Front End Body Panels - Front End Body Panels

Description and Operation

Front Bumper Assembly and Undertray

The front body structure is designed to satisfy bumper impact requirements and primarily comprises the front bumper assembly which is fully described inSection 501-19 Bumpers.

An undertray is fitted to assist air flow through the cooling pack. It is secured to the bottom of the bumper casing and the body front cross-member.

Hood

The hood assembly consists of a one piece inner and outer panel, clinched and bonded together with a bead sealant applied to each clinch joint. The hood opens from the front and is secured by means of a double catch in the hood latch.

Plenum Cover and Front Seals

Protective GMT liners fitted in the wheel arches each incorporate a readily detachable panel for access to the spot lamp assembly. An injection molded plenum cover is secured to the bodywork by securing clips. The plenum cover gives easy access to the windscreen wiper components and the ventilation system pollen filter.

Front End Body Panels - Air Deflector2.2L Duratorq-TDCi (110kW / 150PS) - Puma / 2.0L Duratorq-TDCi

Removal and Installation

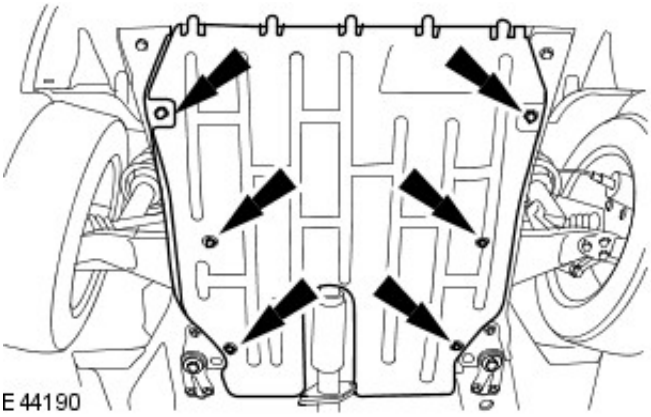
Removal

All vehicles

1. Raise and support the vehicle.
   For additional information, refer to: Lifting (100-02 Jacking and Lifting, Description and Operation).

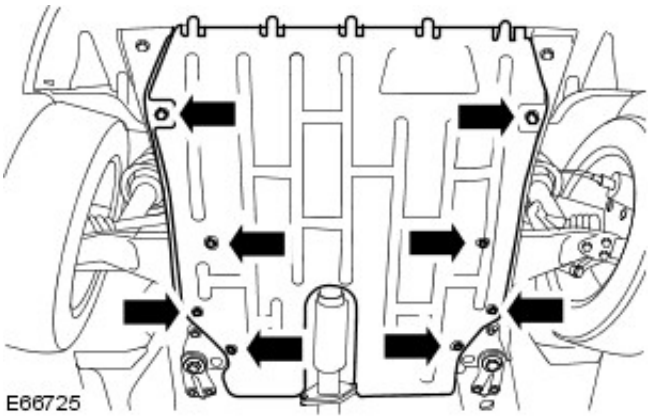
Vehicles with 2.0L diesel engine

2. Remove the air deflector.



Vehicles with 2.2L diesel engine

3. Remove the air deflector.



Installation

1. To install, reverse the removal procedure.

Front End Body Panels - Cowl Vent Screen
Removal and Installation

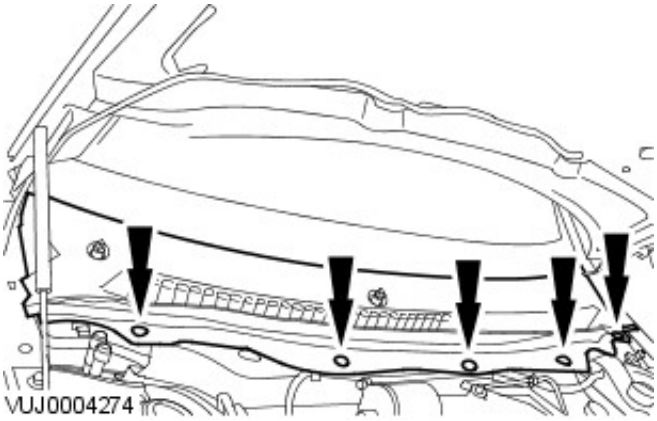
Removal

All vehicles

1. Remove the wiper arms and blades.
   For additional information, refer to: Wiper Pivot Arm (501-16 Wipers and Washers, Removal and Installation).

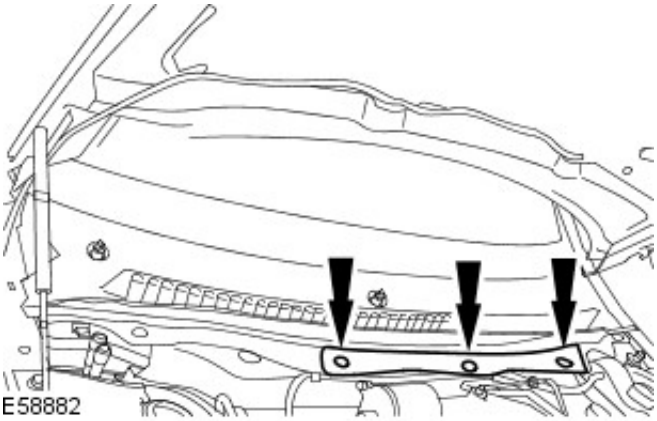
Vehicles built up to VIN:E43868

2. Remove the cowl vent screen.

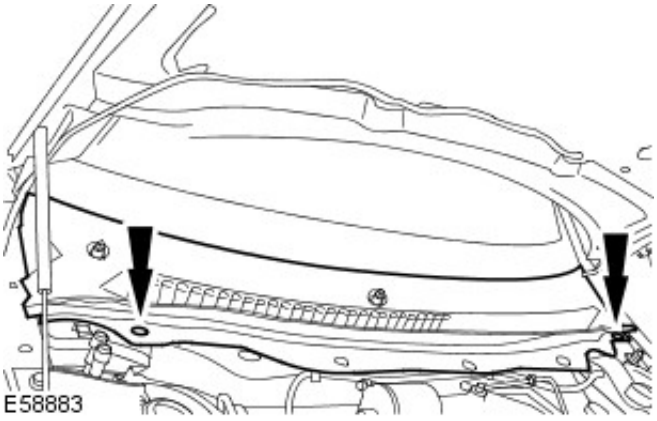


Vehicles built from VIN:E43869

3. Remove the cowl vent screen heatshield.



4. Remove the cowl vent screen.



Installation

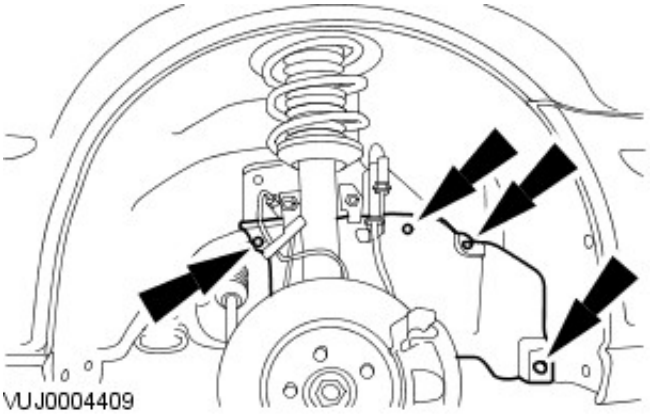
1. To install, reverse the removal procedure.

Front End Body Panels - Fender Splash Shield

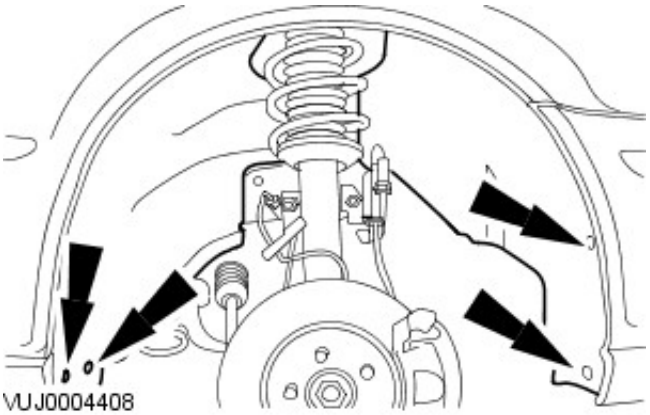
Removal and Installation

Removal

1. Remove the wheel and tire assembly. For additional information, refer toSection 204-04 Wheels and Tires.
2. Remove the wheel arch liner access cover.



3. Remove wheel arch liner.

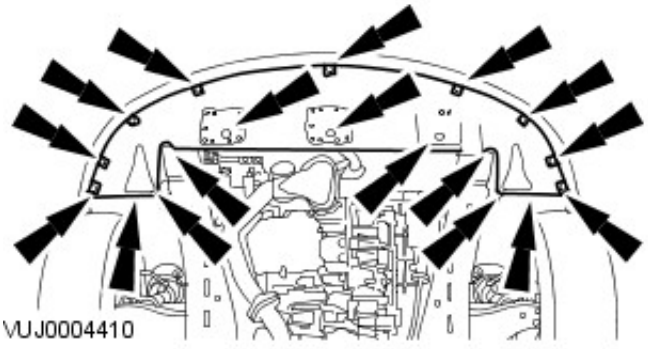


Installation

1. To install, reverse the removal procedure.

Front End Body Panels - Radiator Splash Shield
Removal and Installation

Removal



1. Raise and support the vehicle. For additional information, refer toSection 100-02 Jacking and Lifting.
2. Remove undertray assembly.

Installation

1. To install, reverse the removal procedure.

Body Closures -

Torque Specifications

Description	Nm	lb-ft	lb-in
Door hinge bolt - hinge to body	35	26	–
Door hinge bolt - hinge to door	47	35	–
Door hinge grub screw	18	13	–
Door checkstrap to body	35	26	–
Door checkstrap to door	6	–	53
Door striker plate screw	25	18	–
Luggage compartment lid hinge - hinge to lid nuts	25	18	–
Luggage compartment lid hinge - hinge to body bolts	25	18	–
Luggage compartment lid striker plate	10	7	–
Hood hinge screw	20	15	–

Body Closures - Body Closures

Description and Operation

Doors

The passenger compartment doors each comprise of an inner and outer panel, clinched and bonded together to form a door assembly. Both panels incorporate extensions spot welded together to form a cheater assembly and a sealant is applied in cosmetic bead form to all clinch joints.

The doors are of a conventional latch to striker plate design with the strikers located on the body pillars.

A joint-less single profile bulb seal is installed on each door together with a water shedder and separate vacuum formed speaker cup. Upper and lower door hinges and multi-stage checkstraps require no lubrication throughout vehicle life.

Luggage Compartment Lid

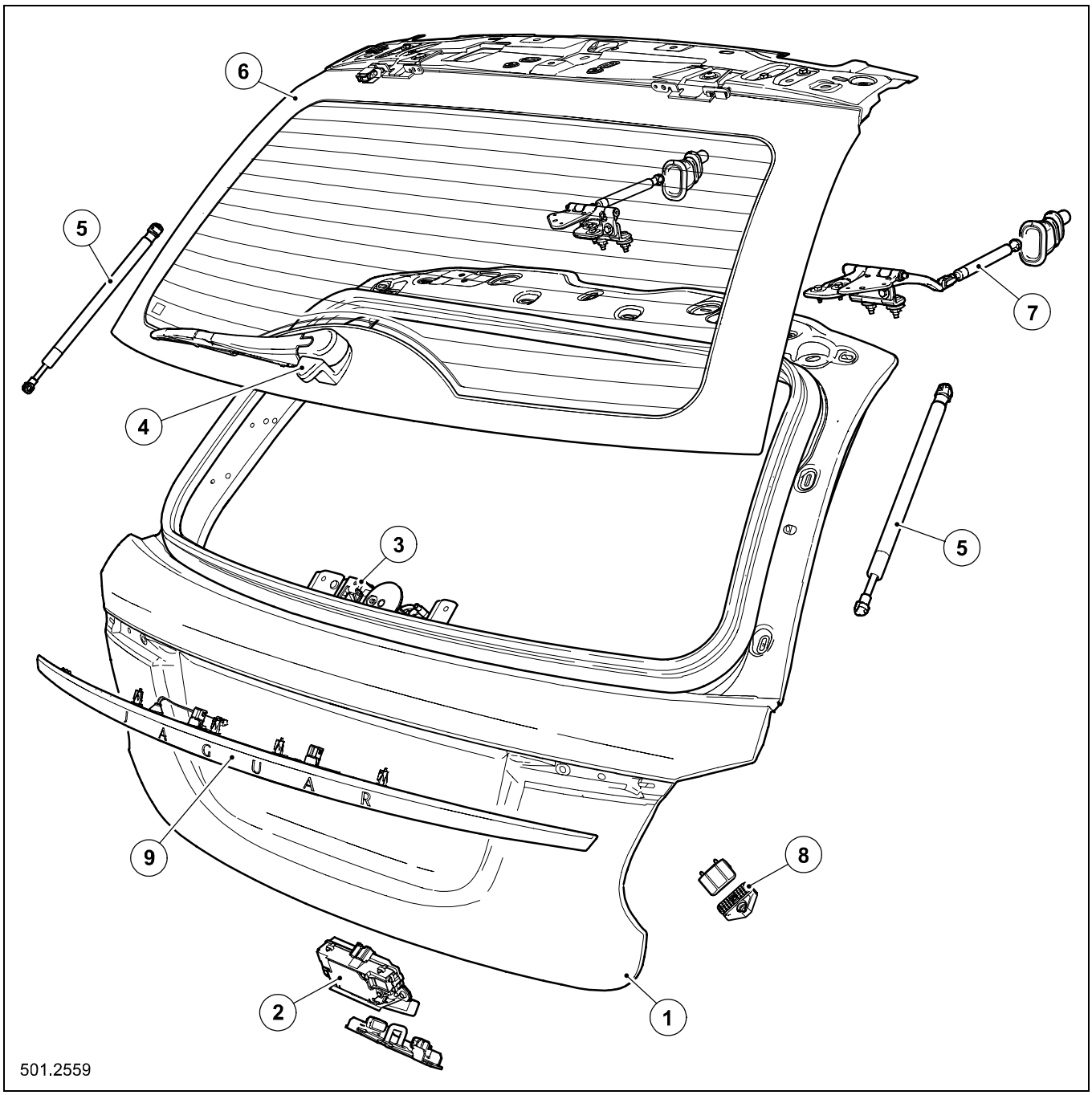
The luggage compartment lid comprises of an inner and outer panel clinched and bonded together to form a complete assembly. A cosmetic bead sealant is applied to all clinch joints.

Hinge reinforcements and a latch striker mounting reinforcement are attached to the lid inner panel and a combined hinge and gas strut mounting assemblies are secured by bolts and nuts to the inner panel and the luggage compartment flange at each side.

The luggage compartment lid utilizes a conventional lock to striker plate design, with the striker located centrally on the edge of the load space floor.

Body Closures and Tailgate (Wagon/Estate)

Tailgate and Opening Backlight



Tailgate exploded view

Key

1. Tailgate
2. Tailgate latch and striker
3. Wiper motor
4. Opening backlight handle with switch
5. Tailgate struts
6. Opening backlight
7. Opening backlight strut and hinge
8. Tailgate bump stops
9. Tailgate finisher

The tailgate has a compact hinge design, with an independent opening backlight glass, to ease loading of lightweight goods. Two gas struts, fixed to the body rear end drain trough panel, assist tailgate lift. Two bump stops are positioned on the drain trough panel waistline.

The glass on the opening backlight is glued to a metal carrier. Two gas struts positioned on the roof rear upper header, assist the opening backlight lift. The underside of the opening backlight handle, houses a switch to release the lock. The underside of the tailgate finisher, houses the tailgate release button and the number plate lamps, as on the sedan.

The hinge bolts for the opening backlight, are accessed by removing the interior trim and the spoiler.

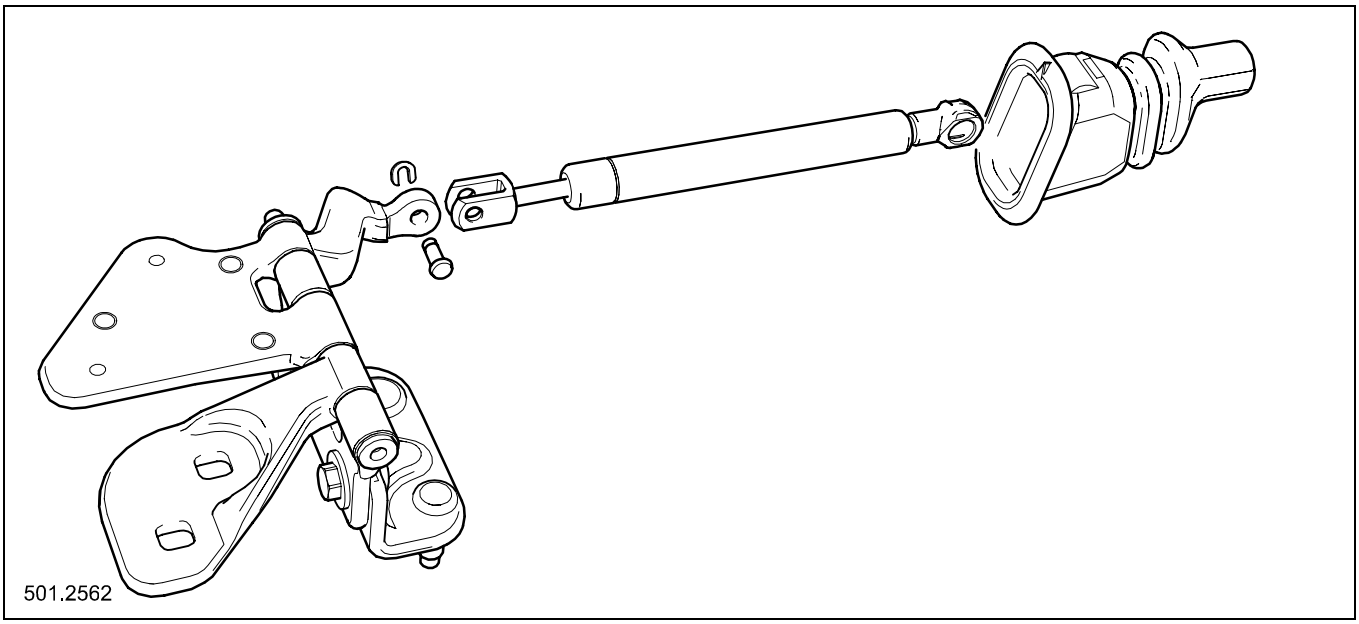
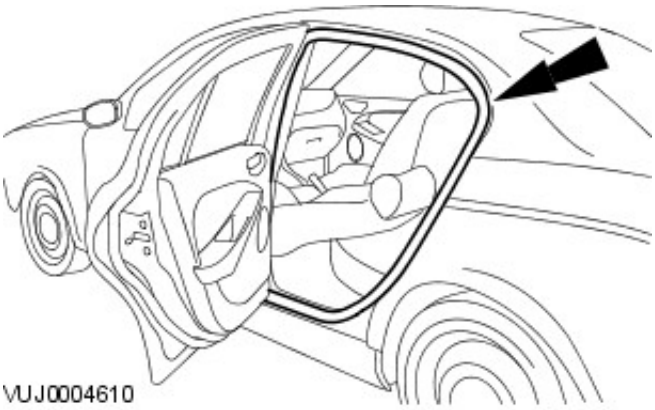


Fig. 17 Opening backlight strut and hinge

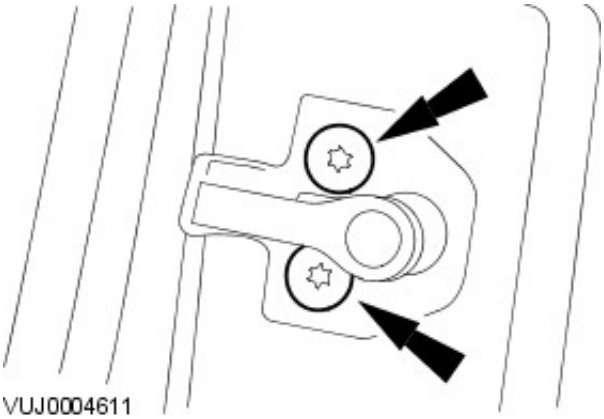
Body Closures - Door Alignment

General Procedures

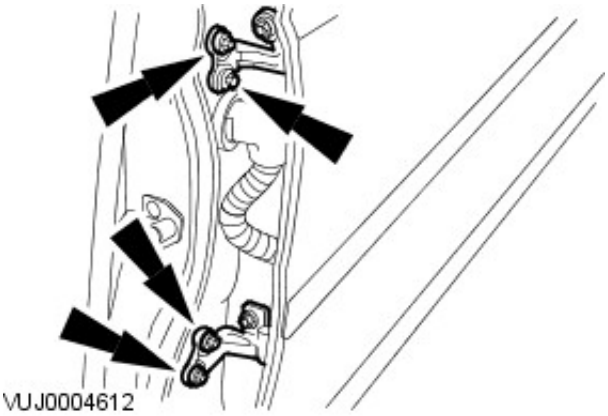


1. NOTE: Rear door shown, front door similar.

Remove the rear door aperture seal.



2. Remove the striker plate.



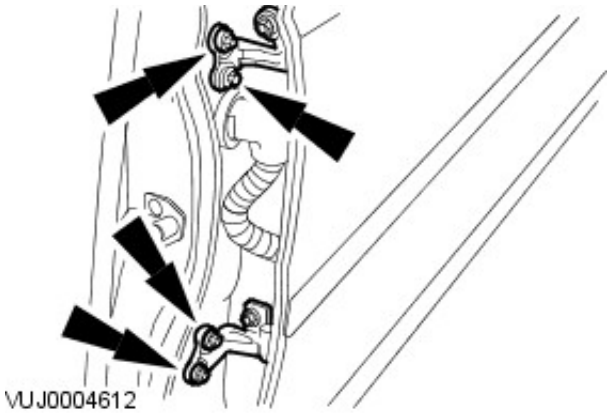
3. Loosen the door hinge bolts.

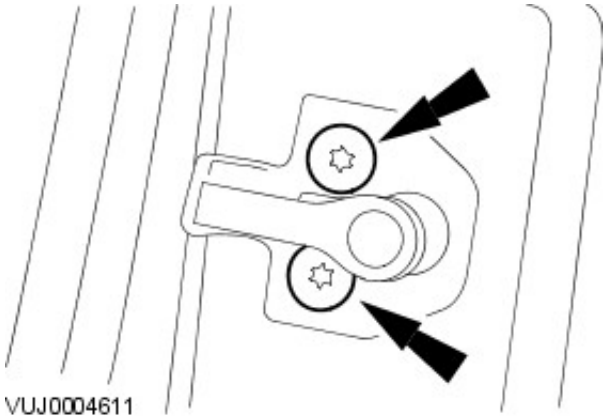
4. NOTE: Initial door fitting, set the front door 4 mm or the rear door 3 mm higher than nominal.

Set the door to the correct alignment.

5. Tighten the door hinge bolts.

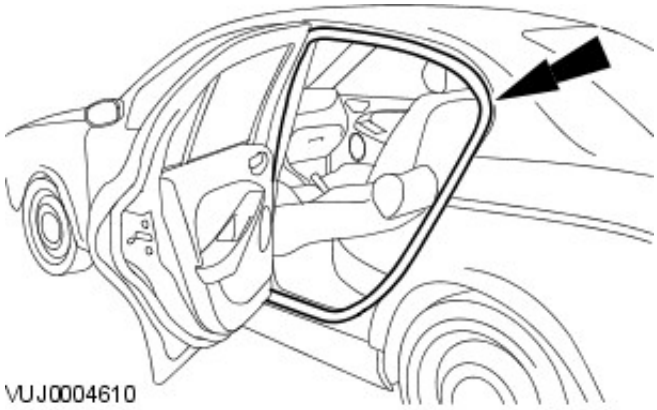
- Tighten to 47 Nm.


VUJ0004612


VUJ0004611

6. Install the striker plate.

- Tighten to 25 Nm.

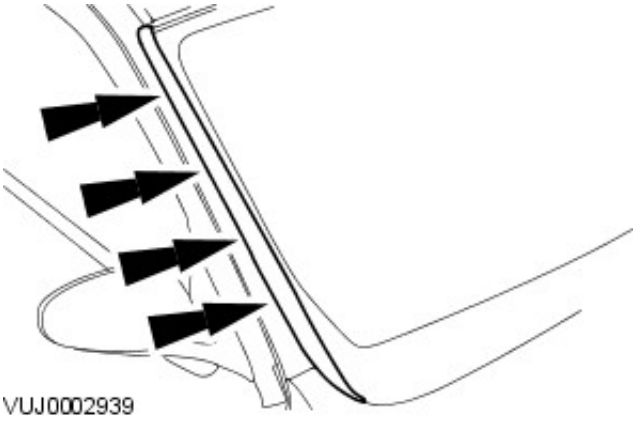

VUJ0004610

7. Install the rear door aperture seal.

Body Closures - Hood Alignment

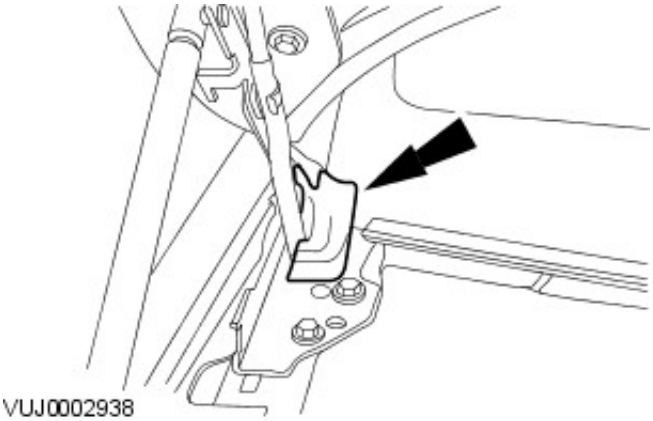
General Procedures

1. Remove the hood latch. For additional information, refer toSection 501-14 Handles, Locks, Latches and Entry Systems.



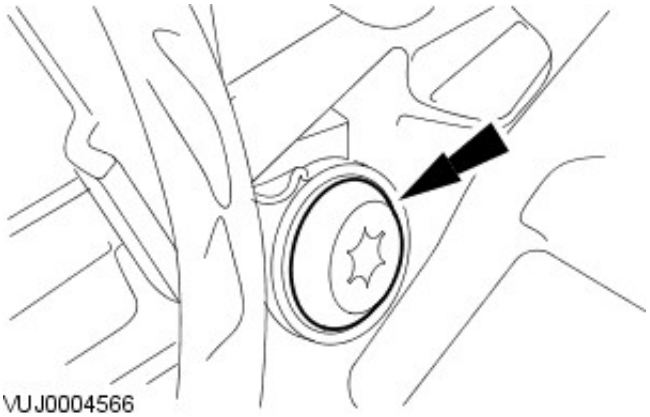
2. NOTE: Right hand shown, left hand similar.

   Remove the A-pillar exterior trim.



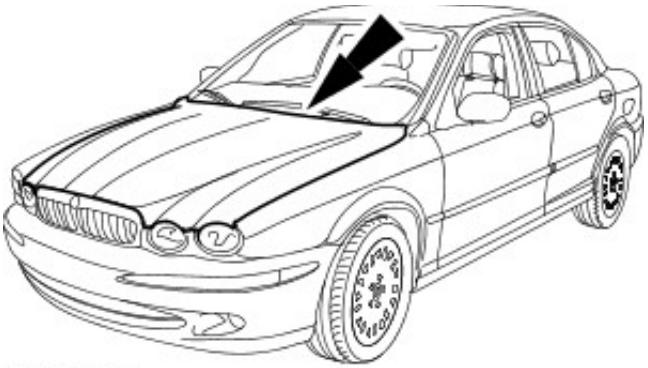
3. NOTE: Right hand shown, left hand similar.

   Remove the lower A-pillar drainage channel.



4. Loosen the hood hinge screws to 3-5 Nm.

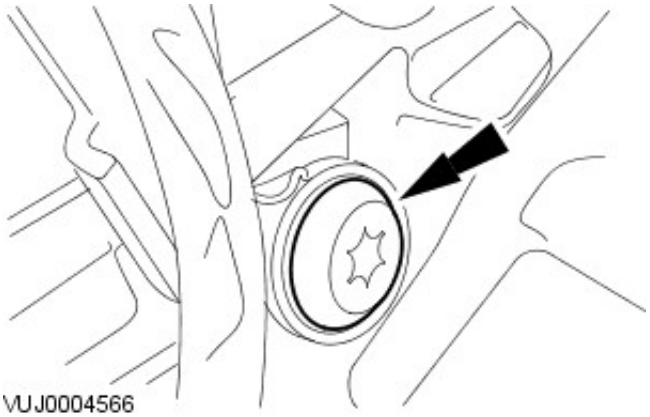
5. Pull up/push down on hood.



VUJ0004567

6. Set hood to the correct alignment.

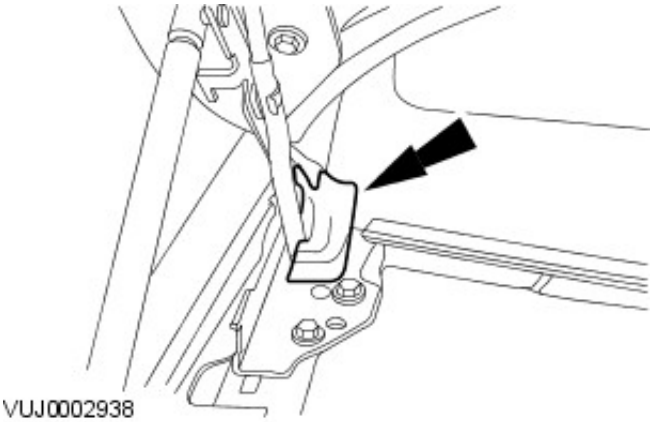
7. Tighten the hood hinge screws to 20 Nm.



VUJ0004566

8. NOTE: Right hand shown, left hand similar.

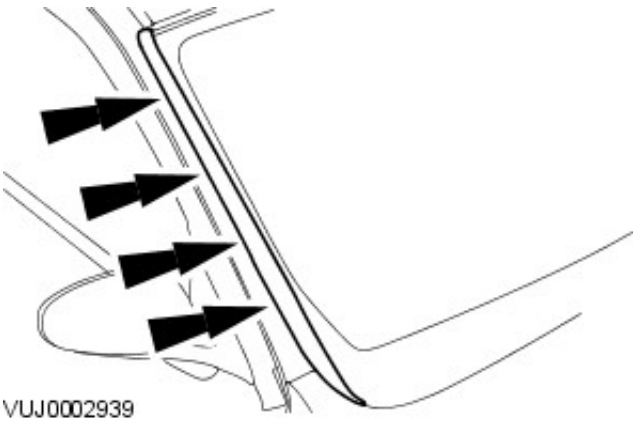
Install the lower A-pillar drainage channel.



VUJ0002938

9. NOTE: Right hand shown, left hand similar.

Install the A-pillar exterior trim.

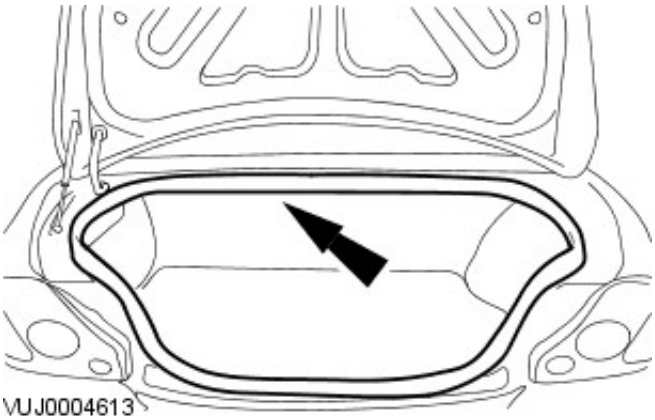


VUJ0002939

10. Install the hood latch. For additional information, refer toSection 501-14 Handles, Locks, Latches and Entry Systems.

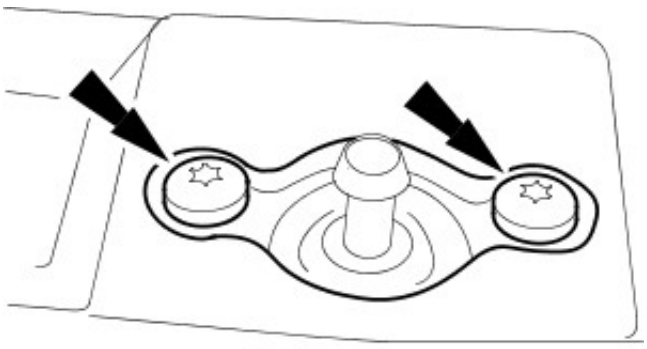
Body Closures - Luggage Compartment Lid Alignment

General Procedures



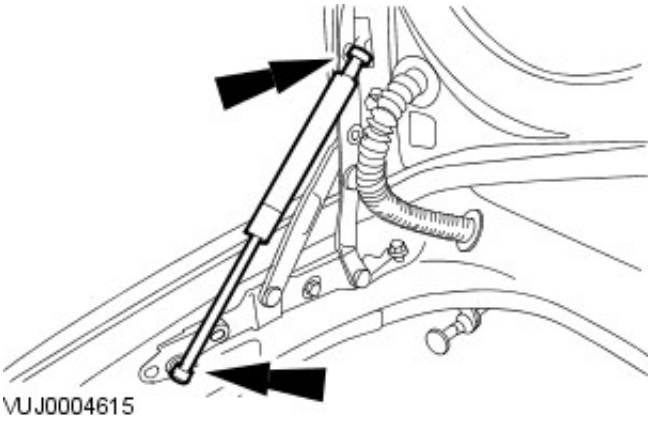
VUJ0004613

1. Remove the luggage compartment lid aperture seal.



VUJ0004614

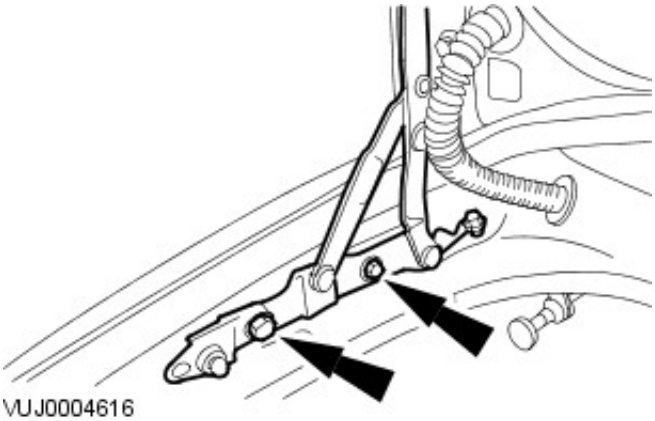
2. Remove the striker plate.



VUJ0004615

3. NOTE: Left hand shown, right hand similar.

Remove the gas strut.

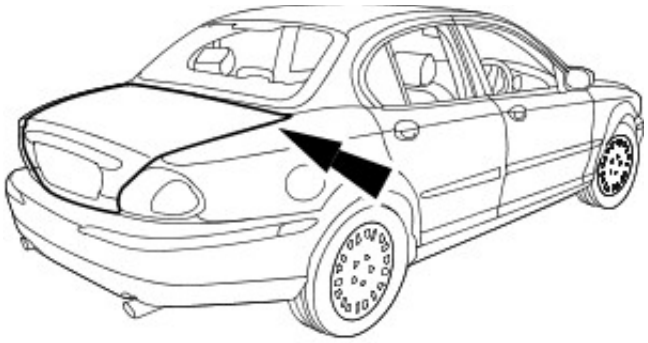


VUJ0004616

4. NOTE: Left hand shown, right hand similar.

Loosen the luggage compartment lid hinge bolts.

5. Pull up/push down on luggage compartment lid.



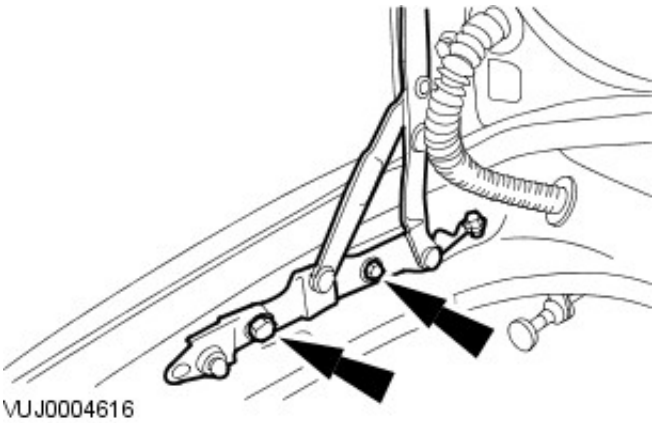
VUJ0004617

6. NOTE: Set the alignment to 2 mm lower than nominal.

Set the luggage compartment lid alignment.

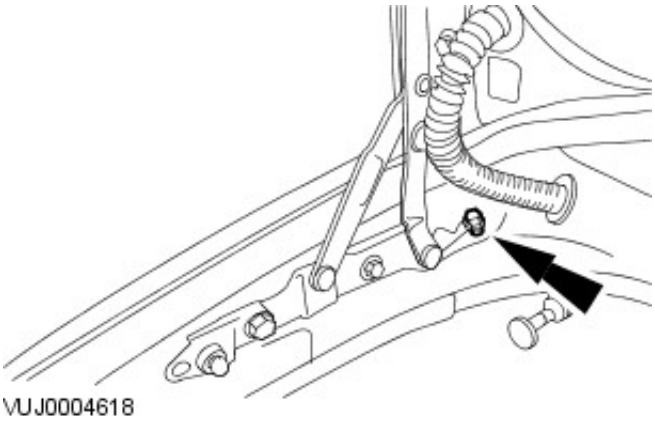
7. Tighten the luggage compartment lid hinge bolts.

- Tighten to 25 Nm.



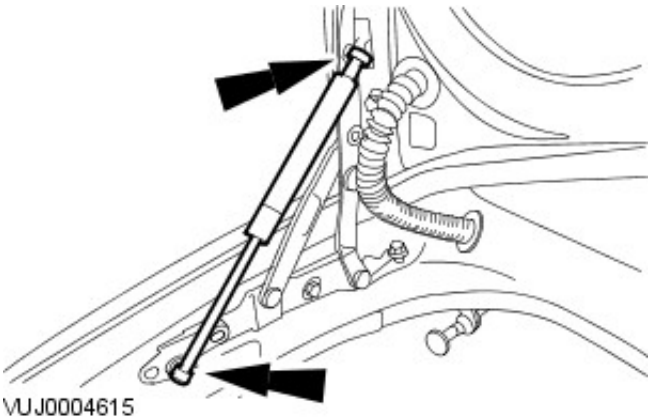
VUJ0004616

8. Adjust the luggage compartment lid stop screw.



VUJ0004618

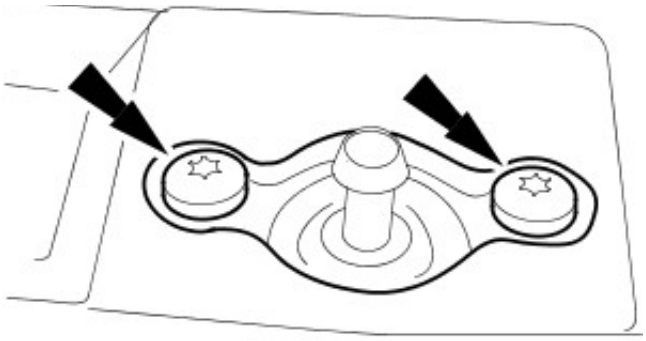
9. Install the gas struts.



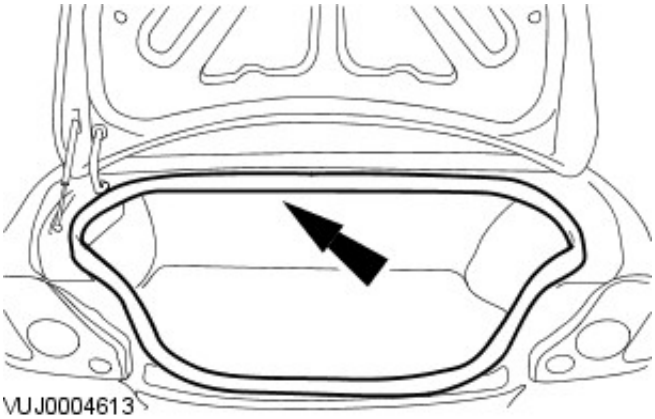
VUJ0004615

10. Install the striker plate.

- Tighten to 10 Nm.



VUJ0004614

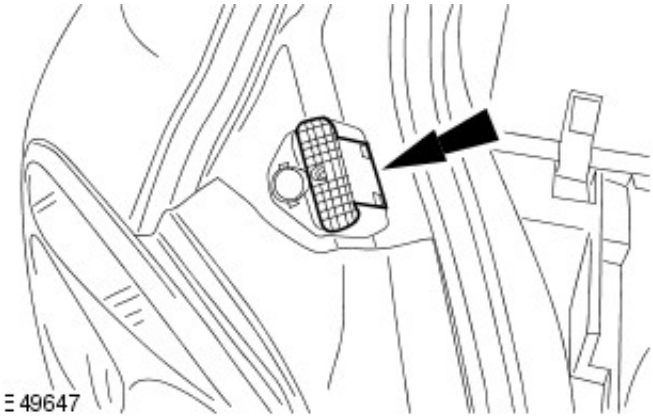


VUJ0004613

11. Install the luggage compartment lid aperture seal.

Body Closures - Liftgate Alignment

General Procedures

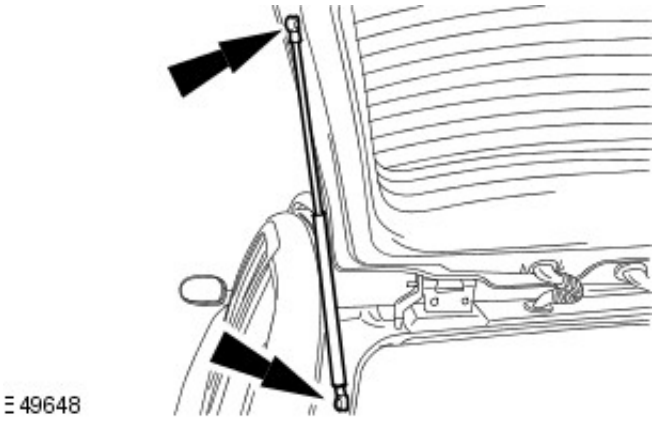


1. Open the liftgate.
2. NOTE: Left-hand shown, right-hand similar.

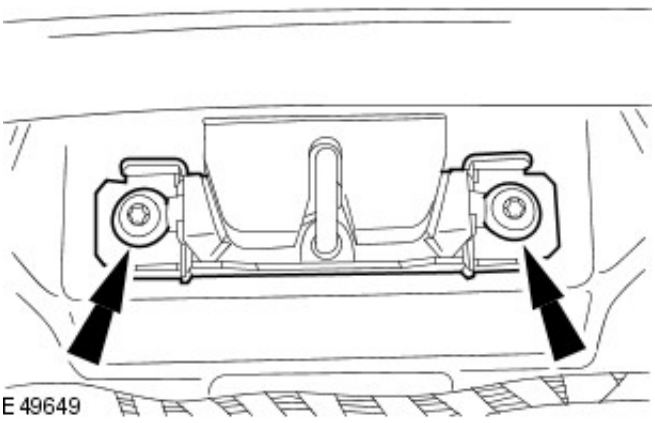
   Adjust both liftgate bump stops counter-clockwise to their fully seated position.

3. Remove the loadspace scuff plate trim panel.
   For additional information, refer to: Loadspace Scuff Plate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
4. NOTE: Left-hand shown, right-hand similar.

   Remove both the liftgate gas struts.

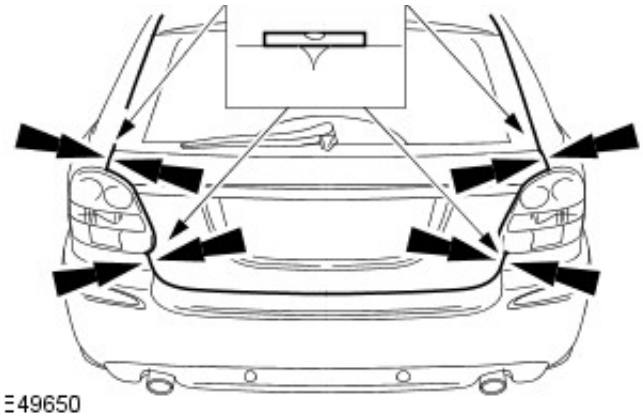


5. Close the liftgate.
6. Open the liftgate window glass.
7. Loosen the liftgate striker retaining bolts.



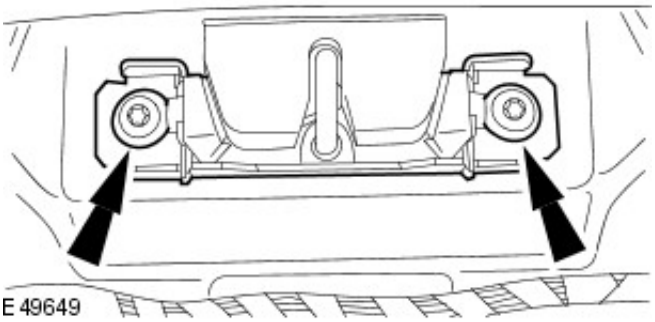
8. NOTE: Make sure the liftgate aligns flush to the rear quarter panels and rear bumper.

   Set the alignment of the liftgate to the rear quarter panels and rear bumper cover.

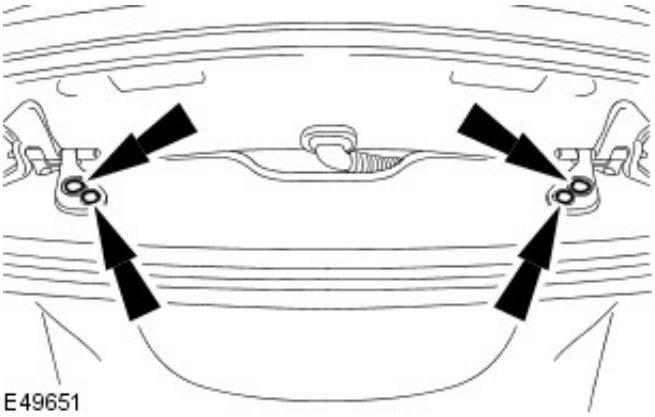


9. Tighten the liftgate striker retaining bolts.

- Tighten to 25 Nm.

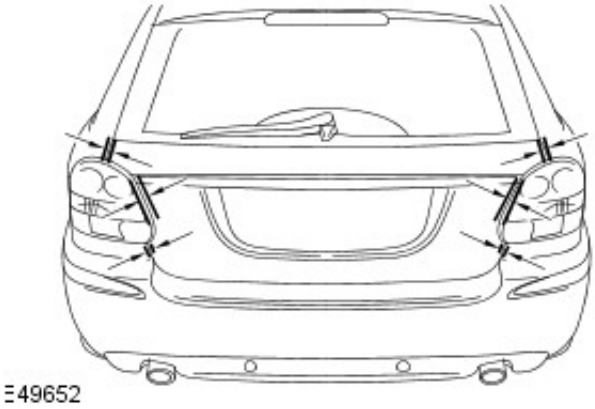


10. Loosen the upper liftgate hinge retaining bolts.



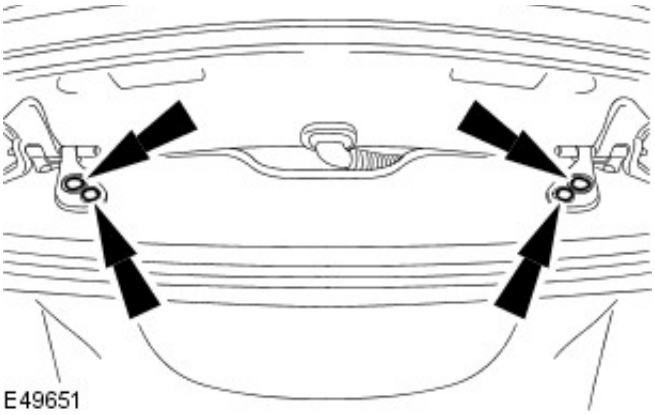
11. NOTE: Make sure the gap between the liftgate and the rear quarter panels, rear lamp assemblies and rear bumper cover are equal.

Set the liftgate gaps to the rear quarter panels, rear lamp assemblies and the rear bumper cover.



12. Tighten the liftgate hinge retaining bolts.

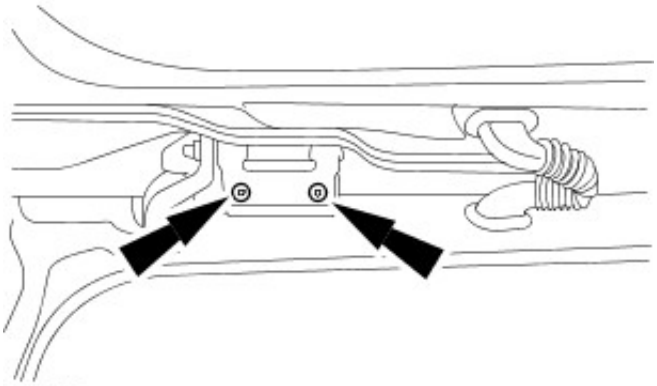
- Tighten to 25 Nm.


E49651

13. Open the liftgate.

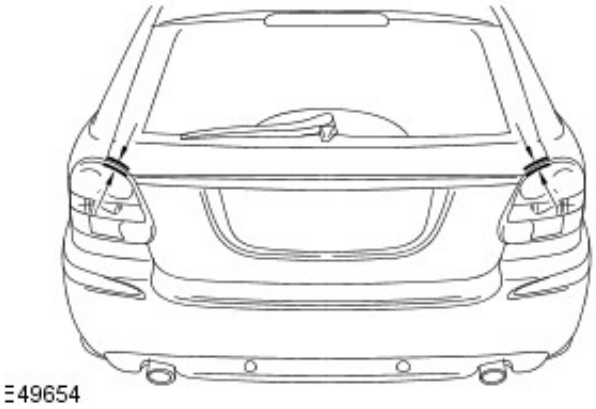
14. NOTE: Left-hand shown, right-hand similar.

Loosen both the lower liftgate hinge retaining bolts.


E49653

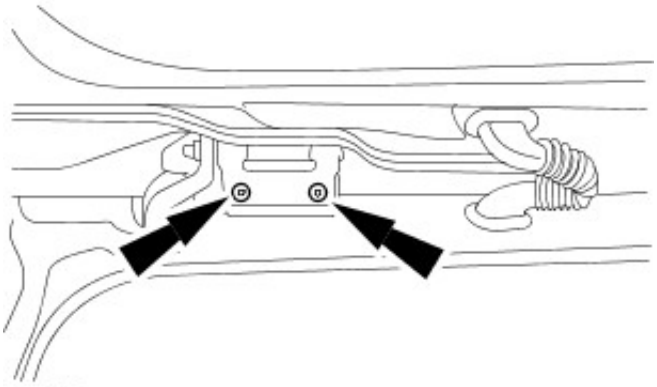
15. NOTE: Make sure the gaps between the liftgate and rear lamp assemblies are equal on both sides.

Set the liftgate gaps to the rear lamp assemblies.


E49654

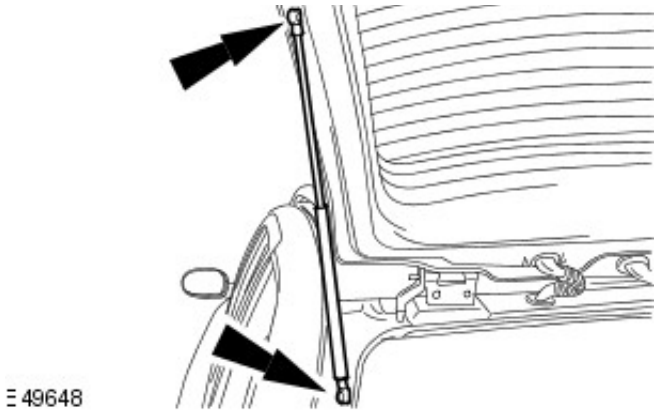
16. Tighten the lower liftgate hinge retaining bolts.

- Tighten to 14 Nm.

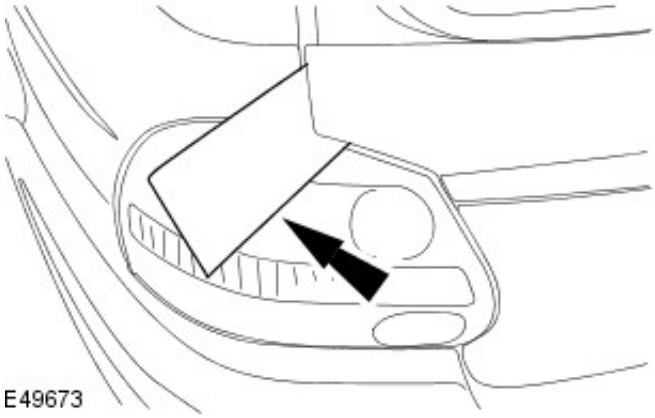

E49653

17. NOTE: Left-hand shown, right-hand similar.

Install both liftgate gas struts.


E49648

18. Install the loadspace scuff plate trim panel.
For additional information, refer to: Loadspace Scuff Plate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).


E49673

19. CAUTION: Do not over adjust the liftgate bump stops. Failure to follow this instruction may result in damage to the component.

• NOTE: Left-hand shown, right-hand similar.

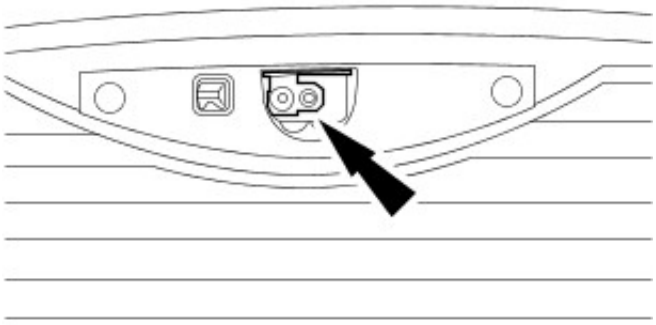
Using a suitable piece of paper check the clearance between the liftgate bump stops and the liftgate, if the paper can be removed with ease adjust the liftgate bump stops counter-clockwise equally until the paper is lightly clamped between the bump stops and liftgate.

20. Close the liftgate.

21. NOTE: Check the liftgate window glass adjustment. If the liftgate window glass adjustment is correct, no further adjustment is required.

Close the liftgate window glass.

22. Make sure the rear wiper pivot arm is in the parked position.

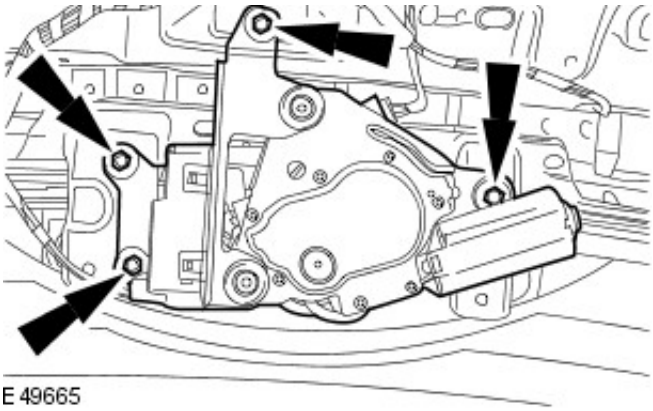

E49816

23. Open the liftgate window glass.

24. Open the liftgate.

25. Remove the liftgate trim panel.
For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

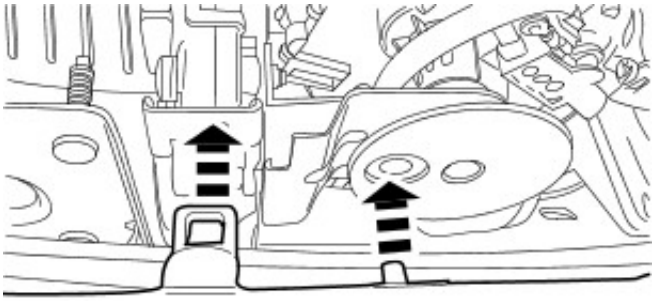
26. Loosen the rear wiper motor retaining nuts.



E49665

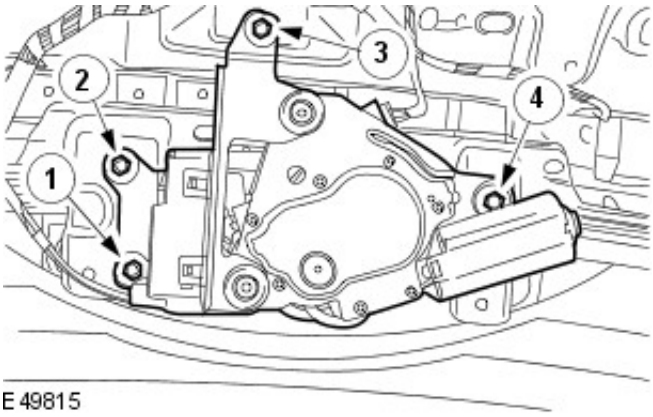
27. Close the liftgate.

28. Make sure the liftgate glass latch and rear wiper mounting arm locate correctly into the liftgate latch actuator and rear wiper motor.



E49656

29. Close the liftgate glass.



E49815

30. CAUTIONS:

⚠ With the aid of an assistant in the loadspace, fully tighten the rear wiper motor retaining nuts. Failure to follow this instruction may result in damage to the vehicle.

⚠ Make sure the rear wiper motor does not move whilst tightening the retaining nuts. Failure to follow this instruction may result in damage to the vehicle.

Tighten the rear wiper motor retaining nuts in the sequence shown.

- Tighten to 8 Nm.

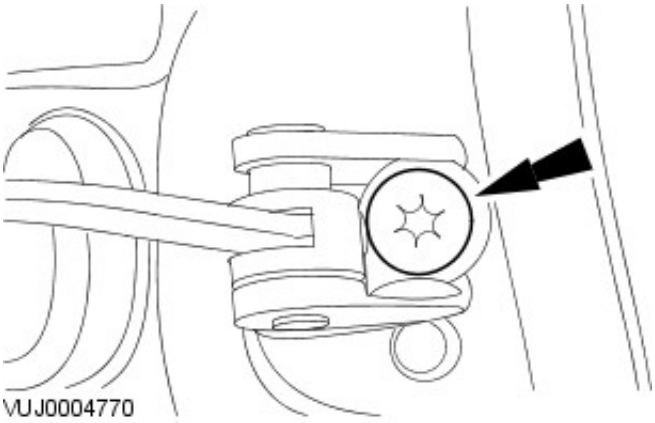
31. Visually check the liftgate for correct alignment.

32. Install the liftgate trim panel.
For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

Body Closures - Weatherstrip

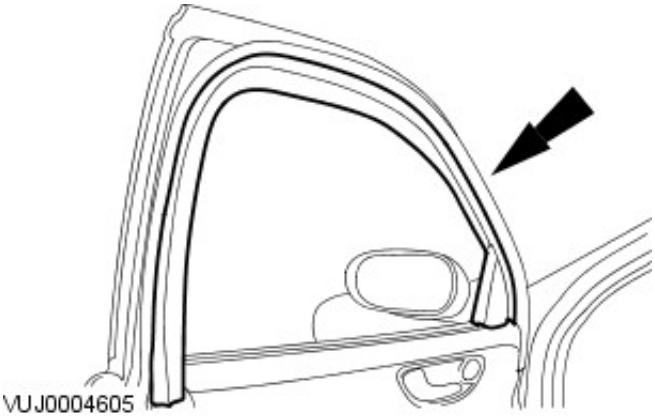
Removal and Installation

Removal

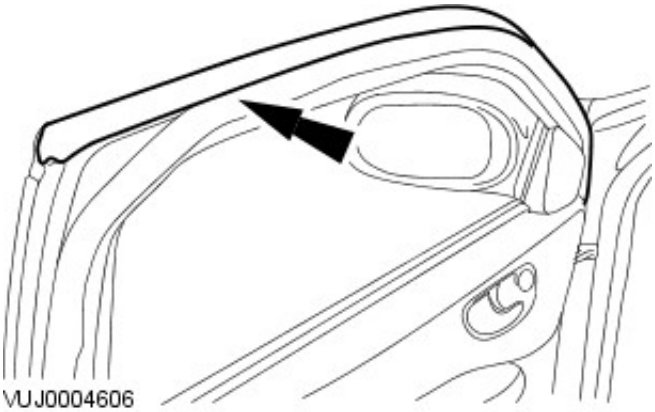


1. NOTE: Front door shown, rear door similar.

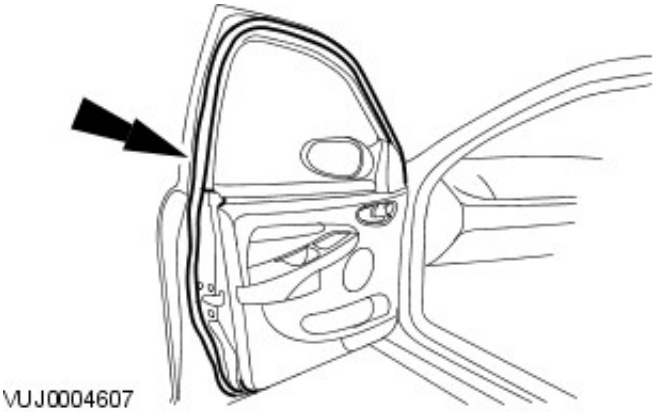
Detach the door checkstrap.



2. Remove the window aperture trim.



3. Remove the frame seal.

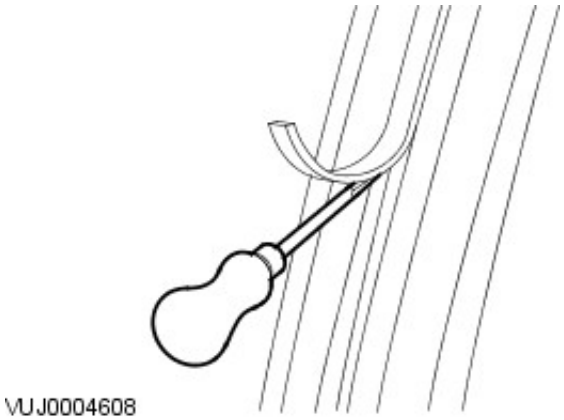


4. NOTE: A start point locator can be found on each weatherstrip in the form of a dot. The start point is on the 'B' Post corner of the door. Using an indelible marker record the start point.

Using an indelible marker, trace around the door weatherstrip.

5. Remove the door weatherstrip.

6. Using a suitable tool remove any residual adhesive from the door.


VUJ0004608

Installation

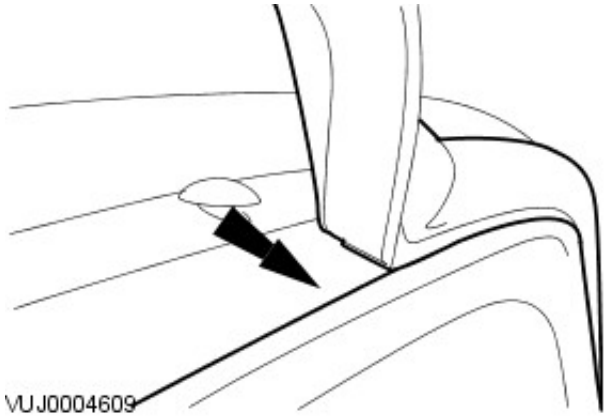
1. NOTE: Door weatherstrips are identified by a color coded dot which is also the start point. The right hand front door is red, the left hand front door is yellow, the right hand rear door is green and the left hand rear door is blue.

• NOTE: Make sure the indelible mark is not removed.

Make sure the weatherstrip mounting surface is clean using a suitable solvent and dry with a lint free cloth.

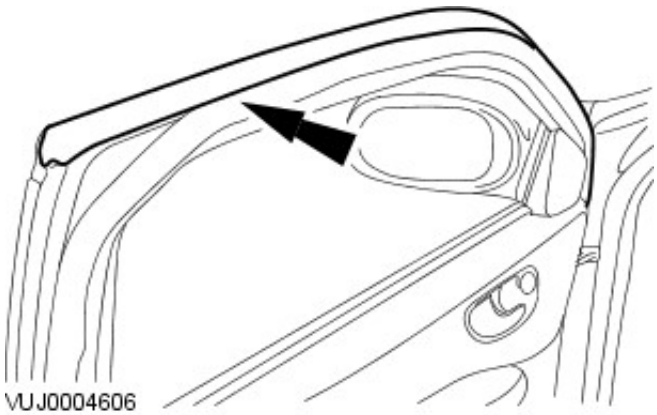
2. NOTE: Align the start point locator to the previously recorded start point.

Install the door weatherstrip.

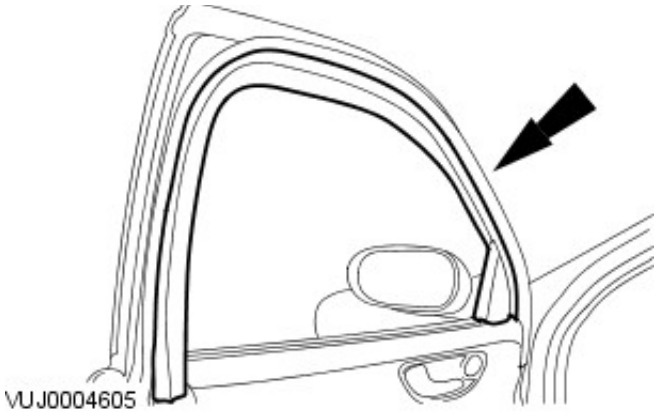

VUJ0004609

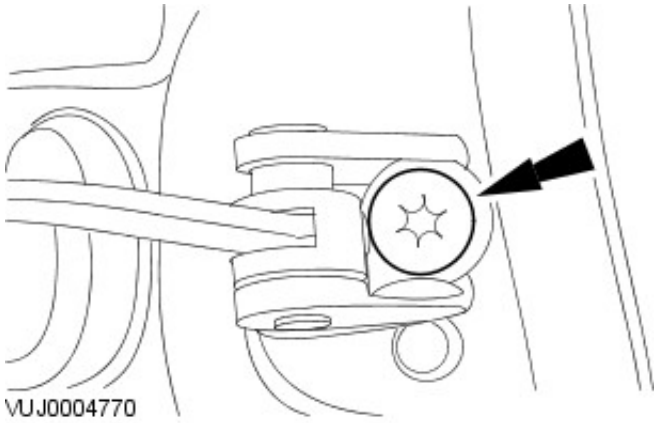
3. Using a suitable solvent, remove the indelible marks.

4. Install the frame seal.


VUJ0004606

5. Install the window aperture trim.





6. Install the door check strap.

- Tighten to 35 Nm.

Interior Trim and Ornamentation -

Torque Specifications

Description	Nm	lb-ft	lb-in
Seat belt anchoring bolt	55	41	–
Loadspace retaining hook - Wagon	8	–	71

Interior Trim and Ornamentation - Interior Trim

Description and Operation

This section covers removal and installation of the interior moldings and trim panels. In many instances, one component overlaps another component. If this condition is found, it will be necessary to loosen or remove the overlapping component before removal, to prevent damage to either component.

The headliner is a one-piece design covering the entire interior of the roof and is made of a molded composite with cloth covering. Finger depressions give pull-down access for the sun visors and passenger assist handles are provided.

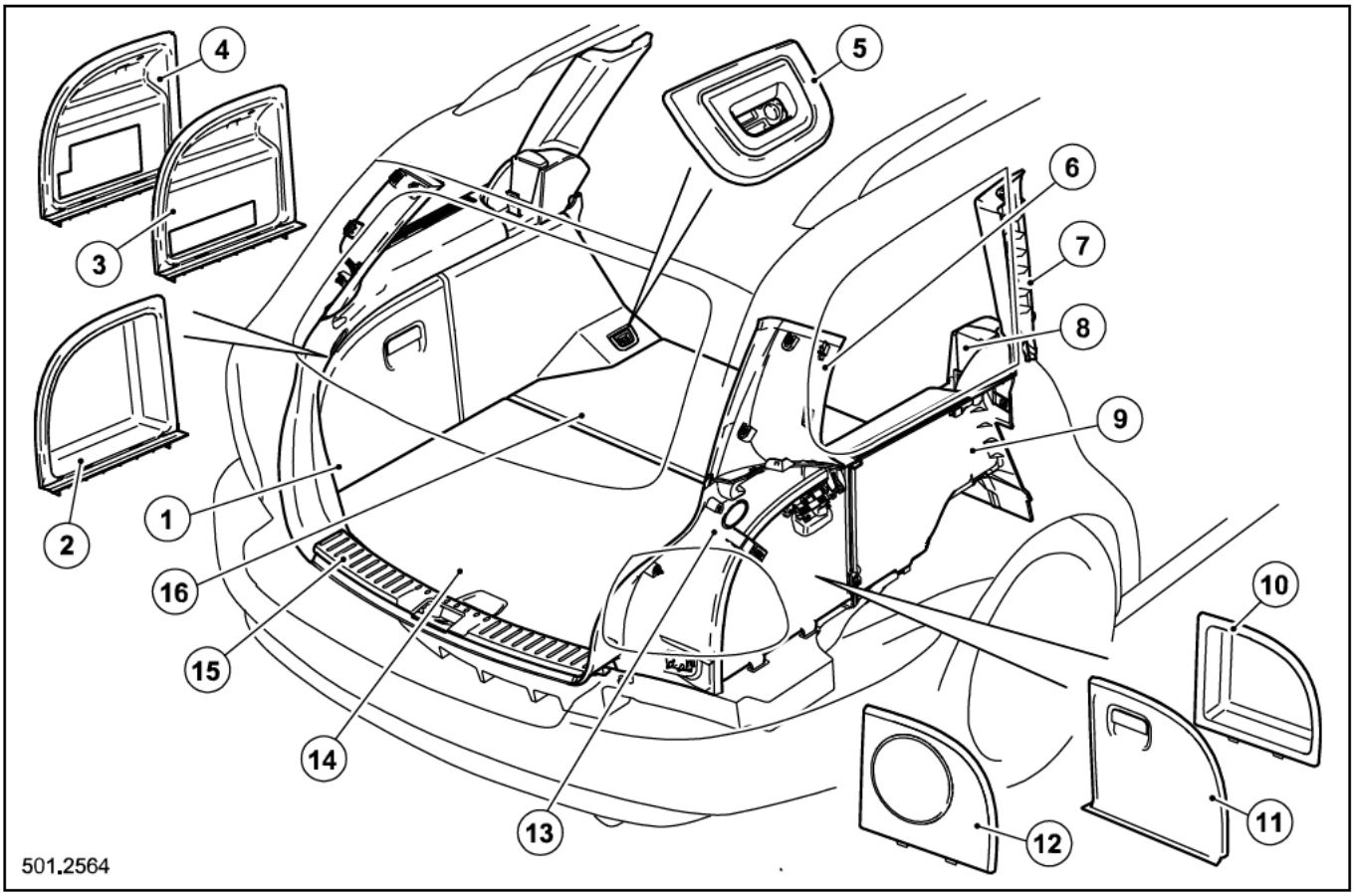
Luggage Compartment Trim (Wagon/Estate)

The headlining is new to fit the extended roof-line of the estate. The new luggage compartment floor trim and side mouldings are shown on the illustration. Behind the left-hand stowage door are three trim panel versions:

- Standard version for stowage space
- CD version with a slot for the CD autochanger
- CD and navigation version with a slot for the CD autochanger and the navigation unit.

The right-hand stowage door is fitted to non-premium audio sound system versions. Premium audio sound system models have the stowage door substituted by a cover holding a bass sub-woofer speaker.

Four tie-down metal loops are positioned in the luggage compartment. The loops are hinged and fold flat when not required.

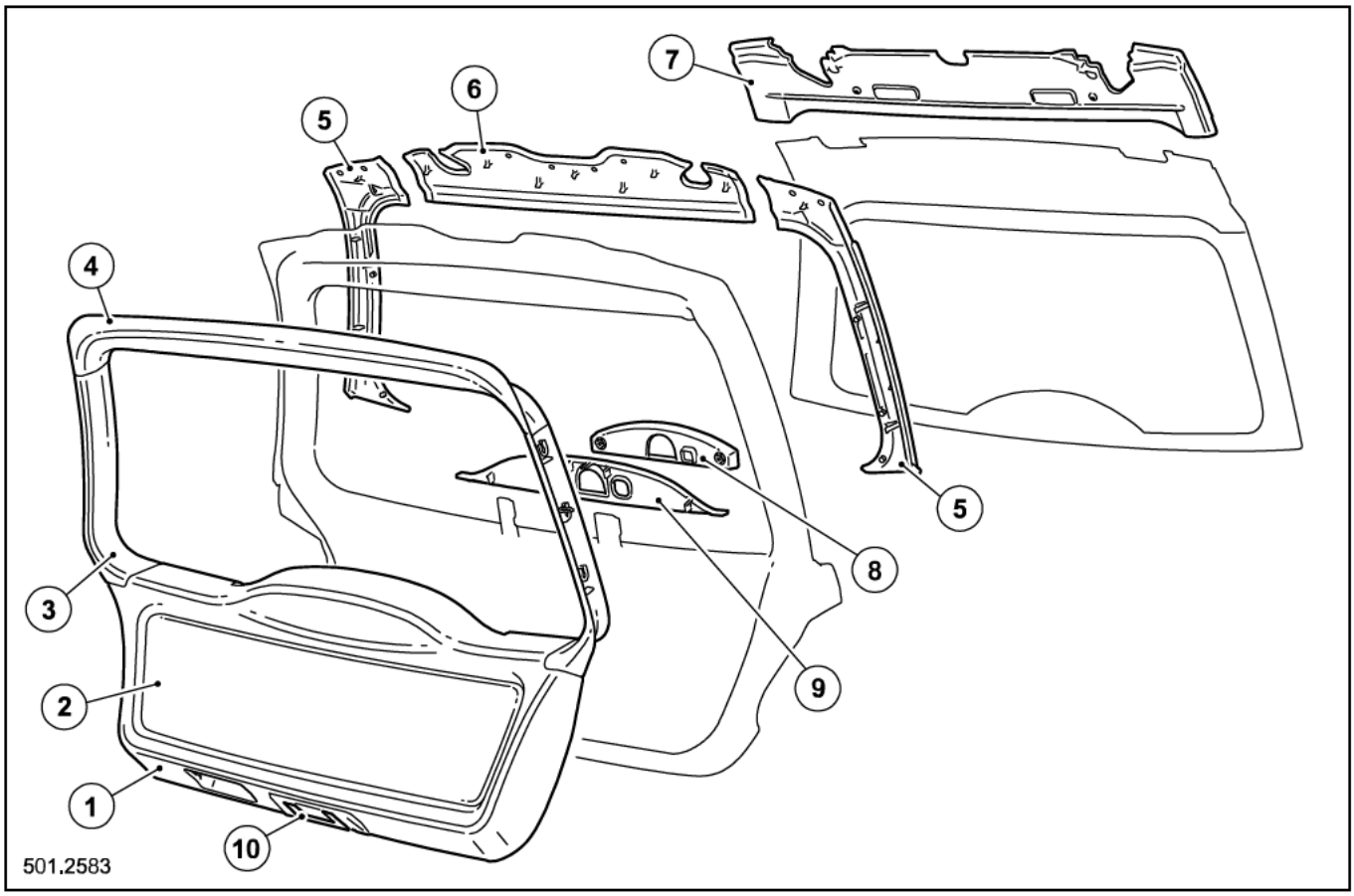


Interior trim mouldings and carpet

1. LH stowage door
2. LH stowage trim (standard version)
3. LH stowage trim (CD autochanger version)
4. LH stowage trim (CD autochanger and navigation version)
5. Luggage tie-down loop
6. 'E' pillar trim
7. 'D' pillar trim
8. Seat belt tower cover
9. Quarter trim
10. LH stowage trim: non-premium audio sound system
11. RH stowage door: non-premium audio sound system
12. RH side cover with bass sub-woofer speaker: premium audio sound system
13. Waist moulding and lamp
14. Hinged carpeted floor panel
15. Scuff plate
16. Fixed carpeted floor panel

Tailgate Trim (Estate)

The tailgate interior trim comprises: upper interior moulding; lower moulding; side interior moulding; carpet insert; glass moulding and glass wiper motor cover. On the exterior side of the tailgate, but interior to the opening backlight, there are three trim items: upper exterior moulding; side interior moulding; wiper motor cover.



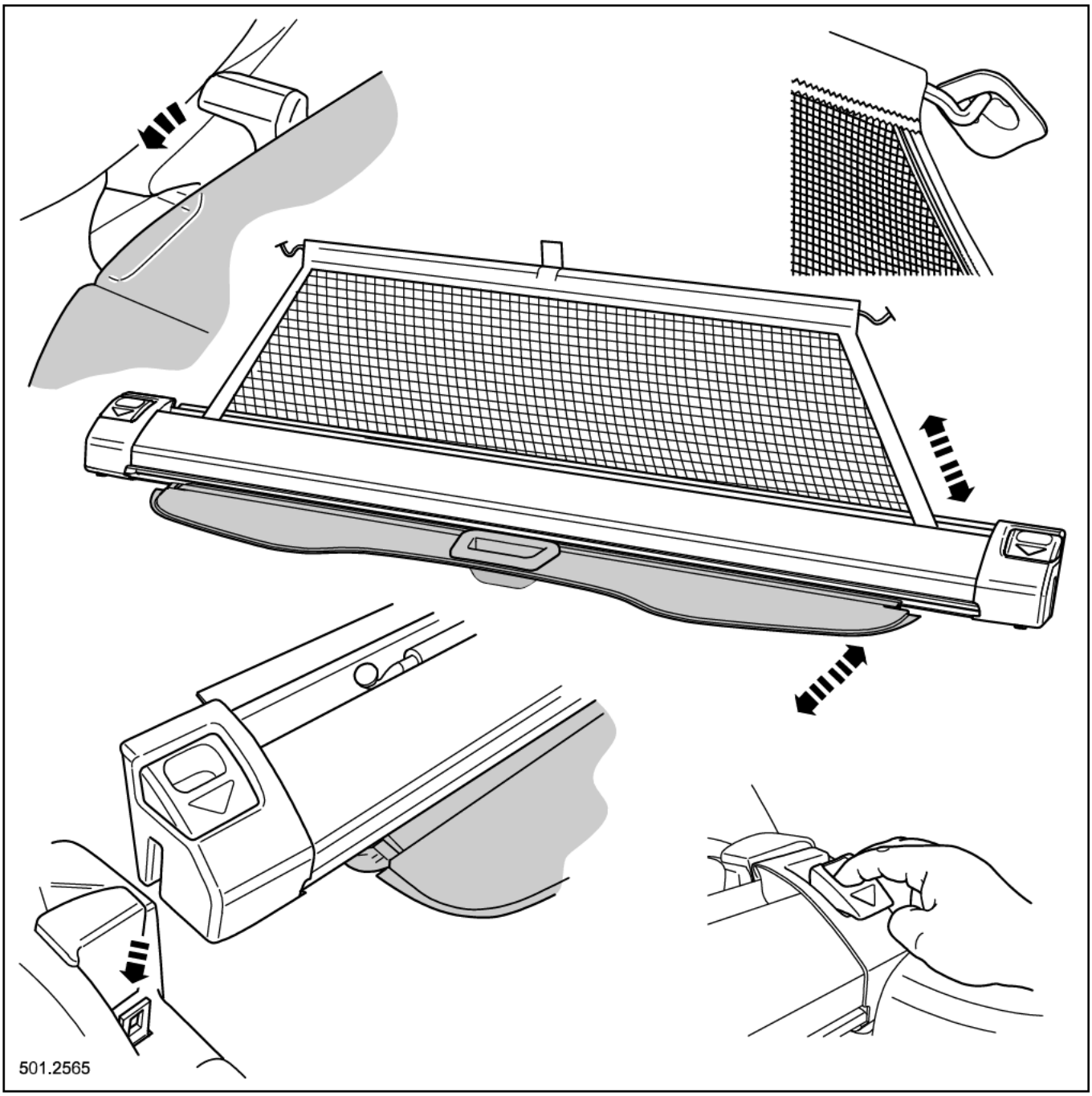
Tailgate trim

1. Lower interior moulding
2. Carpet insert
3. Side interior moulding
4. Upper interior moulding
5. Side exterior moulding
6. Upper exterior moulding
7. Opening backlight moulding
8. Opening backlight wiper motor cover
9. Tailgate wiper motor cover
10. Latch bezel

Luggage Cover and Load Net (Estate)

The luggage cover can be extended from the housing to hide the contents of the luggage compartment. The lugs on either side of the cover fit into the slots on the rear of the luggage compartment. The luggage load net, where fitted, can be extended and the catches on either end, hook into the fittings in the roof.

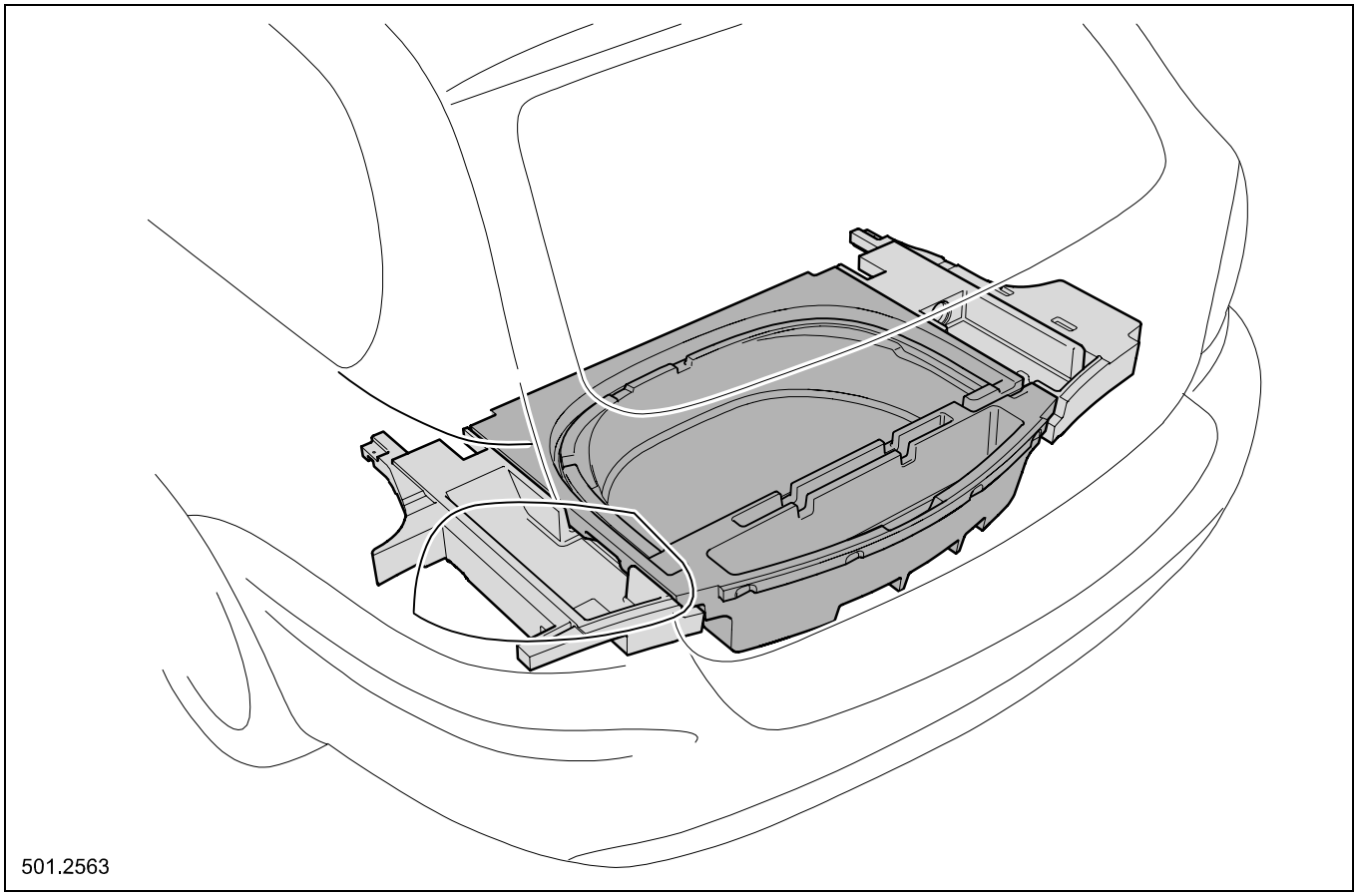
The housing for the luggage cover and load net is locked in place by a catch and striker plate behind the rear seats. Releasing the two buttons, one on either side of the housing, and lifting it clear of the trim allows the complete housing to be removed.



Luggage Cover and Load Net

Underfloor Storage

The underfloor storage tray is located below the luggage compartment floor panel. To access the storage tray, lift the handle on the rear edge of the floor panel. A retaining strap is fitted to the floor panel, which can be hooked over the top lip of the luggage compartment opening, to hold the floor panel up when accessing the storage tray.

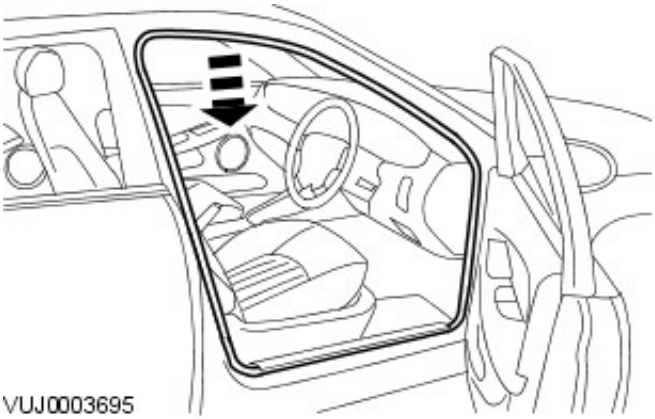


- Underfloor storage tray

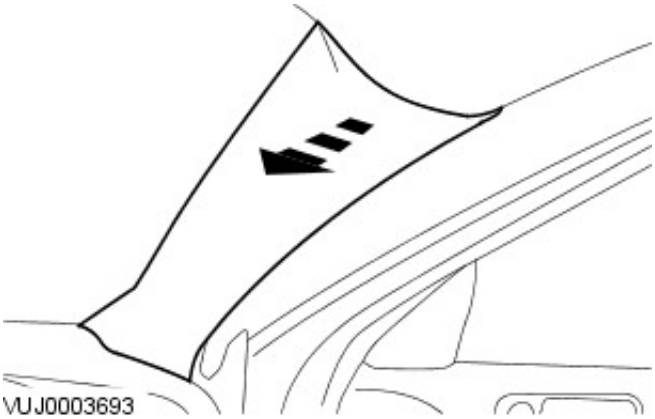
Interior Trim and Ornamentation - A-Pillar Trim Panel

Removal and Installation

Removal

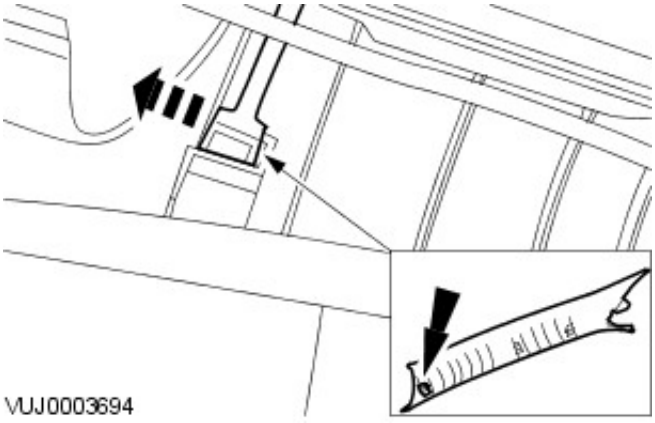


1. Detach the front door opening weather-strip.



2. NOTE: The A-pillar trim panel is secured to the top of the A-pillar by a retaining strap. The retaining strap must be detached from the A-pillar before the A-pillar trim panel is removed.

Detach the A-pillar trim panel.



3. Remove the A-pillar trim panel.

Installation

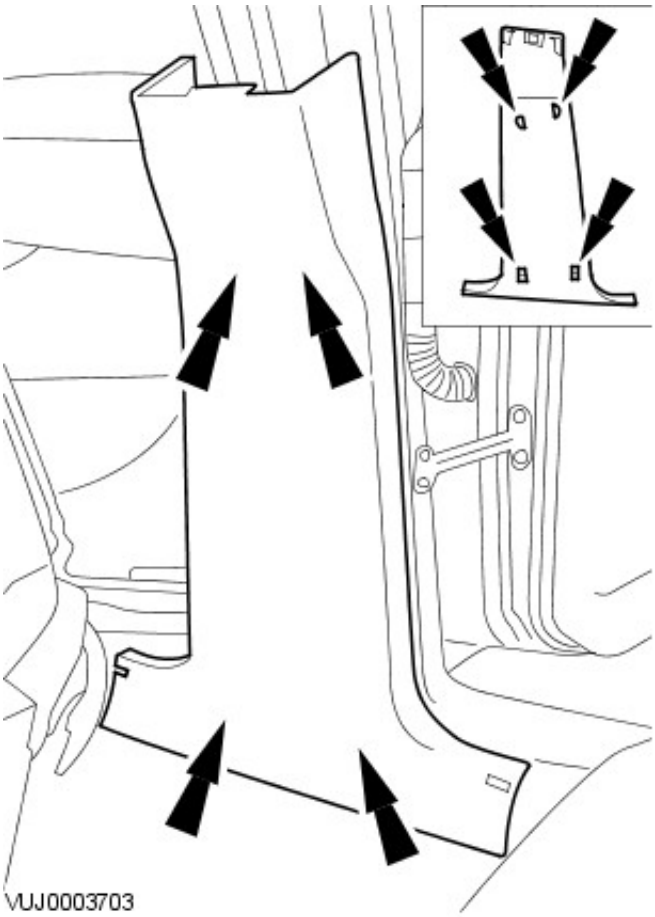
1. To install, reverse the removal procedure.

Interior Trim and Ornamentation - B-Pillar Lower Trim Panel

Removal and Installation

Removal

1. Remove the front scuff plate trim panel. For additional information, refer to Scuff Plate Trim Panel—Front.
2. Remove the rear scuff plate trim panel. For additional information, refer to Scuff Plate Trim Panel—Rear.
3. Remove the B-pillar upper trim panel. For additional information, refer to B-Pillar Trim Panel—Upper.
4. Remove the B-pillar lower trim panel.



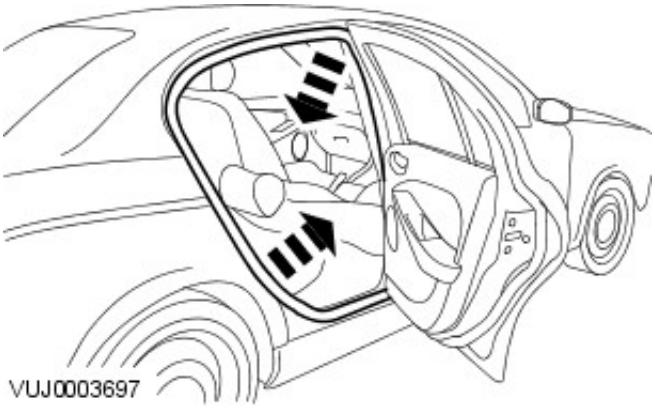
Installation

1. To install, reverse the removal procedure.

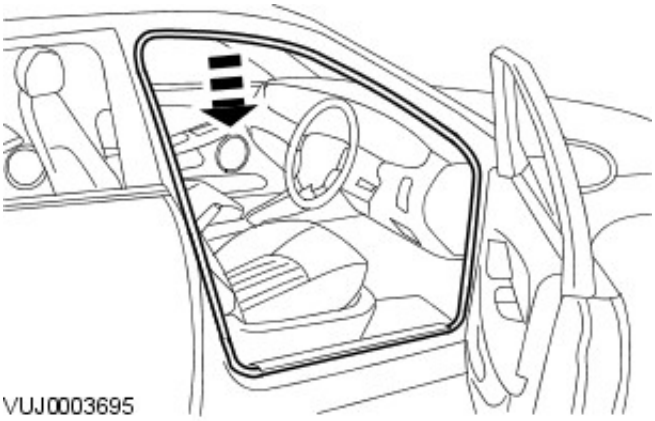
Interior Trim and Ornamentation - B-Pillar Upper Trim Panel

Removal and Installation

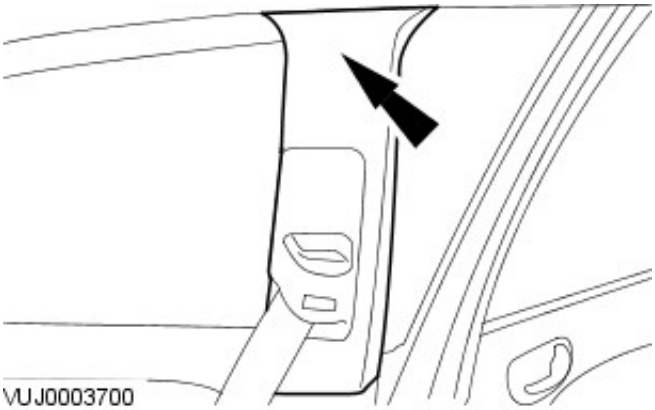
Removal



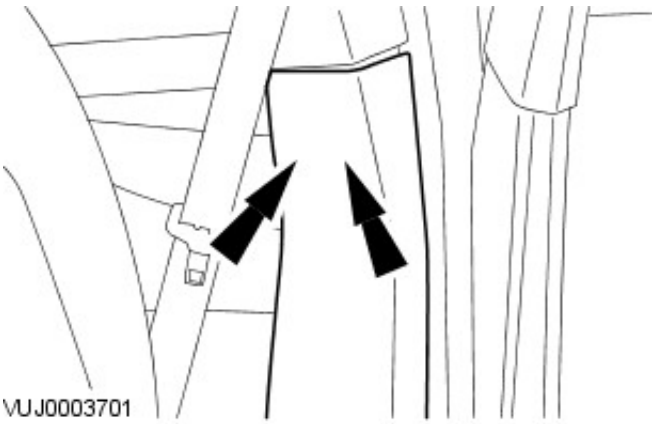
1. Detach the rear door opening weather-strip.



2. Detach the front door opening weather-strip.

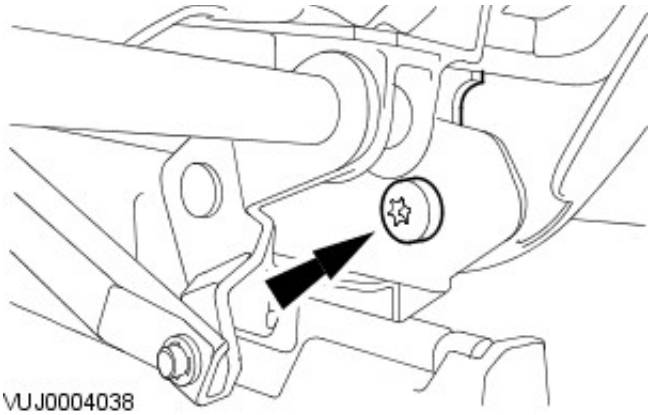


3. Detach the B-Pillar upper trim panel.

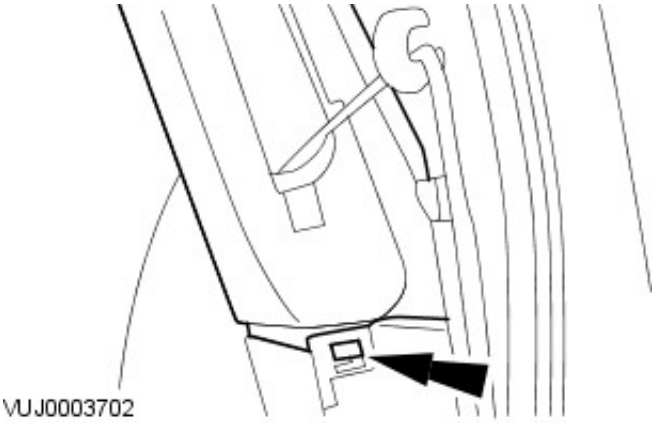


4. Detach the B-pillar lower trim panel.

5. Detach the safety belt lower anchor from the underside of

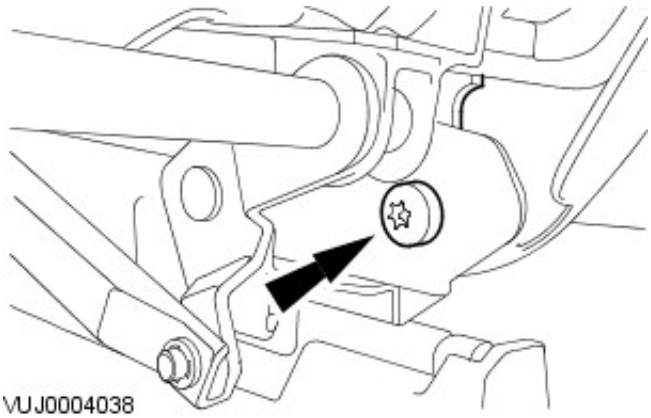


the seat.



6. Remove the B-pillar upper trim panel.

Installation



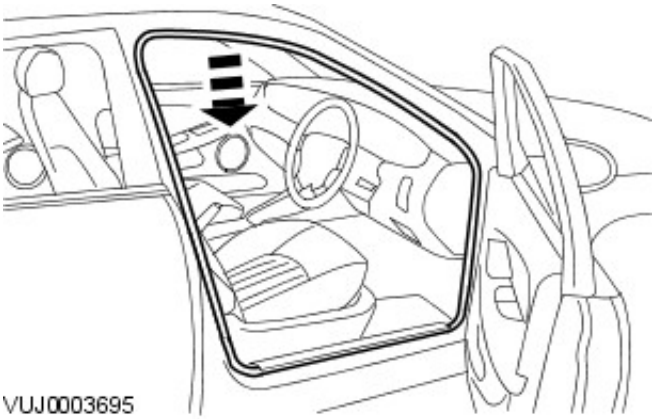
1. To install, reverse the removal procedure.

- Tighten to 55 Nm.

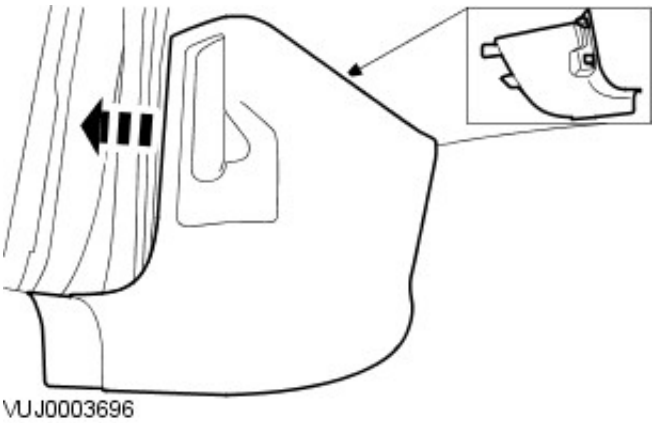
Interior Trim and Ornamentation - Cowl Side Trim Panel

Removal and Installation

Removal


VUJ0003695

1. Detach the front door opening weather-strip.
2. Remove the front scuff plate trim panel. For additional information, refer to Scuff Plate Trim Panel—Front.
3. Remove the cowl side trim panel.


VUJ0003696

Installation

1. To install, reverse the removal procedure.

Interior Trim and Ornamentation - C-Pillar Trim Panel4-Door

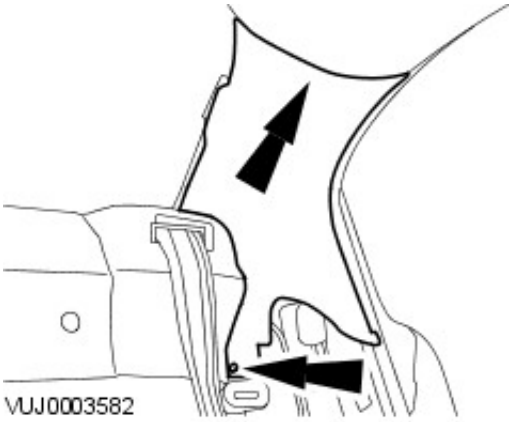
Removal and Installation

Removal

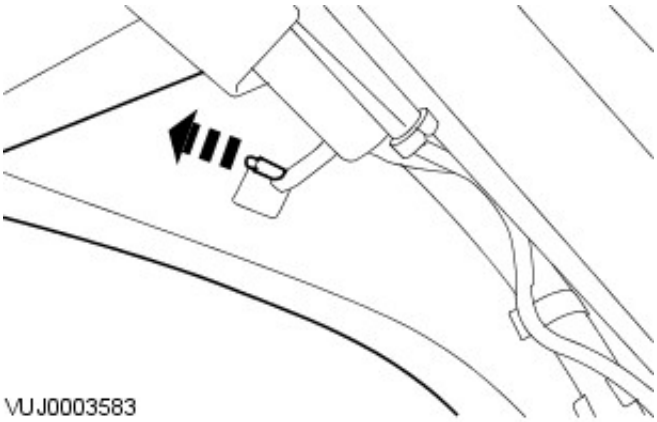
1. Remove the rear seat side bolster. For additional information, refer to Section 501-10 Seating.

2. NOTE: The C-pillar trim panel is secured to the top of the C-pillar by a retaining strap. The retaining strap must be detached from the C-pillar before the C-pillar trim panel is removed.

   Detach the C-pillar trim panel.



3. Remove the C-pillar trim panel.



Installation

1. To install, reverse the removal procedure.

Interior Trim and Ornamentation - C-Pillar Trim PanelWagon

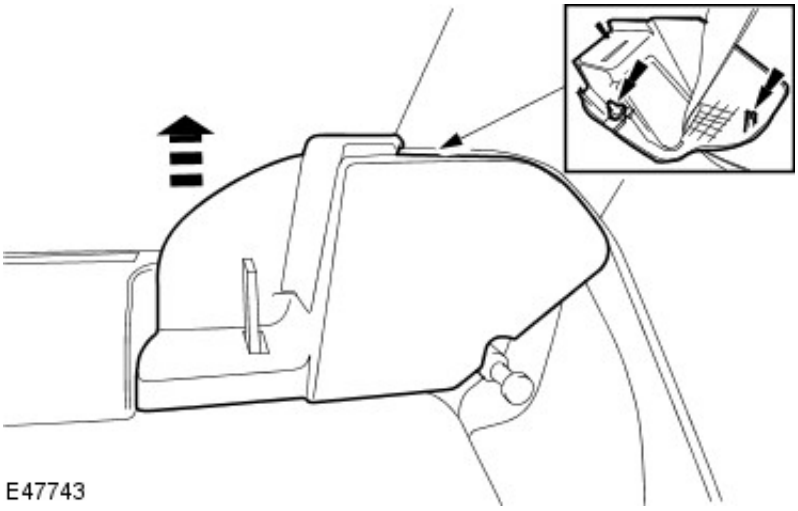
Removal and Installation

Removal

1. Remove the loadspace cover.

2. Fold down the rear seat backrest.

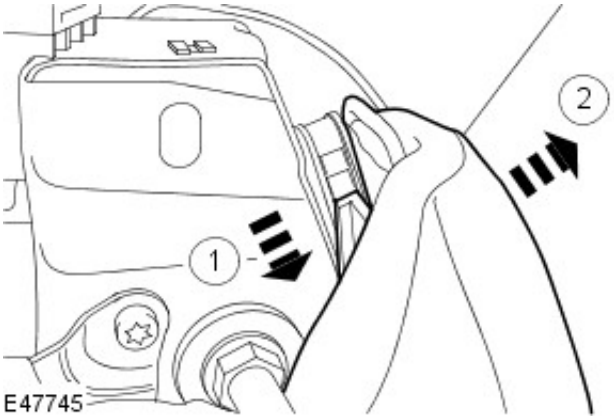
3. Detach the loadspace cover retaining bracket finisher trim.



E47743

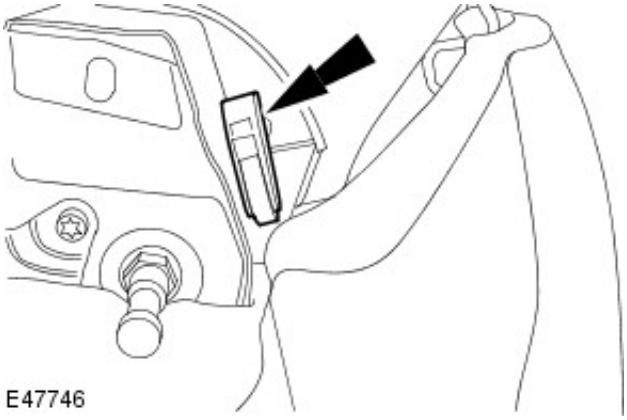
4. Reposition the rear seat bolster.

1. Press the tang.
2. Reposition the rear seat bolster.



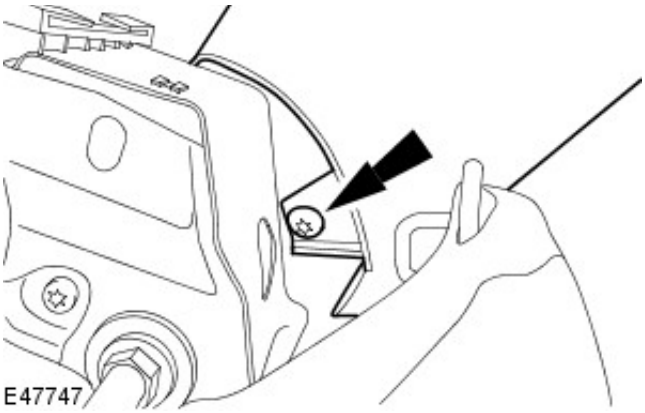
E47745

5. Remove the seat bolster upper retaining latch.

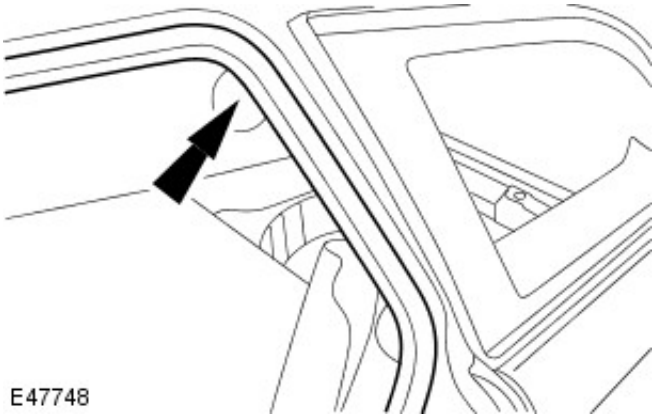


E47746

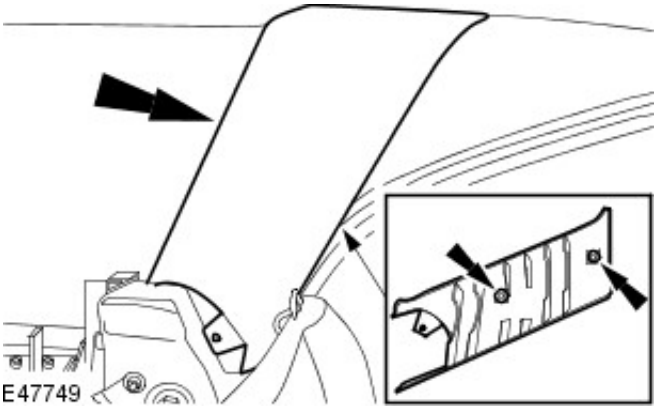
6. Remove the C-pillar trim panel lower retaining screw.



7. Detach the rear door opening weatherstrip.



8. Remove the C-pillar trim panel.



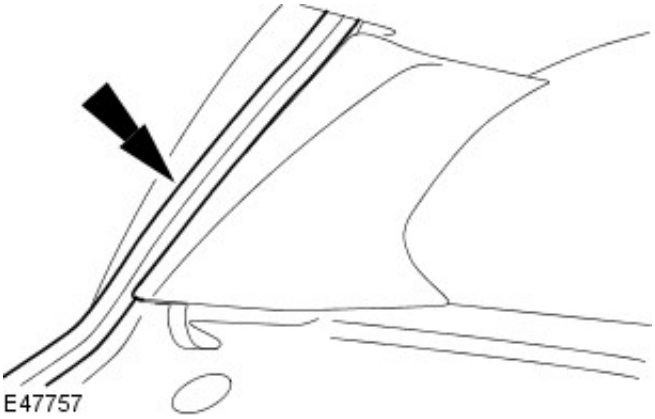
Installation

1. To install, reverse the removal procedure.

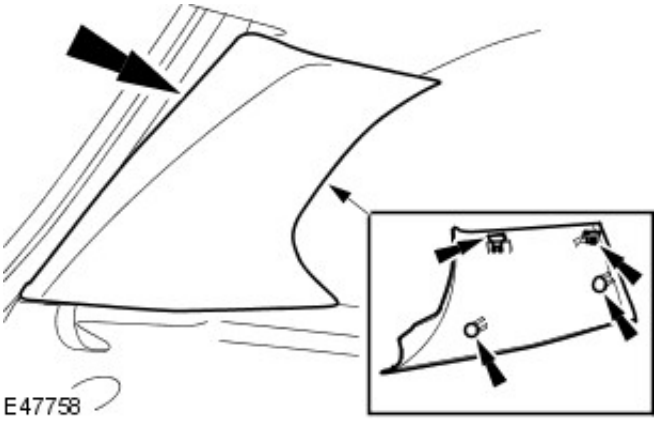
Interior Trim and Ornamentation - D-Pillar Trim Panel

Removal and Installation

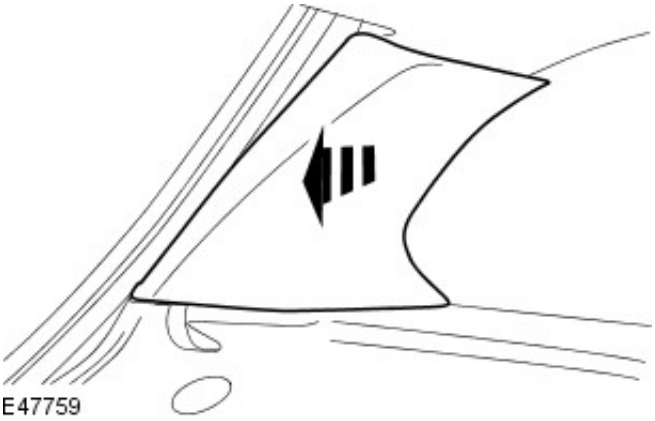
Removal


E47757

1. Detach the liftgate opening weatherstrip.


E47758

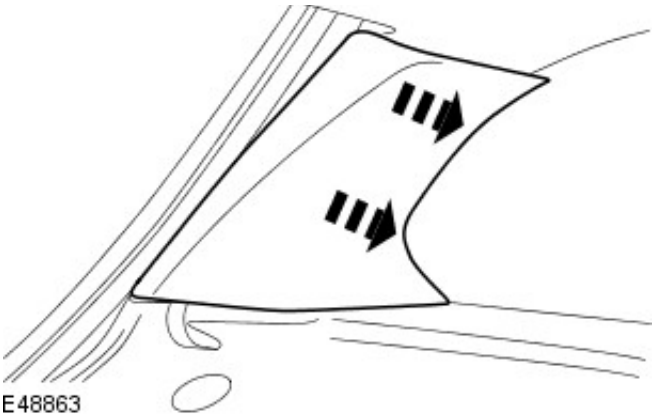
2. Detach the D-Pillar trim panel.


E47759

3. Remove the D-Pillar trim panel.

Installation

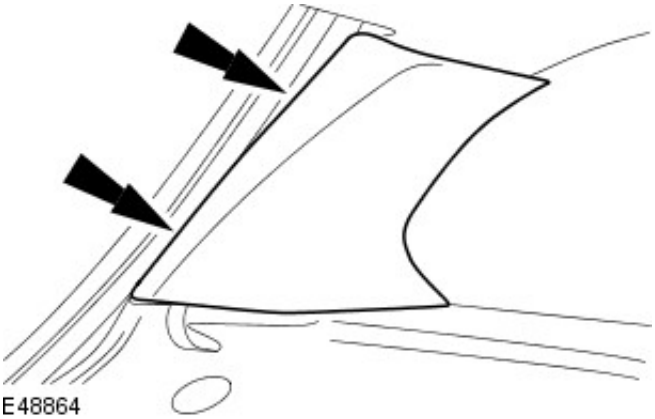
1. Attach the D-Pillar trim panel to the rear quarter window glass edge clips.


E48863

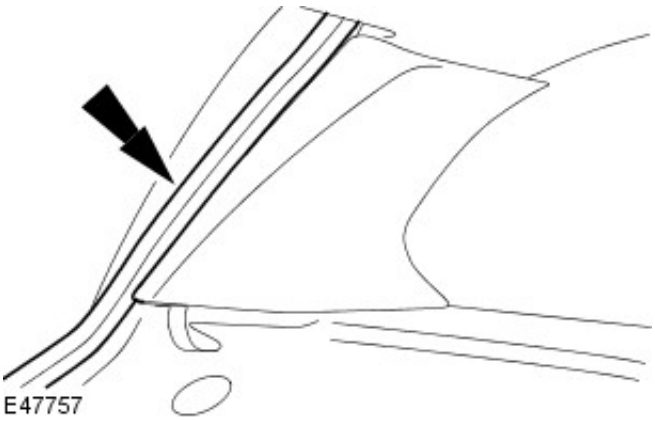
2. NOTE: Make sure the D-pillar trim panel is correctly located to the loadspace trim panel.

Locate the D-Pillar trim panel fir tree clips to the D-Pillar.

3. Install the D-Pillar trim panel.


E48864

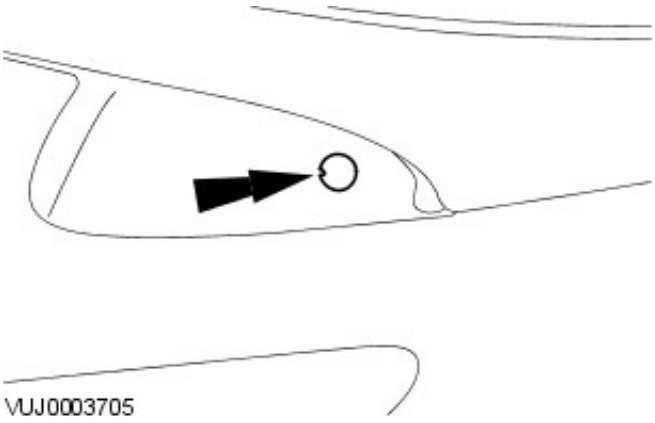
4. Attach the liftgate opening weatherstrip.


E47757

Interior Trim and Ornamentation - Front Door Trim Panel

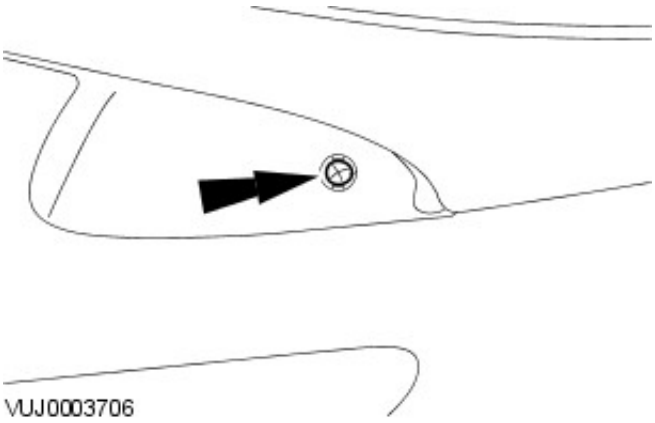
Removal and Installation

Removal



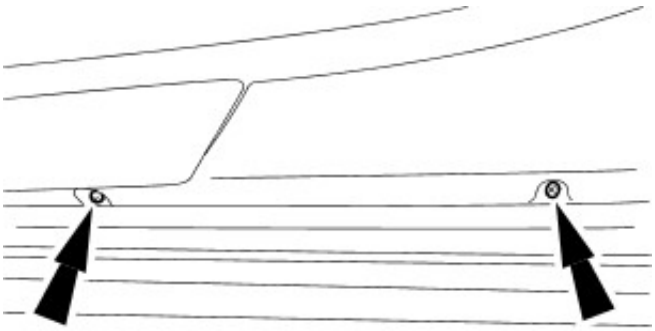
VUJ0003705

1. Remove the retaining screw cover.



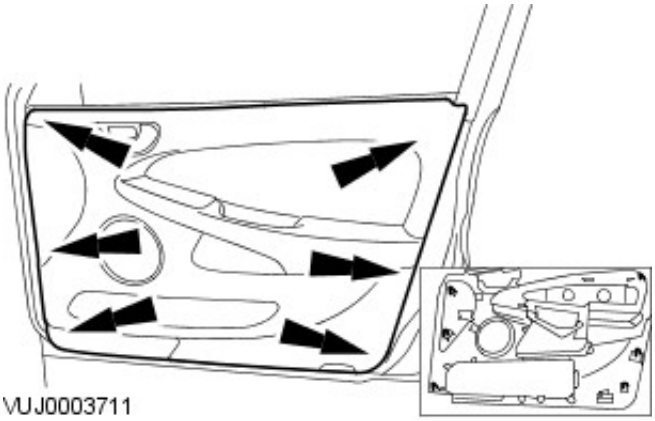
VUJ0003706

2. Remove the retaining screw.



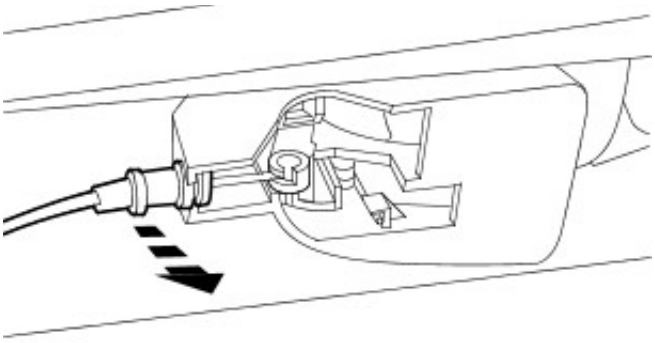
VUJ0003707

3. Remove the retaining screws.



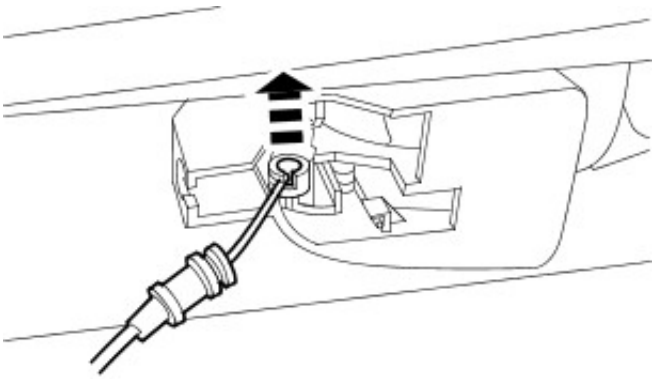
VUJ0003711

4. Detach the front door trim panel.



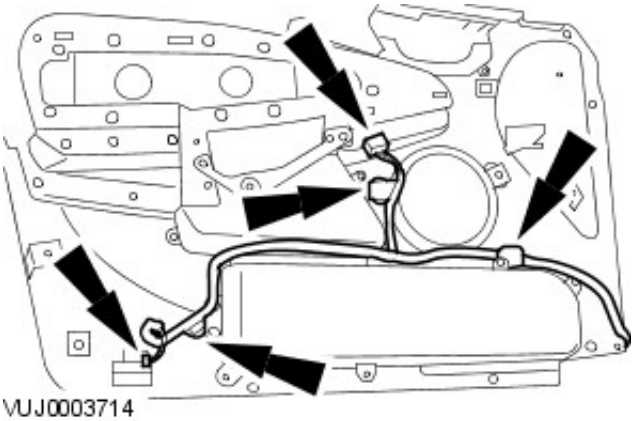
VUJ0003712

5. Detach the door handle cable.



VUJ0003713

6. Remove the door handle cable.



VUJ0003714

7. Remove the front door trim panel.

- Disconnect the electrical connectors and detach the wiring harness.

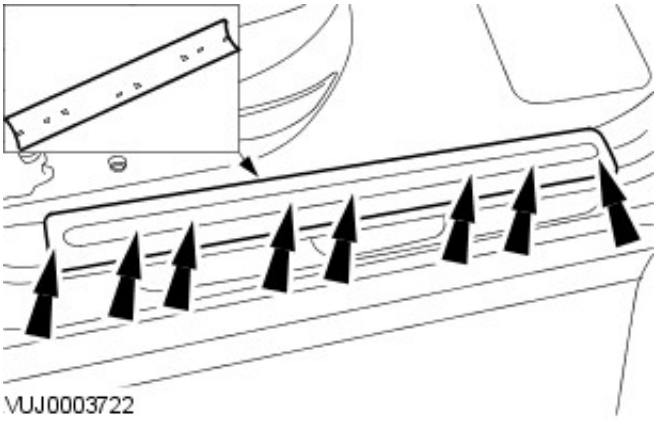
Installation

1. To install, reverse the removal procedure.

Interior Trim and Ornamentation - Front Scuff Plate Trim Panel

Removal and Installation

Removal



1. Remove the scuff plate trim panel.

Installation

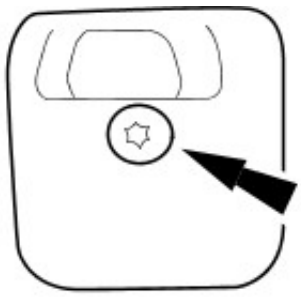
1. To install, reverse the removal procedure.

Interior Trim and Ornamentation - Headliner4-Door

Removal and Installation

Removal

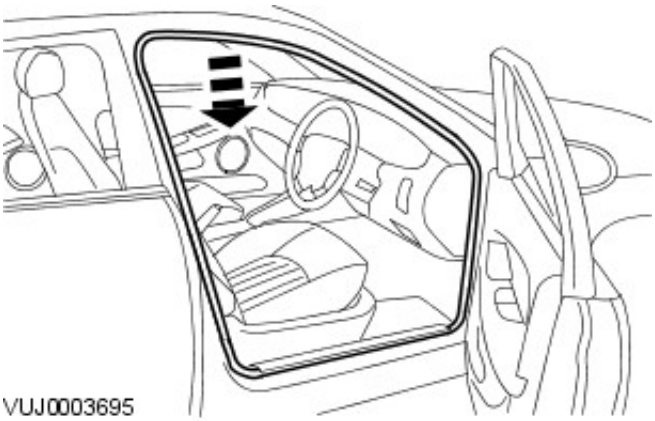
1. Remove the overhead console.
   For additional information, refer to: Overhead Console (501-12 Instrument Panel and Console, Removal and Installation).
2. Remove both sun visors.
   For additional information, refer to: Sun Visor (501-05 Interior Trim and Ornamentation, Removal and Installation).
3. Remove both sun visor retaining clips.



VUJ0003728

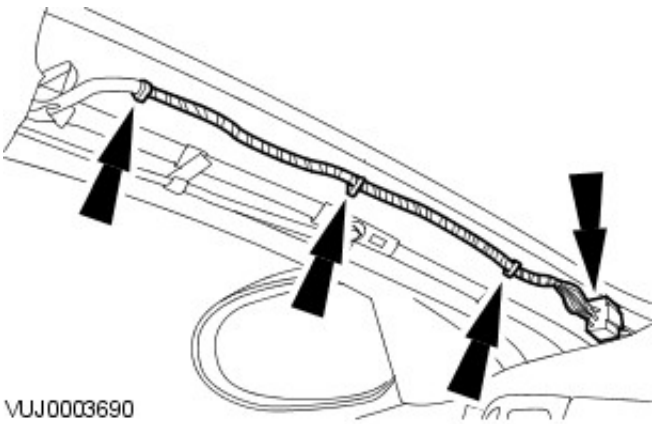
4. NOTE: Right-hand shown, left-hand similar.

   Detach the front door opening weather-strip.



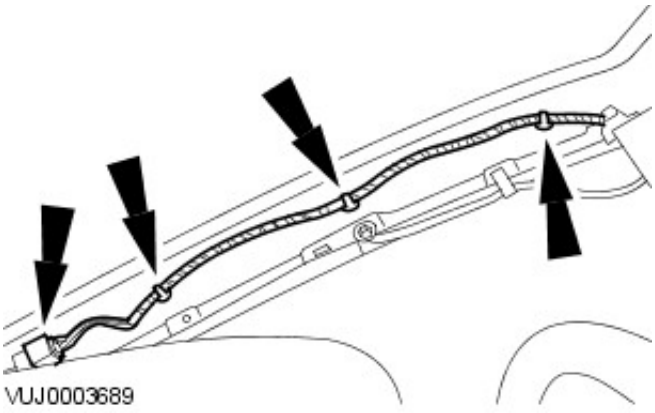
VUJ0003695

5. Remove both A-pillar trim panels.
   For additional information, refer to: A-Pillar Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
6. Disconnect the left-hand electrical connector and detach the wiring harness.



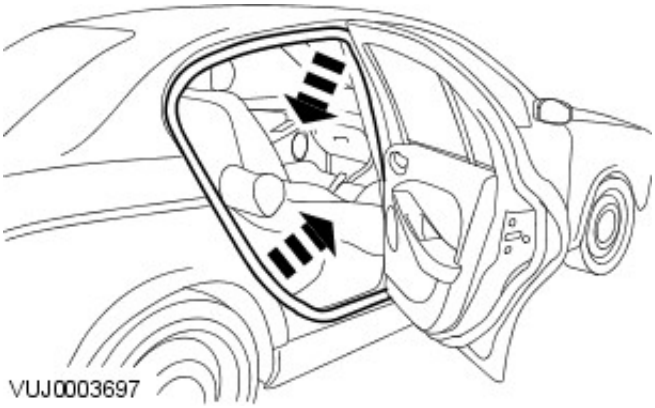
VUJ0003690

7. Disconnect the right-hand electrical connector and detach the wiring harness.



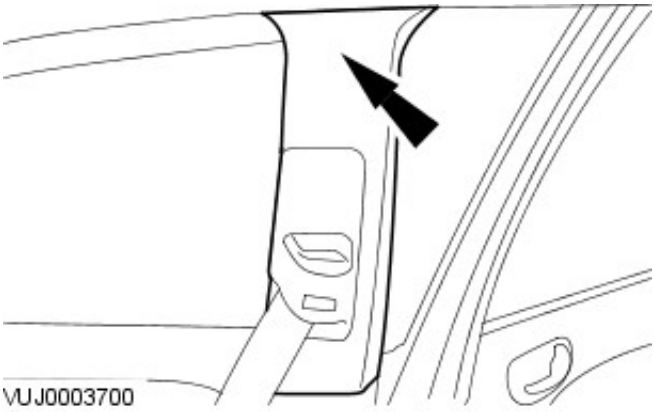
8. NOTE: Right-hand shown, left-hand similar.

Detach the rear door opening weather-strip.



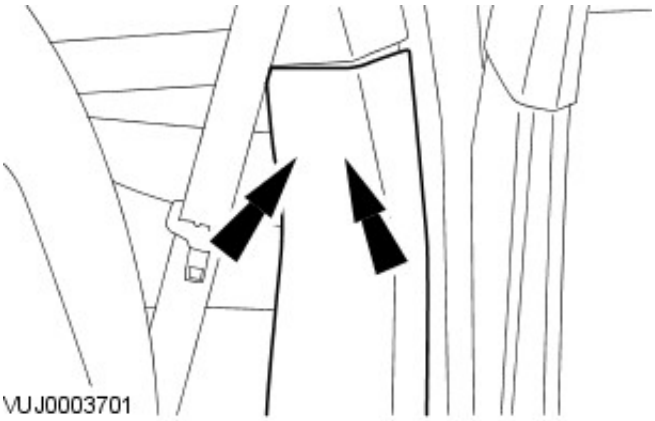
9. NOTE: Right-hand shown, left-hand similar.

Detach the B-pillar upper trim panel.



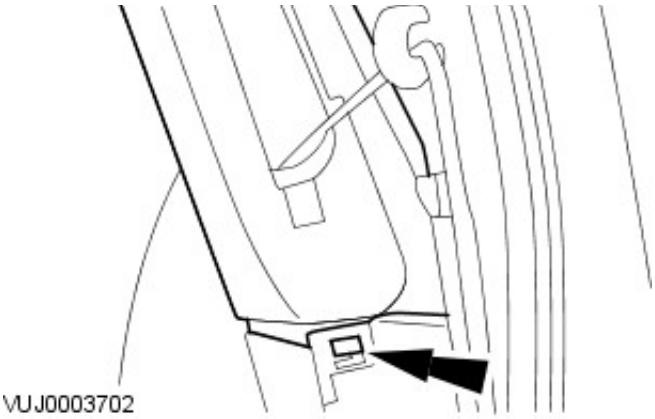
10. NOTE: Right-hand shown, left-hand similar.

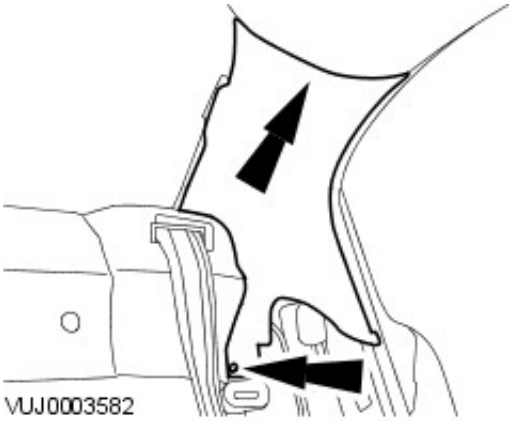
Detach the B-pillar lower trim panel.



11. NOTE: Right-hand shown, left-hand similar.

Detach the B-pillar upper trim panels from the B-pillar trim lower trim panel.

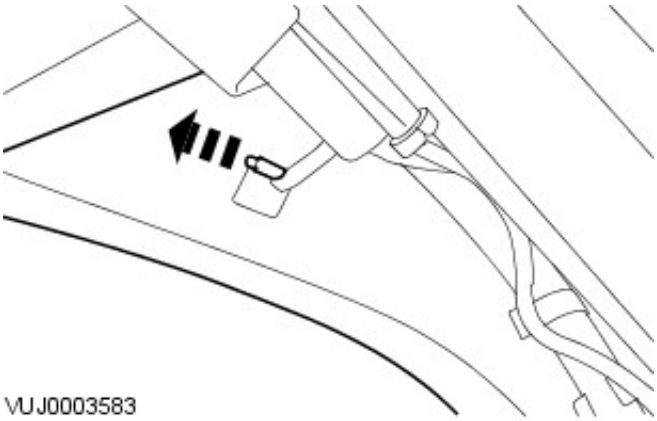

VUJ0003702


VUJ0003582

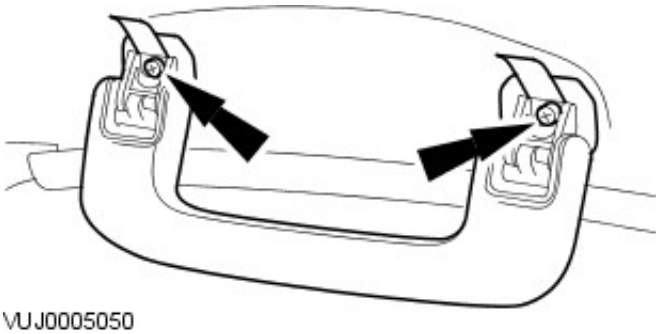
12. NOTE: Left-hand shown, right-hand similar.

• NOTE: The C-pillar trim panel is secured to the top of the C-pillar by a retaining strap. The retaining strap must be detached from the C-pillar before the C-pillar trim panel is removed.

Detach the C-pillar trim panel.


VUJ0003583

13. Remove the C-pillar trim panels.

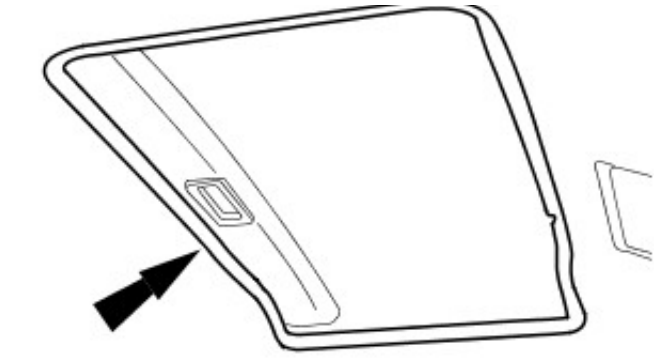

VUJ0005050

14. Detach the covers to expose the screws and remove the driver and passenger assist handles.

15. Remove the rear seat cushion.
For additional information, refer to: Rear Seat Cushion (501-10 Seating, Removal and Installation).

16. Recline both the front seat backrests to allow removal of the headliner through the rear door opening.

17. CAUTION: The headliner must not be creased or folded during removal or installation. Failure to follow this

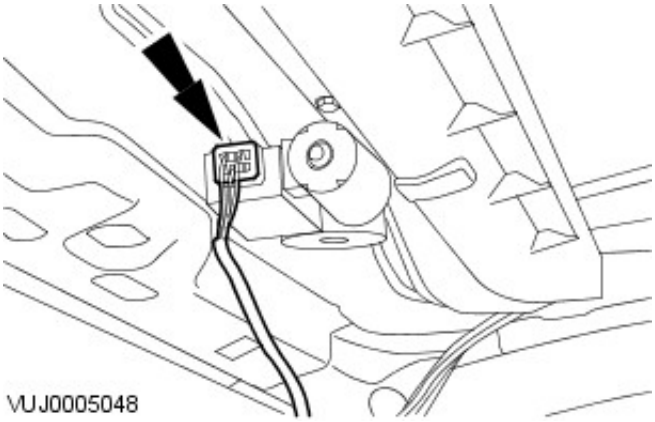


VUJ0005047

instruction may result in damage to the component.

Lower the headliner.

- Remove the sunroof opening panel weatherstrip.



VUJ0005048

18. Disconnect the sunroof motor electrical connector.

VUJ0003691

19. CAUTION: The headliner must not be creased or folded during removal or installation. Failure to follow this instruction may result in damage to the component.

With the aid of an assistant, remove the headliner.

Installation

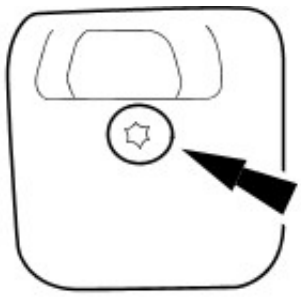
1. To install, reverse the removal procedure.

Interior Trim and Ornamentation - HeadlinerWagon

Removal and Installation

Removal

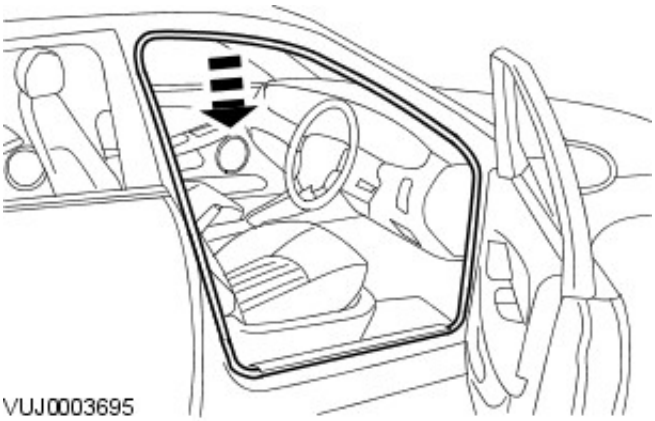
1. Remove the overhead console.
   For additional information, refer to: Overhead Console (501-12 Instrument Panel and Console, Removal and Installation).
2. Remove both sun visors.
   For additional information, refer to: Sun Visor (501-05 Interior Trim and Ornamentation, Removal and Installation).
3. Remove both sun visor retaining clips.



VUJ0003728

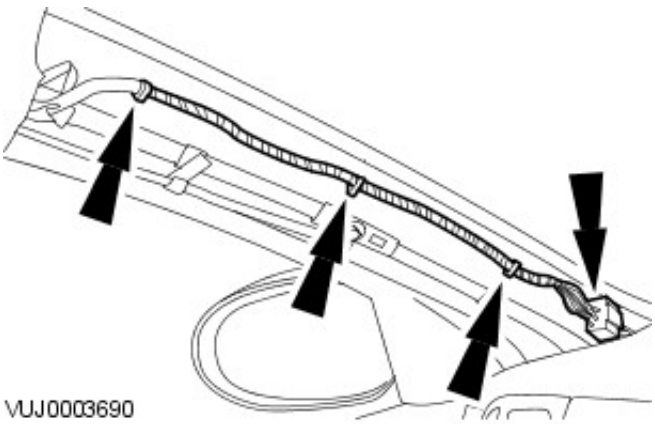
4. NOTE: Right-hand shown, left-hand similar.

   Detach the front door opening weatherstrip.



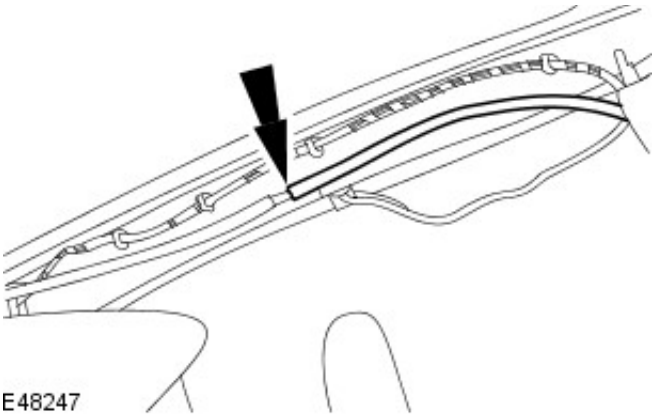
VUJ0003695

5. Remove both A-pillar trim panels.
   For additional information, refer to: A-Pillar Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
6. Disconnect the left-hand electrical connector and detach the wiring harness.

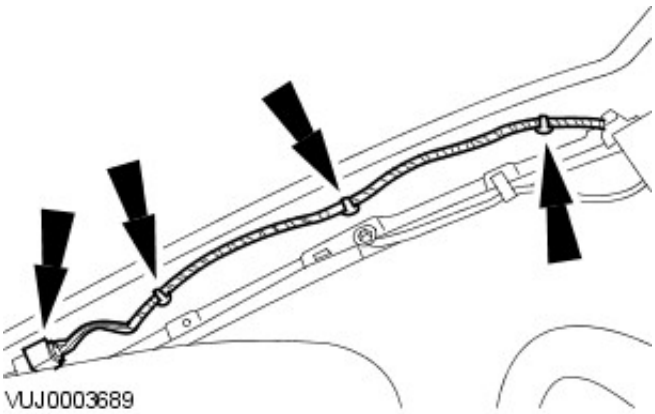


VUJ0003690

7. Disconnect the rear washer hose connector.

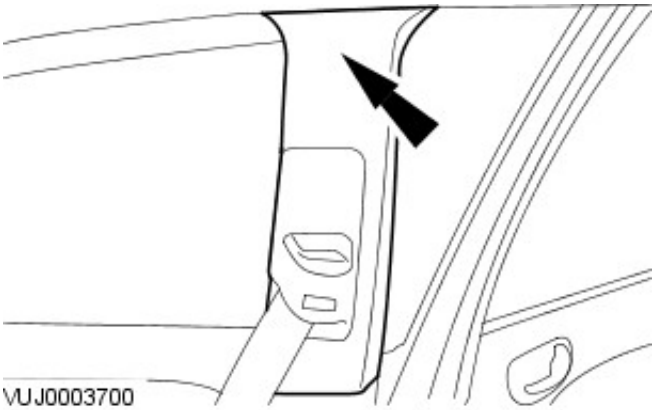


8. Disconnect the right-hand electrical connector and detach the wiring harness.



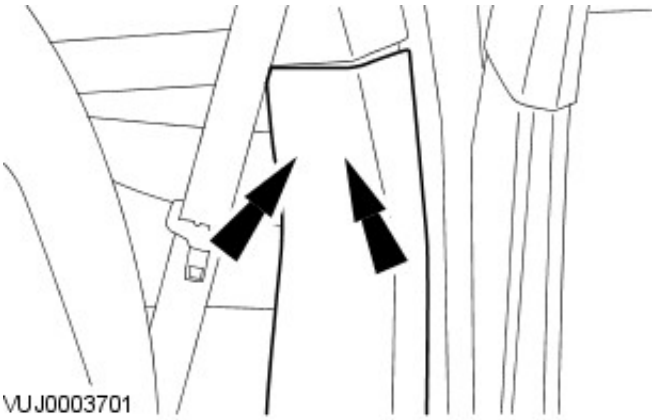
9. NOTE: Right-hand shown, left-hand similar.

Detach the B-pillar upper trim panel.



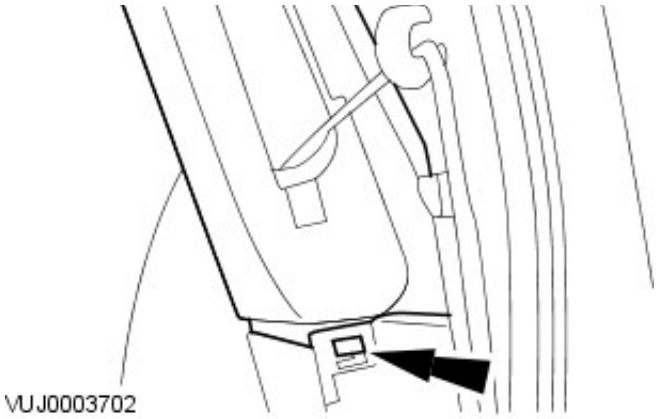
10. NOTE: Right-hand shown, left-hand similar.

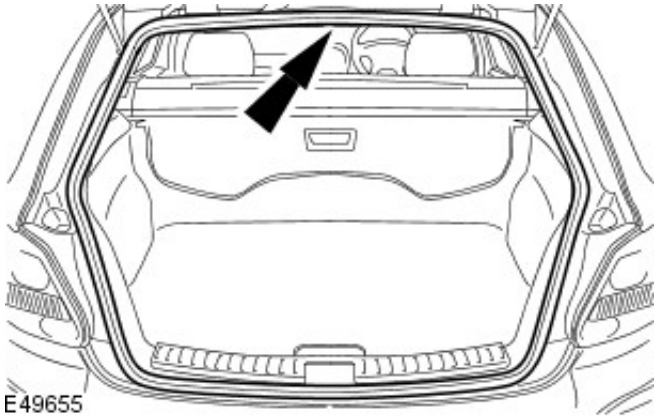
Detach the B-pillar lower trim panel.



11. NOTE: Right-hand shown, left-hand similar.

Detach the B-pillar upper trim panel from the B-pillar trim lower trim panel.


VUJ0003702


E49655

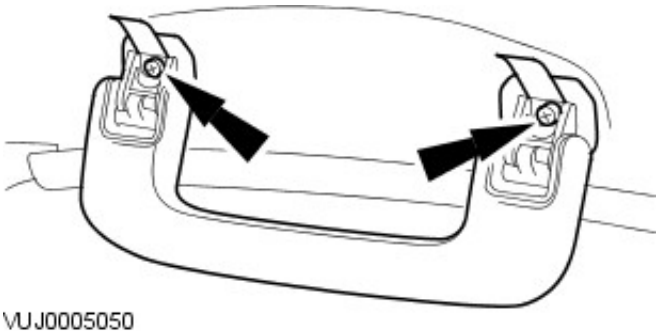
12. NOTE: The liftgate weatherstrip must be replaced once removed.

Remove and discard the liftgate opening weatherstrip.

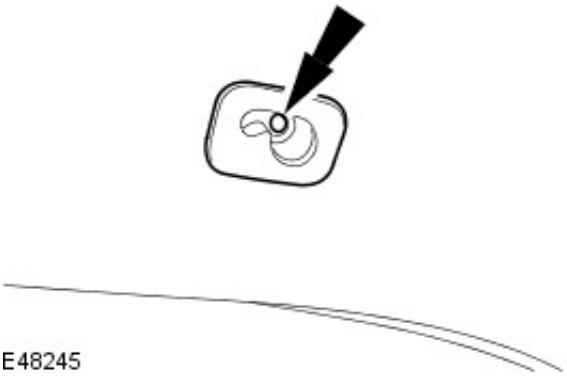
13. Remove both C-pillar trim panels.
For additional information, refer to: C-Pillar Trim Panel - Wagon (501-05 Interior Trim and Ornamentation, Removal and Installation).

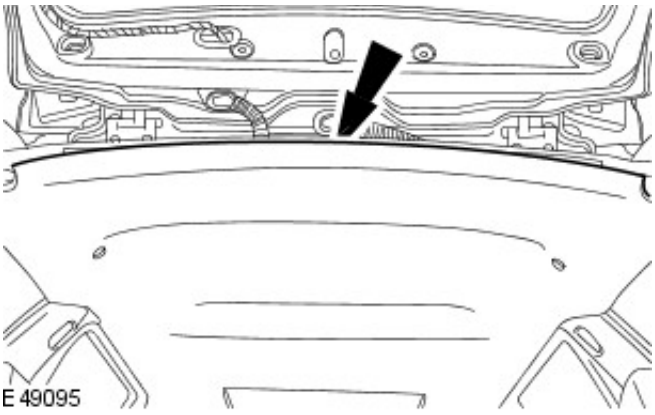
14. Remove both D-pillar trim panels.
For additional information, refer to: D-Pillar Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

15. Detach the covers to expose the screws and remove the driver and passenger assist handles.

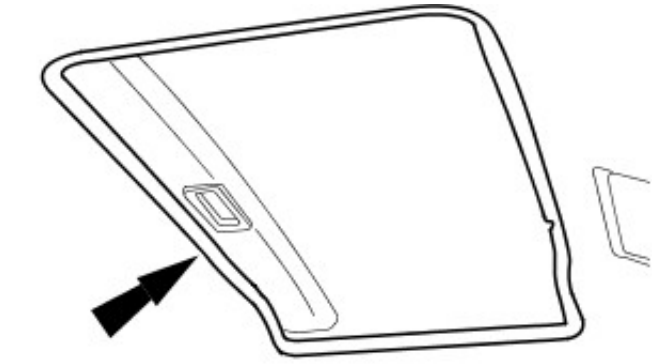

VUJ0005050

16. Remove both luggage net retaining clips.


E48245


E49095

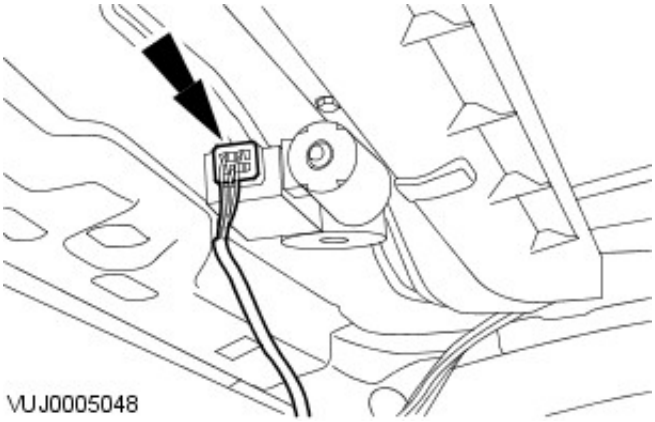
17. Detach the headliner.


VUJ0005047

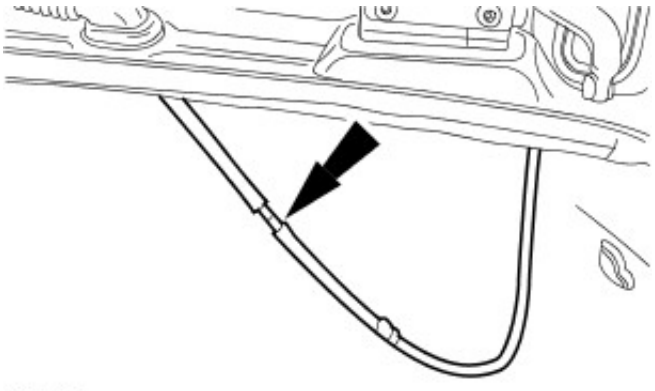
18. CAUTION: The headliner must not be creased or folded during removal or installation. Failure to follow this instruction may result in damage to the component.

Lower the headliner.

- Remove the sunroof opening panel weatherstrip.


VUJ0005048

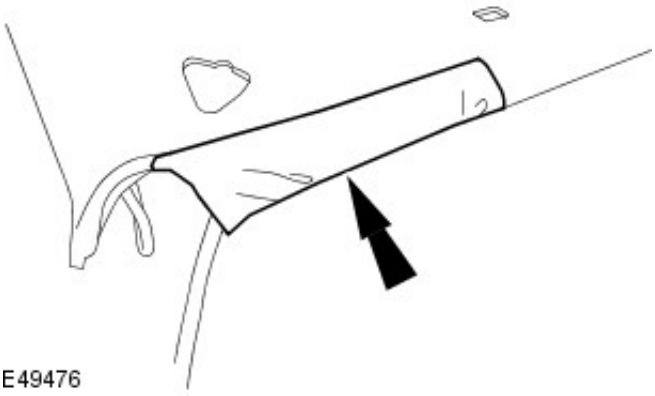
19. Disconnect the roof opening panel motor electrical connector.


E48246

20. Disconnect the rear washer hose connector.

21. NOTE: Headliner shown removed for clarity.

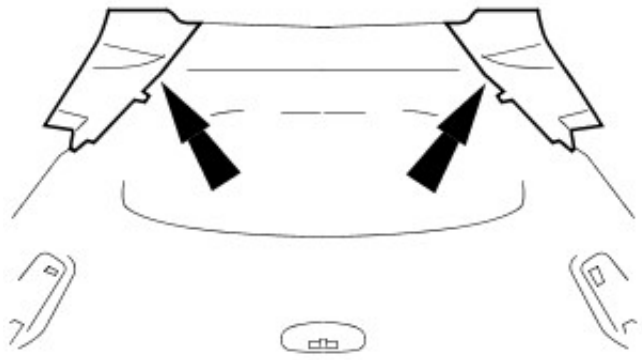
Using a suitable adhesive tape, protect both front corners of the headliner.



E49476

22. NOTE: Headliner shown removed for clarity.

Using a suitable adhesive tape, protect both rear corners of the headliner.



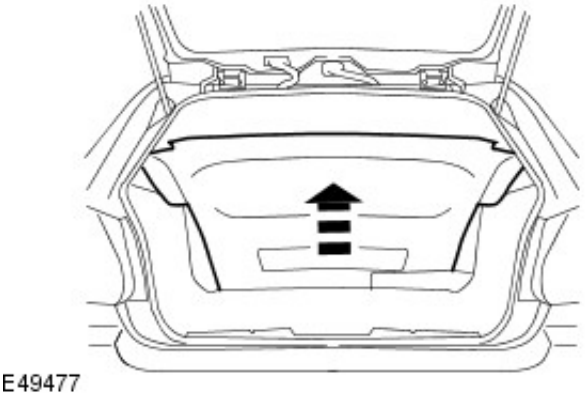
E49478

23. CAUTIONS:

Make sure the headliner is not creased or folded where it is not protected by adhesive tape. Failure to follow this instruction may result in damage to the component.

Make sure the headliner is fully supported during removal. Failure to follow this instruction may result in damage to the component.

With the aid of an assistant, remove the headliner.



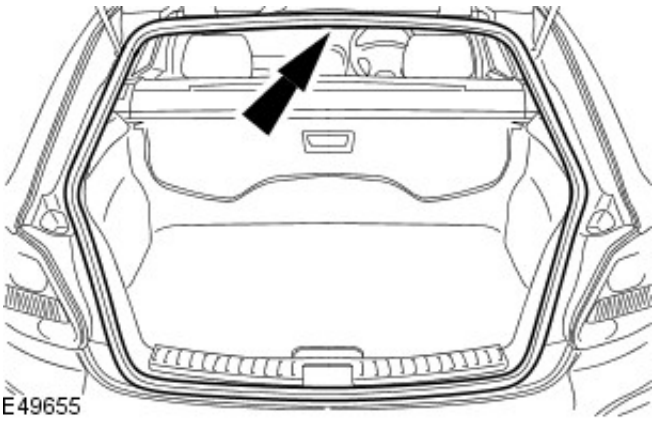
E49477

Installation

1. To install, reverse the removal procedure.

2. NOTE: The liftgate weatherstrip must be replaced once removed.

Install a new liftgate opening weatherstrip.

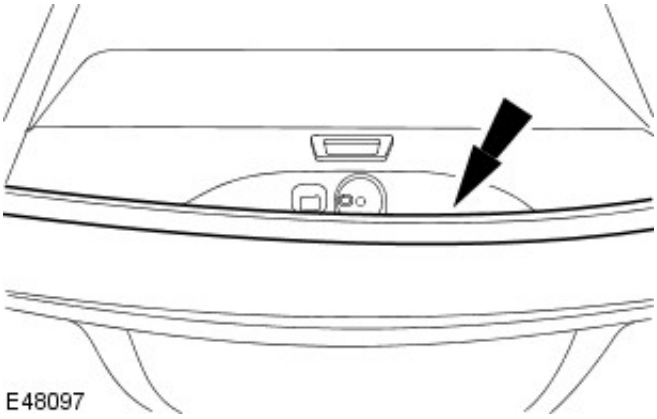


E49655

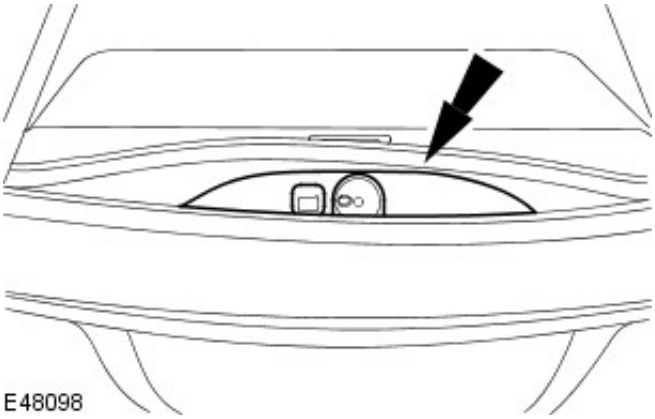
Interior Trim and Ornamentation - Liftgate Trim Panel

Removal and Installation

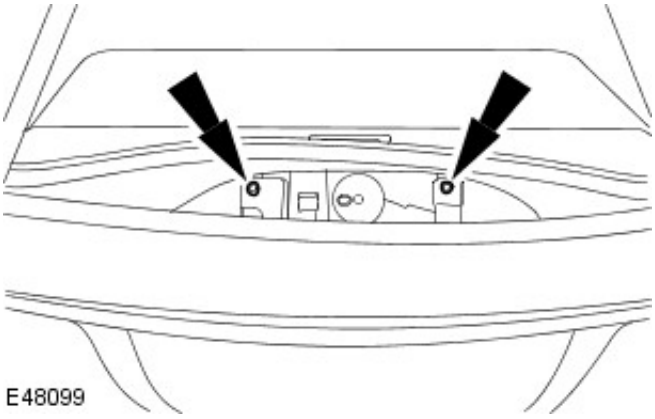
Removal



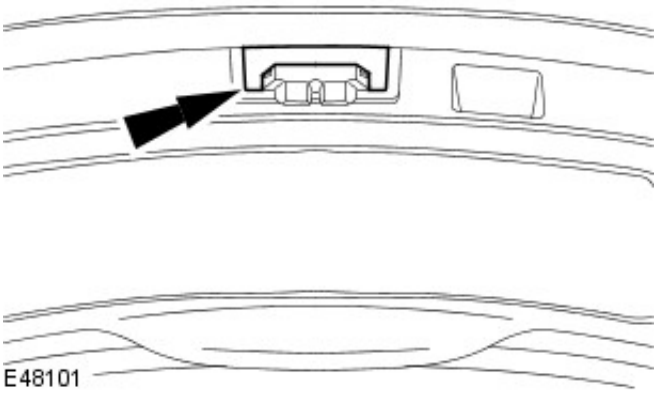
1. Detach the liftgate window glass weatherstrip.



2. Remove the liftgate window glass latch actuator finisher trim panel.

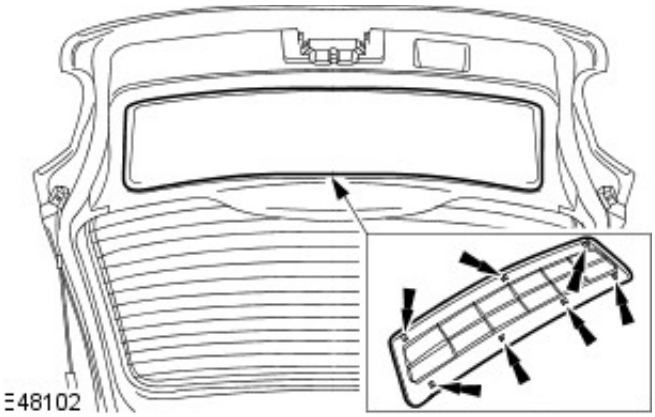


3. Remove the liftgate trim panel upper retaining screws.

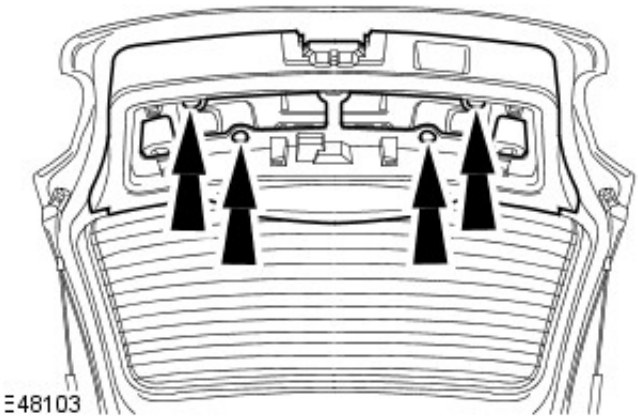


4. Remove the liftgate latch actuator finisher trim panel.

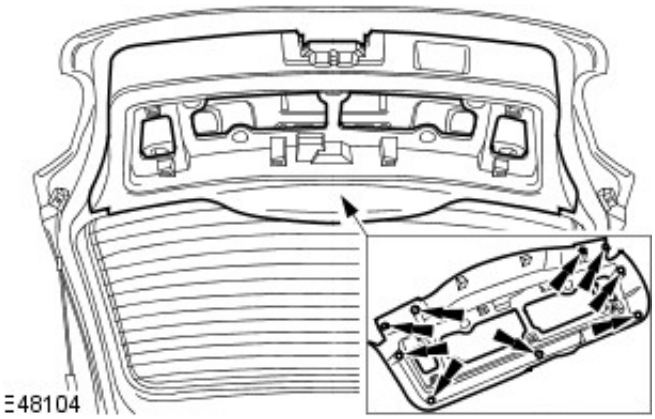
5. Remove the liftgate finisher trim panel.



6. Deatch the liftgate trim panel.



7. Remove the liftgate trim panel.



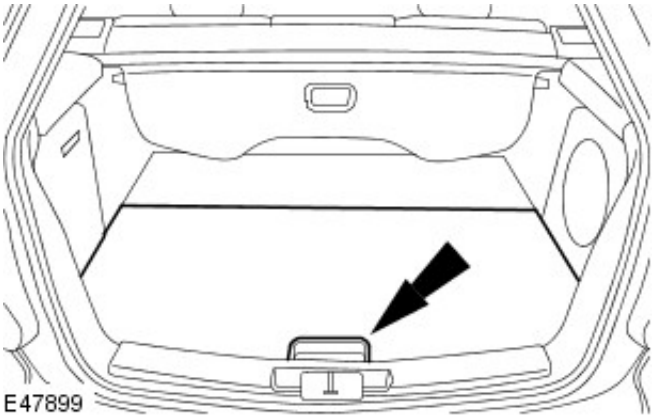
Installation

1. To install, reverse the removal procedure.

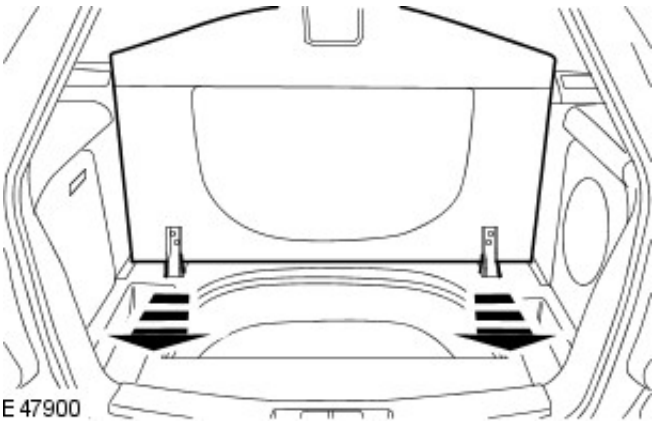
Interior Trim and Ornamentation - Loadspace Scuff Plate Trim Panel

Removal and Installation

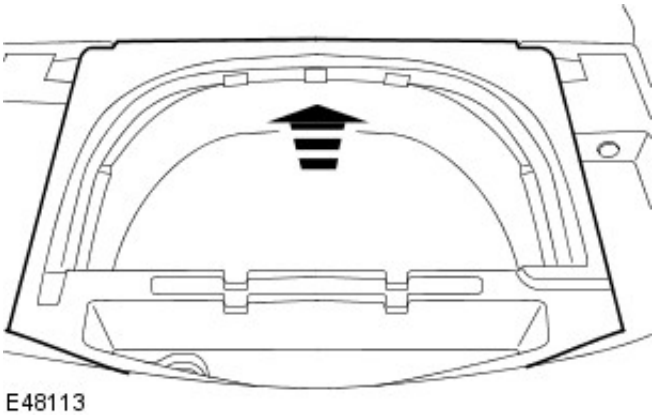
Removal



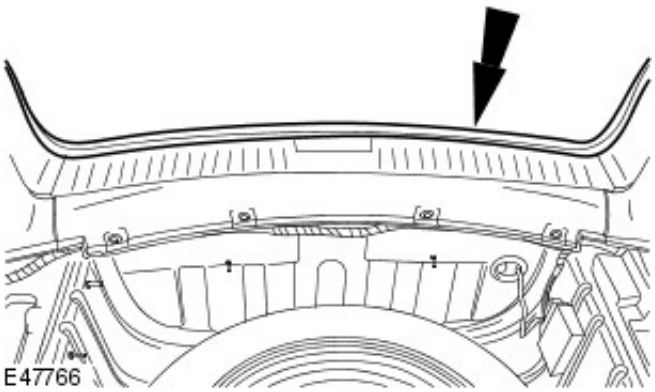
1. Raise the loadspace floor covering.



2. Remove the loadspace floor covering.

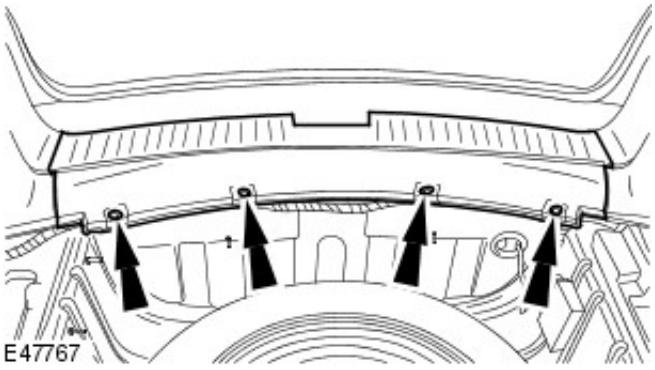


3. Remove the centre loadspace stowage compartment.

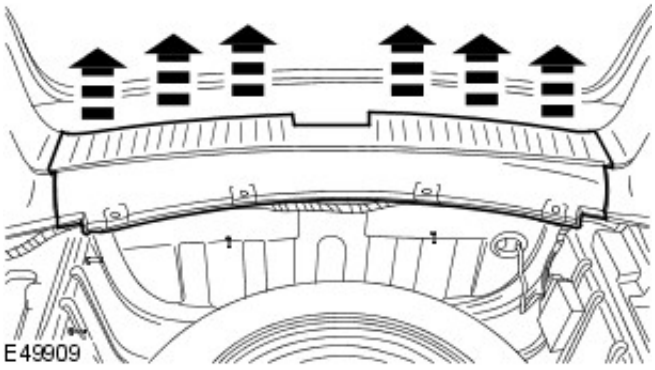


4. Detach the loadspace opening weatherstrip.

5. Detach the loadspace scuff plate trim panel.



6. Remove the loadspace scuff plate trim panel.



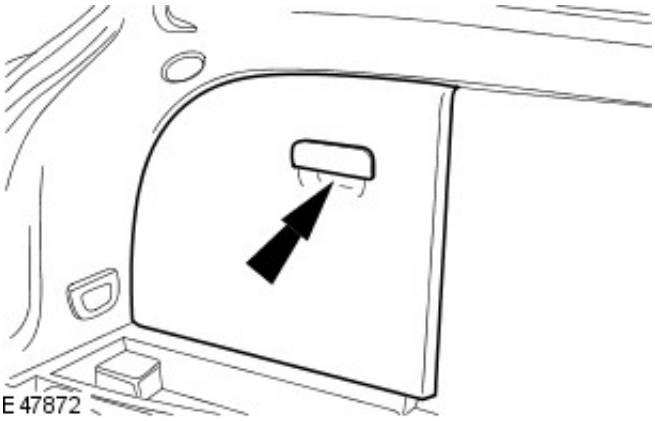
Installation

1. To install, reverse the removal procedure.

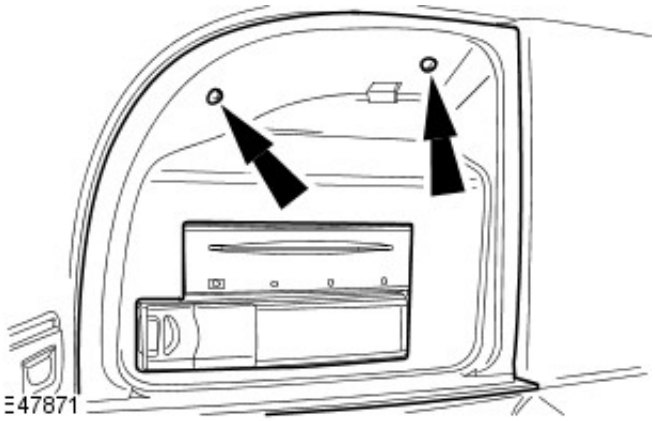
Interior Trim and Ornamentation - Loadspace Trim Panel
Removal and Installation

Removal

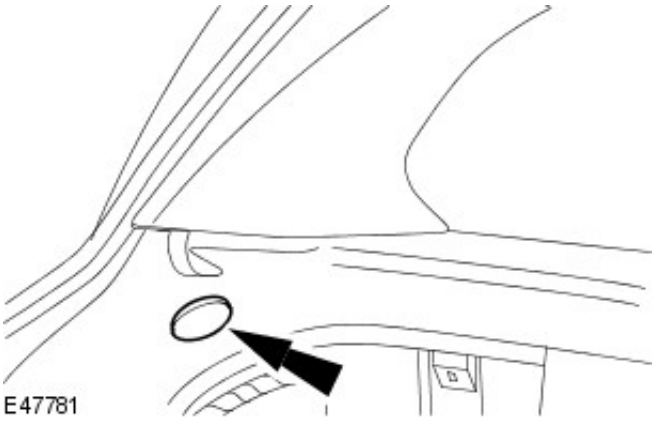
1. Remove the loadspace scuff plate trim panel.
   For additional information, refer to: Loadspace Scuff Plate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
2. Remove the loadspace stowage compartment lid.



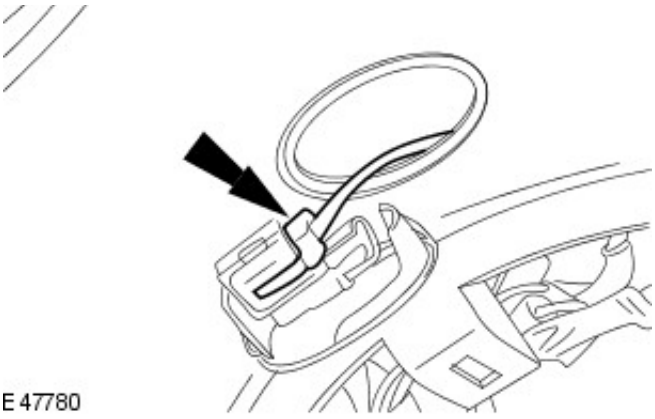
3. Remove the loadspace stowage compartment.



4. Detach the loadspace courtesy lamp.



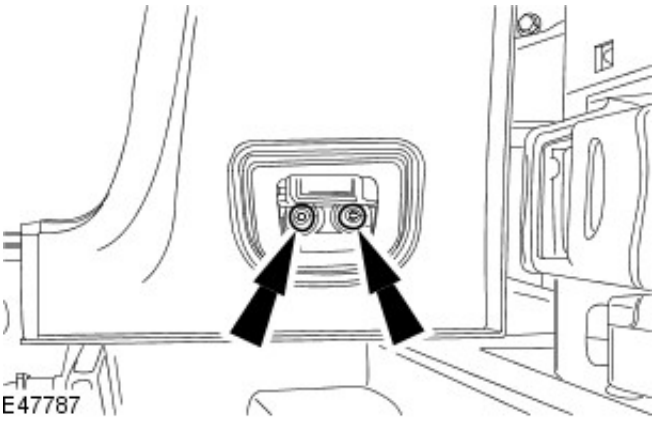
5. Remove the loadspace courtesy lamp.
   - Disconnect the electrical connector.


E47780

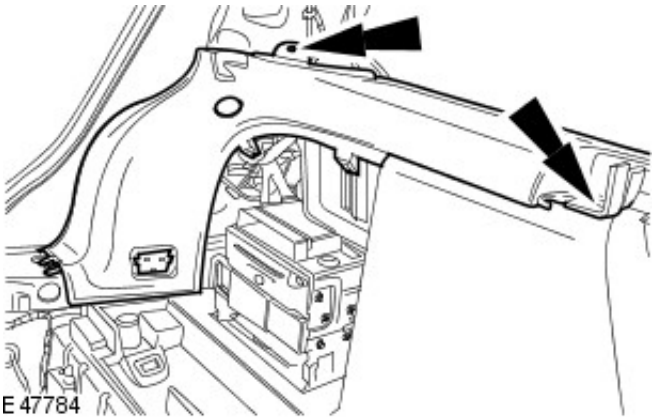
6. Remove the D-pillar trim panel.
For additional information, refer to: D-Pillar Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

7. Remove the C-pillar trim panel.
For additional information, refer to: C-Pillar Trim Panel - Wagon (501-05 Interior Trim and Ornamentation, Removal and Installation).

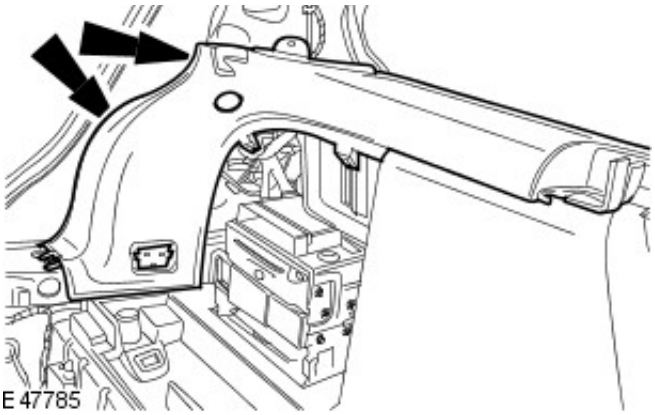
8. Remove the retaining hook.


E47787

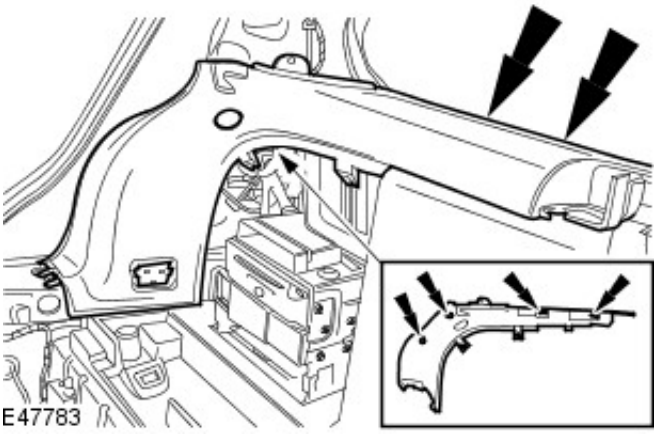
9. Remove the loadspace trim panel retaining screws.


E47784

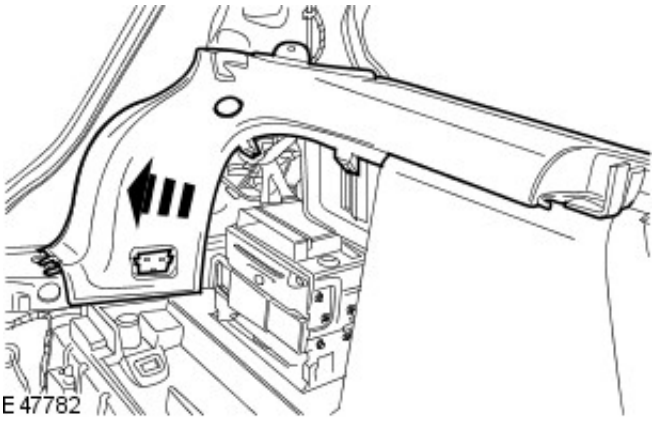
10. Detach the loadspace trim panel rear retaining clips.



11. Detach the loadspace trim panel front retaining clips.



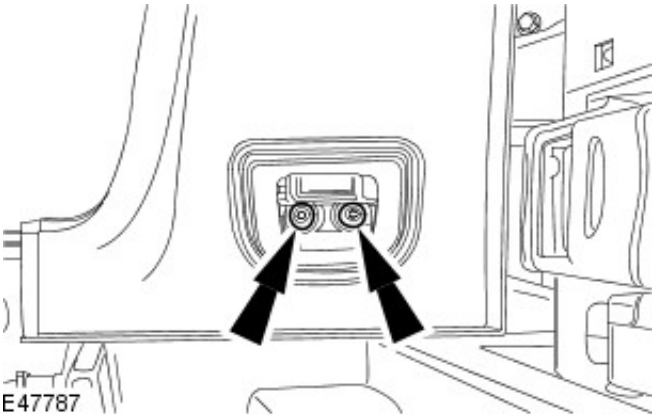
12. Remove the loadspace trim panel.



Installation

1. To install, reverse the removal procedure.

- Tighten to 8 Nm.

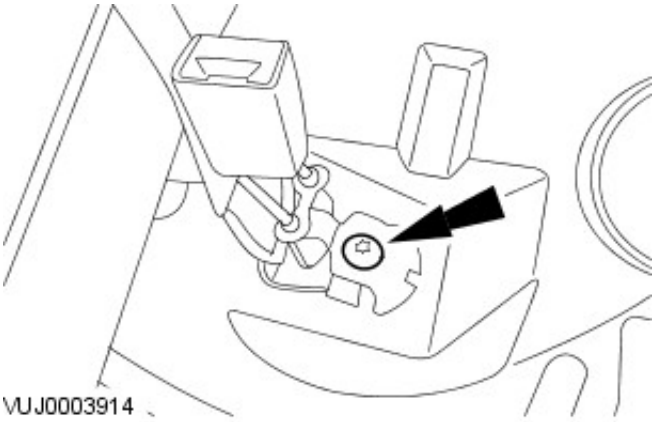


Interior Trim and Ornamentation - Parcel Shelf
Removal and Installation

Removal

Vehicles with split rear seat backrest

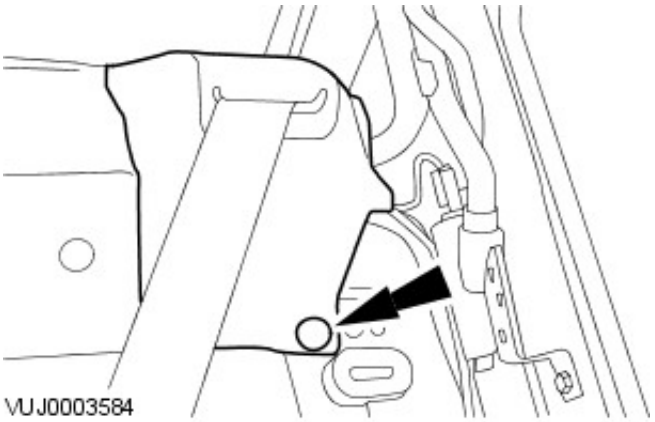
1. Remove the rear seat cushion.
   For additional information, refer to: Rear Seat Cushion (501-10 Seating, Removal and Installation).
2. Remove the rear center safety belt and buckle.
   - Remove the retaining bolt.


VUJ0003914

All vehicles

3. Remove both C-pillar trim panels.
   For additional information, refer to: C-Pillar Trim Panel - 4-Door (501-05 Interior Trim and Ornamentation, Removal and Installation).
4. NOTE: Left-hand shown, right-hand similar.

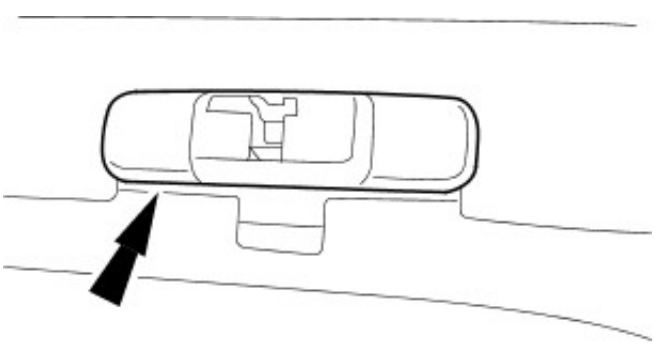
   Detach the rear safety belt retractor trim panel.


VUJ0003584

Vehicles with split rear seat backrest

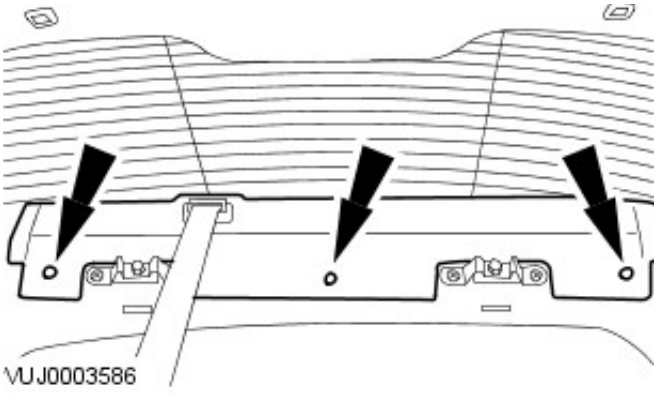
5. NOTE: Left-hand shown, right-hand similar.

   Remove the rear seat backrest latch cover.


VUJ0003585

All vehicles

6. Remove the parcel shelf.

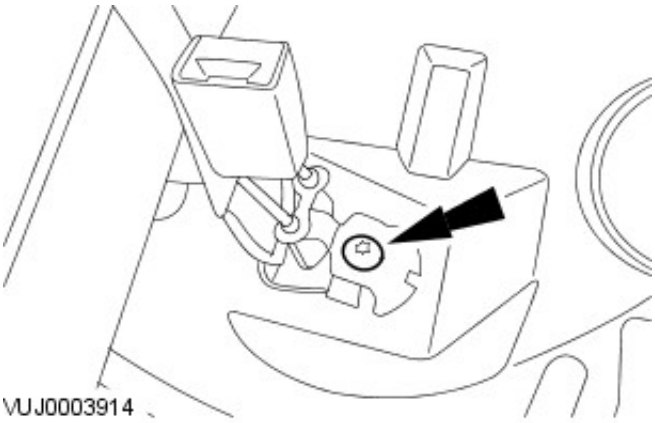


- Pass the rear centre safety belt through the parcel shelf.

Installation

1. To install, reverse the removal procedure.

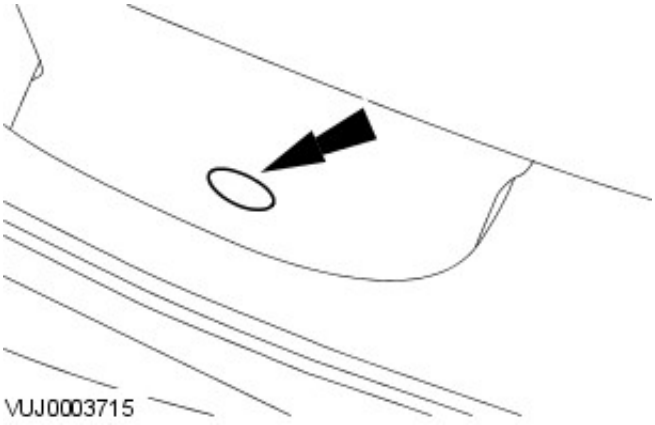
- Tighten to 55 Nm.



Interior Trim and Ornamentation - Rear Door Trim Panel

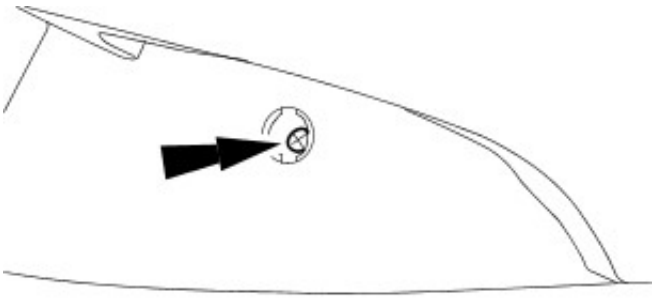
Removal and Installation

Removal



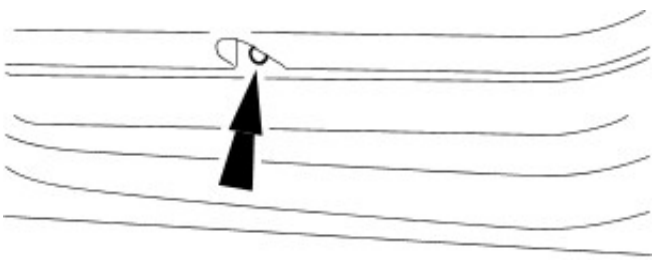
VUJ0003715

1. Remove the retaining screw cover.



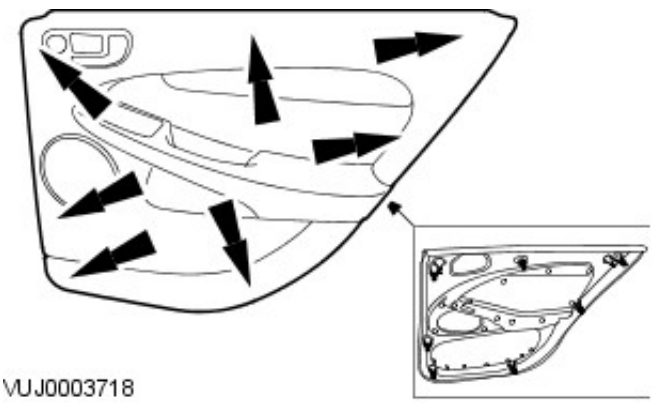
VUJ0003716

2. Remove the retaining screw.



VUJ0003717

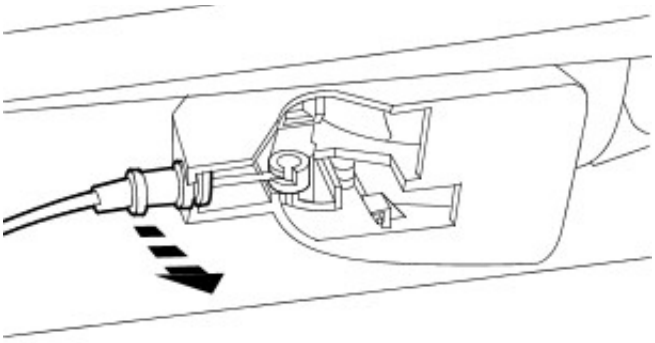
3. Remove the retaining screw.



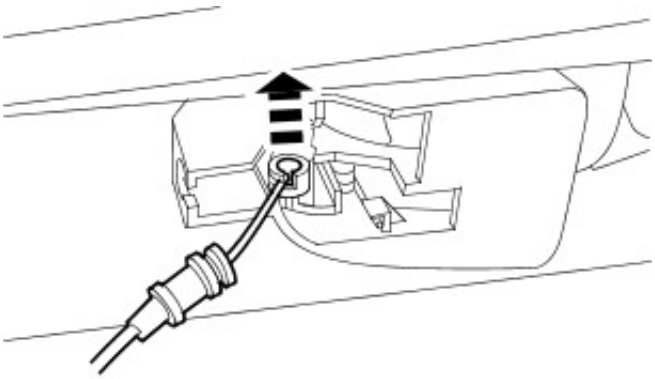
VUJ0003718

4. Detach the rear door trim panel.

5. Detach the door handle cable.

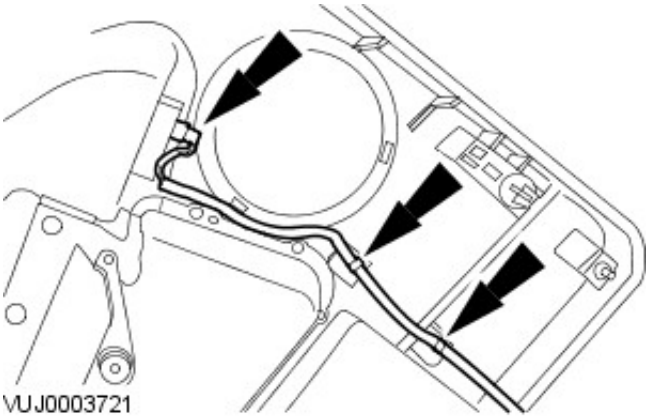


VUJ0003719



VUJ0003720

6. Remove the door handle cable.



VUJ0003721

7. Remove the rear door trim panel.

- Disconnect the electrical connectors and detach the wiring harness.

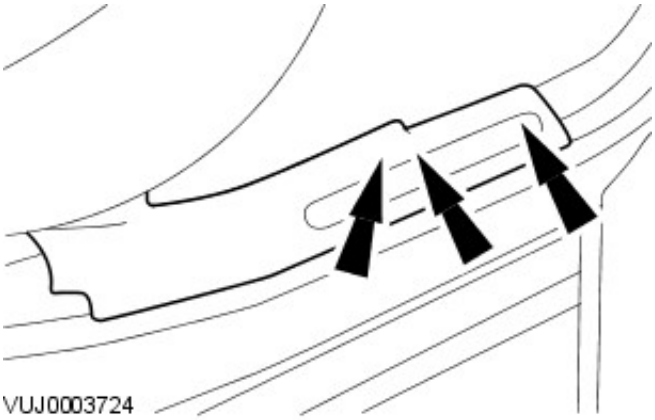
Installation

1. To install, reverse the removal procedure.

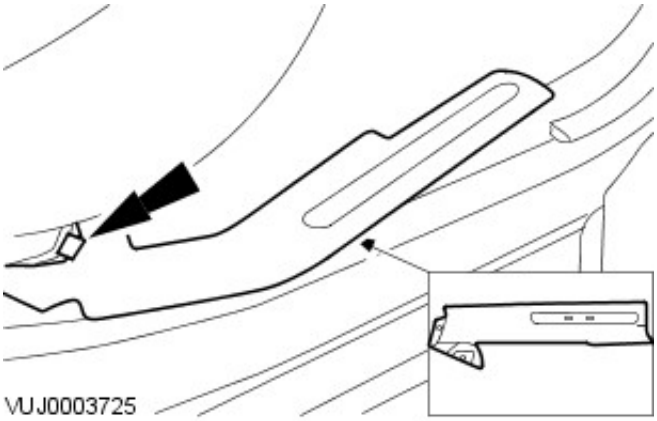
Interior Trim and Ornamentation - Rear Scuff Plate Trim Panel

Removal and Installation

Removal



1. Detach the scuff plate trim panel.



2. Remove the scuff plate trim panel.

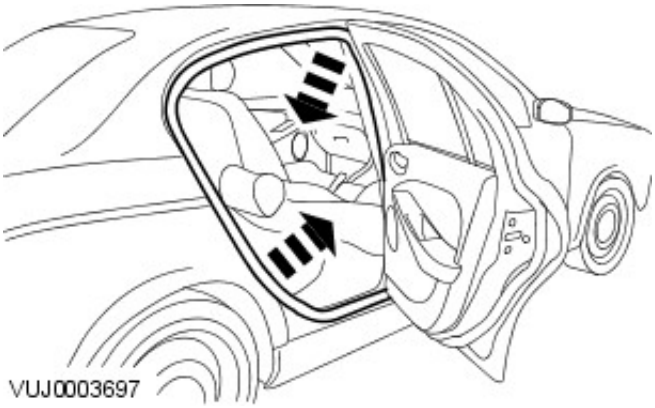
Installation

1. To install, reverse the removal procedure.

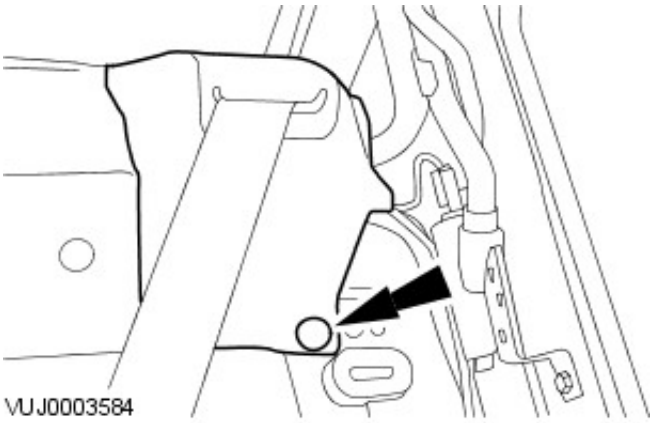
Interior Trim and Ornamentation - Rear Window Blind

Removal and Installation

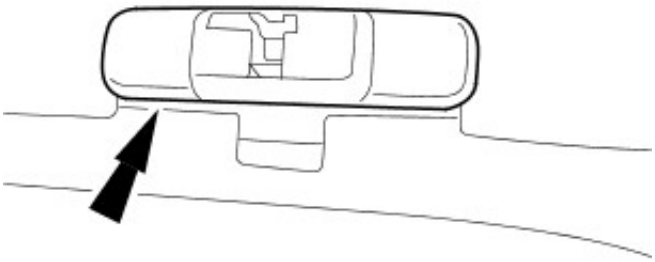
Removal


VUJ0003697

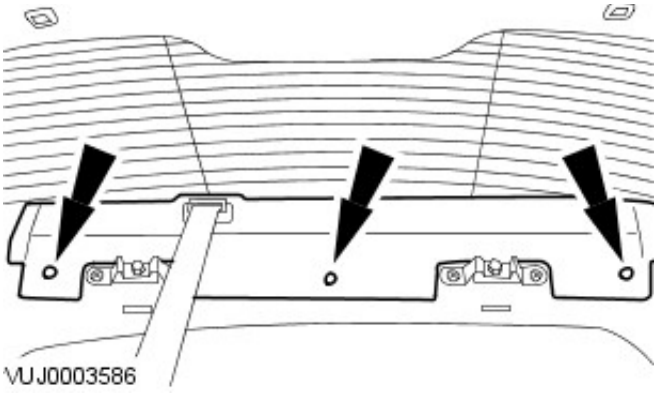
1. Detach the rear door opening weather-strips.
2. Remove the rear seat side bolster. For additional information, refer to Section 501-10 Seating.
3. Remove the C-pillar trim panels. For additional information, refer to C-Pillar Trim Panel.
4. Detach the seat belt reel trim panels.


VUJ0003584

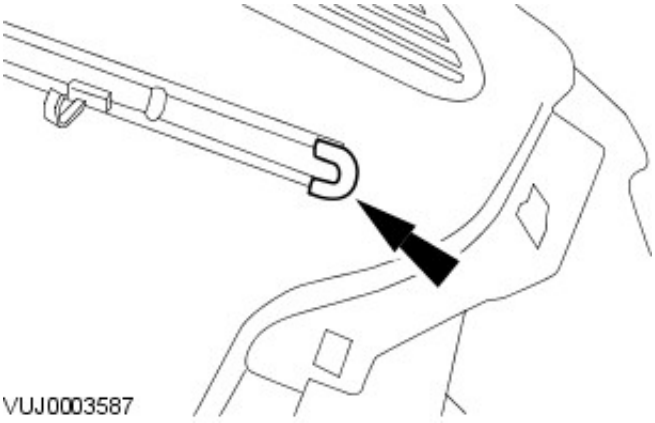
5. Remove the rear seat backrest latch covers.


VUJ0003585

6. Detach the parcel shelf trim panel.

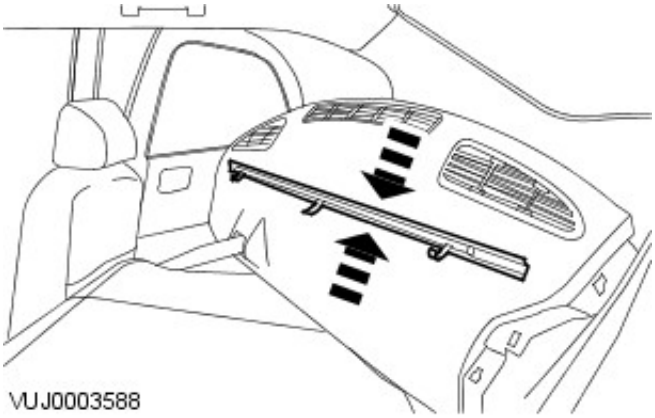


7. Remove the rear window blind retaining clips.

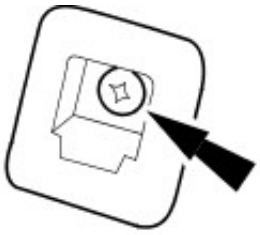


8. Remove the rear window blind.

- Press the sides of the rear window blind inwards.



9. Remove the rear window blind roof fixing.



VUJ0003589

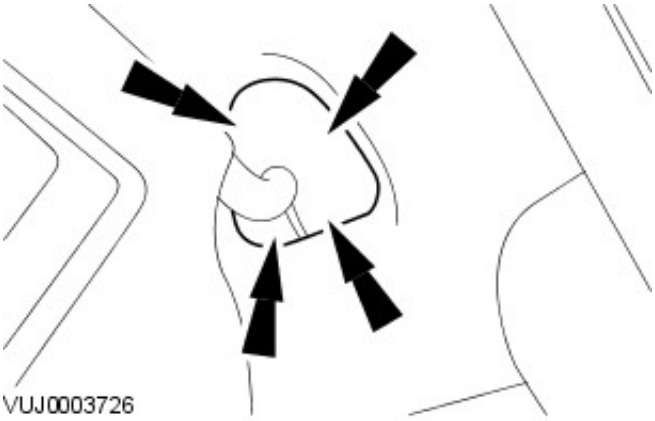
Installation

1. To install, reverse the removal procedure.

Interior Trim and Ornamentation - Sun Visor

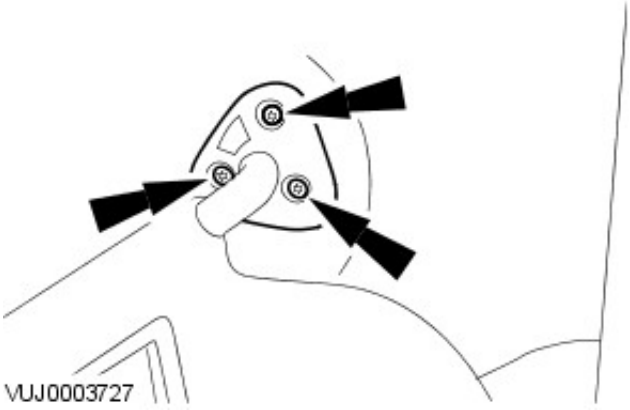
Removal and Installation

Removal



1. Remove the sun visor retaining screw cover.

2. Detach the sun visor.



3. Remove the sun visor.

- Disconnect the electrical connector.

Installation

1. NOTE: Using a suitable adhesive tape, secure the electrical connector to the headliner.

To install, reverse the removal procedure.

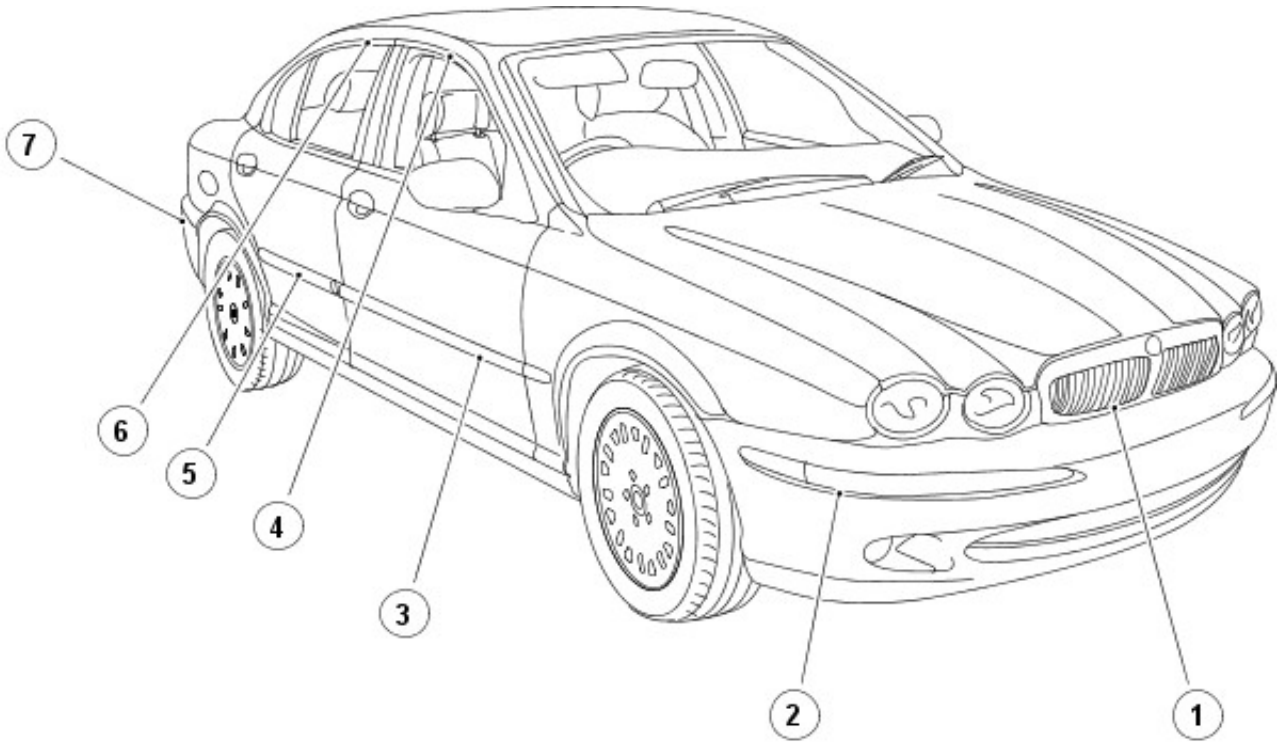
Exterior Trim and Ornamentation -

Torque Specifications

Description	Nm	lb-ft	lb-in
Radiator grill retaining bolts	7	-	62
Rear spoiler retaining nuts	5	-	44
Roof rail retaining bolts	14	10	-
Liftgate moulding retaining nuts	3	-	27

Exterior Trim and Ornamentation - Exterior Trim
Description and Operation

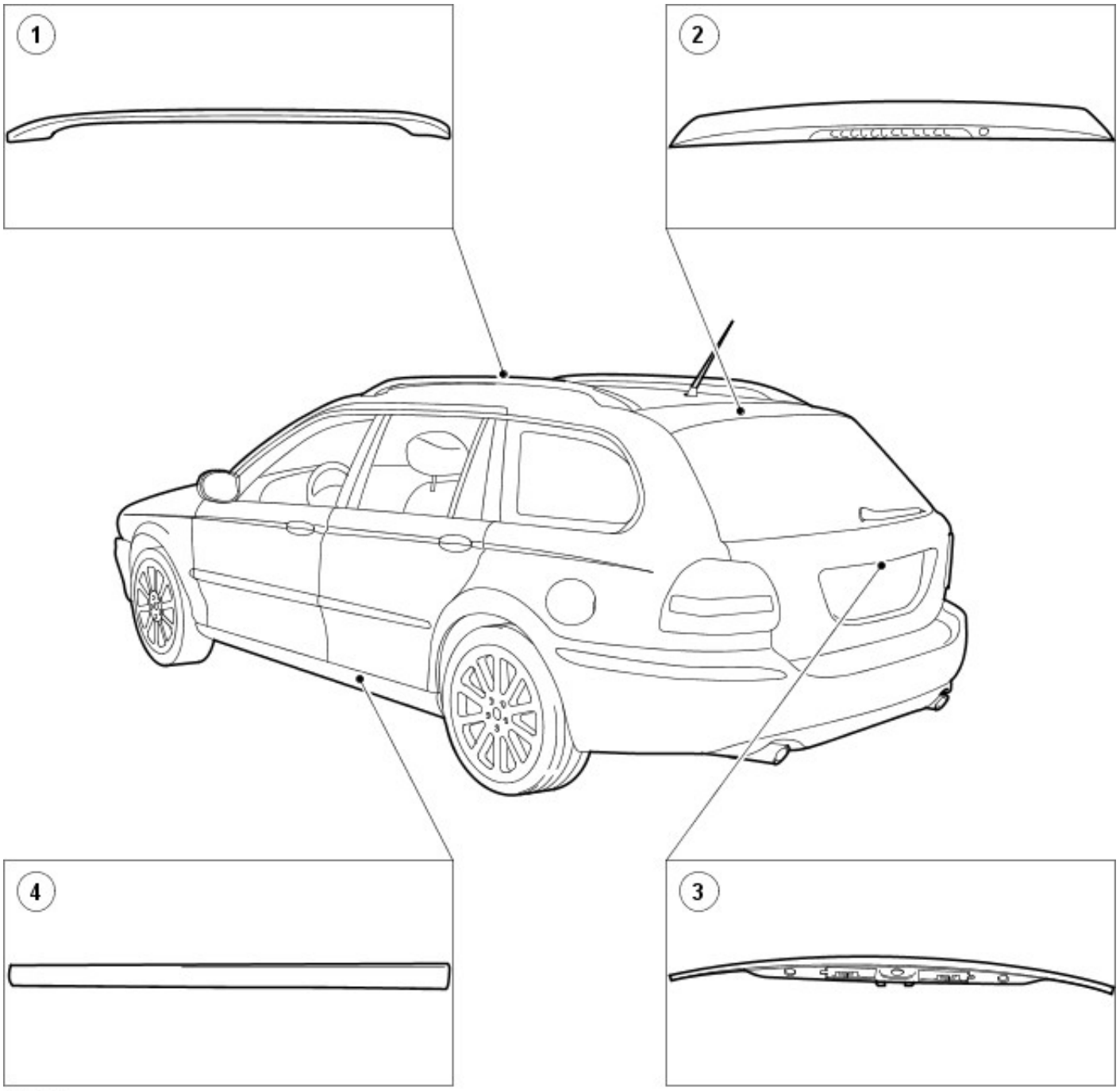
4-Door



VUJ0004078

Item	Part Number	Description
1	—	Radiator grille
2	—	Front bumper insert moulding
3	—	Front door lower moulding
4	—	Front door glass moulding
5	—	Rear door lower moulding
6	—	Rear door glass moulding
7	—	Rear bumper insert moulding

Wagon

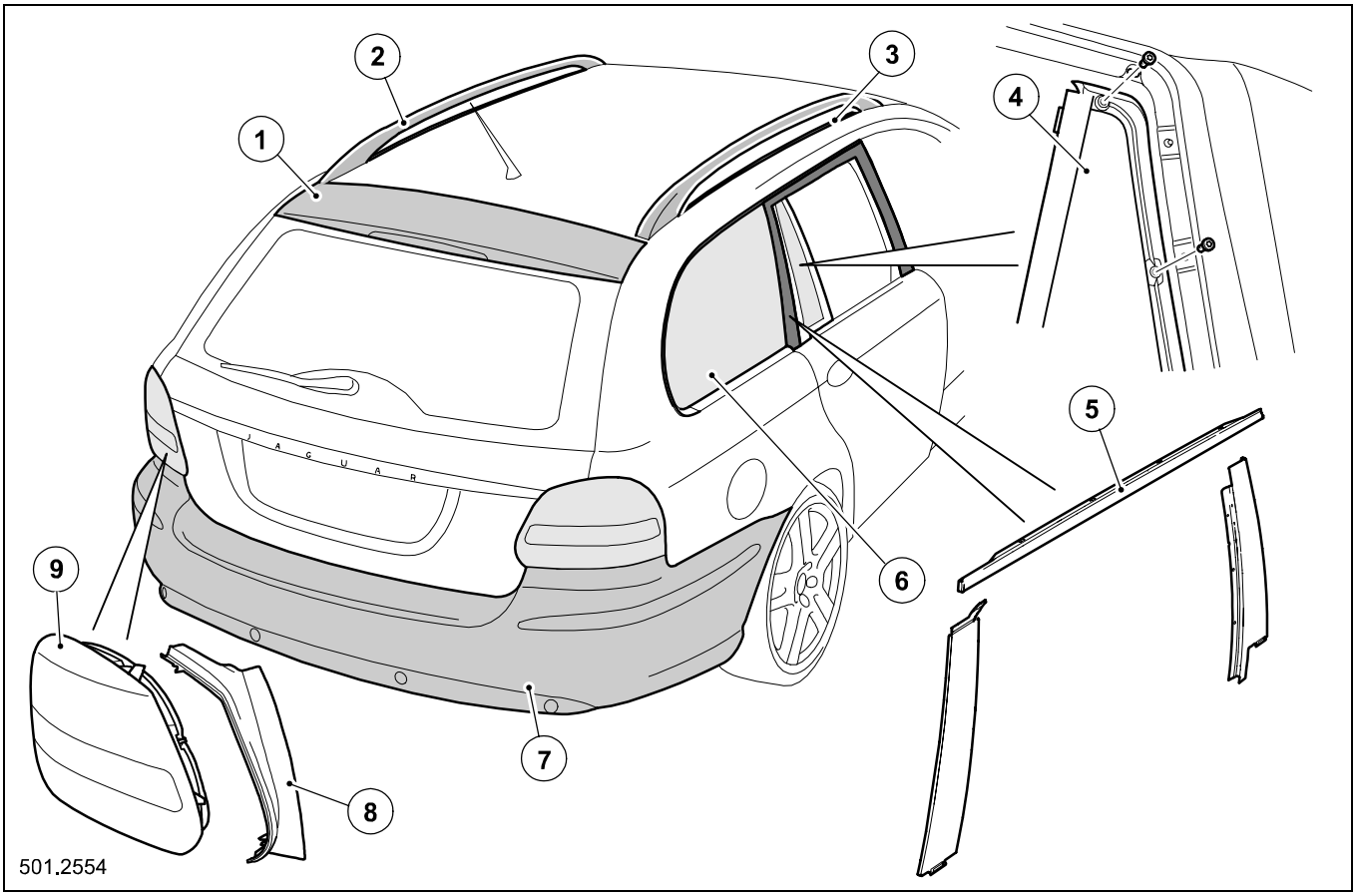


E49337

Item	Part Number	Description
1	-	Roof rail
2	-	Rear spoiler
3	-	Liftgate moulding
4	-	Rocker panel moulding

Exterior Trim Components (Estate)

There are several components unique to the estate shown in the illustration below.

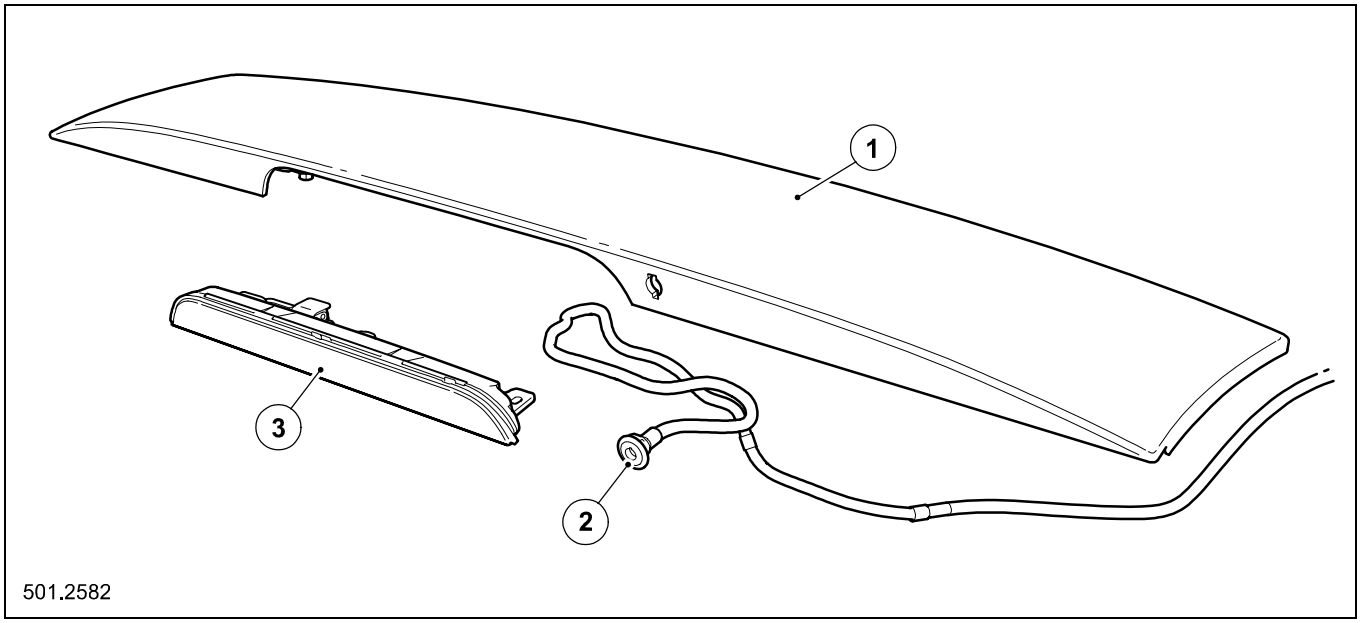


Exterior trim components

1. Roof rear spoiler
2. Roof rails
3. Roof moulding
4. Quarter glass and fixings
5. 'C' and 'D' pillar cappings and rear door upper moulding
6. Sixth light
7. Rear bumper
8. Rear lamp cover
9. Rear lamp

Roof Rear Spoiler

The roof rear spoiler is a painted plastic component fitted to the metal structure of the opening backlight by five M6 nuts. The centre high mounted stop lamp (CHMSL) and washer nozzle are incorporated into the roof rear spoiler. To gain access to the CHMSL, interior trim and the spoiler need to be removed.



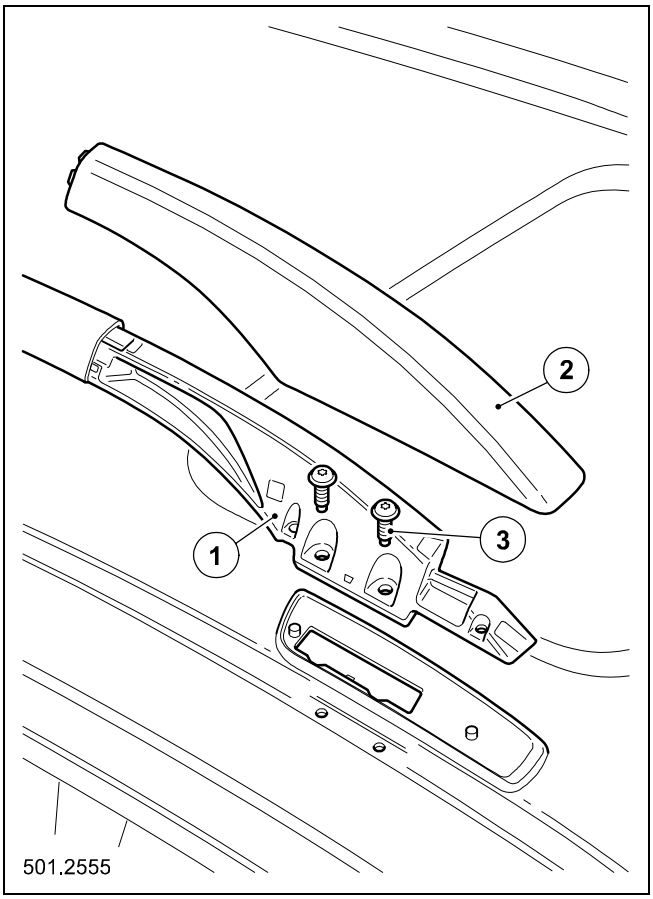
Roof rear spoiler, CHMSL and washer

1. Roof rear spoiler
2. Rear washer nozzle
3. CHMSL

Roof Moulding and Roof Rails

The roof ditch mouldings have the same sections as the sedan but with a clipping feature. All moulding are low gloss black and are divided into two parts: front and rear. The roof rails must be removed before the mouldings can be removed.

The roof rails are a standard fit on all estate vehicles. Black roof bars are standard fitment (silver painted bars are optional). They are fitted to the outside of the vehicle with two M8 screws on each of the four feet. A plastic cover that requires a special tool for removal, surrounds each foot.



Roof rail detail

1. Roof rail foot
2. Roof rail foot cover
3. M8 bolt

'D' and 'C' Pillar Cappings and Rear Door Upper Moulding

The components are fixed with rivets, similar to the sedan. The 'C' pillar capping is 2mm longer than the sedan version. The 'D' capping is new and unique to the estate. The rear door upper moulding is a straight profile to suit the line of the estate but the moulding's section is the same as the sedan.

Rear Lamp Shield

The rear lamps are new and fixed with four M6 nuts (the same type as on the sedan). The tail lamps have a plastic shield located directly to the side of the lamp with plastic clips; the shield profile covers and matches the body-in-white (BIW) profile.

Rear Bumper and Beam (Estate)

The rear bumper and beam are new to suit the new body style and crash requirements. The rear beam fixings are carry-over from the sedan version but the beam is a different shape due to a cut-out in the corner.

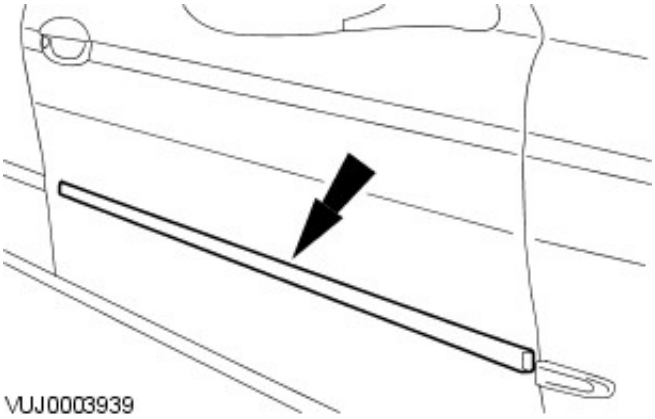
The rear bumper fixings are the same as the sedan with the following exceptions:

- To improve the match with the tail lamp, two more fixings are added in the center bracket.
- On the right-hand side, two fixings instead of one are fitted through the wheel arch area.

Exterior Trim and Ornamentation - Door Moulding

Removal and Installation

Removal



1. Apply suitable protective tape to adjacent areas of paintworks.
2. Using a hand-held heat gun, apply heat uniformly along the moulding length.
3. Applying local heat at one end and using a suitable thin lever to avoid damaging paintwork, progessively ease the moulding away from the door panel.
4. Discard the moulding and remove protective tape.
5. Remove any residual adhesive and thoroughly clean area using isopropyl alcohol.

Installation

1. NOTE: Optimum adhesion is achieved by warming body panel and moulding to 30°C (86°F)

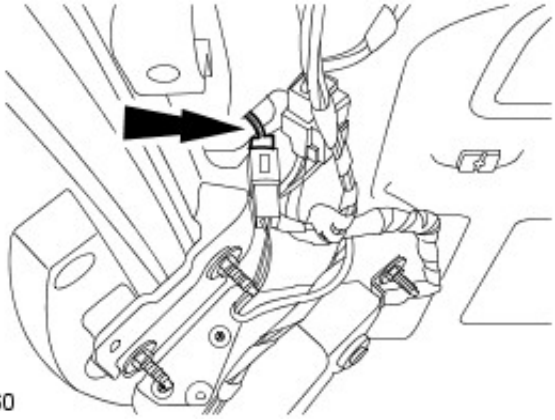
   Using isopropyl alcohol, make sure that mounting area is clean, dry and de-greased.
2. Remove protective backing tape from the moulding.
3. NOTE: Do not allow the moulding to contact the body panel until it is correctly aligned.

   Aligning with adjacent mouldings or to match opposite side of vehicle, press the new moulding firmly onto the body panel.
4. Apply hand pressure along the moulding length to make sure satisfactory adhesion.
5. Allow the moulding and door panel to cool, then thoroughly clean both using isopropyl alcohol.
6. Apply a coat of suitable polish to the moulding and body panel.

Exterior Trim and Ornamentation - Liftgate Moulding
Removal and Installation

Removal

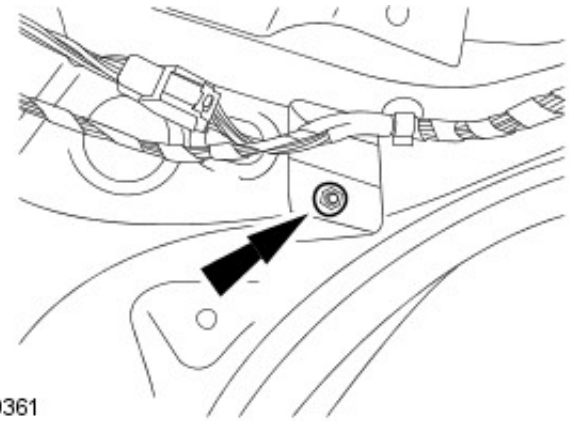
1. Remove the liftgate trim panel.
   For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
2. Disconnect the electrical connector.



E49360

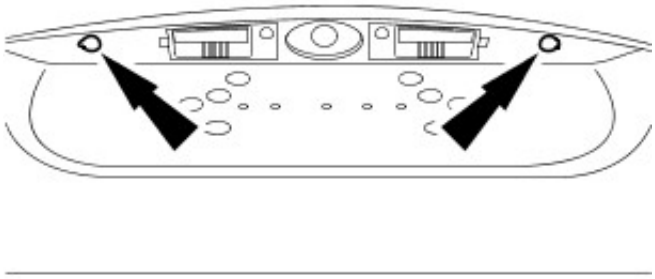
3. NOTE: Left-hand shown, right-hand similar.

   Remove the liftgate moulding retaining nuts.



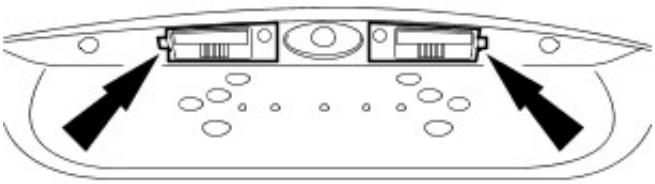
E49361

4. Remove the liftgate moulding retaining screw covers.



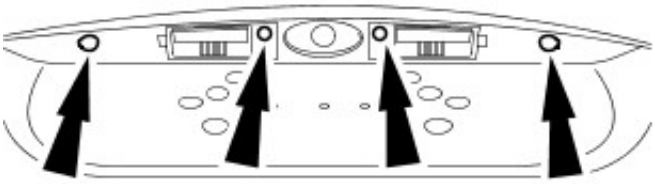
E49362

5. Remove the licence plate lamp covers.



E49363

6. Remove the liftgate moulding retaining screws.



E49364

7. Detach the grommet.

E49365

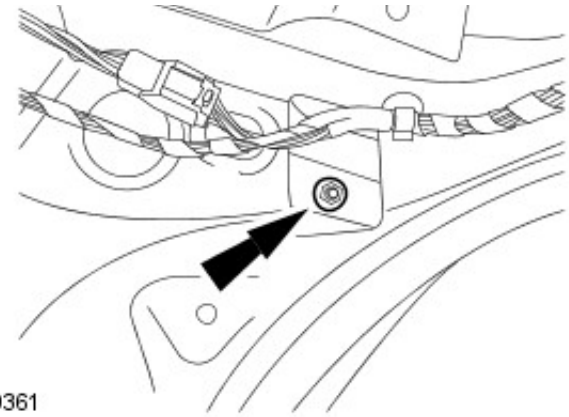
8. Remove the liftgate moulding.

E49366

Installation

1. To install, reverse the removal procedure.

- Tighten to 3 Nm.

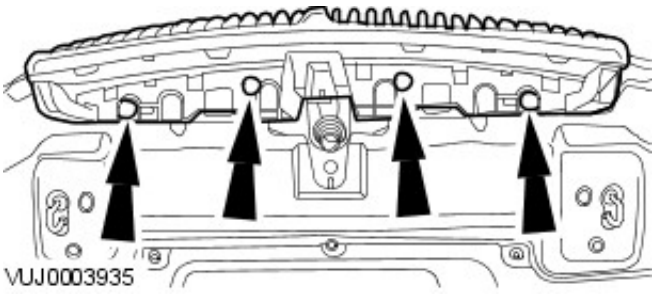


E49361

Exterior Trim and Ornamentation - Radiator Grille

Removal and Installation

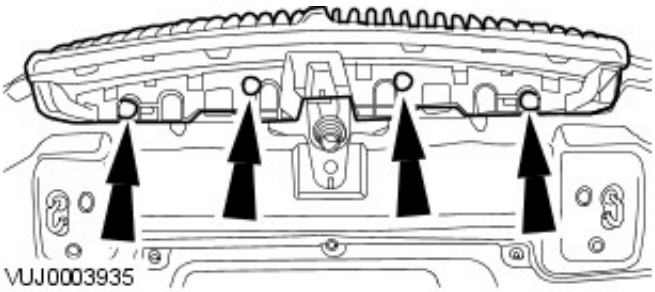
Removal



1. Remove the radiator grille.

- Remove the radiator grille retaining bolts.

Installation



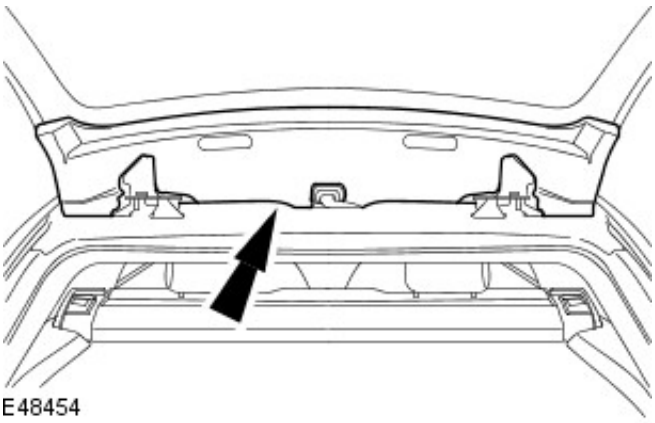
1. To install, reverse the removal procedure.

- Tighten to 7 Nm.

Exterior Trim and Ornamentation - Rear SpoilerWagon

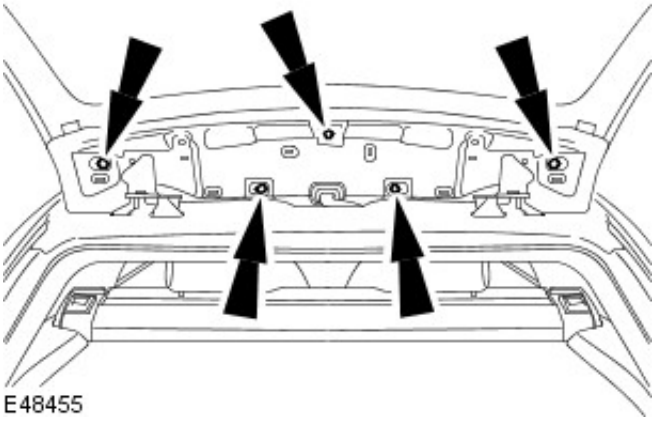
Removal and Installation

Removal



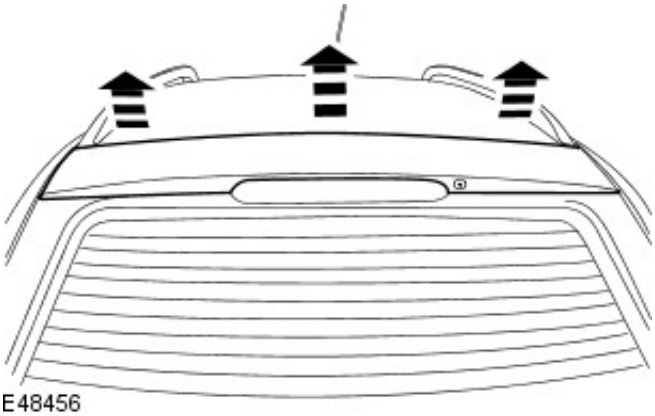
E48454

1. Remove and discard the tailgate opening window finisher trim panel.



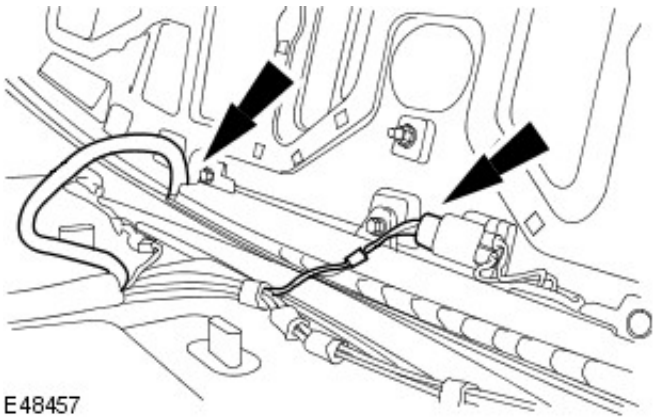
E48455

2. Remove the rear spoiler retaining nuts.



E48456

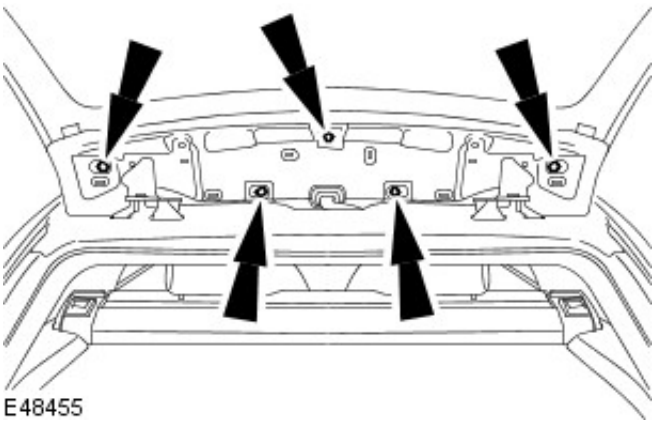
3. Detach the rear spoiler.



E48457

4. Remove the rear spoiler.
   - Disconnect the high mounted stoplamp electrical connector.
   - Disconnect the rear washer jet hose.

Installation


E48455

1. NOTE: A new tailgate opening window finisher trim panel must be installed.

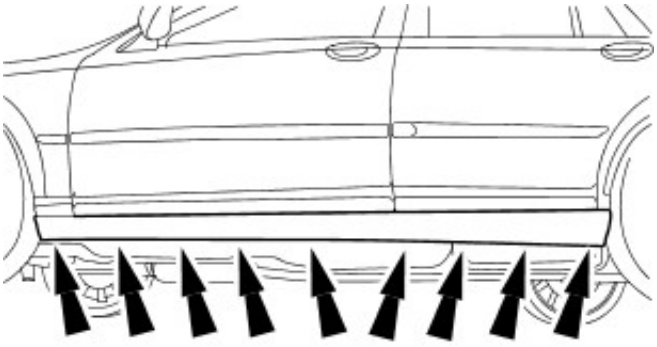
To install, reverse the removal procedure.

- Tighten to 5 Nm.

Exterior Trim and Ornamentation - Rocker Panel Moulding

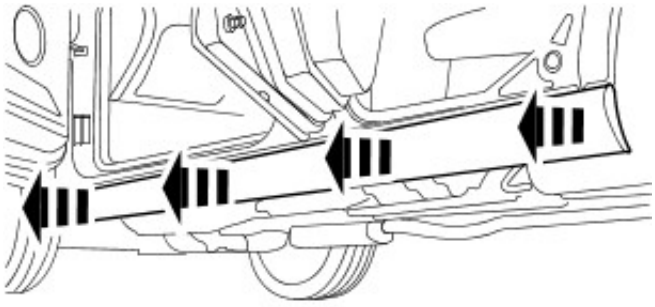
Removal and Installation

Removal



E48883

1. Remove the rocker panel moulding retaining screws.



E48884

2. NOTE: Both doors will need to be open to remove the rocker panel moulding.

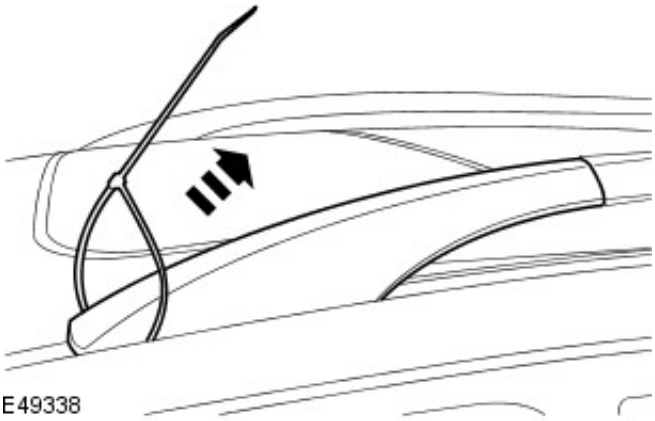
Remove the rocker panel moulding.

Installation

1. To install, reverse the removal procedure.

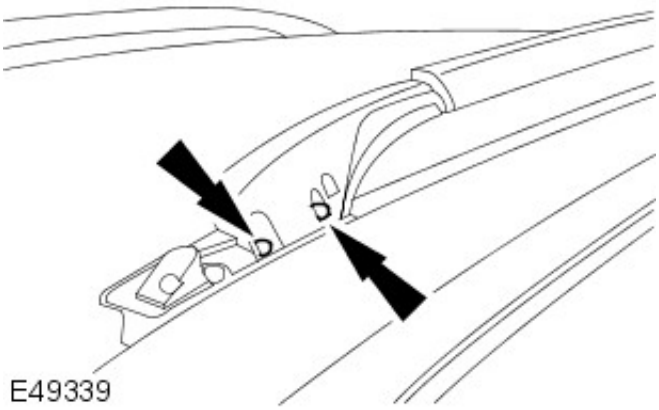
Exterior Trim and Ornamentation - Roof Rail
Removal and Installation

Removal

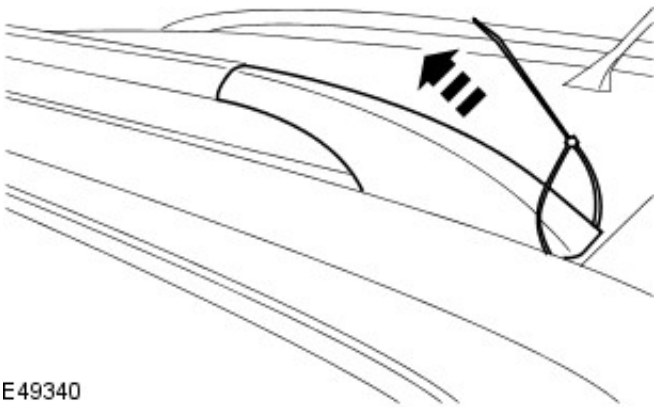

E49338

1. NOTE: Using a suitable tie strap remove the roof rail front trim.

Remove the roof rail front trim.


E49339

2. Remove the roof rail front retaining bolts.

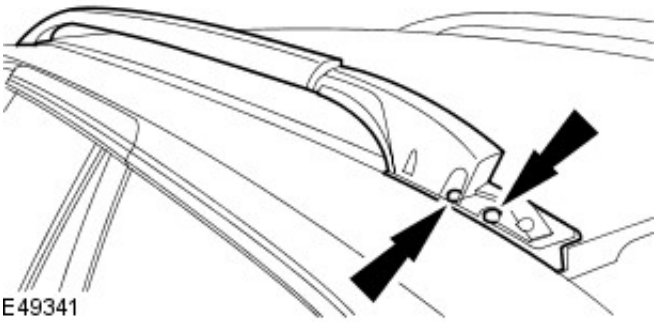

E49340

3. NOTE: Using a suitable tie strap remove the roof rail rear trim.

Remove the roof rail rear trim.

4. NOTE: Remove and discard the seals.

Remove the roof rail.

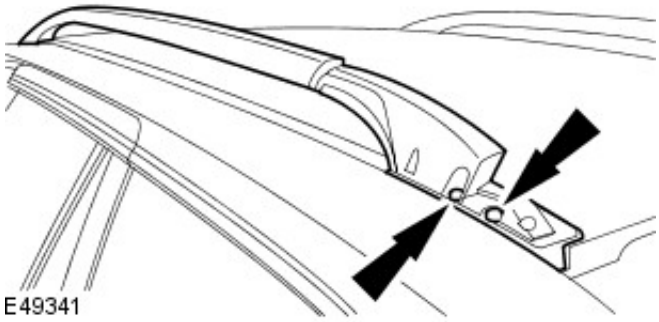

E49341

Installation

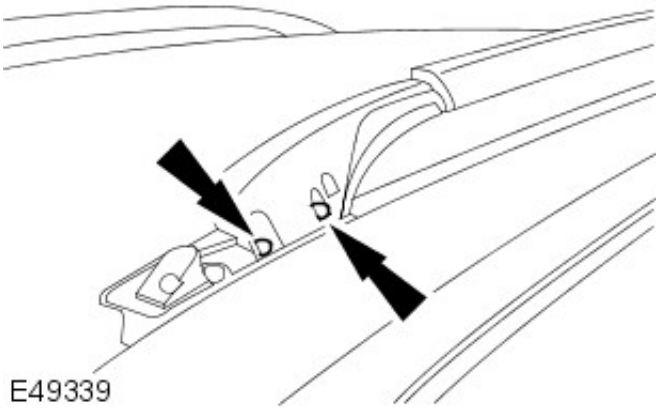
1. NOTE: Install new seals.

To install, reverse the removal procedure.

- Tighten to 14 Nm.



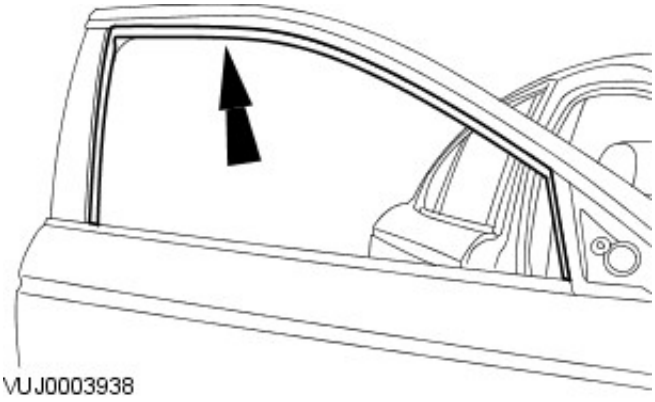
2. Tighten to 14 Nm.



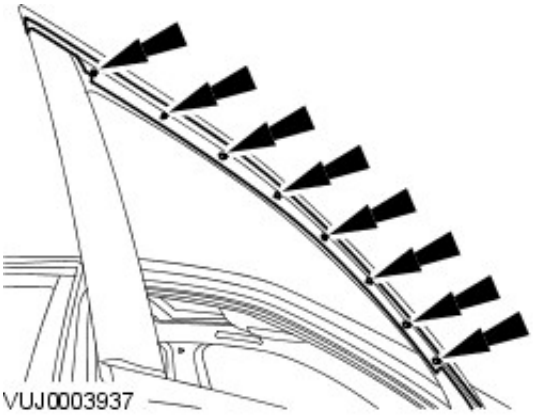
Exterior Trim and Ornamentation - Window Moulding

Removal and Installation

Removal



1. Detach the door window glass aperture seal.



2. Remove the window moulding.
   - Remove and discard the rivets.

Installation

1. NOTE: Install new rivets.

To install, reverse the removal procedure.

Rear View Mirrors -

Torque Specifications

Description	Nm	lb-ft	lb-in
Exterior mirror retaining nut	12	9	-

Rear View Mirrors - Rear View Mirrors

Description and Operation

The manual dipping interior mirror is a prismatic unit with mirror dipping achieved by pulling the lever forward.

Where fitted an electrochromic interior mirror will automatically darken to prevent glare from following vehicle headlamps. An ambient light sensor is fitted to the reflecting surface of the mirror to achieve automatic darkening.

During daytime driving, the ambient light sensor will detect high light levels and control the electrochromic interior mirror to provide a full, clear reflection. During night driving, the ambient light sensor will detect low light levels and automatic glare reduction will occur.

A day/night mirror sensitivity switch on the interior electrochromic mirror will allow the driver to select the sensitivity range from "MIN" (minimum) to "MAX" (maximum) sensitivity. The switch can also be set to an "OFF" position to disable all automatic glare functions.

The exterior mirrors are colour-coded, electrically adjustable and heated. Adjustment of both exterior mirrors is carried out from the driver door switch pack. A slider switch selects the mirror to be adjusted and a toggle switch adjusts the selected mirror to the required position.

Where fitted, power fold back mirrors can be operated by the mirror fold button incorporated in the driver door switch pack on the driver door trim panel. The power fold back mirrors only operate when the mirror select switch is in the middle position, and the vehicle speed is below 19 km/h (12 mph).

Vehicles from 2009MY

E100254

Vehicles built from 2009MY feature direction indicator repeaters located in the exterior rear view mirrors. The functionality and operation of the direction indicator repeaters remains the same as the previous fender mounted items.

The direction indicator repeater bulb is accessed by removal of the mirror glass and backplate.

Rear View Mirrors - Rear View Mirrors

Diagnosis and Testing

Inspection and Verification

1. **1.** Verify the customer concern.
2. **2.** Visually inspect for obvious signs of electrical damage.

Visual Inspection Chart

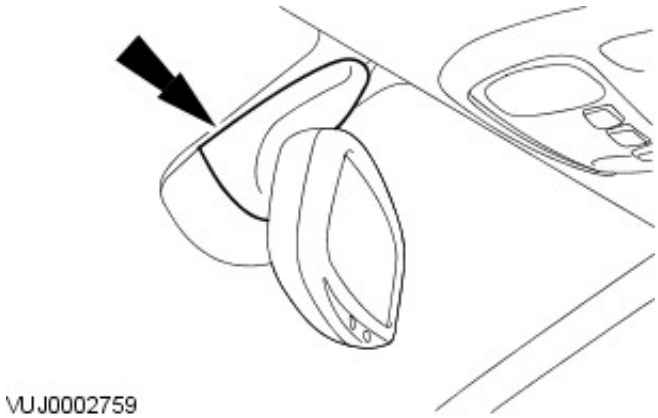
Electrical
• Electrical connector(s) • Wiring harness for damage or corrosion • Switch(s) • Motor assembly • Electrochromic interior mirror

3. **3.** If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **4.** If the cause is not visually evident, verify the symptom and refer to the Jaguar Approved Diagnostic System.

Rear View Mirrors - Auto-Dimming Interior Mirror

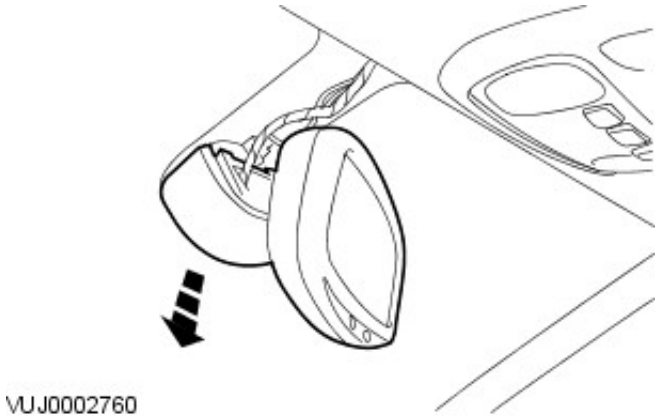
Removal and Installation

Removal



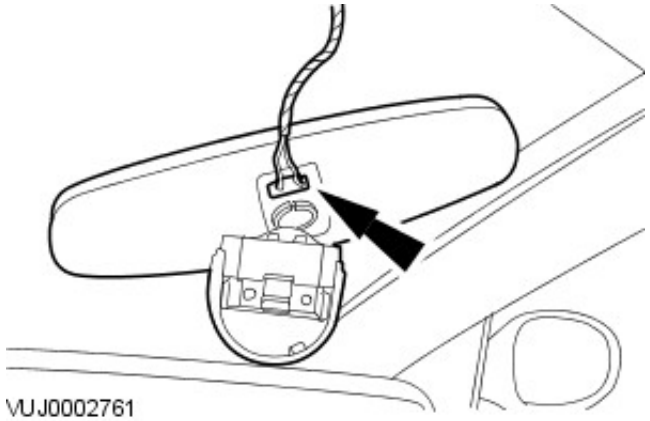
VUJ0002759

1. Detach the interior mirror trim panel.



VUJ0002760

2. Detach the interior mirror.



VUJ0002761

3. Remove the interior mirror.

- Disconnect the interior mirror electrical connector.

Installation

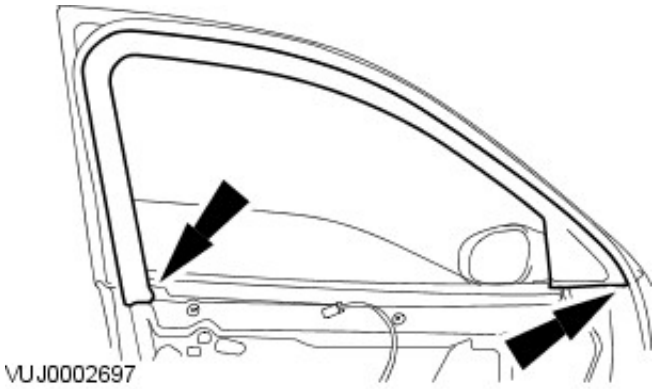
1. To install, reverse the removal procedure.

Rear View Mirrors - Exterior Mirror

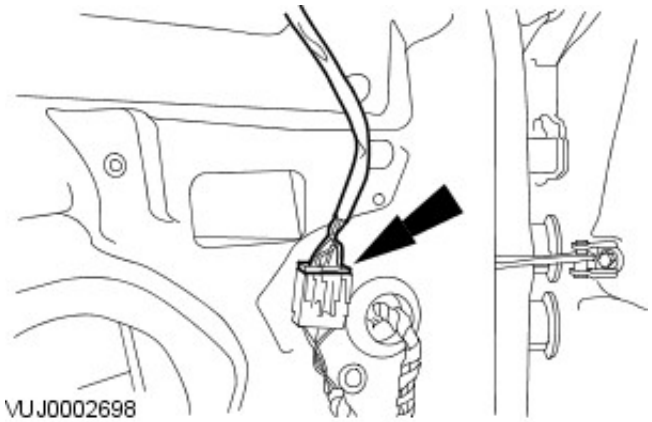
Removal and Installation

Removal

1. Remove the front door trim panel. For additional information, refer to Section 501-05 Interior Trim and Ornamentation.
2. Remove the window surround trim panel.

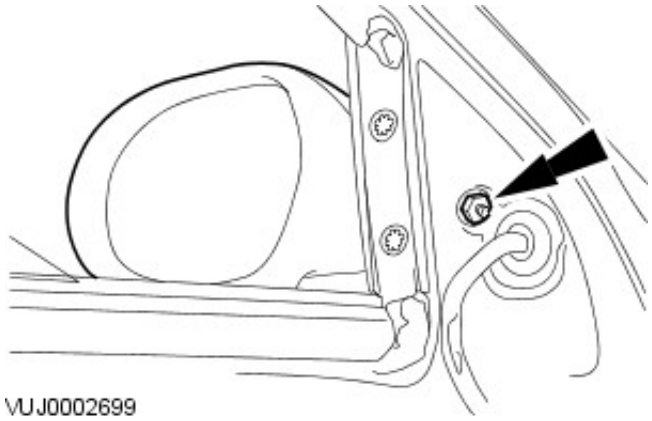

VUJ0002697

3. Disconnect the exterior mirror electrical connector.

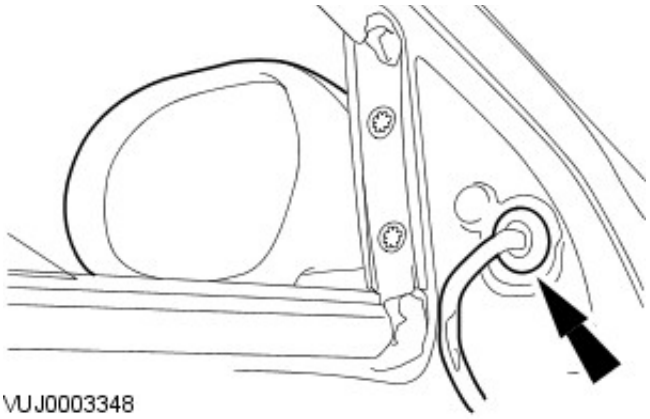

VUJ0002698

4. NOTE: Support the exterior mirror while removing the exterior mirror retaining nut.

   Detach the exterior mirror.


VUJ0002699

5. Remove the exterior mirror.
   - Detach the grommet.

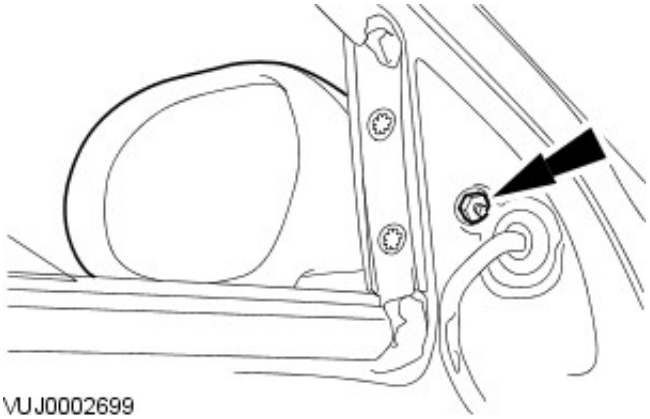


VUJ0003348

Installation

1. To install, reverse the removal procedure.

- Tighten to 12 Nm.

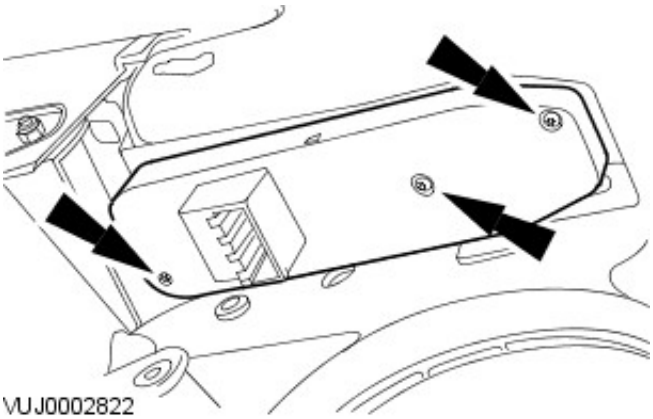


VUJ0002699

Rear View Mirrors - Exterior Mirror Control Switch

Removal and Installation

Removal



1. Remove the front door trim panel. For additional information, refer to Section 501-05 Interior Trim and Ornamentation.
2. Remove the exterior mirror control switch.

Installation

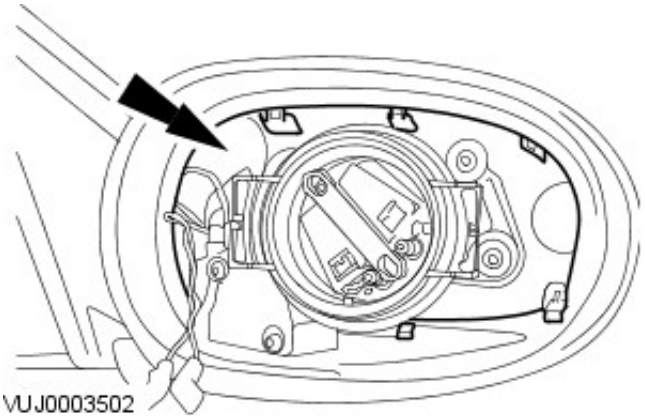
1. To install, reverse the removal procedure.

Rear View Mirrors - Exterior Mirror Cover

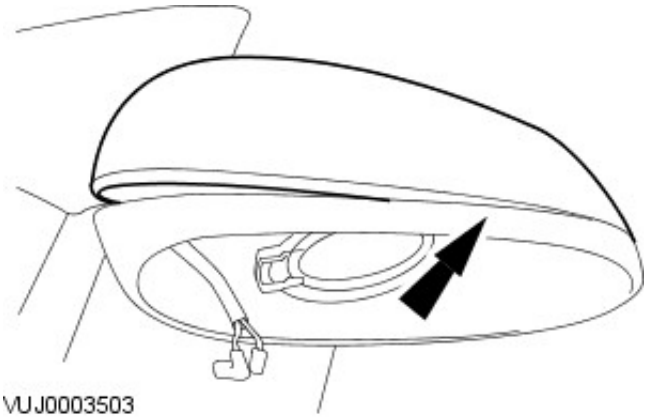
Removal and Installation

Removal

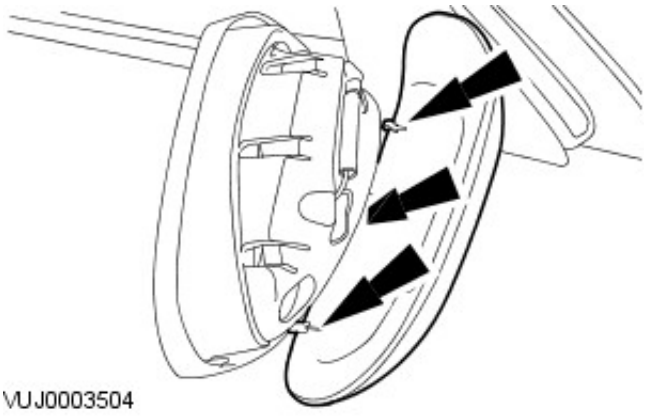
1. Remove the exterior mirror glass. For additional information, refer to Exterior Mirror Glass.
2. Apply light pressure to the inner edge of the exterior mirror cover.



3. Detach the outer edge of the exterior mirror cover.



4. Remove the exterior mirror cover.



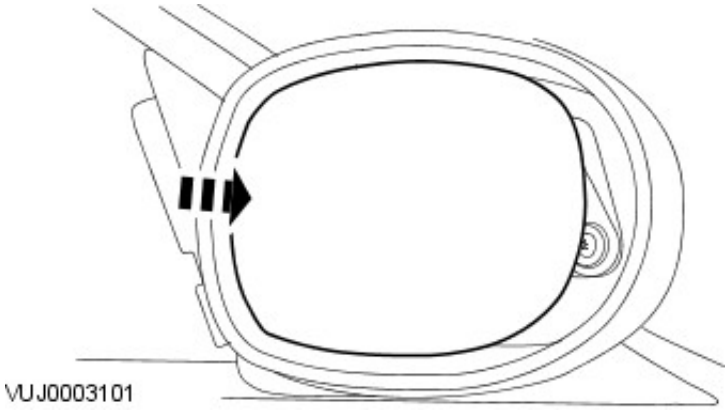
Installation

1. To install, reverse the removal procedure.

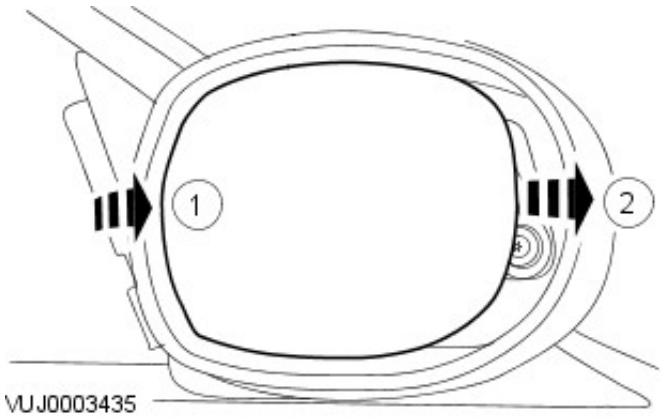
Rear View Mirrors - Exterior Mirror Glass

Removal and Installation

Removal


VUJ0003101

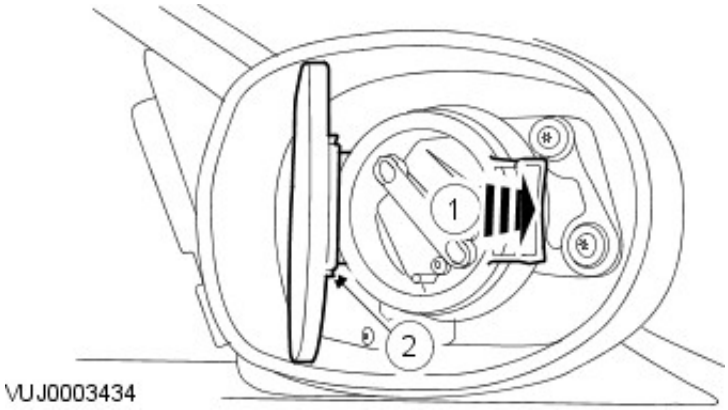
1. Apply light pressure to the mirror glass.



VUJ0003435

2. Detach the mirror glass.

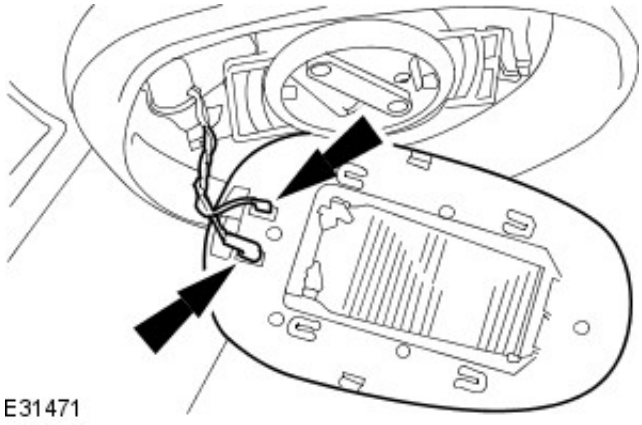
1. Apply light pressure to the inner edge of the mirror glass.
2. Pull the outer edge of the mirror glass to detach the mirror glass.



VUJ0003434

3. Detach the exterior mirror glass.

1. Reposition the mirror glass motor.
2. Detach the exterior mirror glass.


E31471

4. Remove the exterior mirror glass.

- Disconnect the mirror glass heater electrical connectors.

Installation

1. To install, reverse the removal procedure.

Rear View Mirrors - Exterior Mirror Motor

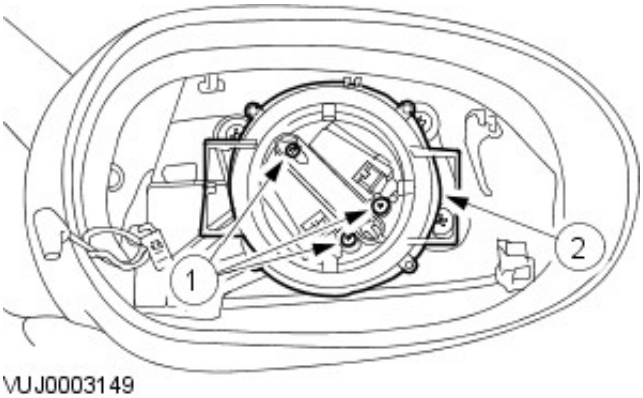
Removal and Installation

Removal

1. Remove the exterior mirror glass. For additional information, refer to Exterior Mirror Glass.

2. Detach the exterior mirror motor.

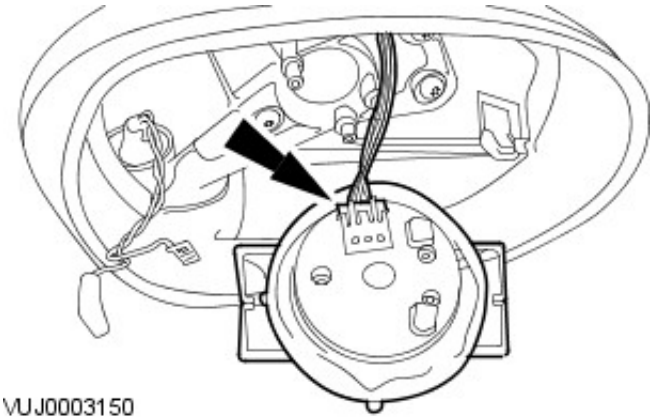
1. Remove the exterior mirror motor retaining screws.
2. Detach the exterior mirror motor.



VUJ0003149

3. Remove the exterior mirror motor.

- Disconnect the exterior mirror motor electrical connector.



VUJ0003150

Installation

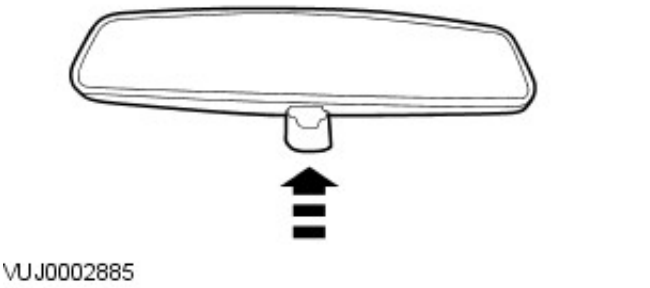
1. To install, reverse the removal procedure.

Rear View Mirrors - Interior Mirror

Removal and Installation

Removal

1. Remove the interior mirror.



VUJ0002885

Installation

1. To install, reverse the removal procedure.

Seating -

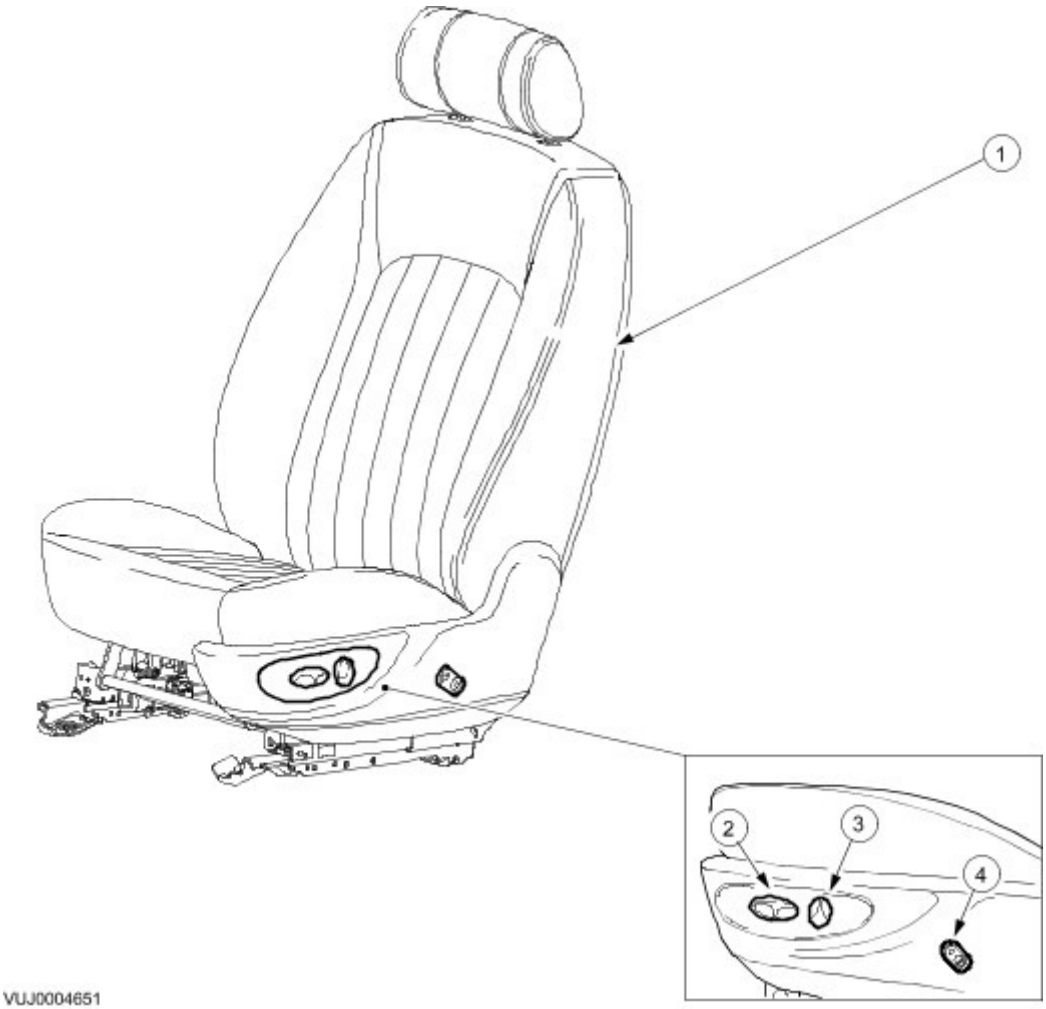
Torque Specifications

Description	Nm	lb-ft	lb-in
Front seat retaining bolts	20	15	-
Front seat backrest retaining bolts	25	18	-
Front seat cushion retaining nuts	15	11	-
Front seat track motor retaining bolt	10	7	-
Front seat cushion front height adjustment motor retaining bolt	10	7	-
Front seat cushion rear height adjustment motor retaining bolts	10	7	-
Front safety belt lower anchor retaining bolt	55	41	-
Front seat safety belt pretensioner retaining bolt	50	37	-
Fixed rear seat backrest retaining bolts	55	41	-
Fixed rear seat retainer block bolt	20	15	-
Folding rear seat backrest hinge retaining bolts - All vehicles	55	41	-
Folding rear seat backrest centre hinge plate retaining bolts - Wagon	23	17	-
Folding rear seat latch retaining bolts - 4-door vehicles	22	16	-
Folding rear seat latch retaining bolts - Wagon	32	24	-
Rear center safety belt retractor retaining bolt - 4-door vehicles	55	41	-
Rear center safety belt retractor retaining bolt - Wagon	38	28	-
Rear center safety belt buckle retaining bolt - All vehicles	55	41	-

Published: Mar 29, 2001

Seats

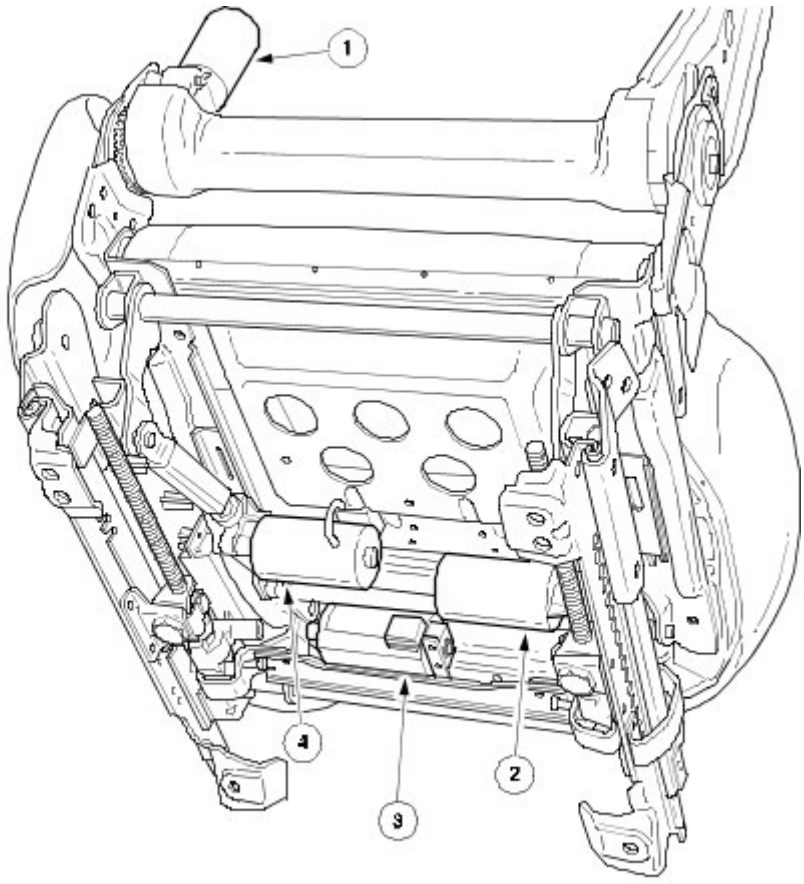
Front Seat (high specification)



VUJ0004651

Item	Part Number	Description
1	—	Front seat
2	—	Front seat track and cushion front/rear height adjustment switch
3	—	Front seat backrest recliner switch
4	—	Front seat lumbar support switch

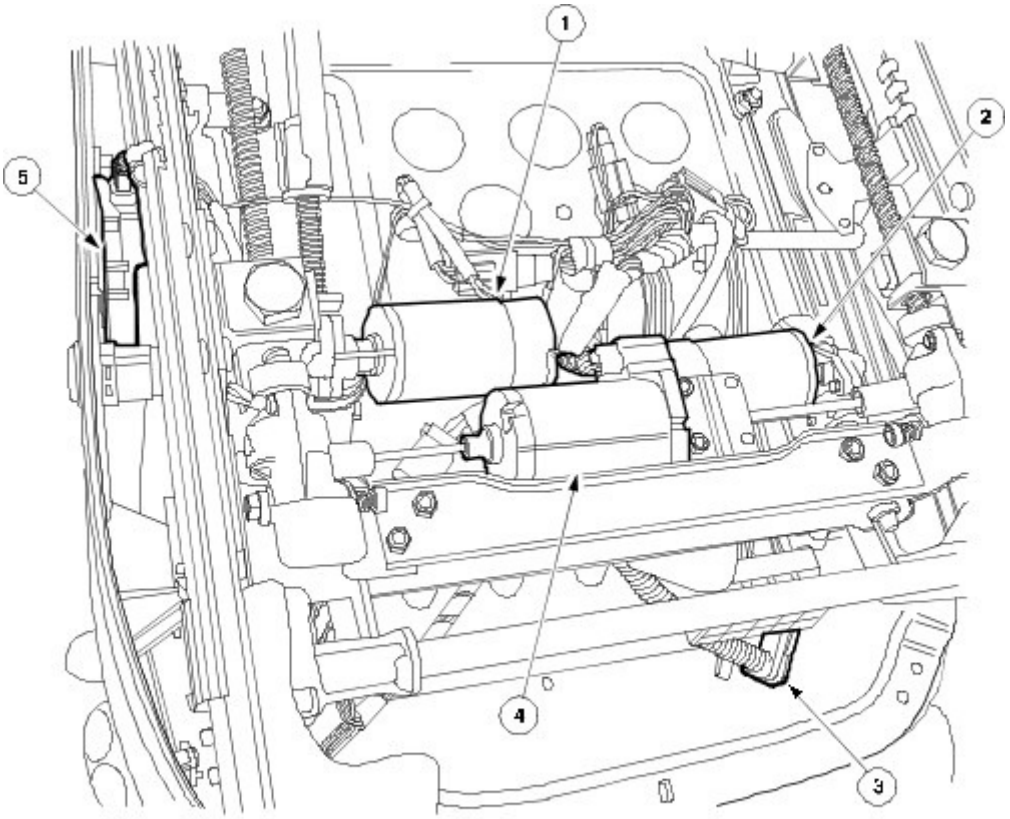
Drivers Front Seat (high specification)



VUJ0004655

Item	Part Number	Description
1	—	Front seat backrest recliner motor
2	—	Front seat cushion front height adjustment motor
3	—	Front seat track motor
4	—	Front seat cushion rear height adjustment motor

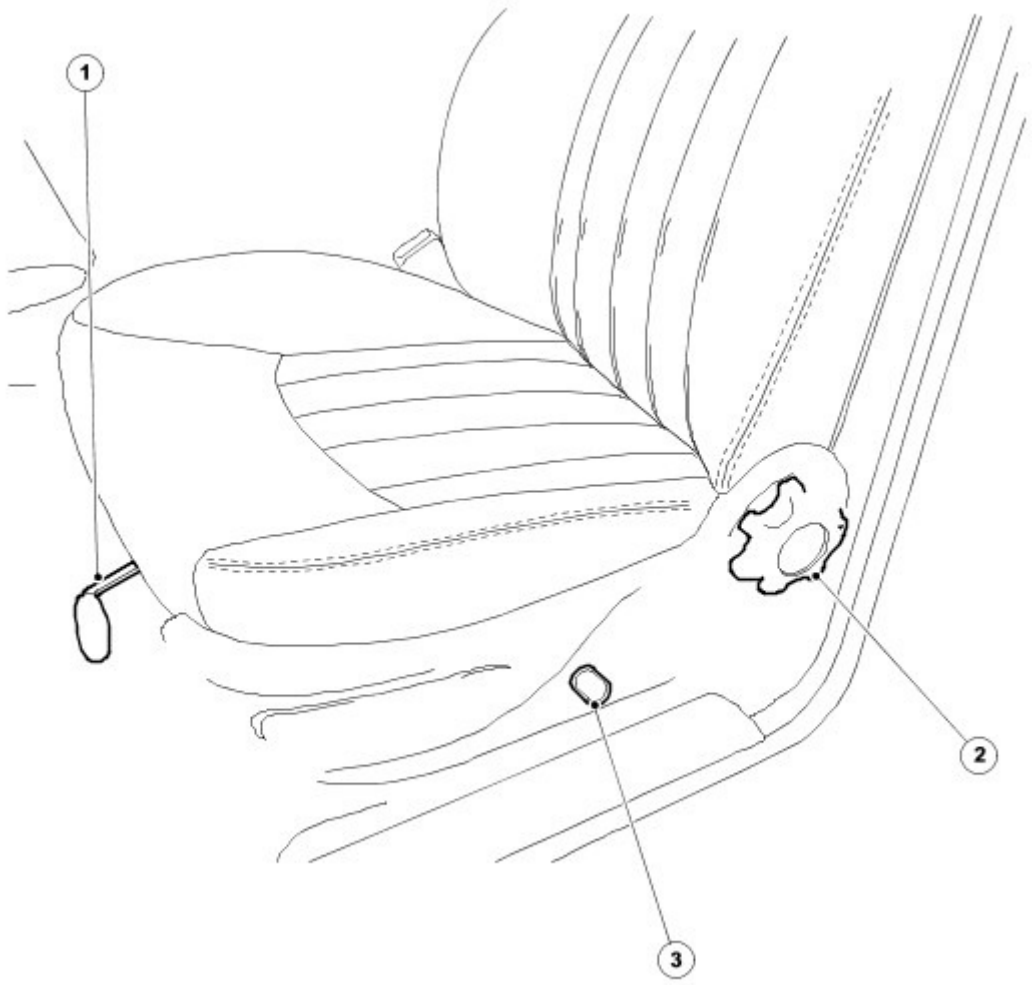
Passengers Front Seat (high specification)



VUJ0004657

Item	Part Number	Description
1	—	Front seat cushion rear height adjustment motor
2	—	Front seat cushion front height adjustment motor
3	—	Front seat weight sensing sensor (passenger side only)
4	—	Front seat track motor
5	—	Front seat weight sensing module (passenger side only)

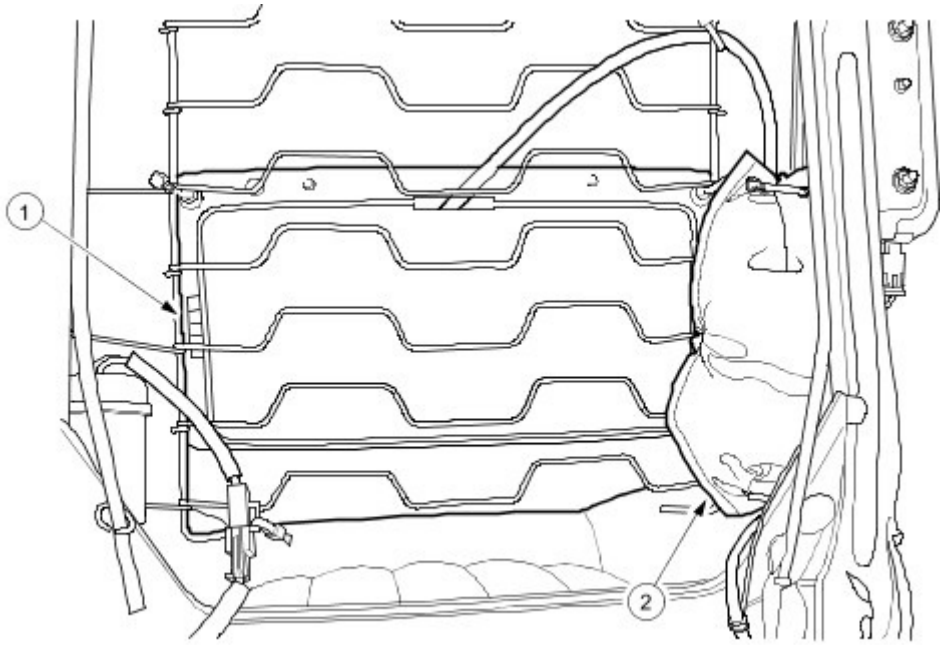
Front Seat (low specification)



VUJ0004650

Item	Part Number	Description
1	—	Front seat track adjustment locking bar
2	—	Front seat cushion height adjustment switch (Drivers side only
3	—	Front seat backrest recliner hand wheel

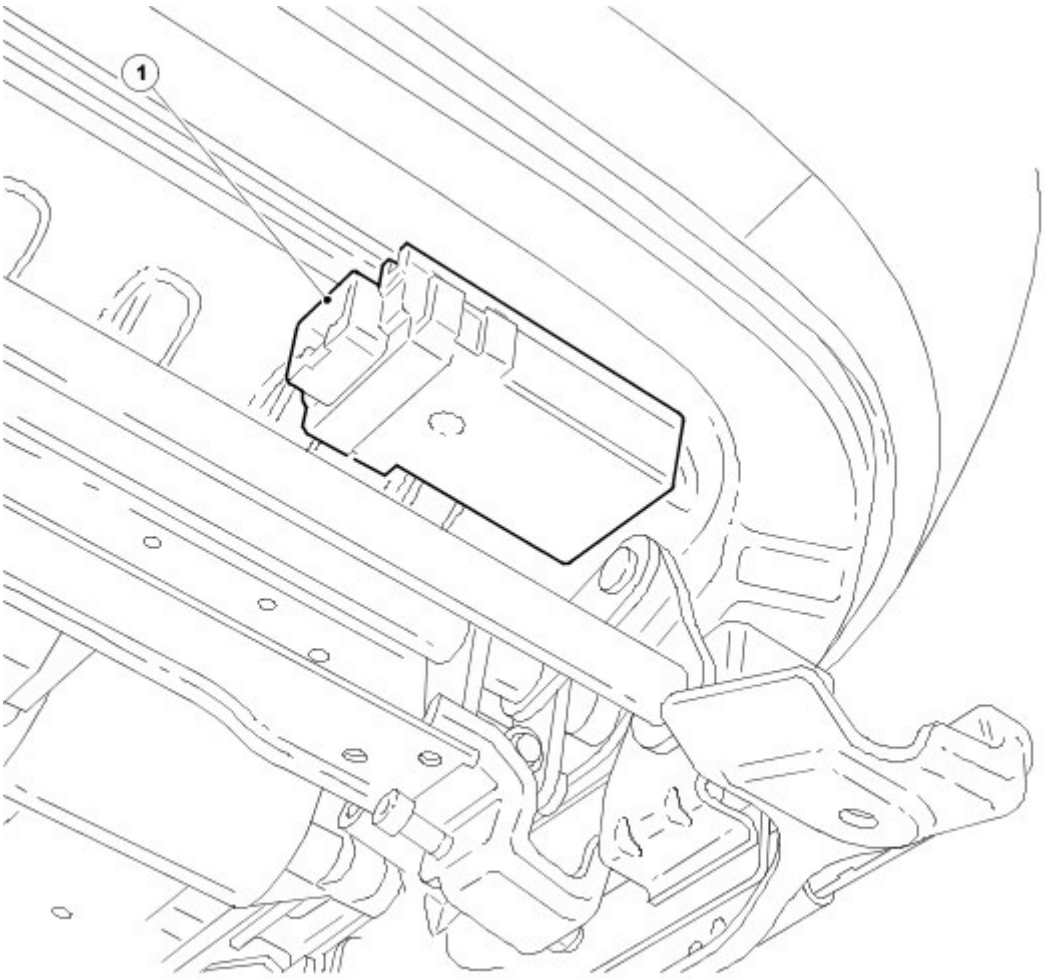
Front Seat Lumbar Support



VUJ0004656

Item	Part Number	Description
1	—	Front seat lumbar support bag
2	—	Front seat lumbar motor

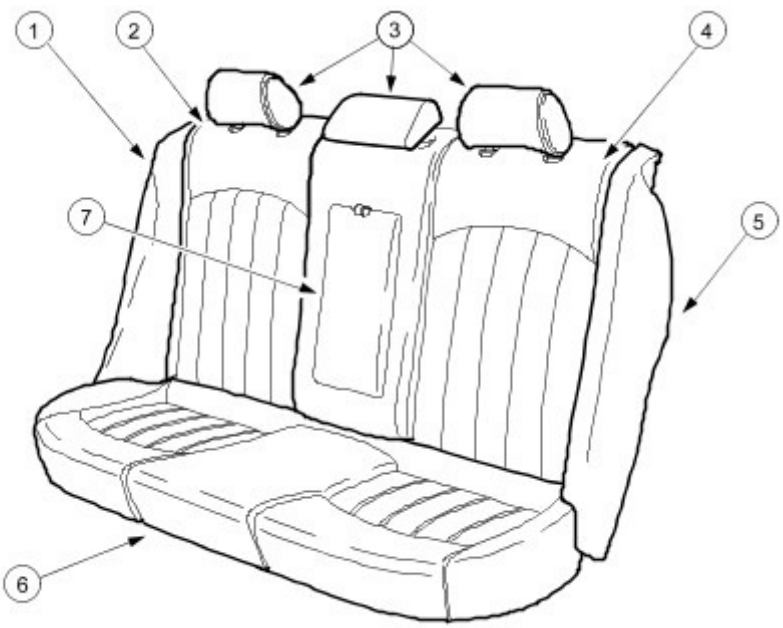
Heated Seats



VUJ0004652

Item	Part Number	Description
1	—	Heated seat module (front seat)

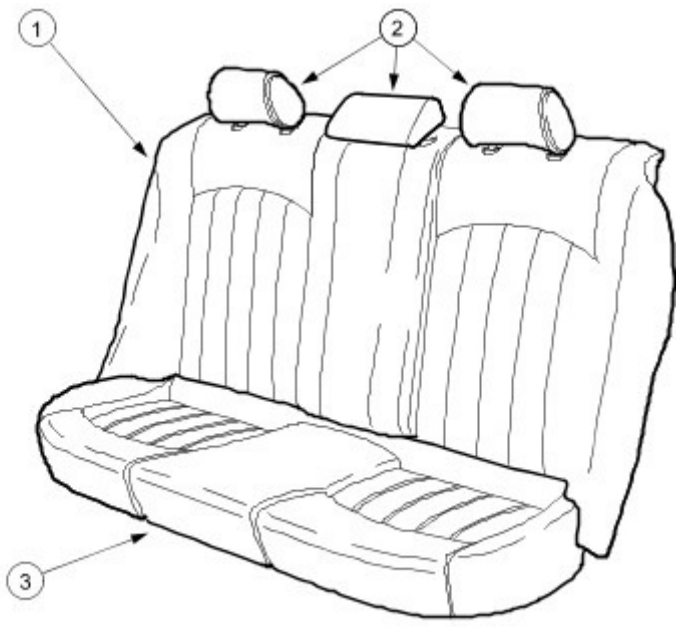
Rear Seat (folding)



VUJ0004653

Item	Part Number	Description
1	—	Rear seat backrest bolster - RH
2	—	Rear seat backrest (split seat type)
3	—	Rear seat head restraints (not available in the U.S.A)
4	—	Rear seat backrest (split seat type)
5	—	Rear seat backrest bolster - LH
6	—	Rear seat cushion
7	—	Rear seat center arm rest

Rear Seat (fixed)



VUJ0004654

Item	Part Number	Description
1	—	Rear seat backrest
2	—	Rear seat head restraints
3	—	Rear seat cushion

Seats

All front seats are fitted with the following features as standard:

- integral side air bags
- head restraints
- safety belt buckle/pretensioner

Front Seats

The driver and passenger seats, although almost identical, have some unique components fitted. The driver's seat has a seat track position sensor and the passenger's seat has a weight sensing system. In both instances the components form an integral part of the occupant restraint system. For additional information, refer to <<501-20b>>.

The high option front seat has the following standard features:

- electrically adjustable seat positioning
- electrically adjustable lumbar support (optional to highline seats only)
- heated seat (optional)

The basic option front seat has the following standard features:

- electrically adjustable seat height positioning (driver seat only)
- heated seat (optional)

Heated Seats

The heated seat system comprises:

- heated seat module
- heated seat switches
- backrest heater element
- cushion heater element and thermostat

The heated seat function permits the electrical heating of the seat back and cushion on the driver and front passenger seats. The heating system of each seat is selected by separate switches located at the top of the center console.

Pressing the appropriate switch activates the first stage of a three stage operation of the heated seat function:

- one press of the switch activates the high setting (providing a seat surface temperature of approximately 42° C).
- a second press of the switch activates the low setting (providing a seat surface temperature of approximately 37°C).
- a third press of the switch deactivates the heating function.

Once the heated seat function has been activated, it will persist until one of the following conditions have been satisfied:

- a fixed period of time has expired (10 minutes)
- if the engine is not running
- the function is deactivated by pressing the switch for a third time
- a malfunction is detected by the heated seat module

Confirmation that the heated seat function is active is indicated by the illumination of the relevant switch, a yellow light indicates the low temperature setting and a red light indicates the high temperature setting.

Heated Seat Module

The heated seat module is located under the front edge of the seat. The module controls the seat heating function by providing the appropriate response depending on the status of the heated seat switches.

Power Lumbar

The power lumbar is a self-contained unit controlled directly by the seat mounted power lumbar switch.

Rear seats

Depending on the market specification the rear seats will be one of the following:

- fixed bench style
- folding seatback split seat style (70/30)

Folding Seatbacks

The rear seatbacks can be folded forward to provide additional luggage space if required. Release handles for each seat back are located in the luggage compartment under the parcel shelf.

Head Restraints

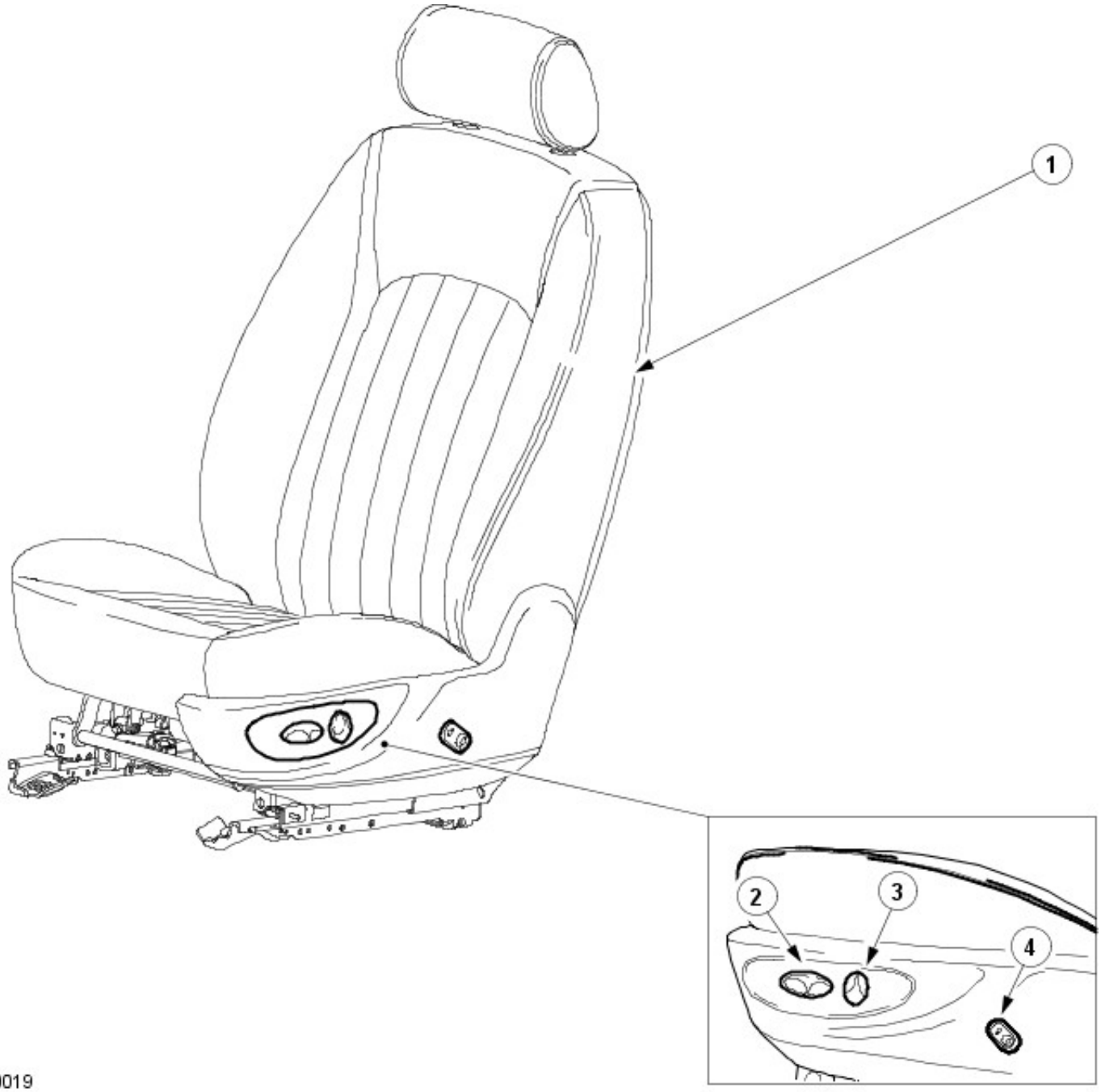
The rear head restraints can only be set to one of the two available heights.

Ski Hatch (if equipped)

Skis or similar objects can be stowed in the vehicle by utilizing the two door hatch fitted to the rear seat. The inner door is accessible after folding down the armrest, the second door is accessible from inside the luggage compartment. A sack complete with strap is provided for holding the stored items, the strap connects to the center rear seat belt buckle to secure the sack and contents.

Seating - Seats
Description and Operation

Front Seat - High Specification, Vehicles without Seat Position Memory



E50019

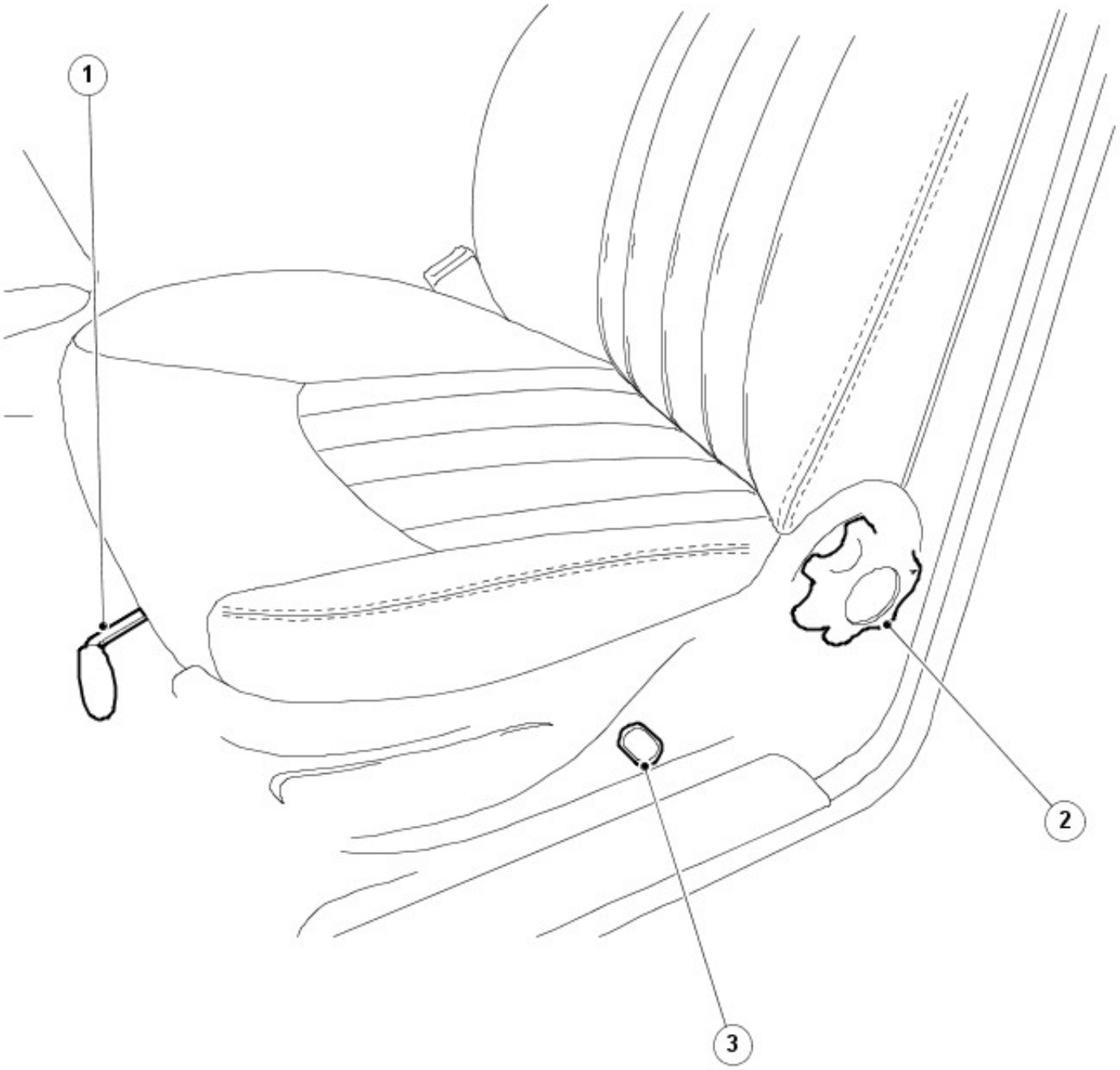
Item	Part Number	Description
1	—	Front seat
2	—	Front seat track and cushion front/rear height adjustment switch
3	—	Front seat backrest recliner switch
4	—	Front seat lumbar support switch

Front Seat - High Specification, Vehicles with Seat Position Memory

E49115

Item	Part Number	Description
1	—	Front seat memory store switch
2	—	Front seat memory switch
3	—	Front seat backrest recliner switch
4	—	Front seat lumbar support switch
5	—	Front seat track and cushion front/rear height adjustment switch

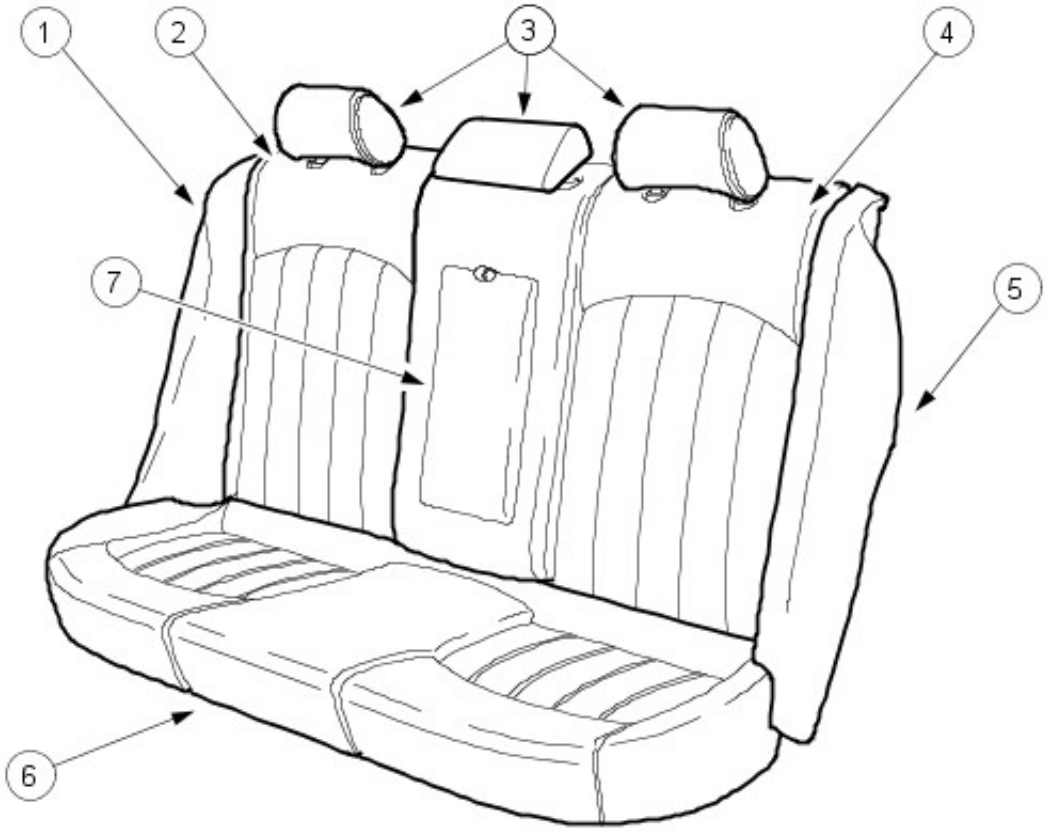
Front Seat - Low Specification



VUJ0004650

Item	Part Number	Description
1	—	Front seat track adjustment locking bar
2	—	Front seat backrest recliner hand wheel
3	—	Front seat cushion height adjustment switch (Driver side only)

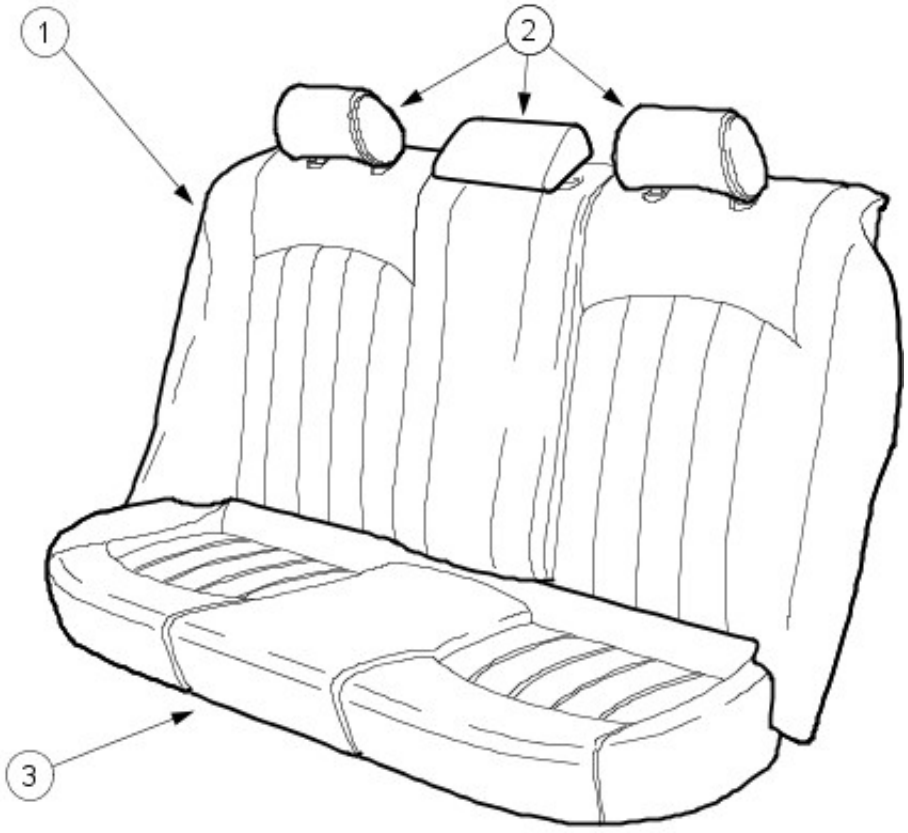
4-Door, Vehicles with 70/30 Split Seat



VUJ0004653

Item	Part Number	Description
1	—	Rear seat backrest bolster - RH
2	—	Rear seat backrest
3	—	Rear seat head restraints (Center rear seat head restraint is optional)
4	—	Rear seat backrest
5	—	Rear seat backrest bolster - LH
6	—	Rear seat cushion
7	—	Rear seat center arm rest

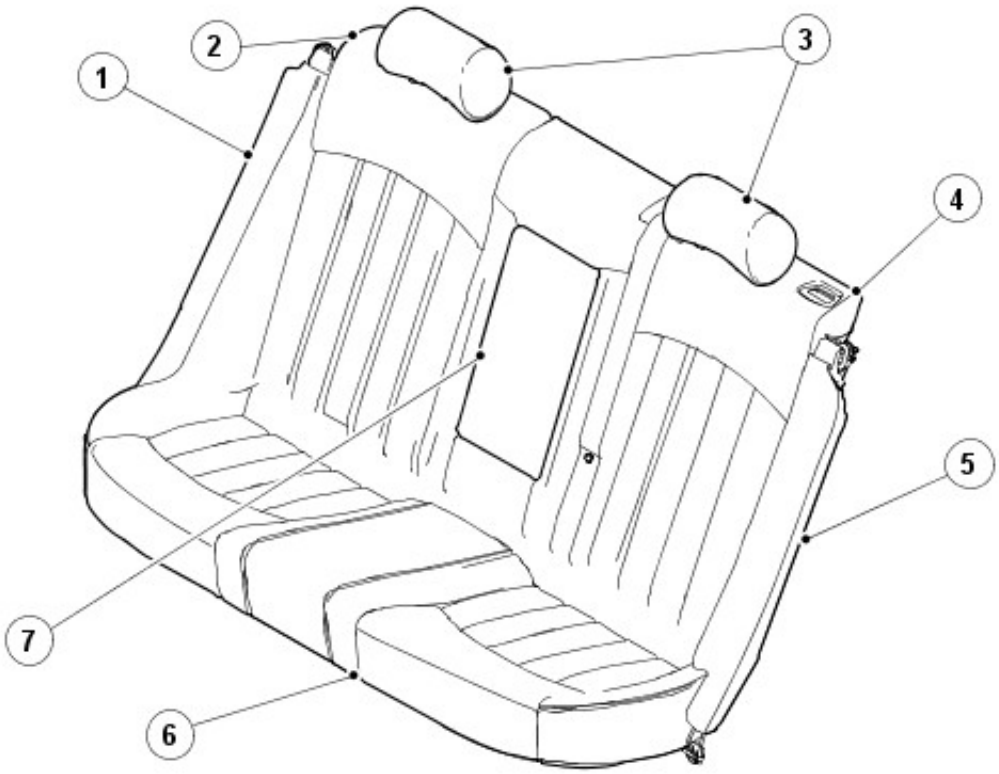
4-Door, Vehicles without 70/30 Split Seat



VUJ0004654

Item	Part Number	Description
1	—	Rear seat backrest
2	—	Rear seat head restraints (Center rear seat head restraint is optional)
3	—	Rear seat cushion

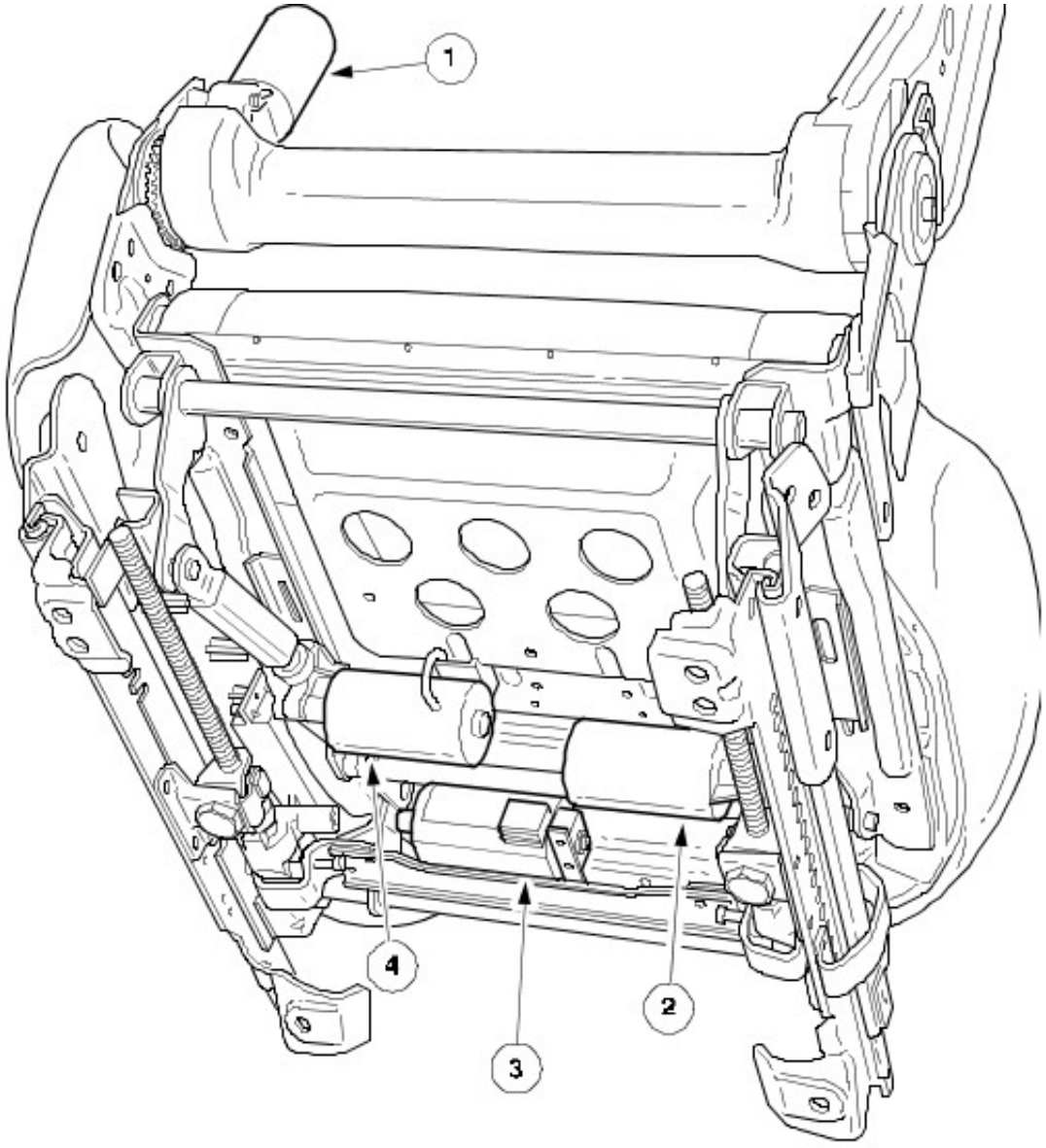
Wagon



E48419

Item	Part Number	Description
1	—	Rear seat backrest bolster - RH
2	—	Rear seat backrest
3	—	Rear seat head restraints (Center rear seat head restraint is optional)
4	—	Rear seat backrest
5	—	Rear seat backrest bolster - LH
6	—	Rear seat cushion
7	—	Rear seat center arm rest

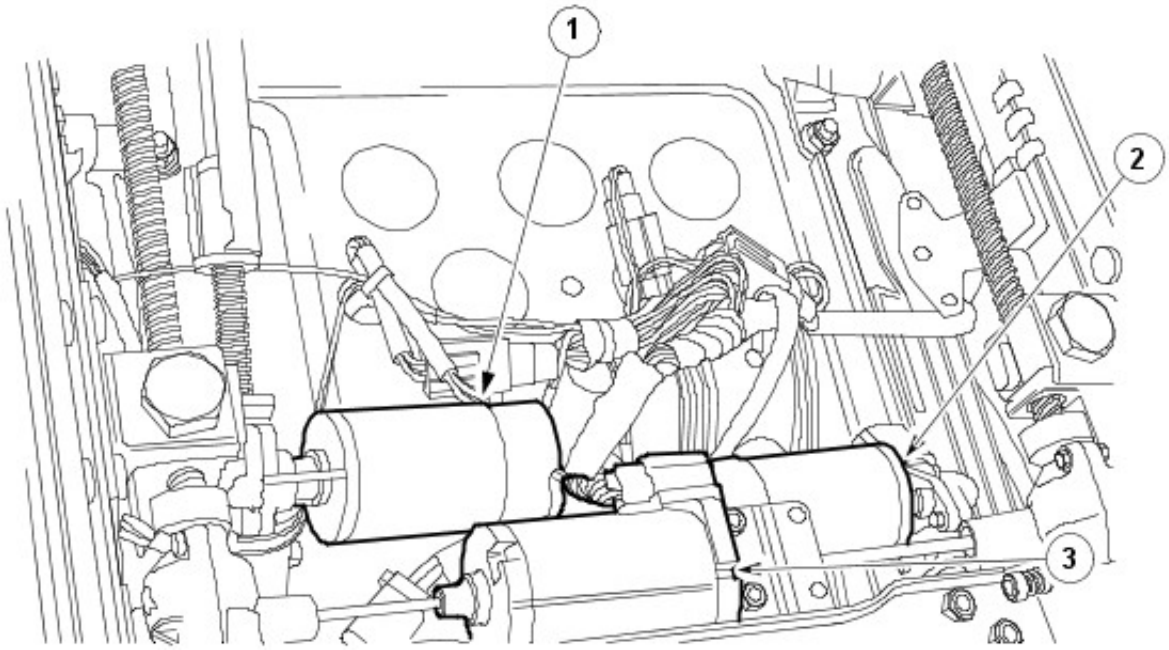
Driver Front Seat - High Specification



VUJ0004655

Item	Part Number	Description
1	—	Front seat backrest recliner motor
2	—	Front seat cushion front height adjustment motor
3	—	Front seat track motor
4	—	Front seat cushion rear height adjustment motor

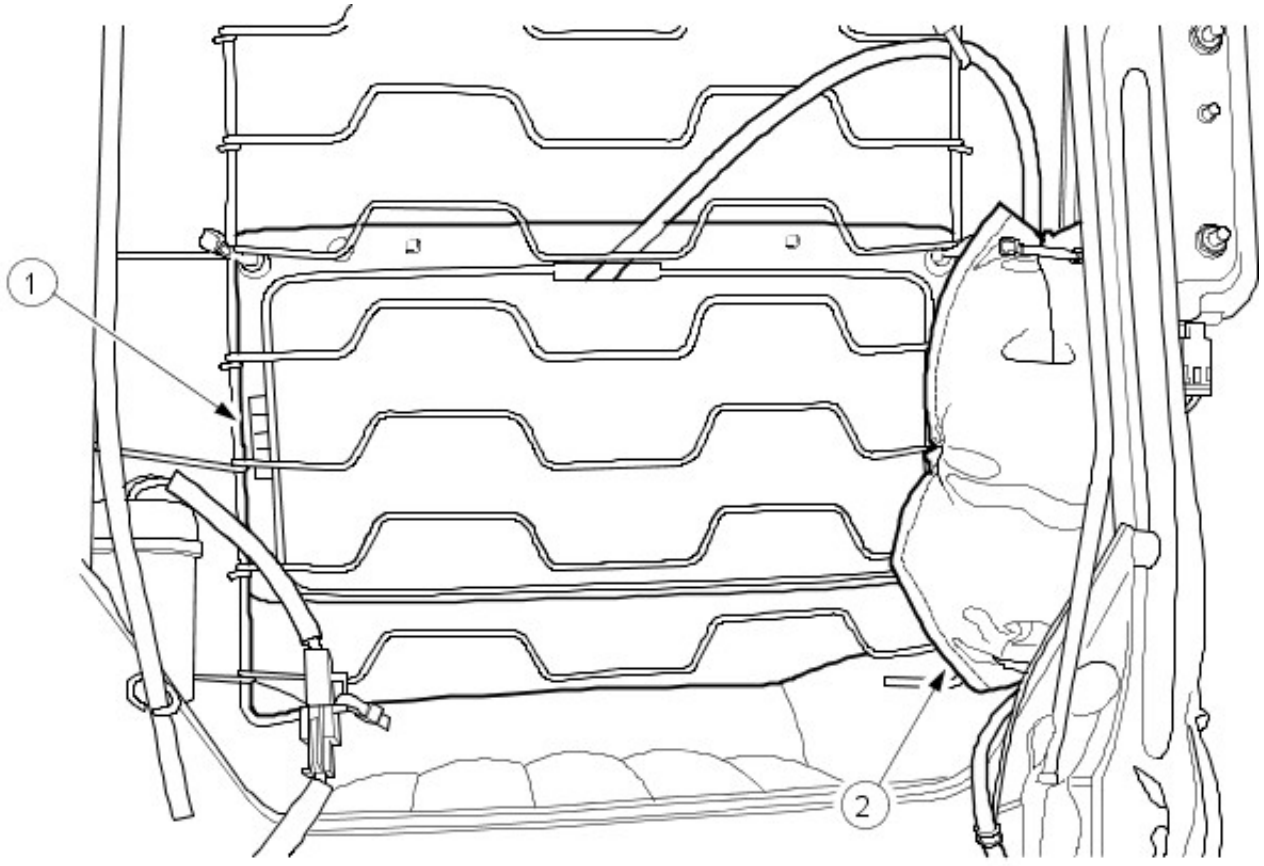
Passenger Front Seat - High Specification



E49990

Item	Part Number	Description
1	—	Front seat cushion rear height adjustment motor
2	—	Front seat cushion front height adjustment motor
3	—	Front seat track motor

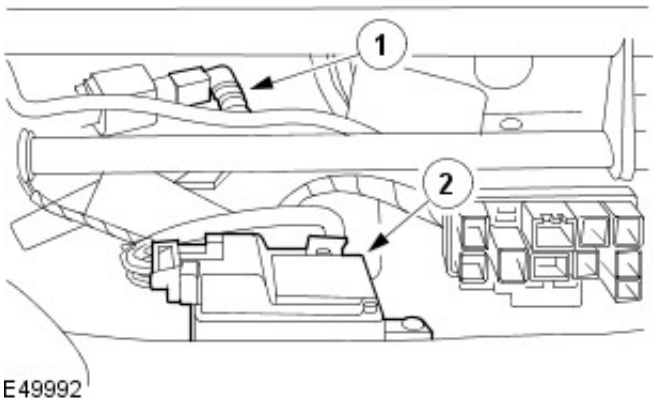
Front Seat Lumbar Support



VUJ0004656

Item	Part Number	Description
1	—	Front seat lumbar support bag
2	—	Front seat lumbar motor

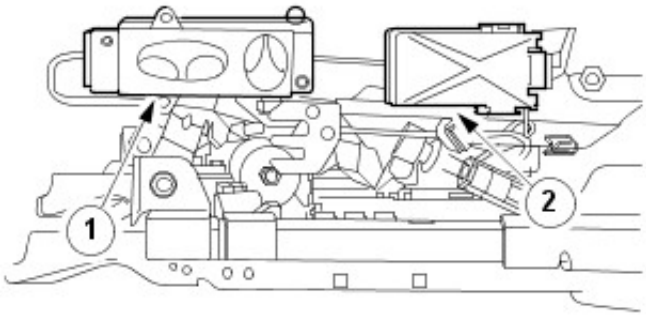
Passenger Front Seat Weight Sensing system



E49992

Item	Part Number	Description
1	—	Front seat weight sensor
2	—	Front seat weight sensor module

Heated Seat Module - High Specification, Vehicles without Seat Position Memory



E50015

Item	Part Number	Description
1	—	Seat Control Switch
2	—	Heated Seat Module

Front Seats

All front seats are fitted with the following features as standard:

- integral side air bags
- head restraints
- safety belt buckle/pretensioner

The driver and passenger seats, although almost identical, have some unique components fitted. The driver seat has a seat track position sensor and the passenger seat has a weight sensing system. In both instances the components form an integral part of the occupant restraint system.
For additional information, refer to: Seat Position Sensor (501-20B Supplemental Restraint System, Removal and Installation) /
Occupant Classification Sensor (501-20B Supplemental Restraint System, Removal and Installation).

The high option front seat has the following features:

- electrically adjustable seat positioning
- electrically adjustable lumbar support (optional)
- heated seat (optional)

The basic option front seat has the following standard features:

- electrically adjustable seat height positioning (driver seat only)
- heated seat (optional)

Seat Position Memory (Optional)

The seat position memory can be programmed for up to three different driver seat configurations and the seat memory switch, located in the seat control switch pack, can be used to store and retrieve the programmed configurations.

The seat position memory front seat has the following features:

- electrically adjustable seat positioning with three position memory
- electrically adjustable lumbar support
- heated seat (optional)

Heated Seats (Optional)

The heated seat system comprises:

- heated seat module (incorporated in the seat control switch pack on vehicles with seat position memory)
- heated seat switches
- backrest heater element
- cushion heater element and thermostat

The heated seat function permits the electrical heating of the seat back and cushion on the driver and front passenger seats. The heating system of each seat is selected by separate switches located at the top of the center console.

Pressing the appropriate switch activates the first stage of a three stage operation of the heated seat function:

- one press of the switch activates the high setting (providing a seat surface temperature of approximately 42°C).
- a second press of the switch activates the low setting (providing a seat surface temperature of approximately 37°C).
- a third press of the switch deactivates the heating function.

Once the heated seat function has been activated, it will persist until one of the following conditions have been satisfied:

- A fixed period of time has expired (10 minutes).
- The engine is not running.
- The function is deactivated by pressing the switch for a third time.
- A malfunction is detected by the heated seat module.

Confirmation that the heated seat function is active is indicated by the illumination of the relevant switch, a yellow light indicates the low temperature setting and a red light indicates the high temperature setting.

Heated Seat Module

The heated seat module is located behind the outer side trim panel of the front seat on vehicles without seat position memory, and is incorporated in to the seat control switch pack on vehicles with seat position memory. The module controls the seat heating function by providing the appropriate response depending on the status of the heated seat switches.

Power Lumbar Support

The power lumbar is a self-contained unit controlled directly by the seat mounted power lumbar switch. On vehicles with seat position memory, the power lumbar switch is incorporated in to the recliner switch in the seat control switch pack.

Rear Seats - 4-Door

Depending on the market specification the rear seats will be one of the following:

- fixed bench style seat
- folding 70/30 split seat

Folding Seatbacks (if equipped)

The rear seatbacks can be folded forward to provide additional luggage space if required. Release handles for each seat back are located in the luggage compartment under the parcel shelf on 4-door vehicles, and on the top of the each seatback on wagon.

Rear Seats - Wagon

The rear seats on wagon are of the folding type with a 70/30 split, fitted with a folding armrest in the left-hand seat backrest. The left-hand seat also incorporates the rear centre safety belt retractor, which has a release cable connected to the rear seat backrest latch to prevent the safety belt from operating if the rear seat backrest is not in the fully latched position.

Head Restraints

The front seat head restraints are adjustable for height and forward and rearward tilt.

The rear seat head restraints can be set to one of two height positions. The optional centre rear seat head restraint (excluding Federal specification vehicles) can also be set to one of two height positions.

Ski Hatch - 4-Door Vehicles only (if equipped)

Skis or similar objects can be stowed in the vehicle by utilizing the two door hatch fitted to the rear seat. The inner door is accessible after folding down the armrest, the second door is accessible from inside the luggage compartment. A sack complete with strap is provided for holding the stored items, the strap connects to the center rear seat belt buckle to secure the sack and contents.

Seating - Seats

Diagnosis and Testing

1. **1.** Verify the customer concern by operating the system.
2. **2.** Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Seat base • Seat backrest • Seat track(s) • Lumbar assembly bag	• Fuse(s) • Wiring harness • Electrical connector(s) • Motor(s) • Switch(es) • Heated seat module • Lumbar assembly pump

3. **3.** If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **4.** If the concern is not visually evident, verify the symptom and refer to the symptom chart.

Symptom Chart

Symptom Chart

Symptom	Possible Sources	Action
The power seat is inoperative - high specification seat only	* Seat control switch.	* CARRY OUT the Seat Control Switch Component Test. REFER to the Wiring Diagrams.
	* Circuit(s). * Motor(s).	* GO to Pinpoint Test A.
The power seat is inoperative - low specification seat only	* Seat control switch.	* CARRY OUT the Seat Control Switch Component Test. REFER to the Wiring Diagrams.
	* Circuit(s). * Motor(s).	* GO to Pinpoint Test B.
The power seat does not move horizontally - high specification seat only	* Seat control switch.	* CARRY OUT the Seat Control Switch Component Test. REFER to the Wiring Diagrams.
	* Circuit(s). * Motor(s).	* GO to Pinpoint Test C.
The power seat does not move vertically - high specification seat only	* Seat control switch.	* CARRY OUT the Seat Control Switch Component Test. REFER to the Wiring Diagrams.
	* Circuit(s). * Motor(s).	* GO to Pinpoint Test D.
The power seat does not recline - high specification seat only	* Seat control switch.	* CARRY OUT the Seat Control Switch Component Test. REFER to the Wiring Diagrams.
	* Circuit(s). * Motor(s).	* GO to Pinpoint Test E.
The power lumbar is inoperative - high specification seat only	* Seat control switch.	* CARRY OUT the Seat Control Switch Component Test. REFER to the Wiring Diagrams.
	* Lumbar assembly bag	* INSPECT the seat lumbar assembly bag. INSTALL a new lumbar assembly as necessary. For additional information, refer to Lumbar Assembly.
	* Circuit(s). * Motor(s).	* GO to Pinpoint Test F.

Pinpoint Tests

• NOTE: Use a digital multimeter for all electrical measurements.

PINPOINT TEST A : THE POWER SEAT IS INOPERATIVE - HIGH SPECIFICATION SEAT	
TEST	DETAILS/RESULTS/ACTIONS

CONDITIONS	
A1: CHECK THE FRONT SEAT OPERATION	
	1 Operate the LH seat control switch
	Is the LH seat inoperative? **Yes** GO to A2. . **No** GO to A4. .
A2: CHECK THE VOLTAGE TO THE SEAT CONTROL SWITCH	
	1 Switch the ignition switch to the OFF position.
	2 Disconnect the seat control switch electrical connector LS1.
	3 Switch the ignition switch to the ON position.
	4 Measure the voltage between the seat control switch electrical connector LS1 pin 6, (OG), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to A3. . **No** REPAIR the circuit. TEST the system for normal operation.
A3: CHECK THE SEAT CONTROL SWITCH GROUND CIRCUIT	
	1 Measure the resistance between the seat control switch electrical connector LS1 pin 1, (B), and ground.
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
A4: CHECK THE VOLTAGE TO THE SEAT CONTROL SWITCH	
	1 Switch the ignition switch to the OFF position.
	2 Disconnect the seat control switch electrical connector RS1.
	3 Switch the ignition switch to the ON position.
	4 Measure the voltage between the seat control switch electrical connector RS1 pin 6, (OY), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to A5. . **No** REPAIR the circuit. TEST the system for normal operation.
A5: CHECK THE SEAT CONTROL SWITCH GROUND CIRCUIT	
	1 Measure the resistance between the seat control switch electrical connector RS1 pin 1, (B), and ground.
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.

PINPOINT TEST B : THE POWER SEAT IS INOPERATIVE - LOW SPECIFICATION SEAT ONLY	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
B1: CHECK THE LH FRONT SEAT HEIGHT ADJUSTMENT MOTOR OPERATION	
	1 Operate the LH seat control switch to the UP position.
	Is the LH seat height adjustment inoperative? **Yes** GO to B2. . **No** GO to B8. .
B2: CHECK THE LH SEAT CONTROL SWITCH POWER SUPPLY	
	1 Disconnect the seat control switch electrical connector LS16.
	2 Measure the voltage between the seat control switch electrical connector LS16 pin 2, (OG), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to B3. . **No** REPAIR the circuit. TEST the system for normal operation.

B3: CHECK THE LH SEAT CONTROL SWITCH GROUND CIRCUIT	
	1 Measure the resistance between the seat control switch electrical connector LS16 pin 3, (B), and ground and between LS16 pin 6, (B), and ground.
	Are the resistances less than 5 ohms? **Yes** GO to B4. . **No** REPAIR the circuit. TEST the system for normal operation.
B4: CHECK THE LH SEAT HEIGHT ADJUSTMENT MOTOR CIRCUITS	
	1 Disconnect the seat height motor electrical connector LS10.
	2 Operate the seat control switch to the UP position.
	3 Measure the voltage between the seat height motor electrical connector LS10 pin 1, (YG), and LS10 pin 2, (WG).
	Is the voltage greater than 10 volts? **Yes** INSTALL a new front seat height motor. TEST the system for normal operation. **No** GO to B5. .
B5: CHECK THE LH SEAT HEIGHT ADJUSTMENT MOTOR CIRCUIT	
	1 Operate the seat control switch to the UP position.
	2 Measure the voltage between the seat height motor electrical connector LS10 pin 1, (YG), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to B6. . **No** GO to B7. .
B6: CHECK THE LH SEAT HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector LS16.
	2 Measure the resistance between the seat height motor electrical connector LS10 pin 2, (WG), and the seat control switch electrical connector LS16 pin 7, (WG).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
B7: CHECK THE LH SEAT HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Measure the resistance between the seat height motor electrical connector LS10 pin 1, (YG), and the seat control switch electrical connector LS16 pin 1, (YG).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
B8: CHECK THE RH SEAT CONTROL SWITCH POWER SUPPLY	
	1 Disconnect the seat control switch electrical connector RS16.
	2 Measure the voltage between the seat control switch electrical connector RS16 pin 2, (OY), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to B9. . **No** REPAIR the circuit. TEST the system for normal operation.
B9: CHECK THE RH SEAT CONTROL SWITCH GROUND CIRCUIT	
	1 Measure the resistance between the seat control switch electrical connector RS16 pin 3, (B), and ground and between RS16 pin 6, (B), and ground.
	Are the resistances less than 5 ohms? **Yes** GO to B10. . **No** REPAIR the circuit. TEST the system for normal operation.
B10: CHECK THE RH SEAT HEIGHT ADJUSTMENT MOTOR CIRCUITS	
	1 Disconnect the seat height motor electrical connector RS10.
	2 Operate the seat control switch to the UP position.
	3 Measure the voltage between the seat height motor electrical connector RS10 pin 1, (WG), and RS10 pin 2, (YG).

	Is the voltage greater than 10 volts? **Yes** INSTALL a new front seat height motor. TEST the system for normal operation. **No** GO to B11. .
B11: CHECK THE RH SEAT HEIGHT ADJUSTMENT MOTOR CIRCUIT	
	1 Operate the seat control switch to the UP position.
	2 Measure the voltage between the seat height motor electrical connector RS10 pin 1, (WG), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to B12. . **No** GO to B13. .
B12: CHECK THE RH SEAT HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector RS16.
	2 Measure the resistance between the seat height motor electrical connector RS10 pin 2, (YG), and the seat control switch electrical connector RS16 pin 7, (YG).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
B13: CHECK THE RH SEAT HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Measure the resistance between the seat height motor electrical connector RS10 pin 1, (WG), and the seat control switch electrical connector RS16 pin 1, (WG).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.

PINPOINT TEST C : THE POWER SEAT DOES NOT MOVE HORIZONTALLY	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
C1: CHECK THE LH FRONT SEAT TRACK MOTOR OPERATION	
	1 Operate the LH seat control switch to the REARWARD track position.
	Is the LH seat track inoperative? **Yes** GO to C2. . **No** GO to C6. .
C2: CHECK THE LH FRONT SEAT TRACK MOTOR CIRCUIT	
	1 Disconnect the seat track motor electrical connector LS4.
	2 Operate the seat control switch to the REARWARD track position.
	3 Measure the voltage between the seat track motor electrical connector LS4 pin 2, (WG), and LS4 pin 1, (YG).
	Is the voltage greater than 10 volts? **Yes** INSTALL a new front seat track motor. For additional information, refer to Motor—Front Seat Track. **No** GO to C3. .
C3: CHECK THE LH FRONT SEAT TRACK MOTOR CIRCUIT	
	1 Operate the seat control switch to the REARWARD track position.
	2 Measure the voltage between the seat track motor electrical connector LS4 pin 2, (WG), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to C4. . **No** GO to C5. .
C4: CHECK THE LH FRONT SEAT TRACK MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector LS1.
	2 Measure the resistance between the seat track motor electrical connector LS4 pin 1, (YG), and the seat control switch electrical connector LS1 pin 3, (YG).

	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
C5: CHECK THE LH FRONT SEAT TRACK MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector LS1.
	2 Measure the resistance between the seat track motor electrical connector LS4 pin 2, (WG), and the seat control switch electrical connector LS1 pin 11, (WG).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
C6: CHECK THE RH FRONT SEAT TRACK MOTOR CIRCUIT	
	1 Disconnect the seat track motor electrical connector RS4.
	2 Operate the seat control switch to the REARWARD track position.
	3 Measure the voltage between the seat track motor electrical connector RS4 pin 2, (YG), and RS4 pin 1, (WG).
	Is the voltage greater than 10 volts? **Yes** INSTALL a new front seat track motor. For additional information, refer to Motor—Front Seat Track. **No** GO to C7. .
C7: CHECK THE RH FRONT SEAT TRACK MOTOR CIRCUIT	
	1 Operate the seat control switch to the REARWARD track position.
	2 Measure the voltage between the seat track motor electrical connector RS4 pin 2, (YG), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to C8. . **No** GO to C9. .
C8: CHECK THE RH FRONT SEAT TRACK MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector RS1.
	2 Measure the resistance between the seat track motor electrical connector RS4 pin 1, (WG), and the seat control electrical connector switch RS1 pin 3, (WG).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
C9: CHECK THE RH FRONT SEAT TRACK MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector RS1.
	2 Measure the resistance between the seat track motor electrical connector RS4 pin 2, (YG), and the seat control switch electrical connector RS1 pin 11, (YG).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.

PINPOINT TEST D : THE POWER SEAT DOES NOT MOVE VERTICALLY - HIGH SPECIFICATION SEAT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
D1: CHECK THE LH FRONT SEAT CUSHION HEIGHT ADJUSTMENT MOTORS FOR CORRECT OPERATION	
	1 Operate the LH seat control switch to the seat cushion front/rear height adjustment position.
	Is the LH seat cushion height adjustment inoperative? **Yes** GO to D2. . **No** GO to D11. .
D2: CHECK THE LH FRONT SEAT CUSHION FRONT HEIGHT ADJUSTMENT MOTOR OPERATION	
	1 Operate the LH seat control switch to the seat cushion front height adjustment position.
	Is the LH seat cushion front height adjustment inoperative? **Yes**

	Yes GO to D3. . **No** GO to D7. .
D3: CHECK THE LH FRONT SEAT CUSHION FRONT HEIGHT ADJUSTMENT MOTOR CIRCUITS	
	1 Disconnect the seat cushion front height adjustment motor electrical connector LS5.
	2 Operate the seat control switch to the FRONT HEIGHT adjustment UP position.
	3 Measure the voltage between the seat cushion front height adjustment motor electrical connector LS5 pin 1, (YB), and LS5 pin 2, (WB).
	Is the voltage greater than 10 volts? **Yes** INSTALL a new seat cushion front height adjustment motor. For additional information, refer to Motor—Front Seat Cushion Front Height Adjustment. **No** GO to D4. .
D4: CHECK THE LH FRONT SEAT CUSHION FRONT HEIGHT ADJUSTMENT MOTOR CIRCUIT	
	1 Operate the seat control switch to the FRONT HEIGHT adjustment UP position.
	2 Measure the voltage between the seat cushion front height adjustment motor electrical connector LS5 pin 1, (YB), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to D5. . **No** GO to D6. .
D5: CHECK THE LH FRONT SEAT CUSHION FRONT HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector LS1.
	2 Measure the resistance between the seat cushion front height adjustment motor electrical connector LS5 pin 2, (WB), and the seat control switch electrical connector LS1 pin 5, (WB).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
D6: CHECK THE LH FRONT SEAT CUSHION FRONT HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector LS1.
	2 Measure the resistance between the seat cushion front height adjustment motor electrical connector LS5 pin 1, (YB), and the seat control switch electrical connector LS1 pin 4, (YB).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
D7: CHECK THE LH FRONT SEAT CUSHION REAR HEIGHT ADJUSTMENT MOTOR CIRCUITS	
	1 Disconnect the seat cushion rear height adjustment motor electrical connector LS2.
	2 Operate the seat control switch to the REAR HEIGHT adjustment UP position.
	3 Measure the voltage between the seat cushion rear height adjustment motor electrical connector LS2 pin 1, (YU), and LS2 pin 2, (WR).
	Is the voltage greater than 10 volts? **Yes** INSTALL a new seat cushion rear height adjustment motor. For additional information, refer to Motor—Front Seat Cushion Rear Height Adjustment. **No** GO to D8. .
D8: CHECK THE LH FRONT SEAT CUSHION REAR HEIGHT ADJUSTMENT MOTOR CIRCUIT	
	1 Operate the seat control switch to the REAR HEIGHT adjustment UP position.
	2 Measure the voltage between the seat cushion rear height adjustment motor electrical connector LS2 pin 1, (YU), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to D9. . **No** GO to D10. .
D9: CHECK THE LH FRONT SEAT CUSHION REAR HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector LS1.
	2 Measure the resistance between the seat cushion rear height adjustment motor electrical connector LS5 pin 2, (WR), and the seat control switch electrical connector LS1 pin 8, (WR).
	Is the resistance less than 5 ohms?

	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
D10: CHECK THE LH FRONT SEAT CUSHION REAR HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector LS1.
	2 Measure the resistance between the seat cushion rear height adjustment motor electrical connector LS2 pin 1, (YU), and the seat control switch electrical connector LS1 pin 9, (YU).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
D11: CHECK THE RH FRONT SEAT CUSHION FRONT HEIGHT ADJUSTMENT MOTOR OPERATION	
	1 Operate the RH seat control switch to the seat cushion front height adjustment position.
	Is the RH seat cushion front height adjustment inoperative? **Yes** GO to D12. . **No** GO to D16. .
D12: CHECK THE RH FRONT SEAT CUSHION FRONT HEIGHT ADJUSTMENT MOTOR CIRCUITS	
	1 Disconnect the seat cushion front height adjustment motor electrical connector RS5.
	2 Operate the seat control switch to the FRONT HEIGHT adjustment UP position.
	3 Measure the voltage between the seat cushion front height adjustment motor electrical connector RS5 pin 1, (WB), and RS5 pin 2, (YB).
	Is the voltage greater than 10 volts? **Yes** INSTALL a new seat cushion front height adjustment motor. For additional information, refer to Motor—Front Seat Cushion Front Height Adjustment. **No** GO to D13. .
D13: CHECK THE RH FRONT SEAT CUSHION FRONT HEIGHT ADJUSTMENT MOTOR CIRCUIT	
	1 Operate the seat control switch to the FRONT HEIGHT adjustment UP position.
	2 Measure the voltage between the seat cushion front height adjustment motor electrical connector RS5 pin 1, (WB), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to D14. . **No** GO to D15. .
D14: CHECK THE RH FRONT SEAT CUSHION FRONT HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector RS1.
	2 Measure the resistance between the seat cushion front height adjustment motor electrical connector RS5 pin 2, (YB), and the seat control switch electrical connector RS1 pin 5, (YB).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
D15: CHECK THE RH FRONT SEAT CUSHION FRONT HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector RS1.
	2 Measure the resistance between the seat cushion front height adjustment motor electrical connector RS5 pin 1, (WB), and the seat control switch electrical connector RS1 pin 4, (WB).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
D16: CHECK THE RH FRONT SEAT CUSHION REAR HEIGHT ADJUSTMENT MOTOR CIRCUITS	
	1 Disconnect the seat cushion rear height adjustment motor electrical connector RS2.
	2 Operate the seat control switch to the REAR HEIGHT adjustment UP position.
	3 Measure the voltage between the seat cushion rear height adjustment motor electrical connector RS2 pin 1, (WR), and RS2 pin 2, (YU).
	Is the voltage greater than 10 volts? **Yes** INSTALL a new seat cushion rear height adjustment motor. For additional information, refer to

	INSTALL a new seat cushion rear height adjustment motor. For additional information, refer to Motor—Front Seat Cushion Rear Height Adjustment. **No** GO to D17. .
D17: CHECK THE RH FRONT SEAT CUSHION REAR HEIGHT ADJUSTMENT MOTOR CIRCUIT	
	1 Operate the seat control switch to the REAR HEIGHT adjustment UP position.
	2 Measure the voltage between the seat cushion rear height adjustment motor electrical connector RS2 pin 1, (WR), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to D18. . **No** GO to D19. .
D18: CHECK THE RH FRONT SEAT CUSHION REAR HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector RS1.
	2 Measure the resistance between the seat cushion rear height adjustment motor electrical connector RS2 pin 2, (YU), and the seat control switch electrical connector RS1 pin 8, (YU).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
D19: CHECK THE RH FRONT SEAT CUSHION REAR HEIGHT ADJUSTMENT MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector RS1.
	2 Measure the resistance between the seat cushion rear height adjustment motor electrical connector RS2 pin 1, (WR), and the seat control switch electrical connector RS1 pin 9, (WR).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.

PINPOINT TEST E : THE POWER SEAT DOES NOT RECLINE - HIGH SPECIFICATION SEAT ONLY	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
E1: CHECK THE LH FRONT SEAT BACKREST MOTOR FOR CORRECT OPERATION	
	1 Operate the LH seat control switch to the REARWARD RECLINE position.
	Is the LH seat recline adjustment inoperative? **Yes** GO to E2. . **No** GO to E6. .
E2: CHECK THE LH FRONT SEAT BACKREST MOTOR CIRCUITS	
	1 Disconnect the seat backrest motor electrical connector LS6.
	2 Operate the seat control switch to the REARWARD RECLINE position.
	3 Measure the voltage between the seat backrest motor electrical connector LS6 pin 2, (WR), and LS6 pin 1, (YR).
	Is the voltage greater than 10 volts? **Yes** INSTALL a new seat backrest motor. For additional information, refer to Motor—Front Seat Backrest. **No** GO to E3. .
E3: CHECK THE LH FRONT SEAT BACKREST MOTOR CIRCUIT	
	1 Operate the seat control switch to the REARWARD RECLINE position.
	2 Measure the voltage between the seat backrest motor electrical connector LS6 pin 2, (WR), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to E4. . **No** GO to E5. .
E4: CHECK THE LH FRONT SEAT BACKREST MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector LS1.
	2 Measure the resistance between the seat backrest motor electrical connector LS6 pin 1, (YR), and the seat control switch electrical connector LS1 pin 7, (YR)

	the seat control switch electrical connector LS1 pin 7, (YR).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
E5: CHECK THE LH FRONT SEAT BACKREST MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector LS1.
	2 Measure the resistance between the seat backrest motor electrical connector LS6 pin 2, (WR), and the seat control switch electrical connector LS1 pin 12, (WR).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
E6: CHECK THE RH FRONT SEAT BACKREST MOTOR CIRCUITS	
	1 Disconnect the seat backrest motor electrical connector RS6.
	2 Operate the seat control switch to the REARWARD RECLINE position.
	3 Measure the voltage between the seat backrest motor electrical connector RS6 pin 2, (YR), and RS6 pin 1, (WR).
	Is the voltage greater than 10 volts? **Yes** INSTALL a new seat backrest motor. For additional information, refer to Motor—Front Seat Backrest. **No** GO to E7. .
E7: CHECK THE RH FRONT SEAT BACKREST MOTOR CIRCUIT	
	1 Operate the seat control switch to the REARWARD RECLINE position.
	2 Measure the voltage between the seat backrest motor electrical connector RS6 pin 2, (YR), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to E8. . **No** GO to E9. .
E8: CHECK THE RH FRONT SEAT BACKREST MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector RS1.
	2 Measure the resistance between the seat backrest motor electrical connector RS6 pin 1, (WR), and the seat control switch electrical connector RS1 pin 7, (WR).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.
E9: CHECK THE RH FRONT SEAT BACKREST MOTOR CIRCUIT FOR OPEN	
	1 Disconnect the seat control switch electrical connector RS1.
	2 Measure the resistance between the seat backrest motor electrical connector RS6 pin 2, (YR), and the seat control switch electrical connector RS1 pin 12, (YR).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat control switch. For additional information, refer to Seat Control Switch. **No** REPAIR the circuit. TEST the system for normal operation.

PINPOINT TEST F : THE POWER LUMBAR IS INOPERATIVE	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
F1: CHECK THE LH FRONT SEAT LUMBAR ASSEMBLY OPERATION - HIGH SPECIFICATION SEAT ONLY	
	1 Operate the LH seat lumbar control switch to the INFLATE position.
	Is the LH seat lumbar adjustment inoperative? **Yes** GO to F2. . **No** GO to F10. .
F2: CHECK THE LH SEAT LUMBAR CONTROL SWITCH POWER SUPPLY	
	1 Disconnect the seat control switch electrical connector LS16.
	2 Measure the voltage between the seat control switch electrical connector LS16 pin 2, (OG), and

	ground.
	Is the voltage greater than 10 volts? **Yes** GO to F3. . **No** REPAIR the circuit. TEST the system for normal operation.
F3: CHECK THE LH SEAT LUMBAR CONTROL SWITCH GROUND CIRCUIT	
	1 Measure the resistance between the seat control switch electrical connector LS16 pin 3, (B), and ground and between LS16 pin 6, (B), and ground.
	Are the resistances less than 5 ohms? **Yes** GO to F4. . **No** REPAIR the circuit. TEST the system for normal operation.
F4: CHECK THE LH SEAT LUMBAR ASSEMBLY CIRCUITS	
	1 Disconnect the seat lumbar assembly electrical connector LS19.
	2 Operate the seat lumbar control switch to the INFLATE position.
	3 Measure the voltage between the seat lumbar motor electrical connector LS19 pin 1, (YG), and LS19 pin 2, (B).
	Is the voltage greater than 10 volts? **Yes** GO to F5. . **No** GO to F7. .
F5: CHECK THE LH SEAT LUMBAR ASSEMBLY DEFLATE CIRCUIT	
	1 Operate the seat lumbar control switch to the DEFLATE position.
	2 Measure the voltage between the seat lumbar assembly electrical connector LS19 pin 3, (WG), and ground.
	Is the voltage greater than 10 volts? **Yes** INSTALL a new lumbar assembly. For additional information, refer to Lumbar Assembly. **No** GO to F6. .
F6: CHECK THE LH SEAT LUMBAR ASSEMBLY DEFLATE CIRCUIT FOR OPEN	
	1 Disconnect the seat lumber control switch electrical connector LS16.
	2 Measure the resistance between the seat lumbar assembly electrical connector LS19 pin 3, (WG), and the seat lumbar control switch electrical connector LS16 pin 7, (WG).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat lumbar control switch. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
F7: CHECK THE LH SEAT LUMBAR ASSEMBLY INFLATE CIRCUIT	
	1 Operate the seat lumbar control switch to the INFLATE position.
	2 Measure the voltage between the seat lumbar motor electrical connector LS19 pin 1, (YG), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to F8. . **No** GO to F9. .
F8: CHECK THE LH SEAT LUMBAR ASSEMBLY GROUND CIRCUIT	
	1 Measure the resistance between the seat lumbar assembly electrical connector LS19 pin 2, (B), and ground.
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat lumbar control switch. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
F9: CHECK THE LH SEAT LUMBAR ASSEMBLY INFLATE CIRCUIT	
	1 Disconnect the seat lumber control switch electrical connector LS16.
	2 Measure the resistance between the seat lumbar assembly electrical connector LS19 pin 1, (YG), and the seat lumbar control switch electrical connector LS16 pin 1, (YG).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat lumbar control switch. TEST the system for normal operation.

	No REPAIR the circuit. TEST the system for normal operation.
F10: CHECK THE RH SEAT LUMBAR CONTROL SWITCH POWER SUPPLY	
	1 Disconnect the seat control switch electrical connector RS16.
	2 Measure the voltage between the seat control switch electrical connector RS16 pin 2, (OY), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to F11. . **No** REPAIR the circuit. TEST the system for normal operation.
F11: CHECK THE RH SEAT LUMBAR CONTROL SWITCH GROUND CIRCUIT	
	1 Measure the resistance between the seat control switch electrical connector RS16 pin 3, (B), and ground and between RS16 pin 6, (B), and ground.
	Are the resistances less than 5 ohms? **Yes** GO to F12. . **No** REPAIR the circuit. TEST the system for normal operation.
F12: CHECK THE RH SEAT LUMBAR ASSEMBLY CIRCUITS	
	1 Disconnect the seat lumbar assembly electrical connector RS19.
	2 Operate the seat lumbar control switch to the INFLATE position.
	3 Measure the voltage between the seat lumbar motor electrical connector RS19 pin 1, (WG), and RS19 pin 2, (B).
	Is the voltage greater than 10 volts? **Yes** GO to F13. . **No** GO to F15. .
F13: CHECK THE RH SEAT LUMBAR ASSEMBLY DEFLATE CIRCUIT	
	1 Operate the seat lumbar control switch to the DEFLATE position.
	2 Measure the voltage between the seat lumbar assembly electrical connector RS19 pin 3, (YG), and ground.
	Is the voltage greater than 10 volts? **Yes** INSTALL a new lumbar assembly. For additional information, refer to Lumbar Assembly. **No** GO to F14. .
F14: CHECK THE RH SEAT LUMBAR ASSEMBLY DEFLATE CIRCUIT FOR OPEN	
	1 Disconnect the seat lumber control switch electrical connector RS16.
	2 Measure the resistance between the seat lumbar assembly electrical connector RS19 pin 3, (YG), and the seat lumbar control switch electrical connector RS16 pin 7, (YG).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat lumbar control switch. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
F15: CHECK THE RH SEAT LUMBAR ASSEMBLY INFLATE CIRCUIT	
	1 Operate the seat lumbar control switch to the INFLATE position.
	2 Measure the voltage between the seat lumbar motor electrical connector RS19 pin 1, (WG), and ground.
	Is the voltage greater than 10 volts? **Yes** GO to F16. . **No** GO to F17. .
F16: CHECK THE RH SEAT LUMBAR ASSEMBLY GROUND CIRCUIT	
	1 Measure the resistance between the seat lumbar assembly electrical connector RS19 pin 2, (B), and ground.
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat lumbar control switch. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.
F17: CHECK THE RH SEAT LUMBAR ASSEMBLY INFLATE CIRCUIT	
	1 Disconnect the seat lumber control switch electrical connector RS16.

	2 Measure the resistance between the seat lumbar assembly electrical connector RS19 pin 1, (WG), and the seat lumbar control switch electrical connector RS16 pin 1, (WG).
	Is the resistance less than 5 ohms? **Yes** INSTALL a new seat lumbar control switch. TEST the system for normal operation. **No** REPAIR the circuit. TEST the system for normal operation.

Seating - Front Seat
Removal and Installation

Removal

• WARNINGS:

An RCM module only requires replacement if the system has incurred five separate deployments. At no time change an RCM for less than five separate deployments.

Always wear safety glasses when repairing an air bag supplemental restraint system (SRS) vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

Do not set a live air bag module down with the trim cover face down. Failure to follow this instruction may result in personal injury.

After deployment, the air bag surface can contain deposits of sodium hydroxide, a product of the gas generant combustion that is irritating to the skin. Wash your hands with soap and water afterwards. Failure to follow this instruction may result in personal injury.

Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

Air bag modules with discolored or damaged trim covers must be replaced.

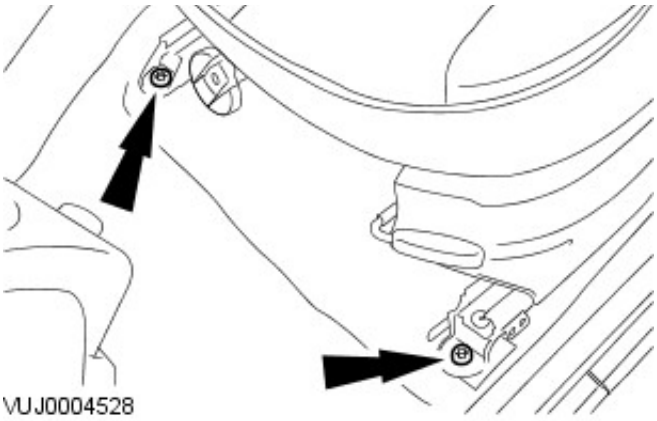
Vehicle sensor orientation is critical for correct system operation. If a vehicle equipped with an air bag supplemental restraint system (SRS) is involved in a collision, inspect the sensor mounting bracket and wiring pigtail for deformation. If damaged, install a new sensor whether or not the air bag is deployed. If the body work is damaged this will have to be addressed.

To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag supplemental restraint system (SRS) components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

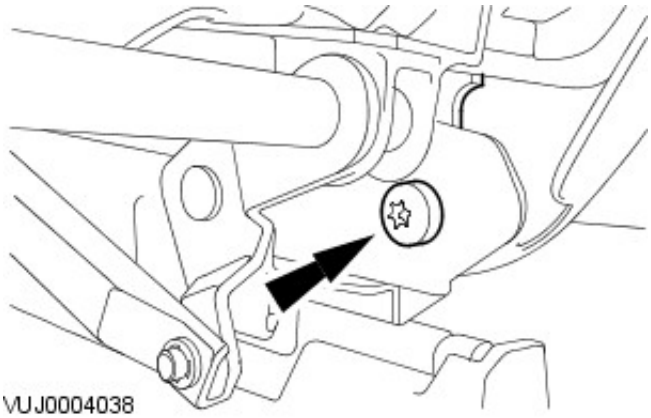
• NOTE: When installing a new air bag module, a prepaid return postcard is provided with the replacement air bag module. The serial number for the new part and the vehicle identification number (VIN) must be recorded and sent to Jaguar Cars Ltd.

1. Inspect the front seat to check if a front seat stabilization spring is installed. If a front seat stabilization spring is installed. REFER to SERVICE ACTION S948 before carrying out any work on the seat.
2. Move the seat fully rearwards.
3. Remove the seat front retaining bolts.

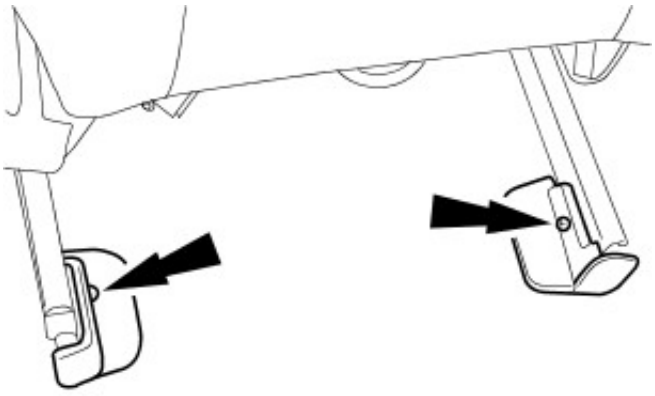

VUJ0004528

4. Move the seat fully forwards.

5. Detach the safety belt lower anchor from the underside of the seat.

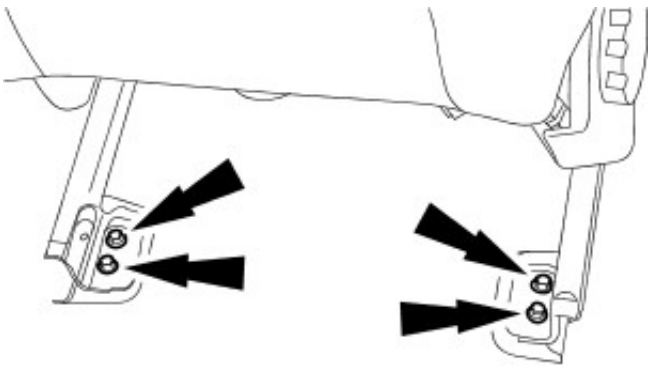

VUJ0004038

6. Remove the seat rear retaining bolt covers.


VUJ0004529

7. Remove the seat.

- Remove the retaining bolts.


VUJ0004530

8. Disconnect the battery ground cable. For additional information, refer to
For additional information, refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General

Procedures).

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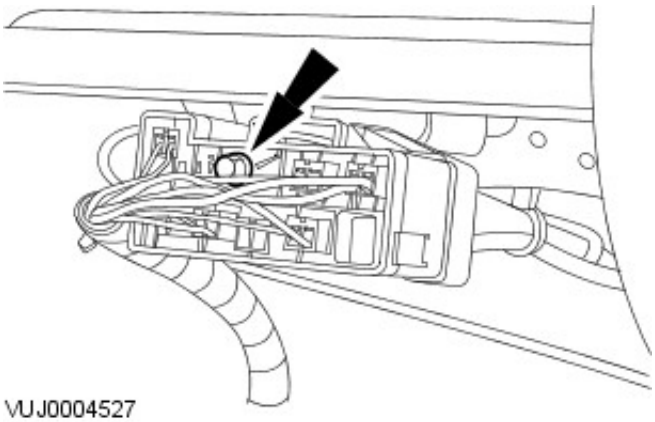
9. Disconnect the electrical connector.

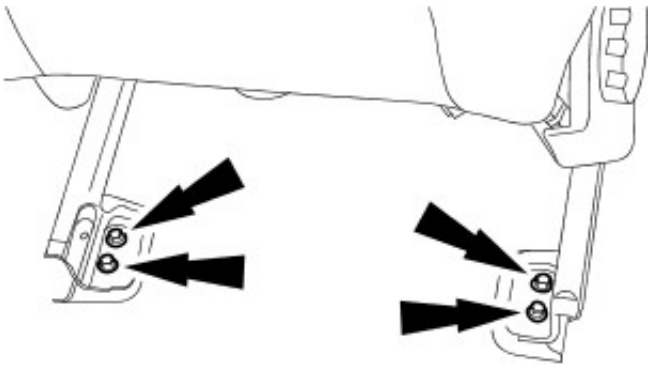


VUJ0004527

Installation

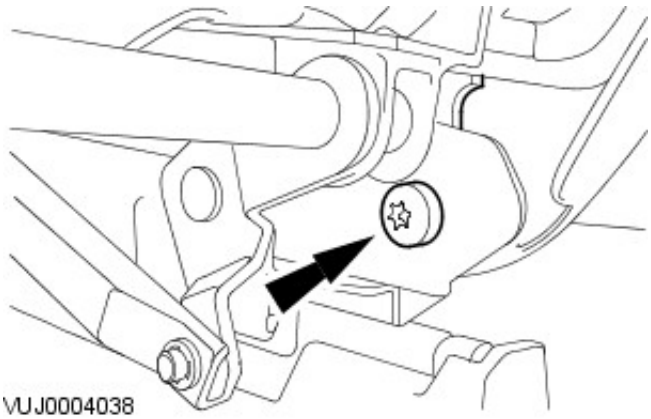
1. To install, reverse the removal procedure.

- Tighten to 20 Nm.



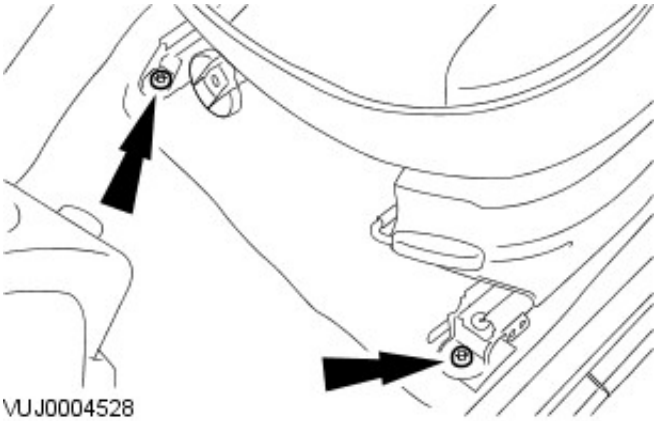
VUJ0004530

2. Tighten to 55 Nm.



VUJ0004038

3. Tighten to 20 Nm.

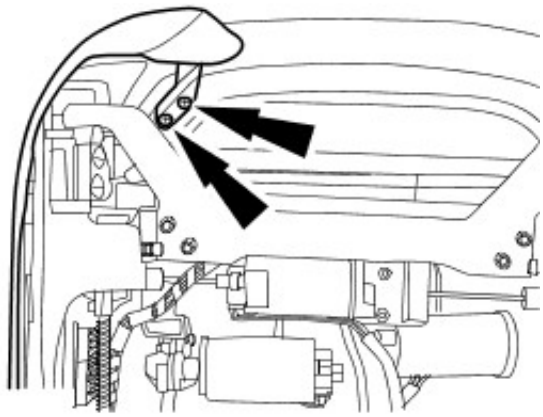


VUJ0004528

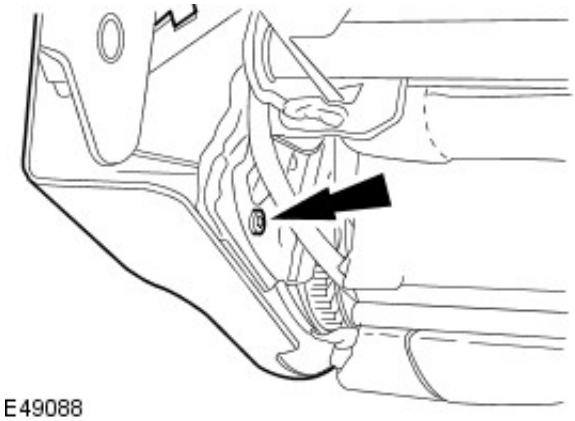
Seating - Front Seat Backrest
Removal and Installation

Removal

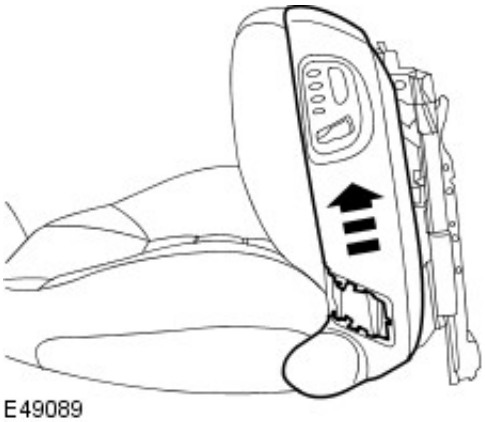
1. Remove the front seat.
   For additional information, refer to: Front Seat (501-10 Seating, Removal and Installation).
2. Detach the outer side trim panel.


E49087

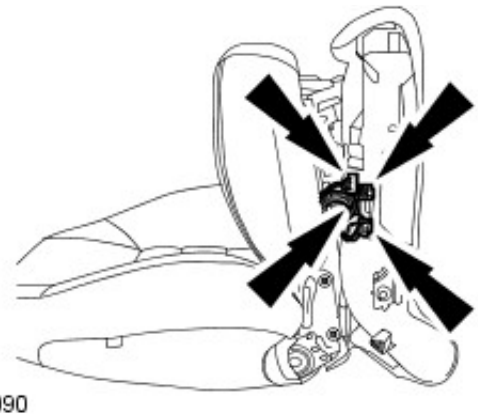
3. Detach the outer side trim panel.


E49088

4. Detach the outer side trim panel.

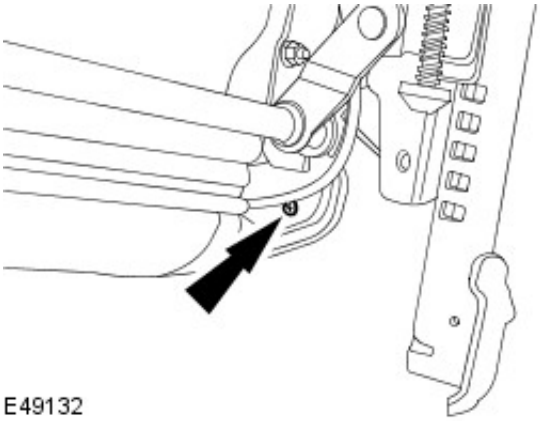

E49089

5. Remove the outer side trim panel.
   - Disconnect the electrical connectors.



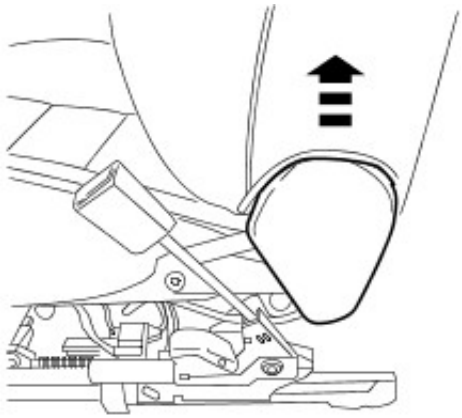
E49090

6. Detach the inner side trim panel.



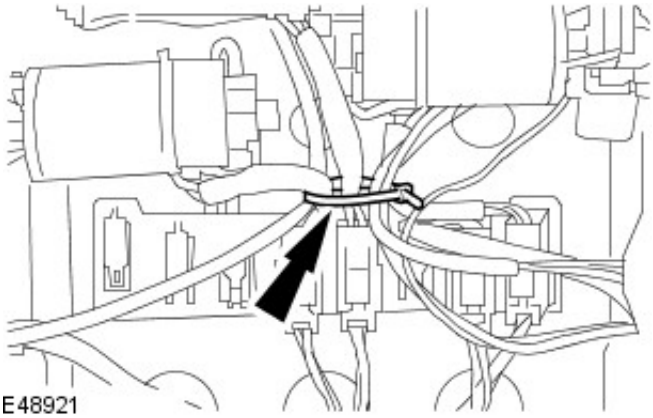
E49132

7. Remove the inner side trim panel.



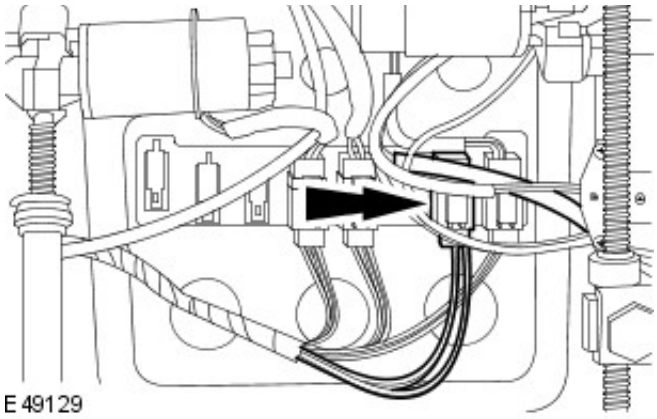
E49133

8. Remove and discard the cable tie.

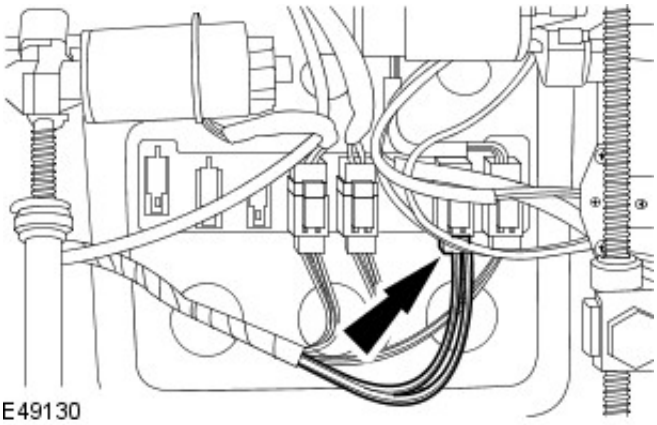


E48921

9. Detach the recliner motor electrical connector.

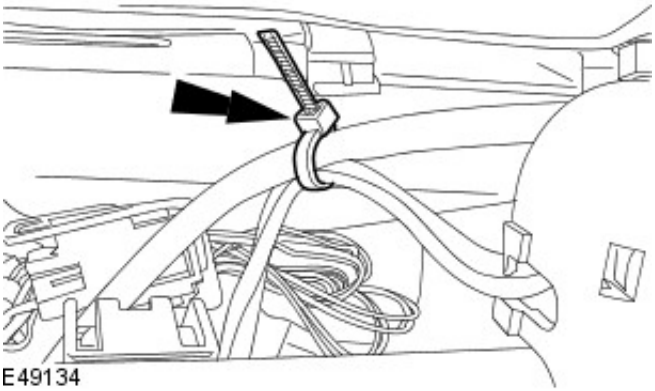

E49129

10. Disconnect the recliner motor electrical connector.

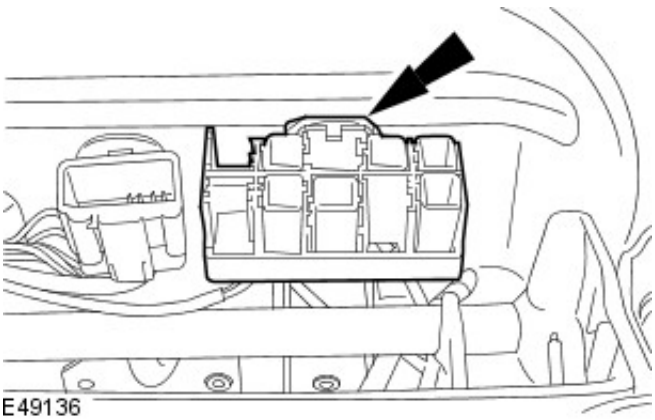

E49130

11. Detach the recliner motor wiring harness.

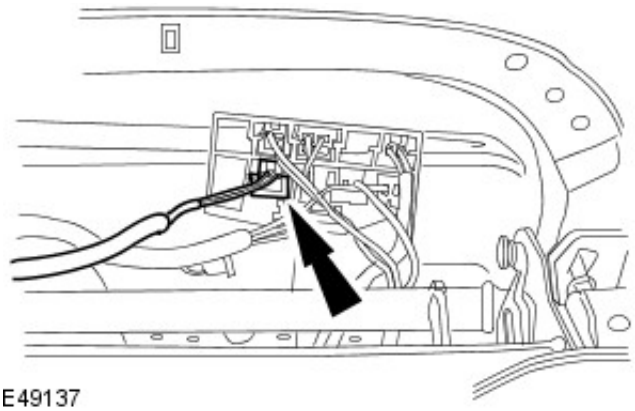
- Remove and discard the retaining clip.


E49134

12. Detach the seat harness electrical connector.

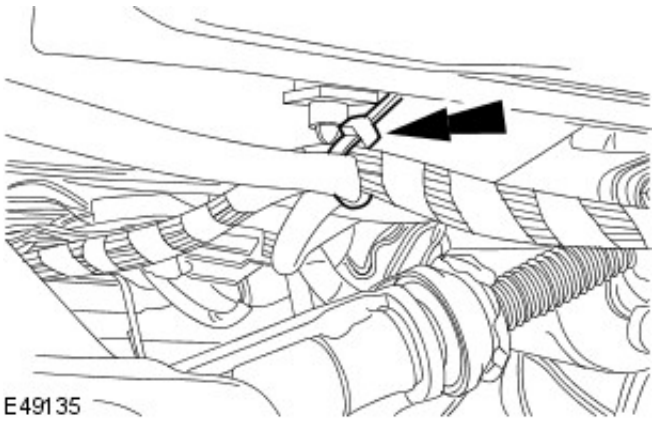

E49136

13. Disconnect the side air bag module electrical connector.

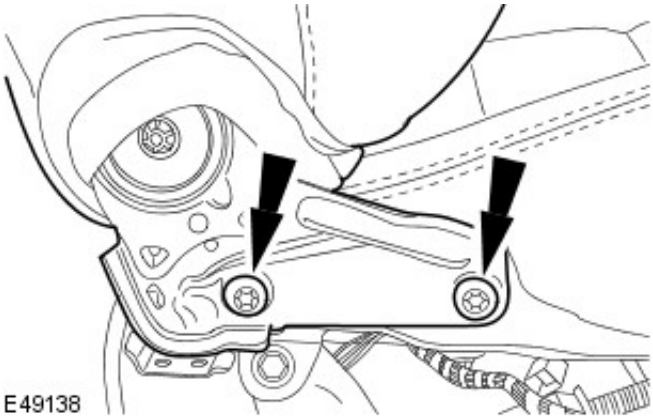

E49137

14. Detach the side airbag module wiring harness.

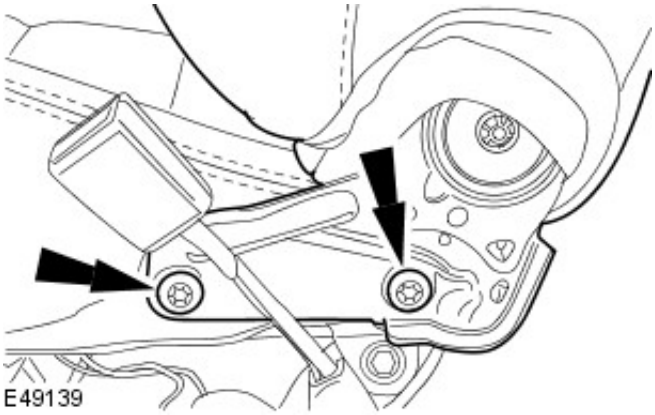
- Remove and discard the retaining clip.


E49135

15. Remove the front seat backrest retaining bolts.


E49138

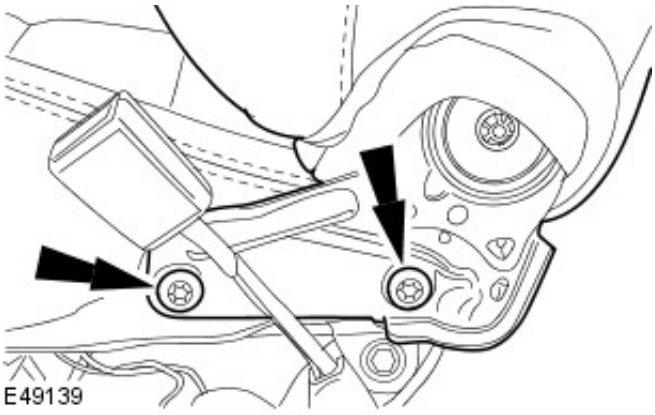
16. Remove the front seat backrest.

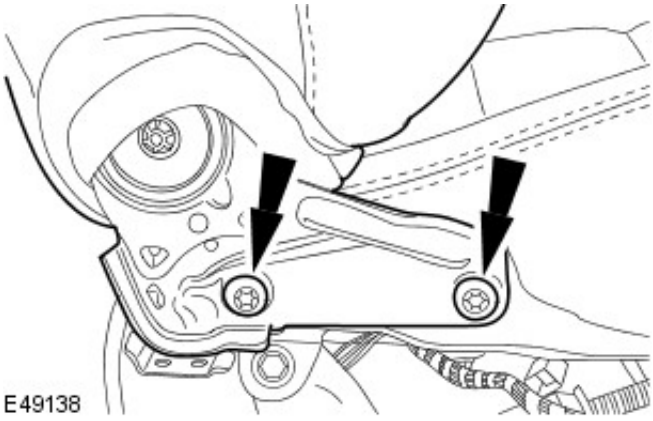

E49139

Installation

1. To install, reverse the removal procedure

- Tighten to 25 Nm.


E49139


E49138

2. Tighten to 25 Nm.

Seating - Front Seat Cushion

Removal and Installation

Removal

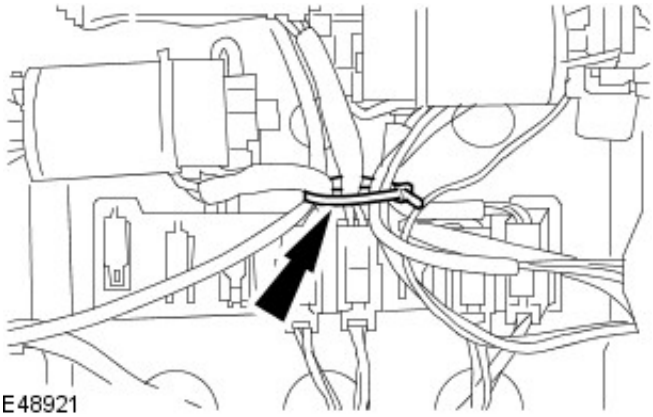
1.  CAUTION: The front seat cushion is calibrated to the occupant classification sensor, and can only be replaced as part of the service kit.

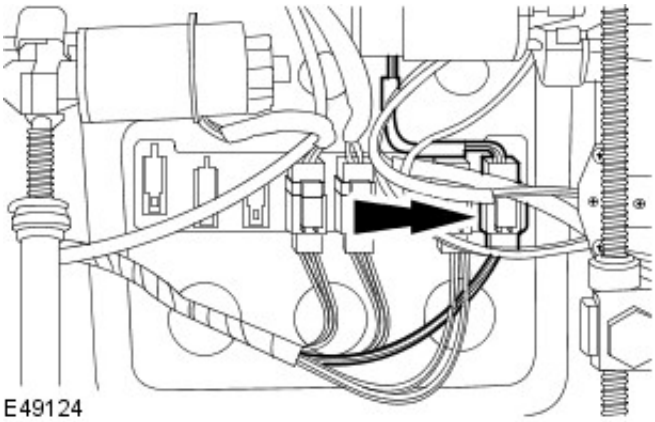
   For additional information, refer to Section 501-20A Safety Belt System / 501-20B Supplemental Restraint System.

Seating - Front Seat Front Height Adjustment Motor
Removal and Installation

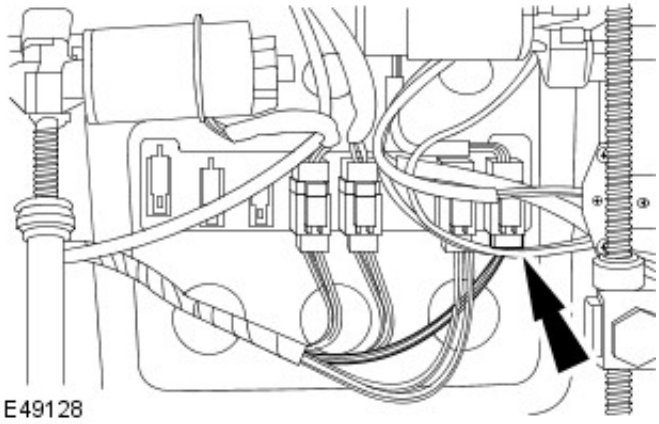
Removal

1. Remove the front seat.
   For additional information, refer to: Front Seat (501-10 Seating, Removal and Installation).
2. Cut and discard the cable tie.

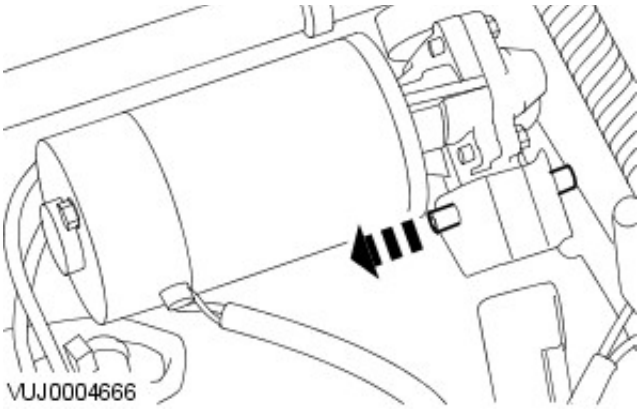

E48921


E49124

3. Detach the front height adjustment motor electrical connector.
4. Disconnect the front height adjustment motor electrical connector.

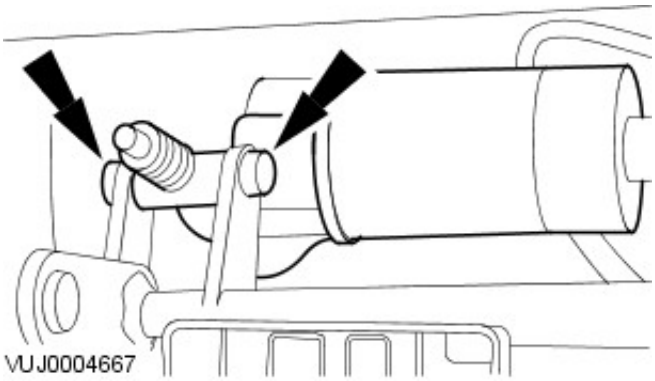

E49128

5. Remove the front height adjustment motor roll pin.



6. Remove the front seat front height adjustment motor.

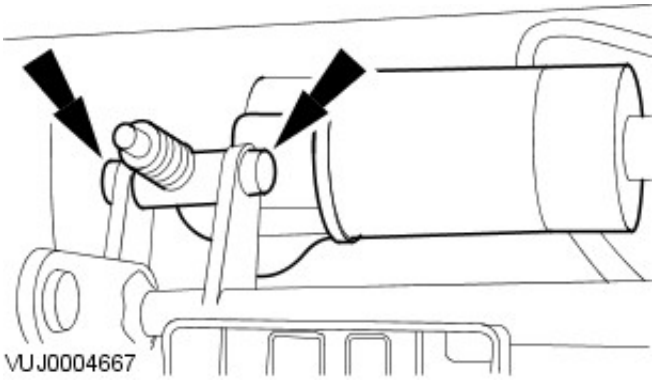
- Remove the retaining bolts.



Installation

1. To install, reverse the removal procedure.

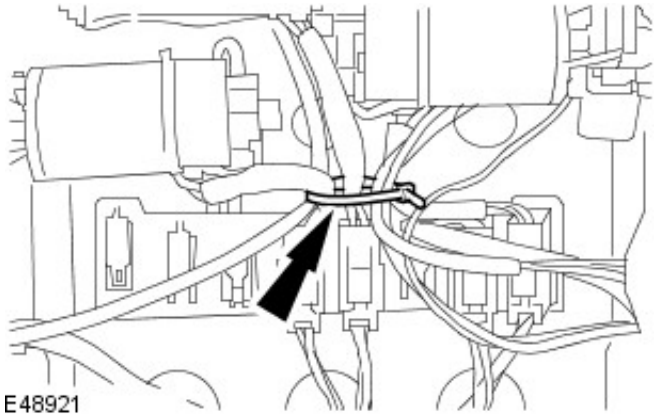
- Tighten to 10 Nm.



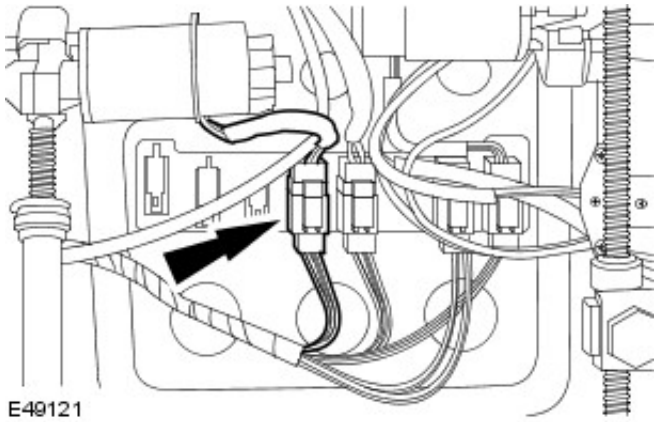
Seating - Front Seat Rear Height Adjustment Motor
Removal and Installation

Removal

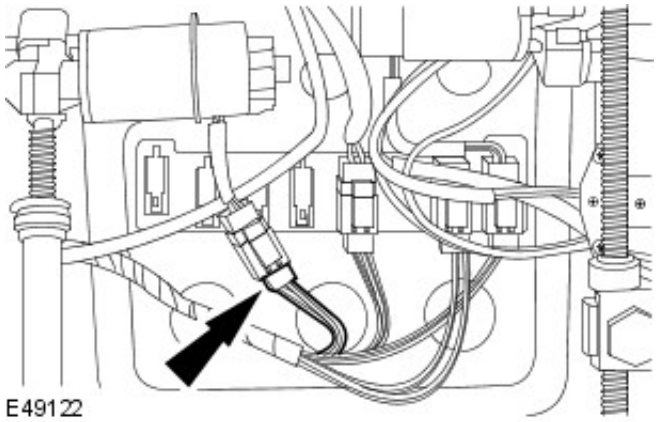
1. Remove the front seat.
   For additional information, refer to: Front Seat (501-10 Seating, Removal and Installation).
2. Remove and discard the cable tie.


E48921

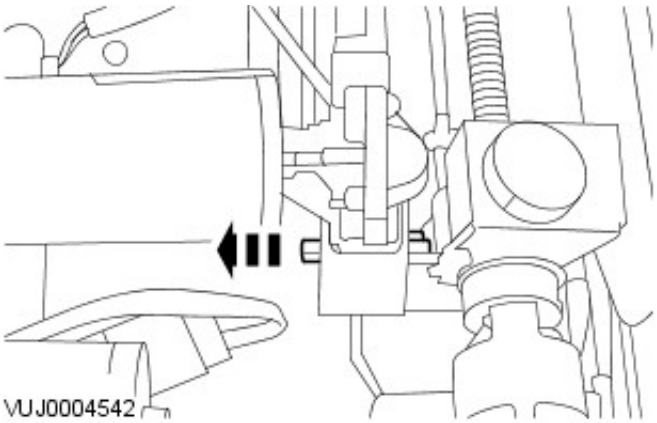
3. Detach the wiring harness.


E49121

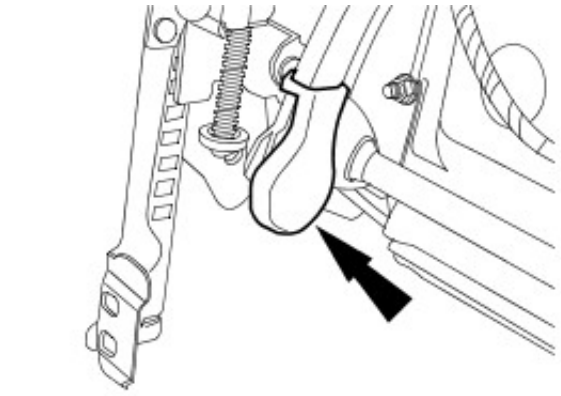
4. Disconnect the front seat rear height adjustment motor electrical connector.


E49122

5. Remove the front seat rear height adjustment motor roll pin.

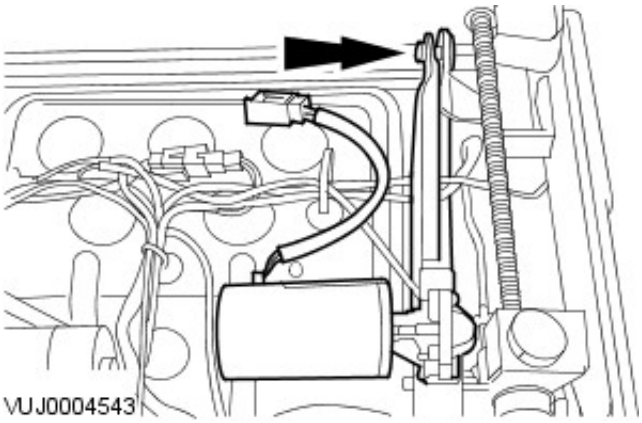


6. Remove the trim finisher.



7. Remove the front seat rear height adjustment motor.

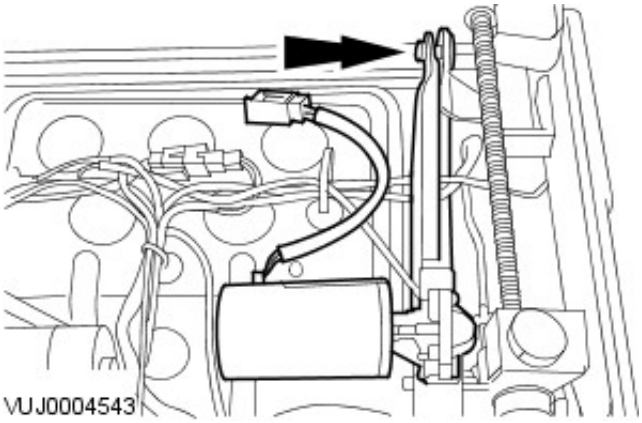
- Remove the retaining bolt.



Installation

1. To install, reverse the removal procedure.

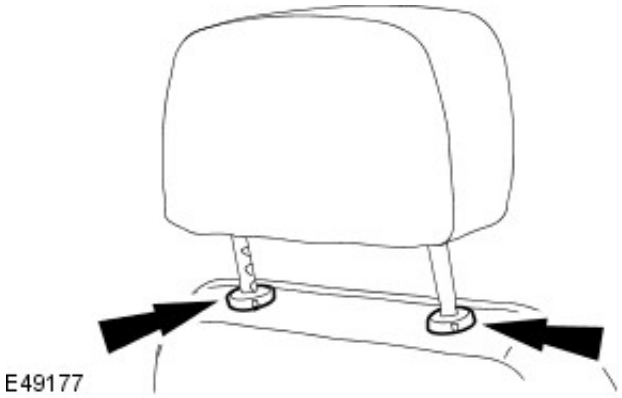
- Tighten to 10 Nm.



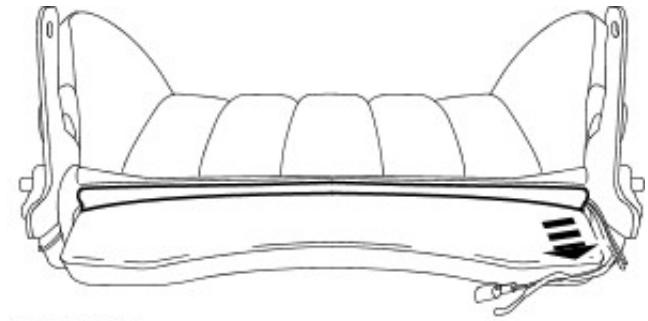
Seating - Front Seat Recliner Motor
Removal and Installation

Removal

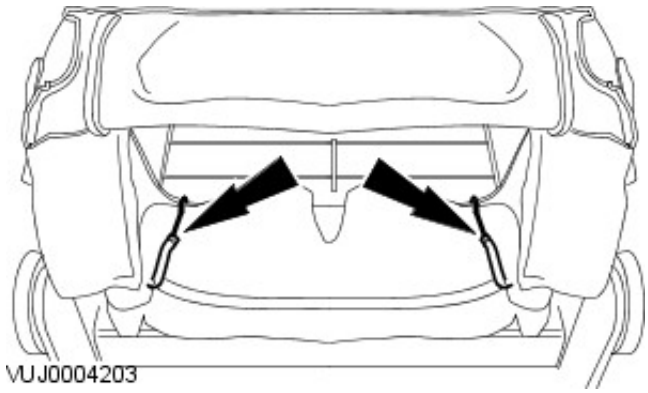
1. Remove the front seat backrest.
   For additional information, refer to: Front Seat Backrest (501-10 Seating, Removal and Installation).
2. Remove the front seat head restraint.
   - Press the retaining tangs.


E49177

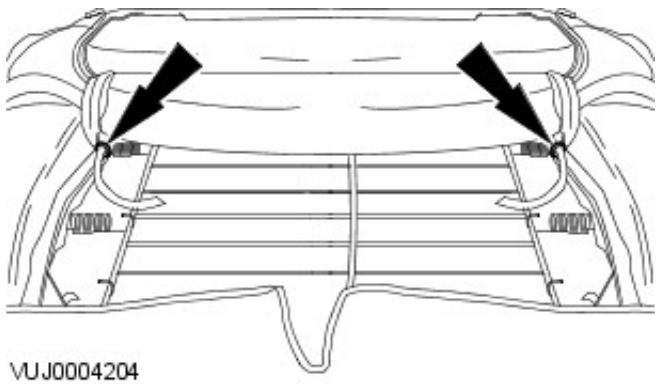
3. Detach the front seat backrest cover.
   - Detach the retaining strip.


VUJ0004202

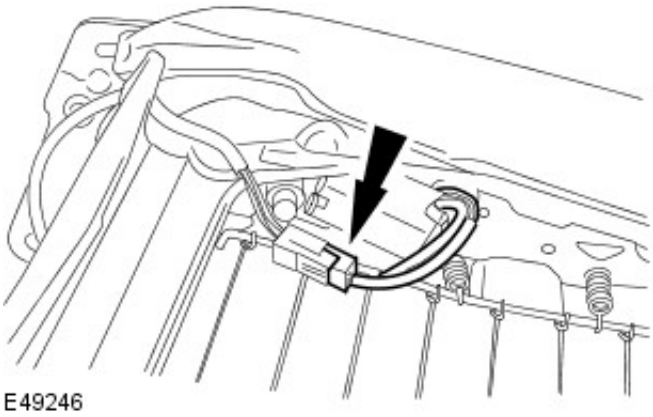
4. Detach the front seat backrest cover tension cords from the front seat backrest.

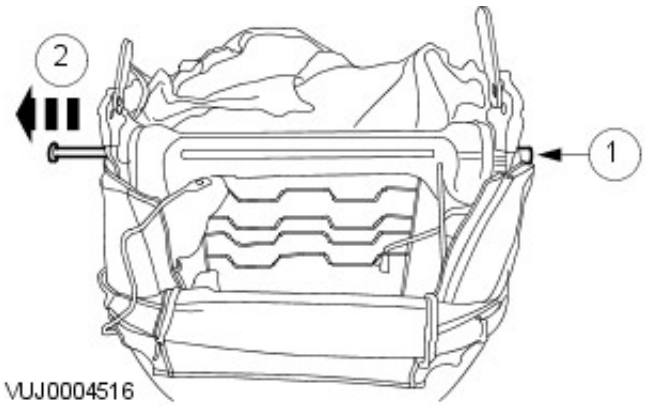

VUJ0004203

5. Detach the front seat backrest cover.
   - Remove and discard the hog rings.


VUJ0004204

6. Disconnect the front seat backrest motor electrical connector.

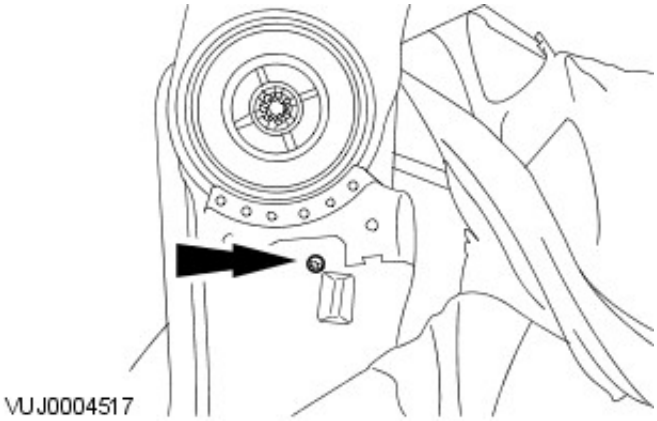

E49246



VUJ0004516

7. Detach the front seat backrest recliner bar from the motor.

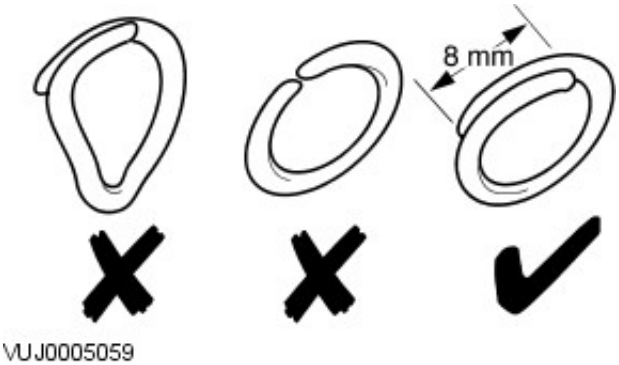
1. Remove the recliner bar retaining clip.
2. Detach the front seat backrest recliner bar from the motor.


VUJ0004517

8. Remove the front seat recliner motor.

- Remove the retaining screw.

Installation



VUJ0005059

1. NOTE: Install new hog rings. Use hog ring pliers to close the hog rings. Do not use any other tool. The hog rings must be closed to overlap as illustrated.

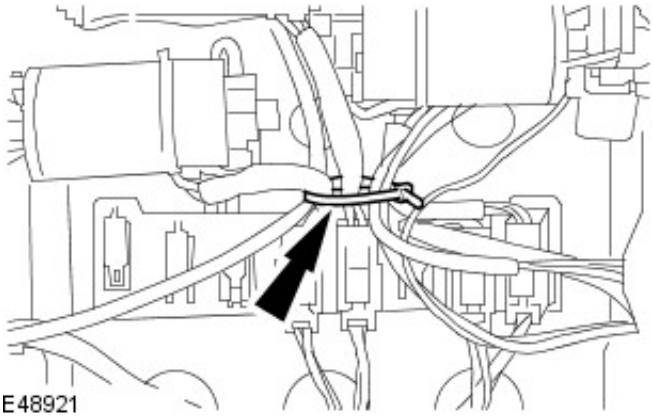
• NOTE: Install a new front seat recliner bar retaining clip.

To assemble, reverse the disassembly procedure.

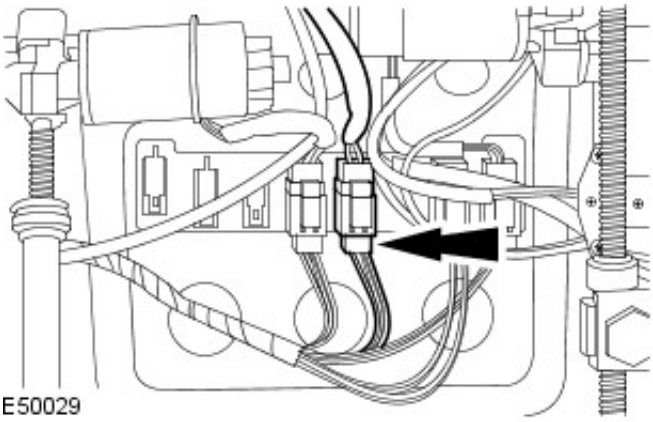
Seating - Front Seat Track Motor
Removal and Installation

Removal

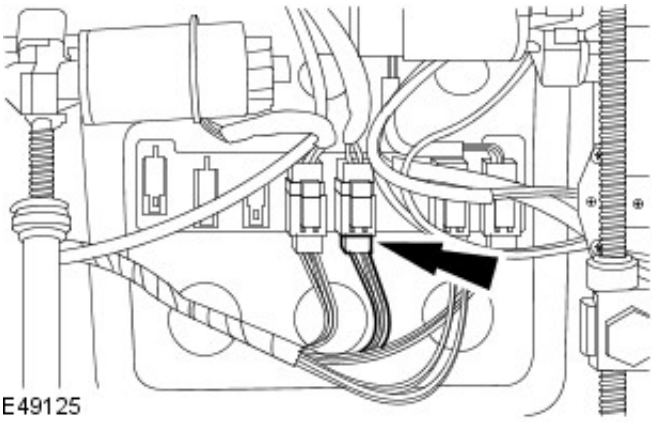
1. Remove the front seat.
   For additional information, refer to: Front Seat (501-10 Seating, Removal and Installation).
2. Remove and discard the cable tie.


E48921

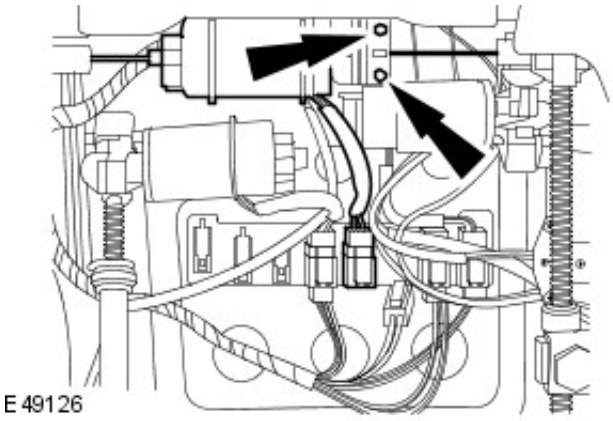
3. Detach the front seat track motor electrical connector.


E50029

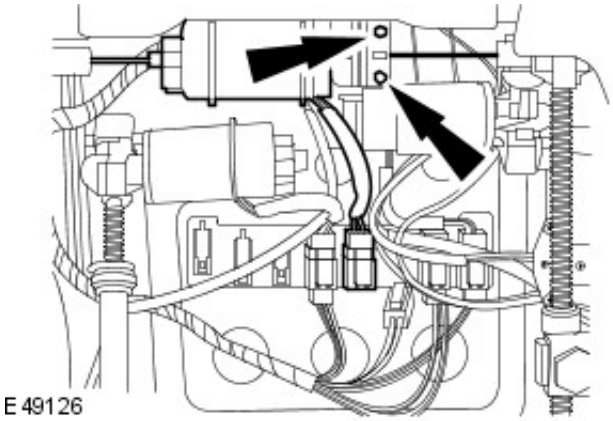
4. Disconnect the front seat track motor electrical connector.


E49125

5. Remove the front seat track motor.


E49126

Installation


E49126

1. NOTE: Make sure the front seat track motor control rods are correctly located.

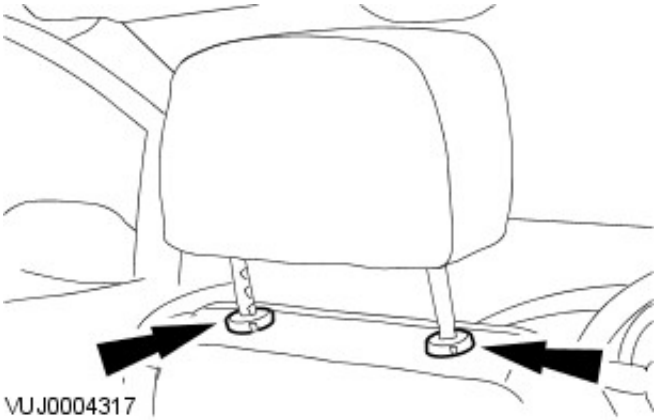
To install, reverse the removal procedure.

- Tighten to 10 Nm.

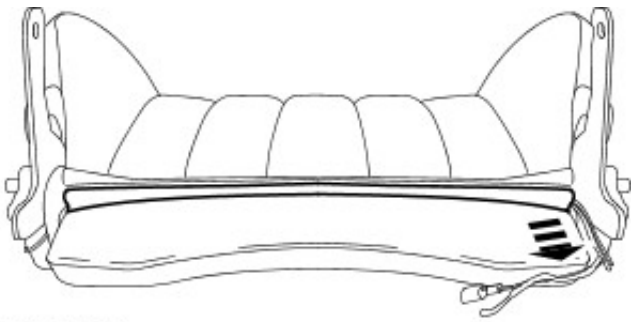
Seating - Lumbar Assembly
Removal and Installation

Removal

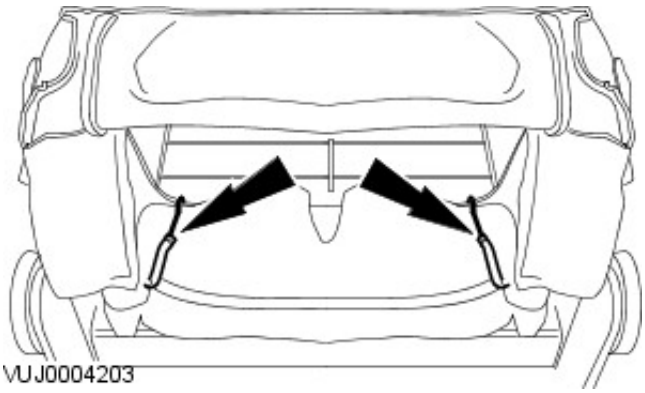
1. Remove the front seat backrest. For additional information, refer to Front Seat Backrest.
2. Remove the head restraint.
   - Press the tangs.


VUJ0004317

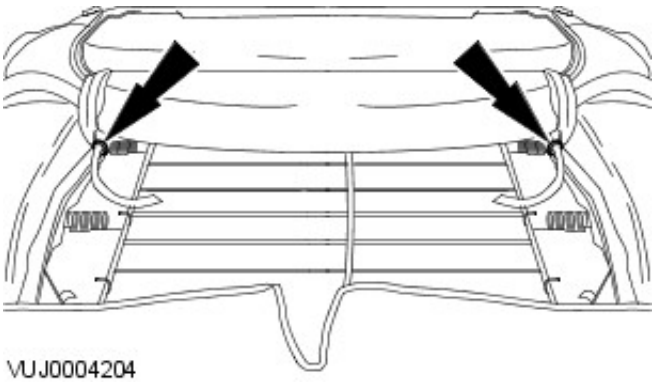
3. Detach the backrest cover.
   - Detach the retaining strip.


VUJ0004202

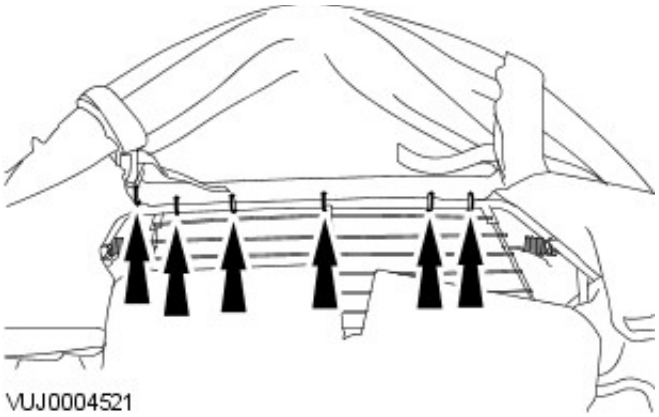
4. Detach the backrest cover tension cords from the backrest.


VUJ0004203

5. Detach the backrest cover.
   - Cut the hog rings.


VUJ0004204

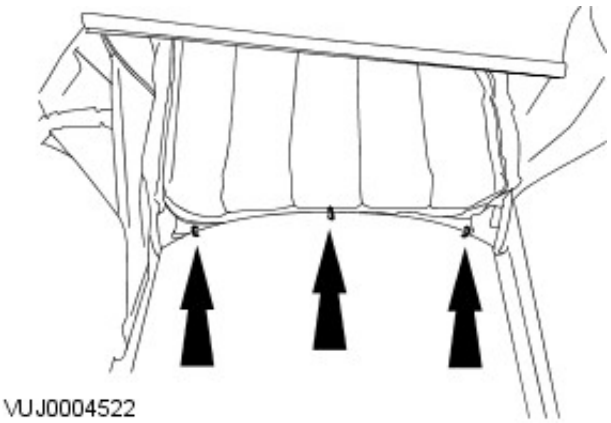
6. Detach the backrest cover.
   - Cut the hog rings.



VUJ0004521

7. Detach the backrest cover.

- Cut the hog rings.



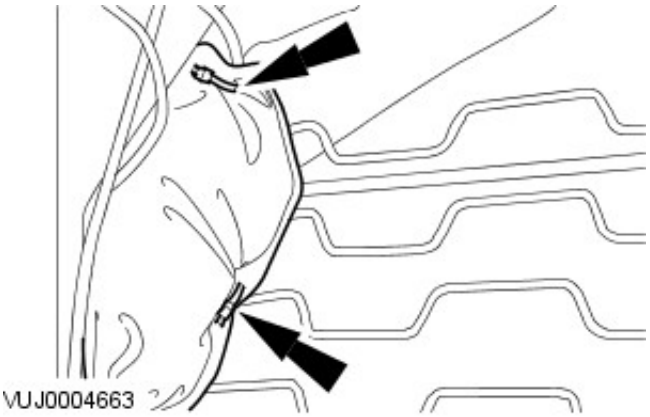
VUJ0004522

8. Roll the backrest cover up the backrest.

VUJ0005032

9. Detach the lumbar motor from the seat backrest frame.

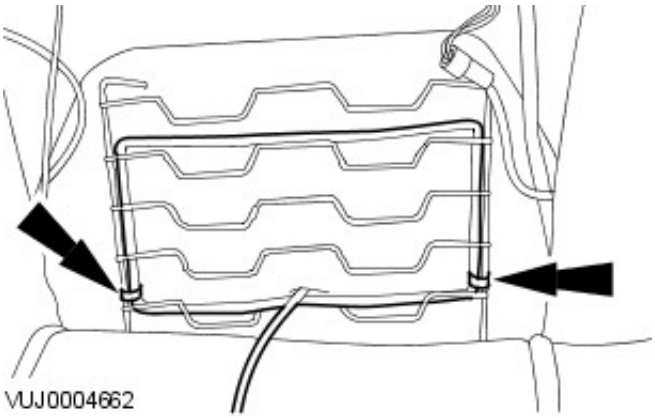
- Cut the cable ties.



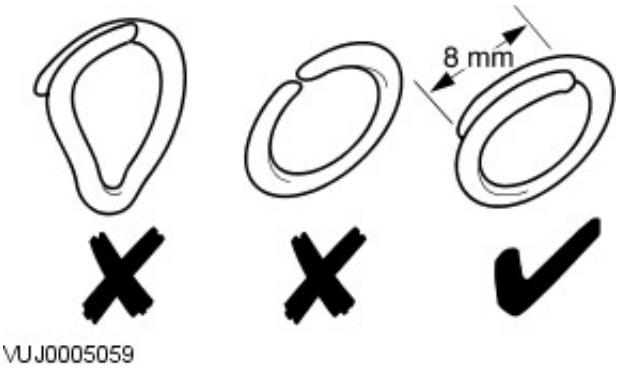
VUJ0004663

10. Remove the lumbar assembly.

- Cut the cable ties.



Installation



1. NOTE: Install new cable ties and hog rings. Use hog ring pliers to close the hog rings. Do not use any other tool. The hog rings must be closed to overlap as illustrated.

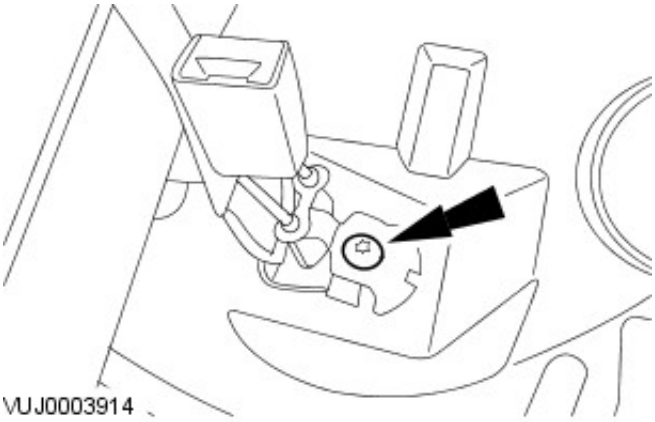
To install, reverse the removal procedure.

Seating - Rear Seat Backrest4-Door

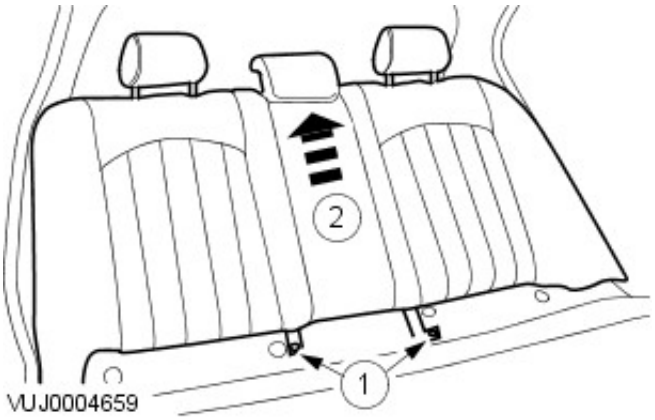
Removal and Installation

Removal

1. Remove the rear seat cushion. For additional information, refer to Rear Seat Cushion.
2. Remove the rear center safety belt and buckle.
   - Remove the retaining bolt.

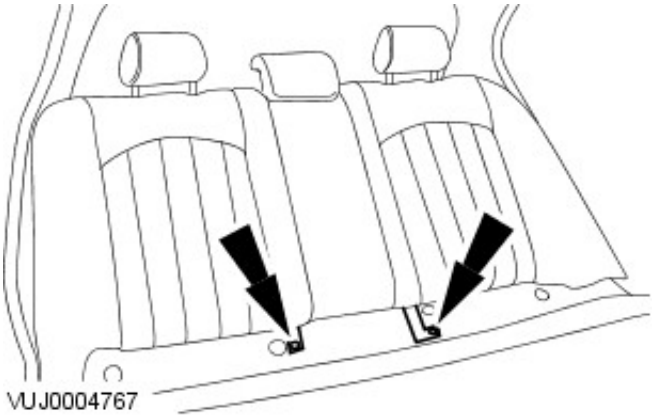


3. Remove the rear seat backrest.
   1. Remove the retaining bolts.
   2. Remove the rear seat backrest.

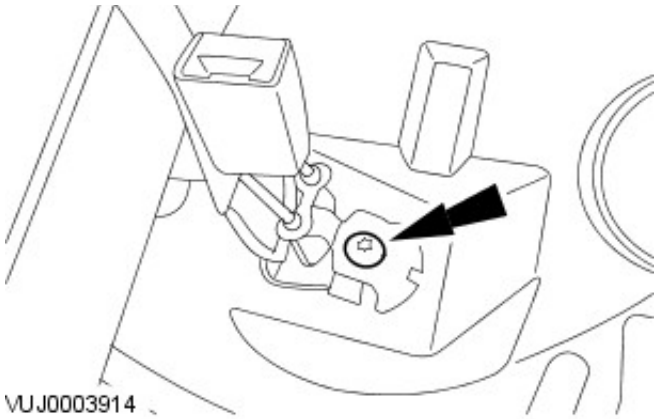


Installation

1. To install, reverse the removal procedure.
   - Tighten to 55 Nm.



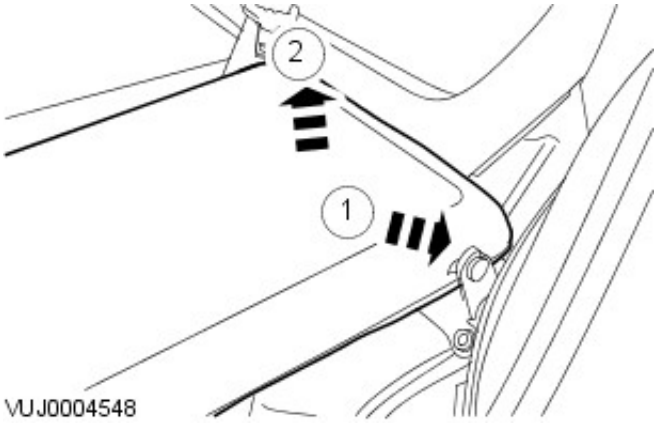
2. Tighten to 55 Nm.


VUJ0003914

Seating - Rear Seat Backrest4-Door, Vehicles With: 70 / 30 Split Seat

Removal and Installation

Removal



1. Fold down the rear seat backrest.

2. Remove the rear seat backrest.

1. Detach the rear seat backrest.
2. Remove the rear seat backrest.

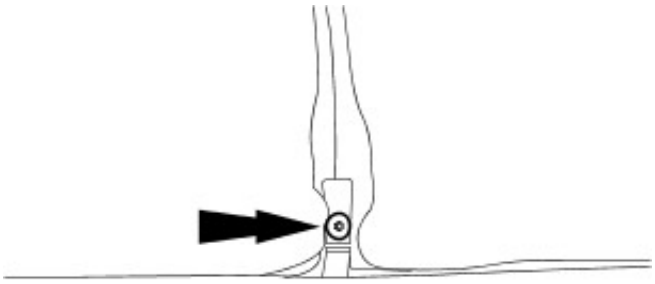
Installation

1. To install, reverse the removal procedure.

Seating - Rear Seat BackrestWagon, Vehicles With: 70 / 30 Split Seat
Removal and Installation

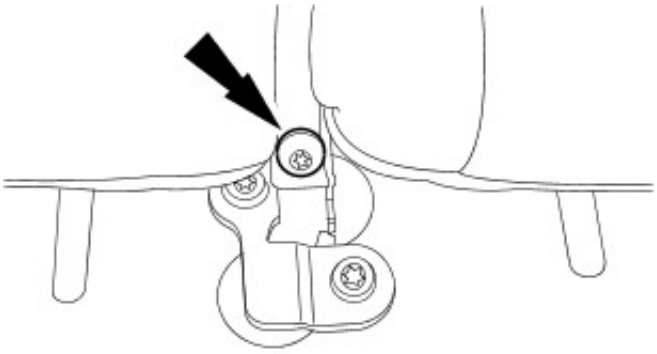
Removal

1. Remove the rear seat cushion.
   For additional information, refer to: Rear Seat Cushion (501-10 Seating, Removal and Installation).
2. Fold down the rear seat backrest.
3. Detach the rear seat backrest center hinge plate.



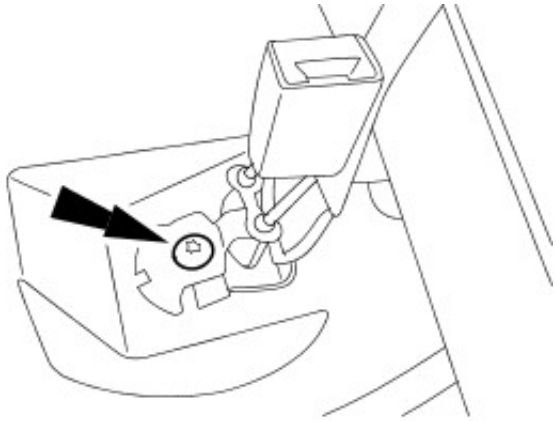
E48745

4. Raise the rear seat backrest.
5. Remove the rear seat backrest centre hinge plate.



E48746

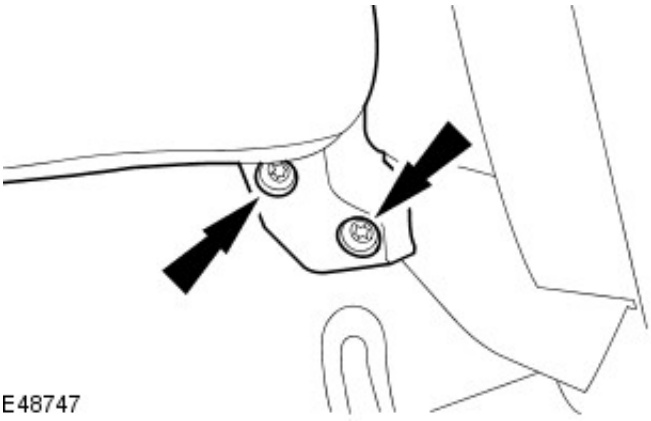
6. Detach the rear centre safety belt buckle.



E48744

7. NOTE: Left-hand shown, right-hand similar.

   Remove the rear seat backrest.



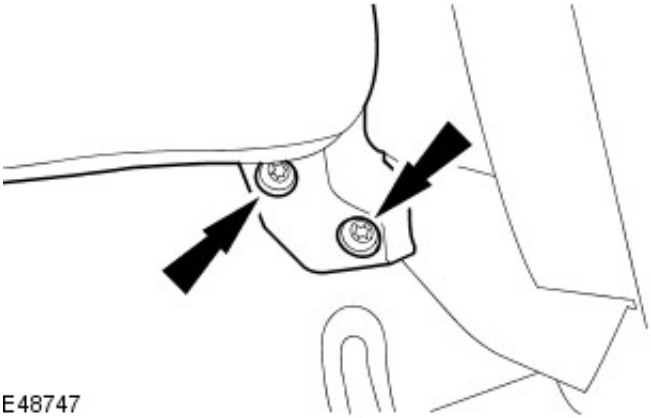
E48747

Installation

1. NOTE: Left-hand shown, right-hand similar.

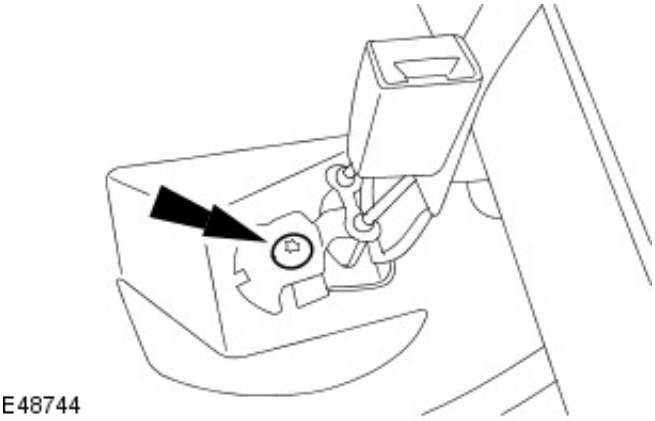
To install, reverse the removal procedure.

- Tighten to 55 Nm.



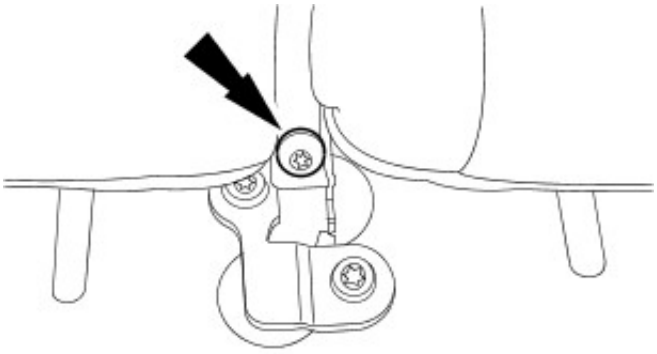
E48747

2. Tighten to 55 Nm.



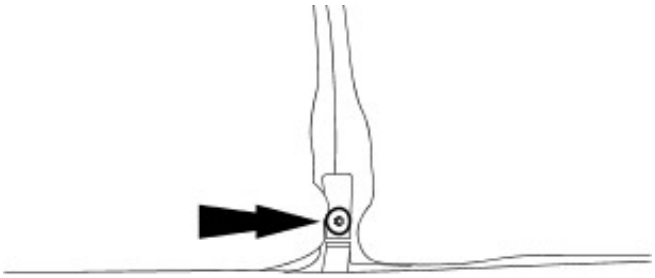
E48744

3. Tighten to 23 Nm.



E48746

4. Tighten to 23 Nm.

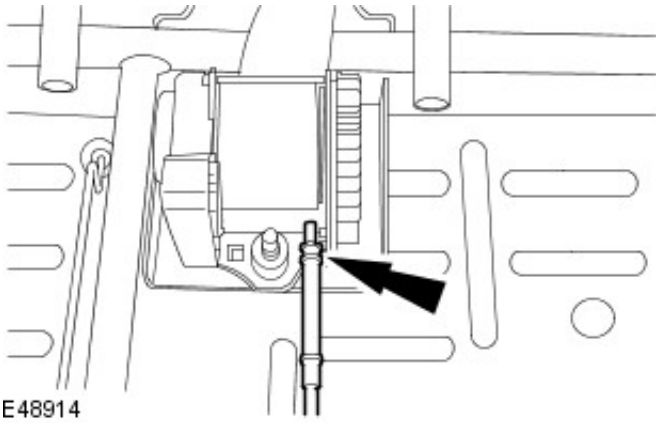


E48745

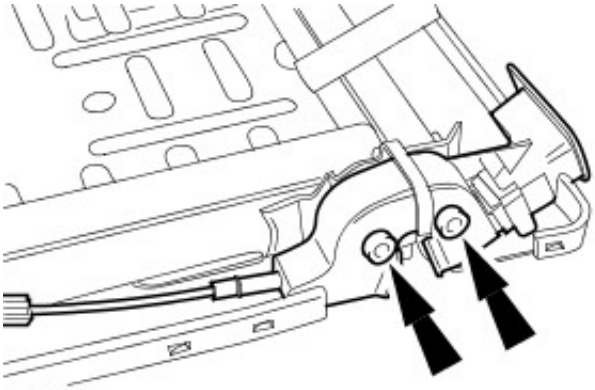
Seating - Rear Seat Backrest LatchWagon
Removal and Installation

Removal

1. Disassemble the rear seat backrest.
   For additional information, refer to: Rear Seat Backrest - Wagon, Vehicles With: 70/30 Split Seat (501-10 Seating, Disassembly and Assembly).
2. Detach the centre safety belt release cable.

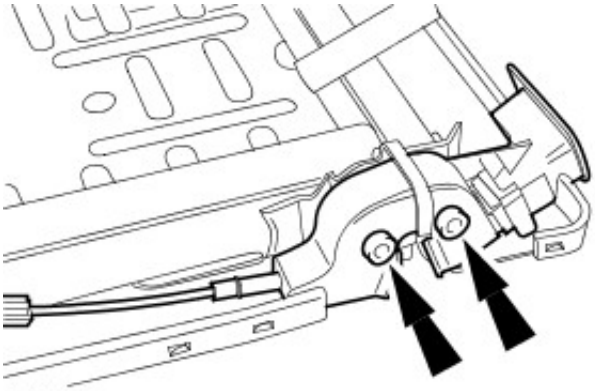

E48914

3. Remove the rear seat backrest latch.


E49106

Installation

1. To install, reverse the removal procedure.
   - Tighten to 32 Nm.

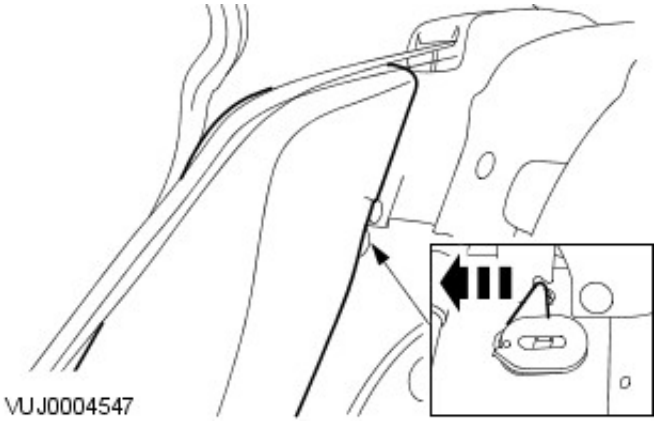

E49106

Seating - Rear Seat Bolster4-Door

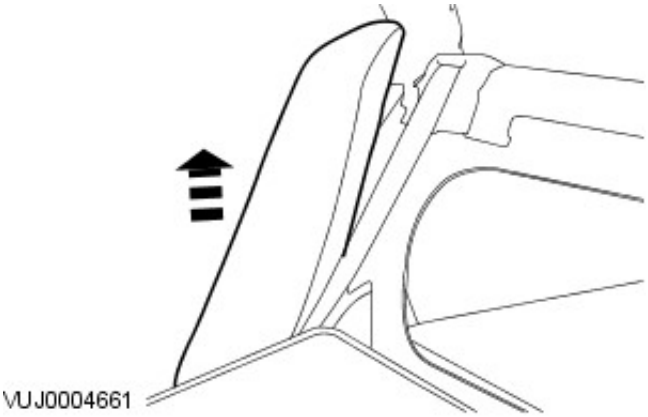
Removal and Installation

Removal

1. Fold down the rear seat backrest.
2. Detach the rear seat backrest bolster.
   - Press the tang.



3. Remove the rear seat backrest bolster.



Installation

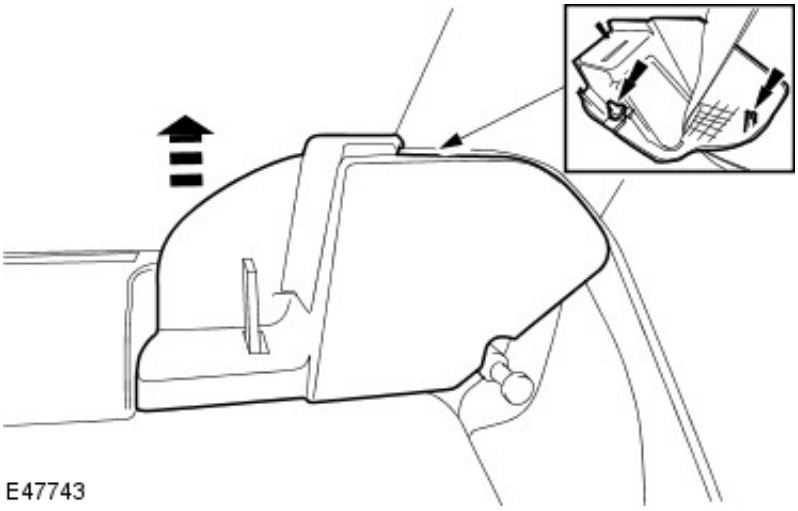
1. To install, reverse the removal procedure.

Seating - Rear Seat BolsterWagon

Removal and Installation

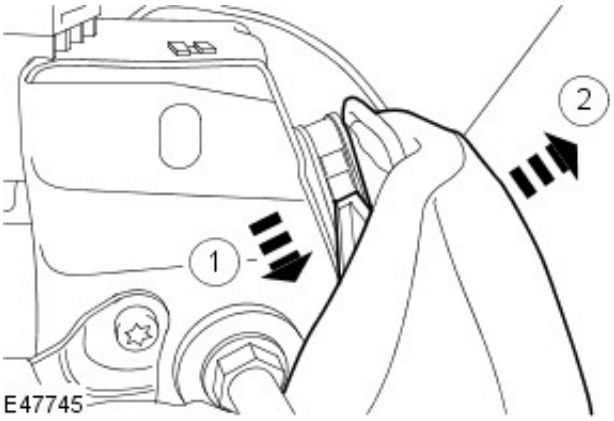
Removal

1. Remove the loadspace cover.
2. Fold down the rear seat backrest.
3. Detach the loadspace cover retaining bracket finisher trim.



E47743

4. Detach the rear seat bolster.
    1. Press the seat bolster upper retaining latch.
    2. Detach the rear seat bolster.



E47745

5. Remove the rear seat bolster.

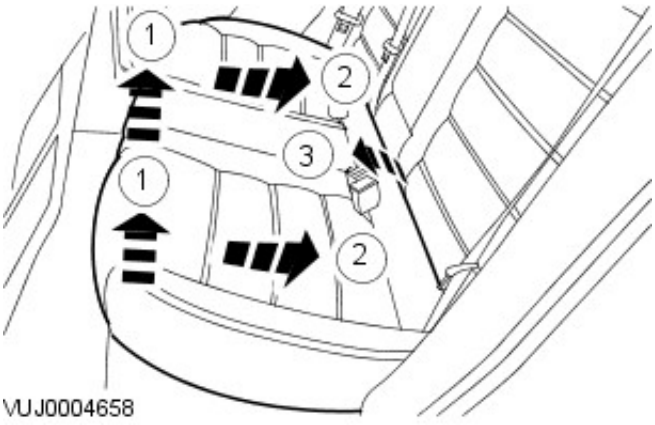
E48420

Installation

1. To install, reverse the removal procedure.

Seating - Rear Seat Cushion
Removal and Installation

Removal



1. NOTE: Remove and discard old retaining clips.

Remove the rear seat cushion.

1. Detach the rear seat cushion front retaining clips.
2. Slide the rear seat cushion out of the retaining hooks.
3. Remove the rear seat cushion.

Installation

1. NOTE: Make sure the safety belt buckles are located through the cushion.

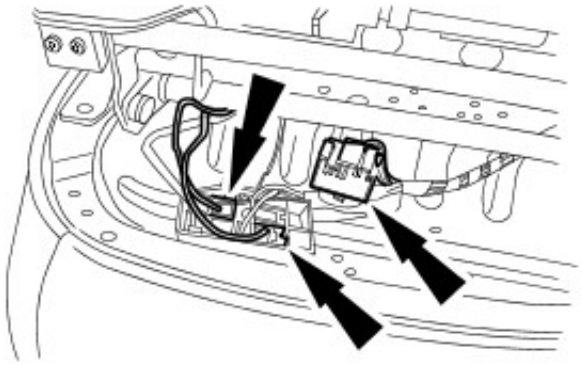
- NOTE: Install new seat cushion front retaining clips

To install, reverse the removal procedure.

Seating - Seat Base
Removal and Installation

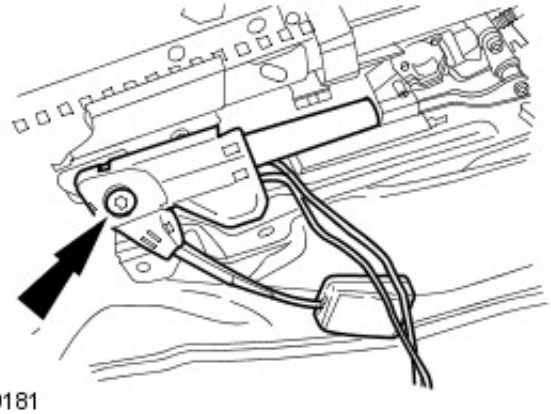
Removal

1. Remove the front seat backrest.
   For additional information, refer to: Front Seat Backrest (501-10 Seating, Removal and Installation).
2. Detach the electrical connectors.



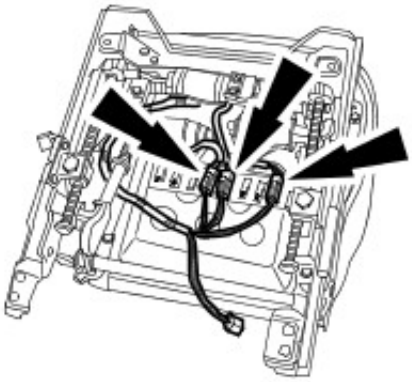
E49180

3. Remove the safety belt buckle and pretensioner.



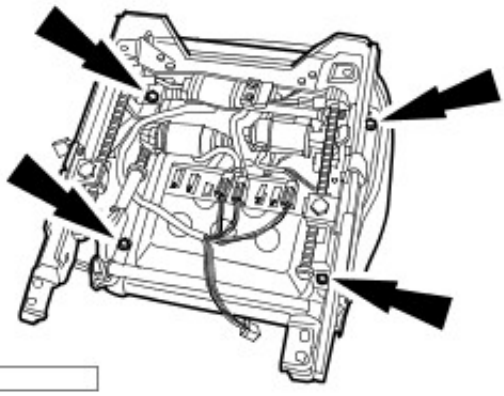
E49181

4. Detach the seat motor electrical connectors.



E49183

5. Remove the seat base.

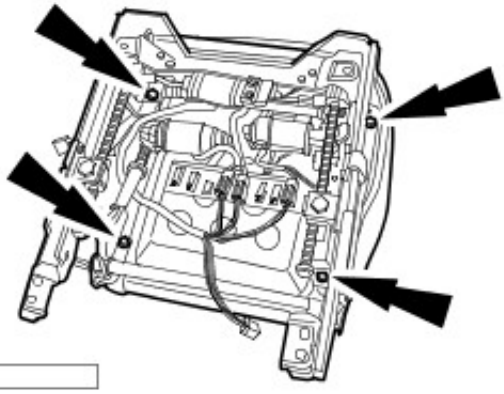


E49182

Installation

1. To install, reverse the removal procedure.

- Tighten to 15 Nm.

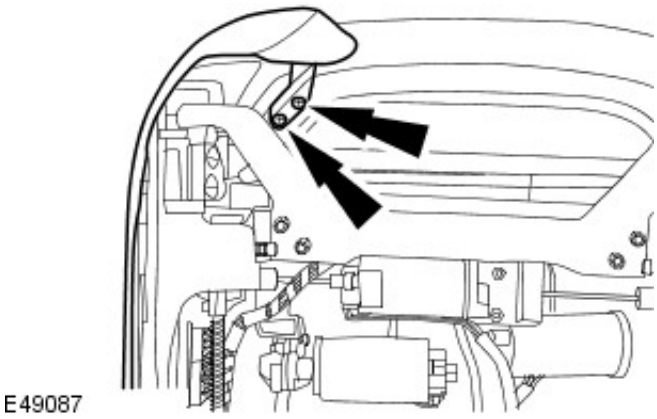


E49182

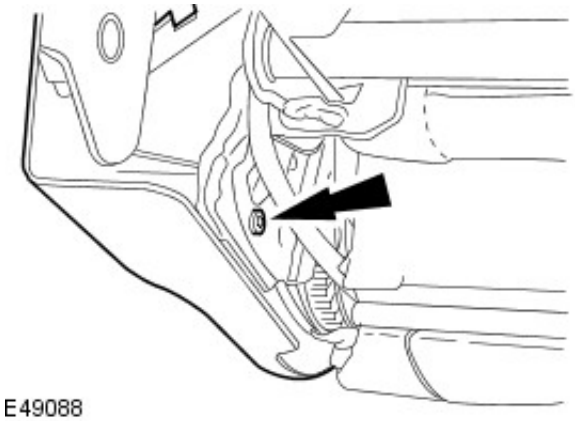
Seating - Seat Control Switch
Removal and Installation

Removal

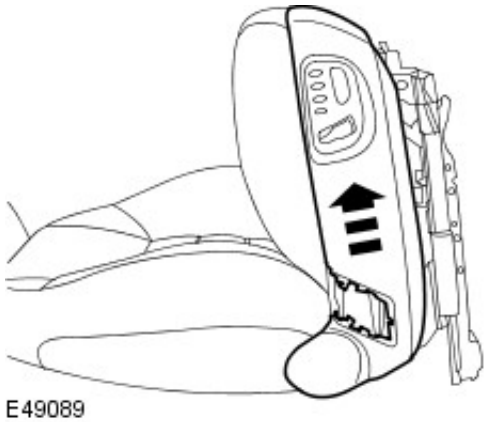
1. Remove the front seat.
   For additional information, refer to: Front Seat (501-10 Seating, Removal and Installation).
2. Detach the outer side trim panel.


E49087

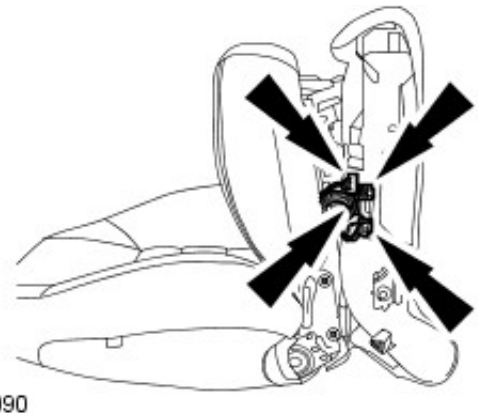
3. Detach the outer side trim panel.


E49088

4. Detach the outer side trim panel.

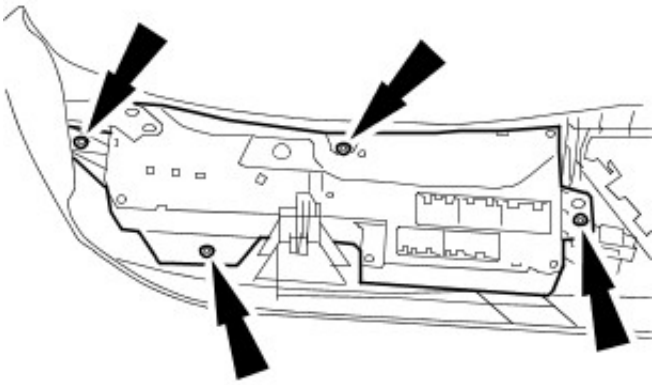

E49089

5. Remove the outer side trim panel.
   - Disconnect the electrical connectors.



E49090

6. Remove the seat control switch.



E49091

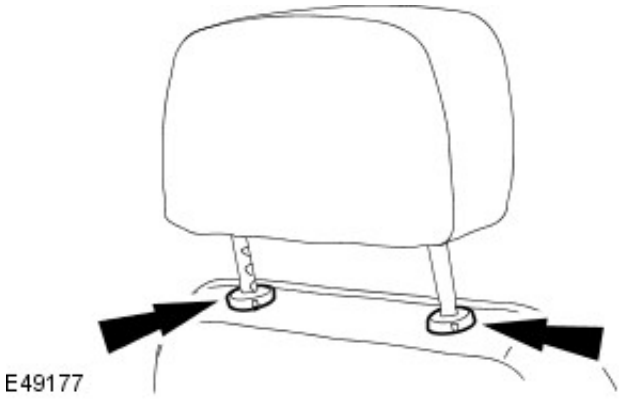
Installation

1. To install, reverse the removal procedure.

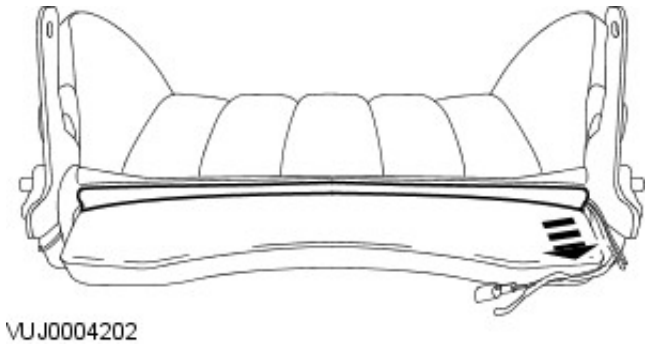
Seating - Front Seat Backrest
Disassembly and Assembly

Disassembly

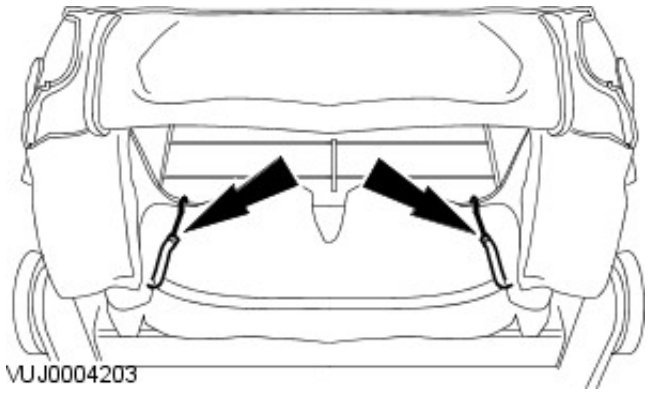
1. Remove the front seat backrest.
   For additional information, refer to: Front Seat Backrest (501-10 Seating, Removal and Installation).
2. Remove the front seat head restraint.
   - Press the retaining tangs.


E49177

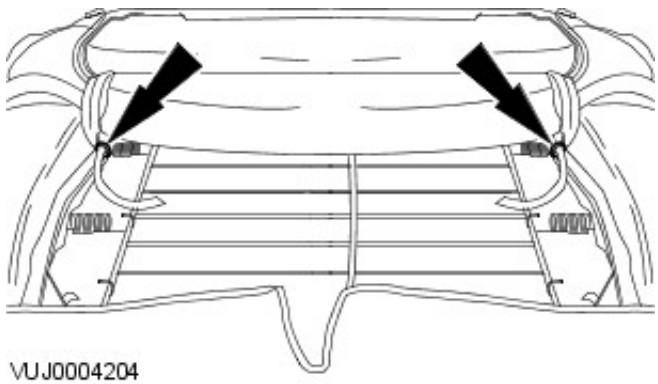
3. Detach the front seat backrest cover.
   - Detach the retaining strip.


VUJ0004202

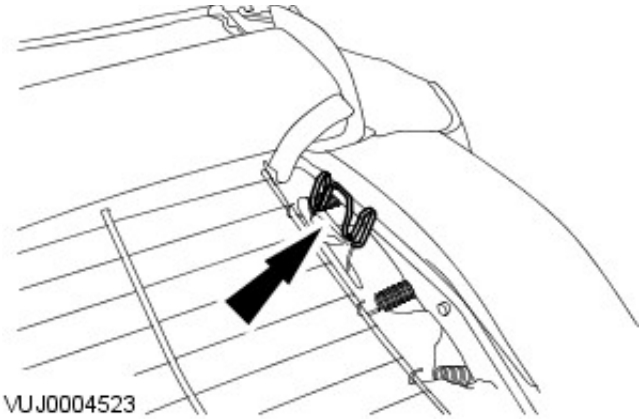
4. Detach the front seat backrest cover tension cords from the front seat backrest.


VUJ0004203

5. Detach the front seat backrest cover.
   - Remove and discard the hog rings.

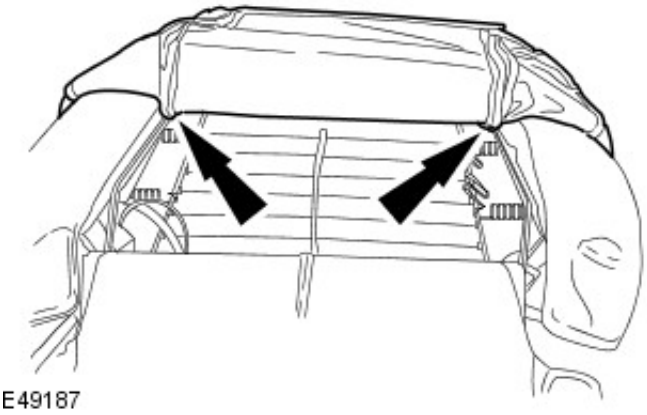

VUJ0004204

6. Detach the front seat backrest cover retaining hook.


VUJ0004523

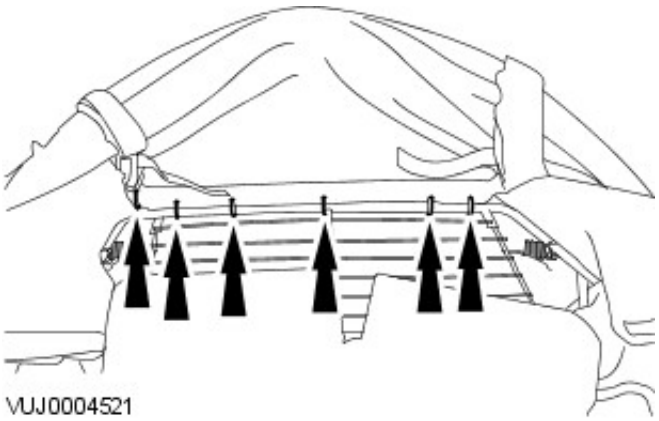
7. Detach the front seat backrest cover.

- Remove and discard the hog rings.


E49187

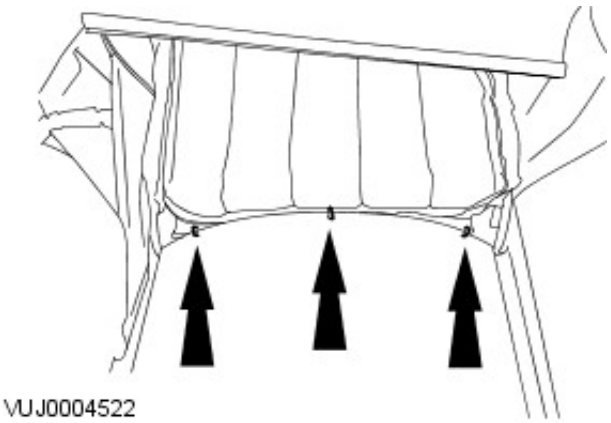
8. Detach the front seat backrest cover.

- Remove and discard the hog rings.


VUJ0004521

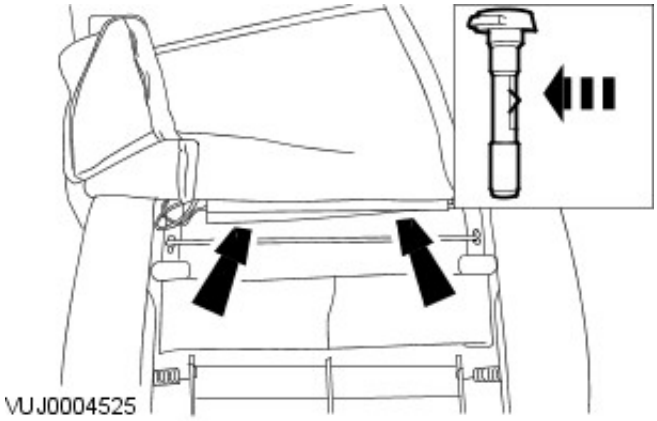
9. Detach the backrest cover.

- Remove and discard the hog rings.


VUJ0004522

10. Detach the front seat backrest cover.

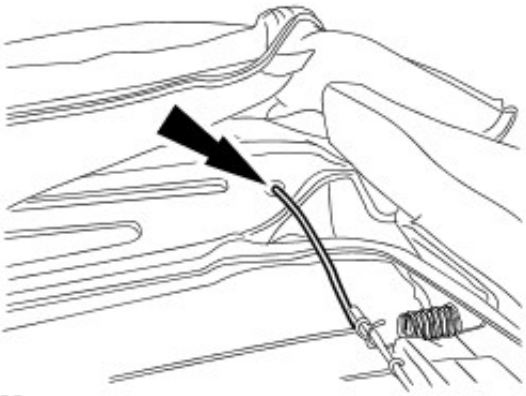
VUJ0005032



VUJ0004525

11. Remove the front seat head restraint guides.

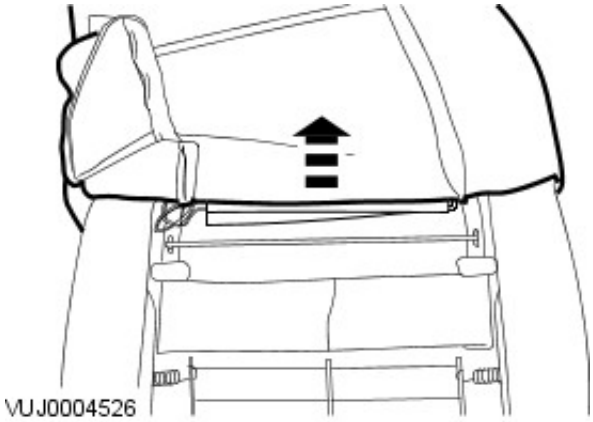
- Using a suitable tool, press the locking tangs.



E49188

12. NOTE: Left-hand shown, right-hand similar.

Detach the front seat backrest cover tension cords from the front seat backrest.

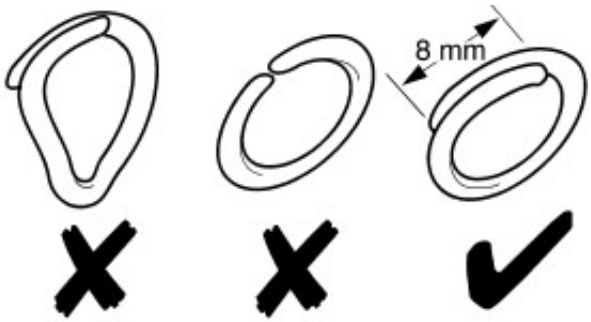


VUJ0004526

13. Remove the front seat backrest cover.

Assembly

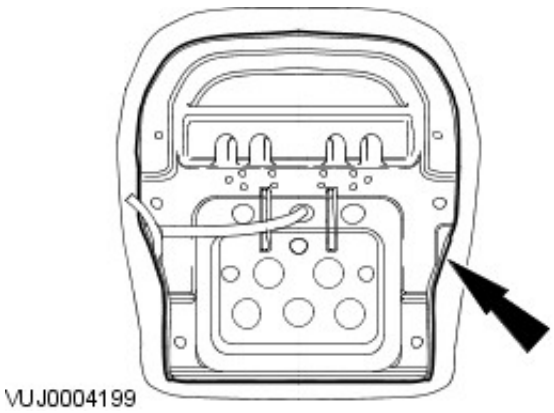
1. NOTE: Install new hog rings. Use hog ring pliers to close the hog rings. Do not use any other tool. The hog rings must be closed to overlap as illustrated.



VUJ0005059

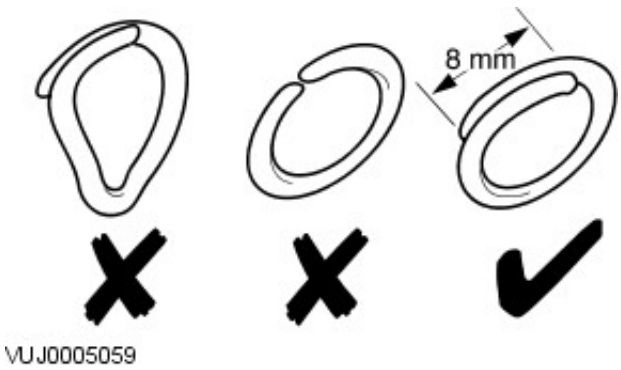
To assemble, reverse the disassembly procedure.

Seating - Front Seat Cushion
Disassembly and Assembly


VUJ0004199

Disassembly

1. Remove the front seat cushion. For additional information, refer to Front Seat Cushion.
2. Remove the seat cushion cover.
   - Unclip the seat cushion from the seat base.
   - Cut the hog rings.



VUJ0005059

Assembly

1. NOTE: Install new hog rings. Use hog ring pliers to close the hog rings. Do not use any other tool. The hog rings must be closed to overlap as illustrated.

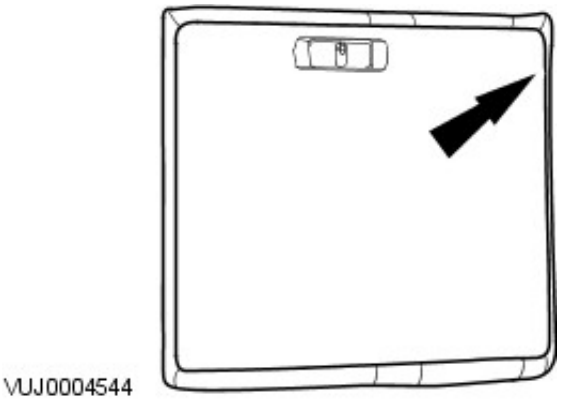
To assemble, reverse the disassembly procedure.

Seating - Rear Seat Backrest4-Door, Vehicles With: 70 / 30 Split Seat

Disassembly and Assembly

Disassembly

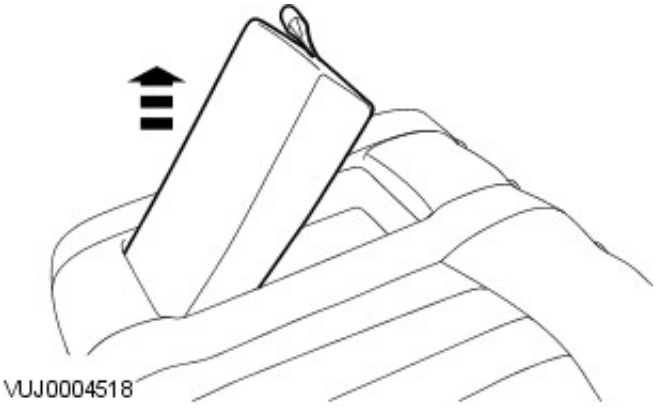
1. Remove the rear seat backrest - folding. For additional information, refer to Rear Seat Backrest—Folding.
2. Remove the head restraint(s).
3. Detach the backrest cover from the backrest.
   - Detach the retaining strip.



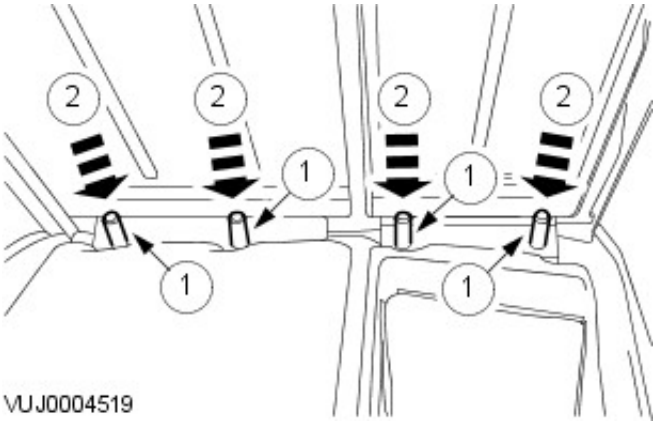
4. NOTE: The armrest pivot pins are held in place by split pins. The armrest should be lifted to gain access to the split pins.

• NOTE: Moving the armrest left and right assists in the removal of the pivot pins.

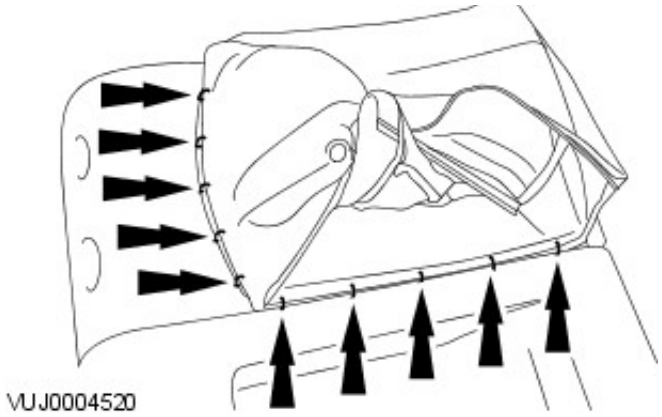
Remove the armrest.



5. Remove the head restraint guides.
   1. Using a suitable screwdriver, press the locking tangs.
   2. Remove the head restraint guides.

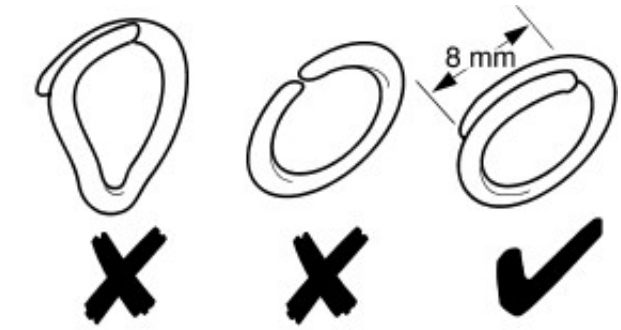


6. Remove the backrest cover.
   - Cut the hog rings.



VUJ0004520

Assembly



VUJ0005059

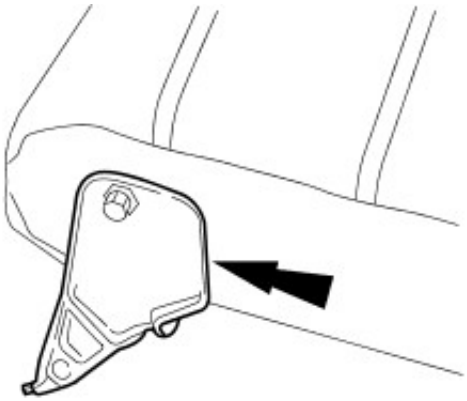
1. NOTE: Install new hog rings. Use hog ring pliers to close the hog rings. Do not use any other tool. The hog rings must be closed to overlap as illustrated.

To assemble, reverse the disassembly procedure.

Seating - Rear Seat BackrestWagon, Vehicles With: 70 / 30 Split Seat
Disassembly and Assembly

Disassembly

1. Remove the rear seat backrest.
   For additional information, refer to: Rear Seat Backrest - Wagon, Vehicles With: 70/30 Split Seat (501-10 Seating, Removal and Installation).
2. Remove the rear seat head restraints (if equipped).
3. Remove the rear seat backrest hinge bracket.

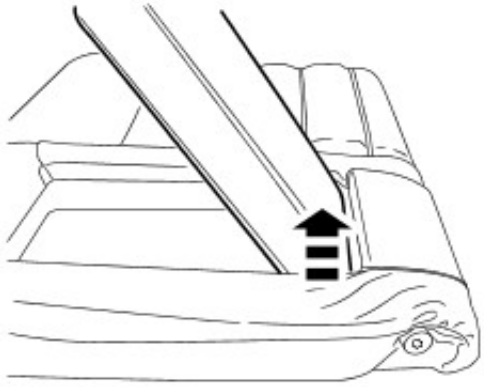


E49070

4. NOTE: Raise the armrest to assist in removal.

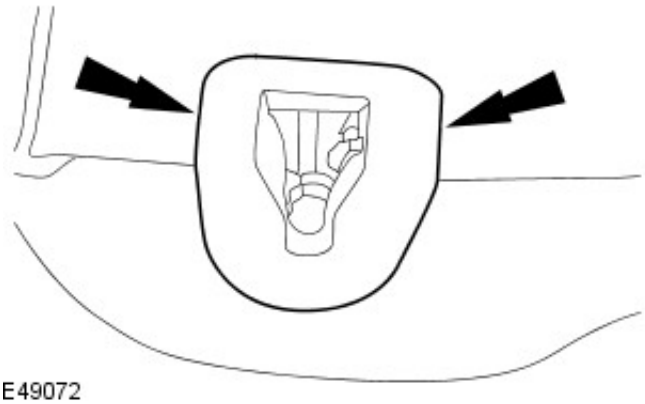
• NOTE: Moving the armrest left and right assists in the removal of the pivot pins.

   Remove the armrest.



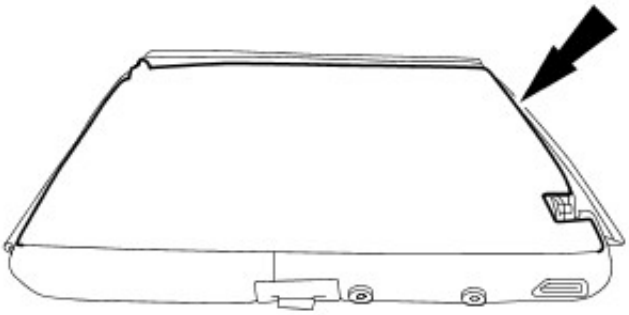
E49071

5. Remove the rear seat backrest latch finisher.



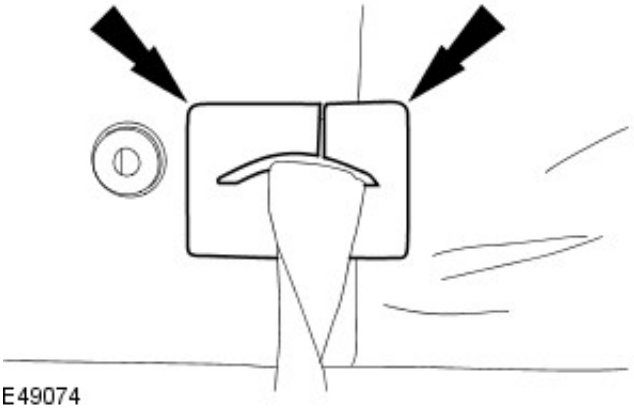
E49072

6. Detach the rear seat backrest cover from the backrest.
   - Detach the retaining strip.



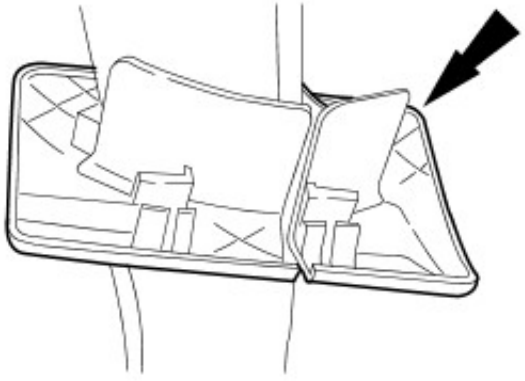
E49073

7. Detach the rear centre safety belt guide finisher.



E49074

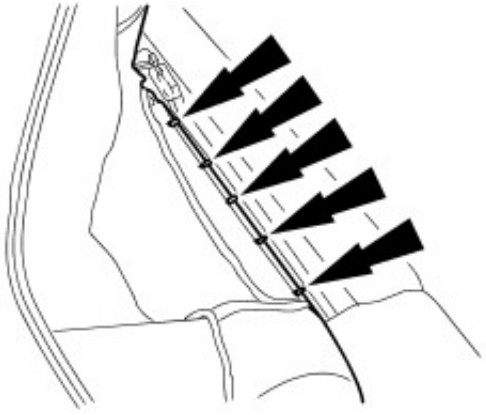
8. Remove the rear centre safety belt guide finisher.



E49075

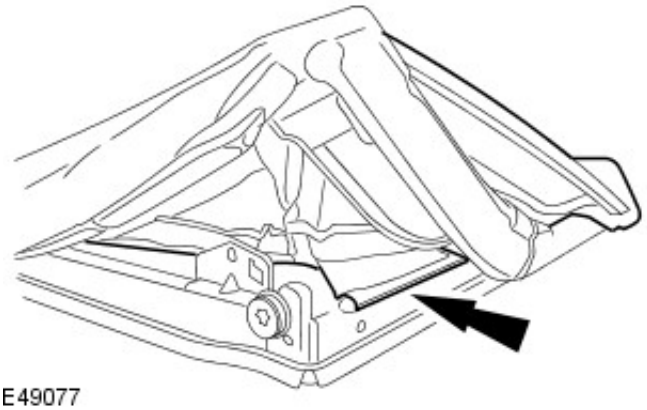
9. Detach the rear seat backrest cover.

- Remove and discard the hog rings.



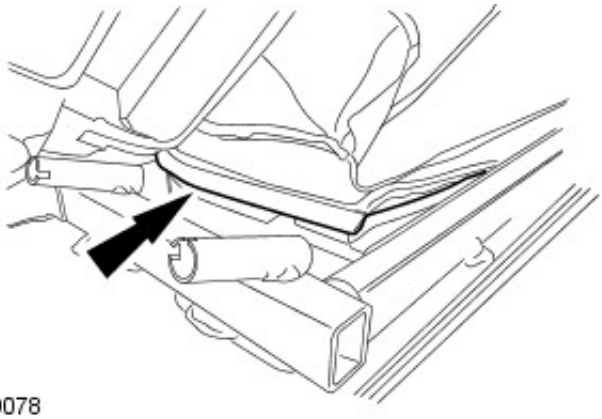
E49076

10. Detach the rear seat backrest cover.



E49077

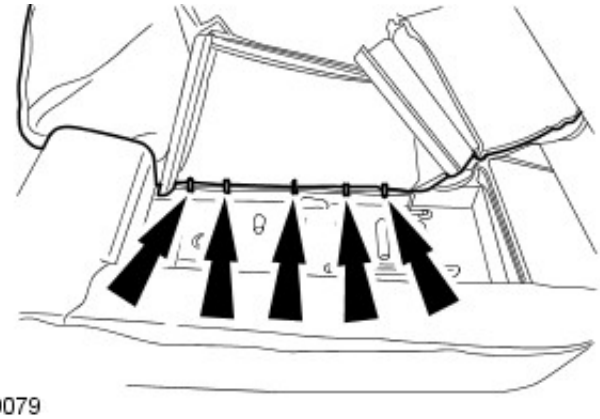
11. Detach the rear seat backrest cover.



E49078

12. Detach the rear seat backrest cover.

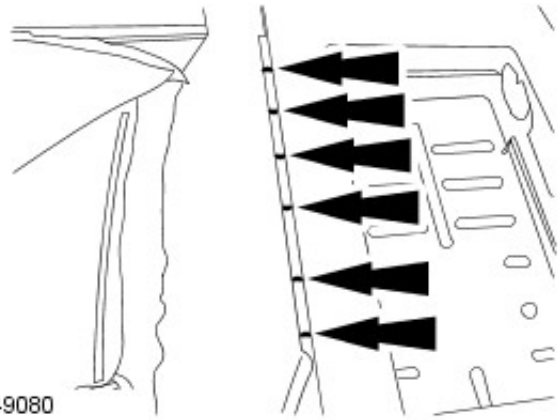
- Remove and discard the hog rings.



E49079

13. Detach the rear seat backrest cover.

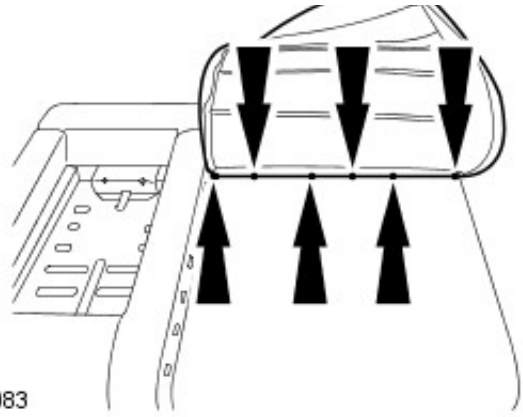
- Remove and discard the hog rings.



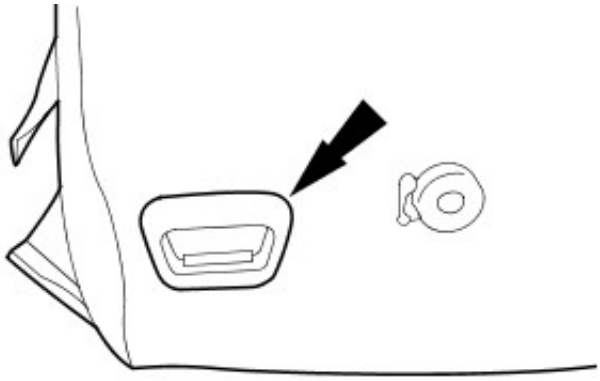
E49080

14. Detach the rear seat backrest cover.

- Remove and discard the hog rings.

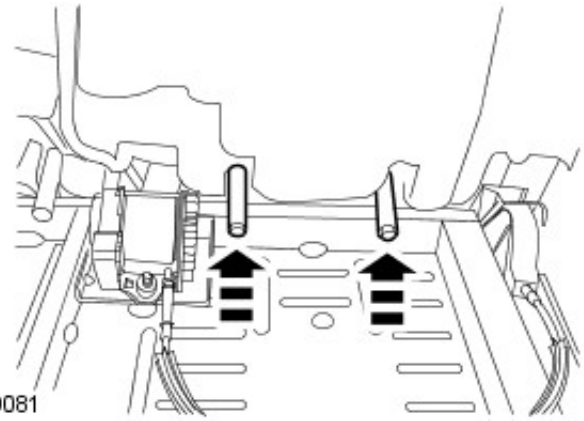


E49083



E49082

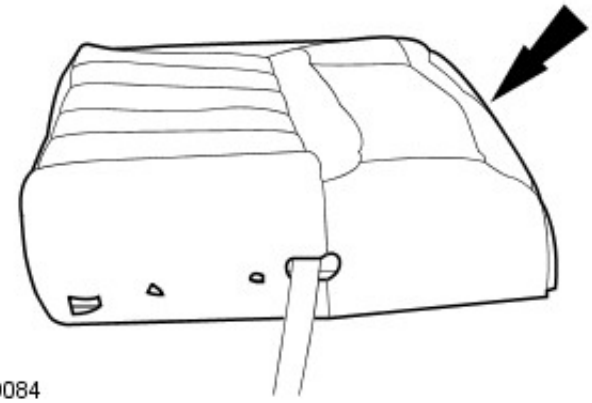
15. Detach the rear seat backrest cover from the backrest latch.



E49081

16. Remove the rear sear head restraint guides.

- Using a suitable tool, press the locking tangs.
- Remove the rear seat head restraint guides.



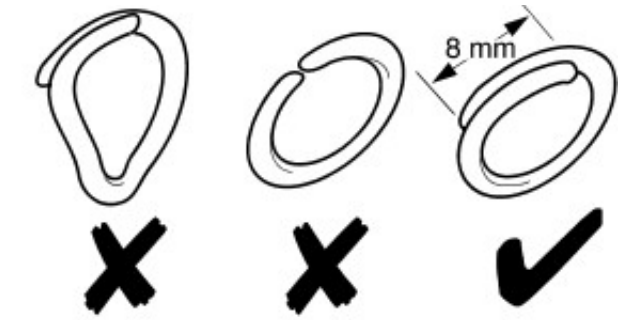
E49084

17. Remove the rear seat backrest cover.

- Pass the centre safety belt through the rear seat backrest cover.

Assembly

1. NOTE: Install new hog rings. Use hog ring pliers to close the hog rings. Do not use any other tool. The hog rings must be closed to overlap as illustrated.



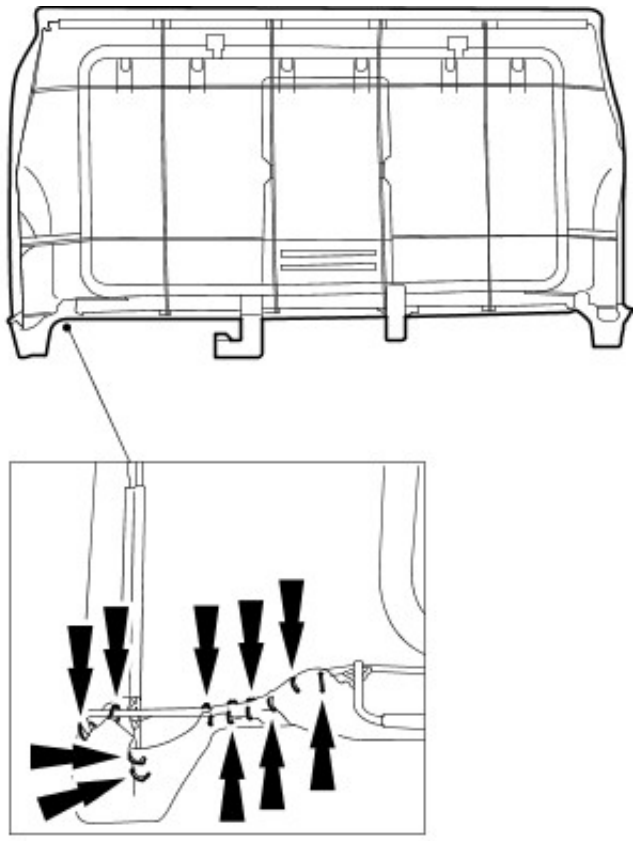
VUJ0005059

To assemble, reverse the disassembly procedure.

Seating - Rear Seat Backrest
Disassembly and Assembly

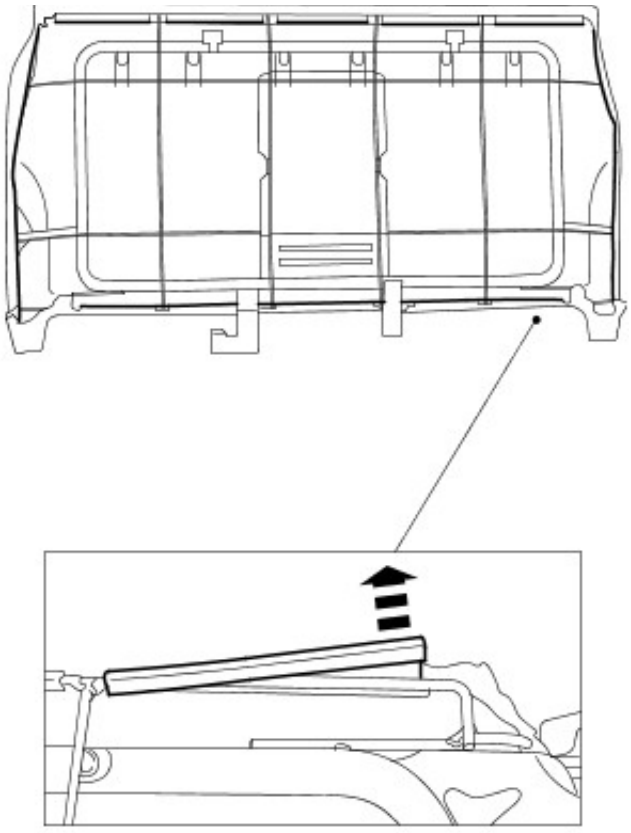
Disassembly

1. Remove the rear seat backrest - fixed. For additional information, refer to Rear Seat Backrest—Fixed.
2. Remove the head restraints.
3. Detach the backrest cover.
   - Cut the hog rings.

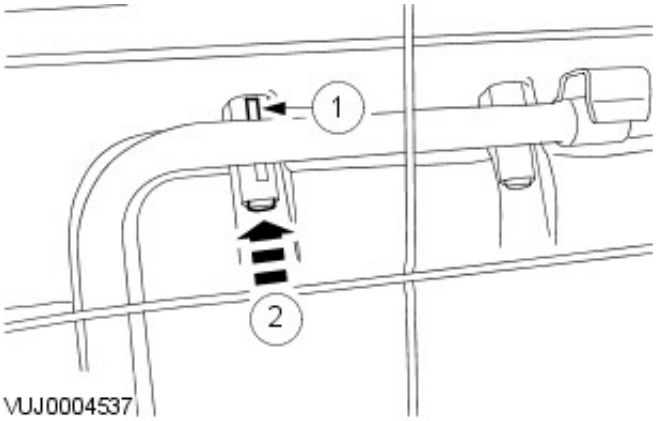


VUJ0004539

4. Detach the backrest cover.
   - Detach the retaining strips.



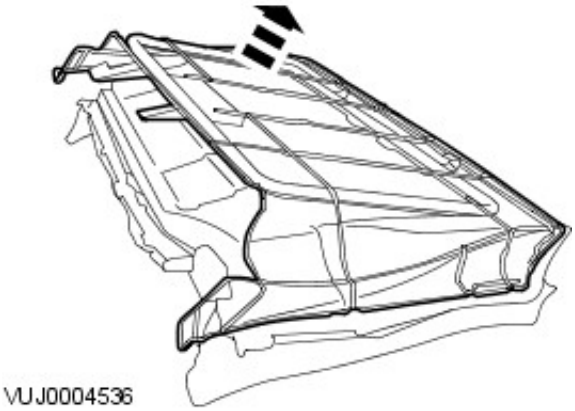
VUJ0004538



VUJ0004537

5. Remove the head restraint guides.

1. Using a suitable screwdriver, press the locking tang.
2. Remove the head restraint guide.

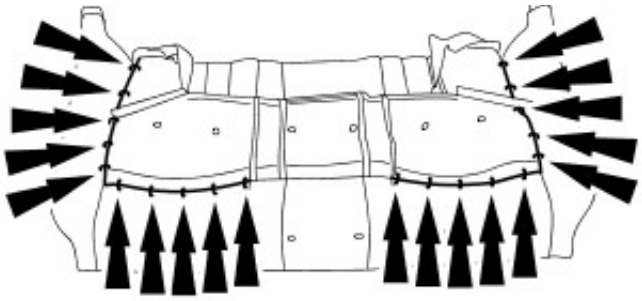


VUJ0004536

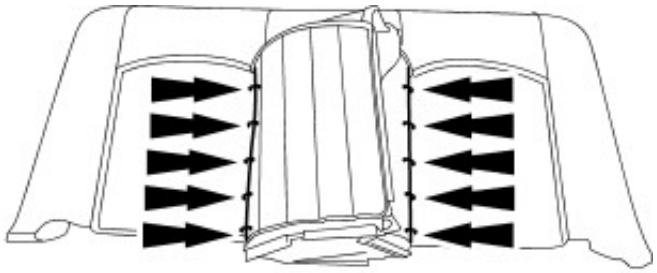
6. Remove the backrest frame from the backrest cushion and cover.

7. Detach the backrest cover from the cushion.

- Cut the hog rings.



VUJ0004535

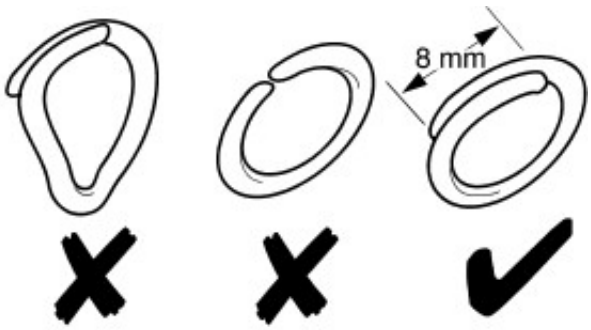


VUJ0004534

8. Remove the backrest cover.

- Cut the hog rings.

Assembly



VUJ0005059

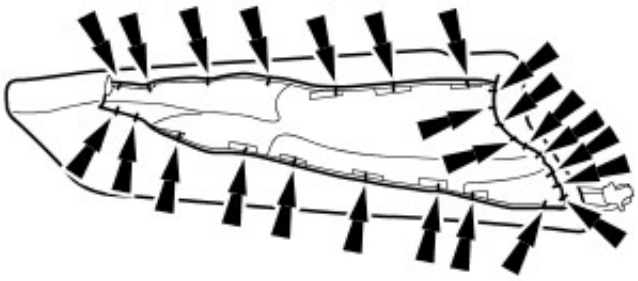
1. NOTE: Install new hog rings. Use hog ring pliers to close the hog rings. Do not use any other tool. The hog rings must be closed to overlap as illustrated.

To assemble, reverse the disassembly procedure.

Seating - Rear Seat Bolster

Disassembly and Assembly

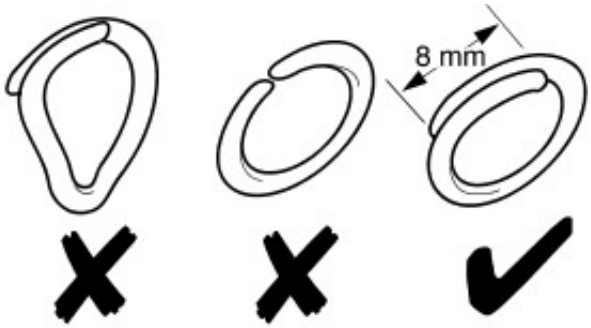
Disassembly



VUJ0004660

1. Remove the rear seat backrest - bolster. For additional information, refer to Rear Seat Backrest—Bolster.
2. Remove the backrest bolster cover.
   - Cut the hog rings.

Assembly



VUJ0005059

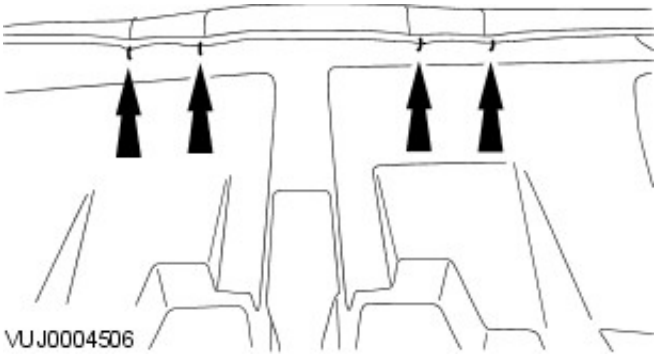
1. NOTE: Install new hog rings. Use hog ring pliers to close the hog rings. Do not use any other tool. The hog rings must be closed to overlap as illustrated.

To assemble, reverse the disassembly procedure.

Seating - Rear Seat Cushion
Disassembly and Assembly

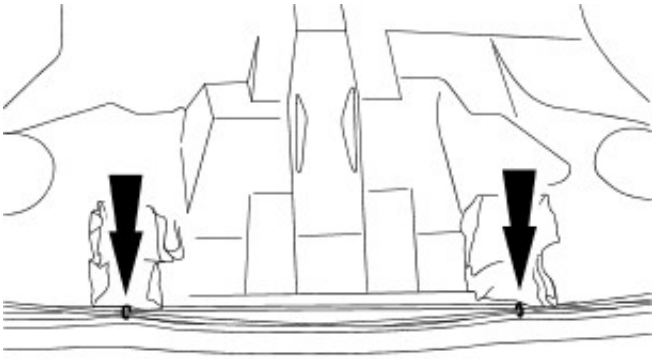
Disassembly

1. Remove the rear seat cushion. For additional information, refer to Rear Seat Cushion.
2. Detach the seat cushion cover.
   - Cut the hog rings.



VUJ0004506

3. Cut the seat cushion cover tension cord retaining hog rings.

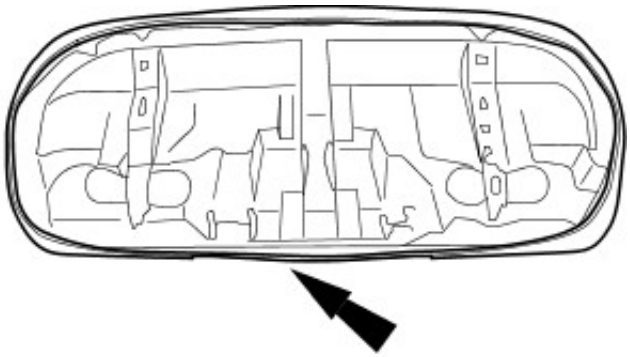


VUJ0004507

4. Detach the seat cushion cover tension cords from the seat cushion.

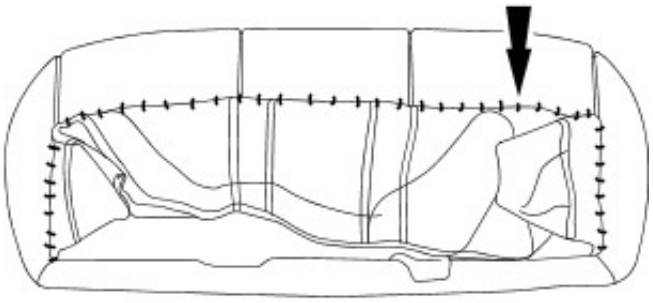
VUJ0004508

5. Detach the seat cushion cover from the seat cushion.

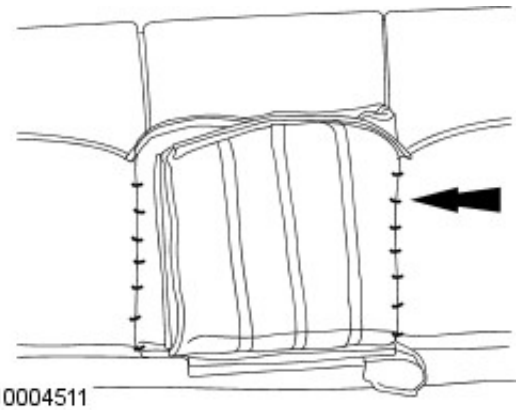


VUJ0004509

6. Detach the seat cushion cover.
   - Cut the hog rings.



VUJ0004510

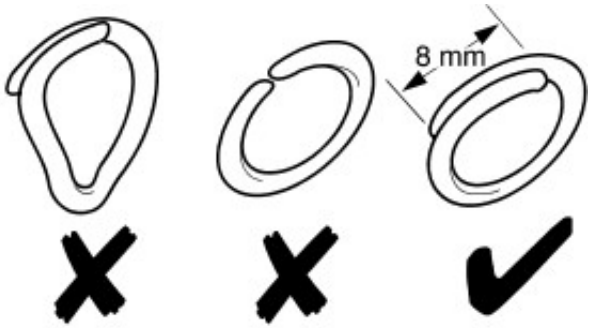


VUJ0004511

7. Remove the seat cushion cover.

- Cut the hog rings.

Assembly



VUJ0005059

1. NOTE: Install new hog rings. Use hog ring pliers to close the hog rings. Do not use any other tool. The hog rings must be closed to overlap as illustrated.

To assemble, reverse the disassembly procedure.

Glass, Frames and Mechanisms -

Adhesive

Description	Specification
Windshield Adhesive	WSS-M2G379-A6A

Torque Specifications

Description	Nm	lb-ft	lb-in
Front window glass retaining bolts	8	-	71
Rear quarter light retaining screws	7	-	62
Rear window glass guide rail retaining nut	7	-	62
Window regulator retaining screws	7	-	62
Liftgate window glass to liftgate window glass hinge retaining bolts	9	-	80

Glass, Frames and Mechanisms - Glass, Frames and Mechanisms

Description and Operation

This vehicle has a fully bonded, laminated front windshield glass glazed directly to the body. The front windshield glass is available in six versions:

- Standard mirror non heated windshield glass.
- Standard mirror with heated windshield glass.
- Electrochromic mirror non heated windshield glass.
- Electrochromic mirror with heated windshield glass.
- Electrochromic mirror non heated windshield glass with rain sensor.
- Electrochromic mirror with heated windshield glass and rain sensor.

The rear windshield glass on 4-door vehicles is a fully bonded toughened glass that combines the antenna for the audio unit within the rear defrost grid. The rear windshield glass is available in two versions:

- Heated with integrated AM/FM antenna
- Heated with integrated AM/FM antenna and TV antenna

The liftgate window glass on wagon is toughened glass, bonded to a mounting bracket which in turn is bolted to the liftgate hinge assembly. The liftgate window glass can be opened independently of the liftgate, and incorporates an electrically operated liftgate window glass release switch and also the rear wiper pivot arm. The liftgate window glass has integral circuits for the liftgate window glass release switch and the defrost grid. The liftgate window glass must be adjusted for correct body clearance.
For additional information, refer to: Liftgate Window Glass Adjustment (501-11 Glass, Frames and Mechanisms, General Procedures).

The heated windshield glass is controlled by the dual automatic temperature control module when the ignition is in the RUN position and the heated windshield glass switch has been activated. Four minutes after activation, the heated windshield glass will automatically switch off. The function is also turned off if the customer deselects before the four minute time has elapsed.

The heated rear windshield glass is controlled by the dual automatic temperature control when the rear windshield glass defrost button is operated. When the switch is operated an indicator in the switch will illuminate indicating that the system is operative. Ten minutes after activation, the heated rear windshield glass will automatically turn off. The function is also turned off if the customer deselects before the ten minute time has elapsed.

The front windows are electrically operated and the rear can be electrically or manually operated. Each electrically powered window can be operated individually or from the main window control switch unless the rear window override switch is active which prevents operation of the rear window control switches.

All switches have two positions enabling either proportional (first position) or automatic ("one-touch" or second position) window activation in the upward or downward direction.

If the system detects an obstacle while the "one-touch" up function is activated the window will stop motion and reverse to a position at least 200 mm (7.87 in) open this is known as "bounce back".

If the system has not been initialized (battery disconnected etc.) then the "one touch" up function will not be active, however "one-touch" down will be active.

The rear quarter window glass on wagon is a fully bonded toughened glass that incorporates the antenna for TV and, for Japan, vehicle information and communication system (VICS). The rear quarter window glass is available in three versions:

- Without antenna.
- With integrated TV antenna.
- With integrated TV and VICS antenna.

Glass, Frames and Mechanisms - Glass, Frames and Mechanisms

Diagnosis and Testing

Inspection and Verification

1. **1.** Verify the customer concern by operating the system.
2. **2.** Visually inspect for obvious signs of mechanical and electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Window glass • Window regulator	• Blown fuse(s) • Window motor • Damaged wiring harness • Loose or corroded connectors • Circuitry open/shorted

3. **3.** If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **4.** If the concern is not visually evident, verify the symptom and refer to the approved Jaguar diagnostic system.

Glass, Frames and Mechanisms - Door Window Motor Initialization

General Procedures

1. NOTE: After the battery has been disconnected it is necessary to initialize each door window motor separately to operate the "one-touch" up function.

Operate the window control switch until the door window glass is in the fully closed position, continue to operate the window control switch for a further two seconds.

2. Release the window control switch.

3. Operate the window control switch in the closed position and continue to operate the window control switch for a further two seconds.

4. Operate the window control switch until the door window glass is in the fully open position ("one-touch" down).

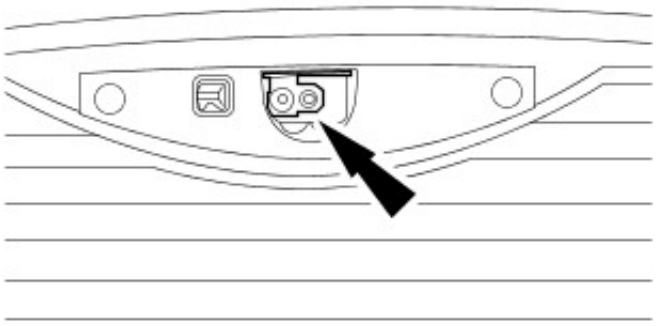
5. NOTE: If the door window motor initialization has been completed correctly, when the window control switch is operated, the door window glass should move to the fully closed position ("one-touch" up) automatically.

• NOTE: If the door window glass does not fully close automatically ("one-touch" up), repeat the complete procedure.

Operate the window control switch once to the close position.

6. Repeat the door window motor initialization for each door window motor.

Glass, Frames and Mechanisms - Liftgate Window Glass Adjustment
General Procedures



E49816

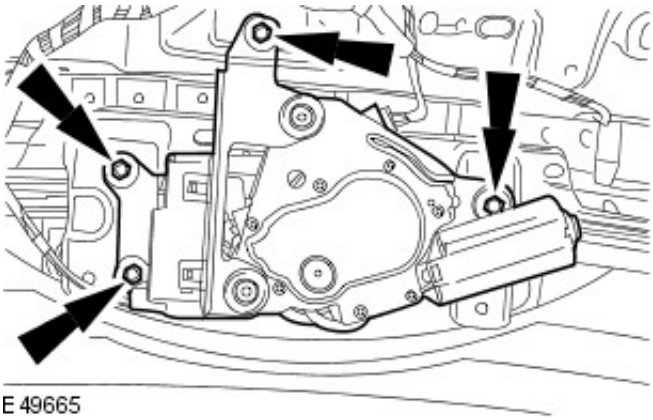
1. Make sure the rear wiper mounting arm is in the parked position.

2. Open the liftgate window glass.

3. Open the liftgate.

4. Remove the liftgate trim panel.
   For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

5. Loosen the rear wiper motor retaining nuts.

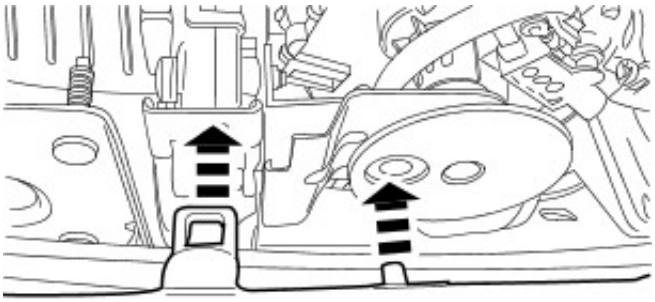


E49665

6. Close the liftgate.

7. NOTE: The aid of an assistant in the loadspace will be required to align the rear wiper motor to the liftgate window glass.

   Make sure the liftgate glass latch and rear wiper mounting arm locate correctly into the liftgate latch actuator and rear wiper motor.

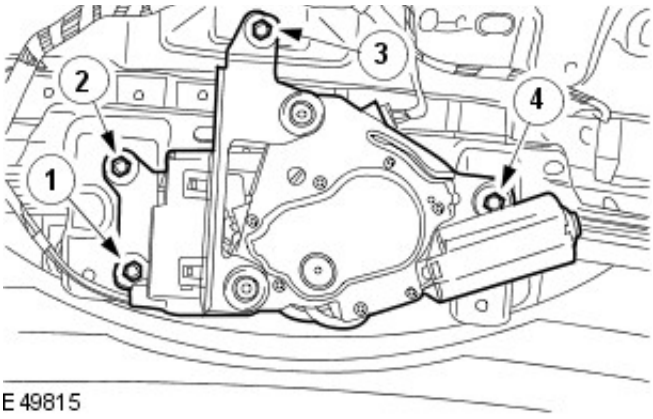


E49656

8. Close the liftgate glass.

9. CAUTIONS:

   With the aid of an assistant in the loadspace, fully tighten the rear wiper motor retaining nuts. Failure to follow this instruction may result in damage to the vehicle.



E49815

Make sure the rear wiper motor does not move whilst tightening the retaining nuts. Failure to follow this instruction may result in damage to the vehicle.

Tighten the rear wiper retaining bolts in the order shown.

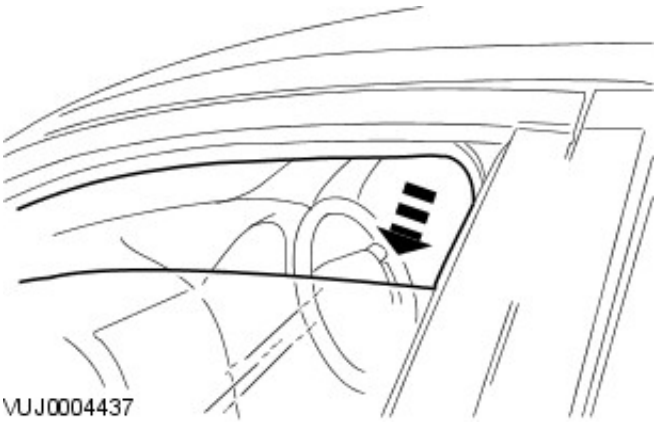
1. Tighten to 8 Nm.

10. Visually check the liftgate window glass for correct alignment.

11. Install the liftgate trim panel.
For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

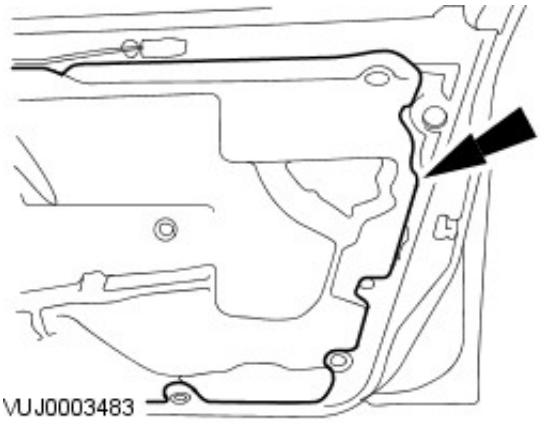
Glass, Frames and Mechanisms - Front Door Window Glass
Removal and Installation

Removal


VUJ0004437

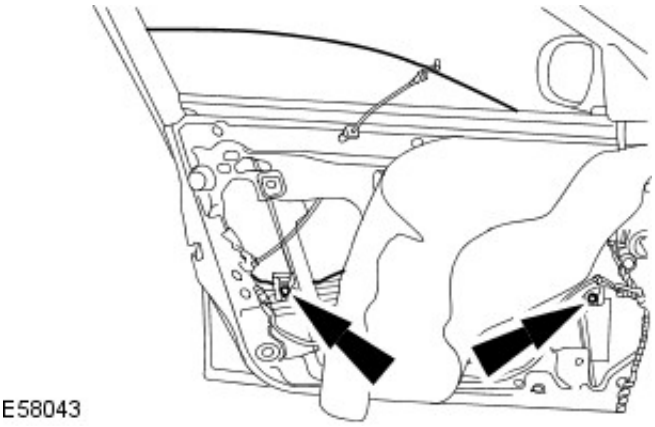
1. Lower the front door window glass approximately 290 mm (11.41 in).

2. Remove the front door trim panel.
   For additional information, refer to: Front Door Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).


VUJ0003483

3. CAUTION: Do not touch the adhesive surface as rebonding will be impaired.

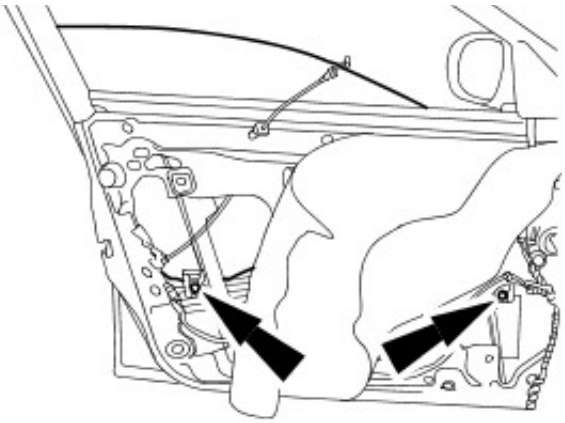
   Detach the front door weathershield.


E58043

4. Remove the front door window glass.
   - Loosen the retaining bolts.

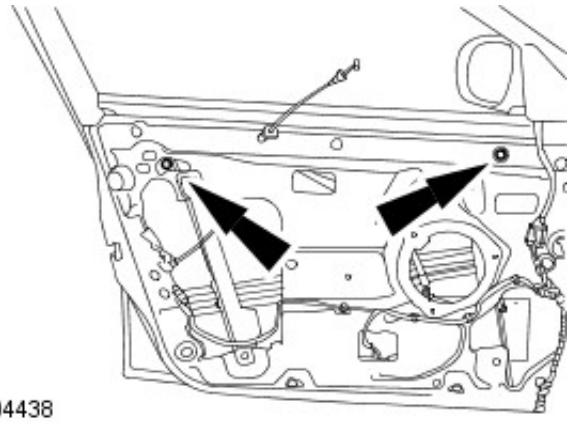
Installation

1. Install the front door window glass, but do not tighten the retaining bolts.

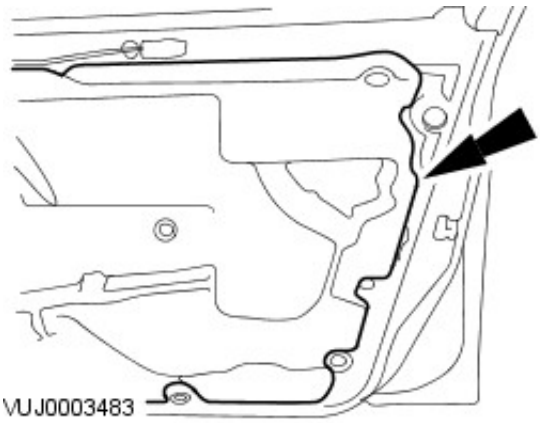


E58043

2. Connect the window control switch electrical connector.
3. Power the front door window glass to the fully closed position.
4. Tighten to 8 Nm.



VUJ0004438



VUJ0003483

5. CAUTION: Do not touch the adhesive surface as rebonding will be impaired.

   Attach the front door weathershield.

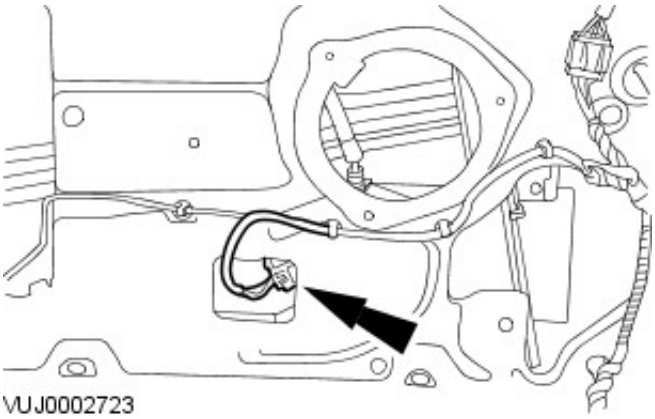
6. Install the front door trim panel.
   For additional information, refer to: Front Door Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

Glass, Frames and Mechanisms - Front Door Window Regulator and Motor

Removal and Installation

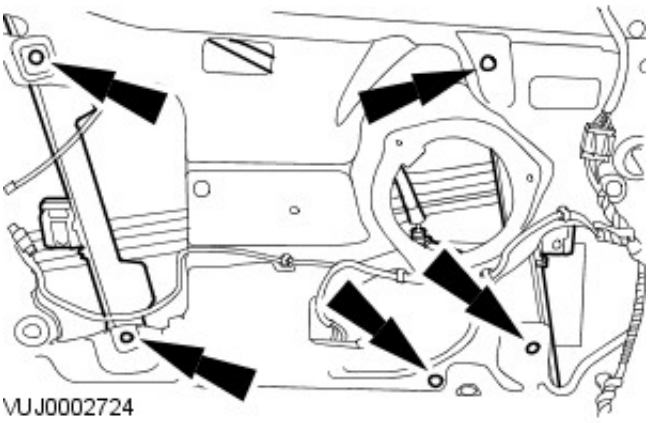
Removal

1. Remove the front door window glass.
   For additional information, refer to: Front Door Window Glass (501-11 Glass, Frames and Mechanisms, Removal and Installation).
2. Disconnect the electrical connector.



VUJ0002723

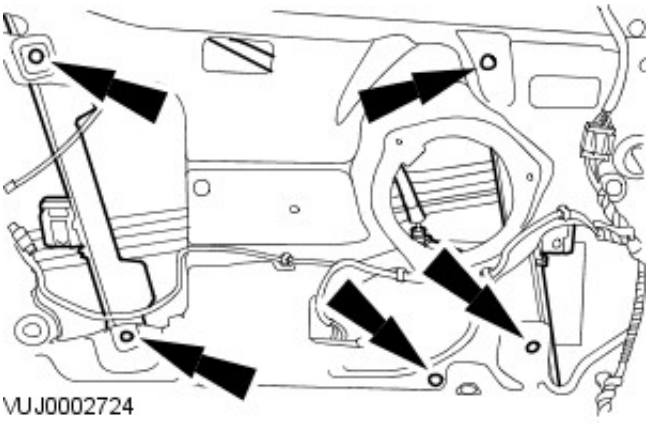
3. Remove the front door motor and window regulator.



VUJ0002724

Installation

1. To install, reverse the removal procedure.
2. Tighten to 7 Nm.

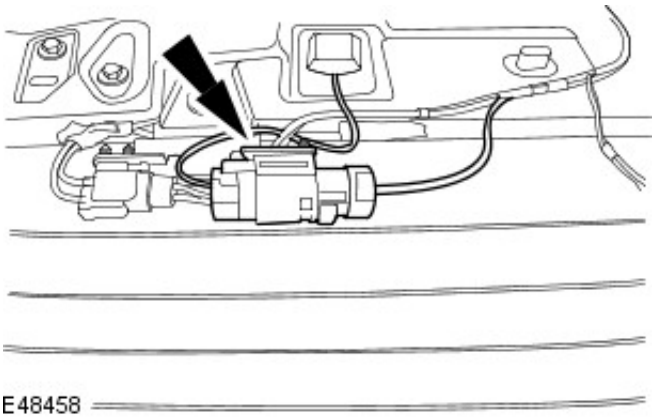


VUJ0002724

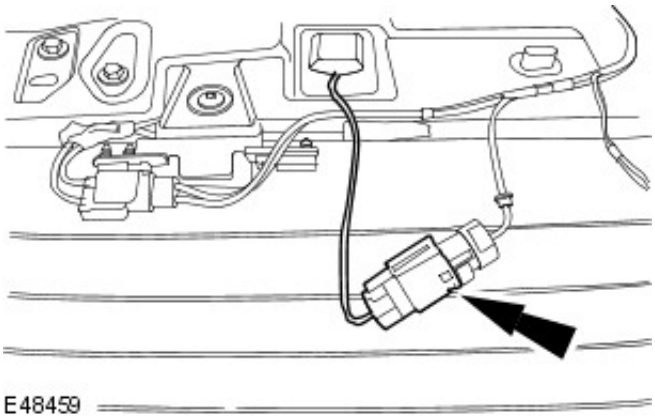
Glass, Frames and Mechanisms - Liftgate Window Glass
Removal and Installation

Removal

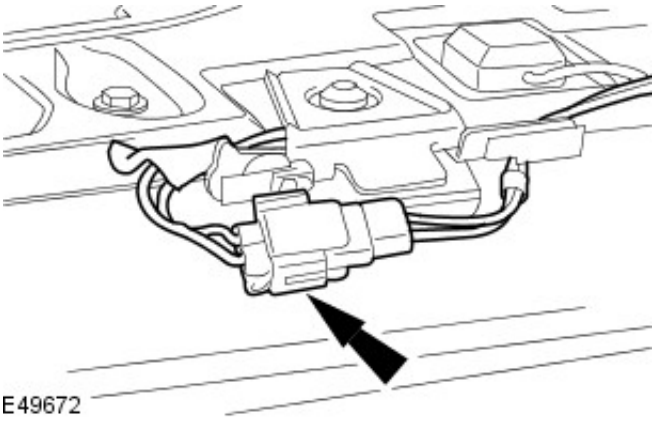
1. Remove the rear spoiler.
   For additional information, refer to: Rear Spoiler - Wagon (501-08 Exterior Trim and Ornamentation, Removal and Installation).
2. Detach the navigation system antenna electrical connector.


E48458

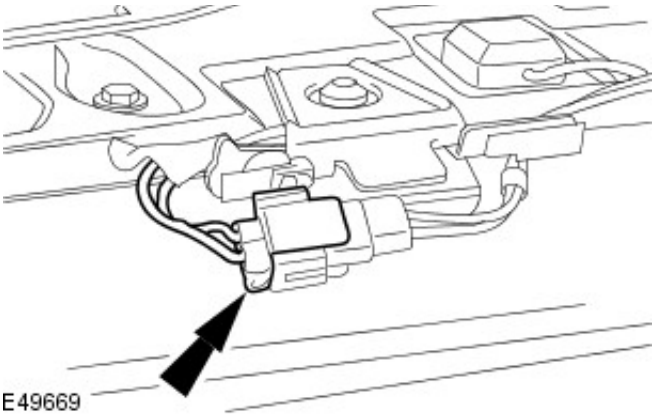
3. Disconnect the navigation system antenna electrical connector.

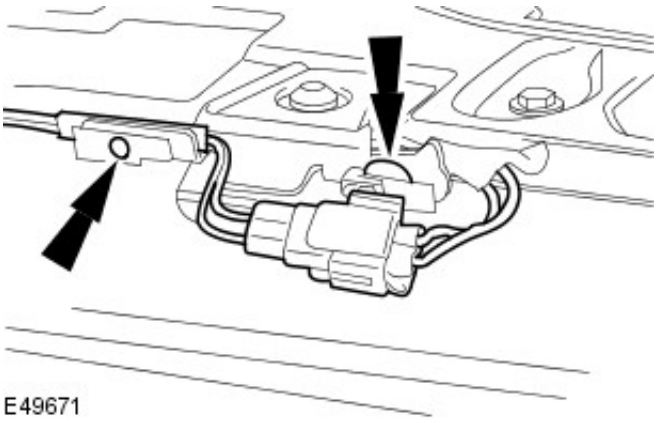

E48459

4. Detach the defrost grid wire electrical connector.

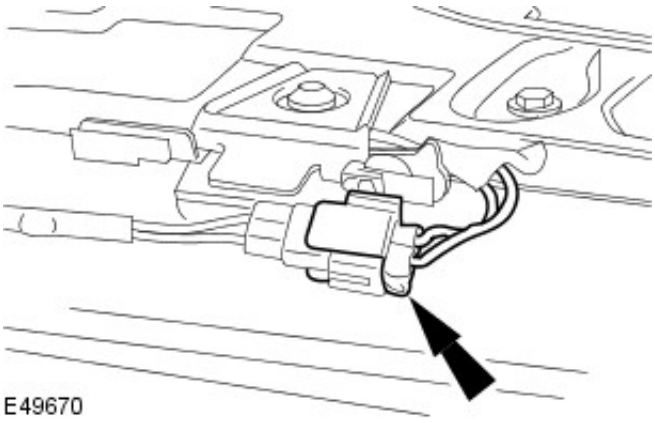

E49672

5. Disconnect the defrost grid wire electrical connector.

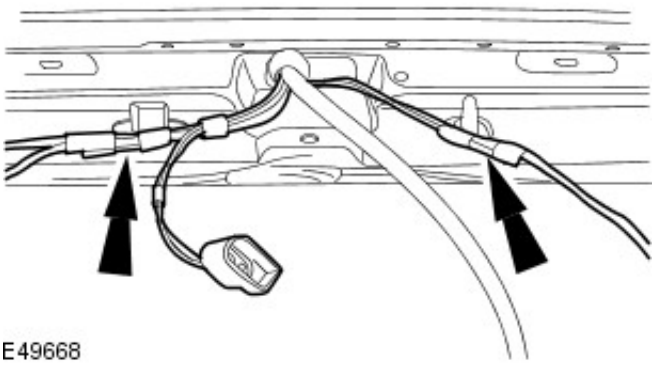

E49669


E49671

6. Detach the liftgate window glass release switch electrical connector.


E49670

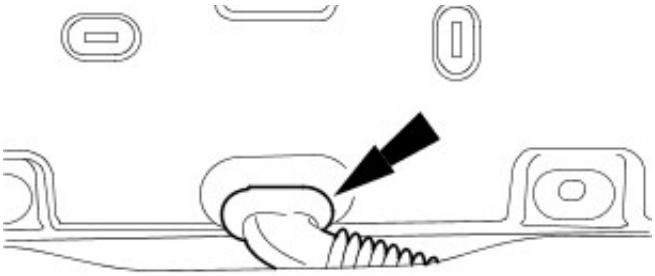
7. Disconnect the liftgate window glass release switch electrical connector.


E49668

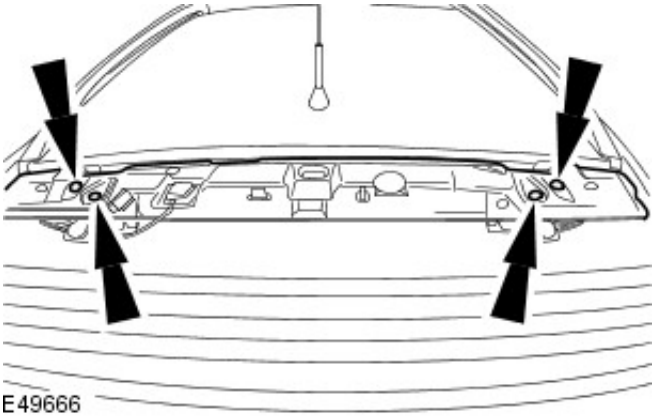
8. Detach the liftgate window glass wiring harness retaining clips.

9. Detach the liftgate window glass wiring harness grommet.

- Pass the wiring harness through the aperture.



E49667



E49666

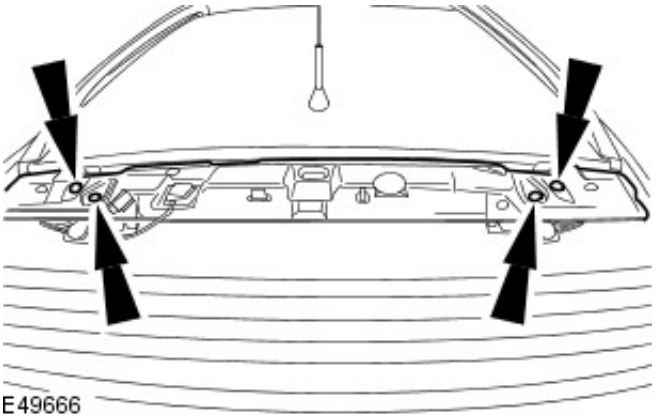
10. CAUTION: Make sure the liftgate window glass is in the open position before removing the retaining bolts. Failure to follow this instruction may result in damage to the vehicle.

• NOTE: Make sure the liftgate window glass is supported before removing the retaining bolts.

• NOTE: Liftgate window glass shown closed for clarity.

Remove the liftgate window glass.

Installation



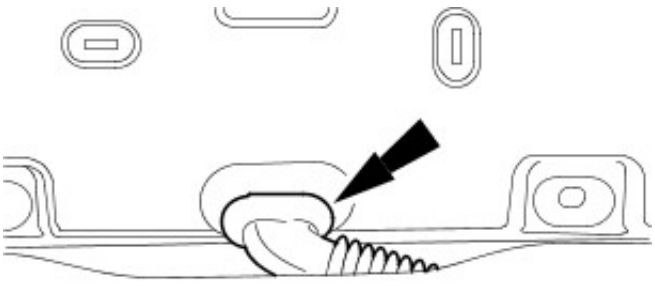
E49666

1. CAUTION: Make sure the liftgate window glass does not contact the vehicle body work when the liftgate window glass is closed. Failure to follow this instruction may result in damage to the vehicle.

• NOTE: Align the liftgate window glass retaining bolts centrally to the liftgate window glass retaining bolt holes.

Install the liftgate window glass.

1. Tighten to 9 Nm.

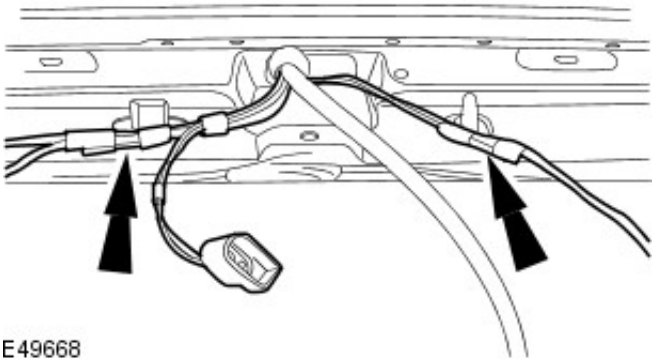


E49667

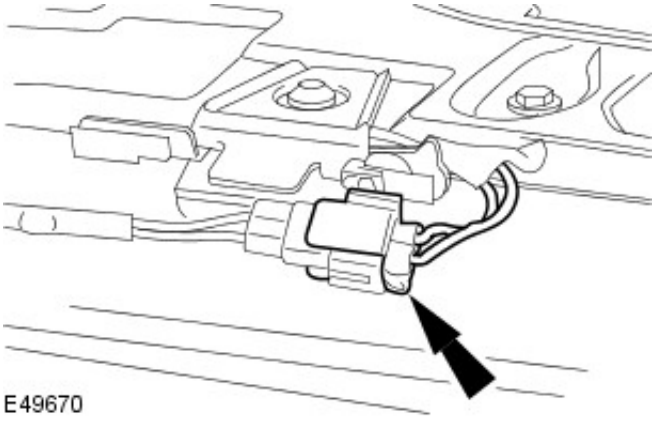
2. Attach the liftgate window glass wiring harness grommet.

- Pass the wiring harness through the aperture.

3. Attach the liftgate window glass wiring harness retaining clips.

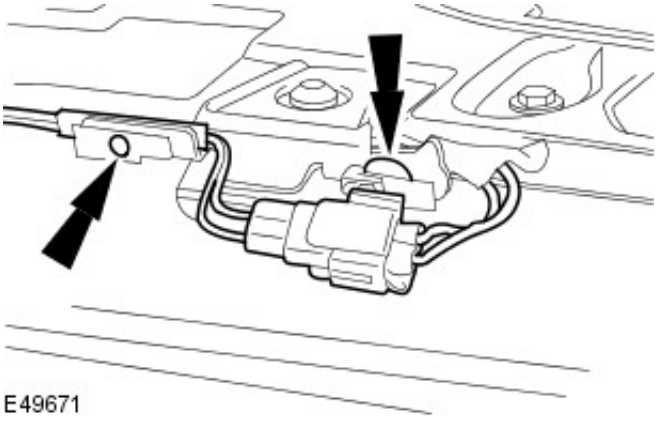


E49668



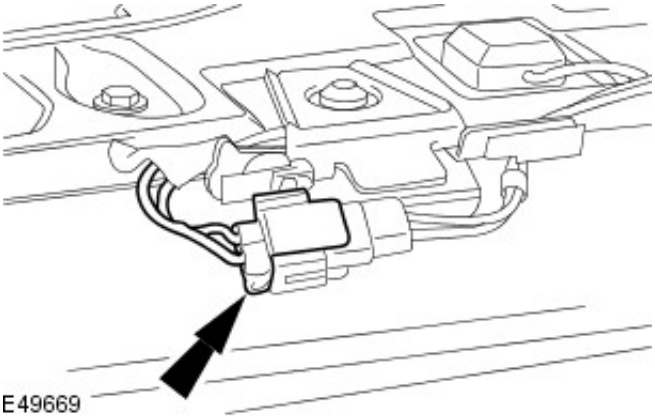
E49670

4. Connect the liftgate window glass release switch electrical connector.



E49671

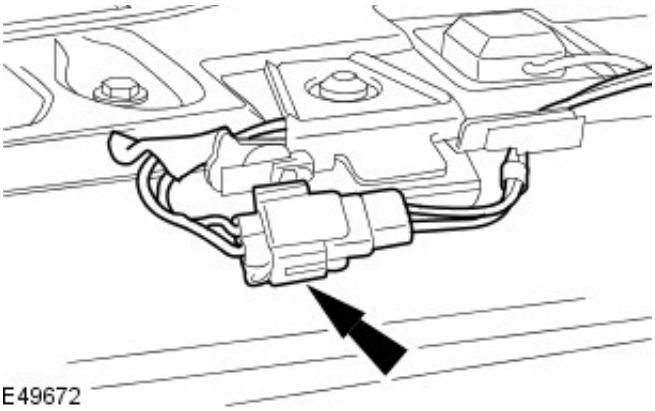
5. Attach the liftgate window glass release switch electrical connector.



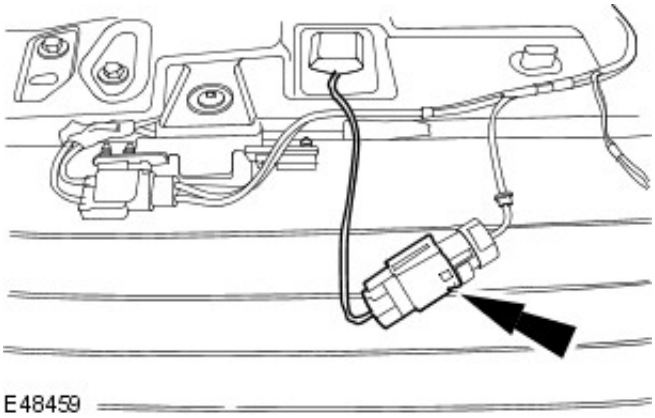
E49669

6. Connect the defrost grid wire electrical connector.

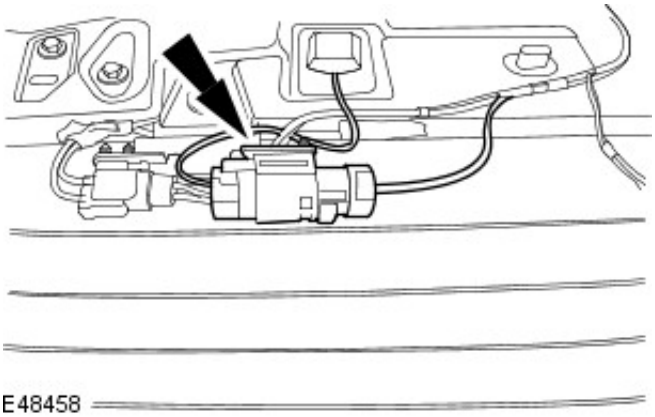
7. Attach the defrost grid wire electrical connector.



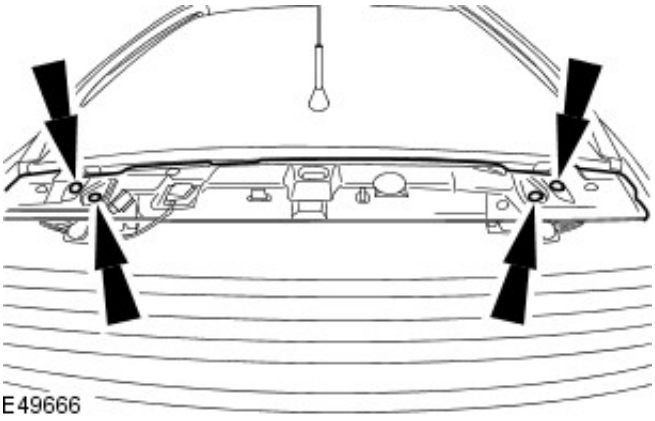
8. Connect the navigation system antenna electrical connector.



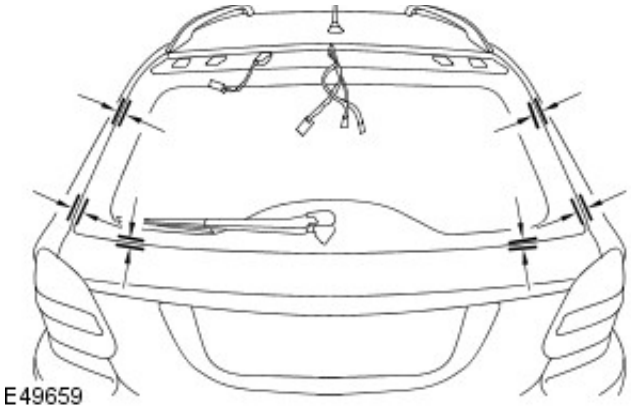
9. Attach the navigation system antenna electrical connector.



10. Loosen the liftgate window glass retaining bolts.



11. Align the liftgate window glass to the liftgate window glass aperture.



E49659

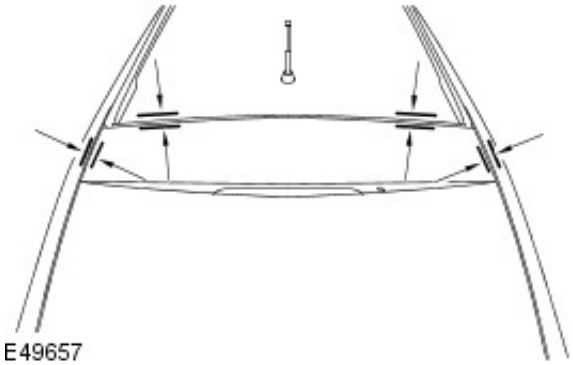
12. Tighten the liftgate window glass retaining bolts.

- Tighten to 9 Nm.

13. CAUTION: Make sure the rear spoiler does not contact the vehicle roof panel when the liftgate window glass is opened. Failure to follow this instruction may result in damage to the vehicle.

Install the rear spoiler.
For additional information, refer to: Rear Spoiler - Wagon (501-08 Exterior Trim and Ornamentation, Removal and Installation).

14. Visually check the alignment of the rear spoiler to the liftgate window glass aperture.

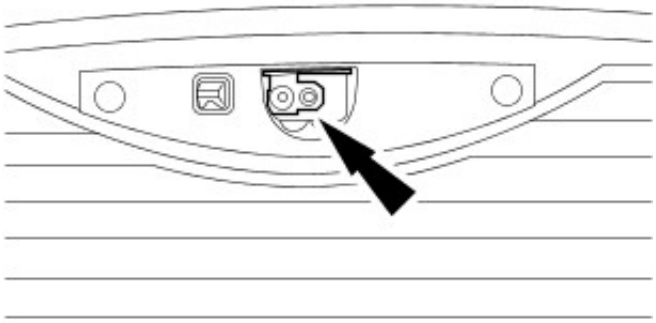


E49657

15. Close the liftgate.

16. Close the liftgate window glass.

17. Make sure the rear wiper pivot arm is in the parked position.

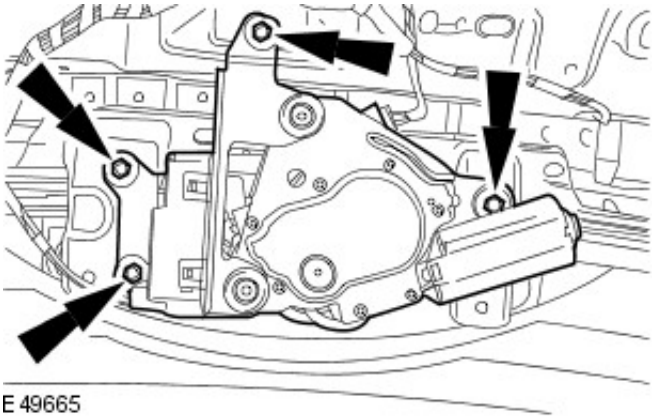


E49816

18. Open the liftgate window glass.

19. Open the liftgate.

20. Remove the liftgate trim panel.
For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).



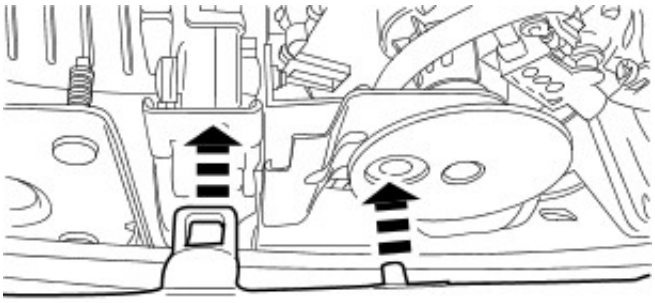
E49665

21. Loosen the rear wiper motor retaining nuts.

22. Close the liftgate.

23. NOTE: The aid of an assistant in the loadspace will be required to align the rear wiper motor to the liftgate window glass.

Make sure the liftgate glass latch and rear wiper mounting arm locate correctly into the liftgate latch actuator and rear wiper motor.



E49656

24. Close the liftgate glass.

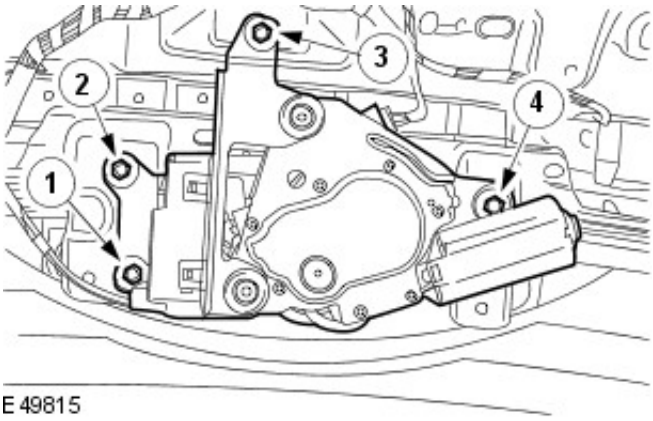
25. CAUTIONS:

With the aid of an assistant in the loadspace, fully tighten the rear wiper motor retaining nuts. Failure to follow this instruction may result in damage to the vehicle.

Make sure the rear wiper motor does not move whilst tightening the retaining nuts. Failure to follow this instruction may result in damage to the vehicle.

Tighten the rear wiper motor retaining nuts in the order shown.

- Tighten to 8 Nm.



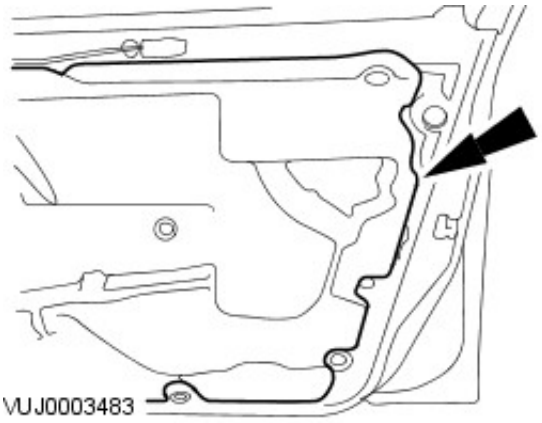
E49815

26. Install the liftgate trim panel.
For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

Glass, Frames and Mechanisms - Rear Door Fixed Window Glass
Removal and Installation

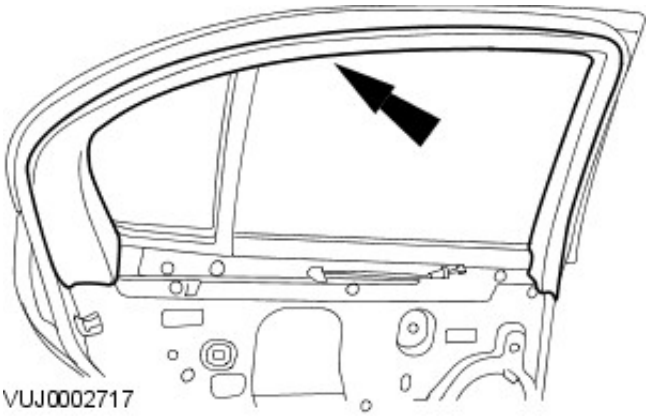
Removal

1. Remove the rear door trim panel. For additional information, refer to Section 501-05 Interior Trim and Ornamentation.

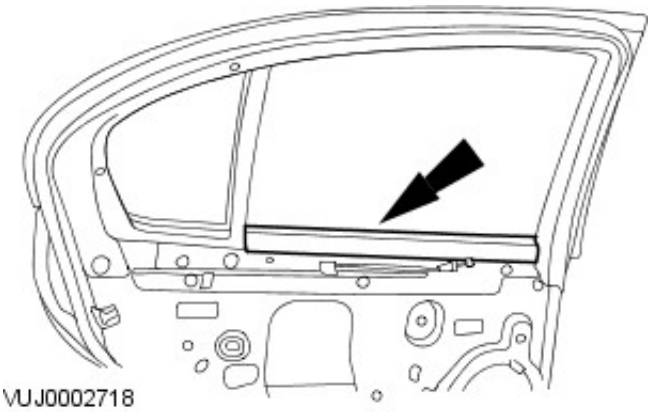

VUJ0003483

2. CAUTION: Do not touch the adhesive surface as rebonding will be impaired.

Peel back the weathershield.


VUJ0002717

3. Detach the window glass surround trim.

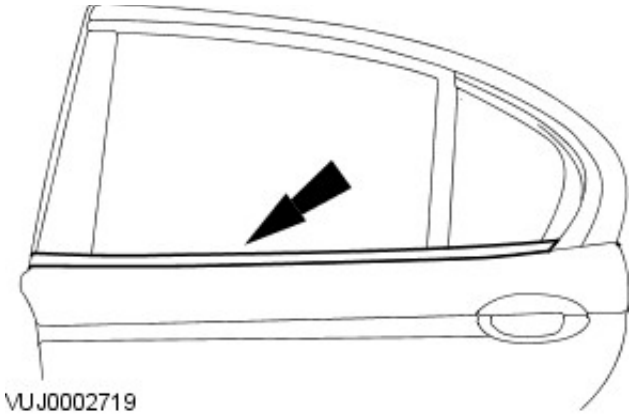

VUJ0002718

4. CAUTION: Do not bend or deform the interior weatherstrip.

Remove the door interior weatherstrip.

5. CAUTION: Do not bend or deform the exterior weatherstrip.

Remove the door exterior weatherstrip.

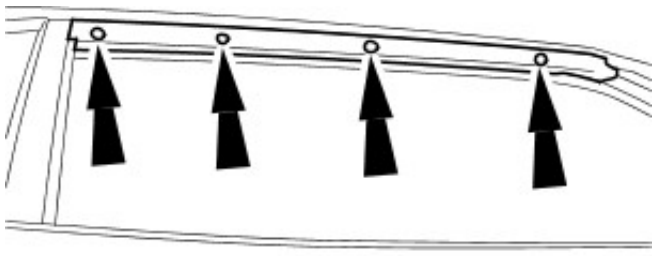


VUJ0002719

6. Detach the window glass aperture seal.

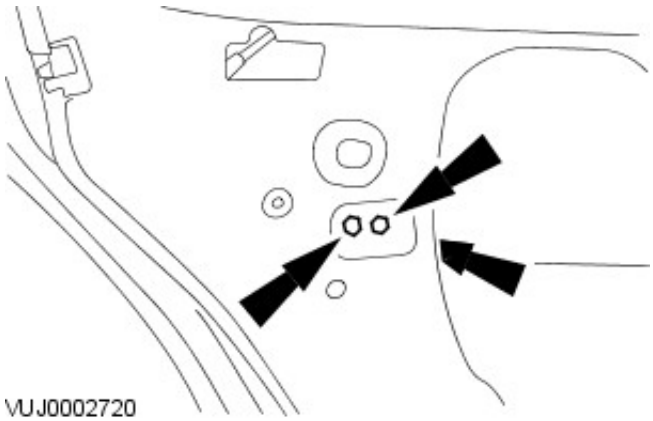
VUJ0003936

7. Remove and discard the rivets.



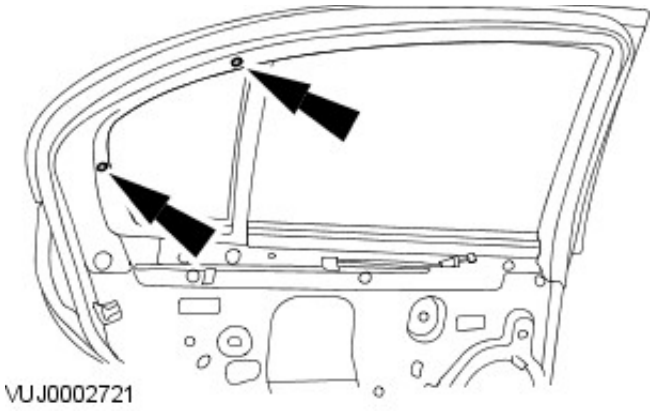
VUJ0003940

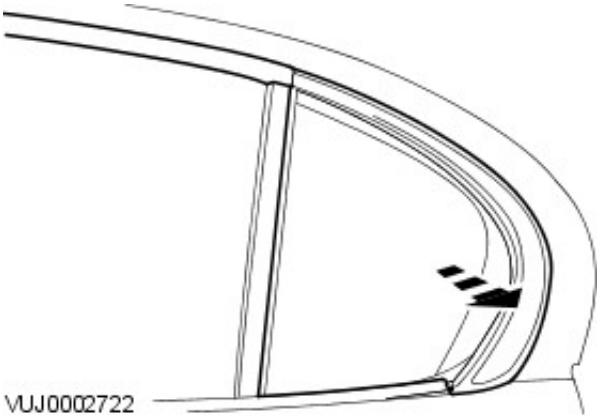
8. Detach the rear quarter window glass guide rail retaining bracket.



VUJ0002720

9. Remove the retaining screws.


VUJ0002721

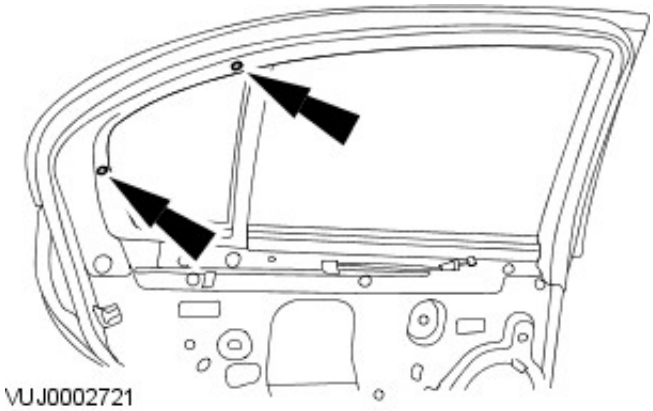

VUJ0002722

10. CAUTION: Use care when removing the rear quarter window glass. Failure to follow these instructions may result in damage to the window glass and the exterior trim.

Remove the rear quarter window glass.

11. Remove any Butyl adheasive from around the rear quarter window glass door aperature.

Installation

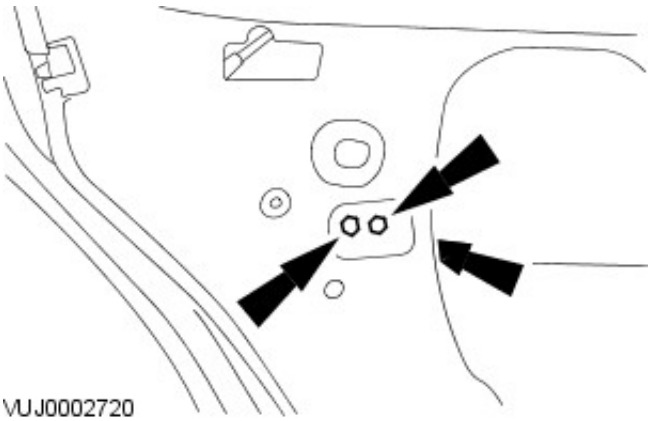

VUJ0002721

1. CAUTION: Use care when installing the rear quarter window glass. Failure to follow these instructions may result in damage to the window glass and the exterior trim.

• NOTE: When refitting the original rear quarter glass, apply new bead of Butyl adhesive.

To install, reverse the removal procedure.

- Tighten to 7 Nm.


VUJ0002720

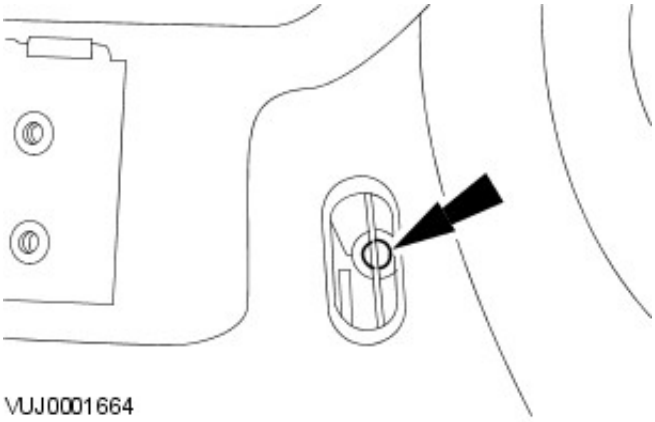
2. Tighten to 7 Nm.

Glass, Frames and Mechanisms - Rear Door Window Glass

Removal and Installation

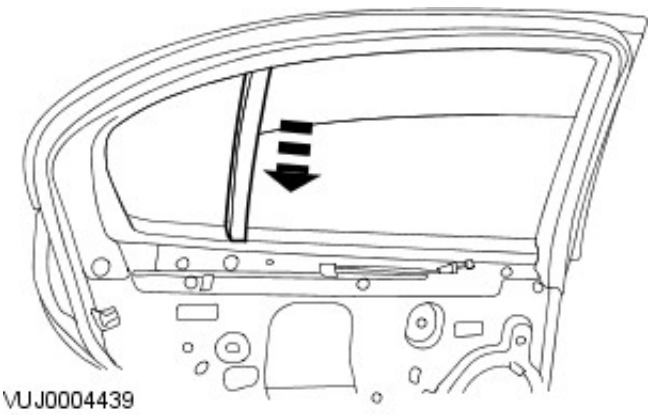
Removal

1. Remove the rear quarter window glass. For additional information, refer to Window Glass—Rear Quarter.
2. Lower the door window glass until the pin is visible in the access hole.



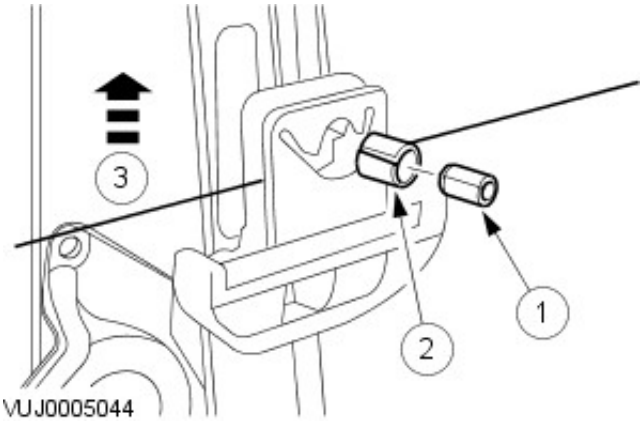
VUJ0001664

3. Reposition the rear window guide rail.



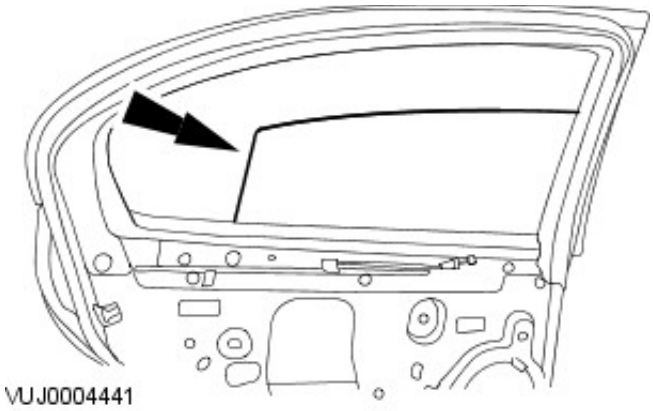
VUJ0004439

4. Detach the window glass from the regulator.
    1. Remove the pin.
    2. Remove the sleeve.
    3. Detach the window glass from the regulator.



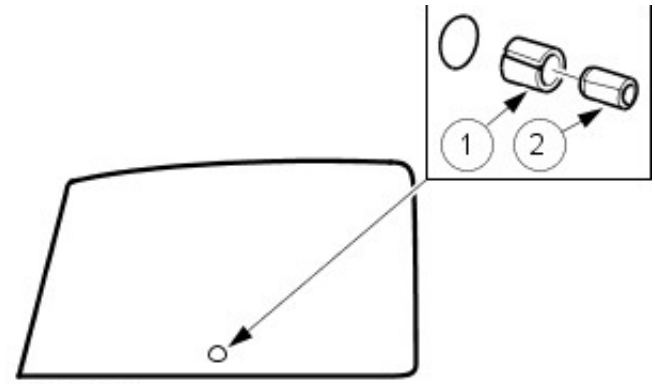
VUJ0005044

5. Remove the window glass.



VUJ0004441

Installation



VUJ0004721

1. CAUTION: Use care when installing the sleeve and the pin into the window glass. Failure to follow these instructions may result in damage to the window glass.

Install the pin.

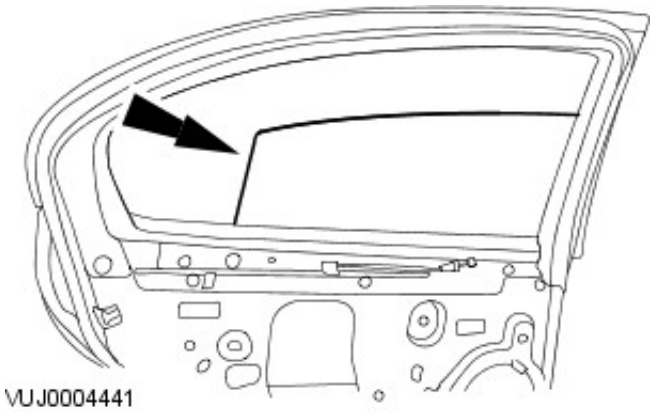
1. CAUTION: Make sure the sleeve is fitted central in the window glass.

1. Install the sleeve.

1. CAUTION: Make sure the sleeve stays central in the window glass.

2. Install the pin.

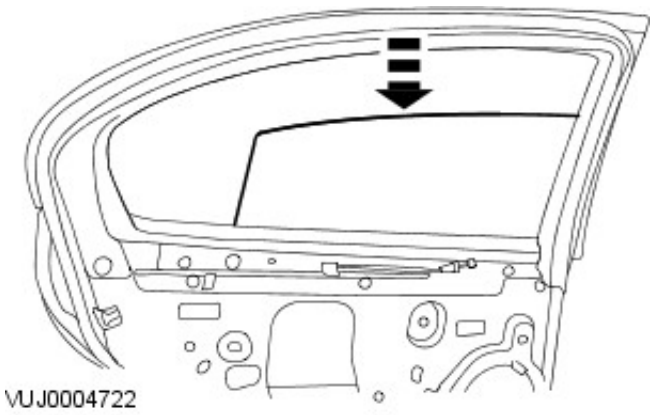
2. Install the window glass.



VUJ0004441

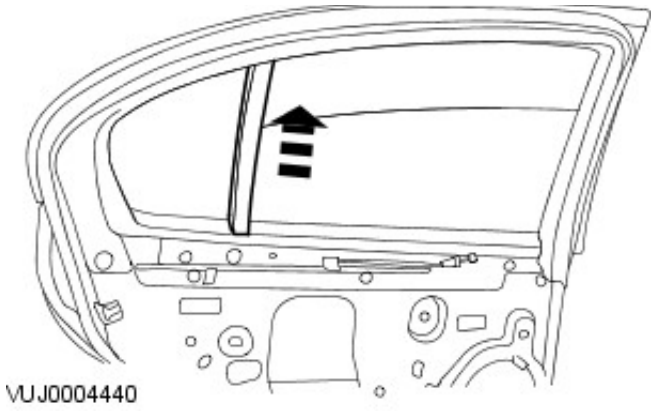
3. NOTE: Insert the glass into the regulator glass clamp and firmly pushed down. Check both sides of the clamp have snapped over the spacer bracket pin.

Attach the window glass into the regulator clamp.



VUJ0004722

4. Reposition the rear window guide rail.



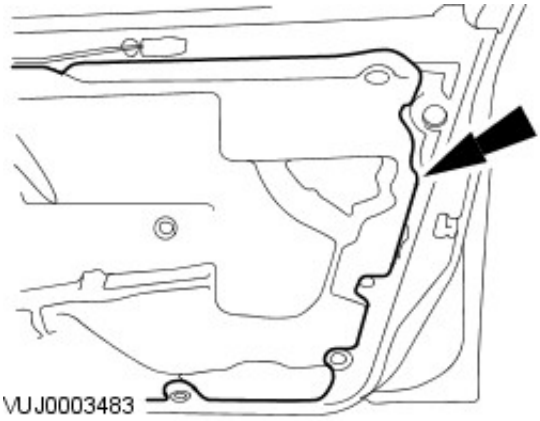
5. Install the rear quarter window glass. For additional information, refer to Window Glass—Rear Quarter.

Glass, Frames and Mechanisms - Rear Door Window Regulator

Removal and Installation

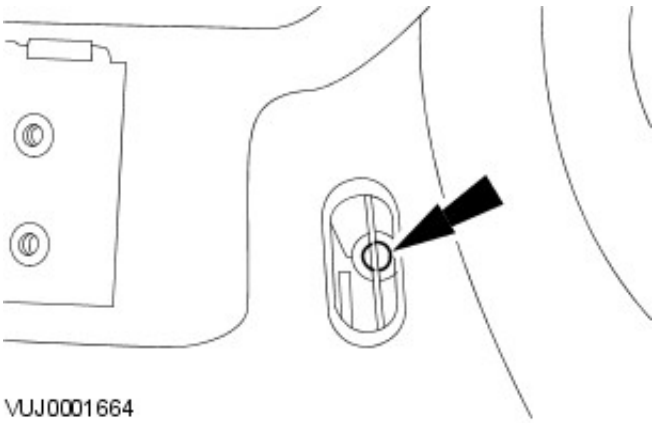
Removal

1. Remove the door trim panel.
   For additional information, refer to Section 501-05 Interior Trim and Ornamentation.
2. Remove the rear speaker.
   For additional information, refer to Section 415-03 Speakers.

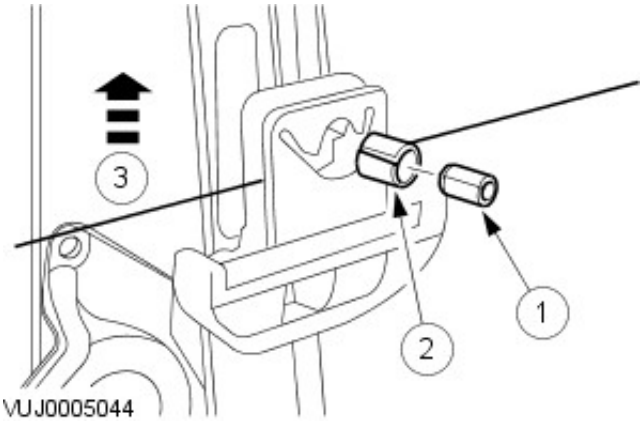

VUJ0003483

3. CAUTION: Do not touch the adhesive surface as rebonding will be impaired

   Peel back the weathershield.


VUJ0001664

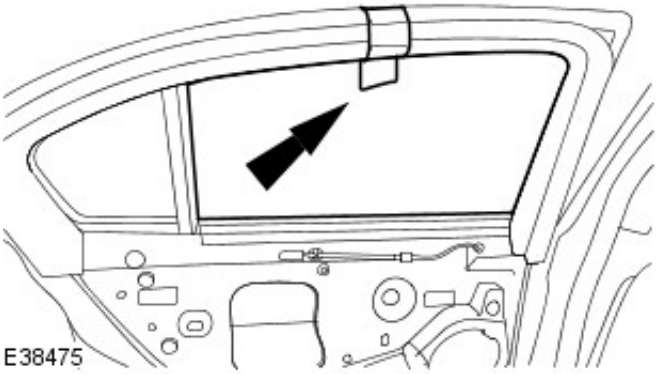
4. Lower the door window glass until the pin is visible in the access hole.

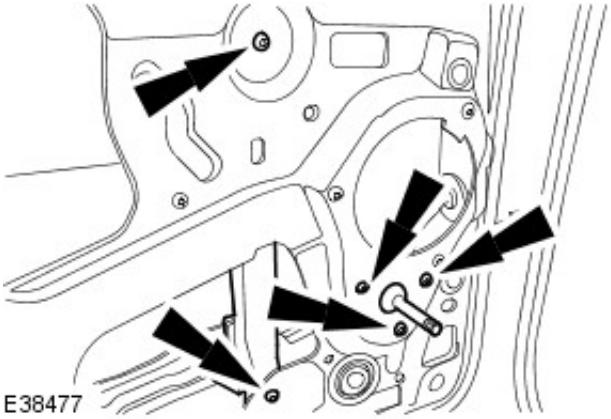


VUJ0005044

5. Detach the window glass from the regulator.
   1. Remove the pin.
   2. Remove the sleeve.
   3. Detach the window glass from the regulator.

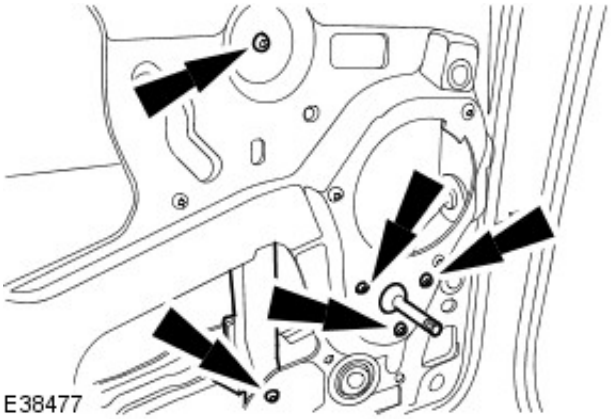
6. Secure window glass in the fully raised position.
   - Apply suitable protective tape to the top of the window glass.





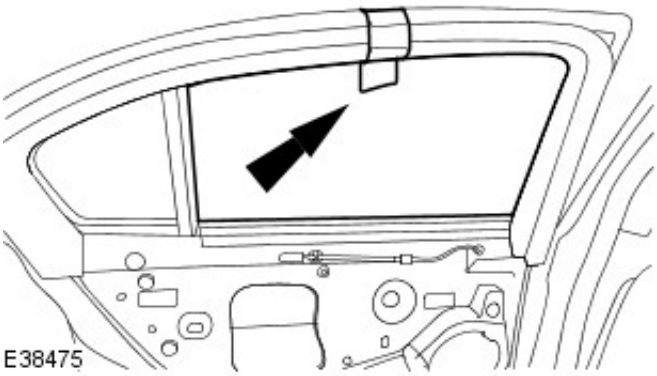
7. Remove the rear door window regulator.

Installation



1. Install the rear door window regulator.

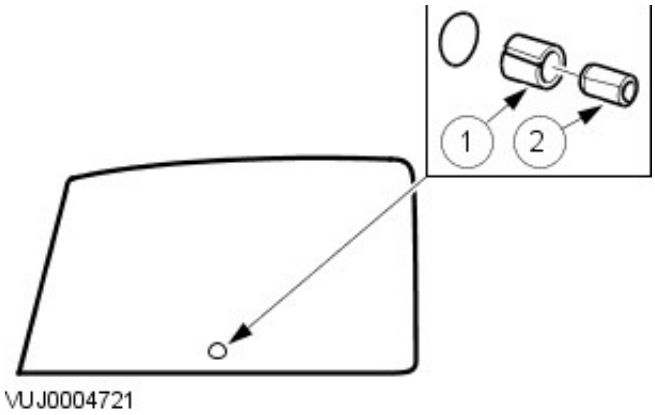
- Tighten to 7 Nm.



2. CAUTION: Support the window glass prior to removal of the protective tape.

Remove the protective tape from the top of the window glass.

3. CAUTION: Use care when installing the sleeve and pin into the window glass. Failure to follow these instructions may



VUJ0004721

result in damage to the window glass.

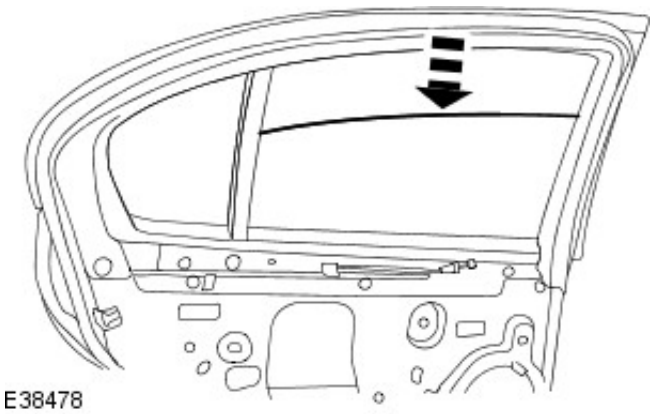
Install the pin.

3. CAUTION: Make sure the sleeve is fitted central in the window glass.

1. Install the sleeve.

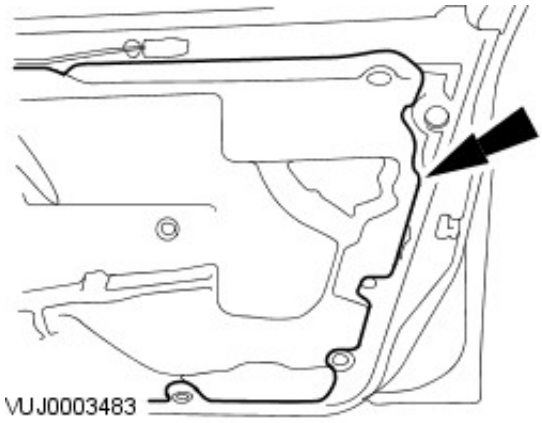
3. CAUTION: Make sure the sleeve stays central in the window glass.

2. Install the pin.


E38478

4. NOTE: Insert the glass into the regulator glass clamp and firmly pushed down. Check both sides of the clamp have snapped over the spacer bracket pin.

Attach the window glass into the regulator clamp.


VUJ0003483

5. CAUTION: Do not touch the adhesive surface as rebonding will be impaired

Install the weathershield.

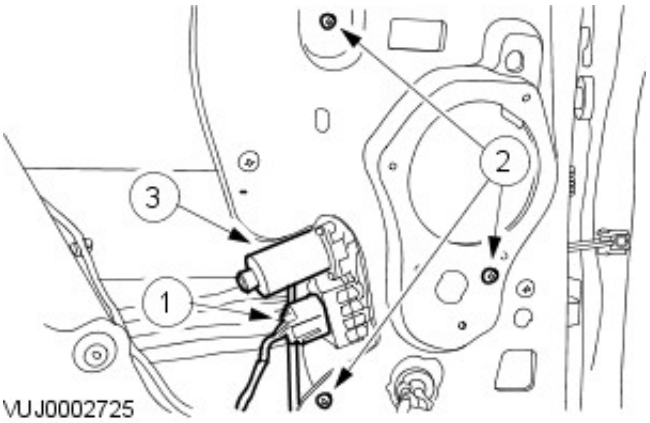
6. Install the rear door speaker.
For additional information, refer to Section 415-03 Speakers.

7. Install the door trim panel.
For additional information, refer to Section 501-05 Interior Trim and Ornamentation.

Glass, Frames and Mechanisms - Rear Door Window Regulator and Motor

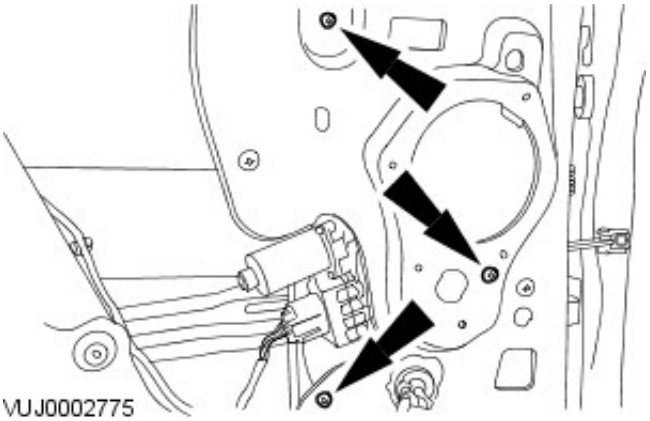
Removal and Installation

Removal



1. Remove the rear door window glass.
   For additional information, refer to: Rear Door Window Glass (501-11 Glass, Frames and Mechanisms, Removal and Installation).
2. Remove the rear motor and window regulator.
   1. Disconnect the electrical connector.
   2. Remove the retaining screws.
   3. Remove the rear motor and window regulator.

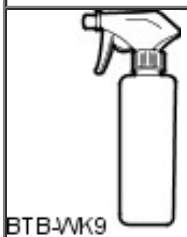
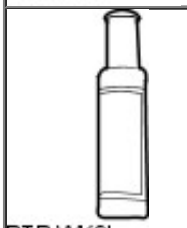
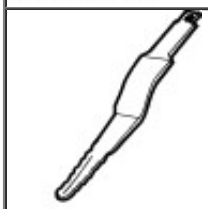
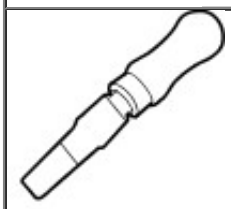
Installation



1. To install, reverse the removal procedure.
2. Tighten to 7 Nm.

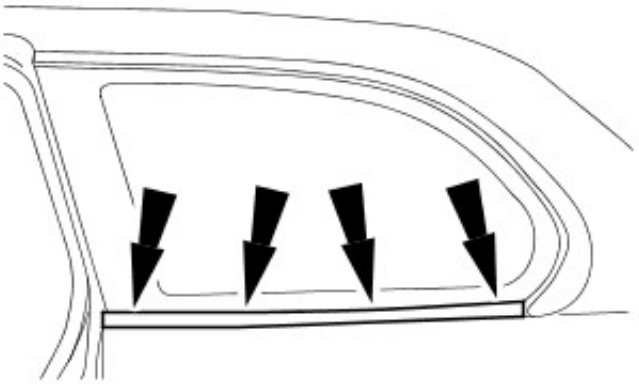
Glass, Frames and Mechanisms - Rear Quarter Window Glass

Removal and Installation

Special Tool(s)	
 BTB-WK9	Spray Bottle WK9
 BTB-WK9L	Lubricant Concentrate WK9L
 BTB-WK10HD	Power Cutting Tool WK10HD
 BTB-WK4ZS	Cutting Blade - Side WK4ZS
 BTB-WK6	Adhesive Removal Blade - Body WK6
 E43759	Betagun application gun Betagun 111

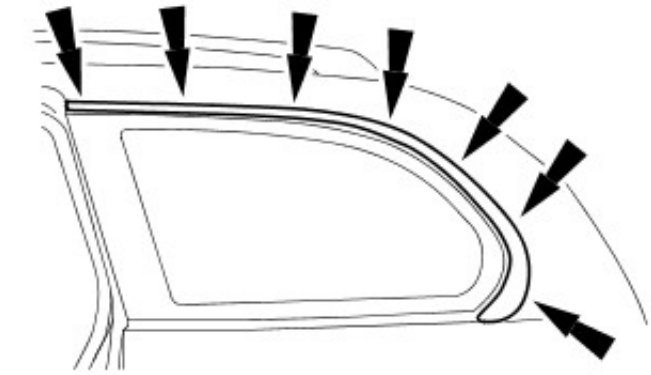
Removal

1. Remove the rear quarter window glass weatherstrip.



E49438

2. Remove the rear quarter window glass finisher trim.



E49439

3. Remove the loadspace trim panel.
For additional information, refer to: Loadspace Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

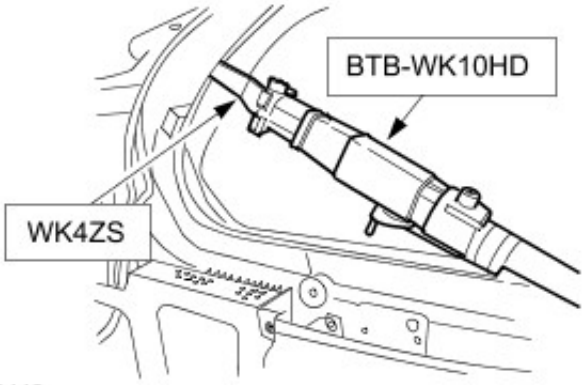
4. Apply a suitable protective tape to the edge of the headliner above the rear quarter glass.

5. Dispense 20ml of WK9L lubricant into the WK9 spray bottle, fill the spray bottle with water and mix.

6. CAUTION: Make sure cutting lubricant does not contact any electrical components. Failure to follow this instruction may result in damage to the component.

Apply cutting lubricant to the rear quarter window glass adhesive.

7. Install the cutting tool blade BTB-WK4ZS to the cutting tool BTB-WK10HD.



E49442

8. WARNING: When removing the rear quarter window glass, personal protection must be worn. Failure to follow this instruction may result in personal injury.

• CAUTIONS:

Make sure the rear quarter glass edge seal is not damaged when cutting the rear quarter window glass adhesive.

Support the rear quarter window glass when cutting the rear quarter window glass adhesive.

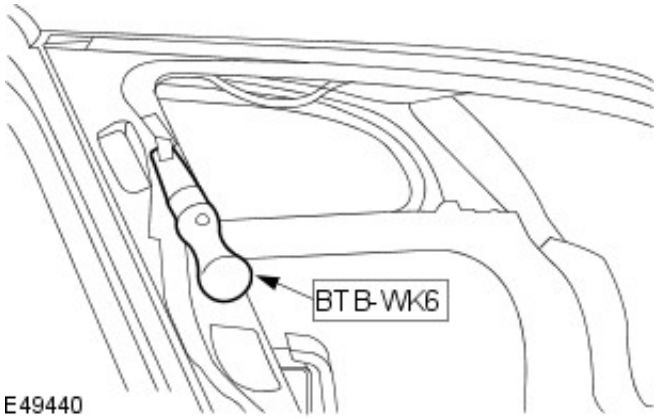
• NOTE: Apply cutting lubricant to the cutting tool frequently throughout the cutting process.

Using the special tool cut through the rear quarter window

glass adhesive.

9. Remove the rear quarter window glass.

Installation



E49440

1. WARNINGS:

If the rear quarter window glass is being installed at a temperature of 23°C (73°F) or above make sure the vehicle is not driven for at least 1 hour after installation.

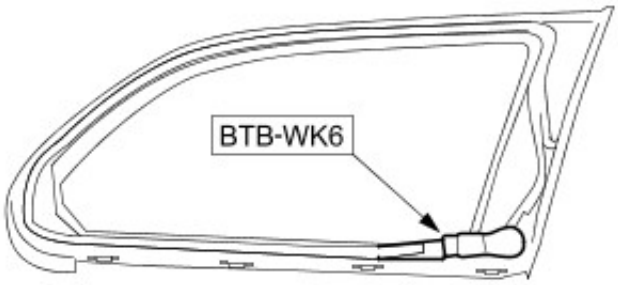
If the rear quarter window glass is being installed at a temperature of 11°C (52°F) make sure the vehicle is not driven for at least 1.5 hours after installation.

If the rear quarter window glass is being installed at a temperature of 5°C (41°F) make sure the vehicle is not driven for at least 2 hours after installation.

If the rear quarter window glass is being installed at a temperature below 5°C (41°F) use heat and make sure the windshield glass adhesive has set before the vehicle is driven.

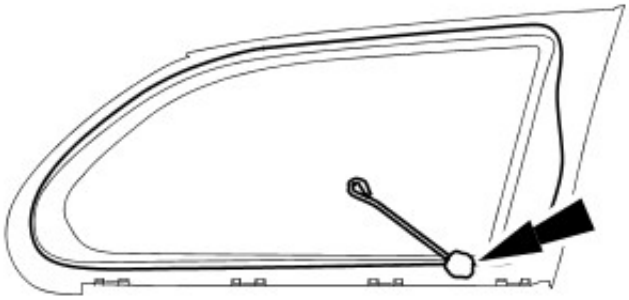
Using the special tool, remove any residual adhesive from the body aperture.

2. If the original rear quarter window glass is to be installed remove any residual adhesive from the rear quarter window glass using the special tool.

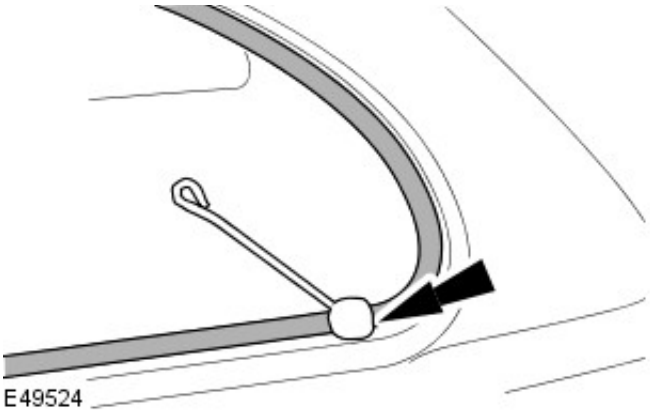


E49441

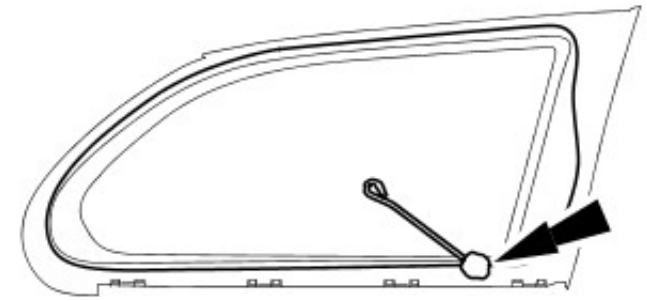
3. Thoroughly clean rear quarter window glass surface using Betawipe spirit.


E49523

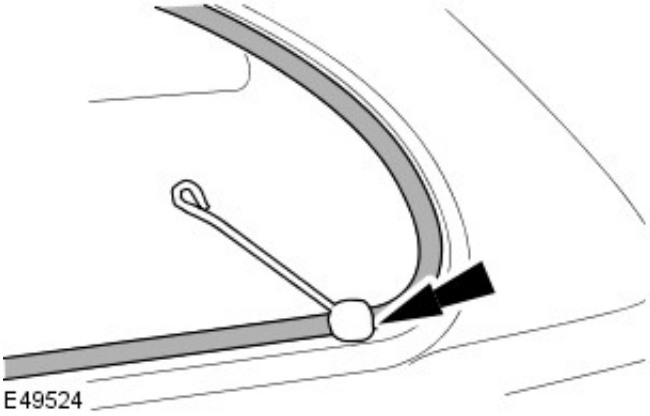
4. Thoroughly clean the mating face of the body using Betawipe spirit.



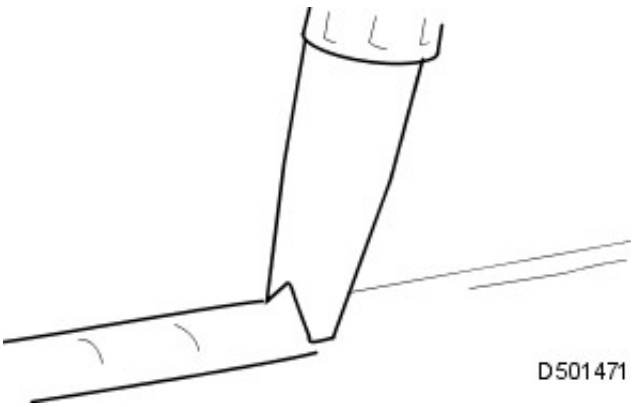
5. Apply primer to the mating face of the glass.



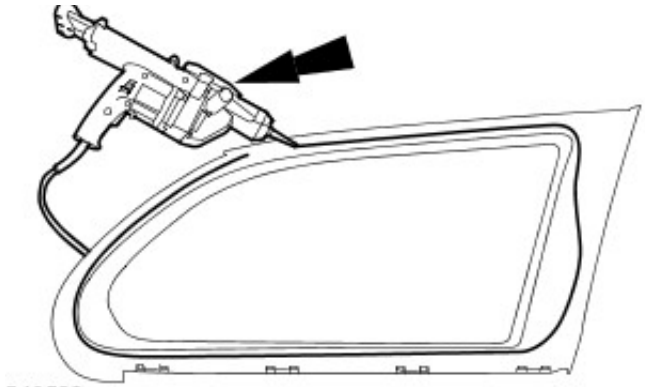
6. Apply primer to the mating face of the body.



7. Cut the nozzle of the JLM20452 glass bonding adhesive to achieve a triangular section bead 8 mm (0.32 in) wide by 10 mm (0.4 in) high.



8. Using the special tool, apply a uniform bead of adhesive to the rear quarter window glass edge commencing at the bottom center and overlapping the ends approximately 14 mm (0.56 in).

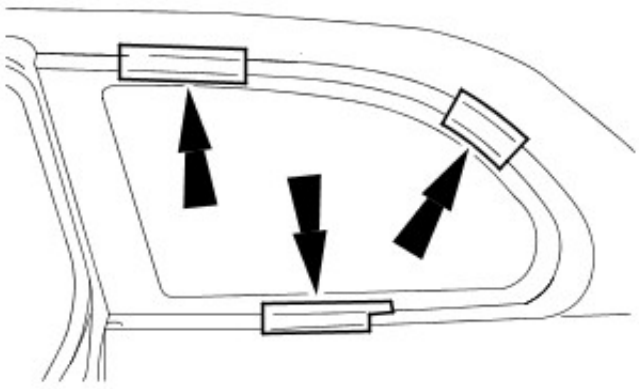

E49522

9. CAUTIONS:

When installing the rear quarter window glass, do not strike it in any way as this will crack the rear quarter window glass.

Make sure the rear quarter window glass does not move out of position in the body aperture.

Install the rear quarter window glass into the aperture and press firmly in to place.


E49443

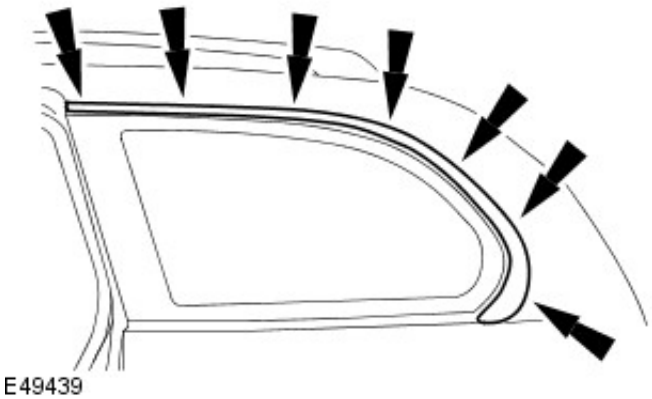
10. CAUTION: Make sure the rear quarter window glass does not move out of position in the rear quarter window glass aperture.

Apply suitable tape to the rear quarter window glass.

11. Remove protective tape from the edge of the headliner.

12. Install the loadspace trim panel.
For additional information, refer to: Loadspace Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

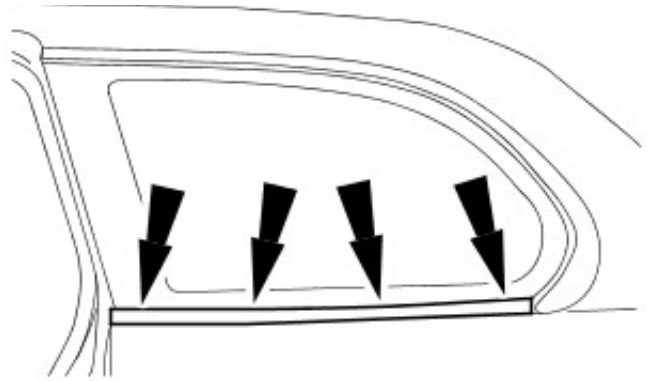
13. NOTE: Make sure the rear quarter window glass adhesive has cured before installing the rear quarter window glass finisher trim.


E49439

Install the rear quarter window glass finisher trim.

14. NOTE: Make sure the rear quarter window glass adhesive has set before installing the rear quarter window glass exterior weatherstrip.

Install the rear quarter window glass weatherstrip.

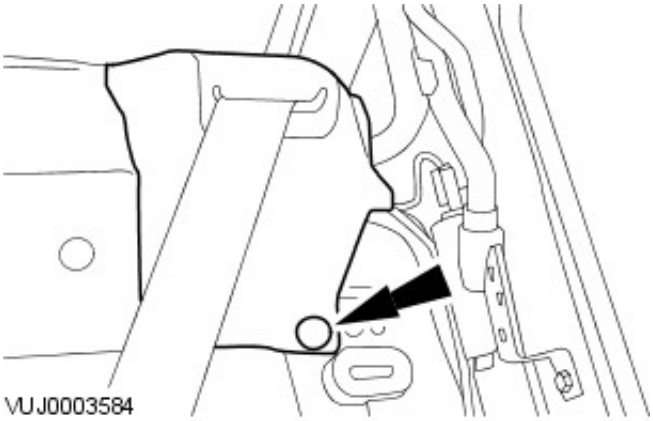


E49438

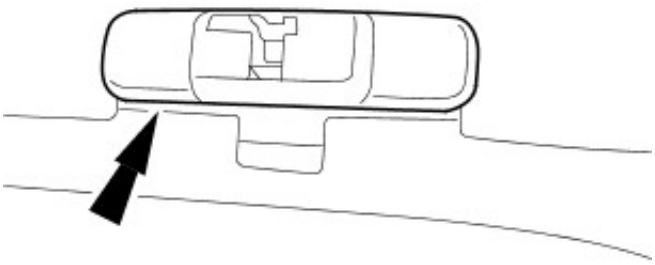
Glass, Frames and Mechanisms - Rear Window Glass Using Cheese Wire
Removal and Installation

Removal

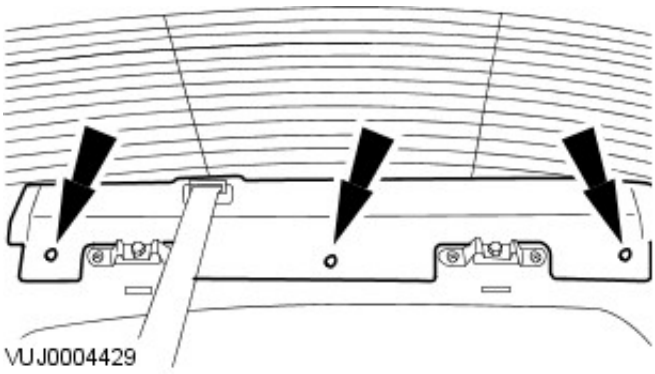
1. Remove the high level stop lamp. For additional information, refer to Section 417-01 Exterior Lighting.
2. Detach the seat belt reel trim panels.


VUJ0003584

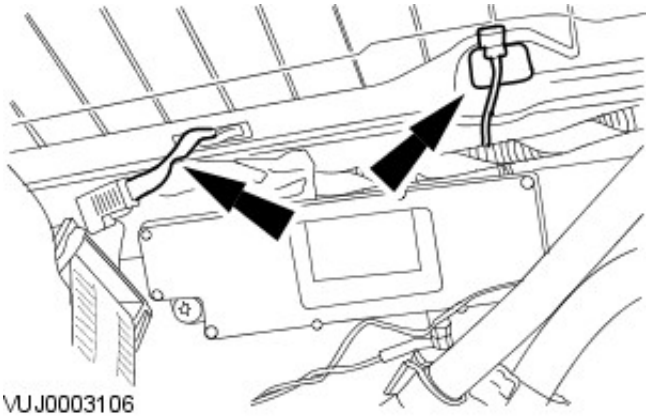
3. Remove the rear seat backrest latch covers.

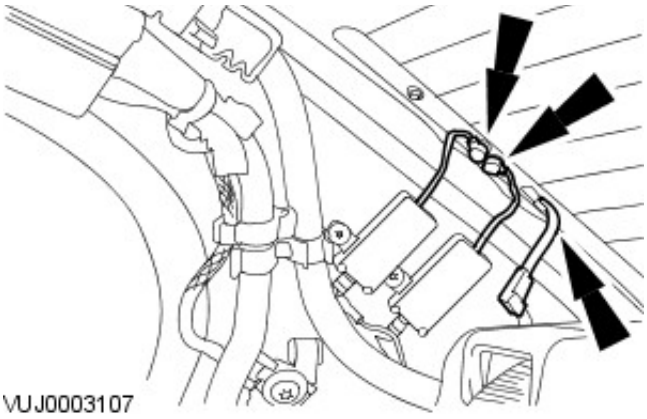

VUJ0003585

4. Detach the parcel shelf trim panel.

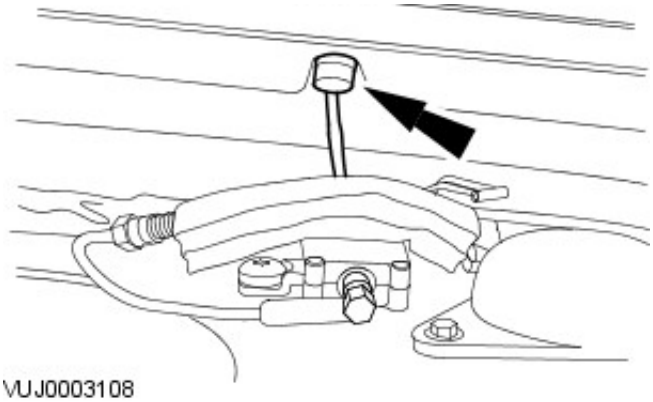

VUJ0004429

5. Disconnect the electrical connectors.

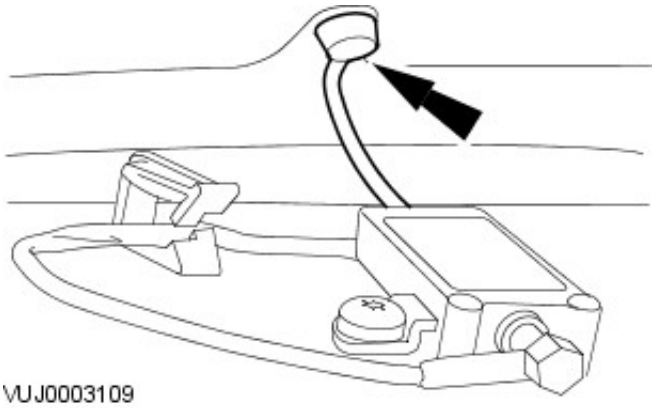

VUJ0003106


VUJ0003107

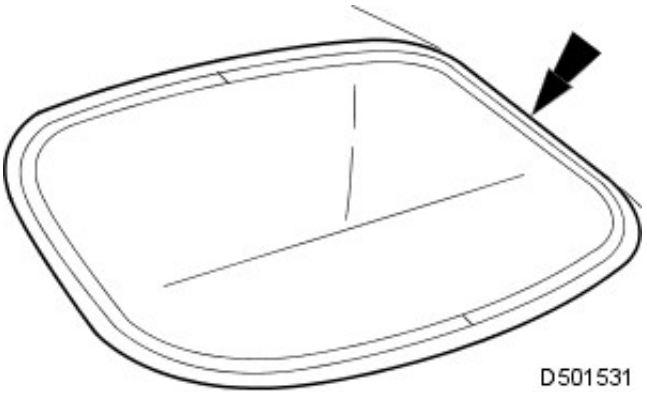
6. Disconnect the electrical connectors.


VUJ0003108

7. Disconnect the electrical connector.


VUJ0003109

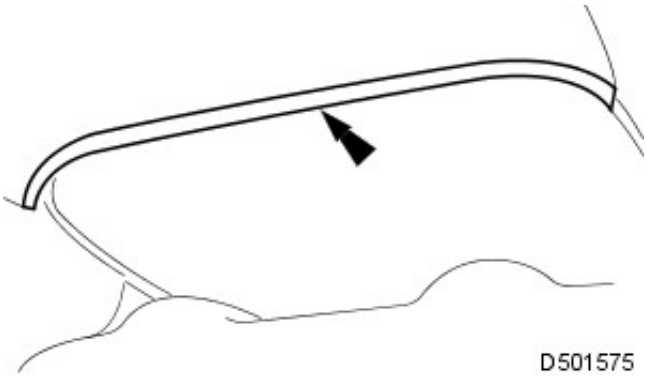
8. Disconnect the electrical connector.


D501531

9. Apply suitable protective tape around the windshield glass aperture.

10. Place a protective sheet over the parcel shelf and place a protective board over the sheet.

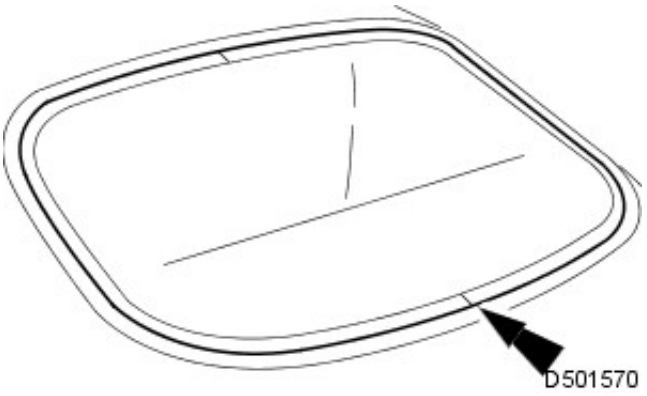
11. Apply suitable protective tape to inner edge of the roof panel.



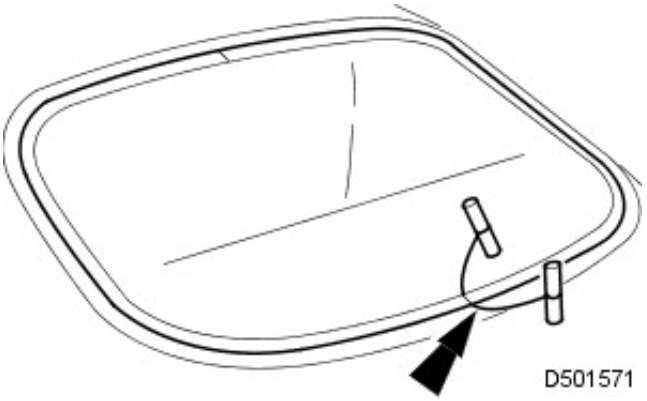
12. Prepare the cheese wire and the cutting handle.

- Position the cutting handle central tube fully upwards in the handle.
- Cut a suitable length of cheese wire and pass one end through the handle tube and the locating aperture.
- Move the cutting handle central tube downwards to secure the cheese wire.

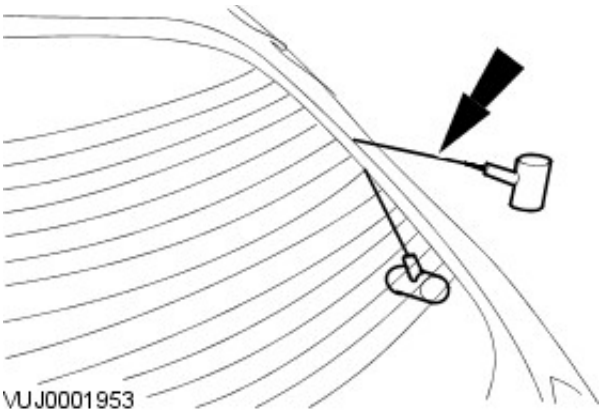
13. Using a suitable long bladed tool, penetrate the windshield glass adhesive.



14. Remove the tool, pass the free end of the cheese wire through the penetration and install the second cutting handle.

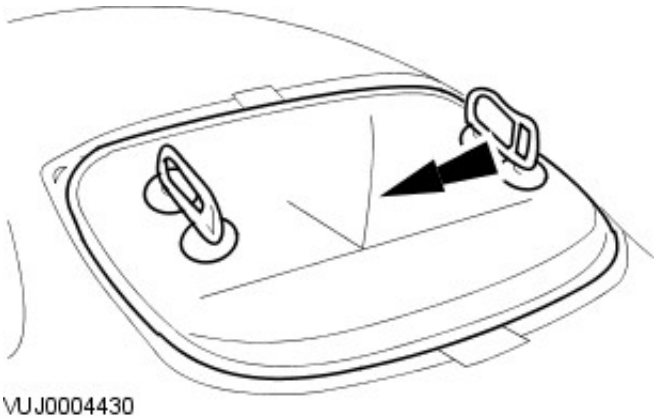


15. With assistance and exercising care to avoid damaging the paintwork, cut around the windshield glass commencing downwards and along the bottom.


VUJ0001953

16. With assistance remove the windshield glass.

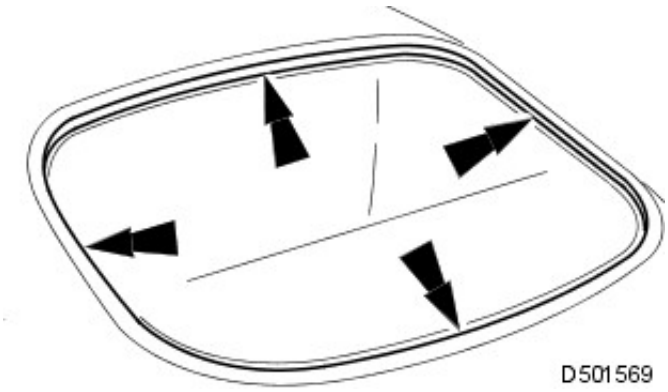
- Attach the lifting handles to the windshield glass.


VUJ0004430

17. Remove the lifting handles from the windshield glass.

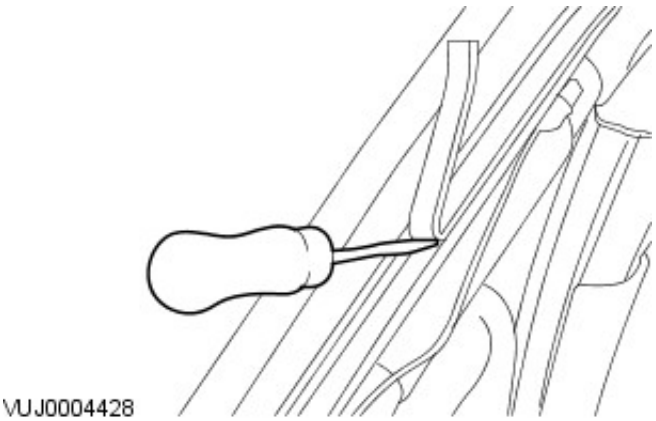
18. Remove the cheese wire cutting tool from the windshield glass aperture, separate the handles by moving center tubes upwards and discard the cheese wire.

19. Apply suitable protective tape to the windshield glass aperture.

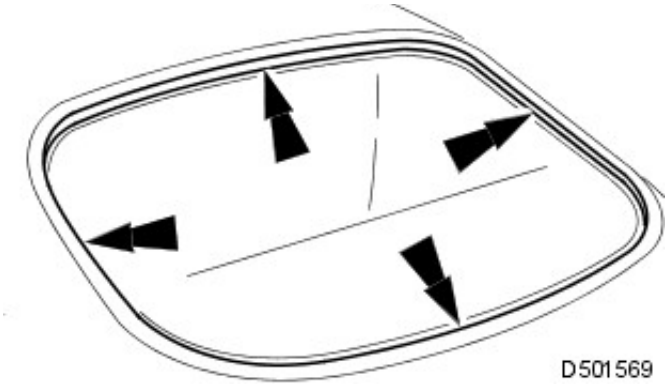

D501569

20. NOTE: To aid bonding of a new windshield glass, make sure at least 1 mm (0.3 in) of residual adhesive remains on the body flange.

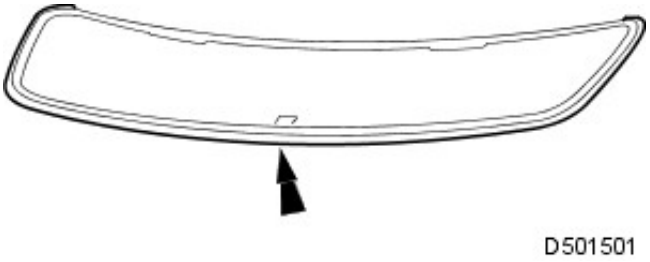
Using a suitable tool remove residual adhesive from the body flange.


VUJ0004428

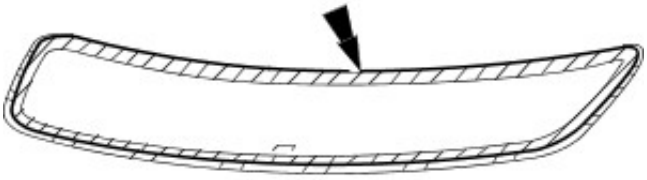
21. Remove the protective tape from the windshield glass aperture.



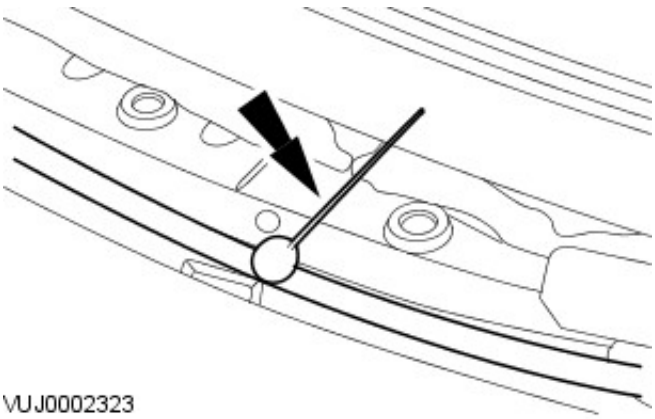
Installation



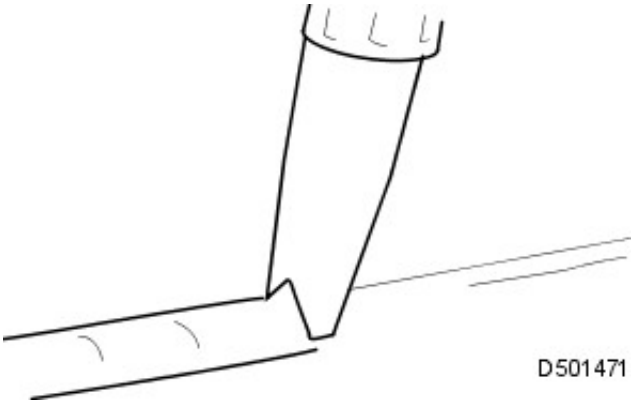
1. Make sure the new windshield glass surface is clean using Betawipe spirit.



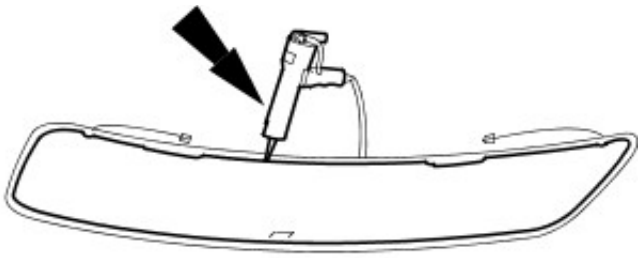
2. Apply glass primer to the mating face of the windshield glass.



3. Apply glass primer to the mating face of the body flange.



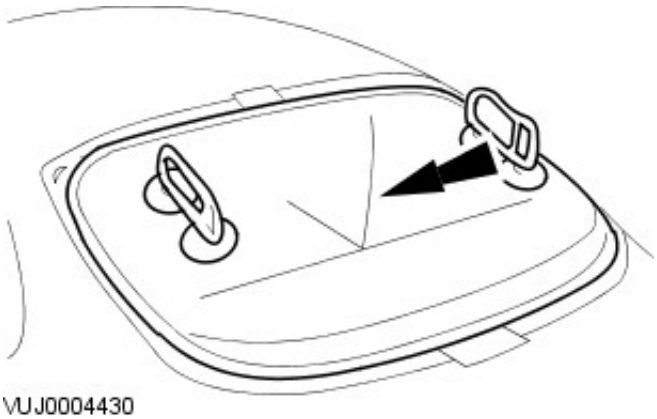
4. Cut the adhesive nozzle to achieve a triangular section bead 8 mm (0.31in) wide by 13 mm (0.51 in) high.



VUJ0001951

5. NOTE: Apply windshield adhesive WSS-M2G379-A6A or equivalent meeting Jaguar specification around the windshield glass edge.

Using a suitable pneumatic application gun, apply a uniform bead of adhesive to the windshield glass edge commencing at the bottom center and overlapping the ends approximately 14 mm (0.55 in).



VUJ0004430

6. WARNINGS:

If the windshield glass is being installed at 23°C (73°F) or above make sure the vehicle is not driven for at least 1 hour after installation.

If the windshield glass is being installed at a temperature of 11°C (52°F) to 23°C (73°F) make sure the vehicle is not driven for at least 1.5 hours after installation.

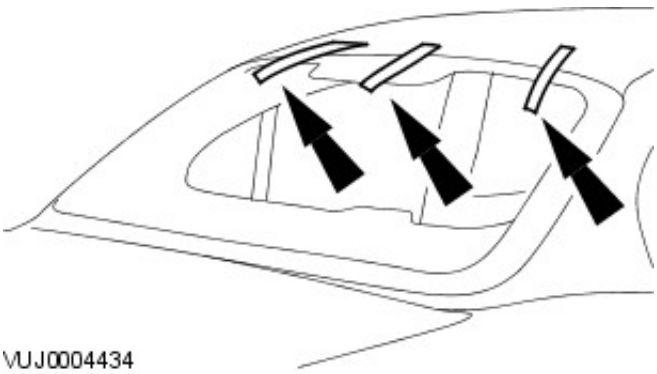
If the windshield glass is being installed at a temperature of 5°C (41°F) to 11°C (52°F) make sure the vehicle is not driven for at least 2 hours after installation.

If the windshield glass is being installed at a temperature below 5°C (41°F) use heat and make sure the windshield glass adhesive has set before the vehicle is driven.

CAUTION: When installing the windshield glass, do not strike it in any way as this will crack the glass.

Install the lifting handles and with assistance, carefully position the windshield glass in the aperture.

- Align the windshield glass and press firmly into place.
- Remove the lifting handles.

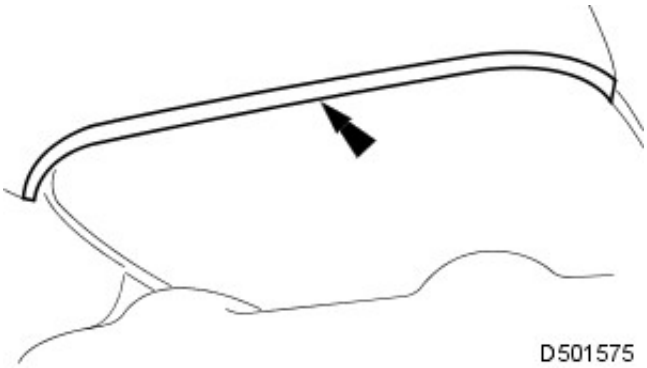


VUJ0004434

7. CAUTION: Make sure the windshield glass does not move out of position in the windshield glass aperture.

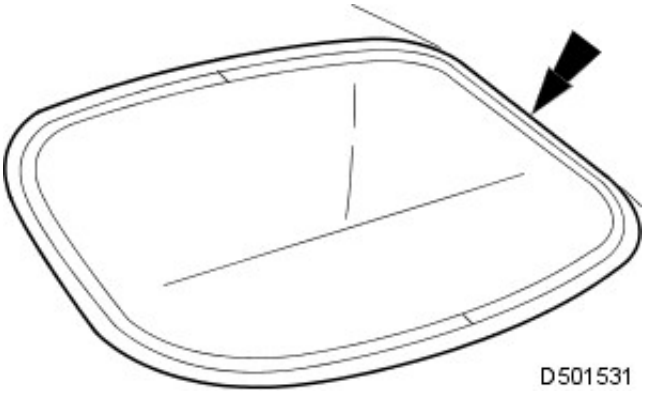
Apply suitable protective tape to the top of the windshield glass.

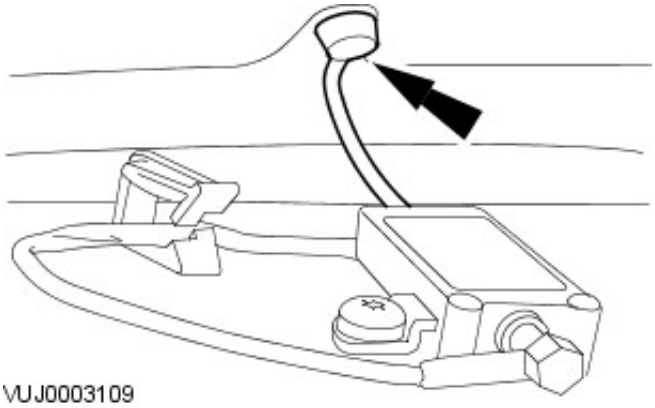
8. Remove the tape from the inner edge of the roof panel.



9. Remove the protective sheet and the protective board from the parcel shelf.

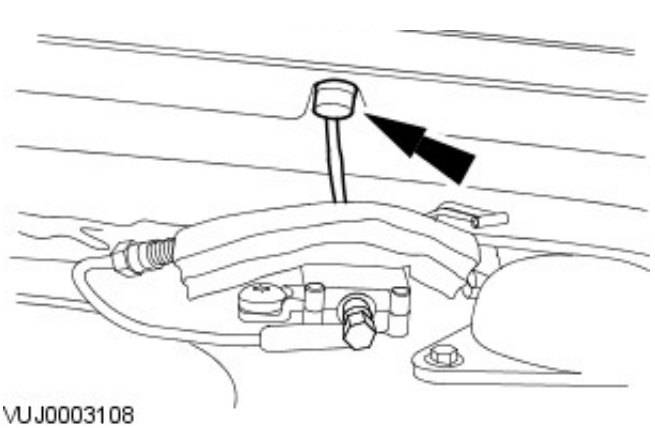
10. Remove the protective tape from around the windshield glass aperture.





11. CAUTION: Do not connect the electrical connector for at least 1 hour after installation of the windshield glass. Failure to follow these instructions may result in damage to the windshield glass adhesive.

Connect the electrical connector.

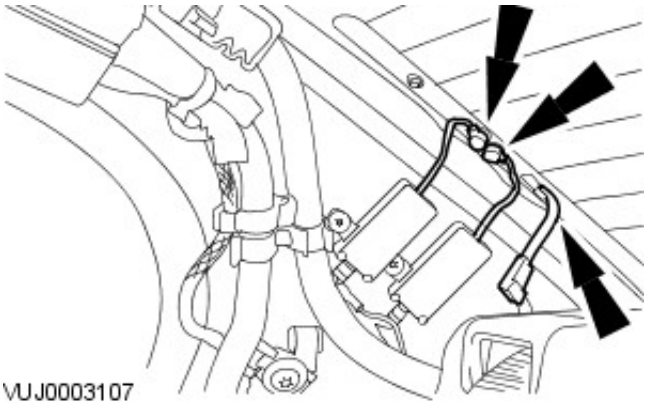


12. CAUTION: Do not connect the electrical connector for at least 1 hour after installation of the windshield glass. Failure to follow these instructions may result in damage to the windshield glass adhesive.

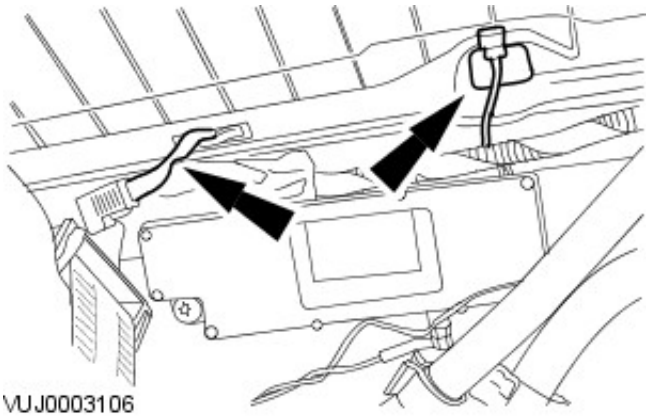
Connect the electrical connector.

13. CAUTION: Do not connect the electrical connectors for at least 1 hour after installation of the windshield glass. Failure to follow these instructions may result in damage to the windshield glass adhesive.

Connect the electrical connectors.



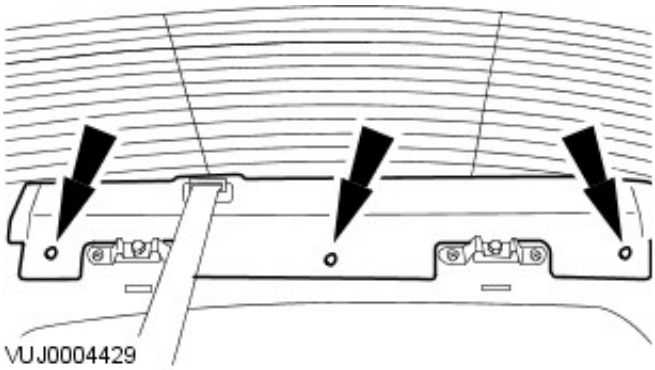
VUJ0003107



VUJ0003106

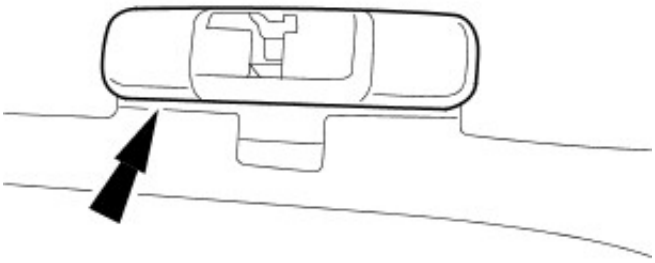
14. CAUTION: Do not connect the electrical connectors for at least 1 hour after installation of the windshield glass. Failure to follow these instructions may result in damage to the windshield glass adhesive.

Connect the electrical connectors.



VUJ0004429

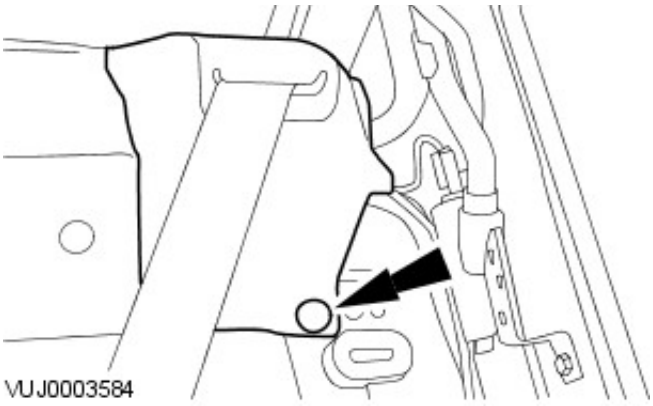
15. Attach the parcel shelf trim panel.



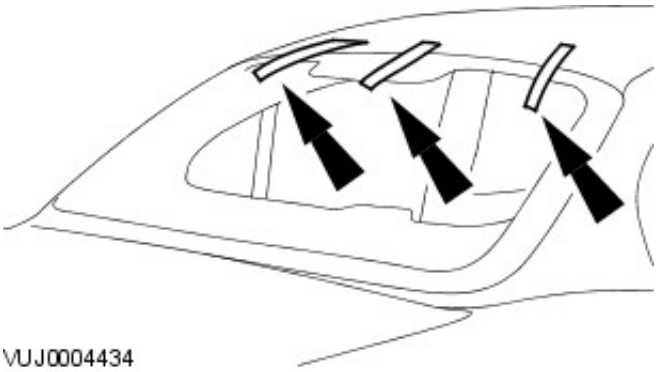
VUJ0003585

16. Install the rear seat backrest latch covers.

17. Attach the seat belt reel trim panels.



18. Install the high level stop lamp. For additional information, refer to Section 417-01 Exterior Lighting.

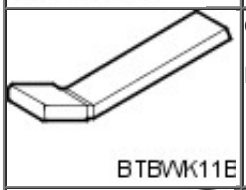
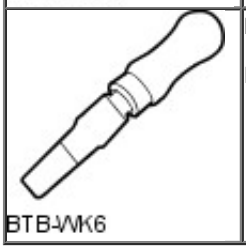


19. CAUTION: Make sure the windshield glass adhesive is set before removing the protective tape.

Remove the protective tape from the top of the windshield glass.

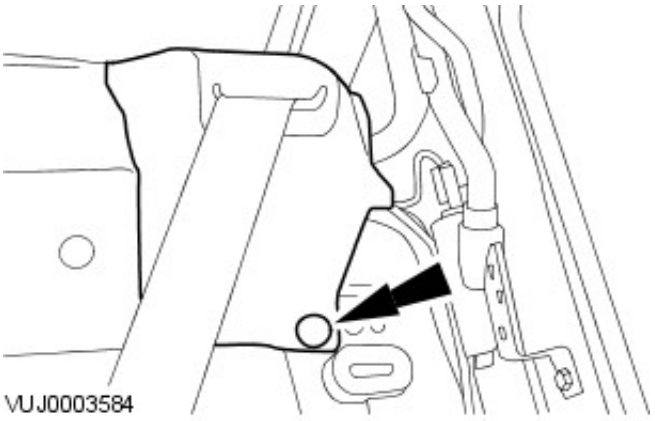
Glass, Frames and Mechanisms - Rear Window Glass Using Cutting Tool

Removal and Installation

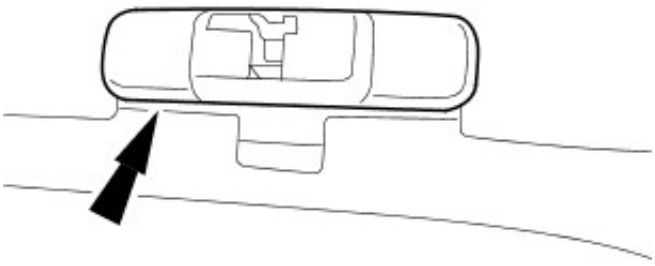
Special Tool(s)	
 BTB-WK9L	Lubricant concentrate BTB-WK9L
 BTB-WK9	Spray bottle BTB-WK9
 BTB-WK10HD	Cutting tool BTB-WK10HD
 BTB-WK24ZS	Serrated general purpose 'Z' cutting blade BTB-WK24ZSC
 BTBWK11E	Cutting blade controller arm BTB-WK11B
 BTB-WK27	Reverse powered cold knife blade cutting tool BTB-WK27RM
 BTB-WK6	Pinchweld scraper blade BTB-WK6

Removal

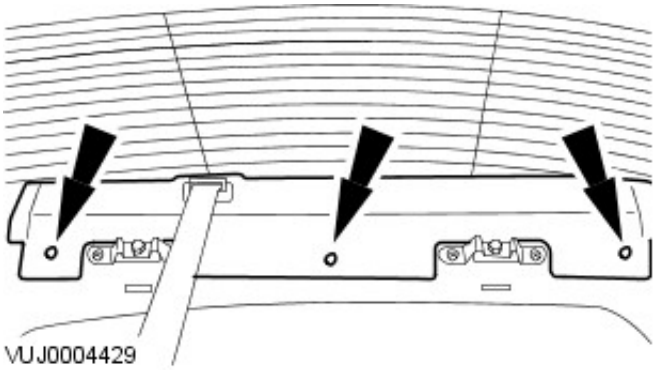
1. Remove the high level stop lamp. For additional information, refer to Section 417-01 Exterior Lighting.
2. Detach the seat belt reel trim panels.


VUJ0003584

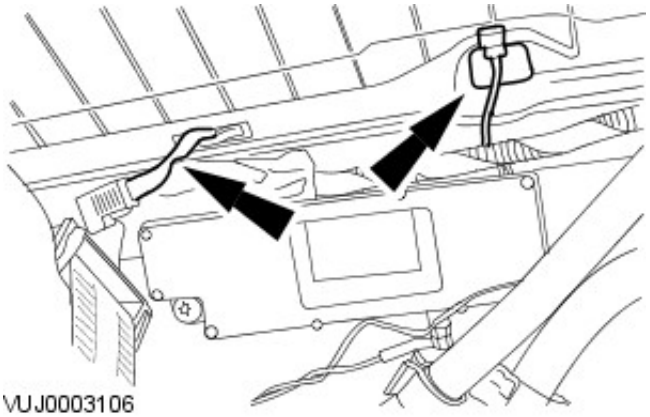
3. Remove the rear seat backrest latch covers.


VUJ0003585

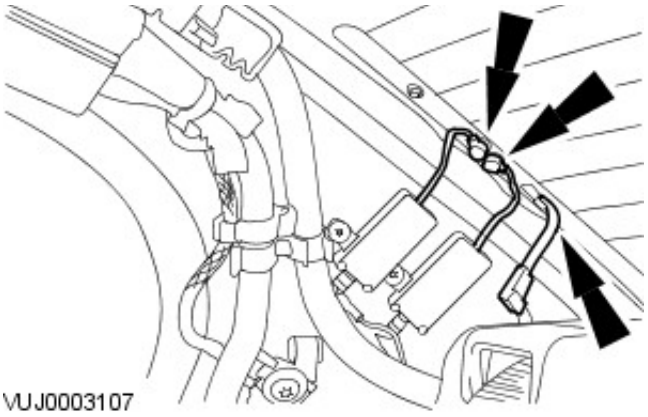
4. Detach the parcel shelf trim panel.


VUJ0004429

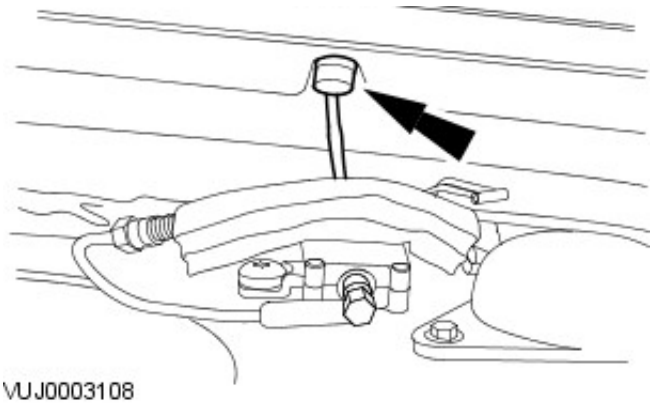
5. Disconnect the electrical connectors.


VUJ0003106

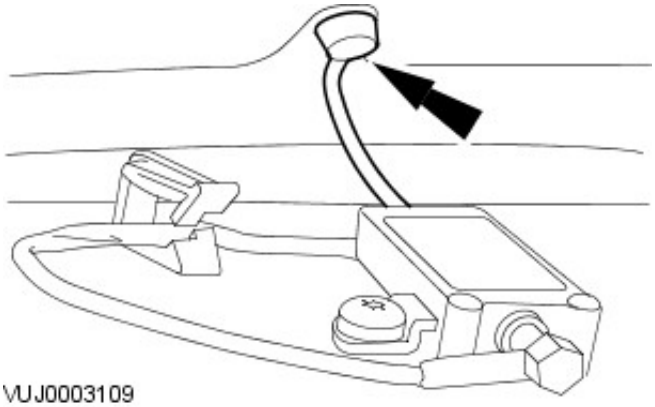
6. Disconnect the electrical connectors.


VUJ0003107

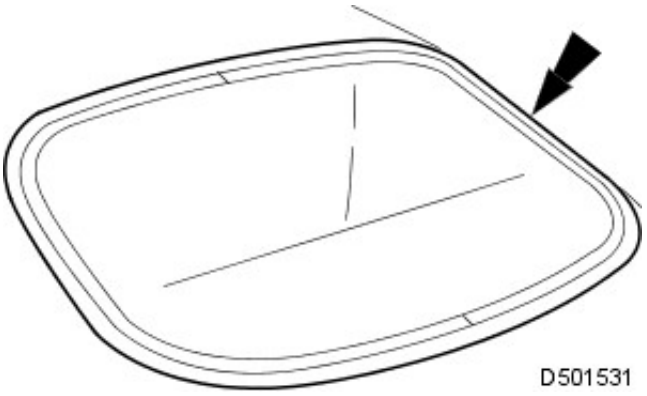
7. Disconnect the electrical connector.


VUJ0003108

8. Disconnect the electrical connector.

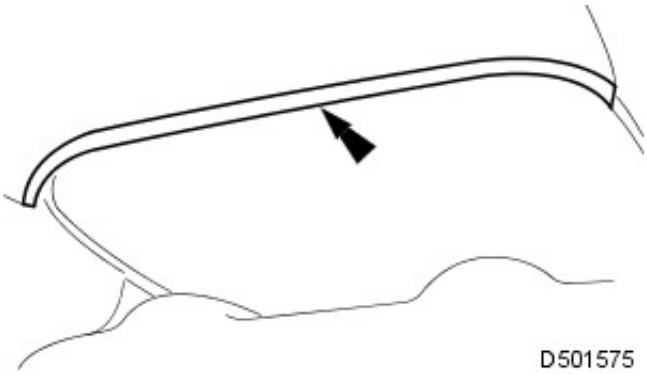

VUJ0003109

9. Apply suitable protective tape around the windshield glass aperture.


D501531

10. Place a protective sheet over the parcel shelf and place a protective board over the sheet.

11. Apply suitable protective tape to inner edge of the roof panel.

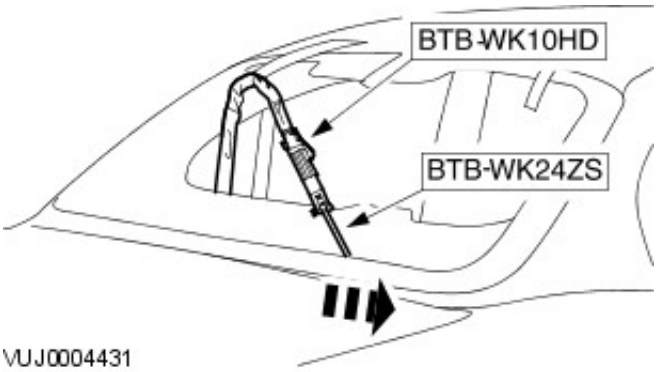


D501575

12. Apply cutting lubricant to the lower part of the inner windshield glass adhesive.

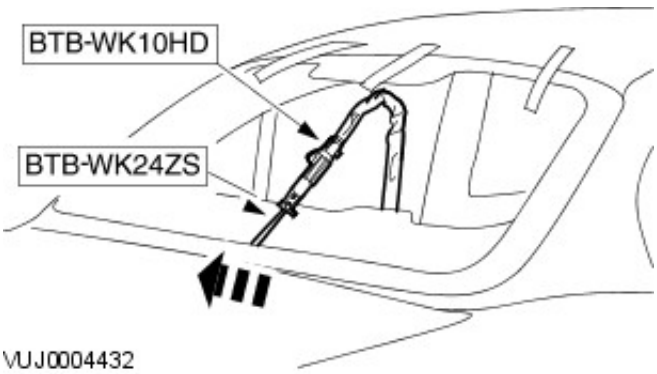
13. Install the cutting tool blade BTB-WK24ZS to the cutting tool BTB-WK10HD.

14. Using the cutting tool cut through the lower windshield glass adhesive.



VUJ0004431

15. Using the cutting tool cut through the lower windshield glass adhesive.

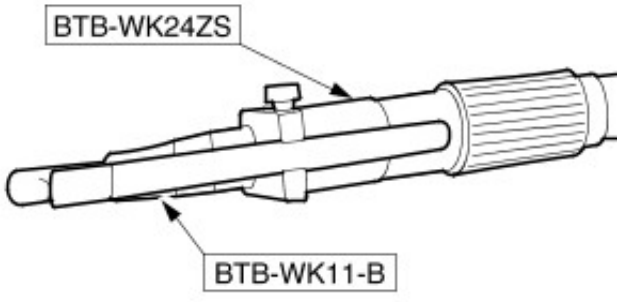


VUJ0004432

16. Apply cutting lubricant to both sides of the inner C-pillar windshield glass adhesive.

17. Install the cutting tool controller arm BTB-WK11B to the cutting tool BTB-WK10HD.

- Set the cutting controller arm to 45 mm.

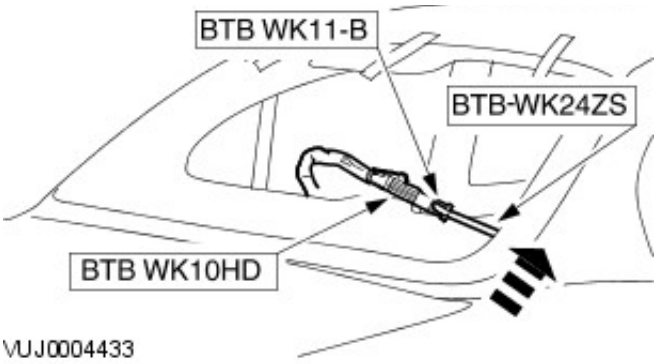


VUJ0004423

18. NOTE: Left-hand shown, right-hand similar.

• NOTE: Start cutting the windshield glass adhesive from the top of the C-piller downwards.

Using the cutting tool cut through both sides of the inner C-



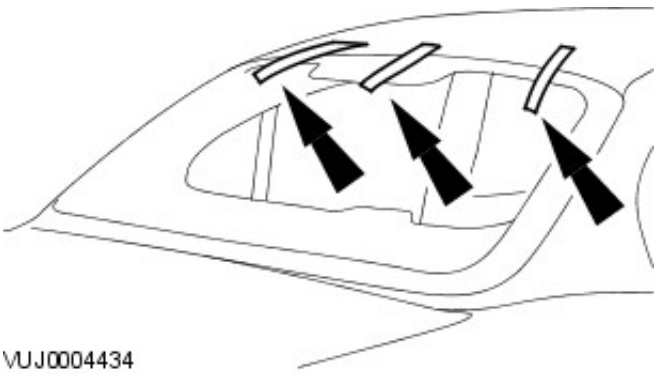
VUJ0004433

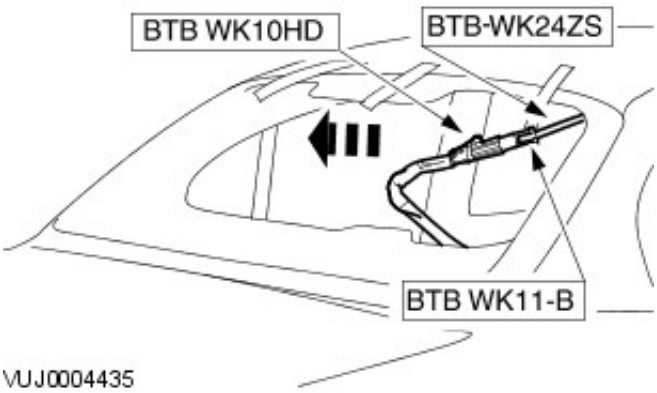
pillar windshield glass adhesive.

19. Apply cutting lubricant to the top of the inner windshield glass adhesive.

20. Set the cutting controller arm to 15 mm.

21. Apply suitable protective tape to the top of the windshield glass.

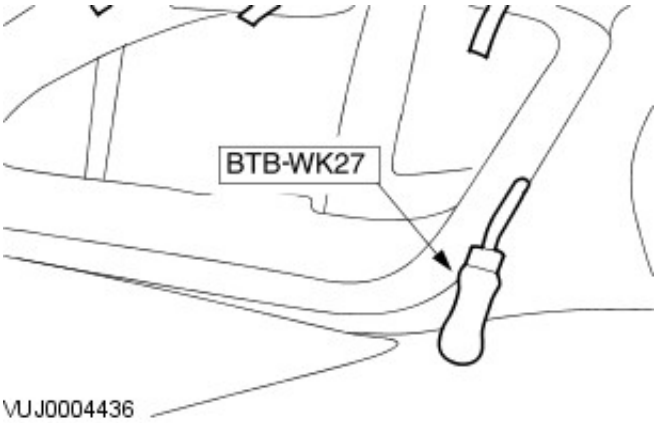

VUJ0004434



VUJ0004435

22. NOTE: Start cutting from either corner of the windshield glass into the center of the windshield glass and continue the cut all the way through to the other corner of the windshield glass. Do not cut from each corner of the windshield glass into the center of the windshield glass as the pressure on the center of the windshield glass could cause breakage.

Using the special tool cut through the top of the inner windshield glass adhesive.



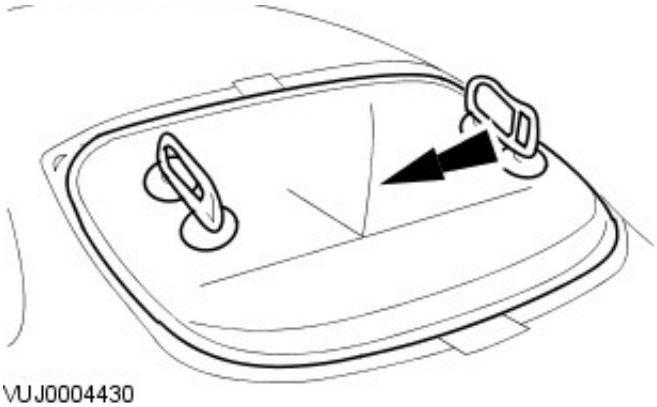
VUJ0004436

23. NOTE: Right-hand shown, left-hand similar.

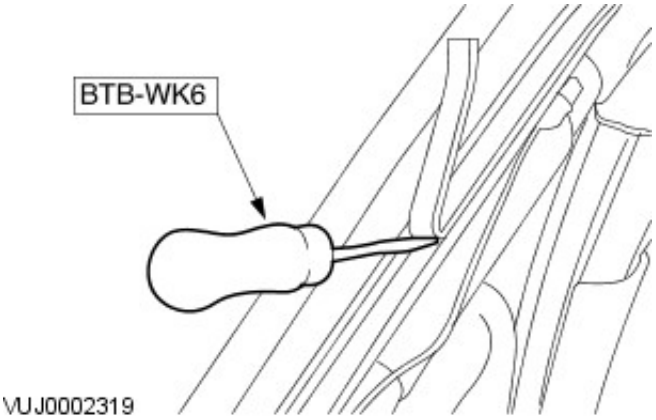
Using the special tool cut through any remaining adhesive on the C-pillars.

24. Remove the windshield glass.

- Attach lifting handles to the windshield glass.



VUJ0004430

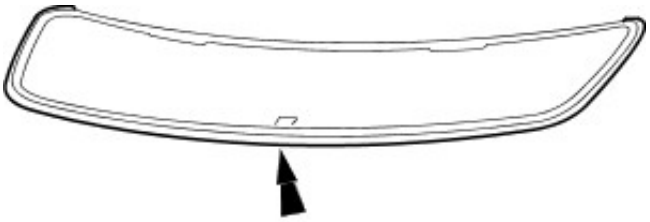


VUJ0002319

25. NOTE: To aid bonding of a new windshield glass, make sure at least 1 mm (0.3 in) of residual adhesive remains on the body flange.

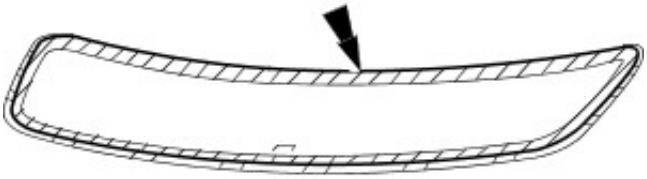
Using the special tool remove the residual adhesive from the body flange.

Installation



D501501

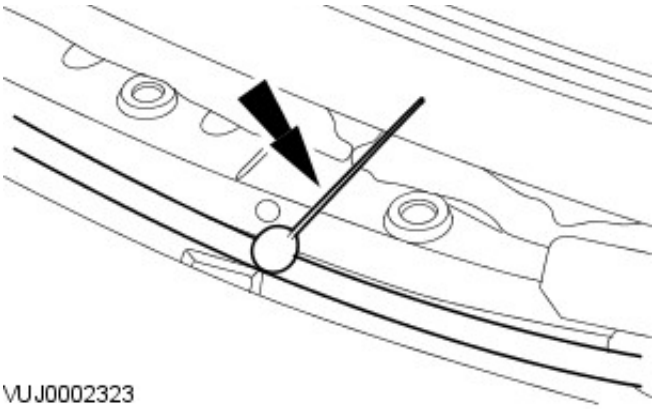
1. Make sure the new windshield glass surface is clean using Betawipe spirit.



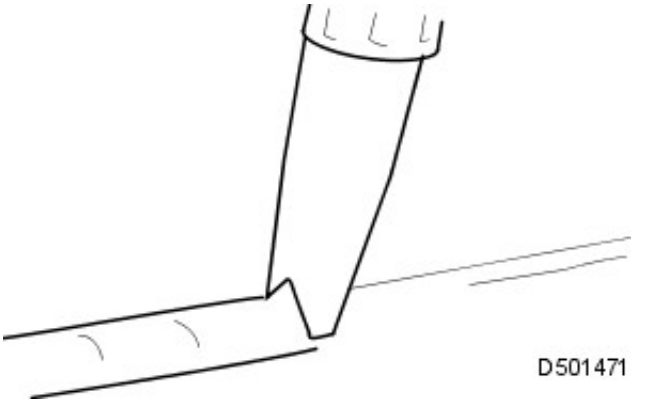
D501503

2. Apply glass primer to the mating face of the windshield glass.

3. Apply glass primer to the mating face of the body flange.

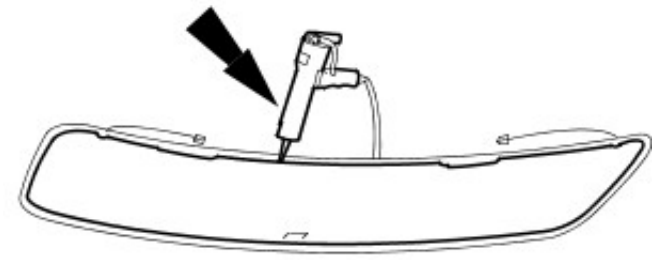


VUJ0002323



D501471

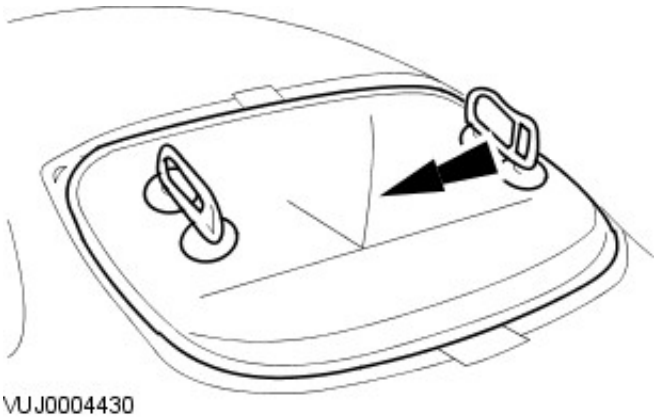
4. Cut the adhesive nozzle to achieve a triangular section bead 8 mm (0.31in) wide by 13 mm (0.51 in) high.



VUJ0001951

5. NOTE: Apply windshield adhesive WSS-M2G379-A6A or equivalent meeting Jaguar specification around the windshield glass edge.

Using a suitable pneumatic application gun, apply a uniform bead of adhesive to the windshield glass edge commencing at the bottom center and overlapping the ends approximately 14 mm (0.55 in).



VUJ0004430

6. WARNINGS:

If the windshield glass is being installed at 23 °C (73 °F) or above make sure the vehicle is not driven for at least 1 hour after installation.

If the windshield glass is being installed at a temperature of 11 °C (52 °F) to 23 °C (73 °F) make sure the vehicle is not driven for at least 1.5 hours after installation.

If the windshield glass is being installed at a temperature of 5 °C (41 °F) to 11 °C (52 °F) make sure the vehicle is not driven for at least 2 hours after installation.

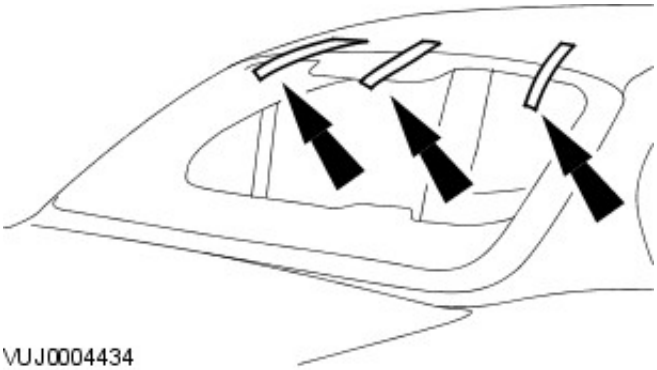
If the windshield glass is being installed at a temperature below 5 °C (41 °F) use heat and make sure the windshield glass adhesive has set before the vehicle is driven.

CAUTION: When installing the windshield glass, do not strike it in any way as this will crack the glass.

Install the lifting handles and with assistance, carefully

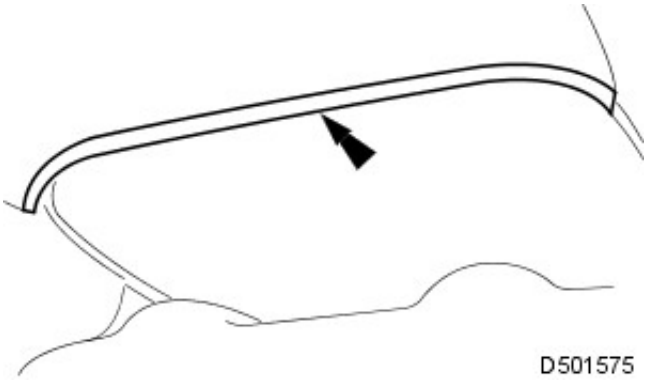
position the windshield glass in the aperture.

- Align the windshield glass and press firmly into place.
- Remove the lifting handles.


VUJ0004434

7. CAUTION: Make sure the windshield glass does not move out of position in the windshield glass aperture.

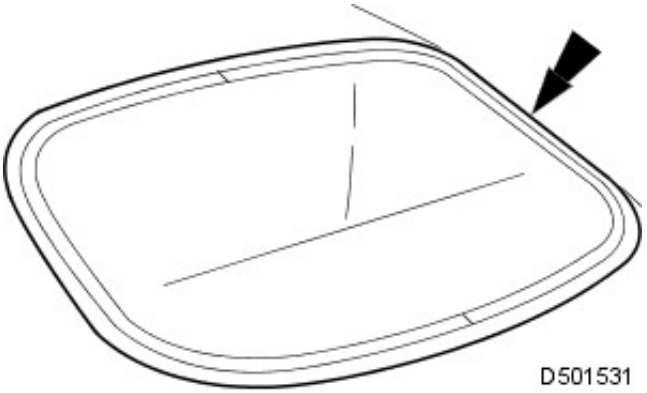
Apply suitable protective tape to the top of the windshield glass.

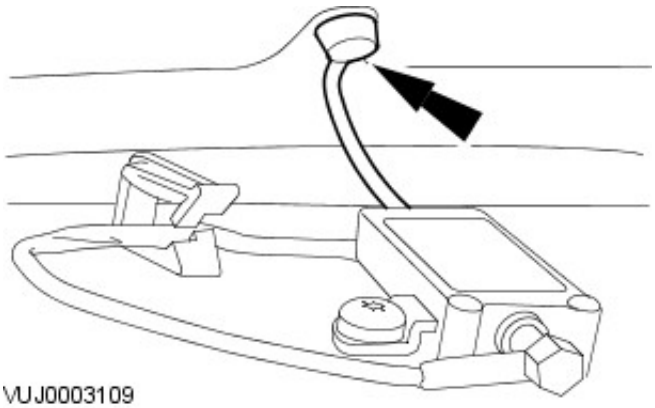

D501575

8. Remove the tape from the inner edge of the roof panel.

9. Remove the protective sheet and the protective board from the parcel shelf.

10. Remove the protective tape from around the windshield glass aperture.


D501531


VUJ0003109

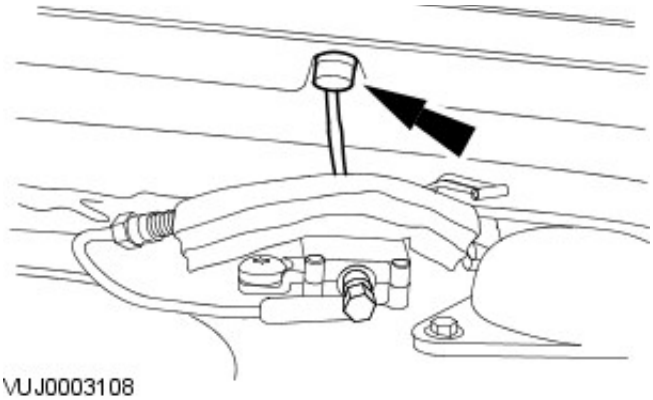
11. CAUTION: Do not connect the electrical connector for at least 1 hour after installation of the windshield glass. Failure to follow these instructions may result in damage to the windshield glass adhesive.

Connect the electrical connector.

12. CAUTION: Do not connect the electrical connector for at least 1 hour after installation of the windshield glass. Failure

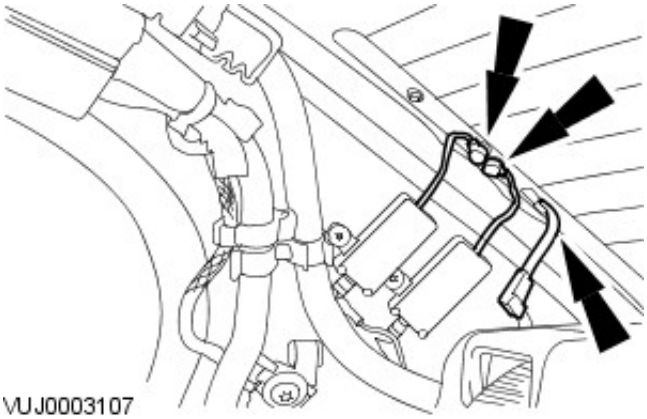
at least 1 hour after installation of the windshield glass. Failure to follow these instructions may result in damage to the windshield glass adhesive.

Connect the electrical connector.


VUJ0003108

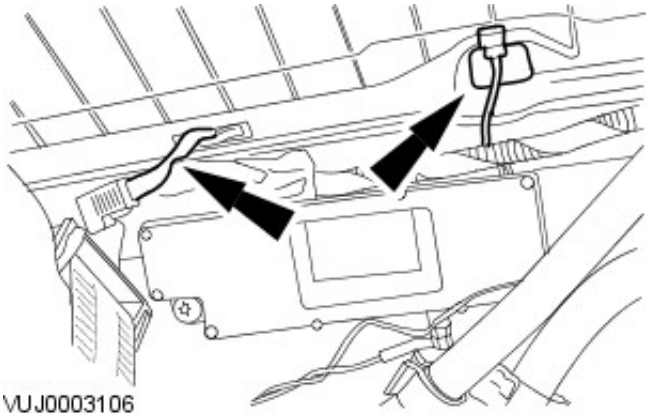
13. CAUTION: Do not connect the electrical connectors for at least 1 hour after installation of the windshield glass. Failure to follow these instructions may result in damage to the windshield glass adhesive.

Connect the electrical connectors.

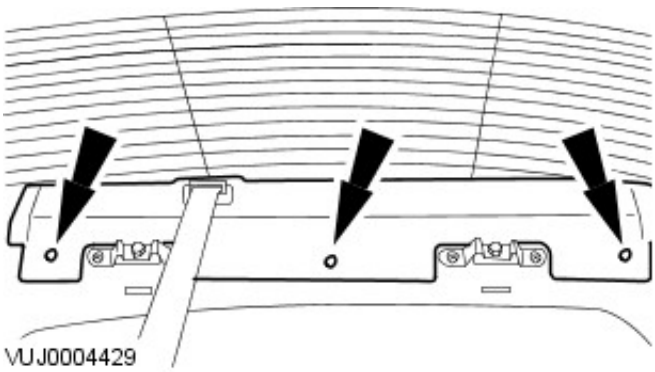

VUJ0003107

14. CAUTION: Do not connect the electrical connectors for at least 1 hour after installation of the windshield glass. Failure to follow these instructions may result in damage to the windshield glass adhesive.

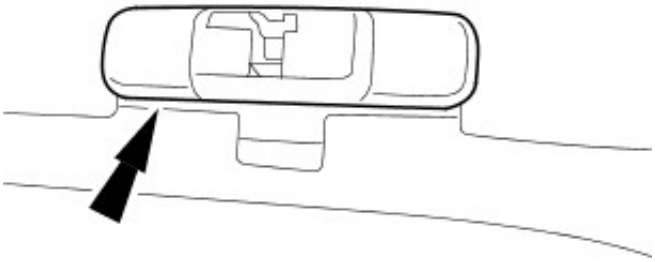
Connect the electrical connectors.


VUJ0003106

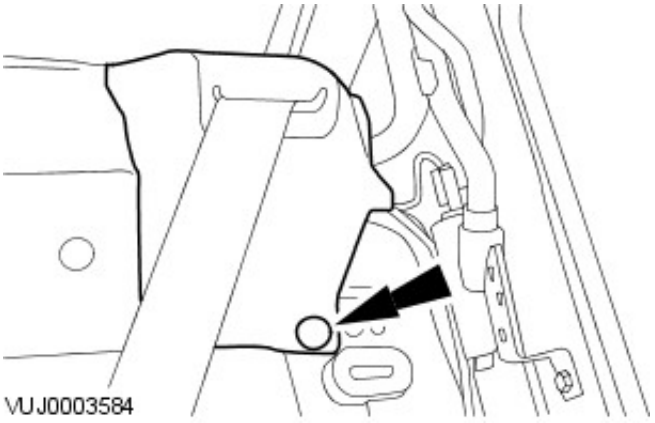
15. Attach the parcel shelf trim panel.


VUJ0004429

16. Install the rear seat backrest latch covers.



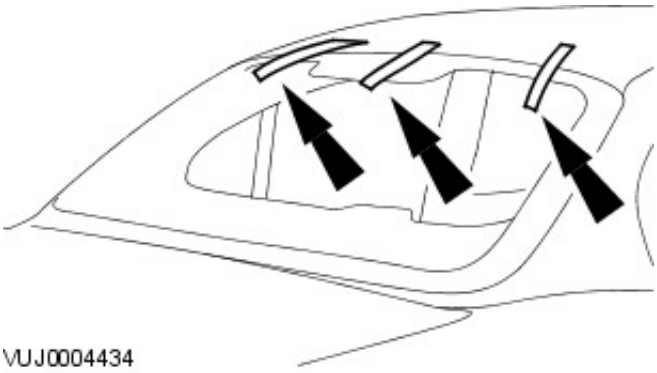
VUJ0003585



VUJ0003584

17. Attach the seat belt reel trim panels.

18. Install the high level stop lamp. For additional information, refer to Section 417-01 Exterior Lighting.



VUJ0004434

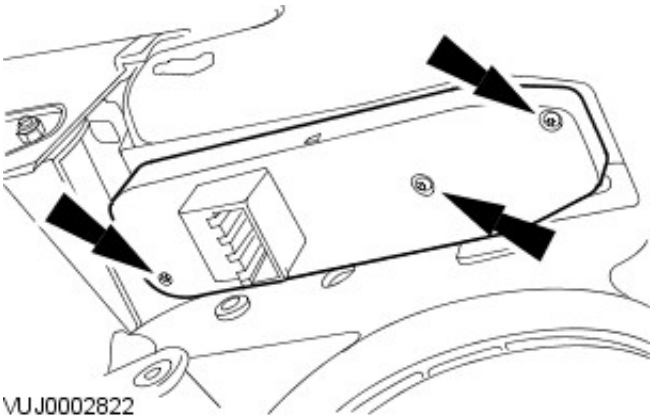
19. CAUTION: Make sure the windshield glass adhesive is set before removing the protective tape.

Remove the protective tape from the top of the windshield glass.

Glass, Frames and Mechanisms - Window Control Switch

Removal and Installation

Removal



1. Remove the front door trim panel. For additional information, refer to Section 501-05 Interior Trim and Ornamentation.
2. Remove the window control switch.

Installation

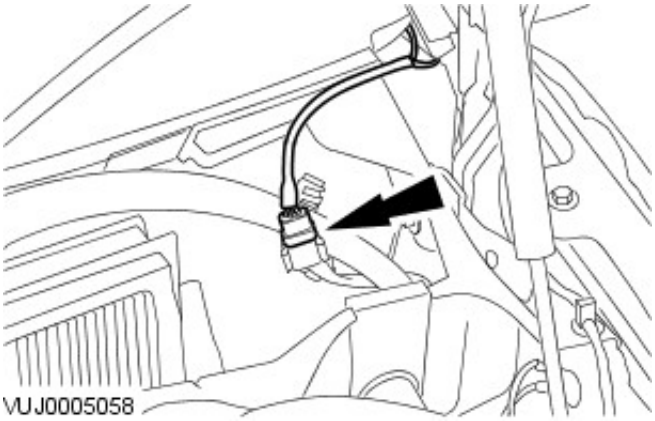
1. To install, reverse the removal procedure.

Glass, Frames and Mechanisms - Windshield Glass Using Cheese Wire
Removal and Installation

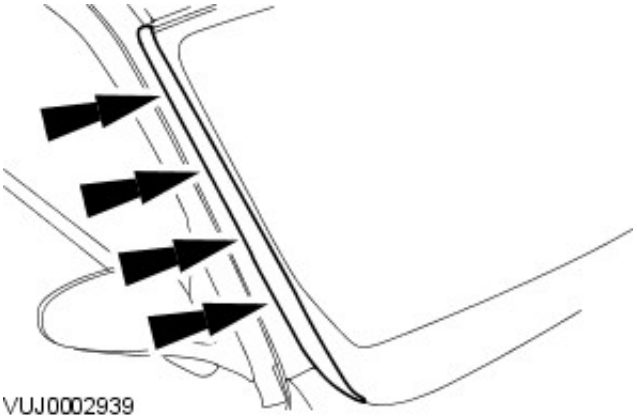
Removal

1. Remove the sun visors.
   For additional information, refer to Section 501-05 Interior Trim and Ornamentation.
2. Remove the cowl vent screen cover.
   For additional information, refer to Section 501-02 Front End Body Panels.
3. Remove the interior mirror.
   For additional information, refer to Section 501-09 Rear View Mirrors.
4. NOTE: Left-hand shown, right-hand similar.

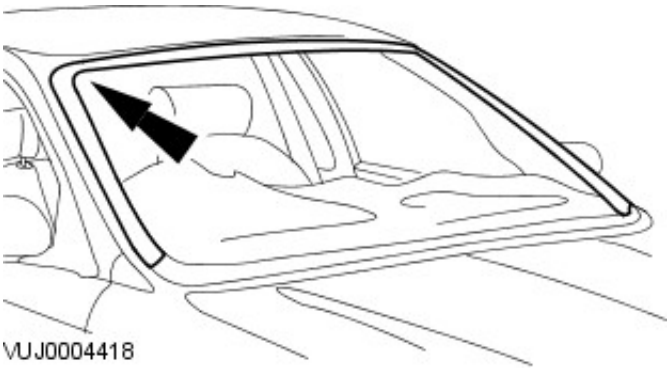
   Disconnect the heated windshield glass electrical connectors.


VUJ0005058

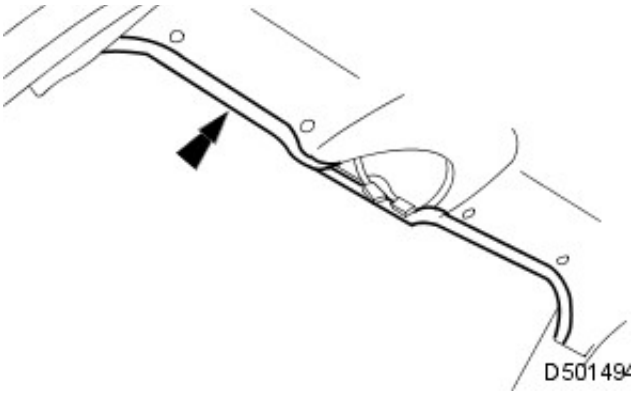
5. Remove the A-pillar exterior trim.


VUJ0002939

6. Apply suitable protective tape around the windshield glass aperture to protect the paintwork.

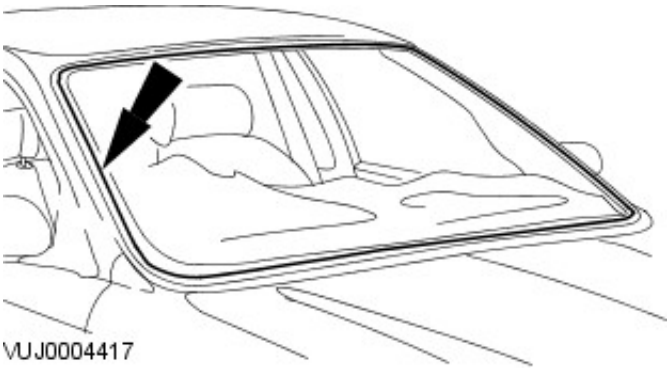

VUJ0004418

7. Place a suitable protective sheet over the fascia and place a protective board over the sheet.
8. Apply suitable protective tape to the leading inner edge of the roof panel.



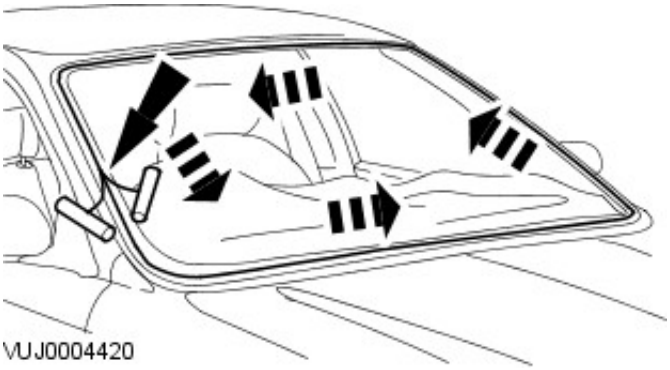
9. Prepare the cheese wire and the cutting handle.

- Position the cutting handle central tube fully upwards in the handle.
- Cut a suitable length of cheese wire and pass one end through the handle tube and the locating aperture.
- Move the cutting handle central tube downwards to secure the cheese wire.



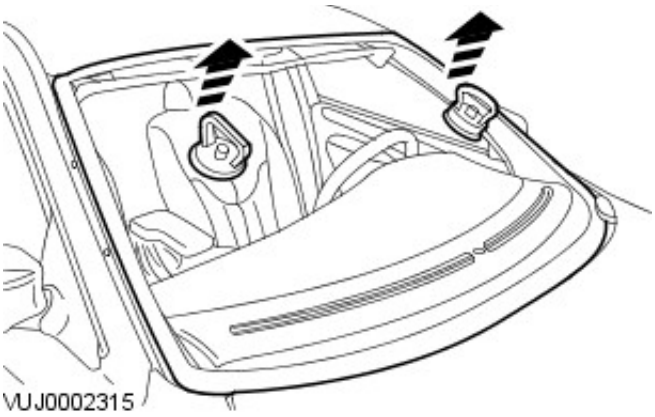
10. Using a suitable long bladed tool, penetrate the windshield glass adhesive approximately 150 mm (0.59 in) from the top of one A-pillar.

11. Remove the tool, pass the free end of the cheese wire through the penetration and install the second cutting handle.



12. With assistance and exercising care to avoid damaging the paintwork, cut around the windshield glass commencing downwards and along the bottom.

13. With assistance remove the windshield glass.



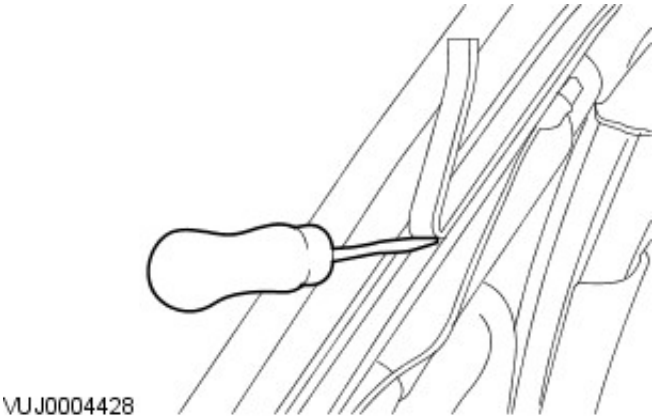
- Attach the lifting handles to the windshield glass.

14. Remove the lifting handles from the windshield glass.

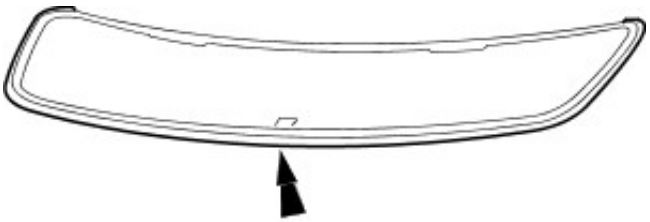
15. Remove the cheese wire cutting tool from the windshield glass aperture, separate the handles by moving center tubes upwards and discard the cheese wire.

16. NOTE: To aid bonding of a new windshield glass, make sure at least 1 mm (0.3 in) of residual adhesive remains on the body flange.

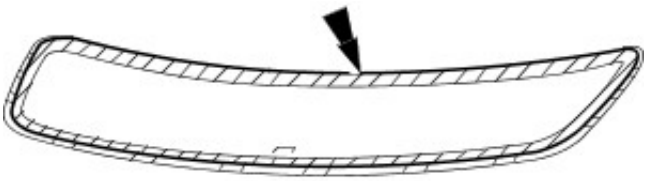
Using a suitable tool remove the residual adhesive from the body flange.



Installation

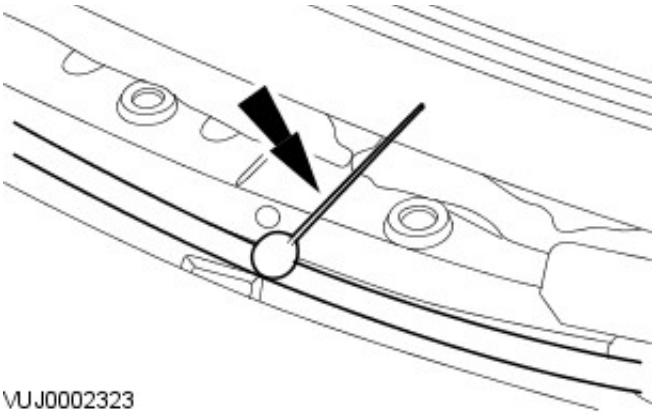


1. Make sure the new windshield glass surface is clean using Betawipe spirit.

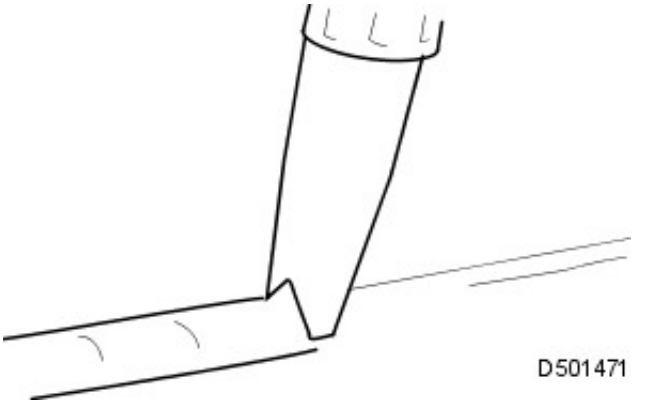


2. Apply glass primer to mating face of the windshield glass.

3. Apply glass primer to the mating face of the body flange.

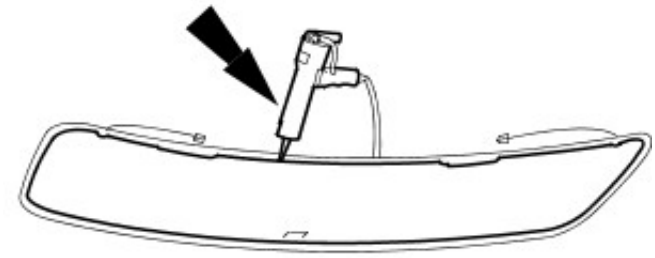


VUJ0002323



D501471

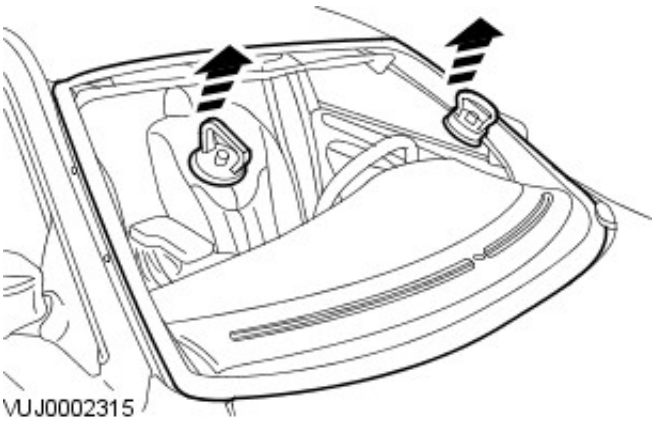
4. Cut the adhesive nozzle to achieve a triangular section bead 8 mm (0.31in) wide by 13 mm (0.51 in) high.



VUJ0001951

5. NOTE: Apply windshield adhesive WSS-M2G379-A6A or equivalent meeting Jaguar specification around the windshield glass edge.

Using a suitable pneumatic application gun, apply a uniform bead of adhesive to the windshield glass edge commencing at the bottom center and overlapping the ends approximately 14 mm (0.55 in).



VUJ0002315

6. WARNINGS:

If the windshield glass is being installed at 23°C (73°F) or above make sure the vehicle is not driven for at least 1 hour after installation.

If the windshield glass is being installed at a temperature of 11°C (52°F) to 23°C (73°F) make sure the vehicle is not driven for at least 1.5 hours after installation.

If the windshield glass is being installed at a temperature of 5°C (41°F) to 11°C (52°F) make sure the vehicle is not driven for at least 2 hours after installation.

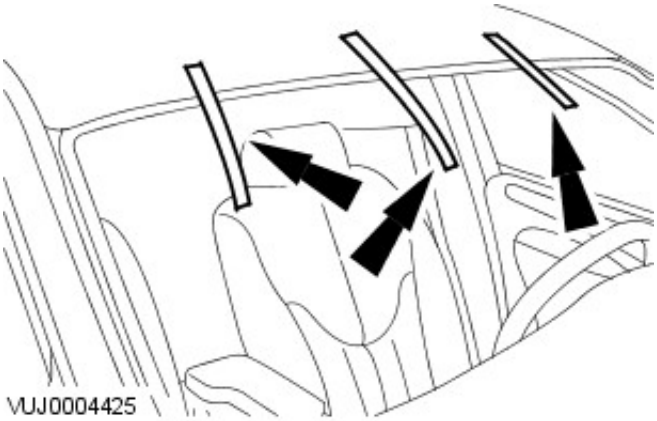
If the windshield glass is being installed at a temperature below 5°C (41°F) use heat and make sure the windshield glass adhesive has set before the vehicle is driven.

CAUTION: When installing the windshield glass, do not strike it in any way as this will crack the glass.

Install the lifting handles and with assistance, carefully

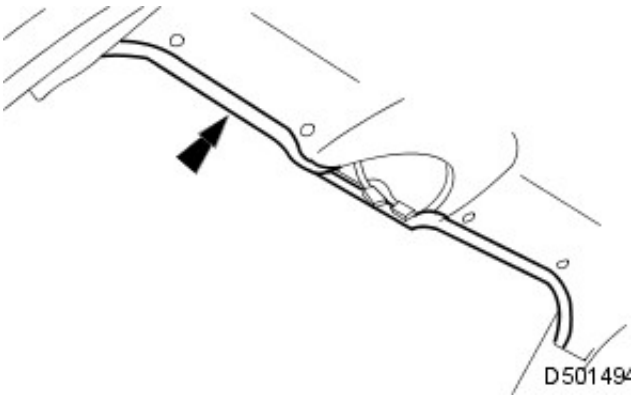
position the windshield glass in the aperture.

- Align the windshield glass and press firmly into place.
- Remove the lifting handles.



7. CAUTION: Make sure the windshield glass does not move out of position in the windshield glass aperture.

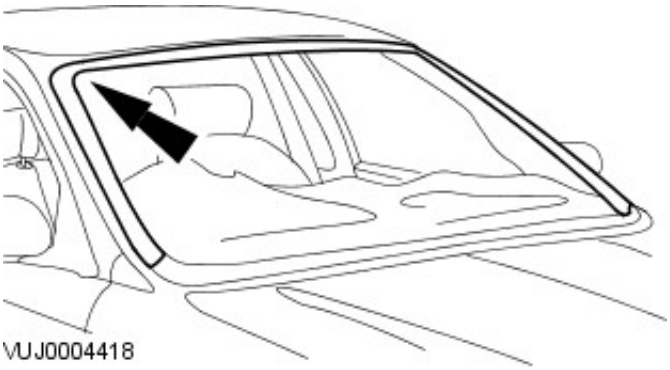
Apply suitable protective tape to the top of the windshield glass.



8. Remove the protective tape from the inner leading edge of the roof panel.

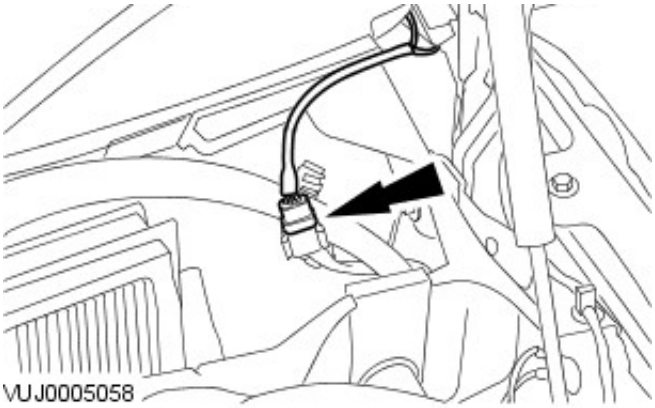
9. Remove the protective sheet and the protective board from the fascia.

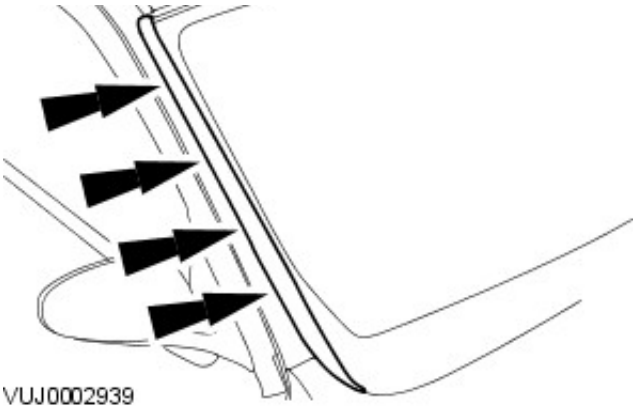
10. Remove the protective tape from the windshield glass aperture.



11. NOTE: Left-hand shown, right-hand similar.

Connect the the heated windshield glass electrical connectors.



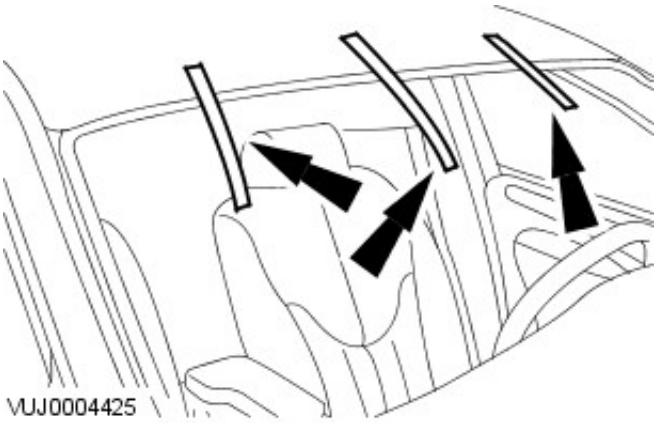

VUJ0002939

12. Install the A-pillar exterior trim.

13. Install the rear view mirror.
For additional information, refer to Section 501-09 Rear View Mirrors.

14. Install the cowl vent screen cover.
For additional information, refer to Section 501-02 Front End Body Panels.

15. Install the sun visors.
For additional information, refer to Section 501-05 Interior Trim and Ornamentation.

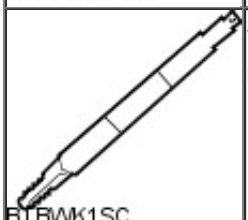
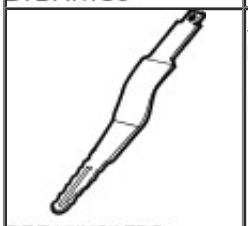
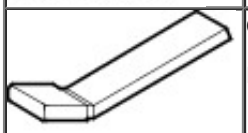

VUJ0004425

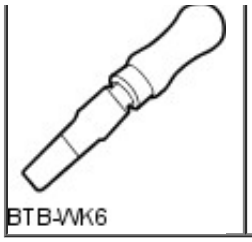
16. CAUTION: Make sure the windshield glass adheasive is set before removing the protective tape.

Remove the protective tape from the top of the windshield glass.

Glass, Frames and Mechanisms - Windshield Glass Using Cutting Tool

Removal and Installation

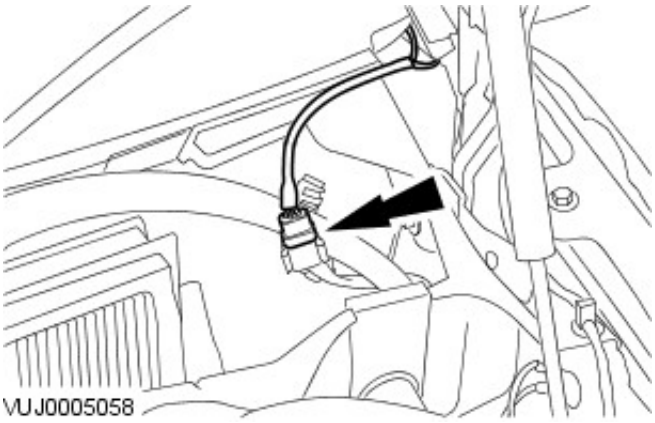
Special Tool(s)	
 BTB-WK9L	Lubricant concentrate BTB-WK9L
 BTB-WK9	Spray bottle BTB-WK9
 BTB-WK10HD	Cutting tool BTB-WK10HD
 BTBWK1SC	Serrated extra long flat cutting blade BTB-WK1SC
 BTB-WK24ZSC	Serrated general purpose 'Z' cutting blade BTB-WK24ZSC
 BTBWK11E	Cutting blade controller arm BTB-WK11B
 BTB-WK27RM	Reverse powered cold knife blade cutting tool BTB-WK27RM
	Pinchweld scraper blade BTB-WK6



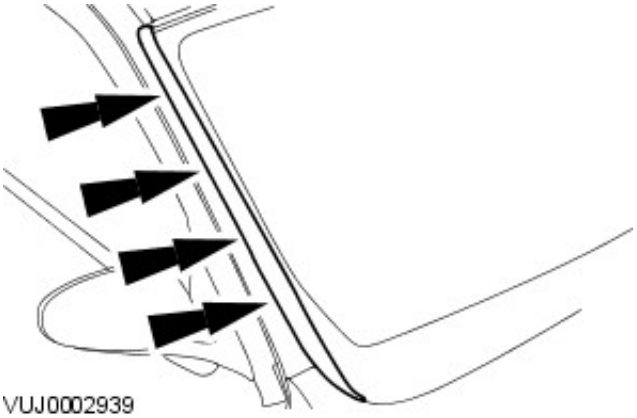
Removal

1. Remove the sun visors.
   For additional information, refer to Section 501-05 Interior Trim and Ornamentation.
2. Remove the cowl vent screen.
   For additional information, refer to Section 501-02 Front End Body Panels.
3. Remove the interior mirror.
   For additional information, refer to Section 501-09 Rear View Mirrors.
4. NOTE: Left-hand shown, right-hand similar.

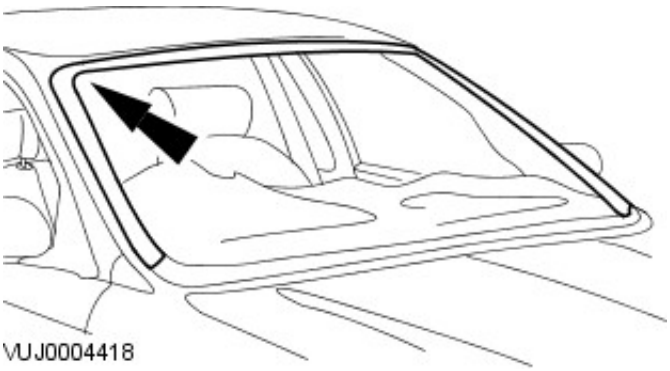
   Disconnect the heated windshield glass electrical connectors.



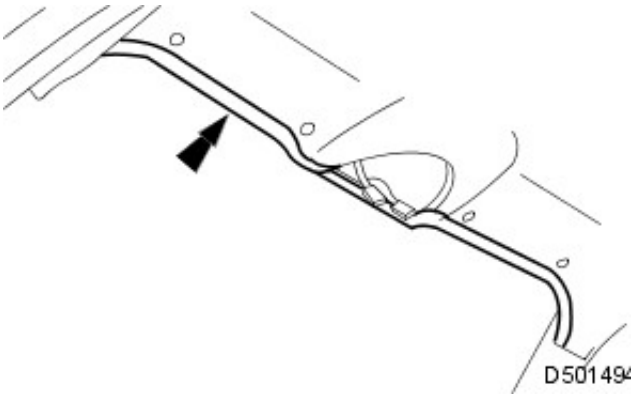
5. Remove the A-pillar exterior trim.



6. Apply suitable protective tape around the windshield glass aperture to protect the paintwork.



7. Place a suitable protective sheet over the fascia and place a protective board over the sheet.

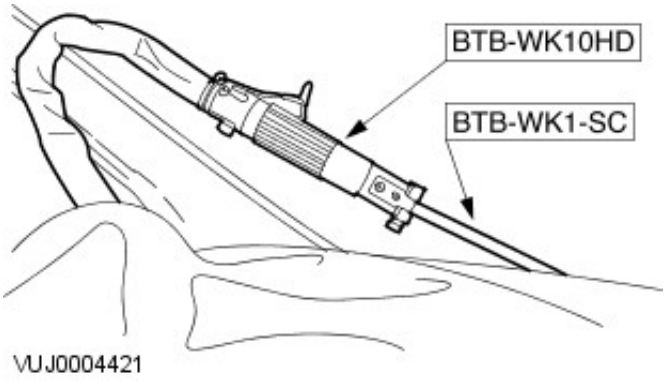


8. Apply suitable protective tape to the leading inner edge of the roof panel.

9. Dispense 20 ml of WK9L lubricant into the WK9 spray bottle, fill the spray bottle with water and mix.

10. Apply cutting lubricant to the lower windshield glass adhesive and approximately 150 mm (5.9 in) up the A-pillar.

11. Install the cutting tool blade BTB-WK1SC to the cutting tool BTB-WK10HD.



VUJ0004421

12. NOTE: Right-hand shown, left-hand similar.

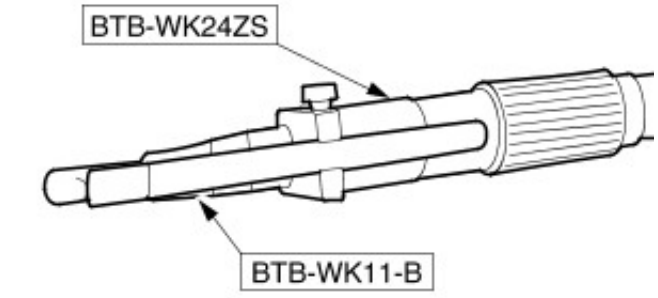
Using the cutting tool, cut through the lower windshield glass adhesive and approximately 150 mm (5.9 in) up the A-pillar.

13. Apply cutting lubricant to both sides of the inner A-pillar windshield glass adhesive.

14. NOTE: Remove the cutting tool blade BTB-WK1SC from the cutting tool BTB-WK10HD.

Install the cutting tool side cutting blade BTB-WK24ZS and the cutting tool controller arm BTB-WK11B to the cutting tool BTB-WK10HD.

- Set the cutting tool controller arm to 20 mm.

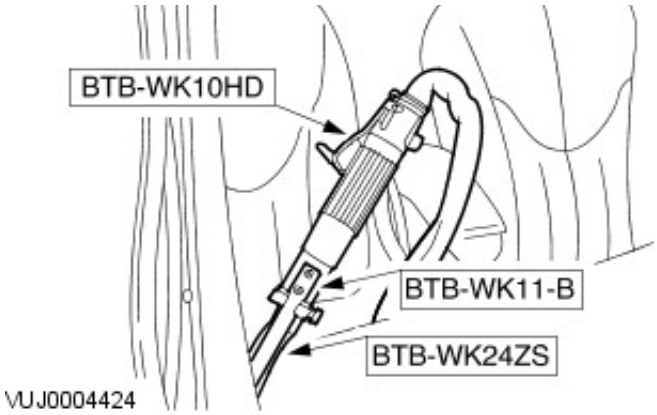


VUJ0004423

15. NOTE: Right-hand shown, left-hand similar.

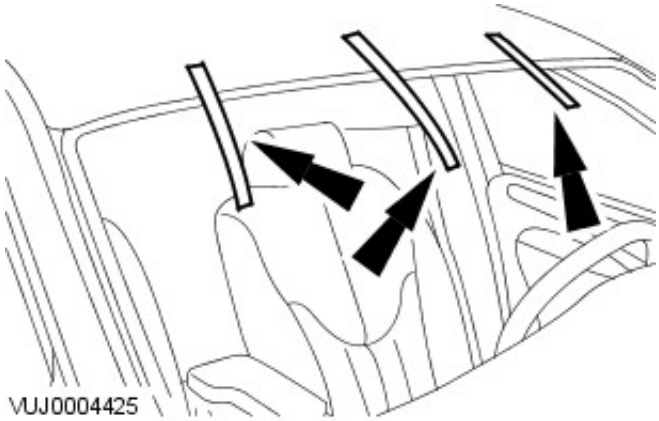
• NOTE: Start cutting the windshield glass adhesive from the top of the A-piller downwards.

Using the cutting tool, cut through A-pillar windshield glass adhesive.



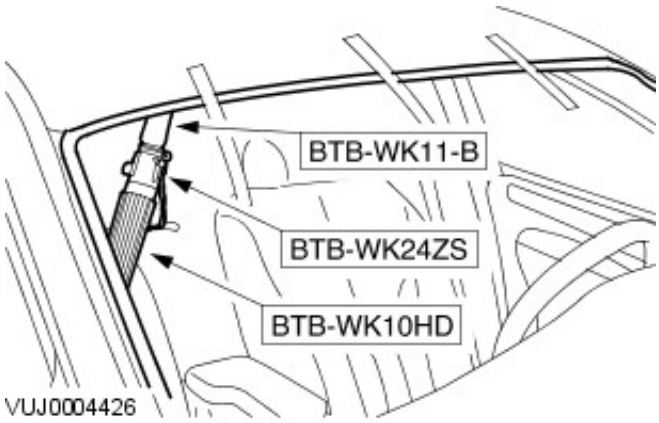
16. Apply cutting lubricant to the top of the inner windshield glass adhesive.

17. Apply suitable protective tape to the top of the windshield glass.



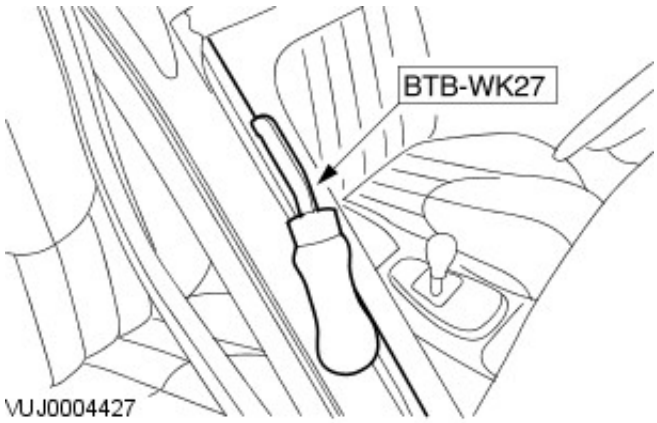
18. NOTE: Start cutting from either corner into the center and continue the cut all the way through to the other corner. Do not cut from each corner into the center of the windshield glass as the pressure on the center of the windshield glass could cause breakage.

Using the cutting tool, cut through the top of the inner windshield glass adhesive.



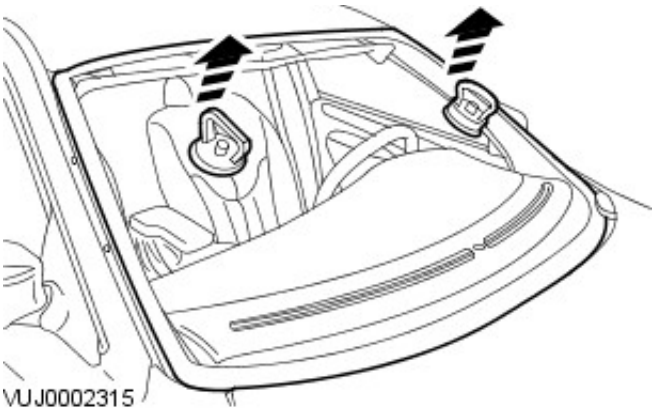
19. NOTE: Right-hand shown, left-hand similar.

Using the special tool cut through any remaining windshield glass adhesive on the A-pillars.



20. With assistance remove the windshield glass.

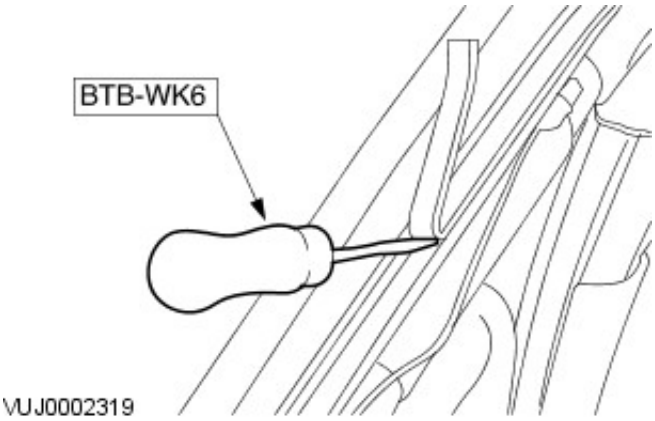
- Attach the lifting handles to the windshield glass.



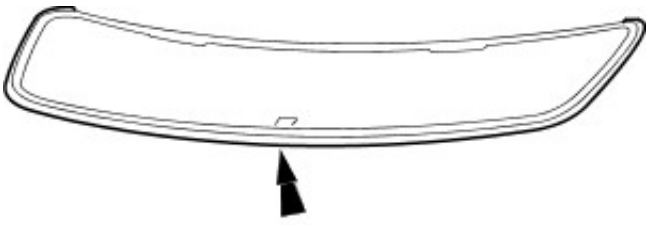
21. Remove the lifting handles from the windshield glass.

22. NOTE: To aid bonding of a new windshield glass, make sure at least 1 mm (0.3 in) of residual adhesive remains on the body flange.

Using the special tool remove the residual adhesive from the body flange.

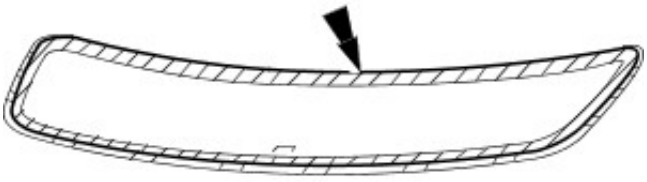


Installation

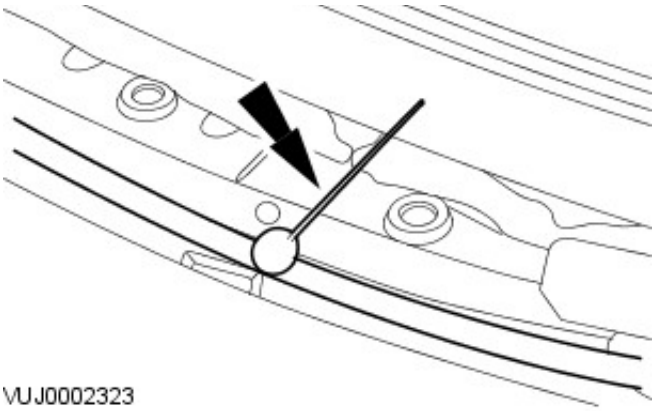


1. Make sure the new windshield glass surface is clean using Betawipe spirit.

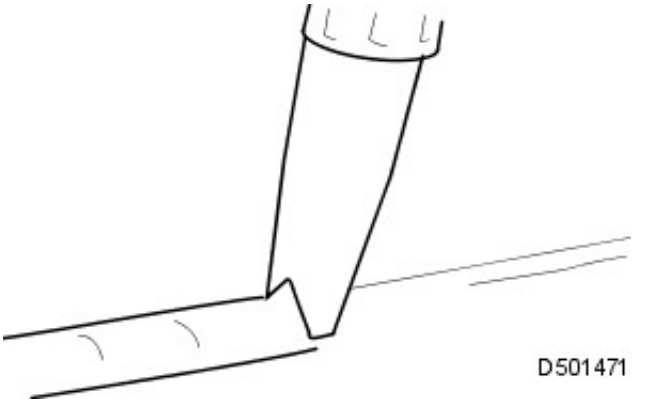
2. Apply glass primer to mating face of the windshield glass.



3. Apply glass primer to the mating face of the body flange.

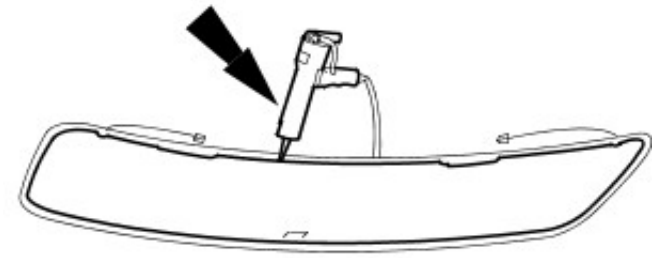


VUJ0002323



D501471

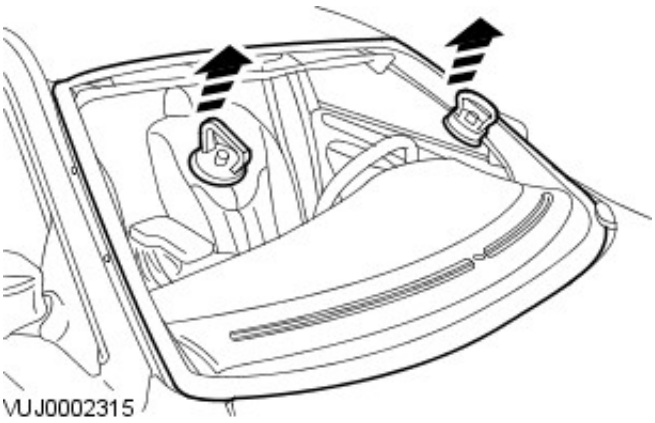
4. Cut the adhesive nozzle to achieve a triangular section bead 8 mm (0.31in) wide by 13 mm (0.51 in) high.



VUJ0001951

5. NOTE: Apply windshield adhesive WSS-M2G379-A6A or equivalent meeting Jaguar specification around the windshield glass edge.

Using a suitable pneumatic application gun, apply a uniform bead of adhesive to the windshield glass edge commencing at the bottom center and overlapping the ends approximately 14 mm (0.55 in).



VUJ0002315

6. WARNINGS:

If the windshield glass is being installed at 23°C (73°F) or above make sure the vehicle is not driven for at least 1 hour after installation.

If the windshield glass is being installed at a temperature of 11°C (52°F) to 23°C (73°F) make sure the vehicle is not driven for at least 1.5 hours after installation.

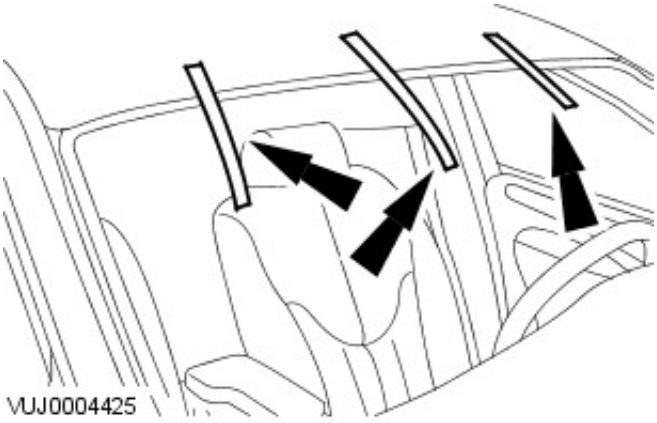
If the windshield glass is being installed at a temperature of 5°C (41°F) to 11°C (52°F) make sure the vehicle is not driven for at least 2 hours after installation.

If the windshield glass is being installed at a temperature below 5°C (41°F) use heat and make sure the windshield glass adheasive has set before the vehicle is driven.

CAUTION: When installing the windshield glass, do not strike it in any way as this will crack the glass.

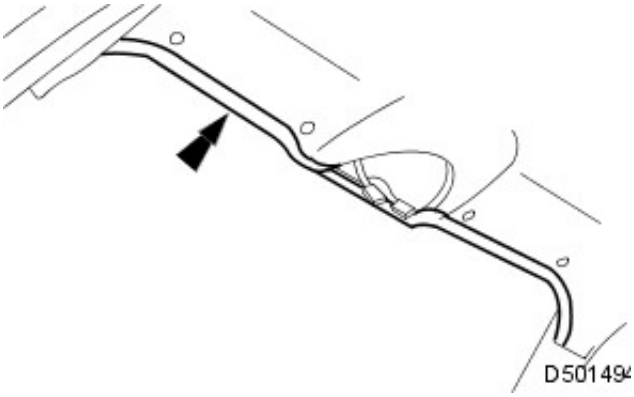
Install the lifting handles and with assistance, carefully position the windshield glass in the aperture.

- Align the windshield glass and press firmly into place.
- Remove the lifting handles.



7. CAUTION: Make sure the windshield glass does not move out of position in the windshield glass aperture.

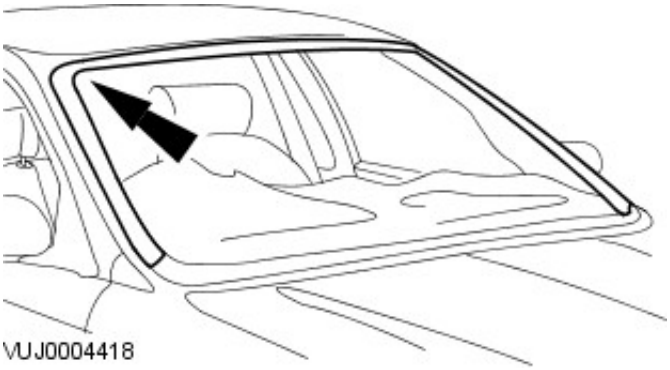
Apply suitable protective tape to the top of the windshield glass.



8. Remove the protective tape from the inner leading edge of the roof panel.

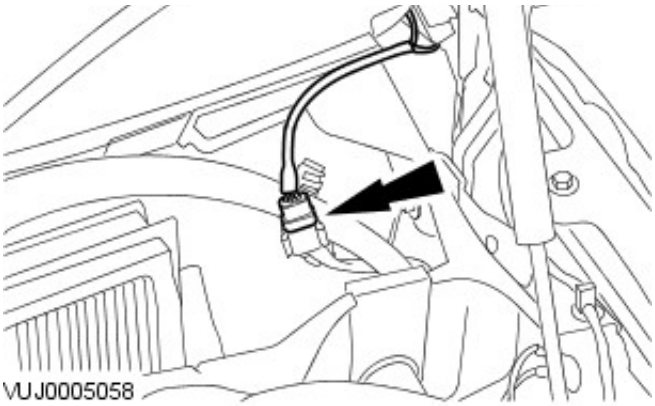
9. Remove the protective sheet and the protective board from the fascia.

10. Remove the protective tape from the windshield glass aperture.

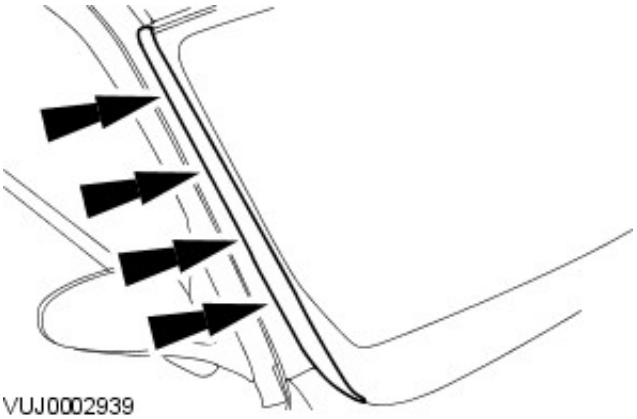


11. NOTE: Left-hand shown, right-hand similar.

Connect the the heated windshield glass electrical connectors.


VUJ0005058

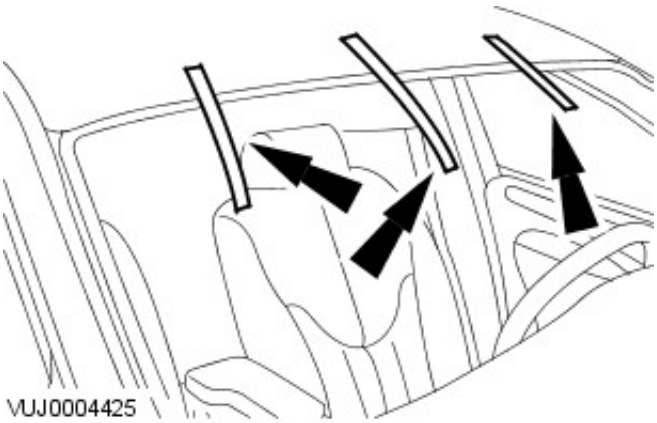
12. Install the A-pillar exterior trim.


VUJ0002939

13. Install the interior mirror.
For additional information, refer to Section 501-09 Rear View Mirrors.

14. Install the cowl vent screen. For additional information, refer to Section 501-02 Front End Body Panels.

15. Install the sun visors. For additional information, refer to Section 501-05 Interior Trim and Ornamentation.

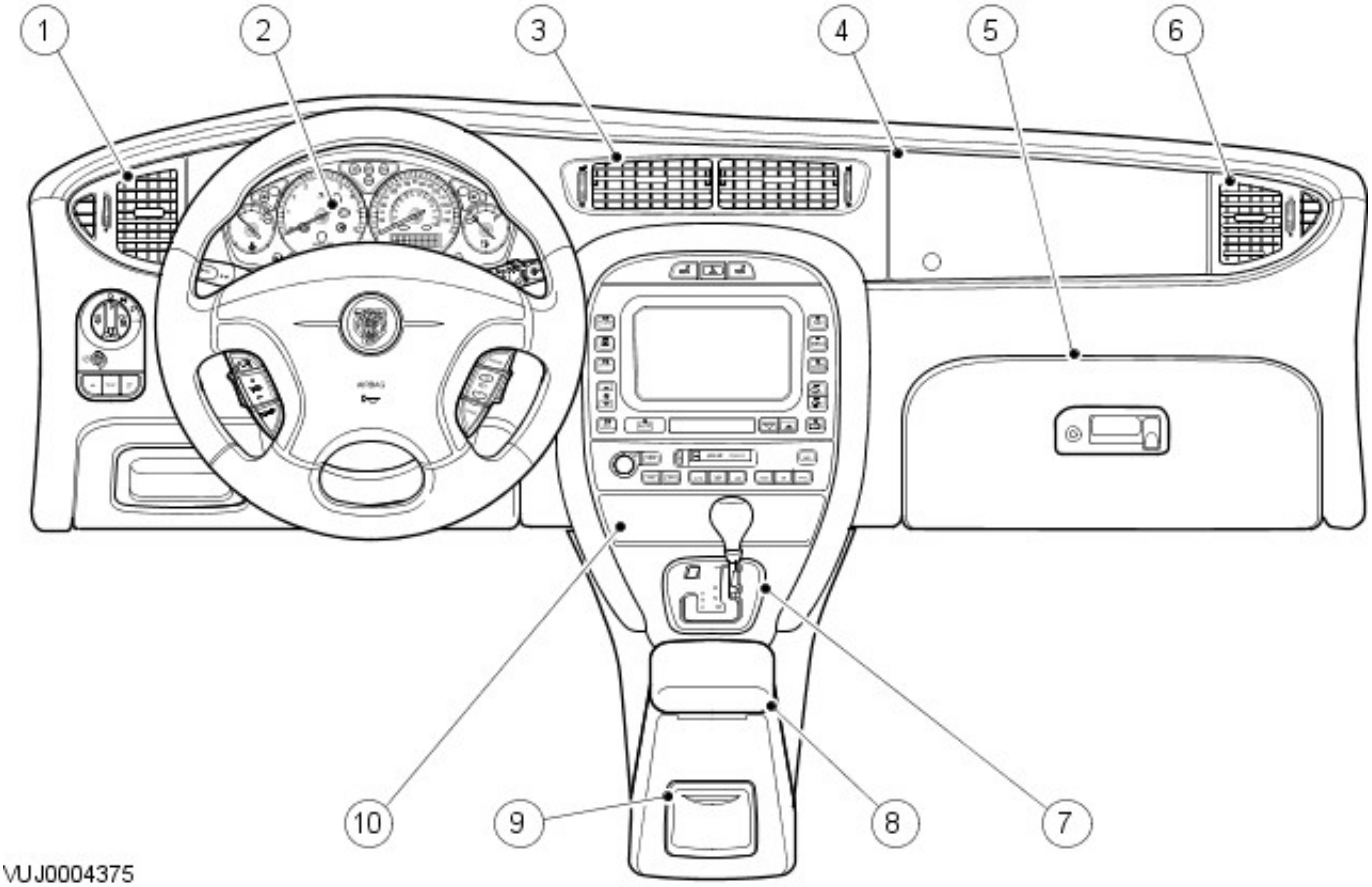

VUJ0004425

16. CAUTION: Make sure the windshield glass adhesive is set before removing the protective tape.

Remove the protective tape from the top of the windshield glass.

Instrument Panel and Console - Instrument Panel

Description and Operation



VUJ0004375

Item	Part Number	Description
1	—	Left hand side register
2	—	Instrument cluster
3	—	Center register
4	—	Passenger air bag module
5	—	Glovebox
6	—	Right hand side register
7	—	J-gate surround
8	—	Arm rest
9	—	Rear ashtray
10	—	Front ashtray

The instrument panel assembly houses the main instrument cluster, passenger air bag module, glovebox, and air distribution registers, all of which can be readily removed without disturbing the instrument panel. The instrument panel wiring harness is located behind the instrument panel assembly to facilitate easy installation in vehicle. The instrument panel must be removed from the vehicle to gain access to the wiring harness.

Console

The floor console is located between the front seats and, depending upon trim level, consists of the ashtray, cigar lighter and armrest. The center section of the console forms a deep stowage box with a secondary cupholder. The optional telephone is incorporated within the armrest. In both cases the center console utilizes a rear hinged lid which is padded to form a central arm rest. A dynamic stability control 'ON/OFF' selector switch, if fitted, is situated immediately in front of the stowage box. Situated in the rear of the center console is a rear passenger ashtray.

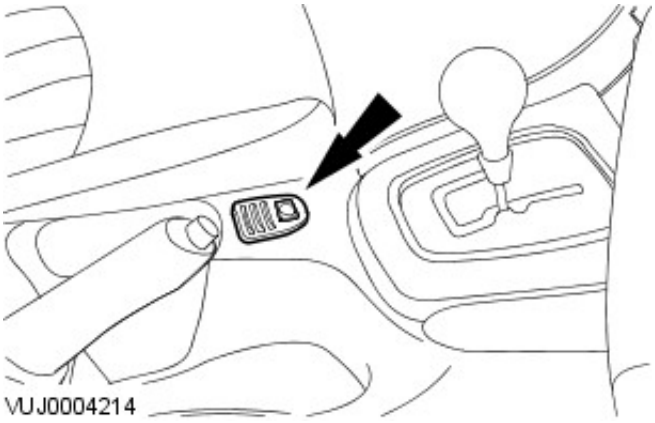
The roof console is located between the front sun visors and, depending upon vehicle options, consists of the front overhead courtesy light, two reading/map lights, remote convenience buttons, sunroof switch, emergency messaging buttons and a microphone.

Instrument Panel and Console - Floor Console

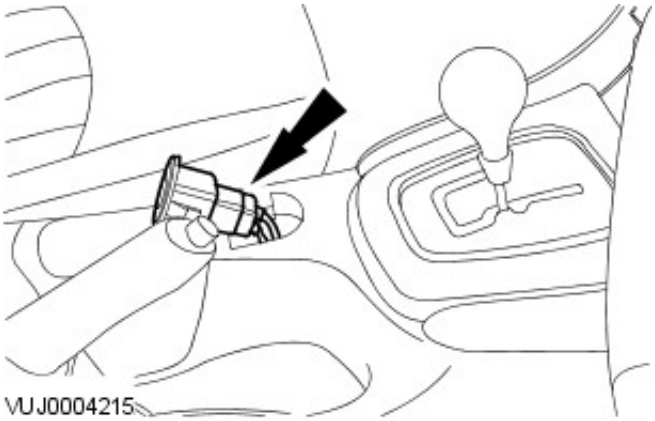
Removal and Installation

Removal

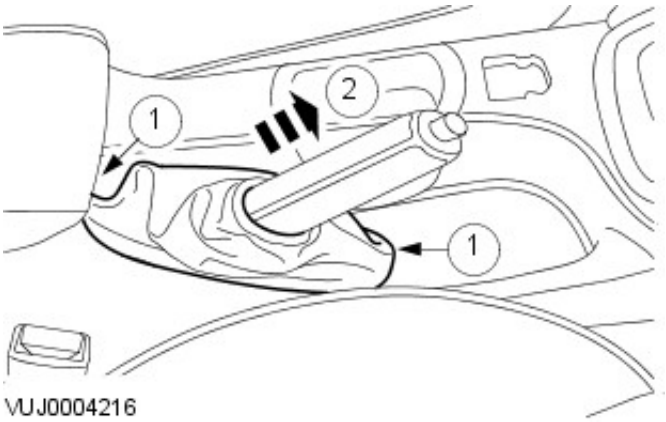
All vehicles


VUJ0004214

1. Detach the electronic passive anti-theft system (PATS) light.


VUJ0004215

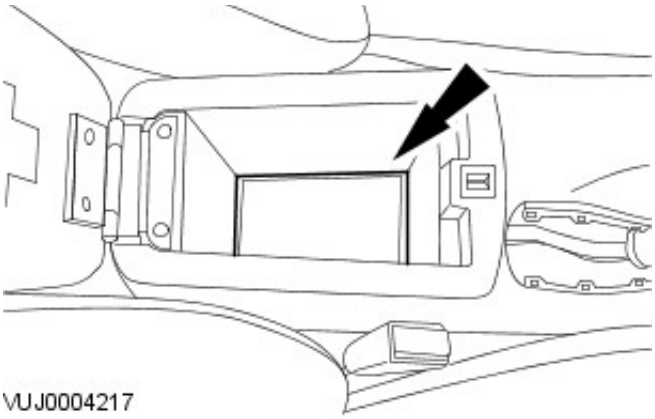
2. Remove the PATS light.
   - Disconnect the electrical connector.



VUJ0004216

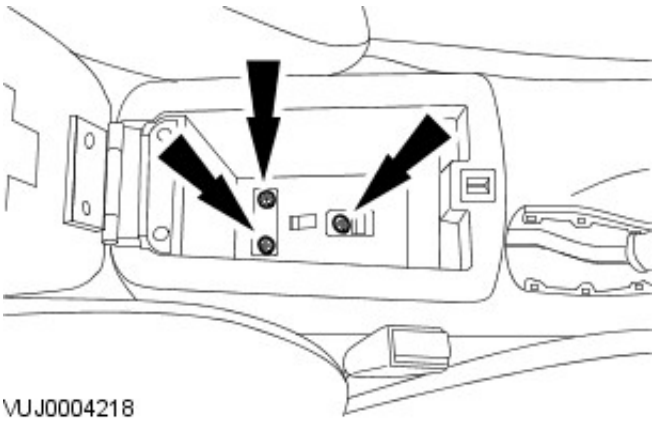
3. Remove the hand brake lever surround.
   1. Detach the hand brake lever surround.
   2. Remove the hand brake lever surround.

4. Remove the console stowage compartment non slip mat.



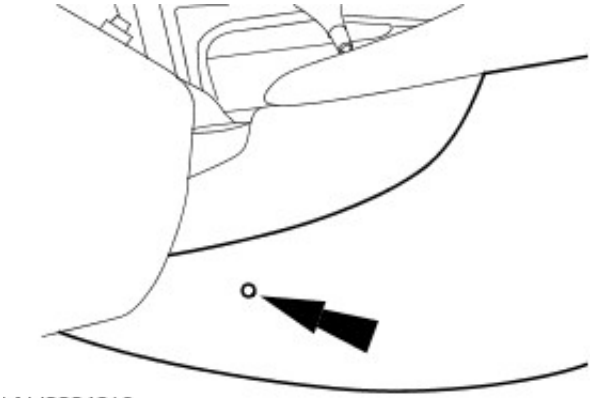
VUJ0004217

5. Remove the retaining screws.



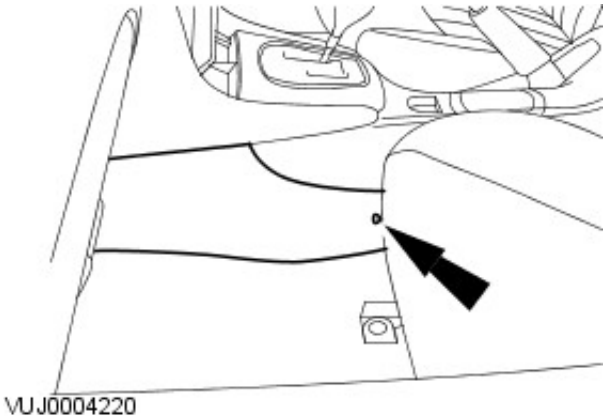
VUJ0004218

6. Remove the center console trim panel.



VUJ0004219

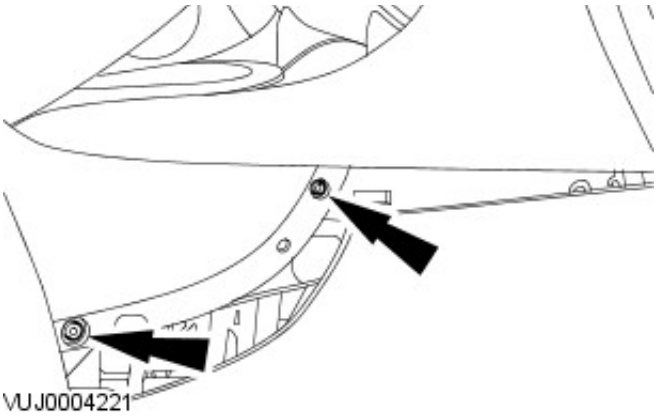
7. Remove the center console trim panel.



VUJ0004220

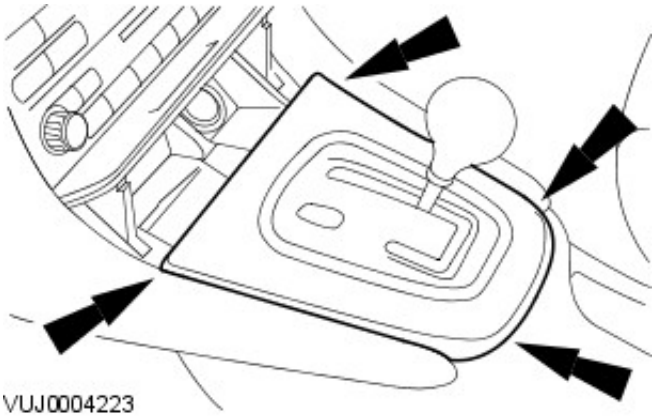
8. NOTE: Right hand shown, left hand similar.

Remove the retaining screws.



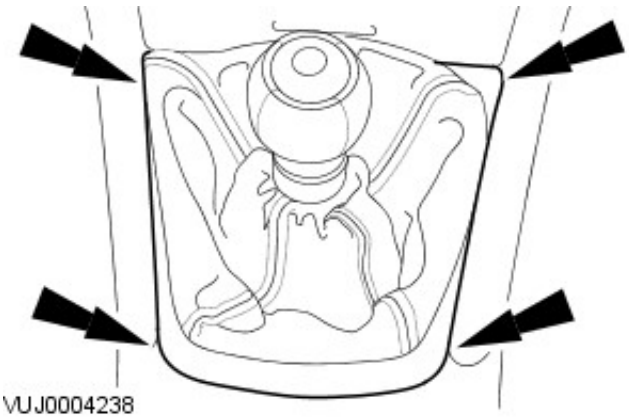
Vehicles with automatic transmission

9. Remove the J-gate surround.



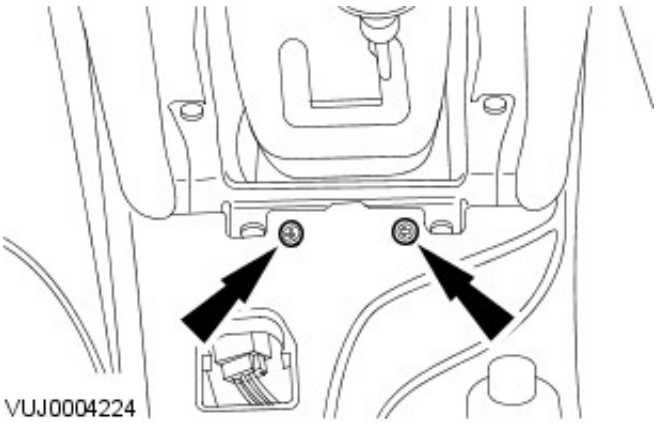
Vehicles with manual transmission

10. Detach the gear selector surround.



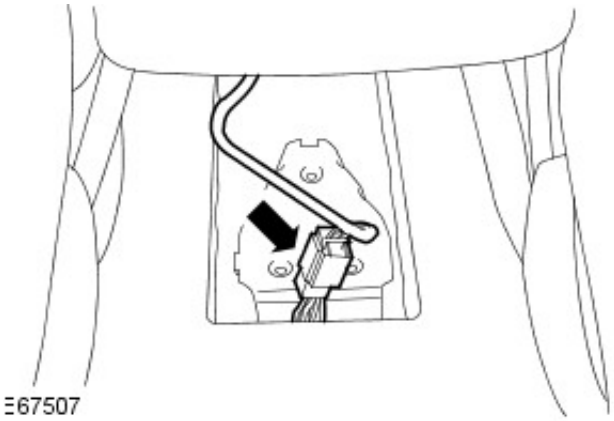
All vehicles

11. Remove the retaining screws.



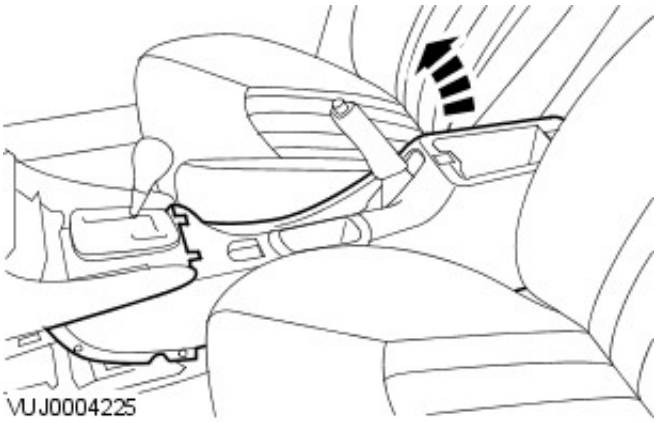
Vehicles with cordless cellular phone

12. Disconnect the bluetooth upgrade module electrical connector.



All vehicles

13. Remove the floor console.



Installation

1. To install, reverse the removal procedure.

Instrument Panel and Console - Instrument Panel
Removal and Installation

Removal

All vehicles

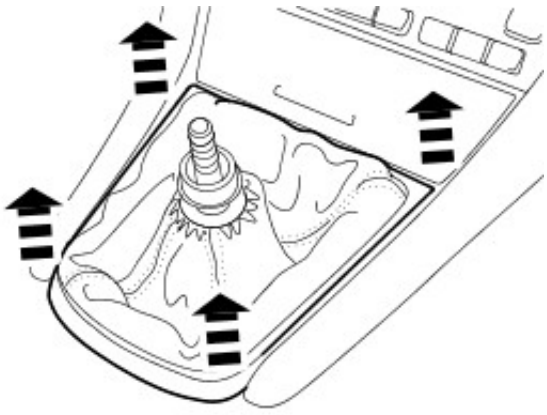
1. Remove the console.
   For additional information, refer to: Floor Console (501-12 Instrument Panel and Console, Removal and Installation).
2. Remove the climate control panel.
   For additional information, refer to: Climate Control Assembly (412-04 Control Components, Removal and Installation).
3. Remove the navigation system display module (if equipped).
   For additional information, refer to: Navigation System Display Module (419-07 Navigation System, Removal and Installation).
4. Remove the instrument cluster.
   For additional information, refer to: Instrument Cluster (413-01 Instrument Cluster, Removal and Installation).
5. Remove the passenger air bag module.
   For additional information, refer to: Passenger Air Bag Module (501-20B Supplemental Restraint System, Removal and Installation).
6. Remove the steering column.
   For additional information, refer to: Steering Column (211-04 Steering Column, Removal and Installation).
7. Remove the headlamp switch.
   For additional information, refer to: Headlamp Switch (417-01 Exterior Lighting, Removal and Installation).

Vehicles with manual transmission

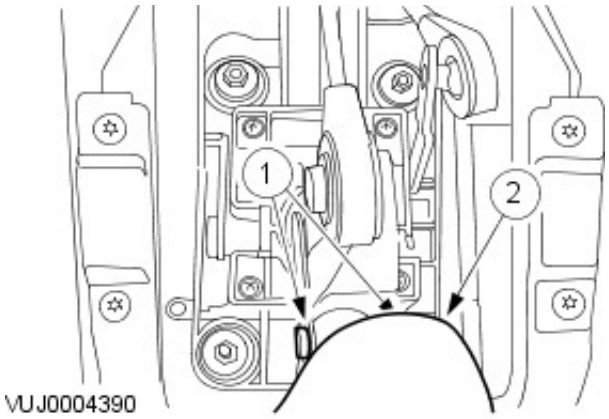
8. Remove the gear selector knob.

E49096

9. Detach the gear selector surround.



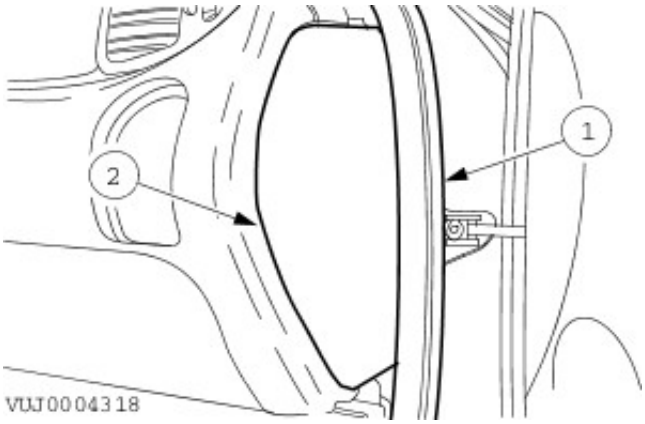
E49097



10. Remove the gear selector surround.

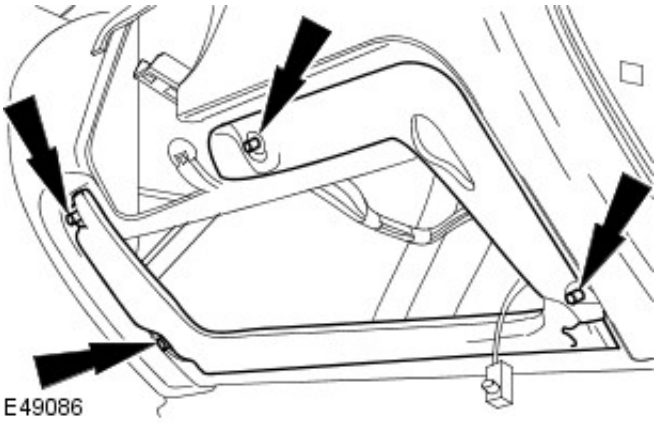
1. Detach the reverse gear interlock mechanism.
2. Remove the gear selector surround.

All vehicles

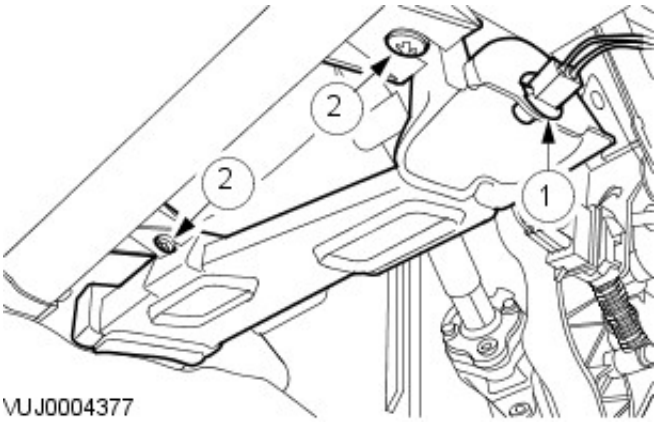


11. Remove the right hand end panel.

1. Detach the front door opening weather strip.
2. Remove the right hand end panel.



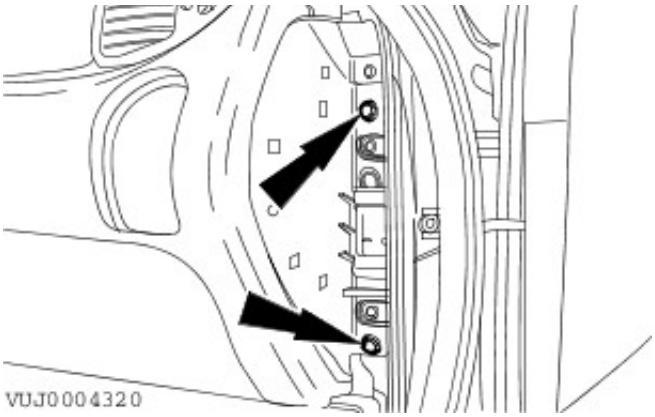
12. Remove support panel.



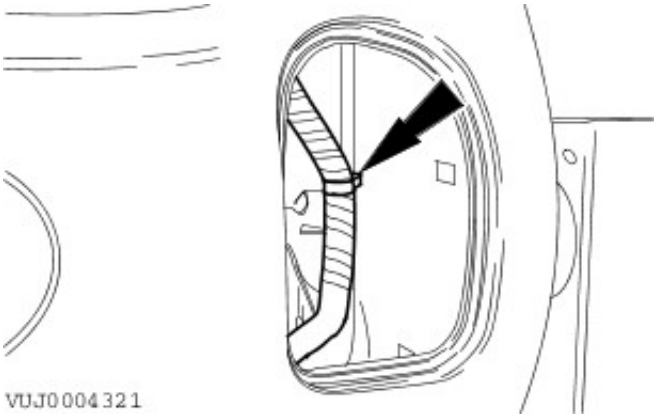
13. Remove the lower vent.

1. Detach the bulb holder.
2. Remove the lower vent.

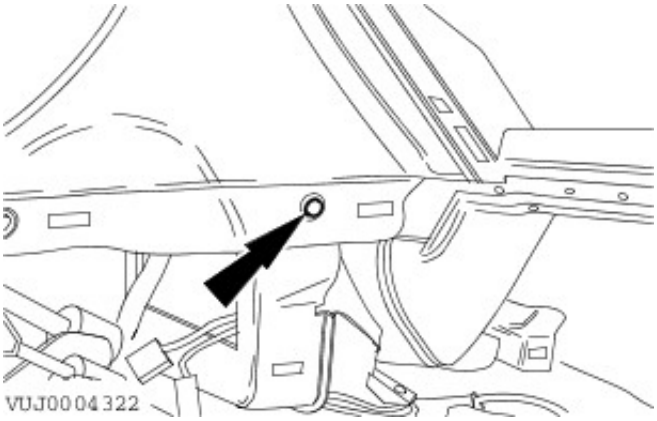
14. Remove the instrument panel retaining screws.



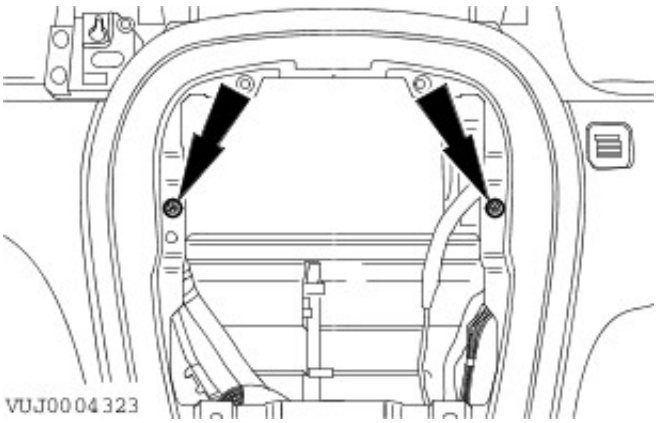
15. Detach the electrical harness.



16. Remove the instrument panel retaining screw.

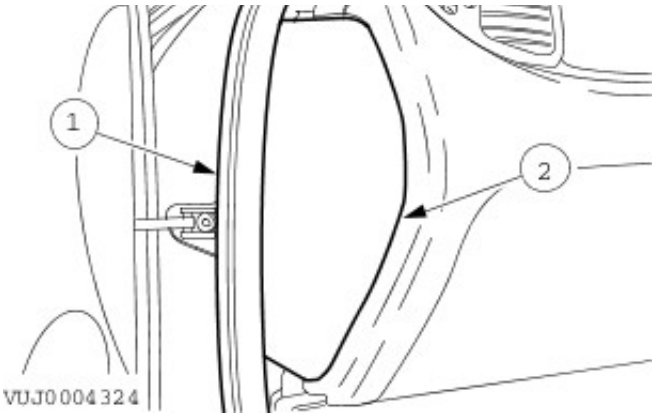


17. Remove the instrument panel retaining screws.



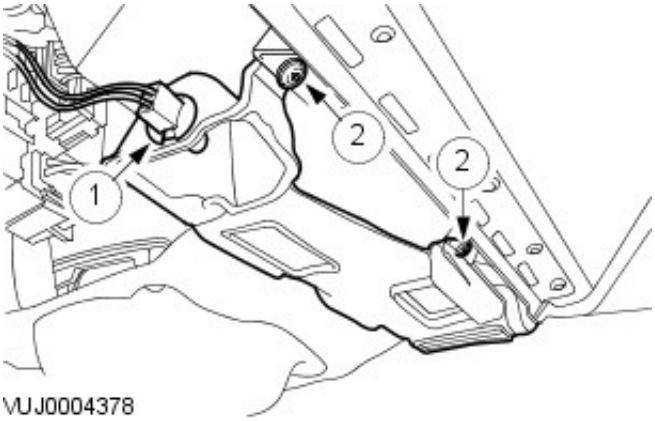
18. Remove the left hand end panel.

1. Detach the front door opening weather strip.
2. Remove the left hand end panel.

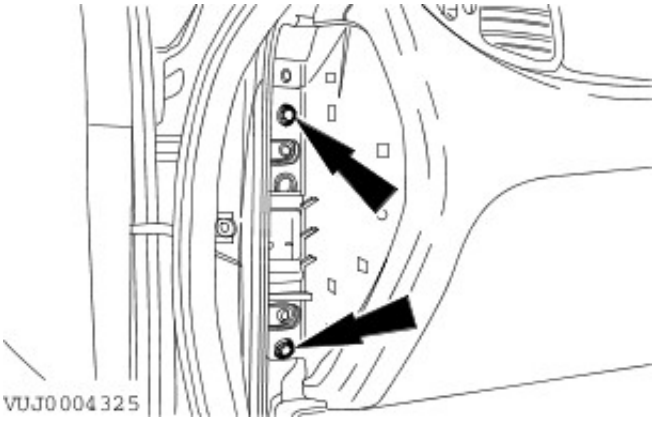


19. Remove the lower vent.

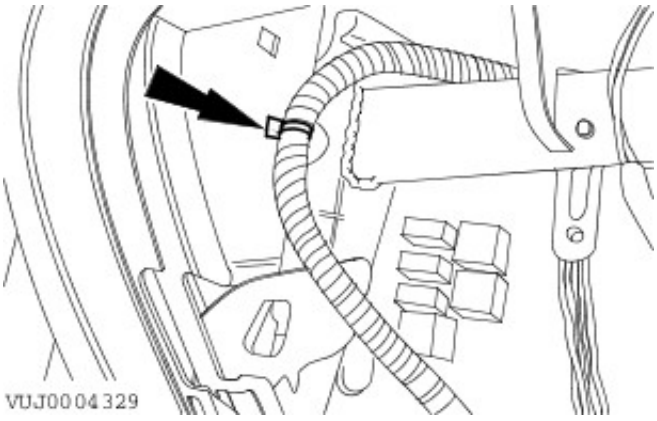
1. Detach the bulb holder.
2. Remove the lower vent.



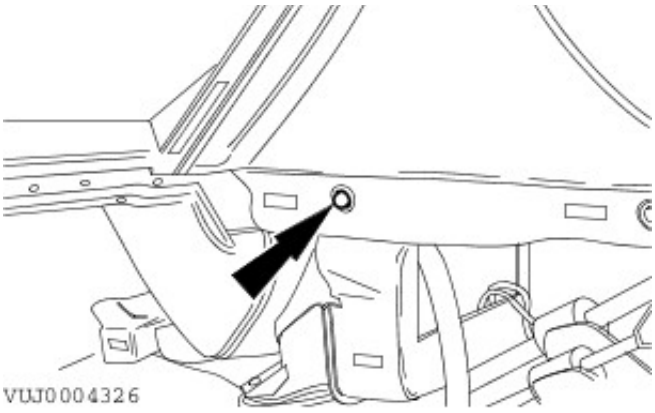
20. Remove the instrument panel retaining screws.



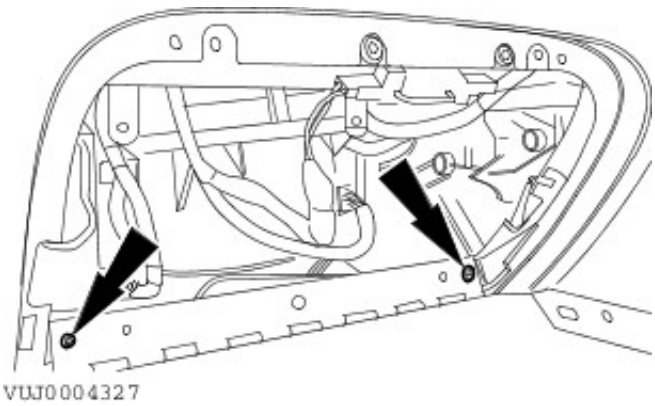
21. Detach the electrical harness.



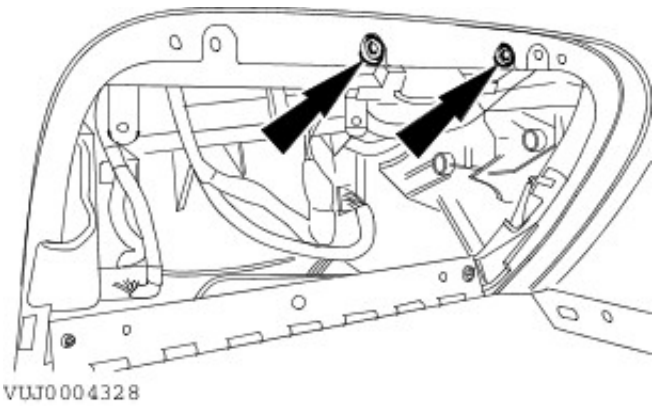
22. Remove the instrument panel retaining screw.



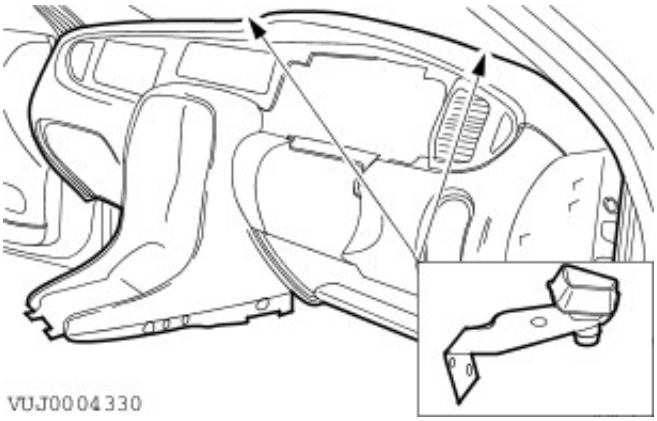
23. Remove the instrument panel retaining screws.



24. Remove and discard the pop rivets.



25. Remove the instrument panel.



Installation

1. To install, reverse the removal procedure.

Instrument Panel and Console - Overhead Console

Removal and Installation

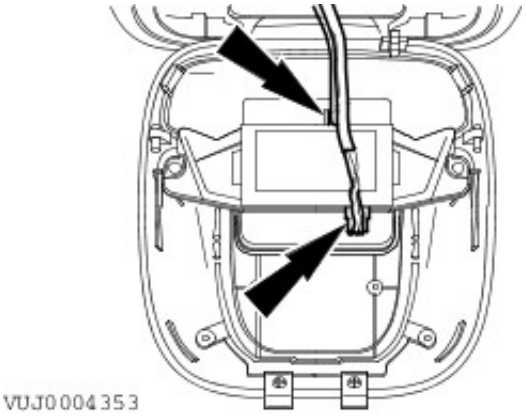
Removal

1. Detach the roof console.

VUJ0004352

2. Remove the roof console.

- Disconnect the electrical connector(s).



VUJ0004353

Installation

1. To install, reverse the removal procedure.

Instrument Panel and Console - Overhead Console Switch Moulding
Removal and Installation

Removal

• NOTE: Some variation in the illustrations may occur, but the essential information is always correct.

1. Remove the overhead console.
For additional information, refer to: Overhead Console (501-12 Instrument Panel and Console, Removal and Installation).

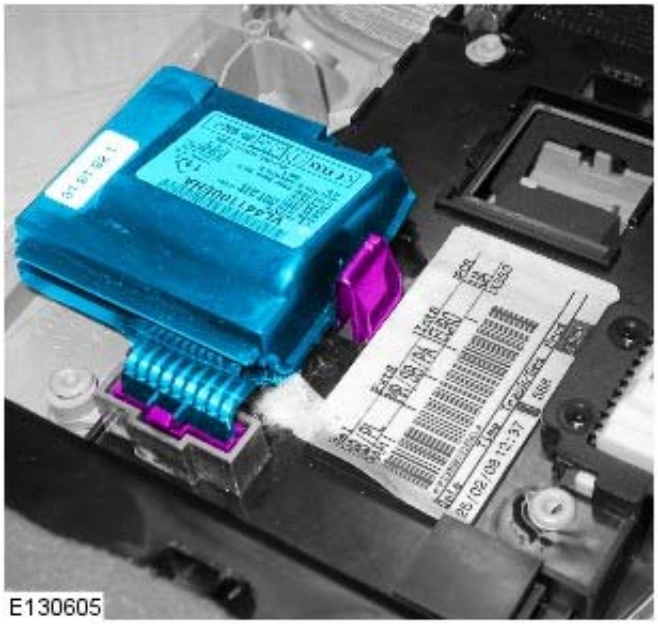
2. NOTE: Where installed.

Remove the front intrusion sensor.

E130673

3. NOTE: Where installed.

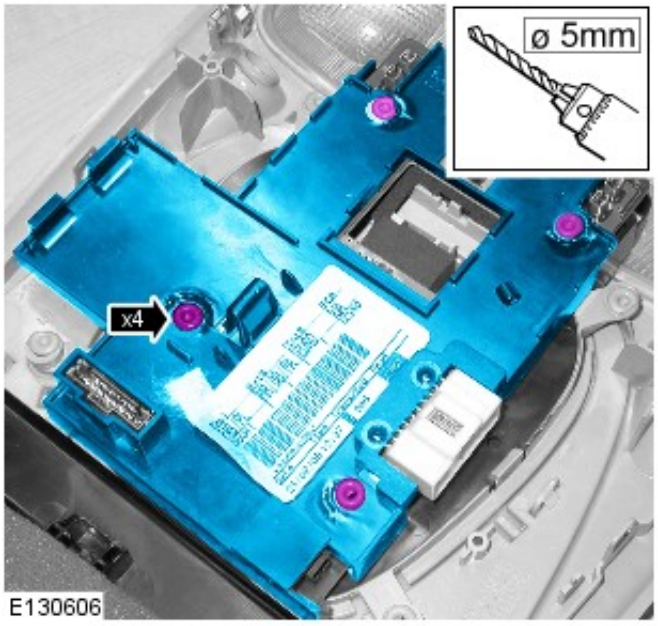
Remove the garage door opener module.


E130605

4. CAUTION: Make sure that only the head of the fixing is removed. Do not drill any deeper than necessary. Failure to follow this instruction may result in damage to the component.

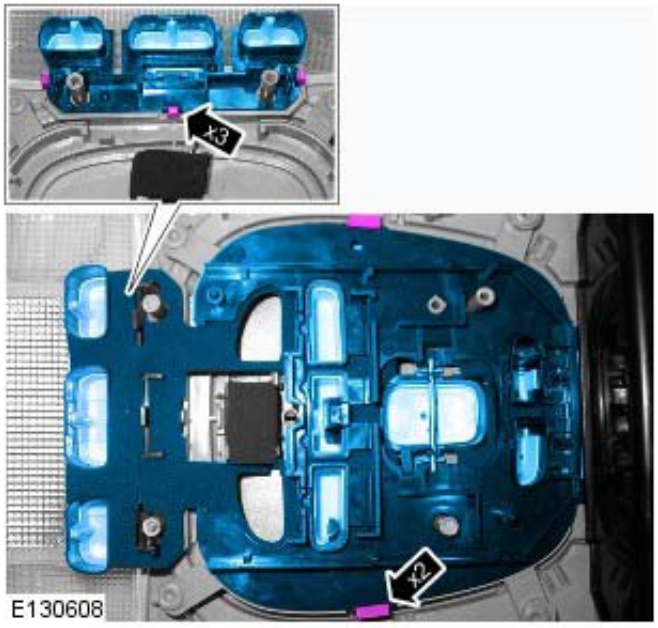
Remove the printed circuit board (PCB) cover.

- Using a 5mm drill bit, carefully drill out and remove the 4 plastic fixing heads.



5. Remove the PCB.

6. Remove the two switch mouldings.

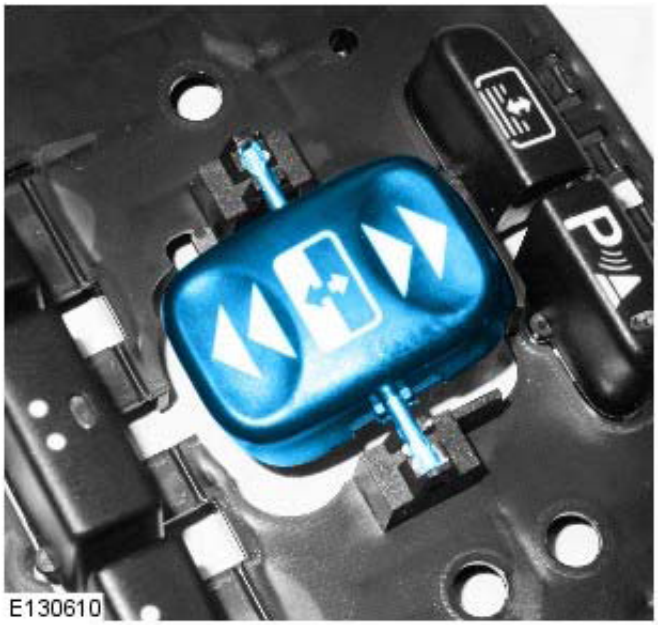


E130608

7. Remove the foam pad.

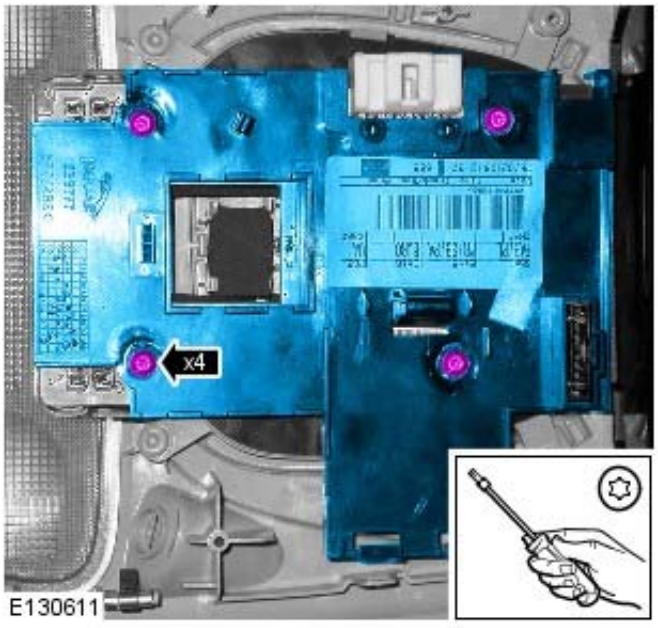

E130609

8. Carefully remove sunroof rocker switch for reuse in the new rear switch moulding.



Installation

1. Select the correct switch moulding for the vehicle from the parts kit.
2. Remove any unnecessary switch buttons from the rear moulding using a suitable sharp knife. Take care not to remove any required switches.
3. Install the sunroof rocker switch.
4. Install the front switch moulding.
5. Install the foam pad.
6. Install the rear switch moulding.
7. Install the PCB.
8. Install the cover.
   - Install the 4 Torx screws
   - Tighten to 1.5 Nm.



9. Install the garage door opener module.
10. Install the front intrusion sensor.
11. Install the overhead console.
    For additional information, refer to: Overhead Console (501-12 Instrument Panel and Console, Removal and

Installation).

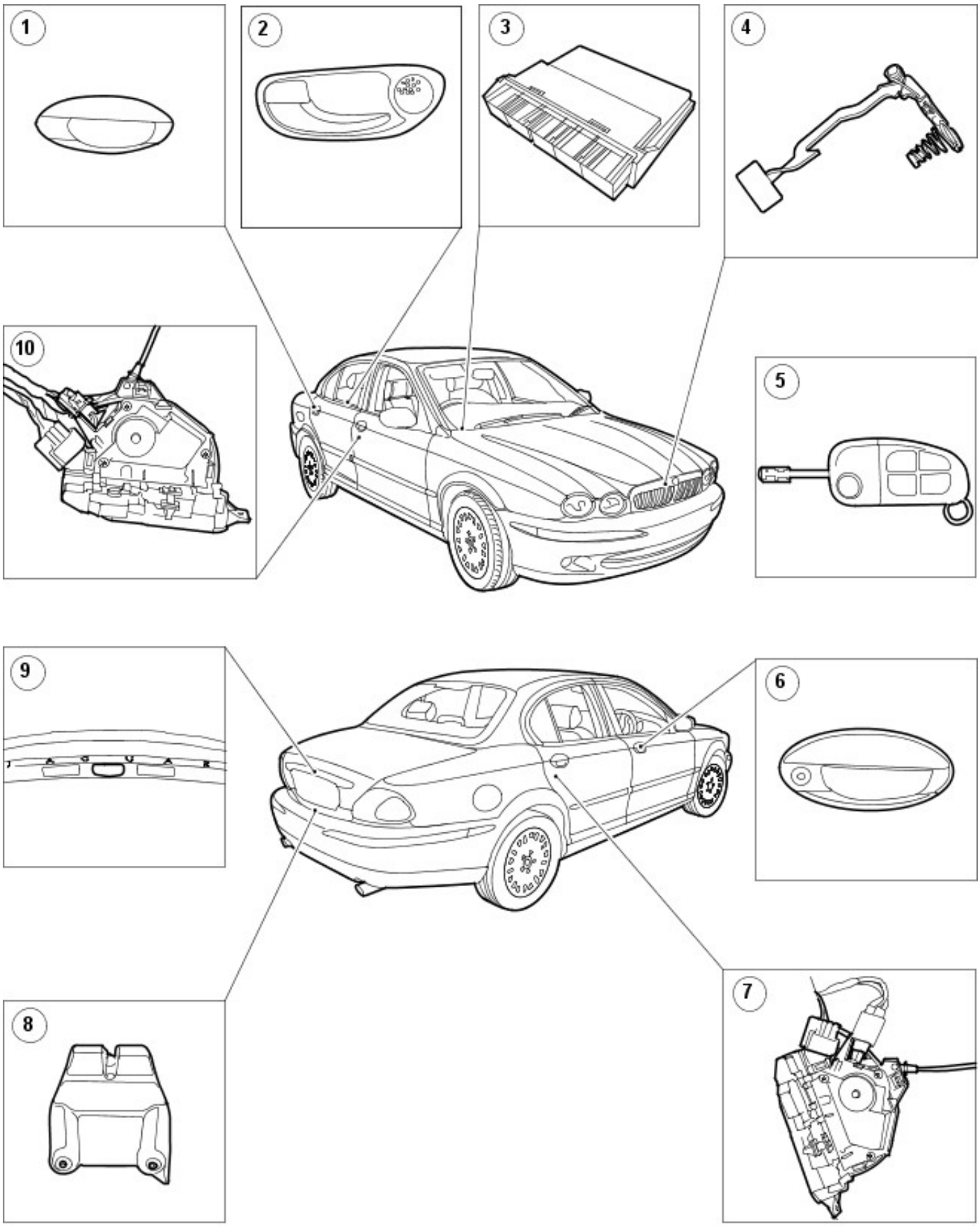
Handles, Locks, Latches and Entry Systems -

Torque Specifications

Description	Nm	lb-ft	lb-in
Door latch actuator retaining screws	7	-	62
Door latch striker retaining bolts	25	18	-
Door exterior handle retaining screws	5	-	44
Luggage compartment lid latch actuator retaining screws	10	-	89
Luggage compartment lid latch striker retaining bolts	25	18	-
Liftgate latch actuator retaining bolts	20	15	-
Liftgate window latch actuator retaining bolts	8	-	71
Rear window wiper pivot arm retaining nut	7	-	62
Rear wiper mounting arm retaining nuts	8	-	71
Liftgate window glass release switch retaining nut	9	-	80

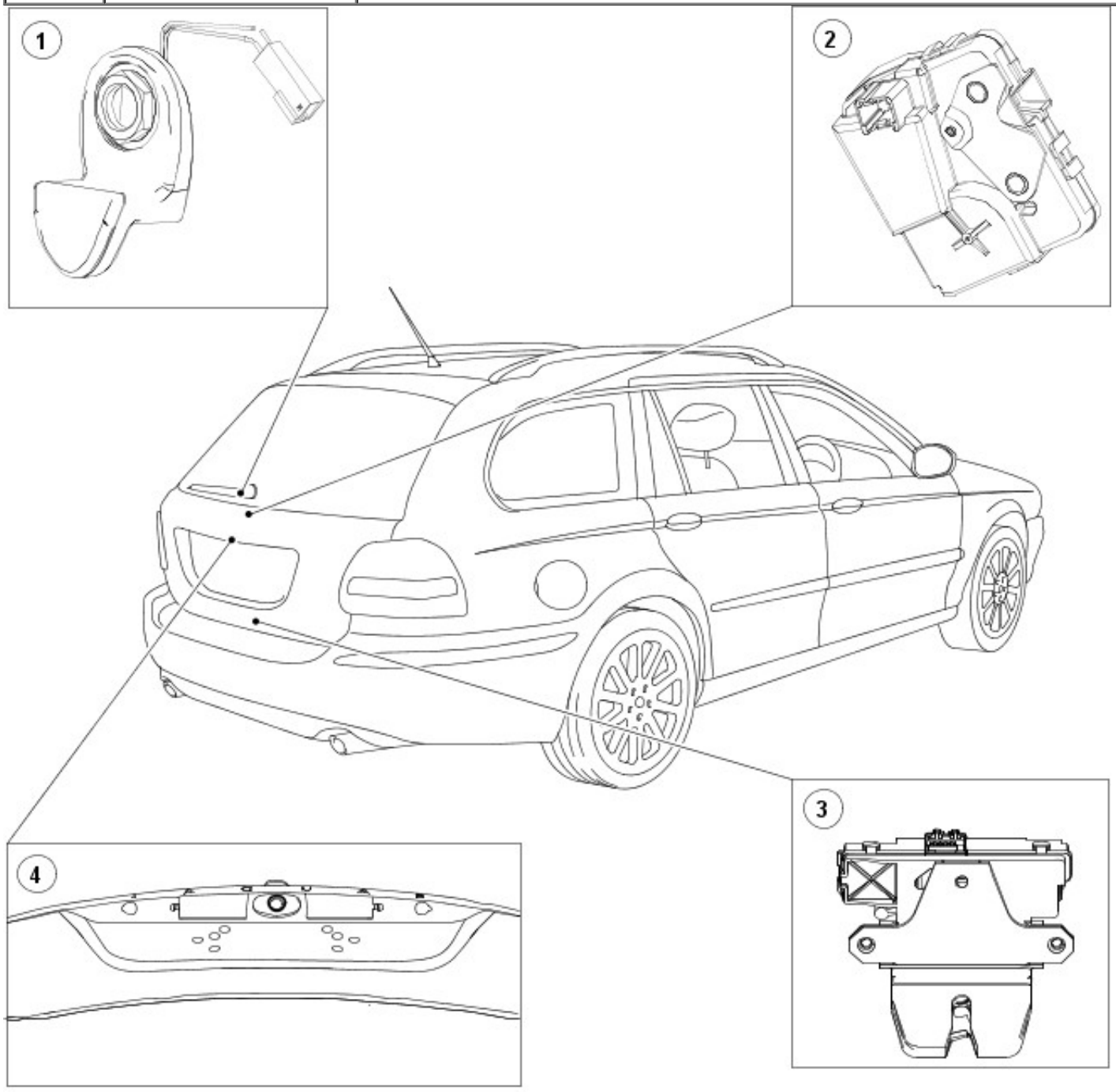
Handles, Locks, Latches and Entry Systems - Handles, Locks, Latches and Entry Systems

Description and Operation



E45867

Item	Part Number	Description
1	—	Rear door exterior handle
2	—	Door interior handle
3	—	Generic electronics module (GEM)
4	—	Hood latch release handle
5	—	Integrated key remote entry transmitter
6	—	Front door exterior handle
7	—	Rear door latch and actuator
8	—	Luggage compartment lid latch and actuator
9	—	Luggage compartment release switch
10	—	Front door latch and actuator



E48997

Item	Part Number	Description
1	-	Liftgate window glass release switch
2	-	Liftgate window latch actuator
3	-	Liftgate latch actuator
4	-	Liftgate release switch

For most markets excluding North America and Japan, the remote central locking system incorporates a double locking facility for optimum security. All locks use the Tibbe key system, using 6 elements and 4 cuts. The keys include 'in-key' transponders which are programmed to the vehicle engine immobilization system by using the Jaguar approved diagnostic system.

The central locking system employs single key access to the driver door, ignition switch and steering column lock.

When the vehicle is not locked, each door latch can be externally released by the corresponding exterior door handle which is operated by a single rod. When unlocked, or central locked, the door latches can also be released by the interior door handles, each of which are operated by a single cable. Operation of the front door interior handles will also unlock the rear doors. Use of the key in the driver door lock cylinder operates the lock by a short rod to provide locking of the door latch. This in turn locks all other doors and the luggage compartment through the central locking system. These locking functions can also be achieved by use of the integrated key remote entry transmitter.

For most markets, vehicles with 2.0L, 2.5L and 3.0L engines have a 'drive-away door locking' feature which automatically central locks all doors and the luggage compartment when the vehicle exceeds 7 km/h (4 mile/h).

Key operation

To central unlock or lock the vehicle, the key is inserted in the driver door lock cylinder, turned towards the front or rear of the vehicle respectively, and released. Holding the key in the lock position for 1.5 seconds will close all windows. Releasing the key stops all operations. Central locking of the vehicle locks all doors and the luggage compartment and sets the alarm system. In addition to all of the above functions, double locking prevents the doors opening from the interior. To 'double lock' the vehicle, the key is inserted in the driver door lock cylinder and turned to the unlock (forward) position, then within three seconds, turned to the lock (rearward) position and released. The same procedure is required to unlock a 'double locked' vehicle as with a central locked vehicle. The key is inserted in the driver door lock cylinder and turned to the unlock (forward) position. This function can also be activated using the remote transmitter.

If an attempt is made to lock the vehicle from either front doors through the driver or passenger interior door handles, when a door, hood or luggage compartment is ajar, will result in all doors being locked and then unlocked. If an attempt is made to lock the vehicle from either rear doors through the interior door handles, or when the hood, a door or the luggage compartment is ajar or open, will result in only that specific rear door to lock.

The fuel filler flap release lever is used to allow the driver to release the fuel filler flap from inside the vehicle. This function can be used at all times.

Keyless Entry

The integrated key remote transmitter operates the following functions:

- unlocking the driver door
- unlocking/locking all doors
- releasing the luggage compartment lid
- activate/deactivate the double locking
- arms/disarms the anti-theft alarm system, interior scanning system and the inclination sensor (if equipped)
- activates global closing
- deactivates a triggered alarm
- headlamp convenience
- remote panic alarm (standard on North American specification vehicles and as a dealer option in other markets)

Inputs and Outputs

The keyless entry/computer operated lock system receives inputs from the following:

- ignition switch (**ACC** and **ON** positions)
- door ajar switches
- hood switch
- luggage compartment switch
- remote transmitter

The Generic electronics module (GEM) distributes outputs to the following:

- door lock actuators
- double locking motors
- turn signals
- alarm horn
- luggage compartment latch
- power window motors for global closing

Transmitter, Keyless Entry Remote

The keyless entry/remote operated lock system is completely independent in function but fully integrated within the GEM. The remote control system consists of a transmitter and an antenna (radio frequency system).

The remote control transmitter for the radio frequency system will operate without the transmitter being directed at the vehicle. The normal range between the transmitter and the antenna will be up to 10 meters for the USA, Canada and the rest of the world. The normal range between transmitter and antenna will be up to five meters for the UK and Europe and three meters for Japan.

Before the remote control system can be used, each transmitter must be initialized to the vehicle. A maximum number of four transmitters can be initialized to any vehicle. All remote transmitters must be initialized at the same time.

The keyless entry/remote operated locks will not operate when the ignition key is in the ignition switch.

Locking and Unlocking

The remote transmitter is integrated into the key and contains four buttons (lock, unlock, trunk release, headlamp convenience). To operate the system:

Press the lock button once to activate the central locking system and the alarm system (if enabled).

Press the lock button twice within three seconds to activate the central locking system, double locking system, alarm system and the interior scanning system (if equipped).

Press the unlock button once to deactivate the double locking, the alarm system is deactivated and only the driver door is fully unlocked (this is programmable using the Jaguar approved diagnostic system or by pressing and holding the lock and unlock buttons simultaneously for 4 seconds, the direction indicators will then flash to show the change of status from single point entry to central unlock).

Pressing the unlock button twice within three seconds will unlock the remaining doors (this is programmable using the Jaguar approved diagnostic system).

Pressing the luggage compartment release button once releases the trunk. The vehicle must be unlocked and at vehicles speeds below 7 km/h (4 mile/h).

Press the headlamp convenience button once to activate the headlamp main beam function, press the headlamp convenience button again to deactivate the headlamp main beam function. This function will automatically deactivate after 30 seconds.

Press the headlamp convenience button three times within three seconds to activate the alarm, press the headlamp convenience button again three times within 3 seconds to deactivate the alarm.

Double Locking

Double locking prevents the interior door handles from unlocking the door.

Double locking is activated by turning the key in the driver door lock to the unlock position and then to the lock position within three seconds or by pressing the lock button twice within three seconds on the remote transmitter.

Successful double locking is indicated by the turn signals flashing twice, one short flash followed by a long flash.

Double locking will be inhibited if the GEM senses the hood, a door or the luggage compartment is ajar or open. The GEM receives its input from the door ajar switches.

If the vehicle battery becomes discharged after the double locking has been activated, opening the drivers door with the key will mechanically deactivate the double locking on the drivers door only.

Handles, Locks, Latches and Entry Systems - Locks, Latches and Entry Systems

Diagnosis and Testing

Inspection and Verification

1. **1.** Verify the customer concern.
2. **2.** Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Door locks • Latch(es) • Handle(s) • Rods/linkages	• Electrical connector(s) • Wiring harness for damage or corrosion • Relay(s) • Module (GEM) • Actuator(s)

3. **3.** If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

• NOTE: Check frequently asked questions 4461 prior to door latch replacement.

• NOTE: Key transmitters will not operate if the key is in the ignition switch.

• NOTE: Carry out the checks in the table and pinpoint tests before installing a new latch.

Symptom Chart

Symtom (General)	Symptom (Specific)	Possible Source	Action
The car or a door fails to lock	The car or a door fails to lock from a transmitter	• A door luggage compartment lid or hood is ajar • Transmitter battery • Signal failure • Latch motor failure(s)	For transmitter tests, GO to Pinpoint Test A. .
	Drive away locking does not function	• Function disabled • Signal failure • Latch motor failure(s)	Check the central locking function using the transmitter. If this functions correctly, check that the drive away locking function is enabled using the Jaguar approved diagnostic system. Carry out a system test using the Jaguar approved diagnostic system.
	The car or a door fails to lock from a key	• Linkage rod disconnected/damaged • Lock barrel operating lever disconnected/damaged • Latch motor failure(s)	Check for resistance when the key is operated, remove the suspect door casing and examine the components listed.
	The car or a door fails to lock from the interior paddle(s)	• Cable disconnected/damaged • Locking paddle damaged • Latch motor failure(s)	Remove the suspect door casing and examine the components listed.
The car or a door fails to unlock	The car or a door fails to unlock from a transmitter	• Transmitter battery • Signal failure • Latch motor failure(s)	For transmitter tests, GO to Pinpoint Test A. , carry out a system test using the Jaguar approved diagnostic system.
	The car or a door fails to unlock from a key	• Linkage rod disconnected/damaged • Lock barrel operating lever disconnected/damaged • Latch motor failure(s)	Check for resistance when the key is operated, remove the suspect door casing and examine the components listed.
	The car or a door fails to unlock from the	• Double locking engaged • Cable	Check that the vehicle is not double-locked. Remove the suspect door casing and examine the components listed. Check that the paddles work when the interior release is

	interior paddle(s)	disconnected/damaged • Locking paddle damaged • Latch motor failure(s) • Incorrect interior door handle fitted	pulled (Federal vehicles, front doors only). Check that a double-locking latch is not fitted to a central lock specification vehicle.
	The car or a door fails to unlock from a **rear** interior paddle	• Double locking engaged • Child locks engaged • Cable disconnected/damaged • Locking paddle damaged • Latch motor failure(s)	Check that the vehicle is not double-locked. Check the child lock engagement (see owner's handbook). Remove the suspect door casing and examine the components listed.
Door fails to latch fully (does not stay closed)	Door ajar	• Pawl fails to latch • Striker is too far inboard	Check the pawl operation with the door open, if the pawl fails to latch fully, install a new latch. Check/adjust the striker(s)
Door(s) difficult to open	An individual door is difficult to open from the exterior handle	• Striker adjustment • Operating rod disconnected/damaged • Pawl sticking	Check the adjustment of the striker(s), remove the suspect door casing and inspect the operating linkage. Check the pawl for correct operation.
	An individual door is difficult to open from the interior handle	• Striker adjustment • Operating cable disconnected/damaged • Pawl sticking	Check the adjustment of the striker(s), remove the suspect door casing and inspect the operating linkage. Check the pawl for correct operation.
Door(s) fail to open	An individual door fails to open from the exterior handle	• Exterior release handle failure • Operating rod disconnected/damaged • Pawl sticking	Check the pawl for correct operation. Check if the door opens from the interior handle. Remove the suspect door casing and inspect the operating linkage (pay particular attention to the linkage clips).
	An individual door fails to open from the interior handle	• Double locking engaged • Interior release handle failure • Operating cable disconnected/damaged • Pawl sticking • Wrong interior handle fitted	Check that the vehicle is not double-locked. Check the pawl for correct operation. Check if the door opens from the exterior handle. Remove the suspect door casing and inspect the operating linkage. Check that the interior paddle operates when the interior release is pulled (Federal vehicles only).
	An individual **rear** door fails to open from the interior handle	• Double locking engaged • Child locks engaged • Interior release handle failure • Operating cable disconnected/damaged • Pawl sticking	Check that the vehicle is not double-locked. Check the child lock engagement (see owner's handbook). Check the pawl for correct operation. Check if the door opens from the exterior handle. Remove the suspect door casing and inspect the operating linkage.
Vehicle locks without request	The vehicle locks without the transmitter or key being operated	• Locking barrel operating lever or linkage rod is disconnected • Latch failure	Check that the lock functions with a key. If the system locks/unlocks normally with a key, carry out a system test using the Jaguar approved diagnostic system.
Vehicle unlocks without request	The vehicle unlocks without the transmitter or key being operated	• Locking barrel operating lever or linkage rod is disconnected • Latch failure	Check the lock function with a key. If the system locks/unlocks normally with a key, carry out a system test using the Jaguar approved diagnostic system.

Pinpoint Tests

PINPOINT TEST A : CAR OR DOOR FAILS TO LOCK FROM A TRANSMITTER	
• NOTE: Make sure all transmitters are available before testing.	
TEST CONDITIONS	**DETAILS / RESULTS / ACTIONS**
A1: CHECK TRANSMITTER FUNCTION	
	1 Operate the remote headlight function with the transmitter.
	Do the headlights operate? **Yes** GO to A2. **No** REPEAT the test with the spare transmitters. If none of the transmitters function, GO to A2. . If spare transmitters function correctly, check/replace the battery in the suspect transmitter.
A2: CHECK THE LOCKING FUNCTION WITH THE KEY	
	1 Operate the lock with the key.
	Does the central locking function correctly? **Yes** CARRY OUT transmitter tests using the Jaguar approved diagnostic system. **No** GO to A3.
A3: CHECK THE MECHANICAL FUNCTION OF THE LOCK	
	1 Operate the lock with a key.
	Is resistance felt when turning the key? **Yes** GO to A4. **No** REMOVE the door casing and check the linkage rod connection from lock barrel to latch.
A4: CHECK THE FUNCTION OF THE INTERIOR LOCKING PADDLES	
	1 Operate the lock with a key.
	2 Observe the operation of the interior locking paddles whilst operating the key.
	Do all the interior operating paddles move freely? **Yes** CARRY OUT functional tests using the Jaguar approved diagnostic system. **No** GO to A5.
A5: CHECK LATCH FUNCTION (CLOSED)	
	1 Check that all the doors, luggage compartment and hood are firmly latched.
	Do all the doors, luggage compartment and hood latch correctly? **Yes** CARRY OUT functional tests using the Jaguar approved diagnostic system. **No** GO to A6.
A6: CHECK LATCH FUNCTION (OPEN)	
	1 Fully open whichever of the body openings did not latch correctly.
	2 Manually operate the body opening pawl.
	Does the body opening pawl latch correctly? **Yes** CHECK and adjust the body opening striker. Recheck for correct latching with the door closed. **No** GO to A7.
A7: CHECK THE INTERIOR LOCKING PADDLE CABLES	
	1 Remove the door casing and check interior locking cable(s) for connection/damage.
	Are any of the cables disconnected or damaged? **Yes** RECTIFY as necessary. For additional information, refer to removal and installation in this section. **No** CARRY OUT functional tests using the Jaguar approved diagnostic system.

Handles, Locks, Latches and Entry Systems - Remote Transmitter Programming

General Procedures

1. NOTE: All remote transmitters are programmable and must be programmed at the same time.

• NOTE: If an attempt is made to program a fifth remote transmitter after four remote transmitters have already been programmed, the generic electronic module (GEM) will exit the remote transmitter learn mode. If the remote transmitter learn mode is entered again, the attempt shall erase all remote entry device associations and start a new set of four remote entry device associations with this fifth remote transmitter programming attempt.

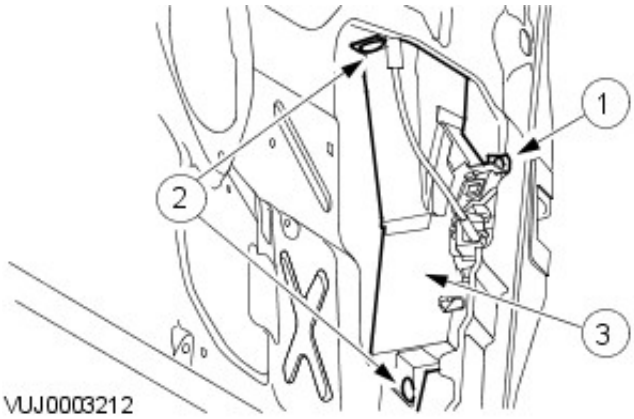
The complexity of the electronics involved with the remote keyless entry, of which the GEM is a part, and the multiplexed communication network which are connected to it, exclude the use of workshop general electrical test equipment. Therefore, reference should be made to the Jaguar Approved Diagnostic System for programming the remote transmitters.

Handles, Locks, Latches and Entry Systems - Exterior Front Door Handle

Removal and Installation

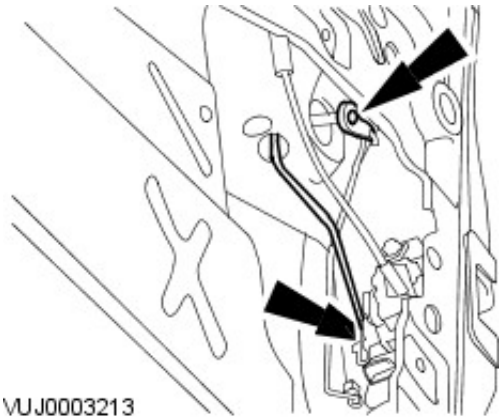
Removal

1. Remove the front door window glass.
   For additional information, refer to: Front Door Window Glass (501-11 Glass, Frames and Mechanisms, Removal and Installation).
2. Remove the front door security shield.
   1. Remove the retaining screw.
   2. Remove and discard the retaining clips.
   3. Remove the front door security shield.

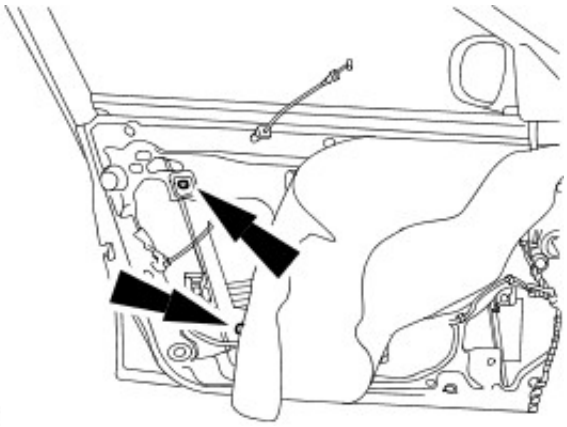


VUJ0003212

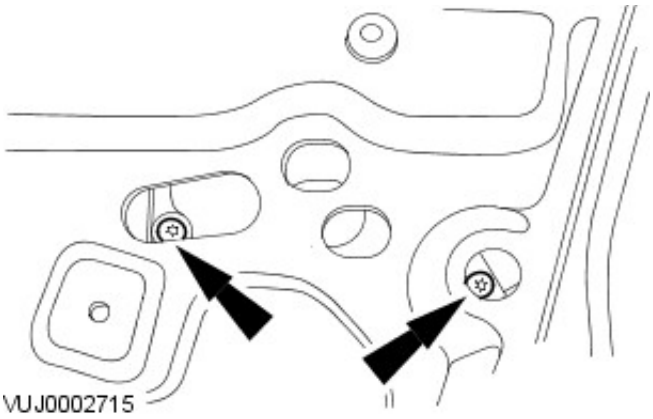
3. Disconnect the front door exterior handle connecting rod and the door lock cylinder connecting rod.


VUJ0003213

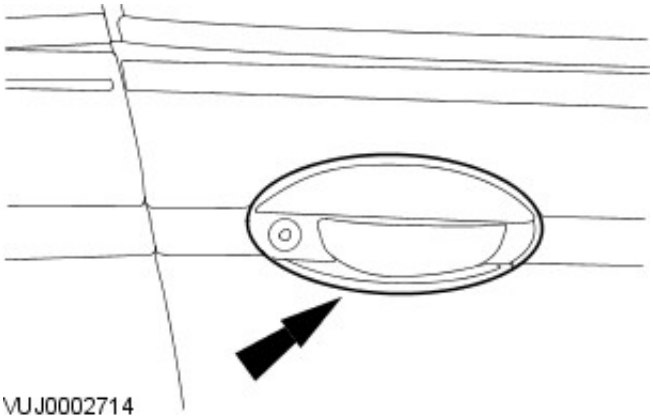
4. Remove the front door motor and window regulator upper and lower rear securing scews.


E58042

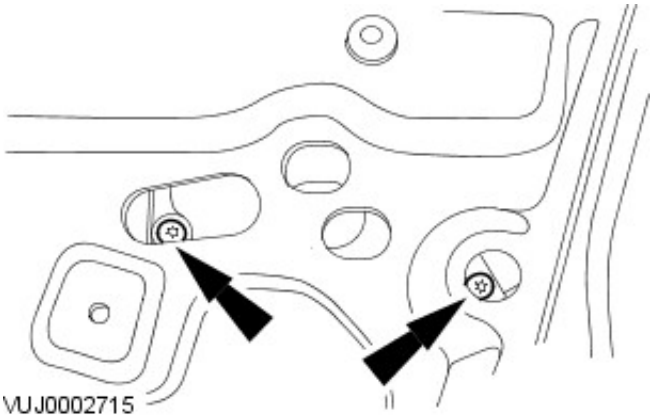
5. Remove the front door exterior handle retaining screws.



6. Remove the front door exterior handle.



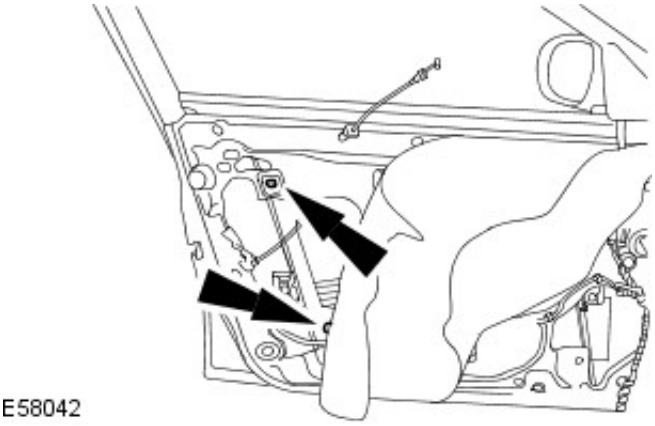
Installation



1. NOTE: Install new front door security shield retaining clips.

To install, reverse the removal procedure.

- Tighten to 5 Nm.



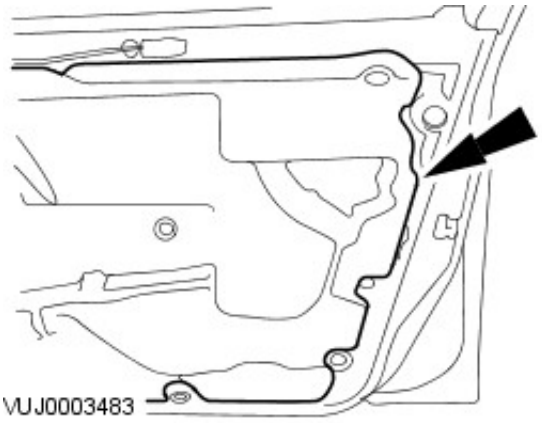
2. Tighten to 7 Nm.

Handles, Locks, Latches and Entry Systems - Front Door Lock Actuator

Removal and Installation

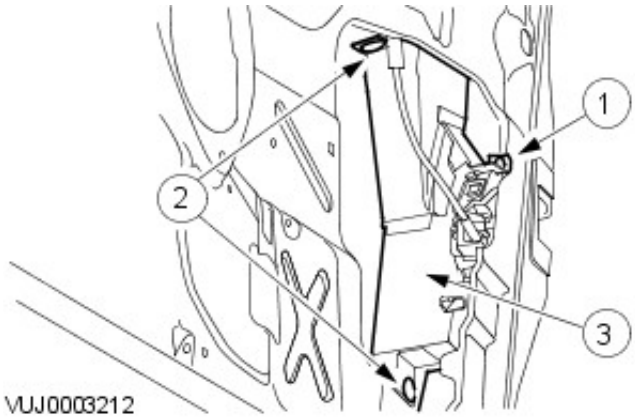
Removal

1. Remove the front door trim panel. For additional information, refer toSection 501-05 Interior Trim and Ornamentation.



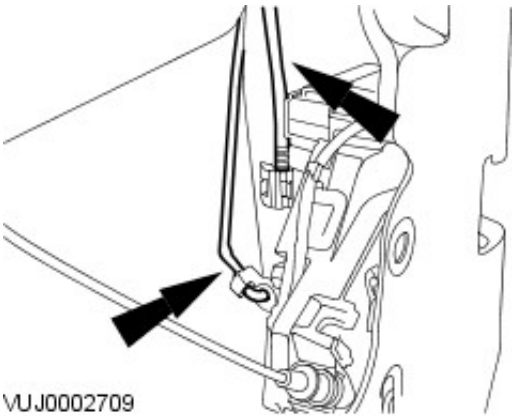
2. CAUTION: Do not touch the adhesive surface as re-bonding will be impaired.

Peel back the weathershield.



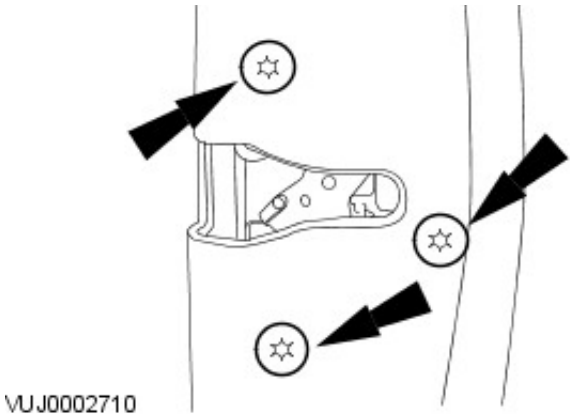
3. Remove the door security shield.

1. Remove the retaining screw.
2. Remove and discard the retaining clips.
3. Remove the door security shield.

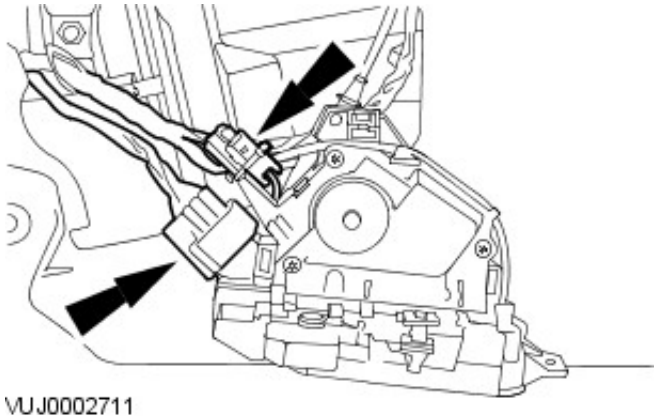


4. Disconnect the front door exterior handle connecting rod and the door lock cylinder connecting rod.

5. Detach the front door latch.

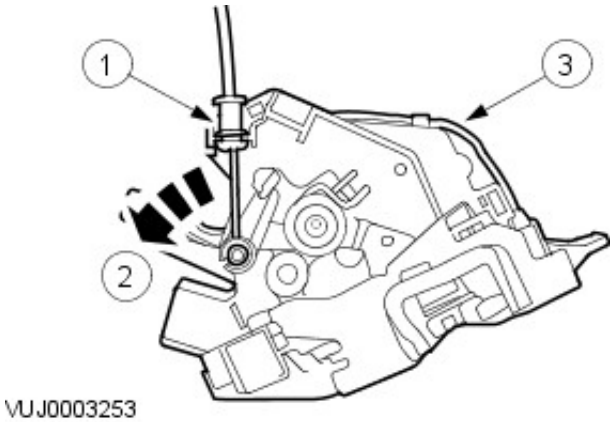


VUJ0002710



VUJ0002711

6. Disconnect the front door latch actuator electrical connectors.

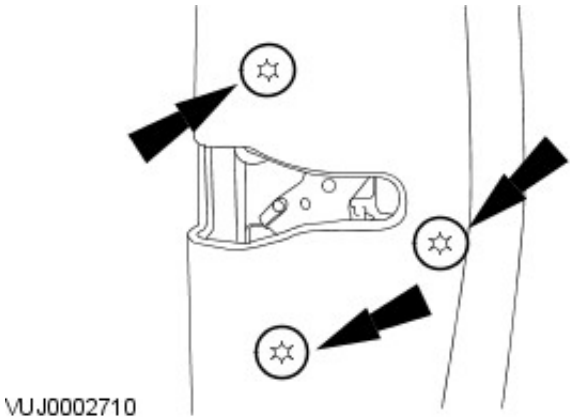


VUJ0003253

7. Remove the front door latch actuator.

1. Detach the front door latch actuator release cable.
2. Disconnect the front door latch actuator release cable.
3. Remove the front door latch actuator.

Installation



VUJ0002710

1. NOTE: Install new front door security shield retaining clips.

To install, reverse the removal procedure.

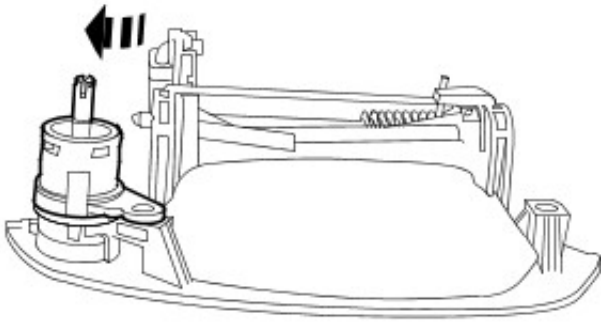
- Tighten to 7 Nm.

Handles, Locks, Latches and Entry Systems - Front Door Lock Cylinder

Removal and Installation

Removal

1. Remove the front door exterior handle. For additional information, refer to Handle—Front Door Exterior.
2. Remove the door lock cylinder.



VUJ0002708

Installation

1. To install, reverse the removal procedure.

Handles, Locks, Latches and Entry Systems - Fuel Filler Door Release Handle and Cable4-Door

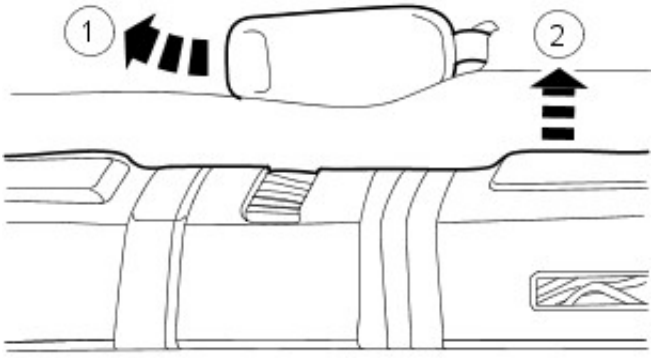
Removal and Installation

Removal

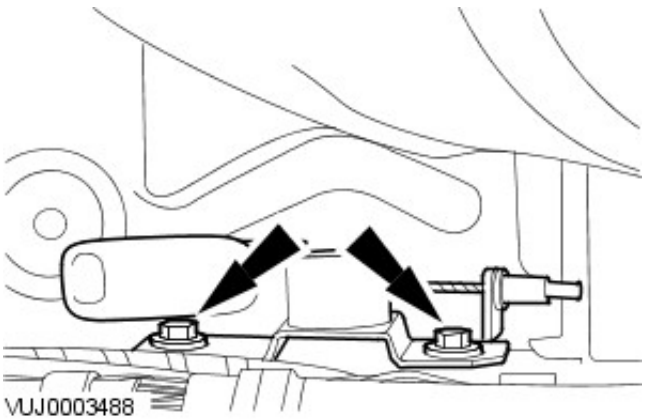
• NOTE: The procedure shown is for LHD vehicles. The procedure is similar for RHD vehicles.

All vehicles

1. Remove the rear seat cushion.
   For additional information, refer to: Rear Seat Cushion (501-10 Seating, Removal and Installation).
2. Remove the rear seat bolster cushion.
   For additional information, refer to: Rear Seat Bolster - 4-Door (501-10 Seating, Removal and Installation).
   .
3. Remove the driver side front scuff plate trim panel.
   For additional information, refer to: Front Scuff Plate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
   .
4. Remove the driver side rear scuff plate trim panel.
   For additional information, refer to: Rear Scuff Plate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
5. Reposition the floor covering to one side.
   1. Lift the fuel filler door release handle.
   2. Reposition the floor covering to one side.

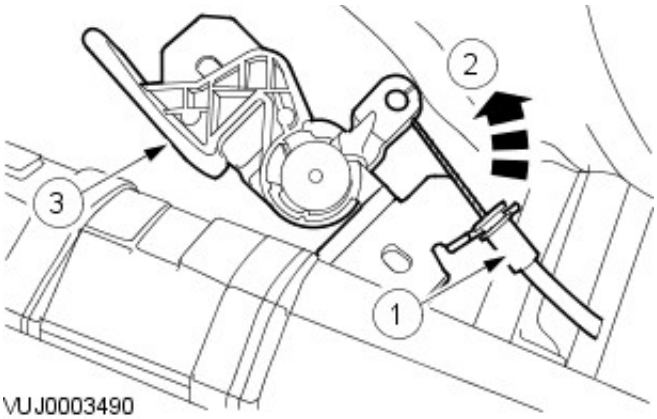


VUJ0003487



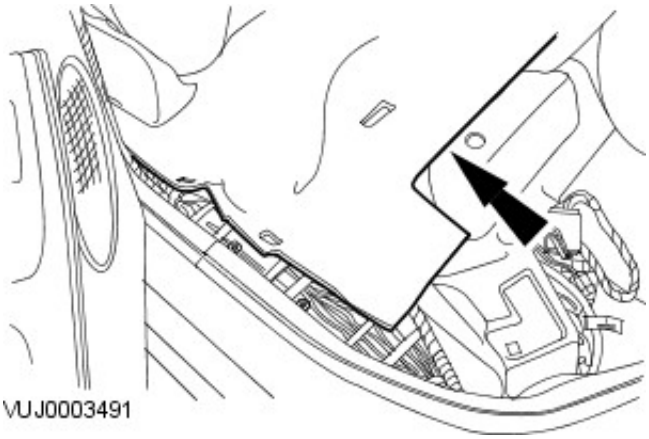
VUJ0003488

6. Detach the fuel filler door release handle and cable.
7. Remove the fuel filler door release handle.
   1. Detach the fuel filler door release cable.
   2. Rotate the fuel filler door release cable counter clockwise.
   3. Remove the fuel filler door release handle.

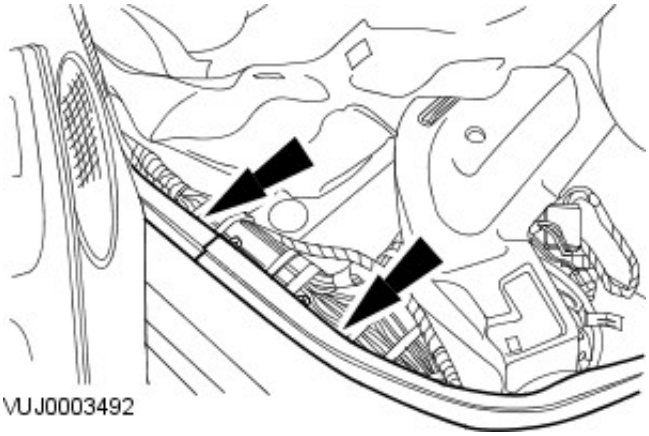


VUJ0003490

8. Reposition the floor covering to one side.

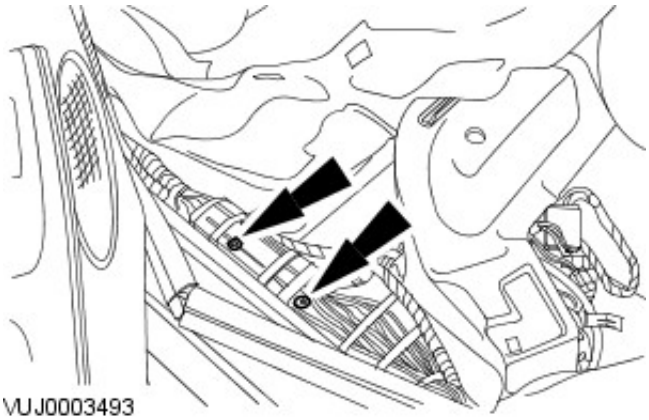

VUJ0003491

9. Detach the rear door opening weatherstrip and position to one side.

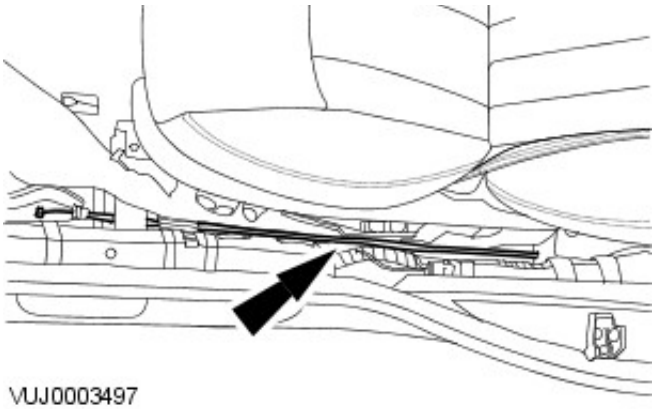

VUJ0003492

10. Reposition the wiring harness to one side.

- Loosen the retaining screws.

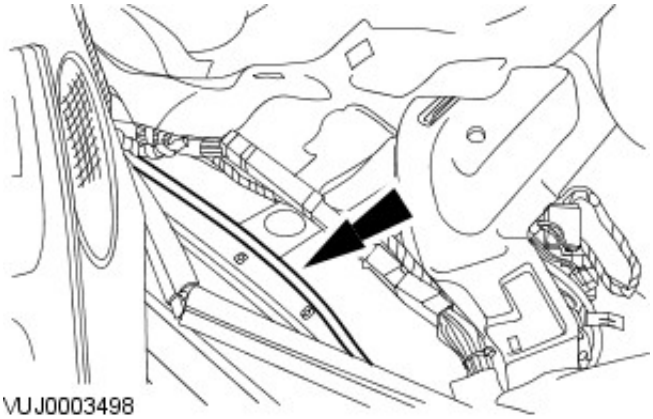

VUJ0003493

11. Detach the fuel filler door release cable.



VUJ0003497

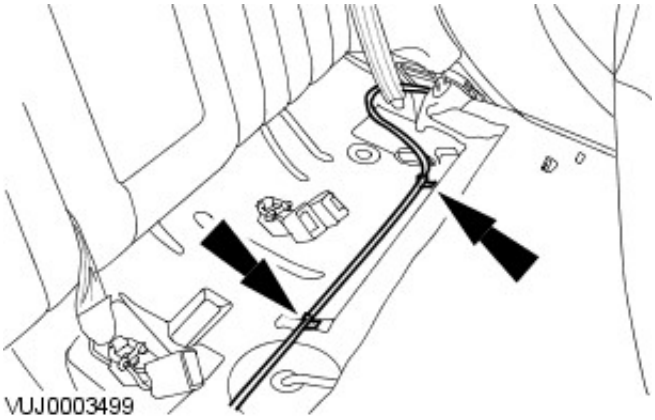
12. Detach the fuel filler door release cable.



VUJ0003498

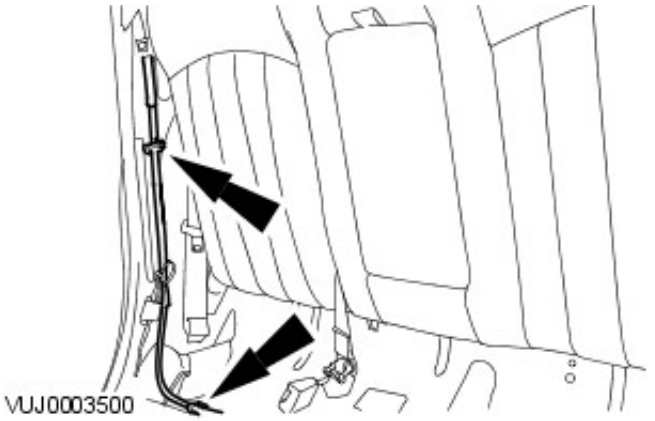
Vehicles built up to VIN:J38978

13. Detach the fuel filler door release cable.



VUJ0003499

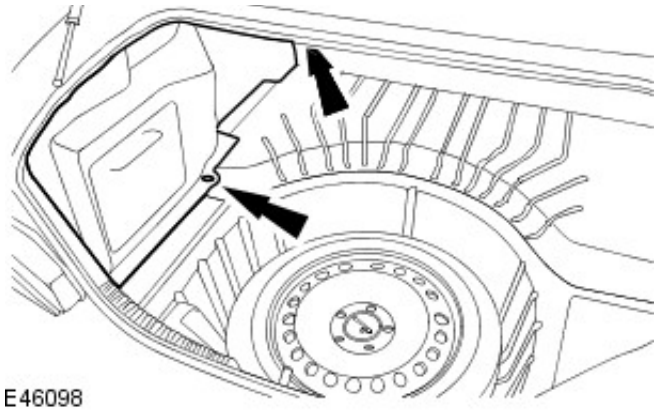
14. Detach the fuel filler door release cable.



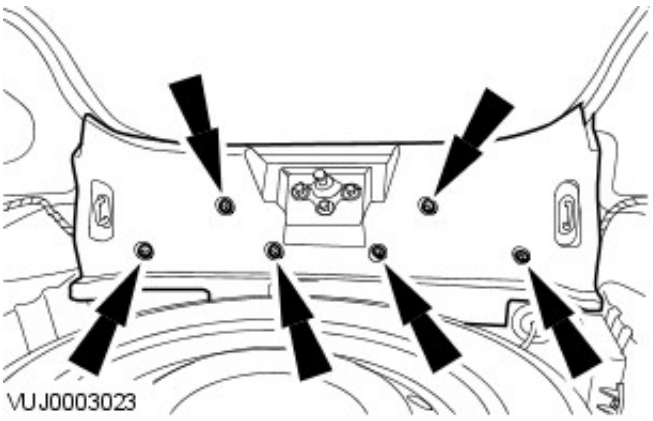
VUJ0003500

Vehicles built from VIN:J38979

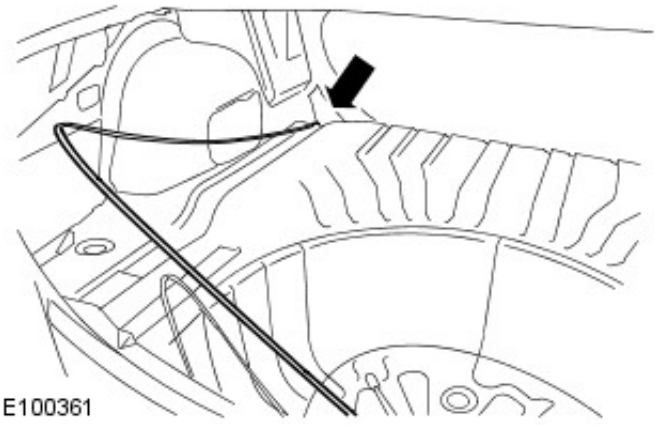
15. Remove the luggage compartment floor covering.


E46098

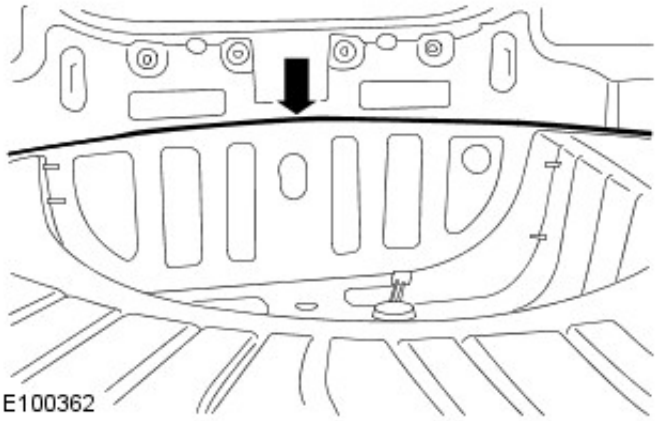
16. Detach and reposition the LH rear quarted trim panel.


VUJ0003023

17. Remove the rear panel.


E100361

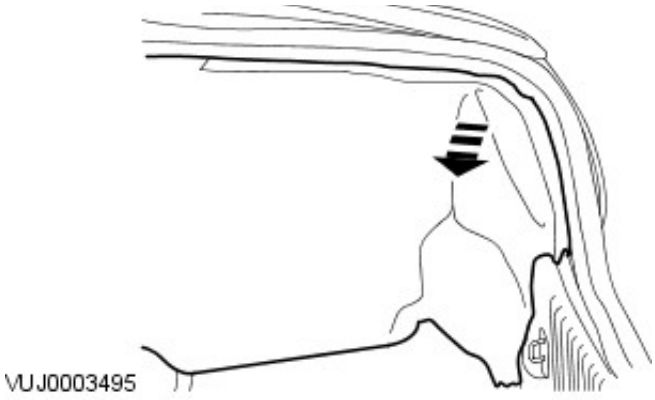
18. Detach the fuel filler door release cable.


E100362

19. Detach the fuel filler door release cable.

All vehicles

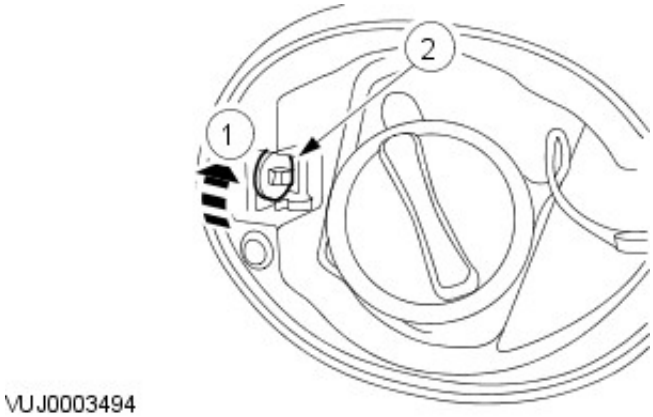
20. Detach and reposition the RH rear quarter trim panel.



VUJ0003495

21. Remove the fuel filler door release cable.

1. Rotate the fuel filler door release cable clockwise.
2. Remove the fuel filler door release cable.



VUJ0003494

Installation

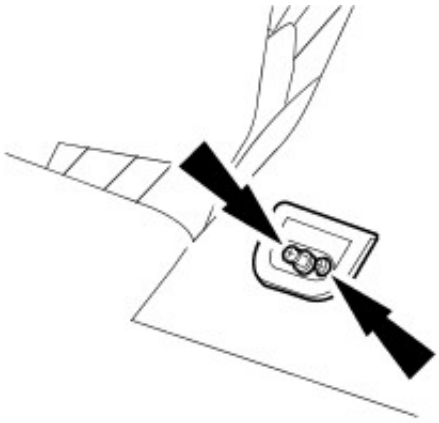
1. To install, reverse the removal procedure.

Handles, Locks, Latches and Entry Systems - Fuel Filler Door Release Handle and CableWagon

Removal and Installation

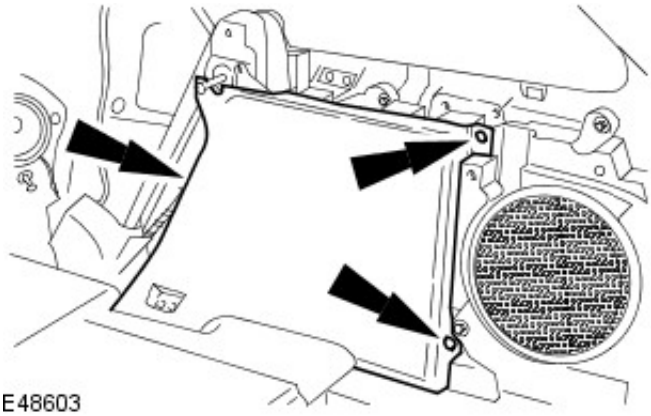
Removal

1. Remove the rear seat cushion.
   For additional information, refer to: Rear Seat Cushion (501-10 Seating, Removal and Installation).
2. Remove the rear seat bolster.
   For additional information, refer to: Rear Seat Bolster - Wagon (501-10 Seating, Removal and Installation).
3. Remove the driver front scuff plate trim panel.
   For additional information, refer to: Front Scuff Plate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
4. Remove the driver rear scuff plate trim panel.
   For additional information, refer to: Rear Scuff Plate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
5. Remove the loadspace trim panel.
   For additional information, refer to: Loadspace Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
6. Remove the right-hand front retaining hook.



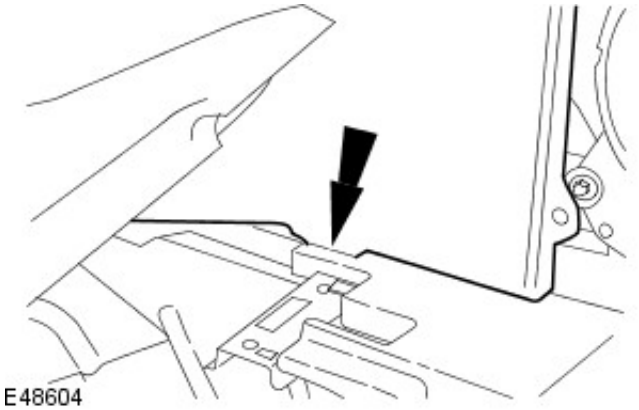
E48602

7. Detach the right-hand loadspace side trim panel.



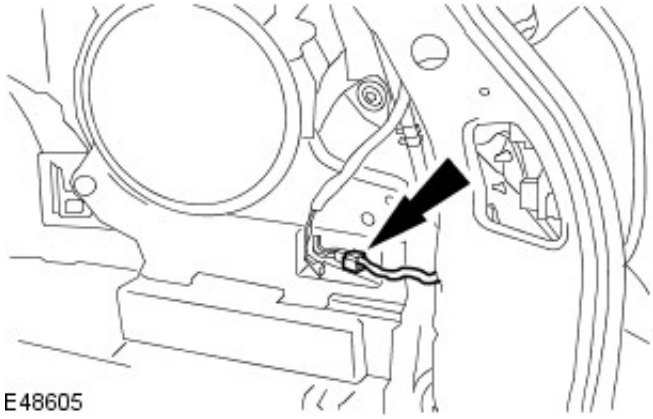
E48603

8. Remove the right-hand loadspace trim panel.



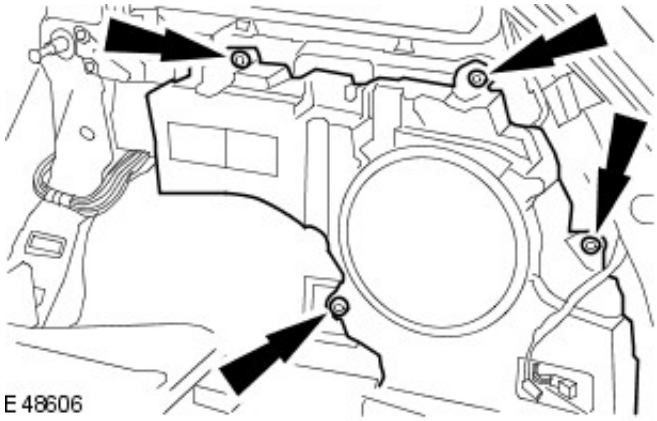
E48604

9. Disconnect the subwoofer enclosure electrical connector (if equipped).



E48605

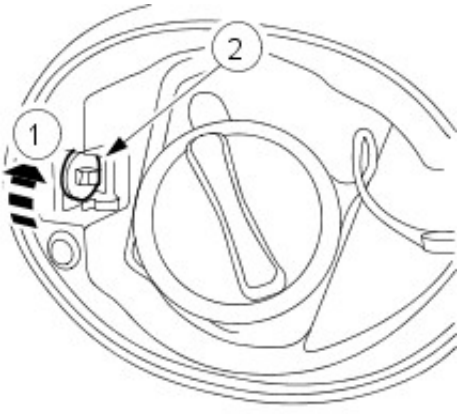
10. Remove the subwoofer enclosure (if equipped).



E48606

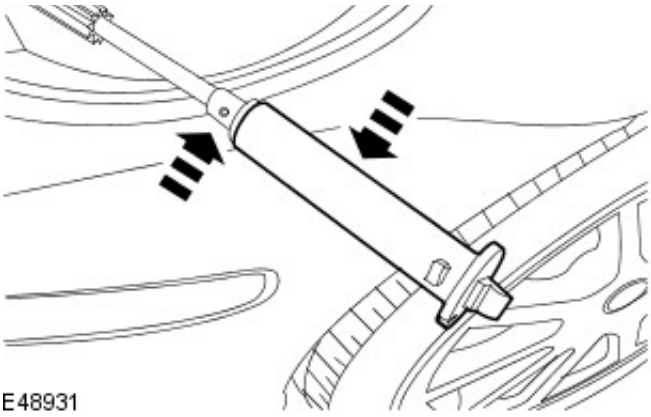
11. Detach the fuel filler door release cable.

1. Rotate the fuel filler door release cable clockwise.
2. Detach the fuel filler door release cable.



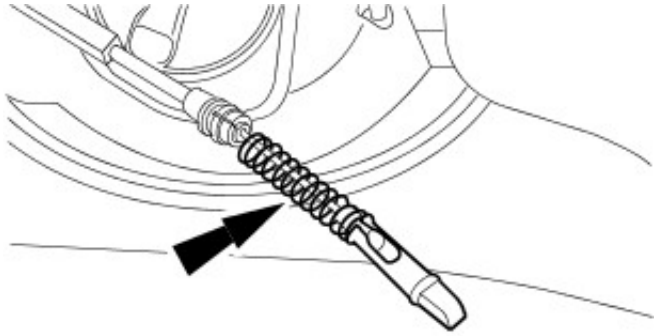
VUJ0003494

12. Remove the fuel filler door latch retainer.



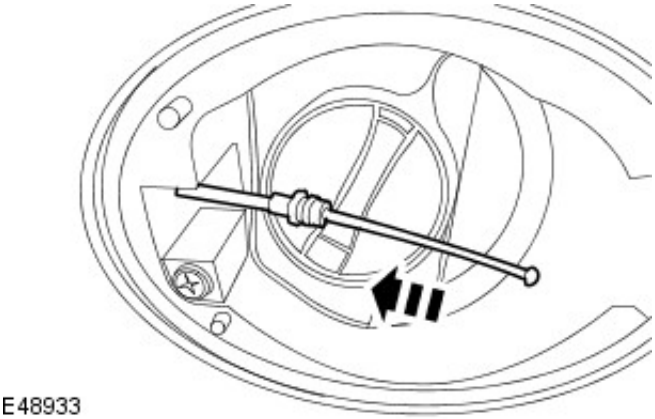
E48931

13. Remove the fuel filler door latch and spring.



E48932

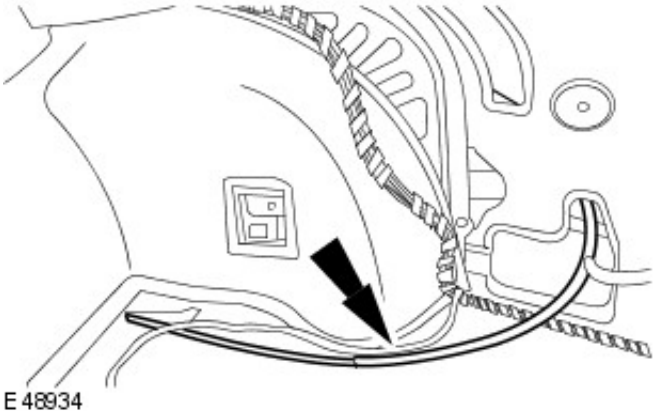
14. Reposition the cable through the boot.



E48933

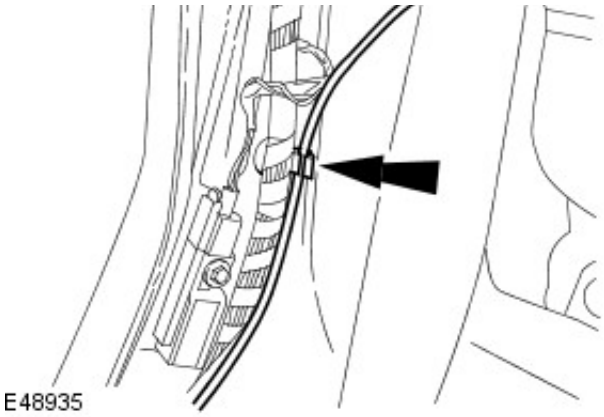
15. NOTE: To aid installation, note the routing of the fuel filler door release cable.

Detach fuel filler door release cable.



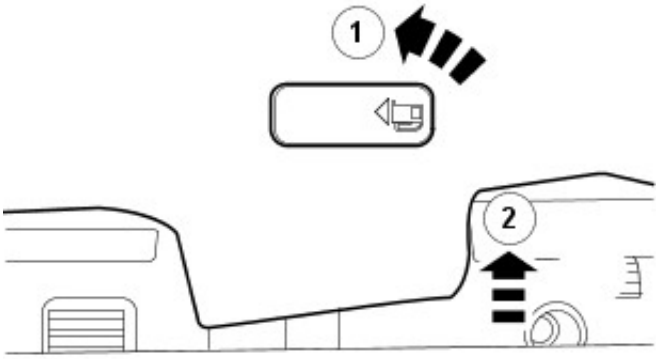
E48934

16. Detach fuel filler door release cable.


E48935

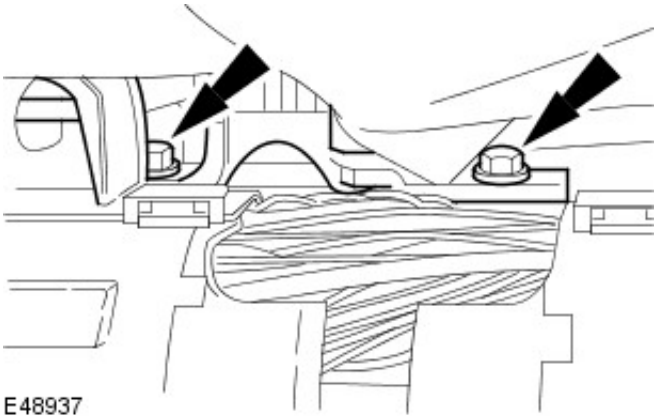
17. Reposition the floor covering to one side.

1. Lift the fuel filler door release handle.
2. Reposition the floor covering to one side.



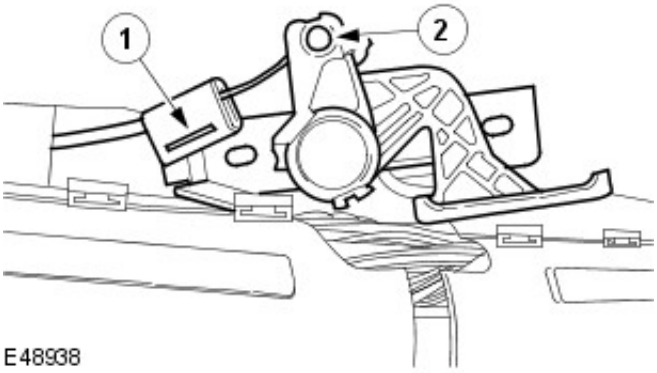
E48936

18. Detach the fuel filler door release handle and cable.


E48937

19. Remove the fuel filler door release handle.

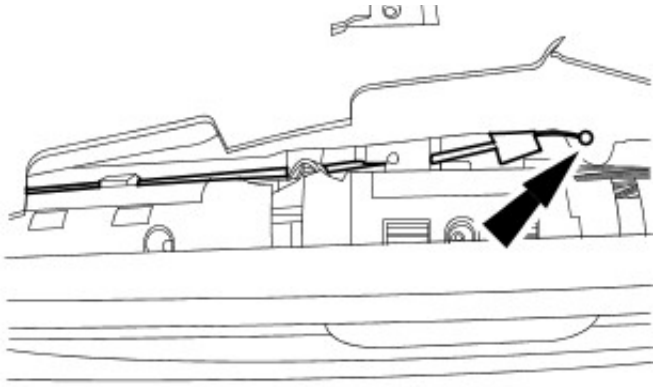
1. Detach the fuel filler door release cable from the handle.
2. Remove the fuel filler door release handle.



E48938

20. NOTE: To aid installation, note the routing of the fuel filler door release cable.

Remove the fuel filler door release cable.



E48939

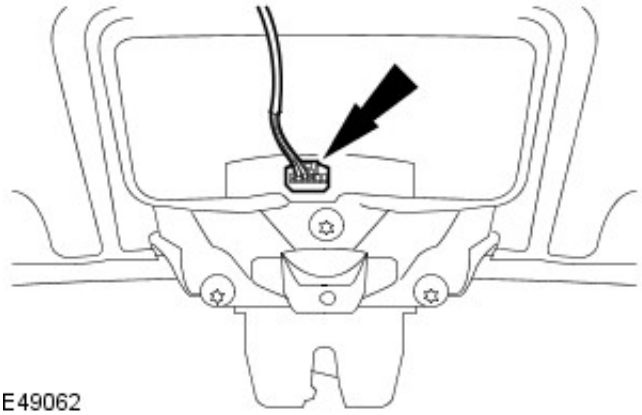
Installation

1. To install, reverse the removal procedure.

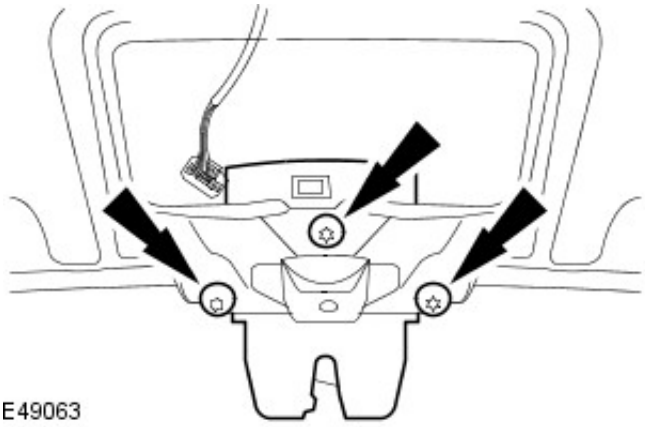
Handles, Locks, Latches and Entry Systems - Liftgate Latch Actuator
Removal and Installation

Removal

1. Remove the tailgate trim panel.
   For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
2. Disconnect the liftgate latch actuator electrical connector.

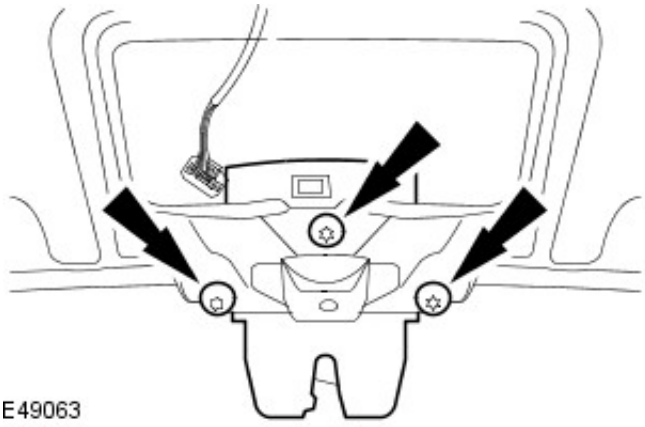

E49062

3. Remove the liftgate latch actuator.


E49063

Installation

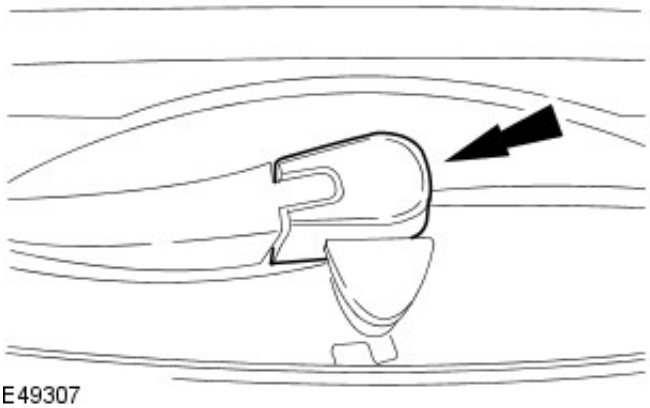
1. To install, reverse the removal procedure.
   1. Tighten to 20 Nm.


E49063

Handles, Locks, Latches and Entry Systems - Liftgate Window Glass Release Switch

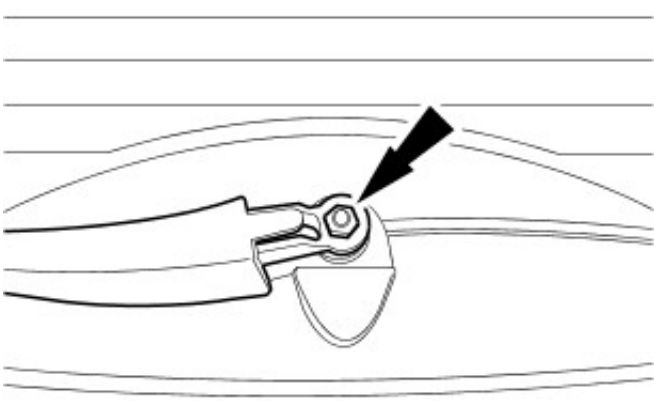
Removal and Installation

Removal



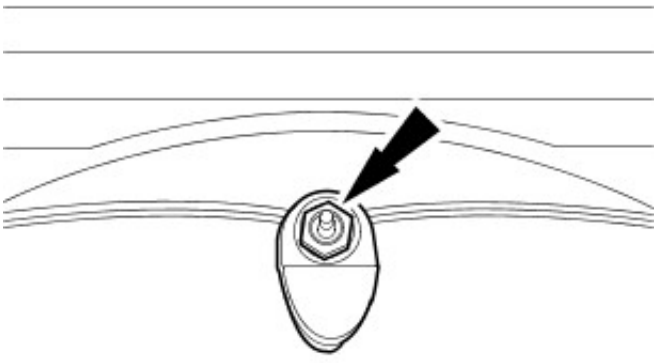
E49307

1. Remove the rear window wiper pivot arm retaining nut cover.



E49308

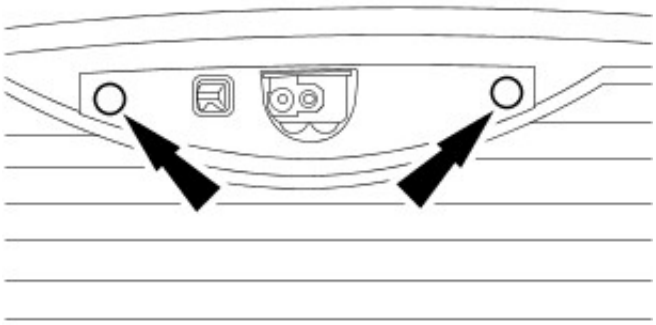
2. Remove the rear window wiper pivot arm.



E49309

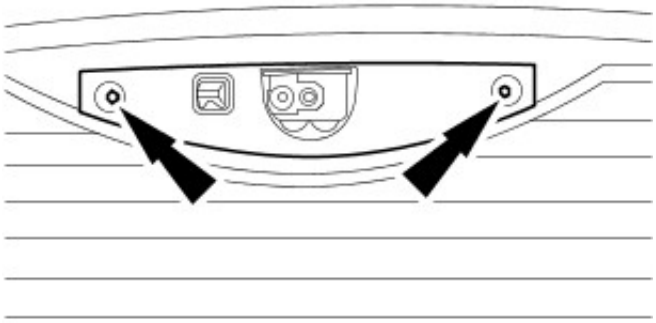
3. Remove the liftgate window glass release switch retaining nut.

4. Remove the rear wiper mounting arm cover retaining nut trim covers.



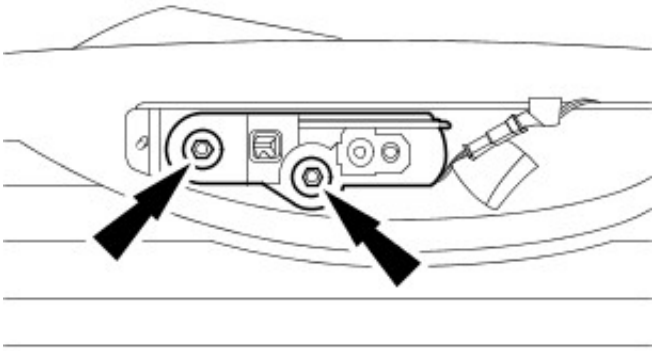
E49310

5. Remove the rear wiper mounting arm cover.



E49311

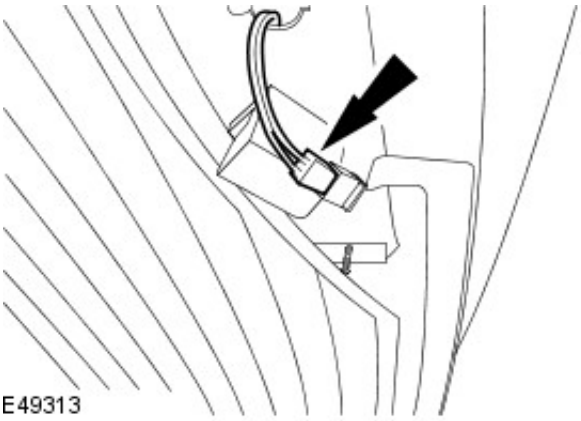
6. Remove the rear wiper mounting arm.



E49312

7. Remove the liftgate window glass release switch.

- Disconnect the liftgate window glass release switch electrical connector.

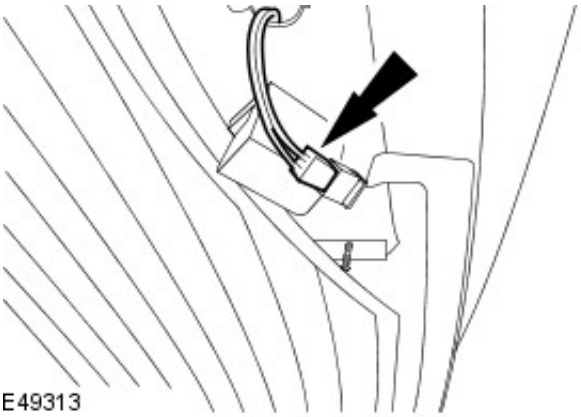


E49313

Installation

1. Install the liftgate window glass release switch.

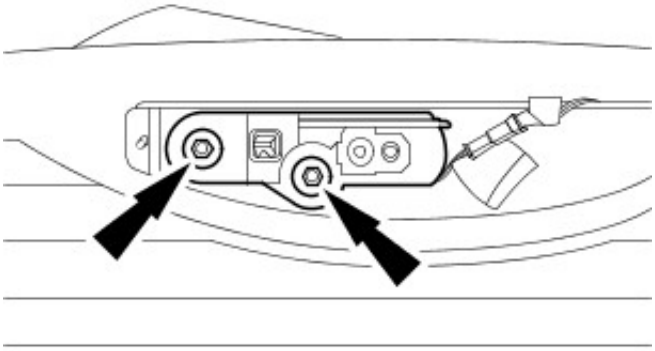
- Connect the liftgate window glass release switch electrical connector.



E49313

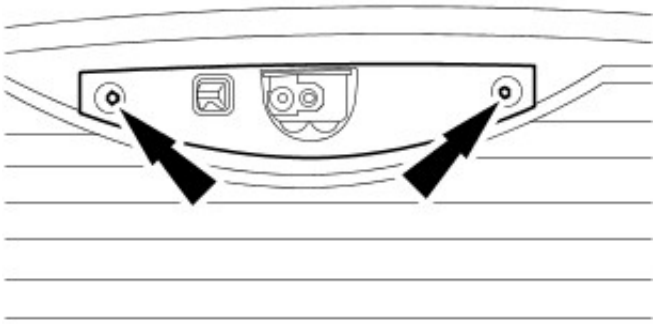
2. Install the rear wiper mounting arm.

- Tighten to 8 Nm.



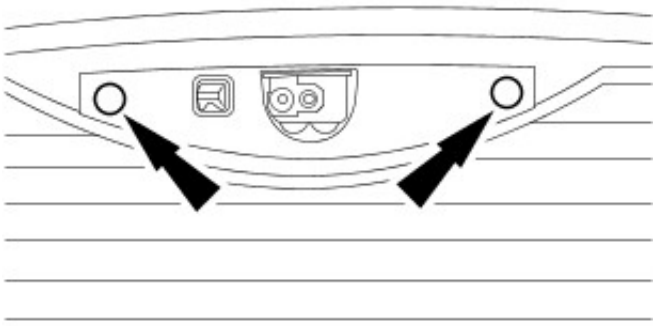
E49312

3. Install the rear wiper mounting arm cover.



E49311

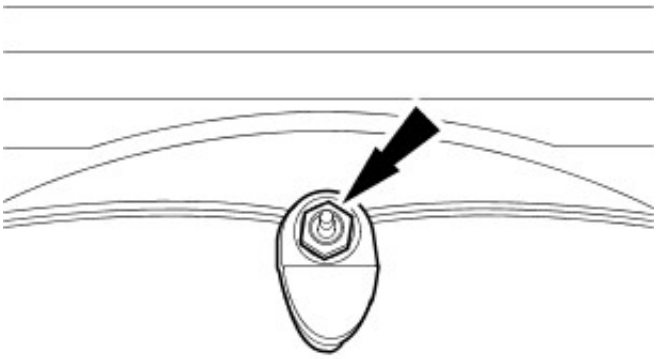
4. Install the rear wiper mounting arm cover retaining nut trim covers.



E49310

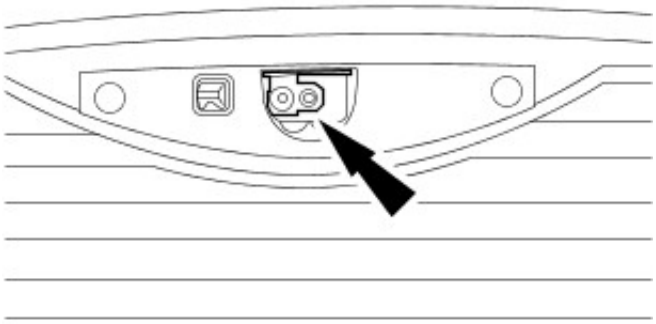
5. Install the liftgate window glass release switch retaining nut.

- Tighten to 9 Nm.



E49309

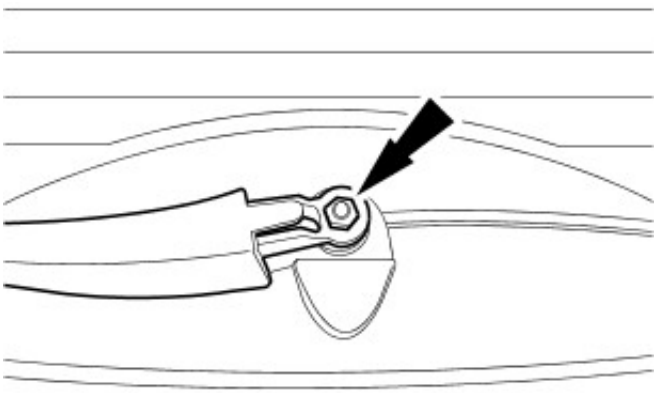
6. Make sure the rear wiper mounting arm is in the parked position.



E49816

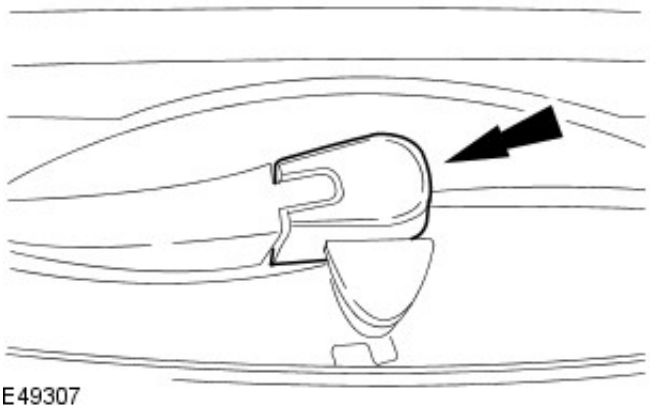
7. Install the rear window wiper pivot arm retaining nut.

- Tighten to 7 Nm.



E49308

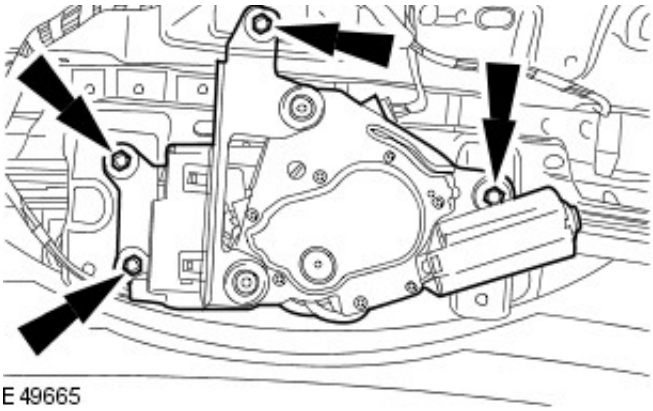
8. Install the rear window wiper pivot arm retaining nut cover.



E49307

9. Remove the liftgate trim panel.
For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

10. Loosen the rear wiper motor retaining nuts.

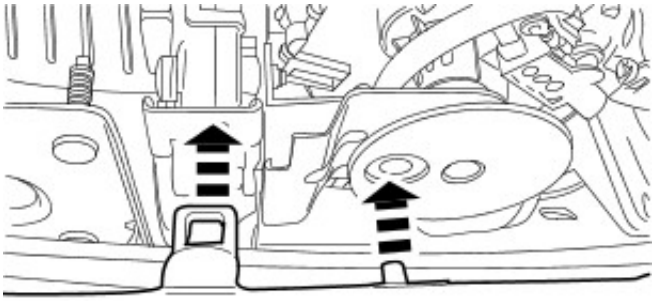


E49665

11. Close the liftgate.

12. NOTE: The aid of an assistant in the loadspace will be required to align the rear wiper motor to the liftgate window glass.

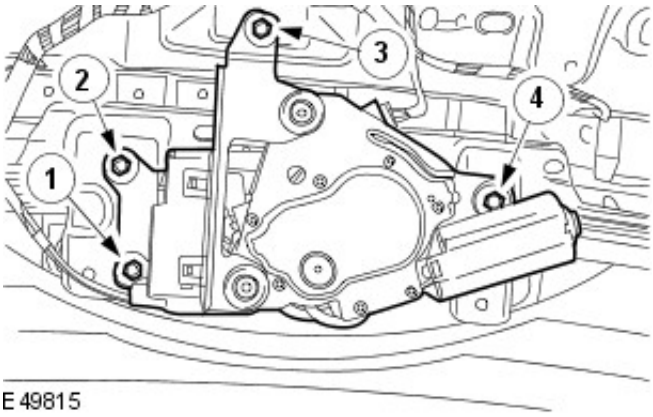
Make sure that the liftgate glass latch and rear wiper mounting arm locate correctly into the liftgate latch actuator and rear wiper motor.



E49656

13. Close the liftgate glass.

14. CAUTIONS:



E49815

With the aid of an assistant in the loadspace, fully tighten the rear wiper motor retaining nuts. Failure to follow this instruction may result in damage to the vehicle.

Make sure the rear wiper motor does not move whilst tightening the retaining nuts. Failure to follow this instruction may result in damage to the vehicle.

Tighten the rear wiper motor retaining nuts in the sequence shown.

- Tighten to 8 Nm.

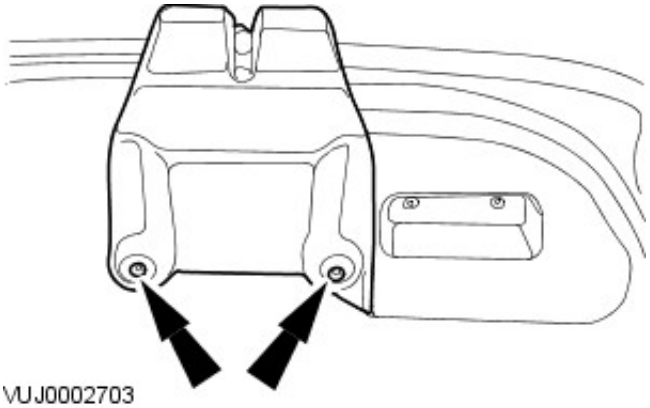
15. Visually check the liftgate window glass for correct alignment.

16. Install the liftgate trim panel.
For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

Handles, Locks, Latches and Entry Systems - Luggage Compartment Lid Latch Actuator

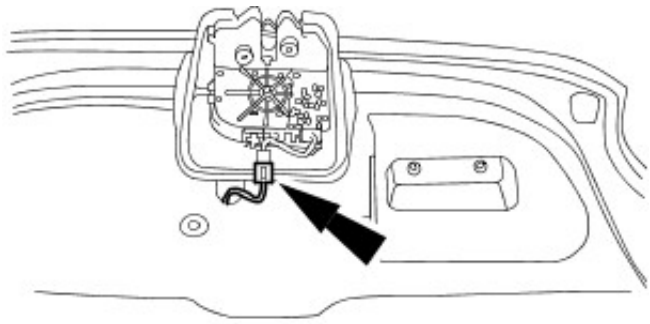
Removal and Installation

Removal



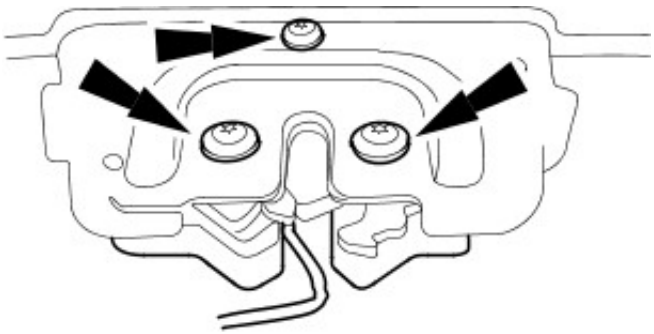
VUJ0002703

1. Remove the luggage compartment lid latch actuator trim panel.



E45866

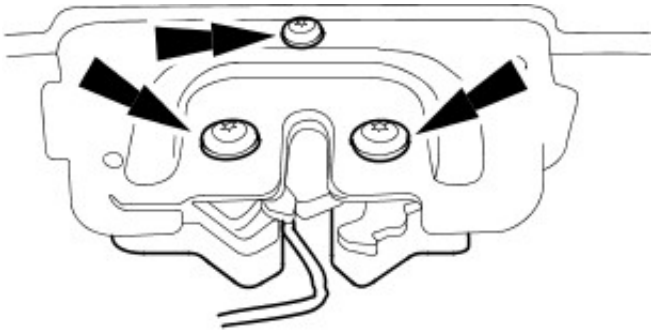
2. Disconnect the luggage compartment lid latch actuator electrical connector.



E45865

3. Remove the luggage compartment lid latch actuator.

Installation



E45865

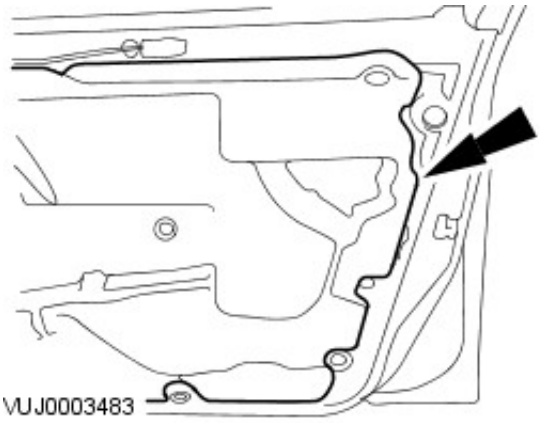
1. To install, reverse the removal procedure.
   - Tighten to 10 Nm.

Handles, Locks, Latches and Entry Systems - Rear Door Lock Actuator

Removal and Installation

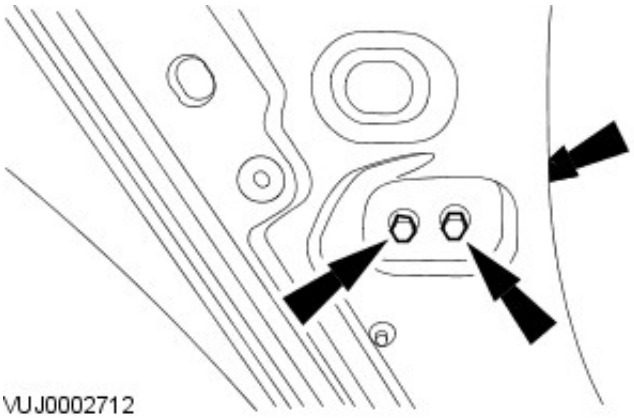
Removal

1. Remove the rear door trim panel. For additional information, refer toSection 501-05 Interior Trim and Ornamentation.

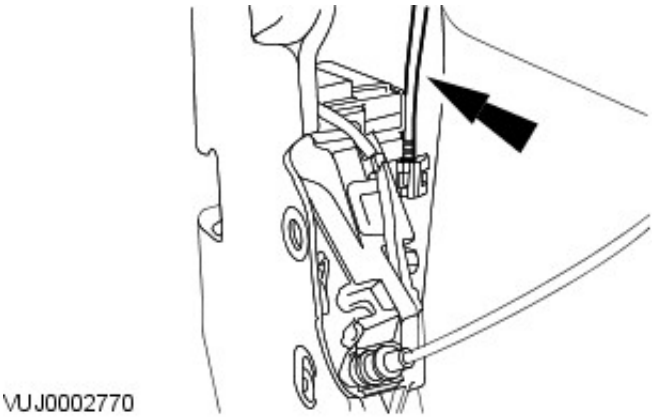

VUJ0003483

2. CAUTION: Do not touch the adhesive surface as re-bonding will be impaired.

   Peel back the weathershield.

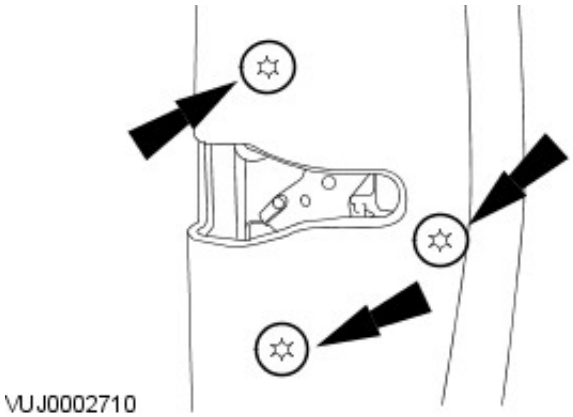

VUJ0002712

3. Remove the rear door window glass run retaining bracket.

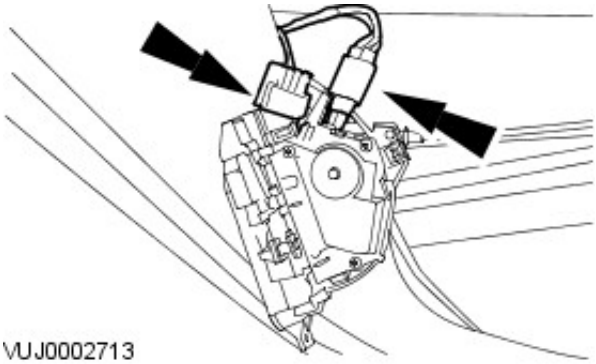

VUJ0002770

4. Disconnect the rear door latch exterior handle connecting rod.

5. Detach the rear door latch.

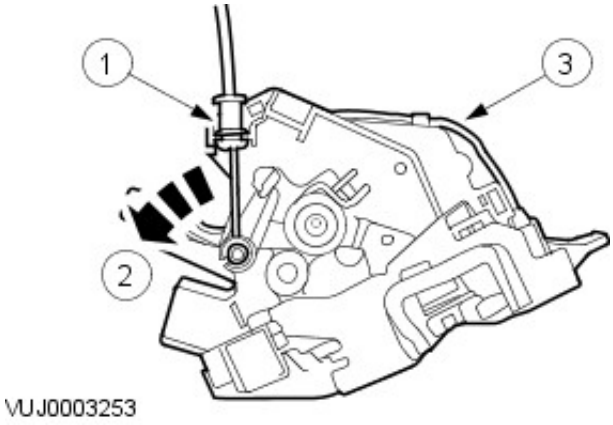


VUJ0002710



VUJ0002713

6. Disconnect the electrical connectors.

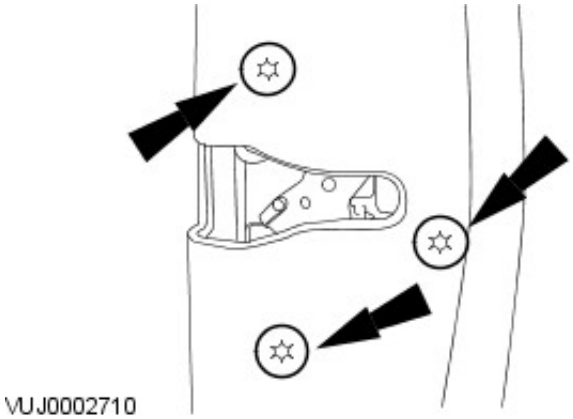


VUJ0003253

7. Remove the rear door latch actuator.

1. Detach the rear door latch actuator release cable.
2. Disconnect the rear door latch actuator release cable.
3. Remove the rear door latch actuator.

Installation



VUJ0002710

1. To install, reverse the removal procedure.

- Tighten to 7 Nm.

Wipers and Washers -

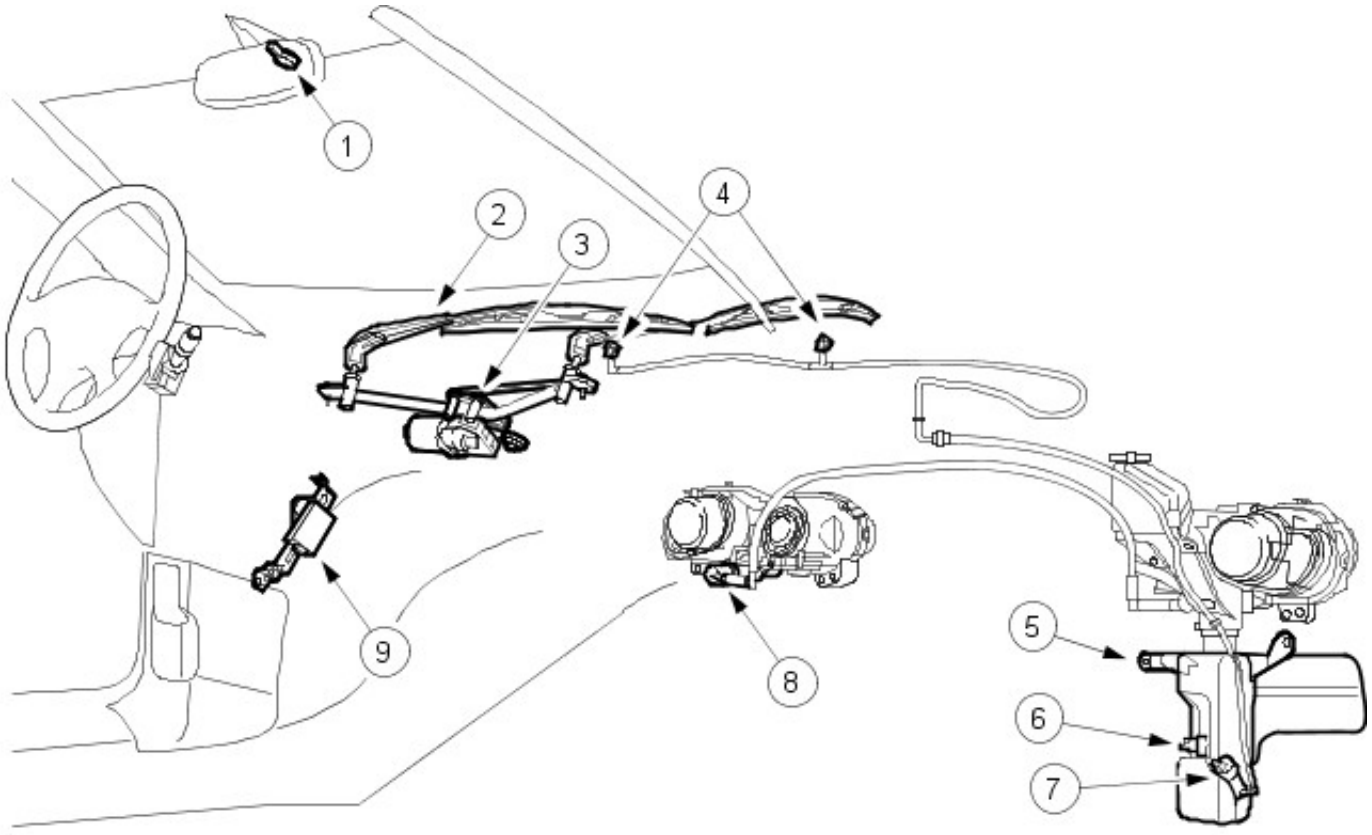
Torque Specifications

Description	Nm	lb-ft	lb-in
Front mounting arm and pivot shaft retaining bolts	8	-	71
Front wiper motor retaining screws	8	-	71
Front wiper motor shaft retaining nut	18	13	-
Front wiper arm retaining nuts	17	13	-
Rear window wiper pivot arm retaining nut	7	-	62
Rear wiper motor retaining nuts	8	-	71
Liftgate window glass latch actuator retaining bolts	8	-	71

Wipers and Washers - Wipers and Washers

Description and Operation

All vehicles



VUJ0004467

Item	Part Number	Description
1	—	Moisture sensor
2	—	Wiper pivot arms/wiper blades
3	—	Mounting arm and pivot shaft
4	—	Windscreen washer jets
5	—	Reservoir
6	—	Reservoir level switch
7	—	Windsheild washer pump
8	—	Headlamp washer assembly (if equipped)
9	—	Rain sensor module

The wipers and washers system consist of the following components, wipers and washers, mounting arm and pivot shaft, wiper motor, reservoir and washer pump, a headlamp washing system is available as an additional option.

The wipers have two speed control, low and high, and an intermittent wipe mode. The wipers will park automatically irrespective of their position when the OFF position of the ignition or control switch is selected.

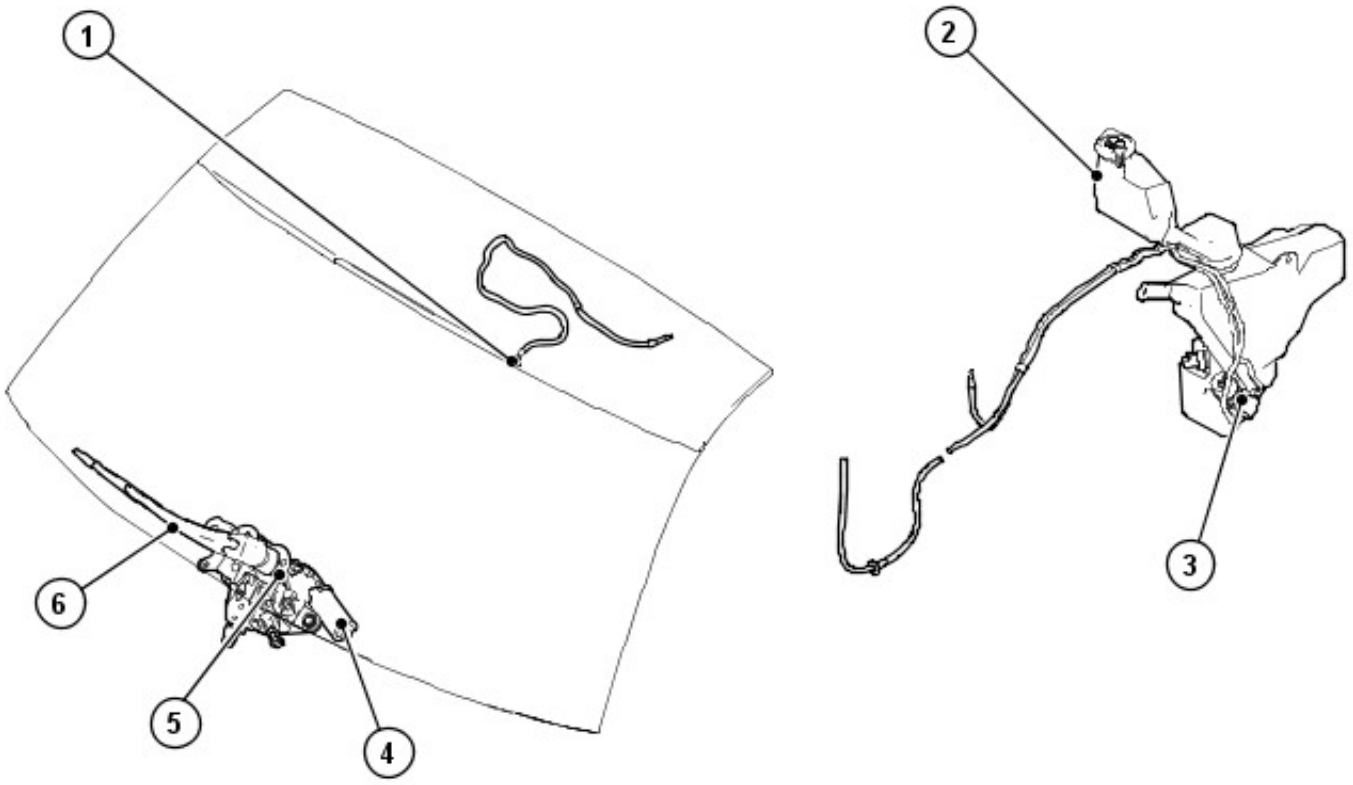
Within wiper and washer system the following features can be attained, adjustable interval intermittent wiping, programmable wash and wipe sequencing and moisture sensitive wiping. The system and features are centrally controlled by the GEM (generic electronics module).

The intermittent wiping has seven speed settings, 3, 6, 9, 12, 15, 18 seconds and speed dependent. The driver also has the capacity to adjust these via a switch with seven settings.

The programmable wash and wipe sequence is driver controlled. With a depression of the wash/wipe switch between 40 milliseconds and 1.2 seconds the wash pump will be activated for a duration of 1.2 seconds. When the wash/wipe switch is depressed for longer than 1.2 seconds the wash pump will be activated for the duration of switch depression, a 10 second duration is the maximum available. The wiping system is automatically activated with the depression of the wash switch.

Where fitted, moisture sensitive wiping will be initiated when the vehicle is running and not in the PARK or NEUTRAL gear selection (gear engaged on manual vehicles). The wiper switch must be in the AUTO position.

Wagon



E49382

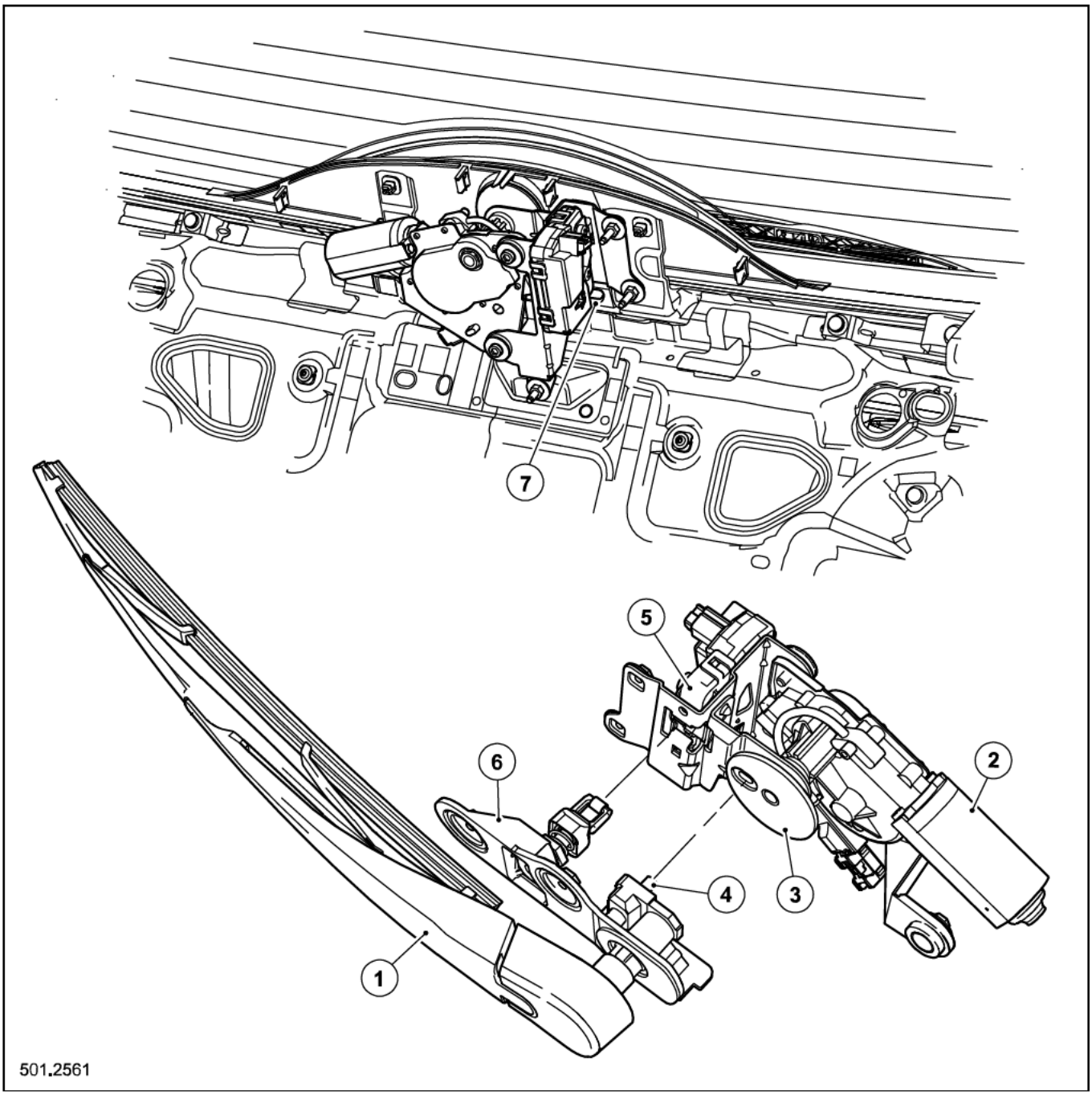
Item	Part Number	Description
1	-	Rear window washer jet
2	-	Reservoir
3	-	Windsheild and rear window washer motor
4	-	Rear window wiper motor
5	-	Rear wiper mounting arm
6	-	Rear window wiper pivot arm/wiper blade

The rear wiper and washer system consist of the following components, wipers and washers, pivot arm, wiper motor, reservoir (uses standard front washer reservoir) and washer pump.

The washer pump directs the washer fluid to the rear washer jet or the front washer jets via a directional valve.

The wiper motor has a rotating disk with a slot. The pivot arm has a pin. The movement of the arm is ensured through the engagement of the pin in the slot when the glass is closed. The latch actuator is fixed with 2 fixings on the latch bracket. It is driven electrically by switch on rear glass handle.

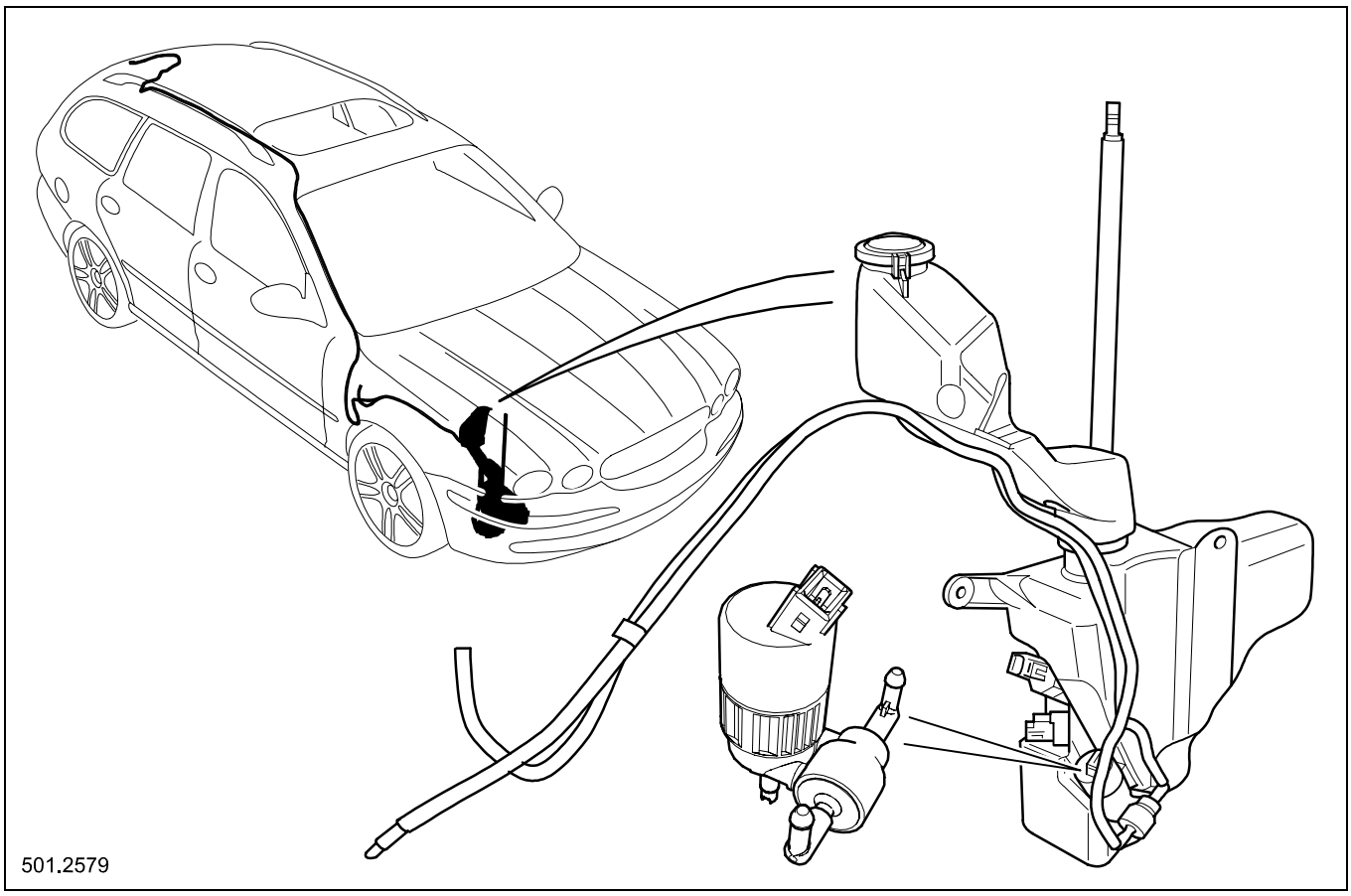
The rear wiper and washer is controlled by pushing the wash/wipe stalk forward, position one for the wipers and position two for the washers.



Wagon/Estate- **Wiper motor system**

1. Wiper
2. Wiper motor
3. Rotating disc
4. Pivot pin
5. Opening backlight latch
6. Pivot striker
7. Mechanical release access slot

The wiper reservoir on the estate has a twin pump to feed the front and rear wash/wipe. To supply the rear wash/wipe, the washer tube is routed to the rear to emerge at the nozzle, located on the rear spoiler.



Washer reservoir and washer tube routing to rear

Wipers and Washers - Wipers and Washers

Diagnosis and Testing

Inspection and Verification

1. **1.** Verify the customer concern.
2. **2.** Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Wiper arms for damage • Wiper linkage for damage • Wiper blades for cuts • Pipe(s) for blockages	• Wiring harness for damage or corrosion • Electrical connector(s) • Switch(s) • Motor(s) • Relay(s) • Fuse(s) • Module

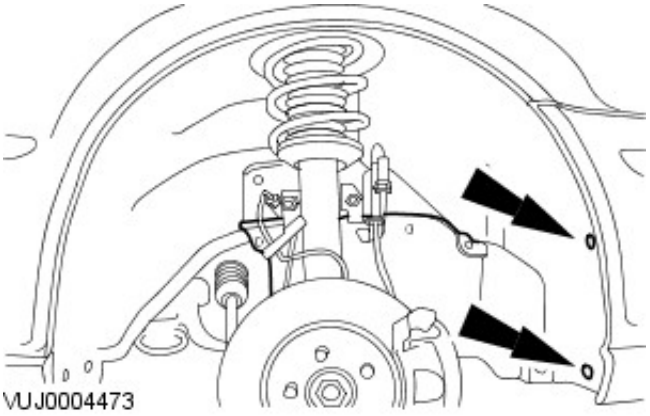
3. **3.** If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **4.** If the cause is not visually evident, verify the symptom and refer to the Jaguar Approved Diagnostic System.

Wipers and Washers - Headlamp Washer Pump

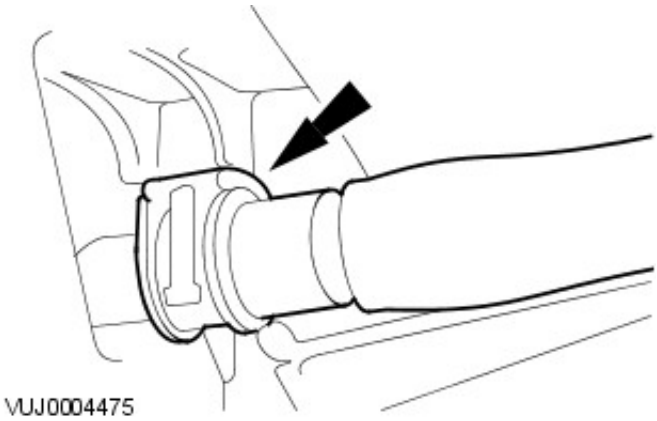
Removal and Installation

Removal

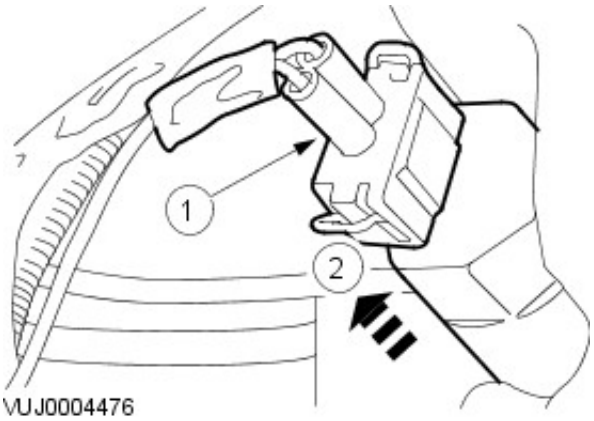
1. Remove the wheel and tire. For additional information, refer to Section 204-04 Wheels and Tires.
2. Detach the wheel arch liner.


VUJ0004473

3. Remove the undertray. For additional information, refer toSection 501-02 Front End Body Panels.
4. Disconnect the headlamp washer supply hose.


VUJ0004475

5. Remove the headlamp washer pump.
    1. Disconnect the headlamp washer pump electrical connector.
    2. Remove the headlamp washer pump.



VUJ0004476

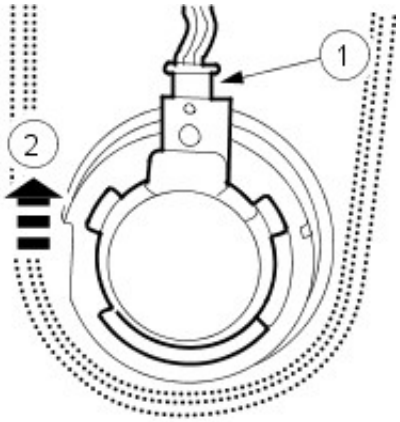
Installation

1. To install, reverse the removal procedure.

Wipers and Washers - Rain Sensor

Removal and Installation

Removal



VUJ0004497

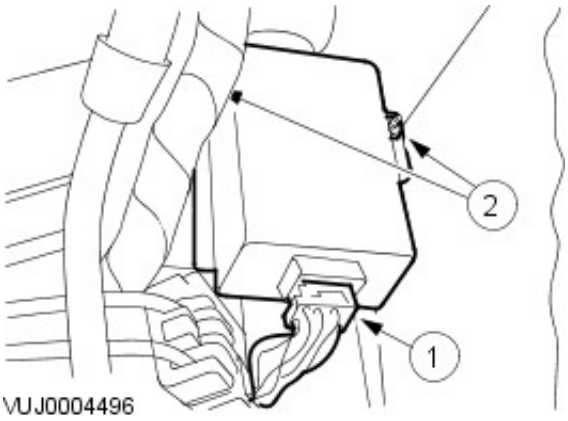
1. Remove the interior rear view mirror. For additional information, refer to Section 501-09 Rear View Mirrors.
2. Remove the moisture sensor.
    1. Disconnect the moisture sensor electrical connector.
    2. Remove the moisture sensor.

Installation

1. To install, reverse the removal procedure.

Wipers and Washers - Rain Sensor Module

Removal and Installation



Removal

1. Remove the cowl side trim panel. For additional information, refer toSection 501-05 Interior Trim and Ornamentation.
2. Remove the rain sensor module.
    1. Disconnect the rain sensor module electrical connector.
    2. Remove the rain sensor module.

Installation

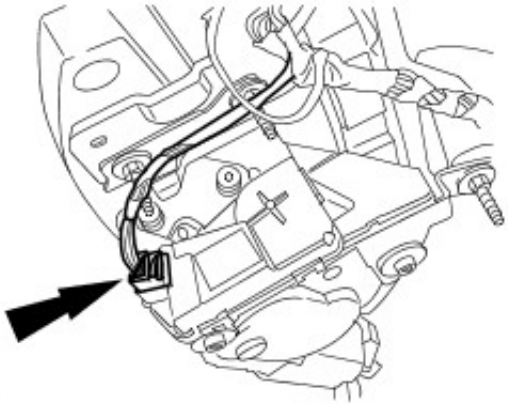
1. To install, reverse the removal procedure.

Wipers and Washers - Rear Window Wiper Motor

Removal and Installation

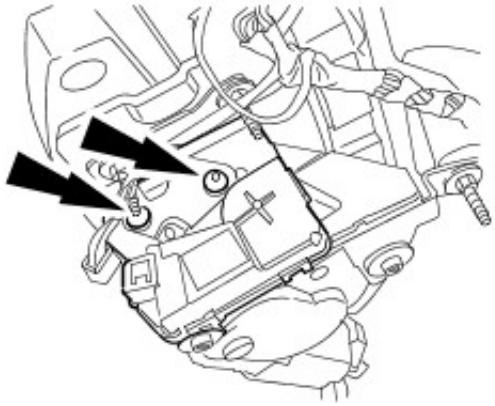
Removal

1. Remove the liftgate trim panel.
   For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
2. Disconnect the liftgate window glass latch actuator electrical connector.



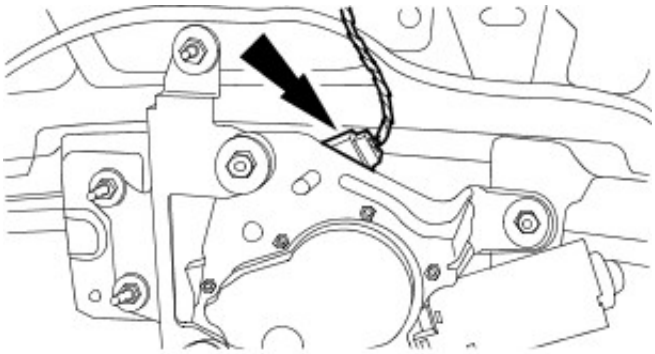
E49314

3. Remove the liftgate window glass latch actuator.



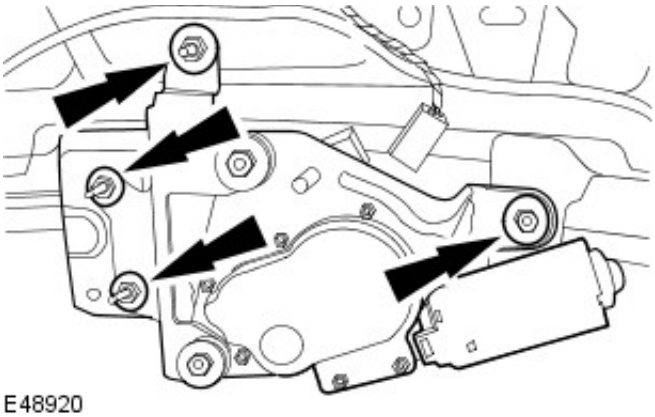
E49315

4. Disconnect the rear window wiper motor electrical connector.



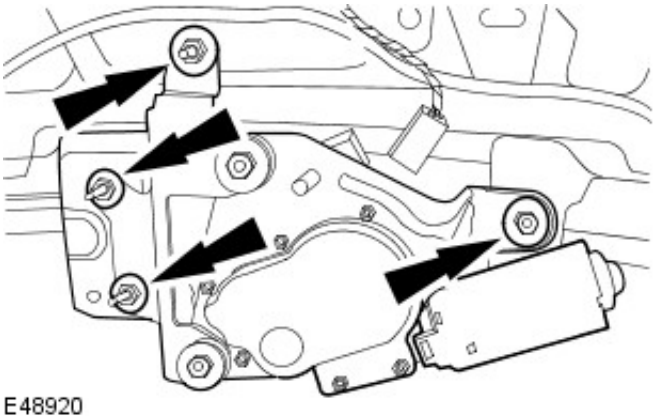
E48919

5. Remove the rear window wiper motor.



E48920

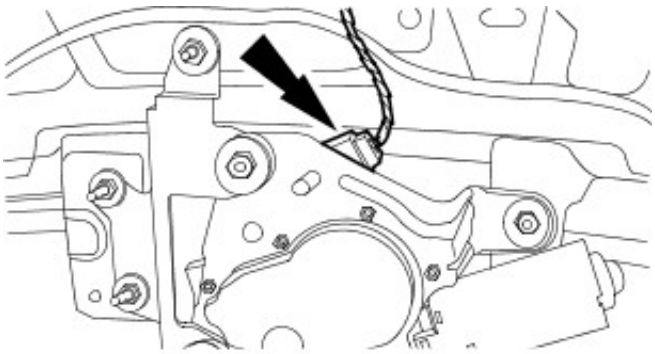
Installation



E48920

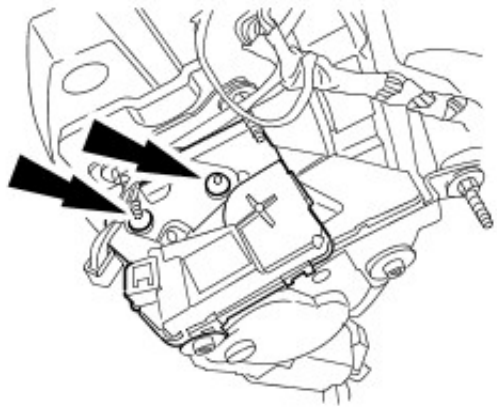
1. NOTE: Do not tighten the rear window wiper motor retaining nuts at this stage.

Install the rear window wiper motor.



E48919

2. Connect the rear window wiper motor electrical connector.

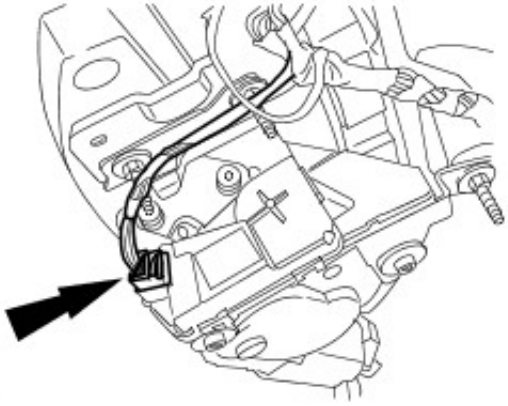


E49315

3. NOTE: Do not tighten the liftgate window glass actuator retaining bolts at this stage.

Install the liftgate window glass latch actuator.

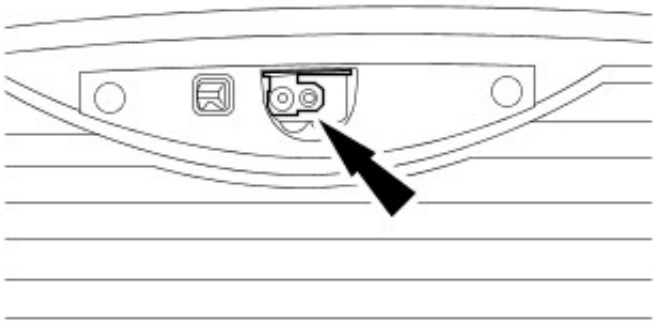
4. Connect the liftgate window glass latch actuator electical connector.



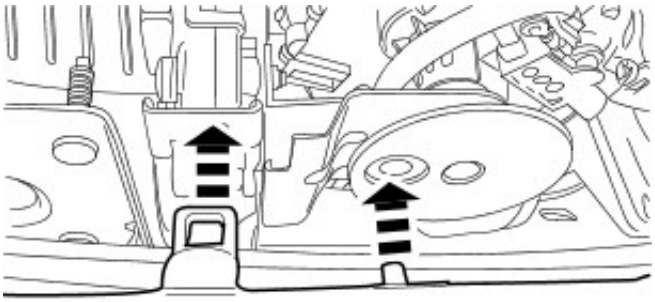
E49314

5. Close the liftgate.

6. Make sure the rear wiper mounting arm is in the parked position.



E49816



E49656

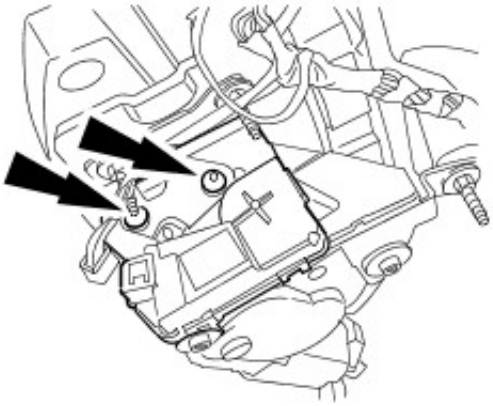
7. NOTE: The aid of an assistant in the loadspace will be required to align the rear wiper motor to the liftgate window glass.

Make sure that the liftgate glass latch and rear wiper mounting arm locate correctly into the liftgate latch actuator and rear wiper motor.

8. Close the liftgate glass.

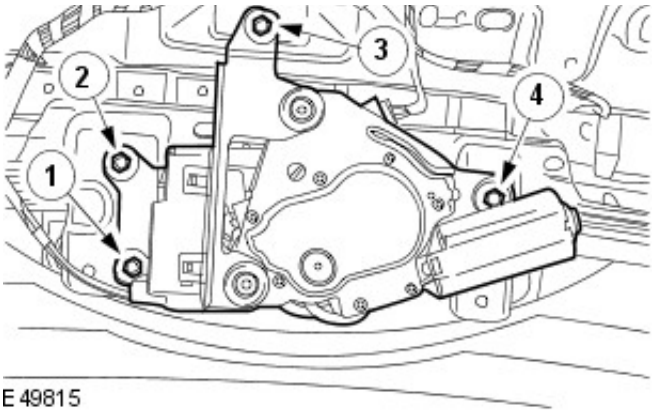
9. Tighten the liftgate window glass actuator retaining bolts.

- Tighten to 8 Nm.



E49315

10. CAUTIONS:



E49815

With the aid of an assistant in the loadspace, fully tighten the rear wiper motor retaining nuts. Failure to follow this instruction may result in damage to the vehicle.

Make sure the rear wiper motor does not move whilst tightening the retaining nuts. Failure to follow this instruction may result in damage to the vehicle.

Tighten the rear wiper motor retaining nuts in the sequence shown.

- Tighten to 8 Nm.

11. Visually check the liftgate window glass for correct alignment.

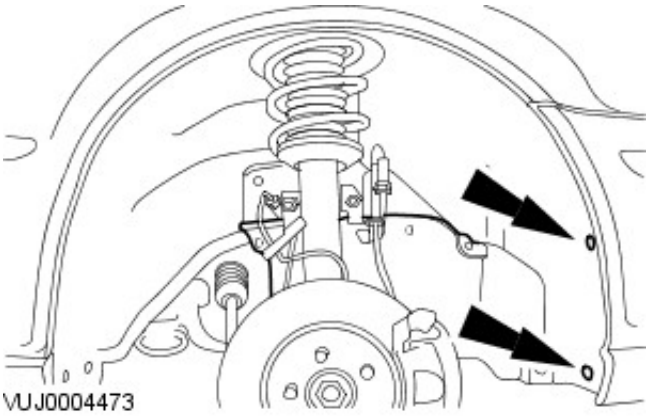
12. Install the liftgate trim panel.
For additional information, refer to: Liftgate Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

Wipers and Washers - Windshield and Rear Window Washer Pump

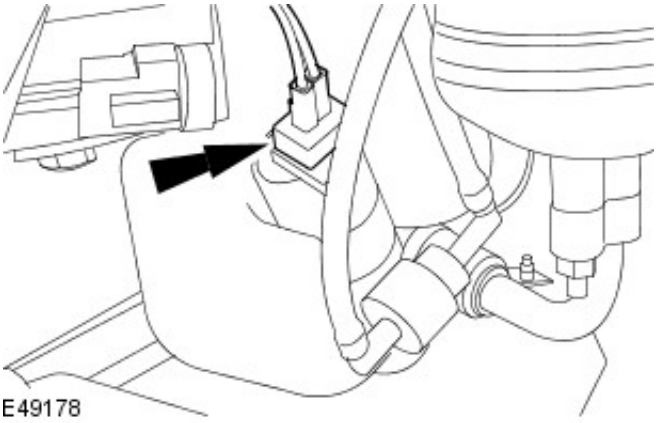
Removal and Installation

Removal

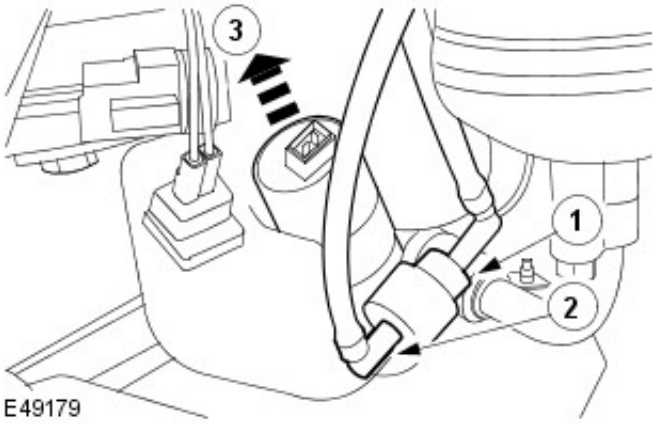
1. Remove the right-hand front wheel and tire.
   For additional information, refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).
2. Detach the fender splash shield.



3. Disconnect the electrical connector.



4. Remove the windshield and rear window washer pump.
   1. Disconnect the windshield washer supply hose.
   2. Disconnect the rear window washer supply hose.
   3. Remove the windshield and rear window washer pump.



Installation

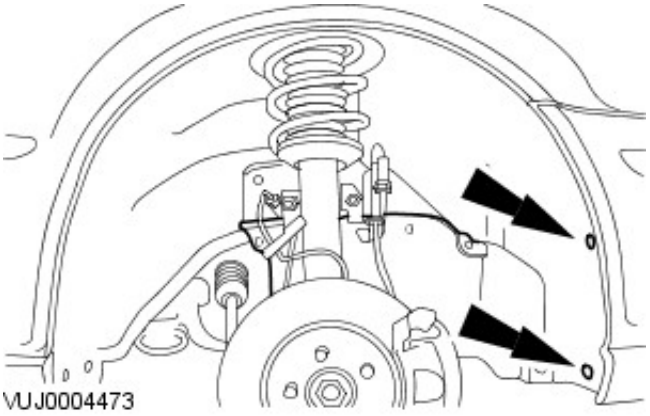
1. To install, reverse the removal procedure.

Wipers and Washers - Windshield Washer Pump

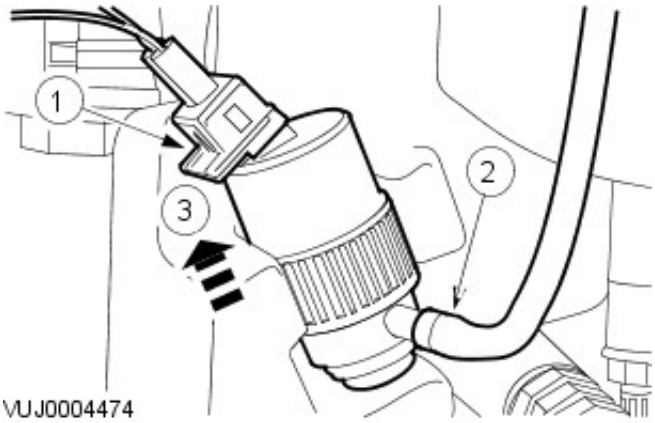
Removal and Installation

Removal

1. Remove the wheel and tire. For additional information, refer to Section 204-04 Wheels and Tires.
2. Detach the wheel arch liner.



3. Remove the washer pump.
    1. Disconnect the washer pump electrical connector.
    2. Disconnect the washer pump supply hose.
    3. Remove the washer pump.



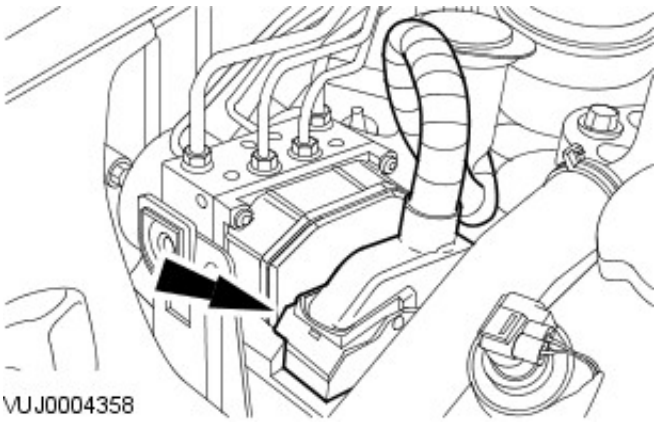
Installation

1. To install, reverse the removal procedure.

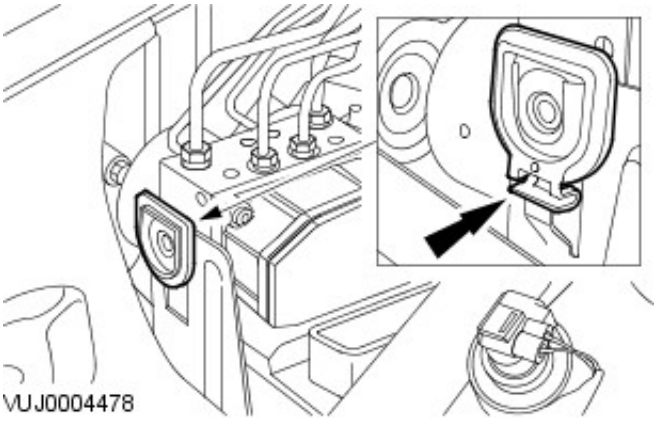
Wipers and Washers - Windshield Washer Reservoir

Removal and Installation

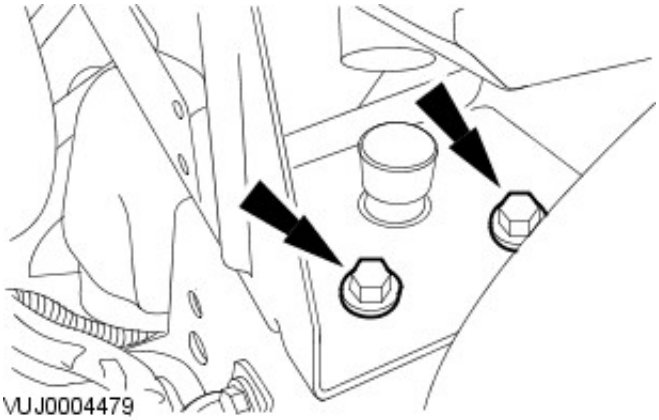
Removal



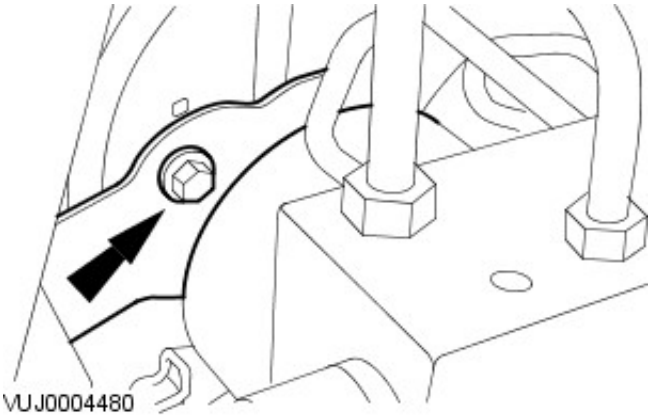
1. Disconnect the ABS electrical connector.



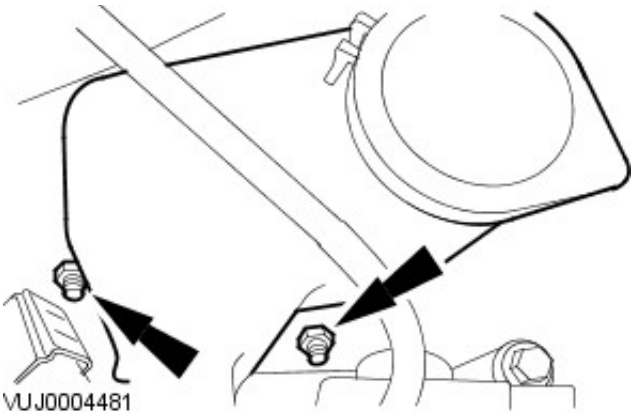
2. Detach the ABS module.



3. Remove the ABS module support bracket retaining bolts.



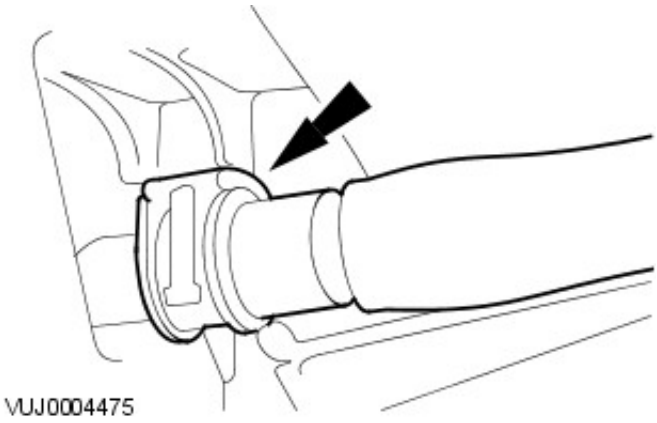
4. Remove the ABS module support bracket.



5. Remove the reservoir filler neck.

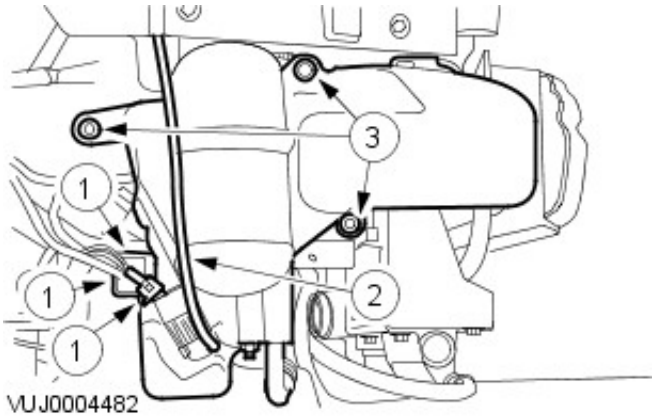
6. Remove the front bumper cover. For additional information, refer to Section 501-19 Bumpers.

7. Disconnect the headlamp washer supply hose.



8. Remove the reservoir.

1. Disconnect the washer pump, headlamp washer pump and fluid level switch electrical connectors.
2. Disconnect the washer pump supply hose.
3. Remove the reservoir.



Installation

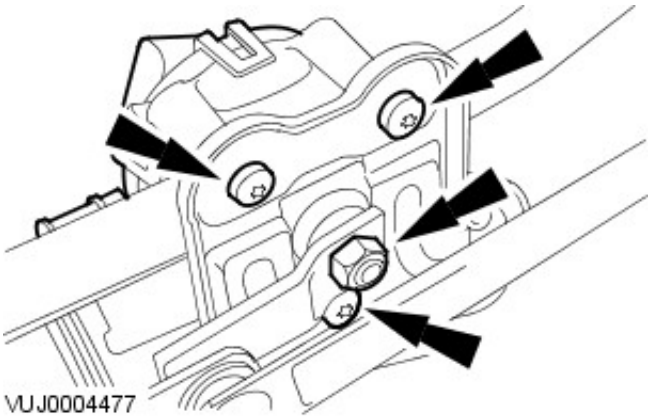
1. To install, reverse the removal procedure.

Wipers and Washers - Windshield Wiper Motor

Removal and Installation

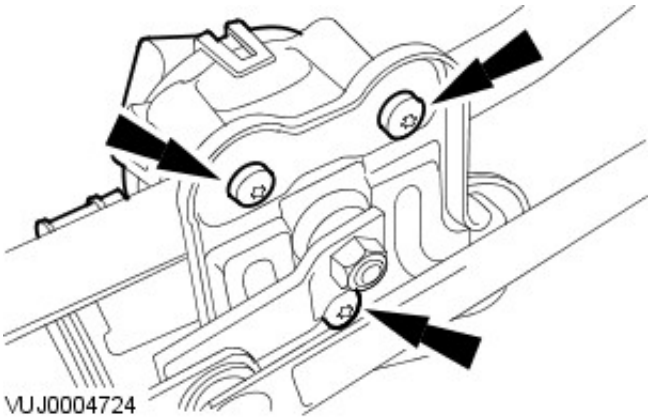
Removal

1. Remove the mounting arm and pivot shaft assembly. For additional information, refer to Mounting Arm and Pivot Shaft.
2. Remove the wiper motor.

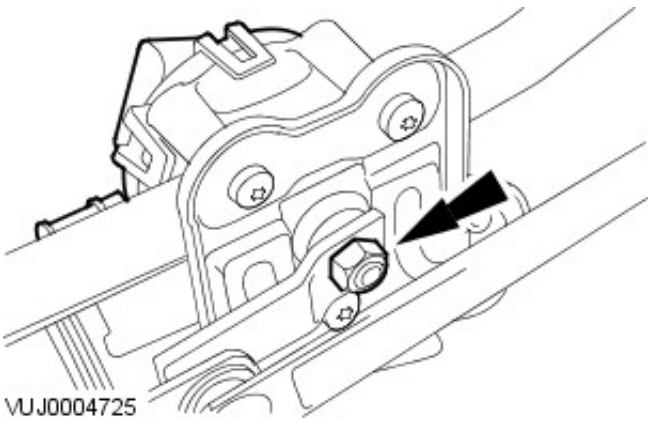


Installation

1. To install, reverse the removal procedure.
   - Tighten to 8 Nm.



2. Tighten to 18 Nm.

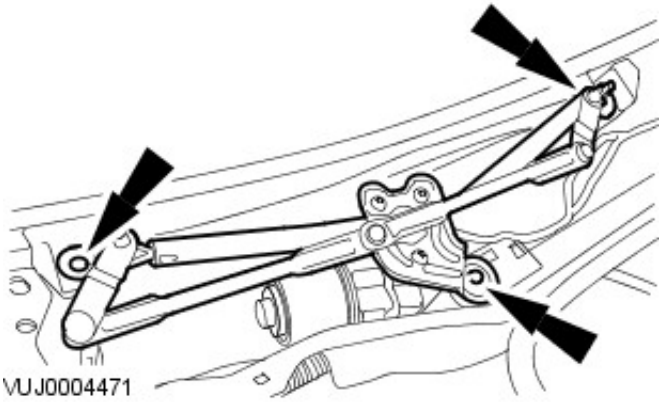


Wipers and Washers - Wiper Mounting Arm and Pivot Shaft

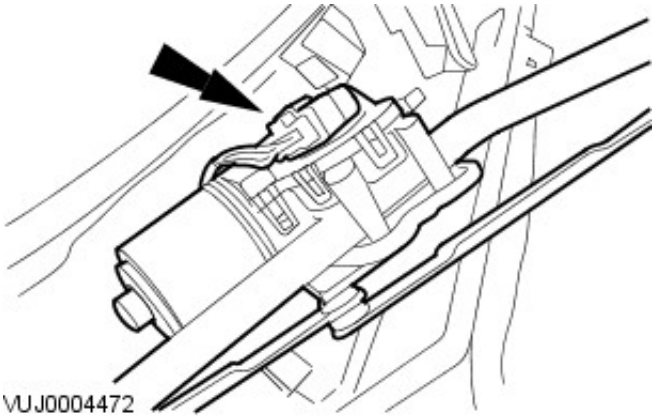
Removal and Installation

Removal

1. Remove the plenum cover. For additional information, refer toSection 501-02 Front End Body Panels.
2. Detach the mounting arm and pivot shaft assembly.

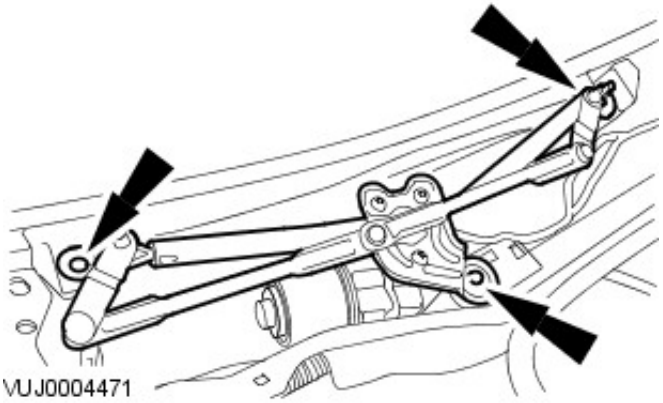


3. Remove the mounting arm and pivot shaft assembly.



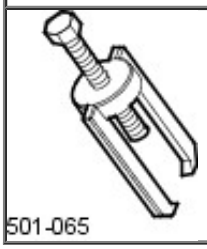
Installation

1. To install, reverse the removal procedure.
   - Tighten to 8 Nm.

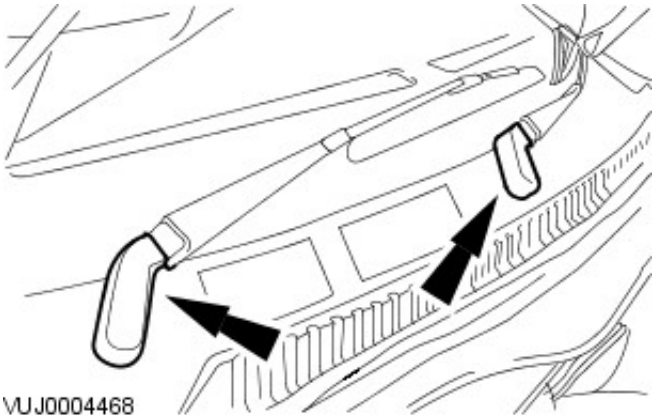


Wipers and Washers - Wiper Pivot Arm

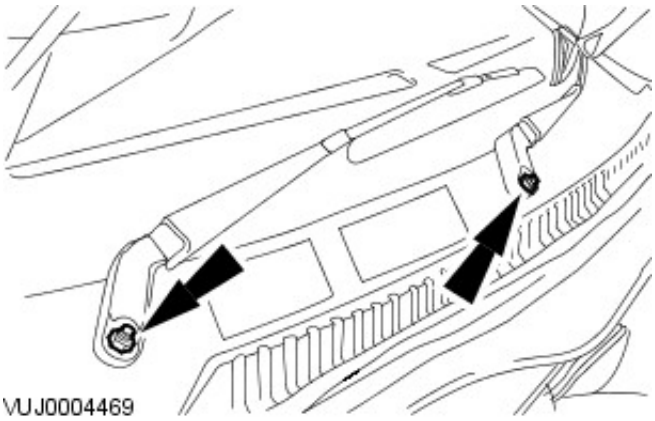
Removal and Installation

Special Tool(s)	
 501-065	Remover - windscreen wiper 501-065

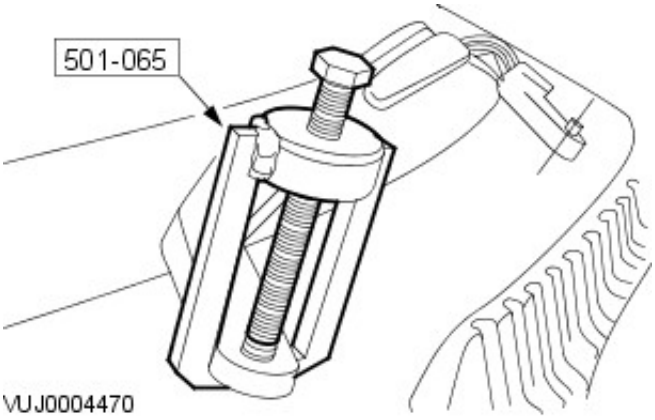
Removal


VUJ0004468

1. Remove the wiper arm nut covers


VUJ0004469

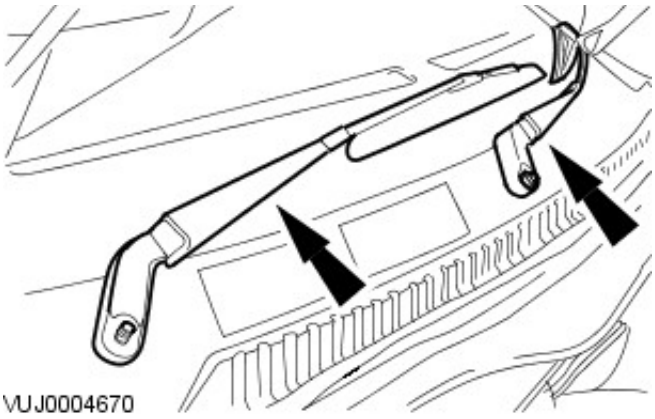
2. Remove the wiper arm nuts.



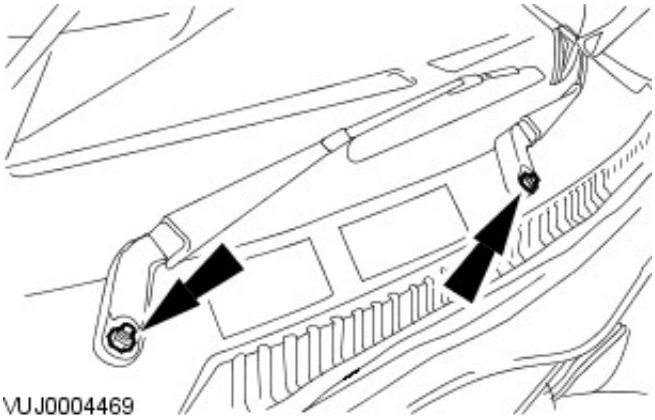
VUJ0004470

3. Using the special tool, detach the wiper arms.

4. Remove the wiper arms



Installation



1. To install, reverse the removal procedure.

- Tighten to 17 Nm.

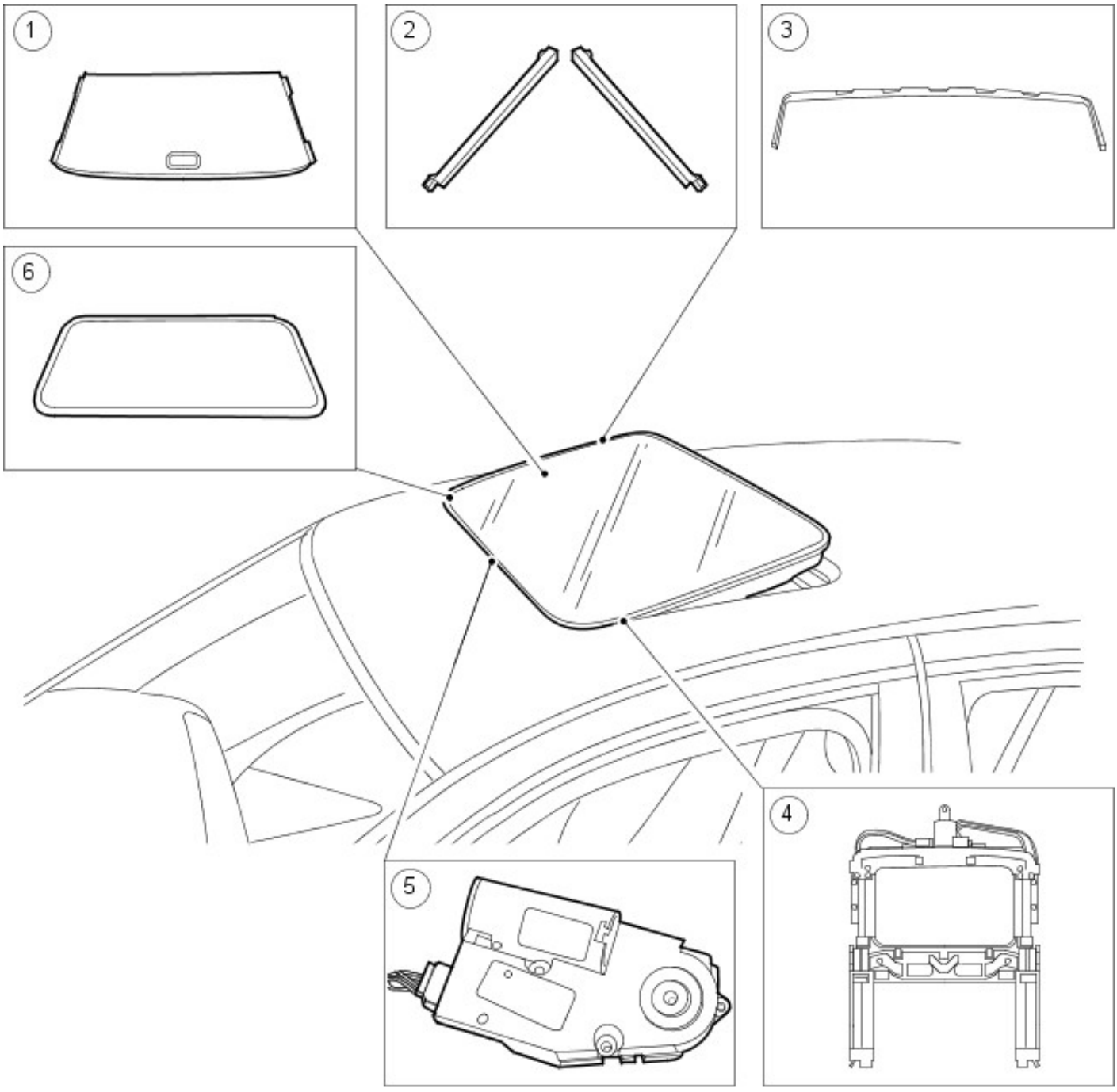
Roof Opening Panel -

Torque Specifications

Description	Nm	lb-ft	lb-in
Roof opening panel frame retaining bolts	9	-	80
Roof opening panel bracket retaining bolts	9	-	80
Roof opening panel motor retaining bolts	3	-	27
Roof opening panel glass retaining screws	3	-	27

Roof Opening Panel - Roof Opening Panel

Description and Operation



VUJ0003757

Item	Part Number	Description
1	—	Roof opening panel shield
2	—	Lifter arms
3	—	Air deflector
4	—	Roof opening panel frame
5	—	Roof opening panel motor
6	—	Roof opening panel glass

The roof opening panel is available as an option. The roof opening panel control module controls the roof opening panel. The roof opening panel motor and module are not available separately. The roof opening panel may be operated from the roof opening panel switch or the global close function.

Roof Opening Panel Switch Operation

The system operates as follows from the roof opening panel switch:

- Press the rear of the switch to the first detent with the roof opening glass in the closed position.
  - The roof opening glass opens rearward until the roof opening panel switch is released or the roof opening panel glass reaches the full open position.
- Press the rear of the switch to the second detent with the roof opening panel glass in the closed position.
  - Activates the express open feature.
  - The roof opening glass will slide rearward until the roof opening panel switch is pressed in any direction or the roof opening glass reaches the full open position.
- Press the front of the switch to the first detent with the roof opening panel glass in the closed position.
  - The roof opening panel glass will vent up until the roof opening panel switch is released or the roof opening panel glass reaches the full vent up position.
- Press the front of the switch to the second detent with the roof opening glass in the closed position.
  - The roof opening glass will vent up until the roof opening glass reaches the full vent up position or the switch is pressed in any direction.
- Press the front of the switch to the first detent with the roof opening glass in a rearward open position.
  - The roof opening glass will slide forward until the roof opening glass reaches the fully closed position or the switch is released.
- Press the front of the switch to the second detent with the roof opening glass in a rearward position.
  - The roof opening glass will close until the roof opening panel switch is pressed in any direction or the roof opening glass reaches the full closed position.
- Press the rear of the switch to the first detent with the roof opening glass in a vent up position.
  - The roof opening glass will close until the roof opening panel switch is released or the roof opening glass reaches the full closed position.
- Press the rear of the switch to the second detent with the roof opening glass in a vent up position.
  - The roof opening glass will close until the roof opening panel switch is pressed in any direction or the roof opening glass reaches the full closed position.

Global Closing Operation

The roof opening panel is included in the global close operation. This function closes the power windows and the roof opening panel automatically. For additional information on the global close feature for the power windows, refer to Section 501-11 Glass, Frames and Mechanisms.

The global close function is activated by:

- turning the driver door lock cylinder to the lock position and holding.

Global close operation is only available with the ignition in the OFF position and the ignition key removed.

When the global close operation is selected, the roof opening panel switch is not recognized by the roof opening panel control module throughout the operation and for five seconds after the operation is completed.

Global close will operate as follows.

- With the roof opening glass in the open position, activating global close will close the roof opening glass to the flush position.

Roof Opening Panel - Roof Opening Panel
Diagnosis and Testing

Principles of Operation

Roof Opening Panel Control Module

Battery power is continuously supplied to the roof opening panel control module. However, the roof opening panel will only operate from the roof opening panel switch with the ignition switch in the RUN or ACCY position. The global close feature is controlled by two circuits from the generic electronics control module (GEM). The two circuits must be at ground potential before the roof opening panel control module will acknowledge the roof opening panel switch. When the ignition switch is turned to RUN or ACCY, the GEM provides ground to these circuits.

The roof opening panel control module incorporates soft stops at the end of all travel positions. The roof opening panel control module monitors the internal switches to determine the roof opening glass position and the soft stops. The internal switches are activated by the roof opening panel motor rotation.

The roof opening panel control module supplies the power and ground to the roof opening panel motor depending on the ordered function. Power is supplied to the roof opening panel for a maximum of 12 seconds. Under normal operation, position is monitored by the roof opening panel control module and power is removed from the roof opening panel motor as soon as the roof opening panel reaches the commanded position.

Roof Opening Panel Switch

Two circuits connect the roof opening panel switch to the roof opening panel control module. One circuit controls open and down operation. The other circuit controls the tilt and close operation. The roof opening panel control module monitors these lines for voltage fluctuation to determine which function was selected.

With the ignition switch in the RUN or ACCY position, the roof opening panel supplies a five volt reference voltage to three control lines. Activation of the roof opening panel switch connects one or more of these lines to the common return which pulls the line low. The roof opening panel control module will sense the line or lines being connected to the common line and carry out the appropriate function.

The express open function connects the open and tilt circuits to the common return when the roof opening panel switch is moved rearward to the second detent position. The operator-controlled open function connects the open circuit to the common return. The close function connects the close circuit to the common causing the roof opening panel to close from a slide or vent position.

Global Close

One circuit connects the GEM to the roof opening panel control module for this function. Global close operation for the roof opening panel is controlled by this circuit being grounded by the GEM.

When the ignition switch is in the RUN or ACCY position, the GEM grounds this circuit allowing normal operation of the roof opening panel from the roof opening panel switch. Global close operation is only available with the ignition in the OFF position and the ignition key removed.

When global close operation is selected, the roof opening panel switch is not recognized by the roof opening panel control module throughout the operation and for five seconds after the operation is completed.

With the ignition switch in the OFF position, the roof opening panel control module supplies a constant voltage to this circuit. The roof opening panel control module monitors these lines for a low state, caused by the GEM grounding the line, to determine the ordered global function by the GEM.

Global close is commanded by the GEM grounding control line one. Line two will remain at previous voltage.

If both lines have voltage, the roof opening panel will be inoperative.

Inspection and Verification

1. **1.** Verify the customer concern by operating the system.
2. **2.** Visually inspect for obvious signs of mechanical and electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Roof opening panel track and rail assembly • Roof opening panel glass seal • Roof opening panel glass adjustment • Roof opening panel synchronization	• Central junction box (CJB) fuse 73 (15A) • Damaged, loose or corroded connectors • Wiring harness • Roof opening panel switch • Roof opening panel motor • Roof opening panel control module

3. **3.** If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. **4.** If the concern is not visually evident, verify the symptom and refer to the Symptom Chart.

Symptom Chart

Refer to the Wiring Diagram manual for the connectors cited in the pinpoint tests.

SYMPTOM CHART

Symptom	Possible Sources	Action
The roof opening panel has excessive wind noise	* Incorrect adjustment. * Roof opening panel glass seal.	* GO to Pinpoint Test A.
The roof opening panel leaks	* Incorrect adjustment. * Roof opening panel frame drain hoses. * Roof opening panel glass seal.	* GO to Pinpoint Test B.
The roof opening panel is noisy during operation	* Roof opening panel glass. * Roof opening panel. * Roof opening panel motor.	* GO to Pinpoint Test C.
The roof opening panel does not open or close	* Roof opening panel. * Roof opening panel control module. * Roof opening panel motor. * Generic electronics module (GEM). * Roof opening panel switch. * Circuitry.	* GO to the approved Jaguar diagnostic system.
The roof opening panel does not open or close in vent position	* Roof opening panel control module. * Roof opening panel switch. * Circuitry.	* GO to the approved Jaguar diagnostic system.
The roof opening panel does not stop in flush from any position.	* Roof opening panel adjustment. * Roof opening panel glass seal. * Roof opening panel control module.	* GO to Pinpoint Test D.
The express open is inoperative	* Roof opening panel control module. * Roof opening panel switch. * Circuitry.	* GO to the approved Jaguar diagnostic system.

PINPOINT TEST A : THE ROOF OPENING PANEL HAS EXCESSIVE WIND NOISE	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
A1: CHECK THE ROOF OPENING GLASS FIT	
	1 Cycle the roof opening glass from the full-open to the full-closed position.
	2 Inspect the roof opening glass seal for proper fit or damage.
	Is the roof opening glass seal OK? **Yes** GO to A2. **No** INSTALL a new roof opening glass seal. REFER to Seal. Test the system for normal operation.
A2: CHECK THE ROOF OPENING GLASS OPERATION	
	1 Cycle the roof opening glass from the full-open to the full-closed position.
	Does the roof opening glass travel to the full-open and the full-closed position? **Yes** ADJUST the roof opening glass. REFER to Roof Opening Panel Alignment. If the roof opening glass closes unevenly, CHECK the roof opening panel syncronization. REFER to Section 100-00 General InformationMotor Synchronization—Calibration. Test the system for normal operation. **No** CHECK the roof opening panel glass seal. If necessary, INSTALL a new roof opening panel glass seal. REFER to Seal. TEST the system for normal operation.

PINPOINT TEST B : THE ROOF OPENING PANEL LEAKS	
TEST CONDITIONS	**DETAILS / RESULTS / ACTIONS**
B1: CHECK THE ROOF OPENING PANEL OPERATION	
	1 Cycle the roof opening panel glass from the full-open position to the full-closed position.
	Does the roof opening glass operate smoothly and close tightly? **Yes** GO to B2. **No** CHECK the roof opening panel glass alignment. REFER to Roof Opening Panel Alignment. Test the system for normal operation.
B2: CHECK THE ROOF OPENING PANEL FRAME DRAIN TUBES	
	1 Gain access to the roof opening panel drain tubes.
	Is there blockage or damage to the roof opening panel drain tubes? **Yes** Clear the blockage or if necessary, INSTALL a new drain tube. TEST the system for normal operation. **No** GO to B3.
B3: CHECK THE ROOF OPENING PANEL GLASS SEAL	
	1 Actuate the roof opening panel glass to the full open position.
	Is the roof opening panel glass seal damaged? **Yes** INSTALL a new roof opening panel glass seal. REFER to Seal. TEST the system for normal operation. **No** REPAIR as necessary. TEST the system for normal operation.

PINPOINT TEST C : THE ROOF OPENING PANEL IS NOISY DURING OPERATION	
TEST CONDITIONS	**DETAILS / RESULTS / ACTIONS**
C1: CHECK THE OPERATION OF THE ROOF OPENING PANEL GLASS	
	1 Cycle the roof opening panel glass from the full-open to the full-closed position.
	Is the roof opening panel glass loose? **Yes** ADJUST the roof opening panel glass. REFER toRoof Opening Panel Alignment **No** GO to C2.
C2: CHECK FOR OBSTRUCTIONS	
	1 Check the roof opening panel track and rail for foreign material, damage or looseness.
	Is the roof opening panel obstructed or damaged? **Yes** REMOVE the obstruction. If necessary, INSTALL a new roof opening panel frame. REFER to Roof Opening Panel Frame. TEST the system for normal operation. **No** GO to C3.
C3: CHECK THE ROOF OPENING PANEL MOTOR	
	1 Cycle the roof opening glass from the full-open to the full-closed position.
	Does the roof opening panel motor make excessive noise? **Yes** CHECK the roof opening panel motor for correct mounting. If necessary, INSTALL a new roof opening panel motor . REFER toRoof Opening Panel MotorTEST the system for normal operation. If the roof opening panel opens or closes unevenly, ADJUST the roof opening panel motor syncronization. REFER toMotor Synchronization—Calibration **No** REFER to Roof Opening Panel Alignment ADJUST the roof opening panel glass as necessary. TEST the system for normal operation.

PINPOINT TEST D : THE ROOF OPENING PANEL DOES NOT STOP IN FLUSH FROM ANY POSITION	
TEST CONDITIONS	**DETAILS / RESULTS / ACTIONS**
D1: CHECK THE ROOF OPENING PANEL GLASS ADJUSTMENT	
	1 Check the roof opening panel glass alignment. For additional information, refer to Roof Opening Panel Alignment.
	Is the roof opening panel glass adjusted correctly? **Yes**

	GO to D2. **No** ADJUST the roof opening panel glass as necessary. TEST the system for normal operation.
D2: CHECK THE ROOF OPENING GLASS SEAL	
	1 Inspect the roof opening panel glass seal for looseness, damage and correct installation.
	Is the roof opening panel glass seal OK and installed correctly? **Yes** GO to D3. **No** REPAIR or INSTALL a new roof opening panel glass seal as necessary. For additional information, refer to Seal. TEST the system for normal operation.
D3: CHECK FOR OBSTRUCTION IN THE ROOF OPENING PANEL	
	1 Inspect the roof opening panel assembly for obstructions in the track.
	Are any obstructions found? **Yes** REMOVE the obstruction. If necessary, INSTALL a new roof opening panel track and rail assembly. For additional information, refer to Roof Opening Panel Frame. TEST the system for normal operation. **No** INSTALL a new roof opening panel control module. For additional information, refer toRoof Opening Panel Motor

Roof Opening Panel - Motor Synchronization

General Procedures

New Roof Opening Panel Motor Synchronization Procedure

• NOTE: The roof opening panel and roof opening panel motor must be installed and the roof opening panel alignment checked prior to synchronizing the motor.

• NOTE: This procedure is for a new roof opening panel motor.

1. Operate the roof opening panel to the fully vent position.
2. Release the roof opening panel control switch, press the roof opening panel control switch again in the same direction within 0.5 seconds and hold until the glass panel stops after a complete opening and closing cycle.

Roof Opening Panel De-Synchronization Procedure

• NOTE: This procedure is to be followed when the roof opening panel motor is detached or removed from the roof opening panel and before it is re-installed.

1. Connect the roof opening panel motor electrical connector.
2. Connect the roof opening panel control switch electrical connector.
3. Operate the roof opening panel control switch to the vent position until the roof opening panel motor stops.
4. Release the roof opening panel control switch. Operate the roof opening panel control switch again in the same direction until the roof opening panel motor stops.
5. Release the roof opening panel control switch, operate the roof opening panel control switch within 0.5 seconds in the same direction and hold for 30 seconds.
6. After 30 seconds the roof opening panel motor will start to turn in one direction.
7. Operate the roof opening panel control switch in the opposite (open) direction. The de-synchronization procedure is successful if the roof opening panel motor does not turn.

De-Synchronized Roof Opening Panel Synchronization Procedure

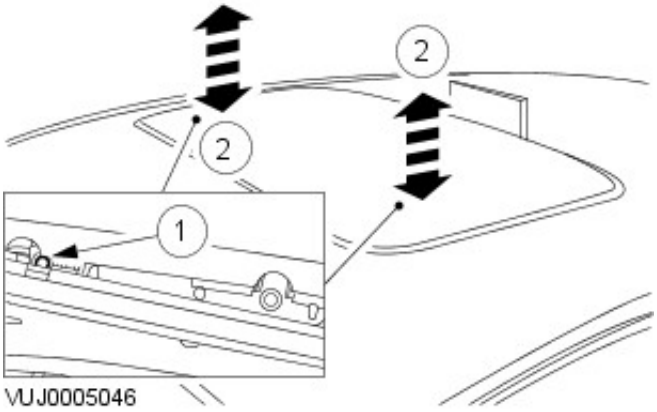
• NOTE: The roof opening panel and roof opening panel motor must be installed and the roof opening panel alignment checked prior to synchronizing the motor.

• NOTE: This procedure is for a roof opening panel motor that has been previously installed and has been de-synchronized.

1. Operate the roof opening panel to the fully vent position.
2. Release the roof opening panel control switch, press the roof opening panel control switch again in the same direction and hold for 30 seconds until the glass moves slightly.
3. Release the roof opening control switch, press the roof opening panel control switch again within 0.5 seconds in the same direction until the glass panel stops after a complete opening and closing cycle.

Roof Opening Panel - Roof Opening Panel Alignment

General Procedures

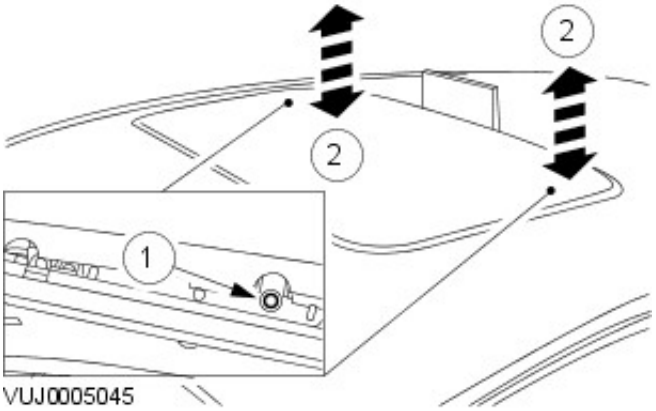


VUJ0005046

1. Place a suitable 1.0 - 1.2 mm thick plastic spacer between the roof opening panel and the roof panel.

2. Adjust the rear edge of the roof opening panel.

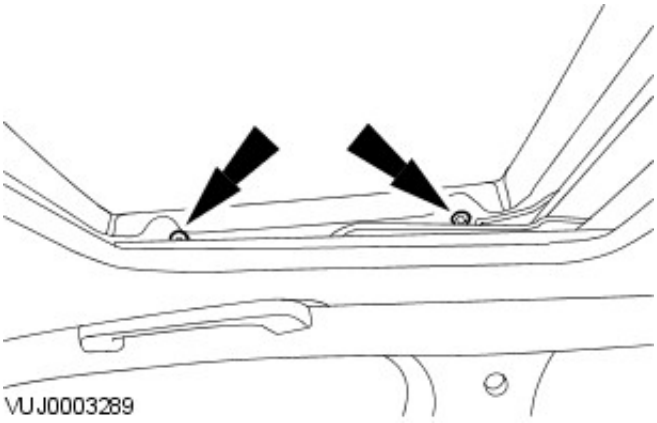
1. Loosen the rear screws on both sides.
2. Push the rear edge up/down to give correct alignment (flush to + 1 mm).



VUJ0005045

3. Adjust the front edge of the roof opening panel.

1. Loosen the front screws on both sides.
2. Push the front edge up/down to give correct alignment (flush to - 1 mm).


VUJ0003289

4. Tighten to 3 Nm.

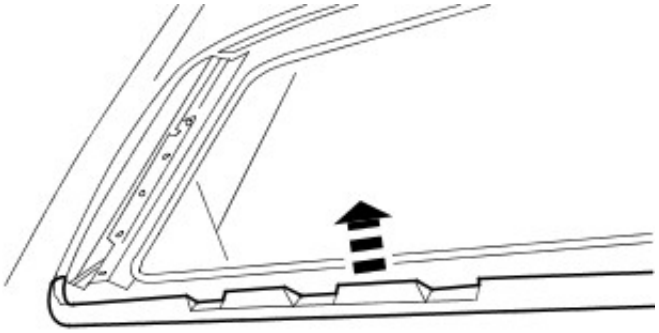
5. Remove the spacer.

Roof Opening Panel - Air Deflector

Removal and Installation

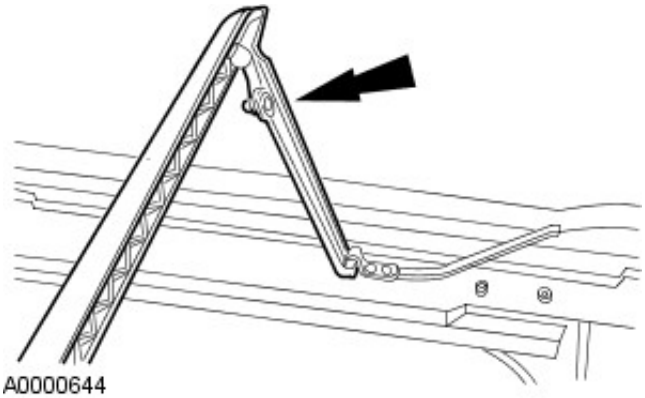
Removal

1. Move the roof opening panel glass fully rearward.
2. Detach the air deflector.



VUJ0003296

3. Remove the air deflector.



A0000644

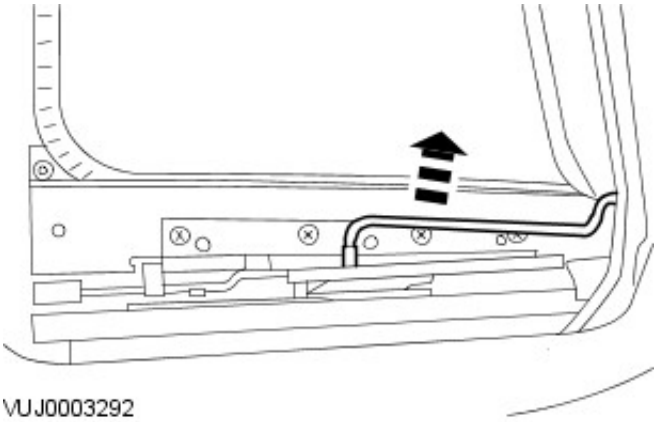
Installation

1. To install, reverse the removal procedure.

Roof Opening Panel - Lifter Arms
Removal and Installation

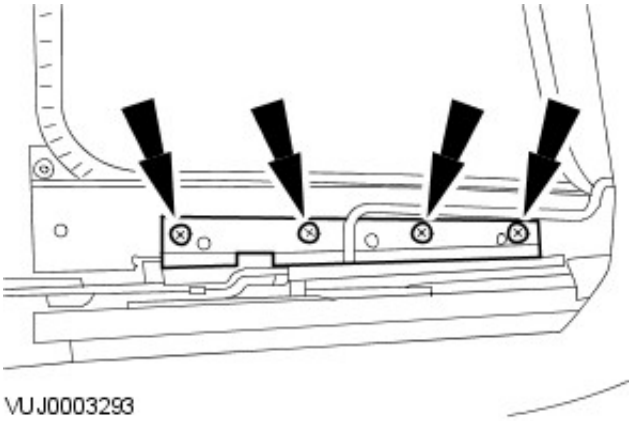
Removal

1. Remove the roof opening panel glass. For additional information, refer to Roof Opening Panel Glass.
2. Detach the control arm.



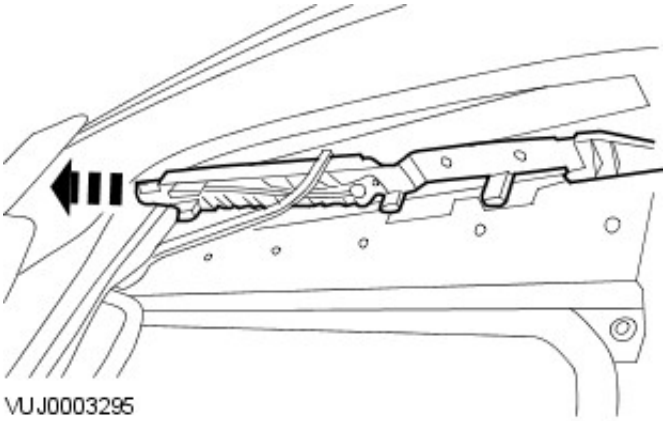
VUJ0003292

3. Remove the lifter arm retaining plate.



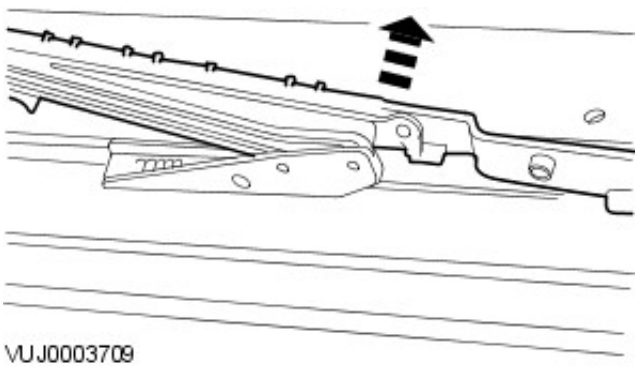
VUJ0003293

4. Detach the lifter arm.



VUJ0003295

5. Remove the lifter arm.



VUJ0003709

Installation

1. To install, reverse the removal procedure.
2. Check, and if necessary, adjust the roof opening panel alignment. For additional information, refer to Roof Opening Panel Alignment.

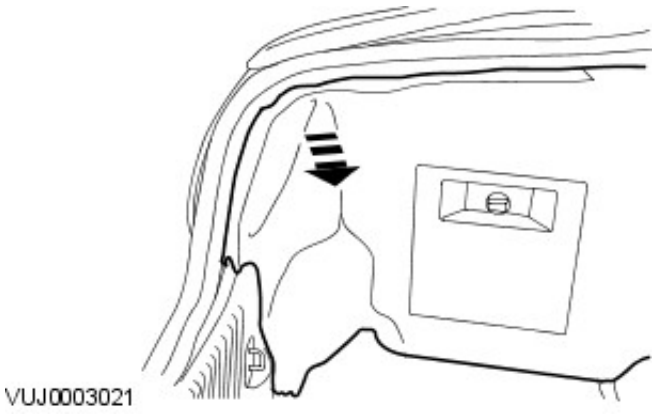
Roof Opening Panel - Roof Opening Panel Control Switch

Removal and Installation

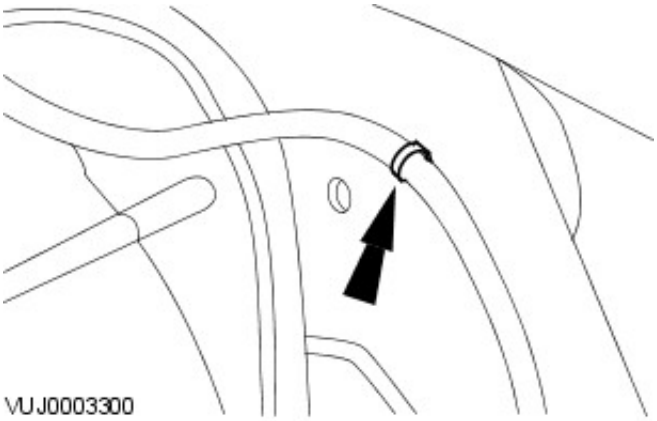
1. Remove the overhead console. For additional information, refer to Section 501-12 Instrument Panel and Console.

Roof Opening Panel - Roof Opening Panel Drain Hose
Removal and Installation

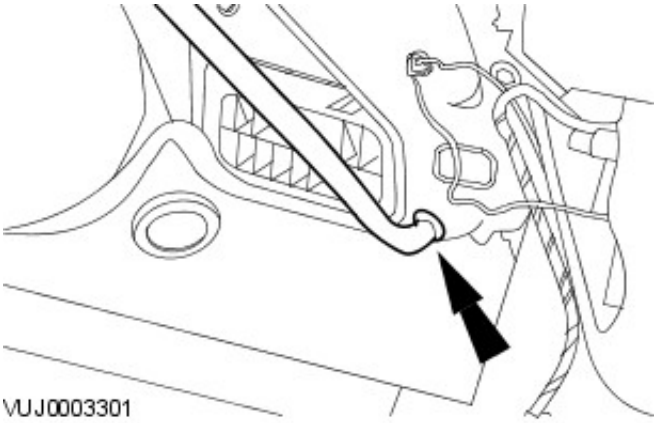
Removal


VUJ0003021

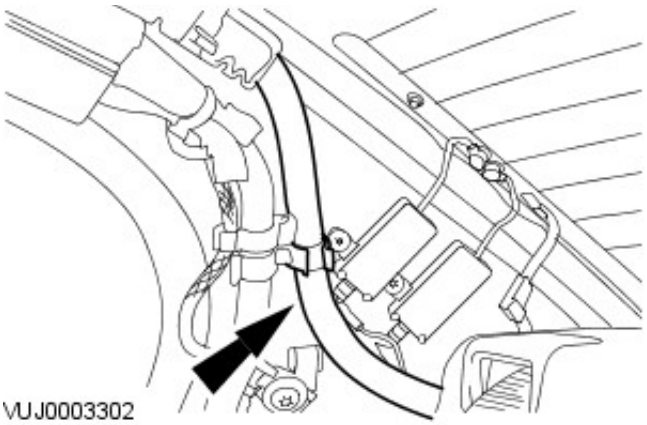
1. Detach the rear quarter trim panel.


VUJ0003300

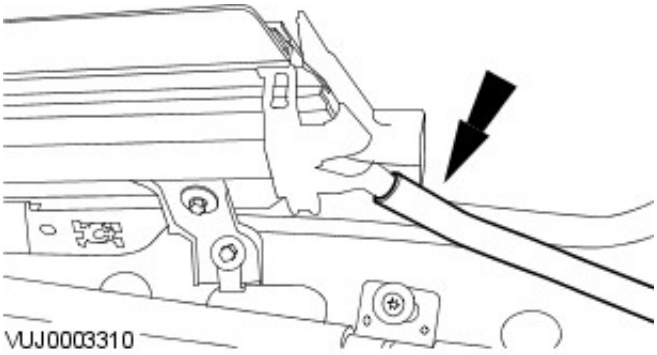
2. Detach the drain hose from the retaining clip.


VUJ0003301

3. Detach the drain hose from the grommet.
4. Remove the headliner. For additional information, refer toSection 501-05 Interior Trim and Ornamentation.
5. Detach the drain hose from the retaining clip.



6. Remove the drain hose.



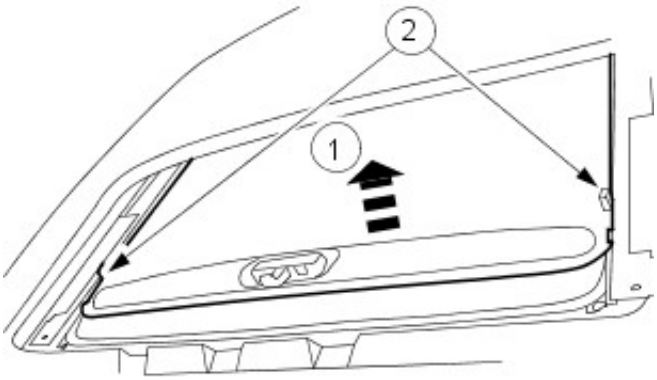
Installation

1. To install, reverse the removal procedure.

Roof Opening Panel - Roof Opening Panel Frame
Removal and Installation

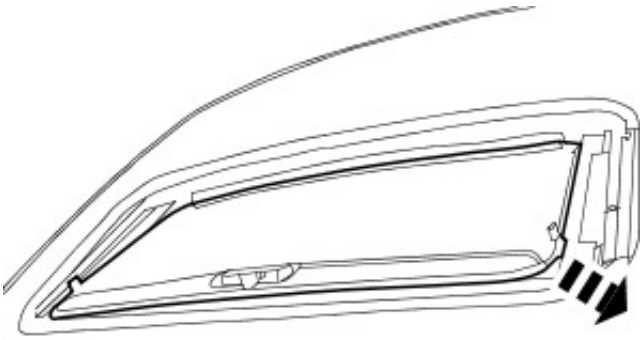
Removal

1. Remove the roof opening panel glass. For additional information, refer to Roof Opening Panel Glass.
2. Detach the roof opening panel shield.
    1. Position the center of the roof opening panel shield upwards.
    2. Detach the roof opening panel shield guide pads.



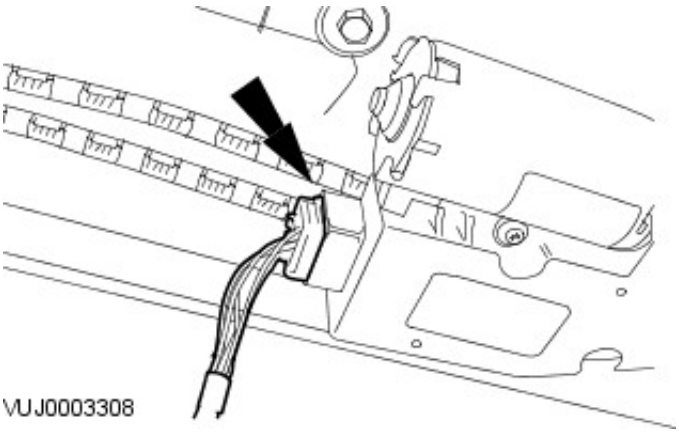
VUJ0003304

3. Remove the roof opening panel shield.
    - Rotate the roof opening panel shield.



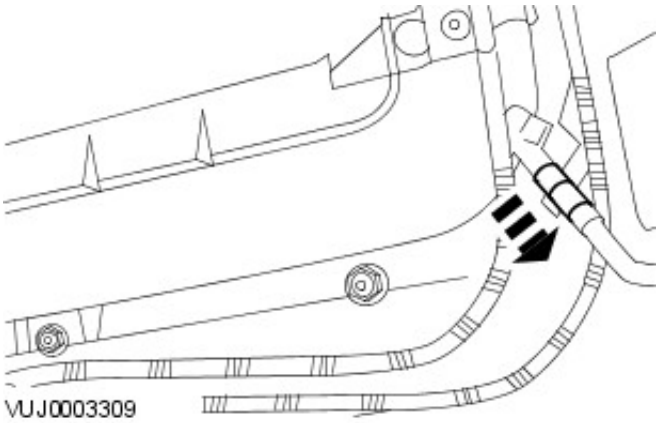
VUJ0003305

4. Remove the headliner. For additional information refer to Section 501-05 Interior Trim and Ornamentation.
5. Disconnect the roof opening panel motor electrical connector.



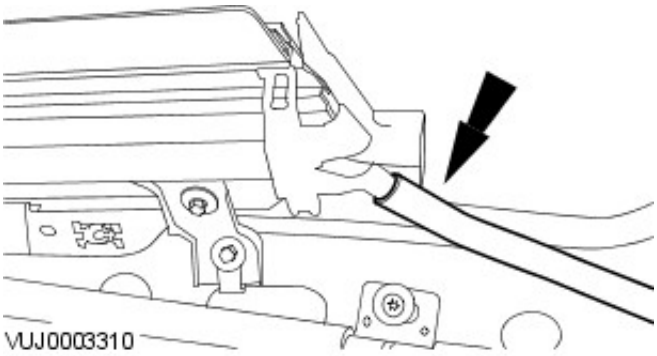
VUJ0003308

6. Detach the roof opening panel front drain hoses.
    - Right-hand side shown, left-hand side similar.

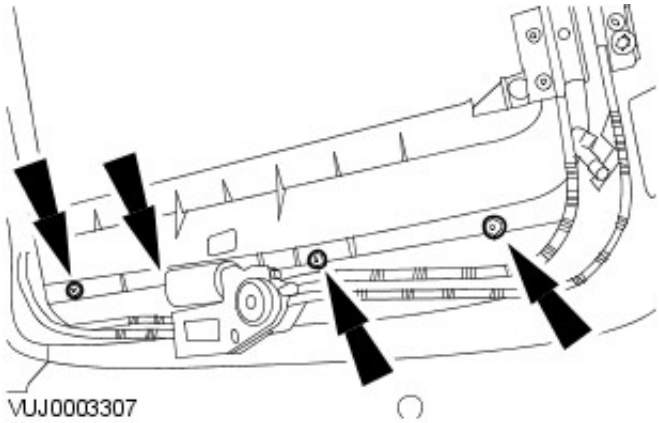


7. Detach the roof opening panel rear drain hoses.

- Right-hand side shown, left-hand side similar.

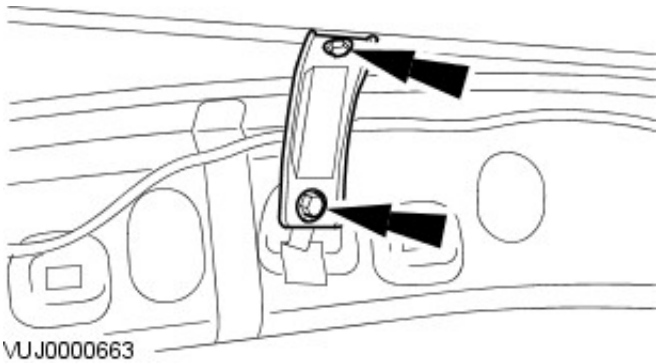


8. Detach the roof opening panel frame.



9. Remove the roof opening panel frame retaining brackets.

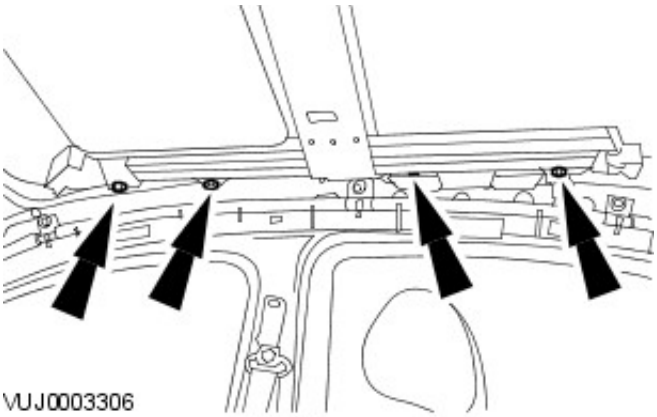
- Right-hand side shown, left-hand side similar.



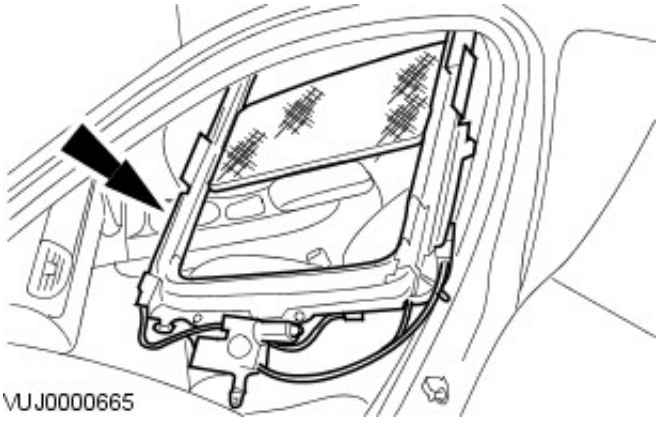
10. CAUTION: Take care to support roof opening panel frame as final bolts are removed.

Detach the roof opening panel frame.

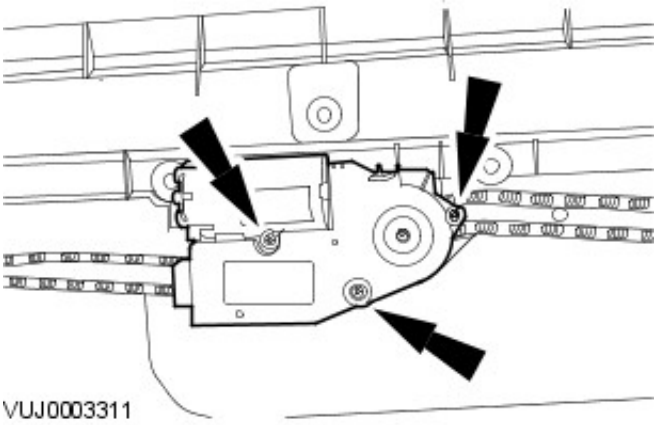
- Right-hand side shown, left-hand side similar.


VUJ0003306

11. Remove the roof opening panel frame.

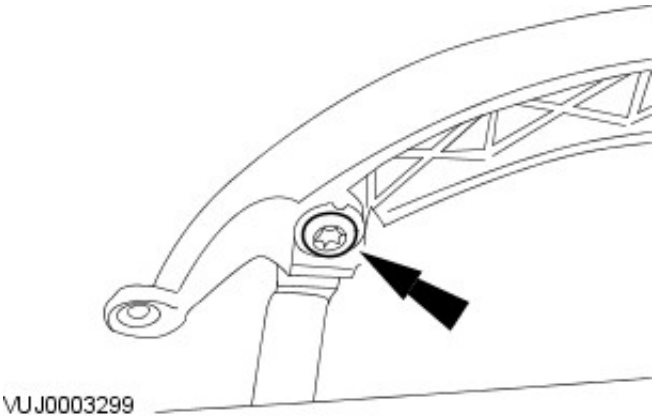

VUJ0000665

12. Remove the roof opening panel motor.


VUJ0003311

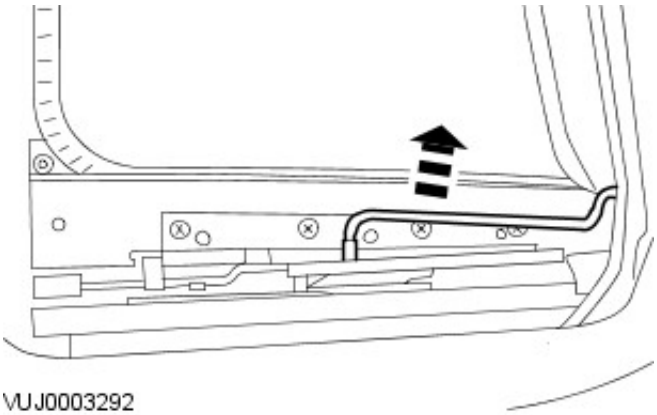
13. Remove the air deflector.

- Right-hand side shown, left-hand side similar.

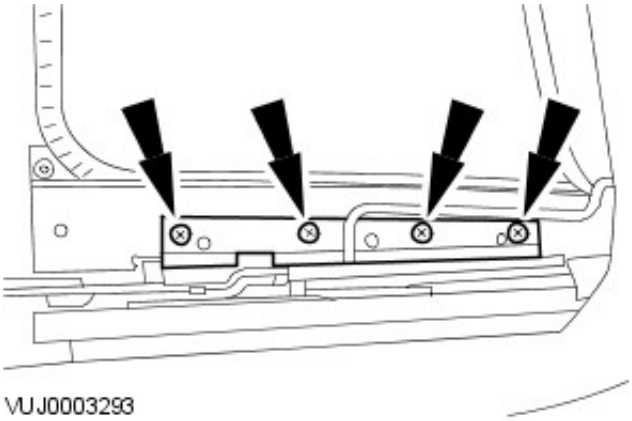

VUJ0003299

14. Detach the control arms.

- Right-hand side shown, left-hand side similar.



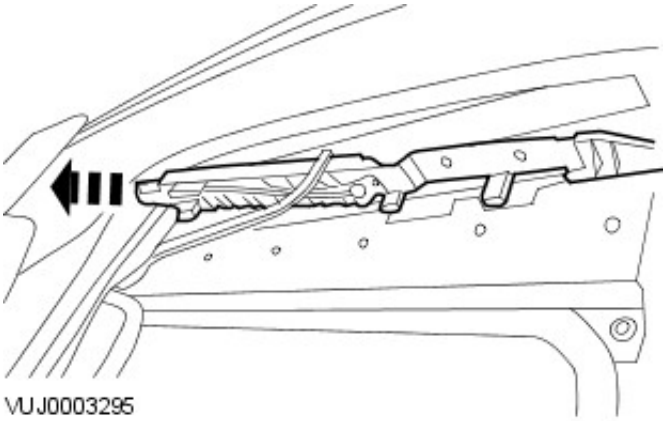
VUJ0003292



VUJ0003293

15. Remove the lifter arm retaining plates.

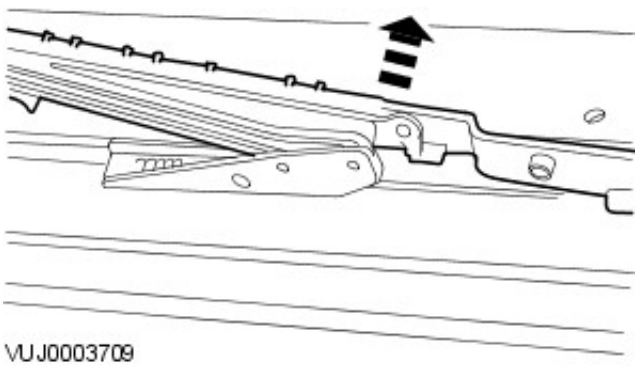
- Right-hand side shown, left-hand side similar.



VUJ0003295

16. Detach the lifter arms.

- Right-hand side shown, left-hand side similar.



VUJ0003709

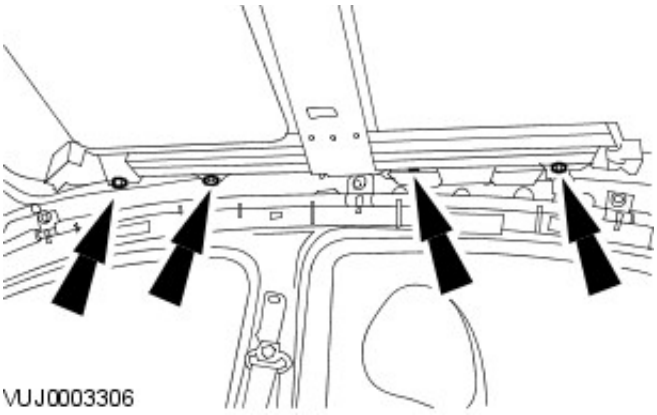
17. Remove the lifter arms.

- Right-hand side shown, left-hand side similar.

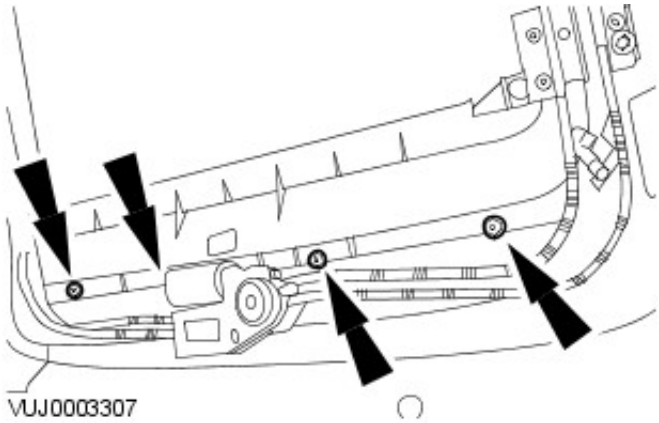
Installation

1. To install, reverse the removal procedure.

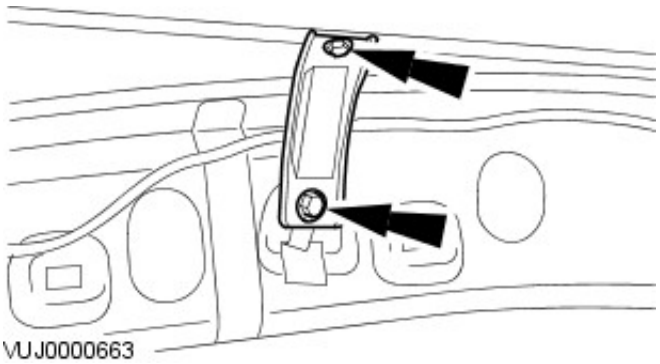
- Tighten to 9 Nm.


VUJ0003306

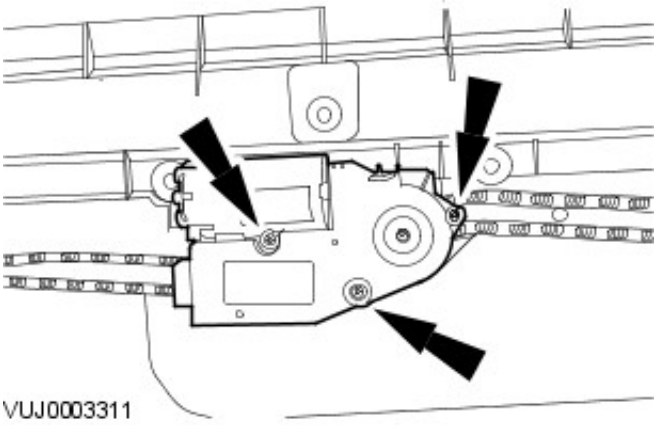
2. Tighten to 9 Nm.


VUJ0003307

3. Tighten to 9 Nm.


VUJ0000663

4. Tighten to 3 Nm.


VUJ0003311

5. CAUTION: If motor oscillation is detected, loosen the motor screws, operate the roof opening panel, then retighten the motor screws. If necessary repeat this procedure.

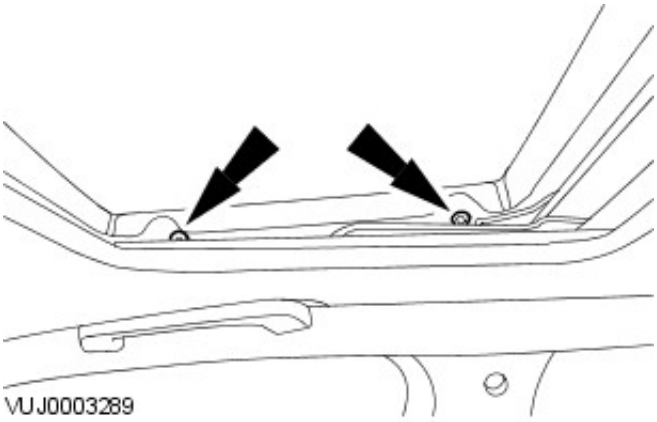
Syncronize the roof opening panel motor. Refer to Motor Synchronization—Calibration.

6. Check, and if necessary, adjust the roof opening panel alignment. For additional information, refer to Roof Opening Panel Alignment.

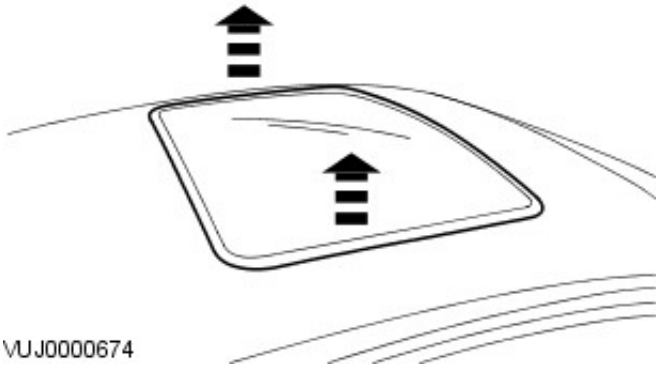
Roof Opening Panel - Roof Opening Panel Glass
Removal and Installation

Removal

• NOTE: Make sure the roof opening panel glass is in the closed position.

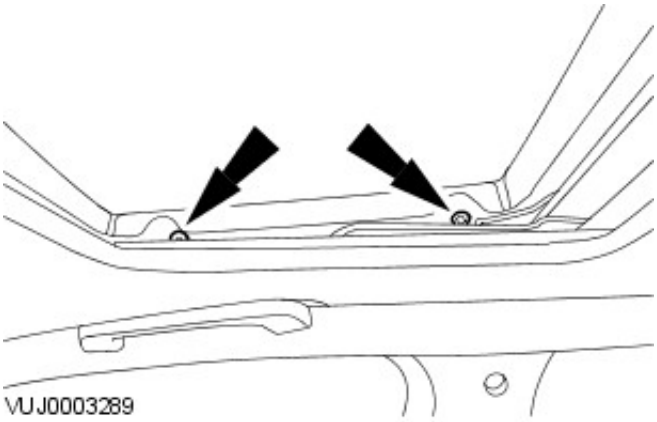


1. Remove the roof opening panel glass screws.



2. Remove the roof opening panel glass.

Installation



1. To install, reverse the removal procedure.

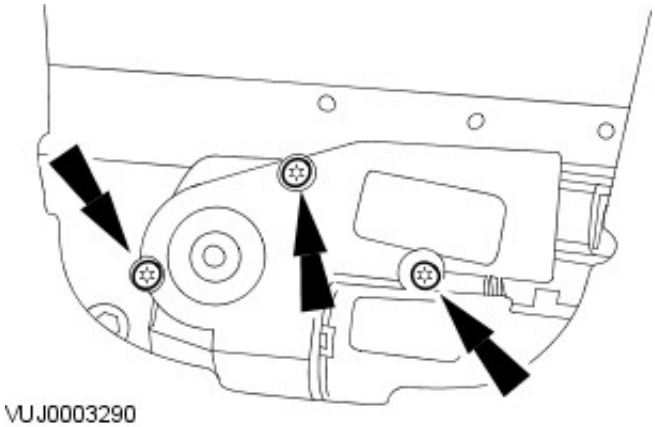
- Tighten to 3 Nm.

2. Check, and if necessary, adjust the roof opening panel alignment. For additional information, refer to Roof Opening Panel Alignment.

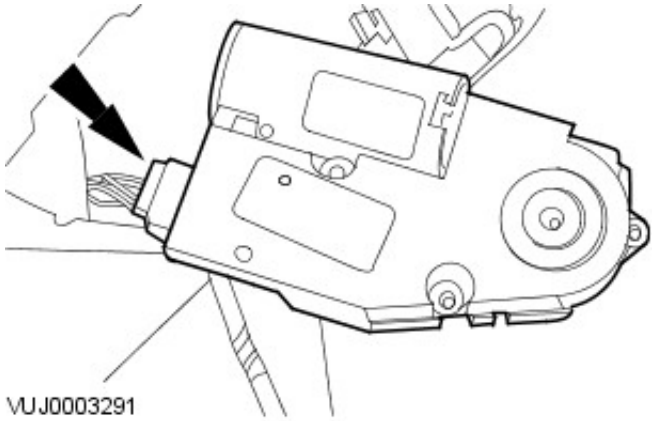
Roof Opening Panel - Roof Opening Panel Motor
Removal and Installation

Removal

1. Remove the overhead console. For additional information, refer to Section 501-12 Instrument Panel and Console.
2. Detach the roof opening panel motor.


VUJ0003290

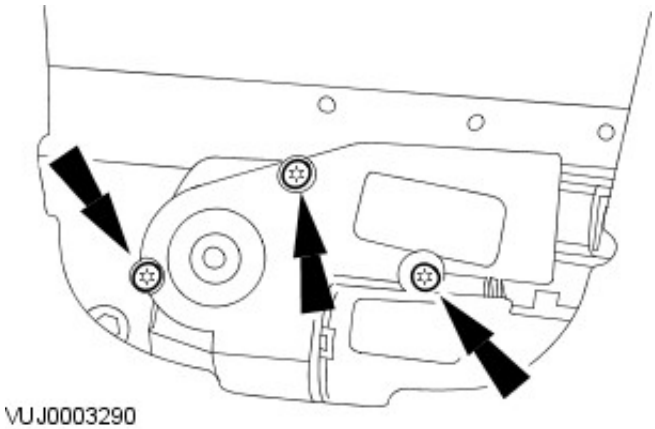
3. Remove the roof opening panel motor.
   - Disconnect the electrical connector.


VUJ0003291

Installation

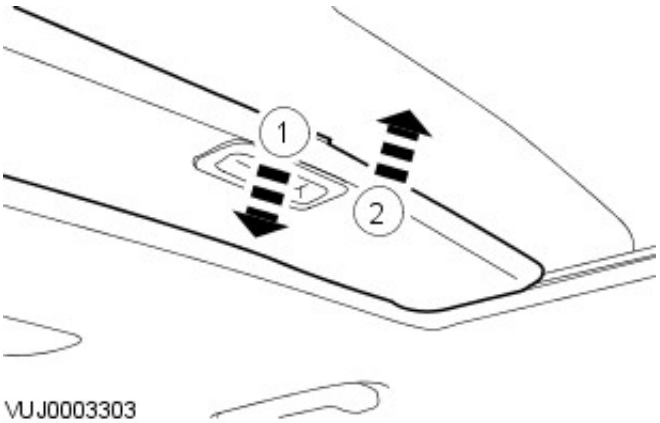
1. CAUTION: If motor oscillation is detected, loosen the motor screws, operate the roof opening panel, then retighten the motor screws. If necessary repeat this procedure.

   Syncronize the roof opening panel motor. Refer to Motor Synchronization—Calibration.
2. To install, reverse the removal procedure.
   - Tighten to 3 Nm.


VUJ0003290

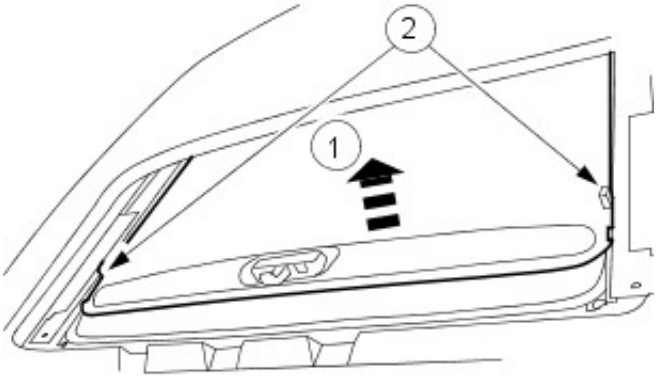
Roof Opening Panel - Roof Opening Panel Shield
Removal and Installation

Removal



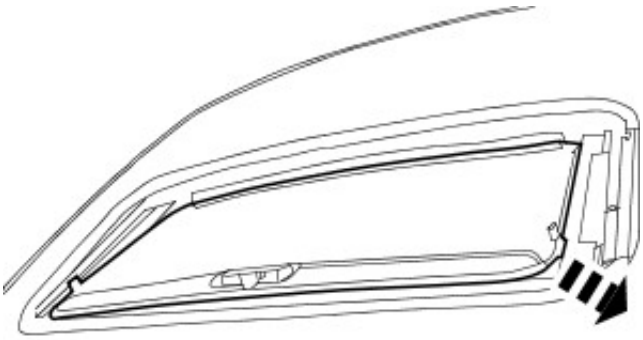
VUJ0003303

1. Partially open the roof opening panel.
2. Detach the front of the roof opening panel shield.
    1. Position the center of the roof opening panel shield downwards.
    2. Position the roof opening panel shield forwards.



VUJ0003304

3. Fully open the roof opening panel.
4. Detach the roof opening panel shield.
    1. Position the center of the roof opening panel shield upwards.
    2. Detach the roof opening panel shield guide pads.



VUJ0003305

5. Remove the roof opening panel shield.
    - Rotate the roof opening panel shield.

Installation

1. CAUTION: To prevent damage to the roof opening panel shield use a steel rule to compress the guide pads.

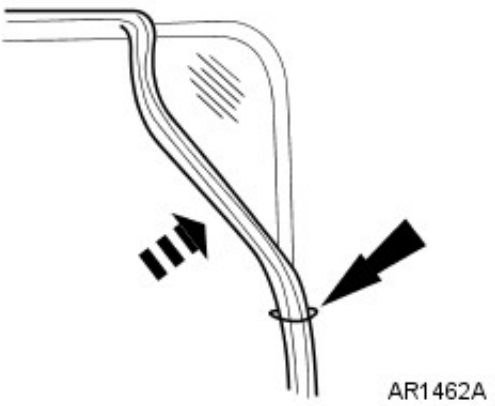
To install reverse the removal procedure.

Roof Opening Panel - Roof Opening Panel Weatherstrip
Removal and Installation

Removal

1. Remove the roof opening panel glass. For additional information, refer to Roof Opening Panel Glass.
2. Remove the roof opening panel glass seal.

Installation



1. CAUTION: Make sure the roof opening panel glass seal is fully seated in the glass channel.

To install, reverse the removal procedure.

- Position the roof opening panel seal seam in the center of the rear facing side of the roof opening glass.

Bumpers -

Torque Specifications

Description	Nm	lb-ft	lb-in
Front bumper cover upper securing bolts	7	5	-
Front bumper cover side securing bolts	7	5	-
Rear bumper cover side securing nuts	7	5	-
Rear bumper cover securing nuts	7	5	-
Rear bumper securing bolts	17	13	-

Bumpers - Bumpers

Description and Operation

This vehicle is fitted with a chassis mounted aluminium beam and is covered by a one piece color co-ordinated front bumper cover which incorporates the energy absorbing foam. The bumper construction includes air management and brake cooling ducts. The fog lamps are mounted via brackets to the bumper covers. Chrome or body color inserts, side marker lights/reflex (Federal specification vehicles only), and a color co-ordinated removable cover for towing eye access are fitted as standard. Telescopic headlamp washers are optional. The color co-ordinated parking aid sensors are mounted through the bumper cover and are optional with the front parking aid system.

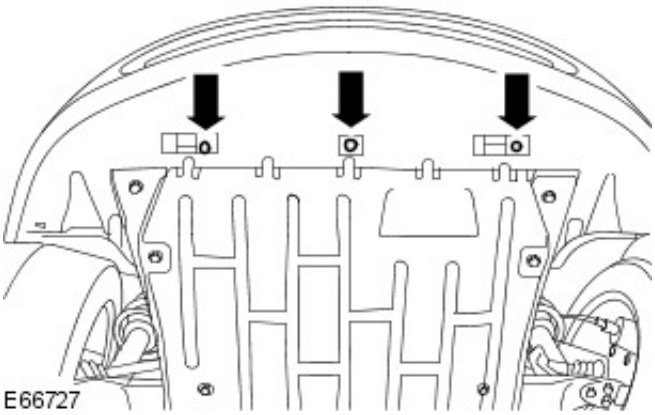
The rear bumper beam is of aluminium construction and is covered by a two piece colour co-ordinated rear bumper cover which incorporates the energy absorbing foam and lower black out panel. Chrome or body color inserts are fitted as standard, and on 4-door vehicles side marker lights/reflex are fitted as standard to Federal specification vehicles. The parking aid sensors are mounted in the lower black out panel and are optional with the parking aid system.

Bumpers - Front Bumper Cover
Removal and Installation

Removal

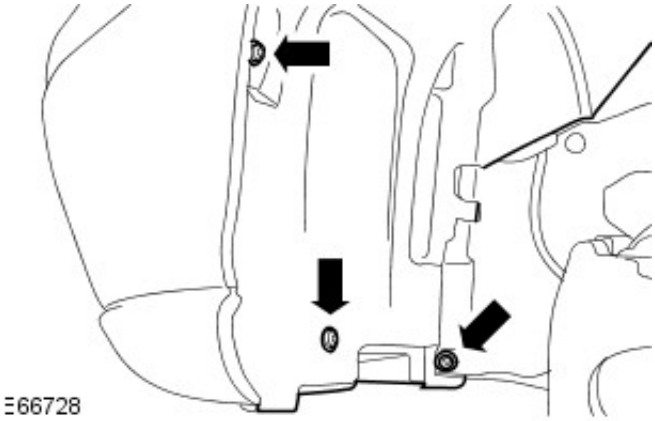
All vehicles

1. Remove the radiator splash shield retaining bolts.

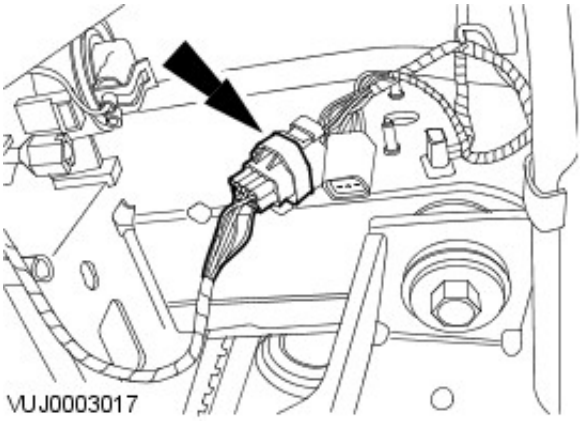


2. NOTE: Left-hand shown, right-hand similar.

Detach the wheel arch liner.

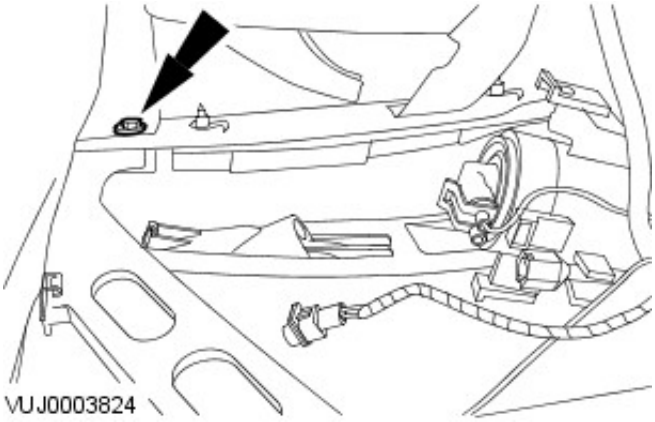


3. Disconnect the bumper wiring harness electrical connector.

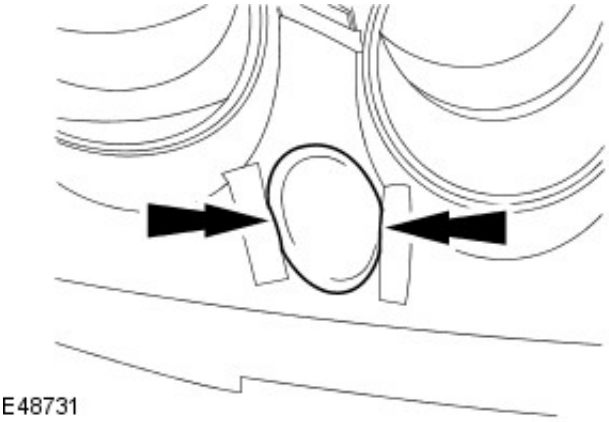


4. NOTE: Left-hand shown, right-hand similar.

Detach the bumper cover.

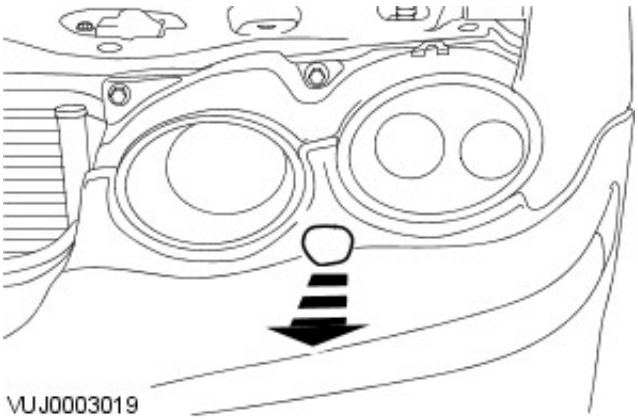


Vehicles with headlamp washers



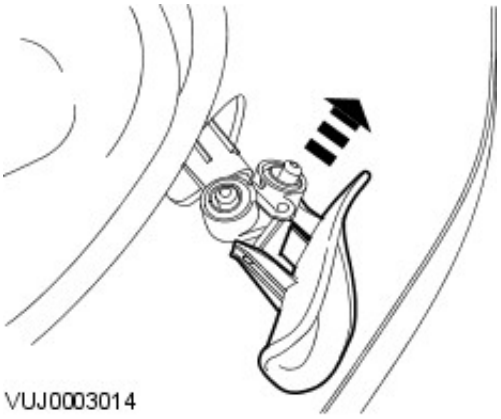
5. NOTE: Left-hand shown, right-hand similar.

Apply suitable tape to the bumper cover to prevent damage to the bumper cover.



6. NOTE: Left-hand shown, right-hand similar.

Reposition the headlamp washers to the fully open position.

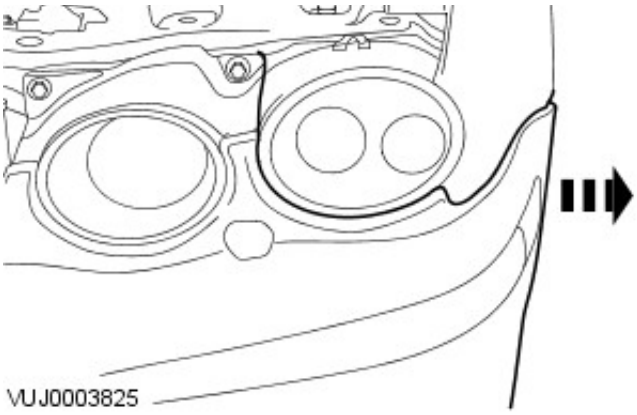


7. NOTE: Left-hand shown, right-hand similar.

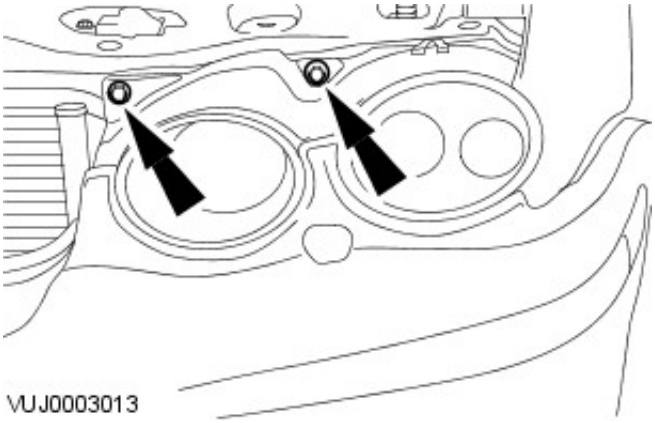
Remove the headlamp washer cover.

All vehicles

8. NOTE: Left-hand shown, right-hand similar.



Detach the side of the bumper cover from the retaining clips.



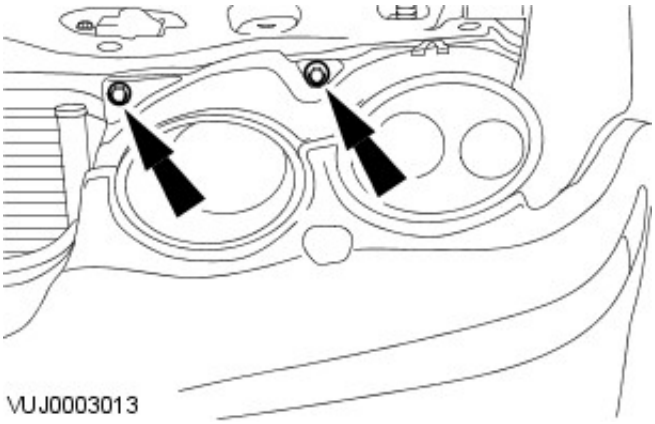
9. CAUTION: Make sure the bumper cover is supported before removing the securing bolts.

• NOTE: Left-hand shown, right-hand similar.

Remove the bumper cover.

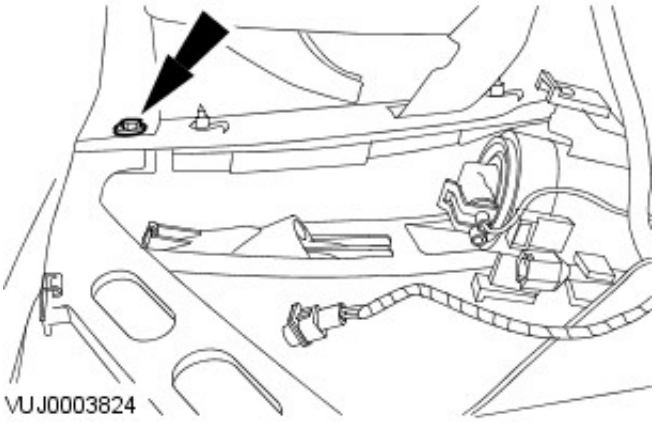
- Remove the bumper cover securing bolts.

Installation



1. To install, reverse the removal procedure.

- Tighten to 7 Nm.

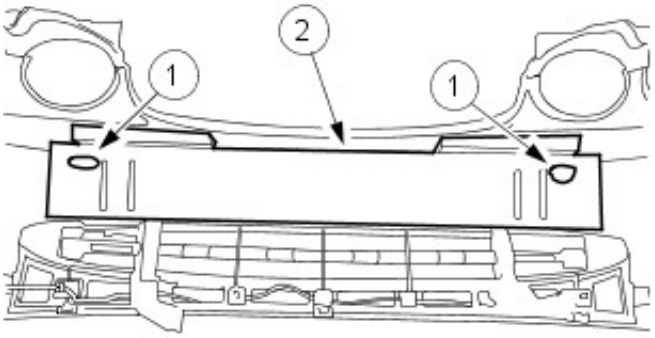


2. Tighten to 7 Nm.

Bumpers - Front Bumper Cover Insert
Removal and Installation

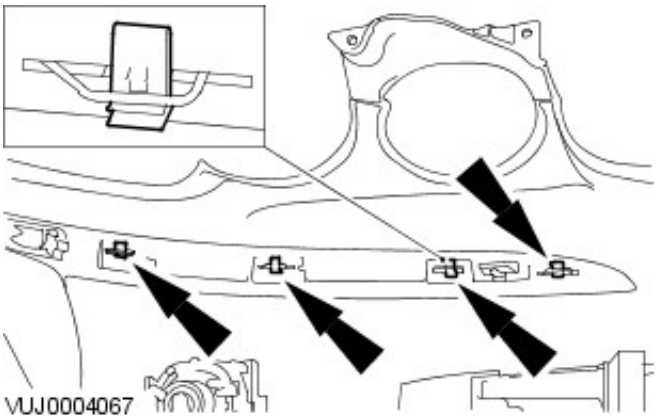
Removal

1. Remove the front bumper cover. For additional information, refer toSection 501-19 Bumpers.
2. Remove the energy absorbing foam.
    1. Remove the energy absorbing foam retaining clips.
    2. Remove the energy absorbing foam.



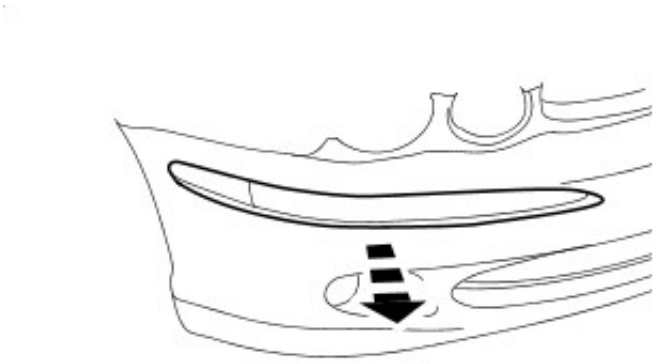
VUJ0004068

3. Remove the bumper insert retaining clips.



VUJ0004067

4. Using a suitable thin lever to avoid damaging the paintwork, progressively ease the moulding away from the front bumper.



VUJ0004069

Installation

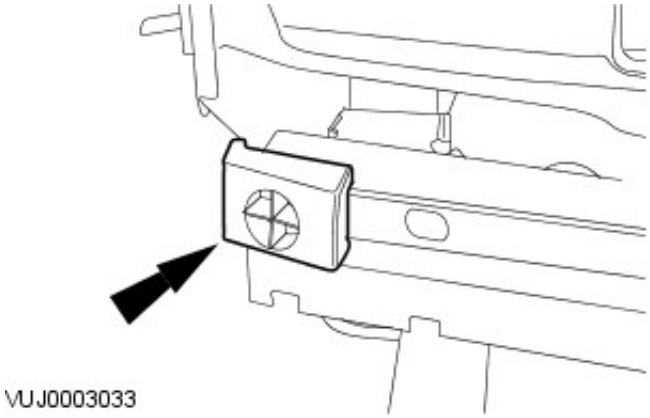
1. To install, reverse the removal procedure.

Bumpers - Rear Bumper4-Door

Removal and Installation

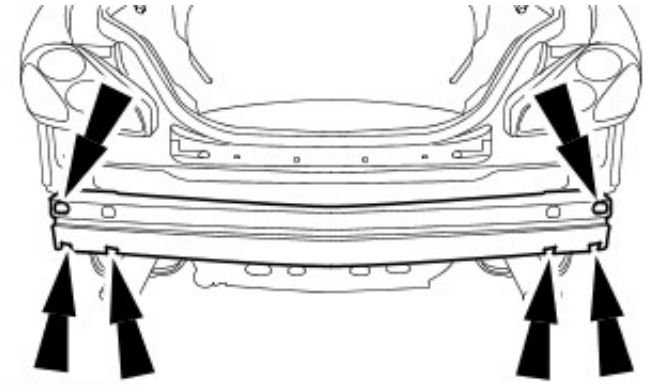
Removal

1. Remove the rear bumper cover. For additional information, refer to Bumper Cover—Rear .
2. Remove the bumper insulator.



VUJ0003033

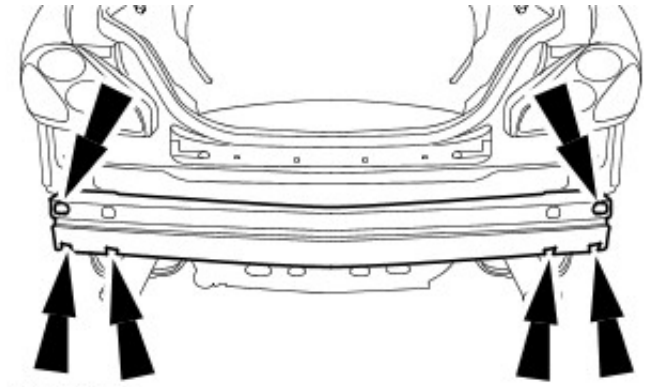
3. Remove the rear bumper.



VUJ0003034

Installation

1. To install, reverse the removal procedure.
   - Tighten to 17 Nm,



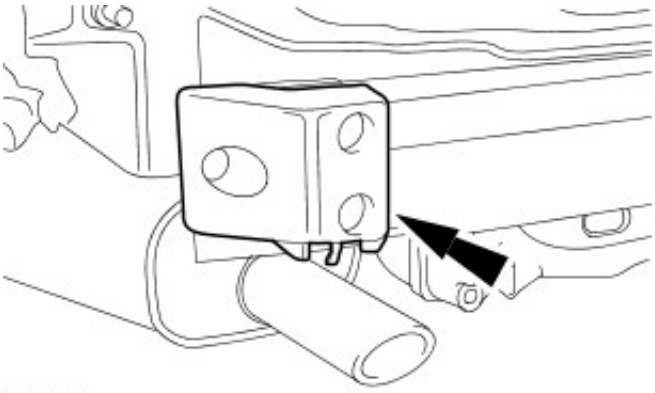
VUJ0003034

Bumpers - Rear BumperWagon
Removal and Installation

Removal

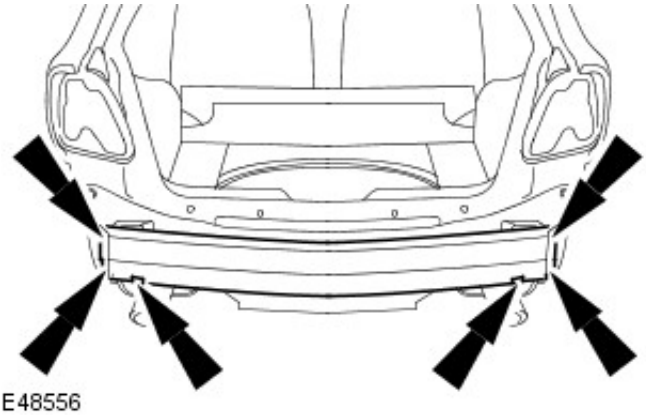
1. Remove the rear bumper cover.
   For additional information, refer to: Rear Bumper Cover - Wagon (501-19 Bumpers, Removal and Installation).
2. NOTE: Left-hand shown, right-hand similar.

   Remove the rear bumper insulators.



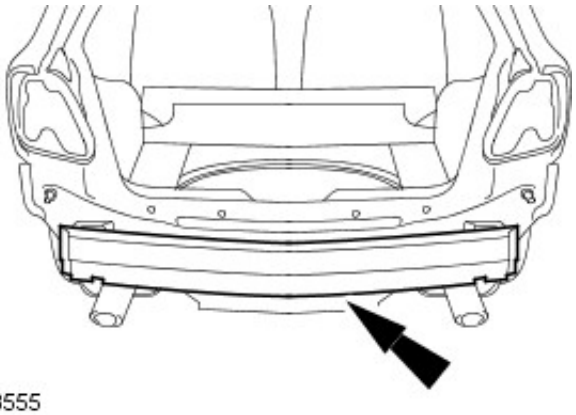
E48557

3. Remove the rear bumper retaining bolts.



E48556

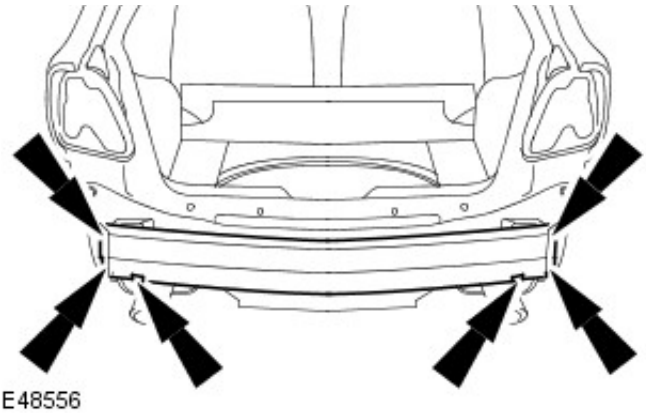
4. Remove the rear bumper.



E48555

Installation

1. To install, reverse the removal procedure.
   - Tighten to 17 Nm,



E48556

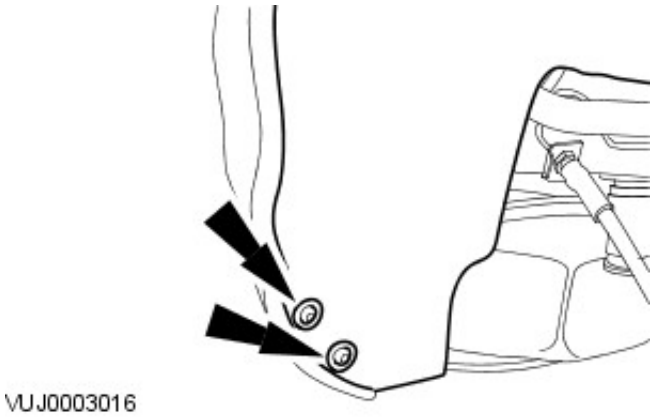
Bumpers - Rear Bumper Cover4-Door

Removal and Installation

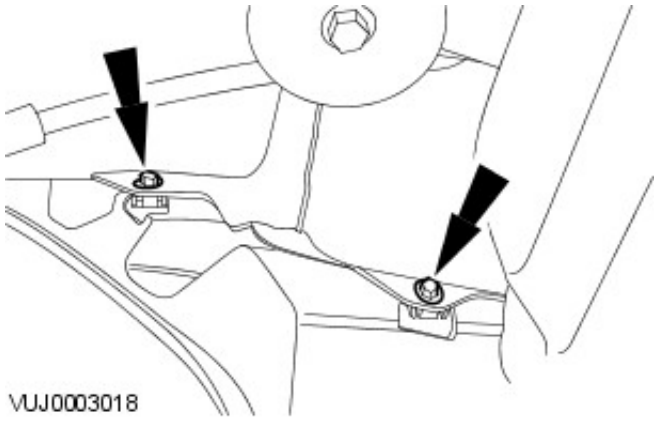
Removal

All Vehicles

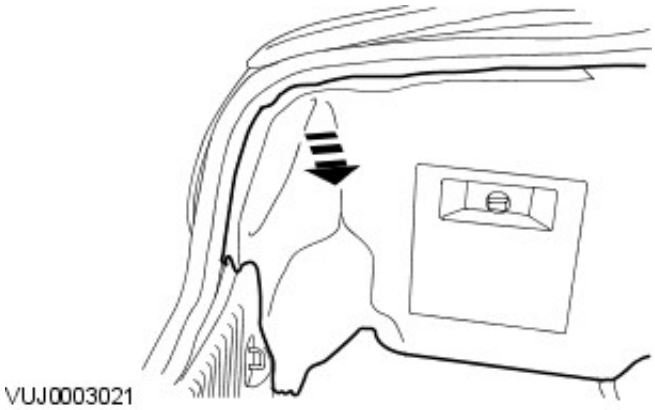
1. Raise and support the vehicle. For additional information, refer to Section 100-02 Jacking and Lifting.
2. Detach the rear wheel arch liner.
   - Right-hand side shown, left-hand side similar.


VUJ0003016

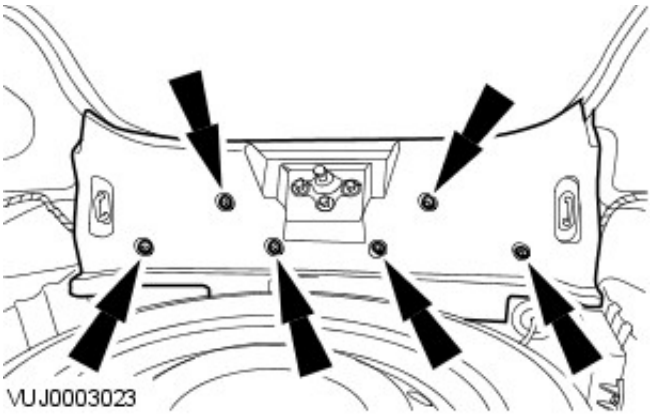
3. Detach the side of the bumper cover.
   - Right-hand side shown, left-hand side similar.


VUJ0003018

4. Detach the boot liner.
   - Right-hand side shown, left-hand side similar.


VUJ0003021

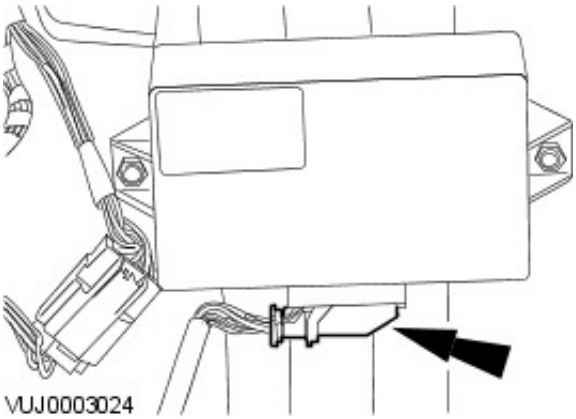
5. Remove the luggage compartment rear trim panel.



6. Remove the spare wheel.

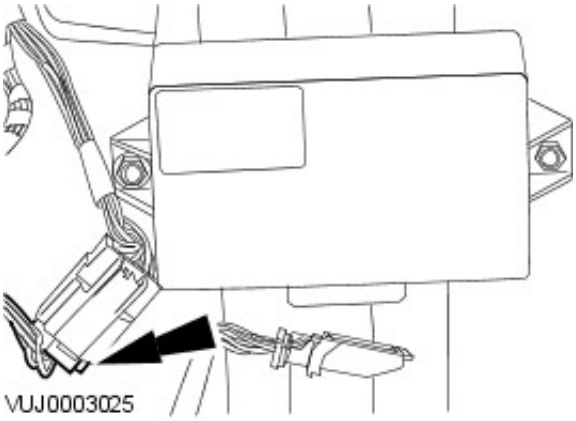
Vehicles with parking aid

7. Disconnect the electrical connector.

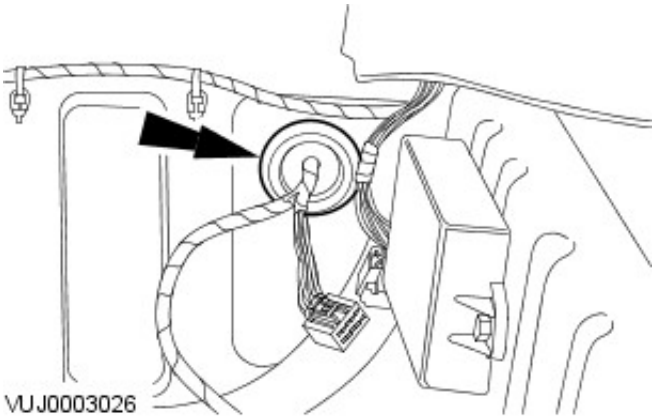


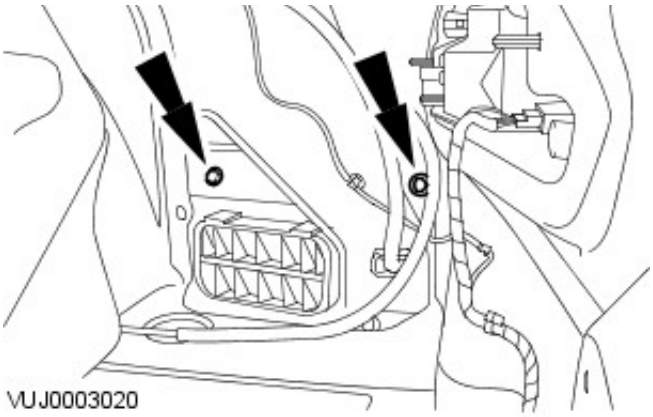
All vehicles

8. Disconnect the electrical connector.



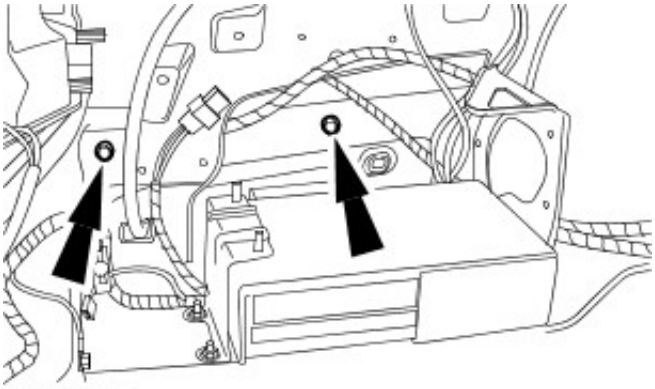
9. Detach the grommet.





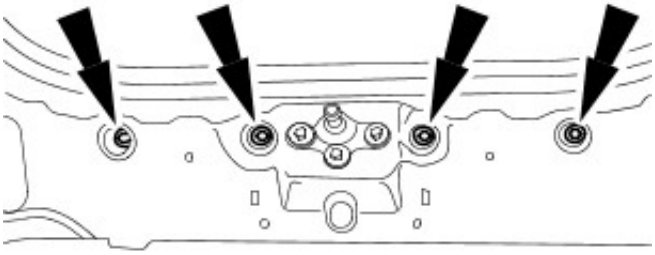
VUJ0003020

10. Detach the side of the bumper cover.



VUJ0003022

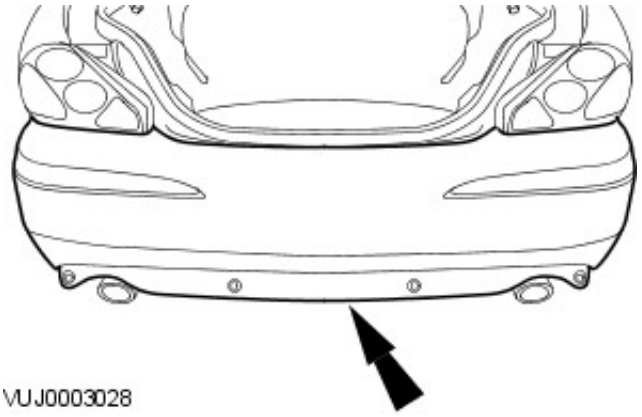
11. Detach the side of the bumper cover.



VUJ0003027

12. CAUTION: Make sure the bumper cover is supported before removing the securing nuts.

Remove the bumper cover securing nuts.



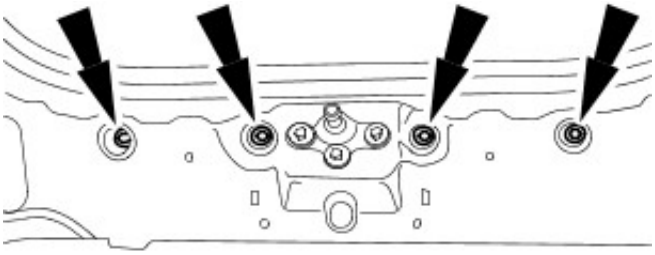
VUJ0003028

13. Remove the bumper cover.

Installation

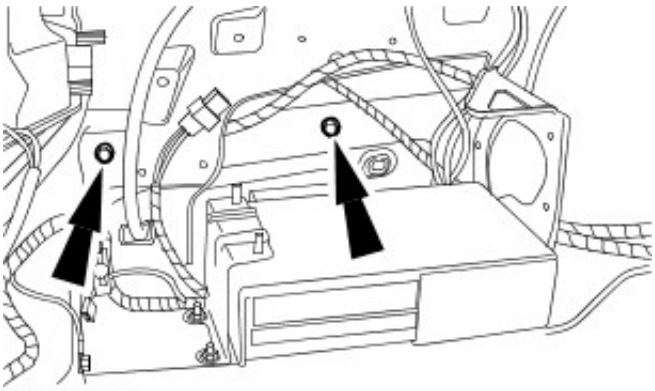
1. To install, reverse the removal procedure.

2. Tighten to 7 Nm.



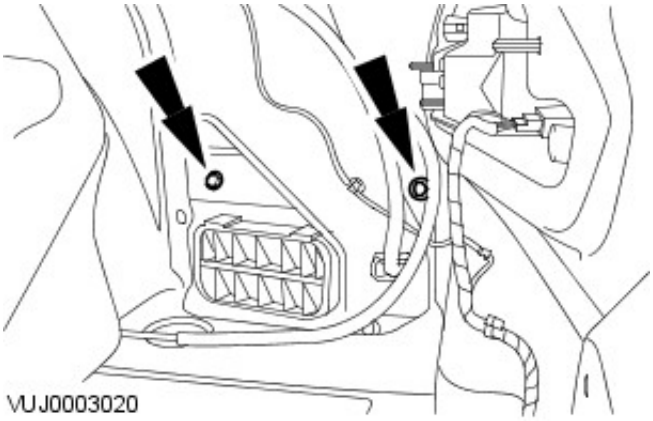
VUJ0003027

3. Tighten to 7 Nm.



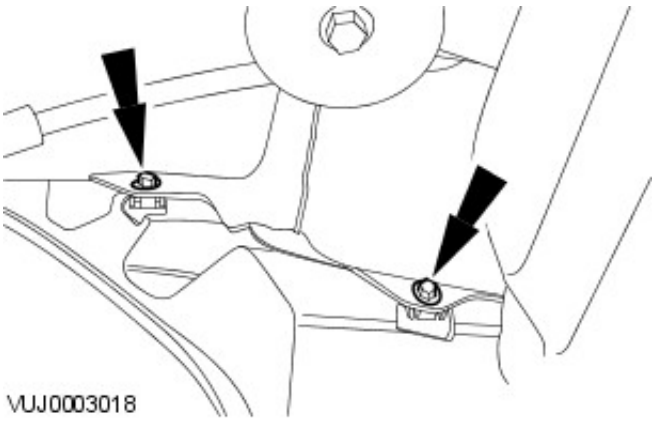
VUJ0003022

4. Tighten to 7 Nm.



VUJ0003020

5. Tighten to 7 Nm.



VUJ0003018

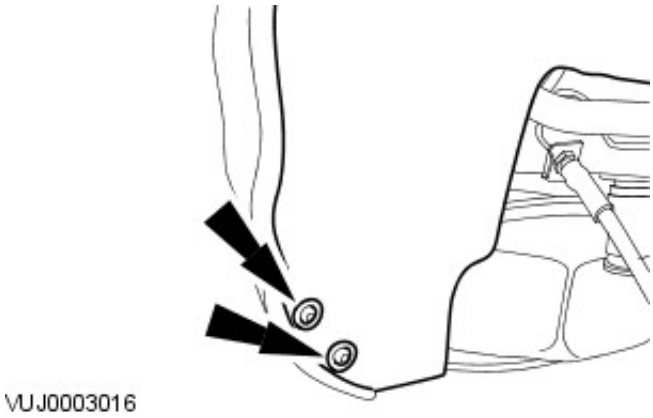
Bumpers - Rear Bumper CoverWagon
Removal and Installation

Removal

All Vehicles

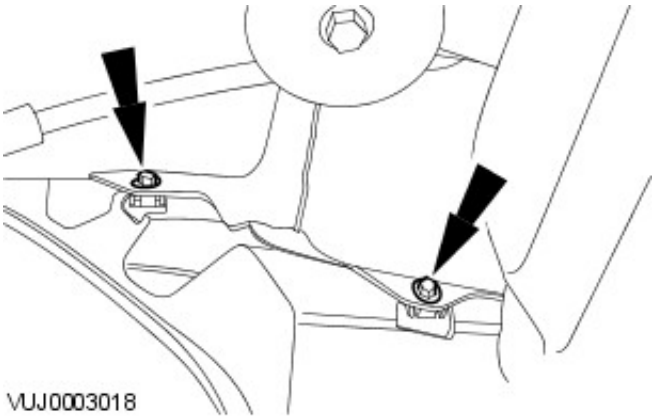
1. Raise and support the vehicle.
   For additional information, refer to: Lifting (100-02 Jacking and Lifting, Description and Operation).
2. NOTE: Right-hand shown, left-hand similar.

   Detach both rear fender splash shields.

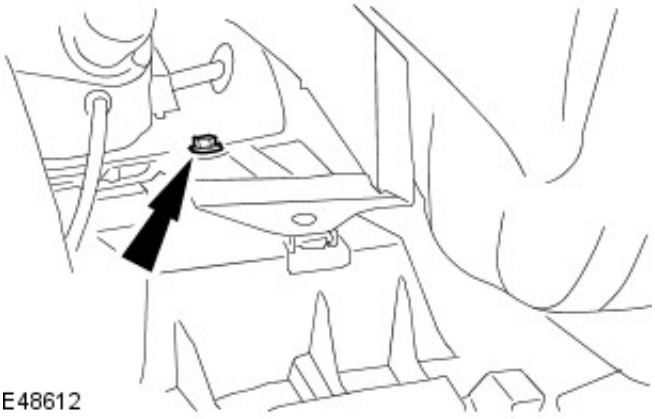

VUJ0003016

3. NOTE: Right-hand shown, left-hand similar.

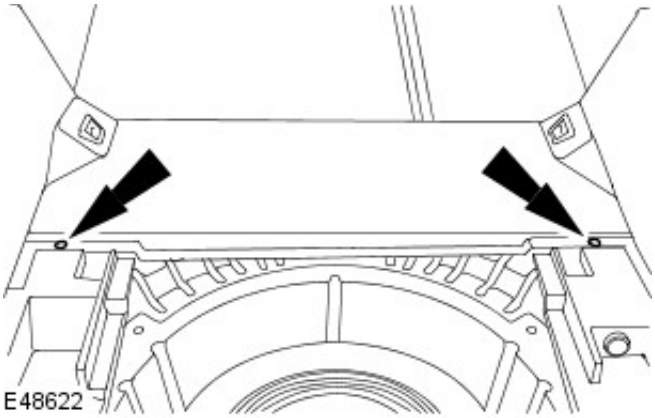
   Detach the bumper cover.


VUJ0003018

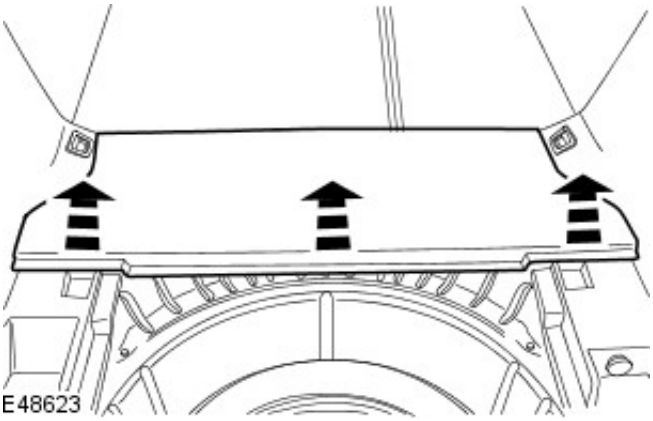
4. Detach the right-hand bumper cover.


E48612

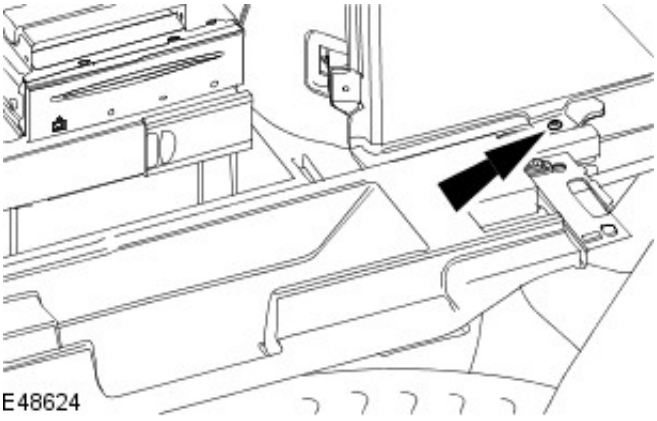
5. Remove the rear lamp assemblies.
   For additional information, refer to: Rear Lamp Assembly - Wagon (417-01 Exterior Lighting, Removal and Installation).
6. Remove the loadspace floor covering retaining screws.



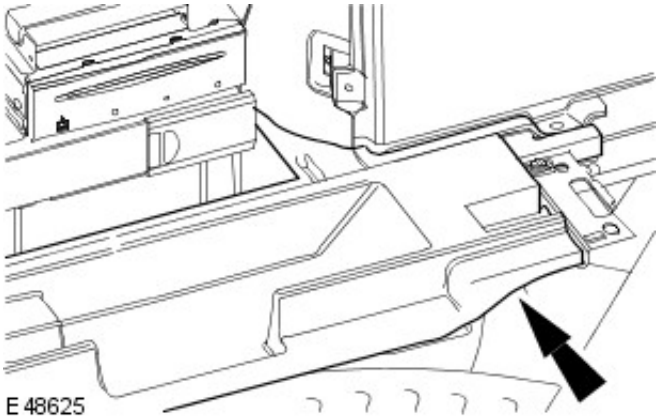
7. Detach the load space floor covering.



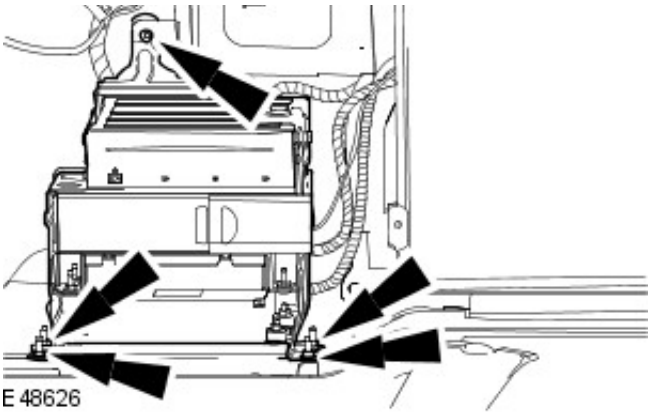
8. Remove the left-hand loadspace stowage compartment retaining screw.



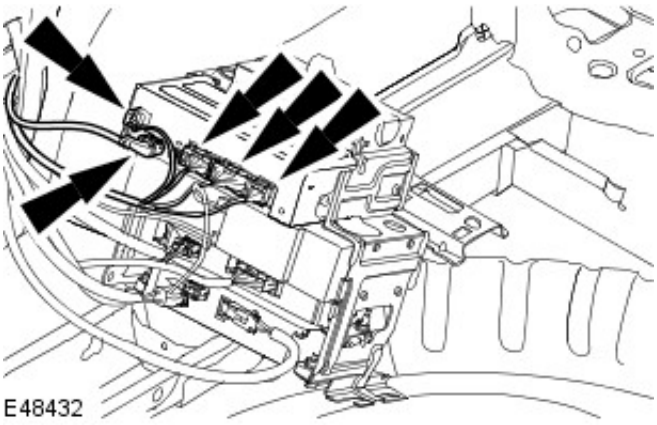
9. Remove the left-hand loadspace stowage compartment.



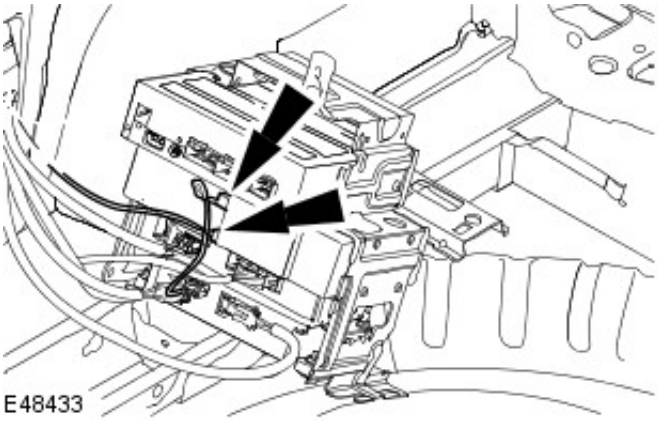
10. Detach the module retaining bracket.


E48626

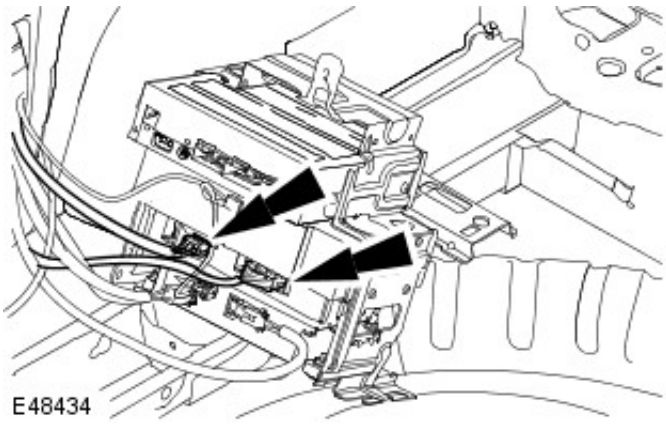
11. Disconnect the navigation system module electrical connectors (if equipped).


E48432

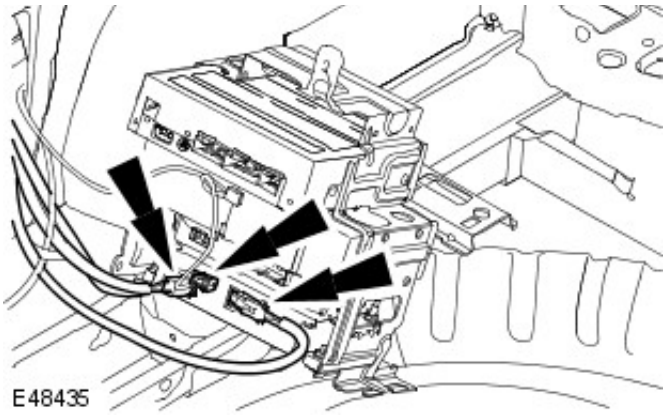
12. Disconnect the compact disc (CD) changer electrical connectors (if equipped).


E48433

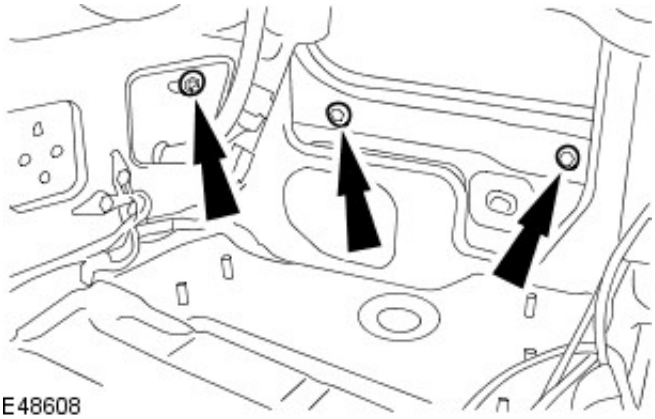
13. Disconnect the voice activated control (VACM) module electrical connectors (if equipped).


E48434

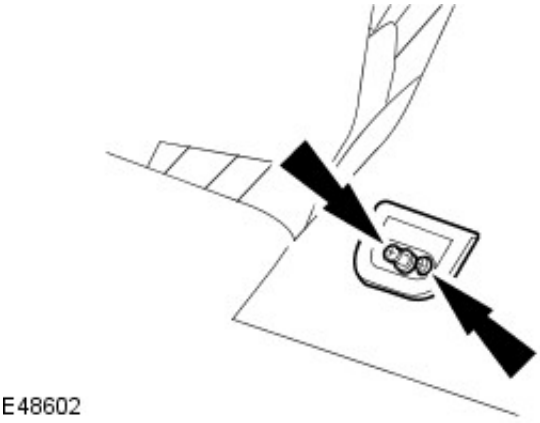
14. Disconnect the cellular phone module electrical connectors (if equipped).


E48435

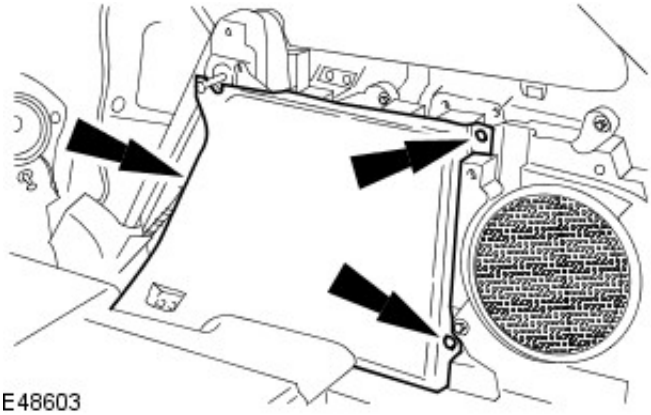
15. Detach the bumper cover.


E48608

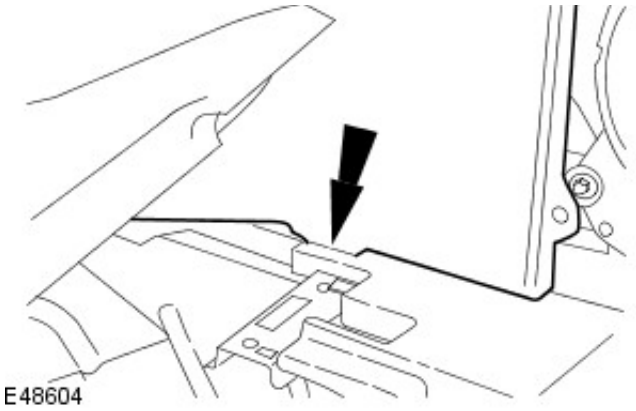
16. Remove the right-hand front retaining hook.


E48602

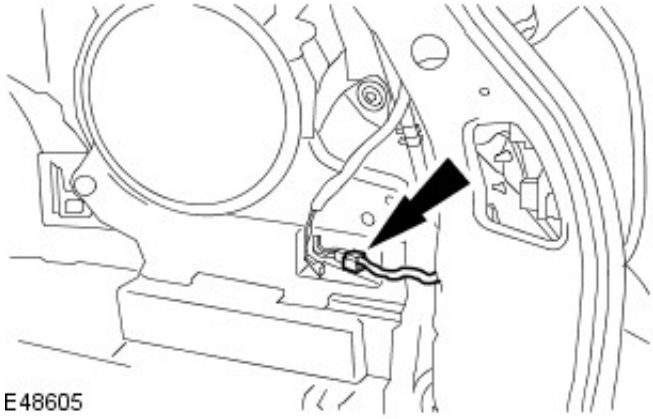
17. Detach the right-hand loadspace side trim panel.


E48603

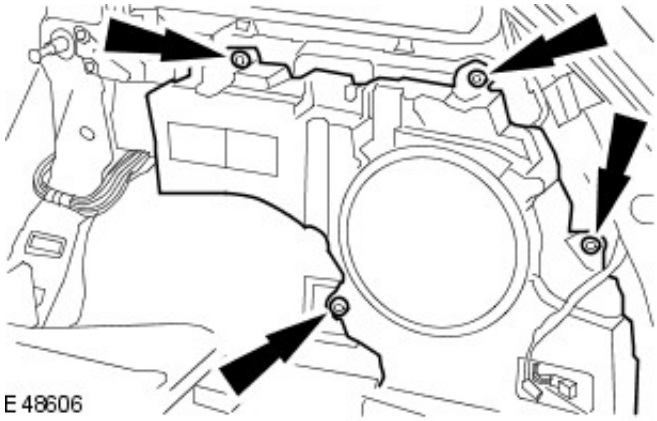
18. Remove the right-hand loadspace side trim panel.


E48604

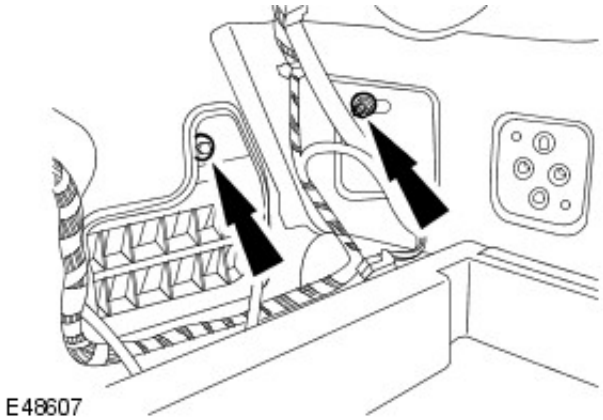
19. Disconnect the subwoofer enclosure electrical connector (if equipped) .


E48605

20. Remove the subwoofer enclosure (if equipped).

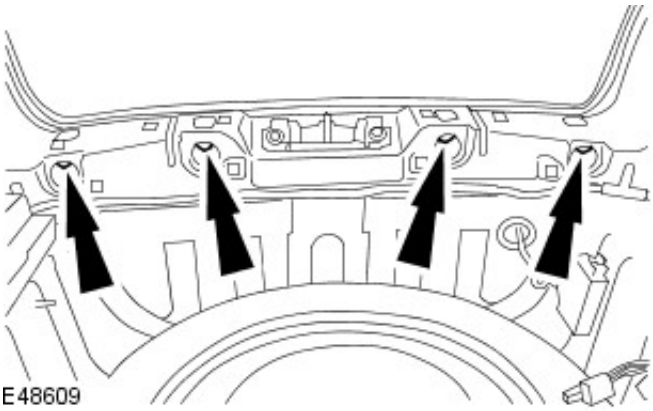

E48606

21. Detach the bumper cover.


E48607

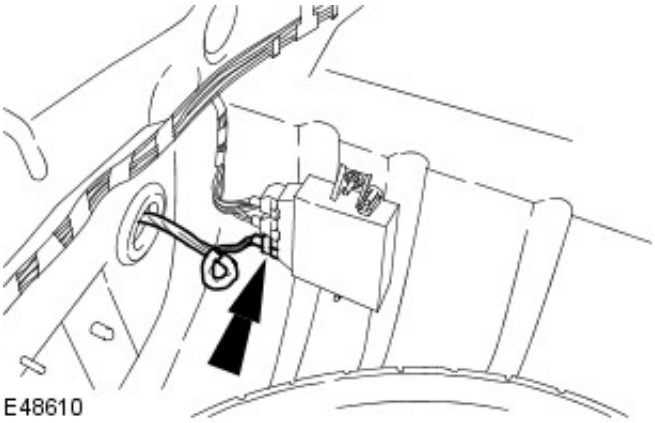
22. CAUTION: Make sure the bumper cover is supported before removing the retaining nuts.

Remove the bumper cover retaining nuts.

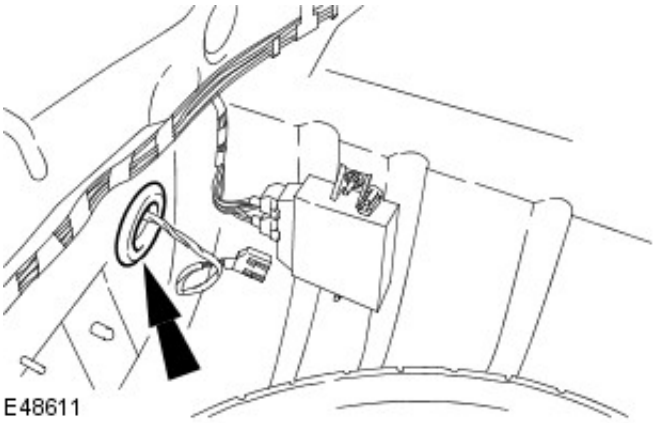

E48609

Vehicles with parking aid

23. Disconnect the electrical connector.

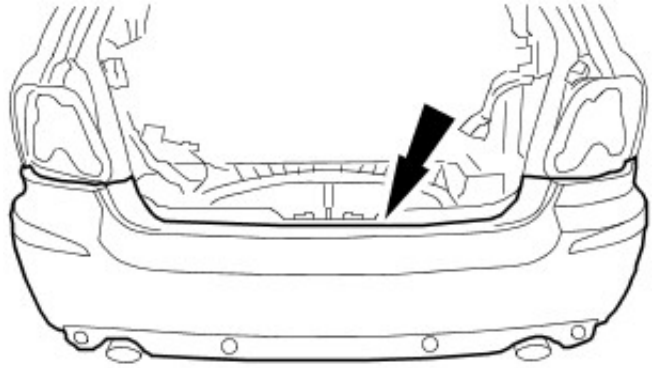

E48610

24. Detach the grommet.


E48611

All vehicles

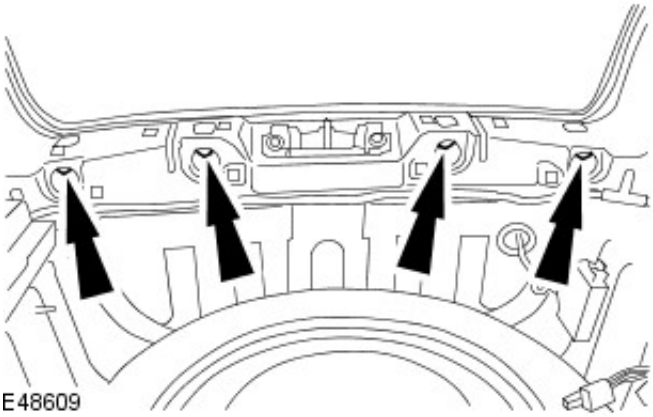
25. Remove the bumper cover.


E48613

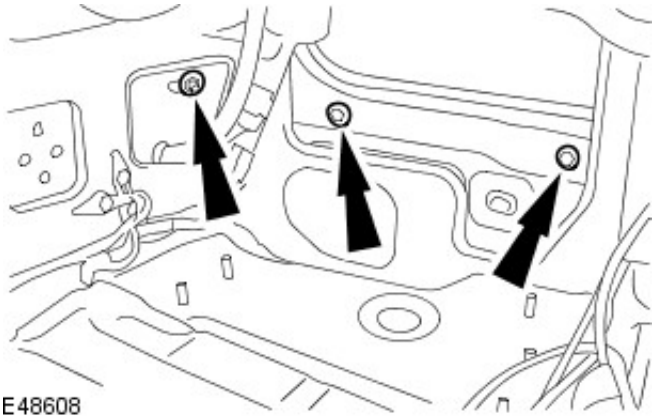
Installation

1. To install, reverse the removal procedure.

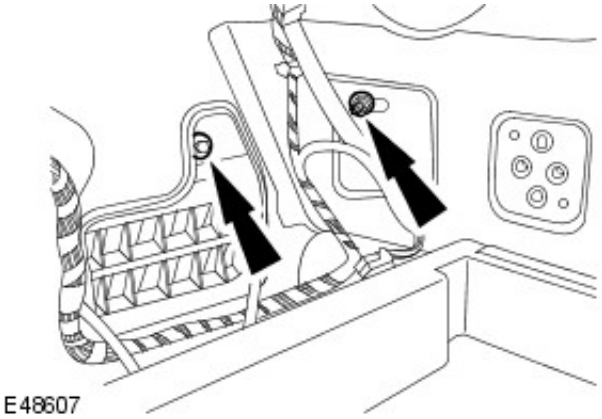
2. Tighten to 4 Nm.


E48609

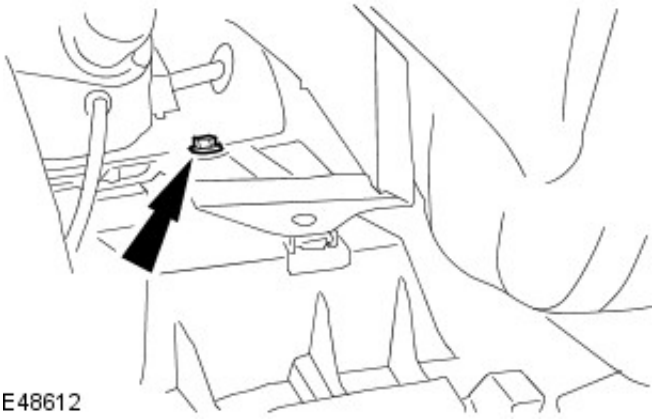
3. Tighten to 4 Nm.


E48608

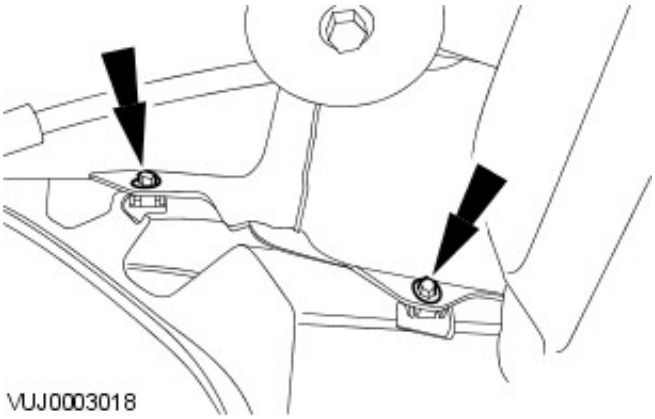
4. Tighten to 4 Nm.


E48607

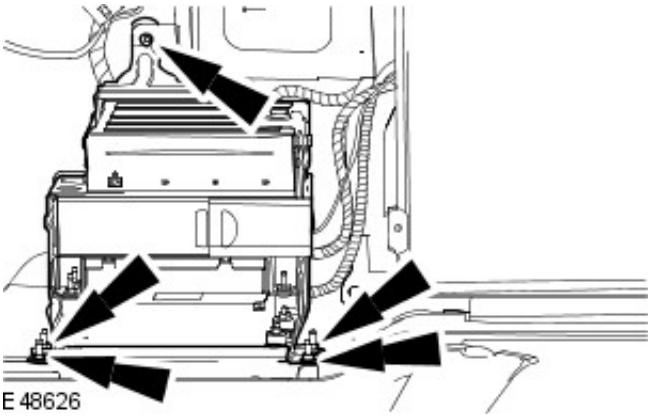
5. Tighten to 4 Nm.


E48612

6. Tighten to 4 Nm.



7. Tighten to 8 Nm.

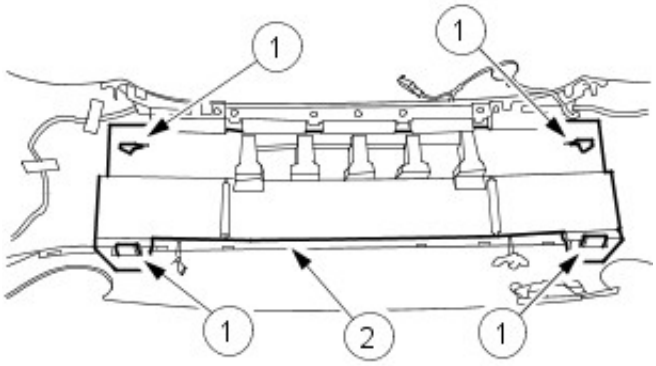


Bumpers - Rear Bumper Cover Insert4-Door

Removal and Installation

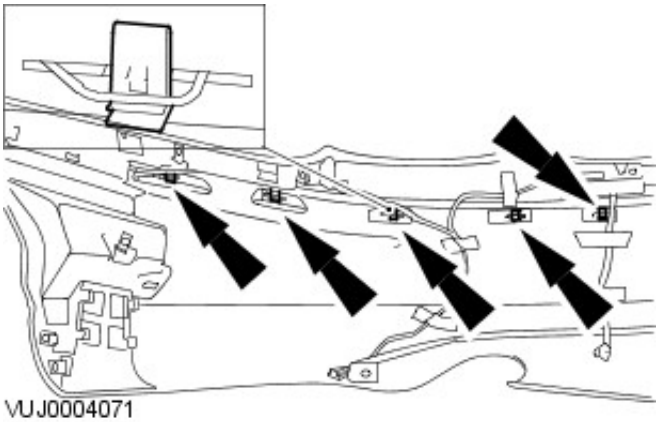
Removal

1. Remove the rear bumper cover. For additional information, refer toSection 501-19 Bumpers.
2. Remove the energy absorbing foam.
    1. Remove the energy absorbing foam retaining clips.
    2. Remove the energy absorbing foam.



VUJ0004070

3. Remove the bumper insert retaining clips.



VUJ0004071

4. Using a suitable thin lever to avoid damaging the paintwork, progressively ease the moulding away from the front bumper.

VUJ0004072

Installation

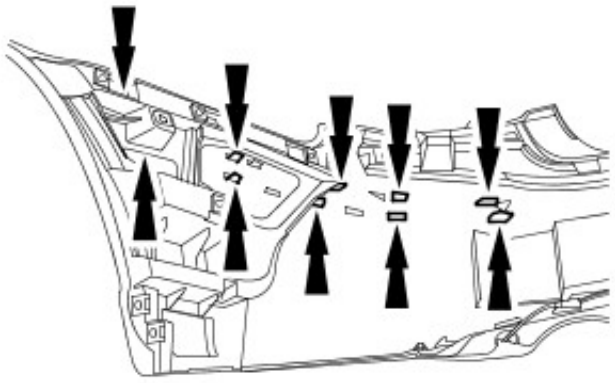
1. To install, reverse the removal procedure.

Bumpers - Rear Bumper Cover InsertWagon

Removal and Installation

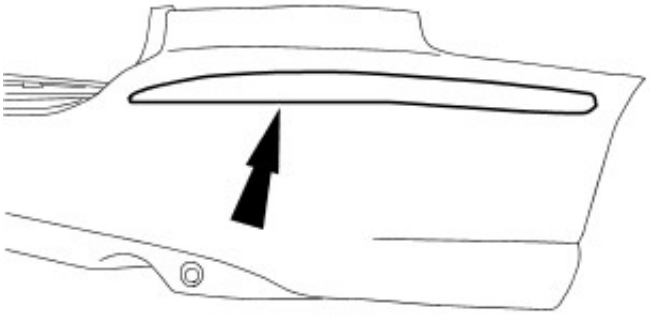
Removal

1. Remove the rear bumper cover.
   For additional information, refer to: Rear Bumper Cover - Wagon (501-19 Bumpers, Removal and Installation).
2. Detach the bumper cover insert.



E48667

3. Using a suitable thin lever to avoid damaging the paintwork, progressively ease the bumper cover insert away from the bumper cover.

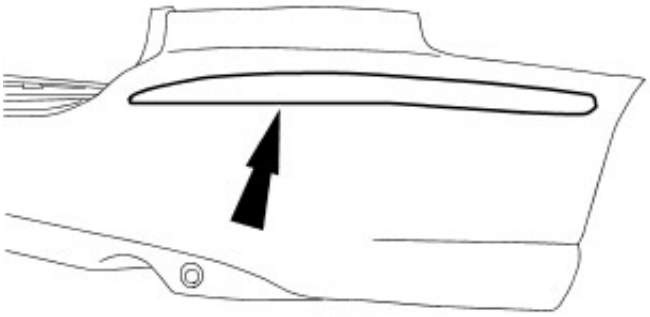


E48668

Installation

1. NOTE: Attach the bumper cover insert to the front of the bumper cover and install towards the rear.

   Install the bumper cover insert.



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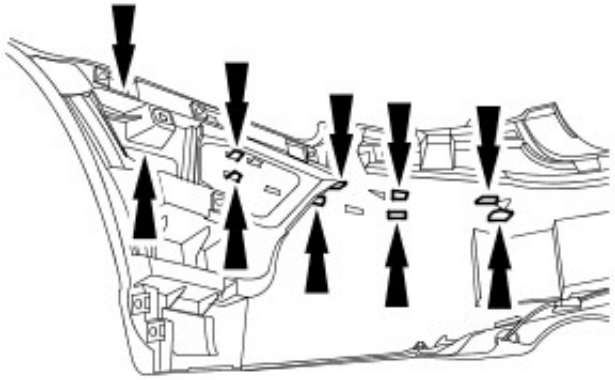
2. Make sure the bumper cover insert tangs are correctly seated.



E48667

Safety Belt System -

Torque Specifications

Description	Nm	lb-ft	lb-in
Front safety belt buckle and pretensioner retaining bolt	50	37	-
Front safety belt lower anchor retaining bolt	55	41	-
Front safety belt upper retaining bolt	25	18	-
Front safety belt guide retaining bolt	5	-	44
Front safety belt retractor retaining bolt	55	41	-
Front safety shoulder height adjuster retaining bolts	25	18	-
Rear safety belt anchor retaining bolts	55	41	-
Rear safety belt and buckle retaining bolt	55	41	-
Rear safety belt retractor retaining bolt	55	41	-
Rear center safety belt retractor retaining bolt - 4-Door	55	41	-
Rear center safety belt retractor retaining bolt - Wagon	38	28	-

Safety Belt System - Safety Belt System

Description and Operation

• WARNINGS:

To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag occupant restraints system (ORS) components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

Never probe the connectors on the air bag module or pretensioners. Doing so may result in deployment. Failure to follow this instructions may result in personal injury.

All safety belt assemblies including retractors, buckles, front safety belt buckle support assemblies (slider bar), if equipped, child safety seat tether brackets (if equipped) and attaching hardware should be inspected after any collision. New safety belt assemblies should be fitted unless a qualified technician finds the assemblies, show no damage and operate correctly. New safety belt assemblies should also be fitted where safety belt assemblies not in use during a collision, are inspected and damage or incorrect operation is noted. Failure to follow these instructions may result in personal injury.

CAUTION: Electronic modules are sensitive to static electrical charges. If exposed to these charges, damage may result.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

VUJ0002037

WARNING: All vehicles fitted with the passenger air bag from the factory have a WARNING sticker attached to the instrument panel, PROHIBITING the use of rear facing child seats in the front seating position. Failure to follow this instruction may result in personal injury.

• NOTE: The front seat belts, which incorporate the seat belt retractors and pretensioners are supplied as an assembly and not serviceable components.

The safety belt system fitted to the vehicle utilizes the conventional lap and diagonal three point fixing. The front and rear safety belts use a conventional static type buckle which is attached to the seat frame of each front seat and directly to the floor pan underneath the rear seats.

The safety belt buckle and pretensioner which is attached to the driver seat is fitted with a switch, which is connected through a wiring harness to a warning indicator which is housed within the instrument cluster. When the ignition is first turned on the warning indicator will illuminate only if the safety belt is not fastened. If the safety belt is fastened before the ignition is turned on the circuit is broken and the indicator will remain off. The safety belt buckle pretensioners will deploy at the same time as the front or side air bags. The air bag control module receives information on the status of the safety belt buckles from a switch contained in the buckle.

The front safety belt retractors incorporate a load limiting device, which reduces occupant injury in the event of a crash. The safety belt retractors, which are mounted within the base of the 'B' pillars, incorporate a torsion bar load limiting device. This device consists of a retractor reel which is mounted onto a spindle (torsion bar) which once the sensor has locked the retractor reel and a predetermined load is applied, twists and allows additional webbing into the system. The deceleration force required to initiate this sequence is approximately the same as that required to initiate air bag deployment. The torsion bar load limiting device will only react if the safety belt is in use at the time of the impact.

It should be considered that during any event that utilizes the full capability of the safety belts, the webbing may have been elongated and the torsion bar may have twisted. For this reason, if a vehicle is involved in an accident which

results in the deployment of the airbag (s), all the safety belts that were in use at the time of the accident MUST NOT be reused, NEW safety belts MUST be installed.

EMERGENCY LOCKING RETRACTOR (ELR)

The retractors in all seat positions feature ELR. During any period of sudden deceleration, or under lateral load when cornering at speed, a sensor weight within the safety belt retractor moves a locking pawl against the teeth on the retractor reel, which then locks the retractor preventing any further release of webbing. As soon as the load applied onto the retractor through the safety belt webbing is removed the locking pawl releases the retractor reel and normal movement is returned to the retractor.

AUTOMATIC LOCKING RETRACTOR (ALR)

Automatic Locking Retractors (ALR) are not fitted in all markets (currently only in the U.S.A., Dominican Republic and Mexico) and are installed in all passenger seat positions. The safety belt webbing on these are clearly marked to show their operating feature. The ALR feature is initiated by pulling all of the webbing from the retractor with the buckle fastened, when the webbing is then released as it retracts the retractor locks allowing travel in only one plane thus producing a fixed length restraint and preventing the safety belt from introducing slack, making any child seat it may be restraining insecure. The ALR mode of the retractor is disengaged by allowing the unfastened webbing to fully retract on to the reel.

BELT MINDER - JAPAN ONLY - VEHICLES FROM 2009MY

The belt minder function is an additional warning to the seat belt warning reminder for the driver's seat only. Under conditions where the driver is unbelted or becomes unbelted and the vehicle is moving above 10 km/h (6 mph) then an additional warning (generated by the GEM (generic electronic module)) of an intermittent tone will start or resume accompanied by the seat belt warning lamp flashing in the instrument cluster. The intermittent tone and flashing lamp will last for 10 seconds, followed by a 10 second period with no tone or flashing lamp. This cycle of 10 seconds on and 10 seconds off is repeated for up to 190 seconds. The warnings will stop when the driver has the seat buckle fastened or the vehicle speed is less than 5 km/h (3 mph) .

The RCM (restraints control module) monitors the status of the driver's seat buckle and transmits this status to the GEM. The GEM uses the seat buckle status and compares it with vehicle speed and driver seat occupancy (ignition on signal determines driver's seat is occupied). If the driver's seat belt is not buckled and the vehicle speed is above 10 km/h (6 mph) then the GEM initiates the belt minder warning.

Safety Belt System - Safety Belt System
Diagnosis and Testing

Inspection and Verification

1. **1.** Verify the customer concern.
2. **2.** Visually inspect for obvious signs of mechanical damage.

Visual inspection
• Damaged/frayed webbing • Damaged buckles • Damaged tongues

3. **3.** If the fault is not visually evident determine the symptom(s) and proceed to the diagnostic trouble code (DTC) flash code index.

Safety information

• WARNINGS:

 To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.

 Always wear safety glasses when repairing an air bag SRS vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

 Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

 Do not set a live air bag module down with the trim cover face down. Failure to follow this instruction may result in personal injury.

 After deployment, the air bag surface can contain deposits of sodium hydroxide, a product of the gas generant combustion that is irritating to the skin. Wash your hands with soap and water afterwards. Failure to follow this instruction may result in personal injury.

 Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

1. **1.** These warnings should be observed whenever working on the SRS and/or it's components.

Flash codes

Self check

1. **1.** Turn the ignition switch to the **ON** position.
2. **2.** Observe the airbag warning light function.

- Warning light **ON** solid for six seconds.
- Warning light goes off and stays off.

Fault on system

3. **3.** Turn the ignition switch to the **ON** position.
4. **4.** Observe the airbag warning light function.

- Warning light **ON** solid for six seconds.
- Warning light goes off for two seconds.
- Warning light flashes the appropriate number of times for the fault logged (see below).
- Warning light goes off for two seconds.
- The sequence is repeated five times.
- Warning light stays **ON** until the ignition is switched **OFF**.

Example

Flash code 16 would be shown as lamp **ON** for one occurence of 0.5 seconds, then lamp **OFF** for one second, followed by six occurences of lamp flashing **ON / OFF** for 0.5 seconds each (1 - 6).

Poor Retraction

• WARNINGS:

 In the event of an incident in which the air bags have been deployed, **ALL** safety belts that were in use at the time of the incident must be removed and new safety belts must be installed. Failure to follow this instruction may result in personal injury.

 After five incidents involving the deployment of SRS components, the restraints control module must be replaced. Failure to follow this instruction may result in personal injury.

If a safety belt does not retract correctly, check that the anchor covers and trim bezels are correctly installed and not rubbing against the safety belt webbing. Where necessary, check that the safety belt webbing is not rubbing at one end of the retractor cover slot and , if so, correct by loosening the retaining bolt, aligning the retractor to centralize the safety belt webbing and retighten the bolt.

The vehicle is equipped with two front and three rear inertia reel safety belts. These safety belts are **dual sensitive** which means that they have:

- a vehicle motion sensor, which locks the safety belt webbing under braking, cornering, on steep hills and in adverse camber conditions
- a webbing motion sensor, which locks when the safety belt webbing is quickly extracted.

Both systems should be fully operational and can be checked by the tests below.

Vehicle Motion Sensor Test

Either of the following two procedures may be used to check correct operation of the vehicle motion sensor.

Both methods require two people, but note that people of larger than normal size should not be asked to conduct these tests. This is to avoid the possibility of a fully unrolled safety belt webbing being mistaken for a correctly locked safety belt retractor.

Test Method 1 (braking)

 WARNING: It is important that during this test, the wearer allows the safety belt to provide the restraint, the wearer should not attempt to anticipate the sudden deceleration. However, both the driver and the passenger must prepare themselves for the possibility that the safety belt will not lock. Failure to follow this instruction may result in personal injury.

- Select a suitable road. Make sure that the road is clear and that full visibility is maintained at all times.
- Both driver and passenger should adopt normal, comfortable seating positions, with safety belts worn in a normal fashion.
- Do not exceed 6 mph (10 km/h) for this test.
- Make sure that all passengers are aware of when the driver will brake.
- Apply the foot brake sharply to stop the vehicle. If the vehicle motion sensitive lock mechanism is operating correctly, the safety belt webbing will lock and restrain the wearer.
- Conduct the test twice in each front and rear passenger seat position.
- Any safety belt retractor which does not restrain the wearer during this test must not be reused. A new safety belt must be installed.

Test Method 2 (turning circle)

This method requires a flat open area, sufficient for the vehicle to be driven in a continuous circle on full lock.

- The passenger should occupy a rear seat with the safety belt correctly adjusted.
- With the steering on full lock, drive the vehicle in a continuous circle at 10 mph (16 km/h). Do not exceed 10 mph (16 km/h).
- When the speed is stable, the passenger should attempt to slowly extract the safety belt webbing from each safety belt retractor in turn. If the vehicle motion sensitive lock mechanism is operating correctly, it will not be possible to extract the webbing.
- Any safety belt retractor from which it is possible to extract the webbing during this test must not be used. A new safety belt must be installed.

Safety Belt Webbing Sensor Test

With the vehicle stationary and on level ground take firm hold of the safety belt webbing and pull out quickly. The retractor should lock within 0.25 metre (10 inches), preventing further webbing pay out. Any safety belt retractor from which it is possible to extract further webbing must not be used. A new safety belt must be installed.

Diagnostic trouble code (DTC) flash code index

DTC	Condition	Possible source	Action
B2292 Flash code 33 - driver side PID $5954/5961 (bit 7)	Safety belt pretensioner circuit fault	• Pretensioner resistance low on squib	For driver side pretensioner circuit tests, GO to Pinpoint Test A.
B2292 Flash code 33 - driver side PID $5954/5961 (bit 6)	Safety belt pretensioner circuit fault	• Pretensioner circuit; open circuit	For driver side pretensioner circuit tests, GO to Pinpoint Test A.
B2292 Flash code 33 - driver side PID $5954/5961 (bit 5)	Safety belt pretensioner circuit fault	• Pretensioner circuit; short circuit to battery	For driver side pretensioner circuit tests, GO to Pinpoint Test A.
B2292 Flash code 33 - driver side PID $5954/5961 (bit 4)	Safety belt pretensioner circuit fault	• Pretensioner circuit; short circuit to ground	For driver side pretensioner circuit tests, GO to Pinpoint Test A.
B2292 Flash code 34 - front passenger side PID $5954/5961 (bit 3)	Safety belt pretensioner circuit fault	• Pretensioner resistance low on squib	For passenger side pretensioner circuit tests, GO to Pinpoint Test B.
B2292 Flash code 34 - front passenger side PID $5954/5961 (bit 2)	Safety belt pretensioner circuit fault	• Pretensioner circuit; open circuit	For passenger side pretensioner circuit tests, GO to Pinpoint Test B.
B2292 Flash code 34 - front passenger side PID $5954/5961 (bit 1)	Safety belt pretensioner circuit fault	• Pretensioner circuit; short circuit to battery	For passenger side pretensioner circuit tests, GO to Pinpoint Test B.
B2292 Flash code 34 - front passenger side PID $5954/5961 (bit 0)	Safety belt pretensioner circuit fault	• Pretensioner circuit; short circuit to ground	For passenger side pretensioner circuit tests, GO to Pinpoint Test B.
B2292 Flash code 38 - driver side PID $5954/5961 (bit 7)	Safety belt reel pretensioner circuit fault	• Retractor pretensioner resistance low on squib	For driver side reel pretensioner circuit tests, GO to Pinpoint Test E.
B2292 Flash code 38 - driver side PID $5954/5961 (bit 6)	Safety belt reel pretensioner circuit fault	• Retractor pretensioner circuit; open circuit	For driver side reel pretensioner circuit tests, GO to Pinpoint Test E.
B2292 Flash code 38 - driver side PID $5954/5961	Safety belt reel pretensioner circuit fault	• Retractor pretensioner circuit; short circuit to battery	For driver side reel pretensioner circuit tests, GO to Pinpoint Test E.

(bit 5)			
B2292 Flash code 38 - driver side PID $5954/5961 (bit 4)	Safety belt reel pretensioner circuit fault	• Retractor pretensioner circuit; short circuit to ground	For driver side reel pretensioner circuit tests, GO to Pinpoint Test E.
B2292 Flash code 39 - front passenger side PID $5954/5961 (bit 3)	Safety belt reel pretensioner circuit fault	• Retractor pretensioner resistance low on squib	For passenger side reel pretensioner circuit tests, GO to Pinpoint Test F.
B2292 Flash code 39 - front passenger side PID $5954/5961 (bit 2)	Safety belt reel pretensioner circuit fault	• Retractor pretensioner circuit; open circuit	For passenger side reel pretensioner circuit tests, GO to Pinpoint Test F.
B2292 Flash code 39 - front passenger side PID $5954/5961 (bit 1)	Safety belt reel pretensioner circuit fault	• Retractor pretensioner circuit; short circuit to battery	For passenger side reel pretensioner circuit tests, GO to Pinpoint Test F.
B2292 Flash code 39 - front passenger side PID $5954/5961 (bit 0)	Safety belt reel pretensioner circuit fault	• Retractor pretensioner circuit; short circuit to ground	For passenger side reel pretensioner circuit tests, GO to Pinpoint Test F.
B2434 Flash code 51	Driver safety belt switch circuit fault	• Driver safety belt switch circuit: short circuit to ground	For driver safety belt switch circuit tests, GO to Pinpoint Test C.
B2435 Flash code 51	Driver safety belt switch circuit fault	• Driver safety belt switch circuit: resistance out of range	For driver safety belt switch circuit tests, GO to Pinpoint Test C.
B2691 Flash code 51	Driver safety belt switch circuit fault	• Driver safety belt switch circuit; open circuit or short circuit to battery	For driver safety belt switch circuit tests, GO to Pinpoint Test C.
B2692 Flash code 52	Passenger safety belt switch circuit fault	• Passenger safety belt switch circuit; open circuit or short circuit to battery	For passenger safety belt switch circuit tests, GO to Pinpoint Test D.
B2438 Flash code 52	Front passenger safety belt switch circuit fault	• Passenger safety belt switch circuit: short circuit to ground	For passenger safety belt switch circuit tests, GO to Pinpoint Test D.
B2439 Flash code 52	Front passenger safety belt switch circuit fault	• Passenger safety belt switch circuit: resistance out of range	For passenger safety belt switch circuit tests, GO to Pinpoint Test D.

Additional tests for changes to be introduced

DTC	Condition	Possible source	Action
B2909 Flash code 16 PID $5939/593A (bit 7)	Front passenger belt tension sensor fault	• Belt tension sensor circuit; open circuit or short circuit to battery	For belt tension sensor circuit tests, GO to Pinpoint Test G.
B2909 Flash code 16 PID $5939/593A (bit 5)	Front passenger belt tension sensor fault	• Belt tension sensor circuit; short circuit to ground	For belt tension sensor circuit tests, GO to Pinpoint Test G.

Pinpoint tests

PINPOINT TEST A : B2292 (FLASH CODE 33): DRIVER SAFETY BELT PRETENSIONER CIRCUIT FAULT

WARNING: **DO NOT** attempt to measure the resistance across the pretensioner. Failure to follow this instruction may result in personal injury.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
A1: CHECK THE SAFETY BELT PRETENSIONER CIRCUIT WITH A SIMULATOR IN PLACE	
	WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the driver safety belt pretensioner connector, CA65.
	4 Connect the simulator in place of the pretensioner.
	5 Reconnect the battery negative terminal.
	6 Clear the DTC.
	7 Turn the ignition switch to the **ON** position.
	8 Recheck the DTCs and flash codes.
	Are there any DTCs and/or flash codes set with the simulator(s) in place? **Yes** GO to A2. **No** INSTALL a new pretensioner. REFER to: Safety Belt Buckle and Pretensioner (501-20A Safety Belt System, Removal and Installation). CLEAR the DTC, test the system for normal operation.
A2: CHECK THE PRETENSIONER SUPPLY CIRCUIT FOR HIGH RESISTANCE	
	WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.
	1 Turn the ignition switch to the **OFF** position.
	2 Disconnect the battery negative terminal.
	3 Wait one minute for the backup power supply to deplete.
	4 Disconnect the simulator.
	5 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	6 Measure the resistance between the RCM connector, pin 31 (WR) and CA65, pin 07 (WR)
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to A3.
A3: CHECK THE PRETENSIONER GROUND CIRCUIT FOR HIGH RESISTANCE	
	1 Measure the resistance between the RCM connector, pin 32 (NW) and CA65, pin 08 (NW).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to A4.
A4: CHECK THE PRETENSIONER SUPPLY CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA65, pin 07 (WR) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes**

	REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to A5.
A5: CHECK THE PRETENSIONER GROUND CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA65, pin 08 (NW) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to A6.
A6: CHECK THE PRETENSIONER SUPPLY CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA65, pin 07 (WR) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to A7.
A7: CHECK THE PRETENSIONER GROUND CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA65, pin 08 (NW) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** Please check part is not on any form of prior authorisation before replacement.

PINPOINT TEST B : B2292 (FLASH CODE 34): PASSENGER SAFETY BELT PRETENSIONER CIRCUIT FAULT	
WARNING: **DO NOT** attempt to measure the resistance across the pretensioner. Failure to follow this instruction may result in personal injury.	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
B1: CHECK THE SAFETY BELT PRETENSIONER CIRCUIT WITH A SIMULATOR IN PLACE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the passenger safety belt pretensioner connector, CA70
	4 Connect the simulator in place of the pretensioner.
	5 Reconnect the battery negative terminal.
	6 Clear the DTC.
	7 Turn the ignition switch to the **ON** position.
	8 Recheck the DTCs and flash codes.
	Are there any DTCs and/or flash codes set with the simulator(s) in place? **Yes** GO to B2. **No** INSTALL a new pretensioner. REFER to: Safety Belt Buckle and Pretensioner (501-20A Safety Belt System, Removal and Installation). CLEAR the DTC, test the system for normal operation.
B2: CHECK THE PRETENSIONER SUPPLY CIRCUIT FOR HIGH RESISTANCE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Turn the ignition switch to the **OFF** position.
	2 Disconnect the battery negative terminal.

	3 Wait one minute for the backup power supply to deplete.
	4 Disconnect the simulator.
	5 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	6 Measure the resistance between the RCM connector, pin 33 (GO) and CA70, pin 07 (GO)
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to B3.
B3: CHECK THE PRETENSIONER GROUND CIRCUIT FOR HIGH RESISTANCE	
	1 Measure the resistance between the RCM connector, pin 34 (BR) and CA70, pin 08 (BR).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to B4.
B4: CHECK THE PRETENSIONER SUPPLY CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA70, pin 07 (GO) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to B5.
B5: CHECK THE PRETENSIONER GROUND CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA70, pin 08 (BR) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to B6.
B6: CHECK THE PRETENSIONER SUPPLY CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA70, pin 07 (GO) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to B7.
B7: CHECK THE PRETENSIONER GROUND CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA70, pin 08 (BR) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** Please check part is not on any form of prior authorisation before replacement.

PINPOINT TEST C : B2434, B2435, B2691 (FLASH CODE 51): DRIVER SAFETY BELT SWITCH CIRCUIT FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
C1: CHECK THE DRIVER SAFETY BELT SWITCH SUPPLY CIRCUIT FOR HIGH RESISTANCE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy,	

disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	4 Disconnect the driver safety belt switch connector, CA65.
	5 Measure the resistance between CA65, pin 14 (O) and the RCM connector, pin 25 (O).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to C2.
C2: CHECK THE DRIVER SAFETY BELT SWITCH SUPPLY CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA65, pin 14 (O) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to C3.
C3: CHECK THE DRIVER SAFETY BELT SWITCH SUPPLY CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA65, pin 14 (O) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to C4.
C4: CHECK THE DRIVER SAFETY BELT SWITCH GROUND CIRCUIT FOR HIGH RESISTANCE	
	1 Measure the resistance between CA65, pin 13 (B) and GROUND.
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to C5.
C5: CHECK THE DRIVER SAFETY BELT SWITCH GROUND CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA65, pin 13 (B) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new driver safety belt switch, REFER to: Safety Belt Buckle and Pretensioner (501-20A Safety Belt System, Removal and Installation). Clear the DTC, test the system for normal operation. If the DTC is repeated, install a new RCM, REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation).

PINPOINT TEST D : B2438, B2439, B2692 (FLASH CODE 52): PASSENGER SAFETY BELT SWITCH CIRCUIT FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
D1: CHECK THE PASSENGER SAFETY BELT SWITCH SUPPLY CIRCUIT FOR HIGH RESISTANCE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy,	

disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.

	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	4 Disconnect the passenger safety belt switch connector, CA70.
	5 Measure the resistance between CA70, pin 14 (R) and the RCM connector, pin 26 (R).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to D2.
D2: CHECK THE PASSENGER SAFETY BELT SWITCH SUPPLY CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA70, pin 14 (R) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to D3.
D3: CHECK THE PASSENGER SAFETY BELT SWITCH SUPPLY CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA70, pin 14 (r) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to D4.
D4: CHECK THE PASSENGER SAFETY BELT SWITCH GROUND CIRCUIT FOR HIGH RESISTANCE	
	1 Measure the resistance between CA70, pin 13 (B) and GROUND.
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to D5.
D5: CHECK THE PASSENGER SAFETY BELT SWITCH GROUND CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA70, pin 13 (B) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new passenger safety belt switch, REFER to: Safety Belt Buckle and Pretensioner (501-20A Safety Belt System, Removal and Installation). Clear the DTC, test the system for normal operation. If the DTC is repeated, install a new RCM, REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation).

PINPOINT TEST E : B2292 (FLASH CODE 38) DRIVER SIDE RETRACTOR PRETENSIONER CIRCUIT FAULT

WARNING: **DO NOT** attempt to measure the resistance across the pretensioner. Failure to follow this instruction may result in personal injury.

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
E1: CHECK THE RETRACTOR PRETENSIONER CIRCUIT WITH A SIMULATOR IN PLACE	

WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the retractor pretensioner connector, CA421.
	4 Connect the simulator in place of the pretensioner.
	5 Reconnect the battery negative terminal.
	6 Clear the DTC.
	7 Turn the ignition switch to the **ON** position.
	8 Recheck the DTCs and flash codes.
	Are there any DTCs and/or flash codes set with the simulator in place? **Yes** GO to E2. **No** INSTALL a new pretensioner, REFER to: Front Safety Belt Retractor (501-20A Safety Belt System, Removal and Installation). CLEAR the DTC, test the system for normal operation.
E2: CHECK THE RETRACTOR PRETENSIONER SUPPLY CIRCUIT FOR HIGH RESISTANCE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the simulator.
	4 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	5 Measure the resistance between CA421, pin 01 (WR) and the RCM connector, pin 35 (WR).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to E3.
E3: CHECK THE RETRACTOR PRETENSIONER GROUND CIRCUIT FOR HIGH RESISTANCE	
	1 Measure the resistance between CA421, pin 03 (NW) and the RCM connector, pin 36 (NW).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to E4.
E4: CHECK THE RETRACTOR PRETENSIONER SUPPLY CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA421, pin 01 (WR) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to E5.
E5: CHECK THE RETRACTOR PRETENSIONER GROUND CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA421, pin 03 (NW) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation.

	No GO to E6.
E6: CHECK THE RETRACTOR PRETENSIONER SUPPLY CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA421, pin 01 (WR) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to E7.
E7: CHECK THE RETRACTOR PRETENSIONER GROUND CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA421, pin 03 (NW) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** Please check part is not on any form of prior authorisation before replacement.

PINPOINT TEST F : B2292 (FLASH CODE 39) PASSENGER SIDE RETRACTOR PRETENSIONER CIRCUIT FAULT	
WARNING: **DO NOT** attempt to measure the resistance across the pretensioner. Failure to follow this instruction may result in personal injury.	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
F1: CHECK THE RETRACTOR PRETENSIONER CIRCUIT WITH A SIMULATOR IN PLACE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the retractor pretensioner connector, CA422.
	4 Connect the simulator in place of the pretensioner.
	5 Reconnect the battery negative terminal.
	6 Clear the DTC.
	7 Turn the ignition switch to the **ON** position.
	8 Recheck the DTCs and flash codes.
	Are there any DTCs and/or flash codes set with the simulator in place? **Yes** GO to F2. **No** INSTALL a new pretensioner. REFER to: Front Safety Belt Retractor (501-20A Safety Belt System, Removal and Installation). CLEAR the DTC, test the system for normal operation.
F2: CHECK THE RETRACTOR PRETENSIONER SUPPLY CIRCUIT FOR HIGH RESISTANCE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the simulator.
	4 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	5 Measure the resistance between CA422, pin 01 (GO) and the RCM connector, pin 37 (GO).

	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to F3.
F3: CHECK THE RETRACTOR PRETENSIONER GROUND CIRCUIT FOR HIGH RESISTANCE	
	1 Measure the resistance between CA422, pin 03 (BR) and the RCM connector, pin 38 (BR).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to F4.
F4: CHECK THE RETRACTOR PRETENSIONER SUPPLY CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA422, pin 01 (GO) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to F5.
F5: CHECK THE RETRACTOR PRETENSIONER GROUND CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA422, pin 03 (BR) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to F6.
F6: CHECK THE RETRACTOR PRETENSIONER SUPPLY CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA422, pin 01 (GO) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to F7.
F7: CHECK THE RETRACTOR PRETENSIONER GROUND CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA422, pin 03 (BR) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** Please check part is not on any form of prior authorisation before replacement.

PINPOINT TEST G : C2909 (FLASH CODE 16): BELT TENSION SENSOR FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
G1: CHECK THE BELT TENSION SENSOR SIGNAL CIRCUIT FOR HIGH RESISTANCE	
	1 Disconnect the belt tension sensor connector, WS19.
	2 Disconnect the occupant classification sensor connector, WS17.
	3 Measure the resistance between WS19, pin 02 (Y) and WS17, pin A (Y).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to G2.
G2: CHECK THE BELT TENSION SENSOR VCC CIRCUIT FOR HIGH RESISTANCE	
	1 Measure the resistance between WS19, pin 01 (O) and WS17, pin B (O).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation.

	No GO to G3.
G3: CHECK THE BELT TENSION SENSOR GROUND CIRCUIT FOR HIGH RESISTANCE	
	1 Measure the resistance between WS19, pin 03 (G) and WS17, pin C (G).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to G4.
G4: CHECK THE BELT TENSION SENSOR SIGNAL CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between WS19, pin 02 (Y) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to G5.
G5: CHECK THE BELT TENSION SENSOR VCC CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between WS19, pin 01 (O) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to G6.
G6: CHECK THE BELT TENSION SENSOR GROUND CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between WS19, pin 03 (G) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to G7.
G7: CHECK THE BELT TENSION SENSOR SIGNAL CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between WS19, pin 02 (Y) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to G8.
G8: CHECK THE BELT TENSION SENSOR VCC CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between WS19, pin 01 (O) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to G9.
G9: CHECK THE BELT TENSION SENSOR GROUND CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between WS19, pin 03 (G) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** Please check part is not on any form of prior authorisation before replacement.

Safety Belt System - Front Safety Belt Retractor

Removal and Installation

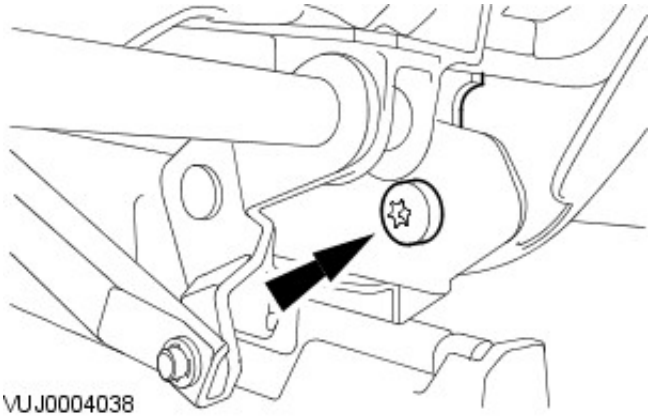
Removal

• NOTE: The front seat belts, which incorporate the seat belt retractors and pretensioners are supplied as an assembly and not serviceable components.

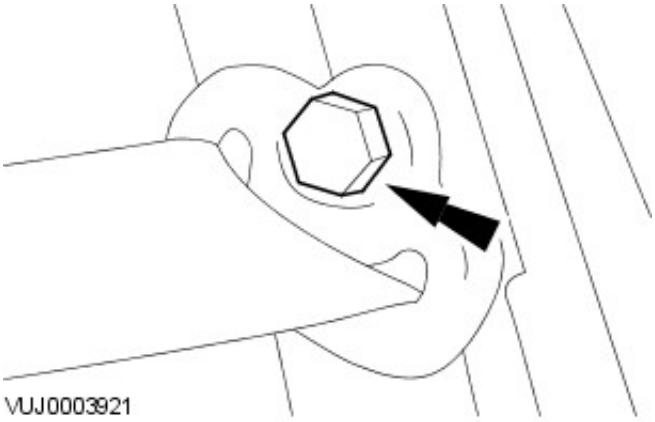
• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

1. NOTE: Right-hand shown left-hand similar.

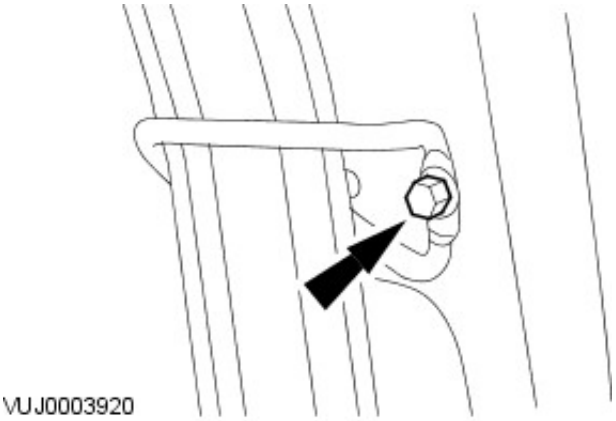
Remove the lower B-pillar trim panel for additional information, refer to Section 501-05 Interior Trim and Ornamentation.


VUJ0004038

2. Detach the safety belt lower anchor from the underside of the seat.


VUJ0003921

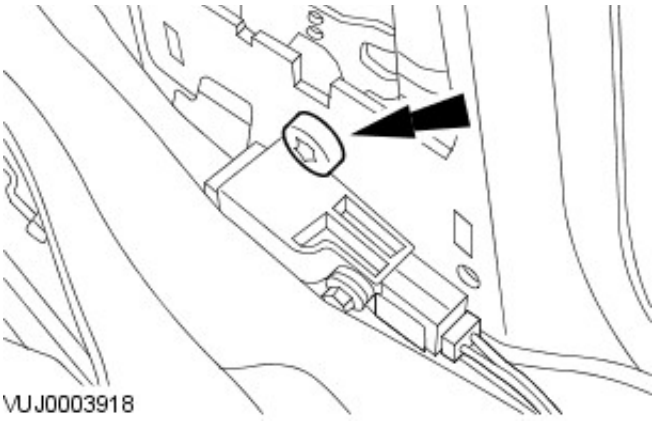
3. Detach the safety belt upper retaining bolt.


VUJ0003920

4. Remove the safety belt guide retaining bolt.

5. Remove the front safety belt retractor assembly.

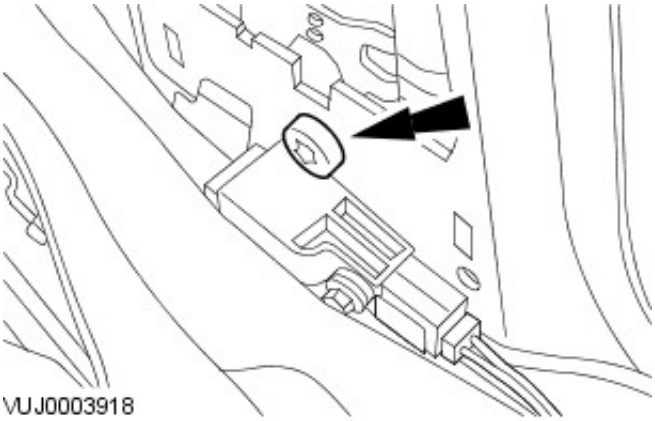
- Remove the retaining bolt.



Installation

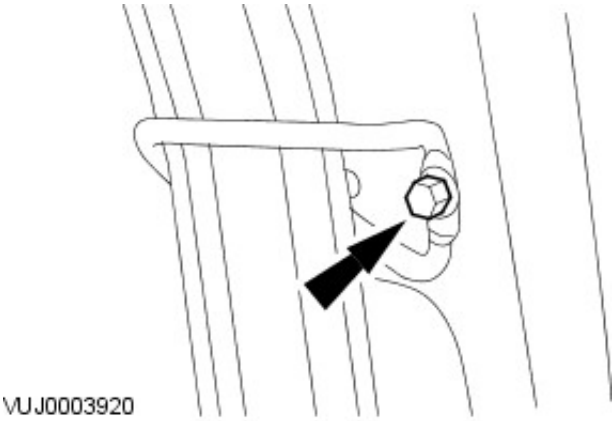
• NOTE: The front seat belts, which incorporate the seat belt retractors and pretensioners are supplied as an assembly and not serviceable components.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.



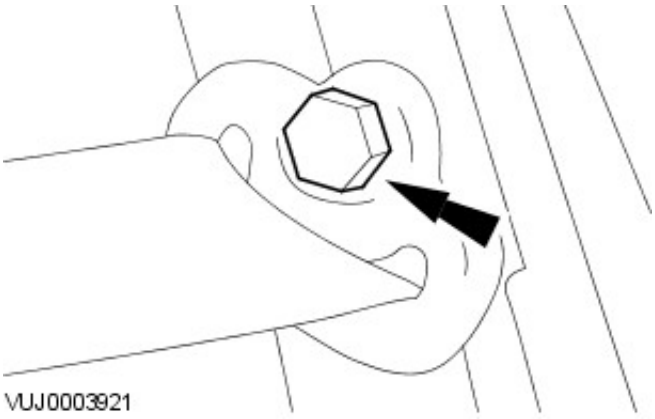
1. To install reverse the removal procedure.

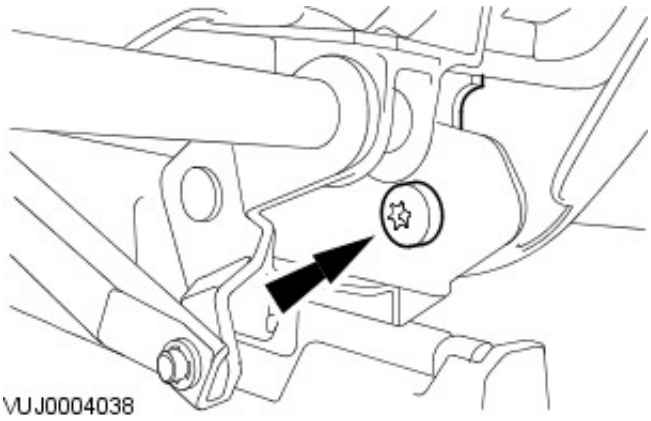
- Tighten to 55 Nm.



2. Tighten to 5 Nm.

3. Tighten to 25 Nm.


VUJ0003921

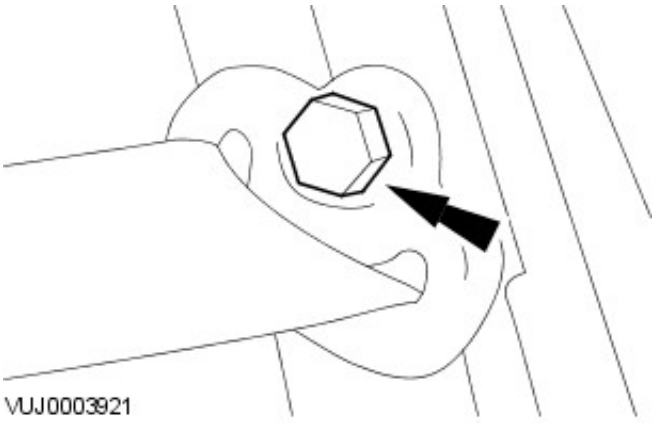

VUJ0004038

4. Tighten to 55 Nm.

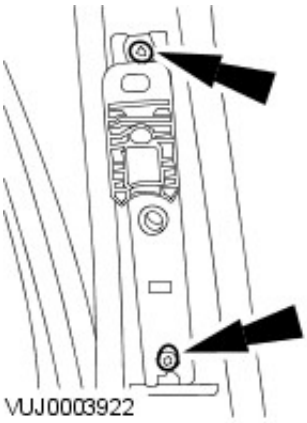
Safety Belt System - Front Safety Belt Shoulder Height Adjuster
Removal and Installation

Removal

1. Remove the upper B-pillar trim panel for additional information, refer to Section 501-05 Interior Trim and Ornamentation.
2. Detach the safety belt upper retaining bolt.

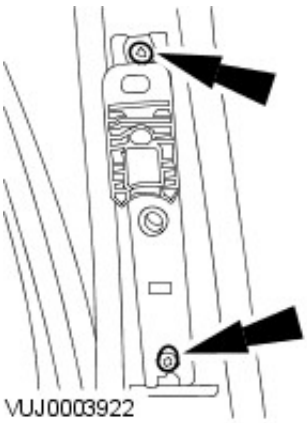

VUJ0003921

3. Remove the front safety belt shoulder height adjuster retaining bolt.
   - Remove the retaining bolts.

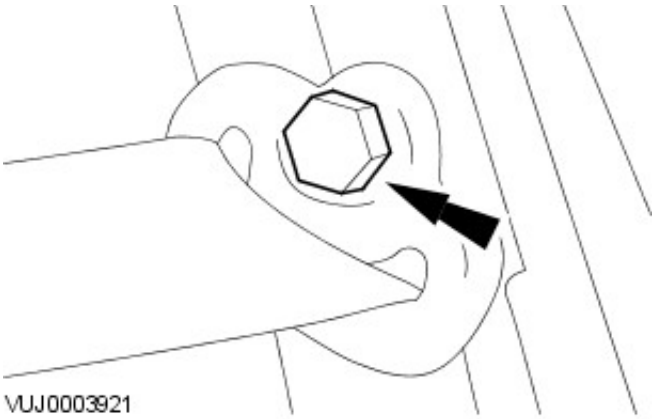

VUJ0003922

Installation

1. To install reverse the removal procedure.
2. Tighten to 25 Nm.


VUJ0003922

3. Tighten to 25 Nm.


VUJ0003921

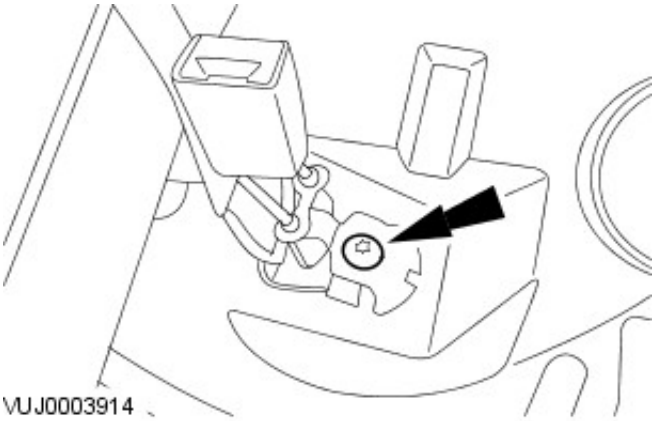
Safety Belt System - Rear Center Safety Belt Retractor4-Door

Removal and Installation

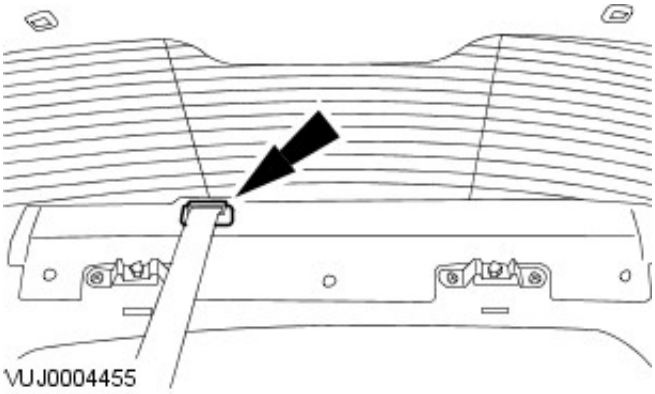
Removal

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

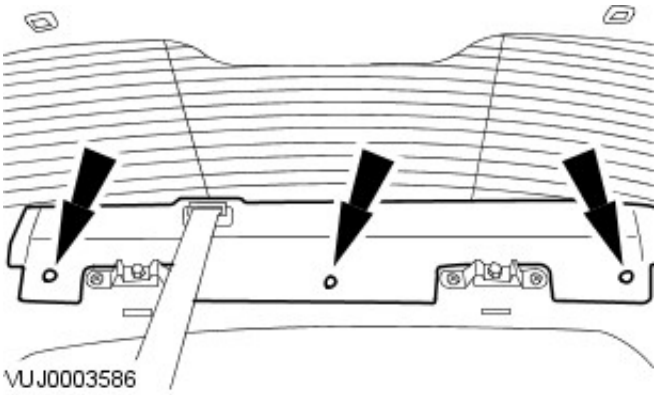
1. Remove the rear seat backrest for additional information, refer to Section 501-10 Seating.
2. Remove the center rear safety belt and buckle.
   - Remove the retaining bolt.



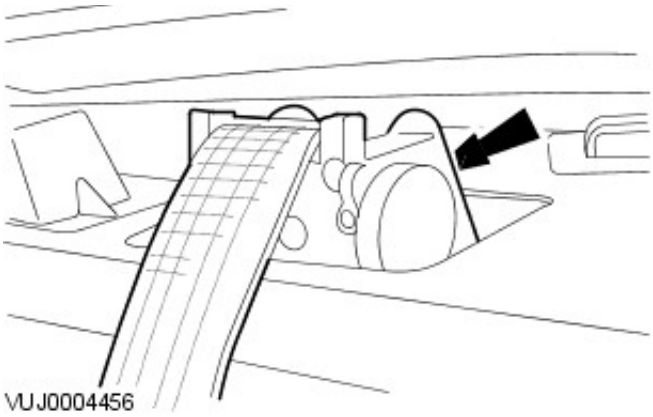
3. Detach and remove the center rear safety belt upper trim cover.



4. Remove the parcel shelf trim panel.

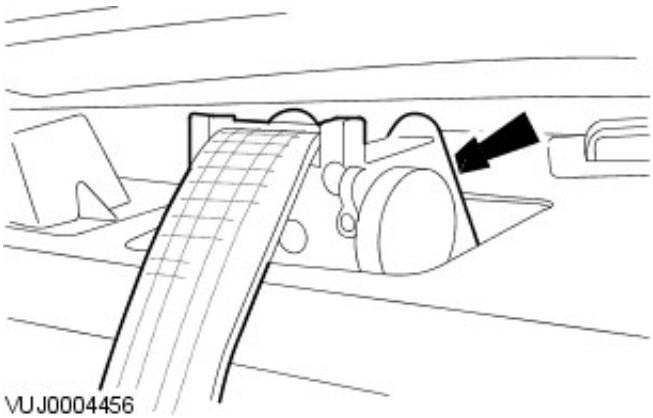


5. Remove the center rear safety belt retractor.
   - Remove the retaining bolt.



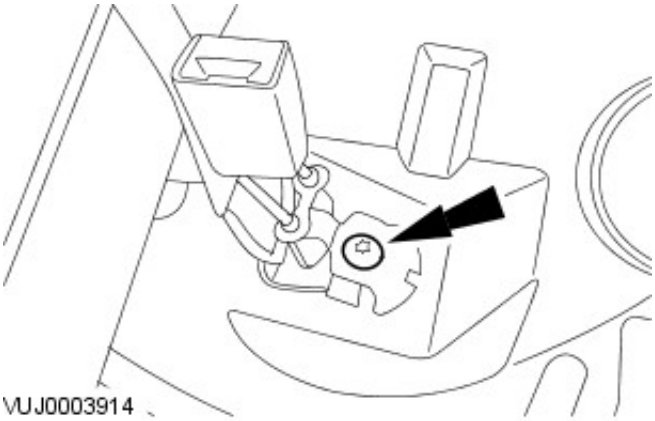
Installation

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.



1. To install reverse the removal procedure.

2. Tighten to 55 Nm.



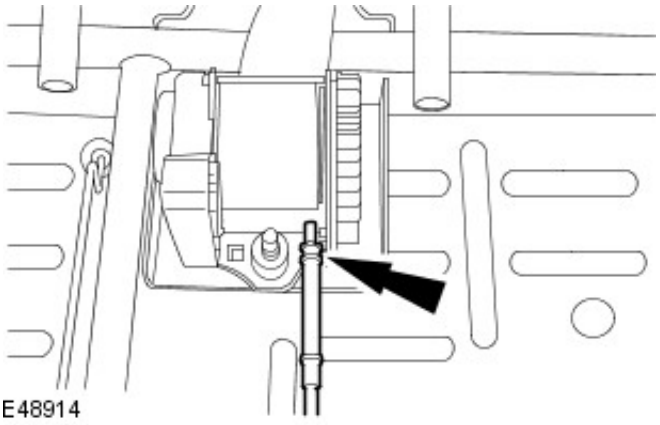
3. NOTE: Make sure the anti rotation pins on the body and safety belt anchor plate are located correctly before tightening the bolt.

Tighten to 55 Nm.

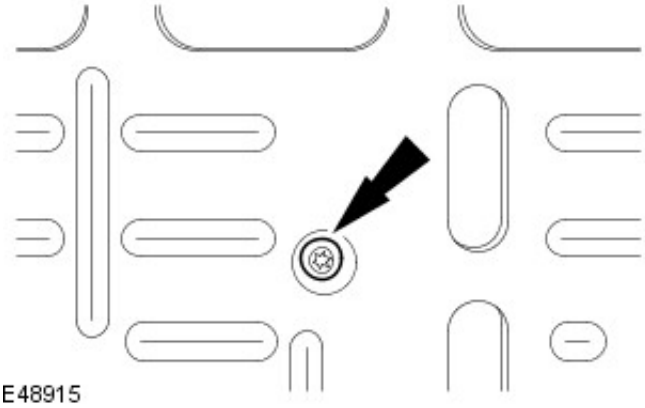
Safety Belt System - Rear Center Safety Belt RetractorWagon
Removal and Installation

Removal

1. Disassemble the rear seat backrest.
   For additional information, refer to: Rear Seat Backrest - Wagon, Vehicles With: 70/30 Split Seat (501-10 Seating, Removal and Installation).
2. Detach the release cable from the rear center safety belt retractor.

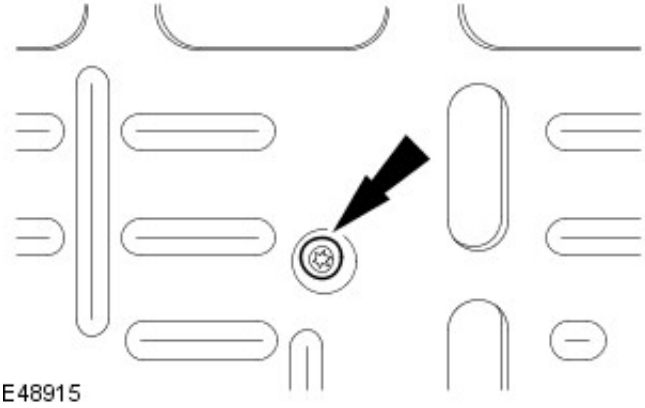

E48914

3. Remove the rear center safety belt retractor.


E48915

Installation

1. To install, reverse the removal procedure.
2. Tighten to 38 Nm.

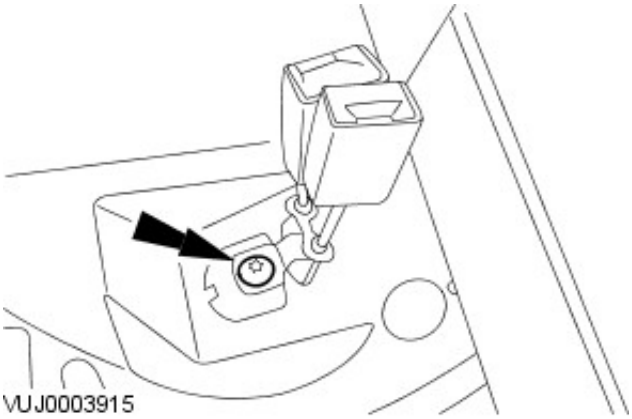

E48915

Safety Belt System - Rear Safety Belt Buckle

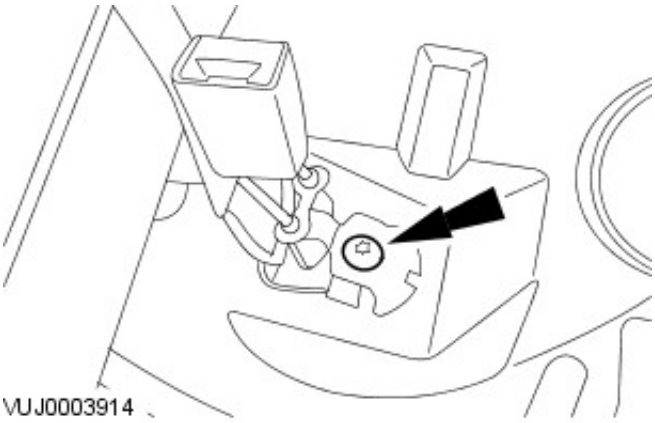
Removal and Installation

Removal

1. Remove the rear seat cushion for additional information, refer to Section 501-10 Seating.
2. Remove the left-hand rear safety belt buckles.
   - Remove the retaining bolt.



3. Remove the right-hand rear safety belt and buckle.
   - Remove the retaining bolt.

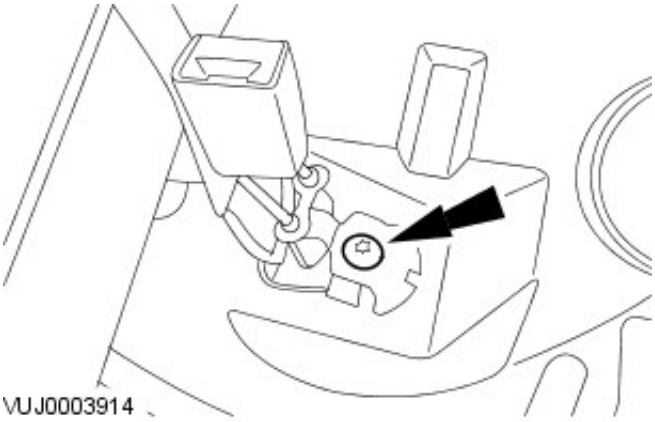


Installation

1. To install reverse the removal procedure.

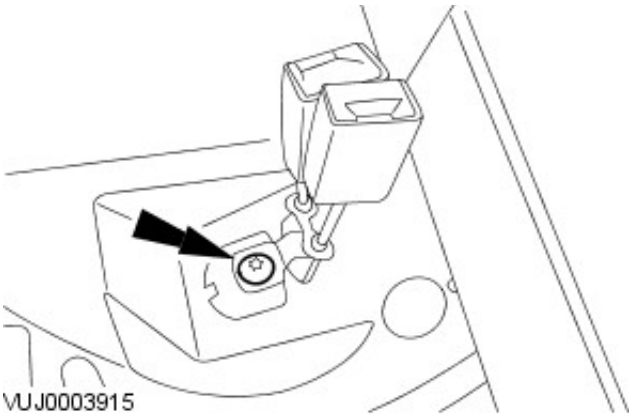
• NOTE: Make sure the anti rotation pins on the body and safety belt anchor plate are located correctly before tightening the bolt.

   - Tighten to 55 Nm.



2. NOTE: Make sure the anti rotation pins on the body and safety belt anchor plate are located correctly before tightening the bolt.

   Tighten to 55 Nm.


VUJ0003915

Safety Belt System - Rear Safety Belt Retractor4-Door

Removal and Installation

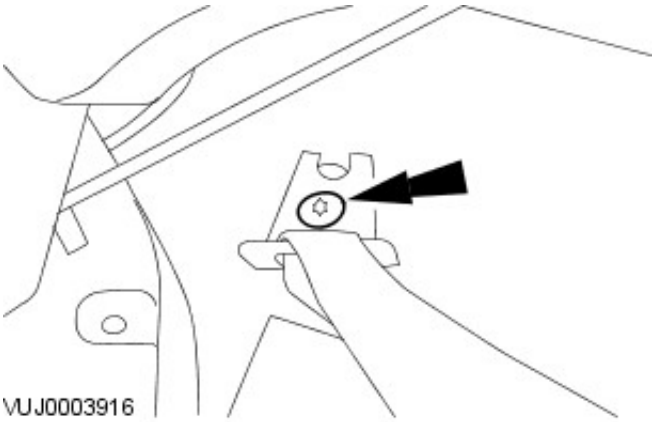
Removal

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

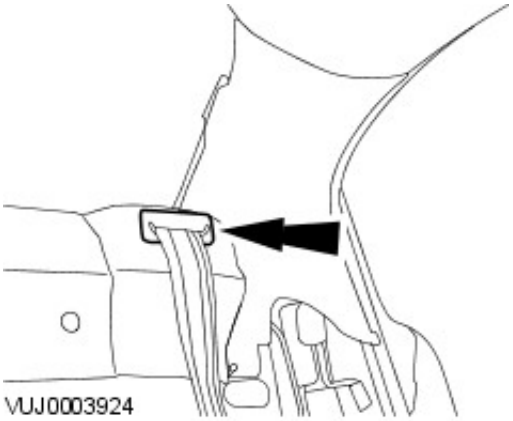
1. Remove the rear seat backrest for additional information, refer to Section 501-10 Seating.

2. NOTE: Left-hand shown right-hand similar.

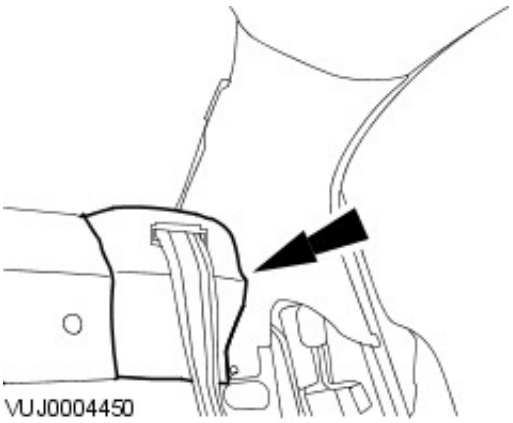
Remove the rear safety belt anchor retaining bolt.



3. Remove and detach the rear safety belt upper trim cover.

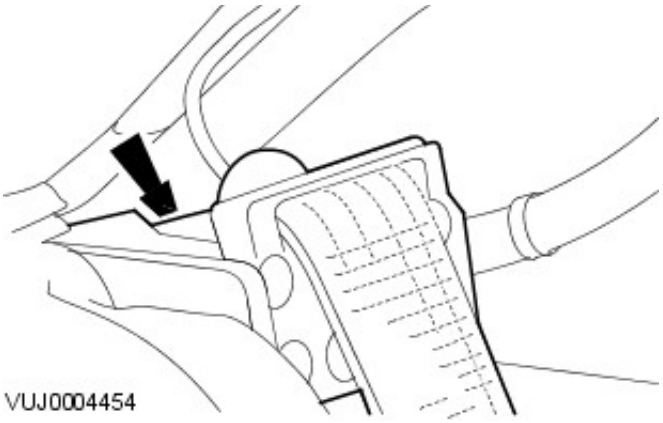


4. Remove the rear safety belt retractor trim panel.



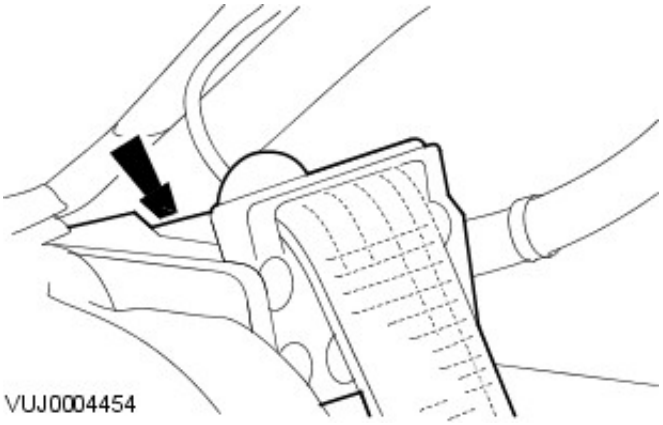
5. Remove the rear safety belt retractor assembly.

- Remove the retaining bolt.



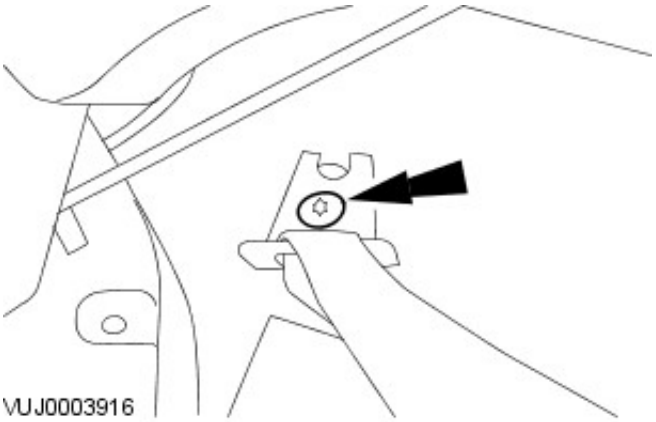
Installation

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.



1. To install reverse the removal procedure.

- Tighten to 55 Nm.

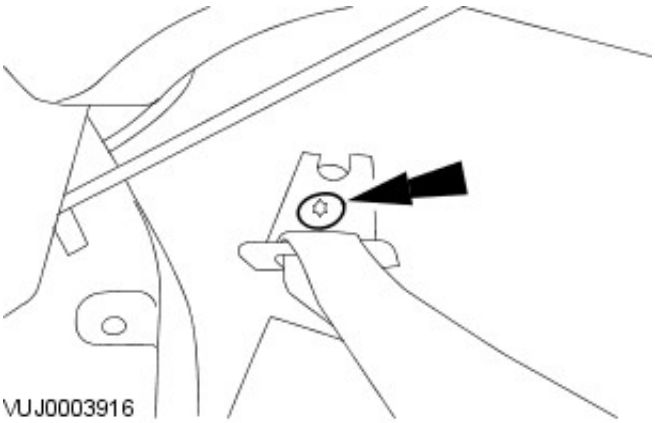


2. Tighten to 55 Nm.

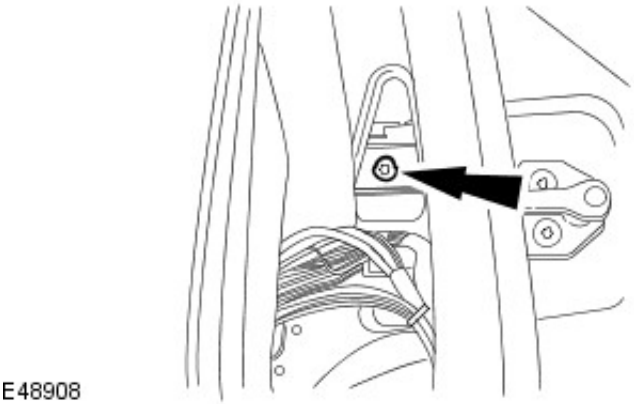
Safety Belt System - Rear Safety Belt RetractorWagon
Removal and Installation

Removal

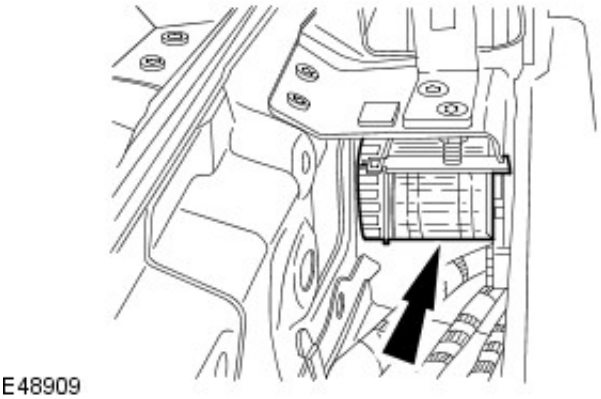
1. Remove the loadspace trim panel.
   For additional information, refer to: Loadspace Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).
2. Remove the rear seat bolster.
   For additional information, refer to: Rear Seat Bolster - Wagon (501-10 Seating, Removal and Installation).
3. Remove the rear safety belt anchor retaining bolt.



4. Remove the rear safety belt retractor retaining bolt.

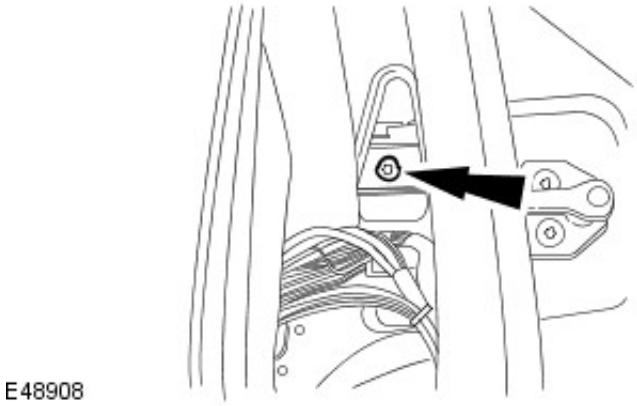


5. Remove the rear safety belt retractor.

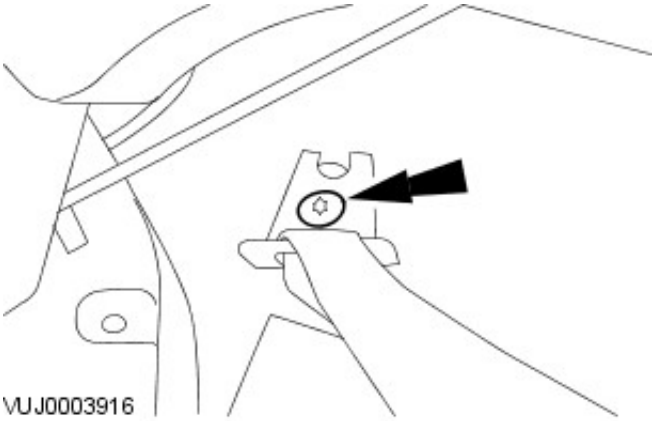


Installation

1. To install reverse the removal procedure.
   - Tighten to 55 Nm



2. Tighten to 55 Nm.



Safety Belt System - Safety Belt Buckle and Pretensioner

Removal and Installation

Removal

• WARNINGS:

To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag occupant restraints system (ORS) components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instructions may result in personal injury.

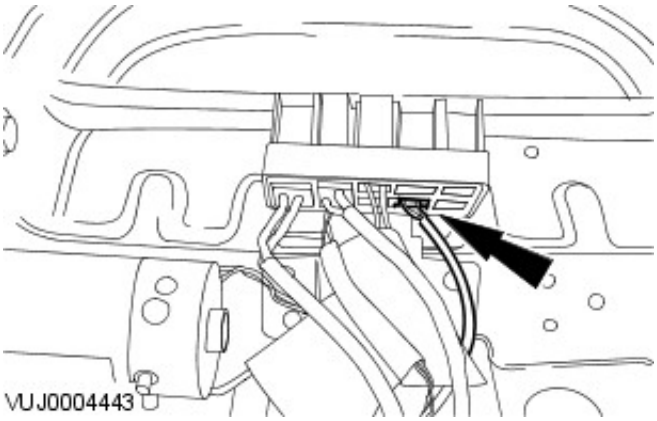
Never probe the connectors on the air bag module or pretensioners. Doing so may result in deployment. Failure to follow this instructions may result in personal injury.

All safety belt assemblies including retractors, buckles, front safety belt buckle support assemblies (slider bar), if equipped, child safety seat tether brackets (if equipped) and attaching hardware should be inspected after any collision. New safety belt assemblies should be fitted unless a qualified technician finds the assemblies, show no damage and operate correctly. New safety belt assemblies should also be fitted where safety belt assemblies not in use during a collision, are inspected and damage or incorrect operation is noted. Failure to follow these instructions may result in personal injury.

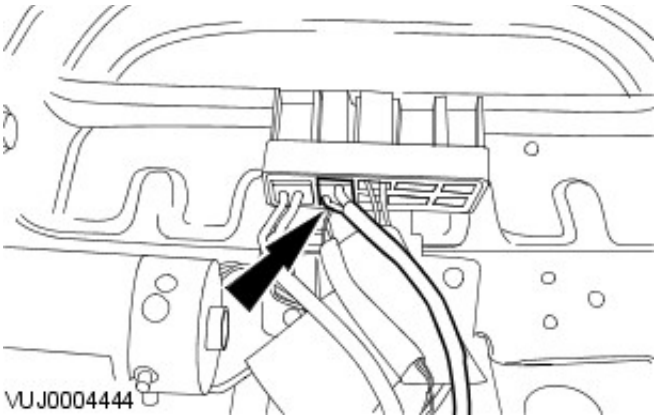
CAUTION: Electronic modules are sensitive to static electrical charges. If exposed to these charges, damage may result.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

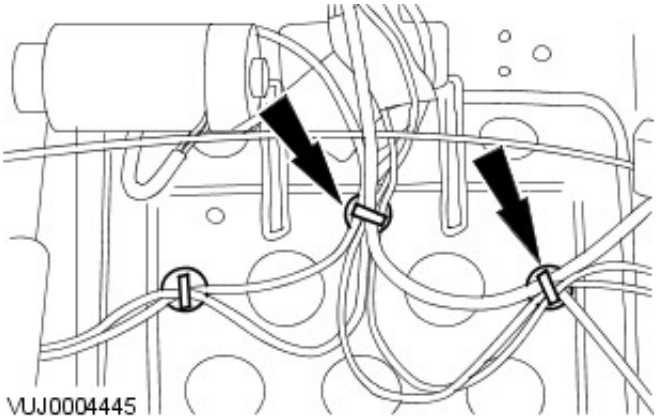
• NOTE: The front seat belts, which incorporate the seat belt retractors and pretensioners are supplied as an assembly and not serviceable components.



1. Disconnect the battery ground cable. For additional information, refer toSection 414-01 Battery, Mounting and Cables.
2. Remove the front seat. For additional information, refer to Section 501-10 Seating.
3. Disconnect the safety belt pretensioner electrical connector.
4. Disconnect the safety belt buckle electrical connector.

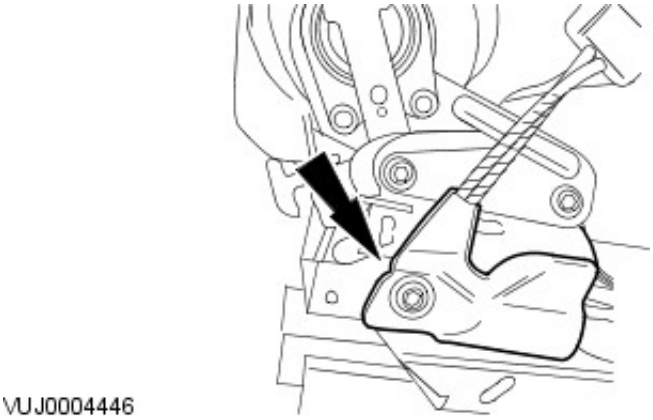


5. Detach the safety belt buckle and pretensioner wiring harness.



6. Remove the safety belt buckle and pretensioner.

- Remove the retaining bolt.



Installation

• WARNINGS:

To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag ORS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instructions may result in personal injury.

Never probe the connectors on the air bag module or pretensioners. Doing so may result in deployment. Failure to follow this instructions may result in personal injury.

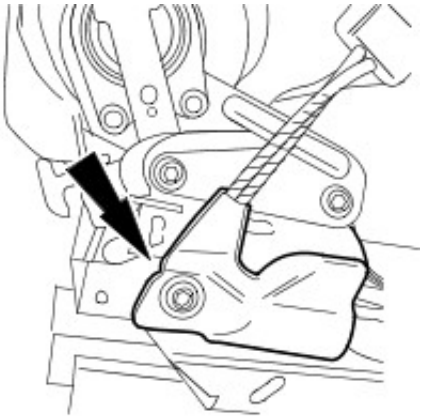
All safety belt assemblies including retractors, buckles, front safety belt buckle support assemblies (slider bar), if equipped, child safety seat tether brackets (if equipped) and attaching hardware should be inspected after any collision. New safety belt assemblies should be fitted unless a qualified technician finds the assemblies, show no damage and operate correctly. New safety belt assemblies should also be fitted where safety belt assemblies not in use during a collision, are inspected and damage or incorrect operation is noted. Failure to follow these instructions may result in personal injury.

CAUTION: Electronic modules are sensitive to static electrical charges. If exposed to these charges, damage

may result.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

• NOTE: The front seat belts, which incorporate the seat belt retractors and pretensioners are supplied as an assembly and not serviceable components.



VUJ0004446

1. To install reverse the removal procedure.

- Tighten to 50 Nm.

Supplemental Restraint System -

Torque Specifications

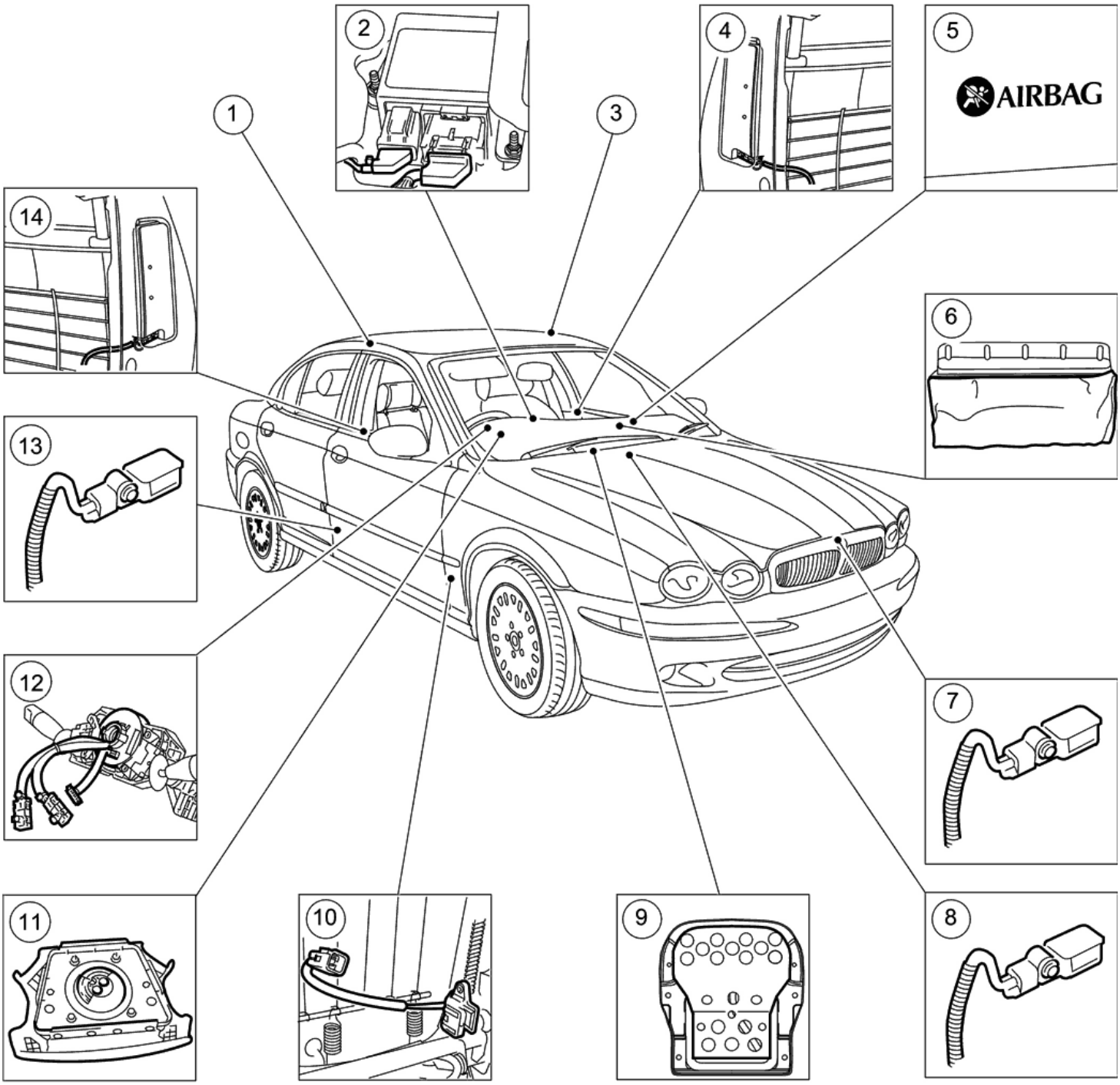
Description	Nm	Lb/Ft	Lb/In
Restraints control module (RCM) retaining bolts	12	9	-
Driver air bag module retaining bolts	5	-	44
Passenger air bag module retaining bolts	9	-	80
Side air curtain module retaining bolts	9	-	80
Side impact sensor retaining bolt	12	9	-
Crash sensor retaining bolt	12	9	-
Driver lower air bag module retaining bolts	11	8	-

Air Bag Supplemental Restraint System (SRS)

The SRS is designed to provide increased collision protection for front seat occupants in addition to that provided by the three-point safety belt system. Safety belt use is necessary to obtain the best occupant protection and to receive the full advantages of the SRS.

The SRS components are shown in the following illustration.

Air Bag Supplemental Restraint System (SRS) Components



VUJ0004391

Item	Description

1	Side air curtain module
2	Restraints control module (RCM)
3	Side air curtain module
4	Side air bag module
5	Passenger air bag deactivation (PAD) indictor
6	Passenger air bag module
7	Crash sensor
8	Side impact sensor
9	Passenger weight sensor
10	Seat track position sensor
11	Driver air bag module
12	Air bag sliding contact
13	Side impact sensor
14	Side air bag module

Restraints Control Module (RCM)

The restraints control module (RCM):

- The primary purpose of the restraints control system is to discriminate between an event that warrants supplemental restraints system deployment and an event that does not. The air bag control module, located under the floor console, governs the operation of the whole system and performs continual system diagnostics. Information on the severity of an impact is received from the crash sensor. In the event of a side impact, in excess of a predetermined limit, the air bag control module will evaluate the signal received from either of the side impact sensors against stored data and deploy the corresponding side air bag module and the side air curtain module. In the event of a frontal impact, in excess of a predetermined limit, the air bag control module will evaluate the signal received from the front crash sensor against stored data and deploy the front air bag modules and the safety belt buckle pretensioners. Variations in the deployment of the front air bag modules are dependent on the status of the driver seat track position, passenger weight sensor and the front safety belt buckles.

Driver Air bag Module

The drivers air bag module:

- The driver air bag module is replaced as an assembly.
- There is no routine maintenance required for this part and there is no serviceable parts.
- The driver air bag module is fitted to the steering wheel, the cover forming the outer surface of the steering wheel boss. The cover has invisible split lines molded in its surface allowing the air bag to easily exit through the cover when the system deploys.

Passenger Air Bag Module

The passenger air bag module:

- The passenger air bag module is replaced as an assembly.
- There is no routine maintenance required for this part and there is no serviceable parts.
- The passenger air bag module is located above the glove compartment behind the finish panel. The air bag control module will only deploy the passenger air bag provided that the passenger weight sensor senses that the seat is occupied.

Deployment Door

The deployment door:

- Is an integral part of the instrument panel with a textured finish.
- Has a tear seam that separates when the air bag inflates, and hinges out of the way during deployment.
- Must not be repainted for any reason.
- Is a component of the passenger air module and is not replaced separately.

Inflator

The inflator:

- Both driver and passenger air bag inflators have a two stage inflation system, this means there are two air bag connections to be made. The two connectors are coded to ensure that the connection is made correctly.
- Receives electrical charge when the air bag sensor is activated.
- Contains an igniter that converts the electrical signal to thermal energy (heat), causing the ignition of the inflator gas generant.
- Inflates the air bag after the sodium azide/copper oxide combustion occurs.
- Is a component of the driver air bag module and passenger air bag module and is not replaced separately.

Side Air Curtain Module

The side air curtain module:

- Is replaced as an assembly.
- The side air curtain modules are fixed between the A-pillar and C-pillar under the headliner and deployed at the same time as the corresponding seat mounted side air bag. If the passenger air bag is deactivated the corresponding side air bag is also deactivated. When deployed, the side air curtain module extends down to approximately shoulder height to protect both the front and rear occupants heads. The side air curtain module is stabilized at the A-pillar and C-pillar by tethers. The side curtain module uses compressed argon to inflate the air bag.

Side Air Bag Module - Front Seat

The side air bag module:

- Is replaced as an assembly.
- The side air bag module is mounted in the outboard bolster of each front seat and uses compressed argon to inflate. It provides protection for the thorax (the part of the torso between the neck and the abdomen). To ensure that the air bag emerges at the same point, a chute has been designed into the inside of the seat trim cover and wrapped around the air bag module. In a side air bag module deployment situation, the air bag module deploys through a stitched seam in the side bolster.

Air Bag Sliding Contact

The air bag sliding contact:

- The air bag sliding contact does not contain any serviceable components.
- The air bag sliding contact is mounted on the steering column, behind the steering wheel.
- The air bag sliding contact continuously transfers electrical signals from the driver air bag module to the air bag sensor.

Side Impact Sensors

The side impact sensors:

- The side impact sensors are mounted at the base of the B-pillars to facilitate lateral impact sensing. In the event of a side impact, the air bag control module processes the crash data sent by the side impact sensor against stored data. The air bag control module will deploy the side air bag and, if equipped, the side air curtain on the side the deployment request was initiated.

Crash Sensor

The crash sensor:

- The front crash sensor is located under the grill opening panel to facilitate impact sensing along the longitudinal axis. The air bag control module processes the crash data sent by the front crash sensor against stored data, and deploys the front air bags.

Seat Track Position Sensor

The seat track position sensor:

- The seat track position sensor is located on the driver seat track. The seat position sensor determines the position of the driver seat, which is then communicated to the restraints control module. If the driver seat is in the forward position, the driver air bag second stage is disabled.

Passenger Weight Sensor

The passenger weight sensor:

- The occupant classification sensor detects, by integrated pressure sensors, the presence of a passenger or object on the seat cushion. The occupant classification sensor cannot discriminate between a passenger and an object. The electronic control unit processes the pressure information and, if the pressure exceeds a threshold, an occupied seat state is communicated through the wiring harness to the air bag control module. If the seat is empty or occupied by a very light object an empty seat state is transmitted to the air bag control module and the passenger air bag will be deactivated to avoid unnecessary repair costs. If the seat is empty and the safety belt is buckled the passenger air bag deactivation indicator will be illuminated. The occupant classification sensor system is not affected by the position of the passenger seat.

Passenger Air Bag Deactivation (PAD) Indictor

The Passenger air bag deactivation (PAD) Indictor:

- The passenger air bag deployment door has a built in lens that displays the passenger air bag module deactivated symbol. The symbol is backlit by the PAD indicator. The illumination of the symbol informs the front seat occupants whether or not the passenger air bag has been deactivated by the occupancy sensing system. The PAD indicator is located under the vent finish panel in front of the passengers seat.

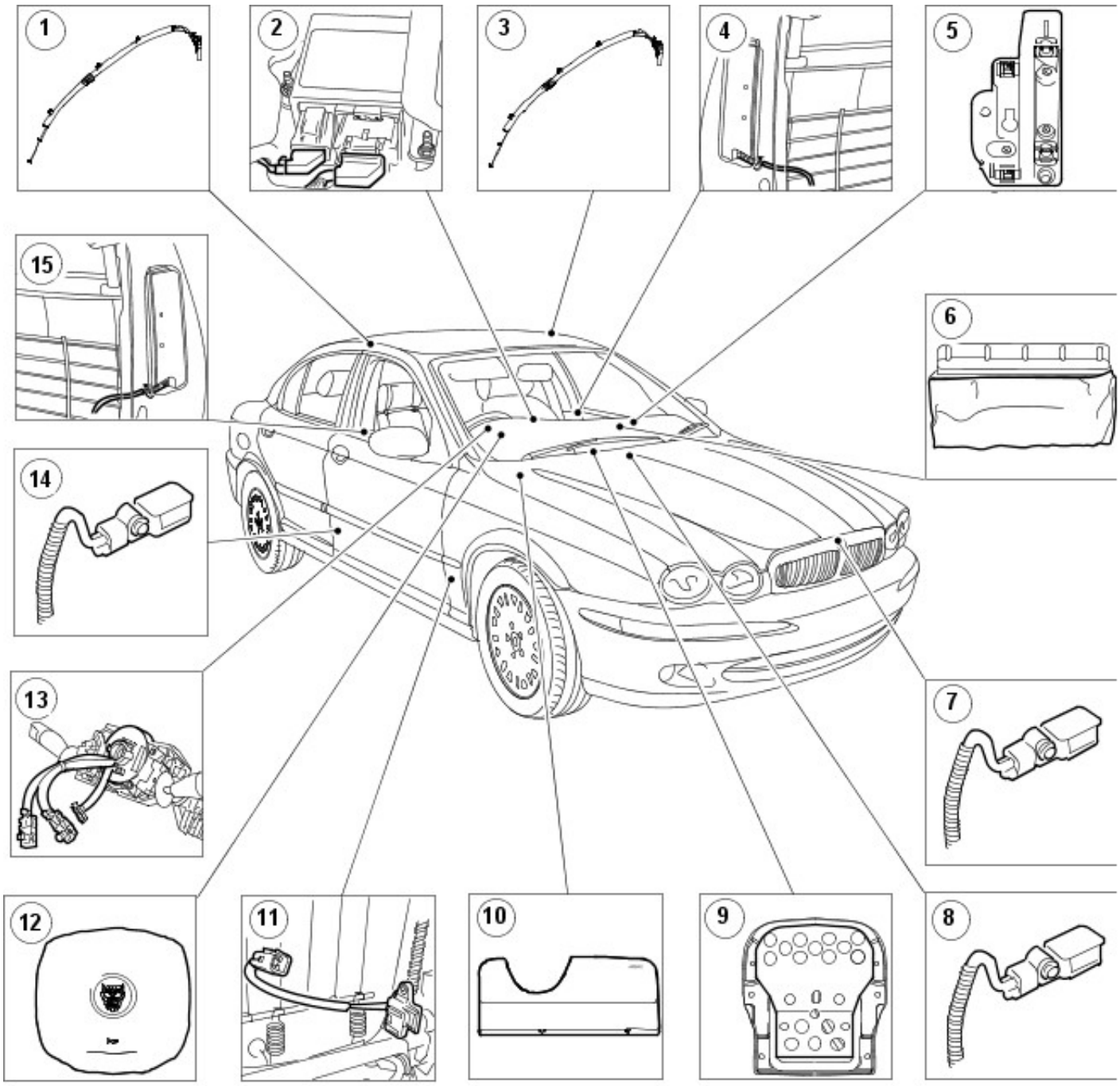
Supplemental Restraint System - Air Bag Supplemental Restraint System (SRS)

Description and Operation

WARNING: All pyrotechnic devices are dangerous. Before performing any procedures on any pyrotechnic device, read all information contained within the Standard Workshop Practices section of this manual.
For additional information, refer to: Standard Workshop Practices (100-00 General Information, Description and Operation).

The SRS is designed to provide increased collision protection for front seat occupants in addition to that provided by the three-point safety belt system. Safety belt use is necessary to obtain the best occupant protection and to receive the full advantages of the SRS.

Air Bag Supplemental Restraint System (SRS) Components



E48382

Item	Part Number	Description
1	—	Side air curtain module

2	—	Restraints control module (RCM)
3	—	Side air curtain module
4	—	Side air bag module
5	—	Passenger air bag deactivation (PAD) indictor
6	—	Passenger air bag module
7	—	Crash sensor
8	—	Side impact sensor
9	—	Passenger weight sensor
10	—	Driver lower air bag module
11	—	Seat track position sensor
12	—	Driver air bag module
13	—	Air bag sliding contact
14	—	Side impact sensor
15	-	Side air bag module

Restraints Control Module (RCM)

The restraints control module (RCM):

- The primary purpose of the restraints control system is to discriminate between an event that warrants supplemental restraints system deployment and an event that does not. The air bag control module, located under the floor console, governs the operation of the whole system and performs continual system diagnostics. Information on the severity of an impact is received from the crash sensor. In the event of a side impact, in excess of a predetermined limit, the air bag control module will evaluate the signal received from either of the side impact sensors against stored data and deploy the corresponding side air bag module and the side air curtain module. In the event of a frontal impact, in excess of a predetermined limit, the air bag control module will evaluate the signal received from the front crash sensor against stored data and deploy the front air bag modules and the safety belt buckle pretensioners. Variations in the deployment of the front air bag modules are dependent on the status of the driver seat track position, passenger weight sensor and the front safety belt buckles.

Driver Air bag Module

The drivers air bag module:

- The driver air bag module is replaced as an assembly.
- There is no routine maintenance required for this part and there are no serviceable parts.
- The driver air bag module is fitted to the steering wheel, the cover forming the outer surface of the steering wheel boss. The cover has invisible split lines molded in its surface allowing the air bag to easily exit through the cover when the system deploys.

Passenger Air Bag Module

The passenger air bag module:

- The passenger air bag module is replaced as an assembly.
- There is no routine maintenance required for this part and there are no serviceable parts.
- The passenger air bag module is located above the glove compartment behind the finish panel. The air bag control module will only deploy the passenger air bag provided that the passenger weight sensor senses that the seat is occupied.

Deployment Door

The deployment door:

- Is an integral part of the instrument panel with a textured finish.
- The deployment door is tethered and moves out of the way when the air bag inflates, and hinges out of the way during deployment.
- Must not be repainted for any reason.

Inflator

The inflator:

- Both driver and passenger air bag inflators have a two stage inflation system, this means there are two air bag connections to be made. The two connectors are coded to ensure that the connection is made correctly.
- Receives electrical charge when the air bag sensor is activated.
- Contains an igniter that converts the electrical signal to thermal energy (heat), causing the ignition of the inflator gas generant.
- Inflates the air bag after the sodium azide/copper oxide combustion occurs.

- Is a component of the driver air bag module and passenger air bag module and is not replaced separately.

Side Air Curtain Module

The side air curtain module:

- Is replaced as an assembly.
- The side air curtain modules are fixed between the A-pillar and C-pillar under the headliner and deployed at the same time as the corresponding seat mounted side air bag. If the passenger air bag is deactivated the corresponding side air bag is also deactivated. When deployed, the side air curtain module extends down to approximately shoulder height to protect both the front and rear occupants heads. The side air curtain module is stabilized at the A-pillar and C-pillar by tethers. The side curtain module uses compressed argon to inflate the air bag.

Side Air Bag Module - Front Seat

The side air bag module:

- Is replaced as an assembly.
- The side air bag module is mounted in the outboard bolster of each front seat and uses compressed argon to inflate. It provides protection for the thorax (the part of the torso between the neck and the abdomen). To ensure that the air bag emerges at the same point, a chute has been designed into the inside of the seat trim cover and wrapped around the air bag module. In a side air bag module deployment situation, the air bag module deploys through a stitched seam in the side bolster.

Air Bag Sliding Contact

The air bag sliding contact:

- The air bag sliding contact does not contain any serviceable components.
- The air bag sliding contact is mounted on the steering column, behind the steering wheel.
- The air bag sliding contact continuously transfers electrical signals from the driver air bag module to the air bag sensor.

Side Impact Sensors

The side impact sensors:

- The side impact sensors are mounted at the base of the B-pillars to facilitate lateral impact sensing. In the event of a side impact, the air bag control module processes the crash data sent by the side impact sensor against stored data. The air bag control module will deploy the side air bag and, if equipped, the side air curtain on the side the deployment request was initiated.

Crash Sensor

The crash sensor:

- The front crash sensor is located under the grill opening panel to facilitate impact sensing along the longitudinal axis. The air bag control module processes the crash data sent by the front crash sensor against stored data, and deploys the front air bags.

Seat Track Position Sensor

The seat track position sensor:

- The seat track position sensor is located on the driver seat track. The seat position sensor determines the position of the driver seat, which is then communicated to the restraints control module. If the driver seat is in the forward position, the driver air bag second stage is disabled.

Passenger Weight Sensor

The passenger weight sensor:

- The occupant classification sensor detects, by integrated pressure sensors, the presence of a passenger or object on the seat cushion. The occupant classification sensor cannot discriminate between a passenger and an object. The electronic control unit processes the pressure information and, if the pressure exceeds a threshold, an occupied seat state is communicated through the wiring harness to the air bag control module. If the seat is empty or occupied by a very light object an empty seat state is transmitted to the air bag control module and the passenger air bag will be deactivated to avoid unnecessary repair costs. If the seat is empty and the safety belt is buckled the passenger air bag deactivation indicator will be illuminated. The occupant classification sensor system is not affected by the position of the passenger seat.

Driver lower air bag module

The driver lower air bag module:

- There is no routine maintenance required for this part and there are no serviceable parts.
- The driver lower air bag module is replaced as an assembly.

- The driver lower air bag module is fitted to enhance lower limb protection. The driver lower air bag module is located below the steering wheel in the instrument panel and is retained by two bolts and two spring clips.

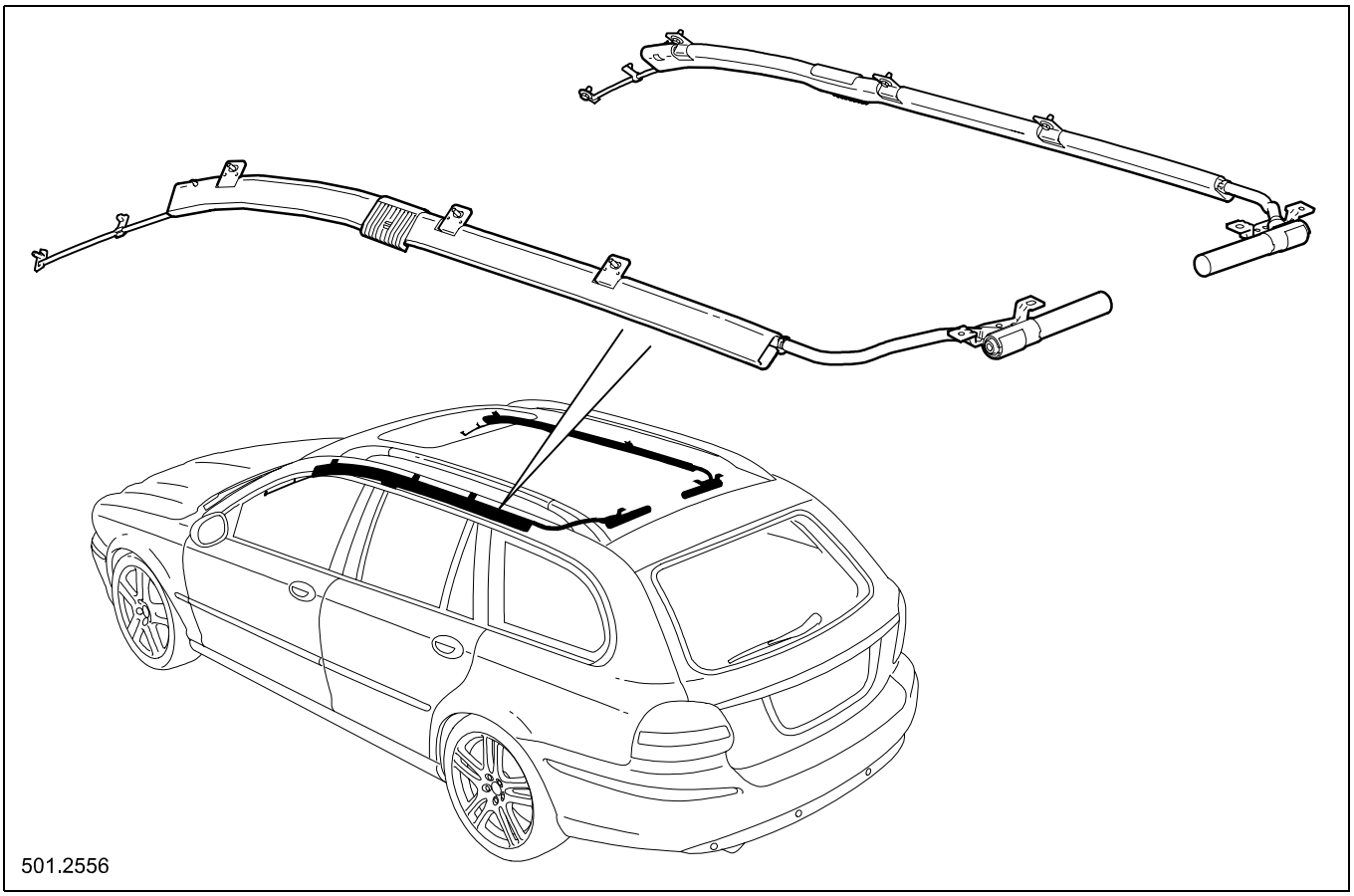
Passenger Air Bag Deactivation (PAD) Indictor

The Passenger air bag deactivation (PAD) Indictor:

- The passenger air bag deployment door has a built in lens that displays the passenger air bag module deactivated symbol. The symbol is backlit by the PAD indicator. The illumination of the symbol informs the front seat occupants whether or not the passenger air bag has been deactivated by the occupancy sensing system. The PAD indicator is located under the vent finish panel in front of the passengers seat.

Side Curtain Air Bag (Estate)

Whereas the side curtain inflator in the sedan is routed from the roof-line down the 'D' pillar, for the estate the route for the inflator remains at roof level.



Side curtain air bag routing - estate

Supplemental Restraint System - Air Bag Supplemental Restraint System (SRS)

Diagnosis and Testing

Principle of operation

The SRS is an intelligent system, in that it deploys the appropriate airbag module for any impact event, based on information provided by the sensors around the vehicle.

Working in conjunction with the safety belt system, the SRS will provide the maximum protection for the vehicle occupants wherever the impact occurs.

In the event of a severe frontal impact, the **restraints control module (RCM)** will deploy the safety belt pretensioners and/or the front airbags as necessary, by measuring the impact via the **crash sensor** and comparing the measurement against data stored in it's memory.

In the event of a side impact, the RCM uses information from the **side impact sensors** to determine if the **thoracic** and/or **curtain airbags** should be deployed.

Occupancy classification sensor

In addition to determining the best deployment of the airbags from impact data, the system uses information from the occupancy classification sensor to control the two-stage airbag used in the **passenger airbag module**, and relays this information to the occupants via the **passenger airbag deactivation (PAD)** lamp.

PAD lamp strategy

Passenger seat status	Passenger airbag status	PAD lamp status
Empty	**OFF**	**OFF**
Empty, but safety belt fastened	**OFF**	**ON**
Occupied (small occupant)	**OFF**	**ON**
Occupied (large occupant)	**ON**	**OFF**

Seat track position sensor

To determine the level of deployment of the **front airbag modules**, the system also uses inputs from the seat track position sensor.

The system will not deploy the second stage of the airbag if the front occupants are too close to the front airbag modules.

Safety information

• WARNINGS:

 To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.

 Always wear safety glasses when repairing an air bag SRS vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

 Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

 Do not set a live air bag module down with the trim cover face down. Failure to follow this instruction may result in personal injury.

 After deployment, the air bag surface can contain deposits of sodium hydroxide, a product of the gas generant combustion that is irritating to the skin. Wash your hands with soap and water afterwards. Failure to follow this instruction may result in personal injury.

 Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

 In the event of an incident in which the air bags have been deployed, **ALL** safety belts that were in use at the time of the incident must be removed and new safety belts must be installed. Failure to follow this instruction may

result in personal injury.

 After five incidents involving the deployment of SRS components, the restraints control module must be replaced. Failure to follow this instruction may result in personal injury.

1. **1.** These warnings should be observed whenever working on the SRS and/or it's components.

Flash codes

Self check (no fault on system)

1. **1.** Turn the ignition switch to the **ON** position.
2. **2.** Observe the airbag warning light function.

- Warning light **ON** solid for six seconds.
- Warning light goes off and stays off.

Fault on system

3. **3.** Turn the ignition switch to the **ON** position.
4. **4.** Observe the airbag warning light function.

- Warning light **ON** solid for six seconds.
- Warning light goes off for two seconds.
- Warning light flashes the appropriate number of times for the fault logged (see below).
- Warning light goes off for two seconds.
- The sequence is repeated five times.
- Warning light stays **ON** until the ignition is switched **OFF**.

Example

Flash code 16 would be shown as lamp **ON** for one occurence of 0.5 seconds, then lamp **OFF** for one second, followed by six occurences of lamp flashing **ON / OFF** for 0.5 seconds each (1 - 6).

Warning tones

In the event of a second fault occurring whilst there is a warning light fault, there will be an audible warning, initiated by the instrument cluster.

This secondary warning will be activated when the SRS system detects any additional fault, other than a warning light fault.

The secondary warning will consist of five sets of five tone bursts, each set of five tones being separated by a five second silence.

This sequence will be repeated approximately every 30 minutes.

Preliminary inspection

Mechanical	Electrical
• Check all visible SRS components for damage/security	• Carry out self-check as above • Check fuses (for additional information, refer to the wiring diagrams) • Only after checking fuses, check connections and harnesses to SRS components for correct fitment/damage • For module power and ground circuit tests, REFER to: Communications Network - VIN Range: E96603->J28492 (418-00 Module Communications Network, Diagnosis and Testing).

Diagnostic trouble code (DTC) flash code index

• NOTE: Other DTCs and flash codes may be stored, relating to the safety belt system, REFER to: Safety Belt System (501-20A Safety Belt System, Diagnosis and Testing).

DTC / Flash code	Condition	Possible source	Action
B1231 Flash code 13	Crash data memory full	• Restraints control module (RCM) fault • Stored	Please check part is not on any form of prior authorisation before replacement.

		impact data	
B1317 Continuous lamp	Battery voltage high	• Module input voltage greater than 15 volts	Suspect charging system fault. Refer to charging system tests.
B1318 Continuous lamp	Battery voltage low	• Module input voltage less than 10.4 volts	Suspect charging system fault. Refer to charging system tests.
B1342	RCM internal fault	• RCM fault	Please check part is not on any form of prior authorisation before replacement.
B1869 Note, If a system fault occurs at the same time as a MIL fault, a tone will sound as well as the MIL illumination (see '**warning tones**' above).	Airbag MIL circuit fault	• Airbag MIL circuit; open circuit, short circuit to ground	For MIL circuit tests, GO to Pinpoint Test A.
B1870	Airbag MIL circuit fault	• Airbag MIL circuit; short circuit to battery	For MIL circuit tests, GO to Pinpoint Test A.
B1884 Flash code 18	Passenger airbag deactivated (PAD) indicator lamp circuit fault	• PAD indicator lamp circuit; open circuit, short circuit to ground	For PAD circuit tests, GO to Pinpoint Test B.
B1890 Flash code 18	Passenger airbag deactivated (PAD) indicator lamp circuit fault	• PAD indicator lamp circuit; short circuit to battery	For PAD circuit tests, GO to Pinpoint Test B.
B1921 Flash code 14	RCM internal airbag diagnostic monitor ground circuit fault	• RCM mounting bracket contact; open circuit, high resistance	WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury. Ensure a clean electrical contact between the RCM and ground. Ensure the fasteners are correctly torqued.
B2293 Flash code 19 - driver	Airbag circuit status fault	• Driver airbag circuit fault	For airbag circuit tests, GO to Pinpoint Test C.
B2293 Flash code 23 - passenger	Airbag circuit status fault	• Passenger airbag circuit fault	For airbag circuit tests, GO to Pinpoint Test C.
B2294 Flash code 24 - driver	Curtain airbag circuit status fault	• Driver curtain airbag circuit; status fault	For curtain airbag circuit tests, GO to Pinpoint Test D.
B2294 Flash code 25 - passenger	Curtain airbag circuit status fault	• Passenger curtain airbag circuit; status fault	For curtain airbag circuit tests, GO to Pinpoint Test D.
		• Driver side	

B2295 Flash code 22 - driver	Side airbag circuit status fault	airbag circuit; status fault	For side airbag circuit tests, GO to Pinpoint Test E.
B2295 Flash code 23 - passenger	Side airbag circuit status fault	• Passenger side airbag circuit; status fault	For side airbag circuit tests, GO to Pinpoint Test E.
B2988 Flash code 28	Knee bolster circuit open circuit	• Knee bolster ground circuit; open circuit • Knee bolster power circuit; open circuit	For knee bolster circuit tests, GO to Pinpoint Test K.
B2989 Flash code 28	Knee bolster circuit short to battery	• Knee bolster ground circuit; short circuit to battery • Knee bolster power circuit; short circuit to battery	For knee bolster circuit tests, GO to Pinpoint Test K.
B2990 Flash code 28	Knee bolster circuit short to ground	• Knee bolster ground circuit; short circuit to ground • Knee bolster power circuit; short circuit to ground	For knee bolster circuit tests, GO to Pinpoint Test K.
B2991 Flash code 28	Knee bolster squib resistance low	• Resistance low or short circuit across airbag module	For knee bolster circuit tests, GO to Pinpoint Test K.
B2296 Flash code 42 - front impact sensor	Front impact sensor circuit status fault	• Impact sensor circuit; status fault	For front impact sensor circuit tests, GO to Pinpoint Test F.
B2296 Flash code 43 - front driver side impact sensor	Front driver side impact sensor circuit status fault	• Impact sensor circuit; status fault	For front driver side impact sensor circuit tests, GO to Pinpoint Test G.
B2296 Flash code 44 - front passenger side impact sensor	Front passenger side impact sensor circuit status fault	• Impact sensor circuit; status fault	For front passenger side impact sensor circuit tests, GO to Pinpoint Test H.
B2296 Flash code 45 - rear driver side impact sensor	Impact sensor circuit status fault	• Impact sensor circuit; status fault	For rear driver side impact sensor circuit tests, GO to Pinpoint Test I.
B2296 Flash code 46 - rear	Impact sensor	• Impact sensor	For rear passenger side impact sensor circuit tests, GO to Pinpoint Test J.

passenger side impact sensor	circuit status fault	circuit; status fault	
B2477 Flash code 54 (continuous lamp)	RCM configuration fault	• RCM configuration fault	Reconfigure the module using the Jaguar approved diagnostic system
C1947 Flash code 49	Driver seat track position sensor circuit fault	• Driver seat track position sensor circuit; short circuit to ground	For driver seat track position sensor circuit tests, GO to Pinpoint Test L.
C1948 Flash code 49	Driver seat track position sensor circuit fault	• Current out of range • Feature present, but not expected	Check configuration using the Jaguar approved diagnostic system. For driver seat track position sensor circuit tests, GO to Pinpoint Test L.
C1981 Flash code 49	Driver seat track position sensor circuit fault	• Driver seat track position sensor circuit; open circuit, short circuit to battery	For driver seat track position sensor circuit tests, GO to Pinpoint Test L.

Additional tests for changes to be introduced

DTC	Condition	Possible source	Action
C2200 Flash code 48	Passenger seat track position sensor circuit fault	• Passenger seat track position sensor circuit; open circuit • Passenger seat track position sensor circuit; short circuit to battery	For passenger seat track position sensor circuit tests, GO to Pinpoint Test M.
C2202 Flash code 48	Passenger seat track position sensor circuit short circuit to ground	• Passenger seat track position sensor circuit; short circuit to ground	For passenger seat track position sensor circuit tests, GO to Pinpoint Test M.
C2204 Flash code 48	Passenger seat track position sensor circuit resistance out of range	• Current out of range • Feature present, but not expected	Check configuration using the Jaguar approved diagnostic system. For passenger seat track position sensor circuit tests, GO to Pinpoint Test M.
B2290 Flash code 16 PID $5952/5959 (bit 3)	Occupant classification sensor (OCS) system fault	• OCS module fault	Check the power and ground to the module, GO to Pinpoint Test N. Please check part is not on any form of prior authorisation before replacement.
B2290 Flash code 16 PID $5952/5959 (bit 2)	Occupant classification sensor (OCS) system fault	• OCS module communications fault	For communication circuit tests, GO to Pinpoint Test N. For more detailed CAN circuit tests, REFER to: Communications Network - VIN Range: E96603->J28492 (418-00 Module Communications Network, Diagnosis and Testing).
B2290 Flash code 16 PID	Occupant classification sensor (OCS) system fault	• OCS module calibration fault	Check that the OCS is the correct unit for the vehicle. Please check part is not on any form of prior authorisation before replacement.

$5952/5959 (bit 1)			
B2290 Flash code 16 PID $5952/5959 (bit 0)	Occupant classification sensor (OCS) system fault	• OCS module sensing element fault	Install a new OCS, REFER to: Occupant Classification Sensor (501-20B Supplemental Restraint System, Removal and Installation).

Pinpoint tests

PINPOINT TEST A : B1869, B1870: AIRBAG MIL CIRCUIT FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
A1: CHECK THE AIRBAG WARNING LIGHT CIRCUIT FOR HIGH RESISTANCE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the RCM connector, IP74.
	4 Disconnect the instrument cluster connector, IP11.
	5 Measure the resistance between IP74, pin 19 (U) and IP11, pin 19 (U).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to A2.
A2: CHECK THE AIRBAG WARNING LIGHT CIRCUIT FOR SHORT CIRCUIT TO B+	
	1 Reconnect the battery negative terminal.
	2 Measure the voltage between IP74, pin 19 (U) and GROUND.
	Is the voltage greater than 3 volts? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** The LEDs in the instrument cluster are not serviceable. Install a new instrument cluster. Clear the DTC, test the system for normal operation. If the fault is still apparent, install a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation).

PINPOINT TEST B : B1884, B1890: PASSENGER AIRBAG DEACTIVATION (PAD) LAMP CIRCUIT FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
B1: CHECK THE PAD LAMP LED	
	1 Disconnect the PAD lamp connector, IP140.
	2 Measure the resistance between IP140, pins 01 (GR) and 03 (O).
	Is the resistance less than 10,000 ohms? **Yes** GO to B2. **No** INSTALL a new PAD lamp LED. REFER to: Passenger Air Bag Deactivation (PAD) Indicator (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation.
B2: CHECK THE PAD LAMP SUPPLY CIRCUIT FOR OPEN CIRCUIT	
	1 Turn the ignition switch to the **ON** position.
	2 Measure the voltage between IP140, pin 01 (GR) and GROUND.
	Is the voltage less than 10 volts? **Yes** REPAIR the circuit between the PAD lamp and battery. This circuit includes the primary junction box, fuses 31 and 41, the ignition switch, and the front power distribution box, fuse 39. For

	additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to B3.
B3: CHECK THE PAD LAMP SUPPLY CIRCUIT FOR SHORT CIRCUIT TO B+	
	1 Turn the ignition switch to the **OFF** position.
	2 Measure the voltage between IP74, pin 15 (O) and GROUND.
	Is the voltage greater than 3 volts? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to B4.
B4: CHECK THE PAD LAMP TRIGGER CIRCUIT FOR HIGH RESISTANCE	
	1 Disconnect the RCM connector, IP74.
	2 Measure the resistance between IP140, pin 03 (O) and IP74, pin 15 (O).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to B5.
B5: CHECK THE PAD LAMP TRIGGER CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between IP40, pin 03 (O) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation).

PINPOINT TEST C : B2293 (FLASH CODE 19 AND/OR 23): AIRBAG CIRCUIT STATUS FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
C1: CHECK THE AIRBAG CIRCUIT STATUS WITH SIMULATORS IN PLACE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete. For flash code 19 • Disconnect the driver airbag module connectors, SW01 and SW02. For flash code 23 • Disconnect the passenger airbag module connectors, IP36 and IP37.
	3 Connect the simulators in place of the airbag modules.
	4 Reconnect the battery negative terminal.
	5 Clear the DTC.
	6 Turn the ignition switch to the **ON** position.
	7 Recheck the DTCs and flash codes.
	Are there any DTCs and/or flash codes set with the simulators in place? **Yes** GO to C2. **No** INSTALL a new airbag module for the relevant side, REFER to: Driver Air Bag Module (501-20B Supplemental Restraint System, Removal and Installation) / Passenger Air Bag Module (501-20B Supplemental Restraint System, Removal and Installation).
C2: CHECK THE STAGE 1 CIRCUIT BETWEEN THE AIRBAG MODULE AND THE RCM FOR OPEN CIRCUIT	

WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.

	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	4 Disconnect the simulators.
	5 Measure the resistance between: For flash code 19 • SW02, pin 01 (G) and the RCM connector, pin 01 (G) • SW02, pin 02 (B) and the RCM connector, pin 02 (B) For flash code 23 • IP36, pin 01 (RW) and the RCM connector, pin 03 (RW) • IP36, pin 02 (BW) and the RCM connector, pin 04 (BW)
	Are any of the resistances greater than 5 ohms? **Yes** GO to C4. **No** GO to C3.
C3: CHECK THE STAGE 2 CIRCUIT BETWEEN THE AIRBAG MODULE AND THE RCM FOR OPEN CIRCUIT	
	1 Measure the resistance between: For flash code 19 • SW01, pin 01 (G) and the RCM connector, pin 05 (G) • SW01, pin 02 (B) and the RCM connector, pin 06 (B) For flash code 23 • IP37, pin 01 (RW) and the RCM connector, pin 13 (RW) • IP37, pin 02 (BW) and the RCM connector, pin 14 (BW)
	Are any of the resistances greater than 5 ohms? **Yes** GO to C4. **No** INSTALL a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation.
C4: CHECK THE CIRCUITS BETWEEN THE CLOCKSPRING AND THE RCM FOR OPEN CIRCUIT	
	1 Disconnect the clockspring connector, IP34.
	2 Measure the resistance between: • IP34, pin 10 (B) and the RCM connector, pin 02 (B) • IP34, pin 09 (G) and the RCM connector, pin 01 (G) • IP34, pin 02 (B) and the RCM connector, pin 06 (B) • IP34, pin 01 (G) and the RCM connector, pin 05 (G)
	Are any of the resistances greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to C5.
C5: CHECK THE CIRCUITS THROUGH THE CLOCKSPRING FOR HIGH RESISTANCE	

	1 Measure the resistance between: • SW01, pin 01 (G) and IP34, pin 01 (G) • SW01, pin 02 (B) and IP34, pin 02 (G) • SW02, pin 01 (G) and IP34, pin 01 (G) • SW02, pin 02 (B) and IP34, pin 02 (B)
	Are any of the resistances greater than 5 ohms? **Yes** INSTALL a new clockspring. REFER to: Clockspring (501-20B Supplemental Restraint System, Removal and Installation). **No** INSTALL a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation.

PINPOINT TEST D : B2294: (FLASH CODE 24 AND/OR 25): CURTAIN AIRBAG CIRCUIT STATUS FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
D1: CHECK THE CURTAIN AIRBAG CIRCUIT STATUS WITH SIMULATORS IN PLACE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete. For flash code 24 • Disconnect the driver curtain airbag module connector, CA144. For flash code 25 • Disconnect the passenger curtain airbag module connector, CA145.
	3 Connect the simulator(s) in place of the airbag module(s).
	4 Reconnect the battery negative terminal.
	5 Clear the DTC.
	6 Turn the ignition switch to the **ON** position.
	7 Recheck the DTCs and flash codes.
	Are there any DTCs and/or flash codes set with the simulator(s) in place? **Yes** GO to D2. **No** INSTALL a new curtain airbag module for the relevant side, REFER to: Side Air Curtain Module - 4-Door (501-20B Supplemental Restraint System, Removal and Installation) / Side Air Curtain Module - Wagon (501-20B Supplemental Restraint System, Removal and Installation).
D2: CHECK THE CIRCUITS BETWEEN THE CURTAIN AIRBAG MODULE AND THE RCM FOR OPEN CIRCUIT	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the simulator(s).
	4 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.

	5 Measure the resistance between: For flash code 24 • The RCM connector, pin 03 (RW) and CA144, pin 01 (RW) • The RCM connector, pin 04 (BW) and CA144, pin 02 (BW) For flash code 25 • The RCM connector, pin 05 (RW) and CA145, pin 01 (RW) • The RCM connector, pin 06 (BW) and CA145, pin 02 (BW)
	Are any of the resistances greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation.

PINPOINT TEST E : B2295 (FLASH CODE 22 AND/OR 23): SIDE AIRBAG CIRCUIT STATUS FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
E1: CHECK THE SIDE AIRBAG CIRCUIT STATUS WITH SIMULATORS IN PLACE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete. For flash code 22 • Disconnect the driver side airbag module connector, AL01. For flash code 23 • Disconnect the passenger side airbag module connector, AD01.
	3 Connect the simulator(s) in place of the airbag module(s).
	4 Reconnect the battery negative terminal.
	5 Clear the DTC.
	6 Turn the ignition switch to the **ON** position.
	7 Recheck the DTCs and flash codes.
	Are there any DTCs and/or flash codes set with the simulator(s) in place? **Yes** GO to E2. **No** INSTALL a new side airbag module for the relevant side. REFER to: Side Air Curtain Module - 4-Door (501-20B Supplemental Restraint System, Removal and Installation) / Side Air Curtain Module - Wagon (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation.
E2: CHECK THE CIRCUITS BETWEEN THE SIDE AIRBAG MODULE AND THE RCM FOR OPEN CIRCUIT	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the simulator(s).
	4 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165.

	For vehicles with 2.5/3.0L engine; • CA450.
	5 Measure the resistance between: For flash code 22 • The RCM connector, pin 01 (RW) and AL01, pin 01 (RW) • The RCM connector, pin 02 (BW) and AL01, pin 02 (BW) For flash code 23 • The RCM connector, pin 21 (RW) and AD01, pin 01 (RW) • The RCM connector, pin 22 (BW) and AD01, pin 02 (BW)
	Are any of the resistances greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation.

PINPOINT TEST F : B2296 (FLASH CODE 42): FRONT IMPACT SENSOR CIRCUIT STATUS FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
F1: CHECK THE POWER SUPPLY TO THE FRONT IMPACT SENSOR	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the front impact sensor connector, JB93.
	4 Reconnect the battery negative terminal.
	5 Turn the ignition switch to the **ON** position.
	6 Measure the voltage between JB93, pin 02 (W) and GROUND.
	Is the voltage less than 4 volts? **Yes** GO to F2. **No** GO to F3.
F2: CHECK THE FRONT IMPACT SENSOR SUPPLY CIRCUIT FOR OPEN CIRCUIT	
	1 Turn the ignition switch to the **OFF** position.
	2 Disconnect the battery negative terminal.
	3 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	4 Measure the resistance between JB93, pin 02 (W) and the RCM connector, pin 19 (W).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to F3.
F3: CHECK THE FRONT IMPACT SENSOR RETURN CIRCUIT FOR OPEN CIRCUIT	
	1 Measure the resistance between JB93, pin 01 (N) and the RCM connector, pin 20 (N).
	Is the resistance greater than 5 ohms?

	Yes REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new front impact sensor, REFER to: Crash Sensor. Clear the DTC, test the system for normal operation. If the fault persists, install a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation.

PINPOINT TEST G : B2296 (FLASH CODE 43): FRONT DRIVER SIDE IMPACT SENSOR CIRCUIT STATUS FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
G1: CHECK THE POWER SUPPLY TO THE FRONT DRIVER SIDE IMPACT SENSOR	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the front driver side impact sensor connector, CA215.
	4 Reconnect the battery negative terminal.
	5 Turn the ignition switch to the **ON** position.
	6 Measure the voltage between CA215, pin 02 (W) and GROUND.
	Is the voltage less than 4 volts? **Yes** GO to G2. **No** GO to G3.
G2: CHECK THE FRONT DRIVER SIDE IMPACT SENSOR SUPPLY CIRCUIT FOR OPEN CIRCUIT	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Turn the ignition switch to the **OFF** position.
	2 Disconnect the battery negative terminal.
	3 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	4 Measure the resistance between CA215, pin 02 (W) and the RCM connector, pin 27 (W).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to G3.
G3: CHECK THE FRONT DRIVER SIDE IMPACT SENSOR RETURN CIRCUIT FOR OPEN CIRCUIT	
	1 Measure the resistance between CA215, pin 01 (N) and the RCM connector, pin 28 (N).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new front driver side impact sensor, REFER to: Side Impact Sensor (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation. If the fault persists, install a new RCM.

	REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation.

PINPOINT TEST H : B2296 (FLASH CODE 44): FRONT PASSENGER SIDE IMPACT SENSOR CIRCUIT STATUS FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
H1: CHECK THE POWER SUPPLY TO THE FRONT PASSENGER SIDE IMPACT SENSOR	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the front passenger side impact sensor connector, CA216.
	4 Reconnect the battery negative terminal.
	5 Turn the ignition switch to the **ON** position.
	6 Measure the voltage between CA216, pin 02 (W) and GROUND.
	Is the voltage less than 4 volts? **Yes** GO to H2. **No** GO to H3.
H2: CHECK THE FRONT PASSENGER SIDE IMPACT SENSOR SUPPLY CIRCUIT FOR OPEN CIRCUIT	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Turn the ignition switch to the **OFF** position.
	2 Disconnect the battery negative terminal.
	3 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	4 Measure the resistance between CA216, pin 02 (W) and the RCM connector, pin 29 (W).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to H3.
H3: CHECK THE FRONT PASSENGER SIDE IMPACT SENSOR RETURN CIRCUIT FOR OPEN CIRCUIT	
	1 Measure the resistance between CA216, pin 01 (N) and the RCM connector, pin 30 (N).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new front passenger side impact sensor, REFER to: Side Impact Sensor (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation. If the fault persists, install a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation.

PINPOINT TEST I : B2296 (FLASH CODE 45): REAR DRIVER SIDE IMPACT SENSOR CIRCUIT STATUS FAULT	
TEST	**DETAILS/RESULTS/ACTIONS**

CONDITIONS	
I1: CHECK THE POWER SUPPLY TO THE REAR DRIVER SIDE IMPACT SENSOR	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the rear driver side impact sensor connector, CA140.
	4 Reconnect the battery negative terminal.
	5 Turn the ignition switch to the **ON** position.
	6 Measure the voltage between CA140, pin 02 (W) and GROUND.
	Is the voltage less than 4 volts? **Yes** GO to I2. **No** GO to I3.
I2: CHECK THE REAR DRIVER SIDE IMPACT SENSOR SUPPLY CIRCUIT FOR OPEN CIRCUIT	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Turn the ignition switch to the **OFF** position.
	2 Disconnect the battery negative terminal.
	3 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	4 Measure the resistance between CA140, pin 02 (W) and the RCM connector, pin 13 (W).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to I3.
I3: CHECK THE REAR DRIVER SIDE IMPACT SENSOR RETURN CIRCUIT FOR OPEN CIRCUIT	
	1 Measure the resistance between CA140, pin 01 (N) and the RCM connector, pin 14 (N).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new rear driver side impact sensor, REFER to: Side Impact Sensor (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation. If the fault persists, install a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation.

PINPOINT TEST J : B2296 (FLASH CODE 46): REAR PASSENGER SIDE IMPACT SENSOR CIRCUIT STATUS FAULT	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
J1: CHECK THE POWER SUPPLY TO THE REAR PASSENGER SIDE IMPACT SENSOR	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	

	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the rear passenger side impact sensor connector, CA131.
	4 Reconnect the battery negative terminal.
	5 Turn the ignition switch to the **ON** position.
	6 Measure the voltage between CA131, pin 02 (W) and GROUND.
	Is the voltage less than 4 volts? **Yes** GO to J2. **No** GO to J3.
J2: CHECK THE REAR PASSENGER SIDE IMPACT SENSOR SUPPLY CIRCUIT FOR OPEN CIRCUIT	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Turn the ignition switch to the **OFF** position.
	2 Disconnect the battery negative terminal.
	3 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	4 Measure the resistance between CA131, pin 02 (W) and the RCM connector, pin 15 (W).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to J3.
J3: CHECK THE REAR PASSENGER SIDE IMPACT SENSOR RETURN CIRCUIT FOR OPEN CIRCUIT	
	1 Measure the resistance between CA131, pin 01 (N) and the RCM connector, pin 14 (N).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new rear passenger side impact sensor, REFER to: Side Impact Sensor (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation. If the fault persists, install a new RCM. REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation.

PINPOINT TEST K : B2988, B2989, B2990, B2991 (FLASH CODE 28): KNEE BOLSTER CIRCUIT OPEN/SHORT CIRCUIT	
WARNING: **DO NOT** attempt to measure the resistance across the airbag module. Failure to follow this instruction may result in personal injury.	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
K1: CHECK THE KNEE BOLSTER AIRBAG CIRCUIT STATUS WITH A SIMULATOR IN PLACE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the knee bolster connector, CA420.

	4 Connect the simulator in place of the airbag module.
	5 Reconnect the battery negative terminal.
	6 Clear the DTC.
	7 Turn the ignition switch to the **ON** position.
	8 Recheck the DTCs and flash codes.
	Are there any DTCs and/or flash codes set with the simulators in place? **Yes** GO to K2. **No** INSTALL a new knee bolster airbag module, REFER to: Driver Lower Air Bag Module (501-20B Supplemental Restraint System, Removal and Installation).
K2: CHECK THE KNEE BOLSTER AIRBAG MODULE SUPPLY CIRCUIT FOR OPEN CIRCUIT	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the simulator from the knee bolster connector, CA420.
	4 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	5 Measure the resistance between CA420, pin 01 (RW) and the RCM connector, pin 07 (RW).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to K3.
K3: CHECK THE KNEE BOLSTER AIRBAG MODULE SUPPLY CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA420, pin 01 (RW) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to K4.
K4: CHECK THE KNEE BOLSTER AIRBAG MODULE SUPPLY CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA420, pin 01 (RW) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** INSTALL a new knee bolster airbag module, REFER to: Driver Lower Air Bag Module (501-20B Supplemental Restraint System, Removal and Installation).

PINPOINT TEST L : C1947 (FLASH CODE 49): DRIVER SEAT TRACK POSITION SENSOR CIRCUIT FAULT	
• NOTE: Check the seat track position sensor for correct fitment before beginning pinpoint tests.	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
L1: CHECK THE DRIVER SEAT TRACK POSITION SENSOR SUPPLY CIRCUIT FOR HIGH RESISTANCE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.	

	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the driver seat track sensor connector, CA65.
	4 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	5 Measure the resistance between CA65, pin 20 (U) and the RCM connector, pin 23 (U).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to L2.
L2: CHECK THE DRIVER SEAT TRACK POSITION SENSOR SUPPLY CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA65, pin 20 (U) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to L3.
L3: CHECK THE DRIVER SEAT TRACK POSITION SENSOR SUPPLY CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA65, pin 20 (U) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to L4.
L4: CHECK THE DRIVER SEAT TRACK POSITION SENSOR GROUND CIRCUIT FOR HIGH RESISTANCE	
	1 Measure the resistance between CA65, pin 19 (B) and GROUND.
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to L5.
L5: CHECK THE DRIVER SEAT TRACK POSITION SENSOR GROUND CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA65, pin 19 (B) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new driver seat track position sensor. REFER to: Seat Position Sensor (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation. If the DTC is repeated, install a new RCM, REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation).

PINPOINT TEST M : C2200 (FLASH CODE 48): PASSENGER SEAT TRACK POSITION SENSOR CIRCUIT FAULT	
• NOTE: Check the seat track position sensor for correct fitment before beginning pinpoint tests.	
TEST CONDITIONS	**DETAILS/RESULTS/ACTIONS**
M1: CHECK THE PASSENGER SEAT TRACK POSITION SENSOR SUPPLY CIRCUIT FOR HIGH RESISTANCE	
WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be	

depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.

	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the passenger seat track sensor connector, CA70.
	4 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	5 Measure the resistance between CA70, pin 20 (U) and the RCM connector, pin 24 (U).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to M2.
M2: CHECK THE PASSENGER SEAT TRACK POSITION SENSOR SUPPLY CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA70, pin 20 (U) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to M3.
M3: CHECK THE PASSENGER SEAT TRACK POSITION SENSOR SUPPLY CIRCUIT FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between CA70, pin 20 (U) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to M4.
M4: CHECK THE PASSENGER SEAT TRACK POSITION SENSOR GROUND CIRCUIT FOR HIGH RESISTANCE	
	1 Measure the resistance between CA70, pin 19 (B) and GROUND.
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** GO to M5.
M5: CHECK THE PASSENGER SEAT TRACK POSITION SENSOR GROUND CIRCUIT FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between CA70, pin 19 (B) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. Clear the DTC, test the system for normal operation. **No** INSTALL a new passenger seat track position sensor. REFER to: Seat Position Sensor (501-20B Supplemental Restraint System, Removal and Installation). Clear the DTC, test the system for normal operation. If the DTC is repeated, install a new RCM, REFER to: Restraints Control Module (RCM) (501-20B Supplemental Restraint System, Removal and Installation).

PINPOINT TEST N : B2290 (FLASH CODE 16): OCCUPANT CLASSIFICATION SENSOR (OCS) SYSTEM FAULT
• NOTE: Refer to the preliminary inspection table for fuse checks, etc before beginning pinpoint tests.

• NOTE: For belt tension sensor to OCS circuit tests,
REFER to: Safety Belt System (501-20A Safety Belt System, Diagnosis and Testing).

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
N1: CHECK THE POWER SUPPLY TO THE OCS	
	WARNING: To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait for one minute. Failure to follow this instruction may result in personal injury.
	1 Disconnect the battery negative terminal.
	2 Wait one minute for the backup power supply to deplete.
	3 Disconnect the OCS connector, WS17.
	4 Turn the ignition switch to the **ON** position.
	5 Measure the voltage between WS17, pin G (GR) and GROUND.
	Is the voltage less than 10 volts? **Yes** REPAIR the circuit between the OCS and battery. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N2.
N2: CHECK THE GEOUND TO THE OCS	
	1 Measure the resistance between WS17, pin D and GROUND.
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N3.
N3: CHECK THE SIGNAL CIRCUIT BETWEEN THE OCS AND THE SEAT TRANSDUCER FOR HIGH RESISTANCE	
	1 Disconnect the seat transducer connector, WS20.
	2 Measure the resistance between WS17, pin K (U) and WS20, pin 02 (U).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N4.
N4: CHECK THE SIGNAL CIRCUIT BETWEEN THE OCS AND THE SEAT TRANSDUCER FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between WS17, pin K (U) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N5.
N5: CHECK THE SIGNAL CIRCUIT BETWEEN THE OCS AND THE SEAT TRANSDUCER FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between WS17, pin K (U) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N6.
N6: CHECK THE 5V CIRCUIT BETWEEN THE OCS AND THE SEAT TRANSDUCER FOR HIGH RESISTANCE	
	1 Measure the resistance between WS17, pin J (W) and WS20, pin 01 (W).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N7.
N7: CHECK THE 5V CIRCUIT BETWEEN THE OCS AND THE SEAT TRANSDUCER FOR SHORT CIRCUIT TO BATTERY	

	1 Measure the resistance between WS17, pin J (W) and the battery positive terminal. Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N8.
N8: CHECK THE 5V CIRCUIT BETWEEN THE OCS AND THE SEAT TRANSDUCER FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between WS17, pin J (W) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N9.
N9: CHECK THE GROUND CIRCUIT BETWEEN THE OCS AND THE SEAT TRANSDUCER FOR HIGH RESISTANCE	
	1 Measure the resistance between WS17, pin H (R) and WS20, pin 03 (R).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N10.
N10: CHECK THE GROUND CIRCUIT BETWEEN THE OCS AND THE SEAT TRANSDUCER FOR SHORT CIRCUIT TO BATTERY	
	1 Measure the resistance between WS17, pin H (R) and the battery positive terminal.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N11.
N11: CHECK THE GROUND CIRCUIT BETWEEN THE OCS AND THE SEAT TRANSDUCER FOR SHORT CIRCUIT TO GROUND	
	1 Measure the resistance between WS17, pin H (R) and GROUND.
	Is the resistance less than 10,000 ohms? **Yes** REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N12.
N12: CHECK THE CONTROLLER AREA NETWORK + CIRCUIT BETWEEN THE RCM AND THE OCS FOR HIGH RESISTANCE	
	1 Disconnect the RCM connector, For vehicles with 2.0L engine; • CA165. For vehicles with 2.5/3.0L engine; • CA450.
	2 Measure the resistance between the RCM connector, pin 17 (O) and WS17, pin E (O).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No** GO to N13.
N13: CHECK THE CONTROLLER AREA NETWORK - CIRCUIT BETWEEN THE RCM AND THE OCS FOR HIGH RESISTANCE	
	1 Measure the resistance between the RCM connector, pin 18 (U) and WS17, pin F (U).
	Is the resistance greater than 5 ohms? **Yes** REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation. **No**

		For more detailed CAN circuit tests, REFER to: Communications Network - VIN Range: E96603->J28492 (418-00 Module Communications Network, Diagnosis and Testing).

Supplemental Restraint System - Air Bag Disposal

General Procedures

Deployed Air Bag

1. WARNING: Always wear safety glasses when repairing an air bag supplemental restraint system (SRS) vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

Deployed air bag modules are to be disposed of as special waste and must comply with local environmental requirements, if in doubt, contact Authority for disposal requirements.

2. NOTE: The storage, transportation, disposal, and/or recycling of air bag module components must be carried out in accordance with all applicable federal, state and local regulations including, but not limited to, those governing building and fire codes, environmental protection, occupational health and safety, and transportation.

Modules removed and deployed by Jaguar service are to be returned to the importer for disposal.

Undeployed Air Bag — Inoperative

1. WARNINGS:

Carry a live air bag module with the air bag and trim cover or deployment door pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

All inoperative air bag modules have been placed on the Mandatory Return List. All discolored or damaged air bag modules must be treated the same as any inoperative live air bag being returned. Failure to follow this instruction may result in personal injury.

Remove the inoperative driver air bag module or passenger air bag module. For additional information see Driver Air Bag Module or Passenger Air Bag Module in this section.

Undeployed Air Bag — Scrapped Vehicle

Remote Deployment

1. WARNINGS:

Always wear safety glasses when repairing an air bag supplemental restraint system (SRS) vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

Carry a live air bag module with the air bag and trim cover or deployment door pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

Remote deployment is to be carried out outdoors with all personnel at least 6.1 meters (20 feet) away to ensure personal safety. Due to the loud report which occurs when the air bag is deployed, hearing protection is required. Failure to

follow this instruction may result in personal injury.

 Do not place the driver or passenger air bag module with the trim cover or deployment door facing down, as the forces of the deploying air bag can cause it to ricochet and cause personal injury. Failure to follow this instruction may result in personal injury.

Equipment required: Universal deployment tool-Part N° 418-S135 and 12V Battery.

2. The deployment procedure should be carried out outdoors away from other personnel.

3. Remove any loose debris from around air bag. Make sure that no flammable liquids are present.

4. Disconnect the battery ground and positive cables.

5. Disconnect the relevant air bag module electrical connector.

6. Connect the appropriate adaptor lead to the restraint device.

7. Connect the deployment lead to the adaptor lead. Pass wire of the deployment tool through window, close all doors, leave window with lead for deployment tool open.

8.  WARNING: Before proceeding, make sure precautions have been taken to warn personnel of a possible loud noise upon activation. Do not allow anybody to approach closer to restraint device than six meters. Failure to follow this instruction may result in personal injury.

Move as far from restraint device as possible and connect the tool clips to a 12V vehicle battery.

9.  WARNING: Do not handle the deployed device immediately after activation - it may be hot. Allow the unit to cool for at least 20 minutes. Cooling modules should be continuously monitored to make sure heat does not create a fire with spilled liquids or other debris. Failure to follow this instruction may result in personal injury.

Deploy the module by depressing both switches on the tool. If activation does not occur, disconnect battery from tool and seek advise from Jaguar Engineering and wait for further instructions.

10. Repeat procedure for all air bags in vehicle.

11. The vehicle is now to be scrapped in the normal manner with modules installed.

Disposal of live air bag modules for driver air bag module, passenger air bag module and side air bag module, using tyres

1. Equipment required: Deployment tool 418-S135, Battery (12V), Safety goggles to BS2092 grade 2, Rubber gloves to PrEN 374 class 2, Ear protectors that have been measured to BS.EN 24869, Particulate respirator to EN 149 grade FFP2S.

2. The deployment procedure should be carried out outdoors, away from other personnel.

3. Stack four scrap tyres, securing together with heavy gauge wire or cable. While disconnected from any electrical power source, connect deployment harness and place air bag adaptor portion under tyre stack, ready for connection to air bag.

4.  WARNING: Power must not be connected during this step. Failure to follow this instruction may result in personal

injury.

 CAUTION: Make sure the connector is not in contact with the inflator or it will be damaged during the test.

Connect air bag to air bag connector, make sure the locking sleeve is fully engaged. Position the air bag with the cover facing upwards.

5. Make sure battery connections of deployment harness are ten meters away from the tyre stack

6. Remove any loose parts from around the air bag. Make sure that no flammable liquids are present.

7.  WARNING: Before proceeding, make sure precautions have been taken to warn personnel of a possible loud noise upon activation. Do not allow anybody to approach closer to restraint device than six meters. Failure to follow this instruction may result in personal injury.

Move as far from restraint device as possible and connect the tool clips to a 12V vehicle battery.

8.  WARNING: Do not handle the deployed device immediately after activation - it may be hot. Allow the unit to cool for at least 20 minutes. Cooling modules should be continuously monitored to make sure heat does not create a fire with spilled liquids or other debris. Failure to follow this instruction may result in personal injury.

Deploy the module by depressing both switches on the tool. If activation does not occur, disconnect battery from tool and seek advise from Jaguar Engineering and wait for further instructions.

9. Allow the air bag to cool for at least 20 minutes. Cooling modules should be continuously monitored to make sure heat does not generate a fire with spilled liquids or other debris.

10. Remove the air bag from the tyre stack and seal in a plastic bag, ready for disposal.

11. In the event of any problems or queries arising from this procedure, contact Jaguar Engineering.

Disposal of side curtain air bag module using tyres

1. Equipment required: Deployment tool 418-S135, Battery (12V), Safety goggles to BS2092 grade 2, Rubber gloves to PrEN 374 class 2, Ear protectors that have been measured to BS.EN 24869, Particulate respirator to EN 149 grade FFP2S.

2. The deployment procedure should be carried out outdoors, away from other personnel.

3.  WARNING: Make sure that the tyre stack is stable before and after deployment. Failure to follow this instruction my result in personal injury.

Stack scrap tyres of a sufficient height to mask the side curtain air bag module, securing together with heavy gauge wire or cable. While disconnected from any electrical power source, connect deployment harness and place air bag adaptor portion under tyre stack, ready for connection to air bag.

4.  WARNING: Power must not be connected during this step. Failure to follow this instruction may result in personal injury.

CAUTION: Make sure the connector is not in contact with the inflator or it will be damaged during the test.

Connect air bag to air bag connector, make sure the locking sleeve is fully engaged. Position the air bag into the tyres with the inflator canister at the lowest point.

5. Make sure battery connections of deployment harness are ten meters away from the tyre stack

6. Remove any loose parts from around the air bag. Make sure that no flammable liquids are present.

7. WARNING: Before proceeding, make sure precautions have been taken to warn personnel of a possible loud noise upon activation. Do not allow anybody to approach closer to restraint device than six meters. Failure to follow this instruction may result in personal injury.

Move as far from restraint device as possible and connect the tool clips to a 12V vehicle battery.

8. WARNING: Do not handle the deployed device immediately after activation - it may be hot. Allow the unit to cool for at least 20 minutes. Cooling modules should be continuously monitored to make sure heat does not create a fire with spilled liquids or other debris. Failure to follow this instruction may result in personal injury.

Deploy the module by depressing both switches on the tool. If activation does not occur, disconnect battery from tool and seek advise from Jaguar Engineering and wait for further instructions.

9. Allow the air bag to cool for at least 20 minutes. Cooling modules should be continuously monitored to make sure heat does not generate a fire with spilled liquids or other debris.

10. Remove the air bag from the tyre stack and seal in a plastic bag, ready for disposal.

11. In the event of any problems or queries arising from this procedure, contact Jaguar Engineering.

Supplemental Restraint System - Clockspring

Removal and Installation

Removal

1. WARNINGS:

 Always wear safety glasses when repairing an air bag supplemental restraints system (SRS) vehicle and when handling an air bag module.

 Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

 Do not set a live air bag module down with the trim cover face down. Failure to follow this instruction may result in personal injury.

 After deployment, the air bag surface can contain deposits of sodium hydroxide, a product of the gas generant combustion that is irritating to the skin. Wash your hands with soap and water afterwards. Failure to follow this instruction may result in personal injury.

 Never probe the connectors on the air bag module. Doing so may result in air bag deployment, which may result in personal injury. Failure to follow this instruction may result in personal injury.

 Air bag modules with discolored or damaged trim covers must be replaced, not repainted.

 Vehicle sensor orientation is critical for correct system operation. If a vehicle equipped with an air bag SRS is involved in a collision, inspect the sensor mounting bracket and wiring pigtail for deformation. If damaged, replace the sensor whether or not the air bag is deployed.

 To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

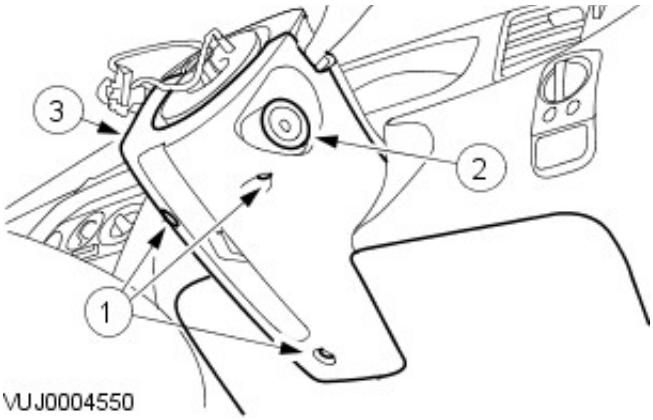
• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

• NOTE: Make sure the front wheels are in the straight-ahead position.

Remove the steering wheel. For additional information, refer to Section 211-04 Steering Column.

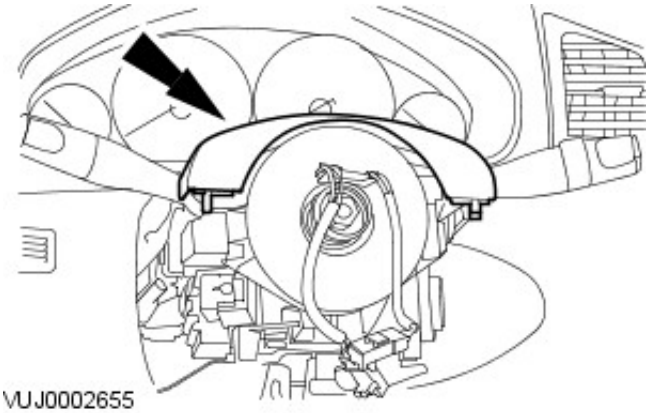
2. Remove the steering column lower shroud.

1. Remove the steering column lower shroud retaining screws.
2. Remove the ignition lock cylinder grommet.
3. Remove the steering column lower shroud.



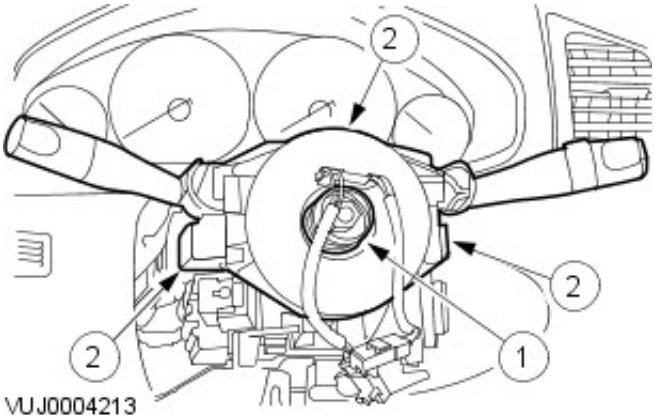
VUJ0004550

3. Remove the steering column upper shroud.


VUJ0002655

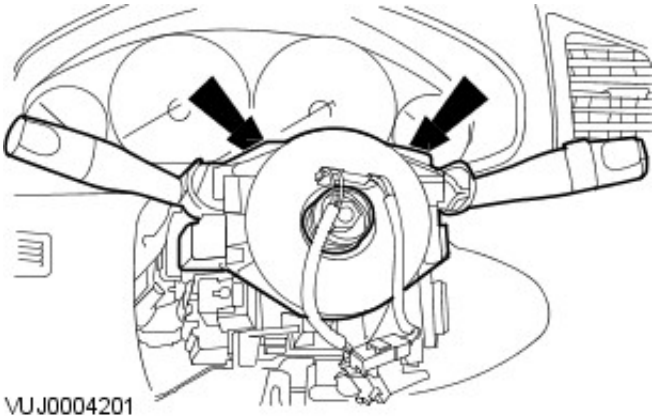
4. Disconnect the multifunction switch electrical connectors.

1. Remove the multifunction switch spring.
2. Disconnect the multifunction switch electrical connectors.



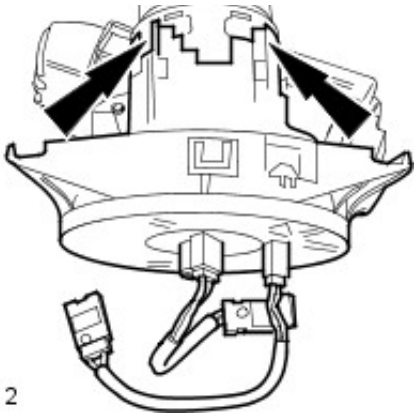
VUJ0004213

5. Remove the multifunction switches.


VUJ0004201

6. Remove the air bag sliding contact.

- Release the retaining tangs.



VUJ0004212

Installation

1. WARNINGS:

Always wear safety glasses when repairing an air bag supplemental restraints system (SRS) vehicle and when handling an air bag module.

Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

• NOTE: A repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

• NOTE: The air bag sliding contact has a service lock that prevents rotation of the air bag sliding contact when the steering wheel is removed.

• NOTE: Make sure the front wheels are in the straight-ahead position.

• NOTE: Make sure to tighten the retaining bolts to the correct specification.

To install, reverse the removal procedure.

Supplemental Restraint System - Crash Sensor
Removal and Installation

Removal

1. WARNINGS:

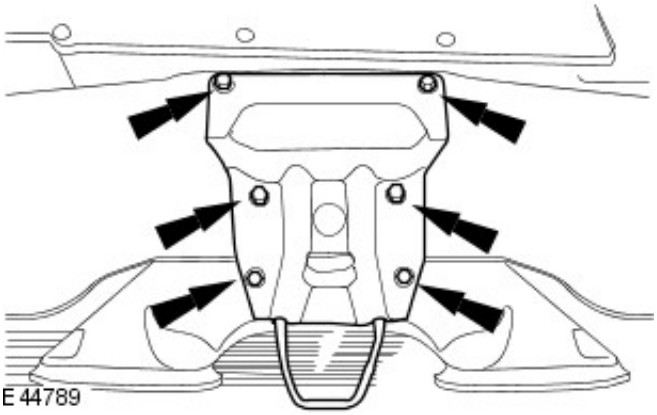
To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag or any other supplemental restraints system (SRS) components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

Never probe the electrical connectors of air bag modules or any other SRS component. Failure to follow this instruction may result in personal injury.

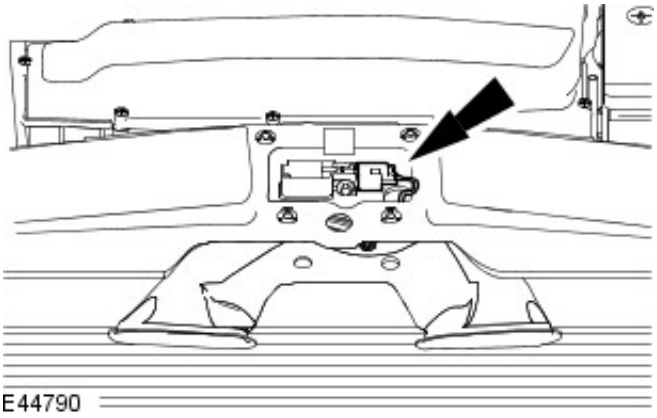
• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

Disconnect the battery ground cable. For additional information, refer to Section 414-01 Battery, Mounting and Cables.

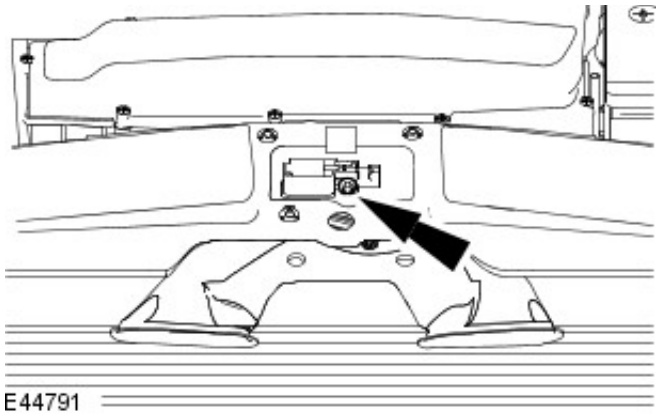
2. Remove the hood latch bracket retaining bolts.


E44789

3. Disconnect the crash sensor electrical connector.


E44790

4. Remove the crash sensor.



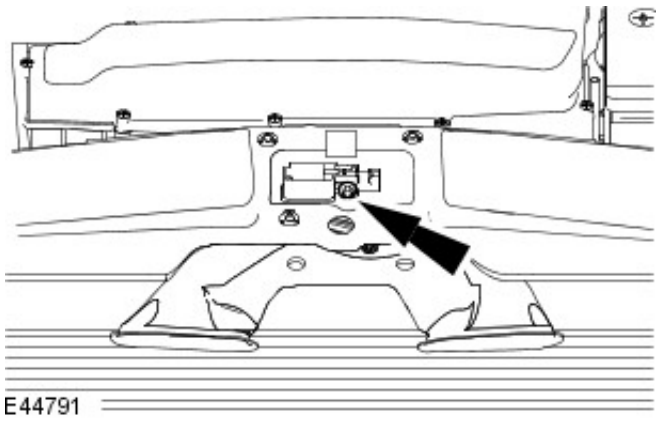
Installation

• WARNINGS:

Make sure the crash sensor locating tang is correctly located. Failure to follow this instruction may result in personal injury.

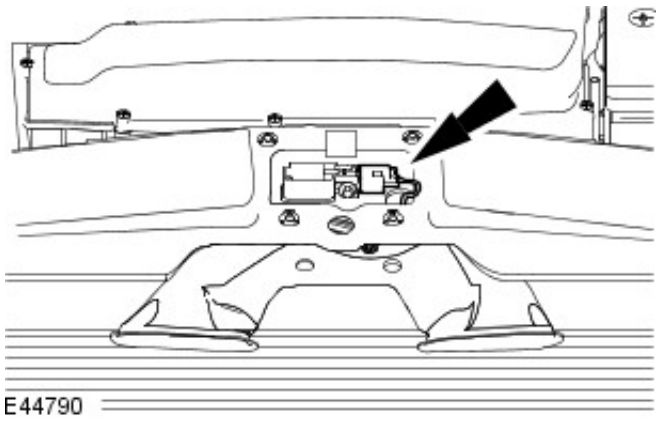
Never probe the electrical connectors of air bag modules or any other supplemental restraint system (SRS) component. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.



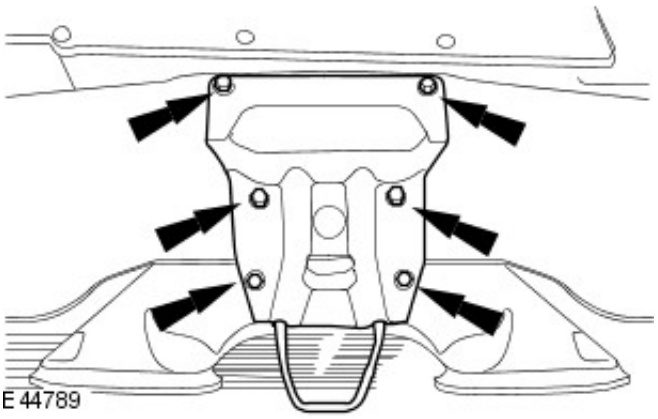
1. Install the crash sensor.

- Tighten to 12 Nm.



2. Connect the crash sensor electrical connector.

3. Tighten the hood latch bracket retaining bolts.


E 44789

Supplemental Restraint System - Driver Air Bag Module

Removal and Installation

Removal

1. WARNINGS:

 An RCM module only requires replacement if the system has incurred five separate deployments. At no time change an RCM for less than five separate deployments.

 Always wear safety glasses when repairing an air bag supplemental restraints system (SRS) vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

 Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

 Do not set a live air bag module down with the trim cover face down. Failure to follow this instruction may result in personal injury.

 After deployment, the air bag surface can contain deposits of sodium hydroxide, a product of the gas generant combustion that is irritating to the skin. Wash your hands with soap and water afterwards. Failure to follow this instruction may result in personal injury.

 Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

 Air bag modules with discolored or damaged trim covers must be replaced.

 Vehicle sensor orientation is critical for correct system operation. If a vehicle equipped with an air bag SRS is involved in a collision, inspect the sensor mounting bracket and wiring pigtail for deformation. If damaged, install a new sensor whether or not the air bag is deployed. If the body work is damaged this will have to be addressed.

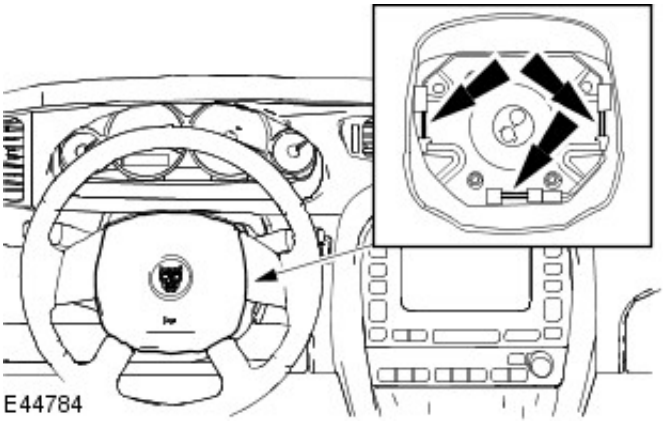
 To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

• NOTE: When installing a new air bag module, a prepaid return postcard is provided with the replacement air bag module. The serial number for the new part and the vehicle identification number (VIN) must be recorded and sent to Jaguar Cars Ltd.

Disconnect the battery ground cable.

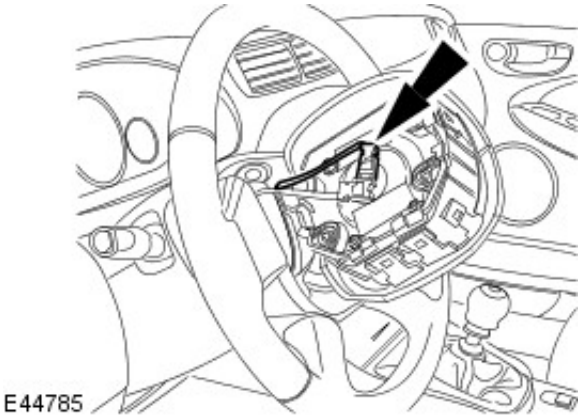
For additional information, refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).


E44784

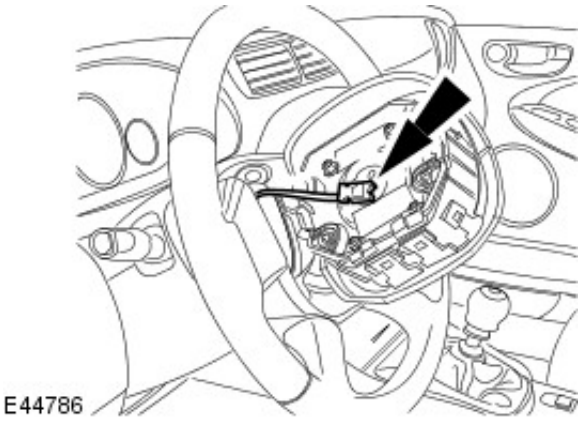
2. CAUTION: Make sure the driver air bag module snap fit connectors are released before removing the driver air bag module.

Detach the driver air bag module.

- Using a suitable tool, access the clips from the rear of the steering wheel.
- Rotate the tool and release the three clips.


E44785

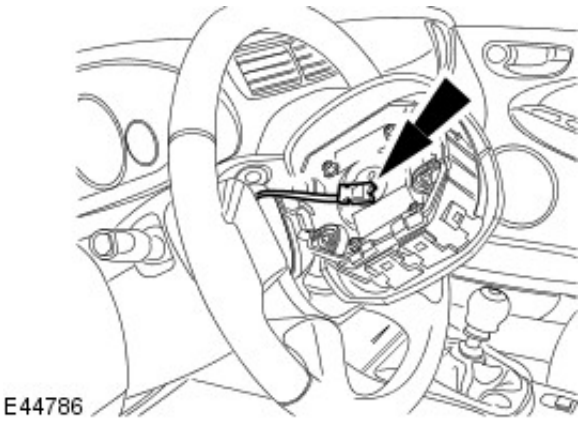
3. Disconnect the driver air bag module electrical connector.


E44786

4. Remove the driver air bag module.

- Disconnect the driver air bag module electrical connector.

Installation


E44786

1. WARNINGS:

An RCM module only requires replacement if the system has incurred five separate deployments. At no time change an RCM for less than five separate deployments.

Always wear safety glasses when repairing an air bag supplemental restraints system (SRS) vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk

of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

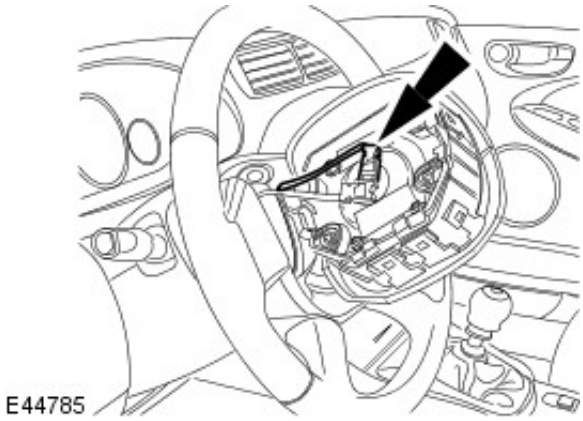
Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition , install the original part and carry out the diagnostic procedure again.

• NOTE: When installing a new air bag module, a prepaid return postcard is provided with the replacement air bag module. The serial number for the new part and the vehicle identification number (VIN) must be recorded and sent to Jaguar Cars Ltd.

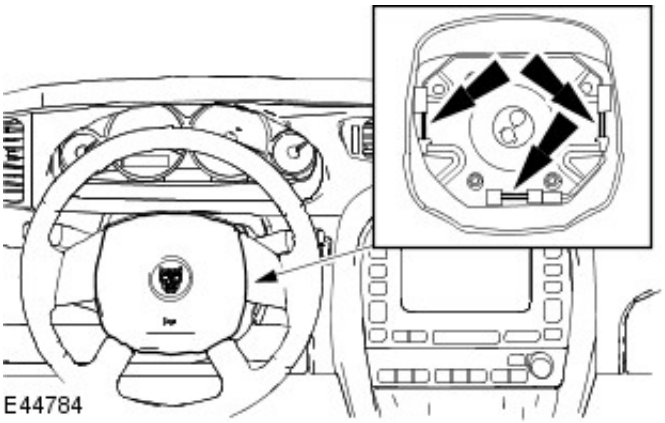
Connect the driver air bag module electrical connector.

2. Connect the driver air bag module electrical connector.


E44785

3. NOTE: Make sure the driver air bag module snap fit connectors are fully seated.

Install the driver air bag module.


E44784

4. Connect the battery ground cable.
For additional information, refer to: Battery Connect (414-01 Battery, Mounting and Cables, General Procedures).

Supplemental Restraint System - Driver Lower Air Bag Module

Removal and Installation

Removal

1. WARNINGS:

 A restraints control (RCM) module only requires replacement if the system has incurred five separate deployments. At no time change an RCM for less than five separate deployments.

 Always wear safety glasses when repairing an air bag supplemental restraints system (SRS) and when handling an air bag module. Failure to follow this instruction may result in personal injury.

 Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

 Do not set a live air bag module down with the trim cover face down. Failure to follow this instruction may result in personal injury.

 After deployment, the air bag surface can contain deposits of sodium hydroxide, a product of the gas generant combustion that is irritating to the skin. Wash your hands with soap and water afterwards. Failure to follow this instruction may result in personal injury.

 Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

 Air bag modules with discolored or damaged trim covers must be replaced.

 Vehicle sensor orientation is critical for correct system operation. If a vehicle equipped with an air bag SRS is involved in a collision, inspect the sensor mounting bracket and wiring pigtail for deformation. If damaged, install a new sensor whether or not the air bag is deployed.

 To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

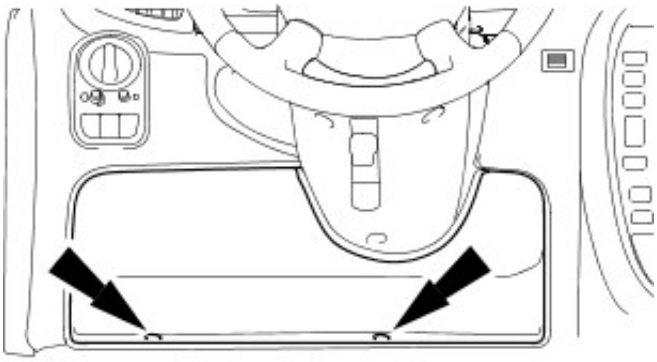
• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

• NOTE: When installing a new air bag module, a prepaid return postcard is provided with the replacement air bag module. The serial number for the new part and the vehicle identification number (VIN) must be recorded and sent to Jaguar Cars Ltd.

Disconnect the battery ground cable.

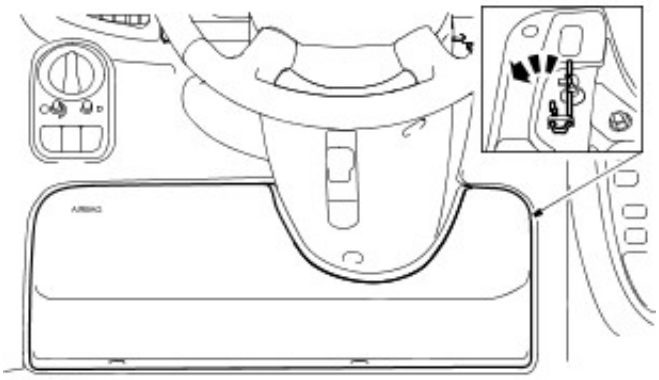
For additional information, refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

2. Remove the driver lower air bag module retaining screws.



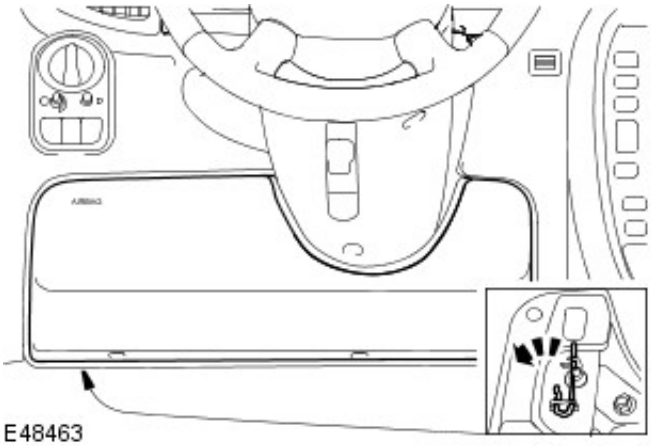
E48461

3. Detach the right-hand driver lower air bag module retaining clip.



E48462

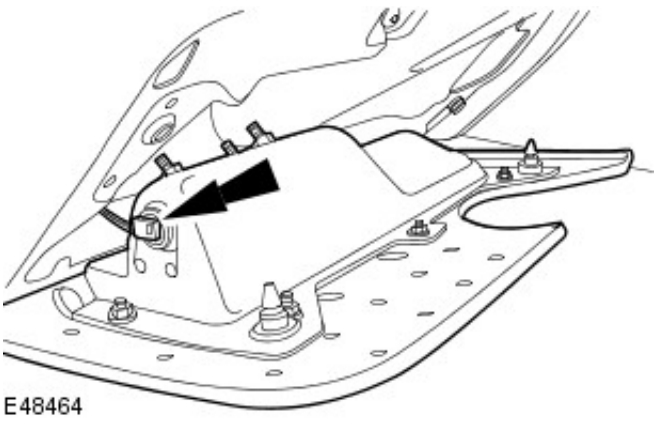
4. Detach the left-hand driver lower air bag module retaining clip.



E48463

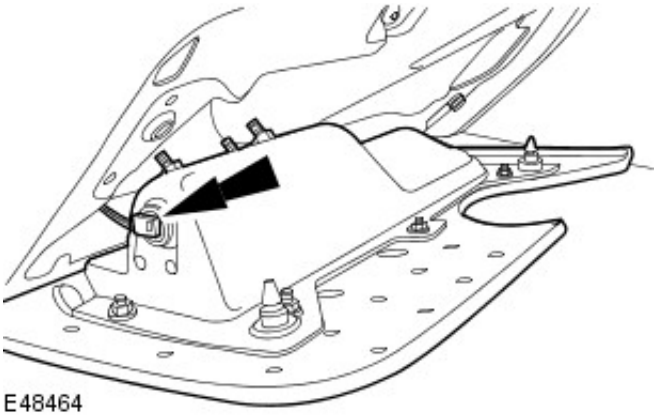
5. Remove the driver lower air bag module.

- Disconnect the driver lower air bag module electrical connector.



E48464

Installation


E48464

1. WARNINGS:

An RCM module only requires replacement if the system has incurred five separate deployments. At no time change an RCM for less than five separate deployments.

Always wear safety glasses when repairing an SRS vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

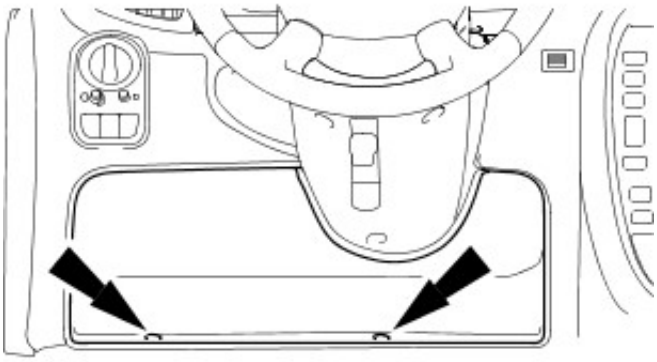
Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition , install the original part and carry out the diagnostic procedure again.

• NOTE: When installing a new air bag module, a prepaid return postcard is provided with the replacement air bag module. The serial number for the new part and the vehicle identification number (VIN) must be recorded and sent to Jaguar Cars Ltd.

Connect the driver lower air bag module electrical connector.


E48461

2. NOTE: Make sure the driver lower air bag module retaining clips are fully seated.

Install the driver lower air bag module.

- Tighten to 11 Nm.

3. Connect the battery ground cable.
For additional information, refer to: Battery Connect (414-01 Battery, Mounting and Cables, General Procedures).

Supplemental Restraint System - Occupant Classification Sensor
Removal and Installation

Removal

1. WARNINGS:

To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag supplemental restraint system (SRS) components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

Never probe the electrical connectors of air bag modules or any other SRS component. Failure to follow this instruction may result in personal injury.

CAUTION: Electronic components in seats are sensitive to impact. Handle seat with care or damage may result.

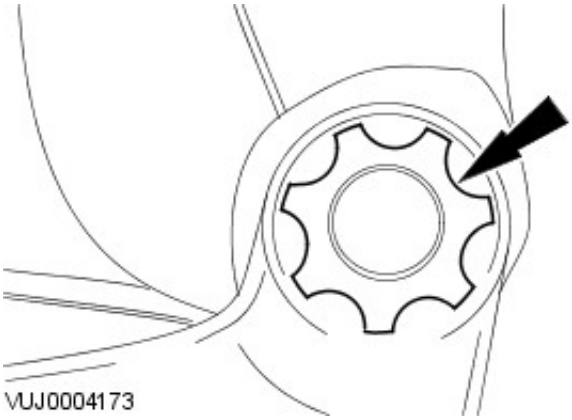
• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

• NOTE: Sensor is available only as a service kit. No attempt should be made to replace individual components.

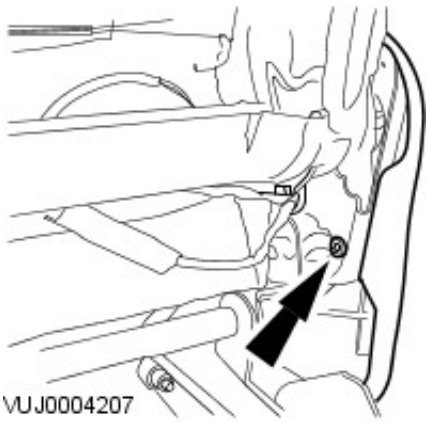
Power seat base to lowest position. Recline seat back to 25 degrees from vertical.

Remove the passenger seat. For additional information, Section 501-10 Seating.

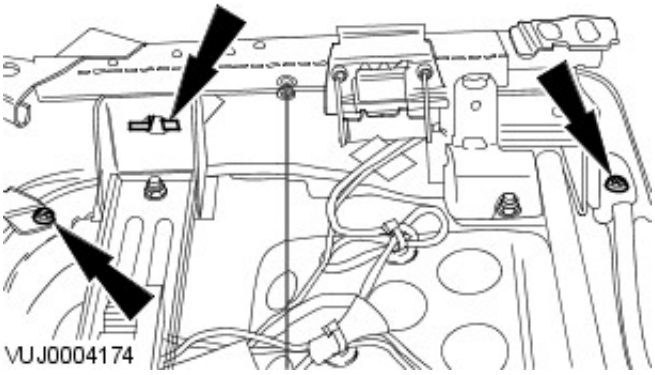
2. Remove the backrest recliner handwheel (if equipped).


VUJ0004173

3. Remove the inner side trim panel.

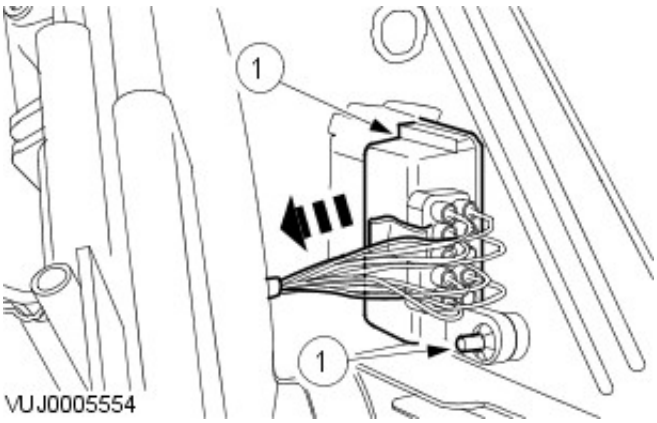

VUJ0004207

4. Remove the outer side trim panel.

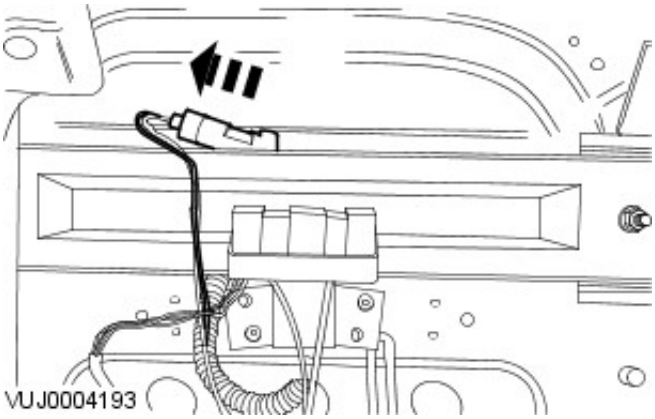


5. Remove the electronic control unit (ECU).

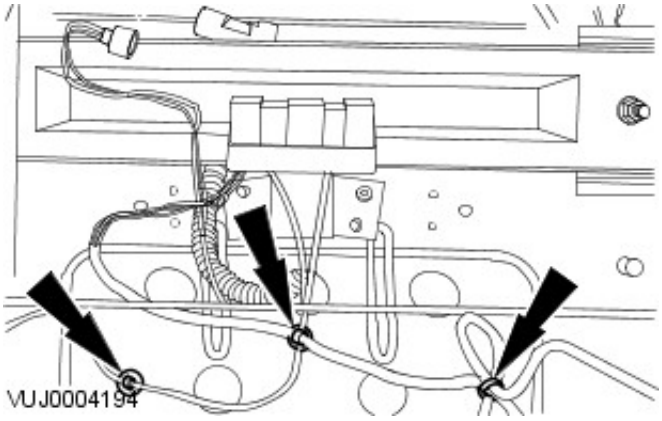
1. Remove the two clips.
1. Remove the ECU.



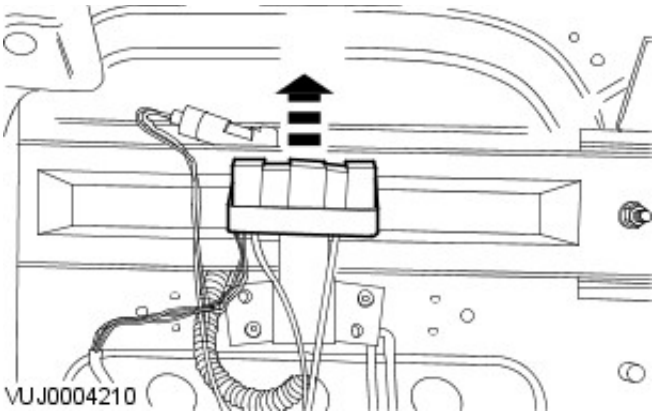
6. Disconnect the electrical connector from the sensor.



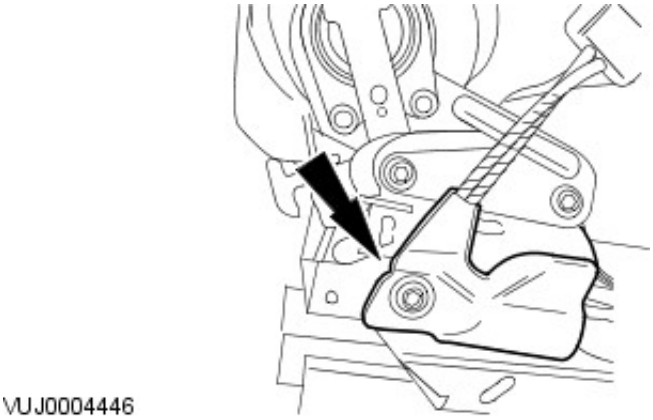
7. Detach the wiring harness from the seat base by cutting and removing the cable ties. If a plastic harness connector plate is fitted to the seat, detach the connectors to free the harness. The plastic carrier plate can then be removed and discarded.



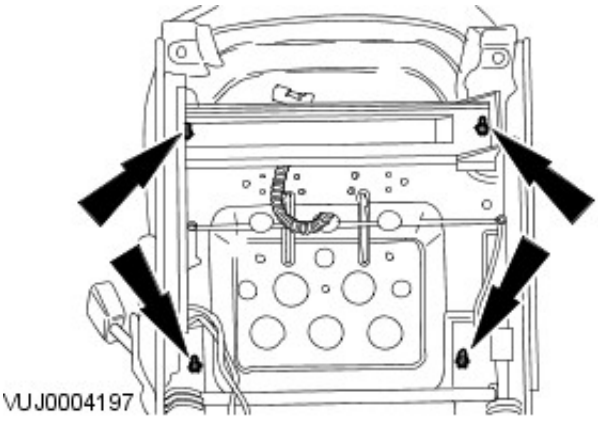
8. Detach the electrical connector from the electrical connector bracket.



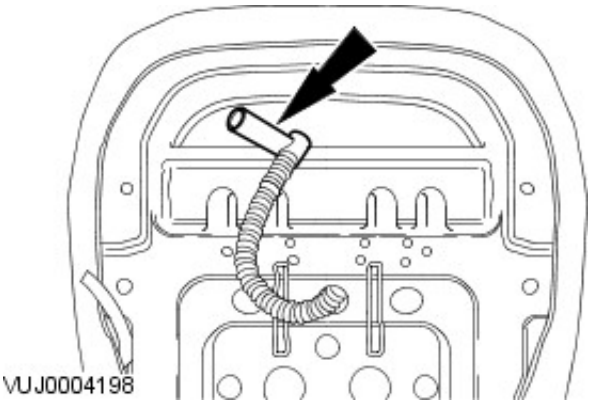
9. Remove the seat buckle.



10. Remove the seat base retaining nuts.

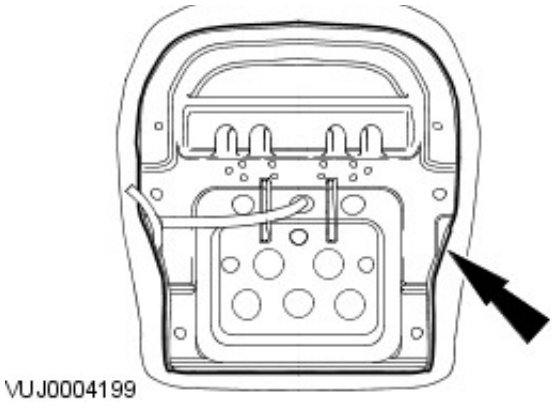


11. Detach the passenger weight sensor electrical connector from the retaining clip.



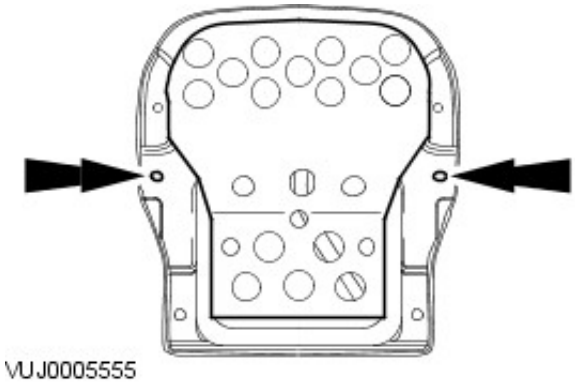
12. Remove the seat cover.

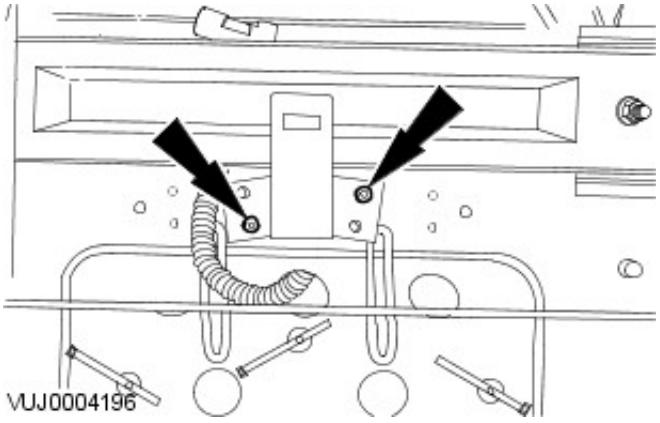
- Unclip the seat cover from the seat base.


VUJ0004199

13. Remove the seat cushion bladder from the seat base.

- Remove the two fir tree clips.


VUJ0005555


VUJ0004196

14. CAUTION: Swarf may damage the bladder. Make sure the seat and bladder are free from debris.

Remove the electrical connector bracket.

- Remove and discard the rivets.

Installation

1. NOTE: Once the seat base is fully assembled, using the cable ties supplied with the kit, fully secure the harness to the seat base.

To install, reverse the removal procedure.

Supplemental Restraint System - Passenger Air Bag Deactivation (PAD) Indicator

Removal and Installation

Removal

1. WARNINGS:

To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag supplemental restraints system (SRS) components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

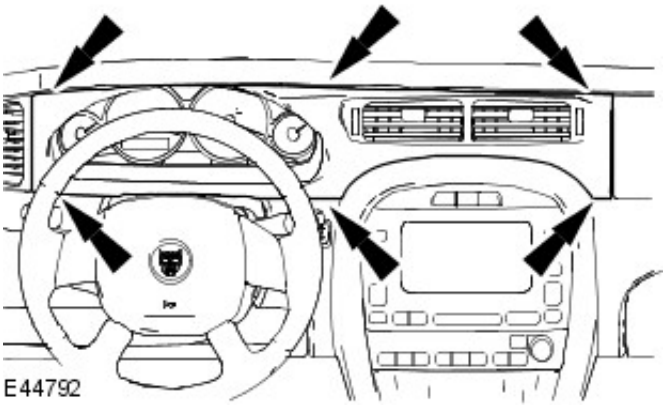
Never probe the electrical connectors of air bag modules or any other supplemental restraint system component. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

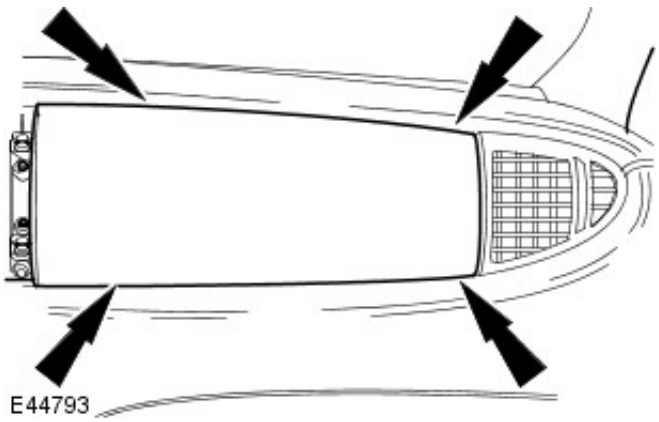
Lower and extend the steering column to its maximum rearward position.

2. Disconnect the battery ground cable.
For additional information, refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

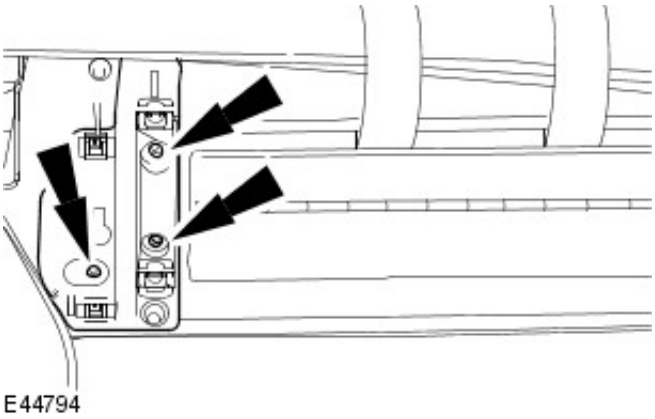
3. Remove the instrument cluster and vent finish panel.

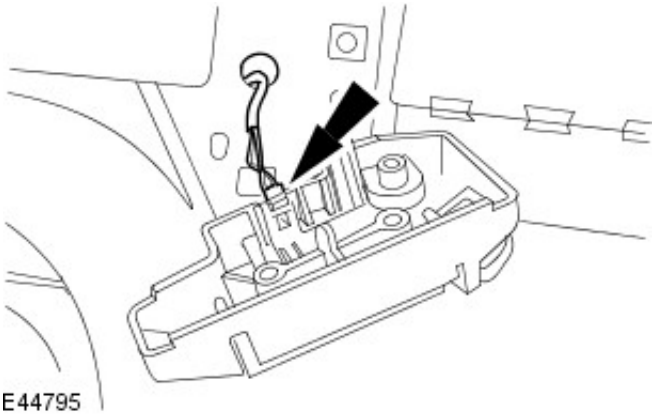


4. Remove the passenger finish panel.



5. Detach the passenger air bag deactivation PAD indicator.


E44794


E44795

6. Remove the PAD indicator.

- Disconnect the electrical connector.

Installation

1. WARNINGS:

To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag supplemental restraints system (SRS) components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

Never probe the electrical connectors of air bag modules or any other supplemental restraint system component. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

To install, reverse the removal procedure.

Supplemental Restraint System - Passenger Air Bag Module

Removal and Installation

Removal

1. WARNINGS:

 A restraints control module (RCM) only requires replacement if the system has incurred five separate deployments. At no time change an RCM for less than five separate deployments.

 Always wear safety glasses when repairing an air bag supplemental restraints system (SRS) vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

 Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

 Do not set a live air bag module down with the trim cover face down. Failure to follow this instruction may result in personal injury.

 After deployment, the air bag surface can contain deposits of sodium hydroxide, a product of the gas generant combustion that is irritating to the skin. Wash your hands with soap and water afterwards. Failure to follow this instruction may result in personal injury.

 Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

 Air bag modules with discolored or damaged trim covers must be replaced.

 Vehicle sensor orientation is critical for correct system operation. If a vehicle equipped with an air bag SRS is involved in a collision, inspect the sensor mounting bracket and wiring pigtail for deformation. If damaged, install a new sensor whether or not the air bag is deployed. If the body work is damaged this will have to be addressed.

 To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

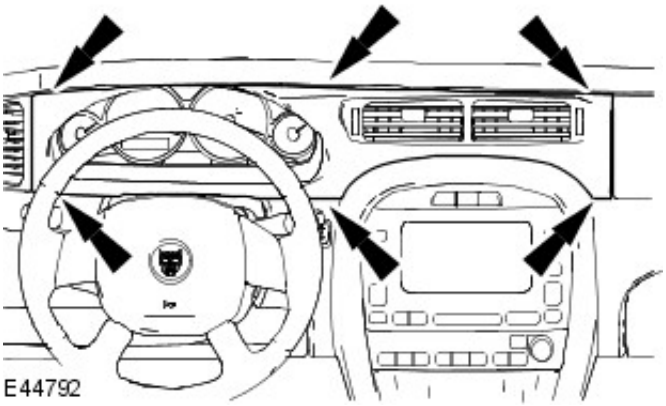
• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

• NOTE: When installing a new air bag module, a prepaid return postcard is provided with the replacement air bag module. The serial number for the new part and the vehicle identification number (VIN) must be recorded and sent to Jaguar cars ltd.

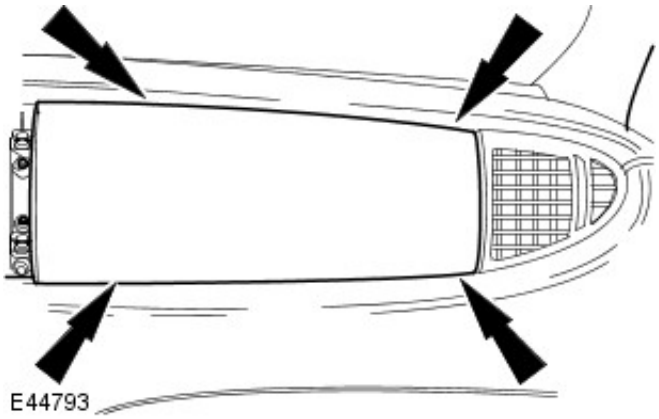
Disconnect the battery ground cable.
For additional information, refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

2. Lower and extend the steering column to its maximum rearward position.

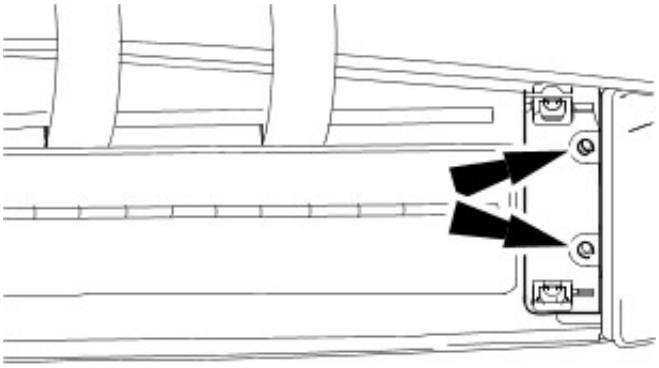
3. Remove the instrument cluster and vent finish panel.


E44792

4. Detach the passenger finish panel.

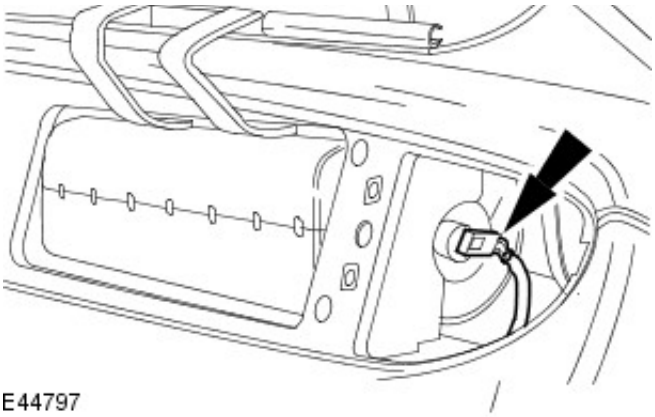

E44793

5. Remove the passenger air vent.


E44796

6. WARNING: Disconnect the passenger air bag module right-hand electrical connector before the left-hand electrical connector. Failure to follow these instructions may result in personal injury.

Disconnect the passenger air bag module right-hand electrical connector.

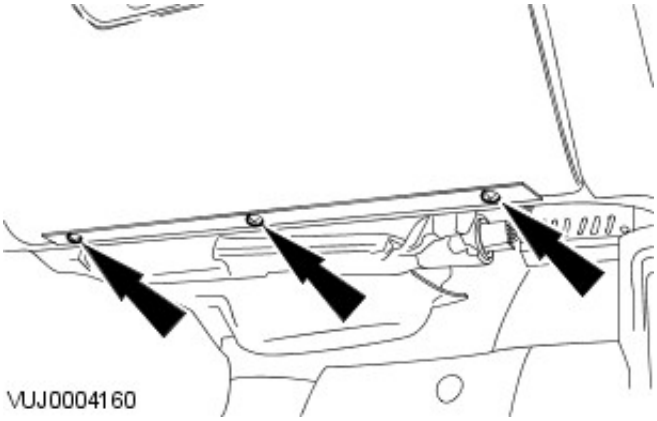


E44797

E44798

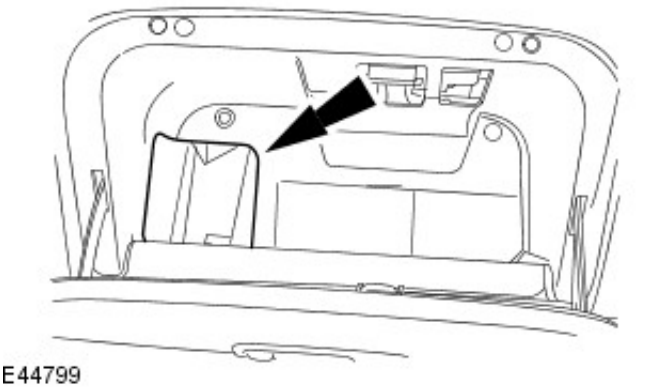
7. WARNING: Make sure the passenger air bag module right-hand electrical connector has been disconnected. Failure to follow this instruction may result in personal injury.

Disconnect the passenger air bag module left-hand electrical connector.



VUJ0004160

8. Remove the passenger compartment hinge retaining screws.

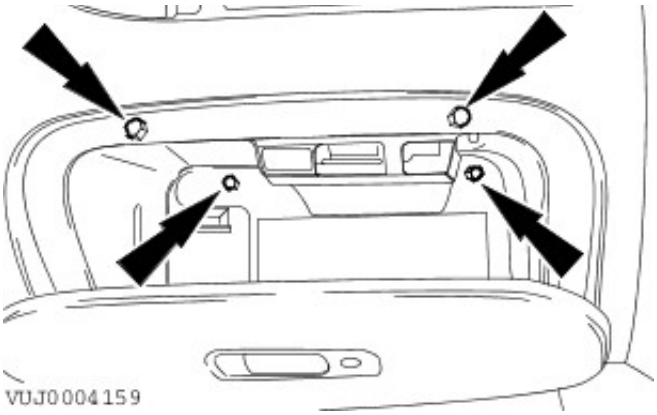


E44799

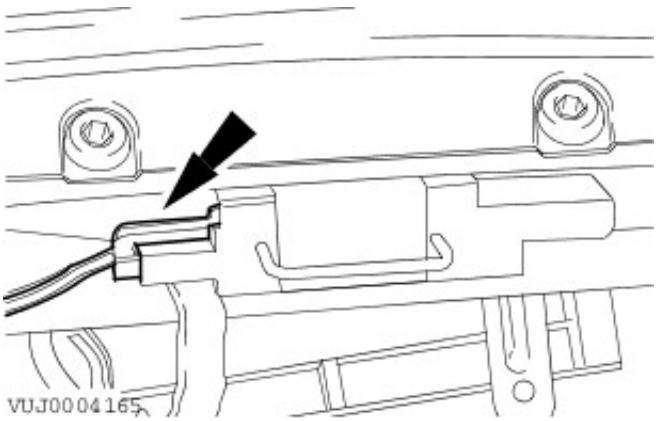
9. Remove the passenger compartment finisher trim.

10. Remove the passenger compartment.

- Remove the passenger compartment retaining screws.



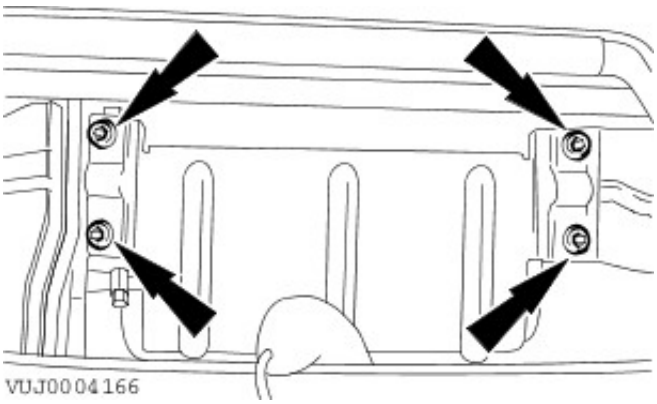
11. Disconnect the passenger compartment lamp electrical connector.



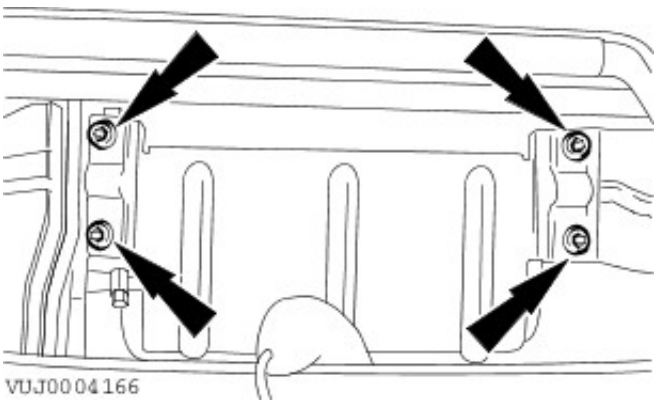
12. NOTE: Under no circumstances should the air bag be removed from the re-action can.

• NOTE: Support the passenger air bag module.

Remove the passenger air bag module.



Installation



1. WARNINGS:

Make sure the passenger air bag module left-hand electrical connector is connected before the right-hand electrical connector. Failure to follow this instruction may result in personal injury.

A restraints control module (RCM) only requires replacement if the system has incurred five separate deployments. At no time change an RCM for less than five separate deployments.

Always wear safety glasses when repairing an air bag supplemental restraints system (SRS) vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

Carry a live air bag module with the air bag and

deployment door pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment.

 Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

To install, reverse the removal procedure.

- Tighten to 9 Nm.

Supplemental Restraint System - Restraints Control Module (RCM)

Removal and Installation

Removal

1. WARNINGS:

To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

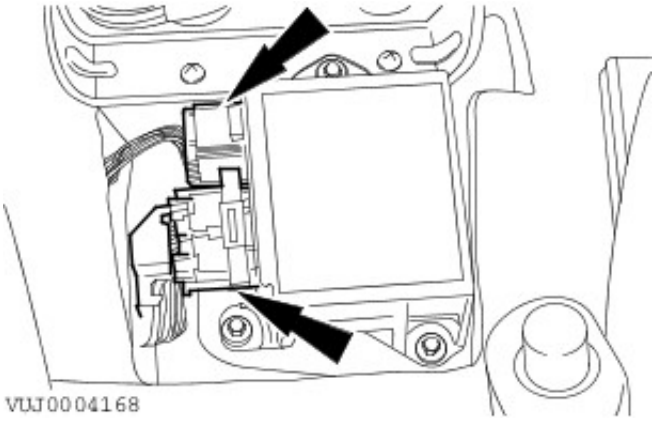
CAUTION: Electronic modules are sensitive to static electrical charges. If exposed to these charges, damage may result.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

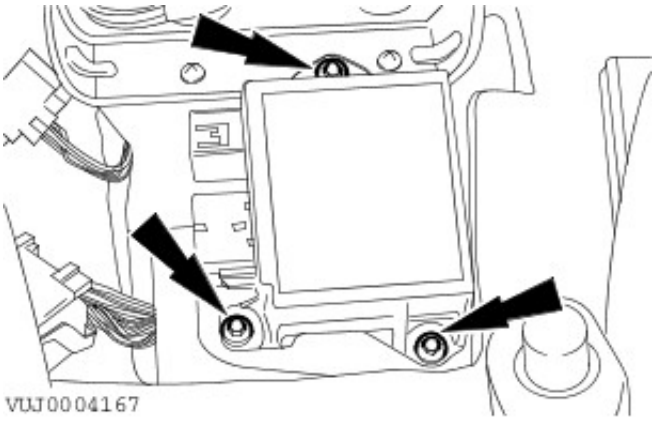
Disconnect the battery ground cable. For additional information, refer to Section 414-01 Battery, Mounting and Cables.

2. Remove the center console. For additional information, refer to Section 501-12 Instrument Panel and Console.

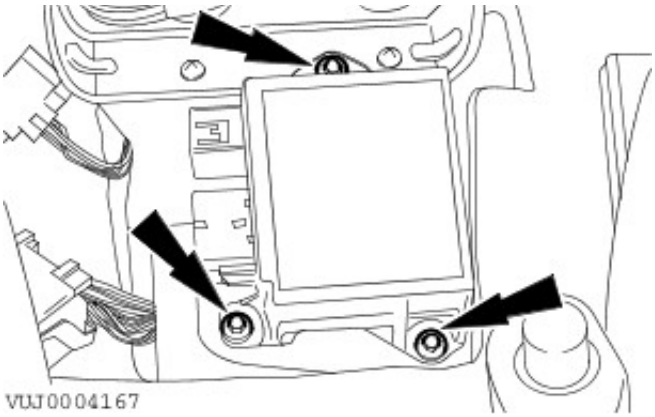
3. Disconnect the RCM electrical connectors.



4. Remove the RCM.



Installation



1. WARNINGS:

The tightening torque of the RCM retaining bolts is critical for correct system operation and safety.

Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

• NOTE: Make sure to tighten the retaining bolts to the correct specification.

To install, reverse the removal procedure.

- Tighten to 12 Nm.

Supplemental Restraint System - Seat Position Sensor
Removal and Installation

Removal

1. WARNINGS:

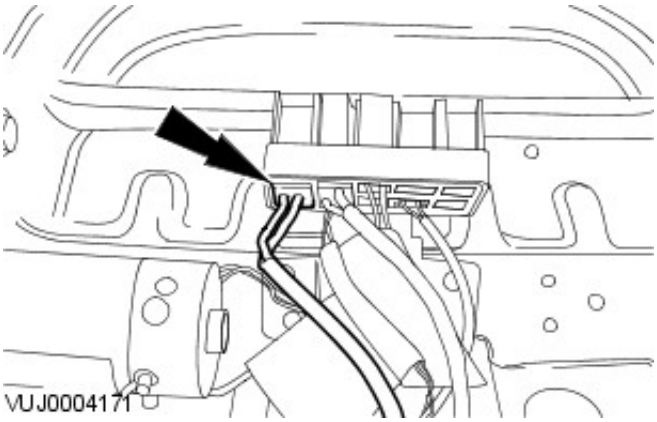
To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

Never probe the electrical connectors of air bag modules or any other supplemental restraint system component. Failure to follow this instruction may result in personal injury.

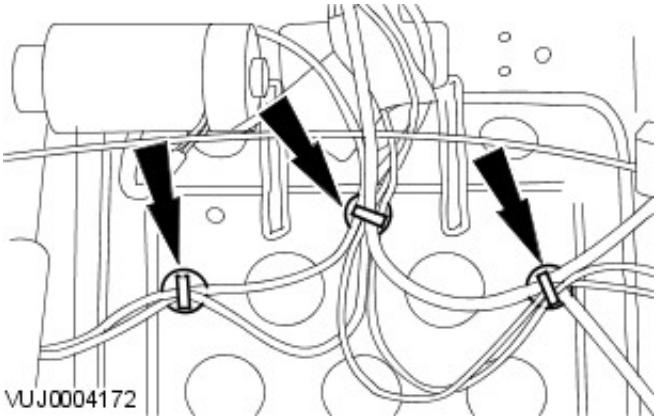
• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

Remove the driver seat. For additional information, refer to Section 501-10 Seating.

2. Disconnect the seat track position sensor electrical connector.

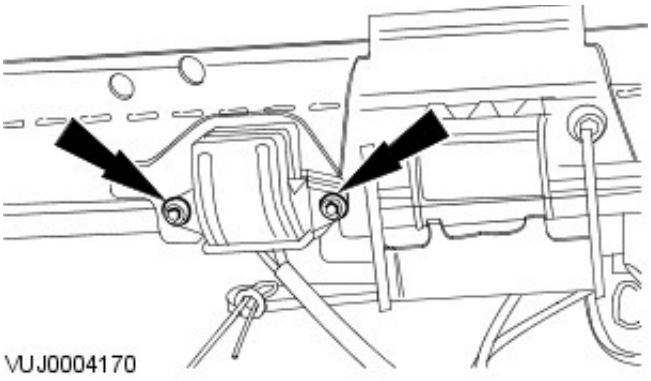


3. Detach the seat track position sensor wiring harness.



4. Remove the seat track position sensor.

- Remove and discard the rivets.



Installation

1. WARNINGS:

To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

Never probe the electrical connectors of air bag modules or any other supplemental restraint system component. Failure to follow this restraint system component. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

To install, reverse the removal procedure.

Supplemental Restraint System - Side Air Curtain Module4-Door

Removal and Installation

Removal

1. WARNINGS:

A restraint control module (RCM) only requires replacement if the system has incurred five separate deployments. At no time change an RCM for less than five separate deployments.

Always wear safety glasses when repairing an air bag supplemental restraints system (SRS) vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

Do not set a live air bag module down with the trim cover face down. Failure to follow this instruction may result in personal injury.

After deployment, the air bag surface can contain deposits of sodium hydroxide, a product of the gas generant combustion that is irritating to the skin. Wash your hands with soap and water afterwards. Failure to follow this instruction may result in personal injury.

Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

Air bag modules with discolored or damaged trim covers must be replaced.

Vehicle sensor orientation is critical for correct system operation. If a vehicle equipped with an air bag SRS is involved in a collision, inspect the sensor mounting bracket and wiring pigtail for deformation. If damaged, install a new sensor whether or not the air bag is deployed. If the body work is damaged this will have to be addressed.

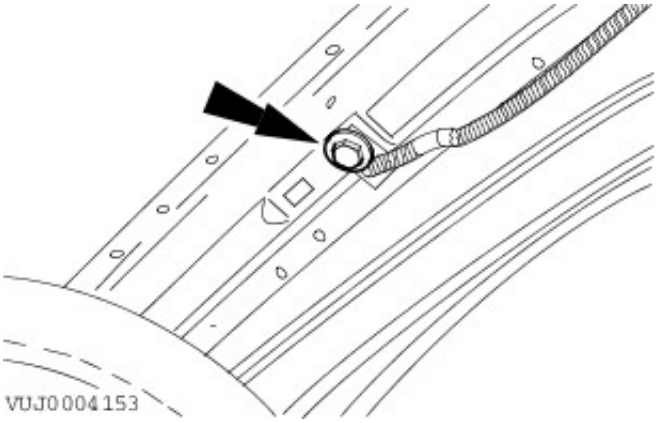
To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

• NOTE: When installing a new air bag module, a prepaid return postcard is provided with the replacement air bag module. The serial number for the new part and the vehicle identification number (VIN) must be recorded and sent to Jaguar Cars Ltd.

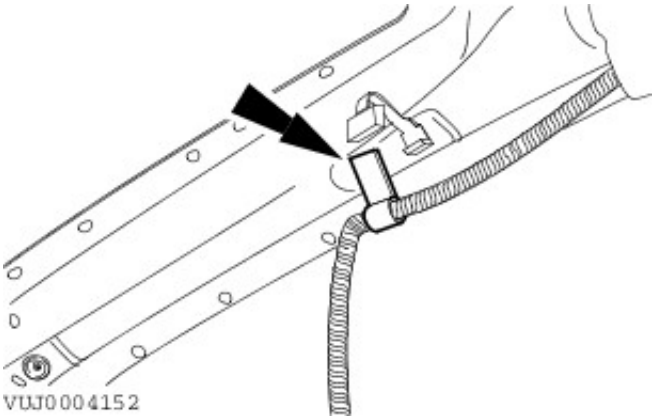
Disconnect the battery ground cable. For additional information, refer to Section 414-01 Battery, Mounting and Cables.

2. Remove the headliner. For additional information, refer to Section 501-05 Interior Trim and Ornamentation.



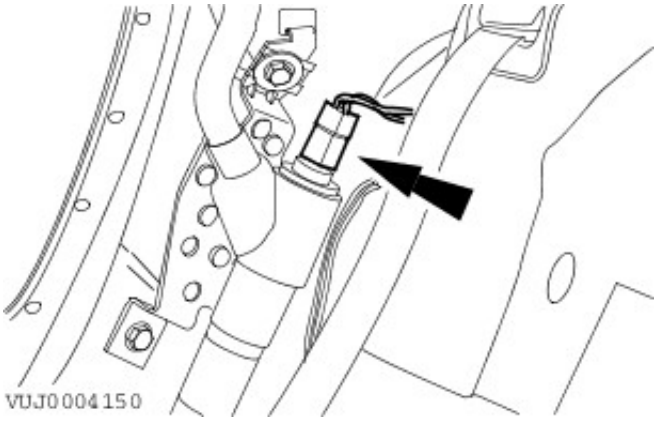
3. NOTE: To aid installation, note the routing of the retaining cord.

Remove the side air curtain module cord retaining bolt.

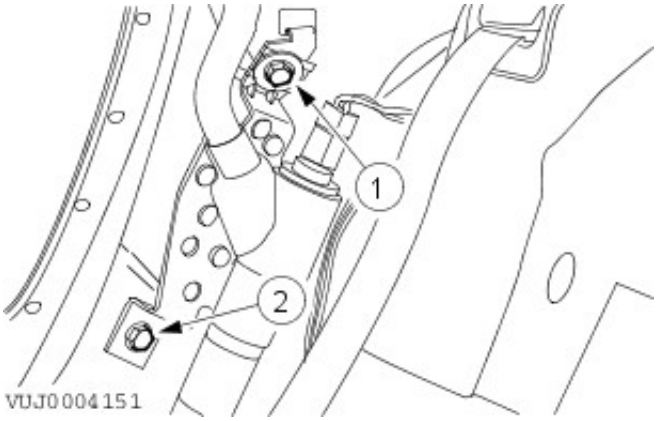


4. NOTE: To aid installation, note the routing of the retaining cord.

Detach the side air curtain module cord from the retaining clip.

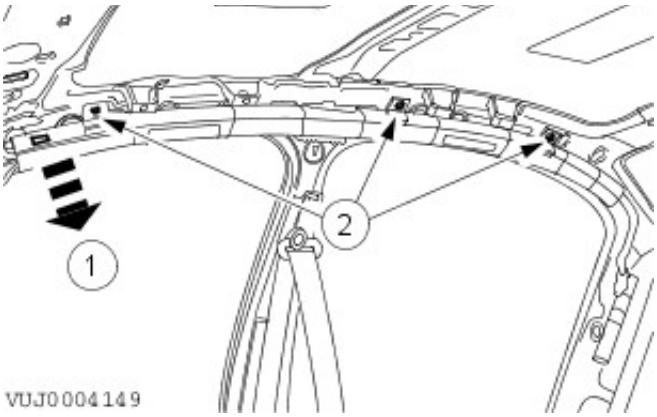


5. Disconnect the side air curtain module electrical connector.



6. NOTE: To aid installation, note the routing of the retaining cord.

Remove the side air curtain module retaining bolts.

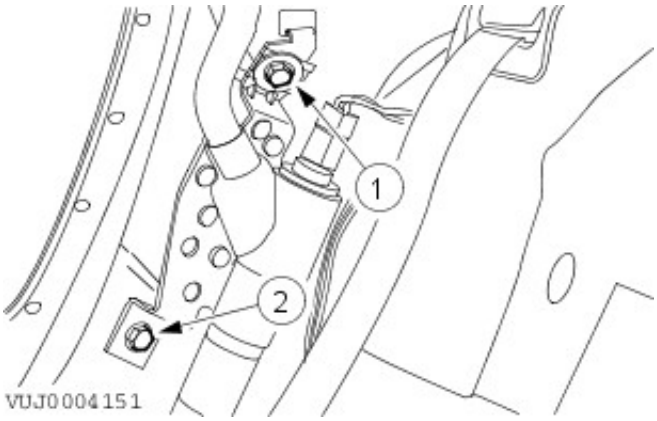


7. NOTE: To aid installation, note the position of the locating tangs.

Remove the side air curtain module.

1. Remove the retaining clip.
2. Remove the retaining bolts.

Installation



1. WARNINGS:

An restraint control module (RCM) only requires replacement if the system has incurred five separate deployments. At no time change an RCM for less than five separate deployments.

Always wear safety glasses when repairing an air bag supplemental restraints system (SRS) vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

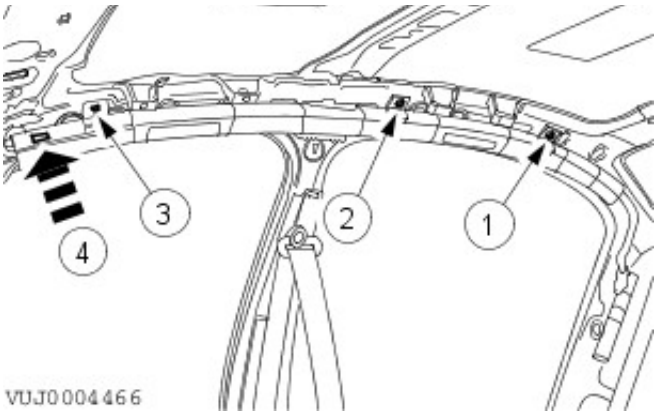
• NOTE: Tighten the retaining bolts to the correct specification and in the indicated sequence shown.

• NOTE: Make sure the side air curtain module tang is correctly located.

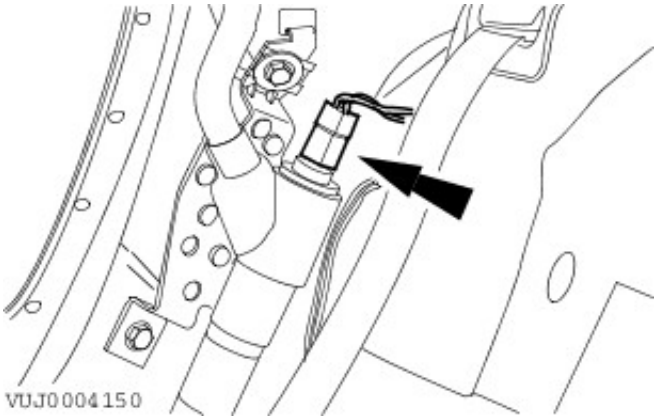
Install the side air curtain module retaining bolts.

- Tighten to 9 Nm.

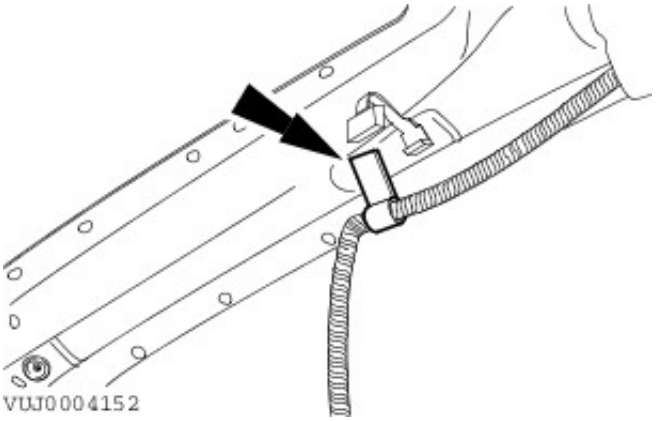
2. Tighten to 9 Nm.



3. Connect the side air curtain module electrical connector.

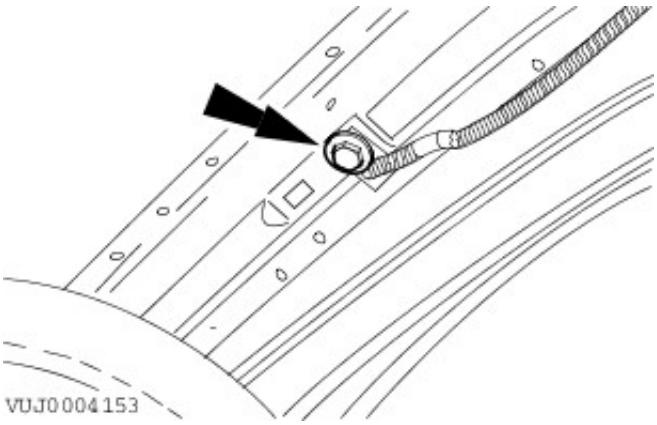


4. Attach the side air curtain module cord.



5. Install the side air curtain module cord retaining bolt.

- Tighten to 9 Nm.



6. Install the headliner. For additional information, refer to Section 501-05 Interior Trim and Ornamentation.

7. Connect the battery ground cable. For additional information, refer to Section 414-01 Battery, Mounting and Cables.

Supplemental Restraint System - Side Air Curtain ModuleWagon

Removal and Installation

Removal

1. WARNINGS:

 A restraint control module (RCM) only requires replacement if the system has incurred five separate deployments. At no time change an RCM for less than five separate deployments.

 Always wear safety glasses when repairing an air bag supplemental restraints system (SRS) vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

 Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

 Do not set a live air bag module down with the trim cover face down. Failure to follow this instruction may result in personal injury.

 After deployment, the air bag surface can contain deposits of sodium hydroxide, a product of the gas generant combustion that is irritating to the skin. Wash your hands with soap and water afterwards. Failure to follow this instruction may result in personal injury.

 Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

 Air bag modules with discolored or damaged trim covers must be replaced.

 Vehicle sensor orientation is critical for correct system operation. If a vehicle equipped with an air bag SRS is involved in a collision, inspect the sensor mounting bracket and wiring pigtail for deformation. If damaged, install a new sensor whether or not the air bag is deployed. If the body work is damaged this will have to be addressed.

 To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag SRS components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

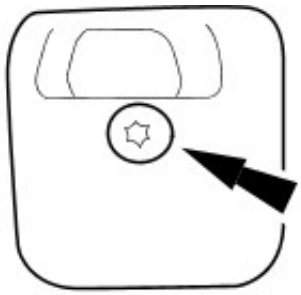
• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

• NOTE: When installing a new air bag module, a prepaid return postcard is provided with the replacement air bag module. The serial number for the new part and the vehicle identification number (VIN) must be recorded and sent to Jaguar Cars Ltd.

Disconnect the battery ground cable. For additional information, refer to
For additional information, refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

2. Remove the overhead console.
For additional information, refer to: Overhead Console (501-12 Instrument Panel and Console, Removal and Installation).

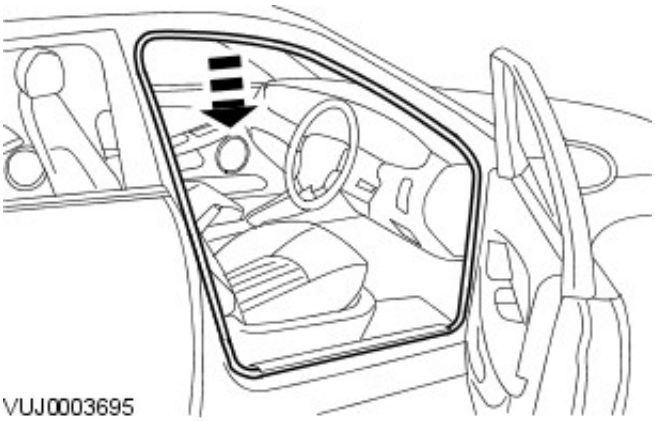
3. Remove the sun visor retaining clips.



VUJ0003728

4. NOTE: Right-hand shown, left-hand similar.

Detach the front door opening weatherstrips.

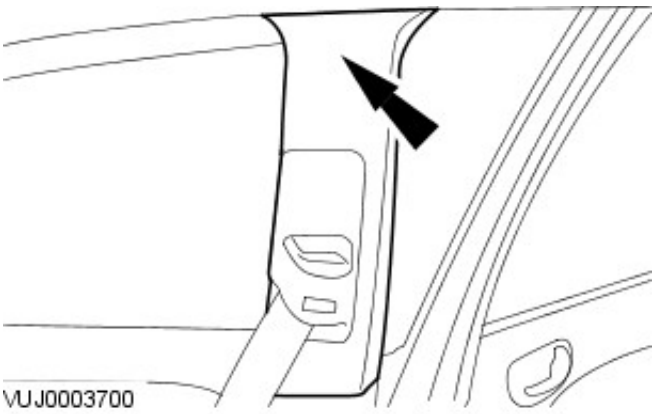


VUJ0003695

5. Remove the A-pillar trim panels.
For additional information, refer to: A-Pillar Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

6. NOTE: Right-hand shown, left-hand similar.

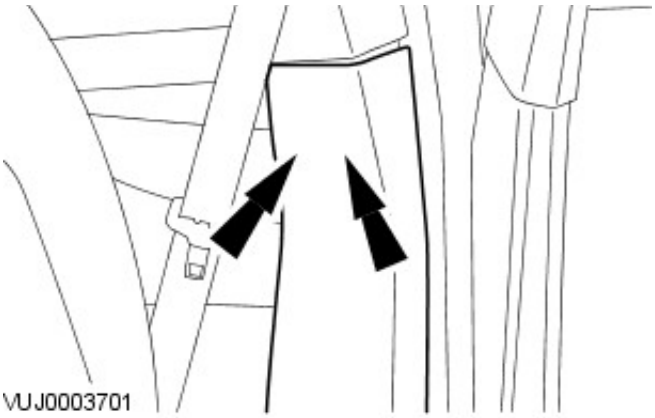
Detach the B-pillar upper trim panels.



VUJ0003700

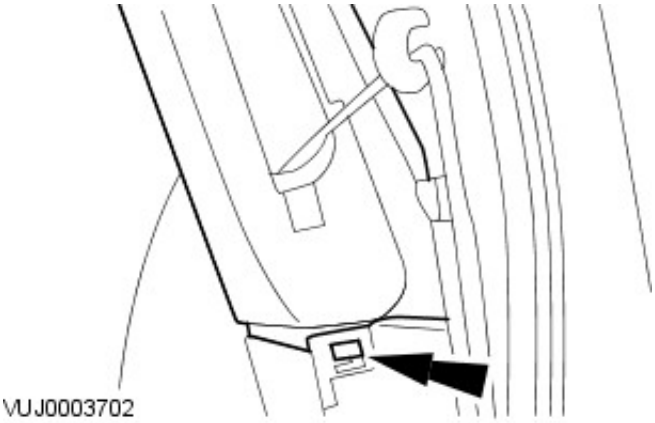
7. NOTE: Right-hand shown, left-hand similar.

Detach the B-pillar lower trim panels.


VUJ0003701

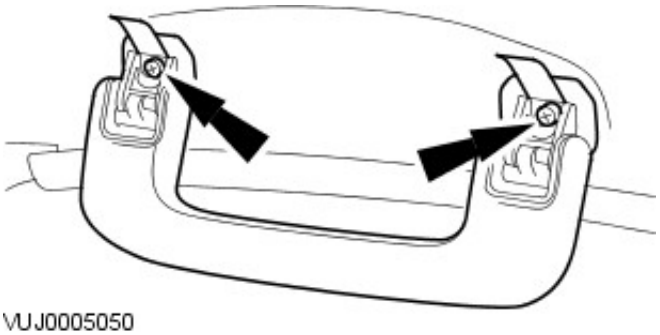
8. NOTE: Right-hand shown, left-hand similar.

Detach the B-pillar upper trim panels from the B-pillar trim lower trim panels.


VUJ0003702

9. Remove the C-pillar trim panels.
For additional information, refer to: C-Pillar Trim Panel - Wagon (501-05 Interior Trim and Ornamentation, Removal and Installation).

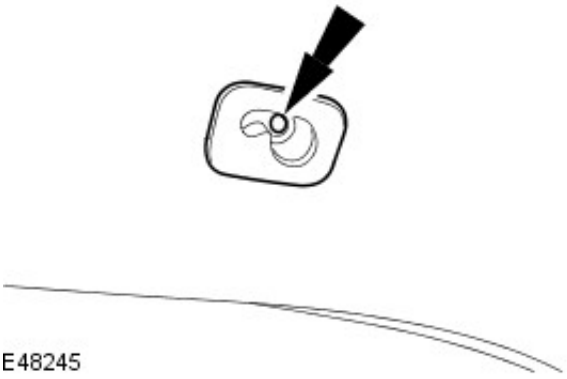
10. Lever open the covers to expose the screws and remove the driver and passenger assist handles.

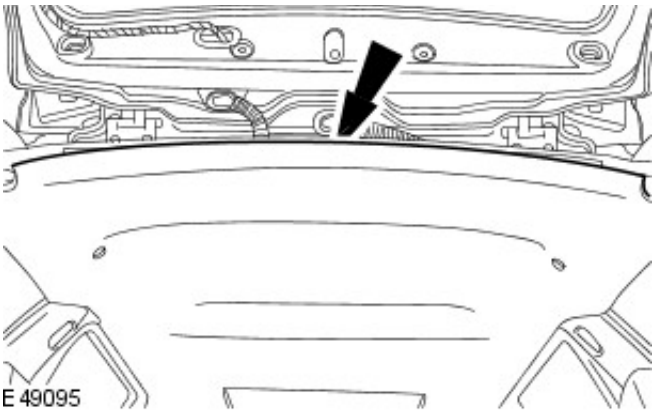

VUJ0005050

11. Remove the D-pillar trim panels.
For additional information, refer to: D-Pillar Trim Panel (501-05 Interior Trim and Ornamentation, Removal and Installation).

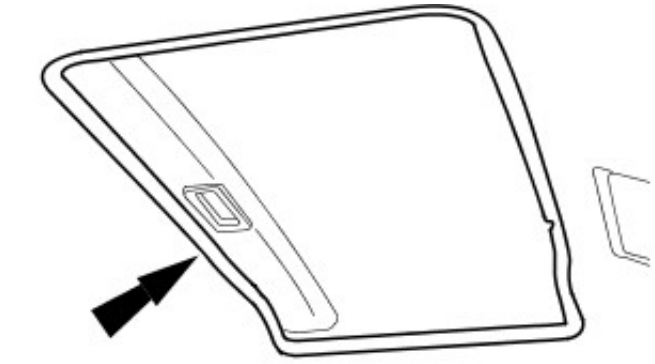
12. NOTE: Right-hand shown, left-hand similar.

Remove the luggage net retaining clip.


E48245


E49095

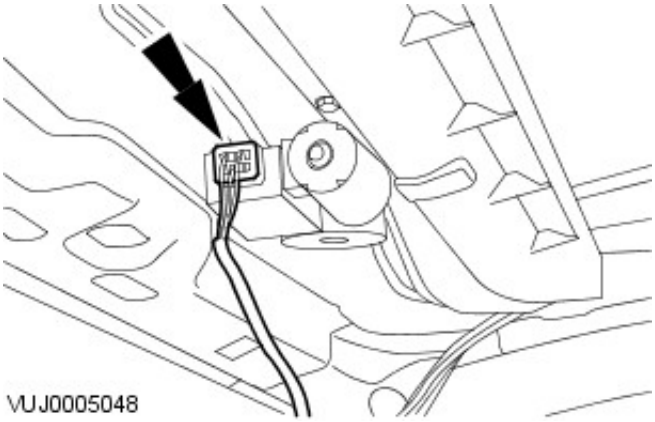
13. Detach the headliner.


VUJ0005047

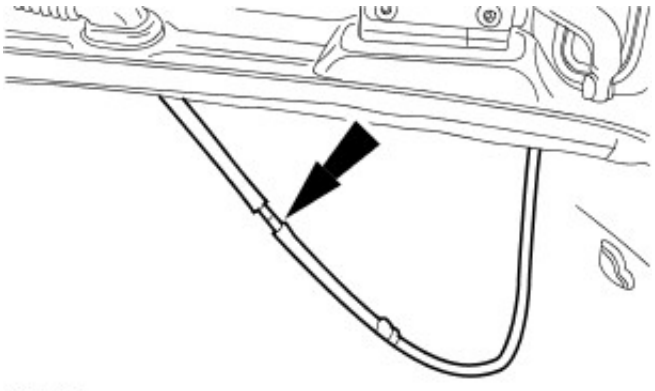
14. CAUTION: The headliner must not be creased or folded during removal or installation. Failure to follow this instruction may result in damage to the component.

Lower the headliner.

- Remove the sunroof opening panel weatherstrip.


VUJ0005048

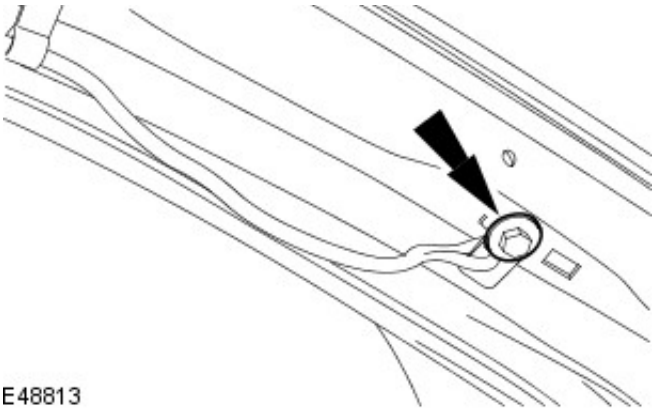
15. Disconnect the sunroof motor electrical connector.


E48246

16. Disconnect the rear washer hose connector.

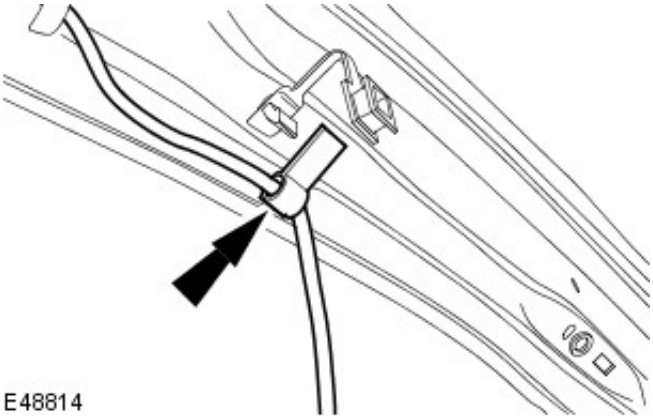
17. NOTE: To aid installation, note the routing of the retaining cord.

Remove the side air curtain module front cord retaining bolt.


E48813

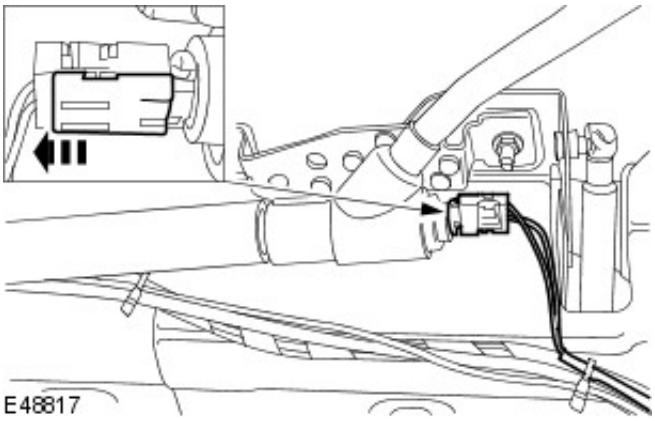
18. NOTE: To aid installation, note the routing of the retaining cord.

Detach the side air curtain module front cord from the retaining clip.

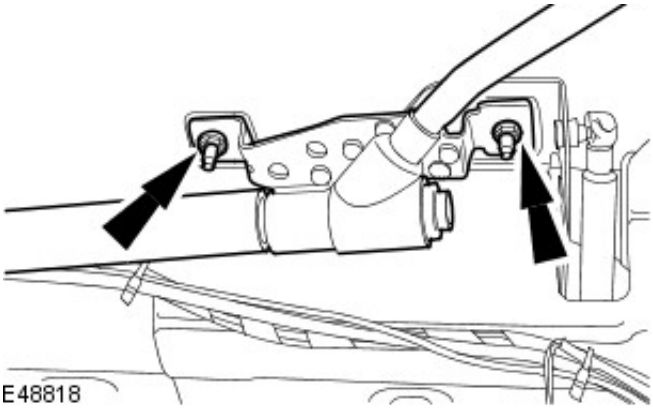

E48814

19. NOTE: To disconnect, slide back the locking tang.

Disconnect the side air curtain module electrical connector.

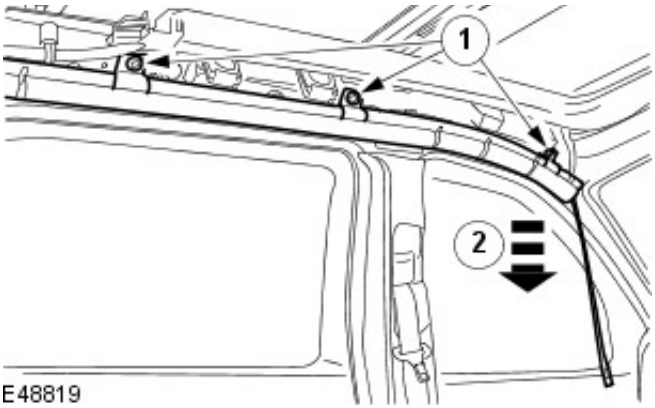

E48817

20. Remove the side air curtain module retaining nuts.


E48818

21. Remove the side air curtain module.

1. Remove the retaining bolts.
2. Detach the retaining clip.



Installation

• WARNINGS:

An restraint control module (RCM) only requires replacement if the system has incurred five separate deployments. At no time change an RCM for less than five separate deployments.

Always wear safety glasses when repairing an air bag supplemental restraints system (SRS) vehicle and when handling an air bag module. Failure to follow this instruction may result in personal injury.

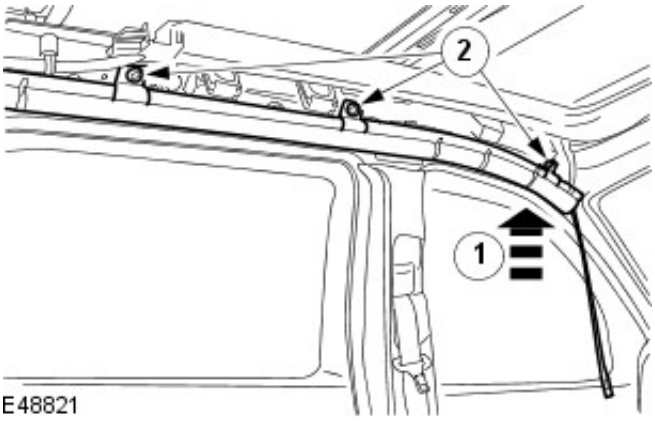
Carry a live air bag module with the air bag and trim cover pointed away from your body. This will reduce the risk of injury in the event of an accidental deployment. Failure to follow this instruction may result in personal injury.

Never probe the connectors on the air bag module. Doing so may result in air bag deployment. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

• NOTE: Tighten the retaining bolts to the correct specification and in the indicated sequence shown.

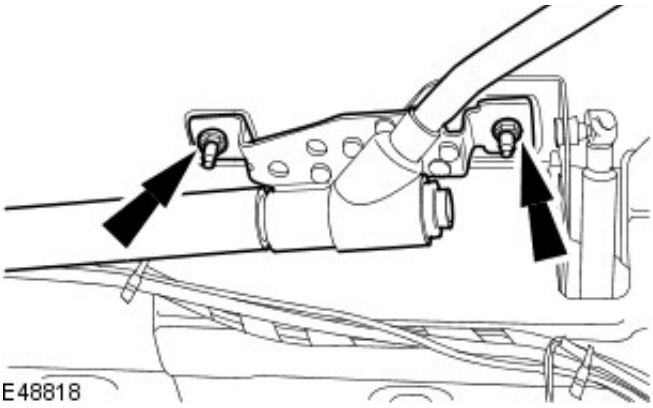
• NOTE: Make sure the side air curtain module tang is correctly located.



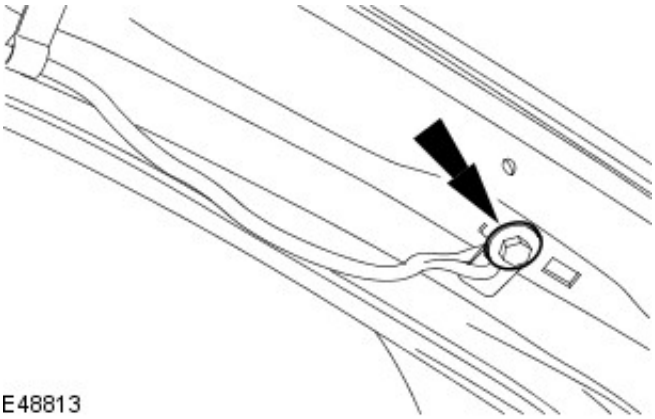
1. To install, reverse the removal procedure.

1. Tighten to 9 Nm.

2. Tighten to 9 Nm.



3. Tighten to 9 Nm.



Supplemental Restraint System - Side Impact Sensor
Removal and Installation

Removal

1. WARNINGS:

To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag supplemental restraints system (SRS) components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

Never probe the electrical connectors of air bag modules or any other SRS component. Failure to follow this instruction may result in personal injury.

• NOTE: Repair is made by replacement only. If a part is replaced and the new part does not correct the condition, install the original part and carry out the diagnostic procedure again.

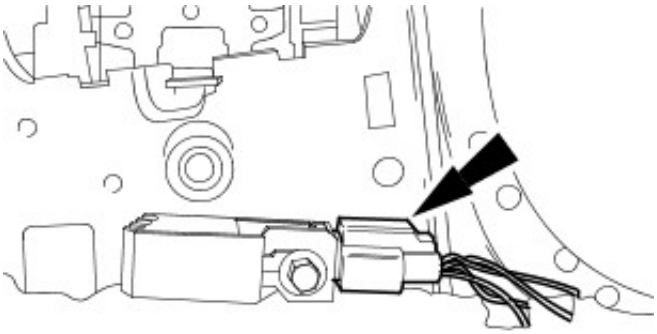
Disconnect the battery ground cable. For additional information, refer to Section 414-01 Battery, Mounting and Cables.

2. Position the seat fully forwards.

3. Remove the B-pillar lower trim panel. For additional information, refer to Section 501-05 Interior Trim and Ornamentation.

4. NOTE: Left-hand shown, right-hand similar.

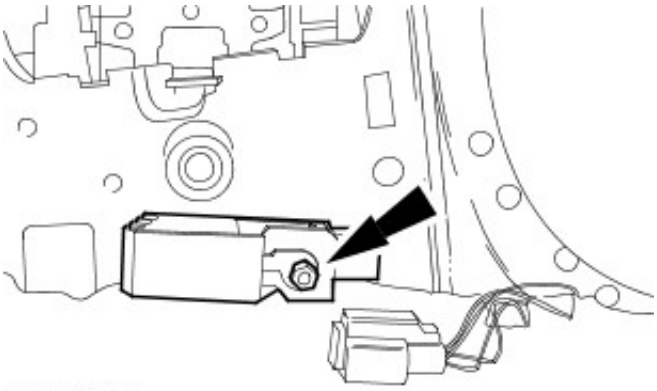
Disconnect the side impact sensor electrical connector.



VUJ0004147

5. NOTE: Left-hand shown, right-hand similar.

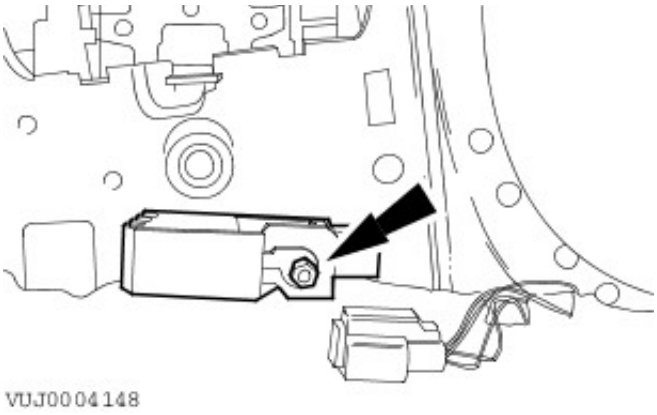
Remove the side impact sensor.



VUJ0004148

Installation

1. WARNINGS:



To avoid accidental deployment and possible personal injury, the backup power supply must be depleted before repairing or replacing any air bag supplemental restraints system (SRS) components. To deplete the backup power supply energy, disconnect the battery ground cable and wait one minute. Failure to follow this instruction may result in personal injury.

Make sure the side impact sensor locating tangs are correctly located into the B-pillar. Failure to follow this instruction may result in personal injury.

Never probe the electrical connectors of air bag modules or any other SRS component. Failure to follow this instruction may result in personal injury.

To install, reverse the removal procedure.

- Tighten to 12 Nm.

Uni-Body, Subframe and Mounting System -

Lubricants, Fluids, Sealers and Adhesives

	Specification
Bush installation lubrication	Shell gravex oil 973

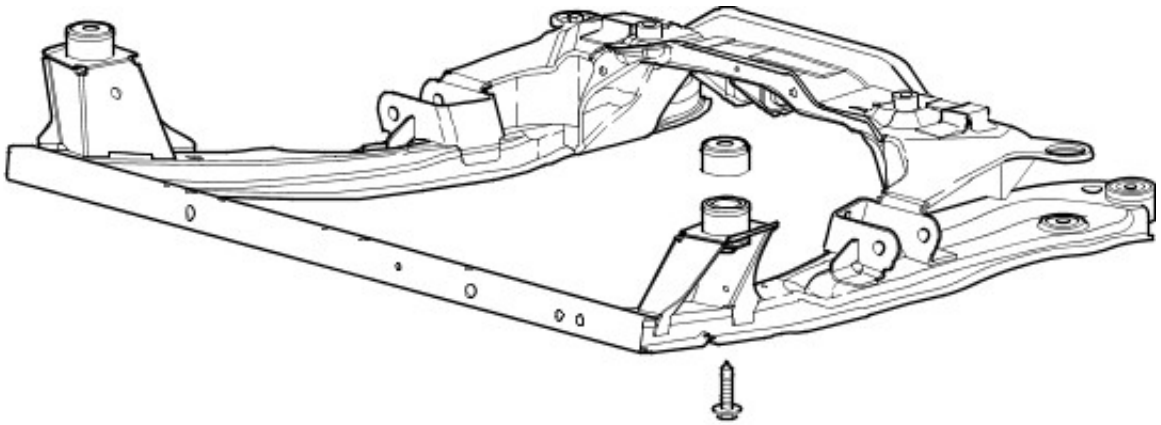
Torque Specifications

Description	Nm	lb-ft	lb-in
Front subframe front mount retaining bolts	142	105	-
Front subframe rear mount retaining bolts	142	105	-
Front subframe reinforcement plate retaining bolts	35	26	-
Front stabilizer bar link arm retaining nuts	47	35	-
Steering gear heat shield retaining bolts	7	-	62
Steering gear to subframe retaining bolts	133	98	-
Steering gear cooling pipe retaining bolts	7	-	62
Engine roll restrictor retaining bolts	80	59	-
Front lower arm ball joint retaining nuts	83	61	-
Rear subframe mounting retaining bolts	126	93	-
Rear shock absorber to wheel knuckle retaining bolts	130	96	-
Wheel knuckle mounting bracket to body retaining bolts	126	93	-
Rear brake caliper retaining bolts	32	24	-

Uni-Body, Subframe and Mounting System - Frame Assembly

Description and Operation

FRONT SUB-FRAME ASSEMBLY

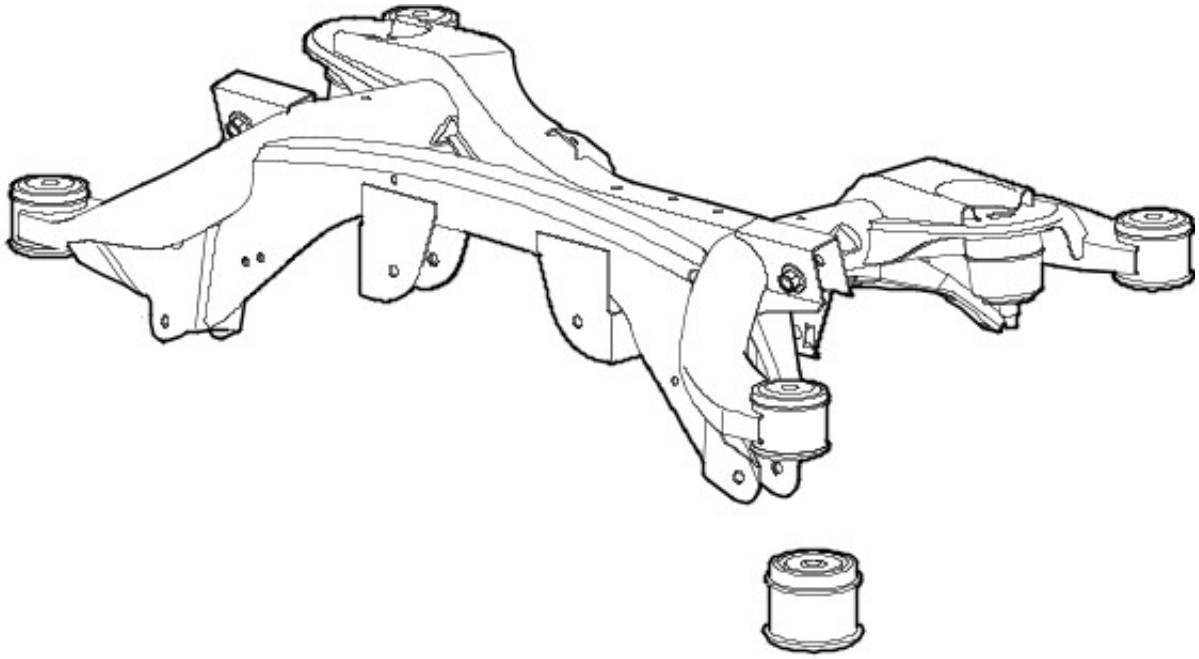


VUJ0004111

The front sub-frame is bolted to the body and aids in structural support. The front sub-frame provides the mounting surface for the steering gear, the front suspension lower arm, the stabilizer bar and the engine roll restrictor support bracket.

On vehicles from 2009MY using the 2.2 Diesel engine and the AW F21 6 speed transmission, a dynamic damper is fitted to the front sub-frame. The damper improves refinement in the 1500-1800 rpm range of the engine. The damper is attached to the rear LH (left-hand) corner of the sub-frame. An integral stud on the damper is located through a hole in the sub-frame and secured with a flanged nut.

REAR SUB-FRAME ASSEMBLY

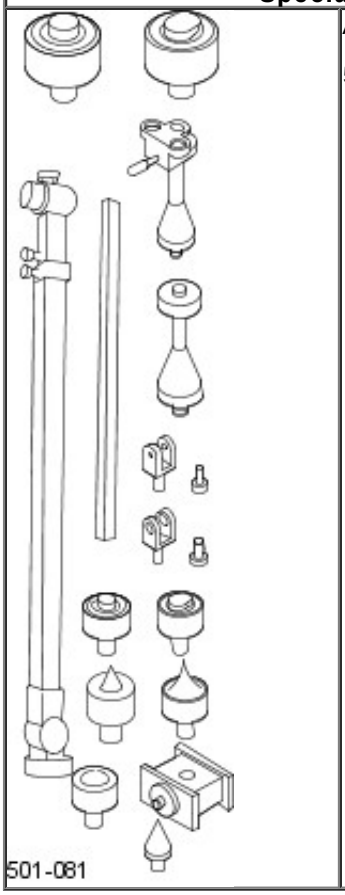


VUJ0004112

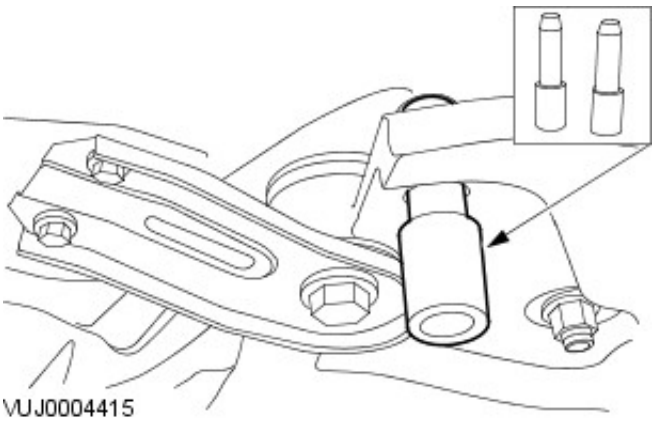
The rear sub-frame is bolted to the body and aids in structural support. The rear sub-frame provides the mounting surface for the rear suspension components, the exhaust hanger insulator and the rear drive differential.

Uni-Body, Subframe and Mounting System - Underbody Misalignment Check

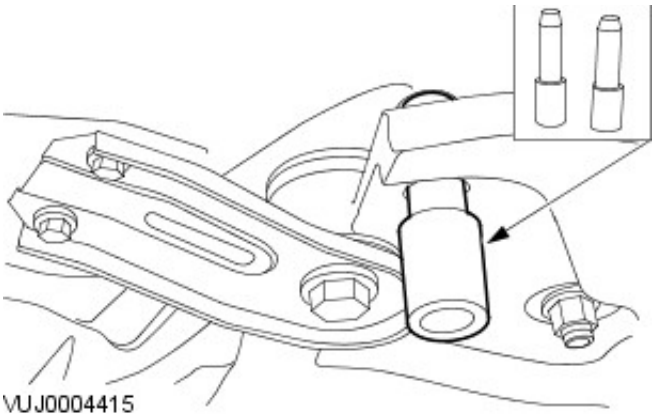
General Procedures

Special Tool(s)	
 501-081	Alignment equipment 501-081

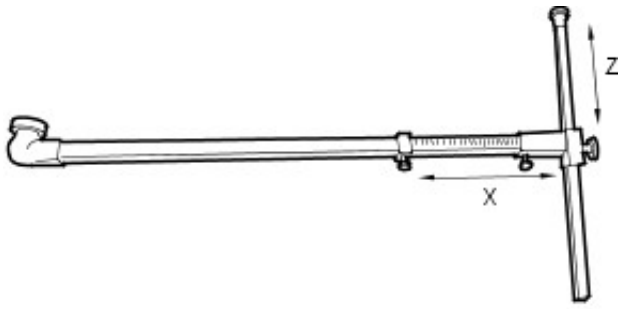
1. Raise and support the vehicle on a two post ramp. For additional information, refer to Section 100-02 Jacking and Lifting.
2. Inspect all underbody structural members for cracks, twists or bends. Check all welded connections for cracks. Inspect the support brackets for looseness. Perform any necessary service or make replacements as required.
3. Install the alignment pins supplied with special tool number HTJ1200-2 to the rear of the front subframe for the initial front subframe to vehicle body alignment check.


VUJ0004415

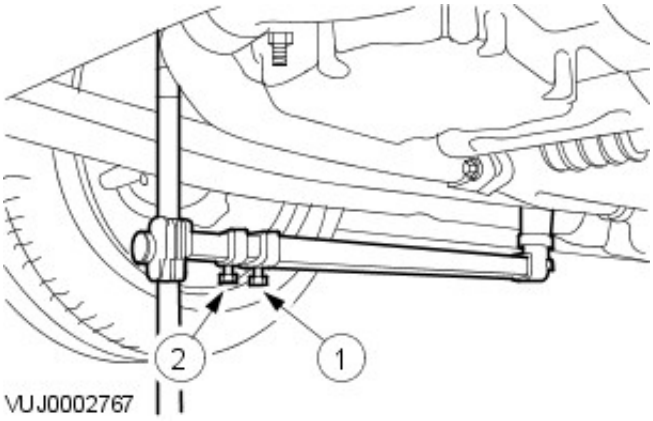
4. Remove the alignment pins.



VUJ0004415



VUJ0002768



VUJ0002767

5. CAUTION: Make sure the measuring equipment is used the right way up as shown in the illustration.

The Z measurement is set on the special tool before the X measurement is taken on the vehicle.

6. CAUTION: Make sure the measuring equipment is used the right way up as shown in the illustration.

• NOTE: Make sure the inner part of the measuring bar is fully retracted and the lock fully tightened before any measurements are taken.

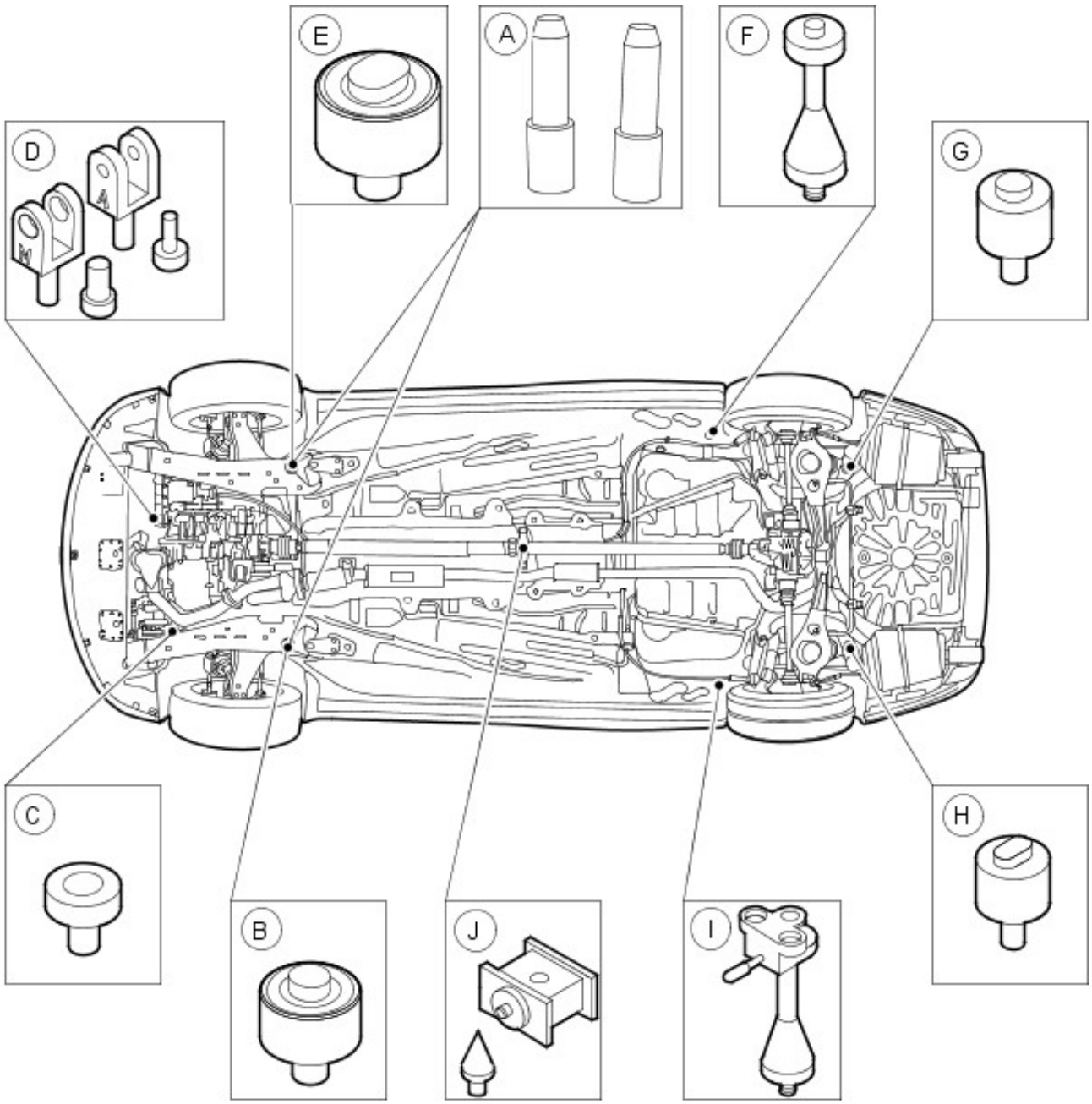
Take the X measurement.

1. Take the X measurement using the middle part of the measuring bar.
2. If the middle part of the measuring bar locks into its fully extended position, continue taking the X measurement on the inner part of the measuring bar.

7. NOTE: The smallest diameter pin and bracket (D) is fitted to vehicles with automatic transmission. The bracket is marked A.The larger diameter pin and bracket (D) is fitted to vehicles with manual transmission. The bracket is marked M.

• NOTE: Clean all the special tool mounting surfaces before installing the special tools.

Install the special tools to the underside of the vehicle.

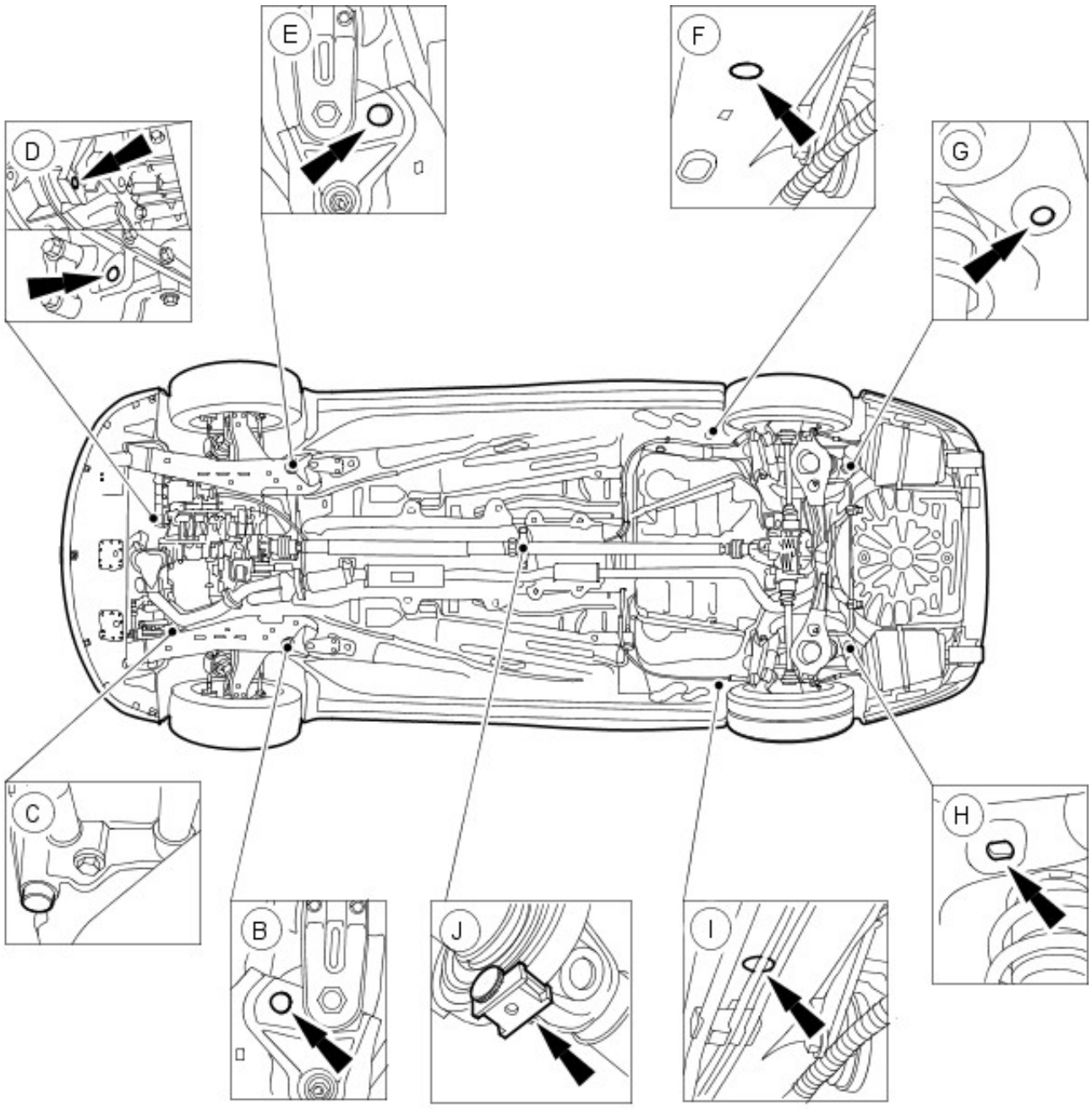


VUJ0002765

8. NOTE: The smallest diameter pin and bracket (D) is fitted to vehicles with automatic transmission. The larger diameter pin and bracket (D) is fitted to vehicles with manual transmission.

• NOTE: Clean all the special tool mounting surfaces before installing the special tools.

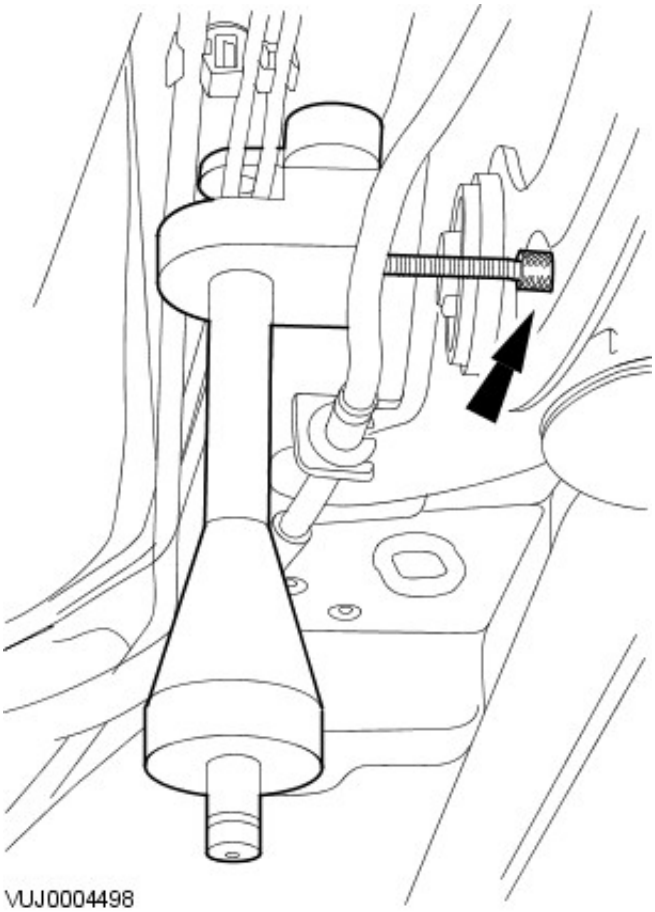
Install the special tools to the underside of the vehicle.



VUJ0004499

9. CAUTION: When installing or removing the special tool make sure the brake pipes are not damaged or detached from the retaining clips.

Adjust the steady screw to the front of the wheel knuckle to stabilize the special tool to the underside of the vehicle.



VUJ0004498

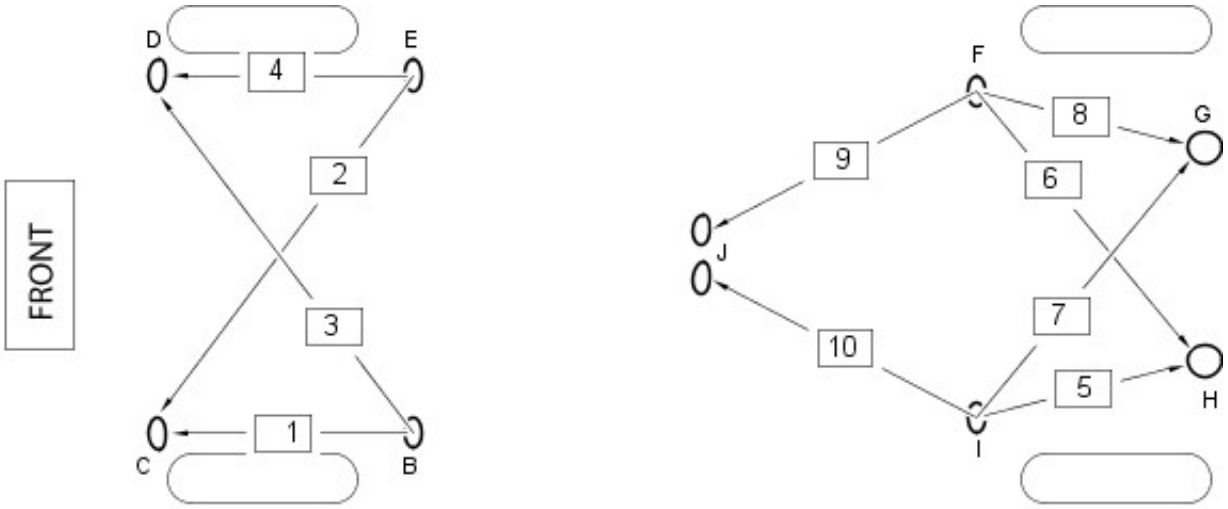
10. Underbody dimension tolerances are ± 2 mm (0.08 inch).

Underbody Dimensions

X-Dimension	Millimeter	Inch
1-All vehicles	674.00	26.28
2-All vehicles	977.00	38.10
3-Manual transmission	877.00	34.20
4-Manual transmission	708.00	27.61
3-Automatic transmission	924.00	36.04
4-Automatic transmission	736.00	28.70
5-All vehicles	799.00	31.16
6-All vehicles	1258.00	49.06
7-All vehicles	1258.00	49.06
8-All vehicles	799.00	31.16
9-All vehicles	957.00	37.32
10-All vehicles	997.00	38.88

Underbody Measurements

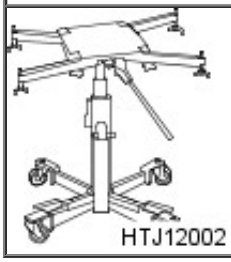
Measurement number	Z-Measuring height	From point	To point
1-All vehicles	117mm	B	C
2-All vehicles	117mm	E	C
3-Manual transmission	126mm	B	D
4-Manual transmission	126mm	E	D
3-Automatic transmission	126mm	B	D
4-Automatic transmission	126mm	E	D
5-All vehicles	314mm	I	H
6-All vehicles	314mm	F	H
7-All vehicles	314mm	I	G
8-All vehicles	314mm	F	G
9-All vehicles	122mm	F	J
10-All vehicles	122mm	I	J



VUJ0002766

Uni-Body, Subframe and Mounting System - Front Subframe2.5L NA V6 - AJV6 / 2.0L NA V6 - AJV6 / 3.0L NA V6 - AJ27

Removal and Installation

Special Tool(s)	
 HTJ12002	Powertrain Assembly Jack HTJ1200-2

Removal

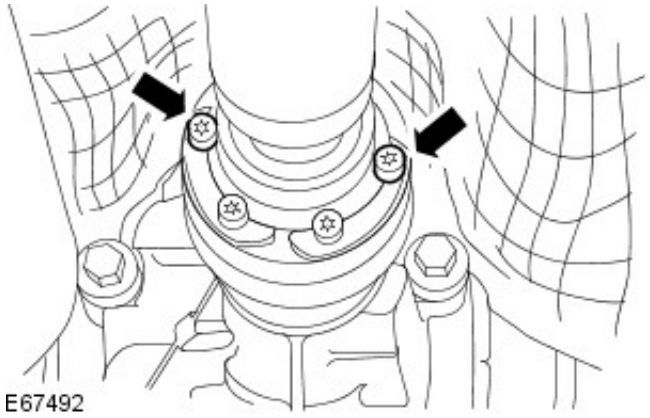
All vehicles

1. Remove the front wheels and tires.
   For additional information, refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).
2. Remove the radiator splash shield.
   For additional information, refer to: Radiator Splash Shield (501-02 Front End Body Panels, Removal and Installation).

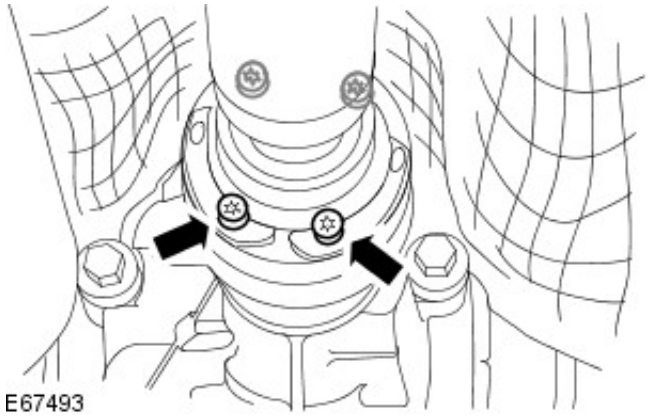
All vehicles

3. Remove the front muffler.
   For additional information, refer to: Front Muffler - 2.5L NA V6 - AJV6/2.0L NA V6 - AJV6/3.0L NA V6 - AJ27 (309-00 Exhaust System, Removal and Installation).
4. Remove the muffler inlet pipe.
   For additional information, refer to: Muffler Inlet Pipe - 2.5L NA V6 - AJV6/2.0L NA V6 - AJV6/3.0L NA V6 - AJ27 (309-00 Exhaust System, Removal and Installation).
5. NOTE: Mark the position of the driveshaft in relation to the drive pinion flange.

   Remove two opposing driveshaft universal joint retaining bolts.

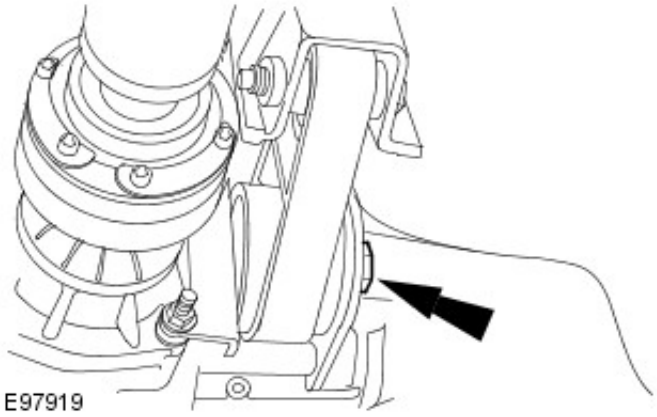

E67492

6. Loosen the remaining driveshaft universal joint retaining bolts.


E67493

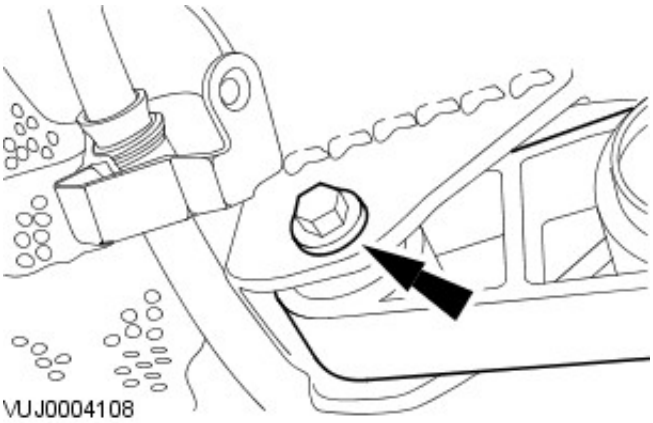
7. Detach the engine roll restrictor.

- Remove the engine roll restrictor retaining bolt.



8. Remove the engine roll restrictor.

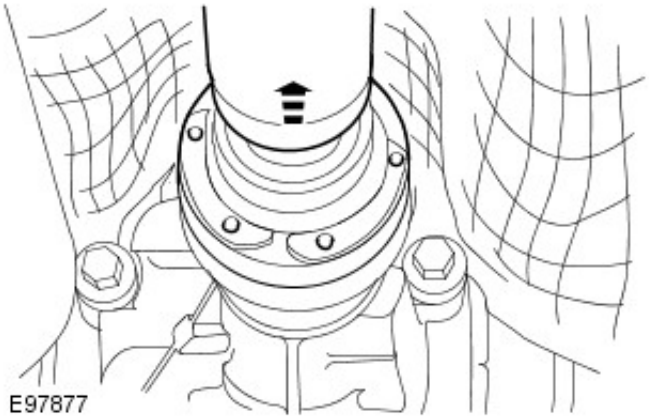
- Remove the engine roll restrictor retaining bolt.



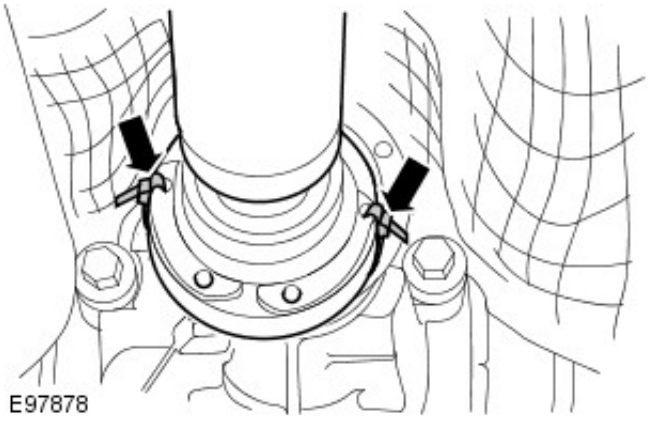
9. NOTE: If installed, remove and discard the gasket.

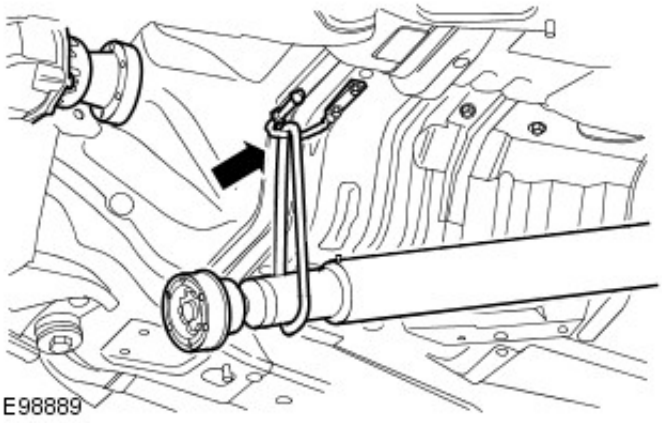
Detach the driveshaft from drive pinion flange.

- Remove and discard the driveshaft retaining bolts and link washers.



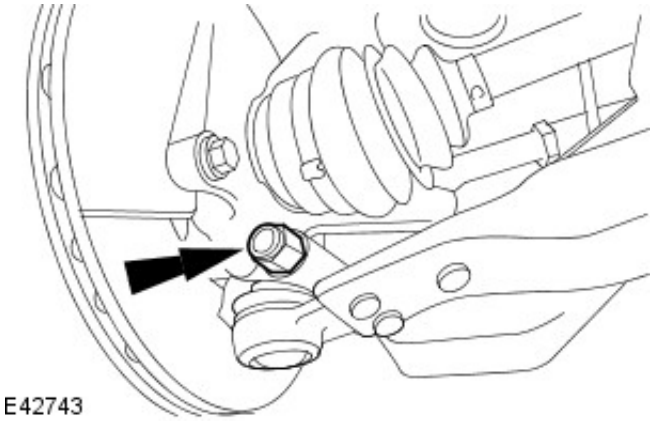
10. Using suitable tie straps, secure the outer casing of the driveshaft universal joint.





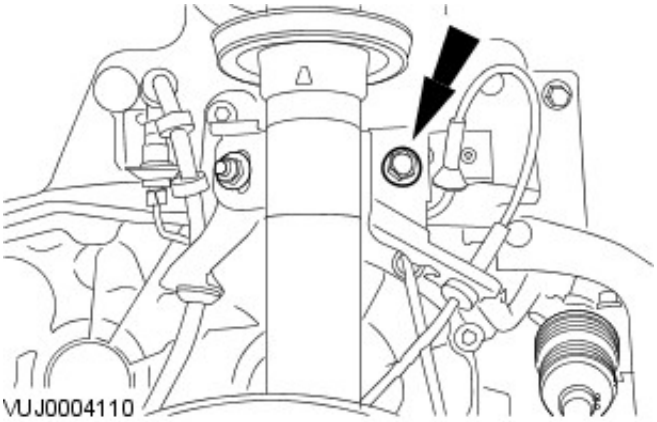
11. CAUTION: Make sure that the driveshaft does not hang on the center universal joint. Failure to follow this instruction may result in damage to the driveshaft.

Using suitable tie straps, secure the driveshaft to the front exhaust hanger .



12. NOTE: Right-hand shown, left-hand similar.

Remove the lower arm ball joint nut and bolt.

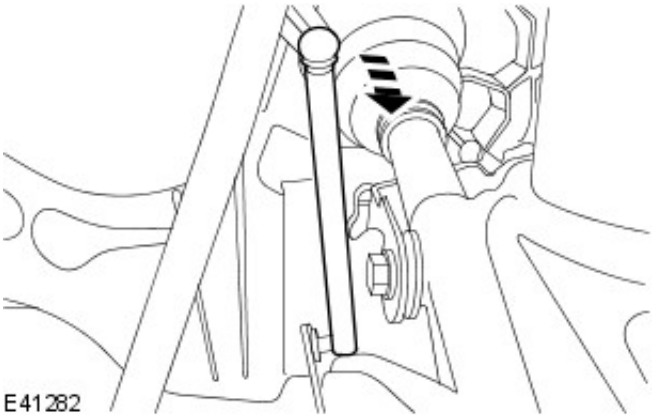


13. NOTE: Left-hand shown, right-hand similar.

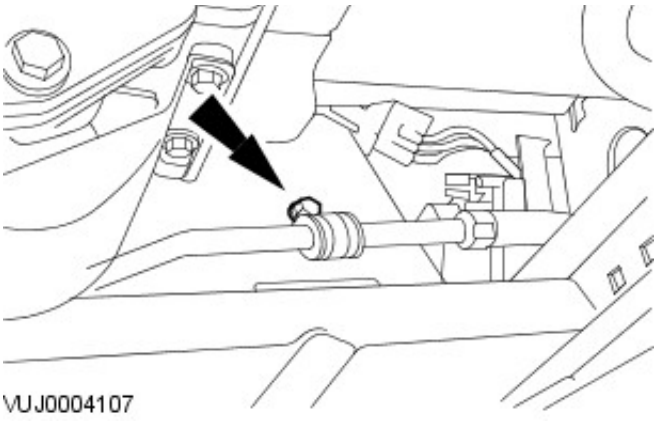
Detach the stabilizer bar link arms.

Vehicles with high intensity discharge headlamps

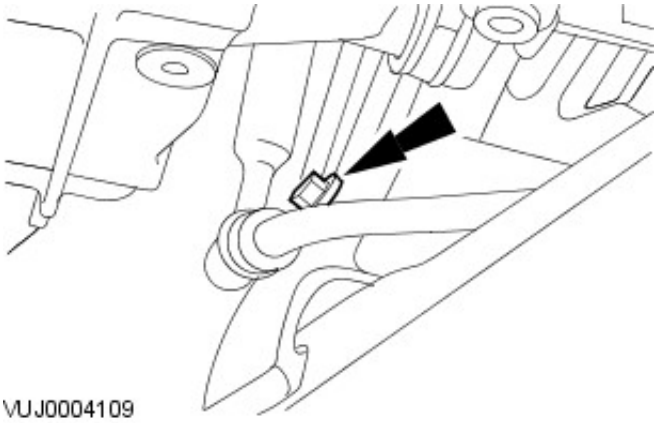
14. Disconnect the high intensity discharge (H.I.D) sensor drop arm.



All vehicles

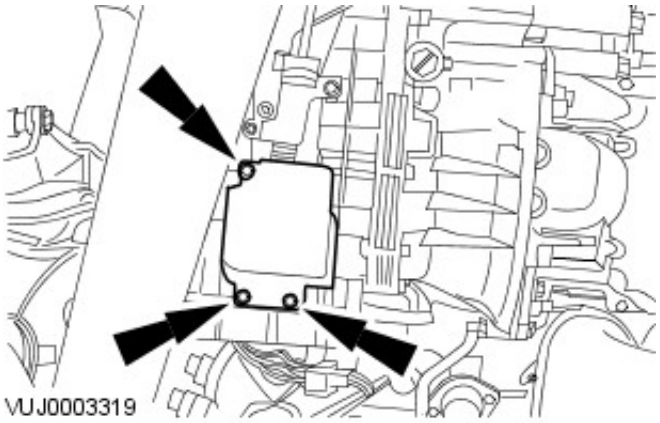


15. Detach the front of the steering gear cooling pipe.

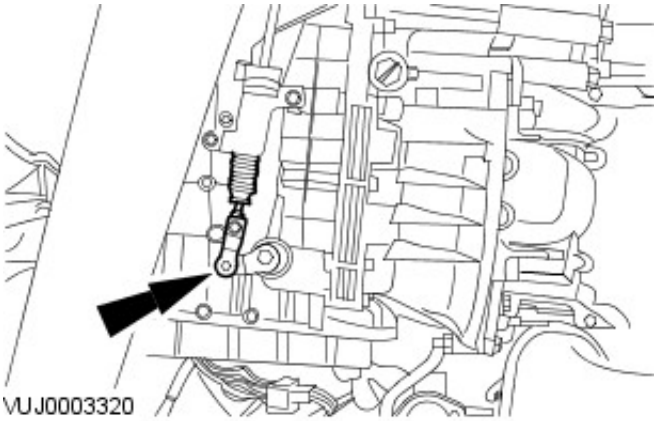


16. Detach the rear of the steering gear cooling pipe.

Vehicles with automatic transmission

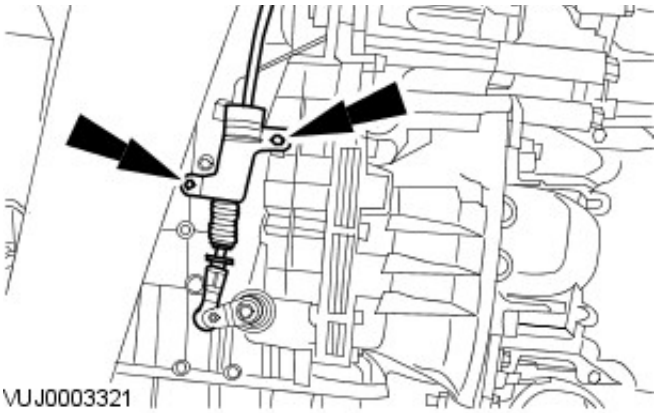


17. Remove the selector cable shield.



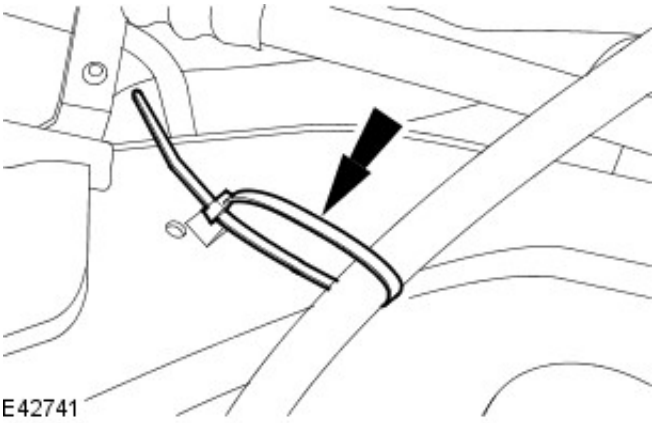
18. Detach the selector cable.

19. Disconnect the selector cable.



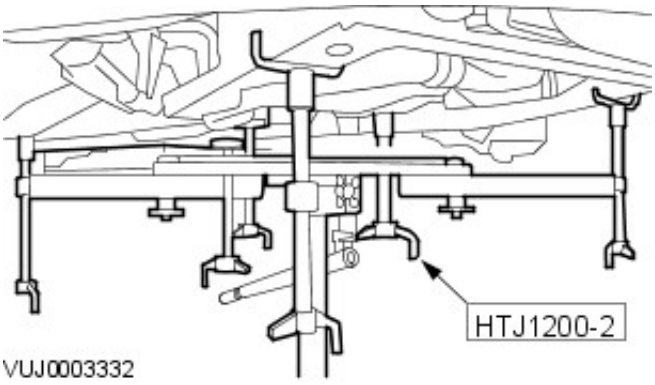
20. NOTE: Secure the selector cable using tie straps.

Detach the selector cable.



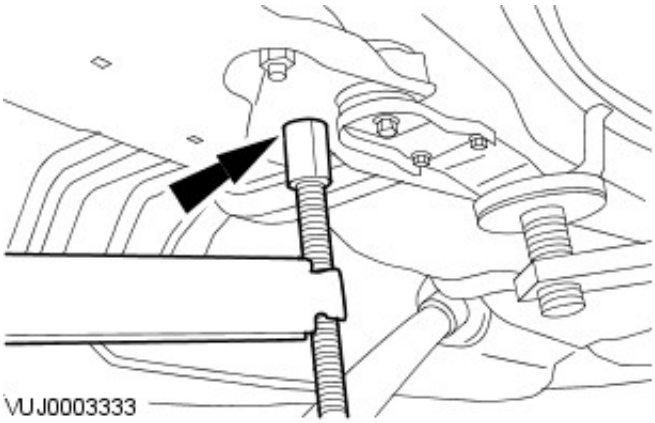
All vehicles

21. Install the special tool.



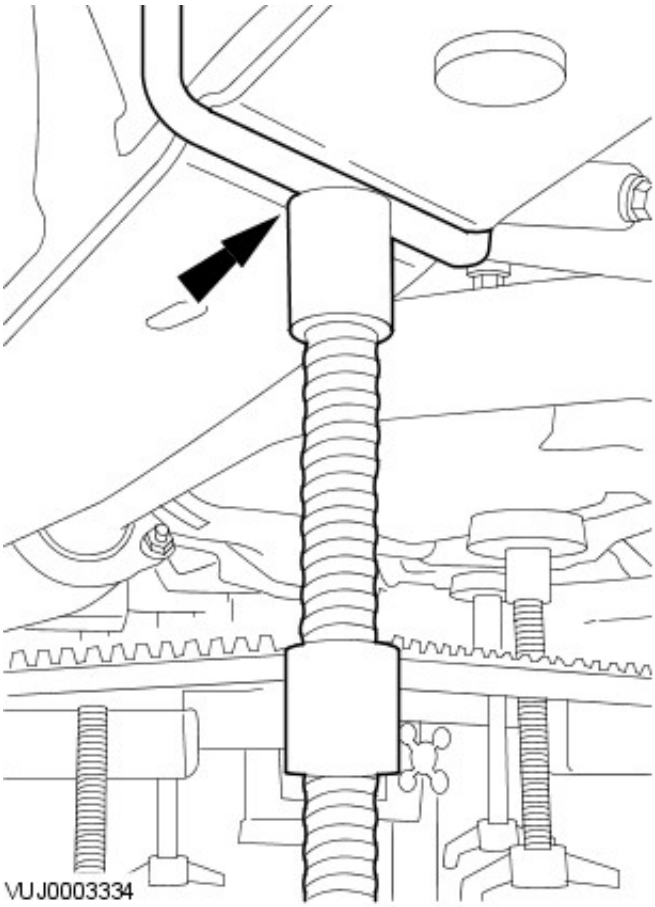
22. NOTE: Left-hand shown, right-hand similar.

Position and adjust the special tool rear height adjuster.



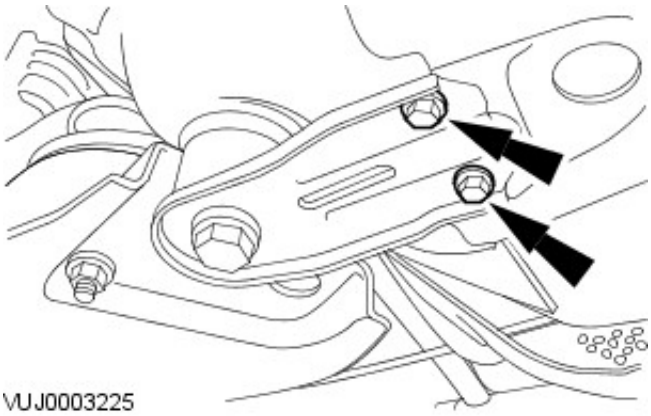
23. NOTE: Right-hand shown, left-hand similar.

Position and adjust the special tool front height adjuster.


VUJ0003334

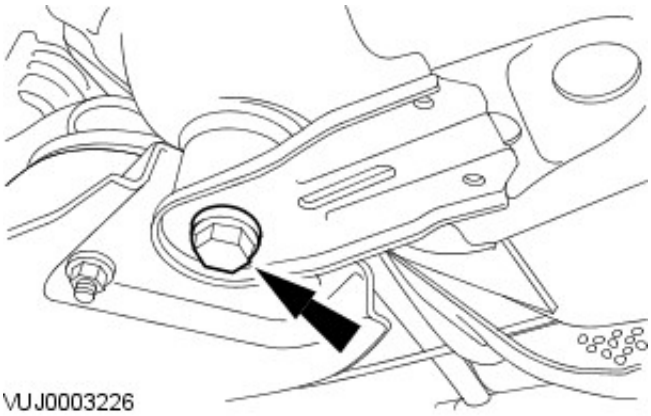
24. NOTE: Left-hand shown, right-hand similar.

Remove the front subframe reinforcement plate retaining bolts.


VUJ0003225

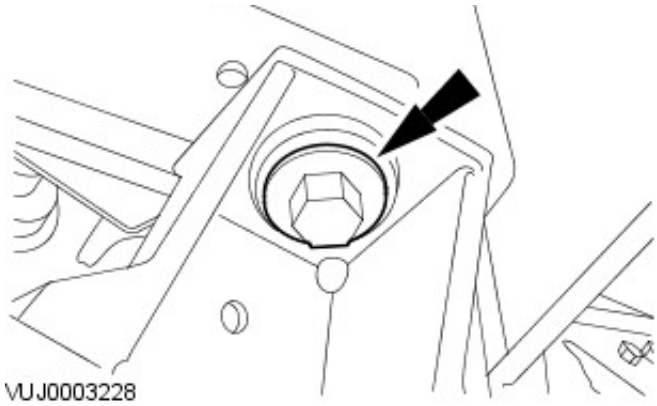
25. NOTE: Left-hand shown, right-hand similar.

Remove the front subframe rear mount retaining bolts.

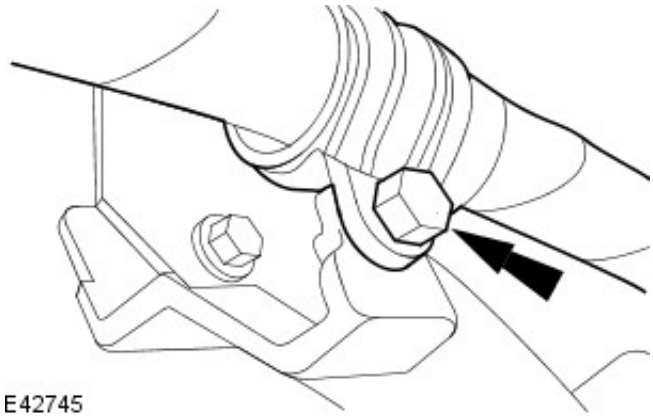

VUJ0003226

26. NOTE: Right-hand shown, left-hand similar.

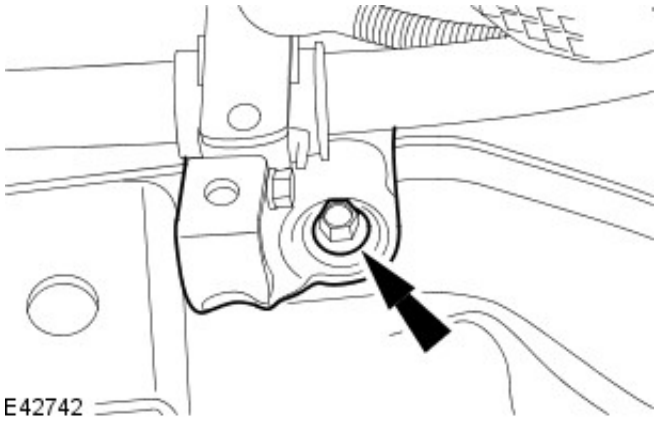
Remove the front subframe front mount retaining bolts.



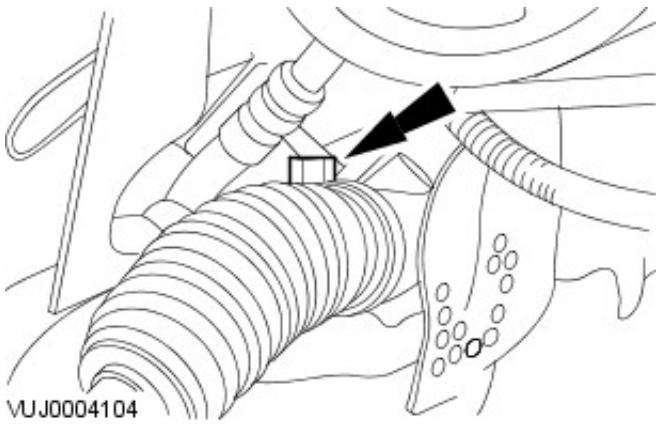
27. Detach the steering gear supply pipe from the steering gear heat shield mount bracket.



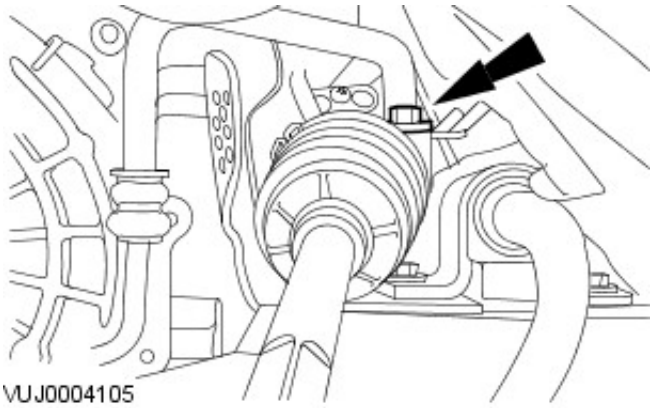
28. Detach the steering gear heat shield mount bracket.



29. Detach the right-hand side of the steering gear.

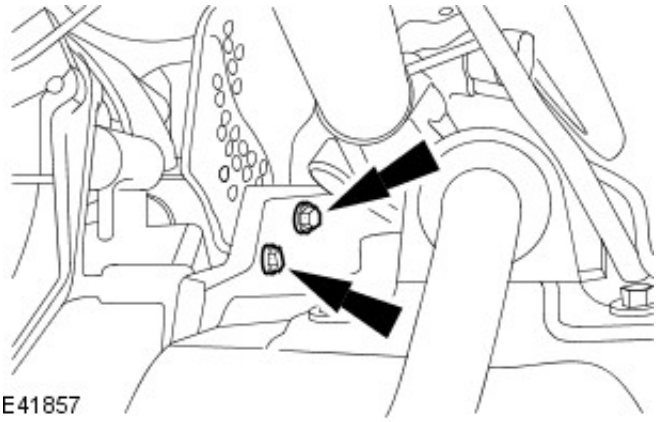


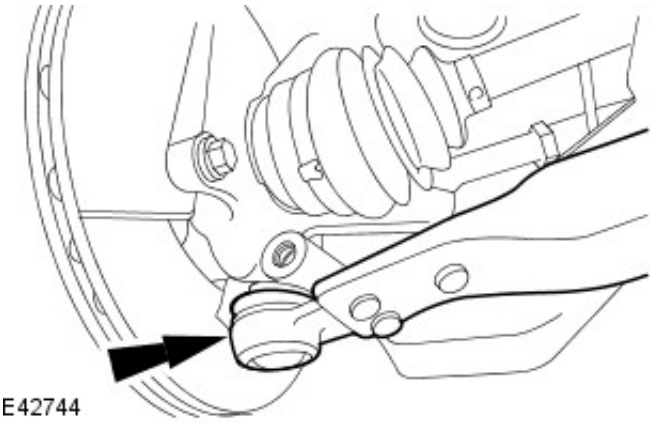
30. Detach the left-hand side of the steering gear.


VUJ0004105

31. Using suitable securing straps, secure the steering gear to the vehicle body.

32. Remove the steering gear heat shield lower retaining bolts.

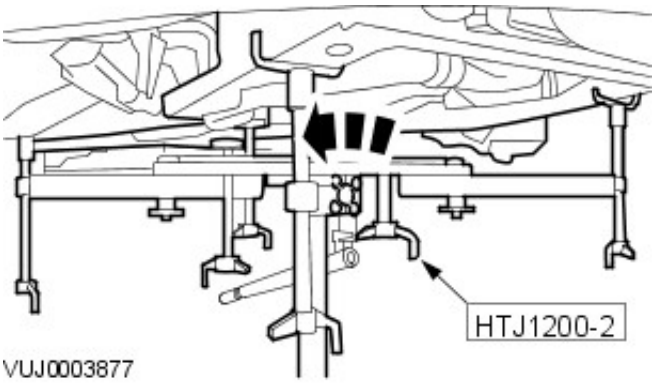

E41857


E42744

33. CAUTION: To prevent damage to the lower arm bushing, detach the lower arm ball joint as the subframe is being lowered. Failure to follow this instruction may result in damage to the vehicle.

- NOTE: Right-hand shown, left-hand similar.

Detach the lower arm.



VUJ0003877

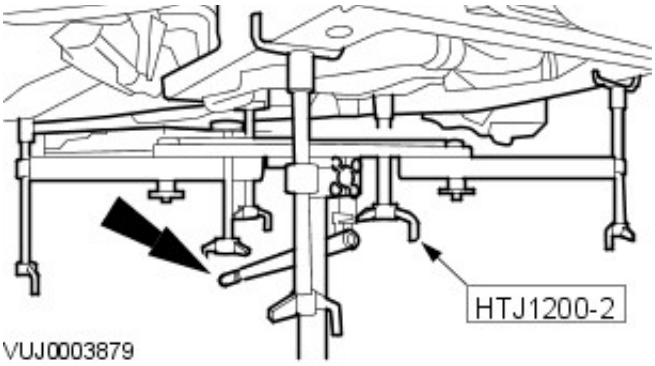
34. WARNING: Rotate the special tool height adjustment valve slowly. Failure to follow this instruction may result in personal injury.

Remove the subframe.

- Rotate the special tool height adjustment valve counter clockwise.
- Lower the special tool.

Installation

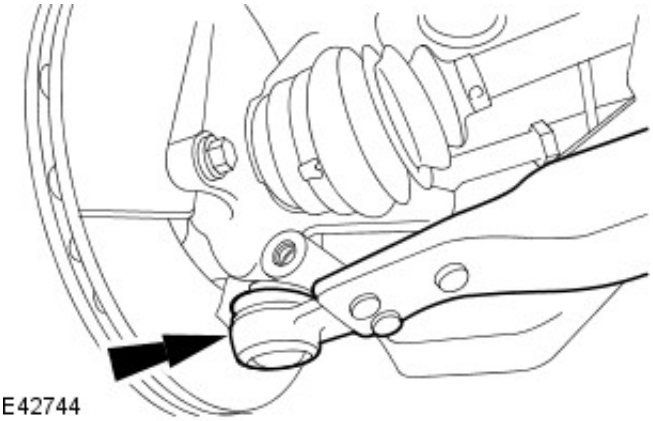
All vehicles



1. WARNING: Raise the special tool platform slowly. Failure to follow this instruction can result in personal injury.

Install the subframe.

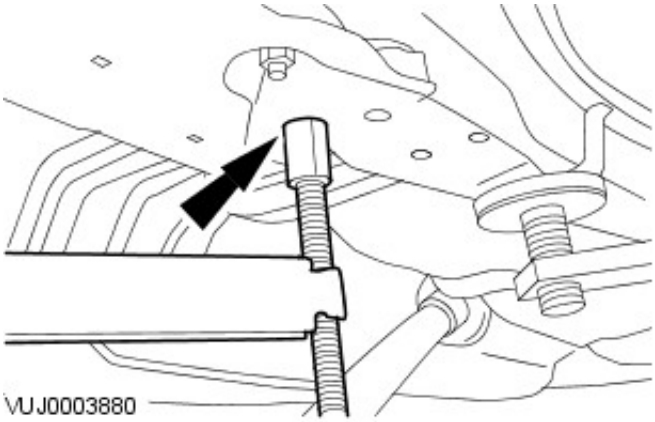
- Raise the special tool platform.



2. CAUTION: To prevent damage to the lower arm bushing, attach the lower arm ball joint as the subframe is being raised. Failure to follow this instruction may result in damage to the vehicle.

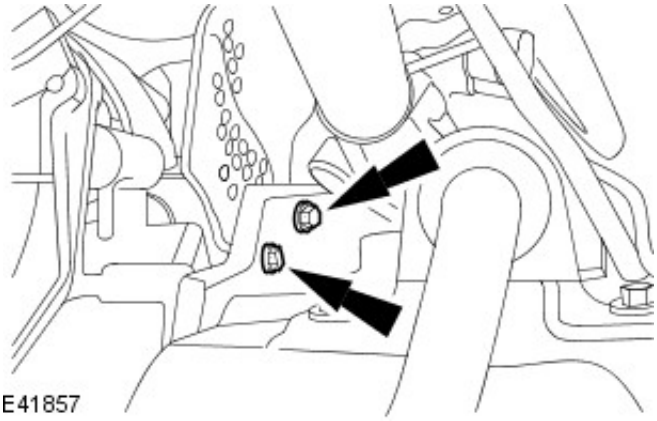
• NOTE: Right-hand shown, left-hand similar.

Attach the lower arm.



3. NOTE: Left-hand shown, right-hand similar.

Make sure the special tool rear height adjuster aligns into the locating hole in the vehicle floor pan.

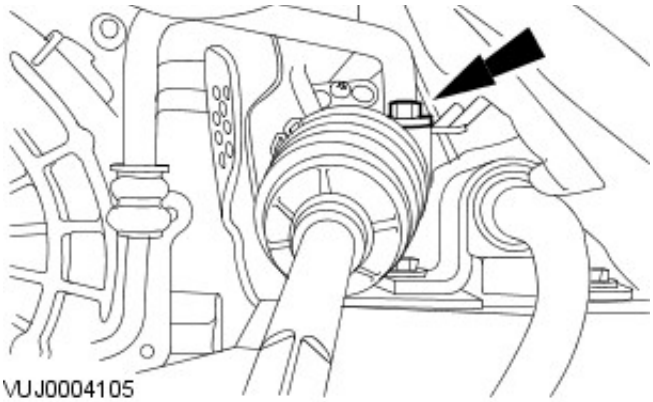


4. Install the steering gear heat shield lower retaining bolts.

5. Remove the steering gear securing straps.

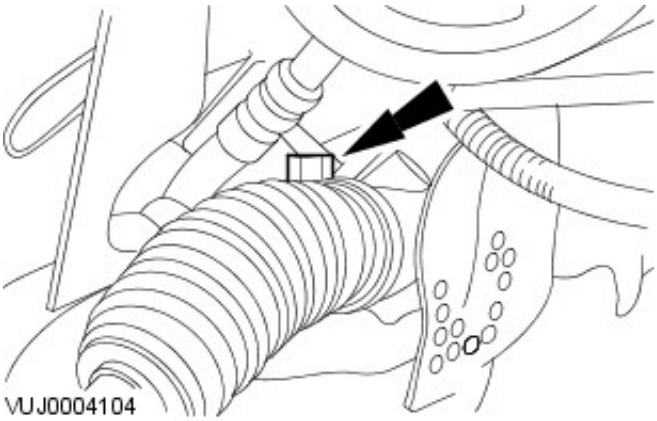
6. Attach the left-hand side of the steering gear.

- Tighten to 133 Nm.

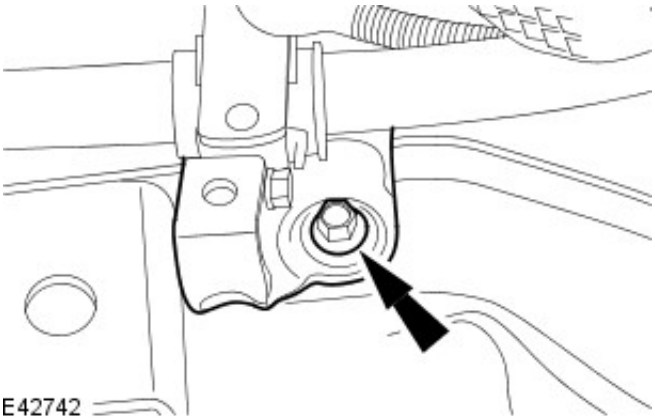

VUJ0004105

7. Attach the right-hand side of the steering gear.

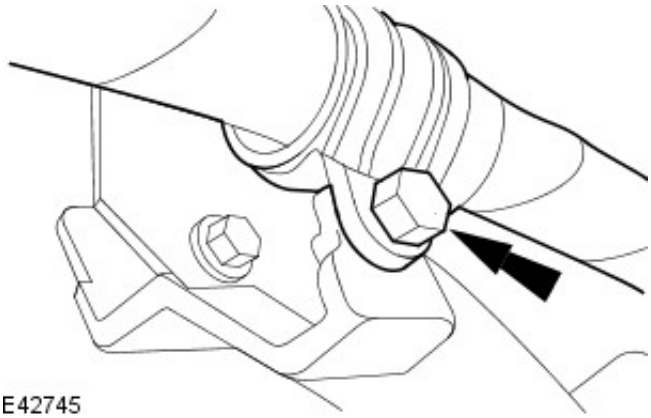
- Tighten to 133 Nm.


VUJ0004104

8. Attach the steering gear heat shield mount bracket.

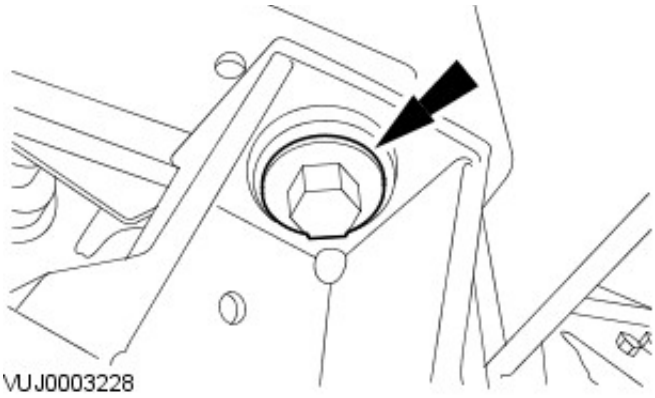

E42742

9. Attach the steering gear supply pipe to the steering gear heat shield mount bracket.


E42745

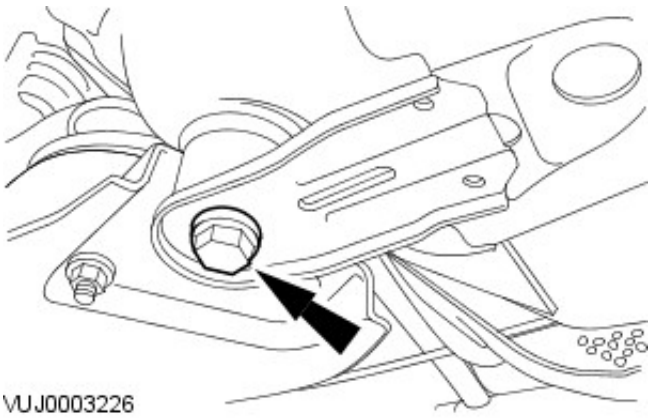
10. NOTE: Right-hand shown, left-hand similar.

Loosely install the front subframe front mount retaining bolt.



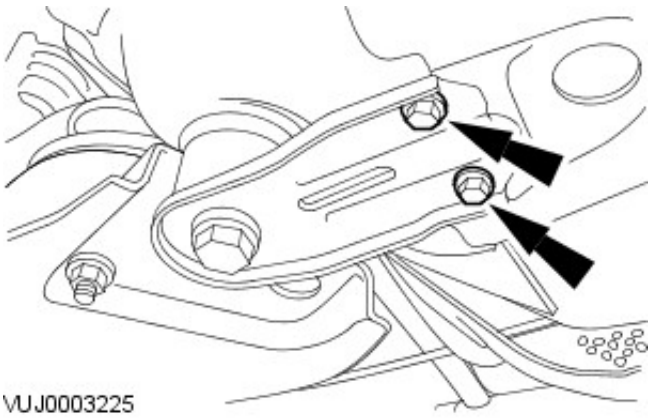
11. NOTE: Left-hand shown, right-hand similar.

Loosely install the front subframe rear mount retaining bolts.



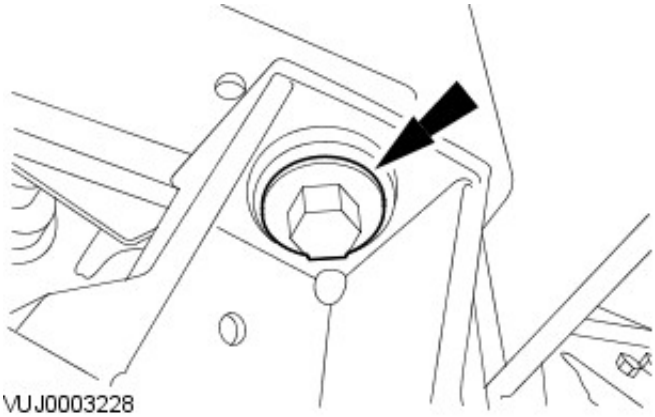
12. NOTE: Left-hand shown, right-hand similar.

Loosely install the front subframe reinforcement plate retaining bolts.



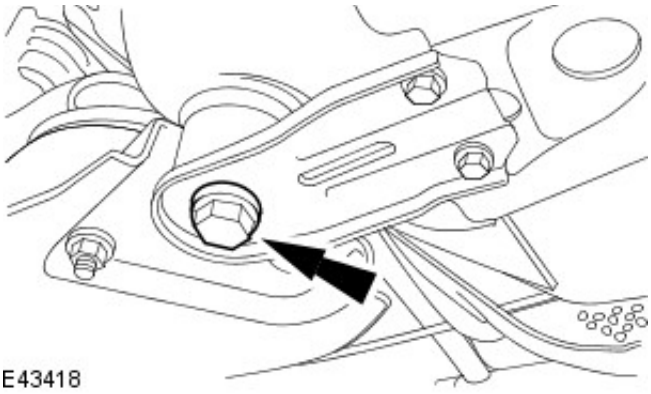
13. NOTE: Right-hand shown, left-hand similar.

Tighten to 142 Nm.



14. NOTE: Left-hand shown, right-hand similar.

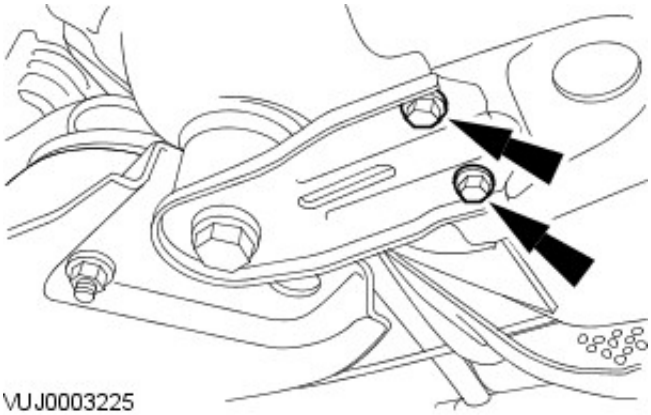
Tighten to 142 Nm.


E43418

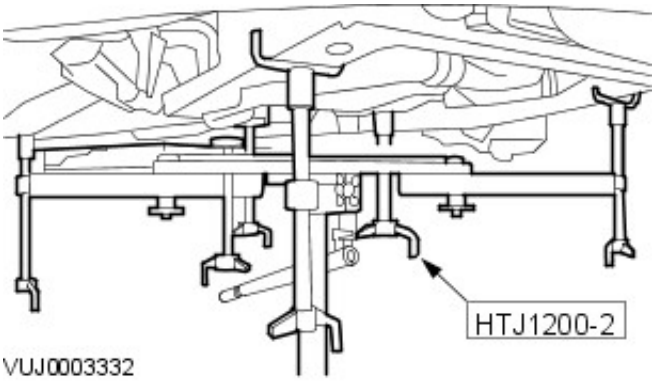
15. NOTE: Left-hand shown, right-hand similar.

Tighten the front subframe reinforcement bolts.

- M8 to 35 Nm.
- M10 to 70 Nm.


VUJ0003225

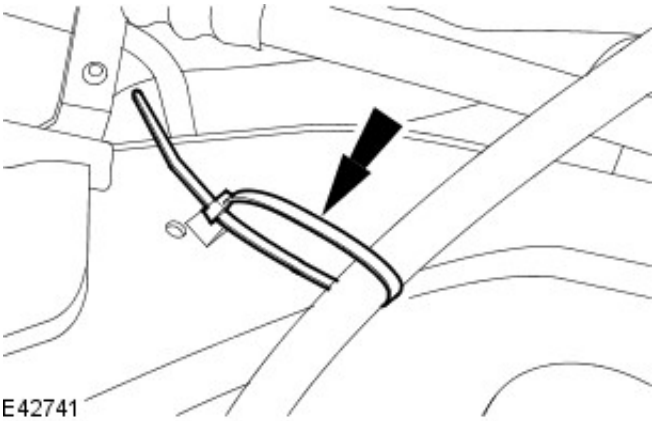
16. Remove the special tool.



VUJ0003332

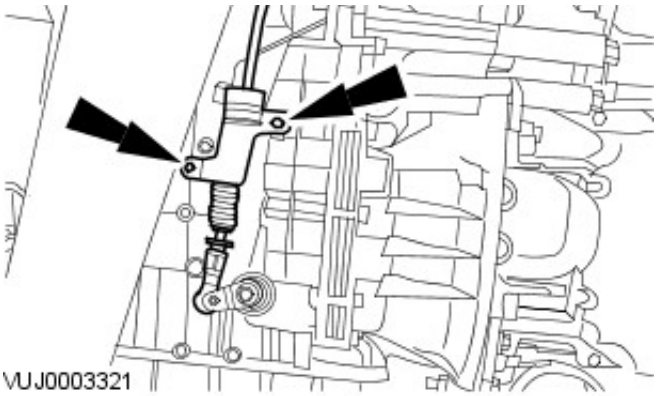
Vehicles with automatic transmission

17. Attach the selector cable.

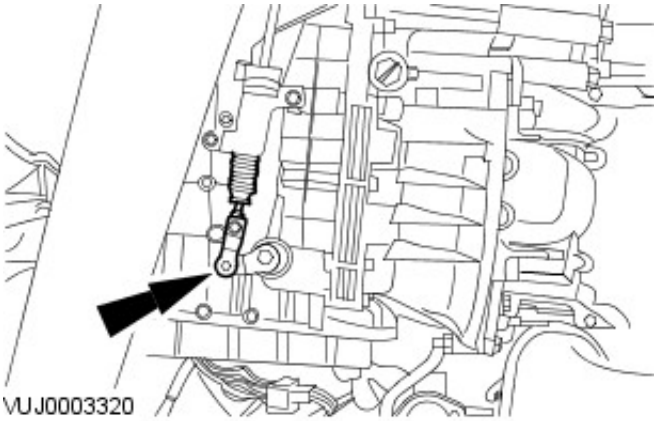

E42741

18. Connect the selector cable.

- Tighten to 10 Nm.

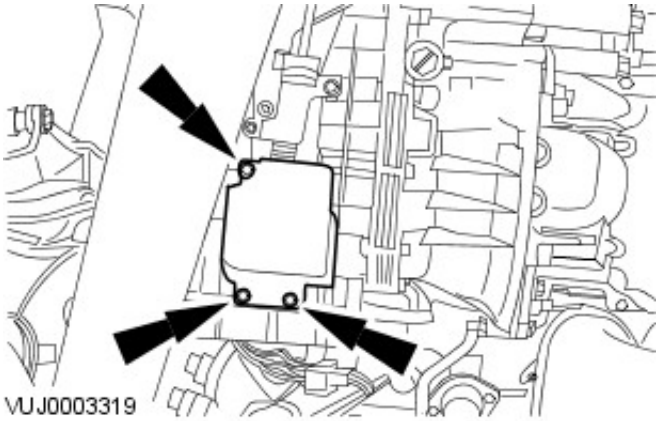


19. Attach the selector cable.



20. Install the selector cable shield.

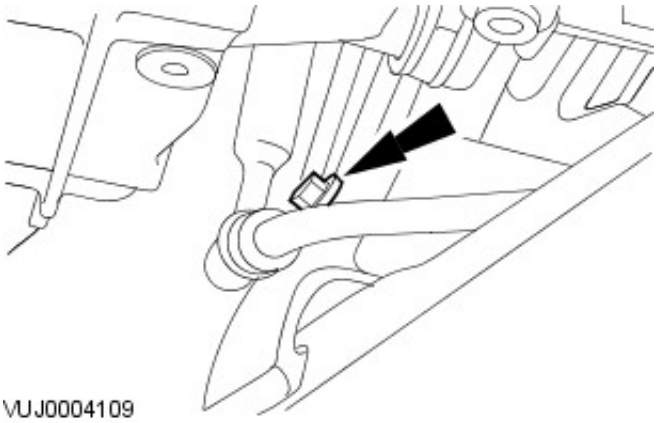
- Tighten to 10 Nm.



All vehicles

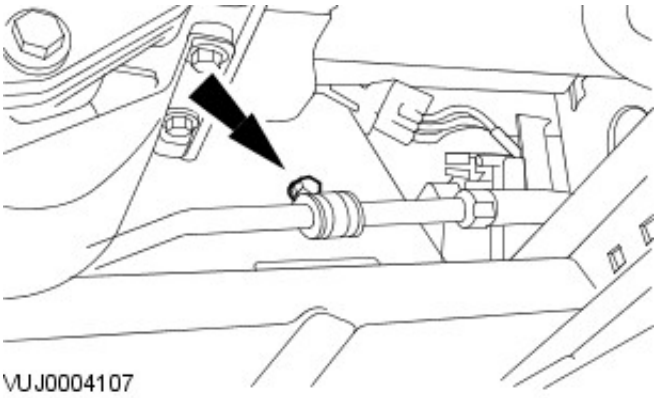
21. Attach the rear of the steering gear cooling pipe.

- Tighten to 7 Nm.



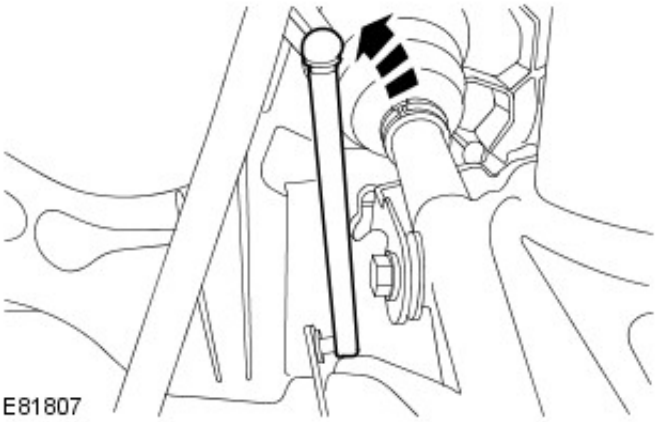
22. Attach the front of the steering gear cooling pipe.

- Tighten to 7 Nm.



Vehicles with high intensity discharge headlamps

23. Connect the high intensity discharge (H.I.D) sensor drop arm.

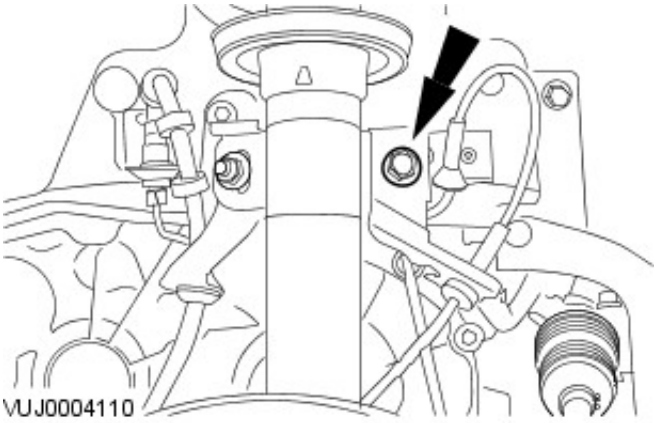


All vehicles

24. NOTE: Left-hand shown, right-hand similar.

Attach the stabilizer bar link arms.

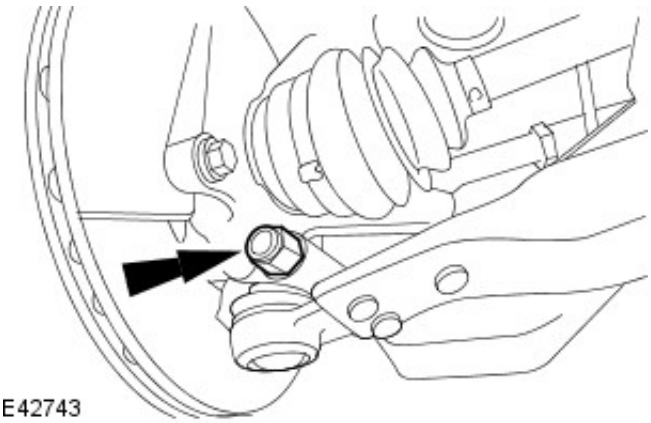
- Tighten to 48 Nm.



25. NOTE: Right-hand shown, left-hand similar.

Install the lower arm ball joint retaining nut and bolt.

- Tighten to 83 Nm.

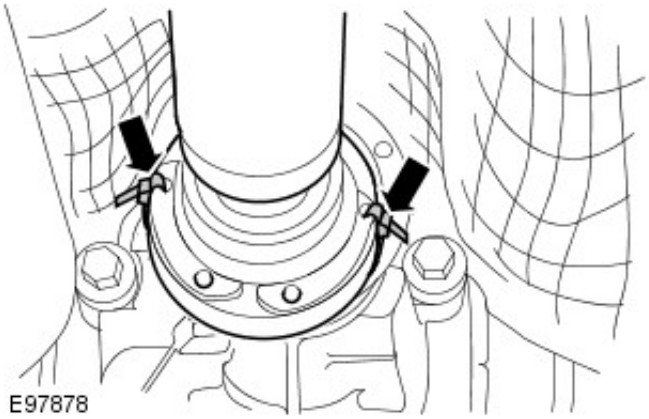


26. Install the muffler inlet pipe.

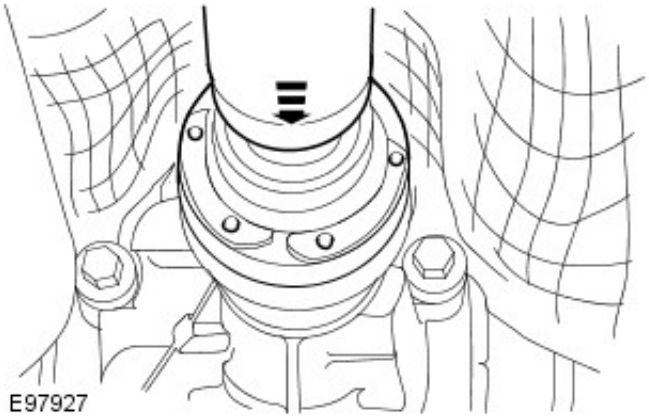
For additional information, refer to: Muffler Inlet Pipe - 2.5L NA V6 - AJV6/2.0L NA V6 - AJV6/3.0L NA V6 - AJ27 (309-00 Exhaust System, Removal and Installation).

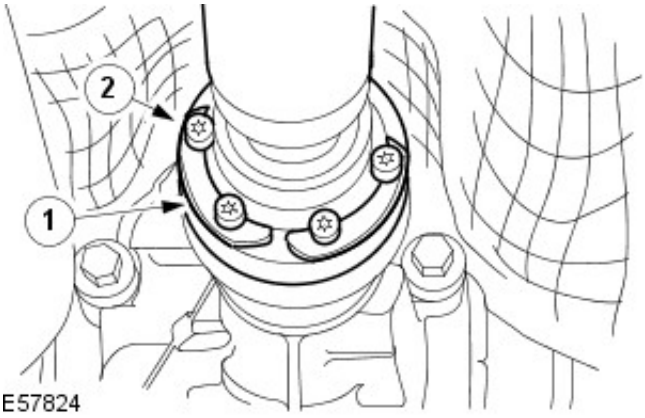
27. Cut and remove the tie straps securing the outer casing of the driveshaft universal joint.

- Cut and remove the tie straps securing the driveshaft to the front exhaust hanger.


E97878

28. Connect the driveshaft to the transfer case.


E97927



E57824

29. CAUTIONS:

INSTALLING A NEW DRIVESHAFT. If a new driveshaft is to be installed, no gasket is required between the driveshaft and the drive pinion flange. Failure to follow this instruction may result in damage to the vehicle.

INSTALLING THE ORIGINAL DRIVESHAFT. If a gasket was removed from between the driveshaft and the drive pinion flange on the driveshaft removal procedure, make sure to install a new gasket. If no gasket was removed from between the driveshaft and the drive pinion flange on the driveshaft removal procedure, a new gasket is not required. Failure to follow this instruction may result in damage to the vehicle.

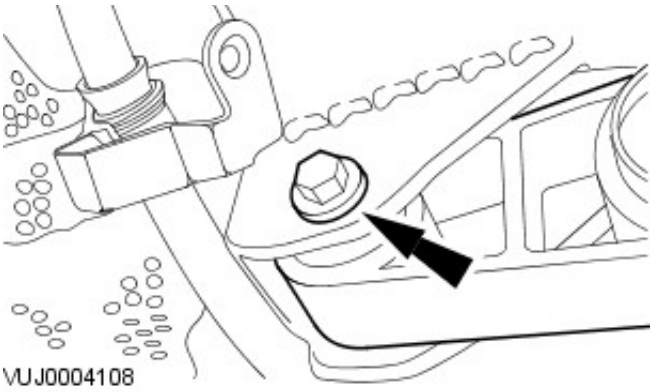
Attach the driveshaft universal joint.

1. Attach the driveshaft universal joint.
2. Install new driveshaft retaining bolt link washers.
3. Install new driveshaft retaining bolts

- Tighten to 44 Nm.

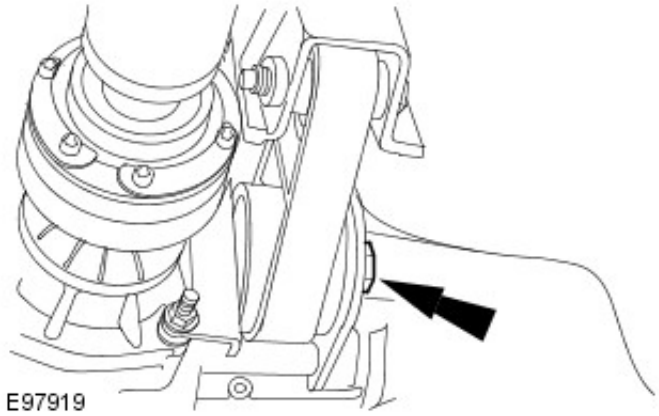
30. Install the engine roll restrictor.

- Install the engine roll restrictor retaining bolt.

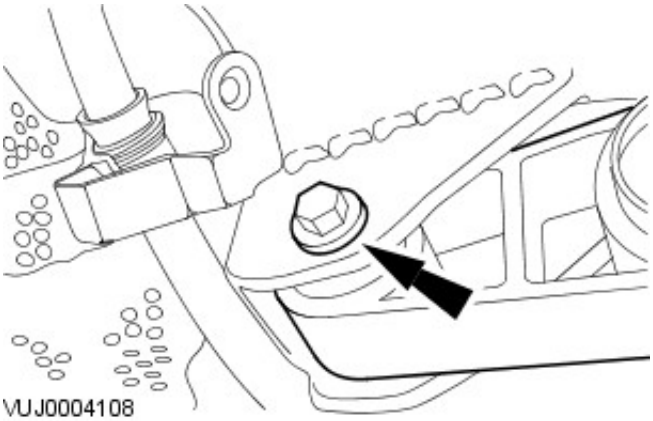


31. Attach the engine roll restrictor.

- Tighten to 80 Nm



32. Tighten to 80 Nm.



33. Install the radiator splash shield.
For additional information, refer to: Radiator Splash Shield (501-02 Front End Body Panels, Removal and Installation).

34. Install the front wheels and tires.
For additional information, refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).

35. Install the front muffler.
For additional information, refer to: Front Muffler - 2.5L NA V6 - AJV6/2.0L NA V6 - AJV6/3.0L NA V6 - AJ27 (309-00 Exhaust System, Removal and Installation).

Vehicles with 2.5L or 3.0L engine

36. Carry out the front subframe alignment procedure.
For additional information, refer to: Underbody Misalignment Check (502-00 Uni-Body, Subframe and Mounting System, General Procedures).

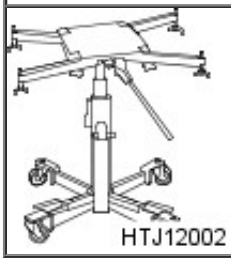
Vehicles with stability assist

37. Calibrate the steering angle sensor, using the Jaguar

approved diagnostic system.

Uni-Body, Subframe and Mounting System - Front Subframe2.2L Duratorq-TDCi (110kW/150PS) - Puma/2.0L Duratorq-TDCi

Removal and Installation

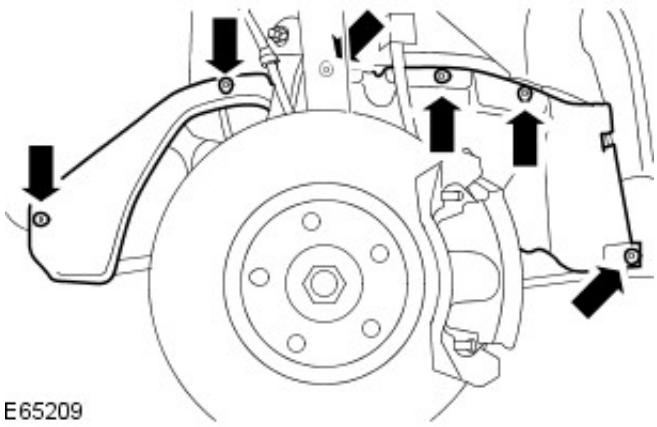
Special Tool(s)	
 HTJ12002	Powertrain Assembly Jack HTJ1200-2

Removal

All vehicles

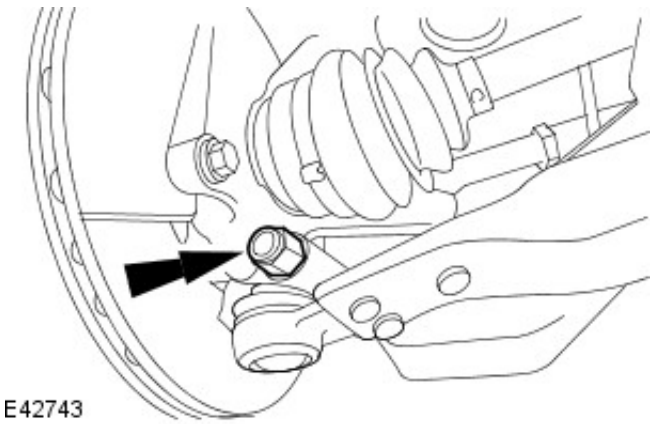
1. Remove the wheels and tires.
   For additional information, refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).
2. Remove the radiator splash shield.
   For additional information, refer to: Radiator Splash Shield (501-02 Front End Body Panels, Removal and Installation).
3. Remove the exhaust flexible pipe.
   For additional information, refer to: Exhaust Flexible Pipe - 2.2L Duratorq-TDCi (110kW/150PS) - Puma/2.0L Duratorq-TDCi (309-00 Exhaust System, Removal and Installation).
4. NOTE: Right-hand shown, left-hand similar.

   Remove the wheel arch liner access cover.


E65209

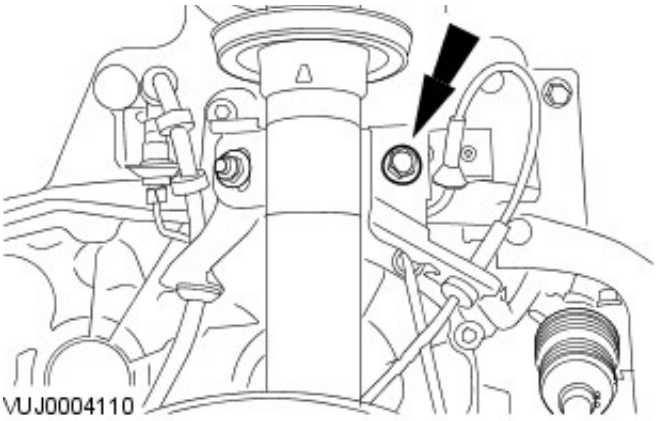
5. NOTE: Right-hand shown, left-hand similar.

   Remove the lower arm ball joint nut and bolt.


E42743

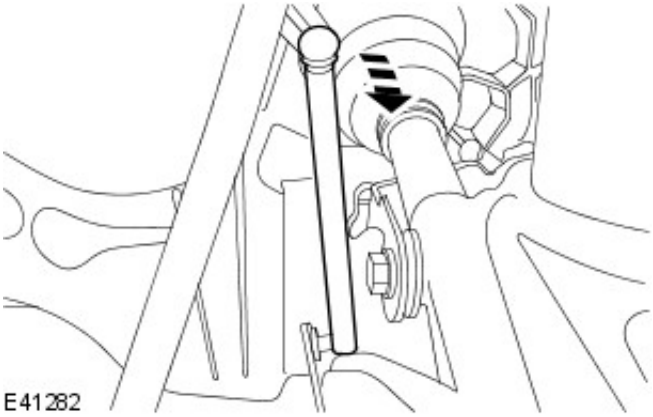
6. NOTE: Left-hand shown, right-hand similar.

   Detach the stabilizer bar link arms.



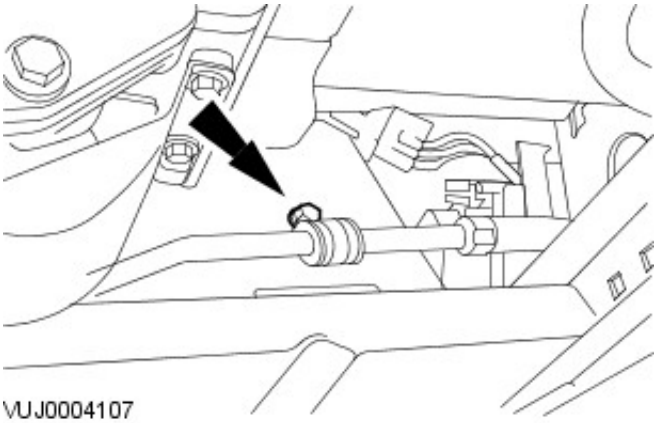
Vehicles with high intensity discharge headlamps

7. Disconnect the high intensity discharge (H.I.D) sensor drop arm.

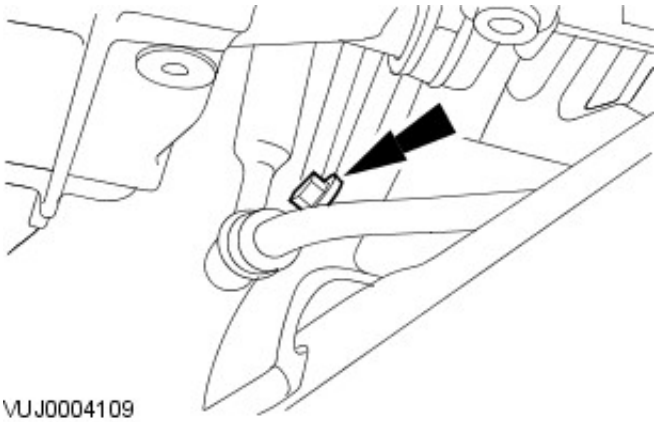


All vehicles

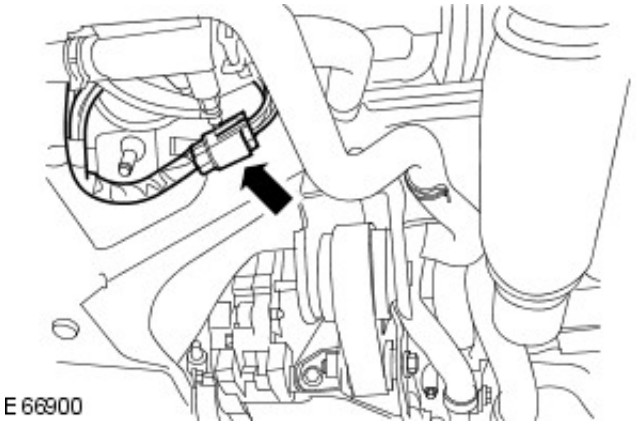
8. Detach the front of the steering gear cooling pipe.



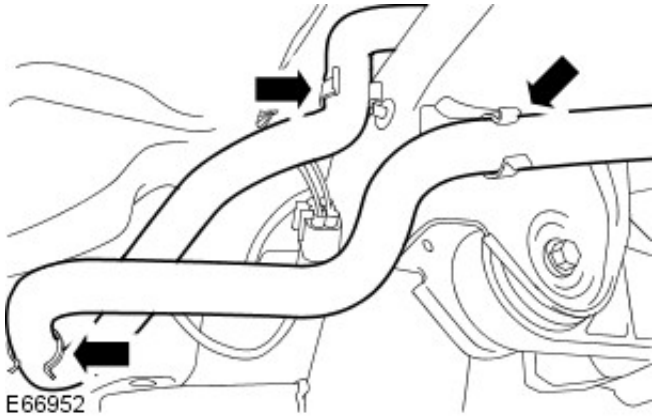
9. Detach the rear of the steering gear cooling pipe.



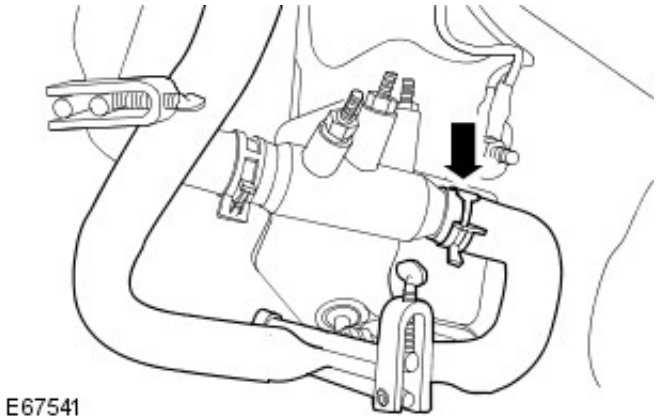
Vehicles with electric booster heater


E66900

10. Detach the electric booster heater electrical connector from the subframe retaining tang.


E66952

11. Detach the coolant hoses from the retaining clips.

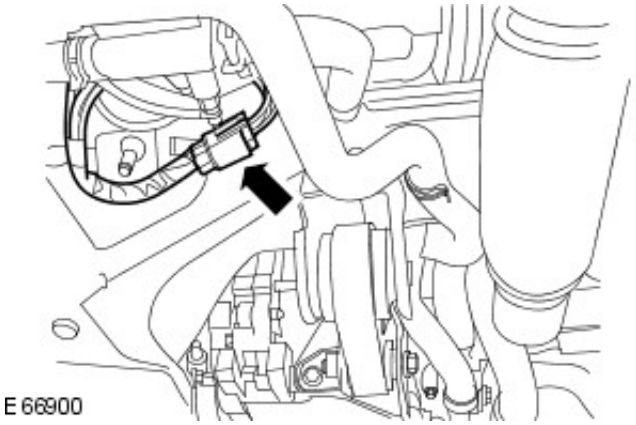

E67541

12. NOTE: Clamp the hose to minimize coolant loss.

Detach the coolant hose.

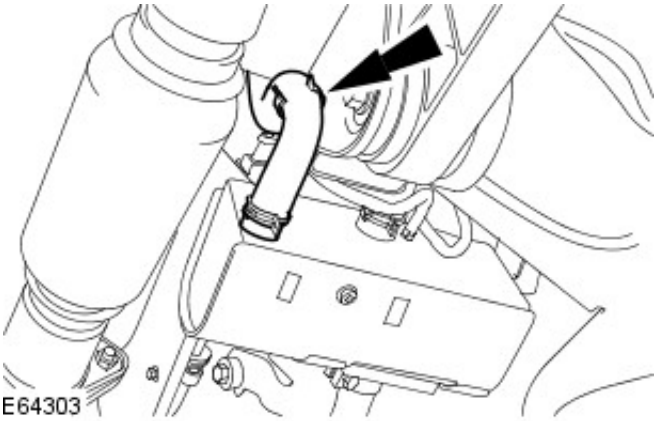
- Disconnect the coolant hose.

Vehicles with fuel fired booster heater


E66900

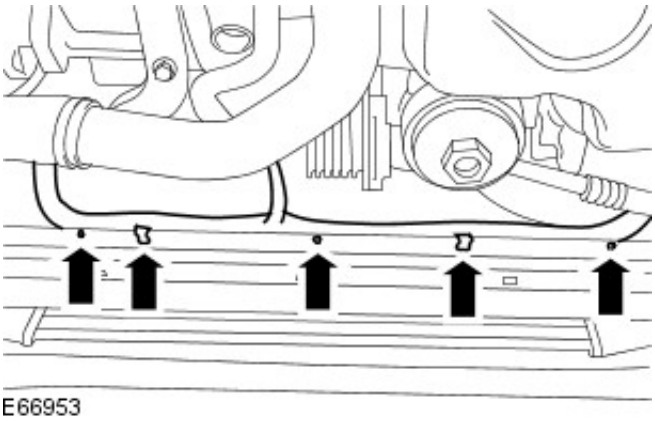
13. Detach the fuel fired booster heater electrical connector from the subframe retaining tang.

14. Detach the coolant hose.

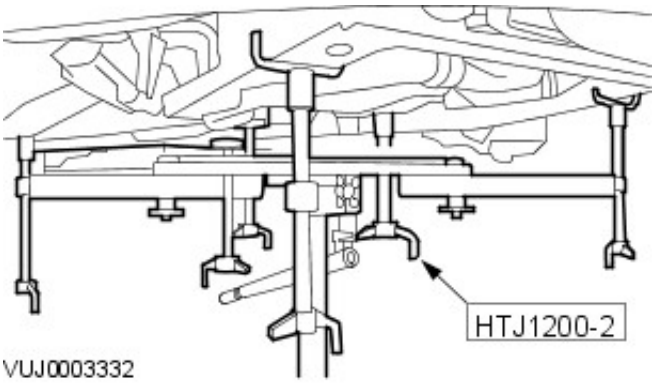


All vehicles

15. Detach the wiring harness.

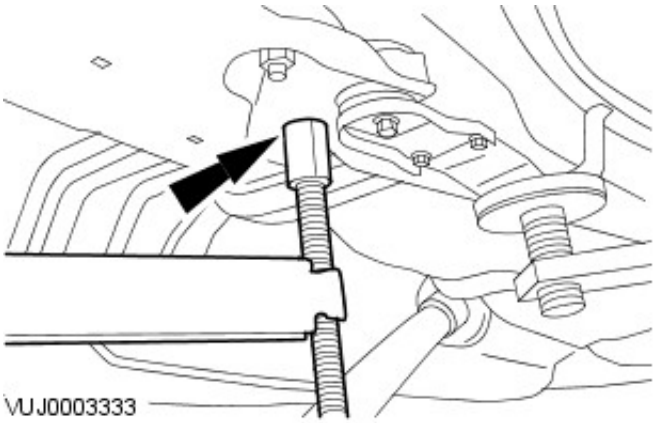


16. Install the special tool.



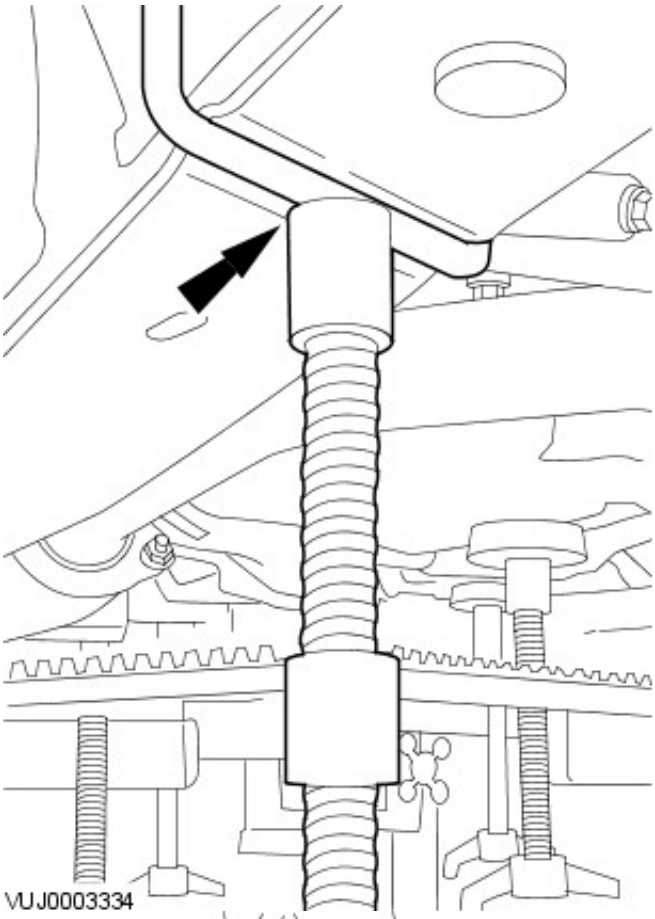
17. NOTE: Left-hand shown, right-hand similar.

Position and adjust the special tool rear height adjuster.

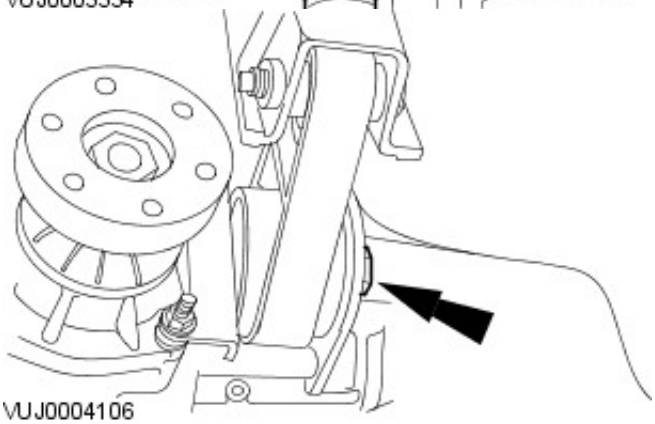


18. NOTE: Right-hand shown, left-hand similar.

Position and adjust the special tool front height adjuster.

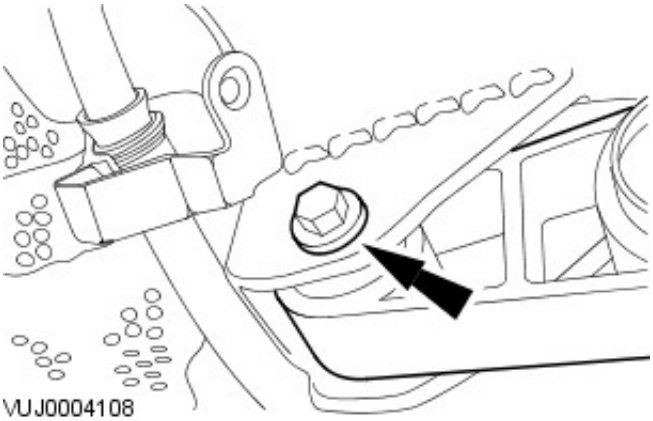

VUJ0003334

19. Detach the engine roll restrictor.


VUJ0004106

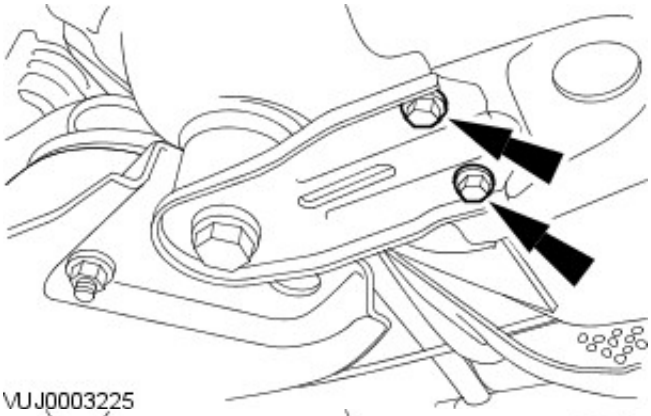
20. Remove the engine roll restrictor.

- Remove the roll restrictor retaining bolt.


VUJ0004108

21. NOTE: Left-hand shown, right-hand similar.

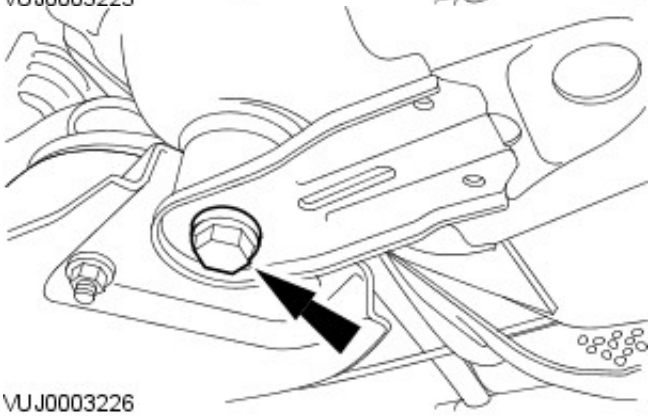
Remove the front subframe reinforcement plate retaining bolts.



VUJ0003225

22. NOTE: Left-hand shown, right-hand similar.

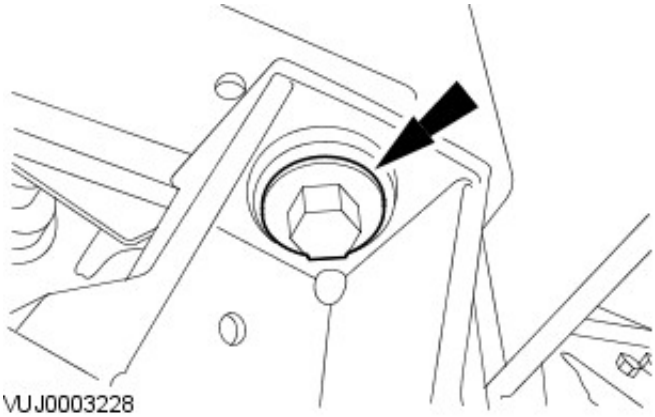
Remove the front subframe rear mount retaining bolts.



VUJ0003226

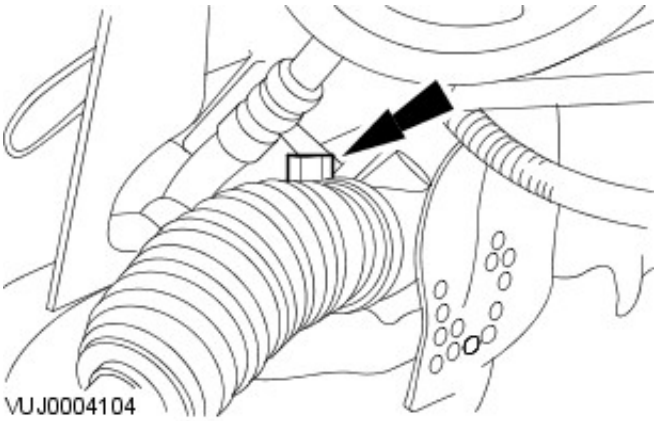
23. NOTE: Right-hand shown, left-hand similar.

Remove the front subframe front mount retaining bolts.



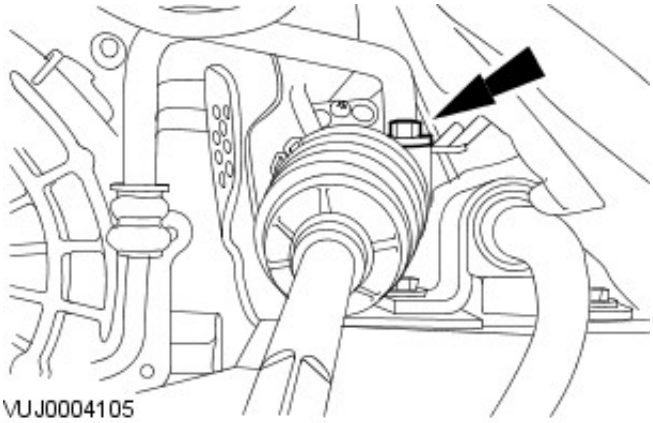
VUJ0003228

24. Detach the right-hand side of the steering gear.

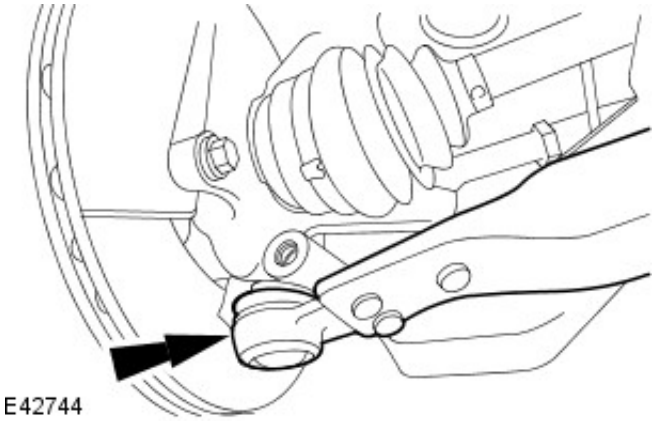


VUJ0004104

25. Detach the left-hand side of the steering gear.


VUJ0004105

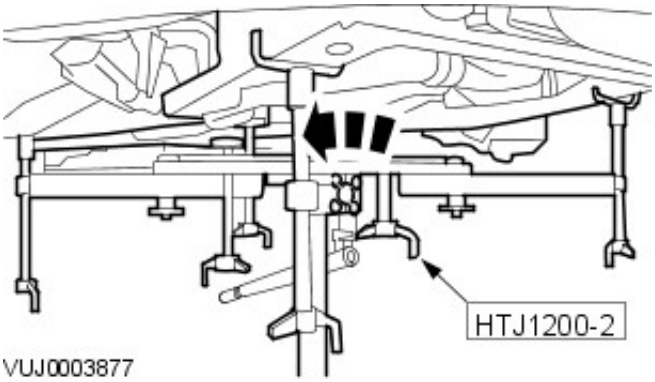
26. Using suitable securing straps, secure the steering gear to the vehicle body.


E42744

27. CAUTION: To prevent damage to the lower arm bushing, detach the lower arm ball joint as the subframe is being lowered. Failure to follow this instruction may result in damage to the vehicle.

• NOTE: Right-hand shown, left-hand similar.

Detach the lower arm.



VUJ0003877

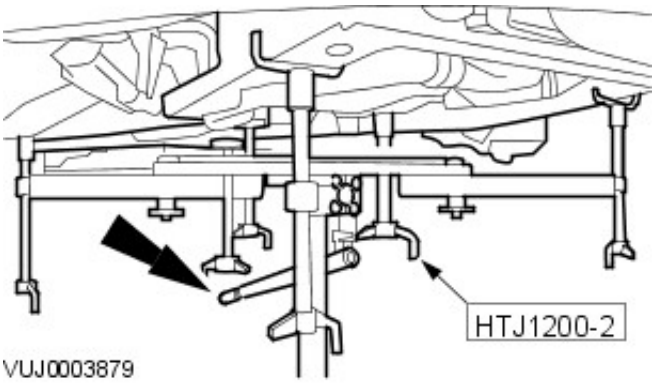
28. WARNING: Rotate the special tool height adjustment valve slowly. Failure to follow this instruction may result in personal injury.

Remove the subframe.

- Rotate the special tool height adjustment valve counter clockwise.
- Lower the special tool.

Installation

All vehicles



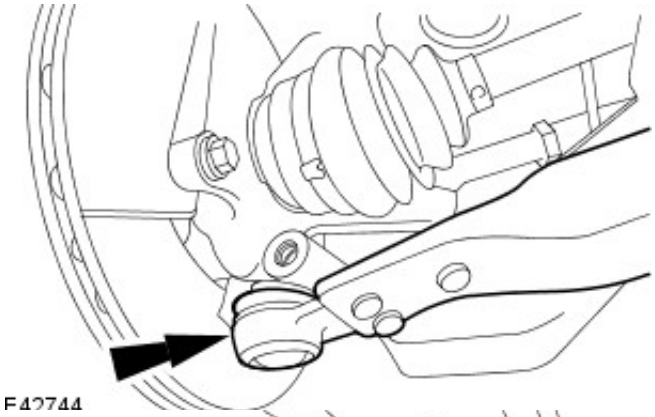
VUJ0003879

1. WARNING: Raise the special tool platform slowly. Failure to follow this instruction can result in personal injury.

Install the subframe.

- Raise the special tool platform.

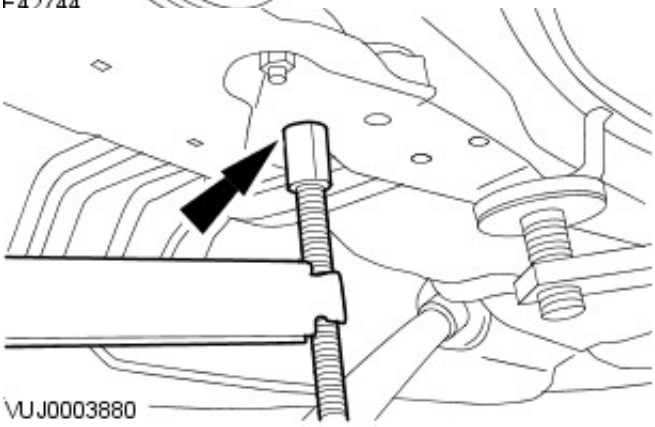
2. CAUTION: To prevent damage to the lower arm bushing, attach the lower arm ball joint as the subframe is



being raised. Failure to follow this instruction may result in damage to the vehicle.

• NOTE: Right-hand shown, left-hand similar.

Attach the lower arm.



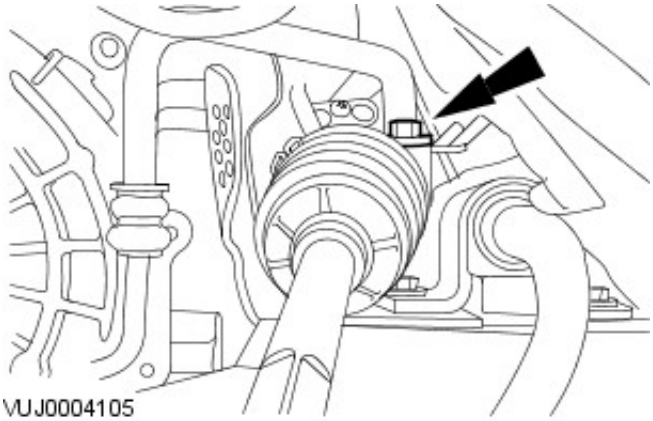
3. NOTE: Left-hand shown, right-hand similar.

Make sure the special tool rear height adjuster aligns into the locating hole in the vehicle floor pan.

4. Remove the steering gear securing straps.

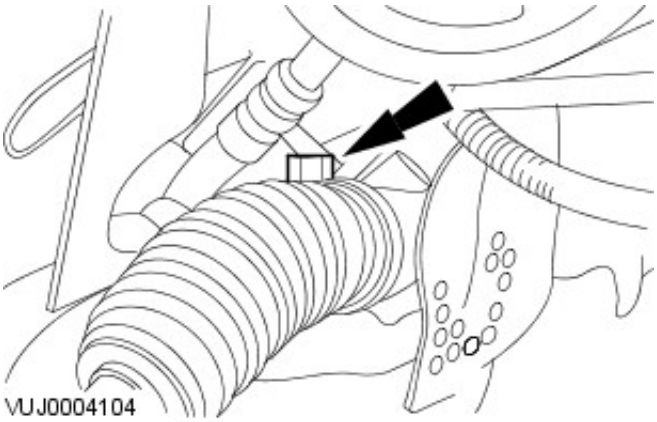
5. Attach the left-hand side of the steering gear.

- Tighten to 133 Nm.



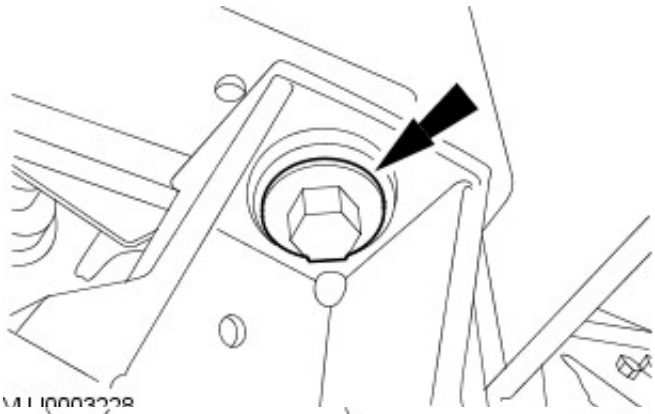
6. Attach the right-hand side of the steering gear.

- Tighten to 133 Nm.



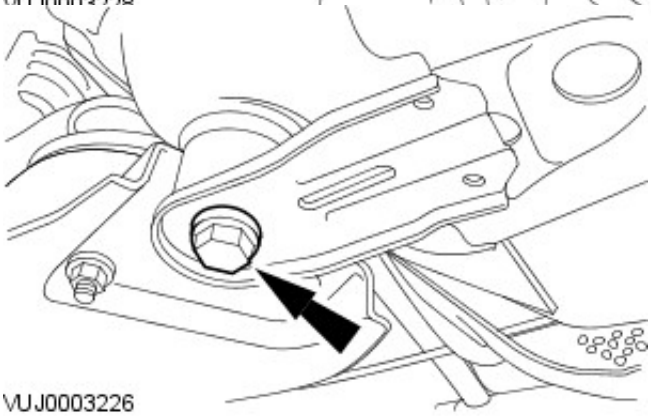
7. NOTE: Right-hand shown, left-hand similar.

Loosely install the front subframe front mount retaining bolt.



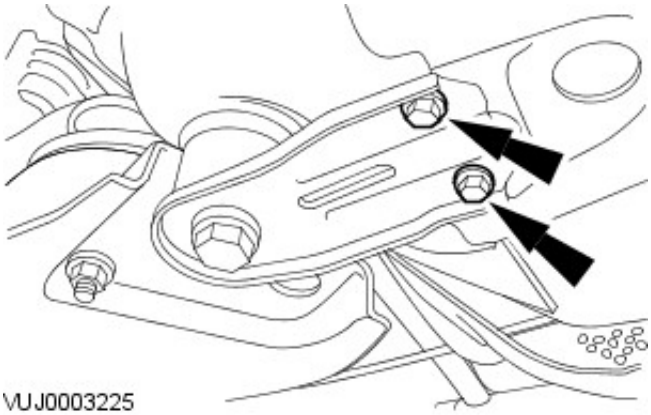
8. NOTE: Left-hand shown, right-hand similar.

Loosely install the front subframe rear mount retaining bolts.



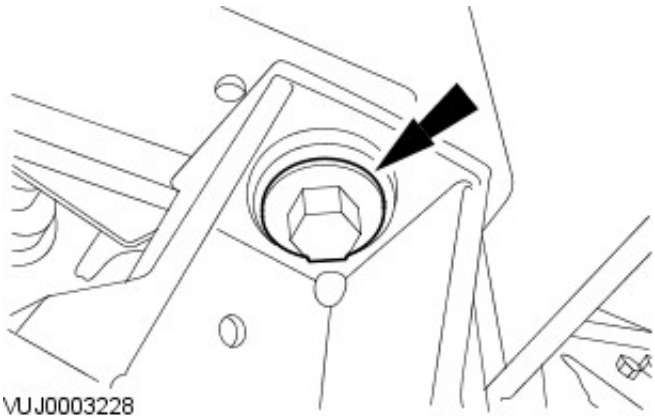
9. NOTE: Left-hand shown, right-hand similar.

Loosely install the front subframe reinforcement plate retaining bolts.



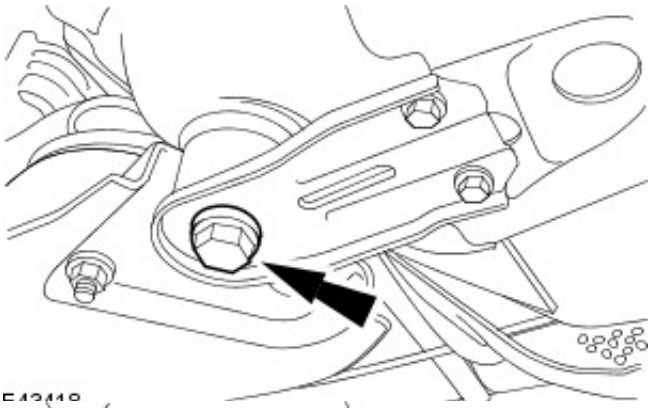
10. NOTE: Right-hand shown, left-hand similar.

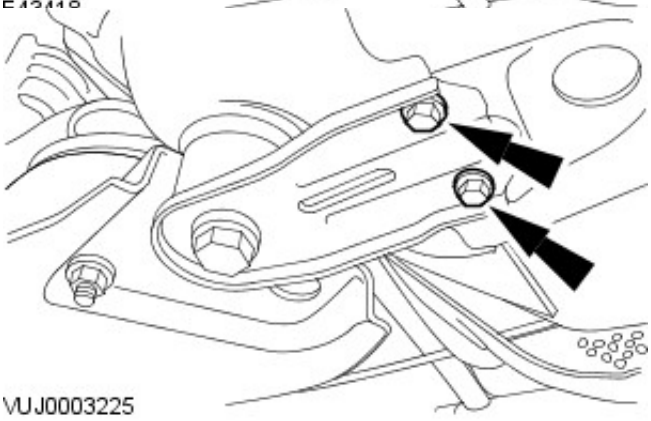
Tighten to 142 Nm.



11. NOTE: Left-hand shown, right-hand similar.

Tighten to 142 Nm.



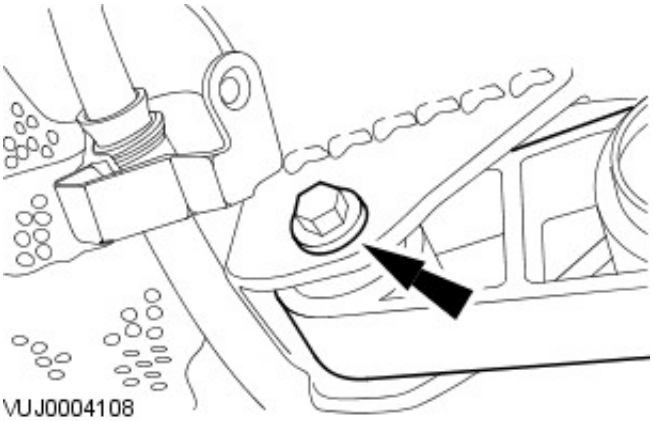


VUJ0003225

12. NOTE: Left-hand shown, right-hand similar.

Tighten the front subframe reinforcement bolts.

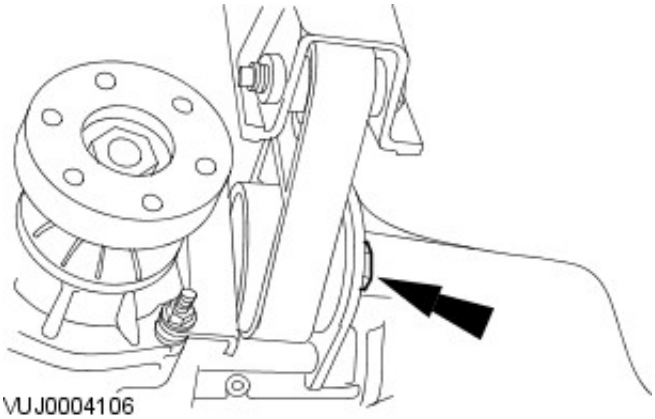
- M8 to 35 Nm.
- M10 to 70 Nm.



VUJ0004108

13. Install the engine roll restrictor.

- Tighten to 80 Nm.

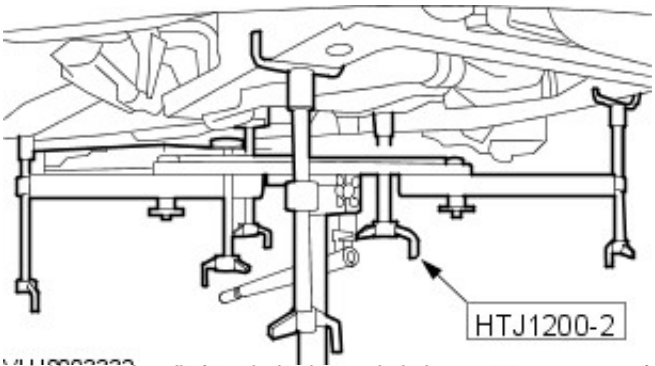


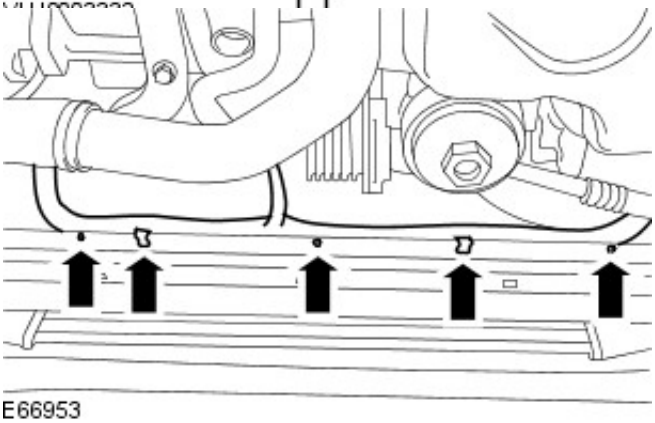
VUJ0004106

14. Attach the engine roll restrictor.

- Tighten to 80 Nm.

15. Remove the special tool.

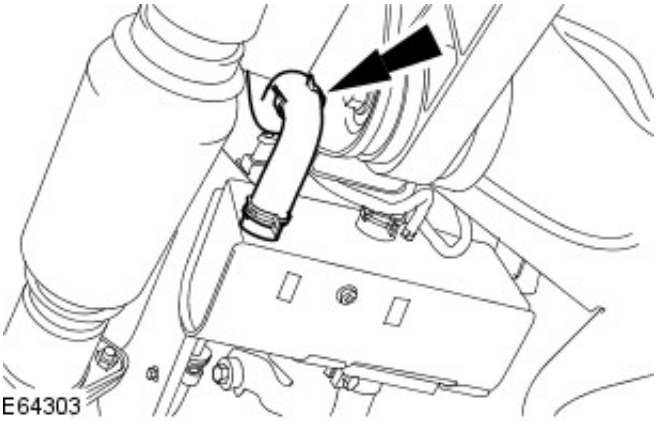



E66953

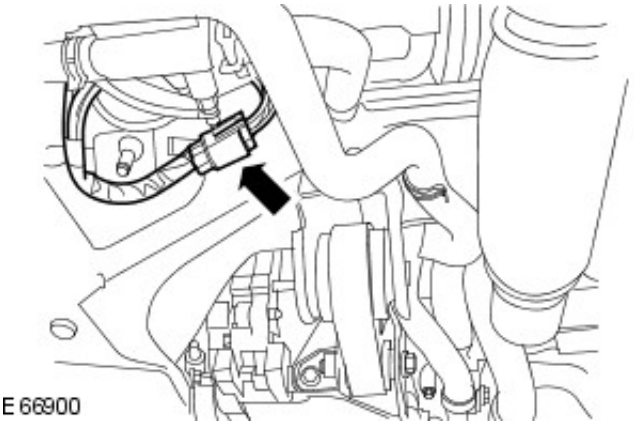
16. Attach the wiring harness.

Vehicles with fuel fired booster heater

17. Attach the coolant hose.


E64303

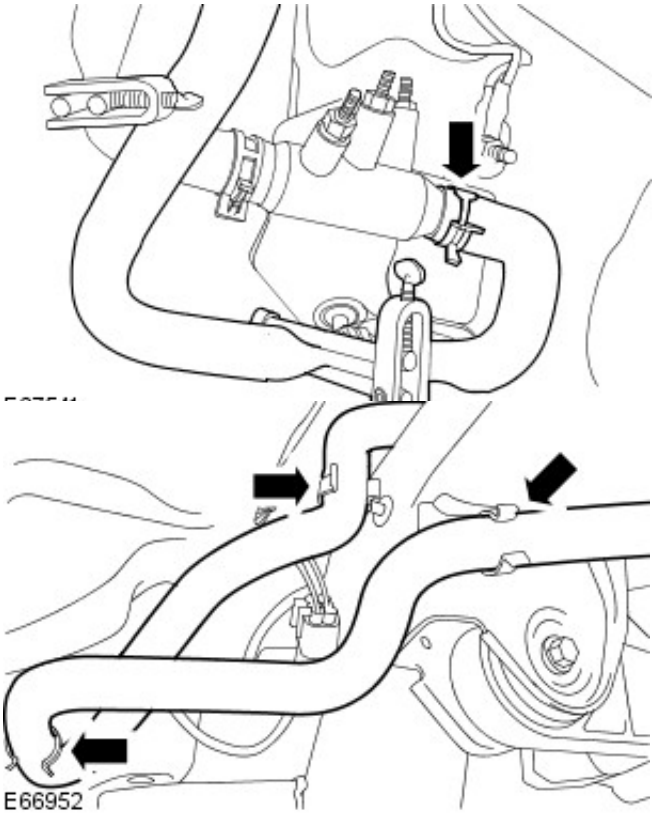
18. Attach the fuel fired booster heater electrical connector to the subframe retaining tang.


E66900

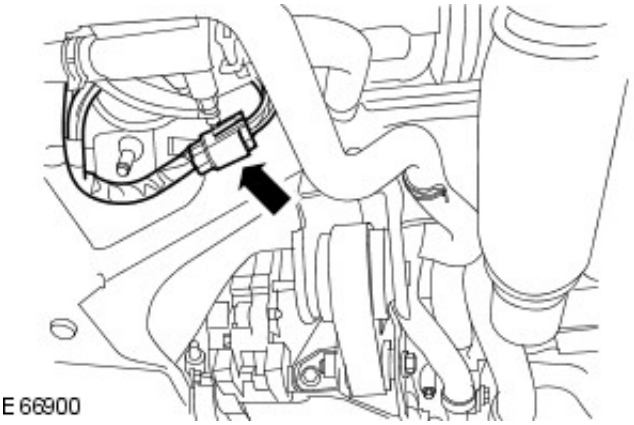
Vehicles with electric booster heater

19. Attach the coolant hose.

- Remove the hose clamp.

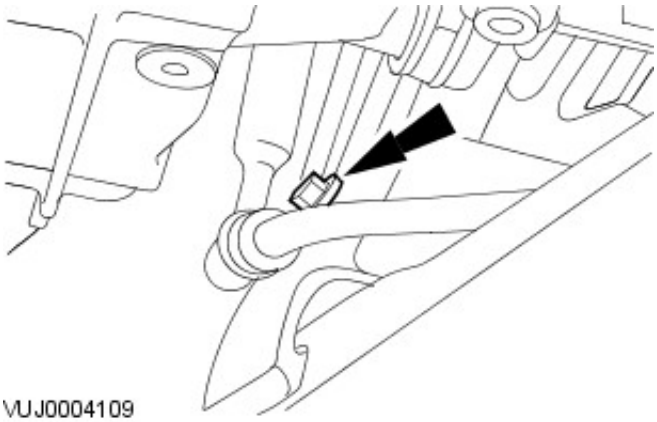


20. Attach the coolant hoses from the retaining clips.



21. Attach the electric booster heater electrical connector to the subframe retaining tang.

All vehicles

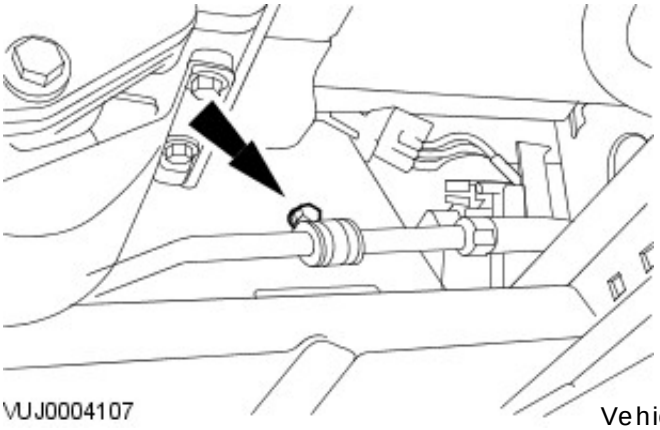


22. Attach the rear of the steering gear cooling pipe.

- Tighten to 7 Nm.

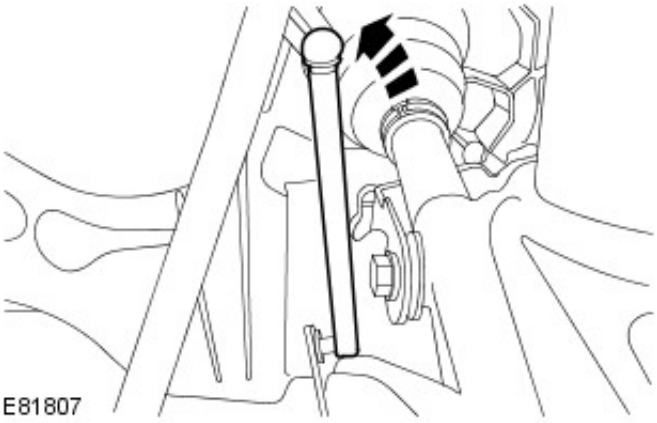
23. Attach the front of the steering gear cooling pipe.

- Tighten to 7 Nm.



Vehicles with high intensity discharge headlamps

24. Connect the high intensity discharge (H.I.D) sensor drop arm.

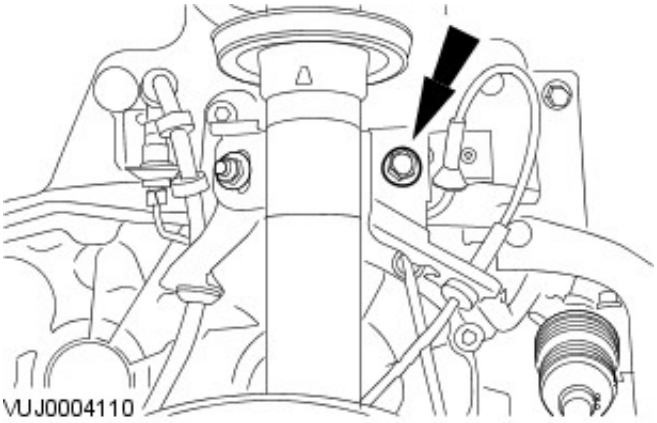


All vehicles

25. NOTE: Left-hand shown, right-hand similar.

Attach the stabilizer bar link arms.

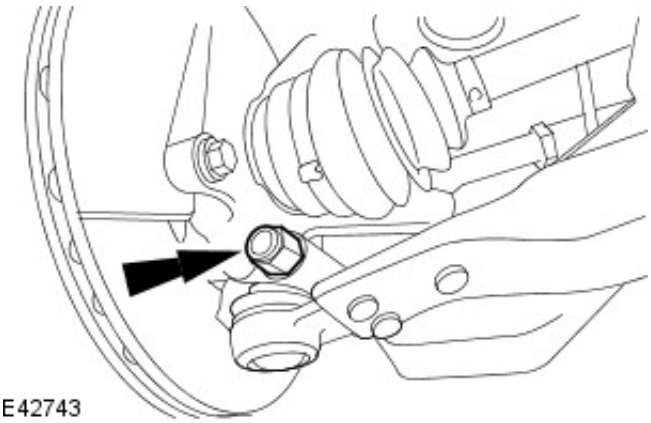
- Tighten to 48 Nm.



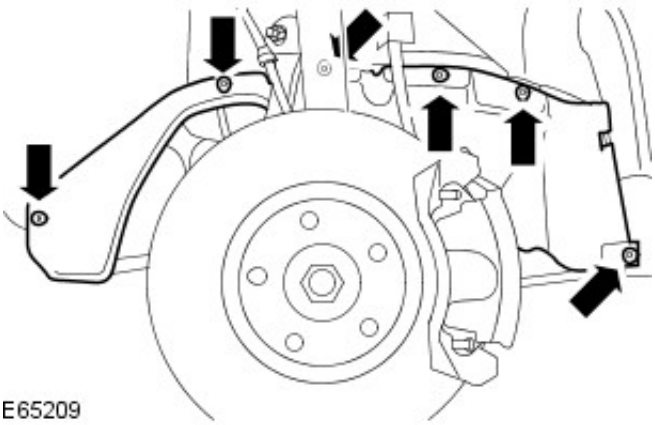
26. NOTE: Right-hand shown, left-hand similar.

Install the lower arm ball joint retaining nut and bolt.

- Tighten to 83 Nm.



27. NOTE: Right-hand shown, left-hand similar.


E65209

Install the wheel arch liner access cover.

28. Install the exhaust flexible pipe.
For additional information, refer to: Exhaust Flexible Pipe - 2.2L Duratorq-TDCi (110kW/150PS) - Puma/2.0L Duratorq-TDCi (309-00 Exhaust System, Removal and Installation).

29. Install the radiator splash shield.
For additional information, refer to: Radiator Splash Shield (501-02 Front End Body Panels, Removal and Installation).

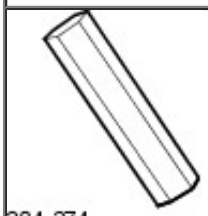
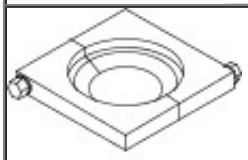
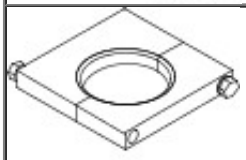
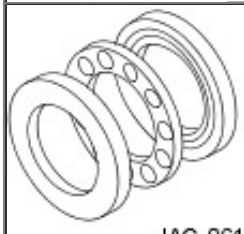
30. Install the wheels and tires.
For additional information, refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).

Vehicles with stability assist

31. Calibrate the steering angle sensor, using the Jaguar approved diagnostic system.

Uni-Body, Subframe and Mounting System - Front Subframe Front Bushing

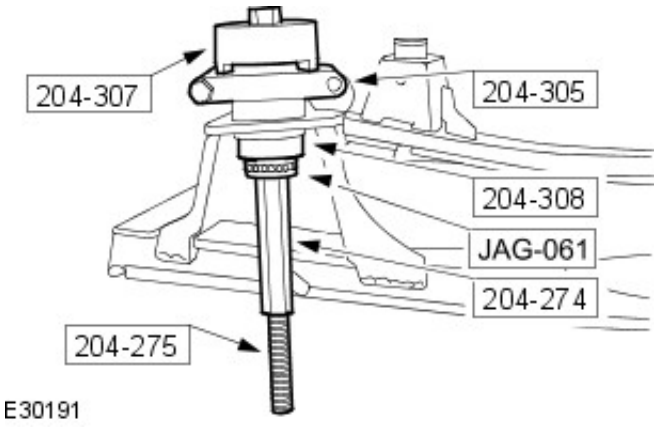
Removal and Installation

Special Tool(s)	
 204-274	Adaptor nut 204-274
 204-275	Forcing screw 204-275
 204-305	Support 204-305
 204-306	Installer guide 204-306
 204-307	Receiver cup 204-307
 204-308	Bush remover/installer 204-308
 204-243	Bush remover/installer 204-243
 JAG-061	Thrust bearing JAG-061

Removal

1. Remove the front subframe
   For additional information, refer to: Front Subframe - 2.2L Duratorq-TDCi (110kW/150PS) - Puma/2.0L Duratorq-TDCi (502-00 Uni-Body, Subframe and Mounting System, Removal and Installation).
2. NOTE: Note the orientation of the bushing before removal.

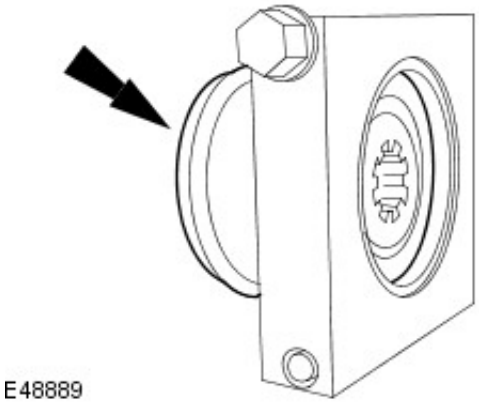
   Using the special tools, remove the front subframe mounting bushing.



E30191

Installation

1. Fit the bushing to the special tool.

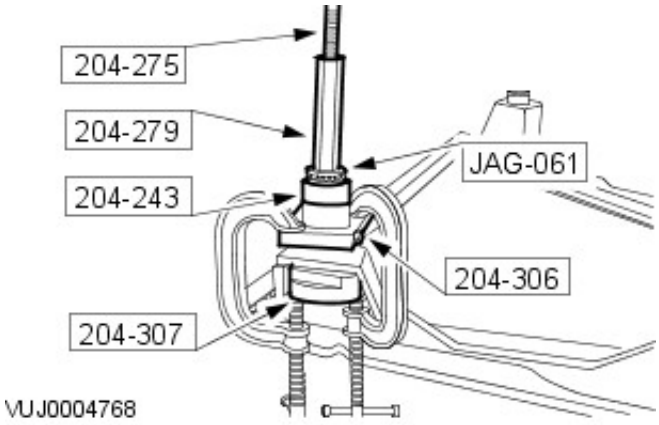

E48889

2. NOTE: Apply a suitable amount of Shell gravex oil 973 to the bushing before installation.

• NOTE: Make sure the bushing is correctly orientated.

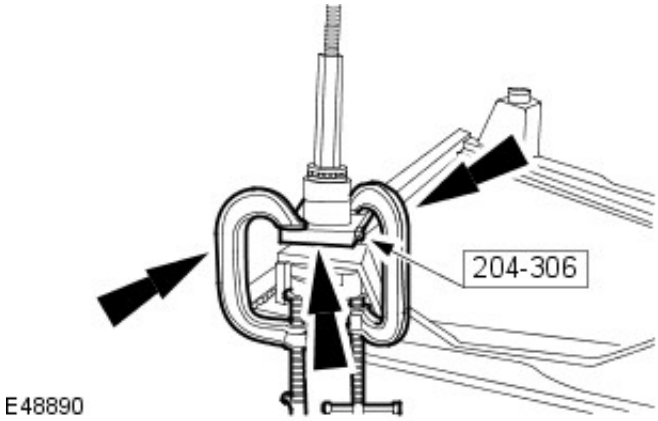
Using the special tools, engage the bushing into the subframe.

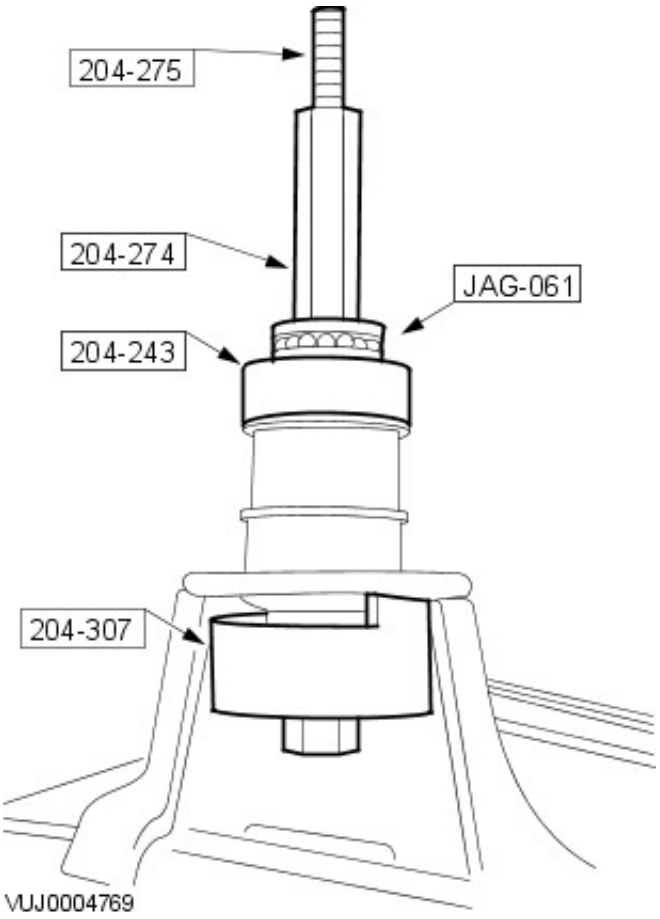
- Using suitable clamps, secure the special tool to the subframe.



VUJ0004768

3. Remove the securing clamps and the special tool.



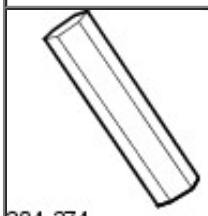
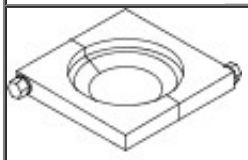
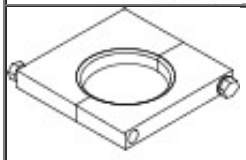
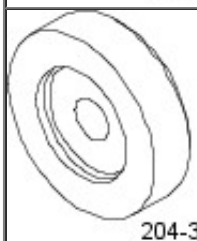
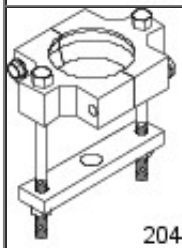


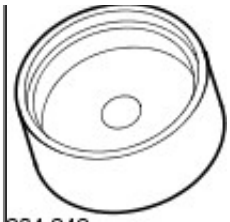
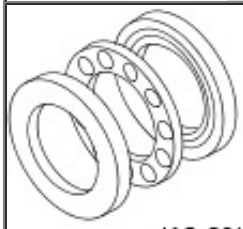
4. Using the special tools, fully engage the bushing into the subframe.

5. Install the front subframe
For additional information, refer to: Front Subframe - 2.2L Duratorq-TDCi (110kW/150PS) - Puma/2.0L Duratorq-TDCi (502-00 Uni-Body, Subframe and Mounting System, Removal and Installation).

Uni-Body, Subframe and Mounting System - Front Subframe Rear Bushing

Removal and Installation

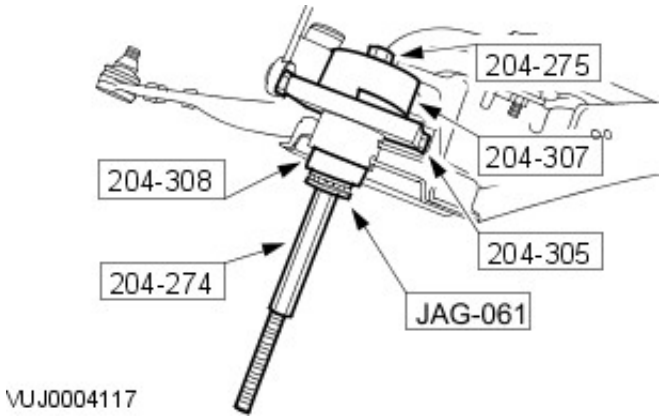
Special Tool(s)	
 204-274	Adaptor nut 204-274
 204-275	Forcing screw 204-275
 204-305	Support 204-305
 204-306	Installer guide 204-306
 204-307	Receiver cup 204-307
 204-308	Bush remover 204-308
 204-315	Bush installer 204-315
 204-319	Installer guide 204-319

 204-243	Bush installer 204-243
 JAG-061	Thrust bearing JAG-061

Removal

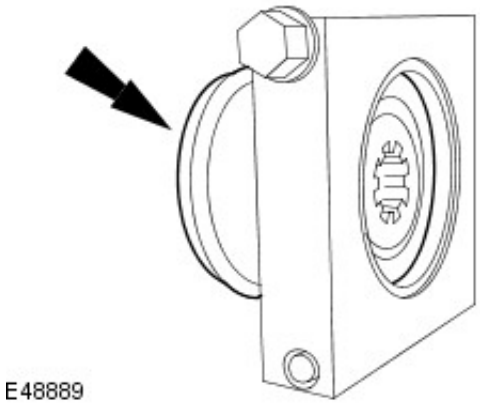
1. Remove the front subframe
   For additional information, refer to: Front Subframe - 2.2L Duratorq-TDCi (110kW/150PS) - Puma/2.0L Duratorq-TDCi (502-00 Uni-Body, Subframe and Mounting System, Removal and Installation).
2. NOTE: Note the orientation of the bushing before removal.

   Using the special tools, remove the front subframe mounting bushing.



Installation

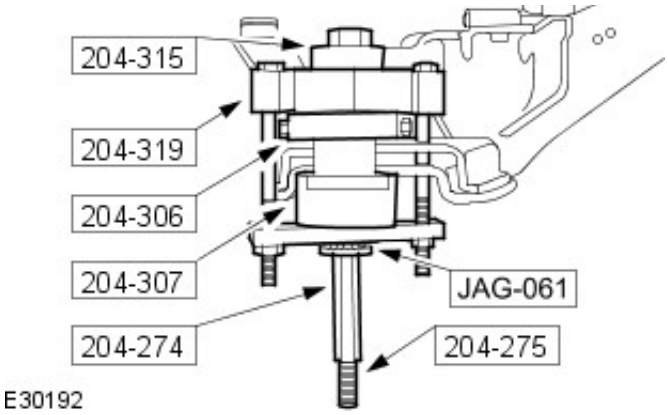
1. Fit the bushing to the special tool.



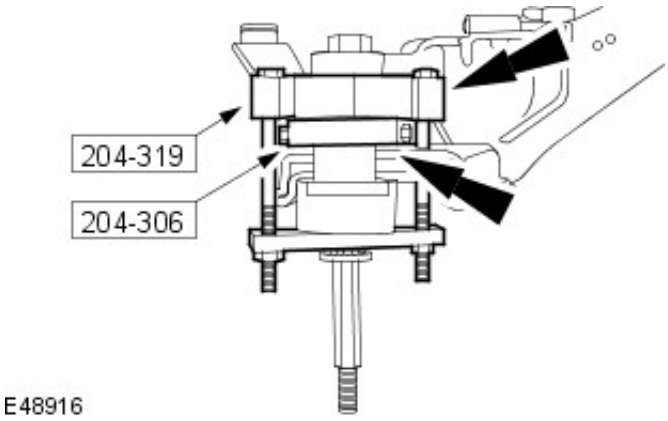
2. CAUTION: Make sure excessive pressure is not used when installing the bushing. Failure to follow these instructions may result in damage to the subframe.

• NOTE: Apply a suitable amount of Shell gravex oil 973 to the bushing before installing.

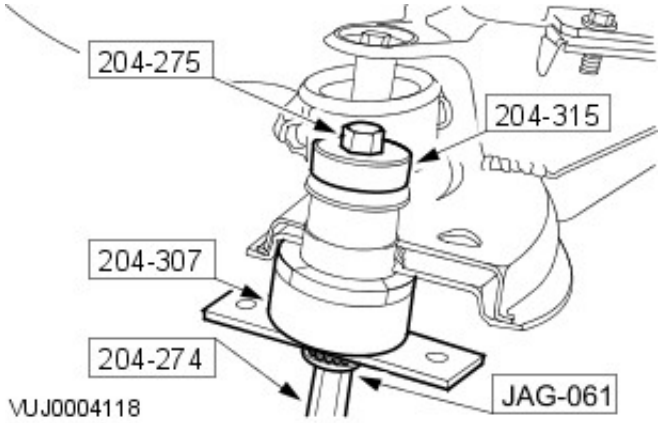
• NOTE: Make sure the bushing is correctly orientated.



Using the special tools, partially install the bushing.



3. Remove the special tools.

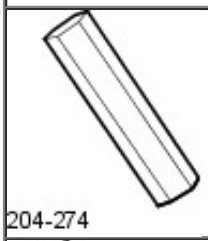
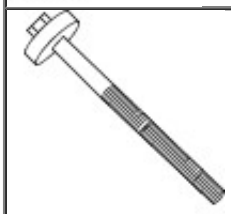
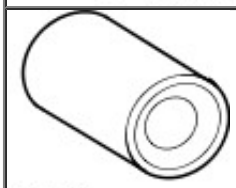
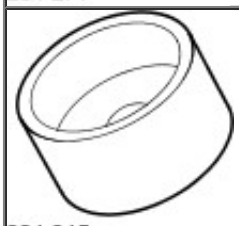


4. Using the special tools, fully seat the bushing.

5. Install the front subframe
For additional information, refer to: Front Subframe - 2.2L Duratorq-TDCi (110kW/150PS) - Puma/2.0L Duratorq-TDCi (502-00 Uni-Body, Subframe and Mounting System, Removal and Installation).

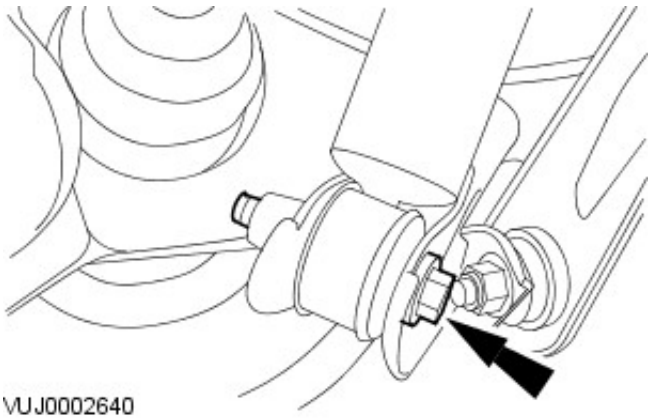
Uni-Body, Subframe and Mounting System - Rear Axle Crossmember Bushing

Removal and Installation

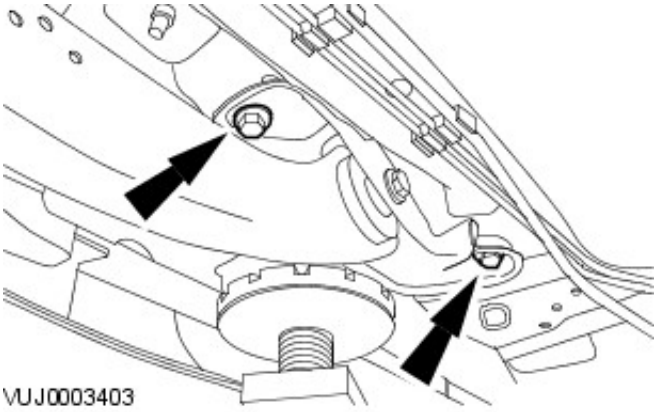
Special Tool(s)	
 204-274	Forcing nut 204-274
 204-275	Forcing screw 204-275
 204-299	Support cup 204-299
 204-271	Bush remover 204-271
 204-245	Bush installer 204-245

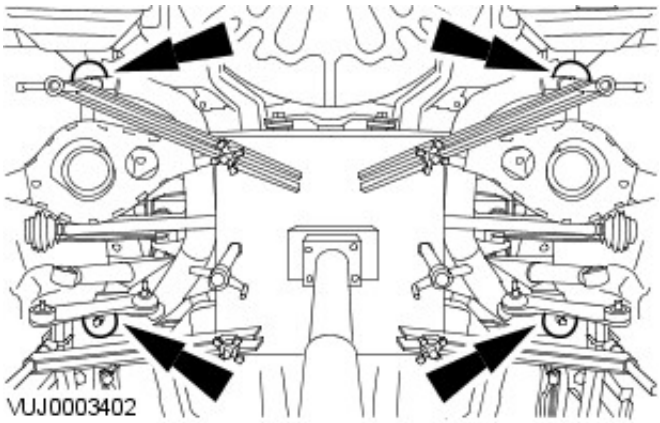
Removal

1. Remove the drive differential. For additional information, refer to Section 205-02 Rear Drive Axle/Differential .
2. Detach the damper.
   - Left-hand side shown, right-hand side similar.


VUJ0002640

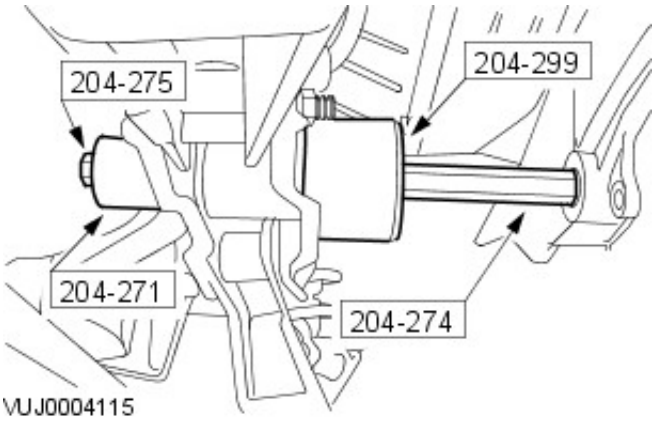
3. Detach the wheel knuckle mounting bracket.





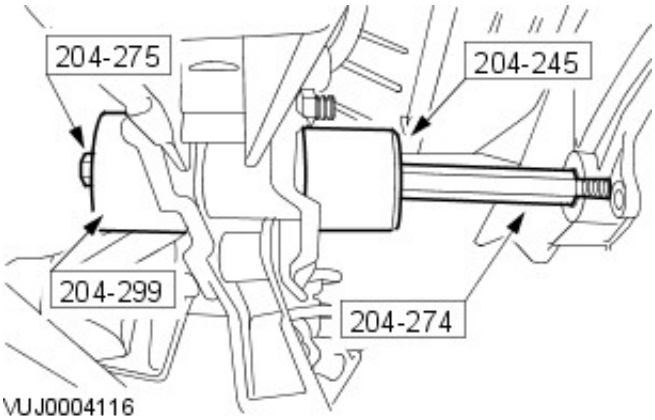
4. Loosen the rear subframe mounting retaining bolts.

- Left-hand side shown, right-hand side similar.



5. Using the special tools, remove the rear axle crossmember bush.

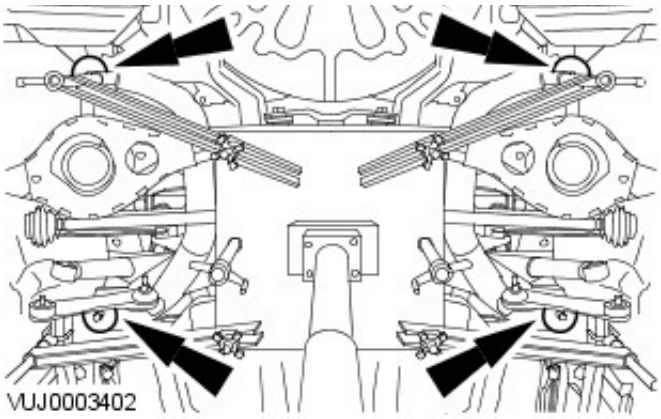
Installation



1. Using the special tools, install the rear axle crossmember bush.

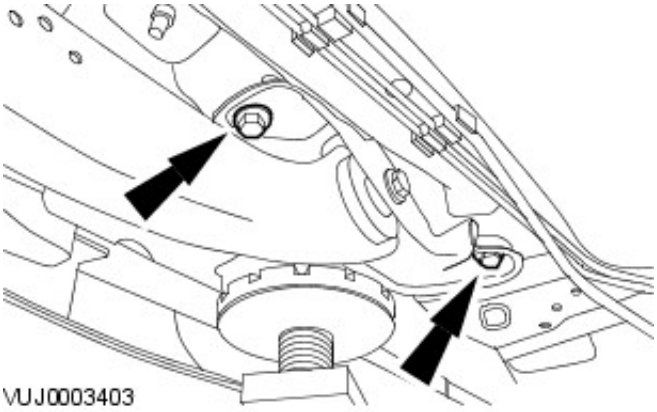
2. NOTE: The final tightening of the suspension components must be carried out with the vehicle on its wheels.

Tighten to 126 Nm.



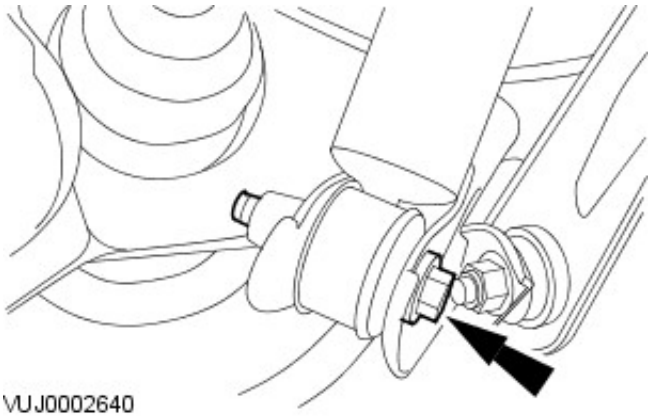
3. NOTE: The final tightening of the suspension components must be carried out with the vehicle on its wheels.

Tighten to 126 Nm.



4. NOTE: The final tightening of the suspension components must be carried out with the vehicle on its wheels.

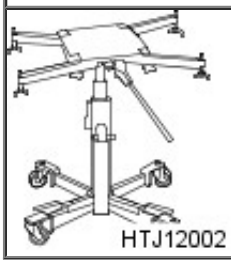
Tighten to 130 Nm.



5. Install the drive differential. For additional information, refer to Section 205-02 Rear Drive Axle/Differential .

6. Carry out the rear subframe alignment procedure. For additional information, refer to Underbody Misalignment Check .

Uni-Body, Subframe and Mounting System - Rear Subframe
Removal and Installation

Special Tool(s)	
 HTJ12002	Powertrain Assembly Jack HTJ1200-2

Removal

All vehicles

1. Remove the wheels and tires.For additional information, refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).

Vehicles with 2.5L or 3.0L engine

2. Remove the driveshaft.For additional information, refer to: Driveshaft (205-01 Driveshaft, Removal and Installation).

All vehicles

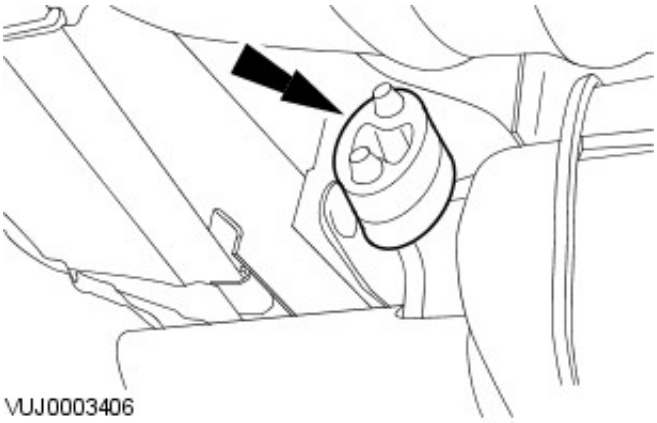
3. Remove the front muffler.For additional information, refer to: (309-00 Exhaust System)

   Front Muffler - 2.2L Duratorq-TDCi (110kW/150PS) - Puma/2.0L Duratorq-TDCi (Removal and Installation), Front Muffler - 2.5L NA V6 - AJV6/2.0L NA V6 - AJV6/3.0L NA V6 - AJ27 (Removal and Installation).

4. NOTE: Left-hand shown, right-hand similar.

• NOTE: 2.5L and 3.0L shown,2.0L similar.

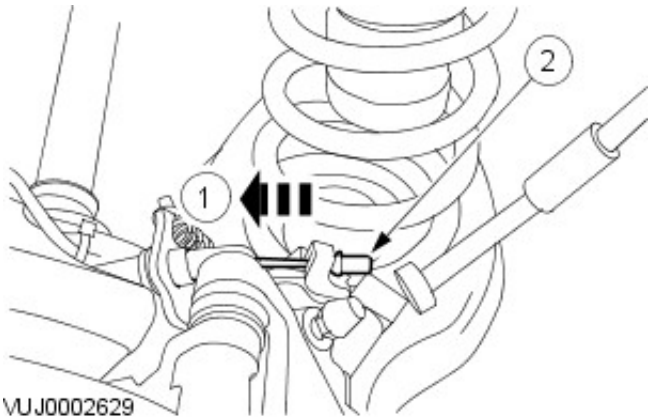
Detach the rear muffler exhaust hanger insulators.


VUJ0003406

5. NOTE: Left-hand shown, right-hand similar.

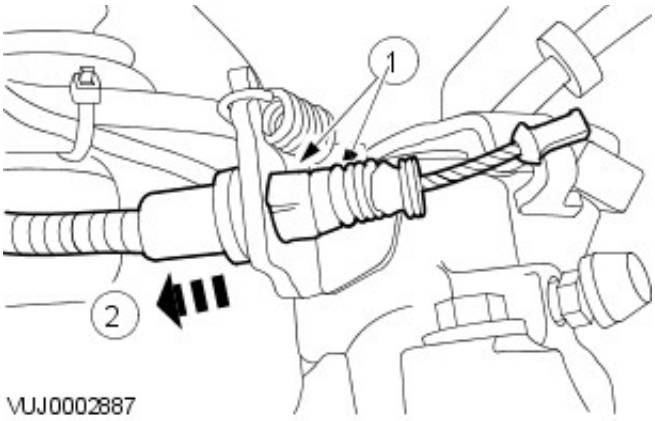
Detach the rear parking brake cables.

1. Release the tension.
2. Detach the rear parking brake cables.



VUJ0002629

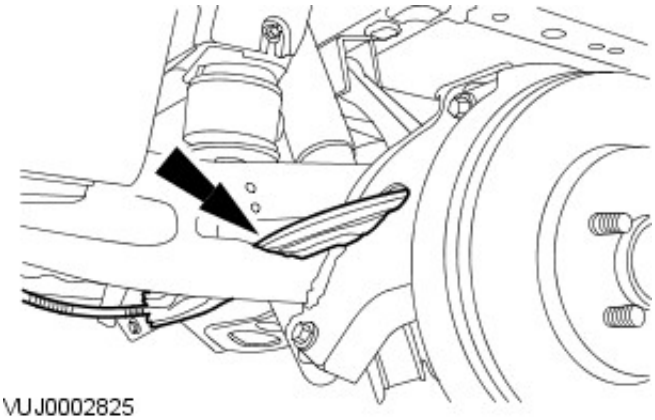
6. NOTE: Left-hand shown, right-hand similar.



VUJ0002887

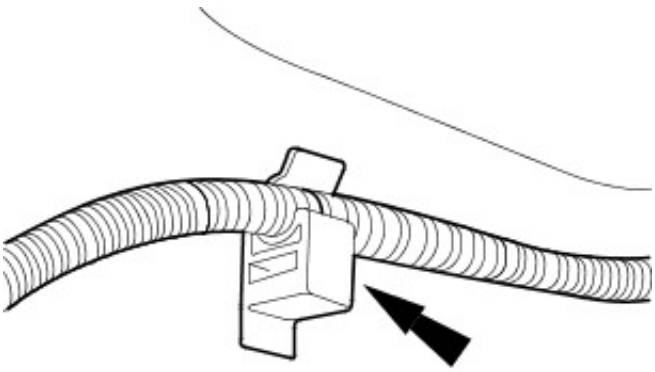
Detach the parking brake cables and conduits.

1. Release the parking brake conduit retaining tangs.
2. Detach the parking brake cables and conduits.


VUJ0002825

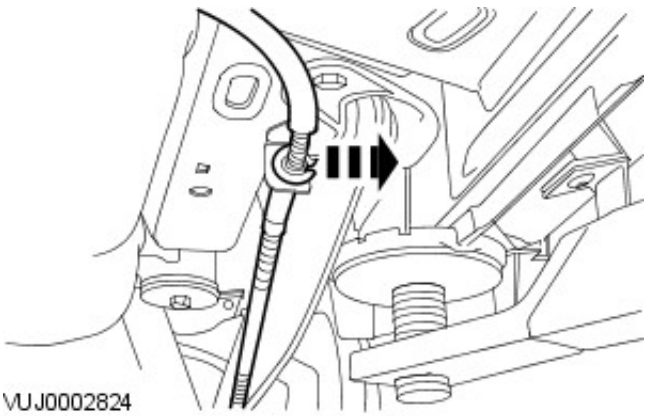
7. NOTE: Left-hand shown, right-hand similar.

Detach the parking brake cables and conduits from the wheel hub carriers.


VUJ0002826

8. NOTE: Left-hand shown, right-hand similar.

Detach the parking brake cables and conduits.


VUJ0002824

9. NOTE: Right-hand shown, left-hand similar.

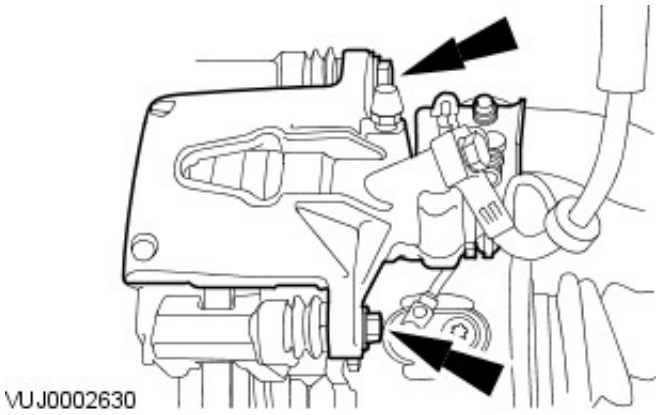
Detach the parking brake cables and conduits.

10. NOTE: Left-hand shown, right-hand similar.

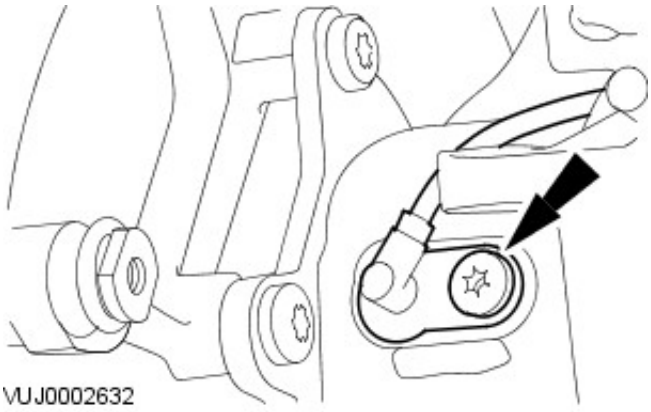
• NOTE: 2.5L and 3.0L shown, 2.0L similar.

Detach the brake calipers and secure to one side.

- Remove and discard the brake caliper retaining bolts.


VUJ0002630

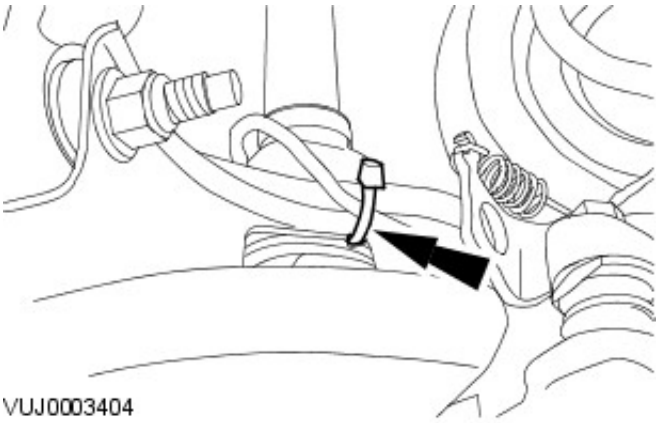
Vehicles with 2.5L or 3.0L engine


VUJ0002632

11. NOTE: Left-hand shown, right-hand similar.

Detach the Anti-lock brake system (ABS) wheel speed sensors.

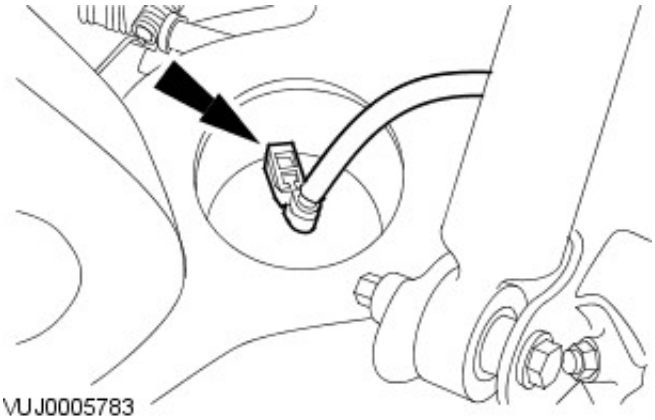
- Remove the ABS wheel speed sensor retaining bolts.


VUJ0003404

12. NOTE: Left-hand shown, right-hand similar.

Remove the ABS wheel speed sensor wiring harness retaining straps.

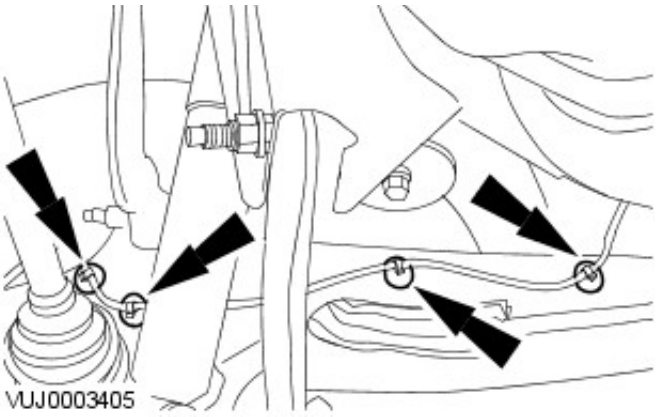
Vehicles with 2.0L engine


VUJ0005783

13. NOTE: Left-hand shown, right-hand similar.

Disconnect the electrical connectors.

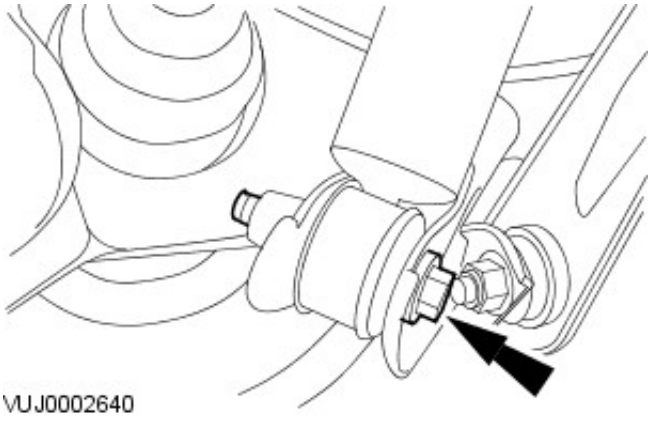
All vehicles



14. NOTE: Left-hand shown, right-hand similar.

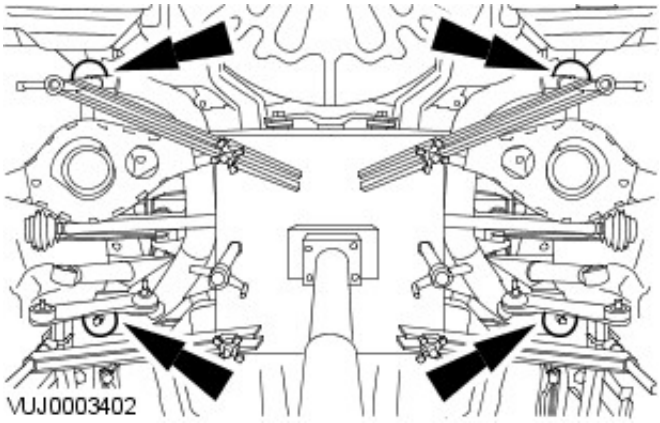
• NOTE: 2.5L and 3.0L shown, 2.0L similar.

Detach the ABS wheel speed sensor wiring harness.



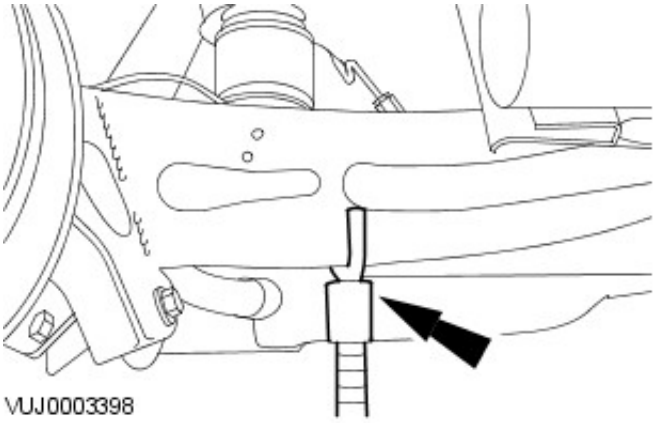
15. NOTE: Left-hand shown, right-hand similar.

Detach the dampers.



16. NOTE: 2.5L and 3.0L shown, 2.0L similar.

Install the special tool.

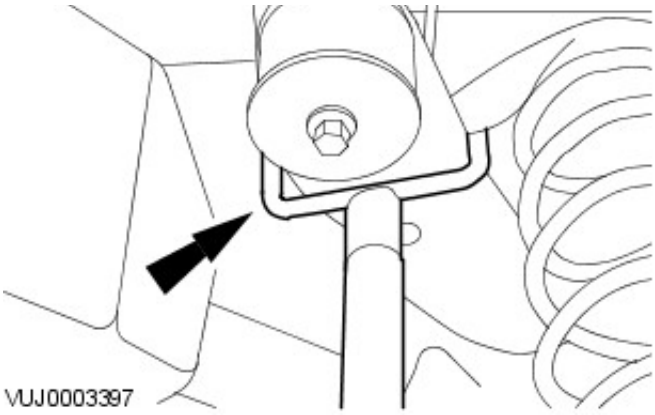


17. NOTE: Right-hand shown, left-hand similar.

Position and adjust the special tool front height adjusters.

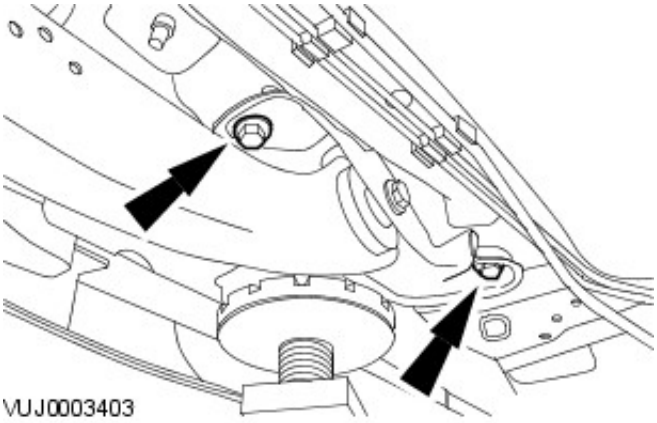
18. NOTE: Right-hand shown, left-hand similar.

Position and adjust the special tool rear height adjusters.



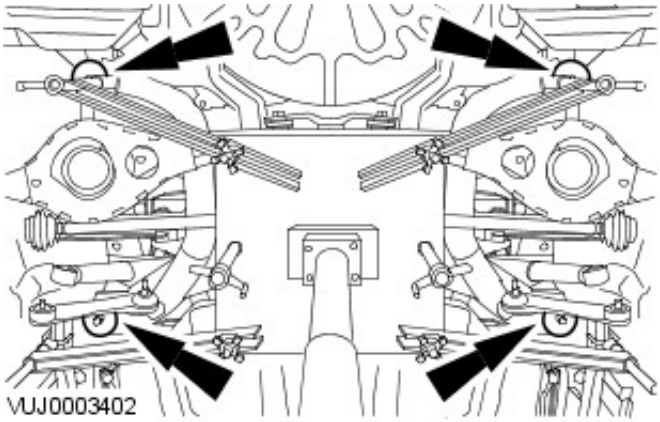
19. NOTE: Left-hand shown, right-hand similar.

Detach the wheel knuckle mounting brackets.



20. NOTE: 2.5L and 3.0L shown, 2.0L similar.

Detach the rear subframe.



21. WARNING: Rotate the special tool height adjustment valve slowly. Failure to follow this instruction can result in personal injury.

Remove the rear subframe.

- Rotate the special tool height adjustment valve counter clockwise.

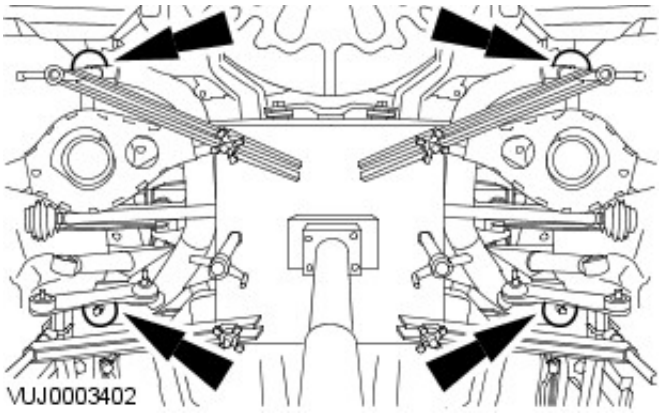
Installation

All vehicles

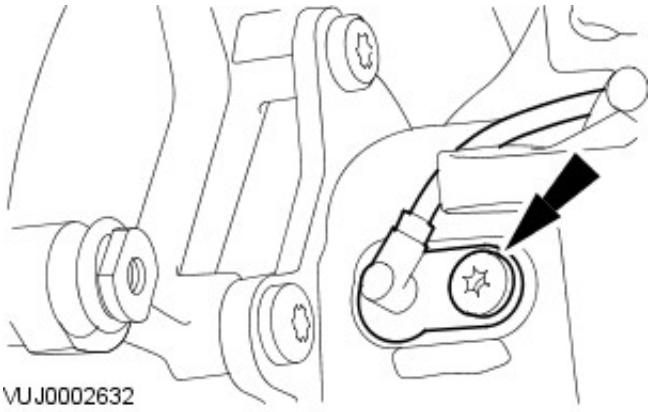
1. NOTE: The final tightening of the suspension components must be carried out with the vehicle on its wheels.

To install, reverse the removal procedure.

2. Tighten to 126 Nm.



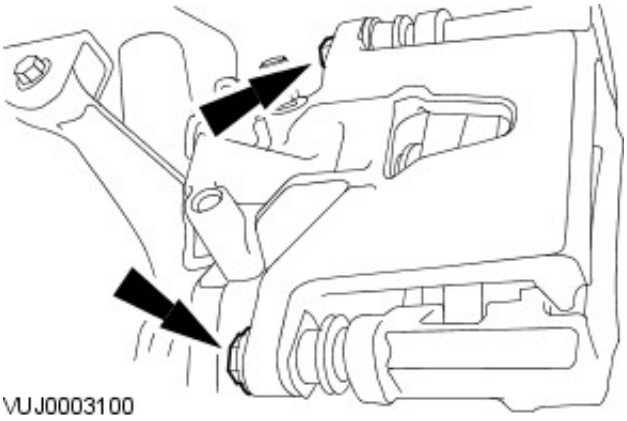
Vehicles with 2.5L or 3.0L engine



3. Tighten to 22 Nm.

4. Install the driveshaft.For additional information, refer to: Driveshaft (205-01 Driveshaft, Removal and Installation).

All vehicles



5. CAUTIONS:

Make sure that the piston location mark is in the correct position so that the locator pin on the brake pad backing plate locates correctly into the piston.

Make sure that the brake disc faces are clean before installation.

- NOTE: Install new brake caliper retaining bolts.
- NOTE: Right-hand shown, left-hand similar.

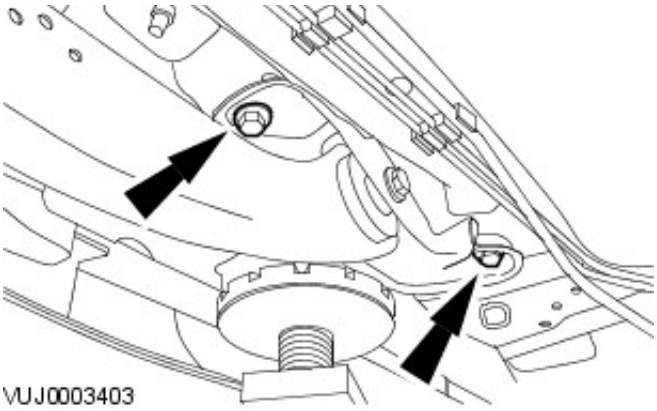
Tighten to 32 Nm.

6. Install the front muffler.For additional information, refer to: (309-00 Exhaust System)

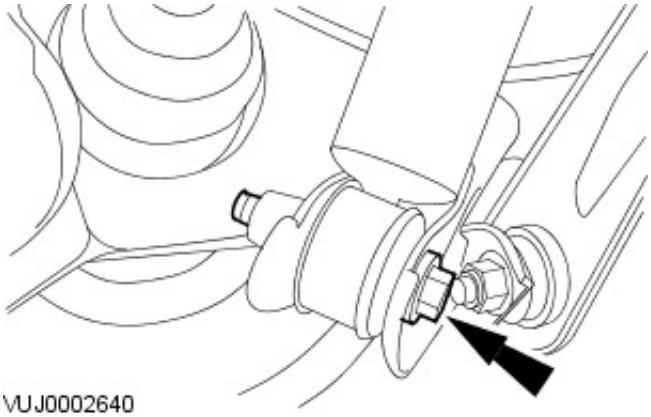
Front Muffler - 2.2L Duratorq-TDCi (110kW/150PS) - Puma/2.0L Duratorq-TDCi (Removal and Installation), Front Muffler - 2.5L NA V6 - AJV6/2.0L NA V6 - AJV6/3.0L NA V6 - AJ27 (Removal and Installation).

7. Install the wheels and tires.For additional information, refer to: Wheel and Tire (204-04 Wheels and Tires, Removal and Installation).

8. Tighten to 126 Nm.



VUJ0003403



VUJ0002640

9. NOTE: Install new retaining bolts.

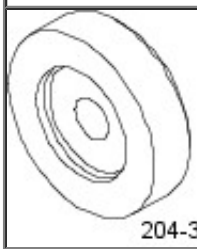
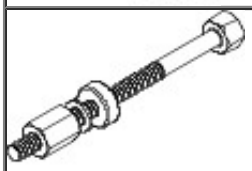
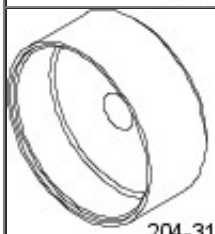
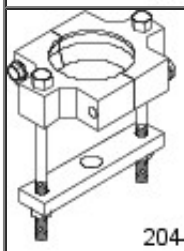
• NOTE: 2.5L and 3.0L shown, 2.0L similar.

Tighten to 130 Nm.

10. Carry out the rear subframe alignment procedure.For additional information, refer to: Underbody Misalignment Check (502-00 Uni-Body, Subframe and Mounting System, General Procedures).

Uni-Body, Subframe and Mounting System - Rear Subframe Bushing

Removal and Installation

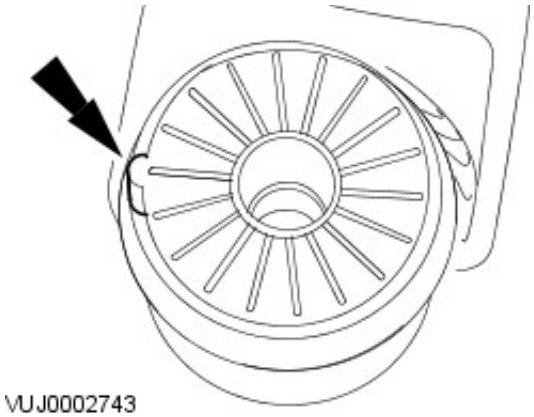
Special Tool(s)	
 204-315	Bush remover 204-315
 204-316	Support cup 204-316
 204-320	Forcing screw 204-320
 204-318	Support cup 204-318
 204-319	Installer guide 204-319
 204-317	Pusher 204-317

All mounting bushes

1. Remove the rear subframe. For additional information, refer to Subframe—Rear.

Rear subframe front mounting bush

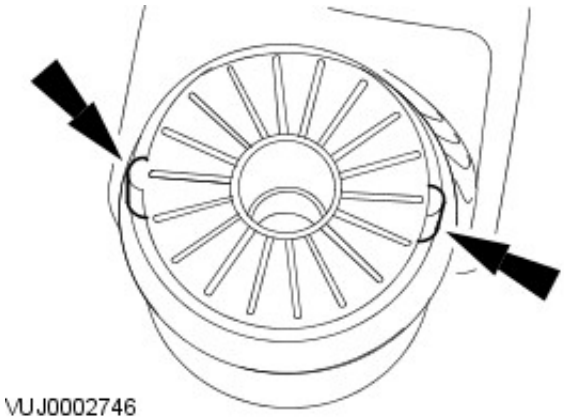
2. Note the orientation of the mounting bush.



VUJ0002743

Rear subframe rear mounting bush

3. Note the orientation of the mounting bush.

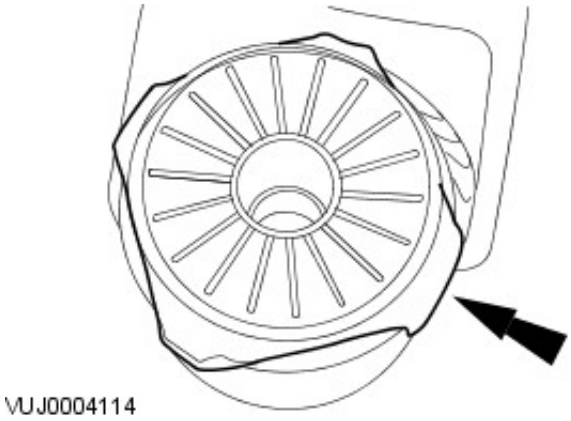


VUJ0002746

All mounting bushes

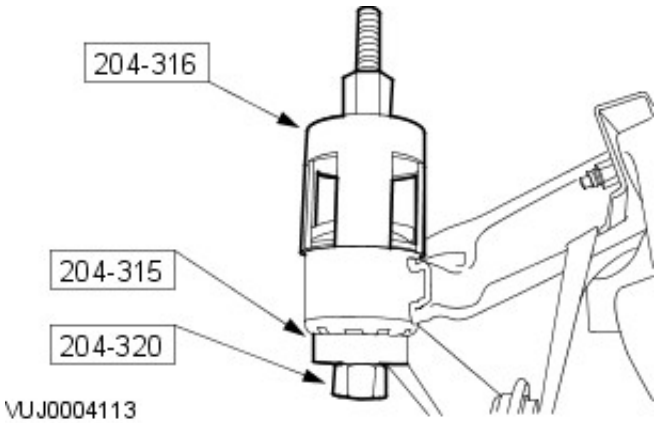
4. CAUTION: Make sure the subframe is not damaged during this procedure.

Cut the edge of the mounting bush.



VUJ0004114

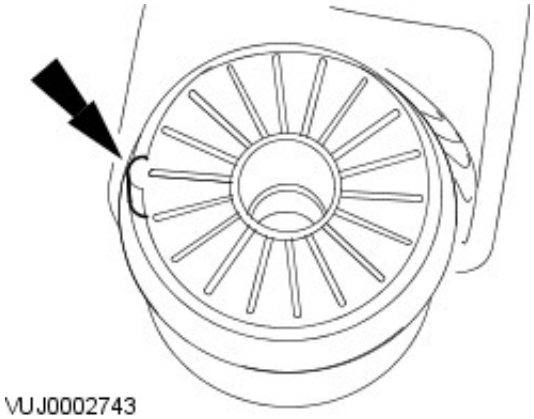
5. Using the special tools, remove the mounting bush.



VUJ0004113

Installation

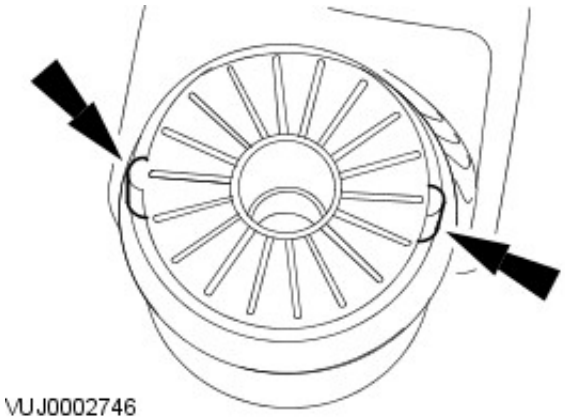
Rear subframe front mounting bush


VUJ0002743

1. NOTE: Apply a suitable amount of Shell gravex oil 973 to the bush before installing.

Align the bush to the subframe. The alignment pointer points to the front of the vehicle.

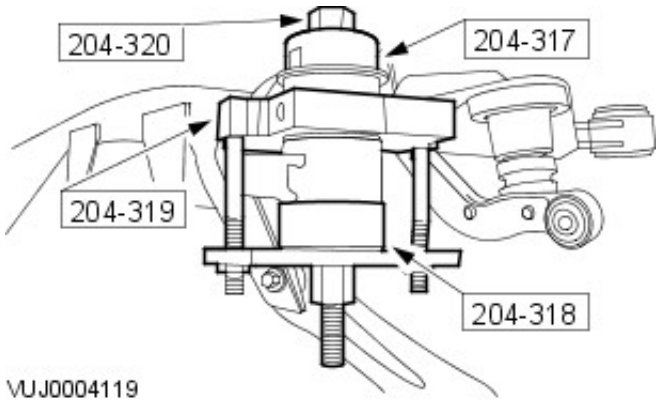
Rear subframe rear mounting bush


VUJ0002746

2. NOTE: Apply a suitable amount of Shell gravex oil 973 to the bush before installing.

Align the bush to the subframe. The alignment pointer points to the front and rear of the vehicle.

All mounting bushes



VUJ0004119

3. Using the special tools, install the mounting bush.

4. Install the rear subframe. For additional information, refer to Subframe—Rear.