

Supplemental Restraint System -

Torque Specifications

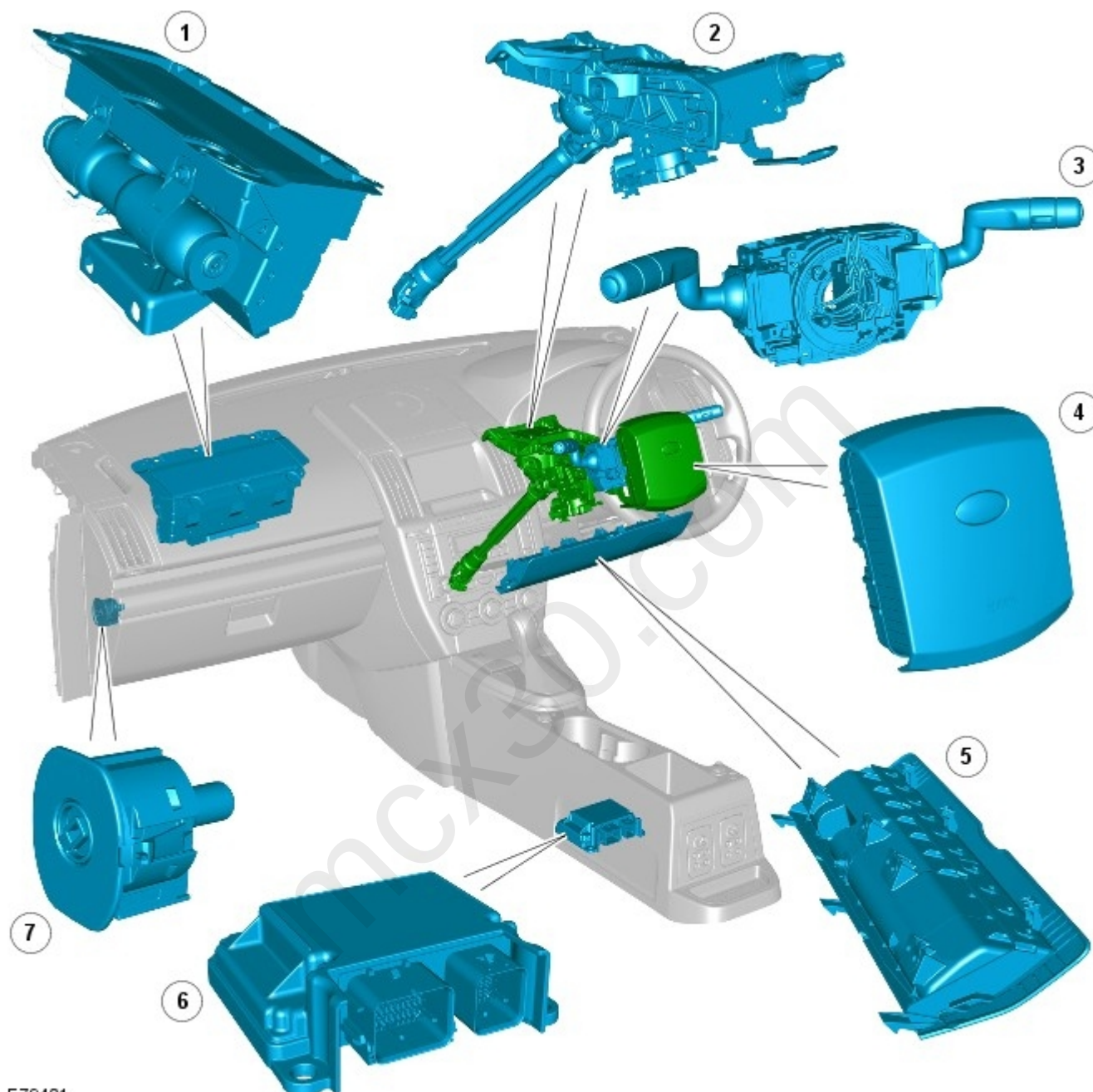
Description	Nm	lb-ft
B-pillar side impact sensor Torx screws	10	7
C-pillar side impact sensor Torx bolts	10	7
Driver lower air bag module	6	4
Front impact severity sensor Torx bolts	10	7
Passenger air bag module bracket Torx screws	7	5
Passenger air bag module nuts	10	7
Restraints control module (RCM) Torx screws	10	7
Side air bag module nuts	10	7
Side air curtain module Torx screws	10	7

Supplemental Restraint System - Air Bag and Safety Belt Pretensioner

Supplemental Restraint System (SRS)

Description and Operation

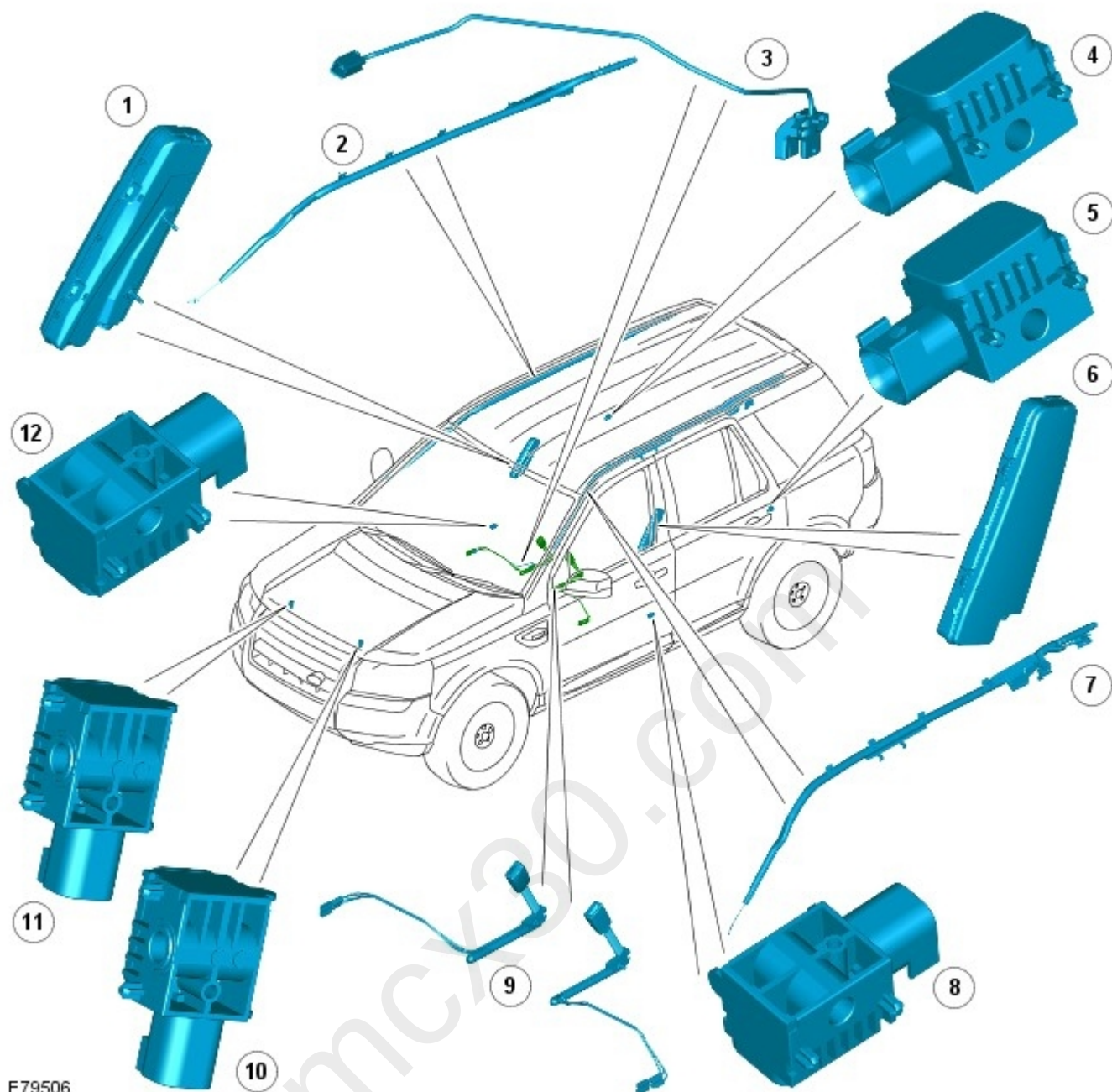
COMPONENT LOCATION SHEET 1 OF 2



E79401

Item	Part Number	Description
1	-	Passenger air bag
2	-	Adaptive steering column
3	-	Clockspring
4	-	Driver air bag
5	-	Driver lower air bag
6	-	Restraints Control Module (RCM)
7	-	Passenger air bag deactivation switch

COMPONENT LOCATION SHEET 2 OF 2



E79506

Item	Part Number	Description
1	-	Side air bag
2	-	Side air curtain
3	-	Driver seat position sensor
4	-	Side impact sensor - C-pillar
5	-	Side impact sensor - C-pillar
6	-	Side air bag
7	-	Side air curtain
8	-	Side impact sensor - B-pillar
9	-	Safety belt pretensioners
10	-	Impact sensor - front
11	-	Impact sensor - front
12	-	Side impact sensor - B-pillar

OVERVIEW

⚠ 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). (100-00, Description and Operation).

The continued development of the Supplemental Restraint System (SRS) provides an improved overall level of crash protection for vehicle occupants. The system analyzes the occupancy scenario and crash severity before activating the appropriate safety devices to better protect a range of occupants in a variety of crash situations. Benefits of the system include:

- Optimization of the deployment restraint devices and the reduction in potential for air bag induced injuries.
- The significant reduction in passenger air bag deployments; particularly when passenger seats are unoccupied.

There are seven separate air bags, each designed with a specific protection function:

- Driver and front passenger air bags provide head and chest protection for front occupants.
- Driver and front passenger side air bags provide protection against side impact.
- Side air curtains provide protection against head impact and roll-over ejection for both front and rear occupants.
- A driver lower air bag provides protection to the driver's legs from the steering column support structures.

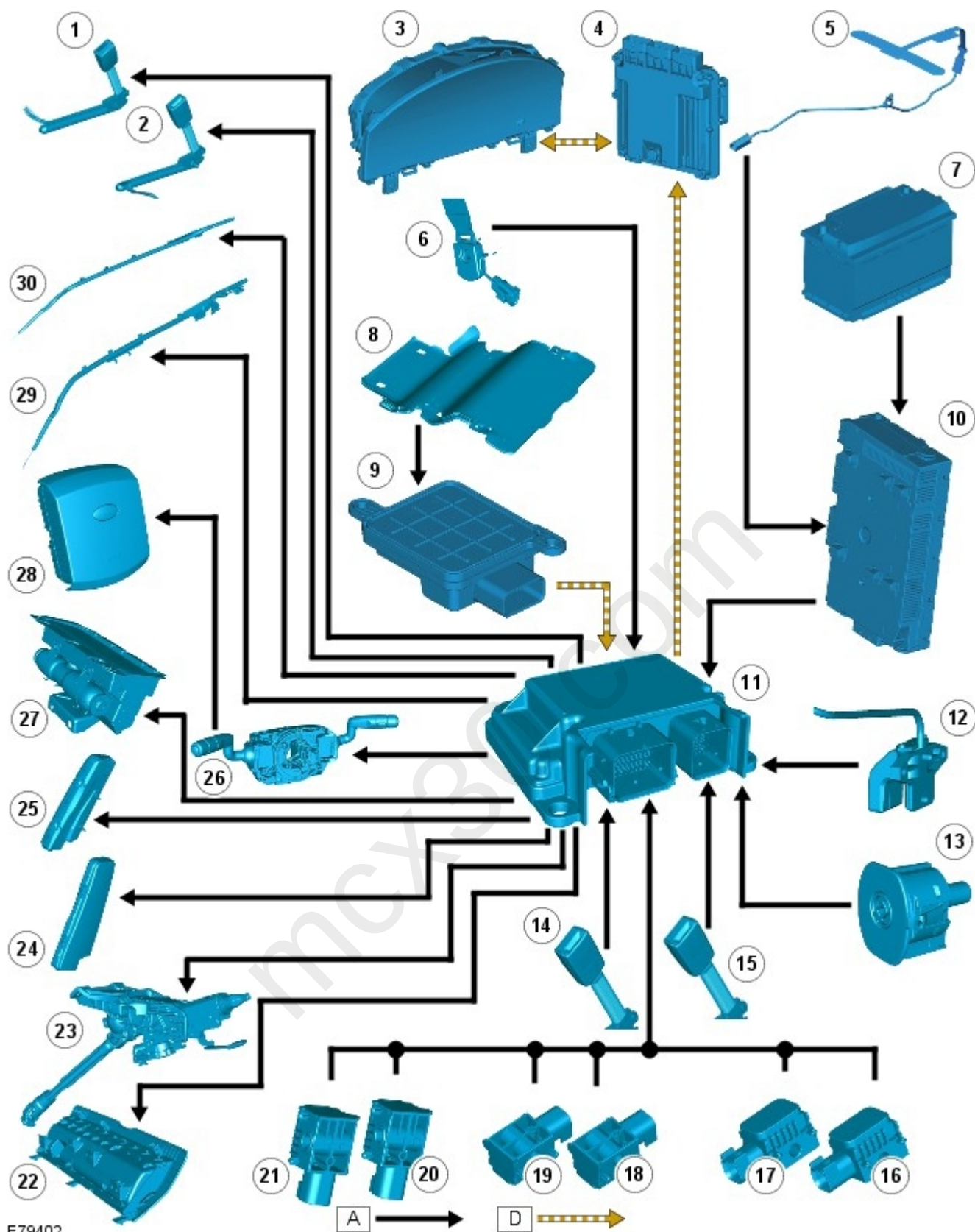
In order to support the SRS requirements, restraint control architecture is used comprising the following systems or components:

- All electronic front and side crash sensing and advanced restraints management.
- Driver air bag with twin stage inflator.
- Passenger air bag with twin stage inflator.
- Depending on market, a front passenger seat:
 - occupant classification sensing system, or
 - occupant detection sensing system.
- Safety belt buckle pretensioners.
- A seat position sensor on the driver seat.
- Depending on market; a pyrotechnic actuator fitted to the steering column to provide increased energy absorption.

CONTROL DIAGRAM

- NOTE: **A** = Hardwired; **D** = High speed controller area network (CAN) bus.

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Item	Part Number	Description
1	-	Drivers safety belt pretensioner
2	-	Passenger safety belt pretensioner
3	-	Instrument cluster
4	-	Engine Control Module (ECM)
5	-	Belt-minder sensor – market specific
6	-	Safety belt tension sensor – market specific
7	-	Battery
8	-	Occupancy sensor
9	-	Occupancy sensor module
10	-	Central Junction Box (CJB)
11	-	Restraints Control Module (RCM)

12	-	Seat position sensor
13	-	Passenger air bag deactivation switch
14	-	Driver safety belt buckle switch
15	-	Passenger safety belt buckle switch
16	-	Impact sensor - left-hand front
17	-	Impact sensor - right-hand front
18	-	Side impact sensor - left-hand B-pillar
19	-	Side impact sensor - right-hand B-pillar
20	-	Side impact sensor - left-hand C-pillar
21	-	Side impact sensor - right-hand C-pillar
22	-	Driver lower air bag
23	-	Adaptive steering column
24	-	Side air bag – left-hand
25	-	Side air bag – right-hand
26	-	Clockspring
27	-	Passenger air bag
28	-	Driver air bag
29	-	Curtain air bag – left-hand
30	-	Curtain air bag – right-hand

PRINCIPLES OF OPERATION

Crash Sensing



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Impact sensor

The impact sensors are installed in the front and both sides of the vehicle. When the ignition is switched on the Restraints Control Module (RCM), supplies power to the impact sensors which perform a self test. After satisfactory self test the impact sensors continually output 'digital acceleration' messages to the restraints control module. The use of multiple impact sensors provide shorter air bag trigger times through faster detection of lateral and longitudinal acceleration and also improves detection accuracy.

Each impact sensor incorporates an accelerometer and a microchip powered by a feed from the restraints control module. Acceleration is evaluated by the microchip and transmitted to the restraints control module, which then makes the decision on whether or not to activate the air bags and pretensioners.

If a fault is detected the relevant impact sensor sends a fault message, instead of the digital acceleration message, to the restraints control module. The RCM then stores a related fault code and illuminates the air bag warning indicator. Faults can be retrieved by the Land Rover approved diagnostic system from the RCM via the high-speed CAN.

Occupant Monitoring

There are two types of occupant monitoring systems fitted to vehicles:

1. NAS markets, have an **Occupant Classification Sensing System**.
2. Markets except NAS and Australia, have an **Occupant Detection Sensing System**.

1. Occupant Classification Sensing System



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Item	Part Number	Description
1	-	Safety belt tension sensor
2	-	Occupancy sensor
3	-	Occupancy sensor module

In NAS markets where safety belt use is infrequent, additional technology is used to classify the occupant of the front passenger seat. The occupant classification sensing system provides seat load data to the Restraints Control Module (RCM).

The occupant classification system consists of:

- A pressure pad, installed under the cushion of the front passenger seat, which is connected to a pressure sensor.
- A safety belt tension sensor, integrated into the anchor point of the front passenger safety belt.
- An occupant classification module, installed under the front passenger seat.

The pressure pad is a silicone filled bladder. Any load on the pressure pad is detected by the pressure sensor. The safety belt tension sensor is a strain gauge which measures the load applied by the safety belt anchor to the anchor bolt. The sensor is located in the lower safety belt anchor point.

The occupancy sensor responds to weight changes on the passenger seat and provides an appropriate signal to the occupancy sensor module. In addition, the belt tension sensor provides a separate input to the occupancy sensor module. The module processes the input signals received from the sensors and forwards an appropriate signal to the RCM on the high-speed CAN.

The RCM monitors and processes the data from these and several other sensors, before making an air bag deployment decision. The system is designed to take account of several variables in addition to weight, including: inclination of the vehicle and exact position and structure of the weight on the seat.

This protects against inadvertent air bag deployment, for example, if the seat were occupied by an infant in a booster

seat, or an unrestrained but very lightweight adult, in both these cases the air bag would be disabled. The occupant classification sensing system forms part of a strategy to control passenger air bag deployment depending on the occupancy scenario.

The occupant classification system has four possible states:

- **Seat Empty:** the passenger air bag, passenger-side air bag and passenger safety belt buckle and pretensioner operation is disabled; the passenger air bag deactivation indicator is not illuminated.
- **Occupied Inhibit:** when the seat is occupied by a small person, the passenger air bag, passenger-side air bag and passenger safety belt buckle and pretensioner operation is disabled; the passenger air bag deactivation indicator is illuminated.
- **Occupied Allow:** when the seat is occupied by a large person; the passenger air bag and passenger-side air bag operation is enabled, the passenger air bag deactivation indicator is not illuminated. Passenger safety belt and pretensioner operation status depends on the safety belt buckle status:
 - active for buckled,
 - inactive for unbuckled.
- **Error:** if a system fault is detected; the passenger air bag is enabled to deploy at 'stage-1' only, refer to Air Bag Dual Stage Inflators below. Passenger-side air bag operation is also enabled; the passenger air bag deactivation indicator is not illuminated. Passenger safety belt and pretensioner operation status depends on the safety belt buckle status:
 - active for buckled,
 - inactive for unbuckled.

Occupancy Sensor Module

The occupancy sensor module is installed on the underside of the front passenger seat. The module supplies a power feed to the occupancy sensor and monitors the return voltage to determine if the seat is occupied or not. The result is transmitted to the RCM on the high-speed CAN. The occupancy sensor module also monitors for short and open circuits in the occupancy sensor. If it detects a fault, the occupancy sensor module transmits a fault message to the RCM.

Safety Belt Tension Sensor

The safety belt tension sensor is a strain-gauge type, encapsulated within the passenger safety belt anchor. The sensor converts the force applied to the safety belt into an electrical signal. In the event that a child-seat is installed onto the front passenger seat, the force applied to the passenger safety belt is reflected by the output signal from the sensor, which provides data to supplement that received from the occupancy sensor. The occupancy sensor module processes the input data and makes it available to the restraints control module, which then makes the necessary adjustments in respect of passenger air bag deployment.

2. Occupant Detection Sensing System

The belt-minder sensor and a safety belt buckle switch are used to warn the driver if the front passenger seat is occupied without the safety belt being engaged.

Belt Minder Sensor



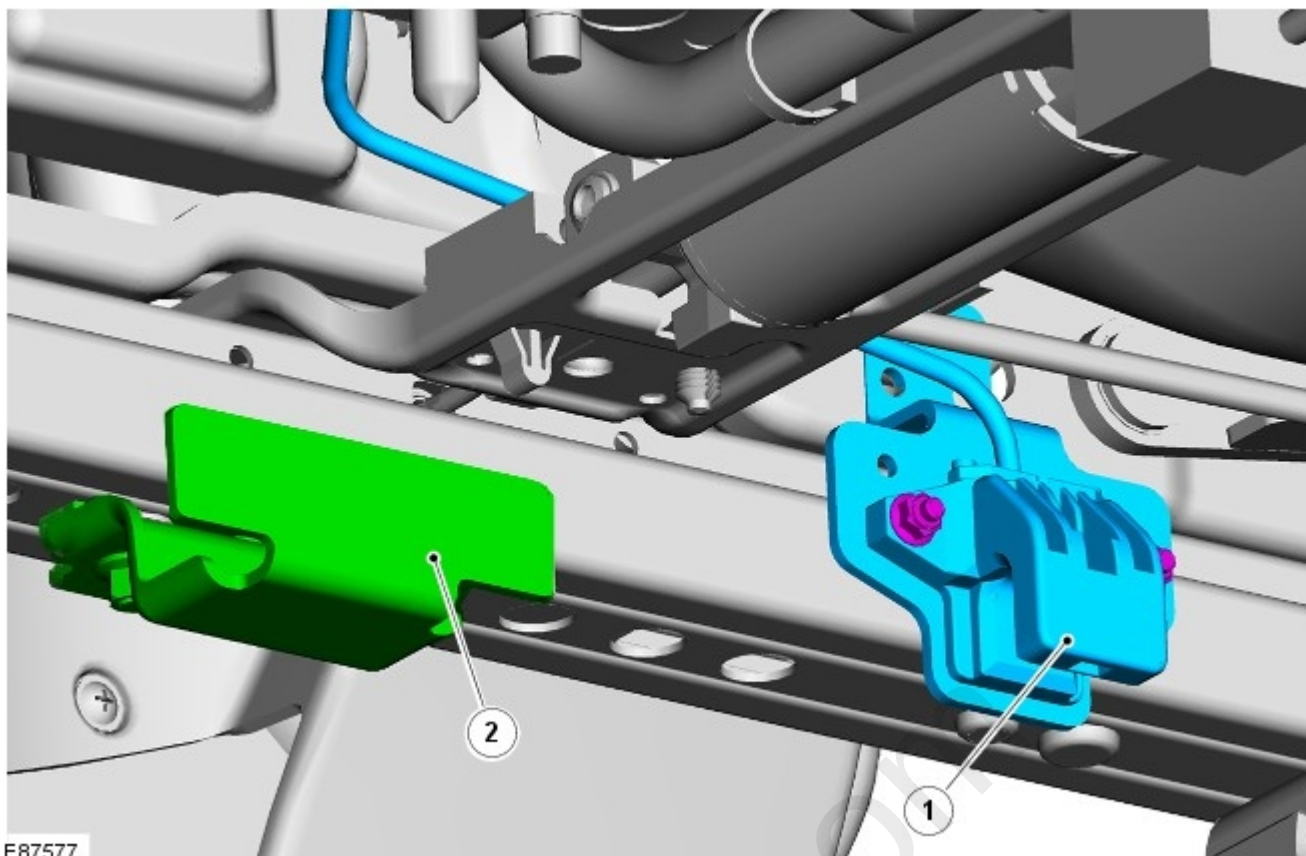
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The occupancy sensor is installed in the cushion of the front passenger seat between the foam padding and the cover. The sensor consists of a foil contact circuit, embedded in a plastic sheet. Weight on the sensor reduces the resistance of the circuit.

The safety belt buckle switch provides an output signal in response to the insertion of the safety belt tongue into the buckle. The output signal from the switch is used by the RCM to determine whether the front seat occupants are correctly restrained. The switch signal is used in conjunction with the belt minder sensor to ensure that air bag and safety belt deployment only occurs when the seat is occupied.

Driver Position Sensing System

Seat Position Sensor

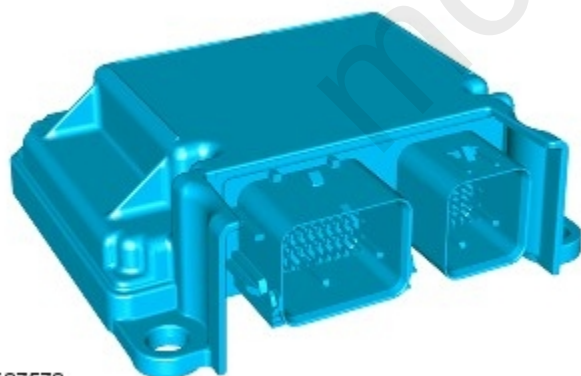


Item	Part Number	Description
1	-	Seat position sensor
2	-	Target bracket

The seat position sensor, a 'Hall effect' type, is fitted to the underside of the driver's seat. The sensor is actuated by the target bracket attached to the seat slide. The disturbance caused when the target bracket passes the sensor creates an output signal for the RCM. On receipt of this signal, which indicates when the seat is forward of a defined point in its travel, the RCM disables the second stage output of the driver air bag; refer to air bags section.

Control and Processing

Restraints Control Module



Internally, the Restraints Control Module (RCM) has two areas that determine which elements of the restraint system are to be deployed:

Area 1 - Crash severity evaluation:

The first area evaluates crash severity by using data from the module's internal accelerometer, the front crash sensor and the safety-belt buckle sensor. Based on this data, the RCM decides which level of air bag deployment is required and forwards the information to the second area, the deployment handler.

Area 2 - Deployment handler:

The status of the seat position sensor, occupant classification sensing system and safety-belt buckle sensors are examined before a decision is made about which restraints should finally be deployed. For instance, if the occupant classification sensing system indicates that the passenger seat is empty, then no restraint deployment will take place on the passenger side, even if full deployment takes place for the driver.

An energy reserve in the RCM ensures there is always a minimum of 150 milliseconds of stored energy available if the power supply from the ignition switch is disrupted during a crash. The stored energy is sufficient to produce firing signals for the driver air bag, the passenger air bag and the safety belt pretensioners.

When the ignition is switched on the RCM performs cyclical monitoring of the system. If a fault is detected the RCM stores a related fault code and sends the signal to illuminate the air bag warning indicator. The faults can be retrieved by the Land Rover approved diagnostic system. If a fault that could cause a false fire signal is detected, the RCM disables the respective firing circuit, and keeps it disabled during a crash event.

Air Bags

Hybrid Inflator Technology

All air bags feature hybrid inflators, rather than the previously used solid pyrotechnic gas generators which use an explosion to generate the air bag charge directly. Hybrid inflators use a self-contained pyrotechnic device to heat a cylinder of compressed inert gas within the inflator. Above a calibrated pressure, this cylinder bursts and the gas is released into the fabric bag.

The benefits of hybrid inflators are cooler gas, hence lower bag surface temperatures, and the elimination of post-deployment effluent associated with solid pyrotechnic generators.

Dual Stage Inflators

Both the driver air bag and passenger air bag feature dual-stage inflators. Each air bag employs two separate inflators, fitted with independent squibs connected to the air bag. This allows air bag size, pressure and rate of rise in pressure to be optimized to suit the vehicle's structural characteristics as well as the severity of the actual impact.

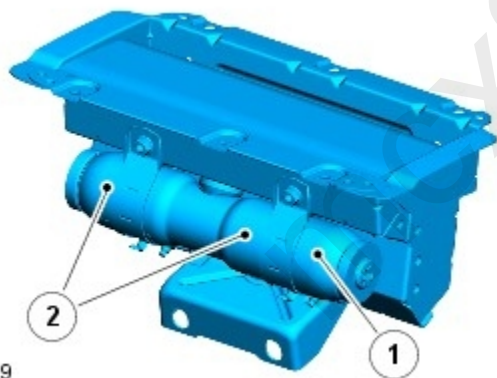
The restraint control module (RCM) monitors the severity of the collision, safety belt tension and proximity of the driver's seat to the steering wheel in order to determine the air bag deployment strategy:

- At relatively low speeds, or when smaller occupants are seated close to the steering wheel only the 'stage 1' inflator deploys; this inflates the air bag to about 70% of its capacity.
- At higher speed impacts both 'stage 1' and after a pre-set interval, 'stage 2' inflator deploys to achieve maximum air bag volume, unless the driver is dangerously close to the steering wheel.

Driver Air Bag

The driver air bag has a two stage inflator, with separate electrical connectors for each stage. Lines molded into the inner surface of the driver air-bag cover, provide weak points that split open in a controlled manner when the driver air bag deploys.

Passenger Air Bag



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Item	Part Number	Description
1	-	Stage one – 70% air bag volume
2	-	Stage two – full air bag volume

The top of the passenger air bag is attached to a re-enforcement lid in the instrument panel. The reinforcement lid incorporates a single door that opens, splitting the instrument panel covering, when the air bag deploys. The air bag has a two stage inflator, with separate electrical connectors for each stage.

Passenger Air Bag Disable Switch



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A key-operated passenger air bag disable switch is installed in specified markets. When the passenger air bag deactivation switch is operated, it changes a ground connection between two pins in the connectors of the RCM. A tell-tale warning light, located in the roof console near the interior rear view mirror is illuminated when the passenger air bag is disabled.

The passenger air bag disable switch is operated by the emergency key located in the remote control.

Passenger Air Bag Deactivation Indicator



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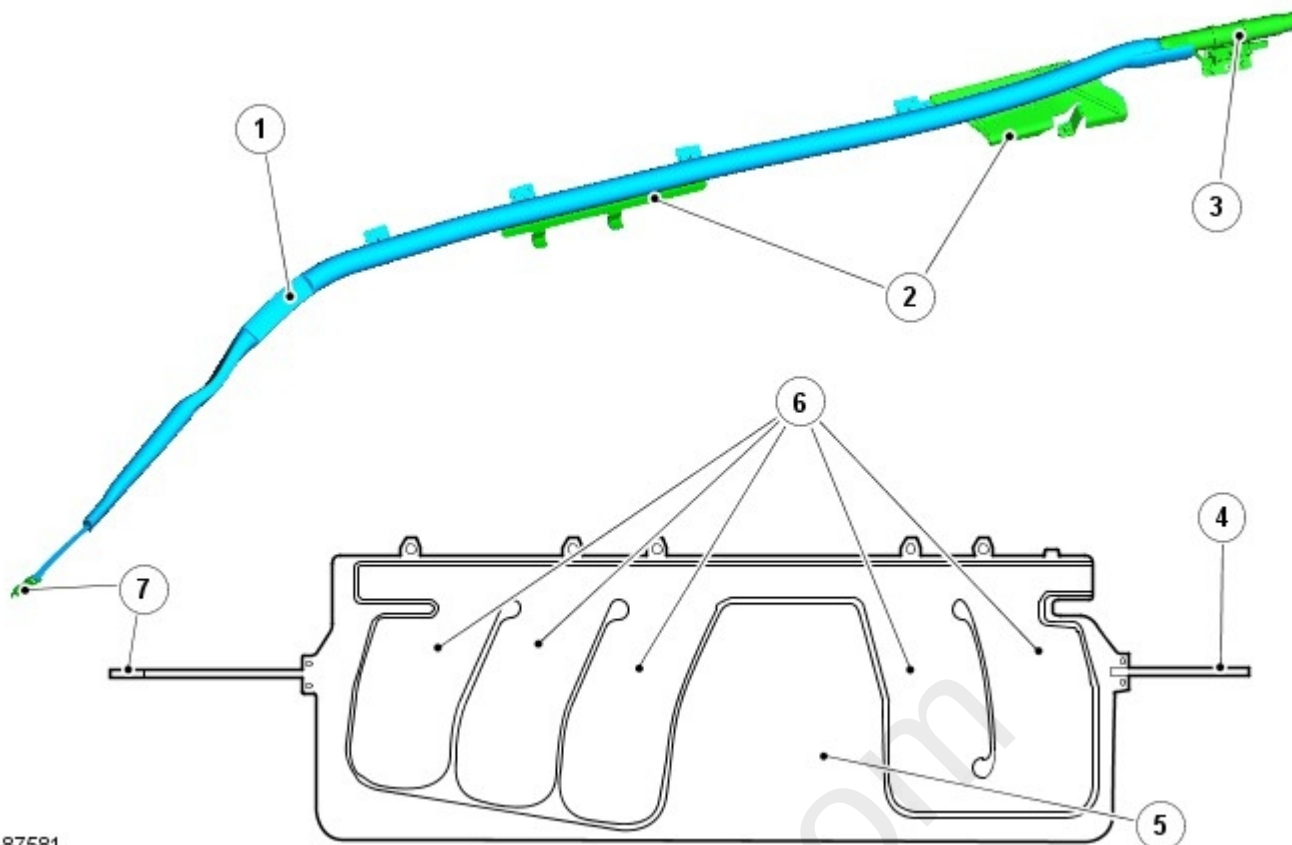
When the passenger air bag deactivation switch is selected to OFF, the RCM disables the passenger air bag and if the front passenger seat is occupied, illuminates the passenger air bag deactivation indicator.

Side Air Bags

A side air bag is attached to the outside of each front seat backrest frame, under the backrest cover.

The side air bags are handed and each consists of a molded plastic case which contains the folded air bag and the inflator. A cable connects the igniter of the inflator to a connector in the main seat harness connector block located under the front edge of the seat cushion. When the air bag deploys it forces the front edge of the molded plastic case apart and splits open the backrest cover.

Side Air Curtains



E87581

Item	Part Number	Description
1	-	Air curtain housing
2	-	Deployment ramps
3	-	Gas generator
4	-	Rear tether
5	-	Curtain
6	-	Air chambers
7	-	Front tether

Side air curtains protect against head injuries in a side impact, while also helping to ensure unrestrained occupants are not ejected through open or broken windows during a rollover event.

A single inflator mounted behind the rear seat passengers unfurls the curtain and fills five separate chambers to provide head protection cushions for occupants in side-impact and roll-over events. Steel ramps guarantee the curtain does not snag on the interior trim as it unfurls, while tethers at the front and rear of the curtain ensure the curtain is held taut.

The side air curtain deflation characteristics are deliberately slow to ensure it remains inflated throughout the duration of a vehicle rollover event.

Air Bag Warning Indicator

The air bag warning indicator consists of a red LED (light emitting diode) behind a SRS graphic in the instrument cluster.

Operation of the air bag warning indicator is controlled by a high-speed CAN bus message from the RCM to the instrument cluster. The RCM sends the signal to illuminate the air bag warning indicator if a fault is detected, and for approximately 6 seconds during the bulb check at the beginning of each ignition cycle.

Clockspring

The clockspring is installed on the steering column to provide the electrical interface between the vehicle's fixed wiring harness and the steering wheel. The clockspring provides connections for the driver air bag, horn and steering wheel switch packs.

Safety Belt Pretensioners



E87583

A pretensioner is integrated into each front safety belt buckle and attached to a bracket on the inboard side of the seat. The pretensioner pulls 80mm of slack from the safety belt through a cable system running parallel to the seat rail. This tightens the front safety belts during a collision to ensure the occupants are securely held in their seats.

Each pretensioner has a tube containing propellant and a piston. The piston is attached to a steel cable, the opposite end of which is attached to the safety belt buckle. A squib in the base of the tube provides an ignition source when triggered by a fire signal from the RCM. On receipt of a fire signal from the RCM, the squib ignites the propellant. The propellant produces nitrogen gas that rapidly expands to drive the piston along the tube, pulling the cable and drawing the buckle downwards.

Steering Column Pyrotechnic Device



E87582

NAS market vehicles; a pyrotechnic device is fitted to the steering column to provide increased energy absorption to a driver not wearing a safety belt. If the driver is wearing a safety belt and a crash situation occurs, the device is not activated. Refer to steering column section for further information.

Supplemental Restraint System - Air Bag Supplemental Restraint System (SRS)

Diagnosis and Testing

Principles of Operation

For a detailed description of the air bag supplemental restraints system, refer to the relevant Description and Operation section in the workshop manual.

REFER to: [Air Bag and Safety Belt Pretensioner Supplemental Restraint System \(SRS\)](#) (501-20B Supplemental Restraint System, Description and Operation).

Inspection and Verification



WARNING: 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 TWO MINUTES. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN PERSONAL INJURY.



CAUTION: Diagnosis by substitution from a donor vehicle is **NOT** acceptable. Substitution of control modules does not guarantee confirmation of a fault, and may also cause additional faults in the vehicle being tested and/or the donor vehicle.

• **NOTE:** Given the legal implications of a restraints system failure, harness repairs to Air Bag module circuits are not acceptable. Where the text refers to "REPAIR the circuit", this will normally mean the replacement of a harness.

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

Visual Inspection

Electrical	
• Battery condition, state of charge • Make sure all electrical connector(s) are engaged correctly on the air bag circuits • Wiring harness • Air bag module(s) • Make sure the restraints control module (RCM) is correctly installed • Fuse(s) • Sensor(s) • Pretensioner(s) • Warning lamp bulb(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
4. **4.** If the cause is not visually evident, check Restraints Control Module (RCM) and Occupancy Classification System (OCS) module for Diagnostic Trouble Codes (DTCs) and refer to the DTC Index.

Given the complexity of the system and the potential for damage/injury, the preferred method of diagnosis is via the Manufacturer approved diagnostic system.

If the Manufacturer approved diagnostic system is not available, use a scan tool to extract DTCs and refer to the DTC Index.

DTC Index

• **NOTE:** If the control module is suspect and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual (section B1.2), or determine if any prior approval programme is in operation, prior to the installation of a new module.

• **NOTE:** Generic scan tools may not read the codes listed, or may read only five digit codes. Match the five digits from the scan tool to the first five digits of the seven digit code listed to identify the fault (the last two digits give additional information read by the manufacturer approved diagnostic system).

• **NOTE:** When performing electrical voltage or resistance tests, always use a digital multimeter (DMM) accurate to three decimal places, and with an up-to-date calibration certificate. When testing resistance, always take the resistance of the DMM leads into account.

• **NOTE:** Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.

• **NOTE:** Inspect connectors for signs of water ingress, and pins for damage and/or corrosion.

• **NOTE:** If DTCs are recorded and, after performing the pinpoint tests, a fault is not present, an intermittent concern may be the cause. Always check for loose connections and corroded terminals.

For a complete list of all Diagnostic Trouble Codes (DTCs) that could be logged on this vehicle, please refer to Section 100-00

REFER to: [Diagnostic Trouble Code \(DTC\) Index - DTC: Restraints Control Module \(RCM\)](#) (100-00 General Information, Description and Operation).

Supplemental Restraint System - Restraints Control Module (RCM)

Removal and Installation

Removal

- NOTE: The RCM must be replaced after every time any SRS component has been deployed.

1. Make the SRS system safe.

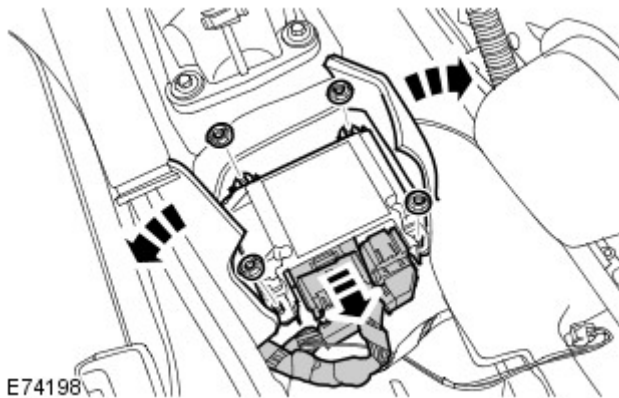
Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

2. Remove the floor console.

Refer to: [Floor Console](#) (501-12 Instrument Panel and Console, Removal and Installation).

- 3.

- Cut the carpet for access.
- Position the carpet aside for access.



- 4.

- Torque: 10 Nm

Installation

1. To install, reverse the removal procedure.
2. Using Land Rover approved diagnostic equipment, programme a new RCM.

Supplemental Restraint System - Driver Air Bag Module

Removal and Installation

Special Tool(s)

 501-106 Remover, Driver Air Bag E48291	501-106 Remover, Driver Air Bag
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Removal

1. Disconnect the battery ground cable.

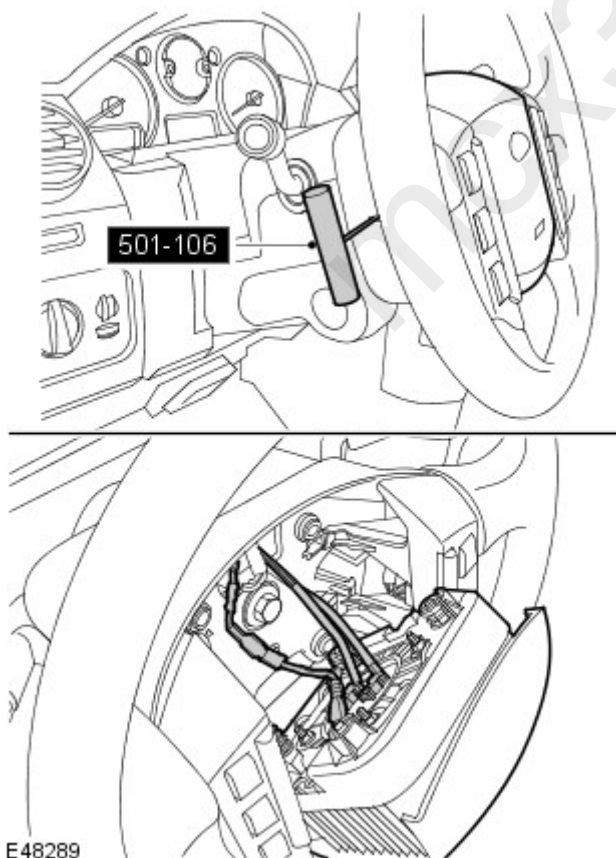
Refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

2. Make the SRS system safe.

Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

3.
 - Carefully release the 2 clips.
 - Using the special tool, remove the driver air bag module.

Special Tool(s): [501-106](#)



4.  **WARNING:** Do not probe supplemental restraint system (SRS) electrical connectors.

- Disconnect the 3 electrical connectors.

Installation

1. **1. WARNINGS:**



The SRS electrical connectors are unique. DO NOT force, or attempt to connect electrical connectors to the wrong sockets.



Driver air bag module installation can be confirmed by hearing 2 audible clicks, 1 for each spring. The module edges should also be flush with the steering wheel.

- NOTE: If the SRS component is to be replaced, the bar code of the new unit must be recorded.

To install, reverse the removal procedure.

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Supplemental Restraint System - Driver Lower Air Bag Module

Removal and Installation

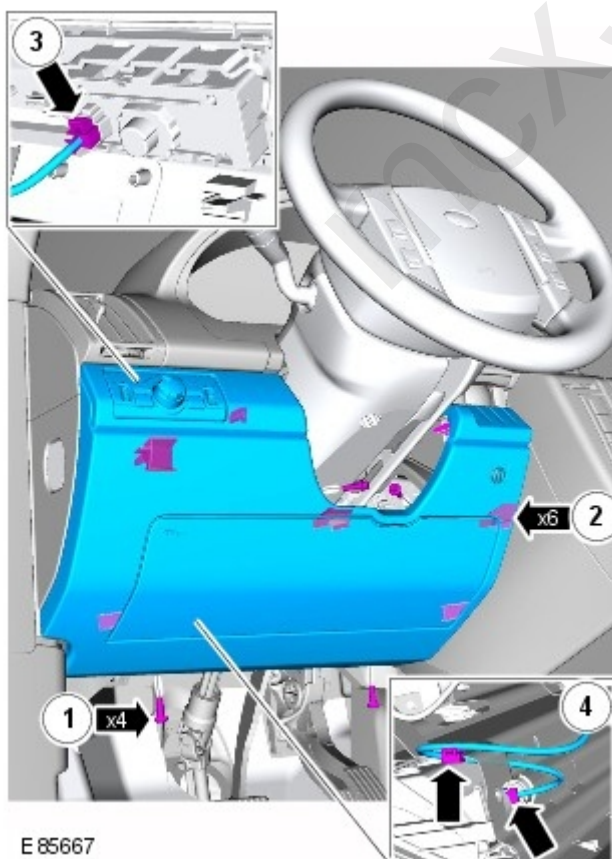
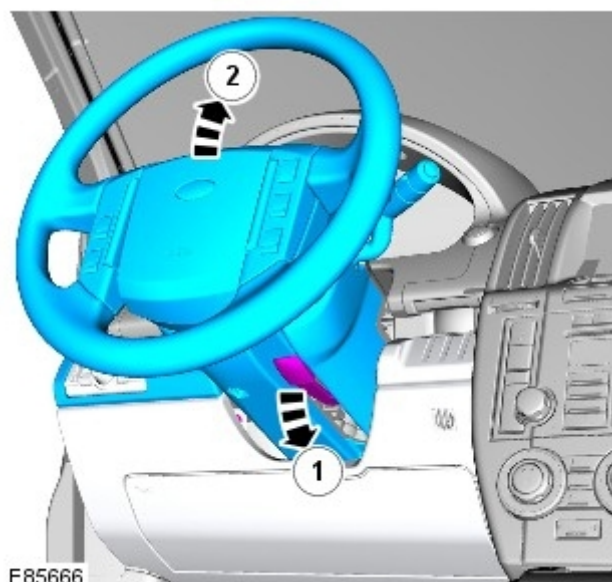
Removal

- NOTE: Removal steps in this procedure may contain installation details.

1. Make the SRS system safe.

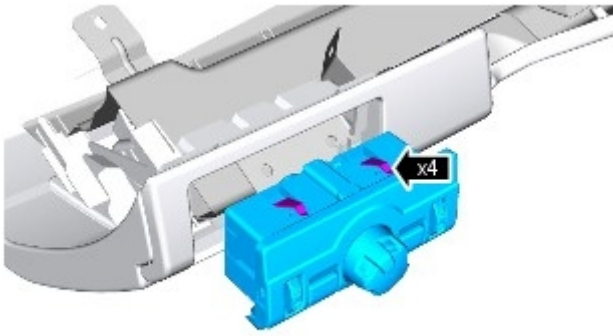
Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

2. Release the steering column lever and raise the column for access.



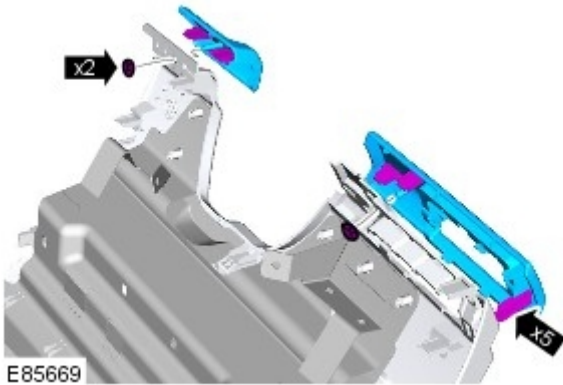
3. **3.** NOTE: If the SRS component is to be replaced, the bar code of the new unit must be recorded.

Torque: 6 Nm



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4. **4.** NOTE: Do not disassemble further if the component is removed for access only.



E85669

- 5.

Installation

1. To install, reverse the removal procedure.

Supplemental Restraint System - Passenger Air Bag Module

Removal and Installation

Removal

- NOTE: Removal steps in this procedure may contain installation details.

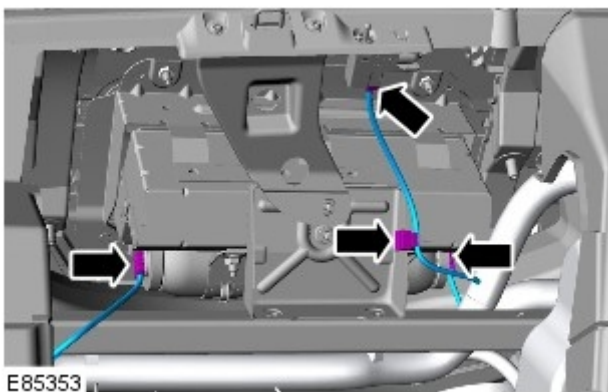
1. Make the SRS system safe.

Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

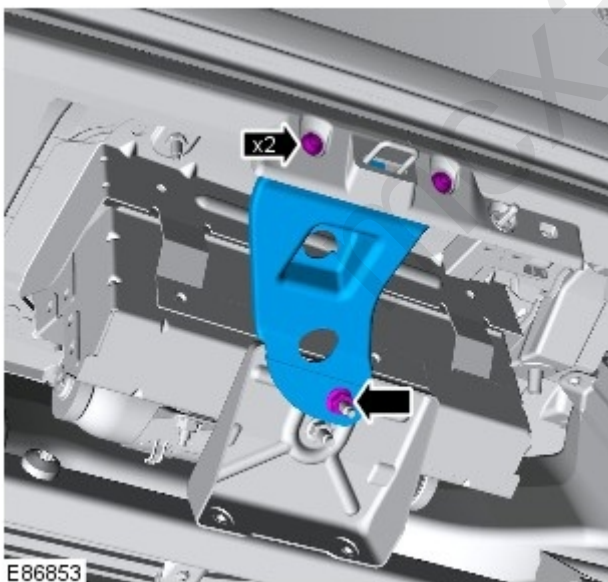
2. Remove the glove compartment.

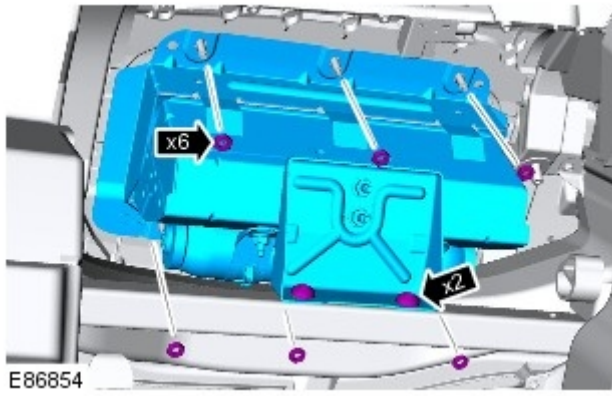
Refer to: [Glove Compartment](#) (501-12 Instrument Panel and Console, Removal and Installation).

- 3.



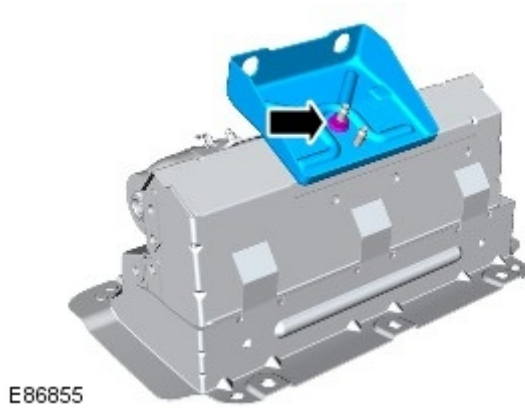
- 4.





5. **5.** NOTE: If the SRS component is to be replaced, the bar code of the new unit must be recorded.

Torque: 10 Nm



6. **6.** NOTE: Do not disassemble further if the component is removed for access only.

Installation

1. To install, reverse the removal procedure.

Supplemental Restraint System - Side Air Bag Module

Removal and Installation

Removal

- NOTE: Removal steps in this procedure may contain installation details.

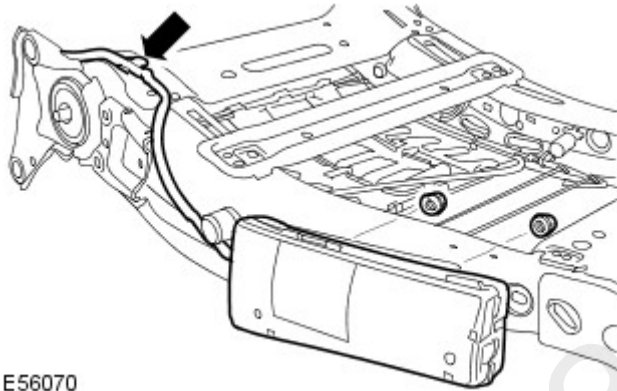
1. Make the SRS system safe.

Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

2. Remove the front seat backrest cover.

Refer to: [Front Seat Backrest Cover](#) (501-10 Seating, Removal and Installation).

3. Remove the front seat backrest pad.



E56070

4.  **WARNING:** Do not probe supplemental restraint system (SRS) electrical connectors.

Torque: 10 Nm

Installation

1. To install, reverse the removal procedure.

Supplemental Restraint System - Side Air Curtain Module

Removal and Installation

Removal

- NOTE: Removal steps in this procedure may contain installation details.

1. Disconnect the battery ground cable.

Refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

2. Make the SRS system safe.

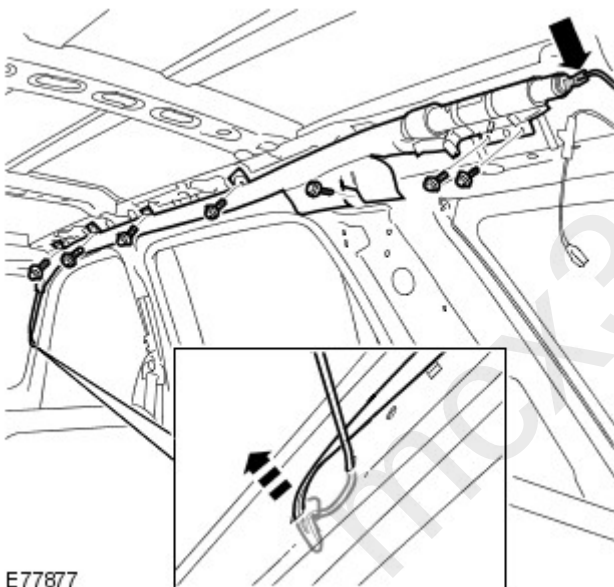
Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

3. Remove the headliner.

Refer to: [Headliner - Vehicles Without: Tilting Roof Opening Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

Refer to: [Headliner - Vehicles With: Tilting Roof Opening Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

4. Torque: 10 Nm



Installation

1. To install, reverse the removal procedure.

Supplemental Restraint System - Passenger Air Bag Deactivation (PAD) Switch

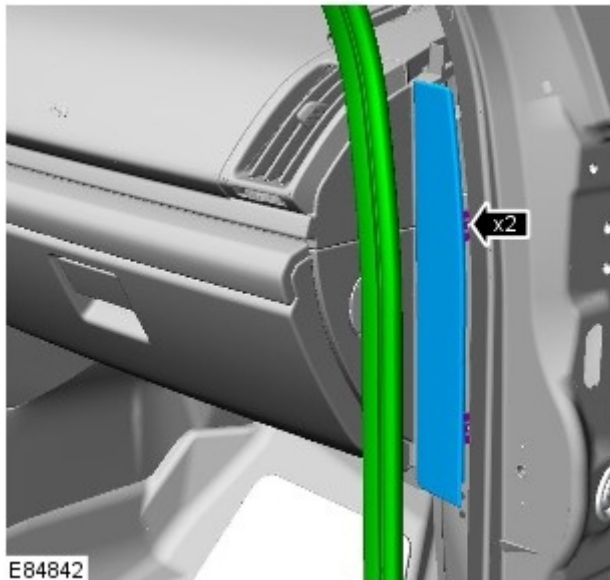
Removal and Installation

Removal

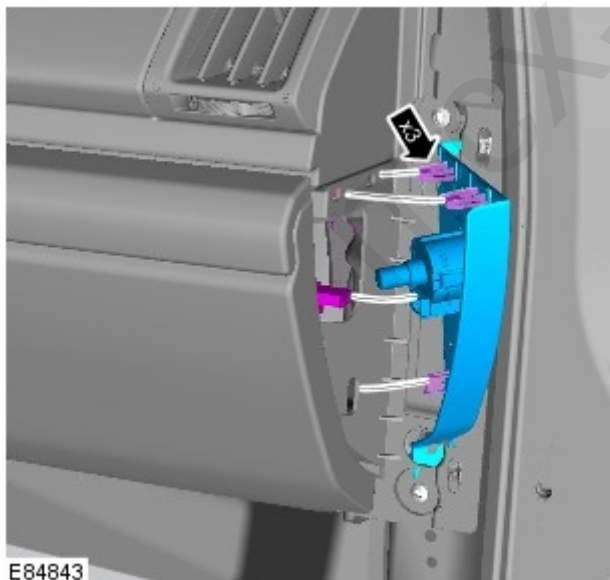
1. Make the SRS system safe.

Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

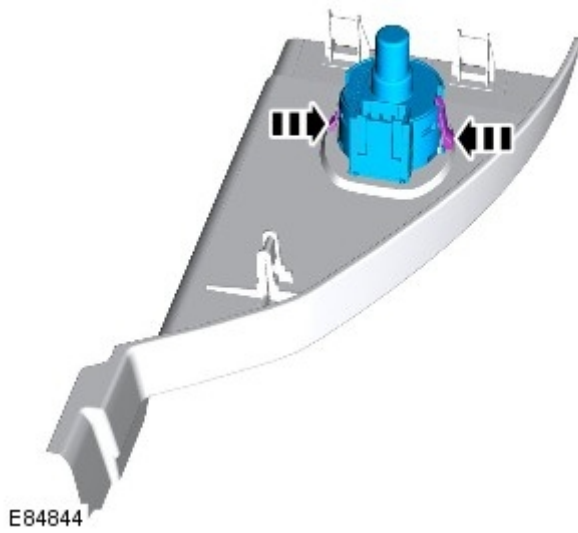
- 2.



- 3.



4.



Installation

1. To install, reverse the removal procedure.

Supplemental Restraint System - Clockspring

Removal and Installation

Removal

1. Make the SRS system safe.

Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

2.  **CAUTION:** Make sure that the road wheels are in the straight ahead position.

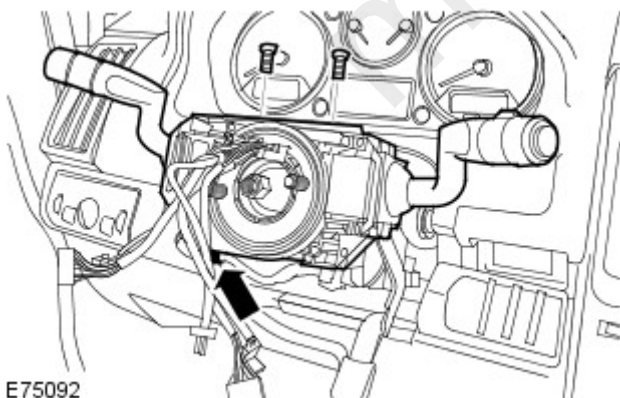
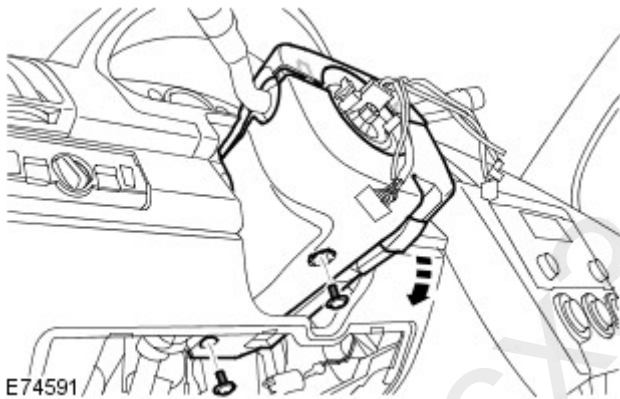
Remove the steering wheel.

Refer to: [Steering Wheel](#) (211-04 Steering Column, Removal and Installation).

3. Release the steering column adjustment lever.

4. Remove the steering column upper cowl.

5. Remove the steering column lower cowl.



6.  **CAUTION:** Make sure that the clockspring rotor does not rotate.

Remove the clockspring.

Installation

1.  **CAUTION:** Correct clockspring alignment can be found by viewing a yellow marker through the window situated on the clockspring face, at the 8 o'clock position. If the marker is not visible, carefully turn the clockspring fully clockwise. Turn the clockspring in a counterclockwise direction 3.25 turns. The yellow marker should now be in the central position.

To install, reverse the removal procedure.

Supplemental Restraint System - Occupant Classification Sensor

Removal and Installation

Removal

- NOTE: The occupant classification sensor is part of the passenger seat cushion. The sensor is only fitted to NAS models.

1. Disconnect the battery ground cable.

Refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

2. Remove the front seat cushion cover.

Refer to: [Front Seat Cushion Cover](#) (501-10 Seating, Removal and Installation).

Installation

1. Install the front seat cushion cover.

Refer to: [Front Seat Cushion Cover](#) (501-10 Seating, Removal and Installation).

2. Connect the battery ground cable.

Refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

3. Using IDS, configure a new occupant classification sensor.

Supplemental Restraint System - B-Pillar Side Impact Sensor

Removal and Installation

Removal

- NOTE: Removal steps in this procedure may contain installation details.

1. Disconnect the battery ground cable.

Refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

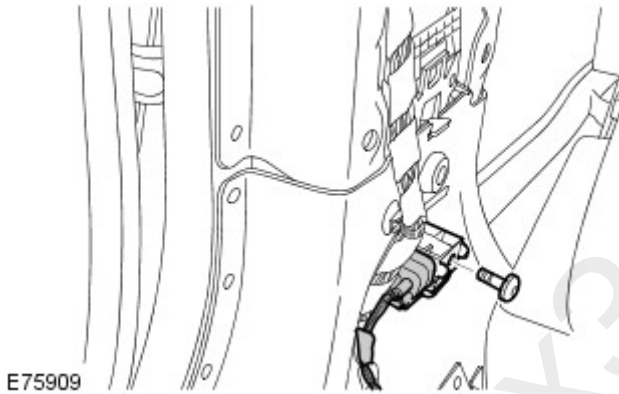
2. Make the SRS system safe.

Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

3. Remove the front scuff plate trim panel.

Refer to: [Front Scuff Plate Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

4. Torque: 10 Nm



Installation

1. To install, reverse the removal procedure.

Supplemental Restraint System - C-Pillar Side Impact Sensor

Removal and Installation

Removal

- NOTE: Removal steps in this procedure may contain installation details.

1. Disconnect the battery ground cable.

Refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

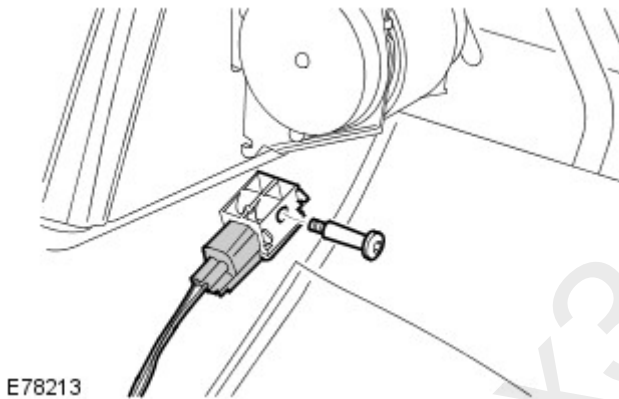
2. Make the SRS system safe.

Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

3. Remove the rear quarter trim panel.

Refer to: [Rear Quarter Trim Panel](#) (501-05 Interior Trim and Ornamentation, Removal and Installation).

4. Torque: 10 Nm



Installation

1. To install, reverse the removal procedure.

Supplemental Restraint System - Front Impact Severity Sensor

Removal and Installation

Removal

- NOTE: Removal steps in this procedure may contain installation details.

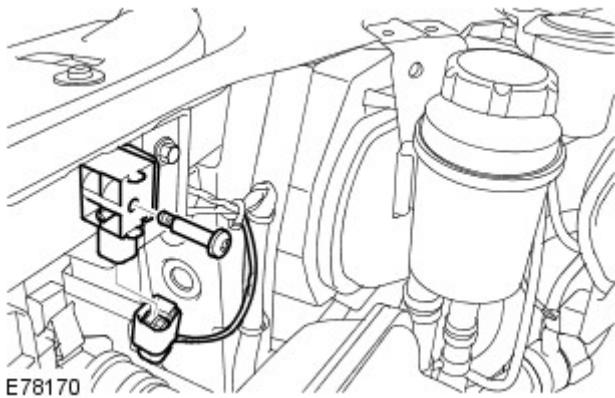
1. Disconnect the battery ground cable.

Refer to: [Specifications](#) (414-00 Battery and Charging System - General Information, Specifications).

2. Make the SRS system safe.

Refer to: [Standard Workshop Practices](#) (100-00 General Information, Description and Operation).

3. Torque: 10 Nm



Installation

1. To install, reverse the removal procedure.