

RESTRAINT SYSTEMS

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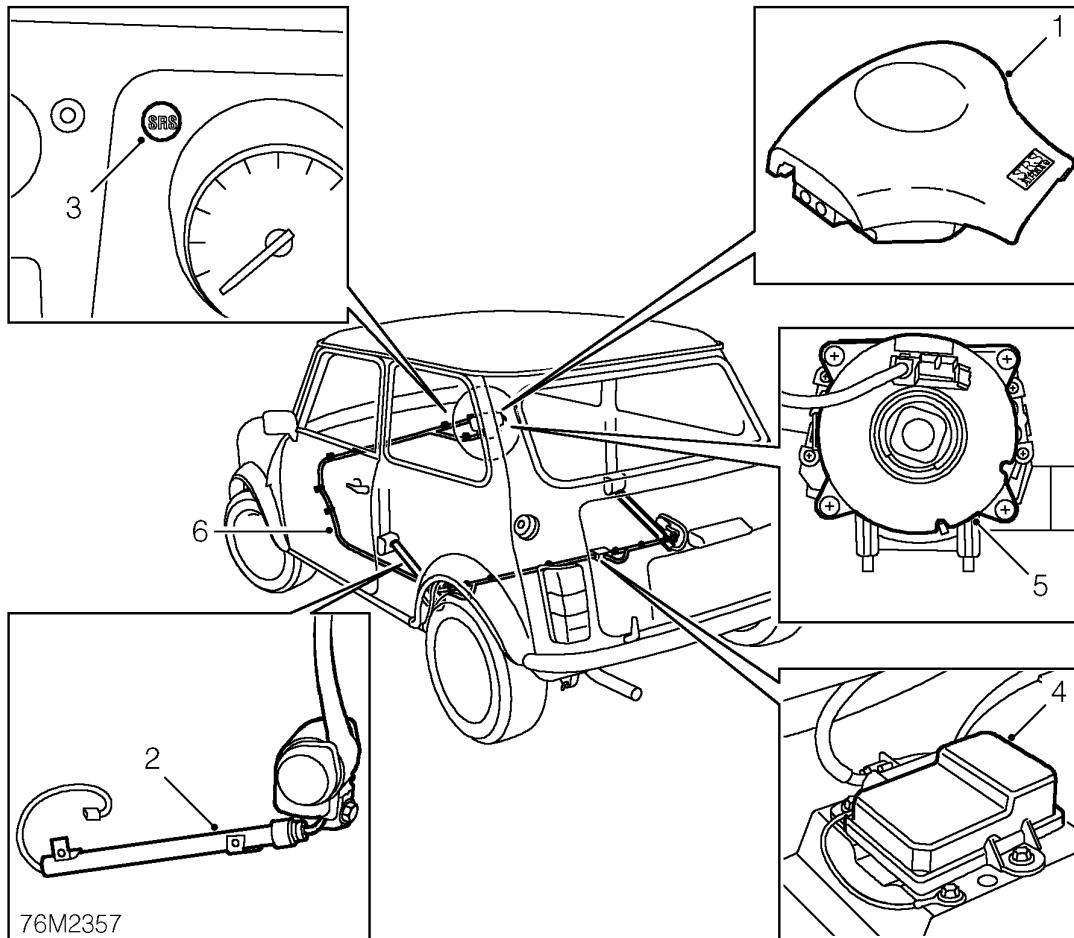
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COMPONENT LOCATION

NOTE: LHD type is symmetrical to RHD type.



1. Driver's airbag module *
2. Seat belt pre-tensioners *
3. SRS warning lamp

4. Diagnostic control unit *
5. Rotary coupler *
6. SRS harness (YELLOW) *

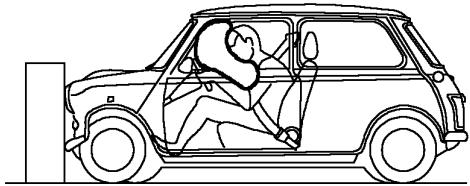
* Components to be renewed following system deployment.



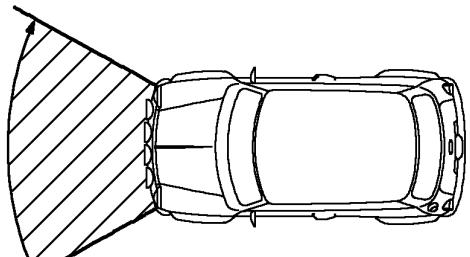
NOTE: Following deployment of the Supplementary Restraint System (SRS) within the vehicle, under any circumstances, all system components including the yellow harnesses MUST be replaced.

RESTRAINT SYSTEMS

DESCRIPTION



76M2358



76M2359

The airbag Supplementary Restraint System (SRS) is a safety device which, when deployed in the event of a severe frontal impact, provides additional protection to the driver's face and upper torso. The airbag is designed to inflate when the vehicle is exceeding a set speed and receives a frontal impact within the area shaded.

The pre-tensioner consists of the seat belt buckle and stalk, a piston and a pyrotechnic device. The pre-tensioners, fitted to both driver and passenger seat belt mechanisms are designed to remove any play in the lap and diagonal belts in the event of a severe frontal impact.

OPERATION

CAUTION: The diagnostic control unit is a non-serviceable component and no attempt should be made to repair or modify the unit.

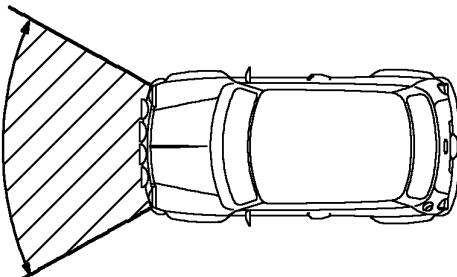
The diagnostic control unit (DCU) which is mounted within the passenger compartment performs two functions:

1. It continually monitors the airbag system for faults;
2. It provides a fire signal to the airbag and pre-tensioners in the event of a crash.

The SRS warning lamp illuminates to inform the driver of any airbag system faults and during a system self test.

The diagnostic control unit comprises of the following circuits which control the airbag system:

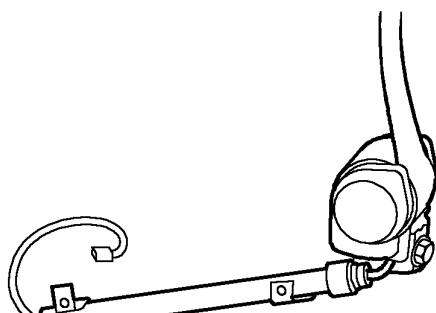
1. The crash sensor determines the severity of any impact and can discriminate between rough road conditions and an actual crash.
2. The safing sensor is wired in series with the crash sensor. The fire signal from the crash sensor therefore, passes through the safing sensor which confirms a crash is taking place.
3. The regulator circuit maintains stability of the system in the event of battery voltage drop.
4. The back-up power supply provides power to the system in the event of the battery being damaged or disconnected during the impact.

**Airbag**

76M2359

When triggered, the fire signal from the diagnostic control unit passes via the airbag harness to the airbag module. Grains of Nitrocellulose and Nitroglycerine inside the airbag module, ignite and combine in a chemical reaction to form a large amount of Nitrogen gas, leading to inflation of the airbag in approximately 30 milli-seconds.

As the driver moves forward into the airbag it rapidly deflates to provide progressive deceleration and reduce the risk of injuries.

Seat belt pre-tensioners

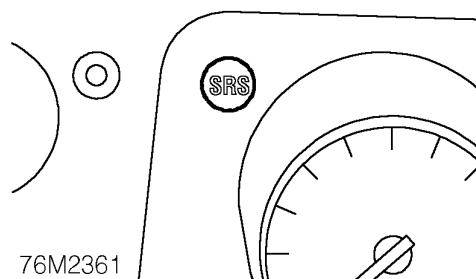
76M2360

The front seat belt reels are linked by cables to gas generators housed within remote steel tubes. The generators are driven by small quantities of nitrocellulose. On receiving a fire signal from the DCU, the generators deploy to force pistons down the steel tubes, pulling the cables tight. The cables are connected to the seat belt reels which in turn pull the seat belts tight, reducing any slack in the belts.

Sequence of operation:

1. The main sensor and the safing sensor detect crash conditions.
2. The DCU supplies an electrical pulse to the airbag igniter and pre-tensioners.
3. Airbag and pre-tensioners deploy.

It takes about 0.1 seconds from the beginning of the airbag deployment until it is completely deflated.

System check

76M2361

The SRS warning lamp, located on the fascia, illuminates when the electrical circuits are switched on whilst the system performs a self diagnosis test. If the system finds no fault during self diagnosis the light will extinguish after approximately 5 seconds and remain extinguished.

In the event of a fault in the system, the warning light will either:

1. Illuminate continuously;
2. Illuminate for 0.5 second, extinguish, then illuminate continuously;
3. Fail to illuminate during the self diagnosis test.

Fault diagnosis

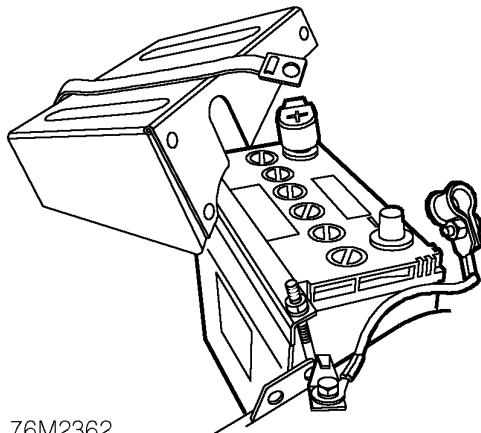
Diagnosis is accomplished using TestBook connected to the vehicle diagnostic connector which is located on a bracket by the foot pedals.



PRECAUTIONS

Making the system safe

- Always disconnect the battery and wait 10 minutes to allow the SRS back-up circuit to fully discharge before commencing work on the airbag system.



- Always disconnect both battery leads, earth lead first before commencing work.

Care Points

ALWAYS:

- Carefully inspect any SRS part before installation.
- Use a digital circuit tester to check the system.



WARNING: Using an analogue circuit tester may cause an accidental deployment and possible injury.

- Check SRS harness is correctly routed.
- Check SRS connectors are mated correctly after completion of work.



NEVER:

- Drop any component.

NOTE: The airbag diagnostic control unit is a shock sensitive device and must be handled with extreme care.

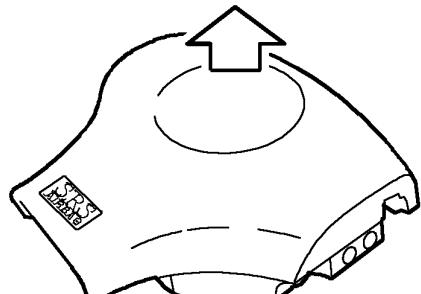
- Wrap arms around an airbag module.
- Attach anything to the airbag cover.
- Attempt to repair any component.
- Apply electrical power to a component except as part of an approved test procedure.
- Transport airbag modules in the passenger compartment of a car.
- Install any SRS component that shows signs of being dropped or improperly handled, such as dents, cracks or deformation.
- Install used SRS parts from another car. When repairing an SRS, use only genuine new parts.

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Handling and Storage

- Do not try to disassemble the airbag assembly or pretensioner. They have no serviceable parts. Once an airbag or pre-tensioner has been deployed, it cannot be repaired or reused.
- Do not carry a seat belt pre-tensioner assembly by the electrical lead, or allow the reel or tube to hang on the flexible link.
- Be careful that the airbag assembly receives no strong shocks; it could deploy.
- Special bolts are necessary for installing the airbag assembly. Do not use other bolts.

Airbag storage



76M2364

For temporary storage of the airbag assembly during service, observe the following precautions:

- Always keep components dry.
- Always carry the airbag module with the pad surface face up.
- Store the removed airbag assembly with the pad surface face up.
- Do not allow anything to rest on the airbag module.
- Place the airbag module in a designated storage area.

WARNING: If the airbag is improperly stored face down, accidental deployment could propel the unit with enough force to cause serious injury.

- Store the removed airbag assembly on a secure flat surface away from any electrical equipment or high heat source (exceeding 85°C/185°F) and free of any oil, grease, detergent or water.



CAUTION: Improper handling or storage can internally damage the airbag assembly, making it inoperative. If you suspect the airbag assembly has been damaged, install a new unit and refer to the Deployment/Disposal Procedures for disposing of the damaged airbag.

Overnight storage

Airbag modules are classed as explosive articles and as such must be stored in an approved secure steel cabinet which has been registered by the local authority.

Seat belt pre-tensioner storage

For temporary storage of the seat belt pre-tensioner during service, observe the following precautions:

- Place the pre-tensioner in designated storage area.
- Store the removed pre-tensioner on a secure, flat surface away from heat, oil, grease, detergent or water.



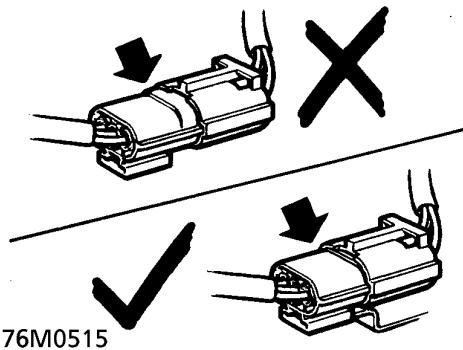
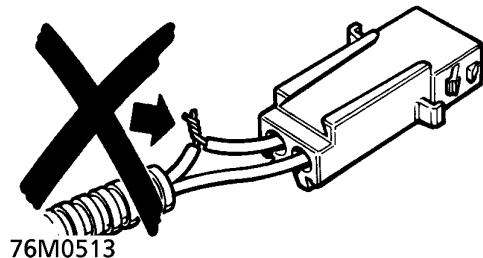
CAUTION: Improper handling or storage can damage the pre-tensioner assembly. If damage is suspected, install a new assembly.

Overnight storage

The seat belt pre-tensioners are classed as explosive articles and as such must be stored in an approved secure steel cabinet which has been registered by the local authority.



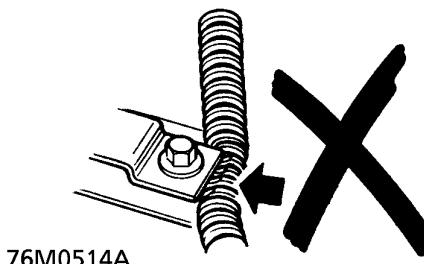
Wiring and connectors



- Never attempt to modify, splice or repair SRS wiring. Never install electronic equipment such as; a mobile telephone, two way radio or in-car entertainment system in such a way that it interferes electrically with the airbag harness.



NOTE: SRS wiring can be identified by special yellow outer protective covering.



- Always ensure SRS harnesses are routed correctly. Be careful to avoid trapping or pinching the SRS harness. Look out for possible points of chafing.
- Always use specified earth fixings tightened to the correct torque. Poor earthing can cause intermittent problems that are difficult to diagnose.

RESTRAINT SYSTEMS

WARNING LABELS



76M2365

A combination of symbols/icons is displayed (either in a suitable, prominent position or is attached to the component itself) to indicate:

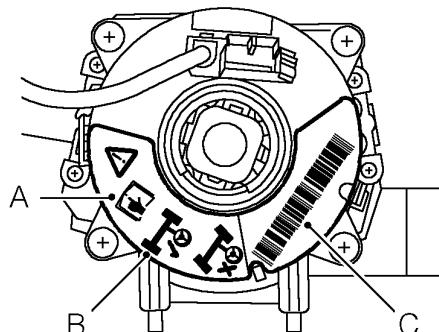
- (a) The need for caution when working in close proximity to SRS components.
- (b) The publication where suitable reference and advice can be found (usually Workshop Manual or Owner's Handbook).

 **NOTE: It is imperative that before any work is undertaken on the SRS system, the appropriate publication is read thoroughly.**

The following list indicates current locations for warning labels. Exact positions may vary dependent on legislation and market trends.

1. Front windscreen

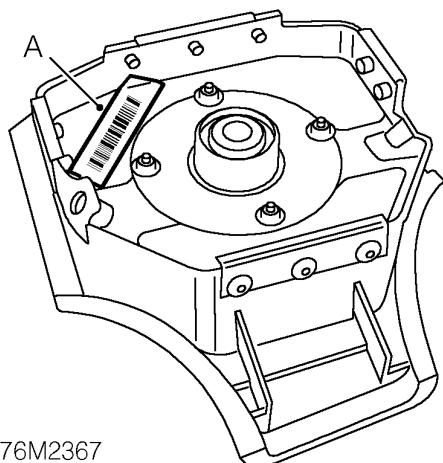
Refer to the Owner's Handbook for information on the airbag system.



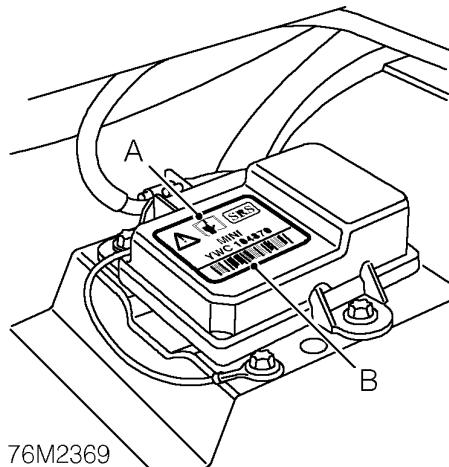
76M2366

2. Rotary coupler

- A** - Refer to the Workshop Manual for detailed instructions.
- B** - Ensure wheels are in the straight ahead position before removal and refitting.
- C** - ROVER Part Number/Bar code - The code must be recorded and quoted for ordering purposes.



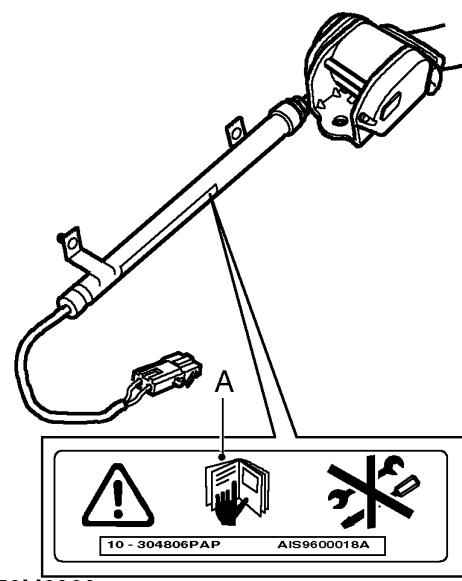
76M2367



76M2369

3. Airbag module

A - ROVER Part Number/Bar code - If the airbag module is to be replaced, the code must be recorded and quoted for ordering purposes.



76M2368

4. Seat belt pre-tensioner

A - Refer to the Workshop Manual for detailed instructions. DO NOT attempt to disassemble.

5. Diagnostic control unit.

A - Refer to the Workshop Manual for information on the airbag system.

B - ROVER Part Number/Bar Code - If the airbag diagnostic control unit is to be replaced, the code must be recorded and quoted for ordering purposes.

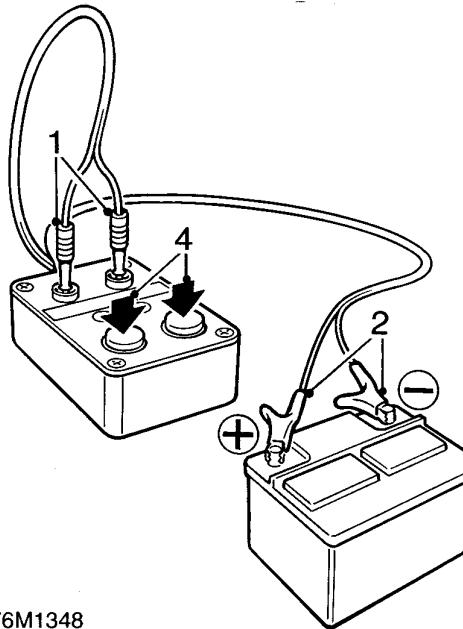
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AIRBAG AND PRE-TENSIONER, MANUAL DEPLOYMENT

If a vehicle is to be scrapped and contains an undeployed airbag module, or pre-tensioner, the components must be manually deployed. This operation should only be carried out using the following recommended manual deployment procedure.

Before deployment is started the deployment tool self test procedure should be carried out.

Deployment tool SMD 4082/1 self test procedure



76M1348

1. Insert blue and yellow connectors of tool lead into corresponding sockets on face of tool.
2. Connect crocodile clips of second tool lead to battery, red to positive and black to negative.
3. Red "READY" light should illuminate.
4. Press and hold both operating buttons.
5. Green "DEFECTIVE" light should illuminate.
6. Release both operating buttons.
7. Red "READY" light should illuminate.
8. Disconnect tool from battery.
9. Disconnect blue and yellow connectors from tool face sockets.
10. Self test now complete.

Deployment of pre-tensioner fitted to vehicle

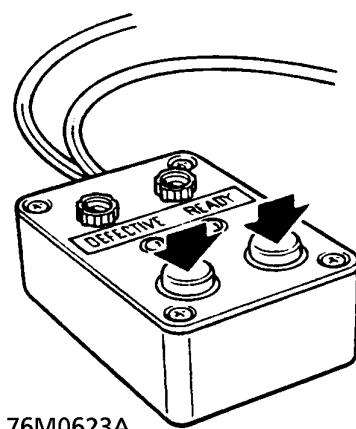
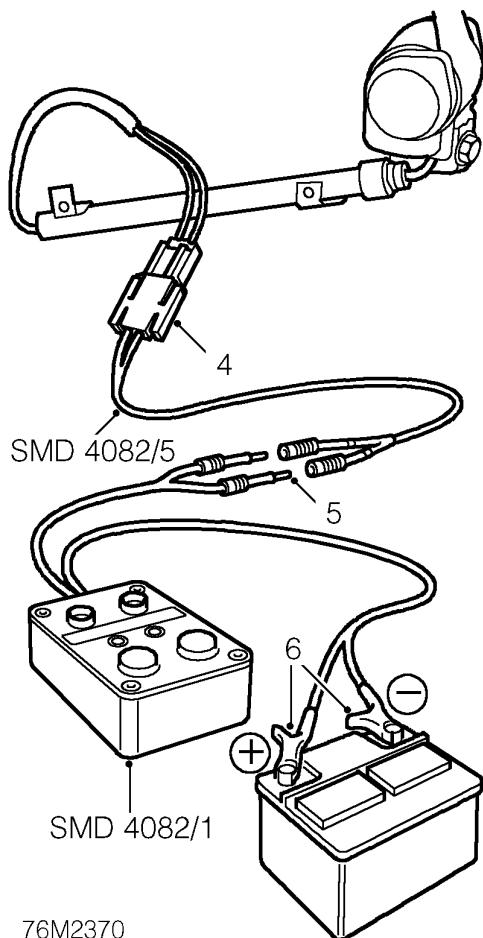
These guidelines are written to aid authorised personnel to carry out the safe disposal of the pre-tensioner.

WARNING:

- Only use the Rover approved deployment equipment.
- Deploy pre-tensioner in a designated area.
- Ensure pre-tensioner is not damaged or ruptured before deploying.
- Notify relevant authorities.

1. Carry out deployment tool self test.
2. Remove 3 screws securing rear cubby hole cover to body and remove cover.
3. Disconnect pre-tensioner harness connector.

WARNING: Ensure deployment tool SMD 4082/1 is not connected to battery.



7. Press both operating buttons to deploy pre-tensioner.
8. DO NOT return to the vehicle for 5 minutes.
9. Using gloves, remove pre-tensioner from body, place pre-tensioner in plastic bag, and seal bag.
10. Transport deployed pre-tensioner to designated area for incineration.

NOTE: DO NOT transport pre-tensioner in the vehicle passenger compartment.

4. Connect flylead **SMD 4082/5** to pre-tensioner connector.
5. Connect flylead **SMD 4082/5** to tool **SMD 4082/1**.
6. Connect tool **SMD 4082/1** to battery.



WARNING: Ensure all personnel are standing at least 15 metres away from vehicle.

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Deployment of pre-tensioner removed from vehicle

These guidelines are written to aid authorised personnel to carry out the safe disposal of the pre-tensioner.

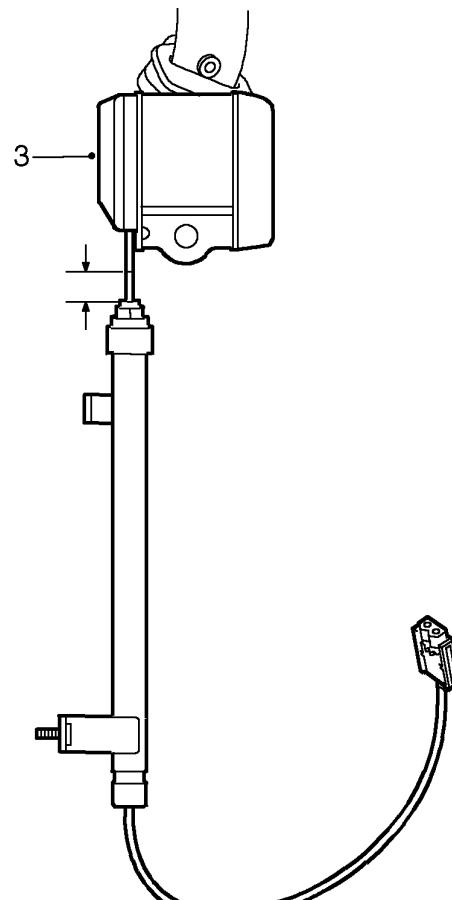


WARNING:

- Only use the Rover approved deployment equipment.
- Deploy pre-tensioner in a designated area.
- Ensure pre-tensioner is not damaged or ruptured before deploying.
- Notify relevant authorities.

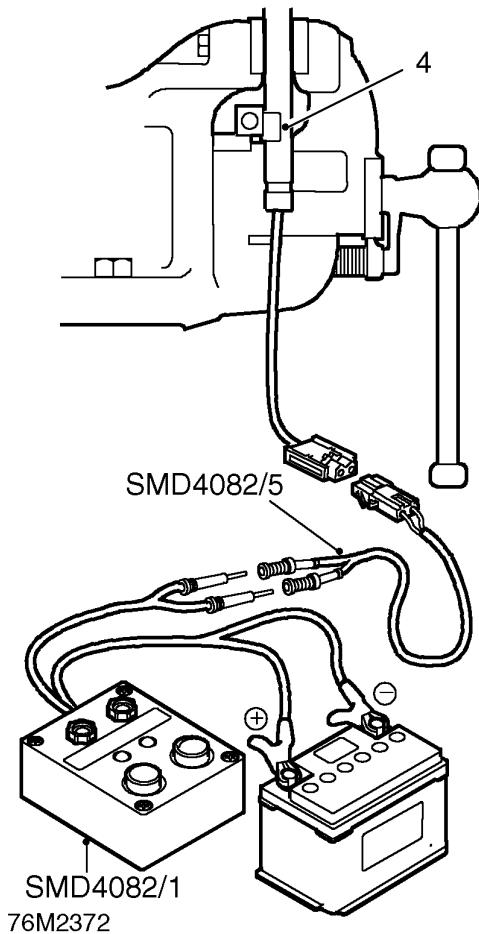
1. Carry out deployment tool self test.
2. Remove seat belt pre-tensioner from vehicle.

See Repairs.



76M2371

3. Remove reel from gas generator by cutting flexible link approximately 10 mm from end of gas generator tube.



4. Position gas generator tube vertically in vice with fly lead at bottom and tube bracket positioned on vice side to prevent tube being forced out of vice. Tighten vice to hold tube rigid and secure. DO NOT OVERTIGHTEN.



WARNING: Ensure deployment tool SMD 4082/1 is not connected to battery.

5. Connect flylead **SMD 4082/5** to pre-tensioner connector.
6. Connect flylead **SMD 4082/5** to tool **SMD 4082/1**.

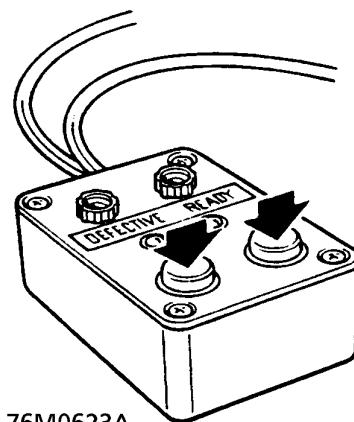


WARNING: Do not lean over gas generator tube whilst connecting.

7. Connect tool **SMD 4082/1** to battery.



WARNING: Ensure all personnel are standing at least 15 metres away from vehicle.



8. Press both operating buttons to deploy pre-tensioner.
9. DO NOT return to the vehicle for 5 minutes.

WARNING: If a suspected 'live' unit fails to deploy using the above procedure, store the unit in accordance to the Storage Procedures outlined in this section and inform Rover Group.

10. Using gloves, remove pre-tensioner from vice, place pre-tensioner in plastic bag, and seal bag.
11. Transport deployed pre-tensioner to designated area for incineration.

NOTE: DO NOT transport pre-tensioner in the vehicle passenger compartment.

12. Scrap all remaining parts of pre-tensioner assembly. DO NOT re-use or salvage any parts of the pre-tensioner assembly.

RESTRAINT SYSTEMS

Deployment of airbag module

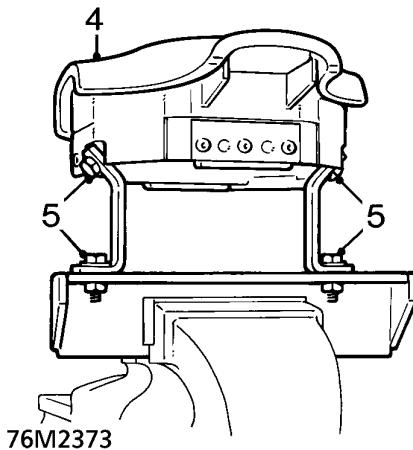
These guidelines are written to aid authorised personnel to carry out the safe disposal of airbag modules when removed from the vehicle.



WARNING:

- Only use the Rover approved deployment equipment.
- Deploy airbag modules in a well ventilated designated area.
- Ensure airbag module is not damaged or ruptured before deploying.
- Notify relevant authorities.

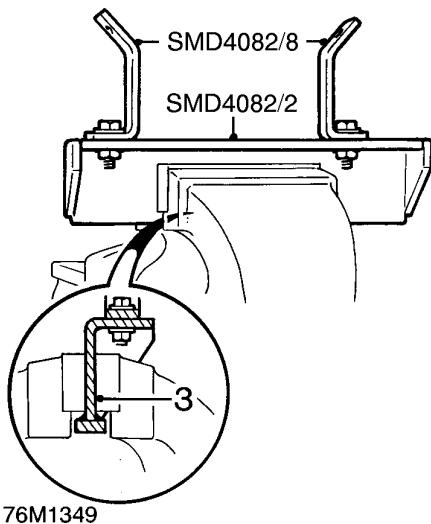
1. Carry out deployment tool self test.
2. Remove airbag module from steering wheel.
See Repairs.



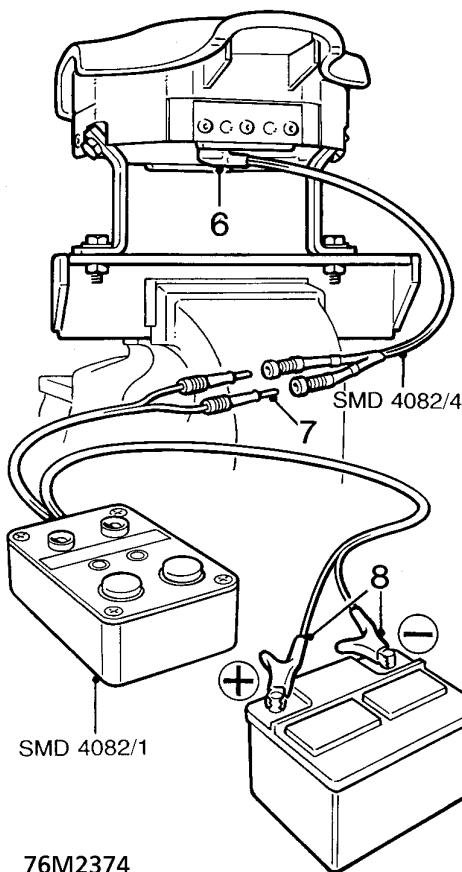
4. Secure airbag module to tool **SMD 4082/2**.
Ensure module is correctly secured using both fixings.
5. Ensure airbag module mounting brackets are secure.



WARNING: Ensure deployment tool SMD 4082/1 is not connected to battery.



3. Position tool **SMD 4082/2** in vice, ensuring that vice jaws grip tool above bottom flange to prevent possibility of tool being forced upwards from vice. Tighten vice.



6. Connect flylead **SMD 4082/4** to airbag module.
7. Connect flylead **SMD 4082/4** to tool **SMD 4082/1**.

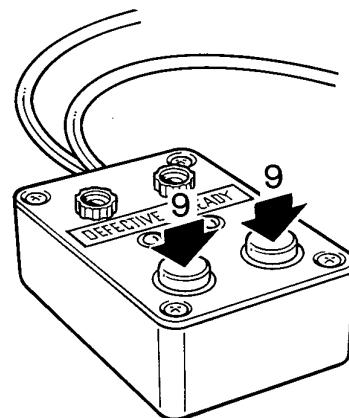


WARNING: Do not lean over airbag module whilst connecting.

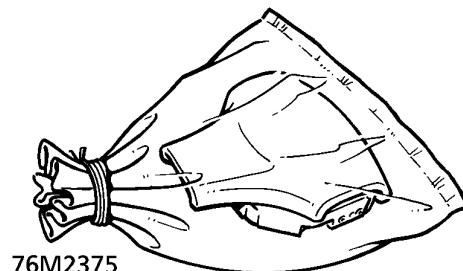
8. Connect tool **SMD 4082/1** to battery.



WARNING: Ensure all personnel are standing at least 15 metres away from module.



9. Press both operating buttons to deploy airbag module.
10. **DO NOT** return to airbag module for 30 minutes.



11. Using gloves and face mask, remove airbag module from tool, place airbag module in plastic bag, and seal bag.
12. Wipe down tool with damp cloth.
13. Transport deployed airbag module to designated area for incineration.



NOTE: DO NOT transport airbag module in the vehicle passenger compartment.

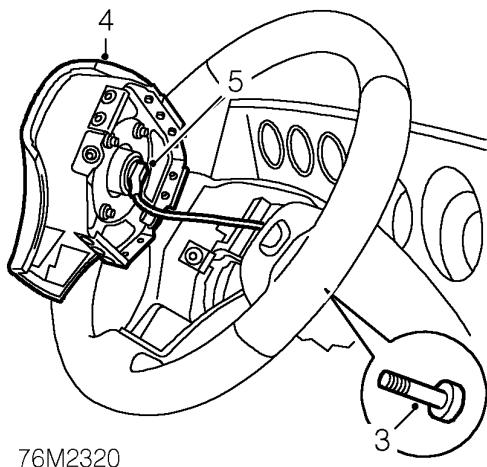
14. Scrap all remaining parts of airbag system. **DO NOT** re-use or salvage any parts of the airbag system.

**DRIVERS AIRBAG MODULE****Service repair no - 76.73.71**

CAUTION: See safety precautions before commencement of repair.

Remove

1. Remove key from starter switch, disconnect both battery leads, earth lead first, and wait 10 minutes for the SRS back-up power circuit to discharge before commencing work.



76M2320

2. Remove 2 Torx bolts securing the air bag module to steering wheel.
3. Release air bag module from steering wheel.



CAUTION: Do not allow the air bag module to hang by the air bag harness.

4. Disconnect harness connector from air bag module.
5. Remove air bag module.



CAUTION: Store the air bag module in accordance with the storage procedures outlined in the precautions part of this section.



NOTE: If the air bag module is to be replaced, the bar code must be recorded.

Refit

1. Position air bag module and make connection with harness upwards as shown in illustration.
2. Fit air bag to steering wheel and hand start the 2 Torx screws. Tighten screws to 7 Nm.
3. Connect battery leads, earth lead last.
4. Carry out system check by turning the ignition on and checking that the SRS warning light illuminates then extinguishes after 3 seconds.

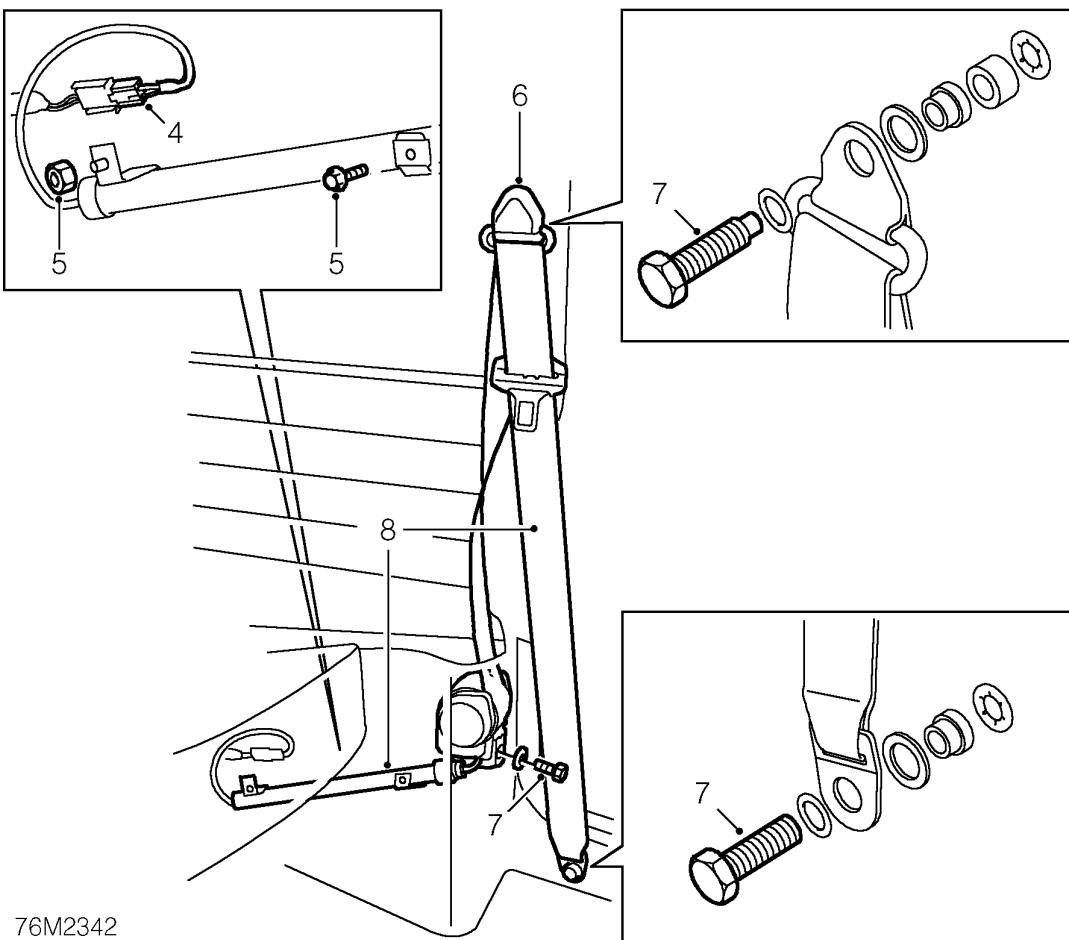
RESTRAINT SYSTEMS

FRONT SEAT BELT PRE-TENSIONER

Service repair no - 76.73.31

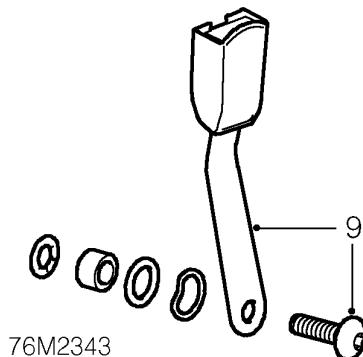


WARNING: SRS safety procedures must be followed and ALL precautions observed. See Precautions.
Replace pre-tensioner every 15 years.



Remove

1. Remove key from starter switch.
2. Disconnect both battery leads, earth lead first, and wait 10 minutes for the SRS back-up power circuit to discharge before commencing work.
3. Remove rear quarter companion box. **See BODY, Interior trim components.**
4. Release multiplug from body and disconnect pre-tensioner harness multiplug.
5. Remove nut and bolt securing pre-tensioner to body.
6. Remove cover from seat belt upper securing bolt.
7. Remove 3 bolts securing seat belt to body, collect spacers and washers.
8. Remove seat belt and pre-tensioner assembly.



9. Remove Torx screw securing seat belt stalk and remove stalk.

Refit

1. Position seat belt stalk, spacer and washers, fit Torx bolt and tighten to 32 Nm.
2. Position seat belt and pre-tensioner assembly to body, fit and tighten bolt to 30 Nm.
3. Extend seat belt and align to upper mounting. Fit upper mounting bolt, spacer and washers and tighten to 32 Nm.
4. Fit cover to upper seat belt securing bolt.
5. Extend seat belt and align to lower mounting. Fit lower mounting bolt, spacer and washers and tighten to 30 Nm.
6. Fit nut and screw securing pre-tensioner to body. Tighten nut to 6 Nm and screw to 1.5 Nm.
7. Connect multiplug to pre-tensioner harness and secure to bracket on body.
8. Fit rear quarter companion box. **See BODY, Interior trim components.**
9. Connect both battery leads, earth lead last.
10. Carry out system check by turning ignition on and check that the SRS warning light illuminates then extinguishes after 3 seconds.

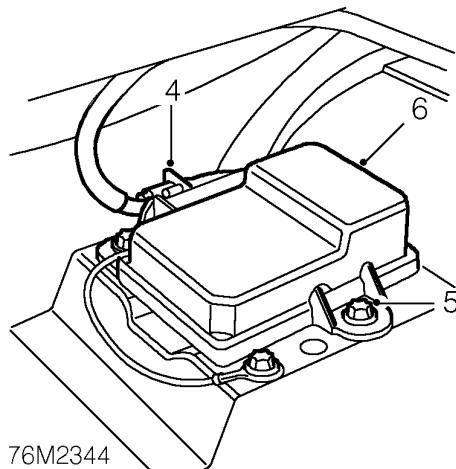
SRS AND DIAGNOSTIC CONTROL UNIT

Service repair no - 76.73.72

Remove

 **CAUTION: See safety precautions before commencement of repair.**

1. Remove key from starter switch, disconnect both battery leads, earth lead first, and wait 10 minutes for the SRS back-up power circuit to discharge before starting work.
2. Slide drivers seat forward and fold down squab.
3. Release carpet from under rear seat for access to SRS control unit.



4. Disconnect multiplug from control unit.
5. Remove and discard 3 Torx screws securing control unit to floor.
6. Remove control unit.

Refit

 **CAUTION: Ensure unit and bracket faces are clean and free from burrs. An incorrectly mounted unit could cause the system to malfunction.**

1. Position control unit, fit NEW Torx screws and tighten to 9 Nm.
2. Connect harness multiplug to control unit.
3. Position floor carpet.
4. Reposition drivers seat.
5. Connect battery leads, earth lead last.
6. Carry out system check by turning the ignition on and checking that the SRS warning light illuminates then extinguishes after 3 seconds.

RESTRAINT SYSTEMS

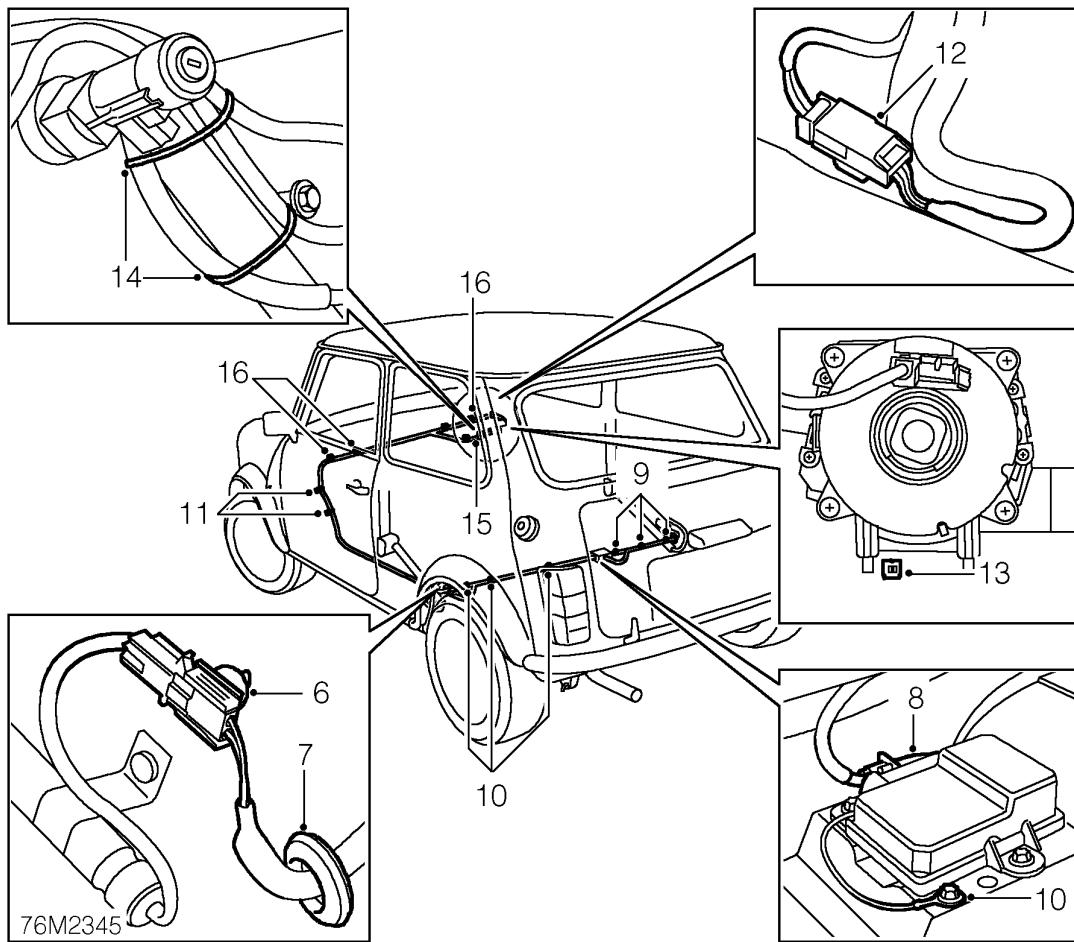
SUPPLEMENTARY RESTRAINT SYSTEM HARNESS

Service repair no - 76.73.73

CAUTION:

- Do not install used SRS parts from another car. When repairing an SRS, use only genuine new ROVER parts.
- Never attempt to modify, splice, or repair SRS wiring.

NOTE: SRS wiring can be identified by its yellow or black with yellow stripe outer protective covering.





Remove

1. Remove key from starter switch, disconnect both battery leads, earth lead first, and wait 10 minutes for the SRS back-up circuit to discharge before commencing work.
2. Remove fascia. *See BODY, Interior trim components.*
3. Remove carpet. *See BODY, Interior trim components.*
4. Remove steering column nacelle. *See STEERING, Repairs.*
5. Remove quarter panel companion boxes. *See BODY, Interior trim components.*
6. Release and disconnect multiplugs from seat belt pre-tensioners.
7. Release pre-tensioner leads from companion box panels.
8. Disconnect multiplug from SRS control unit.
9. Raise rear seat cushion and release 6 harness clips.
10. Remove bolt securing SRS harness earth lead to body.
11. Release 2 clips securing SRS harness to bulkhead.
12. Release and disconnect multiplug from fuse box feed.
13. Disconnect multiplug from rotary coupler.
14. Remove 2 cable ties securing SRS harness to steering column.
15. Remove 2 clips securing SRS harness to body.
16. Remove 5 cable ties securing SRS harness to bulkhead and remove SRS harness.
17. Remove clips from harness.

Refit

1. Fit NEW clips to harness.
2. Fit harness to vehicle.

 **CAUTION: Always ensure SRS harness is routed correctly. Avoid trapping or pinching the SRS harness. Look out for possible points of chafing.**

3. Route the harness to position and secure with cable ties.
4. Connect harness to rotary coupler and secure to steering column with cable ties.
5. Connect harness multiplug to fuse box.
6. Secure SRS harness clips to bulkhead.
7. Secure SRS harness clips to rear seat pan.
8. Connect harness multiplug to SRS control unit.
9. Fit bolt securing harness earth lead to body and tighten to 10 Nm.
10. Fit harness leads through companion box panels, secure grommets and connect seat belt pre-tensioner multiplugs.
11. Position rear seat cushion.

 **CAUTION: Ensure all SRS harness connectors are mated correctly and securely fastened. Do not leave the connectors hanging loose.**

12. Fit rear quarter companion boxes. *See BODY, Interior trim components.*
13. Fit steering column nacelle. *See STEERING, Repairs.*
14. Fit carpet. *See BODY, Interior trim components.*
15. Fit fascia. *See BODY, Interior trim components.*
16. Connect battery leads, earth lead last.
17. Carry out system check by turning the ignition on and checking that the SRS warning light illuminates then extinguishes after 3 seconds.

