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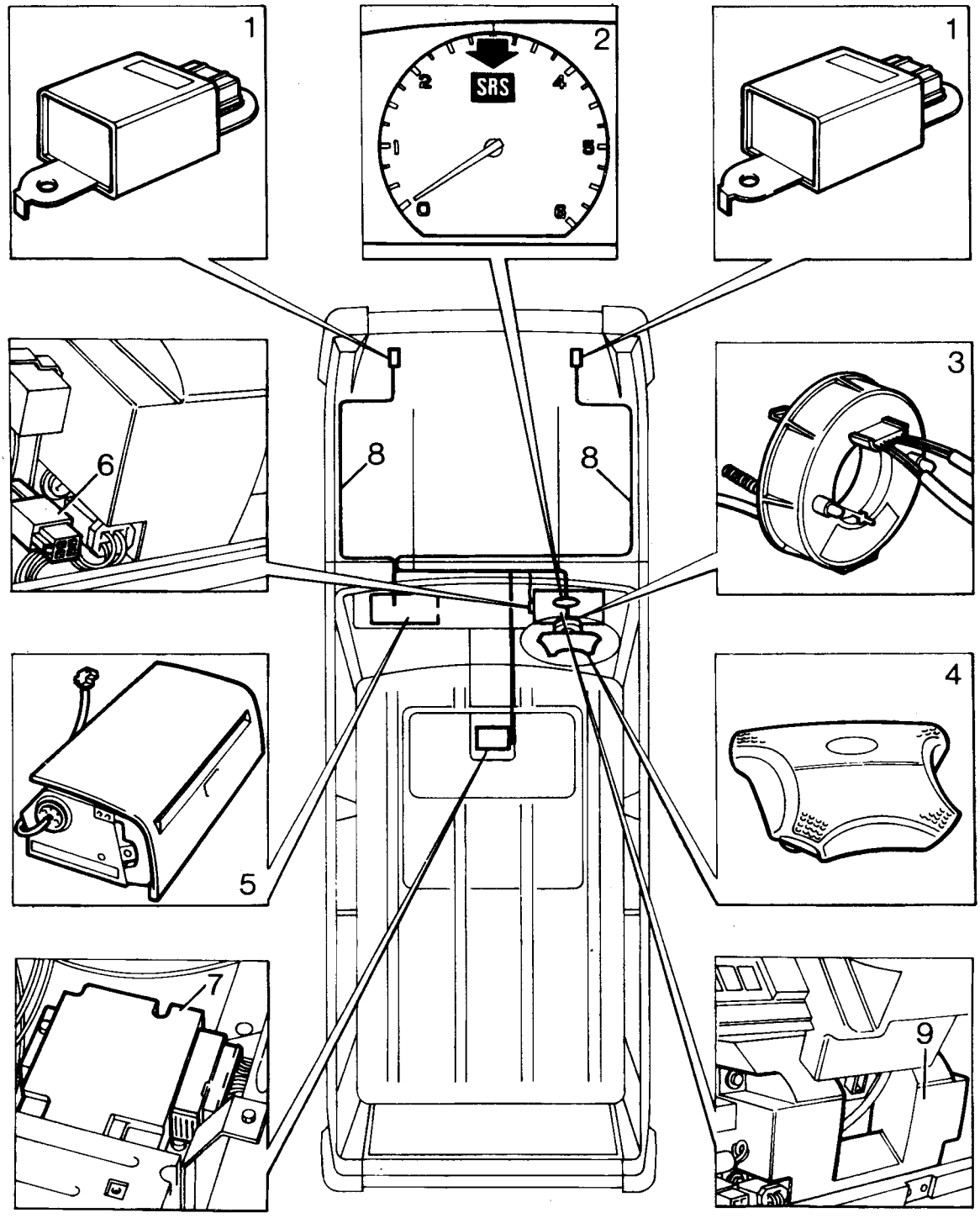

RR4231

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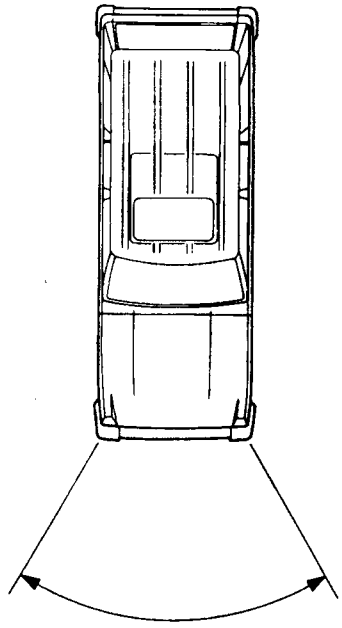
OPERATION

The airbag supplementary restraint system (SRS) is a safety device which, when used in conjunction with the seat belt, is designed to protect the driver and front passenger by operating when the vehicle receives a frontal impact (in the area indicated) exceeding a certain set speed.



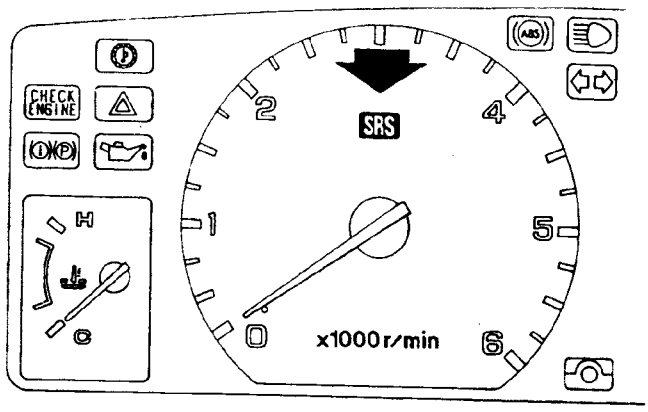
RR4232

In the event of a frontal impact, when the airbag diagnostic control unit and one of the airbag crash sensors senses the impact, the diagnostic control unit fires igniters. This in turn ignites tablets of sodium azide which generate a large amount of Nitrogen gas leading to airbag inflation in approximately 30 milli-seconds.

When fully deployed the airbag offers additional protection to the front seat occupant. As an occupant moves into the airbag it immediately discharges the gas to provide progressive occupant deceleration and reduce risk of injuries. The whole process is completed in approximately 0.3 seconds.

WARNING: All the airbag system components, including the wiring harness, MUST be renewed after the airbags have deployed.

SRS warning light (airbag)

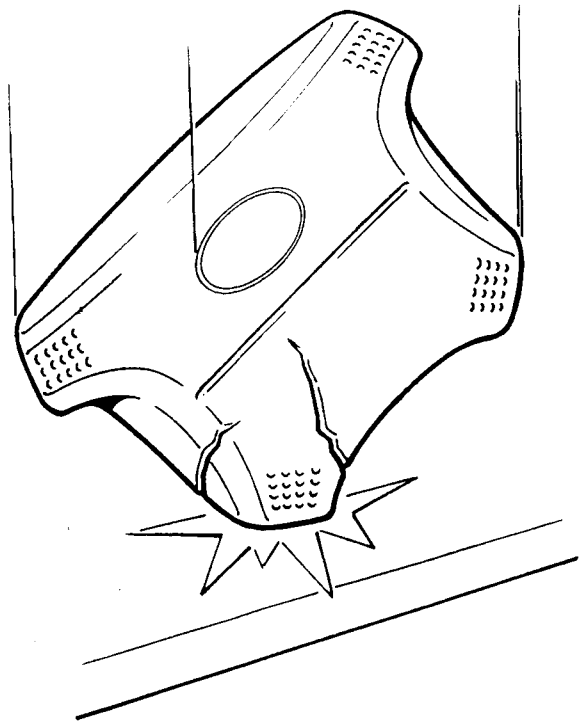


RR4233

The warning light in the instrument pack illuminates after the electrical circuits are switched on whilst a system check is carried out. After about 8 seconds the warning light will go out. The system checks airbag diagnostic control unit, airbag crash sensors, airbag harness, driver and passenger modules.

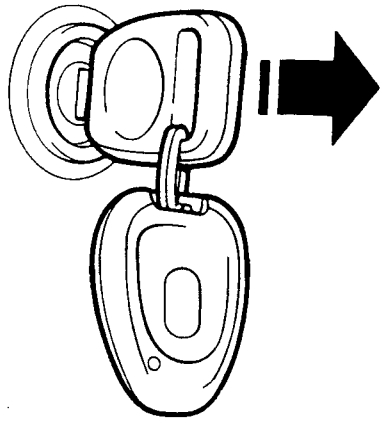
In the event of a fault in the system the warning light will illuminate and begin modulating. The airbag diagnostic control unit logs the fault which can only be accessed using TestBook.

GENERAL PRECAUTIONS



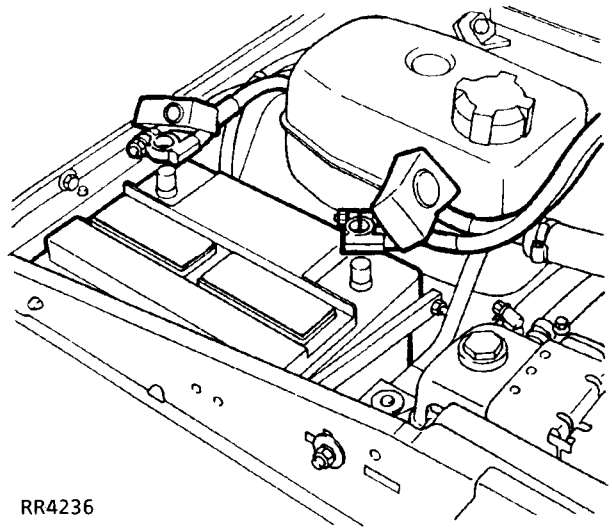
RR4234

1. Carefully inspect any airbag part before installing. Do not install any part that shows signs of being dropped or improperly handled, such as dents, cracks or deformation.



RR4235

2. Always remove the key from the starter switch before beginning work.

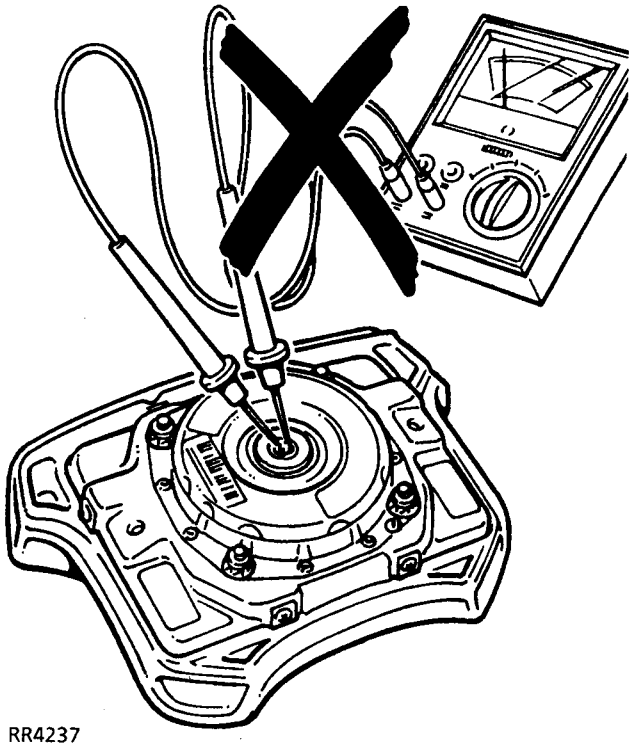


RR4236

3. Always disconnect both the negative '-' cable and positive '+' cable at the battery before removal of driver or passenger airbag modules. Disconnect the negative cable first.

⚠ **CAUTION: The airbag system has sufficient stored energy to deploy airbags for up to 20 minutes**

4. To continue work immediately, disconnect the driver's airbag and passenger's airbag (where fitted).
5. Do not try to dismantle the airbag module. There are NO separately serviceable parts. Once an airbag has been deployed, it cannot be repaired or reused.
6. Do not install used airbag parts from another vehicle. When repairing, use only new airbag parts.



RR4237

7. Do not use electrical test equipment on the airbag harness or connectors. Tampering with or disconnecting the harness could result in accidental firing of the airbag or make the system inoperative, which may result in serious injury.
8. **An airbag system fault can only be diagnosed using TestBook.**
9. The airbag module contains Sodium Azide which is poisonous and extremely flammable. Contact with water, acid or heavy metals may produce harmful or explosive compounds. Do not dismantle, incinerate or bring into contact with electricity.

VEHICLE RECOVERY

Towing - airbag not deployed

Normal towing procedures are unlikely to cause an airbag to deploy. However, as a precaution switch the ignition off and then disconnect both battery leads. Disconnect the negative '-' lead first.

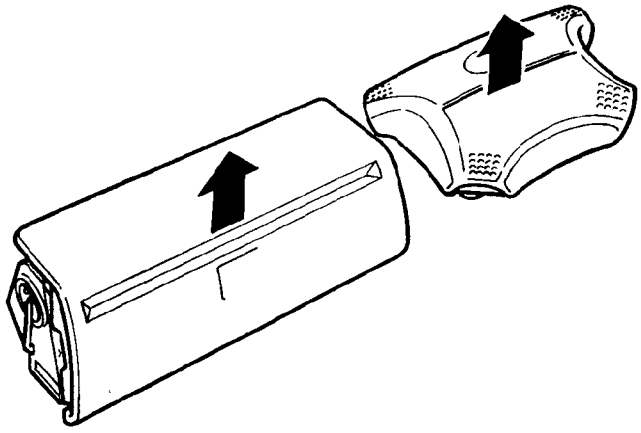
Towing - airbag deployed

Once the driver's airbag has been deployed the vehicle must have a front suspended tow. However, as a precaution switch the ignition off and then disconnect both battery leads. Disconnect the negative '-' lead first.

AIRBAG STORAGE

Temporary storage

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



RR4017

Store the airbag module with the pad surface up.

Place the airbag module in designated storage area. If no designated storage area is available, the module may be stored in the boot of the vehicle from which it was removed. Always lock the boot when module is stored in it and inform workshop supervisor.

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

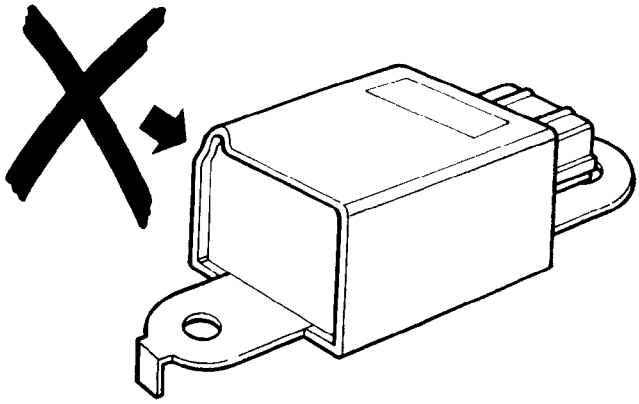
Store the removed airbag module on a secure flat surface away from heat, oil, grease, detergent or water.

CAUTION: Improper handling or storage can internally damage the airbag module, making it inoperative. If you suspect the airbag module has been damaged, install a new unit.

Overnight storage

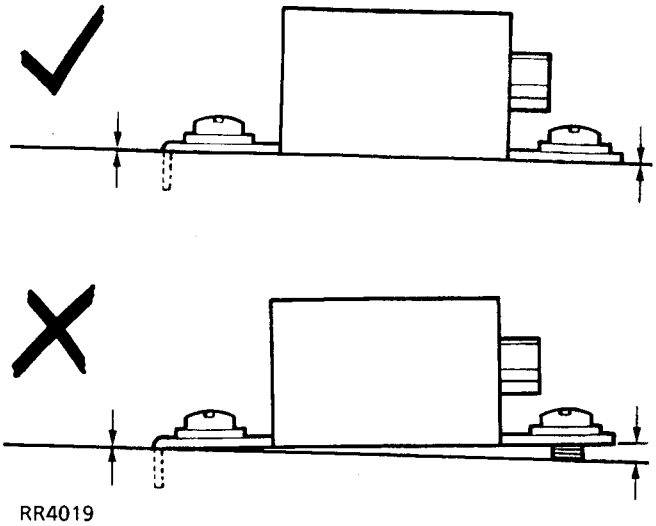
Airbag modules are classed as an explosive article and as such they must be stored in a secure steel cabinet which has been approved by the local authority.

CRASH SENSOR INSPECTION



RR4018

1. After any degree of front body damage, inspect both front crash sensors. Replace a sensor if there are any signs of dents, cracks or deformation.

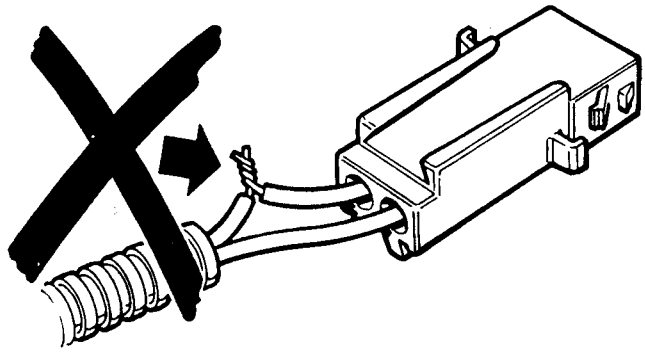


RR4019

2. Ensure the sensors are installed correctly. There must be no gap between the sensor and body of the vehicle. Use the fixing screws supplied with the sensor and tighten to the correct torque. Tighten front sensor fixing before rear sensor fixing.

CAUTION: Take extra care when painting or doing body work in the vicinity of the sensors. Avoid direct exposure of the sensors or harness to heat guns, welding or spraying equipment.

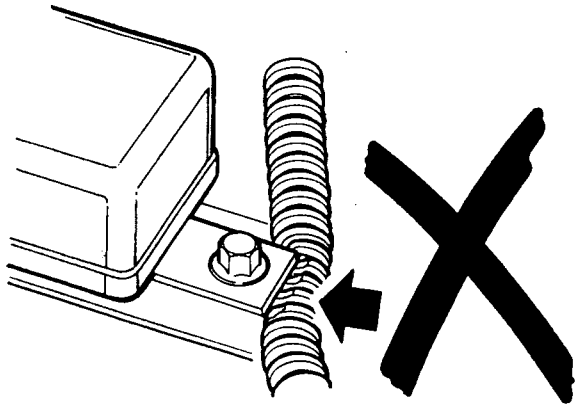
AIRBAG HARNESS



RR4020

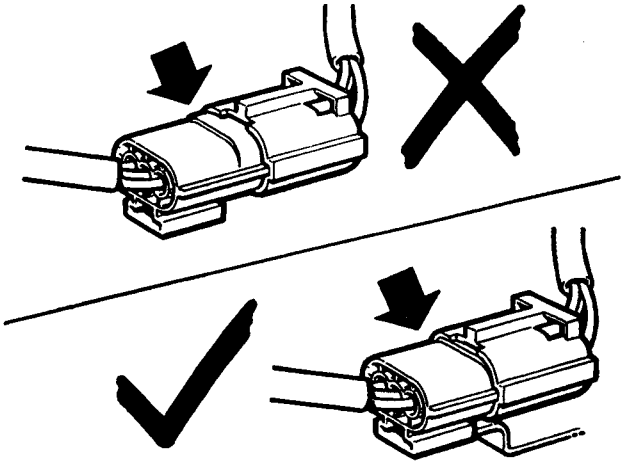
1. Never attempt to modify, splice or repair the airbag harness. Never install electronic equipment such as; a mobile telephone, two-way radio or in-car entertainment system in such a way that it interferes electrically with the airbag harness.

NOTE: The airbag harness can be identified by a special yellow outer protective covering.



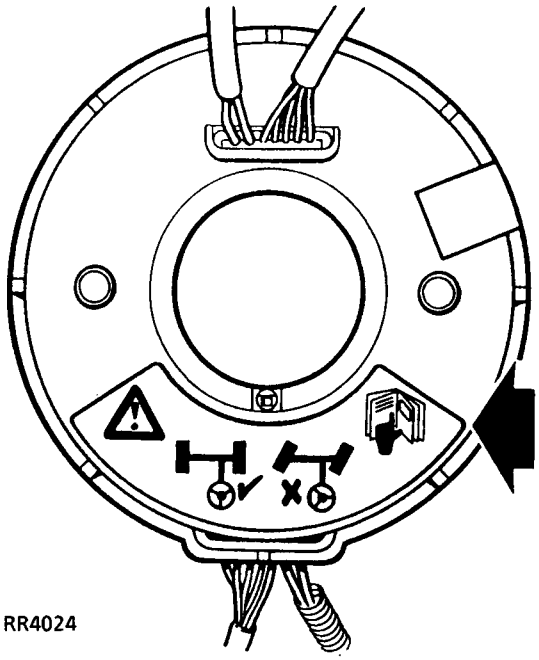
RR4021

2. Make sure the airbag harness is installed correctly and not pinched or trapped.



RR4022

3. Ensure all airbag harness connectors are mated correctly and securely fastened. Do not leave the connectors hanging loose.

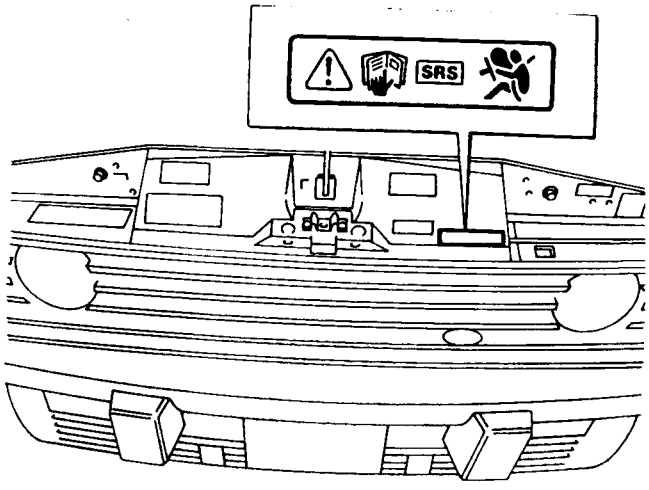


RR4024

2. Rotary coupler

CAUTION: Ensure wheels are straight ahead before removal and installation.

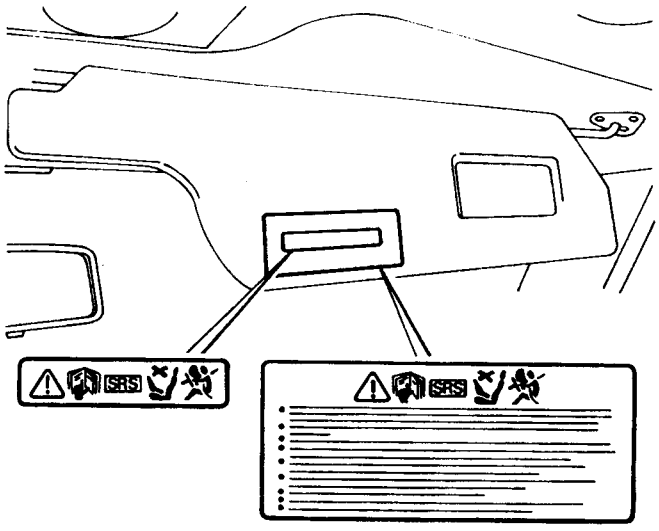
WARNING LABELS



RR4023

1. Bonnet locking platform

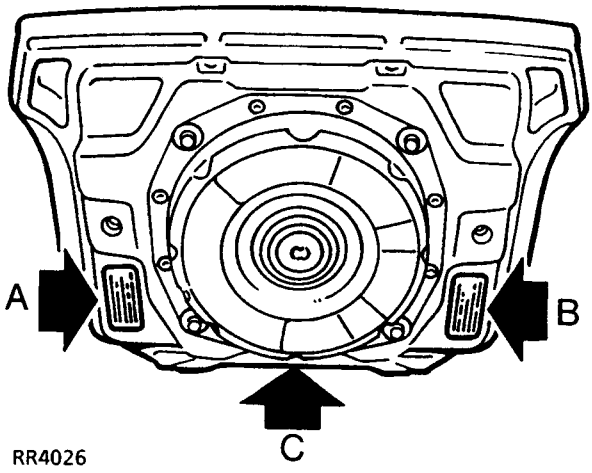
Refer to the Owner's Handbook for information on the airbag system.



RR4025

3. Driver's sun visor

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



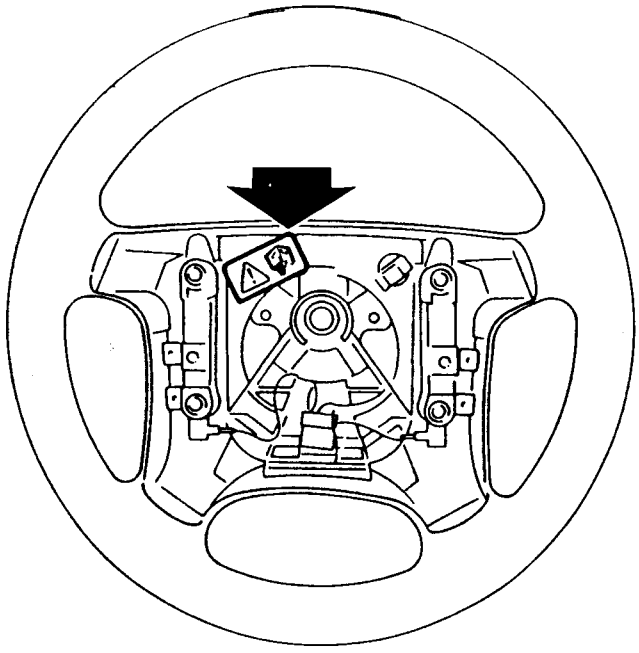
RR4026

4. Airbag modules

A - If defective, replace and dispose of the entire unit as directed in the instructions. Under no circumstances should a diagnosis be performed using electrically powered test equipment or probing devices.

B - Tampering or mishandling can result in personal injury. For special handling instruction refer to the Workshop manual. This airbag module cannot be repaired. Use diagnostic instructions to determine if the unit is defective.

C - ROVER Bar code - The code number must be recorded if the airbag module is to be replaced.



RR4027

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

CAUTION: Before and during any removal operations within the SRS section, note routing and position of all harnesses to aid correct refitting and to avoid accidentally trapping cables.

CAUTION: During refitting of any item within the SRS section, always ensure connectors are fully engaged and latched before proceeding to the next stage of the operation.

DRIVER'S AIRBAG MODULE

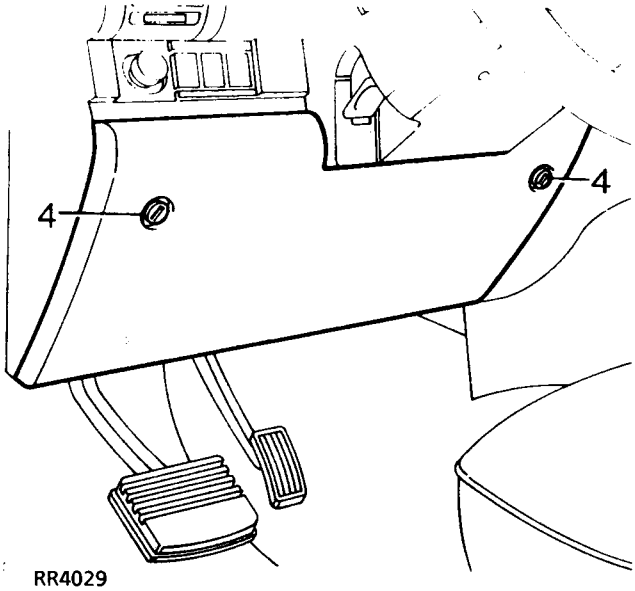
Service repair no - 76.74.01

WARNING: All the airbag system components, including the wiring harness, MUST be renewed after the airbags have deployed.

Remove

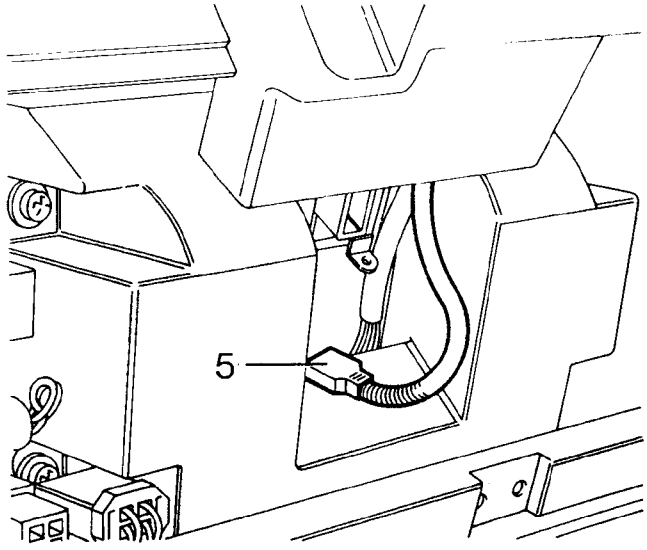
1. Turn steering wheel 90° from horizontal.
2. Switch off ignition.
3. Disconnect battery negative '-' and then the positive '+' lead.

CAUTION: Always disconnect both leads.



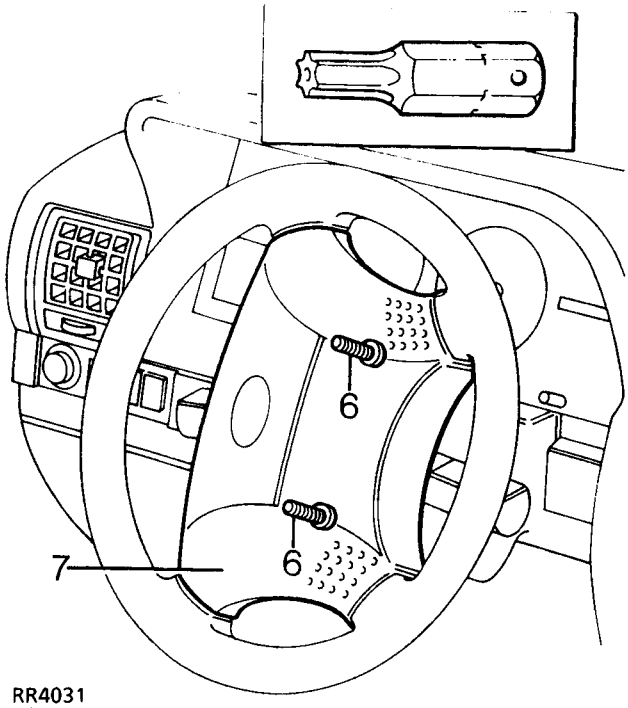
RR4029

4. Release 2 turnbuckles and remove dash lower panel.



RR4030

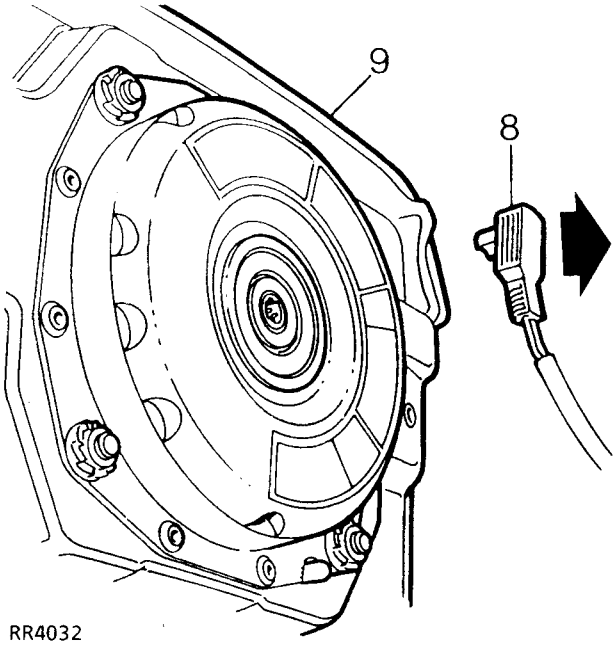
5. Disconnect airbag harness connector from yellow airbag column harness.



RR4031

6. Use special socket, unscrew 2 tamper-proof Resistorx screws securing airbag module to steering wheel.
7. Release airbag module from steering wheel.

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



RR4032

8. Disconnect harness connector from airbag module.
9. Remove airbag module.

CAUTION: Store the airbag module in accordance with the storage procedures outlined in Description and Operation.

NOTE: If airbag module is to be replaced the serial numbers must be recorded in the vehicle service record.

Refit

10. Reverse removal procedure.
11. Connect harness connector to airbag module with harness downwards (as shown at 8).
12. Position airbag module on steering wheel and engage retained screws. Use special socket to tighten screws to ***8Nm.***

CAUTION: Take care not to cross thread screws.

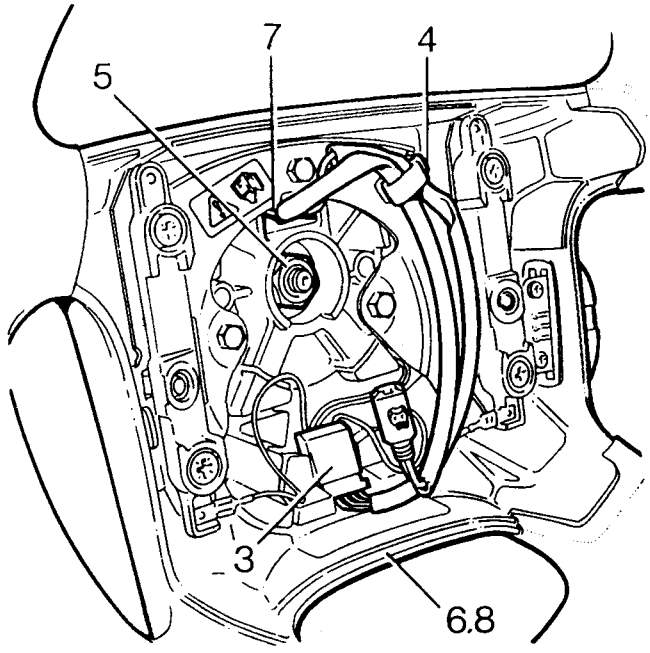
13. Check Supplementary Restraint System using **Testbook** .

STEERING WHEEL

Service repair no - 57.60.01

Remove

1. Remove driver's airbag module. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Driver's Airbag Module***
2. Position steering wheel so the road wheels are in the straight ahead position.



RR4033

3. Disconnect cruise control switch connector (where fitted) from rotary coupler harness.
4. Release harnesses from clip on steering wheel.
5. Remove steering wheel nut.
6. Release steering wheel from column.
7. Feed harnesses through hole in steering wheel.
8. Remove steering wheel.

CAUTION: Prevent rotation of rotary coupler once steering wheel is removed. Secure in position with adhesive tape.

Refit

9. Reverse removal procedure.

CAUTION: Ensure road wheels are straight ahead before fitting steering wheel.

10. Fit steering wheel ensuring the rotary coupler lugs are correctly engaged.
11. Fit steering wheel nut. Tighten to ***50Nm.***
12. Refit driver's airbag module. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Driver's Airbag Module***

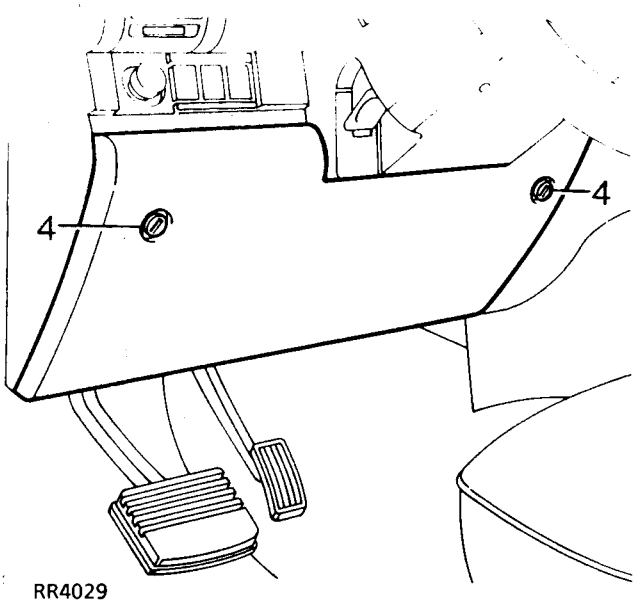
ROTARY COUPLER

Service repair no - 19.75.54

CAUTION: Ensure wheels are straight ahead before removal and refitting. Store in plastic bag. DO NOT rotate mechanism whilst removing.

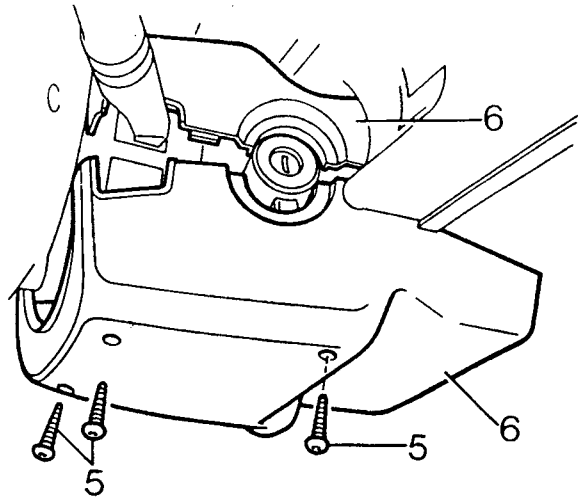
Remove

1. Remove driver's airbag module. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Driver's Airbag Module***
2. Remove steering wheel. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Steering Wheel***
3. Release lever and lower steering column.



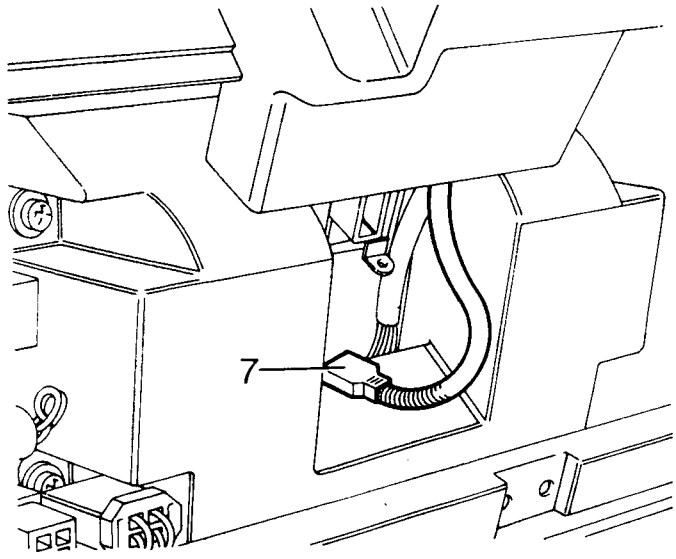
RR4029

4. Release 2 turnbuckles and remove lower dash panel.



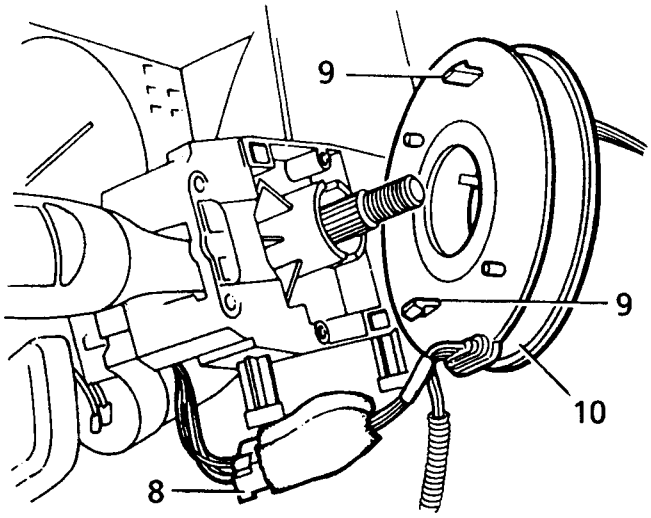
RR4034

5. Remove 3 screws securing lower half of nacelle to steering column.
6. Separate the 2 halves of the nacelle and remove from steering column.



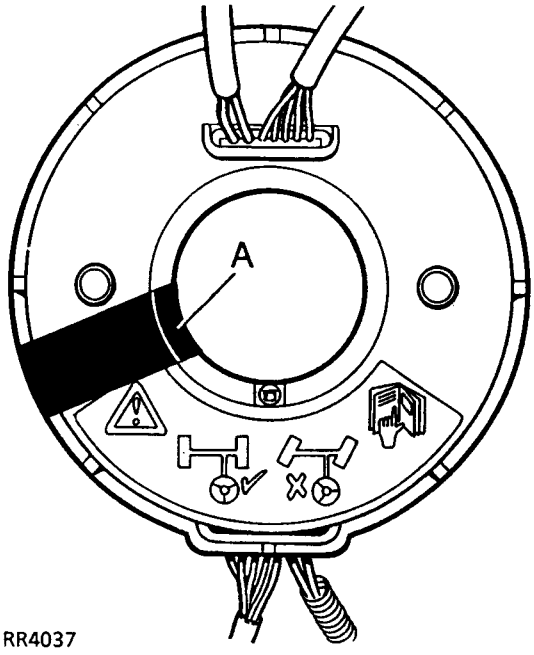
RR4035

7. Release airbag harness connector from bracket and disconnect.



RR4036A

8. Disconnect rotary coupler connector from steering column harness.
9. Release 2 clips securing rotary coupler to column switch assembly.
10. Remove rotary coupler from column switch assembly.



RR4037

11. If rotary coupler is being re-used, place a piece of adhesive tape around moulding in position **A** to prevent rotation.

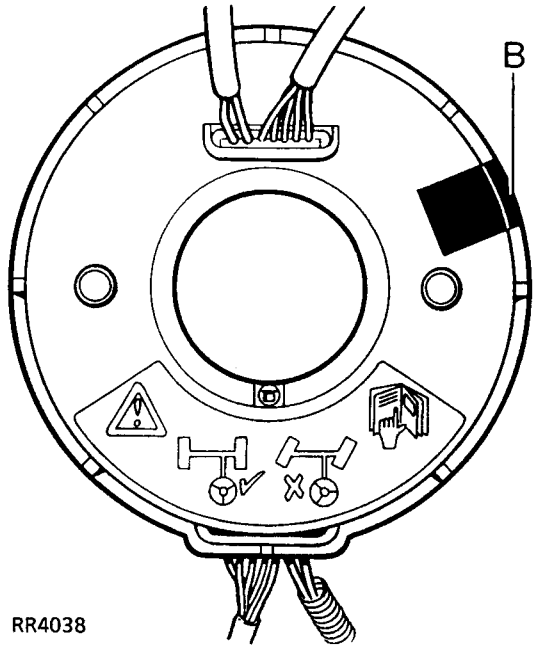
Refit

12. Reverse removal procedure.

⚠ **CAUTION: Ensure indicator cancellation pegs correctly engage into back of steering wheel.**

13. Align direction indicator cancellation bush. If original rotary coupler is being fitted remove adhesive tape and then fit rotary coupler to column switch assembly.

△ **NOTE: If original rotary coupler is to be fitted and there is evidence of tampering, it is imperative that the coupler is centralised.** ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Rotary Coupler centralise***



RR4038

14. If a new rotary coupler is being fitted and the sealing tape at position **B** is broken it MUST NOT be used.
15. Refit steering wheel. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Steering Wheel***
16. Turn steering wheel to both LH and RH lock 5 times. If adverse noises can be heard, check alignment of indicator cancellation pegs.
17. Refit driver's airbag module. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Driver's Airbag Module***

ROTARY COUPLER CENTRALISE

Fitting a rotary coupler which has not been centralised could result in tape breakage. If the tape is broken, a new rotary coupler must be fitted.

Providing the removal procedure has been correctly followed this operation should not be necessary. If however there is evidence of tampering, it is imperative that the coupler is centralised.

⚠ **CAUTION: Ensure wheels are positioned straight ahead before fitting the rotary coupler.**

1. Correctly fit rotary coupler to column switch assembly but do not fit steering wheel or make any electrical connections. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Rotary Coupler***
2. Depress rotary coupler locking peg and without using undue force, rotate coupler anti-clockwise as far as inner tape will allow. Releasing peg will lock coupler in its current position.

⚠ **NOTE: Do not apply excessive force when limit is reached as this may result in tape breakage. If no limit can be found, tape has already broken and rotary coupler must be replaced.**

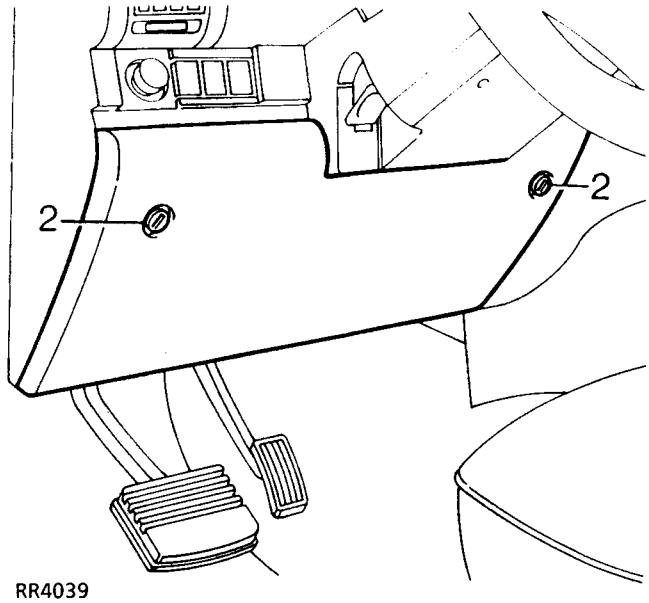
3. Having turned rotary coupler fully anti-clockwise to limit position, proceed to turn coupler 2.5 turns clockwise to obtain central position. (Coupler will normally rotate a full five turns from anti-clockwise limit to clockwise limit).
4. Make necessary electrical connections and refit steering wheel. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Steering Wheel***
5. Refit driver's airbag module. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Driver's Airbag Module***

COLUMN SWITCH ASSEMBLY

Service repair no - Indicator/lighting - 86.65.55
Service repair no - Wash/wipe - 84.15.34

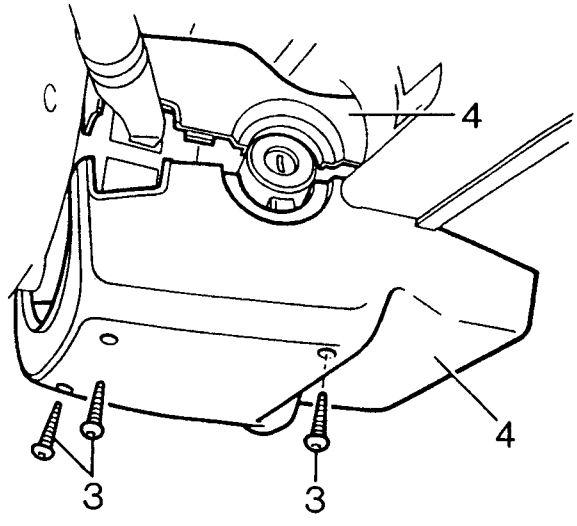
Remove

1. Remove steering wheel. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Steering Wheel***



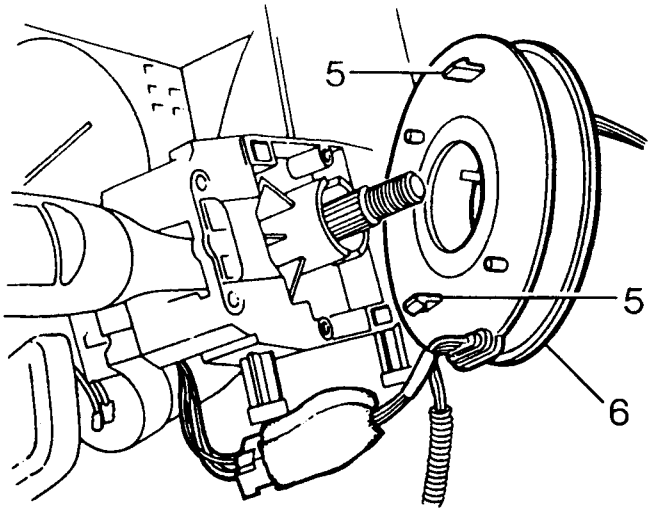
RR4039

2. Release 2 turnbuckles and remove lower dash panel.



RR4040

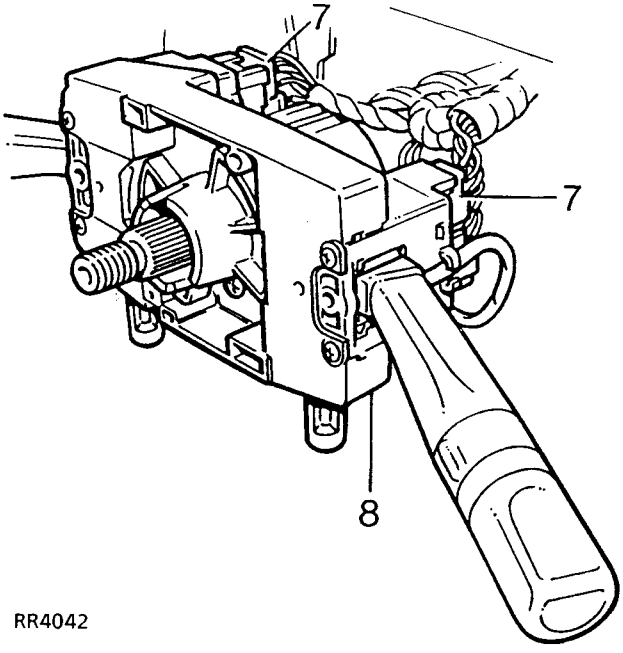
3. Remove 3 screws securing lower half of nacelle to steering column.
4. Separate the halves of the nacelle and remove from steering column.



RR4041

5. Release 2 clips securing rotary coupler to column switch assembly.
6. Release rotary coupler.

CAUTION: Do not allow rotary coupler to hang on its harness.



RR4042

7. Disconnect 4 connectors from column switch assembly.
8. Remove column switch assembly from steering column.

Refit

9. Reverse removal procedure.

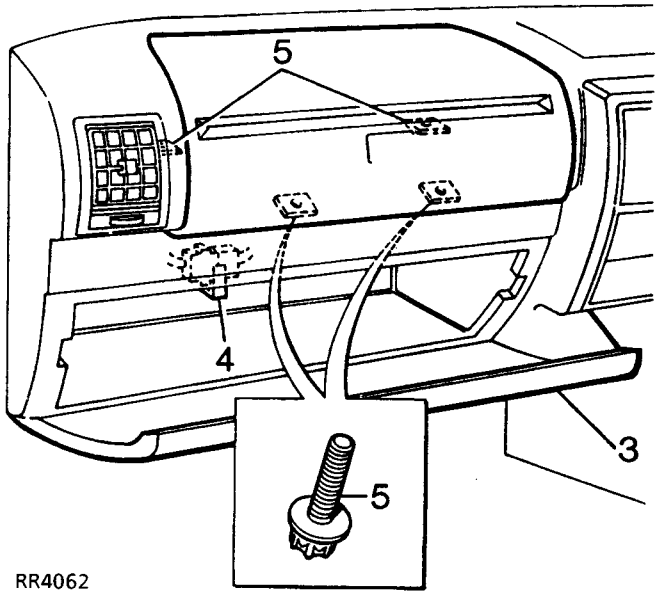
PASSENGER'S AIRBAG MODULE

Service repair no - 76.74.02

WARNING: All the airbag system components, including the wiring harness, MUST be renewed after the airbags have deployed.

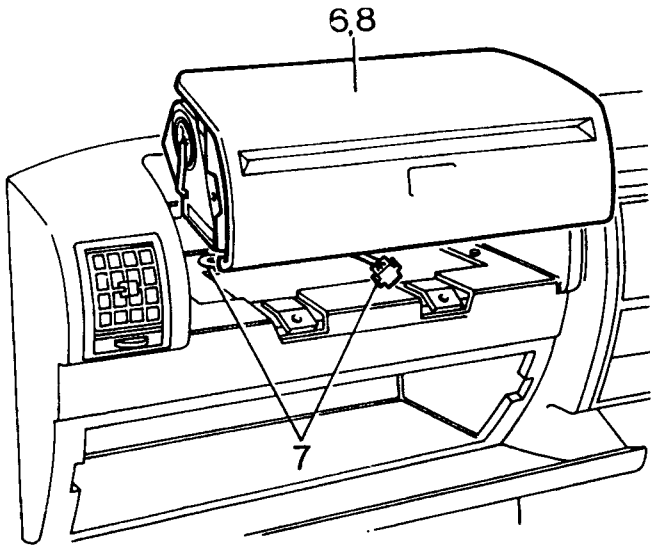
Remove

1. Switch off ignition.
2. Disconnect battery negative lead and then positive lead.



RR4062

3. Open glovebox and disconnect harness connector from airbag module.
4. Use special socket and long extension, remove 2 torx head screws securing front of airbag module to fascia panel.
5. Use special socket, remove 2 torx head screws securing rear of airbag module to fascia panel.



RR4043

6. Release airbag module from fascia panel.

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

7. Carefully and without pullling on connector remove airbag module.

CAUTION: Store the airbag module in accordance with the storage procedures outlined in Description and Operation.

NOTE: If airbag module is to be replaced the serial number must be recorded in the vehicle service record.

Refit

8. Reverse removal procedure.
9. Tighten airbag module securing screws to ***8 Nm.***

CAUTION: Take care not to cross thread screws.

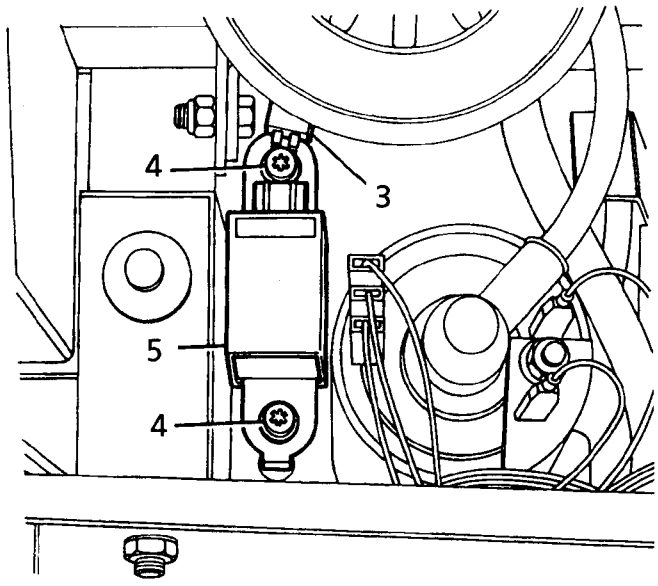
10. Check Supplementary Restraint System using **Testbook.**

CRASH SENSOR

Service repair no - 76.74.04

Remove

1. Disconnect battery negative lead.
2. **LH sensor only:**Slacken power steering reservoir clamp and lift reservoir to provide access.
   Diesel model only: Remove jack and mounting bracket.



RR4044A

3. Disconnect multiplug from sensor

CAUTION: Ensure airbag harness connector seal and anti-backout DO NOT come adrift when disconnecting sensor.

4. Use special socket, remove 2 screws securing crash sensor to body.
5. Remove crash sensor.

Refit

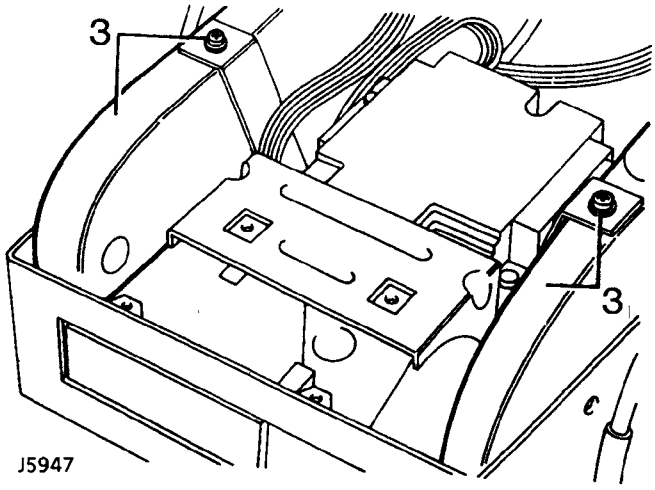
6. Reverse removal procedure.
7. Tighten crash sensor securing screws to ***10Nm.*** Ensure multiplug is fully engaged on sensor and retained by its latch.
8. Check Supplementary Restraint System using **Testbook.**

AIRBAG DIAGNOSTIC CONTROL UNIT

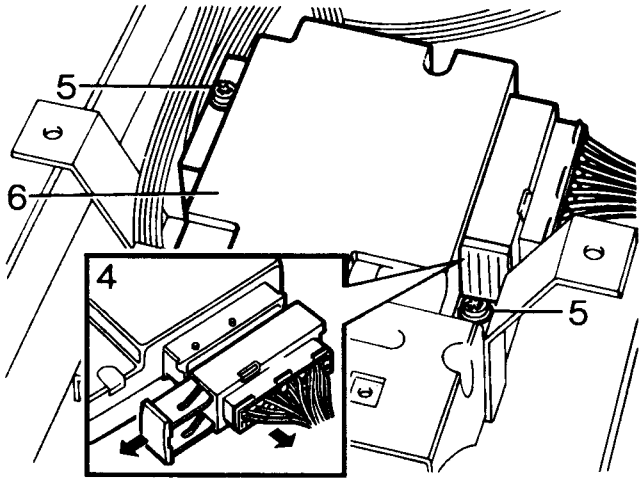
Service repair no - 76.73.72

Remove

1. Disconnect battery negative lead.
2. Remove centre console assembly. ***See Centre Console***



3. Remove 4 screws and release the 2 rear passenger air ducts from their fitted position and remove centre console mounting bracket.



4. Use flat ended screwdriver and release YELLOW retainer, pull retainer 30mm from multiplug and disconnect airbag harness multiplug from airbag control unit.
5. Use special socket, remove 2 screws securing airbag control unit to body bracket.
6. Remove airbag diagnostic control unit.

Refit

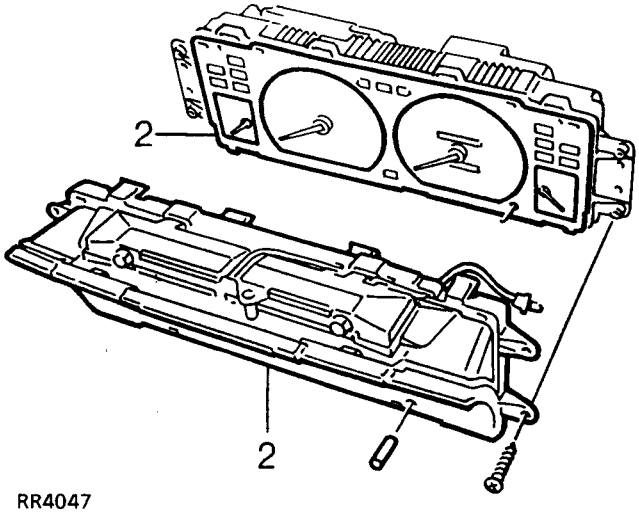
7. Reverse removal procedure.
8. Tighten control unit securing screws to ***10Nm.***
9. Check Supplementary Restraint System using **Testbook.**

SRS WARNING LIGHT BULBS

Service repair no - 76.73.74

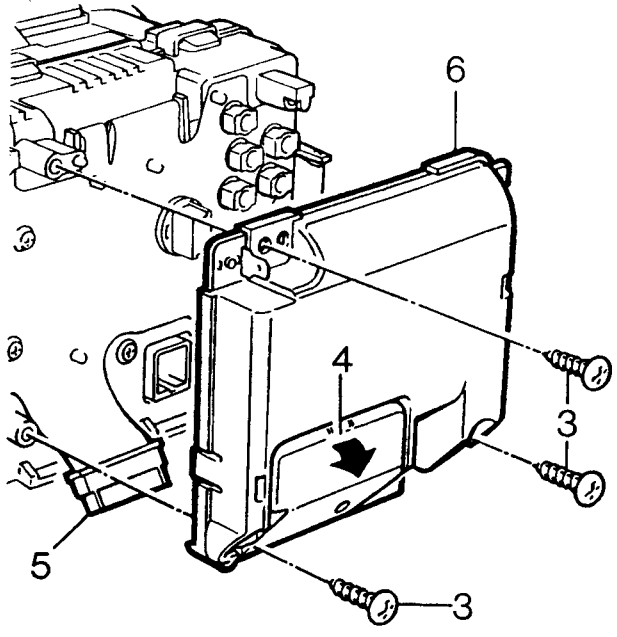
Remove

1. Remove instrument binnacle. ***See ELECTRICAL, Repair, Instrument Binnacle***



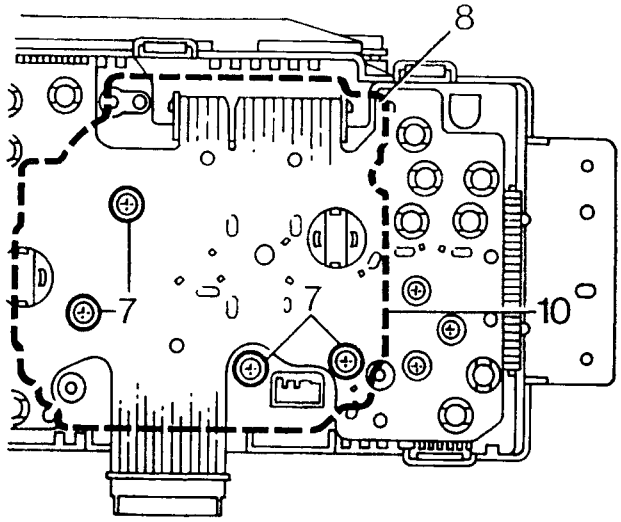
RR4047

2. Remove window and face plate from instrument panel.



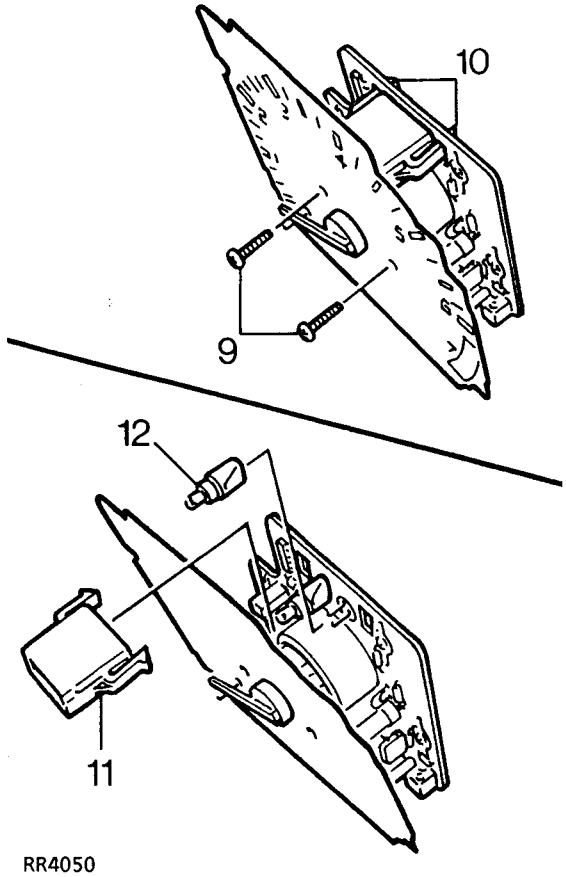
RR4048

3. Remove 3 screws securing ECU to instrument panel.
4. Release and remove small cover from ECU.
5. Disconnect multiplug from ECU.
6. Remove ECU



RR4049

7. Remove 4 screws securing tachometer.
8. Remove tachometer.



RR4050

9. Carefully remove 2 screws securing face plate to tachometer.
10. Release warning light housing from tachometer circuit board.
11. Carefully (to avoid damage to tachometer needle and spindle), tilt and remove warning light housing.
12. Remove 2 warning light bulbs

Refit

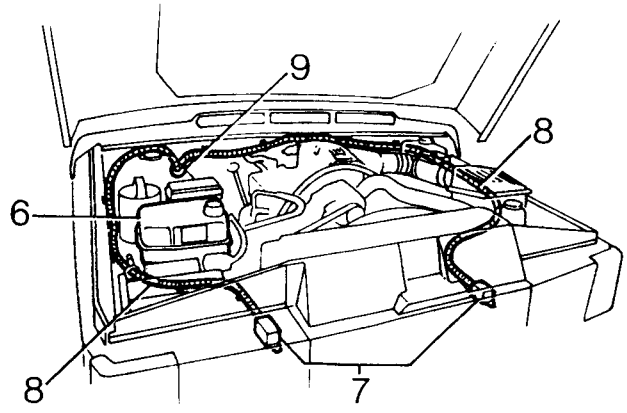
13. Reverse removal procedure.
14. Fit new warning light bulbs
15. Carefully fit warning light housing, ensuring that locating pegs engage correctly and that retaining clips lock housing into position.
16. Ensure that tachometer needle is on the correct side of its stop.
17. Fit instrument panel. ***See ELECTRICAL, Repair, Instrument Binnacle***

AIRBAG HARNESS

Service repair no - 76.70.63

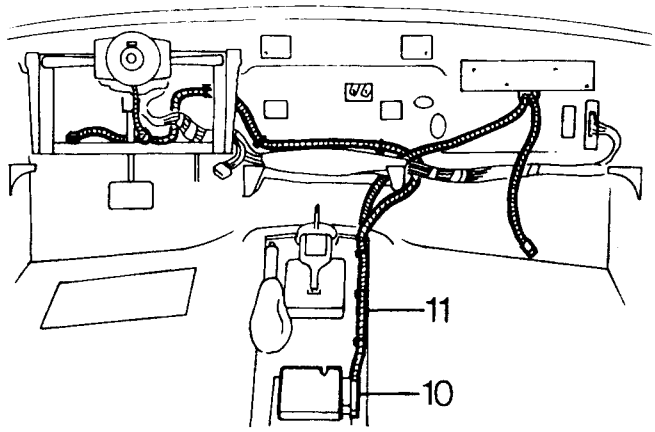
Remove

1. Remover driver's airbag. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Driver's Airbag module***
2. Remover passenger's airbag. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Passenger's Airbag Module***
3. Remove fascia panel assembly. ***See Dash Panel Assembly***
4. Remove heater blower unit. ***See HEATING AND VENTILATION, Repair, Blower Motor Unit - Heater and Air Conditioning***
5. Remove heater and cooler unit. ***See AIR CONDITIONING, Repair, Heater and Cooler Unit***



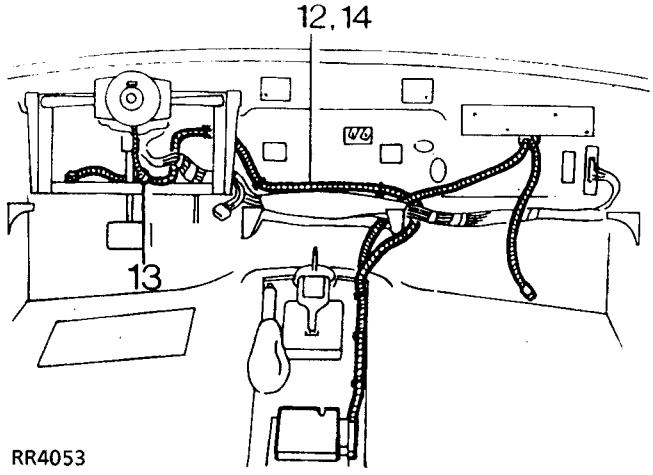
RR4051

6. Remove 3 screws securing expansion tank and position expansion tank aside.
7. Disconnect multiplug from each crash sensor.
8. Release airbag harness from clips and ties along the bulkhead and each valance.
9. Displace airbag harness grommet to inside of bulkhead and feed harness through bulkhead.



RR4052

10. Disconnect multiplug from airbag control unit.
11. Release airbag harness from under carpet.



RR4053

12. Release ties securing harness along toeboard.
13. Disconnect steering wheel airbag multiplug.
14. Release airbag harness from driver's side and remove.

Refit

15. Reverse removal procedure.

CAUTION: Ensure harness is correctly routed in harness protector and that all securing clips and ties are correctly engaged and harness is undamaged. Ensure all connections are fully engaged and retained by their latches.

AIRBAG MANUAL DEPLOYMENT

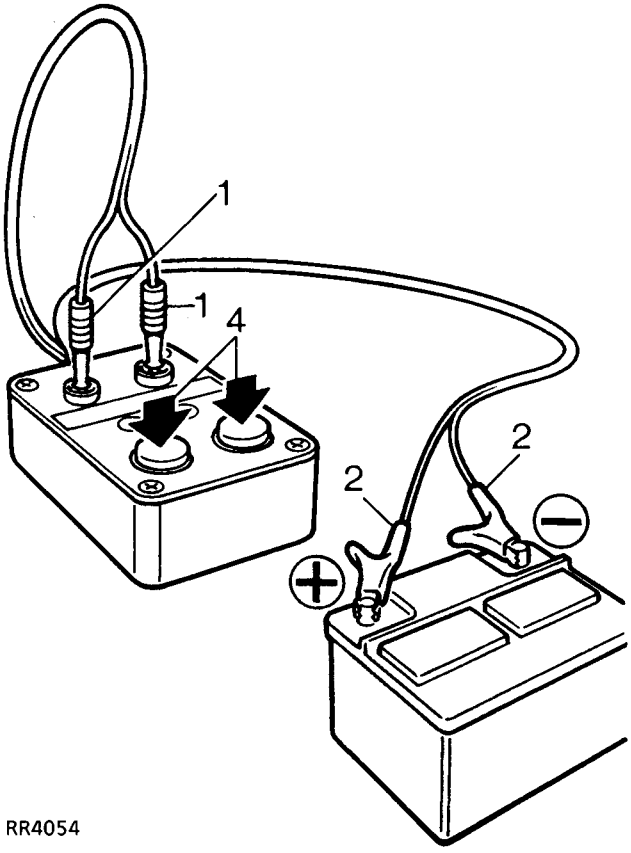
Service repair no - 76.73.00 - Fitted to vehicle
Service repair no - 76.73.00 - Removed from vehicle

CAUTION: Deployment in the vehicle will damage the steering wheel; if the vehicle is not being scrapped deploy the module away from the vehicle in accordance with the separate procedure.

If a vehicle is to be scrapped and contains an undeployed airbag module, the module 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



RR4054

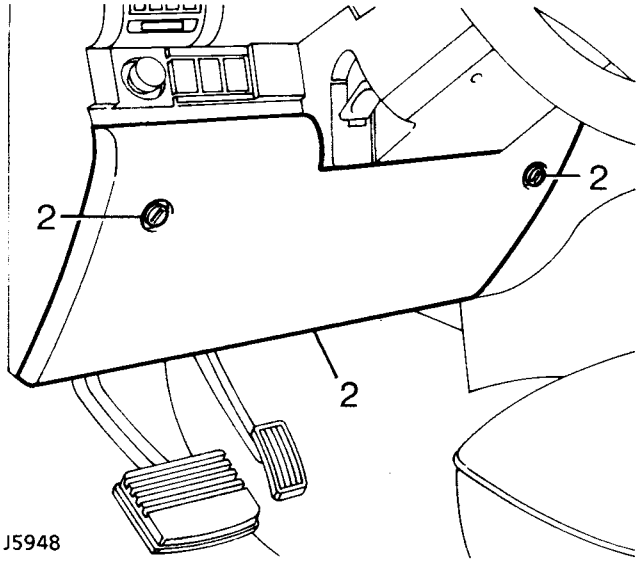
1. Insert BLUE and YELLOW connectors of tool lead into corresponding sockets on face of tool.
2. Connect crocodile clips of second tool lead to battery, RED to positive and BLACK to negative.
3. RED "READY" light should illuminate.
4. Press and hold both operating buttons.
5. GREEN "DEFECTIVE" light 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 with module fitted to vehicle

These guidelines are written to aid authorised personnel to carry out the safe disposal of the airbag module when fitted to the vehicle.

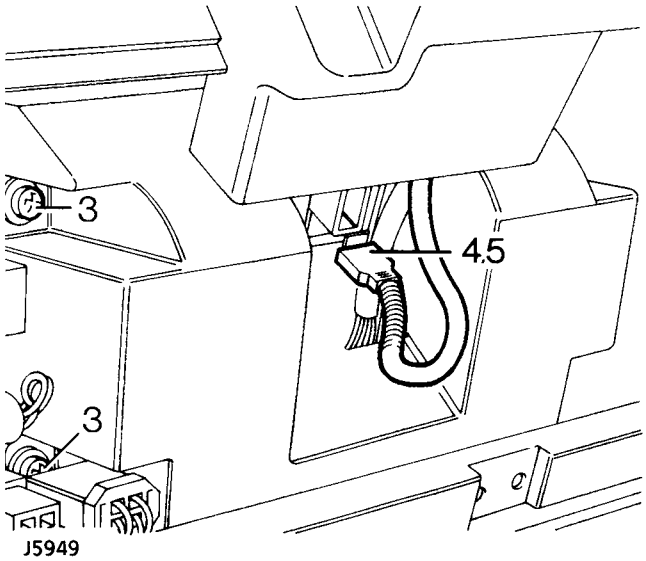
WARNING: Only use the LAND ROVER approved deployment equipment. Deploy airbag module in a well ventilated designated area. Ensure airbag module is not damaged or ruptured before deploying.

1. Carry out deployment tool self test.



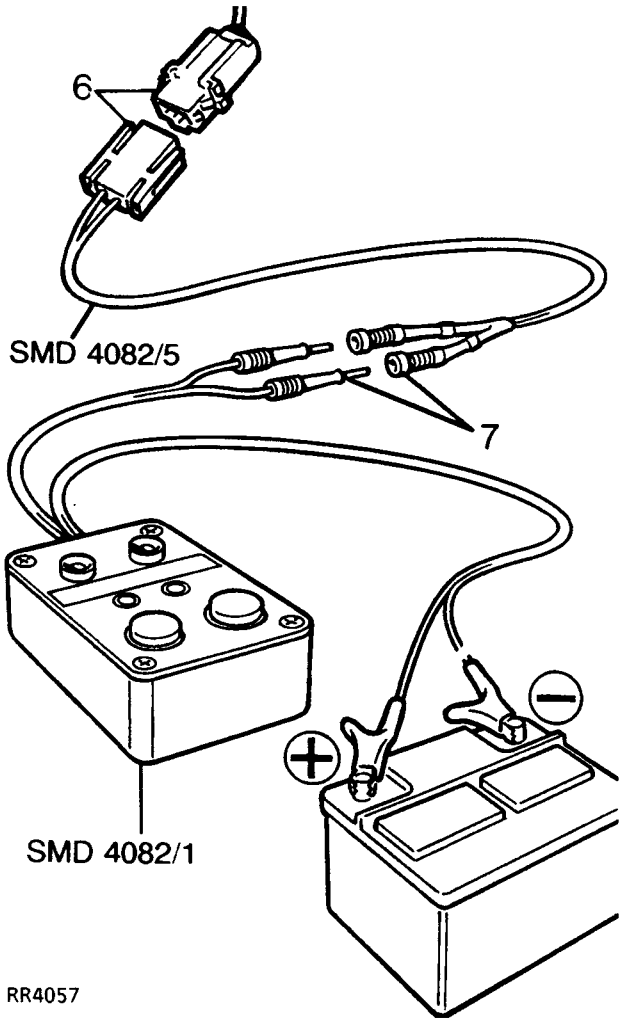
J5948

2. Release 2 turnbuckles securing lower panel to dash, remove lower panel.



J5949

3. Knee bolster (where fitted); Remove 4 screws and withdraw kneebolster.
4. Release airbag harness to column harness connector from bracket.
5. Disconnect airbag harness connector from column harness.



RR4057

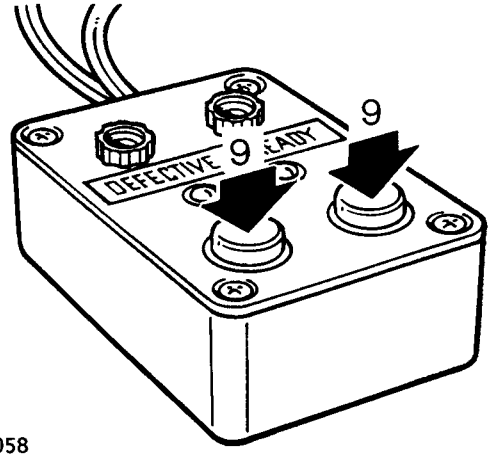
WARNING: Ensure tool is not connected to battery.

6. Connect flylead **SMD 4082/5** to column harness connector.
7. Connect flylead **SMD 4082/5** to tool **SMD 4082/1.**

WARNING: Ensure airbag module is secure within steering wheel.

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

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



RR4058

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 steering wheel, place airbag module in plastic bag and seal bag.
12. Transport deployed airbag module to designated area for incineration.

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

13. Scrap all remaining parts of airbag system. **DO NOT** re-use or salvage any parts of the airbag system including steering wheel.

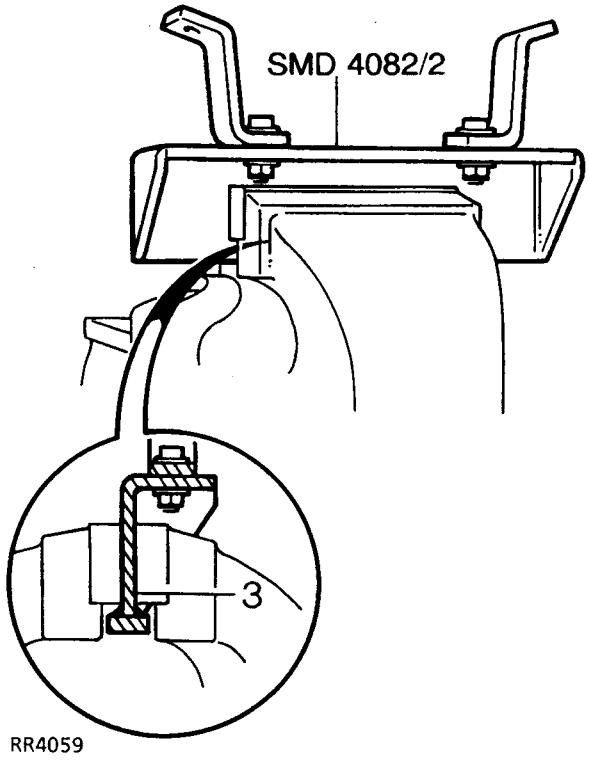
Deployment with module removed from vehicle.

Driver's Airbag Module

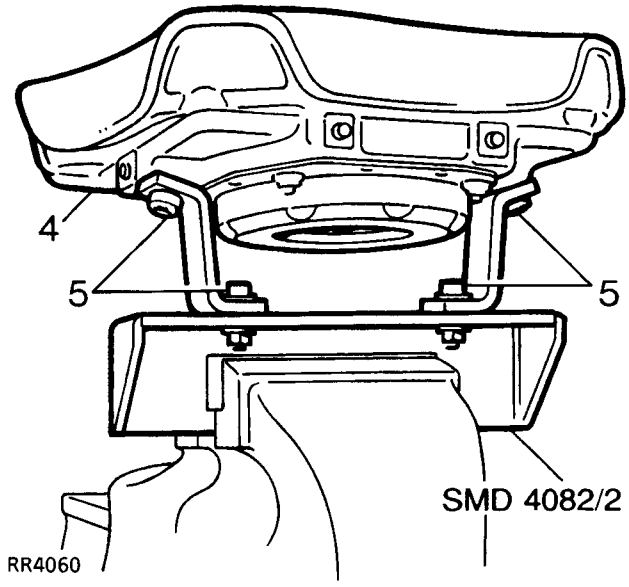
These guidelines are written to aid authorised personnel to carry out the safe disposal of airbag modules when removed from the vehicle.

WARNING: Only use the LAND ROVER approved deployment equipment.
Deploy airbag modules in a well ventilated designated area.
Ensure airbag module is not damaged or ruptured before deploying.

1. Carry out deployment tool self test.
2. Remove airbag module from steering wheel. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Driver's Airbag Module***

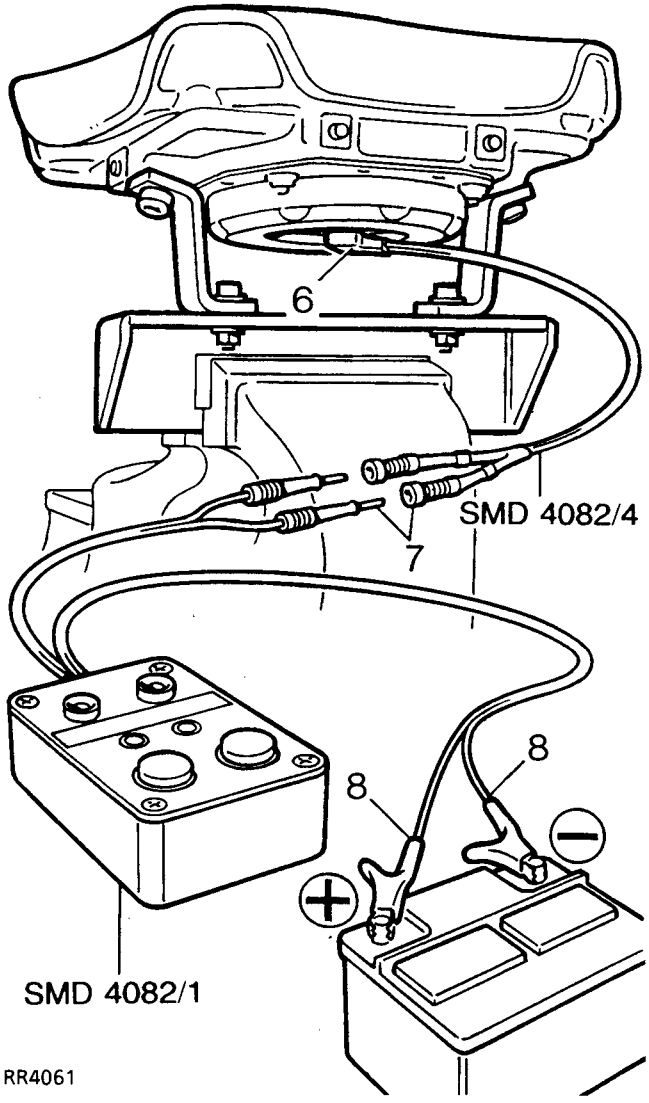


3. Position tool **SMD 4082/2** in vice, ensuring that vice jaws grip tool above bottom flange to prevent possibility of tool being forced upwards from vice. Tighten vice.

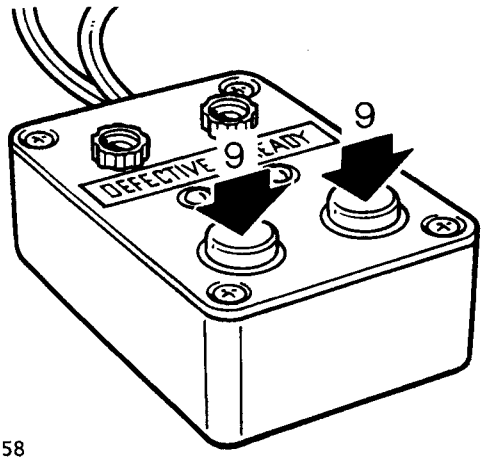


WARNING: Ensure tool SMD 4082/1 is not connected to battery.

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.



RR4061



RR4058

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 module whilst connecting.

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

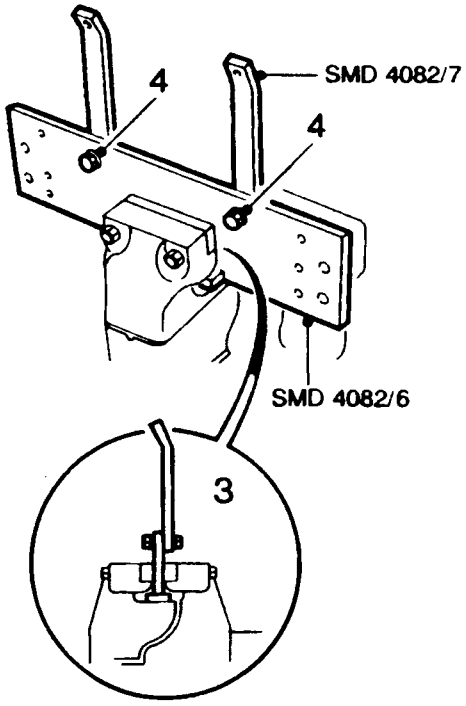
WARNING: Ensure all personnel are standing at least 15 metres away from module.

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. DO NOT re-use or salvage any parts of the airbag system including steering wheel or steering column.

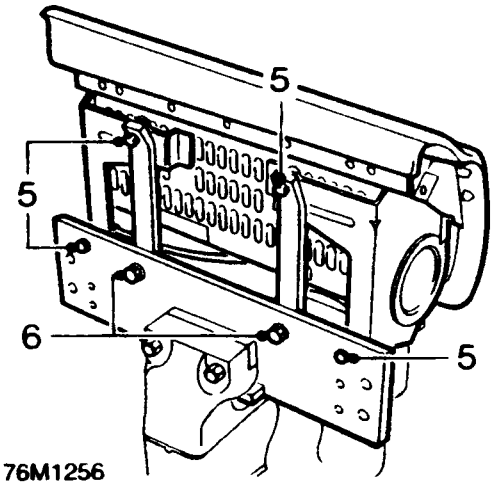
Passenger's Airbag Module

1. Carry out deployment tool self test.
2. Remove airbag module from fascia. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Passenger's airbag module***



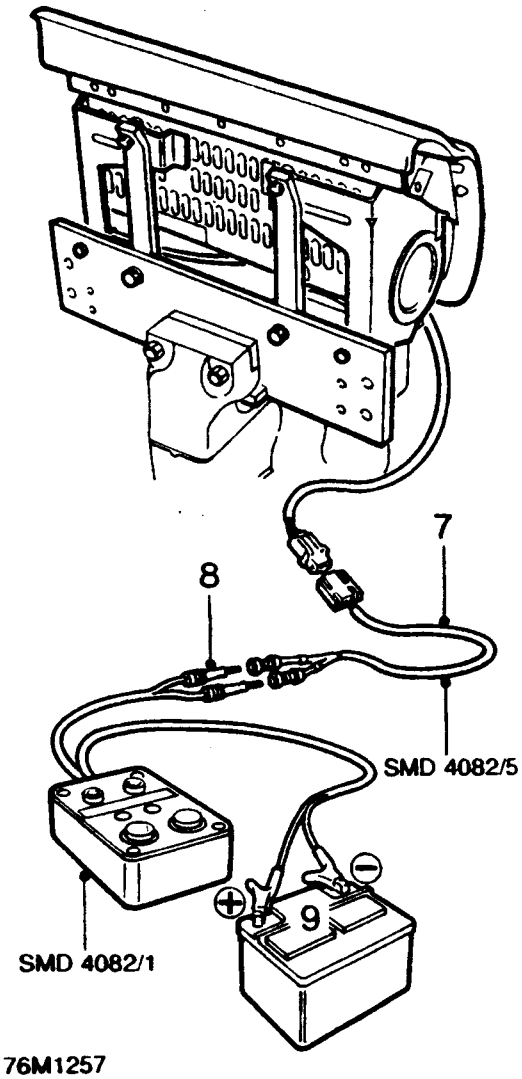
76M1255

3. Position tool **SMD 4082/6** in vice, ensuring that vice jaws grip tool above bottom flange to prevent possibility of tool being forced upwards from vice. Tighten vice.
4. Position brackets **SMD 4082/7** to tool; lightly tighten bolts.



76M1256

5. Position airbag module to tool **SMD 4082/6.** Ensure module is correctly secured using all fixings.
6. Ensure airbag module mounting brackets are secure.



76M1257

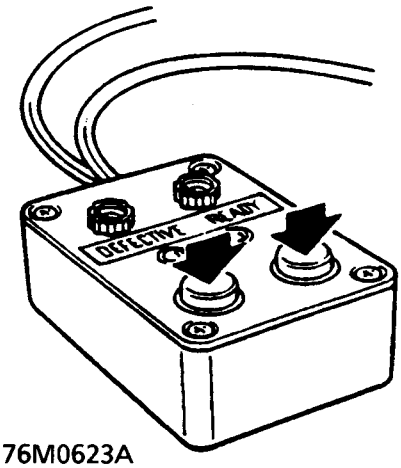
WARNING: Ensure tool SMD 4082/1 is not connected to battery.

7. Connect flylead **SMD 4082/5** to airbag module.
8. Connect flylead **Smd 4082/5** to tool **SMD 4082/1**

WARNING: Do not lean over module whilst connecting.

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

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



76M0623A

10. Press both operating buttons to deploy airbag module.
11. **DO NOT** return to airbag module for 30 minutes.
12. Using gloves and face mask, remove airbag module from tool, place airbag module in plastic bag and seal bag.
13. Wipe down tool with damp cloth.
14. Transport deployed airbag module to designated area for incineration.

△ **NOTE: DO NOT transport airbag module in the vehicle passenger compartment. DO NOT re-use or salvage any parts of the airbag system.**

TORQUE VALUES

NOTE: Torque wrenches should be regularly checked for accuracy to ensure that all fixings are tightened to the correct torque.

	Nm
Airbag module screws	8
Steering wheel nut	50
Crash sensor screws	10
Control unit	10

76 - CHASSIS AND BODY

CONTENTS

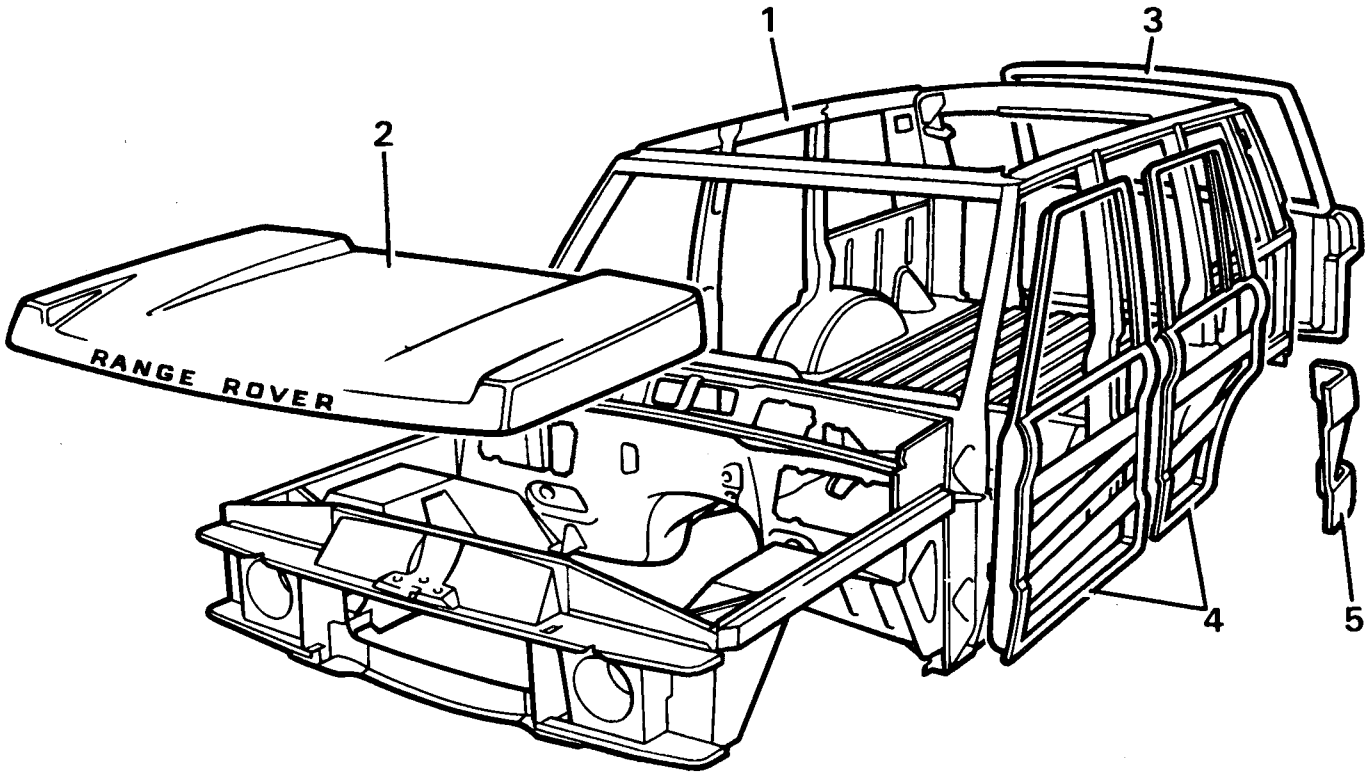
CONTENTS

BODY CONSTRUCTION

Description

The Range Rover body consists of a steel frame to which alloy outer panels are attached. The decker panel, front wings, side door outer panels, body side outer panels and roof are made from a special light magnesium aluminium alloy.

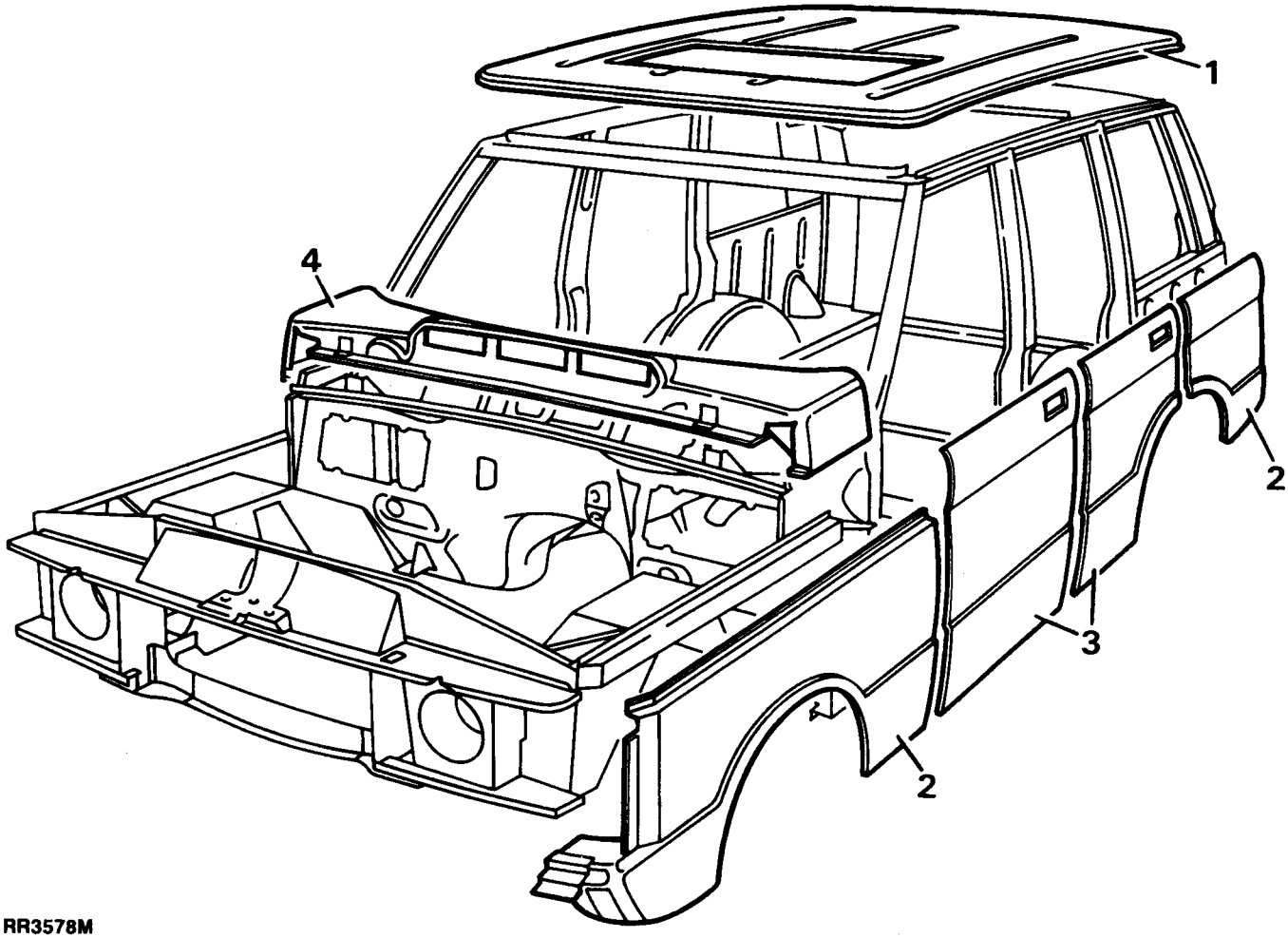
The manufacture of body panels from aluminium has two distinct advantages, the first of which is an improved resistance to corrosion, the second being it reduces the gross vehicle weight.



RR3577M

Steel components

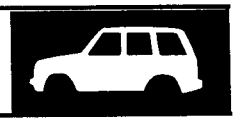
1. Body shell
2. Bonnet
3. Tailgate
4. Door frames
5. Quarter panel



RR3578M

Aluminium alloy components

1. Roof
2. Wings
3. Door panels
4. Decker panel



PAINT CODES - 1995

The following information should be used when ordering paint for 1995 model year vehicles.

COLOUR	TYPE	LRC	INTERERIOR	DECALS
VOGUE				
CONISTON	SOLID	570	b,S	MID SILVER
ARLES BLUE	SOLID	424	dg,DG	MID SILVER
ALPINE WHITE	SOLID	456	b,dg,S,AG,DG	DARK GRANITE
PEMBROKE GREY	SOLID	476	dg,AG,DG	MID SILVER
PORTOFINO RED	SOLID	390	b,dg,S,AG,DG	MID SILVER
100"				
BELUGA BLACK	SOLID COB	416	S,AG	MID SILVER
ARDENNES GREEN	MICATALLIC	413	b,dg,S,DG	MID SILVER
ROMAN BRONZE	METALLIC	479	b,dg,S,DG	DARK GRANITE
ASPEN	METALLIC	458	dg,DG	DARK GRANITE
PLYMOUTH BLUE	MICATALLIC	434	b,dg,S,AG,DG	MID SILVER
AEGEAN BLUE	MICATALLIC	490	b,dg,S,AG,DG	MID SILVER
AVALON	MICATALLIC	575	dg,DG	MID SILVER
MONTPELIER	MICATALLIC	536	b,dg,S,DG	MID SILVER
VOGUE SE				
ALPINE WHITE	SOLID	456	S,DG	DARK GRANITE
BELUGA BLACK	SOLID COB	416	S,DG	MID SILVER
ARDENNES GREEN	MICATALLIC	413	S,AG	MID SILVER
ASPEN	METALLIC	458	S,DG	DARK GRANITE
PLYMOUTH BLUE	MICATALLIC	434	S,DG	MID SILVER
AVALON	MICATALLIC	575	DG	MID SILVER
NIAGARA	MICATALLIC	536	DG	MID SILVER
LSE 108"				
ALPINE WHITE	SOLID	456	S,AG,DG	DARK GRANITE
BELUGA BLACK	SOLID COB	416	S,AG,DG	MID SILVER
ARDENNES GREEN	MICATALLIC	413	S,AG,DG	MID SILVER
MOSSWOOD	MICATALLIC	987	S,AG,DG	MID SILVER
PLYMOUTH BLUE	MICATALLIC	434	S,AG,DG	MID SILVER
AVALON	MICATALLIC	575	S,AG,DG	MID SILVER
NIAGARA	MICATALLIC	574	S,AG,DG	MID SILVER

KEY TO COLOURS:

INTERIOR: Velour: b - BROGUE, dg - DARK GRANITE
Leather: S - SORREL, AG - ASH GREY, DG - DARK GRANITE

BODY REPAIRS, GENERAL INFORMATION

Aluminium panels can be effectively repaired using the 'Argon Arc' process of welding, because the afore mentioned is a specialist operation it is necessary that only a skilled operator or specialist body shop undertake such repairs.

Under certain conditions it may not be practical to repair an exterior damaged panel, if this is the case, then panels can be easily removed and replaced with new ones.

Panel beating

WARNING: Before applying heat to any panel ensure that the panel is clean and free from underseal and that the area to be worked on is well clear of any combustible materials. Ensure that all precautions are taken against fire.

1. Aluminium alloy panels can be beaten out after accidental damage in the same way as sheet steel. Hammering causes metal to work harden, and requires annealing to prevent the possibility of cracking. To anneal, apply spread of heat to the area, until the heated metal will char a piece of soft wood when touched on it. Followed by slow air cooling.

Welding

WARNING: The battery ground lead MUST be disconnected before commencing welding.

WARNING: Before applying heat to any panel ensure that the panel is clean and free from underseal and that the area to be worked on is well clear of any combustible materials. Ensure that all precautions are taken against fire.

1. Clean off all grease and paint, dry thoroughly and then clean the edges to be welded, and an area at least half an inch on either side of the weld, with a stiff wire scratch brush or wire wool. Cleanliness is essential. Also clean the welding rod or strip with steel wool.
2. It is strongly recommended that a few welds are made on scrap metal before the actual repair is undertaken if the operator is not already experienced in welding aluminium and its alloys.
3. Use only 5 per cent magnesium aluminium welding rod (5 Mg/A).

Welding tears and patching

1. If a tear extends to the edge of a panel, start the weld from the end away from the edge and also at this point drill a small hole to prevent the crack spreading, then work towards the edge.
2. When welding a long tear, or making a long welded joint, tack the edges to be welded at intervals of 50 to 100mm. After this, weld continuously along the joint, increasing the speed of the weld as the material heats up.
3. When patching, cut the patch to the correct shape for the hole to be filled, but of such sizes as to leave a gap 0.80mm between it and the panel, and then weld as described above. Never apply an 'overlay' patch.

Spot welding

1. Spot welding is mainly used in the manufacture of the Range-Rover inner steel body frame and exterior magnesium-aluminium alloy panels, and is a process which can be carried out satisfactorily by the use of the proper apparatus in a specialist body shop. Aluminium and its alloys are very good conductors of heat and electricity, and thus it is most important to maintain the right conditions for successful spot welding. The correct current density must be maintained, and so must the 'dwell' of the electrodes. Special spot welding machines have been developed, but they are expensive, and though the actual work can be carried out by comparatively unskilled labour, supervision and machine maintenance must be in the hands of properly qualified persons.

Riveting

1. Where both sides of the metal are accessible and it is possible to use an anvil or 'dolly' solid aluminium rivets may be used, with a suitable punch or 'pop' to ensure clean rounded head on the work. For riveting blind holes, 'pop-rivets' must be used. These are inserted and closed by special 'Lazy-Tong' 'pop-rivet' pliers.

PAINTWORK

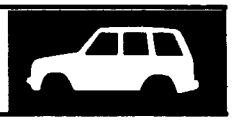
General Information

Before undertaking any paintwork process on the exterior body of Range Rover, firstly ascertain which is the best method of repair either by panel repair or replacement.

The initial preparation of a panel is very important to ensure that when finished it is of a standard that meets and matches existing bodywork. Panels must be thoroughly degreased with Berger Preclean 802.0516 or a suitable equivalent, any unsound paint to be stripped using Berger Double strength Meltic 301.8051. Always refer to the paint manufacturers instructions.

Paintwork processes should be performed by a specialist bodyshop where paint spraying can be undertaken in a controlled environment whereby temperatures are kept constant and the atmosphere dust free.

The flow chart on the following page gives a guide to preparing and painting a panel. Wherever possible refer to the Berger Vehicle Refinishes Product Data and Application Sheets for further information.



SUBSTRATE — **ALUMINIUM PANELS**

PANEL REPAIR	**REPLACEMENT PANEL**
PREPARATION	
Wet for using P60 Grade paper or dry sand using P240 grit discs.	Wet flat using P60 Grade paper or dry sand using P240 grit discs. Care must be taken to avoid cutting through to bare aluminium.
BODY FILLING	
If filling is required, thoroughly abrade bare aluminium area to be filled and apply Standox Polyester	If filling is required, fill small indentations with Standox Polyster stopper 430-5029.
ETCHING	
	This process is not required if the original electrocoat primer is in sound condition. **IF NOT**
Etch the bare aluminium and filler with auto-speed self etch primer 414-1171, mixed 1:1 with activator 801-7995. Apply one coat and allow to dry for approximately 20 minutes. Recoat within 1 hour.	

PRIMING

To obtain maximum adhesion and excellent build, apply Standox 2K 4:1 full primer 405-0381. Coats of 30-40 microns can be wet flatted with P60 grade paper after 45 minutes at 20° C.

COLOUR COATING

Apply either Standox 2K Standocryl or Standox Metallic Basislack to the colour required. Hardeners and thinners will vary depending upon system employed, conditions available, temperature and size of vehicle etc. Refer to paint manufacturer's Technical Information Sheet for correct selection.

BODY

Introduction:

The information which follows is concerned solely with the 'Monocoque' assembly of the inner body shell on Range Rover models.

Body repairs often require the removal of mechanical and electrical units and associated wiring. Where necessary, reference should be made to the relevant section of the Repair Manual for removal and refitting instructions.

The inner body shell is of 'Monocoque' construction and to gain access to the repair area, it may be necessary to remove exterior body panels, all exterior body panels are bolted to the inner body shell to facilitate easier panel removal and replacement or repair.

It is expected that a repairer will select the best and most economic repair method possible, making use of the facilities available. The instructions given are intended to assist a skilled body repairer by expanding approved procedures for panel replacement with the objective of restoring the car to a safe running condition and effecting a repair which is visually acceptable.

WARNING: After collision damage has been repaired and the airbags(s) has not deployed, the SRS integrity must be confirmed using TestBook.

WELDING

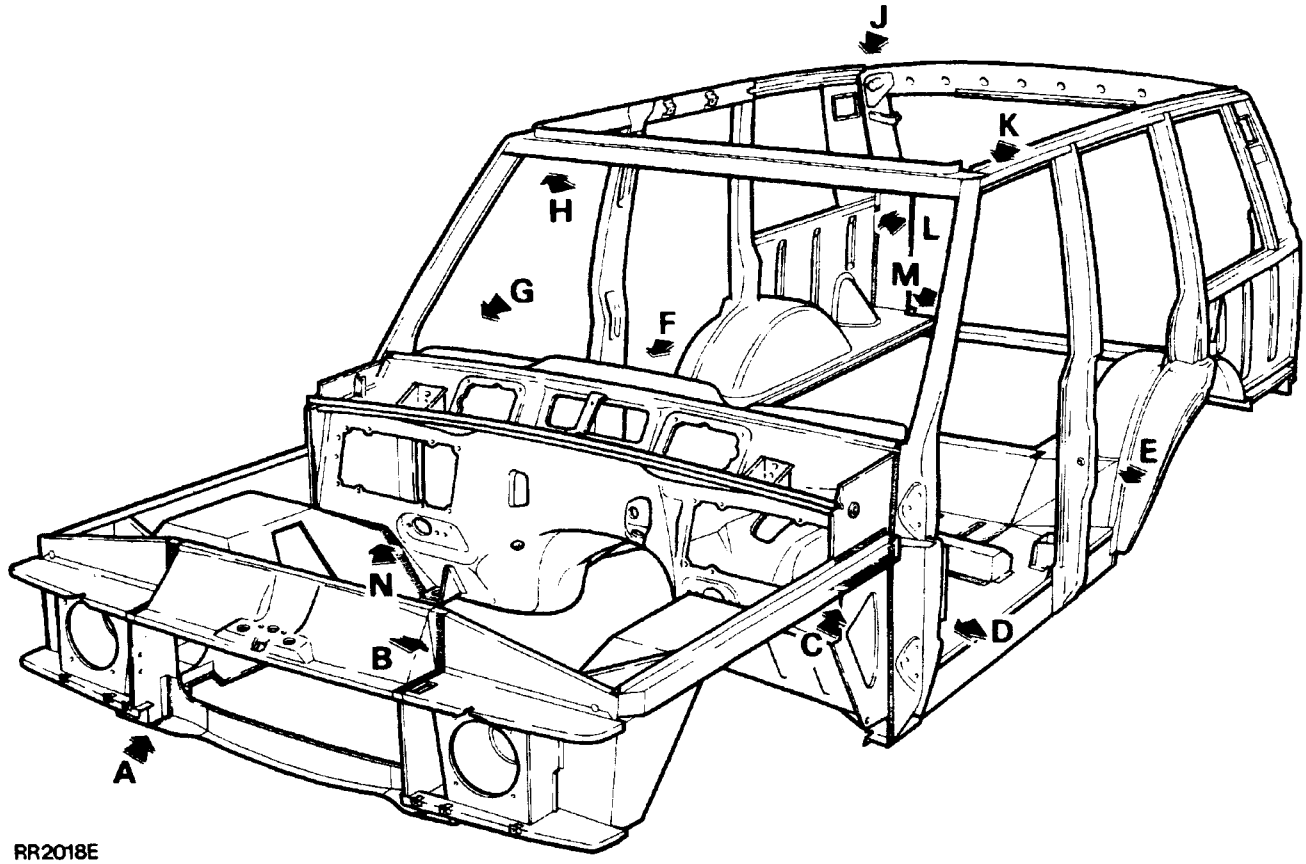
The following charts and illustrations show the locations and types of weld for securing the body side assembly, tailgate frame assembly and the front valance and wheel arch assembly. Before undertaking any spot weld joints to the inner body, it is advisable to make a test joint using offcuts of the damaged components, and to use this test piece to perform a weld integrity test.

Spot welding is satisfactory if the joints do not pull apart. If the weld pulls a hole or tears the metal the weld is satisfactory. It is defective if the weld joint pulls apart or if there are signs of burning, porosity or cracking evident.

PREPARATION

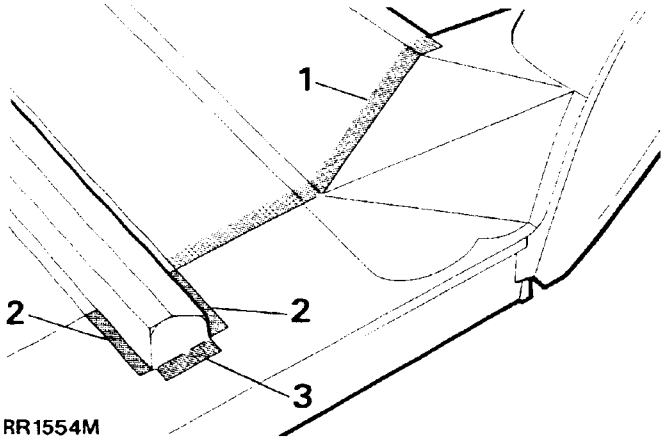
Thoroughly clean all areas to be welded, remove any sealants and corrosion protectives from around original panels. Align and clamp all new panels in position and check relationship to one another.

INNER BODY SHELL ASSEMBLY

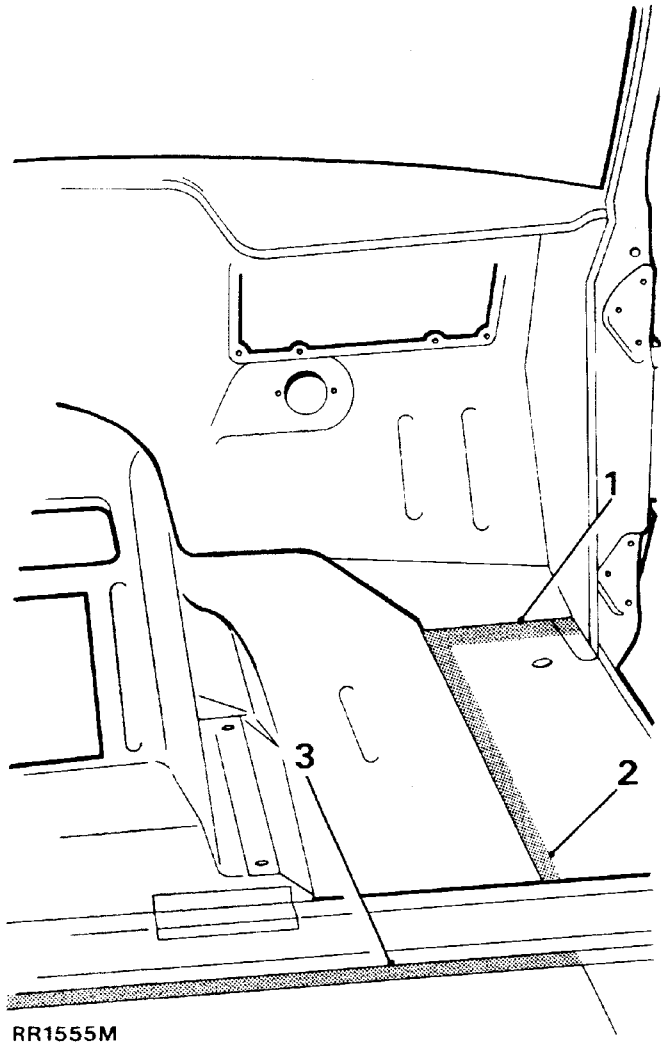


RR2018E

	LOCATION	FACTORY JOINT (minimum number of spot welds quoted)
A.	Front cross member to valance and wheel arch assembly	6 spot welds, 20mm pitch
B.	Bonnet[hood] locking platform to valance and wheel arch assembly	10 spot welds, 25mm pitch
C.	Valance and wheel arch assembly to dash and tunnel assembly	16 spot welds, 25mm pitch
D.	Body side complete to dash and tunnel assembly	10 spot welds, 65mm pitch

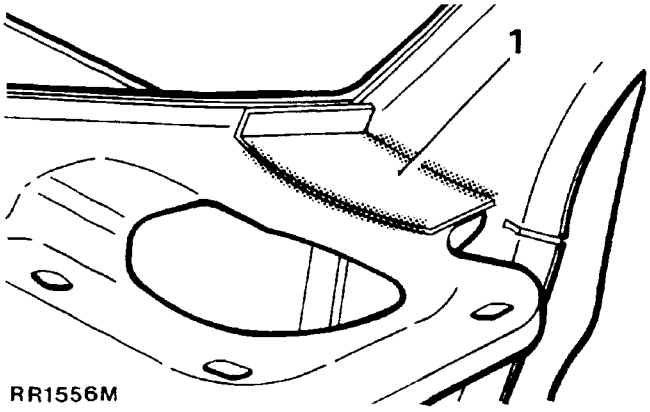


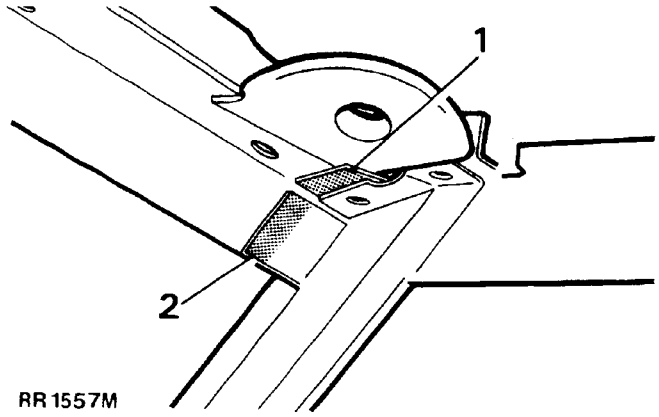
LOCATION E



LOCATION F

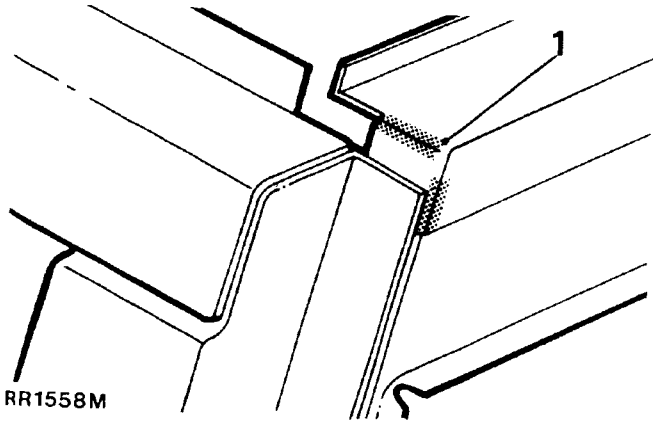
LOCATION	
E. 1. Body side complete to heelboard panel assembly.	14 spot welds, 35mm pitch
2. Body side complete to dash and tunnel assembly complete.	10 spot welds, 25mm pitch
3. Body side complete to dash and tunnel assembly complete.	3 spot welds, 30mm pitch
F. 1. Body side complete to dash and tunnel assembly complete	7 spot welds, 30mm pitch
2. Body side complete to dash and tunnel assembly complete	18 spot welds, 40mm pitch
3. Body side complete to dash and tunnel assembly complete	30 spot welds, 34mm pitch



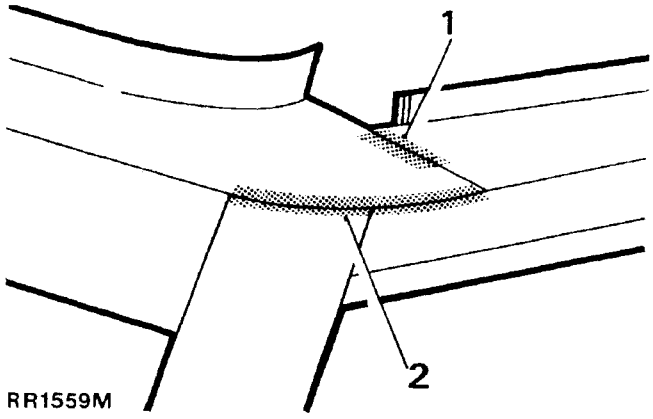


LOCATION G **LOCATION H**

	LOCATION	FACTORY JOINT (minimum weld requirement quoted)
G.	1. Reinforcement plate to dash and tunnel assembly and body side assembly complete.	CO^2 weld, 2 places 75mm long each weld.
H.	1. Body side complete to roof header panel assembly (internal joint) 2. Body side complete to roof header panel assembly (internal joint)	3 spot welds, 15mm pitch 3 spot welds, 15mm pitch

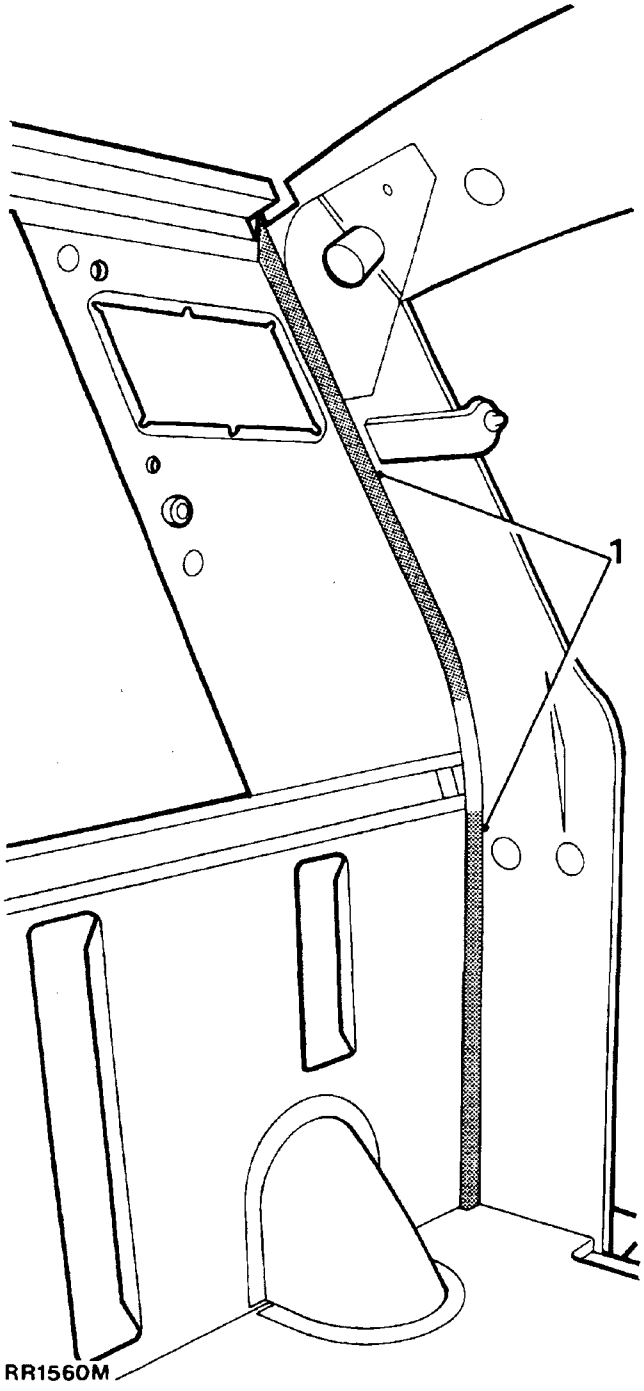


LOCATION J

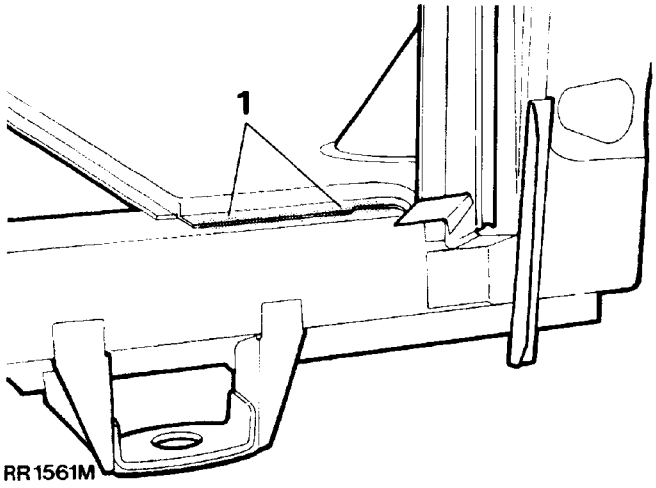


LOCATION K

	LOCATION	FACTORY JOINT (minimum weld requirement quoted)
J.	1. Body side complete to rear tailgate frame assembly	CO^2 weld, one run 40mm long
K.	1. Body side complete to roof header panel assembly (external joint)	CO^2 weld, one run 20mm long
	2. Body side complete to roof header panel assembly (external joint)	CO^2 weld, one run 100mm long

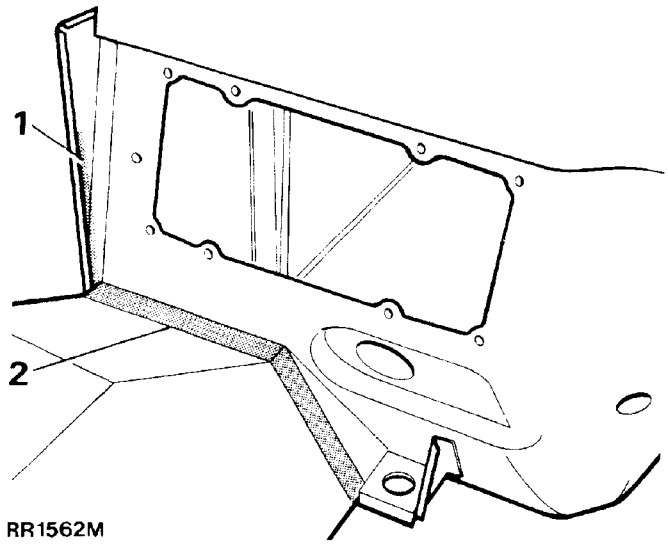


LOCATION L



LOCATION M

	LOCATION	FACTORY JOINT (minimum weld requirement quoted)
L.	1. Body side complete to rear tailgate side member	32 spot welds, 30mm pitch
M.	1. Body side complete to rear tailgate bottom cross member	CO^2 weld, 2 runs 40mm long



LOCATION N

LOCATION	FACTORY JOINT (minimum number of spot welds quoted)
N. 1. Valance and wheel arch assembly to dash and tunnel assembly	4 spot welds, 45mm pitch
2. Valance and wheel arch assembly to dash and tunnel assembly.	15 spot welds, 25mm pitch

HEADLINING

Service repair no - 76.64.01

Remove

1. Remove spare wheel.
2. Remove rear seat belt upper guide brackets and inertia reel assemblies.
3. Fold rear seat backrest forward. Recline front seats.
4. Disconnect battery negative lead.
5. Remove two roof lamp assemblies. Remove interior lamp mounting panel if sunroof is fitted.
6. Remove rear view mirror.
7. Remove two sun visors and centre retaining bracket.
8. Remove passenger grab handles.
   Sunroof vehicles: Remove edge trim and clips from roof opening.
9. With assistance support front of headlining. Remove two plastic retaining clips above rear door.
10. Remove two plastic retaining clips securing rear end of headlining near upper tailgate hinges.
11. Pull headlining forward to clear rear quarter trim. Lower headlining,disconnect electrical leads from speakers.
12. Remove headlining through tailgate.

CAUTION: To assist removal tilt headlining at an angle. DO NOT flex headlining as damage may occur.

Refit

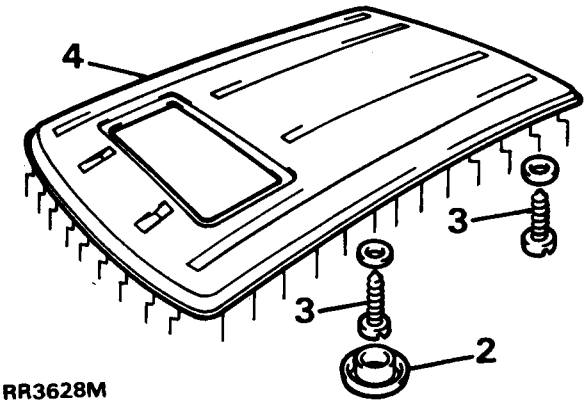
13. Reverse removal procedure.
    Sunroof vehicles: Secure headlining around roof opening with edging finisher.

ROOF PANEL

Service repair no - 76.10.13

Remove

1. Remove headlining. ***See Headlining***
2. Remove blanking plugs from rail above door frames to access screws.
3. Remove the screws washers from around inner edge of roof panel.



RR3628M

4. With assistance lift roof panel from body. Remove sealant from roof and body mating faces.

Refit

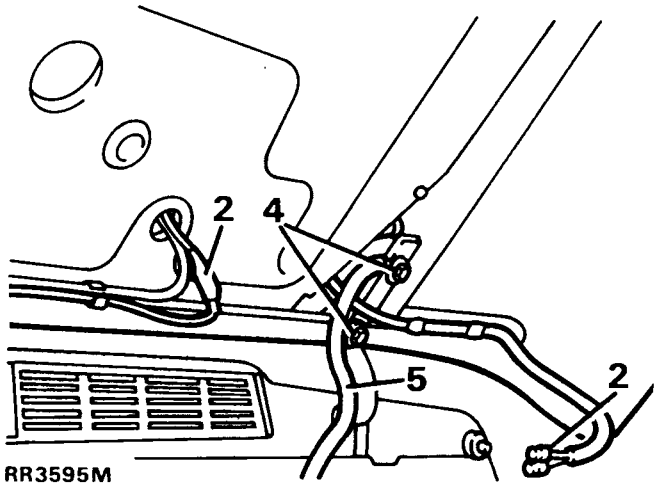
5. Apply sealant to roof and body mating faces.
6. Reverse removal procedure.

BONNET

Service repair no - 76.16.01

Remove

1. Disconnect battery negative lead.



RR3595M

2. Disconnect electrical leads to under bonnet[hood] lamp and heated washer jets.
3. Disconnect windscreen washer tube at 'T' joint.
4. With assistance release four bolts securing bonnet[hood] to hinges. Note ground strap located onto left hinge for reassembly. Lift bonnet[hood] clear of vehicle.

Refit

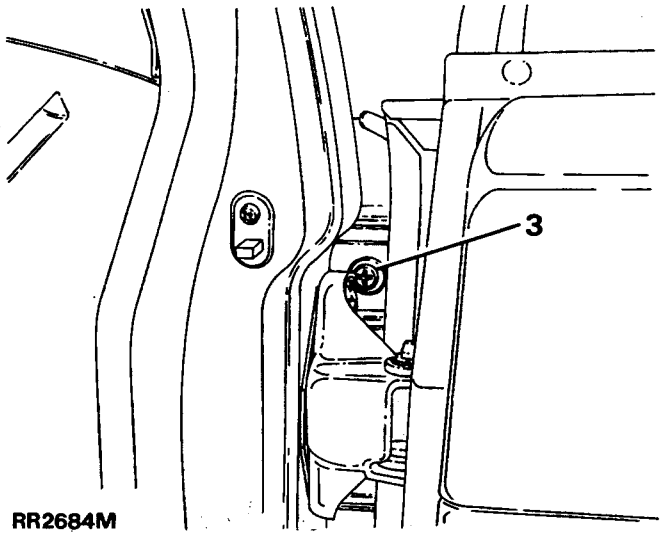
5. Fit bonnet[hood] ensure ground strap is refitted. Before final tightening of bolts align bonnet[hood] with decker[cowl] panel, wing[fender] and front grille.
6. Reverse removal procedure.

DECKER PANEL

Service repair no - 76.10.35

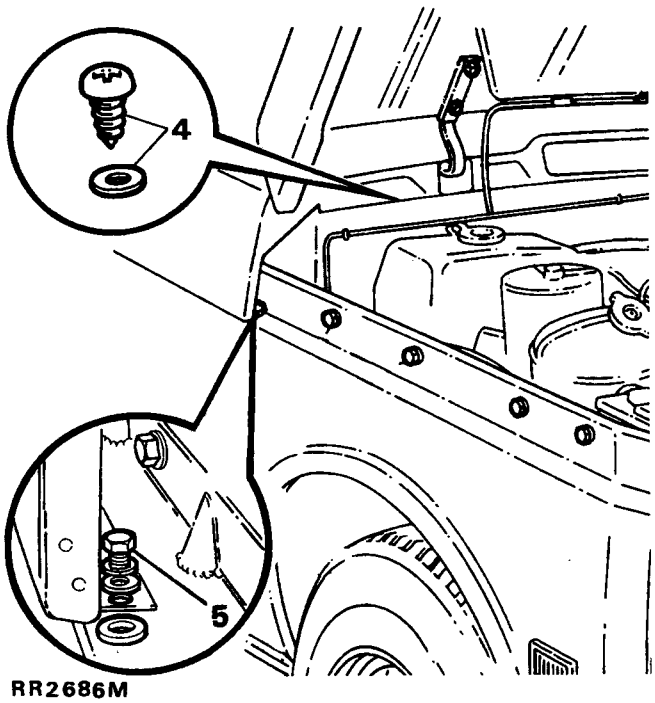
Remove

1. Disconnect battery negative lead.
2. Remove bonnet[hood]. ***See Bonnet***



RR2684M

3. Remove wiper arms and two nuts securing wheel boxes to decker[cowl] panel. Remove two exterior sealing rubbers.
4. Remove nine screws securing front of decker[cowl] panel.



RR2686M

5. Remove four bolts,spring and plain washers retaining decker[cowl] panel to wing[fender]s.
6. With assistance place a tube over each hinge and lower to enable decker[cowl] panel to be removed. Slowly return hinges to upright position.

WARNING: Gradually let hinges return to upright position to prevent possibility of personal injury or damage.

Refit

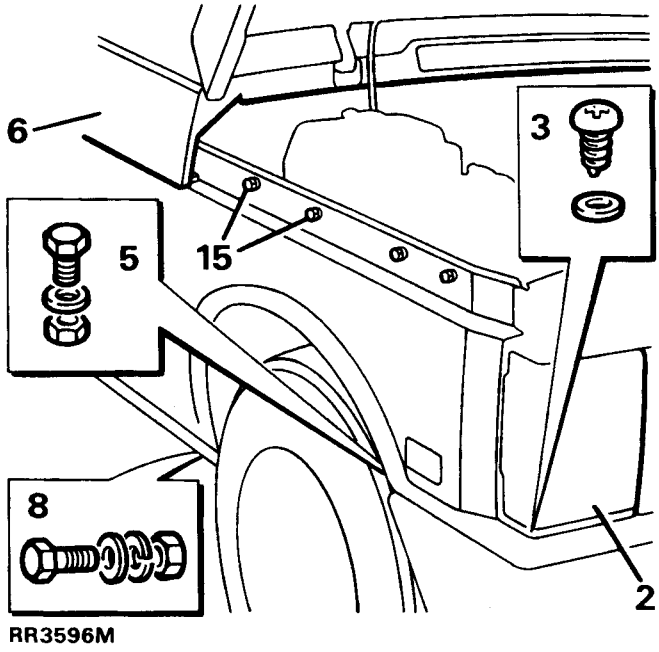
7. Reverse removal procedure.
8. Using a soft blunt implement ease windscreen rubber onto top of decker[cowl] panel.

FRONT WING

Service repair no - 76.10.24

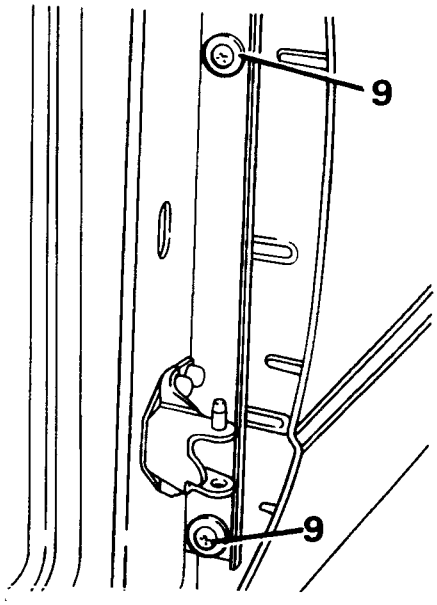
Remove

1. Remove wheel arch liner. ***See Front Wheel Arch Liner***
2. Remove side light and flash lamp assembly.



RR3596M

3. Remove screws, plain washers from bottom of side light recess.
4. Remove fixings securing bumper end cap. Remove moulding from bumper.
5. Remove bolt which secures spoiler to front wheel arch.
6. Release decker[cowl] panel. ***See Decker Panel***
7. Remove five nuts, bolts, plain and spring washers securing wing[fender] to valance.
8. Remove two bolts, plain washers, securing sill finisher to bottom of wing[fender].



RR3597M

9. Remove two screws securing wing[fender] to 'A' post. Located near door hinges.

Refit

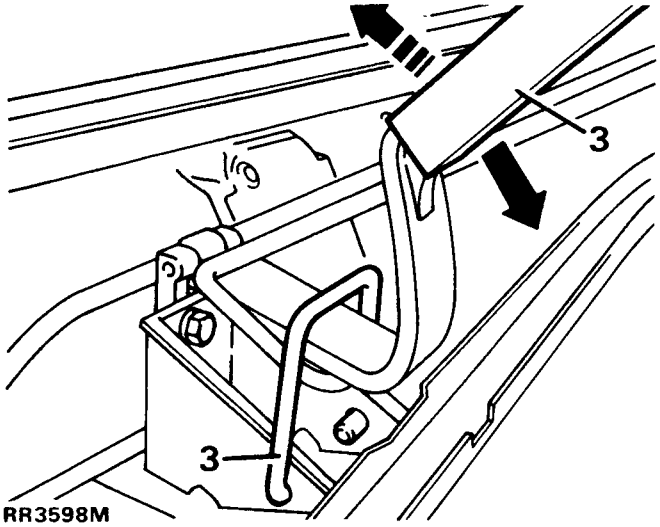
10. Apply suitable protection to wing[fender] inner. Apply sealant to mating faces.
11. Before tightening wing[fender] bolts ensure wing[fender] aligns with edge of front door.
12. Reverse removal procedure.

ASSISTED BONNET LIFT

Service repair no - 76.16.11

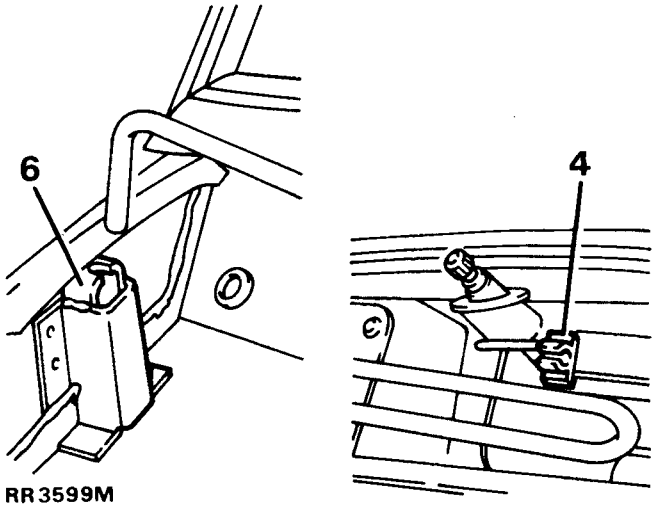
Remove

1. Remove bonnet[hood]. ***See Bonnet***
2. Remove decker[cowl] panel. ***See Decker Panel***



RR3598M

3. Place a tube over each hinge and lower to remove stop bracket. Slowly return hinges to upright position.



RR3599M

4. Release torsion bar from retaining clip.
5. Move torsion bar so it releases from hinge.
6. Release torsion bar from retaining bracket.

7. Remove 2 bolts and plain washers securing hinge to mounting bracket.
8. Withdraw hinge.

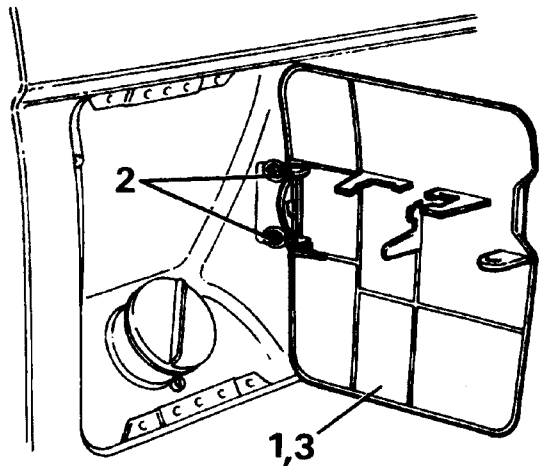
Refit

9. Fit hinge and securely tighten 2 retaining bolts
10. Fit torsion bar, ensure secure location into retaining clip and bracket.
11. Reverse removal procedure.

FUEL FILLER FLAP

Service repair no - 76.10.25

Remove



RR2073E

1. Open fuel filler flap.
2. Release 2 screws with plain washers.
3. Remove flap.

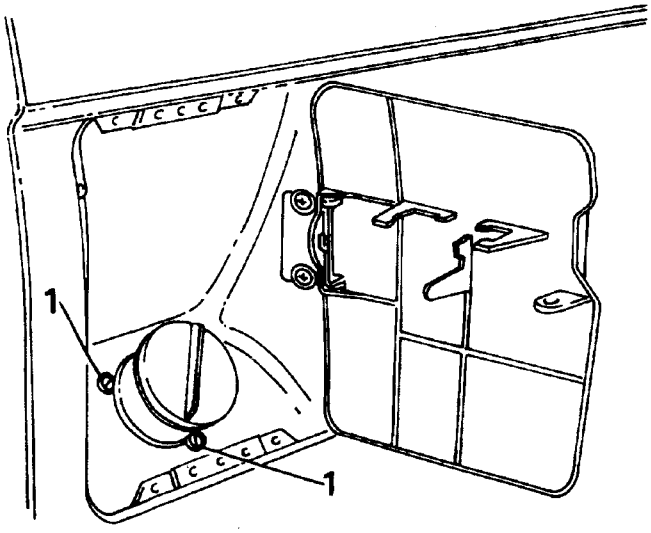
Refit

4. Fit flap, loosely fit screws.
5. Check outer profile of flap aligns with wing[fender]. Adjust hinge flap in or out of opening.
6. Tighten screws.

REAR CORNER PANEL AND WING

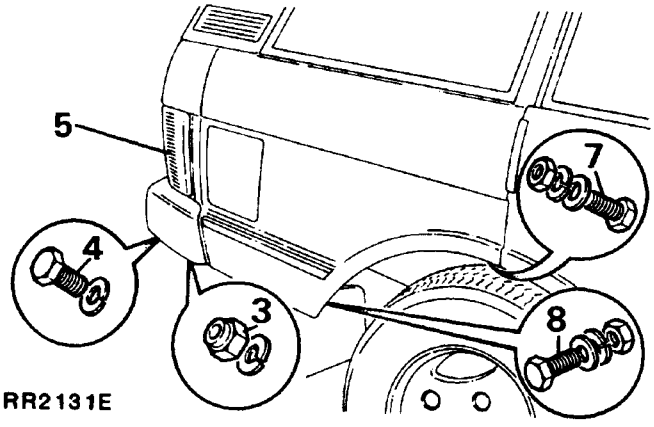
Service repair no - 76.10.20 / 76.10.27

Remove



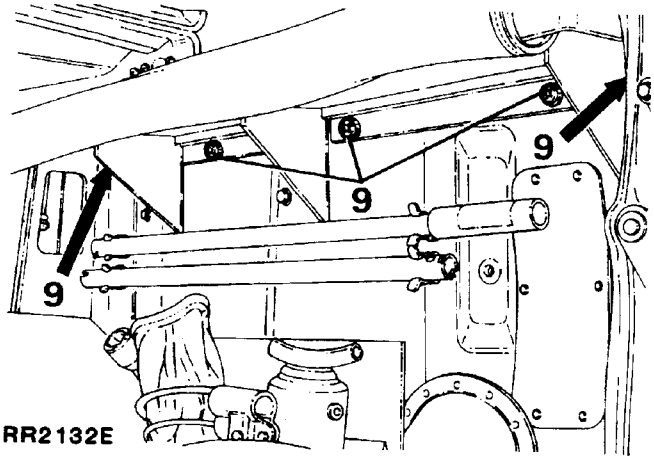
RR2130E

1. If applicable, remove 3 filler tube screws and fuel filler flap. ***See Fuel Filler Flap***
2. Remove load space cover and spare wheel.



RR2131E

3. Remove 2 nuts and washers securing bumper end cap to corner panel.
4. Remove bolt securing end cap to bumper.
5. Remove rear lamp assembly. ***See ELECTRICAL, Repair, Tail Lamp Assembly***
6. Drill out pop rivets securing corner panel to tailgate frame.
7. Remove 2 nuts and bolts securing wing[fender] to 'D' post, located beneath wheel arch.
8. Loosen nut and bolt retaining mud-flap bracket to wing[fender].



RR2132E

9. Remove 5 screws securing wing[fender] to bodyside panel. To access screw adjacent to 'D' post, fold rear seat forward and remove seat locking mechanism housing.
10. Remove rear wing[fender] with corner panel.
11. Remove 7 bolts, plain and spring washers securing wing[fender] to corner panel.

Refit

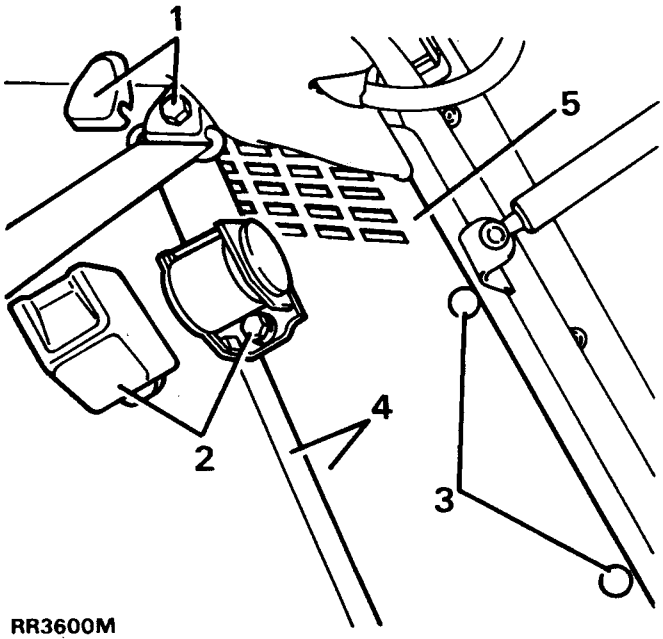
12. Assemble corner panel to rear wing[fender] with bolts. Align panels before tightening.
13. Coat underside of panels with body protection.
14. Fit assembly to vehicle. Align door shut face to wing[fender] edge and corner panel to tailgate, before tightening screws and fitting pop rivets.
15. Reverse removal procedure.

REAR QUARTER PANEL-INTERIOR

Service repair no - 76.13.43

Remove

NOTE: Remove spare wheel when removing left rear quarter panel.



RR3600M

1. Remove cover and bolt from seat belt guide bracket.
2. Remove clip on cover from seat belt inertia reel. Remove bolt and place inertia reel to one side.
3. Remove clips securing trim panel to body side.
4. Ease trim panel from behind rubber moulding.
5. Remove panel.

Refit

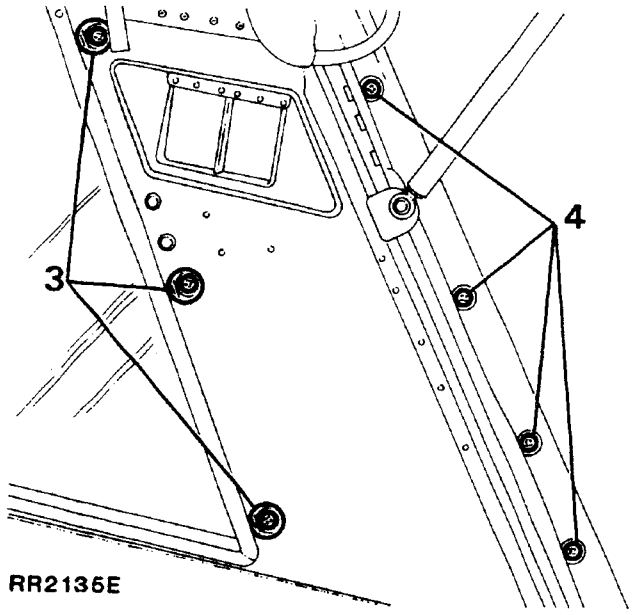
6. Ease top of trim panel under lip of rubber moulding.
7. Push panel up behind headlining until clip holes are visible.
8. Ease rubber moulding lip over remainder of trim panel.
9. Ensure electrical harness locates in channel behind trim panel. Fit 2 trim clips.
10. Fit seat belt guide bracket and inertia reel. Tighten bolts to ***20Nm.***
11. Refit covers to guide bracket and inertia reel.

REAR QUARTER PANEL-EXTERIOR

Service repair no - 76.13.22

Remove

1. Remove spare wheel if removing left rear quarter panel.
2. Remove interior quarter panel. ***See Rear Quarter Panel-Interior***



RR2136E

3. Remove 3 nuts with plain washers securing exterior quarter panel to bodyside.
4. Remove 4 screws securing quarter panel to tailgate opening.
5. Remove panel.

Refit

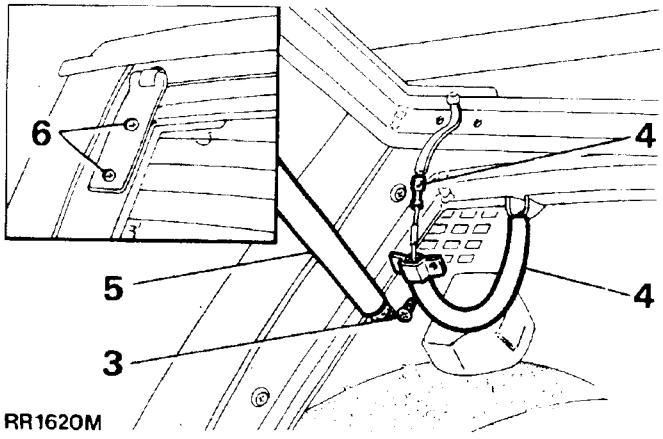
6. Reverse removal procedure.

TAILGATE UPPER

Service repair no - 76.28.29

Remove

1. Disconnect battery negative lead.
2. Remove tailgate wiper arm.



RR1620M

3. Open tailgate and remove screws from electrical wiring shrouds.
4. Move shroud away from screen and headlining. Disconnect electrical wiring.

WARNING: DO NOT repair worn tailgate stays. Fit a replacement.

5. Pry stays off tailgate.
6. With assistance support tailgate, remove screws from hinge.

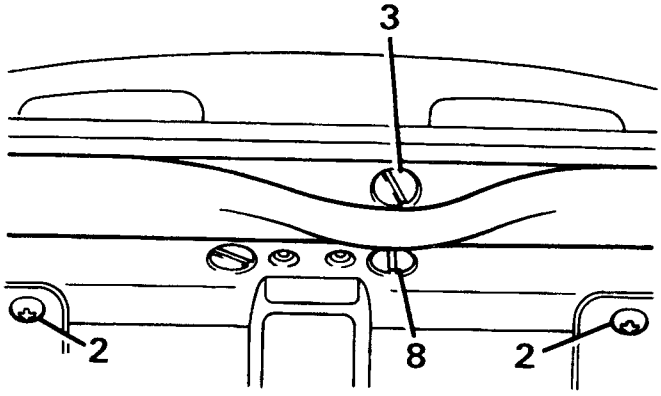
Refit

7. Reverse removal procedure.

TAILGATE UPPER LOCK

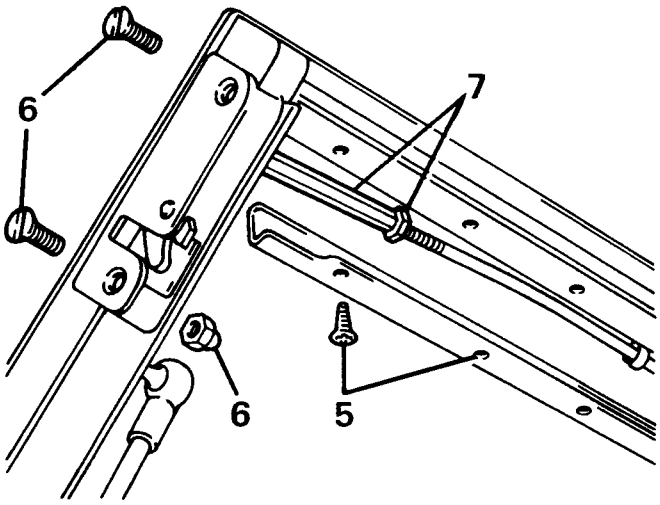
Remove

1. Remove upper tailgate lock actuator unit. ***See ELECTRICAL, Repair, Upper Tailgate Actuator Unit***



RR3601M

2. Remove 2 screws securing release handle.
3. Move sealing rubber, remove screw to detach handle.
4. If required, remove key barrel by removing 2 screws at joint. Remove retaining plate and release spring.
5. Remove 8 screws securing operating rod covers either side of lock mechanism.
6. Remove 4 screws and 2 nuts securing lock catches to sides of tailgate.



RR3602M

7. Release 2 locknuts on operating rods. Rotate connecting rod until side catches can be removed.
8. Remove 2 screws securing lock mechanism. Remove unit complete with operating rods.

Refit

9. Reverse removal procedure.
10. To adjust side catches release locknuts on operating rods. Rotate hexagonal link to shorten or extend length as necessary.

TAILGATE UPPER GLASS

Remove

1. Tailgate upper glass and frame assembly are serviced as one unit.
2. Remove tailgate upper. ***See Tailgate Upper***
3. Remove high level stop lamp. ***See ELECTRICAL, Repair, High Level Stop Lamp***
4. Remove lock actuator unit. ***See ELECTRICAL, Repair, Upper Tailgate Actuator Unit***
5. Remove lock assembly. ***See Tailgate Upper Lock***

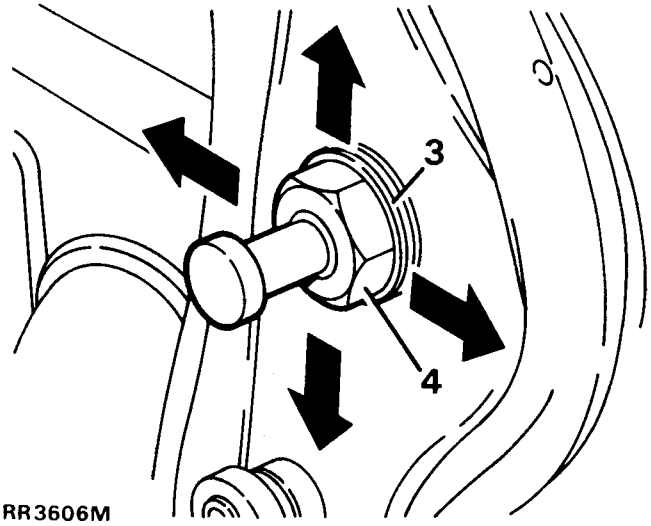
Refit

6. Reverse removal procedure.

TAILGATE LOWER STRIKER

Adjust

1. Adjustment is correct when tailgate profile aligns with rear body corner panels.
2. Open lower tailgate.
3. Add or remove spacing washers between striker and tailgate opening.
4. Move striker in appropriate direction and tighten.



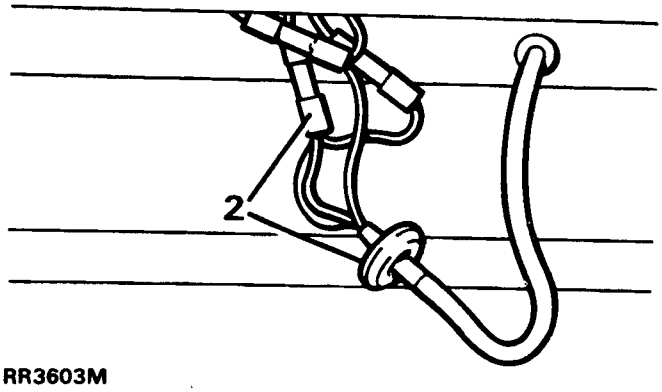
RR3606M

TAILGATE LOWER

Service repair no - 76.28.30

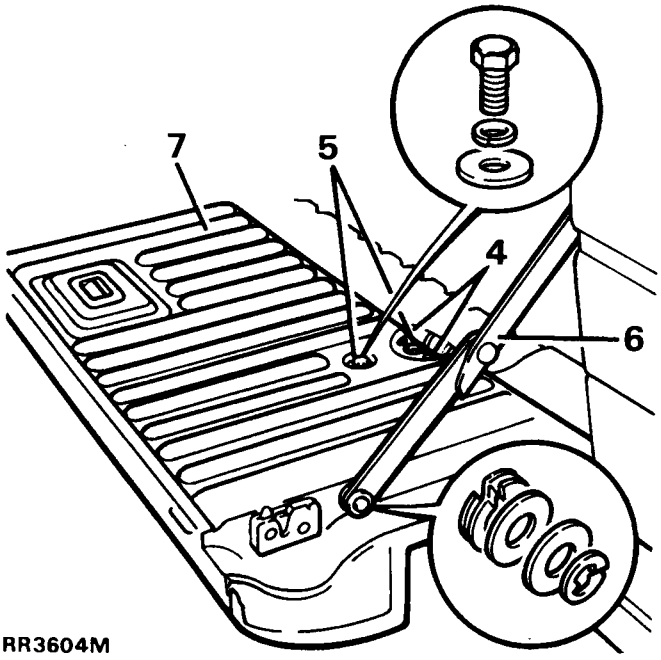
Remove

1. Disconnect battery negative lead.



RR3603M

2. Remove grommet and withdraw electrical leads from tailgate. Disconnect connectors.
3. Remove tailgate trim panel.



RR3604M

4. Remove 4 screws securing seal around tailgate hinge.
5. Remove tailgate to hinge bolts.
6. With assistance disconnect check straps.
7. Withdraw tailgate.

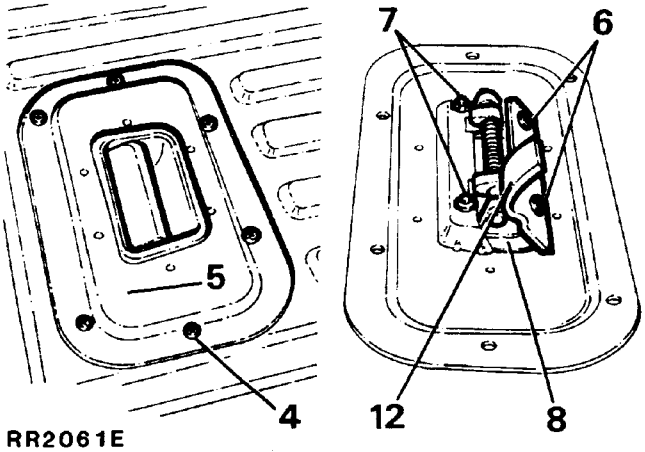
Refit

8. Reverse removal procedure. Ensure grommet is refitted onto tailgate.

TAILGATE LOWER RELEASE MECHANISM

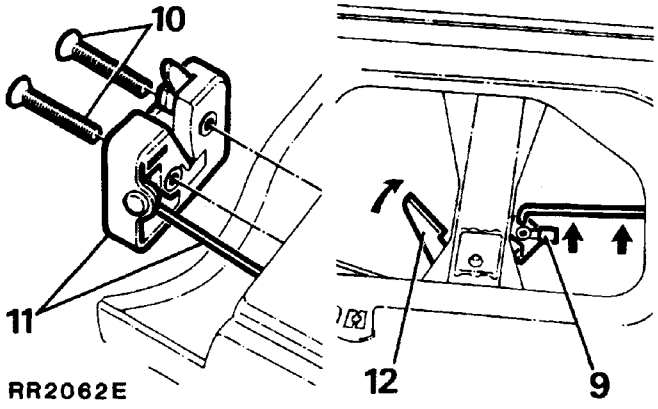
Remove

1. Open lower tailgate.
2. Lever trim from handle surround.
3. Remove 4 clips, remove tailgate trim panel.



RR2061E

4. Remove screws securing lock cover plate.
5. Remove cover plate with release mechanism.
6. Remove 2 screws and detach handle release actuator lever.
7. Remove 2 nuts and detach handle release retaining bracket.
8. Withdraw handle release mechanism from cover plate.
9. Release spring clips securing operating rods to tailgate release mechanism.



RR2062E

10. Remove screws securing 2 exterior locks on tailgate side.
11. Withdraw exterior locks with operating rods.

Refit

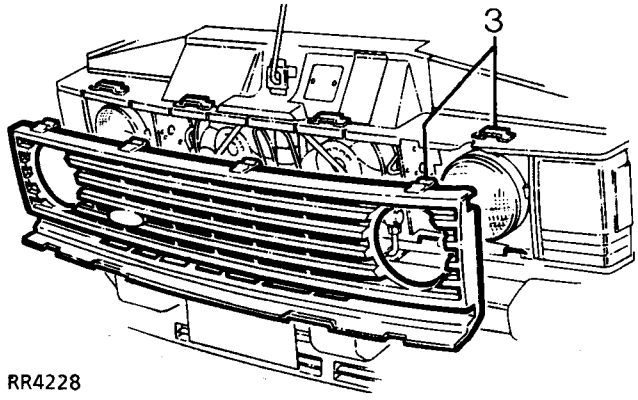
12. Reverse removal procedure. Grease handle release actuator lever and internal tailgate operating lever.

RADIATOR GRILLE

Service repair no - 76.55.06

Remove

1. Open and support bonnet[hood].
2. Depress 4 retaining lugs and ease grille forward.
3. Lift grille to remove.



RR4228

Refit

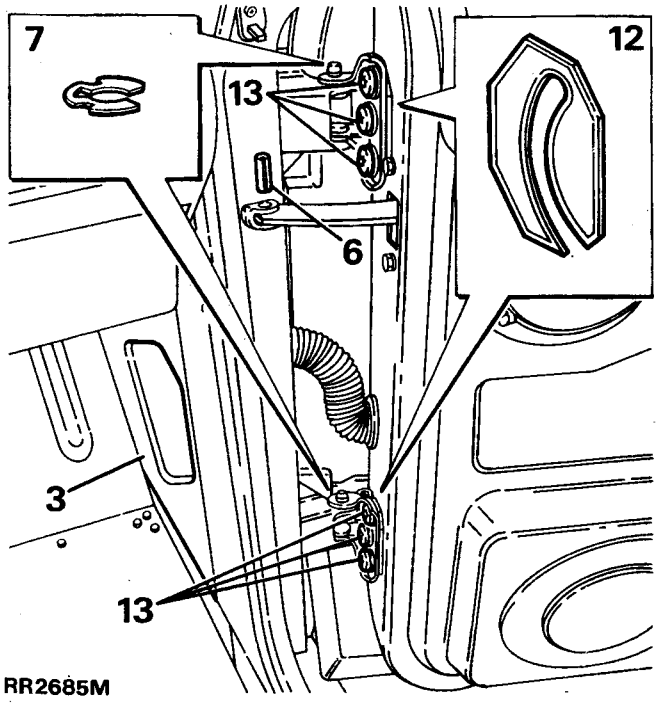
4. Locate lower lugs of grille into slots.
5. Ensure upper retaining lugs of grille locate behind bracket.

FRONT DOOR

Service repair no - 76.28.07

Remove

1. Disconnect battery negative lead.
2. Open door to be removed.



RR2685M

3. Remove 2 clips securing trim panel to side of footwell.
4. Locate and disconnect door wiring plugs.
5. Disengage grommets either side of A' post. Feed wiring out.
6. Drive out roll pin from door check link.
7. Remove 'C' clips from hinge pins.

WARNING: Instruction 8 MUST BE carried out with assistance.

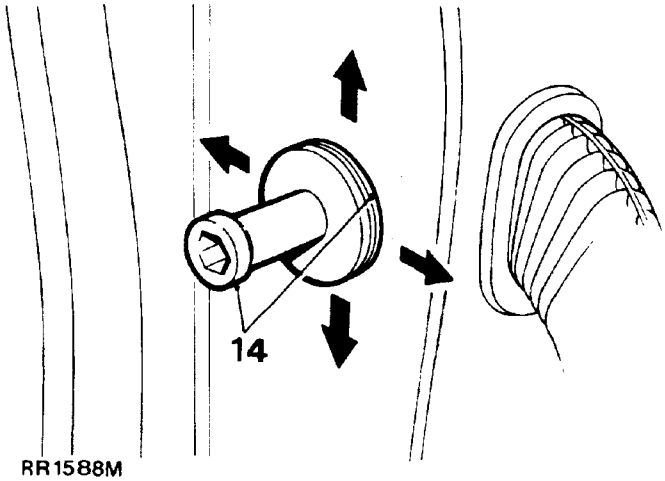
8. Lift opened door off hinge pins.

Refit

9. Reverse removal procedure. Renew clips if worn or distorted.
10. Open door, connect wiring plugs. Ensure they locate above trim panel.
11. Check operation of door and lock. If necessary, adjust door and striker plate.

Adjust

12. Adjust door by shims between hinge and door to move door forward or rearward in opening.
13. Loosen 6 screws securing hinges to door to adjust door up and down or in and out of opening. Tighten to ***25Nm.***



RR1588M

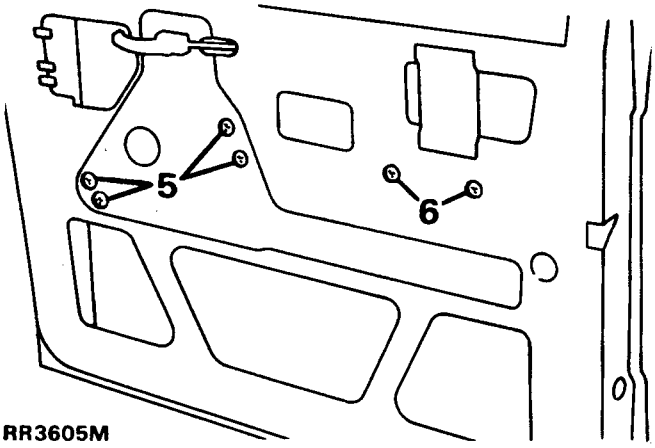
14. Adjust door lock striker by adding and subtracting spacing washers or moving in required direction.
15. Note: If it is necessary to remove hinges from 'A' post. Refit in exactly same position using same thickness of shims.

FRONT DOOR GLASS AND REGULATOR

Service repair no - 76.31.01 / 76.31.45

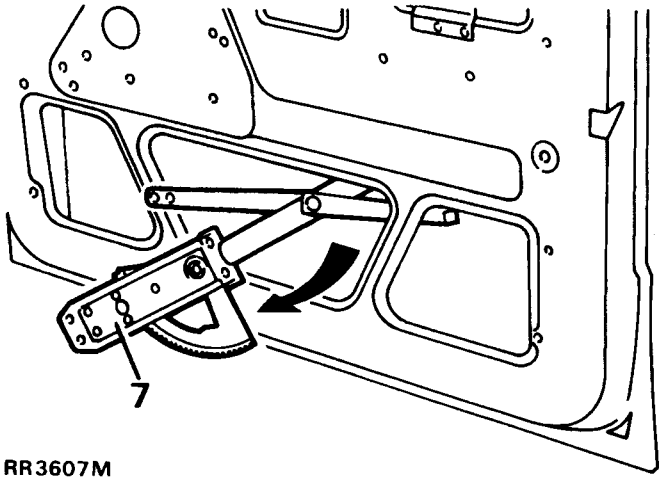
Remove

1. Fully close window and secure with tape to prevent window from dropping.
2. Remove trim panel. ***See Front Door Trim Panel***
3. Remove vapour barrier.
4. Remove window lift motor. ***See ELECTRICAL, Repair, Window Lift Motor - Front Doors***



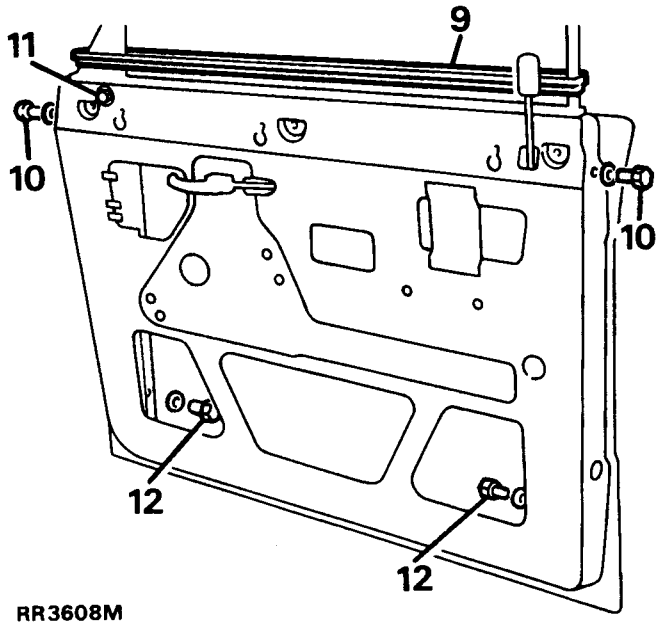
RR3605M

5. Remove 4 window regulator retaining bolts with shakeproof washers from door panel.
6. Remove 2 screws with shakeproof washers retaining lower window lift channel. Slide channel off stud.



RR3607M

7. Disengage lifting arm stud from upper lifting channel. Remove window regulator through opening in door panel.
8. Remove exterior driving mirror.



RR3608M

9. Remove waist rail seal from top of door.
10. Remove bolt, shakeproof and plain washer from both end faces of door which secure door frame.
11. Remove bolt, spring and plain washer from recessed hole under mirror mounting plate.
12. Remove bolt spring and plain washer securing each lower side of door frame.
13. Remove glass and frame out of door panel.
14. Remove tape securing glass to frame.
15. Slide glass out of door frame.

Refit

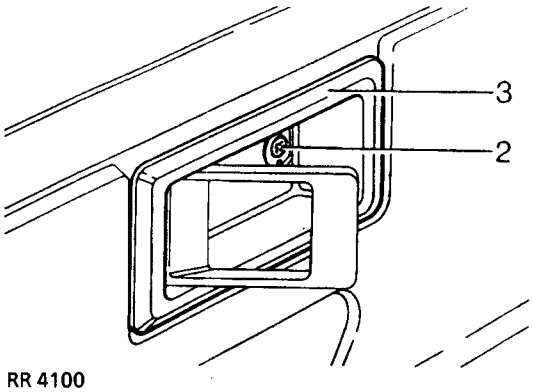
16. Reverse removal procedure. When fitting door frame align to suit door opening. Then tighten door frame securing bolts.

FRONT DOOR TRIM PANEL

Service repair no - 76.34.01

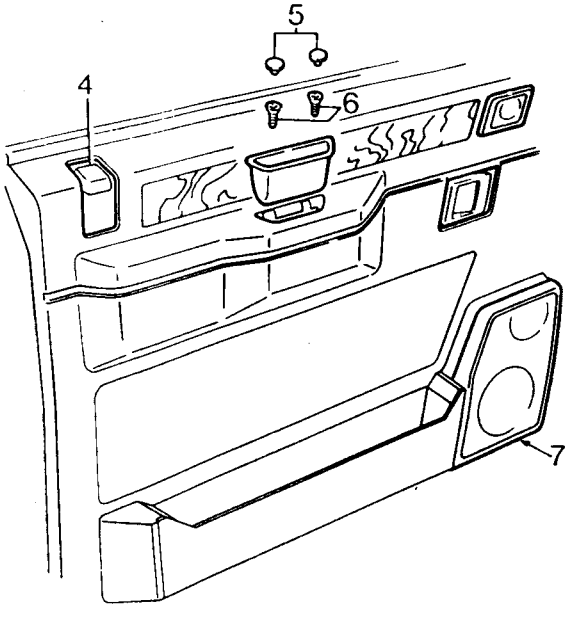
Remove

1. Disconnect battery negative lead.



RR 4100

2. Remove screw securing handle surround.
3. Remove surround.



RR 4101

4. Pry sill button surround from trim panel.
5. Remove buttons from bottom of door pull pocket.
6. Remove screws, withdraw pocket from trim panel.
7. Use trim stud release fork, start at front bottom corner and release 14 trim studs from door panel.

△ **NOTE: Support trim panel while speaker leads are disconnected.**

8. Disconnect 2 multiplugs from speakers. ***Do not carry out further dismantling if component is removed for access only.***
9. Remove 2 nuts securing speaker grille, depress 3 clips and remove speaker.
10. Remove 4 plates retaining speaker harness and release harness connector block.
11. Depress 2 clips retaining tweeter speaker, disconnect 2 Lucars and remove tweeter.
12. Disconnect 2 Lucars from top speaker and multiplug from bottom speaker.
13. Remove 4 nuts securing each speaker and remove 2 speakers from panel.
14. Remove trim panel pocket secured by 6 screws.
15. Remove 14 trim clips from trim panel.
16. Transfer components removed to new trim panel.

△ **NOTE: Renew trim clips as necessary.**

Refit

17. Reverse removal procedure.

FRONT DOOR LOCK, OUTSIDE AND INSIDE DOOR RELEASE HANDLES

Service repair no - 76.37.12

Remove

1. Remove trim panel. ***See Front Door Trim Panel***
2. Remove plastic vapour barrier sheet.
3. Remove window lift motor. ***See ELECTRICAL, Repair, Window Lift Motor - Front Door***
4. Remove door glass and regulator. ***See Front Door Glass and Regulator***
5. Remove door lock actuator. ***See ELECTRICAL, Repair, Front Door Actuator Unit***
6. Disconnect control rod from key operated lock. Release metal clip at bottom of rod.
7. Disconnect control rod from outside door release handle.
8. Disconnect rod between door release handle and door lock by releasing clip and pulling rod out of connecting block.
9. From inside door remove pin which secures quadrant to inner panel. Remove quadrant.
10. Remove screws securing sill button to door. Remove sill button from control rod.
11. Remove door lock by removing three screws as shown.
12. Withdraw lock through cut out below.

Continue for removal of outside release handle.

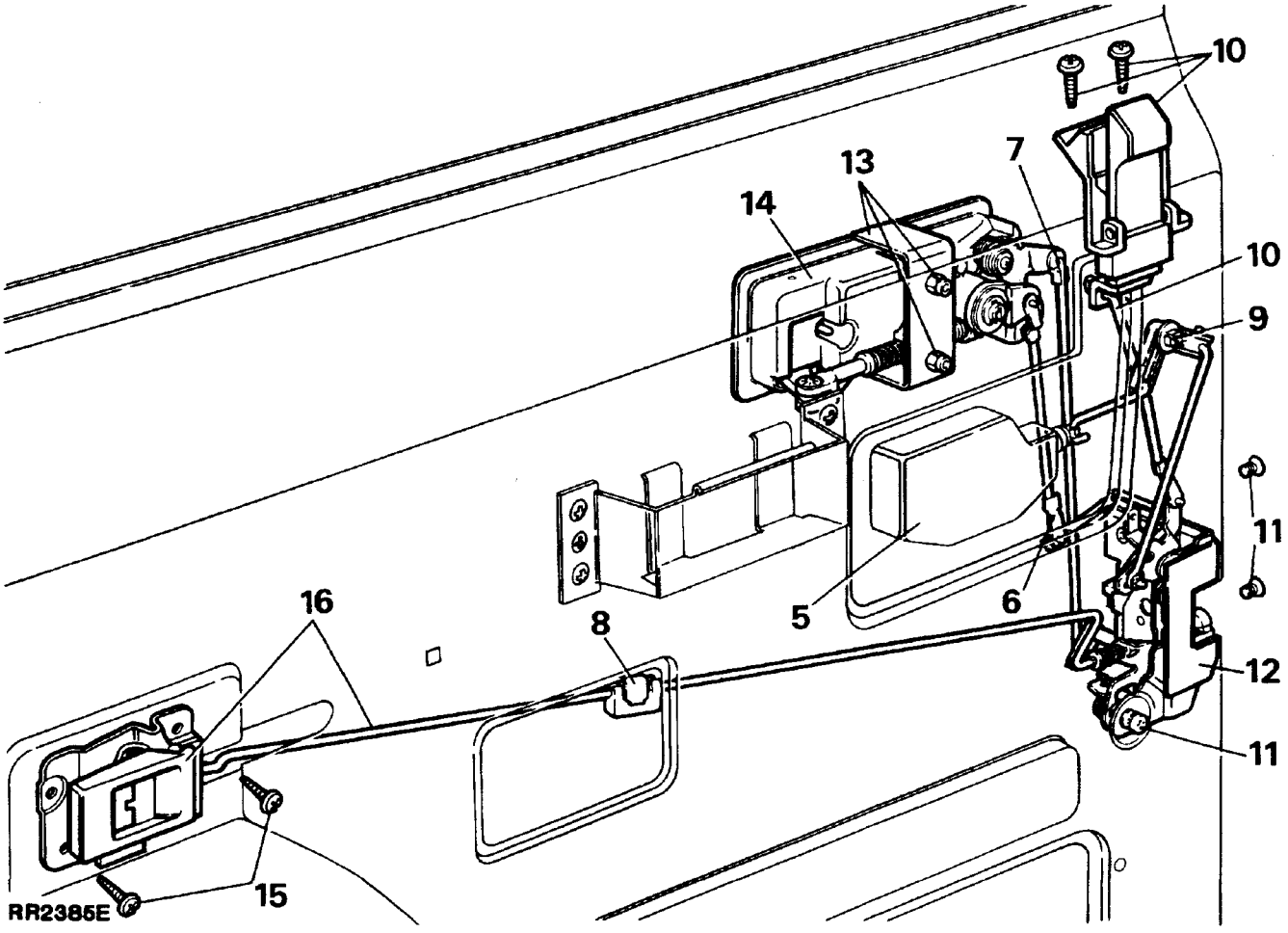
13. Remove nuts, shakeproof washers and retaining bracket.
14. Remove door release handle from outer panel.

Continue for removal of inside release handle.

15. Remove screws securing handle to door panel.
16. Withdraw handle with connecting rod attached.

Refit

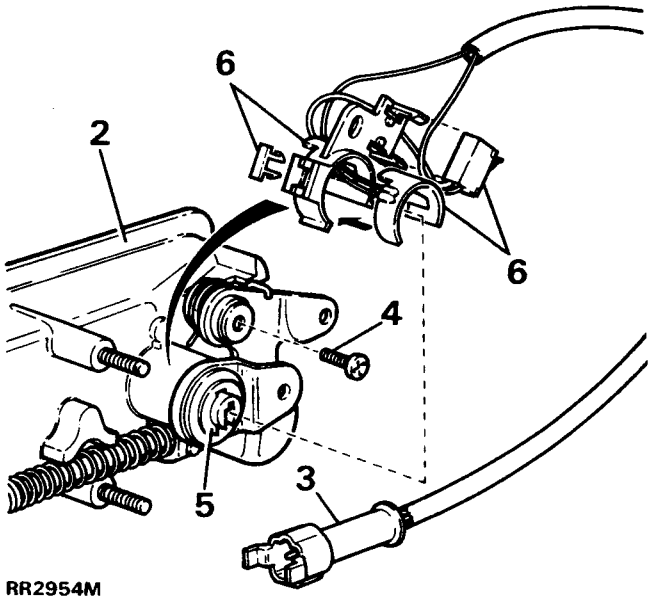
17. Reverse removal procedure. 1 to 16.



FRONT DOOR HEATED LOCK ASSEMBLY

Remove

1. Disconnect battery negative lead.
2. Remove outside front door handle assembly. ***See Front Door Lock, Outside and Inside Door Release Handles***



RR2954M

3. Disconnect heaters electrical wiring at multiplug.
4. Remove heater retaining bracket screw.
5. Remove 'C' clip and coloured cam link from end of barrel assembly.

⚠ **CAUTION: Ensure loose barrel assembly remains in position, to avoid components falling apart.**

6. Remove heater retaining bracket, complete with de-icing element, switch and wiring assembly.

Refit

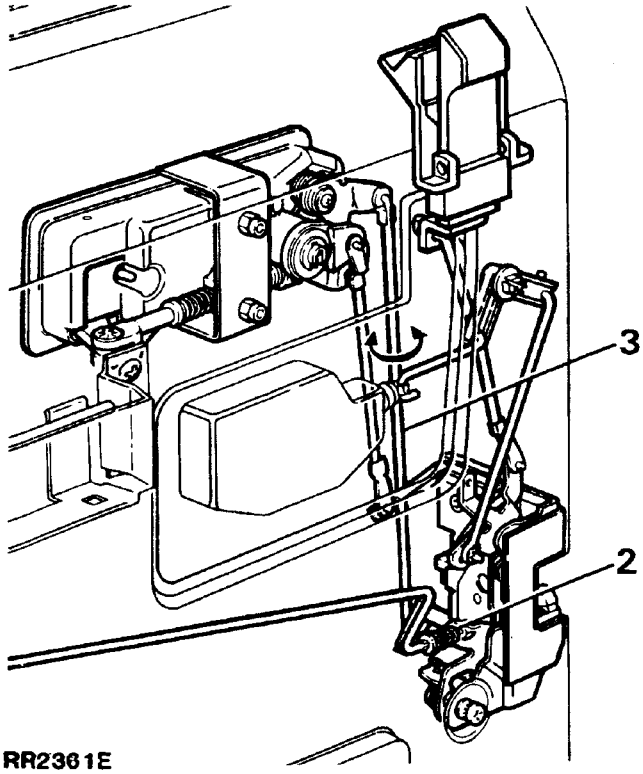
7. Hold de-icing element in position and fit heater retaining bracket assembly.
8. Reverse removal procedure. 1 to 5.

ADJUSTMENT - FRONT DOOR LOCK AND HANDLE ASSEMBLY

Service repair no - 76.37.47

Inside door release handle to lock

1. Ensure inside door release handle is in fitted position.
2. Adjust spring tensioned nut at door lock to shorten or extend rod as required, so door release occurs before maximum handle movement.



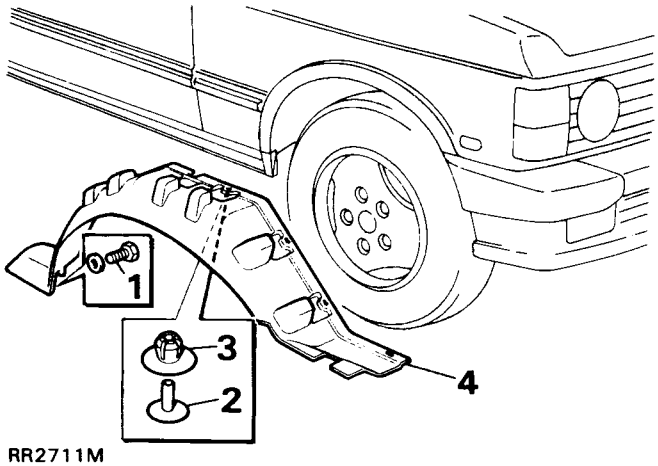
RR2361E

Outside door release handle to lock

3. Disconnect rod at outer door release handle by releasing plastic olive. Rotate rod to shorten or extend operating length as required, so door release occurs before maximum handle movement. Refit rod.

FRONT WHEEL ARCH LINER

Service repair no - 76.10.48



RR2711M

Remove

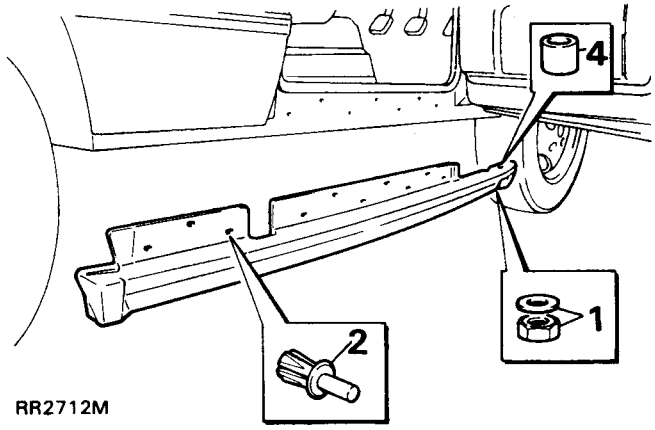
1. Remove bolt and washer securing rear lower edge of liner.
2. Pry out centre studs of eight plastic clips spaced around liner.
3. Pry out plastic clips.
4. Remove liner.

Refit

5. Reverse removal procedure. Renew clips as necessary.

SILL FINISHER

Remove



RR2712M

1. Remove nut and washer from underneath front of sill finisher.
2. Tap out centre piece of ten Rocut fixing rivets.
3. Pry out Rocut rivets and remove sill finisher.

Refit

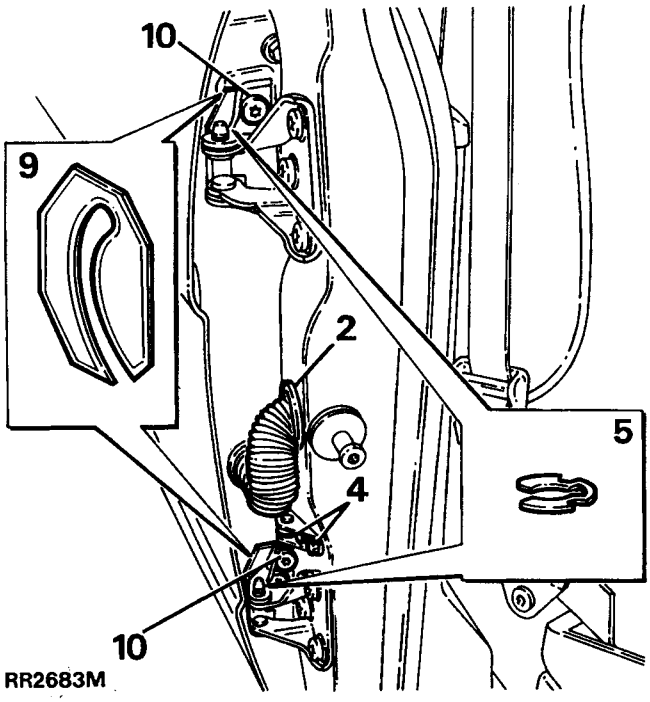
4. Reverse removal procedure. Renewing Rocut rivets. Ensure metal tube insert is refitted into sill finisher where bolt goes through.

REAR DOOR

Service repair no - 76.28.06

Remove

1. Disconnect battery negative lead.



RR2683M

2. Remove wiring grommet from 'B' post.
3. Withdraw door wiring plugs from 'B' post and disconnect.
4. Remove two bolts securing the check strap to 'B' post.
5. Remove 'C' clips from grooves in hinge pins.

WARNING: Instruction 6. MUST BE carried out with assistance.

6. Lift opened door off hinge pins.

Refit

7. Reverse removal procedure. Renew 'C' clips if worn or distorted.

Adjust

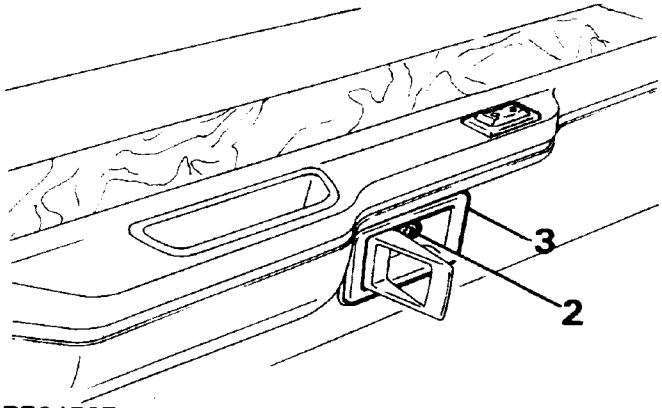
8. Adjust door by means of shims between hinge and door to move door forward or rearward in the opening.
9. Loosen six screws securing hinges to door to adjust door up and down or in and out of opening. Retighten screws to ***25Nm.***
10. Adjustment to door striker is identical to front doors.
11. Note: If it is necessary to remove hinges from 'B' post they should be refitted in exact same position using same thickness of shims.

REAR DOOR - TRIM PANEL

Service repair no - 76.34.04/98

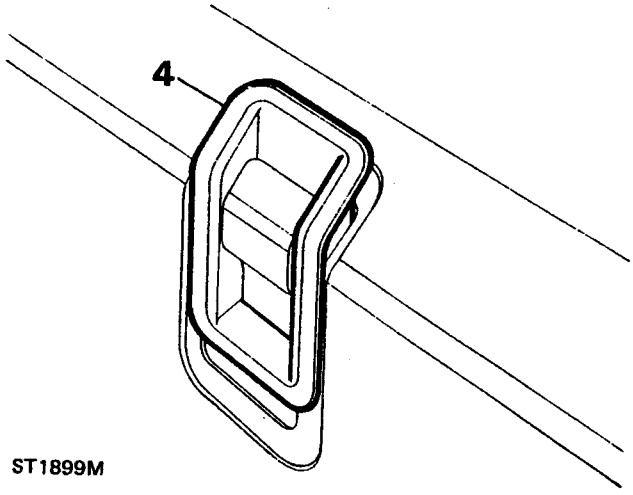
Remove

1. Disconnect battery negative lead.

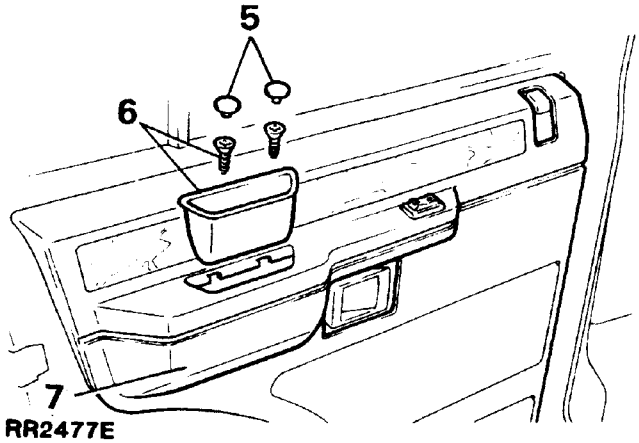


RR2476E

2. Remove screw securing handle surround.
3. Remove surround.
4. Pry door locking button surround from trim panel.



ST1899M



RR2477E

5. Remove two finisher buttons from door pull pocket to reveal securing screws.
6. Remove screws and withdraw pocket.
7. Pry trim panel away from door.
8. Disconnect electrical plug from window lift switch.
9. Remove window lift switch.

Refit

10. Reverse removal procedure.

REAR DOOR LOCK, OUTSIDE AND INSIDE DOOR RELEASE HANDLES

Service repair no - 76.37.13

Remove

1. Fully close window.
2. Disconnect battery negative lead.
3. Remove trim panel. ***See Rear Door - Trim Panel***
4. Remove plastic vapour barrier sheet.
5. Disconnect inside door release control rod from door lock.
6. Disconnect sill locking control rod from door lock by releasing metal clip.
7. Disconnect control rod from outside door release handle by pulling it out of plastic olive.
8. Remove door lock by removing two screws from door shut face and single screw with shakeproof washer on inside of door. Retrieve any spacing washers which may be fitted.
9. Remove lock through upper rear opening of panel.
10. Remove two nuts with shakeproof washers and retaining bracket securing outside door release handle.
11. Remove outside door release handle from outer door panel.
12. Remove two screws with plain washers securing inside door release handle to inner door panel.
13. Remove handle with connecting rod attached.
14. Remove two screws securing sill locking button to inner door panel and detach sill button from bellcrank.

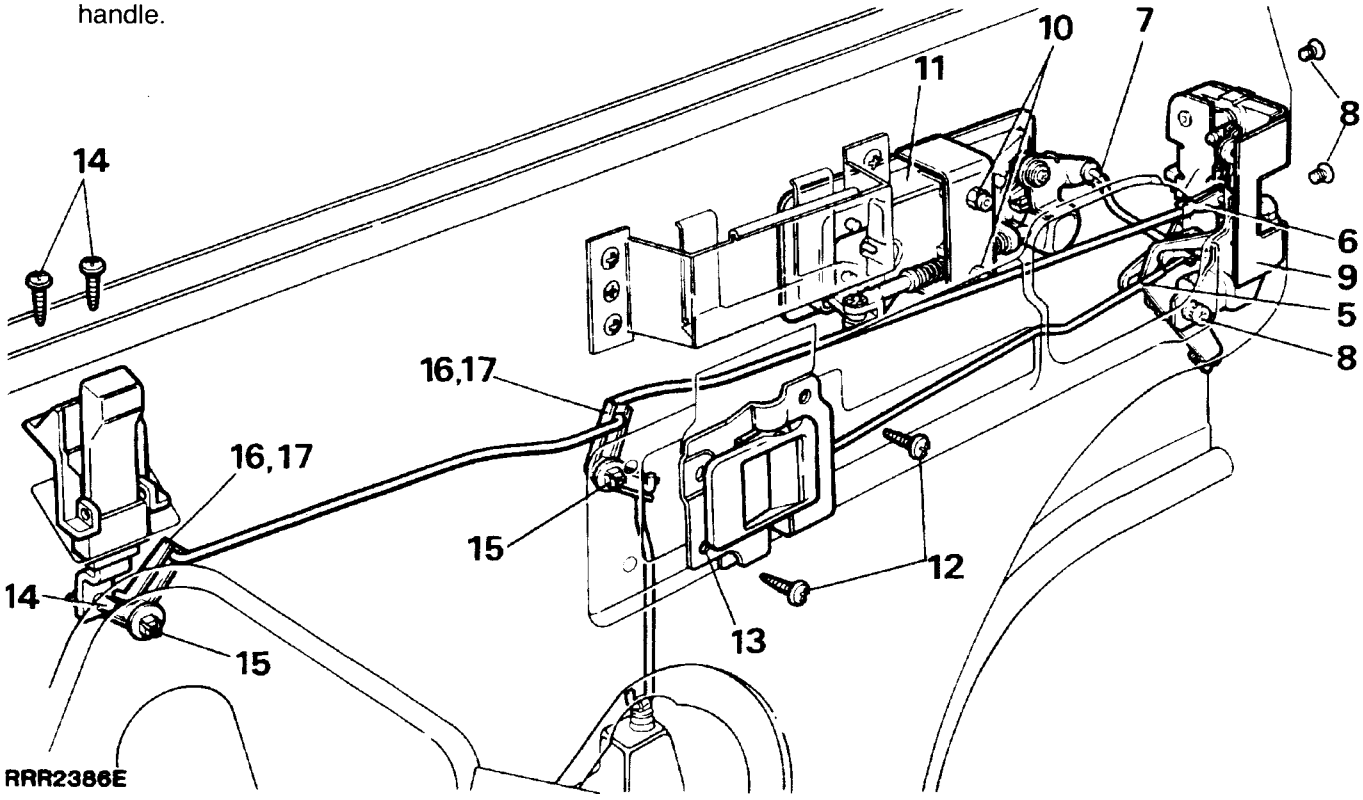
Sill locking bellcranks

15. Press out plastic locking pins from inner door panel.
16. Release bellcranks from inner door panel and unhook respective connecting rods.
17. Withdraw bellcranks from inner door panel.

△ **NOTE: When fitting bellcranks, locking pins are entered into square insert from outside and pressed in flush.**

Refit

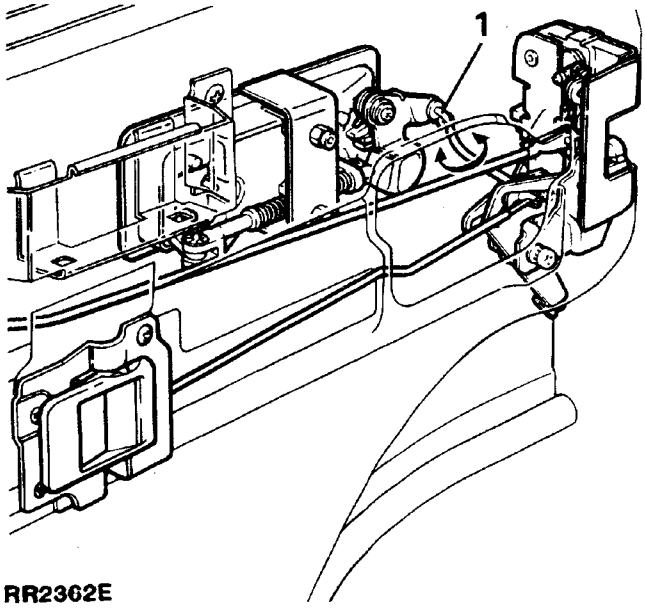
18. Reverse removal procedure. 1 to 17.



REAR DOOR LOCK AND HANDLE ASSEMBLY

Service repair no - 76.37.48

Outside door release handle to lock



RR2362E

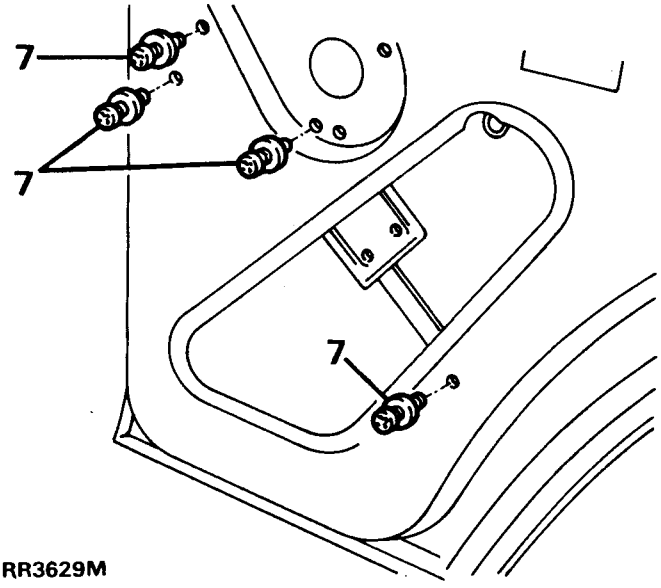
1. Disconnect connecting rod at rear of door outer release handle.
2. Rotate rod to adjust operating length as required, so that door release occurs before maximum handle movement.

REAR DOOR GLASS AND REGULATOR

Service repair no - 76.31.02 / 76.31.46

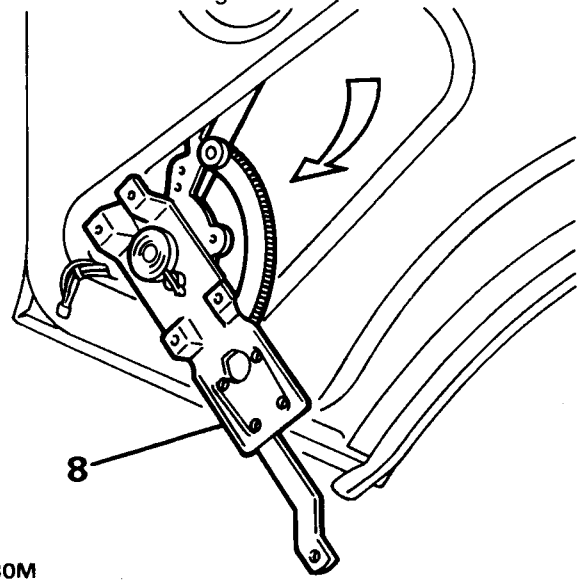
Remove

1. Fully close window and secure with tape.
2. Disconnect battery negative lead.
3. Remove trim panel. ***See Rear Door - Trim Panel***
4. Remove sill button.
5. Remove plastic vapour barrier.
6. Remove window lift motor. ***See ELECTRICAL, Repair, Window Lift Motor - Rear Doors***

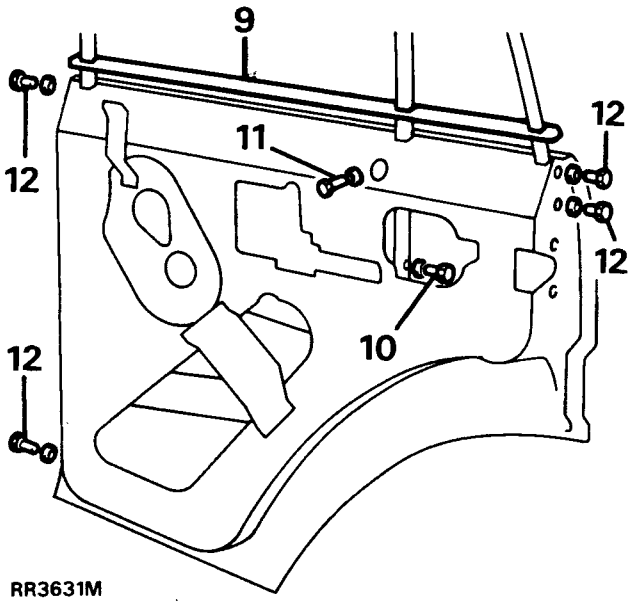


RR3629M

7. Remove four window regulator screws with shakeproof washers.
8. Disengage lifting arm stud from channel and remove window regulator.



RR3630M



RR3631M

9. Remove waist rail seal from top of door panel.
10. Remove bolt, spring and plain washers which secures bottom of door frame.
11. Remove bolt, spring and plain washer from door frame, as shown.
12. Remove two bolts, spring and plain washers from both door faces.
13. Remove door frame with glass in position.
14. Remove tape and slide glass out of door frame.

Refit

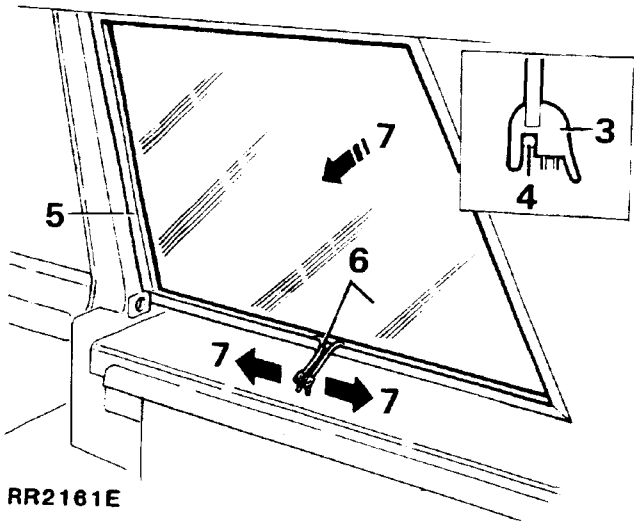
15. Reverse removal procedure. When fitting door frame align to suit door opening. Then tighten door frame securing bolts.

REAR QUARTER LIGHT GLASS

Service repair no - 76.81.25

Remove

1. Remove and discard moulding from flange around opening.
2. Clean area where moulding contacts body.



RR2161E

Refit

3. Fit new moulding to glass.
4. Fit a draw cord around moulding retaining channel.
5. Coat flange around opening with liquid soap to aid assembly.
6. Hold glass and moulding to opening. Site draw cords inside vehicle.
7. With assistance push glass and moulding into opening. Pull draw cords enabling seal to ride over flange.
8. Ensure interior trim fits under moulding.
9. Ensure moulding is settled and contacts body.

FRONT SEAT ELECTRICAL

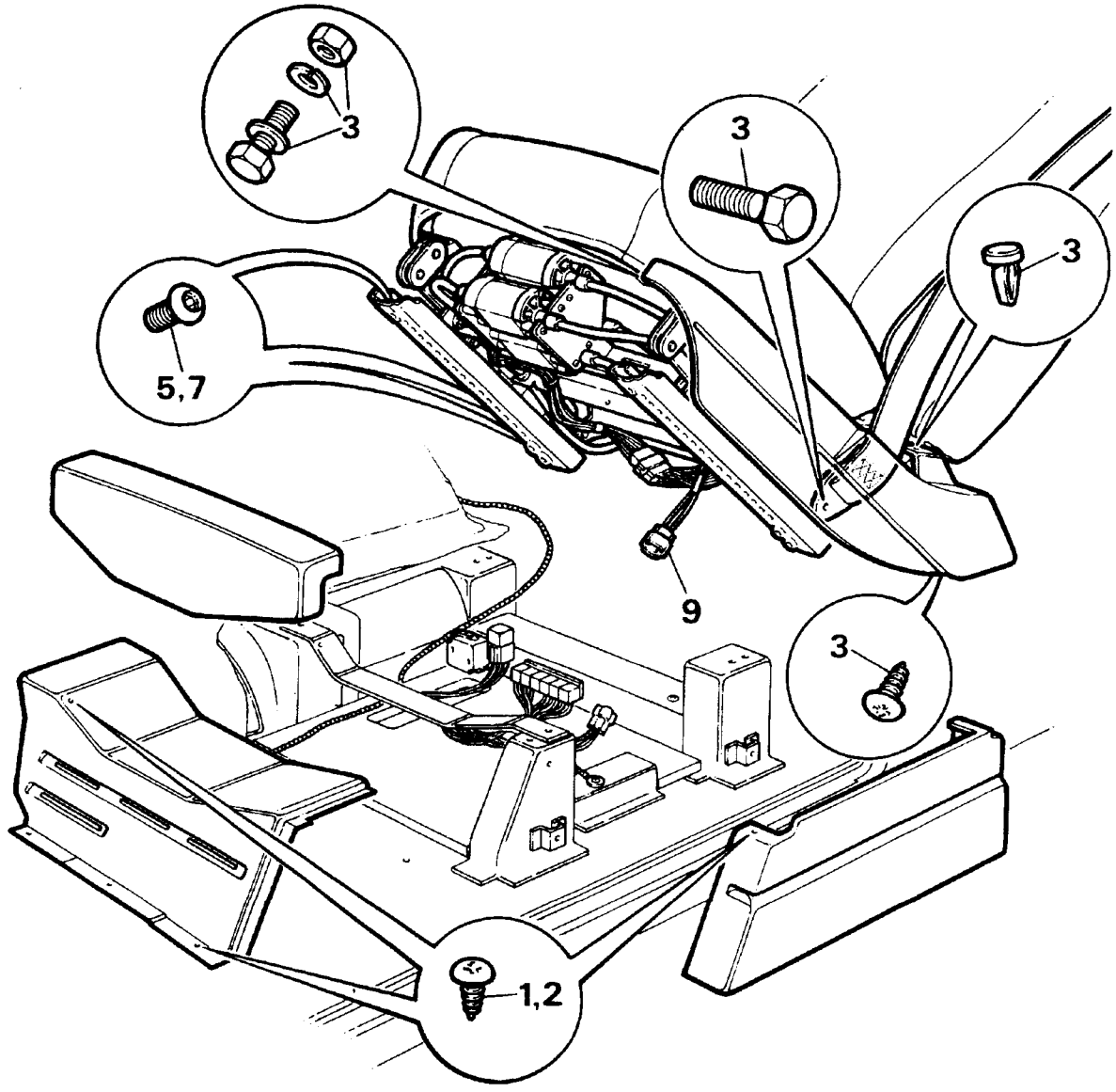
Service repair no - 76.77.01

Remove

1. Remove screw securing seat side trim panel and remove panel.
2. Remove three screws from seat front trim panel. Remove screw from top of trim panel to seat base, located below seat base cushion. Remove panel.
3. Remove three fixings securing cushion side trim panel. Remove panel. Remove bolt securing seat belt.
4. Move seat to rearward position. If seat will not move. ***See ELECTRICAL, Repair, Electrical Seat Failure***
5. Remove two screws at front of each slide channel.
6. Move seat to most forward position.
7. Remove four screws at rear of each slide channel.
8. Disconnect battery negative lead.
9. Disconnect all electrical multiplugs to seat electrics.
10. Remove seat.

Refit

11. Reverse removal procedure. Arrange electrical leads so they can not become trapped by seat slide mechanism.



RR2152E

FRONT SEAT MANUAL

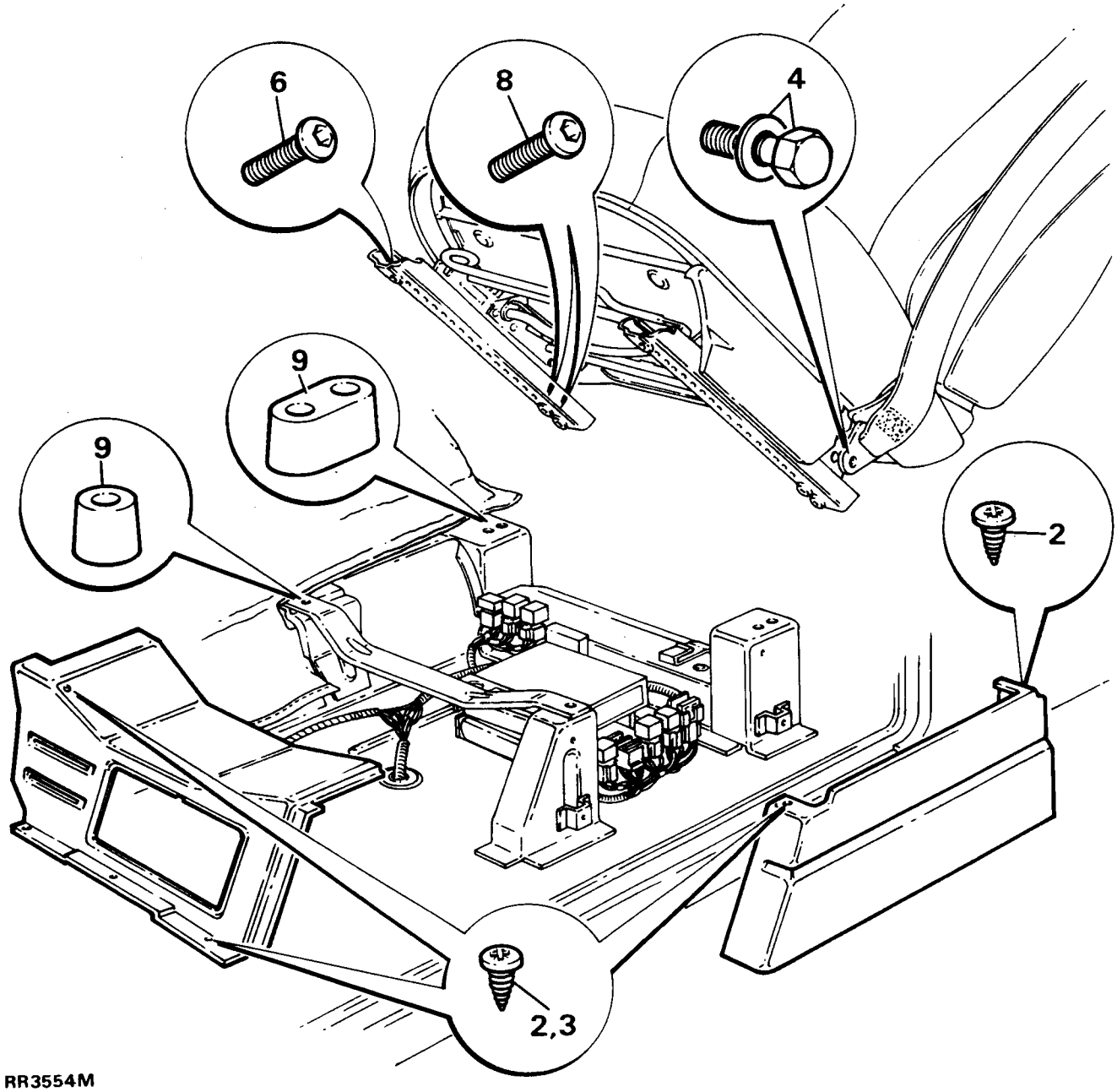
Service repair no - 76.70.01

Remove

1. Disconnect battery negative lead.
2. Remove two screws securing side panel and remove panel.
3. Remove three screws from front trim panel. Remove screw from top of trim panel to seat base. Remove panel.
4. Remove bolt and washer securing seat belt.
5. Move seat to rearward position.
6. Remove two screws at front of each slide channel.
7. Move seat to most forward position.
8. Remove four screws at rear of each slide channel.
9. Remove seat, retaining spacers between slide channel and seat base.

Refit

10. Reverse removal procedure.



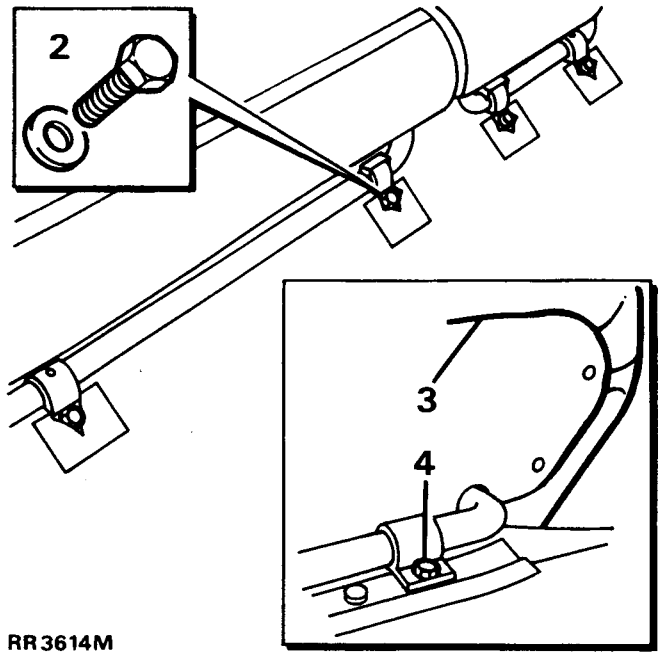
RR3554M

ASYMMETRIC SPLIT REAR SEAT

Service repair no - 76.70.38

Remove

1. Lift footwell carpet to access front hinge bolts.



RR3614M

2. Remove hinge bolts.
3. Fold seat fully forward.
4. Remove rear hinge bolts.
5. Remove seat from vehicle.

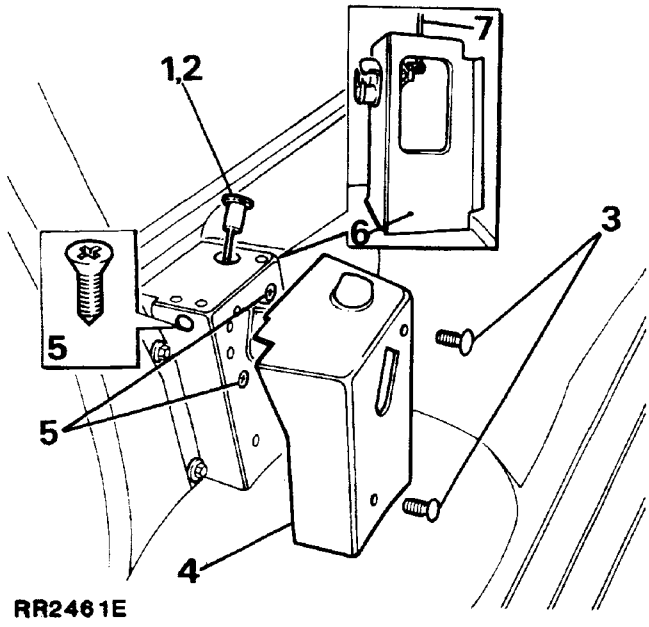
Refit

6. Reverse removal procedure. Ensure seat folds and latches smoothly.

ASYMMETRIC SPLIT REAR SEAT - LOCKING MECHANISM

Service repair no - 76.70.51

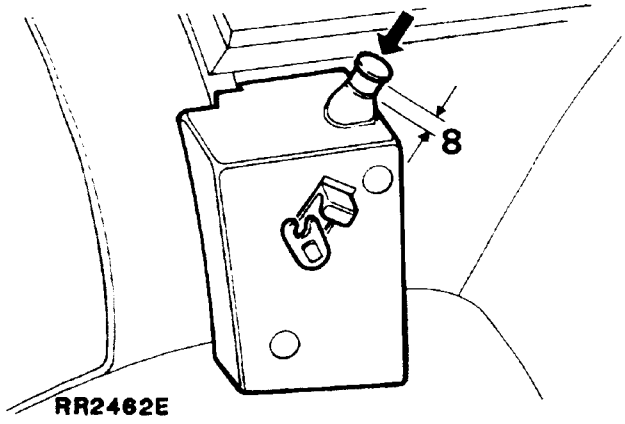
Remove



RR2461E

1. Depress release button and fold seat forward.
2. Unscrew and remove release button.
3. Remove two trim buttons securing trim cover.
4. Remove trim cover.
5. Remove three screws securing latch to tower. One screw is accessed through hole in tower.
6. Retrieve latch from opening rear of tower.
7. Remove operating rod by releasing plastic clip.

Refit



RR2462E

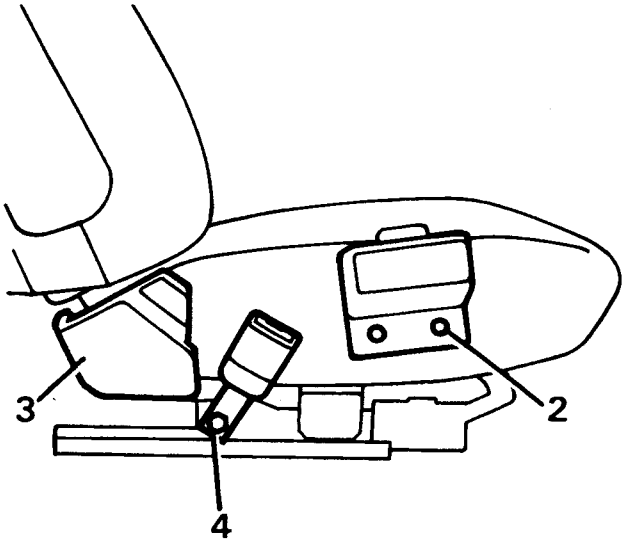
8. Reverse removal procedure. When release button is depressed there must be a gap from 5 to 8 mm between head of button and lip of trim cover.

FRONT SEAT HEATED CUSHION AND SQUAB

Service repair no - 76.77.05 / 76.77.14

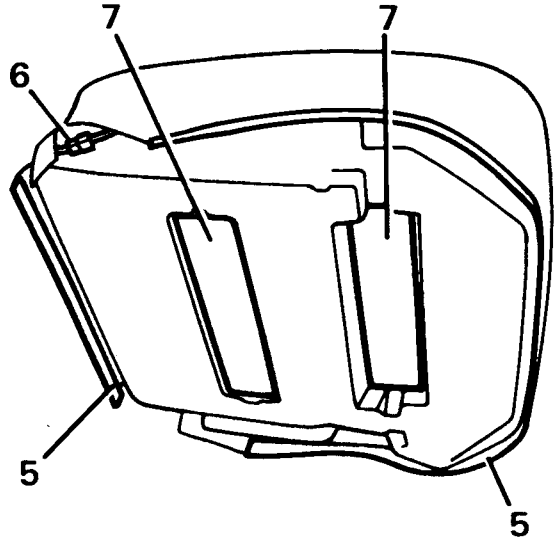
Remove heated cushion.

1. Remove front seat assembly. ***See Front Seat Electrical***



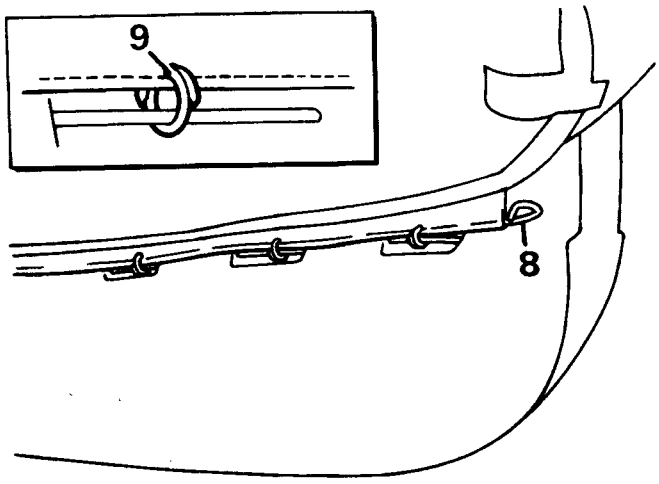
RR3645M

2. Remove two screws securing seat control adjustment unit.
3. Remove two screws securing corner trim.
4. Release seat belt buckle bracket.
5. Release trim from seat frame.



RR3646M

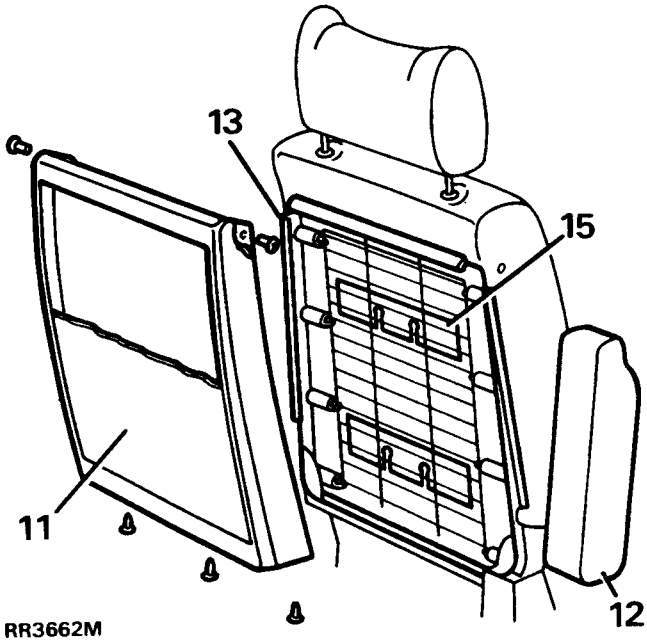
6. Disconnect heater wiring at multiplug to seat squab. Remove cushion and trim from seat frame.
7. Turn 90° two seat trim retention plates and push through slot in cushion foam.



RR3647M

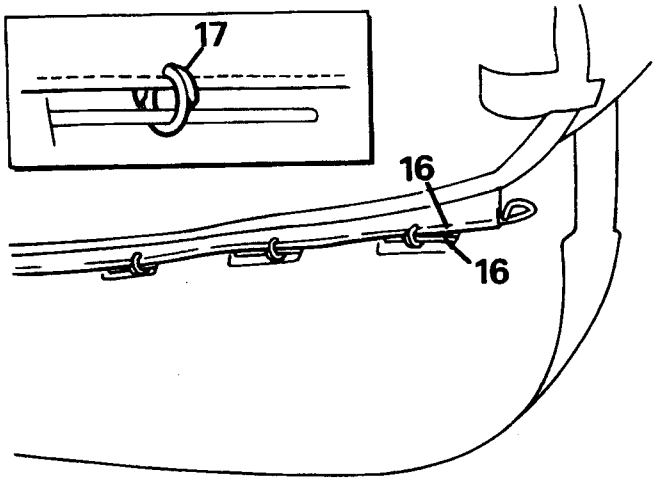
8. Fold seat trim over cushion to reveal stapled wire retention rods.
9. Pry open staples and release seat trim from seat cushion.

Continue for removal of heated squab.



RR3662M

10. Remove headrest.
11. Remove squab panel rear. Three screws at base. Peel back trim to remove screw from each top corner.
12. Remove armrest assembly.
13. Release trim from edge of seat frame.
14. Remove squab foam with trim from seat frame.
15. Turn 90° two trim retention plates and push through slot in foam.



RR3663M

16. Fold trim over squab foam to reveal two wire retention rods.
17. Pry open staples and release trim from squab cushion.

Refit

18. Reverse removal procedure.

SEAT BELTS

Introduction

Seat belt assemblies are factory fitted. If removal is necessary follow procedures in this section. All seat belt fixings **MUST** be tightened to correct torque values.

Seat belt assemblies **MUST** be replaced after they have been subjected to loading such as in a collision.

A lamp warning is incorporated to alert user. The warning lamp will illuminate for eight seconds when ignition is switched on regardless of seat belt usage.

On American specification vehicles a audible warning will sound with an high and low note from four to eight seconds unless driver seat belt is fitted.

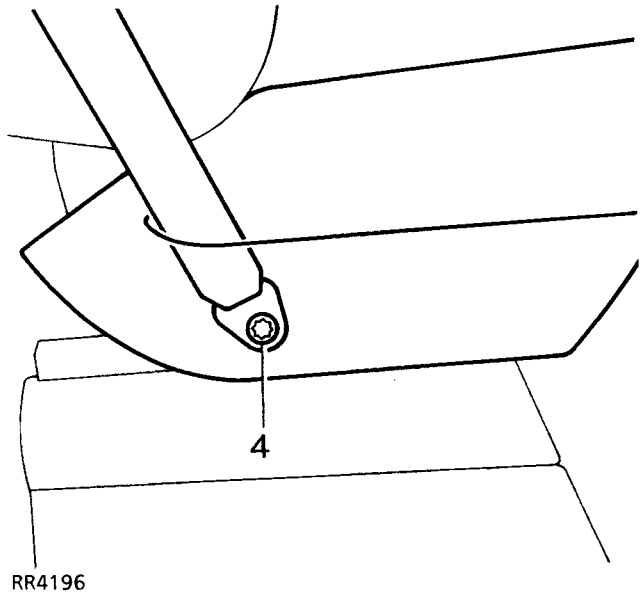
A lap belt is provided for occupant of the centre rear seat.

FRONT SEAT BELT

Service repair no - 76.73.10

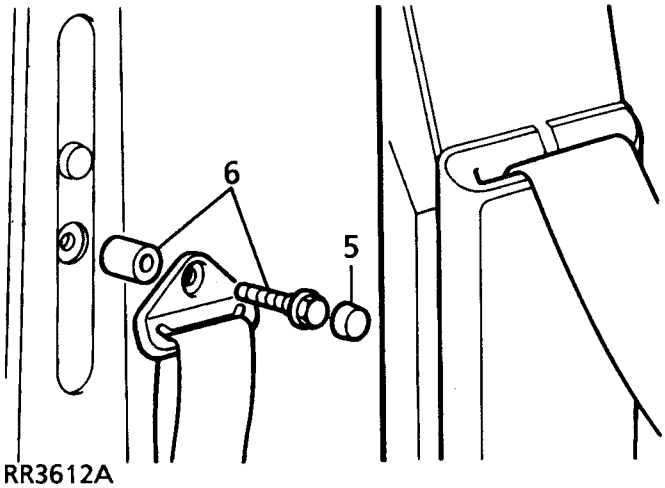
Remove

1. Move seat to access belt mountings.
2. Disconnect battery negative lead.
3. Remove seat side trim panel.



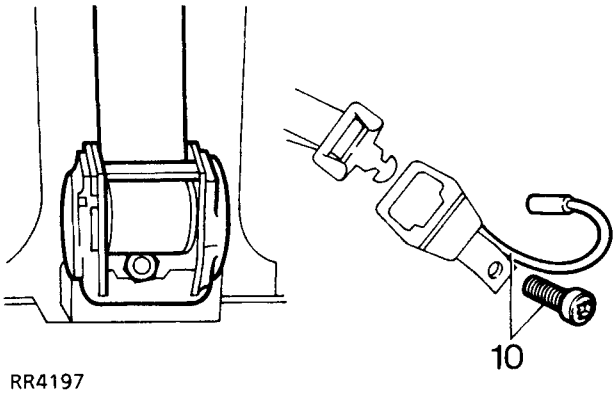
RR4196

4. Remove bolt, plain washer and spacer from belt to seat base.
5. Remove moulding from adjustable seat belt mounting.
6. Remove nut and spacer securing seat belt to 'B'post.



RR3612A

7. Pull door seal away to remove lower 'B' post trim.
8. Remove seat belt through slot in lower 'B' post trim.



RR4197

9. Remove bolt and spring washer from inertia reel assembly to 'B' post.
10. Disconnect electrical plug and remove bolt securing buckle to seat base.

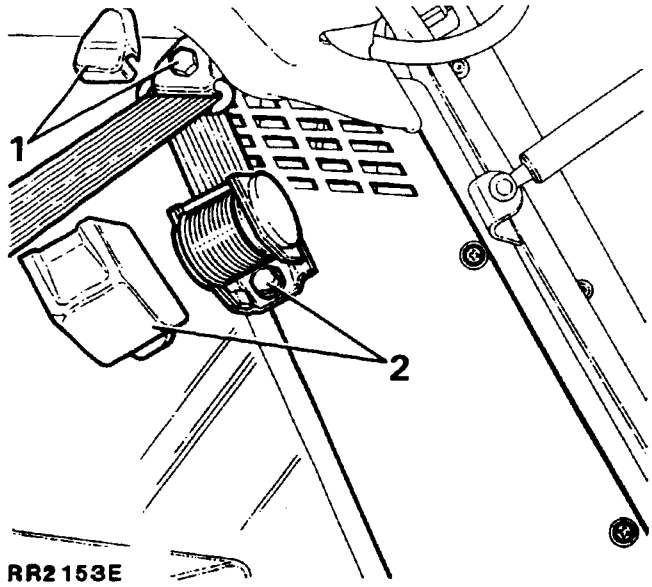
Refit

11. Reverse removal procedure. Ensure belts are not twisted. Tighten bolts to ***25Nm.***

REAR SEAT BELT

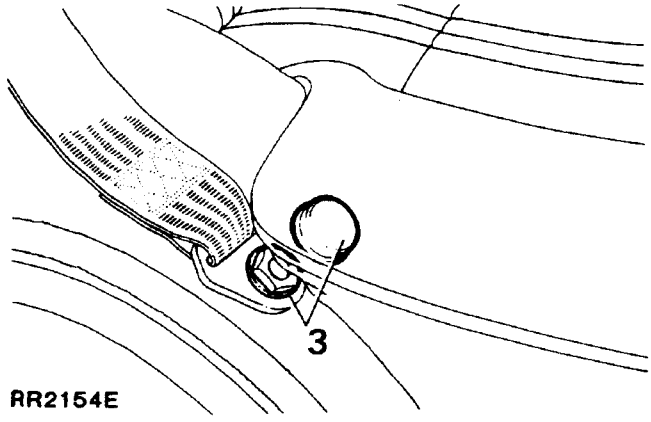
Service repair no - 76.73.18

Remove



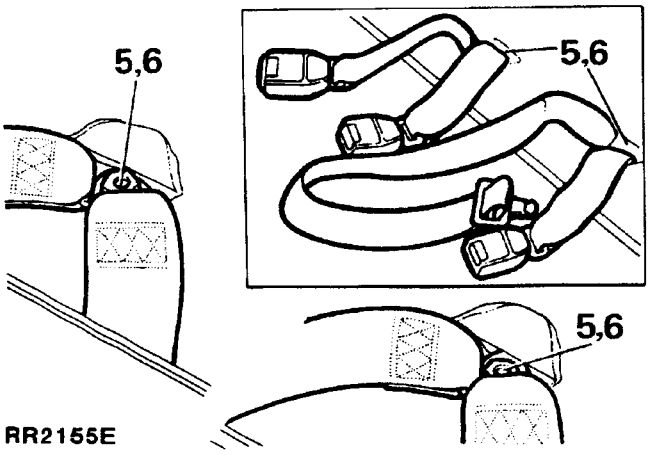
RR2153E

1. Remove plastic cover from upper guide bracket. Remove bolt, spacer, plain and wavy washer.
2. Unclip cover from inertia reel assembly. Remove bolt, spring washer. Place reel to one side.



RR2154E

3. Remove plastic cover and bolt securing belt assembly to wheel arch.
4. Remove belt assembly.



RR2155E

5. Remove bolt and plain washer securing belt bracket to load space floor.
6. Centre lap strap only: Remove bolts securing lap strap and buckle assembly and withdraw both components.

Refit

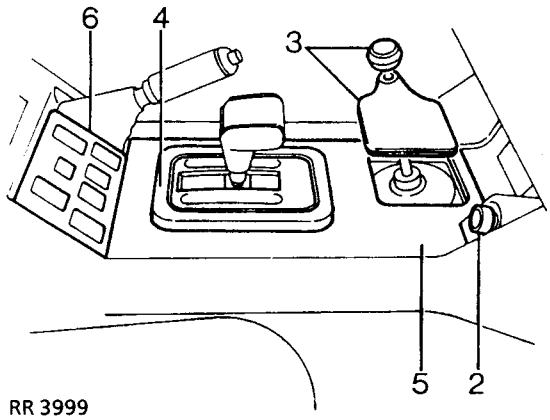
7. Reverse removal procedure. Ensure belts are not twisted. Tighten bolts to ***25Nm.***

CENTRE CONSOLE

Service repair no - 76.52.00
Service repair no - 76.25.09 Veneer panel
Service repair no - 76.25.25 Switch panel

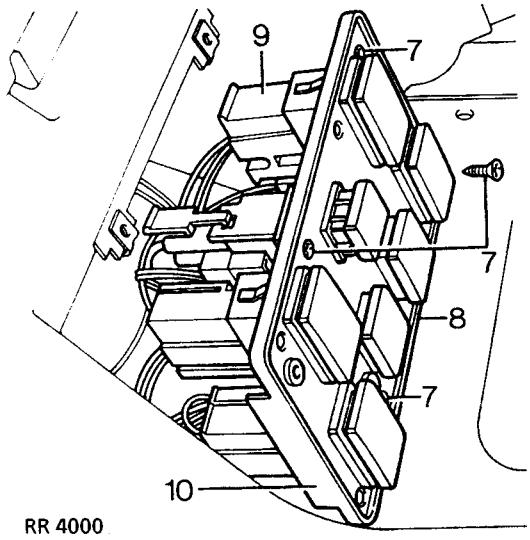
Remove

1. Disconnect battery negative lead.



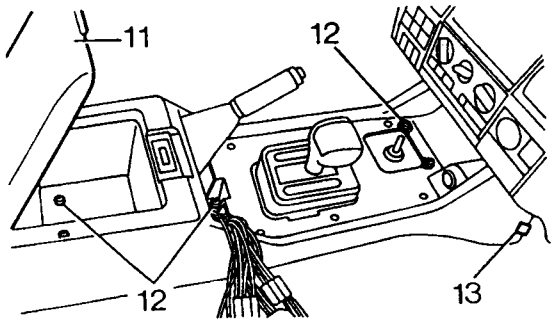
RR 3999

2. Remove cigar lighter.
3. Release gaiter and unscrew transfer gear lever knob.
4. Lift at front and remove finisher from automatic gear selector housing.
5. Lift at front and remove veneer panel.
6. Remove switch panel veneer.



RR 4000

7. Remove 4 screws securing switch panel.
8. Withdraw switch panel from console.
9. Disconnect multiplugs from 9 switches.
10. Remove switch panel assembly.



RR 4001

11. Open glovebox lid.
12. Remove 5 screws securing console.
13. Release 2 clips, securing front of console to bracket.
14. Release handbrake gaiter from console.
15. Remove spring clip (from RH side) and clevis pin securing cable to handbrake lever.
16. Lift handbrake lever and manoeuvre console slightly away from tunnel.
17. Disconnect Lucar connectors from cigar lighter.
18. Lift console assembly over handbrake and gear levers and remove from vehicle.

Refit

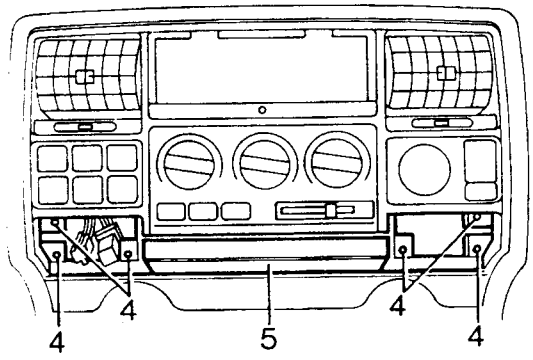
19. Reverse removal procedure. Ensure electrical plugs are fitted correctly and wiring is not trapped.
20. Lubricate handbrake clevis pin.

DRINKS TRAY

Service repair no - 76.46.41

Remove

1. Disconnect battery negative lead.
2. Remove ash tray.
3. Release air suspension switch panel from dash and position below aperture. ***See ELECTRICAL, Repair, Air Suspension Switches and Bulbs***



RR 4003

4. Remove 6 screws securing drinks tray to dash.
5. Remove drinks tray assembly.

Refit

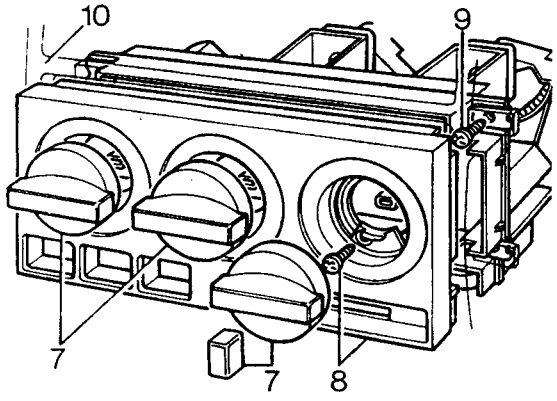
6. Reverse removal procedure.

DASH PANEL CENTRAL LOUVRE PANEL

Service repair no - 76.46.42

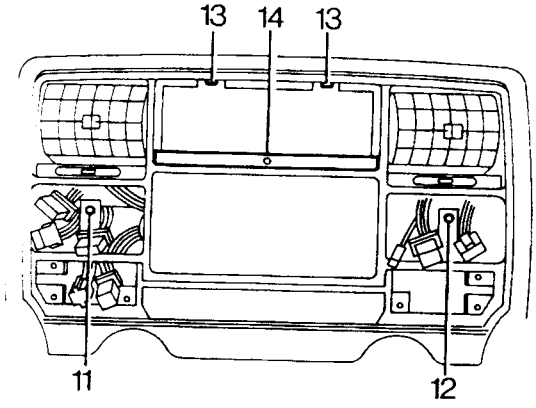
Remove

1. Disconnect battery negative lead.
2. Remove radio from mounting frame. ***See ELECTRICAL, Repair, Radio***
3. Remove clock assembly.
4. Remove drinks tray. ***See Drinks Tray***
5. Remove heater control unit. ***See HEATING AND VENTILATION, Repair, Heater Control Unit***
6. Remove centre console assembly. ***See Centre Console***



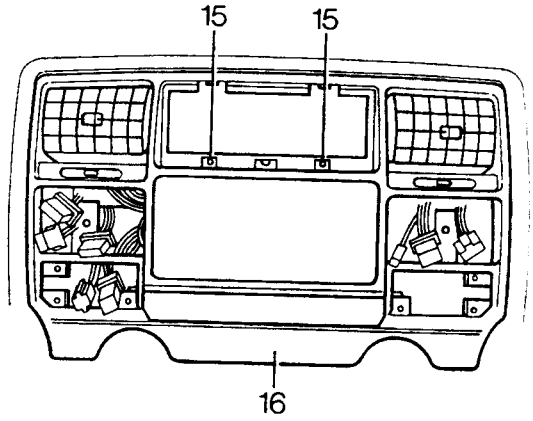
RR 4004

7. Remove 3 heater control knobs and blower switch knob.
8. Undo 2 screws and remove heater graphic display panel.
9. Remove 4 screws securing heater control unit to panel.
10. Push heater control unit through panel.



RR 4005

11. Inside auxiliary switch panel aperture, remove 2 screws securing panel.
12. Inside clock aperture, remove 2 screws securing panel.
13. Slacken 2 screws securing upper panel.
14. Manoeuvre LED light panel from panel, disconnect bulb holder and remove light panel.



RR 4006

15. Remove 2 screws securing louvre panel.
16. Remove louvre panel from dash panel.

Refit

⚠ **CAUTION: When refitting avoid trapping of electrical wiring.**

17. Reverse removal procedure. Place louvre panel in position, ensure wiring looms are free and multiplugs and connectors are through their apertures
18. Check function of all switches and controls.

DASH PANEL ASSEMBLY

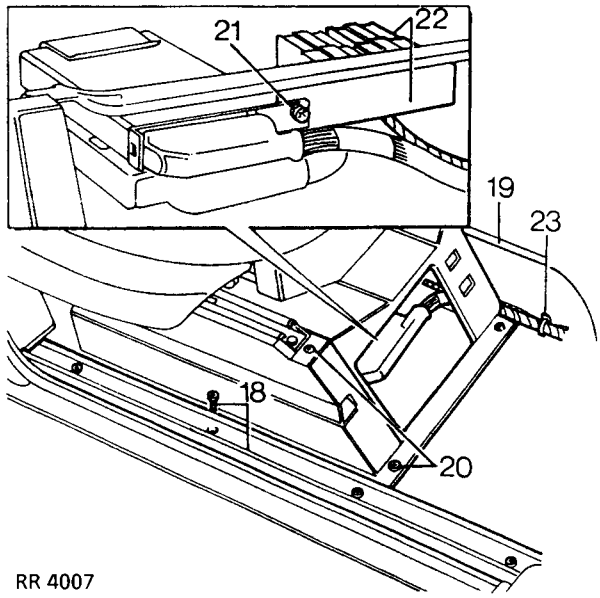
Service repair no - 76.46.23

Remove

1. Move front seats to rearmost position.
2. Disconnect battery negative lead.
3. Disconnect air bag multiplugs under dash panel.

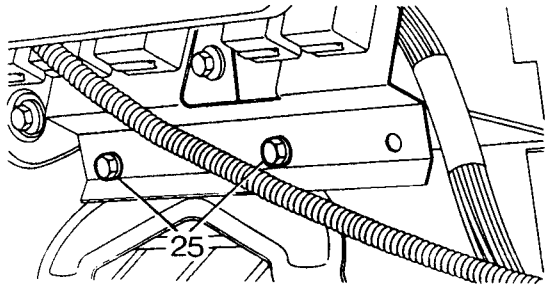
⚠ **CAUTION: When air bags are fitted, reference must be made to the Airbag Supplementary Restraint System section.**

4. Remove passenger's side glove box.
5. Remove driver's side access panel.
6. Remove centre console assembly. ***See Centre Console***
7. Remove airbag from steering wheel. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Driver's Airbag Module***
8. Remove airbag from panel panel. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Passenger's Airbag Module***
9. Release clamp and lower steering column.
10. Remove steering wheel. ***See STEERING, Repair, Steering Wheel***
11. Remove column switch assembly. ***See SUPPLEMENTARY RESTRAINT SYSTEM, Repair, Column Switch Assembly***
12. Remove instrument housing. ***See ELECTRICAL, Repair, Instrument Binnacle***
13. Remove radio. ***See ELECTRICAL, Repair, Radio***
14. Remove exterior mirrors switch panel. ***See ELECTRICAL, Repair, Auxiliary Switches and Bulbs***
15. Remove air suspension switch panel. ***See AIR SUSPENSION, Repair, Operating Switches and Bulbs***
16. Remove switch panel. ***See ELECTRICAL, Repair, Switch Panel***
17. Remove clock panel assembly. ***See ELECTRICAL, Repair, Clock***



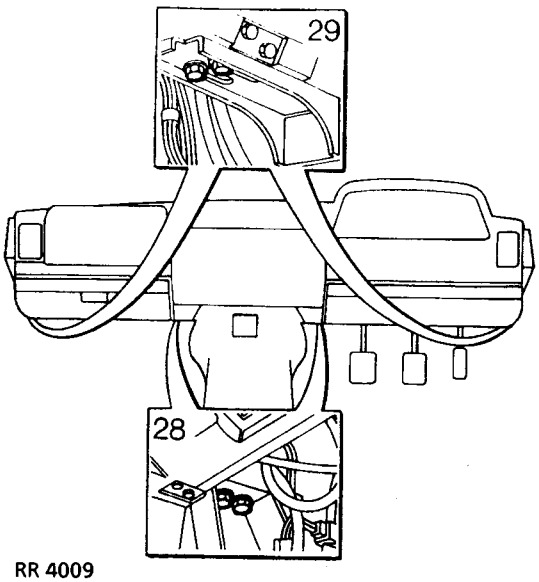
RR 4007

18. Undo 4 screws and remove RH front door tread plate.
19. Position RH footwell carpet aside.
20. Undo 4 screws and remove front finisher from RH seat.
21. Remove screw securing air suspension ECU bracket.
22. Release multiplug from bracket and disconnect multiplug.
23. Cut tie securing air suspension switch harness to tunnel.
24. Position switch harness aside and lay carpet in footwell.

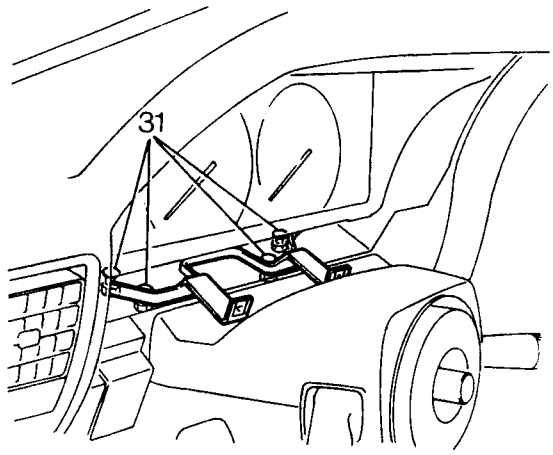


RR 4008

25. Undo screw securing mounting bracket and position passenger's side relay assembly aside.
26. Set heater controls fully clockwise.
27. Note position of levers, disconnect heater control cables from levers and outer cable from retaining clips.

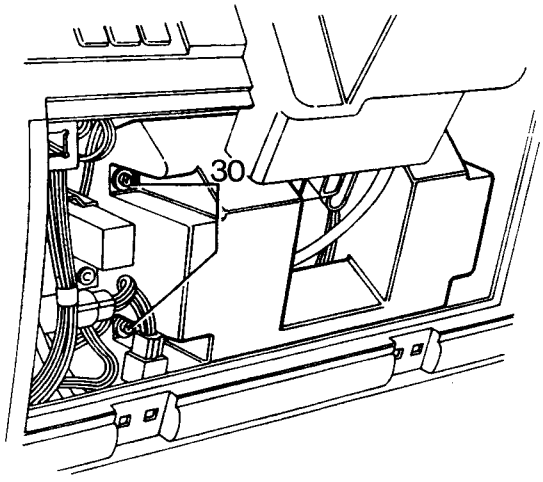


RR 4009



RR 4011

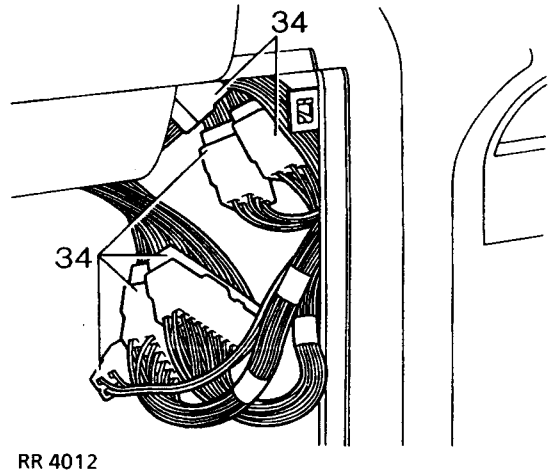
28. Remove 4 bolts securing dash panel to centre lower mounting brackets.
29. Remove 4 bolts securing dash panel to side lower mounting brackets.



RR 4010

30. Undo 4 screws and remove 2 driver's knee bolster pads from below steering column.

31. Remove 4 nuts securing instrument mounting bracket to dash panel.



RR 4012

32. With assistance: Manoeuvre dash panel partially rearward.
33. Driver's side: Disconnect 6 multiplugs connecting dash harness to main harness.
34. Disconnect 3 multiplugs connecting dash harness to fusebox.
35. With assistance: Lift dash panel rearward to clear fixings and remove from vehicle.

Refit

CAUTION: When refitting avoid trapping of electrical wiring.

36. Reverse removal procedure.
37. With assistance: Position dash panel and connect dash harness multiplugs to fusebox and main harness.
38. Reverse removal procedure. Ensure dash panel upper bracket studs are located before the 4 lower brackets.
39. Reverse removal procedure. Disconnect glovebox switch Lucars to ease fitting of relay bracket.

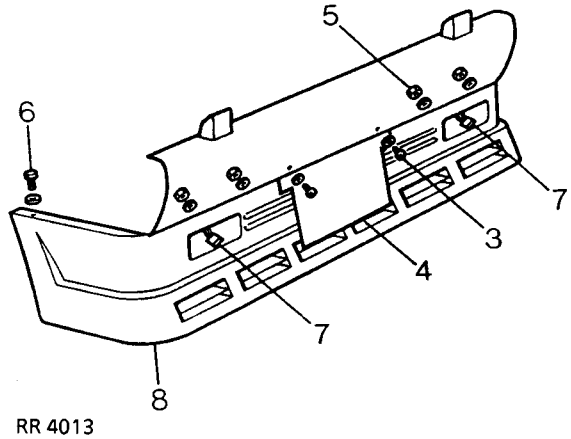
FRONT SPOILER

Service repair no - 76.10.46

The spoiler will reduce the vehicle approach angle by approximately 10° . Where the vehicle is expected to perform on rough or hilly terrain, it is advisable to remove the spoiler assembly to prevent possible damage from ground contact.

Remove

1. Raise and support front of vehicle on safety stands.
2. Remove engine undertray.



RR 4013

3. Remove two screws with spring washers securing centre of front spoiler and number plate.
4. Remove number plate.
5. Remove four nuts with spring washers located behind front bumper above auxiliary lamps.
6. Remove two bolts, nuts and washers securing outer edges of spoiler to front wing[fender]s.
7. Release auxiliary lamp multiplugs from clips and disconnect the multiplugs.
8. Remove front spoiler assembly.
   Do not carry out further dismantling if component is removed for access only.
9. Remove nut retaining each auxiliary lamp.
10. Remove 2 auxiliary lamps.
11. Transfer components removed to new spoiler.

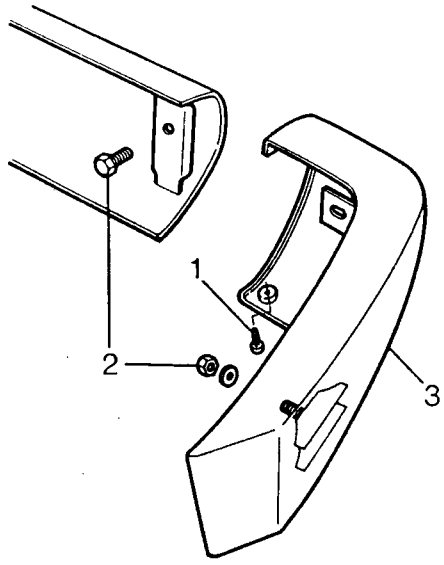
Refit

12. Reverse removal procedure.

FRONT BUMPER

Service repair no - 76.22.08
Service repair no - 76.22.41 - End cap

Remove



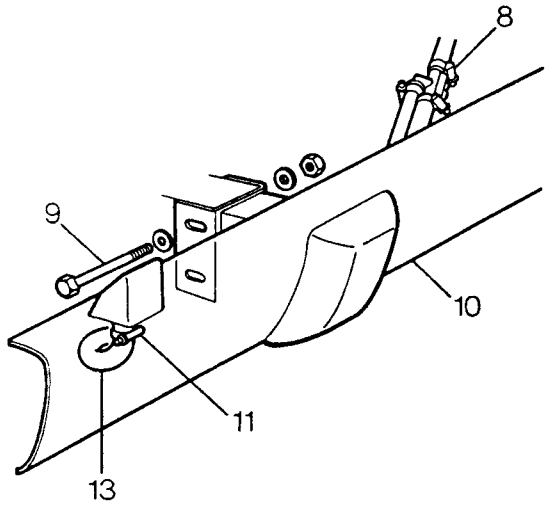
RR 4014

End cap - each

1. Remove screw securing bottom of end cap.
2. From inside, remove 2 nuts and bolts securing top of end cap.
3. Remove end cap.

Front bumper

4. Raise and support front of vehicle on safety stands.
5. Remove radiator grille. ***See Radiator Grille***
6. Remove engine undertray.
7. Remove front spoiler assembly. ***See Front Spoiler***



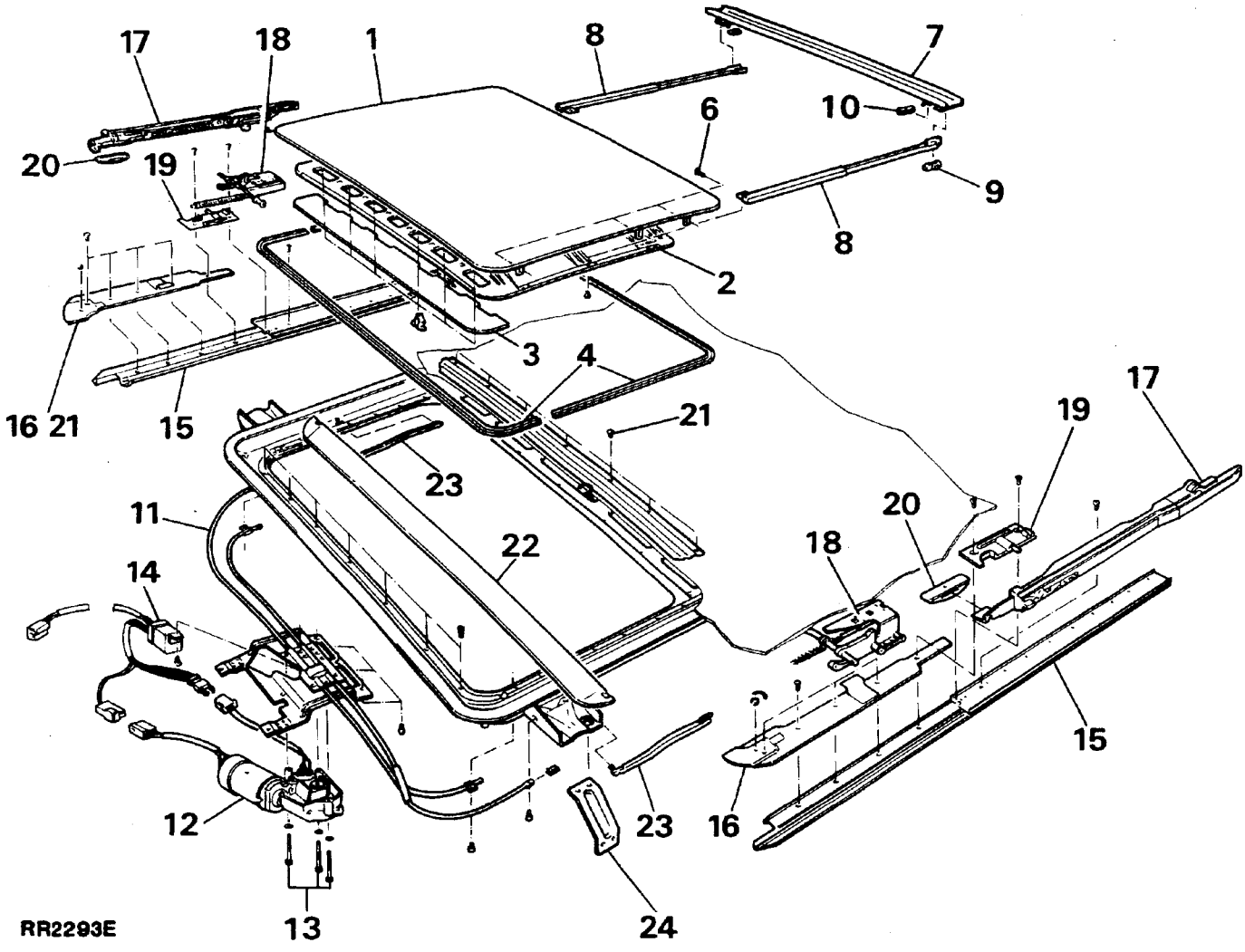
RR 4015

8. Release 2 clips and disconnect headlamp washer pipes from 'T' piece. Plug pipe ends.
9. Remove 4 bolts securing bumper to chassis frame.
10. Remove bumper assembly.
    Do not carry out further dismantling if component is removed for access only.
11. Release 2 clips and disconnect pipes from headlamp washers.
12. Remove pipe and valve assembly.
13. Remove nut and washer and remove each washer jet.
14. Tranfer components removed to new bumper.

Refit

15. Reverse removal procedure.

METAL SUNROOF ASSEMBLY



KEY

1. Roof panel
2. Sunroof headliner
3. Insulation pad
4. Roof seals (front and rear)
5. Sunroof headliner retaining clips (quantity - 6)
6. Roof panel retaining screws (quantity - 6)
7. Water channel
8. Water channel connectors
9. Support bracket-water channel
10. Slide shoe-water channel
11. Motor bracket/guide tube assembly
12. Operating motor
13. Motor retaining screws
14. Relay
15. Lower guide rails
16. Front guide rails
17. Slide mechanism
18. Rear guide
19. Pivot bracket
20. Slide shoe
21. Rear edge trim finisher
22. Wind deflector assembly
23. Wind deflector operating arms
24. Support bracket (quantity - 6)

OPERATION

Sunroof operation is a tilt and slide action controlled by a rocker switch adjacent to roof lamp, with ignition switched **'ON'.**

1. Depress front of switch to lift rear edge of sunroof into **'Tilt'** position.
2. Depress rear edge of switch to close roof.
3. Depress rear of switch to slide sunroof into **'Open'** position.
4. Depress front of switch to slide sunroof into **'Close'** position.

△ **NOTE: The electric drive cuts out automatically in closed, tilt and open positions. If switch is operated in wrong direction in one of these positions, press switch once to reset and again to operate.**

EMERGENCY OPERATION

If the sunroof fails to operate, check fuse. To close, carry out following procedure:

1. Lower interior lamp mounting panel by releasing two turnbuckles.
2. Remove emergency handle from vehicle tool kit.
3. Engage handle in motor drive spindle and turn to close roof.

MAINTENANCE

At each service water test drain tubes to ensure they are not blocked or kinked. Blow air up rear drain tubes which are clipped to rear mud flap supports. Blow down front drain tubes which run down 'A' post and out of engine bay.
Annually: Clean sunroof opening thoroughly.

△ **NOTE: When vehicle is operated in extremely dusty conditions more frequent cleaning is recommended.**

OPERATING MOTOR, MICRO-SWITCH AND RELAY

△ **NOTE: The motor drive spindle retaining nut is set to correct torque value. If roof fails to operate check retaining nut torque. Tighten to *5Nm.***

Remove

1. Ensure sunroof is closed. Disconnect battery negative lead.
2. Remove interior lamp mounting panel to gain access to motor.
3. Disconnect two wiring connectors.
4. Remove three securing screws and withdraw motor.
5. Remove screw and withdraw relay.
6. Remove microswitch from motor by drilling out rivets, if required.

Refit

7. Secure new microswitch using nuts and bolts to replace rivets. Tighten nuts and apply a spot of paint to threads.
8. Ensure motor is in 'park' position, ie. hole on driven gear aligned with drive spindle.
9. Reverse removal procedure.
10. Check operation of sunroof in all positions.

SUNROOF PANEL SEALS

Service repair no - 76.82.55

Remove

1. Position sunroof in tilt position and Disconnect battery negative lead.
2. Unclip sunroof headliner from roof panel front and slide headliner back.
3. Remove three roof panel screws from each side and remove panel.
4. Remove both seals from roof panel.

Refit

5. Fit front seal to front edge of panel. Ensure there is an equal length of seal each side of centre point.
6. Butt rear seal against front seal fit tight around panel edge. Trim excess seal to produce a close joint with front seal.
7. Refit sunroof panel.

SUNROOF ASSEMBLY

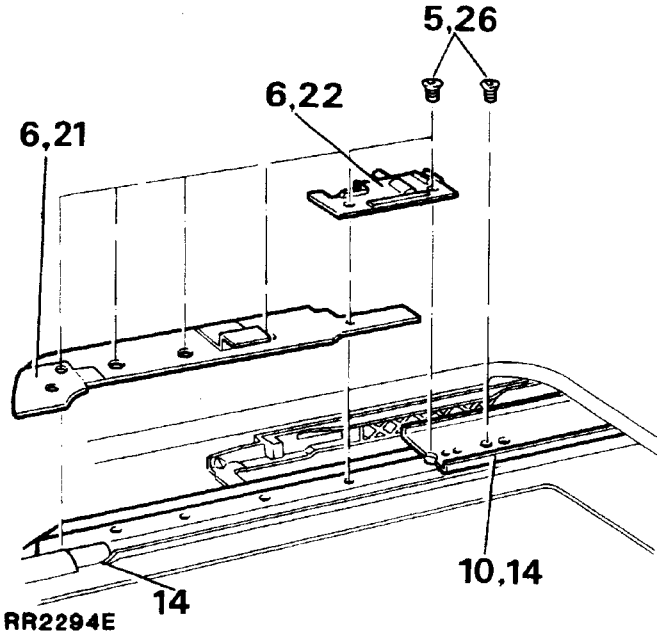
Service repair no - 76.82.71

Including roof panel. Slide mechanism. Wind deflector. Motor mounting bracket. Guide tubes.

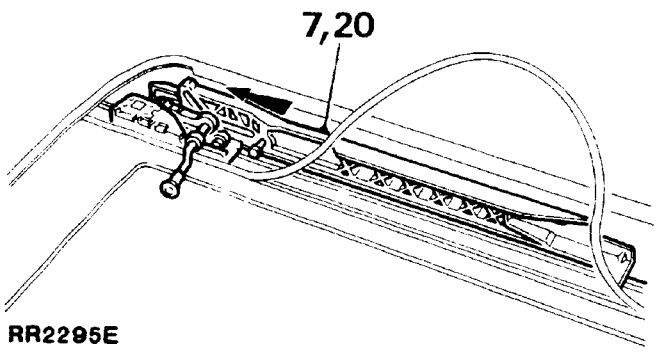
Remove

△ **NOTE: Remove vehicle headlining ONLY if removing motor mounting bracket and guide tubes.** ***See Headlining***

1. Partially open sunroof and unclip sunroof headliner from roof panel front. Slide sunroof headliner back.
2. Move sunroof to tilt position. Disconnect battery negative lead.
3. Remove three roof panel screws from each side and remove panel.
4. Remove motor screws and withdraw motor.

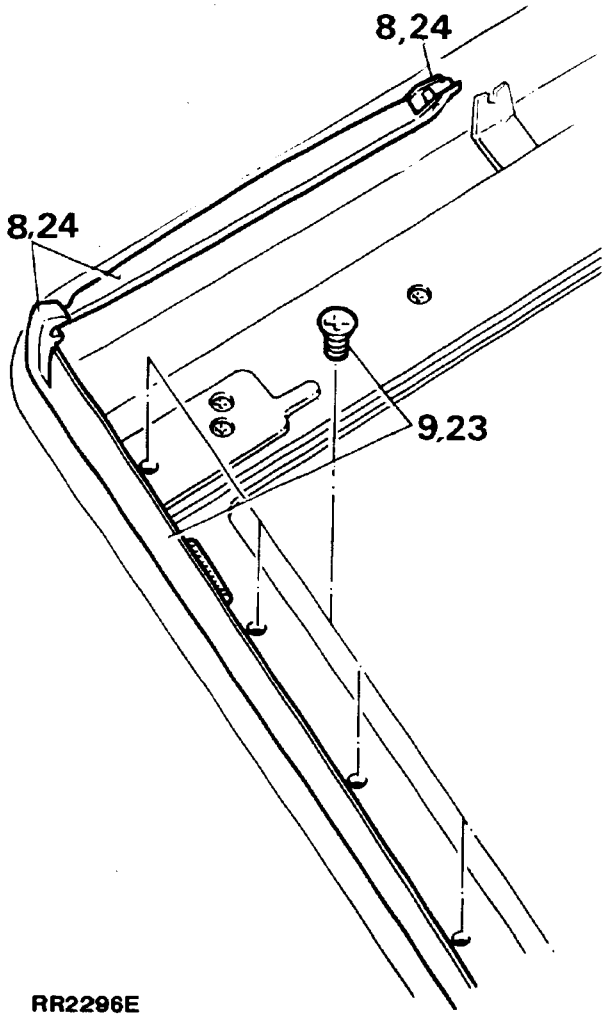


5. Remove guide rail screws, seven each side.
6. Remove pivot bracket and remove front guide rail.
7. Remove slide and tilt mechanism with flexible drive cable from both sides. Only disassemble if replacement parts are required.



RR2295E

8. Unclip both wind deflector operating arms from rear mounting brackets. Remove arms from deflector, if required.



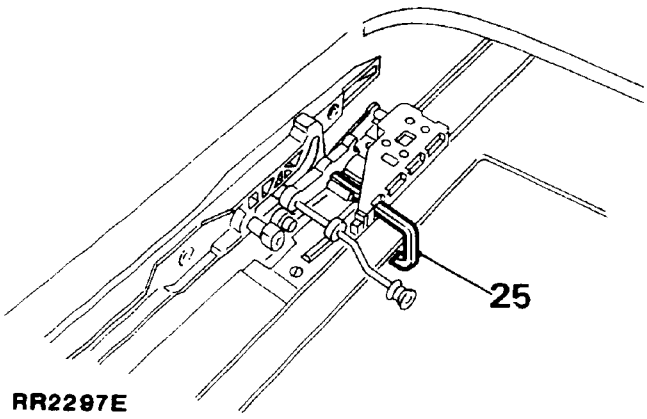
RR2296E

9. Remove seven screws, and withdraw wind deflector.
10. Remove lower guide rails and rear edge finisher, seven screws.
11. Remove screws from guide tubes, two each side. Remove five screws and withdraw motor mounting bracket.
12. Pull sunroof headliner assembly forward and remove.

Refit

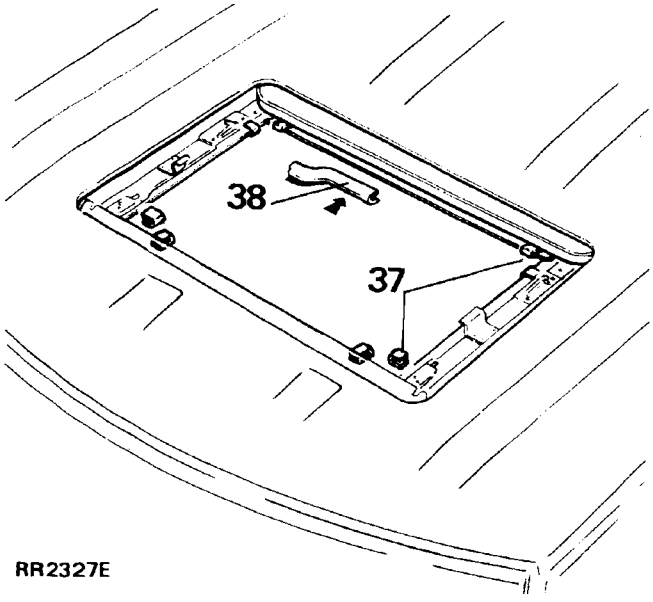
△ **NOTE: During assembly lightly lubricate all sliding parts using a silicon spray.**

13. Position motor bracket and guide tube assembly. Fit and tighten securing screws.
14. Position right guide rail in rear retaining bracket. Push rearwards fully and locate leading edge under drive cable opening. Repeat operation for left hand guide rail.
15. Align fixing holes, and loosely fit screw in seventh hole from front.
16. Position finisher to rear edge of sun roof opening and secure using seven screws.
17. Position sunroof headliner assembly into outer guide runners, and push fully rearwards.
18. Lubricate drive cables. Ensure slide and tilt mechanism is fully assembled.
19. Push cable fully into right side guide tube. Loop remaining cable and enter rear end into right inner side runner.
20. Repeat operation 19. for left side. Push both assemblies rearwards to take up slack in cables, and push a further 75 mm to rear.
21. Position both front guide rails, aligning with four forward holes. Fit screws, do not tighten.
22. Position both pivot brackets, loosely fit screws.
23. Fit wind deflector and tighten fixings.
24. Position right operating arm in locating slot in deflector. Secure opposite end in frame bracket. Repeat for left side.
25. Pull right slide and tilt mechanism forward, align with pivot bracket and secure in position using setting key. Repeat operation for left side.
26. Tighten screws to guide rails, seven each side.
27. Fit and secure relay.
28. Ensure operating motor is in park position ie. hole on driven gear aligned with drive spindle. Fit and secure to mounting bracket.



RR2297E

29. Remove setting keys. Temporarily connect operating switch and electrics.
30. Operate switch to 'tilt' position.
31. Position roof panel into roof opening with six screws, do not tighten.
32. Move roof to 'closed' position and adjust roof profile. The panel profile should be 0.5 mm low at forward edge, 1 mm high at rear edge.
33. Tighten roof panel screws.
34. Tilt sunroof, pull sunroof headliner forward and locate rear brackets in tilt mechanism. Align front six clips and push to secure.
35. Check operation of sunroof.



RR2327E

36. Refit vehicle headlining. ***See Headlining***

SUNROOF HEADLINER ASSEMBLY

Service repair no - 76.82.03

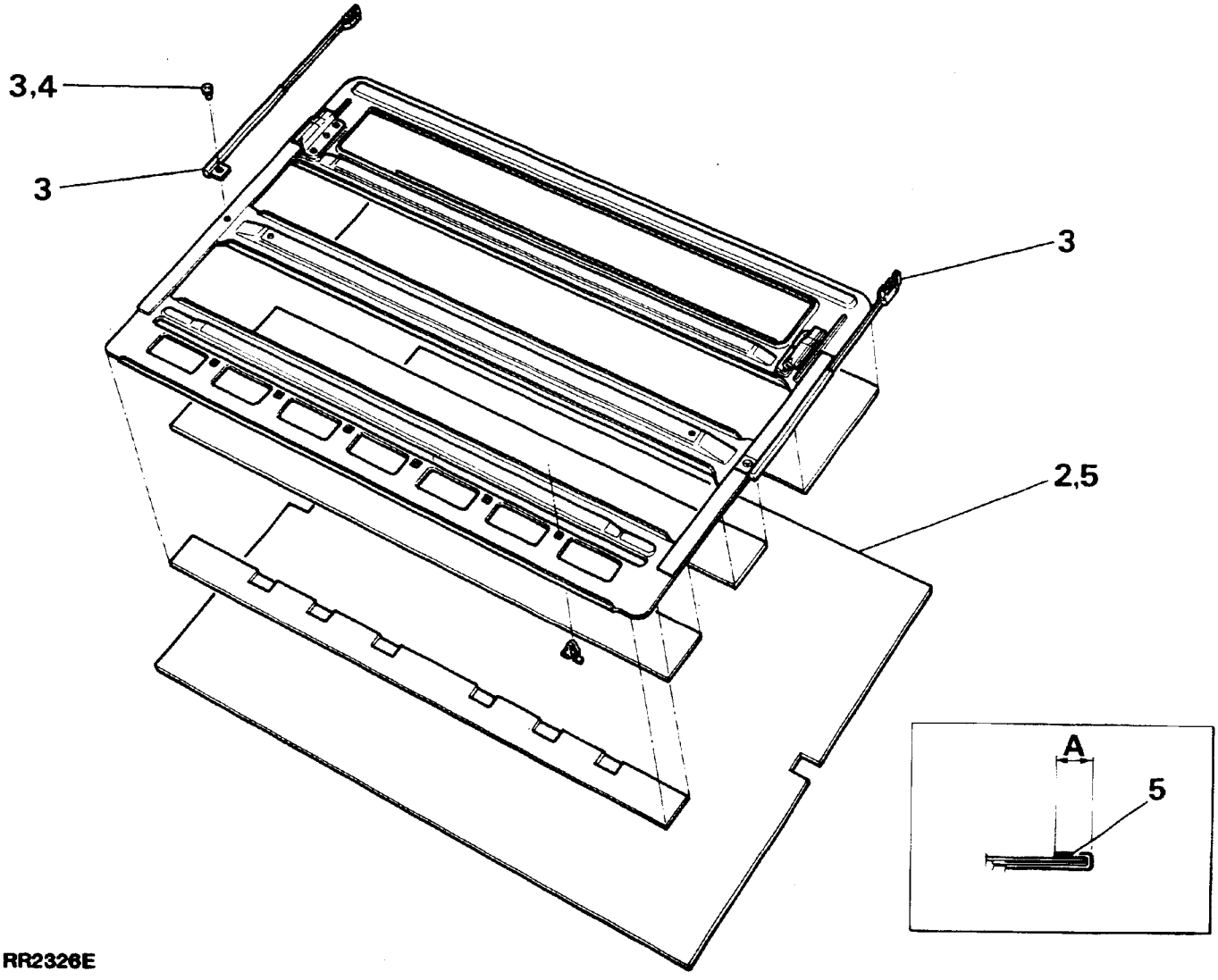
Remove, retrim and refit

Remove and retrim

1. Remove sunroof headliner assembly. ***See Sunroof Assembly***
2. Remove trim covering from frame assembly. It is not necessary to remove three pads and insulation pad shown.
3. If required: remove water channel by unclipping connecting arms. Drill out rivets securing connecting arms to frame.
4. Secure connecting arms to frame using suitable rivets before retrimming frame.
5. Trim frame using a new headliner cover. Inset shows section through frame indicating where adhesive is applied. Dimension 'A' should be radially constant.

Refit

6. Refit sunroof headliner assembly and reassemble sunroof.



RR2326E

GLASS SUNROOF

Operation

The sunroof operates in a tilt and slide action controlled by a rocker switch near the interior lamp.

A drive motor and control unit is located behind the switch and interior lamp panel. The control units function is to stop the drive motor at the full tilt and slide positions.

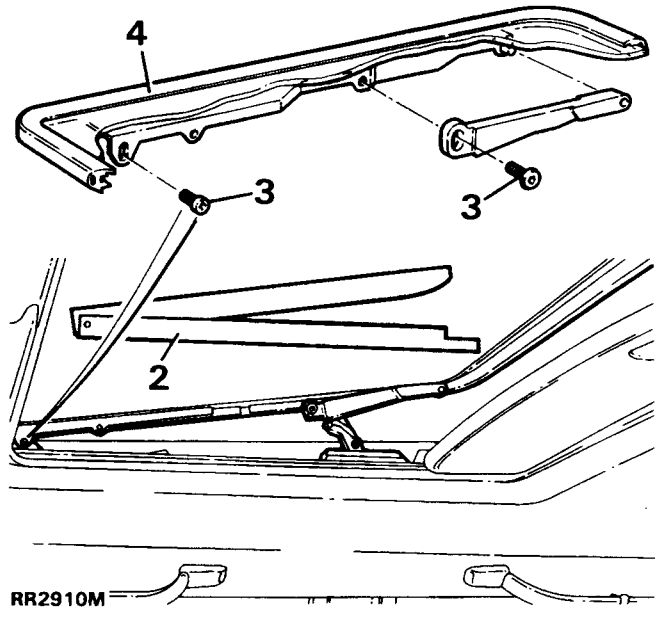
Removal and refit of sunroof assemblies shown can be carried out without removing complete sunroof assembly.

GLASS PANEL ASSEMBLY

Service repair no - 76.82.64

Remove

1. Open sunroof to tilt position.



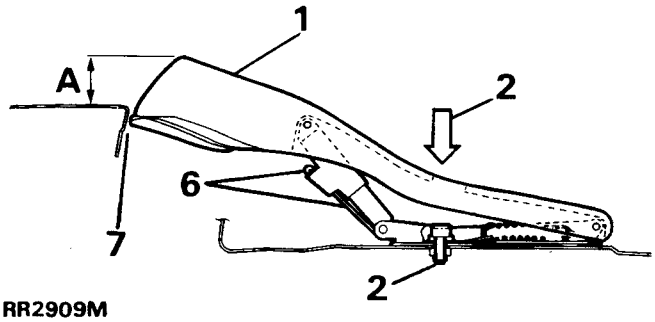
Refit and Adjust

1. Remove mechanism covers. Slide rearwards to disengage from location and lift out.
2. Remove two screws from each side as shown.
3. Remove glass sunroof.
4. Fit glass sunroof.
5. Fit four screws but do not tighten.
6. Close sunroof.
7. Check height of sunroof panel against roof aperture. The trimmed edge of glass sunroof to stand **1mm** above roof aperture.
8. Adjust by moving sunroof panel up or down. Tighten screws.
9. Fit mechanism covers.
10. Check sunroof operates correctly.

WIND DEFLECTOR ASSEMBLY

Service repair no - 76.82.31

Remove



RR2909M

1. Open sunroof.
2. Remove two screws accessed through slot in deflector.
3. Remove wind deflector.

Refit

4. Fit wind deflector assembly.
5. Fit two screws firmly but do not tighten.

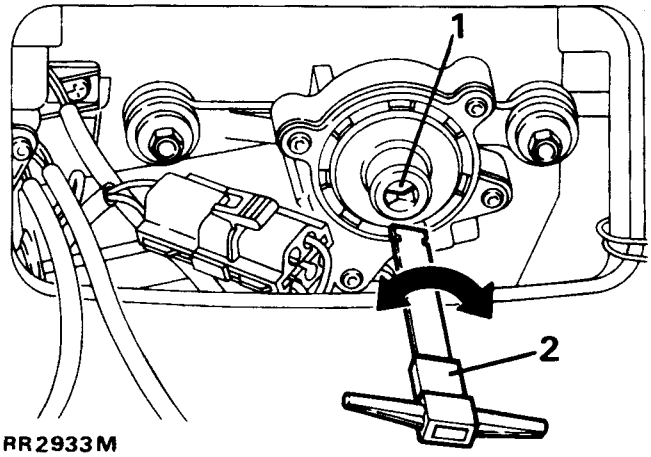
Adjust

Adjustment and attachment of deflector is by same two screws.

6. Adjust wind deflector rearwards or forwards into position shown. At same time adjust height 'A' to **15-20 mm** by moving slotted metal strip rearwards or forwards. Tighten two screws.
7. Ensure deflector does not catch front edge of roof aperture when operated.
8. Fully check that sunroof operates correctly.

MANUAL OPERATION

If sunroof fails to operate it can be opened or closed manually with key provided.



RR2933M

1. Remove two turnbuckles to access sunroof motor spindle located behind switch plate.
2. Engage key into motor spindle and turn to open or close sunroof panel.
3. After manual operation motor spindle MUST BE TURNED BACK A QUARTER TURN TO ENGAGE ELECTRICAL DRIVE MOTOR.

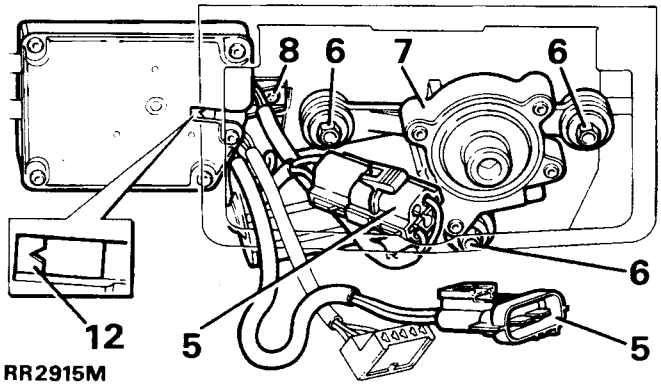
MOTOR DRIVE ASSEMBLY AND CONTROL UNIT

Service repair no - 76.82.72 / 76.82.73

NOTE: The following servicing of sunroof assembly can be carried out without removing complete sunroof assembly.

Remove

1. Close sunroof and disconnect battery negative lead.
2. Release two turnbuckles to access motor drive assembly and control unit, located behind switchplate.
3. Remove switchplate and disconnect two multiplugs.
4. Release front of roof headlining to access motor drive assembly and control unit.
5. Disconnect two multiplugs from control unit to motor drive and to main harness.



RR2915M

6. Remove three screws securing motor drive assembly.
7. Remove motor drive assembly.
8. To remove control unit undo screw. Lower then move control box inwards to release from mounting.
9. Inspect motor drive assembly and control unit for wear and damage, renew as necessary.

Refit

10. Refit motor drive assembly ensuring metal insert is fitted.

CAUTION: The motor drive assembly gear will not mesh correctly with drive cables if metal insert is NOT refitted.

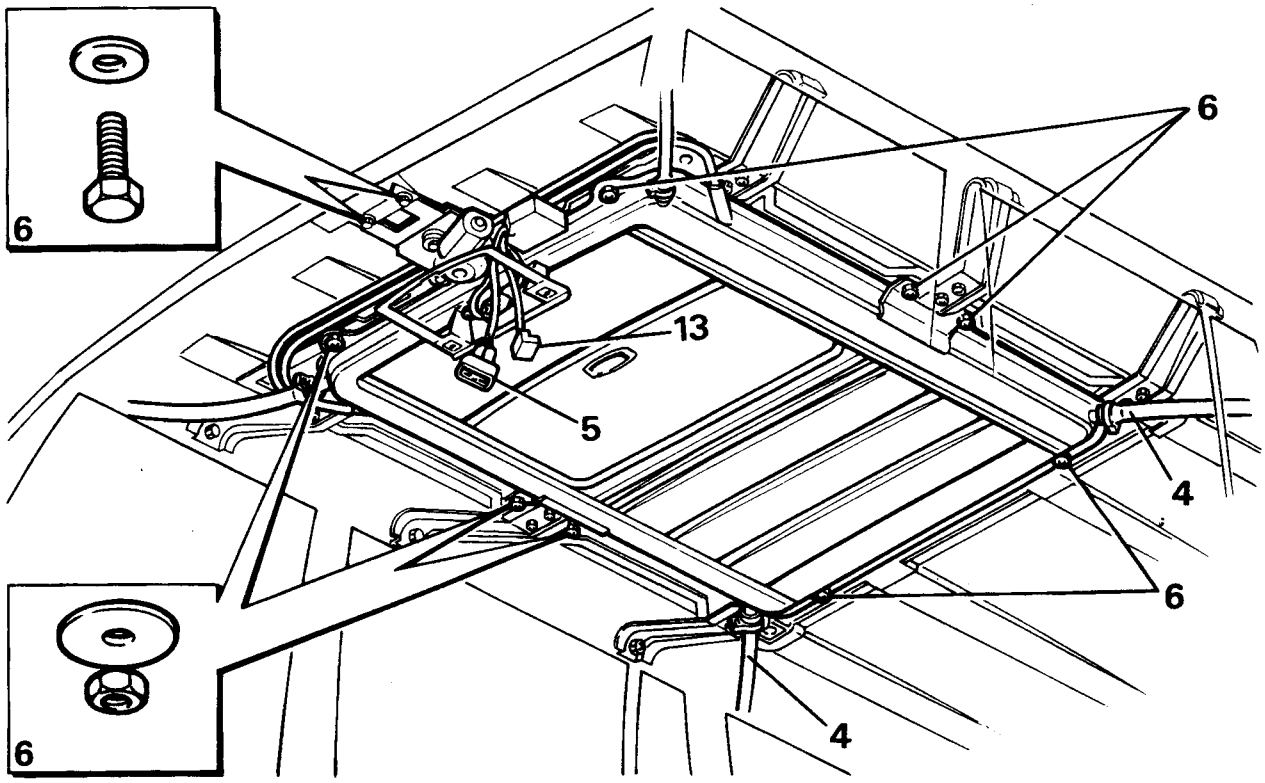
11. Refit control unit.
12. Check timing of the control unit to sunroof:

    A 'V' shaped notch should be visible through slot in control unit when sunroof is fully closed.

13. Reverse removal procedure. 2 to 5.
14. Check sunroof operates correctly.

GLASS SUNROOF COMPLETE ASSEMBLY

Service repair no - 76.82.59



RR2914M

Remove

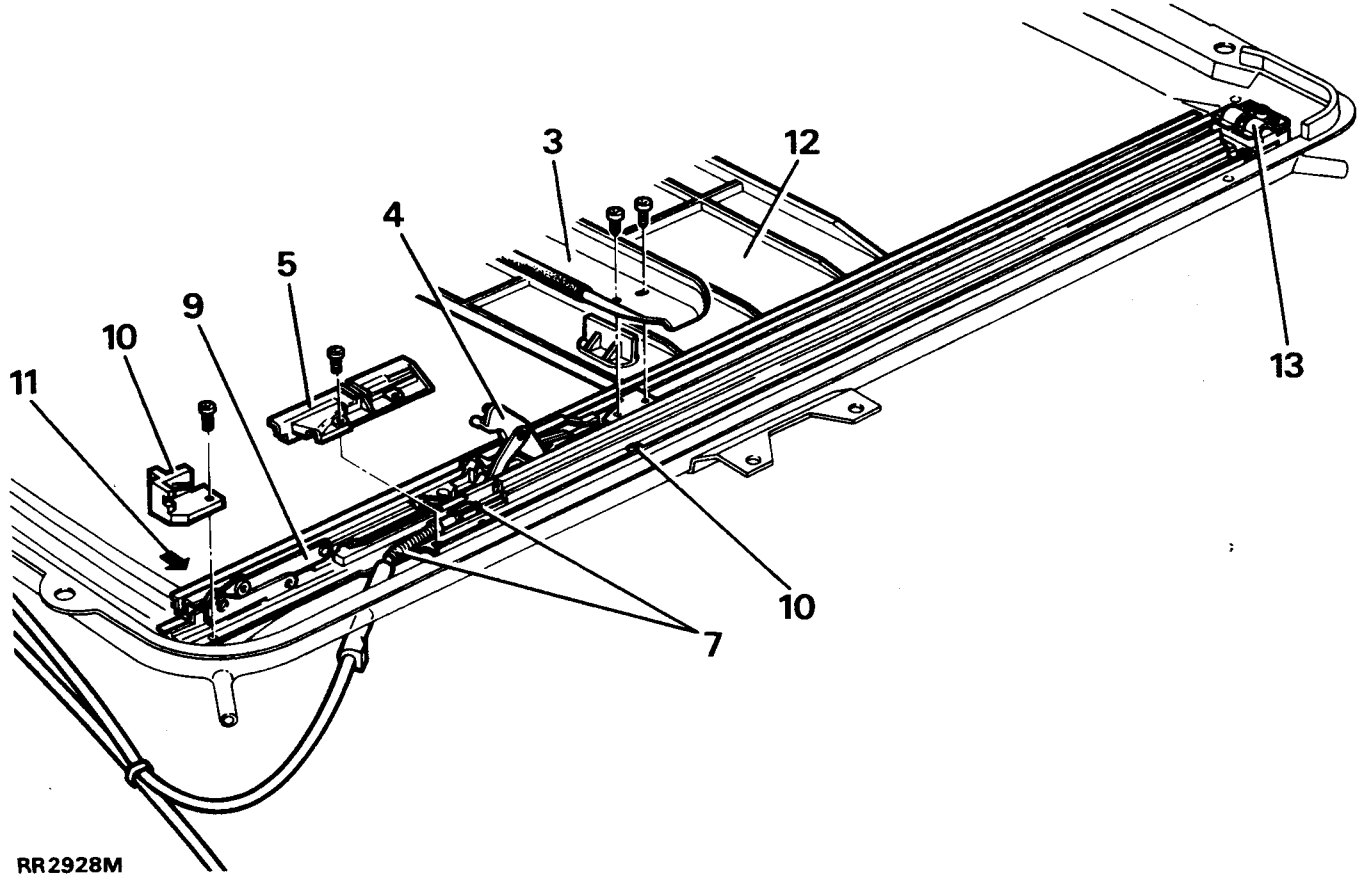
1. Open sunroof rearwards. Disconnect battery negative lead.
2. Remove switchplate and disconnect two multiplugs from switch and courtesy light.
3. Remove headlining. ***See Headlining***
4. Remove four clips and disconnect drain tubes.
5. Disconnect multiplug from control unit to main harness.
6. With assistance remove eight nuts and washers and two bolts. Lower sunroof assembly remove through rear of vehicle.

Refit

7. Manually close sunroof. ***See Manual Operation***
8. Lift complete sunroof assembly to roof panel.
9. Fit loosely eight retaining nuts and washers and two bolts.
10. Ensure closed sunroof fits equally positioned in roof panel aperture. Tighten retaining nuts and bolts, recheck fit.
11. Connect electrical multiplugs to main harness and sunroof switch.
12. Check sunroof operates correctly and leave in open position.
13. Disconnect sunroof switch
14. Fit drain tubes with retaining clips.Water test to ensure watertight seal.
15. Fit headlining and sunroof trim.
16. Reconnect electrical multiplugs to sunroof switch and interior light then fit switchplate.
17. Close sunroof and draw sunshade.

SLIDE AND GUIDE CHANNEL ASSEMBLIES OR SUNSHADE PANEL

Service repair no - 76.82.71 / 76.82.03



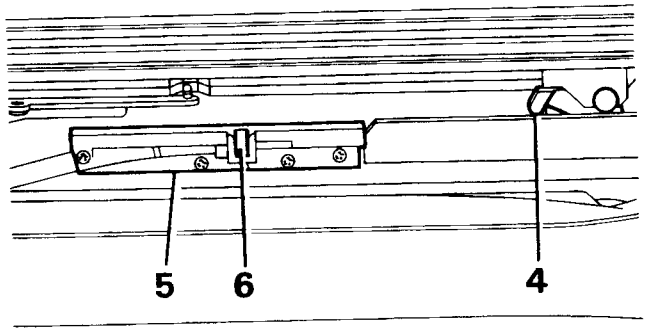
RR2928M

NOTE: The following can be carried out without removing complete sunroof assembly.

The sunshade panel is removed by releasing, either left or right slide and guide channel assembly, instructions 1. to 12.

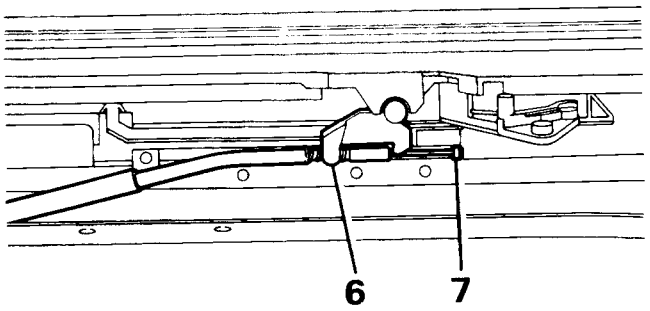
Remove

1. Remove glass panel assembly. ***See Glass Panel Assembly***
2. Remove sunroof wind deflector assembly. ***See Wind Deflector Assembly***
3. Remove rear cross member drain channel.
4. Move tilt slide rearwards until location cam is clear of locator block.
5. Remove locator block.



RR2929M

6. Move tilt slide forwards until location cam has reached position it normally locates into locator block. Manually adjust the cam outwards to allow tilt slide to pass and attain full tilt position.



RR2930M

7. The drive cable end is now accessible. Disconnect drive cable from slide assembly.
8. Push tilt slide rearwards reversing instruction 6.
9. Push complete slide assembly rearwards approximately 2".
10. Remove front end stop and attaching screw from centre of guide channel.
11. Push guide channel assembly out sideways to release guide channel from roof panel.
12. Slide sunshade panel forward and lift out of runner to remove.

Continue for removal of slide and guide channel assembly.

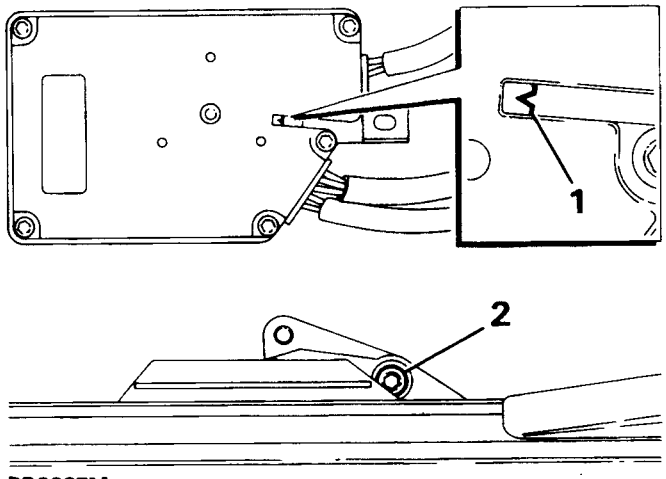
13. Using a flashlight directed between roof panel and sunroof assembly. Observe for reassembly guide channel rear spring fixing point.
14. Pull guide channel forward to release from rear spring fixing point. Remove guide channel assembly.

Refit

15. Reverse removal procedure.
16. Check sunroof operates correctly.

TIMING OF CONTROL UNIT TO SUNROOF OPERATION

The timing of control unit to sunroof operation will be disturbed:-
If sunroof position is altered when control unit is removed.
Or control unit is removed and control unit gear is moved.



RR2927M

1. To check timing of control unit to sunroof. A 'V' shaped notch should be visible through slot in control unit when sunroof is in fully closed position.
2. To check control unit timing when glass panel is removed. A 'V' shaped notch should be visible through slot in control unit when sunroof tilt mechanism rivet is at a tangent to angle on guide channel. Viewed from inside vehicle.

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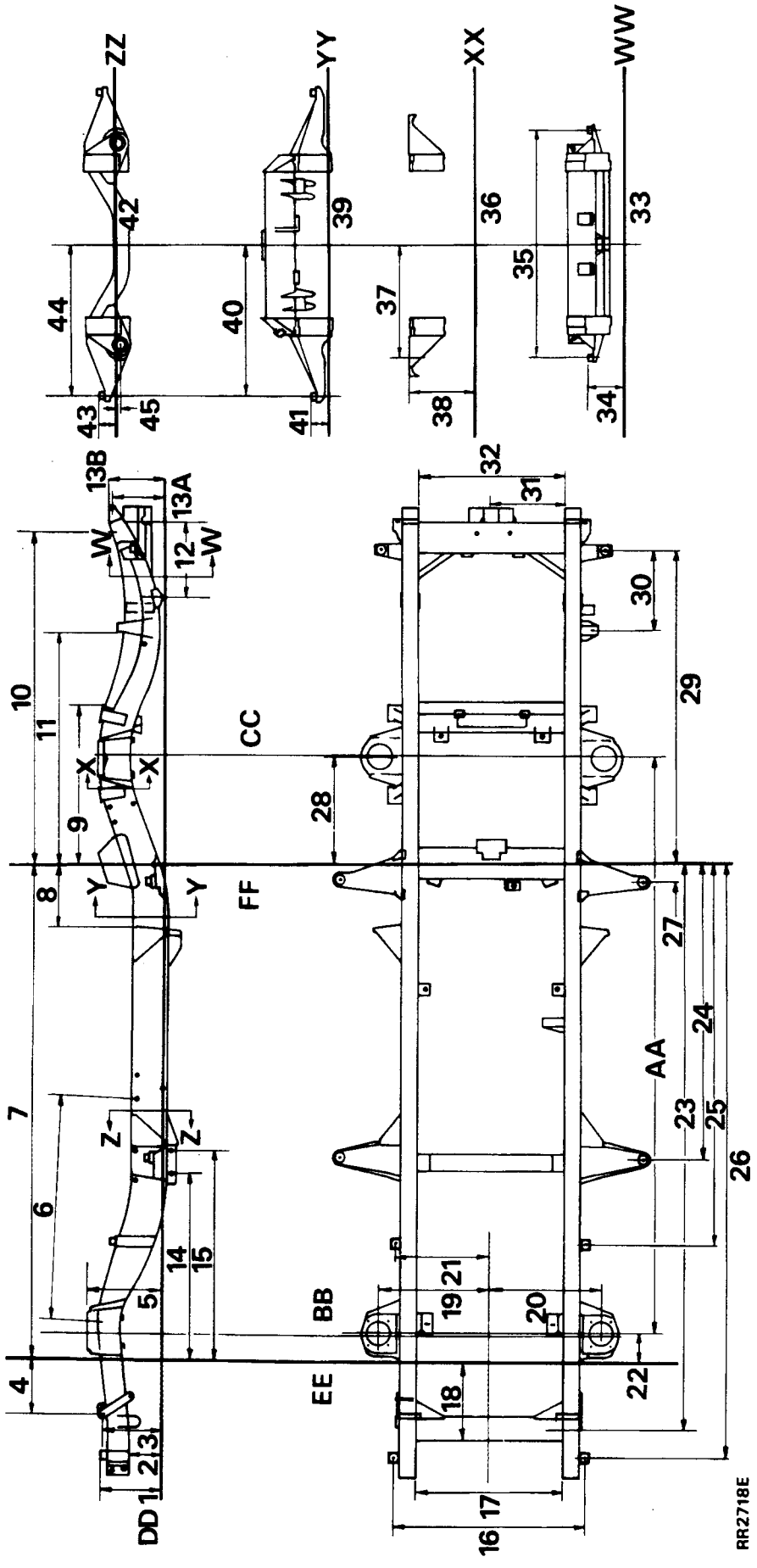
CHASSIS AMERICA ONLY - 1990 ONWARDS

Alignment check - RR2718E

	Diagram reference	millimetres
AA	Wheelbase reference dimension	2540,00
BB	Centre line of front axle	
CC	Centre line of rear axle	
DD	Frame datum line	
EE	Side member datum line	
FF	Datum line	
1		264,525 ± 1,27
2	Frame datum to underside of cross-member	150,80
3		266,70 ± 2,54
4		237,74 ± 1,27
5		327,81 ± 2,54
6		979,94
7		2179,73 ± 2,54
8		291,74 ± 2,54
9		707,96 ± 2,54
10		1468,49 ± 2,54
11		1025,27 ± 2,54
12		338,84 ± 2,54
13A		222,25 ± 2,54
13B		252,984 ± 2,54
14	Reference dimension	824,92
15	To face of boss (both sides)	935,43 ± 2,54
16		838,2 ± 0,38
17	Check figure	630,94 ± 1,27
18		344,17 ± 1,27
19		485,77 ± 2,54
20		485,77 ± 2,54
21		828,68 ± 0,38
22		129,03 ± 2,54
23		2479,45 ± 0,25
24		1290,34 ± 0,38
25		1657,04 ± 0,38
26		2598,44 ± 0,38
27		79,09 ± 0,38
28		465,48 ± 2,54
29		1398,88 ± 0,38
30		368,30 ± 2,54
31	Reference dimension	317,50
32	Reference dimension	635,00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RR2718E

CHASSIS

Diagram reference		millimetres
SECTION W - W		
31	Frame datum line DD	
32		155,91 ± 1,27
33		990,6 ± 0,50
34		825,5 ± 2,54
SECTION X - X		
35	Frame datum line DD	
36		488,95 ± 2,54
37		309,83 ± 1,00
SECTION Y - Y		
38	Frame datum line DD	
39		1320,8 ± 0,50
40		80,39 ± 1,27
SECTION Z - Z		
41	Frame datum line DD	
42		80,39 ± 1,27
43		660,4 ± 0,25
44		9,53 ± 2,54

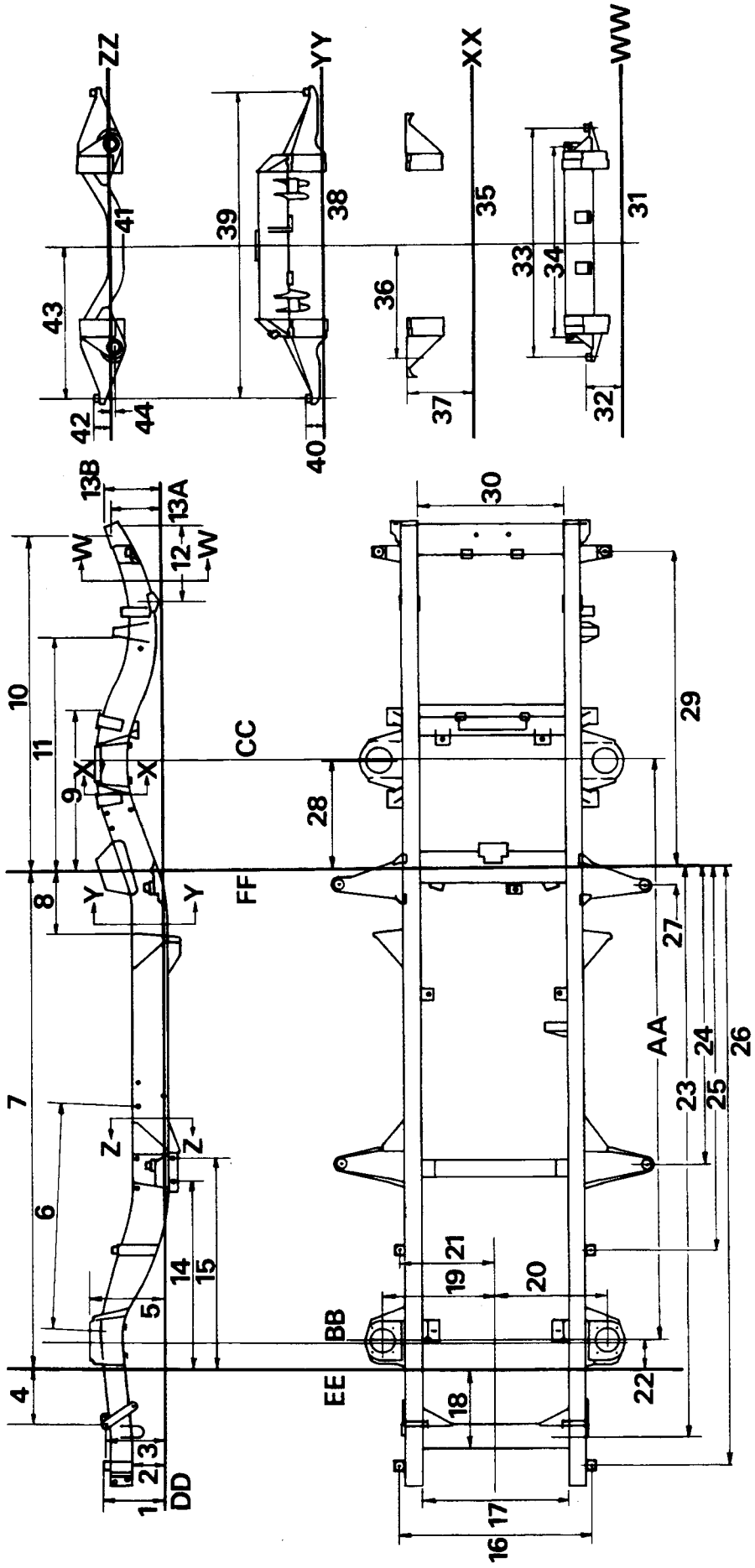
CHASSIS NON AMERICAN - 1990 ONWARDS

Alignment check - RR2751M

	Diagram reference	millimetres
AA	Wheelbase reference dimension	2540,00
BB	Centre line of front axle	
CC	Centre line of rear axle	
DD	Frame datum line	
EE	Side member datum line	
FF	Datum line	
1		264,525 ± 1,27
2	Frame datum to underside of cross-member	150,80
3		266,70 ± 2,54
4		237,74 ± 1,27
5		327,81 ± 2,54
6		979,94
7		2179,73 ± 2,54
8		291,74 ± 2,54
9		707,96 ± 2,54
10		1468,49 ± 2,54
11		1025,27 ± 2,54
12		338,84 ± 2,54
13A		222,25 ± 2,54
13B		252,984 ± 2,54
14	Reference dimension	824,92
15	To face of boss (both sides)	935,43 ± 2,54
16		838,2 ± 0,38
17	Check figure	630,94 ± 1,27
18		344,17 ± 1,27
19		485,77 ± 2,54
20		485,77 ± 2,54
21		828,68 ± 0,38
22		129,03 ± 2,54
23		2479,45 ± 0,25
24		1290,34 ± 0,38
25		1657,04 ± 0,38
26		2598,44 ± 0,38
27		79,09 ± 0,38
28		465,48 ± 2,54
29		1398,88 ± 0,38
30	Reference dimension	635,00

CHASSIS - RR2751M

Diagram reference		millimetres
SECTION W - W		
31	Frame datum line DD	
32		155,91 ± 1,27
33		990,6 ± 0,38
34		825,5 ± 2,54
SECTION X - X		
35	Frame datum line DD	
36		488,95 ± 2,54
37		295,27 ± 2,54
SECTION Y - Y		
38	Frame datum line DD	
39		660,40 ± 0,25
40		80,39 ± 1,27
SECTION Z - Z		
41	Frame datum line DD	
42		80,39 ± 1,27
43		660,40 ± 0,25
44		9,53 ± 2,54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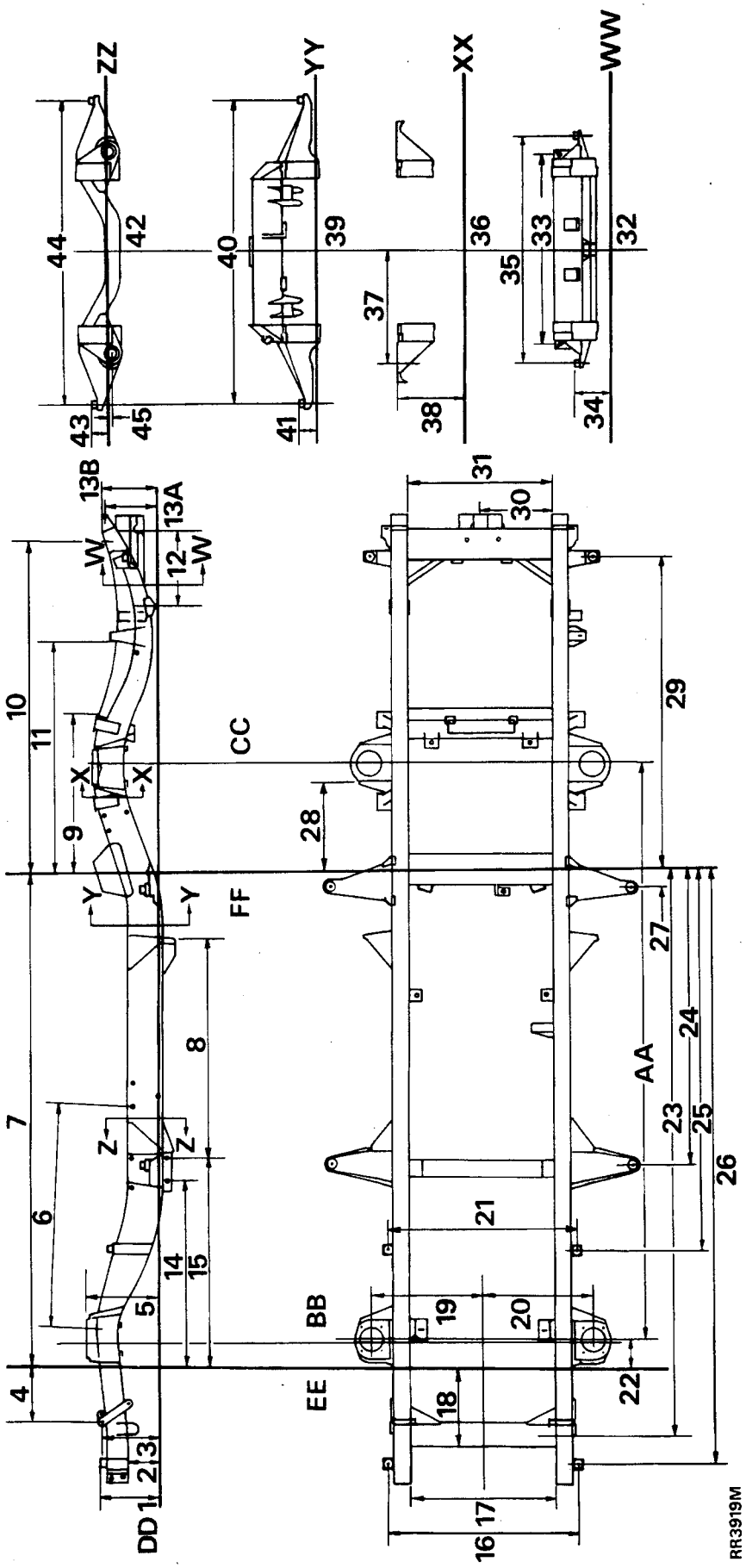
RR2751M

CHASSIS - AMERICAN COUNTY LWB (108") MODELS

Alignment check - RR3919M

	Diagram reference	millimetres
AA	Wheelbase - Reference dimension	2743,20
BB	Centre line of front axle	
CC	Centre line of rear axle	
DD	Frame datum line	
EE	Sidemember datum holes	
FF	Datum line	
1		264,16 ± 1,27
2	Frame datum to underside of crossmember	150,80
3		266,70 ± 2,54
4		237,74 ± 1,00
5		337,34 ± 1,00
6		974,57 ± 1,00
7		2382,93 ± 2,54
8		1155,75 ± 1,00
9		707,96 ± 2,54
10		1468,49 ± 2,54
11		1025,27 ± 2,54
12		338,84 ± 2,54
13A		240,03 ± 2,54
13B		252.98 ± 2,54
14	Reference dimension	824,92
15	To face of boss (both sides)	935,43 ± 1,00
16		838,20 ± 0,50
17	Check figure	630,94 ± 1,27
18		344,17 ± 1,27
19		485,77 ± 2,54
20		485,77 ± 2,54
21		828,65 ± 0,50
22		129,03 ± 2,54
23		2682,65 ± 0,25
24		1493,54 ± 0,75
25		1860,24 ± 0,75
26		2801,64 ± 0,75
27		79,09 ± 0,75
28		390,88 ± 2,54
29		1398,88 ± 0,75
30	Reference dimension	317,50
31	Reference dimension	635,00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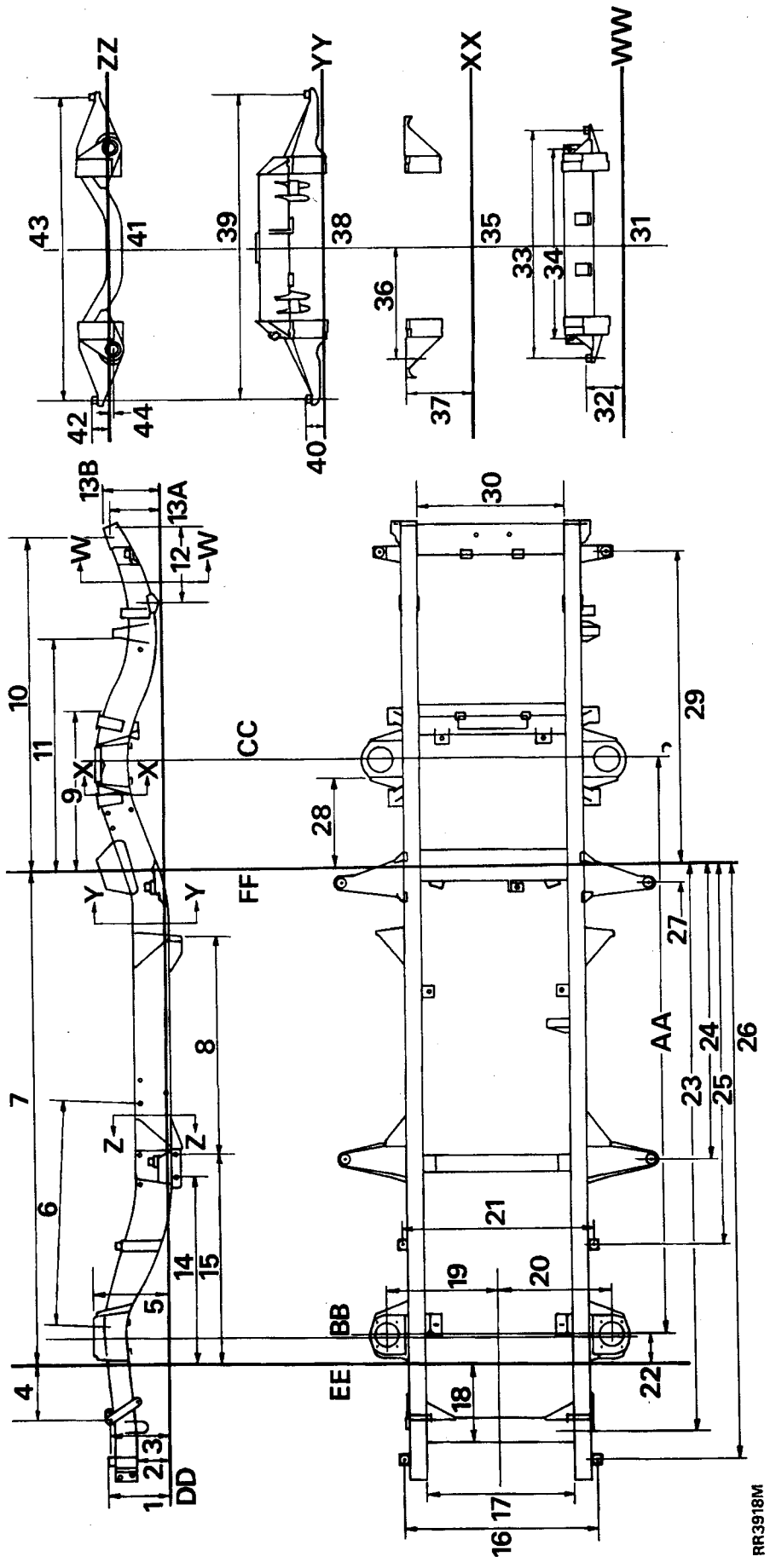
CHASSIS - RR3919M

Diagram reference		millimetres
SECTION W - W		
32	Frame datum line DD	
33		825,50 ± 2,54
34		155,91 ± 1,27
35		990,60 ± 0,50
SECTION X - X		
36	Frame datum line DD	
37		488,95 ± 2,54
38		309,83 ± 1,00
SECTION Y - Y		
39	Frame datum line DD	
40		1320,80 ± 0,50
41		80,39 ± 1,27
SECTION Z - Z		
42	Frame datum line DD	
43		80,39 ± 1,27
44		1320,8 ± 0,50
45		9,53 ± 2,54

CHASSIS - LSE (108") AIR SUSPENSION MODELS

Alignment check - RR3918M

	Diagram reference	millimetres
AA	Wheelbase - Reference dimension	2743,20
BB	Centre line of front axle	
CC	Centre line of rear axle	
DD	Frame datum line	
EE	Sidemember datum holes	
FF	Datum line	
1		264,16 ± 1,27
2	Frame datum to underside of crossmember	150,80
3		266,70 ± 2,54
4		237,74 ± 1,00
5		337,34 ± 1,00
6		974,57 ± 1,00
7		2382,93 ± 2,54
8		1155,75 ± 1,00
9		707,96 ± 2,54
10		1468,49 ± 2,54
11		1025,27 ± 2,54
12		338,84 ± 2,54
13A		222,25 ± 2,54
13B		240,03 ± 2,54
14	Reference dimension	824,92
15	To face of boss (both sides)	935,43 ± 1,00
16		838,20 ± 0,50
17		630,94 ± 1,27
18		344,17 ± 1,27
19		485,77 ± 2,54
20		485,77 ± 2,54
21		828,65 ± 0,50
22		129,03 ± 2,54
23		2682,65 ± 0,25
24		1493,54 ± 0,75
25		1860,24 ± 0,75
26		2801,64 ± 0,75
27		79,09 ± 0,75
28		390,88 ± 2,54
29		1398,88 ± 0,75
30	Reference dimension	635,00


ZZ
YY
XX
WW
43
41
39
38
35
31
36
33
34
42
44
40
37
32
13B
13A
W
12
W
30
10
11
9
X
X
CC
29
28
Y
Y
FF
27
AA
24
26
23
25
8
7
Z
Z
6
21
19
20
14
15
5
BB
EE
22
4
18
2
3
DD
1
17
16
RR3918M

CHASSIS

Diagram reference		millimetres
SECTION W - W		
31	Frame datum line DD	
32	.....	155,91 ± 1,27
33	.....	990,6 ± 0,50
34	.....	825,5 ± 2,54
SECTION X - X		
35	Frame datum line DD	
36	.....	488,95 ± 2,54
37	.....	309,83 ± 1,00
SECTION Y - Y		
38	Frame datum line DD	
39	.....	1320,8 ± 0,50
40	.....	80,39 ± 1,27
SECTION Z - Z		
41	Frame datum line DD	
42	.....	80,39 ± 1,27
43	.....	660,4 ± 0,25
44	.....	9,53 ± 2,54

WINDSCREEN GLASS

Service repair no - 76.81.01

Information

The following equipment is required:

Cutting wire and handles
Windscreen repair kit
Sealant applicator gun
Suction cup lifters

The following materials are included in the windscreen repair kit:

Glass cleaning solvent - 'Betawipe' Glass activator (yellow cap)
Cotton buds.
Glass primer - 'Betaprime'(green cap)
Body primer - 'Betaprime' paint/plastic primer (red cap)
Betaseal Adhesive sealant

NOTE: The adhesive sealant cures in 6 to 8 hours

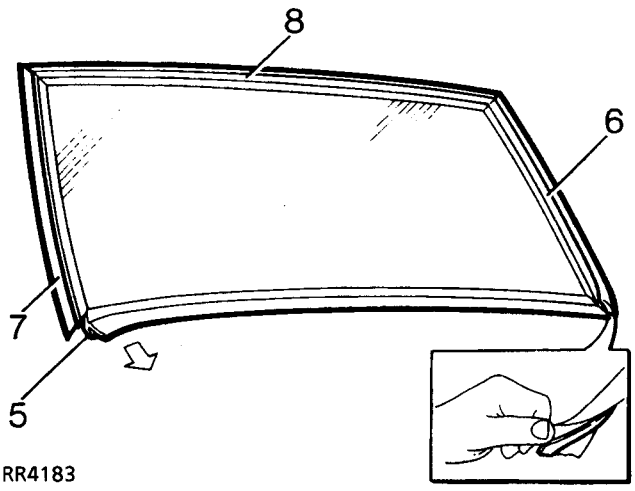
CAUTION: Once existing sealant is cut, the exposed surfaces oxidises in approximately 90 minutes. The refit procedure must be completed within this time span to prevent the sealant oxidising, to effect a satisfactory joint.

CAUTION: If the windscreen aperture body flange shows signs of corrosion it must be treated with anti corrosion primer and repainted. Newly painted areas must then be left for 8 hours or more before applying adhesive sealant.

NOTE: The multiplugs for heated windscreen are located under the decker[cowl] panel, release decker[cowl] panel to gain access.

Remove

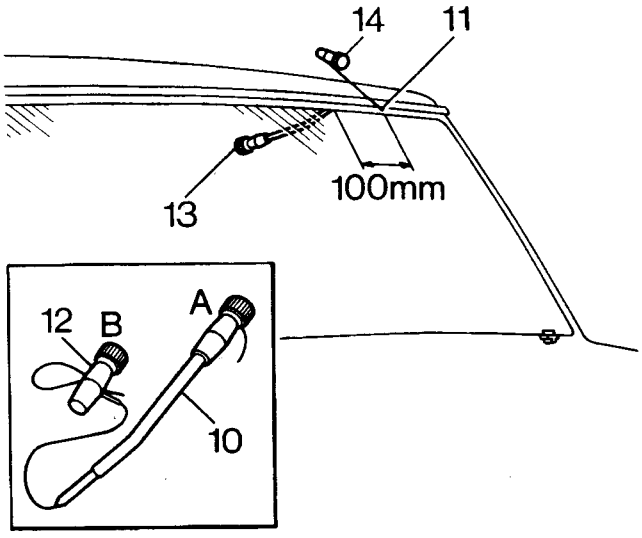
1. Remove windscreen wiper arms. ***See WIPERS AND WASHERS, Repair, Wiper Arms - Windscreen.***
2. Remove rear view mirror and stickers from glass.
3. Remove '**A**' post finishers.
4. Fit protective cover over dash panel and apply masking tape to protect '**A**' posts.



RR4183

5. Ease one end of bottom finisher away from glass, pull to disengage finisher flange and remove.
6. Lift lip of LH '**A**' post finisher and release sealing strip along its length, pull to disengage finisher flange from glass and remove.

7. Remove RH '**A**' post finisher.
8. Remove header finisher.
9. Apply masking tape to protect paint finish around glass.

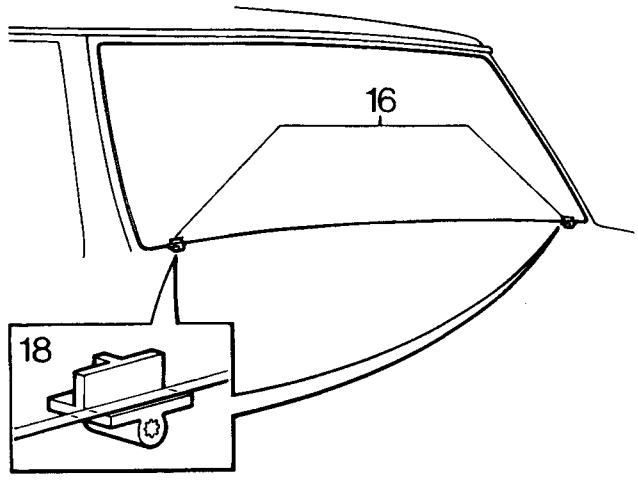


RR4184

10. Prepare cutting wire in handle '**A**'. Bend end of wire to handle and tape over end.
11. Force cutting wire through sealer from inside and 100mm from a top corner. Use a needle if necessary to make a pilot hole.
12. Attach handle '**B**'. Allow 200mm of wire between handles, tape over end of wire.
13. **With an assistant on the inside:** Wedge the tube of the handle '**A**' between glass and body flange 100mm ahead of hole in sealer.
14. **From the outside:** Carefully cut sealer from flange using a straight pull away from the glass. Continue in 100mm steps around the glass, use a sawing action at the corners.

CAUTION: Along the bottom edge, great care must be taken to cut up to the 2 supports, positions indicated on the obscuration band (See item 18).

15. Remove handle '**B**', withdraw the cutting wire and insert it through the sealer between the supports. Refit handle '**B**'.



RR4185

16. Cut through sealer between the supports. If heated front screen: Cut through the 2 wires each side of the supports. Tape cut wires and panels to prevent damage to bodywork when screen is removed.
17. Attach suction cups to glass and lift glass from body flange, cut sealer free around supports as necessary.

WARNING: If glass has splintered: Protect eyes and operate demister blower at maximum speed to remove any glass from ducts. Use a vacuum cleaner to remove glass particles from inside the vehicle.

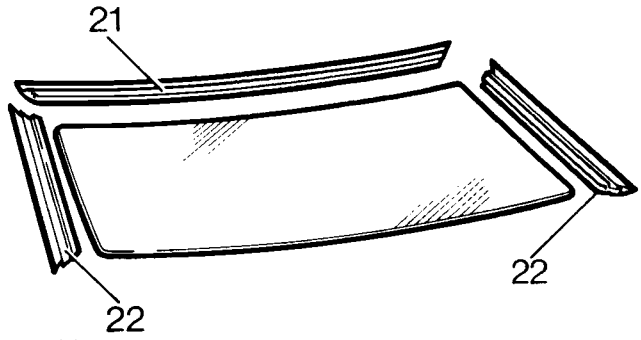
Refit

18. Check condition of supports, renew if necessary. Locating studs must be at right angle to flange.

NOTE: The supports were fitted to early vehicles and now replaced with nylon sheaths.

19. Carefully cut back old sealant around body flange to obtain a smooth surface 2mm thick. **DO NOT cut down to flange.**
20. **If refitting original glass:** It must be free from chips or cracks. Cut back old sealant around glass to obtain a smooth surface 2mm thick. **DO NOT cut down to glass surface.**

⚠ **CAUTION: Lay glass on felt covered supports, do not stand on edge. Any chipping of glass edge may develop into cracks.**



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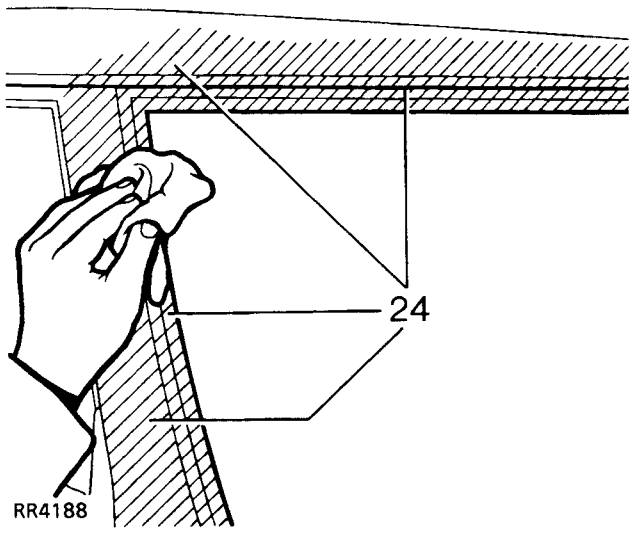
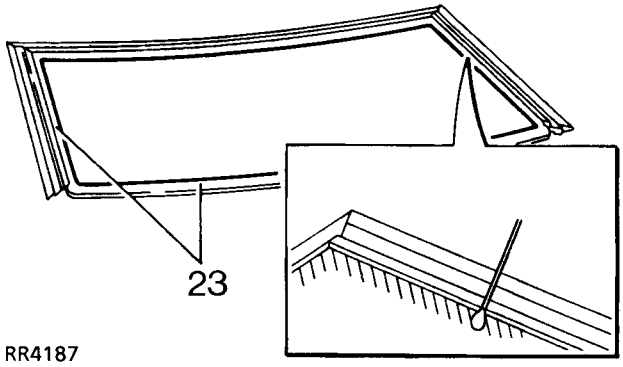


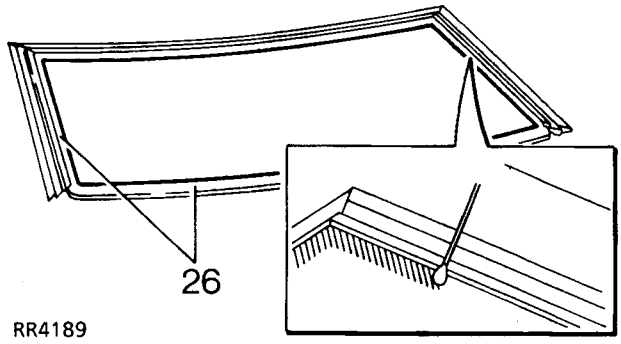
RR4188

21. Align header finisher on top edge of glass, push flange fully onto glass and use a wooden block and mallet to ensure fit.
22. Carefully align each side finisher on edge of glass, push flange fully onto glass and use a wooden block and mallet to ensure fit.

24. Ensure body flanges and surfaces covered by the finishers are clean



RR4187



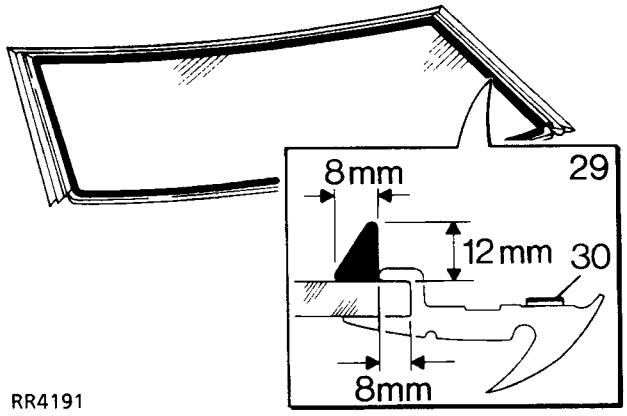
RR4189

23. Using a cotton bud, apply glass cleaning solvent (yellow cap) to inside face of glass, 20mm strip around inside of finishers and 30mm wide along bottom edge. Immediately wipe off solvent with a clean cloth.

⚠ **CAUTION: Do not touch cleaned or primed surfaces with fingers.**

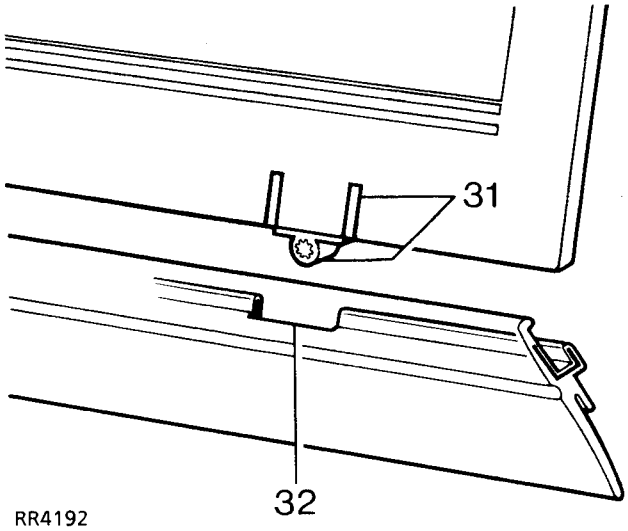
25. Shake the primer container for at least 30 seconds.
26. Using a cotton bud, apply Glass Primer (green cap) to inside face of glass, 20mm strip around inside of finishers and 30mm wide along bottom edge. This must be touch dry before applying adhesive.

27. Remove protective coverings and tape.



RR4191

28. Pierce top and pre-cut nozzle to sealer cartridge, remove lid and shake out crystals and install cartridge in applicator gun.
29. Apply a continuous bead of adhesive sealant around the glass as shown. Vertical edge of sealer to abutt finishers and to be 8mm from bottom edge of glass.
30. Remove protective covering (RED) from side finisher sealing strip.



RR4192

31. **With assistance:** Attach suction cups to glass and lift into position, carefully align the indicators on the obscuration band with the supports. Lower screen onto body flange, check alignment and firmly press to seat glass in the aperture.

△ **NOTE: The finisher on later vehicles will not have cutouts, or supports fitted, as shown.**

32. Align cut outs with the supports and push finisher fully onto the glass. Use a wooden block to ensure fit.
33. Refit '**A**' post finishers and interior mirror.
34. Refit wiper arms.