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Body Repair

Introduction

This section contains information for the body repair and rectification of the vehicle. Wherever possible the vehicle must be returned to its original manufactured condition. Following repair the vehicle must be fully checked and, if necessary, the braking system and steering must be fully reset.

Health and Safety

Ensure that the correct working practices are established before beginning work.

Observe that the correct working practices are followed whether they be legislative or common sense.

Be aware of the potential risks of using materials used in the manufacture and repair of vehicles and take the appropriate precautions.

Warning: *Make sure that the working practices for the air conditioning system are followed: do not vent the refrigerant directly into the atmosphere and always use the approved recovery/recycle /recharge equipment, always wear suitable protective garments to prevent injury to the eyes and the skin.*

Potential Risks

Paint

If the organic solvents, contained in paints, are inhaled for any length of time damage can be caused to the liver, kidneys, respiratory tract and the digestive system.

Prolonged exposure to isocyanates can cause lung sensitisation and asthma-like symptoms can develop with subsequent re-exposure to even low concentrations.

Solvent inhalation can cause dizziness or loss of consciousness.

Inhalation of spray dust and sanding debris can cause lung damage.

Paint activators and additives will damage the eyes or can cause dermatitis if allowed to splash and come into contact with these areas. Peroxide and acid catalysts can cause burns.

Applied heat

There is considerable risk of damage to the eyes and skin when welding or flame cutting.

Fire is a serious danger as many materials and fluids in the vehicle are inflammable.

Toxic and dangerous fumes can be liberated when the following are subjected to heat; expanded foam, corrosion protection, adhesive and sealing compounds, trim, seat material and paints that contain isocyanates.

When heated to a temperature of 300°C, polyurethane based compounds can liberate small quantities of isocyanate. Many types of nitrogen containing chemicals may be liberated as breakdown products, these chemicals can contain isocyanates, oxides of nitrogen and hydrogen cyanide.

Potentially toxic or asphyxiant fumes and gases are produced by welding, for example; zinc oxide with zinc coated panels and ozone gas from the MIG process.

Metal repair

There is considerable risk of damage to the eyes, ears and skin when metal cutting, forming and dressing is being carried out.

Soldering may be hazardous because of heat generated fumes and skin contact with the materials.

Precautions

Paint

Ensure that there is efficient ventilation at all times. Paint spraying should be confined to spray booths.

Anyone with a history asthma should not be engaged in any process which involves the use of isocyanates.

Any operator working inside a spray booth where isocyanates are present must use air-fed breathing equipment. Supplied air to the visor should be fed at the recommended pressure and filtered to remove oil, water and fumes.

Operators involved in handling, mixing or spraying should wear protective clothing, gloves and goggles to avoid skin and eye contact. A Particle mask or canister type respirator should be worn when sanding.

Applied heat

When welding, flame cutting or brazing and so on, goggles, a mask or fume extractor and flameproof protective clothing should be used always.

It is especially important when working with polyurethane compounds to use air-fed breathing equipment.

Ensure that at all times the appropriate fire fighting equipment is available and that personnel are trained in its use.

Metal repair

Wear appropriate eye and hand protection when sanding, drilling, cutting, chiselling, flattening or welding. Wear a face mask or air-fed visor when sanding or flattening either body solder or fillers. When a soldering operation has been completed, remove swarf from the work area and wash your hands thoroughly.

General Repair Notes

The following precautions should be noted before any work is carried out:

- disconnect the vehicle battery ground lead, taking note of the reconnection procedures
- Make sure that you have read and understood the safety related procedures in this section.

Caution: Electric arc welding must not be used on the vehicle as the high voltages produced by this process will cause irreparable damage to the electrical control and microprocessor systems.

All trim and electrical components in the locality of the repair must be removed or disconnected prior to panel removal or replacement.

Welding and Gas Process Special Notes

Resistance spot welding, MIG welding and all gas processes may only be carried out on bare, unpainted or unplated metal. The flanges of panels, which are to be welded together, must be clean, corrosion free and treated as appropriate with either weld-through or inter-weld sealer.

The resistance spot welding equipment used in vehicle repair does not always produce a weld of equivalent strength to that produced in manufacturing. This means that a single row of spot welds should be spaced on a pitch of 19-25 mm, which will usually result in more spot welds than found in the original factory joint.

Use a resistance spot weld cutter to remove resistance spot welds. Where a new joint is to be MIG welded, cut the old resistance spot welds from the panel that is to be retained; the resulting holes are then used for plug welding. Suitable holes may be drilled or punched as follows:

- 8.0 mm for sections up to 1.6 mm thickness
- 10.0 mm for thicker sections.

Always refer to the welding equipment manufacturers diagrams and tables for the relevant procedure.

Steel Body Parts - Repair, Remove and Replace

Removal

1. Expose the resistance spot weld. For those spot welds that are not obviously visible use a rotary wire brush fitted to an air drill or a hand held wire brush.

Caution: Do not burn off underseal, use a 'hot knife' or a suitable solvent.

2. Cut out the spot welds using a Zipcutter or roto-Bor. At this point it may be necessary to cut out the bulk of a panel using a pneumatic saw.

Note: On some panels, before removing the bulk of the panel, brazed areas and MIG welded seams should be removed.

3. Separate the spot welded joints and remove the panel remnants.

Preparing Old Surfaces

1. Remove the weld nuggets with a sander and 36 grit disc.
2. Clean all flanges to a bright smooth finish.
3. Straighten existing panel joint edges as required.

Preparing New Surfaces

1. Mark off the area of the new panel and cut to size leaving approximately two inches overlap on the existing panel
2. Offer up the new panel or section and align it with the associated parts.
3. Clamp the panel into position.
4. Where necessary, cut the new and original panels to form a butt joint.
5. Remove all clamps and the new panel.
6. If required, apply the inner panel protection and or sound insulation.

7. Prepare the new panel joint edges for welding by cleaning to bright metal, both interior and exterior edges.
8. Apply weld through primer or inter-weld sealer to all surfaces to be resistance spot welded.
9. Where appropriate, apply metal-to-metal adhesive or sealer in accordance with the manufacturer's instructions.

Panel Alignment

1. Align the replacement panel with the associated panel and clamp it in position.
2. With certain panels it may be necessary to tack weld or use PK screws.

Welding

1. MIG tack the butt joints.
2. Re-check the alignment and the panel contours as necessary.
3. Select the correct arms for resistance spot welding and ensure that the tips are correctly trimmed.

Note: It is recommended that the arms are not more than 12 in (300 mm) in length.

4. Test the equipment for satisfactory operation using test coupons.

In the absence of test equipment a satisfactory weld can be verified by pulling the test coupons apart and viewing the welded condition.

5. Resistance spot weld where required. Note the presence of zinc coated panels and treat as previously described.
6. Dress back all MIG tack welds.
7. MIG seam weld the butt joints.
8. Dress all welds as required.
9. Final braze and lead load as necessary prior to paint preparation.

RTM Body Parts

Certain exterior panels of the vehicle are manufactured from RTM as shown as shaded areas in Figure 1. The Front and rear bumpers are made from R-RIM

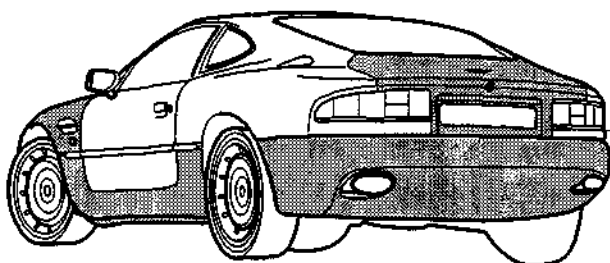
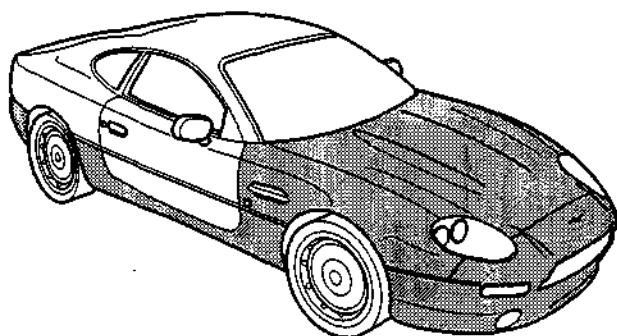


Figure 1.

Damage Recognition

Before any remedial action is carried out the damaged should be assessed. If the cover has been holed or torn it must be replaced. Repair should be attempted only if the damage falls into one of the following three categories.

Cosmetic	Abrasion to the surface paint finish
Substrate surface	Deep scratches, gouges or localised radial stress cracks.
Substrate penetration	Splits not exceeding 100 mm. Splits radiating from a gouge and accompanied by localised stress cracks.

Repair Procedures

Cosmetic Damage

Repair the paintwork using standard procedures.

Substrate surface

Where the defect does not affect the physical strength of the panel, fill and repaint using standard techniques.

Substrate Penetration

No reliable repair procedures are possible to correct major physical damage to RTM panels. Any small defect which do not affect the integrity or security of the panel may be filled and repainted at the owners risk.

Note: Because of the inherent flexibility of plastic panels, hard filler may crack. Such repairs cannot therefore be guaranteed.

Where the damage affects the security and or the integrity of the panel, it must be replaced.

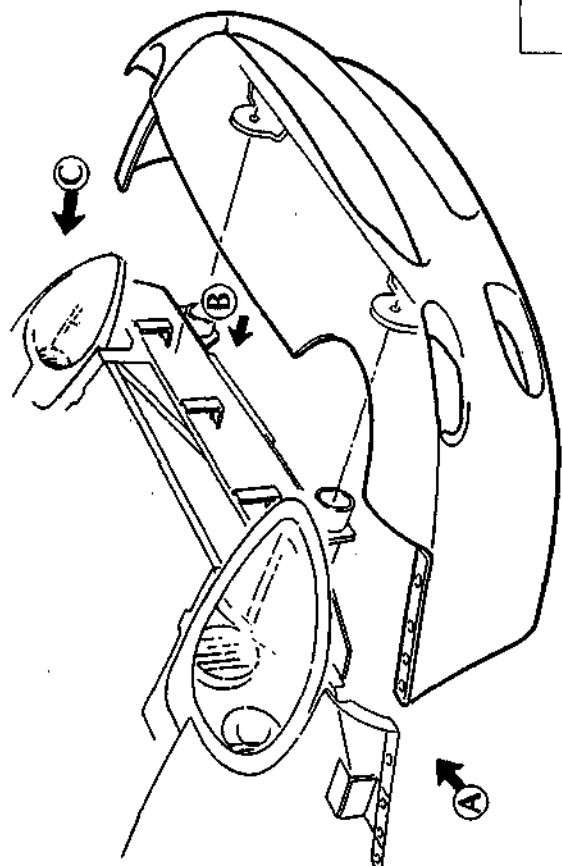
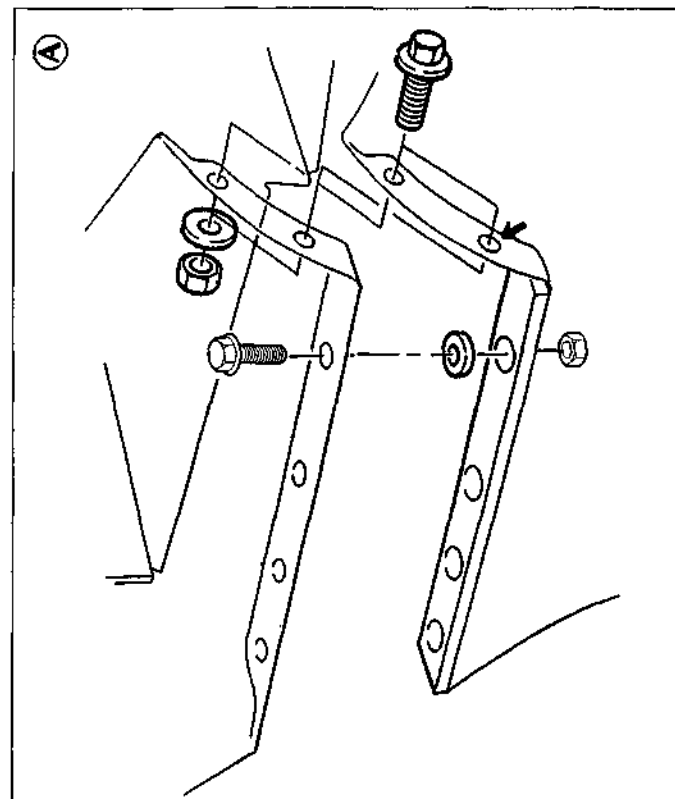
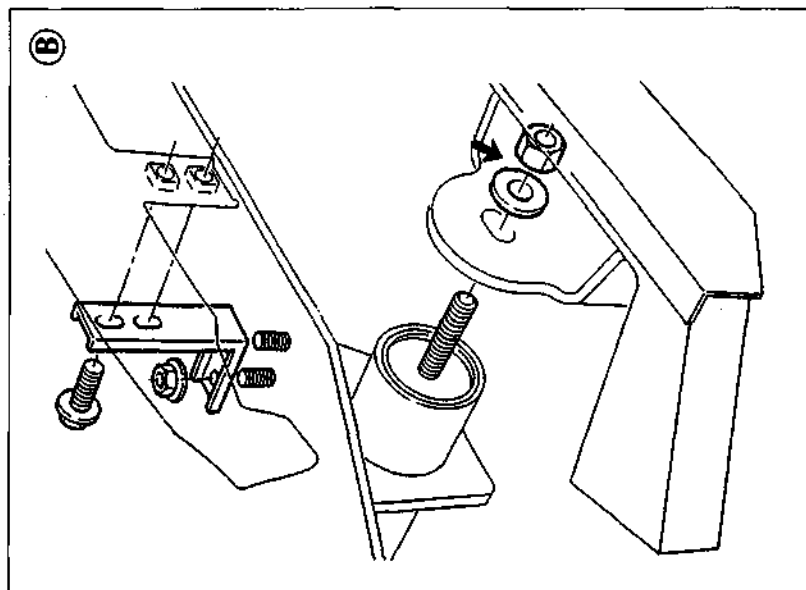
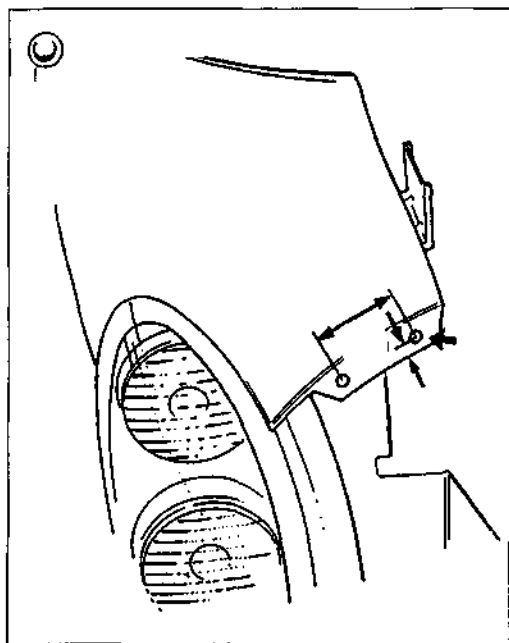
Precautions during Paint Operations

When any repair operation is being completed on the DB7 paintwork, take particular care to protect the leather upholstery and trim from paint contamination.

Body Panel and Trim Removal

The following diagrams show the fixings for all removeable body and trim panels.

- Sheet 1. Front Apron
- Sheet 2. Front Undertray
- Sheet 3. Wheel Arch Liners
- Sheet 4. Side Sills (top fixings)
- Sheet 5. Side Sills (bottom fixings)
- Sheet 6. Rear Bumper
- Sheet 7. Doors
- Sheet 8. Door Liners
- Sheet 9. Door Liner (components)
- Sheet 10. Steering Wheel
- Sheet 11. Column Switches
- Sheet 12. Instrument Panel (surround)
- Sheet 13. Instrument Panel
- Sheet 14. Facia Underscuttles
- Sheet 15. Glove Box
- Sheet 16. Facia Mountings (1)
- Sheet 17. Facia Mountings (2)
- Sheet 18. Console Instruments
- Sheet 19. Radio
- Sheet 20. Front Seats
- Sheet 21. Ashtray
- Sheet 22. Centre Console
- Sheet 23. Seat ECU Covers
- Sheet 24. Rear Console
- Sheet 25. Rear Seats and C Post Trim
- Sheet 26. Quarter Panels, B Post Panels, Parcel Shelf
- Sheet 27. Headlining

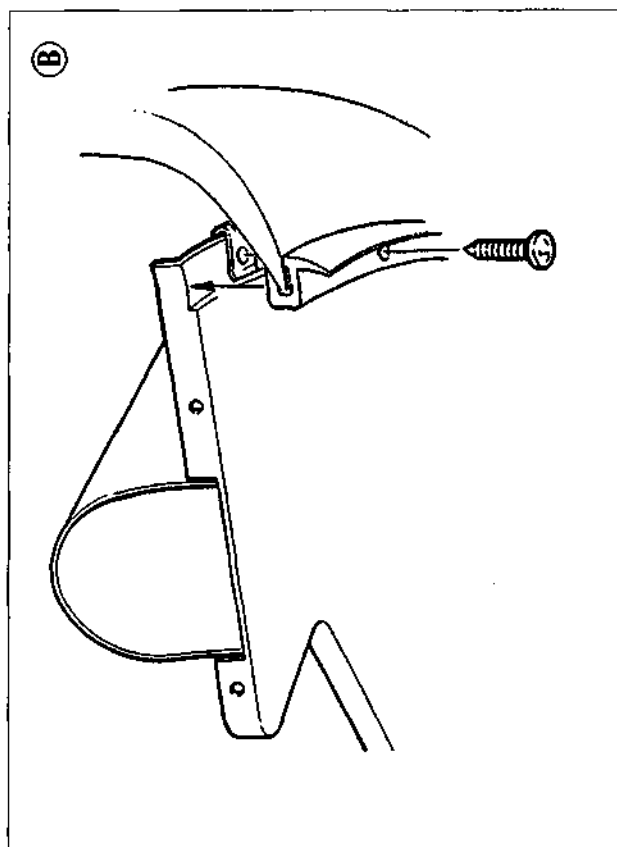
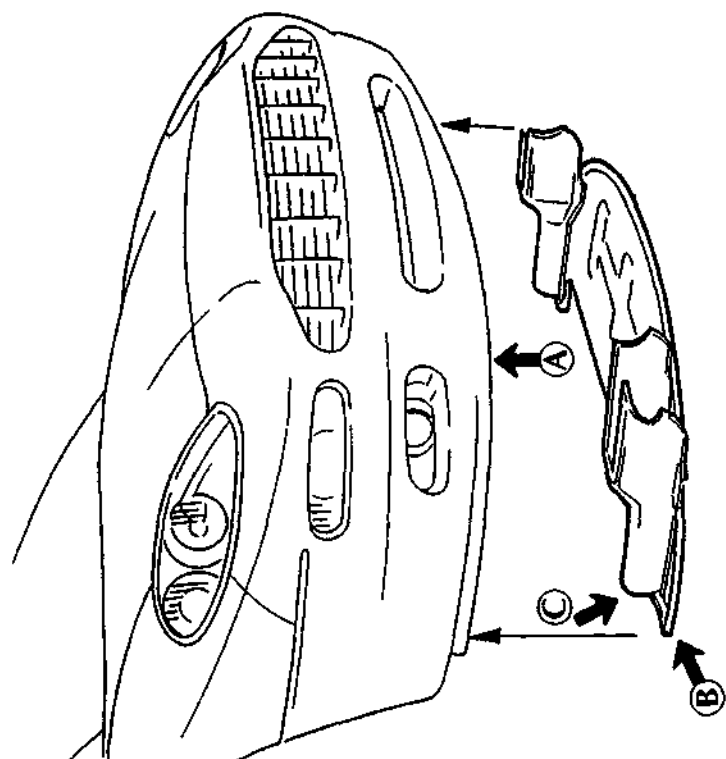
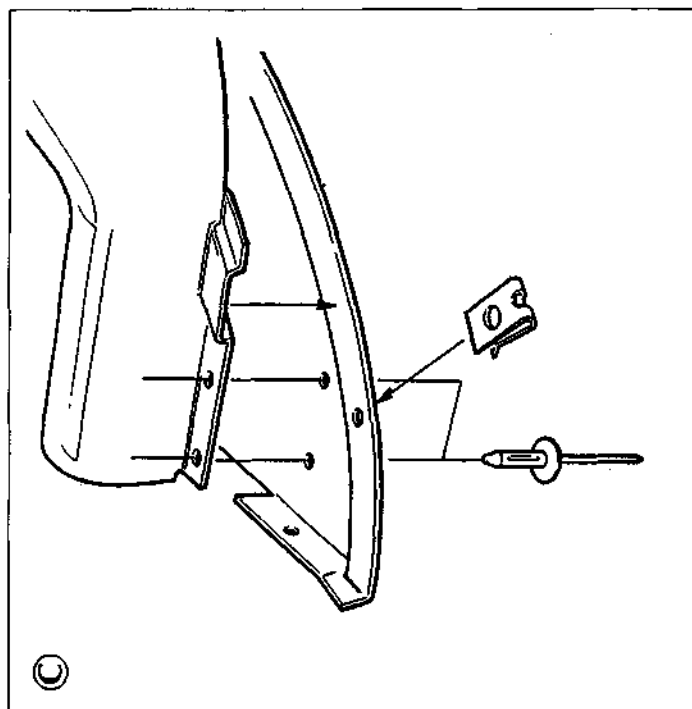
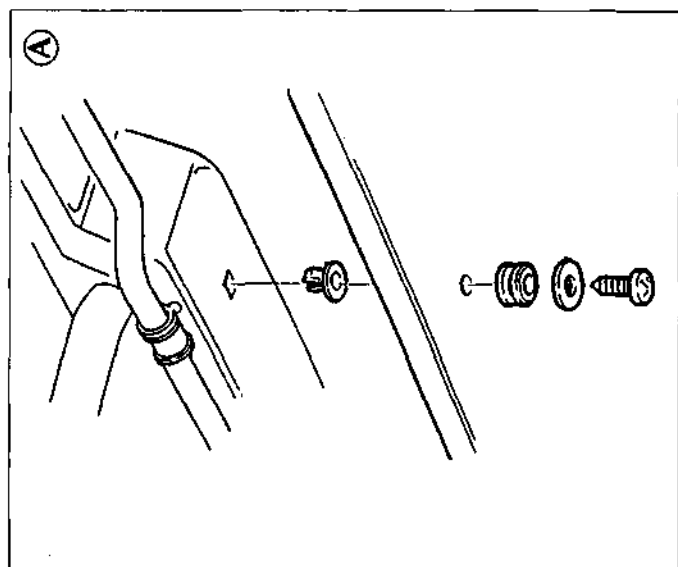


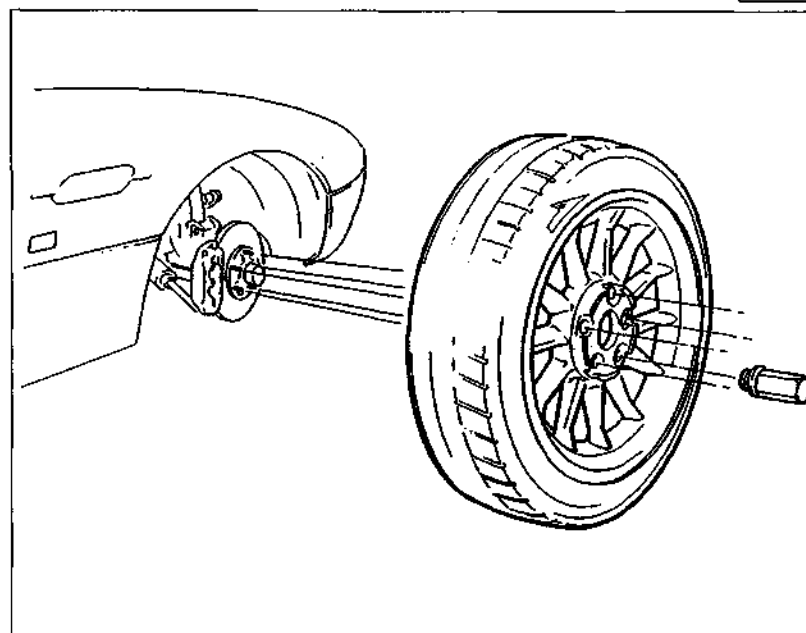
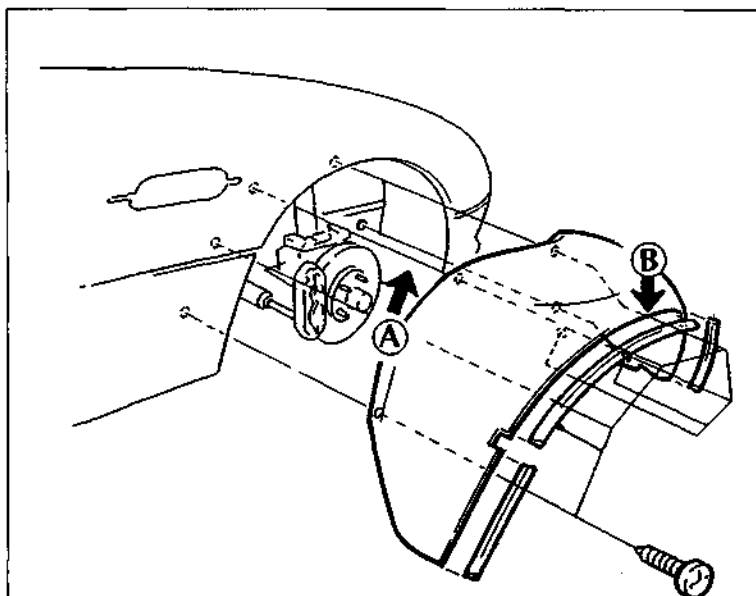
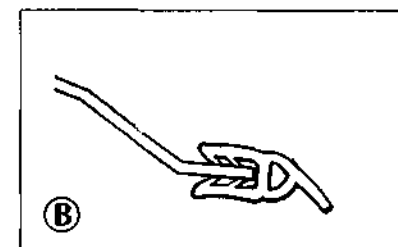
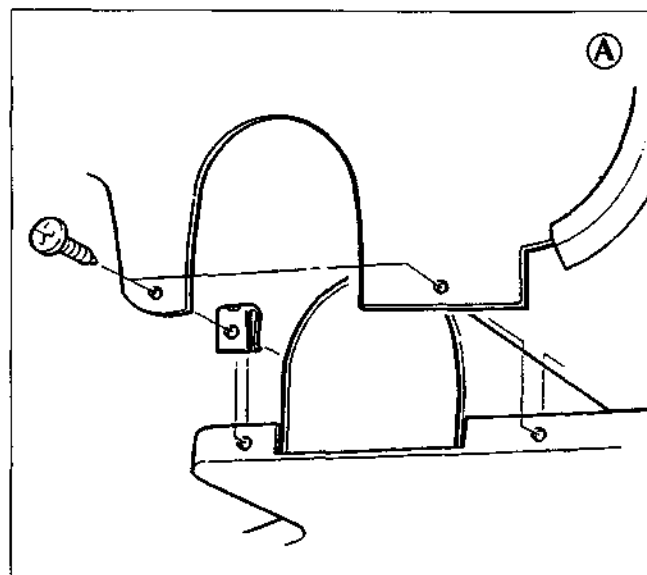
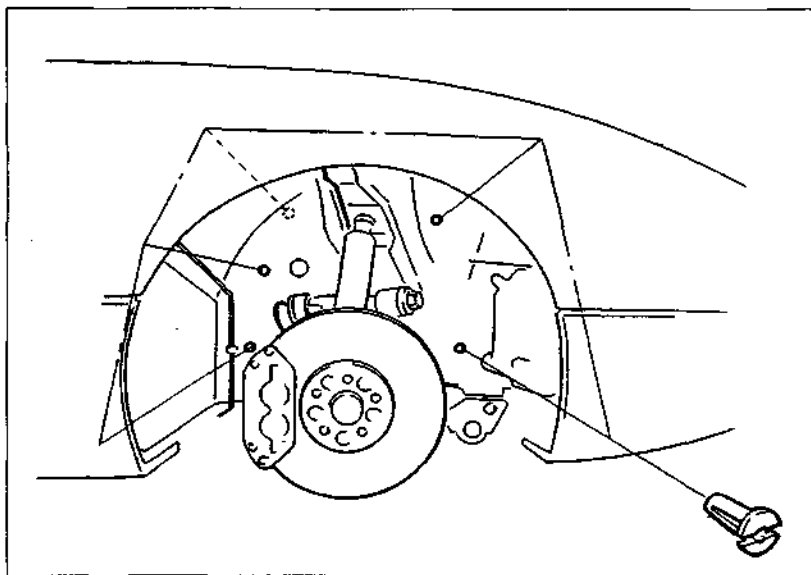
DB32

Body and Trim

Sheet 2

**Front
Undertray**





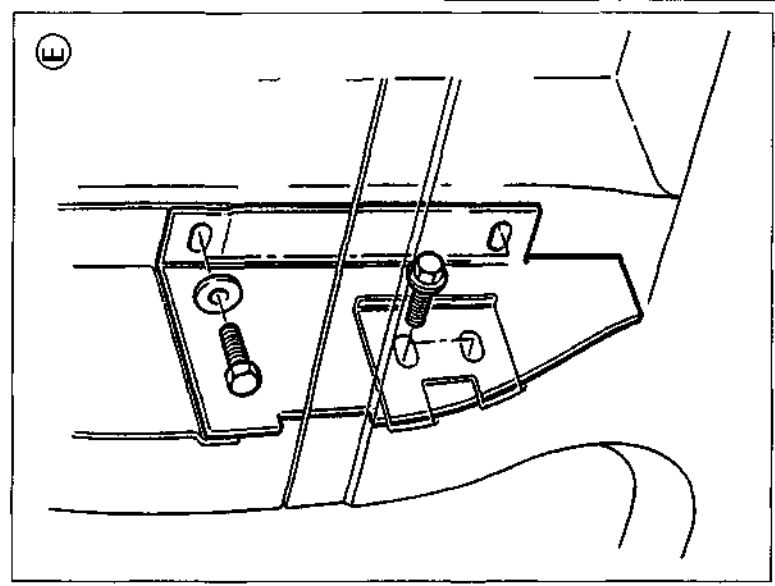
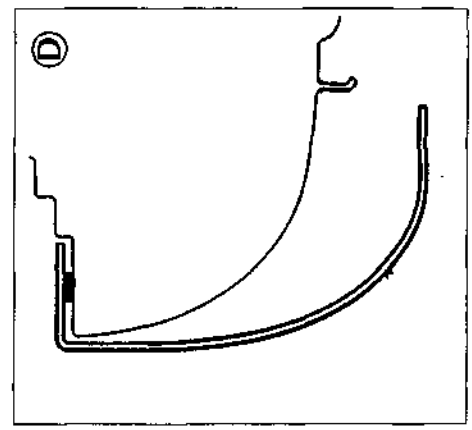
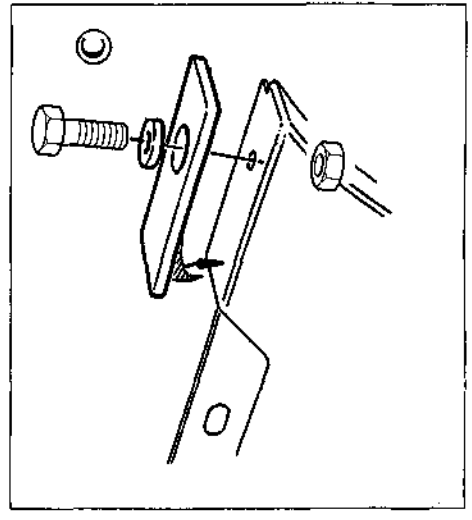
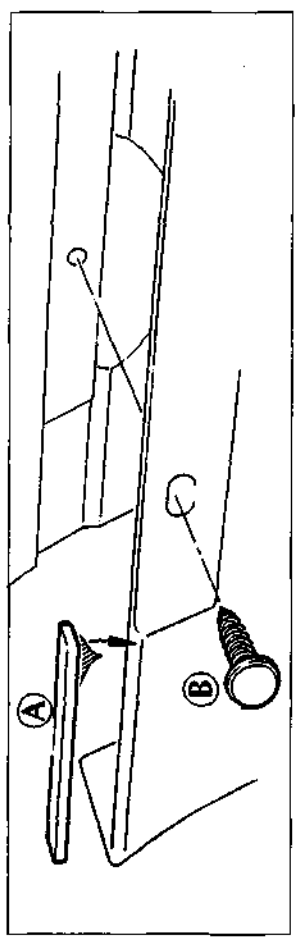
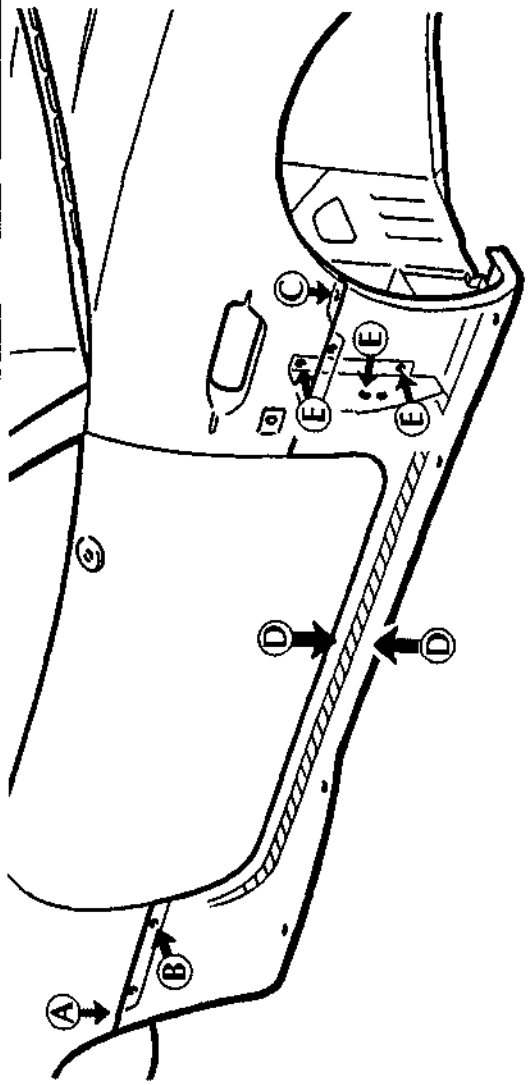
Caution: Take extreme care to avoid damaging the wing edge during liner removal.

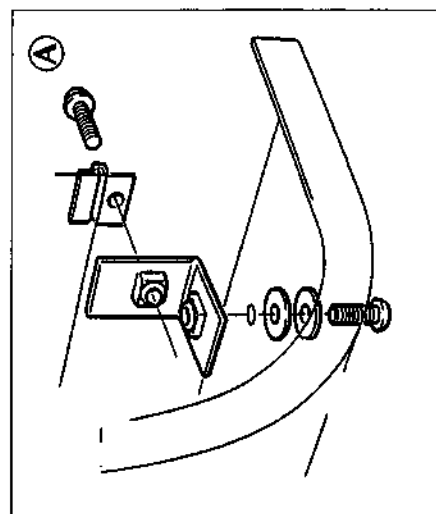
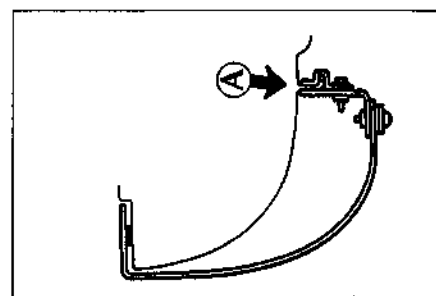
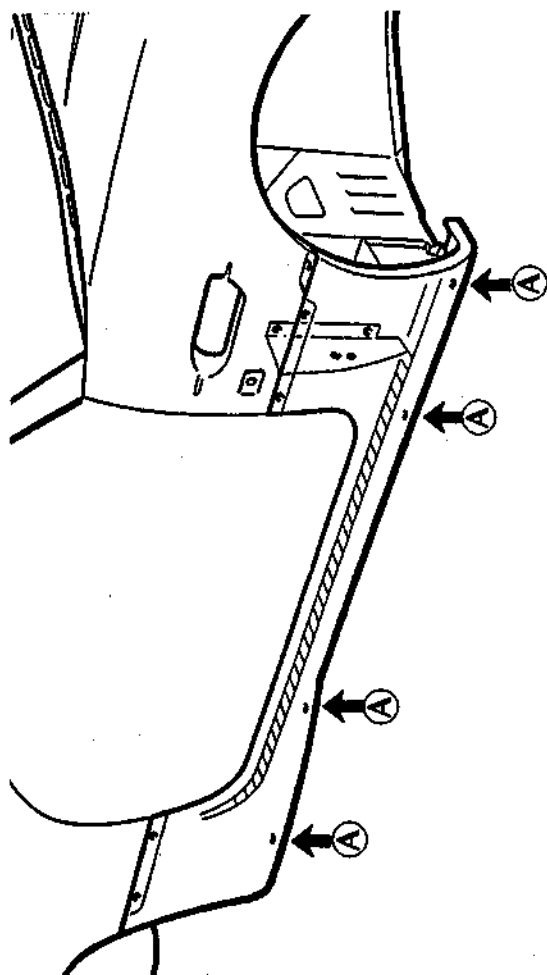
1. Remove the liner securing screws.
2. Pull down the inside of the liner and pull off the edge seals.
3. Pull the liner lower corners together and ease the liner down and out of the wheel arch.
4. Refit the edge seals to the liner before refitting.

DB7
Body and Trim

Sheet 3

**Wheel Arch
Liners**





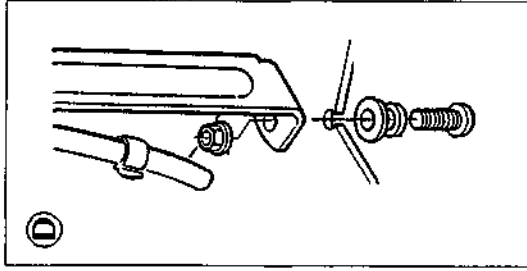
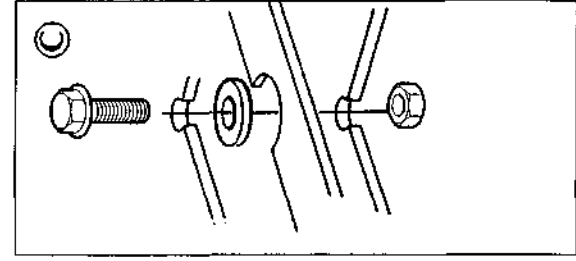
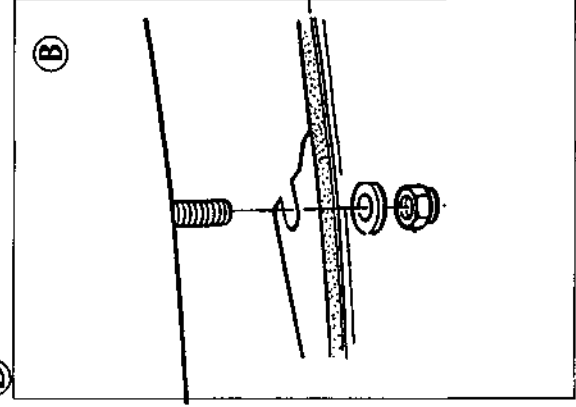
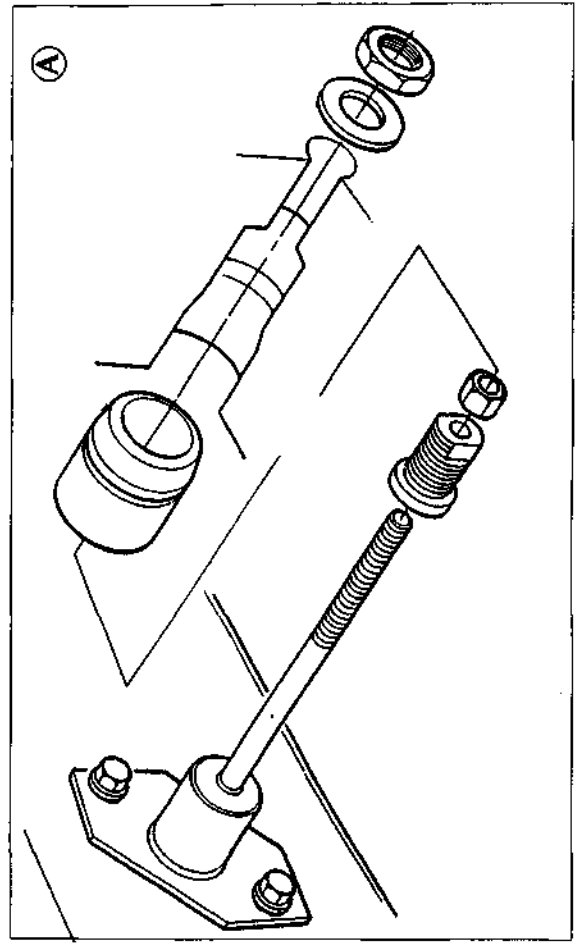
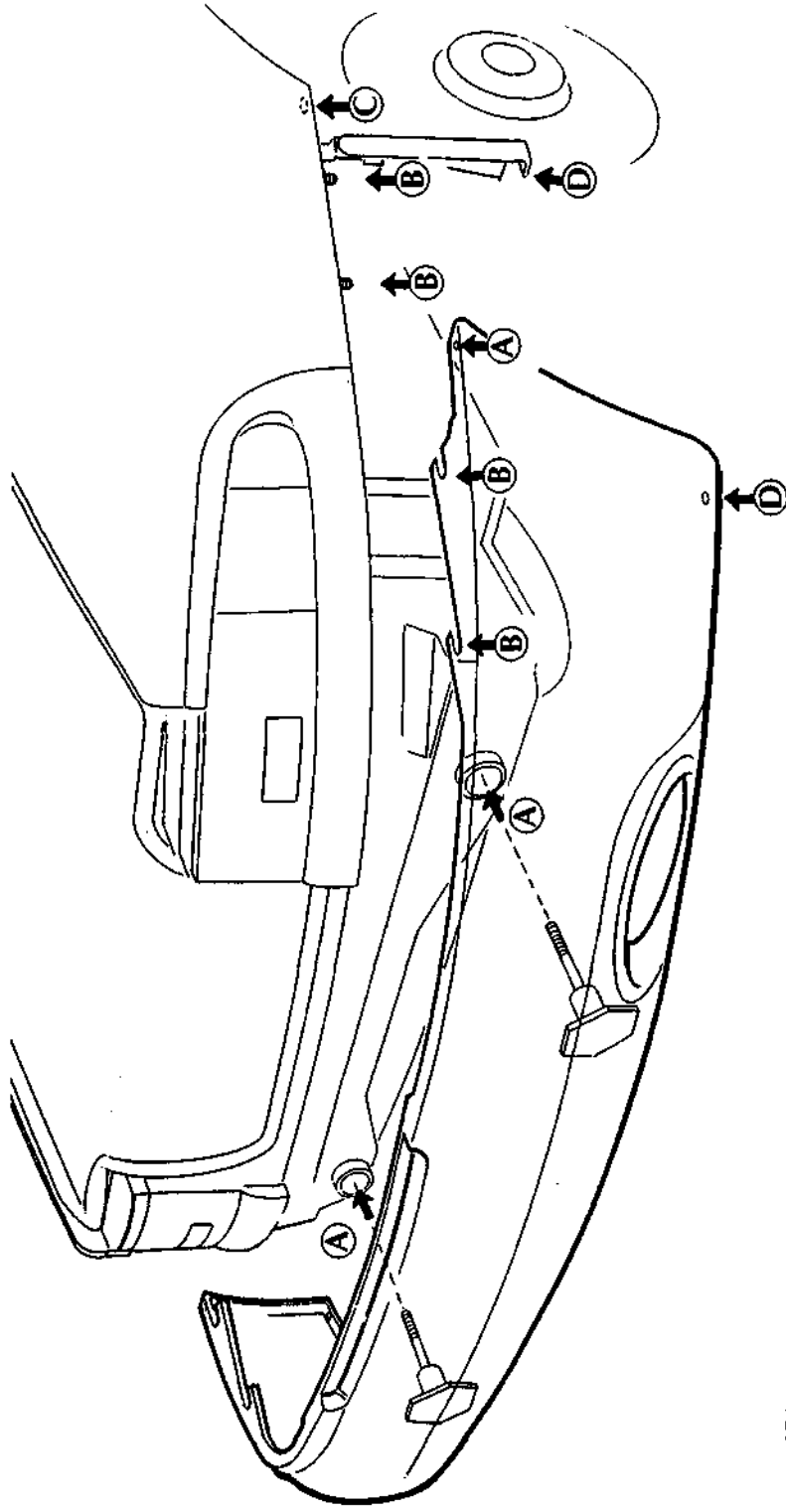
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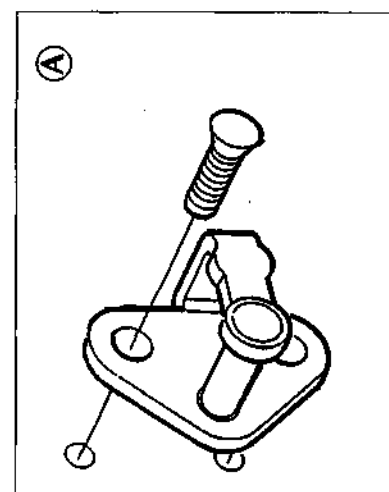
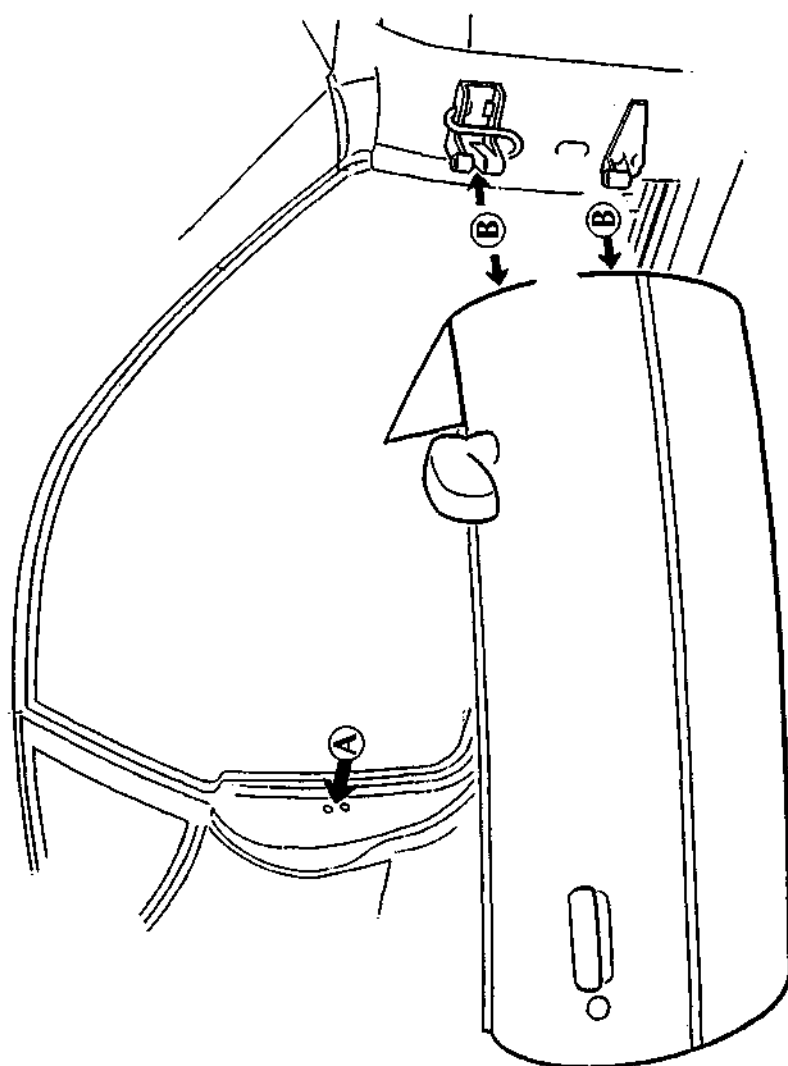
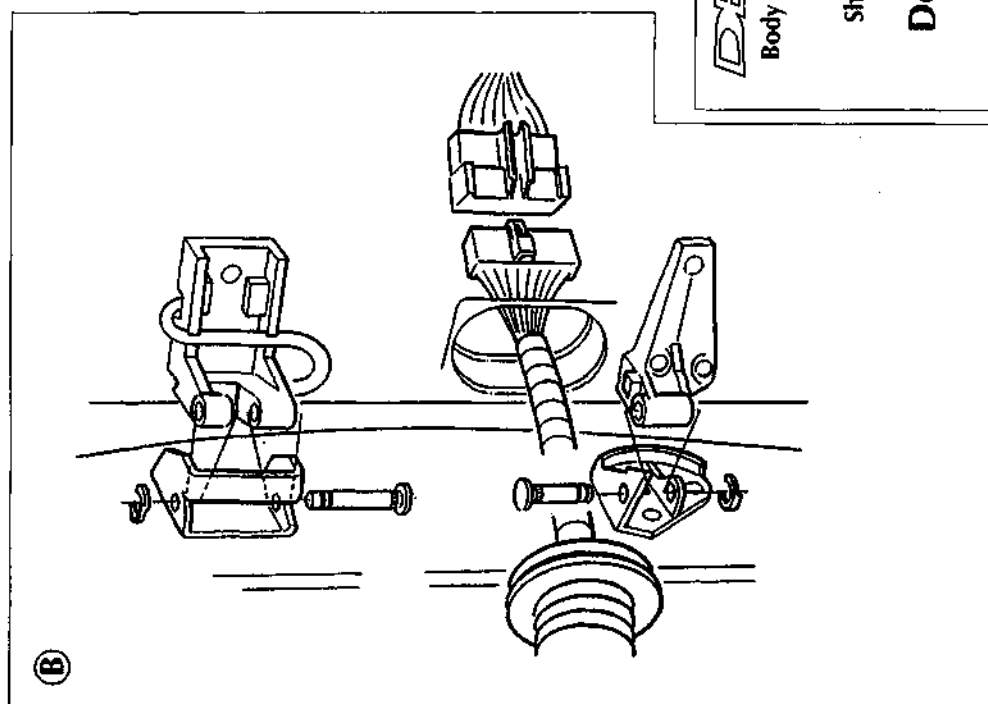
Body and Trim

Sheet 6

**Rear
Bumper**

Not EA



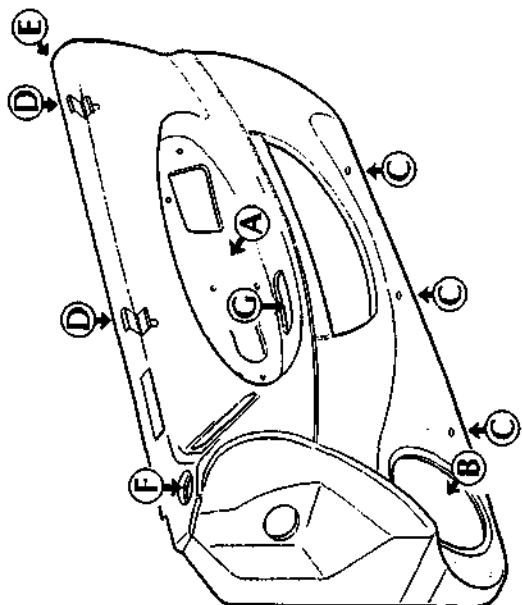
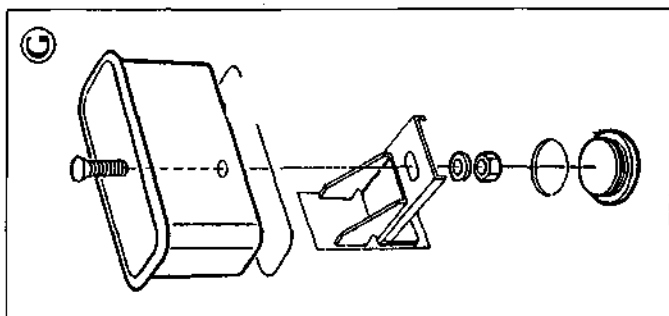
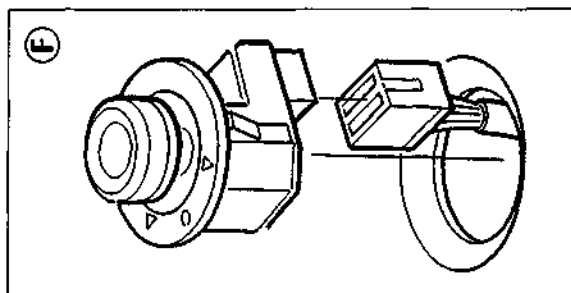
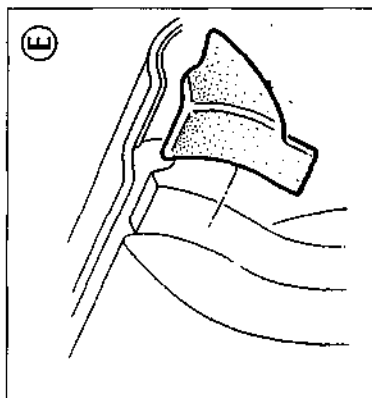
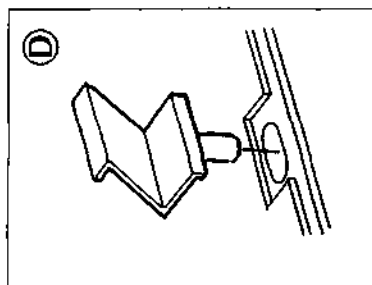
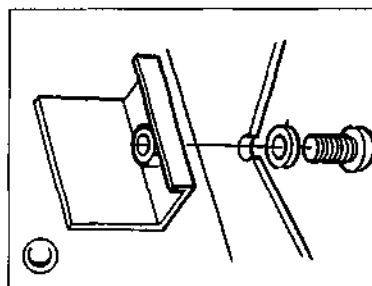
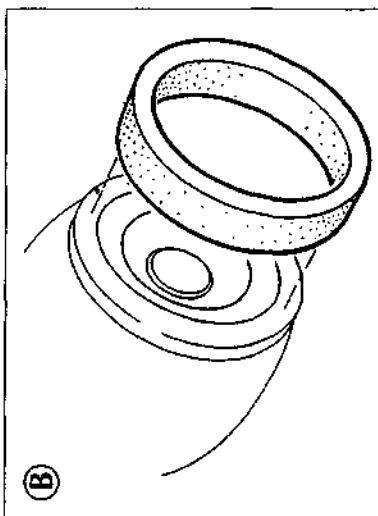
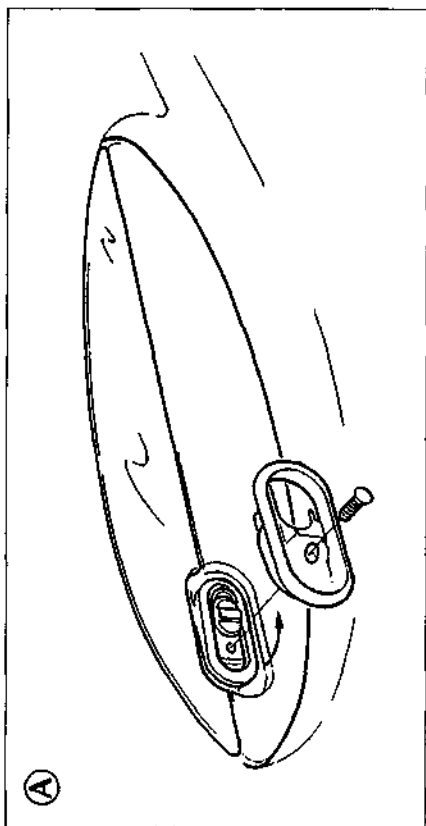


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Body and Trim

Sheet 8

**Door
Liners**



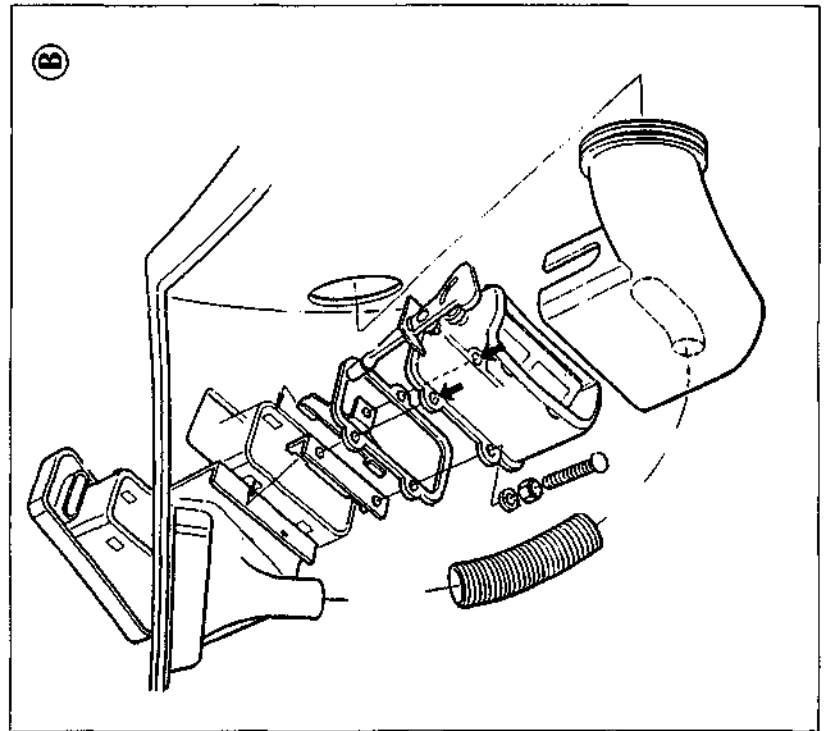
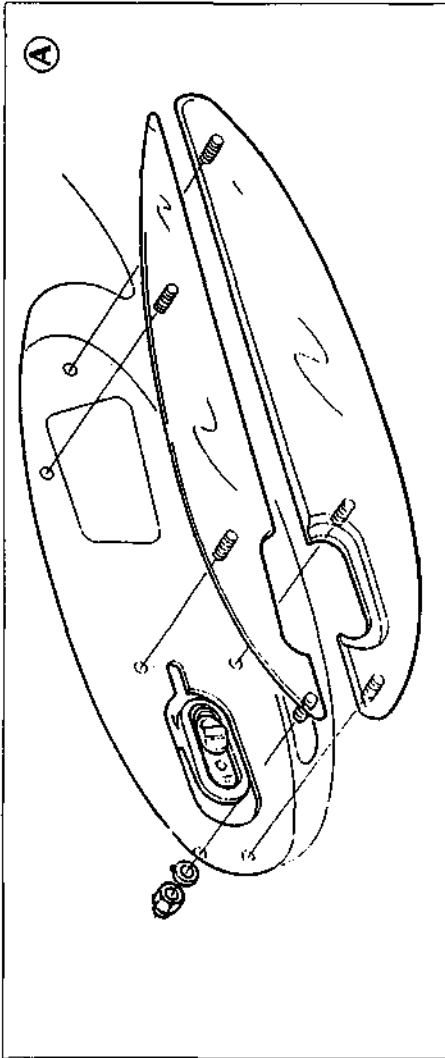
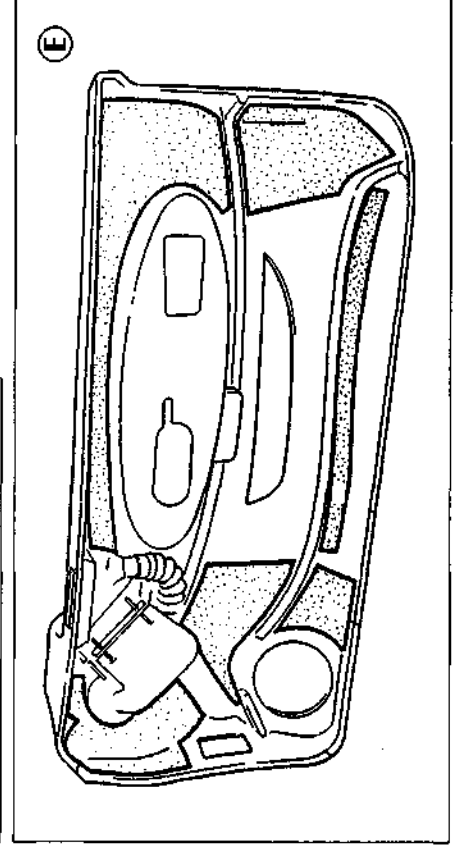
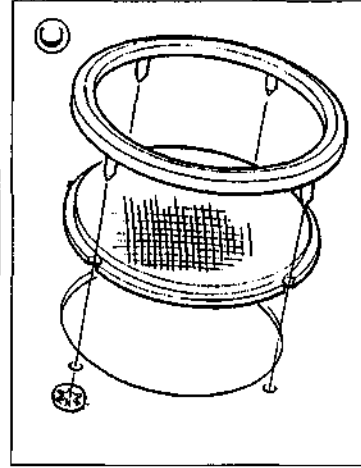
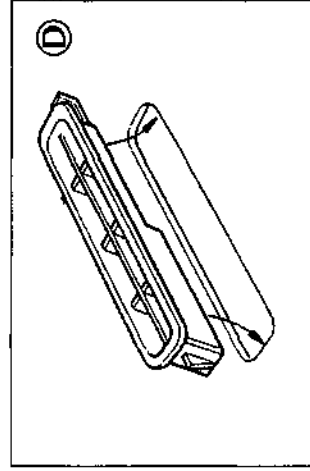
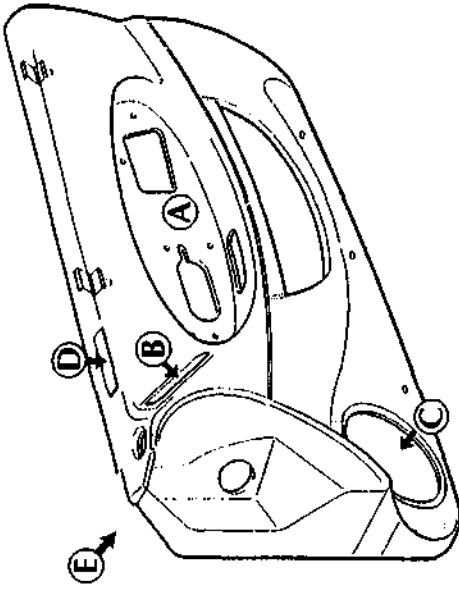
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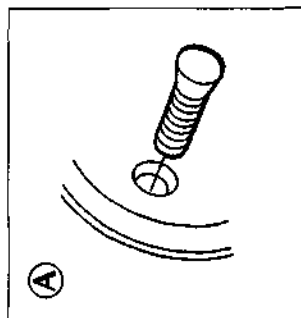
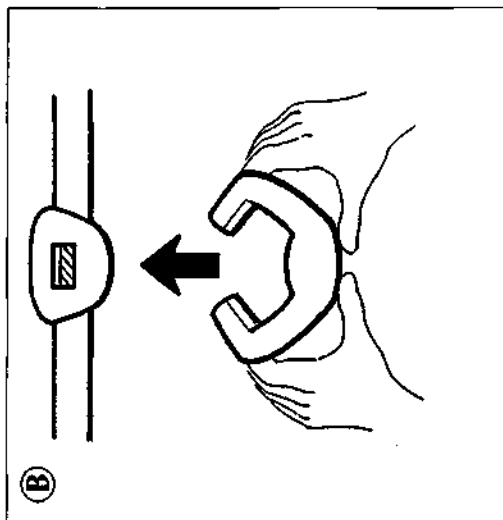
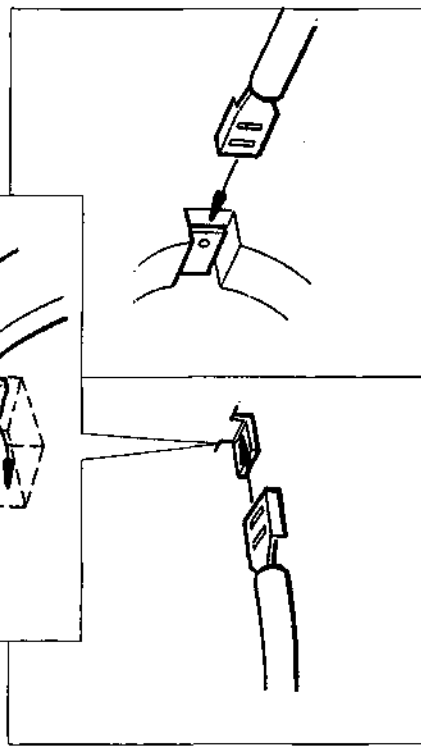
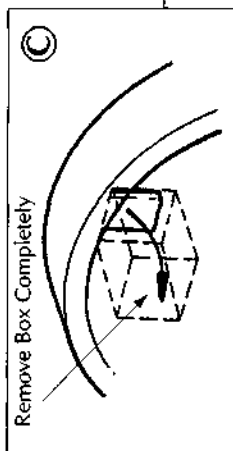
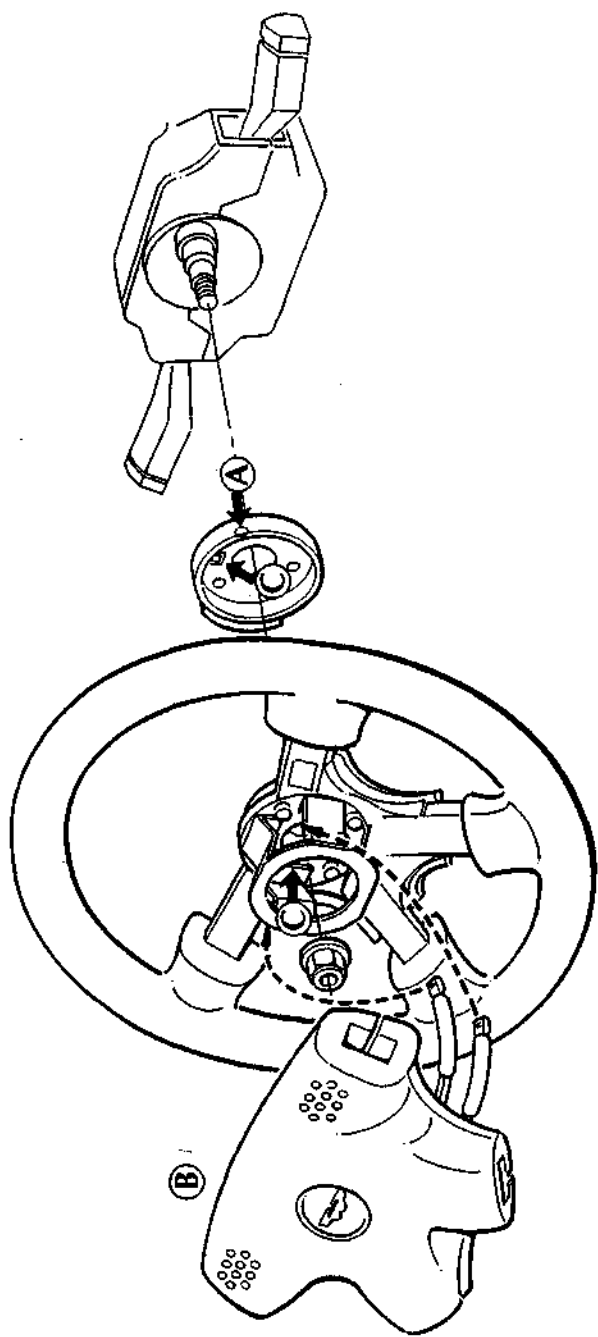
Body and Trim

Sheet 9

**Door
Liner**

(Components)





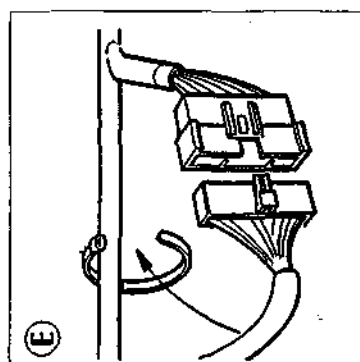
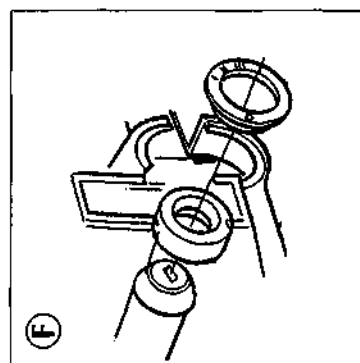
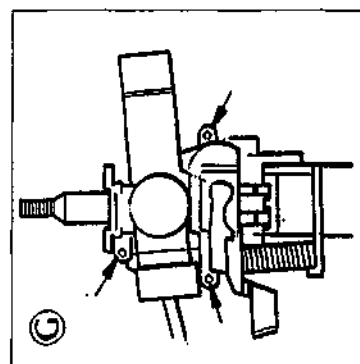
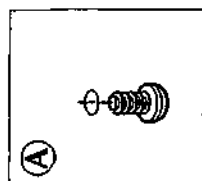
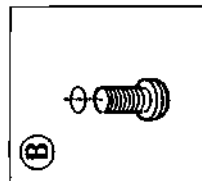
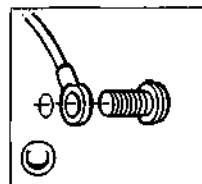
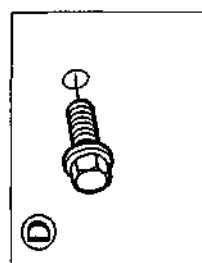
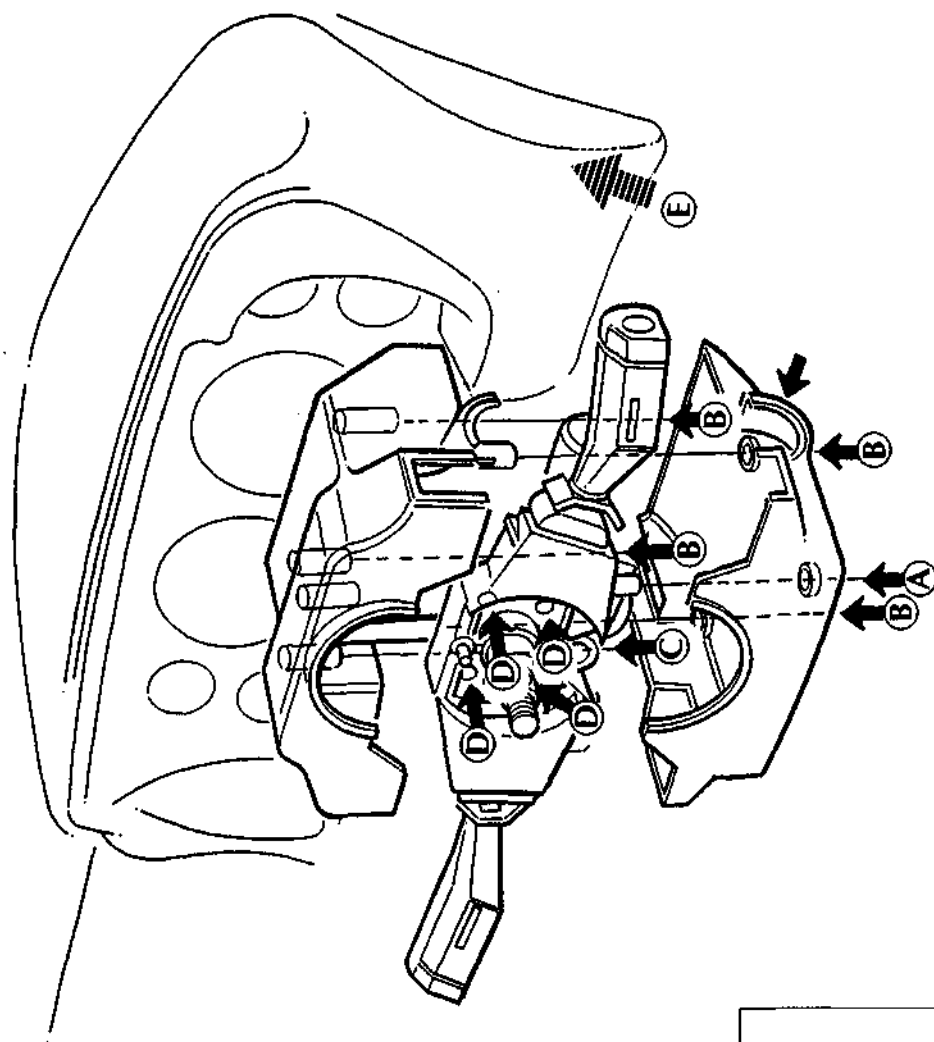
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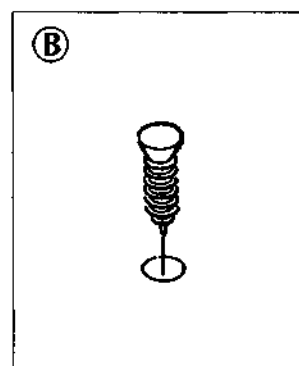
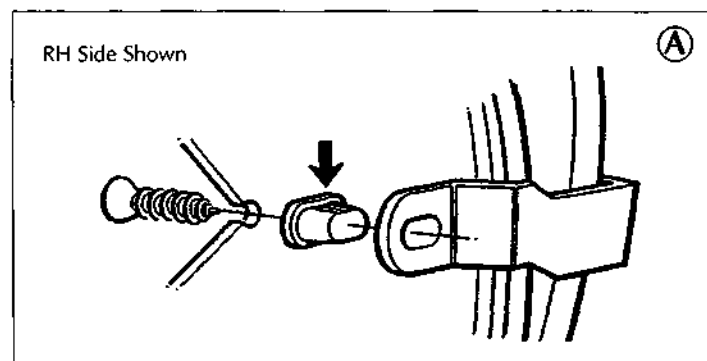
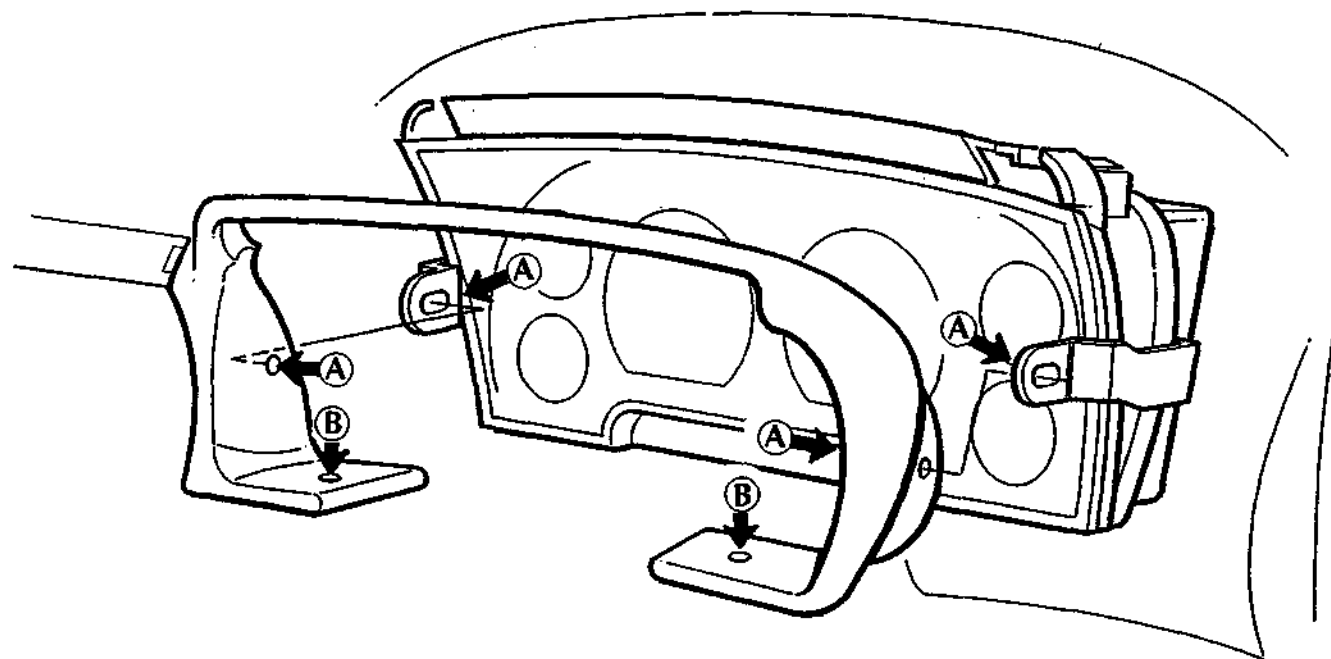
Body and Trim

Sheet 11

**Column
Switches**

Up to 97 MY





DB7
Body and Trim

Sheet 12

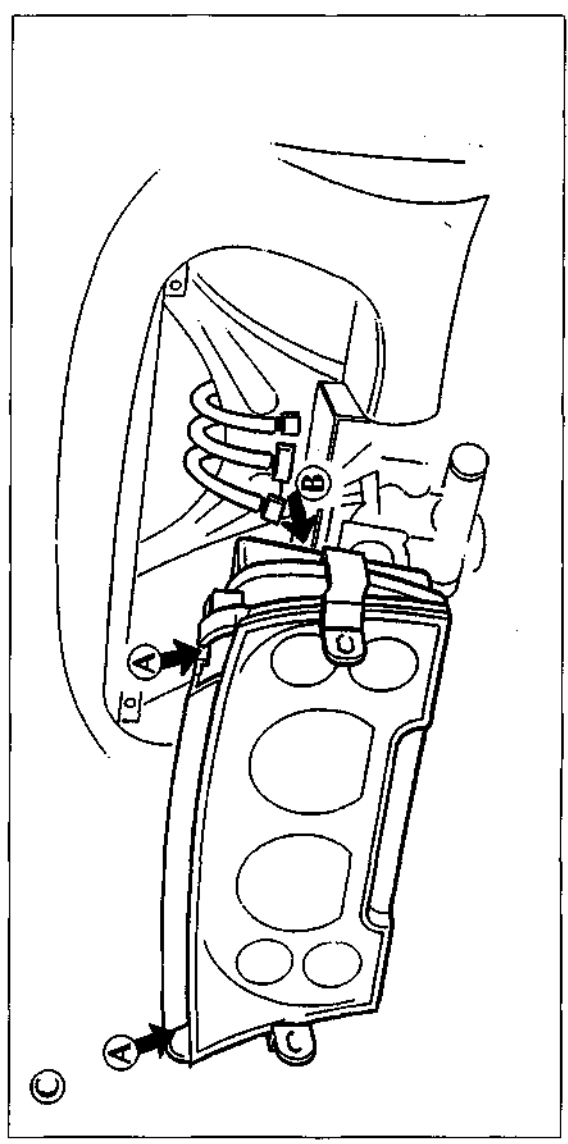
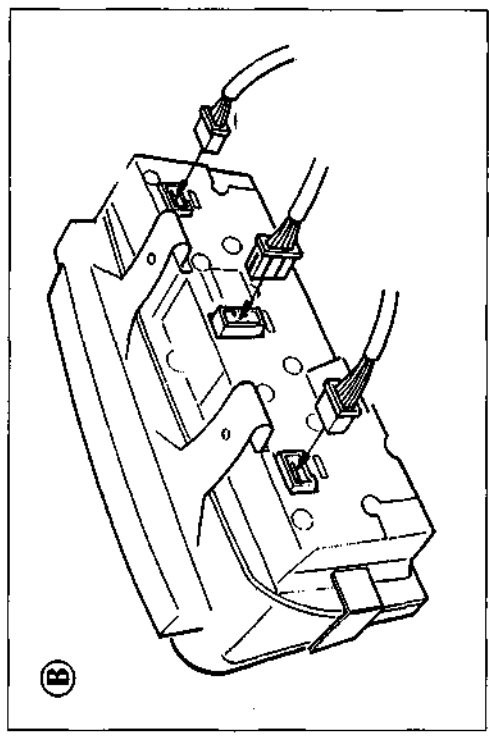
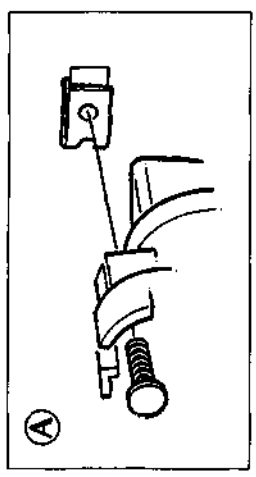
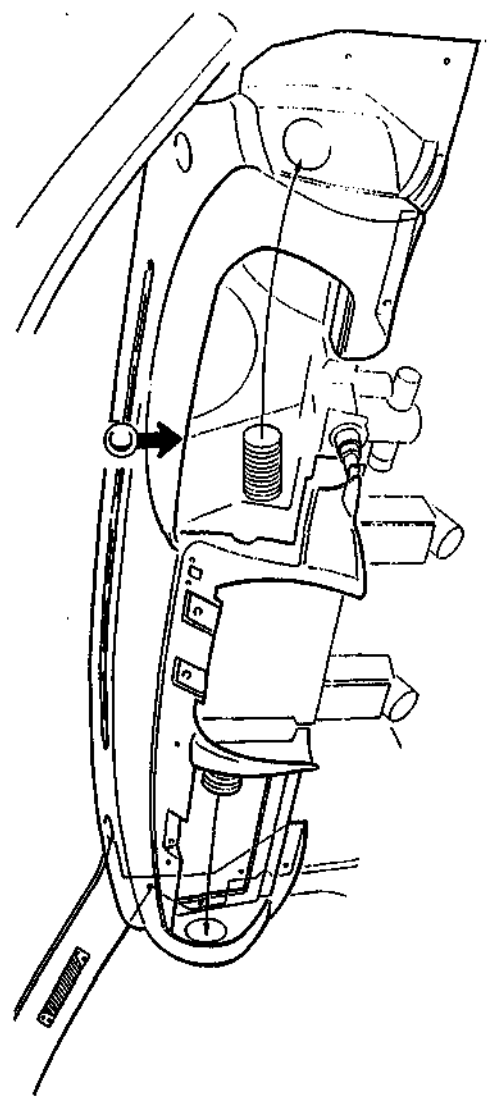
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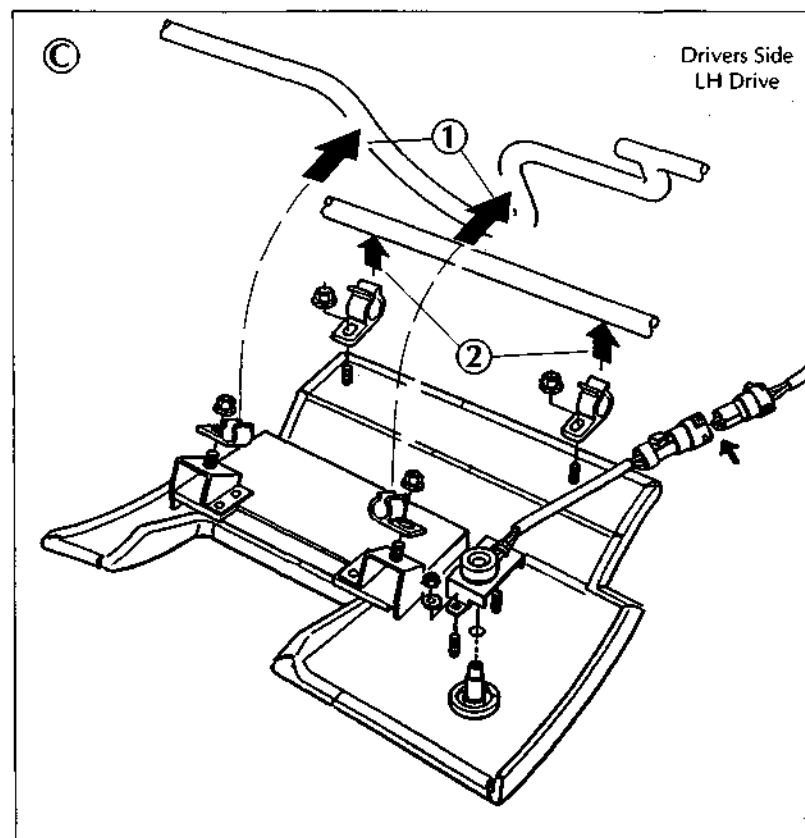
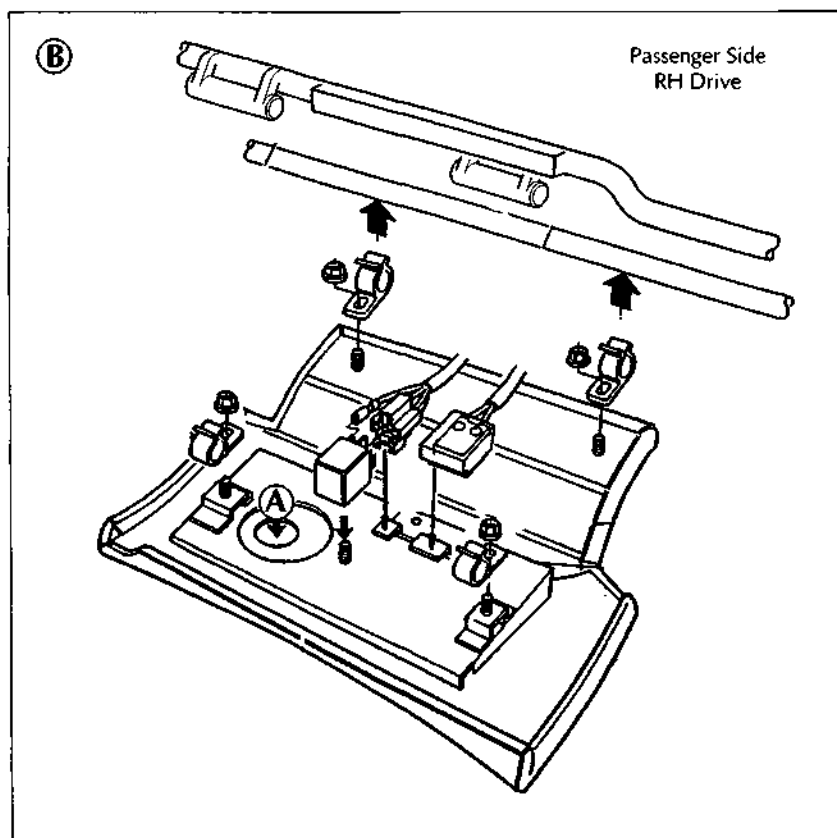
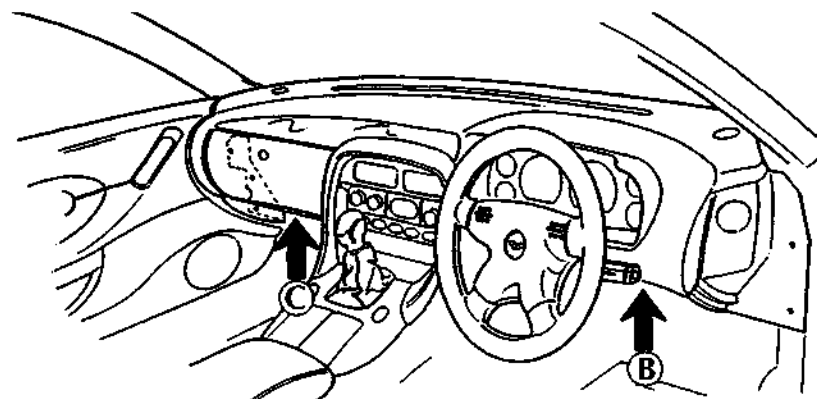
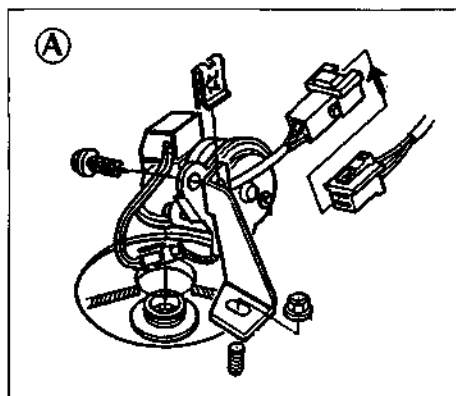
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Body and Trim

Sheet 13

Instrument Panel



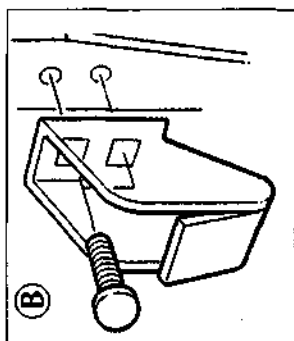
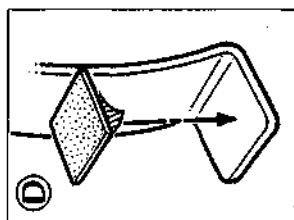
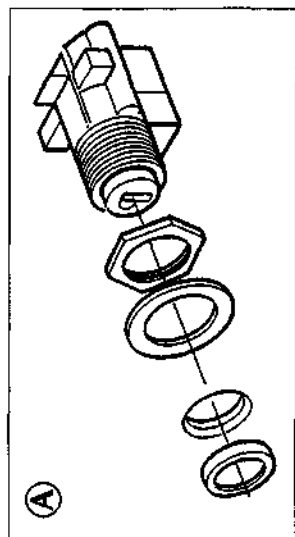
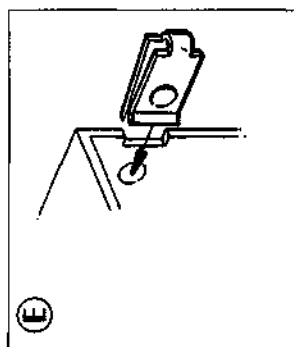
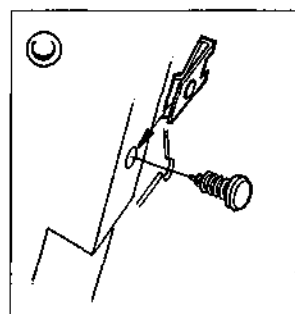
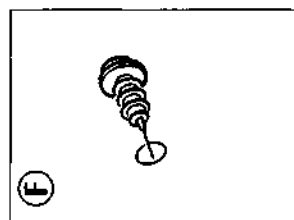
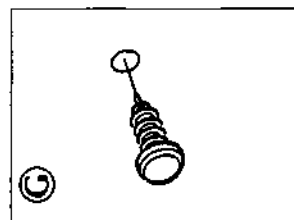
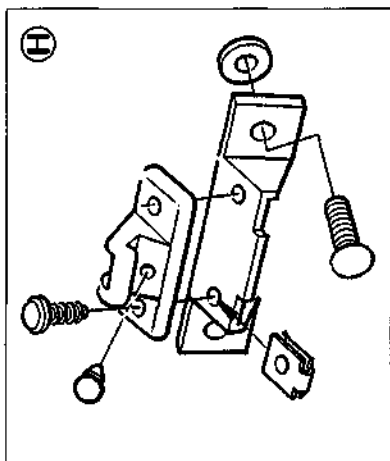
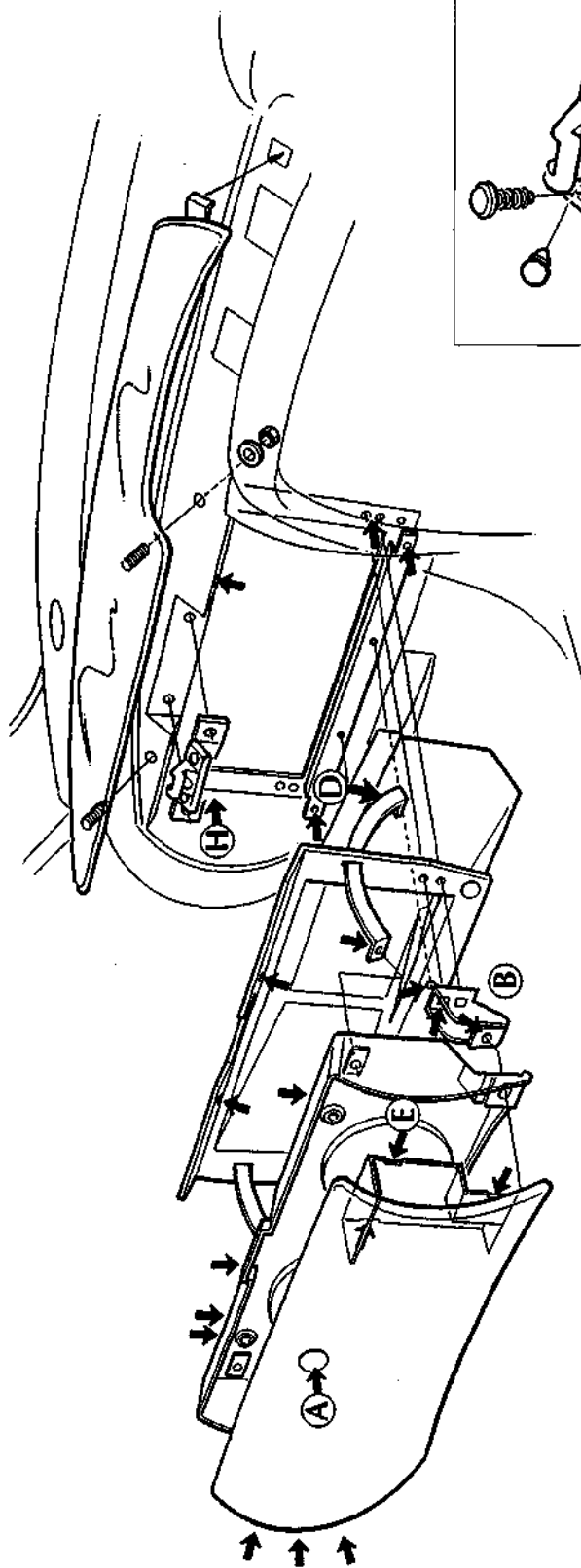


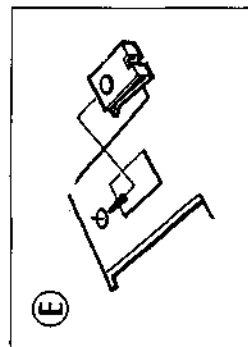
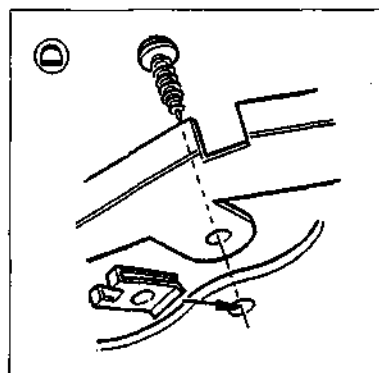
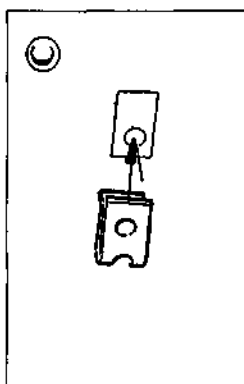
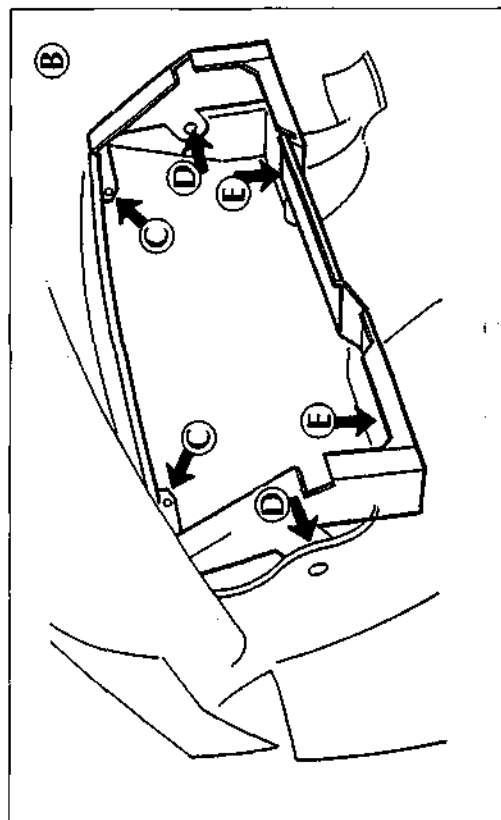
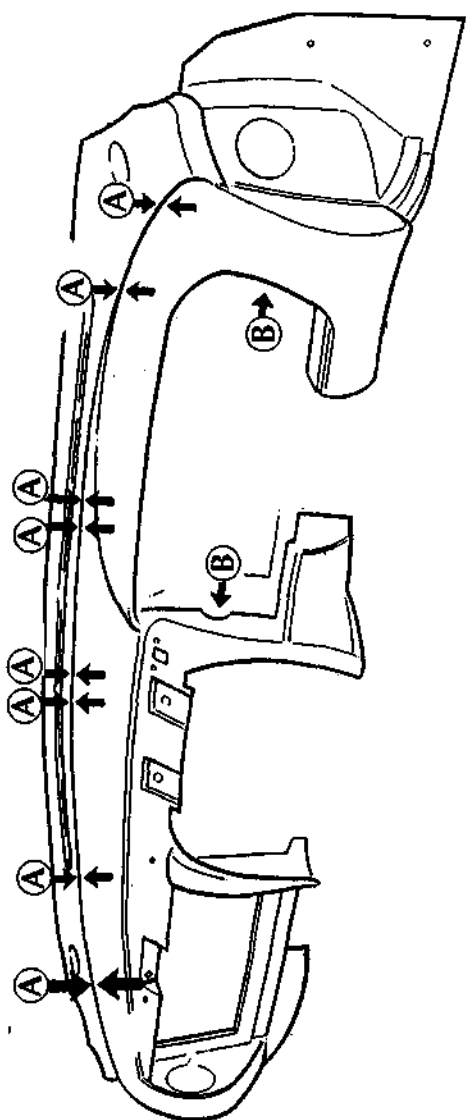
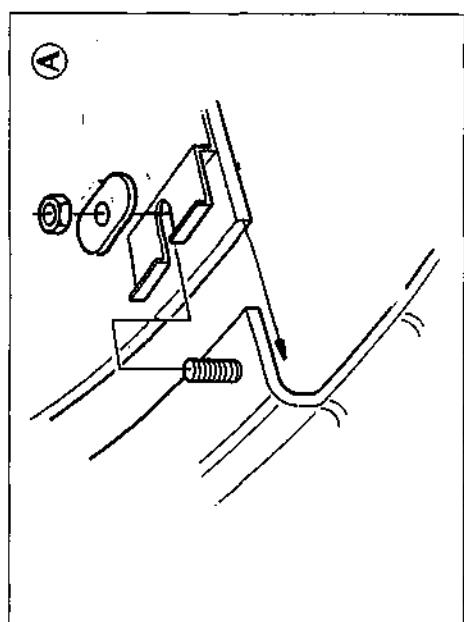
DB7
Body and Trim

Sheet 14

**Facia
Underscuttles**

Up to 97 MY

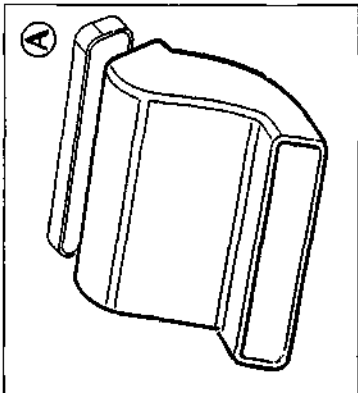
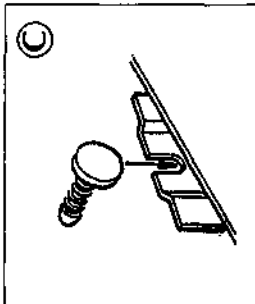
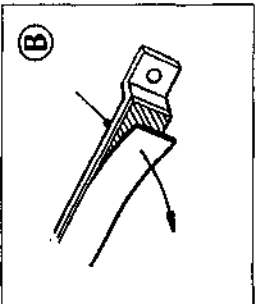
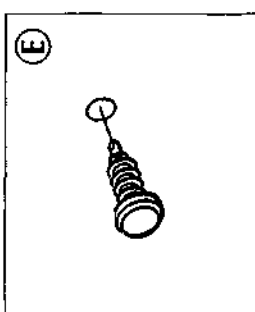
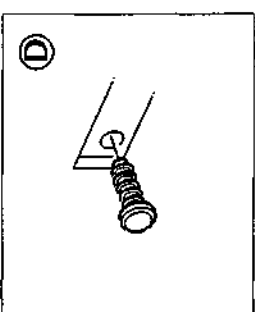
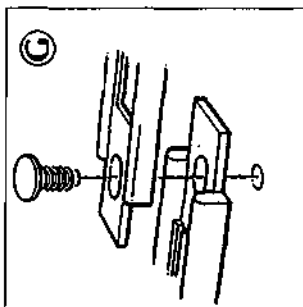
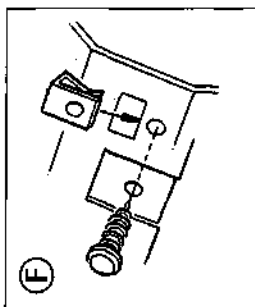
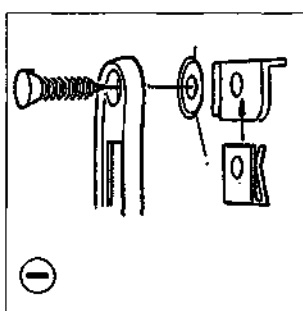
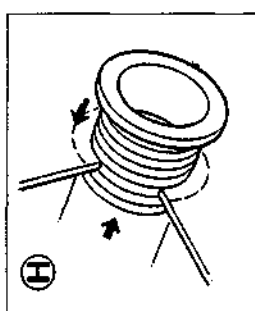
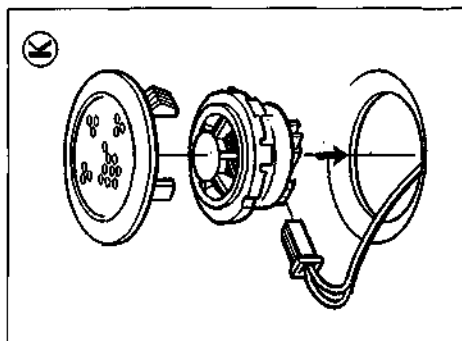
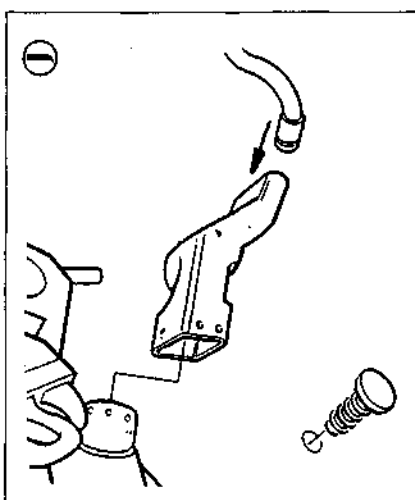
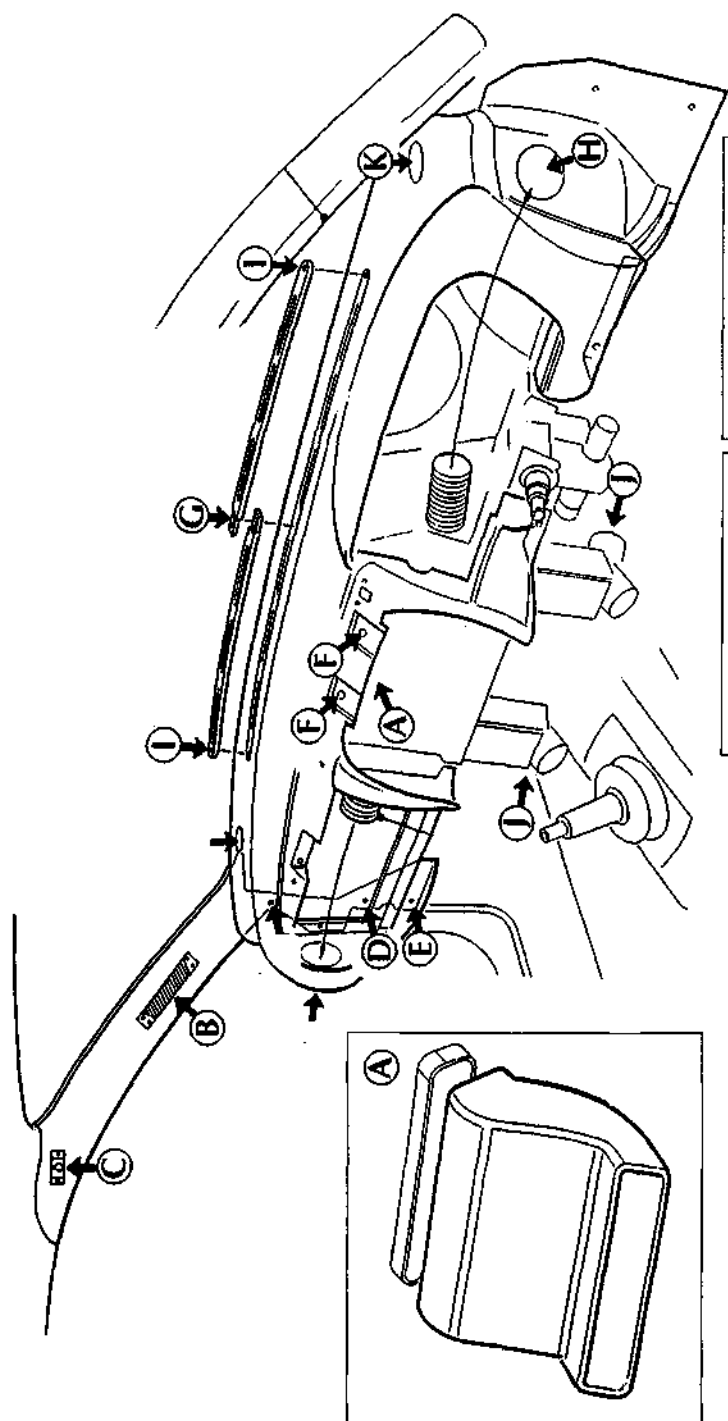


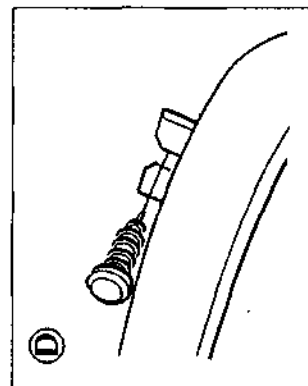
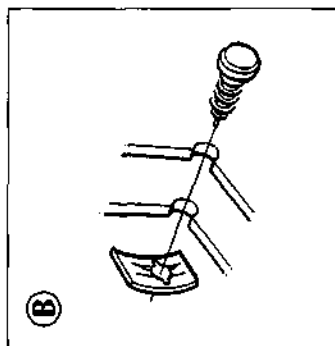
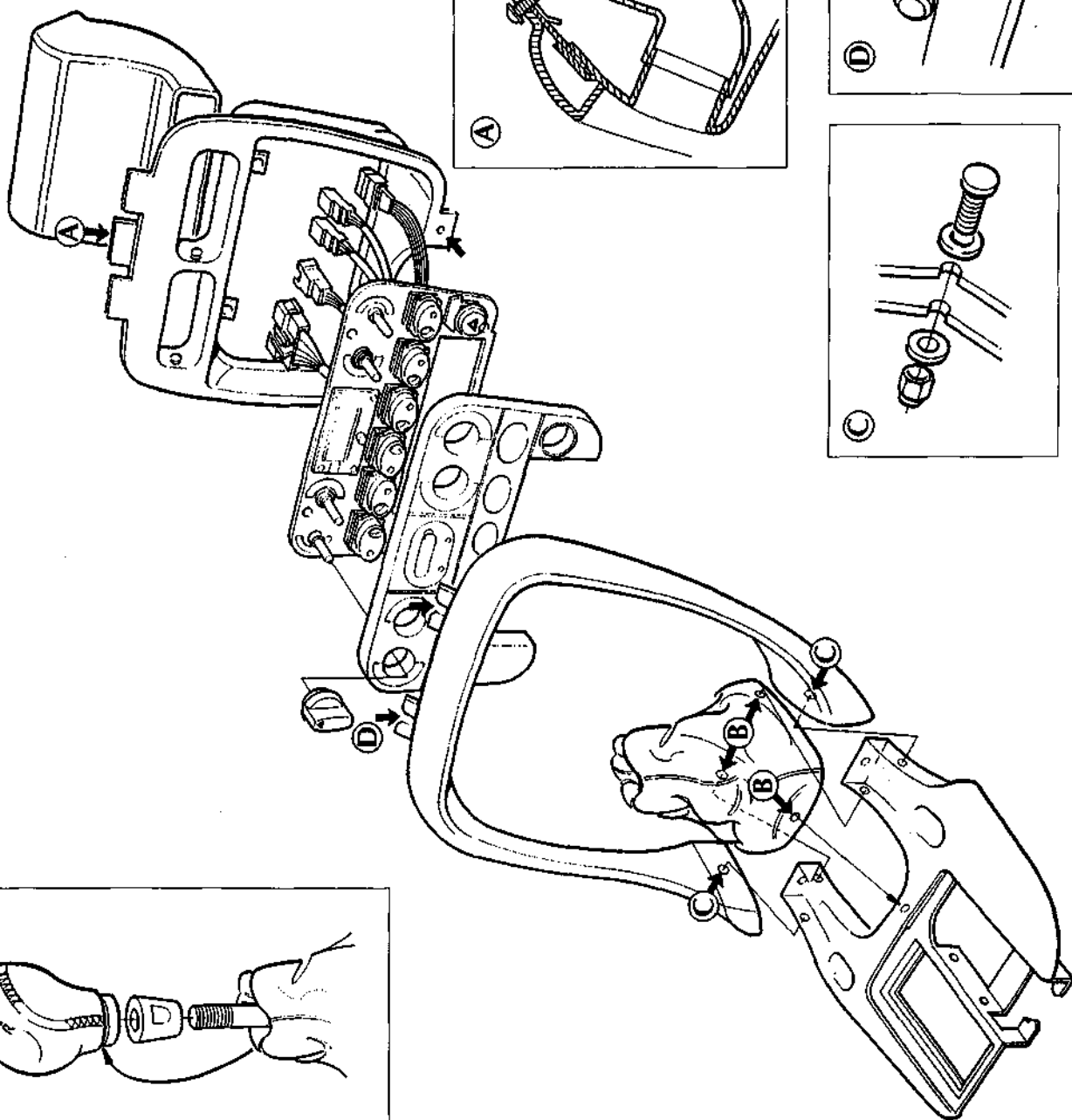


DXB 2
Body and Trim

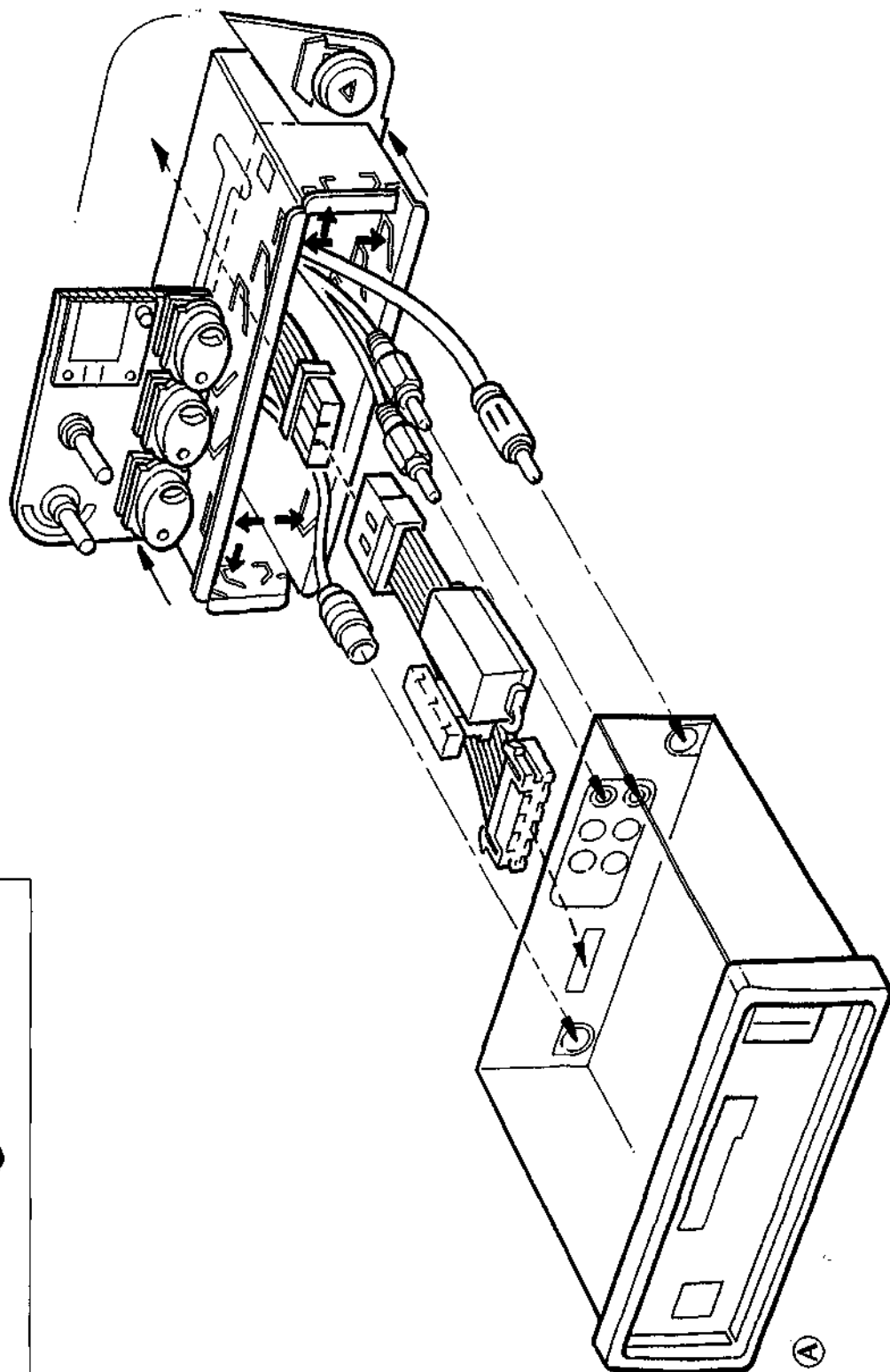
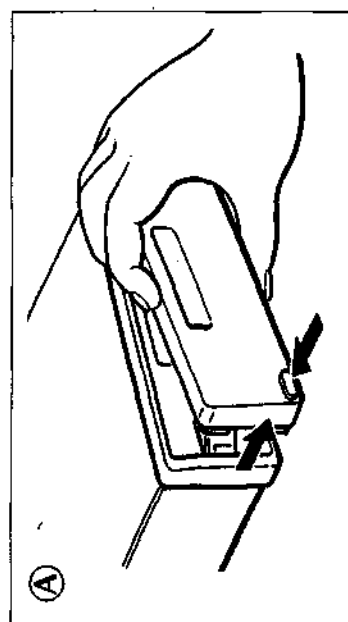
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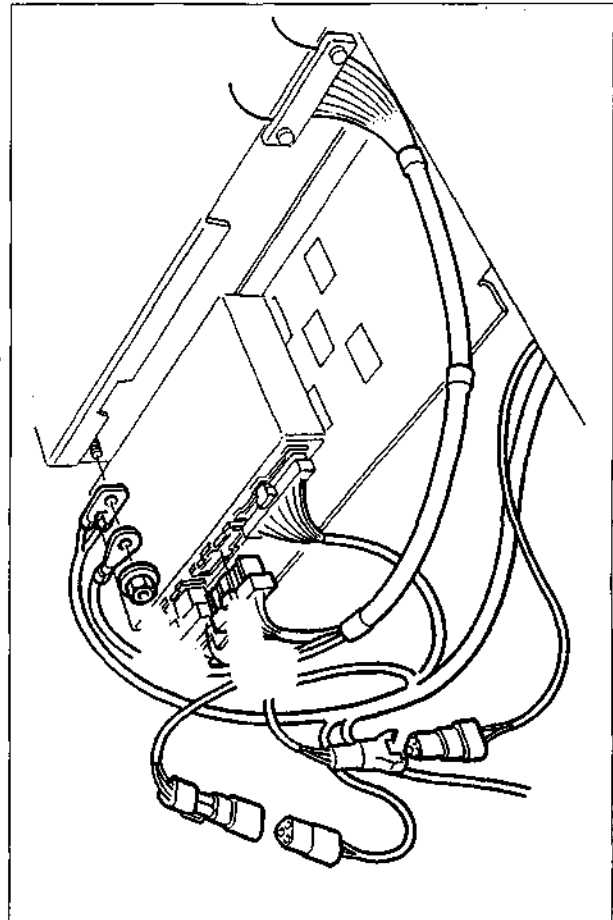
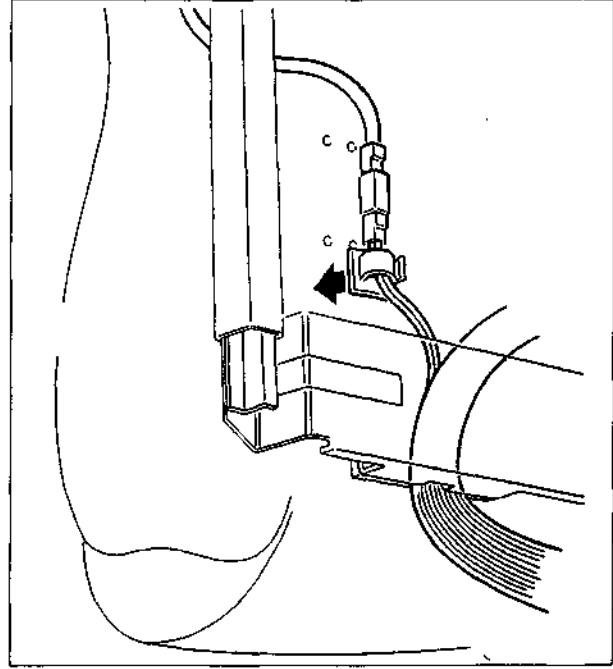
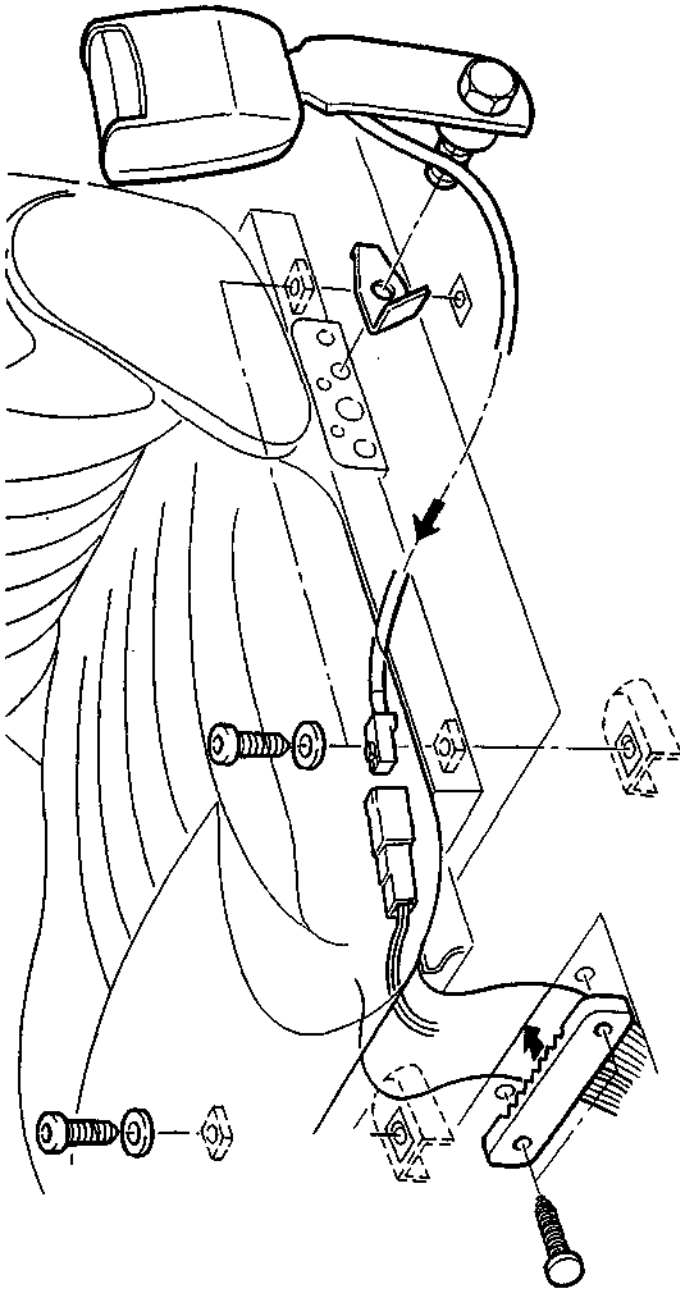
**Facia
Mountings
(1)**





Console Instruments



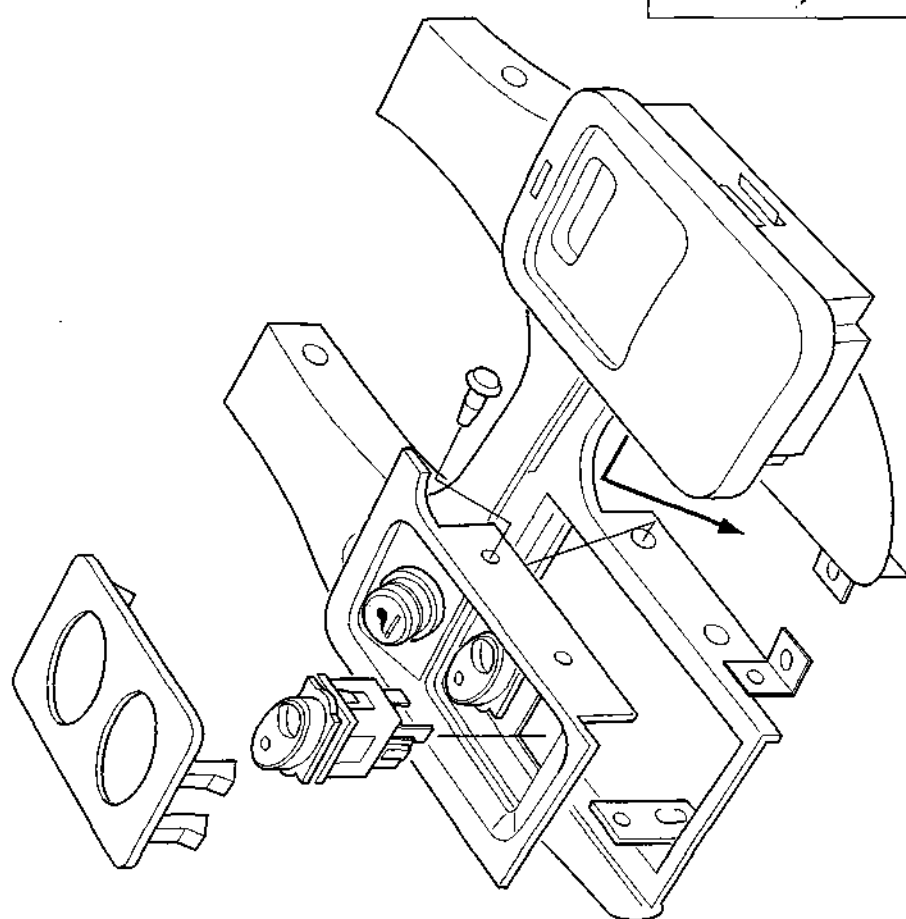
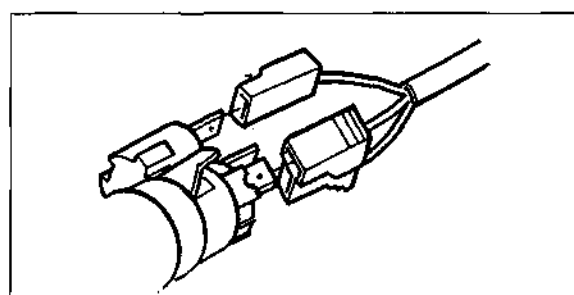
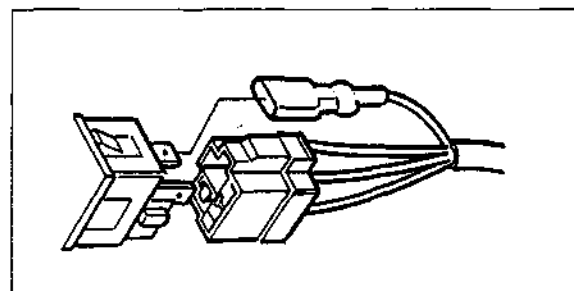


D132

Body and Trim

Sheet 21

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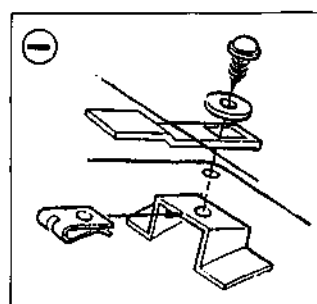
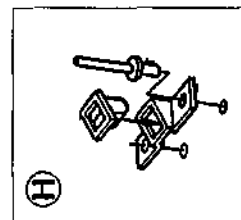
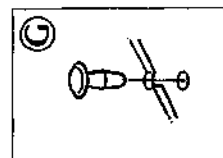
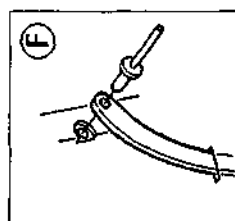
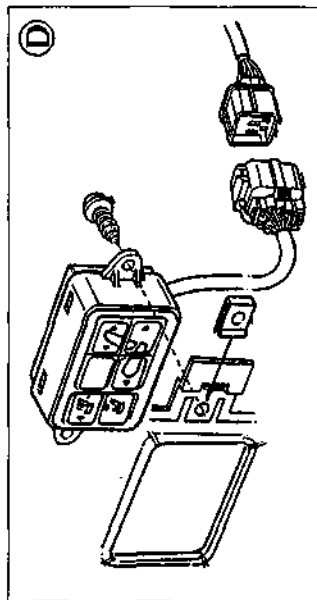
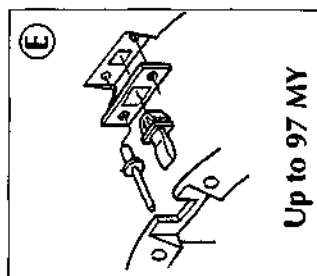
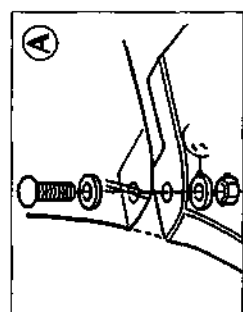
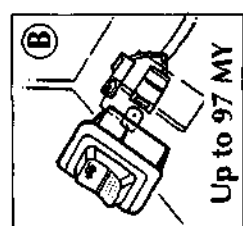
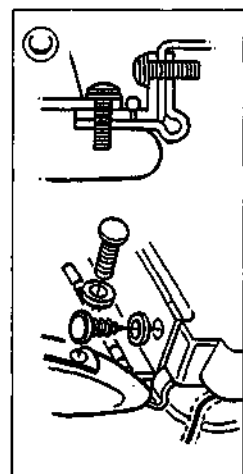
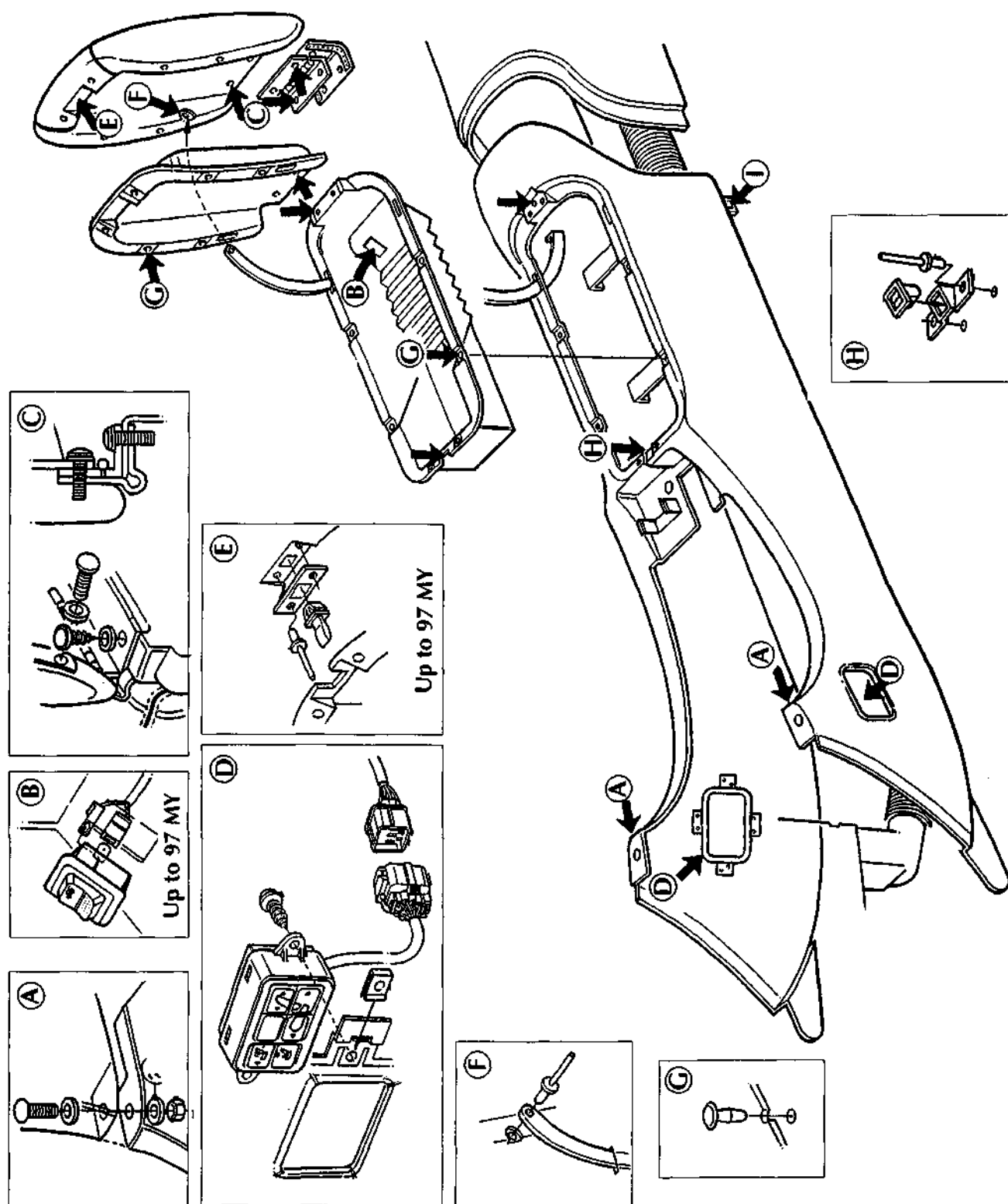


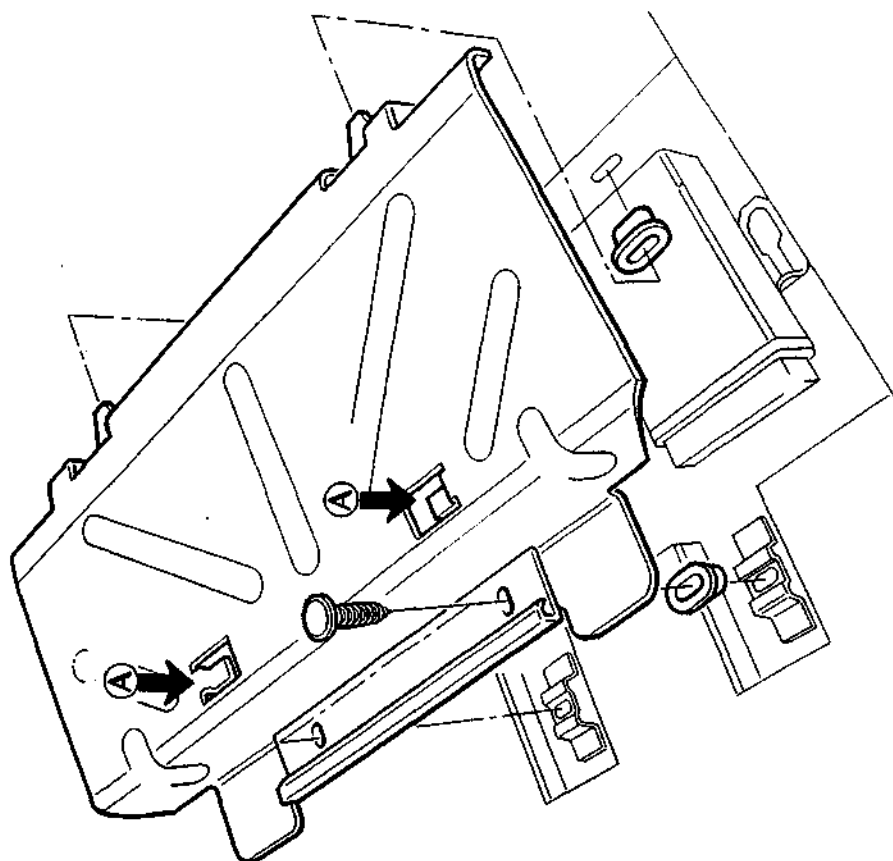
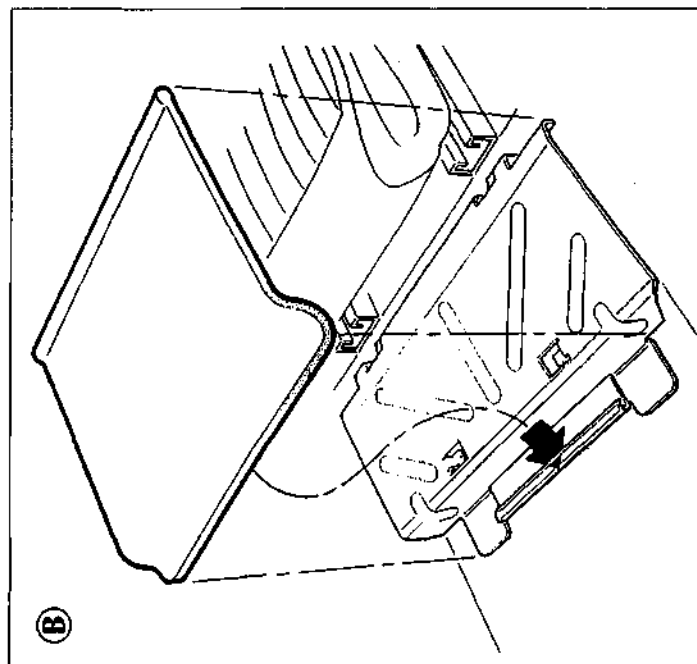
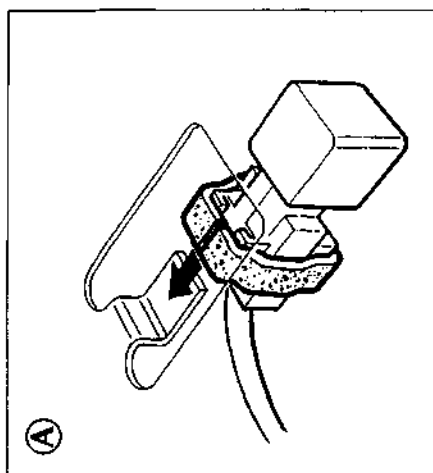
DB7

Body and Trim

Sheet 22

**Centre
Console**





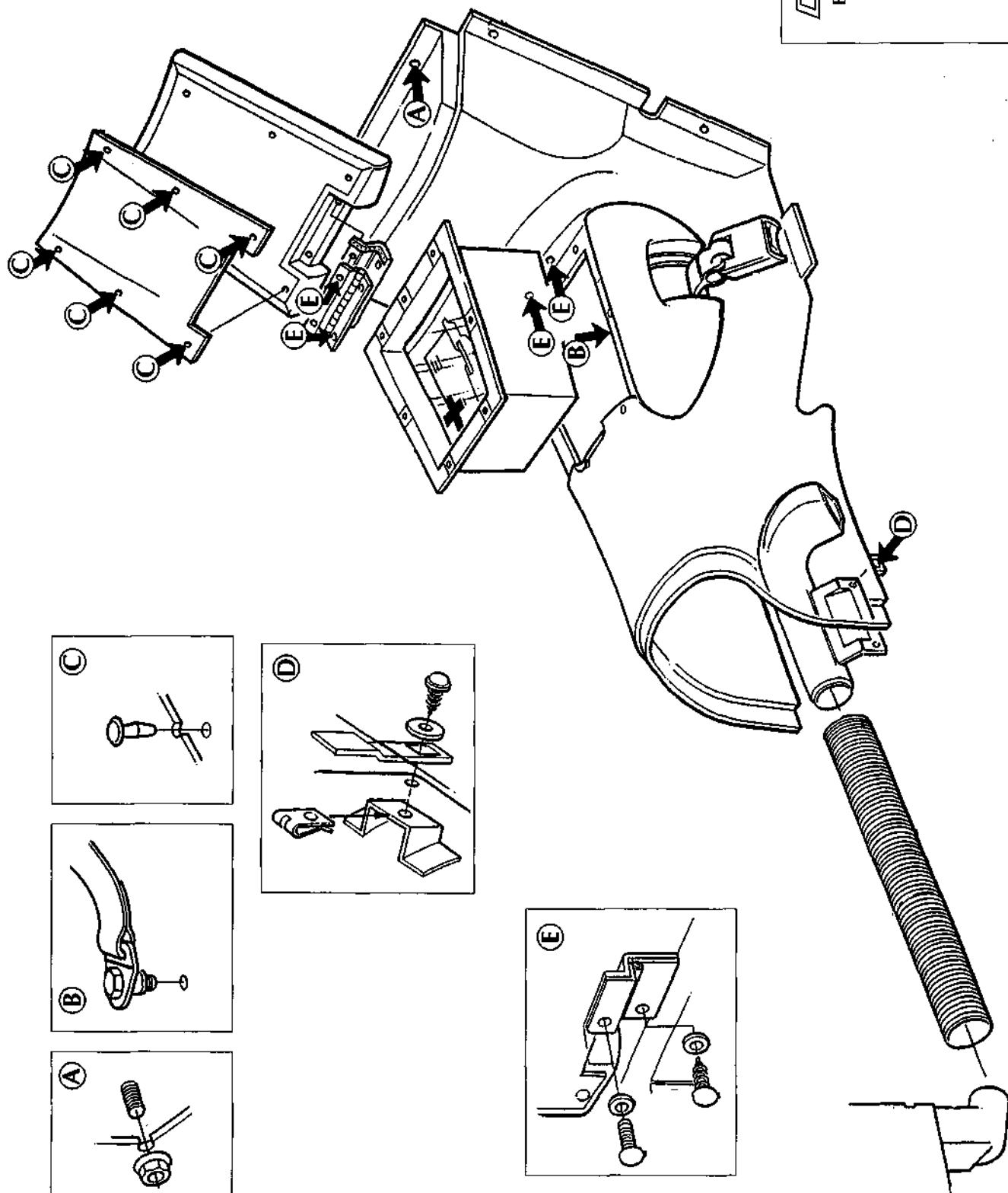
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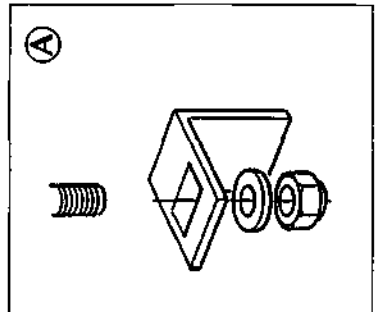
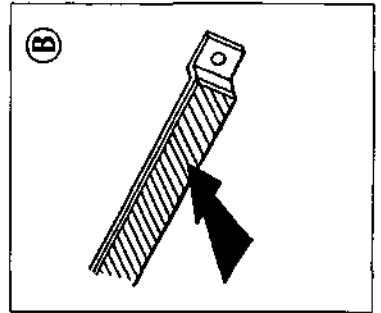
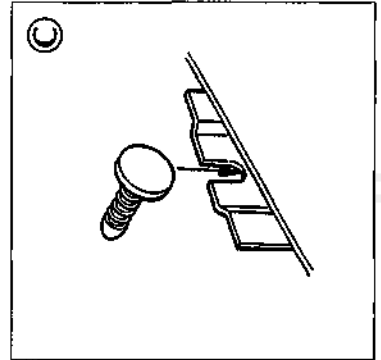
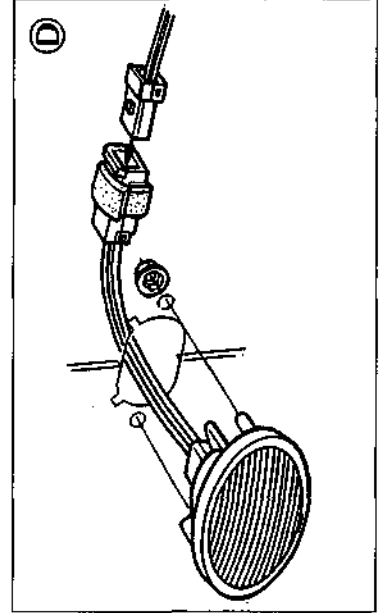
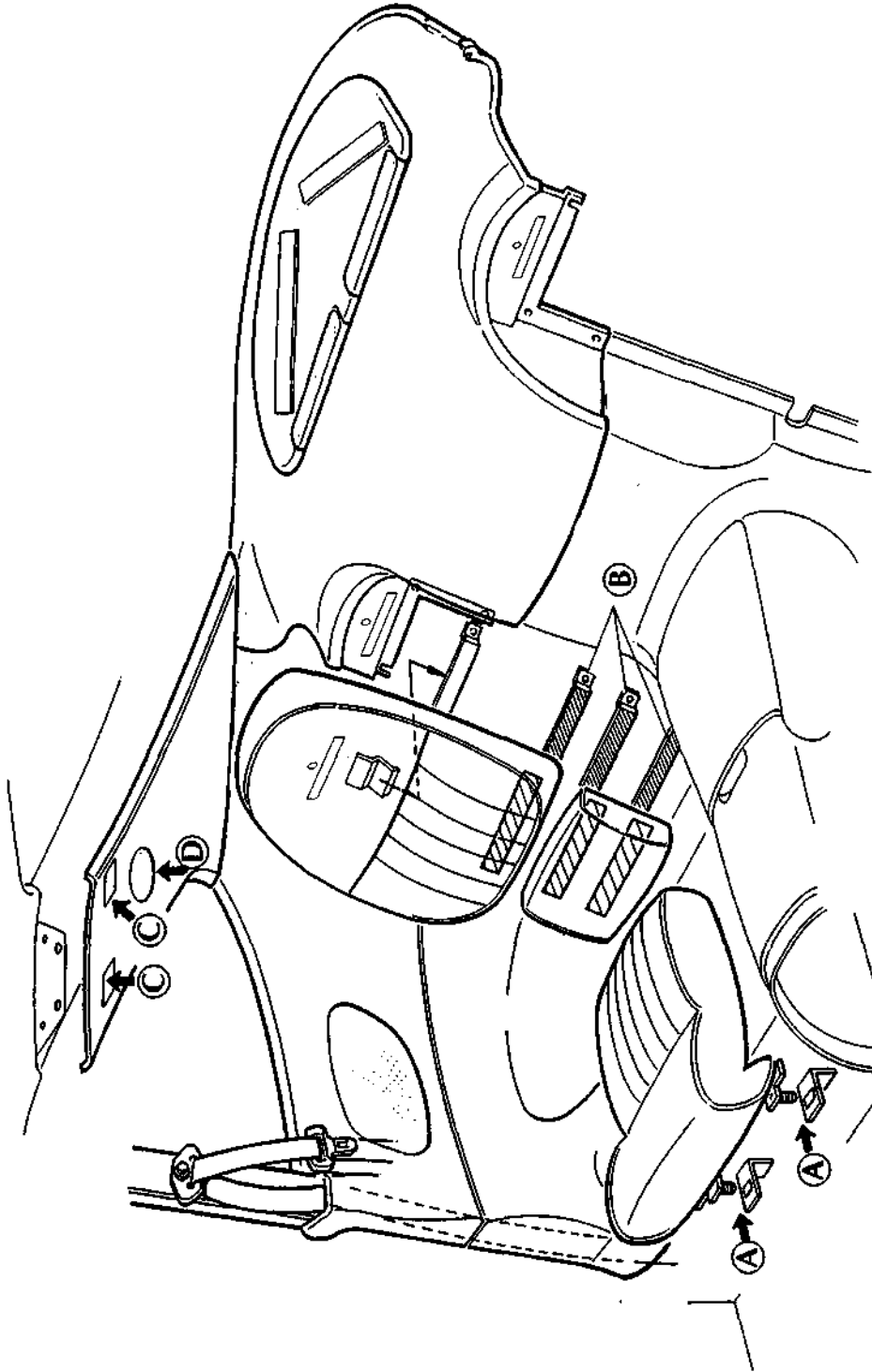
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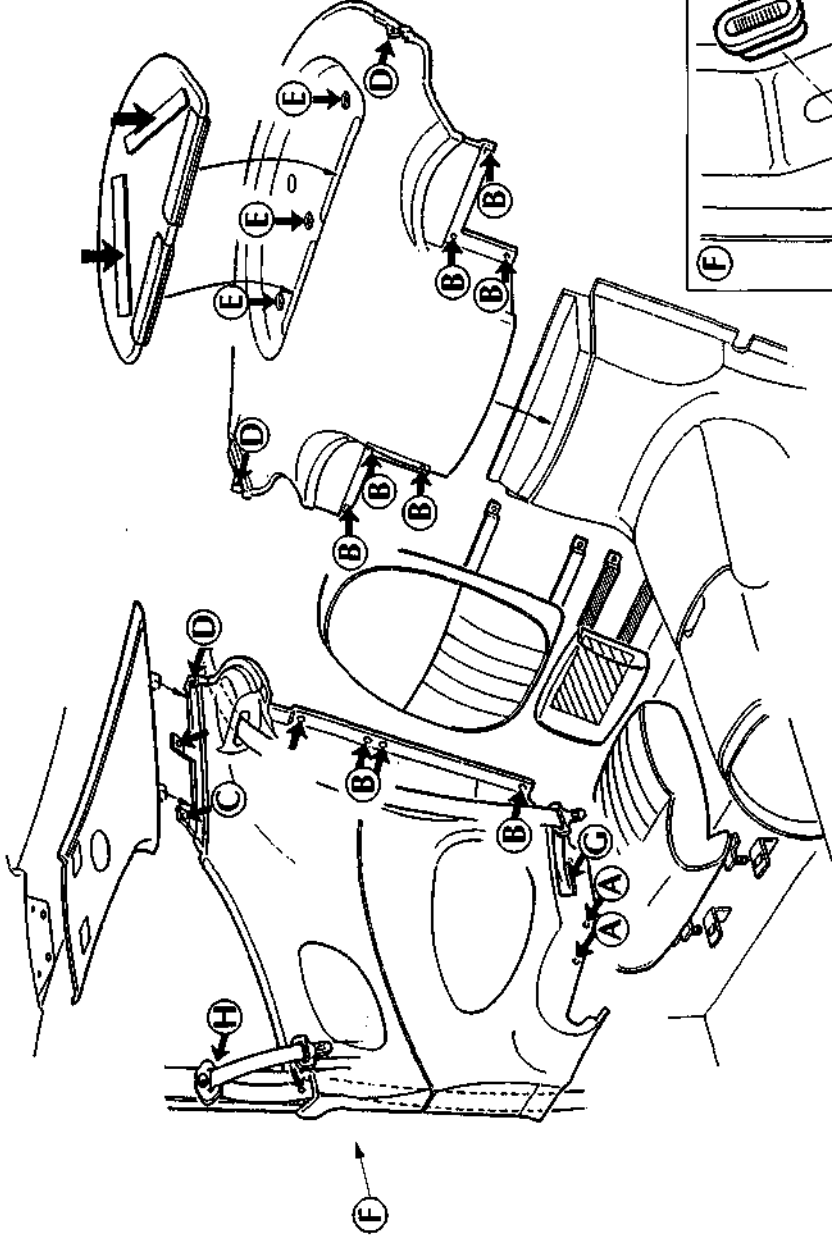
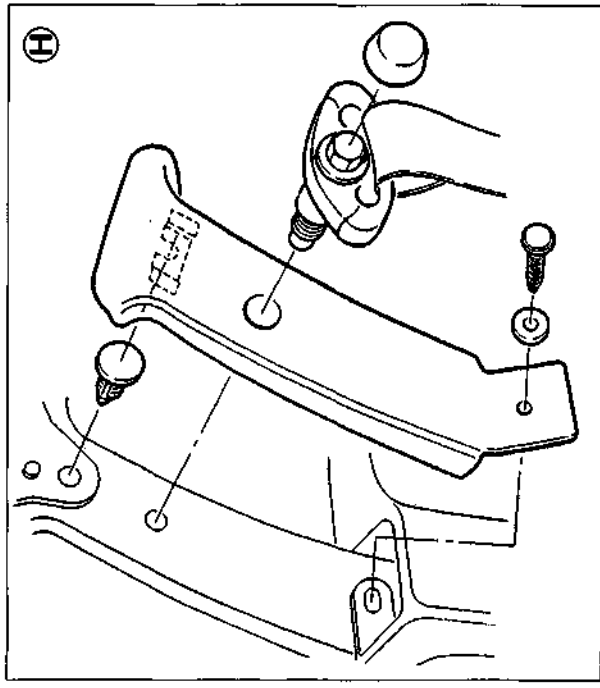
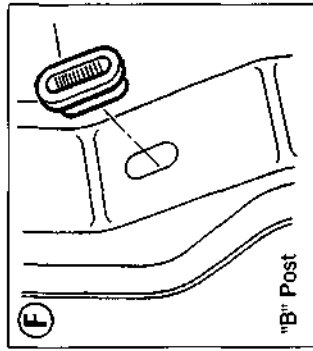
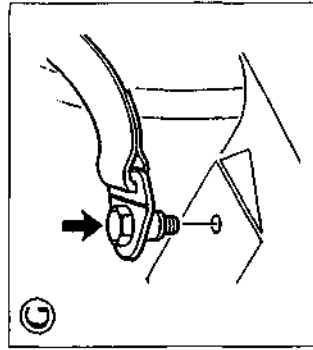
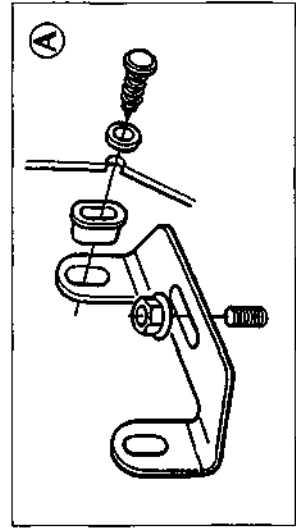
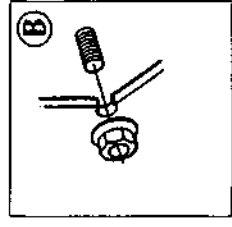
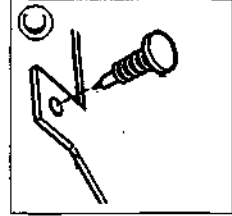
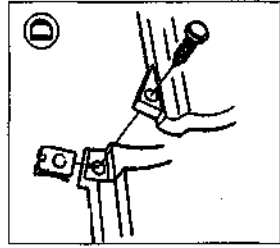
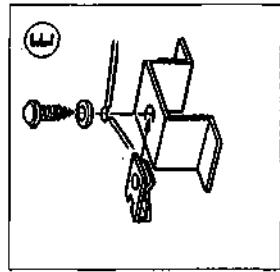
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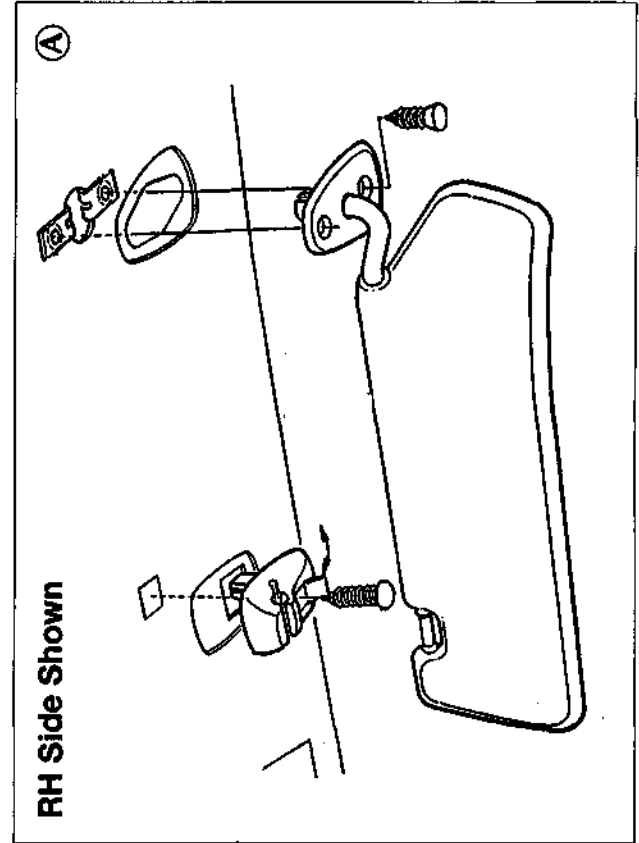
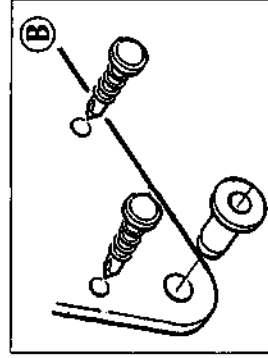
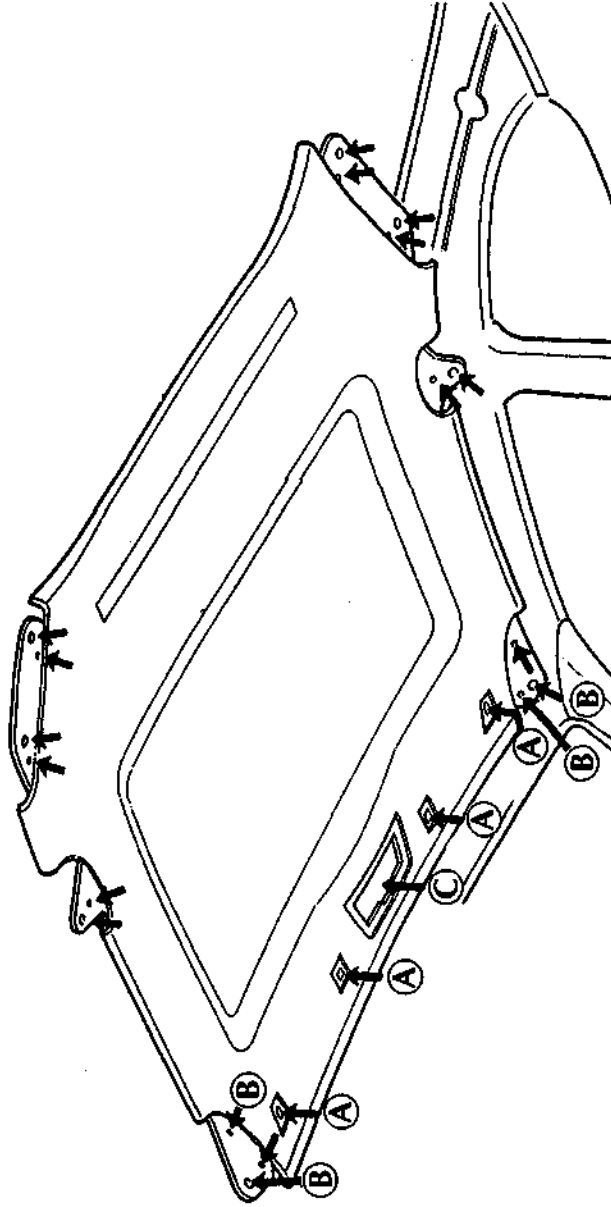
Rear
Console

Coupe Only

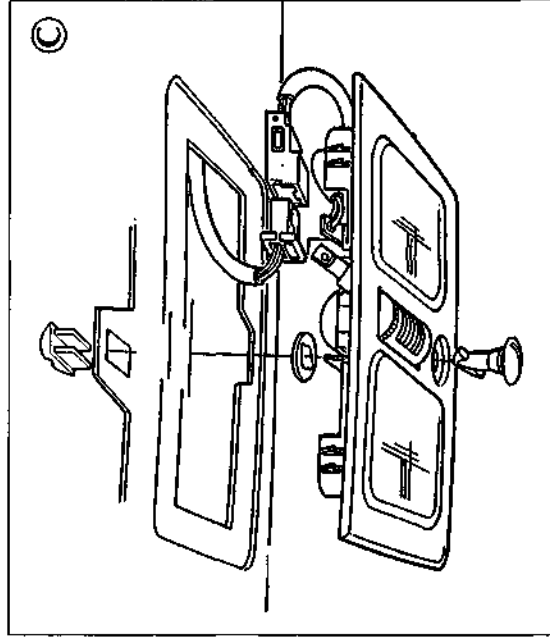








RH Side Shown



Volante Roof

Description

The system comprises an electrically driven hydraulic pump and two hydraulic rams for raising and lowering the roof. The pump is powered via two heavy duty changeover relays. Two further pairs of changeover relays power the rear quarter windows (one pair for each window). The roof hydraulic pump is protected by a 30A fuse, the windows by circuit breakers.

An electronic control module (ECM) is actuated by the roof switch on the centre console. The ECM controls the operation of both the roof and rear quarter window circuits so that they can only be operated in a pre-programmed manner. When in operation, the ECM provides signals to the roof and to the rear quarter windows.

When the roof switch is moved into the open (Roof Down) position, the roof and rear windows move together until approximately four seconds has elapsed. At this time, the ECM will remove power from the rear window circuits, leaving the roof motor running. The roof motor will stop after 12 seconds (i.e. a further 8 seconds after the rear window motors stop).

The signals will be removed from the rear window relay after 4 seconds and from the roof relay after 12 seconds if the roof switch is held in either position for longer than 12 seconds.

In order to comply with legislation, the following features are built into the system:

If the roof switch is operated in either direction and then released before that operation is complete, the roof and rear quarter windows will stop immediately. If, whilst the system is in operation, the ignition switch is turned to the off position, the system will immediately stop.

If the roof switch is pressed again after pausing during a roof movement, the timing sequence will be as follows:

1. If the previous direction is selected, the timing recommences from where it left off and will continue to completion. If the ignition has been turned off, the timing will start from the beginning of its cycle.
2. If the opposite direction is selected, the timing sequence will commence from the beginning of the newly selected direction and continue to completion.

Roof and Rear Quarter Light Control

The following diagrams show the component location and the electrical control for the roof and rear quarter light systems.

Roof Component Location

Roof Switch

Hydraulic Pump

ECM

Roof Up Relay

Roof Down Relay

LH Q Light Up Relay

LH Q Light Down Relay

RH Q Light Up Relay

RH Q Light Down Relay

Fuse and Circuit Breakers

Hydraulic Rams

Heated Rear Window Override Switch

Figure 1. Roof System Component Location

Roof Control System

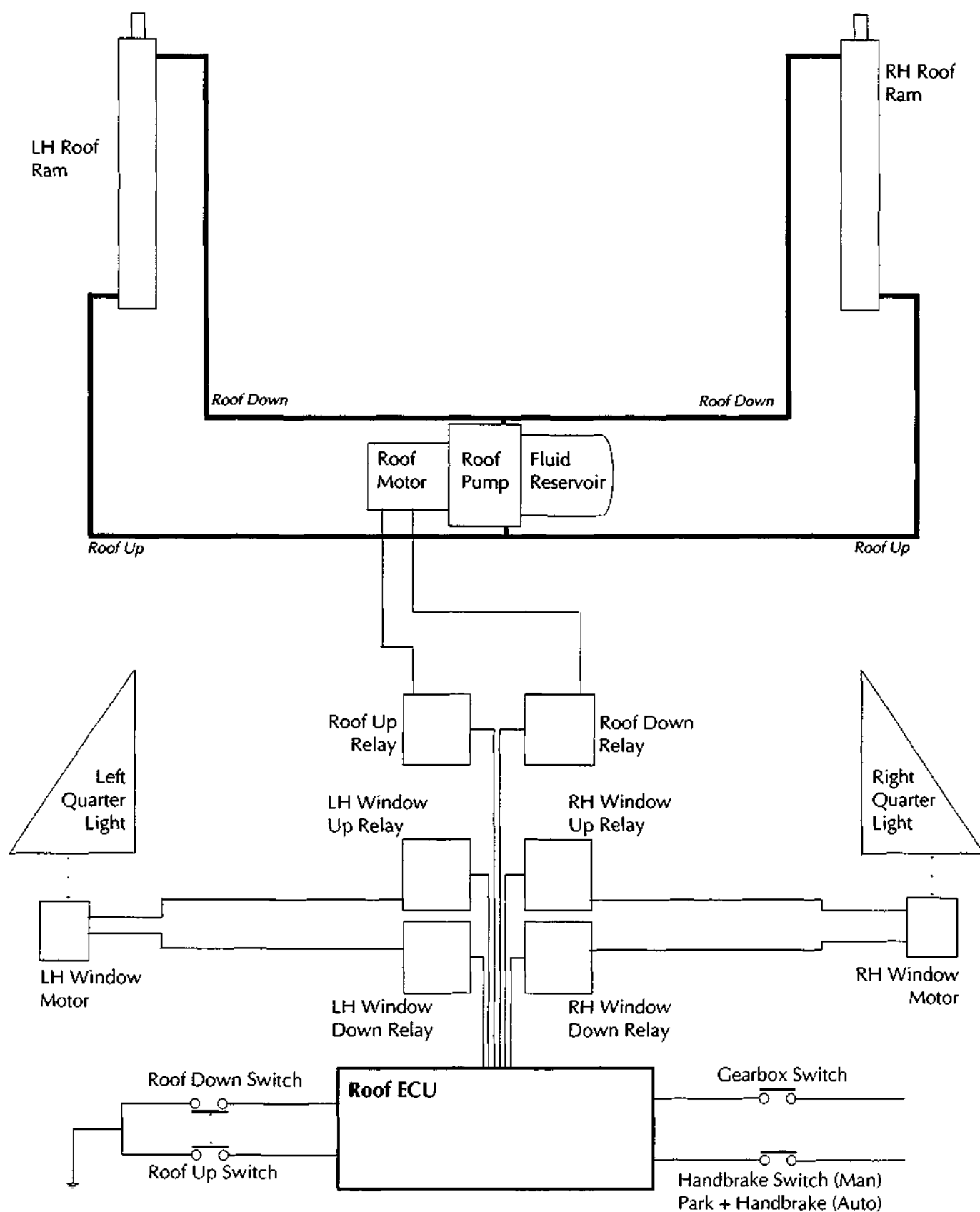


Figure 2. Roof System - Control Schematic Diagram

9.0.02.1 - Roof Removal/Replacement

1. Move the front seats fully forward for access.
2. Remove the rear seat squab and cushion. Remove the rear quarter trim panel.
3. Release the roof side curtain clips.
4. Release the rear window support bracket securing bolts (Fig 1-2).
5. Remove the side curtain clips (2 per side).
6. Release the side curtain rods and move the curtains aside.
7. Disconnect the heated rear window connector.
8. Release the rear window support bracket from the body.

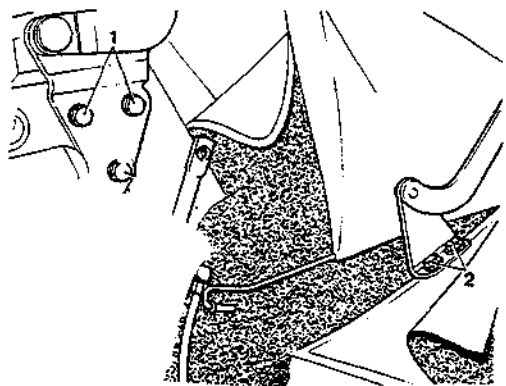


Figure 1. Rear Window Support Bracket

9. Release the roof catches.
10. Select Manual on the roof motor control switch. Lower the roof to the midway position. Select Electric on the roof motor control switch - the roof will remain in a raised position.
11. Raise the trim and remove the cable securing nuts.

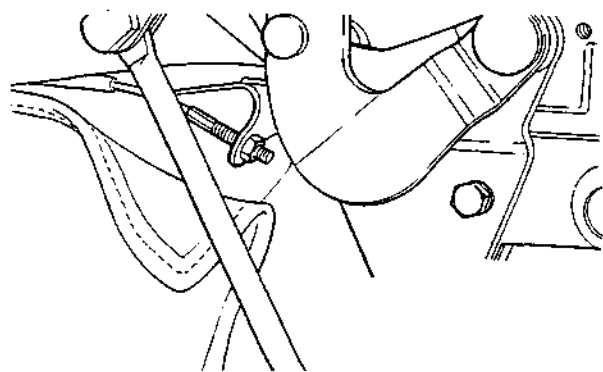


Figure 2. Cable Securing Nuts

12. Release the roof outer finisher securing screws and remove the finisher.
13. Release the cable and roof material from the body channel.

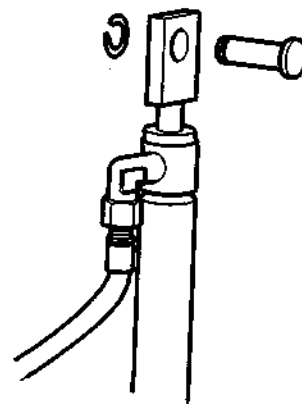


Figure 2. Ram Mountings

14. Select the Manual position on the roof motor control switch. Fold the roof and remove the ram to roof securing pins.
15. Remove the six roof to body securing bolts.
16. Remove the roof assembly.

Refitting

1. Fit the roof into position on the vehicle, aligned with the fixing holes.
2. Refit the six roof to body securing bolts.
3. Locate the rams to the pivot.
4. Select Manual on the roof motor control switch. Place the roof in the partially open position to align the ram fixing holes. Fit but do not tighten the securing bolts.
5. Fit the pivot pins and securing clips.
6. Finally tighten all bolts.
7. Position the rear window support bracket, fit and tighten the securing bolts.
8. Fully raise the roof. Select Electric on the roof motor control switch.

9. Position the rear edge of the roof to the body.
10. Position the rear cable to the roof lower edge. Position the loops on the cable (approximately 17 in equi-spaced apart). Position the cable to the mounting brackets, fit but do not tighten the securing nuts.

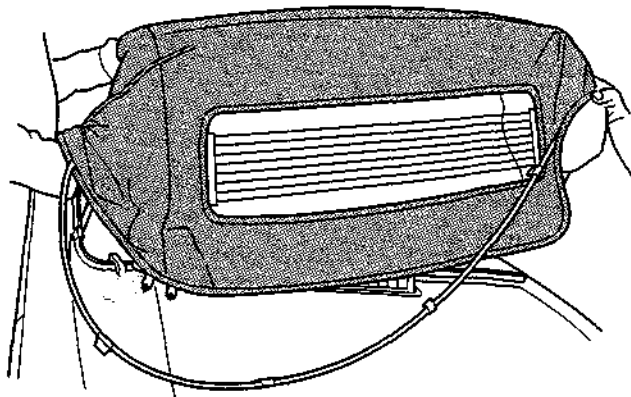


Figure 3. Cable, Roof Channel and Body Channel

11. Align the rear edge of the roof material to the body and commence tightening the cable nuts evenly. Stop frequently and check that the cable and roof channel are correctly bedding into the body channel. Continue tightening and checking until the roof is fully seated in the body channel.
12. Fit and secure the roof finishers.
13. Reconnect the heated rear window connector.
14. Position the roof inner curtain. Fit clips to the curtain rods. Fit and tighten the securing screws.
15. Refit all trim and check the roof mechanism for correct operation and fitting.

9.0.02.3 - Roof Hydraulic Control System

Procedure

1. Move the front seats forward for access.
2. Fully lower the roof.
3. Remove the rear seat squab and cushion. Remove the rear quarter trim panels.
4. Remove both the cylinder pivot pins. Release the ram cylinder assemblies (take care not to kink the pipes).
5. Remove the screws from the hydraulic pipe grommet in the rear of the roof storage well. Remove the grommet.
6. Release the pipe securing clips.

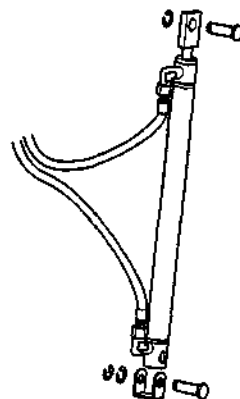


Figure 2. Ram Mountings

7. Open the boot and remove the boot floor trim panel. Remove the pump mounting plate securing bolts.
8. Release and remove the pump cover.
9. Disconnect the pump multi-plug.
10. Release the pump mounting rubbers from the plate.
11. Feed both ram cylinders into the boot through the aperture in the roof well rear wall.
12. Remove the complete hydraulic system from the boot.

Note: Check that the reservoir fluid level is correct. Always bleed the hydraulic system before topping up.

Refitting is the reverse of the removal procedure.

On completion of the refitting, check the roof operation.

9.0.02.5 - Bleeding the Roof Hydraulic System

Procedure

This procedure is completed in two stages:

- a) Bleed the left hand ram by disconnecting it from the pump.
- b) Bleed the right hand ram and pump by disconnecting both from the left hand ram.

Bleed the left hand ram:

1. Remove the roof hydraulic system.
2. Disconnect the left cylinder union nuts at the pump.

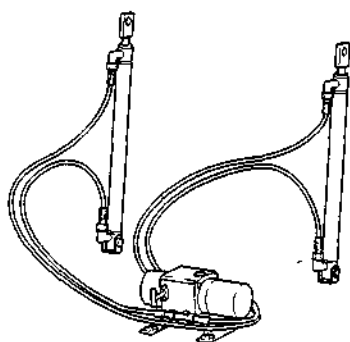


Figure 1. Left Hand Ram Bleeding

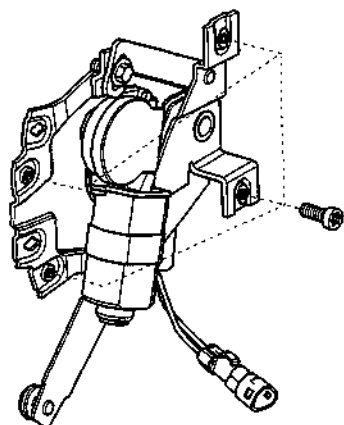
3. Submerge the two tubes in hydraulic fluid.
4. Fully extend the left hand ram to draw in clean hydraulic fluid.
5. Invert the cylinder, pause for any air in the cylinder to rise to the top and then fully retract the ram to expel any remaining air.
6. Reconnect the tubes to the pump and tighten the union nuts.
7. Remove the reservoir filler plug and fill to the maximum level indicated on the fluid reservoir. Refit the filler plug.

Bleed the right hand ram and pump:

8. Release the left hand cylinder tubes at the cylinder and submerge the tubes in hydraulic fluid.
9. Turn the motor control valve to the Electric position.
10. Fully extend the right hand ram to draw in clean fluid.
11. Invert the right hand cylinder and pause for any trapped air to rise to the top.
12. Fully retract the right hand ram to expel any trapped air.
13. Reconnect the two pipes to the left hand cylinder and tighten the union nuts.
14. Remove the filler plug and top up the reservoir with clean fluid to the maximum level indicated on the reservoir. Refit the filler plug.
15. Refit the roof hydraulic system.

9.1.01.1 - Rear Quarter Window Renewal**Procedure**

1. Move the front seat forward to gain access.
2. Switch on the ignition, release the roof locking latches and lower the roof to approximately the midway position. Switch off the ignition.
3. Remove the rear seat squab and cushion. Remove the rear quarter trim panel.
4. Remove the roof cylinder support bracket securing bolts.
5. Support the roof, remove the cylinder to roof securing bolt. Remove the cylinder bracket.
6. Disconnect the cylinder from the pivot and carefully lower the roof.
7. Remove the window motor cover. Disconnect the window motor feed wires.

*Figure 1. Window Motor Mountings*

8. Release and remove the window motor finisher, feeding the wires through the grommet.
9. Remove the window motor mounting bracket securing bolts.
10. Remove the motor assembly, disengaging it from the glass.
11. Remove the window carrier securing nuts and special washers
12. Remove the window adjusters, displace and remove the window carrier.

Reassembly

Reassembly is the reverse of the removal procedure.

On reconnection of the motor, check the window height as follows:

1. Switch on the ignition and raise the rear quarter windows.
2. Check that the top of the glass is exactly level with the top edge of the fully raised door window.
3. Check for a complete vertical seal between the rear quarter window and the door window.
4. If the rear window alignment is not correct, adjust it using the procedure in the Wind Noise and Sealing section.
5. Switch off the ignition and complete the reassembly.
6. Switch on the ignition, raise the roof and recheck for complete sealing at the rear window top edge.

9.1.01.2 - Rear Quarter Glass Adjustment

The rear quarter glass can be adjusted in three planes, Lateral, Up and Down, and Front to Rear. During initial assembly, assuming that the door is correctly gapped and profiled, the door glass is set to the upper 'A' post seal and the front frame seal. The rear quarter glass is then set to the door glass.

Both glass tops should be accurately aligned and there should be a minimum 2mm gap between the glasses. Any minor adjustments are then made using the following procedures.

Lateral Adjustment

Remove the rear quarter trim panel. Remove the adjuster stud locknuts and special washers (Fig 7-A). Using a 5mm box spanner, rotate the adjuster screw clockwise to move the glass inboard or anti-clockwise to move the glass outboard (Fig 7-B). Refit the special washers, refit and tighten the locknuts. Refit the rear quarter trim panel.

Front to Rear Adjustment

Remove the rear quarter trim panel. Loosen the three adjuster stud locknuts. Adjust the glass front to rear as required (Fig 7-C). Re-tighten the locknuts. Check and readjust as required. Refit the rear quarter trim panel.

Up and Down Adjustment

Remove the rear quarter trim panel. Slacken off the lockbolt (Fig 7-D) two to three turns. Adjust the vertical position of the glass as required. Re-tighten the lockbolt. Recheck the glass position and readjust as required. Refit the rear quarter trim panel.

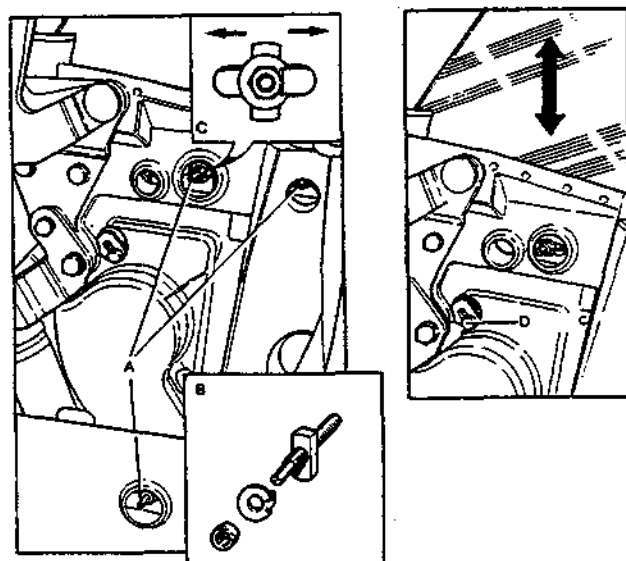
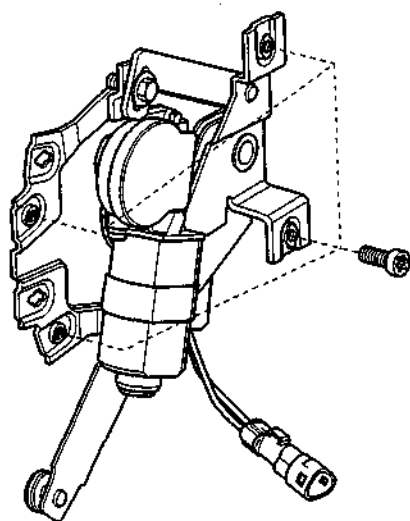


Figure 7. Rear Quarter Glass Adjustments

9.1.01.4 - Rear Quarter Window Lift Motor - Left Hand**Procedure**

1. Move the front seat forward to gain access.
2. Switch on the ignition, release the roof locking latches and lower the roof. Switch off the ignition.
3. Remove the rear seat squab and cushion. Remove the rear quarter trim panel.
4. Disconnect the window motor feed wires.

*Figure 1. LH Window Lift Motor Removal*

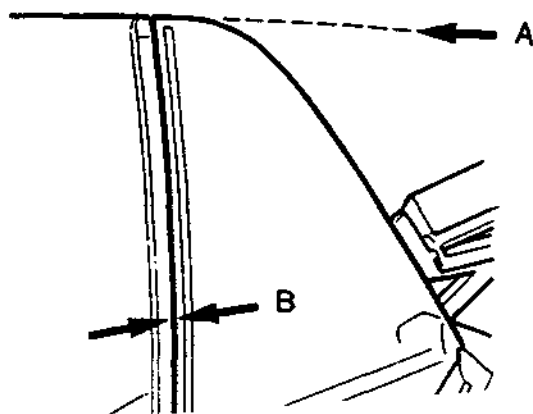
5. Release and remove the window motor finisher, feeding the wires through the grommet.
6. Remove the window motor mounting bracket securing bolts.
7. Remove the motor assembly, disengaging it from the glass.
8. Remove the motor to carrier securing bolts and remove the motor.

Reassembly

Reassembly is the reverse of the removal procedure.

On reconnection of the motor, check the window height as follows:

1. Switch on the ignition and raise the rear quarter windows.
2. Check that the top of the glass is exactly level with the top edge of the fully raised door window.
3. Check for a complete vertical seal between the rear quarter window and the door window.

*Figure 1. Rear Quarter Window Alignment*

4. If the rear window alignment is not correct, adjust it using the procedure in the Wind Noise and Sealing section.
5. Switch off the ignition and complete the reassembly.
6. Switch on the ignition, raise and latch the roof, recheck for complete sealing at the rear window top edge.

9.1.01.5 - Rear Quarter Window Lift Motor - Right Hand

Procedure

1. Move the front seat forward to gain access.
2. Switch on the ignition, release the roof locking latches and lower the roof. Switch off the ignition.
3. Remove the rear seat squab and cushion. Remove the rear quarter trim panel.
4. Disconnect the window motor feed wires.

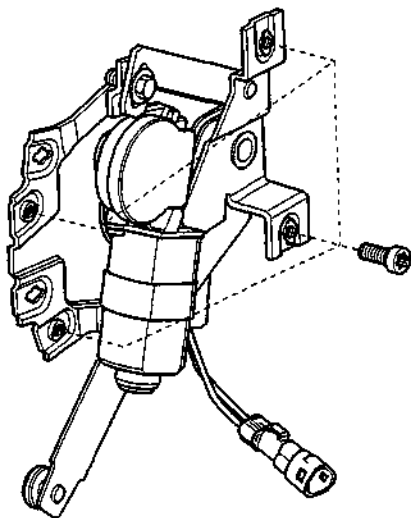


Figure 1. LH Window Lift Motor Removal

5. Release and remove the window motor finisher, feeding the wires through the grommet.
6. Remove the window motor mounting bracket securing bolts.
7. Remove the motor assembly, disengaging it from the glass.
8. Remove the motor to carrier securing bolts and remove the motor.

Reassembly

Reassembly is the reverse of the removal procedure.

On reconnection of the motor, check the window height as follows:

1. Switch on the ignition and raise the rear quarter windows.
2. Check that the top of the glass is exactly level with the top edge of the fully raised door window.
3. Check for a complete vertical seal between the rear quarter window and the door window.

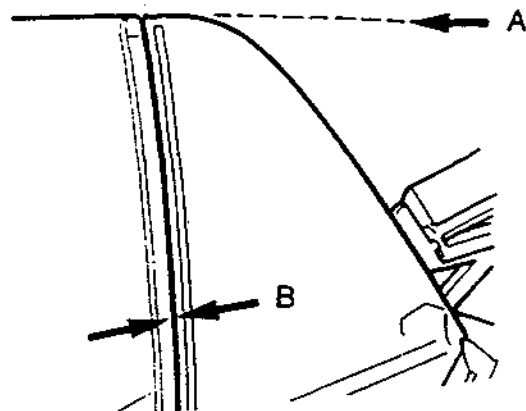


Figure 2. Rear Quarter Window Alignment

4. If the rear window alignment is not correct, adjust it using the procedure in the Wind Noise and Sealing section.
5. Switch off the ignition and complete the reassembly.
6. Switch on the ignition, raise and latch the roof, recheck for complete sealing at the rear window top edge.

Roof Sealing and Wind Noise

Roof seals and side windows have been provided with a range of adjustments capable of dealing with any leaks which may occur.

The following information is divided into five sections:

1. A post and header sealing/roof lock adjustment
2. Roof seals - adjustment
3. Cheater plate seals - adjustment/renewal
4. Door glass - adjustment
5. Rear quarter glass - adjustment (9.1.01.2)

When a leak is reported, either wind noise or water ingress, try to pinpoint the actual leak path using any of the following methods:

- An ultrasonic leak detector
- An air flow detector, e.g. Dräger smoke tube
- Paper test strips at seal contact areas

9.2.01.5 - 'A' Post/Header Sealing and Lock Adjustment

When a leak is detected at the top of the 'A' post adjacent to the header rail seal, first ensure that the roof lock is correctly adjusted.

If the lock is difficult to operate, it is probably overtensioned. Release the retaining hook locknut and extend the hook one full turn. Check and repeat the adjustment as necessary.

If the locking handle is loose, it is undertensioned. Release the retaining hook locknut and screw the hook inwards one full turn. Check and repeat the adjustment as necessary.

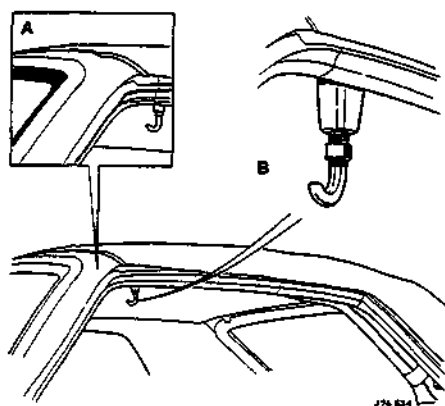


Figure 1. Roof Lock

Open the roof and check for obvious seal defects i.e. collapse, damage or manufacturing faults. Replace where necessary. If the lock tension is correct and a leak is still evident, it may be caused by lack of pressure between the front frame and header seals (Fig 2).

Increase seal pressure by inserting a packer between the front and rear frame seals (see DB7 Volante parts manual).

Note: After fitting seal packers, check the locking handle tension and adjust if necessary. If a leak is still evident, go to 9.2.01.6.

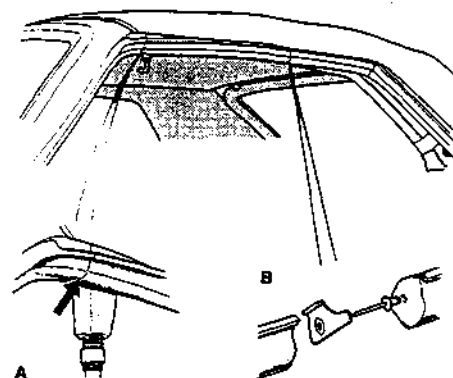


Figure 2. Front and Rear Seal Packers

9.2.01.6 - Roof Seals - Adjustment

Seal adjustment is done in two stages. First stage - lateral adjustment, and second stage - outward adjustment. Seals are packed out using selected packing strips.

Lateral Adjustment

Partially open the roof.

Front frame seal only: Remove the seal retaining plate. Remove the seal from the channel.

Slacken the channel securing screws and reposition the channel as required, moving it on the slotted screw holes (Fig 3-A). Tighten the channel securing screws.

Apply soft soap to the seal and insert the outer seal edge into the channel. Then press in the inner edge to fully seat the seal.

Refit the seal retaining plate.

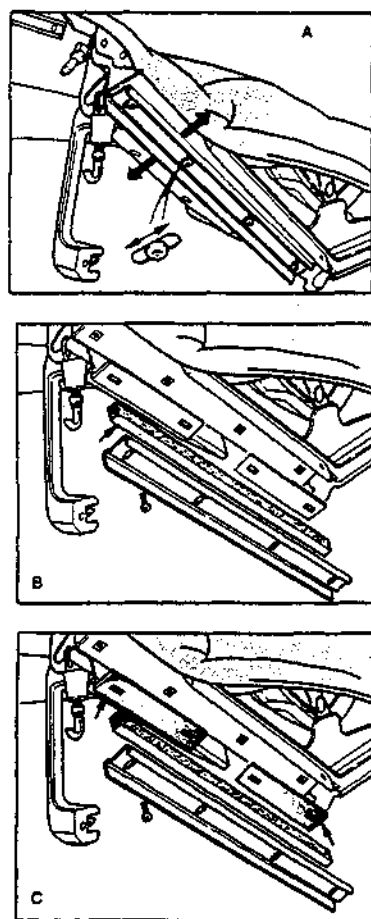


Figure 3. Front Frame Seal Adjustment

Outward Adjustment

Partially open the roof.

Remove the seal retaining plate. Remove the seal from the channel. Mark the position of the channel for reference, release the screws and remove the channel.

Select the appropriate packing (Figure 3-B)(see DB7 Volante parts manual):

Rear frame seal foam strip
Front frame seal foam strip
Main column seal foam strip
Upper 'A' post seal foam strip

Note: The foam strips are for full length packing. For packing at one end only, a shorter rubber wedge can be used. (Fig 1-C)

Fit the foam strip/rubber wedge and channel. Align the channel in the previously marked position. Fit and tighten the securing screws.

Apply soft soap to the seal and insert the outer seal edge into the channel. Then press in the inner edge to fully seat the seal. Refit the seal retaining plate.

Note: It is important at all times to retain the overall shape of the roof seal line (Fig 4). Where a leak necessitates the adjustment of only one or two seals, ensure that there are no misalignments. A more satisfactory result may be obtained by adjusting the adjacent component, i.e. the door glass or rear quarter glass.

The relationship between the roof seals is very important. Two seals in very close contact will promote leakage problems. Sealing will be far more effective if the seals touch lightly or exhibit a small air gap (Fig 4).

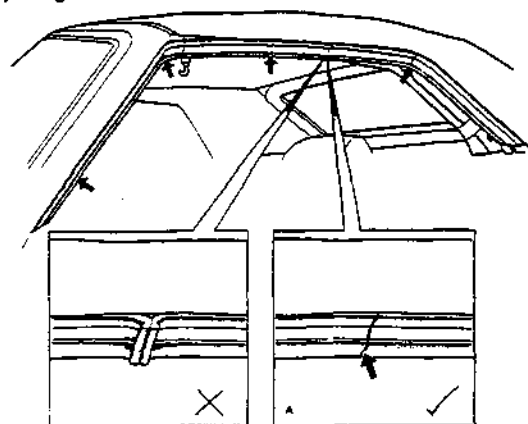


Figure 4. Seal Line and spacing

9.2.01.7 - Cheater Plate Seals - Adjust/ Renew

The contact line along the front edge of the door glass, and continuing via the cheater plate, is critical. Closer examination of the cheater plate assembly (following leak path identification) may reveal ridges where the upper and lower seals are joined. (Fig 5). The only solution is to carefully fit new seals using an appropriate sealant and contact adhesive.

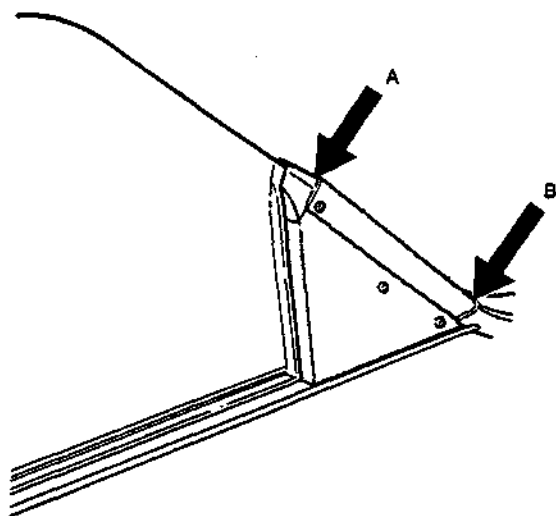


Figure 5. Cheater Panel Seals

If the leak is caused by incorrect positioning of the door glass, carry out the adjustment procedure as detailed in 9.2.01.8.

9.2.01.8 - Door Glass Adjustment

The door glass can be adjusted in three planes, Lateral, Up and Down, and Front to Rear. It is advisable however to avoid forward and rearward adjustment if possible, as this will affect the height and overall position of the glass relative to the seals. Use this adjustment only to correct serious misalignment.

Lateral Adjustment

Remove the door trim pad. Partially lower the window to allow access to the glass channel mounting bracket (Fig 6-A). Slacken off the four nuts to allow lateral adjustment. Move the glass to the desired position and tighten the nuts. Close the window and recheck the alignment. Repeat the adjustment until the optimum alignment is achieved. Refit the door trim pad.

Upward Adjustment

Remove the door trim pad. Slacken off the regulator locknut (Fig 6-B). With the door closed, operate the window to the fully closed position and tighten the locknut. Refit the door trim panel.

Front to Rear Adjustment

Remove the door trim pad. Partially lower the window to allow access to the glass channel mounting bracket (Fig 6C). Slacken the four screws to allow glass movement. Move the glass to the required position and tighten the screws. Close the window and recheck the alignment. Repeat the adjustment as necessary until the optimum front to rear alignment is achieved. Refit the door trim pad.

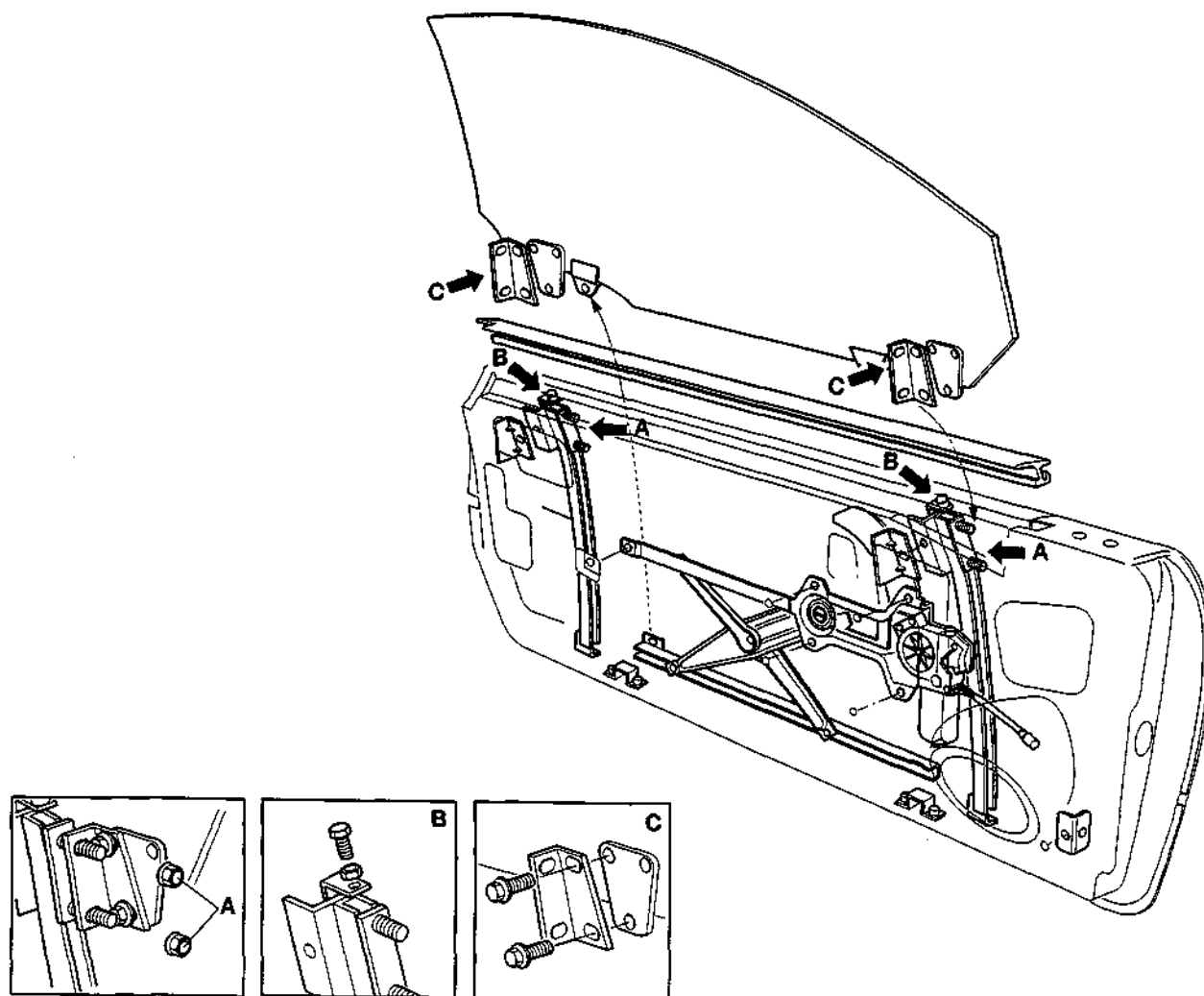


Figure 6. Door Glass Adjustments

Cleaning of Alcantara Trimmed Roof Lining and Interior Components

Recommendations

1. Clean the stain immediately.
2. Clean the stain working from the edge to the centre of the spot to prevent a ring forming.
3. Delicately remove most of the dirt with a blunt scraper and immediately blot the spot with a clean white cloth.
4. Once you've identified the type of stain, follow the instructions in the spot removal chart.
5. Never pour a solvent directly on the spot; instead pour the solvent on a clean cloth.
6. After you've applied the spot remover, remove it with a dry clean cloth. Afterwards, brush the area against the material nap.
7. Let the spot dry. Do not sit on a humid part. Afterwards, vacuum the spot with a vacuum cleaner.

Spot Removal Chart

Type of Stain	Cleaning Product and Cleaning Method
Alcohol-Liquors	Wash with mild soap, then blot with denatured alcohol
Beer	Blot with lukewarm water (max 50°C) and denatured alcohol at 3%
Coffee, Tea, Milk	Wash with mild soap. If the stain persists, blot with denatured alcohol or ammonia diluted at 10%.
Chocolate, Confectionary	Blot with lukewarm water (max 50°C) or with ammonia diluted at 5%.
Paints	Oil Paint - Blot with ethyl alcohol then wash with mild soap. Water Based Paint - If the stain is fresh, blot with cold water. An old stain is very difficult to remove, consult a specialist.
Cosmetics	Apply ethyl alcohol or perchloroethylene, then wash with mild soap. If the stain persists, use ammonia diluted at 5% or denatured alcohol.
Grass, Plants	Blot with lukewarm water (max 50°C) then wash with mild soap.
Chewing Gum	Blot with acetone.
Ink	Remove as much as possible with a paper towel. Blot with a solution of 30% denatured alcohol and 70% water, then wash with mild soap. Lemon juice also gives good results.
Marmalade, Syrup, Fruit Juice	Blot with lukewarm water (max 50°C). If the stain persists, use ethyl alcohol or perchloroethylene
Oil, Grease	Blot with denatured alcohol, then wash with mild soap.
Ballpoint Pen	Blot with perchloroethylene and denatured alcohol.
Wine Beverages	Blot with water and vinegar (50%), then wash with mild soap.

