BODY FITTINGS

SECTION BP - ELISE 2001 M.Y. Onwards

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BP.1 - ROOF

The Lotus Elise has been designed to exploit the pleasures of open top motoring, the better to enjoy exposure to the natural environment, unencumbered by the restrictions and confinement bestowed by a cockpit roof. In order to provide some weather protection to the occupants and vehicle interior, and allow the continued enjoyment of the car in unfavourable weather conditions, two roof configurations are provided; a soft top canopy, and a hard roof option comprising a pair of 'Targa' panels supported from a central spar.

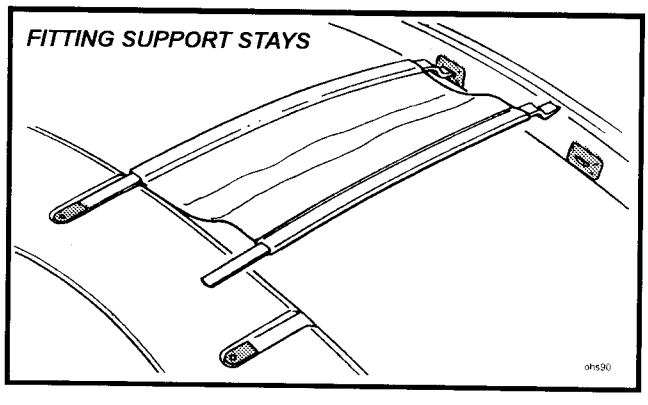
Soft Top Canopy

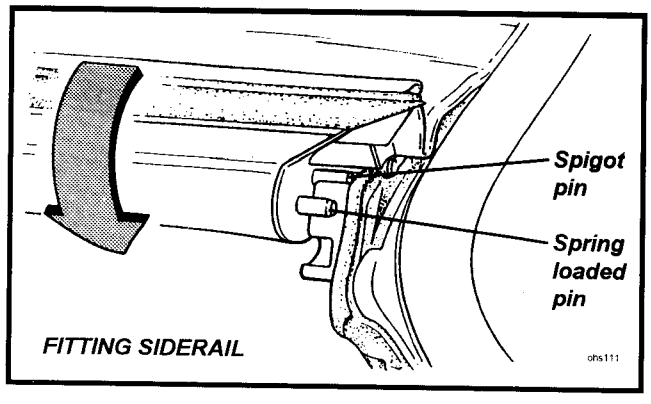
The soft top roof is used in conjunction with a body colour composite panel (rear window shroud) fixed over the roll over bar and extending for a short distance over each rear clamshell butresses. The rear window shroud incorporates on its underside, a roof tensioning push rod mechanism. A hollow composite roof siderail is used to bridge each top corner of the windscreen frame to the roll over bar, and provide a mounting for a weatherstip seal, against which the top edge of the door glass abuts. The soft top roof canopy is fixed to each siderail, with each siderail using a spigot pin at the front and rear to engage with a slot in a latch plate on the header rail and roll over bar. A second, spring loaded spigot pin at each end of the siderails, is arranged to slide into a ramped hole on the latch plates to secure and tension the soft top.

Soft Top - Fitting

1. From its stowage bag in the rear luggage compartment, withdraw the roof assembly and support stays. Lower both door windows, or open both doors.

2. Insert the two support stays, with the cranked ends foremost, into the roof slots above the rear window, and in the windscreen header rail.





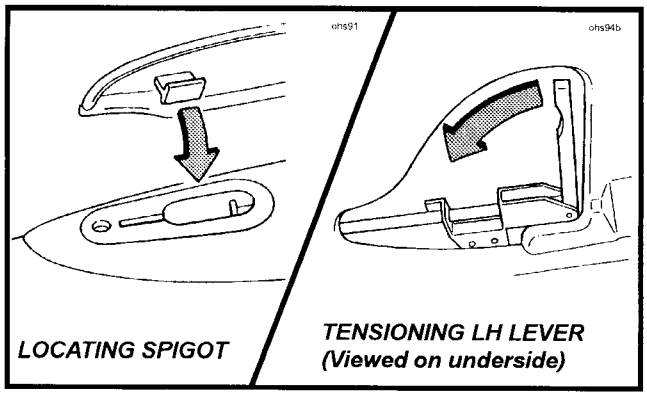
3. Lay the soft top roof onto the support diaphragm, and unroll the canopy with the tails towards the rear, taking care not to damage the paintwork with the tail spigots.

4. Taking one of the roof side rails, engage the spigot pin on the front and rear end of the rail, into the uppermost slot in the latch block on the windscreen header rail and roll over bar. On the inside face of the side rail, locate the two latch release levers, and pull the handles towards each other whilst rotating the side rail downwards, until both spring loaded pins 'click' into their ramped slots indicating that latching is complete. Pull up on the side rail to check security.

5. Repeat this operation for the opposite side rail ensuring that the tensioning cable at the front edge of the canopy is located in the channel ahead of the windscreen header seal, and that the seal is not pinched by the cable.
   Note that the front and rear ends of the spring loaded pins are fitted with plastic end caps to reduce friction. These are glued in position using Loctite 480 after priming with Loctite 770.

6. Locate the spigot on the underside of each soft top tail into the keyhole slot in the body buttress.

7. Beneath each side of the rear window shroud, locate the tensioning lever, and pull rearwards to tension the canopy.

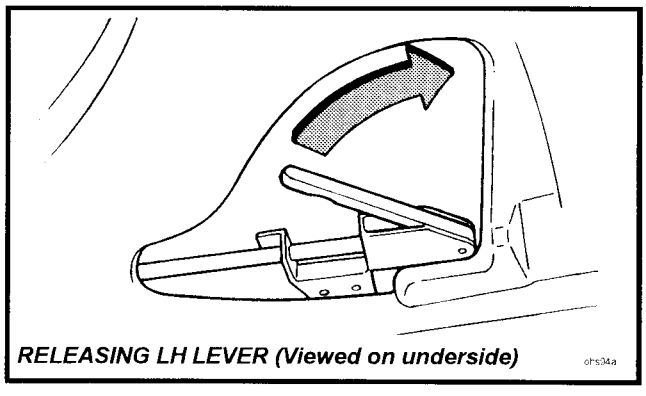


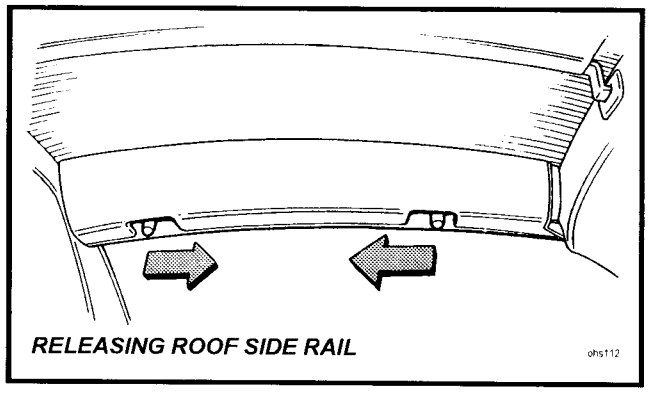
Soft Top - Removal

1. Open both doors or lower both door windows.

2. Beneath each side of the rear window shroud, locate the tensioning lever, and press the lever fully forwards to release the tension from each tailpiece of the soft top canopy.

3. Unhook each tailpiece from the body buttress slot and fold back to guard against paint damage.





4. On the inside of one roof side rail, locate the two latch handles. Press down on the front of the siderail to ease the load on the mechanism and pull the lever handles together to release both latches. Rotate the side rail upwards to release from the latch plates, and repeat for the opposite side.

5. Fold in the roof tails and roll up the roof canopy taking care to protect the side rail inner trim surfaces from being damaged by the tailpiece feet. Place in the roof stowage bag.

6. Unhook the two roof stays and stow in the roof bag.

Important Note: If the roof is not fully dry, it should be stowed for no longer than a few days before unrolling or refitting and allowing to air dry completely. Prolonged stowage of a wet or damp roof will promote rotting of the fabric.

Rear Window Shroud: The rear window shroud is secured by two fixings accessible from within the cabin above the rear window, and by one screw behind each keyhole slot in the shroud tail. The side rail latch plates must also be released from the roll over bar. Small adjustments to the length of the roof tail tensioning cable may, if necessary, be made at the lever end.

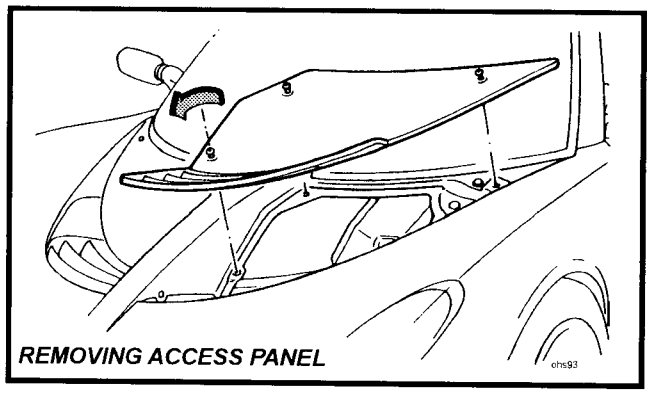
Roof Cable - Front: The tension of the steel cable running through the front edge of the roof canopy should be adjusted with the side rails latched. Hook a spring balance under the centre of the cable, and apply an upwards force of 6 kgf. Adjust the cable tension to achieve a vertical gap of 6mm between the cable and top surface of the windscreen surround.

Roof Cable - Rear: The roof rear cable tension should be sufficient only to maintain stability of the roof canopy shape.

Side Rail Front Latch Plates: The latch plates on the windscreen header rail are secured using a two part adhesive. If necessary, use Betaclean 3900 (A100B6008V), Betaprime 5404 (A082B6337V), and a 50/50 mix of two part adhesive Betamate 7064S (A116B0159V) and Betamate 7014 (A116B0158V) to refix.

BP.2 - FRONT BONNET PANELS

Two removeable panels are provided in the front body to allow access to the windscreen washer reservoir and the front fusebox and relays. Each panel consists of a glass fibre composite moulding painted body colour, to which is bonded a black plastic slatted grille, providing an outlet for air exhausting from the radiator finning. Each panel is fixed to the clamshell by three screw fasteners, with spigots on the front and inboard edges of the grille engaging with corresponding holes in the clamshell. The outboard fastener uses a mounting plinth adjustable in height to allow optimum panel alignment to be achieved.



REMOVING ACCESS PANEL

Note that on some early cars, the outboard fixing was positioned further inboard, with an adjustable height rubber buffer supplementing panel stability. Panel replacement on these cars would require fitment of the later type panel and adjustable outboard fixing.

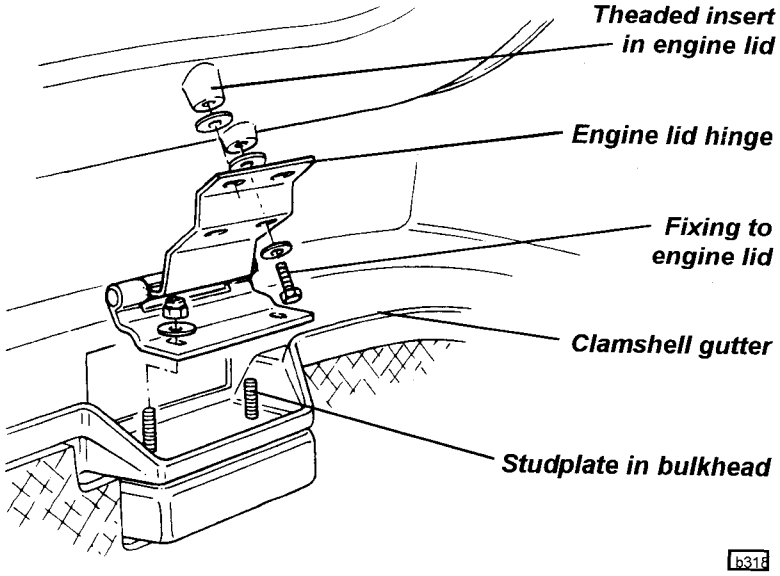
The louvre panel is bonded to the access panel using the following products: Betaclean 3900 (both surfaces); Betaprime 5404 (both surfaces); Betaseal 1701. For further details refer to Sub-Section BO.5.

BP.3 - ENGINE COVER LID

The engine cover is moulded from glass fibre composite and incorporates 4 engine cooling outlet grilles bonded into recessed apertures. Two hinges are used to attach the lid to the rear bulkhead, and a single, key operated latch mechanism secures the lid to a striker pin mounted on the clamshell engine/boot bulkhead. The latch is released by inserting the ignition key into the lock and turning clockwise. When closing, fully engage the latch mechanism by pressing down on the cover only immediately above the latch. Note that the lock mechanism plastic cover plate on the inside of the engine lid, serves also to channel any rain water into the engine bay.

To remove the engine cover, disconnect the aerial co-axial cable and amplifier lead, and release the cover from the two identical hinges. Note that the hinges also serve to clamp the clamshell front edge to the cabin rear bulkhead.

Beware that the engine cover is locked whenever it is closed, and always requires the use of the ignition key to release. Owners should be made aware of the importance of having a spare key available in case of inadvertently locking the keys in the boot.



ADDENDUM TO BP.3 - Bonding of engine cover latch plates

The engine cover latch is secured to two steel stud plates bonded to the underside of the composite engine lid. If it is necessary to rebond a stud plate, proceed as follows:

1. Abrade the bonding surface of the stud plates to achieve a metallic finish.

2. Completely remove any old adhesive from the engine lid, taking care not to damage the composite substrate. Abrade the bonding surface.

3. Bolt the two stud plates to the latch mechanism before cleaning the bonding surfaces on both the stud plates and the engine lid with Betaclean 3900 (see sub-section BO.5).

4. Prime the two stud plates and the bonding area on the engine lid with Betaprime 5404 (see sub-section BO.5).

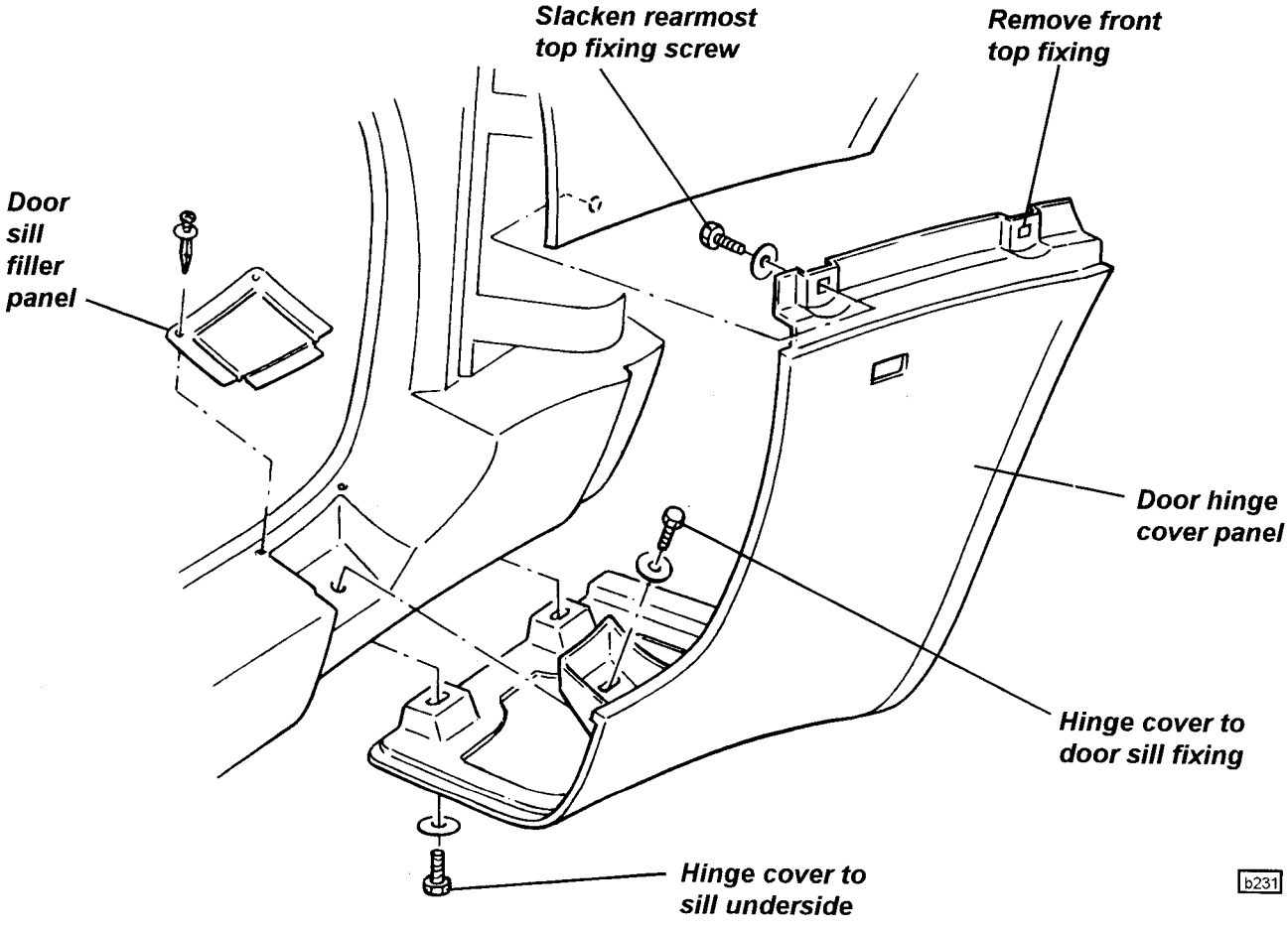
5. Apply a 50/50 mix of Betamate 7064S (A116B0159V) and Betamate 7014 (A116B0158V) to both brackets, and fit into position on the engine cover, ensuring that adhesive is extruded from around both brackets. Wipe off excess adhesive with Betaclean 3900. Centralise the keyhole slot with the engine cover aperture, and secure in position with tape for a minimum of 30 minutes.

BP.4 - DOOR HINGE COVER PANEL

A separate glass fibre composite body panel is used to fill the area beween the door and wheelarch, and uses threaded fasteners to attach to the rear of the clamshell, top of the sill and bottom inboard edge of the sill panel.

To remove a door hinge cover panel:

- From beneath the sill, remove the two fixings securing the bottom edge of the hinge panel to the sill.
- Remove the filler panel concealing the fixing securing the hinge cover to the door sill recess, and remove the fixing.
- Remove the wheelarch liner and remove the foremost of the two screws securing the door hinge cover panel to the clamshell.
- From the door aperture, slacken, but do not remove, the rearmost of the two screws securing the door hinge cover panel to the clamshell and withdraw the hinge panel downwards.



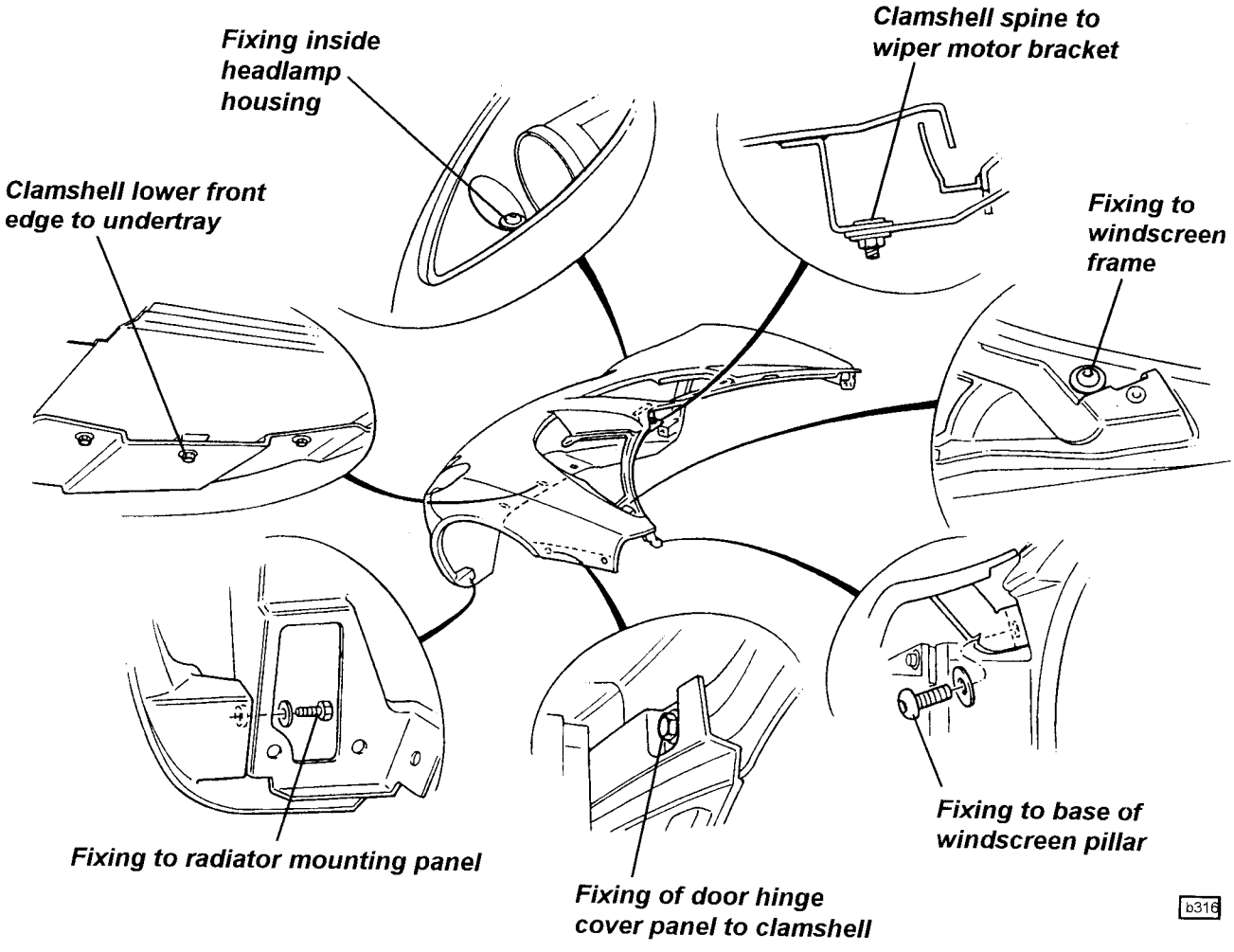
BP.5 - FRONT CLAMSHELL

The front clamshell is a bonded assembly of several glass fibre composite mouldings incorporating both front wings, the front access aperture, radiator air intake and headlamp housings. The clamshell is secured to the windscreen frame, radiator mounting panel and other panels using threaded fasteners for ease of removal and to facilitate service access and body repair.

To Remove Front Clamshell

1. Remove both front body access panels.

2. Remove both front wheelarch liners;



3. Remove both door hinge cover panels:
   - From beneath the sill, remove the two fixings securing the bottom edge of the hinge panel to the sill.
   - Remove the filler panel concealing the fixing securing the hinge cover to the door sill recess, and remove the fixing.
   - From inside each wheelarch, remove the foremost of the two screws securing the door hinge cover panel to the clamshell.
   - From the door aperture, slacken, but do not remove, the rearmost of the two screws securing the door hinge cover panel to the clamshell and withdraw the hinge panel downwards.

4. Via each door aperture, remove the single fixing securing a bracket at the top rear corner of the clamshell to the base of the windscreen pillar.

5. Remove the fixing at each side securing the clamshell to the bottom of the windscreen frame, and the two nuts securing the clamshell spine to the wiper motor bracket extension.

6. Remove the single fixing at the bottom front of each wheelarch, securing the clamshell to the radiator panel extension.

7. Remove the headlamp cover/mask assembly from each side by releasing the three thumbscrews inside the wheelarch. Remove the clamshell fixing at the front of each headlamp housing. Release the headlamp harnesses, and feed through the clamshell hole.

8. Beneath the nose, release the screws fixing the front lower edge of the clamshell to the alloy undertray.

9. Lift the clamshell from the car. Note any spacing washers or shims fitted at any fixing point.

BP.6 - REAR CLAMSHELL

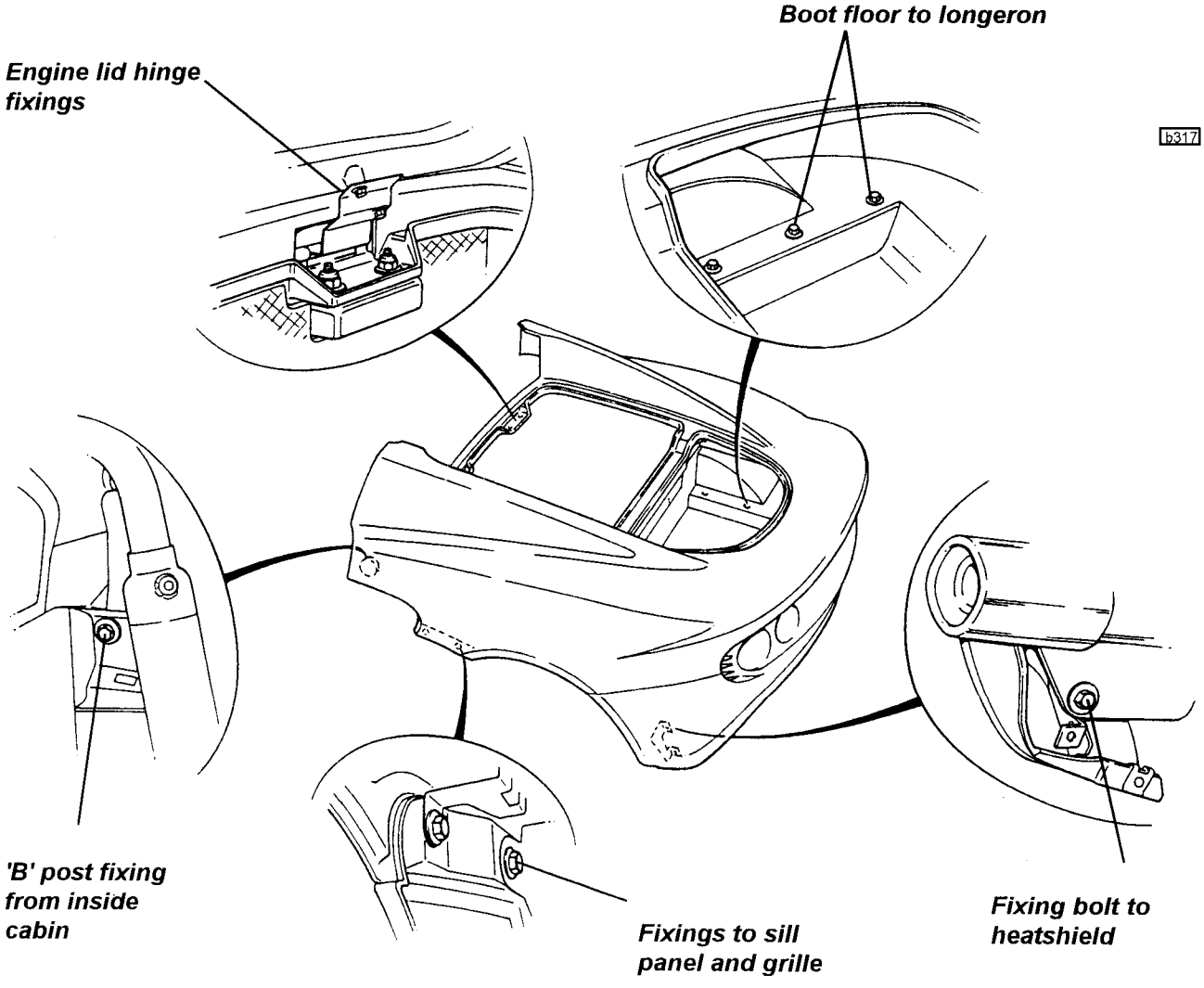
The rear clamshell is a one piece composite moulding incorporating both rear wings, the engine bay aperture, rear transom and integral luggage bay. The clamshell is secured to the chassis and other body panels by threaded fasteners for ease of service access and body repair.

To Remove Rear Clamshell

1. Remove both rear wheelarch liners;

2. Remove the rear window shroud; two fixings inside cabin above rear window; one screw securing each keyhole slot to the rear buttress.

3. Remove the fuel filler cap and release the eight screws securing the fuel filler neck to the clamshell. Remove the washer ring, and withdraw the neck from the clamshell aperture, noting the earth braid secured to the roll over bar backstay.



4. From inside the cabin, remove the full width trim panel from the rear bulkhead. From the access thus provided, remove the fixing securing the front end of the clamshell to the 'B' post above the engine bay air intake.

5. From inside each rear wheelarch, release the air intake grille fixings, and the two screws securing the clamshell to the waistline joint of the sill panel. Note that on the left hand side, these fixings also secure the cradle for the engine air intake hose.

6. Disconnect the aerial leads, release the engine lid hinges from the clamshell, and remove the lid.

7. Remove the battery and feed the battery cables through the clamshell grommet. Disconnect the rear harness and feed through the clamshell grommet.

8. Remove the rear diffuser and tailpipe grilles. Release the single fixing securing each bottom rear corner of the clamshell to the vertical heat shield behind the wheelarch.

9. From inside the luggage area, release the three screws each side securing the boot floor to the longerons. Release the two screws securing the ECM mounting bracket to the boot front wall.

10. Withdraw the clamshell from the car, noting any shim washers fitted at mounting points.

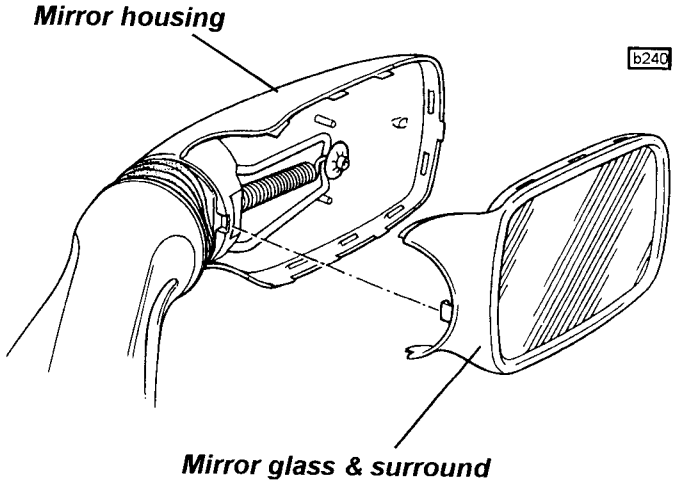
11. Refit in reverse order to disassembly.

BP.7 - DOOR MIRRORS

The manually adjustable, plastic housed door mirrrors, are mounted via an injection moulded plinth to the door shell. A spinrg loaded ball and socket arrangement provides a mians of mirror adjustment, and a spriung attachment of the mirror housing to the pivot scocket allows for the mirror to move forwards or backwards on accidental contact, in order to reduce the potential for personal unjury or vehicle damage.

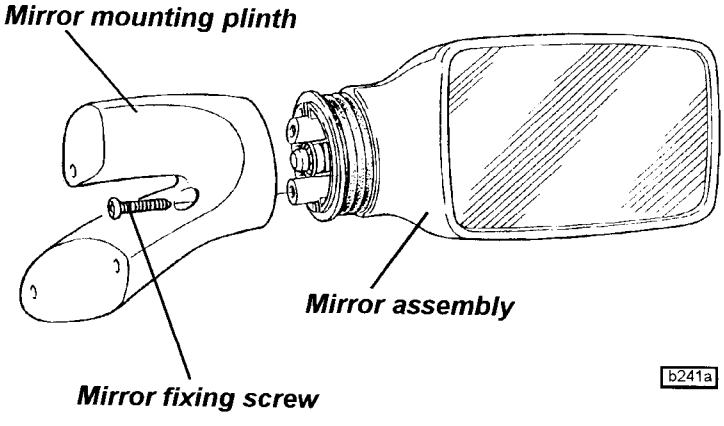
Replacement of mirror glass

The mirror glass is contained in a plastic surround which is clipped into the housing in order to provide for convenient and inexpensive replacement. To remove a glass, pull back the boot between mirror and plinth, and carefully prise the inboard edge of the mirror surround from its retaining clips. Working around the mirror periphery, continue to prise the surround from the housing taking care not to damage the paint on the housing. Press the new glass/surround into the housing until all the retaining clips are engaged, and reposition the convoluted boot.



Replacement of mirror assembly

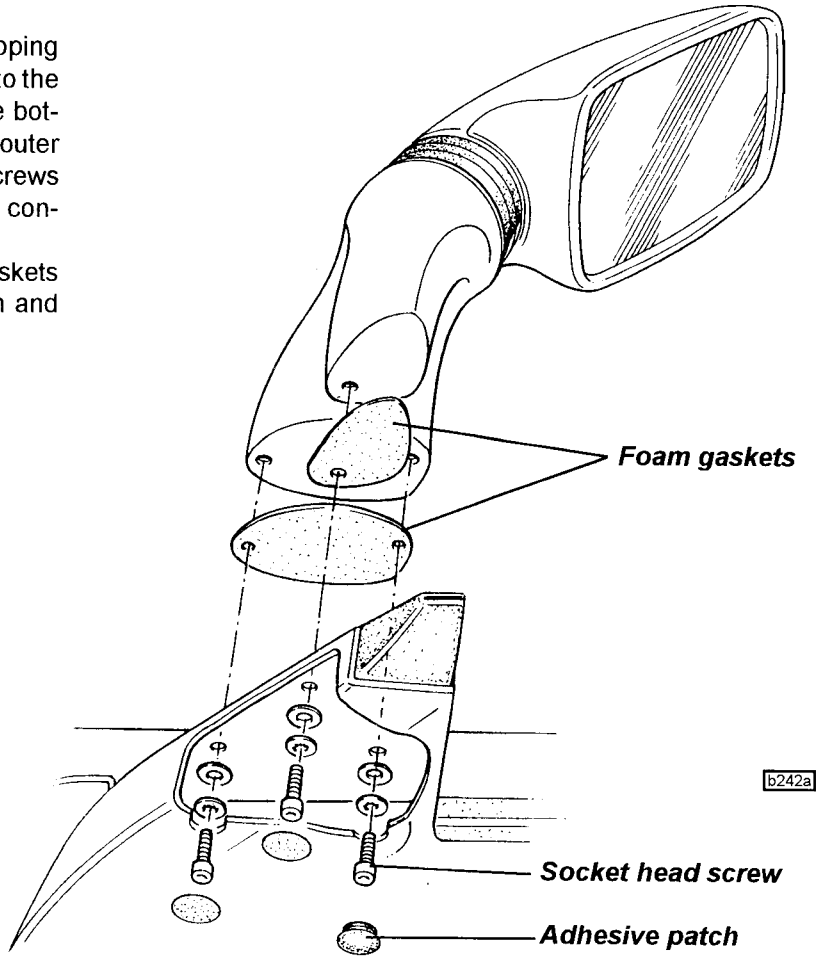
The mirror assembly locates in the plastic injection moulded plinth via two spigots, and is retained by a single screw tapping into the lower spigot. To remove a mirror assembly, use a cross head cranked screwdriver, or similar tool, to remove the screw recessed into the inside face of the mirror plinth.



Replacement of mirror plinth

The mirror plinth incorporates tapping plates to accommodate a single screw into the top leg, and a pair of M5 screws into the bottom leg. The plinth is secured to the door outer panel with access holes for the three screws provided in the inner panel, cosmetically concealed by adhesive patches.

When refitting, ensure that foam gaskets are used between each leg of the plinth and the door shell.



BP.8 - DOOR BEAM & HINGE

The door shell is bolted to a hollow section extruded aluminium alloy door beam, hinged at the front end to the 'B' post, and carrying the door latch mechanism, via steel brackets, at its rear end. The front end of the door beam is welded to a second extrusion which forms the rotor of the door hinge. The hinge stator (or hinge bracket) is bolted to an outrigger on the chassis, and incorporates two cylindrical bearing housings which accommodate maintenance free pivot bushes.

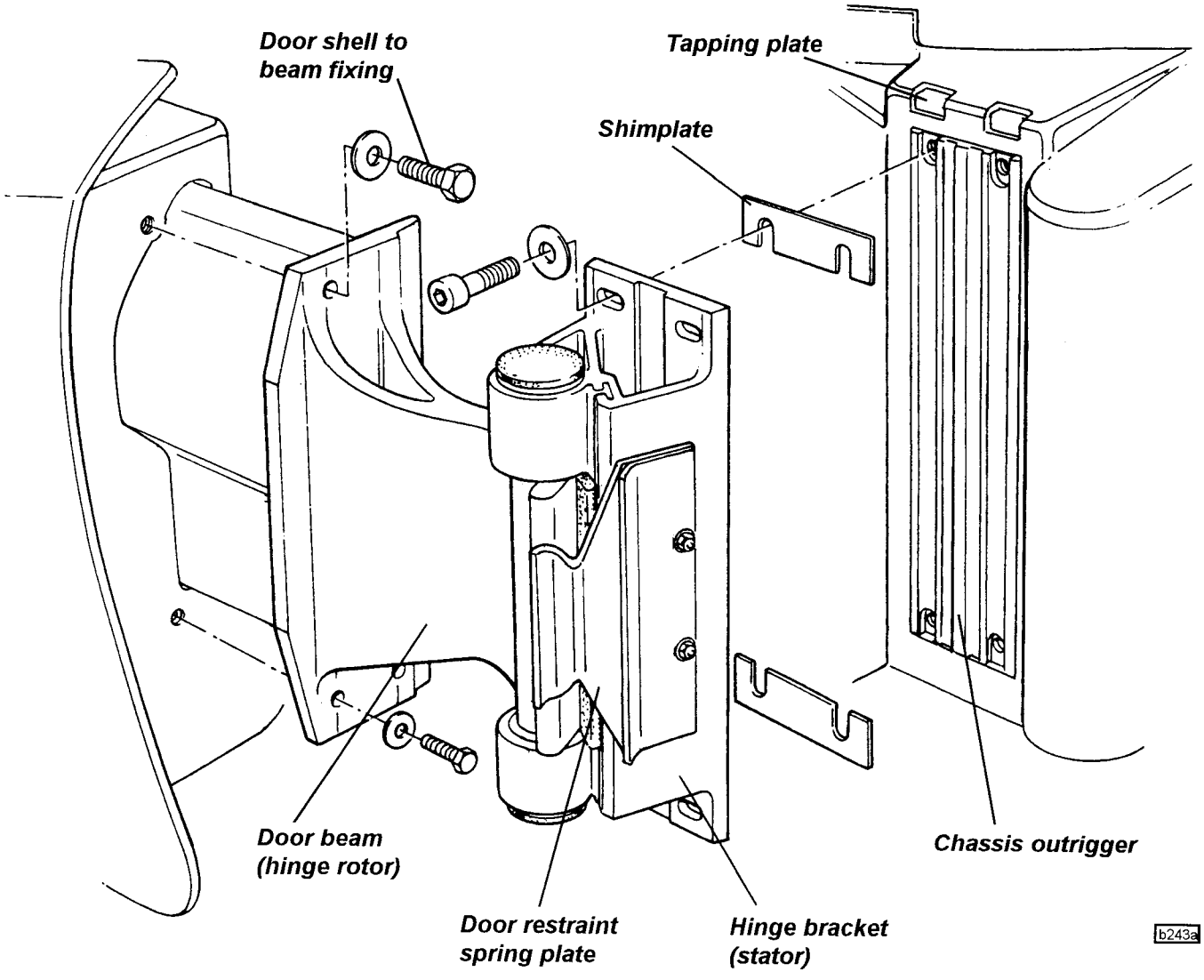
Door hinge adjustments

In order to provide for adjustment of door shutlines, the door hinge may be adjusted in two ways:

i) Height of the hinge, its fore/aft position, and the pivot axis angle (to control the front/rear height alignment) may be adjusted after slackening the hinge bracket fixing bolts. The tapping plates for these bolts are linked in vertical pairs and are captive, but loose, within the chassis outrigger, and allow for some vertical movement. Horizontally slotted fixing holes in the hinge bracket allow for fore/aft movement.

ii) Slotted shim plates fitted between the hinge bracket and chassis, allow the in/out door front edge alignment to be adjusted in steps of 1 rnm, and by varying the shim pack at the top and bottom pairs of fixings, the vertical alignment, as viewed from the front, may be adjusted.

Ensure that the clamping load of the hinge bracket to the chassis is not corrupted by the shim plates bearing against the body. If the surrounding body stands proud of the chassis door hinge outrigger, use a suitably cut down shim plate to act as a spacer between the chassis and the adjustment shim pack or hinge bracket.

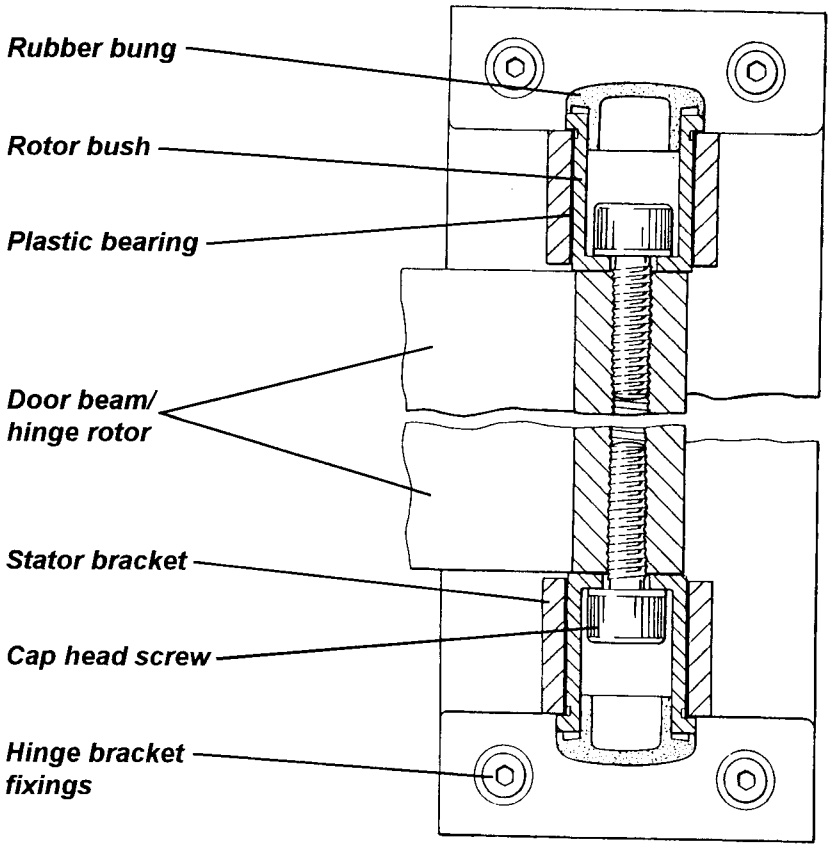


Door beam pivot bearings

The door beam hinge uses two maintenance free 'top hat' section synthetic bearings, pressed into the hinge stator bracket. Inside each bearing, is fitted a 'top hat' section steel rotor bush, clamped to the door beam extension by an M10 cap head screw threaded into the door beam.

The door beam extension also incorporates a cheek flange which abuts against a rubber strip on the hinge bracket to limit door opening angle. A spring steel plate fixed to the front of the hinge bracket is designed to engage around the profiled edge of the door beam abutrnent flange when the door is fully open, in order to provide a sprung restraint for the door in this position.

To remove the door assembly, or for access to the door pivot components, the two M10 cap head rotor bush retaining screws should be removed, and the door assembly withdrawn from the hinge bracket. The rotor bushes and/or bearings may then be withdrawn from the hinge bracket. On re-assembly, note that the bearings and bushes are assembled dry from above and below the upper and lower housings respectively, and the cap head screws tightened to 45 Nm. Insert the rubber bungs into the bush ends to inhibit dirt ingress and corrosion.



BP.9 - DOOR SHELL ASSEMBLY

The door shell is mounted on the door beam via three screws through a flange at the front end of the beam, and by the door latch mounting bracket at the rear end. In order to provide fixing points for the beam, lock mechanism and other components, the door shell includes various tapping plates and brackets jig bonded to the inside of the shell, including fixing brackets for the accurate location of the window guide rails.

If a door is to be removed from the car, the preferred method is to release the M10 cap head screws clamping the upper and lower bushes to the door beam. The beam and door shell assembly may then be withdrawn from the hinge stator bracket without losing adjustment of the hinge alignment and door shutlines. If the door shell has to be removed from the beam for repairs or replacement, the beam may be left 'in situ' and the door shell slid off the beam using the following procedure:

Removal of door shell from beam

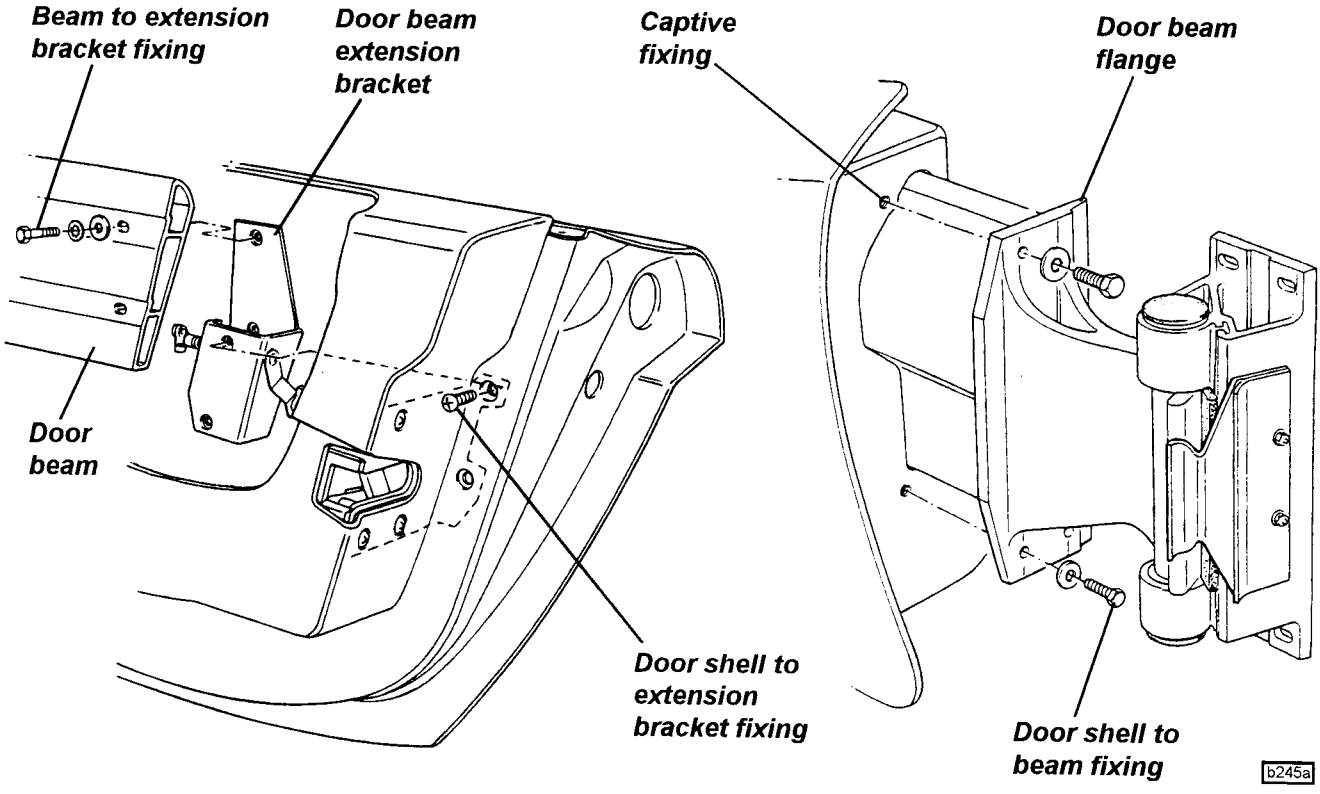
The door shell is secured to the beam via three screws through a flange at the front end of the beam, tapping into nut plates bonded into the door shell, and via two bolts at the rear end of the door to the door beam extension bracket. Access to the two rear bolts requires that the door glass first be released:

1. Remove the window winder handle and door trim panel.

2. Release the three screws securing the interior release handle, and unclip the control rod from the mechanism.

3. Remove the two M6 and the single M8 screw securing the door beam flange to the front of the door shell

4. Release the three M6 nuts securing the door glass to the lift channel, and separate the glass from the channel. Tilt the glass as necessary to allow access to the two M8 bolts fixing the rear end of the door beam to the extension bracket. Remove the bolts and withdraw the door assembly from the beam. Note that it is necessary to remove the drop glass waist seal before the glass may be withdrawn from the door.



When refitting the door, take care not to scratch the glass if this is contained in the door. Insert the two rear bolts securing the beam to the latch bracket, but do not tighten until the three fixings securing the front of the shell to the beam flange have been fitted and tightened.

BP.10 - DOOR GLASS, GUIDE RAILS & WINDER MECHANISM

A manually operated door window scissor type lift mechanism is used in conjunction with two steel guide rails and a 'frameless' door design.

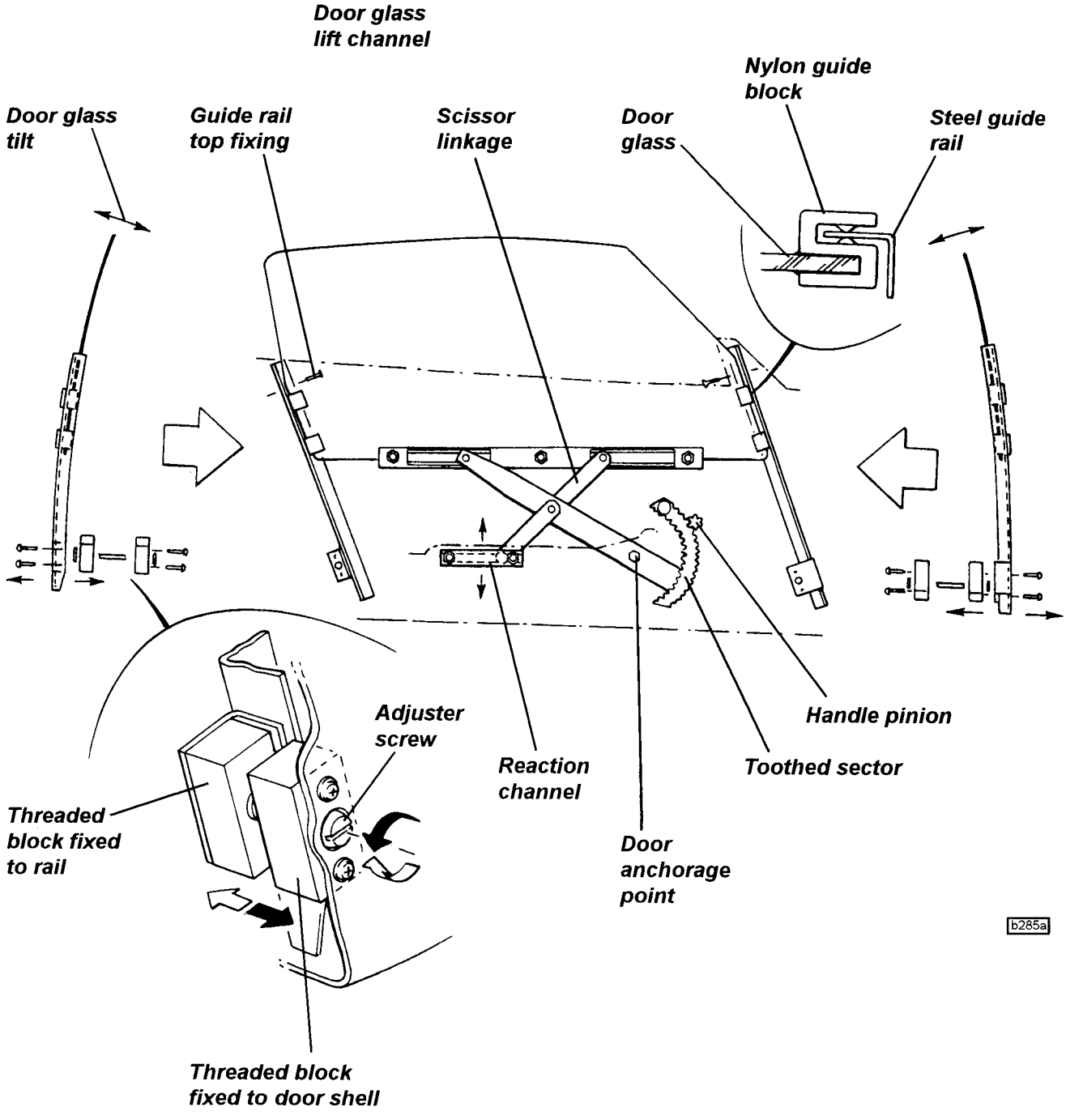
The operating principle of the window lift mechanism is that of a scissor linkage, with the front lower end of the primary leg anchored to the door shell, the lower end of the secondary leg sliding in a horizontal channel on the door shell, and the upper ends of both legs sliding in a channel fixed to the bottom edge of the window. The geometry of the system provides for a parallel lift of the glass, where the angle of the bottom edge does not change throughout the range of travel. An extension to the primary scissor leg carries a toothed sector which is engaged by a pinion on the window winder. The front and rear edges of the glass are guided by steel rails which engage with point contact Nylon guide blocks bonded to the glass. The bottom ends of the rails are adjustable in/out to set the inward tilt of the glass, with the 'up' glass position controlled by an eccentric stop on the winder mechanism.

Door glass adjustment

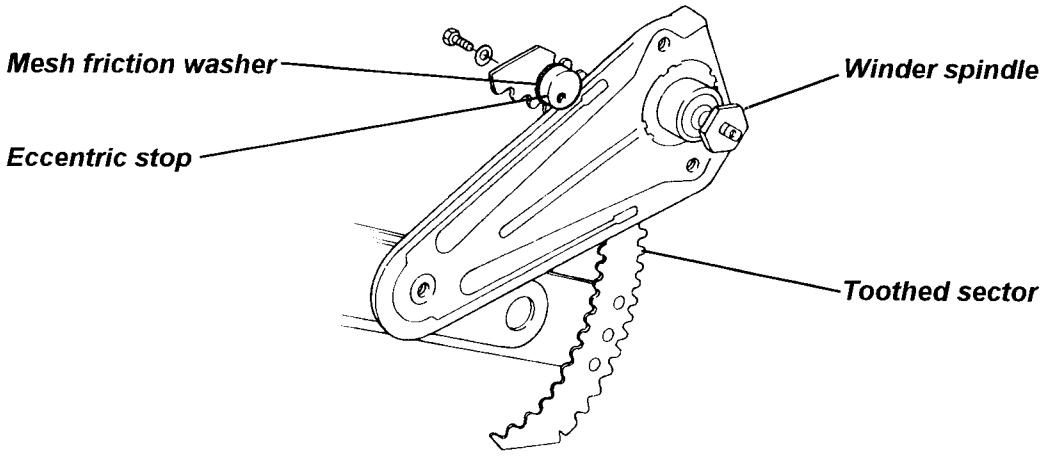
To adjust the door glass for optimum weather sealing and ease of operation:

1. Fit the soft top roof and fully raise the window. Check the alignment of the top edge of the glass against the seal, and the seal compression along the cant rail and up the 'A' and 'B' posts. A light compression is required; just sufficient to ensure sealing, without imposing loads on the winder mechanism.

2. To adjust the inward tilt of the glass, screw the adjusters at the bottom of each guide rail in or out as necessary. Access is available without removing the door trim panel. Check that the window glass moves freely throughout the range of travel.


Door glass lift channel
Nylon guide block
Door glass tilt
Guide rail top fixing
Scissor linkage
Door glass
Steel guide rail
Adjuster screw
Handle pinion
Reaction channel
Toothed sector
Threaded block fixed to rail
Door anchorage point
b285a
Threaded block fixed to door shell

3. To adjust the alignment of the top edge of the glass, it is necessary to adjust the height of the reaction channel. Remove the window winder handle and door trim panel, slacken the reaction channel fixings, and move the channel up or down as required. *Raising* the channel will raise the *rear* edge of the glass.



4. To adjust the fully up position of the glass, the eccentric stop on the toothed sector of the winder mechanism must be rotated as necessary. A mesh friction washer is fitted between the eccentric and the sector to help retain adjustment.

To replace the door window glass

1. Remove the window winder handle, and the door trim panel.

2. Release the three fixings securing the slider channel to the bottom of the glass.

3. Do not attempt to withdraw the glass from the door without first removing the door waist seal. Carefully prise the one-piece seal off the door shell inner and outer flanges, and release the push fixing from the seal moulding at the rear end of the door. Withdraw the glass from the door shell.

4. Note that new door glasses are supplied complete with jig bonded Nylon sliders and lift channel.

5. Fit the new glass into the door and re-assemble in reverse order to the above.

6. Adjust the glass position as detailed above.

To replace door winder mechanism

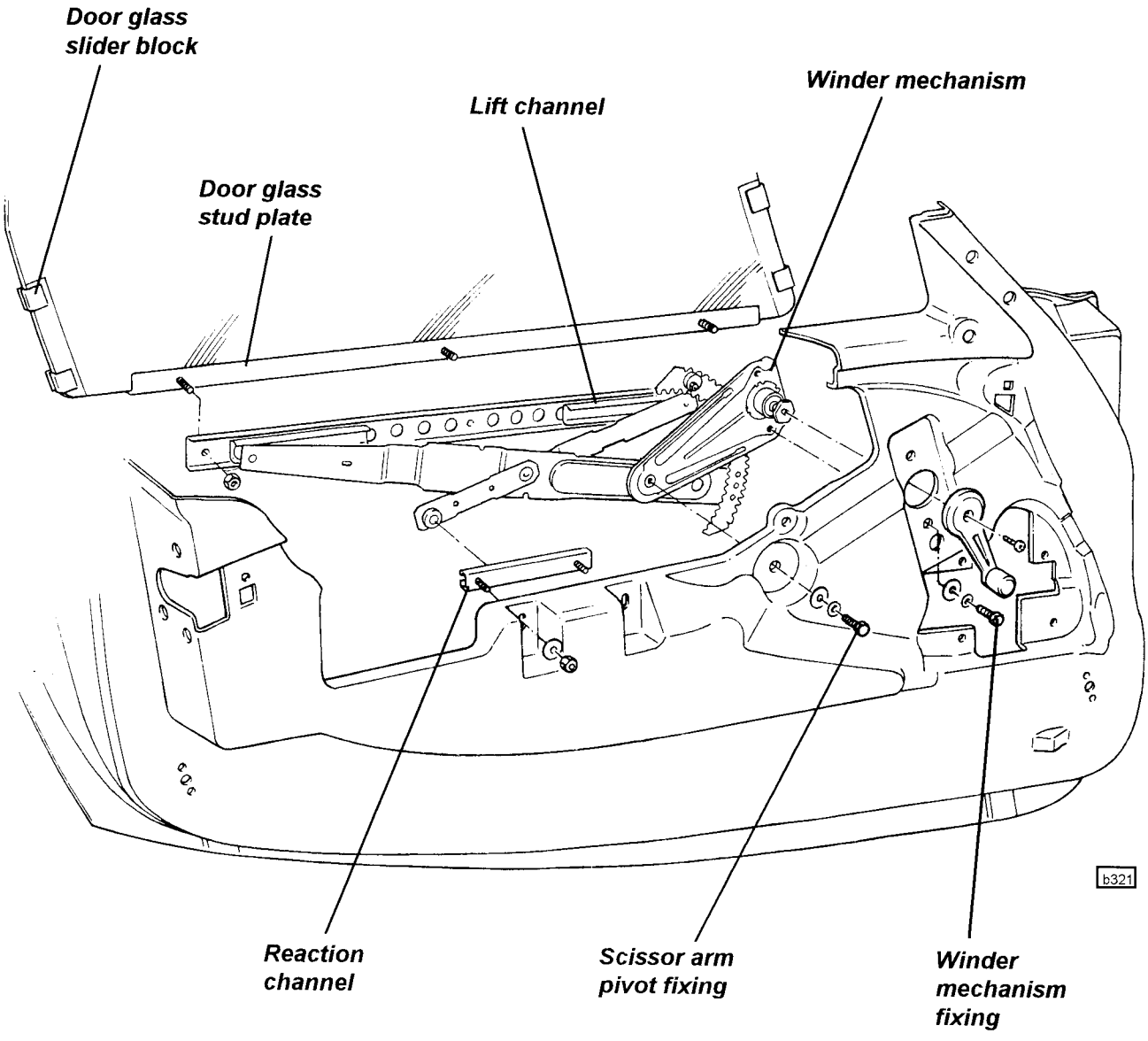
1. Remove the window winder handle, and the door trim panel.

2. Release the interior release control rod from the door handle and unclip from the latch mechanism.

3. Secure the door glass in the fully raised position, and release the three fixings securing the winder mechanism to the door;
   - two fixings adjacent to the winder spindle;
   - on fixing through the static pivot of the primary scissor arm

4. Maneouvre the mechanism to free the winder spindle from the door, and to disengage the two upper sliding bosses of the scissor arms from the window channel, and the lower sliding boss from the static reaction channel. Withdraw the mechanism from the door.

5. Before fitting a lift mechanism, lubricate the three slider bosses and the sector teeth with Century Luplex M2 grease (or similar). Fit the mechasnism into the door and engage the three slider bosses in their lift and reaction channels before securing with the three fixing screws. Note that a single M6 spacer washer is used between the pivot of the primary scissor arm and the door shell.



6. Adjust the glass upstop postion, top edge alignment and inward tilt as detailed above.

Door glass guide rails

Two guide rails are used for door glass; one for the front and one for the rear edge. Each of the steel, black zinc plated, guide rails, is secured by a single screw at the top end to a jig bonded bracket in the door shell, and by a threaded adjuster at the lower end, engaging in a threaded block fixed to the door shell. Screwing the adjusters in or out will set the inward tilt of the glass and the contact between glass and door weatherseal.

To remove a guide rail, first remove the door glass (see above), before releasing the single screw at the top, and releasing the threaded block from the door shell.

BP.11 - DOOR SEALS

Drop Glass 'Waist' Seal

The door drop glass waist seal is a single unit comprising inner and outer seal extrusions joined around the rear end by a moulded capping piece. Each length of seal is pressed onto the top edge of the inner or outer door panel, with a plastic rivet securing the capping piece. The seal should be removed before withdrawing the door glass or guide channels from the door.

A 'cheater' seal is bonded to the vertical front end of the door glass aperture, up the rear face of the mirror mounting extension. To fit a new seal:
- Clean the bonding surfaces on the door shell edges with Betaclean 3900 (A100B6008V).
- Apply Permabond A905 surface conditioner to the bonding surfaces of door shell and cheater seal.
- Apply Loctite 382 adhesive to the inside of the cheater seal and fit onto the door.

Door Weatherstrip

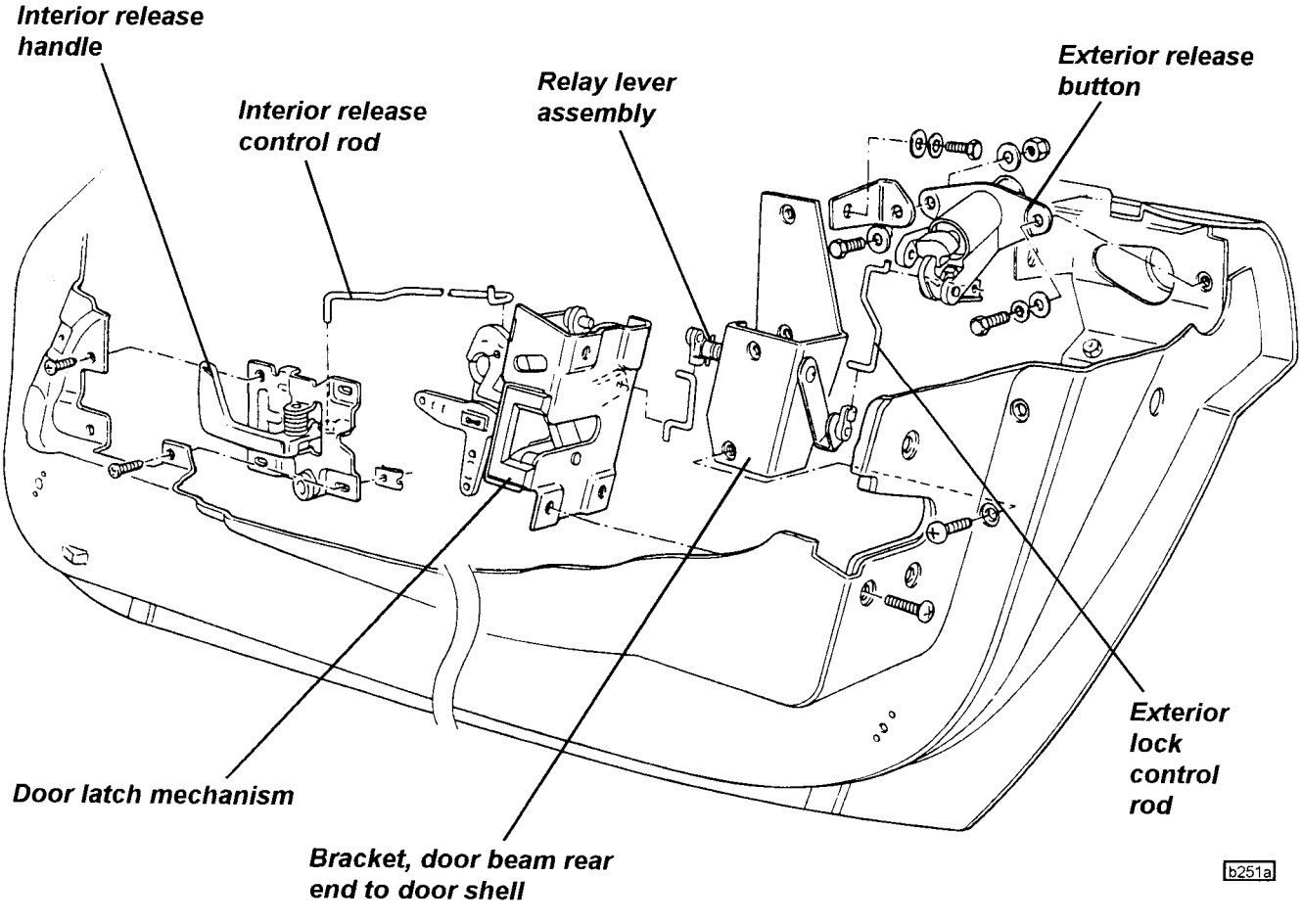
A hollow section rubber weatherstrip is bonded around the door aperture and roof landings to seal against the door shell and roof. Different seal configurations are used for the door and roof areas, with specially moulded sections to interface with the roof cantrails. The seal is divided into front and rear sections, with a joint at the bottom front of each door aperture.

The weatherstrip is manufactured with a self adhesive backing strip. Before fitting a new seal, the bonding area on the body must be completely clean before priming with PP Primer 3842 (A082U6199V). Trial fit the seal before peeling off the protective backing from the adhesive and applying the seal, ensuring that the moulded sections at the cant rail interfaces are correctly positioned.

BP.12 - DOOR LATCH MECHANISM

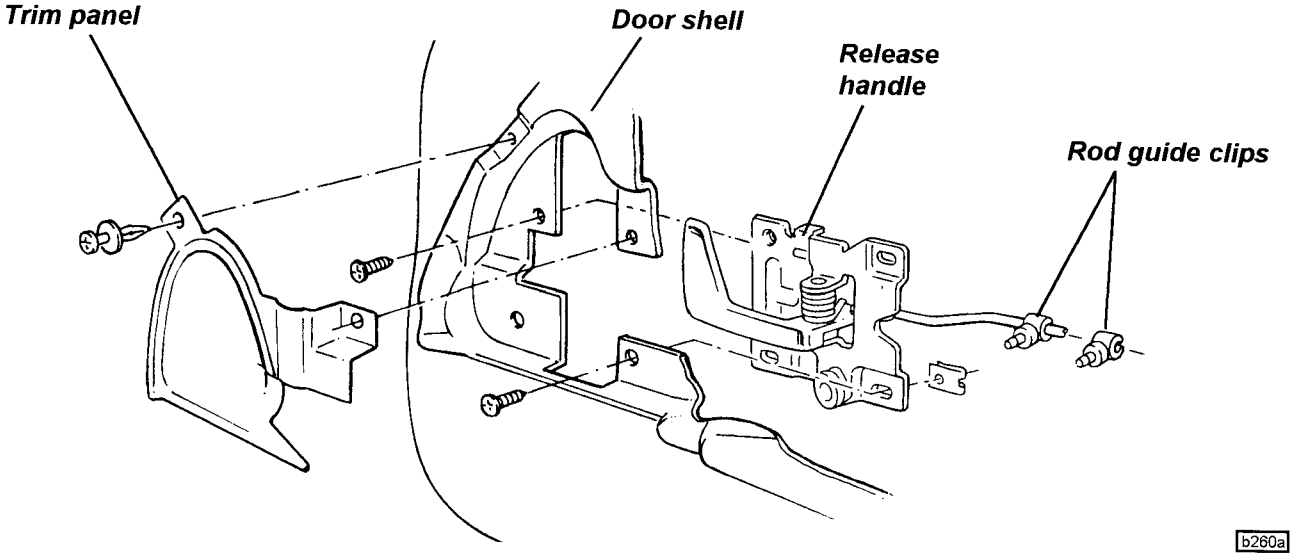
The door latch mechanism is fitted inside the rear face of the door, which is reinforced by a steel plate bonded to the glass fibre composite door shell. The latch engages with a striker pin which passes through the composite sill/'B' post moulding, into a captive nut on the roll over bar. An external locking door release button is mounted via a reinforcing plate, in the top rear of the door outer shell, and transmits its motion around the rear edge of the door glass to the latch mechanism via two short link rods and a relay lever.

The interior release handle is mounted in the front of the door inner shell, and is connected to the latch mechanism by a control rod. No interior control of door locking is provided.



Interior Release Handle

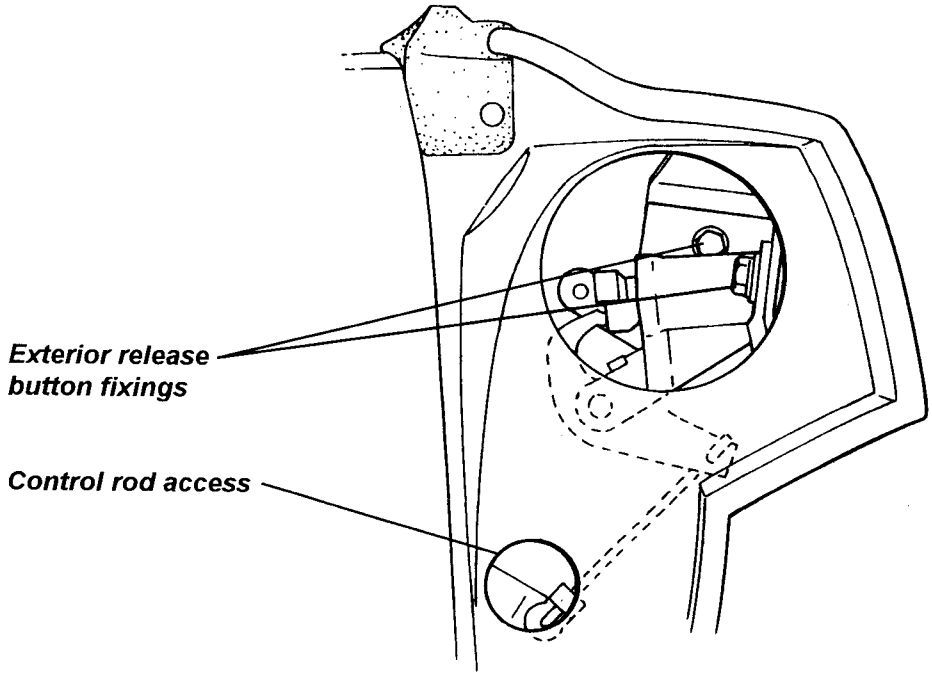
- Remove the window winder handle and door trim panel.
- Remove the four screws securing the interior handle assembly and unclip the control rod end clip to allow the rod to be unhooked from the handle.
- On refitting, ensure that the control rod is located in the guide clips.



b260a

Exterior Release Button

- Remove the access disc from the rear face of the door, and the rod access grommet lower down.
- Release the two screws securing the lock assembly and angle bracket to the tapping plate bonded in the door shell.
- Unclip the link rod from the relay lever, and withdraw the lock button from the door.

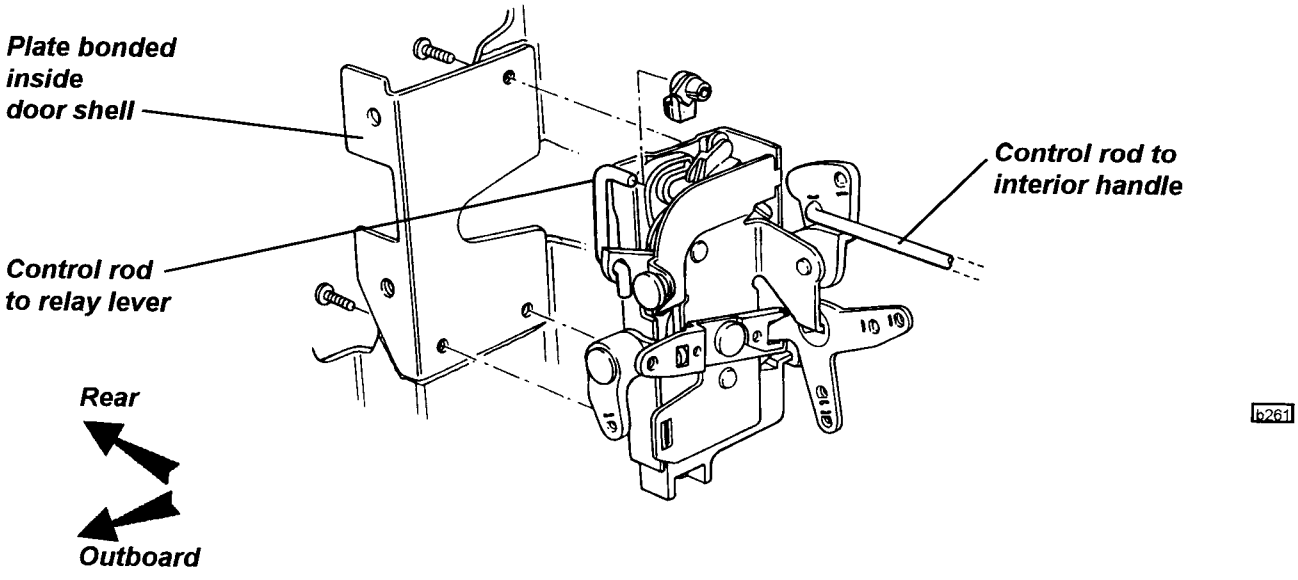


b255b

Latch Mechanism

- Remove the window winder handle and door trim panel.
- Unclip the control rod from the interior release handle, and unhook from the latch mechanism.
- Unclip and disconnect the short link rod between the relay lever and the latch mechanism.
- Remove the three M6 screws securing the latch mechanism to the door, and withdraw the latch.

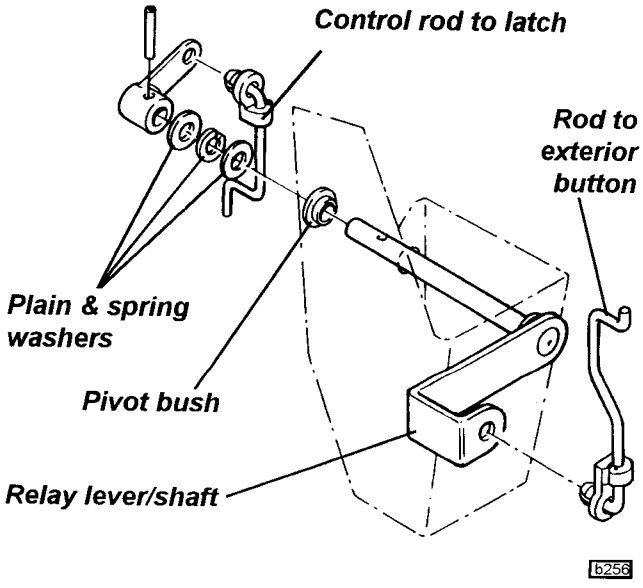
Viewed through outer door skin



Relay Lever Mechanism

The relay lever components comprise a shaft with an integral lever on one end, which connects to the exterior lock button, and a second lever pinned to the other end, which connects to the latch mechanism. The shaft is supprted in two fibre bushes housed on the bracket connecting the rear end of the door beam to the door shell. To remove the door beam extension bracket complete with relay lever mechanism:

- Remove the window winder handle and door trim panel.
- Release the three M6 nuts securing the door glass to the lift channel, and separate the glass from the channel. Do not attempt to withdraw the glass from the door without first removing the door glass waist seals.



- Remove the access grommet from the rear face of the door, and unclip the exterior lock link rod from the relay lever. Similarly disconnect the link rod between the relay lever and the latch mechanism.
- Support the door shell before removing the two M8 bolts fixing the rear end of the door beam to the end bracket, and the two screws securing the bracket to the door shell. Remove the bracket complete with relay lever assembly from the door.
- Refit the bracket in reverse order to removal.

BP.13 - INSTRUMENT BINNACLE & DASH PANEL

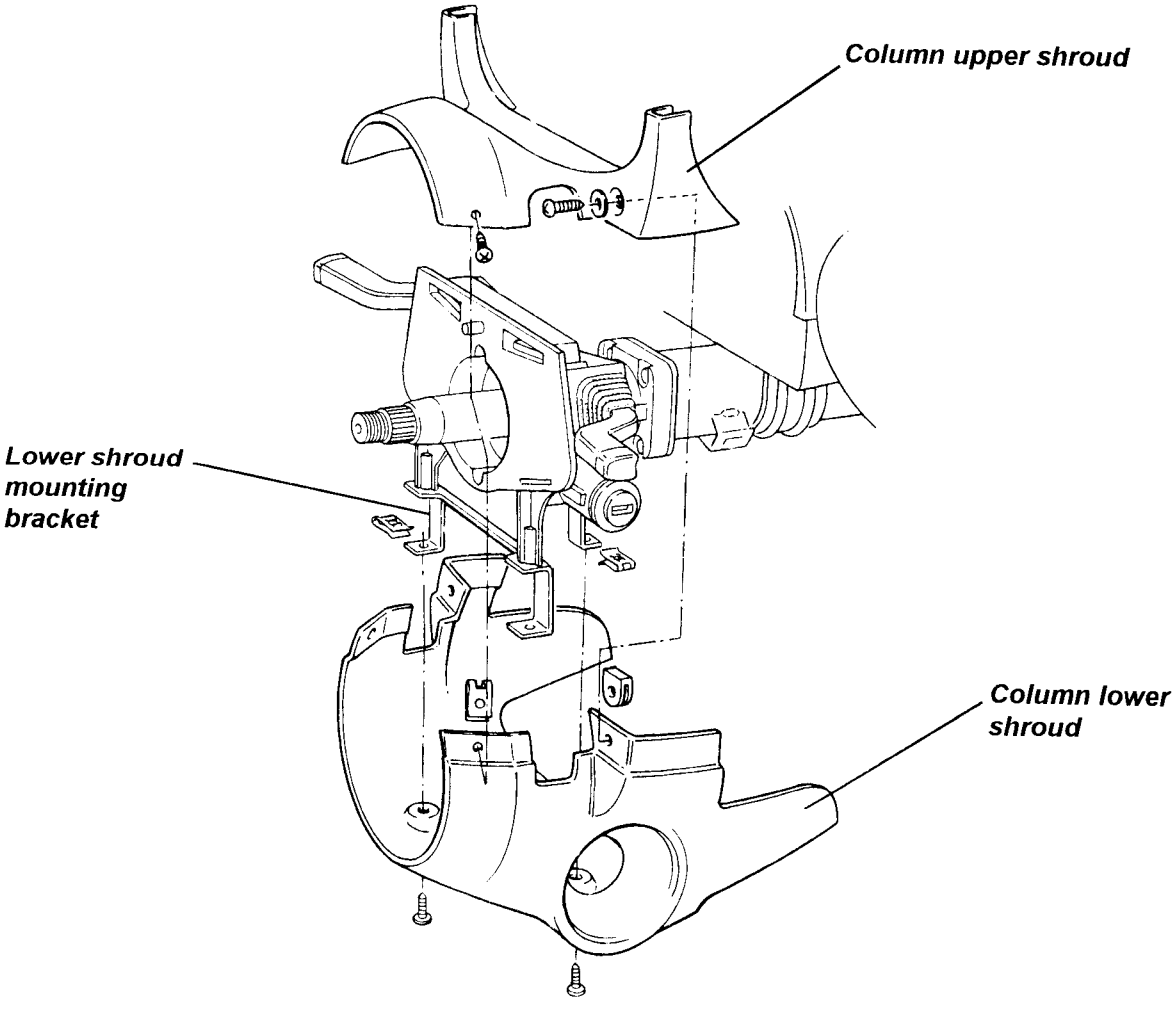
The dash panel comprises principally of three alloy extrusions linking the chassis scuttle crossbeam and the bottom of the windscreen pillars. The lowermost extrusion is bonded to the chassis, and incorporates a curved shelf. The middle and upper extrusions are bonded and rivetted together to form an assembly which locates behind the top edge of the lower extrusion, and is screwed at each end to the composite windscreen frame at the bottom of each screen pillar. The upper extrusion houses the climate controls and audio aperture. A skinned foam fascia top panel joins the top of the dash to the base of the windscreen and incorporates the demist ducting and four windscreen outlet vents, with a moulded plastic capping panel around the front of the fascia top and surrounding the vents. At each end of the fascia, a moulded plastic panel joins the fascia to the door sill finisher, and is used to mount the front speakers and lighting switches.

The dash and fascia are interrupted by the steering column which is secured to the scuttle crossbeam by a pair of extruded alloy support brackets. The instrument pack and its cowl are mounted via a steel bracket secured using the column mounting fixings.

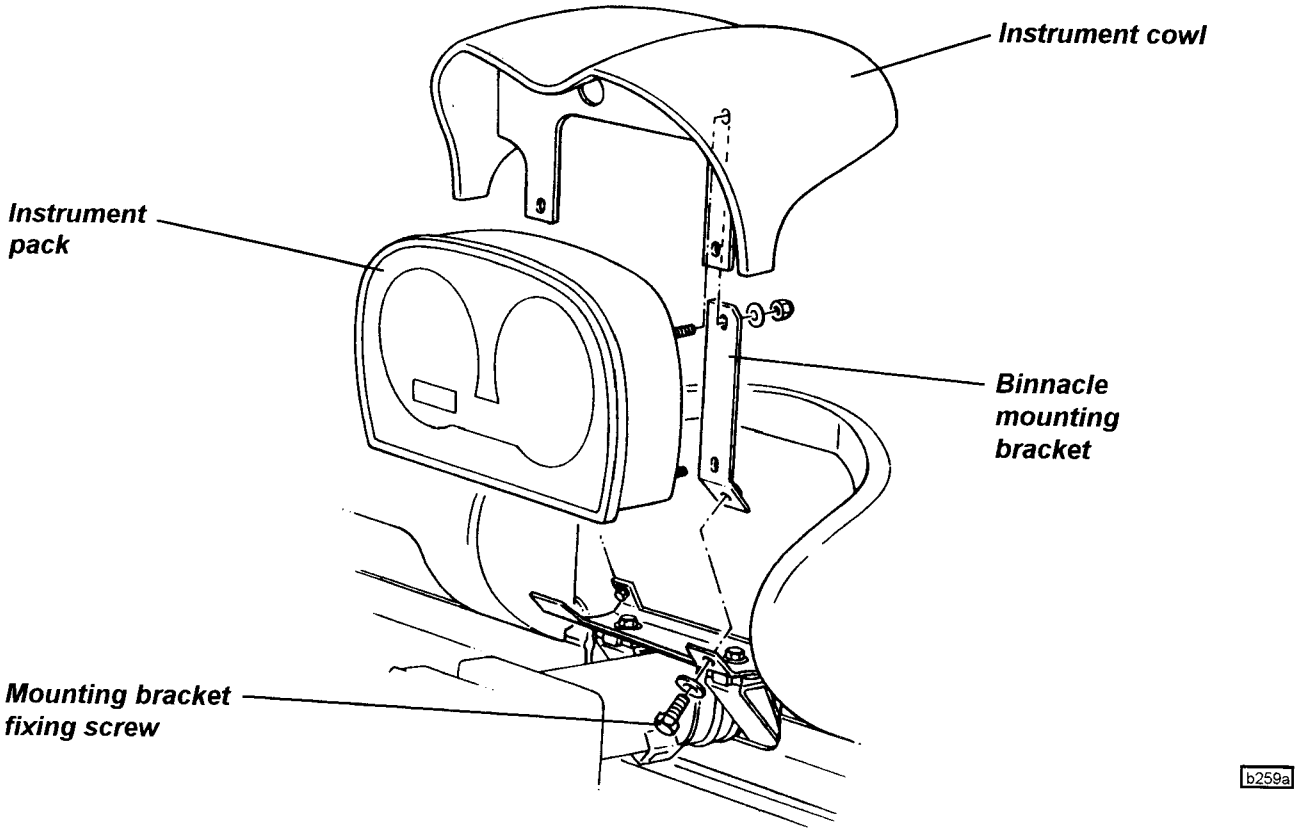
For access to the climate controls, or electrical components mounted on top of the chassis scuttle beam, the fascia top panel must be removed.

To Remove Fascia Top Panel

1. Remove the steering column upper and lower shrouds:
   - Remove the four screws securing the shroud upper section.
   - Pull out the grommet from around the ignition switch and remove the three screws securing the lower shroud to the column.
   - Disconnect the trip reset button from the lower shroud.



2. Release the two fixings securing the binnacle mounting brackets to the column, and withdraw the instrument pack and cowl. Unplug the harness connector.



3. Release the screws securing each fascia end (speaker) panel, disconnect the switch and speaker harnesses and withdraw the panels.

4. Carefully prise each windscreen outlet vent from the fascia.

5. Remove the screws at each end securing the fascia capping panel, and withdraw the panel.

6. Remove the plastic finisher above the climate controls. Remove the four screws securing the top flange of the dash extrusion to the underside of the fascia top.

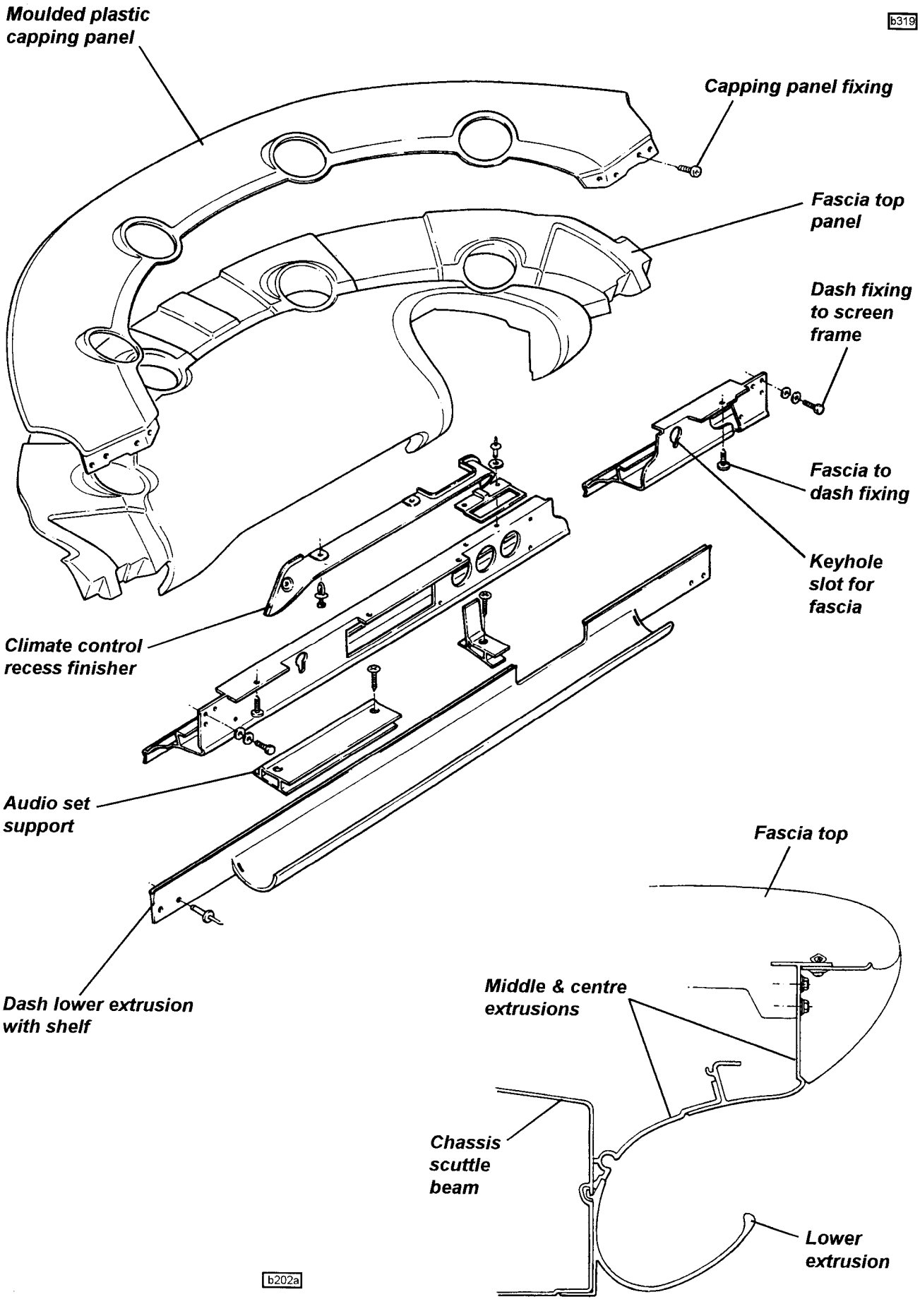
7. Lift the rear of the fascia top to release the two locating bosses from the keyhole slots in the dash, and pull the fascia rearwards to withdraw the two front edge spigot pins.

To Remove Dash Panel

1. Remove fascia top panel (see above).

2. Remove the climate controls, audio set, interior light.

3. Release the fixings securing each end of the dash upper extrusion assembly to the windscreen frame and withdraw the dash.


Moulded plastic capping panel
b319
Capping panel fixing
Fascia top panel
Dash fixing to screen frame
Fascia to dash fixing
Keyhole slot for fascia
Climate control recess finisher
Audio set support
Dash lower extrusion with shelf
Fascia top
Middle & centre extrusions
Chassis scuttle beam
Lower extrusion
b202a

BP.14 - WINDSCREEN

The laminated windscreen, together with self coloured synthetic finisher moulded around the top and side edges, is bonded to the composite windscreen mounting frame using Betaseal flexible polyurethane adhesive. It is not practicable to remove a windscreen from a car and then refit the same glass, as removal of the screen will require cutting the surround finisher which is available only as part of a new windscreen assembly.

To Replace Windscreen

Parts required:

- Windscreen
- Betaseal Kit
- Plinth, interior mirror mounting
- Activator Dymax 500E (A111B6187V)
- Adhesive Dymax 840 (A111B6186V)

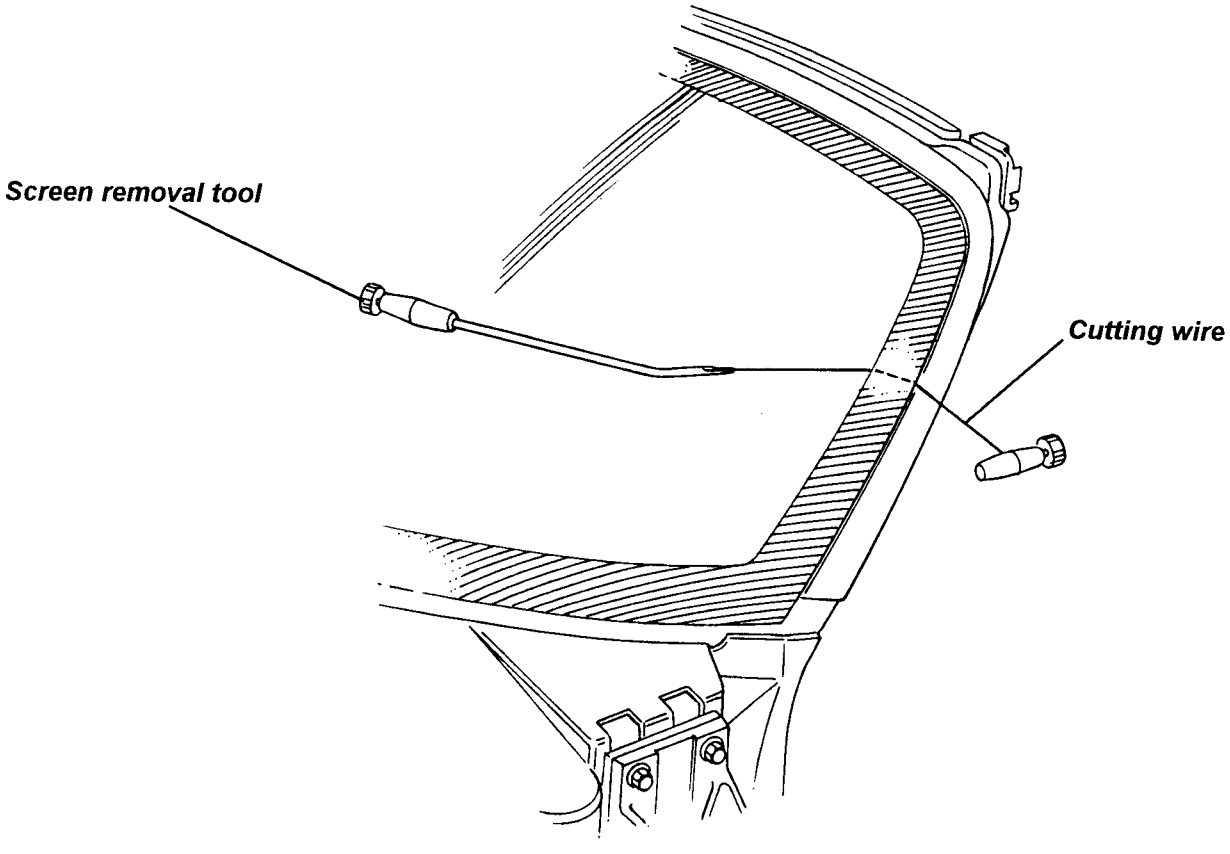
1. Remove the fascia end (speaker) panels, and the fascia top capping panel (around inside base of windscreen).

2. Remove the front clamshell (see sub-section BP.5).

3. Remove the wiper arm from its spindle, and the interior mirror from its plinth.

4. Cut around the whole length of the windscreen surround finisher to allow access to the 'screen adhesive joint. Apply suction handles to the outside surface of the screen.

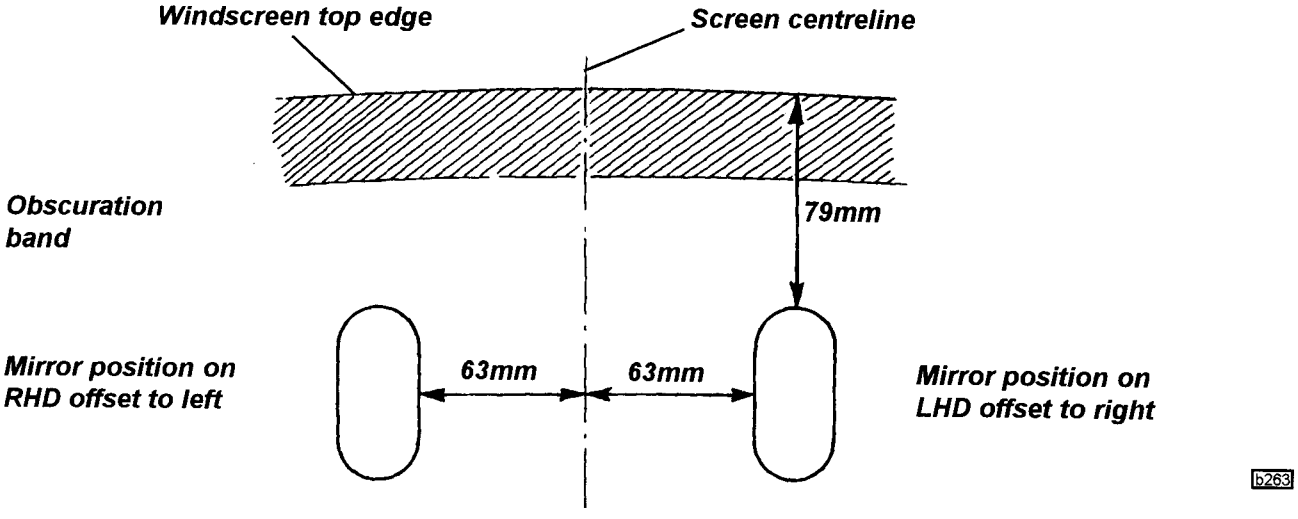
5. In order to incur the minimum risk of damage to the windscreen composite mounting frame, the preferred method of cutting the windscreen adhesive is by the use of a 'cheese' wire. Protect the visual surface of the windscreen frame with tape before commencing the cutting operation.



6. After cutting out the screen, remove old adhesive from the windscreen frame sufficiently to leave a consistent and flat surface for the new bond.

7. Clean the whole of the inside surface of the windscreen with a 50% solution of water and isopropanol. Allow to dry.

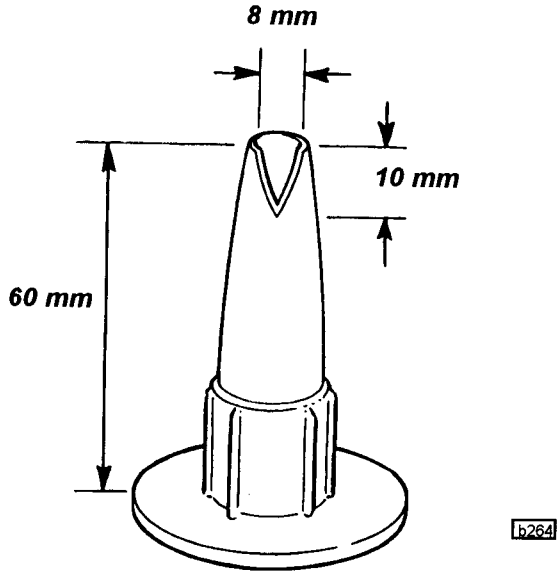
8. Fit the interior mirror plinth to the inside of the windscreen:
   - Use Betawipe VP04604 (A082B6150V) to clean thoroughly the bonding surface of both the mirror plinth and corresponding surface on the screen.
   - Apply activator Dymax 500E (A111B6187V) to the screen patch.
   - Apply adhesive Dymax 840 (A111B6186V) to the screen.
   - Fit the plinth to the screen with the dimple lowermost and hold for 30 seconds.
   - Allow at least 10 minutes curing time before fitting the mirror.



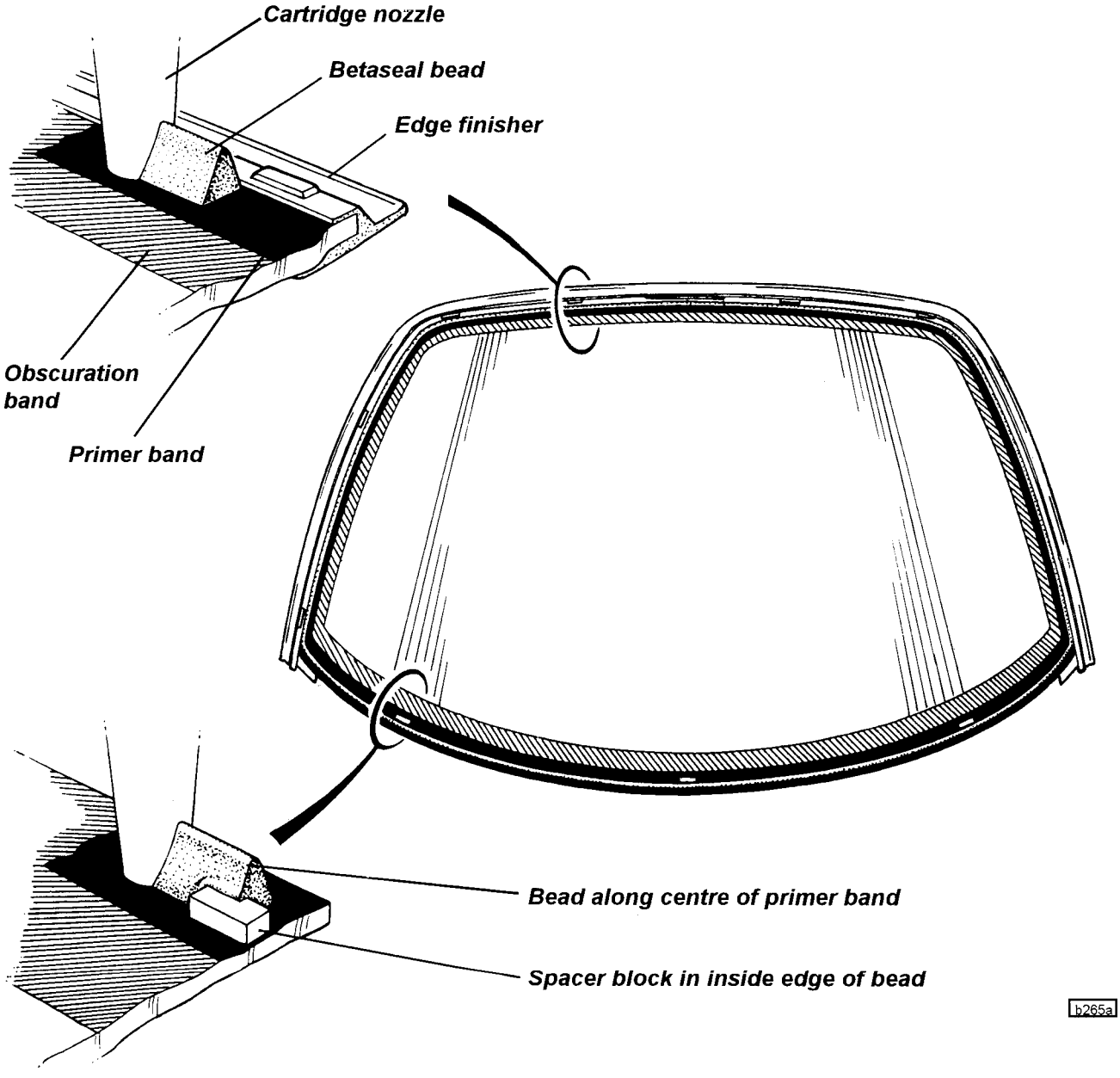
9. Clean the whole of the inside surface of the obscuration band, and the bonding surface on the windscreen frame with the wipe cleaner.

10. Apply a 25 mm wide band of Betaprime around the inside periphery of the glass. Similarly apply to the whole of the bonding surface on the windscreen frame, and to the windscreen bottom laminated edge. Allow to dry for a minimum of 5 minutes. If the screen is not fitted within 48 hours, the primer should be re-applied.

11. Cut the nozzle of the Betaseal cartridge to the dimensions shown to produce a triangular section bead. Holding the cartridge vertically, extrude a bead of adhesive around the screen, using the edge of the finisher as a guide along the top and sides, and following the centreline of the primer band along the lower section.



12. Cut three 4mm spacer blocks from the material supplied in the Betaseal kit, and position in the inside edge of the adhesive bead running along the bottom of the class. These spacers are used to control the fitted height of the glass, and the wiper arm clearance.



13. Using the suction handles, carefully lower the windscreen onto the frame, with the edge finisher firmly butted against the top and sides off the frame recess. Press around the periphery of the screen to compress the adhesive until contact with the finisher spacers and bottom edge spacer blocks is felt. Carefully examine the integrity of the whole length of the joint, if necessary using a spatula to force extra adhesive into any suspect areas. Wipe off any excess adhesive extruded from the joint, or alternatively, allow the adhesive fully to cure and cut away any excess using a scalpel blade.

14. Use duct tape and/or support blocks to hold the screen in position and do not disturn until the Betaseal is fully cured. This will take approximately 4 hours dependent on atmospheric conditions, with a longer period required in dry atmospheres.

15. Refit wiper arm, interior mirror and front clamshell.

Spillage of material

a) Any spillage of Betaseal onto unprimed glass can be readily peeled off after it has cured.

b) Any spillage onto the bldy can be removed with either Wipe Cleaner No.4, or white spirit.

Shelf life

a) Betaseal primer has a useful life of about 24 hrs. after exposure to the air, after which it starts to become spongy. If the material is spongy, DO NOT USE. Always use glass primer immediately on opening, and replace the lid after use.

b) Betaseal has a shelf life of over 6 months at ambient temperature in the original unopened package.

BP.15 - DECAL POSITIONING

Individual 'L O T U S' self adhesive decals are used on the rear transom, and a single 'elise' decal on the inside of the rear screen.