

**The Elimination of
Body Leaks on the
VOLKSWAGEN 1500**

Group: A 25

Edition: September 1964

Supersedes October 1963 Edition

VOLKSWAGENWERK AKTIENGESELLSCHAFT

Experience has shown that body leaks are frequently very difficult to find. The spot where the water is entering the body is often nowhere near where the water is found inside the body and this makes the location and sealing of the leak a long and difficult task.

The search for a leak should always begin with a systematic spraying of all likely places with a hose pipe while a second mechanic watches carefully from inside the vehicle. If this does not help to locate the leak definitely because of the absence of the slight vacuum which exists inside the body when the vehicle is moving, the vacuum should be produced as described in Technical Recommendation A 26, or the vehicle taken for a road test in the rain. The success of the work carried out should be checked in the same way before handing the vehicle back to the customer.

Before commencing to seal the leak, the area concerned must be cleaned thoroughly and dried with compressed air. To ensure that the sealing compound adheres properly, the spot should be coated thinly with D 12 adhesive first.

Leakage occurs mainly at the following points:

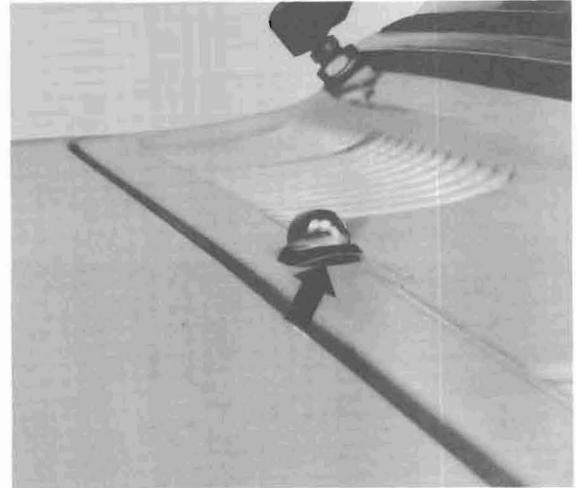
A - Front of body

A I - Behind the instrument panel in the center

A I/1 - At the windshield washer jet. Either through the seal for the jet or at the jet itself which is mounted in plastic.

Remedy:

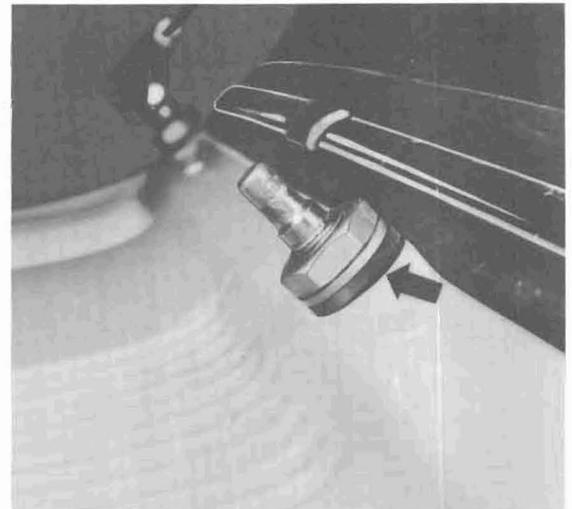
A coat of D 12 sealing compound under the seal or, if the jets are leaking, replace the jet mounting.



A I/2 - At the windshield wiper shaft bearing seal.

Remedy:

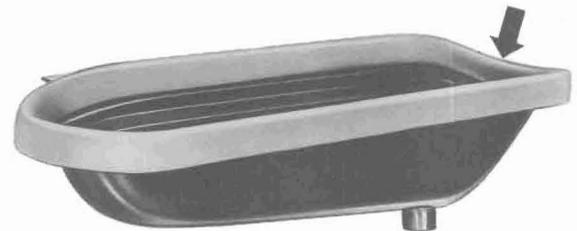
- a - Check if the nut is tight and the seal located properly.
- b - Use a larger washer (21.2 mm dia)
- c - If the wiper shaft shows signs of seizure, the operating linkage must be replaced.

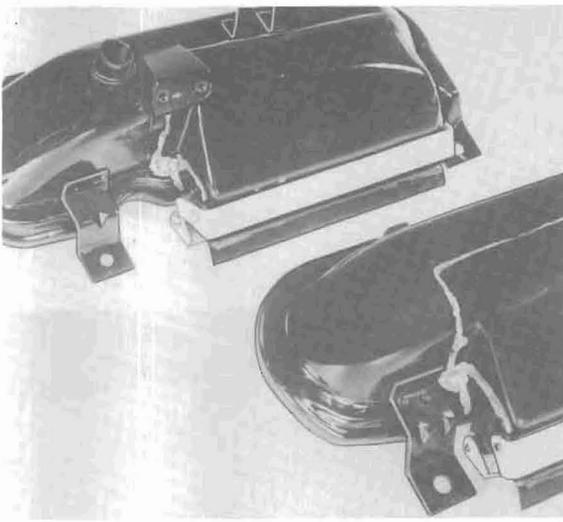


A I/3 - At the fresh air control box seals, particularly in the corners.

Remedy:

Ensure that the seals are fitted properly, particularly in the corners. If necessary, straighten the control box in the corners. Distorted seals must be replaced. If leaks still appear at the seal, it should be sealed with sealing compound.





A I/4 - At the welding seams on the fresh air control boxes.

Remedy:

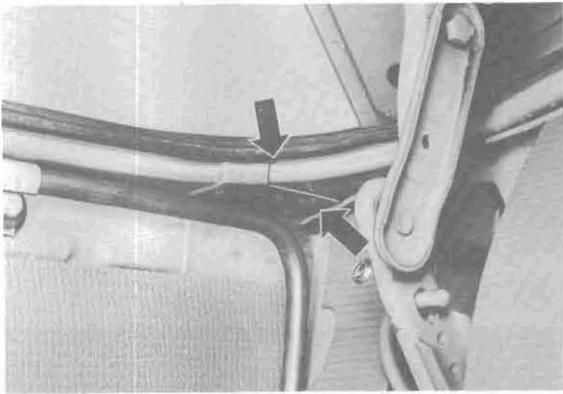
Fit new control box. Check new box for leakage before installation.

A II - Behind the instrument panel at left and right corners.

A II/1 - At the joint between roof, luggage compartment well and wheel housing - water runs over or under the hood weatherstrip behind the instrument panel. (Is also possible on vehicles on which the joint is brazed).

Remedy:

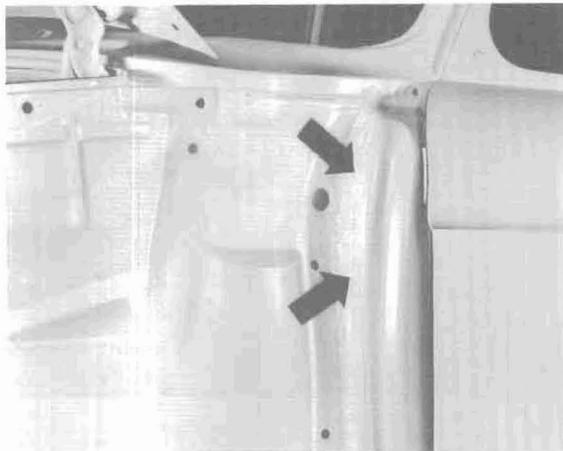
Cement weatherstrip on the curved part properly, ensure that hood makes good contact. The entire overlap should be coated with sealing compound on the inside.



A II/2 - At the upper part of joint between wheel housing and side panel.

Remedy:

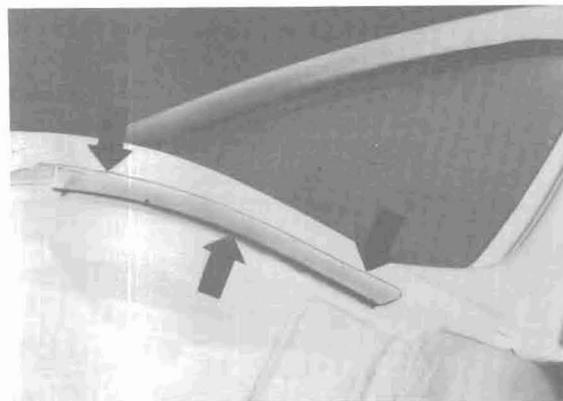
Take fender off and check that sealing compound has been applied properly. If necessary, coat the entire area with sealing compound.



A II/3 - Soldered joint between cowl panel and side panel.

Remedy:

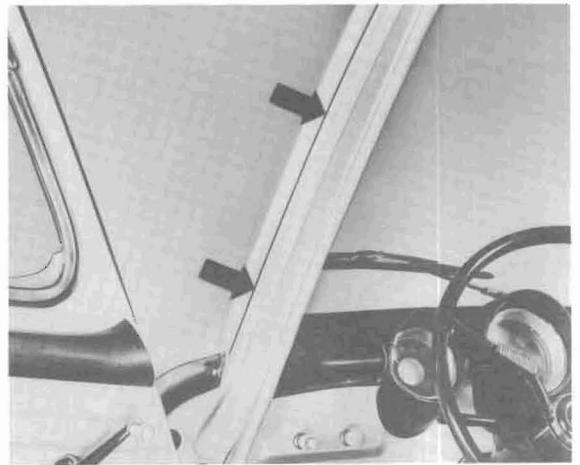
Take fender off and check for shrinkage holes in solder. If necessary, coat the soldered joint with sealing compound.



A II/4 - Under the roof channel

Remedy:

Coat the joint under the roof channel with D 20 jointing compound. Wipe surplus compound off with gasoline and paint joint to match vehicle color.



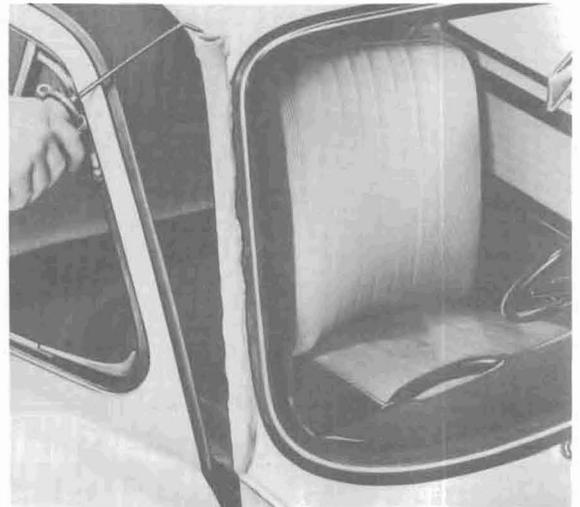
A II/5 - Under the flanged edge of the roof channel in the rain gutter.

Remedy:

Pack the gutter with plastic sealing compound so that the gutter can be filled with water. If the water level drops, coat the flanged edge with D 20 jointing cement.

Note:

The jointing cement will not dry out so quickly if a turpentine soaked cloth is placed in the tin. Cement which has already thickened can often be made usable by adding benzine.



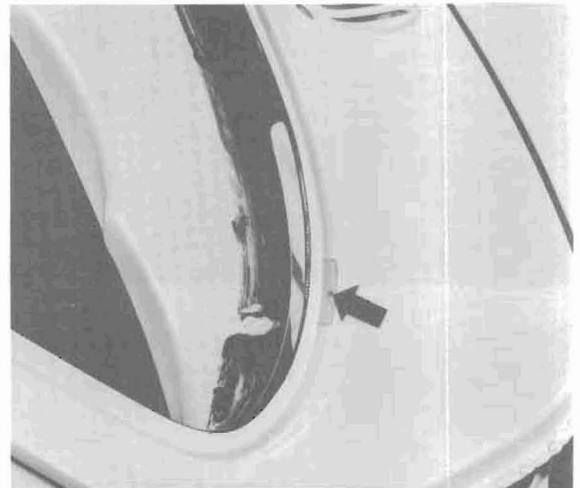
A II/6 - At the windshield seal.

Remedy:

Remove windshield. Any gaps between spot welds should be closed by pressing the sheet metal together and a coat of sealing compound applied. The paint drain holes should be closed with thin water-proof adhesive tape. Coat the windshield seal carefully with glycerine or talcum powder and insert windshield again.

Important

A lasting seal cannot be obtained by just smearing sealer under the outside lip of the weatherstrip.



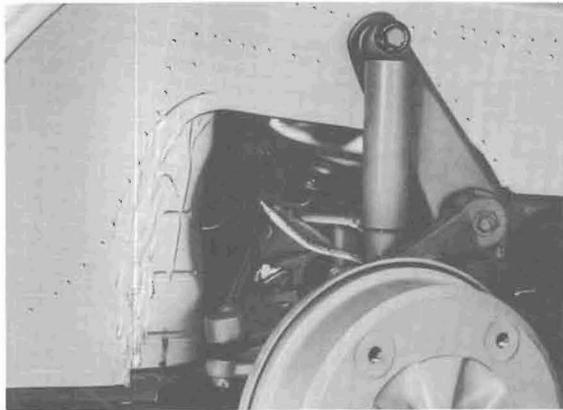


A III - In footwell

A III/1 - At the water drain hoses where they pass through the front partition.

Remedy:

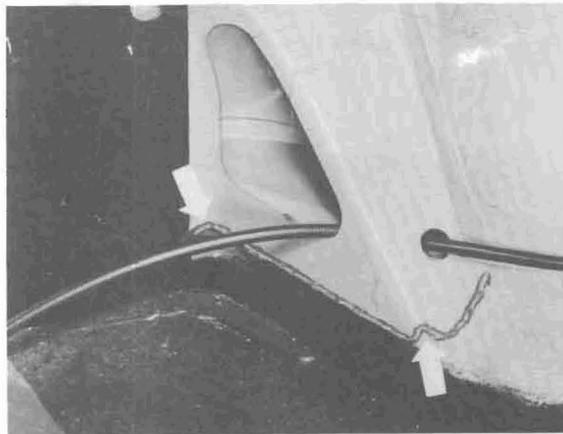
Coat hoses with universal adhesive and insert them into adaptors. Ensure that the hoses are not pushed through too far as otherwise they will contact the tank and the water will not be able to drain off.



A III/2 - At the joint between front partition and wheel housing.

Remedy:

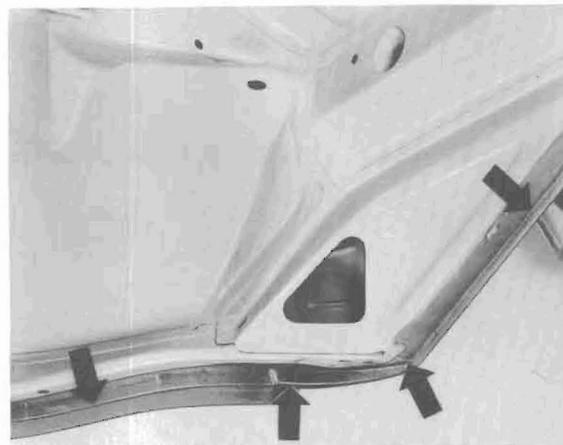
Coat the entire area, inside and out, with sealing compound. Check for burned through spot welds.



A III/3 - At the bottom of the front partition under the openings behind the foot rest.

Remedy:

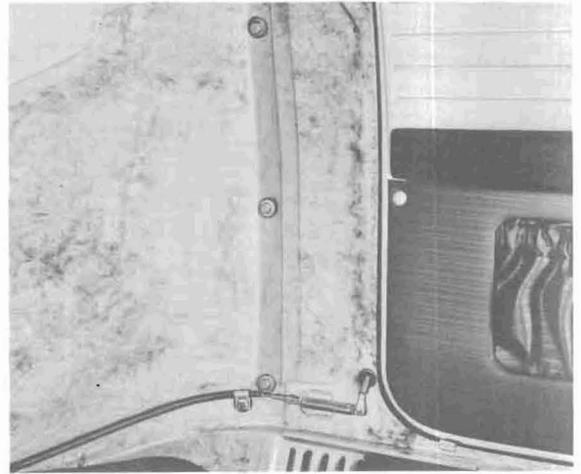
Coat the seam near the two M 10 body bolts with sealing compound. If necessary, lift the body so that all areas are accessible.



A III/4 - At the inner fender securing screws.

Remedy:

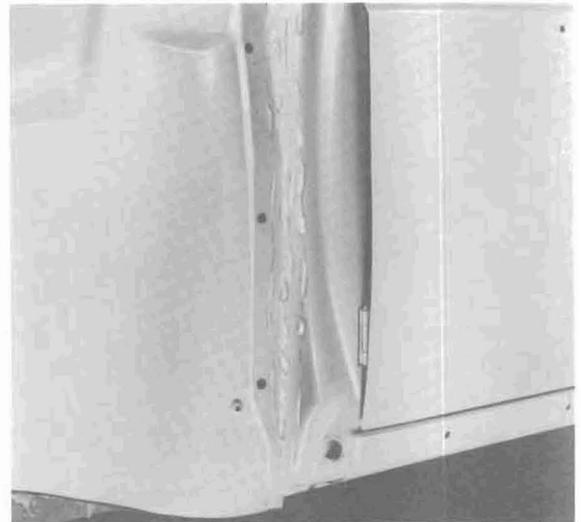
Check position of screws and rubber seals. Tighten screws if loose and replace seals if they have moved.



A III/5 - At the joint between wheel housing and side panel in center and lower areas.

Remedy:

Remove fender and check if sealing compound has been applied properly. If necessary re-seal the complete area with sealing compound. (see also point A II/2).



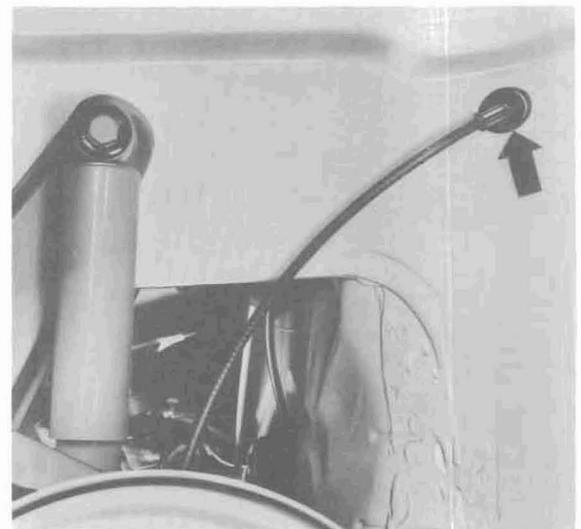
A III/6 - At the grommets for parking lamp and brake light switch cables and the seal for the speedometer drive cable in the side panel (illustration) and the lower rubber mounting for the steering column tube.

Remedy:

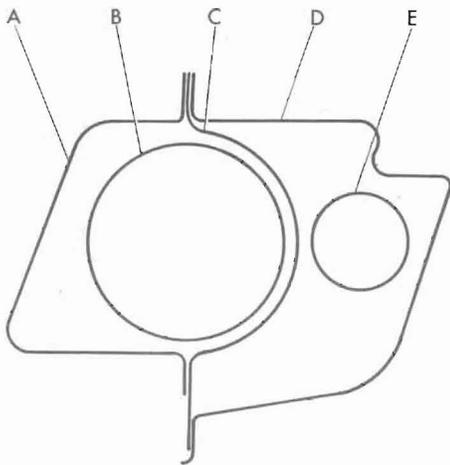
Ensure that the grommets are in good condition and properly located in body. If necessary, replace grommets or seal the holes with sealing compound.

Note

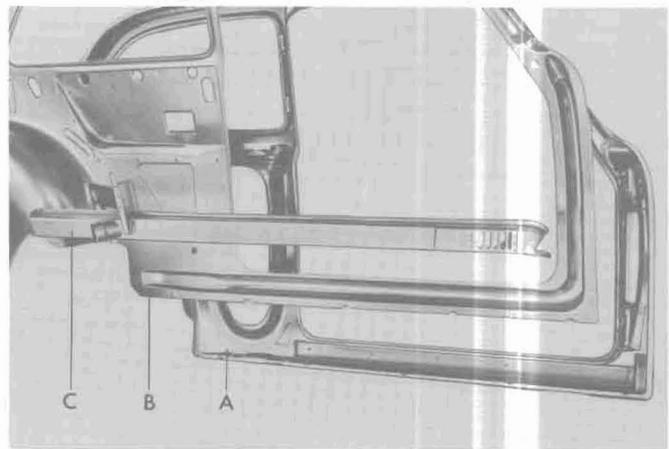
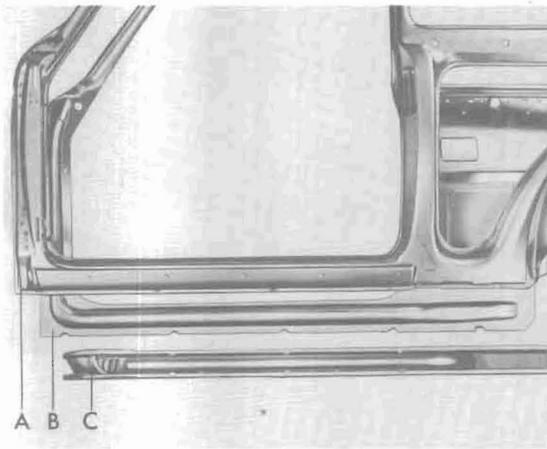
When fitting an aerial, do not put the cable through the hole for the parking lamp cable in the front wheel housing. A fresh hole should be drilled and sealed with a suitable grommet.



B - At the side member



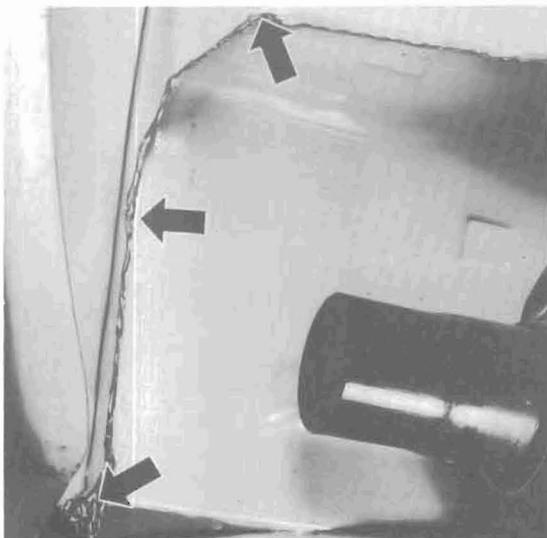
- A = Side member
- B = Warm air duct
- C = Side panel/inner
- D = Side panel/outer
- E = Guide tube for main harness



A = Side panel/outer

B = Side panel/inner

C = Side member

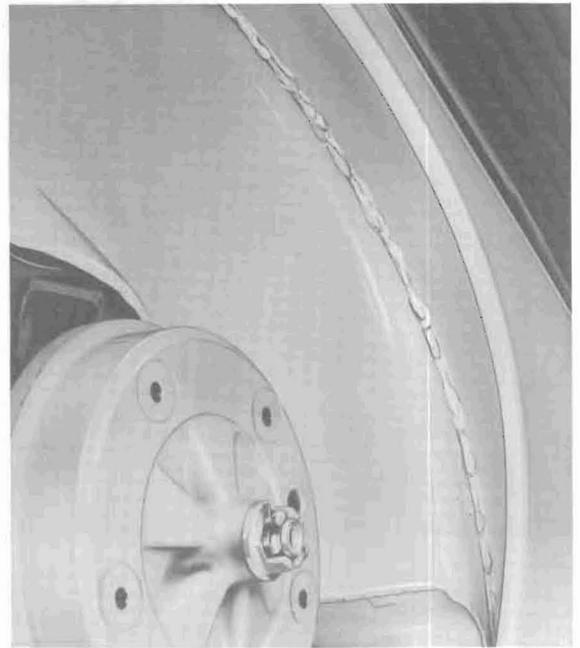


B 1 - Water runs out of the side members through the heater outlets into the vehicle interior.

Remedy:

- a - Check gas welded seam between wheel housing and quarter panel carefully and reweld as necessary.

- b - Coat wheel housing to quarter panel joint with sealing compound. Sealing must be carried out with great care at this point because water from the rear wheel is thrown into this joint with great force. At the same time, the work described at point C should also be carried out.



- c - Check the drain holes at the front of the side member. If necessary, clean them with a suitably bent piece of wire.

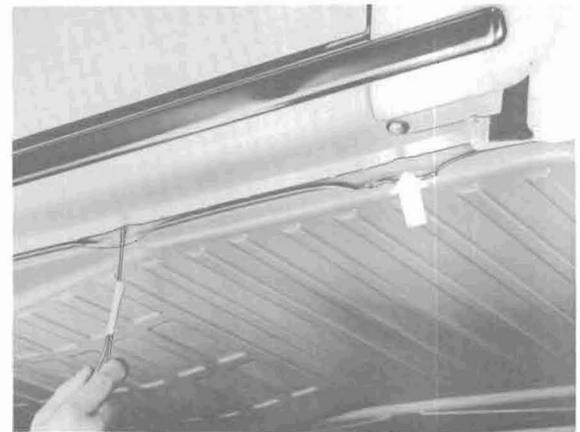
It is advisable to make a second drain hole by clearing one of the closed paint drain holes with a piece of wire (3 mm dia). The edge of the floor plate should be bent down slightly to do this.

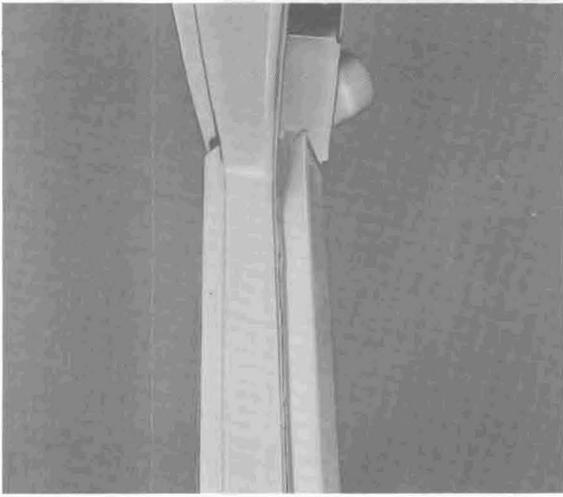


- d - Coat the spot welded joint between side member and inner side panel with sealing compound. The body should be taken off to do this.

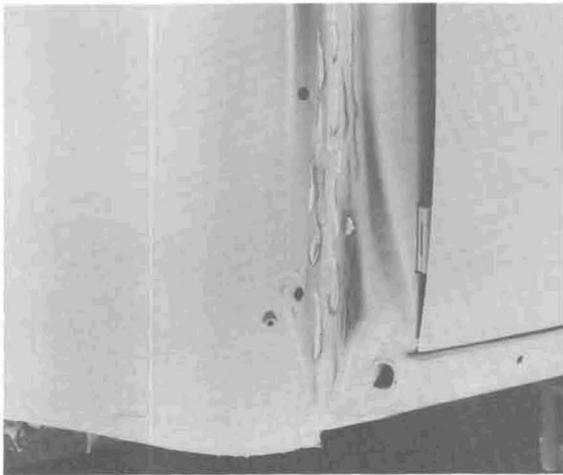
Important

In order to be able to say definitely that water is entering in this area, pour water into the side member through the heater outlets and lift the vehicle alternately at front and rear. The leak can be located immediately by means of the water leaking out.

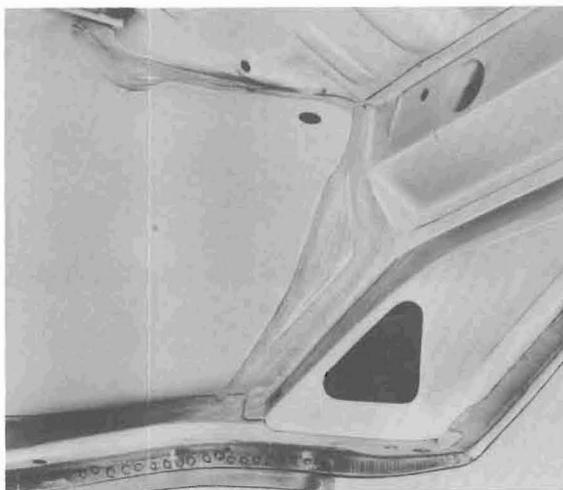




- e - Check upper spot welded joint between side member and inner and outer side panels, outside under the sill panel cover. Close any gaps by pressing metal together and coating with sealing compound. The work described at point C 8 should also be carried out.



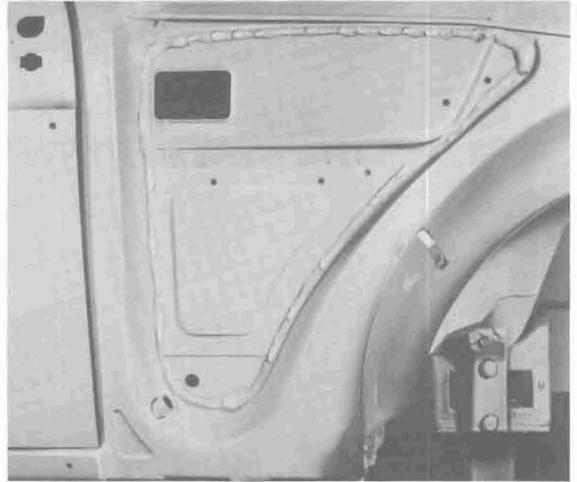
- f - Seal lower part of joint between wheel housing and front side panel carefully. The work described at points A II/2 and A III/5 should also be carried out.



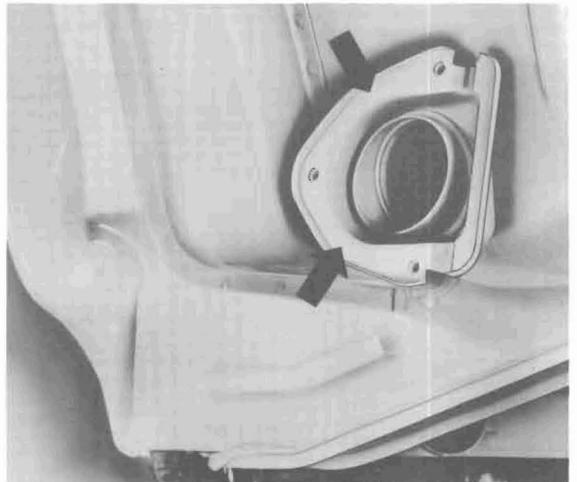
- g - Check location of inner fender securing screws and washers (see also point A III/4).

- h - Check joint near front body bolts (see also A III/3)

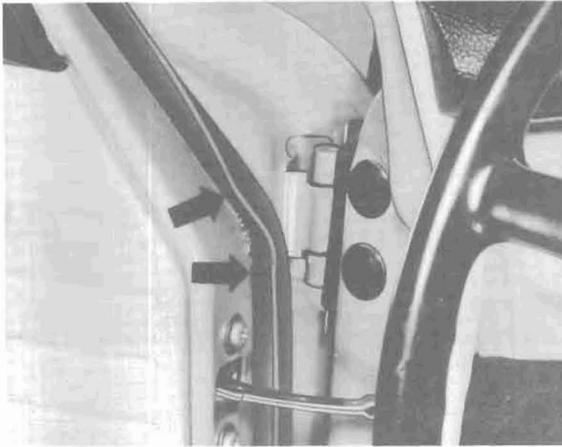
- i - Check the sealing of the joint between inner and outer quarter panels after removing the fender. If the sealing compound has not been applied properly, scrape it all off and apply fresh sealer.



- j - Ensure that the heater control box seal is located properly on the flange of the warm air pipe. If necessary fit a new seal.



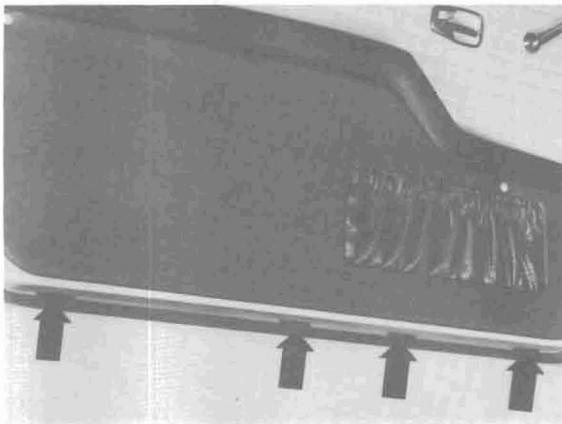
C - At the doors



C 1 - At the door weatherstrip above the upper hinge.

Remedy:

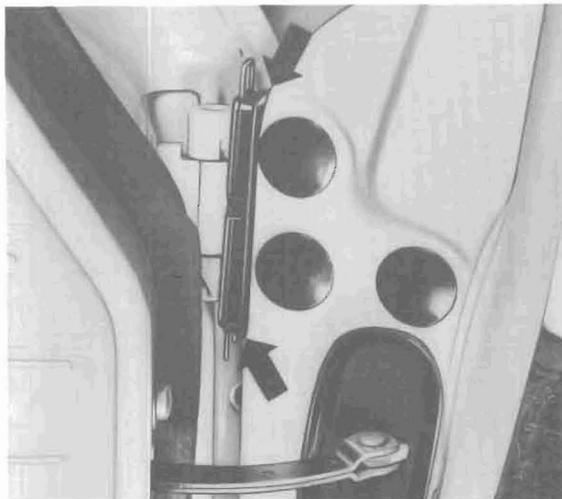
Check door weatherstrip contact in door opening, if necessary, relocate weatherstrip. Ensure that the adhesive has dried before closing the door.



C 2 - At the bottom of the door weatherstrip.

Remedy:

Check position of door weatherstrip, particularly at the wider part. If necessary, relocate weatherstrip and allow adhesive to set before closing door.



C 3 - At the hinge seals.

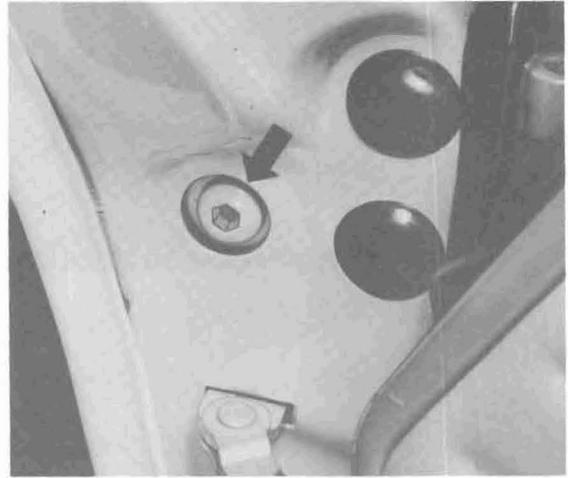
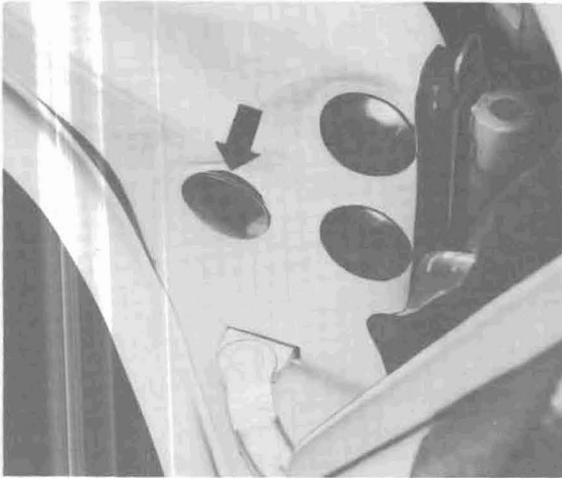
Remedy:

Ensure that the sealing rubber contacts properly. If necessary, stick the seal to the hinge pillar.

C 4 - At the caps for the hinge screws.

Remedy:

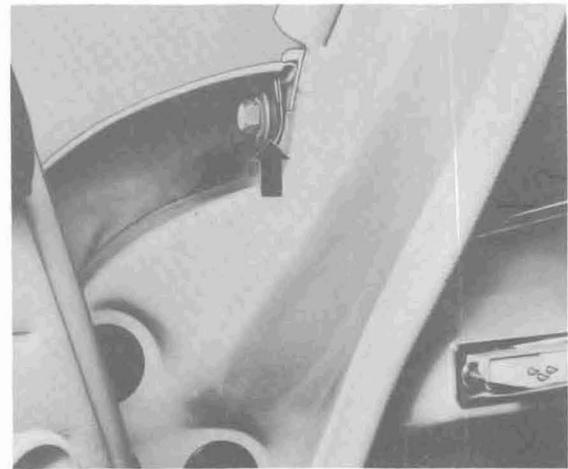
Install new caps. If necessary, grind the hinge screw heads down slightly so that the caps fit properly.



C 5 - At the upper outer fender securing screw (rubber washer displaced).

Remedy:

Crushed washers must be replaced and the entire area coated with sealing compound. To do this, the screw must be removed and the fender pressed away slightly. The washer shown must be between fender and body.

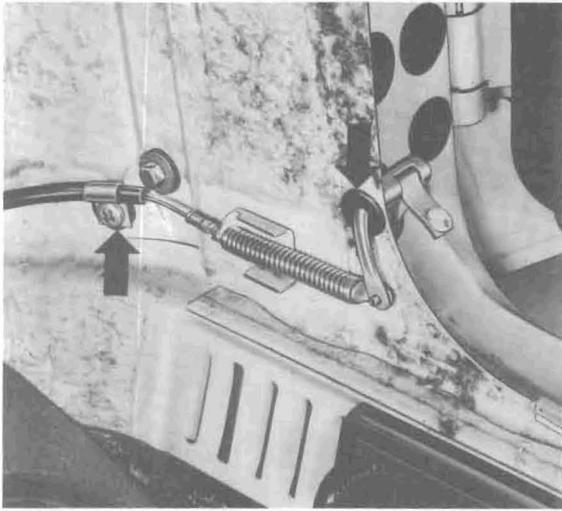


C 6 - At the hole for the interior lamp cable.

Remedy:

Cover hole with plastic sealer.





C 7 - At the hole for the backrest locking lever.

Remedy:

Close the hole by sticking a rubber washer (311 821 185) over it.

Important

If water is entering at the points mentioned at C 6 and C 7, all the work described under A II/4, A II/5, C 3, C 4 and C 5 should be carried out as otherwise it is not possible to establish definitely where the water is entering.



C 8 - Under the sill panel cover at front and rear, mainly at joint between plastic foam strip and door beading.

Remedy:

a - Remove sill panel cover and check plastic foam strip. Replace strip if necessary. Then seal sill panel cover with plastic sealer and install again.

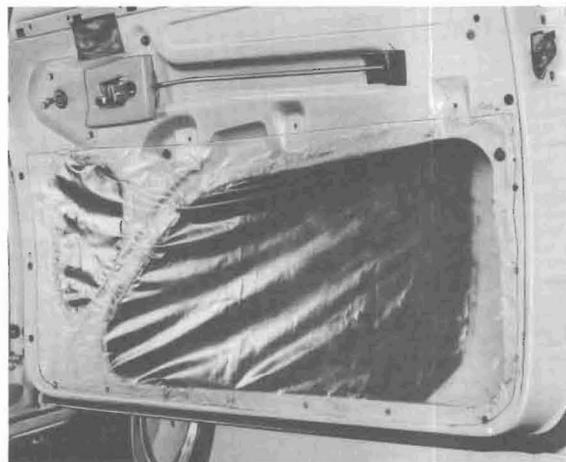


b - If necessary, coat joint between sill panel cover and outer side member with jointing compound D 20. If the cover contacts badly at the joint, it must be secured with a countersunk tapping screw (Part No. N 13 968 1).

C 9 - Between the door inner panel and the oiled paper or plastic sheeting stuck to it.

Remedy:

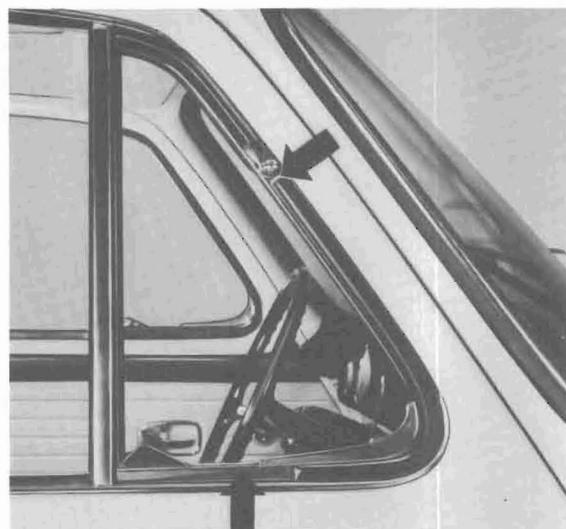
Remove the oiled paper in every case and stick the plastic sheeting (311 867 145 A) to the door inner panel, using only D 12 universal adhesive. Damaged or loose plastic sheeting should be replaced.



C 10 - At the seals for the vent wings.

Remedy:

Check location of seals. If necessary, remove vent wing and coat new seal with glycerine before installing. Replace fasteners if bent.

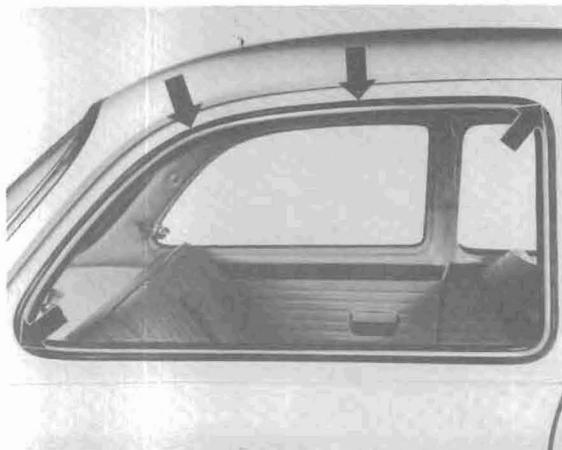


C 11 - At the seals for the door trim panel clips.

Remedy:

Check fit and position of seals, replace any damaged rubber seals.

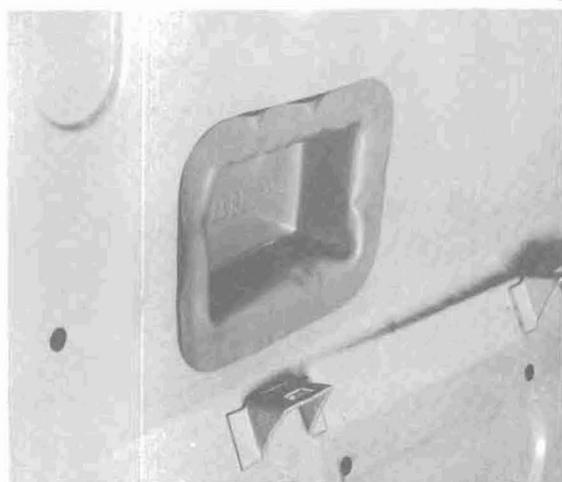
D - At rear of body



D 1 - At the hinged quarter windows.

Remedy:

Check fastener and replace if necessary. Fit new window weatherstrip.



D 2 - At the ashtray trims.

Remedy:

Remove trim and stick in again very carefully. Replace damaged trims.



D 3 - At the backrest support on the Variant.

Remedy:

Check for burned through spot welds. If necessary, remove trim panel and seal support from inside with sealing compound.

D 4 - At the leatherette patches covering the bolts securing sub-frame to body.

Remedy:

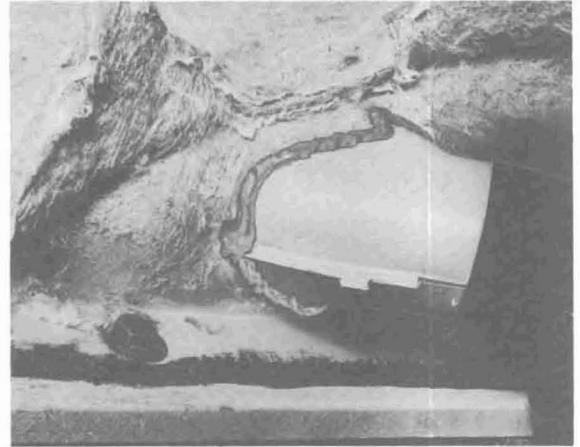
Replace leatherette patches by proper plugs - Part No. 311 813 797.



D 5 - At the welded or flanged seam where warm air pipe passes through luggage compartment floor.

Remedy:

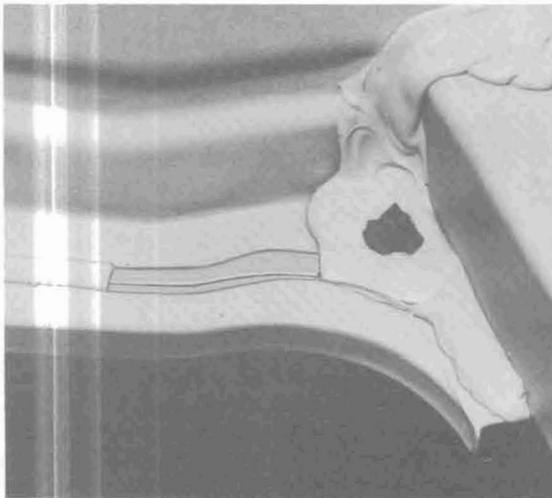
Seal the hole round the warm air pipe with sealing compound.



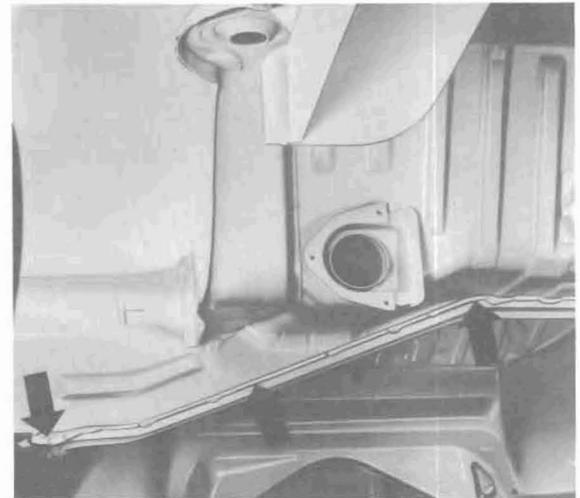
D 6 - At the joints on the rear luggage compartment floor. (Sealer is not located exactly on the joints).

Remedy:

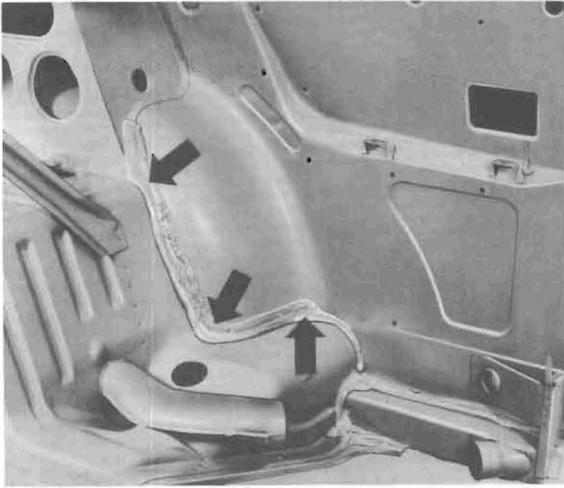
a - Check joints at lowest point of floor inside and out and renew sealing compound where necessary.



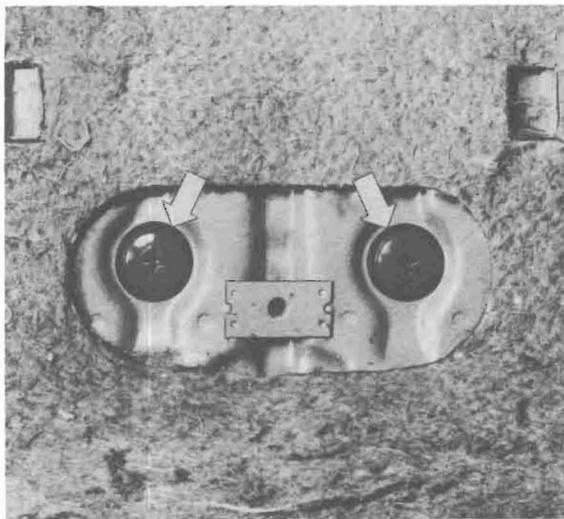
(looking from inside body)



(looking from engine side)



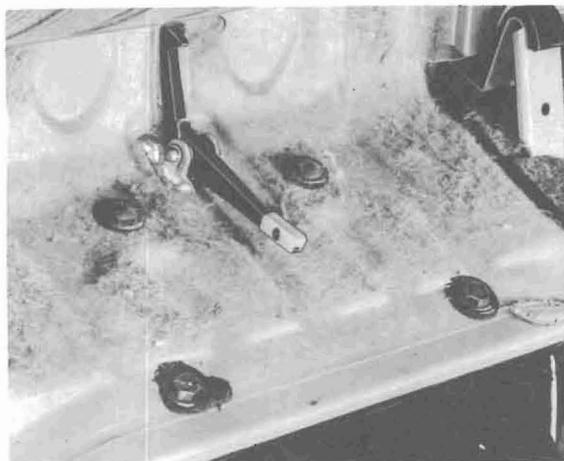
- b - Check spot welded flange between wheel housing and luggage compartment floor. Burned spot welds should be rewelded with gas and the flange then given a fresh coat of sealer.



- D 7 - At the sealing rings for belt mounting on luggage compartment floor.

Remedy:

Check location of rings. If necessary, fit new rings and tighten plugs.



- D 8 - At the mounting for backrest lock hooks on Variant.

Remedy:

Apply sealer all round mounting.

D 9 - At the screw for the battery ground cable.

Remedy:

Coat nut with sealing compound from outside.

D 10 - At the grommets for starter and regulator cables.

Remedy:

Ensure that grommets are in good condition and located properly.
Replace grommets as necessary or coat holes with sealing compound.

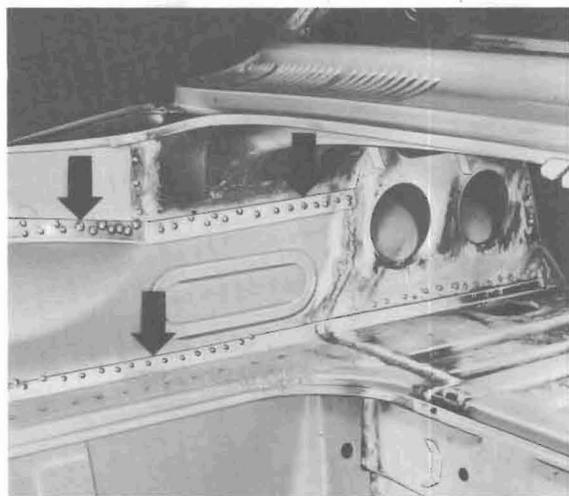
Note

Check the drain channel in the side panel formed by a rib in the fender and clear as necessary.

D 11 - At the joint between the front air deflector plate and the left and right deflector plates. (Water runs through the luggage compartment behind the rear seat backrest and into the vehicle interior.)

Remedy:

Check for burned spot welds.
Close any gaps in the overlap by pressing the metal together and coat the joint with sealing compound.



E - On the frame

E 1 - At the frame seal.

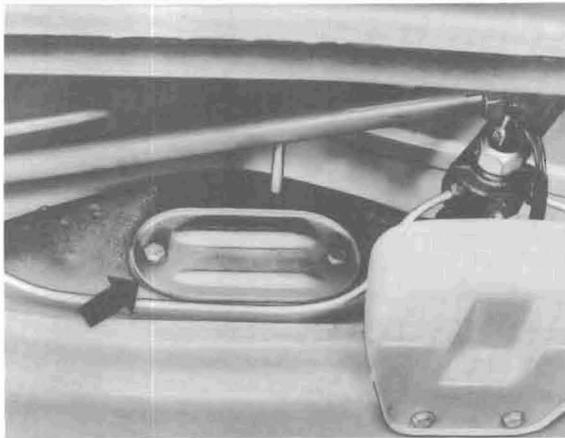
Remedy:

Check frame seal carefully and renew if crushed. When fitting a new seal, ensure that the clipped together parts are coated with sealing compound.

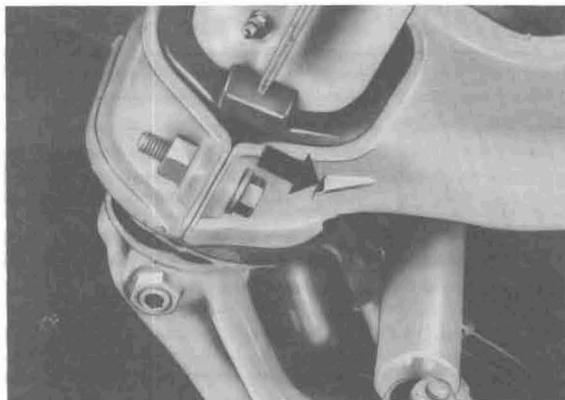
E 2 - At the joint between frame tunnel and floor plates.

Remedy:

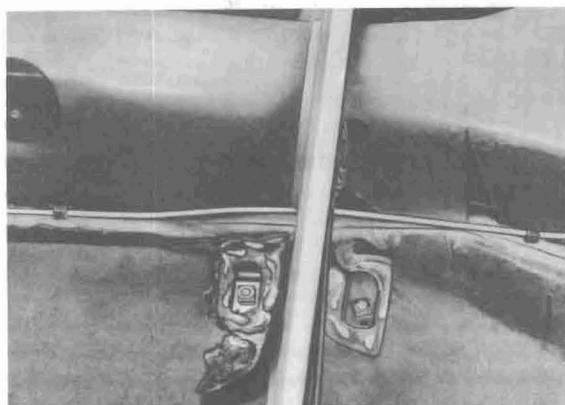
a - Check spot welding. Burned spot welds should be gas welded from outside and sealed with sealing compound from inside.



b - Check seal for frame head cover. Replace crushed seals.



c - Check drain holes on each front axle retainer and clear where necessary.



E 3 - At reinforcement plate for front sub-frame.

Remedy:

Replace crushed seals for securing screws. Seal round nuts on the inside with sealing compound.

E 4 - At the battery strap mounting.

Remedy:

Seal round the head of the screw from outside with sealing compound.