How to prevent water leaks on Type 914 — 914/6 vehicles

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PROCEDURES TO CORRECT AND PREVENT WATER LEAKAGE INTO PASSENGER, FUEL TANK, FRONT AND REAR LUGGAGE COMPARTMENTS.

Generel remarks

Experience has shown that leakages on the body shell have a variety of cause. Adding to the difficulty of determining the location of these leaks is that the water entry point is not always the same as where the water emerges into the car's interior. So that the areas of water penetration can be positively identified, it is worthwhile using an air blower to produce a partial vacuum inside the car, or else make a test run in the rain.

The passage of air over the body of a moving car gradually builds up a slight vacuum inside the car. This vacuum depends not only on road speed but also on other factors. For instance, it increases quite noticeably if a window is opened. This can raise the partial vacuum as high as approx. 30 mm (1,18 in.) water gauge. At this level water will be drawn in through any opening.

Before proceeding with the sealing of leaks, first attempt to trace their origin by the water which has already entered the vehicle. Note that the affected areas must first be cleaned and then dried with compressed air. Only then should they be sprayed with water, with the spray directed upward from below. If at the same time a partial vacuum is produced inside the car, conditions will be almost identical to driving through the rain.

During actual spraying note the following:

1. The water spray should strike the vehicle as rainwater does. A powerful jet striking a single spot will alter the shape of the seals to an extent which could not actually happen when driving.

2. The direction of the water spray should, if possible, simulate driving rain and splashes from the road surface. Rain normally strikes the front of the vehicle diagonally. Splashed water is thrown up by the wheels and flung off at a tangent by the tires to strike the insides of the wheel housings. A dense cloud of spray collects under the car and the moving airstream forces this against the underside of the bodyshell.

3. Two persons are needed to perform the spraying test, one inside the car to observe the results while the second man sprays each area of the body.

The pages which follow describe and illustrate the most likely points of leakage on the body and possible remedies.

Note

A chassis number shown at the end of a section of text means that vehicles from that chassis number onward have already been sealed at the factory.

Recommended sealing materials

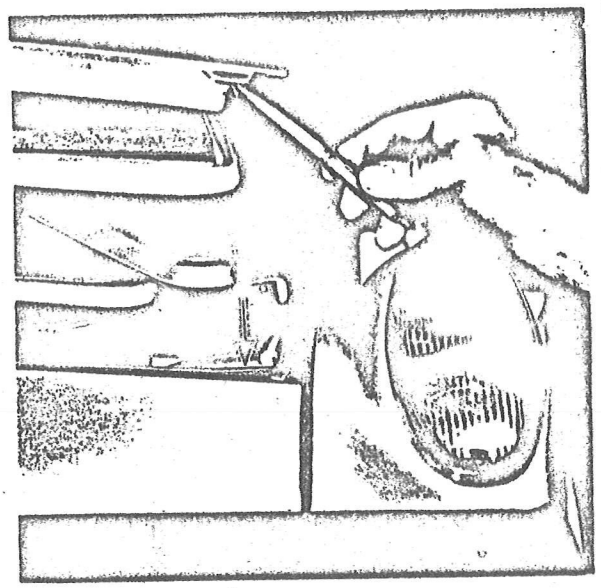
D 10/5	VW window glass cement
D 12	VW Universal adhesive
D 14	Sealing compound (plastic sealer, permanently flexible)
D 17	Genuine VW sealing compound
D 19	Plastic sealing strip

o r e l s e

3 M rainstrip cement, color gray, Article No. 8522
Bostik 292 Universal adhesive for windshield and rear window
Terostat strip (plastic sealing strip)
National sealing compound 5100
'UHU-hart' (hard setting adhesive) for headlight lenses

Item 1

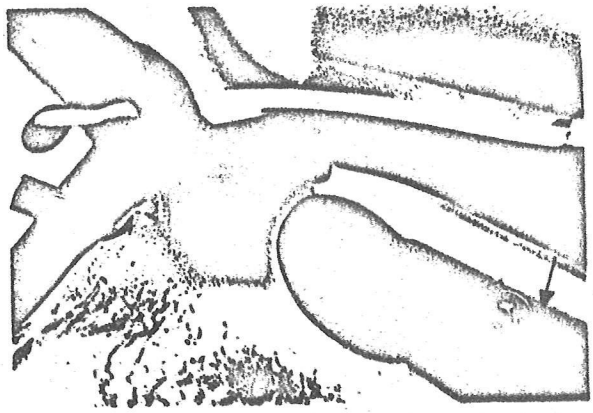
Front luggage compartment leaking. Inadequate pressure of lid seal or partial vacuum inside compartment allows water to enter.



Remedy

a. Examine lid seal, if necessary re-attach seal carefully with adhesive or re-align metal frame. Check left and right areas (see arrow) with special care.

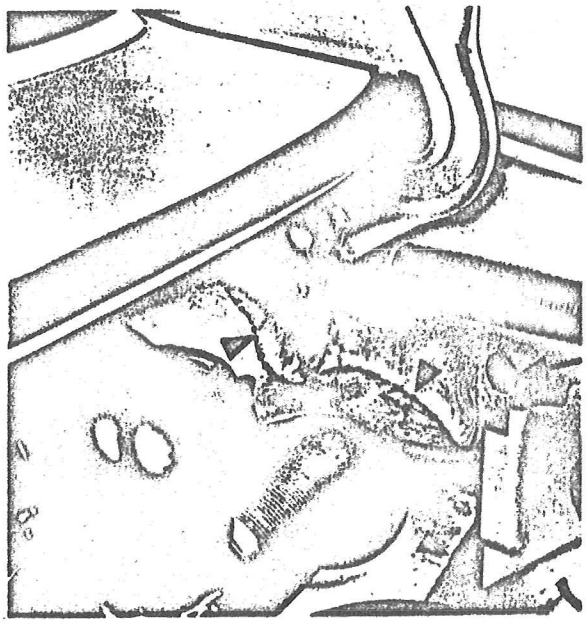
b. Install rubber sealing washers under the two front apron fastening bolts in the lock bulkhead. The slots must be covered (see illustration).



c. Check luggage compartment floor and install rubber grommets in the paint drain holes if missing.

d. Examine spot weld flanges on lock bulkhead and wheel housings for leaks. If necessary seal with National 5100 sealer.

e. Look for leakage at the side spot weld seams between wheel housing and bulkhead to fuel tank compartment at left and right (see illustration). Water may be penetrating into the passenger compartment. Seal affected areas with sealing compound.



Item 2

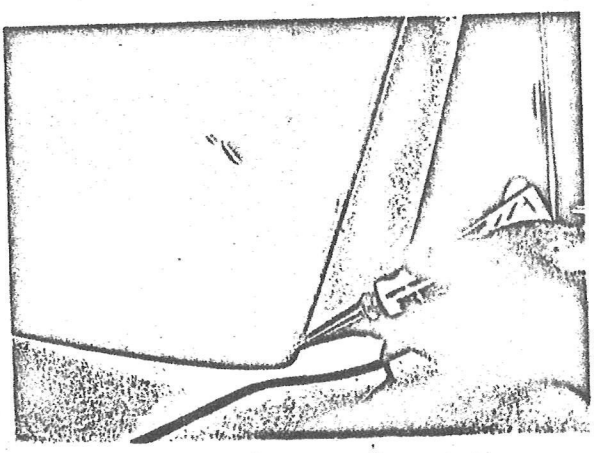
Water entering at headlights.

Remedy

Remove the headlights (see Workshop Manual Group 9, 3.2-2/1).
Check that rubber cap is correctly located on reflector. Prevent possible leaks between glass and reflector with 'UHU-hart'.
Route the cable so that it is bent downward before reaching the plugs. This will prevent moisture from reaching the plugs.

Item 3

Windshield leaking at lower corners.
Water reaching instrument panel.

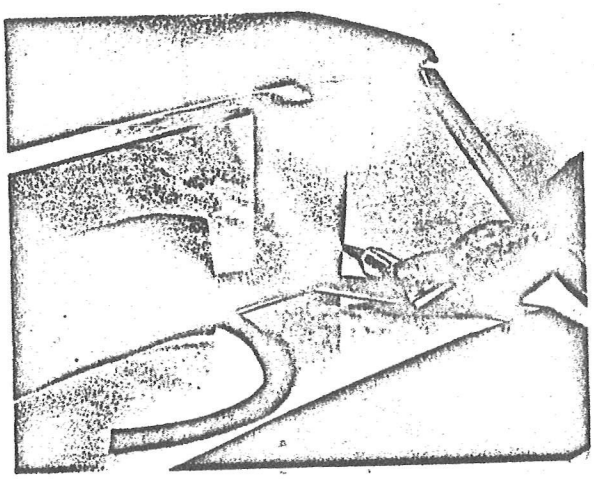


Remedy

Remove trim around windshield (see Workshop Manual Group 8, 5.1-1/1).
Reseal the windshield from the outside.
The Solbit material should be visible as a glossy black layer through the glass. If not, resealing will be necessary.
Seal beneath the outer clips at the base of the windshield with Terostat strip.

Item 4

Lower corners of rear window leaking.
Water entering between the rear bulkhead and its lining.



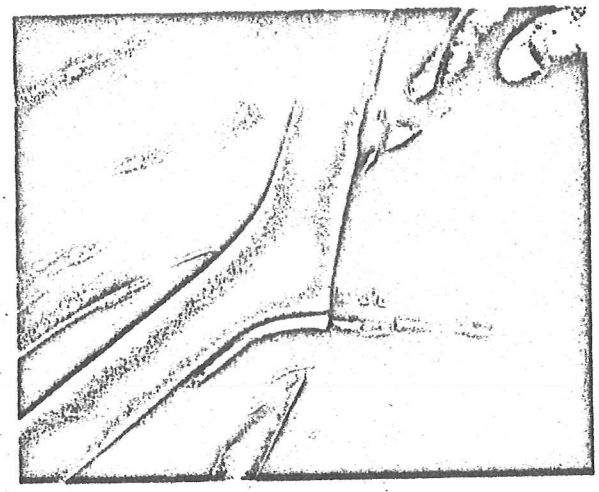
Remedy

Partly pull away the rubber seal strip from the flange between the engine compartment and the glass. Seal the glass at the rear face and press the seal strip back into position.

(Chassis number 470 290 4786)

Item 5

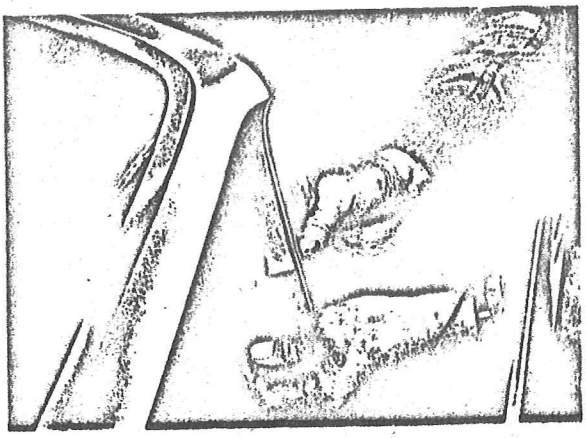
a. Roof seals at top of windshield frame leaking. Water enters through pickup hole for ski holder on windshield pillar and from the side member post into the car's interior. Also inside the protecting cap on the door window guide rail into the passenger compartment.



Remedy

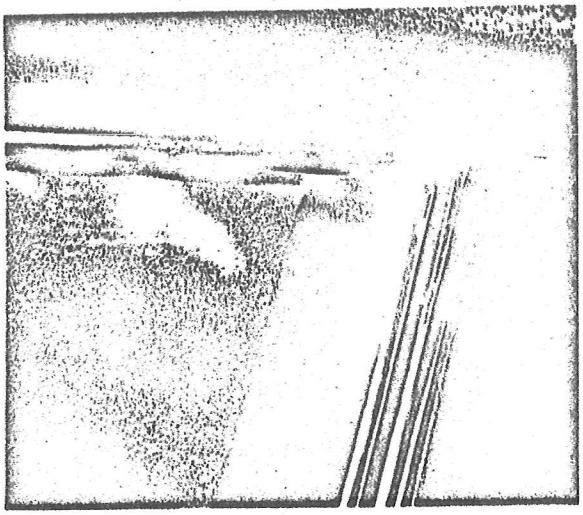
Seal off the plastic ski holder inserts with foam rubber cut to size. Seal the front edge of the rubber sectional strip against the windshield frame with Terokal 412 Union cement.

b. Windshield pillar seal leaking. Water entering between pillar and clamping strip and at the butt joint between the windshield surround seal and the roof side seal.



Remedy

Pull the rubber seal out of the clamping strip. Unscrew the clamping strip from the windshield pillar.
Attach Terostat strip under the curved top section of the clamping strip, and coat the entire length of the strip on the inside face with Bostik 292 Universal adhesive.
Re-attach the clamping strip and sealing strip. Align the door window guide correctly. The butt end should make a good seal under pressure with the roof side seal.

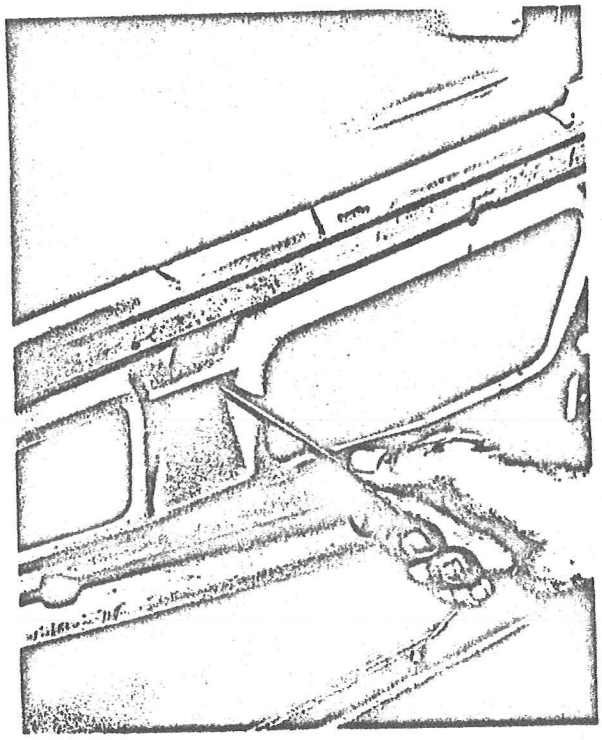


Item 6

a. Door windows set too low at rear. Water runs down from top of glass into car's interior.

Remedy

Unscrew the window lifter adjusting screw on the bottom of the door frame further (see Workshop Manual Group 8, 4. 1-7/2). If the range of adjustment is insufficient, remove the door trim panel, loosen the two rear fastening screws for the window lifter on the inner door panel and file the holes out upward to form slots. Loosen the lower fastening screw and place shim washers between lifter and door panel. Re-attach the window lifter in the new position.

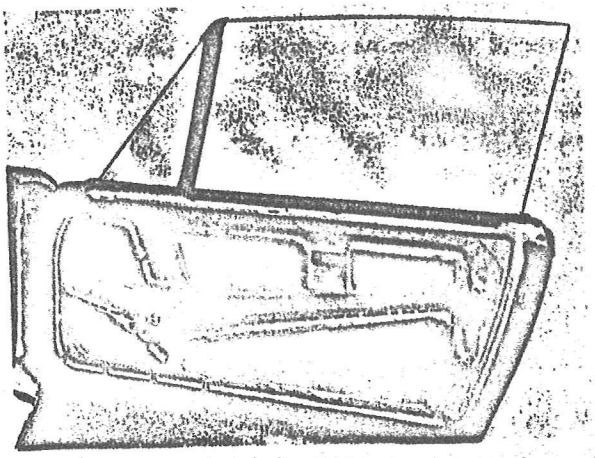


b. Door seal leaking.

Water enters under the door seal at the upper edge of the side member and penetrates the interior of the vehicle.

Remedy

Take off the door trim panel. Loosen the bottom falf of the plastic film over the complete width of the door and up to about half the height of the panel. Then cut a strip of plastic film about 25 cm (10 in.) wide and attach the top to the inner door panel. Trim the film and allow it to hang down through the cutouts in the door so that any moisture is directed through the water drain holes to the outside of the car. Replace damaged grommets (see picture) and re-attach the original plastic film carefully with adhesive.



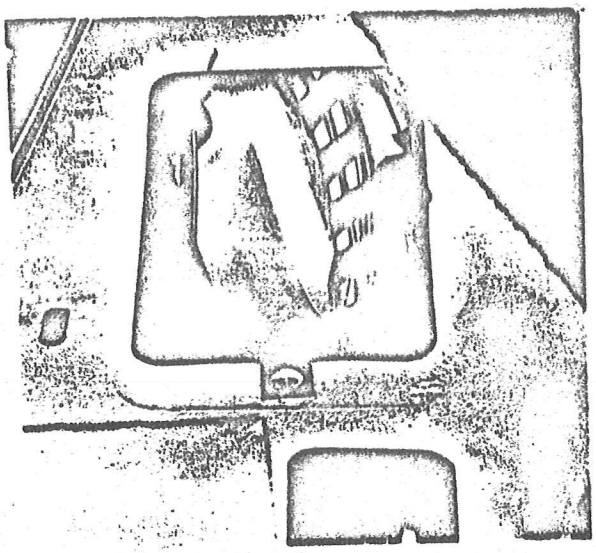
Item 7

a. Floor panel assembly leaking water.

Remedy

Examine all weld seams and spot weld flanges on the exterior of the floor panel assembly and carefully apply National 5100 sealer. If necessary remove trim and seal the weld seams from the inside.

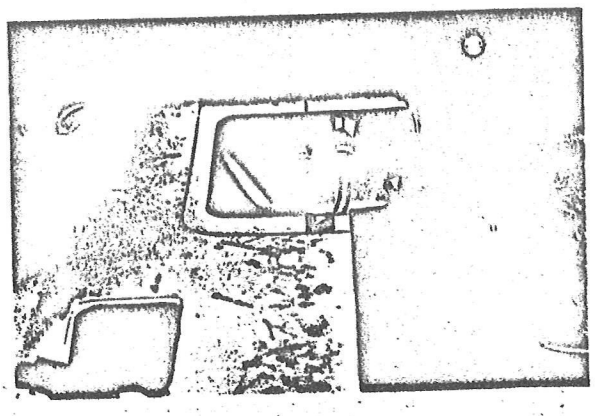
b. Front of center tunnel - water entering.



Remedy

Remove the pedal floor board. Fold back the center tunnel carpet. Take off the cover panel from the tunnel. Seal the holes for the brake and fuel lines with National 5100 sealer. Apply also to the brake line hole from underneath the car.

c. Rear of center tunnel leaking - on 914/6 Water entering car's interior through center tunnel.

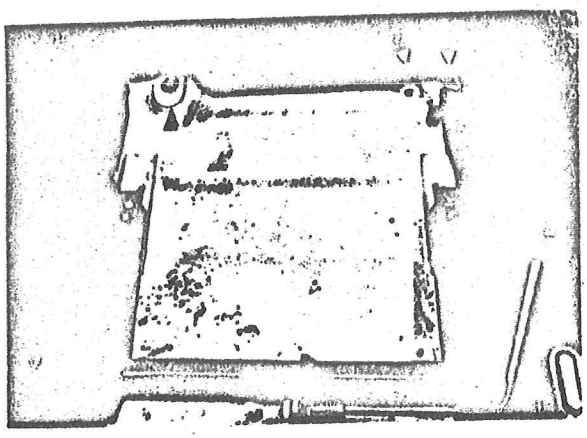


Remedy

Examine the floor panel and base of rear bulkhead near the 914/6 engine mounting, and carefully coat with National 5100 sealer. Remove the console and cover from the center tunnel and also apply the National 5100 sealer to the inside face.

(chassis number 914 043 0723)

d. Seal the seat belt anchorange reinforcement plates on the floor panel at both sides (see illustration).



(chassis number 470 290 4878)

e. Water in tunnel.

Remedy

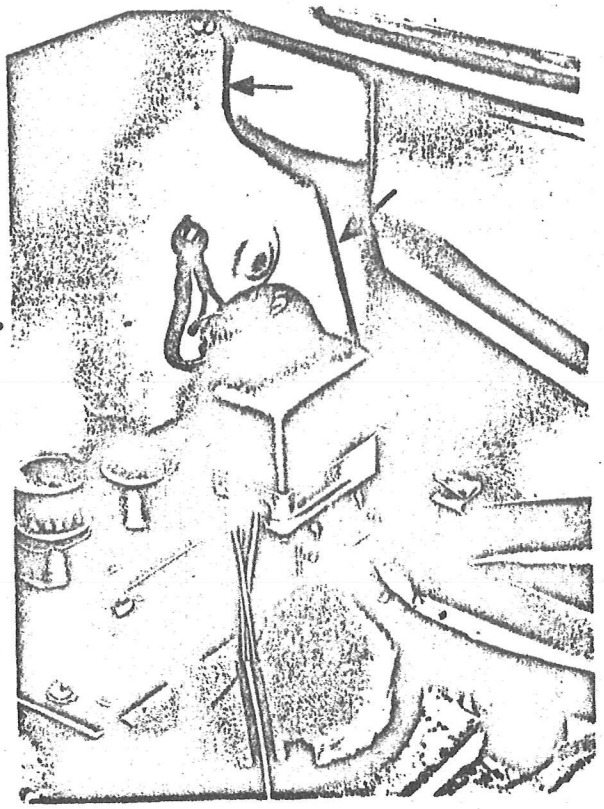
Drill a water drain hole at the lowest point on the floor panel and install a rubber vent grommet.

Item 8

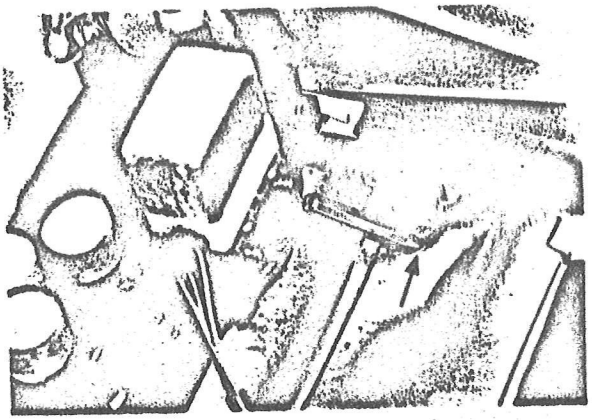
Water entering at rear bulkhead.

Remedy

Remove the driver's seat. Unscrew the console from the center tunnel. Remove the rear panel trim (see Workshop Manual Group 8, 6.1-1/1 to 3/1).

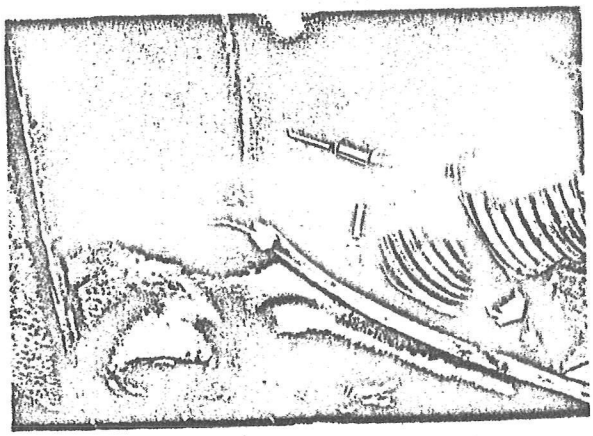


a. Inspect the entire length of the rear bulkhead joint with the wheel housing inner panel from the engine side. If necessary apply National 5100 sealer. Carefully seal the Bowden cable for the engine compartment release. Seal the same area from the passenger compartment side.



b. If not already present, punch out drain holes through the depressions in the engine panels on both sides. Clear existing holes if blocked.

Warning
Do not damage the steel side member stamping. Check the spot weld seam between rear bulkhead and lower section of bulkhead. If necessary coat on both sides with National 5100 sealer.



c. Check around outer handbrake cable tube and lower part of bulkhead for leaks.

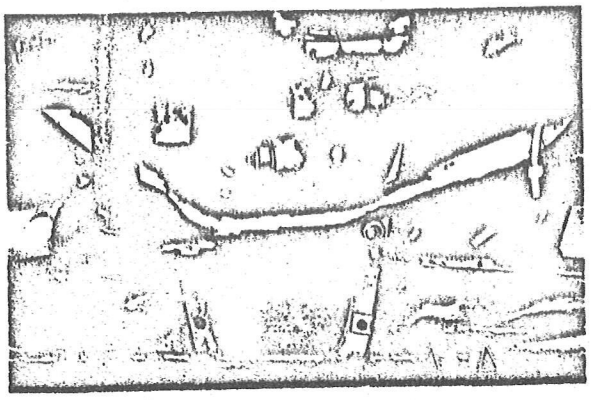
d. Water entering passenger compartment between guide tubes and handbrake cables.

Remedy

Detach the handbrake cables. Partly remove the handbrake cable guide from the tube support by turning. Wrap threads with Terostat strip. Reinstall the handbrake cable (see Workshop Manual Group 7, 1.3 - 1/1) and adjust.

(chassis number 470 290 5227)

e. Leakage at hole for fuel line, gearshift rod and speedometer shaft in lower section of rear bulkhead. Water entering passenger compartment.



(chassis number 470 290 5633)

Remedy

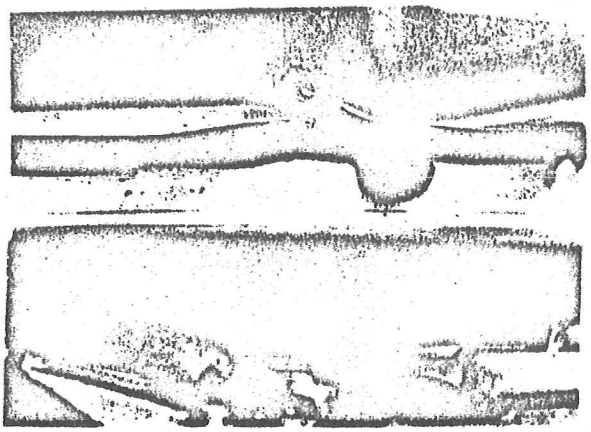
Seal the grommets with sealing compound.

Item 9

Water entering engine compartment.

Type 914

a. Water drain funnel not correctly centered below water drip tray.



Remedy

Bend funnel fastening at support.

(chassis number 470 290 5709)

b. Water entering tunnel and interior at point of cable harness division in engine compartment.

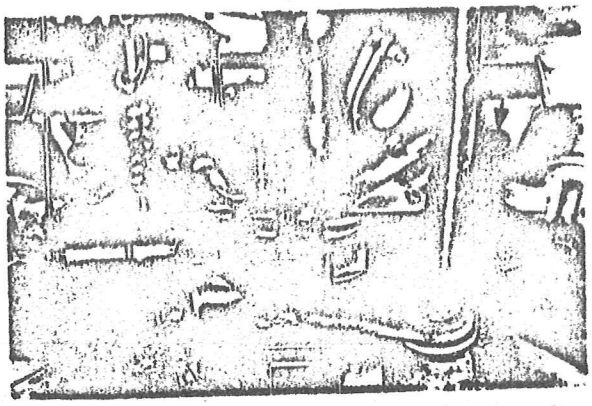
Remedy

Fill the junction above the rubber grommet with sealer and wrap with adhesive strip.

(chassis number 470 290 4632)

Item 10

Rear luggage compartment - water entering: inadequate pressure of lid seal, partial vacuum in luggage compartment.



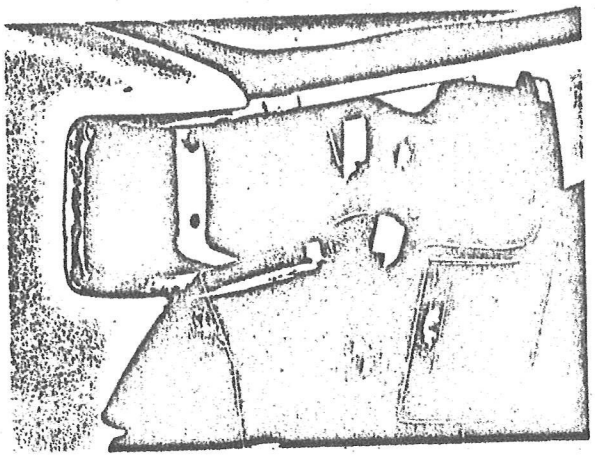
Remedy

a. Inspect luggage compartment floor and panels connected to the wheels housings. Reseal where necessary.

b. Close the holes in the cross member with plastic plugs 999.703.201.40 (see illustration).
(Water entering through threaded connection for spare wheel).

c. Rear shock absorber pans - leaking through to luggage compartment: apply National 5100 sealer to the shock absorber pans from the wheel side.

(chassis number 470 290 4770)



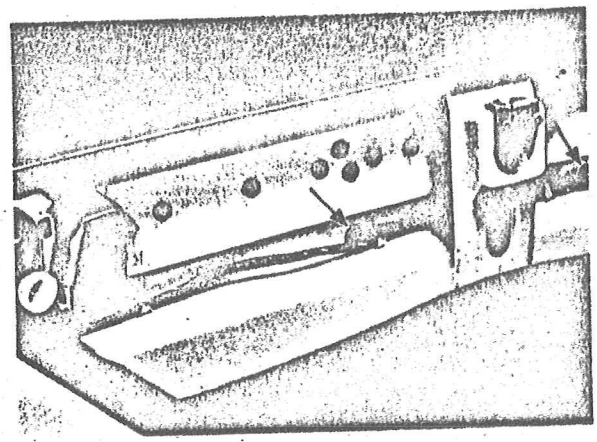
Rear end panel area

a. Rear light assemblies leaking
Water entering between end panel of body and assembly housing and penetrating luggage compartment.

Remedy

Remove the rear lights. Apply Terostat strip to the outer half of the sealing face on the end panel (half width) and re-install the rear lights.

Chassis number 470 290 5668



b. Water entering the lamp assemblies themselves

Remedy

Unscrew and remove the light assembly. Seal the lense gasket with Terostat strip as required. New gaskets installed from chassis number 470 290 4801

c. Seal type insignia attachment points.

d. Carefully seal the cable outlets through the end panel to the license plate lights with sealing compound