



XK

DATE 10/03

501-53

SERVICE

## TECHNICAL BULLETIN

### Water Entry Into Vehicle – Possible Causes – Guidelines

MODEL 1997 MY-ON  
XK Range  
VIN 001001-on

#### Issue:

In the event of customers complaining of water leaks on their vehicle, this Technical Bulletin has been issued to give Water Leak Diagnostic information and should be **used as a guide only**.

#### Action:

Before any action can be taken in diagnosing a water leak, it is necessary to question the customer to gain as much information as possible.

The following questions should be put to the customer before the diagnostic procedure can be started:

- When was the first water leak discovered?
- Was the vehicle damaged in an accident in the leaking area?
- Does the vehicle leak in the rain or on a wet road?
- Is the vehicle laden/unladen when it leaks?
- Does the road surface affect the water leak?
- Does the vehicle leak in a car wash?
- Does the vehicle leak when parked on a slope or level ground or both?
- Does the ambient temperature affect the water leak? I.e. cold/warm

There are two procedures to follow depending on the information given by the customer. If there is enough information supplied by the customer so that a diagnosis is possible, follow the procedure in Section 1. If a diagnosis is not possible from the information supplied by the customer, follow the procedure listed in section 2.

**Note:** Before beginning with the following procedures, refer to the recommended Tools, Equipment and Materials in Appendix 1.

**NOTE:** The information in Technical Bulletins is intended for use by trained, professional technicians with the knowledge, tools, and equipment to do the job properly and safely. It informs these technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by "do-it-yourselfers." Do not assume that a condition described affects your car. Contact a Jaguar retailer to determine whether the Bulletin applies to your vehicle.

## SECTION 1 - DIAGNOSIS POSSIBLE FROM CUSTOMER INFORMATION

If the diagnosis is possible from the information given by the customer, follow the diagnostic procedure below.

1. Visually inspect the area for missing or damaged outer seals or trim components.
2. Check the water drainage holes are clear.
3. Have the trim components been retrofitted?

**Note:** Incorrectly retrofitted parts can cause water leaks.

4. Expose the leaking area by removing trim components, carpets and anti-drumming material.
5. Locate any signs of water and follow its trail.
6. Is the water clean or dirty?

**Note:** Clean water normally enters from above and dirty water normally enters from below.

7. Clean and dry the wet area in the interior.
8. Using the Ultra Violet (UV) lamp, test for the leakage path. (See Appendix 2)
9. Having identified the leak, dry the affected area, using warm air if necessary. The appropriate remedial action should then be carried out.

**Note:** Once the remedial action has been carried out, repeat the water test in the area the leak was detected.

## SECTION 2 - DIAGNOSIS NOT POSSIBLE FROM CUSTOMER INFORMATION

If the diagnosis is not possible from the information given by the customer, follow the diagnostic procedure below.

**Note:** Check for related Technical Bulletins before proceeding.

1. Visually inspect the area for missing or damaged outer seals or trim components.
2. Check the water drainage holes are clear.
3. Expose the leaking area by removing trim components, carpets and anti-drumming material.
4. Locate any signs of water and follow its trail.
5. Clean and dry the wet area in the interior.
6. Visually inspect the area for accident damage or damage that has already been repaired.

7. Have the trim components been retrofitted?

**Note:** Incorrectly retrofitted parts can cause water leaks.

8. Carry out a water test to locate the leaks. (See Appendix 3)
9. Using the Ultra Violet (UV) lamp, test for the leakage path. (See Appendix 2)
10. Road test the vehicle in various conditions:
- Laden/unladen
  - Different speeds
  - Different road surfaces
  - Varying road gradients

**Note:** Be careful when assessing wet/damp areas as these can be misread due to internal/external conditions i.e. Snow being carried into the vehicle on shoes or defrosting of windows leading to the fascia/interior trim becoming soaked.

11. Having identified the leak, dry the affected area, using warm air if necessary. The appropriate remedial action should then be carried out.

**Note:** Once the remedial action has been carried out, repeat the water test in the area the leak was detected.

## Possible Water Ingress Points into the Vehicle

### Water Ingress around the luggage compartment

Issue: Water ingress into the spare wheel well and the luggage compartment carpet is wet.

Possible cause: The luggage compartment aperture seal is distorted (see Illustration 1).

**Note: If the seal is distorted water can track between aperture seal and luggage compartment lid.**

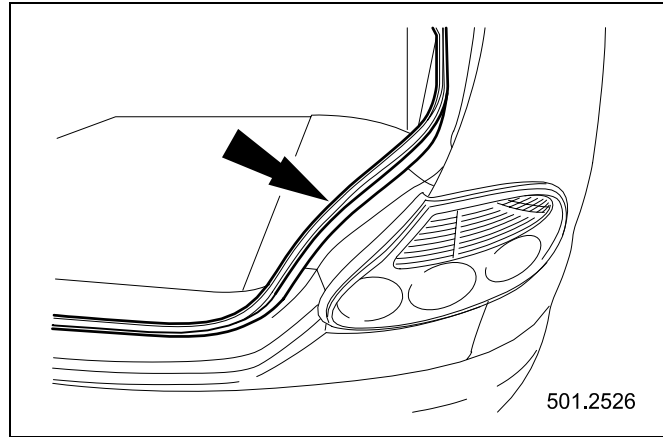


Illustration 1

Issue: Water ingress into the spare wheel well and the luggage compartment carpet is wet.

Possible cause: Water tracking underneath the luggage compartment aperture seal (see Illustration 2).

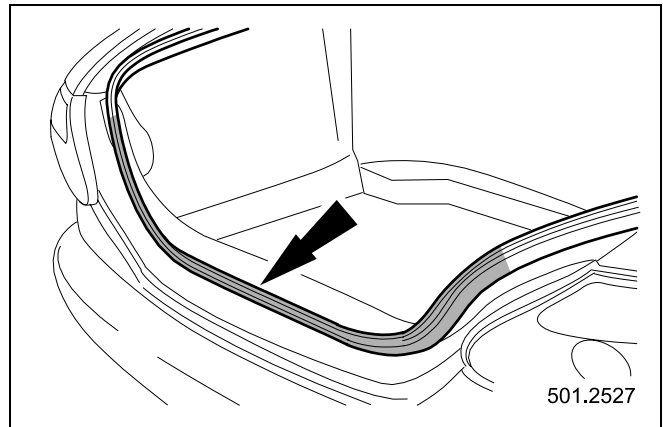


Illustration 2

Issue: The luggage compartment carpet is wet at one or both sides.

Possible cause: The luggage compartment aperture seal flange is distorted or bent near to the hinge/strut (see Illustration 3).

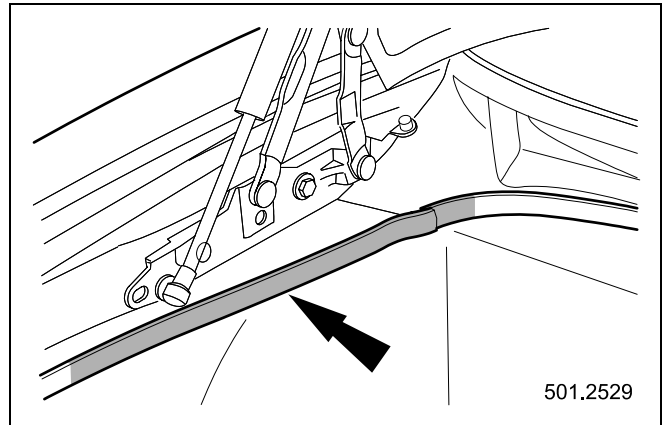


Illustration 3

Issue: The luggage compartment carpet is wet towards the rear of the luggage compartment.  
Possible cause: Fender seam leaking (see Illustration 4).

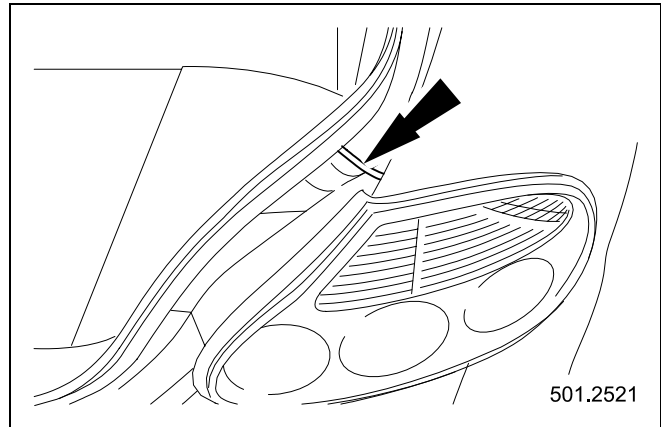


Illustration 4

Issue: The luggage compartment carpet is wet towards the front of the luggage compartment.  
Possible cause: Forward channel seam leaking (see Illustration 5).

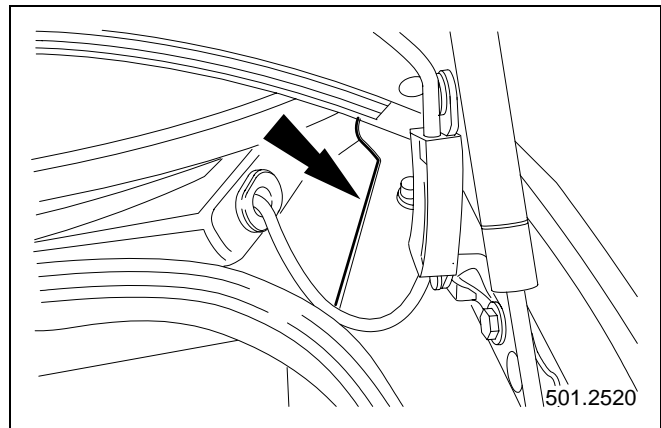


Illustration 5

Issue: Water ingress towards the front of the luggage compartment.  
Possible cause: Hole at the hood to fender joint, not correctly sealed (see Illustration 6).

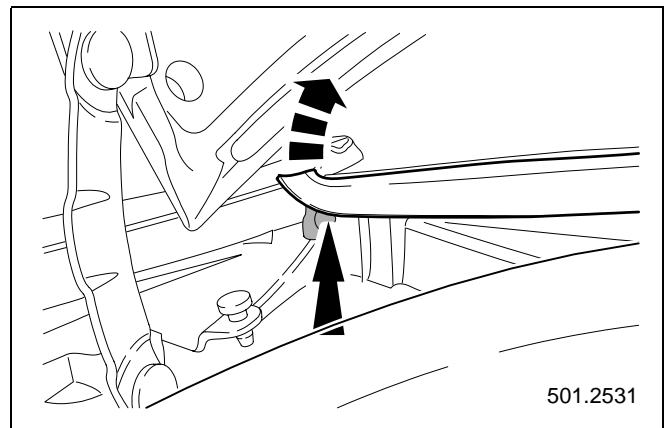


Illustration 6

Issue: Water ingress towards the front of the luggage compartment.  
Possible cause: Luggage compartment harness grommet not correctly installed (see Illustration 7).

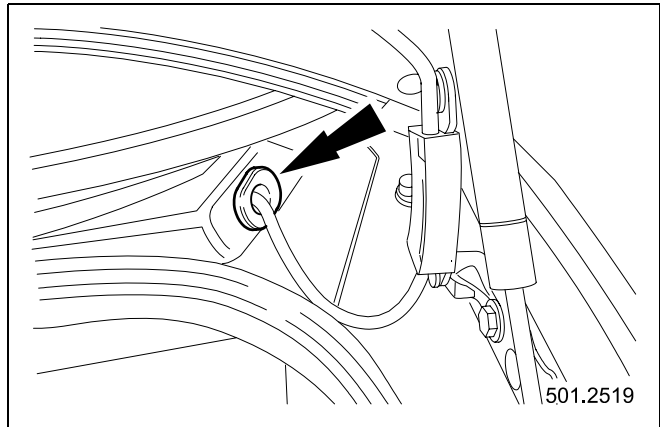


Illustration 7

Issue: Water ingress at the sides of the luggage compartment.  
Possible cause: Wheel arch seams leaking (see Illustration 8).

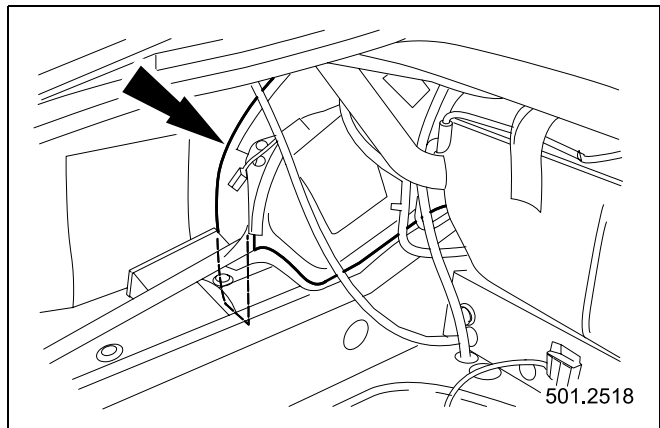


Illustration 8

Issue: Water ingress towards the front of the luggage compartment.  
Possible cause: When the vehicle is fitted with a space saver wheel, the installation of the trunk board may displace the grommets (see Illustration 9).

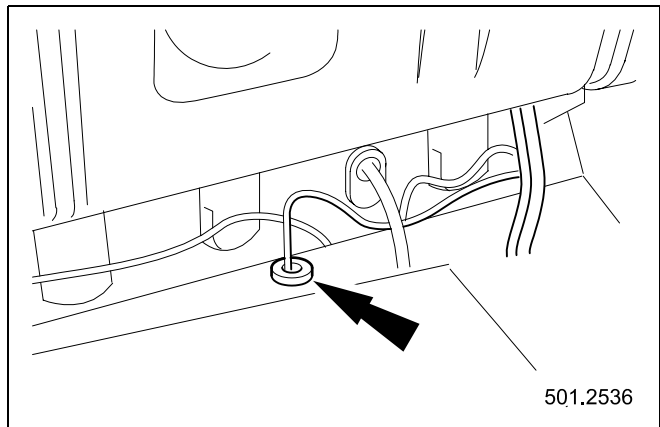


Illustration 9

## Water Ingress around the doors

Issue: Draft-welt wet at rear of tread plate.  
Possible cause: Water ingress from under the top rear section of the door seal (see Illustration 10).

**Note: Remove door seal and apply a suitable wet sealant (to the area shown) to block the water path.**

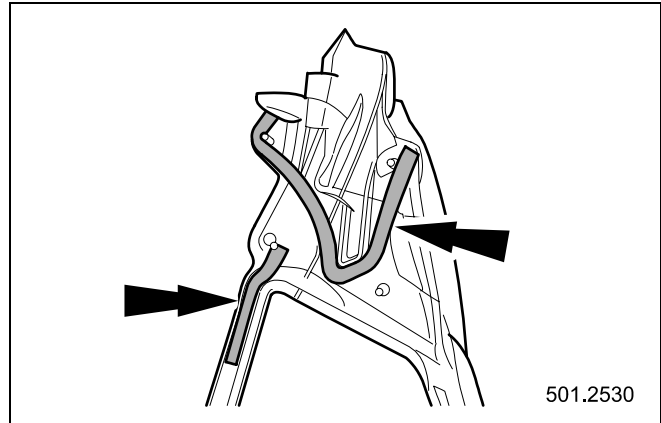


Illustration 10

Issue: Sill carpet wet at rear or front of the tread plate.  
Possible cause: Water ingress point at joint of cantrail finisher (see Illustration 11).

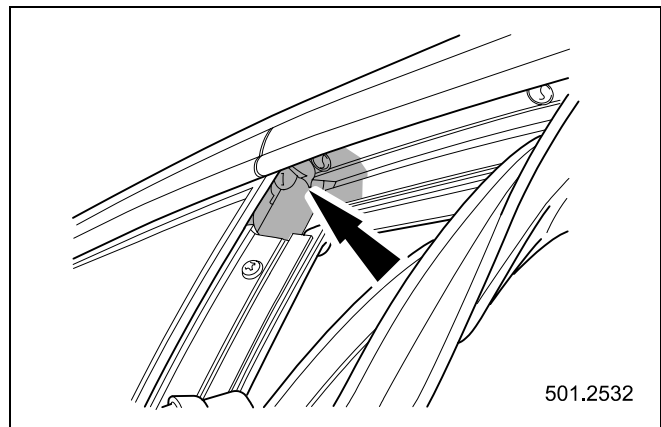


Illustration 11

Issue: Water ingress into the front footwell and front sill carpet is wet.  
Possible cause: Water ingress point at the door mirror harness grommet (see Illustration 12).

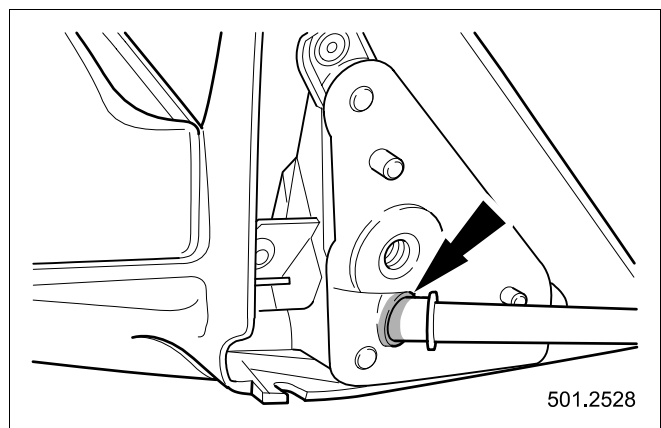


Illustration 12

Issue: Water ingress into the front footwell and front sill carpet is wet.  
Possible cause: Water ingress through the door speaker seal (see Illustration 13).

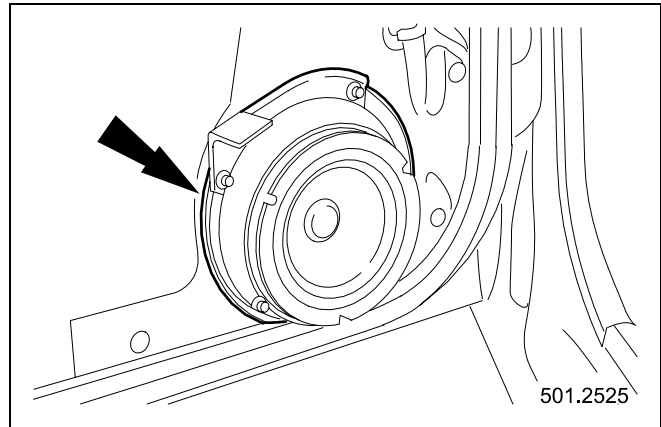


Illustration 13

Issue: On vehicles up to VIN A34929. Water ingress from the top of the 'A' post.  
Possible cause: Gap between the front hood seal and the header seal (see Illustration 14).

**Note: On vehicles prior to VIN A34929, replace the front hood frame seal with modified parts - part numbers HJG7778AA or HJG7779AA.**

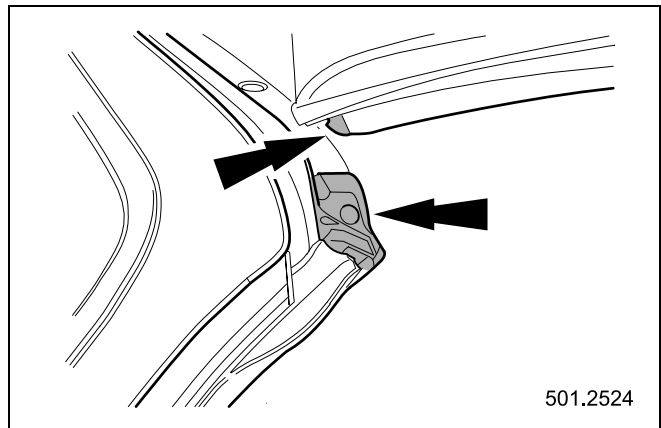


Illustration 14

Issue: Water ingress around the door glass cheater seal.  
Possible cause: The door glass cheater seal is split due to incorrect glass height adjustment (see Illustration 15).

**Note: Replace seal and reset the door glass, refer to Technical Bulletin X501-52 Door Glass Height Adjustment.**

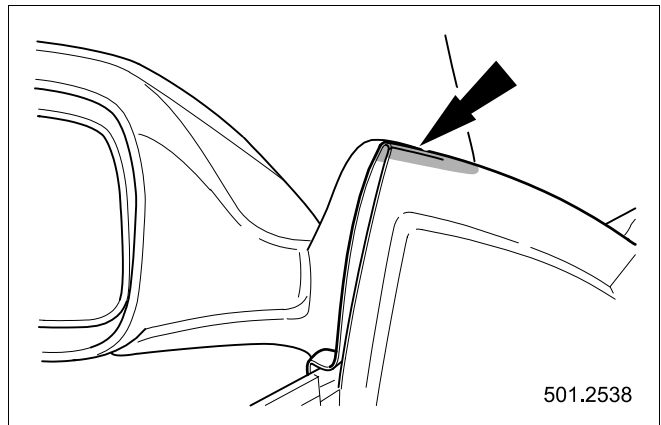


Illustration 15



### Water Ingress into the front footwells

Issue: Water ingress into the front footwell.  
Possible cause: Pinholes in the body sealant at the lower corner of windscreen. This seam extends underneath the front fender (see Illustration 16).

**Note: If it is necessary to seal along the full length of the seam, the front fender will need to be removed by a Jaguar approved body repair center.**

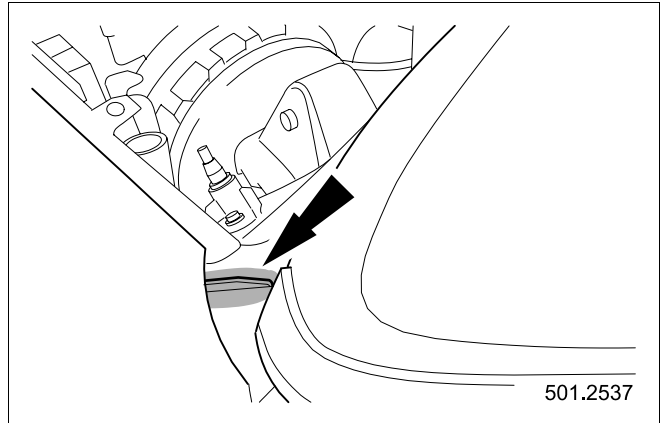


Illustration 16

Issue: Water ingress into the front footwell.  
Possible cause: Poor sealing of the vertical seam at rear of the engine bay (see Illustration 17).

**Note: Follow seam up under the windscreen flange.**

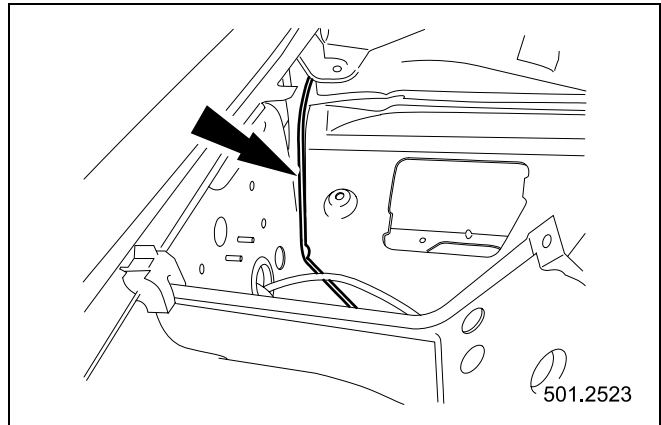


Illustration 17

Issue: Water ingress into the passenger front footwell.  
Possible cause: On left hand drive vehicles only - water ingress through the accelerator cable blanking grommet on the right hand side of the vehicle (see Illustration 18).

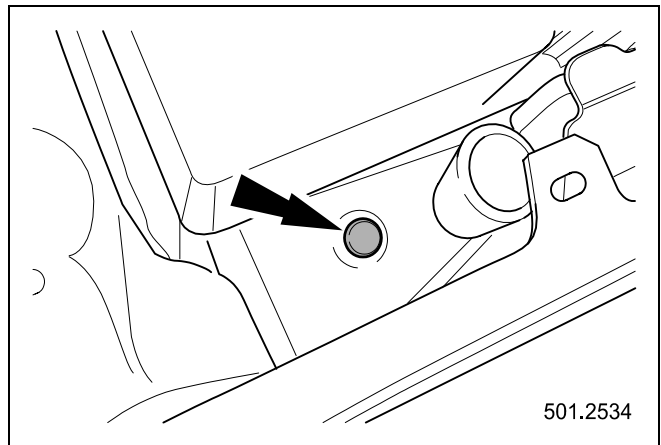


Illustration 18

Issue: Water ingress into the front footwell.  
Possible cause: Water ingress through the bonnet release cable grommet or the harness grommet (see Illustration 19).

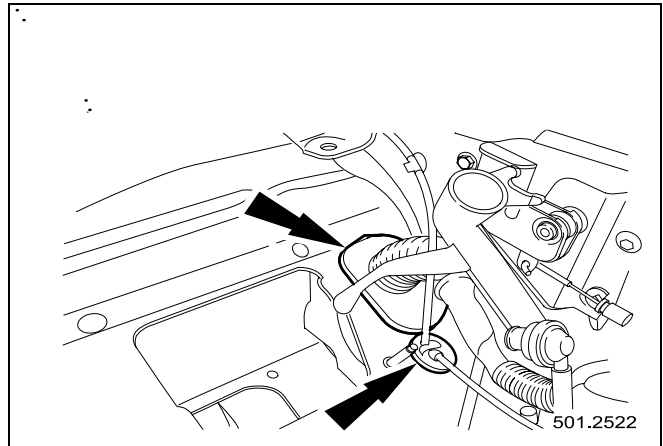


Illustration 19

Issue: Water ingress into the front footwell when the vehicle is parked facing uphill.  
Possible cause: Water ingress from the plenum chamber area (see Illustration 20).

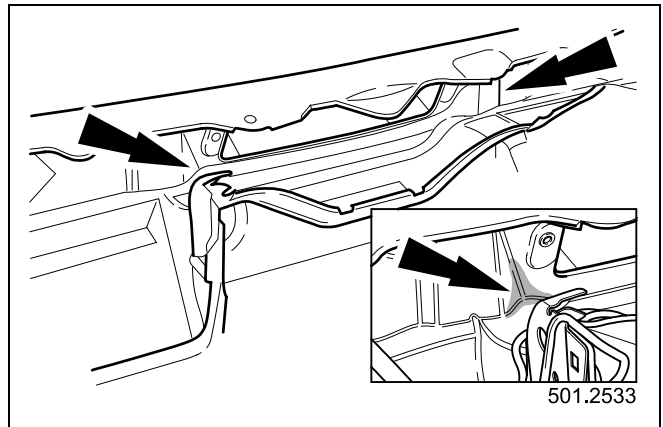


Illustration 20

## APPENDIX 1

### TOOLS, EQUIPMENT AND MATERIALS

The following can be used when proceeding with any of the Workshop Procedures listed in this Technical Bulletin:

- Dry absorbent clothes
- Variable water spray gun
- Flashlight
- Mirror
- Compressed air line and gun
- Wet/dry vacuum cleaner
- Sealer gun
- Suitable knife
- Wedge (plastic or wooden)
- Hot air blower
- UV Lamp
- Sealing compound (tape and plastic compound)
- Multipurpose adhesive
- Flange protection material
- Door sealing sheet (PVC)
- Double-sided adhesive tape for door sealing sheet
- Butyl tape for foam gaskets
- Denatured alcohol (from specialist suppliers)
- PU Adhesive
- Silicone remover
- Tar remover

## APPENDIX 2

### USE OF THE ULTRA VIOLET (UV) LAMP

**Note:** Before using the UV lamp, the safety instructions indicated in the operating instructions must be noted.

1. From the exterior of the vehicle, wet the affected area using the water spray gun.
2. From the exterior of the vehicle, spray the prepared test fluid (see UV lamp operation instructions) over the affected area/s.
3. Connect the UV lamp and from the interior of the vehicle illuminate the affected area (Illustration 21).
4. The leak is located as soon as a bluish reflection can be seen in the area of the water leak.

**Note:** Light colors absorb a part of the test fluid.  
Once a leak path has been identified, the test fluid must be thoroughly washed away using an appropriate cleanser.

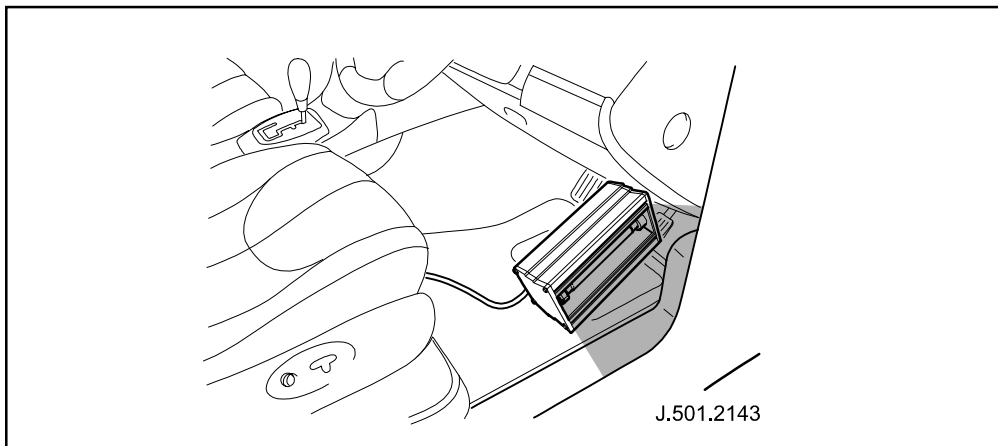


ILLUSTRATION 21

## APPENDIX 3

### WATER LEAK TESTING PROCEDURE

The water leak detection can be carried out using one of 2 methods:

- Using a car wash/jet wash when the ingress path is not clear.
- Using a variable water spray gun, when the ingress path has been isolated to a specific area.

**Note:** Before beginning with the following procedures, recommended Tools, Equipment and Materials can be found in Appendix 1.

### USING A CAR WASH/JET WASH:

A car wash/jet wash should be used when a water leak ingress path is not clear.

If it is suspected that a vehicle is leaking water from e.g. the front lower door area, ensure the area is completely dry then:

1. Have at least one person inside the vehicle while the car is being washed using the car wash/jet wash checking for signs of water ingress.
2. Look at the suspect area for signs of water seeping into the vehicle.
3. Once water seepage/ingress has been identified, mark the general location.

**Note:** When checking for signs of water ingress in darkened areas use a light.

4. Ensure there is no water ingress in any other area of the vehicle.
5. Once the car wash/jet wash is complete, return the vehicle to the workshop to perform the water leak test using the spray gun (see below).

### USING A VARIABLE SPRAY GUN:

The variable spray gun should be used once the leak ingress path has been isolated to a specific area i.e. door, luggage compartment etc...

If it is suspected that a vehicle is leaking water from e.g. the front lower door area, ensure the area is completely dry, then:

1. Have at least one person inside the vehicle checking for signs of water ingress.
2. From the exterior of the vehicle, direct the spray gun at the lowest point of the suspected leaking area (Illustration 22).

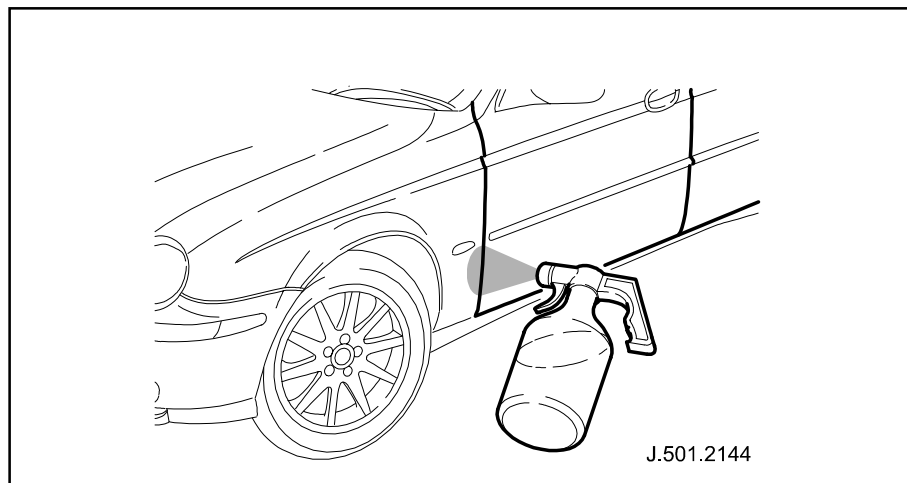


ILLUSTRATION 22

3. Working slowly upwards, spray water over the suspected leaking area until the person inside the vehicle identifies water seepage/ingress.
4. Ensure there is no water ingress from any other point around the suspect area.
5. Once all suspect areas have been tested, mark the ingress point and dry the tested area.
6. Perform the appropriate repair.