

PUBLISHED: 23-APR-2020
2020.0 DEFENDER (LE), 501-11

GLASS, FRAMES AND MECHANISMS

WINDSHIELD WATER INGRESS DIAGNOSTICS (G2683886)

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PRINCIPLES OF OPERATION

For a detailed description of the Glass, Frames and Mechanisms, refer to the relevant Description and Operation section in the workshop manual.

INSPECTION AND VERIFICATION

 CAUTION:

Diagnosis by substitution from a donor vehicle is **NOT** acceptable. Substitution of control modules does not guarantee confirmation of a fault, and may also cause additional faults in the vehicle being tested and/or the donor vehicle.

 NOTES:

- If a control module or a component is at fault and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual, or determine if any prior approval program is in operation, prior to the installation of a new module/component.
- When performing voltage or resistance tests, always use a digital multimeter that has the resolution ability to view 3 decimal places. For example, on the 2 volts range can measure 1mV or 2 K Ohm range can measure 1 Ohm. When testing resistance always take the resistance of the digital multimeter leads into account.
- Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.
- Refer to Section 100-00 General Information for window glass health and safety precautions.

1. Verify the customer concern
2. Visually inspect for obvious signs of damage and system integrity

Visual Inspection**MECHANICAL**

- Deterioration of window seals

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step

4. If the cause is not visually evident, verify the symptom and refer to the Symptom Chart, alternatively check for Diagnostic Trouble Code(s) (DTC) and refer to the DTC Index
5. Check JLR claims submission system for open campaigns. Refer to the corresponding bulletins and SSMS which may be valid for the specific customer complaint and complete the recommendations as required.

SYMPTOM CHART

SYMPTOM	POSSIBLE CAUSES	ACTION
Ingress of water into A-pillar area or instrument cluster area	■ Breaks in seals or adhesive beads	■ Identify the area of the leak (see procedures outlined below). Remove the windshield. Remove the existing adhesive bead and reapply using the correct bonding procedure

WINDSHIELD WATER INGRESS

GENERAL



NOTES:

- If water leaks are noted at the front end of the headliner, this may be as a result of windshield water ingress OR water ingress from the pano roof glass (if installed). To correctly identify the point of water ingress, lower the headliner and look for evidence of water ingress both from the windshield and the pano roof glass BEFORE continuing with the diagnostics described below. For guidance on diagnosis of pano roof glass (if installed) water ingress, see separate section in this manual (REFER to: Section 501-17 Roof Opening Panel - Diagnosis and Testing - Water Ingress Diagnostics).
- If water ingress is evident, perform the following procedures below.

If water leaks occur, the cause can be established using the checks described below. A systematic and logical procedure is required to locate water leaks. Before beginning extensive checks, a thorough visual inspection must be completed.

- Visual Inspection
 - The following characteristics may indicate existing water leaks:
 - Check the clearance and accurate fit of ancillary components such as the hood, tailgate, doors, and so on.
 - Check for correct fit and possible damage to sealing elements such as blanking plugs, rubber door weather strips, and so on.
 - Check water drain holes for unhindered flow.
- Various tests can be used to provide further information on possible leaks:

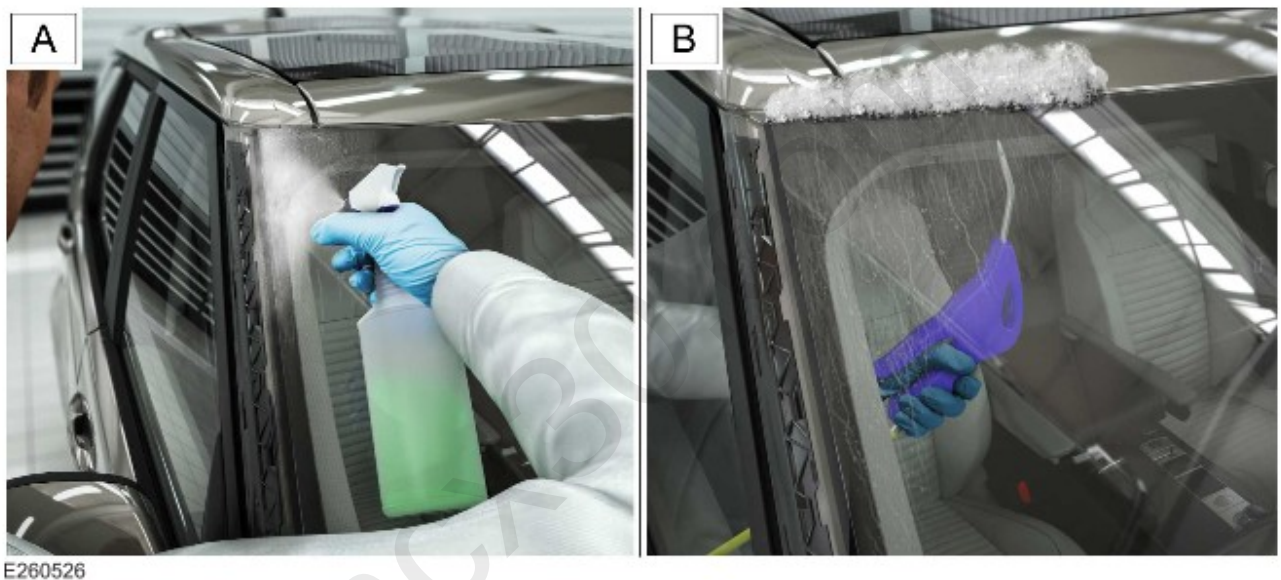
- The breaks in adhesive beads can be located by using compressed air from inside the vehicle. The leak location can be identified from outside by the escaping air.
- Water test
- Washer test
- Road test

PRACTICAL EXECUTION OF TESTS AND CHECKS

Compressed air test

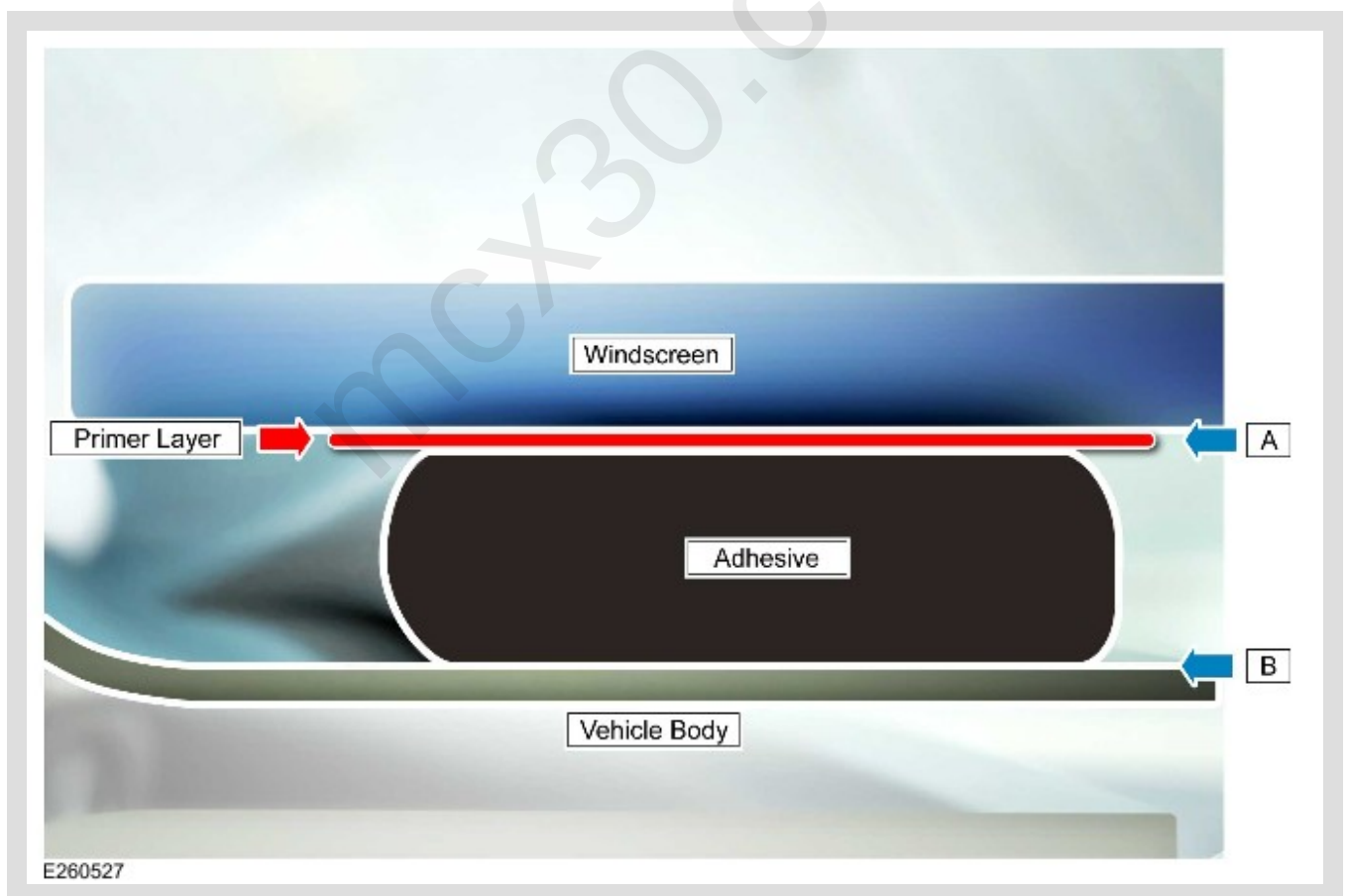
NOTE:

Complete the compressed air test with a second person present (in the passenger compartment).



- Lower the headliner at the front of the vehicle to give clear access to the upper section of the windshield inside the vehicle.
- The leak may be located behind the exterior A-pillar windshield mouldings (if installed), so these should be removed before commencing testing **Make sure the windshield moulding carrier remains installed** as this may be a source of the water leak and should be in situ for the tests as described below.
- On the outside of the vehicle, use a hand-held spray-bottle to apply a fine mist of soapy water to the areas all around the exterior windshield edge joints (see image A above - NOTE: image is NOT vehicle specific).
- From the inside of the vehicle, use an air hose to blow a jet of compressed air around the interior windshield edge joints.
- The leak should be located from outside by a second assistant. Bubbles will form in the affected area and escaping air may be audible (see image B above - NOTE: image is NOT vehicle specific).
- Take a photograph of the vehicle showing the location of the water ingress point(s) before proceeding. Make sure that an image is attached to an Electronic Product Quality Report (EPQR) before proceeding with any windshield removals.

- When the leak point(s) have been noted, remove the windshield. NOTE: Depending on the nature of the leak point, it may be possible to reuse the windshield. Consequently, make sure the correct equipment and procedures are utilized during removal of the windshield.
- When the windshield has been removed from the vehicle, it is important to confirm the specific nature of the leak. The image below shows a representation (not to scale) of the materials involved when a windshield is installed. A layer of primer is applied to the windshield glass; a layer of adhesive is applied; finally, the windshield is mounted into the frame. Consequently, there are two possible entry points for water ingress:
 - 1) Water ingress between the windshield adhesive layer and the windshield glass (see arrow A, below)
 - 2) Water ingress between the vehicle body and the windshield adhesive layer (see arrow B, below)
- Where possible, note the specific nature of the water ingress (as specified above). Photograph the leak point and attach both the photo and a written description of the location and nature of the water ingress/leak point to the EPQR.
- **If the leak point is identified as being between the vehicle body and the windshield adhesive layer, the existing windshield may be re-used.** Thoroughly remove all traces of adhesive and primer from the existing windshield, clean the windshield and refit.
- If the leak point is identified as being between the windshield adhesive layer and the windshield glass, the existing windshield should be replaced and a new windshield installed.



Water test



NOTES:

- Never aim a jet of water directly at a weather strip or rubber seals.
- DO NOT use a high pressure water hose for water testing.

- Complete the water test with a second person present (in the passenger compartment).
- Use variable washer nozzles (concentrated water jet to fine spray mist).
- Lower the headliner at the front of the vehicle to give clear access to the upper section of the windshield inside the vehicle.
- The outer trims must be raised carefully using a plastic wedge.
- Start in the lower section and spray the whole area, working upwards in stages.
- The leak should be located from inside by a second assistant.

Washer test

- Further tests can be completed in the washer system.
- Some leaks originate here, or only occur here.
- The relevant passenger compartment should be checked using a flashlight during the wash procedure.

Road test

- If no leaks are located during the tests above, road tests should be completed on wet roads.
- Road tests under various conditions:
 - At various speeds.
 - On various road surfaces (asphalt to cobbles).
 - With loaded or unloaded vehicle.
 - Driving through puddles (splash water).

Other test equipment

- Other equipment such as stethoscopes, ultraviolet (UV) lamps, special mirrors or ultrasound measuring instruments can be used to locate leaks.

DTC
INDEX

For a complete list of all Diagnostic Trouble Codes (DTCs) that could be set on this vehicle, please refer to Section 100-00.

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