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2020.0 DEFENDER (LE), 501-17

ROOF OPENING PANEL (G2401042)

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PRINCIPLE OF OPERATION

For a detailed description of the roof opening panel system and operation, refer to the relevant description and operation section of the workshop manual. REFER to: [Roof Opening Panel](#) (501-17 Roof Opening Panel, Description and Operation).

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 checked and/or the donor vehicle

 NOTES:

- If a control module or a component may be 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 accurate to three decimal places, and with an up-to-date calibration certificate. 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

1. Verify the customer concern

2. Visually inspect for obvious signs of mechanical or electrical damage

Visual Inspection

MECHANICAL	ELECTRICAL
■ Roof opening panel glass assembly ■ Roof opening panel glass seal ■ Frame assembly ■ Sunblind ■ Deflector ■ Access panel ■ Roof opening panel cables	■ Fuses ■ Battery junction box ■ Body control module ■ Wiring harness ■ Loose or corroded connector(s) ■ Roof opening panel motor and control module ■ Roof opening panel switch

MECHANICAL	ELECTRICAL
■ Drain tube(s)	

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) and refer to the Diagnostic Trouble Code(s) (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
Roof opening panel inoperative	■ Fuse(s) blown ■ Circuit fault ■ Switch fault ■ Motor fault	Check the fuse(s). Check the roof opening panel circuits. Check the switch and motor function. Refer to the electrical guides
Roof opening panel sticking	■ Debris in the channels /guides ■ Cable(s) sticking /damaged ■ Roof opening panel not correctly aligned ■ Switch fault ■ Motor fault	Check for general debris. Inspect, clean and lubricate the cable(s) and guides. Check the roof opening panel alignment. Refer to the relevant section of the workshop manual. Check the switch and motor function. Refer to the electrical guides
Roof opening panel juddering	■ Debris in the channels /guides ■ Cable(s) sticking /damaged ■ Roof opening panel not correctly aligned ■ Motor fault	Check for general debris. Inspect, clean and lubricate the cable(s) and guides. Check the roof opening panel alignment. Refer to the relevant section of the workshop manual. Check the motor function

Water ingress from roof opening panel	■ Debris in the channels /guides ■ Drain tube(s) blocked ■ Damage to the roof opening panel glass seal ■ Roof opening panel not correctly aligned	Check for general debris and blocked drain tube(s). Inspect, clean and lubricate the cable(s) and guides. Check the roof opening panel glass seal. Check the roof opening panel alignment. Refer to the relevant section of the workshop manual
Wind noise	■ Damage to the roof opening panel glass seal ■ Cable(s) sticking /damaged ■ Roof opening panel not correctly aligned	Check the roof opening panel glass seal. Inspect, clean and lubricate the cable(s) and guides. Check the roof opening panel alignment. Refer to the relevant section of the workshop manual
Roof opening glass panel will bounce back (ant-trap activating) when glass panel closed by one touch. This can occur when glass panel is closing from tilt or when panel contacts the wind deflector	■ Roof opening glass panel motors have not been initialised to in car fit conditions	■ Using the Jaguar Land Rover approved diagnostic equipment, connect to the vehicle through the Vehicle Communication Interface (VCI) unit and perform calibrations following the steps below: ■ ECU Diagnostics ■ Body Control Module (BCM) ■ List of ECU functions ■ Sunroof calibration (MAKE SURE the vehicle engine is running throughout the entire calibration procedure, power mode 7)

FURTHER DIAGNOSTICS FOR ROOF OPENING PANEL GLASS/ROOF OPENING PANEL BLIND ISSUES

The following diagnostic tests should be used if the customer reports that the roof opening panel glass and/or roof opening panel blind is not functioning as expected.

**NOTE:**

These diagnostic procedures allow the technician to accurately identify the precise nature of the roof opening panel glass/roof opening panel blind fault. To assist the retailer in understanding the concerns (so that the quality of the parts can be improved) please use the diagnostics aid below to correctly identify and report the specific concern description through the Retailer/Authorized Repairer warranty system

PINPOINT TEST A : ROOF OPENING PANEL GLASS/ROOF OPENING PANEL BLIND PINPOINT TESTS**A1: CHECK ROOF OPENING PANEL BLIND "ONE-TOUCH" OPEN FUNCTION**

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 With the roof opening panel blind in the closed position, press the roof opening panel blind open switch fully and then release it
	Does the roof opening panel blind open fully following "one-touch" operation of the roof opening panel blind switch? Yes If the roof opening panel blind opens fully, continue to roof opening panel glass opening checks GO toA3 . No If the roof opening panel blind only moves when the button is pressed or does not move at all GO toA2 .

A2: CHECK ROOF OPENING PANEL BLIND MANUAL OPEN FUNCTION

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Press the roof opening panel blind switch fully and hold it down
	Does the roof opening panel blind move while the roof opening panel blind switch is pressed but stop moving when the switch is released? Yes Record the fault description as No Blind One-Touch and report fault to JLR Retailer/Authorized Repairer Helpdesk. Refer to the table below for remedial actions for No Blind One-Touch faults. When remedial actions have been completed, continue to roof opening panel glass opening checks GO toA3 . No If there is no movement of the roof opening panel blind GO toA4 .

A3: CHECK ROOF OPENING PANEL GLASS "ONE-TOUCH" OPEN FUNCTION

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 With the roof opening panel glass in the closed position, press the roof opening panel glass open switch fully and then release it. The roof opening panel glass should move to a tilted position in response to the first operation of the roof opening panel glass open switch. Repeat the operation (press the roof opening panel glass open switch fully and then release it). The roof opening panel glass should open fully in response to the second operation of the roof opening panel glass open switch
	Does the roof opening panel glass operate as described above? Yes If the roof opening panel glass opens as expected, continue to roof opening panel glass closing checks GO toA5 . No If the roof opening panel glass only moves when the button is pressed or does not move at all GO toA6 .

A4: CHECK ROOF OPENING PANEL BLIND INITIALIZATION

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Press the roof opening panel blind close switch fully and hold it down
	Does the roof opening panel blind move?

A4: CHECK ROOF OPENING PANEL BLIND INITIALIZATION	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	Yes If the roof opening panel blind jogs forward a few millimetres and then returns to its original position, record the fault description as Blind - Lost Initialization and report fault to JLR Retailer/Authorized Repairer Helpdesk. Refer to the table below for remedial actions for Blind - Lost Initialization faults. Note: the glass and blind operation is a linked system. If the roof opening panel blind has lost initialization or has no function, this fault must be rectified before continuing with roof opening panel glass checks No If there is no movement of the roof opening panel blind, record the fault description as Blind - No Function and report fault to JLR Retailer/Authorized Repairer Helpdesk. Refer to the table below for remedial actions for Blind - No Function faults. Note: the glass and blind operation is a linked system. If the roof opening panel blind has lost initialization or has no function, this fault must be rectified before continuing with roof opening panel glass checks
A5: CHECK ROOF OPENING PANEL GLASS "ONE-TOUCH" CLOSE FUNCTION	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 With the roof opening panel glass in the open position, press the roof opening panel glass close switch fully and then release it. The roof opening panel glass should move back to a tilted position in response to the first operation of the roof opening panel glass close switch. Repeat the operation (press the roof opening panel glass close switch fully and then release it). The roof opening panel glass should close fully in response to the second operation of the roof opening panel glass close switch
	Does the roof opening panel glass operate as described above? Yes If the roof opening panel glass closes fully, the roof opening panel glass is functioning as expected, continue to roof opening panel blind closing checks GO to A8. No If the roof opening panel glass starts to close but then reverses and moves back to the open position, record the fault description as Glass Pinch Detection Error and report fault to JLR Retailer/Authorized Repairer Helpdesk. Refer to the table below for remedial actions for Glass Pinch Detection Error faults
A6: CHECK ROOF OPENING PANEL GLASS MANUAL OPEN FUNCTION	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Press the roof opening panel glass open switch fully and hold it down
	Does the roof opening panel glass move while the roof opening panel glass switch is pressed but stop moving when the switch is released? Yes Record the fault description as No Glass One-Touch and report fault to JLR Retailer/Authorized Repairer Helpdesk. Refer to the table below for remedial actions for No Glass One-Touch faults. When remedial actions have been completed, continue to roof opening panel blind closing checks GO to A8. No If there is no movement of the roof opening panel glass GO to A7.
A7: CHECK ROOF OPENING PANEL GLASS INITIALIZATION	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Press the roof opening panel glass close switch fully and hold it down
	Does the roof opening panel glass move? Yes If the roof opening panel glass jogs forward a few millimetres and then returns to its original position, record the fault description as Glass - Lost Initialization and report fault to JLR Retailer/Authorized Repairer Helpdesk. Refer to the table below for remedial actions for Glass - Lost Initialization faults. Note: the glass and blind operation is a linked system. If the roof opening panel glass has lost initialization or has no function, this fault must be rectified before continuing with roof opening panel blind checks

A7: CHECK ROOF OPENING PANEL GLASS INITIALIZATION	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	No If there is no movement of the roof opening panel glass, record the fault description as Glass - No Function and report fault to JLR Retailer/Authorized Repairer Helpdesk. Refer to the table below for remedial actions for Glass - No Function faults. Note: the glass and blind operation is a linked system. If the roof opening panel glass has lost initialization or has no function, this fault must be rectified before continuing with roof opening panel blind checks
A8: CHECK ROOF OPENING PANEL BLIND "ONE-TOUCH" CLOSE FUNCTION	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 With the roof opening panel blind in the open position, press the roof opening panel blind close switch fully and then release it
	Does the roof opening panel blind close fully following "one-touch" operation of the roof opening panel blind switch? Yes If the roof opening panel blind closes fully, the roof opening panel blind is functioning as expected. No further action required No If the roof opening panel blind starts to close but then reverses and moves back to the open position, record the fault description as Blind Pinch Detection Error and report fault to JLR Retailer/Authorized Repairer Helpdesk. Refer to the table below for remedial actions for Blind Pinch Detection Error faults. If the roof opening panel blind only moves while the roof opening panel blind close switch is pressed, record the fault description as No Blind One-Touch and report fault to JLR Retailer/Authorized Repairer Helpdesk. Refer to the table below for remedial actions for No Blind One-Touch faults

ROOF OPENING PANEL BLIND/ROOF OPENING PANEL GLASS FAULTS - REMEDIAL ACTIONS



NOTE:

If the roof opening panel blind is de-normalised the roof opening panel glass cannot open (roof opening panel blind position is not known). If the roof opening panel glass is de-normalised the roof opening panel blind cannot close (roof opening panel glass position is not known)

FAULT TYPE	REMEDIAL ACTION
- No Blind One-Touch - No Glass One-Touch	Check the body control module for related Diagnostic Trouble Code(s) and refer to the relevant DTC index. Check the operation of the relevant switches and circuits and rectify as required. After rectification of any faults, re-initialize the roof opening panel blind/roof opening panel glass as detailed below
- Blind - Lost Initialization - Glass - Lost Initialization	Check the body control module for related Diagnostic Trouble Code(s) and refer to the relevant DTC index. Check the operation of the relevant switches and circuits and rectify as required. After rectification of any faults, re-initialize the roof opening panel blind/roof opening panel glass as detailed below
	Check the guide rails and mechanism for any signs of damage or debris and rectify as required. After rectification of any faults, re-initialize the roof opening panel blind/roof opening panel glass as detailed below. If there is no sign of debris or mechanical damage, check if the roof finishers are installed too tightly to the sunroof rear panel. Remove

