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SEATING

SEATS – VEHICLES WITH: LUMBAR/MASSAGE (G2401035)

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PRINCIPLES OF OPERATION

For a detailed description of the Seating system, refer to the relevant Description and Operation section in the workshop manual. REFER to: [Seats - \[+\] 5 Seat Configuration](#) (501-10 Seating, 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 tested and/or the donor vehicle.

 NOTES:

- If the control module or a component may be at fault and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual (section B1.2), 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 damage and system integrity

Visual Inspection

MECHANICAL	ELECTRICAL
■ Lumbar/massage air pump(s) ■ Upper massage cells ■ Lower massage cells ■ Seat massage air hoses	■ Fuses ■ Wiring harnesses and connectors ■ Driver seat module ■ Passenger seat module ■ Touchscreen ■ LIN bus ■ Massage switchpack(s) ■ Lumbar/massage air pump(s)

MECHANICAL	ELECTRICAL
	■ Lumbar/massage solenoid(s) ■ Massage master solenoid(s) ■ Massage slave solenoid(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 Codes (DTCs) 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 CHARTS

2-Way Lumbar - Non-memory Front Seats



NOTE:

The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure.

SYMPTOM	POSSIBLE CAUSES	ACTION
All seat functions inoperative	■ Seat switchpack power or ground circuit open circuit, high resistance ■ Seat switchpack internal failure	■ GO to Pinpoint Test A.
Lumbar inflate inoperative	■ Seat switchpack internal failure ■ Lumbar air pump circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hose blocked ■ Air hose leaking ■ Air cell leaking	■ GO to Pinpoint Test B.
Lumbar deflate inoperative	■ Seat switchpack internal failure ■ Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hose blocked	■ GO to Pinpoint Test C.

4-Way Lumbar and Bolster - Non-memory Front Seats

**NOTE:**

The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure.

SYMPTOM	POSSIBLE CAUSES	ACTION
All seat functions inoperative	- Seat switchpack power or ground circuit open circuit, high resistance - Seat switchpack internal failure	GO to Pinpoint Test A.
Lumbar forward /up/down AND bolster inflate inoperative	- Seat switchpack internal failure - Lumbar air pump circuit short circuit to ground, short circuit to power, open circuit, high resistance - Air hose blocked - Air hose leaking - Relief valve stuck open	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. GO to Pinpoint Test D.
Lumbar forward inoperative	- Seat switchpack internal failure - Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance - Air hose blocked - Air hose leaking - Air cell leaking	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. GO to Pinpoint Test E.
Lumbar rearward inoperative	- Seat switchpack internal failure - Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance - Air hose blocked	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. GO to Pinpoint Test F.
Lumbar up inoperative	- Seat switchpack internal failure - Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance - Air hose blocked - Air hose leaking - Air cell leaking	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. GO to Pinpoint Test G.

SYMPTOM	POSSIBLE CAUSES	ACTION
Lumbar down inoperative	■ Seat switchpack internal failure ■ Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hose blocked ■ Air hose leaking ■ Air cell leaking	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test H.
Bolster inflate inoperative	■ Seat switchpack internal failure ■ Lumbar air pump circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hoses blocked/leaking ■ Air cells leaking	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test I.
Bolster deflate inoperative	■ Seat switchpack internal failure ■ Bolster solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hoses blocked	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test J.

4-Way Lumbar and Bolster - Memory Front Seats



NOTE:

The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure.

SYMPTOM	POSSIBLE CAUSES	ACTION
All seat functions inoperative	■ Seat system fault ■ Seat switchpack power or ground circuit open circuit, high resistance ■ Seat switchpack internal failure	■ GO to Pinpoint Test A.
Lumbar forward/up /down AND bolster inflate inoperative	■ Seat switchpack internal failure ■ Lumbar air pump circuit short circuit to ground,	

SYMPTOM	POSSIBLE CAUSES	ACTION
	short circuit to power, open circuit, high resistance ■ Air hose blocked ■ Air hose leaking ■ Relief valve stuck open	 NOTES: ■ Lumbar/massage air pump operation will be inhibited if the motor temperature exceeds 72±4°C (162±7°F). The lumbar/massage air pump will not re-start until 10 minutes after the temperature has decreased below the cut-off temperature. This condition is not a fault. ■ The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test D.
Lumbar forward inoperative	■ Seat switchpack internal failure ■ Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hose blocked ■ Air hose leaking ■ Air cell leaking	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test E.
Lumbar rearward inoperative	■ Seat switchpack internal failure ■ Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hose blocked	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test F.
Lumbar up inoperative	■ Seat switchpack internal failure ■ Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hose blocked ■ Air hose leaking ■ Air cell leaking	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test G.
Lumbar down inoperative	■ Seat switchpack internal failure ■ Lumbar solenoid circuit short circuit to ground,	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure.

SYMPTOM	POSSIBLE CAUSES	ACTION
	short circuit to power, open circuit, high resistance ■ Air hose blocked ■ Air hose leaking ■ Air cell leaking	■ GO to Pinpoint Test H .
Bolster inflate inoperative	■ Seat switchpack internal failure ■ Lumbar air pump circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hoses blocked /leaking ■ Air cells leaking	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test K .
Bolster deflate inoperative	■ Seat switchpack internal failure ■ Bolster solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hoses blocked	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test L .

4-Way Lumbar, Bolster and Massage - Front Seats



NOTE:

The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure.

SYMPTOM	POSSIBLE CAUSES	ACTION
All seat functions inoperative	■ Seat system fault ■ Seat switchpack power or ground circuit open circuit, high resistance ■ Seat switchpack internal failure	■ GO to Pinpoint Test A .
Lumbar forward/up /down AND bolster inflate AND	■ Seat switchpack internal failure	

SYMPTOM	POSSIBLE CAUSES	ACTION
massage functions inoperative	- Master massage solenoid power or ground circuit open circuit, high resistance - Lumbar air pump circuit short circuit to ground, short circuit to power, open circuit, high resistance - Air hose blocked - Air hose leaking - Relief valve stuck open	 NOTES: - Lumbar/massage air pump operation will be inhibited if the motor temperature exceeds $72\pm 4^{\circ}\text{C}$ ($162\pm 7^{\circ}\text{F}$). The lumbar/massage air pump will not re-start until 10 minutes after the temperature has decreased below the cut-off temperature. This condition is not a fault. - The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. - Using the Jaguar Land Rover approved diagnostic equipment, perform routine - On Demand Self Test. Check the relevant seat module for related DTCs and refer to the relevant DTC index
Lumbar forward inoperative	- Seat switchpack internal failure - Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance - Air hose blocked - Air hose leaking - Air cell leaking	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. GO to Pinpoint Test E.
Lumbar rearward inoperative	- Seat switchpack internal failure - Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance - Air hose blocked	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. GO to Pinpoint Test F.
Lumbar up inoperative	- Seat switchpack internal failure - Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance - Air hose blocked - Air hose leaking - Air cell leaking	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. GO to Pinpoint Test G.
Lumbar down inoperative	Seat switchpack internal failure	

SYMPTOM	POSSIBLE CAUSES	ACTION
	■ Lumbar solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hose blocked ■ Air hose leaking ■ Air cell leaking	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test H.
Bolster inflate inoperative	■ Seat switchpack internal failure ■ Lumbar air pump circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hoses blocked /leaking ■ Air cells leaking	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test K.
Bolster deflate inoperative	■ Seat switchpack internal failure ■ Bolster solenoid circuit short circuit to ground, short circuit to power, open circuit, high resistance ■ Air hoses blocked	 NOTE: The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test L.
Seat massage functions inoperative (all seats)	■ Incorrect power mode ■ Vehicle interior temperature too high /low	 NOTE: The engine must be running and the vehicle interior temperature must be between 0°C (32°F) and 50°C (122°F) for the seat massage functions to operate. ■ Start the engine and retest ■ Cool or warm the vehicle interior as necessary and retest
Seat massage functions inoperative (one seat only)	■ Lumbar/massage air pump thermal protection active ■ LIN bus ■ Massage master solenoid ■ Massage slave solenoid ■ Air hose blocked ■ Air hose leaking	 NOTES: ■ Lumbar/massage air pump operation will be inhibited if the motor temperature exceeds 72±4°C (162±7°F). The lumbar/massage air pump will not re-start until 10 minutes after the temperature has decreased below the cut-off temperature. ■ The Lumbar/Massage solenoid block is installed with an air exhaust valve that is designed to expel air under operating conditions. This is not an air leak and does not represent a solenoid block failure. ■ GO to Pinpoint Test M.

SYMPTOM	POSSIBLE CAUSES	ACTION
	Air cell leaking	
Seat massage functions will not operate indefinitely	Massage seat functions cease when the timed cycle is complete	 NOTE: The seat massage cycle lasts approximately 10 minutes. Operate the massage seat switches again to repeat the cycle
Seat massage uncommanded operation	Auto massage function active	 NOTE: The auto massage function allows seat massage to commence automatically after a preset time (5, 15, 30 or 60 minutes). Set the auto massage function to off as necessary

ON DEMAND SELF TEST (ODST)

The On Demand Self Test (ODST) is performed using the Jaguar Land Rover approved diagnostic equipment as follows:

1. Begin a Diagnostic session
2. Select 'Body'
3. Select 'Seating'
4. Select the relevant seat
5. Run the On Demand Self Test (ODST) application

DTC INDEX

For a list of diagnostic trouble codes (DTCs) that could be set on this vehicle, please refer to Section 100-00. REFER to: [Diagnostic Trouble Code Index - DTC: Driver/Passenger/Rear Seat Module \(DSM/PSM/RSM\)](#) (100-00 General Information, Description and Operation).

PINPOINT TESTS

PINPOINT TEST A : SEAT SWITCHPACK TESTS	
A1: SEAT SWITCHPACK TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Check the specification of the seat
	Are there memory functions for the seat? Yes GO toA2. No GO toA3.
A2: SEAT SWITCHPACK TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
 NOTE: Some DTCs can only be set if the fault is detected during the On Demand Self Test routine.	
	1 Using the Jaguar Land Rover approved diagnostic equipment, perform routine - On Demand Self Test
	2 Using the Jaguar Land Rover approved diagnostic equipment, check the relevant seat module for related DTCs and refer to the relevant DTC index
	Are any relevant DTCs set? Yes Perform the relevant corrective action No GO toA3.
A3: SEAT SWITCHPACK TEST 3	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
 NOTE: Perform this test at every power circuit terminal in the seat switchpack connector.	
	1 Set a multimeter to measure voltage
	2 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only.
	3 Refer to the relevant section of the workshop manual and remove the seat switchpack
	4 Set the ignition to on
	 NOTE: Circuit reference - VBATT / GND -
	5 Connect the multimeter across the seat switchpack power terminal and the ground terminal

A3: SEAT SWITCHPACK TEST 3	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	Is the measured voltage less than battery voltage? Yes GO to A4. No Install a new seat switchpack
A4: SEAT SWITCHPACK TEST 4	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Circuit reference - GND - 1 Connect the multimeter to the seat switchpack ground terminal and battery negative
	Is the measured voltage greater than 0V? Yes Refer to the electrical circuit diagrams and check seat switchpack ground circuit for open circuit, high resistance. Repair the harness as necessary No Refer to the electrical circuit diagrams and check seat switchpack power circuit for open circuit, high resistance. Repair the harness as necessary

PINPOINT TEST B : 2-WAY LUMBAR INFLATE TESTS	
B1: 2-WAY LUMBAR INFLATE TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Set the ignition to on
	2 Operate the seat switchpack lumbar inflate switch
	3 Listen for the lumbar air pump operating
	Was the lumbar air pump operation audible? Yes GO to B2. No GO to B3.
B2: 2-WAY LUMBAR INFLATE TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: The battery support unit must be connected during this test to make sure that the power supply is stable.
	 NOTES: ■ Circuit reference - VBATT - ■ The 2-way lumbar inflate circuit current specification is 1.05A ± 10%.

B2: 2-WAY LUMBAR INFLATE TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Connect an inductive ammeter to the seat switchpack power circuit
	2 Set the ignition to on
	3 Operate the seat switchpack lumbar inflate switch
	Is the measured current within specification? Yes Check the lumbar air cell hose for leaks/blockages No Refer to the electrical circuit diagrams and check the lumbar air pump / lumbar inflate solenoid circuit for open circuit, high resistance
B3: 2-WAY LUMBAR INFLATE TEST 3	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only.
	1 Refer to the relevant section of the workshop manual and remove the seat switchpack
	2 Set a multimeter to measure voltage
	3 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Circuit reference - LUMBAR PUMP / GND -
	4 Connect the multimeter across the seat switchpack lumbar pump terminal and the ground terminal
	5 Set the ignition to on
	6 Operate the seat switchpack lumbar inflate switch
	Is the measured voltage less than battery voltage? Yes GO to Pinpoint Test A. No Refer to the electrical circuit diagrams and check the lumbar air pump / lumbar inflate solenoid circuit for short circuit to ground, short circuit to power, open circuit, high resistance

PINPOINT TEST C : 2-WAY LUMBAR DEFLATE TESTS	
C1: 2-WAY LUMBAR DEFLATE TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: The battery support unit must be connected during this test to make sure that the power supply is stable.

PINPOINT TEST C : 2-WAY LUMBAR DEFLATE TESTS	
C1: 2-WAY LUMBAR DEFLATE TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTES: ■ Circuit reference - VBATT - ■ The 2-way lumbar deflate circuit current specification is 0.50A ± 10%. 1 Connect an inductive ammeter to the seat switchpack power circuit
	2 Set the ignition to on
	3 Operate the seat switchpack lumbar deflate switch
	Is the measured current less than specification? Yes GO to C2. No Check the lumbar air cell hoses for blockages
C2: 2-WAY LUMBAR DEFLATE TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only. 1 Refer to the relevant section of the workshop manual and remove the seat switchpack
	2 Set a multimeter to measure voltage
	3 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Circuit reference - LUMBAR DEFLATE / GND - 4 Connect the multimeter across the seat switchpack lumbar deflate terminal and the ground terminal
	5 Set the ignition to on
	6 Operate the seat switchpack lumbar deflate switch
	Is the measured voltage less than battery voltage? Yes GO to Pinpoint Test A. No Refer to the electrical circuit diagrams and check the lumbar deflate solenoid circuit for short circuit to ground, short circuit to power, open circuit, high resistance

PINPOINT TEST D : 4-WAY LUMBAR AND BOLSTER INFLATE TESTS	
D1: 4-WAY LUMBAR AND BOLSTER INFLATE TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Set the ignition to on
	2 Operate the seat switchpack lumbar forward switch
	3 Listen for the lumbar air pump operating
	Was the lumbar air pump operation audible? Yes GO toD2. No GO toD3.
D2: 4-WAY LUMBAR AND BOLSTER INFLATE TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
 NOTE: The battery support unit must be connected during this test to make sure that the power supply is stable.	
	 NOTES: ■ Circuit reference - VBATT - ■ The 4-way lumbar forward circuit current specification is 1.55A ± 10%.
	1 Connect an inductive ammeter to the seat switchpack power circuit
	2 Set the ignition to on
	3 Operate the seat switchpack lumbar forward switch
	Is the measured current greater than specification? Yes Check the lumbar air pump hose for blockages No Check the lumbar air pump hoses for leaks
D3: 4-WAY LUMBAR AND BOLSTER INFLATE TEST 3	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only.
	1 Refer to the relevant section of the workshop manual and remove the seat switchpack
	2 Set a multimeter to measure voltage
	3 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Circuit reference - LUMBAR PUMP / GND -

	4 Connect the multimeter across the seat switchpack lumbar pump terminal and the ground terminal
	5 Set the ignition to on
	6 Operate the seat switchpack lumbar forward switch
	Is the measured voltage less than battery voltage? Yes GO to Pinpoint Test A. No Refer to the electrical circuit diagrams and check the lumbar air pump circuit for short circuit to ground, short circuit to power, open circuit, high resistance

PINPOINT TEST E : 4-WAY LUMBAR FORWARD TESTS	
E1: 4-WAY LUMBAR FORWARD TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
 NOTES: - When the seat switchpack lumbar forward switch is operated, the lumbar upper and lower inflate solenoids are energised. - The battery support unit must be connected during this test to make sure that the power supply is stable.	
	 NOTES: - Circuit reference - VBATT - - The 4-way lumbar forward circuit current specification is 1.55A ± 10%.
	1 Connect an inductive ammeter to the seat switchpack power circuit
	2 Set the ignition to on
	3 Operate the seat switchpack lumbar forward switch
	Is the measured current less than specification? Yes GO to E2. No Check the lumbar/bolster pump hose and the lumbar air cell hoses for blockages/leaks
E2: 4-WAY LUMBAR FORWARD TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only.
	1 Refer to the relevant section of the workshop manual and remove the seat switchpack
	2 Set a multimeter to measure voltage

E2: 4-WAY LUMBAR FORWARD TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	3 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Circuit reference - LUMBAR FWD / GND -
	4 Connect the multimeter across the seat switchpack lumbar forward terminal and the ground terminal
	5 Set the ignition to on
	6 Operate the seat switchpack lumbar forward switch
	Is the measured voltage less than battery voltage? Yes GO to Pinpoint Test A . No Refer to the electrical circuit diagrams and check the lumbar forward circuit for short circuit to ground, short circuit to power, open circuit, high resistance

PINPOINT TEST F : 4-WAY LUMBAR REARWARD TESTS	
F1: LUMBAR REARWARD TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTES: - When the seat switchpack lumbar rearward switch is operated, the lumbar upper and lower deflate solenoids are energised. - The battery support unit must be connected during this test to make sure that the power supply is stable.
	 NOTES: - Circuit reference - VBATT - - The 4-way lumbar rearward circuit current specification is 1.00A ± 10%.
	1 Connect an inductive ammeter to the seat switchpack power circuit
	2 Set the ignition to on
	3 Operate the seat switchpack lumbar rearward switch
	Is the measured current less than specification? Yes GO to F2. No Check the lumbar air cell hoses for blockages

F2: 4-WAY LUMBAR REARWARD TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only. 1 Refer to the relevant section of the workshop manual and remove the seat switchpack
	2 Set a multimeter to measure voltage
	3 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Circuit reference - LUMBAR RWD / GND - 4 Connect the multimeter across the seat switchpack lumbar rearward terminal and the ground terminal
	5 Set the ignition to on
	6 Operate the seat switchpack lumbar rearward switch
	Is the measured voltage less than battery voltage? Yes GO to Pinpoint Test A. No Refer to the electrical circuit diagrams and check the lumbar rearward circuit for short circuit to ground, short circuit to power, open circuit, high resistance

PINPOINT TEST G : 4-WAY LUMBAR UP TESTS	
G1: 4-WAY LUMBAR UP TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTES: - When the seat switchpack lumbar up switch is operated, the lumbar upper inflate solenoid and the lower deflate solenoids are energised. - The battery support unit must be connected during this test to make sure that the power supply is stable.
	 NOTES: - Circuit reference - VBATT - - The 4-way lumbar up circuit current specification is 1.55A ± 10%. 1 Connect an inductive ammeter to the seat switchpack power circuit
	2 Set the ignition to on
	3 Operate the seat switchpack lumbar up switch
	Is the measured current less than specification? Yes GO to G2.

PINPOINT TEST G : 4-WAY LUMBAR UP TESTS	
G1: 4-WAY LUMBAR UP TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	No Check the lumbar/bolster pump hose and the lumbar air cell hoses for blockages/leaks
G2: 4-WAY LUMBAR UP TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only. 1 Refer to the relevant section of the workshop manual and remove the seat switchpack
	2 Set a multimeter to measure voltage
	3 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Circuit reference - LUMBAR UP / GND - 4 Connect the multimeter across the seat switchpack lumbar up terminal and the ground terminal
	5 Set the ignition to on
	6 Operate the seat switchpack lumbar up switch
	Is the measured voltage less than battery voltage? Yes GO to Pinpoint Test A. No Refer to the electrical circuit diagrams and check the lumbar up circuit for short circuit to ground, short circuit to power, open circuit, high resistance

PINPOINT TEST H : 4-WAY LUMBAR DOWN TESTS	
H1: LUMBAR DOWN TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTES: - When the seat switchpack lumbar down switch is operated, the lumbar upper deflate solenoid and the lower inflate solenoids are energised. - The battery support unit must be connected during this test to make sure that the power supply is stable.
	 NOTES: - Circuit reference - VBATT - - The 4-way lumbar down circuit current specification is 1.55A ± 10%. 1 Connect an inductive ammeter to the seat switchpack power circuit

PINPOINT TEST H : 4-WAY LUMBAR DOWN TESTS	
H1: LUMBAR DOWN TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	2 Set the ignition to on
	3 Operate the seat switchpack lumbar down switch
	Is the measured current less than specification? Yes GO to H2. No Check the lumbar/bolster pump hose and the lumbar air cell hoses for blockages/leaks
H2: LUMBAR DOWN TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only. 1 Refer to the relevant section of the workshop manual and remove the seat switchpack
	2 Set a multimeter to measure voltage
	3 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Circuit reference - LUMBAR DWN / GND - 4 Connect the multimeter across the seat switchpack lumbar down terminal and the ground terminal
	5 Set the ignition to on
	6 Operate the seat switchpack lumbar down switch
	Is the measured voltage less than battery voltage? Yes GO to Pinpoint Test A. No Refer to the electrical circuit diagrams and check the lumbar down circuit for short circuit to ground, short circuit to power, open circuit, high resistance

PINPOINT TEST I : BOLSTER INFLATE TESTS	
I1: BOLSTER INFLATE TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: The battery support unit must be connected during this test to make sure that the power supply is stable.

PINPOINT TEST I : BOLSTER INFLATE TESTS

I1: BOLSTER INFLATE TEST 1

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTES: ■ Circuit reference - VBATT - ■ The bolster inflate circuit current specification is 1.05A ± 10%. 1 Connect an inductive ammeter to the seat switchpack power circuit
	2 Set the ignition to on
	3 Operate the seat switchpack bolster inflate switch
	Is the measured current less than specification? Yes GO to I2. No Check the lumbar/bolster pump hose and the bolster air cell hoses for blockages/leaks

I2: BOLSTER INFLATE TEST 2

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only. 1 Refer to the relevant section of the workshop manual and remove the seat switchpack
	2 Set a multimeter to measure voltage
	3 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Circuit reference - BOLSTER INF / GND - 4 Connect the multimeter across the seat switchpack bolster inflate terminal and the ground terminal
	5 Set the ignition to on
	6 Operate the seat switchpack bolster inflate switch
	Is the measured voltage less than battery voltage? Yes GO to Pinpoint Test A. No Refer to the electrical circuit diagrams and check the bolster inflate circuit for short circuit to ground, short circuit to power, open circuit, high resistance

PINPOINT TEST J : BOLSTER DEFLATE TESTS

J1: BOLSTER DEFLATE TEST 1

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
 NOTE: The battery support unit must be connected during this test to make sure that the power supply is stable.	
	 NOTES: ▪ Circuit reference - VBATT - ▪ The bolster deflate circuit current specification is 0.50A ± 10%.
	1 Connect an inductive ammeter to the seat switchpack power circuit
	2 Set the ignition to on
	3 Operate the seat switchpack bolster deflate switch
	Is the measured current less than specification? Yes GO to J2. No Check the bolster air cell hoses for blockages

J2: BOLSTER DEFLATE TEST 2

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only.	
	1 Refer to the relevant section of the workshop manual and remove the seat switchpack
	2 Set a multimeter to measure voltage
	3 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Circuit reference - BOLSTER DEF / GND -
	4 Connect the multimeter across the seat switchpack bolster deflate terminal and the ground terminal
	5 Set the ignition to on
	6 Operate the seat switchpack bolster deflate switch
	Is the measured voltage less than battery voltage? Yes GO to Pinpoint Test A. No Refer to the electrical circuit diagrams and check the bolster deflate circuit for short circuit to ground, short circuit to power, open circuit, high resistance

PINPOINT TEST K : MEMORY SEAT BOLSTER INFLATE TESTS

K1: MEMORY SEAT BOLSTER INFLATE TEST 1

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
 NOTE: Some DTCs can only be set if the fault is detected during the On Demand Self Test routine.	
	Using the Jaguar Land Rover approved diagnostic equipment, perform routine - On Demand Self Test
	Using the Jaguar Land Rover approved diagnostic equipment, check the relevant seat module for related DTCs and refer to the relevant DTC index
	Are any relevant DTCs set? Yes Perform the relevant corrective action No GO to K2.

K2: MEMORY SEAT BOLSTER INFLATE TEST 2

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
 NOTE: The battery support unit must be connected during this test to make sure that the power supply is stable.	
	 NOTES: - Circuit reference - VBATT - - The bolster inflate circuit current specification is 1.05A ± 10%. - Connect an inductive ammeter to the seat switchpack power circuit
	Set the ignition to on
	Operate the seat switchpack bolster inflate switch
	Is the measured current less than specification? Yes GO to K3. No Check the lumbar/bolster pump hose and the bolster air cell hoses for blockages/leaks

K3: MEMORY SEAT BOLSTER INFLATE TEST 3

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only. Refer to the relevant section of the workshop manual and remove the seat switchpack
	Set a multimeter to measure voltage

K3: MEMORY SEAT BOLSTER INFLATE TEST 3	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	3 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Circuit reference - BOLSTER INF / GND -
	4 Connect the multimeter across the seat switchpack bolster inflate terminal and the ground terminal
	5 Set the ignition to on
	6 Operate the seat switchpack bolster inflate switch
	Is the measured voltage less than battery voltage? Yes GO to Pinpoint Test A . No Refer to the electrical circuit diagrams and check the bolster inflate circuit for short circuit to ground, short circuit to power, open circuit, high resistance

PINPOINT TEST L : MEMORY SEAT BOLSTER DEFLATE TESTS	
L1: MEMORY SEAT BOLSTER DEFLATE TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Some DTCs can only be set if the fault is detected during the On Demand Self Test routine.
	1 Using the Jaguar Land Rover approved diagnostic equipment, perform routine - On Demand Self Test
	2 Using the Jaguar Land Rover approved diagnostic equipment, check the relevant seat module for related DTCs and refer to the relevant DTC index
	Are any relevant DTCs set? Yes Perform the relevant corrective action No GO to L2.
L2: MEMORY SEAT BOLSTER DEFLATE TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: The battery support unit must be connected during this test to make sure that the power supply is stable.
	 NOTES: ■ Circuit reference - VBATT - ■ The bolster deflate circuit current specification is 0.50A ± 10%.

L2: MEMORY SEAT BOLSTER DEFLATE TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Connect an inductive ammeter to the seat switchpack power circuit
	2 Set the ignition to on
	3 Operate the seat switchpack bolster deflate switch
	Is the measured current less than specification? Yes GO to L3. No Check the bolster air cell hoses for blockages
L3: MEMORY SEAT BOLSTER DEFLATE TEST 3	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: Do not disconnect the electrical connector during this step; the seat switchpack is removed for access to the wiring harness only.
	1 Refer to the relevant section of the workshop manual and remove the seat switchpack
	2 Set a multimeter to measure voltage
	3 Using the multimeter, measure and record the battery voltage (reference voltage)
	 NOTE: Circuit reference - BOLSTER DEF / GND -
	4 Connect the multimeter across the seat switchpack bolster deflate terminal and the ground terminal
	5 Set the ignition to on
	6 Operate the seat switchpack bolster deflate switch
	Is the measured voltage less than battery voltage? Yes GO to Pinpoint Test A. No Refer to the electrical circuit diagrams and check the bolster deflate circuit for short circuit to ground, short circuit to power, open circuit, high resistance

PINPOINT TEST M : MESSAGE SEAT TESTS	
M1: MESSAGE SEAT TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Using the Jaguar Land Rover approved diagnostic equipment, perform routine - On Demand Self Test
	2 Check the relevant seat module for related DTCs
	Are any relevant DTCs set? Yes Perform the relevant corrective action

PINPOINT TEST M : MESSAGE SEAT TESTS	
M1: MESSAGE SEAT TEST 1	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	No GO to M2.
M2: MESSAGE SEAT TEST 2	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	 NOTE: The message circuit current specification is 1.10A ± 10%.
	1 Connect an inductive ammeter to the message master solenoid power circuit
	2 Set the seat massage function to on
	Is the measured current less than specification? Yes Refer to the electrical circuit diagrams and check the seat massage circuits for open circuit, high resistance No Check the message air cell hoses for blockages/leaks

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