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AUTOMATIC TRANSMISSION

DIAGNOSTICS - VEHICLES WITH: 8HP76 8-SPEED AUTOMATIC TRANSMISSION, AWD (G2413847)

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PRINCIPLES OF OPERATION

For a detailed description of the Automatic Transmission, refer to the relevant Description and Operation section in the workshop manual. REFER to: [Transmission Description - Vehicles With: 8HP76 8-Speed Automatic Transmission, AWD](#) (311-01 Automatic Transmission, Description and Operation).

INSPECTION, VERIFICATION AND ADDITIONAL WARNINGS FOR ELECTRIC VEHICLES

**WARNINGS:**

- A risk assessment must be performed before any work is undertaken. Failure to comply with this instruction may result in personal injury or death.
- All electric vehicle work must be performed by a suitably qualified person. Failure to comply with this instruction may result in personal injury or death.
- Appropriate Personal Protection Equipment (PPE) must be worn when working on or near an electric vehicle high voltage system. Failure to comply with this instruction may result in personal injury or death.
- The hybrid/EV battery pack casing must not be disassembled due to the risk of exposure to hazardous voltage. Failure to comply with this instruction may result in personal injury or death.
- The electric power inverter converter casing must not be disassembled due to the risk of exposure to hazardous voltage. Failure to comply with this instruction may result in personal injury or death.
- If the hybrid/EV battery pack is damaged or overcharged, there is a risk of exposure to hazardous voltage and/or highly corrosive electrolyte mist. If liquid or vapour is observed leaking from the hybrid/EV battery pack, take the following action:
 - Evacuate the area.
 - Notify manager.
 - Do not breathe smoke/vapor.
 - Contain spillage using spill kit.
 - Wash any spillage off body and clothing (remove contaminated clothing).
- If the electric vehicle warning indicator is illuminated, the battery energy control module cannot isolate the high voltage cables. Be aware that live working will be necessary to rectify the fault. Failure to comply with this instruction may result in personal injury or death.
- Be aware that a motor generator can generate a voltage if the wheels are rotated, even if the electric vehicle system has been made safe. Failure to comply with this instruction may result in personal injury or death.

CAUTIONS:

- 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.
- When probing connectors to take measurements in the course of the pinpoint tests, use the adaptor kit, part number 3548-1358-00.

NOTES:

- If the control module or a component is suspect and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual, or determine if any prior approval programme is in operation, prior to the installation of a new module/component.
- Generic scan tools may not read the codes listed, or may read only 5-digit codes. Match the 5 digits from the scan tool to the first 5 digits of the 7-digit code listed to identify the fault (the last 2 digits give extra information read by the manufacturer-approved diagnostic system).
- 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.
- Inspect connectors for signs of water ingress, and pins for damage and/or corrosion.
- If DTCs are recorded and, after performing the pinpoint tests, a fault is not present, an intermittent concern may be the cause. Always check for loose connections and corroded terminals.
- 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 carry out the recommendations as required.

1. Verify the customer concern

2. Visually inspect for obvious signs of damage and system integrity

Visual Inspection

MECHANICAL	ELECTRICAL	HYDRAULIC
■ Transmission Control Switch (TCS) ■ Automatic transmission ■ Motor generator ■ Motor generator cooling system	■ Fuses ■ Wiring harnesses and connectors ■ High voltage cables ■ Hybrid electric vehicle battery pack ■ Battery Energy Control Module (BECM) ■ Electric Power Inverter Converter Module (EPICM) ■ Motor generator ■ Motor generator coolant pump	■ Automatic transmission fluid level /condition ■ Automatic transmission fluid cooler pipes ■ Automatic transmission fluid cooler

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 carry out the recommendations as required.

AUTOMATIC TRANSMISSION FLUID

FLUID LEVEL AND CONDITION CHECK

CAUTION:

The vehicle should not be driven if the fluid level is low as internal failure can result.

NOTE:

The transmission fluid temperature must not be allowed to exceed 50°C (122°F) whilst checking level. Should the temperature rise above this figure, abort the check and allow the transmission fluid to cool to below 30°C (86°F).

This vehicle is not equipped with a fluid level indicator. An incorrect level may affect the transmission operation and could result in transmission damage. To correctly check and add fluid to the transmission. Refer to the relevant section in the workshop manual.

HIGH FLUID LEVEL

A fluid level that is too high may cause the fluid to become aerated due to the churning action of the rotating internal parts. This will cause erratic control pressure, foaming, loss of fluid from the vent tube and possible transmission damage. If an overfill condition is identified, with the engine at idle ensure the fluid temperature is within the specified range and allow the excess fluid to drain until a small thread of fluid runs from the filler/level plug hole.

LOW FLUID LEVEL

A low fluid level could result in poor transmission engagement, slipping, or damage. This could also indicate a leak in one of the transmission seals or gaskets.

ADDING FLUID

CAUTION:

The use of any other type of transmission fluid other than that specified can result in transmission damage.

If fluid needs to be added, add fluid in 0.50 liter increments through the fill hole opening. Do not overfill the fluid. For fluid type, refer to the Specification section in the workshop manual.

FLUID CONDITION CHECK

1. Check the fluid level.
2. Observe the color and the odor of the fluid. The color under normal circumstances should be like honey, not dark brown or black.
3. Allow the fluid to drip onto a facial tissue and examine the stain.
4. If evidence of solid material is found, the transmission fluid pan should be removed for further inspection.

NOTE: In the event of a transmission unit replacement for internal failure, the oil cooler and pipes must also be replaced.

VIBRATION FROM TRANSMISSION

Vibration from the transmission may be caused by the installation of incorrect front/rear drive units. Refer to Sections 205-02 and 205-03 for further guidance on how to diagnose and rectify this issue

DTC INDEX

For a list of Diagnostic Trouble Codes (DTCs) that could be logged on this vehicle, please refer to Section 100-00. REFER to: [Diagnostic Trouble Code Index - DTC: Transmission Control Module \(TCM\) for 8HP76/51 Transmission](#) (100-00 General Information, Description and Operation).