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AUTOMATIC TRANSMISSION

DIAGNOSTICS - VEHICLES WITH: 8HP70 8-SPEED AUTOMATIC TRANSMISSION AWD (G2391366)

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PRINCIPLE OF OPERATION

For a detailed description of the automatic transmission/transaxle system and operation, refer to the relevant Description and Operation sections in the workshop manual. REFER to: [Transmission Description - Vehicles With: 8HP70 8-Speed Automatic Transmission AWD](#) (311-01 Automatic Transmission, Description and Operation).

FLUID LEVEL AND CONDITION CHECK

 CAUTION:

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

 NOTE:

The transmission fluid temperature must not be allowed to exceed 50°C (122°F) when checking levels. 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 check and add fluid to the transmission, refer to the relevant section in the workshop manual. **REFER to General Procedures - Transmission Fluid Level Check.**

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 breather tube and possible transmission damage. If an overfill condition is identified, with the engine at idle make sure 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. Refer to the oil leak detection process in this document to aid diagnosis.

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, follow the fill process shown in the relevant section in the workshop manual. **REFER to General Procedures - Transmission Fluid Level Check.** 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. Refer to the relevant section in the workshop manual. **REFER to General Procedures - Transmission Fluid Level Check.**
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.

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.

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

Visual Inspection

MECHANICAL	ELECTRICAL	HYDRAULIC
■ Damaged/stuck shift mechanism ■ Damaged automatic transmission casing	■ Blown fuse(s) ■ Damaged, loose or corroded connectors/pins ■ Wiring harness	■ Fluid level too high/low ■ Poor condition of fluid ■ Fluid leak

3. Check the 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.
4. If the cause is not visually evident check for Diagnostic Trouble Codes (Diagnostic Trouble Code(s) (DTC)s) and refer to the DTC Index.
5. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

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.

8-SPEED TRANSMISSION ISSUES - OIL LEAK DETECTION

Symptom Chart

SYMPTOM	POSSIBLE SOURCES	ACTION
Oil leak from underneath the vehicle or a leak is discovered during routine service	Oil leak	Follow the service instruction below

SERVICE INSTRUCTION



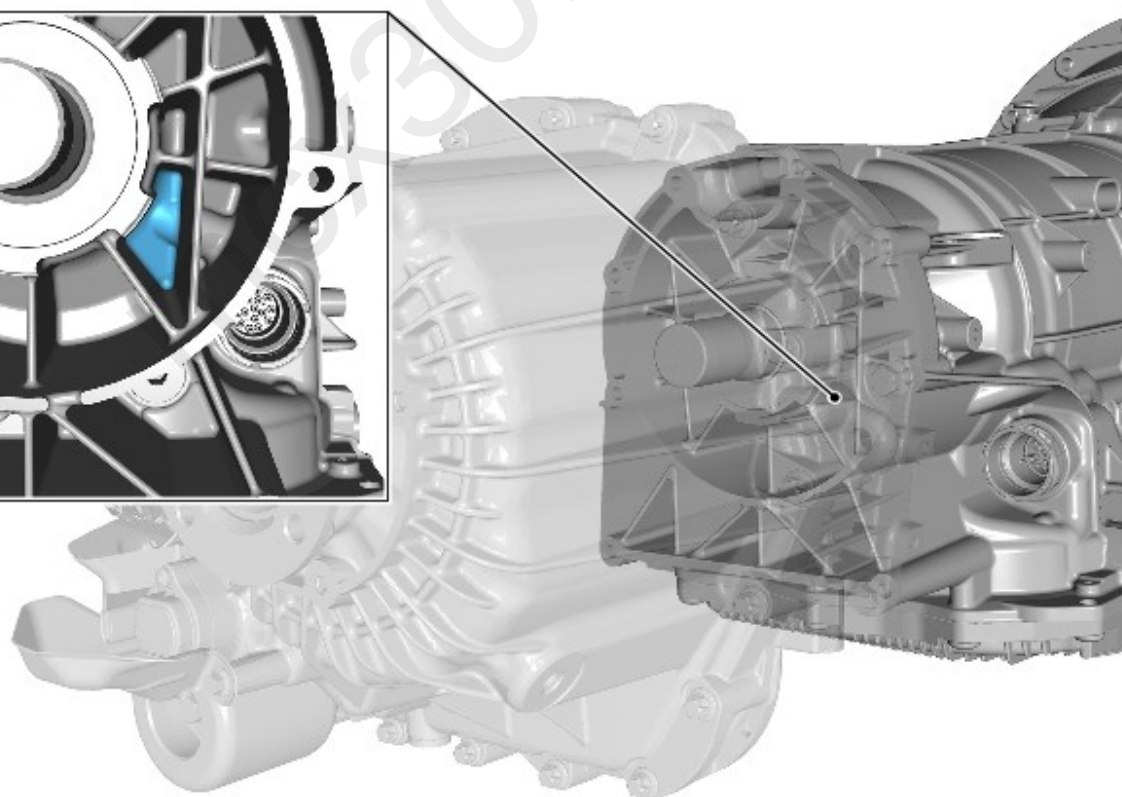
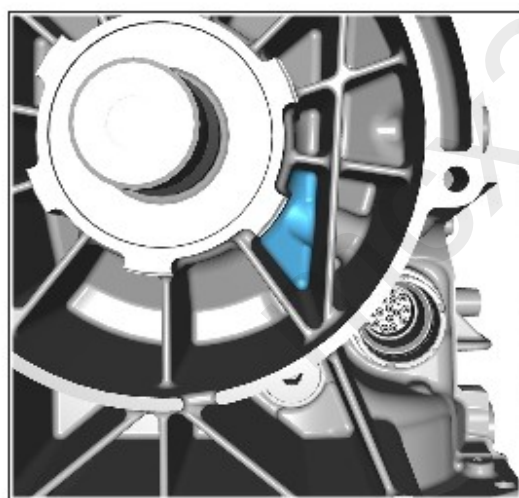
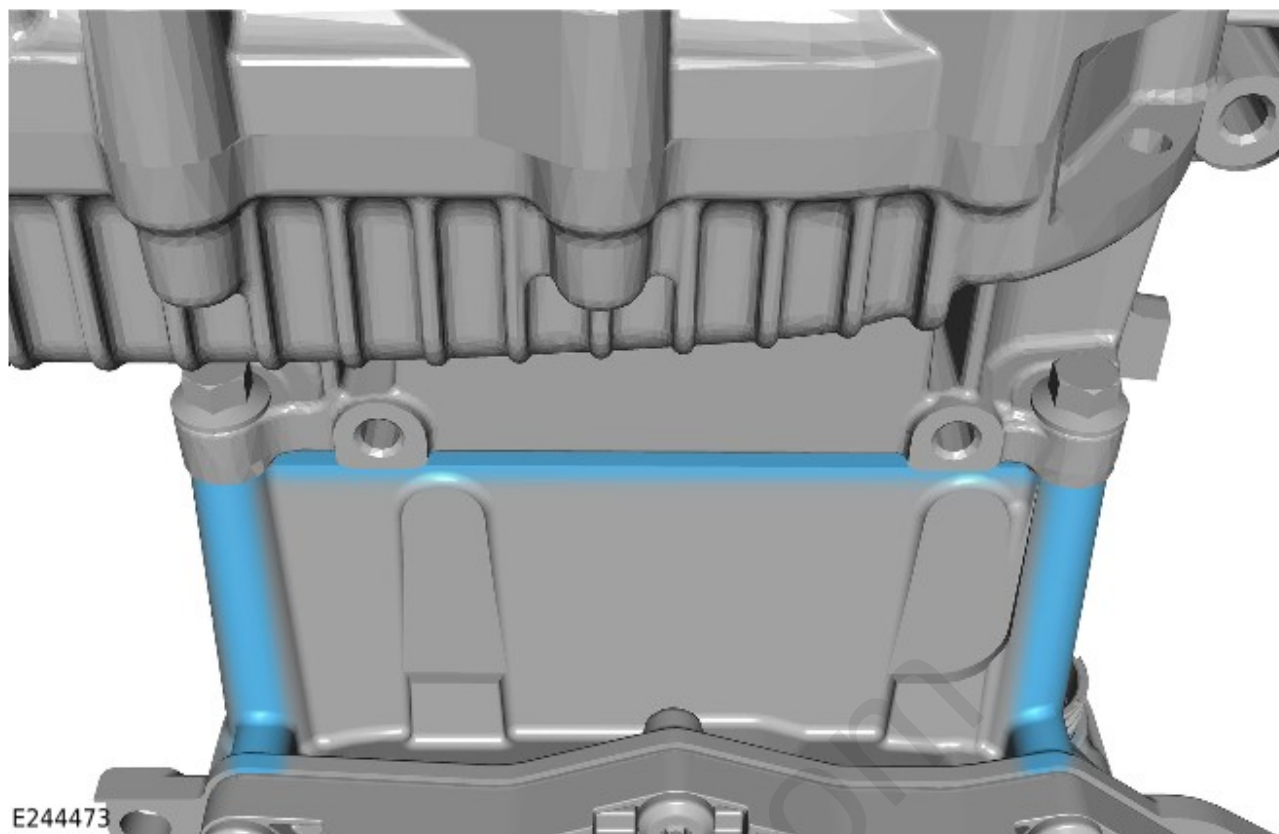
NOTE:

Be aware that oil leaks from above the transmission will cause oil to collect on the transmission oil pan, for example engine leaks, oil cooler pipe leaks, even diesel fuel leaks.

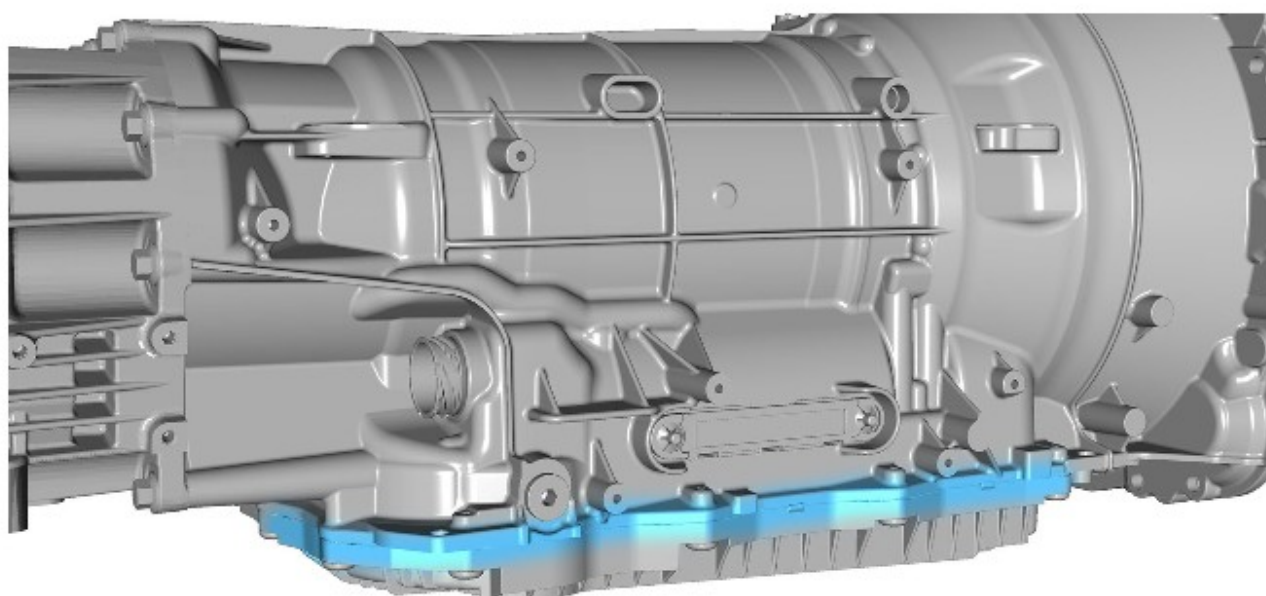
1. Remove the transmission undershield to gain access to the transmission area. **REFER to Workshop Manual Section 501-02.**
2. Using a suitable degreaser, thoroughly clean the transmission to make sure all oil contamination is removed. Refer to the Oil Leak Inspection section in this document. Make sure all relevant areas are free of oil, contamination before progressing. Make sure there is no residual oil left in bolt holes etc. If necessary, use an air blower to clear and dry the bolt holes on the sump pan.

Oil Leak Inspection

If there are any signs of oil leaks between the automatic transmission and the transfer case, this may be due to internal porosity of the automatic transmission case.



Due to capillary action, oil residue may be found in the joint between the transmission case and the oil pan. The potential leak path is shown in the illustration below.

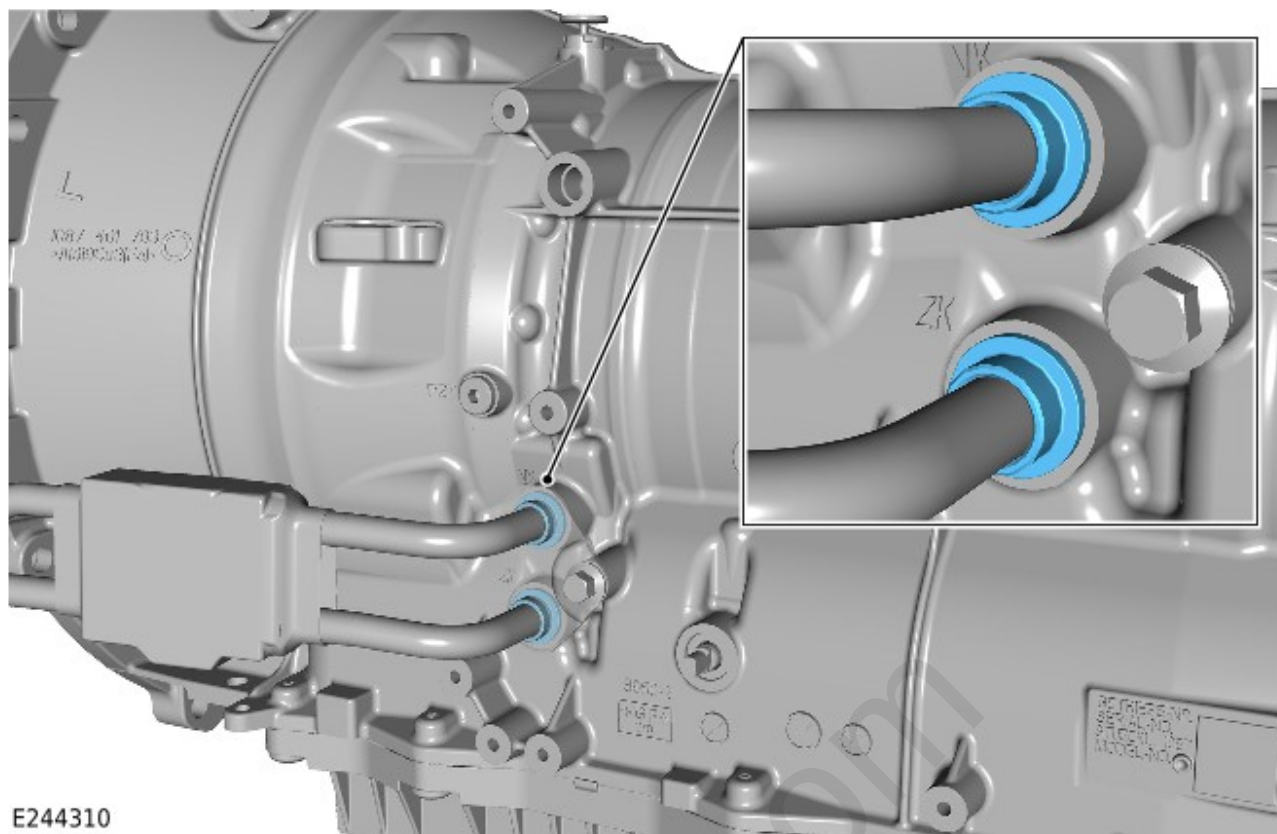


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Other potential leak sources are the transmission oil cooler pipe unions. Visually inspect the areas shown in the illustration below.

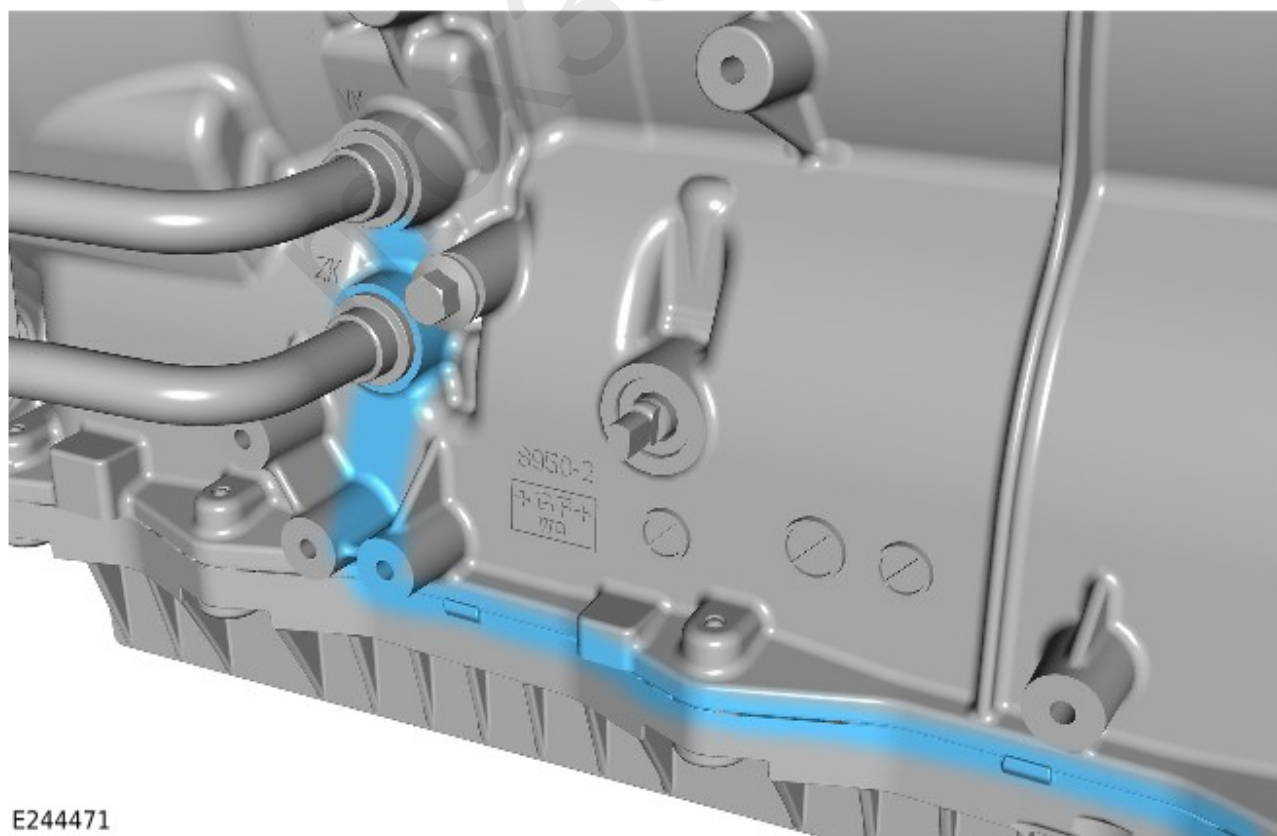
 NOTE:

The bracket securing the transmission oil pipes has been removed to provide extra clarity.



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The potential leak path is shown in the illustration below.



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NOTE:

Leak detector spray is available to order on the JLR Electronics Parts Catalogue.

3. Thoroughly coat the potential leak locations using a suitable leak detector spray, refer to the illustrations above.
4. Run the vehicle up to operating temperature, raise the ramp and use a suitable inspection lamp to identify the source of the transmission oil leak.
5. Identify the source of the oil leak and take clear, in focus pictures. These may be required to support your warranty claim.
6. When the source of the leak has been identified, refer to the relevant technical bulletin or refer to the relevant section of the workshop manual and repair as necessary. If the source of the leak is not shown in the illustrations above, report using an Electronic Product Quality Report (EPQR). Make sure to attach clear, in focus pictures showing the use of leak detection spray and the exact position of the leak.

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: Transmission Control Module \(TCM\)](#) (100-00 General Information, Description and Operation).

cmjjaGFyZG1vcnRvbjsyMDIwLTASLTU3VDIwOjA2OjI3LjI2OV07OTAuMTk5LjEyMS4xMTc7