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Transmission / Transaxle Cooling - V8 5.0L Petrol / TDV6 3.0L Diesel -

Lubricants

- CAUTIONS:

 Do not use any lubricant other than that specified.

 Do not over lubricate.

Item	Specification
Transmission fluid	ATF Shell M 1375.4 Land Rover Part No. TYK500050

Capacity

Item	Capacity
Initial dry fill	9.5 Litres (16.7 pints) (10.0 US quarts)

Torque Specification

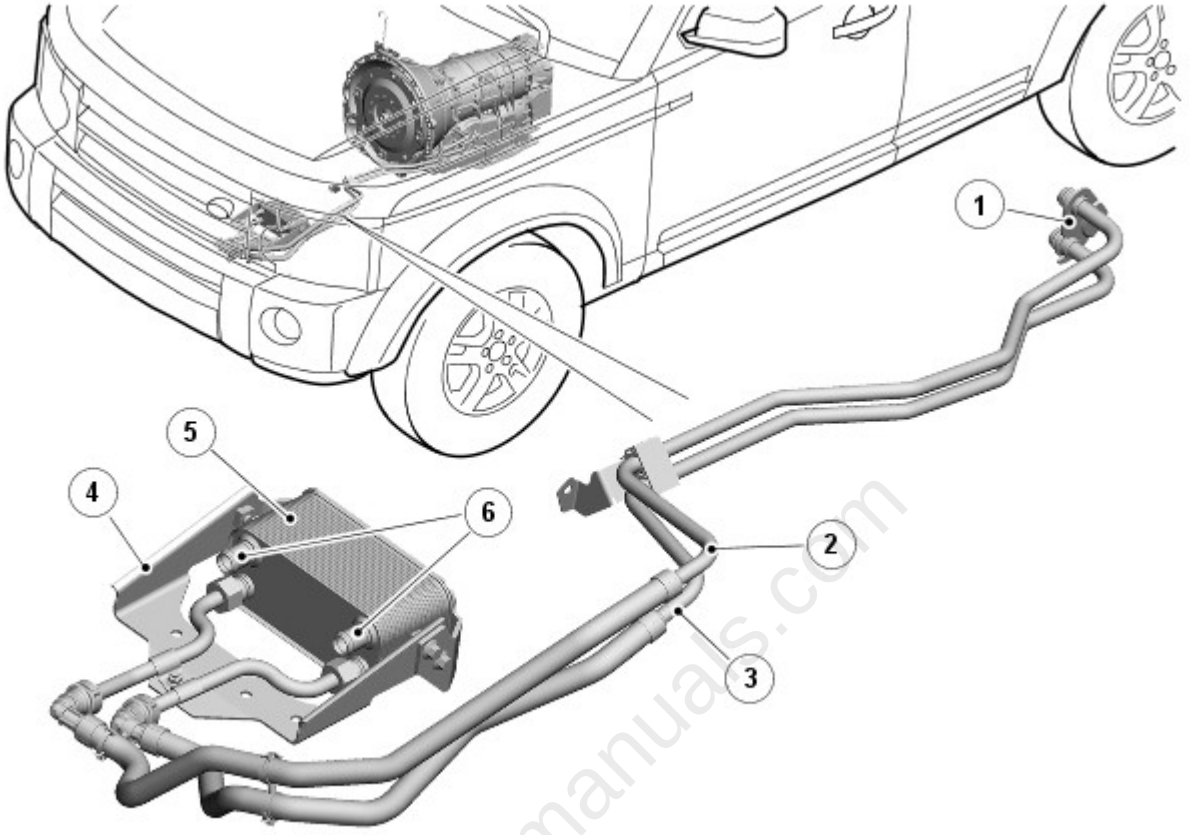
Description	Nm	lb-ft	lb-in
Transmission fluid cooler tube to transmission housing bolt	23	17	-
Transmission fluid cooler tube bracket retaining bolt - vehicles with Engine 5.0L	10	7	-
Transmission fluid cooler tube bracket retaining nut - vehicles with Engine 3.0D	11	8	-
Transmission fluid cooler retaining bolts	25	18	-
Transmission fluid cooler tube line union to cooler	16	12	-

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Transmission / Transaxle Cooling - V8 5.0L Petrol / TDV6 3.0L Diesel - Transmission Cooling

Description and Operation



E122434

Item	Part Number	Description
1	-	Latch-plate
2	-	Return hose and pipe (to transmission)
3	-	Feed hose and pipe (from transmission)
4	-	Mounting bracket
5	-	Transmission fluid cooler
6	-	Engine coolant hose connections

INTRODUCTION

Transmission cooling is provided by a transmission fluid cooler, which transfers heat from the transmission to the engine cooling system. The transmission fluid cooler is installed in the engine compartment, on a mounting bracket attached to the crossmember of the secondary loadpath frame.

Two hose and pipe assemblies connect the transmission fluid cooler to the automatic transmission. Two engine coolant hose connections are incorporated into the transmission fluid cooler for the supply and return of coolant from the engine cooling system.
For additional information, refer to: Engine Cooling (303-03D Engine Cooling - V8 5.0L Petrol, Description and Operation).

Fluid from the pump in the automatic transmission flows through the feed hose and pipe to the transmission fluid cooler. The fluid then flows through the transmission fluid cooler, and the return hose and pipe, to the sump of the automatic transmission.

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Diagnosis and Testing

Principle of Operation

For a detailed description of the automatic transmission cooling system, refer to the relevant Description and Operation sections in the workshop manual.

Inspection and Verification

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

Visual Inspection

Mechanical
• Feed and return tubes • Connections to the automatic transmission and the automatic transmission fluid cooler • Automatic transmission fluid level

3. **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. **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.

Symptom Chart

Condition	Possible Causes	Action
Over heating of the automatic transmission	Obstruction in the automatic transmission fluid cooler	Flush out the automatic transmission fluid cooler with new automatic transmission fluid. If the flushing is unsuccessful, install a new transmission fluid cooler. REFER to: Transmission Fluid Cooler (307-02A Transmission/Transaxle Cooling - TDV6 2.7L Diesel, Removal and Installation).
Over heating of the automatic transmission	Obstruction in the automatic transmission fluid tubes	Flush out the automatic transmission fluid cooler tubes with new automatic transmission fluid. If the flushing is unsuccessful install new automatic transmission fluid cooler tubes.
Loss of automatic transmission fluid	Connections to the automatic transmission and the automatic transmission fluid cooler	Check the integrity of the tubes, connections and seals. Check the torque of the tube fixings.
Loss of automatic transmission fluid	Leak at oil cooler	Check the integrity of tubes, connections and seals. Check the torque of the tube fixings.

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 (DTC) Index - DTC: Transmission Control Module (TCM) - Siemens (100-00 General Information, Description and Operation).

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Transmission / Transaxle Cooling - V8 5.0L Petrol / TDV6 3.0L Diesel - Transmission Fluid CoolerV8 5.0L Petrol

Removal and Installation

Removal

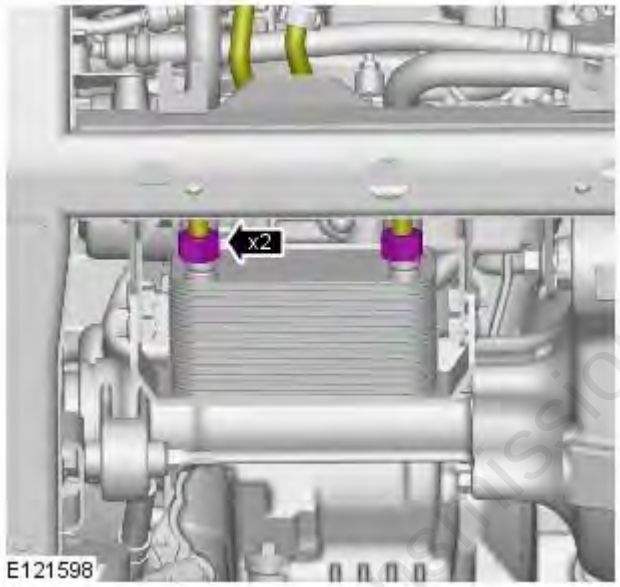
- NOTE: Removal steps in this procedure may contain installation details.

1. **1.** WARNING: Make sure to support the vehicle with axle stands.

   Raise and support the vehicle.

2. Refer to: Cooling System Draining, Filling and Bleeding (303-03D Engine Cooling - V8 5.0L Petrol, General Procedures).

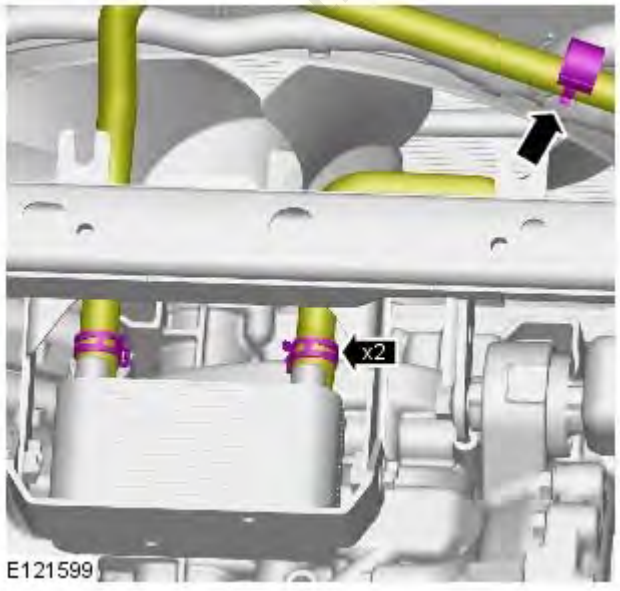
3. Refer to: Transmission Fluid Level Check (307-01D Automatic Transmission/Transaxle - V8 5.0L Petrol/TDV6 3.0L Diesel, General Procedures).



4. **4.** WARNING: Be prepared to collect escaping fluids.

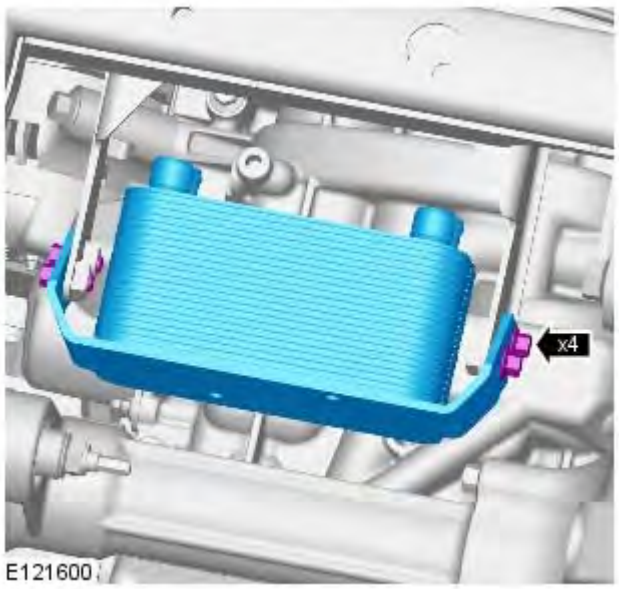
   CAUTION: Before disconnecting or removing the components, make sure the area around the joint faces and connections are clean and dry. Plug open connections to prevent contamination.

   Torque: 16 Nm



5. **5.** WARNING: Be prepared to collect escaping fluids.

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6. *Torque:* 25 Nm

Installation

1. To install, reverse the removal procedure.

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Transmission / Transaxle Cooling - V8 5.0L Petrol / TDV6 3.0L Diesel - Transmission Fluid CoolerTDV6 3.0L Diesel

Removal and Installation

Removal

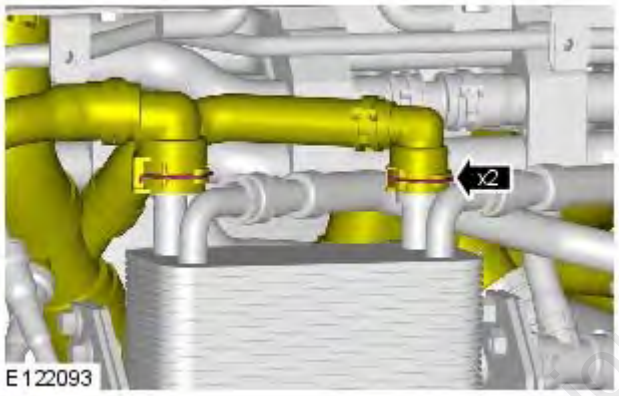
- NOTE: Removal steps in this procedure may contain installation details.

1. **1.** WARNING: Make sure to support the vehicle with axle stands.

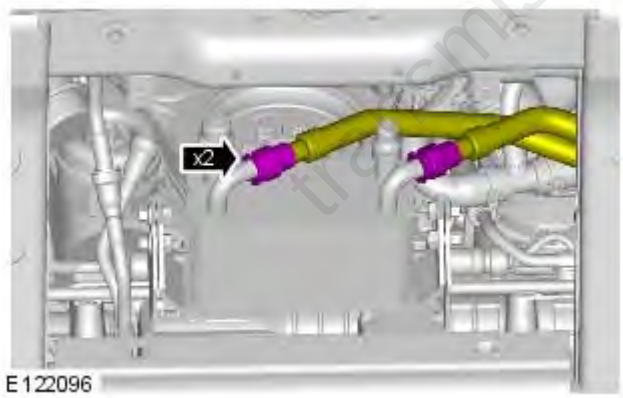
   Raise and support the vehicle.

2. Refer to: Cooling System Draining, Filling and Bleeding (303-03B Engine Cooling - TDV6 3.0L Diesel, General Procedures).

3. Refer to: Transmission Fluid Level Check (307-01D Automatic Transmission/Transaxle - V8 5.0L Petrol/TDV6 3.0L Diesel, General Procedures).



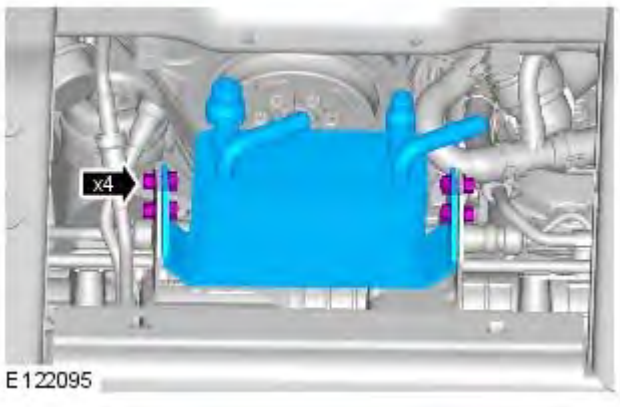
4. **4.** WARNING: Be prepared to collect escaping fluids.



5. **5.** WARNING: Be prepared to collect escaping fluids.

   CAUTION: Before disconnecting or removing the components, ensure the area around the joint faces and connections are clean and dry. Plug open connections to prevent contamination.

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6. *Torque:* 23 Nm

Installation

1. To install, reverse the removal procedure.

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Transmission / Transaxle Cooling - V8 5.0L Petrol / TDV6 3.0L Diesel - Transmission Fluid Cooler TubesV8 5.0L Petrol

Removal and Installation

Removal

- NOTE: Removal steps in this procedure may contain installation details.

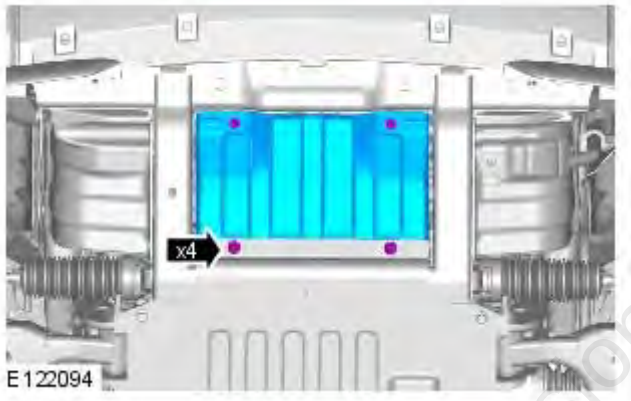
1. **1.** WARNING: Make sure to support the vehicle with axle stands.

   Raise and support the vehicle.

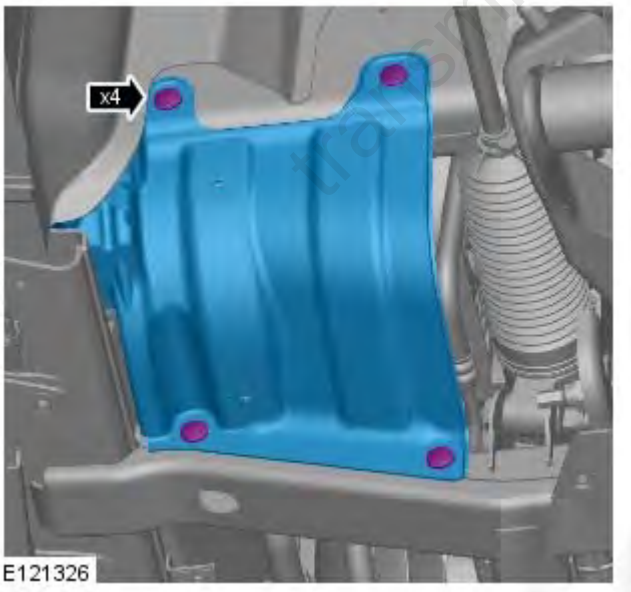
2. Refer to: Engine Undershield (501-02 Front End Body Panels, Removal and Installation).

3. Remove the LH front road wheel.

   Torque: 140 Nm

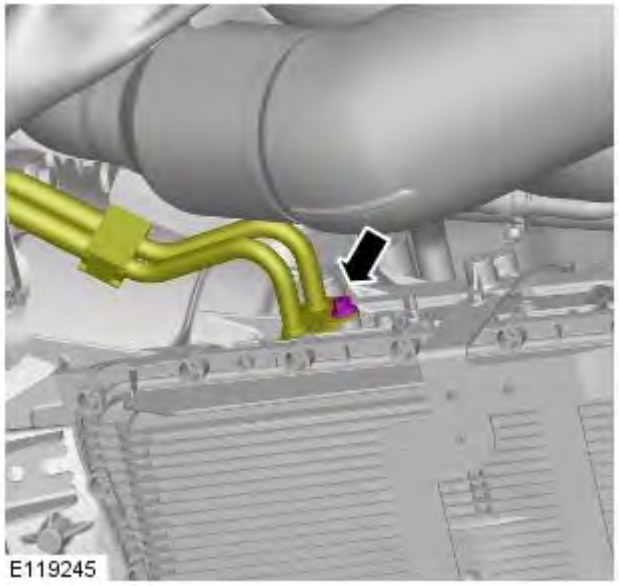


4. *Torque:* 10 Nm



5.

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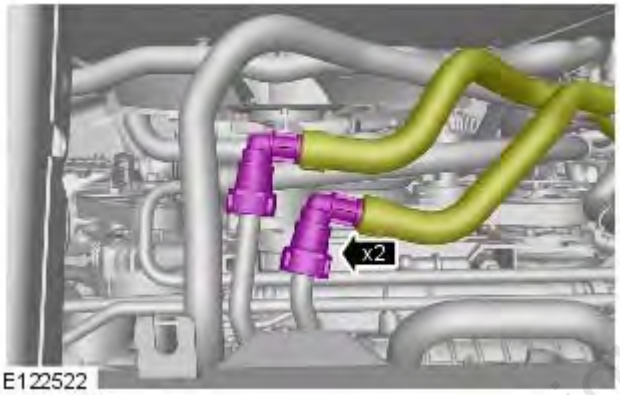


6. **6.** WARNING: Be prepared to collect escaping fluids.

   CAUTION: Always plug any open connections to prevent contamination.

   • NOTE: Some variation in the illustrations may occur, but the essential information is always correct.

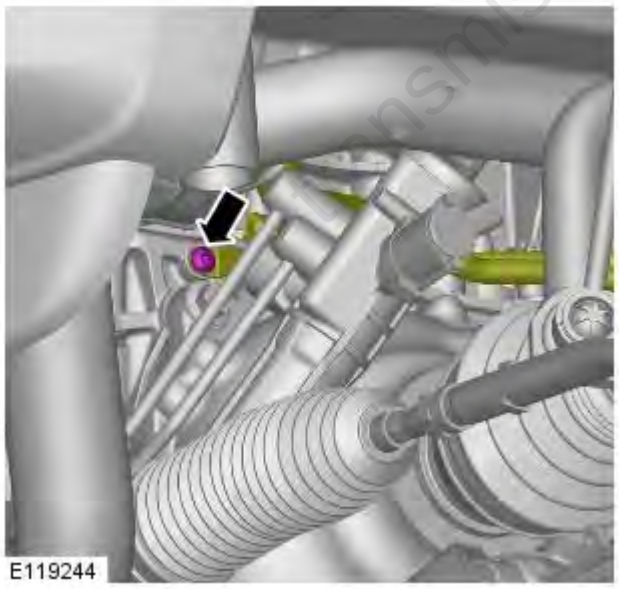
   Torque: 23 Nm



7. **7.** WARNING: Be prepared to collect escaping fluids.

   CAUTION: Before disconnecting or removing the components, make sure the area around the joint faces and connections are clean and dry. Plug open connections to prevent contamination.

   Torque: 16 Nm

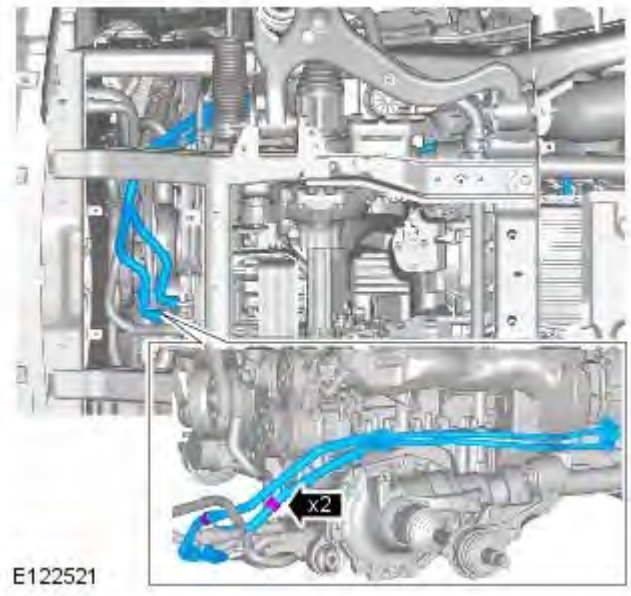


8. **8.** NOTE: Some variation in the illustrations may occur, but the essential information is always correct.

   Torque: 10 Nm

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9.



Installation

1. To install, reverse the removal procedure.

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Transmission / Transaxle Cooling - V8 5.0L Petrol / TDV6 3.0L Diesel - Transmission Fluid Cooler TubesTDV6 3.0L Diesel

Removal and Installation

Removal

- NOTE: Removal steps in this procedure may contain installation details.

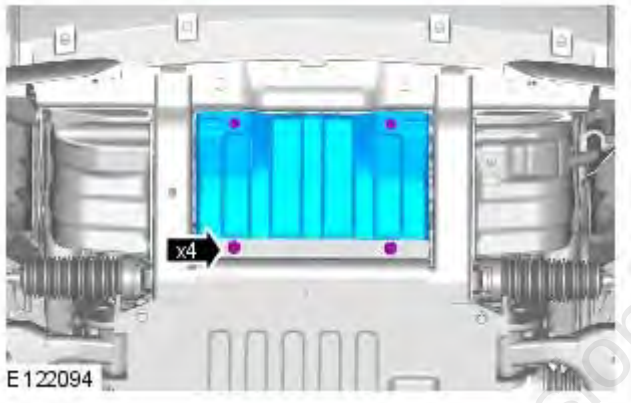
1. **1.** WARNING: Make sure to support the vehicle with axle stands.

   Raise and support the vehicle.

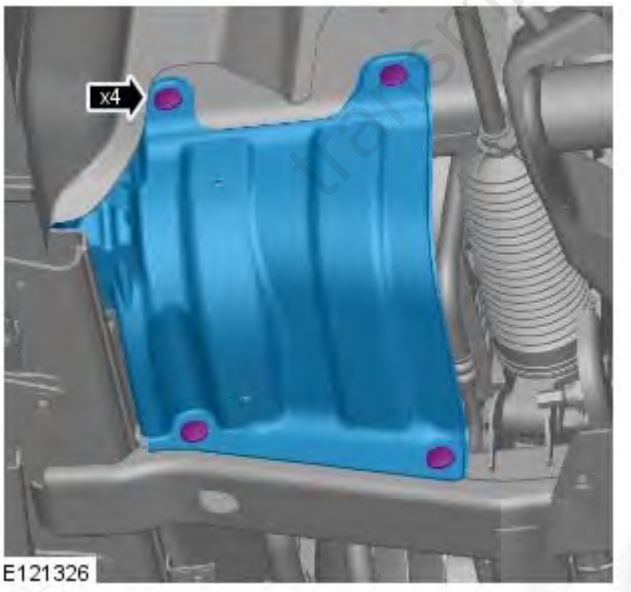
2. Refer to: Engine Undershield (501-02 Front End Body Panels, Removal and Installation).

3. Remove the LH front road wheel.

   Torque: 140 Nm

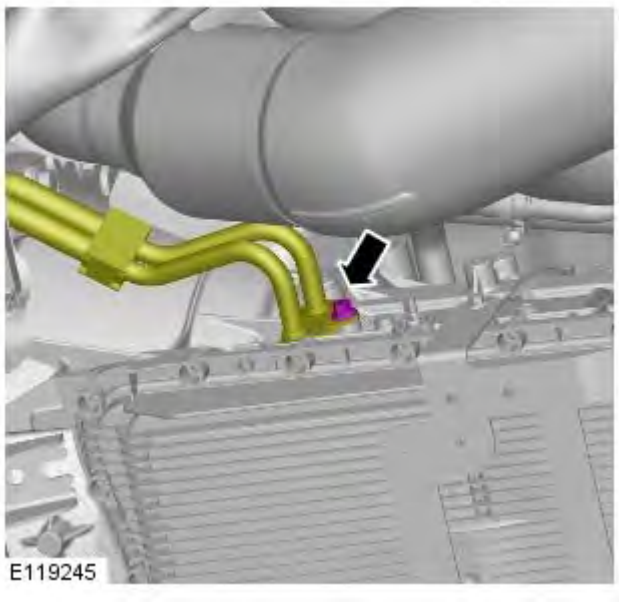


4. *Torque:* 10 Nm



5.

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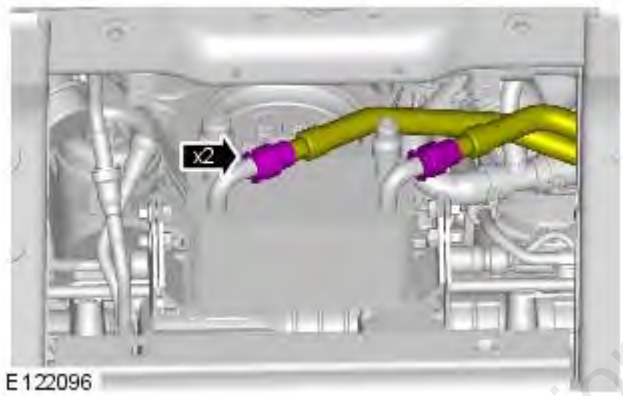


6. **6.** WARNING: Be prepared to collect escaping fluids.

   CAUTION: Always plug any open connections to prevent contamination.

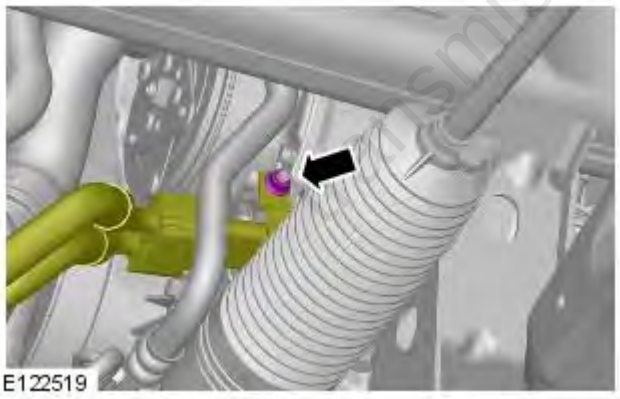
   • NOTE: Some variation in the illustrations may occur, but the essential information is always correct.

   Torque: 23 Nm



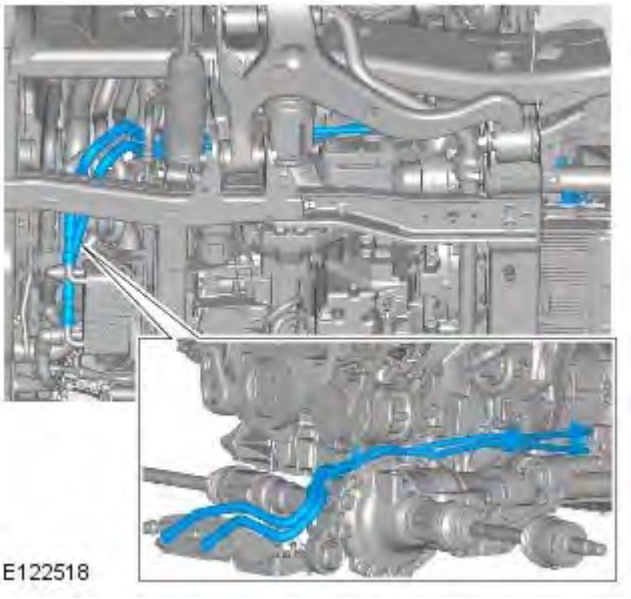
7. **7.** WARNING: Be prepared to collect escaping fluids.

   CAUTION: Before disconnecting or removing the components, make sure the area around the joint faces and connections are clean and dry. Plug open connections to prevent contamination.



8. *Torque:* 11 Nm

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9. **9.** WARNING: Be prepared to collect escaping fluids.

Installation

1. To install, reverse the removal procedure.

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