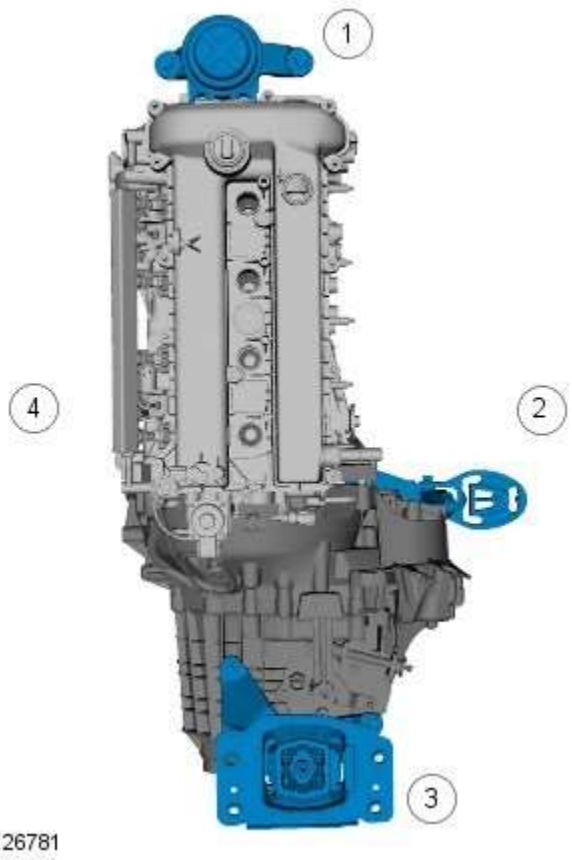


Item		Description
1		front
2		right
3		rear
4		left

How to use Repair Procedures

This manual has been written in a format that is designed to meet the needs of technicians worldwide. It provides general descriptions for accomplishing repair work with tested and effective techniques.

Important Safety Instructions

Appropriate service methods and correct repair procedures are essential for the safe, reliable operation of all motor vehicles as well as the personal safety of the individual carrying out the work.

Anyone who departs from the instructions provided in this manual must first establish that personal safety or vehicle integrity is not compromised by the choice of method, tools or components.

Warnings, Cautions and Notes in This Manual

WARNING: Warnings are used to indicate that failure to follow a procedure correctly may result in personal injury.

CAUTION: Cautions are used to indicate that failure to follow a procedure correctly may result in damage to the vehicle or equipment being used.

NOTE: Notes are used to provide additional essential information required to carry out a complete and satisfactory repair.

Generic warnings or cautions are in their relevant description and operation procedure within section 100-00. If the generic warnings or cautions are required for a procedure, there will be a referral to the appropriate description and operation procedure.

If a warning, caution or note only applies to one step, it is placed at the beginning of the specific step.

DTC	Description	Possible Causes	Action
		cable • Height sensor electrical fault • Height sensor linkage bent • Incorrect height sensor fitted	voltages should be within ± 0.15v. To check sensor operation on the vehicle: Check for water ingress around the height sensors, electrical connectors or shaft end. Check for excessive movement in the shaft in all directions. Raise vehicle (ideally on wheels-free ramp) until suspension on corner under investigation is at rebound to gain access to height sensor. Access may be improved by removing road wheel. Carefully disconnect the height sensor link from the upper suspension arm. Monitor the height sensor signal voltage output for the height sensor under investigation. Position the sensor arm so it is in the mid position and confirm that the voltage is around 2.5 volts. Move the sensor arm over the range ±40° around the mid position and confirm that the voltage changes smoothly between around 0.2 volts and 4.8 volts. If voltages are incorrect or do not change smoothly then replace sensor. NOTE: For angles of movement beyond ±40°, the sensor signal will clamp to a voltage of ~0.15v or ~4.85v, depending on position of sensor lever. This is normal. When investigation is complete, refit height sensor link to upper arm. If any fixings to the height sensor body or mounting bracket were slackened or found to be loose or if a height sensor was changed, the vehicle ride height MUST be re-calibrated. Refer to the relevant section of the workshop manual for the calibration procedure
C1A05-22	Left Rear Height Sensor - Signal amplitude > maximum	• Height sensor linkage not connected • Height sensor or bracket loose • Height sensor bracket bent • Incorrect height calibration • Height sensor linkage toggled • Height sensor water ingress • Wiring to height sensor partial short to ground • Wiring to height sensor short to other cable • Height sensor electrical fault • Height sensor linkage bent • Incorrect height sensor fitted	• Inspect for damage or loose fixings. NOTE If any height sensor fixings were slackened or found to be loose or if a height sensor was changed, the vehicle ride height MUST be re-calibrated. Confirm that the correct height sensor part number is fitted, as specified in the service parts database. To check height sensor: Disconnect electrical connector to height sensor and inspect connecter pins & terminals for evidence of corrosion or water ingress. If no corrosion found, disconnect harness at Control Module. A: Check for short circuits between any of the 3 terminals and vehicle ground. B: Check for electrical continuity between the two connectors for each of the 3 terminals. Reconnect electrical connector at Control Module only. C: Check voltages at terminals within height sensor connector (sensor not connected), with respect to vehicle body. • Voltage to sensor ground connection should be ~0v • Voltage to sensor signal connection should be ~0v • Voltage to sensor supply connection should be ~5v All voltages should be within ± 0.15v. To check sensor operation on the vehicle: Check for water ingress around the height sensors, electrical connectors or shaft end. Check for excessive movement in the shaft in all directions. Raise vehicle (ideally on wheels-free ramp) until suspension on corner under investigation is at rebound to gain access to height sensor. Access may be improved by removing road wheel. Carefully disconnect the height sensor link from the upper suspension arm. Monitor the height sensor signal voltage output for the height sensor under investigation. Position the sensor arm so it is in the mid position and confirm that the voltage is around 2.5 volts. Move the sensor arm over the range ±40° around the mid position and confirm that the voltage changes smoothly between around 0.2 volts and 4.8 volts. If voltages are incorrect or do not change smoothly then replace sensor. NOTE: For angles of movement beyond ±40°, the sensor signal will clamp to a voltage of ~0.15v or ~4.85v, depending on position of sensor lever. This is normal. When investigation is complete, refit height sensor link to upper arm. If any fixings to the height sensor body or mounting bracket were slackened or found to be loose or if a height sensor was changed, the vehicle ride height MUST be re-calibrated. Refer to the relevant section of the workshop manual for the calibration procedure
C1A05-76	Left Rear Height Sensor - Wrong mounting position	• Incorrect height calibration	• Refer to the workshop manual and perform the height sensor calibration procedure. Clear the DTC and retest the system
C1A05-78	Left Rear Height Sensor - Alignment or adjustment incorrect	• Incorrect height calibration	• Refer to the workshop manual and perform the height sensor calibration procedure. Clear the DTC and retest the system

Published: 18-Apr-2014

General Information - Diagnostic Trouble Code (DTC) Index DTC: Pedestrian Protection System Control Module (PPSCM)

Description and Operation

Pedestrian Protection System Control Module (PPSCM)

WARNING: TO AVOID ACCIDENTAL DEPLOYMENT AND POSSIBLE PERSONAL INJURY, THE BACKUP POWER SUPPLY MUST BE DEPLETED BEFORE REPAIRING OR REPLACING ANY PEDESTRIAN PROTECTION SYSTEM COMPONENTS. TO DEPLETE THE BACKUP POWER SUPPLY ENERGY, DISCONNECT THE BATTERY GROUND CABLE AND WAIT TWO MINUTES. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN PERSONAL INJURY.

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 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 DDW 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.

The table below lists all Diagnostic Trouble Codes (DTCs) that could be logged in the Pedestrian Protection System Control Module (PPSCM). For additional diagnosis and testing information, refer to the relevant Diagnosis and Testing section in the workshop manual.
For additional information, refer to: Pedestrian Protection System (501-20C Pedestrian Protection System, Diagnosis and Testing).

DTC	Description	Possible Causes	Action
B1001-11	Right Hood Deployment Control - Circuit short to ground	• Right hood deployment control circuit short circuit to ground	• Refer to the electrical circuit diagrams and check the right hood deployment control circuit for short circuit to ground. Install a new wiring harness as necessary. If no wiring harness fault exists, using the manufacturer approved diagnostic system, clear the DTCs and retest. If the fault persists, install a new right hood deployment control
B1001-12	Right Hood Deployment Control - Circuit short to battery	• Right hood deployment control circuit short circuit to power	• Refer to the electrical circuit diagrams and check the right hood deployment control circuit for short circuit to power. Install a new wiring harness as necessary. If no wiring harness fault exists, using the manufacturer approved diagnostic system, clear the DTCs and retest. If the fault persists, install a new right hood deployment control

Published: 11-May-2011

Front Suspension - Upper Arm RH

Removal and Installation

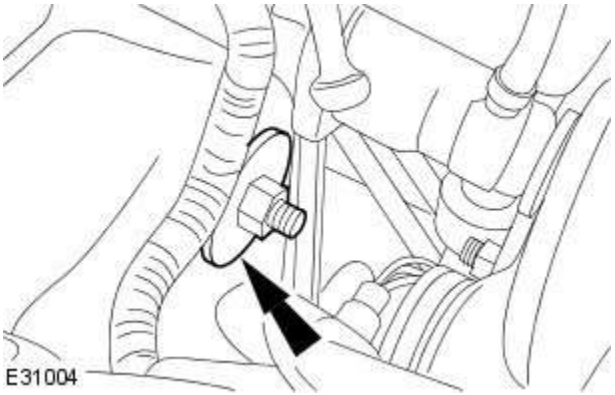
Removal

1. WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.

   Raise and support the vehicle.

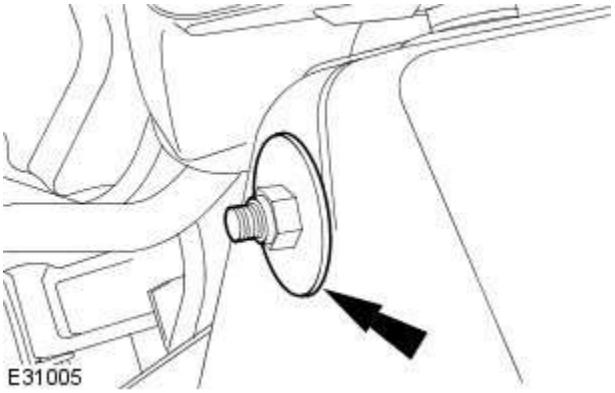
2. Remove the front shock absorber.
   For additional information, refer to: Front Shock Absorber (204-01 Front Suspension, Removal and Installation).

3. Remove the secondary bulkhead panel RH.
   For additional information, refer to: Secondary Bulkhead Panel RH - 3.0L NA V6 - AJ27 (501-02 Front End Body Panels, Removal and Installation).



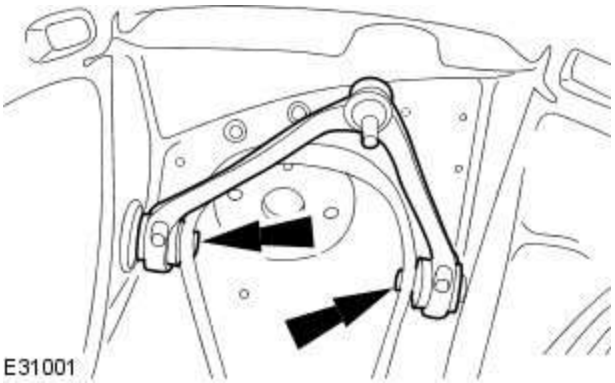
4. NOTE: Some variation in the illustrations may occur, but the essential information is always correct.

   Remove the upper arm retaining nut.



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

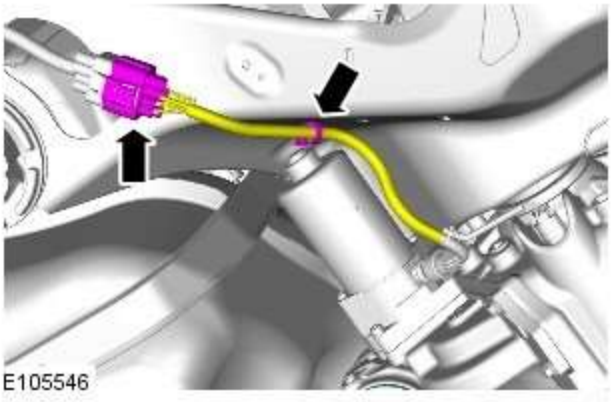
   Remove the upper arm retaining nut.



6. Remove the upper arm.

Vehicles with supercharger

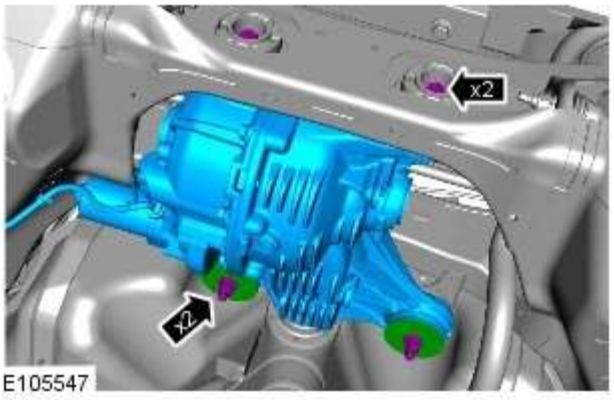
7.



All vehicles

8. Support the rear differential casing.

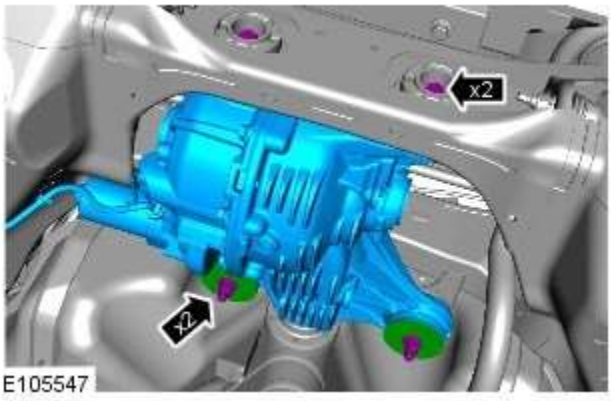
9.



Installation

All vehicles

1. *Torque:*
   M14 190 Nm
   M12 90 Nm

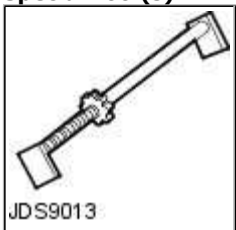


Published: 11-May-2011

Anti-Lock Control - Stability Assist - Hydraulic Control Unit (HCU)

Removal and Installation

Special Tool(s)

	Brake pedal hold down tool JDS9013

Removal

All vehicles

1. Disconnect the battery ground cable.
   For additional information, refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

Left-hand drive vehicles

2. Remove the secondary bulkhead RH panel.
   For additional information, refer to: Secondary Bulkhead Panel RH - 3.0L NA V6 - AJ27 (501-02 Front End Body Panels, Removal and Installation).

Right-hand drive vehicles

3. Remove the secondary bulkhead LH panel.
   For additional information, refer to: Secondary Bulkhead Panel LH - 3.0L NA V6 - AJ27 (501-02 Front End Body Panels, Removal and Installation).

All vehicles

4. WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.

   Raise and support the vehicle.

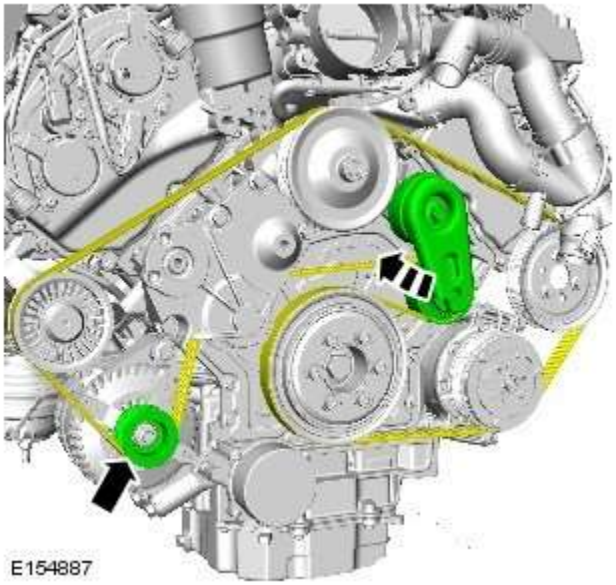
5. Connect brake bleed pipes and bottles to the left-hand front and the left-hand rear brake caliper bleed nipples and loosen the brake caliper bleed nipples.

6. NOTE: To prevent the loss of brake fluid, using the special tool apply the brake pedal and set to 40mm (1.6 in) below the rest position.

   Using the special tool, press and hold the brake pedal.

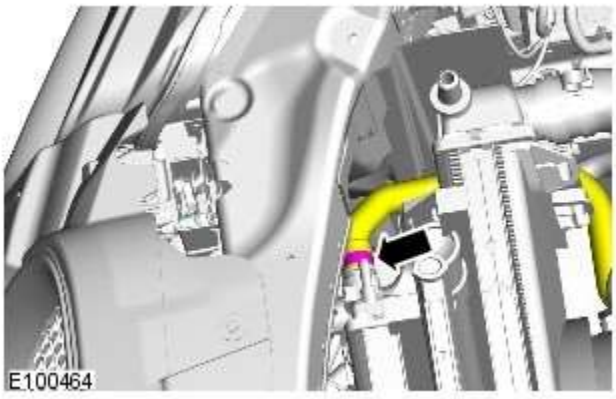
7. Remove the bleed pipes and bottles.
   - Tighten the left-hand front brake caliper bleed nipple.
     1. For vehicles with supercharger: Tighten to 14Nm.
     2. For vehicles without supercharger: Tighten to 8 Nm.
   - Tighten the left-hand rear brake caliper bleed nipple.
     1. All vehicles: Tighten to 14 Nm.
   - Disconnect and remove the brake bleed pipes and bottles.
   - Install the bleed nipple dust caps.

6.



7. CAUTION: Before removing the crankshaft pulley bolt, note the numbers on the bolt head. If the bolt head shows 10.9, the bolt must be removed counter clockwise. If the bolt head shows 12.9, the bolt must be removed clockwise. Failure to follow this instruction may result in damage to the crankshaft.

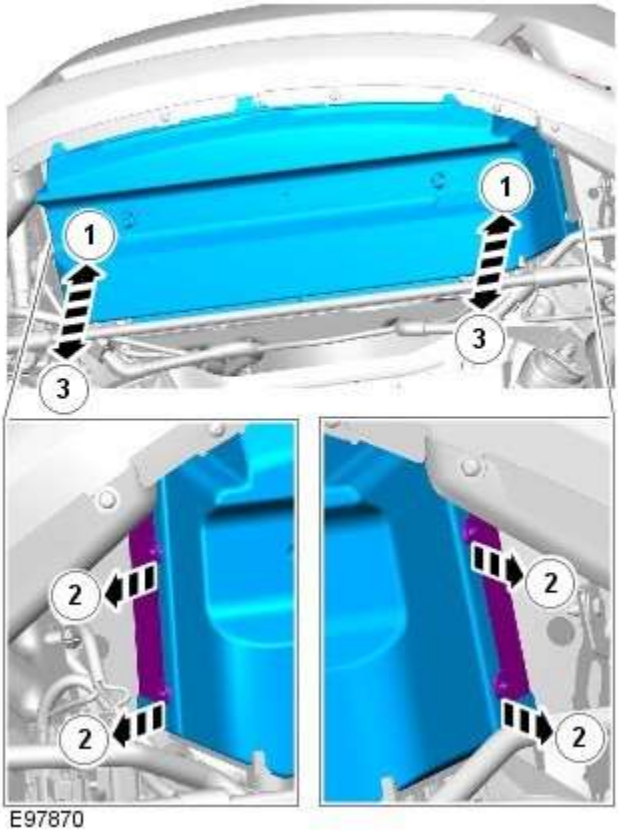
   Note the markings on the crankshaft pulley bolt.



6.

7. WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.

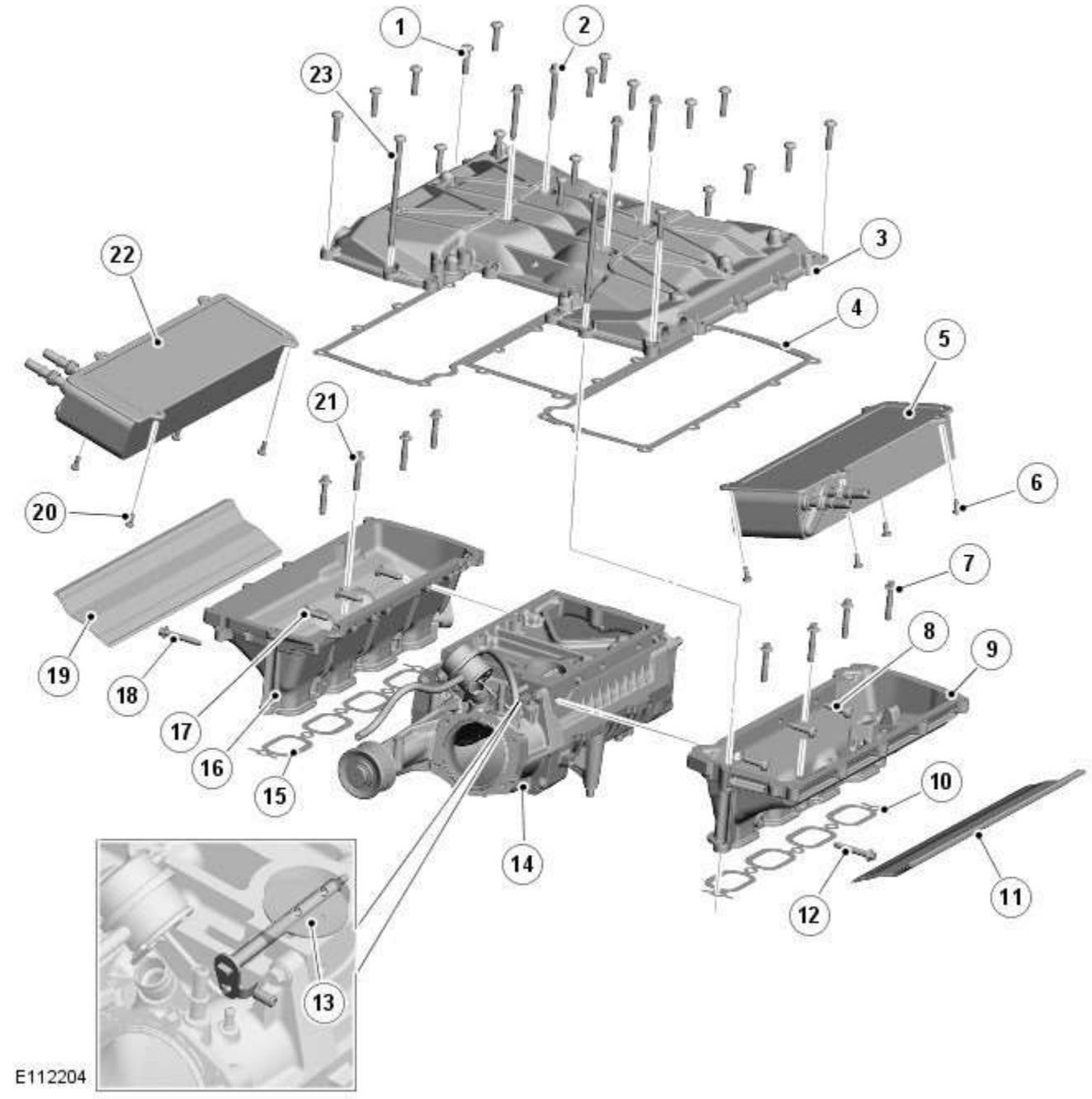
   Raise and support the vehicle.



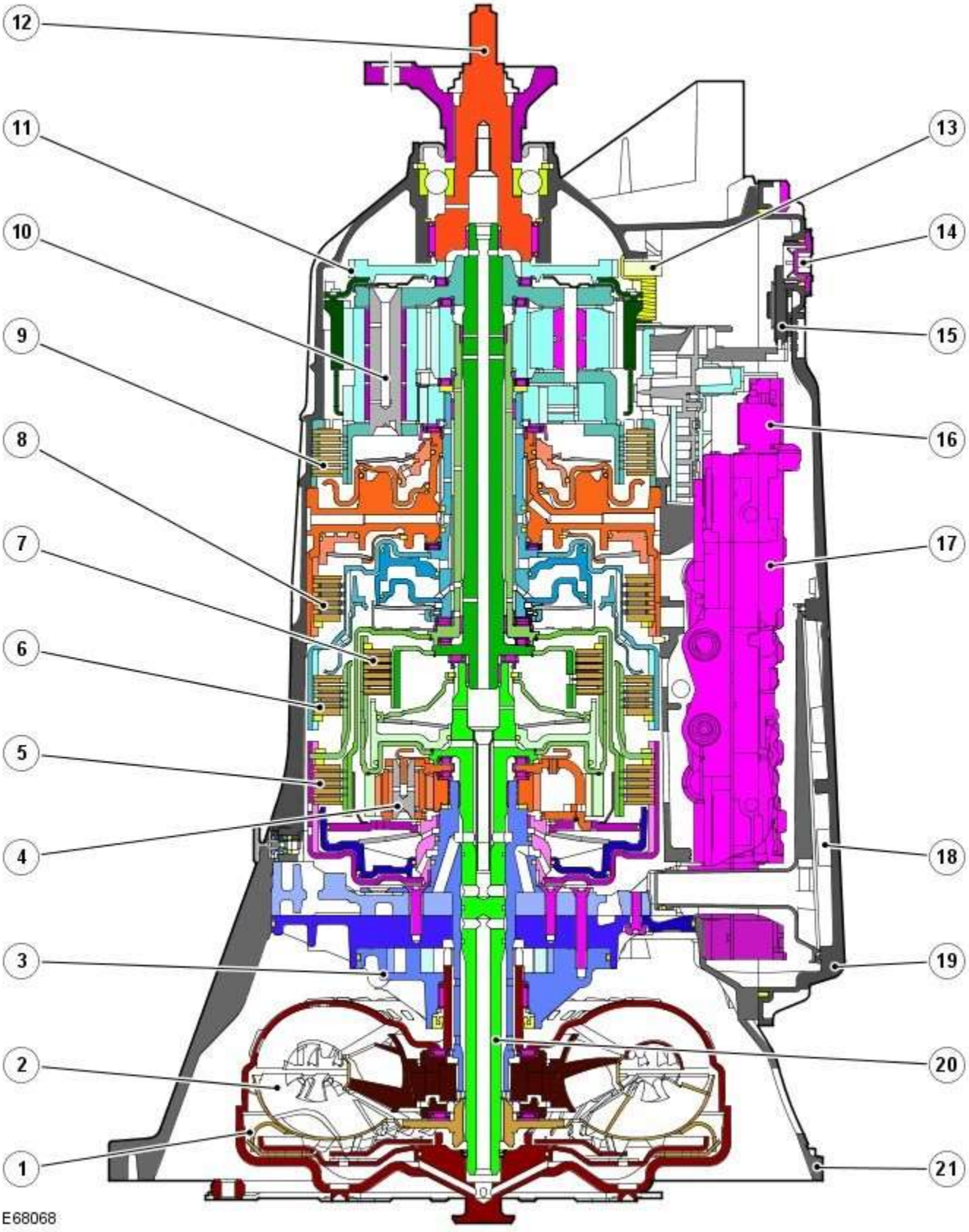
8. NOTE: Some variation in the illustrations may occur, but the essential information is always correct.

9. Refer to: Cooling System Partial Draining, Filling and Bleeding - V8 S/C 5.0L Petrol (303-03C Engine Cooling - V8 5.0L Petrol/V8 S/C 5.0L Petrol, General Procedures).

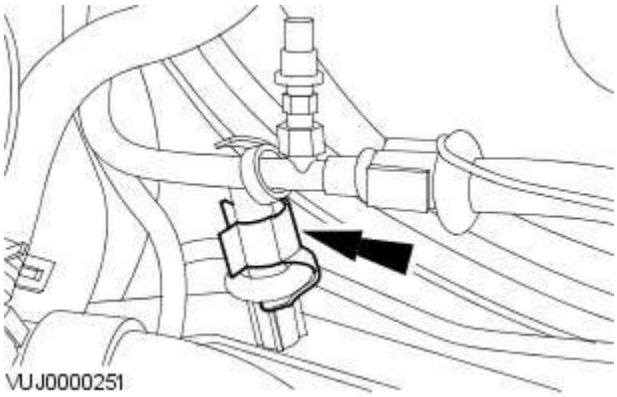
Supercharger and Intake Manifolds - Exploded



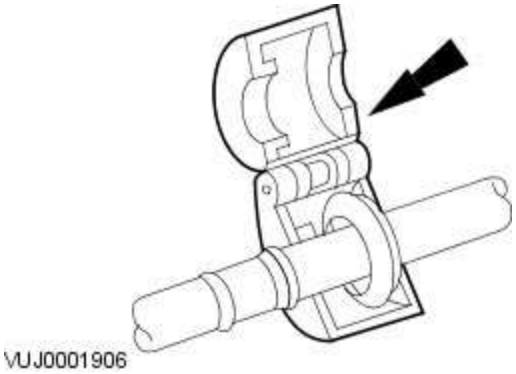
Item	Description
1	M08 x 35 mm screw (19 off)
2	M08 x 65 mm screw (4 off)
3	Charge air cooler tank top
4	Gasket
5	LH charge air cooler
6	M6 x 15 mm screw (4 off)
7	M08 x 45 mm screw (4 off)
8	M08 x 30 mm crew (3 off)
9	LH intake manifold
10	Gasket
11	N.H. (noise vibration and harshness) pad



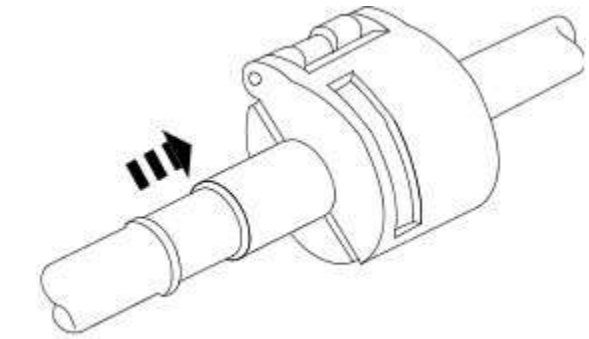
Item	Description
1	Torque converter lock-up clutch
2	Torque converter
3	Fluid pump
4	Single planetary gearset


VUJ0000251

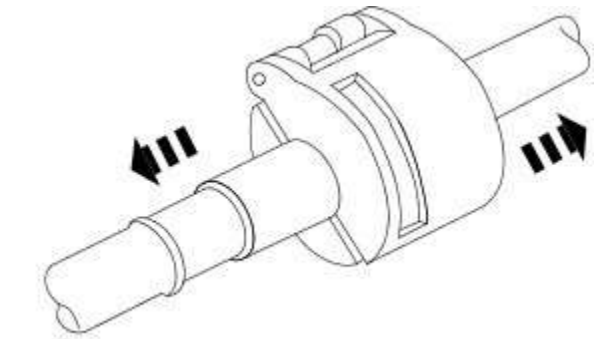
2. Remove the safety clip from the spring lock coupling.


VUJ0001906

3. Install the special tool.

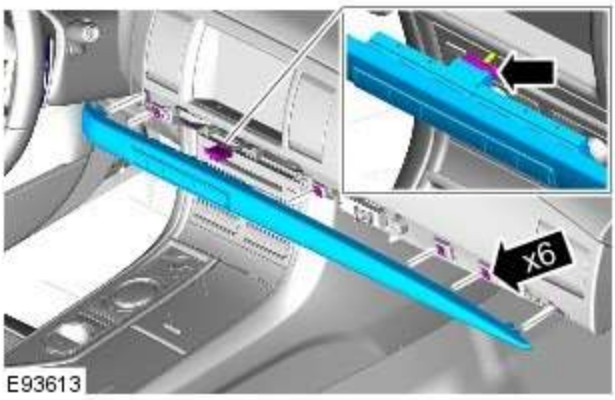

VUJ0001907

4. Close the special tool and push it into the female end of the spring lock coupling.

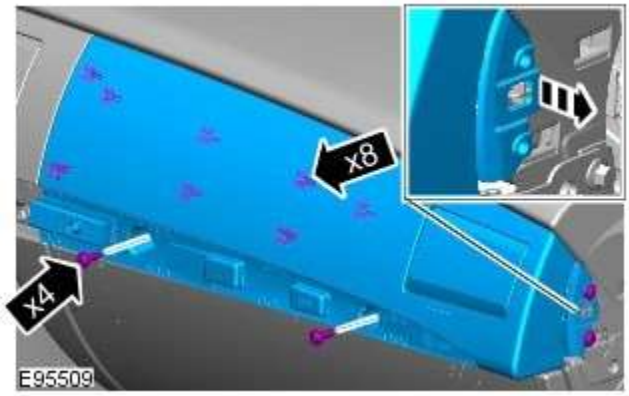

VUJ0001908

5. Disconnect the spring lock coupling.

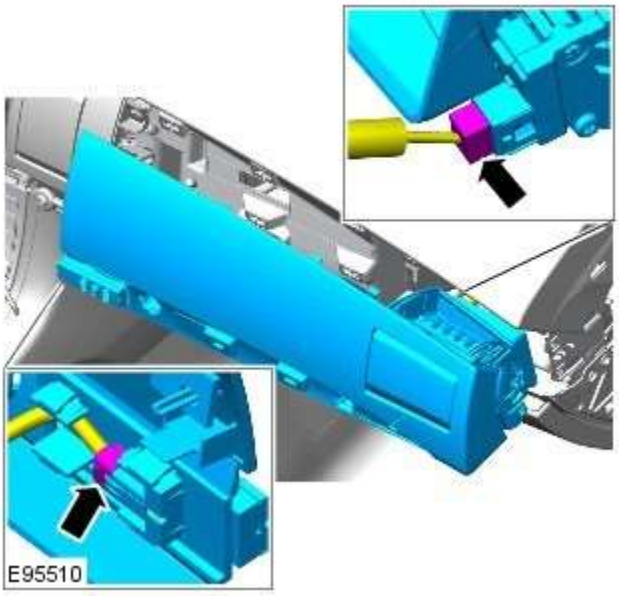
2.



3.



4.



External HD Service Tool Map Updates

E142915

Discovery 4, Range Rover Sport and Range Rover vehicles, equipped with a HDD (hard disc drive) integrated into the touch screen, are updated at point of service. Dealers are supplied with a set of master pack map update DVD's which are loaded onto the dealer Jaguar/Land Rover approved diagnostic equipment. The map data is then loaded from the diagnostic equipment onto the navigation tool hard drive. The map data is loaded to the touch s screen from the navigation tool hard drive.

The following process should be used to update the map data:

NOTE: The navigation update tool does not need the map data loading every time. This is only necessary when a new map update DVD is released.

- Using the approved Jaguar/Land Rover diagnostic equipment select the navigation update tool.

E142966

- Select **Setup** on th navigation update tool.

E142967

Published: 11-May-2011

Exterior Lighting - High Mounted Stoplamp

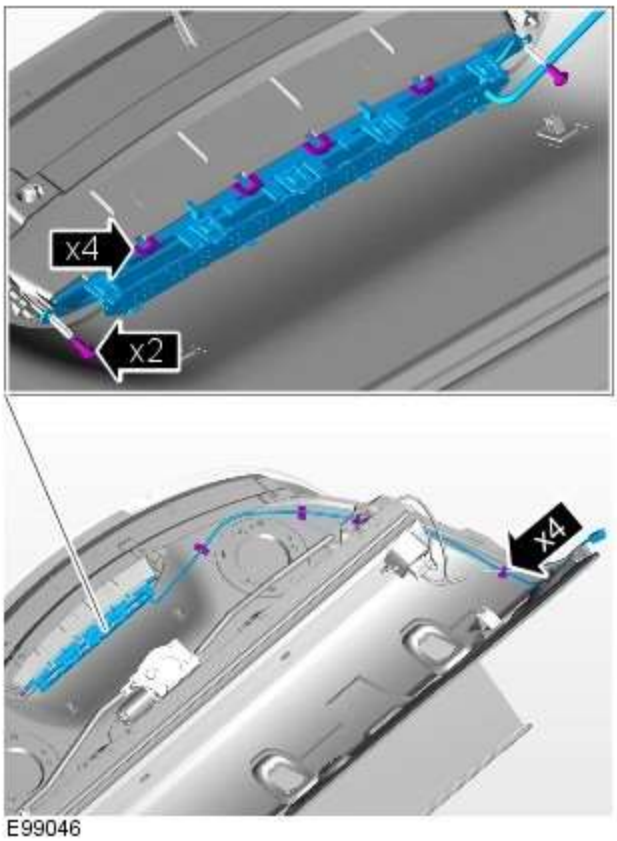
Removal and Installation

Removal

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

1. Refer to: Parcel Shelf (501-05 Interior Trim and Ornamentation, Removal and Installation).

2.



Installation

1. To install, reverse the removal procedure.

NOTE: Unlocked position shown

1 With the latch in the locked state (i.e. the latch interior release lever is in the locked position), press the key-fob or smart key **unlock** button

Does the latch interior release lever move from the locked position to the unlocked position?

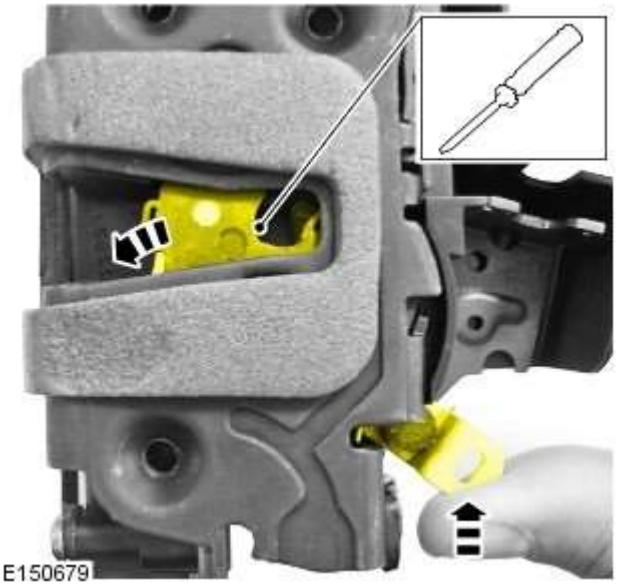
Yes

GO to C6.

No

If this is a repeat test and the vehicle electrical test section has been completed and confirmed that vehicle is working correctly, then replace the door latch. If replacing latch as part of a warranty claim, please quote reference code **LKINOP** in the technician comments section of the warranty claim

C6: PHYSICAL TEST 3



NOTE: Fully latched position shown

1 With the latch in its unlocked state, push the latch exterior release lever against its return spring, whilst simultaneously applying a light pressure to release the latch claw using a small screw driver or similar

Does the latch claw release?

Yes

GO to C7.

No

Repeat tests **C5** and **C6** to confirm the fault GO to C5. If the repeat test has confirmed that the exterior release lever will not release the claw on an unlocked latch replace the door latch. If replacing latch as part of a warranty claim, please quote reference code **EXTINOP** in the technician comments section of the warranty claim

C7: PHYSICAL TEST 4