

# TECHNICAL BULLETIN

## LTB00057NAS5

### 05 AUG 2014



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NOTE: The information in Technical Bulletins is intended for use by trained, professional Technicians with the knowledge, tools, and equipment required to do the job properly and safely. It informs these Technicians of conditions that may occur on some vehicles, or provides information that could assist in proper vehicle service. The procedures should not be performed by 'do-it-yourselfers'. If you are not a Retailer, do not assume that a condition described affects your vehicle. Contact an authorized Land Rover service facility to determine whether this bulletin applies to a specific vehicle.

**This reissue replaces all previous versions. Please destroy all previous versions. Only refer to the electronic version of this Technical Bulletin in TOPIx.**

Changes are highlighted in gray

### **SECTION: 204-06**

## Suspension Warning Lamp Illuminated - Diagnostic & Repair Procedure

### **AFFECTED VEHICLE RANGE:**

#### **Range Rover Sport (LS)**

**Model Year:** 2006-2013  
**VIN:** 6A901924-DA814822

### **MARKETS:**

NAS

### **CONDITION SUMMARY:**

**Situation:** The Dynamic Response system red warning lamp may be illuminated on the Instrument Cluster and Diagnostic Trouble Codes (DTC) C1119-62, C1119-09, and/or C1B11-62 may be stored, possibly indicating system contamination.

This Technical Bulletin provides a process for Retailers to correctly diagnose Dynamic Response system contamination, to identify if an actuator has failed, and to determine which parts may require replacement. A flushing procedure is provided to clean the affected parts that do not need to be replaced and ensure that the issue does not re-occur.

**Action:** Should a customer express concern, use SDD to establish which actuator is at fault and carry out the flush and repair procedure by following the Service Instruction outlined below.

### **PARTS:**

LR014592	High pressure pipe repair kit - from 2010MY	Quantity: 1
LR014593	High pressure pipe front - from 2010MY	Quantity: 1
LR014595	Pump - from 2010MY	Quantity: 1
LR024072	Rear actuator - from 2010MY	Quantity: 1
LR024073	Rear actuator - up to 2010MY	Quantity: 1
LR032958	Front actuator - up to 2007MY	Quantity: 1
LR032959	Front actuator - from 2007MY	Quantity: 1
RQB500393	High pressure pipe front - up to 2010MY	Quantity: 1
RQN000011	Reservoir	Quantity: 1
RVB000017	Pump - up to 2010MY	Quantity: 1
RVH500100	Pressure Control Valve (PCV)	Quantity: 1
RVH500110	Valve block	Quantity: 1
RVJ100010	Valve block filter	Quantity: 1

### **TOOLS:**



Dynamic Response system Bleed Bottle  
204-591-01

E62797



Dynamic Response system Control Box  
204-591-02

E62798

Hose Plier clamp-off tools

SDD with latest DVD and Calibration File

Jaguar Land Rover-approved Midtronics battery power supply

### **WARRANTY:**

**△ NOTE: Repair procedures are under constant review, and therefore times are subject to change; those quoted here must be taken as guidance only. Always refer to TOPIx to obtain the latest repair time.**


**△ NOTE: DDW requires the use of causal part numbers. Labor only claims must show the causal part number with a quantity of zero.**

DESCRIPTION	SRO	TIME (HOURS)	CONDITION CODE	CAUSAL PART
Dynamic Response system - Check using SDD - Replace pump - 4.2L / 5.0L V8 SC	<b>60.60.89/41</b>	1.9	49	RQK500110
Dynamic Response system - Check using SDD - Replace pump - 4.4L / 5.0L V8 N/A	<b>60.60.89/41</b>	1.8	49	RQK500110
Dynamic Response system - Pressure test using SDD - Replace valve block	<b>60.60.89/42</b>	2.4	49	RQK500110
Dynamic Response system - Check using SDD - Replace front actuator; flush and bleed system	<b>60.60.89/43</b>	4.2	49	RQK500110
Dynamic Response system - Check using SDD - Replace rear actuator; flush and bleed system	<b>60.60.89/44</b>	5.9	49	RQK500110
Dynamic Response system - Check using SDD - Replace front actuator; replace high-pressure pipe front section; flush system - 4.2L / 5.0L V8 SC	<b>60.60.89/47</b>	4.3	49	RQK500110
Dynamic Response system - Check using SDD - Replace front actuator; replace high-pressure pipe front section; flush system - 4.4L / 5.0L V8 N/A	<b>60.60.89/47</b>	4.2	49	RQK500110
Pressure Control Valve - Renew	<b>60.60.23</b>	0.4	49	RQK500110
Dynamic Response system - Pressure test	<b>60.90.20</b>	0.4	49	RQK500110

**△ NOTE: Normal Warranty policies and procedures apply.**

### **SERVICE INSTRUCTION:**

1. Connect the Jaguar Land Rover-approved Midtronics battery power supply to the vehicle battery.

2. Turn ignition 'ON' (engine not running).
3. Connect the Symptom Driven Diagnostics (SDD) system to the vehicle and begin a new session.
4. Follow the on-screen prompts, allowing SDD to read the VIN and identify the vehicle and initiating the data collect sequence.
5. Read and record all Diagnostic Trouble Codes (DTC).
  - Follow the Service Instruction if any of the following DTC codes are present: C1119 62, C1119 09, C1B 1162.
6.  **CAUTION: If the Dynamic Response system reservoir is empty, pump damage is likely to have occurred.**

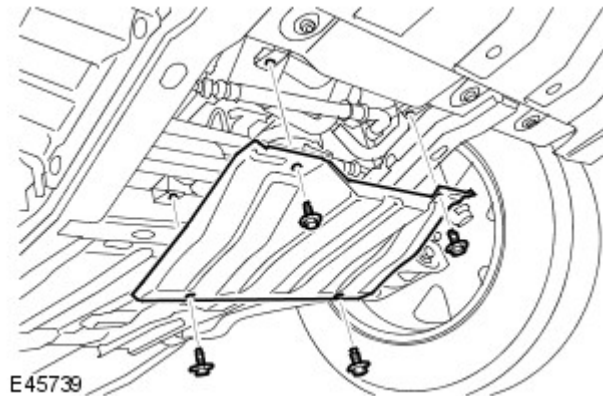
Check the Dynamic Response system fluid level.

- If the level is correct, proceed to step 12.
- If the fluid is low, inspect system for leaks.

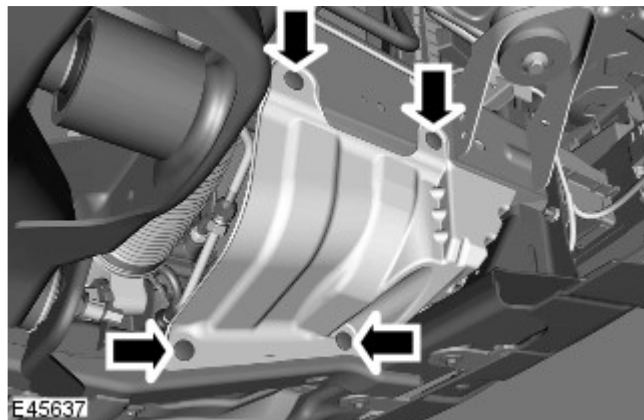
7.  **WARNING: Do not work on or under a vehicle supported only by a jack. Always support the vehicle on safety stands.**

Raise and support the vehicle (see TOPIx Workshop Manual, section: 100-02).

8. Remove the engine under shield (see TOPIx Workshop Manual, section: 501-02).
9. Remove the radiator access panel.

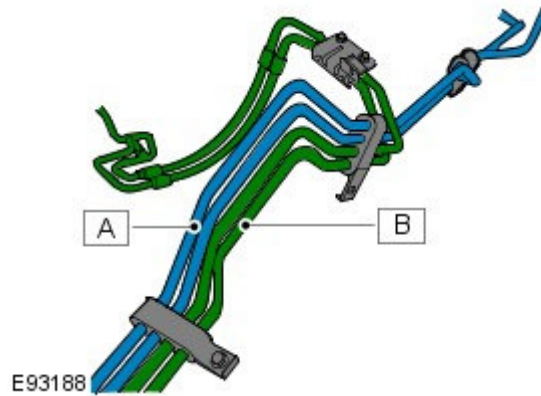


10. Remove the right-hand splash shield.



11. Inspect the Dynamic Response system for leaks.
12. Using SDD, perform the Dynamic Response system test.

- Select 'Special Applications'.
- Select 'Dynamic Response system Hydraulic Control - System Test'.
- Demand 50 Bar of pressure for up to five minutes or until the primary circuit pipes (A) are hot. Check pipe temperature under right-hand wheel arch.
- If 50 bar cannot be obtained then the Pressure Control Valve (PCV) in the valve block is faulty and requires replacement with the PCV service kit (see TOPIx Workshop Manual, Section: 204-06).
- Open Directional Control Valve 1 (DCV1) and check system pressure is still 50 Bar. Hold for two minutes. If pressure has dropped by over 5 Bar, this indicates a faulty actuator.
- Open Directional Control Valve 2 (DCV2) and check system pressure is still 50 Bar. Hold for two minutes. If pressure has dropped by over 5 Bar, this indicates a faulty actuator.

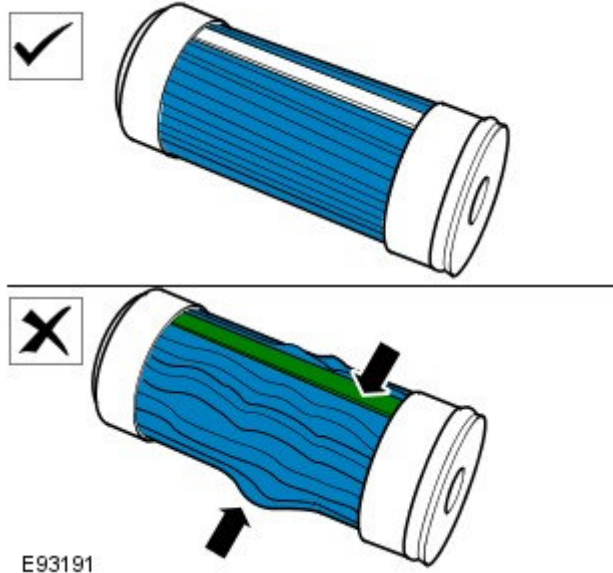


- 13.**  **NOTE: If the temperature comparison test is not conclusive at this stage, follow the bulletin and if condition (B) is found at step 22, the front actuator requires replacement.**

Confirm which actuator is faulty.

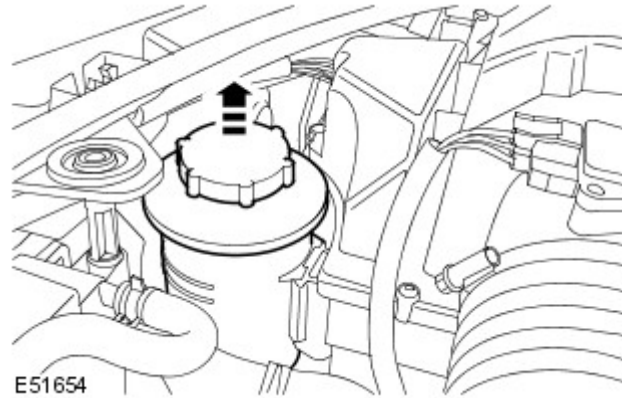
- If all four pipes in the front wheel arch area are hot and at a similar temperature, this indicates that the front actuator is faulty. Replace the front actuator (see TOPIx Workshop Manual, section 204-06).
  - If the pipes in the rear wheel arch are hot, this indicates that the rear actuator is at fault. Replace the rear actuator (see TOPIx Workshop Manual, section 204-06).
  - If the pressure has dropped but there is no increase in the actuator pipes temperature (B), and rear pipes, then the valve block requires replacement (see TOPIx Workshop Manual, section 204-06). There should be a corresponding DCV fault code logged.
- 14.** If found faulty in step 12, install a new Pressure Control Valve (PCV) service kit (see TOPIx Workshop Manual, Section: 204-06). Once complete, check the valve block and reservoir filter for signs of debris (steps 15-22). Complete bleed process. If no debris found in reservoir of valve block filter. It will not be necessary to follow the other steps shown in this procedure.
- 15.** Remove the valve block filter (see TOPIx Workshop Manual, Section: 204-06).
- 16.** Inspect the valve block filter.

- Check filter for signs of distortion. A distorted filter indicates excessive system pressure.
- Replace the filter.



- 17.** Release the Dynamic Response system reservoir.

- Release the clip.
- Tie the reservoir aside.

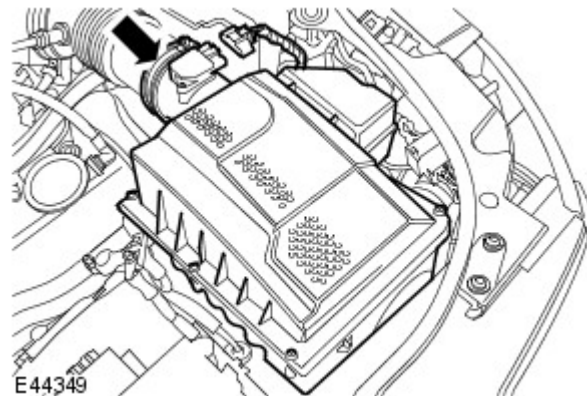


18. Disconnect the intake air resonator.

- Release the clip.

19. Remove the right-hand air cleaner assembly.

- Disconnect the right-hand Mass Air Flow (MAF) sensor electrical connectors.



20. Position container to collect fluid loss.


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



**NOTE: Some fluid spillage is inevitable during this operation.**

Remove the fluid reservoir.

- Disconnect the hoses from the fluid reservoir.
- Using a suitable tool clamp the hoses to prevent air ingress.
- Release the two clips.

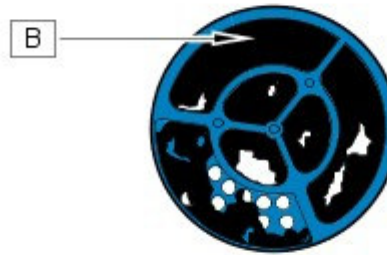
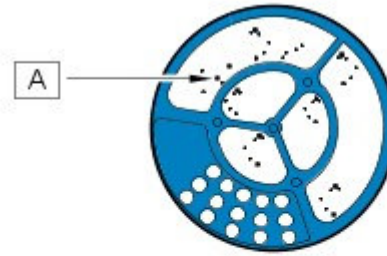
22.  **NOTE: A small number of particles is acceptable (A). The reservoir does not require replacement.**

Inspect the reservoir fluid filter for signs of contamination.

- A small number of particles is acceptable (A). The reservoir does not require replacement.
- If the filter is lightly contaminated with

grey metallic looking particles, this would indicate a pump failure. Discard the reservoir if this condition is found. Proceed to next step.

- If the filter is heavily contaminated with black particles and sludge (B), this would indicate an actuator internal piston seal failure. Discard the reservoir. Proceed to step 24.



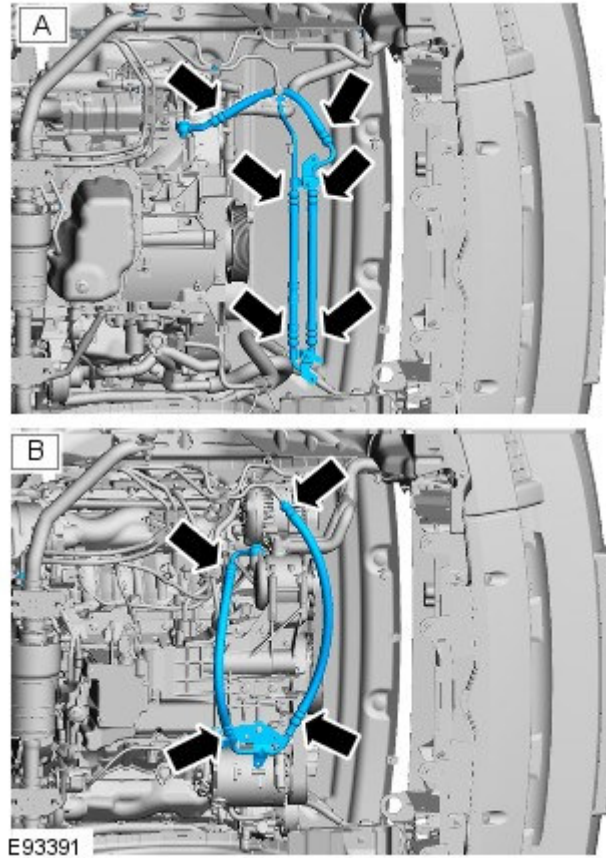
E93190

**23.** If required, install a new Dynamic Response system pump. It will not be necessary to change any actuator if the pump is replaced.

**24.**  **NOTE: 'A': all AJV8 petrol engines; 'B': TDV8 diesel only.**

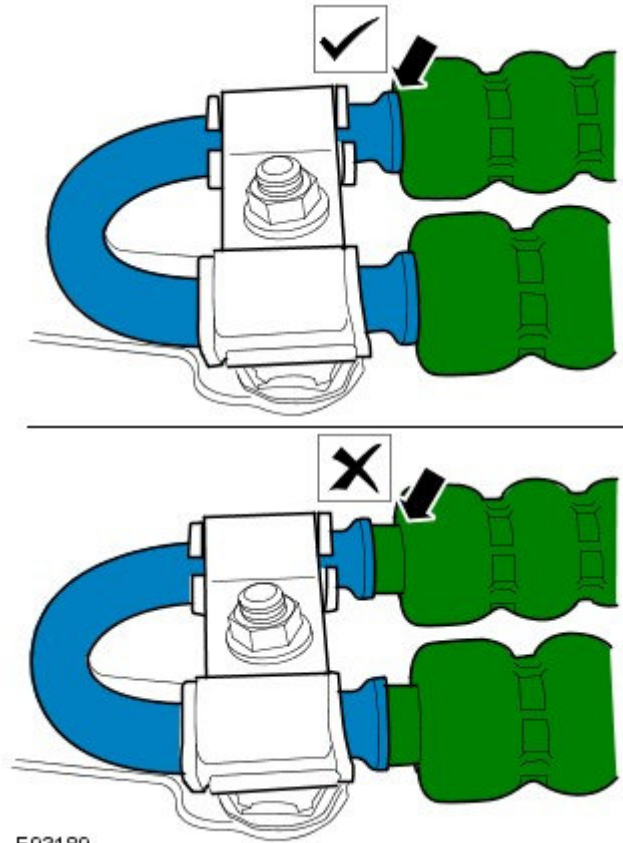
Inspect the high-pressure hose crimps for signs of movement.

- A = all AJV8 petrol engines
- B = TDV8 diesel only



**25.** Any pipe assembly that shows signs of movement must be replaced.

- Any gap larger than 1mm is not acceptable.



26. Replace the hose assembly as follows.

- AJV8 petrol models the hose assembly shown in graphic E93391 [see step 24 (A)] must be replaced if required.

27. Install the fluid reservoir.

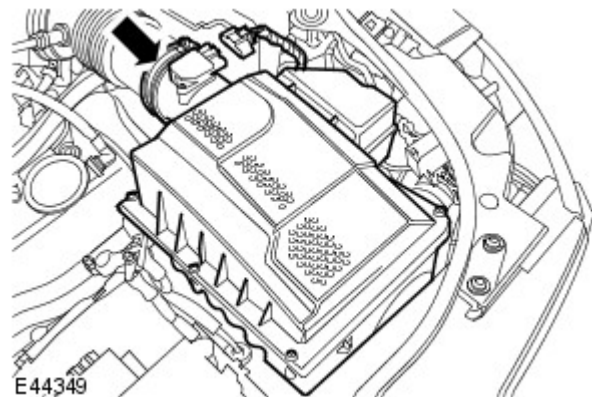
- Clean the component mating faces.
- Connect the hoses.
- Install the clips.

28. Remove the hose clamps.

29.  **NOTE: When installing the air cleaner, make sure the locating pegs fit securely into the grommets.**

Install the right-hand air cleaner assembly.

- Connect the right-hand Mass Air Flow (MAF) sensor electrical connectors.



30.  **NOTE: It is not necessary to perform this step if the valve block or pump has been replaced.**



Remove the contaminated fluid from the actuator, without the internal leak.

- Remove both wheels and tires (see TOPIX Workshop Manual, section 204-04).
- Disconnect both the stabilizer bar links from the stabilizer bar (see TOPIX Workshop Manual, section 204-06).
- Disconnect the Dynamic Response system fluid pipes from the actuator.
- Move the actuator bar arms in opposite directions to displace the fluid. Full movement in both directions of each arm must be performed, to ensure fluid from both sides of the piston is removed.

**31.** Install the special tool to the Dynamic Response system reservoir.

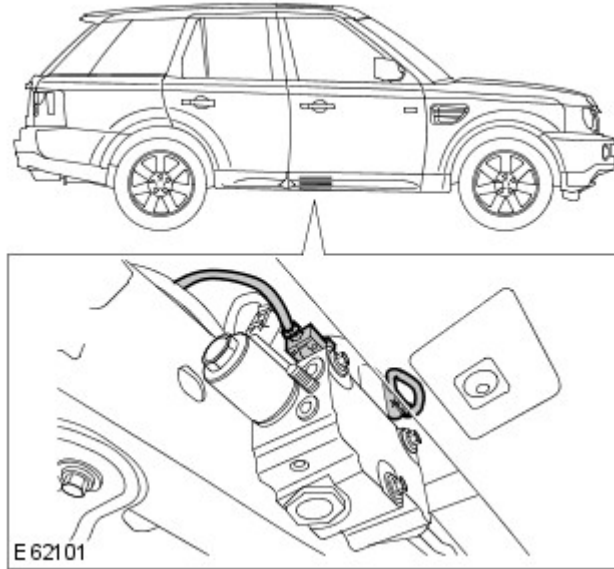
- Completely fill the reservoir with fluid.
- Make sure the pressure regulator on the special tool is turned OFF.
- Fill the special tool bottle approximately  $\frac{3}{4}$  full with fluid.
- Connect the special tool to a suitable workshop air supply.



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

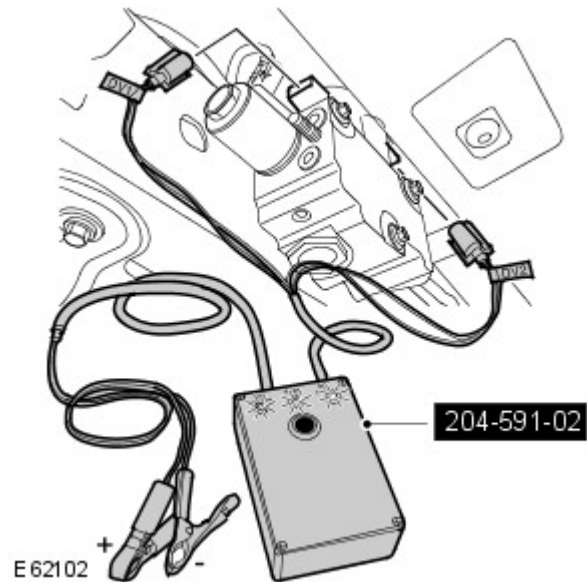
Raise and support the vehicle (see TOPIX Workshop Manual, section: 100-02).

**33.** Disconnect the two valve block actuator control valve electrical connectors.



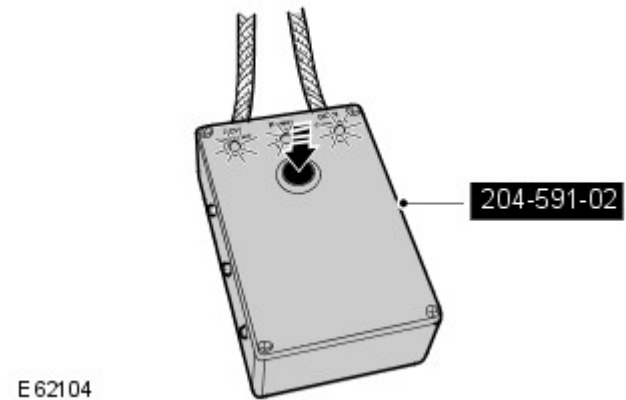
**34.** Connect the special tool electrical connectors to the valve block.

- Connect the special tool power supply leads to the vehicle battery.



**35.** Disconnect the Dynamic Response system fluid pipes from the actuator.

**36.** Using the special tool, open both actuator control valves.



37. Flush fluid through the front pipes until approximately 0.5 liter has been displaced.

38.  **CAUTION: The O-ring seals are to be reused unless damaged.**

Connect the fluid lines to the actuator.

- Tighten the two bolts to 22Nm (16lbf. ft).

39. Repeat the flush process for the rear pipes.

- If the pipes have not been disconnected during step 30, disconnect the Dynamic Response system fluid pipes from the actuator.
- Flush fluid through the actuator until approximately 0.5 liter has been displaced.

40.  **CAUTION: It will not be necessary to replace any actuator if the pump has been replaced.**

Install a new actuator and stabilizer bar (see TOPIx Workshop Manual, section: 204-06).

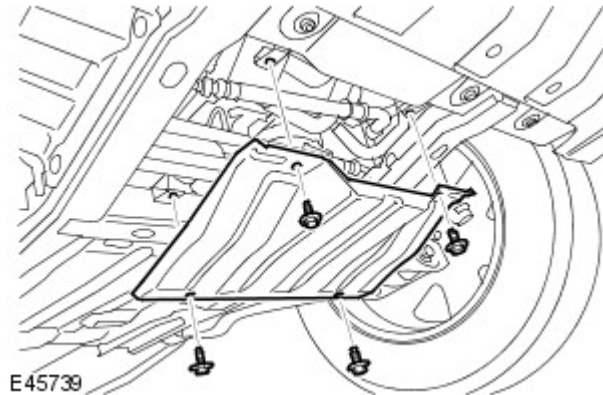
41. Bleed the Dynamic Response system (see TOPIx Workshop Manual section: 204-06).

42. Check and top up the Dynamic Response system fluid reservoir.

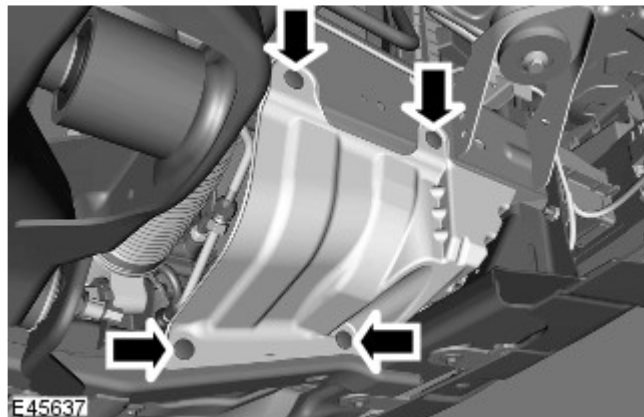
- Fill the reservoir to the mid-way mark between the 'MAX' and 'MIN' marks.

43. Install the radiator access panel.

- Tighten the bolts to 10Nm.



44. Install the right-hand splash shield.



45. Install the engine under shield (see TOPIx Workshop Manual, section: 501-02).

46. Clear diagnostic trouble codes (DTCs).

47.  **CAUTION: Only perform the road test if the pump or an actuator has been replaced.**

If the pump or an actuator has been replaced, perform a 10 mile road test on twisty roads to exercise the system.

- 48.** Install a new valve block filter (see TOPIx Workshop Manual, section: 204-06).
- 49.** Check and top up the Dynamic Response system fluid reservoir.
  - Fill the reservoir to the mid-way mark between the 'MAX' and 'MIN' marks.