LTB00557NAS6

TECHNICAL BULLETIN

24 AUG 2018

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.

INFORMATION

This reissue replaces all previous versions. Please destroy all previous versions.

Changes are highlighted in blue

SECTION:

204-06: Ride and Handling Optimization

SUBJECT/CONCERN:

'Knock' Sound From Front Suspension

AFFECTED VEHICLE RANGE:

MODEL:	MODEL YEAR:	VIN:	ASSEMBLY PLANT:	APPLICABILITY:
Range Rover Sport (LW)	2014	001154-001205	Solihull	Vehicles With: Dynamic Response
Range Rover Sport (LW)	2014-2015	300003-399999	Solihull	Vehicles With: Dynamic Response
Range Rover Sport (LW)	2014-2016	500023-599999	Solihull	Vehicles With: Dynamic Response
Range Rover Sport (LW)	2015-2017	601763-690429	Solihull	Vehicles With: Dynamic Response
Range Rover Sport (LW)	2016-2017	100369-181319	Solihull	Vehicles With: Dynamic Response
Range Rover (LG)	2013-2017	000083-380216	Solihull	Vehicles With: Dynamic Response

MARKETS:

NORTH AMERICA

CONDITION SUMMARY:

SITUATION:

A 'knock' sound from the front suspension may be heard inside the vehicle when traveling over an uneven road surface. The sound may be noticeable, when one of the front wheels travels over a uneven surface while the opposite front wheel remains on a smooth surface.

CAUSE:

This may be caused by the operation of the Dynamic Response system actuators.

ACTION:

Should a customer express this concern, follow the Basic Diagnostic Process and Workshop Procedure outlined below.

PARTS:

NOTE:

Only if required: an allowance of $46.80 (or local equivalent) has been provided for the Dynamic Response system fluid (Texaco cold climate fluid PSF14315 [33270]) and Loctite™ 243; claim using code 'ZZZ001'.

PART NUMBER	DESCRIPTION	QUANTITY
LR092959	Front Stabilizer Actuator (if required)	1
LR050753	Bolt (M12 X 55mm) (if required)	4
LR045743	Bolt (M14 X 55mm) (if required)	2
LR045788	M12 Steel Repair Insert (if required)	4
LR043320	M14 Steel Repair Insert (if required)	2
LR072419	Valve block - Dynamic Response system (if required)	1
LR072550	Reservoir - Dynamic Response system fluid (if required)	1
ZZZ001	Dynamic Response fluid; Loctite™	$46.80

TOOLS:

Jaguar Land Rover-approved Midtronics battery power supply

Jaguar Land Rover-approved diagnostic tool with latest SDD Software Management Pack

WARRANTY:

NOTE:

Only if required: an allowance of $46.80 (or local equivalent) has been provided for the Dynamic Response system fluid (Texaco cold climate fluid PSF14315 [33270]) and Loctite™ 243; claim using code 'ZZZ001'.

NOTES:

- 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 JLR claims submission system to obtain the latest repair time.
- The JLR Claims Submission System 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
Actuator - Front - Dynamic Response system - Renew	60.60.50	1.20	42	LR046089
Install steel inserts to subframe	60.35.74	2.30	42	LR046089
Valve block - Dynamic Response system - Renew - Range Rover Sport (L494)	60.60.20	2.40	42	LR046089
Valve block - Dynamic Response system - Renew - Range Rover (L405)	60.60.20	2.70	42	LR046089
Pressure test - Dynamic Response system	60.90.20	0.40	42	LR046089
Fluid reservoir - Dynamic Response system - Renew	60.60.12	0.20	42	LR046089

NOTE:

Normal Warranty procedures apply.

BASIC DIAGNOSTIC PROCESS:

1

NOTE:

Use customer supplied occurrence information (speed/road surface/symptom) to understand what is the most probable root cause of the noises observed.

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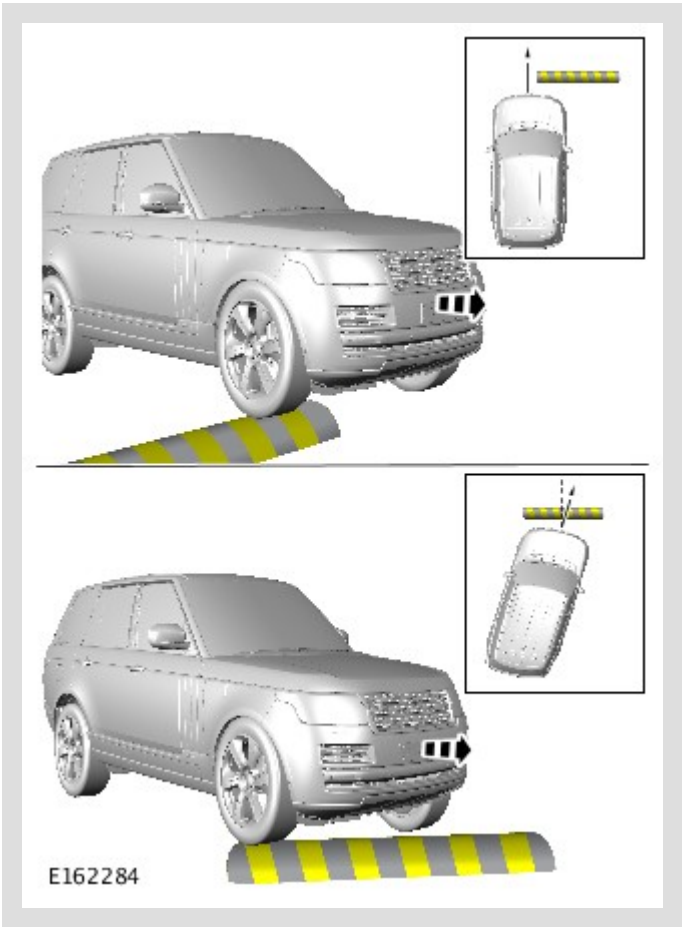
SYMPTOM: single 'knock' OR a series of isolated 'knocks':

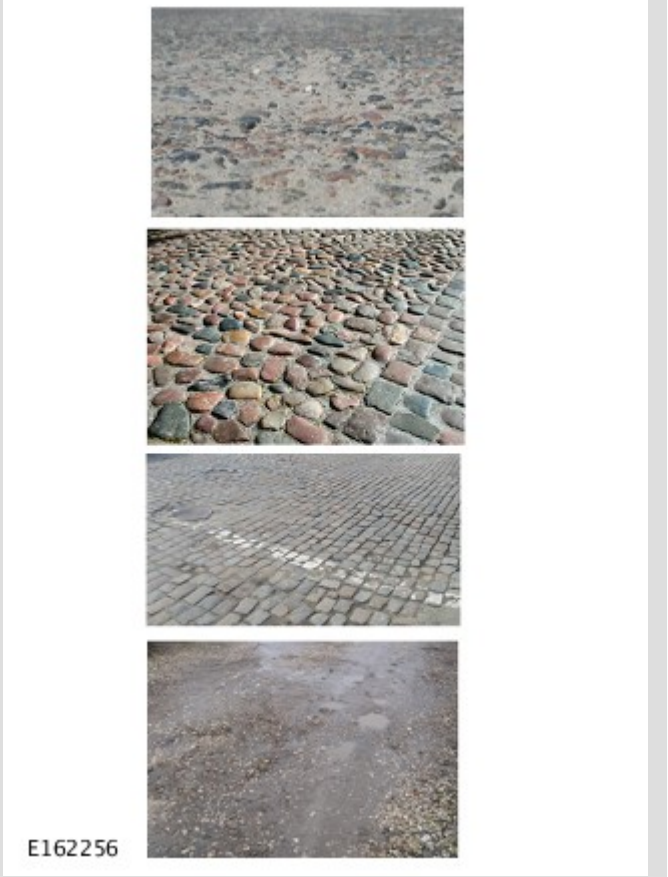
- **Drive Cycle / Conditions:** single-wheel and dual-wheel inputs from speed bumps /damaged road surfaces or similar while traveling ONLY forward at speeds of up to 25mph (40kmh).
  - **Action:** perform the SERVICE INSTRUCTION listed below.



SYMPTOM: 'click' noise:

- **Drive Cycle / Conditions:** 'click' noise occurs during harsh cornering, rapid acceleration, and/or abrupt braking.
  - **Action:** refer to Technical Bulletin LTB00618NAS, 'Click' / 'Rattle' Noise From Engine Compartment When Driving.
    - If the issue is not rectified after performing the Service Instruction in this bulletin, remedial work may be required to the steering rack. Before contacting the Technical HelpLine, raise a Technical Assistance (TA)request, detailing the following: customer symptoms, road surfaces, and road speeds that create the noise. After submitting the TA request, the Technical Helpline will advise the remedial actions required.

3



SYMPTOM: 'rattle' noise:

- **Drive Cycle / Conditions:** noise occurs while traveling at speeds up to 20mph (32kmh) over road surfaces shown.
  - **Action:** refer to Technical Bulletin LTB00618NAS, 'Click' / 'Rattle' Noise From Engine Compartment When Driving.

4

SYMPTOM: 'thud' noise:

- **Drive Cycle / Conditions:** noise occurs while braking abruptly at low vehicle speeds.
  - **Action - 2013-15MY:**refer to Technical Bulletin LTB00573NAS, 'Thud' / 'Thump' Noise From Front Suspension On Brake Application .
  - **Action - 2016-17MY:** go to the Workshop Procedure below.

WORKSHOP PROCEDURE:

NOTES:

- This Technical Bulletin is written in a specific order where the most likely causes of this issue are dealt with first. The most likely causes will also give the biggest benefit if addressed. It is therefore imperative that the steps are followed in order.
- Refer to TOPIx for all torques not explicitly specified in this document.
- Replacement of any suspension component which affects suspension geometry must be followed by a four-wheel alignment inspection using the procedure highlighted in the vehicle Workshop Manual.
- **VEHICLE TESTING:** it is important to identify a test route that highlights the customer concern of suspension knock and re-test the vehicle over the same test route when identified in the following procedure. The test route should include roads that have a uneven road surface or drain covers that allow single wheel inputs. The vehicle speed that highlights the issue should be noted during the initial appraisal of the customer concern and then replicated on subsequent test drives.
- Typically, noise from the Dynamic Response system can be observed at low vehicle speeds (10–25mph / 16–40 km/h). Some occurrences of hydraulic knock should be expected. Only excessive / abnormal knocking noise indicates a concern.

1

Check the Dynamic Response system fluid reservoir for leaks:

- If a leak is not present, go to the next Step.
- If a leak is present, replace the Dynamic Response system fluid reservoir (see TOPIx Workshop Manual section 204-06: Ride and handling optimization - Removal and installation - Fluid reservoir).

2

Front Suspension Knock Test: vehicles with the Dynamic Response system are expected to exhibit a low level of hydraulic knock from the system during normal operation as the input forces are reacted by the Dynamic Response system. Where there is a customer complaint of excessive / abnormal knocking noise, the following steps should be taken.

- Check and rectify basic faults before beginning diagnostic routines.
- Verify the customer concern.
- Visually inspect for obvious signs of mechanical damage.
- Make sure all tire pressures are set according to the tire label in the driver's door opening.

- Make sure the same test route is used for road test after any remedial work.

3

NOTE:

Do NOT remove the fuse for the Dynamic Response System

Front Suspension Knock Diagnostic Test (refer to Step 1 of the Basic Diagnostic Process above)

4

NOTE:

A small amount of pivot is normal.

Check the front stabilizer bar links for abnormal play.

- If abnormal play is not found, go to the next Step.
- If abnormal play is found, renew the stabilizer bar link(s).

5 Carry out road test.

- If the issue is not present, return the vehicle to the customer.
- If the issue is still present, go to the next Step.

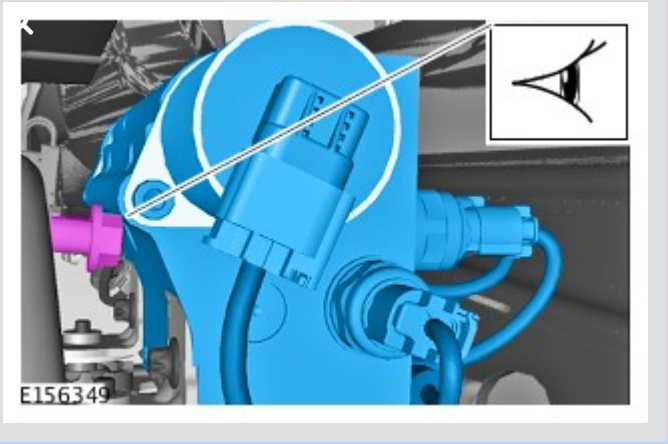
6 Check the front stabilizer bar arm for play.

- If the front stabilizer bar arm does not have greater than ± 10mm of play, go to the next Step.
- If the front stabilizer bar arm does have greater than ± 10mm of play, perform a system bleed (see TOPIx Workshop Manual section 204-06: Ride and handling optimization - General procedures - Active Stabilization System Bleeding).
  - Initially only bleed the front stabilizer bar actuator.

7

NOTE:

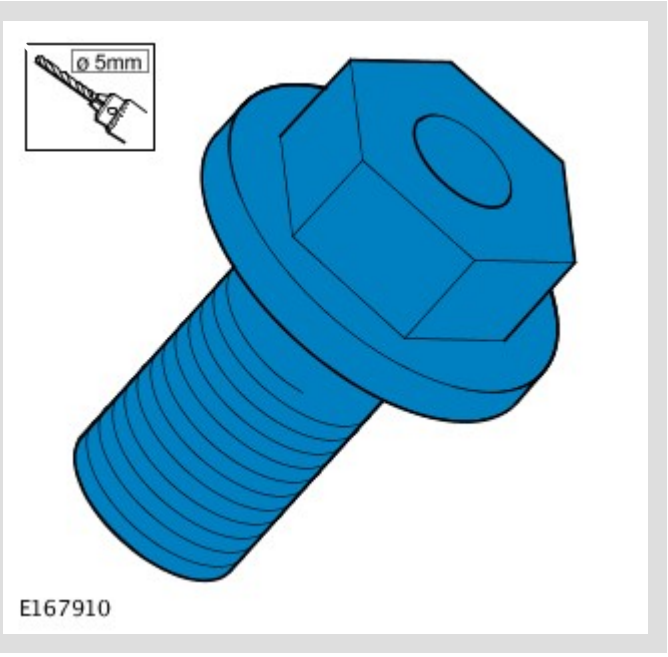
View of the end of hydraulic valve block from front of vehicle.



Check the valve block to body stud clearance.

- If there is sufficient clearance between the valve block body and the plastic body fastener that secures the fuel lines, go to Step 9.
- If there is not sufficient clearance between the valve block body and the plastic body fastener that secures the fuel lines, go to Step 8.

8



Remove the plastic body fastener and drill an axial hole 5mm diameter through the head; this will allow the body stud to pass through the head of the fixing.

9

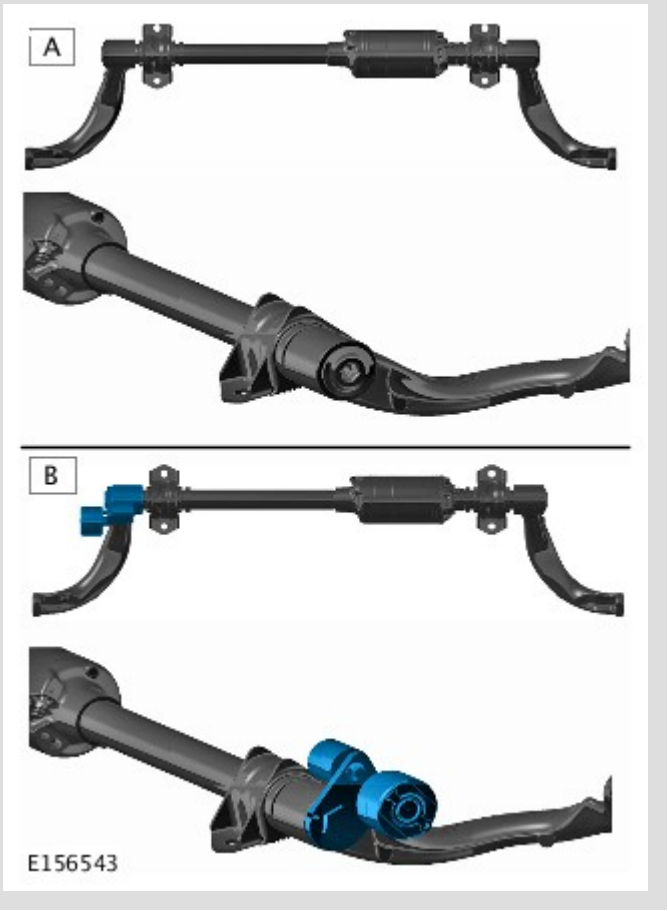
Carry out road test.

- If the issue is not still present, return the vehicle to the customer
- If the issue is still present, go to the next Step.

10

NOTE:

If the latest specification of front actuator bar is installed, only replace it if it is damaged/leaking fluid.



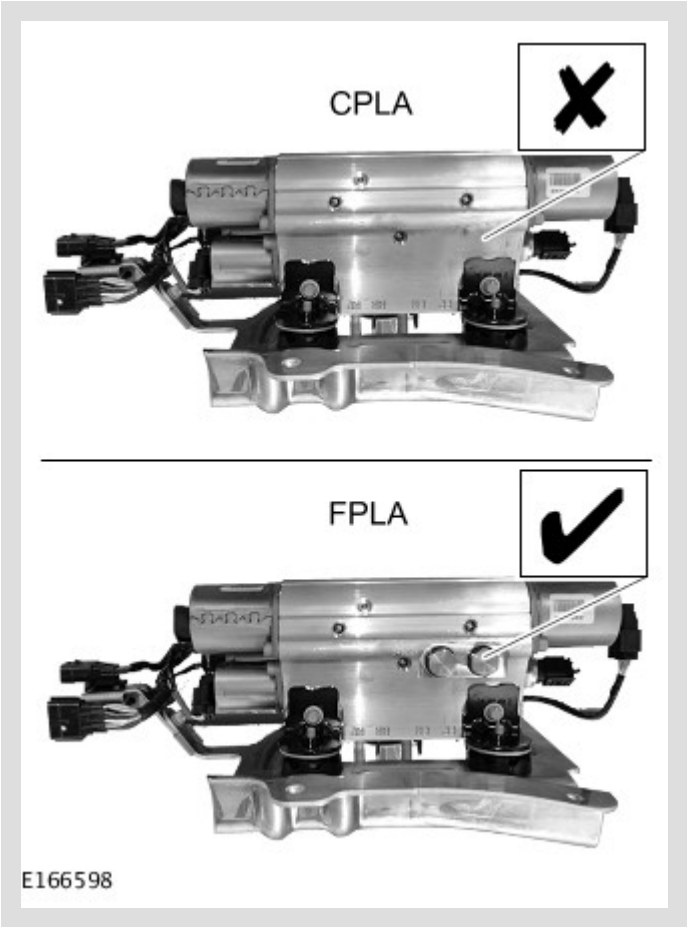
2013MY Range Rover (L405) vehicles up to VIN 125193 only: if the knocking noise is still present and considered unacceptable after performing the above steps, replace the Dynamic Response front actuator with part number LR052058 **(B)** (see TOPIx Workshop Manual section 204-06: Ride and Handling Optimisation - Front Stabilizer Bar).

After performing all listed remedial actions, it is possible that a low level of residual knocking noise may still be present. This low level of knocking noise may be caused by the Dynamic Response system's hydraulic operation. If the concern has not improved to an acceptable level, go to the next Step.

11

NOTE:

On strong customer complaint, confirm which level of valve block is installed. Valve block shown removed for clarity.



Check the valve block level (**CPLA or FPLA**).

- If the vehicle does have the latest level (FPLA) valve block **(✓)**, go to the Step 22.
- If the vehicle does not have the latest level (FPLA) valve block **(X)**, install a new valve block (see TOPIx Workshop Manual section 204-06: Ride and handling optimization - Removal and installation - Valve block).
  - When all tasks are finished, go to the next Step.

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

13

CAUTIONS:

- A Jaguar Land Rover-approved Midtronics battery power supply must be connected to the vehicle startup battery during diagnosis / module programming.

- All ignition ON/OFF requests must be performed. Failure to perform these steps may cause damage to control modules in the vehicle.

NOTE:

The Jaguar Land Rover-approved diagnostic tool must be loaded with SDD154.00 Software Management Pack v299 (or later).

Connect the Jaguar Land Rover-approved diagnostic tool to the vehicle and begin a new session.

14 Follow all on-screen instructions, allowing the diagnostic tool to read the VIN, identify the vehicle, and initiating the data collect sequence.

15

NOTE:

When requested, select 'FPLA' valve.

Follow all on-screen prompts.

16 If the hyperlink is not available:

1. Select **Service Functions** from the Session Type screen.
2. Select the **Selected Symptoms** tab.
3. Select **Dynamic response module - Valve block replacement**
4. Select **continue**.
5. Select the **Recommendations** tab.
6. Select **Run** to perform the **'Dynamic response module - Valve block replacement'** option.

17 Follow all on-screen instructions until the application finishes successfully.

1. When all tasks are complete, go to the next Step.

18 If the hyperlink is not available:

1. Select **Diagnosis** from the Session Type screen.

2 Select the **Selected Symptoms** tab.

3 Select **Chassis - Suspension system - Vehicle dynamic suspension**

4 Select **continue**.

5 Select **Run** to perform the **'Dynamic response hydraulic control - system test'** option.

19 Follow all on-screen instructions.

- If the test does succeed, go to the next Step.
- If the test does not succeed, perform additional diagnosis.

20 Exit the current session.

1 Select the **Session** tab.

2 Select the **Close Session** option.

21 Disconnect the diagnostic tool and battery power supply from the vehicle.

22

NOTE:

After performing all remedial actions, it is possible that a low level of residual noise will still be evident, This is due to the systems hydraulic operation. The system is working correctly and this noise does not adversely affect vehicle stability or performance. If the customer is still not accepting of this then please contact your local Customer Relationship Center (CRC) team to discuss the case.

If noise levels have improved to a suitable level, return vehicle to customer.