

LTB00401NAS5

TECHNICAL BULLETIN

09 MAY 2017



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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.

INFORMATION

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

Changes are highlighted in blue

SECTION:

204-04: Wheels and Tires

SUBJECT/CONCERN:

Wheel/Tire Balancing and Optimization

AFFECTED VEHICLE RANGE:

MODEL:	MODEL YEAR:	VIN:	ASSEMBLY PLANT:
Range Rover Evoque (LV)	2012 Onwards	000447 Onwards	Halewood
Range Rover Sport (LW)	2014 Onwards	000002 Onwards	Solihull
Range Rover (LG)	2013 Onwards	001204 Onwards	Solihull
Freelander (LN)	2002-2005	353298-419396	Halewood
LR2 (LF)	2007-2015	000212-439912	Halewood
LR3 (LA)	2005-2009	000360-513325	Solihull
LR4 (LA)	2010-2016	510742-847658	Solihull
Range Rover Sport (LS)	2006-2013	900129-814822	Solihull
Range Rover (LM)	2003-2012	101029-393639	Solihull

MARKETS:

NORTH AMERICA

CONDITION SUMMARY:**SITUATION:**

The steering wheel may exhibit a vibration / shimmy while driving.

CAUSE:

This may be caused by a road wheel/tire assembly imbalance and/or temporary tire flat-spotting.

ACTION:

Should a customer express this concern, refer to the information outlined below.

PARTS:

PART NUMBER	DESCRIPTION	QUANTITY:
Wheel weights	Locally sourced	As required

TOOLS:



Jaguar Land Rover-approved
Midtronics battery
power supply



Jaguar Land
Rover-approved
diagnostic tool



JLR-IDU2

Inline
Diagnostic
Unit 2
(IDU2)



NVHMOU

NVH
Sensor
Steering
Wheel

WARRANTY:**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 TOPIx to obtain the latest repair time.
- 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
10 mile (15 km) road test - Wheel shimmy/vibration test	74.10.89.40	0.3	42	LR037742
Steering wheel vibration / steering shimmy	74.10.89.39	2.2	42	LR037742

NOTE:

Normal Warranty procedures apply.

SERVICE INSTRUCTION 'A':

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NOTES:

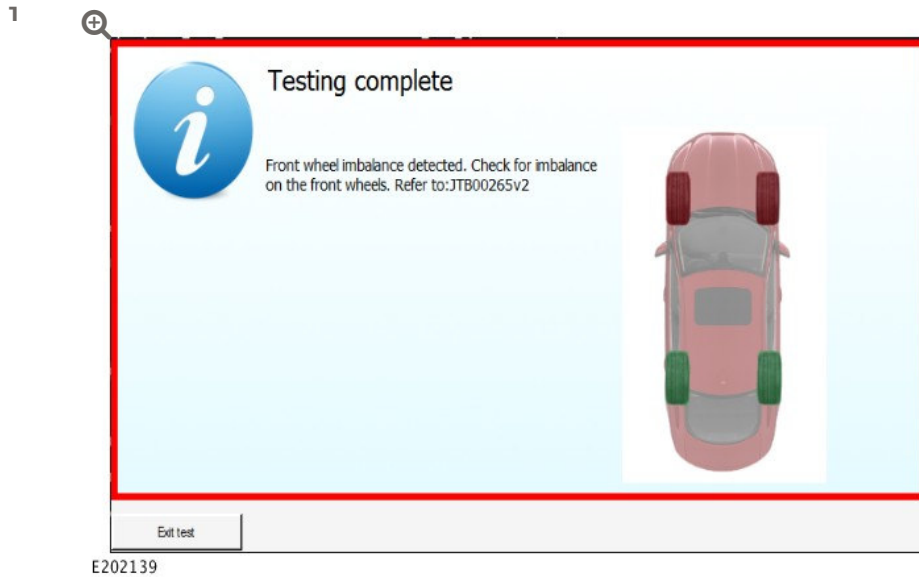
- **Factory wheel alignment and wheel balancing are covered for 12 months/12,500 miles (20,000 Km),**

whichever occurs first, for OEM equipment only. Refer to Warranty Compliance and Procedures Manual for further information.

- No claim should be submitted with reference to this Technical Bulletin where wheel shimmy was identified and rectified during the normal length Pre-Delivery Inspection (PDI) road test.
- Until flat spots are removed, significant steering wheel vibration/shimmy/vehicle vibration may be present, even if the car has only stood overnight. A test drive is required to ensure temporary tire flat spots are removed. For longer term flat spots, a longer drive may be required. The test drive should be carried out on normal open roads to allow the highest speed that speed limits and road / traffic conditions allow.
- All road tests must be performed with tire pressures at 29psi / 2.0bar / 200kPa.
- The Diagnostic Procedure is only available for Range Rover Evoque (L538), Range Rover Sport (L494), and Range Rover (L405) vehicles. For all other vehicles, follow the sub-steps below only.

If the vehicle has experienced a steering wheel vibration / shimmy during the Pre-Delivery Inspection (PDI) road test, refer to Technical Bulletin LTB00466NAS. If after performing the Service Instruction therein the concern is still evident, go to the Diagnostic Procedure below.

SERVICE INFORMATION:



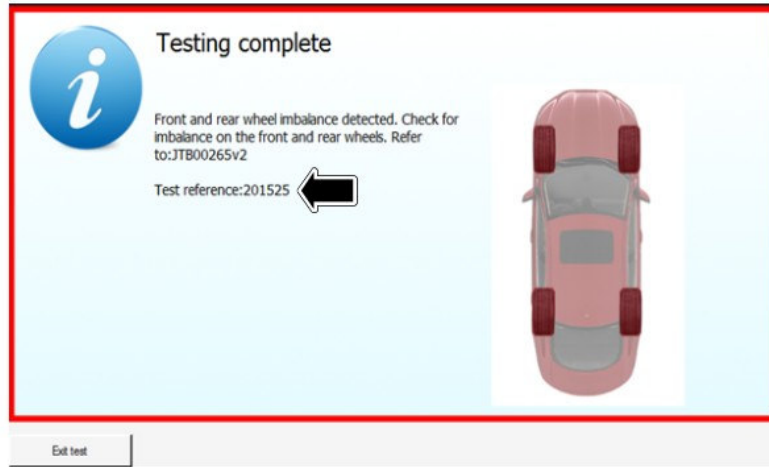
This image suggests that there is front wheel and tire assembly imbalance.

- On completion of the Diagnostic Procedure below, the test results will identify if there is front, rear, front and rear, or no wheel imbalance detected.

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NOTE:

This information must be added to the Retailer verbatim of the claim; otherwise the claim will be rejected.



E206660

Make a record of the test reference number produced at the end of the diagnostic test in the Warranty claim submission.

DIAGNOSTIC PROCEDURE:

Changes are not highlighted.

CAUTIONS:

- A Jaguar Land Rover-approved Midtronics battery power supply must be connected to the vehicle battery during diagnosis / module programming.
- Make sure all ignition ON/OFF requests are carried out; failure to perform these steps may cause damage to control modules in the vehicle.

NOTES:

- The Jaguar Land Rover-approved diagnostic tool must be loaded with DVD149.00 and Calibration File 264 (or later).

- **The Jaguar Land Rover-approved diagnostic tool test results will identify if there is front, rear, front and rear, or no wheel imbalance detected.**

- 1 Connect the Jaguar Land Rover-approved Midtronics battery power supply to the vehicle battery.
- 2 Connect the Jaguar Land Rover-approved diagnostic tool to the vehicle.
- 3 Begin a new diagnostic session by reading the Vehicle Identification Number (VIN) for the current vehicle and initiating the data collect sequence.
- 4 Follow the Jaguar Land Rover-approved diagnostic tool prompts.
- 5 Select **Diagnosis** from the Session Type screen.
- 6 Select the **Selected Symptoms** tab and then select:
 - **Chassis - Steering system - Steering system symptoms**
- 7 Select **continue**.
- 8 Select the **Recommendations** tab.
- 9 Select **Run** to perform the '**Special applications - Inline diagnostic unit 2 noise vibration and harshness diagnostic test - Wheel imbalance** ' option.

Disconnect the Jaguar Land Rover-approved battery support unit.

11 NOTE:

Complete this step if a road test was not completed during the Diagnostic Procedure.

Drive the vehicle a minimum of 10 miles (15 Km) before attempting to assess the level of wheel vibration/shimmy.

- 12** Assess the level of wheel vibration/shimmy using the results shown on the Jaguar Land Rover-approved diagnostic tool.
- If the wheel vibration/shimmy is still present, follow this up immediately with a second test drive of 10 miles (15 Km) and confirm if the issue is flat spotted tires or wheel and tire assembly balancing that is incorrect.
 - If the amount of steering wheel vibration is still deemed unacceptable, complete steps 13-14 and go to Service Instruction B.
 - If the amount of steering vibration is considered acceptable, complete steps 13-14 and do not continue with this Technical Bulletin.
 - Return the vehicle to the customer with a full explanation of the situation/flat spot scenario and how it can/does affect the drive of the vehicle until the wheel and tire reaches normal operating temperature.
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Exit the current session by selecting the 'Session' tab and then select the 'Close Session' option.

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- 14 Disconnect the Jaguar Land Rover-approved diagnostic tool.

SERVICE INSTRUCTION 'B':

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- 1 Remove all four road wheel and tire assemblies (see TOPIx Workshop Manual section 204-04: Wheels and Tires).
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- 2 Adjust the tire pressures to 36psi / 2.5bar / 250kPa.
- Balance each road wheel and tire assembly until the residual imbalance dynamic is minimized.
 - Target is 0g (zero grams) on each plane; maximum is inner 5g/outer 5g.
 - Use the “bulls-eye” balancing mode to minimize residual imbalance.
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- 3 The maximum Radial Force Variation (RFV) values should be as follows:
- 60N (6.1kg, 13.5lbf) First Harmonic
 - 100N (10.2kg, 22.5lbf) Peak-to-Peak
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4 **NOTE:**

If Radial Force Variation (RFV) equipment is not available and the tire has not been removed from the

wheel and the RFV spot (red dot) is still visible, this should be installed at the top.

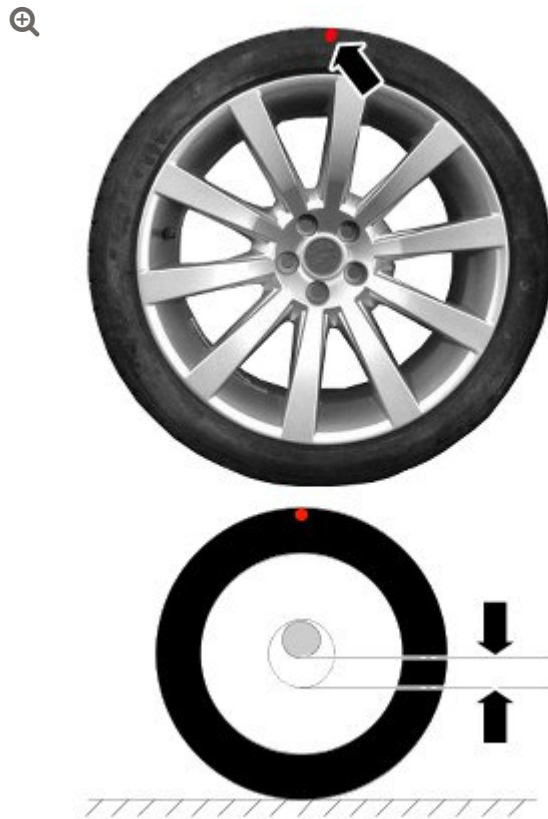
If these levels cannot be achieved, perform the following:

- Remove the tire.
- Follow the match mounting procedure as detailed by the wheel balance machine.
- Mark the high point of first harmonic RFV on the outer (and inner for future reference) sidewall of the tire.
 - On vehicles fitted with power steering (electronic): install the lowest first harmonic RFV wheel/tire assemblies to the rear axle.
 - On vehicles fitted with power steering (hydraulic): install the lowest first harmonic RFV wheel/tire assemblies to the front axle.
- Print out the results of balance and force variation (before and after) and attach to repair order.

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NOTE:

Do not brace the wheel while tightening the nuts; this can disturb the match mounting.



E146997

Install all four road wheel and tire assemblies with the RFV high point at the top.

- Reference the high point of first harmonic RFV on the outer sidewall of the tire.
 - Vehicles fitted with power steering (electronic): install the lowest first harmonic RFV wheel/tire assemblies, with the RFV high point at the top, to the rear axle.
 - Vehicles fitted with power steering (hydraulic): install the lowest first harmonic RFV wheel/tire assemblies, with the RFV high point at the top, to the front axle.

⌂ Lower the vehicle.

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- 7 Tighten wheel nuts to the specified torque (see TOPIx Workshop Manual section 204-04: Wheels and Tires).
 - Adjust tire pressures to recommended cold settings.

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- 8 Drive the vehicle for 5 miles (7 Km) on normal roads up to speeds of approximately 50 mph (80 km/h) with the tires set at normal road pressures to verify the steering vibration has been rectified.

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- 9 Return the vehicle to the Customer with a full explanation of the situation/flat spot scenario and how it can/does affect the drive of the vehicle until the wheel and tire reaches normal operating temperature.