



## Technical Service Bulletin

No.LTB00030v2  
15 February 2007

Reissue

**Please replace the previous edition of this bulletin.**

This bulletin supersedes TSB LTB00030/2007 dated 25 January, which should either be destroyed or clearly marked to show it is no longer valid (e.g. with a line across the page).

<b>Subject/Concern:</b> Steering Wheel Vibration/Steering Shimmy
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<b>Models:</b>		
Range Rover Sport (LS)		VIN-range: 5A900018 Onwards
Range Rover (LM)		VIN-range: 2A100003-5A198056

**Markets: All Section: 204-04**

### Summary:

A customer may report a concern that the steering wheel vibrates in a side-to-side motion, or 'shimmy' at 50-70 mph, more noticeably when 20 inch alloy wheels are installed.

**Version 2 has been issued adding an extra vehicle line, a change in the VIN Range, Parts Required, Causal Part and Service Instruction.**

**NOTE:** The steering racks listed in Parts Required are for steering gear shimmy issues only.

**Cause:** Tire flat spots, wheel assembly balance or tire radial force variation could result in the above complaint.

**Action:** Should a customer express concern regarding the above, refer to the Service Procedure detailed in this bulletin.

<b>Parts Required:</b>		
Description	Part Number	Quantity
Steering Gear - left-hand drive - Range Rover Sport	QEB500490	1
Steering Gear - right-hand drive - Range Rover Sport	QEB500520	1
Steering Gear - left-hand drive - Range Rover	QEB500480	1
Steering Gear - right-hand drive - Range Rover	QEB500470	1

Labour Time:	Operation Description	Operation No.	Time
2.20 hours	Steering wheel vibration/steering shimmy - Service fix	74.10.89/39	1.30 hours
1.30 hours	Steering gear renew - TDV6	57.10.01	1.70 hours
1.40 hours	Steering gear renew - TDV8	57.10.01	1.60 hours
1.60 hours	Steering gear renew - AJ V8 Naturally Aspirated	57.10.01	4.5 hours
1.70 hours	Steering gear renew - AJ V8 Supercharged	57.10.01	
4.5 hours	Steering gear renew - Right-hand drive, M62 - V8 Naturally Aspirated	57.10.01	

Steering gear renew - Left-hand drive, M62 - V8 Naturally Aspirated	57.10.01	2.2 hours
Steering gear renew - Right-hand drive, TD6, Turbocharged	57.10.01	5.2 hours
Steering gear renew - Left-hand drive, TD6, Turbocharged	57.10.01	2.2 hours

Repair/Claim Coding:	
<b>Causal Part:</b>	Range Rover Sport RTB500220 - Range Rover LH drive QEB000081 - RH drive QEB000051
<b>ACES Condition Code:</b>	D9
<b>Defect Code:</b>	

## Service Procedure

1 . **NOTE:** Steps 1 to 3 are part of the Pre-Delivery Inspection (PDI) and are not to be claimed if this resolves the concern.

Adjust the tire pressures to the recommended maximum load pressures when cold, reference the PDI sheet, tire label or Global Technical Reference GTR Workshop Manual, section: 04 -General Data - Wheels and Tires).

2 . **NOTE:** Until flatspots are removed, significant shimmy may be present, even if the car has only stood overnight.

Drive the vehicle for at least 15km (10 miles) before attempting to assess shimmy. This is to ensure temporary tire flat spots are removed. The test drive should be carried out on normal open roads to allow the highest speed that speed limits and road/traffic conditions allow. For further information on wheel balancing refer to Bulletin No 0028 - CDS. REF: L8908bu (New Range Rover shown, Range Rover Sport similar).

3 . Assess the level of wheel vibration; if acceptable, no further action is required.

### If the levels of vibration remain unacceptable, balance the wheels as follows:

4 . Raise vehicle on the lift immediately on returning to the workshop, to avoid inducing further tire flat spots.

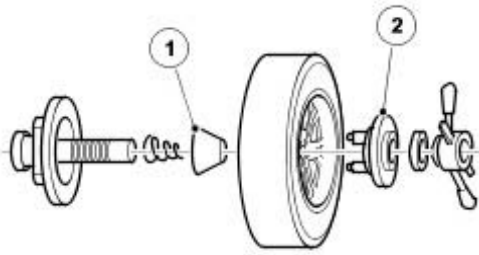
5 . Remove all four road wheel and tire assemblies for balancing (see Global Technical Reference GTR Workshop Manual, section: 204-04).

6 . Inflate the tire to 2.5bar (36lbf/in<sup>2</sup>) +/- 0.1bar (1lbf/in<sup>2</sup>).

7 . **NOTE:** For adhesive weights, use the attachment arm (if installed) of the balancing machine to ensure accurate weight positioning.

8 . If tire road force variations (RFV) measuring is available, the road wheel and tire assembly should aim for a maximum of 60 Newton (6kg) first harmonic RFV, 100 Newton (10kg)

Balance road wheel and tire assemblies until the residual imbalance dynamic is minimized. Target is 0g on each plane, maximum is inner 5g, outer 5g.



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peak-to-peak. If these levels cannot be achieved, then remove the tire and follow the match mounting procedure described in the wheel balance machine user manual. Mark the high point of 1st harmonic RFV on the tire (ideally also mark on the inside too, as a future reference). Install the lowest 1st harmonic RFV units to the front. Print out the results of balance and force variation before and after, and attach to job card.

9 . **NOTE:** If 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 the red dot is not visible, it is strongly advised that the wheels are balanced using locally sourced (RFV) wheel balance equipment.

The high-point of RFV should be marked, and the road wheel and tire assembly installed to the vehicle with the RFV high point at the top, prior to the wheels being tightened.

10 . **NOTE:** Nothing should be used to brace the wheel while tightening the nuts as this can disturb the match mounting.

Install all four road wheel and tire assemblies (see Global Technical Reference GTR Workshop Manual, section: 204-04) and torque wheel nuts to 140Nm.

11 . Lower the vehicle on the lift

12 . Return tire pressures to the recommended settings (use MVW pressures for high temperature markets, to reduce potential for flat spot generation).

13 . Drive the vehicle for approximately 7km (5 miles) carried out on normal roads and up to speeds of approximately 80km/h (50mile/h).

14 . Assess the level of wheel vibration:



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1 If acceptable, no further action is required.

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2 If the levels of vibration remain unacceptable, continue to next step.

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15 . **NOTE:** The above **must** be completed before renewing the steering gear assembly. Failure to complete the above may result in warranty claim rejection.

**NOTE:** The customer may notice the steering feels slightly lighter, but this is normal.

Renew the steering gear assembly. (For Range Rover Sport see Global Technical Reference GTR Workshop Manual, section: 211-02, Power Steering, Steering Gear (57.10.01)), (For Range Rover see Global Technical Reference GTR Workshop Manual JLR 12 30 10\_IE(1), section: 57-Steering - Power Steering Rack - 57.10.01).