

WORKSHOP BULLETIN

MARCH 1989

BULLETIN No. LSM180WB8

**RANGE ROVER - FOUR DOOR
CONCEALED DOOR HINGES
1989 MODEL YEAR**

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RANGE ROVER

INTRODUCTION **01**

INTRODUCTION

A model enhancement for 1989 model year four door Range Rovers is the introduction of concealed door hinges.

This bulletin contains service details of the new door hinges and the decker panel.

This bulletin also contains a revised list of recommended lubricants deleting reference to LT230 Transfer gearbox. Note that the Borg Warner Transfer Gearbox is fitted to ALL 1989 model year Range Rovers.

In Section 10 Maintenance, the correct procedure for tensioning all drive belts is given. If a new drive belt is fitted the engine must be run as instructed before retensioning the belt.

RANGE ROVER

TORQUE WRENCH SETTINGS **06**

BODY

	Nm	lbf ft
Front and rear seat belt fixings (ALL)	20.3	15
Front door hinges to door and body	25	19
Rear passenger door hinges to door and body	25	19

Recommended Lubricants and Fluids - 1989 Model year

Use only the recommended grades of oil set out below.

These recommendations apply to climates where operational temperatures are above - 10°C (14°F)

COMPONENTS	BP	CASTROL	DUCKHAM	ESSO	MOBIL	PETROFINA	SHELL	TEXACO
Petrol engine sump Carburettor Dashpots Oil can	BP Visco 2000 (15W/40) or BP Visco Nova (10W/40)	Castrol GTX (15W/50) or Castrolite (10W/40)	Duckhams 15W/50 Hypergrade Motor Oil	Esso Superlube plus (15W/40)	Mobil Super (10W/40) or Mobil 1 Rally Formula	Fina Supergrade Motor Oil (15W/40) or (10W/40)	Shell Super Motor Oil (15W/40) or (10W/40)	Havoline Motor Oil (15W/40) or Eurotex HD (10W/30)
Diesel engine sump * *	BP Vanellus C3 Extra (15W/40)	Castrol Turbomax (15W/40)	Duckhams Fleetmaster SHPD (15W/40)	Esso Super Diesel Oil TD (15W/40)	Mobil Delvac 1400 Super (15W/40)	Fina Kappa LDO (15W/40)	Shell Myrina (15W/40)	Texaco URSA Super TD (15W/40)
	The following list of oils to MIL - L - 2104D or CCMC D2 or API Service levels CD or SE/CD are for emergency use only if the above oils are not available. They can be used for topping up without detriment, but if used for engine oil changing, they are limited to a maximum of 5,000 km (3,000 miles) between oil and filter changes.							
	BP Vanellus C3 Multigrade (15W/40)	Castrol Deusol RX Super (15W/40)	Duckhams Hypergrade (15W/50)	Esso Essolube XD - 3 plus (15W/40)	Mobil Delvac Super (15W/40)	Fina Dilano HPD (15W/40)	Shell Rimula X (15W/40)	Texaco URSA Super Plus (15W/40)
Automatic gearbox	BP Autran DX2D	Castrol TQ Dexron IID	Duckhams Fleetmatic CD or Duckhams D - Matic	Esso ATF Dexron IID	Mobil ATF 220D	Fina Dexron IID	Shell ATF Dexron IID	Texamatic Fluid 9226
Manual gearbox	BP Autran G	Castrol TQF	Duckhams Q - Matic	Esso ATF Type G	Mobil ATF 210	Fina Purfomatic 33G	Shell Donax TF	Texamatic Type G or Universal
Front and Rear differential Swivel pin housings	BP Gear Oil SAE 90EP	Castrol Hypoy SAE 90EP	Duckhams Hypoid 90	Esso Gear Oil GX (85W/90)	Mobil Mobilube HD90	Fina Pontonic MP SAE (80W/90)	Shell Spirax 90EP	Texaco Multigear Lubricant EP (85W/90)
Propeller shaft Front and Rear	BP Energrease L2	Castrol LM Grease	Duckhams LB 10	Esso Multi - purpose Grease H	Mobil Grease MP	Fina Marson HTL 2	Shell Retinax A	Marfak All Purpose Grease
Power steering box and fluid Reservoir Borg Warner Transfer Gearbox	BP Autran DX2D or BP Autran G	Castrol TQ Dexron IID or Castrol TQF	Duckhams Fleetmatic CD or Duckhams Q - matic	Esso ATF Dexron IID or Esso ATF Type G	Mobil ATF 220D or Mobil ATF 210	Fina Dexron IID or Fina purifomatic 33G	Shell ATF Dexron IID or Shell Donax TF	Texamatic Fluid 9226 or Texamatic Type G or 4291A Universal
Brake and clutch reservoirs	Brake fluids having a minimum boiling point of 260°C (500°F) and complying with FMVSS 116 DOT4							
Lubrication nipples (hubs, ball joints etc.)	BP Energrease L2	Castrol LM Grease	Duckhams LB 10	Esso Multi - purpose Grease H	Mobil Grease MP	Fina Marson HTL 2	Shell Retinax A	Marfak All Purpose Grease
Ball joint assembly Top Link	Dextragrease Super GP							
Seat slides Door lock striker	BP Energrease L2	Castrol LM Grease	Duckhams LB 10	Esso Multi - purpose Grease H	Mobil Grease MP	Fina Marson HTL 2	Shell Retinax A	Marfak All purpose grease
	NLGI - 2 Multi - purpose Lithium - based Grease							

**** Other approved oils include:** Agip Sigma Turbo, Aral OL P327, Autol Valve - SHP, Aviation Turbo, Caltex RPM Delo 450, Century SHPD, Chevron Delo 450 Multigrade, Divinol Multimax Extra, Ecubsol CD Plus, Elf Multiperformance, Esso Special Diesel, Fanal Indol X, Fuchs Titan Truck 1540, Gulf Superfleet Special, IP Taurus M, Total Rubia TIR, Valvoline Super HD LD, Veedol Turbostar.

RECOMMENDED LUBRICANTS AND FLUIDS - ALL CLIMATES AND CONDITIONS - 1989 Model year

COMPONENTS	SERVICE CLASSIFICATION		AMBIENT TEMPERATURE °C								
	Specification	SAE Classification	- 30	- 20	- 10	0	10	20	30	40	50
Petrol models Engine sump Carburetter	Oils must meet BLS.22.OL.07 or	5W/30	██								
		5W/40)	██								
	Oils must meet BLS.22.OL.02	10W/30	██								
		10W/40)	██								
		10W/50)	██								
Dashpots Oil can	or CCMC G1 or G2	15W/40)	██								
		20W/40)	██								
		20W/50)	██								
or API service levels SE or SF	25W/40)	25W/50)	██								
		25W/50)	██								
		25W/50)	██								
Diesel models engine sump	SHPD oils meeting CCMC D3	10W/30	██								
		15W/40	██								
* Emergency only: Oils meeting MIL - L - 2104D or CCMCD2 or API CD											
Main Gearbox Automatic	ATF Dexron IID		██								
Main Gearbox manual	ATF M2C33 (F or G)		██								
Final drive units Swivel pin housings	API GL4 or GL5 MIL - L - 2105 or MIL - L - 2105B	90 EP	██								
		80W EP	██								
Power steering Borg Warner Transfer Gearbox	ATF M2C 336 or ATF Dexron IID		██								

* Diesel Models - Engine Sump

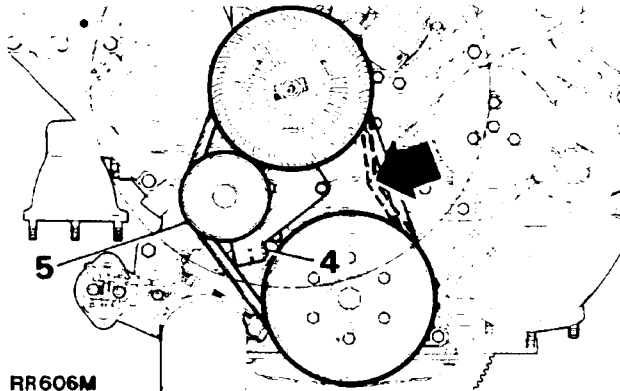
Oils for emergency use only if the SHPD oils are not available. They can be used for topping up without detriment, but if used for engine oil changing, they are limited to a maximum of 5,000 km (3,000 miles) between oil and filter changes. (See * * on previous page)

CAPACITIES

- Transfer gearbox capacity - 2.1 Litres
- 3.7 UK Pints
- 4.4 US Pints

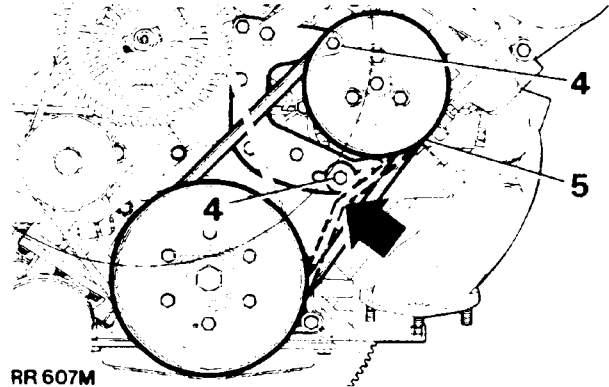
DRIVE BELTS - adjust or renew

Illustration A



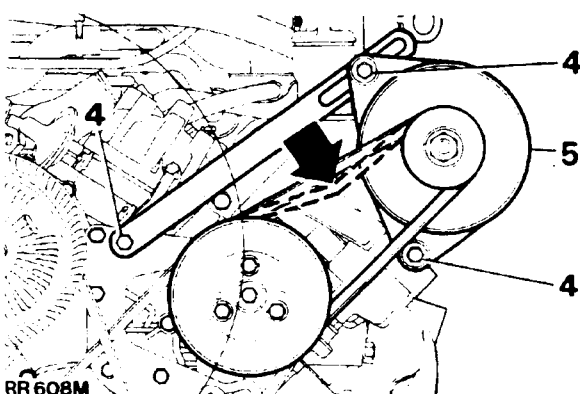
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Illustration B



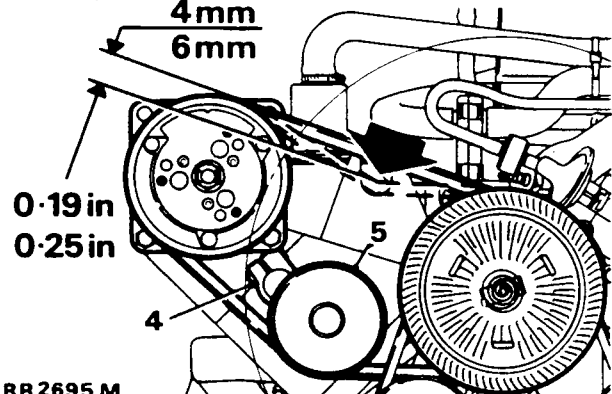
RR607M

Illustration C



RR608M

Illustration D



RR2695 M

Check driving belts, adjust or renew

1. Examine the following belts for wear and condition and renew if necessary:
 - (A) Crankshaft-Jockey Pulley-Water Pump
 - (B) Crankshaft-Steering Pump
 - (C) Steering Pump-Alternator
 - (D) Compressor-Jockey Pulley-Water Pump
2. Each belt should be sufficiently tight to drive the appropriate auxiliary without undue load on the bearings.
3. Slacken the bolts securing the unit to its mounting bracket.
4. Slacken the appropriate pivot bolt or jockey wheel and the fixing at the adjustment link where applicable.
5. Pivot the unit inwards or outwards as necessary and adjust until the correct belt tension is obtained.
6. Belt tension should be approximately 4 to 6 mm (0.19 to 0.25 in) at the points denoted by the bold arrows.

7. Tighten all unit adjusting bolts. Check adjustment again.

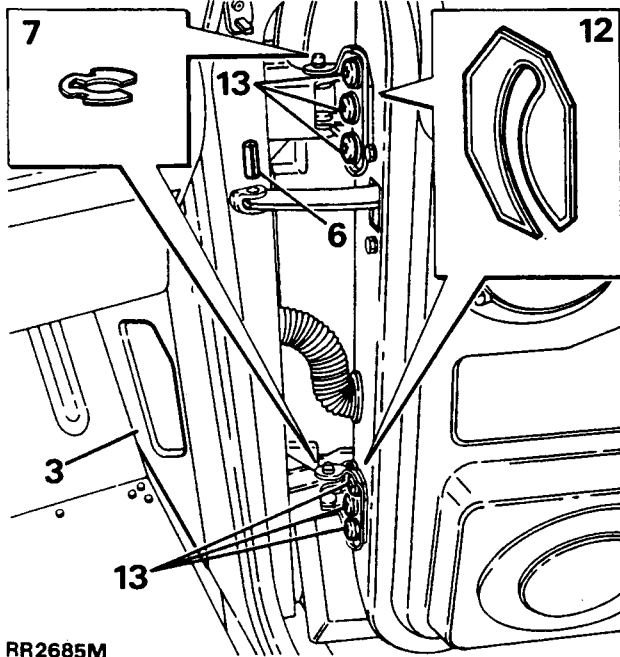
CAUTION: When fitting a new drive belt, tension the belt as described above. Reconnect the battery and start and run the engine for 3 to 5 minutes at fast idle, after which time the belt must be re-checked, retension the belt if necessary.

FRONT DOOR

Remove, refit and adjust.

Removing

1. Disconnect the battery negative lead.
2. Open the door to be removed.
3. Remove the trim panel from side of footwell by carefully levering under the trim and prising out the two plastic clips.



RR2685M

4. Locate and disconnect all door wiring plugs.
5. Disengage the grommets either side of 'A' post and feed wiring out.
6. Drive out the roll pin from the door check link.
7. Remove 'C' clips from grooves in hinge pins.

WARNING: Instruction 8. MUST BE carried out with assistance.

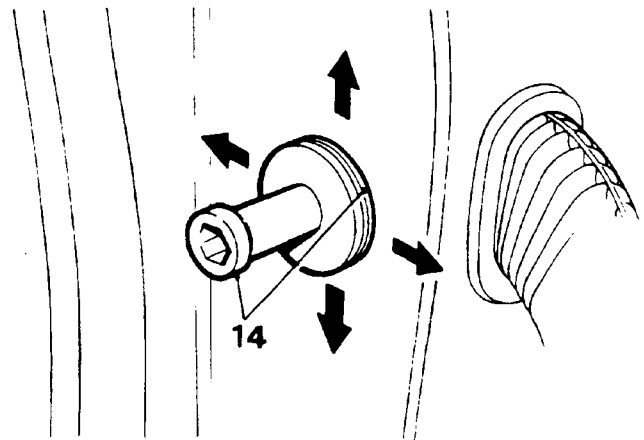
8. Carefully lift the opened door off the hinge pins.

Refitting

9. Reverse the removal procedure. Renew the 'C' clips if worn or distorted.
10. With door fully open reconnect wiring plugs ensuring they are located above the trim panel.
11. Check the operation of the door and lock. If necessary, adjust the door and striker plate.

Adjusting

12. Adjust the door by means of shims between the hinge and door to move the door forward or rearward in the opening.
13. Loosen the six Torx screws securing the hinges to the door to adjust the door up and down or in and out of the opening. Retighten the screws to the specified torque settings.
14. The door lock striker can be adjusted by loosening the striker and moving it in the appropriate direction or adding and subtracting spacing washers between the striker and 'B' post.



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15. Note: If it is necessary to remove hinges from 'A' post they should be refitted in exactly the same position using the same thickness of shims.

REAR PASSENGER DOOR**Remove, refit and adjust.****Removing**

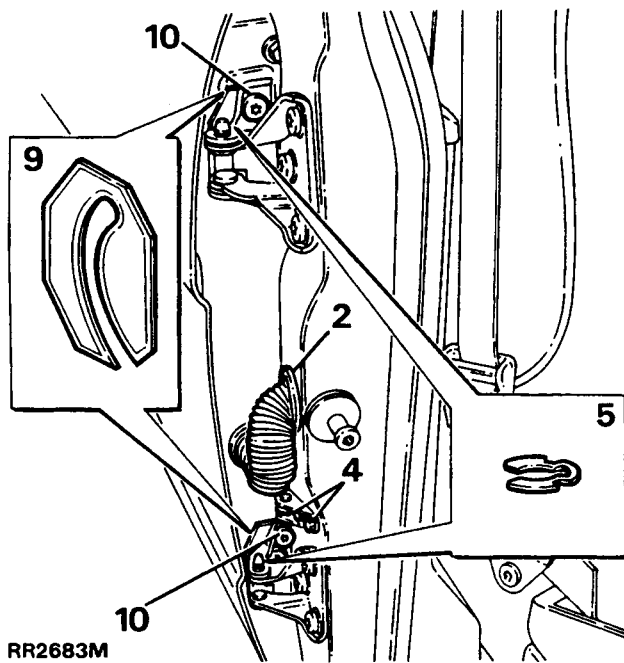
1. Disconnect the battery negative lead.
2. Remove wiring grommet from the 'B' post.
3. Withdraw the door wiring plugs from the 'B' post and disconnect them.
4. Remove the two bolts securing the check strap to 'B' post.
5. Remove 'C' clips from grooves in the hinge pins.

WARNING: Instruction 6. MUST BE carried out with assistance.

6. Carefully lift the opened door off the hinge pins.

Adjusting

9. Adjust the door by means of shims between the hinge and door to move the door forward or rearward in the opening.
10. Loosen the six Torx screws securing the hinges to the door to adjust the door up and down or in and out of the opening. Retighten the screws to the specified torque settings.
11. Adjustment to the door striker is identical to front doors.
12. Note: If it is necessary to remove hinges from 'B' post they should be refitted in exactly the same position using the same thickness of shims.

**Refitting**

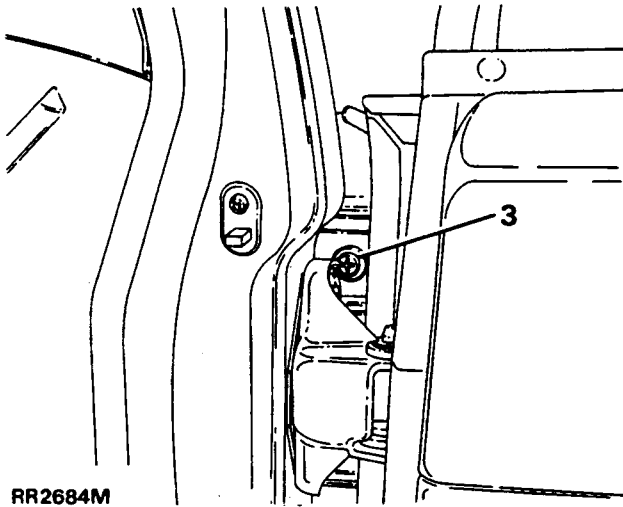
7. Reverse the removal procedure. Renew 'C' clips if worn or distorted.
8. Check the operation of the door and lock. If necessary, adjust the door and striker plate.

DECKER PANEL

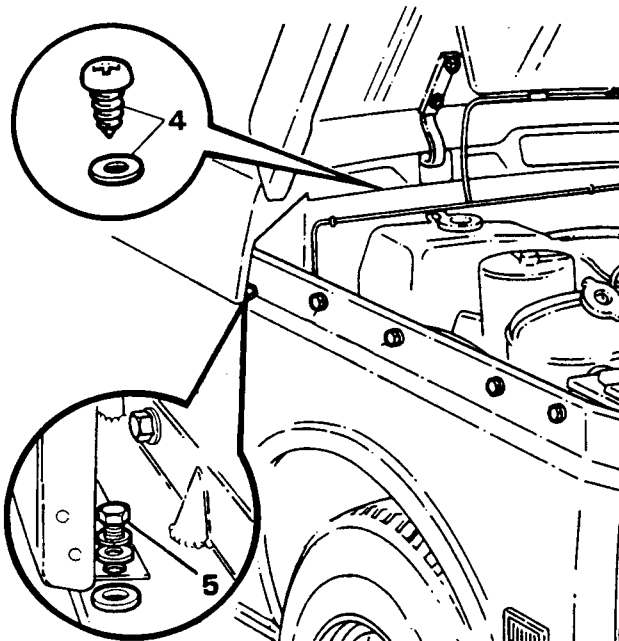
Remove and Refit

Removing

1. Remove bonnet.
2. Remove the wiper arms and two nuts securing the wheel boxes to the decker panel and remove the two sealing rubbers.
3. Remove the two cross-head screws retaining the panel to the 'A' post mounting brackets located above the front door hinges.



4. Remove the nine cross-head screws securing the front of the decker panel.
5. Remove the four bolts with spring and plain washers securing decker panel to front wings accessible from the front of the decker panel.



6. With assistance place a tube over each of the hinges and lower to enable the decker panel to be fed over the hinges, gradually return the hinges to their upright position.

WARNING: Gradually let the torsion bar spring tension return the hinges to their upright position to prevent the possibility of personal injury or damage to the vehicle.

Refitting

7. Reverse the decker panel removal instruction.
8. Using a soft blunt implement ease the windscreen rubber up onto the top of the decker panel.

