



RECALL ACTION

Recall Action
Number: P017

Subject: Brake Vacuum Assistance System	Publication No.:	P017v6
	Model:	Discovery 3/LR3 2.7L TDV6
	Model Year:	2005-2009
	VIN Range:	LA000005 – LA513325
	Model:	Range Rover Sport 2.7L TDV6
	Model Year:	2005-2009
	VIN Range:	LS900002 – LS999983 LS100000 – LS215571
	Date of Issue:	November 2010

To:	All UK Dealer/Authorized Repairers
For the Attention of:	The Managing Director
Copies To:	The Service/After-sales Director/Manager The Parts Director/Manager

Related Information:	This Recall Action is being reissued to notify dealers of the extension to the VIN ranges. Specific vehicles in the VIN ranges LA412125 – LA487033, LS100008 – LS181999, LS980310 - LS999998 are eligible for Recall P008 which must be carried out at the same time as this Recall.
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RE: Brake Vacuum Assistance System

Dear Colleagues

A concern has been identified on the above vehicles where oil is collecting in the brake booster causing a progressive loss of brake assistance, resulting in hard brake pedal and increased stopping distances for the same pedal effort. Engine oil in the brake master cylinder will lead to a loss of one or both of the foundation brake system hydraulic brake circuits and therefore increased brake pedal travel, increased stopping distances and, in the event of both primary and secondary brake master cylinder seal failure, a total loss of service brakes.

Temporary sticking of the non-return valve leads to a temporary loss of vacuum assistance on the braking system. The hydraulic braking system itself remains fully functional. Once the valve has unstuck the booster vacuum is immediately restored, full braking assistance is available, and the brakes perform normally for the remainder of that drive cycle.

Action to be taken

Land Rover has taken the decision to recall affected vehicles and you will be required to replace the brake booster vacuum pipe, the vacuum pump non return valve and check for oil in the brake booster. Where oil is detected in the brake booster, the brake booster and if necessary master cylinder will be replaced. For the workshop procedure see Appendix 1.

Land Rover will be writing to customers with vehicles affected by this Recall requesting them to contact their preferred Authorized Dealer as soon as possible to arrange for the rework action to be carried out at the earliest opportunity. A copy of the customer letter is attached as Appendix 2.

Dealers are reminded that they should not sell vehicles identified as affected by a safety recall until such time as the safety recall has been successfully completed on affected vehicles.



Please check DDW to ensure that the vehicle is affected by this Recall Action prior to undertaking any rework action. DDW will be updated to reflect only those vehicles affected.

At the time of confirming a booking for vehicle repair, please ensure you check DDW and that all outstanding Field Service Actions are identified to ensure the correct parts are available and adequate workshop time is allocated for repairs to be completed at one visit.

For information purposes, a Technical Question and Answer document is attached as Appendix 3.

Parts Information

The parts from Table 1 should be ordered from Land Rover Parts in the normal manner.

Table 1

Part No.	Description	Drive	Model	Variant	Qty
LR014528	Master Cylinder Kit	LHD	Both	All	1
LR014527	Master Cylinder Kit	RHD	Both	All	1
SJJ500090	Brake Booster Kit	Both	Discovery	All	1
SJJ500070	Brake Booster Kit	Both	RRS	Without Brembo Brakes	1
SJJ500080	Brake Booster Kit	Both	RRS	With Brembo Brakes	1
SIJ500040	Brake Fluid – 1Ltr	Both	Both	All	1
LR019702	Brake Booster Vacuum Pipe and Vacuum Pump Valve	LHD	Both	EU2/EU3	1
LR019703	Brake Booster Vacuum Pipe and Vacuum Pump Valve	RHD	Both	EU2/EU3	1
LR018674	Brake Booster Vacuum Pipe and Vacuum Pump Valve	LHD	Both	EU4	1
LR018673	Brake Booster Vacuum Pipe and Vacuum Pump Valve	RHD	Both	EU4	1

Warranty Information

Table 2 – SROs

Description	Trans.	SRO	Time
Check/replace vacuum pipe and Vacuum pump non return valve	Both	70.50.89.30	0.3
Check oil in brake booster and master cylinder	Both	70.50.89.31	0.1
Replace brake booster	Manual	70.50.01	1.1
Replace brake booster	Automatic	70.50.01	0.8
Replace master cylinder and brake booster	Manual	70.50.89.28	1.5
Replace master cylinder and brake booster	Automatic	70.50.89.28	1.3
Diagnose oil in brake booster - insufficient oil, re-fit original booster and master cylinder	Manual	70.50.89.32	0.6
Diagnose oil in brake booster - insufficient oil, re-fit original booster and master cylinder	Automatic	70.50.89.32	0.3
Drive in/drive out	Both	02.02.02	0.2

Warranty Claims should be submitted quoting program code **P017** together with option code X. In this instance it will also be necessary to quote the relevant SROs and parts from Tables 1 and 2.

NOTE: The option that contains the drive in/drive out allowance may only be claimed when the vehicle has been brought back into the workshop for this action alone to be undertaken.



Warranty Claims should be submitted in accordance with the current Land Rover Warranty Policy and Procedures Manual and its amendments unless stated otherwise in this Recall Action.


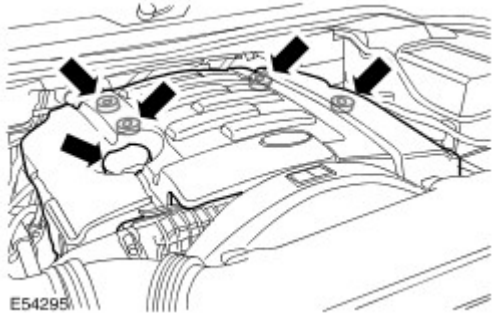
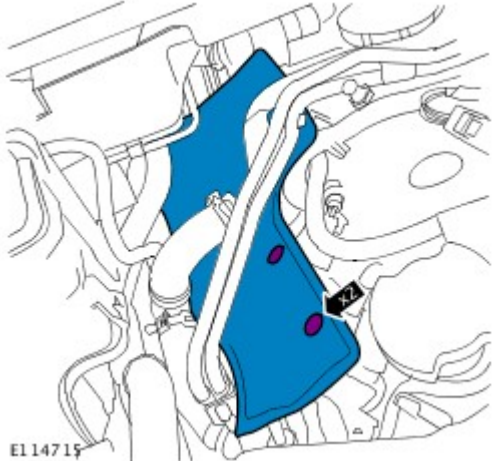

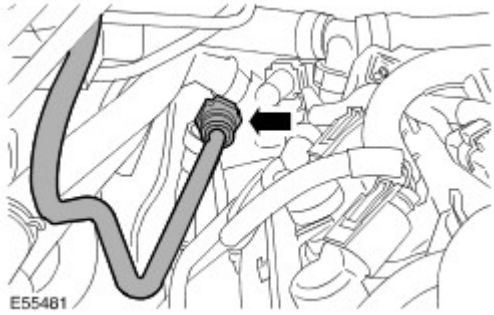
Yours faithfully


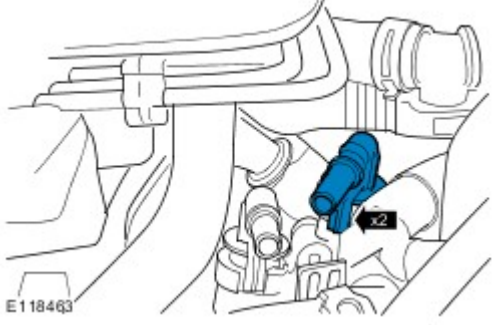
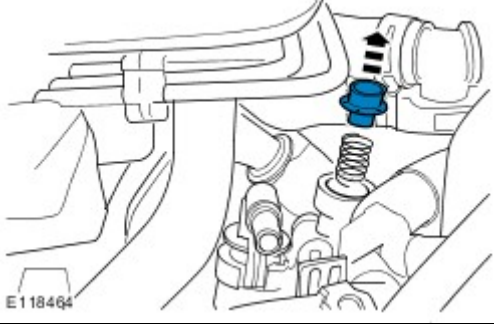
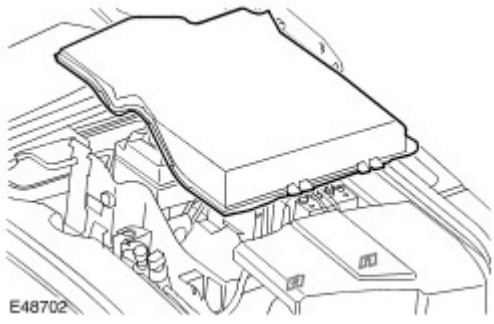
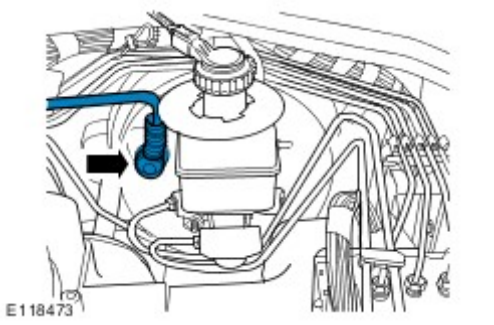
A handwritten signature in black ink, appearing to read "K Phelps".

K Phelps
Director - Service Operations

Attached **Appendix 1 – Workshop Procedure**
 Appendix 2 – Sample Customer Letter
 Appendix 3 – Technical Q & A

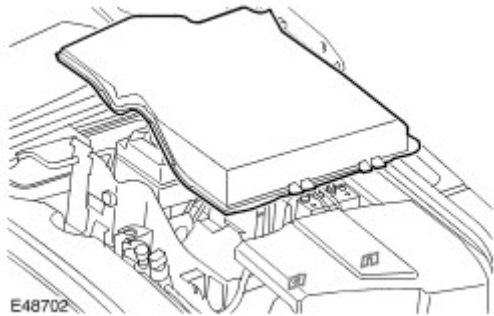
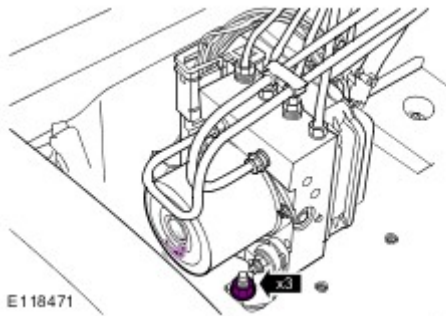

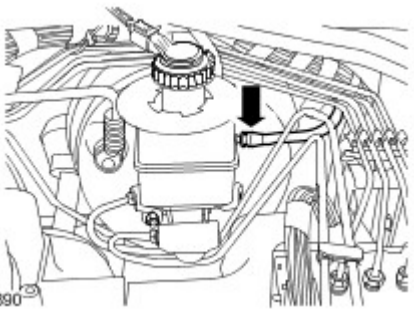
Appendix 1 – Workshop Procedure




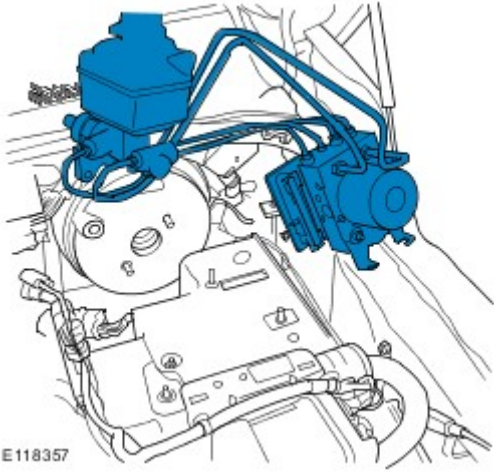
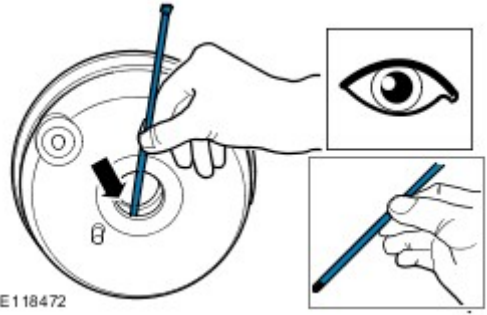

Item	Description	
Brake Booster Non-Return valve		
1	<p>CAUTION:  To avoid dirt or contamination entering the brake vacuum system ensure that prior to disconnection of the brake vacuum pipe and during the non return valve replacement the area around the brake vacuum pump is clean and clear of any debris.</p> <p>Pump the brake pedal until the brake vacuum assistance is exhausted.</p>	
2	<p>Remove the engine cover (see Fig. 1).</p> <ul style="list-style-type: none"> • Remove the oil filler cap. • Release the 4 clips. 	 <p>E54295</p>
Fig. 1		
3	<p>Remove the fuel injector sound proofing (see Fig. 2).</p>	 <p>E1 14715</p>
Fig. 2		
4	<p>CAUTION:  Always plug any open connections to prevent contamination.</p> <p>Disconnect the brake booster vacuum line from the brake vacuum pump (see Fig. 3).</p>	 <p>E55481</p>
Fig. 3		

<p>5</p>	<p>CAUTION:  Failure to follow this instruction may cause damage to the vehicle.</p> <p>Remove and discard the brake vacuum pump upper inlet valve spigot (see Fig. 4).</p> <ul style="list-style-type: none"> • Release the 2 clips. 	 <p>E118463</p>
		<p>Fig. 4</p>
<p>6</p>	<p>Remove and discard the brake vacuum pump inlet valve spring, ball and washer (see Fig. 5).</p>	 <p>E118464</p>
		<p>Fig. 5</p>
<p>7</p>	<p>Remove the auxiliary battery cover.</p> <ul style="list-style-type: none"> • Release the 2 clips (see Fig. 6). 	 <p>E48702</p>
		<p>Fig. 6</p>
<p>8</p>	<p>Disconnect the brake booster vacuum hose from the brake booster (see Fig. 7).</p> <ul style="list-style-type: none"> • Check for presence of oil in one way valve. • If no oil presence in the one way valve, carry out steps 9 to 18 and release the vehicle. • If oil is present in the one way valve, carry out steps 9 to 33. 	 <p>E118473</p>
		<p>Fig. 7</p>

<p>9</p>	<p>Install</p> <p>CAUTION: ⚠ Using a mirror ensure the correct orientation of the spring.</p> <p>CAUTION: ⚠ Failure to follow this instruction may cause damage to the vehicle.</p> <p>CAUTION: ⚠ If new components are damaged when installing a new valve kit must be used.</p> <p>Install the brake vacuum pump inlet valve spring (see Fig. 8).</p>	
<p>Fig. 8</p>		
<p>10</p>	<p>CAUTION: ⚠ Using a mirror ensure the correct orientation of the spring.</p> <p>CAUTION: ⚠ Failure to follow this instruction may cause damage to the vehicle.</p> <p>Install the new brake vacuum pump inlet flat valve and washer (see Fig. 9).</p>	
<p>Fig. 9</p>		
<p>11</p>	<p>CAUTION: ⚠ Make sure the O-ring is securely fitted to the spigot.</p> <p>CAUTION: ⚠ Do not use excess force when fitting inlet valve spigot.</p> <p>CAUTION: ⚠ Using a mirror make sure the spigot is securely fitted and undamaged.</p> <p>CAUTION: ⚠ Failure to follow this instruction may cause damage to the vehicle.</p> <p>NOTE: An audible click is heard when the clips are fully latched.</p> <p>Install the new brake vacuum pump inlet valve spigot (see Fig. 10).</p> <ul style="list-style-type: none"> Secure with the clips. 	
<p>Fig. 10</p>		

<p>12</p>	<p>NOTE: Connect the vacuum gauge to the valve and run the engine for 5 seconds. The gauge should maintain vacuum for at least 5 seconds with the engine not running. If the vacuum is not maintained the valve has been fitted incorrectly.</p> <p>Check the operation of the valve using a suitable vacuum gauge (see Fig. 11).</p> <ul style="list-style-type: none"> Using a suitable cap blank off lower spigot. 	
		Fig. 11
<p>13</p>	<p>CAUTION: Always plug any open connections to prevent contamination.</p> <p>CAUTION: Make sure that a new component is installed.</p> <p>Connect the 2 new brake booster vacuum lines to the brake vacuum pump (see Fig. 12).</p>	
		Fig. 12
<p>14</p>	<p>Install the injector sound proofing (see Fig. 13).</p>	
		Fig. 13
<p>15</p>	<p>Install the engine cover.</p>	
<p>16</p>	<p>Connect the brake booster vacuum hose.</p>	
<p>17</p>	<p>Install the cover(see Fig. 14).</p>	
		Fig. 14
<p>18</p>	<p>Start engine and check the brake booster operation.</p>	

Check for oil in the brake servo and master cylinder	
All vehicles	
19	Pump the brake pedal until the brake vacuum assistance is exhausted.
20	Remove the auxiliary battery cover (see Fig. 15). <ul style="list-style-type: none"> • Release the two clips.
	 <p>E48702</p>
	Fig. 15
21	If installed, remove the auxiliary battery.
22	Release the anti-lock brake system modulator (see Fig. 16). <ul style="list-style-type: none"> • Remove the three nuts. • Release the brake tubes from the clip.
	 <p>E118471</p>
	Fig. 16
23	Disconnect the low brake fluid warning indicator switch electrical connector.
	<p>CAUTION:  Brake fluid will damage paint finished surfaces. If spilled, immediately remove the fluid and clean the area with water.</p> <p>Position an absorbent cloth to collect fluid spillage.</p>
Vehicles with manual transmission	
24	Disconnect the clutch master cylinder supply line (see Fig. 17). <ul style="list-style-type: none"> • Using a suitable cap blank off the supply line.
	 <p>E52890</p>
	Fig. 17
All vehicles	

<p>25</p>	<p>CAUTION:  Make sure the wings and trim panels are covered and protected, failure to follow this instruction may result in damage to the vehicle.</p> <p>CAUTION:  Make sure that excessive force is not used when maneuvering Master Cylinder and ABS Modulator. Failure to follow this instruction may lead to movement of brake pipe joints, and air ingress into brake system and or fluid leaks.</p> <p>CAUTION:  Move Master Cylinder, Brake Pipes and ABS Modulator assembly only a sufficient amount to gain access to master cylinder push rod. Taking care not to twist pipes in their unions (see Fig 18).</p> <p>Displace the master cylinder (see Fig. 18).</p> <ul style="list-style-type: none"> • Remove the two nuts. • Check for oil deposit on master cylinder push rod. 	 <p>E118357</p>
		<p>Fig. 18</p>
<p>26</p>	<p>Check for oil ingress in brake booster (see Fig. 19).</p> <ul style="list-style-type: none"> • Using a suitable white cable tie check for oil ingress. • If oil on the master cylinder push rod, install a new master cylinder (See (GTR), Workshop Procedure, section: 206-06). • If oil is in the brake booster, install a new brake booster (See (GTR), Workshop Procedure, section: 206-07). • If no oil in the brake booster and master cylinder, carry on from step 27. 	 <p>E118472</p>
		<p>Fig. 19</p>
<p>All vehicles</p>		
<p>27</p>	<p>CAUTION:  Make sure the master cylinder is correctly aligned. Failure to ensure master cylinder is correctly aligned to the brake booster actuation rod may cause component damage or poor brake performance.</p> <p>Install the brake master cylinder.</p> <ul style="list-style-type: none"> • Tighten the nuts to 26 Nm (19 lb.ft). 	
<p>28</p>	<p>Secure the anti-lock brake system modulator.</p> <ul style="list-style-type: none"> • Install the three nuts. • Secure the brake tubes to the clip. 	
<p>29</p>	<p>Check the security of the brake pipe to brake master cylinder and brake pipe to anti-lock brake system modulator unions and tighten to 15 Nm if required.</p>	

	Vehicles with manual transmission
30	Connect the clutch master cylinder supply line. <ul style="list-style-type: none">• Remove cap.
	All vehicles
31	Connect the low brake fluid warning indicator switch electrical connector.
32	If installed, install the auxiliary battery.
	Vehicles with manual transmission
33	Bleed the clutch system (see Global Technical Reference (GTR), Workshop Procedure, section: 308-00).
	All vehicles
34	Start engine and check the brake booster operation.