



TECHNICAL SERVICE BULLETIN No.LT307-002/2005

12 October 2005

Circulate to:	Service Manager	Parts Manager	Warranty Administrator	Service Reception	Technicians

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Subject/Concern: Discovery II - Method Change - Automatic Transmission Removal Procedure	
Model:	
Discovery Series II (LT) - Automatic Transmission vehicles only	VIN Range: XA900000-XA907214 VIN Range: VA200000-4A870624 Engine: Td5

Markets: All
Section: 307-01 (44 - Automatic Transmission)

Summary

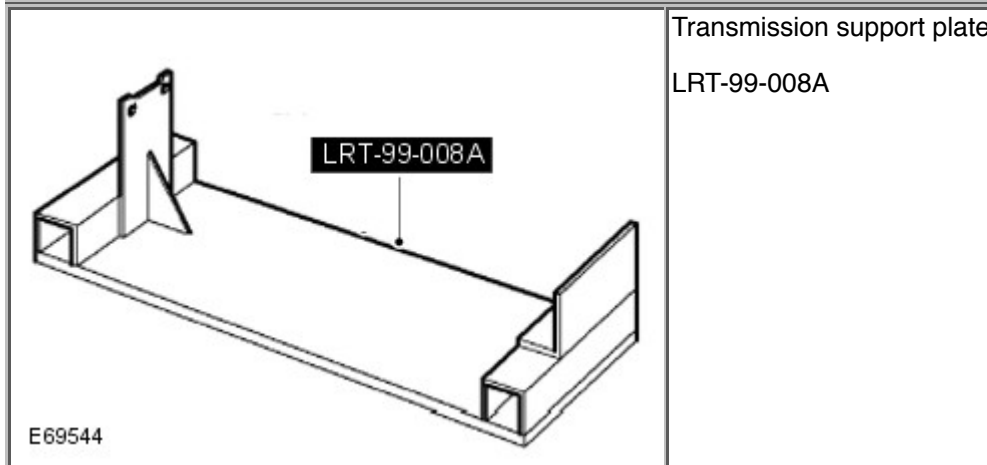
Change to Methods for removal and installation of the automatic transmission assembly.

Associated repairs that require the new workshop procedure will also change.

Cause: Methods engineers at Land Rover have recently studied the service process for renewal of the automatic transmission assembly for Discovery II models, and significant process changes have been made. The changes, detailed below, refine and improve the process which allow the operation to be carried out more efficiently. Changes:

- Viscous cooling fan no longer removed.
- Exhaust manifold heat shield no longer removed.
- Driveshaft securing nuts and bolts removal time corrected.
- Transfer box oil drain and refill no longer required (remove for access only).
- Handbrake drum no longer removed (handbrake cable is disconnected inside the vehicle and the handbrake assembly removed with the transmission).

Action: Should it become necessary to remove an automatic transmission assembly on a Discovery II, please refer to the procedure detailed in this bulletin.



Transmission support plate
LRT-99-008A

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 DDW to obtain the latest repair time.

Refer to the attached table for procedures also affected by this process time change.

Superseded repair time - 44.20.04.99– Auto Transmission - Remove For Access TD5 up to 2A999999
5.30 hours

Superseded repair time - 44.20.04.99– Auto Transmission - Remove For Access TD5 from 3A000001
5.50 hours

Labor Time		
Operation Description	Operation No.	Time
Auto Transmission - Remove For Access TD5	44.20.04/99	4.80 hours

Service Procedure

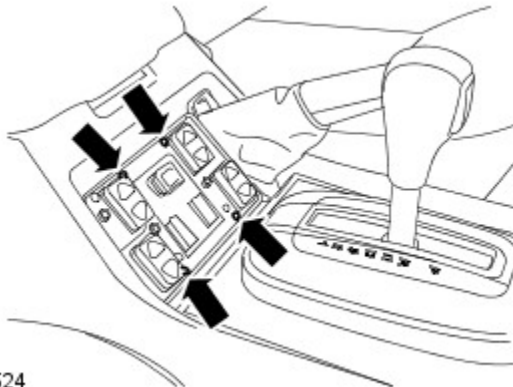
Remove

1. Release the four clips and remove the window lift switch finisher.



E69523

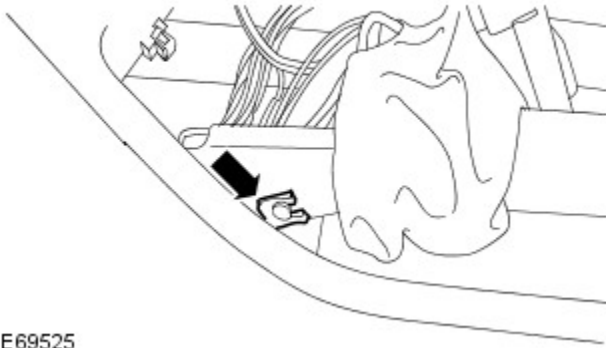
2. Remove the four securing screws and reposition the window switch pack from the center console.



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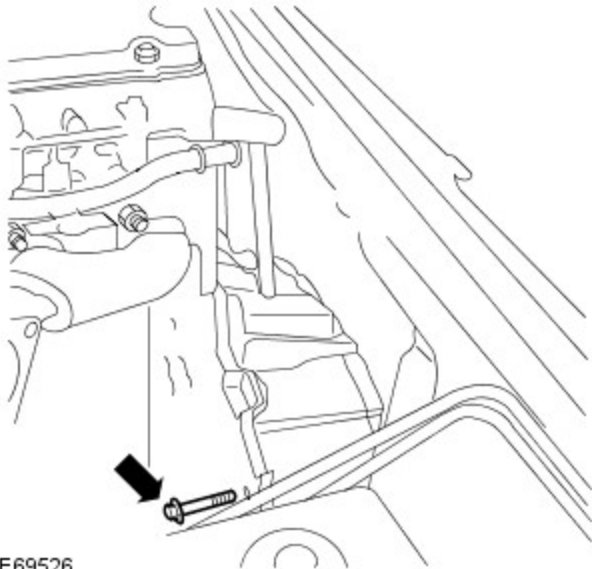
3. Release the handbrake lever gaiter from the center console.

4. Remove the handbrake lever retaining clip and clevis pin.



E69525

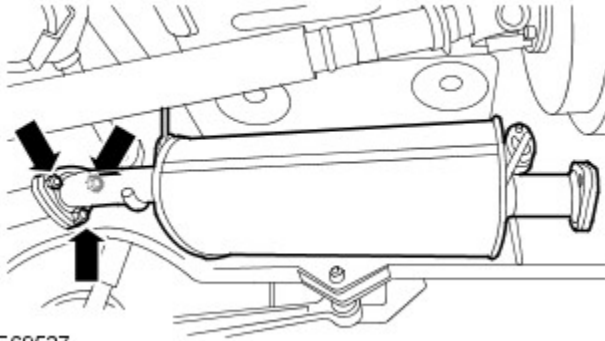
5. Remove the battery cover.
6. Remove the engine acoustic cover.
7. Remove the bolt securing the closing plate to the transmission.



E69526

8. Raise vehicle on lift.
9. Where installed, remove the undertray.
10. Remove the exhaust front pipe.

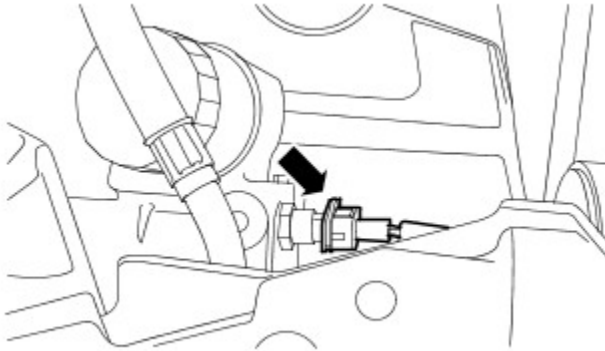
11. Remove the three nuts securing the exhaust intermediate pipe to the tail pipe.



E69527

12. Release and remove the intermediate pipe from the tail pipe and collect the gasket.

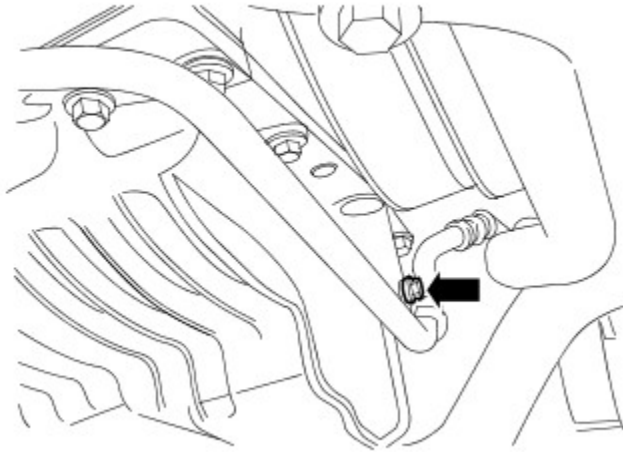
13. Disconnect the connector from the oil pressure switch.



E69528

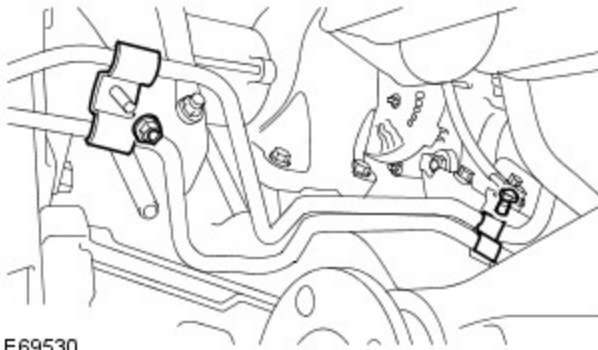
14. Remove the rear propeller shaft.
15. Remove the front propeller shaft.
16. Drain automatic transmission oil.

17. Remove the bolt securing the transmission oil cooler pipe clip to the sump.



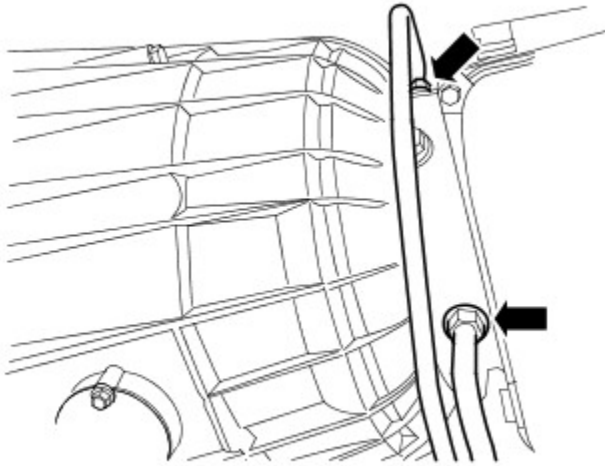
E69529

18. Remove the nut securing the transmission oil cooler pipe clamp and remove the clamp.



E69530

19. Remove the bolt securing the oil cooler pipe clamp and remove the clamp.



E69531

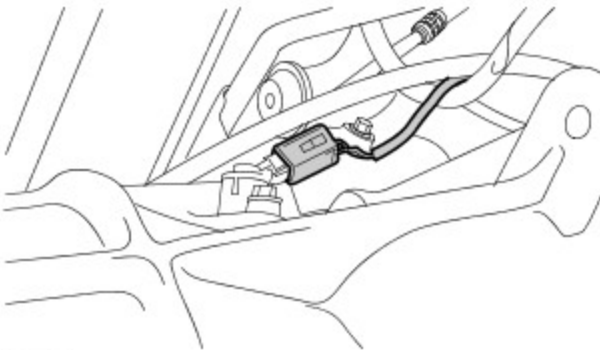
20.  **Always install clean plugs to open connections to prevent contamination.**

Loosen and remove the oil cooler pipe unions from the transmission. Discard the O-rings.

21. Release the transmission oil cooler pipes and tie aside.

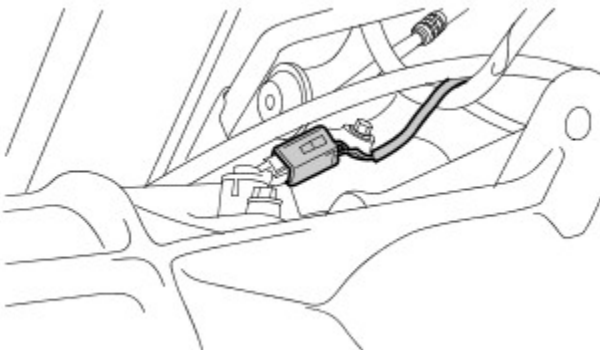
22. Remove the starter motor.

23. Disconnect the connector from crankshaft position sensor.



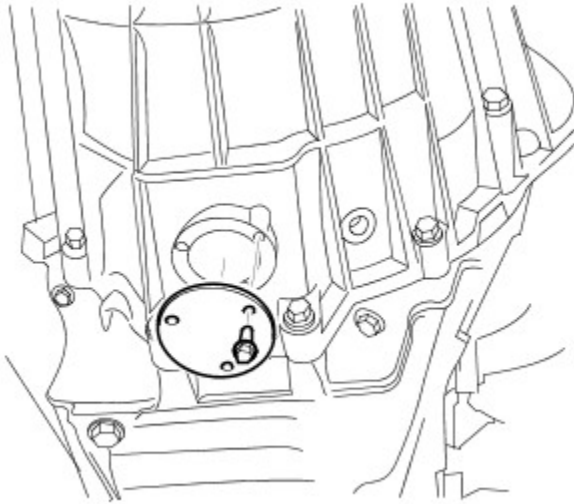
E69532

24. Remove the bolt securing the coolant pipe clip to the intake manifold.



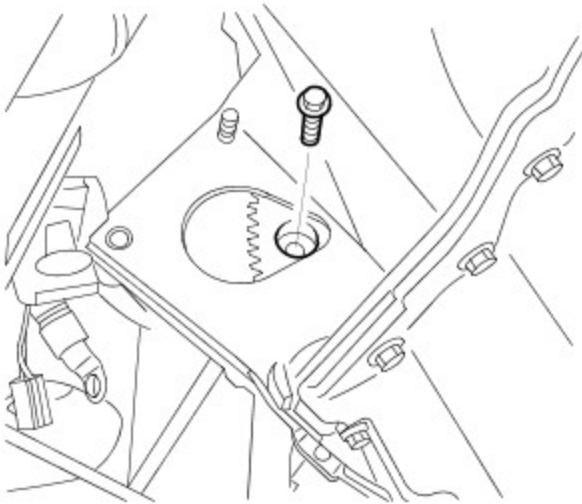
E69533

25. Remove the inspection plate from the converter housing to gain access to torque converter retaining bolts.



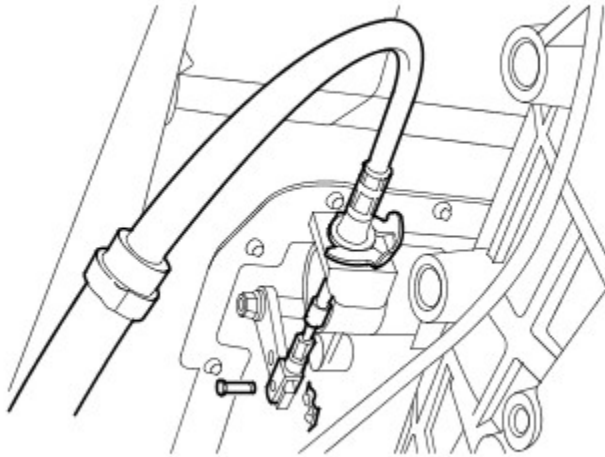
E69534

26. Rotate the crankshaft for access and remove the three bolts securing the drive plate to the torque converter. Discard the bolts.



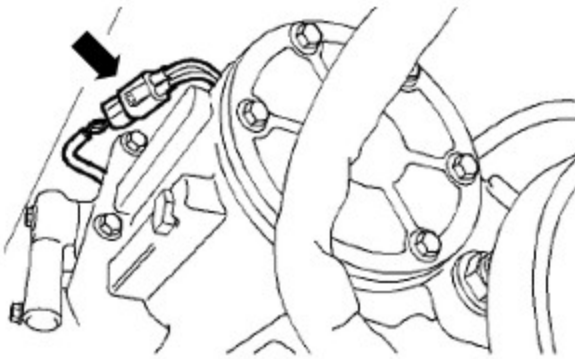
E69535

27. Release and remove the clevis pin and C-clip securing the transfer transmission high/low selector cable to the transfer transmission high/low selector lever. Position the cable aside.



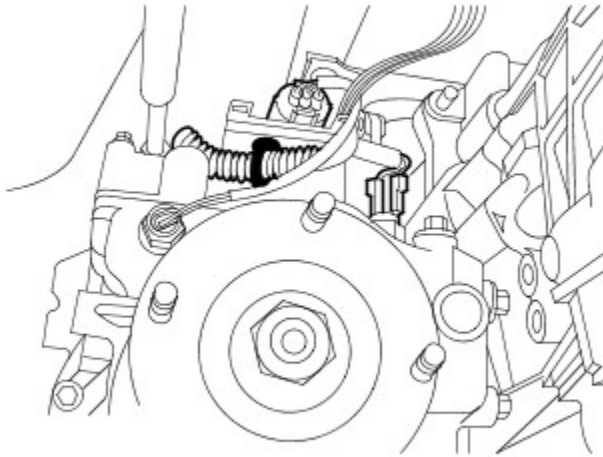
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28. Disconnect the connector from the reverse lamp switch.



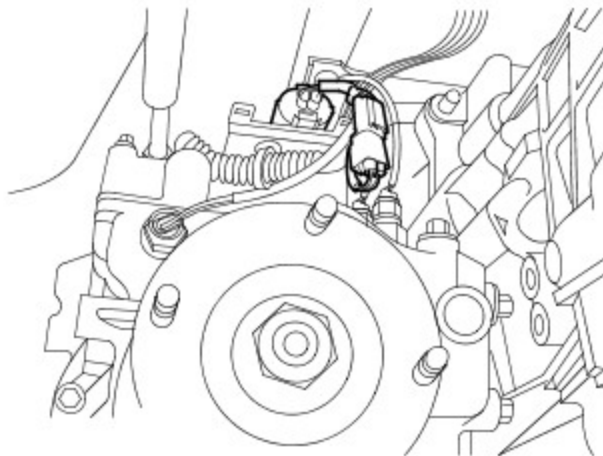
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29. Where installed (Up to 03MY) - Disconnect the connector from the differential lock warning lamp switch and the connectors from the high/low ratio switch and neutral sensor.



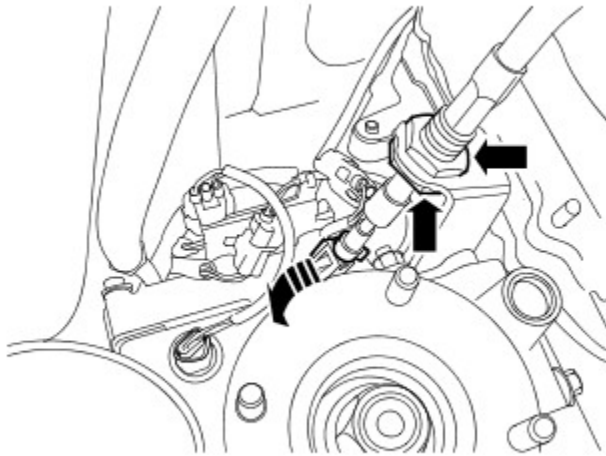
E69538

30. Where installed (03MY onwards) - Release and disconnect both the differential lock warning lamp switch connectors from the main harness.



E69539

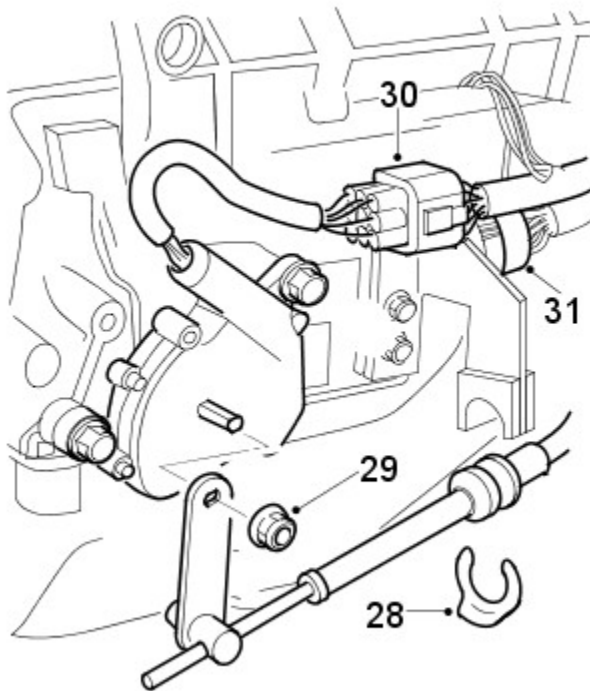
31. Where installed - Remove and discard the clevis pin securing the differential lock selector cable to the transfer transmission.



E69540

32. Where installed - Loosen the locknuts securing the differential lock selector cable and release from the bracket.

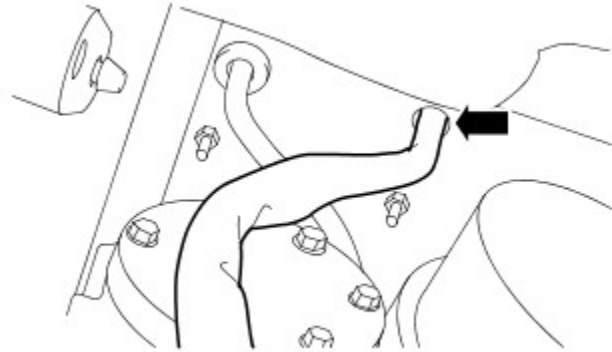
33. Disconnect the connector from the inhibitor switch.



E69541

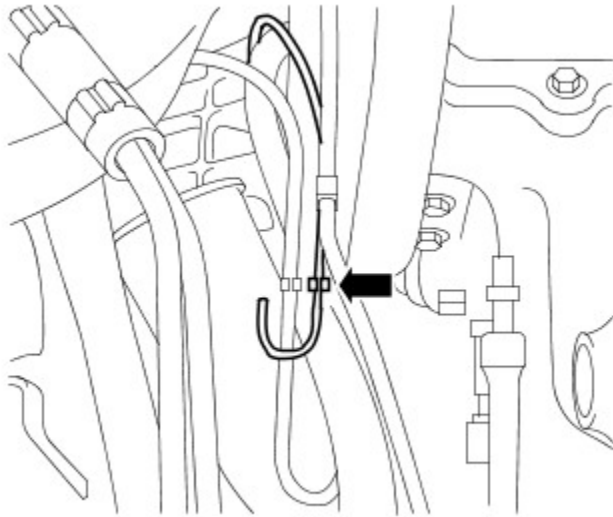
34. Remove the nut securing the selector lever to the inhibitor switch and release the lever.
35. Rotate the locking ring anti-clockwise and disconnect the transmission connector.

36. Withdraw the handbrake cable from the body.



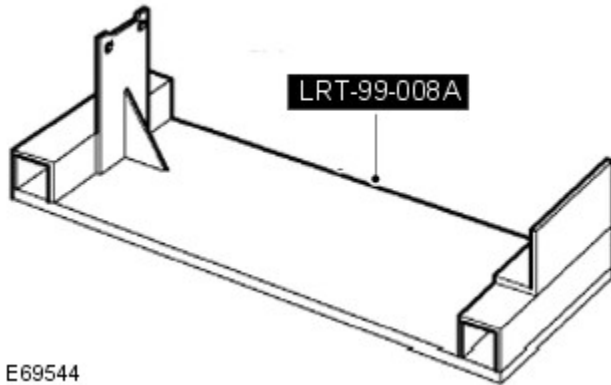
E69542

37. Release the transfer and transmission breather pipes from the bulkhead clip.




E69543

38. Position a suitable jack to support the transmission.



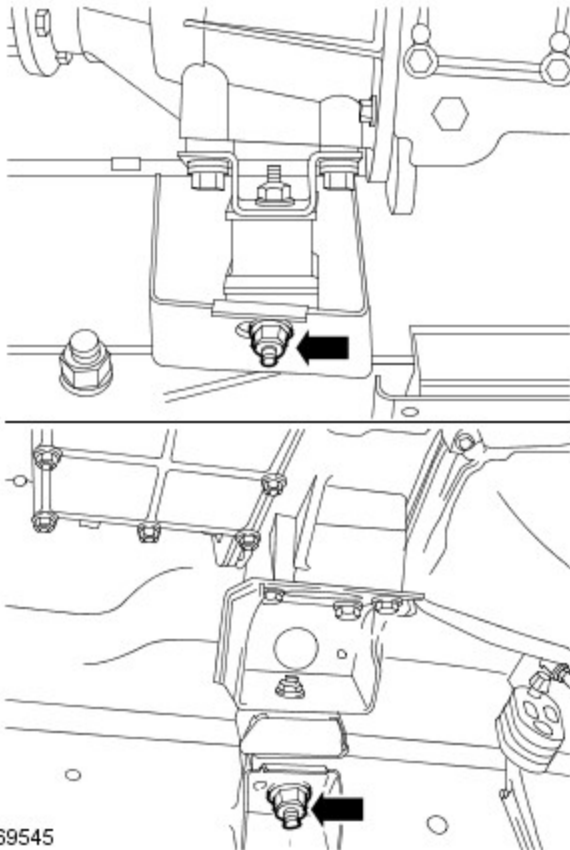
E69544

39.  Where the use of a transmission hoist is necessary, it is absolutely essential to follow the manufacturers instructions to ensure safe and effective use of equipment.

Install the special tool, LRT-99-008A, to the transmission jack and secure with bolts.

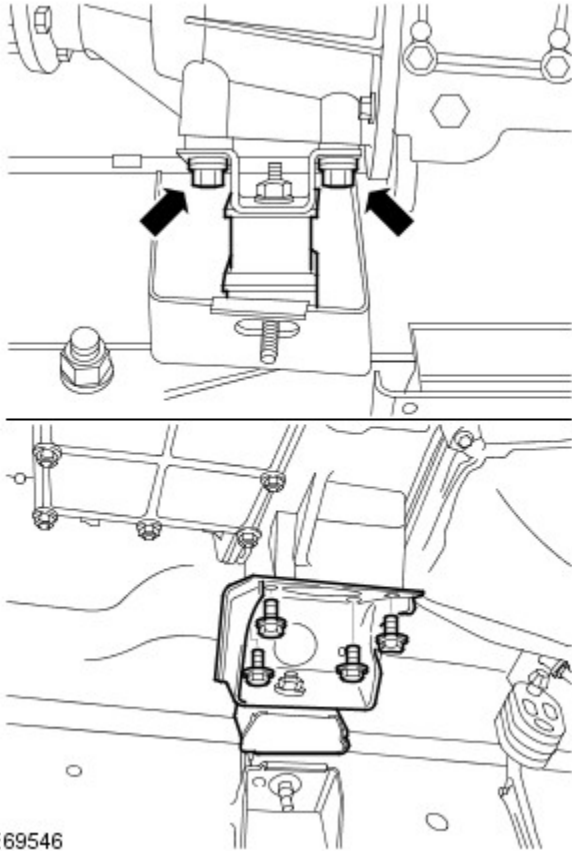
40. Remove the two bolts from the transfer transmission, raise the transmission jack and install the bolts to secure LRT-99-008A under the transmission sump and transfer transmission.

41. Remove the two nuts securing the transmission mountings to the chassis.




E69545

42. Remove the eight bolts securing the mountings to the transmission.

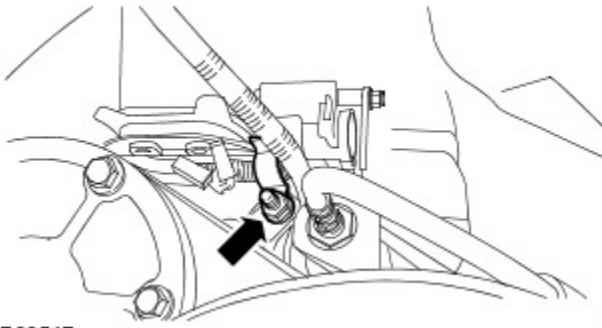


E69546

43. Raise the transmission and remove the two transmission mounting bracket assemblies.
44. Lower the transmission sufficiently to access the top of the transmission.
45.  **To prevent damage to components, cushion the jack pad with a block of wood or hard rubber.**

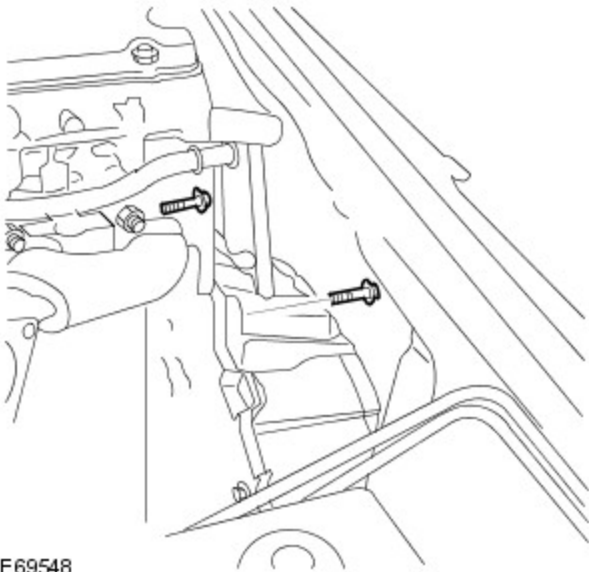
Position a second support jack under the engine using a block between the engine sump and the jack to prevent damage to sump.

46. Remove the transmission harness bracket retaining nut.



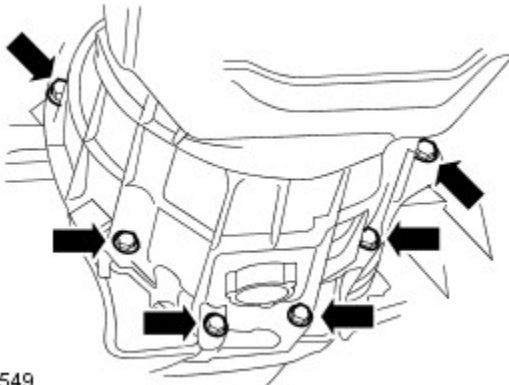
E69547

47. Remove the two upper bolts securing the transmission to the engine.



E69548

48. Remove the six remaining bolts securing the transmission to the engine.



E69549

49.  **Ensure the torque converter remains with the**

transmission.

With assistance, carefully remove the transmission from the engine. Ensure the torque converter remains with the transmission.

50. Install a suitable strap to retain the torque converter in the converter housing.

Install

51. Clean the torque converter and drive plate mating faces.

52. **To prevent damage to the oil pump drive and torque converter, ensure the set back tolerance from the drive plate mating face to the edge of the transmission housing is at a minimum of 24.8mm (0.9in).**

Remove the torque converter retaining strap.

53. With assistance, carefully install the transmission to the engine. Ensure engagement of torque converter spigot and converter housing onto the dowels.

54. Install the bolts securing the transmission to the engine, but do not tighten at this stage.

55. Rotate the engine to align the torque converter with the drive plate, install new bolts and tighten to 50Nm (37lb-ft).

56. Tighten the bolts securing the transmission to the engine evenly to 45Nm (33lb-ft).

57. Install the harness clip to stud and tighten nut to 25Nm (18lb-ft).

58. Carefully raise the transmission to install the mountings.

59. Install the mounting bracket to the transmission and tighten bolts to 85Nm (63lb-ft).

60. Lower the transmission and tighten the nuts securing the mountings to the chassis to 48Nm (35lb-ft).

61. Remove the jack supporting the engine.


62. Remove the two bolts securing LRT-99-008A to the transfer transmission.

63. Remove the support from the transmission.

64. Install the transfer transmission and automatic transmission handbrake cables.
65. Connect the main harness electrical connector to the handbrake lever.

transmission and tighten the locking ring.

67. Connect the inhibitor switch connector.
68. **Ensure the selector lever is correctly aligned and seated before tightening the nut.**

Position the selector lever to the inhibitor switch and tighten the nut to 25Nm (18lb-ft).
69. Connect the connector to the reverse lamp switch.
70. Where installed (Up to 03MY) - Connect the two Lucar connectors to the differential lock warning lamp switch and the connectors to the high/low ratio switch and neutral sensor.
71. Where installed (03MY onwards) - Connect the differential lock warning lamp switch connectors to the main harness.
72. Where installed - Connect and secure the differential lock selector cable to the transfer transmission with the clevis pin.
73. Check and adjust the differential lock selector cable.
74. Connect the high/low shift cable to the bracket/lever and install the clevis pin and clip.
75. Install the inspection plate to the converter housing and tighten the bolts to 7Nm (5lb-ft).
76. Install the bolt securing the coolant pipe clip to the intake manifold and tighten to 10Nm (7lb.ft).
77. Connect the connector to the crankshaft position sensor.
78. Install the starter motor.
79. Release the oil cooler pipes.
80. Clean oil the cooler pipe unions and install new O-rings.
81.  **Make sure any blanking plugs are removed before component is installed.**

Align and install the cooler pipes to the transmission securing clamps. Install the nuts and bolts, but do not tighten at this stage.
82. Tighten the oil cooler securing clamps, nuts and bolts to

10Nm (7lbf.ft).

83. Tighten the oil cooler unions to the transmission to 25Nm (18lbf.ft).
84. Install the front propeller shaft.
85. Install the rear propeller shaft.
86. Connect the connector to the oil pressure switch.
87. Using a new gasket, connect the exhaust intermediate pipe to the tail pipe, install the nuts and tighten to 25Nm (18lb-ft).
88. Install the exhaust front pipe.
89. Where installed, install the undertray.
90. Lower vehicle on lift.
91. Install the bolt securing the closing plate to the transmission and tighten to 10Nm (7lbf.ft).
92. Install the engine acoustic cover.
93. Connect the battery ground lead.
94. Install the battery cover.
95. Install and secure the handbrake cable to the handbrake lever.
96. Install and secure the handbrake lever gaiter to the center console.
97. Install the window switch pack to the center console.
98. Install and secure the window lift switch finisher to the trim casing.
99. Fill the automatic transmission with oil.

Table Attachment 1

Procedures Also Affected by this Process Time Change

SRO	Description	Old Time (hrs)	New Time (hrs)
12.21.20	Discovery Series II (LT), Td5, Automatic transmission	7.10	6.50
12.53.13	Discovery Series II (LT), Td5, Automatic transmission (to 2A999999)	5.70	5.20
12.53.13	Discovery Series II (LT), Td5, Automatic transmission (3A000001 on)	5.90	5.20
12.53.19	Discovery Series II (LT), Td5, Automatic transmission	5.70	5.20
44.17.01	Discovery Series II (LT), Td5, Automatic transmission	6.30	5.70

SRO	Description	Old Time (hrs)	New Time (hrs)
44.17.07	Discovery Series II (LT), Td5, Automatic transmission (to 2A999999)	5.40	4.90
44.17.07	Discovery Series II (LT), Td5, Automatic transmission (3A000001 on)	5.70	4.90
44.17.11	Discovery Series II (LT), Td5, Automatic transmission (to 2A999999)	5.40	4.90
44.17.11	Discovery Series II (LT), Td5, Automatic transmission (3A000001 on)	5.70	4.90
44.17.20	Discovery Series II (LT), Td5, Automatic transmission	6.50	6.00
44.20.02	Discovery Series II (LT), Td5, Automatic transmission (to 2A999999)	5.60	5.00
44.20.02	Discovery Series II (LT), Td5, Automatic transmission (3A000001 on)	5.80	5.00
44.20.11	Discovery Series II (LT), Td5, Automatic transmission	6.10	5.60
44.32.01	Discovery Series II (LT), Td5, Automatic transmission	6.30	5.80