

# TECHNICAL INFORMATION



## ABS Sensor Overlay Harness

No: 70/01/05/NAS  
 FGN LT206-09  
 Replaces: 86/04/04/NAS  
 Issue: 1  
 Date: 07 July 2005

### AFFECTED VEHICLE RANGE:

**Discovery Series II (LT) All**

### SITUATION:

#### ABS WIRING HARNESS DAMAGE

Environmental influences or mechanical damage can result in wiring harness malfunction. The ABS harness is exposed to hostile elements that can result in open circuits or other wiring-related ABS symptoms.

### RESOLUTION:

#### USE SERVICE "OVERLAY" HARNESS TO REPAIR ABS ELECTRICS

New ABS "overlay harness kits" have been made available for service repairs. The harness deletes the front connectors located in the front fender wells in production vehicles. The harnesses **MUST** be used instead of replacing the main or chassis harness for ABS sensor harness concerns such as open circuit conditions.

### PARTS INFORMATION:

**SSW500020**.....ABS sensor service kit, front                   Qty 1 per side  
**SSW500030**.....ABS sensor service kit, rear                   Qty 1 per side

### DDW WARRANTY CLAIMS:



**NOTE: 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.**

DDW requires the use of causal part numbers. Labor only claims must show the causal part number with a quantity of zero.

Job Description	SRO	Time (Hours)	Condition Code	Causal Part
Install RH front overlay harness	70.65.89/41	2.10	79	SSW500020
Install LH front overlay harness	70.65.89/42	2.20	79	SSW500020
Install RH rear overlay harness	70.65.89/43	2.20	79	SSW500030
Install LH rear overlay harness	70.65.89/44	2.30	79	SSW500030

*Normal warranty policy and procedures apply.*

**NOTE: The information in Technical Information 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 the bulletin applies to a specific vehicle.

<b>TIB</b> 70/01/05/NAS	<b>CIRCULATE:</b> TO	<b>Service Mgr</b> X	<b>Warranty</b> X	<b>Workshop</b> X	<b>Body Shop</b> X	<b>Parts</b> X
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## REPAIR PROCEDURE



**CAUTION:** Only one ABS sensor harness should be replaced at a time, ensuring that only two connector terminals are removed at one time from connector C0505. Limiting the scope of the repair will avoid confusion and protect against incorrectly fitted ABS sensor harnesses.



**NOTE:** If a fault is found with the ABS sensor harness the appropriate corrective action as outlined in the Bulletin should be followed to install new ABS sensor overlay harnesses.

### REPLACE RIGHT-HAND FRONT ABS SENSOR/HARNESS



**NOTE:** GTR lookup sequence is as follows:  
GTR Home > NAS > Service Information/ LT Discovery Series II/2004 > Discovery Series II Workshop Manual 1999 MY on > Bookmark "86-1 Charging and Starting" > link "86.15.01 Battery"

1. Refer to GTR section 86.15.01 and disconnect the battery ground cable.
2. Disconnect the white ABS connector at the right-hand suspension turret. (Figure 1)
3. Release ABS sensor grommet and harness from inner wing.
4. Withdraw the harness through the aperture into the wheel arch.
5. Remove the right-hand front wheel.
6. Release the harness from the brackets on the inner fender valance, suspension turret and front hub. (Figure 2)



**NOTE:** GTR lookup sequence is as follows:  
GTR Home > NAS > Service Information/ LT Discovery Series II/2004 > Discovery Series II Workshop Manual 1999 MY on > Bookmark "70 - brakes" > link "70.12.10 Brake disc - front"

7. Refer to GTR section 70.12.10 and remove the front brake disc.
8. Loosen the four bolts securing the front hub to the swivel hub. (Figure 3)



**CAUTION:** Ensure that the general area is clean and dry to avoid dirt ingress into the joint between the front hub and swivel hub.

9. Release the front hub from the swivel hub sufficiently to allow the sensor harness to be removed.



**CAUTION:** Ensure the area around the ABS sensor is clean and dry to avoid dirt ingress into the front hub.

10. Remove the Allen screw and release the ABS sensor from the front hub assembly.

Figure 1

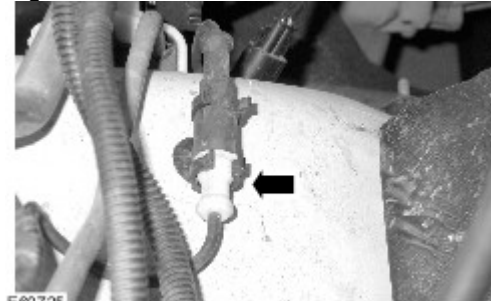


Figure 2

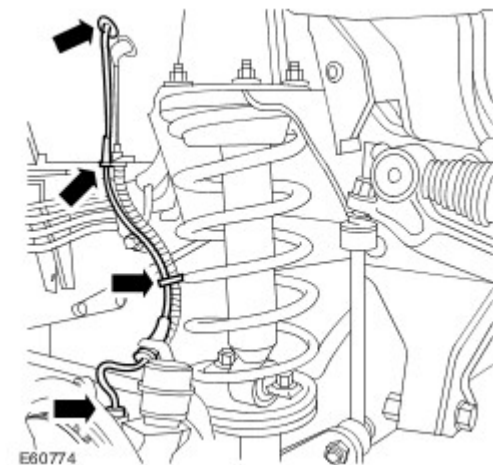
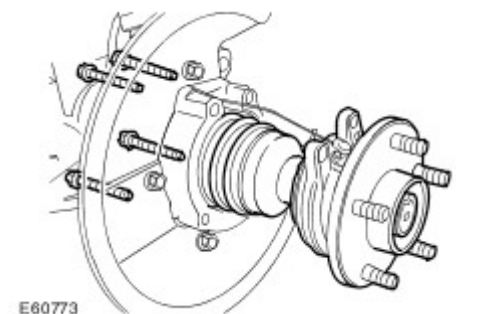



Figure 3



11. Discard the 'O' ring seal.
12. Apply anti-seize grease to sensor.
13. Lubricate and install a new 'O' ring seal.

 **CAUTION: Ensure the mating surfaces of the hub and new ABS sensor are clean.**

14. Position the ABS sensor between the hub and the swivel hub and tighten the Allen screw to **18 Nm (13lbf.ft)**.
15. Position the hub and tighten the bolts to **100 Nm (74lbf.ft)**.
16. Secure the ABS harness to the brackets and secure the grommet to the inner fender valence.
17. Install the brake disc.
18. Install road wheel and tighten nuts to **140 Nm (103 lb-ft)**.
19. Remove the passenger-side footwell closing panel.
20. Remove the A-pillar lower finisher.
21. From inside the vehicle (passenger side), carefully reposition the carpet/NVH cover from the bulkhead to expose the bulkhead grommet.
22. From the engine bay, carefully pull the NVH cover away from the bulkhead and remove the grommet. (Figure 4)
23. Make an incision in the center of the grommet and pass the new ABS harness through the grommet.
24. Pass the new harness through the bulkhead and install the grommet.

 **NOTE: GTR lookup sequence is as follows:  
GTR Home > NAS > Service Information/ LT Discovery Series II/2004 > Discovery Series II Workshop Manual 1999 MY on > Bookmark "70 -BRAKES" > link "70.65.08 ECU - Self leveling and anti locking brakes (SLABS)"**

25. Refer to GTR section 70.65.08. Secure the harness using cable ties where necessary and route the harness to the self-leveling and anti-lock braking (SLABS) electronic control unit (ECU).
26. Cut away any excess harness and carefully remove approximately 50mm of **outer** insulation.
27. Strip the wire insulation to expose the wires conductors.
28. Install the crimp terminals supplied in the repair kit.
29. Refer to GTR Electrical Library, Connector View C0505 and disconnect connector C0505 from the SL/ABS ECU.

Figure 4

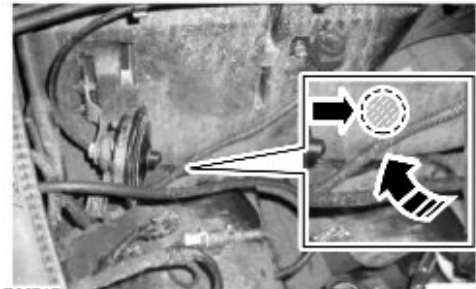
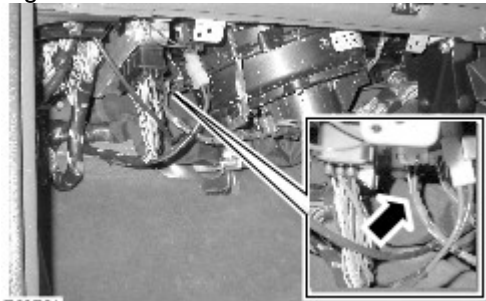


Figure 5





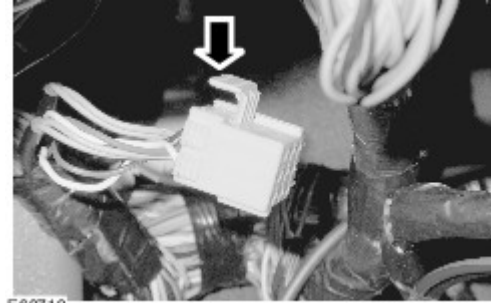
**CAUTION:** This step refers to connector termination for the **RIGHT-HAND FRONT SENSOR - LEFT-HAND DRIVE VEHICLES ONLY**. Release the specified terminals only.



**NOTE:** The new harness terminals may be connected in either cavity of the connector. They are not polarity sensitive.

30. Release terminals **four and five** from the connector and insert the new terminals.
31. Cut off the removed redundant terminals and secure back to the main harness using a suitable electrical tape.
32. Connect the SLABS connector.
33. Install the passenger-side footwell closing panel.
34. Install the A-pillar lower finisher.
35. Refer to GTR section 86.15.01 and connect the battery ground cable.
36. Using T4 perform the following:
  - Clear the fault codes from SLABS ECU.
  - Raise the RHF corner of the vehicle.
  - Select the T4 overview screen.
  - With ignition at position two, spin the RHF wheel and check the input from the sensor is operating correctly.
37. Disconnect T4 and lower the vehicle.
38. Road test the vehicle.


Figure 6



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## REPLACE LEFT-HAND FRONT ABS SENSOR/HARNESS


1. Refer to GTR section 86.15.01 and disconnect the battery ground cable
2. Disconnect the white ABS connector at the left-hand bulkhead. (Figure 7)
3. Release ABS sensor grommet and harness from inner wing.
4. Withdraw the harness through the aperture into the wheel well.
5. Remove the left-hand front wheel.
6. Release the harness from the brackets on the inner fender valance, suspension turret and front hub. (Figure 8)
7. Refer to GTR section 70.12.10 and remove the brake disc.

 **CAUTION: The hub and swivel area must be clean and dry to avoid dirt ingress into the joint between the front hub and swivel hub.**

8. Clean the area and loosen the four bolts securing the front hub to the swivel hub. (Figure 9)
9. Release the front hub from the swivel hub sufficiently to allow the sensor harness to be removed.

 **CAUTION: The area around the ABS sensor must be clean and dry to avoid dirt ingress into the front hub.**

10. Clean the sensor area and remove the Allen screw to release the ABS sensor from the front hub assembly.
11. Discard the 'O' ring seal.
12. Apply anti-seize grease to the new sensor.
13. Lubricate and install a new 'O' ring seal.

 **CAUTION: The mating faces of the hub and new ABS sensor MUST be clean.**

14. Position the ABS sensor between the hub and the swivel hub and tighten the Allen screw to **18 Nm (13lbf.ft)**.
15. Position the hub and tighten the retaining bolts to **100 Nm (74lbf.ft)**.
16. Secure the ABS harness to the brackets and secure the grommet to the inner fender valance.
17. Install the brake disc.
18. Install the road wheel and tighten nuts to **140 Nm (103 lb-ft)**.
19. Release the driver-side footwell closing panel.

Figure 7

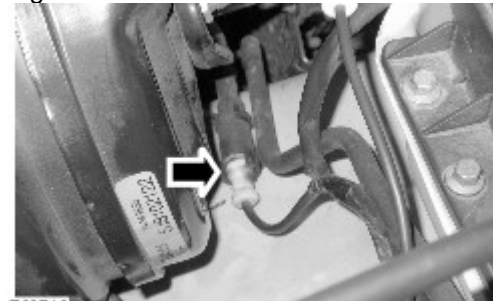


Figure 8

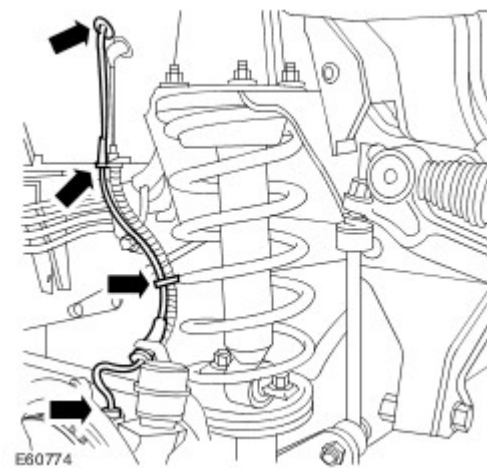
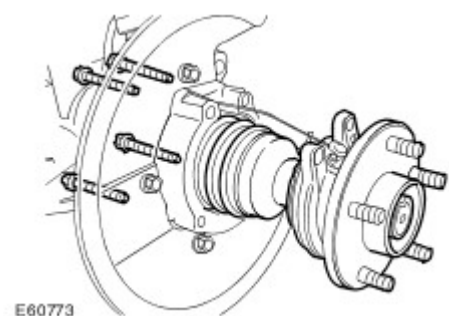




Figure 9




20. Remove the bulkhead grommet from under brake servo. (Figure 10)
21. Make an incision in the center of the grommet and pass the new ABS harness through the grommet.
22. Pass the new harness through the bulkhead and install the grommet. (Figure 11)

 **NOTE: GTR lookup sequence is as follows:  
GTR Home > NAS > Service Information/ LT Discovery Series II/2004 > Discovery Series II Workshop Manual 1999 MY on > Bookmark "70 -BRAKES" > link "70.65.08 ECU - Self leveling and anti locking brakes (SLABS)"**

23. Refer to GTR section 70.65.08 and route the harness across the vehicle following the main wiring harness behind the center console to the self-leveling and anti-lock braking (SLABS) electronic control unit (ECU). (Figure 12)
24. Secure the harness using cable ties where necessary.
25. Cut away any excess harness and carefully remove approximately 50mm of outer insulation.
26. Strip the wire insulation to expose the wires conductors.
27. Install the crimp terminals supplied in the repair kit.
28. Refer to GTR Discovery Series II Electrical Library Workshop Manual Section Connectors, Connector Views (C0505) and disconnect connector C0505 from the SLABS ECU. (Figure 13)

 **CAUTION: This step refers to connector termination for the left-hand front sensor - left-hand driver vehicles only. Release the specified terminals only.**

 **NOTE: The new harness terminals may be connected in either cavity of the connector. They are not polarity sensitive.**

29. Release terminals **one and two** from the connector and insert the new terminals.
30. Secure the removed redundant terminals back to the main harness using a suitable electrical tape.
31. Connect the SLABS connector.
32. Install the footwell closure panel.
33. Connect the battery ground cable.
34. Using T4 perform the following:
  - Clear the fault codes from SLABS ECU.
  - Raise the LHF corner of the vehicle.
  - Select the T4 overview screen.
  - With ignition at position two, spin the LHF wheel and check the input from the sensor is operating correctly.
35. Disconnect T4 and lower the vehicle.
36. Road test the vehicle.

Figure 10

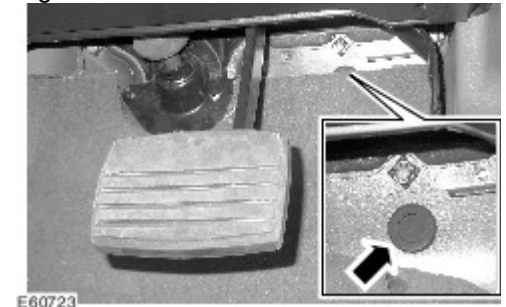


Figure 11



Figure 12

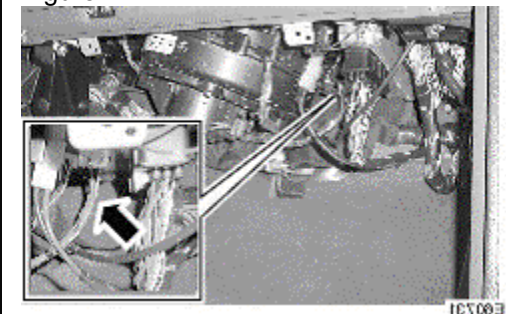
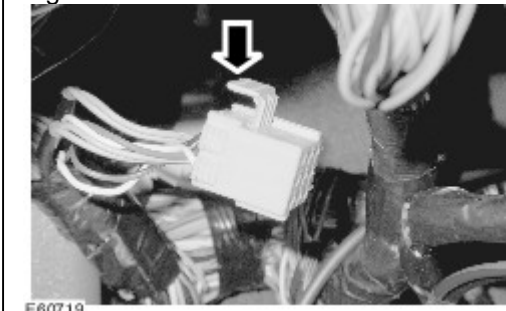


Figure 13



## REPLACE REAR ABS SENSOR/HARNESS – EITHER SIDE

1. Refer to GTR Workshop Manual Section 86.15.01 and disconnect the battery ground cable.
2. Remove the relevant rear wheel.
3. Release the ABS sensor harness connector from the clip on the body and disconnect the connector. (Figure 14 or Figure 15)
4. Cut off the redundant ABS sensor connector lead back to the main harness and tape the exposed end to the main harness with insulating tape.
5. Release the harness from the brake flexible hose and hose brackets.

**NOTE:** GTR lookup sequence is as follows:  
GTR Home > NAS > Service Information/ LT Discovery Series II/2004 > Discovery Series II Workshop Manual 1999 MY on > Bookmark "70 - BRAKES" > link "70.12.33 Brake disc - rear"

6. Refer to GTR Workshop Manual section 70.12.33 and remove the brake disc.

**CAUTION:** The area around the ABS sensor must be clean and dry to avoid dirt ingress.

7. Remove the Allen screw and release the ABS sensor.
8. Discard the 'O' ring seal.
9. Apply anti-seize grease to the sensor.
10. Lubricate and install a new 'O' ring seal.

**CAUTION:** Ensure the mating faces of the hub and new ABS sensor are clean.

11. Install the ABS sensor and tighten the Allen screw to **18 Nm (13lbf.ft)**.
12. Install the harness into brake flexible hose clips on the brake hose.
13. Refer to GTR section 70.12.33 and install the brake disc.

**CAUTION:** Do not secure the harness to brake or fuel lines.

14. Secure the new ABS harness following the route of the main ABS harness to the front of the vehicle (passenger side bulkhead area). (Figure 16)
15. Install the road wheel and tighten nuts to **140 Nm (103 lb-ft)**.
16. Remove the passenger-side footwell closing panel.
17. From inside the vehicle (passenger side), carefully reposition the carpet/NVH cover from the bulkhead to expose the bulkhead grommet.

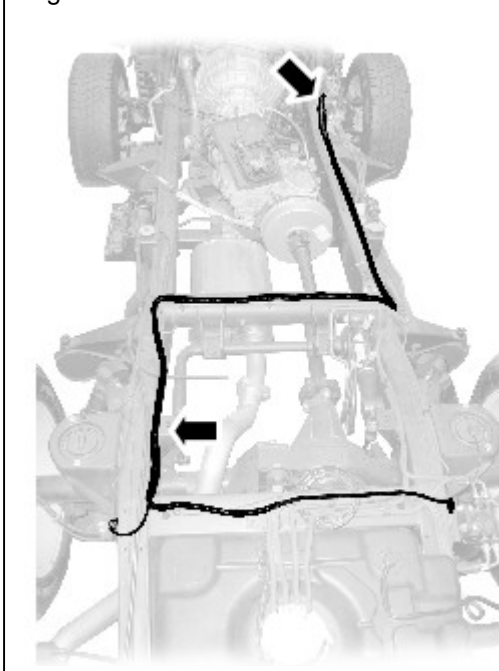
Figure 14



Figure 15



Figure 16



18. From the engine bay, carefully pull the NVH cover away from the bulkhead and remove the grommet. (Figure 17)
19. Make an incision in the center of the grommet and pass the new ABS harness through the grommet.
20. Pass the new harness through the bulkhead and install the grommet.



**NOTE: GTR lookup sequence is as follows:  
GTR Home > NAS > Service Information/ LT Discovery Series II/2004 > Discovery Series II Workshop Manual 1999 MY on > Bookmark "70 -BRAKES" > link "70.65.08 ECU - Self leveling and anti locking brakes (SLABS)"**

21. Refer to GTR section 70.65.08 and route the harness across the vehicle following the main wiring harness behind the center console to the self-leveling and anti-lock braking (SLABS) electronic control unit (ECU). (Figure 18)
22. Secure the harness using cable ties where necessary.
23. Cut away any excess harness and carefully remove approximately 50mm of outer insulation.
24. Strip the wire insulation to expose the wires conductors.
25. Install the crimp terminals supplied in the repair kit.
26. Refer to GTR Electrical Library Connector Views (C0505) and disconnect connector C0505 from the SLABS ECU. (Figure 19)



**NOTE: The new harness terminals may be connected in either cavity of the connector. There is no polarity.**

27. If replacing the **left rear** sensor, release terminals **seven and eight** from the connector and insert the new terminals.
28. If replacing the **right rear** sensor, release terminals **three and six** from the connector and insert the new terminals.
29. Cut off the removed redundant terminals and secure back to the main harness using electrical tape.
30. Connect the SLABS connector.
31. Install the footwell closure panels.
32. Connect the battery ground cable.
33. Using T4 and perform the following:
  - Clear the fault codes from SLABS ECU.
  - Raise the relevant corner of the vehicle.
  - Select the T4 overview screen.
  - With ignition at position two, spin the relevant rear wheel and check the input from the sensor is operating correctly.
34. Disconnect T4 and lower the vehicle.
35. Road test the vehicle.

Figure 17

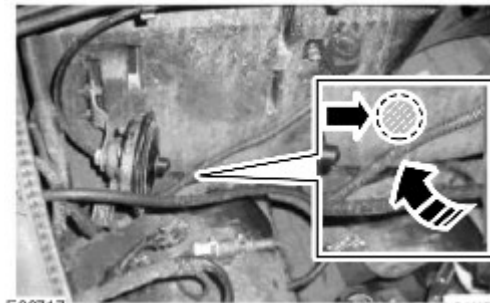


Figure 18

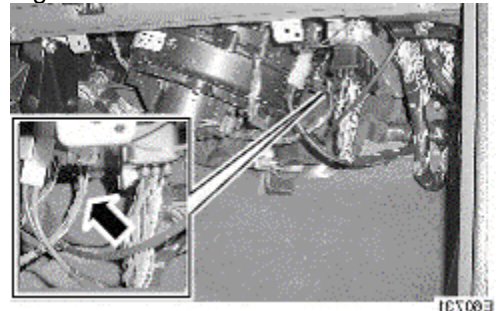


Figure 19

