

# TECHNICAL INFORMATION



## Wheel Speed Sensor Related ABS/TC/HDC Warning Lamp Illumination Troubleshooting

No: 70/03/05/NAS  
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### AFFECTED VEHICLE RANGE:

Discovery Series II (LT) All

### SITUATION:

#### ILLUMINATED ABS/TC/HDC WARNING LAMPS

A customer may complain that the anti-lock braking system (ABS), traction control (TC) and hill descent control (HDC) warning lamps are illuminated. There are a variety of potential causes of a wheel speed sensor fault. When T4 diagnostics indicates that the fault (logged codes 4.4, 4.5, 4.6, 4.7, 6.4, 6.5, 6.6, 6.7, 8.4, 8.5, 8.6 and 8.7) is the wheel speed sensor, the information in this bulletin should be used to diagnose the problem.

### RESOLUTION:

#### DIAGNOSE WARNING LAMP ILLUMINATION CAUSES

Should a customer express concern regarding the warning lamp illumination, the diagnostic procedure in the "Repair Procedure" section of this bulletin should be used to troubleshoot the problem and ensure that a successful corrective action is taken.

### PARTS INFORMATION:

SSW500020.....	Service Sensor kit - Front	1
SSW500030.....	Service Sensor kit - Rear	1
SRD500070 .....	Electric control unit - (SLABS)	1

### TOOLS

T4 "RDS" Disc ..... "Archive 23" or later

### 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.

Description	SRO	Time (Hours)	Condition Code	Causal Part
Wheel speed sensor fault diagnosis	70.90.89/28	0.30	28	TAR100070
Replace ECU	70.65.08	1.20	28	TAR100070

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.

TIB	CIRCULATE:	Service Mgr	Warranty	Workshop	Body Shop	Parts
70/03/05/NAS	TO	X	X	X	X	X

## REPAIR PROCEDURE

### TROUBLESHOOTING ABS WARNING LIGHTS

 **NOTE:** Land Rover approved brake pads/discs are fitted to the vehicle to ensure proper operation of the systems.

 **NOTE:** If during this procedure it is determined that the wheel speed sensor requires renewal, when locating the new sensor head into the hub care must be taken to ensure that the sensor O-ring is correctly located.


1. Connect T4 to the vehicle and load Archive disc 23 (or a later version).
2. Start a new diagnostic session.
3. Using the on-screen display, select:
  - 'SLS & ABS'
  - 'Vehicle Maintenance'
  - 'Read ECU Information'
  - 'Internal ECU Data'
4. Record the Internal ECU Data.
5. Return to Vehicle Maintenance screen and select 'Fault Code Diagnostics'.
6. Record and then clear any logged fault codes.


 **NOTE:** Damage to the wheel speed sensor lead includes cuts/abrasions to the lead insulation, even if these have not caused the sensor register open or short circuit.

7. Check the external condition of the suspect wheel speed sensor and lead for moisture ingress, damage to the insulation and possible exposed wires.
8. If there is no external damage to the wheel speed sensor lead, perform the following:
  - Check the condition of the suspect wheel speed sensor lead for evidence of internal damage or poor connectivity using the following technique:
    - a) Using T4, select 'Real-Time Display' and then select 'DC Voltage'.
    - b) With assistance flex the wheel speed sensor lead and tap/flex the wheel speed sensor connector, observing the on-screen display for any changes in the displayed value.
  - If the displayed value changes, refer to TIB [70/01/05/NAS](#) and replace the wheel speed sensor and lead with the sensor and complete overlay harness.
  - Clear any logged fault codes.
  - Disconnect T4 from the vehicle.
  - Road test the vehicle.
  - Connect T4 to the vehicle and ensure there are no new logged fault codes.
9. If moisture is present in the wheel speed sensor lead connector, perform the following:
  - Refer to TIB [70/01/05/NAS](#) and replace the wheel speed sensor and lead with the sensor and complete overlay harness.
  - Clear any logged fault codes.
  - Disconnect T4 from the vehicle.
  - Road test the vehicle.
  - Connect T4 to the vehicle and ensure there are no new logged fault codes.

10. If the wheel speed sensor or the wheel speed sensor lead is damaged, the wheel speed sensor **and** lead must be replaced as an assembly.

- Refer to TIB [70/01/05/NAS](#) and replace the wheel speed sensor and lead with the sensor and complete overlay harness assembly.
- Clear any logged fault codes.
- Disconnect T4 from the vehicle.
- Road test the vehicle.
- Connect T4 to the vehicle and ensure there are no new logged fault codes.


 **NOTE: With ECU SRD500070, during certain circumstances the ABS warning lamp may flash while the vehicle is braking at slow speed. This is normal functionality. The lamp will extinguish after a few seconds and it will not cause a fault code to be stored. If the lamp stays on for the remainder of the ignition on period, then check for stored fault codes. If any stored fault code indicates an erratic wheel speed sensor signal then proceed to step 12.**

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

 **NOTE: ECU SRD500070 is a replacement for both SRD000070 and SRD000150.**

11. If fault codes remain stored in the SLABS ECU as identified in this bulletin or no faults were found while carrying out the diagnostic procedure on the wheel speed sensor, refer to GTR section 70.65.08 and replace the installed SLABS ECU with a new SLABS ECU (SRD500070).

- When all ECU renewal steps are complete, road test the vehicle.
- Connect T4 to the vehicle and verify that no new logged fault codes returned.

 **NOTE: GTR lookup sequence is as follows:  
GTR Home > NAS > Service Information/ LT Discovery Series II/2004 > Workshop Manuals > Discovery Series II Workshop Manual 1999 MY on > Bookmark "60 – FRONT SUSPENSION" > Link "60.25.01 Wheel Hub"  
Discovery Series II Workshop Manual 1999 MY on > Bookmark "64 – REAR SUSPENSION" > Link "64.15.01 Wheel Hub"**

12. If the fault returns, refer to GTR section 60.25.01 or 64.15.01 and replace the wheel hub at the reported fault location.

13. Clear any logged fault codes.

14. Disconnect T4 from the vehicle.

15. Road test the vehicle.

16. Connect T4 to the vehicle and verify that no new logged fault codes have returned.