

TECHNICAL INFORMATION



Troubleshooting ABS/HDC/TC Warning Lamp Illumination

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AFFECTED VEHICLE RANGE:

Discovery Series II

XA900000 to XA999999
XA200412 and up

SITUATION:

WARNING LAMPS ILLUMINATED

Investigation of ABS, Traction Control (TC) or Hill Descent Control (HDC) warning lamp illumination using T4 may reveal fault code "11,4: Shuttle Valve Switch (SVS) electrical failure." Because the cause of an SVS electrical failure does not necessarily lie within the Modulator, additional diagnostic routines may be required to define the problem further and ensure that the correct action is taken.

RESOLUTION:

PERFORM SPECIFIED TROUBLESHOOTING STEPS



NOTE: A number of ABS modulators have been returned to Land Rover with "no fault found" when subjected to testing. This bulletin must be used as a guide to correctly diagnose a concern before replacing an ABS modulator.

Should a customer complain about the illumination of the warning lamps and T4 investigate reveals fault code "11,4 SVS electrical fault," use the information in this bulletin to correctly diagnose the customer's concern.

PARTS/TOOL INFORMATION:

LRT 86-010/1Harness Repair Kit, Phase 2

DDW WARRANTY CLAIMS:



NOTE: "Prior con" requirement for ABS modulator units is removed with the publication of this TIB.

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
Diagnostic procedure for logged shuttle valve switch failure	70.90.89/27	0.50	79	SRB101201 SRB101202 SRB101203

*Normal warranty policy and procedures apply.
Material allowance is included in labor operation.*

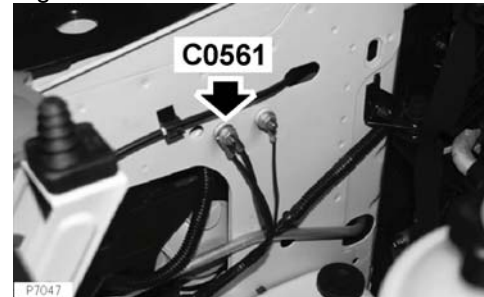
TIB 70/07/04/NAS	CIRCULATE: TO	Service Mgr X	Warranty X	Workshop X	Body Shop X	Parts X
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REPAIR PROCEDURE

NOTE: For connector views not detailed in this bulletin, refer to the GTR Discovery Electrical Library.

1. Connect T4 to the vehicle and check for any logged fault codes.
2. Locate the ground stud connection (C0561-1) located on the radiator support behind the LH headlamp assembly. (Figure 1)
3. Check that C0561-1 is undamaged and free of corrosion.
4. If the ground stud is damaged or corroded, clean the eyelet and stud and tighten the nut to **10 Nm (7.5 lbf.ft.)**.
5. Check for continuity between the ground stud (C0561-1) and C0500 connector on the ABS modulator body.
6. Move and flex the wire between C0561-1 and C0500 to verify that there is no interruption in continuity.

Figure 1



LOCATION: Behind LH Headlamp
Air intake box removed for visibility

CAUTION: Correctly crimped and soldered wires are vital to an effective repair. **GTR New Range Rover Electrical Library – Introduction, Harness Repairs** outlines the methods and repair guidelines to be followed when performing electrical repairs.

7. If there is no continuity or intermittent continuity when the wire is flexed, repair the damaged wire.
8. Disconnect and inspect the 13-pin connector at the ABS modulator (C0501) for moisture ingress and corrosion.
9. Disconnect and inspect the 15-pin connector at the SLABS ECU (C0506) for moisture and corrosion.

CAUTION: Removing and repairing/replacing connector pins one at a time ensures that the pins are reinstalled in the correct position. Always following this procedure will protect against incorrect wiring connections.

10. If moisture or corrosion is present in either connector, dry and clean the affected connector and repair the corroded connector pins.
11. Connect an ohmmeter between pin 9 of the ABS modulator connector (C0501-9 yellow/green wire) and ground.

NOTE: An assistant is required to perform the brake pedal application actions in the following steps.

12. Monitor and record the change in resistance as an assistant very slowly depresses the brake pedal.
13. Check results against the values shown in the resistance table below:

Approximate pedal position	Minimum resistance	Maximum resistance
No travel	2555 Ohms	4088 Ohms
Partial travel	1533 Ohms	2554 Ohms
Full Travel	511 Ohms	1532 Ohms

14. If the resistance is outside the minimum and maximum values shown in the table, replace the ABS modulator.
15. Connect an ohmmeter between pin 6 of the SLABS connector (C0506-6 yellow/ green wire) and ground.
16. Monitor and record the change in resistance as an assistant very slowly depresses the brake pedal.
17. Check results against the values shown in the resistance table below:

Approximate pedal position	Minimum resistance	Maximum resistance
No travel	2555 Ohms	4088 Ohms
Partial travel	1533 Ohms	2554 Ohms
Full Travel	511 Ohms	1532 Ohms

18. If the resistance is outside the minimum and maximum values in the table, check for continuity between pin 6 of the 15-pin SLABS ECU connector (C0506-6) and pin 9 of the ABS modulator connector (C0501-9 yellow/ green wire).
19. If there is no continuity or intermittent continuity when the wire is flexed, repair or replace the damaged wire.
20. If the resistance is between the minimum and maximum values, check for continuity between pin 12 of the 18-pin SLABS ECU connector (C0504-12 - black wire) and ground C0362-1 located high on the LH inner fender within the passenger compartment. (Figure 2)
21. If there is no continuity or intermittent continuity when the wire is flexed, repair or replace the damaged wire.
22. Check for continuity between pin 3 of the 15-pin SLABS ECU connector (C0506-3 black/slate wire) and ground.
23. If there is no continuity or intermittent continuity when the wire is flexed between C0506-3 and ground, check for continuity between pin 3 and pin 8 of ABS modulator connector (C0501-8).
24. If there is no continuity or intermittent continuity when the wire is flexed between C0506-3 and C0501-8, repair or replace the damaged wire.
25. If there is continuity between C0506-3 and C0501-8, replace the modulator.
26. If there is continuity between C0506-3 and ground, replace the SLABS ECU.
27. Disconnect T4 from the vehicle.
28. Road test the vehicle to ensure the warning lights are not illuminated.
29. Re-connect T4 to verify that the fault is now historic.
30. Clear all logged fault codes.

Figure 2

