

7. Diagnostics Chart for ABS Warning Light Circuit and Diagnosis Circuit Failure

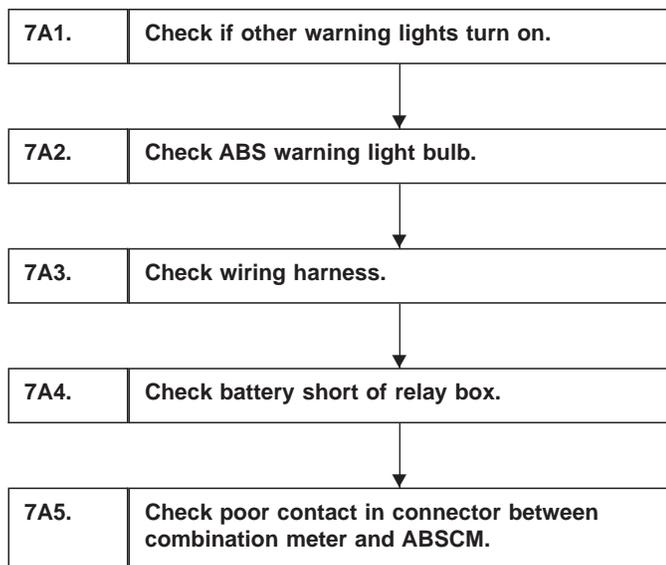
A: ABS WARNING LIGHT DOES NOT COME ON.

DIAGNOSIS:

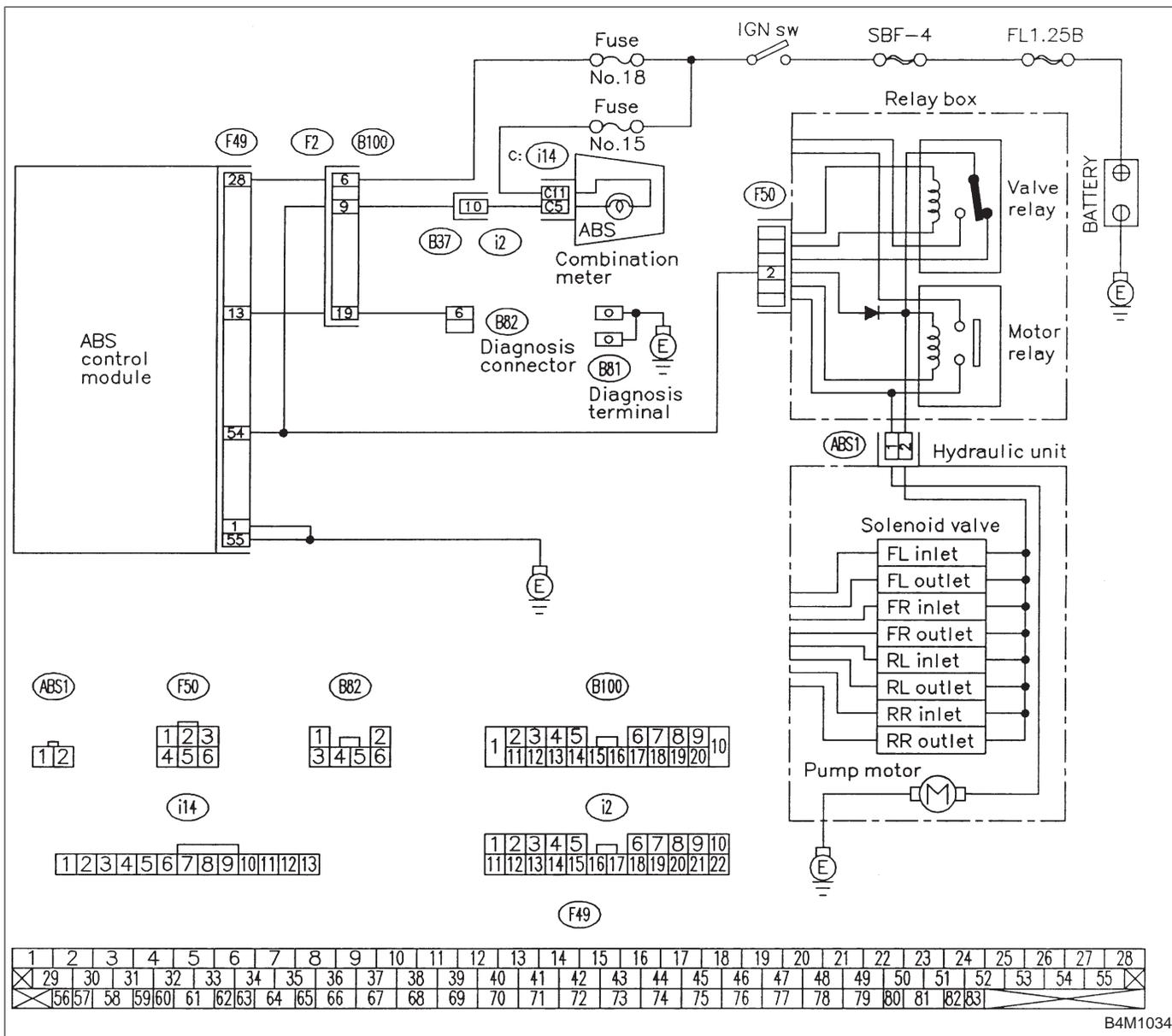
- ABS warning light circuit is open or shorted.

TROUBLE SYMPTOM:

- When ignition switch is turned ON (engine OFF), ABS warning light does not come on.



WIRING DIAGRAM:



7A1 **CHECK IF OTHER WARNING LIGHTS TURN ON.**

Turn ignition switch to ON (engine OFF).

- CHECK** : **Do other warning lights turn on?**
- YES** : Go to step **7A2**.
- NO** : Repair combination meter.

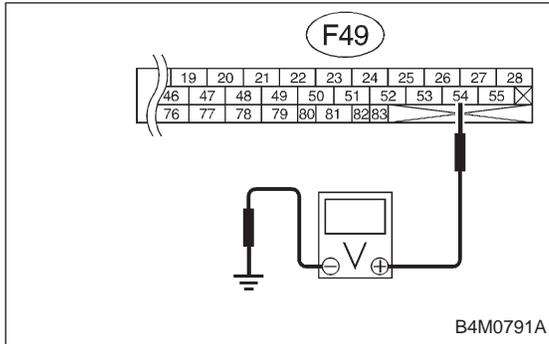
7A2 CHECK ABS WARNING LIGHT BULB.

- 1) Turn ignition switch to OFF.
- 2) Remove combination meter.
- 3) Remove ABS warning light bulb from combination meter.

CHECK : *Is ABS warning light bulb OK?*

YES : Go to step **7A3**.

NO : Replace ABS warning light bulb.

**7A3 CHECK WIRING HARNESS.**

- 1) Disconnect connector from ABSCM.
- 2) Disconnect connector (F50) from relay box.
- 3) Turn ignition switch to ON.
- 4) Measure voltage between connector (F49) and chassis ground.

CHECK : *Connector & terminal (F49) No. 54 (+) — Chassis ground (-): Is voltage 12 V?*

YES : Go to next step.

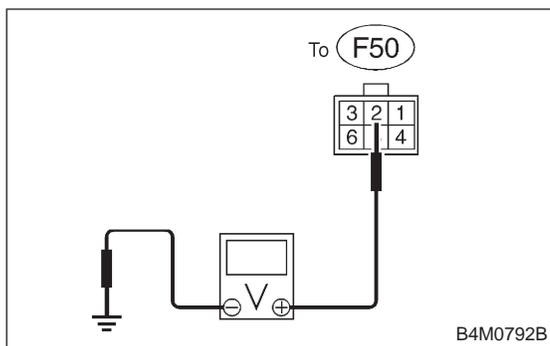
NO : Repair broken wire in harness or connector.

- 5) Turn ignition switch to OFF.
- 6) Measure voltage between ABSCM connector (F49) and chassis ground.

CHECK : *Connector & terminal (F49) No. 54 (+) — Chassis ground (-): Is voltage less than 3 V?*

YES : Go to step **7A4**.

NO : Repair battery short of harness.

**7A4****CHECK BATTERY SHORT OF RELAY BOX.**

- 1) Disconnect connector from relay box.
- 2) Turn ignition switch to ON.
- 3) Measure voltage between relay box and chassis ground.

CHECK : **Connector & terminal**
To (F50) No. 2 (+) — Chassis ground (-):
Is voltage 0 V?

YES : Go to next step.

NO : Replace relay box.

- 4) Turn ignition switch OFF.
- 5) Measure voltage between relay box and chassis ground.

CHECK : **Connector & terminal**
To (F50) No. 2 (+) — Chassis ground (-):
Is voltage 0 V?

YES : Go to step **7A5**.

NO : Replace relay box.

7A5**CHECK POOR CONTACT IN CONNECTOR BETWEEN COMBINATION METER AND ABSCM.**

CHECK : **Is there poor contact in connectors between combination meter and ABSCM?**

YES : Repair connector.

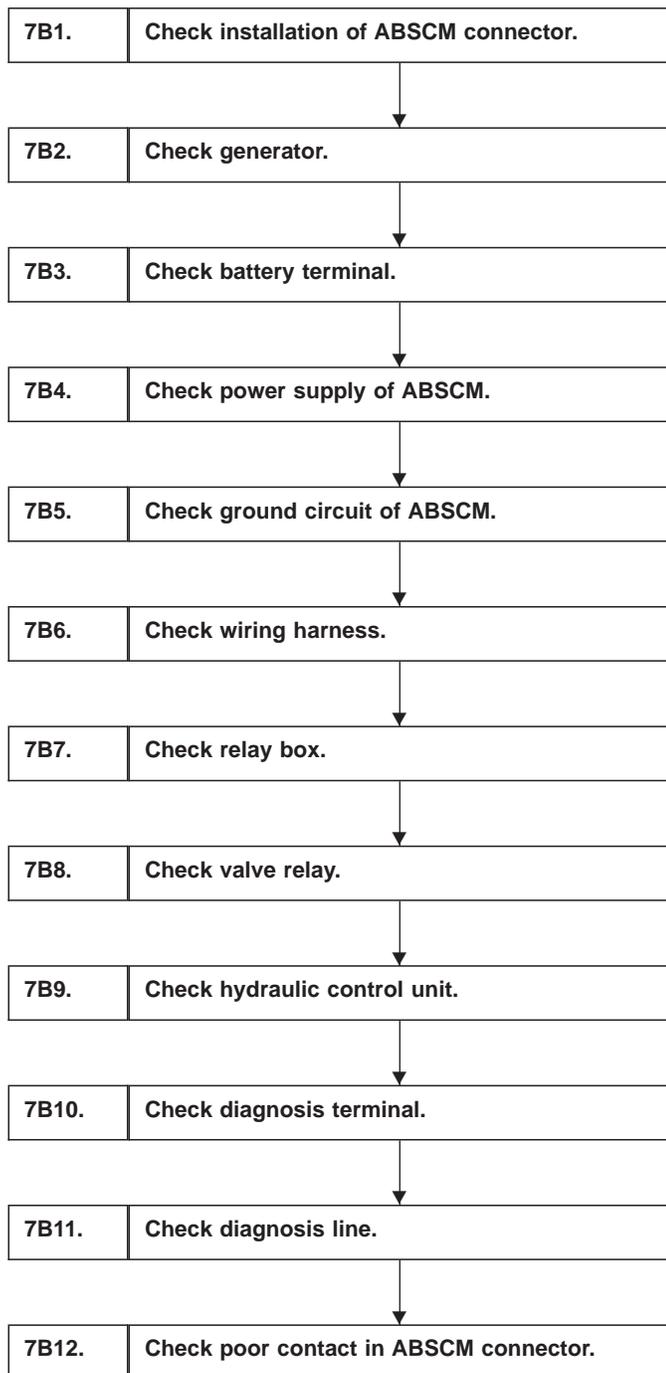
NO : Replace ABSCM.

B: ABS WARNING LIGHT DOES NOT GO OFF.**DIAGNOSIS:**

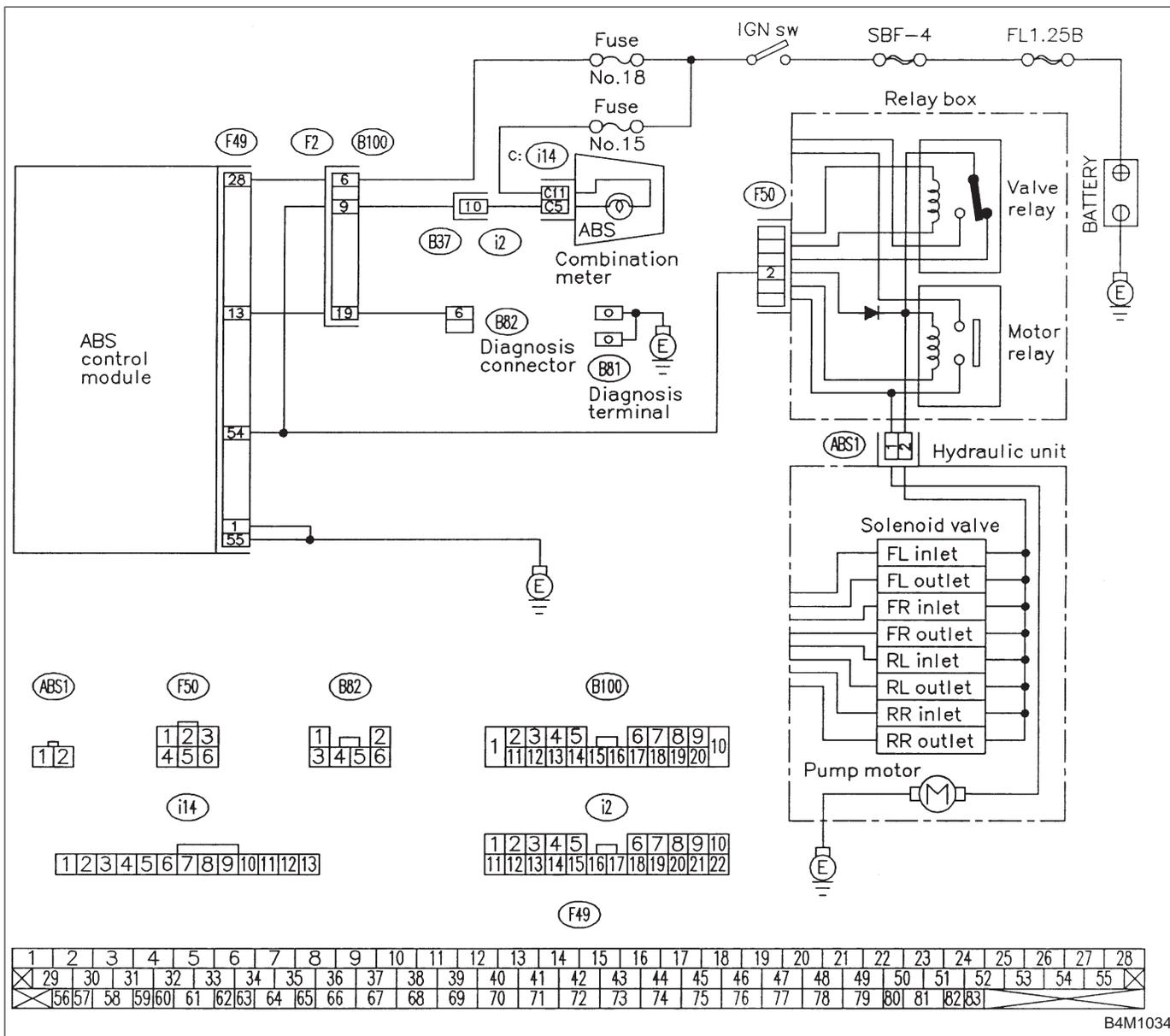
- ABS warning light circuit is open or shorted.

TROUBLE SYMPTOM:

- When starting the engine and while ABS warning light is kept ON.



WIRING DIAGRAM:



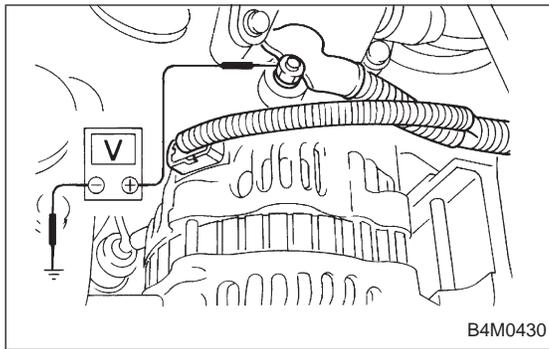
7B1 CHECK INSTALLATION OF ABSCM CONNECTOR.

Turn ignition switch to OFF.

CHECK : Is ABSCM connector inserted into ABSCM until the clamp locks onto it?

YES : Go to step 7B2.

NO : Insert ABSCM connector into ABSCM until the clamp locks onto it.



7B2 CHECK GENERATOR.

- 1) Start the engine.
- 2) Idle the engine.
- 3) Measure voltage between generator and chassis ground.

CHECK : *Terminal Generator B terminal (+) — Chassis ground (-): Is voltage 10 — 15 V?*

YES : Go to step 7B3.

NO : Repair generator.

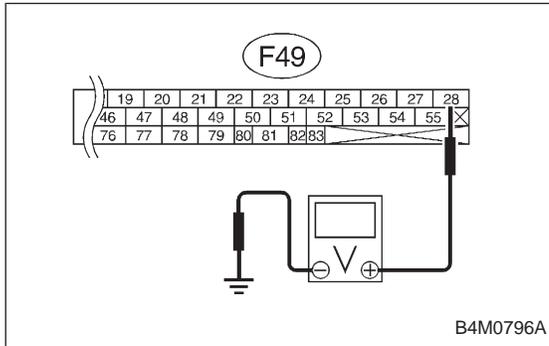
7B3 CHECK BATTERY TERMINAL.

Turn ignition switch to OFF.

CHECK : *Is there poor contact at battery terminal?*

YES : Repair battery terminal.

NO : Go to step 7B4.



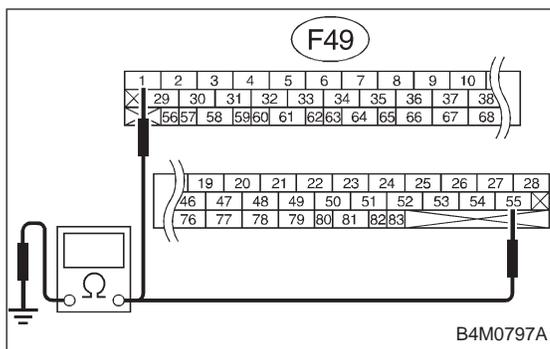
7B4 CHECK POWER SUPPLY OF ABSCM.

- 1) Disconnect connector from ABSCM.
- 2) Start engine.
- 3) Idle the engine.
- 4) Measure voltage between ABSCM connector and chassis ground.

CHECK : *Connector & terminal (F49) No. 28 (+) — Chassis ground (-): Is voltage 10 — 15 V?*

YES : Go to step 7B5.

NO : Repair ABSCM power supply circuit.



7B5 CHECK GROUND CIRCUIT OF ABSCm.

- 1) Turn ignition switch to OFF.
- 2) Measure resistance between ABSCM connector and chassis ground.

CHECK : **Connector & terminal**
(F49) No. 1 — Chassis ground:
(F49) No. 55 — Chassis ground:
Is resistance less than 0.5 Ω?

- YES** : Go to step 7B6.
NO : Repair ABSCM ground harness.

7B6 CHECK WIRING HARNESS.

- 1) Disconnect connector (F50) from relay box.
- 2) Turn ignition switch to ON.

CHECK : **Does the ABS warning light remain off?**

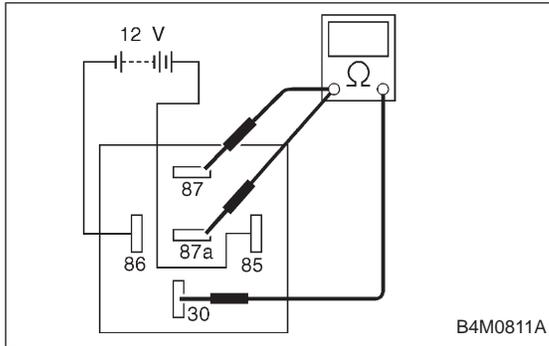
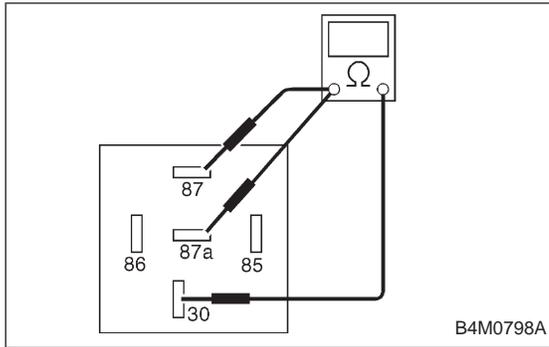
- YES** : Go to step 7B7.
NO : Repair front wiring harness.

7B7 CHECK RELAY BOX.

- 1) Turn ignition switch to OFF.
- 2) Connect connector (F50) to relay box.
- 3) Remove valve relay from relay box.
- 4) Disconnect connector (ABS1) from hydraulic control unit.
- 5) Turn ignition switch to ON.

CHECK : **Does the ABS warning light remain off?**

- YES** : Go to step 7B8.
NO : Repair relay box and check fuse.

**7B8 CHECK VALVE RELAY.**

1) Measure resistance between valve relay terminal and terminal.

CHECK : **Terminals**
No. 30 — No. 87:
Is resistance more than 1 MΩ?
No. 30 — No. 87a:
Is resistance less than 0.5 Ω?

YES : Go to next step.

NO : Replace valve relay.

2) Connect battery to valve relay terminal No. 85 and No. 86.

3) Measure resistance between valve relay terminals.

CHECK : **Terminals**
No. 30 — No. 87:
Is resistance less than 0.5 Ω?
No. 30 — No. 87a:
Is resistance more than 1 MΩ?

YES : Go to step 7B9.

NO : Replace valve relay.

7B9 CHECK HYDRAULIC CONTROL UNIT.

1) Turn ignition switch to OFF.

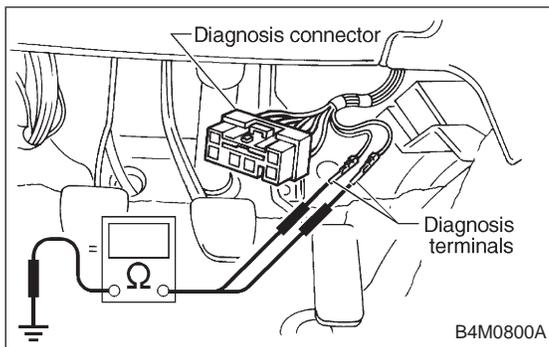
2) Connect connector (ABS1) to hydraulic control unit.

3) Turn ignition switch to ON.

CHECK : **Is the ABS warning light off?**

YES : Go to step 7B10.

NO : Replace hydraulic control unit and check fuse No. 19.

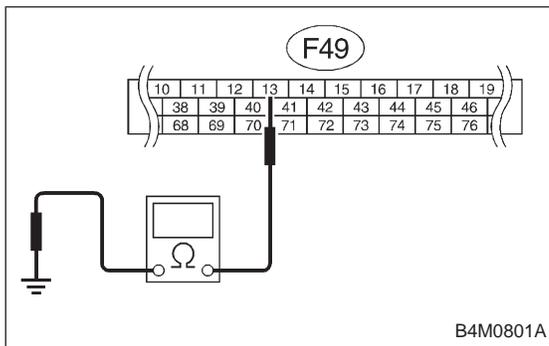


7B10 CHECK DIAGNOSIS TERMINAL.

Measure resistance between diagnosis terminals (B81) and chassis ground.

CHECK : *Terminals*
Diagnosis terminal (A) — Chassis ground:
Diagnosis terminal (B) — Chassis ground:
Is the resistance less than 1 Ω?

YES : Go to step 7B11.
NO : Repair diagnosis terminal harness.



7B11 CHECK DIAGNOSIS LINE.

- 1) Turn ignition switch to OFF.
- 2) Connect diagnosis terminal to diagnosis connector (B82) No. 6.
- 3) Disconnect connector from ABSCM.
- 4) Measure resistance between ABSCM connector and chassis ground.

CHECK : *Connector & terminal*
(F49) No. 13 — Chassis ground:
Is the resistance less than 1 Ω?

YES : Go to step 7B12.
NO : Repair harness connector between ABSCM and diagnosis connector.

7B12 CHECK POOR CONTACT IN ABSCM CONNECTOR.

CHECK : *Is there poor contact in ABSCM connector?*

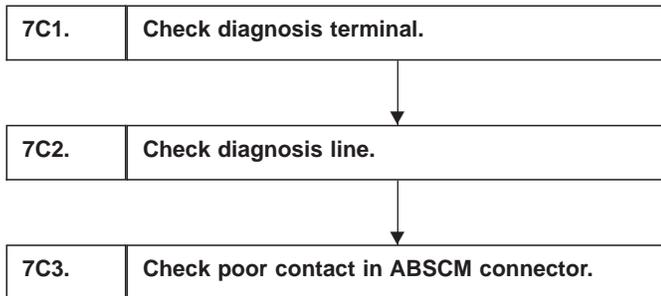
YES : Repair connector.
NO : Replace ABSCM.

C: TROUBLE CODE DOES NOT APPEAR.**DIAGNOSIS:**

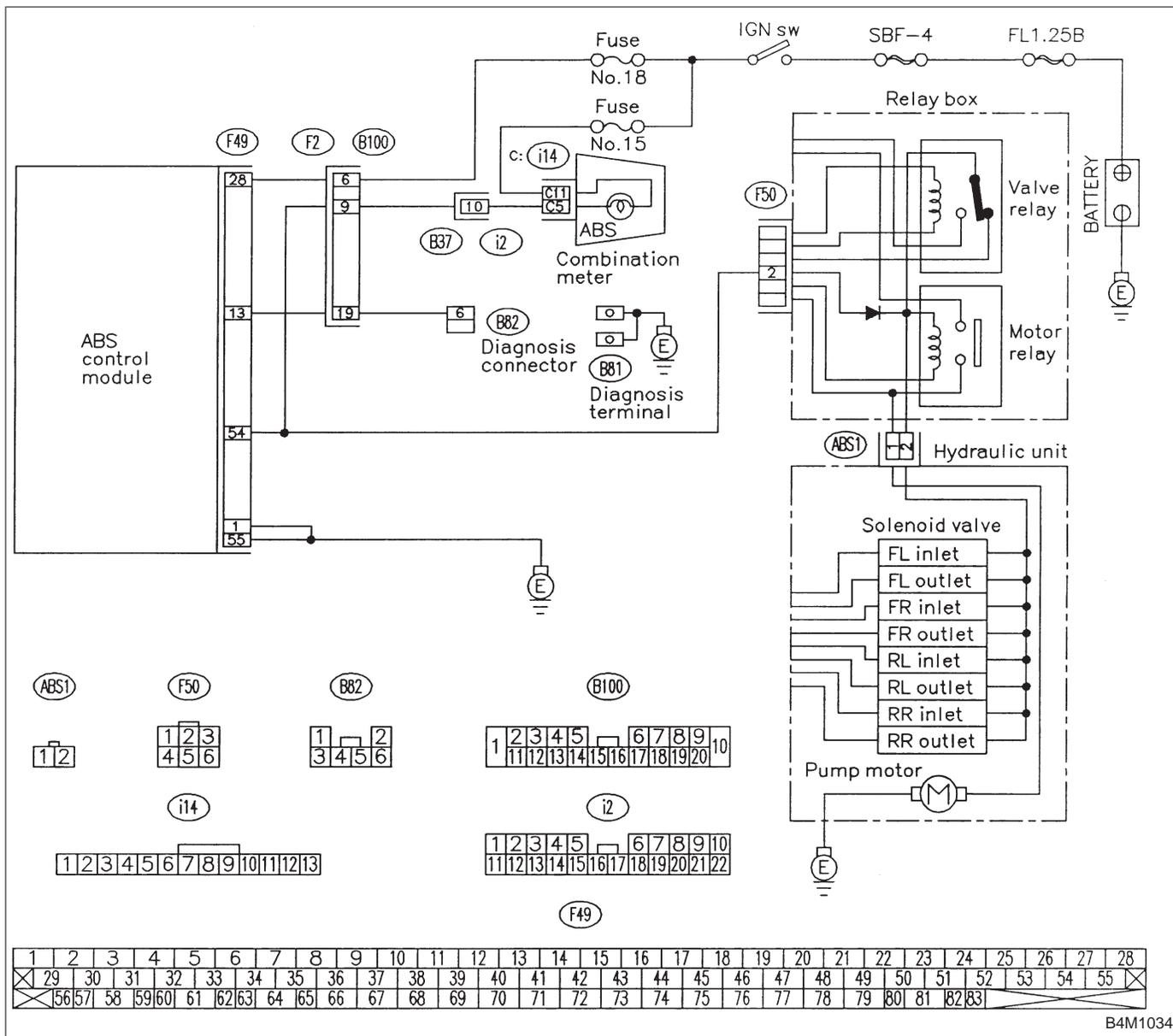
- Diagnosis circuit is open.

TROUBLE SYMPTOM:

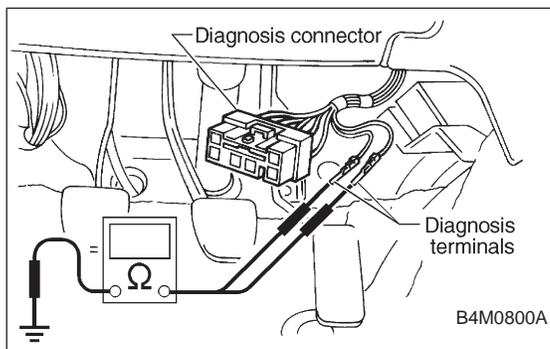
- The ABS warning light turns on or off normally but the start code cannot be read out in the diagnostic mode.



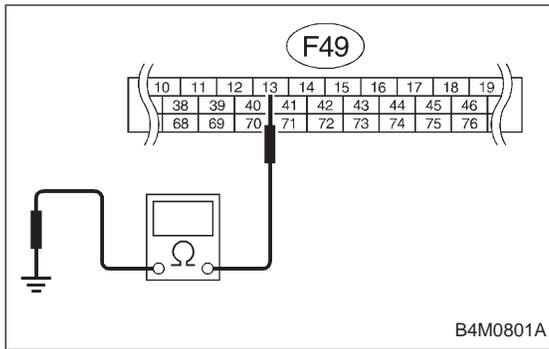
WIRING DIAGRAM:



B4M1034



7C1	CHECK DIAGNOSIS TERMINAL.
Measure resistance between diagnosis terminals (B81) and chassis ground.	
CHECK	Terminals Diagnosis terminal (A) — Chassis ground: Diagnosis terminal (B) — Chassis ground: Is the resistance less than 0.5 Ω?
YES	Go to step 7C2.
NO	Repair diagnosis terminal harness.



7C2	CHECK DIAGNOSIS LINE.
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- 1) Turn ignition switch to OFF.
- 2) Connect diagnosis terminal to diagnosis connector (B82) No. 6.
- 3) Disconnect connector from ABSCM.
- 4) Measure resistance between ABSCM connector and chassis ground.

CHECK : **Connector & terminal (F49) No. 13 — Chassis ground: Is the resistance less than 0.5 Ω?**

YES : Go to step 7C3.

NO : Repair harness connector between ABSCM and diagnosis connector.

7C3	CHECK POOR CONTACT IN ABSCM CONNECTOR.
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CHECK : **Is there poor contact in ABSCM connector?**

YES : Repair connector.

NO : Replace ABSCM.