

7. Diagnostics for CHECK ENGINE Malfunction Indicator Lamp (MIL)

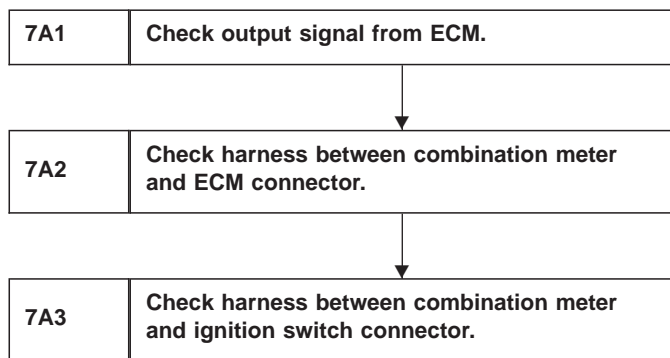
A: CHECK ENGINE MALFUNCTION INDICATOR LAMP (MIL) DOES NOT COME ON.

DIAGNOSIS:

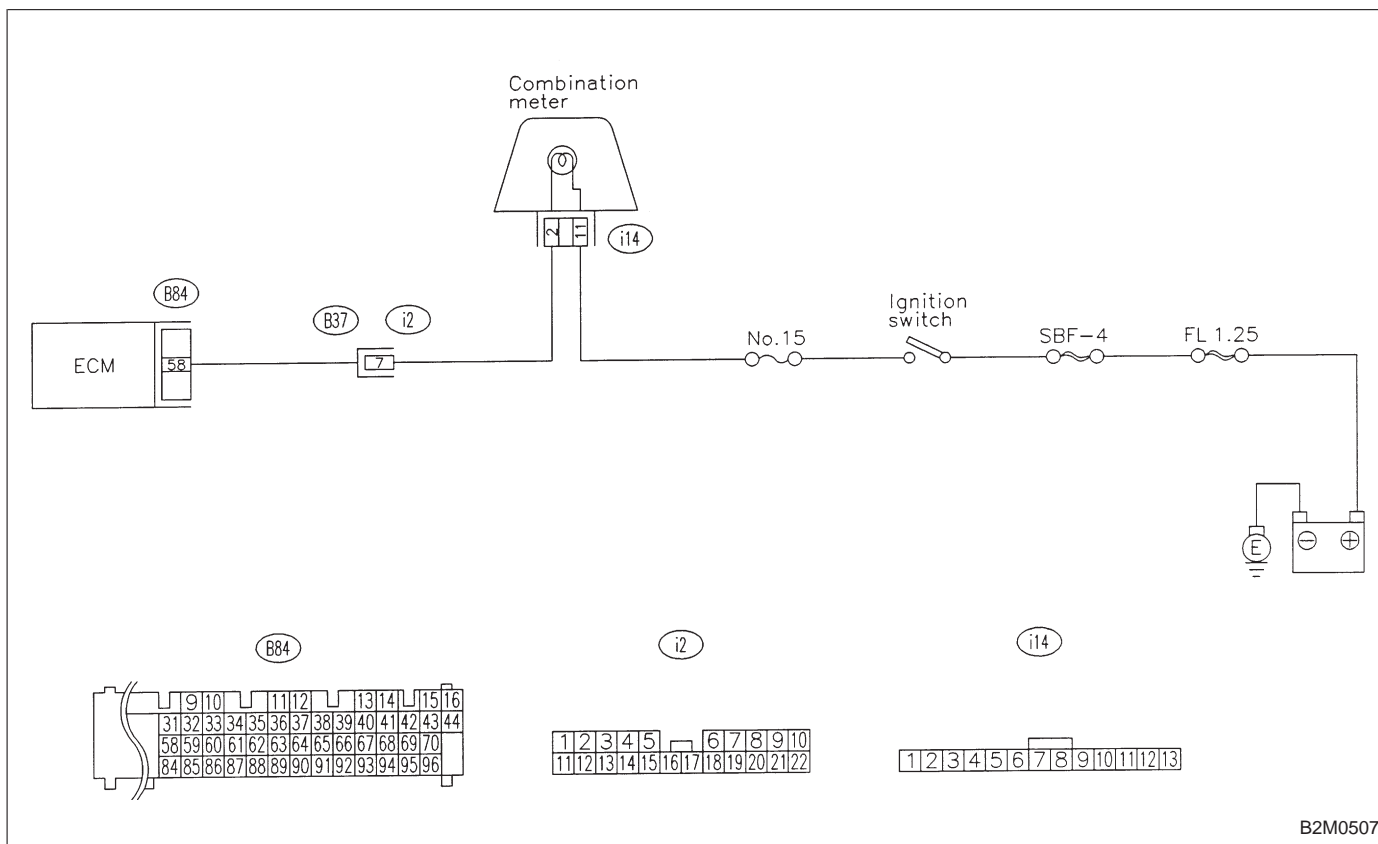
- The CHECK ENGINE malfunction indicator lamp (MIL) circuit is open or shorted.

TROUBLE SYMPTOM:

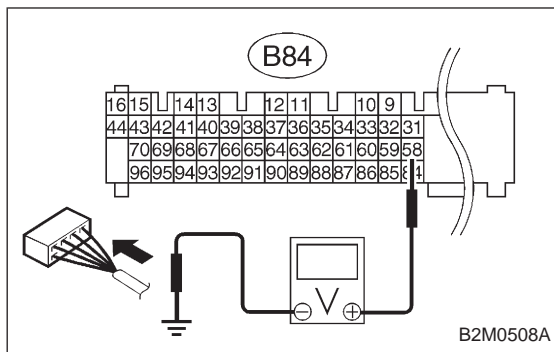
- When ignition switch is turned ON (engine OFF), MIL does not come on.



WIRING DIAGRAM:



B2M0507



7A1	CHECK OUTPUT SIGNAL FROM ECM.
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- 1) Turn ignition switch to ON.
- 2) Measure voltage between ECM connector and chassis ground.

CHECK : **Connector & terminal (B84) No. 58 (+) — Chassis ground (-): Is the voltage less than 1 V?**

YES : Go to step **7A2**.

NO : Go to next **CHECK** .

CHECK : **Does the MIL come on when shaking or pulling ECM connector and harness?**

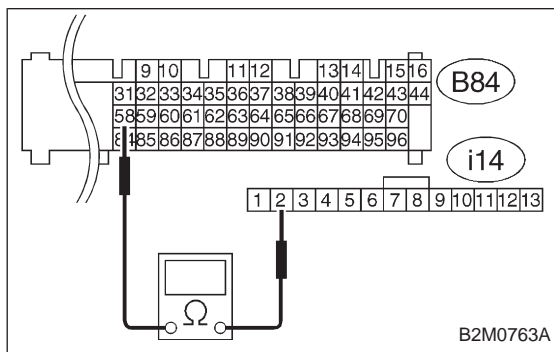
YES : Repair poor contact in ECM connector.

NO : Go to next **CHECK** .

CHECK : **Is ECM connector correctly connected?**

YES : Replace ECM.

NO : Repair connection of ECM connector.



7A2	CHECK HARNESS BETWEEN COMBINATION METER AND ECM CONNECTOR.
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- 1) Turn ignition switch to OFF.
- 2) Remove combination meter. <Ref. to 6-2 [W13A1].>
- 3) Disconnect connector from ECM and combination meter.
- 4) Measure resistance of harness between ECM and combination meter connector.

CHECK : **Connector & terminal (B84) No. 58 — (i14) No. 2: Is resistance less than 1 Ω?**

YES : Go to next **CHECK** .

NO : Repair harness and connector.

NOTE:

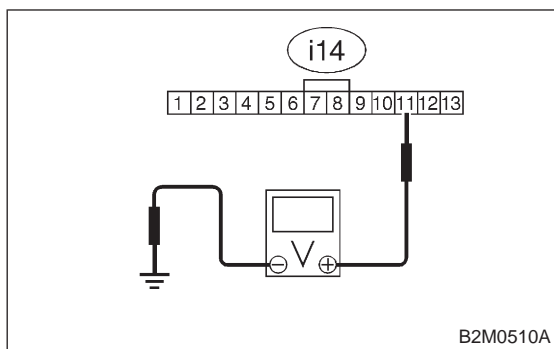
In this case, repair the following:

- Open circuit in harness between ECM and combination meter connector
- Poor contact in coupling connector (B37)

CHECK : **Is there poor contact in combination meter connector?**

YES : Repair poor contact in combination meter connector.

NO : Go to step **7A3**.

**7A3****CHECK HARNESS BETWEEN COMBINATION METER AND IGNITION SWITCH CONNECTOR.**

- 1) Turn ignition switch to ON.
- 2) Measure voltage between combination meter connector and chassis ground.

CHECK : **Connector & terminal (i14) No. 11 (+) — Chassis ground (-): Is voltage more than 10 V?**

YES : Go to next **CHECK** .

NO : Check the following and repair if necessary.

- Blown out fuse (No. 15).

NOTE:

If replaced fuse (No. 15) blows easily, check the harness for short circuit of harness between fuse (No. 15) and combination meter connector.

- Open or short circuit in harness between fuse (No. 15) and combination meter connector
- Open or short circuit in harness between fuse (No. 15) and ignition switch connector
- Poor contact in ignition switch connector

CHECK : **Is there poor contact in combination meter connector?**

YES : Repair poor contact in combination meter connector.

NO : Replace bulb or combination meter.

B: CHECK ENGINE MALFUNCTION INDICATOR LAMP (MIL) DOES NOT GO OFF.

DIAGNOSIS:

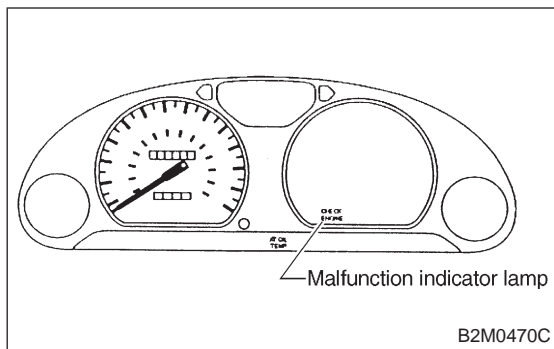
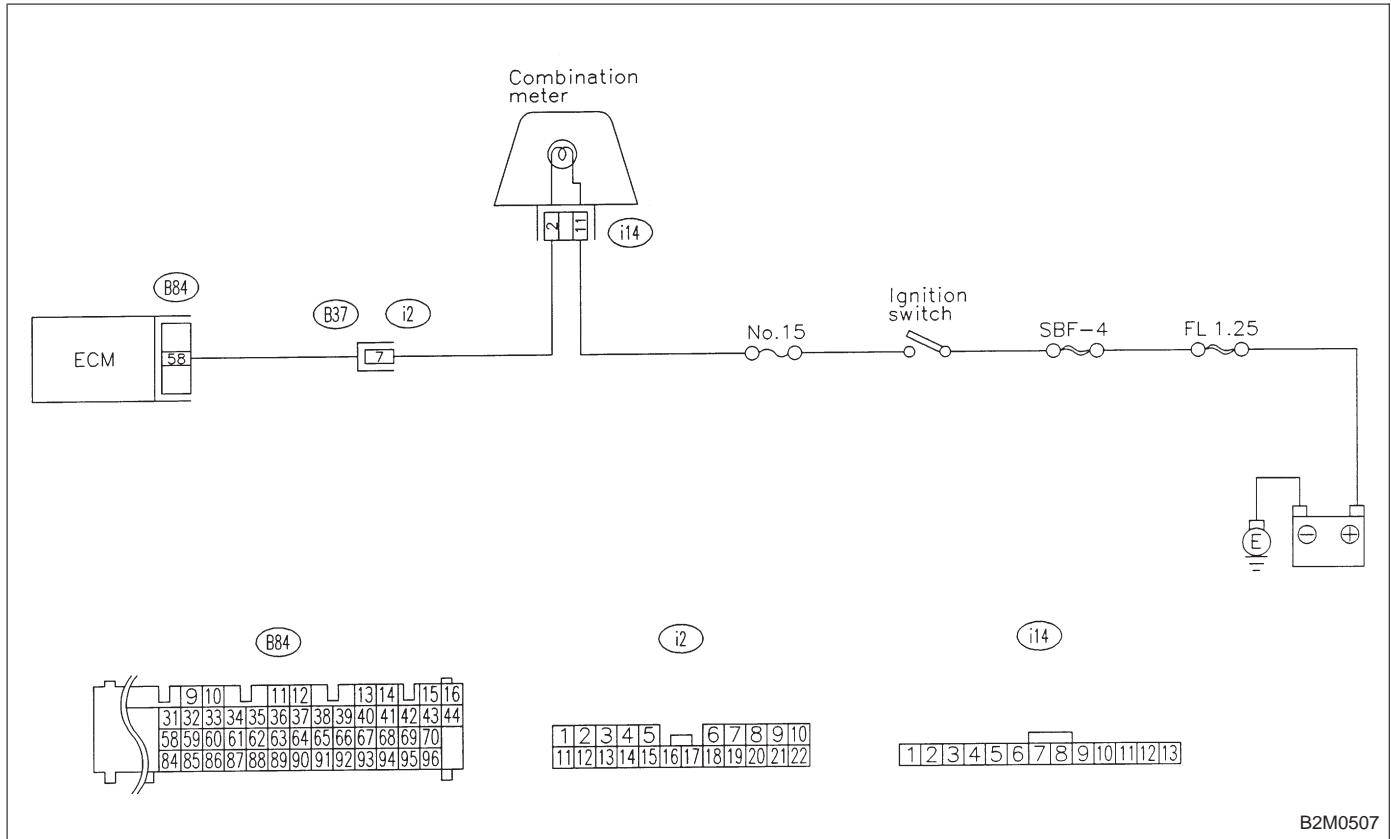
- The CHECK ENGINE malfunction indicator lamp (MIL) circuit is shorted.

TROUBLE SYMPTOM:

- Although MIL comes on when engine runs, trouble code is not shown on Subaru select monitor or OBD-II general scan tool display.

7B1	Check harness between combination meter and ECM connector.
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WIRING DIAGRAM:



7B1	CHECK HARNESS BETWEEN COMBINATION METER AND ECM CONNECTOR.
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- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ECM.
- 3) Turn ignition switch to ON.

- CHECK** : **Does the MIL come on?**
- YES** : Repair short circuit in harness between combination meter and ECM connector.
- NO** : Replace ECM.

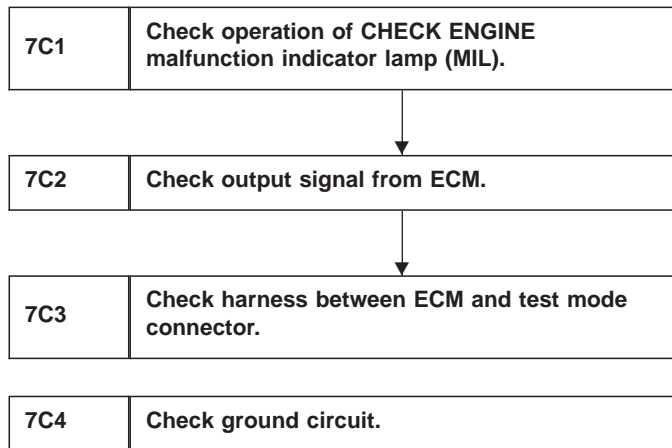
C: CHECK ENGINE MALFUNCTION INDICATOR LAMP (MIL) DOES NOT BLINK AT A CYCLE OF 3 HZ.

DIAGNOSIS:

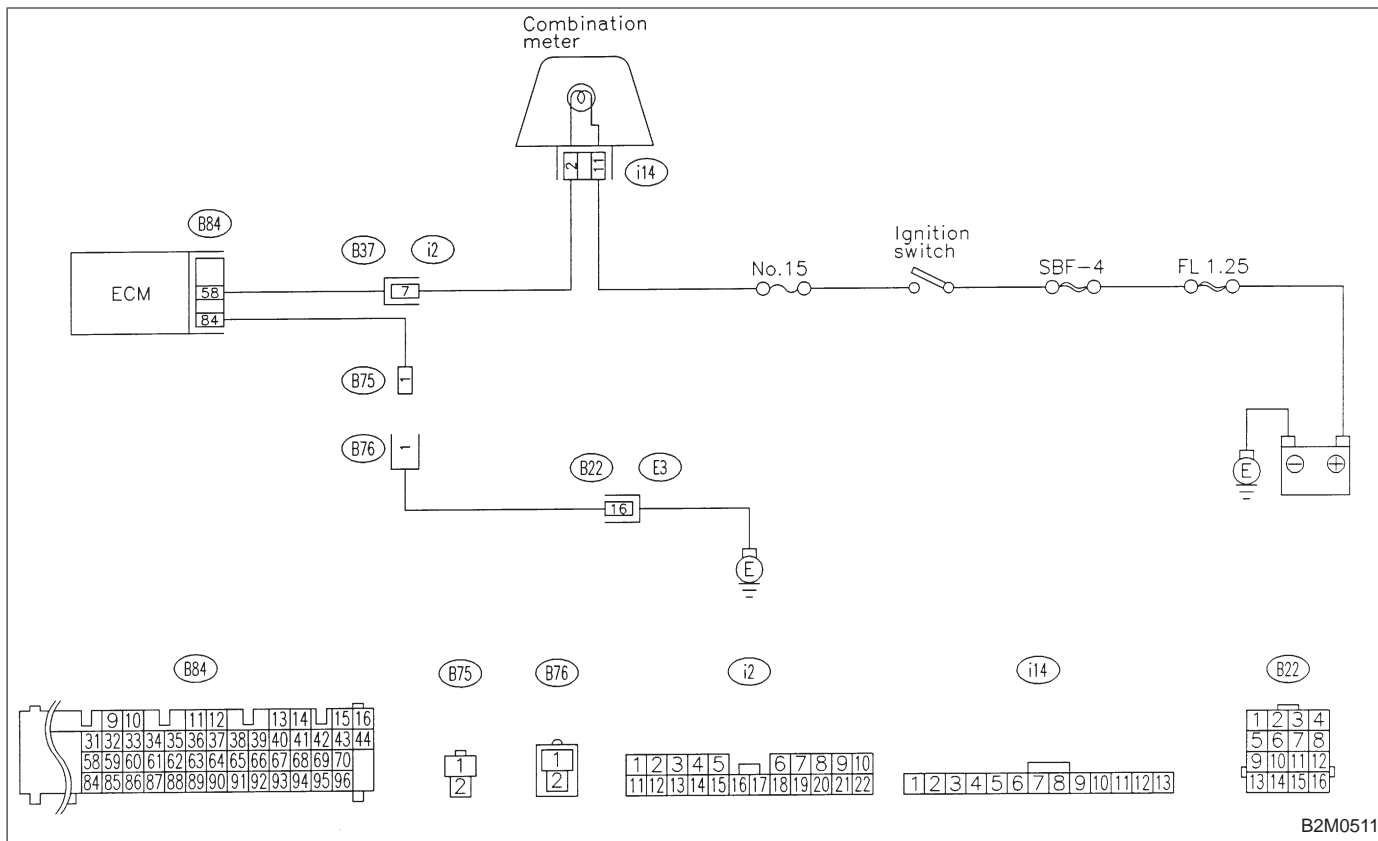
- The CHECK ENGINE malfunction indicator lamp (MIL) circuit is open or shorted.
- Test mode connector circuit is in open.

TROUBLE SYMPTOM:

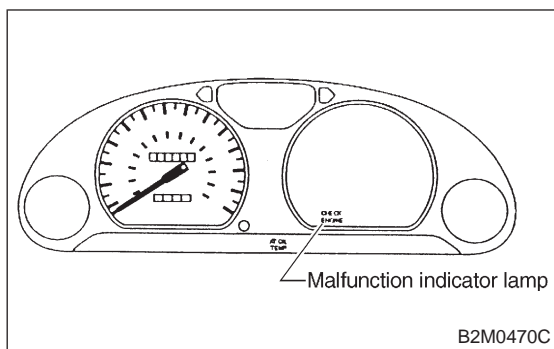
- When inspection mode, MIL does not blink at a cycle of 3 Hz.



WIRING DIAGRAM:



B2M0511

**7C1****CHECK OPERATION OF CHECK ENGINE MALFUNCTION INDICATOR LAMP (MIL).**

- 1) Turn ignition switch to OFF.
- 2) Disconnect test mode connector.
- 3) Turn ignition switch to ON.

CHECK : **Does the MIL come on?**

YES : Go to step **7C2**.

NO : Repair the MIL circuit. <Ref. to 2-7 [T7A0].>

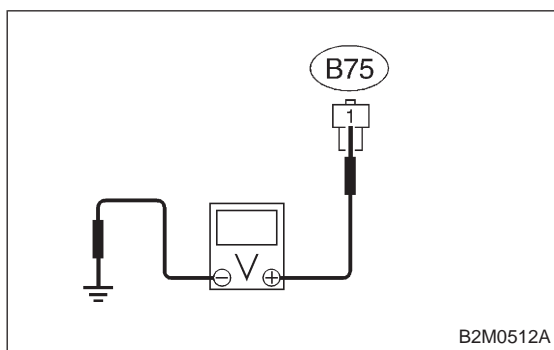
7C2**CHECK OUTPUT SIGNAL FROM ECM.**

Measure voltage between test mode connector and chassis ground.

CHECK : **Connector & terminal (B75) No.1 (+) — Chassis ground (-): Is voltage less than 1 V?**

YES : Go to step **7C3**.

NO : Go to step **7C4**.

**7C3****CHECK HARNESS BETWEEN ECM AND TEST MODE CONNECTOR.**

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ECM.
- 3) Measure resistance of harness between ECM and test mode connector.

CHECK : **Connector & terminal (B84) No.84 — (B75) No.1: Is resistance less than 1 Ω?**

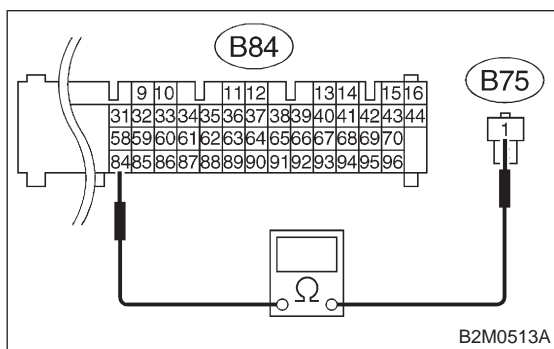
YES : Go to next **CHECK** .

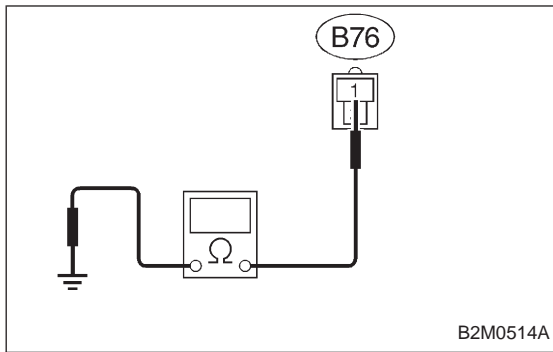
NO : Repair open circuit in harness between ECM and test mode connector.

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

YES : Repair poor contact in ECM connector.

NO : Replace ECM.



**7C4****CHECK GROUND CIRCUIT.**

- 1) Turn ignition switch to OFF.
- 2) Measure resistance of harness between test mode connector and chassis ground.

CHECK : **Connector & terminal (B76) No.1 — Chassis ground: Is resistance less than 5 Ω?**

YES : Repair poor contact in test mode connector.

NO : Repair harness and connector.

NOTE:

In this case, repair the following:

- Open circuit in harness between test mode and coupling connector (B22)
- Open circuit in harness between coupling connector (B22) and engine grounding terminal
- Poor contact in coupling connector (B22)

D: CHECK ENGINE MALFUNCTION INDICATOR LAMP (MIL) REMAINS BLINKING AT A CYCLE OF 3 Hz.

DIAGNOSIS:

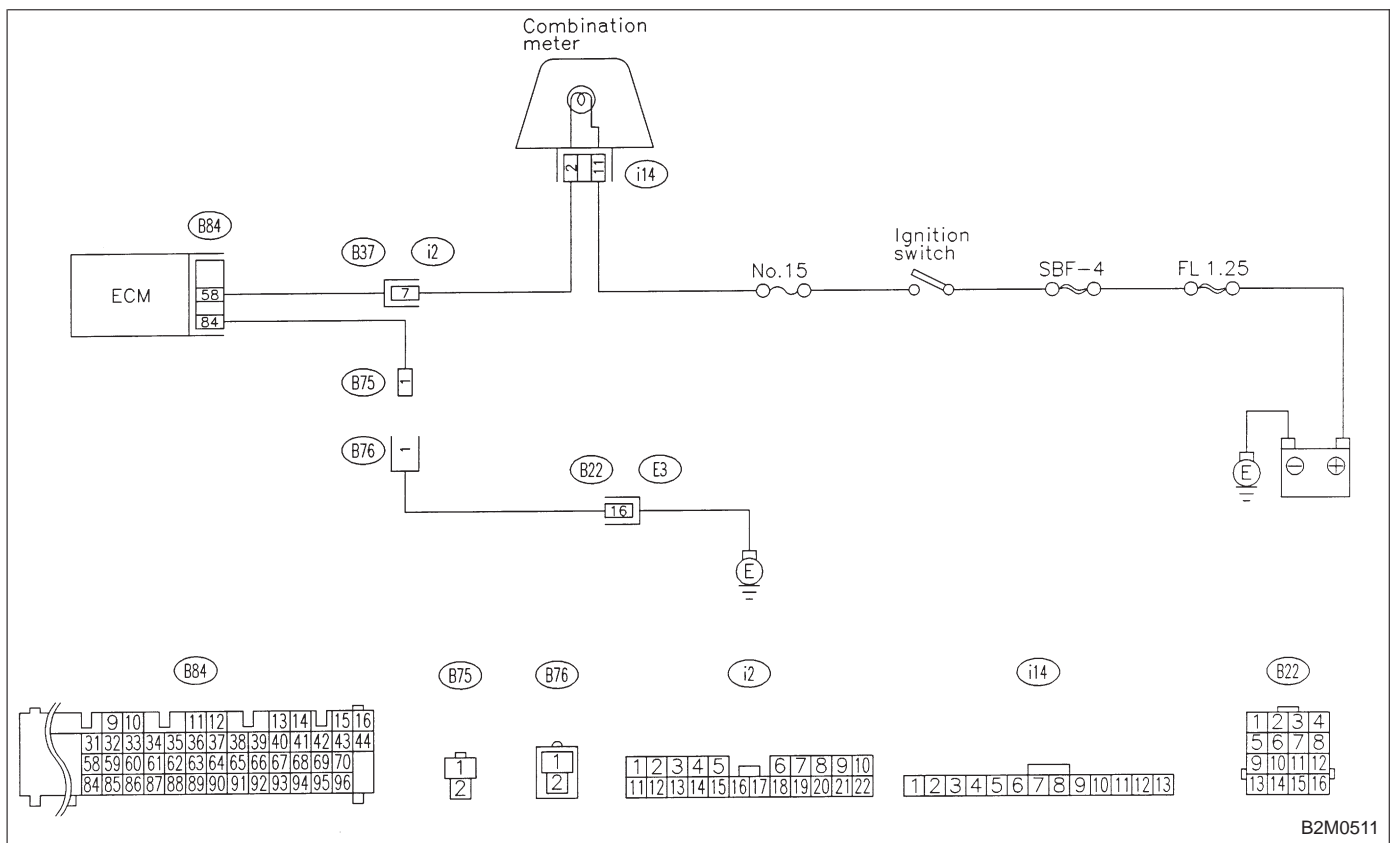
- Test mode connector circuit is shorted.

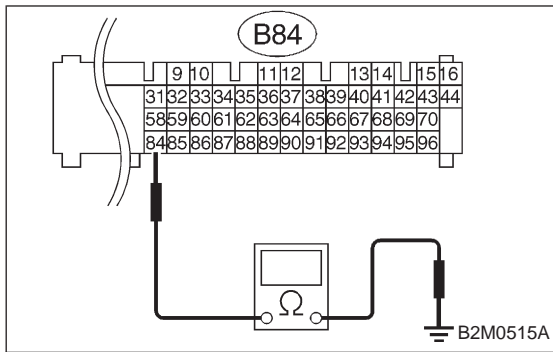
TROUBLE SYMPTOM:

- Even though test mode connector is disconnected, MIL blinks at a cycle of 3 Hz when ignition switch is turned to ON.

7D1	Check harness between ECM connector and engine grounding terminal.
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WIRING DIAGRAM:





7D1

CHECK HARNESS BETWEEN ECM CONNECTOR AND ENGINE GROUNDING TERMINAL.

- 1) Turn ignition switch to OFF.
- 2) Disconnect connector from ECM.
- 3) Measure resistance of harness between ECM connector and chassis ground.

CHECK : **Connector & terminal (B84) No.84 — Chassis ground: Is resistance less than 5 Ω?**

YES : Repair short circuit in harness between ECM and test mode connector.

NO : Replace ECM.