

### 15. Malfunction Indicator Light

#### A: PROCEDURE

1. Activation of check malfunction indicator light. <Ref. to EN(H4DOTC)-48, ACTIVATION OF MALFUNCTION INDICATOR LIGHT, Malfunction Indicator Light.>
↓
2. Check that the malfunction indicator light does not come on. <Ref. to EN(H4DOTC)-49, MALFUNCTION INDICATOR LIGHT DOES NOT COME ON., Malfunction Indicator Light.>
↓
3. Check that the malfunction indicator light does not go off. <Ref. to EN(H4DOTC)-51, MALFUNCTION INDICATOR LIGHT DOES NOT GO OFF., Malfunction Indicator Light.>
↓
4. Check that the malfunction indicator light does not blink at a cycle of 3 Hz. <Ref. to EN(H4DOTC)-52, MALFUNCTION INDICATOR LIGHT DOES NOT BLINK AT A CYCLE OF 3 H Z., Malfunction Indicator Light.>
↓
5. Check that the malfunction indicator light remains blinking at a cycle of 3 Hz. <Ref. to EN(H4DOTC)-54, MALFUNCTION INDICATOR LIGHT REMAINS BLINKING AT A CYCLE OF 3 HZ., Malfunction Indicator Light.>

# MALFUNCTION INDICATOR LIGHT

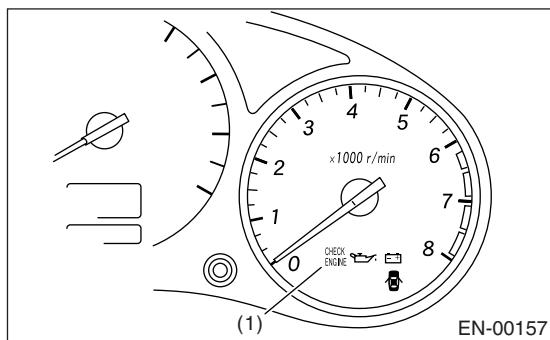
## ENGINE (DIAGNOSTICS)

### B: ACTIVATION OF MALFUNCTION INDICATOR LIGHT

1) When the ignition switch is turned to ON (engine off), the malfunction indicator light in the combination meter illuminates.

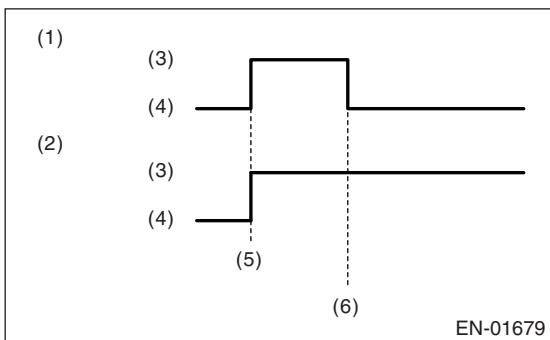
#### NOTE:

If the malfunction indicator light does not illuminate, perform diagnostics of the malfunction indicator light circuit or the combination meter circuit. <Ref. to EN(H4DOTC)-49, MALFUNCTION INDICATOR LIGHT DOES NOT COME ON., Malfunction Indicator Light.>



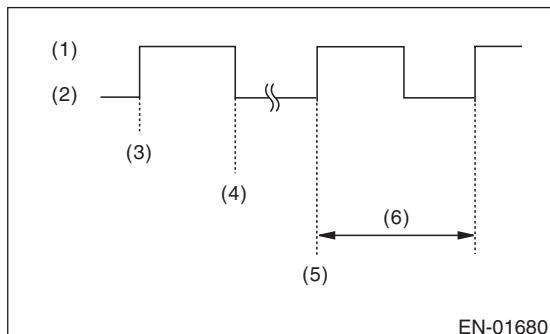
(1) Malfunction indicator light

2) After starting the engine, the malfunction indicator light goes out. If it does not, either the engine or the emission control system is malfunctioning.



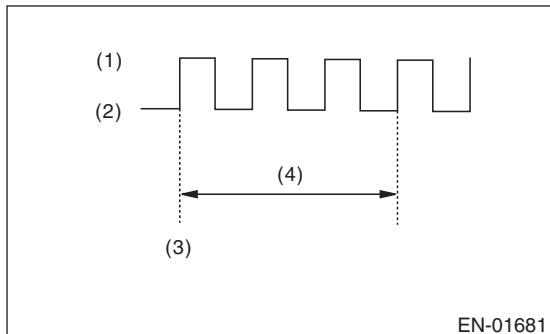
- (1) No trouble
- (2) Trouble occurs
- (3) ON
- (4) OFF
- (5) Ignition switch ON
- (6) Engine start

3) If the diagnosis system senses a misfire which could damage the catalyzer, the malfunction indicator light will blink at a cycle of 1 Hz.



- (1) ON
- (2) OFF
- (3) Ignition switch ON
- (4) Engine start
- (5) Misfire start
- (6) 1 second

4) When the ignition switch is turned to ON (engine off) or to START with the test mode connector connected, the malfunction indicator light blinks at a cycle of 3 Hz.



- (1) ON
- (2) OFF
- (3) Ignition switch ON
- (4) 1 second

# MALFUNCTION INDICATOR LIGHT

ENGINE (DIAGNOSTICS)

## C: MALFUNCTION INDICATOR LIGHT DOES NOT COME ON.

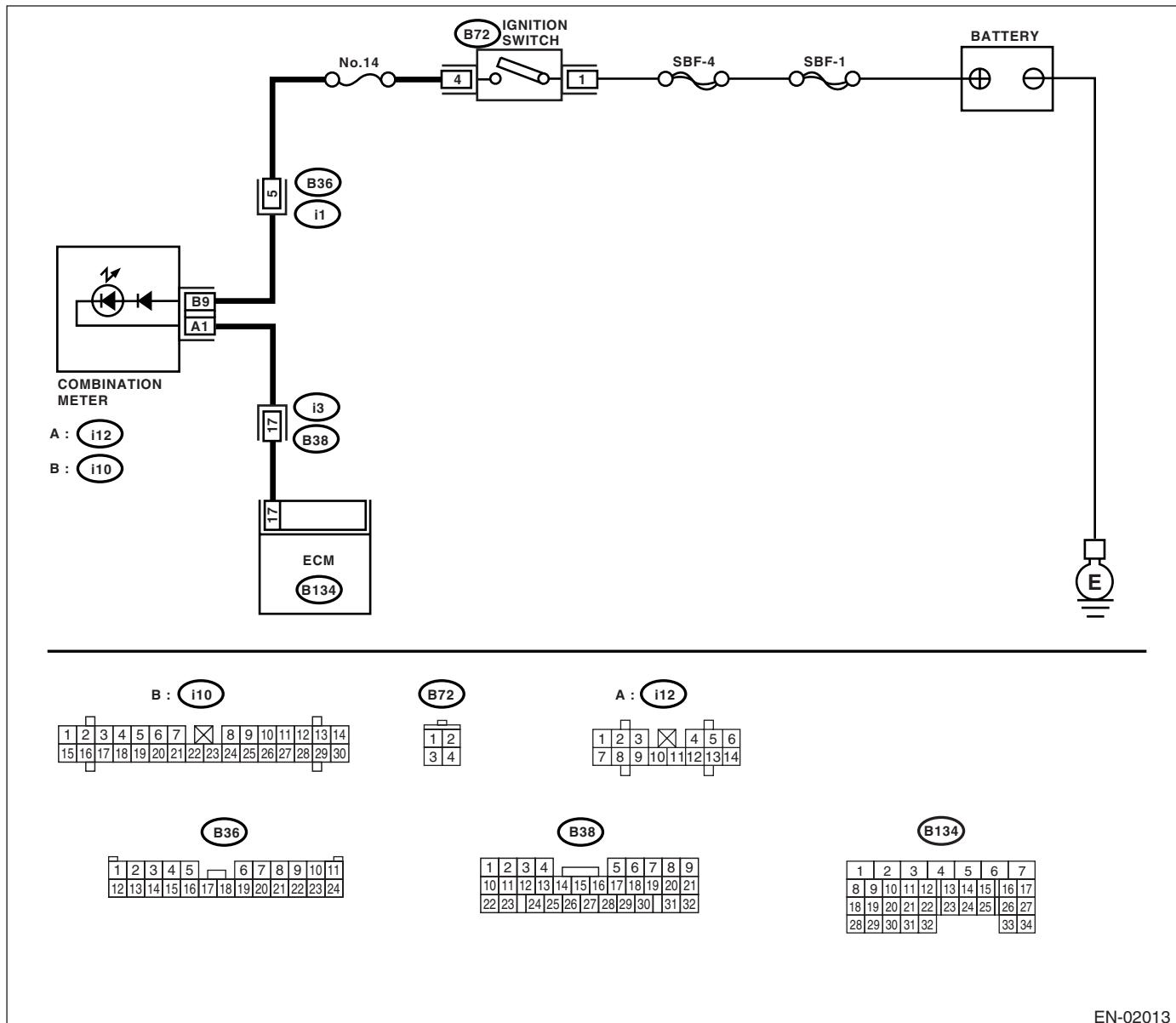
### DIAGNOSIS:

The malfunction indicator light circuit is shorted.

### TROUBLE SYMPTOM:

When the ignition switch is turned to ON (engine OFF), malfunction indicator light does not come on.

### WIRING DIAGRAM:



EN-02013

# MALFUNCTION INDICATOR LIGHT

## ENGINE (DIAGNOSTICS)

Step	Check	Yes	No
<b>1 CHECK OUTPUT SIGNAL FROM ECM.</b> 1) Turn the ignition switch to ON. 2) Measure the voltage between ECM connector and chassis ground. <b>Connector &amp; terminal</b> <i>(B134) No. 17 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 4.	Go to step 2.
<b>2 CHECK POOR CONTACT.</b>	Does the malfunction indicator light come on when shaking or pulling ECM connector and harness?	Repair the poor contact in ECM connector.	Go to step 3.
<b>3 CHECK ECM CONNECTOR.</b>	Is the ECM connector correctly connected?	Replace the ECM. <Ref. to FU(H4DOTC)-42, Engine Control Module (ECM).>	Repair the connection of ECM connector.
<b>4 CHECK HARNESS BETWEEN COMBINATION METER AND ECM CONNECTOR.</b> 1) Turn the ignition switch to OFF. 2) Remove the combination meter. <Ref. to IDI-10, Combination Meter Assembly.> 3) Disconnect the connector from ECM and combination meter. 4) Measure the resistance of harness between ECM and combination meter connector. <b>Connector &amp; terminal</b> <i>(B134) No. 17 — (i12) No. 1:</i>	Is the resistance less than 1 $\Omega$ ?	Go to step 5.	Repair the harness and connector.  NOTE: In this case, repair the following: <ul style="list-style-type: none"><li>• Open circuit in harness between ECM and combination meter connector</li><li>• Poor contact in coupling connector</li></ul>
<b>5 CHECK POOR CONTACT.</b> Check poor contact in combination meter connector.	Is there poor contact in combination meter connector?	Repair the poor contact in combination meter connector.	Go to step 6.
<b>6 CHECK HARNESS BETWEEN COMBINATION METER AND IGNITION SWITCH CONNECTOR.</b> 1) Turn the ignition switch to ON. 2) Measure the voltage between combination meter connector and chassis ground. <b>Connector &amp; terminal</b> <i>(i10) No. 9 (+) — Chassis ground (-):</i>	Is the voltage more than 10 V?	Replace the combination meter circuit board. <Ref. to IDI-10, Combination Meter Assembly.>	Check the following and repair if necessary.  NOTE: <ul style="list-style-type: none"><li>• Blown out fuse (No. 14)</li><li>• Open or short circuit in harness between fuse (No. 14) and battery terminal</li><li>• Poor contact in ignition switch connector</li></ul>

# MALFUNCTION INDICATOR LIGHT

ENGINE (DIAGNOSTICS)

## D: MALFUNCTION INDICATOR LIGHT DOES NOT GO OFF.

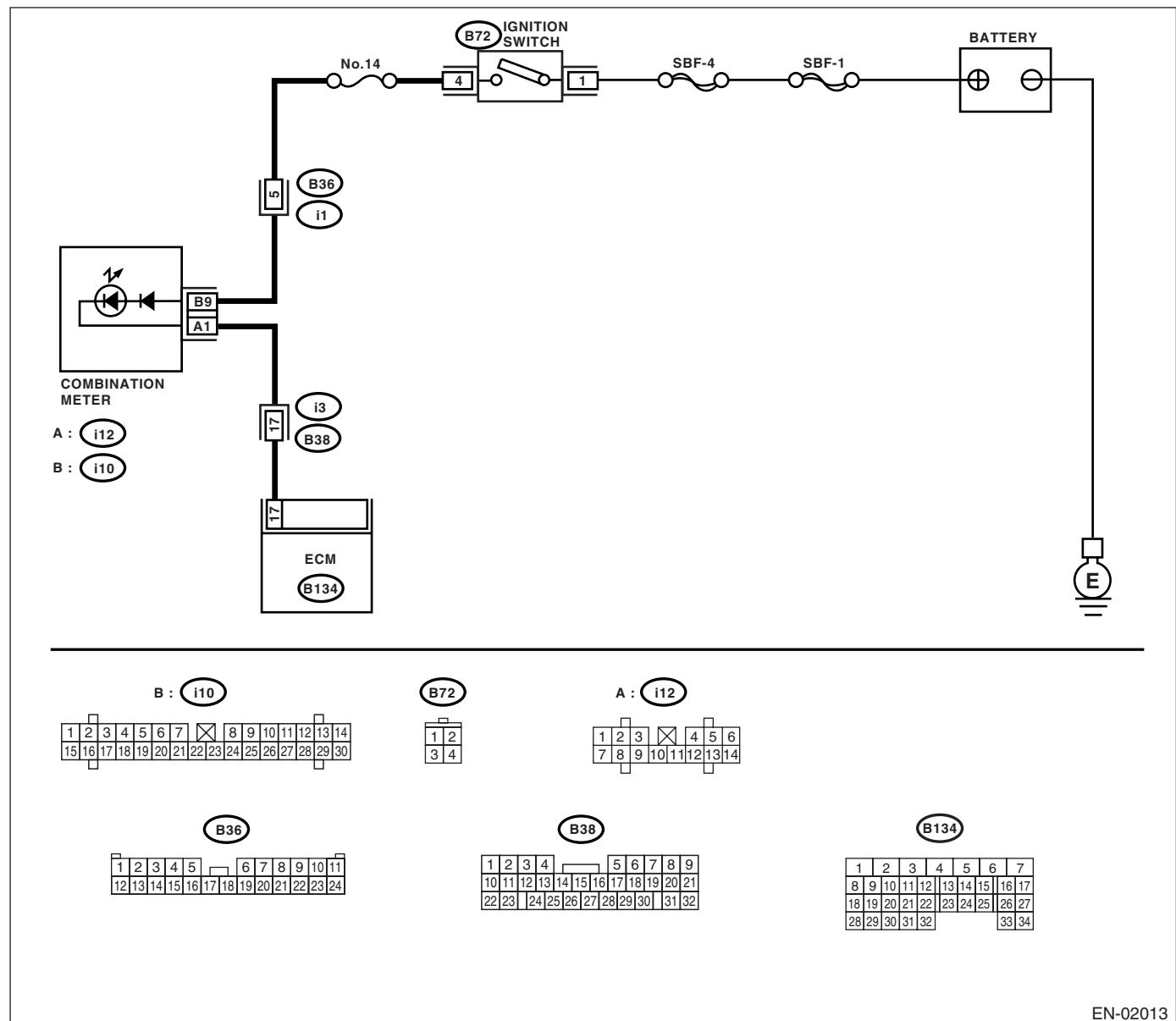
### DIAGNOSIS:

The malfunction indicator light circuit is shorted.

### TROUBLE SYMPTOM:

Although malfunction indicator light comes on when engine runs, but DTC is not shown on Subaru Select Monitor or OBD-II general scan tool display.

### WIRING DIAGRAM:



EN-02013

Step	Check	Yes	No
1 <b>CHECK HARNESS BETWEEN COMBINATION METER AND ECM CONNECTOR.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM. 3) Turn the ignition switch to ON.	Does the malfunction indicator light come on?	Repair the short circuit in harness between combination meter and ECM connector.	Replace the ECM. <Ref. to FU(H4DOTC)-42, Engine Control Module (ECM).>

# MALFUNCTION INDICATOR LIGHT

## ENGINE (DIAGNOSTICS)

### E: MALFUNCTION INDICATOR LIGHT DOES NOT BLINK AT A CYCLE OF 3 Hz.

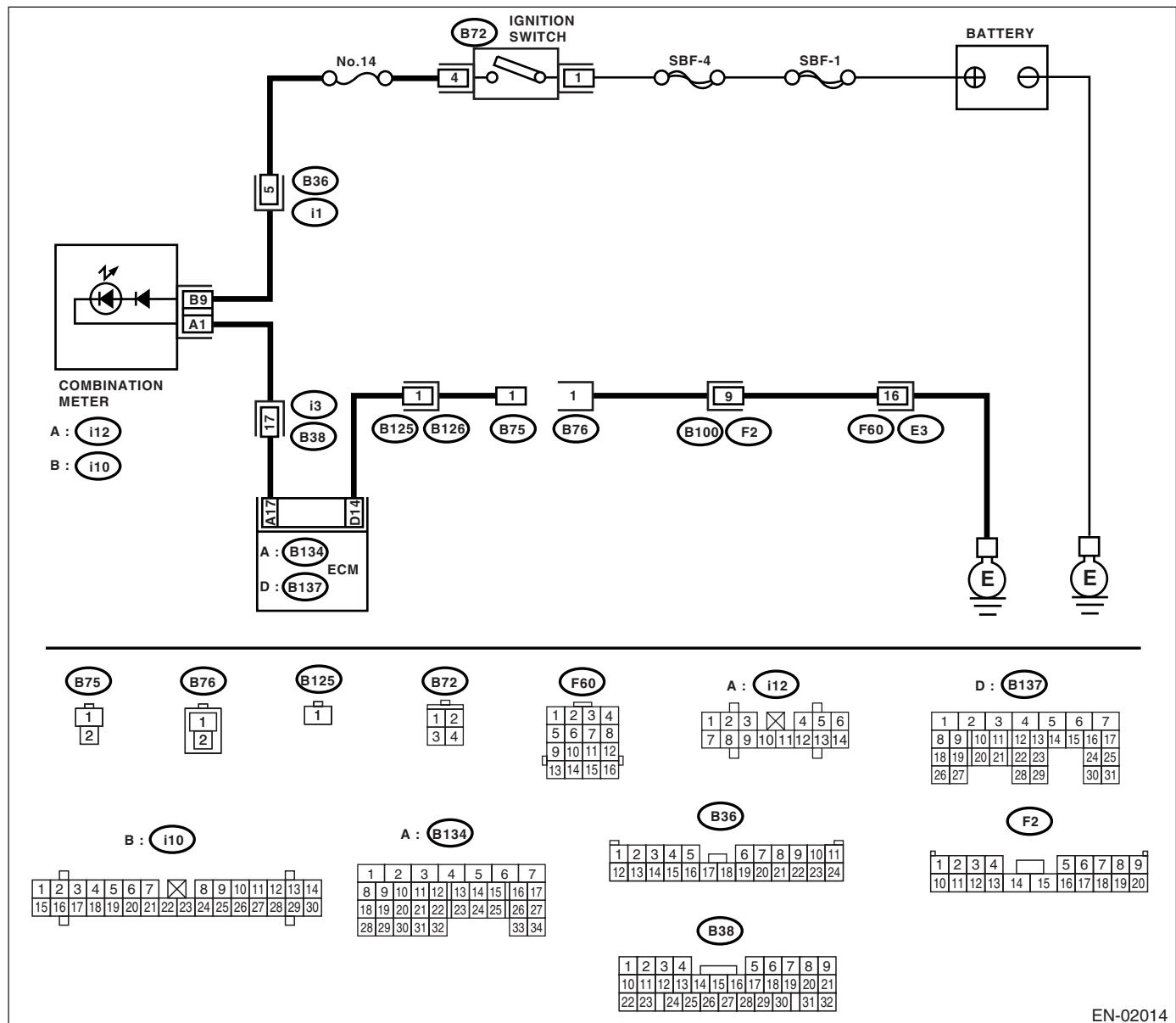
#### DIAGNOSIS:

- The malfunction indicator light circuit is open or shorted.
- Test mode connector circuit is open.

#### TROUBLE SYMPTOM:

During inspection mode, malfunction indicator light does not blink at a cycle of 3 Hz.

#### WIRING DIAGRAM:



EN-02014

# MALFUNCTION INDICATOR LIGHT

ENGINE (DIAGNOSTICS)

Step	Check	Yes	No
<b>1 CHECK STATUS OF MALFUNCTION INDICATOR LIGHT.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the test mode connector. 3) Turn the ignition switch to ON. (engine OFF)	Does the malfunction indicator light come on?	Go to step 2.	Repair the malfunction indicator light circuit. <Ref. to EN(H4DOTC)-49, MALFUNCTION INDICATOR LIGHT DOES NOT COME ON., Malfunction Indicator Light.>
<b>2 CHECK HARNESS BETWEEN COMBINATION METER AND ECM CONNECTOR.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM. 3) Turn the ignition switch to ON.	Does the malfunction indicator light come on?	Repair the ground short circuit in harness between combination meter and ECM connector.	Go to step 3.
<b>3 CHECK HARNESS BETWEEN TEST MODE CONNECTOR AND CHASSIS GROUND.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM. 3) Measure the resistance of harness between test mode connector and chassis ground. <i>Connector &amp; terminal (B76) No. 1 — Chassis ground:</i>	Is the resistance less than 1 $\Omega$ ?	Go to step 4.	Repair the harness and connector.  NOTE: In this case, repair the following: <ul style="list-style-type: none"><li>• Open circuit in harness between test mode connector and chassis ground</li></ul>
<b>4 CHECK POOR CONTACT.</b> Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Go to step 5.
<b>5 CHECK HARNESS BETWEEN ECM AND TEST MODE CONNECTOR.</b> 1) Connect the test mode connector. 2) Measure the resistance of harness between ECM and chassis ground. <i>Connector &amp; terminal (B137) No. 14 — Chassis ground:</i>	Is the resistance less than 1 $\Omega$ ?	Go to step 6.	Repair the open circuit in harness between ECM and test mode connector.
<b>6 CHECK POOR CONTACT.</b> Check poor contact in ECM connector.	Is there poor contact in ECM connector?	Repair the poor contact in ECM connector.	Replace the ECM. <Ref. to FU(H4DOTC)-42, Engine Control Module (ECM).>

## MALFUNCTION INDICATOR LIGHT

## ENGINE (DIAGNOSTICS)

**F: MALFUNCTION INDICATOR LIGHT REMAINS BLINKING AT A CYCLE OF 3 HZ.**

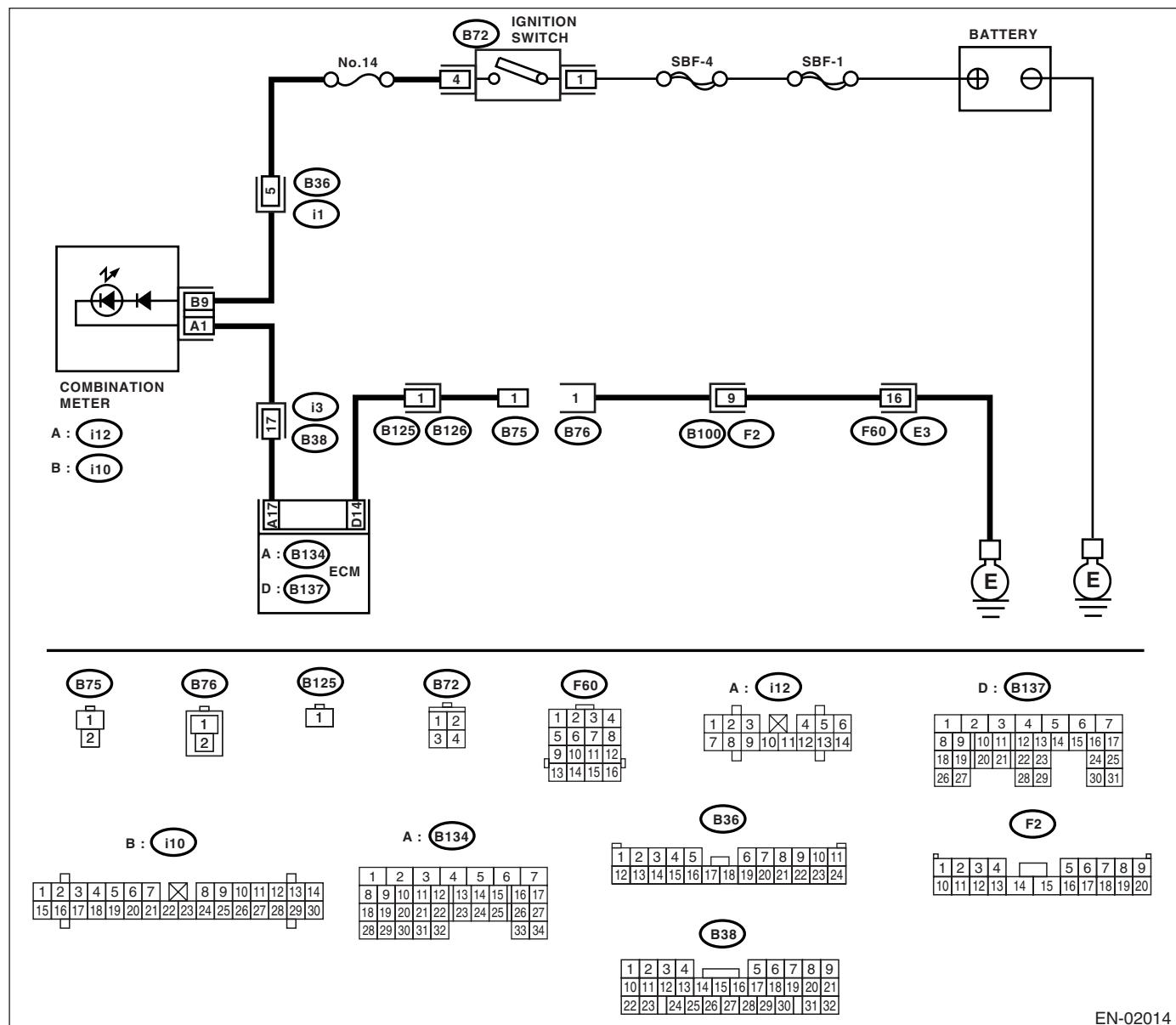
## DIAGNOSIS:

Test mode connector circuit is shorted.

## TROUBLE SYMPTOM:

Malfunction indicator light blinks at a cycle of 3 Hz when ignition switch is turned to ON.

## WIRING DIAGRAM:



# MALFUNCTION INDICATOR LIGHT

## ENGINE (DIAGNOSTICS)

Step	Check	Yes	No
<b>1</b> <b>CHECK TEST MODE CONNECTOR.</b> 1) Disconnect the test mode connector. 2) Turn the ignition switch to ON.	Does the malfunction indicator light blink?	Go to step <b>2</b> .	System is in good order.  NOTE: Malfunction indicator light blinks at a cycle of 3 Hz when test mode connector is connected.
<b>2</b> <b>CHECK HARNESS BETWEEN ECM CONNECTOR AND ENGINE GROUNDING TERMINAL.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from ECM. 3) Measure the resistance of harness between ECM connector and chassis ground.  <i>Connector &amp; terminal</i> <i>(B137) No. 14 — Chassis ground:</i>	Is the resistance less than 5 $\Omega$ ?	Repair the short circuit in harness between ECM and test mode connector.	Replace the ECM. <Ref. to FU(H4DOTC)-42, Engine Control Module (ECM).>