14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles

A: DIAGNOSTIC TROUBLE CODE (DTC) LIST

DTC No.	Item	Index
P0101	Mass air flow sensor circuit range/performance problem (high input)	<Ref. to 2-7 [T14B0].>
P0102	Mass air flow sensor circuit low input	<Ref. to 2-7 [T14C0].>
P0103	Mass air flow sensor circuit high input	<Ref. to 2-7 [T14D0].>
P0106	Pressure sensor circuit range/performance problem	<Ref. to 2-7 [T14E0].>
P0107	Pressure sensor circuit low input	<Ref. to 2-7 [T14F0].>
P0108	Pressure sensor circuit high input	<Ref. to 2-7 [T14G0].>
P0116	Engine coolant temperature sensor circuit low input	<Ref. to 2-7 [T14H0].>
P0117	Engine coolant temperature sensor circuit high input	<Ref. to 2-7 [T14I0].>
P0121	Throttle position sensor circuit range/performance problem (high input)	<Ref. to 2-7 [T14J0].>
P0122	Throttle position sensor circuit low input	<Ref. to 2-7 [T14K0].>
P0123	Throttle position sensor circuit high input	<Ref. to 2-7 [T14L0].>
P0125	Insufficient coolant temperature for closed loop fuel control	<Ref. to 2-7 [T14M0].>
P0130	Front oxygen sensor circuit malfunction	<Ref. to 2-7 [T14N0].>
P0133	Front oxygen sensor circuit slow response	<Ref. to 2-7 [T14O0].>
P0135	Front oxygen sensor heater circuit malfunction	<Ref. to 2-7 [T14P0].>
P0136	Rear oxygen sensor circuit malfunction	<Ref. to 2-7 [T14Q0].>
P0139	Rear oxygen sensor circuit slow response	<Ref. to 2-7 [T14R0].>
P0141	Rear oxygen sensor heater circuit malfunction	<Ref. to 2-7 [T14S0].>
P0170	Fuel trim malfunction	<Ref. to 2-7 [T14T0].>
P0181	Fuel temperature sensor A circuit range/performance problem	<Ref. to 2-7 [T14U0].>
P0182	Fuel temperature sensor A circuit low input	<Ref. to 2-7 [T14V0].>
P0183	Fuel temperature sensor A circuit high input	<Ref. to 2-7 [T14W0].>
P0301	Cylinder 1 misfire detected	<Ref. to 2-7 [T14X0].>
P0302	Cylinder 2 misfire detected	<Ref. to 2-7 [T14Y0].>
P0303	Cylinder 3 misfire detected	<Ref. to 2-7 [T14Z0].>

DTC No.	Item	Index
P0304	Cylinder 4 misfire detected	<Ref. to 2-7 [T14AA0].>
P0325	Knock sensor circuit high input	<Ref. to 2-7 [T14AB0].>
P0335	Crankshaft position sensor circuit malfunction	<Ref. to 2-7 [T14AC0].>
P0336	Crankshaft position sensor circuit range/performance problem	<Ref. to 2-7 [T14AD0].>
P0340	Camshaft position sensor circuit malfunction	<Ref. to 2-7 [T14AE0].>
P0341	Camshaft position sensor circuit range/performance problem	<Ref. to 2-7 [T14AF0].>
P0420	Catalyst system efficiency below threshold	<Ref. to 2-7 [T14AG0].>
P0440	Evaporative emission control system malfunction	<Ref. to 2-7 [T14AH0].>
P0443	Evaporative emission control system purge control valve circuit low input	<Ref. to 2-7 [T14AI0].>
P0446	Evaporative emission control system vent control low input	<Ref. to 2-7 [T14AJ0].>
P0451	Evaporative emission control system pressure sensor range/performance problem	<Ref. to 2-7 [T14AK0].>
P0452	Evaporative emission control system pressure sensor low input	<Ref. to 2-7 [T14AL0].>
P0453	Evaporative emission control system pressure sensor high input	<Ref. to 2-7 [T14AM0].>
P0461	Fuel level sensor circuit range/performance problem	<Ref. to 2-7 [T14AN0].>
P0462	Fuel level sensor circuit low input	<Ref. to 2-7 [T14AO0].>
P0463	Fuel level sensor circuit high input	<Ref. to 2-7 [T14AP0].>
P0480	Cooling fan relay 1 circuit low input	<Ref. to 2-7 [T14AQ0].>
P0483	Cooling fan function problem	<Ref. to 2-7 [T14AR0].>
P0500	Vehicle speed sensor malfunction	<Ref. to 2-7 [T14AS0].>
P0506	Idle control system RPM lower than expected	<Ref. to 2-7 [T14AT0].>
P0507	Idle control system RPM higher than expected	<Ref. to 2-7 [T14AU0].>
P0601	Internal control module memory check sum error	<Ref. to 2-7 [T14AV0].>
P0703	Brake switch input malfunction	<Ref. to 2-7 [T14AW0].>
P0705	Transmission range sensor circuit malfunction	<Ref. to 2-7 [T14AX0].>
P0710	Transmission fluid temperature sensor circuit malfunction	<Ref. to 2-7 [T14AY0].>
P0715	Torque converter turbine speed sensor circuit malfunction	<Ref. to 2-7 [T14AZ0].>
P0720	Output speed sensor (vehicle speed sensor 2) circuit malfunction	<Ref. to 2-7 [T14BA0].>

DTC No.	Item	Index
P0725	Engine speed input circuit malfunction	<Ref. to 2-7 [T14BB0].>
P0731	Gear 1 incorrect ratio	<Ref. to 2-7 [T14BC0].>
P0732	Gear 2 incorrect ratio	<Ref. to 2-7 [T14BD0].>
P0733	Gear 3 incorrect ratio	<Ref. to 2-7 [T14BE0].>
P0734	Gear 4 incorrect ratio	<Ref. to 2-7 [T14BF0].>
P0740	Torque converter clutch system malfunction	<Ref. to 2-7 [T14BG0].>
P0743	Torque converter clutch system (Solenoid B) electrical	<Ref. to 2-7 [T14BH0].>
P0748	Pressure control solenoid (Duty solenoid A) electrical	<Ref. to 2-7 [T14BI0].>
P0753	Shift solenoid A (Shift solenoid 1) electrical	<Ref. to 2-7 [T14BJ0].>
P0758	Shift solenoid B (Shift solenoid 2) electrical	<Ref. to 2-7 [T14BK0].>
P1100	Starter switch circuit low input	<Ref. to 2-7 [T14BL0].>
P1101	Neutral position switch circuit low input [MT vehicles]	<Ref. to 2-7 [T14BM0].>
P1101	Neutral position switch circuit high input [AT vehicles]	<Ref. to 2-7 [T14BN0].>
P1102	Pressure sources switching solenoid valve circuit low input	<Ref. to 2-7 [T14BO0].>
P1103	Engine torque control signal 1 circuit malfunction	<Ref. to 2-7 [T14BP0].>
P1106	Engine torque control signal 2 circuit malfunction	<Ref. to 2-7 [T14BQ0].>
P1115	Engine torque control cut signal circuit high input	<Ref. to 2-7 [T14BR0].>
P1116	Engine torque control cut signal circuit low input	<Ref. to 2-7 [T14BS0].>
P1120	Starter switch circuit high input	<Ref. to 2-7 [T14BT0].>
P1121	Neutral position switch circuit high input [MT vehicles]	<Ref. to 2-7 [T14BU0].>
P1121	Neutral position switch circuit low input [AT vehicles]	<Ref. to 2-7 [T14BV0].>
P1122	Pressure sources switching solenoid valve circuit high input	<Ref. to 2-7 [T14BW0].>
P1141	Mass air flow sensor circuit range/performance problem (low input)	<Ref. to 2-7 [T14BX0].>
P1142	Throttle position sensor circuit range/performance problem (low input)	<Ref. to 2-7 [T14BY0].>
P1143	Pressure sensor circuit range/performance problem (low input)	<Ref. to 2-7 [T14BZ0].>
P1144	Pressure sensor circuit range/performance problem (high input)	<Ref. to 2-7 [T14CA0].>
P1150	Front oxygen sensor heater circuit high input	<Ref. to 2-7 [T14CB0].>

DTC No.	Item	Index
P1151	Rear oxygen sensor heater circuit high input	<Ref. to 2-7 [T14CC0].>
P1325	Knock sensor circuit low input	<Ref. to 2-7 [T14CD0].>
P1400	Fuel tank pressure control solenoid valve circuit low input	<Ref. to 2-7 [T14CE0].>
P1420	Fuel tank pressure control solenoid valve circuit high input	<Ref. to 2-7 [T14CF0].>
P1422	Evaporative emission control system purge control valve circuit high input	<Ref. to 2-7 [T14CG0].>
P1423	Evaporative emission control system vent control high input	<Ref. to 2-7 [T14CH0].>
P1442	Fuel level sensor circuit range/performance problem 2	<Ref. to 2-7 [T14CI0].>
P1443	Evaporative emission control system vent control function problem	<Ref. to 2-7 [T14CJ0].>
P1507	Idle control system malfunction (fail-safe)	<Ref. to 2-7 [T14CK0].>
P1510	Idle air control solenoid valve signal 1 circuit low input	<Ref. to 2-7 [T14CL0].>
P1511	Idle air control solenoid valve signal 1 circuit high input	<Ref. to 2-7 [T14CM0].>
P1512	Idle air control solenoid valve signal 2 circuit low input	<Ref. to 2-7 [T14CN0].>
P1513	Idle air control solenoid valve signal 2 circuit high input	<Ref. to 2-7 [T14CO0].>
P1514	Idle air control solenoid valve signal 3 circuit low input	<Ref. to 2-7 [T14CP0].>
P1515	Idle air control solenoid valve signal 3 circuit high input	<Ref. to 2-7 [T14CQ0].>
P1516	Idle air control solenoid valve signal 4 circuit low input	<Ref. to 2-7 [T14CR0].>
P1517	Idle air control solenoid valve signal 4 circuit high input	<Ref. to 2-7 [T14CS0].>
P1520	Cooling fan relay 1 circuit high input	<Ref. to 2-7 [T14CT0].>
P1540	Vehicle speed sensor malfunction 2	<Ref. to 2-7 [T14CU0].>
P1560	Back-up voltage circuit malfunction	<Ref. to 2-7 [T14CV0].>
P1700	Throttle position sensor circuit malfunction for automatic transmission	<Ref. to 2-7 [T14CW0].>
P1701	Cruise control set signal circuit malfunction for automatic transmission	<Ref. to 2-7 [T14CX0].>
P1702	Automatic transmission diagnosis input signal circuit low input	<Ref. to 2-7 [T14CY0].>
P1703	Low clutch timing control solenoid valve circuit malfunction	<Ref. to 2-7 [T14CZ0].>
P1704	2-4 brake timing control solenoid valve circuit malfunction	<Ref. to 2-7 [T14DA0].>
P1705	2-4 brake pressure control solenoid valve (Duty solenoid D) circuit malfunction	<Ref. to 2-7 [T14DB0].>
P1722	Automatic transmission diagnosis input signal circuit high input	<Ref. to 2-7 [T14DC0].>

DTC No.	Item	Index
P1742	Automatic transmission diagnosis input signal circuit malfunction	<Ref. to 2-7 [T14DD0].>

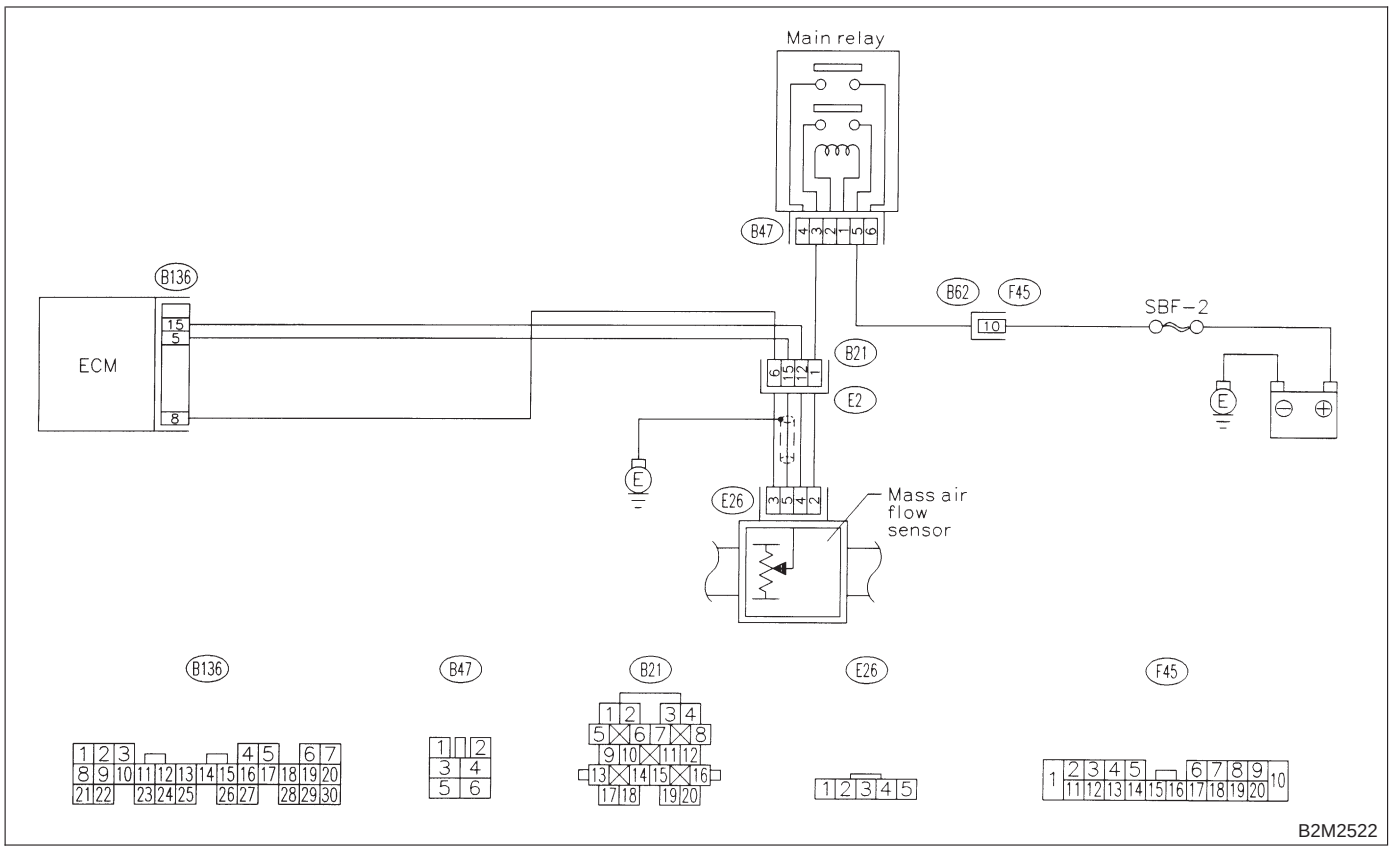
MEMO:

B: DTC P0101 — MASS AIR FLOW SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (HIGH INPUT) —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14B1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0102 or P0103?***

YES : Inspect DTC P0102 or P0103 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

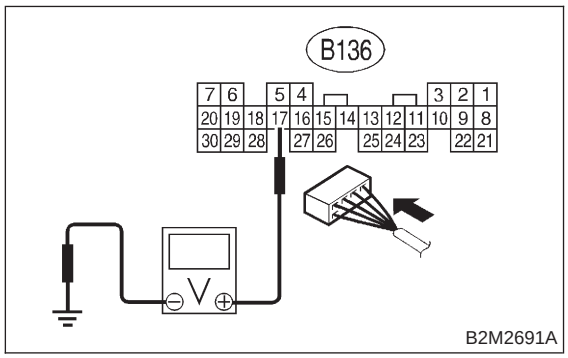
NOTE:
In this case, it is not necessary to inspect DTC P0101.

NO : Go to step **14B2**.

14B2 : CHECK INPUT SIGNAL FOR ECM.

1) Turn ignition switch to ON.
2) Measure voltage between ECM connector and chassis ground while throttle valve is fully closed.

Connector & terminal
(B136) No. 17 (+) — Chassis ground (−):

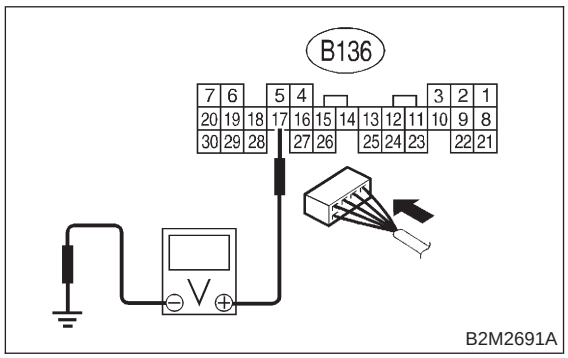


CHECK : ***Is the voltage between 0.2 V and 1.0 V?***
YES : Go to step **14B3**.
NO : Check throttle position sensor circuit. <Ref. to 2-7 [T14K0].>

14B3 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM connector and chassis ground while throttle valve is fully opened.

Connector & terminal
(B136) No. 17 (+) — Chassis ground (−):



CHECK : ***Is the voltage between 4.2 V and 4.7 V?***
YES : Replace mass air flow sensor. <Ref. to 2-7 [W2A1].>
NO : Check throttle position sensor circuit. <Ref. to 2-7 [T14K0].>

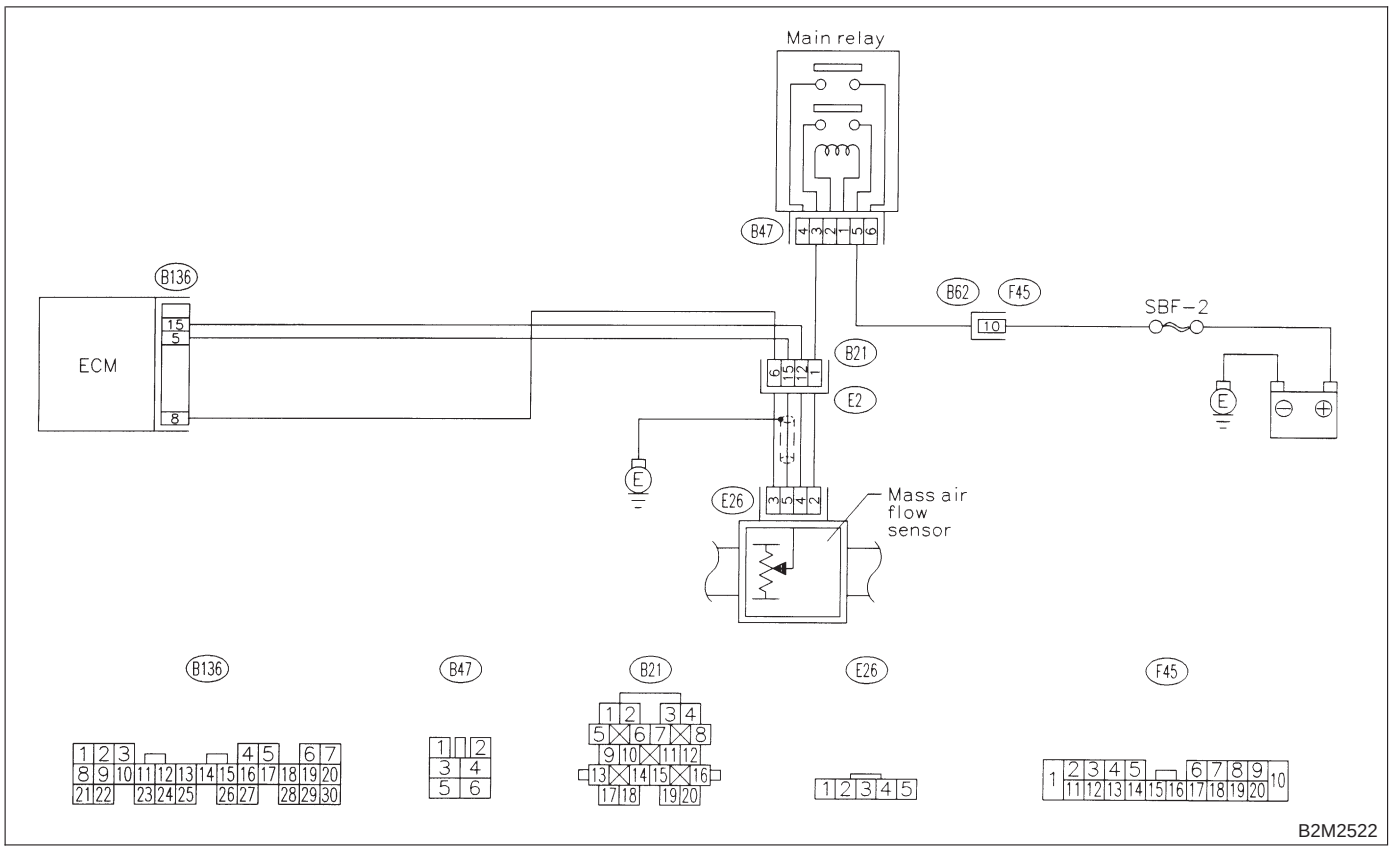
C: DTC P0102 — MASS AIR FLOW SENSOR CIRCUIT LOW INPUT —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition

- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

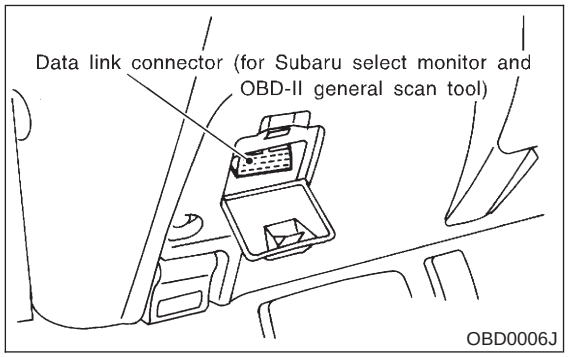
CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14C1 : CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor or the OBD-II general scan tool switch to ON.
4) Start engine.
5) Read data of mass air flow sensor signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedure, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value equal to or more than 0 g/sec (0 lb/min) or 0.3 V and equal to or less than 186 g/sec (25 lb/min) or 5.0 V?***

YES : Even if MIL lights up, the circuit has returned to a normal condition at this time. A temporary poor contact of the connector or harness may be the cause. Repair harness or connector in the mass air flow sensor.

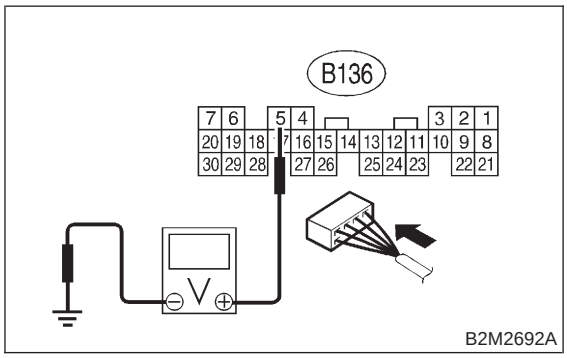
NOTE:
In this case, repair the following:
● Open or ground short circuit in harness between mass air flow sensor and ECM connector
● Poor contact in mass air flow sensor or ECM connector

NO : Go to step **14C2**.

14C2 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM connector and chassis ground while engine is idling.

Connector & terminal
(B136) No. 5 (+) — Chassis ground (−):



CHECK : ***Is the voltage less than 0.3 V?***
YES : Go to step **14C4**.
NO : Go to step **14C3**.

14C3 : CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR.)

Measure voltage between ECM connector and chassis ground while engine is idling.

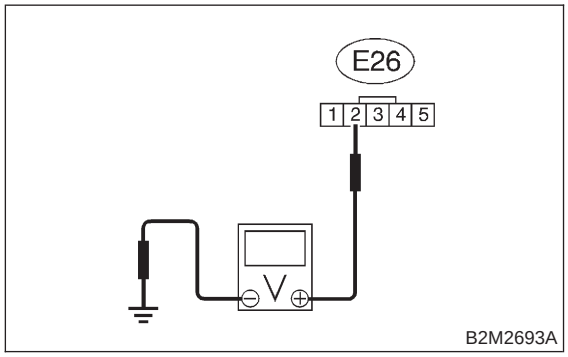
CHECK : ***Does the voltage change more than 0.3 V by shaking harness and connector of ECM while monitoring the value with Subaru Select Monitor?***
YES : Repair poor contact in ECM connector.
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

14C4 : CHECK POWER SUPPLY TO MASS AIR FLOW SENSOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from mass air flow sensor.
3) Turn ignition switch to ON.
4) Measure voltage between mass air flow sensor connector and engine ground.

Connector & terminal
(E26) No. 2 (+) — Engine ground (−):



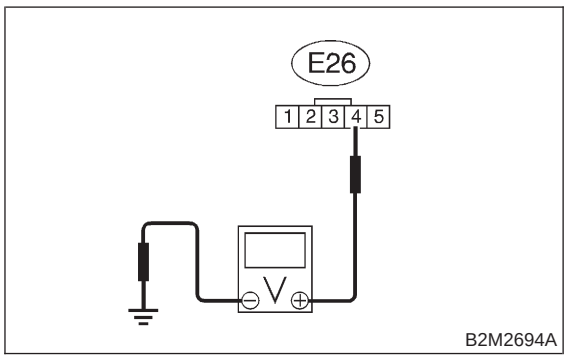
CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **14C5**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open or ground short circuit in harness between main relay and mass air flow sensor connector
- Poor contact in main relay connector
- Poor contact in coupling connector (B21)

14C5 : CHECK POWER SUPPLY TO MASS AIR FLOW SENSOR.

Measure voltage between mass air flow sensor connector and engine ground.

Connector & terminal
(E26) No. 4 (+) — Engine ground (−):



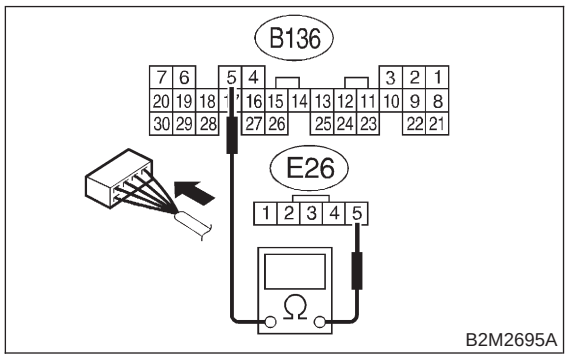
CHECK : ***Is the voltage more than 4 V?***
YES : Go to step **14C6**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open or ground short circuit in harness between ECM and mass air flow sensor connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B21)

14C6 : CHECK HARNESS BETWEEN ECM AND MASS AIR FLOW SENSOR CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from ECM.
3) Measure resistance of harness between ECM and mass air flow sensor connector.

Connector & terminal
(B136) No. 5 — (E26) No. 5:



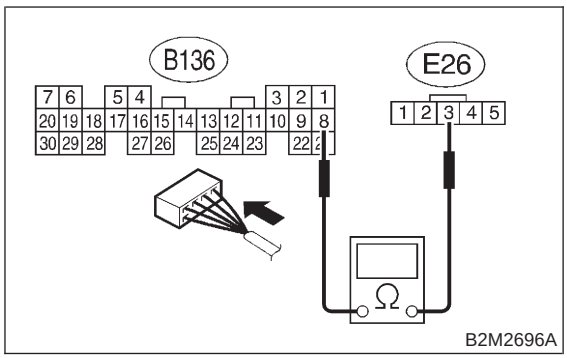
CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14C7**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and mass air flow sensor connector
- Poor contact in mass air flow sensor connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B21)

14C7 : CHECK HARNESS BETWEEN ECM AND MASS AIR FLOW SENSOR CONNECTOR.

Measure resistance of harness between ECM and mass air flow sensor connector.

Connector & terminal
(B136) No. 8 — (E26) No. 3:



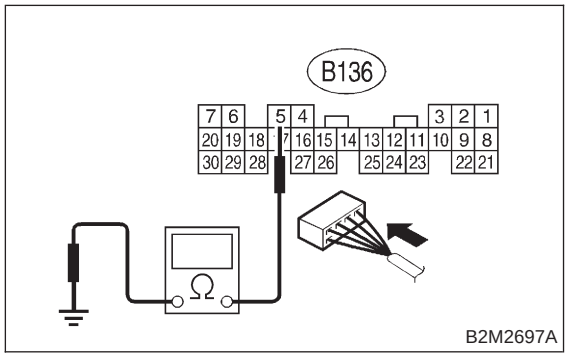
CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14C8**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and mass air flow sensor connector
- Poor contact in mass air flow sensor connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B21)

14C8 : CHECK HARNESS BETWEEN ECM AND MASS AIR FLOW SENSOR CONNECTOR.

Measure resistance of harness between ECM connector and chassis ground.

Connector & terminal
(B136) No. 5 — Chassis ground:



CHECK : ***Is the resistance more than 1 MΩ?***
YES : Replace mass air flow sensor. <Ref. to 2-7 [W2A1].>
NO : Repair ground short circuit in harness between ECM and mass air flow sensor connector.

MEMO:

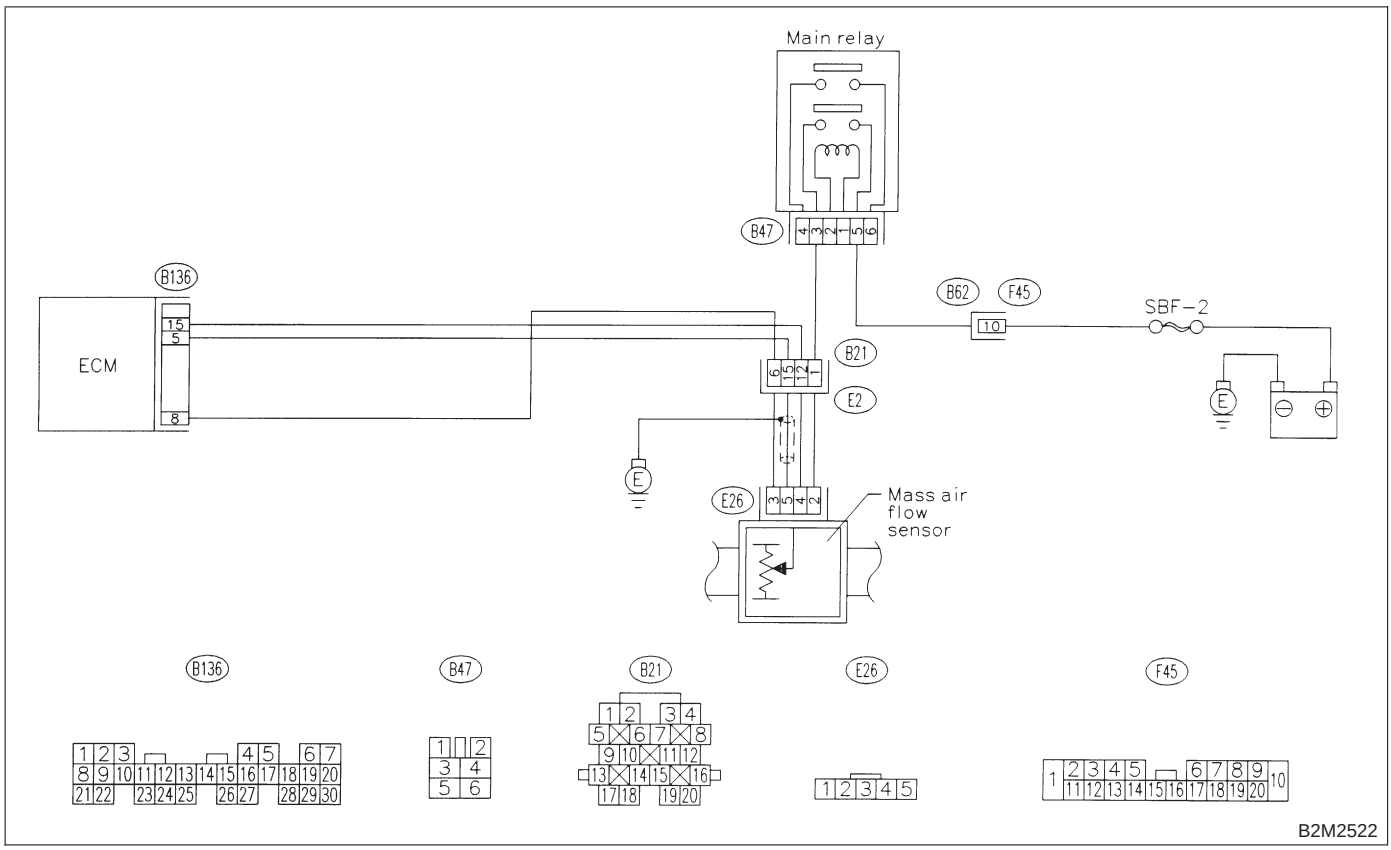
D: DTC P0103 — MASS AIR FLOW SENSOR CIRCUIT HIGH INPUT —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition

- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

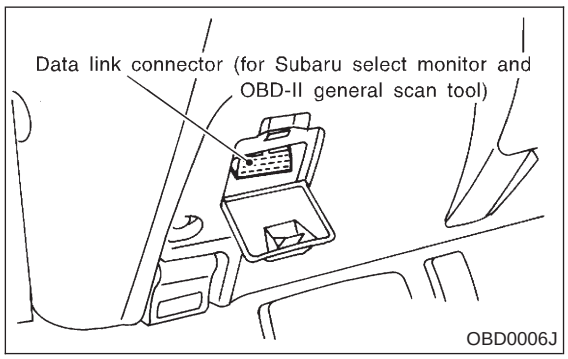
CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14D1 : CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor or the OBD-II general scan tool switch to ON.
4) Start engine.
5) Read data of mass air flow sensor signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value equal to or more than 0 g/sec (0 lb/min) or 0.3 V and equal to or less than 186 g/sec (25 lb/min) or 5.0 V?***

YES : Even if MIL lights up, the circuit has returned to a normal condition at this time.

NO : Go to step **14D2**.

14D2 : CHECK HARNESS BETWEEN ECM AND MASS AIR FLOW SENSOR CONNECTOR.

1) Turn ignition switch to OFF and Subaru Select Monitor or the OBD-II general scan tool switch to OFF.
2) Disconnect connector from mass air flow sensor.
3) Turn ignition switch to ON and Subaru Select Monitor or the OBD-II general scan tool switch to ON.
4) Read data of mass air flow sensor signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value more than 186 g/sec (25 lb/min) or 5 V?***

YES : Repair battery short circuit in harness between mass air flow sensor and ECM connector. After repair, replace ECM. <Ref. to 2-7 [W15A1].>

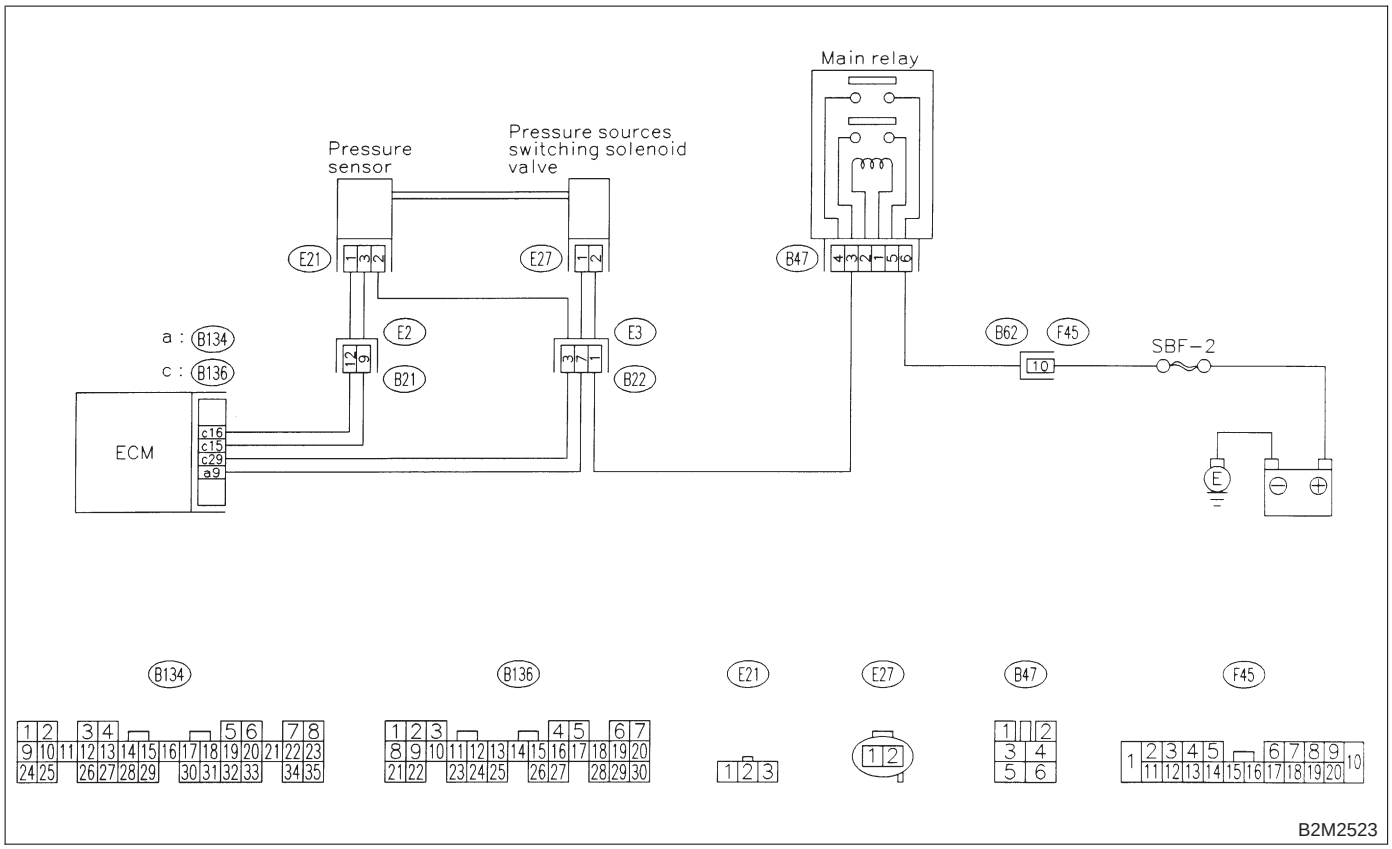
NO : Replace mass air flow sensor. <Ref. to 2-7 [W2A1].>

E: DTC P0106 — PRESSURE SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14E1 : CHECK ANY OTHER DTC ON DISPLAY.

NOTE:
In this case, it is not necessary to inspect DTC P0106.

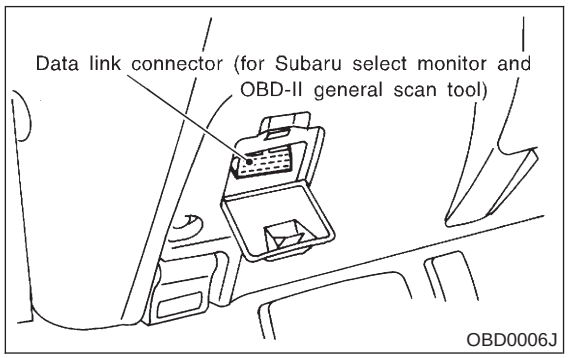
CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0107, P0108, P1102 OR P1122?***

YES : Inspect DTC P0107, P0108, P1102 OR P1122 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NO : Go to step **14E2**.

14E2 : CHECK IDLE SWITCH SIGNAL.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor switch to ON.
4) Operate the LED operation mode for engine using Subaru Select Monitor.

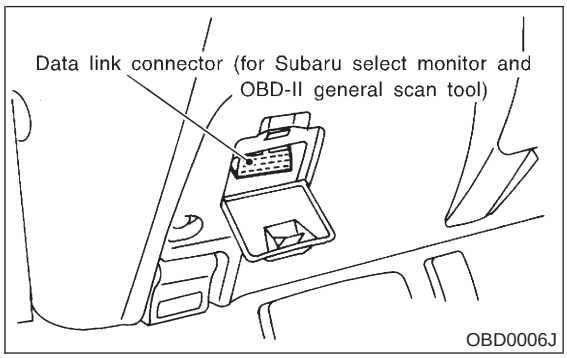
NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "LED OPERATION MODE FOR ENGINE". <Ref. to 2-7 [T3C8].>

CHECK : ***Does the LED of {Idle Switch Signal} come on?***
YES : Go to step **14E3**.
NO : Check throttle position sensor circuit. <Ref. to 2-7 [T14K0].>

NOTE:
In this case, it is not necessary to inspect DTC P0106.

14E3 : CHECK DATA FOR CONTROL.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch ON and Subaru Select Monitor or the OBD-II general scan tool switch ON.
4) Start engine.
5) Read data of intake manifold absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value more than 85 kPa (638 mmHg, 25.12 inHg)?***
YES : Go to step **14E6**.
NO : Go to step **14E4**.

14E4 : CHECK DATA FOR CONTROL.

Read data of atmospheric absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool.

CHECK : ***Is the value less than 32 kPa (240 mmHg, 9.45 inHg)?***
YES : Go to step **14E7**.
NO : Go to step **14E5**.

14E5 : CHECK DATA FOR CONTROL.

Read data of atmospheric absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool.

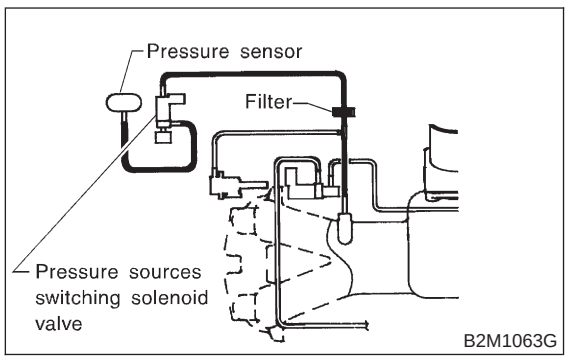
CHECK : ***Is the value more than 133 kPa (998 mmHg, 39.29 inHg)?***

YES : Replace pressure sensor. <Ref. to 2-7 [W11A0].>

NO : Repair poor contact in pressure sensor connector, pressure sources switching solenoid valve connector, and ECM connector.

14E6 : CHECK VACUUM HOSES.

Check the following items.
- Disconnection of the vacuum hose from pressure sources switching solenoid valve to intake manifold
- Holes in the vacuum hose between pressure sources switching solenoid valve to intake manifold
- Clogging of the vacuum hose between pressure sources switching solenoid valve to intake manifold
- Disconnection of the vacuum hose from pressure sensor to pressure sources switching solenoid valve
- Holes in the vacuum hose between pressure sensor and pressure sources switching solenoid valve
- Clogging of the vacuum hose between pressure sensor and pressure sources switching solenoid valve
- Clogging of the filter



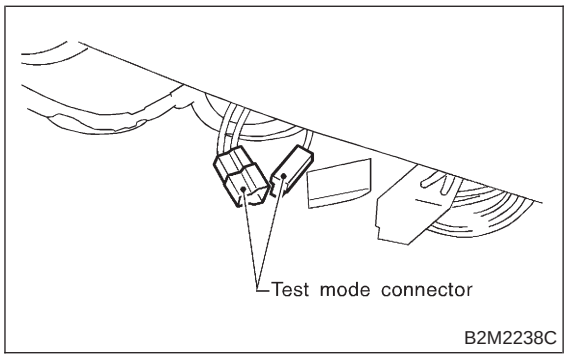
CHECK : ***Is there a fault in vacuum hose?***

YES : Repair or replace hoses or filter.

NO : Go to step **14E7**.

14E7 : CHECK PRESSURE SOURCES SWITCHING SOLENOID VALVE.

1) Turn ignition switch to OFF.
2) Connect test mode connector.



3) Turn ignition switch to ON.

NOTE:
Pressure sources switching solenoid valve operation check can also be executed using Subaru Select Monitor. For the procedure, refer to the "COMPULSORY VALVE OPERATION CHECK MODE". <Ref. to 2-7 [T3F0].>

CHECK : ***Does pressure sources switching solenoid valve produce operating sound? (ON ⇔ OFF each 1.5 sec.)***

YES : Replace pressure sensor. <Ref. to 2-7 [W11A0].>

NO : Replace pressure sources switching solenoid valve. <Ref. to 2-7 [W13A0].>

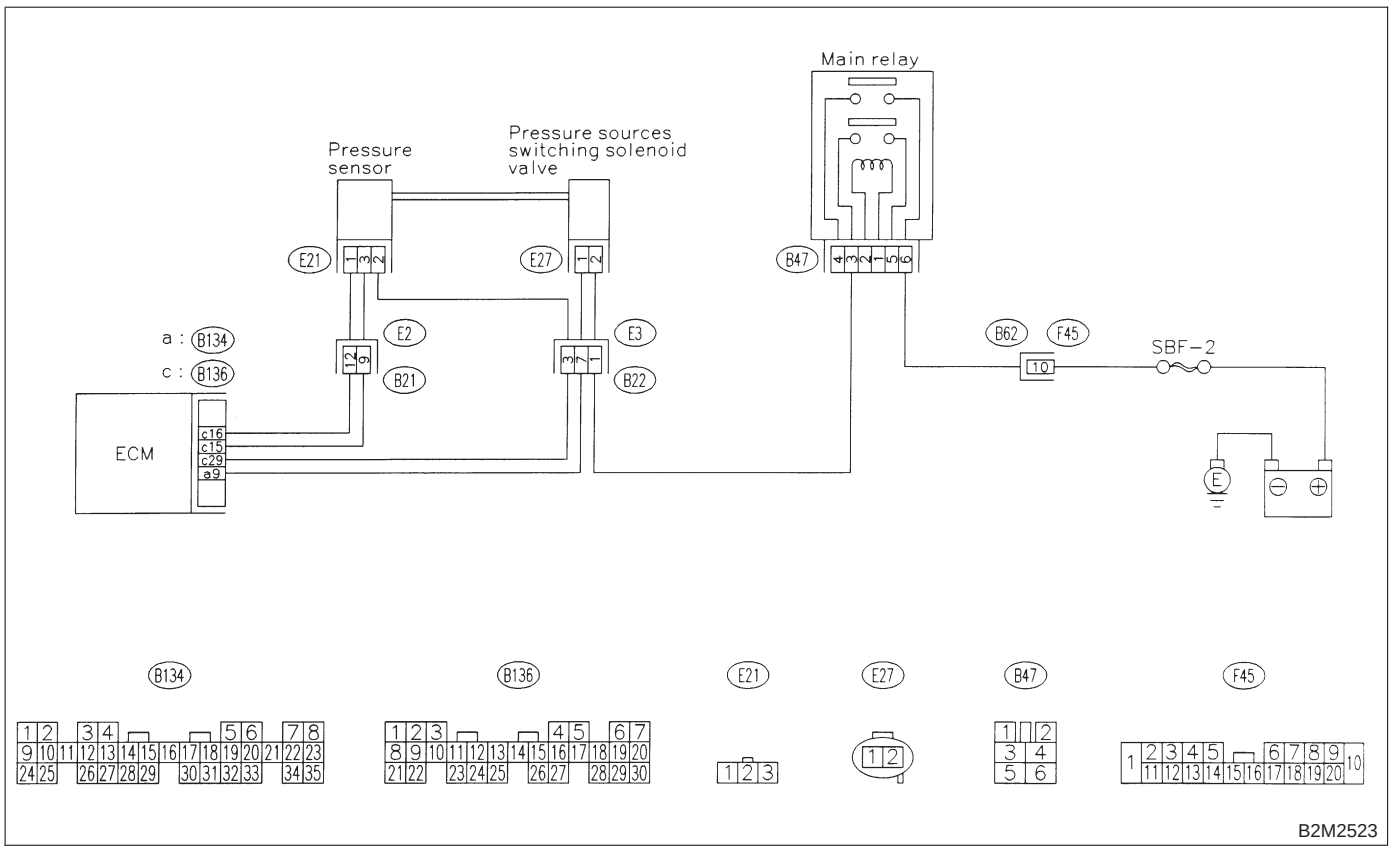
MEMO:

F: DTC P0107 — PRESSURE SENSOR CIRCUIT LOW INPUT —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition

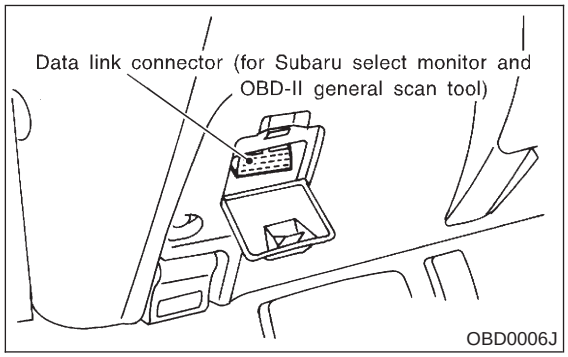
CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14F1 : CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor or the OBD-II general scan tool switch to ON.
4) Start engine.
5) Read the data of intake manifold absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value less than 0 kPa (0 mmHg, 0 inHg)?***
YES : Go to step **14F3**.
NO : Go to step **14F2**.

14F2 : CHECK POOR CONTACT.

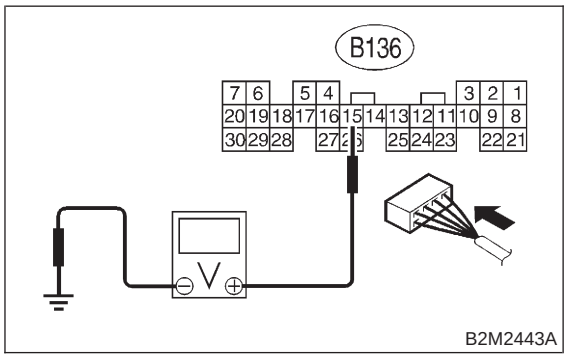
Check poor contact in ECM and pressure sensor connector. <Ref. to 2-7 [T3C8].>

CHECK : ***Is there poor contact in ECM or pressure sensor connector?***
YES : Repair poor contact in ECM or pressure sensor connector.
NO : Even if MIL lights up, the circuit has returned to a normal condition at this time.

14F3 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B136) No. 15 (+) — Chassis ground (−):

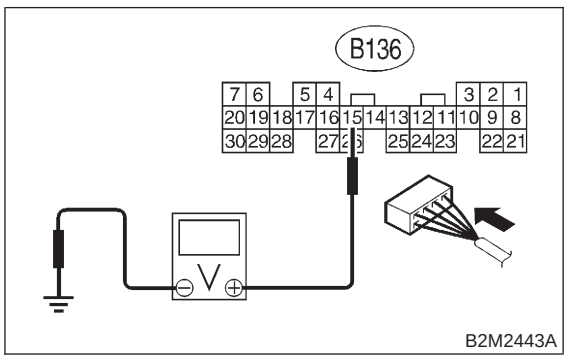


CHECK : ***Is the voltage more than 4.5 V?***
YES : Go to step **14F5**.
NO : Go to step **14F4**.

14F4 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B136) No. 15 (+) — Chassis ground (−):



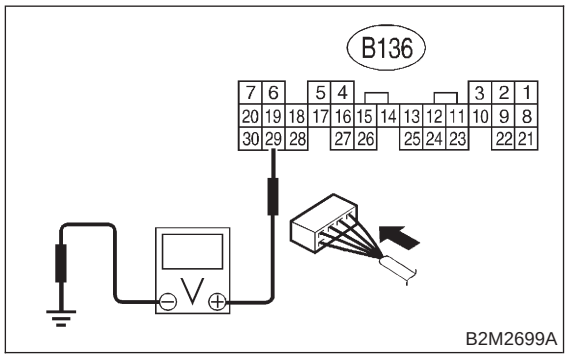
CHECK : ***Does the voltage change more than 4.5 V by shaking harness and connector of ECM while monitoring the value with voltage meter?***
YES : Repair poor contact in ECM connector.
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

14F5 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM and chassis ground.

Connector & terminal
(B136) No. 29 (+) — Chassis ground (−):



CHECK : ***Is the voltage less than 0.2 V?***
YES : Go to step **14F7**.
NO : Go to step **14F6**.

14F6 : CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR.)

Read data of atmospheric absolute pressure signal using Subaru Select Monitor.

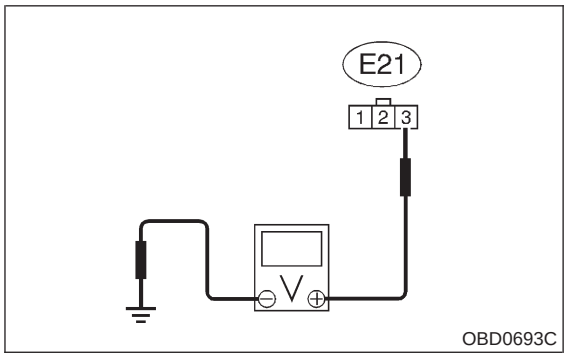
NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the “READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE”. <Ref. to 2-7 [T3C4].>

CHECK : ***Does the value change more than 0 kPa (0 mmHg, 0 inHg) by shaking harness and connector of ECM while monitoring the value with Subaru select monitor?***
YES : Repair poor contact in ECM connector.
NO : Go to step **14F7**.

14F7 : CHECK HARNESS BETWEEN ECM AND PRESSURE SENSOR CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from pressure sensor.
3) Turn ignition switch to ON.
4) Measure voltage between pressure sensor connector and engine ground.

Connector & terminal
(E21) No. 3 (+) — Engine ground (−):



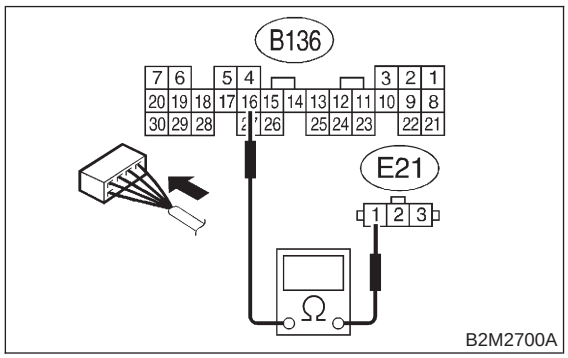
CHECK : ***Is the voltage more than 4.5 V?***
YES : Go to step **14F8**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
● Open circuit in harness between ECM and pressure sensor connector
● Poor contact in coupling connector (B21)

14F8 : CHECK HARNESS BETWEEN ECM AND PRESSURE SENSOR CONNECTOR.

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

Connector & terminal
(B136) No. 16 — (E21) No. 1:



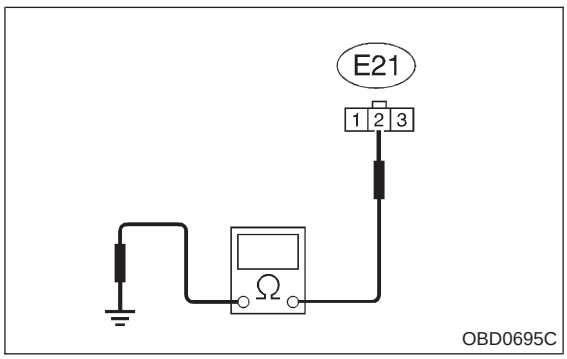
CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14F9**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and pressure sensor connector
- Poor contact in coupling connector (B21)

14F9 : CHECK HARNESS BETWEEN ECM AND PRESSURE SENSOR CONNECTOR.

Measure resistance of harness between pressure sensor connector and engine ground.

Connector & terminal
(E21) No. 2 — Engine ground:



CHECK : ***Is the resistance more than 500 kΩ?***
YES : Go to step **14F10**.
NO : Repair ground short circuit in harness between ECM and pressure sensor connector.

14F10 : CHECK POOR CONTACT.

Check poor contact in pressure sensor connector. <Ref. to FOREWORD [T3C1].>

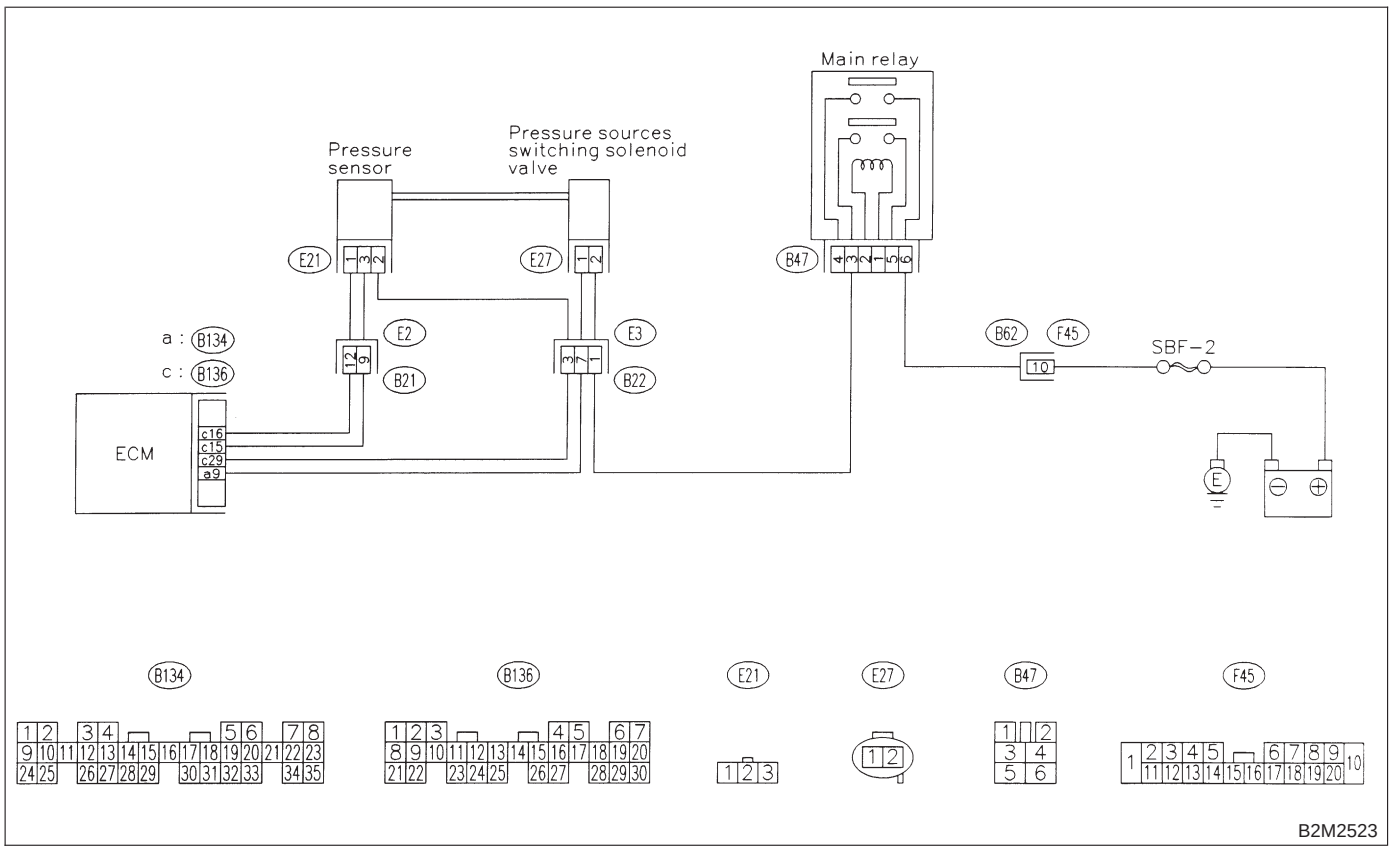
CHECK : ***Is there poor contact in pressure sensor connector?***
YES : Repair poor contact in pressure sensor connector.
NO : Replace pressure sensor. <Ref. to 2-7 [W11A0].>

G: DTC P0108 — PRESSURE SENSOR CIRCUIT HIGH INPUT —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition

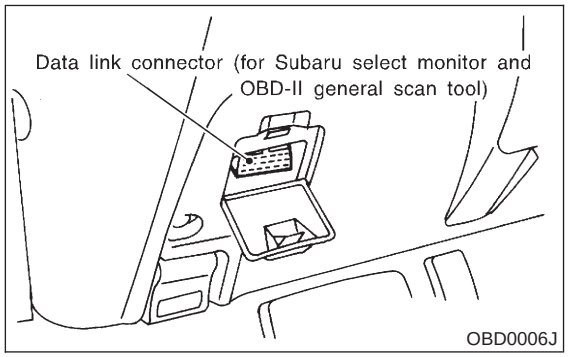
CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14G1 : CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor or the OBD-II general scan tool switch to ON.
4) Start engine.
5) Read the data of intake manifold absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool.

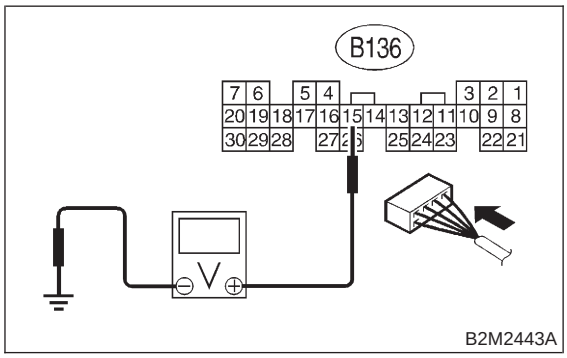
NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value more than 140 kPa (1,050 mmHg, 41.34 inHg)?***
YES : Go to step **14G10**.
NO : Go to step **14G2**.

14G2 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B136) No. 15 (+) — Chassis ground (−):

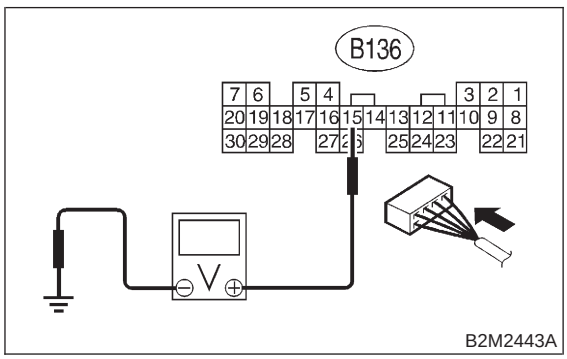


CHECK : ***Is the voltage more than 4.5 V?***
YES : Go to step **14G4**.
NO : Go to step **14G3**.

14G3 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B136) No. 15 (+) — Chassis ground (−):



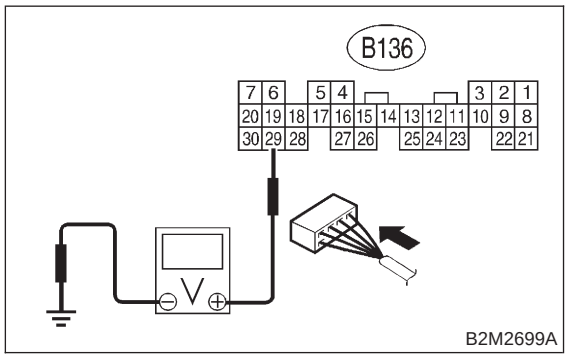
CHECK : ***Does the voltage change more than 4.5 V by shaking harness and connector of ECM while monitoring the value with voltage meter?***
YES : Repair poor contact in ECM connector.
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

14G4 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B136) No. 29 (+) — Chassis ground (−):



CHECK : ***Is the voltage less than 0.2 V?***
YES : Go to step **14G6**.
NO : Go to step **14G5**.

14G5 : CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR.)

Read data of atmospheric absolute pressure signal using Subaru Select Monitor.

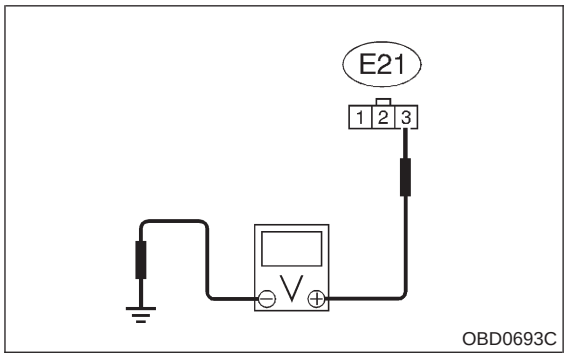
NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the “READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE”. <Ref. to 2-7 [T3C4].>

CHECK : ***Does the value change more than 0 kPa (0 mmHg, 0 inHg) by shaking harness and connector of ECM while monitoring the value with Subaru select monitor?***
YES : Repair poor contact in ECM connector.
NO : Go to step **14G6**.

14G6 : CHECK HARNESS BETWEEN ECM AND PRESSURE SENSOR CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from pressure sensor.
3) Turn ignition switch to ON.
4) Measure voltage between pressure sensor connector and engine ground.

Connector & terminal
(E21) No. 3 (+) — Engine ground (−):



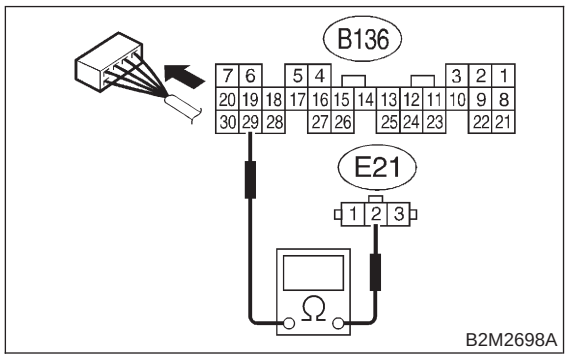
CHECK : ***Is the voltage more than 4.5 V?***
YES : Go to step **14G7**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
● Open circuit in harness between ECM and pressure sensor connector
● Poor contact in coupling connector (B21)

14G7 : CHECK HARNESS BETWEEN ECM AND PRESSURE SENSOR CONNECTOR.

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

Connector & terminal
(B136) No. 29 — (E21) No. 2:



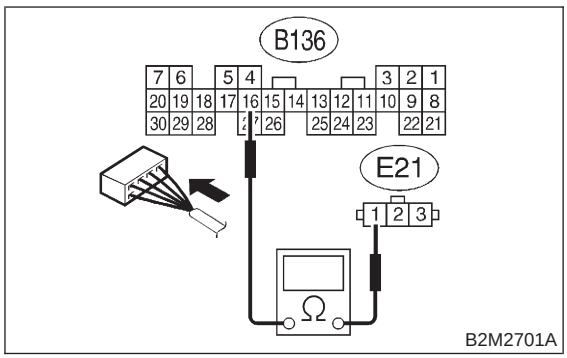
CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14G8**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and pressure sensor connector
- Poor contact in coupling connector (B22)

14G8 : CHECK HARNESS BETWEEN ECM AND PRESSURE SENSOR CONNECTOR.

Measure resistance of harness between ECM and pressure sensor connector.

Connector & terminal
(B136) No. 16 — (E21) No. 1:



CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14G9**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and pressure sensor connector
- Poor contact in coupling connector (B21)

14G9 : CHECK POOR CONTACT.

Check poor contact in pressure sensor connector. <Ref. to FOREWORD [T3C1].>

CHECK : ***Is there poor contact in pressure sensor connector?***
YES : Repair poor contact in pressure sensor connector.
NO : Replace pressure sensor. <Ref. to 2-7 [W11A0].>

14G10 : CHECK HARNESS BETWEEN ECM AND PRESSURE SENSOR CONNECTOR.

1) Turn ignition switch to OFF and Subaru Select Monitor or the OBD-II general scan tool switch to OFF.
2) Disconnect connector from pressure sensor.
3) Turn ignition switch to ON and Subaru Select Monitor or the OBD-II general scan tool switch to ON.
4) Read data of intake manifold absolute pressure signal using Subaru select monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value more than 140 kPa (1,050 mmHg, 41.34 inHg)?***

YES : Repair battery short circuit in harness between ECM and pressure sensor connector.

NO : Replace pressure sensor. <Ref. to 2-7 [W11A0].>

MEMO:

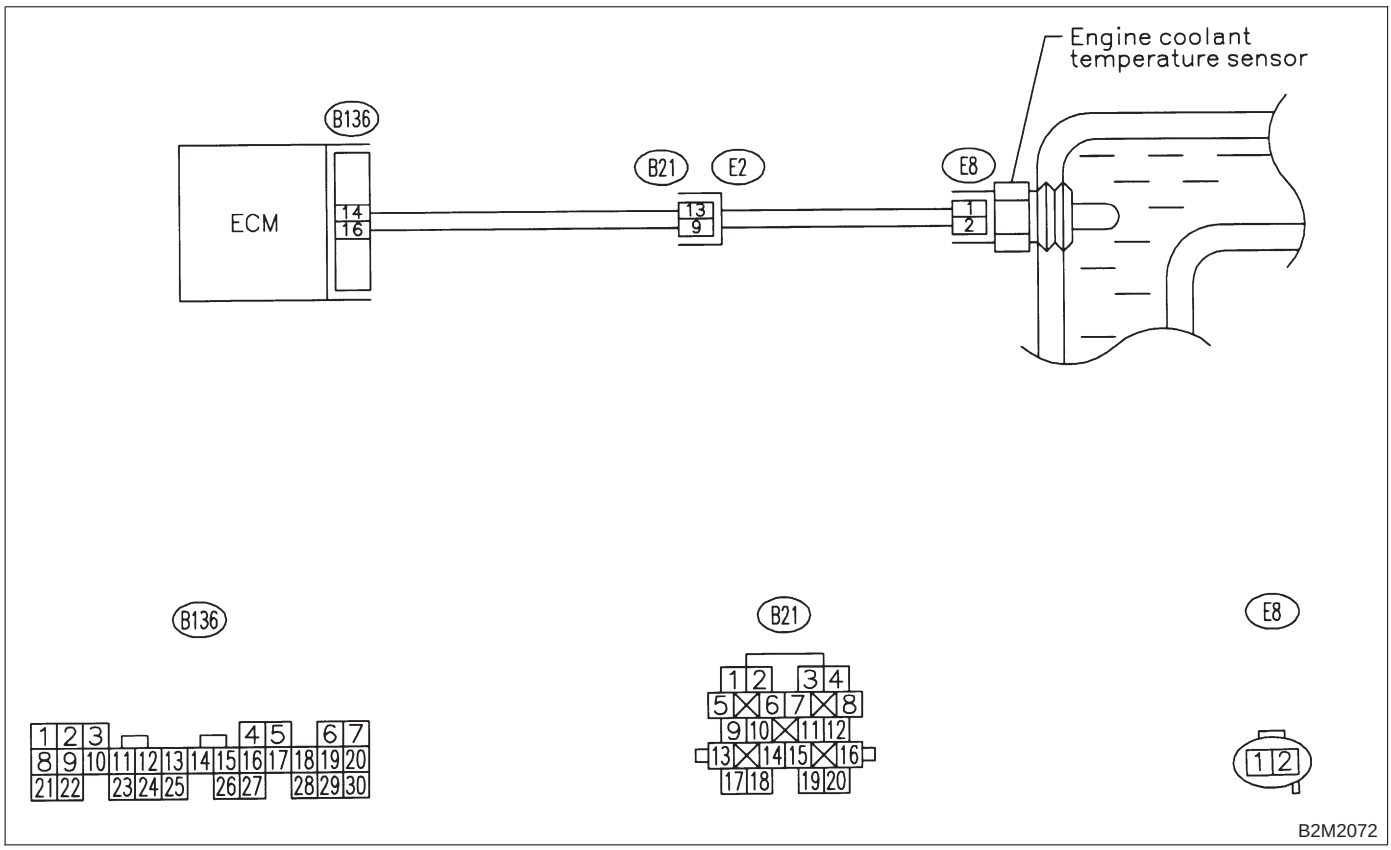
H: DTC P0116 — ENGINE COOLANT TEMPERATURE SENSOR CIRCUIT LOW INPUT —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition

- **TROUBLE SYMPTOM:**
  - Hard to start
  - Erroneous idling
  - Poor driving performance

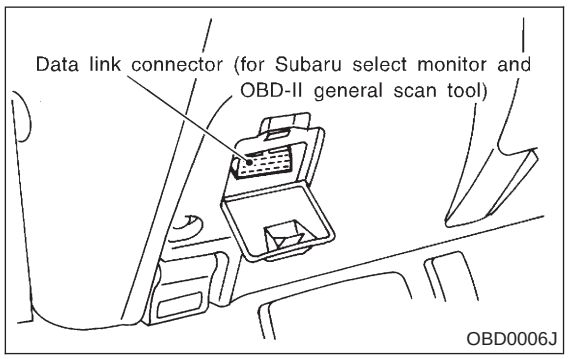
CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14H1 : CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor or OBD-II general scan tool switch to ON.
4) Start engine.
5) Read data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool.

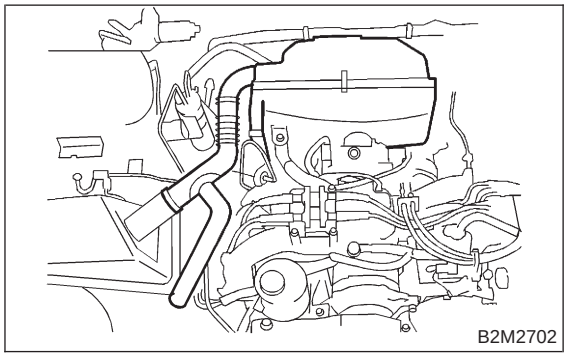
NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value greater than 150°C (300°F)?***
YES : Go to step **14H2**.
NO : Repair poor contact.

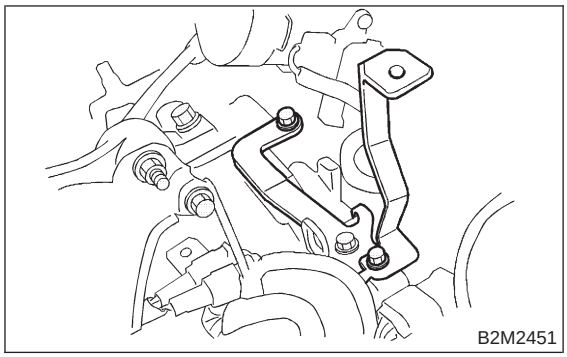
NOTE:
In this case, repair the following:
● Poor contact in engine coolant temperature sensor
● Poor contact in ECM
● Poor contact in coupling connector (B21)

14H2 : CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR.

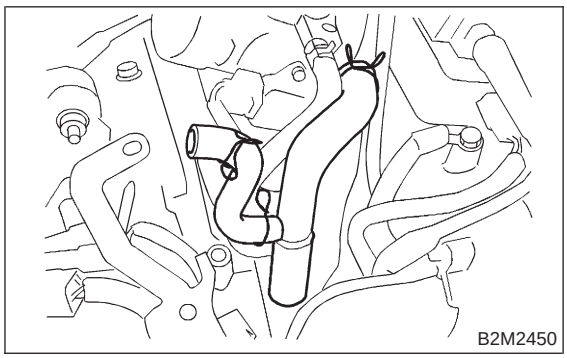
1) Turn ignition switch to OFF.
2) Remove air intake duct and air intake chamber assembly as a unit.



3) Remove engine harness connector bracket from cylinder block.



4) Remove blow-by hoses.



5) Disconnect connector from engine coolant temperature sensor.
6) Turn ignition switch and Subaru Select Monitor or OBD-II general scan tool switch to ON.
7) Read data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value less than −40°C (−40°F)?***
YES : Replace engine coolant temperature sensor. <Ref. to 2-7 [W5A2].>
NO : Repair ground short circuit in harness between engine coolant temperature sensor and ECM connector.

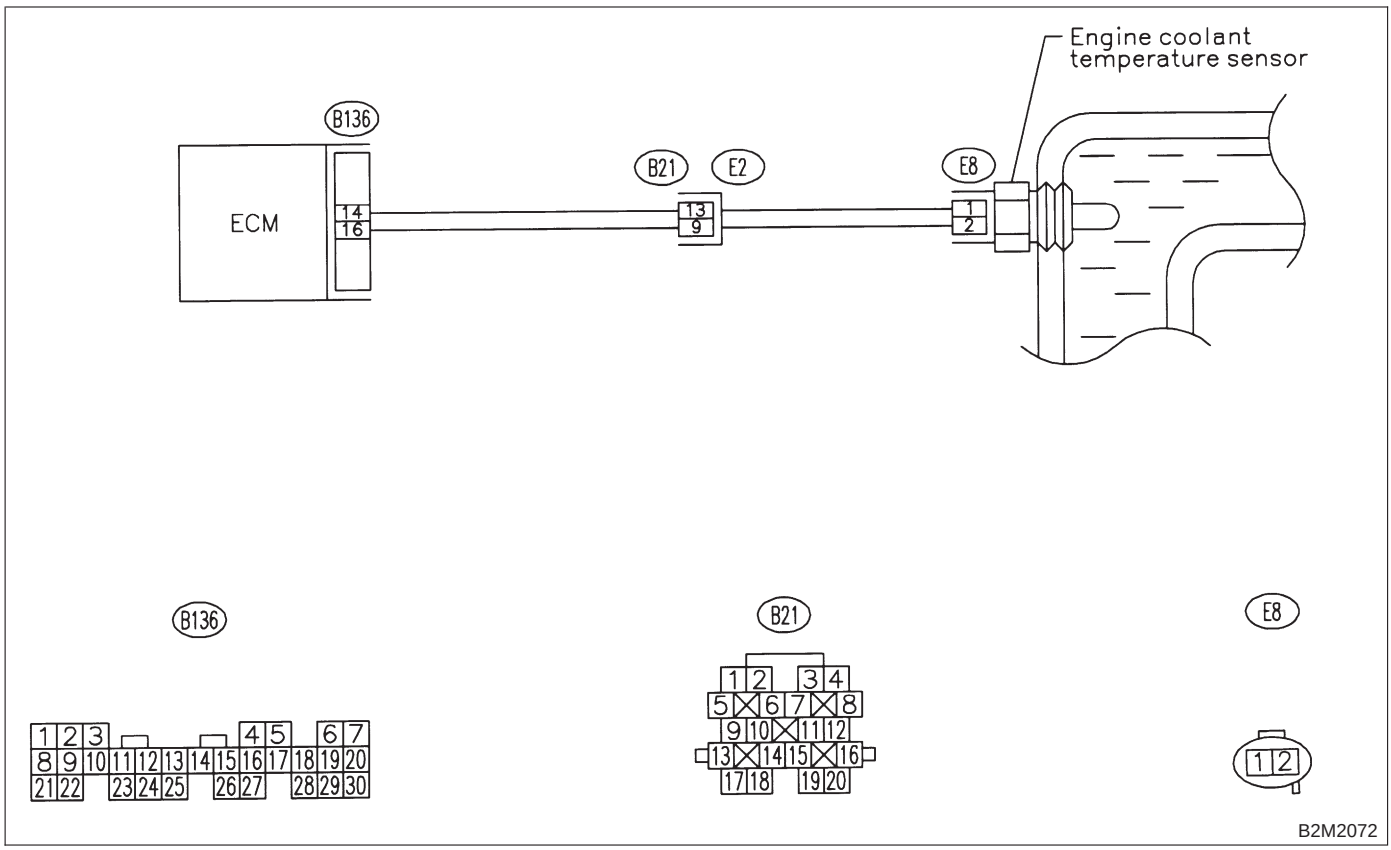
MEMO:

I: DTC P0117 — ENGINE COOLANT TEMPERATURE SENSOR CIRCUIT HIGH INPUT —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition
- **TROUBLE SYMPTOM:**
  - Hard to start
  - Erroneous idling
  - Poor driving performance

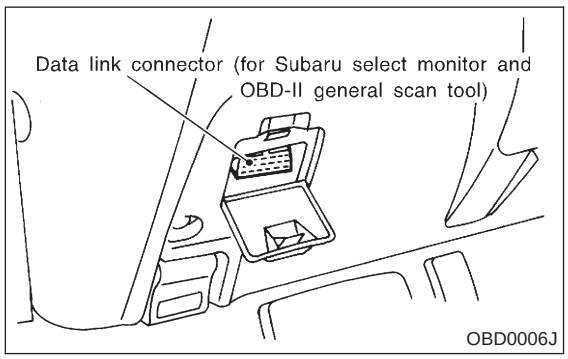
CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14I1 : CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor or OBD-II general scan tool switch to ON.
4) Start engine.
5) Read data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool.

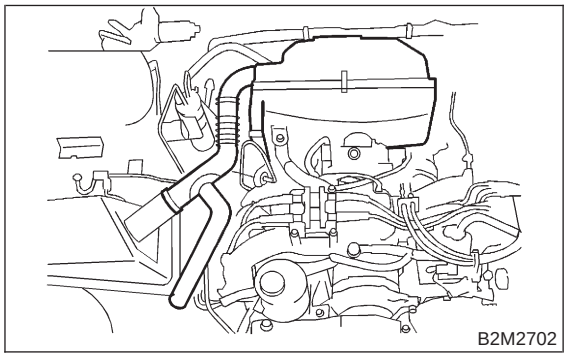
NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value less than −40°C (−40°F)?***
YES : Go to step **14I2**.
NO : Repair poor contact.

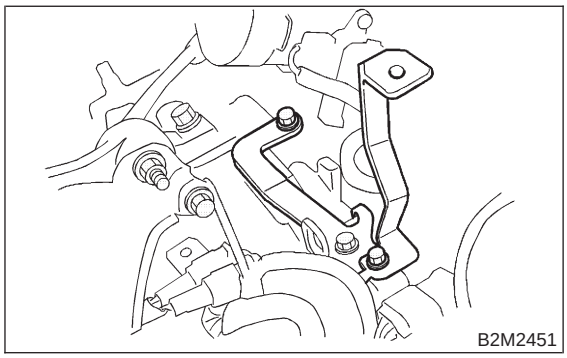
NOTE:
In this case, repair the following:
● Poor contact in engine coolant temperature sensor
● Poor contact in ECM
● Poor contact in coupling connector (B21)

14I2 : CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR.

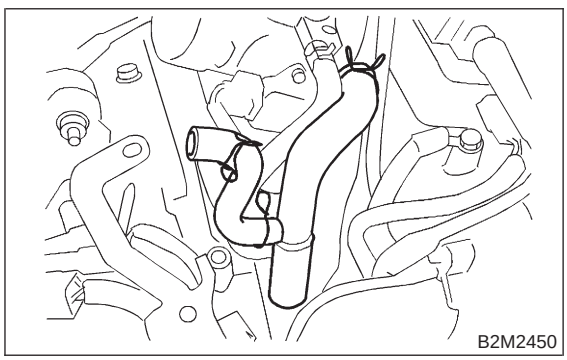
1) Turn ignition switch to OFF.
2) Remove air intake duct and air intake chamber assembly as a unit.



3) Remove engine harness connector bracket from cylinder block.



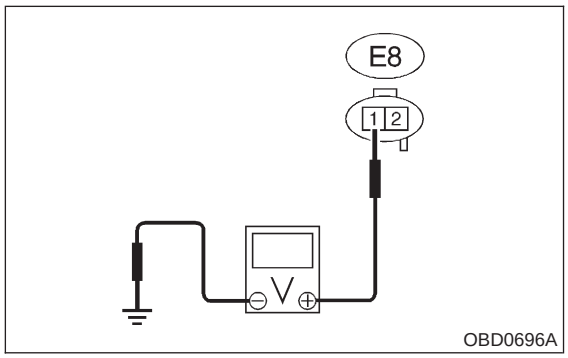
4) Remove blow-by hoses.



5) Disconnect connector from engine coolant temperature sensor.

6) Measure voltage between engine coolant temperature sensor connector and engine ground.

Connector & terminal
(E8) No. 1 (+) — Engine ground (−):

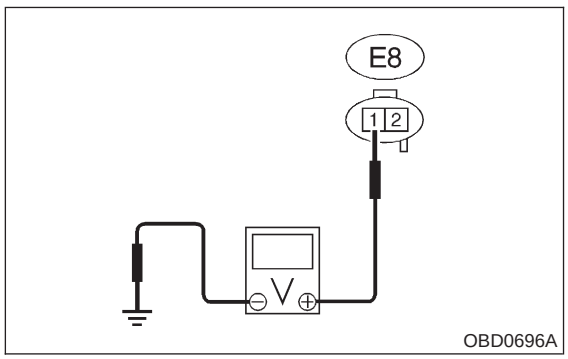


CHECK : ***Is the voltage more than 10 V?***
YES : Repair battery short circuit in harness between ECM and engine coolant temperature sensor connector.
NO : Go to step **14I3**.

14I3 : CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR.

1) Turn ignition switch to ON.
2) Measure voltage between engine coolant temperature sensor connector and engine ground.

Connector & terminal
(E8) No. 1 (+) — Engine ground (−):

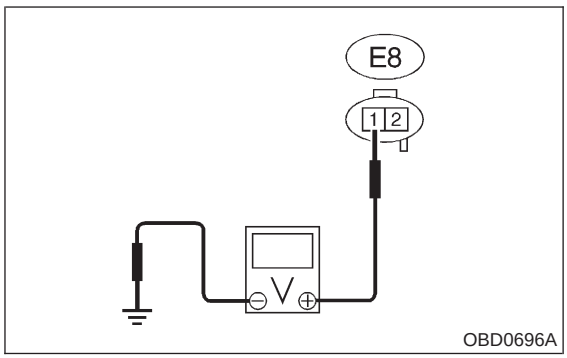


CHECK : ***Is the voltage more than 10 V?***
YES : Repair battery short circuit in harness between ECM and engine coolant temperature sensor connector.
NO : Go to step **14I4**.

14I4 : CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR.

Measure voltage between engine coolant temperature sensor connector and engine ground.

Connector & terminal
(E8) No. 1 (+) — Engine ground (−):



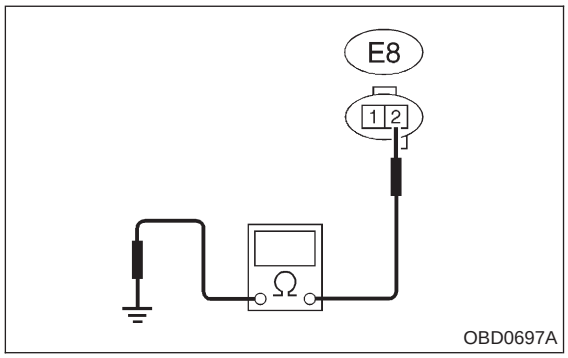
CHECK : ***Is the voltage more than 4 V?***
YES : Go to step **14I5**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and engine coolant temperature sensor connector
- Poor contact in engine coolant temperature sensor connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B21)

14I5 : CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Measure resistance of harness between engine coolant temperature sensor connector and engine ground.

Connector & terminal
(E8) No. 2 — Engine ground:



CHECK : ***Is the resistance less than 5 Ω?***
YES : Replace engine coolant temperature sensor. <Ref. to 2-7 [W5A2].>
NO : Repair harness and connector.

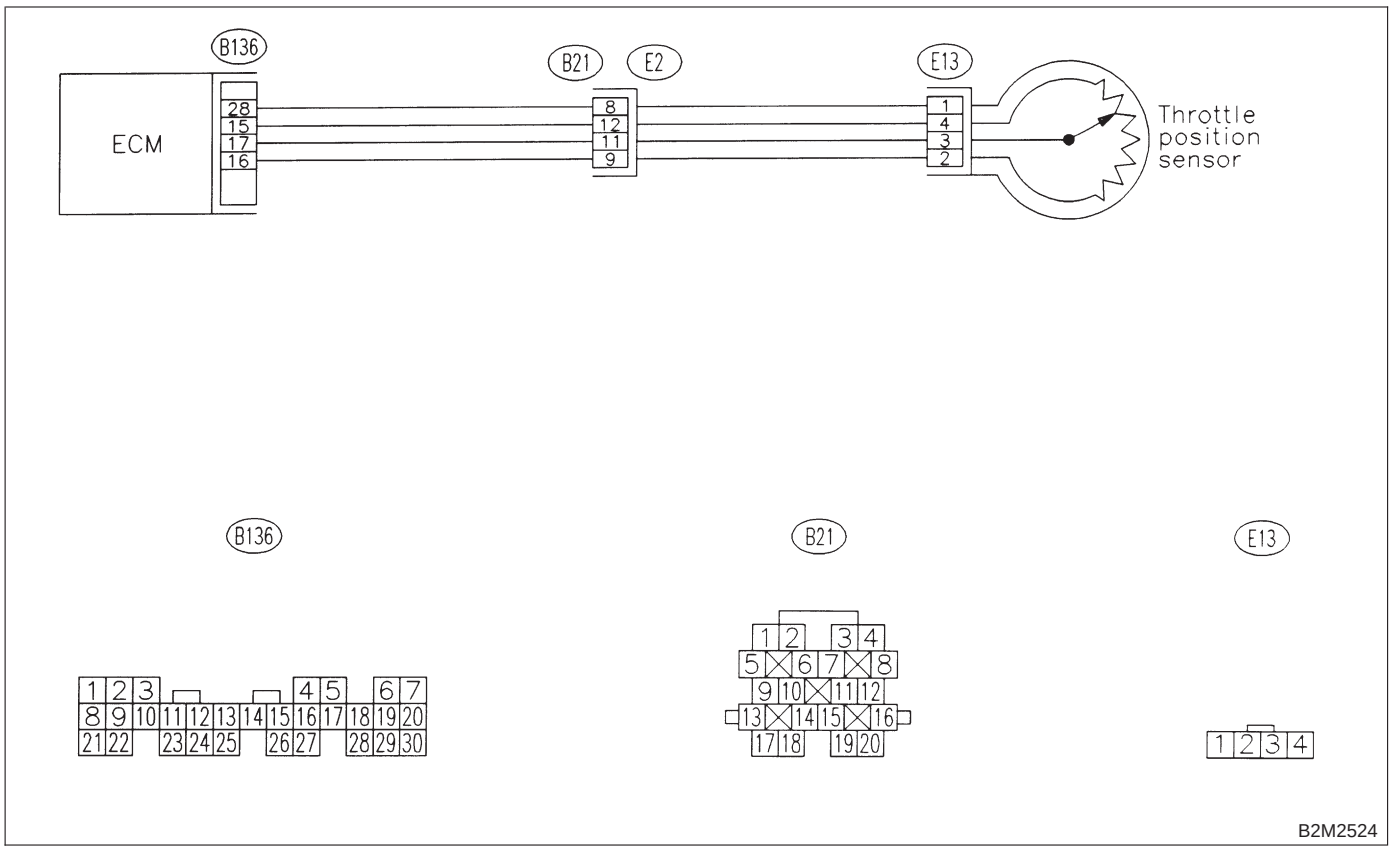
NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and engine coolant temperature sensor connector
- Poor contact in engine coolant temperature sensor connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B21)

J: DTC P0121 — THROTTLE POSITION SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (HIGH INPUT) —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14J1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0122 or P0123?***

YES : Inspect DTC P0122 or P0123 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NOTE:
In this case, it is not necessary to inspect DTC P0121.

NO : Replace throttle position sensor. <Ref. to 2-7 [W9A2].>

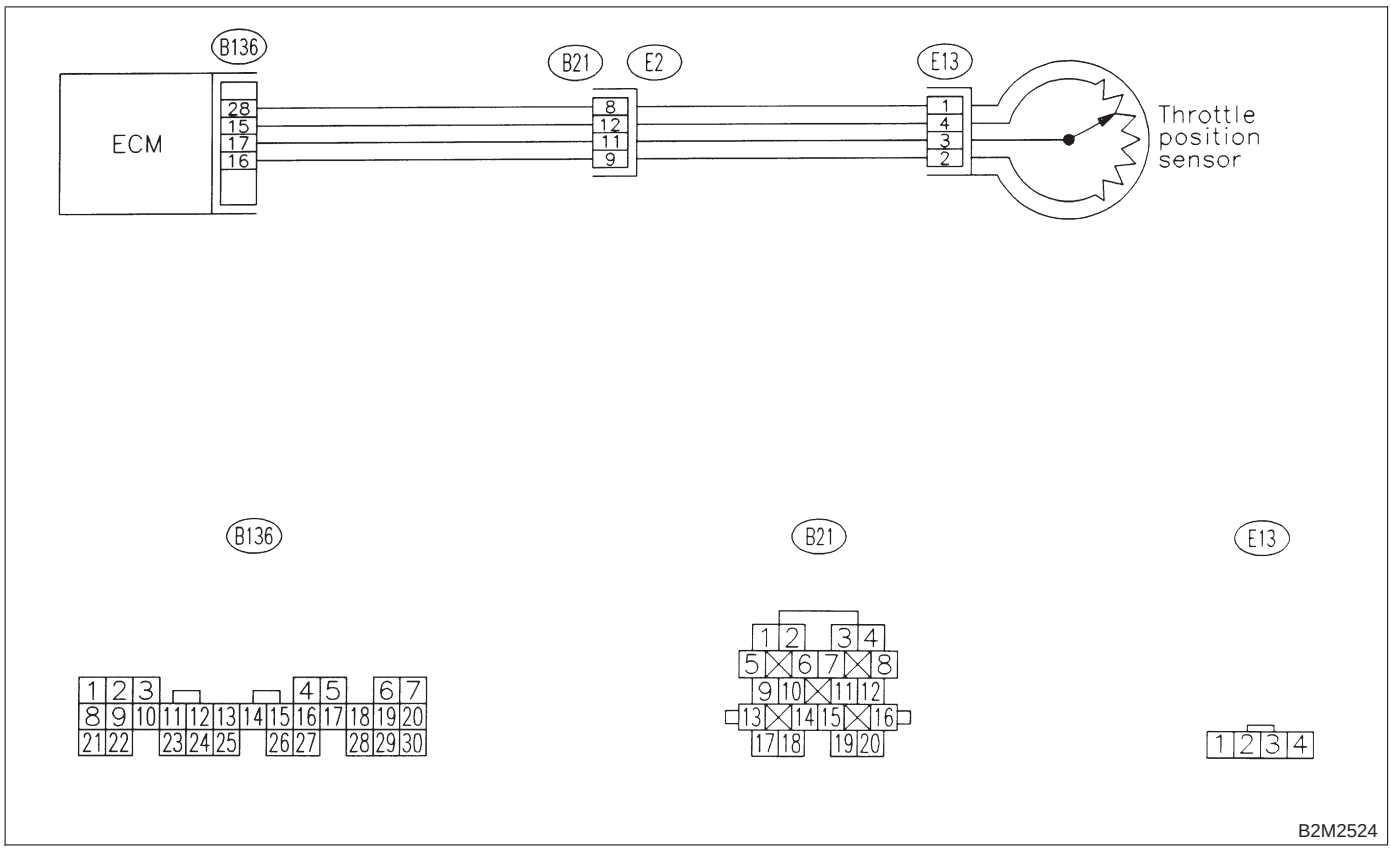
K: DTC P0122 — THROTTLE POSITION SENSOR CIRCUIT LOW INPUT —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition

- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

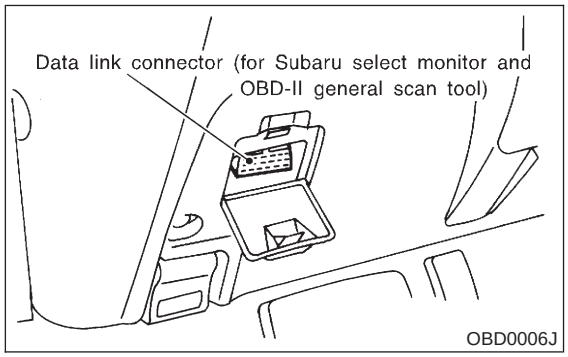
CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14K1 : CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor or OBD-II general scan tool switch to ON.
4) Start engine.
5) Read data of throttle position sensor signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

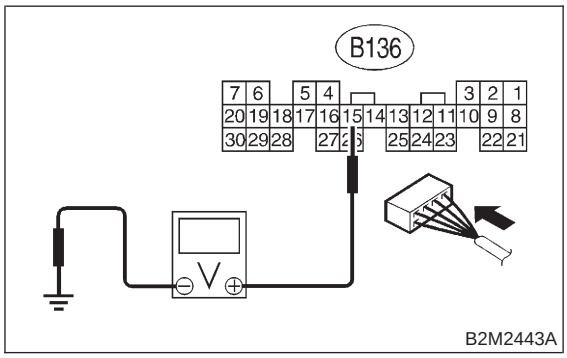
CHECK : ***Is the value less than 0.1 V?***
YES : Go to step **14K2**.
NO : Even if MIL lights up, the circuit has returned to a normal condition at this time. A temporary poor contact of the connector may be the cause.

NOTE:
In this case, repair the following:
● Poor contact in throttle position sensor connector
● Poor contact in ECM connector
● Poor contact in coupling connector (B21)

14K2 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM connector and chassis ground while throttle valve is fully closed.

Connector & terminal
(B136) No. 15 (+) — Chassis ground (−):

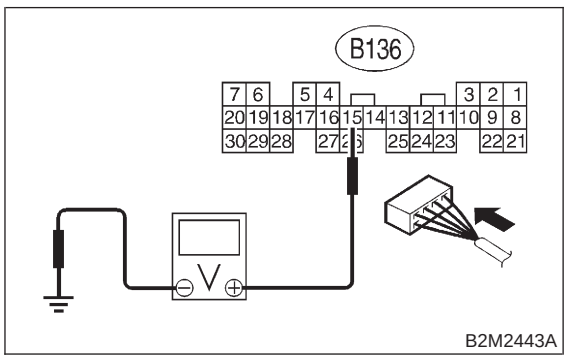


CHECK : ***Is the voltage more than 4.5 V?***
YES : Go to step **14K4**.
NO : Go to step **14K3**.

14K3 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B136) No. 15 (+) — Chassis ground (−):



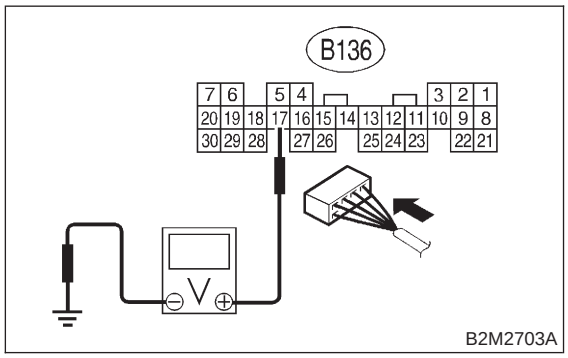
CHECK : ***Does the voltage change more than 4.5 V by shaking harness and connector of ECM while monitoring the value with voltage meter?***
YES : Repair poor contact in ECM connector.
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

14K4 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B136) No. 17 (+) — Chassis ground (−):



CHECK : ***Is the voltage less than 0.1 V?***
YES : Go to step **14K6**.
NO : Go to step **14K5**.

14K5 : CHECK INPUT SIGNAL FOR ECM. (USING SUBARU SELECT MONITOR.)

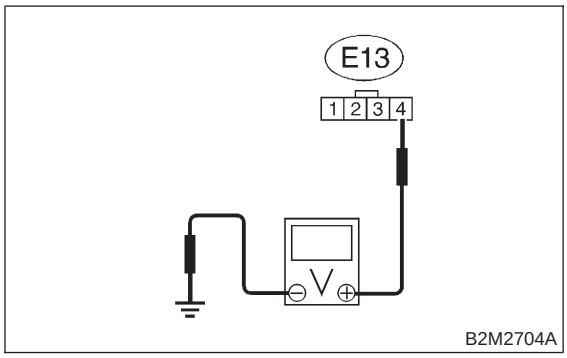
Measure voltage between ECM connector and chassis ground.

CHECK : ***Does the voltage change more than 0.1 V by shaking harness and connector of ECM while monitoring the value with Subaru Select Monitor?***
YES : Repair poor contact in ECM connector.
NO : Go to step **14K6**.

14K6 : CHECK HARNESS BETWEEN ECM AND THROTTLE POSITION SENSOR CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connectors from throttle position sensor.
3) Turn ignition switch to ON.
4) Measure voltage between throttle position sensor connector and engine ground.

Connector & terminal
(E13) No. 4 (+) — Engine ground (−):



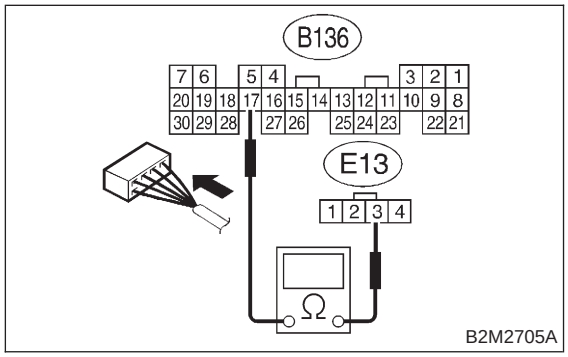
CHECK : ***Is the voltage more than 4.5 V?***
YES : Go to step **14K7**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between throttle position sensor and ECM connector
- Poor contact in throttle position sensor connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B21)

14K7 : CHECK HARNESS BETWEEN ECM AND THROTTLE POSITION SENSOR CONNECTOR.

1) Turn ignition switch to OFF.
2) Measure resistance of harness between ECM connector and throttle position sensor connector.

Connector & terminal
(B136) No. 17 — (E13) No. 3:



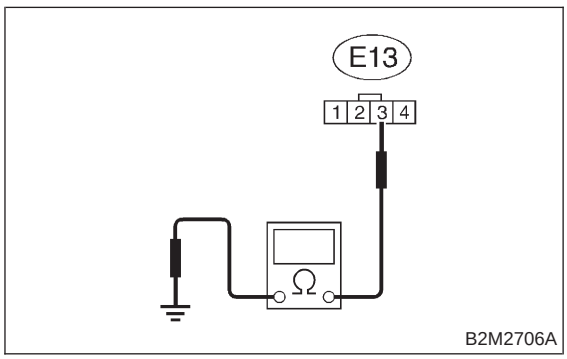
CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14K8**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between throttle position sensor and ECM connector
- Poor contact in ECM connector
- Poor contact in throttle position sensor connector
- Poor contact in coupling connector (B21)

14K8 : CHECK HARNESS BETWEEN ECM AND THROTTLE POSITION SENSOR CONNECTOR.

Measure resistance of harness between throttle position sensor connector and engine ground.

Connector & terminal
(E13) No. 3 — Engine ground:



CHECK : ***Is the resistance less than 10 Ω?***
YES : Repair ground short circuit in harness between throttle position sensor and ECM connector.
NO : Go to step **14K9**.

14K9 : CHECK POOR CONTACT.

Check poor contact in throttle position sensor connector. <Ref. to FOREWORD [T3C1].>

CHECK : ***Is there poor contact in throttle position sensor connector?***
YES : Repair poor contact in throttle position sensor connector.
NO : Replace throttle position sensor. <Ref. to 2-7 [W9A2].>

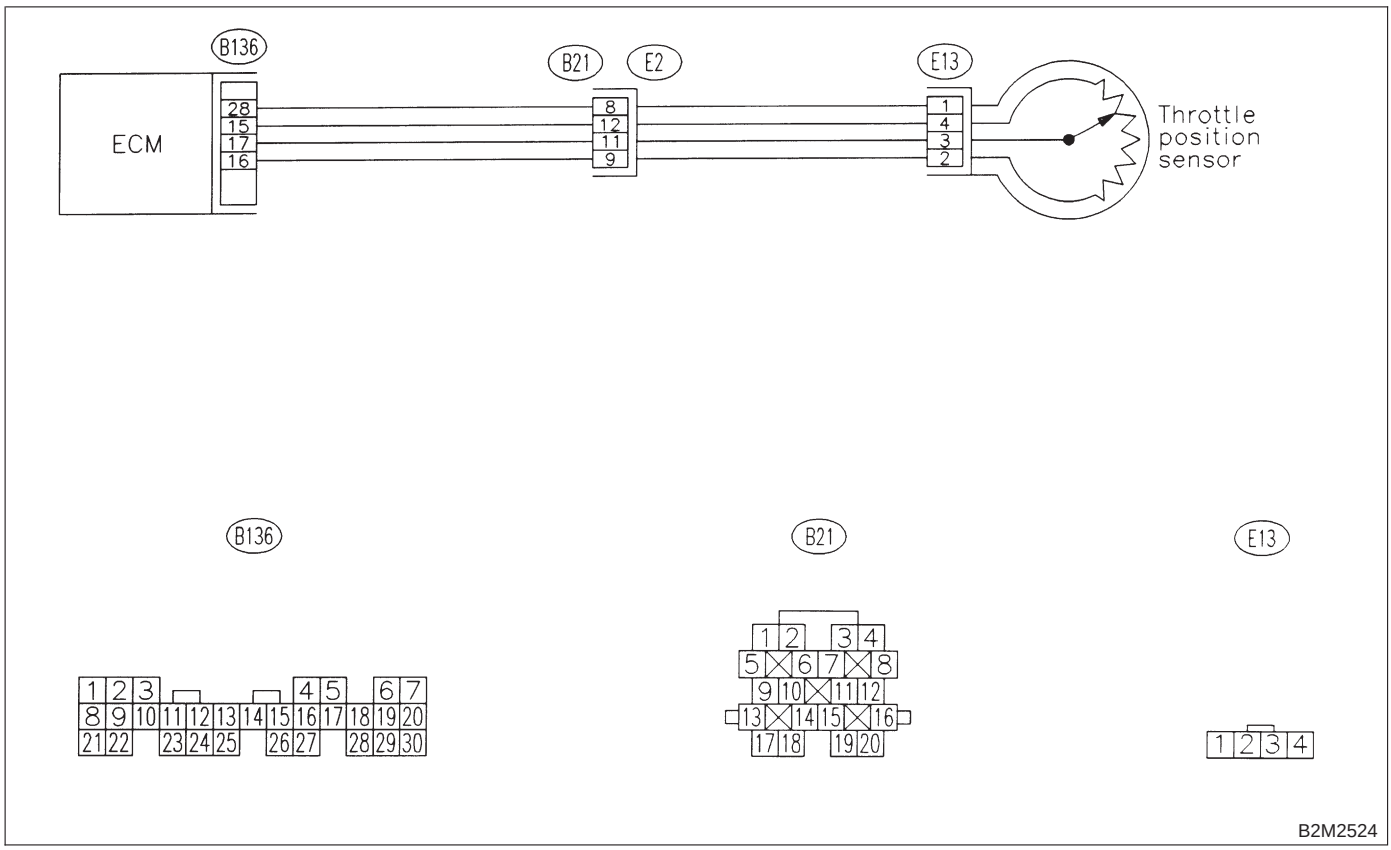
L: DTC P0123 — THROTTLE POSITION SENSOR CIRCUIT HIGH INPUT —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition

- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

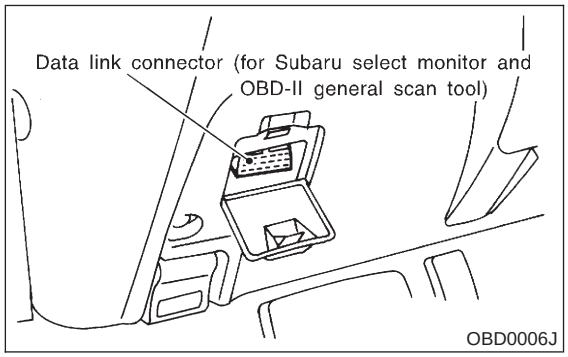
CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14L1 : CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor or OBD-II general scan tool switch to ON.
4) Start engine.
5) Read data of throttle position sensor signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

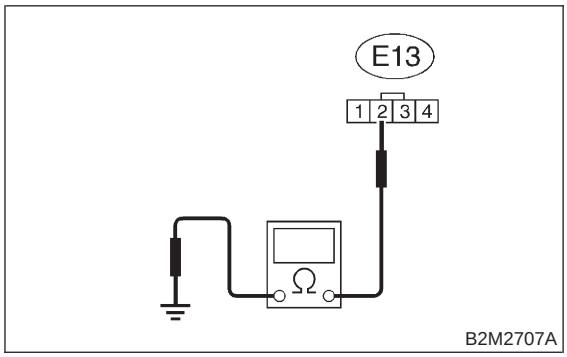
CHECK : ***Is the value more than 4.9 V?***
YES : Go to step **14L2**.
NO : Even if MIL lights up, the circuit has returned to a normal condition at this time. A temporary poor contact of the connector may be the cause.

NOTE:
In this case, repair the following:
● Poor contact in throttle position sensor connector
● Poor contact in ECM connector
● Poor contact in coupling connector (B21)

14L2 : CHECK HARNESS BETWEEN THROTTLE POSITION SENSOR AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from throttle position sensor.
3) Measure resistance of harness between throttle position sensor connector and engine ground.

Connector & terminal
(E13) No. 2 — Engine ground:



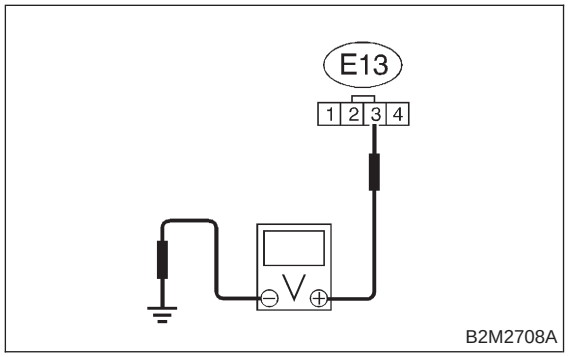
CHECK : ***Is the resistance less than 5 Ω?***
YES : Go to step **14L3**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
● Open circuit in harness between throttle position sensor and ECM connector
● Poor contact in coupling connector (B21)

14L3 : CHECK HARNESS BETWEEN THROTTLE POSITION SENSOR AND ECM CONNECTOR.

1) Turn ignition switch to ON.
2) Measure voltage between throttle position sensor connector and engine ground.

Connector & terminal
(E13) No. 3 (+) — Engine ground (−):



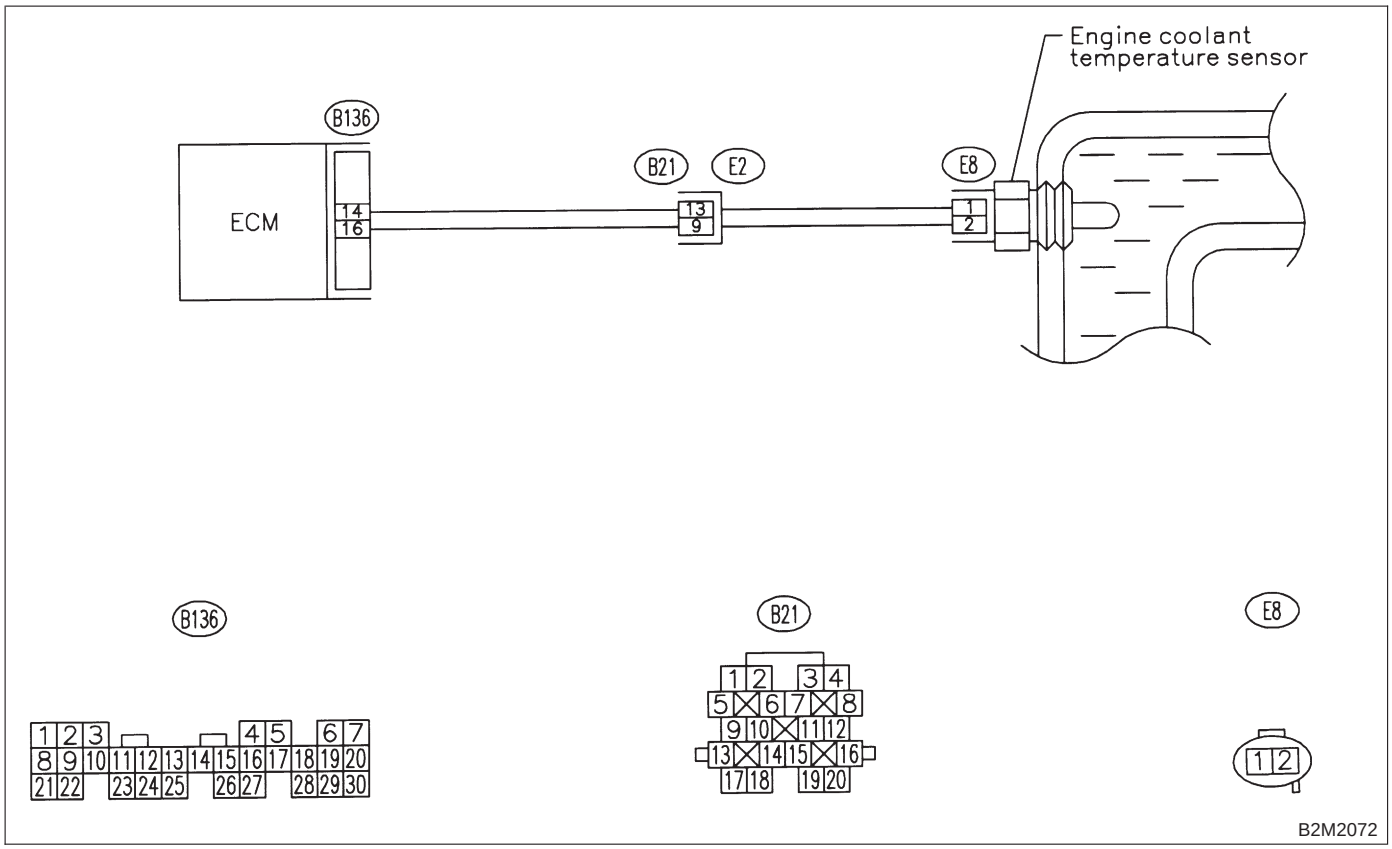
CHECK : ***Is the voltage more than 4.9 V?***
YES : Repair battery short circuit in harness between throttle position sensor and ECM connector. After repair, replace ECM. <Ref. to 2-7 [W15A1].>
NO : Replace throttle position sensor. <Ref. to 2-7 [W9A2].>

M: DTC P0125 — INSUFFICIENT COOLANT TEMPERATURE FOR CLOSED LOOP FUEL CONTROL —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Engine would not return to idling.

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14M1 :	**CHECK ANY OTHER DTC ON DISPLAY.**

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0116 or P0117?***

YES : Inspect DTC P0116 or P0117 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NOTE:
In this case, it is not necessary to inspect DTC P0125.

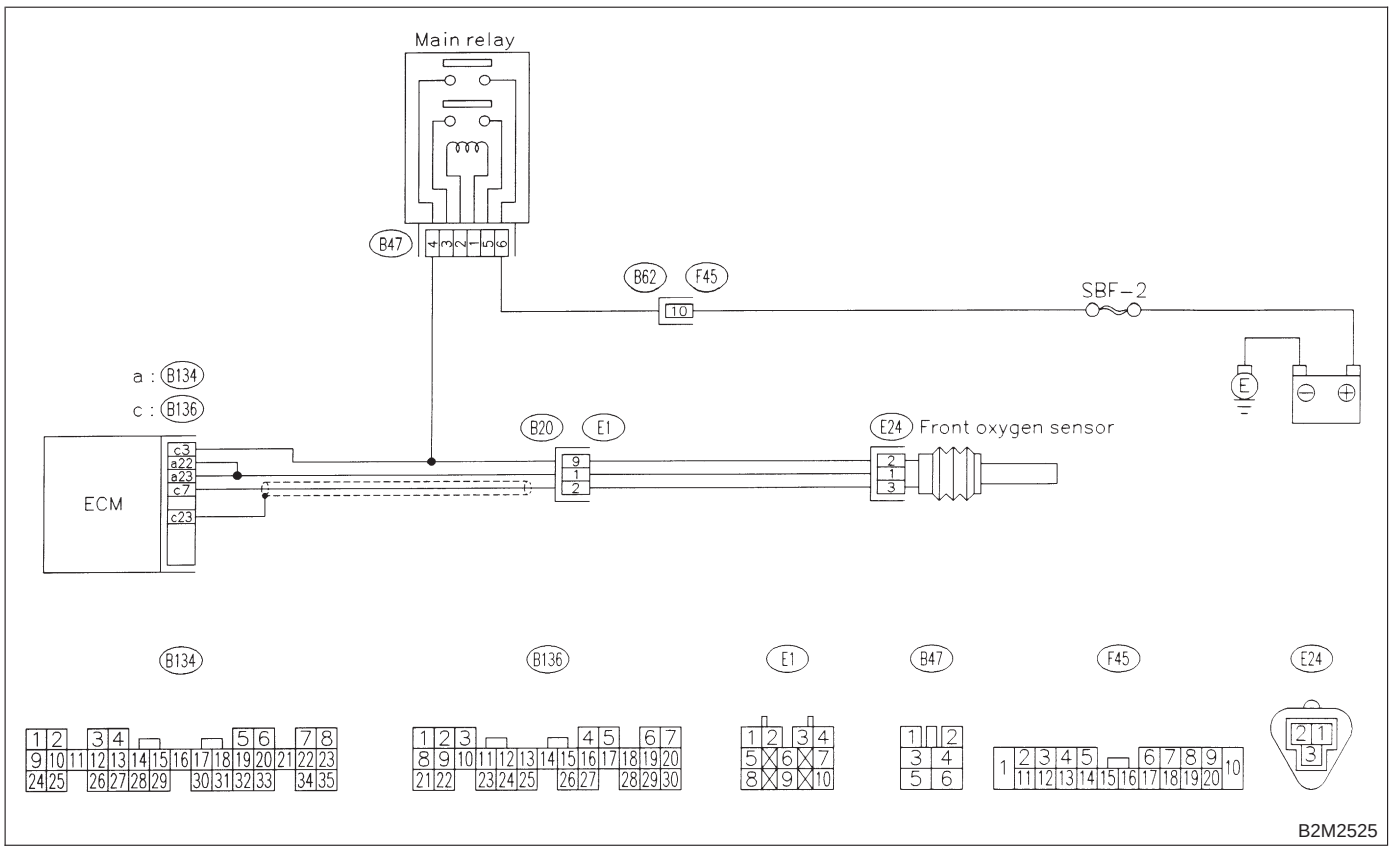
NO : Replace engine coolant temperature sensor. <Ref. to 2-7 [W5A2].>

N: DTC P0130 — FRONT OXYGEN SENSOR CIRCUIT MALFUNCTION —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



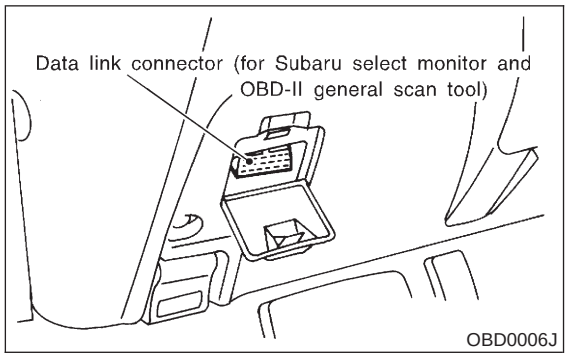
14N1 : CHECK FOR OTHER CAUSES AFFECTING EXHAUST GAS.

NOTE:
- Check for use of improper fuel.
- Check if engine oil or coolant level is extremely low.

CHECK : ***Is CO % more than 2 % after engine warm-up?***
YES : Check fuel system.
NO : Go to step **14N2**.

14N2 : CHECK FRONT OXYGEN SENSOR DATA.

1) Turn ignition switch to OFF.
2) Connect the Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Start engine and Turn the Subaru Select Monitor and the OBD-II general scan tool switch to ON.
4) Warm-up the engine until coolant temperature is above 70°C (160°F) and keep the engine speed at 2,000 rpm to 3,000 rpm for one minute.
5) Read data of front oxygen sensor signal using Subaru Select Monitor or OBD-II general scan tool.

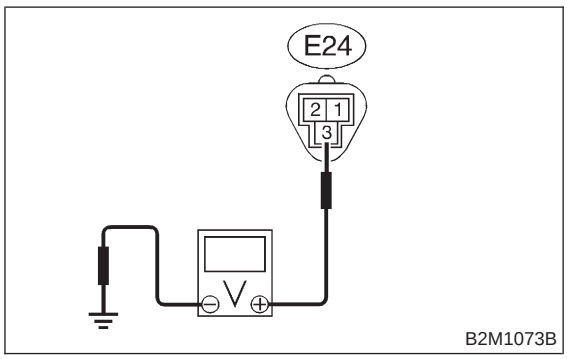
NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ OXYGEN SENSOR MONITORING TEST RESULTS DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C7].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the difference of voltage less than 0.1 V between the value of max. output and min. output?***
YES : Go to step **14N3**.
NO : Replace front oxygen sensor. <Ref. to 2-7 [W7A0].>

14N3 : CHECK HARNESS BETWEEN FRONT OXYGEN SENSOR AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from front oxygen sensor.
3) Turn ignition switch to ON.
4) Measure voltage between front oxygen sensor harness connector and engine ground.

Connector & terminal
(E24) No. 3 (+) — Engine ground (−):



CHECK : ***Is the voltage more than 0.2 V?***
YES : Go to step **14N4**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
● Open circuit in harness between ECM and front oxygen sensor connector
● Poor contact in the ECM connector

14N4 : CHECK POOR CONTACT.

Check poor contact in front oxygen sensor connector. <Ref. to FOREWORD [T3C1].>

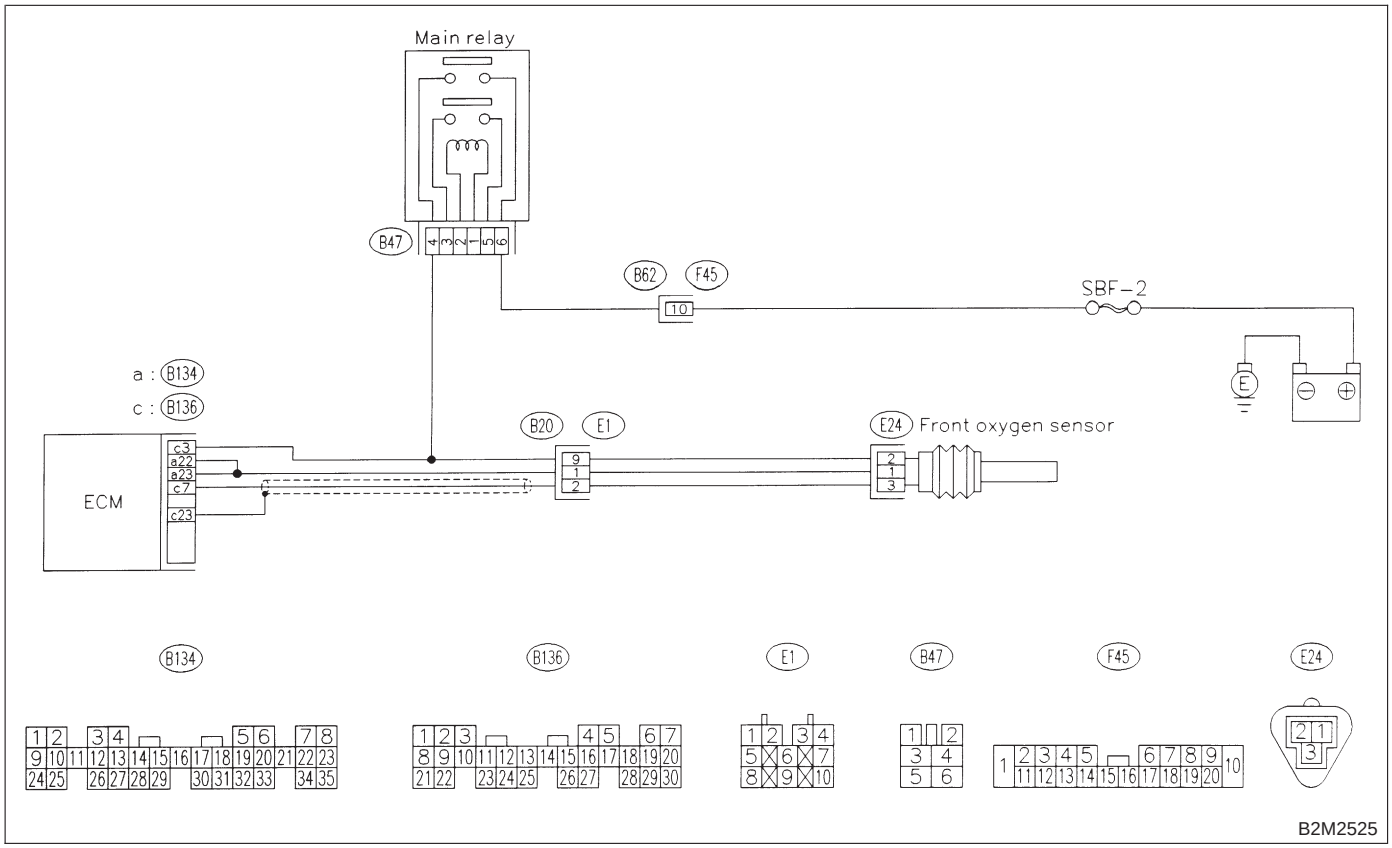
CHECK : ***Is there poor contact in front oxygen sensor connector?***
YES : Repair poor contact in front oxygen sensor connector.
NO : Replace front oxygen sensor. <Ref. to 2-7 [W7A0].>

O: DTC P0133 — FRONT OXYGEN SENSOR CIRCUIT SLOW RESPONSE —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14O1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0130?***

YES : Inspect DTC P0130 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NOTE:
In this case, it is not necessary to inspect DTC P0133.

NO : Go to step **14O2**.

14O2 : CHECK EXHAUST SYSTEM.

NOTE:
Check the following items.
- Loose installation of front portion of exhaust pipe onto cylinder heads
- Loose connection between front exhaust pipe and front catalytic converter
- Damage of exhaust pipe resulting in a hole

CHECK : ***Is there a fault in exhaust system?***

YES : Repair exhaust system.

NO : Replace front oxygen sensor. <Ref. to 2-7 [W7A0].>

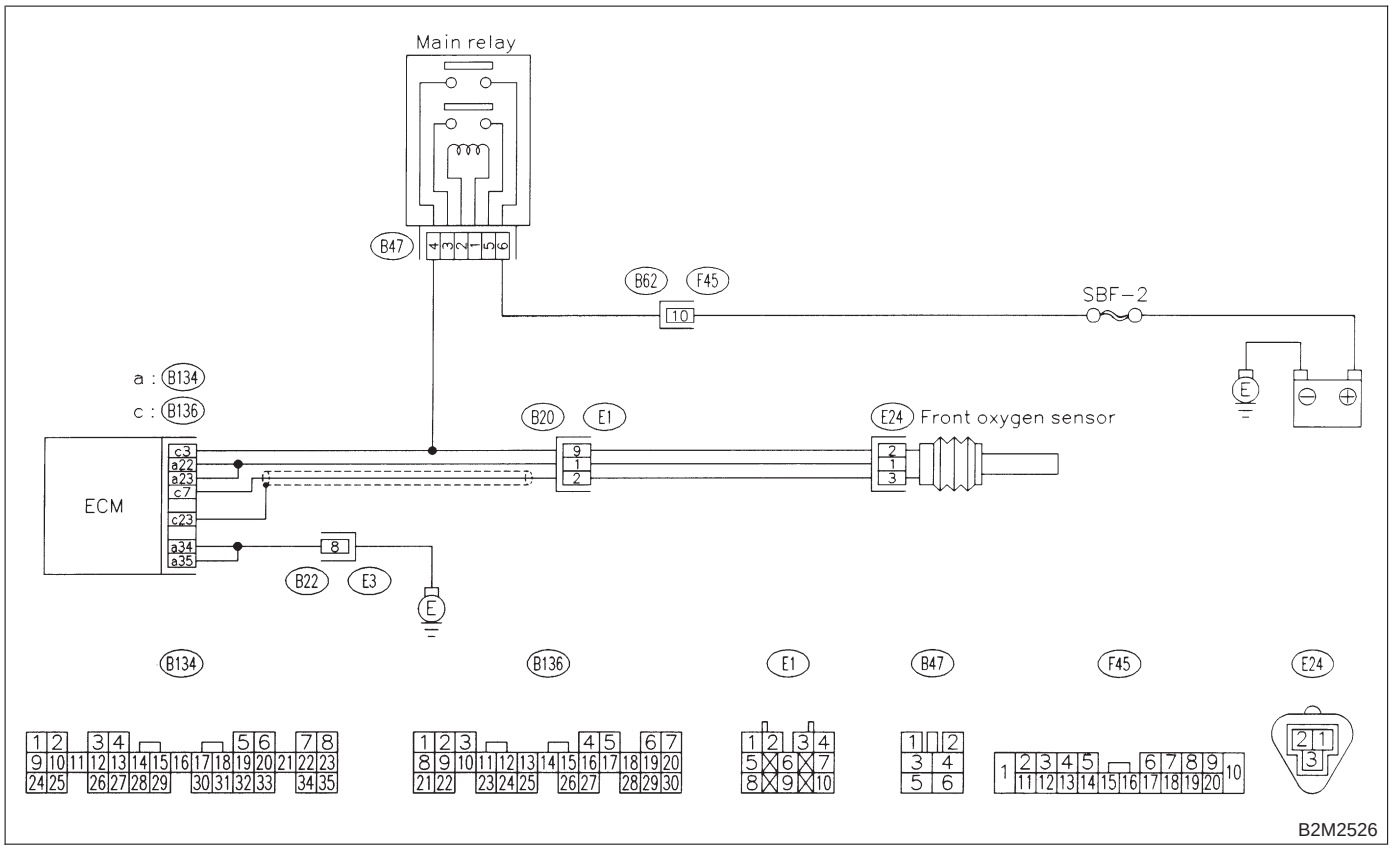
MEMO:

P: DTC P0135 — FRONT OXYGEN SENSOR HEATER CIRCUIT MALFUNCTION —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14P1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0135 and P0141 at the same time?***

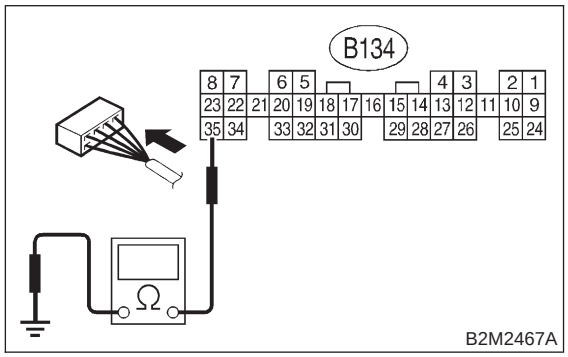
YES : Go to step **14P2**.

NO : Go to step **14P4**.

14P2 : CHECK GROUND CIRCUIT OF ECM.

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

Connector & terminal
(B134) No. 35 — Chassis ground:



CHECK : ***Is the resistance less than 5 Ω?***
YES : Go to step **14P4**.
NO : Go to step **14P3**.

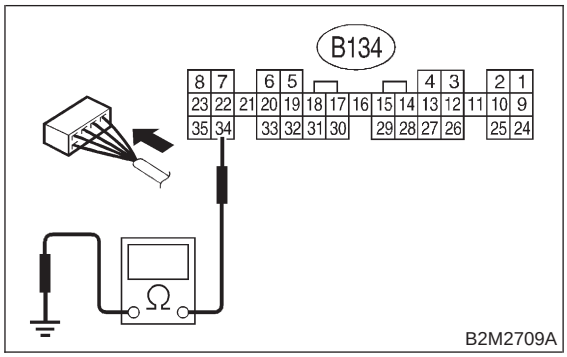
14P3 : CHECK GROUND CIRCUIT OF ECM.

1) Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and engine ground terminal
- Poor contact in ECM connector
- Poor contact in coupling connector (B22)

2) Measure resistance of harness between ECM connector and chassis ground.

Connector & terminal
(B134) No. 34 — Chassis ground:



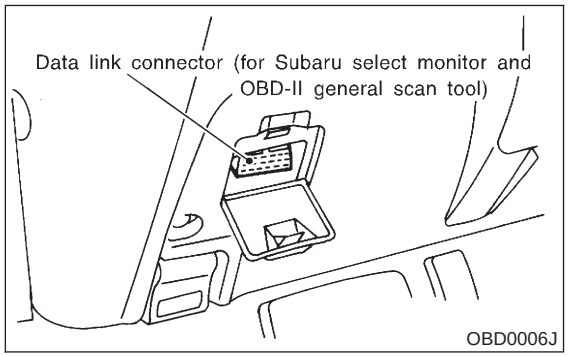
CHECK : ***Is the resistance less than 5 Ω?***
YES : Go to step **14P4**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and engine ground terminal
- Poor contact in ECM connector

Poor contact in coupling connector (B22)

14P4 : CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor or OBD-II general scan tool switch to ON.
4) Start engine
5) Read data of front oxygen sensor heater current using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value more than 0.2 A?***
YES : Repair connector.

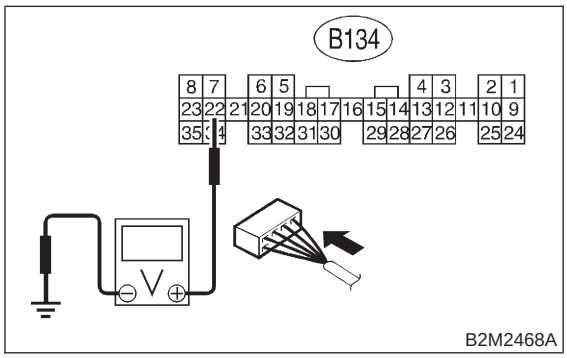
NOTE:
In this case, repair the following:
● Poor contact in front oxygen sensor connector
● Poor contact in ECM connector

NO : Go to step **14P5**.

14P5 : CHECK OUTPUT SIGNAL FROM ECM.

1) Start and idle the engine.
2) Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B134) No. 22 (+) — Chassis ground (−):

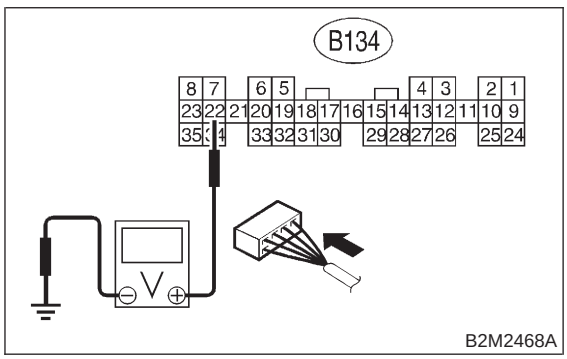


CHECK : ***Is the voltage less than 1.0 V?***
YES : Go to step **14P11**.
NO : Go to step **14P6**.

14P6 : CHECK OUTPUT SIGNAL FROM ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B134) No. 22 (+) — Chassis ground (−):

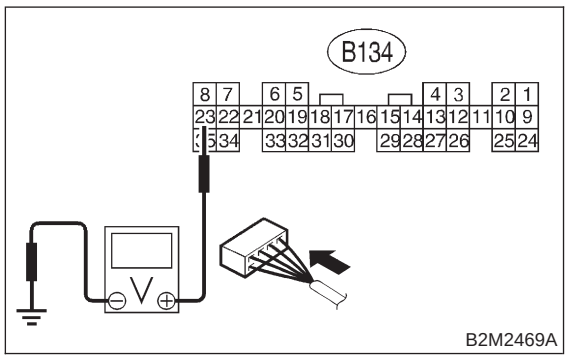


CHECK : ***Does the voltage change less than 1.0 V by shaking harness and connector of ECM while monitoring the value with voltage meter?***
YES : Repair poor contact in ECM connector.
NO : Go to step **14P7**.

14P7 : CHECK OUTPUT SIGNAL FROM ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B134) No. 23 (+) — Chassis ground (−):

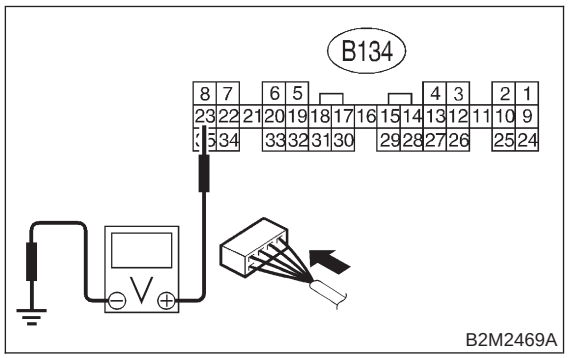


CHECK : ***Is the voltage less than 1.0 V?***
YES : Go to step **14P11**.
NO : Go to step **14P8**.

14P8 : CHECK OUTPUT SIGNAL FROM ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B134) No. 23 (+) — Chassis ground (−):

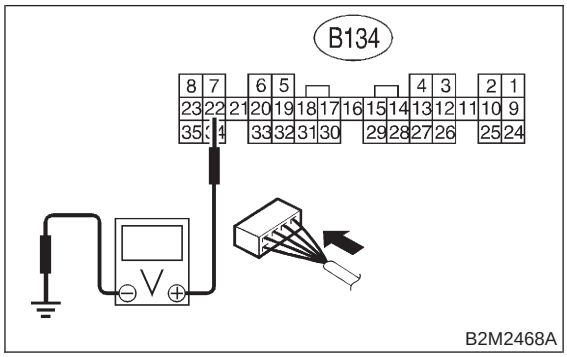


CHECK : ***Does the voltage change less than 1.0 V by shaking harness and connector of ECM while monitoring the value with voltage meter?***
YES : Repair poor contact in ECM connector.
NO : Go to step **14P9**.

14P9 : CHECK OUTPUT SIGNAL FROM ECM.

1) Disconnect connector from front oxygen sensor.
2) Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B134) No. 22 (+) — Chassis ground (−):

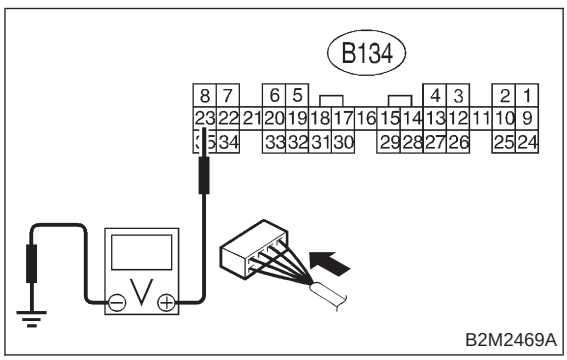


CHECK : ***Is the voltage less than 1.0 V?***
YES : Go to step **14P10**.
NO : Repair battery short circuit in harness between ECM and front oxygen sensor connector. After repair, replace ECM. <Ref. to 2-7 [W15A1].>

14P10 : CHECK OUTPUT SIGNAL FROM ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B134) No. 23 (+) — Chassis ground (−):

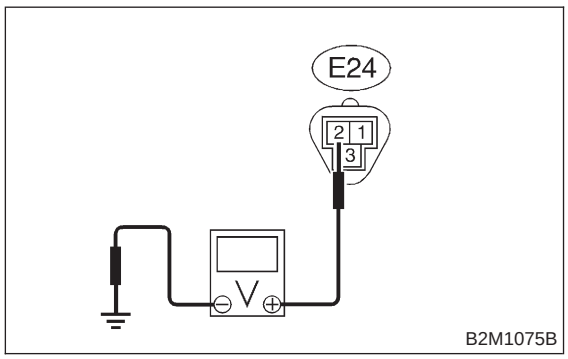


CHECK : ***Is the voltage less than 1.0 V?***
YES : Replace ECM. <Ref. to 2-7 [W15A1].>
NO : Repair battery short circuit in harness between ECM and front oxygen sensor connector. After repair, replace ECM. <Ref. to 2-7 [W15A1].>

14P11 : CHECK POWER SUPPLY TO FRONT OXYGEN SENSOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from front oxygen sensor.
3) Turn ignition switch to ON.
4) Measure voltage between front oxygen sensor connector and engine ground.

Connector & terminal
(E24) No. 2 (+) — Engine ground (−):



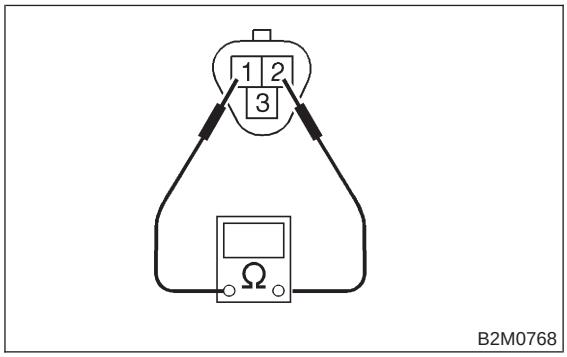
CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **14P12**.
NO : Repair power supply line.

NOTE:
In this case, repair the following:
- Open circuit in harness between main relay and front oxygen sensor connector
- Poor contact in front oxygen sensor connector
- Poor contact in main relay connector

14P12 : CHECK FRONT OXYGEN SENSOR.

1) Turn ignition switch to OFF.
2) Measure resistance between front oxygen sensor connector terminals.

Terminals
No. 1 — No. 2:



CHECK : ***Is the resistance less than 30 Ω?***
YES : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between front oxygen sensor and ECM connector
- Poor contact in front oxygen sensor connector
- Poor contact in ECM connector

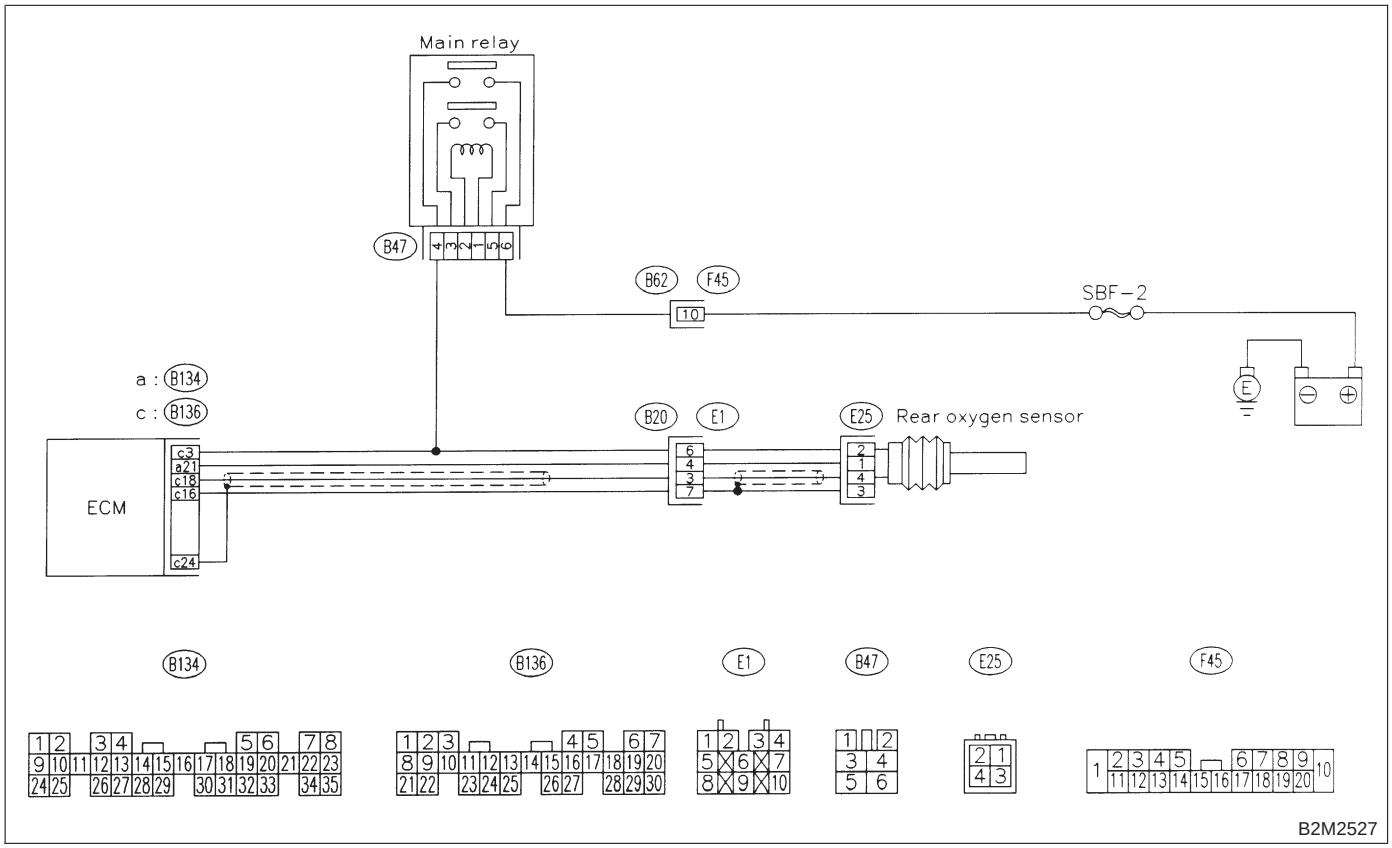
NO : Replace front oxygen sensor. <Ref. to 2-7 [W7A0].>

Q: DTC P0136 — REAR OXYGEN SENSOR CIRCUIT MALFUNCTION —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14Q1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0130?***

YES : Go to step **14Q2**.

NO : Go to step **14Q3**.

14Q2 : CHECK FAILURE CAUSE OF P0130.

Inspect DTC P0130 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

CHECK : ***Is the failure cause of P0130 in the fuel system?***

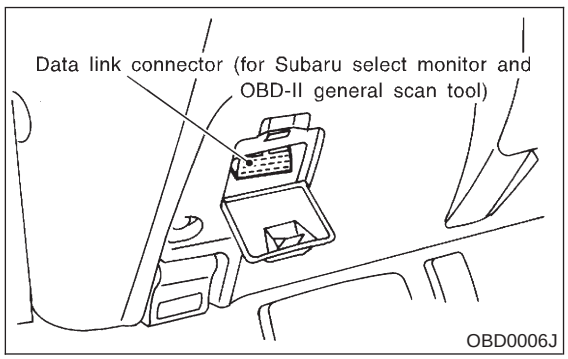
YES : Check fuel system.

NOTE:
In this case, it is not necessary to inspect DTC P0136.

NO : Go to step **14Q3**.

14Q3 : CHECK REAR OXYGEN SENSOR DATA.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or OBD-II general scan tool to data link connector.



3) Start the engine, and turn Subaru Select Monitor or OBD-II general scan tool switch to ON.
4) Warm-up the engine until engine coolant temperature is above 70°C (160°F), and keep the engine speed at 2,000 rpm to 3,000 rpm for two minutes.
5) Read data of rear oxygen sensor signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Does the value fluctuate?***
YES : Go to step **14Q7**.
NO : Go to step **14Q4**.

14Q4 : CHECK REAR OXYGEN SENSOR DATA.

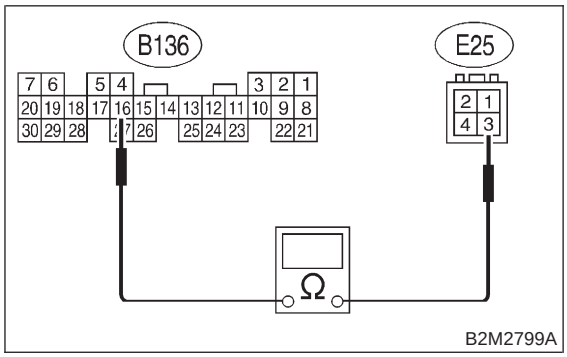
Read data of rear oxygen sensor signal using Subaru Select Monitor or OBD-II General Scan Tool.

CHECK : ***Is the value fixed between 0.2 and 0.4 V?***
YES : Go to step **14Q5**.
NO : Replace rear oxygen sensor. <Ref. to 2-7 [W8A1].>

14Q5 : CHECK HARNESS BETWEEN ECM AND REAR OXYGEN SENSOR CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connectors from ECM and rear oxygen sensor.
3) Measure resistance of harness between ECM and rear oxygen sensor connector.

Connector & terminal
(B136) No. 16 — (E25) No. 3:

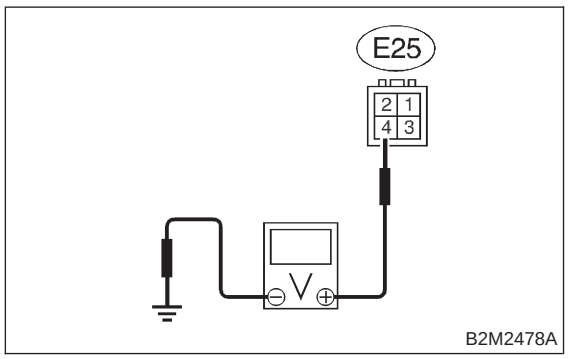


CHECK : ***Is the resistance more than 3 Ω?***
YES : Repair open circuit in harness between ECM and rear oxygen sensor connector.
NO : Go to step **14Q6**.

14Q6 : CHECK HARNESS BETWEEN REAR OXYGEN SENSOR AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from rear oxygen sensor.
3) Turn ignition switch to ON.
4) Measure voltage between rear oxygen sensor harness connector and engine ground or chassis ground.

Connector & terminal
(E25) No. 4 (+) — Engine ground (−):



CHECK : ***Is the voltage more than 0.2 V?***
YES : Replace rear oxygen sensor. <Ref. to 2-7 [W8A1].>
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between rear oxygen sensor and ECM connector
- Poor contact in rear oxygen sensor connector
- Poor contact in ECM connector

14Q7 : CHECK EXHAUST SYSTEM.

Check exhaust system parts.

NOTE:
Check the following items.
- Loose installation of portions
- Damage (crack, hole etc.) of parts
- Looseness and ill fitting of parts between front oxygen sensor and rear oxygen sensor

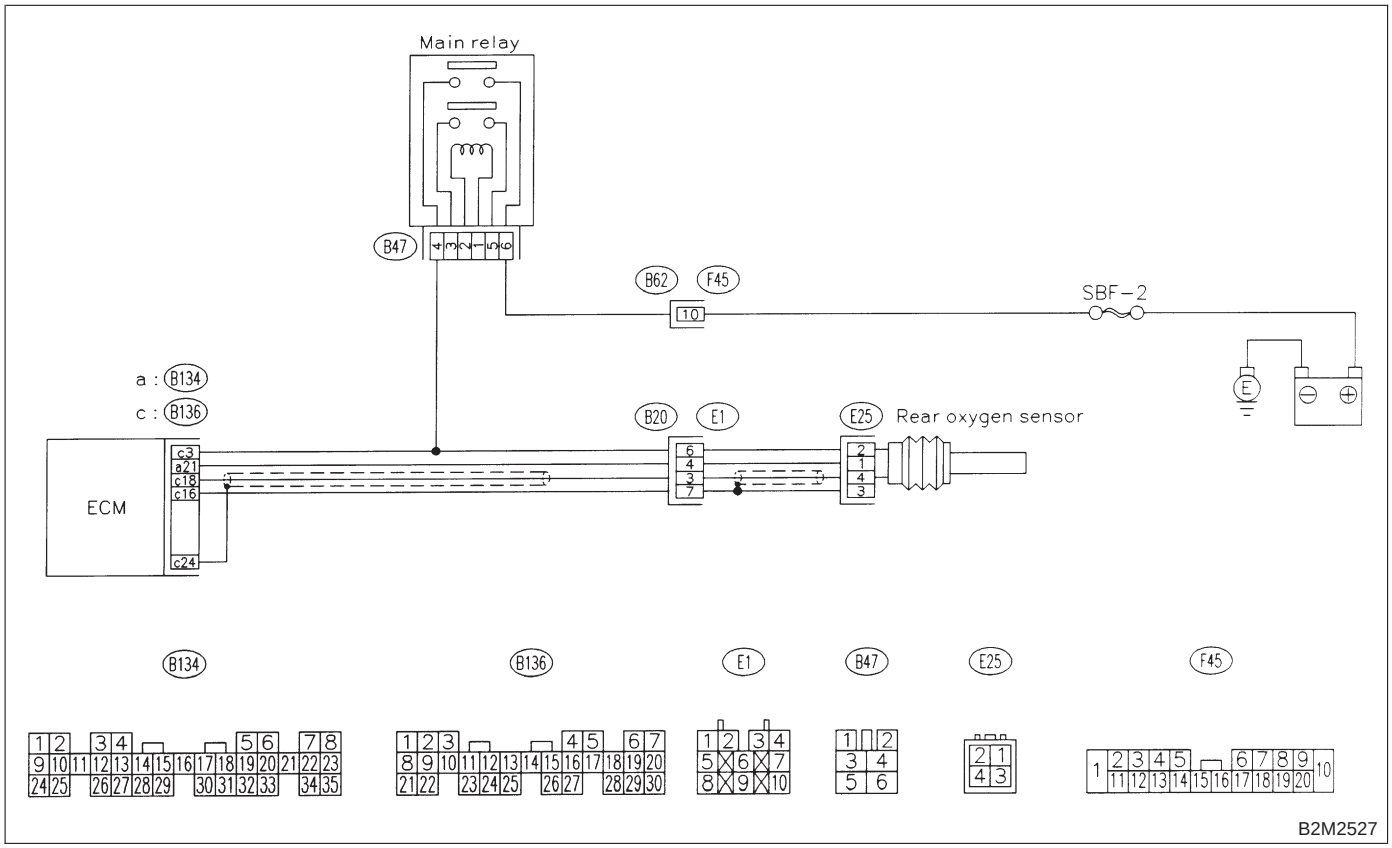
CHECK : ***Is there a fault in exhaust system?***
YES : Repair or replace faulty parts.
NO : Replace rear oxygen sensor. <Ref. to 2-7 [W8A1].>

R: DTC P0139 — REAR OXYGEN SENSOR CIRCUIT SLOW RESPONSE —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14R1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0136?***

YES : Inspect DTC P0136 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NOTE:
In this case, it is not necessary to inspect DTC P0139.

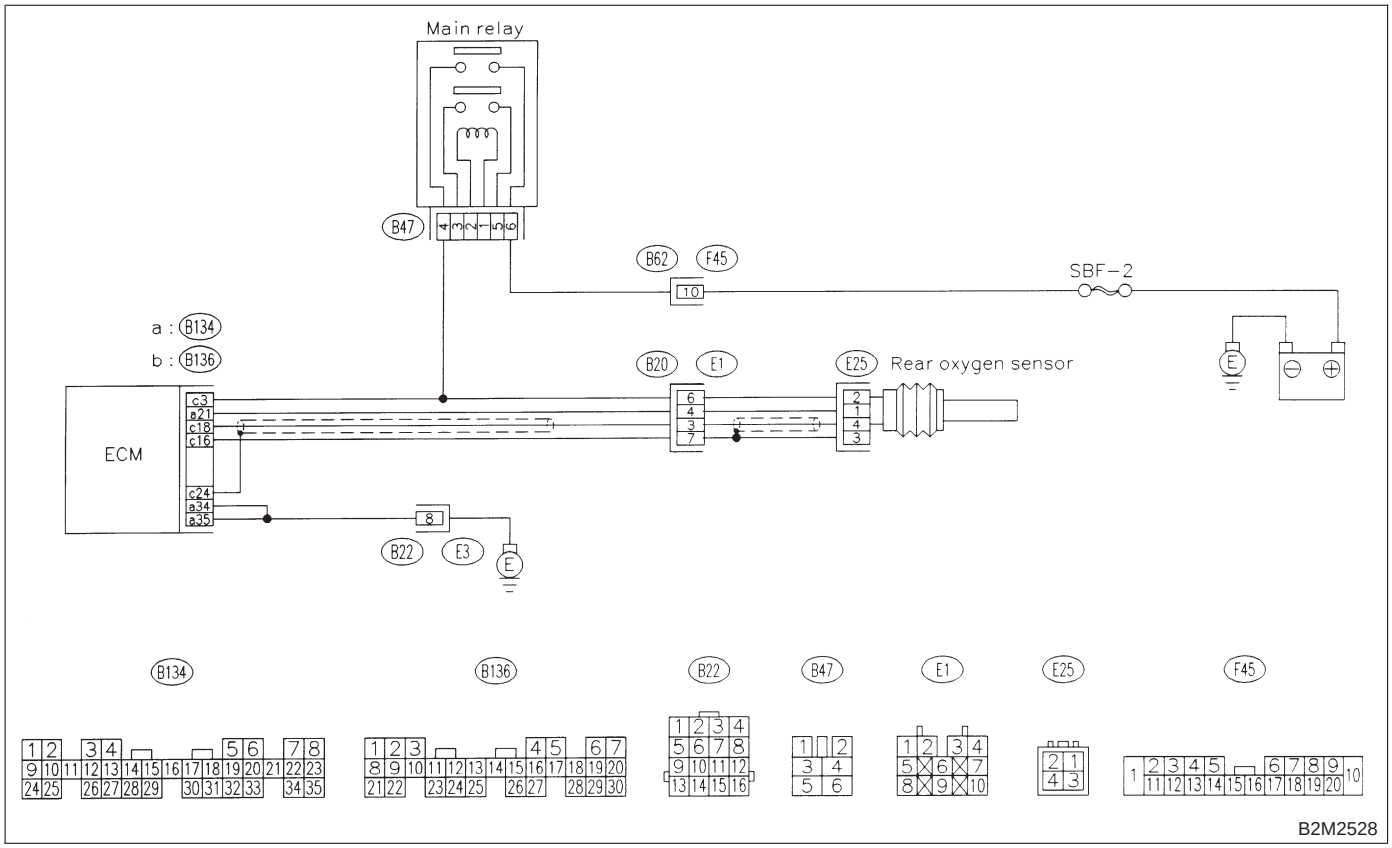
NO : Replace rear oxygen sensor. <Ref. to 2-7 [W8A1].>

S: DTC P0141 — REAR OXYGEN SENSOR HEATER CIRCUIT MALFUNCTION —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14S1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0141 and P0135 at the same time?***

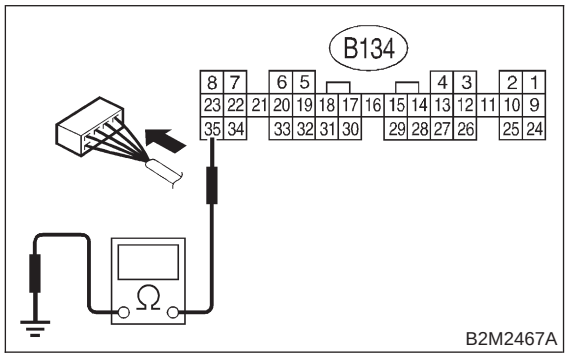
YES : Go to step **14S2**.

NO : Go to step **14S3**.

14S2 : CHECK GROUND CIRCUIT OF ECM.

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

Connector & terminal
(B134) No. 35 — Chassis ground:



CHECK : ***Is the resistance less than 5 Ω?***
YES : Go to step **14S4**.
NO : Go to step **14S3**.

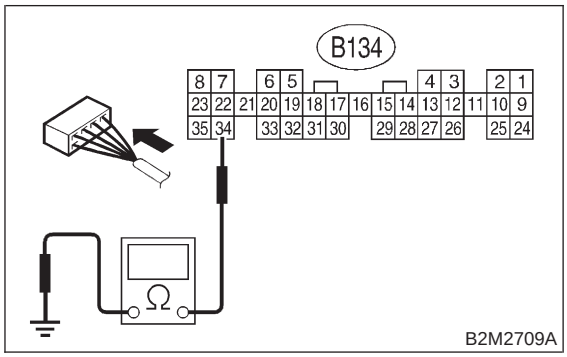
14S3 : CHECK GROUND CIRCUIT OF ECM.

1) Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and engine ground terminal
- Poor contact in ECM connector
- Poor contact in coupling connector (B22)

2) Measure resistance of harness between ECM connector and chassis ground.

Connector & terminal
(B134) No. 34 — Chassis ground:

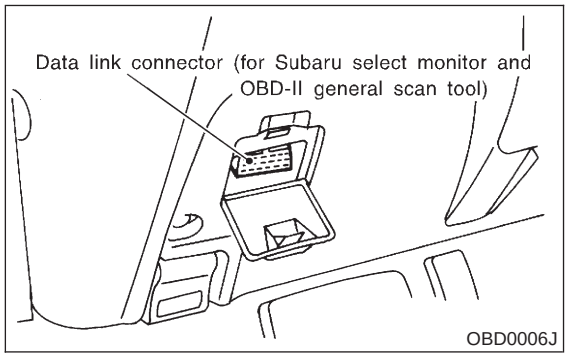


CHECK : ***Is the resistance less than 5 Ω?***
YES : Go to step **14S4**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and engine ground terminal
- Poor contact in ECM connector
- Poor contact in coupling connector (B22)

14S4 : CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor or OBD-II general scan tool switch to ON.
4) Start engine.
5) Read data of rear oxygen sensor heater current using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value more than 0.2 A?***
YES : Repair connector.

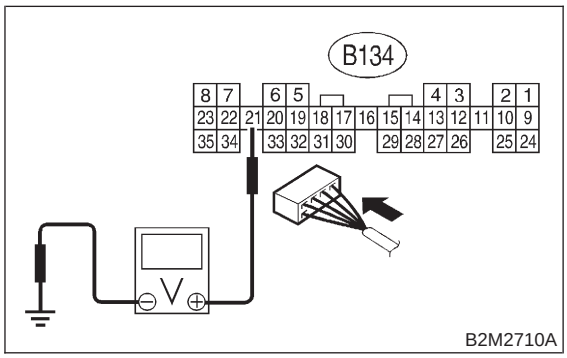
NOTE:
In this case, repair the following:
● Poor contact in rear oxygen sensor connector
● Poor contact in rear oxygen sensor connecting harness connector
● Poor contact in ECM connector

NO : Go to step **14S5**.

14S5 : CHECK OUTPUT SIGNAL FROM ECM.

1) Start and idle the engine.
2) Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B134) No. 21 (+) — Chassis ground (−):

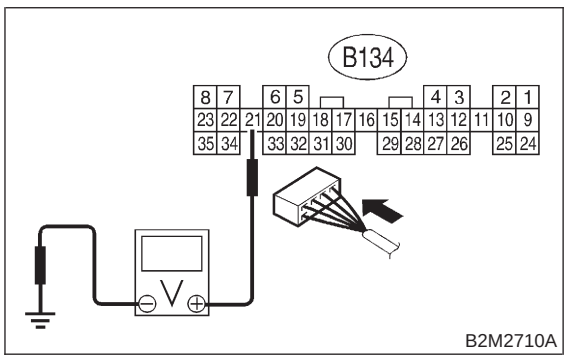


CHECK : ***Is the voltage less than 1.0 V?***
YES : Go to step **14S8**.
NO : Go to step **14S6**.

14S6 : CHECK OUTPUT SIGNAL FROM ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B134) No. 21 (+) — Chassis ground (−):

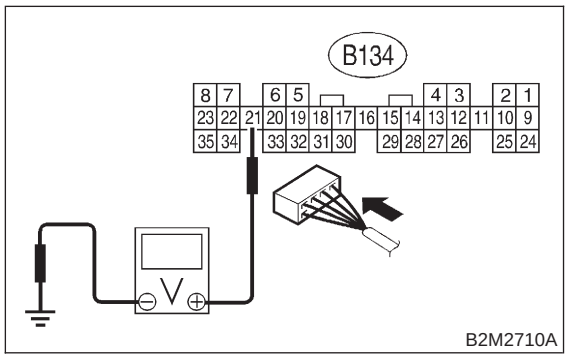


CHECK : ***Does the voltage change less than 1.0 V by shaking harness and connector of ECM while monitoring the value with voltage meter?***
YES : Repair poor contact in ECM connector.
NO : Go to step **14S7**.

14S7 : CHECK OUTPUT SIGNAL FROM ECM.

1) Disconnect connector from rear oxygen sensor.
2) Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B134) No. 21 (+) — Chassis ground (−):

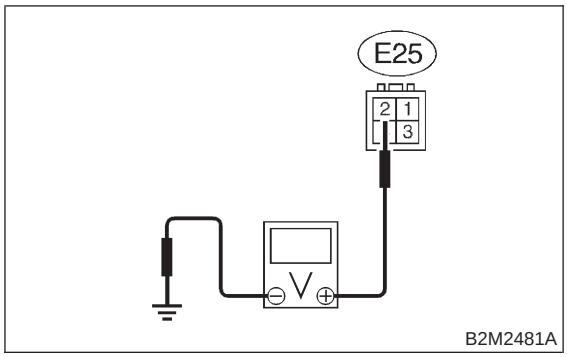


CHECK : ***Is the voltage less than 1.0 V?***
YES : Replace ECM. <Ref. to 2-7 [W15A1].>
NO : Repair battery short circuit in harness between ECM and rear oxygen sensor connector. After repair, replace ECM. <Ref. to 2-7 [W15A1].>

14S8 : CHECK POWER SUPPLY TO REAR OXYGEN SENSOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from rear oxygen sensor.
3) Turn ignition switch to ON.
4) Measure voltage between rear oxygen sensor connector and engine ground or chassis ground.

Connector & terminal
(E25) No. 2 (+) — Chassis ground (−):



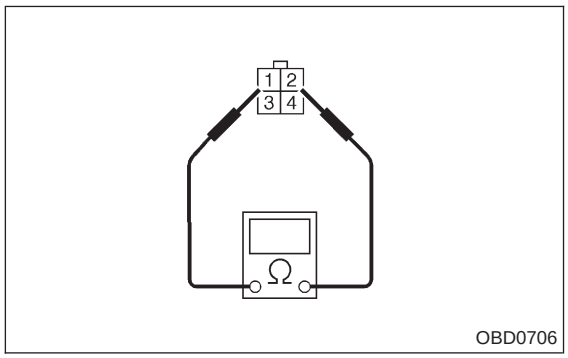
CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **14S9**.
NO : Repair power supply line.

NOTE:
In this case, repair the following:
- Open circuit in harness between main relay and rear oxygen sensor connector
- Poor contact in rear oxygen sensor connector
- Poor contact in coupling connector (E1)

14S9 : CHECK REAR OXYGEN SENSOR.

1) Turn ignition switch to OFF.
2) Measure resistance between rear oxygen sensor connector terminals.

Terminals
No. 1 — No. 2:



CHECK : ***Is the resistance less than 30 Ω?***
YES : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between rear oxygen sensor and ECM connector
- Poor contact in rear oxygen sensor connector
- Poor contact in ECM connector
- Poor contact in coupling connector (E1)

NO : Replace rear oxygen sensor. <Ref. to 2-7 [W8A1].>

MEMO:

T: DTC P0170 — FUEL TRIM MALFUNCTION —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

14T1 : CHECK EXHAUST SYSTEM.

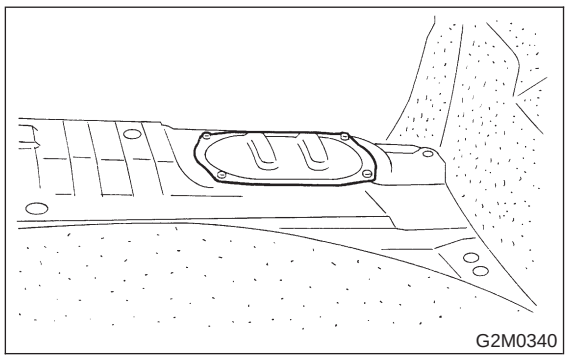
CHECK : ***Are there holes or loose bolts on exhaust system?***
YES : Repair exhaust system.
NO : Go to step **14T2**.

14T2 : CHECK AIR INTAKE SYSTEM.

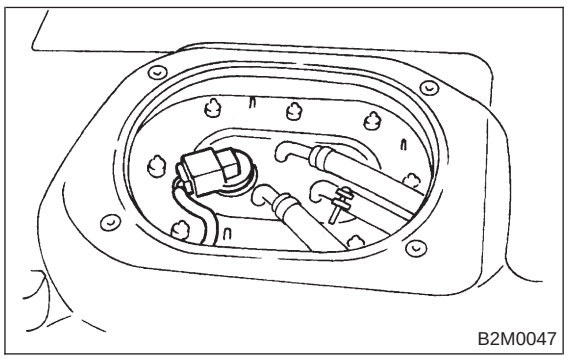
CHECK : ***Are there holes, loose bolts or disconnection of hose on air intake system?***
YES : Repair air intake system.
NO : Go to step **14T3**.

14T3 : CHECK FUEL PRESSURE.

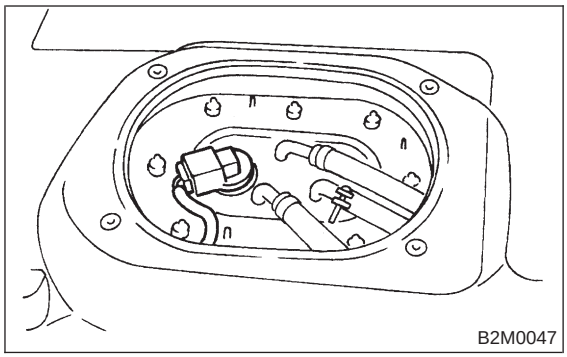
1) Release fuel pressure.
(1) Remove fuel pump access hole lid located on the right rear of trunk compartment floor (Sedan) or luggage compartment floor (Wagon).


G2M0340

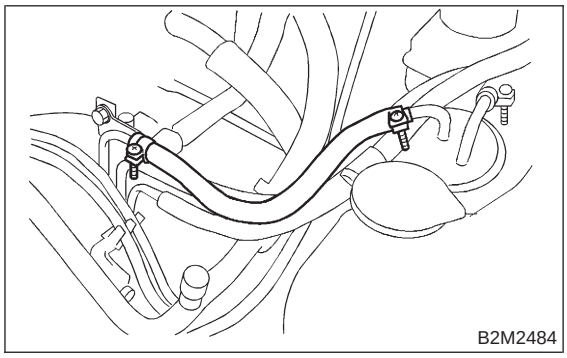
(2) Disconnect connector from fuel tank.


B2M0047

(3) Start the engine, and run it until it stalls.
(4) After stopping the engine, crank the engine for 5 to 7 seconds to reduce fuel pressure.
(5) Turn ignition switch to OFF.
(6) Remove fuel filler cap.
2) Connect connector to fuel tank.


B2M0047

3) Disconnect fuel delivery hose from fuel filter, and connect fuel pressure gauge.

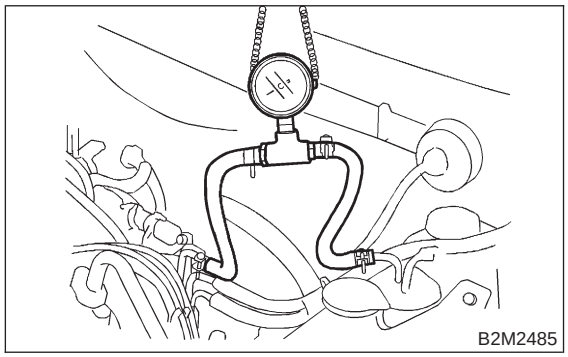

B2M2484

4) Install fuel filler cap.

5) Start the engine and idle while gear position is neutral.
6) Measure fuel pressure while disconnecting pressure regulator vacuum hose from intake manifold.

WARNING:
Before removing fuel pressure gauge, release fuel pressure.

NOTE:
If fuel pressure does not increase, squeeze fuel return hose 2 to 3 times, then measure fuel pressure again.



CHECK : ***Is fuel pressure between 226 and 275 kPa (2.3 — 2.8 kg/cm^2, 33 — 40 psi)?***
YES : Go to step **14T4**.
NO : Repair the following items.

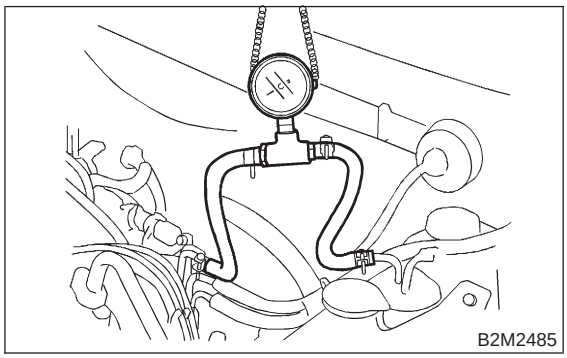
Fuel pressure too high	● Clogged fuel return line or bent hose
Fuel pressure too low	● Improper fuel pump discharge ● Clogged fuel supply line

14T4 : CHECK FUEL PRESSURE.

After connecting pressure regulator vacuum hose, measure fuel pressure.

WARNING:
Before removing fuel pressure gauge, release fuel pressure.

NOTE:
● If fuel pressure does not increase, squeeze fuel return hose 2 to 3 times, then measure fuel pressure again.
● If out of specification as measured at this step, check or replace pressure regulator and pressure regulator vacuum hose.

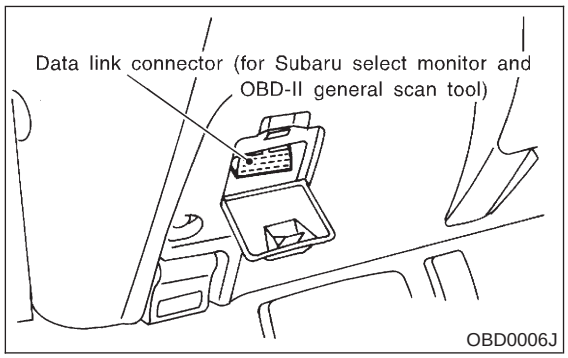


CHECK : ***Is fuel pressure between 157 and 206 kPa (1.6 — 2.1 kg/cm^2, 23 — 30 psi)?***
YES : Go to step **14T5**.
NO : Repair the following items.

Fuel pressure too high	● Faulty pressure regulator ● Clogged fuel return line or bent hose
Fuel pressure too low	● Faulty pressure regulator ● Improper fuel pump discharge ● Clogged fuel supply line

14T5 : CHECK ENGINE COOLANT TEMPERATURE SENSOR. < REF. TO 2-7 [T14H0].> OR <REF. TO 2-7 [T14I0].>

1) Turn ignition switch to OFF.
2) Connect the Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Start the engine and warm-up completely.
4) Read data of engine coolant temperature sensor signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the “READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE”. <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is temperature greater than 60°C (140°F)?***
YES : Go to step **14T6**.
NO : Replace engine coolant temperature sensor. <Ref. to 2-7 [W5A2].>

14T6 : CHECK MASS AIR FLOW SENSOR.

1) Start the engine and warm-up engine until coolant temperature is greater than 60°C (140°F).
2) Place the selector lever in “N” or “P” position.
3) Turn A/C switch to OFF.
4) Turn all accessory switches to OFF.
5) Read data of mass flow sensor signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the “READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE”. <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

Specification:

Engine speed	Specified value
Idling	2.2 — 4.2 (g/sec)
2,500 rpm	8.6 — 14.5 (g/sec)

CHECK : ***Is the voltage within the specifications?***
YES : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

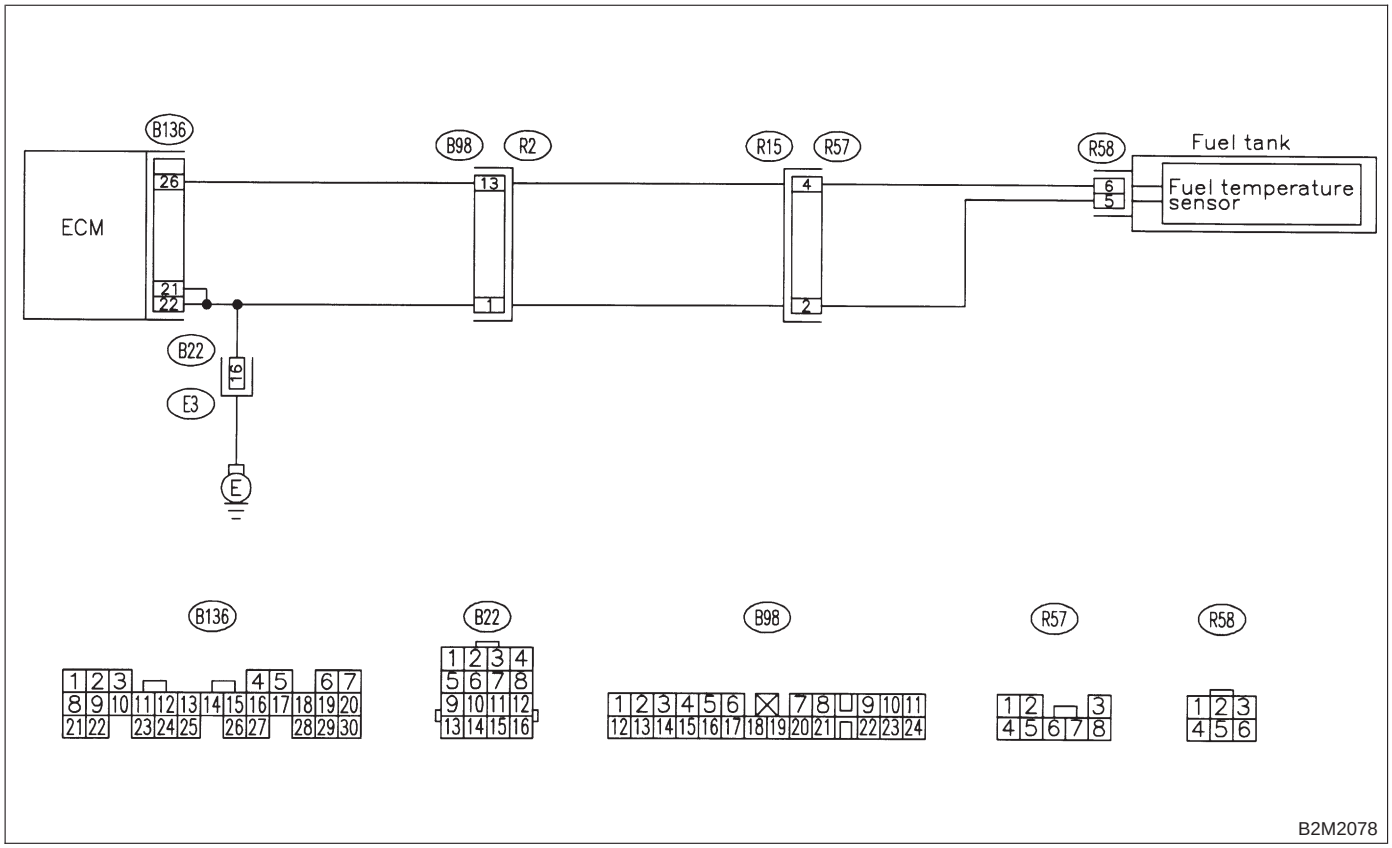
NO : Replace mass air flow sensor. <Ref. to 2-7 [W2A1].>

U: DTC P0181 — FUEL TEMPERATURE SENSOR A CIRCUIT RANGE/PERFORMANCE PROBLEM —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14U1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0182 or P0183?***

YES : Inspect DTC P0182 or P0183 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

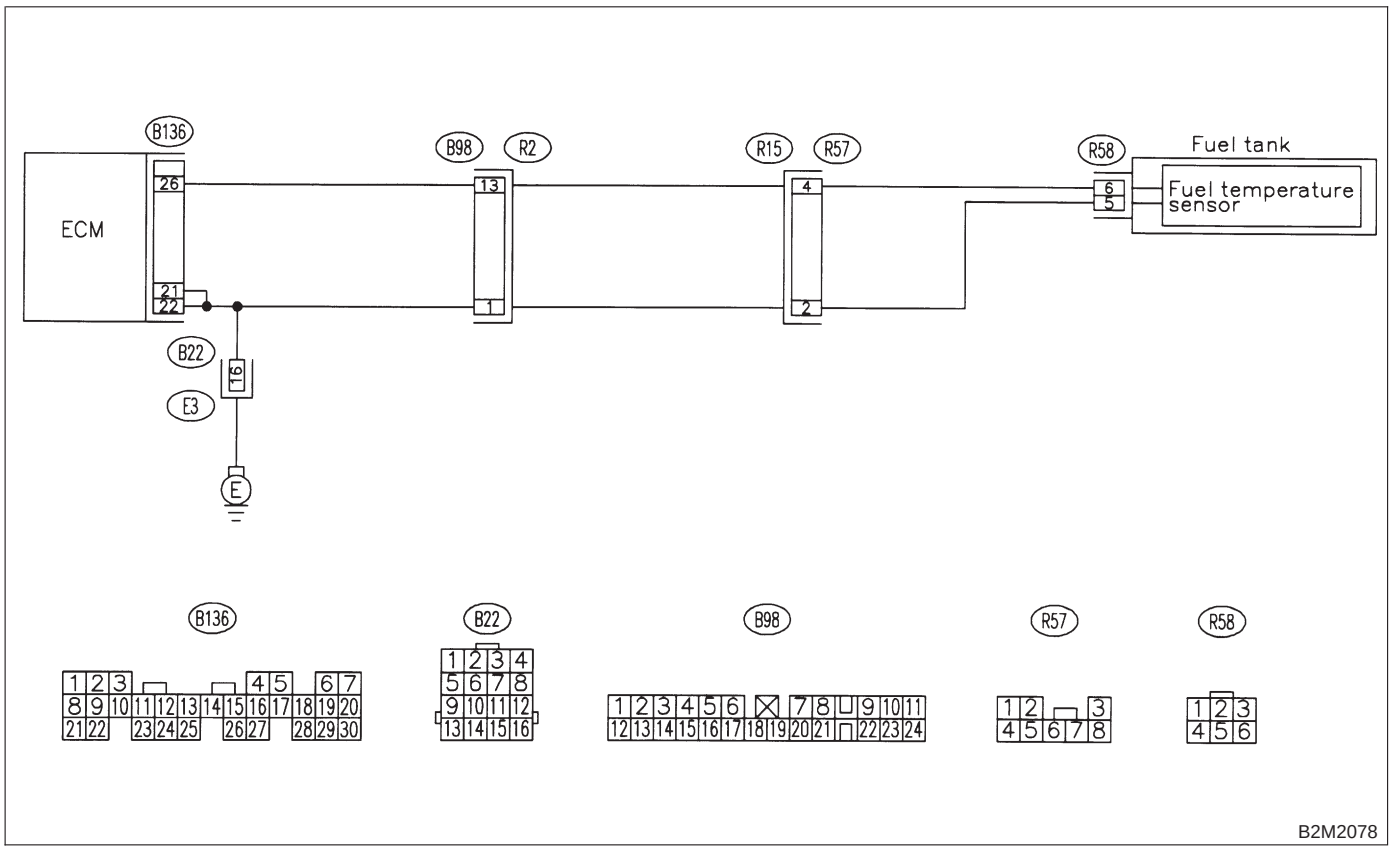
NOTE:
In this case, it is not necessary to inspect DTC P0181.

NO : Replace fuel temperature sensor. <Ref. to 2-1 [W8A0].>

V: DTC P0182 — FUEL TEMPERATURE SENSOR A CIRCUIT LOW INPUT —

NOTE:
Check fuel temperature sensor circuit.
<Ref. to 2-7 [T12W0].>

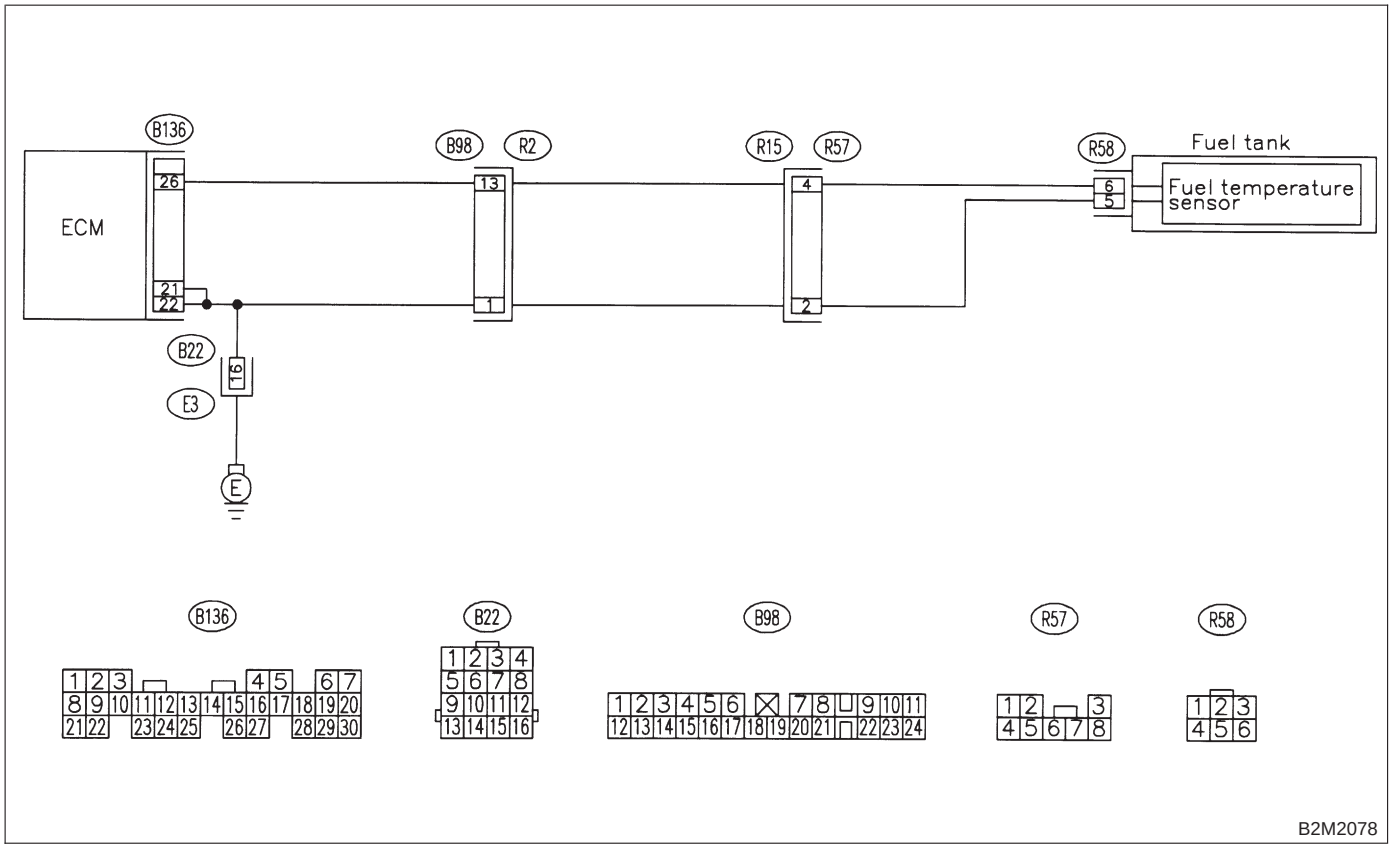
- **WIRING DIAGRAM:**



W: DTC P0183 — FUEL TEMPERATURE SENSOR A CIRCUIT HIGH INPUT —

NOTE:
Check fuel temperature sensor circuit.
<Ref. to 2-7 [T12X0].>

- **WIRING DIAGRAM:**



X: DTC P0301 — CYLINDER 1 MISFIRE DETECTED —

NOTE:
For the diagnostic procedure, refer to 2-7 [T14AA1]. <Ref. to 2-7 [T14AA1].>

Y: DTC P0302 — CYLINDER 2 MISFIRE DETECTED —

NOTE:
For the diagnostic procedure, refer to 2-7 [T14AA1]. <Ref. to 2-7 [T14AA1].>

Z: DTC P0303 — CYLINDER 3 MISFIRE DETECTED —

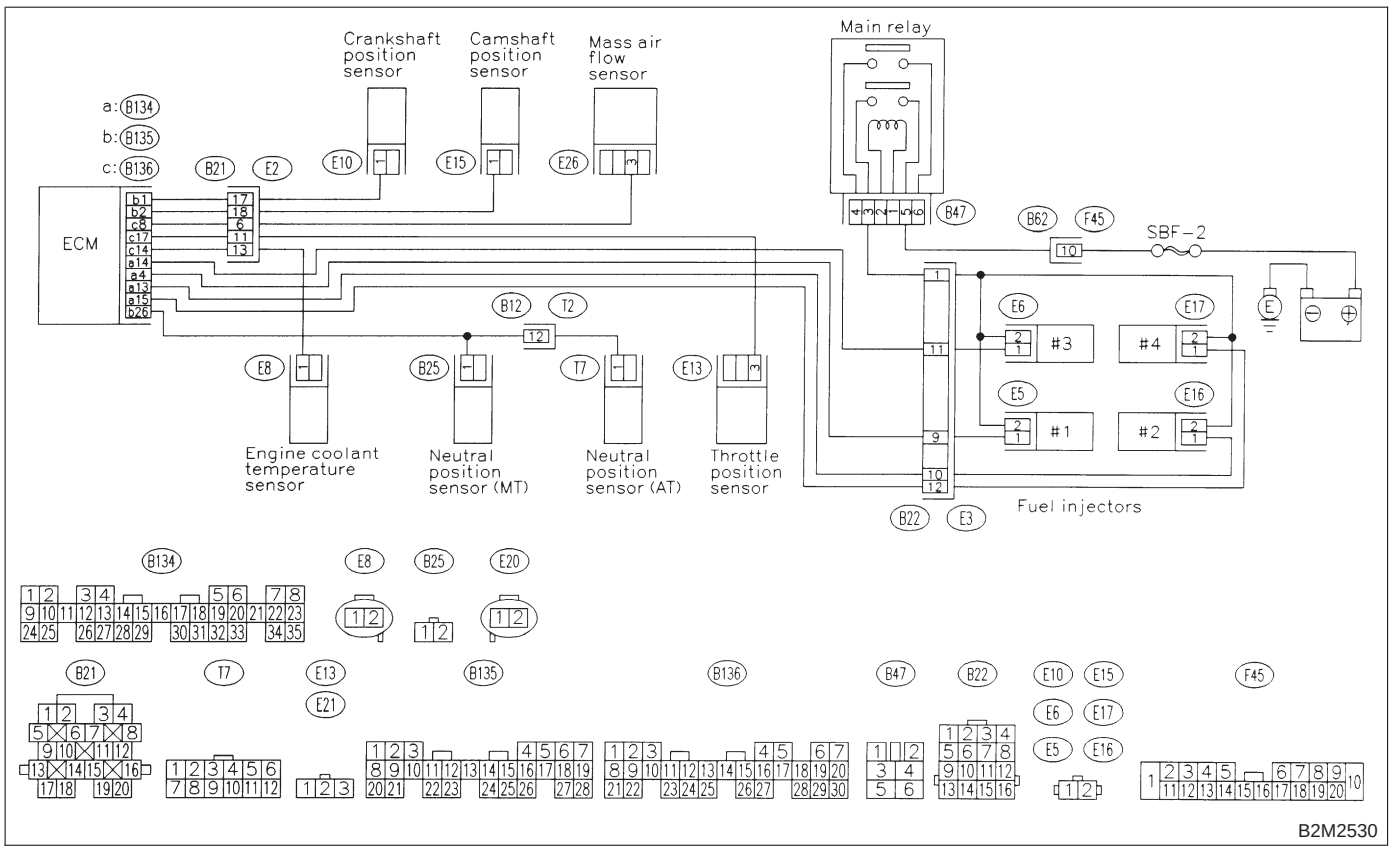
NOTE:
For the diagnostic procedure, refer to 2-7 [T14AA1]. <Ref. to 2-7 [T14AA1].>

AA: DTC P0304 — CYLINDER 4 MISFIRE DETECTED —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
  - Immediately at fault recognition (A misfire which could damage catalyst occurs.)
- **TROUBLE SYMPTOM:**
  - Engine stalls.
  - Erroneous idling
  - Rough driving

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14AA1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0101, P0102, P0103, P0116, P0117 or P0125?***

YES : Inspect DTC P0101, P0102, P0103, P0116, P0117 or P0125 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

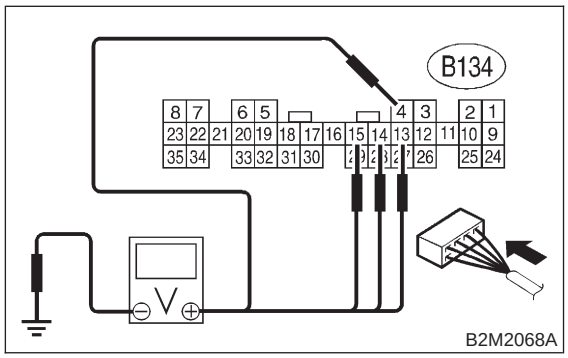
NOTE:
In this case, it is not necessary to inspect DTC P0301, P0302, P0303 and P0304.

NO : Go to step **14AA2**.

14AA2 : CHECK OUTPUT SIGNAL FROM ECM.

1) Turn ignition switch to ON.
2) Measure voltage between ECM connector and chassis ground on faulty cylinders.

Connector & terminal
#1; (B134) No. 4 (+) — Chassis ground (−):
#2; (B134) No. 13 (+) — Chassis ground (−):
#3; (B134) No. 14 (+) — Chassis ground (−):
#4; (B134) No. 15 (+) — Chassis ground (−):

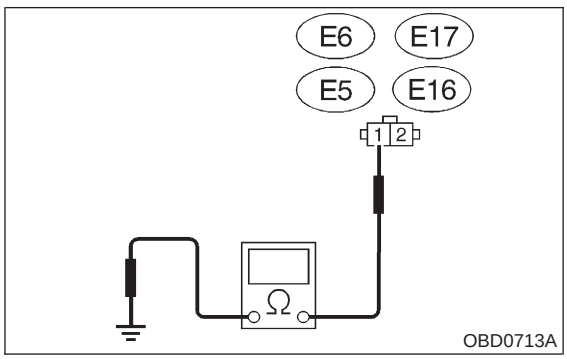


CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **14AA7**.
NO : Go to step **14AA3**.

14AA3 : CHECK HARNESS BETWEEN FUEL INJECTOR AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from fuel injector on faulty cylinders.
3) Measure voltage between ECM connector and engine ground on faulty cylinders.

Connector & terminal
#1; (E5) No. 1 — Engine ground:
#2; (E16) No. 1 — Engine ground:
#3; (E6) No. 1 — Engine ground:
#4; (E17) No. 1 — Engine ground:



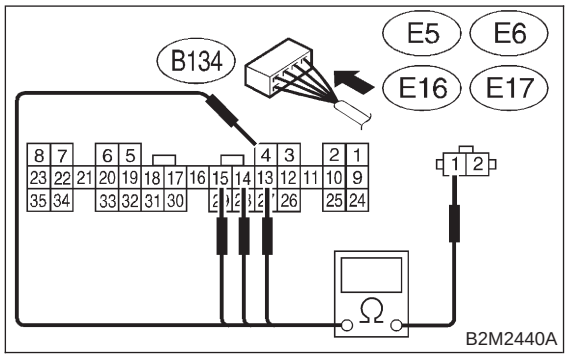
CHECK : ***Is the resistance less than 10 Ω?***
YES : Repair ground short circuit in harness between fuel injector and ECM connector.
NO : Go to step **14AA4**.

14AA4 : CHECK HARNESS BETWEEN FUEL INJECTOR AND ECM CONNECTOR.

Measure resistance of harness connector between ECM connector and fuel injector on faulty cylinders.

Connector & terminal

#1; (B134) No. 4 — (E5) No. 1:
#2; (B134) No. 13 — (E16) No. 1:
#3; (B134) No. 14 — (E6) No. 1:
#4; (B134) No. 15 — (E17) No. 1:



CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14AA5**.
NO : Repair harness and connector.

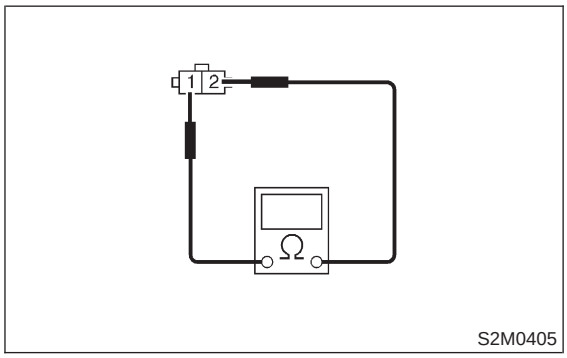
NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and fuel injector connector
- Poor contact in coupling connector (B22)

14AA5 : CHECK FUEL INJECTOR.

Measure resistance between fuel injector terminals on faulty cylinder.

Terminals

No. 1 — No. 2:



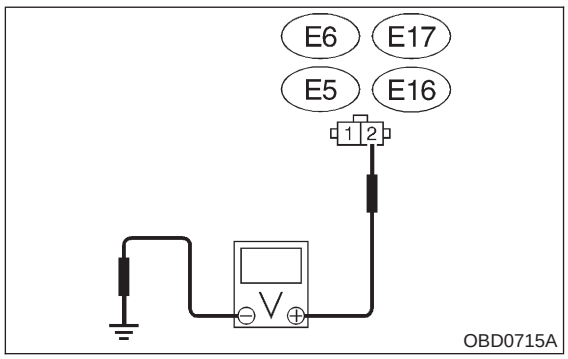
CHECK : ***Is the resistance between 5 and 20 Ω?***
YES : Go to step **14AA6**.
NO : Replace faulty fuel injector. <Ref. to 2-7 [W14A1].>

14AA6 : CHECK POWER SUPPLY LINE.

1) Turn ignition switch to ON.
2) Measure voltage between fuel injector and engine ground on faulty cylinders.

Connector & terminal

#1; (E5) No. 2 (+) — Engine ground (−):
#2; (E16) No. 2 (+) — Engine ground (−):
#3; (E6) No. 2 (+) — Engine ground (−):
#4; (E17) No. 2 (+) — Engine ground (−):



CHECK : ***Is the voltage more than 10 V?***
YES : Repair poor contact in all connectors in fuel injector circuit.
NO : Repair harness and connector.

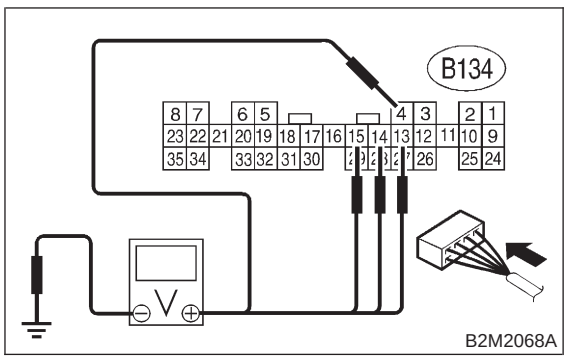
NOTE:
In this case, repair the following:
● Open circuit in harness between main relay and fuel injector connector on faulty cylinders
● Poor contact in coupling connector (B22)
● Poor contact in main relay connector
● Poor contact in fuel injector connector on faulty cylinders

14AA7 : CHECK HARNESS BETWEEN FUEL INJECTOR AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from fuel injector on faulty cylinder.
3) Turn ignition switch to ON.
4) Measure voltage between ECM connector and chassis ground on faulty cylinders.

Connector & terminal

#1; (B134) No. 4 (+) — Chassis ground (−):
#2; (B134) No. 13 (+) — Chassis ground (−):
#3; (B134) No. 14 (+) — Chassis ground (−):
#4; (B134) No. 15 (+) — Chassis ground (−):

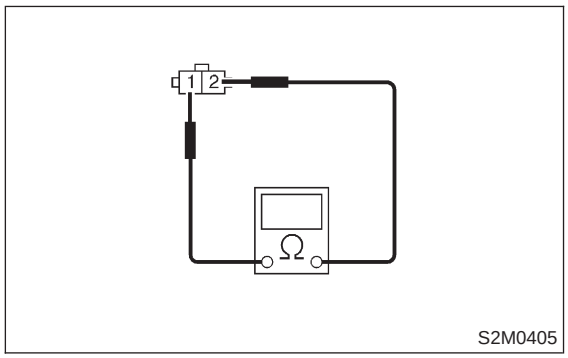


CHECK : ***Is the voltage more than 10 V?***
YES : Repair battery short circuit in harness between ECM and fuel injector. After repair, replace ECM. <Ref. to 2-7 [W15A1].>
NO : Go to step **14AA8**.

14AA8 : CHECK FUEL INJECTOR.

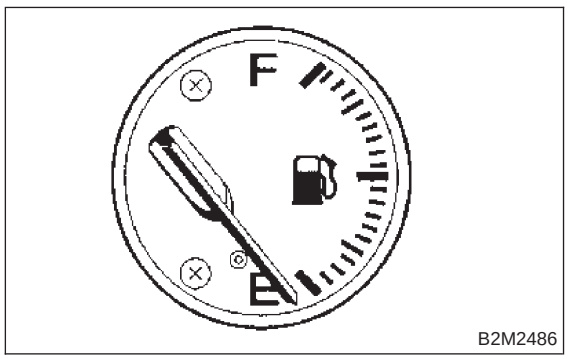
1) Turn ignition switch to OFF.
2) Measure resistance between fuel injector terminals on faulty cylinder.

Terminals
No. 1 — No. 2 :



CHECK : ***Is the resistance less than 1 Ω?***
YES : Replace faulty fuel injector <Ref. to 2-7 [W14A1].> and ECM <Ref. to 2-7 [W15A1].>.
NO : Go to step **14AA9**.

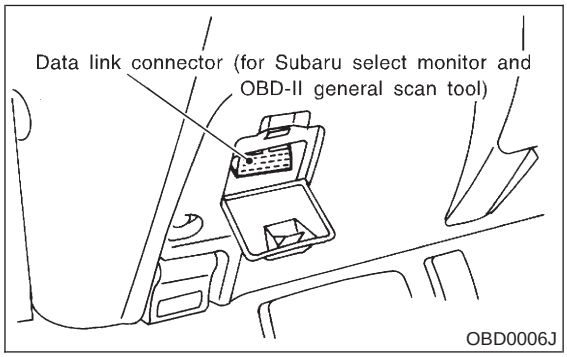
14AA9 : CHECK FUEL LEVEL.



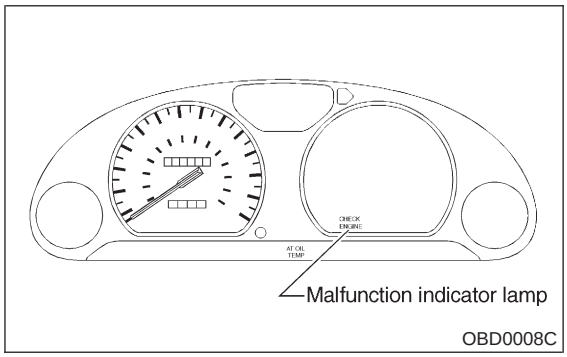
CHECK : ***Is fuel meter indication (in combination meter) higher than the "Lower" level?***
YES : Go to step **14AA10**.
NO : Replenish fuel so fuel meter indication is higher than the "Lower" level. After refuel, Go to step **14AA10**. <Ref. to 2-7 [T14AA10].>

14AA10 : CHECK STATUS OF CHECK ENGINE MALFUNCTION INDICATOR LAMP (MIL).

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor to the data link connector.



3) Clear memory using Subaru Select Monitor. <Ref. to 2-7 [T3D0].>
4) Start engine, and drive the vehicle more than 10 minutes.



CHECK : ***Is the MIL coming on or blinking?***
YES : Go to step **14AA12**.
NO : Go to step **14AA11**.

14AA11 : CHECK CAUSE OF MISFIRE DIAGNOSED.

CHECK : ***Was the cause of misfire diagnosed when the engine is running?***

YES : Finish diagnostics operation, if the engine has no abnormality.

NOTE:
Ex. Remove spark plug cord, etc.

NO : Repair poor contact.

NOTE:
In this case, repair the following:
- Poor contact in ignitor connector
- Poor contact in ignition coil connector
- Poor contact in fuel injector connector on faulty cylinders
- Poor contact in ECM connector
- Poor contact in coupling connector (B22)

14AA12 : CHECK AIR INTAKE SYSTEM.

CHECK : ***Is there a fault in air intake system?***

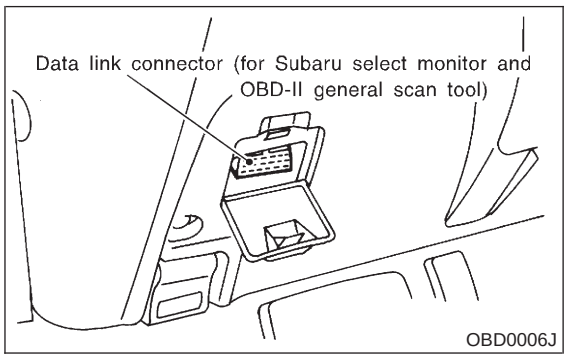
YES : Repair air intake system.

NOTE:
Check the following items:
- Are there air leaks or air suction caused by loose or dislocated nuts and bolts?
- Are there cracks or any disconnection of hoses?

NO : Go to step **14AA13**.

14AA13 : CHECK MISFIRE SYMPTOM.

1) Turn ignition switch to OFF.
2) Connect the Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch to ON, and turn Subaru Select Monitor or OBD-II general scan tool switch to ON.
4) Read diagnostic trouble code (DTC).
- Subaru Select Monitor

<Ref. to 2-7 [T3C2].>
- OBD-II general scan tool

For detailed operation procedures, refer to the OBD-II General Scan Tool Operation Manual.

NOTE:
Perform diagnosis according to the items listed below.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate only one DTC?***

YES : Go to step **14AA18**.

NO : Go to step **14AA14**.

14AA14 : CHECK DIAGNOSTIC TROUBLE CODE (DTC) ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0301 and P0302?***

YES : Go to step **14AA19**.

NO : Go to step **14AA15**.

14AA15 : CHECK DIAGNOSTIC TROUBLE CODE (DTC) ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0303 and P0304?***

YES : Go to step **14AA20**.

NO : Go to step **14AA16**.

14AA16 : CHECK DIAGNOSTIC TROUBLE CODE (DTC) ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0301 and P0303?***
YES : Go to step **14AA21**.
NO : Go to step **14AA17**.

14AA17 : CHECK DIAGNOSTIC TROUBLE CODE (DTC) ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0302 and P0304?***
YES : Go to step **14AA22**.
NO : Go to step **14AA18**.

14AA18 : ONLY ONE CYLINDER

CHECK : ***Is there a fault in that cylinder?***
YES : Repair or replace faulty parts.

NOTE:
Check the following items.
- Spark plug
- Spark plug cord
- Fuel injector
- Compression ratio

NO : Go to DTC P0170. <Ref. to 2-7 [T14T0].>

14AA19 : GROUP OF #1 AND #2 CYLINDERS

CHECK : ***Are there faults in #1 and #2 cylinders?***
YES : Repair or replace faulty parts.

NOTE:
- Check the following items.
- Spark plugs
- Fuel injectors
- Ignition coil
- Compression ratio
- If no abnormal is discovered, check for “8. D: IGNITION CONTROL SYSTEM” of #1 and #2 cylinders side. <Ref. to 2-7 [T9D0].>

NO : Go to DTC P0170. <Ref. to 2-7 [T14T0].>

14AA20 : GROUP OF #3 AND #4 CYLINDERS

CHECK : ***Are there faults in #3 and #4 cylinders?***
YES : Repair or replace faulty parts.

NOTE:
- Check the following items.
- Spark plugs
- Fuel injectors
- Ignition coil
- If no abnormal is discovered, check for “8. D: IGNITION CONTROL SYSTEM” of #3 and #4 cylinders side. <Ref. to 2-7 [T9D0].>

NO : Go to DTC P0170. <Ref. to 2-7 [T14T0].>

14AA21 : GROUP OF #1 AND #3 CYLINDERS

CHECK : ***Are there faults in #1 and #3 cylinders?***
YES : Repair or replace faulty parts.

NOTE:
Check the following items.
- Spark plugs
- Fuel injectors
- Skipping timing belt teeth

NO : Go to DTC P0170. <Ref. to 2-7 [T14T0].>

14AA22 : GROUP OF #2 AND #4 CYLINDERS

CHECK : ***Are there faults in #2 and #4 cylinders?***
YES : Repair or replace faulty parts.

NOTE:
Check the following items.
- Spark plugs
- Fuel injectors
- Compression ratio
- Skipping timing belt teeth

NO : Go to DTC P0170. <Ref. to 2-7 [T14T0].>

14AA23 : CYLINDER AT RANDOM

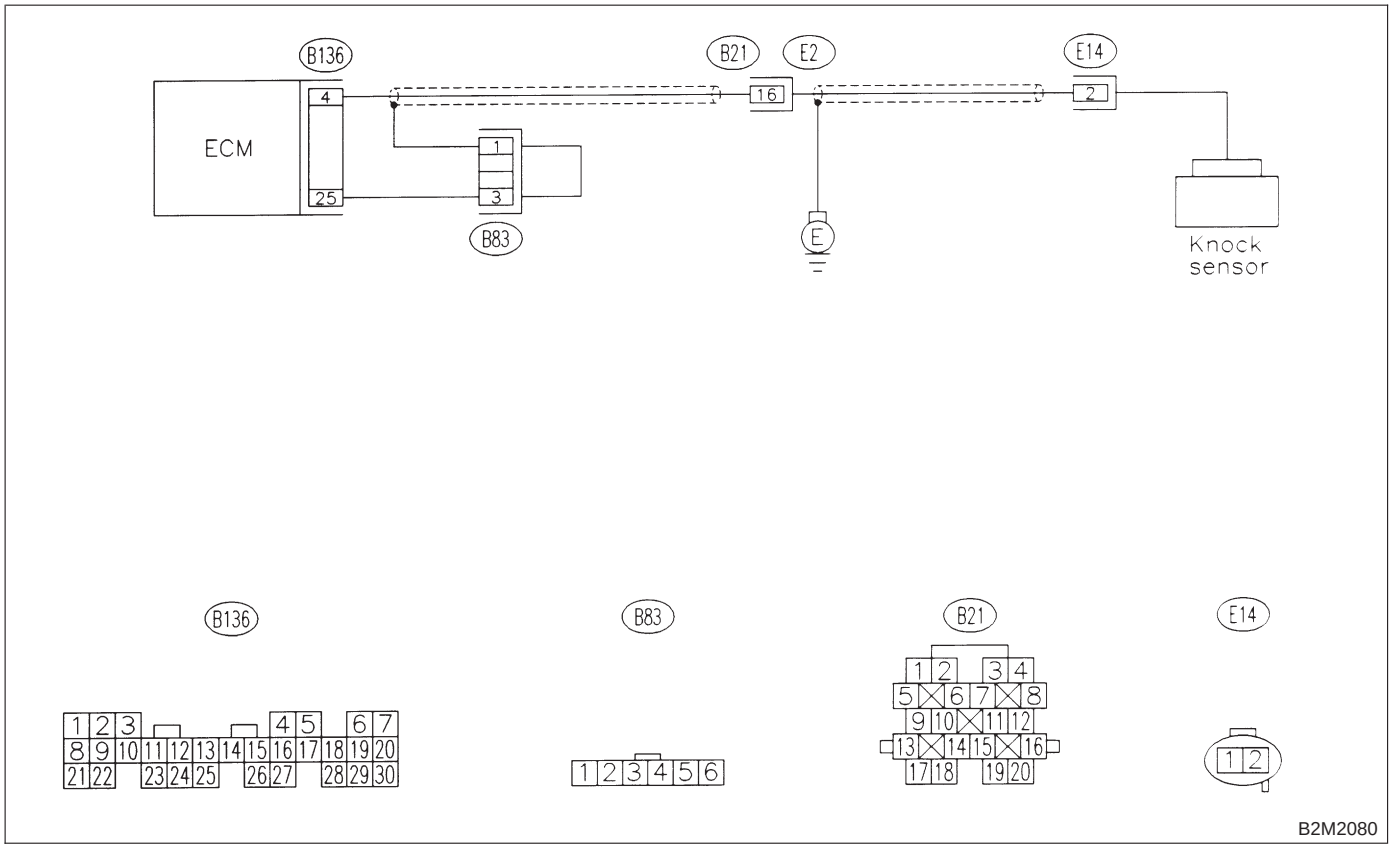
CHECK : ***Is the engine idle rough?***
YES : Go to DTC P0170. <Ref. to 2-7 [T14T0].>
NO : Repair or replace faulty parts.

NOTE:
Check the following items.
- Spark plugs
- Fuel injectors
- Compression ratio

AB: DTC P0325 — KNOCK SENSOR CIRCUIT HIGH INPUT —

NOTE:
Check knock sensor circuit.
<Ref. to 2-7 [T12AC0].>

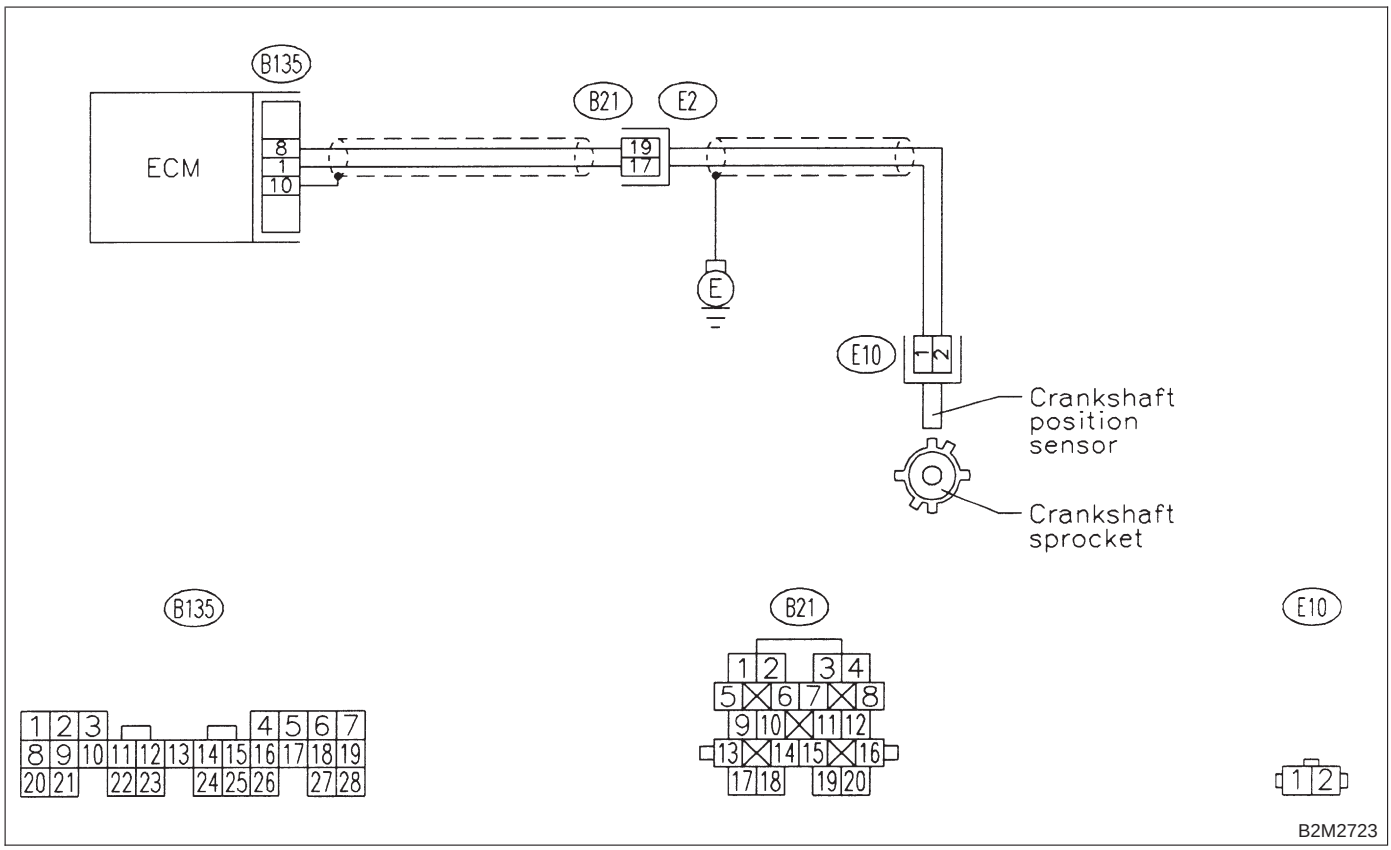
- **WIRING DIAGRAM:**



AC: DTC P0335 — CRANKSHAFT POSITION SENSOR CIRCUIT MALFUNCTION —

NOTE:
Check crankshaft position sensor circuit.
<Ref. to 2-7 [T12AD0].>

- **WIRING DIAGRAM:**

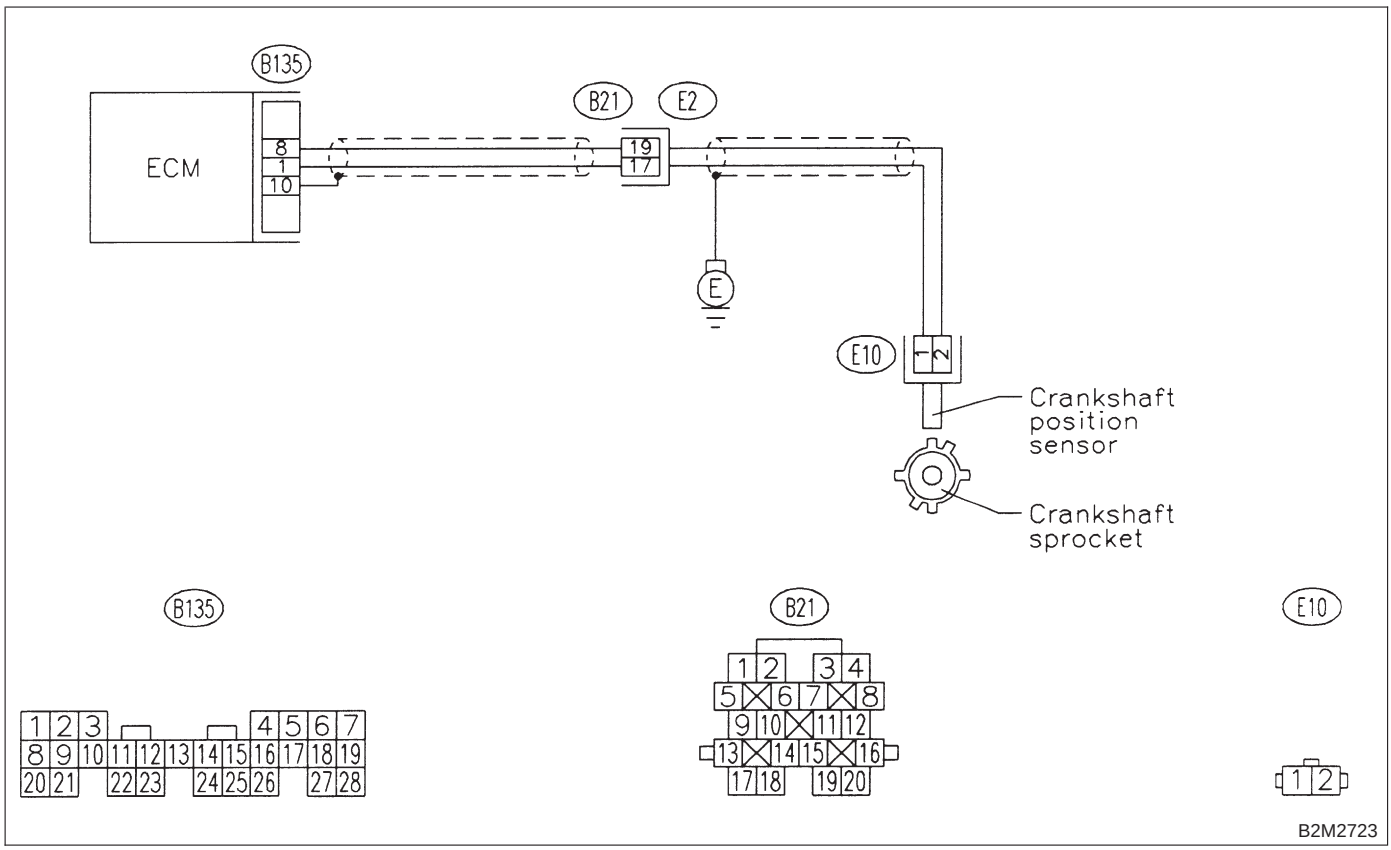


AD: DTC P0336 — CRANKSHAFT POSITION SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition
- **TROUBLE SYMPTOM:**
  - Engine stalls.
  - Failure of engine to start

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14AD1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0335?***

YES : Inspect DTC P0335 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NO : Go to step **14AD2**.

14AD2 : CHECK CONDITION OF CRANKSHAFT POSITION SENSOR.

Turn ignition switch to OFF.

CHECK : ***Is the crankshaft position sensor installation bolt tightened securely?***

YES : Go to step **14AD3**.

NO : Tighten crankshaft position sensor installation bolt securely.

14AD3 : CHECK CRANKSHAFT SPROCKET.

Remove front belt cover. <Ref. to 2-3a [W2A1].>

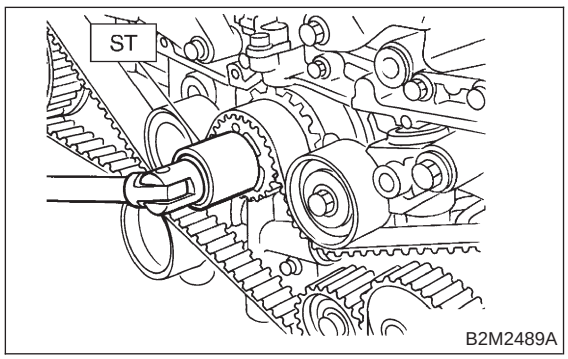
CHECK : ***Are there any cracks or damages in the crankshaft sprocket teeth?***

YES : Replace crankshaft sprocket. <Ref. to 2-3a [W2A4].>

NO : Go to step **14AD4**.

14AD4 : CHECK INSTALLATION CONDITION OF TIMING BELT.

Turn crankshaft using ST, and align alignment mark on crankshaft sprocket with alignment mark on timing belt.
ST 499987500 CRANKSHAFT SOCKET



CHECK : ***Is timing belt dislocated from its proper installing position?***

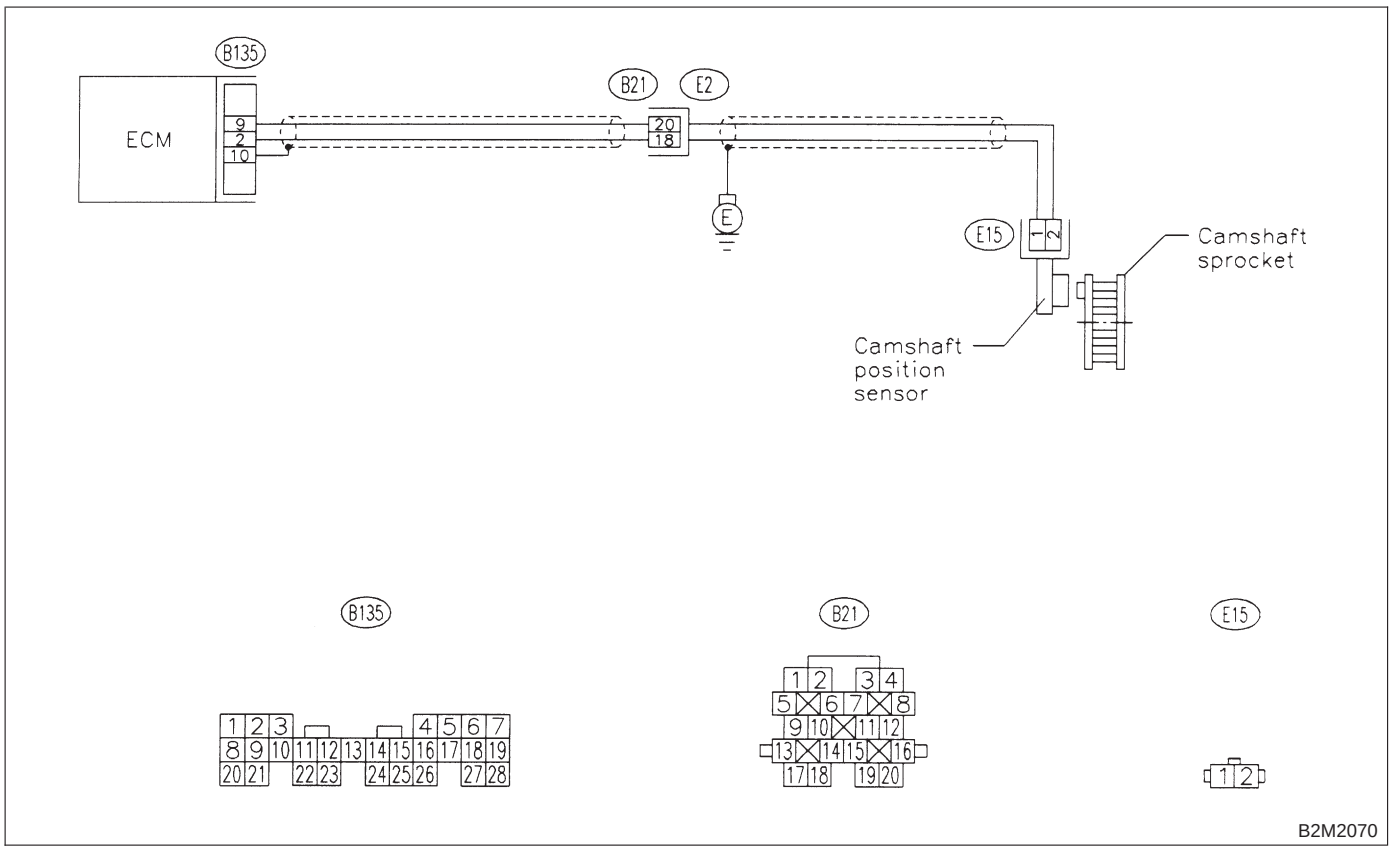
YES : Repair installation condition of timing belt. <Ref. to 2-3a [W2C0].>

NO : Replace crankshaft position sensor. <Ref. to 2-7 [W6A0].>

AE: DTC P0340 — CAMSHAFT POSITION SENSOR CIRCUIT MALFUNCTION —

NOTE:
Check camshaft position sensor circuit.
<Ref. to 2-7 [T12AF0].>

- **WIRING DIAGRAM:**



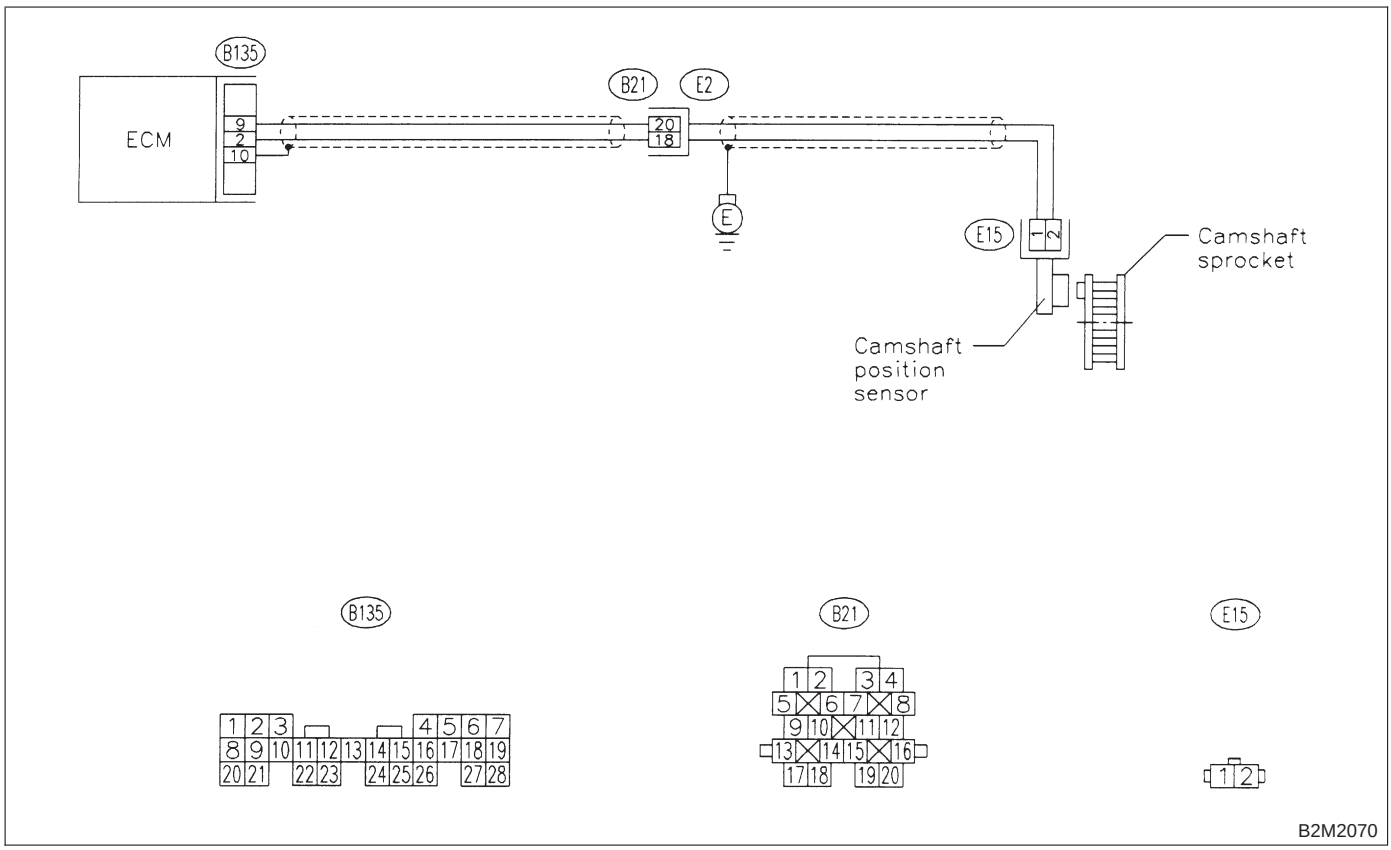
MEMO:

AF: DTC P0341 — CAMSHAFT POSITION SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition
- **TROUBLE SYMPTOM:**
  - Engine stalls.
  - Failure of engine to start

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14AF1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0340?***

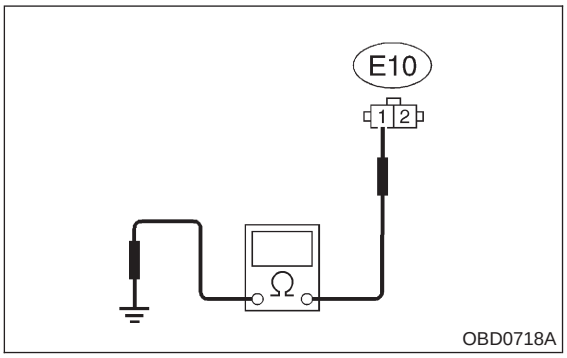
YES : Inspect DTC P0340 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NO : Go to step **14AF2**.

14AF2 : CHECK HARNESS BETWEEN CRANKSHAFT POSITION SENSOR AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from crankshaft position sensor.
3) Measure resistance of harness between crankshaft position sensor connector and engine ground.

Connector & terminal
(E10) No. 1 — Engine ground:



CHECK : ***Is the resistance more than 100 kΩ?***
YES : Repair harness and connector.

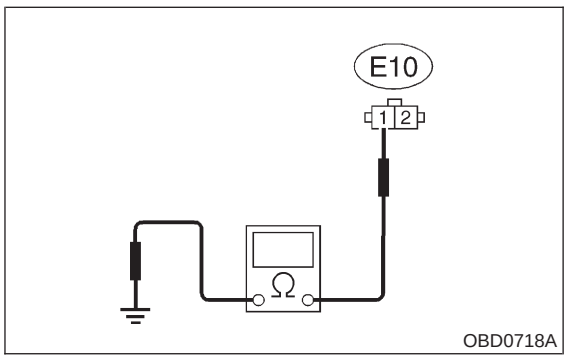
NOTE:
In this case, repair the following:
- Open circuit in harness between crankshaft position sensor and ECM connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B21)

NO : Go to step **14AF3**.

14AF3 : CHECK HARNESS BETWEEN CRANKSHAFT POSITION SENSOR AND ECM CONNECTOR.

Measure resistance of harness between crankshaft position sensor connector and engine ground.

Connector & terminal
(E10) No. 1 — Engine ground:



CHECK : ***Is the resistance less than 10 Ω?***
YES : Repair ground short circuit in harness between crankshaft position sensor and ECM connector.

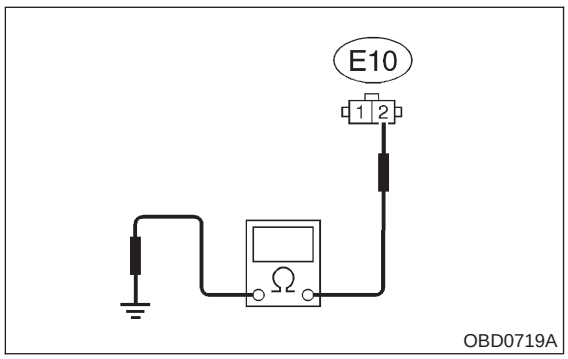
NOTE:
The harness between both connectors are shielded. Repair ground short circuit in harness together with shield.

NO : Go to step **14AF4**.

14AF4 : CHECK HARNESS BETWEEN CRANKSHAFT POSITION SENSOR AND ECM CONNECTOR.

Measure resistance of harness between crankshaft position sensor connector and engine ground.

Connector & terminal
(E10) No. 2 — Engine ground:



CHECK : ***Is the resistance less than 5 Ω?***
YES : Go to step **14AF5**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between crankshaft position sensor and ECM connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B21)

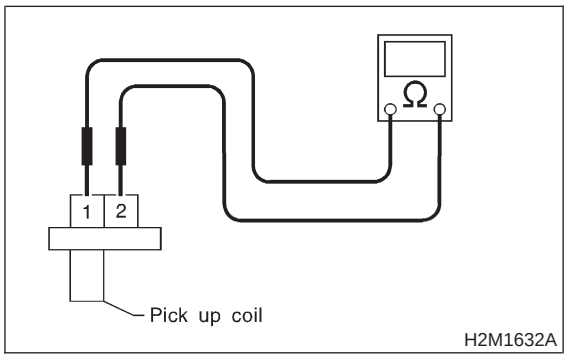
14AF5 : CHECK CONDITION OF CRANKSHAFT POSITION SENSOR.

CHECK : ***Is the crankshaft position sensor installation bolt tightened securely?***
YES : Go to step **14AF6**.
NO : Tighten crankshaft position sensor installation bolt securely.

14AF6 : CHECK CRANKSHAFT POSITION SENSOR.

1) Remove crankshaft position sensor.
2) Measure resistance between connector terminals of crankshaft position sensor.

Terminals
No. 1 — No. 2:



CHECK : ***Is the resistance between 1 and 4 kΩ?***
YES : Go to step **14AF7**.
NO : Replace crankshaft position sensor. <Ref. to 2-7 [W6A0].>

14AF7 : CHECK CONDITION OF CAMSHAFT POSITION SENSOR.

Turn ignition switch to OFF.

CHECK : ***Is the camshaft position sensor installation bolt tightened securely?***
YES : Go to step **14AF8**.
NO : Tighten camshaft position sensor installation bolt securely.

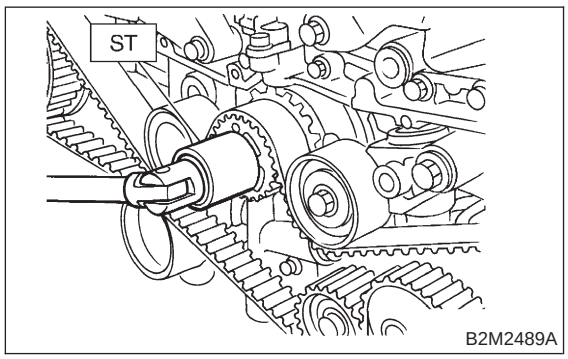
14AF8 : CHECK CAMSHAFT SPROCKET.

Remove front belt cover. <Ref. to 2-3a [W2A1].>

CHECK : ***Are there any cracks or damages in the crankshaft sprocket teeth?***
YES : Replace camshaft sprocket. <Ref. to 2-3a [W2A4].>
NO : Go to step **14AF9**.

14AF9 : CHECK INSTALLATION CONDITION OF TIMING BELT.

Turn crankshaft using ST, and align alignment mark on crankshaft sprocket with alignment mark on timing belt.
ST 499987500 CRANKSHAFT SOCKET



CHECK : ***Is timing belt dislocated from its proper installing position?***

YES : Repair installation condition of timing belt. <Ref. to 2-3a [W2A3].>

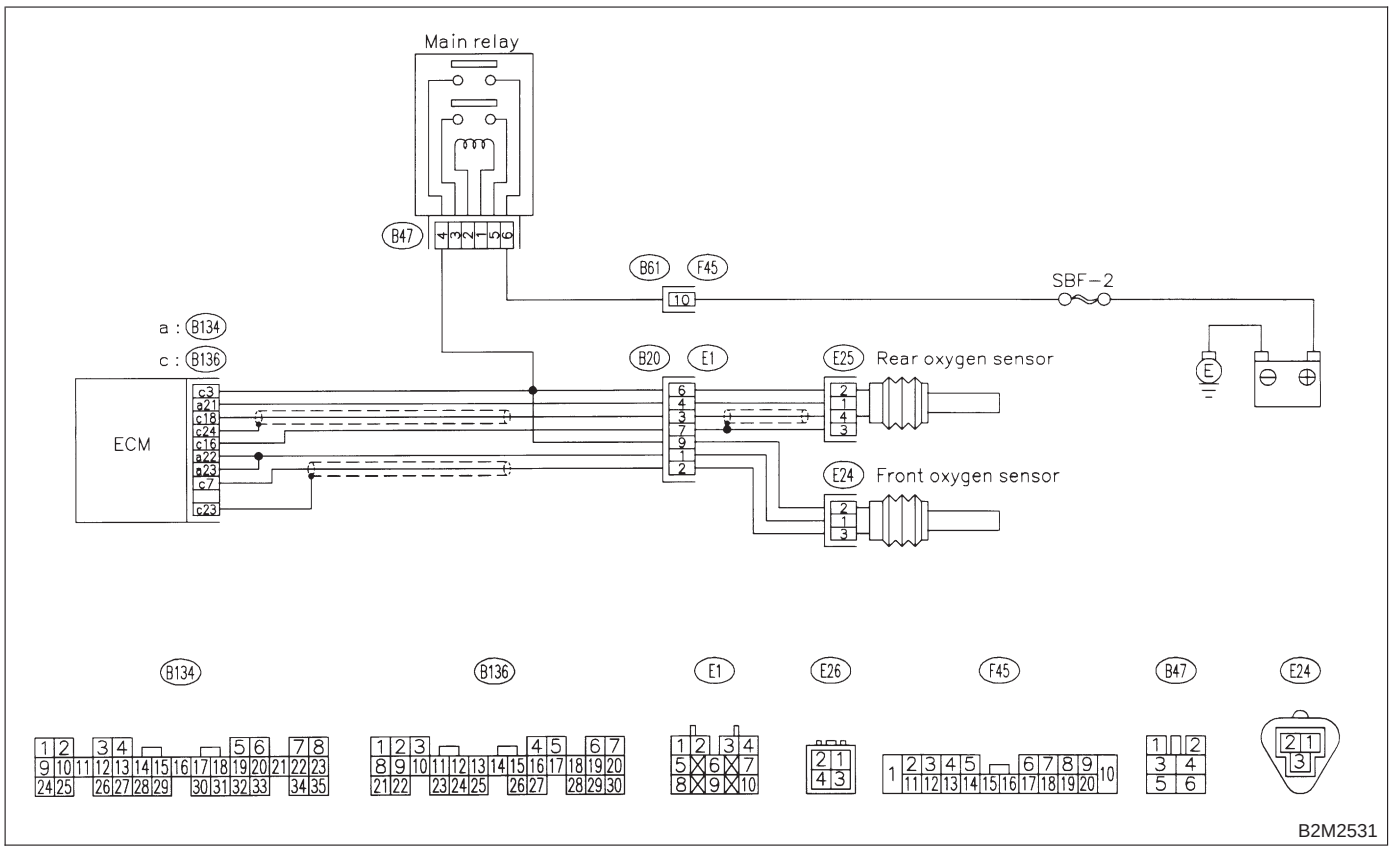
NO : Replace camshaft position sensor. <Ref. to 2-7 [W10A1].>

AG: DTC P0420 — CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Engine stalls.
  - Idle mixture is out of specifications.

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14AG1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0130, P0133, P0135, P0136, P0139, P0141, P0301, P0302, P0303, P0304, P1150 and P1151?***

YES : Inspect the relevant DTC using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NOTE:
In this case, it is not necessary to inspect DTC P0420.

NO : Go to step **14AG2**.

14AG2 : CHECK EXHAUST SYSTEM.

Check for gas leaks or air suction caused by loose or dislocated nuts and bolts, and open hole at exhaust pipes.

NOTE:
Check the following positions.
- Between cylinder head and front exhaust pipe
- Between front exhaust pipe and front catalytic converter
- Between front catalytic converter and rear catalytic converter

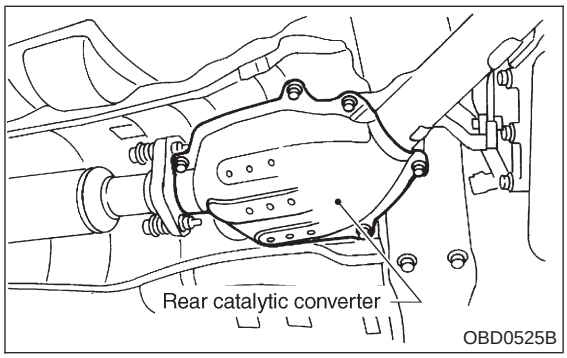
CHECK : ***Is there a fault in exhaust system?***

YES : Repair or replace exhaust system. <Ref. to 2-9 [W1A0].>

NO : Go to step **14AG3**.

14AG3 : CHECK REAR CATALYTIC CONVERTER.

Separate rear catalytic converter from rear exhaust pipe.



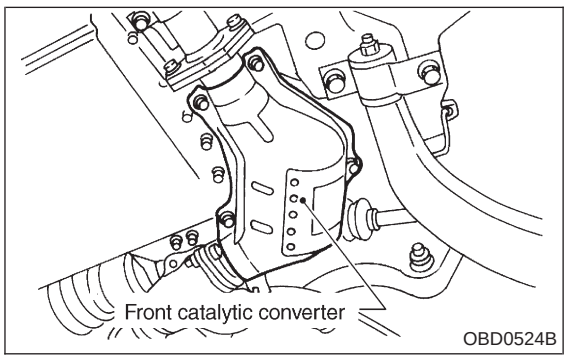
CHECK : ***Is there damage at rear face of rear catalyst?***

YES : Replace front catalytic converter <Ref. to 2-1 [W1A0].> and rear catalytic converter <Ref. to 2-1 [W2A0].>.

NO : Go to step **14AG4**.

14AG4 : CHECK FRONT CATALYTIC CONVERTER.

Remove front catalytic converter.



CHECK : ***Is there damage at rear face or front face of front catalyst?***

YES : Replace front catalytic converter. <Ref. to 2-1 [W1A0].>

NO : Contact with SOA service.

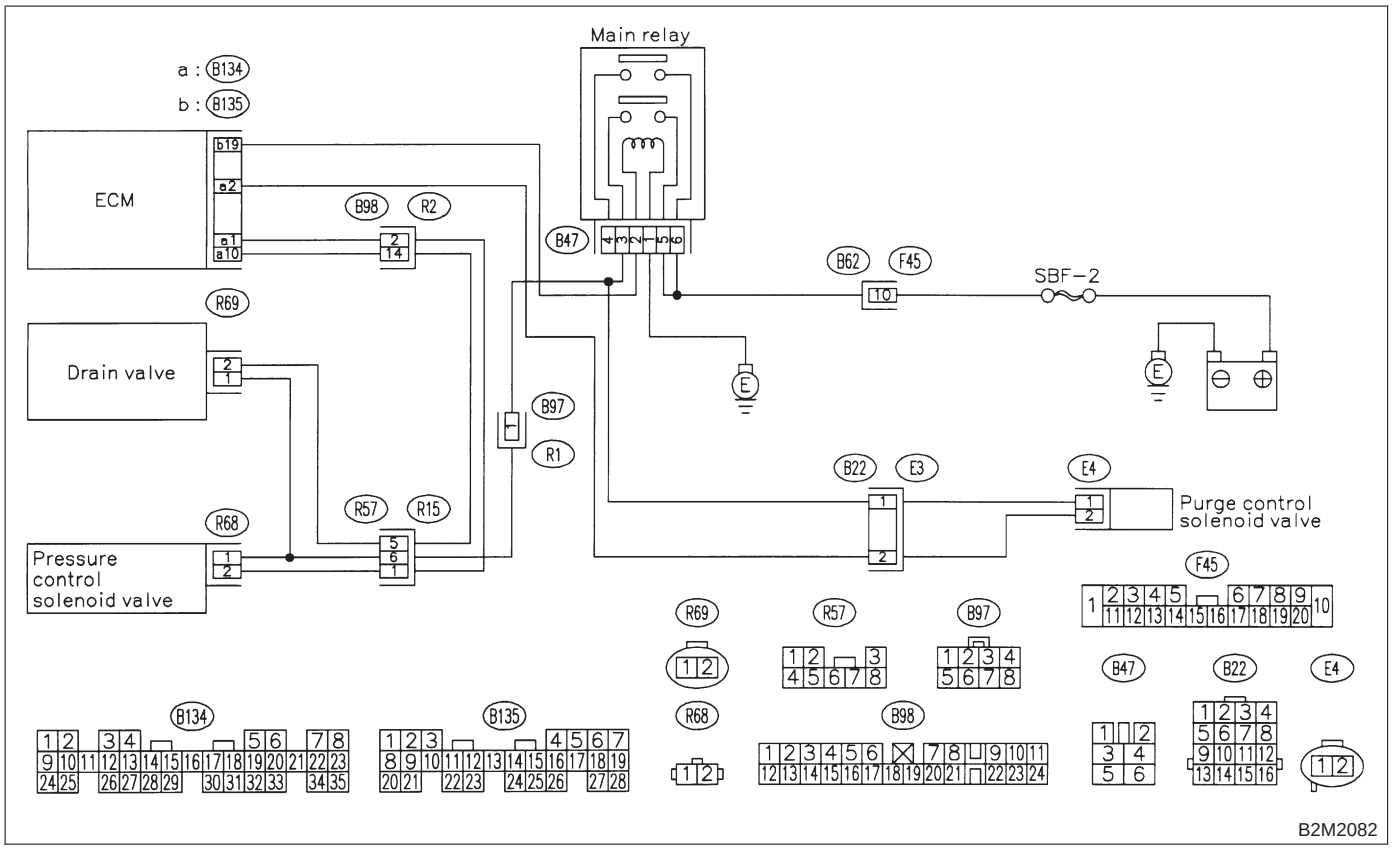
NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

AH: DTC P0440 — EVAPORATIVE EMISSION CONTROL SYSTEM MALFUNCTION —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Gasoline smell

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14AH1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Is there any other DTC on display?***
YES : Inspect the relevant DTC using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>
NO : Go to step **14AH2**.

14AH2 : CHECK FUEL FILLER CAP.

1) Turn ignition switch to OFF.
2) Open the fuel flap.

CHECK : ***Is the fuel filler cap tightened securely?***
YES : Go to step **14AH3**.
NO : Tighten fuel filler cap securely.

14AH3 : CHECK FUEL FILLER PIPE PACKING.

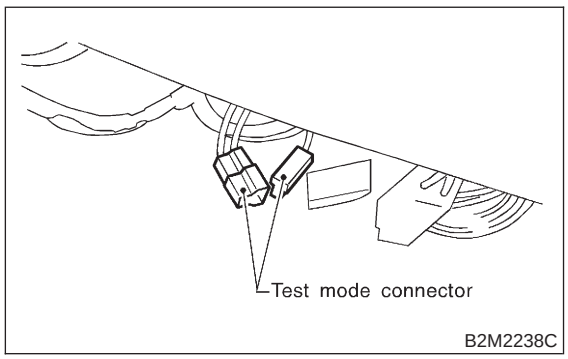
CHECK : ***Is there any damage to the seal between fuel filler cap and fuel filler pipe?***

YES : Repair or replace fuel filler cap and fuel filler pipe. <Ref. to 2-8 [W3A0].>

NO : Go to step **14AH4**.

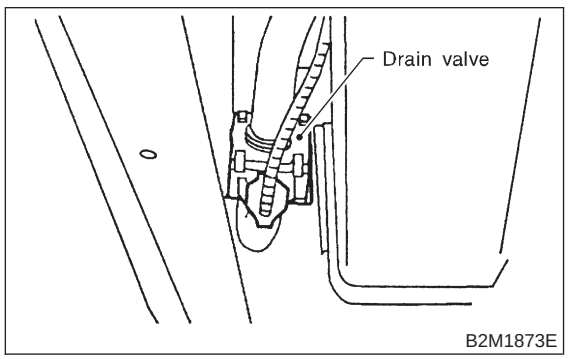
14AH4 : CHECK DRAIN VALVE OR VENT CONTROL SOLENOID VALVE.

1) Connect test mode connector.



2) Turn ignition switch to ON.

NOTE:
Drain valve or vent control solenoid valve operation check can also be executed using Subaru Select Monitor. For the procedure, refer to “COMPULSORY VALVE OPERATION CHECK MODE”. <Ref. to 2-7 [T3F0].>



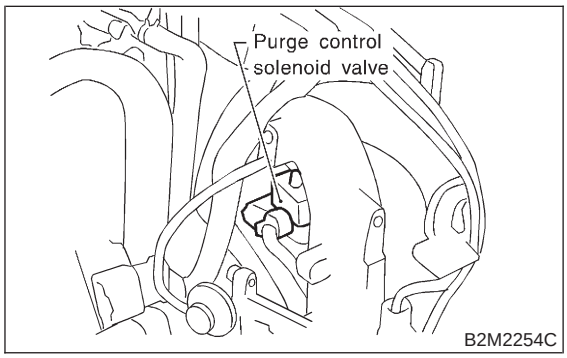
CHECK : ***Does drain valve produce operating sound?***

YES : Go to step **14AH5**.

NO : Replace drain valve. <Ref. to 2-1 [W17A0].>

14AH5 : CHECK PURGE CONTROL SOLENOID VALVE.

NOTE:
Purge control solenoid valve operation check can also be executed using Subaru Select Monitor. For the procedure, refer to “COMPULSORY VALVE OPERATION CHECK MODE”. <Ref. to 2-7 [T3F0].>



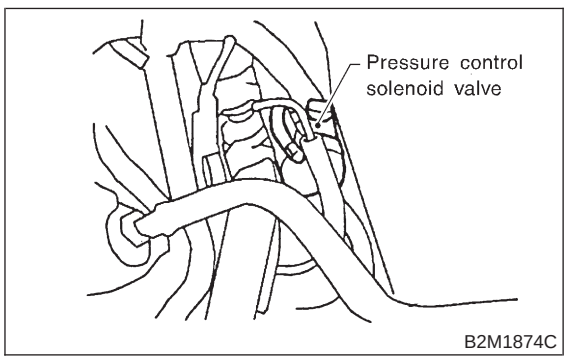
CHECK : ***Does purge control solenoid valve produce operating sound?***

YES : Go to step **14AH6**.

NO : Replace purge control solenoid valve. <Ref. to 2-1 [W4A2].>

14AH6 : CHECK PRESSURE CONTROL SOLENOID VALVE.

NOTE:
Pressure control solenoid valve operation check can also be executed using Subaru Select Monitor. For the procedure, refer to “COMPULSORY VALVE OPERATION CHECK MODE”. <Ref. to 2-7 [T3F0].>



CHECK : ***Does pressure control solenoid valve produce operating sound?***

YES : Go to step **14AH7**.

NO : Replace pressure control solenoid valve. <Ref. to 2-1 [W10A0].>

14AH7 : CHECK EVAPORATIVE EMISSION CONTROL SYSTEM LINE.

Turn ignition switch to OFF.

CHECK : ***Does fuel leak in fuel line?***
YES : Repair or replace fuel line. <Ref. to 2-8 [W7A0].>
NO : Go to step **14AH8**.

14AH8 : CHECK CANISTER.

CHECK : ***Is there any damage at canister?***
YES : Repair or replace canister. <Ref. to 2-1 [W3A0].>
NO : Go to step **14AH9**.

14AH9 : CHECK FUEL TANK.

CHECK : ***Is there any damage at fuel tank?***
YES : Repair or replace fuel tank. <Ref. to 2-8 [W2A0].>
NO : Go to step **14AH10**.

14AH10 : CHECK ANY OTHER MECHANICAL TROUBLE IN EVAPORATIVE EMISSION CONTROL SYSTEM.

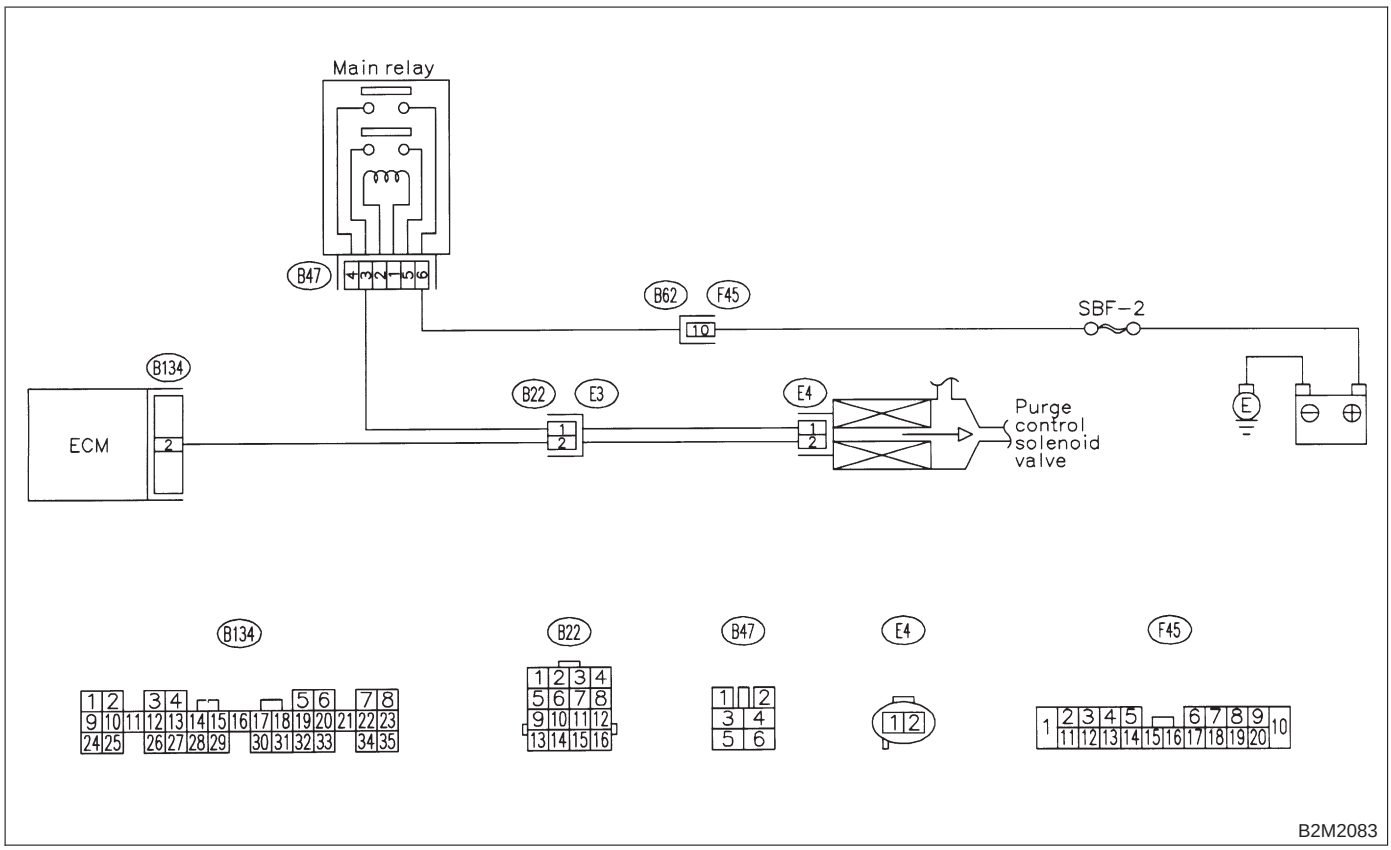
CHECK : ***Are there holes, cracks, clogging or disconnections of hoses or pipes in evaporative emission control system?***
YES : Repair or replace hoses or pipes.
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

AI: DTC P0443 — EVAPORATIVE EMISSION CONTROL SYSTEM PURGE CONTROL VALVE CIRCUIT LOW INPUT —

NOTE:
Check purge control solenoid valve circuit.
<Ref. to 2-7 [T12AJ0].>

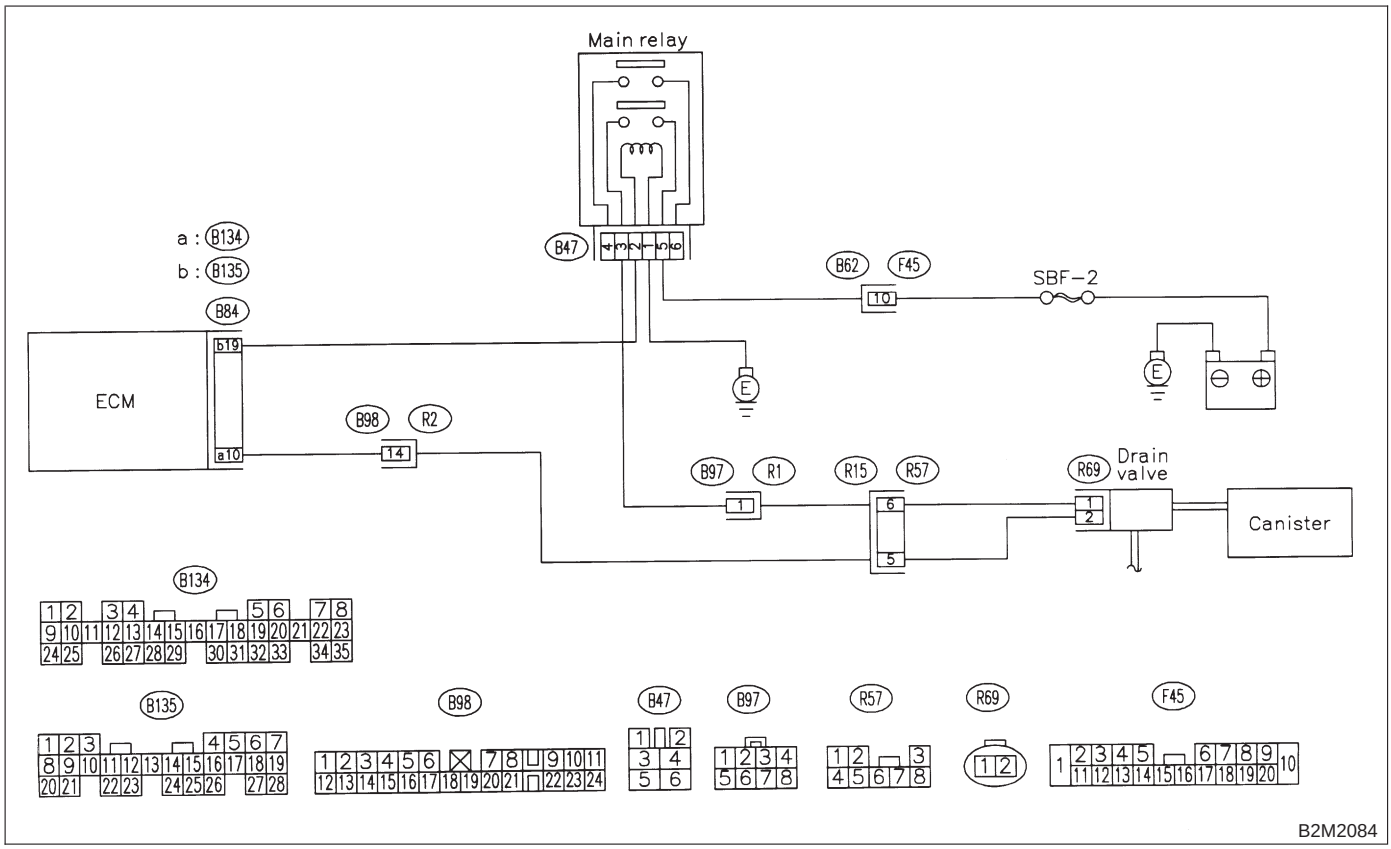
- **WIRING DIAGRAM:**



AJ: DTC P0446 — EVAPORATIVE EMISSION CONTROL SYSTEM VENT CONTROL LOW INPUT —

NOTE:
Check drain valve circuit.
<Ref. to 2-7 [T12AK0].>

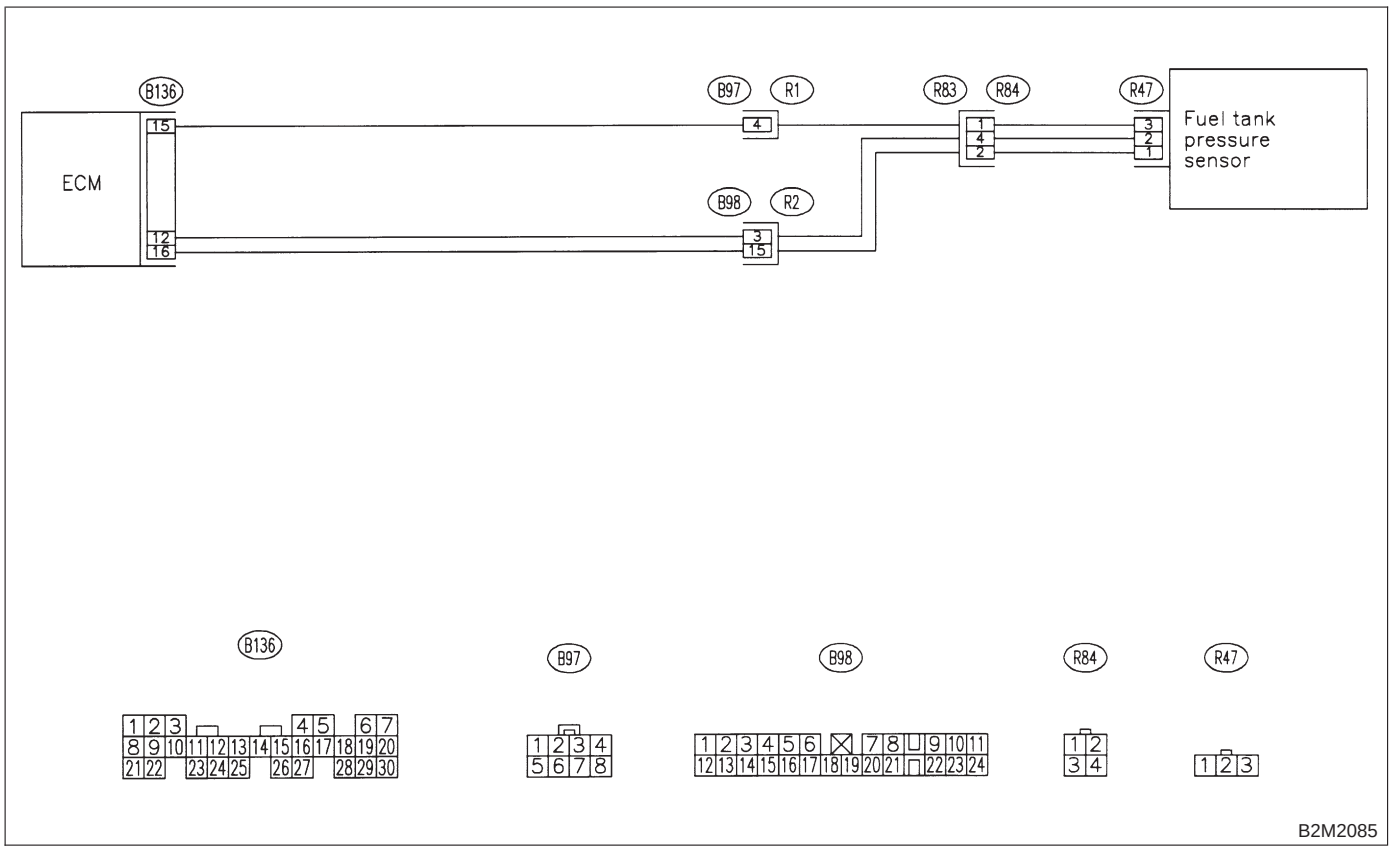
- **WIRING DIAGRAM:**



AK: DTC P0451 — EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR RANGE/PERFORMANCE PROBLEM —

NOTE:
Check fuel tank pressure control system.
<Ref. to 2-7 [T12AL0].>

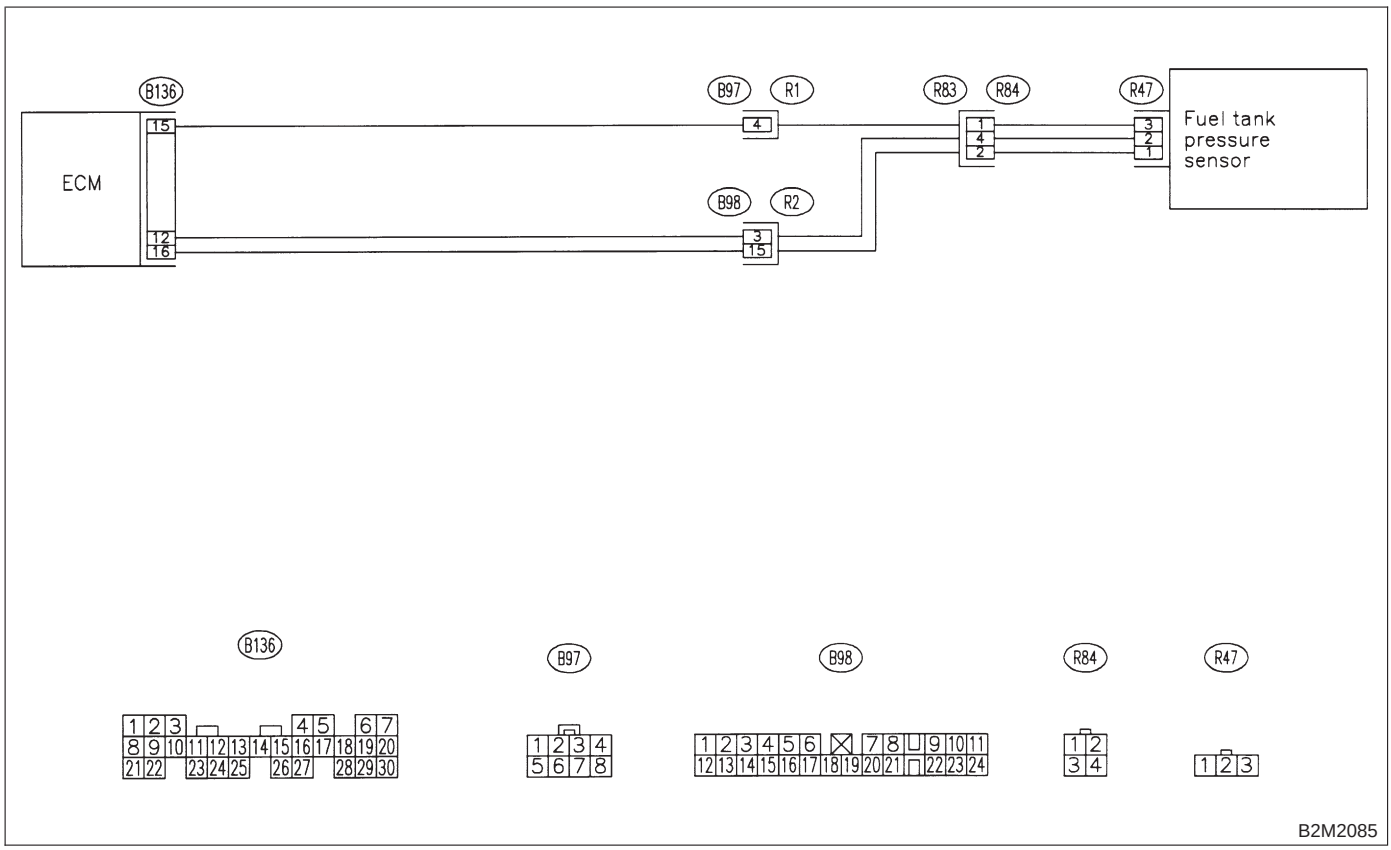
- **WIRING DIAGRAM:**



AL: DTC P0452 — EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR LOW INPUT —

NOTE:
Check fuel tank pressure sensor circuit.
<Ref. to 2-7 [T12AM0].>

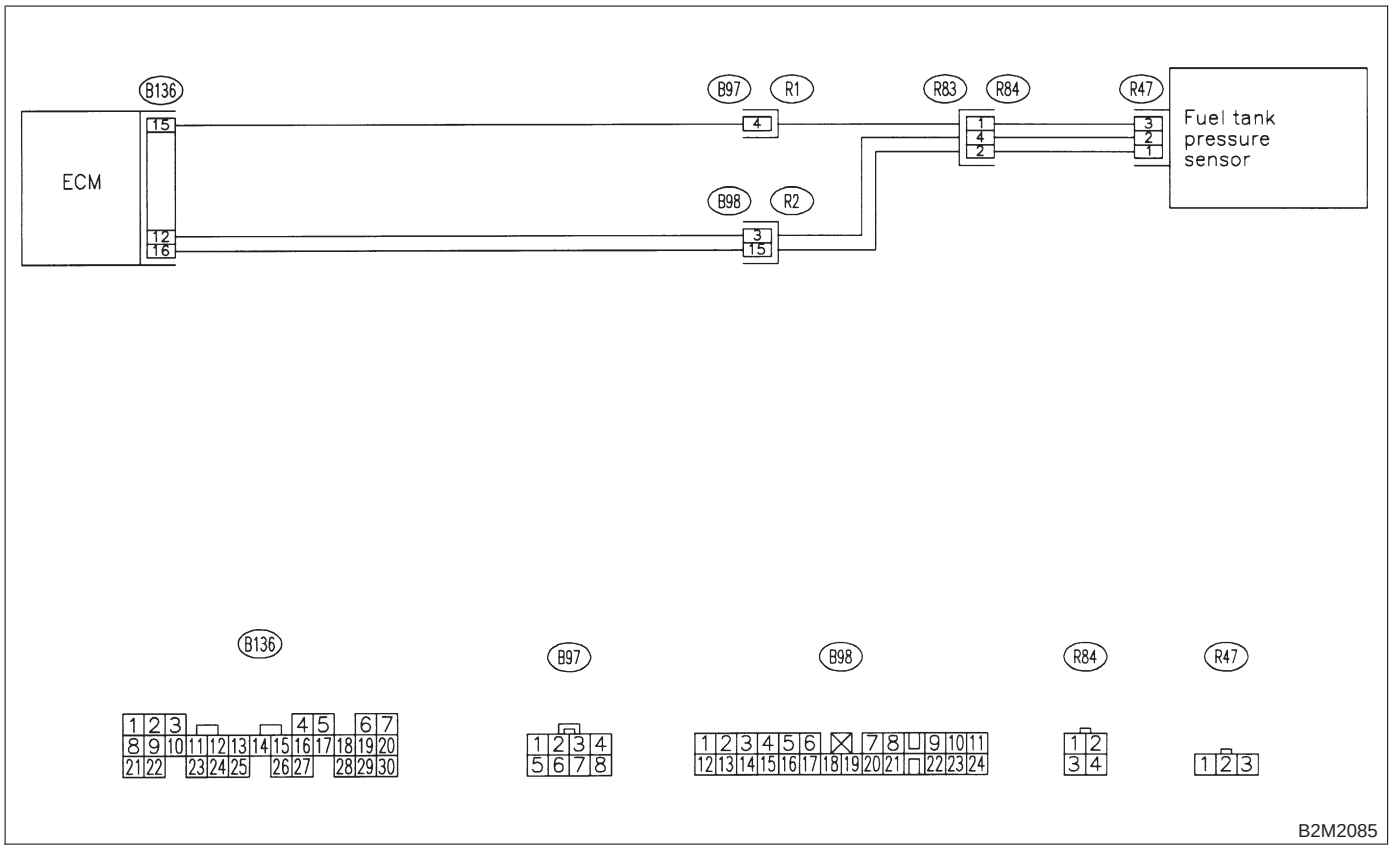
- **WIRING DIAGRAM:**



AM: DTC P0453 — EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR HIGH INPUT —

NOTE:
Check fuel tank pressure sensor circuit.
<Ref. to 2-7 [T12AN0].>

- **WIRING DIAGRAM:**

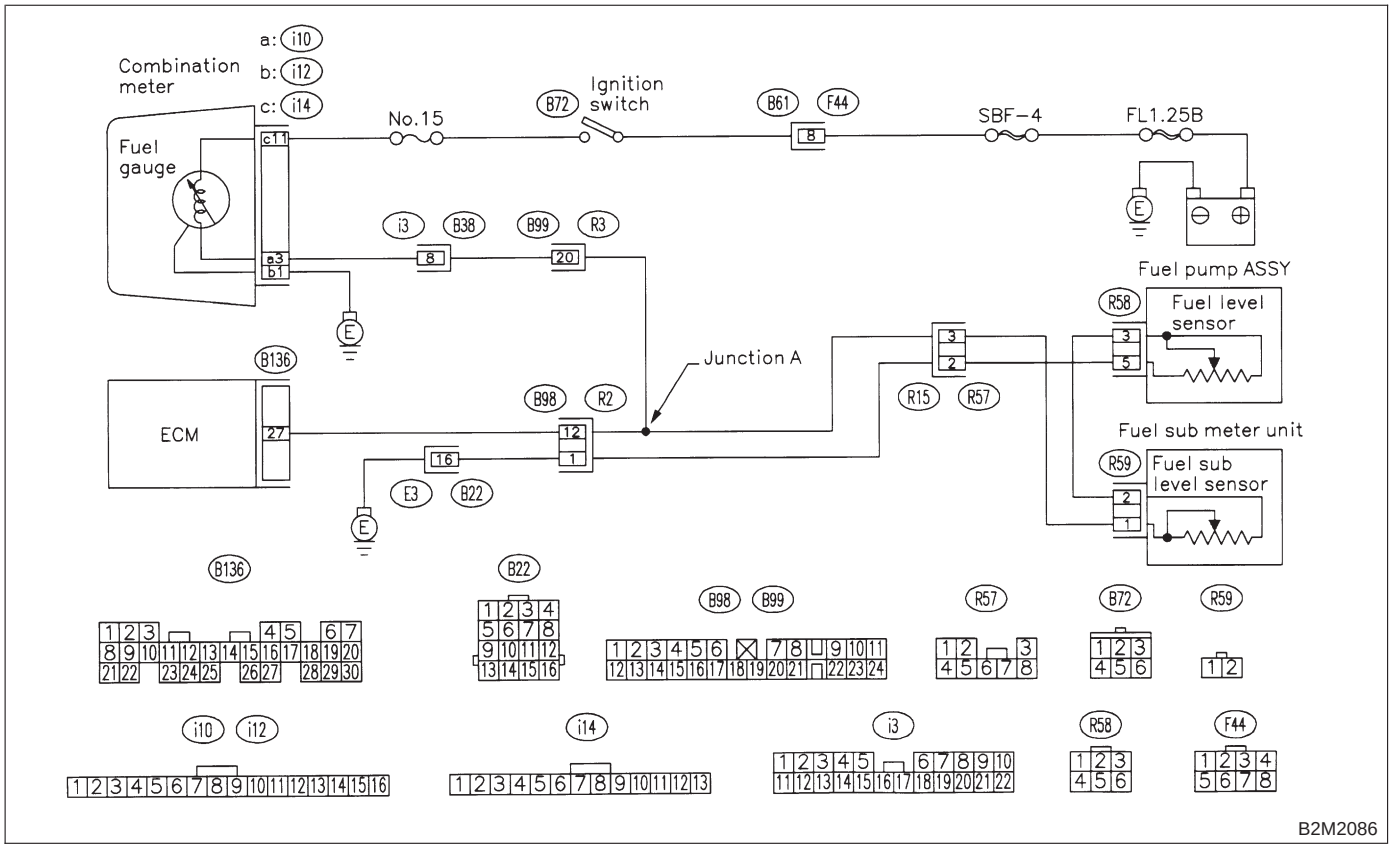


AN: DTC P0461 — FUEL LEVEL SENSOR CIRCUIT RANGE/ PERFORMANCE PROBLEM —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14AN1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0462 or P0463?***

YES : Inspect DTC P0462 or P0463 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

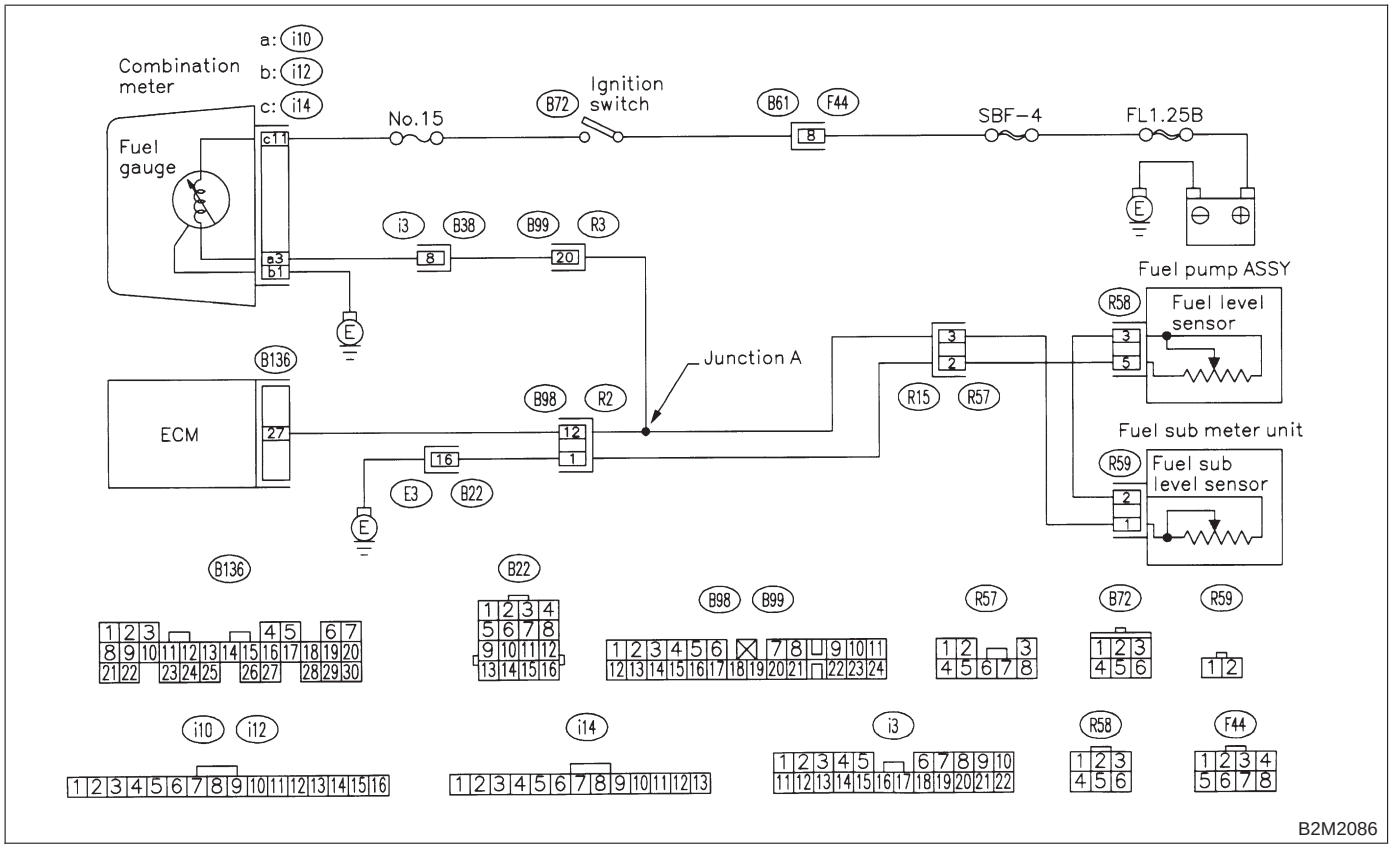
NOTE:
In this case, it is not necessary to inspect this trouble.

NO : Replace fuel sending unit <Ref. to 2-1 [W12A0].> and fuel sub meter unit <Ref. to 2-1 [W14A0].>.

AO: DTC P0462 — FUEL LEVEL SENSOR CIRCUIT LOW INPUT —

NOTE:
Check fuel tank sensor circuit.
<Ref. to 2-7 [T12AP0].>

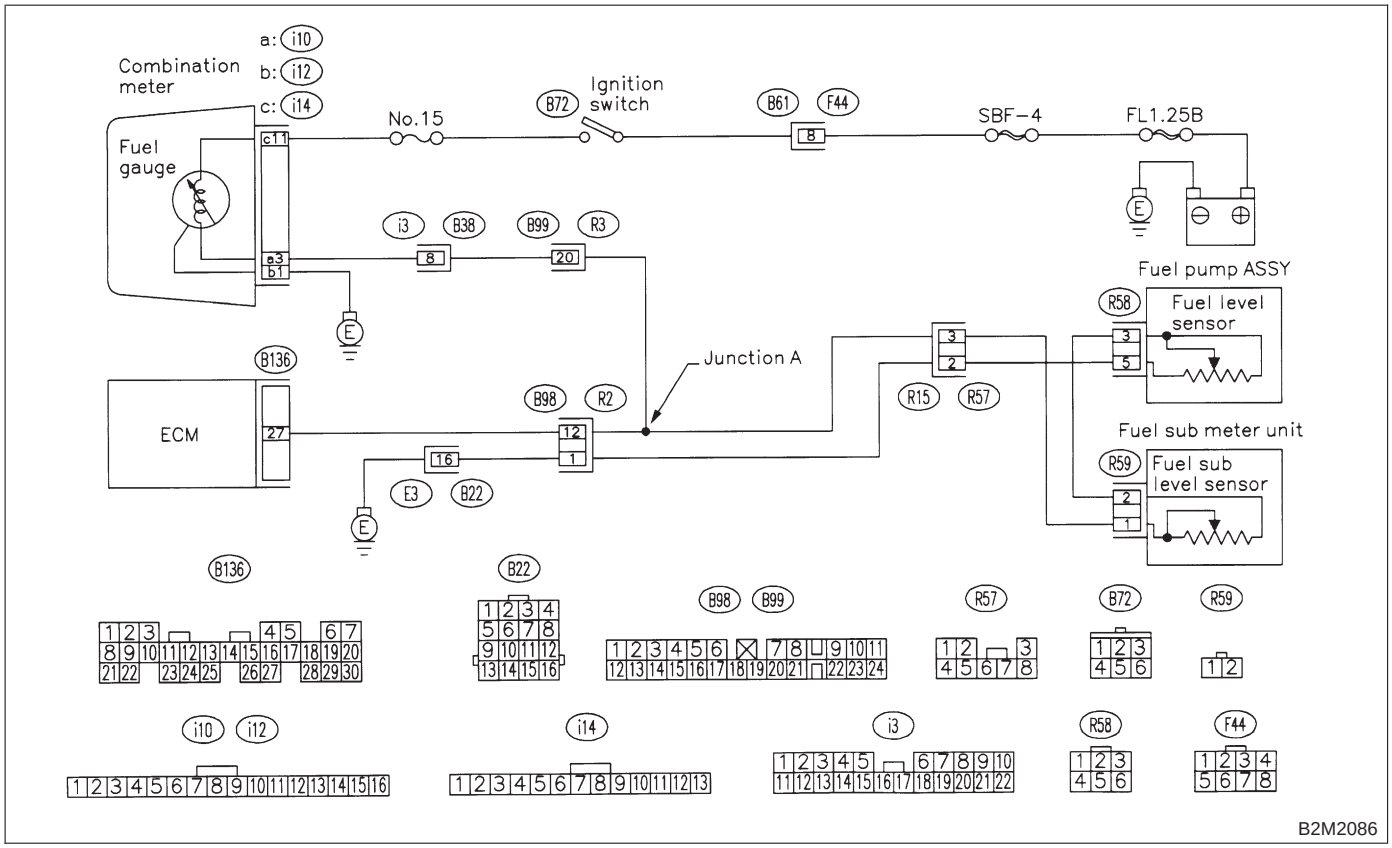
- **WIRING DIAGRAM:**



AP: DTC P0463 — FUEL LEVEL SENSOR CIRCUIT HIGH INPUT —

NOTE:
Check fuel level sensor circuit.
<Ref. to 2-7 [T12AQ0].>

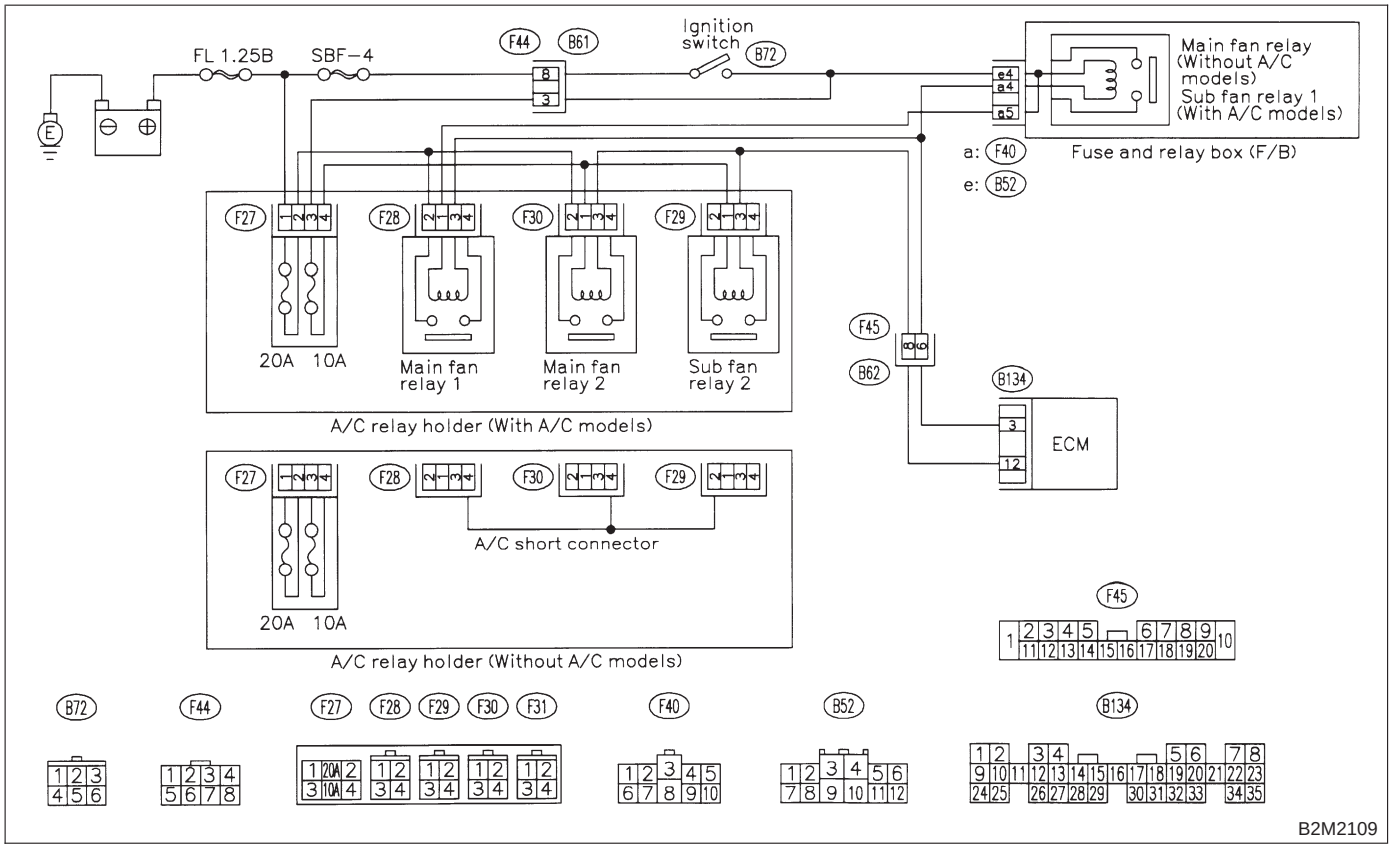
- **WIRING DIAGRAM:**



AQ: DTC P0480 — COOLING FAN RELAY 1 CIRCUIT LOW INPUT —

NOTE:
Check radiator fan relay 1 circuit.
<Ref. to 2-7 [T12AR0].>

- **WIRING DIAGRAM:**



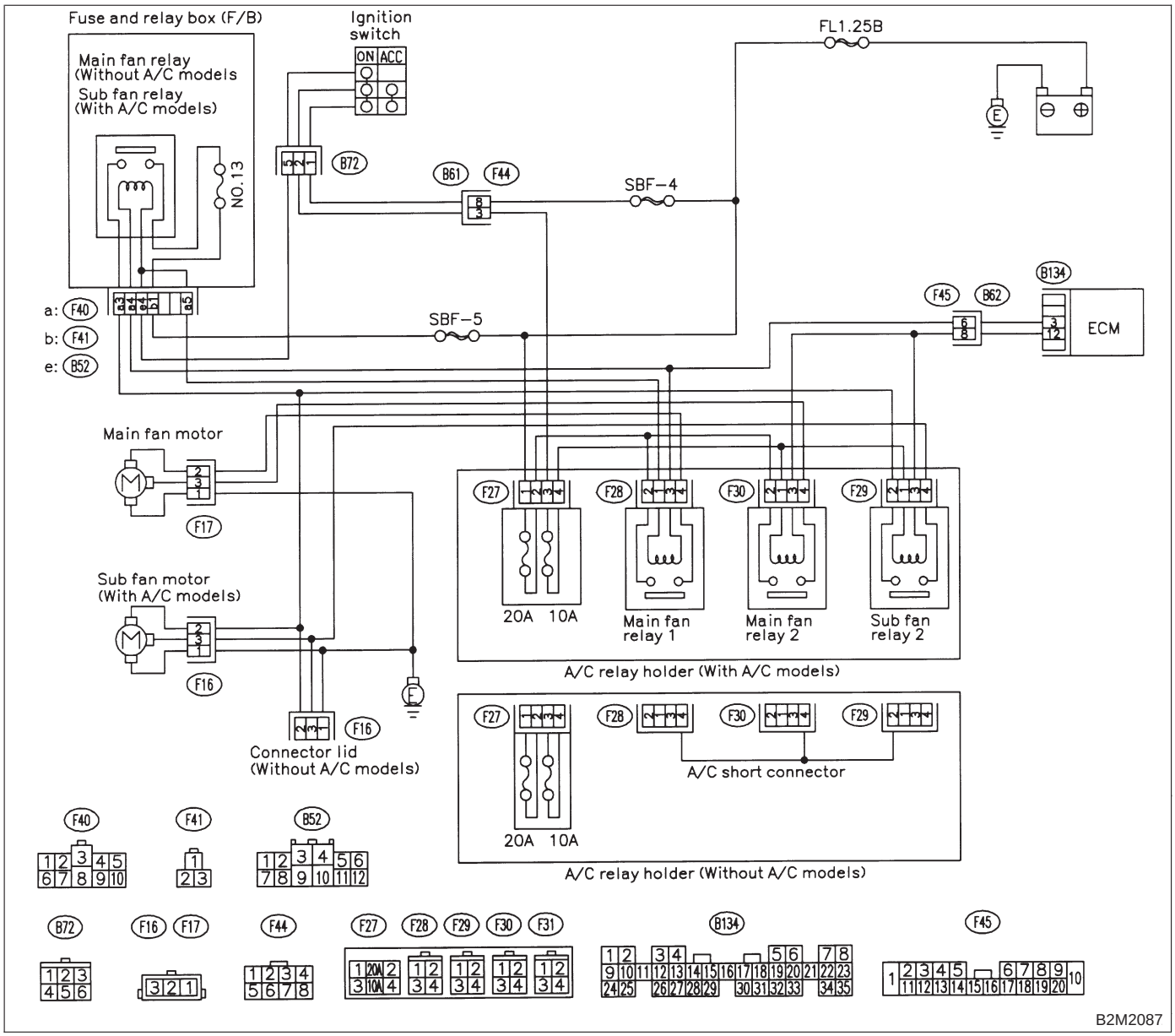
AR: DTC P0483 — COOLING FAN FUNCTION PROBLEM —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Occurrence of noise
  - Overheating

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

NOTE:
If the vehicle, with the engine idling, is placed very close to a wall or another vehicle, preventing normal cooling function, the OBD system may detect malfunction.

- **WIRING DIAGRAM:**



14AR1 :	CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Is there any other DTC on display?***

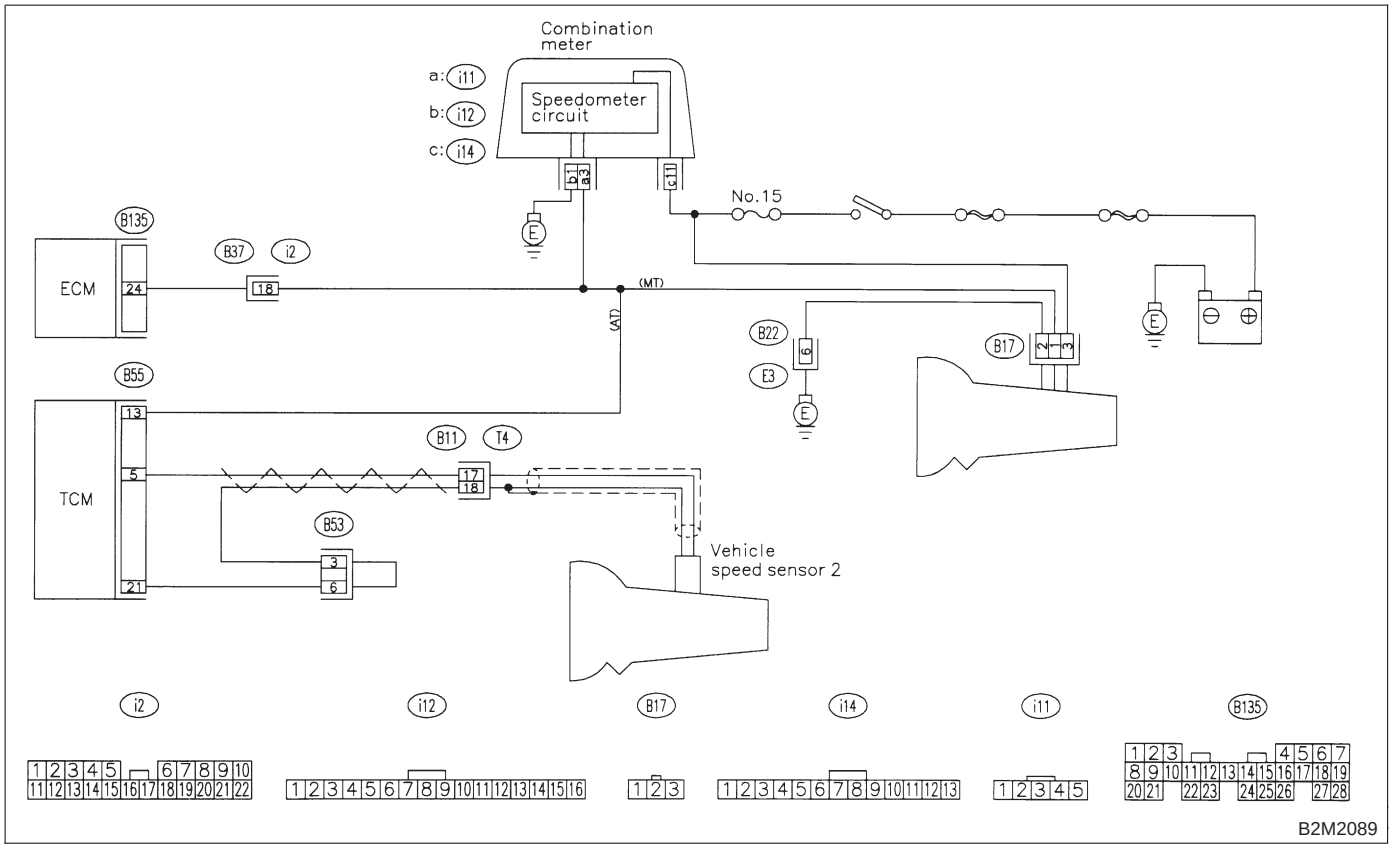
YES : Inspect the relevant DTC using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NO : Check engine cooling system. <Ref. to 2-5 [T100].>

AS: DTC P0500 — VEHICLE SPEED SENSOR MALFUNCTION —

NOTE:
Check vehicle speed sensor 2 circuit.
<Ref. to 2-7 [T12AT0].>

- **WIRING DIAGRAM:**



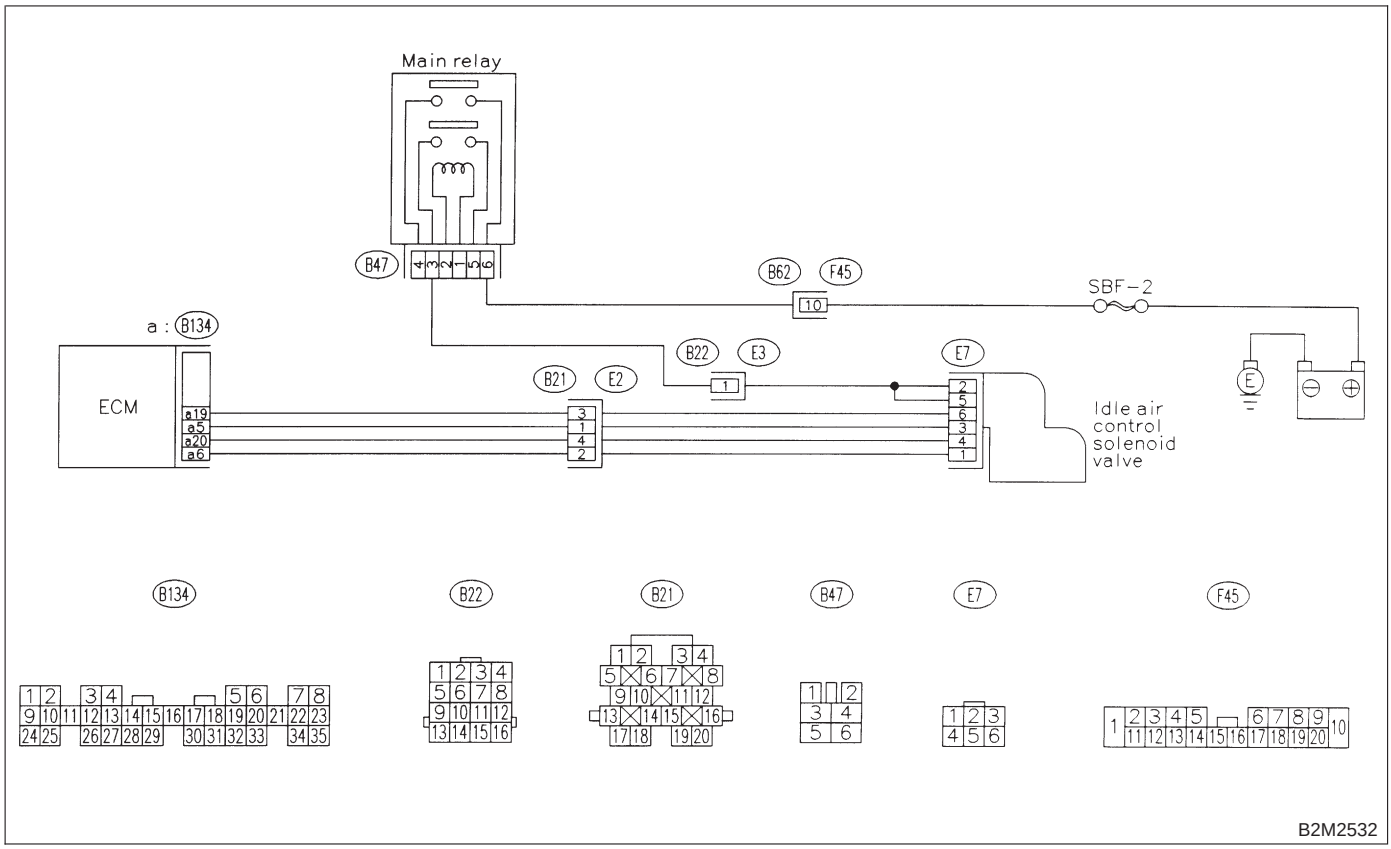
MEMO:

AT: DTC P0506 — IDLE CONTROL SYSTEM RPM LOWER THAN EXPECTED —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Engine is difficult to start.
  - Engine does not start.
  - Erroneous idling
  - Engine stalls.

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14AT1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P1510, P1511, P1512, P1513, P1514, P1515, P1516 or P1517?***

YES : Inspect DTC P1510, P1511, P1512, P1513, P1514, P1515, P1516 or P1517 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NOTE:
In this case, it is not necessary to inspect DTC P0506.

NO : Go to step **14AT2**.

14AT2 : CHECK AIR BY-PASS LINE.

1) Turn ignition switch to OFF.
2) Remove idle air control solenoid valve from throttle body. <Ref. to 2-7 [W12A2].>
3) Remove throttle body from intake manifold. <Ref. to 2-7 [W3A2].>
4) Using an air gun, force air into idle air control solenoid valve installation area. Confirm that forced air subsequently escapes from throttle body interior.

CHECK : ***Does air flow out?***

YES : Replace idle air control solenoid valve. <Ref. to 2-7 [W12A2].>

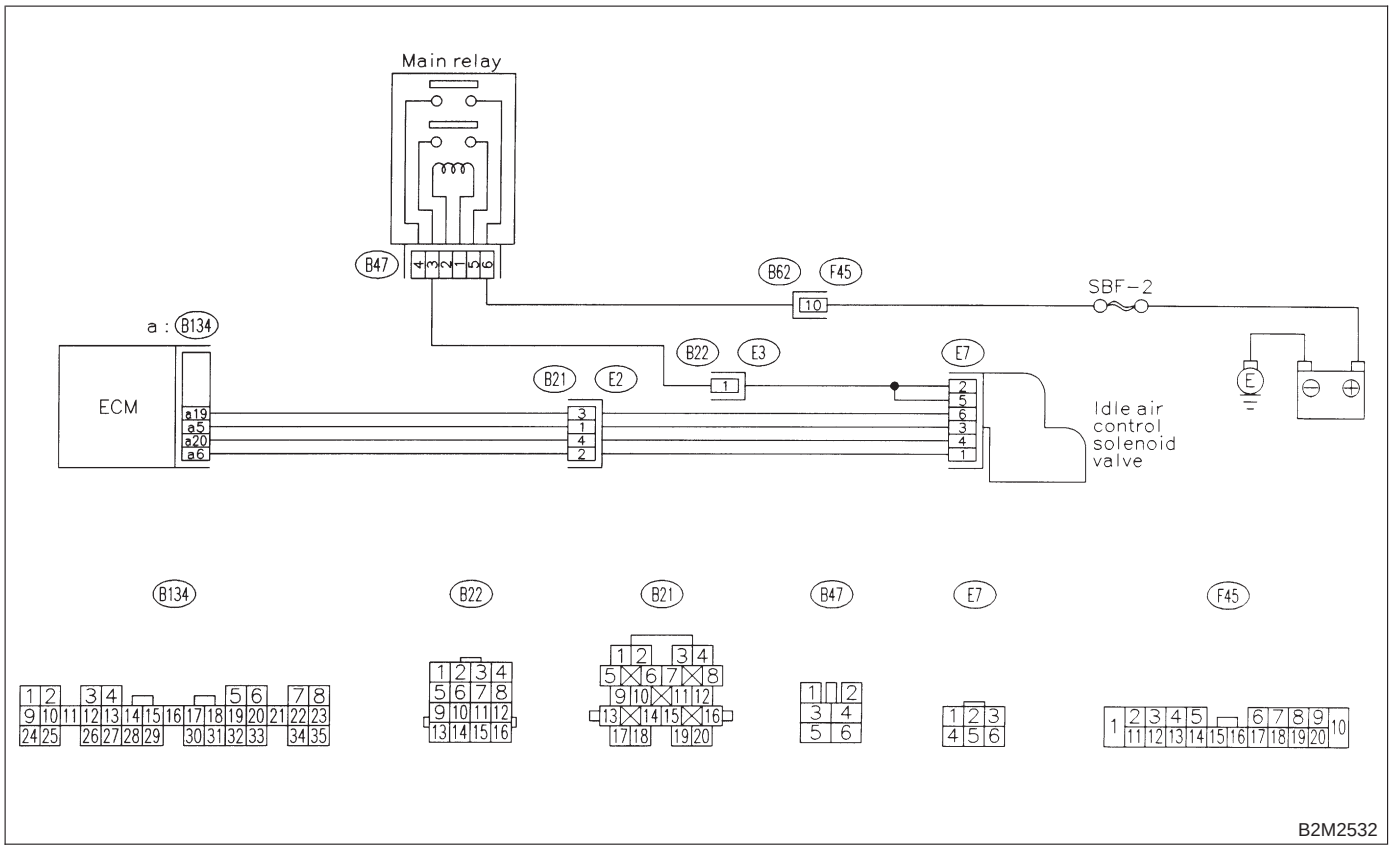
NO : Replace throttle body. <Ref. to 2-7 [W3A2].>

AU: DTC P0507 — IDLE CONTROL SYSTEM RPM HIGHER THAN EXPECTED —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Engine keeps running at higher revolution than specified idling revolution.

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14AU1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P1510, P1511, P1512, P1513, P1514, P1515, P1516 or P1517?***

YES : Inspect DTC P1510, P1511, P1512, P1513, P1514, P1515, P1516 or P1517 using "14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles". <Ref. to 2-7 [T14A0].>

NOTE:
In this case, it is not necessary to inspect DTC P0507.

NO : Go to step **14AU2**.

14AU2 : CHECK AIR INTAKE SYSTEM.

1) Turn ignition switch to ON.
2) Start engine, and idle it.
3) Check the following items.

- Loose installation of intake manifold, idle air control solenoid valve and throttle body
- Cracks of intake manifold gasket, idle air control solenoid valve gasket and throttle body gasket
- Disconnections of vacuum hoses

CHECK : ***Is there a fault in air intake system?***

YES : Repair air suction and leaks.

NO : Go to step **14AU3**.

14AU3 : CHECK AIR BY-PASS LINE.

1) Turn ignition switch to OFF.
2) Remove idle air control solenoid valve from throttle body. <Ref. to 2-7 [W12A2].>
3) Confirm that there are no foreign particles in by-pass air line.

CHECK : ***Are foreign particles in by-pass air line?***

YES : Remove foreign particles from by-pass air line.

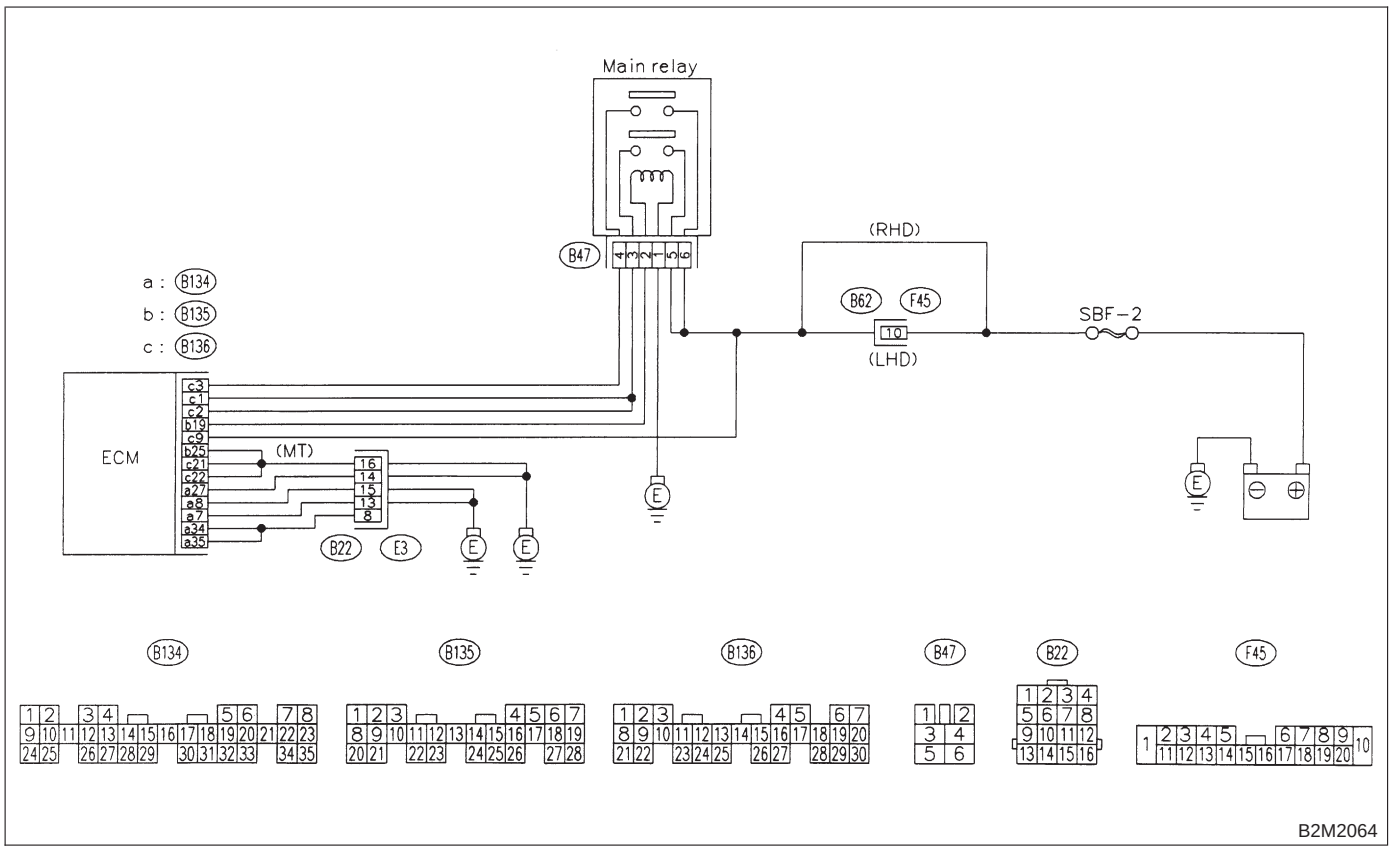
NO : Replace idle air control solenoid valve. <Ref. to 2-7 [W12A2].>

AV: DTC P0601 — INTERNAL CONTROL MODULE MEMORY CHECK SUM ERROR —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Engine does not start.
  - Engine stalls.

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14AV1 :	**CHECK ANY OTHER DTC ON DISPLAY.**

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0601?***

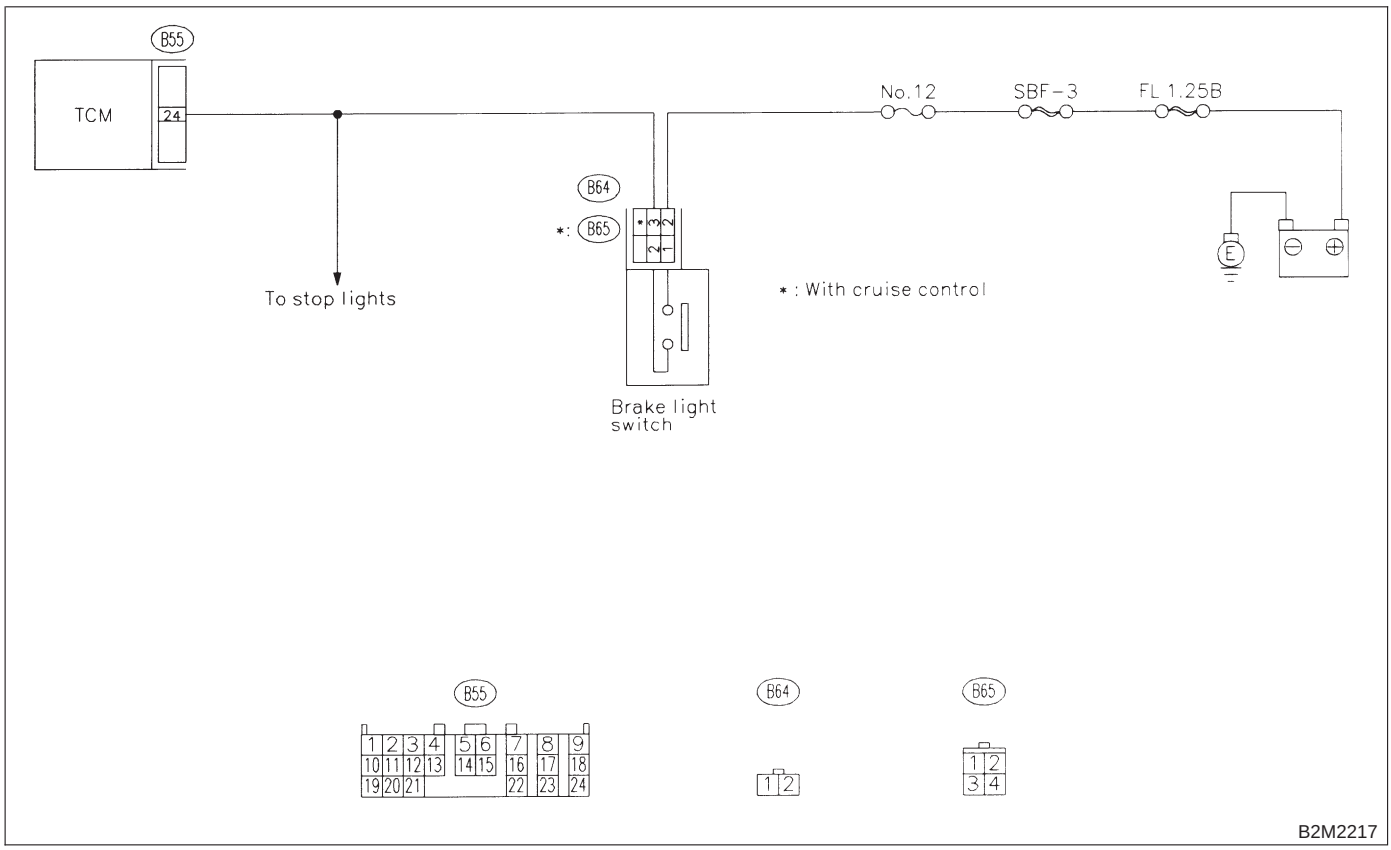
YES : Replace ECM. <Ref. to 2-7 [W15A1].>

NO : It is not necessary to inspect DTC P0601.

AW: DTC P0703 — BRAKE SWITCH INPUT MALFUNCTION —

NOTE:
Check brake switch input signal circuit.
<Ref. to 2-7 [T12AY0].>

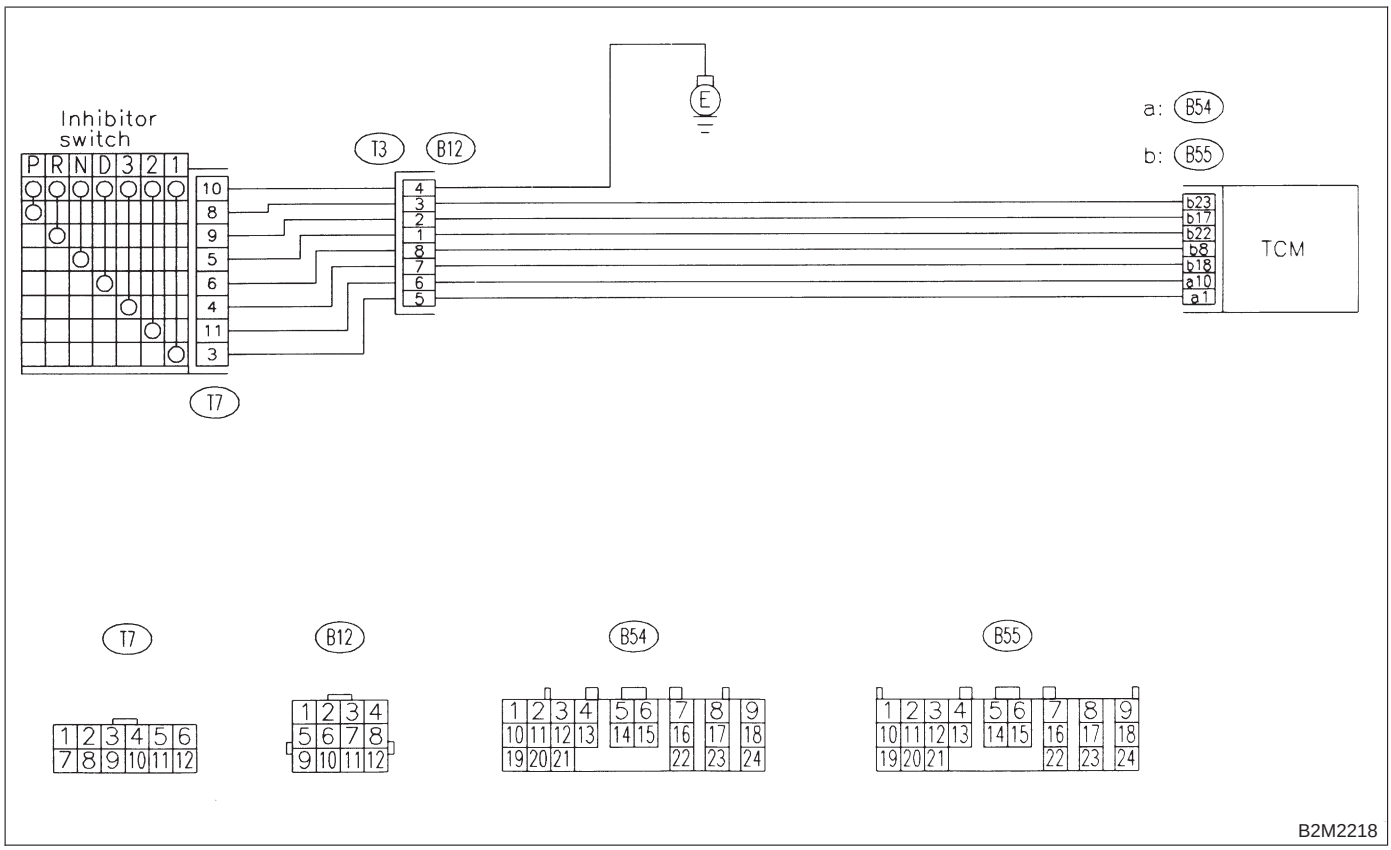
- **WIRING DIAGRAM:**



AX: DTC P0705 — TRANSMISSION RANGE SENSOR CIRCUIT MALFUNCTION —

NOTE:
Check inhibitor switch circuit.
<Ref. to 2-7 [T12AZ0].>

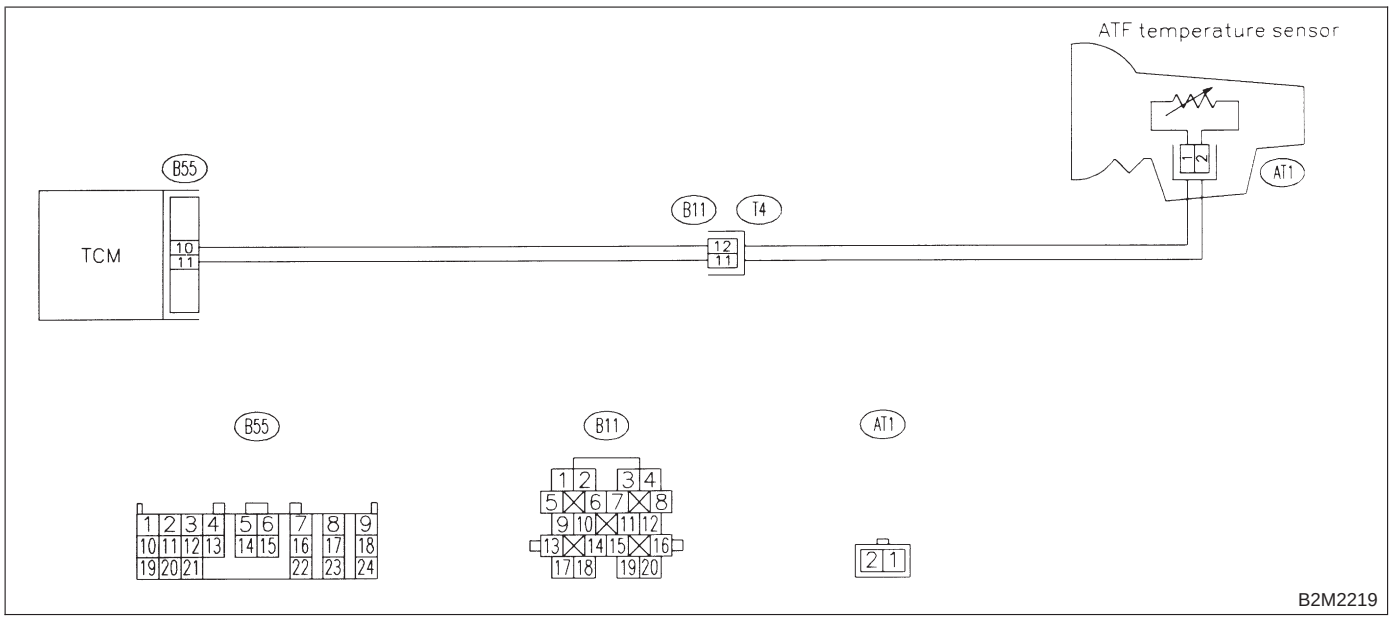
- **WIRING DIAGRAM:**



AY: DTC P0710 — TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT MALFUNCTION —

NOTE:
Check automatic transmission fluid temperature sensor circuit.
<Ref. to 2-7 [T12BA0].>

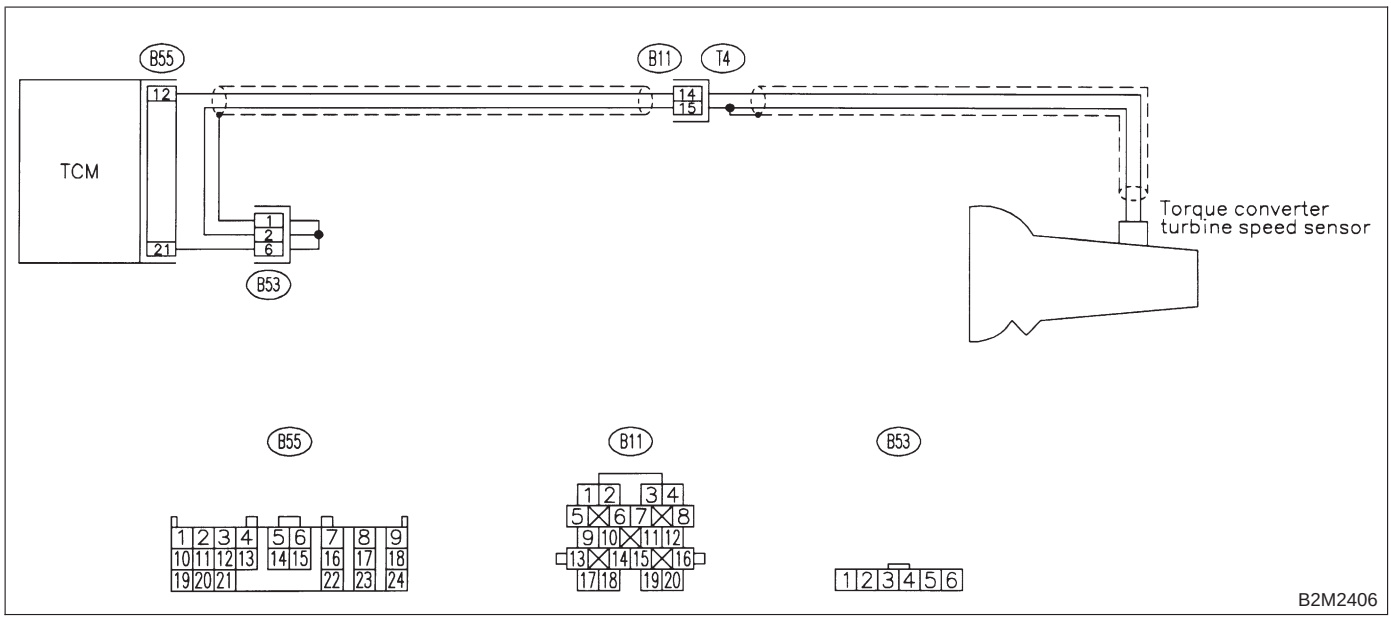
- **WIRING DIAGRAM:**



AZ: DTC P0715 — TORQUE CONVERTER TURBINE SPEED SENSOR CIRCUIT MALFUNCTION —

NOTE:
Check torque converter turbine speed sensor circuit.
<Ref. to 2-7 [T12BB0].>

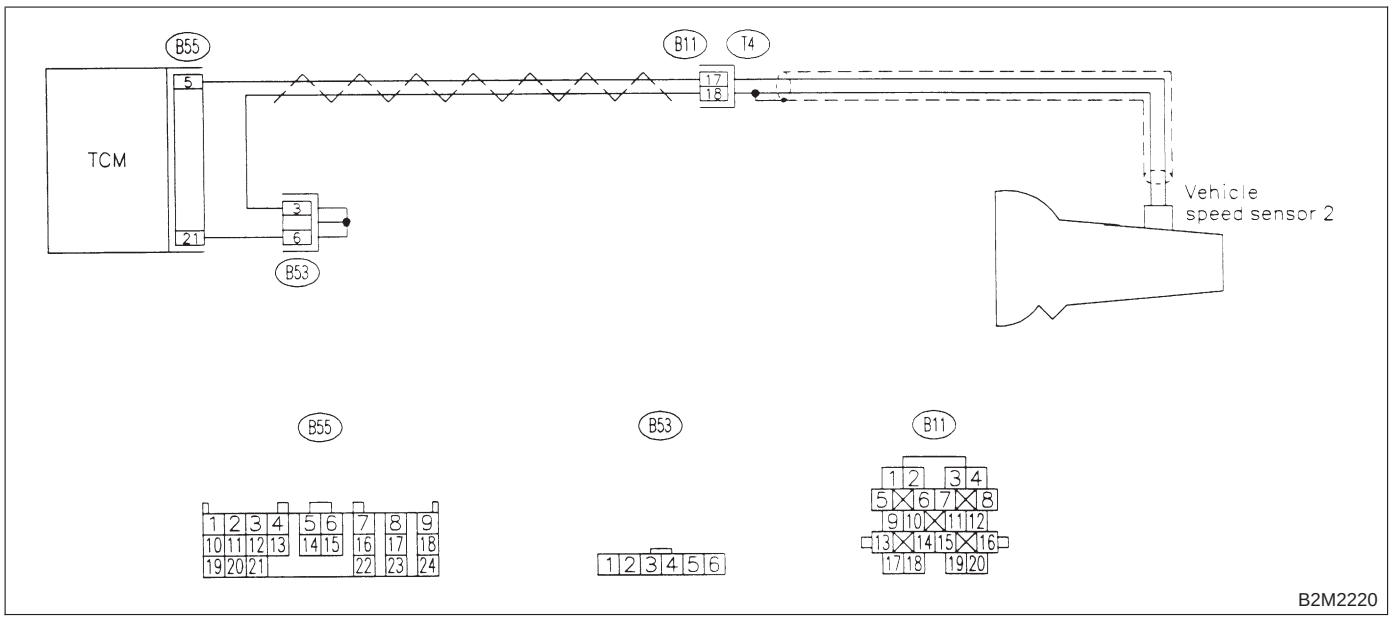
- **WIRING DIAGRAM:**



BA: DTC P0720 — OUTPUT SPEED SENSOR (VEHICLE SPEED SENSOR 2) CIRCUIT MALFUNCTION —

NOTE:
Check vehicle speed sensor 2 circuit.
<Ref. to 2-7 [T12BC0].>

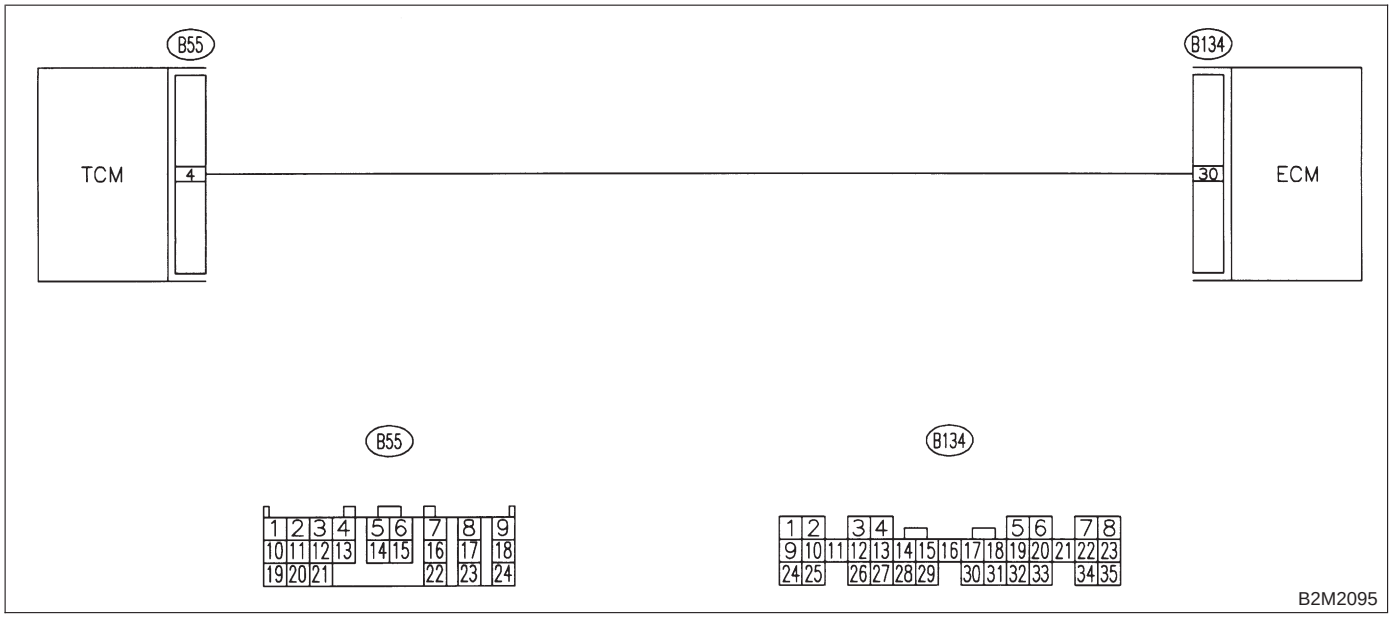
- **WIRING DIAGRAM:**



BB: DTC P0725 — ENGINE SPEED INPUT CIRCUIT MALFUNCTION —

NOTE:
Check engine speed signal input circuit.
<Ref. to 2-7 [T12BD0].>

- **WIRING DIAGRAM:**



MEMO:

BC: DTC P0731 — GEAR 1 INCORRECT RATIO —

NOTE:
For the diagnostic procedure, refer to 2-7 [T14BF0]. <Ref. to 2-7 [T14BF0].>

BD: DTC P0732 — GEAR 2 INCORRECT RATIO —

NOTE:
For the diagnostic procedure, refer to 2-7 [T14BF0]. <Ref. to 2-7 [T14BF0].>

BE: DTC P0733 — GEAR 3 INCORRECT RATIO —

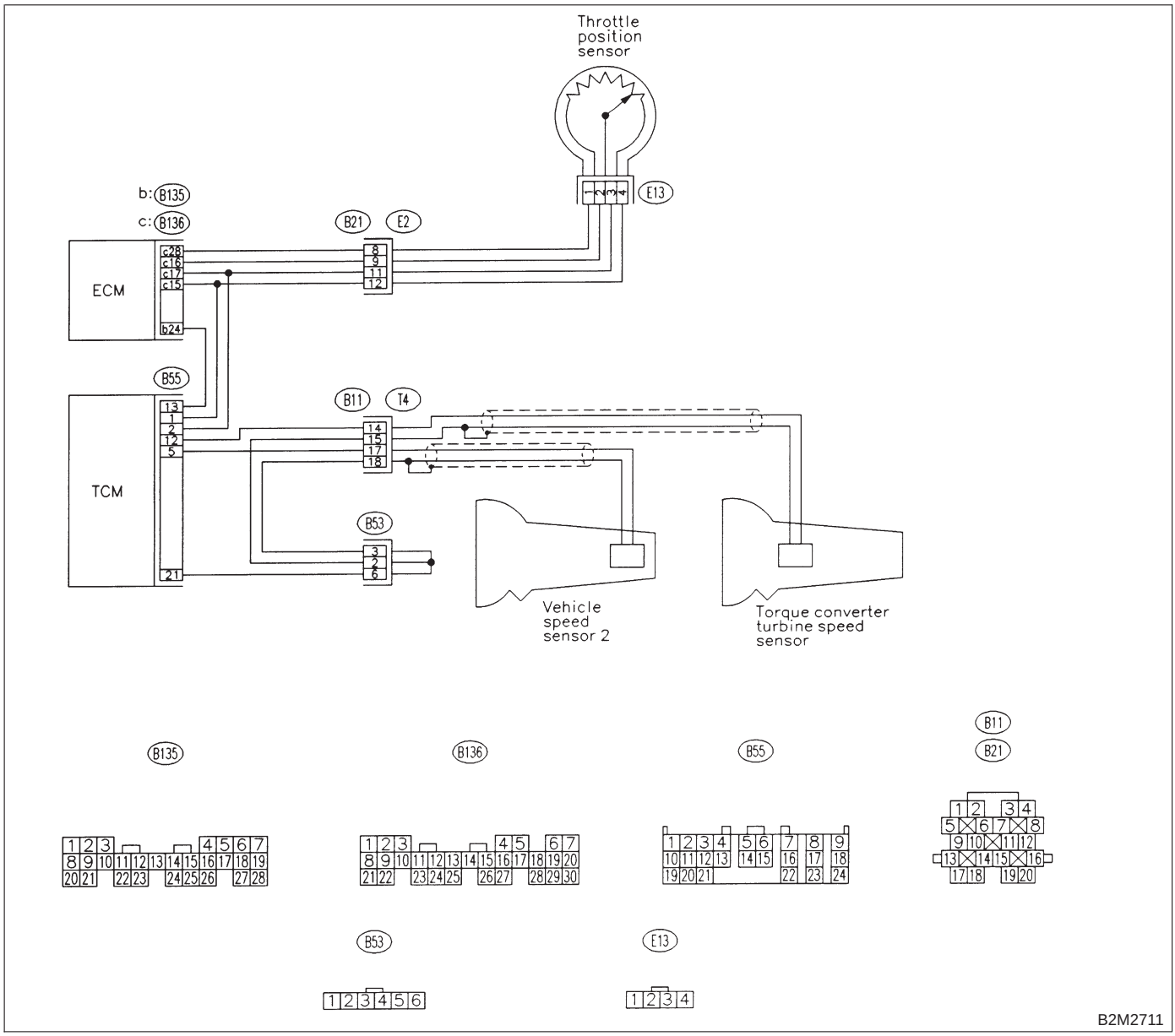
NOTE:
For the diagnostic procedure, refer to 2-7 [T14BF0]. <Ref. to 2-7 [T14BF0].>

BF: DTC P0734 — GEAR 4 INCORRECT RATIO —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Shift point too high or too low; engine brake not effected in “3” range; excessive shift shock; excessive tight corner “braking”

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

● **WIRING DIAGRAM:**



B2M2711

14BF1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Is there any other DTC on display?***

YES : Inspect relevant DTC using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NO : Go to step **14BF2**.

14BF2 : CHECK THROTTLE POSITION SENSOR CIRCUIT.

Check throttle position sensor circuit. <Ref. to 3-2 [T8F0].>

CHECK : ***Is there any trouble in throttle position sensor circuit?***

YES : Repair or replace throttle position sensor circuit.

NO : Go to step **14BF3**.

14BF3 : CHECK VEHICLE SPEED SENSOR 2 CIRCUIT.

Check vehicle speed sensor 2 circuit. <Ref. to 3-2 [T8G0].>

CHECK : ***Is there any trouble in vehicle speed sensor 2 circuit?***

YES : Repair or replace vehicle speed sensor 2 circuit.

NO : Go to step **14BF4**.

14BF4 : CHECK TORQUE CONVERTER TURBINE SPEED SENSOR CIRCUIT.

Check torque converter turbine speed sensor circuit. <Ref. to 3-2 [T8H0].>

CHECK : ***Is there any trouble in torque converter turbine speed sensor circuit?***

YES : Repair or replace torque converter turbine speed sensor circuit.

NO : Go to step **14BF5**.

14BF5 : CHECK POOR CONTACT.

Check poor contact in TCM connector. <Ref. to FOREWORD [T3C1].>

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

YES : Repair poor contact in TCM connector.

NO : Go to step **14BF6**.

14BF6 : CHECK MECHANICAL TROUBLE.

Check mechanical trouble in automatic transmission.

CHECK : ***Is there any mechanical trouble in automatic transmission?***

YES : Repair or replace automatic transmission. <Ref. to 2-11 [W300].>

NO : Replace TCM. <Ref. to 3-2 [W22A0].>

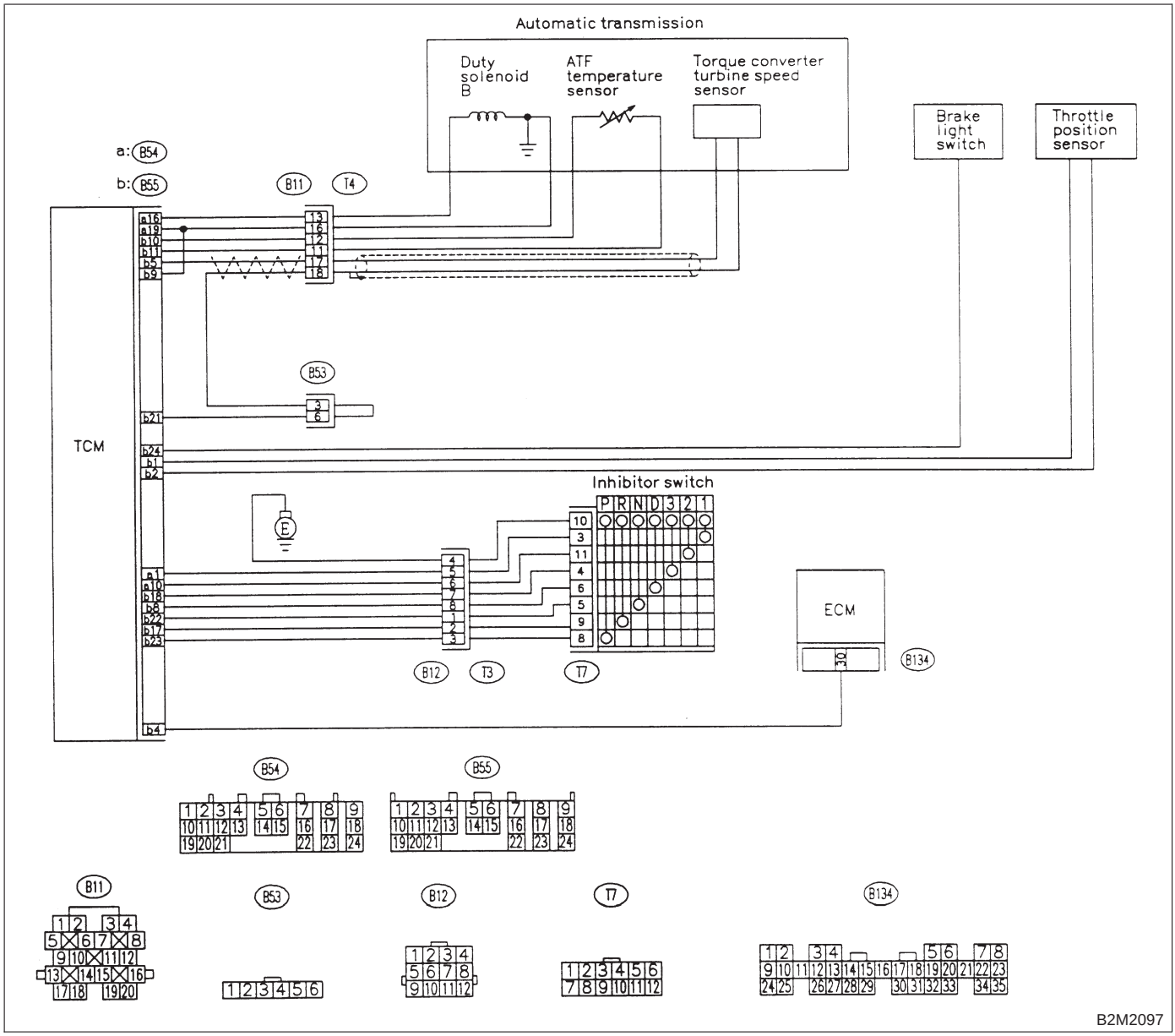
MEMO:

BG: DTC P0740 — TORQUE CONVERTER CLUTCH SYSTEM MALFUNCTION —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - No lock-up (after engine warm-up)
  - No shift or excessive tight corner “braking”

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14BG1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Is there any other DTC on display?***
YES : Inspect the relevant DTC using "14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles". <Ref. to 2-7 [T14A0].>
NO : Go to step **14BG2**.

14BG2 : CHECK DUTY SOLENOID B CIRCUIT.

Check duty solenoid B circuit. <Ref. to 3-2 [T8Q0].>

CHECK : ***Is there any trouble in duty solenoid B circuit?***
YES : Repair or replace duty solenoid B circuit.
NO : Go to step **14BG3**.

14BG3 : CHECK THROTTLE POSITION SENSOR CIRCUIT.

Check throttle position sensor circuit. <Ref. to 3-2 [T8F0].>

CHECK : ***Is there any trouble in throttle position sensor circuit?***
YES : Repair or replace throttle position sensor circuit.
NO : Go to step **14BG4**.

14BG4 : CHECK TORQUE CONVERTER TURBINE SPEED SENSOR CIRCUIT.

Check torque converter turbine speed sensor circuit. <Ref. to 3-2 [T8H0].>

CHECK : ***Is there any trouble in torque converter turbine speed sensor circuit?***
YES : Repair or replace torque converter turbine speed sensor circuit.
NO : Go to step **14BG5**.

14BG5 : CHECK ENGINE SPEED INPUT CIRCUIT.

Check engine speed input circuit. <Ref. to 3-2 [T8C0].>

CHECK : ***Is there any trouble in engine speed input circuit?***
YES : Repair or replace engine speed input circuit.
NO : Go to step **14BG6**.

14BG6 : CHECK INHIBITOR SWITCH CIRCUIT.

Check inhibitor switch circuit. <Ref. to 2-7 [T14AX0].>

CHECK : ***Is there any trouble in inhibitor switch circuit?***
YES : Repair or replace inhibitor switch circuit.
NO : Go to step **14BG7**.

14BG7 : CHECK BRAKE LIGHT SWITCH CIRCUIT.

Check brake light switch circuit. <Ref. to 2-7 [T14AW0].>

CHECK : ***Is there any trouble in brake light switch circuit?***
YES : Repair or replace brake light switch circuit.
NO : Go to step **14BG8**.

14BG8 : CHECK ATF TEMPERATURE SENSOR CIRCUIT.

Check ATF temperature sensor circuit. <Ref. to 3-2 [T8E0].>

CHECK : ***Is there any trouble in ATF temperature sensor circuit?***
YES : Repair or replace ATF temperature sensor circuit.
NO : Go to step **14BG9**.

14BG9 : CHECK POOR CONTACT.

Check poor contact in TCM connector. <Ref. to FOREWORD [T3C1].>

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

YES : Repair poor contact in TCM connector.

NO : Go to step **14BG10**.

14BG10 : CHECK MECHANICAL TROUBLE.

Check mechanical trouble in automatic transmission.

CHECK : ***Is there any mechanical trouble in automatic transmission?***

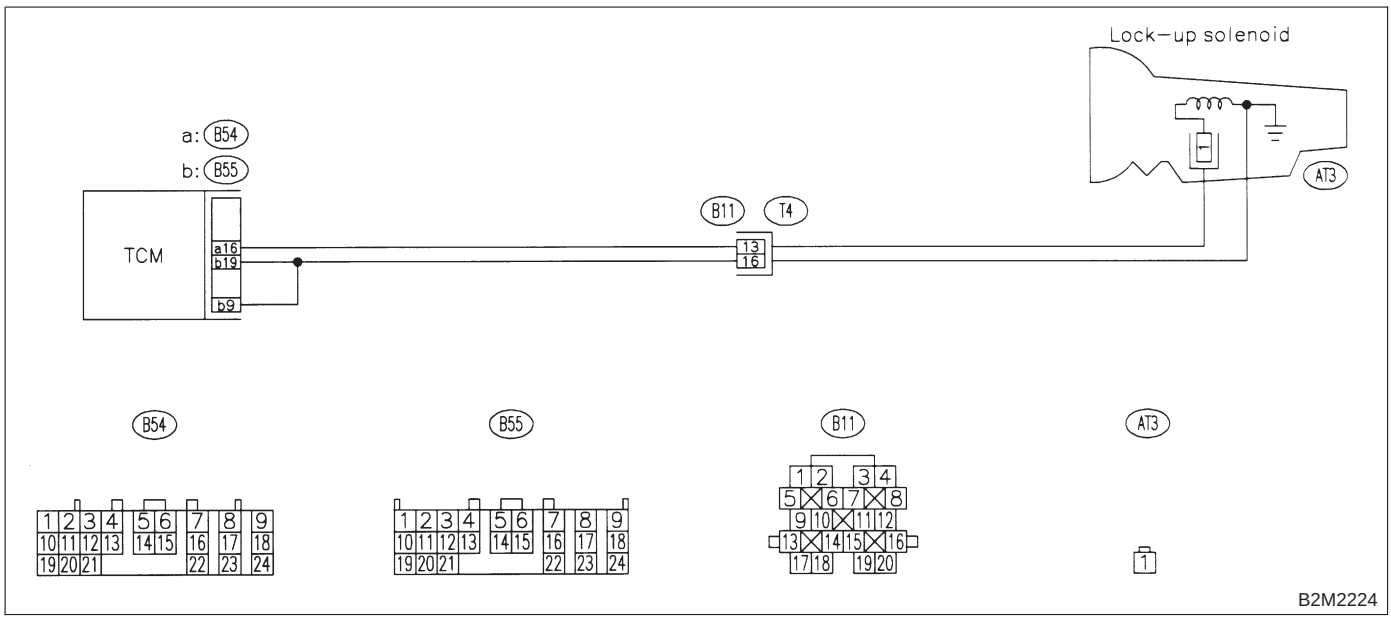
YES : Repair or replace automatic transmission. <Ref. to 2-11 [W300].>

NO : Replace TCM. <Ref. to 3-2 [W22A0].>

BH: DTC P0743 — TORQUE CONVERTER CLUTCH SYSTEM (DUTY SOLENOID B) ELECTRICAL —

NOTE:
Check duty solenoid B circuit.
<Ref. to 2-7 [T12BJ0].>

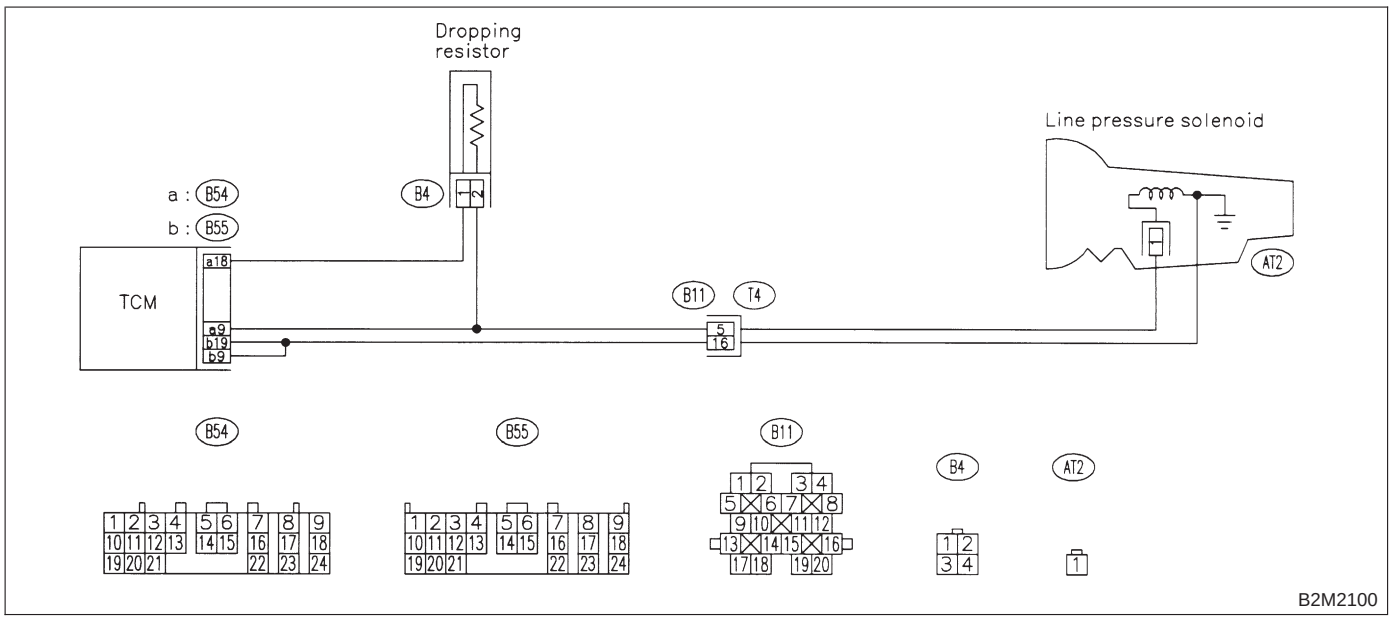
- **WIRING DIAGRAM:**



BI: DTC P0748 — PRESSURE CONTROL SOLENOID (DUTY SOLENOID A) ELECTRICAL —

NOTE:
Check duty solenoid A circuit.
<Ref. to 2-7 [T12BK0].>

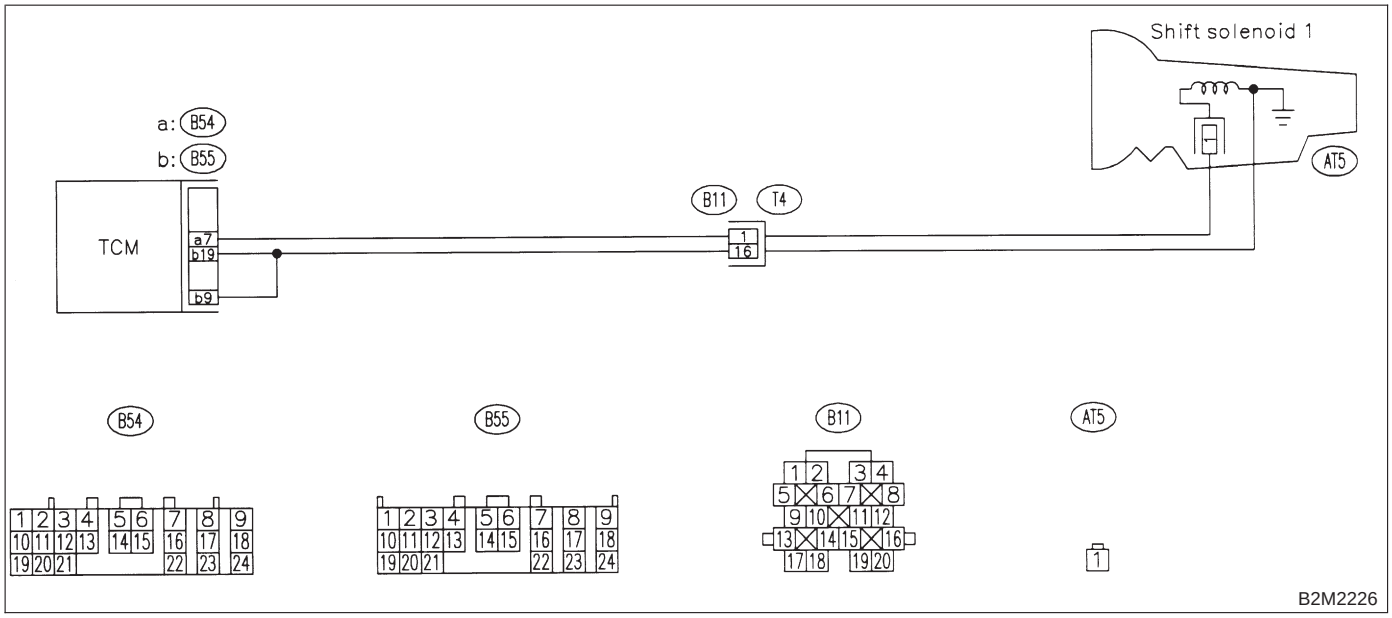
- **WIRING DIAGRAM:**



BJ: DTC P0753 — SHIFT SOLENOID A (SHIFT SOLENOID 1) ELECTRICAL —

NOTE:
Check shift solenoid 1 circuit.
<Ref. to 2-7 [T12BL0].>

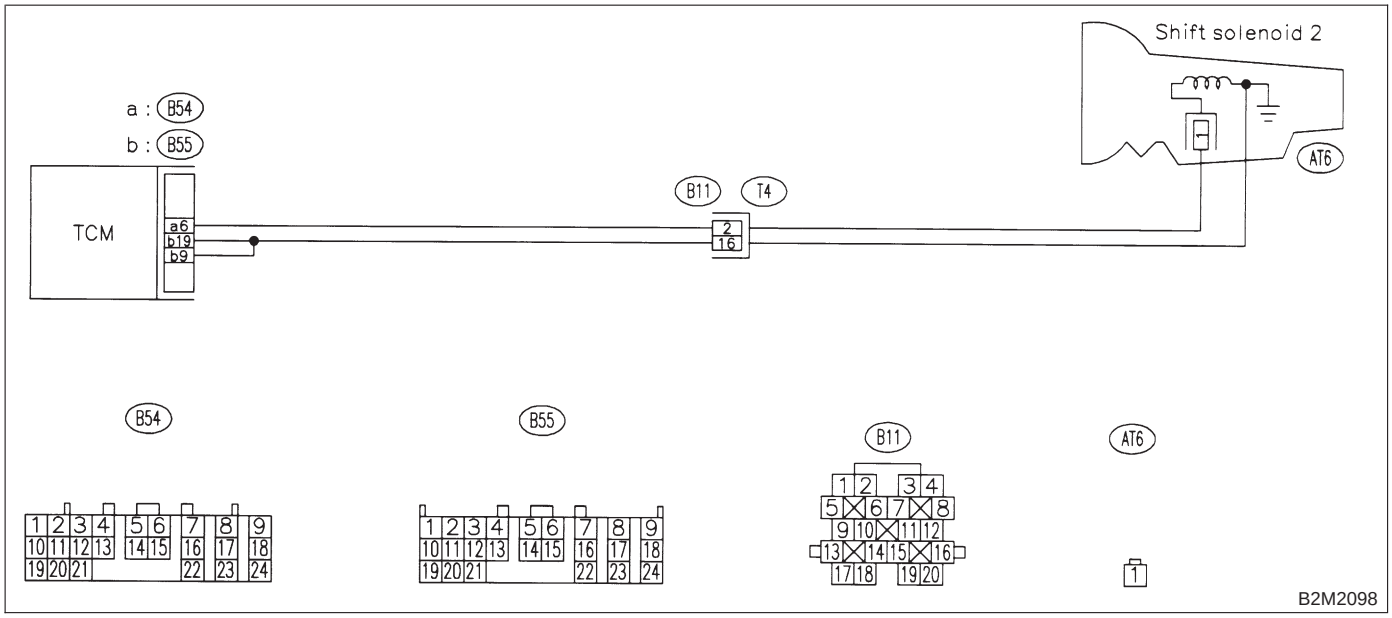
- **WIRING DIAGRAM:**



BK: DTC P0758 — SHIFT SOLENOID B (SHIFT SOLENOID 2) ELECTRICAL —

NOTE:
Check shift solenoid 2 circuit.
<Ref. to 2-7 [T12BM0].>

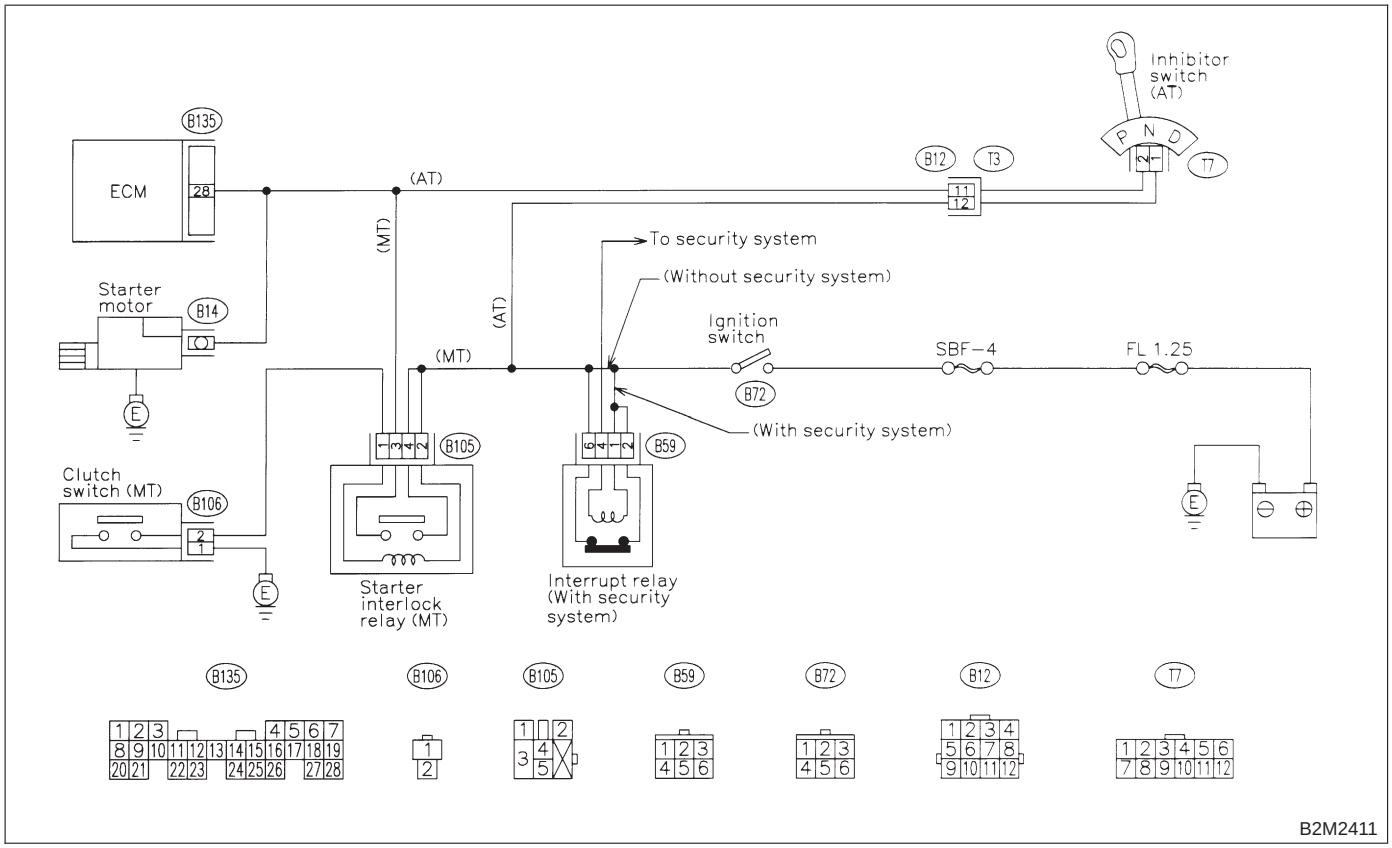
- **WIRING DIAGRAM:**



BL: DTC P1100 — STARTER SWITCH CIRCUIT LOW INPUT —

NOTE:
Check starter switch circuit.
<Ref. to 2-7 [T12BN0].>

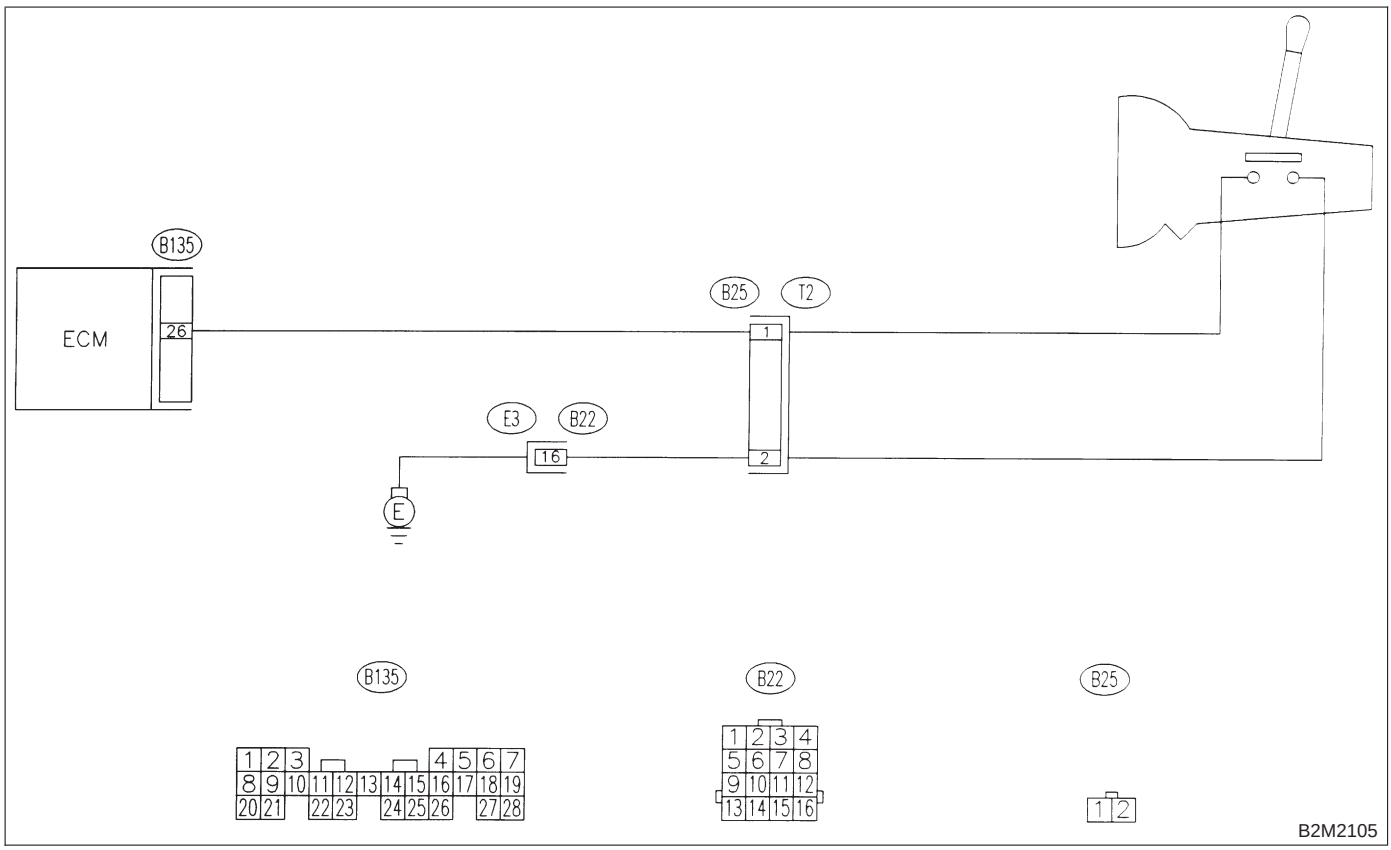
- **WIRING DIAGRAM:**



BM: DTC P1101 — NEUTRAL POSITION SWITCH CIRCUIT LOW INPUT [MT VEHICLES] —

NOTE:
Check neutral position switch circuit.
<Ref. to 2-7 [T12BO0].>

- **WIRING DIAGRAM:**



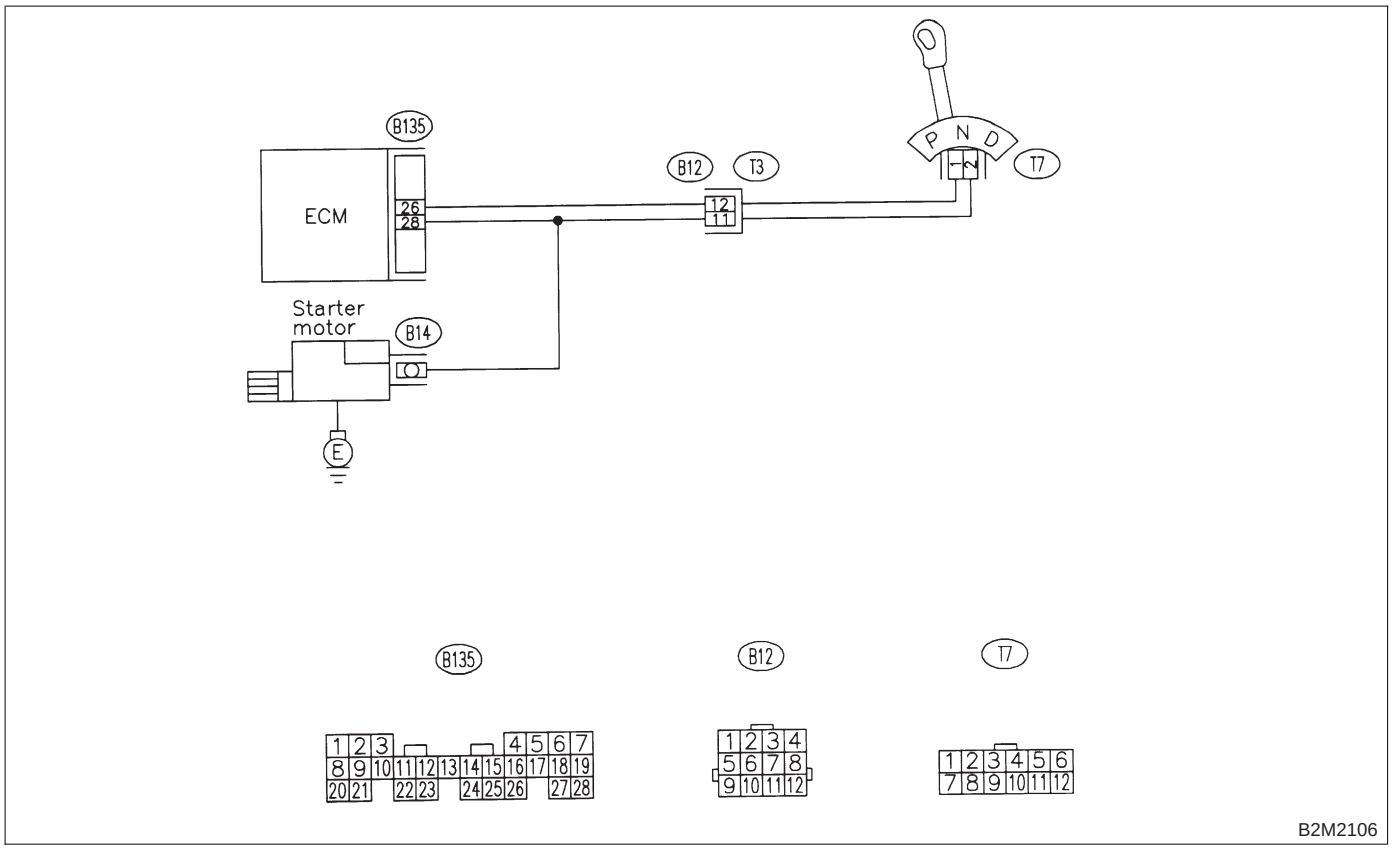
MEMO:

BN: DTC P1101 — NEUTRAL POSITION SWITCH CIRCUIT HIGH INPUT [AT VEHICLES] —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Erroneous idling

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14BN1 : CHECK DTC P0705 ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0705?***

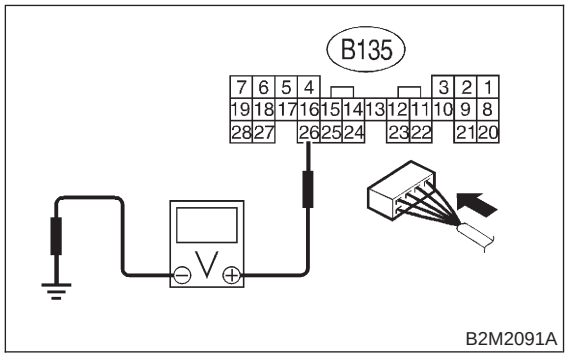
YES : Inspect DTC P0705 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NO : Go to step **14BN2**.

14BN2 : CHECK INPUT SIGNAL FOR ECM.

1) Turn ignition switch to ON.
2) Measure voltage between ECM and chassis ground in selector lever "N" and "P" positions.

Connector & terminal
(B135) No. 26 (+) — Chassis ground (−):

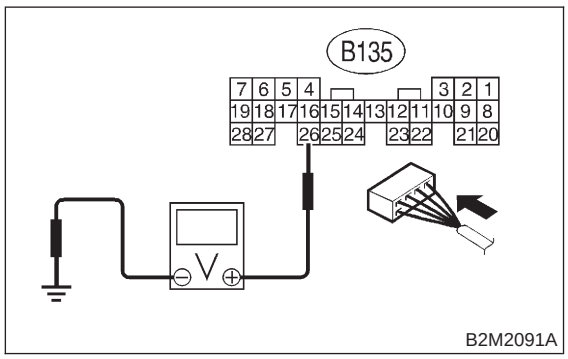


CHECK : ***Is the voltage less than 1 V?***
YES : Go to step **14BN3**.
NO : Go to step **14BN5**.

14BN3 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM and chassis ground in selector lever except for "N" and "P" positions.

Connector & terminal
(B135) No. 26 (+) — Chassis ground (−):



CHECK : ***Is the voltage between 4.5 and 5.5 V?***
YES : Go to step **14BN4**.
NO : Go to step **14BN5**.

14BN4 : CHECK POOR CONTACT.

Check poor contact in ECM connector. <Ref. to FOREWORD [T3C1].>

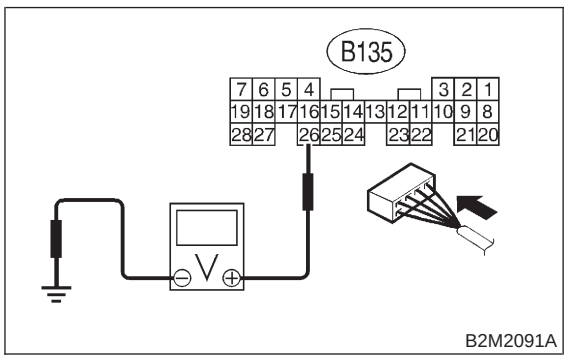
CHECK : ***Is there poor contact in ECM connector?***
YES : Repair poor contact in ECM connector.
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

14BN5 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM and chassis ground.

Connector & terminal
(B135) No. 26 (+) — Chassis ground (−):

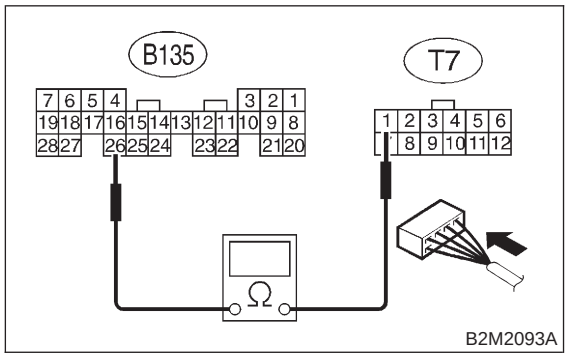


CHECK : ***Is the voltage more than 10 V?***
YES : Repair battery short circuit in harness between ECM and inhibitor switch connector.
NO : Go to step **14BN6**.

14BN6 : CHECK HARNESS BETWEEN ECM AND INHIBITOR SWITCH CONNECTOR.

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

Connector & terminal
(B135) No. 26 — (T7) No. 1:



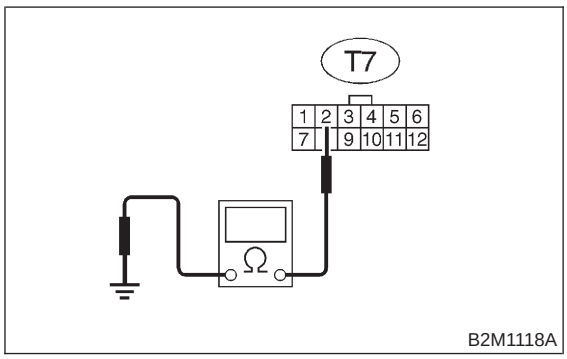
CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14BN7**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and inhibitor switch connector
- Poor contact in coupling connector (B12)
- Poor contact in inhibitor switch connector
- Poor contact in ECM connector

14BN7 : CHECK INHIBITOR SWITCH GROUND LINE.

Measure resistance of harness between inhibitor switch connector and engine ground.

Connector & terminal
(T7) No. 2 — Engine ground:

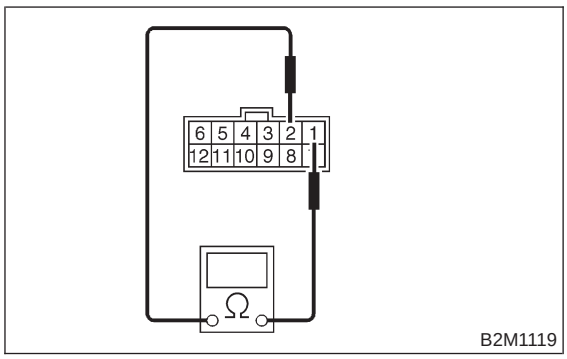


CHECK : ***Is the resistance less than 5 Ω?***
YES : Go to step **14BN8**.
NO : Repair open circuit in inhibitor switch ground line.

14BN8 : CHECK INHIBITOR SWITCH.

Measure resistance between inhibitor switch connector receptacle's terminals in selector lever "N" and "P" positions.

Terminals
No. 1 — No. 2:



CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14BN9**.
NO : Replace inhibitor switch. <Ref. to 3-2 [W2C0].>

14BN9 : CHECK SELECTOR CABLE CONNECTION.

CHECK : ***Is there any fault in selector cable connection to inhibitor switch?***

YES : Repair selector cable connection. <Ref. to 3-2 [W2A0].>

NO : Contact with SOA service.

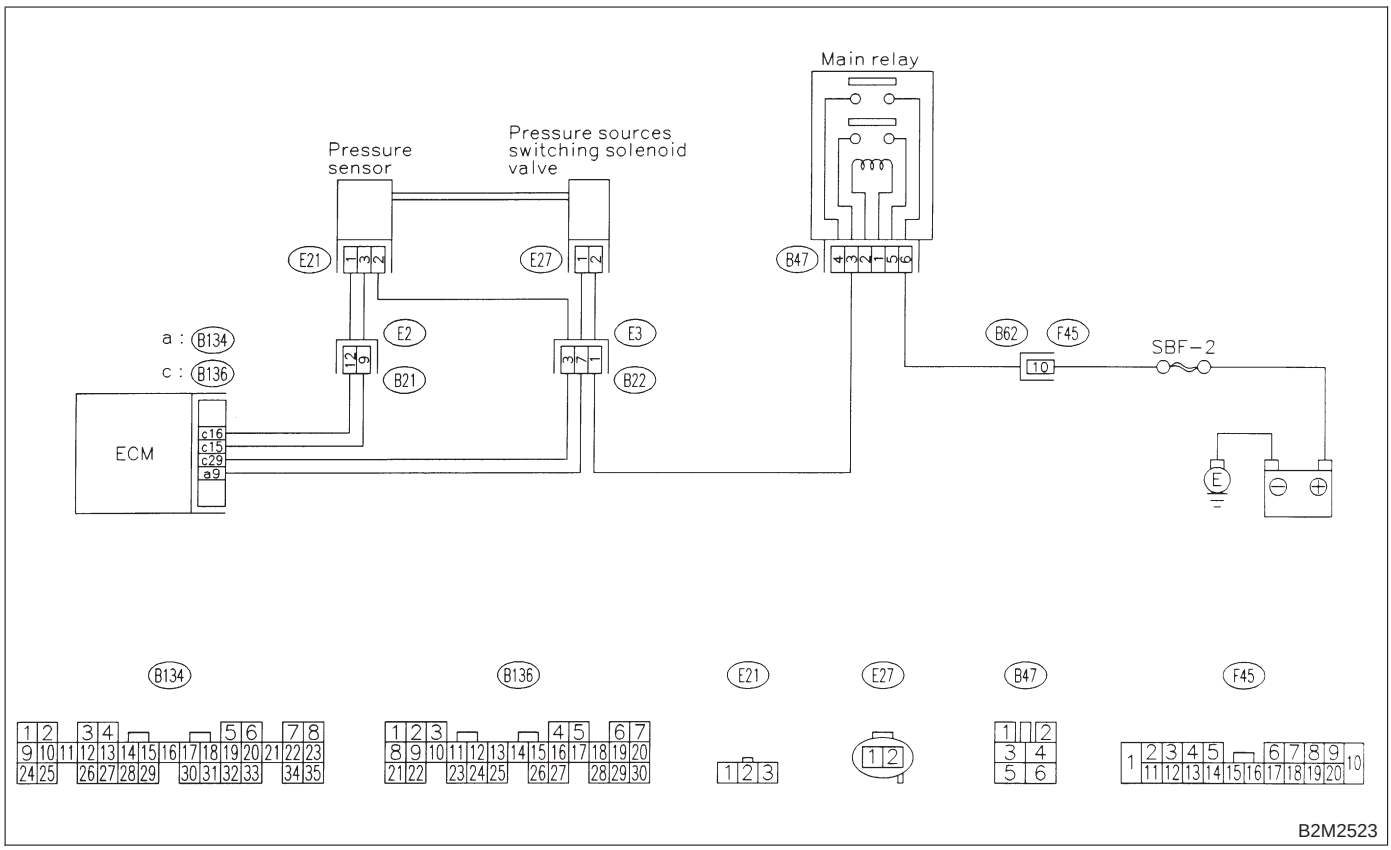
NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

BO: DTC P1102 — PRESSURE SOURCES SWITCHING SOLENOID VALVE CIRCUIT LOW INPUT —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Failure of engine to start

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

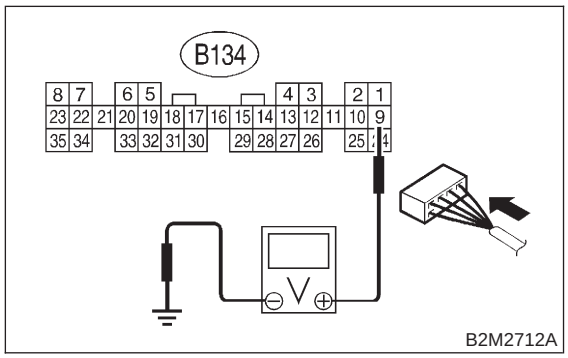
- **WIRING DIAGRAM:**



14BO1 : CHECK OUTPUT SIGNAL FROM ECM.

1) Turn ignition switch to ON.
2) Measure voltage between ECM and chassis ground.

Connector & terminal
(B134) No. 9 (+) — Chassis ground (−):



CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **14BO2**.
NO : Go to step **14BO3**.

14BO2 : CHECK POOR CONTACT.

Check poor contact in ECM connector. <Ref. to FOREWORD [T3C1].>

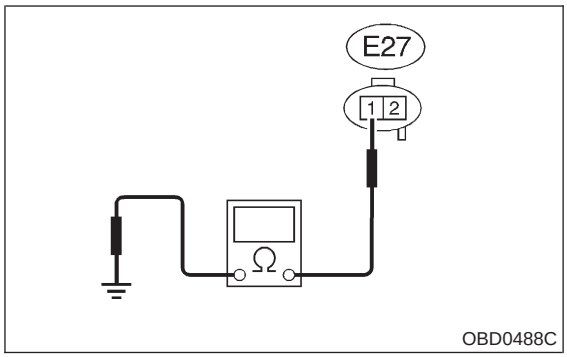
CHECK : ***Is there poor contact in ECM connector?***
YES : Repair poor contact in ECM connector.
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

14BO3 : CHECK HARNESS BETWEEN ECM AND PRESSURE SOURCES SWITCHING SOLENOID VALVE CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from pressure sources switching solenoid valve and ECM.
3) Measure resistance of harness between pressure sources switching solenoid valve connector and engine ground.

Connector & terminal
(E27) No. 1 — Engine ground:

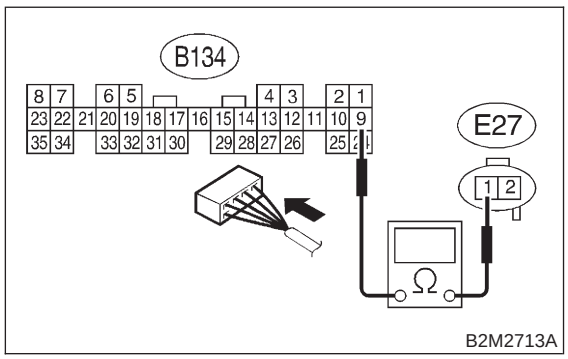


CHECK : ***Is the resistance less than 10 Ω?***
YES : Repair ground short circuit in harness between ECM and pressure sources switching solenoid valve connector.
NO : Go to step **14BO4**.

14BO4 : CHECK HARNESS BETWEEN ECM AND PRESSURE SOURCES SWITCHING SOLENOID VALVE CONNECTOR.

Measure resistance of harness between ECM and pressure sources switching solenoid valve connector.

Connector & terminal
(B134) No. 9 — (E27) No. 1:

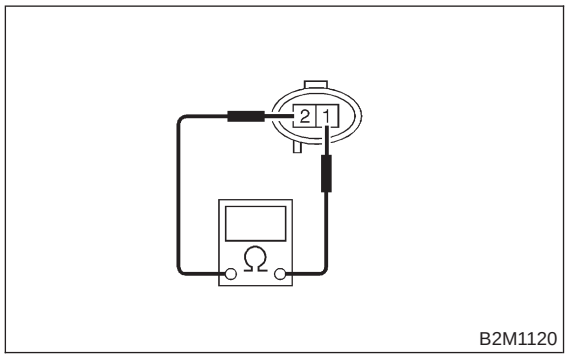


CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14BO5**.
NO : Repair open circuit in harness between ECM and pressure sources switching solenoid valve connector.

14BO5 : CHECK PRESSURE SOURCES SWICTCHING SOLENOID VALVE.

Measure resistance between pressure sources switching solenoid valve connector terminals.

Terminals
No. 1 — No. 2:

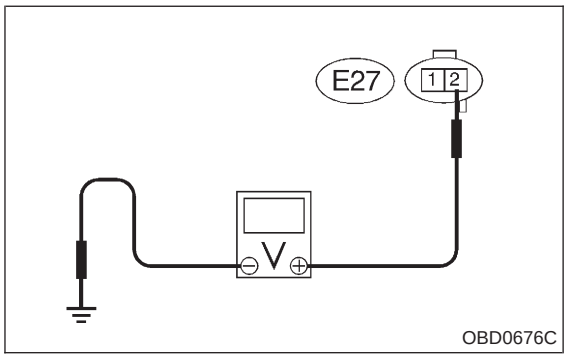


CHECK : ***Is the resistance between 10 and 100 Ω?***
YES : Go to step **14BO6**.
NO : Replace pressure sources switching solenoid valve. <Ref. to 2-7 [W13A0].>

14BO6 : CHECK POWER SUPPLY TO PRESSURE SOURCES SWITCHING SOLENOID VALVE.

1) Turn ignition switch to ON.
2) Measure voltage between pressure sources switching solenoid valve harness connector and engine ground.

Connector & terminal
(E27) No. 2 (+) — Engine ground (−):



CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **14BO7**.
NO : Repair open circuit in harness between main relay and pressure sources switching solenoid valve connector.

14BO7 : CHECK POOR CONTACT.

Check poor contact in pressure sources switching solenoid valve connector. <Ref. to FOREWORD [T3C1].>

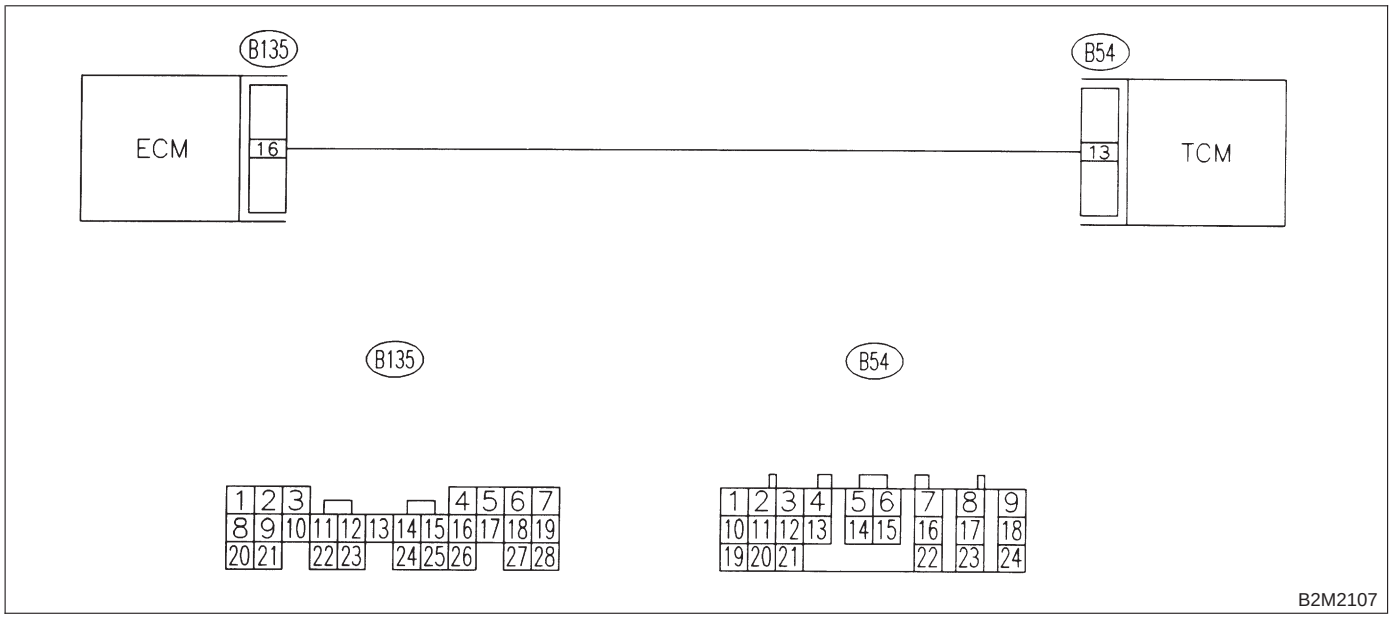
CHECK : ***Is there poor contact in pressure sources switching solenoid valve connector?***
YES : Repair poor contact in pressure sources switching solenoid valve connector.
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

BP: DTC P1103 — ENGINE TORQUE CONTROL SIGNAL 1 CIRCUIT MALFUNCTION —

NOTE:
Check engine torque control signal 1 circuit. <Ref. to 2-7 [T12BQ0].>

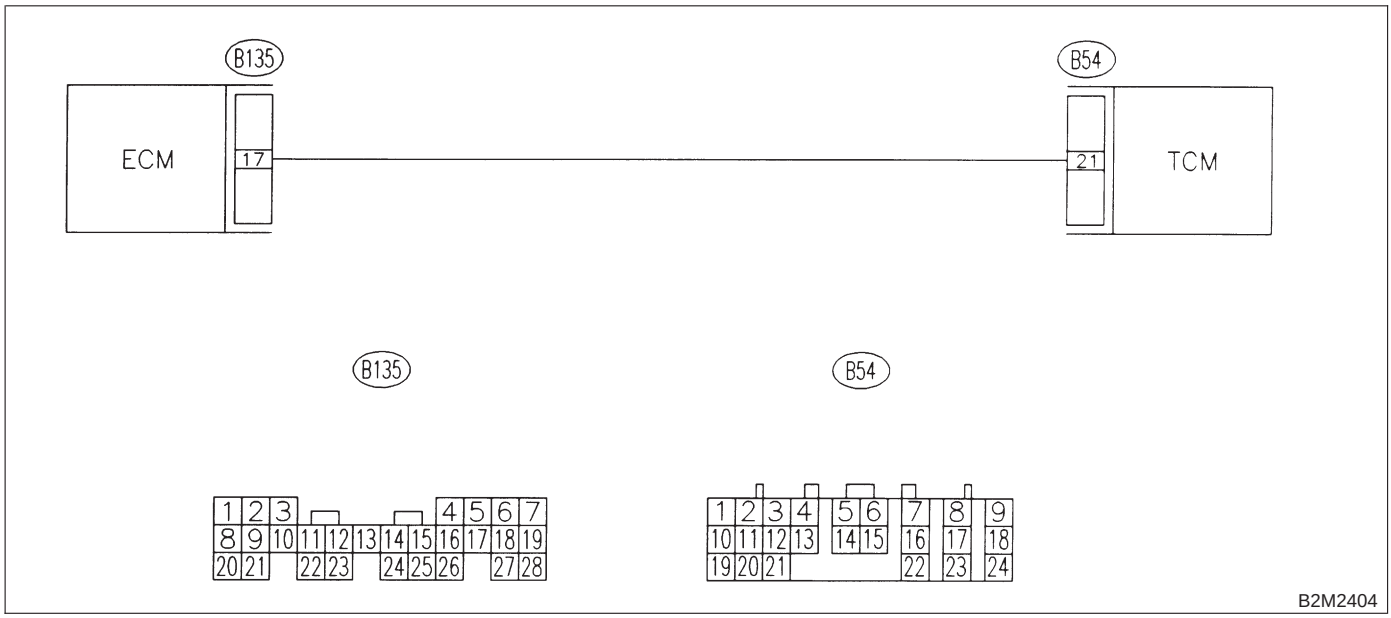
- **WIRING DIAGRAM:**



BQ: DTC P1106 — ENGINE TORQUE CONTROL SIGNAL 2 CIRCUIT MALFUNCTION —

NOTE:
Check engine torque control signal 2 circuit. <Ref. to 2-7 [T12BR0].>

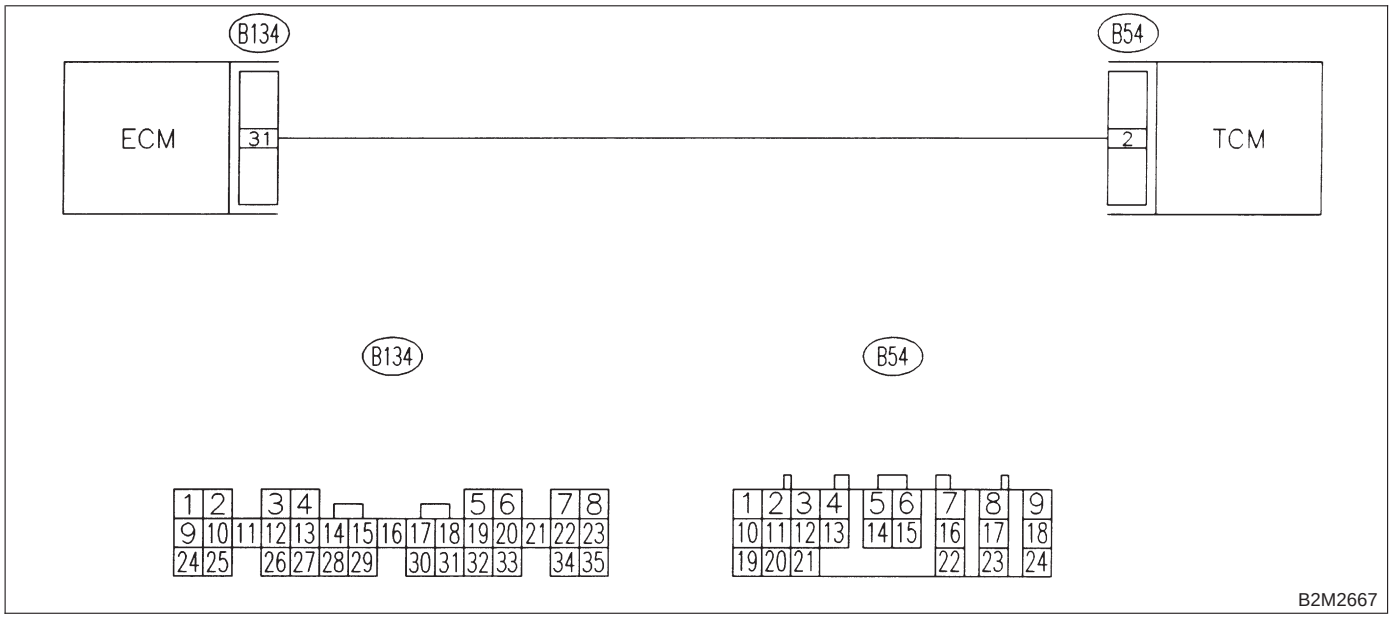
- **WIRING DIAGRAM:**



BR: DTC P1115 — ENGINE TORQUE CONTROL CUT SIGNAL CIRCUIT HIGH INPUT —

NOTE:
Check engine torque control cut signal circuit. <Ref. to 2-7 [T12BV0].>

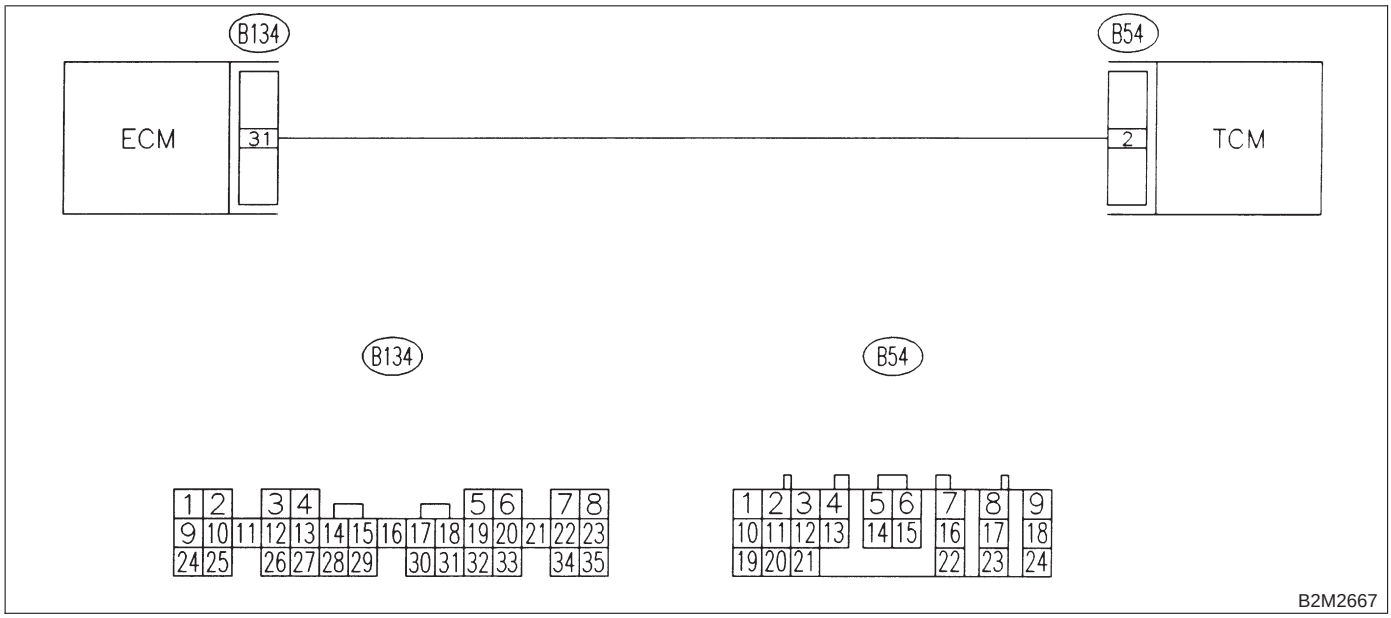
- **WIRING DIAGRAM:**



BS: DTC P1116 — ENGINE TORQUE CONTROL CUT SIGNAL CIRCUIT LOW INPUT —

NOTE:
Check engine torque control cut signal circuit. <Ref. to 2-7 [T12BW0].>

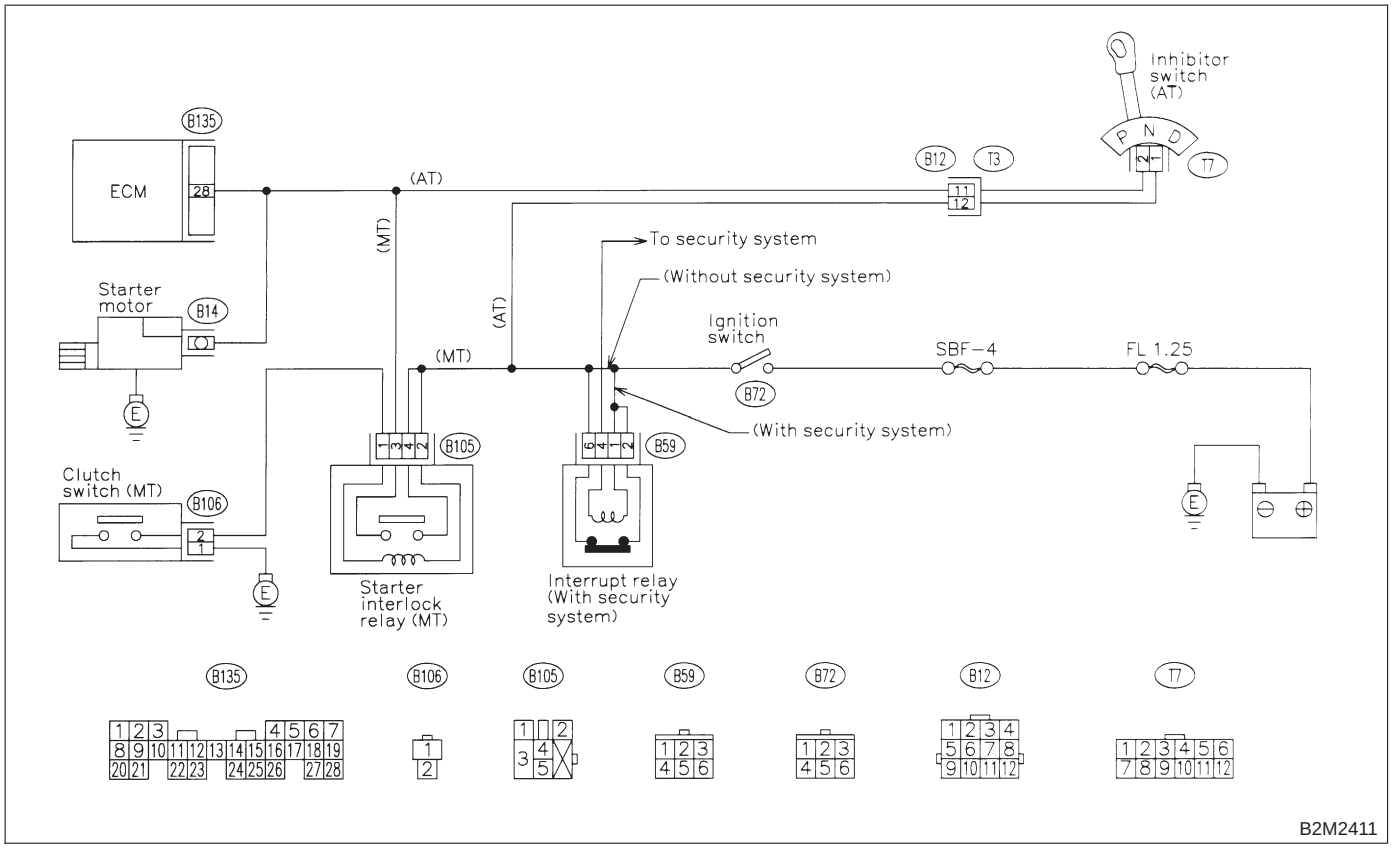
- **WIRING DIAGRAM:**



BT: DTC P1120 — STARTER SWITCH CIRCUIT HIGH INPUT —

NOTE:
Check starter switch circuit.
<Ref. to 2-7 [T12BX0].>

- **WIRING DIAGRAM:**

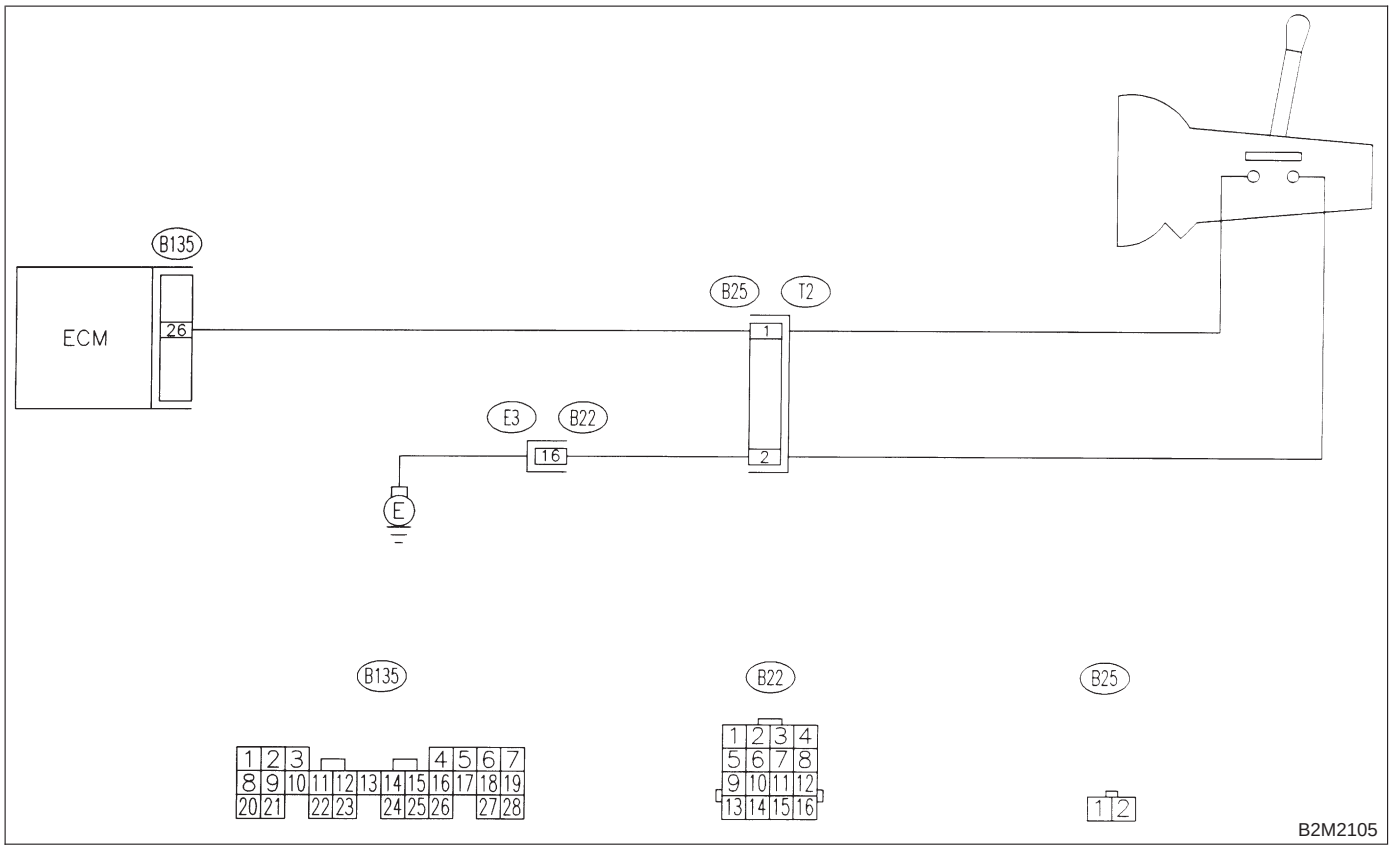


BU: DTC P1121 — NEUTRAL POSITION SWITCH CIRCUIT HIGH INPUT [MT VEHICLES] —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Erroneous idling

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

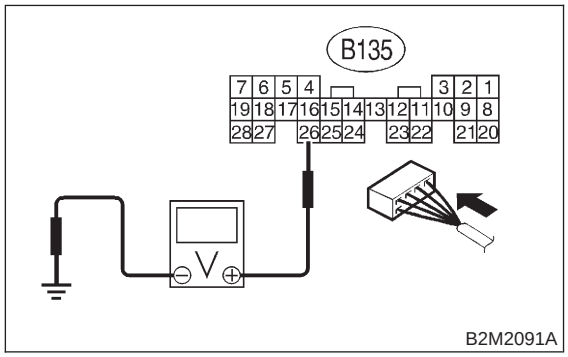
- **WIRING DIAGRAM:**



14BU1 : CHECK INPUT SIGNAL FOR ECM.

1) Turn ignition switch to ON.
2) Measure voltage between ECM and chassis ground.

Connector & terminal
(B135) No. 26 (+) — Chassis ground (−):

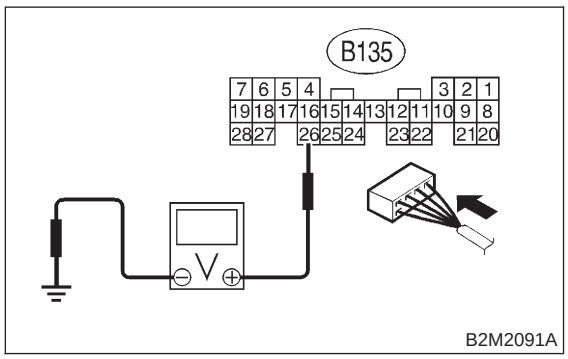


CHECK : ***Is the voltage between 4.5 and 5.5 V in neutral position?***
YES : Go to step **14BU2**.
NO : Go to step **14BU4**.

14BU2 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM and chassis ground.

Connector & terminal
(B135) No. 26 (+) — Chassis ground (−):



CHECK : ***Is the voltage less than 1 V in other positions?***
YES : Go to step **14BU3**.
NO : Go to step **14BU4**.

14BU3 : CHECK POOR CONTACT.

Check poor contact in ECM connector. <Ref. to FOREWORD [T3C1].>

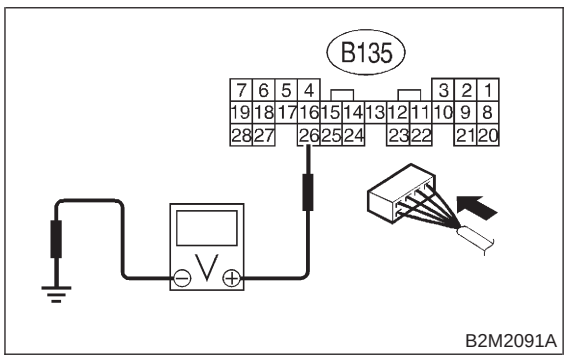
CHECK : ***Is there poor contact in ECM connector?***
YES : Repair poor contact in ECM connector.
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

14BU4 : CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR.

1) Turn ignition switch to OFF.
2) Measure voltage between ECM and chassis ground.

Connector & terminal
(B135) No. 26 (+) — Chassis ground (–):

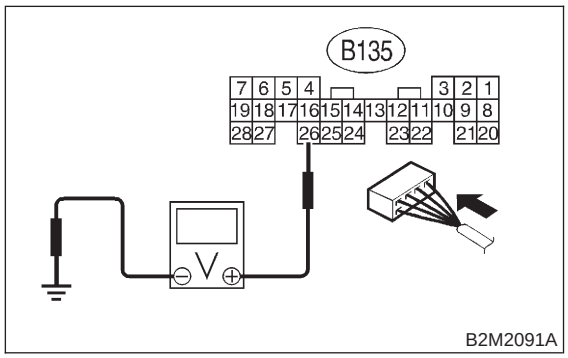


CHECK : ***Is the voltage more than 10 V?***
YES : Repair battery short circuit in harness between ECM and transmission harness connector.
NO : Go to step **14BU5**.

14BU5 : CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR.

1) Turn ignition switch to ON.
2) Measure voltage between ECM and chassis ground.

Connector & terminal
(B135) No. 26 (+) — Chassis ground (–):

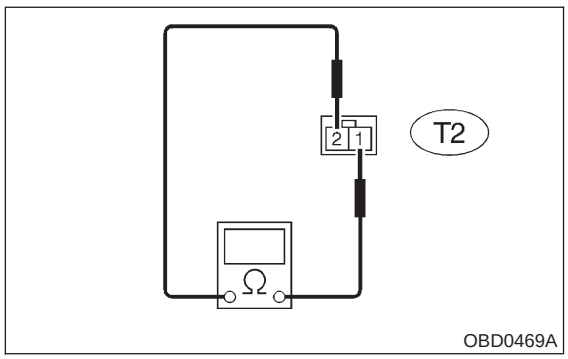


CHECK : ***Is the voltage more than 10 V?***
YES : Repair battery short circuit in harness between ECM and transmission harness connector.
NO : Go to step **14BU6**.

14BU6 : CHECK NEUTRAL POSITION SWITCH.

Measure resistance between transmission harness connector terminals.

Connector & terminal
(T2) No. 1 — No. 2:

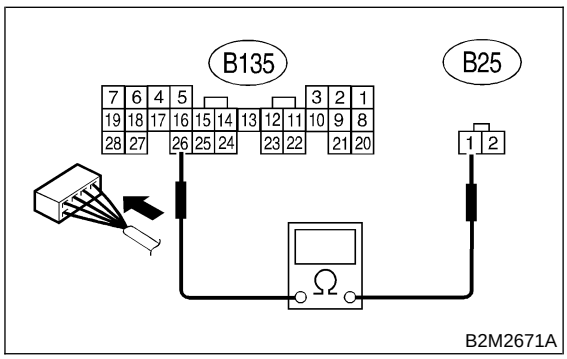


CHECK : ***Is the resistance less than 1 Ω in other positions?***
YES : Go to step **14BU7**.
NO : Repair open circuit in transmission harness or replace neutral position switch.

14BU7 : CHECK HARNESS BETWEEN ECM AND NEUTRAL POSITION SWITCH CONNECTOR.

1) Disconnect connector from ECM.
2) Measure resistance of harness between ECM and transmission harness connector.

Connector & terminal
(B135) No. 26 — (B25) No. 1:

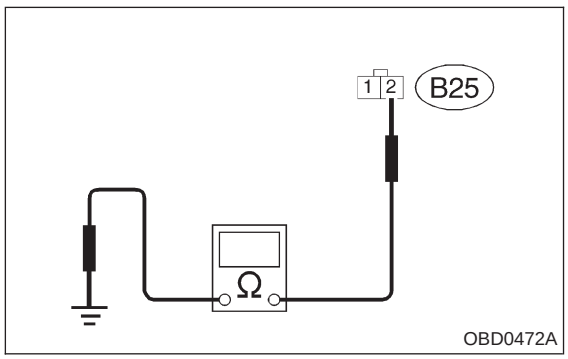


CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14BU8**.
NO : Repair open circuit in harness between ECM and transmission harness connector.

14BU8 : CHECK HARNESS BETWEEN ECM AND NEUTRAL POSITION SWITCH CONNECTOR.

Measure resistance of harness between transmission harness connector and engine ground.

Connector & terminal
(B25) No. 2 — Engine ground:



CHECK : ***Is the resistance less than 5 Ω?***
YES : Go to step **14BU9**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
● Open circuit in harness between transmission harness connector and engine grounding terminal
● Poor contact in coupling connector (B22)

14BU9 : CHECK POOR CONTACT.

Check poor contact in transmission harness connector. <Ref. to FOREWORD [T3C1].>

CHECK : ***Is there poor contact in transmission harness connector?***
YES : Repair poor contact in transmission harness connector.
NO : Contact with SOA service.

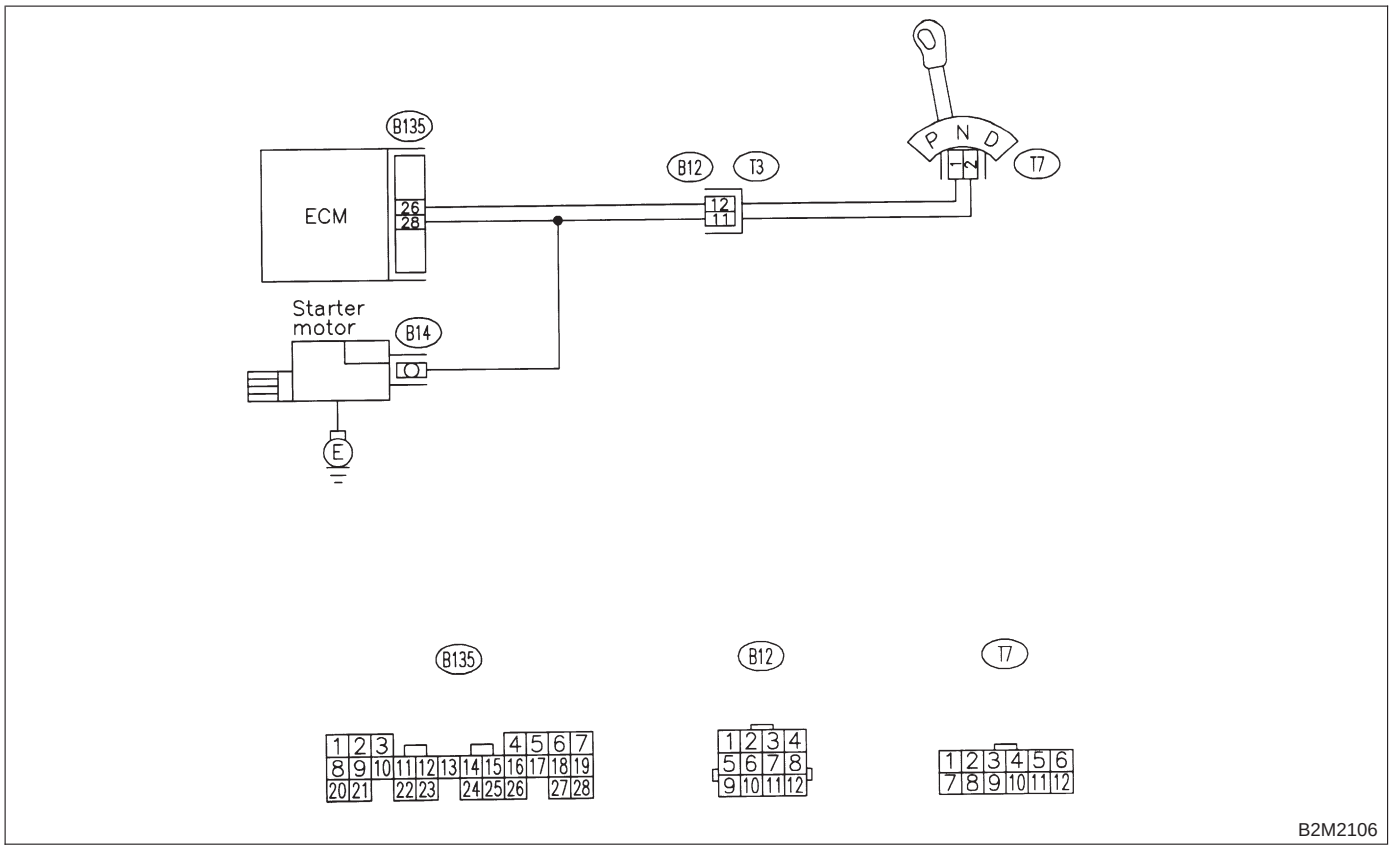
NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

BV: DTC P1121 — NEUTRAL POSITION SWITCH CIRCUIT LOW INPUT [AT VEHICLES] —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Erroneous idling

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14BV1 : CHECK DTC P0705 ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0705?***

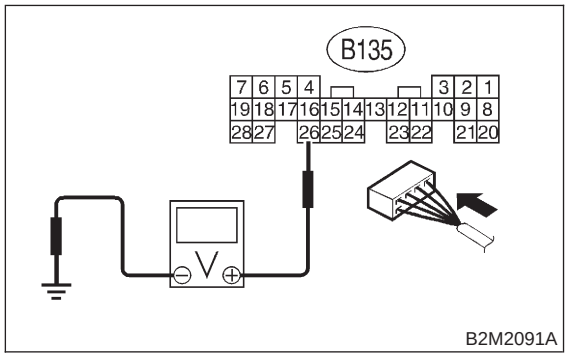
YES : Inspect DTC P0705 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NO : Go to step **14BV2**.

14BV2 : CHECK INPUT SIGNAL FOR ECM.

1) Turn ignition switch to ON.
2) Measure voltage between ECM and chassis ground.

Connector & terminal
(B135) No. 26 (+) — Chassis ground (−):

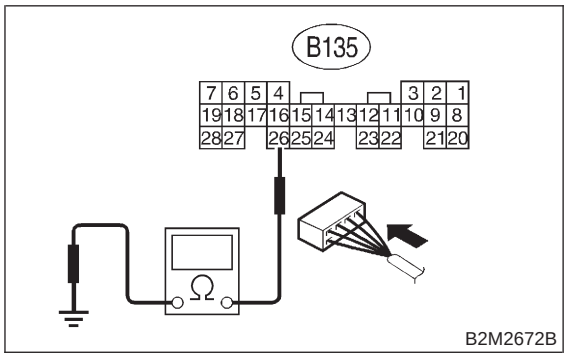


CHECK : ***Is the voltage between 4.5 and 5.5 V in other positions?***
YES : Even if MIL lights up, the circuit has returned to a normal condition at this time.
NO : Go to step **14BV3**.

14BV3 : CHECK HARNESS BETWEEN ECM AND TRANSMISSION HARNESS CONNECTOR.

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

Connector & terminal
(B135) No. 26 — Chassis ground:

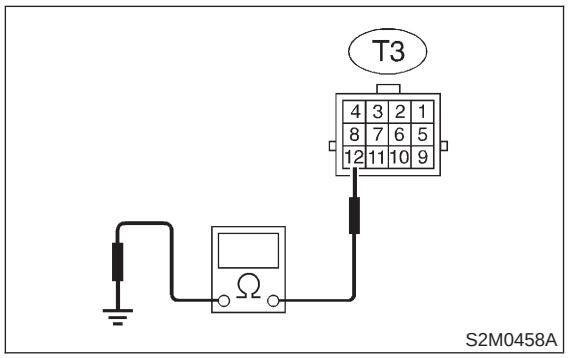


CHECK : ***Is the resistance less than 10 Ω?***
YES : Repair ground short circuit in harness between ECM and transmission harness connector.
NO : Go to step **14BV4**.

14BV4 : CHECK TRANSMISSION HARNESS CONNECTOR.

1) Disconnect connector from inhibitor switch.
2) Measure resistance of harness between transmission harness connector and engine ground.

Connector & terminal
(T3) No. 12 — Engine ground:

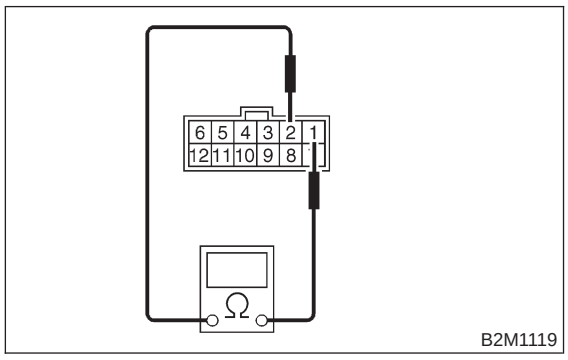


CHECK : ***Is the resistance less than 10 Ω?***
YES : Repair ground short circuit in harness between transmission harness and inhibitor switch connector.
NO : Go to step **14BV5**.

14BV5 : CHECK INHIBITOR SWITCH.

Measure resistance between inhibitor switch connector receptacle's terminals in selector lever except for "N" position.

Terminals
No. 1 — No. 2:



CHECK : ***Is the resistance more than 1 MΩ in other positions?***
YES : Go to step **14BV6**.
NO : Replace inhibitor switch. <Ref. to 3-2 [W2C0].>

14BV6 : CHECK SELECTOR CABLE CONNECTION.

CHECK : ***Is there any fault in selector cable connection to inhibitor switch?***
YES : Repair selector cable connection. <Ref. to 3-2 [W2A0].>
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

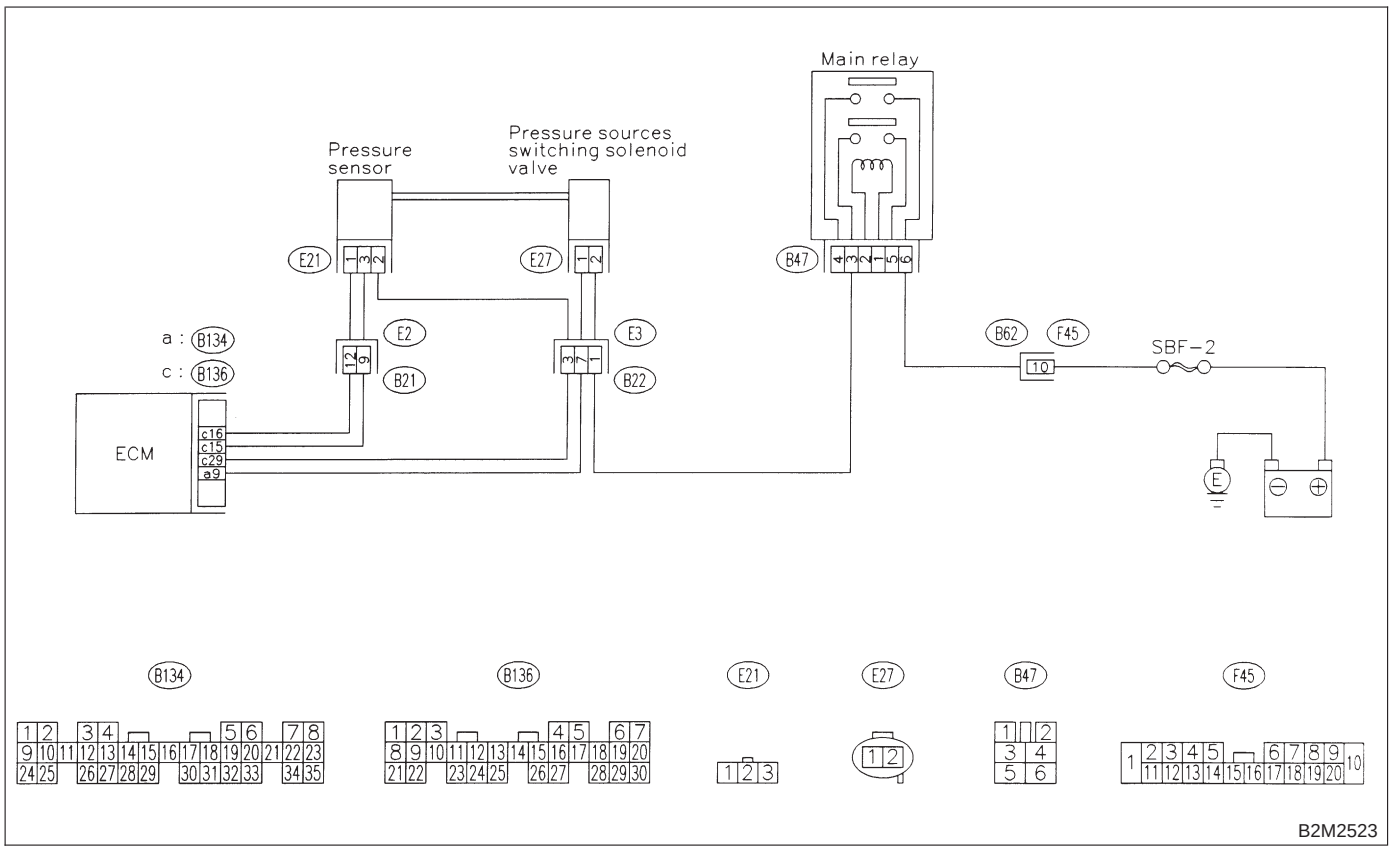
MEMO:

BW: DTC P1122 — PRESSURE SOURCES SWITCHING SOLENOID VALVE CIRCUIT HIGH INPUT —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Failure of engine to start

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

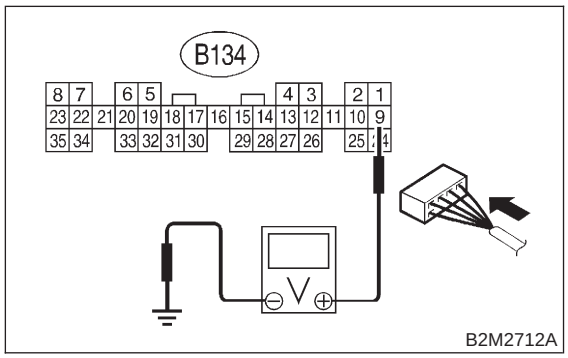
- **WIRING DIAGRAM:**



14BW1 : CHECK OUTPUT SIGNAL FROM ECM.

1) Turn ignition switch to ON.
2) Measure voltage between ECM and chassis ground.

Connector & terminal
(B134) No. 9 (+) — Chassis ground (−):



CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **14BW3**.
NO : Go to step **14BW2**.

14BW2 : CHECK POOR CONTACT.

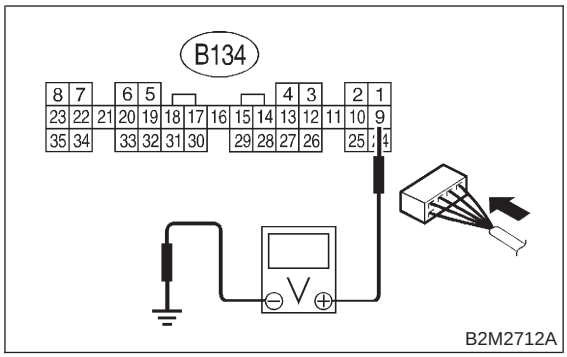
Check poor contact in ECM connector. <Ref. to FOREWORD [T3C1].>

CHECK : ***Is there poor contact in ECM connector?***
YES : Repair poor contact in ECM connector.
NO : Replace ECM. <Ref. to 2-7 [W15A1].>

14BW3 : CHECK HARNESS BETWEEN ECM AND PRESSURE SOURCES SWITCHING SOLENOID VALVE CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from pressure sources switching solenoid valve.
3) Turn ignition switch to ON.
4) Measure voltage between ECM and chassis ground.

Connector & terminal
(B134) No. 9 (+) — Chassis ground (−):

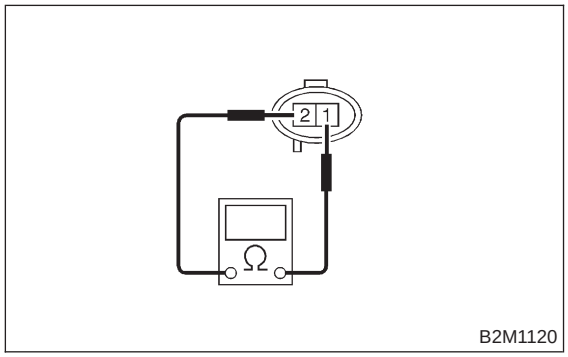


CHECK : ***Is the voltage more than 10 V?***
YES : Repair battery short circuit in harness between ECM and pressure sources switching solenoid valve connector. After repair, replace ECM. <Ref. to 2-7 [W15A1].>
NO : Go to step **14BW4**.

14BW4 : CHECK PRESSURE SOURCES SWICTHING SOLENOID VALVE.

1) Turn ignition switch to OFF.
2) Measure resistance between pressure sources switching solenoid valve connector terminals.

Terminals
No. 1 — No. 2:



CHECK : ***Is the resistance less than 1 Ω?***
YES : Replace pressure sources switching solenoid valve <Ref. to 2-7 [W13A0].> and ECM <Ref. to 2-7 [W15A1].>.
NO : Go to step **14BW5**.

14BW5 : CHECK POOR CONTACT.

Check poor contact in ECM connector. <Ref. to FOREWORD [T3C1].>

CHECK : ***Is there poor contact in ECM connector?***
YES : Repair poor contact in ECM connector.
NO : Replace ECM. <Ref. to 2-7 [W15A1].>

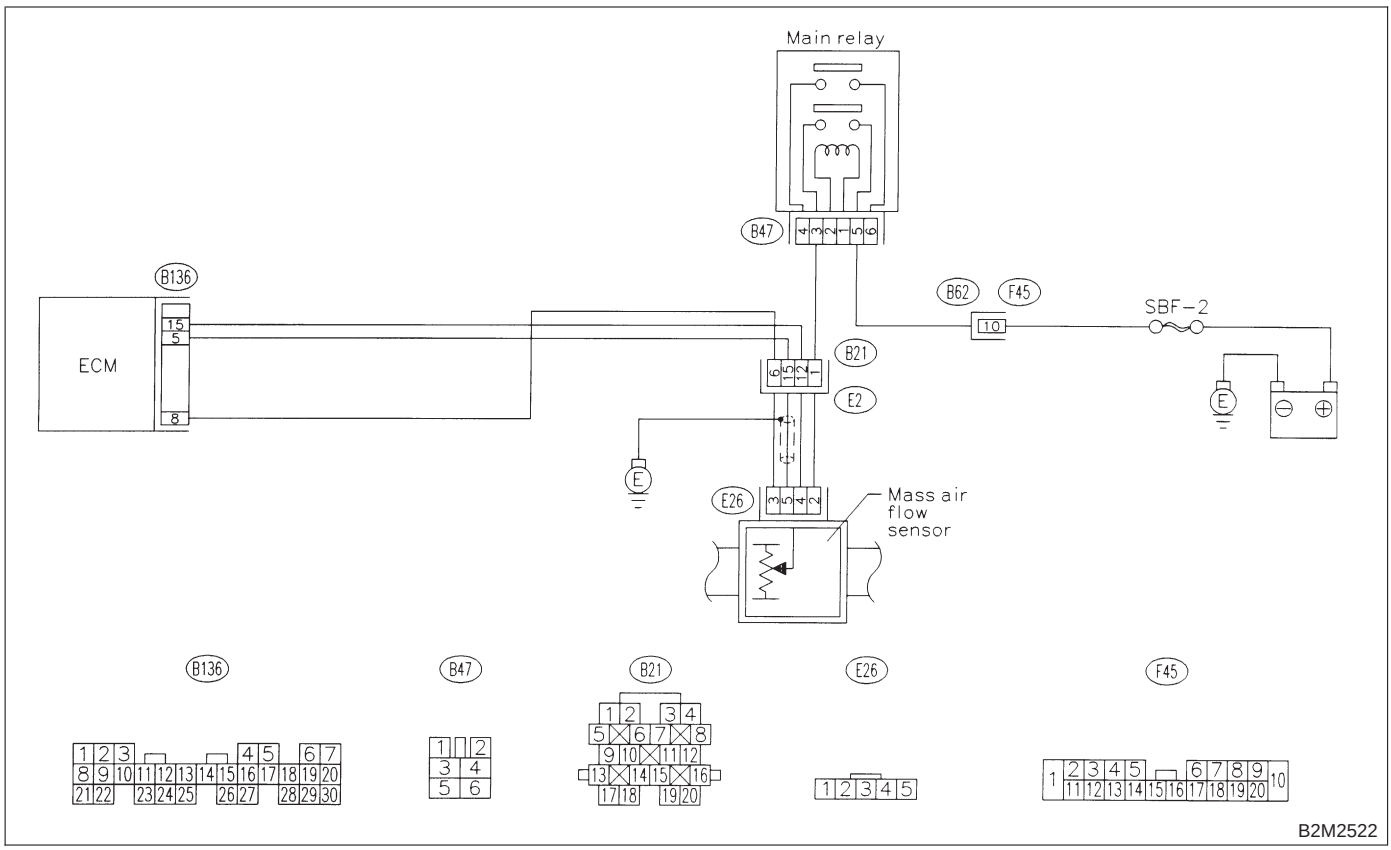
MEMO:

BX: DTC P1141 — MASS AIR FLOW SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (LOW INPUT) —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14BX1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0102, P0103 or P0122?***

YES : Inspect DTC P0102, P0103 or P0122 using "14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles". <Ref. to 2-7 [T14A0].>

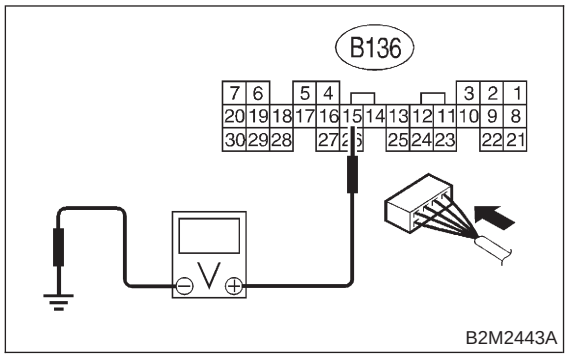
NOTE:
In this case, it is not necessary to inspect DTC P1141.

NO : Go to step **14BX2**.

14BX2 : CHECK THROTTLE POSITION SENSOR.

Measure voltage between ECM and chassis ground while throttle valve is fully closed.

Connector & terminal
(B136) No. 15 (+) — Chassis ground (−):



CHECK : ***Is the voltage less than 0.1 V?***

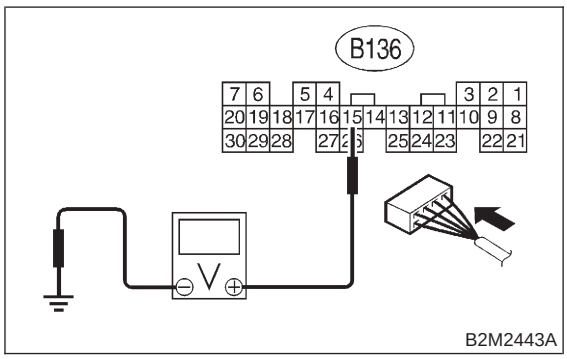
YES : Go to step **14BX3**.

NO : Check throttle position sensor circuit. <Ref. to 2-7 [T14K0].>

14BX3 : CHECK THROTTLE POSITION SENSOR.

Measure voltage between ECM and chassis ground while throttle valve is fully opened.

Connector & terminal
(B136) No. 15 (+) — Chassis ground (−):



CHECK : ***Is the voltage more than 4.5 V?***

YES : Replace mass air flow sensor. <Ref. to 2-7 [W2A1].>

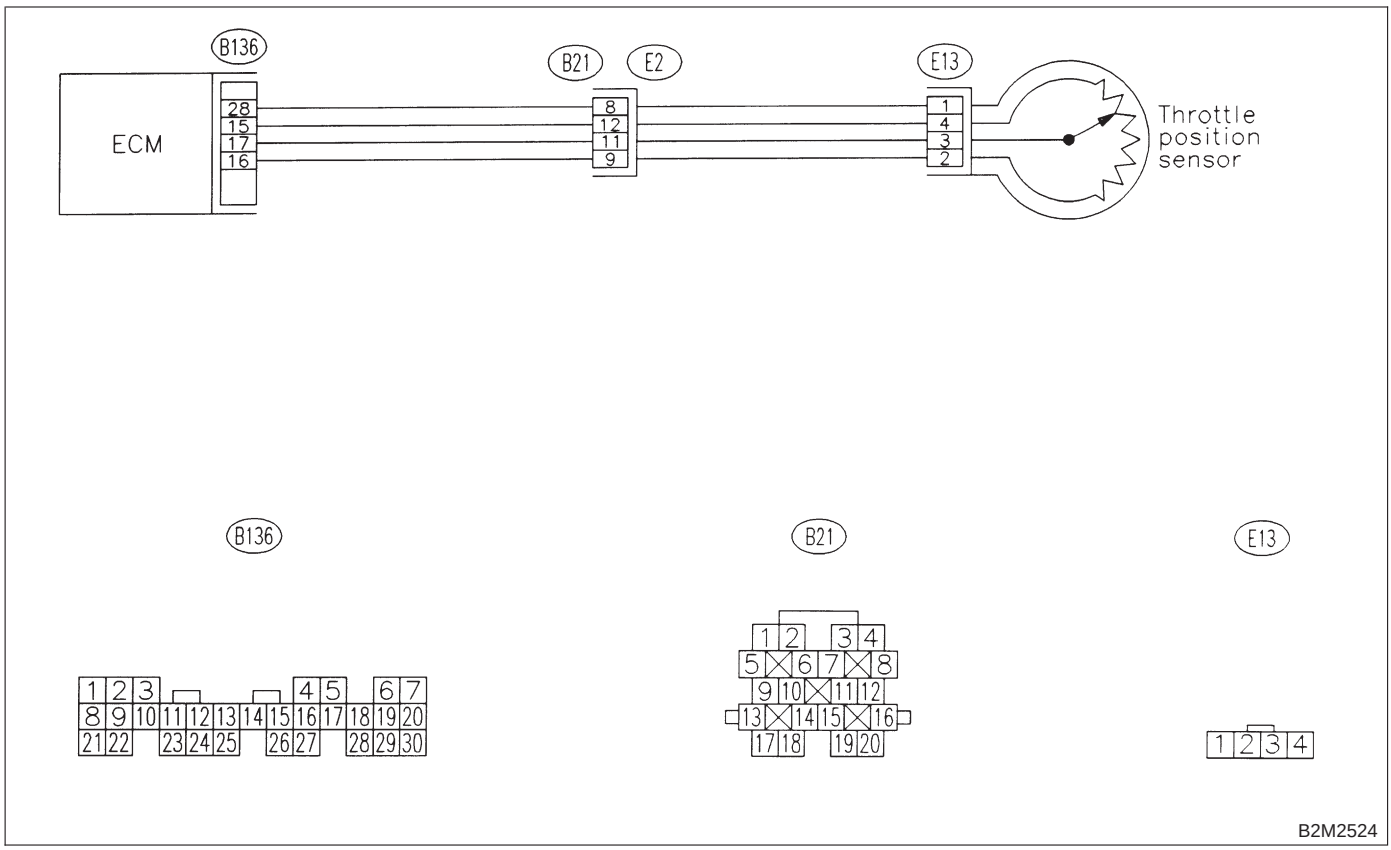
NO : Check throttle position sensor circuit. <Ref. to 2-7 [T14K0].>

BY: DTC P1142 — THROTTLE POSITION SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (LOW INPUT) —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Engine stalls.
  - Poor driving performance

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14BY1 :	CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0122 or P0123?***

YES : Inspect DTC P0122 or P0123 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NOTE:
In this case, it is not necessary to inspect DTC P1142.

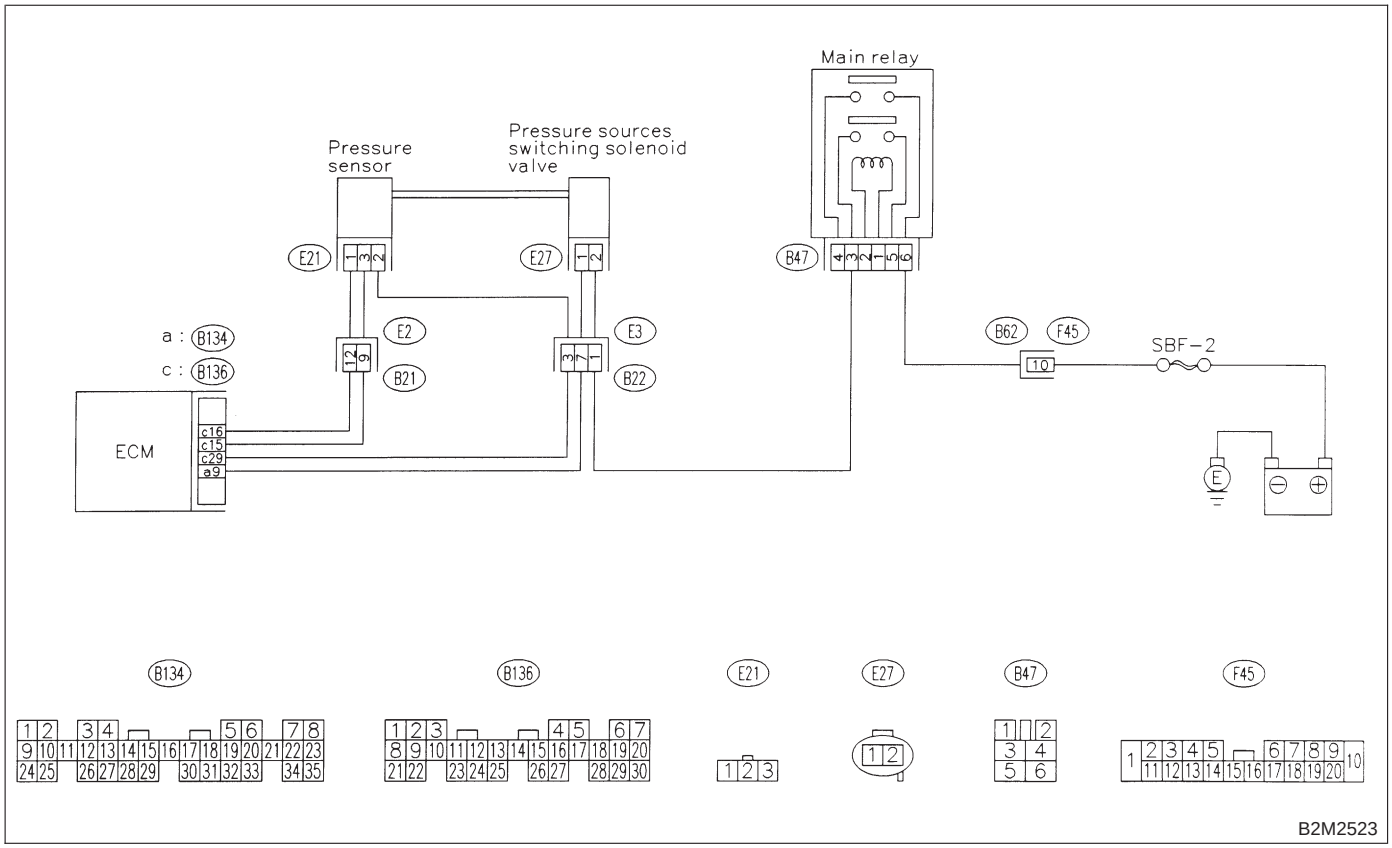
NO : Replace throttle position sensor. <Ref. to 2-7 [W9A2].>

BZ: DTC P1143 — PRESSURE SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (LOW INPUT) —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

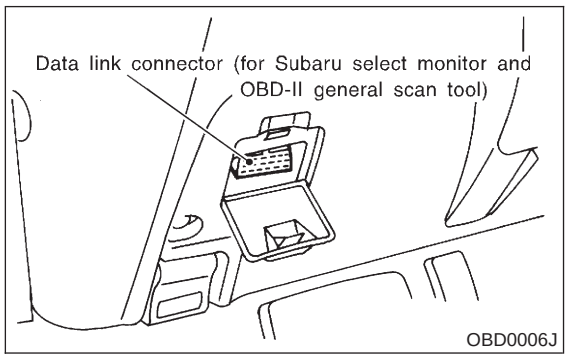
CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14BZ1 : CHECK IDLE SWITCH SIGNAL.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor switch to ON.
4) Operate the LED operation mode for engine using Subaru Select Monitor.

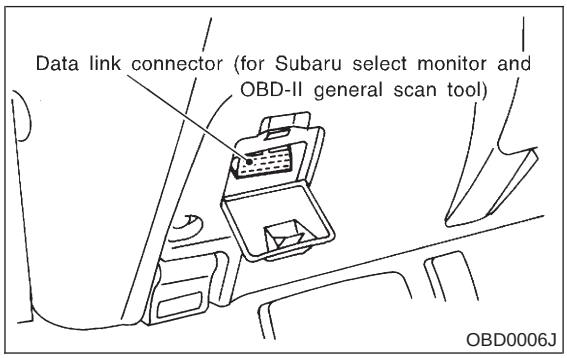
NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "LED OPERATION MODE FOR ENGINE". <Ref. to 2-7 [T3C8].>

CHECK : ***Does the LED of {Idle Switch Signal} come on?***
YES : Go to step **14BZ2**.
NO : Check throttle position sensor circuit. <Ref. to 2-7 [T14K0].>

NOTE:
In this case, it is not necessary to inspect DTC P1143.

14BZ2 : CHECK DATA FOR CONTROL.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch ON and Subaru Select Monitor or the OBD-II general scan tool switch ON.
4) Start engine.
5) Read data of atmospheric absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value less than 32 kPa (240 mmHg, 9.45 inHg)?***
YES : Go to step **14BZ4**.
NO : Go to step **14BZ3**.

14BZ3 : CHECK PRESSURE SENSOR.

1) Measure actual atmospheric pressure.
2) Read data of atmospheric absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool.

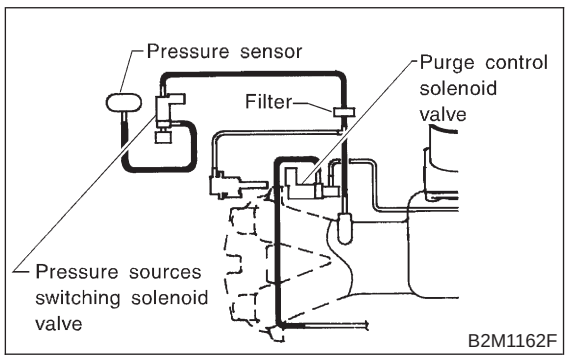
NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>

CHECK : ***Is the difference between absolute value of Subaru Selector Monitor indication and actual atmospheric pressure greater than 10 kPa (75 mmHg, 2.95 inHg)?***
YES : Replace pressure sensor.
NO : Even if MIL lights up, the circuit has returned to a normal condition at this time. Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

14BZ4 : CHECK VACUUM HOSES.

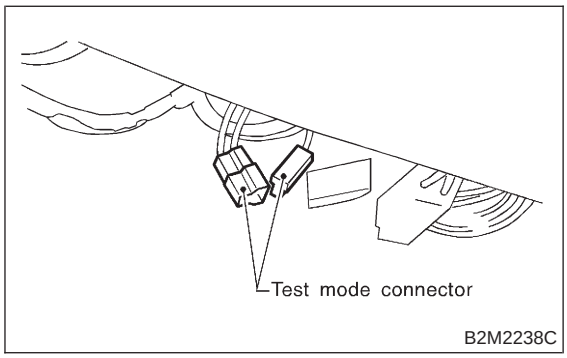
Check the following item. Incorrect hose connections in line between the pressure sources switching solenoid valve and pressure sensor, intake manifold and/or purge control solenoid valve.



CHECK : ***Is there a fault in vacuum hose?***
YES : Repair or replace hoses or filter.
NO : Go to step **14BZ5**.

14BZ5 : CHECK PRESSURE SOURCES SWITCHING SOLENOID VALVE.

1) Turn ignition switch to OFF.
2) Connect test mode connector.



3) Turn ignition switch to ON.

NOTE:
Pressure sources switching solenoid valve operation check can also be executed using Subaru Select Monitor. For the procedure, refer to the "COMPULSORY VALVE OPERATION CHECK MODE". <Ref. to 2-7 [T3F0].>

CHECK : ***Does pressure sources switching solenoid valve produce operating sound? (ON ⟷ OFF each 1.5 sec.)***
YES : Replace pressure sensor. <Ref. to 2-7 [W11A0].>
NO : Replace pressure sources switching solenoid valve. <Ref. to 2-7 [W13A0].>

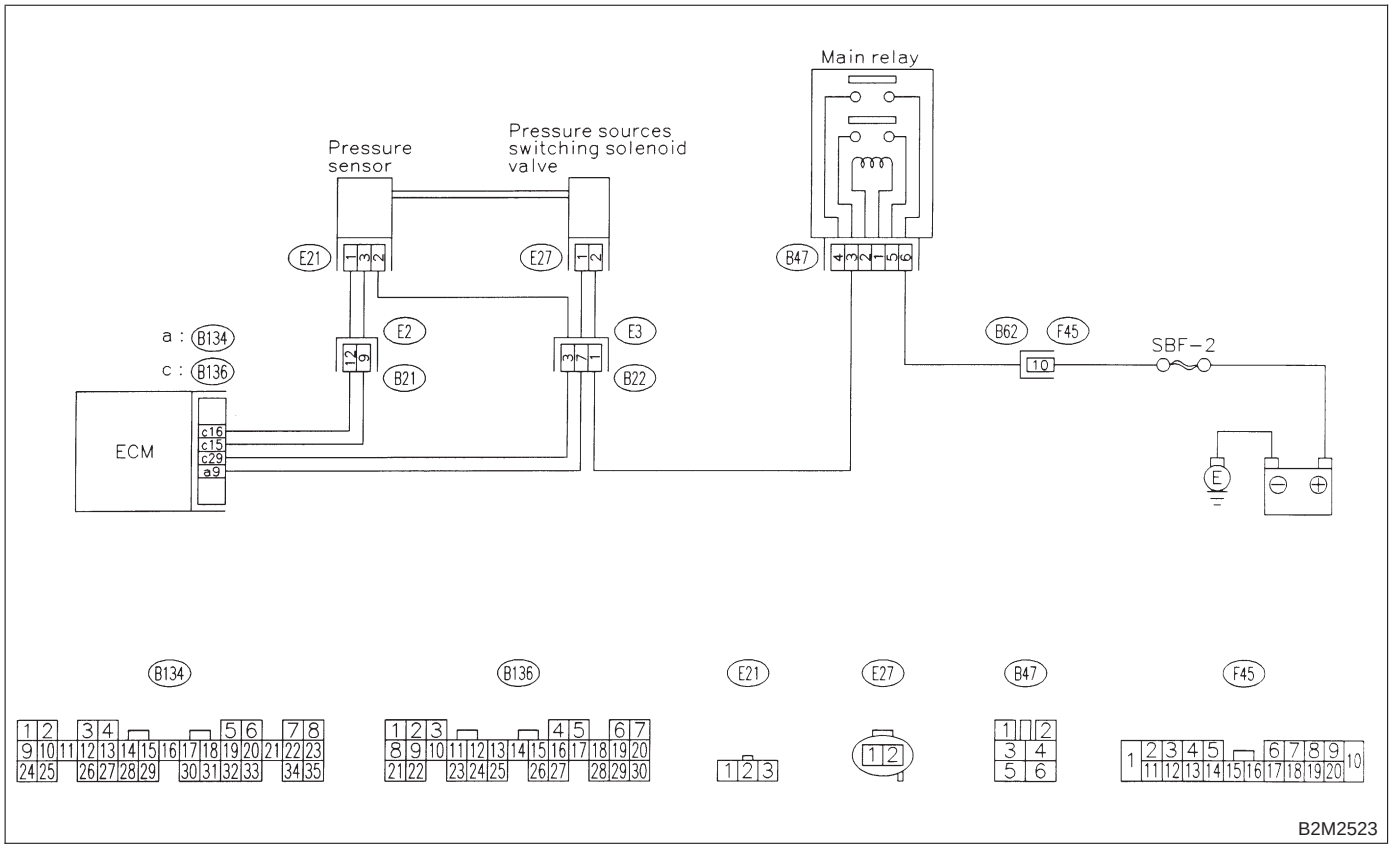
MEMO:

CA: DTC P1144 — PRESSURE SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (HIGH INPUT) —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

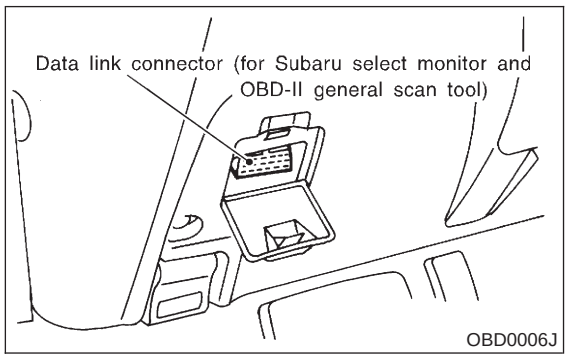
CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14CA1 : CHECK IDLE SWITCH SIGNAL.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor to data link connector.



3) Turn ignition switch to ON and Subaru Select Monitor switch to ON.
4) Operate the LED operation mode for engine using Subaru Select Monitor.

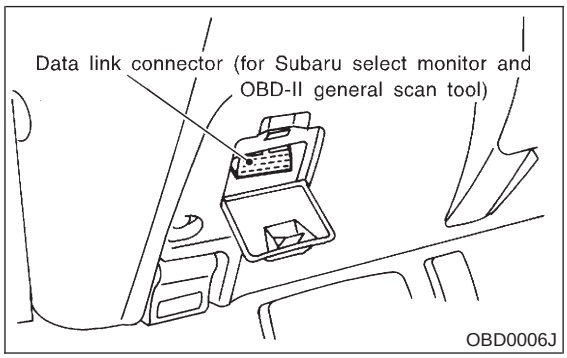
NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "LED OPERATION MODE FOR ENGINE". <Ref. to 2-7 [T3C8].>

CHECK : ***Does the LED of {Idle Switch Signal} come on?***
YES : Go to step **14CA2**.
NO : Check throttle position sensor circuit. <Ref. to 2-7 [T14K0].>

NOTE:
In this case, it is not necessary to inspect DTC P1144.

14CA2 : CHECK DATA FOR CONTROL.

1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



3) Turn ignition switch ON and Subaru Select Monitor or the OBD-II general scan tool switch ON.
4) Start engine.
5) Read data of atmospheric absolute pressure signal using Subaru Select Monitor or OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value more than 133 kPa (998 mmHg, 39.29 inHg)?***
YES : Replace pressure sensor. <Ref. to 2-7 [W11A0].>
NO : Even if MIL lights up, the circuit has returned to a normal condition at this time. Contact with SOA service.

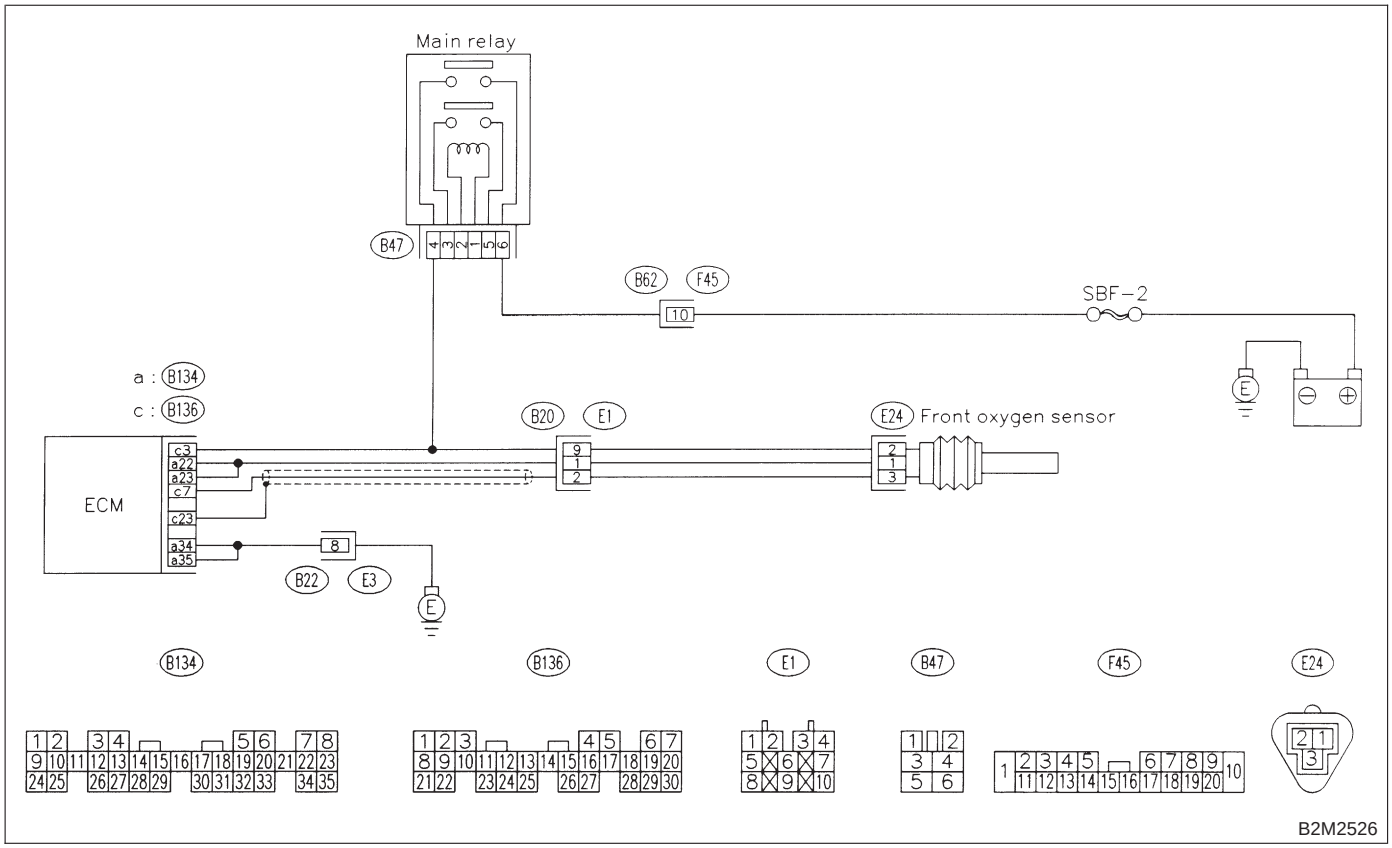
NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

CB: DTC P1150 — FRONT OXYGEN SENSOR HEATER CIRCUIT HIGH INPUT —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

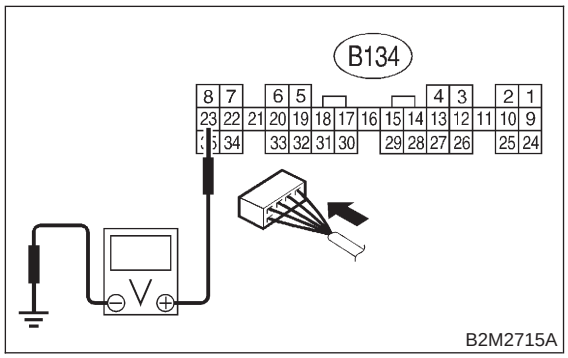
- **WIRING DIAGRAM:**



14CB1 : CHECK OUTPUT SIGNAL FROM ECM.

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

Connector & terminal
(B134) No. 23 (+) — Chassis ground (−):

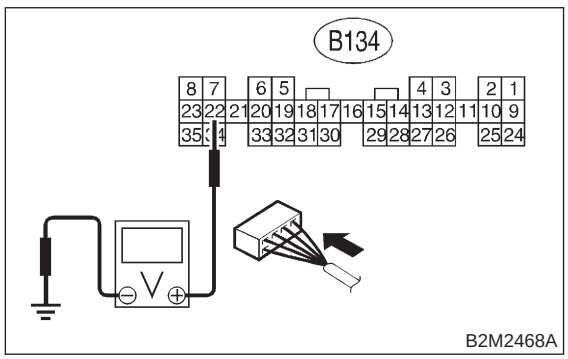


CHECK : ***Is the voltage more than 8 V?***
YES : Go to step **14CB3**.
NO : Go to step **14CB2**.

14CB2 : CHECK OUTPUT SIGNAL FROM ECM.

Measure voltage between ECM connector and chassis ground.

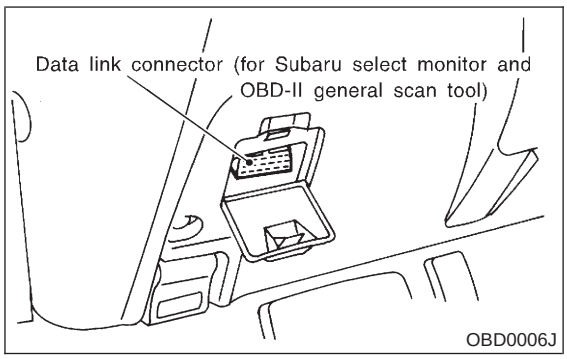
Connector & terminal
(B134) No. 22 (+) — Chassis ground (−):



CHECK : ***Is the voltage more than 8 V?***
YES : Go to step **14CB3**.
NO : Go to step **14CB4**.

14CB3 : CHECK FRONT OXYGEN SENSOR HEATER CURRENT.

1) Turn ignition switch to OFF.
2) Repair battery short circuit in harness between ECM and front oxygen sensor connector.
3) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



4) Turn ignition switch to ON and Subaru Select Monitor or OBD-II general scan tool switch to ON.
5) Read data of front oxygen sensor heater current using Subaru Select Monitor or the OBD-II general scan tool.

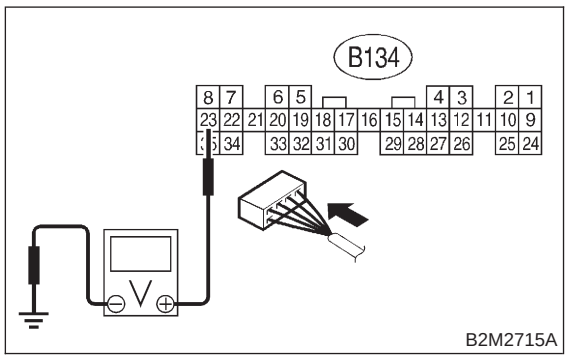
NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the "READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE". <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedure, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value more than 7 A?***
YES : Replace ECM. <Ref. to 2-7 [W15A1].>
NO : END

14CB4 : CHECK OUTPUT SIGNAL FROM ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B134) No. 23 (+) — Chassis ground (−):



CHECK : ***Does the voltage change more than 8 V by shaking harness and connector of ECM while monitoring the value with voltage meter?***

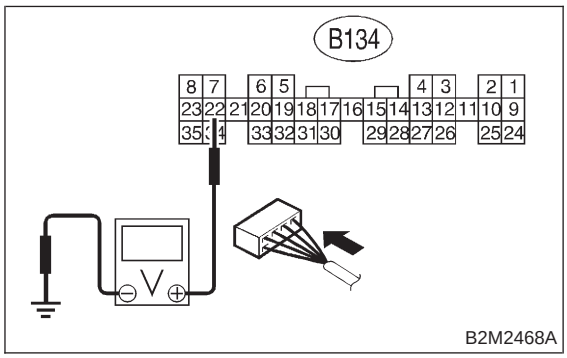
YES : Repair battery short circuit in harness between ECM and front oxygen sensor connector.

NO : Go to step **14CB5**.

14CB5 : CHECK OUTPUT SIGNAL FROM ECM.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B134) No. 22 (+) — Chassis ground (−):



CHECK : ***Does the voltage change more than 8 V by shaking harness and connector of ECM while monitoring the value with voltage meter?***

YES : Repair battery short circuit in harness between ECM and front oxygen sensor connector.

NO : END

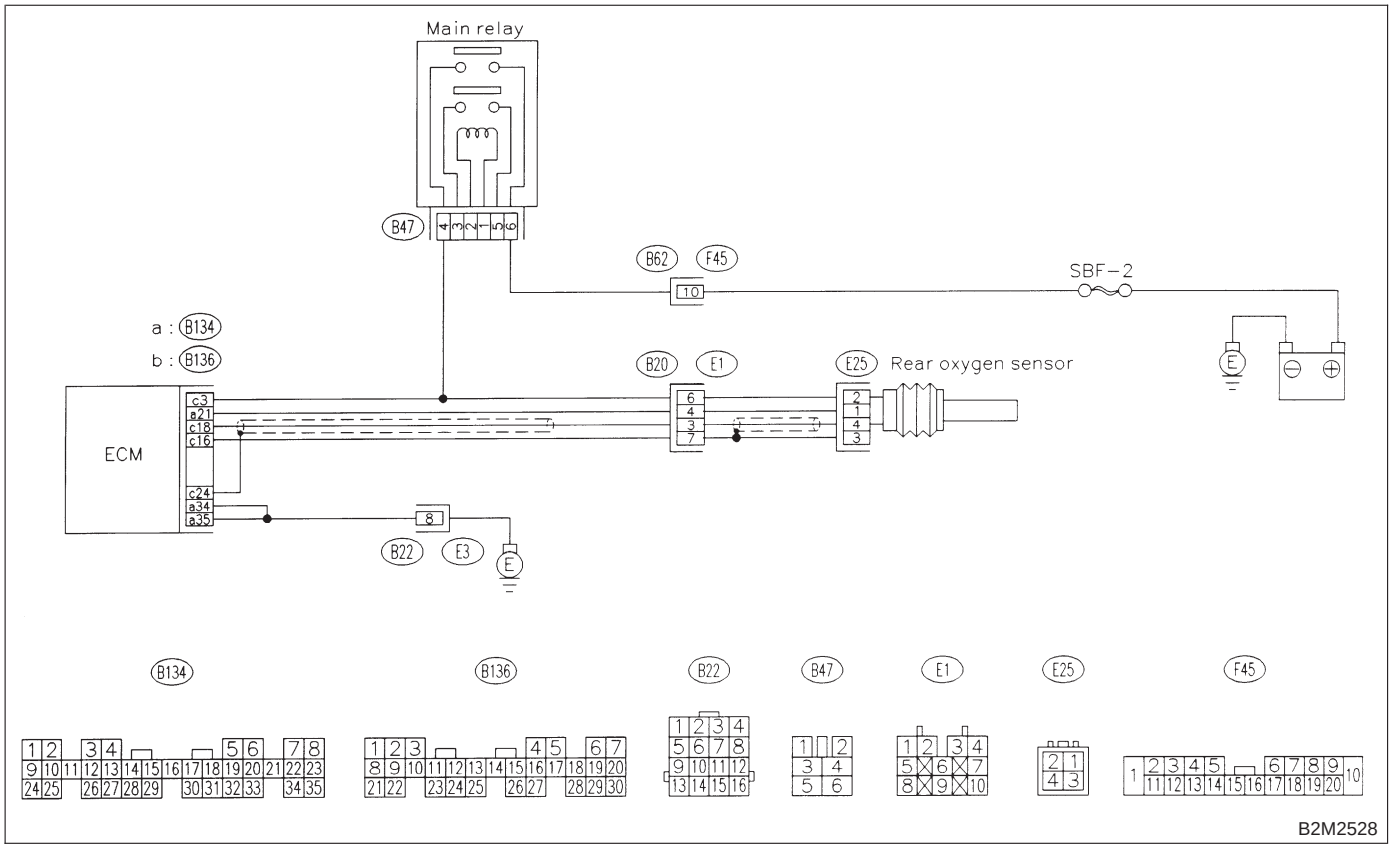
MEMO:

CC: DTC P1151 — REAR OXYGEN SENSOR HEATER CIRCUIT HIGH INPUT —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

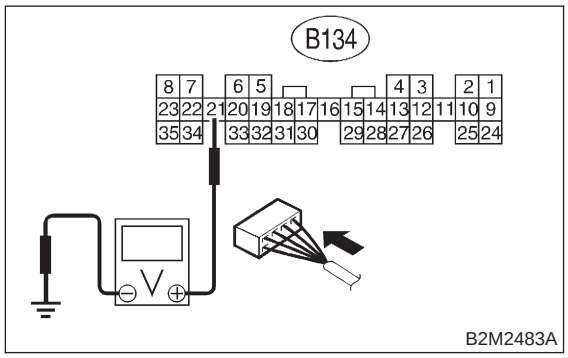
- **WIRING DIAGRAM:**



14CC1 : CHECK INPUT SIGNAL FOR ECM.

Measure voltage between ECM connector and chassis ground.

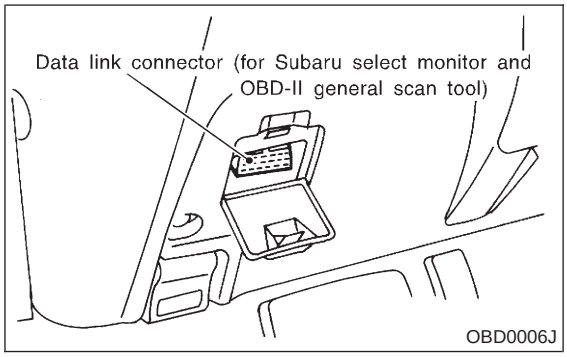
Connector & terminal
(B134) No. 21 (+) — Chassis ground (−):



CHECK : ***Is the voltage more than 8 V?***
YES : Go to step **14CC2**.
NO : Go to step **14CC3**.

14CC2 : CHECK FRONT OXYGEN SENSOR HEATER CURRENT.

1) Turn ignition switch to OFF.
2) Repair battery short circuit in harness between ECM and front oxygen sensor connector.
3) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.



4) Turn ignition switch to ON and Subaru Select Monitor or OBD-II general scan tool switch to ON.
5) Read data of rear oxygen sensor heater current using Subaru Select Monitor or the OBD-II general scan tool.

NOTE:
● Subaru Select Monitor
For detailed operation procedure, refer to the “READ CURRENT DATA SHOWN ON DISPLAY FOR ENGINE”. <Ref. to 2-7 [T3C4].>
● OBD-II general scan tool
For detailed operation procedure, refer to the OBD-II General Scan Tool Instruction Manual.

CHECK : ***Is the value more than 7 A?***
YES : Replace ECM. <Ref. to 2-7 [W15A1].>
NO : END

14CC3 : CHECK POOR CONTACT.

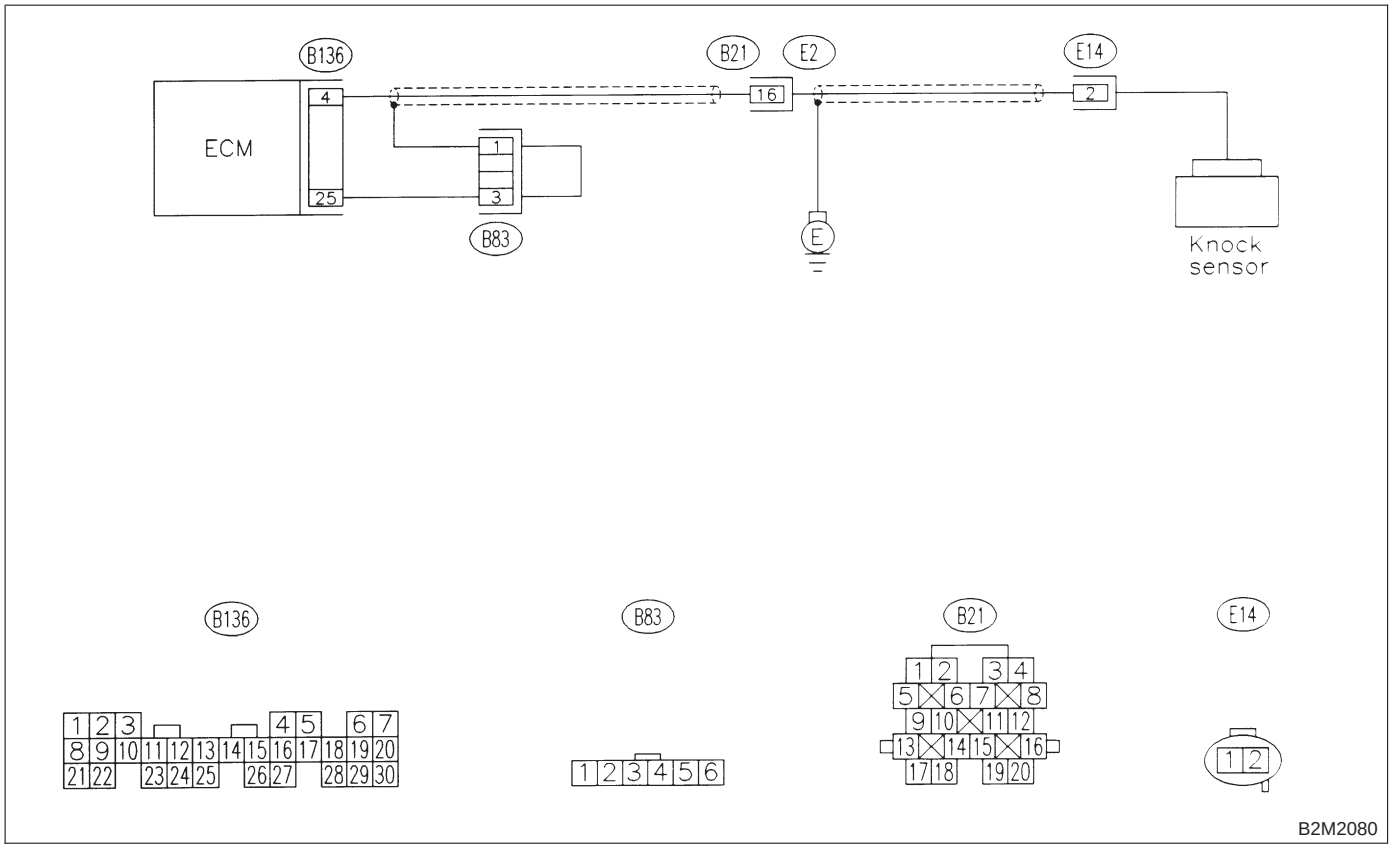
Check poor contact in ECM connector. <Ref. to FOREWORD [T3C1].>

CHECK : ***Is there poor contact in ECM connector?***
YES : Repair poor contact in ECM connector.
NO : END.

CD: DTC P1325 — KNOCK SENSOR CIRCUIT LOW INPUT —

NOTE:
Check knock sensor circuit.
<Ref. to 2-7 [T12AC0].>

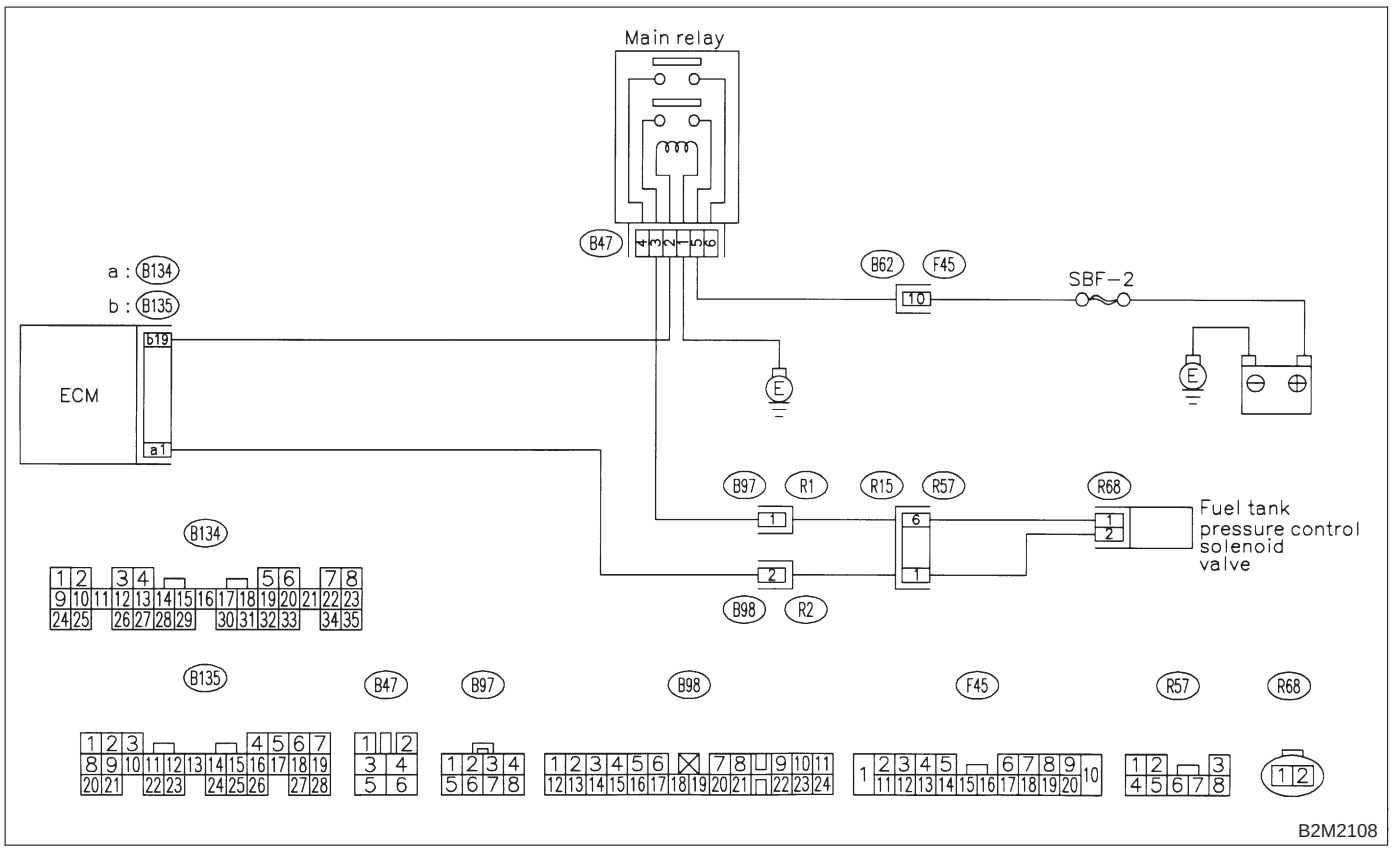
- **WIRING DIAGRAM:**



CE: DTC P1400 — FUEL TANK PRESSURE CONTROL SOLENOID VALVE CIRCUIT LOW INPUT —

NOTE:
Check fuel tank pressure control solenoid valve circuit.
<Ref. to 2-7 [T12CI0].>

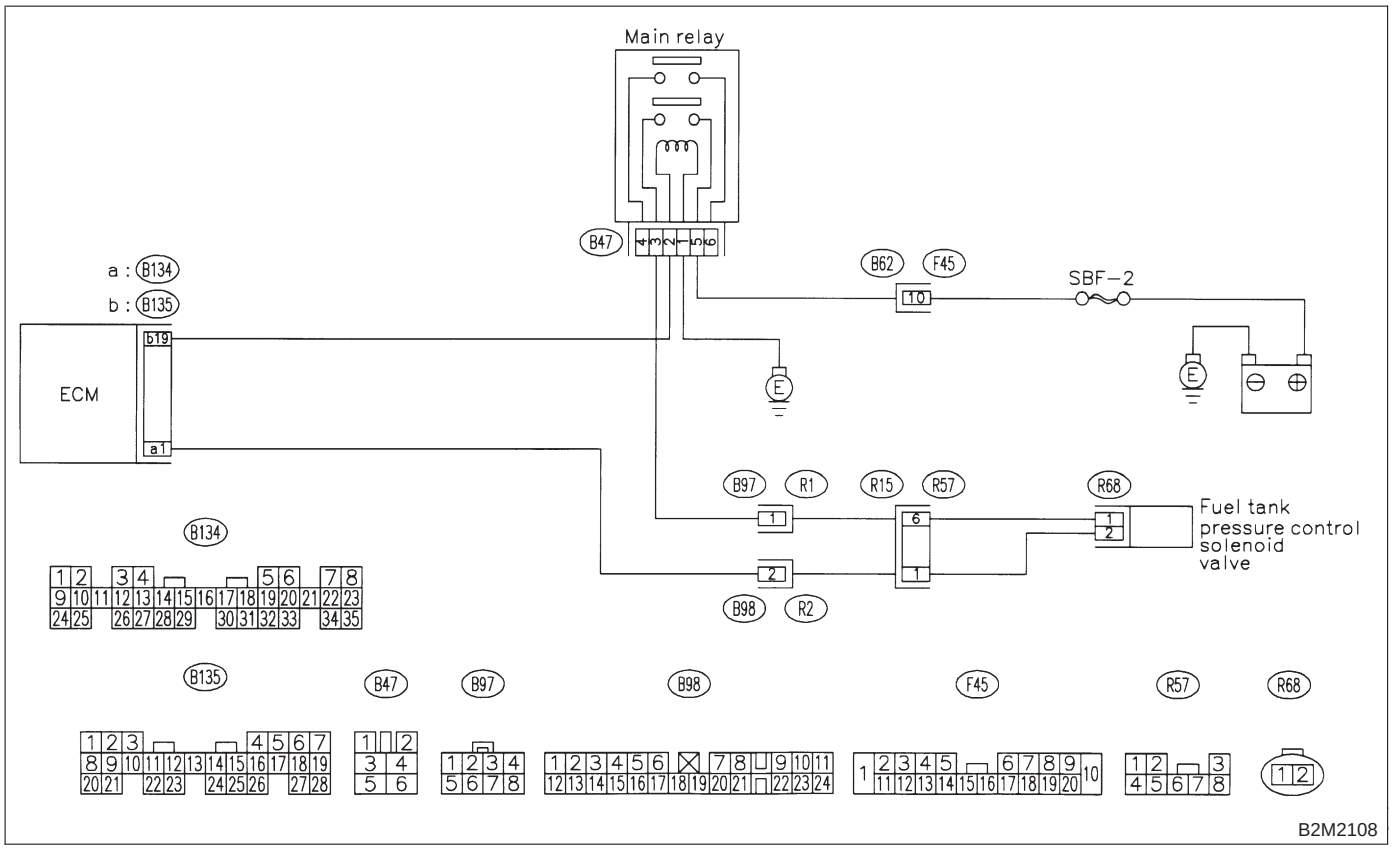
- **WIRING DIAGRAM:**



CF: DTC P1420 — FUEL TANK PRESSURE CONTROL SOLENOID VALVE CIRCUIT HIGH INPUT —

NOTE:
Check fuel tank pressure control solenoid valve circuit. <Ref. to 2-7 [T12CJ0].>

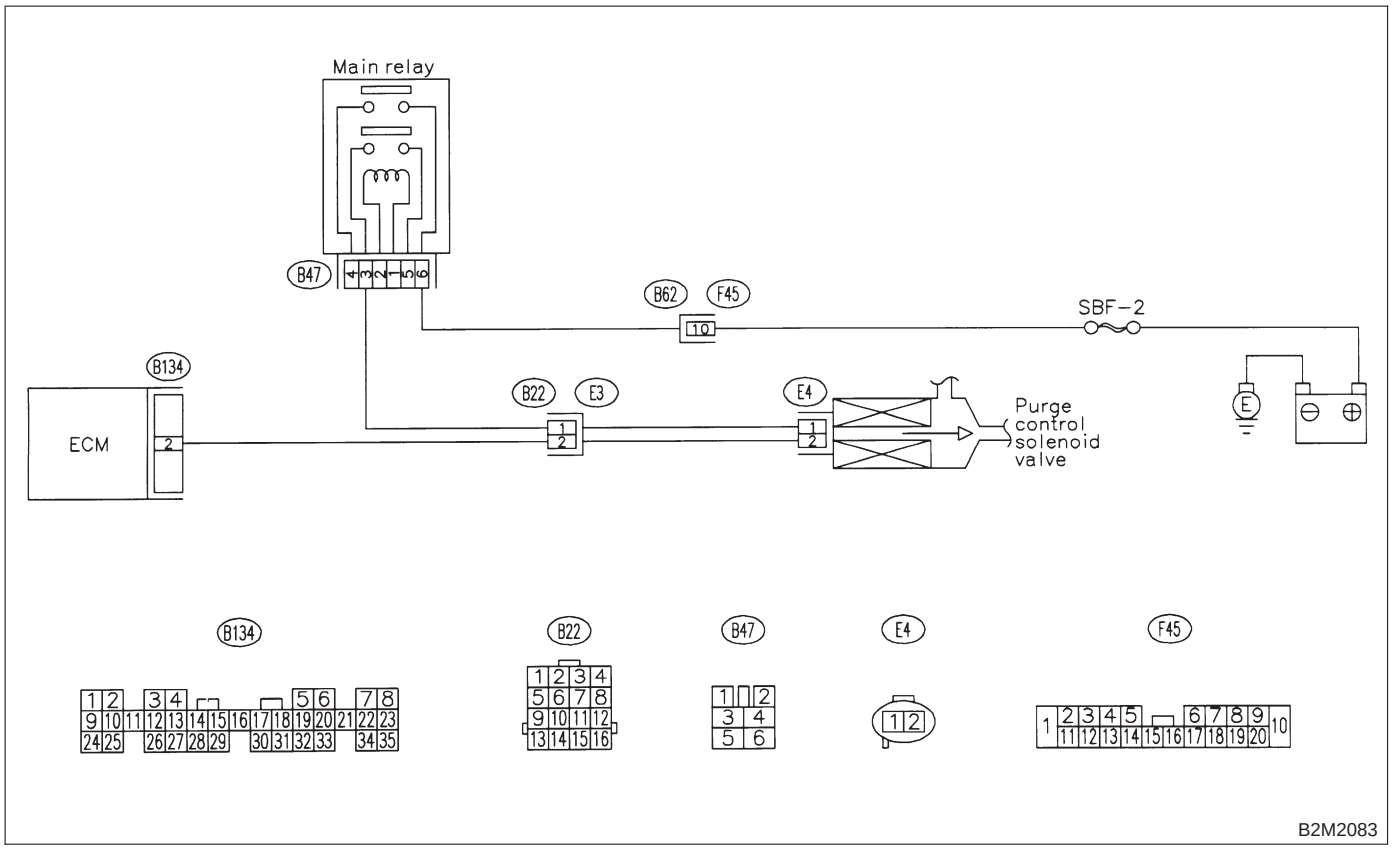
- **WIRING DIAGRAM:**



CG: DTC P1422 — EVAPORATIVE EMISSION CONTROL SYSTEM PURGE CONTROL VALVE CIRCUIT HIGH INPUT —

NOTE:
Check purge control solenoid valve circuit. <Ref. to 2-7 [T12CK0].>

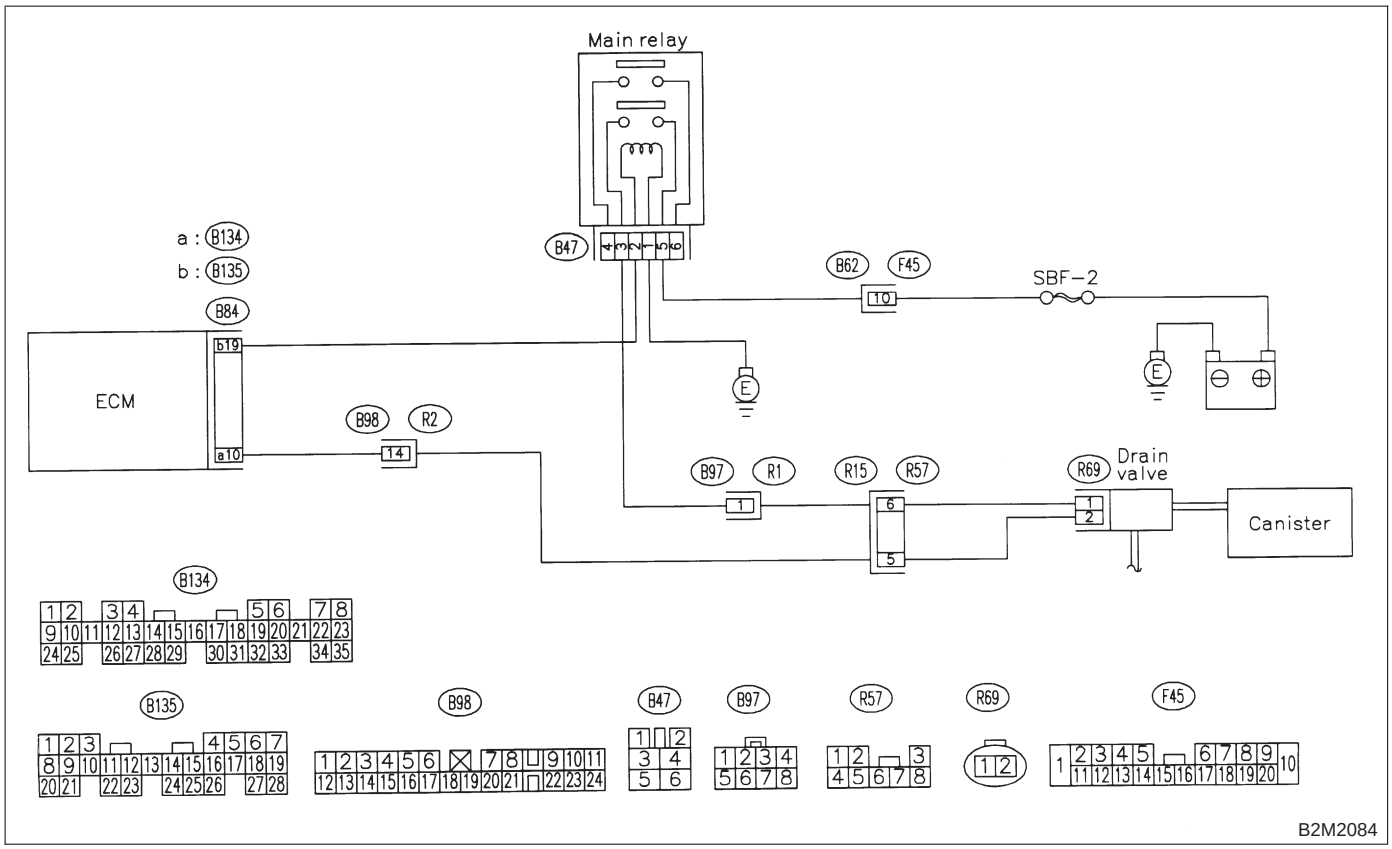
- **WIRING DIAGRAM:**



CH: DTC P1423 — EVAPORATIVE EMISSION CONTROL SYSTEM VENT CONTROL HIGH INPUT —

NOTE:
Check drain valve circuit. <Ref. to 2-7 [T12CL0].>

- **WIRING DIAGRAM:**

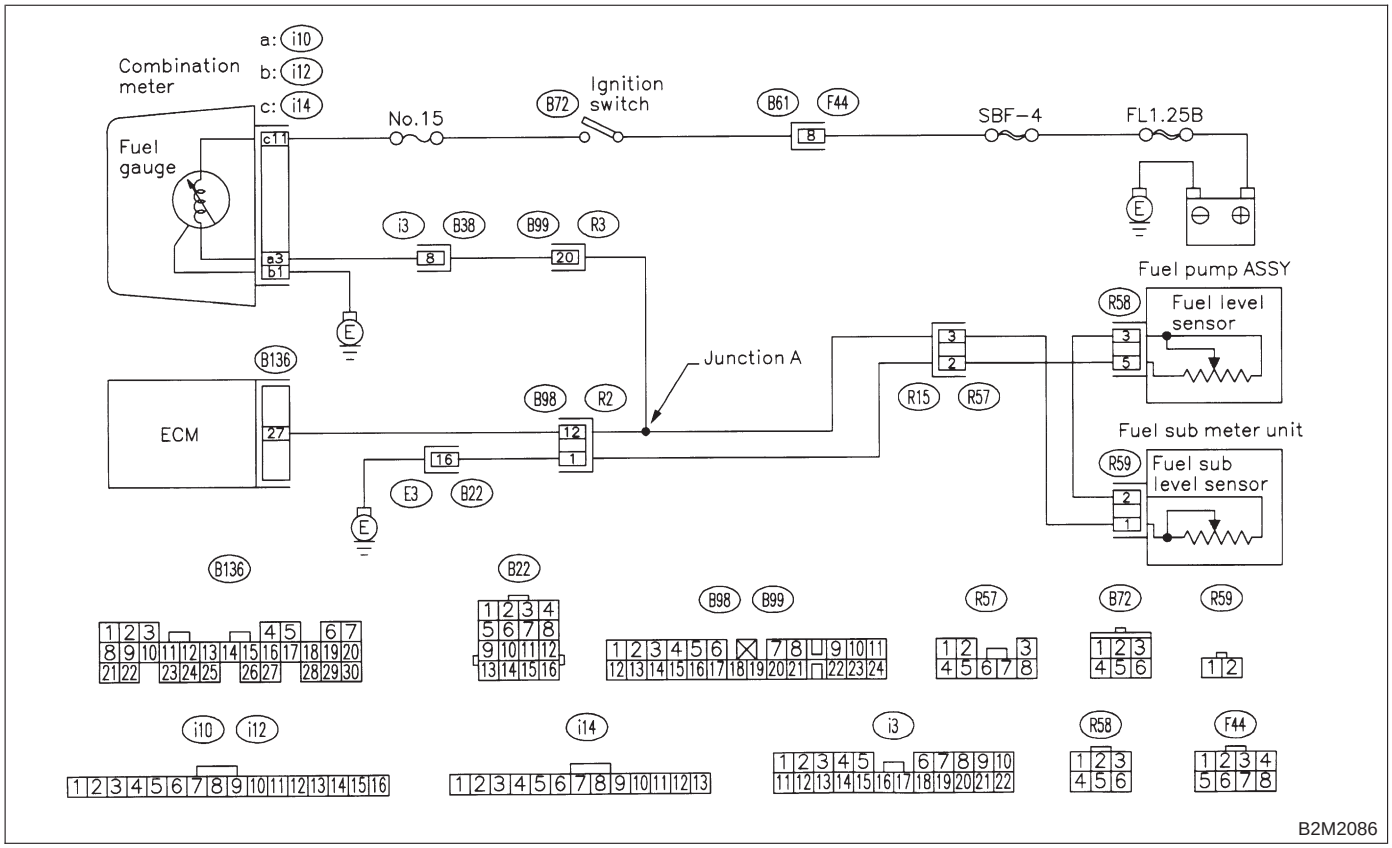


CI: DTC P1442 — FUEL LEVEL SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM 2 —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14CI1 : CHECK ANY OTHER DTC ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P0461, P0462 or P0463?***

YES : Inspect DTC P0461, P0462 or P0463 using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NOTE:
In this case, it is not necessary to inspect this trouble.

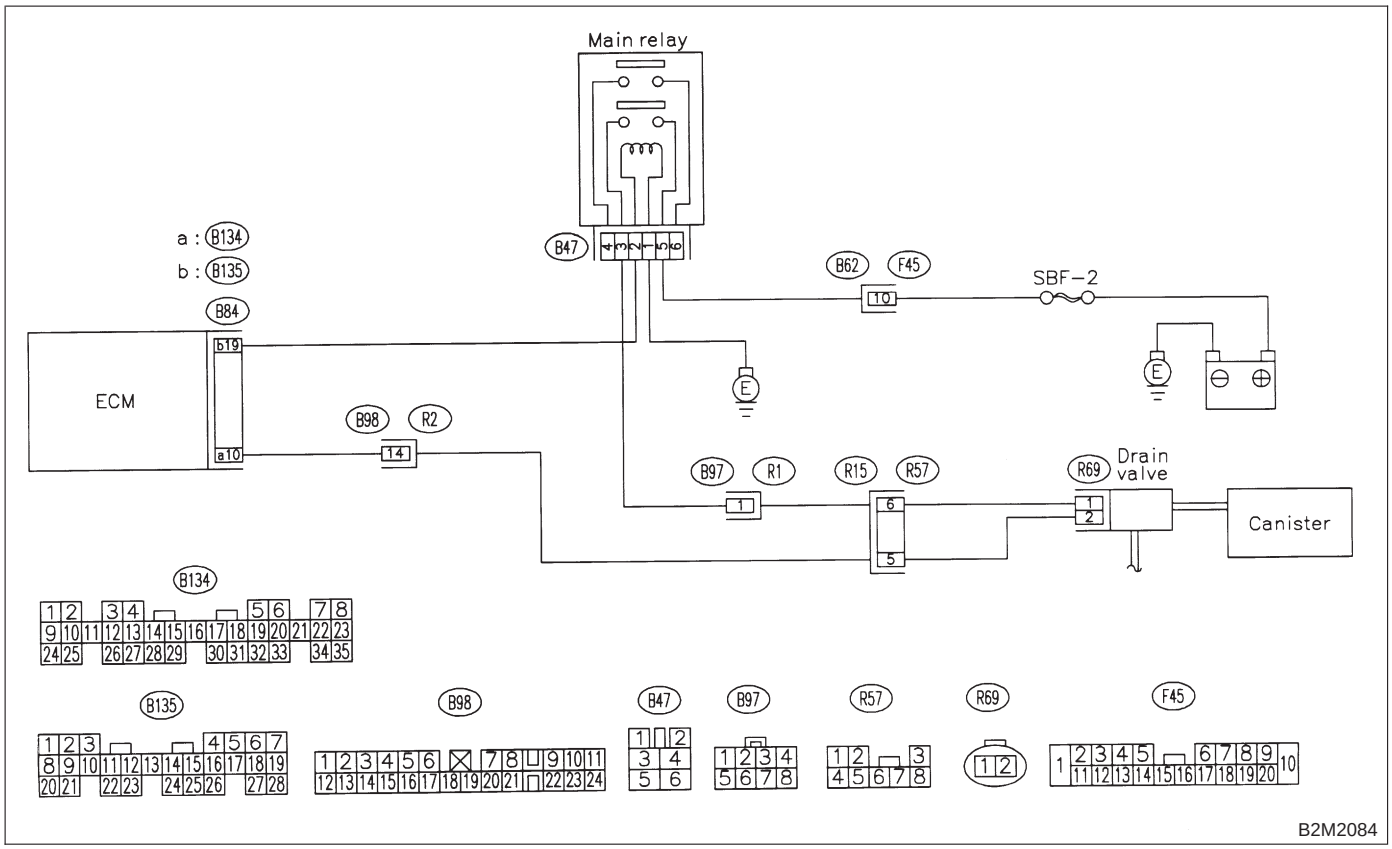
NO : Replace fuel sending unit <Ref. to 2-1 [W12A0].> and fuel sub meter unit <Ref. to 2-1 [T14A0].>.

CJ: DTC P1443 — EVAPORATIVE EMISSION CONTROL SYSTEM VENT CONTROL FUNCTION PROBLEM —

- **DTC DETECTING CONDITION:**
  - Immediately after fault occurrence
- **TROUBLE SYMPTOM:**
  - Improper fuel supply

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14CJ1 :	**CHECK ANY OTHER DTC ON DISPLAY.**

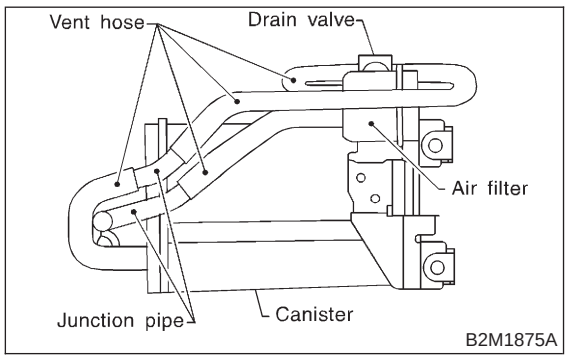
CHECK : ***Is there any other DTC on display?***

YES : Inspect the relevant DTC using “14. Diagnostics Chart with Trouble Code for 2200 cc Except California Spec. LHD Vehicles”. <Ref. to 2-7 [T14A0].>

NO : Go to step **14CJ2**.

14CJ2 : CHECK VENT LINE HOSES.

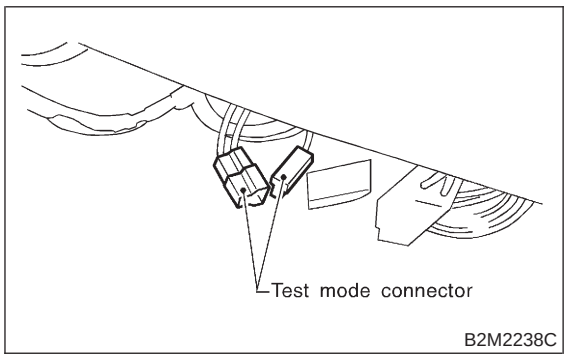
Check the following items.
- Clogging of vent hoses between canister and drain valve
- Clogging of vent hose between drain valve and air filter
- Clogging of vent hose between air filter and junction pipe
- Clogging of junction pipe
- Clogging of air filter



CHECK : ***Is there a fault in vent line?***
YES : Repair or replace the faulty part.
NO : Go to step **14CJ3**.

14CJ3 : CHECK DRAIN VALVE OPERATION.

1) Turn ignition switch to OFF.
2) Connect test mode connector at the lower portion of instrument panel (on the driver's side), to the side of the center console box.



3) Turn ignition switch to ON.

NOTE:
Drain valve operation check can also be executed using Subaru Select Monitor. For the procedure, refer to the "COMPULSORY VALVE OPERATION CHECK MODE". <Ref. to 2-7 [T3F0].>

CHECK : ***Does drain valve produce operating sound?***
YES : Contact with SOA service.

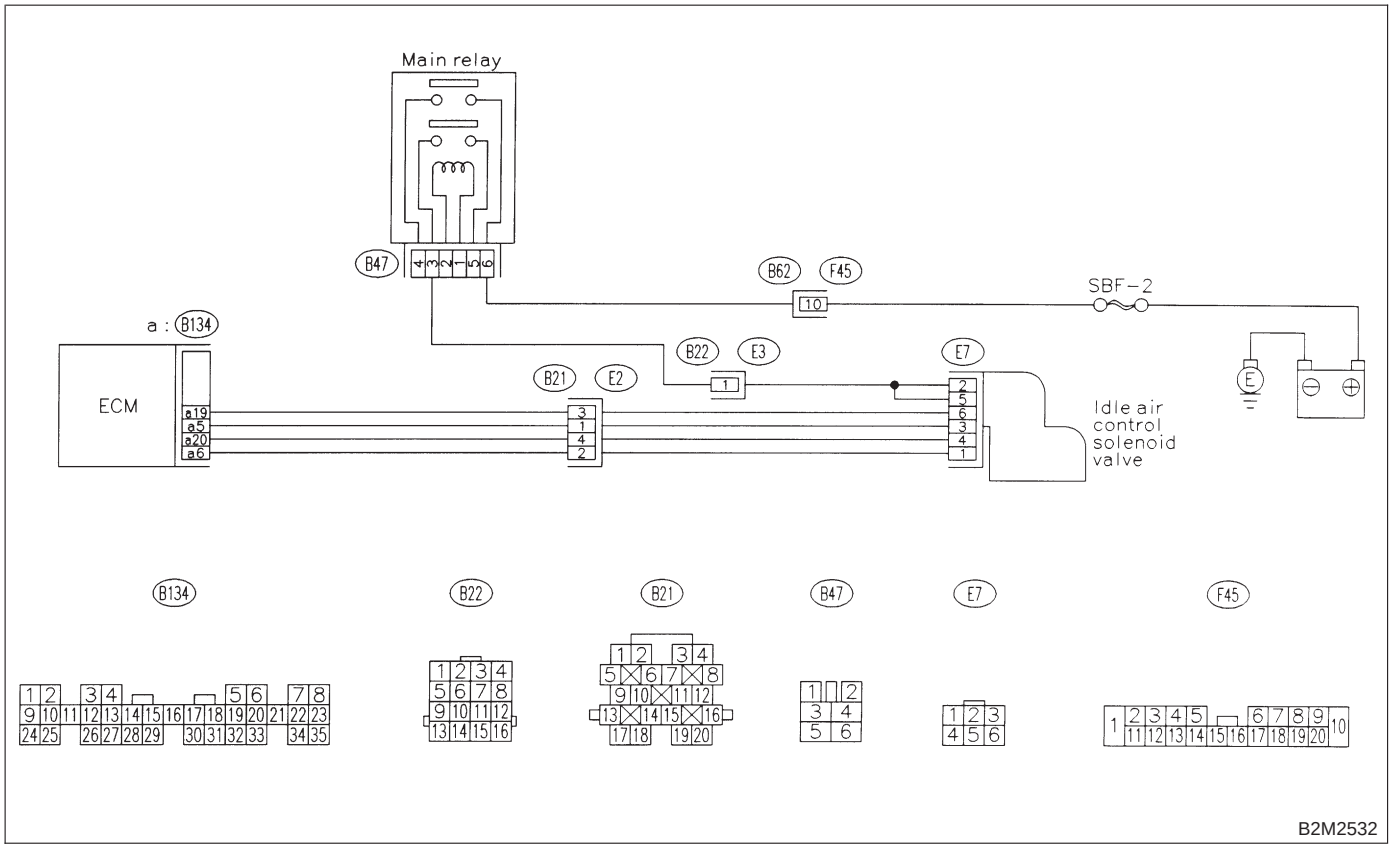
NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

NO : Replace drain valve. <Ref. to 2-1 [W17A0].>

CK: DTC P1507 — IDLE CONTROL SYSTEM MALFUNCTION (FAIL-SAFE) —

NOTE:
Check idle control system.
<Ref. to 2-7 [T14AU0].>

- **WIRING DIAGRAM:**



MEMO:

CL: DTC P1510 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 1 CIRCUIT LOW INPUT —

NOTE:
For the diagnostic procedure, refer to 2-7 [T14CR0]. <Ref. to 2-7 [T14CR0].>

CM: DTC P1511 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 1 CIRCUIT HIGH INPUT —

NOTE:
For the diagnostic procedure, refer to 2-7 [T14CS0]. <Ref. to 2-7 [T14CS0].>

CN: DTC P1512 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 2 CIRCUIT LOW INPUT —

NOTE:
For the diagnostic procedure, refer to 2-7 [T14CR0]. <Ref. to 2-7 [T14CR0].>

CO: DTC P1513 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 2 CIRCUIT HIGH INPUT —

NOTE:
For the diagnostic procedure, refer to 2-7 [T14CR0]. <Ref. to 2-7 [T14CR0].>

CP: DTC P1514 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 3 CIRCUIT LOW INPUT —

NOTE:
For the diagnostic procedure, refer to 2-7 [T14CR0]. <Ref. to 2-7 [T14CR0].>

CQ: DTC P1515 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 3 CIRCUIT HIGH INPUT —

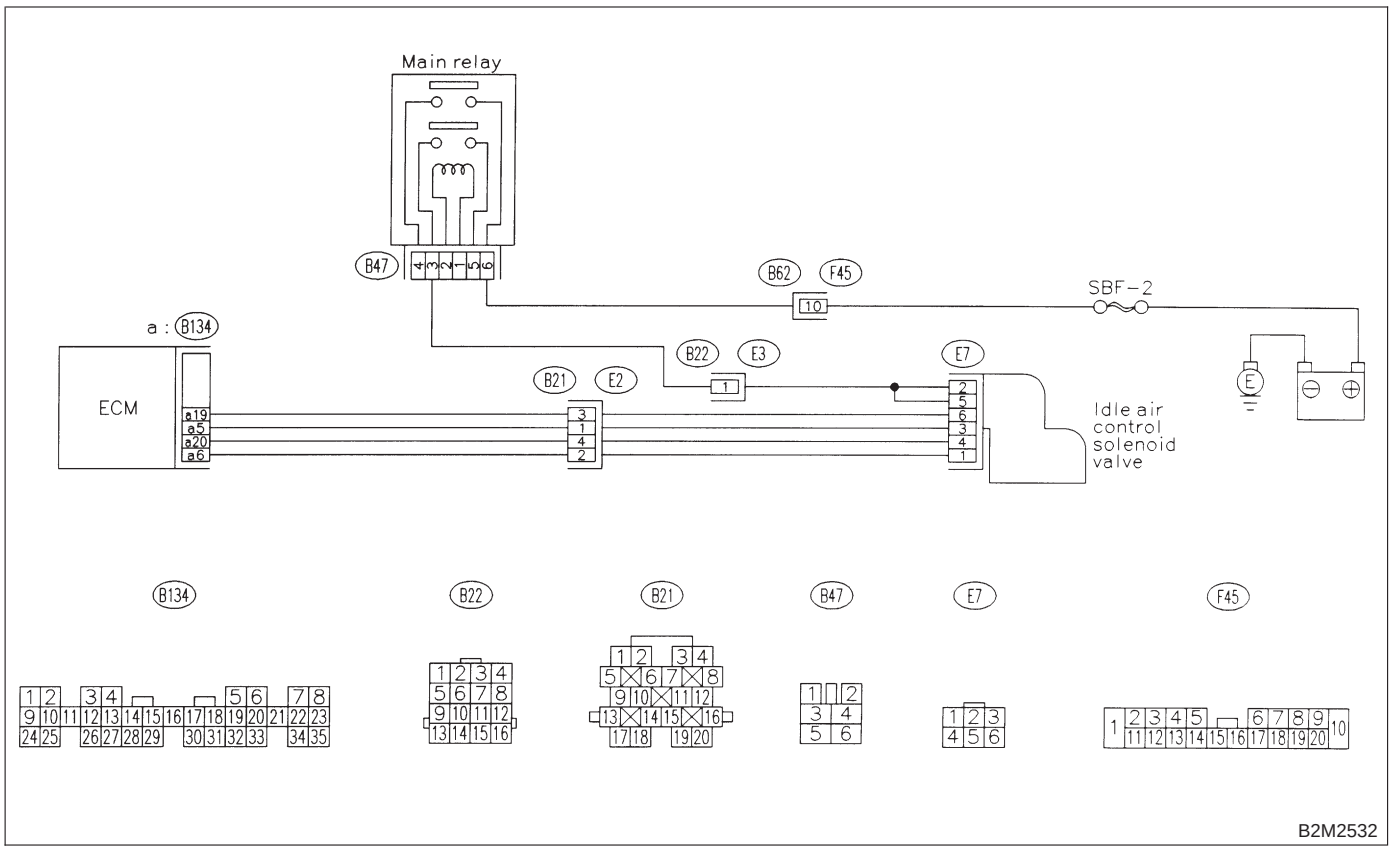
NOTE:
For the diagnostic procedure, refer to 2-7 [T14CR0]. <Ref. to 2-7 [T14CR0].>

CR: DTC P1516 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 4 CIRCUIT LOW INPUT —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition
- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Engine stalls.
  - Engine breathing

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

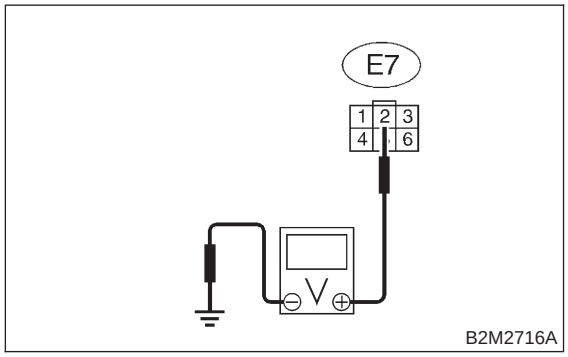
- **WIRING DIAGRAM:**



14CR1 : CHECK POWER SUPPLY TO IDLE AIR CONTROL SOLENOID VALVE.

1) Turn ignition switch to OFF.
2) Disconnect connector from idle air control solenoid valve.
3) Turn ignition switch to ON.
4) Measure voltage between idle air control solenoid valve connector and engine ground.

Connector & terminal
(E7) No. 2 (+) — Engine ground (−):



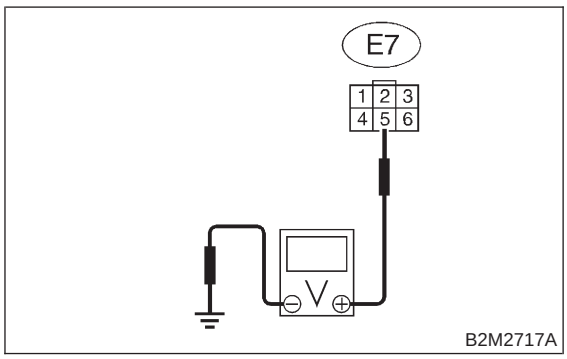
CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **14CR2**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between idle air control solenoid valve and main relay connector
- Poor contact in coupling connector (B22)

14CR2 : CHECK POWER SUPPLY TO IDLE AIR CONTROL SOLENOID VALVE.

Measure voltage between idle air control solenoid valve connector and engine ground.

Connector & terminal
(E7) No. 5 (+) — Engine ground (−):



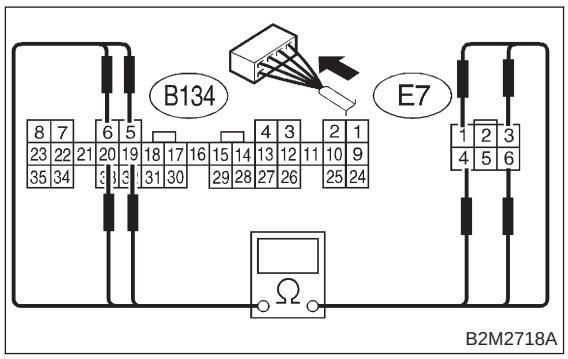
CHECK : ***Is the voltage more than 10 V?***
YES : Go to step **14CR3**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between idle air control solenoid valve and main relay connector
- Poor contact in coupling connector (B22)

14CR3 : CHECK HARNESS BETWEEN ECM AND IDLE AIR CONTROL SOLENOID VALVE CONNECTOR.

1) Turn ignition switch to OFF.
2) Measure resistance between ECM and idle air control solenoid valve connector.

Connector & terminal
#1; (B134) No. 5 — (E7) No. 3:
#2; (B134) No. 6 — (E7) No. 1:
#3; (B134) No. 19 — (E7) No. 6:
#4; (B134) No. 20 — (E7) No. 4:



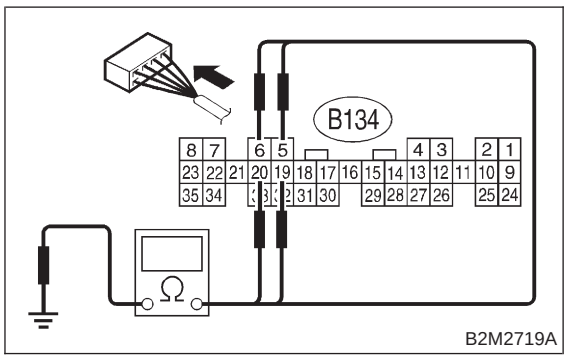
CHECK : ***Is the resistance less than 1 Ω?***
YES : Go to step **14CR4**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and idle air control solenoid valve connector
- Poor contact in coupling connector (B21)

14CR4 : CHECK HARNESS BETWEEN ECM AND IDLE AIR CONTROL SOLENOID VALVE CONNECTOR.

1) Disconnect connector from ECM.
2) Measure resistance between ECM connector and chassis ground.

Connector & terminal
#1; (B134) No. 5 — Chassis ground:
#2; (B134) No. 6 — Chassis ground:
#3; (B134) No. 19 — Chassis ground:
#4; (B134) No. 20 — Chassis ground:



CHECK : ***Is the resistance less than 10 Ω?***
YES : Repair ground short circuit in harness between ECM and idle air control solenoid valve connector.
NO : Go to step **14CR5**.

14CR5 : CHECK POOR CONTACT.

Check poor contact in ECM connector and idle air control solenoid valve connector. <Ref. to FOREWORD [T3C1].>

CHECK : ***Is there poor contact in ECM connector or idle air control solenoid valve connector?***

YES : Repair poor contact in ECM connector or idle air control solenoid valve connector.

NO : Replace idle air control solenoid valve. <Ref. to 2-7 [W12A2].>

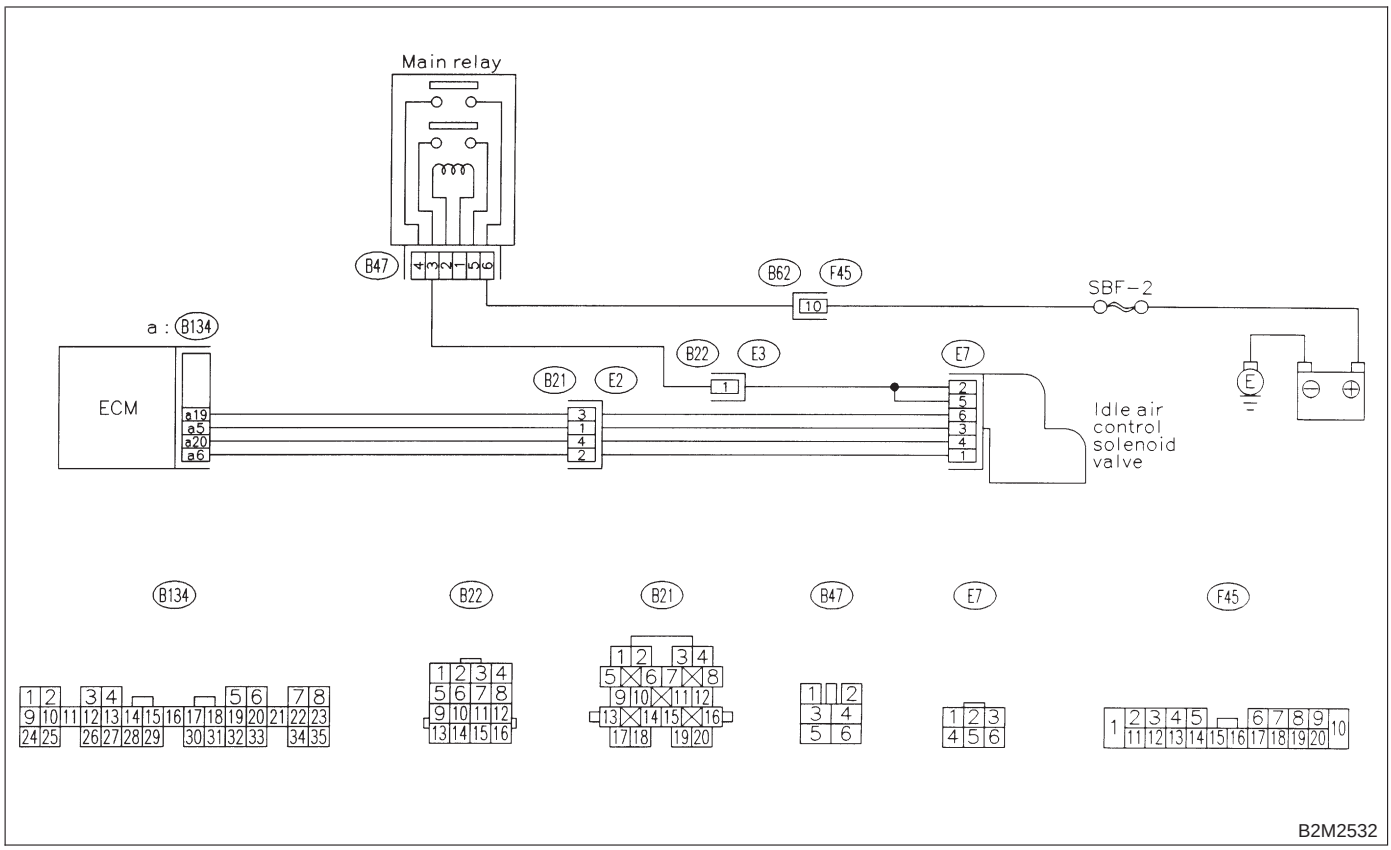
MEMO:

CS: DTC P1517 — IDLE AIR CONTROL SOLENOID VALVE SIGNAL 4 CIRCUIT HIGH INPUT —

- **DTC DETECTING CONDITION:**
  - Immediately at fault recognition
- **TROUBLE SYMPTOM:**
  - Erroneous idling
  - Engine stalls.
  - Engine breathing

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14CS1 :	**CHECK ANY OTHER DTC ON DISPLAY.**

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P1511, P1513, P1515 and P1517 at same time?***

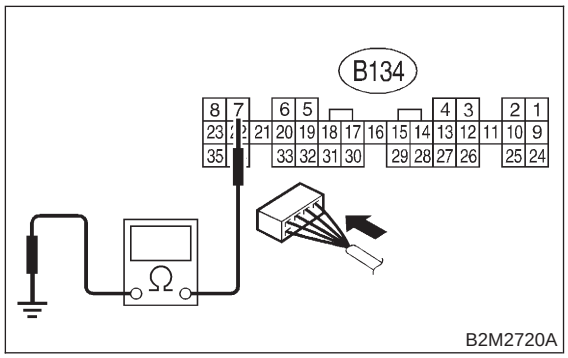
YES : Go to step **14CS2**.

NO : Go to step **14CS3**.

14CS2 : CHECK GROUND CIRCUIT FOR ECM.

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

Connector & terminal
(B134) No. 7 — Chassis ground:



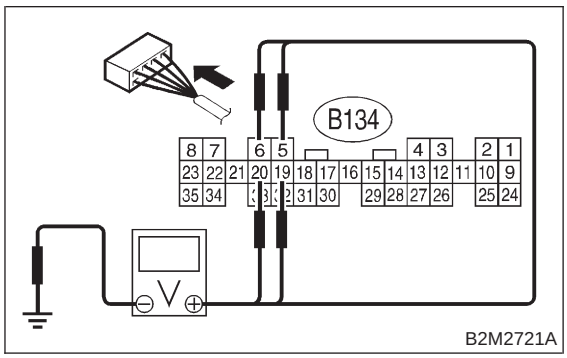
CHECK : ***Is the resistance less than 5 Ω?***
YES : Go to step **14CS3**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM connector and engine ground terminal
- Poor contact in ECM connector
- Poor contact in coupling connector (B22)

14CS3 : CHECK HARNESS BETWEEN ECM AND IDLE AIR CONTROL SOLENOID VALVE CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from idle air control solenoid valve.
3) Turn ignition switch to ON.
4) Measure voltage between ECM connector and chassis ground.

Connector & terminal
#1; (B134) No. 5 (+) — Chassis ground (–):
#2; (B134) No. 6 (+) — Chassis ground (–):
#3; (B134) No. 19 (+) — Chassis ground (–):
#4; (B134) No. 20 (+) — Chassis ground (–):

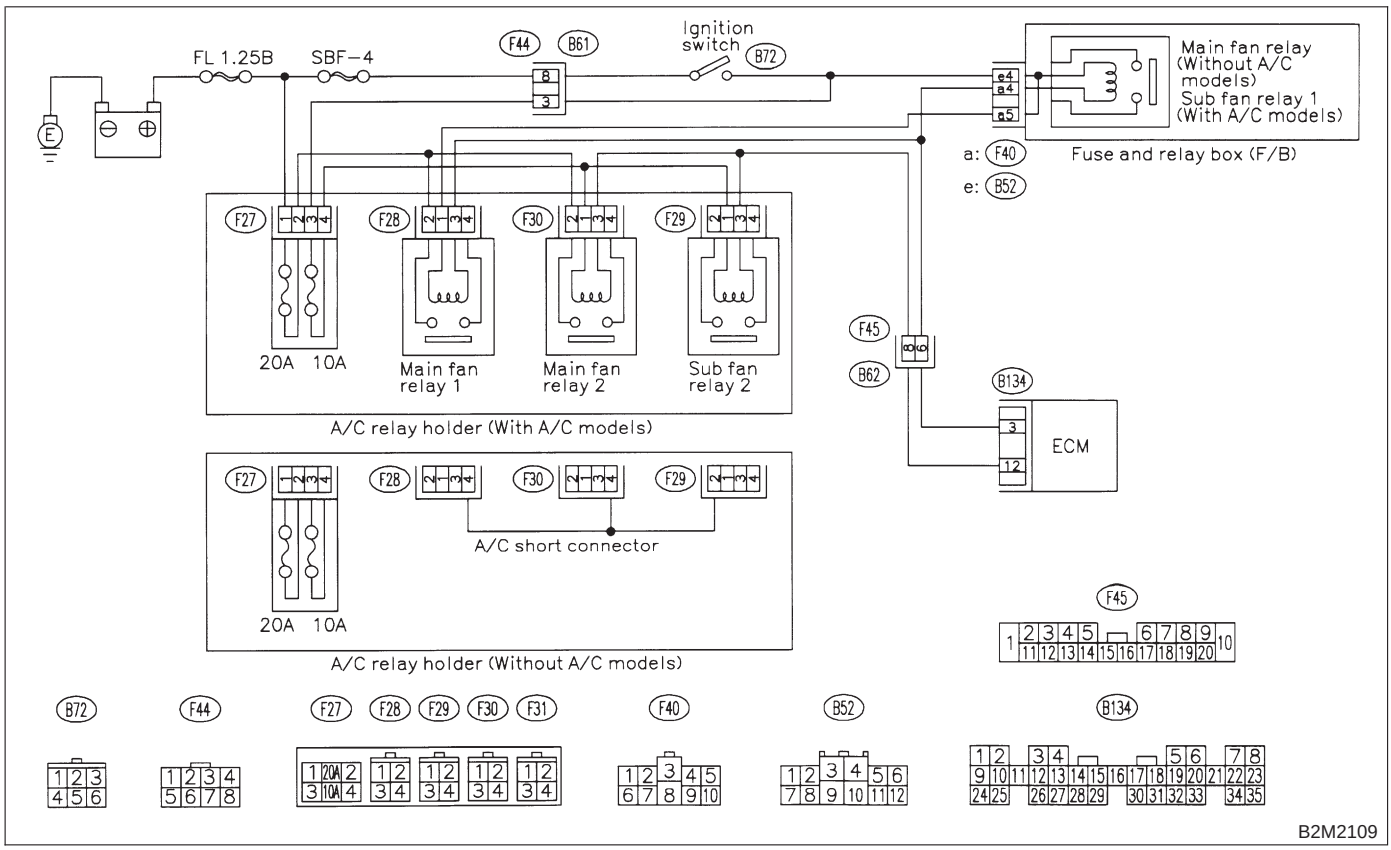


CHECK : ***Is the voltage more than 10 V?***
YES : Repair battery short circuit in harness between ECM and idle air control solenoid valve connector. After repair, replace ECM. <Ref. to 2-7 [W15A1].>
NO : Replace ECM. <Ref. to 2-7 [W15A1].>

CT: DTC P1520 — COOLING FAN RELAY 1 CIRCUIT HIGH INPUT —

NOTE:
Check radiator fan relay 1 circuit.
<Ref. to 2-7 [T12CP0].>

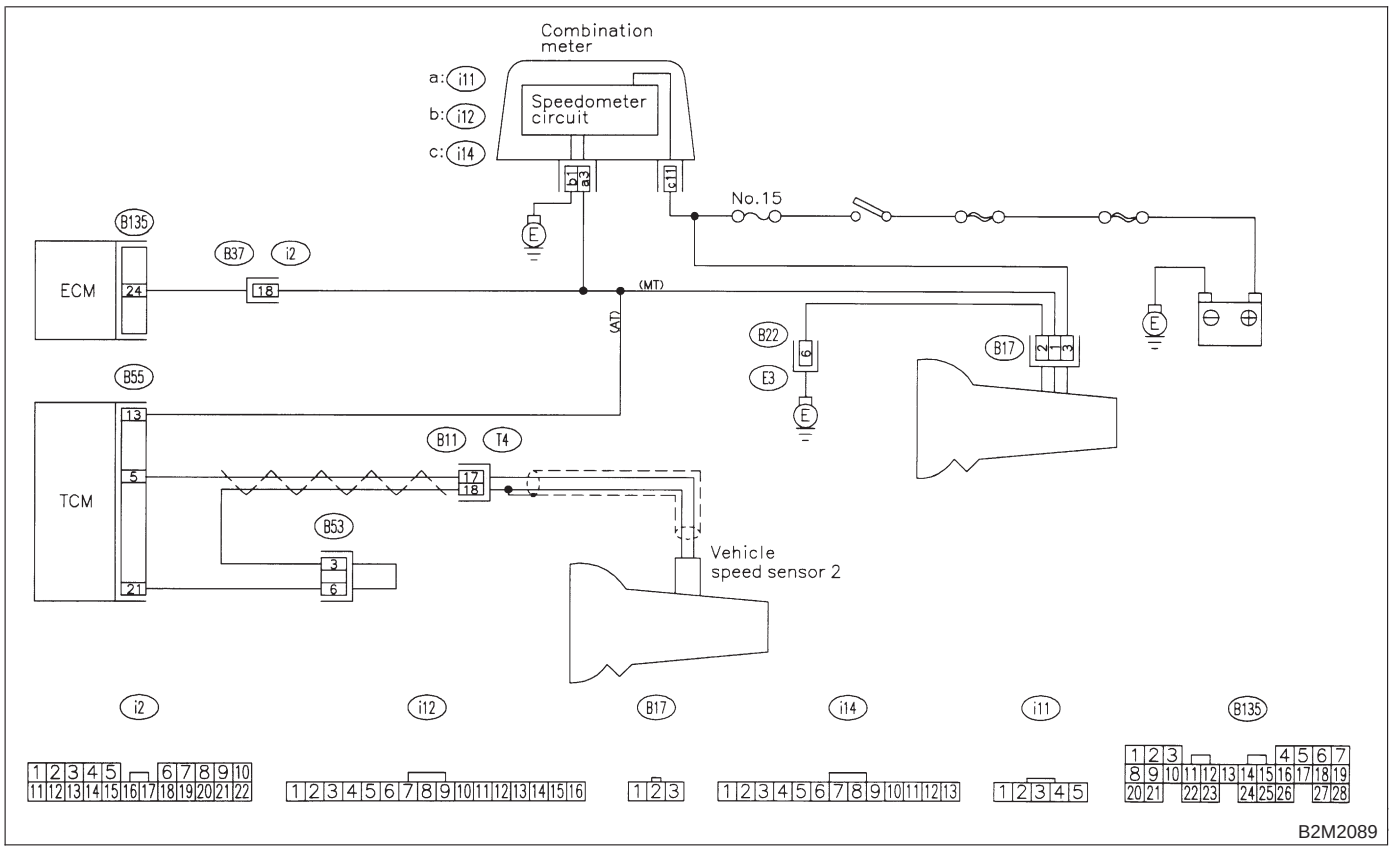
- **WIRING DIAGRAM:**



CU: DTC P1540 — VEHICLE SPEED SENSOR MALFUNCTION 2 —

NOTE:
Check vehicle speed sensor 2 circuit.
<Ref. to 2-7 [T12AT0].>

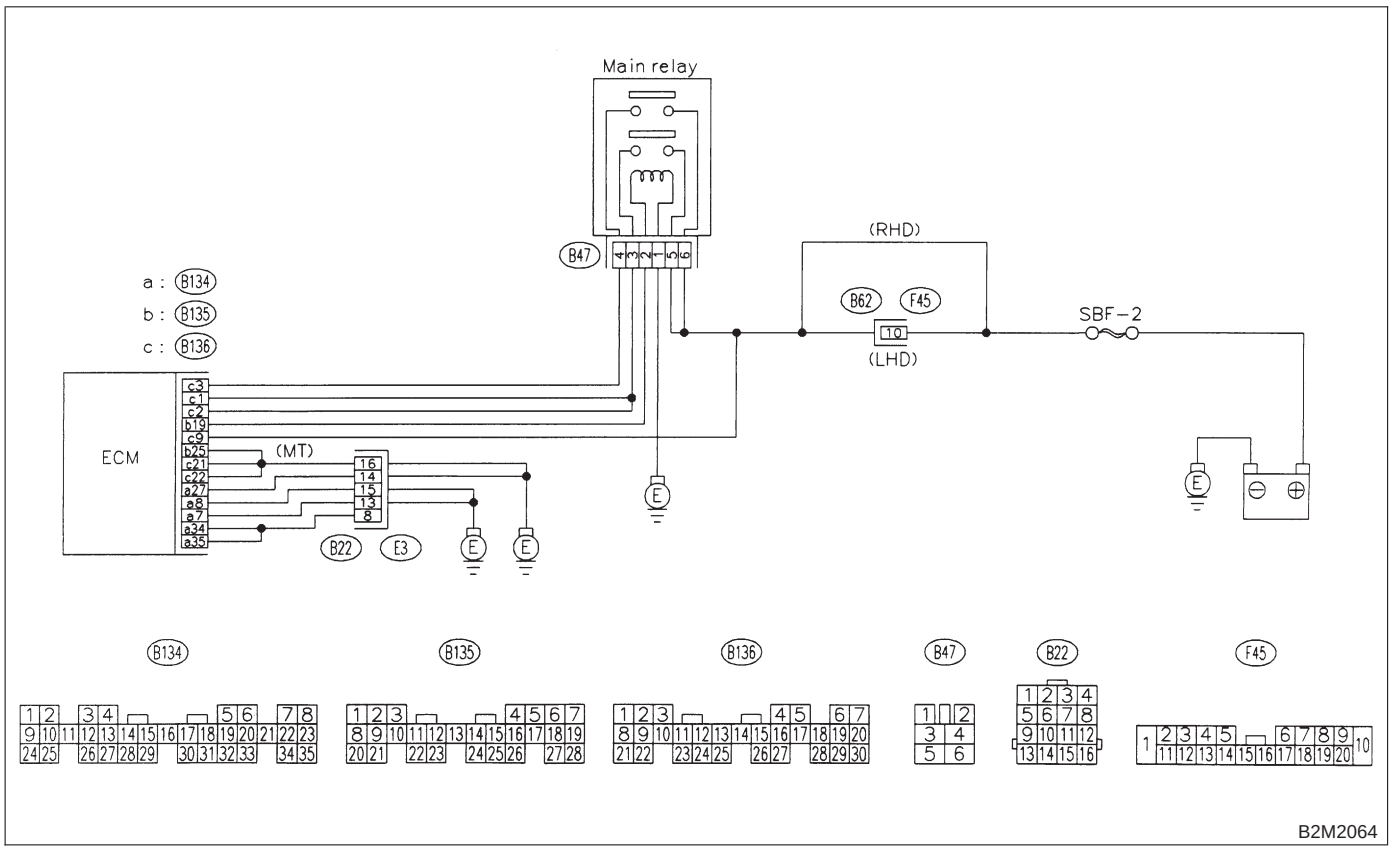
- **WIRING DIAGRAM:**



CV: DTC P1560 — BACK-UP VOLTAGE CIRCUIT MALFUNCTION —

NOTE:
Check back-up voltage circuit.
<Ref. to 2-7 [T12CQ0].>

- **WIRING DIAGRAM:**

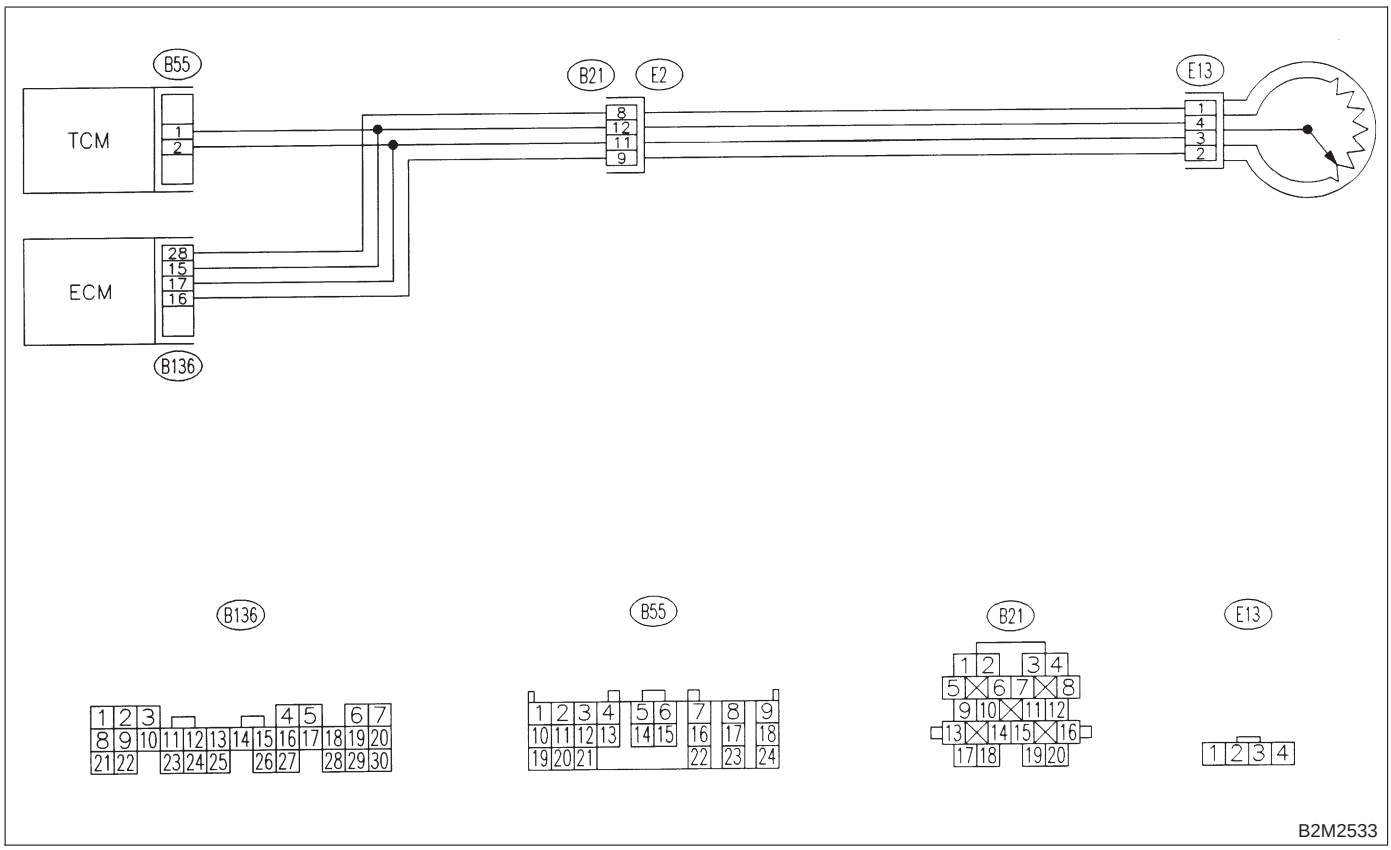


CW: DTC P1700 — THROTTLE POSITION SENSOR CIRCUIT MALFUNCTION FOR AUTOMATIC TRANSMISSION —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault
- **TROUBLE SYMPTOM:**
  - Shift point too high or too low; engine brake not effected in “3” range; excessive shift shock; excessive tight corner “braking”

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14CW1 : CHECK DTC P1700 ON DISPLAY.

CHECK : ***Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC P1700?***

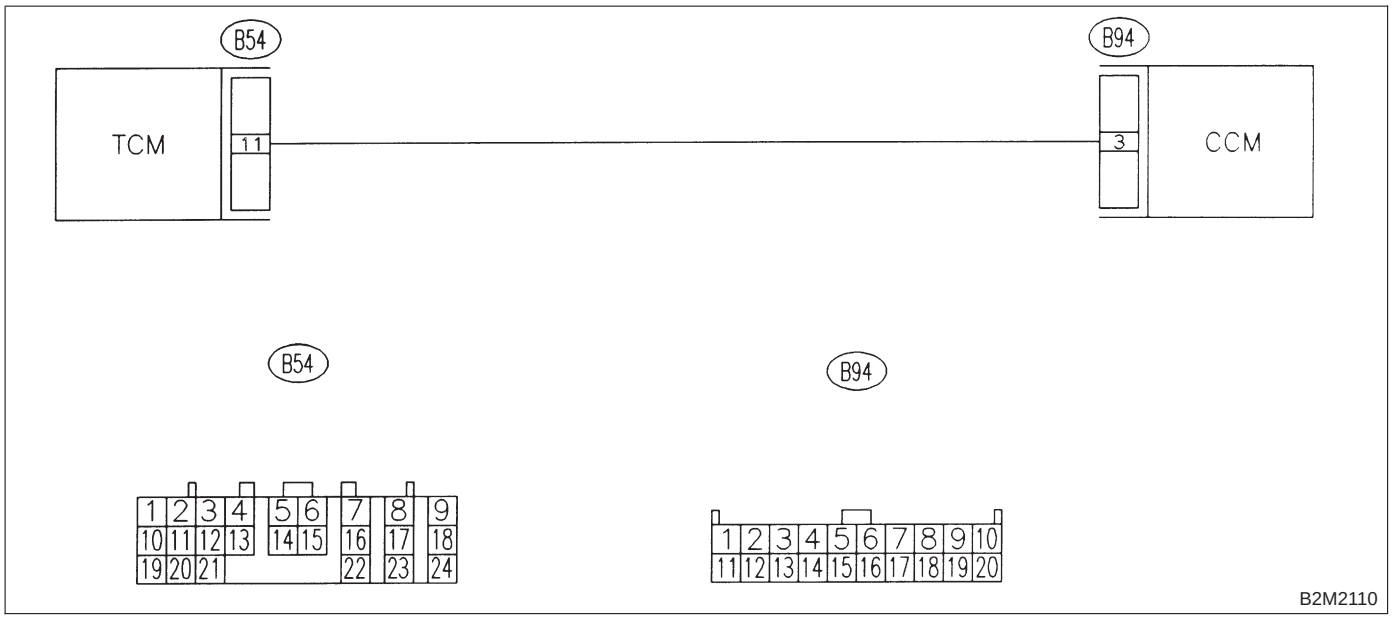
YES : Check throttle position sensor circuit. <Ref. to 3-2 [T8F0].>

NO : It is not necessary to inspect DTC P1700.

CX: DTC P1701 — CRUISE CONTROL SET SIGNAL CIRCUIT MALFUNCTION FOR AUTOMATIC TRANSMISSION —

NOTE:
Check cruise set signal circuit. <Ref. to 2-7 [T12CS0].>

- **WIRING DIAGRAM:**



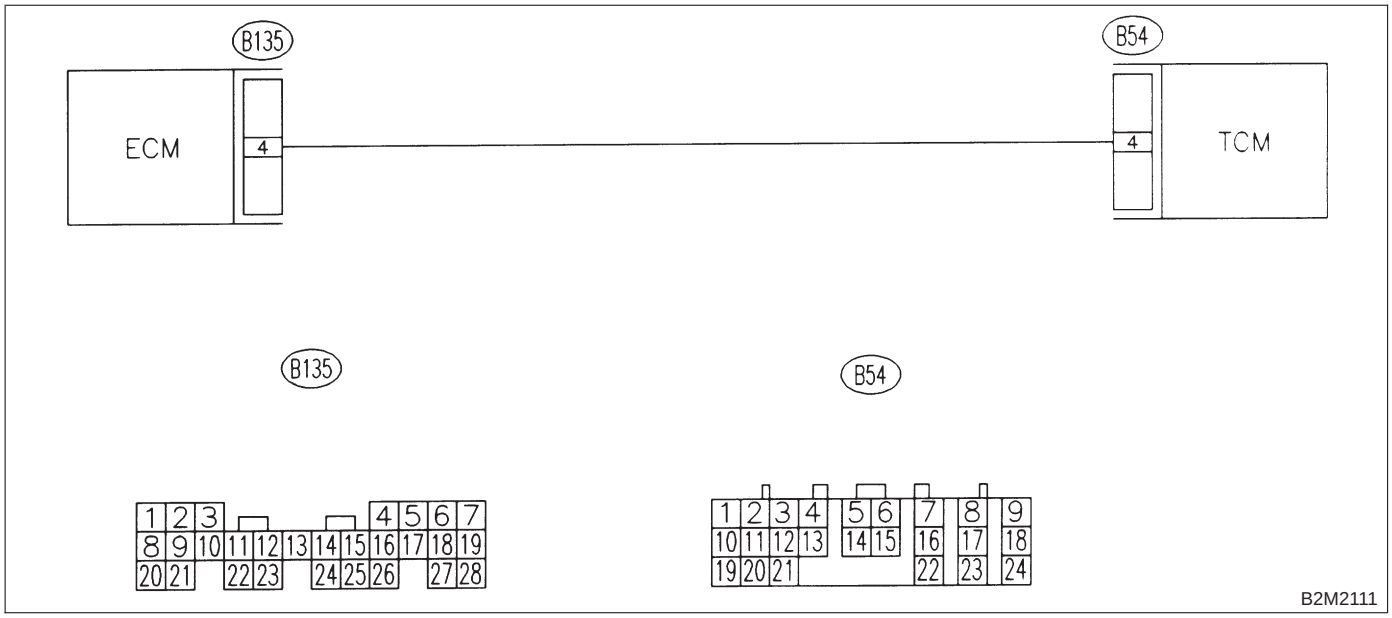
MEMO:

CY: DTC P1702 — AUTOMATIC TRANSMISSION DIAGNOSIS INPUT SIGNAL CIRCUIT LOW INPUT —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



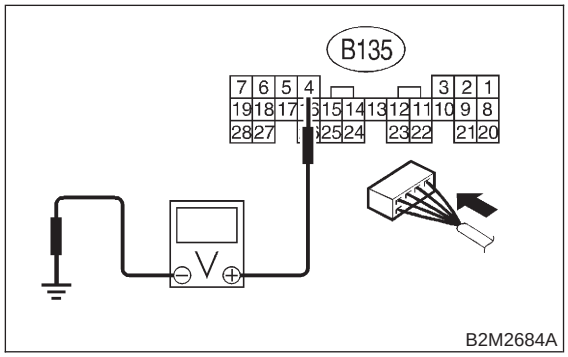
14CY1 : CHECK TRANSMISSION TYPE.

CHECK : ***Is transmission type AT?***
YES : Go to step **14CY2**.
NO : Check AT/MT identification circuit. <Ref. to 2-7 [T14DE0].>

14CY2 : CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR.

1) Turn ignition switch to ON.
2) Measure voltage between ECM and chassis ground.

Connector & terminal
(B135) No. 4 (+) — Chassis ground (−):



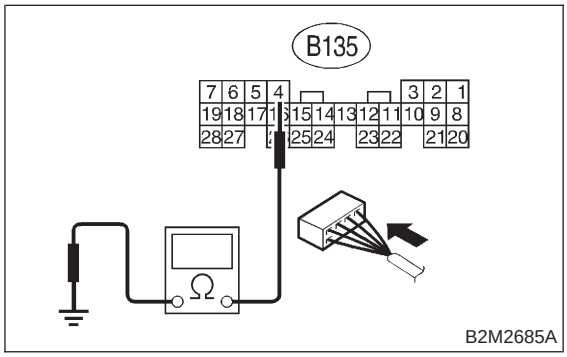
CHECK : ***Is the voltage less than 1 V?***
YES : Go to step **14CY3**.
NO : Even if MIL lights up, the circuit has returned to a normal condition at this time.

NOTE:
In this case, repair the following:
- Poor contact in ECM connector
- Poor contact in TCM connector

14CY3 : CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR.

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

Connector & terminal
(B135) No. 4 — Chassis ground:

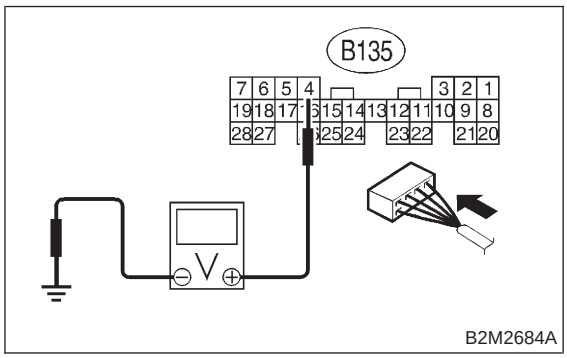


CHECK : ***Is the resistance less than 10 Ω?***
YES : Repair ground short circuit in harness between ECM and TCM connector.
NO : Go to step **14CY4**.

14CY4 : CHECK OUTPUT SIGNAL FOR ECM.

1) Connect connector to ECM.
2) Turn ignition switch to ON.
3) Measure voltage between ECM and chassis ground.

Connector & terminal
(B135) No. 4 (+) — Chassis ground (−):

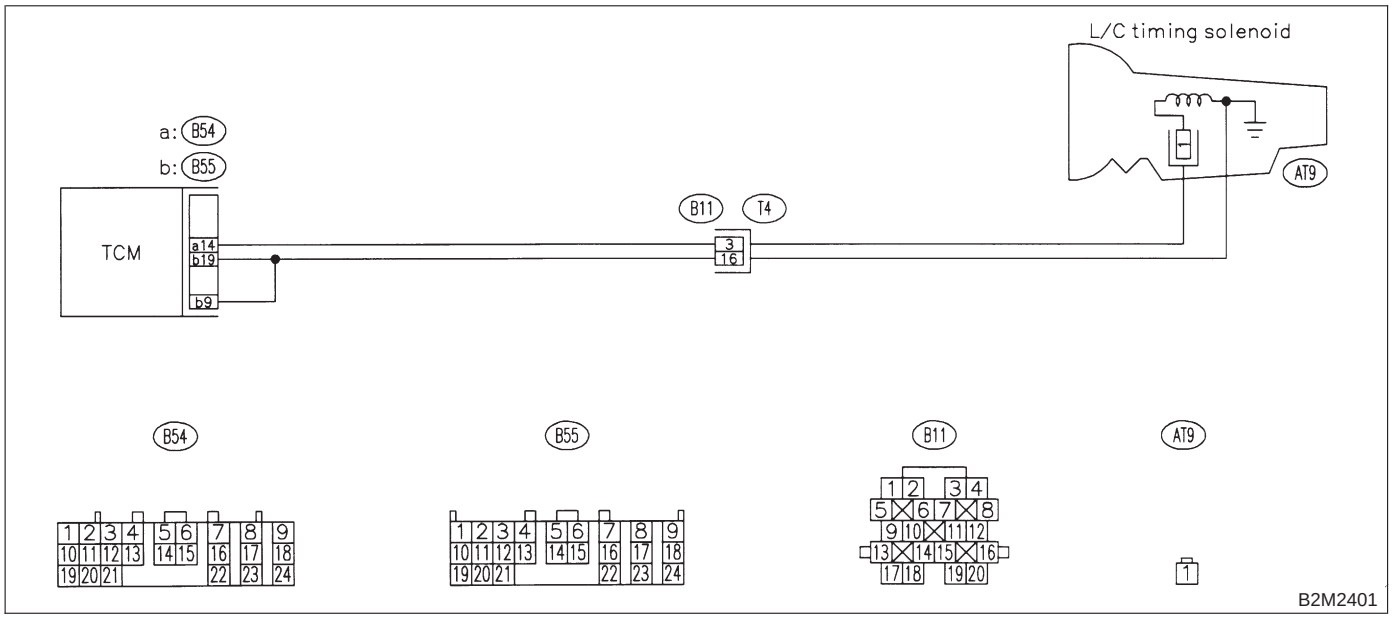


CHECK : ***Is the voltage more than 5 V?***
YES : Replace TCM. <Ref. to 3-2 [W22A0].>
NO : Repair poor contact in ECM connector.

CZ: DTC P1703 — LOW CLUTCH TIMING CONTROL SOLENOID VALVE CIRCUIT MALFUNCTION —

NOTE:
Check low clutch timing control solenoid valve circuit. <Ref. to 2-7 [T12CU0].>

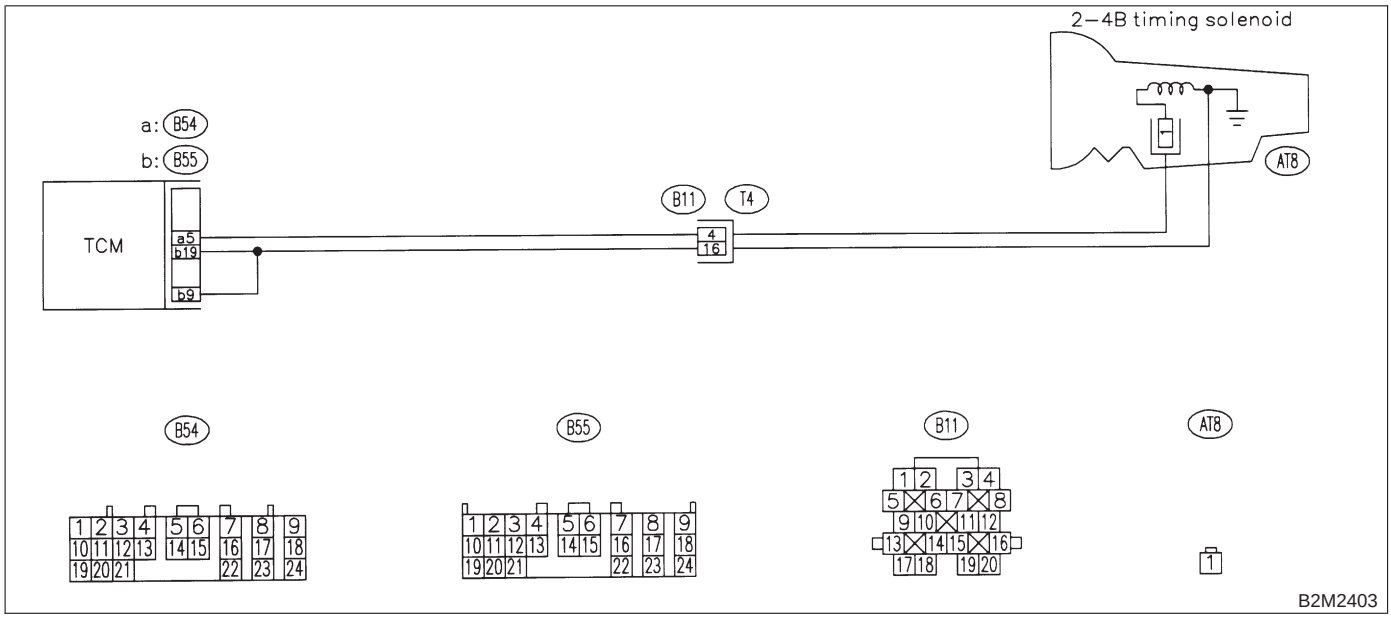
- **WIRING DIAGRAM:**



DA: DTC P1704 — 2-4 BRAKE TIMING CONTROL SOLENOID VALVE CIRCUIT MALFUNCTION —

NOTE:
Check 2-4 brake timing control solenoid valve circuit. <Ref. to 2-7 [T12CV0].>

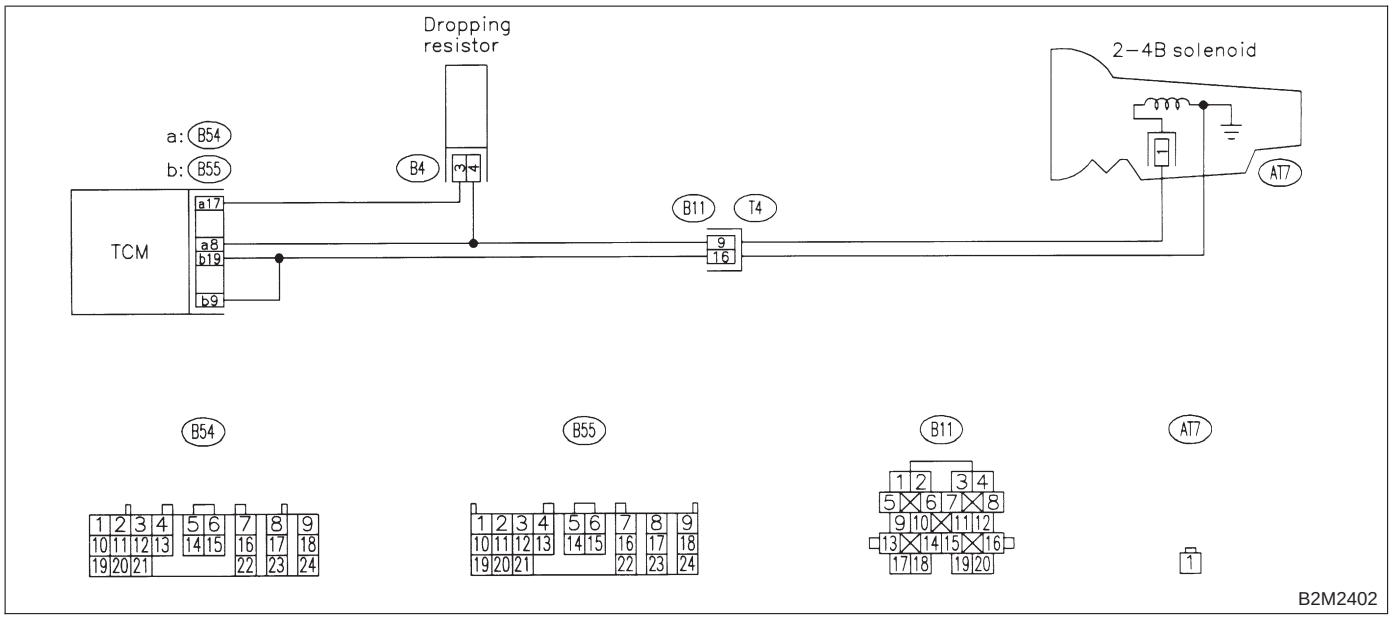
- **WIRING DIAGRAM:**



DB: DTC P1705 — 2-4 BRAKE PRESSURE CONTROL SOLENOID VALVE (DUTY SOLENOID D) CIRCUIT MALFUNCTION —

NOTE:
Check 2-4 brake pressure control solenoid valve (Duty solenoid D) circuit. <Ref. to 2-7 [T12CW0].>

- **WIRING DIAGRAM:**

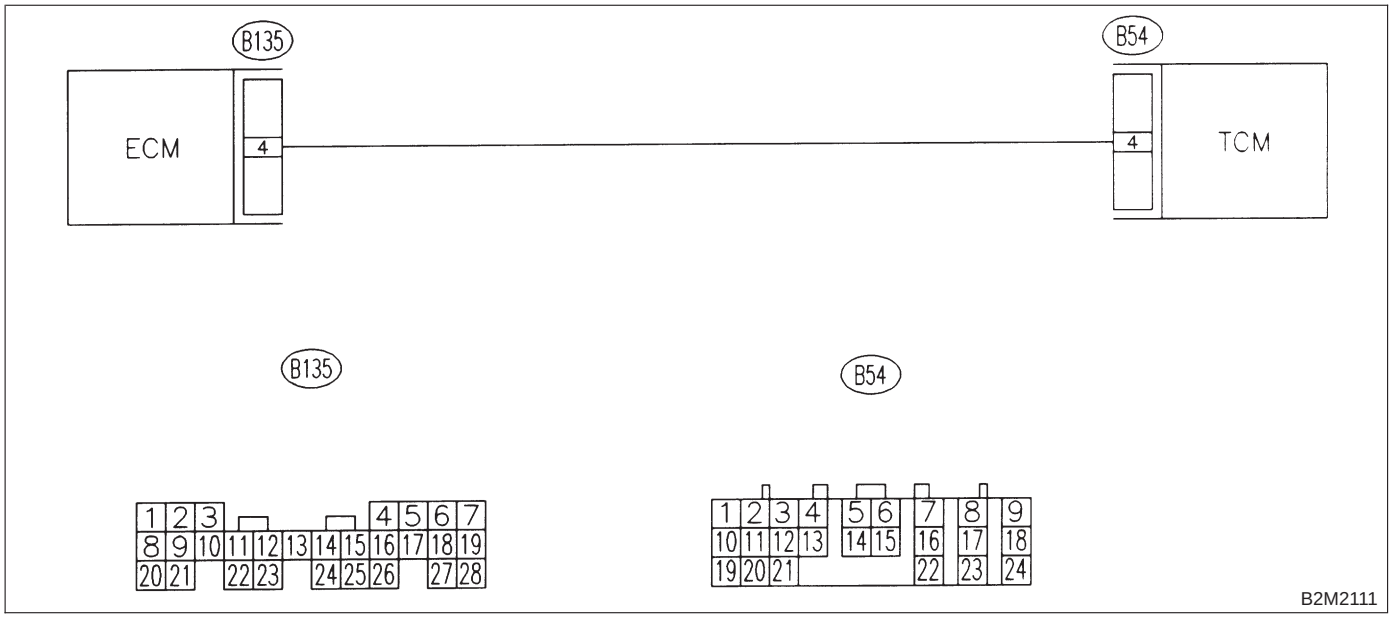


DC: DTC P1722 — AUTOMATIC TRANSMISSION DIAGNOSIS INPUT SIGNAL CIRCUIT HIGH INPUT —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



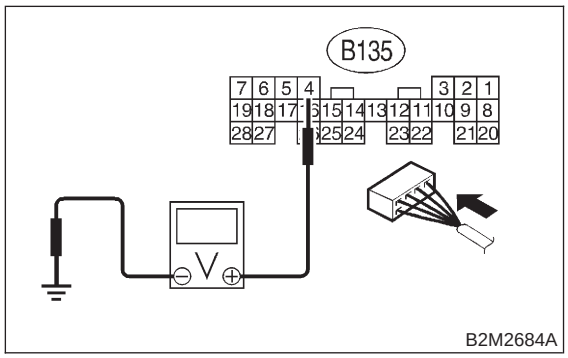
14DC1 : CHECK TRANSMISSION TYPE.

CHECK : ***Is transmission type AT?***
YES : Go to step **14DC2**.
NO : Check AT/MT identification circuit. <Ref. to 2-7 [T14DE0].>

14DC2 : CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR.

1) Turn ignition switch to ON.
2) Measure voltage between ECM and chassis ground.

Connector & terminal
(B135) No. 4 (+) — Chassis ground (−):

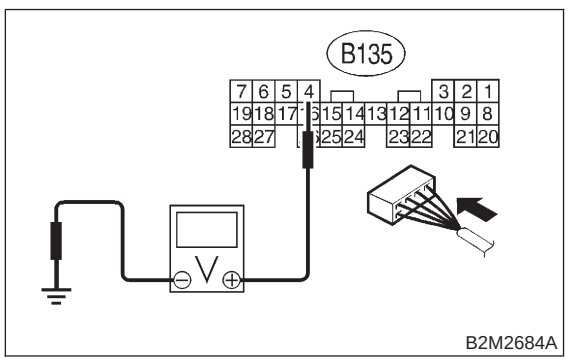


CHECK : ***Is the voltage more than 10 V?***
YES : Repair battery short circuit in harness between ECM and TCM connector. After repair, replace ECM. <Ref. to 2-7 [W15A1].>
NO : Go to step **14DC3**.

14DC3 : CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B135) No. 4 (+) — Chassis ground (−):

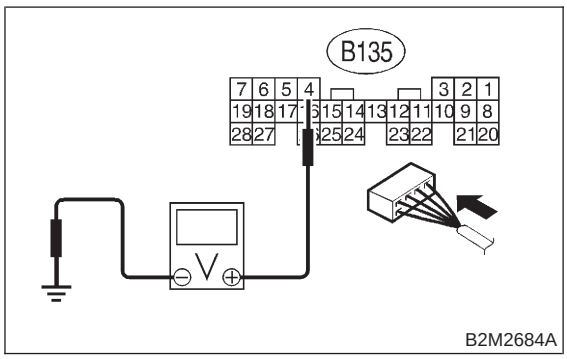


CHECK : ***Is the voltage more than 4 V?***
YES : Go to step **14DC6**.
NO : Go to step **14DC4**.

14DC4 : CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR.

Measure voltage between ECM connector and chassis ground.

Connector & terminal
(B135) No. 4 (+) — Chassis ground (−):

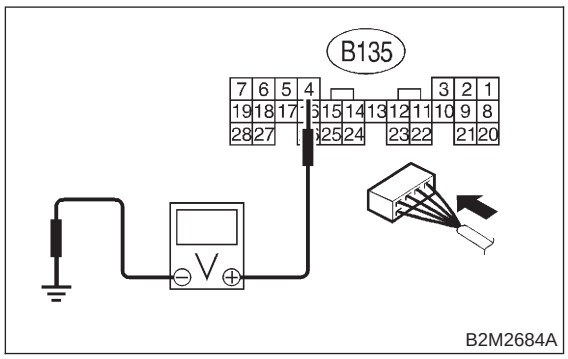


CHECK : ***Is the voltage less than 1 V?***
YES : Repair poor contact in ECM connector.
NO : Go to step **14DC5**.

14DC5 : CHECK OUTPUT SIGNAL FROM ECM.

Measure voltage between ECM and chassis ground.

Connector & terminal
(B135) No. 4 (+) — Chassis ground (−):



CHECK : ***Does the voltage change from 1 V to 4 V while monitoring the value with voltage meter?***

YES : Even if MIL lights up, the circuit has returned to a normal condition at this time.

NOTE:
In this case, repair the following:
- Poor contact in ECM connector
- Poor contact in TCM connector

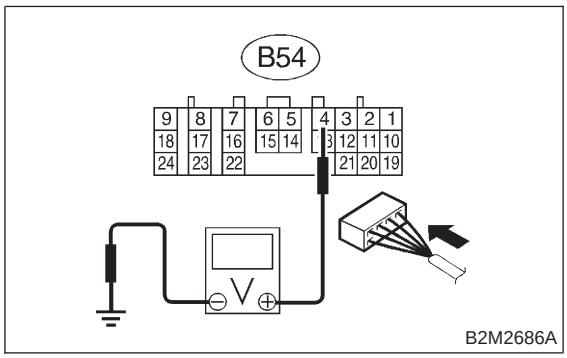
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.

14DC6 : CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR.

Measure voltage between TCM and chassis ground.

Connector & terminal
(B54) No. 4 (+) — Chassis ground (−):



CHECK : ***Is the voltage more than 4 V?***

YES : Go to step **14DC7**.

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

14DC7 : CHECK POOR CONTACT.

Check poor contact in TCM connector. <Ref. to FOREWORD [T3C1].>

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

YES : Repair poor contact in TCM connector.

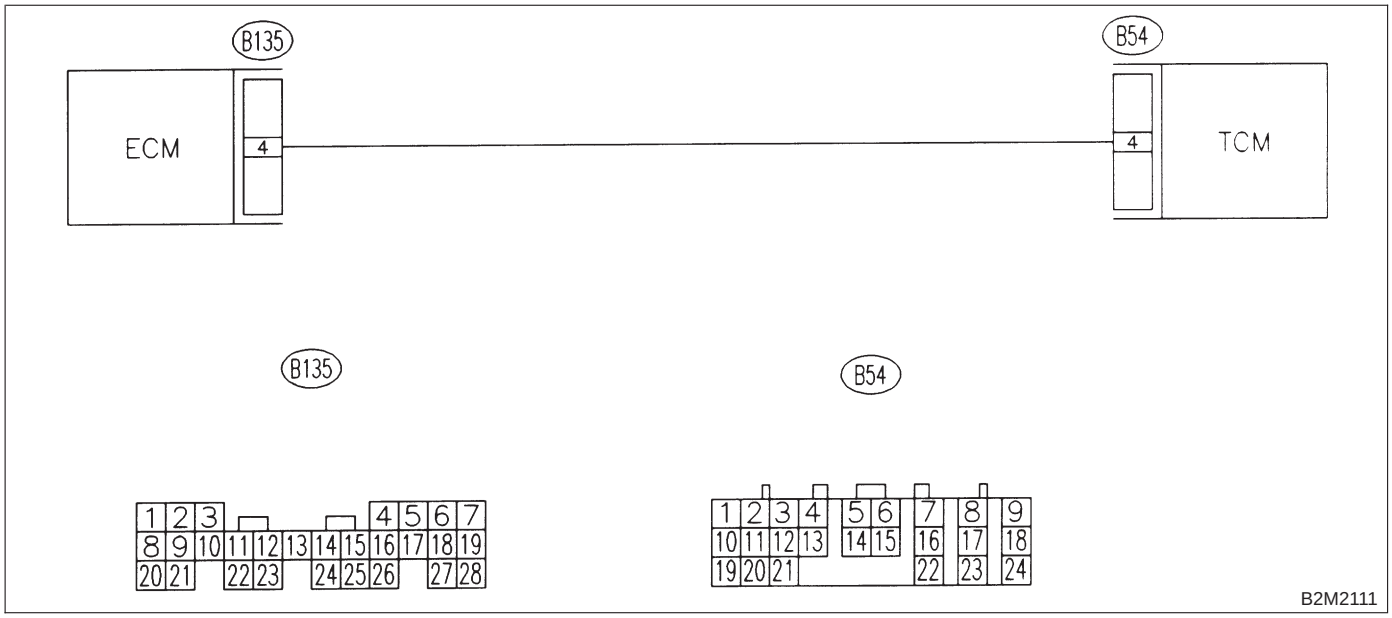
NO : Check TCM power supply line and grounding line.

DD: DTC P1742 — AUTOMATIC TRANSMISSION DIAGNOSIS INPUT SIGNAL CIRCUIT MALFUNCTION —

- **DTC DETECTING CONDITION:**
  - Two consecutive driving cycles with fault

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

- **WIRING DIAGRAM:**



14DD1 : CHECK TRANSMISSION TYPE.

CHECK : ***Is transmission type AT?***
YES : Go to step **14DD2**.
NO : Check AT/MT identification circuit. <Ref. to 2-7 [T14DE0].>

14DD2 : CHECK DRIVING CONDITION.

1) Start and warm-up the engine until the radiator fan makes one complete rotation.
2) Drive the vehicle.

CHECK : ***Is AT shift control functioning properly?***
YES : Go to step **14DD3**.
NO : Replace TCM. <Ref. to 3-2 [W22A0].>

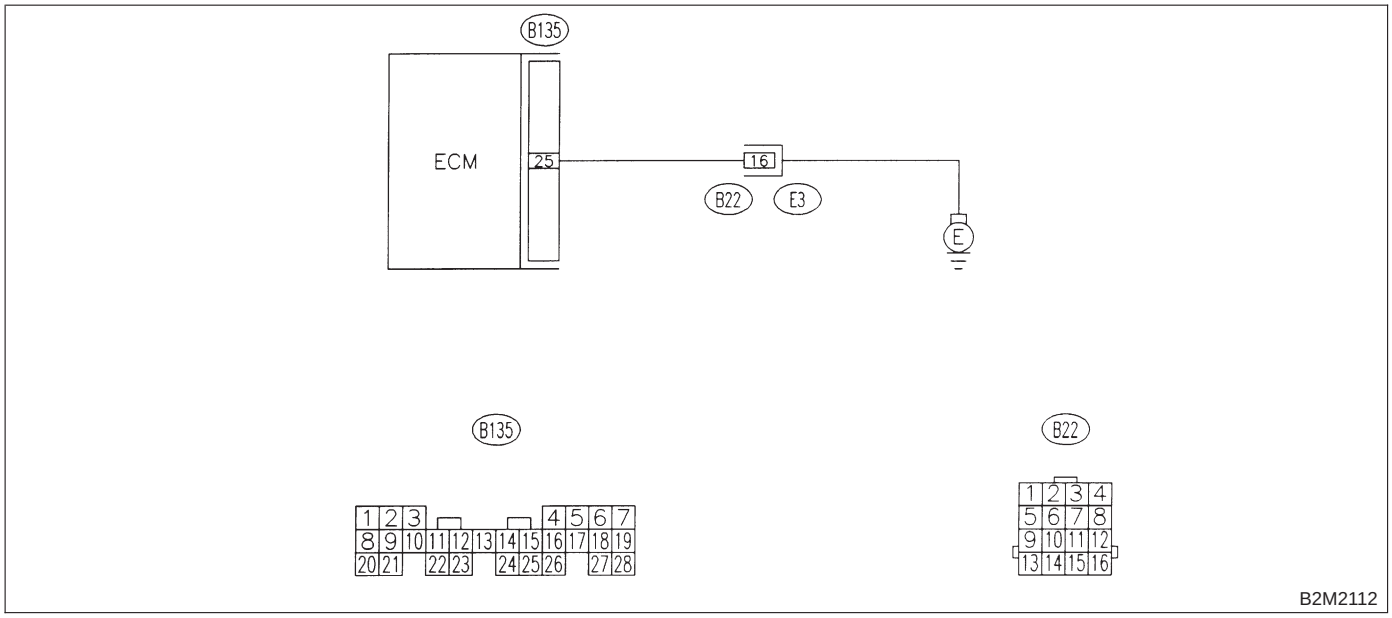
14DD3 : CHECK ACCESSORY.

CHECK : ***Are car phone and/or CB installed on vehicle?***
YES : Repair grounding line of car phone or CB system.
NO : Replace TCM. <Ref. to 3-2 [W22A0].>

DE: — AT/MT IDENTIFICATION CIRCUIT MALFUNCTION [MT VEHICLES] —

CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY MODE <Ref. to 2-7 [T3D0].> and INSPECTION MODE <Ref. to 2-7 [T3E0].>.

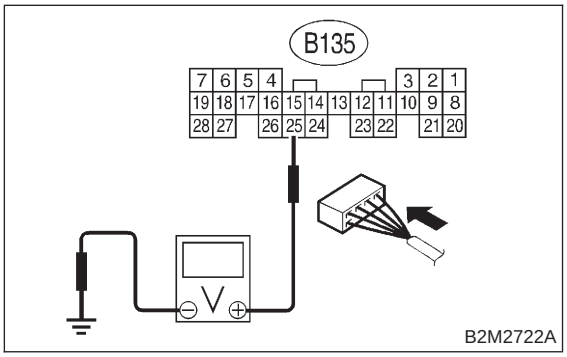
- **WIRING DIAGRAM:**



14DE1 : CHECK HARNESS BETWEEN ECM CONNECTOR AND ENGINE GROUNDING TERMINAL.

1) Turn ignition switch to ON.
2) Measure voltage between ECM and chassis ground.

Connector & terminal
(B135) No. 25 (+) — Chassis ground (−):



CHECK : ***Is the voltage more than 2 V?***
YES : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM connector and engine grounding terminal
- Poor contact in engine grounding terminal
- Poor contact in coupling connector (B22)

NO : Go to step **14DE2**.

14DE2 : CHECK POOR CONTACT.

Check poor contact in ECM connector. <Ref. to FOREWORD [T3C1].>

CHECK : ***Is there poor contact in ECM connector?***
YES : Repair poor contact in ECM connector.
NO : Contact with SOA service.

NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.