10. Diagnostics Chart with Trouble Code

A: DIAGNOSTIC TROUBLE CODE (DTC) LIST

DTC No.	Abbreviation (Subaru select monitor)	Item	Page
P0100	QA	Mass air flow sensor circuit malfunction	125
P0101	QA — R	Mass air flow sensor circuit range/performance problem	132
P0105	P — S	Pressure sensor circuit malfunction	134
P0106	PS — R	Pressure sensor circuit range/performance problem	142
P0115	TW	Engine coolant temperature sensor circuit malfunction	147
P0120	THV	Throttle position sensor circuit malfunction	151
P0121	TH — R	Throttle position sensor circuit range/performance problem	157
P0125	TW — CL	Insufficient coolant temperature for closed loop fuel control	159
P0130	FO2 — V	Front oxygen sensor circuit malfunction	161
P0133	FO2 — R	Front oxygen sensor circuit slow response	164
P0135	FO2H	Front oxygen sensor heater circuit malfunction	166
P0136	RO2 — V	Rear oxygen sensor circuit malfunction	172
P0139	RO2 — R	Rear oxygen sensor circuit slow response	177
P0141	RO2H	Rear oxygen sensor heater circuit malfunction	179
P0170	FUEL	Fuel trim malfunction	185
P0180	TNKT	Fuel temperature sensor A circuit malfunction	190
P0181	TNKT — F	Fuel temperature sensor A circuit range/performance problem	195
P0201	INJ1	Fuel injector circuit malfunction - #1	197
P0202	INJ2	Fuel injector circuit malfunction - #2	
P0203	INJ3	Fuel injector circuit malfunction - #3	
P0204	INJ4	Fuel injector circuit malfunction - #4	
P0301	MIS — 1	Cylinder 1 misfire detected	203
P0302	MIS — 2	Cylinder 2 misfire detected	
P0303	MIS — 3	Cylinder 3 misfire detected	
P0304	MIS — 4	Cylinder 4 misfire detected	
P0325	KNOCK	Knock sensor circuit malfunction	211
P0335	CRANK	Crankshaft position sensor circuit malfunction	215
P0340	CAM	Camshaft position sensor circuit malfunction	218
P0400	EGR	Exhaust gas recirculation flow malfunction	221
P0403	EGRSOL	Exhaust gas recirculation circuit malfunction	227
P0420	CAT	Catalyst system efficiency below threshold	233
P0440	EVAP	Evaporative emission control system malfunction	236
P0441	CPC — F	Evaporative emission control system incorrect purge flow	241
P0443	CPC	Evaporative emission control system purge control valve circuit malfunction	244
P0446	VCMSOL	Evaporative emission control system vent control malfunction	249
P0450	TNKP	Evaporative emission control system pressure sensor malfunction	255
P0451	TNKP — F	Evaporative emission control system pressure sensor range/performance problem	264

DTC No.	Abbreviation (Subaru select monitor)	Item	Page
P0500	VSP	Vehicle speed sensor malfunction	266
P0505	ISC	Idle control system malfunction	269
P0506	ISC — L	Idle control system RPM lower than expected	276
P0507	ISC — H	Idle control system RPM higher than expected	277
P0600	—	Serial communication link malfunction	278
P0601	RAM	Internal control module memory check sum error	281
P0703	ATBRK	Brake switch input malfunction	283
P0705	ATRNG	Transmission range sensor circuit malfunction	286
P0710	ATF	Transmission fluid temperature sensor circuit malfunction	293
P0720	ATVSP	Output speed sensor (vehicle speed sensor 1) circuit malfunction	294
P0725	ATNE	Engine speed input circuit malfunction	295
P0731	ATGR1	Gear 1 incorrect ratio	296
P0732	ATGR2	Gear 2 incorrect ratio	
P0733	ATGR3	Gear 3 incorrect ratio	
P0734	ATGR4	Gear 4 incorrect ratio	
P0740	ATLU — F	Torque converter clutch system malfunction	300
P0743	ATLU	Torque converter clutch system electrical	304
P0748	ATPL	Pressure control solenoid electrical	305
P0753	ATSFT1	Shift solenoid A electrical	306
P0758	ATSFT2	Shift solenoid B electrical	307
P0760	ATOVR — F	Shift solenoid C malfunction	308
P0763	ATOVR	Shift solenoid C electrical	312
P1100	ST — SW	Starter switch circuit malfunction	313
P1101	N/P — SW	Neutral position switch circuit malfunction [MT vehicles]	315
P1101	N/P — SW	Neutral position switch circuit malfunction [AT vehicles]	318
P1102	BR	Pressure sources switching solenoid valve circuit malfunction	322
P1103	TRQ	Engine torque control signal circuit malfunction	328
P1400	PCVSOL	Fuel tank pressure control solenoid valve circuit malfunction	331
P1401	PCV — F	Fuel tank pressure control system function problem	337
P1402	FLVL	Fuel level sensor circuit malfunction	339
P1500	FAN — 1	Radiator fan relay 1 circuit malfunction	351
P1502	FAN — F	Radiator fan function problem	358
P1700	ATTH	Throttle position sensor circuit malfunction for automatic transmission	361
P1701	ATCRS	Cruise control set signal circuit malfunction for automatic transmission	362
P1702	ATDIAG	Automatic transmission diagnosis input signal circuit malfunction	365
P0461*1	EXERR22	Fuel level sensor circuit range/performance problem	368

*1: Only OBD-II general scan tool displays DTC.

B: DTC P0100 — MASS AIR FLOW SENSOR CIRCUIT MALFUNCTION (QA) —

DTC DETECTING CONDITION:

- Immediately at fault recognition

TROUBLE SYMPTOM:

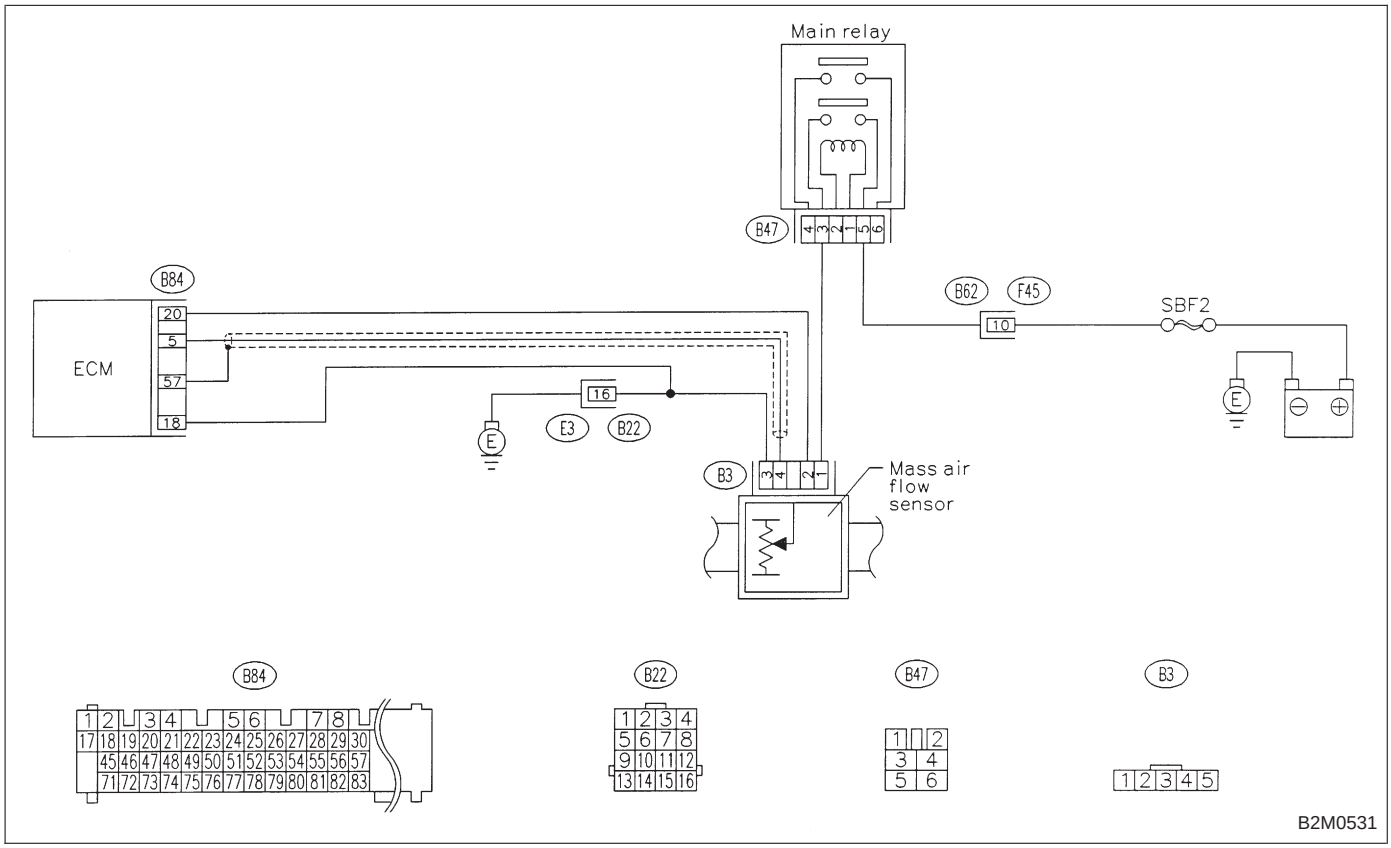
- Erroneous idling
- Engine stalls.
- Poor driving performance

10B1	Connect Subaru Select Monitor or the OBD-II general scan tool, and read data.	10B5	Check harness between ECM and mass air flow sensor connector.
10B2	Check input signal for ECM. (Using voltage meter and Subaru Select Monitor.)		
10B3	Check power supply to mass air flow sensor.		
10B4	Check harness between ECM and mass air flow sensor connector.		

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

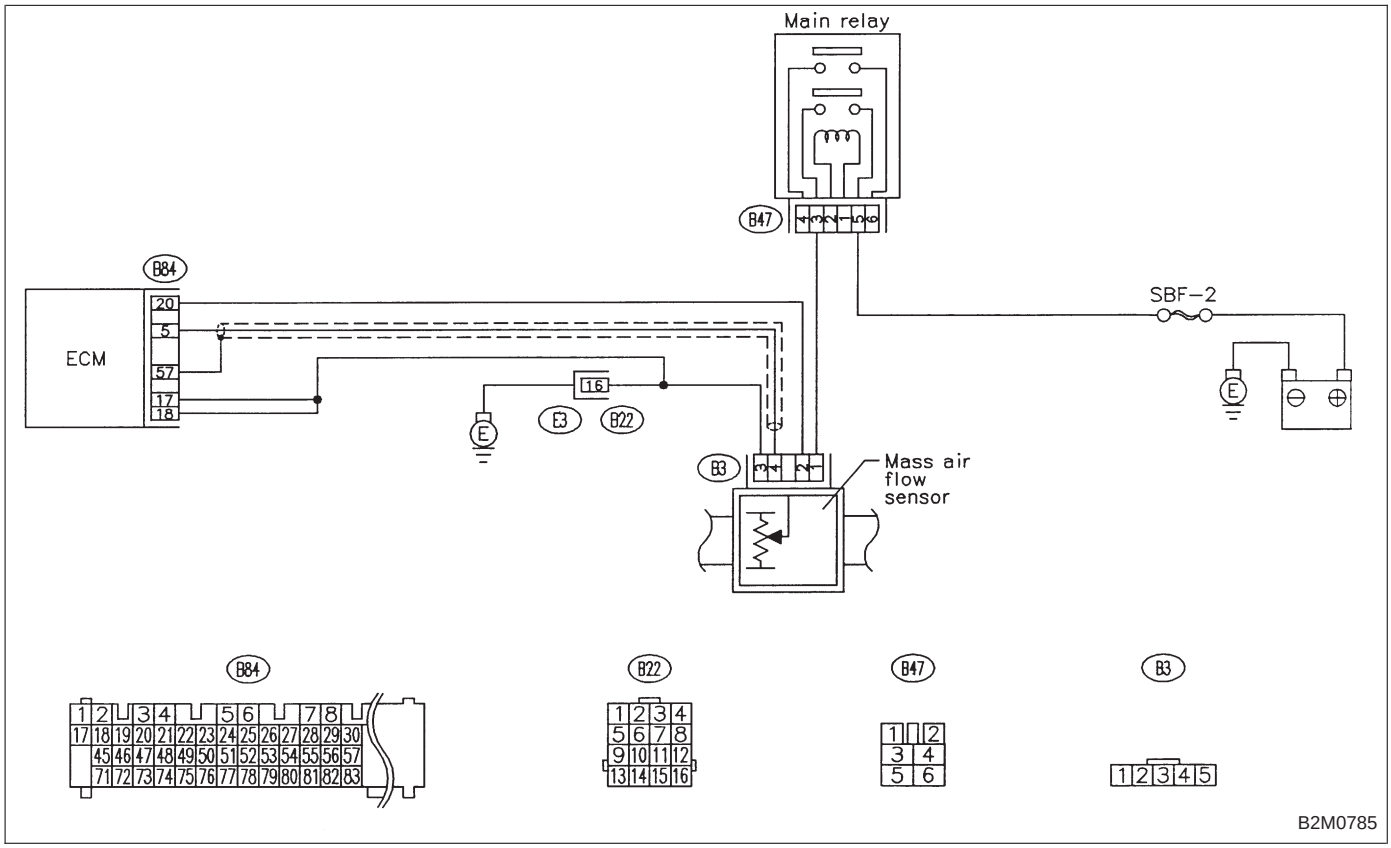
WIRING DIAGRAM:

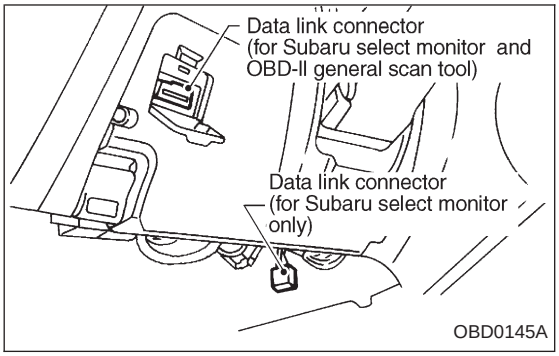
- LHD Model

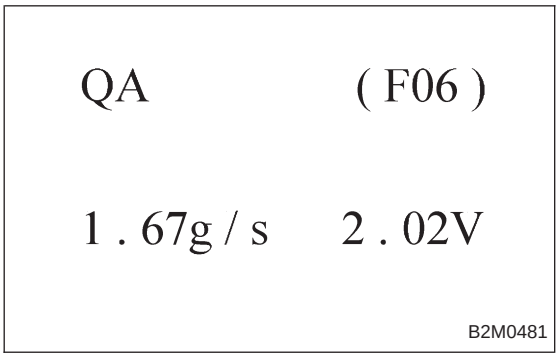


WIRING DIAGRAM:

- RHD Model







10B1	**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 on Subaru Select Monitor or OBD-II general scan tool.
● Subaru Select Monitor
Designate mode using function key.

Function mode: F06

● F06: Mass air flow and voltage input from mass air flow sensor are shown on display at the same time.

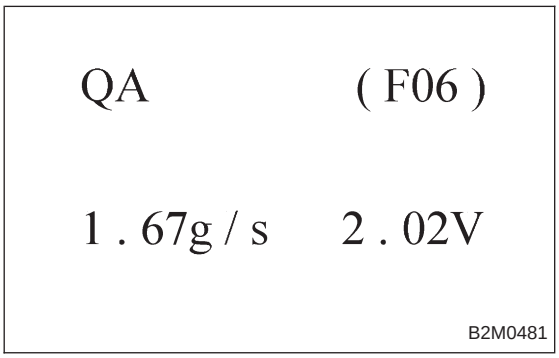
CHECK ***: Is the value equal to or more than 1.3 g/sec or 0.3 V and equal to or less than 250 g/sec or 5.0 V in function mode F06?***

Probable cause: Poor connect of connectors, circuit and grounding line.

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 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 next CHECK .

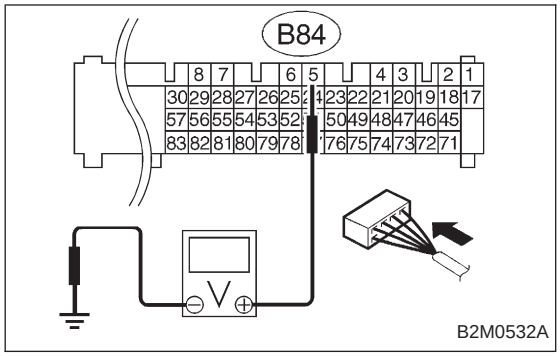


CHECK ***: Is the value less than 1.3 g/sec or 0.3 V in function mode F06?***

YES : Go to step **10B2**.
NO : Go to step **10B5**.

● OBD-II general scan tool

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



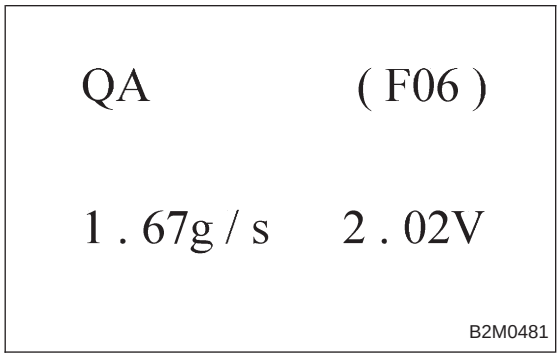
10B2	CHECK INPUT SIGNAL FOR ECM. (USING VOLTAGE METER AND SUBARU SELECT MONITOR.)

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

CHECK ***: Connector & terminal (B84) No. 5 (+) — Chassis ground (−): Is the voltage less than 0.3 V?***

YES : Go to step **10B3**.

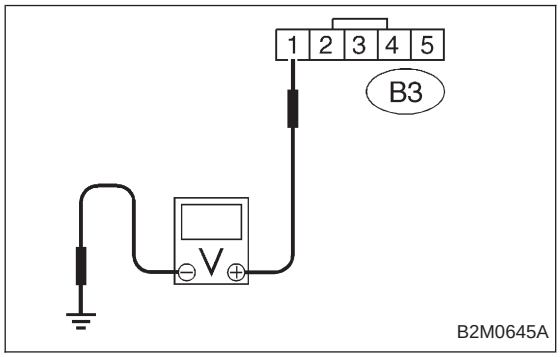
NO : Go to next CHECK .



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 : Replace ECM.



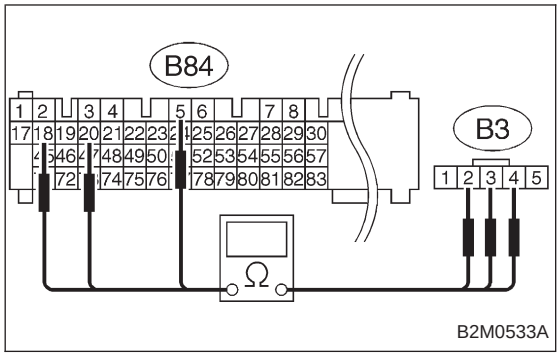
10B3	CHECK POWER SUPPLY TO MASS AIR FLOW SENSOR.

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.

CHECK ***: Connector & terminal (B3) No. 1 (+) — Engine ground (−): Is the voltage more than 10 V?***

YES : Go to step **10B4**.

NO : Repair open circuit in harness between main relay and mass air flow sensor connector.



10B4	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.

CHECK ***: Connector & terminal (B84) No. 5 — (B3) No. 4: Is the resistance less than 1 Ω?***

YES : Go to next CHECK .

NO : Repair harness and connector.

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

CHECK ***: Connector & terminal (B84) No. 18 — (B3) No. 3: Is the resistance less than 1 Ω?***

YES : Go to next CHECK .

NO : Repair harness and connector.

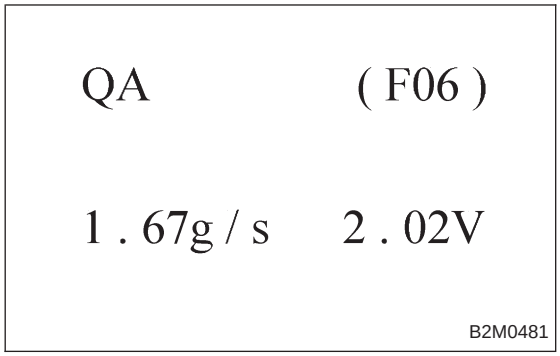
NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and mass air flow sensor connector
- Poor contact in mass air flow sensor connector
- Poor contact in ECM connector

CHECK ***: Connector & terminal (B84) No. 20 — (B3) No. 2: Is the resistance less than 1 Ω?***

YES : Replace mass air flow sensor.

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



10B5	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 on Subaru select monitor or OBD-II general scan tool.

● Subaru Select Monitor

Designate mode using function key.

Function mode: F06

CHECK ***: Is the value more than 250 g/sec or 5 V in function mode F06?***

YES : Repair short circuit in harness between mass air flow sensor and ECM connector.

NO : Go to next CHECK .

CHECK ***: Is there poor contact in mass air flow sensor connector?***

YES : Repair poor contact in mass air flow sensor connector.

NO : Replace mass air flow sensor.

● OBD-II general scan tool

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

OBD (FB1)

P0101 <QA_R>

OBD0152

C: DTC P0101 — MASS AIR FLOW SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (QA – R) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

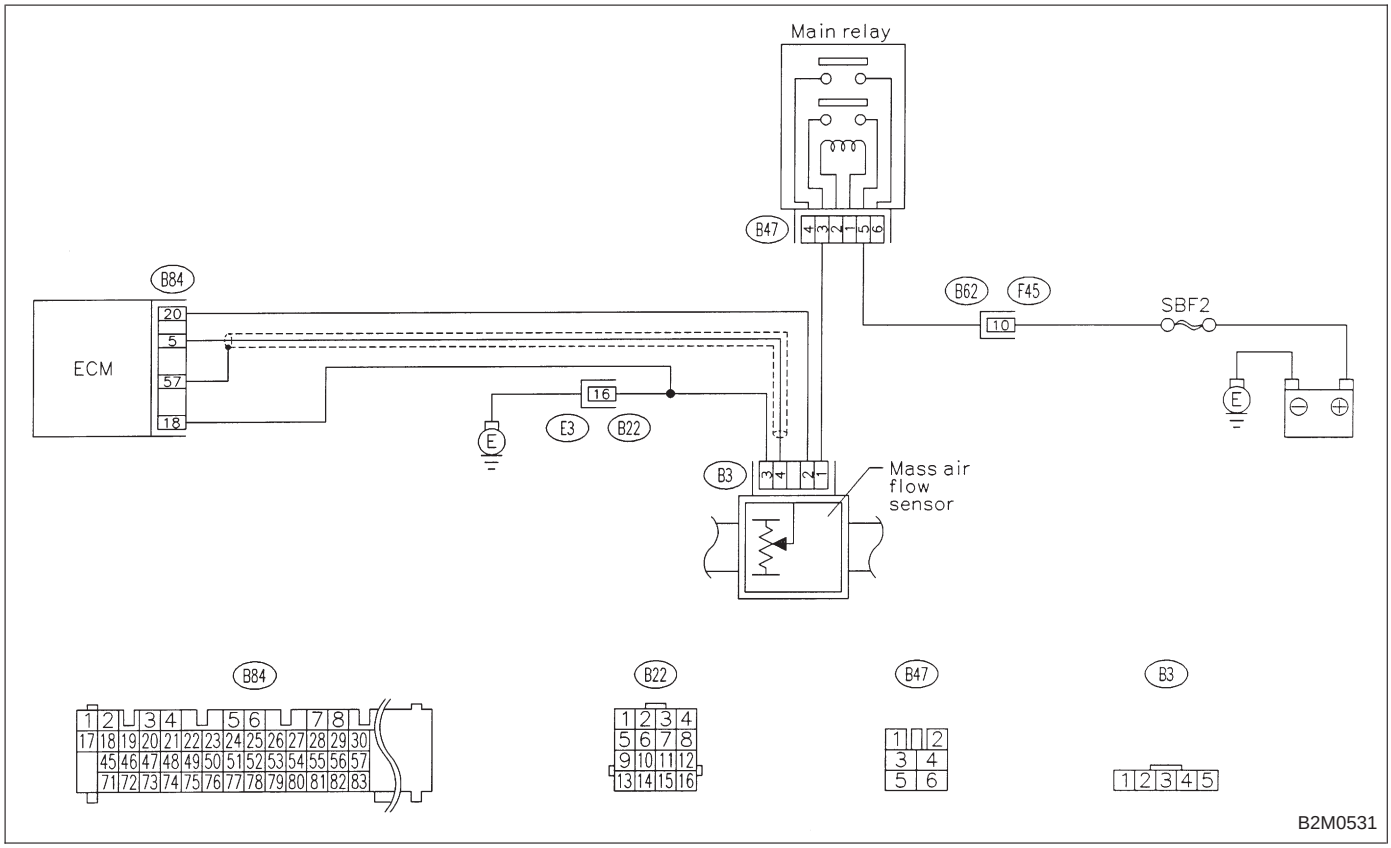
- Erroneous idling
- Engine stalls.
- Poor driving performance

10C1	**Check DTC P0100 on display.**

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

WIRING DIAGRAM:

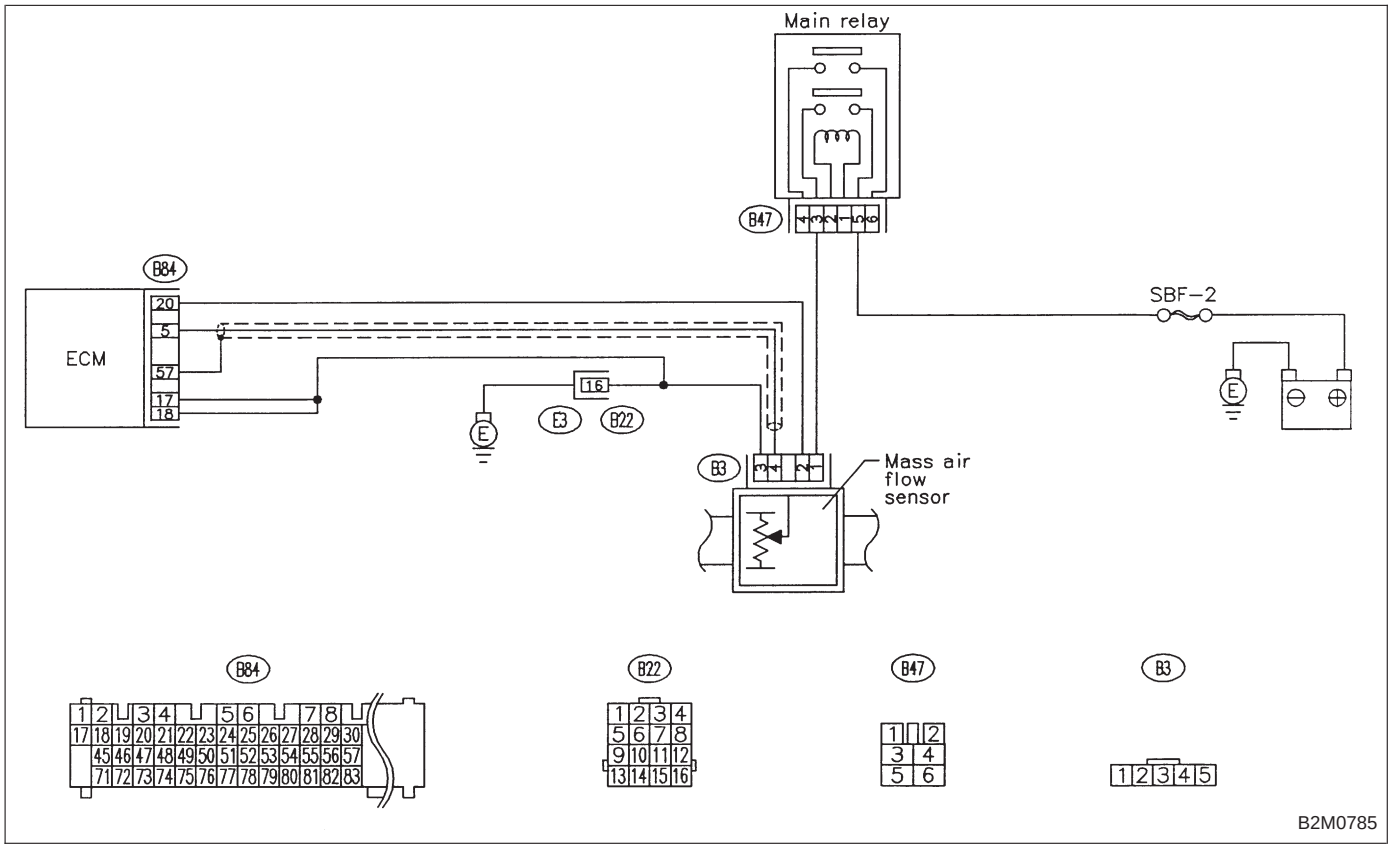
- LHD Model



B2M0531

WIRING DIAGRAM:

- RHD Model



10C1	CHECK DTC P0100 ON DISPLAY.

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0100?***

YES : Inspect DTC P0100 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

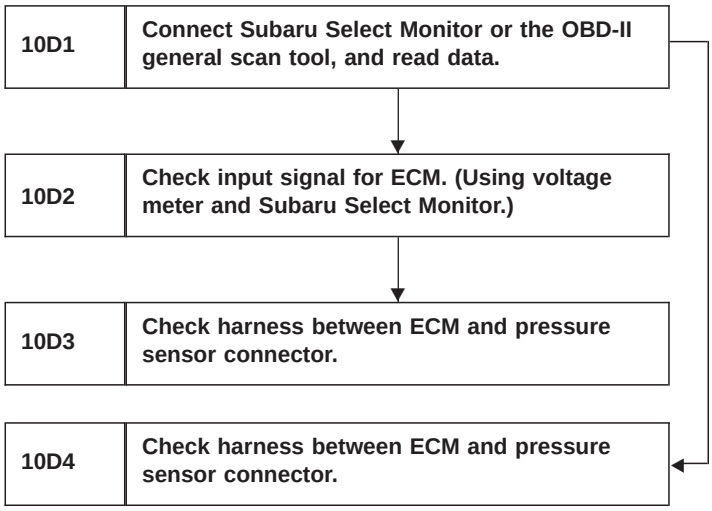
NOTE:
In this case, it is not necessary to inspect DTC P0101.

NO : Replace mass air flow sensor.

D: DTC P0105 — PRESSURE SENSOR CIRCUIT MALFUNCTION (P – S) —

DTC DETECTING CONDITION:

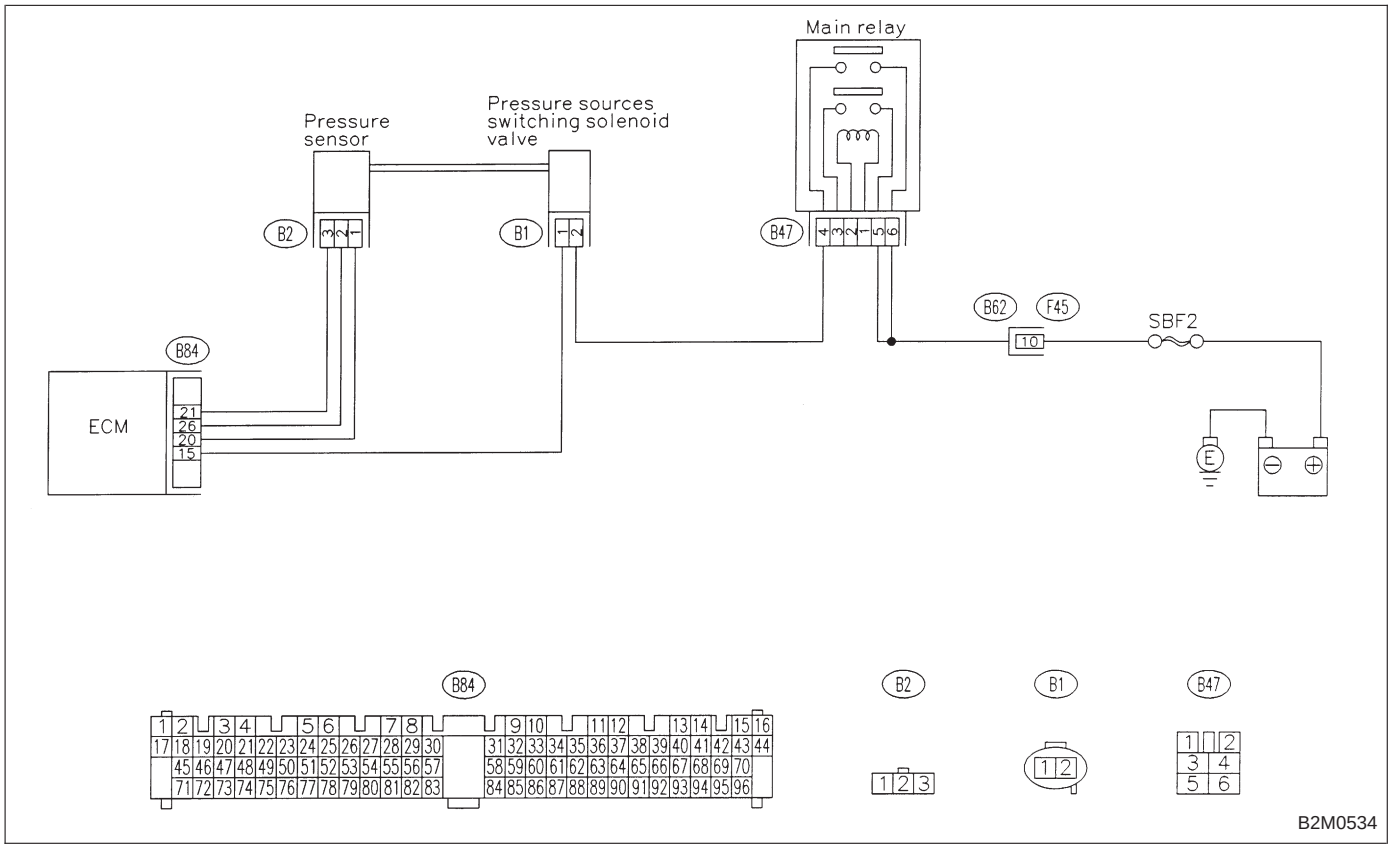
- Immediately at fault recognition



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

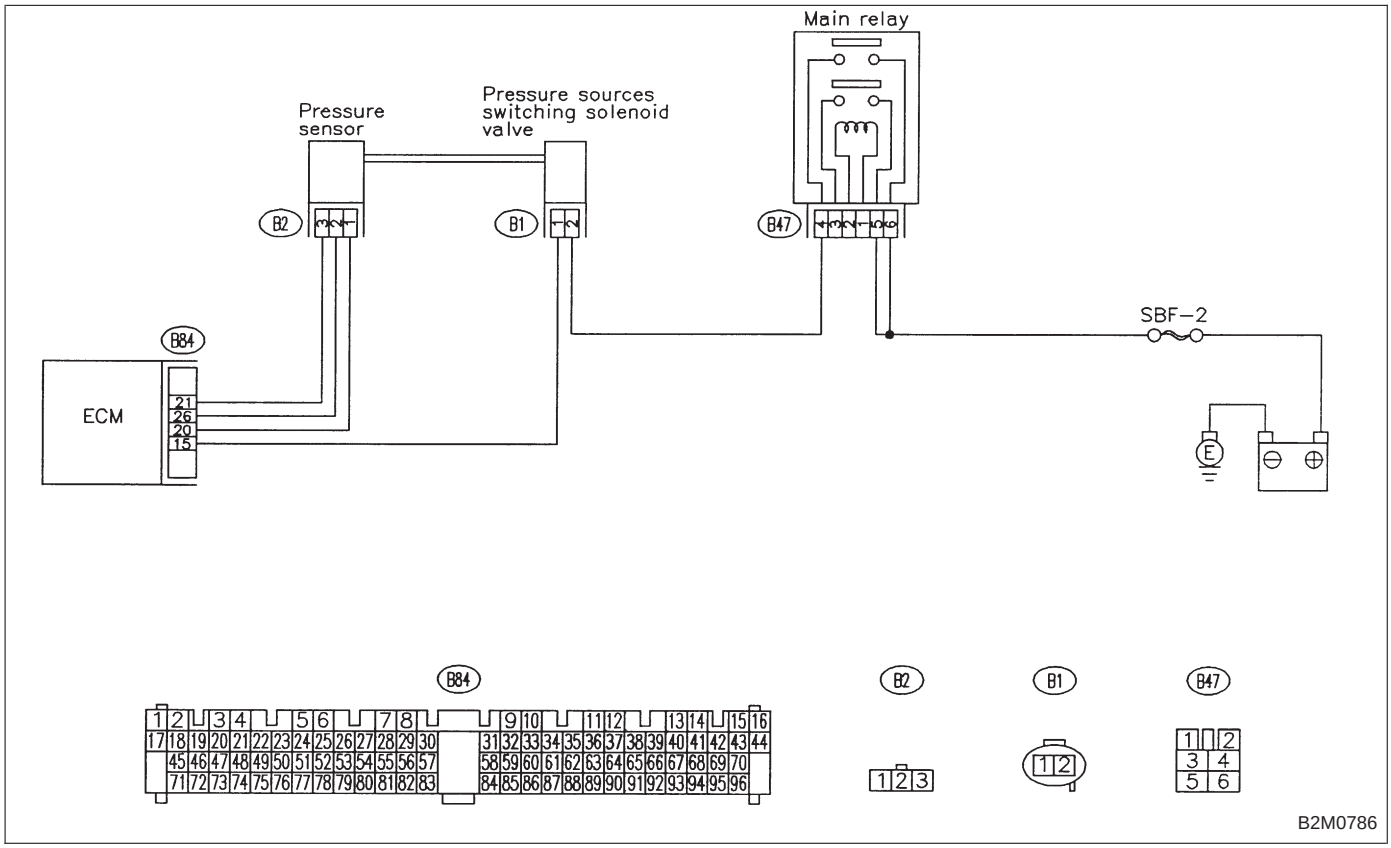
WIRING DIAGRAM:

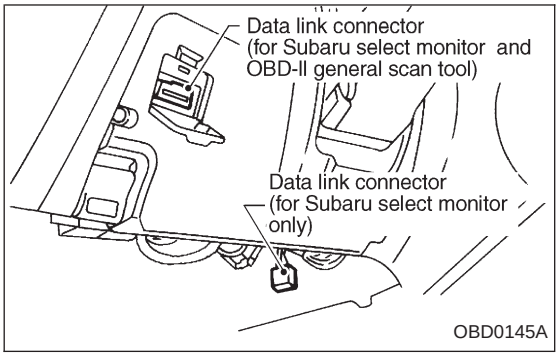
- LHD Model



WIRING DIAGRAM:

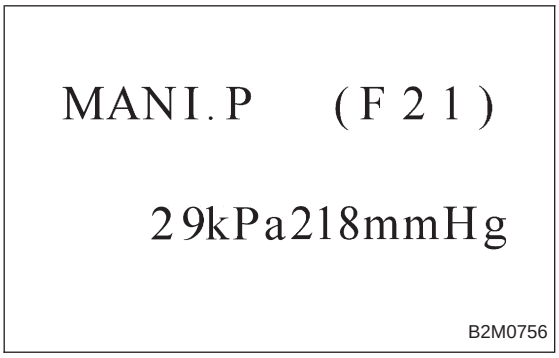
- RHD Model





10D1	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.



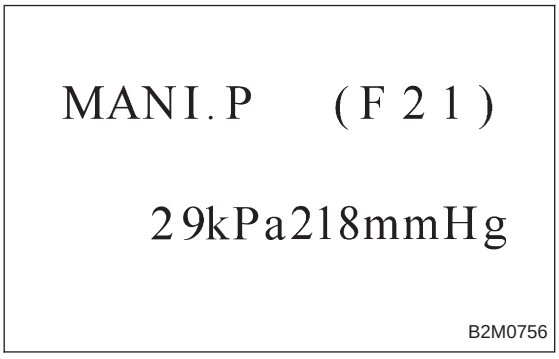
5) Read the data on Subaru Select Monitor or the OBD-II general scan tool.
● Subaru Select Monitor
Designate mode using function key.

Function mode: F21

● F21: Display shows pressure signal value sent from pressure sensor.

CHECK ***: Is the value less than 0 kPa in function mode F21?***

YES : Go to step **10D2**.
NO : Go to next CHECK .

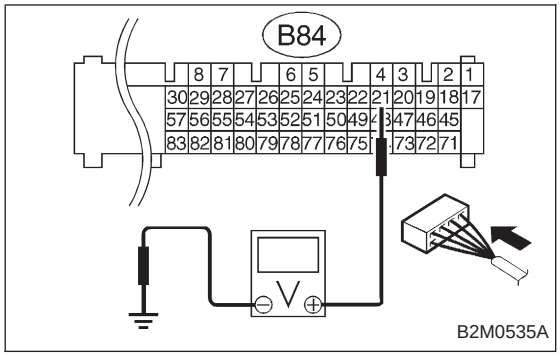


CHECK ***: Is the value more than 140 kPa in function mode F21?***

YES : Go to step **10D4**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
● Open or short circuit in harness between pressure sensor and ECM connector
● Poor contact in pressure sensor
● Poor contact in ECM connector
● OBD-II general scan tool

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



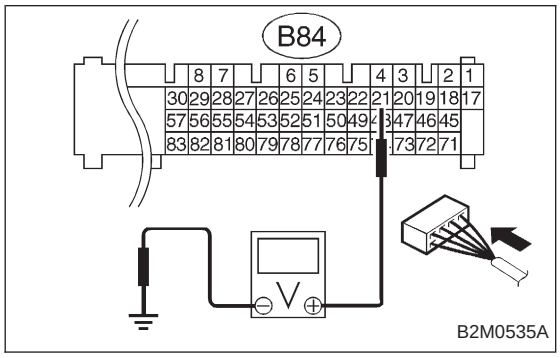
10D2	CHECK INPUT SIGNAL FOR ECM. (USING VOLTAGE METER AND SUBARU SELECT MONITOR.)

1) Measure voltage between ECM connector and chassis ground.

CHECK ***: Connector & terminal (B84) No. 21 (+) — Chassis ground (−): Is the voltage more than 4.5 V?***

YES : Go to next step 2).

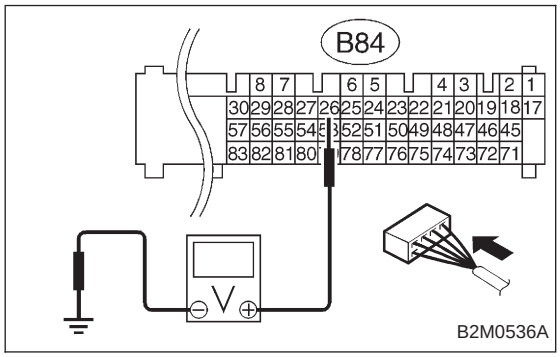
NO : Go to next CHECK .



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 : Replace ECM.

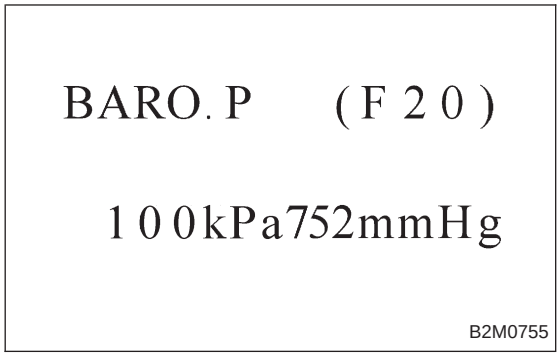


2) Measure voltage between ECM and chassis ground.

CHECK ***: Connector & terminal (B84) No. 26 (+) — Chassis ground (−): Is the voltage less than 0.2 V?***

YES : Go to step **10D3**.

NO : Go to next CHECK .



3) Read data on Subaru Select Monitor.
● Subaru Select Monitor
Designate mode using function key.

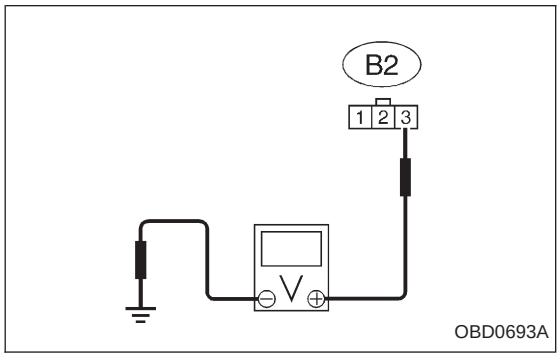
Function mode: F20

● F20: Display shows pressure signal value sent from pressure sensor.

CHECK ***: Does the value change more than 0 kPa 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 **10D3**.



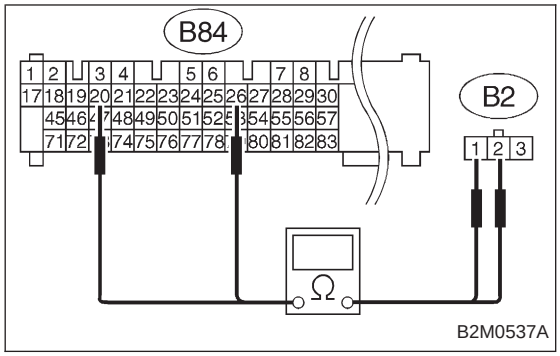
10D3	CHECK HARNESS BETWEEN ECM AND PRESSURE SENSOR CONNECTOR.

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.

CHECK ***: Connector & terminal (B2) No. 3 (+) — Engine ground (−): Is the voltage more than 4.5 V?***

YES : Go to next step 5).

NO : Repair open circuit in harness between ECM and pressure sensor connector.



5) Turn ignition switch to OFF.
6) Disconnect connector from ECM.
7) Measure resistance of harness between ECM and pressure sensor connector.

CHECK ***: Connector & terminal (B84) No. 26 — (B2) No. 2: Is the resistance less than 1 Ω?***

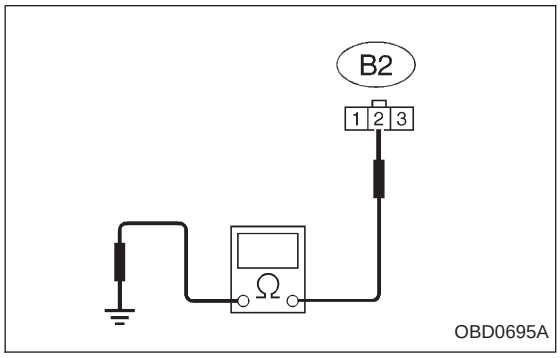
YES : Go to next CHECK .

NO : Repair open circuit in harness between ECM and pressure sensor connector.

CHECK ***: Connector & terminal (B84) No. 20 — (B2) No. 1: Is the resistance less than 1 Ω?***

YES : Go to next step 8).

NO : Repair open circuit in harness between ECM and pressure sensor connector.



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

CHECK ***: Connector & terminal (B2) No. 2 — Engine ground: Is the resistance more than 500 kΩ?***

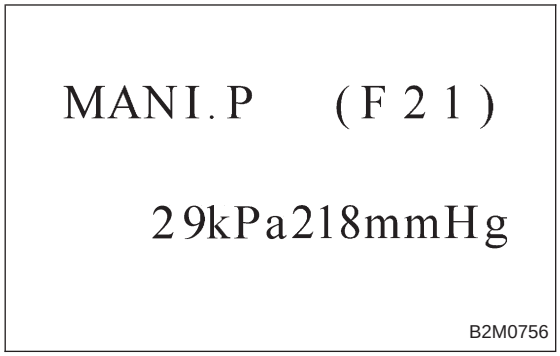
YES : Go to next CHECK .

NO : Repair short circuit in harness between ECM and pressure sensor connector.

CHECK ***: Is there poor contact in pressure sensor connector?***

YES : Repair poor contact in pressure sensor connector.

NO : Replace pressure sensor.



10D4	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 on Subaru select monitor or the OBD-II general scan tool.

● Subaru Select Monitor

Designate mode using function key.

Function mode: F21

CHECK ***: Is the value more than 140 kPa in function mode F21?***

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

NO : Replace pressure sensor.

● OBD-II general scan tool

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

E: DTC P0106 — PRESSURE SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (PS – R) —

DTC DETECTING CONDITION:

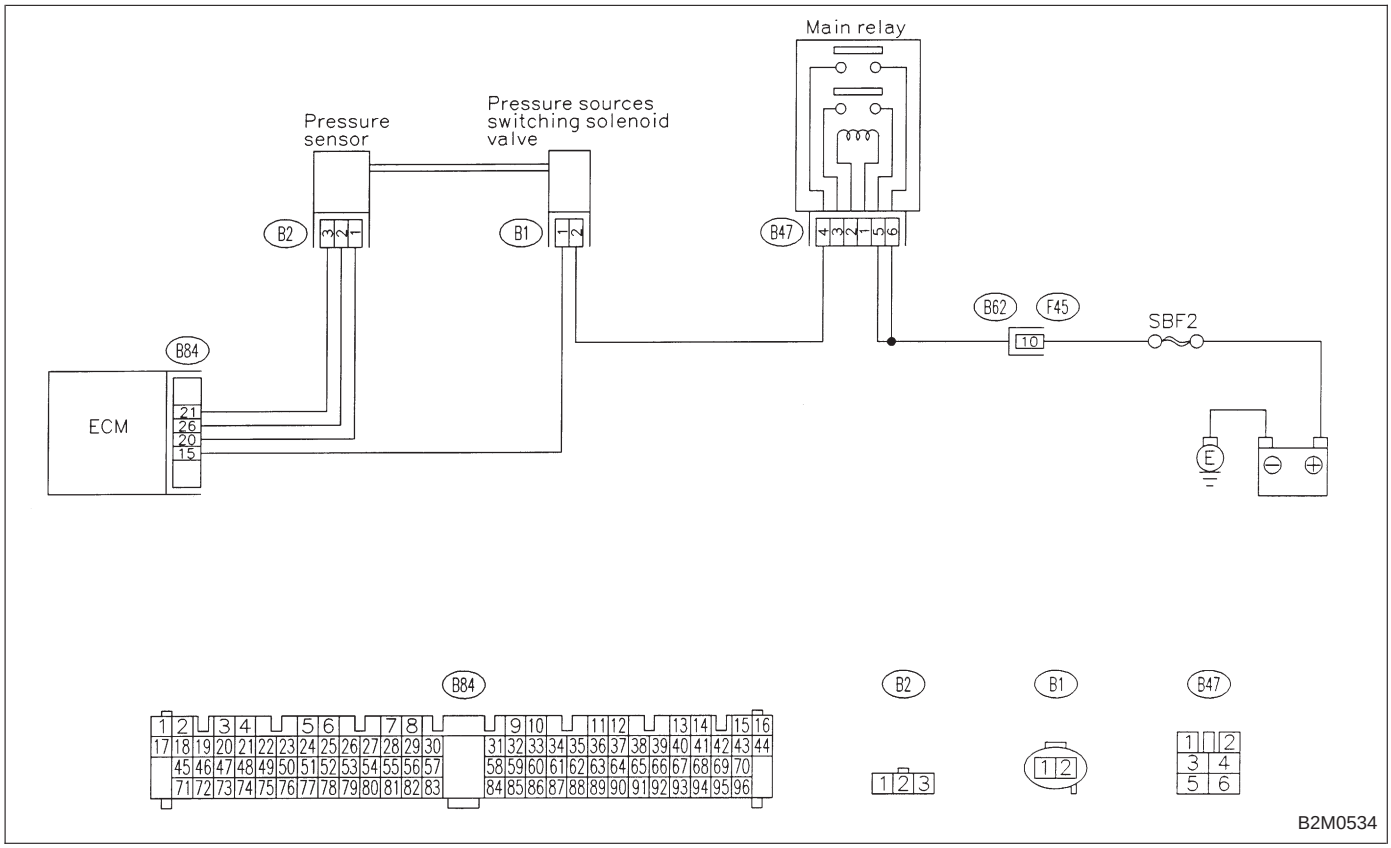
- Two consecutive trips with fault

10E1	**Check DTC P0105 or P1102 on display.**
10E2	**Check data for control.**
10E3	**Check vacuum hose.**
10E4	**Check pressure sources switching solenoid valve.**

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

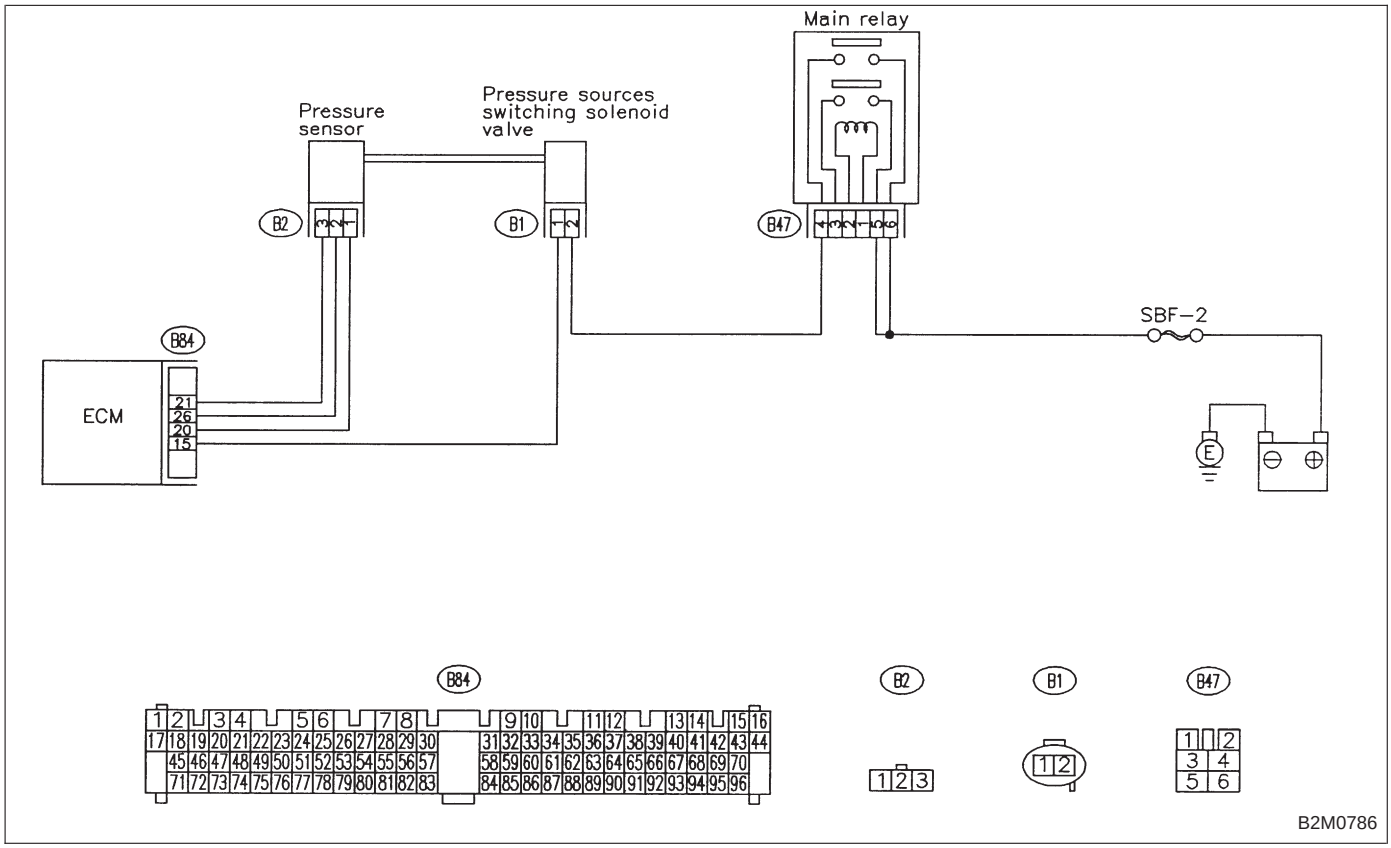
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



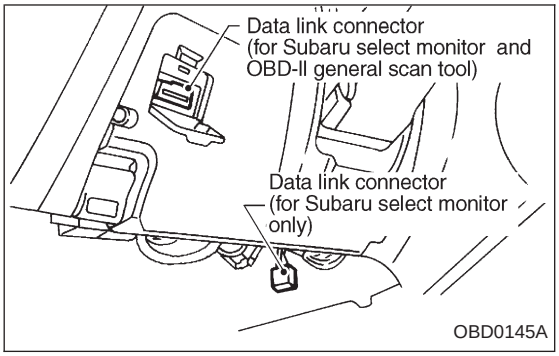
10E1	CHECK DTC P0105 OR P1102 ON DISPLAY.

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0105 or P1102?***

YES : Inspect DTC P0105 or P1102 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

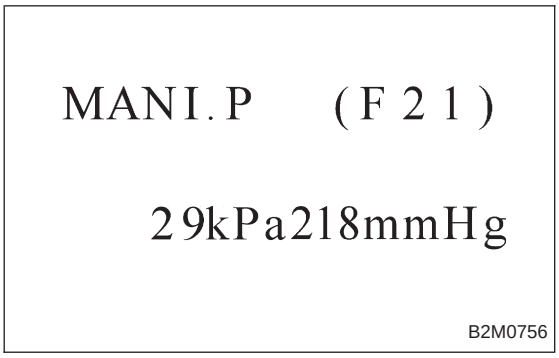
NOTE:
In this case, it is not necessary to inspect DTC P0106.

NO : Go to step **10E2**.



10E2	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 on Subaru Select Monitor or the OBD-II general scan tool.

- Subaru Select Monitor

Designate mode using function key.

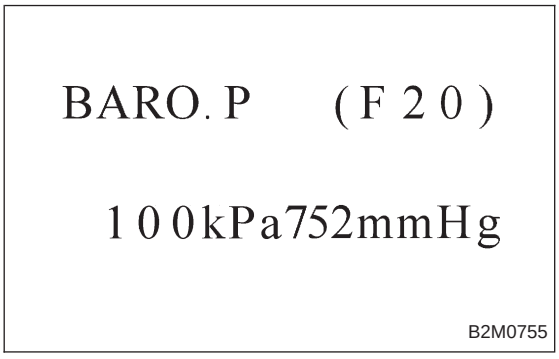
Function mode: F21 and F20

- F21: Display shows pressure signal value sent from the pressure sensor.
- F20: Display shows pressure signal value sent from the pressure sensor.

CHECK ***: Is the value more than 85 kPa in function mode F21?***

YES : Go to step **10E3**.

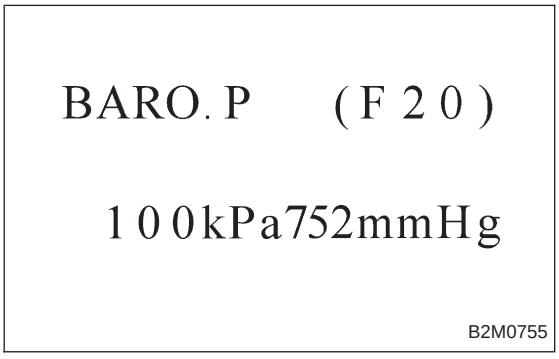
NO : Go to next CHECK .



CHECK ***: Is the value less than 32 kPa in function mode F20?***

YES : Go to step **10E4**.

NO : Go to next CHECK .



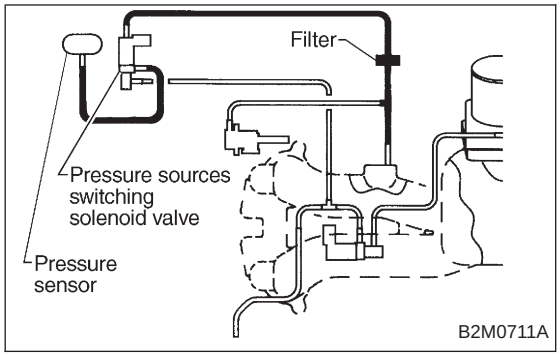
CHECK ***: Is the value more than 133 kPa in function mode F20?***

YES : Replace pressure sensor.

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

- OBD-II general scan tool

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



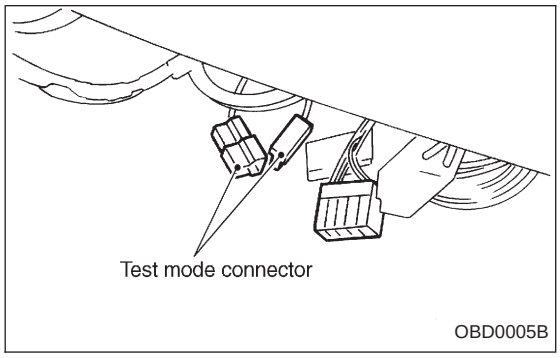
10E3	CHECK VACUUM HOSE.

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

NOTE:
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

YES : Repair or replace hoses or filter.

NO : Go to step **10E4**.



10E4	CHECK PRESSURE SOURCES SWITCHING SOLENOID VALVE.

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

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

NOTE:
Pressure sources switching solenoid valve operation check can also be executed using Subaru Select Monitor (Function mode: FD10). For the procedure, refer to “COMPULSORY VALVE OPERATION CHECK MODE” 2-7 [T3F0].

YES : Replace pressure sensor.

NO : Replace pressure sources switching solenoid valve.

F: DTC P0115 — ENGINE COOLANT TEMPERATURE SENSOR CIRCUIT MALFUNCTION (TW) —

DTC DETECTING CONDITION:

- Immediately at fault recognition

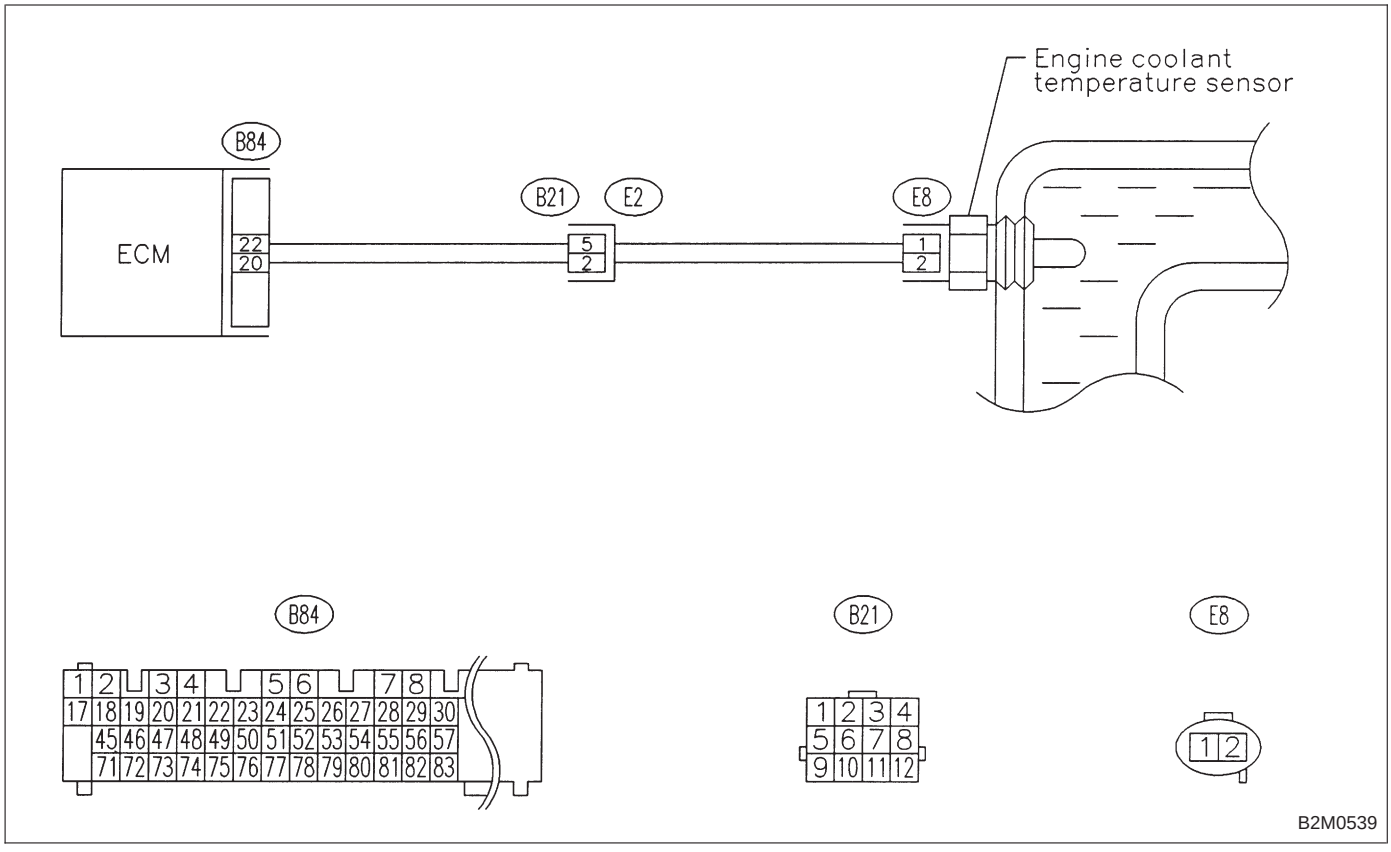
TROUBLE SYMPTOM:

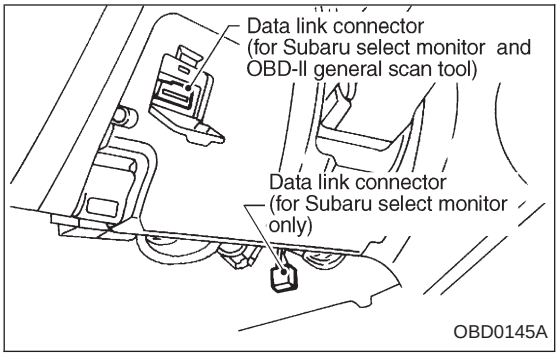
- Hard to start
- Erroneous idling
- Poor driving performance

10F1	Connect Subaru Select Monitor or the OBD-II general scan tool, and read data.
10F2	Check harness between engine coolant temperature sensor and ECM connector.
10F3	Check harness between engine coolant temperature sensor and ECM connector.

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

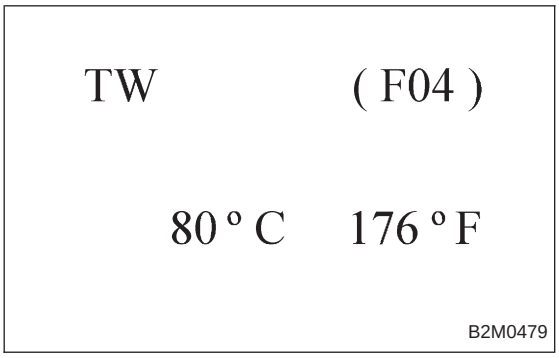
WIRING DIAGRAM:





10F1	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 on Subaru Select Monitor or OBD-II general scan tool.

- Subaru Select Monitor

Designate mode using function key.

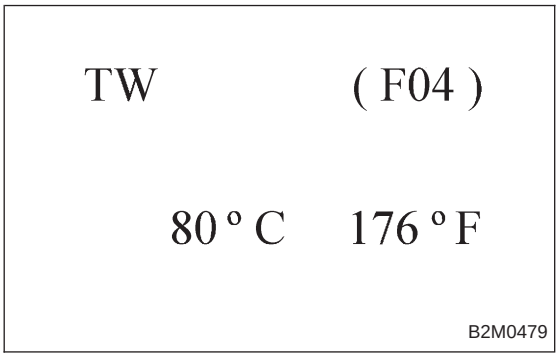
Function mode: F04

- F04: Water temperature is indicated in "°C" and "°F".

CHECK ***: Is the value greater than 150°C or 300°F in function mode F04?***

YES : Go to step **10F2**.

NO : Go to next CHECK .



CHECK ***: Is the value less than −40°C or −40°F in function mode F04?***

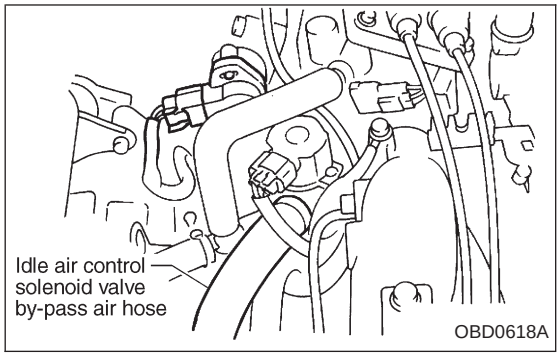
YES : Go to step **10F3**.

NO : Repair poor contact.

NOTE:
In this case, repair the following:

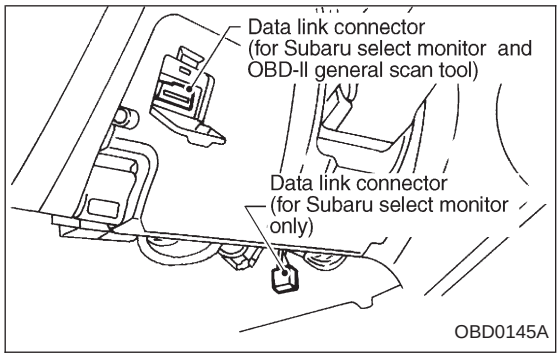
- Poor contact in engine coolant temperature sensor
- Poor contact in ECM
- Poor contact in coupling connector (B21)
- OBD-II general scan tool

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

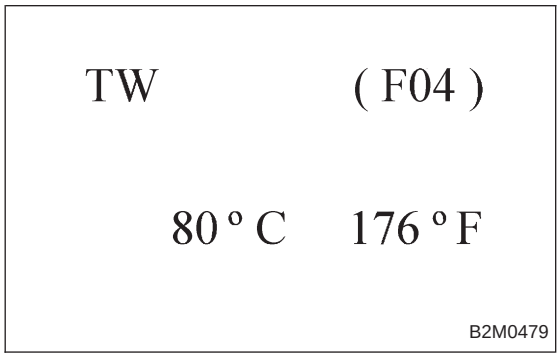


10F2	CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Remove idle air control solenoid valve by-pass air hose.
3) Disconnect connector from engine coolant temperature sensor.



4) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.
5) Turn ignition switch and Subaru Select Monitor or OBD-II general scan tool switch to ON.



6) Read data on Subaru Select Monitor or the OBD-II general scan tool.

● Subaru Select Monitor
Designate mode using function key.

Function mode: F04

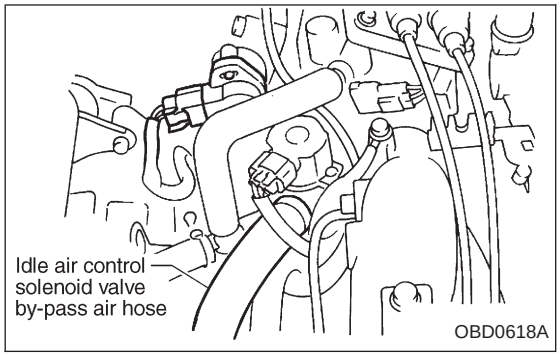
● F04: Water temperature is indicated in "°C" and "°F".

CHECK ***: Is the value less than −40°C or −40°F in function mode F04?***

YES : Replace engine coolant temperature sensor.

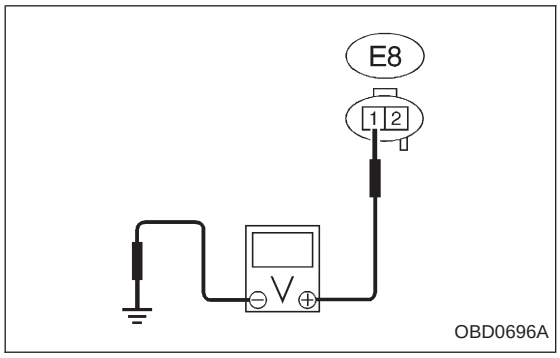
NO : Repair short circuit in harness between engine coolant temperature sensor and ECM connector.

● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.



10F3	CHECK HARNESS BETWEEN ENGINE COOLANT TEMPERATURE SENSOR AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Remove idle air control solenoid valve by-pass air hose.
3) Disconnect connector from engine coolant temperature sensor.
4) Turn ignition switch to ON.



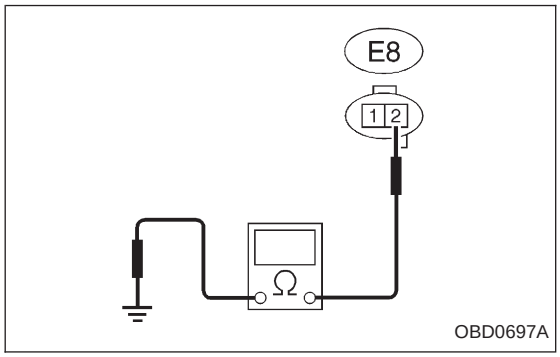
5) Measure voltage between engine coolant temperature sensor connector and engine ground.

CHECK ***: Connector & terminal***
(E8) No. 1 (+) — Engine ground (−):
Is the voltage more than 4 V?

YES : Go to next step 6).

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)



6) Turn ignition switch to OFF.

7) Measure resistance of harness between engine coolant temperature sensor connector and engine ground.

CHECK ***: Connector & terminal***
(E8) No. 2 — Engine ground:
Is the resistance less than 5 Ω?

YES : Replace engine coolant temperature sensor.

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)

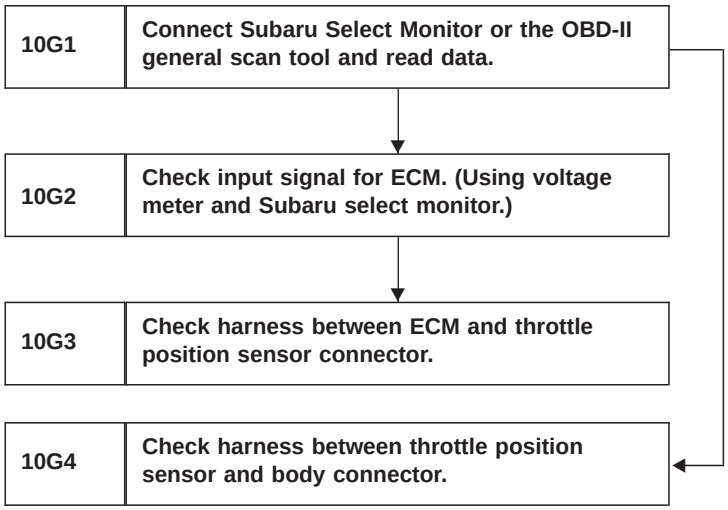
G: DTC P0120 — THROTTLE POSITION SENSOR CIRCUIT MALFUNCTION (THV) —

DTC DETECTING CONDITION:

- Immediately at fault recognition

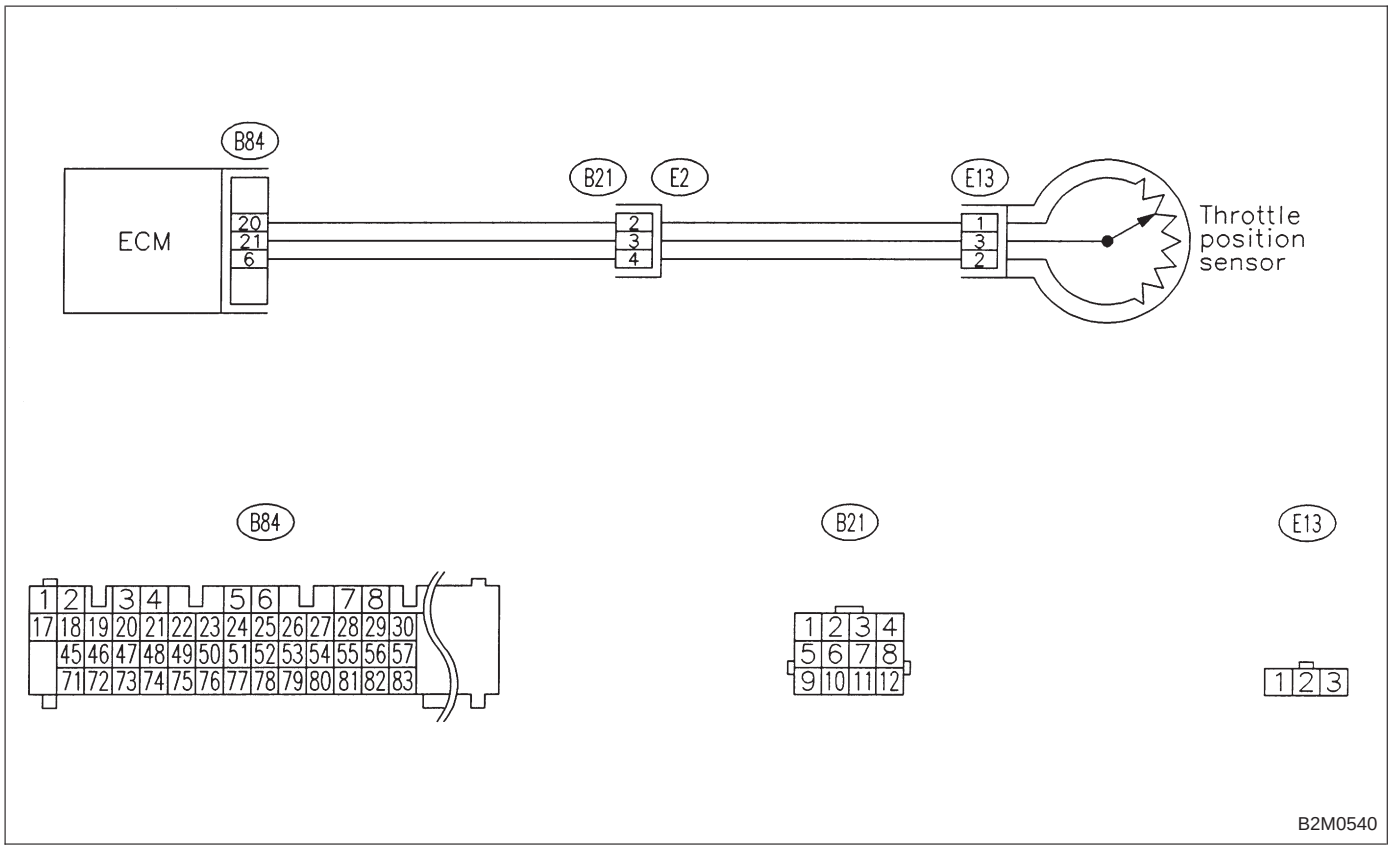
TROUBLE SYMPTOM:

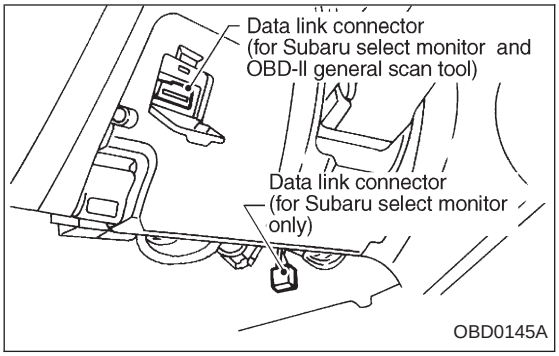
- Erroneous idling
- Engine stalls.
- Poor driving performance



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

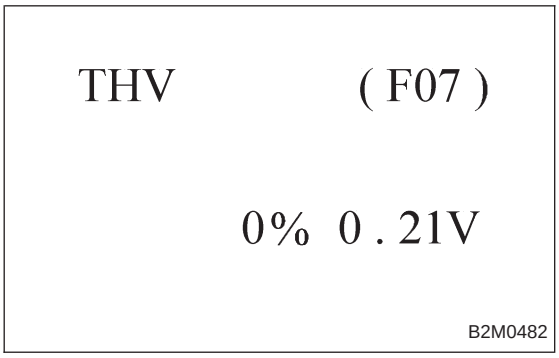
WIRING DIAGRAM:





10G1	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 on Subaru Select Monitor or OBD-II general scan tool.
● Subaru Select Monitor
Designate mode using function key.

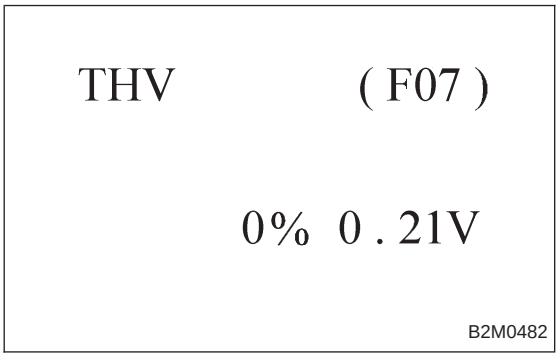
Function mode: F07

● F07: Throttle position sensor output signal is indicated.

CHECK ***: Is the value less than 0.1 V in function mode F07?***

YES : Go to step **10G2**.

NO : Go to next CHECK .



CHECK ***: Is the value more than 4.9 V in function mode F07?***

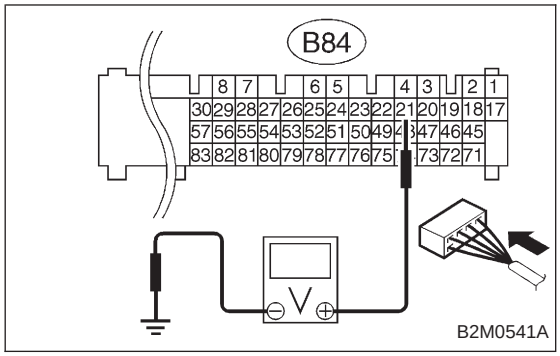
YES : Go to step **10G4**.

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)
● OBD-II general scan tool

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



10G2	CHECK INPUT SIGNAL FOR ECM. (USING VOLTAGE METER AND SUBARU SELECT MONITOR.)

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

CHECK ***: Connector & terminal (B84) No. 21 (+) — Chassis ground (−): Is the voltage more than 4.5 V?***

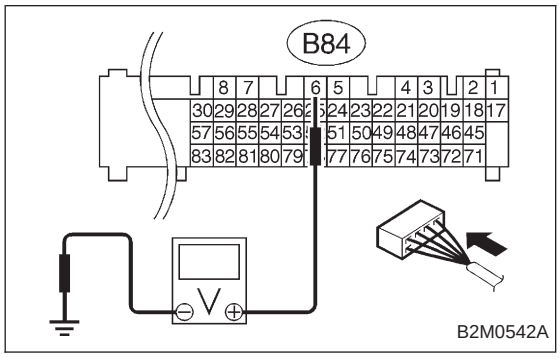
YES : Go to next step 2).

NO : Go to next CHECK .

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 : Replace ECM.

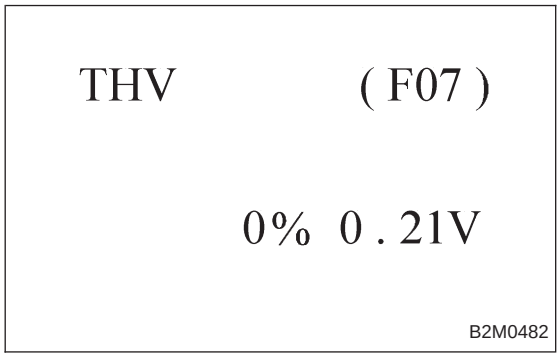


2) Measure voltage between ECM connector and chassis ground.

CHECK ***: Connector & terminal (B84) No. 6 (+) — Chassis ground (−): Is the voltage less than 0.1 V?***

YES : Go to step **10G3**.

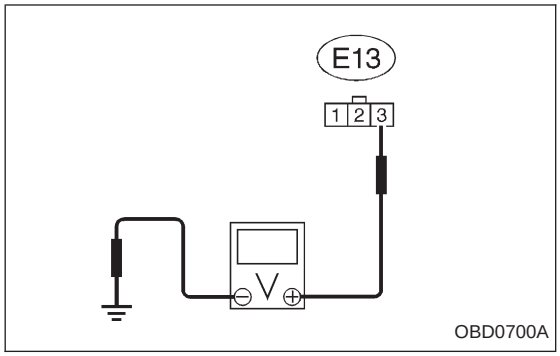
NO : Go to next CHECK .



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 **10G3**.



10G3	CHECK HARNESS BETWEEN ECM AND THROTTLE POSITION SENSOR CONNECTOR.

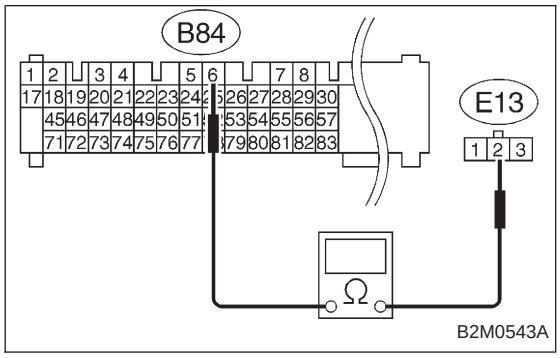
1) Turn ignition switch to OFF.
2) Disconnect connectors from throttle position sensor.
3) Turn ignition switch to ON.
4) Measure voltage between throttle position sensor connector and engine ground.

CHECK ***: Connector & terminal***
(E13) No. 3 (+) — Engine ground (−):
Is the voltage more than 4.5 V?

YES : Go to next step 5).

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)



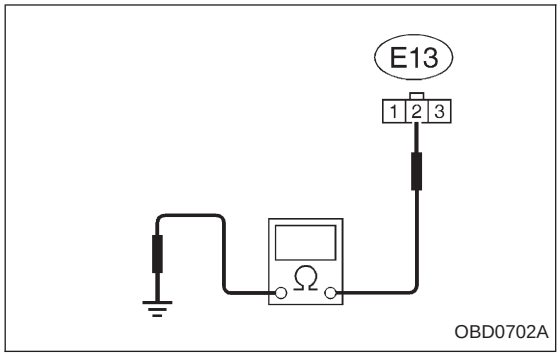
5) Turn ignition switch to OFF.
6) Measure resistance of harness between ECM connector and throttle position sensor connector.

CHECK ***: Connector & terminal***
(B84) No. 6 — (E13) No. 2:
Is the resistance less than 1 Ω?

YES : Go to next step 7).

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)



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

CHECK ***: Connector & terminal (E13) No. 2 — Engine ground: Is the resistance less than 10 Ω?***

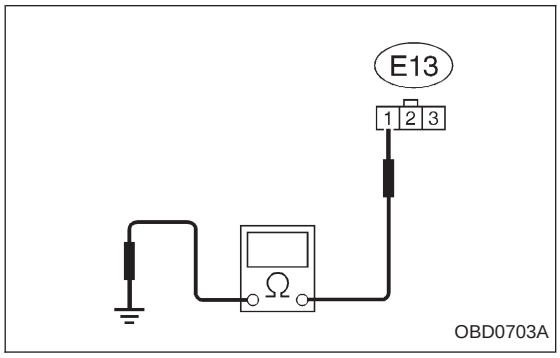
YES : Repair short circuit in harness between throttle position sensor and ECM connector.

NO : Go to next CHECK .

CHECK ***: Is there poor contact in throttle position sensor connector?***

YES : Repair poor contact in throttle position sensor connector.

NO : Replace throttle position sensor.



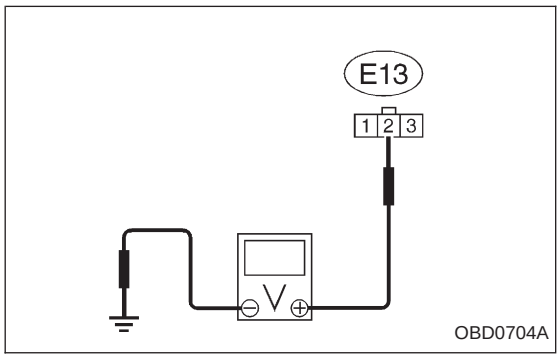
10G4	CHECK HARNESS BETWEEN THROTTLE POSITION SENSOR AND BODY CONNECTOR.

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.

CHECK ***: Connector & terminal (E13) No. 1 — Engine ground: Is the resistance less than 5 Ω?***

YES : Go to next step 4).

NO : Repair open circuit in harness between throttle position sensor and ECM connector.



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

CHECK ***: Connector & terminal (E13) No. 2 (+) — Engine ground (−): Is the voltage more than 4.9 V?***

YES : Repair short circuit in harness between throttle position sensor and ECM connector.

NO : Replace throttle position sensor.

H: DTC P0121 — THROTTLE POSITION SENSOR CIRCUIT RANGE/PERFORMANCE PROBLEM (TH – R) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

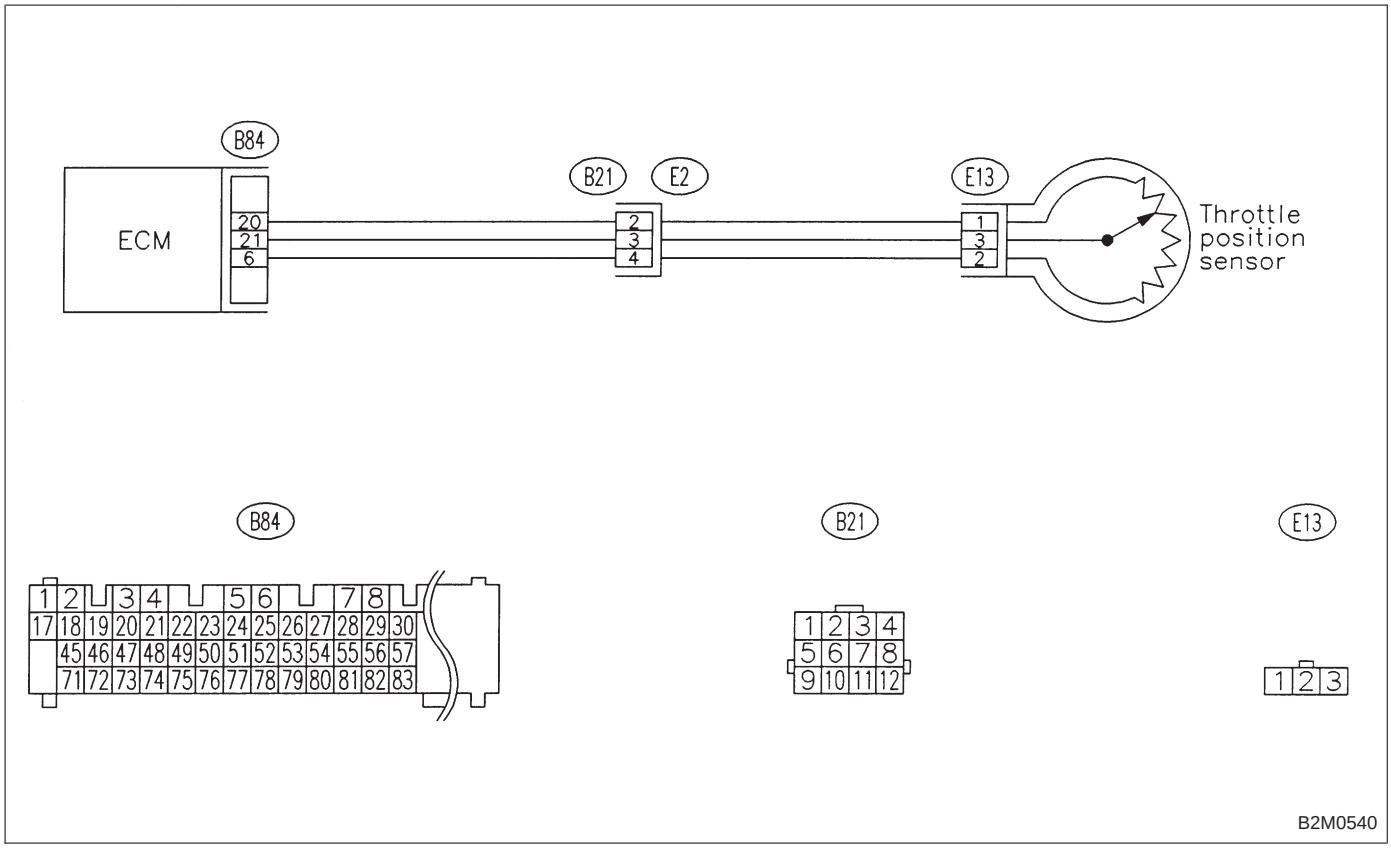
TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

10H1	**Check DTC P0120 on display.**

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

WIRING DIAGRAM:



10H1	CHECK DTC P0120 ON DISPLAY.

CHECK : ***Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0120?***

YES : Inspect DTC P0120 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

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

NO : Replace throttle position sensor.

I: DTC P0125 — INSUFFICIENT COOLANT TEMPERATURE FOR CLOSED LOOP FUEL CONTROL (TW – CL) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

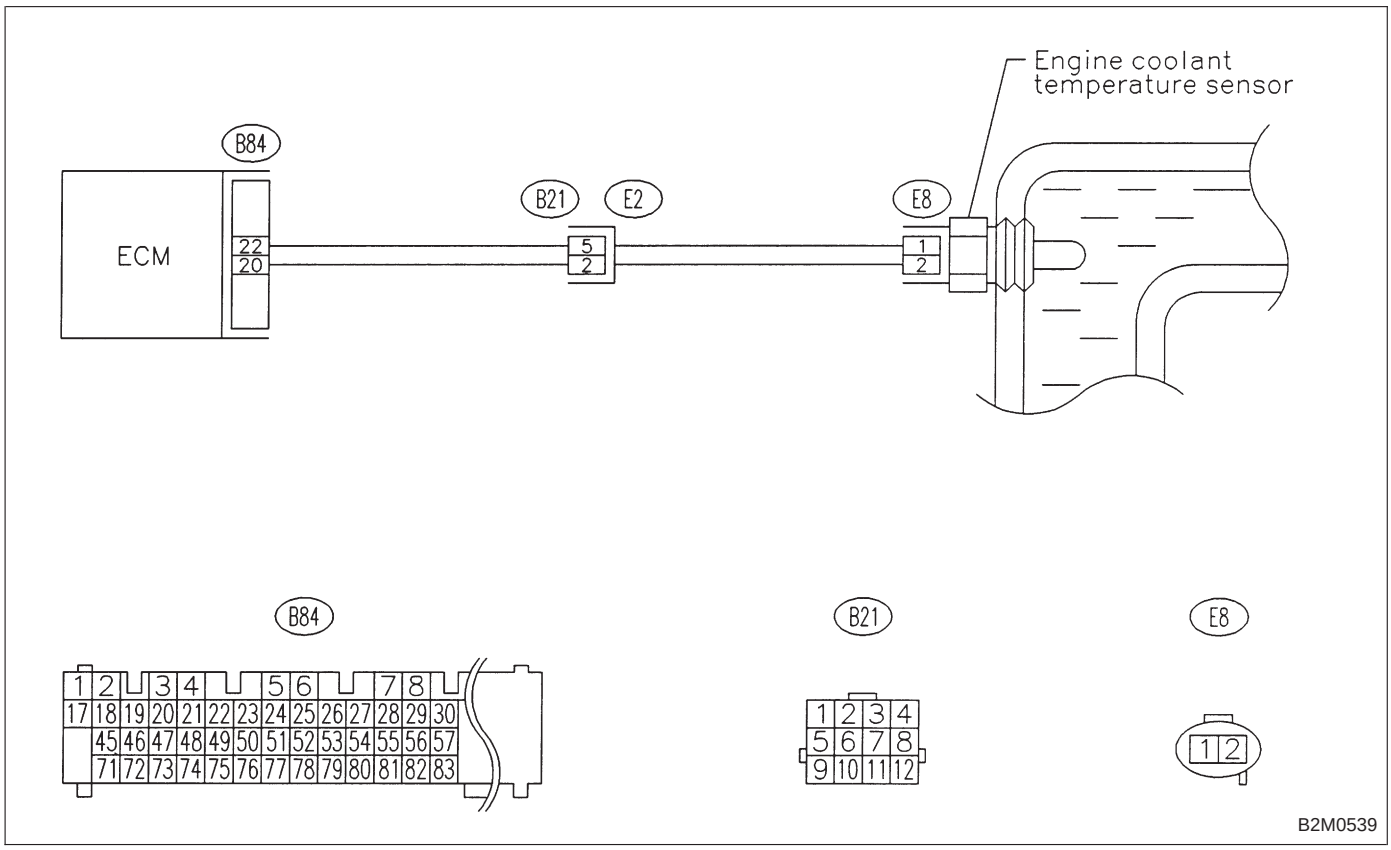
TROUBLE SYMPTOM:

- Engine would not return to idling.

10I1	**Check DTC P0115 on display.**

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

WIRING DIAGRAM:



10I1	CHECK DTC P0115 ON DISPLAY.

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0115?***

YES : Inspect DTC P0115 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

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

NO : Replace engine coolant temperature sensor.

OBD (FB1)

P0130 <FO2_V>

OBD0199

J: DTC P0130 — FRONT OXYGEN SENSOR CIRCUIT MALFUNCTION (FO2 – V) —

DTC DETECTING CONDITION:

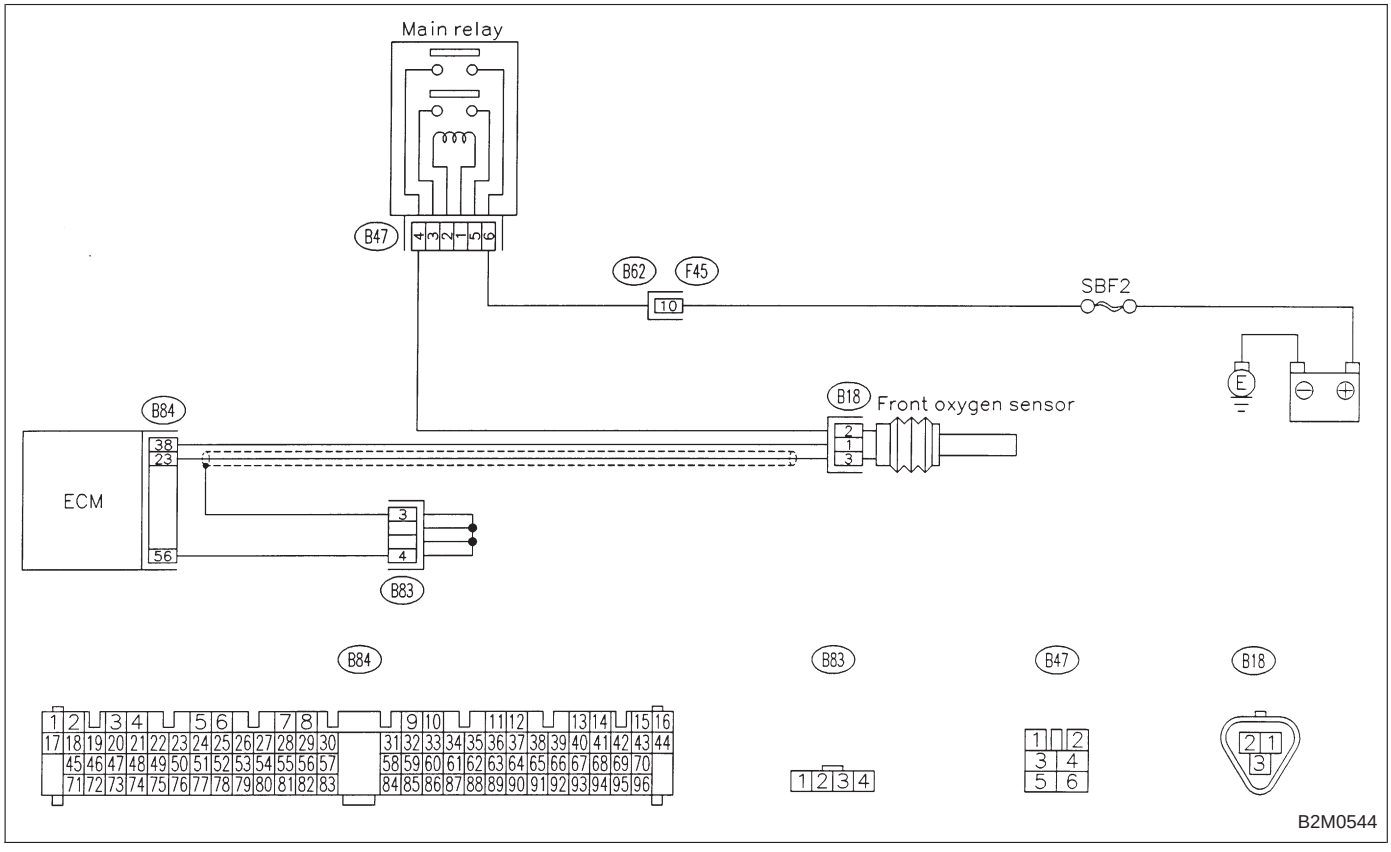
- Two consecutive trips with fault

10J1	**Check for other causes affecting exhaust gas.**
10J2	**Check front oxygen sensor data.**
10J3	**Check harness between front oxygen sensor and ECM connector.**

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

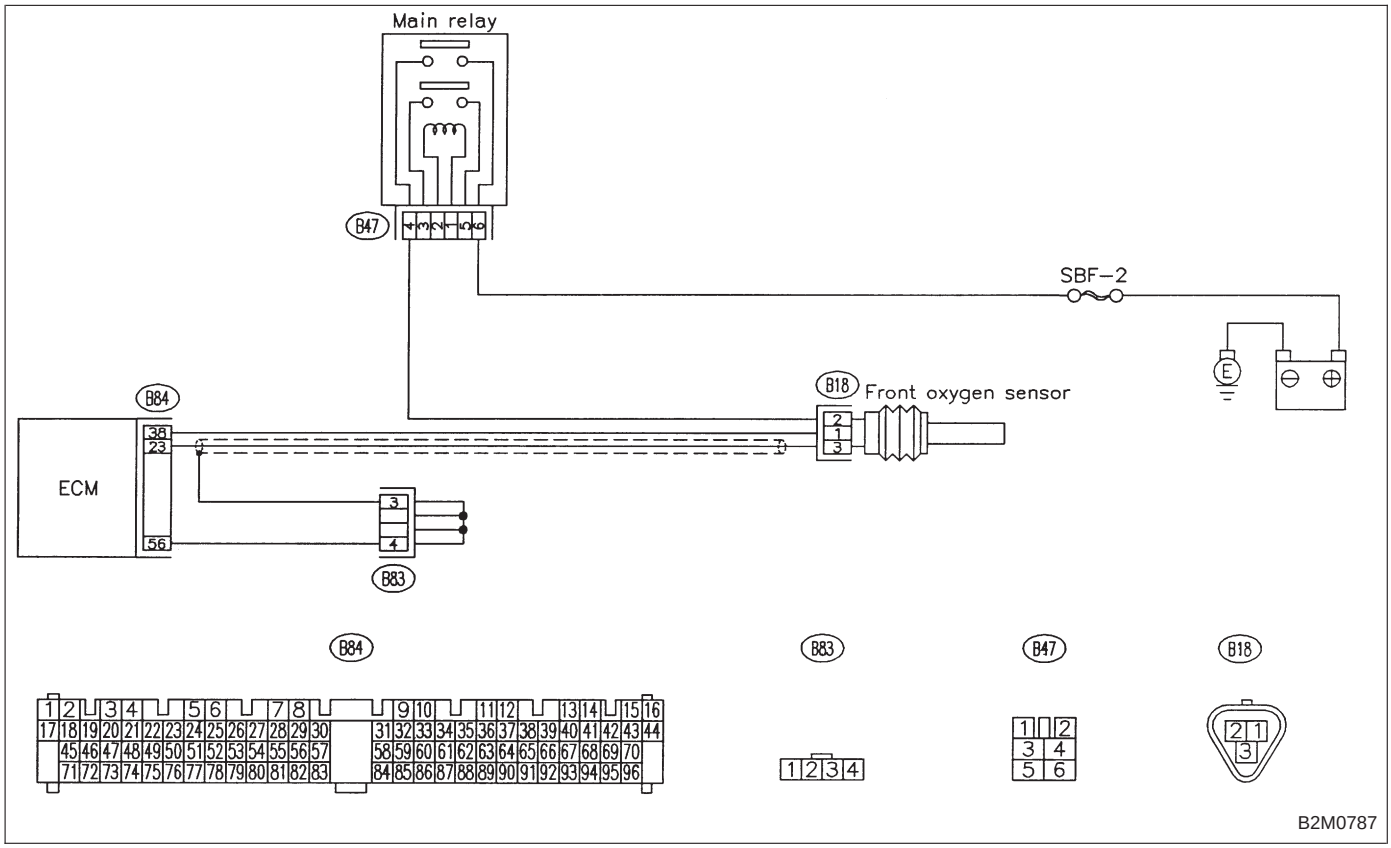
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



10J1	CHECK FOR OTHER CAUSES AFFECTING EXHAUST GAS.

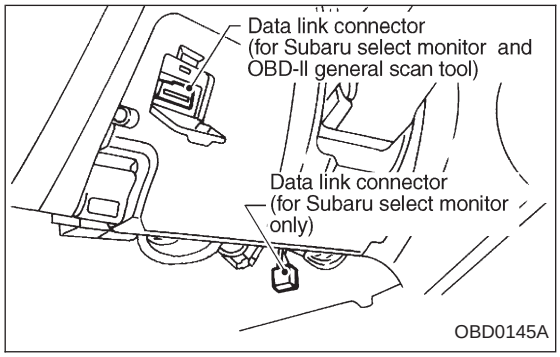
CHECK ***: Is CO % more than 2 % after engine warm-up?***

YES : Check fuel system.

NOTE:

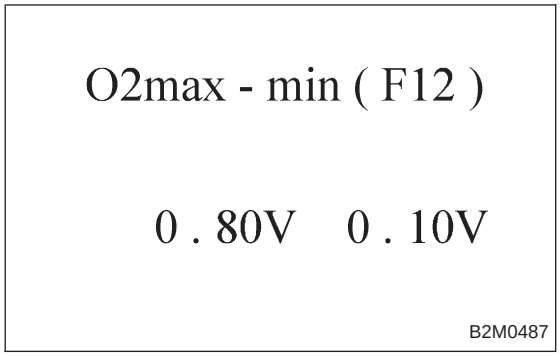
- Check for use of improper fuel.
- Check if engine oil or coolant level is extremely low.

NO : Go to step **10J2**.



10J2	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 on Subaru Select Monitor or the OBD-II general scan tool.

● Subaru Select Monitor

Designate mode using function key.

Function mode: F12

● F12: Front oxygen sensor max. and min. output signals are indicated at the same time.

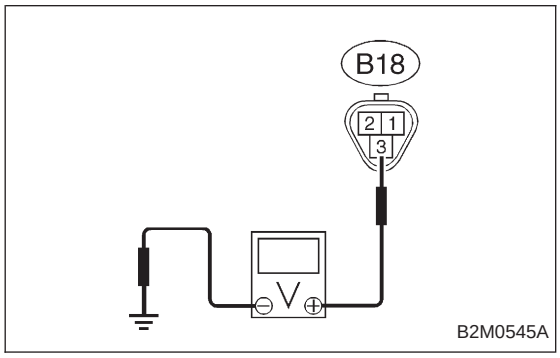
CHECK ***: Is the difference of voltage less than 0.1 V between the value of max. output and min. output with function mode F12?***

YES : Go to step **10J3**.

NO : Replace front oxygen sensor.

● OBD-II general scan tool

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



10J3	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.

CHECK ***: Connector & terminal (B18) No. 3 (+) — Engine ground (−): Is the voltage more than 0.2 V?***

YES : Go to next CHECK .

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

CHECK ***: Is there poor contact in front oxygen sensor connector?***

YES : Repair poor contact in front oxygen sensor connector.

NO : Replace front oxygen sensor.

K: DTC P0133 — FRONT OXYGEN SENSOR CIRCUIT SLOW RESPONSE (FO2 – R) —

DTC DETECTING CONDITION:

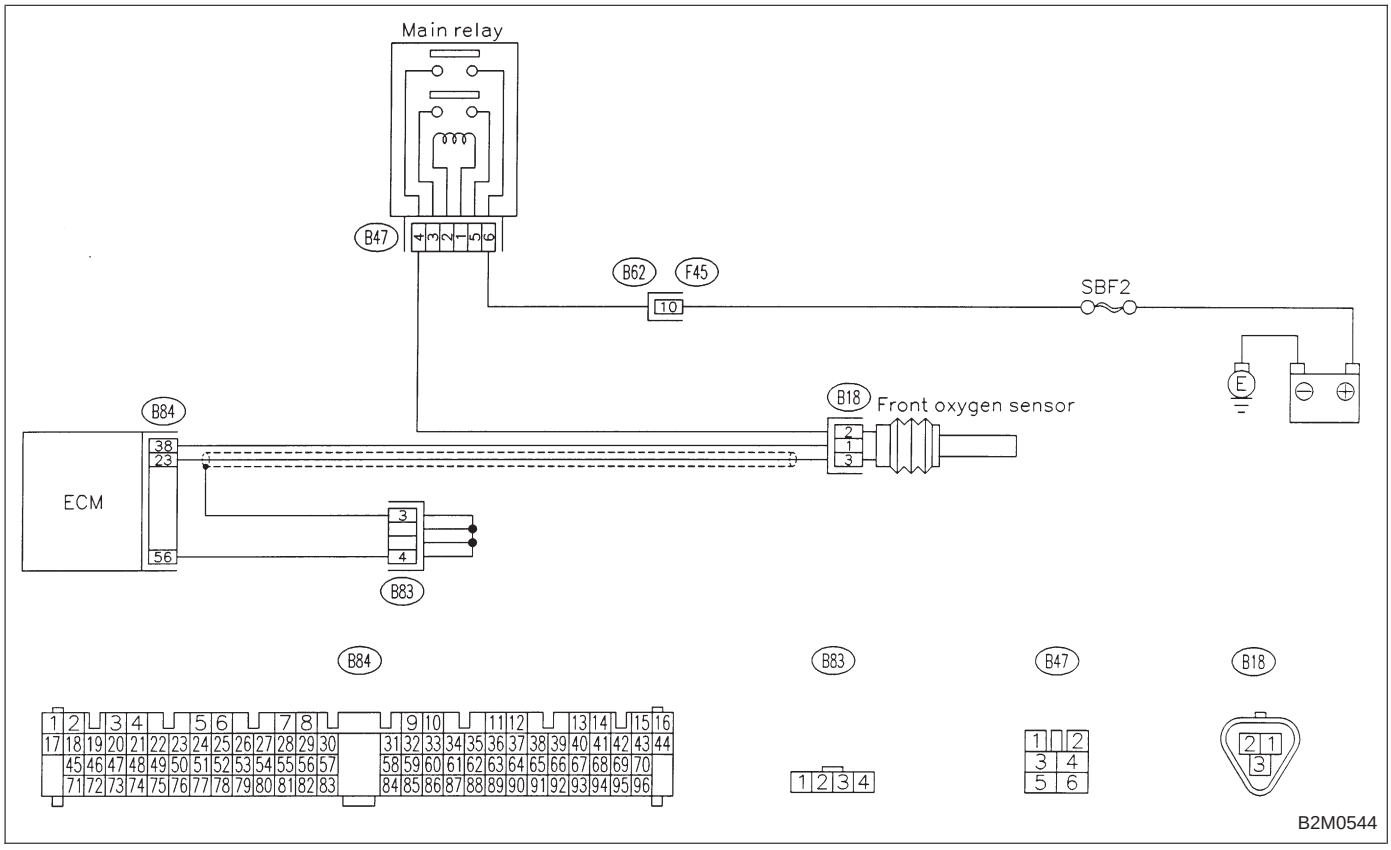
- Two consecutive trips with fault

10K1	**Check DTC P0130 on display.**
↓	
10K2	**Check exhaust system.**

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

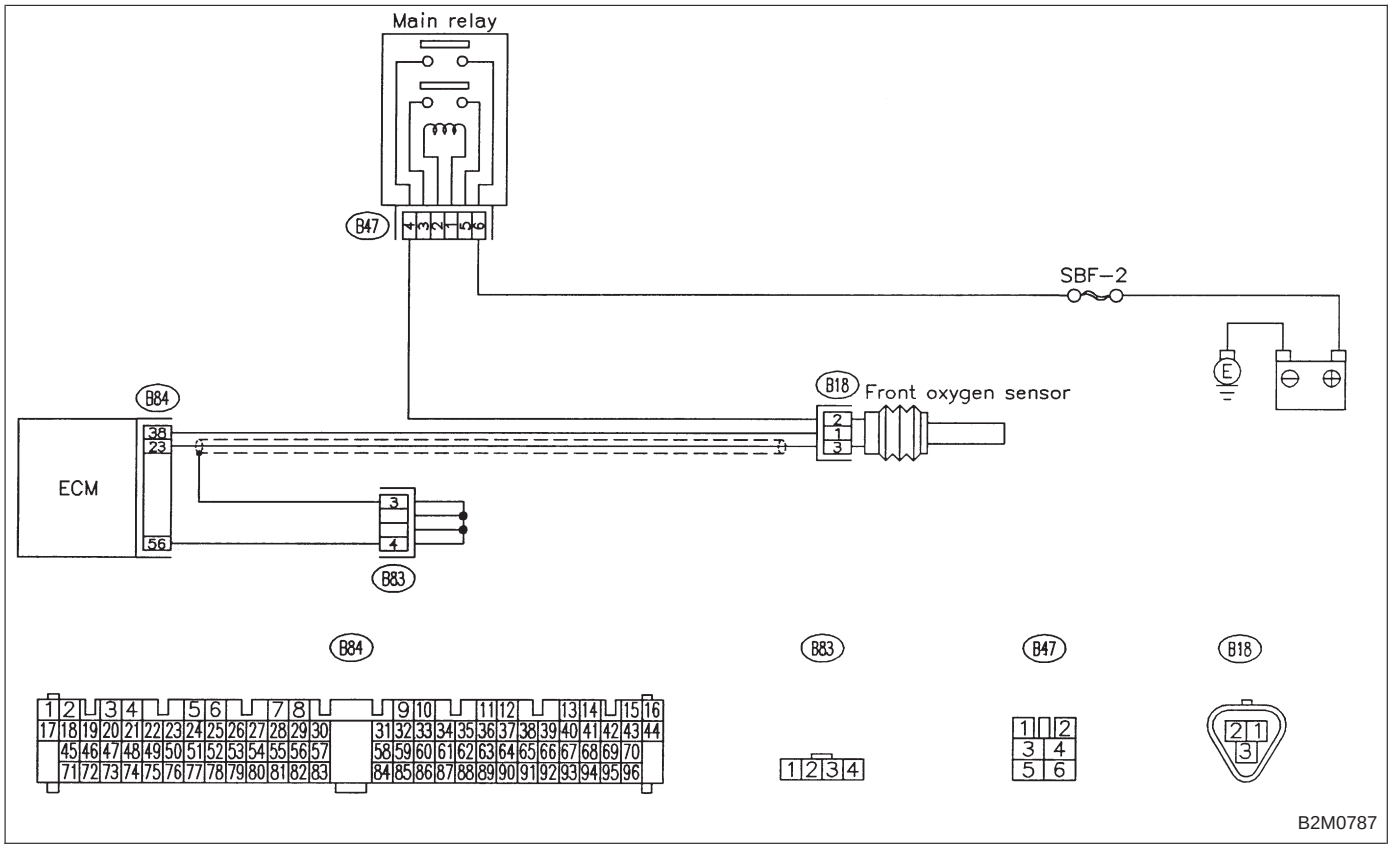
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



10K1	CHECK DTC P0130 ON DISPLAY.

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

YES : Inspect DTC P0130 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

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

NO : Go to step **10K2**.

10K2	CHECK EXHAUST SYSTEM.

CHECK ***: Is there a fault in 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

YES : Repair exhaust system.

NO : Replace front oxygen sensor.

L: DTC P0135 — FRONT OXYGEN SENSOR HEATER CIRCUIT MALFUNCTION (FO2H) —

DTC DETECTING CONDITION:

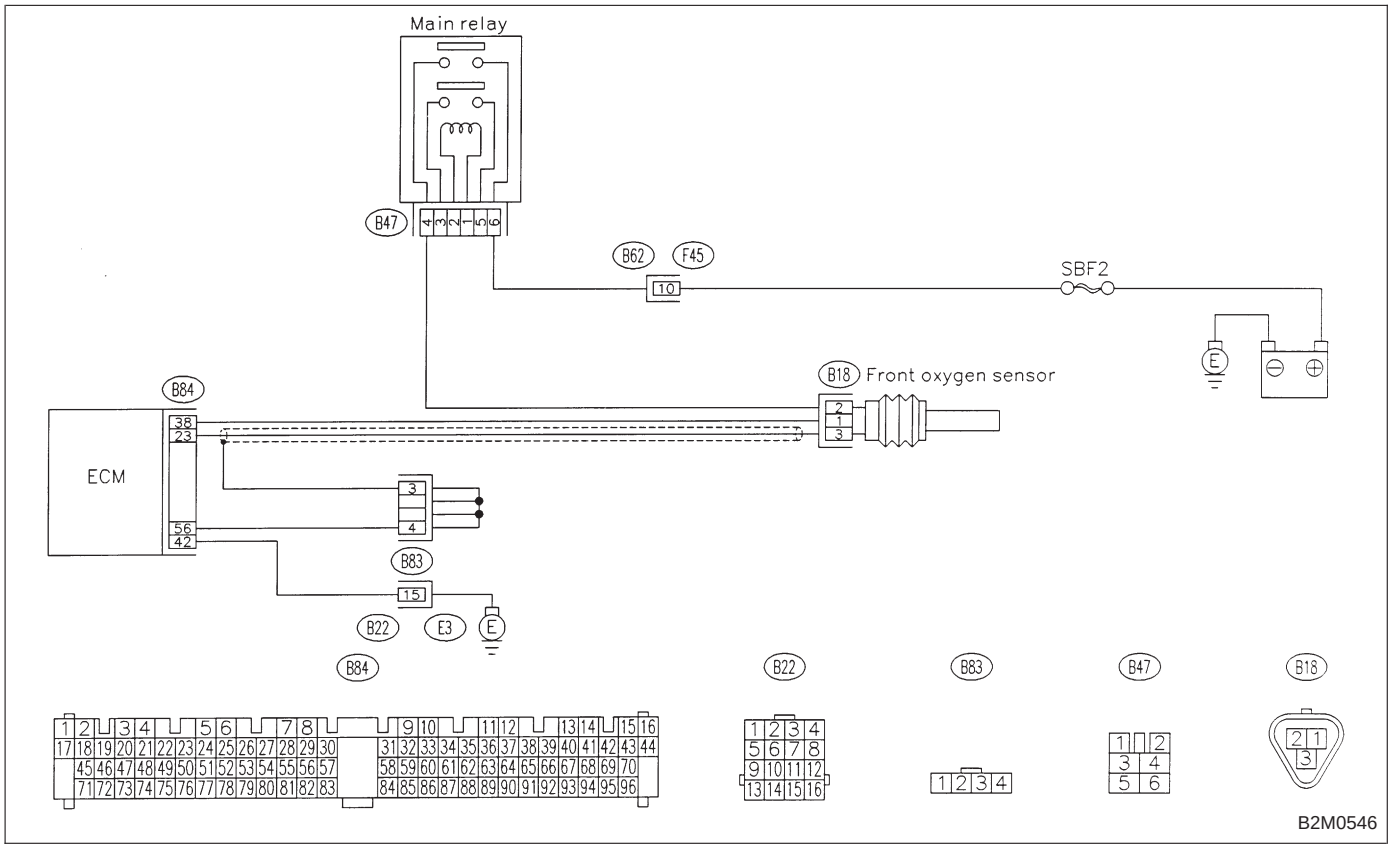
- Two consecutive trips with fault

10L1	**Check DTC P0141 on display.**
10L2	**Connect Subaru Select Monitor or the OBD-II general scan tool, and read data.**
10L3	**Check output signal from ECM. (Using voltage meter.)**
10L4	**Check power supply to front oxygen sensor.**
10L5	**Check front oxygen sensor.**

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

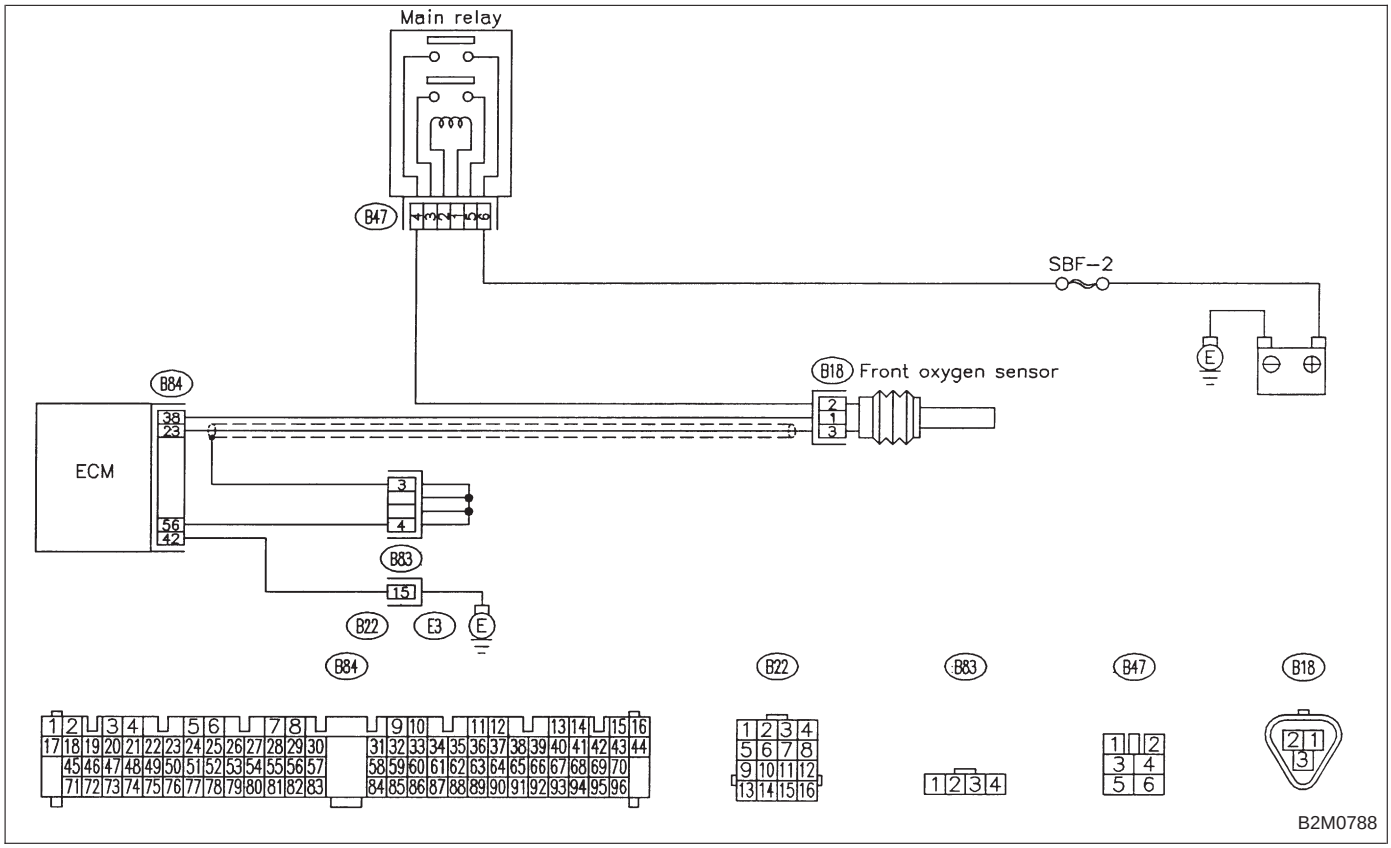
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model

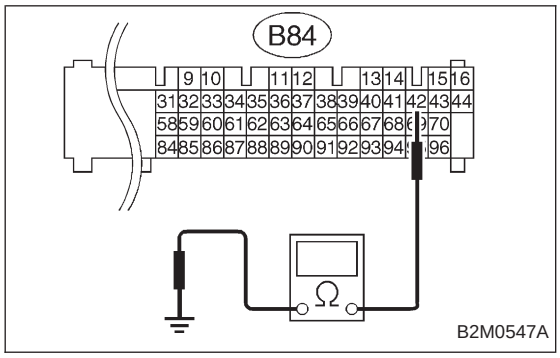


10L1	CHECK DTC P0141 ON DISPLAY.

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

YES : Go to next step 1).

NO : Go to step **10L2**.



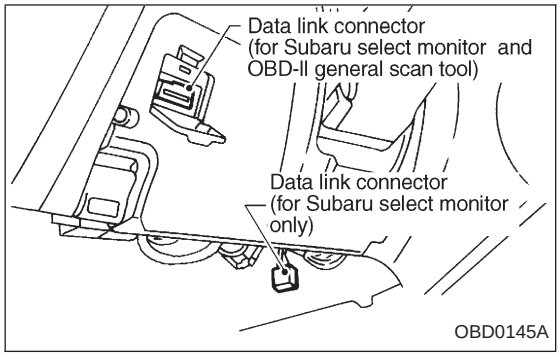
1) Turn ignition switch to OFF.
2) Disconnect connector from ECM.
3) Measure resistance of harness between ECM connector and chassis ground.

CHECK : ***Connector & terminal (B84) No. 42 — Chassis ground: Is the resistance less than 5 Ω?***

YES : Repair poor contact in ECM connector.

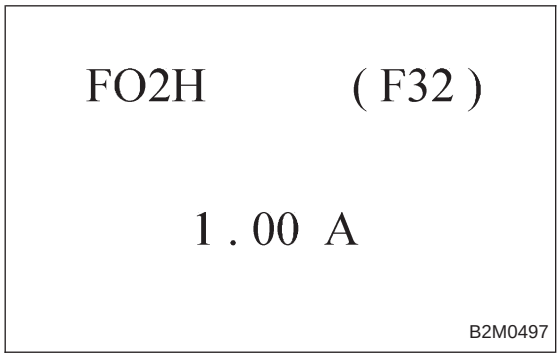
NO : Repair harness and connector.

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

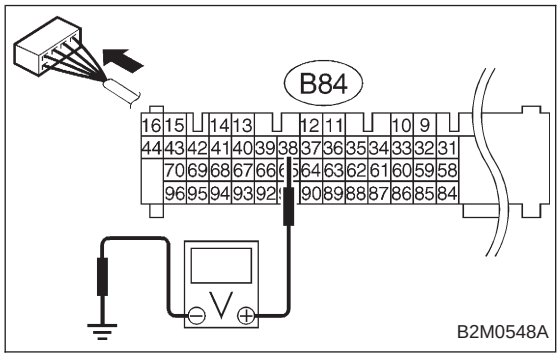


10L2	CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.

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.

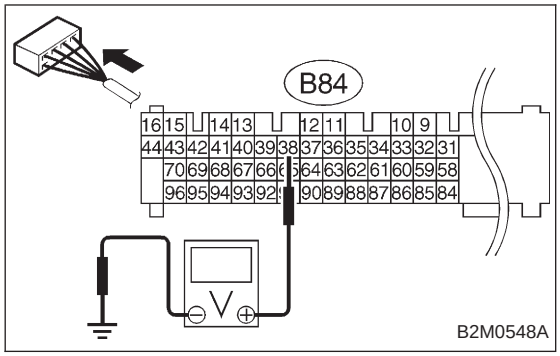


5) Read data on Subaru Select Monitor or OBD-II general scan tool.
● Subaru Select Monitor
Designate mode using function key.
Function mode: F32
● F32: Front oxygen sensor heater current is indicated.
CHECK ***: Is the value more than 0.2 A in function mode F32?***
YES : Repair connector.
NOTE:
In this case, repair the following:
● Poor contact in front oxygen sensor connector
● Poor contact in ECM connector
NO : Go to step **10L3**.
● OBD-II scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.



10L3	CHECK OUTPUT SIGNAL FROM ECM. (USING VOLTAGE METER.)

1) Start and idle the engine.
2) Measure voltage between ECM connector and chassis ground.
CHECK ***: Connector & terminal (B84) No. 38 (+) — Chassis ground (−): Is the voltage less than 1.0 V?***
YES : Go to step **10L4**.
NO : Go to next CHECK .
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 next step 3).

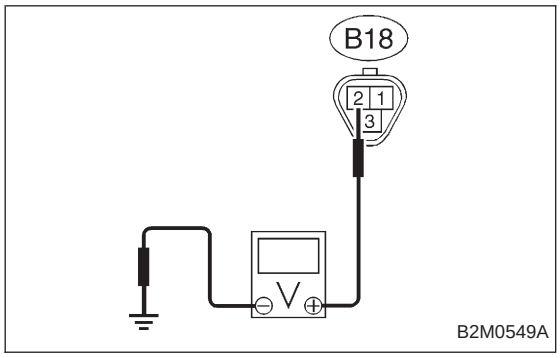


3) Disconnect connector from front oxygen sensor.
4) Measure voltage between ECM connector and chassis ground.

CHECK : ***Connector & terminal***
(B84) No. 38 (+) — Chassis ground (−):
Is the voltage less than 1.0 V?

YES : Replace ECM.

NO : Repair short circuit in harness between ECM and front oxygen sensor connector. After repair short circuit of harness, replace ECM.



10L4	CHECK POWER SUPPLY TO FRONT OXYGEN SENSOR.

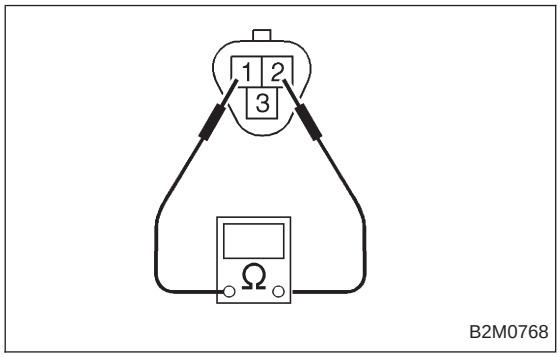
1) Turn ignition switch to OFF.
2) Disconnect connector from front oxygen sensor.
3) Turn ignition switch to ON.
4) Measure voltage between front oxygen sensor connector and engine ground.

CHECK : ***Connector & terminal***
(B18) No. 2 (+) — Engine ground (−):
Is the voltage more than 10 V?

YES : Go to step **10L5**.

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



10L5	CHECK FRONT OXYGEN SENSOR.

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

CHECK : ***Terminals***
No. 1 — No. 2:
Is the resistance less than 30 Ω?

YES : Repair harness and connector.

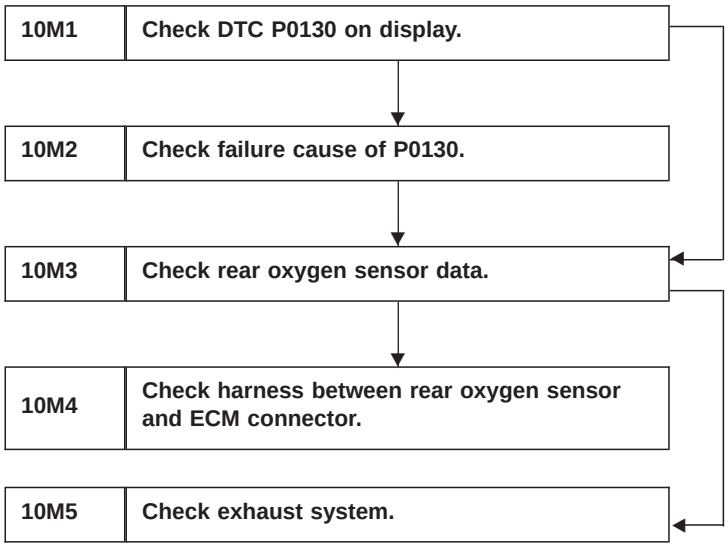
NOTE:
In this case, repair the following:
- Open circuit in harness between front oxygen sensor and ECM connector
- Poor contact in front oxygen sensor connector
- Poor contact in ECM connector

NO : Replace front oxygen sensor.

M: DTC P0136 — REAR OXYGEN SENSOR CIRCUIT MALFUNCTION (RO2 — V) —

DTC DETECTING CONDITION:

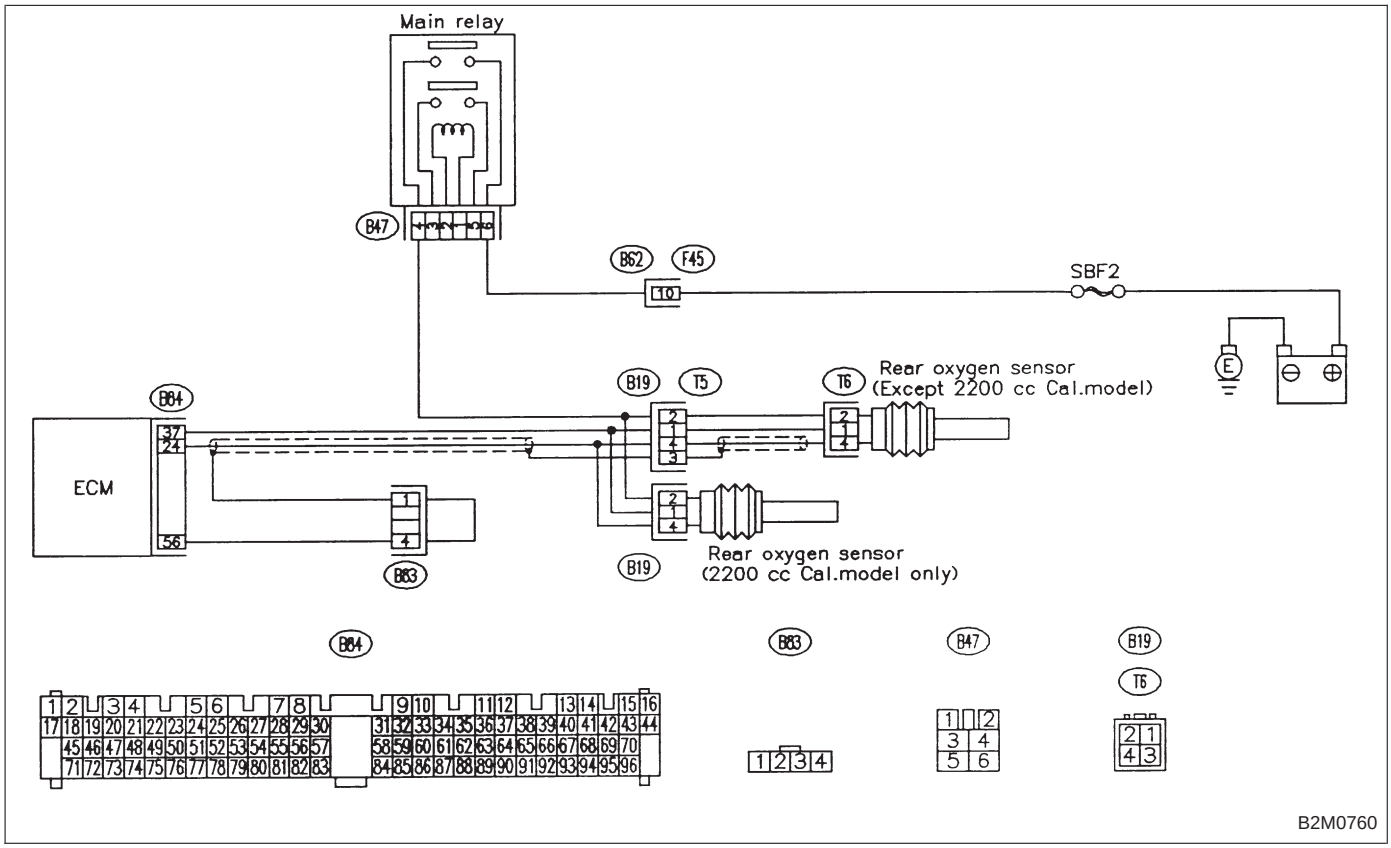
- Two consecutive trips with fault



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

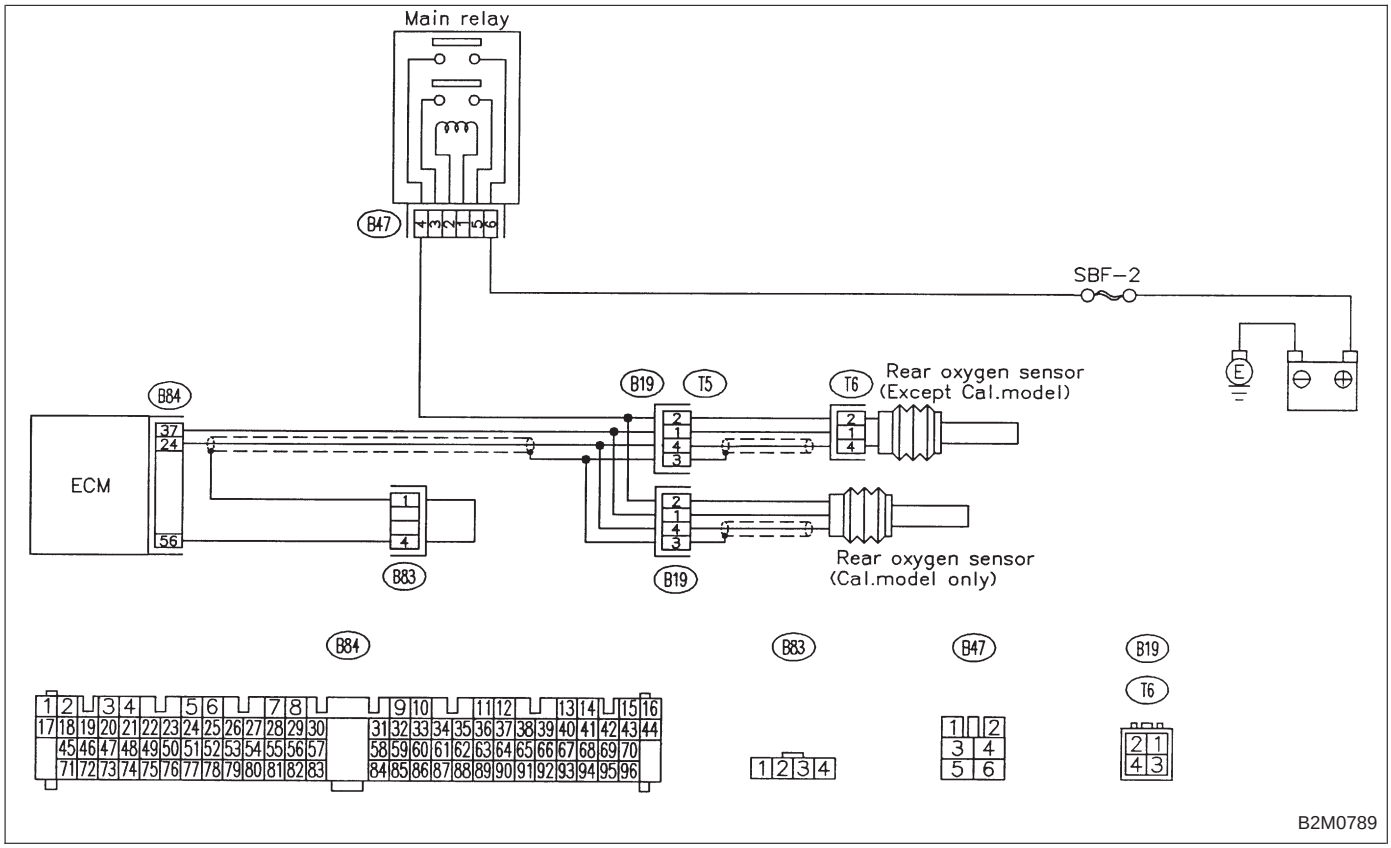
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



10M1	CHECK DTC P0130 ON DISPLAY.

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

YES : Go to step **10M2**.

NO : Go to step **10M3**.

10M2	CHECK FAILURE CAUSE OF P0130.

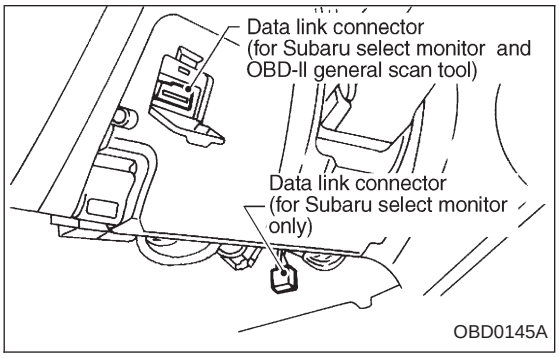
Perform the step 1 of DTC P0130.

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

YES : Check fuel system.

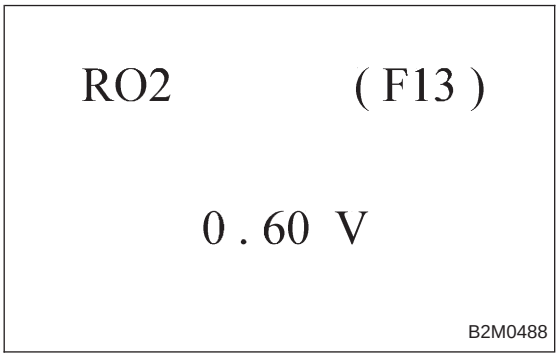
NOTE:
In this case, it is not necessary to inspect DTC P0136.

NO : Go to step **10M3**.



10M3	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 on Subaru Select Monitor or OBD-II general scan tool.

- Subaru Select Monitor

Designate mode using function key.

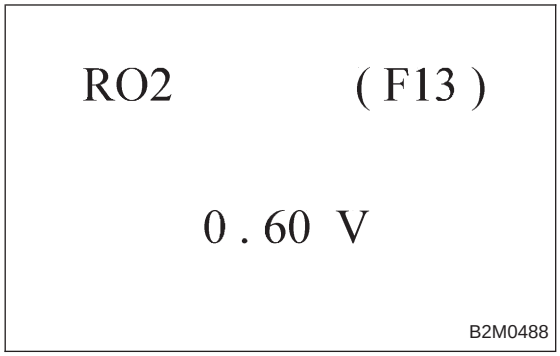
Function mode: F13

- F13: Rear oxygen sensor output signal is indicated.

CHECK : ***Does the value fluctuate in function mode F13?***

YES : Go to step **10M5**.

NO : Go to next CHECK .



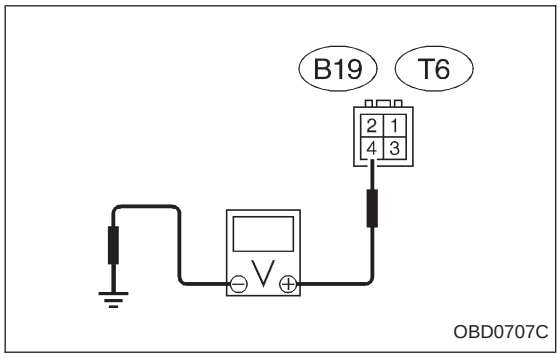
CHECK : ***Is the value fixed between 0.2 and 0.4 V in function mode F13?***

YES : Go to step **10M4**.

NO : Replace rear oxygen sensor.

● OBD-II general scan tool

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



10M4	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.

CHECK : ***Connector & terminal***
● 2200 cc California model
(B19) No. 4 (+) — Engine ground (−):
● Except 2200 cc California model
(T6) No. 4 (+) — Chassis ground (−):
Is the voltage more than 0.2 V?

YES : Replace rear oxygen sensor.

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
● Poor contact in rear oxygen sensor connecting harness connector (Except 2200 cc California model)

10M5	CHECK EXHAUST SYSTEM.

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

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

YES : Repair or replace faulty parts.

NO : Replace rear oxygen sensor.

OBD (FB1)

P0139 <RO2_R>

OBD0229

N: DTC P0139 — REAR OXYGEN SENSOR CIRCUIT SLOW RESPONSE (RO2 – R) —

DTC DETECTING CONDITION:

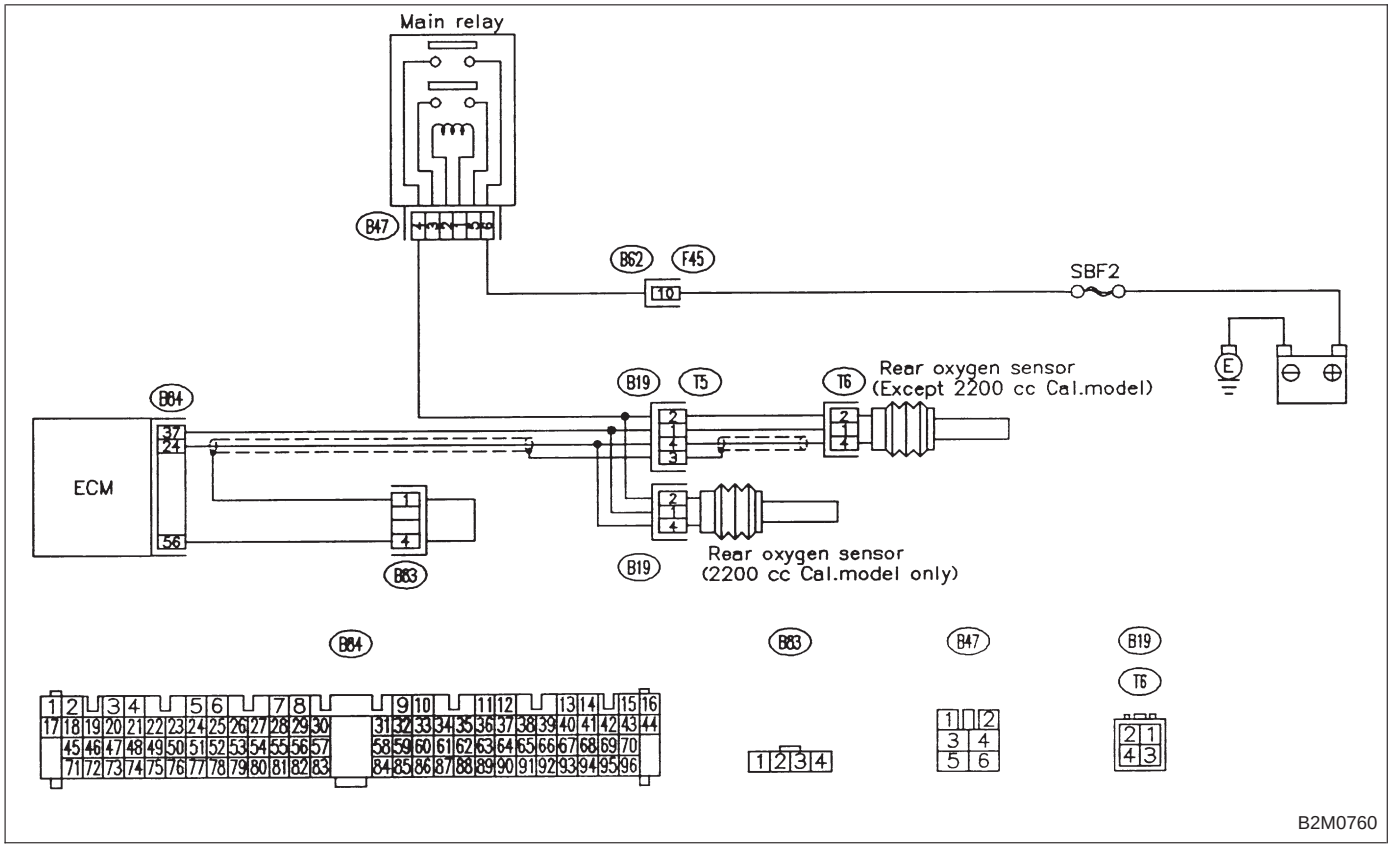
- Two consecutive trips with fault

10N1	**Check DTC P0136 on display.**

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

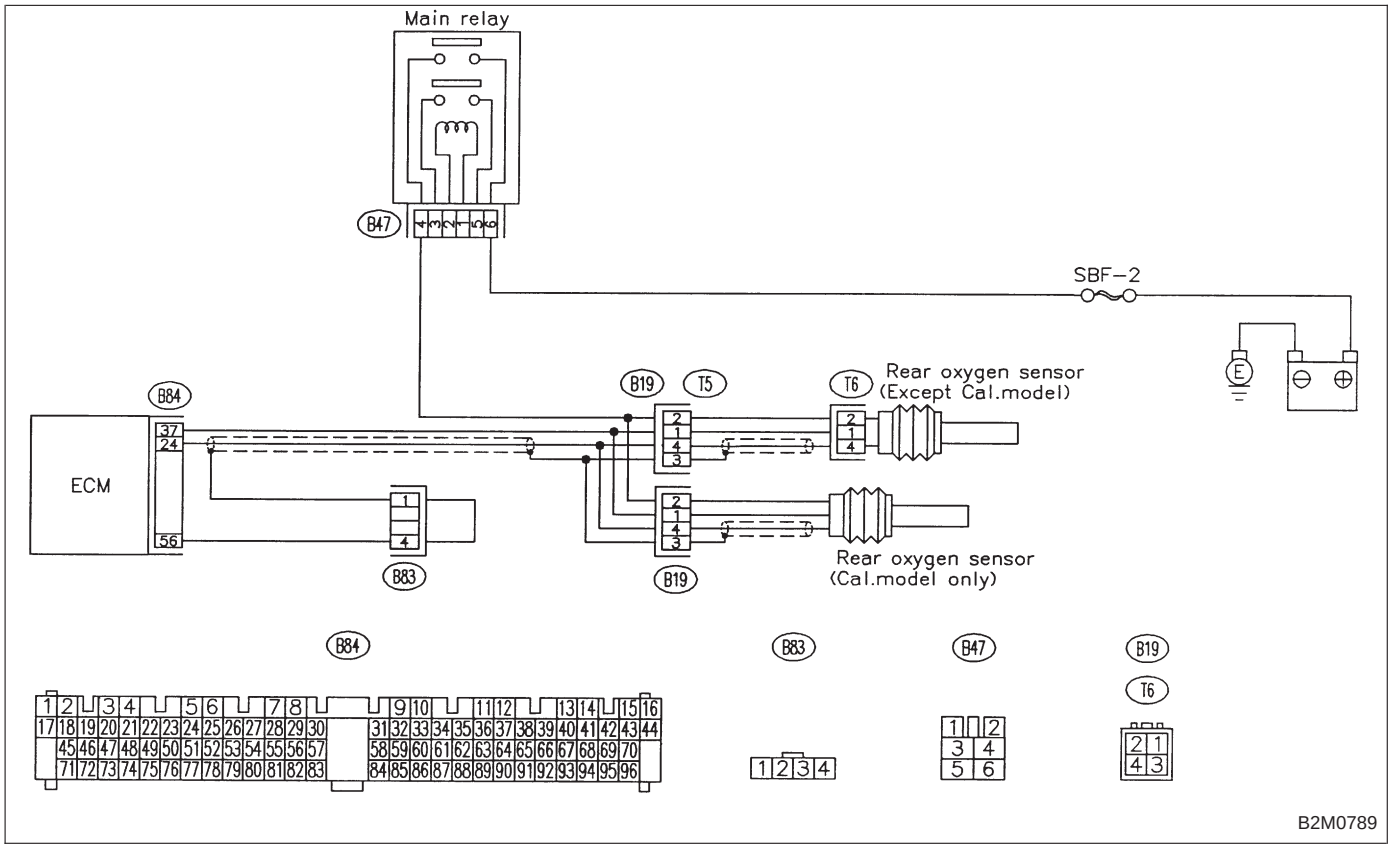
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



10N1	CHECK DTC P0136 ON DISPLAY.

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

YES : Inspect DTC P0136 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

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

NO : Replace rear oxygen sensor.

O: DTC P0141 — REAR OXYGEN SENSOR HEATER CIRCUIT MALFUNCTION (RO2H) —

DTC DETECTING CONDITION:

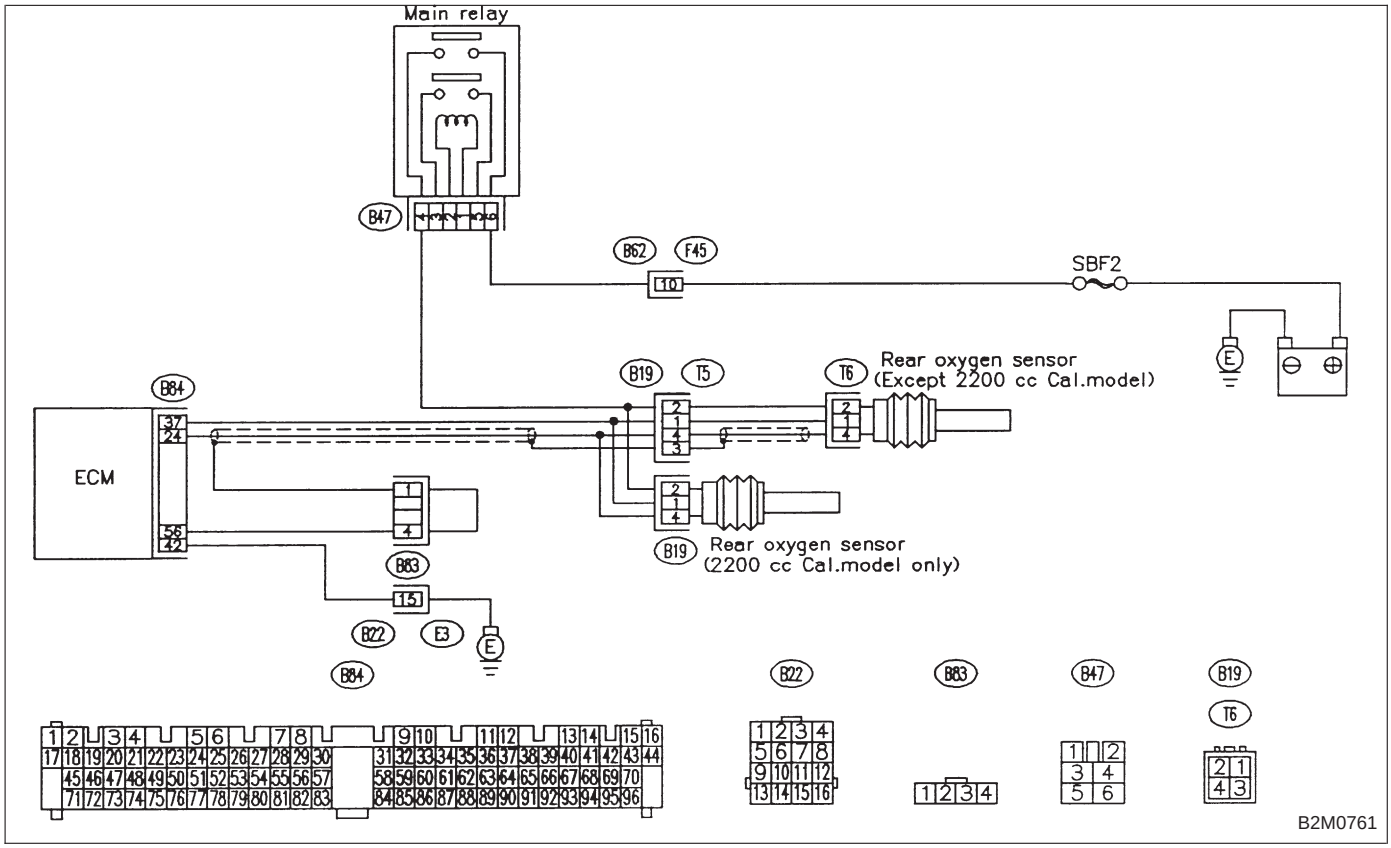
- Two consecutive trips with fault

10O1	**Check DTC P0135 on display.**
10O2	**Connect Subaru Select Monitor or the OBD-II general scan tool, and read data.**
10O3	**Check output signal from ECM. (Using voltage meter.)**
10O4	**Check power supply to rear oxygen sensor.**
10O5	**Check rear oxygen sensor.**

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

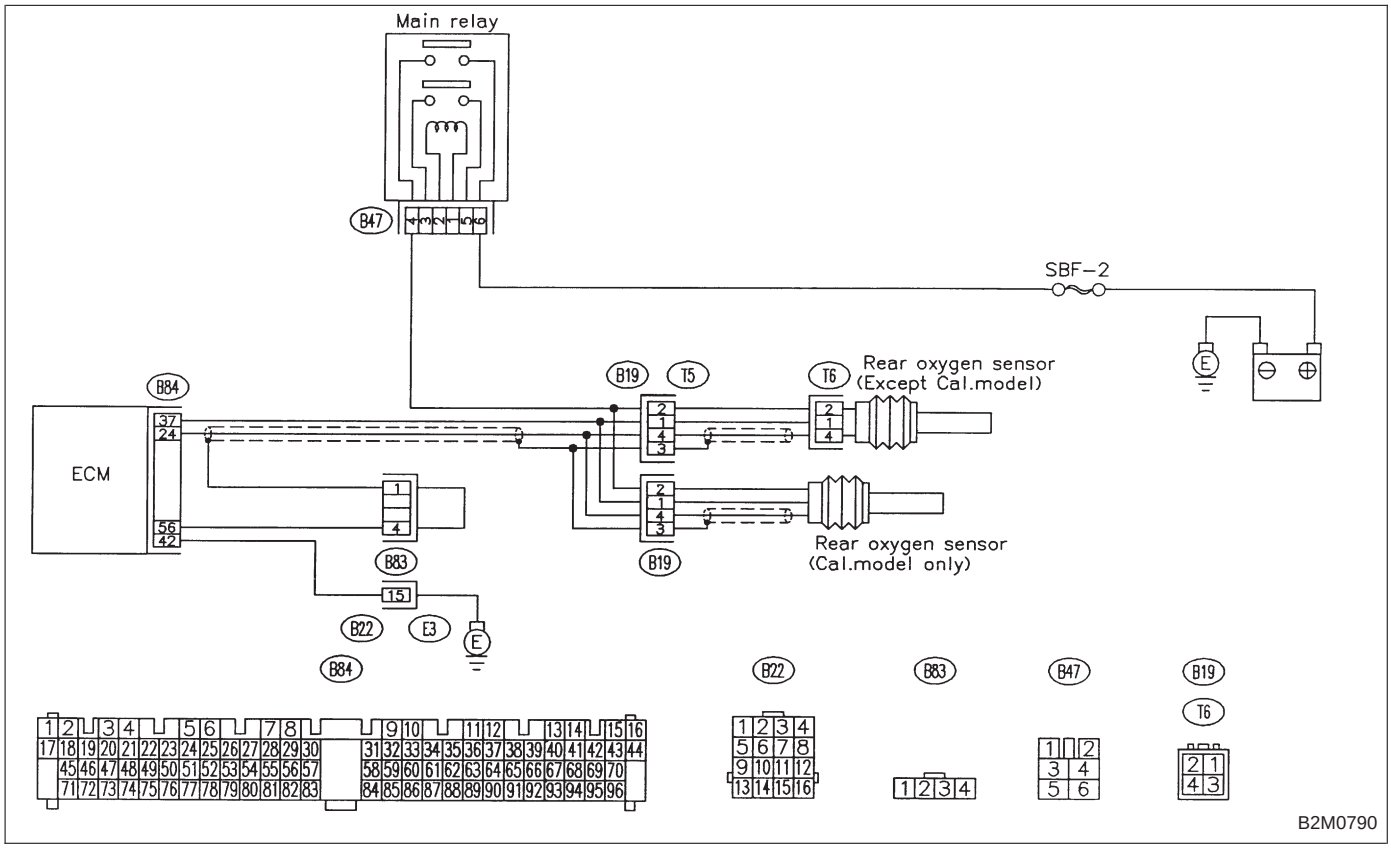
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model

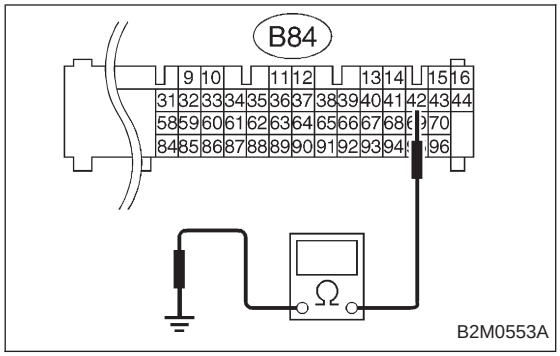


10O1	CHECK DTC P0135 ON DISPLAY.

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

YES : Go to next step 1).

NO : Go to step **10O2**.



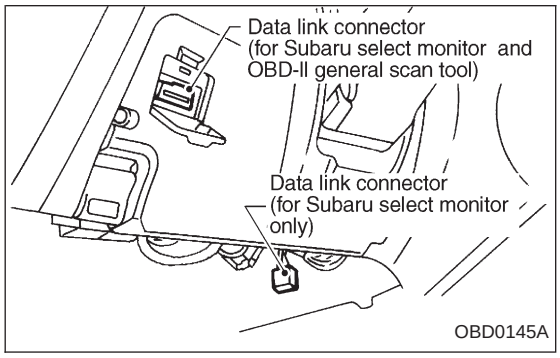
1) Turn ignition switch to OFF.
2) Disconnect connector from ECM.
3) Measure resistance of harness between ECM connector and chassis ground.

CHECK : ***Connector & terminal (B84) No. 42 — Chassis ground: Is the resistance less than 5 Ω?***

YES : Repair poor contact in ECM connector.

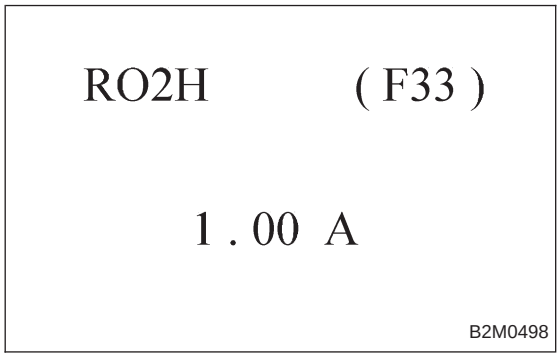
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and coupling connector (B22)
- Open circuit in harness between coupling connector (B22) and engine grounding terminal
- Poor contact in rear oxygen sensor connector
- Poor contact in rear oxygen sensor connecting harness connector (B19)
- Poor contact in coupling connector (B22)



10O2	**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 on Subaru Select Monitor or OBD-II general scan tool.
- Subaru Select Monitor

Designate mode using function key.

Function mode: F33

- F33: Rear oxygen sensor heater current is indicated.

CHECK : ***Is the value more than 0.2 A in function mode F33?***

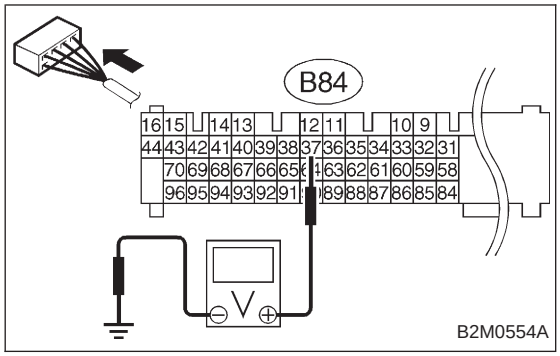
YES : Repair connector.

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 **10O3**.

- OBD-II scan tool

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



10O3	CHECK OUTPUT SIGNAL FROM ECM. (USING VOLTAGE METER.)

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

CHECK ***: Connector & terminal (B84) No. 37 (+) — Chassis ground (−): Is the voltage less than 1.0 V?***

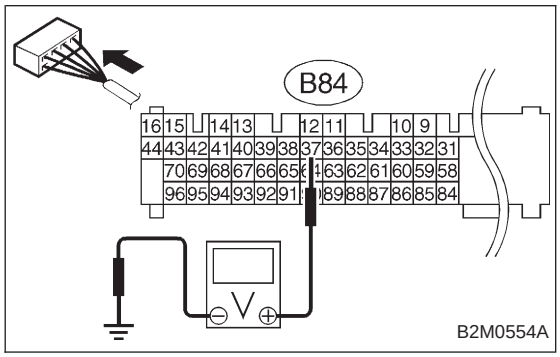
YES : Go to step **10O4**.

NO : Go to next CHECK .

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 next step 3).

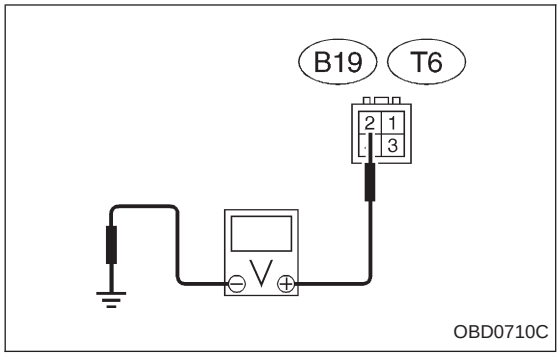


3) Disconnect connector from rear oxygen sensor.
4) Measure voltage between ECM connector and chassis ground.

CHECK ***: Connector & terminal (B84) No. 37 (+) — Chassis ground (−): Is the voltage less than 1.0 V?***

YES : Replace ECM.

NO : Repair short circuit in harness between ECM and rear oxygen sensor connector. After repair short circuit in harness, replace ECM.



10O4	CHECK POWER SUPPLY TO REAR OXYGEN SENSOR.

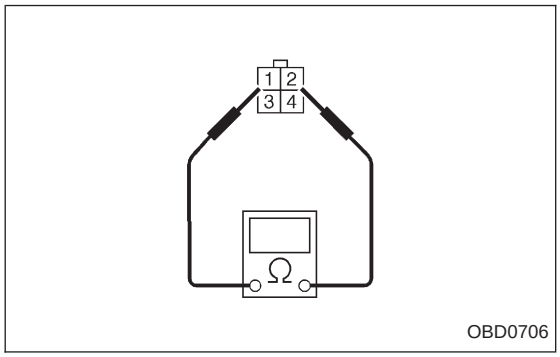
1) Turn ignition switch to OFF.
2) Disconnect connector from rear oxygen sensor.
3) Turn ignition switch to ON.
4) Measure voltage between rear oxygen sensor connector and engine ground or chassis ground.

CHECK ***: Connector & terminal***
● 2200 cc California model
(B19) No. 2 (+) — Engine ground (−):
● Except 2200 cc California model
(T6) No. 2 (+) — Chassis ground (−):
Is the voltage more than 10 V?

YES : Go to step **10O5**.

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 rear oxygen sensor connecting harness connector (Except 2200 cc California model)



10O5	CHECK REAR OXYGEN SENSOR.

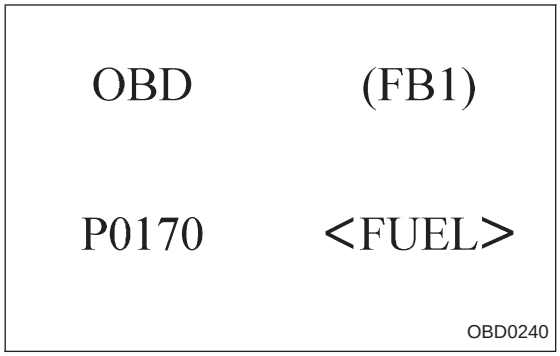
1) Turn ignition switch to OFF.
2) Measure resistance between rear oxygen sensor connector terminals.

CHECK ***: Terminals***
No. 1 — No. 2:
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 rear oxygen sensor connecting harness connector

NO : Replace rear oxygen sensor.



P: DTC P0170
— FUEL TRIM MALFUNCTION (FUEL) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

- Erroneous idling
- Engine stalls.
- Poor driving performance

10P1	**Check exhaust system.**
10P2	**Check air intake system.**
10P3	**Check fuel pressure.**
10P4	**Check engine coolant temperature sensor. <Ref. to 2-7 F: DTC P0115 [T10F0].>**
10P5	**Check mass air flow sensor.**

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

10P1	CHECK EXHAUST SYSTEM.

CHECK : ***Are there holes or loose bolts on exhaust system?***

YES : Repair exhaust system.

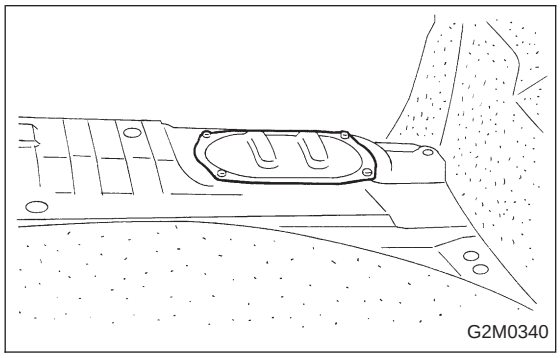
NO : Go to step **10P2**.

10P2	CHECK AIR INTAKE SYSTEM.

CHECK : ***Are there holes, loose bolts or disconnection of hose on air intake system?***

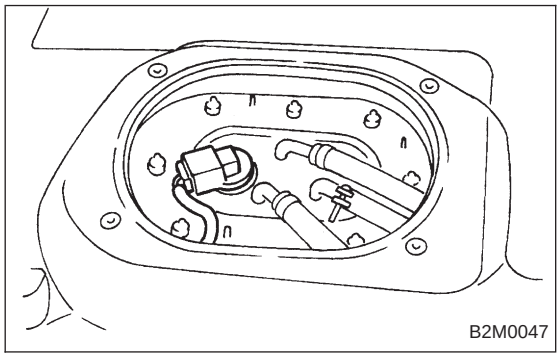
YES : Repair air intake system.

NO : Go to step **10P3**.

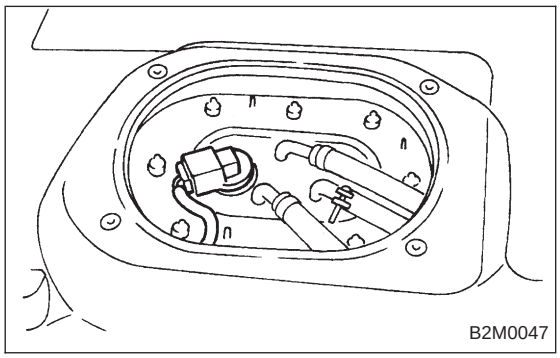

G2M0340

10P3	CHECK FUEL PRESSURE.

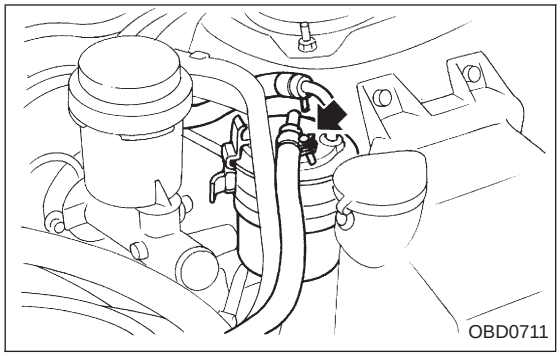
1) Release fuel pressure.
   (1) Remove fuel pump access hole lid located on the right rear of trunk compartment floor (Sedan) or luggage compartment floor (Wagon).


B2M0047

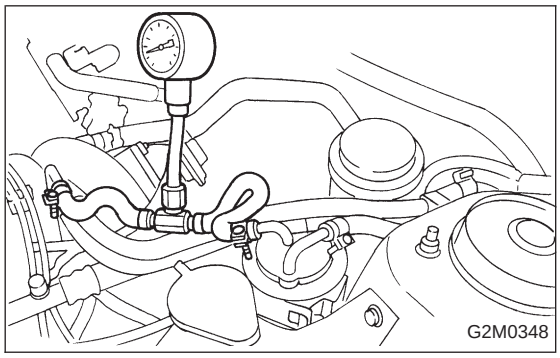
   (2) Disconnect connector from fuel tank.
   (3) Start the engine, and run it until it stalls.
   (4) After stopping the engine, crank the engine for 5 to 7 seconds to reduce fuel pressure.
   (5) Turn ignition switch to OFF.


B2M0047

2) Connect connector to fuel tank.



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



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

CHECK ***: Is fuel pressure between 226 and 275 kPa (2.3 — 2.8 kg/cm^2, 33 — 40 psi)?***

YES : Go to next step 6).

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

6) After connecting pressure regulator vacuum hose, measure fuel pressure.

CHECK ***: Is fuel pressure between 157 and 206 kPa (1.6 — 2.1 kg/cm^2, 23 — 30 psi)?***

YES : Go to step **10P4**.

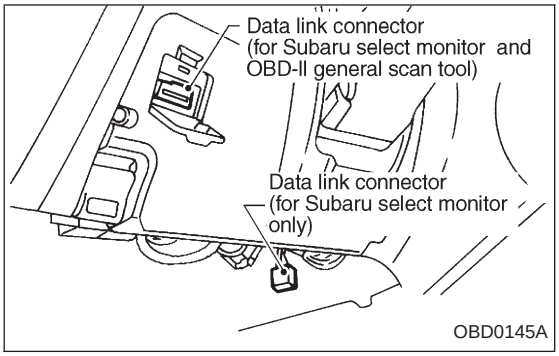
NO : Repair the following items.

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

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

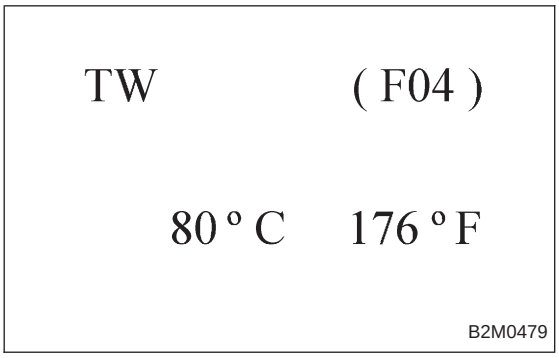
NOTE:

● 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 step 6), check or replace pressure regulator and pressure regulator vacuum hose.



10P4	**CHECK ENGINE COOLANT TEMPERATURE SENSOR. <REF. TO 2-7 F: DTC P0115 [T10F0].>**

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 on Subaru Select Monitor or the OBD-II general scan tool.

● Subaru Select Monitor
Designate mode using function key.

Function mode: F04

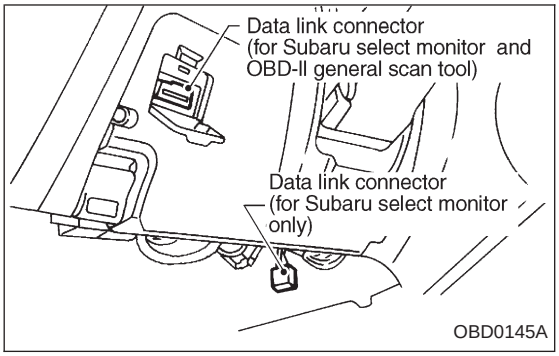
● F04: Water temperature is indicated in "°C" and "°F".

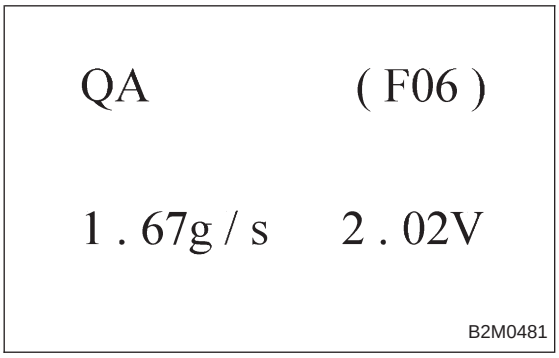
CHECK ***: Is temperature greater than 60°C or 140°F in function mode F04?***

YES : Go to step **10P5**.

NO : Replace engine coolant temperature sensor.

● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.





10P5	CHECK MASS AIR FLOW SENSOR.

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 engine until coolant temperature is greater than 60°C (140°F).
4) Place the selector lever in “N” or “P” position.
5) Turn A/C switch to OFF.
6) Turn all accessory switches to OFF.
7) Read data on Subaru Select Monitor or OBD-II general scan tool.

● Subaru Select Monitor
Designate mode using function key.

Function mode: F06

● F06: Mass air flow and voltage input from mass air flow sensor are shown on display.

CHECK ***: Is the voltage in function mode F06 within the specifications shown in the following table?***

Model	Engine speed	Specified value
2200 cc	Idling	1.7 — 3.3 (g/sec)
	2,500 rpm	7.1 — 14.2 (g/sec)
2500 cc	Idling	2.2 — 4.2 (g/sec)
	2,500 rpm	8.6 — 14.5 (g/sec)

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.

● OBD-II general scan tool
For detailed operation procedures, refer to the OBD-II General Scan Tool Instruction Manual.

OBD (FB1)
P0180 <TNKT>

H2M1306

Q: DTC P0180 — FUEL TEMPERATURE SENSOR A CIRCUIT MALFUNCTION (TNKT) —

DTC DETECTING CONDITION:

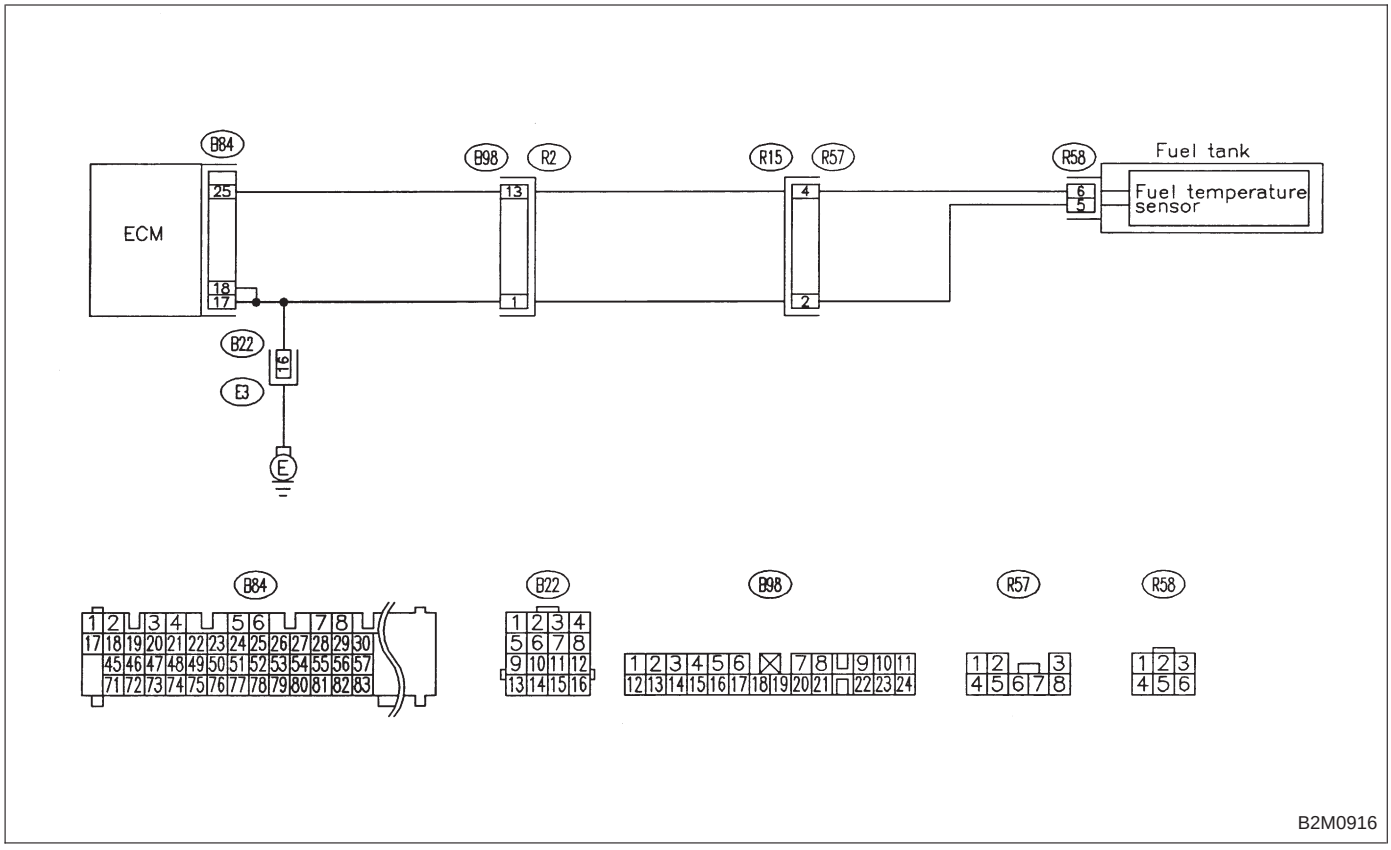
- Immediately at fault recognition

10Q1	**Connect Subaru Select Monitor or the OBD-II general scan tool, and read data.**
10Q2	**Check harness between fuel temperature sensor and ECM connector.**
10Q3	**Check harness between fuel temperature sensor and ECM connector.**

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

WIRING DIAGRAM:

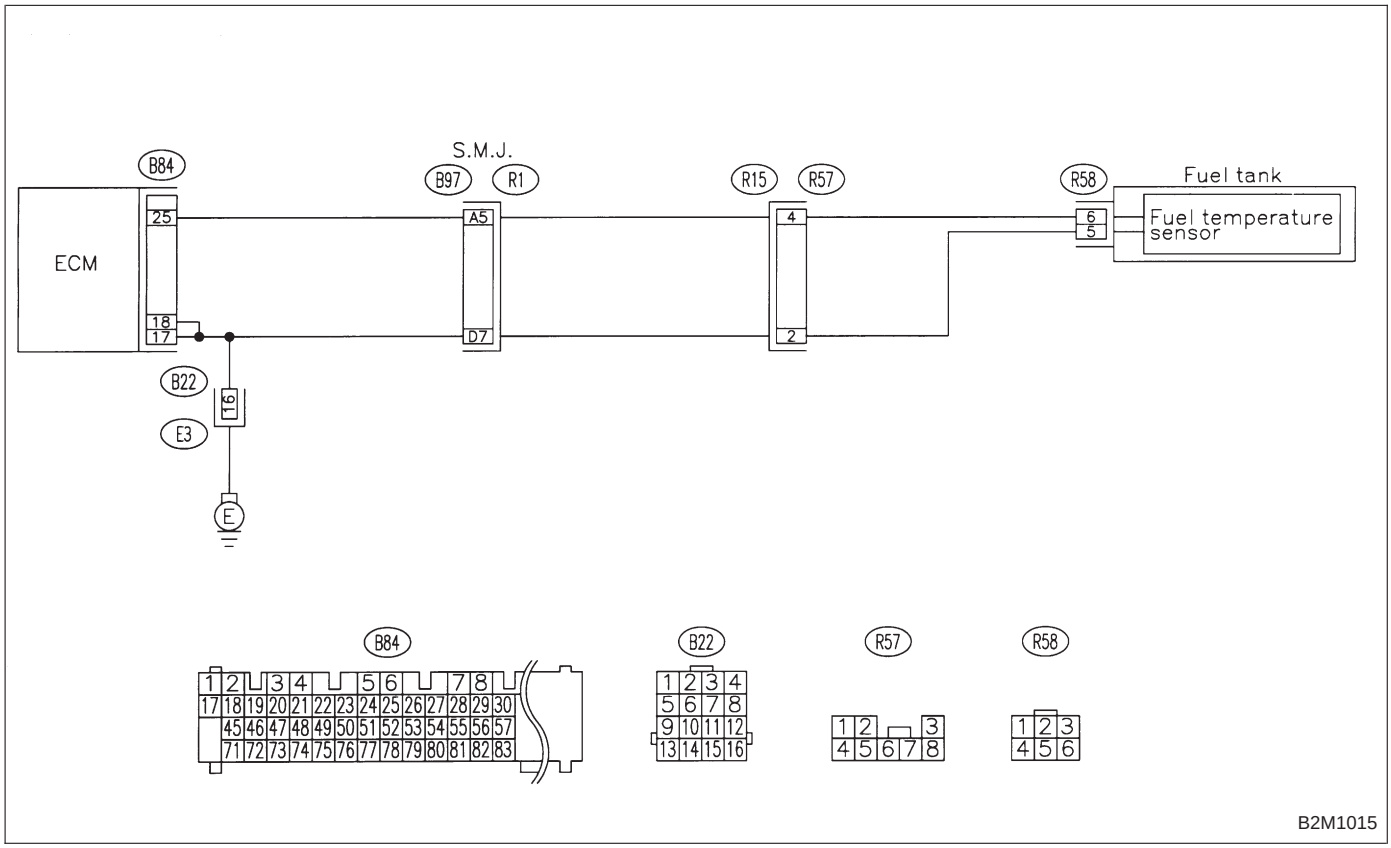
- LHD Model

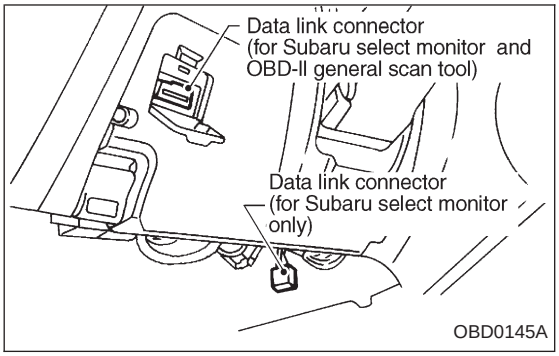


B2M0916

WIRING DIAGRAM:

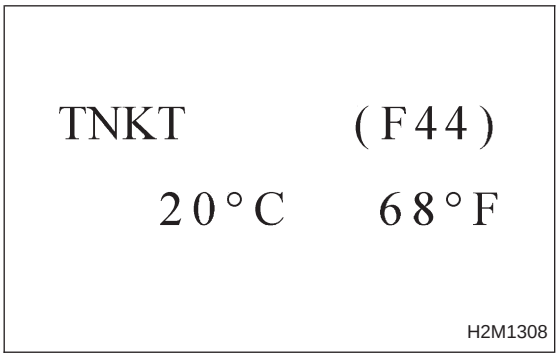
- RHD Model





10Q1	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 on Subaru Select Monitor or OBD-II general scan tool.

- Subaru Select Monitor

Designate mode using function key.

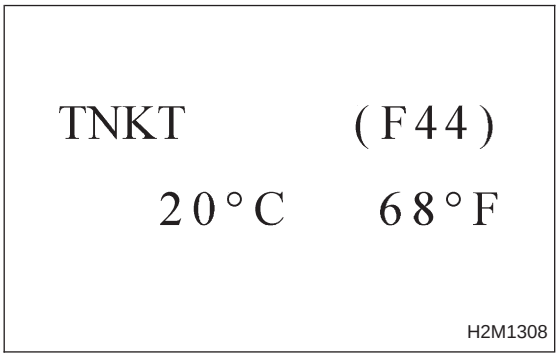
Function mode: F44

- F44: Fuel temperature is indicated in "°C" and "°F".

CHECK ***: Is the value greater than 150°C or 300°F in function mode F44?***

YES : Go to step **10Q2**.

NO : Go to next CHECK .



CHECK ***: Is the value less than −40°C or −40°F in function mode F44?***

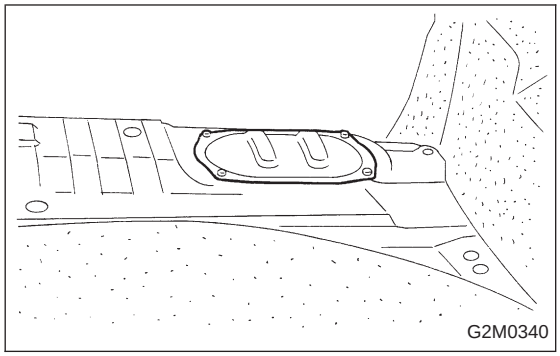
YES : Go to step **10Q3**.

NO : Repair poor contact.

NOTE:
In this case, repair the following:

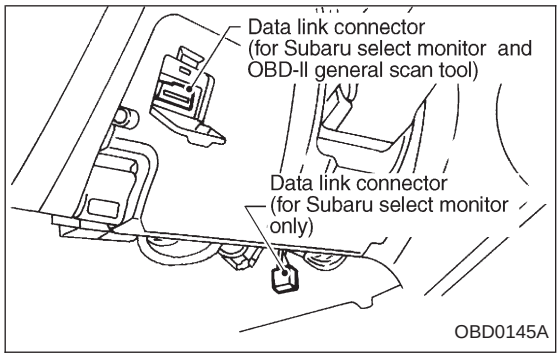
- Poor contact in fuel pump connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B22, B98 (LHD)/B97 (RHD), and R57)
- OBD-II general scan tool

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


G2M0340

10Q2	CHECK HARNESS BETWEEN FUEL TEMPERATURE SENSOR AND ECM CONNECTOR.

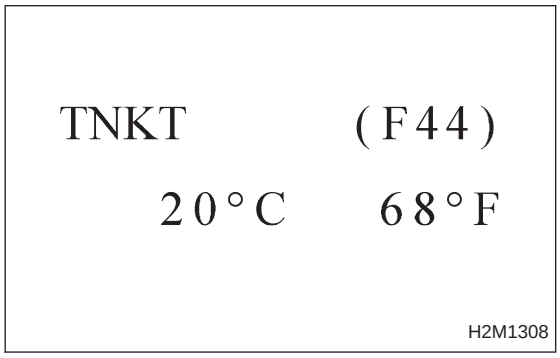
1) Turn ignition switch to OFF.
2) Remove access hole lid.
3) Disconnect connector from fuel pump.



OBD0145A

4) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.

5) Turn ignition switch and Subaru Select Monitor or OBD-II general scan tool switch to ON.



H2M1308

6) Read data on Subaru Select Monitor or the OBD-II general scan tool.

- Subaru Select Monitor

Designate mode using function key.

Function mode: F44

- F44: Fuel temperature is indicated in "°C" and "°F".

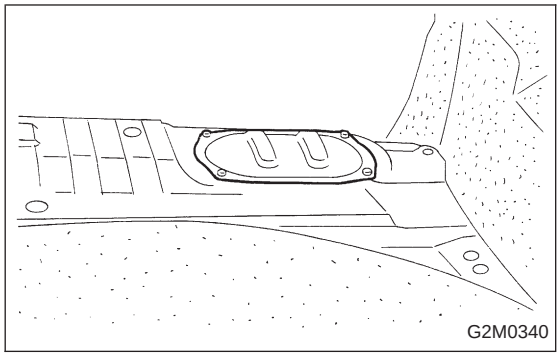
CHECK ***: Is the value less than −40°C or −40°F in function mode F44?***

YES : Replace fuel temperature sensor.

NO : Repair short circuit in harness between fuel pump and ECM connector.

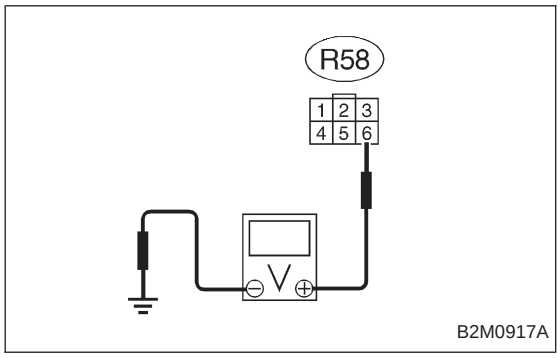
- OBD-II general scan tool

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


G2M0340

10Q3	CHECK HARNESS BETWEEN FUEL TEMPERATURE SENSOR AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Remove access hole lid.
3) Disconnect connector from fuel pump.
4) Turn ignition switch to ON.



B2M0917A

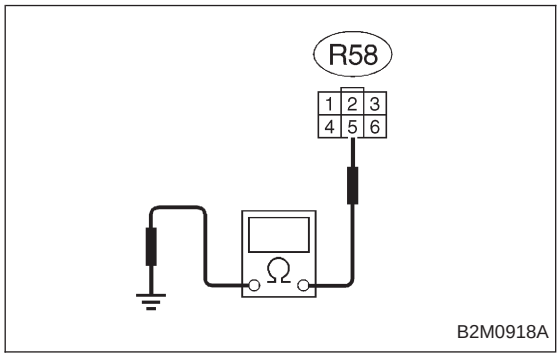
5) Measure voltage between fuel pump connector and chassis ground.

CHECK ***: Connector & terminal (R58) No. 6 (+) — Chassis ground (−): Is the voltage more than 4 V?***

YES : Go to next step 6).

NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and fuel pump connector
- Poor contact in fuel pump connector
- Poor contact in ECM connector
- Poor contact in coupling connectors (B98 (LHD)/B97 (RHD), and R57)



B2M0918A

6) Turn ignition switch to OFF.

7) Measure resistance of harness between fuel pump connector and chassis ground.

CHECK ***: Connector & terminal (R58) No. 5 — Chassis ground: Is the resistance less than 5 Ω?***

YES : Replace fuel temperature sensor.

NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and fuel pump connector
- Poor contact in fuel pump connector
- Poor contact in ECM connector
- Poor contact in coupling connectors (B22, B98 (LHD)/B97 (RHD), and R57)

OBD (FB1)

P0181 <TNKT_F>

H2M1350

R: DTC P0181 — FUEL TEMPERATURE SENSOR A CIRCUIT RANGE/PERFORMANCE PROBLEM (TNKT — F) —

DTC DETECTING CONDITION:

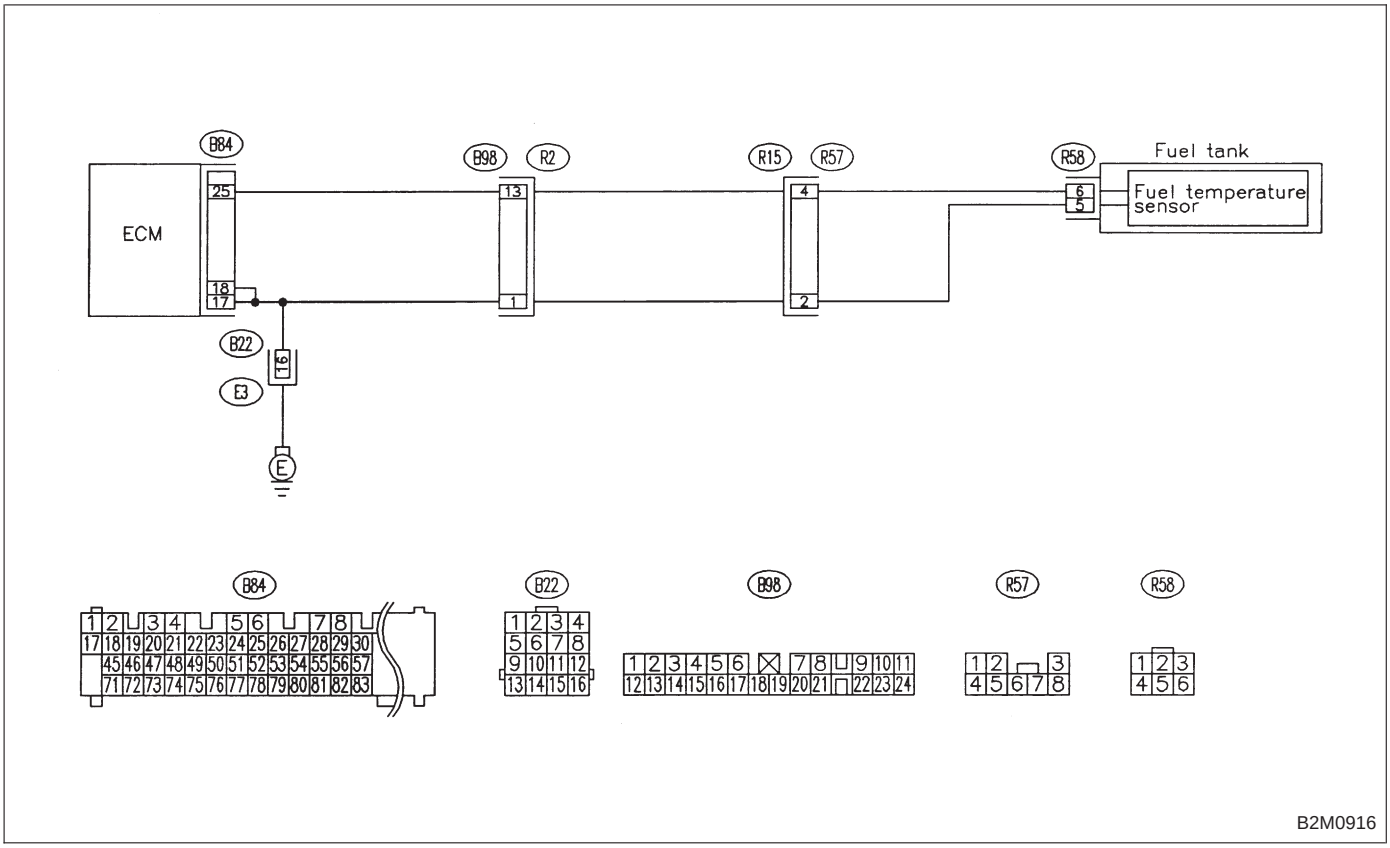
- Two consecutive trips with fault

10R1	**Check DTC P0180 on display.**

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

WIRING DIAGRAM:

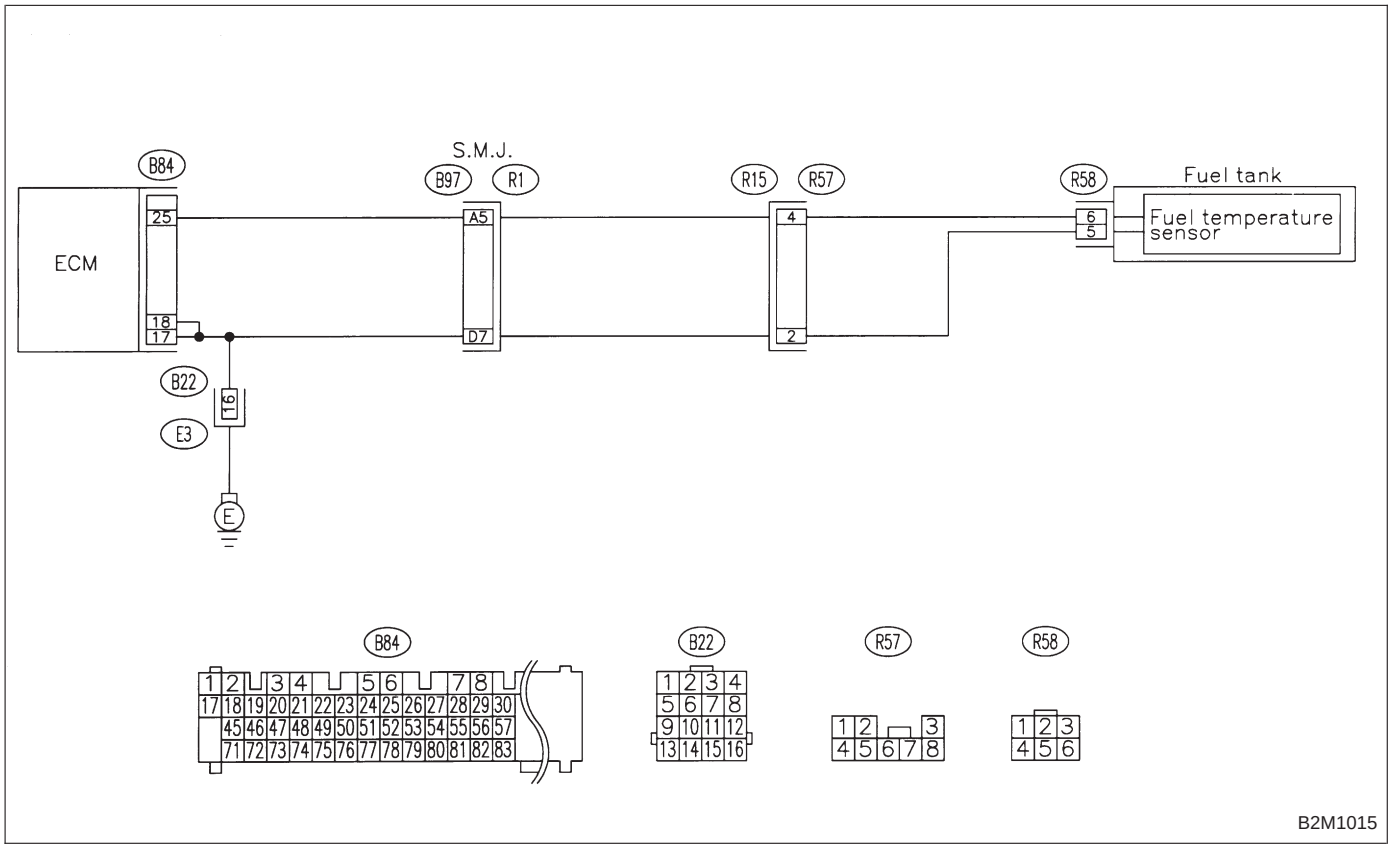
- LHD Model



B2M0916

WIRING DIAGRAM:

- RHD Model



10R1	CHECK DTC P0180 ON DISPLAY.

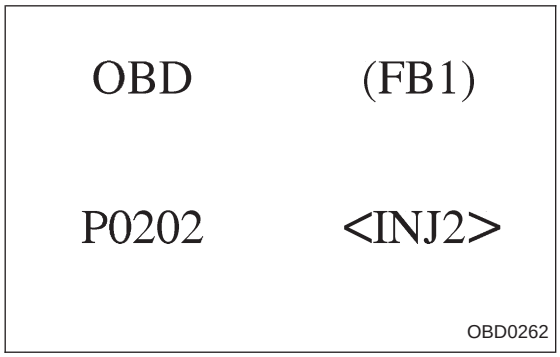
CHECK : ***Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0180?***

YES : Inspect DTC P0180 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

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

NO : Replace fuel temperature sensor.

S: DTC P0201
— FUEL INJECTOR CIRCUIT MALFUNCTION - #1 (INJ1) —



T: DTC P0202
— FUEL INJECTOR CIRCUIT MALFUNCTION - #2 (INJ2) —

U: DTC P0203
— FUEL INJECTOR CIRCUIT MALFUNCTION - #3 (INJ3) —

V: DTC P0204
— FUEL INJECTOR CIRCUIT MALFUNCTION - #4 (INJ4) —

DTC DETECTING CONDITION:

- Immediately at fault recognition

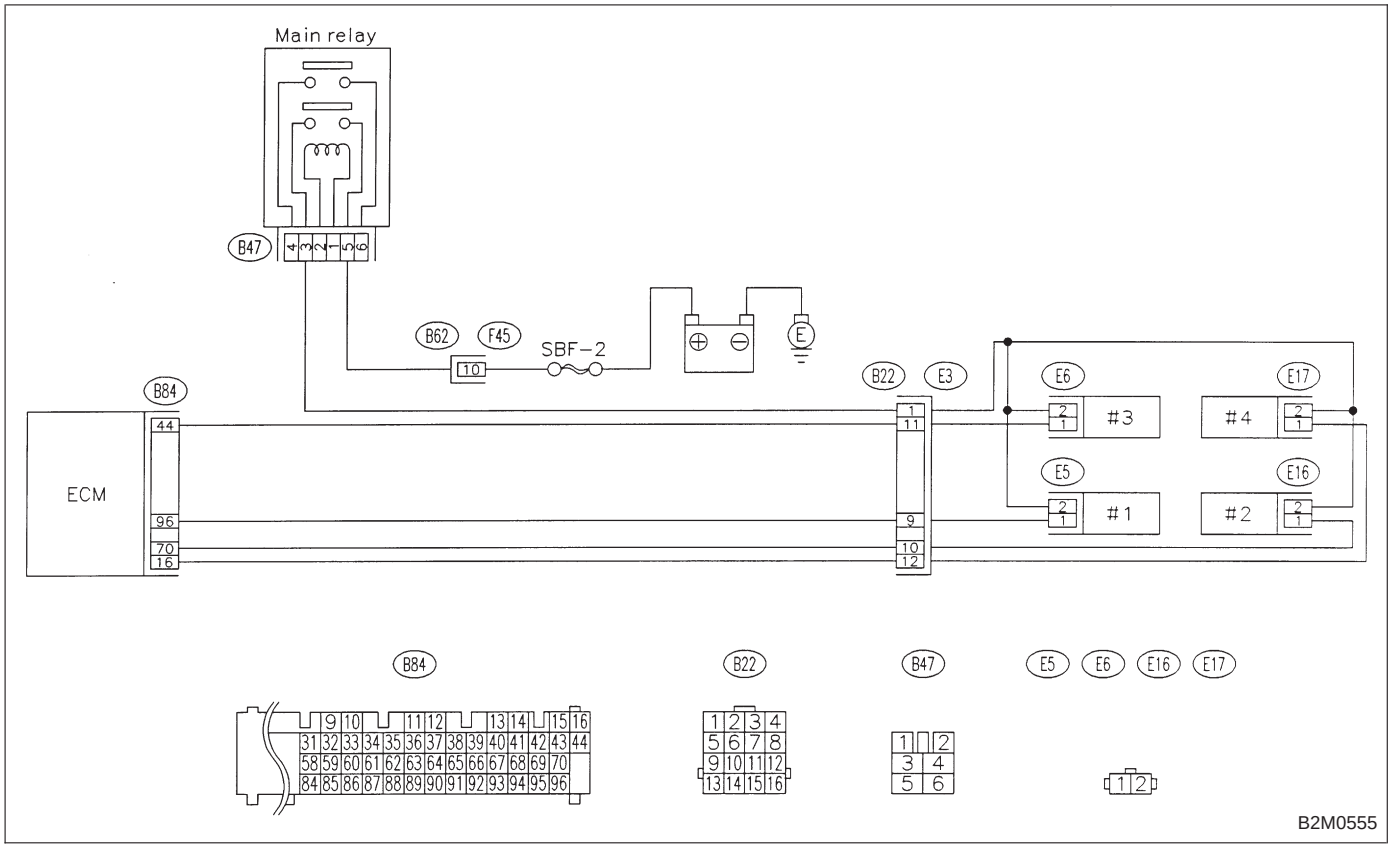
TROUBLE SYMPTOM:

- Failure of engine to start
- Engine stalls.
- Erroneous idling
- Rough driving

10V1	Check output signal from ECM.
10V2	Check harness between fuel injector and ECM connector.
10V3	Check harness between fuel injector and ECM connector.
10V4	Check fuel injector.
10V5	Check power supply line.

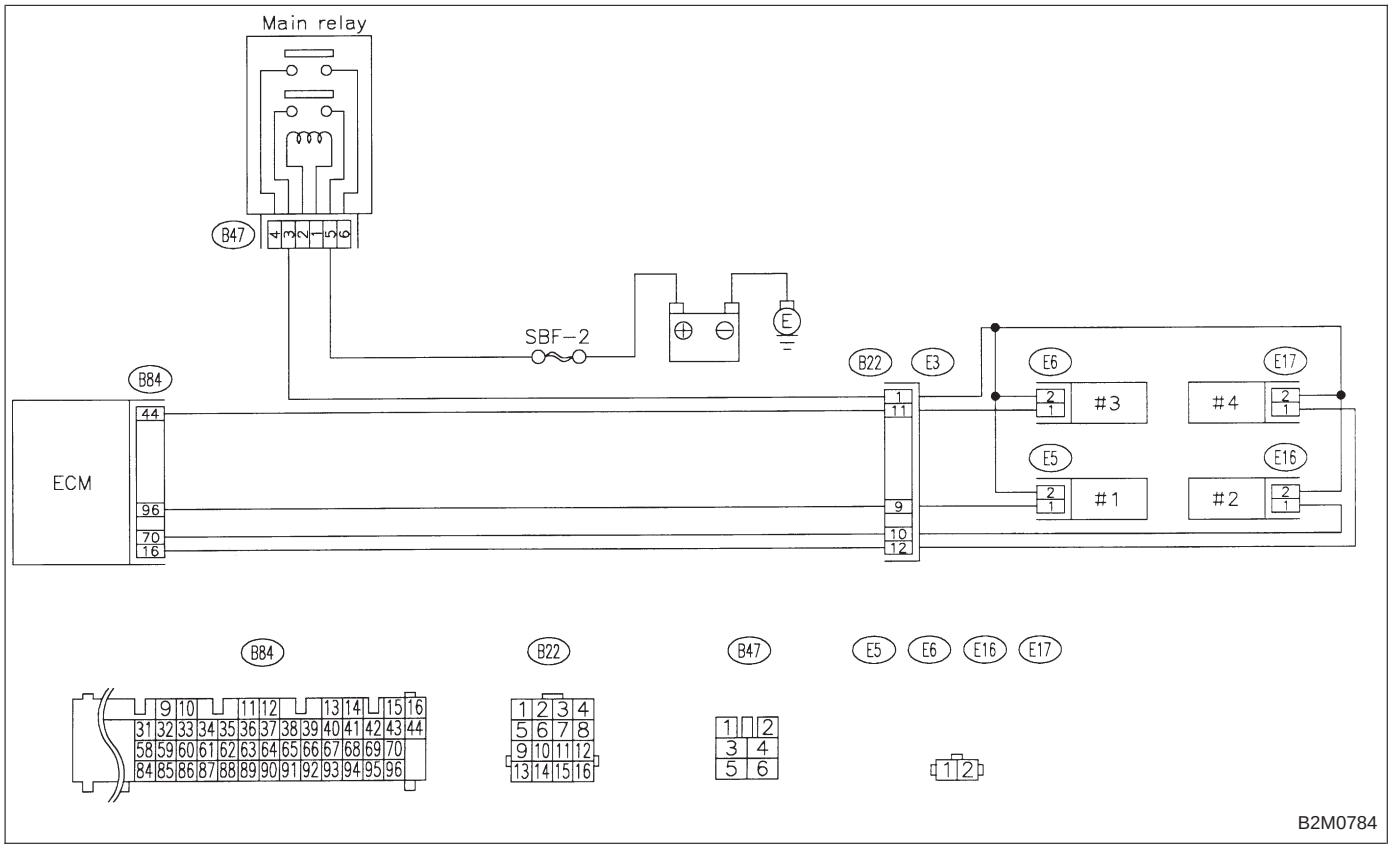
CAUTION:
- **Check or repair only faulty cylinders.**
- **After repair or replacement of faulty parts, conduct CLEAR MEMORY and INSPECTION MODES. <Ref. to 2-7 [T3D0] and [T3E0].>**

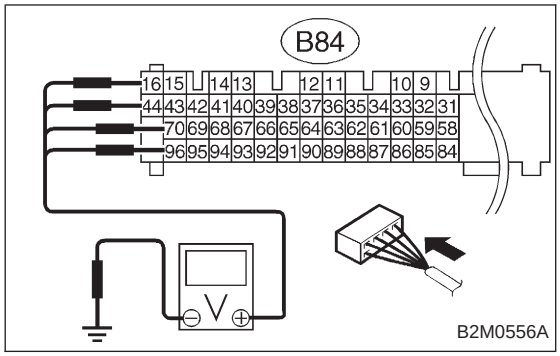
WIRING DIAGRAM:
- LHD Model



WIRING DIAGRAM:

- RHD Model



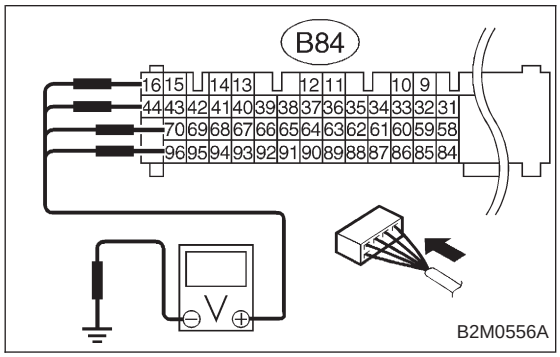


10V1	CHECK OUTPUT SIGNAL FROM ECM.

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

CHECK ***: Connector & terminal***
#1 (B84) No. 96 (+) — Chassis ground (−):
#2 (B84) No. 70 (+) — Chassis ground (−):
#3 (B84) No. 44 (+) — Chassis ground (−):
#4 (B84) No. 16 (+) — Chassis ground (−):
Is the voltage more than 10 V?

YES : Go to step **10V2**.
NO : Go to step **10V3**.

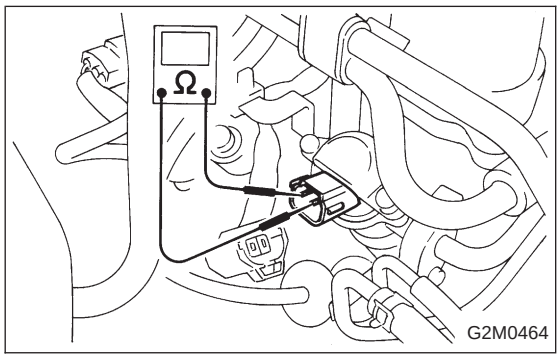


10V2	CHECK HARNESS BETWEEN FUEL INJECTOR AND ECM CONNECTOR.

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.

CHECK ***: Connector & terminal***
#1 (B84) No. 96 (+) — Chassis ground (−):
#2 (B84) No. 70 (+) — Chassis ground (−):
#3 (B84) No. 44 (+) — Chassis ground (−):
#4 (B84) No. 16 (+) — Chassis ground (−):
Is the voltage more than 10 V?

YES : Repair short circuit in harness between ECM and fuel injector. After repair, replace ECM.
NO : Go to next step 5).

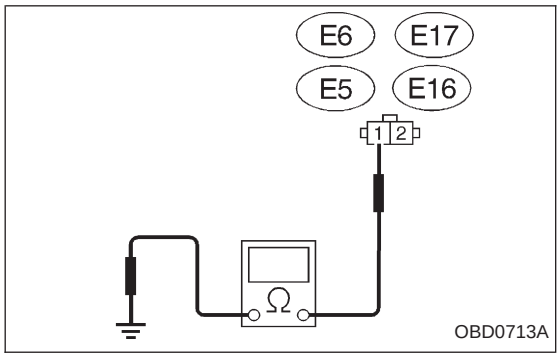


5) Turn ignition switch to OFF.
6) Measure resistance between fuel injector terminals on faulty cylinder.

CHECK ***: Terminals***
No. 1 — No. 2 :
Is the resistance less than 1 Ω?

YES : Replace faulty fuel injector and ECM.
NO : Go to next CHECK .

CHECK ***: Is there poor contact in ECM connector?***
YES : Repair poor contact in ECM connector.
NO : Replace ECM.

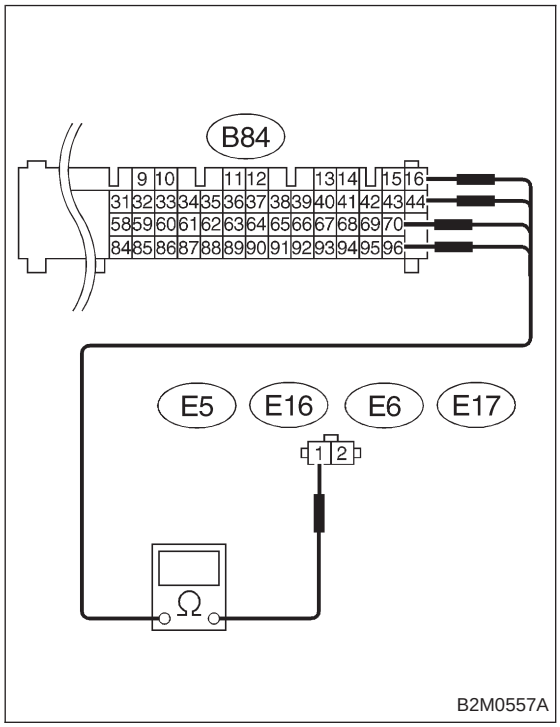


10V3	CHECK HARNESS BETWEEN FUEL INJECTOR AND ECM CONNECTOR.

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

CHECK ***: 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:
Is the resistance less than 10 Ω?

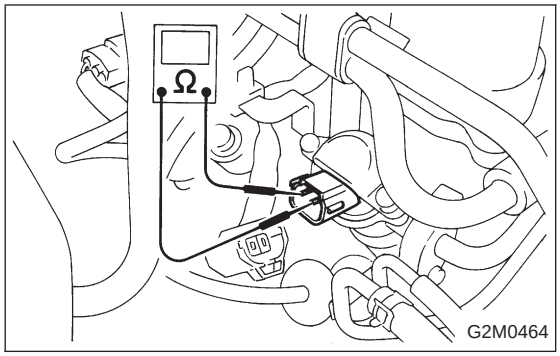
YES : Repair short circuit in harness between fuel injector and ECM connector.
NO : Go to next step 4).



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

CHECK ***: Connector & terminal***
#1 (B84) No. 96 — (E5) No. 1:
#2 (B84) No. 70 — (E16) No. 1:
#3 (B84) No. 44 — (E6) No. 1:
#4 (B84) No. 16 — (E17) No. 1:
Is the resistance less than 1 Ω?

YES : Go to step **10V4**.
NO : Repair open circuit in harness between ECM and fuel injector connector.



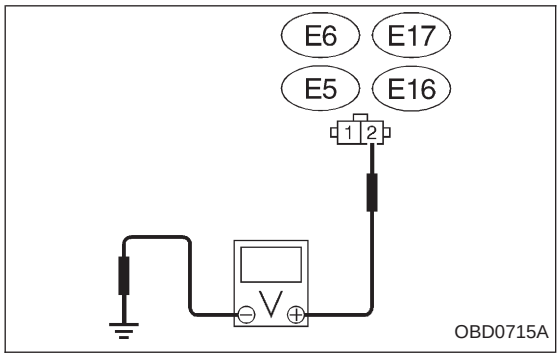
10V4	CHECK FUEL INJECTOR.

Measure resistance between fuel injector terminals on faulty cylinder.

CHECK : ***Terminals***
No. 1 — No. 2:
Is the resistance between 5 and 20 Ω?

NO : Replace faulty fuel injector.

YES : Go to step **10V5**.



10V5	CHECK POWER SUPPLY LINE.

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

CHECK : ***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 (−):
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 main relay connector
- Poor contact in fuel injector connector on faulty cylinders

W: DTC P0301
— CYLINDER 1 MISFIRE DETECTED (MIS – 1) —

X: DTC P0302
— CYLINDER 2 MISFIRE DETECTED (MIS – 2) —

Y: DTC P0303
— CYLINDER 3 MISFIRE DETECTED (MIS – 3) —

Z: DTC P0304
— CYLINDER 4 MISFIRE DETECTED (MIS – 4) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault
- Immediately at fault recognition (A misfire which could damage catalyst occurs.)

TROUBLE SYMPTOM:

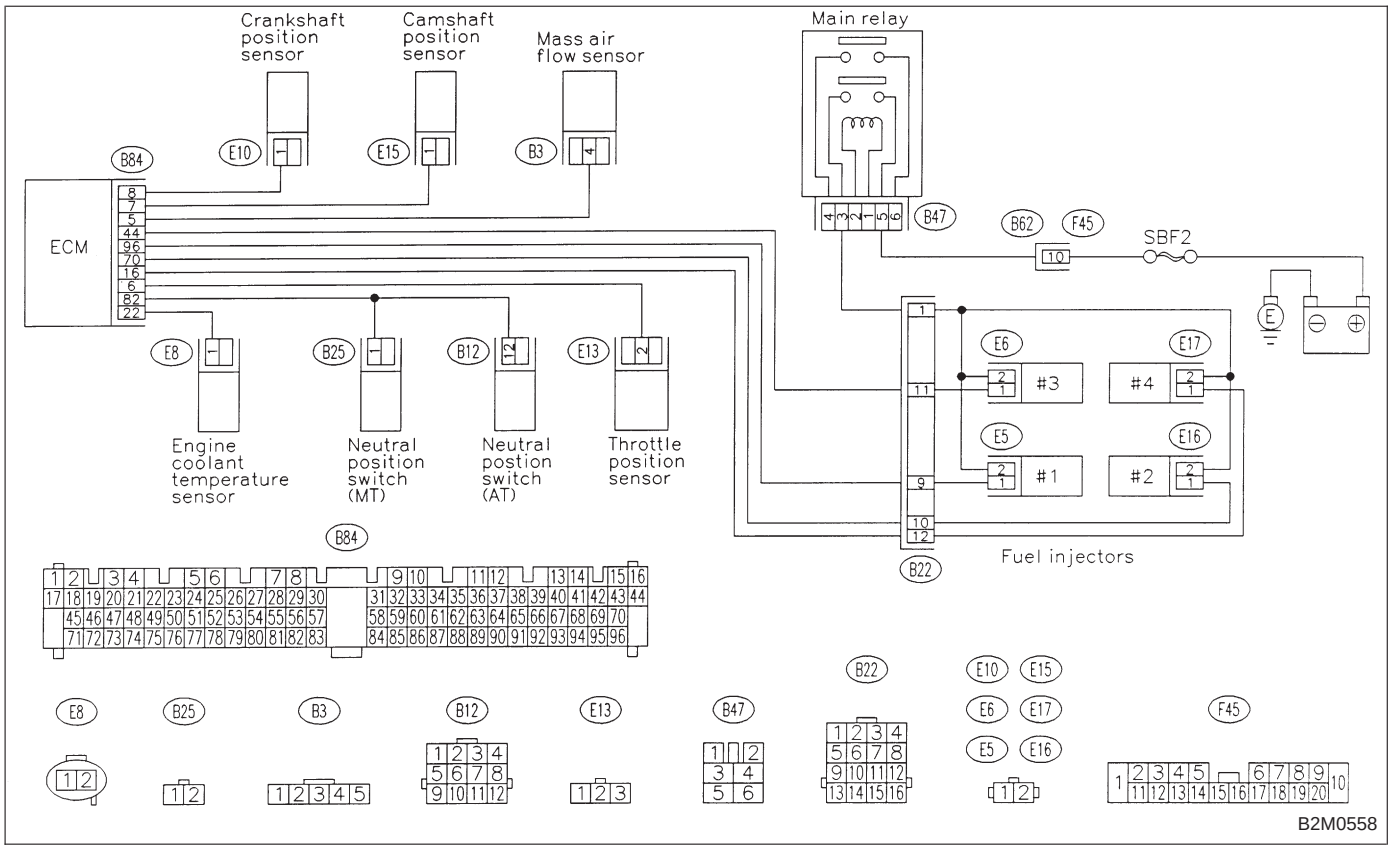
- Engine stalls.
- Erroneous idling
- Rough driving

10Z1	Check DTC P0100, P0101, P0115, P0125, P0201, P0202, P0203 and P0204 on display.
10Z2	Connect Subaru Select Monitor and read data.
10Z3	Check air intake system.
10Z4	Check misfire symptom.

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

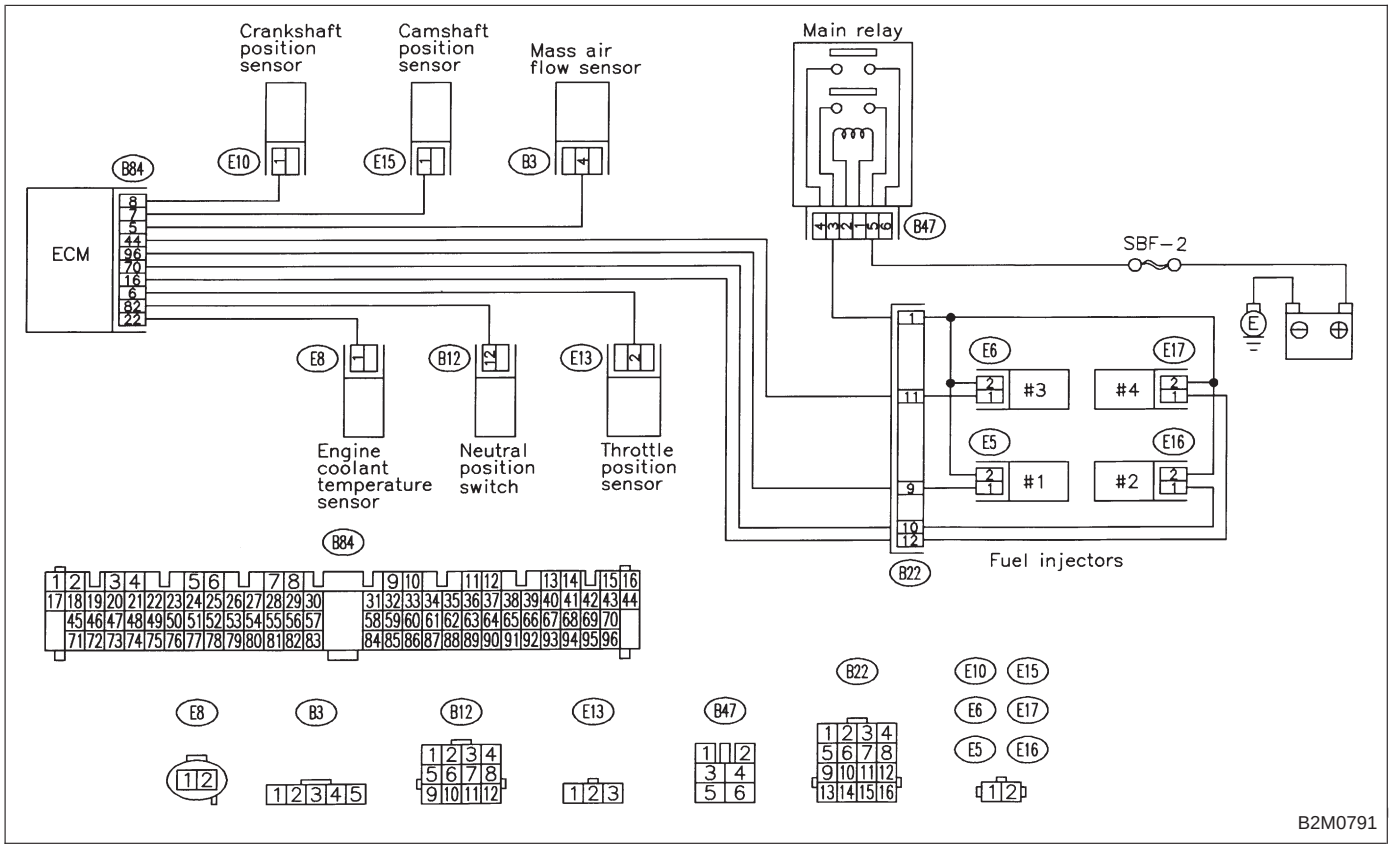
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



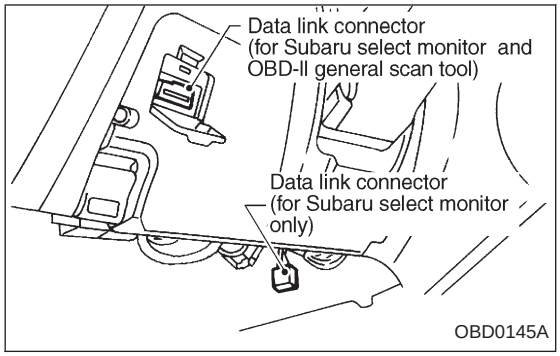
10Z1	**CHECK DTC P0100, P0101, P0115, P0125, P0201, P0202, P0203, AND P0204 ON DISPLAY.**

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0100, P0101, P0115, P0125, P0201, P0202, P0203 and P0204?***

YES : Inspect DTC P0100, P0101, P0115, P0125, P0201, P0202, P0203 and P0204 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

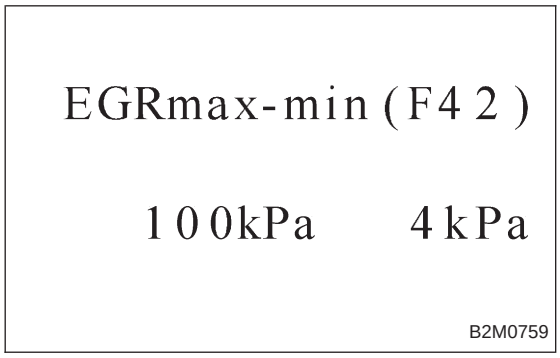
NOTE:
In this case, it is not necessary to inspect DTC P0301, P0302, P0303 and P0304.

NO : Go to step **10Z2**.

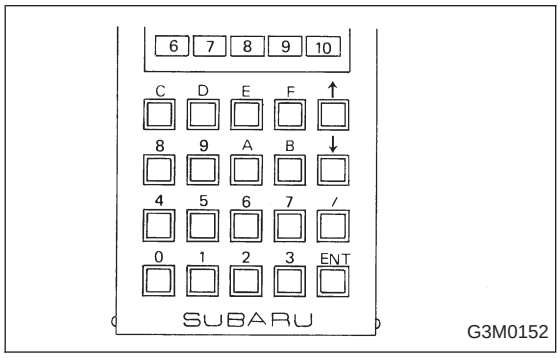


10Z2	CONNECT SUBARU SELECT MONITOR AND READ DATA.

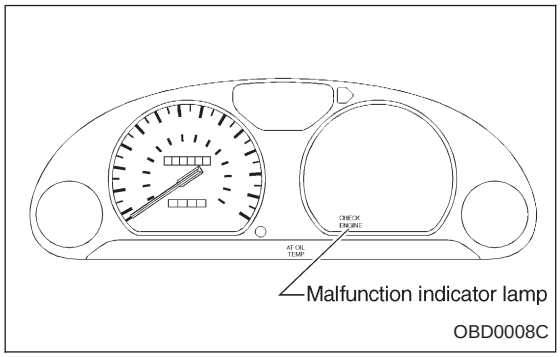
1) Turn ignition switch to OFF.
2) Connect Subaru Select Monitor to the data link connector.
3) Turn ignition switch to ON and turn Subaru Select Monitor switch to ON.



4) Read data on Subaru Select Monitor.
Designate mode use function key.
Function mode: F42
NOTE:
F42: Maximum and minimum EGR system pressure value are indicated at the same time.
5) Print out the displayed data on paper.



6) Clear memory on Subaru Select Monitor.
Designate mode use function key.
Press [F], [C], [0], [ENT] in that order.



7) Start engine, and drive the vehicle more than 10 minutes.
CHECK ***: Is the MIL coming on or blinking?***
YES : Go to step **10Z3**.
NO : Go to next CHECK .

CHECK ***: Has the vehicle been run empty of fuel?***

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

NO : Go to next CHECK .

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

NOTE:
Ex. Remove spark plug cord, etc.

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

NO : Repair connector.

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)

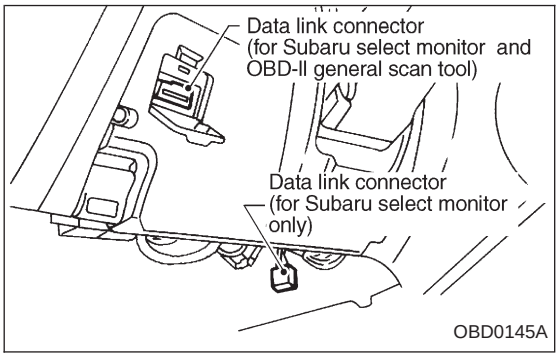
10Z3	CHECK AIR INTAKE SYSTEM.

CHECK ***: Is there a fault in 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?

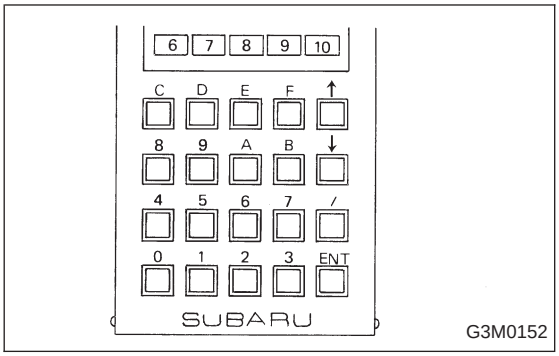
YES : Repair air intake system.

NO : Go to step **10Z4**.



10Z4	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

Designate mode use function key.

Function mode: FB1

- 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.

DTC	Next action
Only one cylinder	Go to step ①.
P0301 and P0302	Go to step ②.
P0303 and P0304	Go to step ③.
P0301 and P0303	Go to step ④.
P0302 and P0304	Go to step ⑤.
Others	Go to step ⑥.

① ONLY ONE CYLINDER

CHECK ***: Is there a fault in that cylinder?***

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

YES : Go to next CHECK .

NO : Go to DTC P0170, 2-7 [T10P3], [T10P4] and [T10P5].

② GROUP OF #1 AND #2 CYLINDERS

CHECK ***: Are there faults in #1 and #2 cylinders?***

NOTE:
Check the following items.
- Spark plugs
- Fuel injectors
- Ignition coil

YES : Go to next CHECK .

NO : Go to DTC P0170, 2-7 [T10P3], [T10P4] and [T10P5].

NOTE:
If no abnormal is discovered, check for “8. F: IGNITION SYSTEM” of #1 and #2 cylinders side.

③ **GROUP OF #3 AND #4 CYLINDERS**

CHECK ***: Are there faults in #3 and #4 cylinders?***

NOTE:
Check the following items.
- Spark plugs
- Fuel injectors
- Ignition coil

YES : Go to next CHECK .

NO : Go to DTC P0170, 2-7 [T10P3], [T10P4] and [T10P5].

NOTE:
If no abnormal is discovered, check for "8. F: IGNITION SYSTEM" of #3 and #4 cylinders side.

④ **GROUP OF #1 AND #3 CYLINDERS**

CHECK ***: Are there faults in #1 and #3 cylinders?***

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

YES : Go to next CHECK .

NO : Go to DTC P0170, 2-7 [T10P3], [T10P4] and [T10P5].

⑤ **GROUP OF #2 AND #4 CYLINDERS**

CHECK ***: Are there faults in #2 and #4 cylinders?***

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

YES : Go to next CHECK .

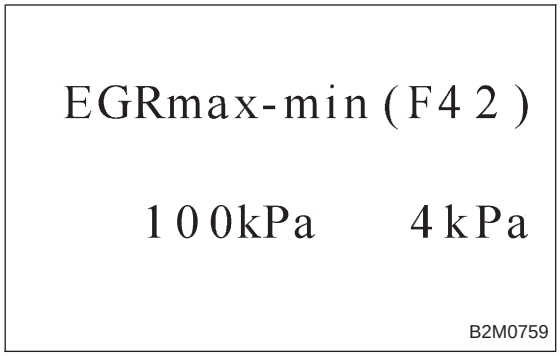
NO : Go to DTC P0170, 2-7 [T10P3], [T10P4] and [T10P5].

⑥ **THE CYLINDER AT RANDOM**

CHECK ***: Is the engine idle rough?***

YES : Go to next CHECK .

NO : Go to DTC P0170, 2-7 [T10P3], [T10P4] and [T10P5].



CHECK ***: Is the minimum EGR system pressure value (value of function mode (F42) less than 1 kPa?***

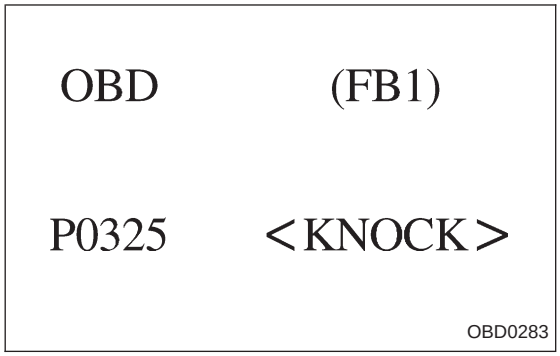
NOTE:
Use the value read in step **10Z2** for function mode F42.

YES : Clean EGR valve.

CAUTION:
Do not use solvent when cleaning EGR valve assembly, as it can damage diaphragm.

NOTE:
- Remove and blow away the exhaust deposits. Make sure the valve operates smoothly and the valve seat area is completely cleaned.
- Replace EGR valve as required.

NO : Go to DTC P0170, 2-7 [T10P3], [T10P4] and [T10P5].



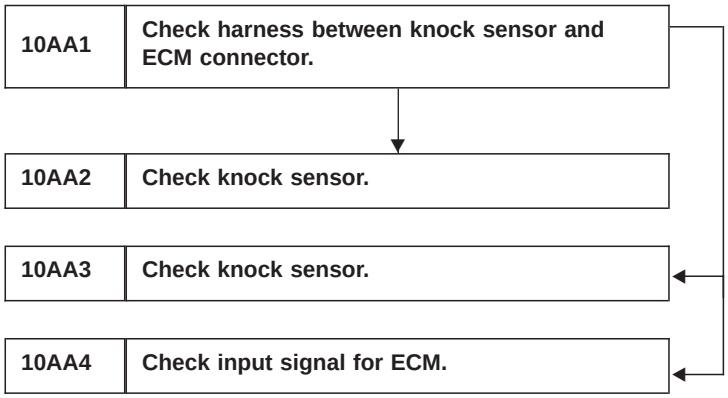
AA: DTC P0325 — KNOCK SENSOR CIRCUIT MALFUNCTION (KNOCK) —

DTC DETECTING CONDITION:

- Immediately at fault recognition

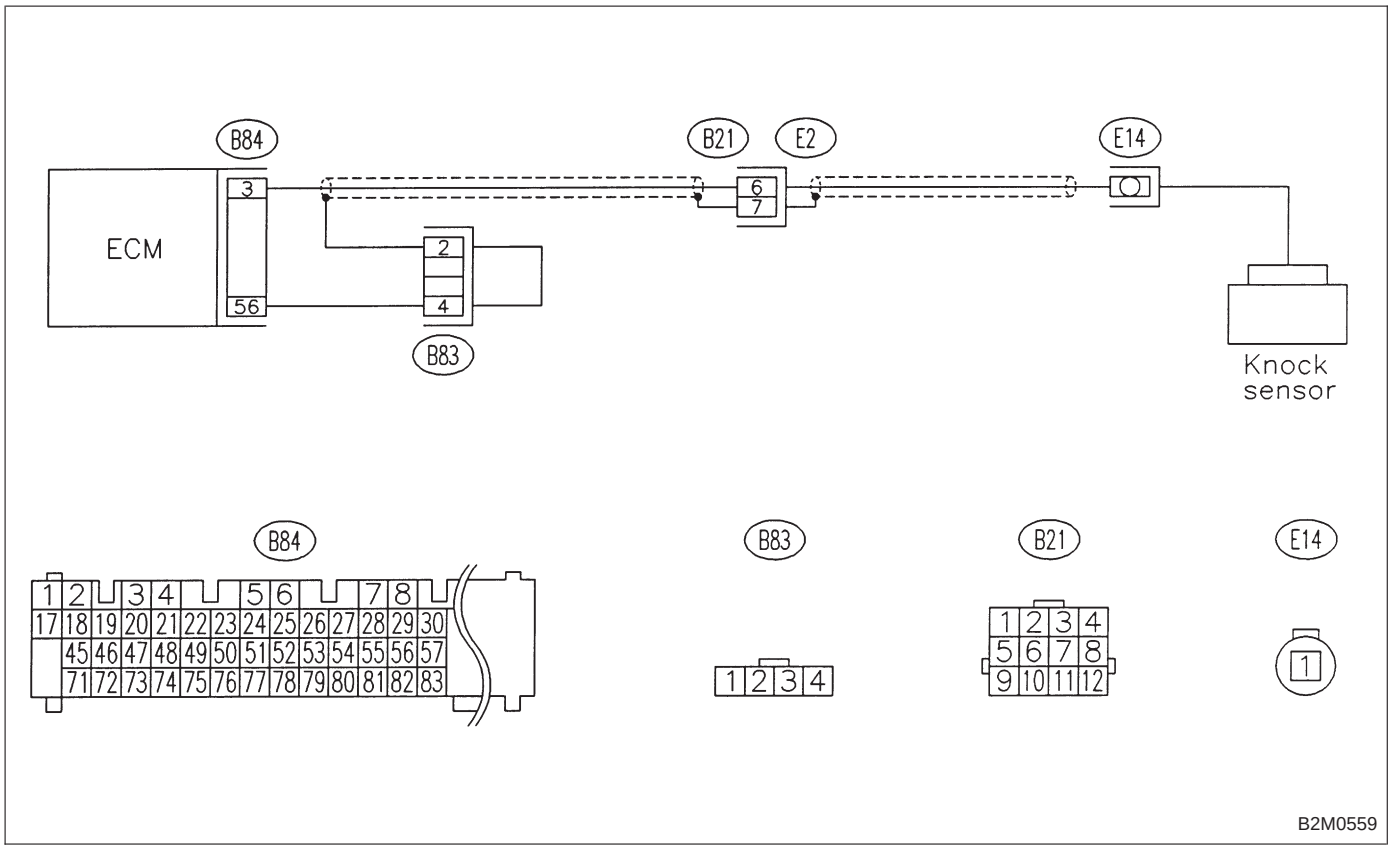
TROUBLE SYMPTOM:

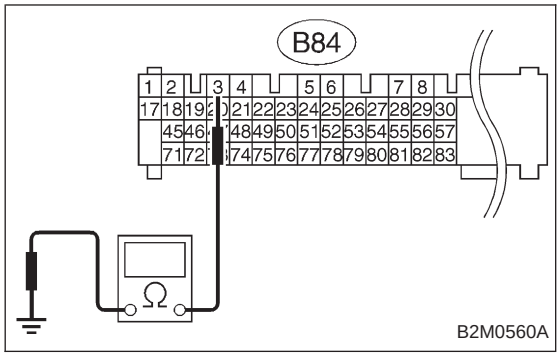
- Poor driving performance
- Knocking occurs.



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

WIRING DIAGRAM:



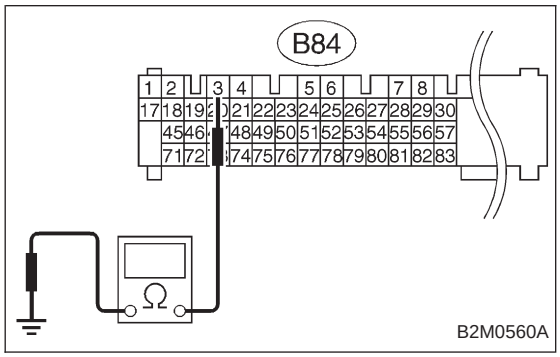


10AA1	CHECK HARNESS BETWEEN KNOCK SENSOR AND ECM CONNECTOR.

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

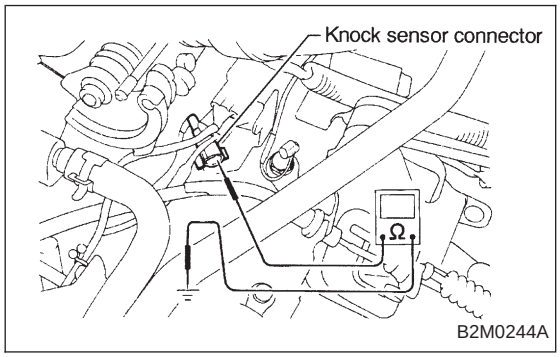
CHECK : ***Connector & terminal***
(B84) No. 3 — Chassis ground:
Is the resistance more than 700 kΩ?

YES : Go to step **10AA2**.
NO : Go to next CHECK .



CHECK : ***Connector & terminal***
(B84) No. 3 — Chassis ground:
Is the resistance less than 400 kΩ?

YES : Go to step **10AA3**.
NO : Go to step **10AA4**.



10AA2	CHECK KNOCK SENSOR.

1) Disconnect connector from knock sensor.
2) Measure resistance between knock sensor connector terminal and engine ground.

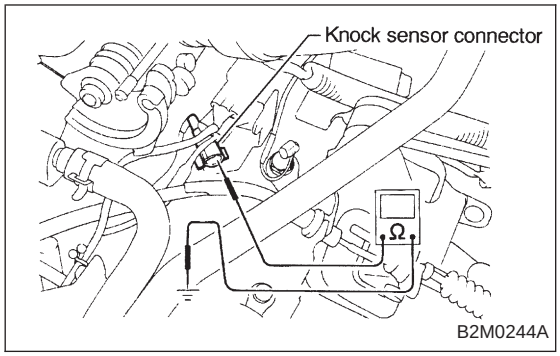
CHECK : ***Terminal***
No. 1 — Engine ground:
Is the resistance more than 700 kΩ?

YES : Go to next CHECK .
NO : Repair harness and connector.

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

CHECK : ***Is the knock sensor installation bolt tightened securely?***

YES : Replace knock sensor.
NO : Tighten knock sensor installation bolt securely.



10AA3	CHECK KNOCK SENSOR.

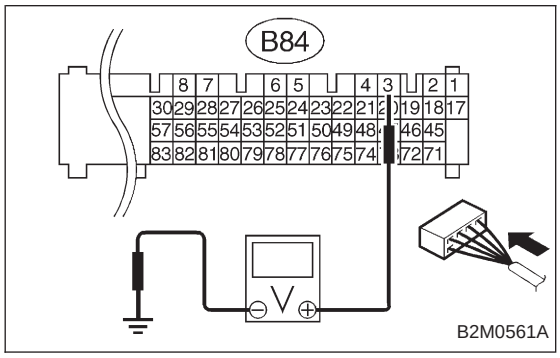
1) Disconnect connector from knock sensor.
2) Measure resistance between knock sensor connector terminal and engine ground.

CHECK ***: Terminal***
No. 1 — Engine ground:
Is the resistance less than 400 kΩ?

YES : Replace knock sensor.

NO : Repair short circuit in harness between knock sensor connector and ECM connector.

NOTE:
The harness between both connectors is shielded. Repair short circuit of harness together with shield.



10AA4	CHECK INPUT SIGNAL FOR ECM.

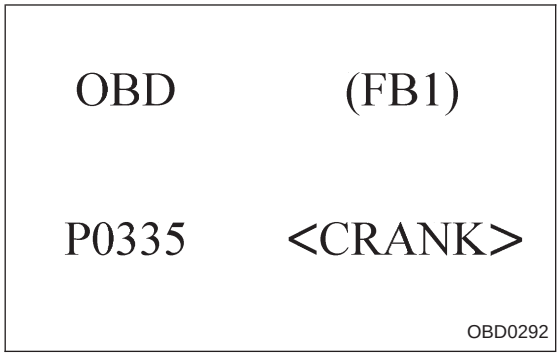
1) Connect connectors to ECM and knock sensor.
2) Turn ignition switch to ON.
3) Measure voltage between ECM and chassis ground.

CHECK ***: Connector & terminal***
(B84) No. 3 (+) — Chassis ground (−):
Is the voltage more than 2 V?

YES : Even if MIL lights up, the circuit has returned to a normal condition at this time. (However, the possibility of poor contact still remains.)

NOTE:
In this case, repair the following:
- Poor contact in knock sensor connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B21)

NO : Repair poor contact in ECM connector.



AB: DTC P0335 — CRANKSHAFT POSITION SENSOR CIRCUIT MALFUNCTION (CRANK) —

DTC DETECTING CONDITION:

- Immediately at fault recognition

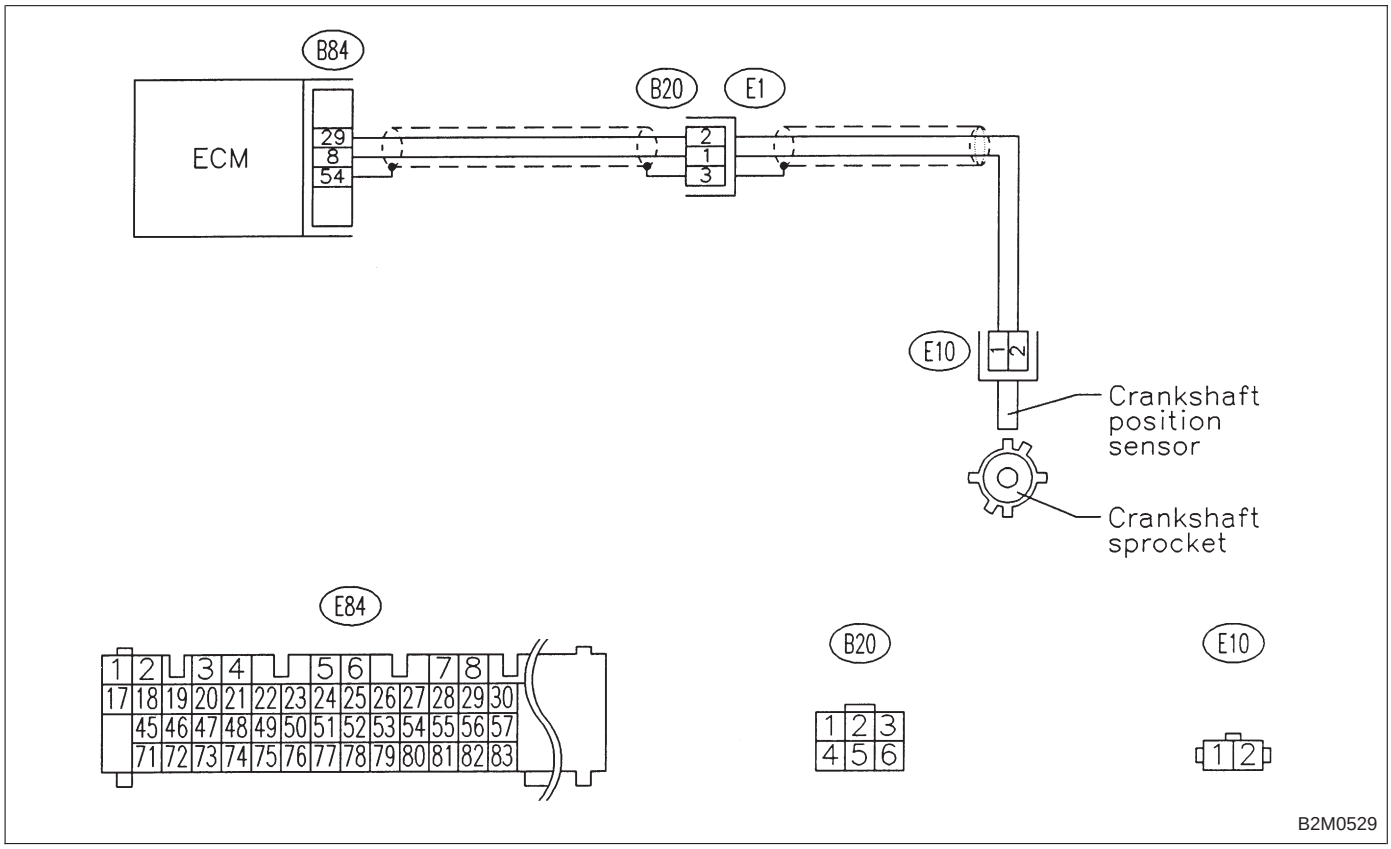
TROUBLE SYMPTOM:

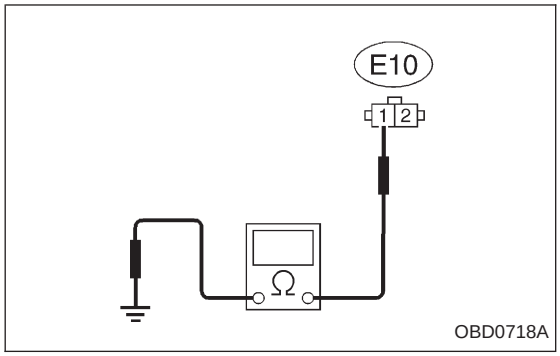
- Engine stalls.
- Failure of engine to start

10AB1	**Check harness between crankshaft position sensor and ECM connector.**
↓	
10AB2	**Check crankshaft position sensor.**

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

WIRING DIAGRAM:





10AB1	CHECK HARNESS BETWEEN CRANKSHAFT POSITION SENSOR AND ECM CONNECTOR.

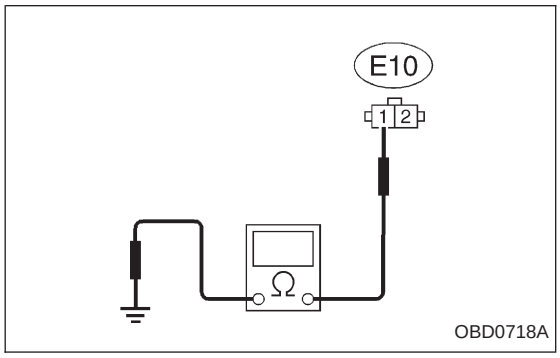
1) Turn ignition switch to OFF.
2) Disconnect connector from crankshaft position sensor.
3) Measure resistance of harness between crankshaft position sensor connector and engine ground.

CHECK : ***Connector & terminal***
(E10) No. 1 — Engine ground:
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 (B20)

NO : Go to next CHECK .

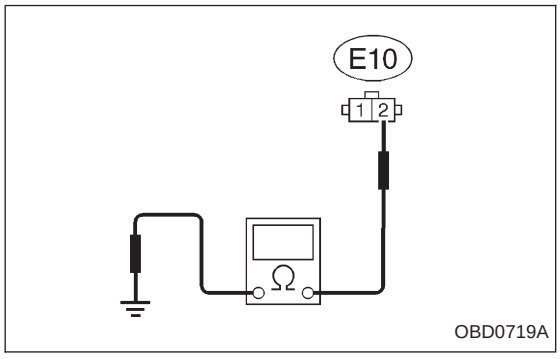


CHECK : ***Connector & terminal***
(E10) No. 1 — Engine ground:
Is the resistance less than 10 Ω?

YES : Repair short circuit in harness between crankshaft position sensor and ECM connector.

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

NO : Go to next CHECK .



CHECK : ***Connector & terminal***
(E10) No. 2 — Engine ground:
Is the resistance less than 5 Ω?

YES : Go to step **10AB2**.

NO : Repair harness and connector.

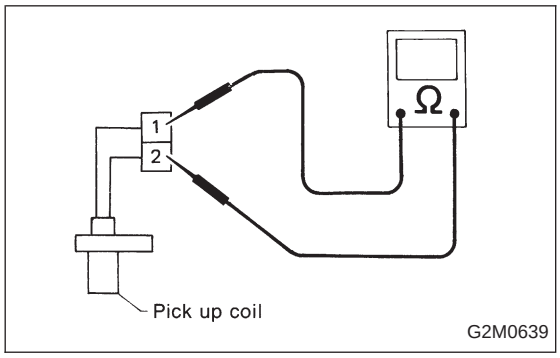
NOTE:
In this case, repair the following:
- Open circuit in harness between crankshaft position sensor and ECM connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B20)

10AB2	CHECK CRANKSHAFT POSITION SENSOR.

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

YES : Go to next step 1).

NO : Tighten crankshaft position sensor installation bolt securely.



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

CHECK ***: Terminals No. 1 — No. 2: Is the resistance between 1 and 4 kΩ?***

YES : Repair poor contact in crankshaft position sensor connector.

NO : Replace crankshaft position sensor.

AC: DTC P0340 — CAMSHAFT POSITION SENSOR CIRCUIT MALFUNCTION (CAM) —

DTC DETECTING CONDITION:

- Immediately at fault recognition

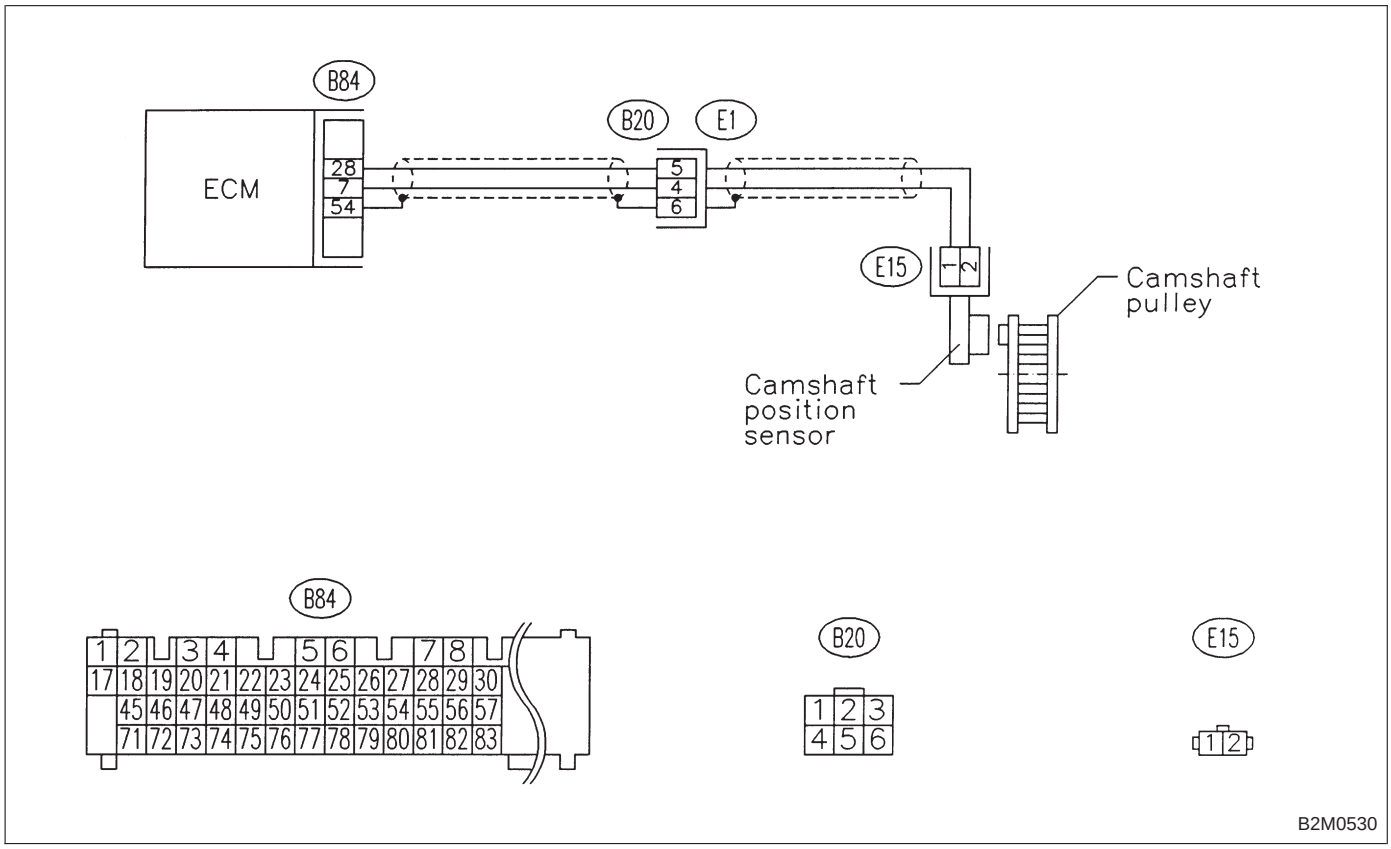
TROUBLE SYMPTOM:

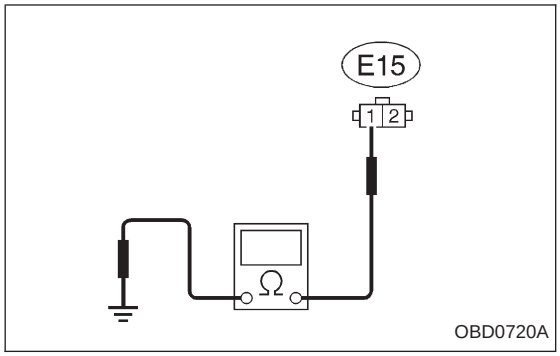
- Engine stalls.
- Failure of engine to start

10AC1	**Check harness between camshaft position sensor and ECM connector.**
↓	
10AC2	**Check camshaft position sensor.**

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

WIRING DIAGRAM:





10AC1	CHECK HARNESS BETWEEN CAMSHAFT POSITION SENSOR AND ECM CONNECTOR.

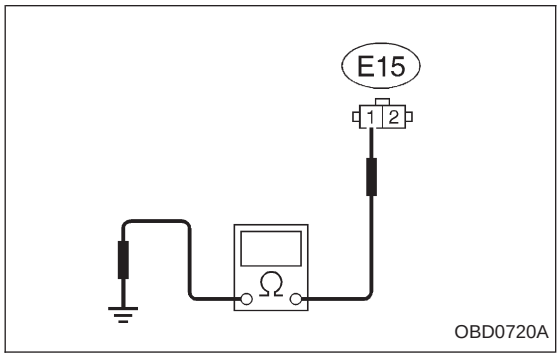
1) Turn ignition switch to OFF.
2) Disconnect connector from camshaft position sensor.
3) Measure resistance of harness between camshaft position sensor connector and engine ground.

CHECK ***: Connector & terminal (E15) No. 1 — Engine ground: Is the resistance more than 100 kΩ?***

YES : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between camshaft position sensor and ECM connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B20)

NO : Go to next CHECK .

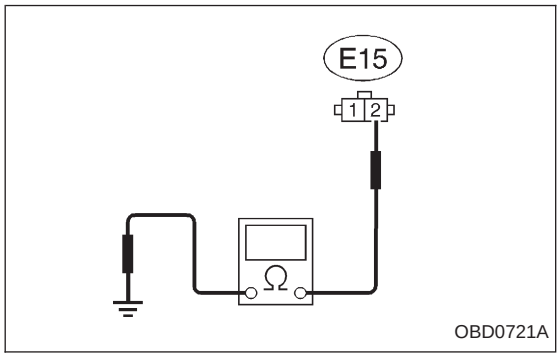


CHECK ***: Connector & terminal (E15) No. 1 — Engine ground: Is the resistance less than 10 Ω?***

YES : Repair short circuit in harness between camshaft position sensor connector and ECM connector.

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

NO : Go to next CHECK .



CHECK ***: Connector & terminal (E15) No. 2 — Engine ground: Is the resistance less than 5 Ω?***

YES : Go to step **10AC2**.

NO : Repair harness and connector.

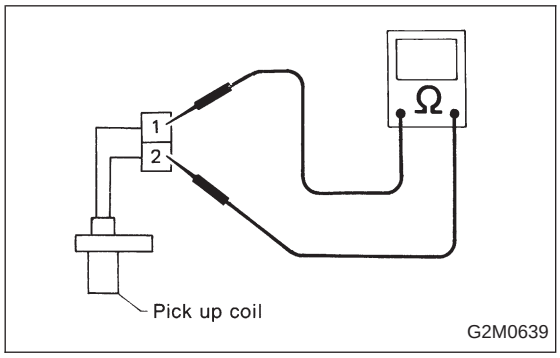
NOTE:
In this case, repair the following:
- Open circuit in harness between camshaft position sensor and ECM connector
- Poor contact in ECM connector
- Poor contact in coupling connector (B20)

10AC2	CHECK CAMSHAFT POSITION SENSOR.

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

YES : Go to next step 1).

NO : Tighten camshaft position sensor installation bolt securely.



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

CHECK : ***Terminals***
No. 1 — No. 2:
Is the resistance between 1 and 4 kΩ?

YES : Repair poor contact in camshaft position sensor connector.

NO : Replace camshaft position sensor.

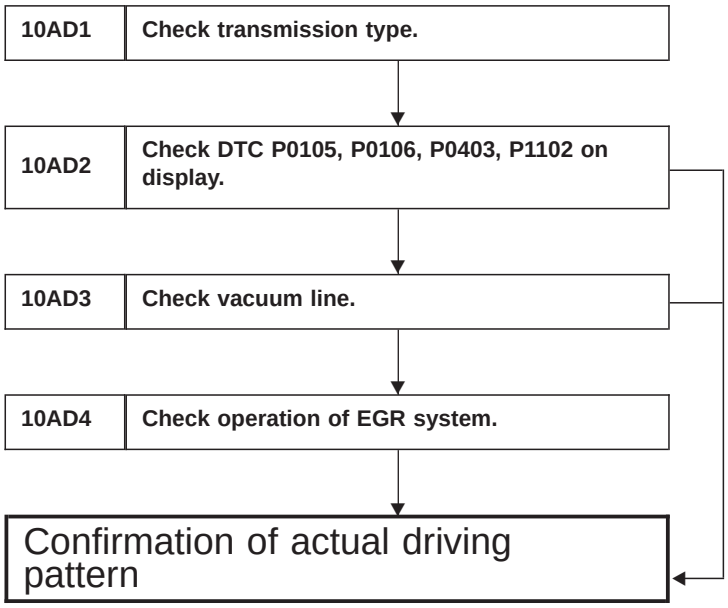
AD: DTC P0400 — EXHAUST GAS RECIRCULATION FLOW MALFUNCTION (EGR) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

- Poor driving performance on low engine speed

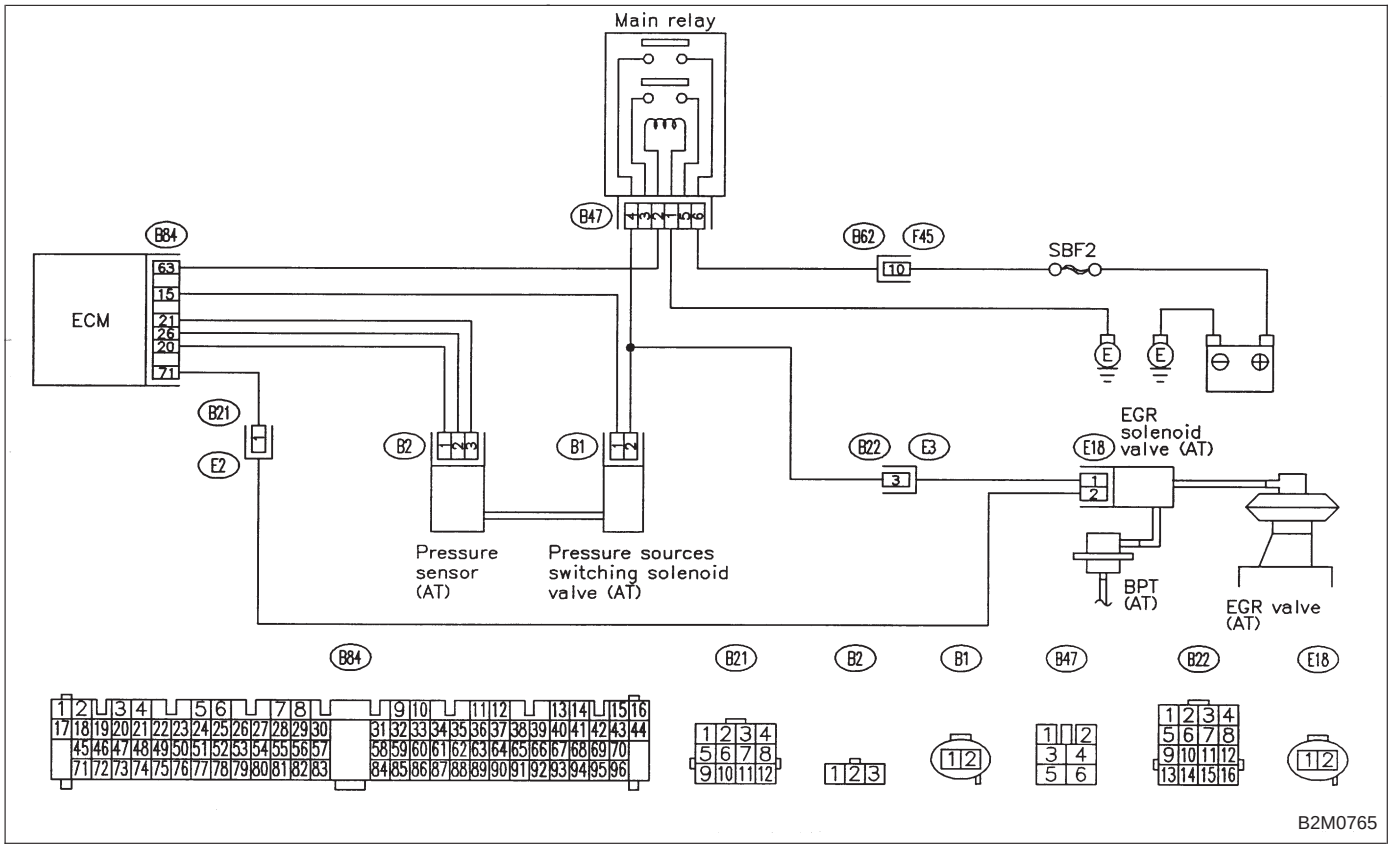


CAUTION:

Before confirmation of actual driving pattern, conduct CLEAR MEMORY and INSPECTION MODES. <Ref. to 2-7 [T3D0] and [T3E0].>

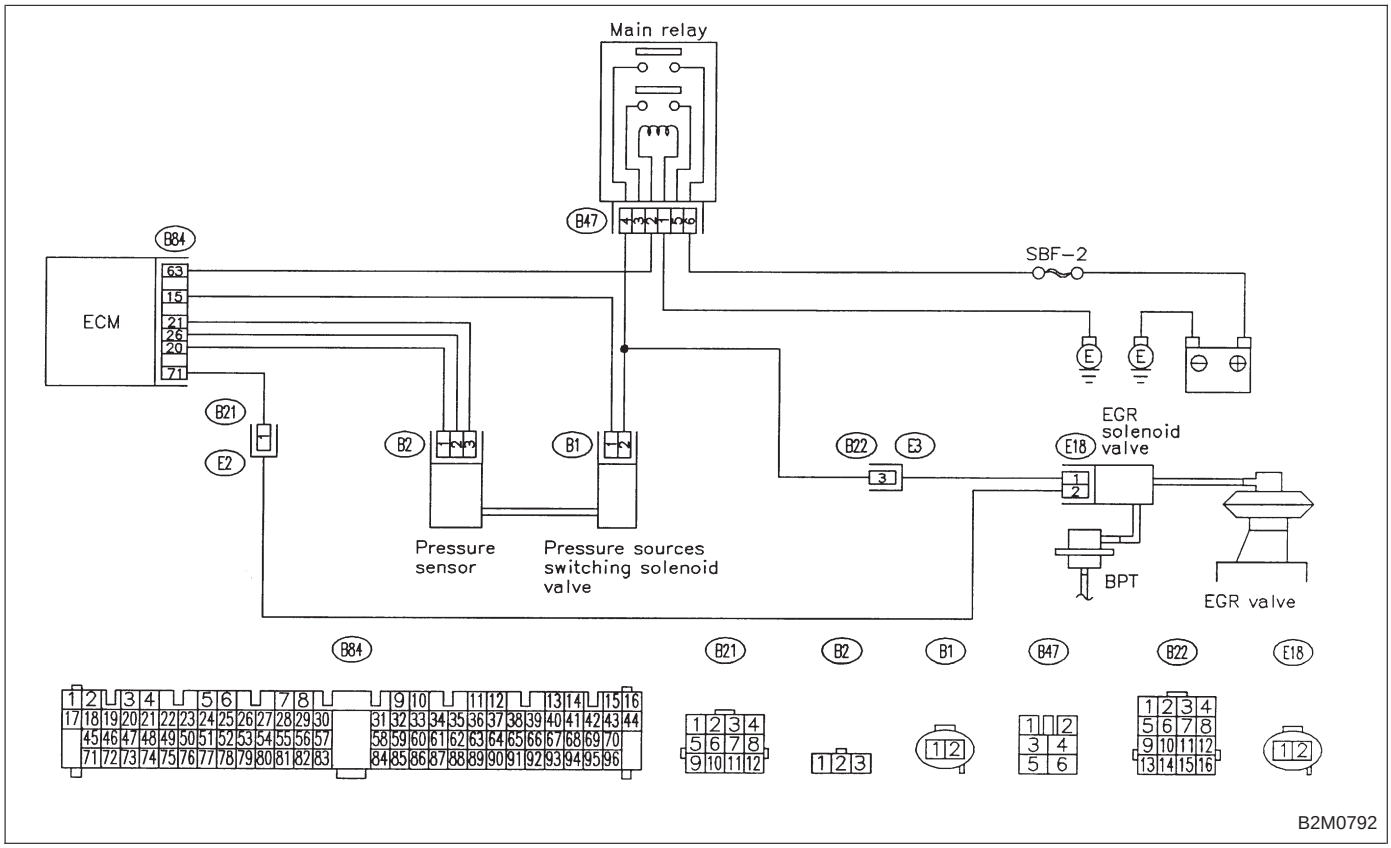
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



10AD1	CHECK TRANSMISSION TYPE.

CHECK ***: Is transmission type AT?***

YES : Go to step **10AD2**.

NO : Check AT/MT identification circuit. <Ref. to 2-7 [T10BW0].>

10AD2	CHECK DTC P0105, P0106, P0403, P1102 ON DISPLAY.

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0105, P0106, P0403 or P1102?***

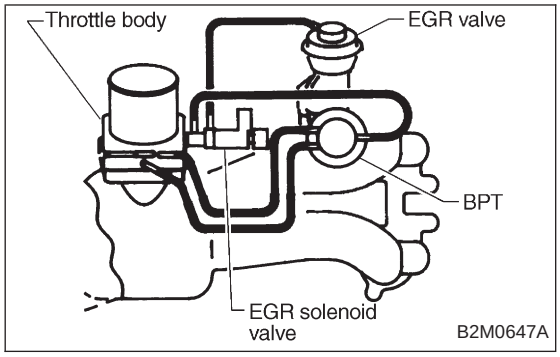
YES : ● Inspect DTC P0105, P0106, P0403 or P1102 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.
● Manually check that EGR valve diaphragm is not stuck.

WARNING:
Be careful when checking EGR valve, since it may be extremely hot.

NOTE:
In this case, it is not necessary to inspect DTC P0400.

After checking the above item, go to **CONFIRMATION OF ACTUAL DRIVING PATTERN.**

NO : Go to step **10AD3**.



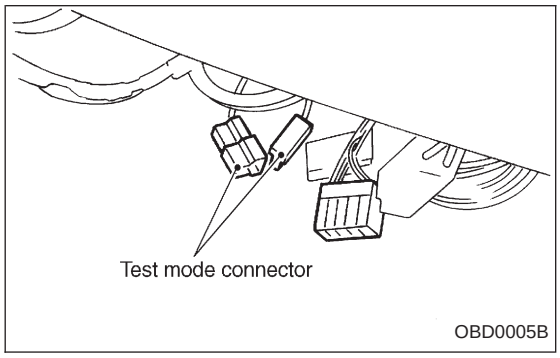
10AD3	CHECK VACUUM LINE.

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

NOTE:
Check the following items.
- Disconnection, leakage and clogging of the two vacuum hoses and pipes between throttle body and BPT
- Disconnection, leakage and clogging of the vacuum hose and pipe between EGR solenoid valve and BPT
- Disconnection, leakage and clogging of the vacuum hose between EGR solenoid valve and EGR valve
- Disconnection, leakage and clogging of BPT pressure transmitting hose

YES : Repair or replace hoses and pipes.
And after the checking and repairing, go to **CONFIRMATION OF ACTUAL DRIVING PATTERN**.

NO : Go to step **10AD4**.



10AD4	CHECK OPERATION OF EGR SYSTEM.

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

CHECK ***: Does EGR solenoid valve produce operating sound?***

NOTE:
EGR control solenoid valve operation check can also be executed using Subaru Select Monitor (Function mode: FD05). For the procedure, refer to “COMPULSORY VALVE OPERATION CHECK MODE” 2-7 [T3F0].

YES : Go to next step 4).

NO : Replace EGR solenoid valve.

4) Turn ignition switch to OFF.
5) Disconnect connector from EGR solenoid valve.
6) Connect 12 V battery’s ground ⊖ terminal to one terminal of the EGR solenoid valve. Then connect 12 V battery’s ⊕ terminal to the other terminal of it.

CAUTION:
Do not use the 12 V battery installed in the vehicle, because the electrical system may be damaged.

7) Start the engine.

CHECK ***: Does EGR valve operate at a throttle valve opening of 5 to 10 degrees with visually check?***

YES : Possibly EGR valve malfunction may be due to freezing or clogging by foreign matter. At this point in time do not replace EGR valve, since it is not faulty. And after the checking, go to **CONFIRMATION OF ACTUAL DRIVING PATTERN.**

NOTE:

If malfunction is detected again in the confirmation of actual driving pattern, EGR valve is faulty. Go to next CHECK .

NO : Go to next CHECK .

CHECK ***: Is there clogging in the gas outlets of intake manifold or cylinder head, checking by breathing into the outlets?***

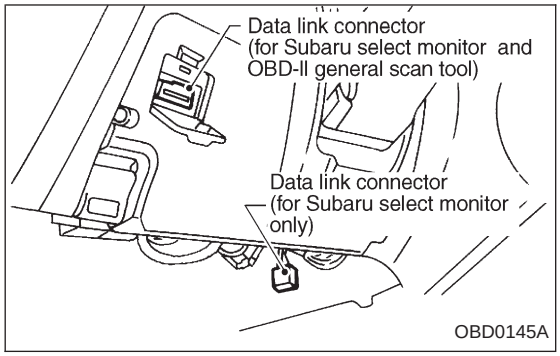
YES : Repair or replace intake manifold or cylinder head. And go to **CONFIRMATION OF ACTUAL DRIVING PATTERN.**

NO : Clean EGR valve. And go to **CONFIRMATION OF ACTUAL DRIVING PATTERN.**

CAUTION:
Do not use solvent when cleaning EGR valve assembly, as it can damage diaphragm.

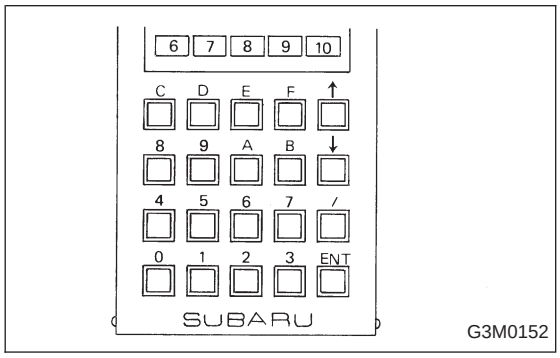
NOTE:

- Remove and blow away the exhaust deposits. Make sure the valve operates smoothly and the valve seat area is completely cleaned.
- Replace EGR valve as required.

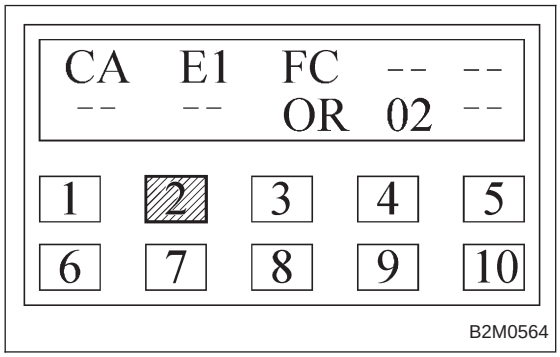


CONFIRMATION OF ACTUAL DRIVING PATTERN.

1) Conduct CLEAR MEMORY and INSPECTION MODES. <Ref. to 2-7 [T3D0] and [T3E0].>
2) Connect Subaru select monitor to its data link connector.
3) Start and warm-up the engine until the radiator fan makes one complete rotation. (All accessory switches are OFF.)
4) Turn Subaru select monitor switch to ON.

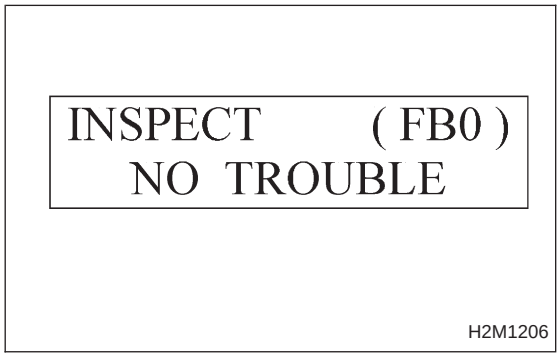


5) Designate mode using function key.
Function mode: FA4



6) Drive at 88±5 km/h (55±3 MPH) until the LED No. 2 comes on.

NOTE:
Keep the throttle valve opening at the same degree, since diagnosis will be interrupted when the opening varies.
Diagnosis starts in 190 seconds after starting engine and takes 4 seconds.
Put the gear to “D” range for the diagnosis.



7) Designate mode using function key.
Function mode: FB0
8) Confirm the “No trouble” indication on Subaru select monitor.

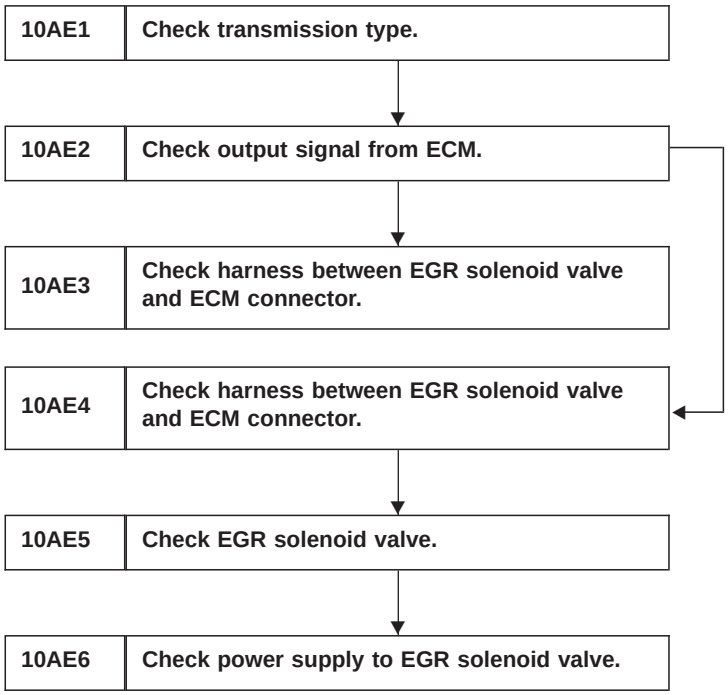
AE: DTC P0403 — EXHAUST GAS RECIRCULATION CIRCUIT MALFUNCTION (EGRSOL) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

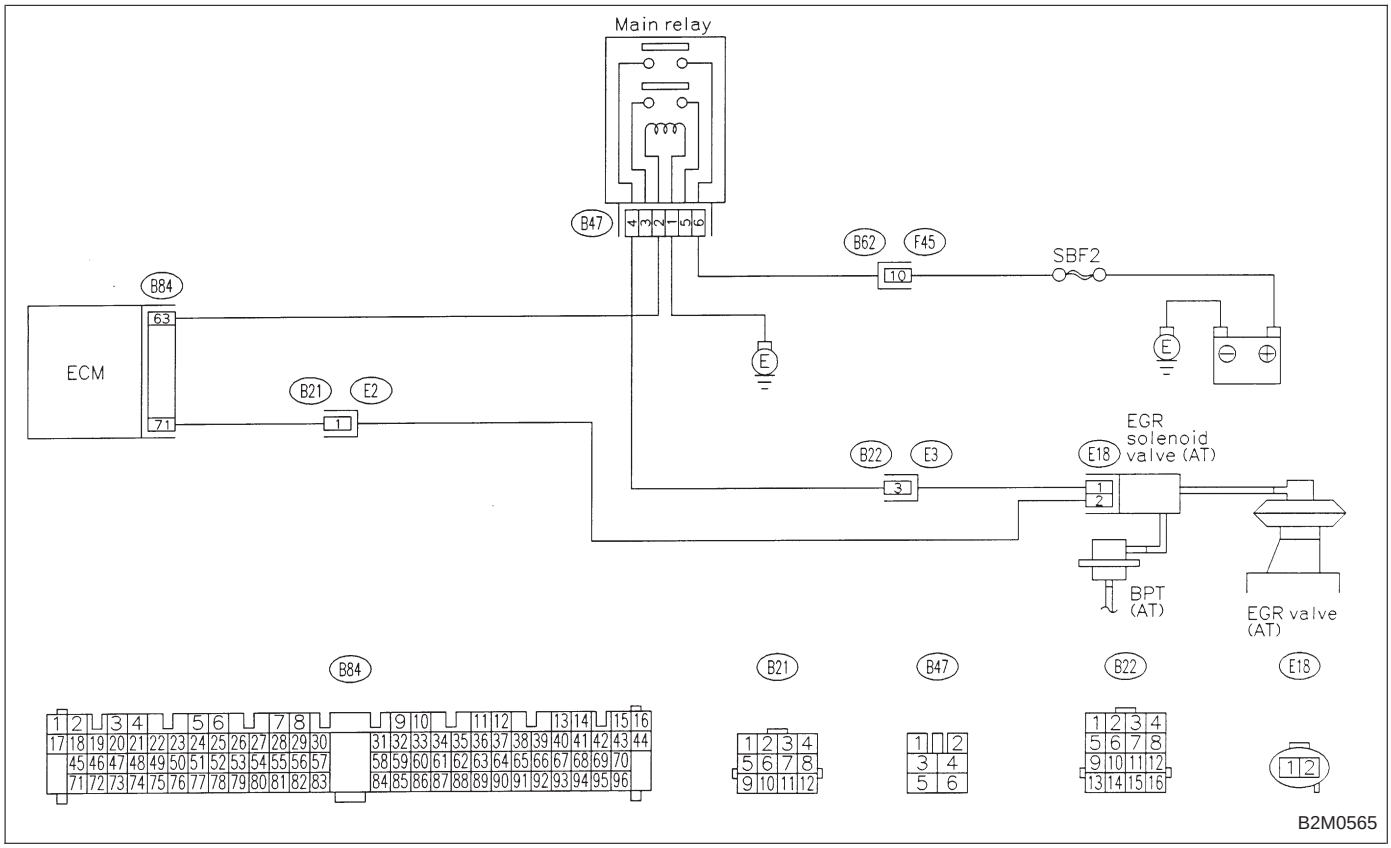
- Poor driving performance on low engine speed



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

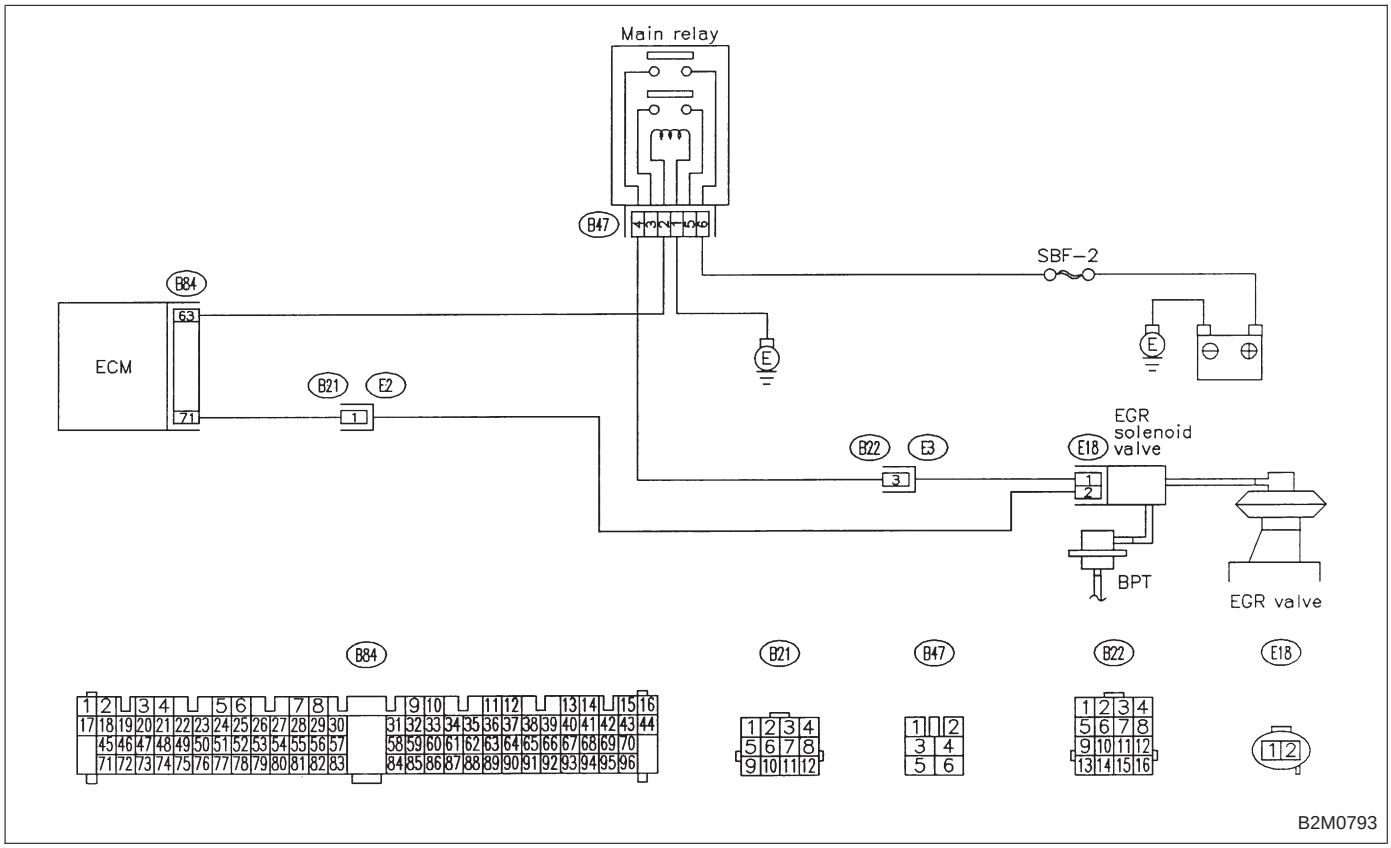
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model

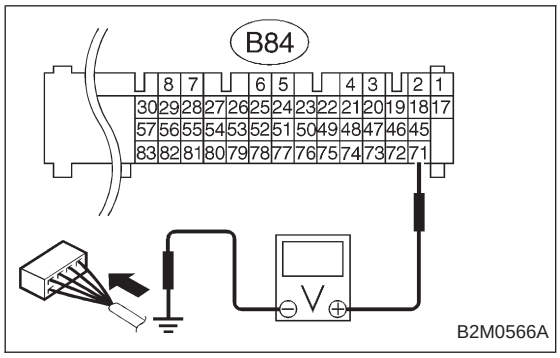


10AE1	CHECK TRANSMISSION TYPE.

CHECK ***: Is transmission type AT?***

YES : Go to step **10AE2**.

NO : Check AT/MT identification circuit. <Ref. to 2-7 [T10BW0].>



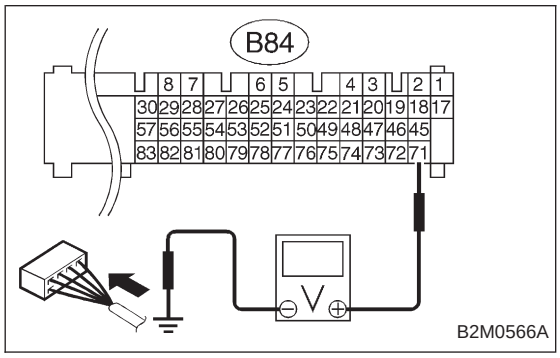
10AE2	CHECK OUTPUT SIGNAL FROM ECM.

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

CHECK ***: Connector & terminal (B84) No. 71 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Go to step **10AE3**.

NO : Go to step **10AE4**.



10AE3	CHECK HARNESS BETWEEN EGR SOLENOID VALVE AND ECM CONNECTOR.

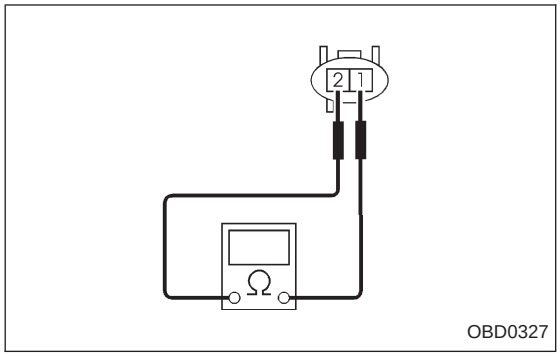
1) Turn ignition switch to OFF.
2) Disconnect connector from EGR solenoid valve.
3) Turn ignition switch to ON.
4) Measure voltage between ECM and chassis ground.

CHECK ***: Connector & terminal (B84) No. 71 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Repair short circuit in harness and replace ECM.

NOTE:
The harness between ECM and EGR solenoid valve is in short circuit.

NO : Go to next step 5).



5) Turn ignition switch to OFF.
6) Measure resistance between EGR solenoid valve terminals.

CHECK ***: Terminals***
No. 1 — No. 2:
Is the resistance less than 1 Ω?

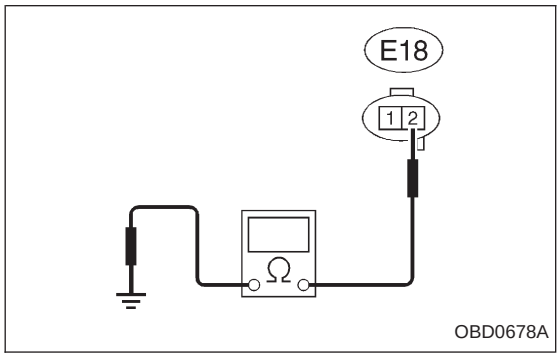
YES : Replace EGR solenoid valve and ECM.

NO : Go to next CHECK .

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

YES : Repair poor contact in ECM connector.

NO : Replace ECM.



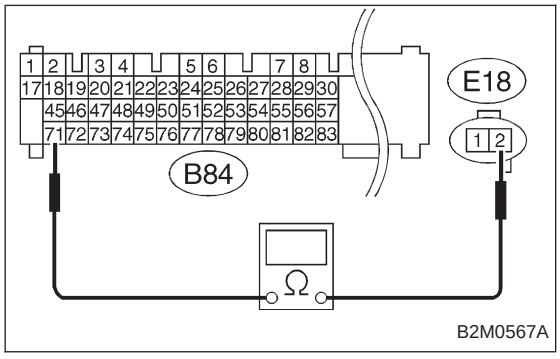
10AE4	CHECK HARNESS BETWEEN EGR SOLENOID VALVE AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connectors from EGR solenoid valve and ECM.
3) Measure resistance of harness between EGR solenoid valve connector and engine ground.

CHECK ***: Connector & terminal***
(E18) No. 2 — Engine ground:
Is the resistance less than 10 Ω?

YES : Repair short circuit in harness between ECM and EGR solenoid valve connector.

NO : Go to next step 4).

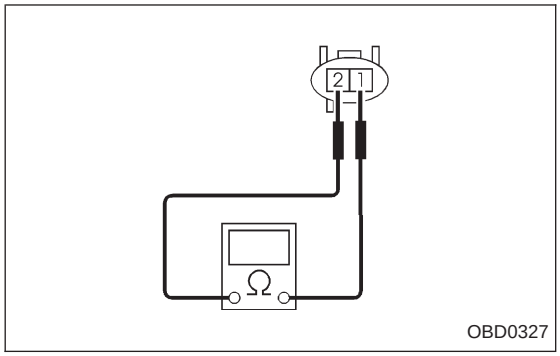


4) Measure resistance of harness between ECM and EGR solenoid valve connector.

CHECK ***: Connector & terminal***
(B84) No. 71 — (E18) No. 2:
Is the resistance less than 1 Ω?

YES : Go to step **10AE5**.

NO : Repair open circuit in harness between ECM and EGR solenoid valve connector.



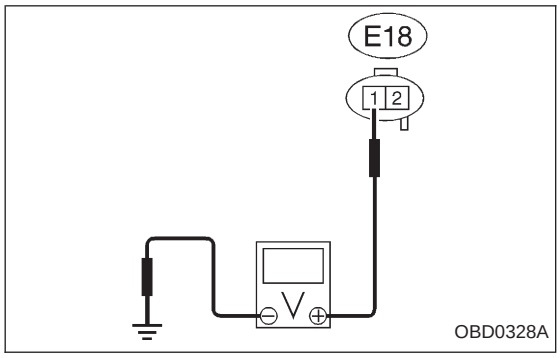
10AE5	CHECK EGR SOLENOID VALVE.

Measure resistance between EGR solenoid valve terminals.

CHECK : ***Terminals No. 1 — No. 2: Is the resistance between 10 and 100 Ω?***

YES : Go to step **10AE6**.

NO : Replace EGR solenoid valve.



10AE6	CHECK POWER SUPPLY TO EGR SOLENOID VALVE.

1) Turn ignition switch to ON.
2) Measure voltage between EGR solenoid valve and engine ground.

CHECK : ***Connector & terminal (E18) No. 1 (+) — Engine ground (−): Is the voltage more than 10 V?***

YES : Go to next CHECK .

NO : Repair open circuit in harness between main relay and EGR solenoid valve connector.

CHECK : ***Is there poor contact in EGR solenoid valve connector?***

YES : Repair poor contact in EGR solenoid valve connector.

NO : Contact with SOA service.

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

AF: DTC P0420 — CATALYST SYSTEM EFFICIENCY BELOW THRESHOLD (CAT) —

DTC DETECTING CONDITION:

- Immediately at fault recognition (2200 cc all states except California model only)
- Two consecutive trips with fault

TROUBLE SYMPTOM:

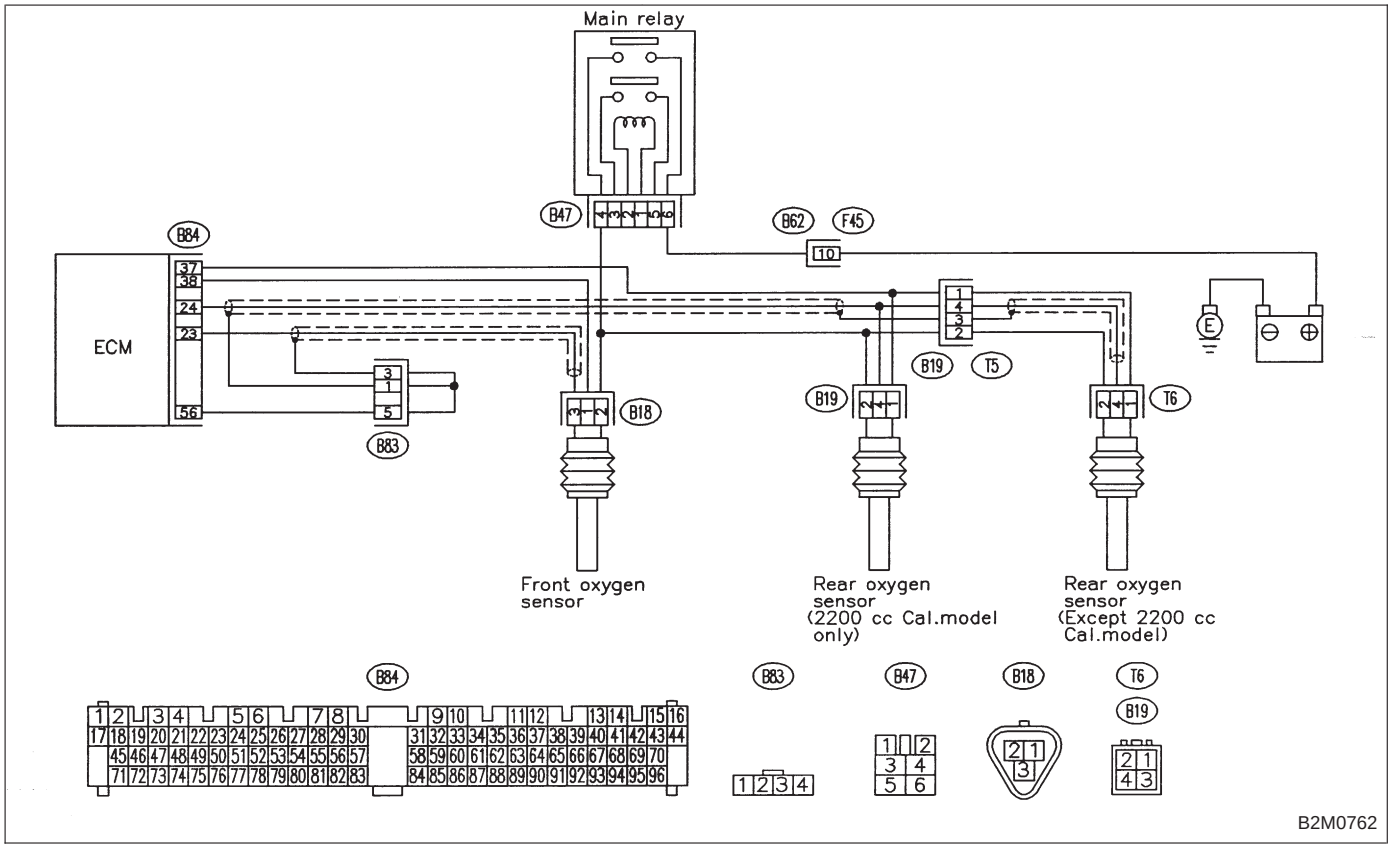
- Engine stalls.
- Idle mixture is out of specifications.

10AF1	**Check any other DTC P0130, P0133, P0135, P0136, P0139 and P0141 on display.**
↓	
10AF2	**Check exhaust system.**
↓	
10AF3	**Check rear catalytic converter.**

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

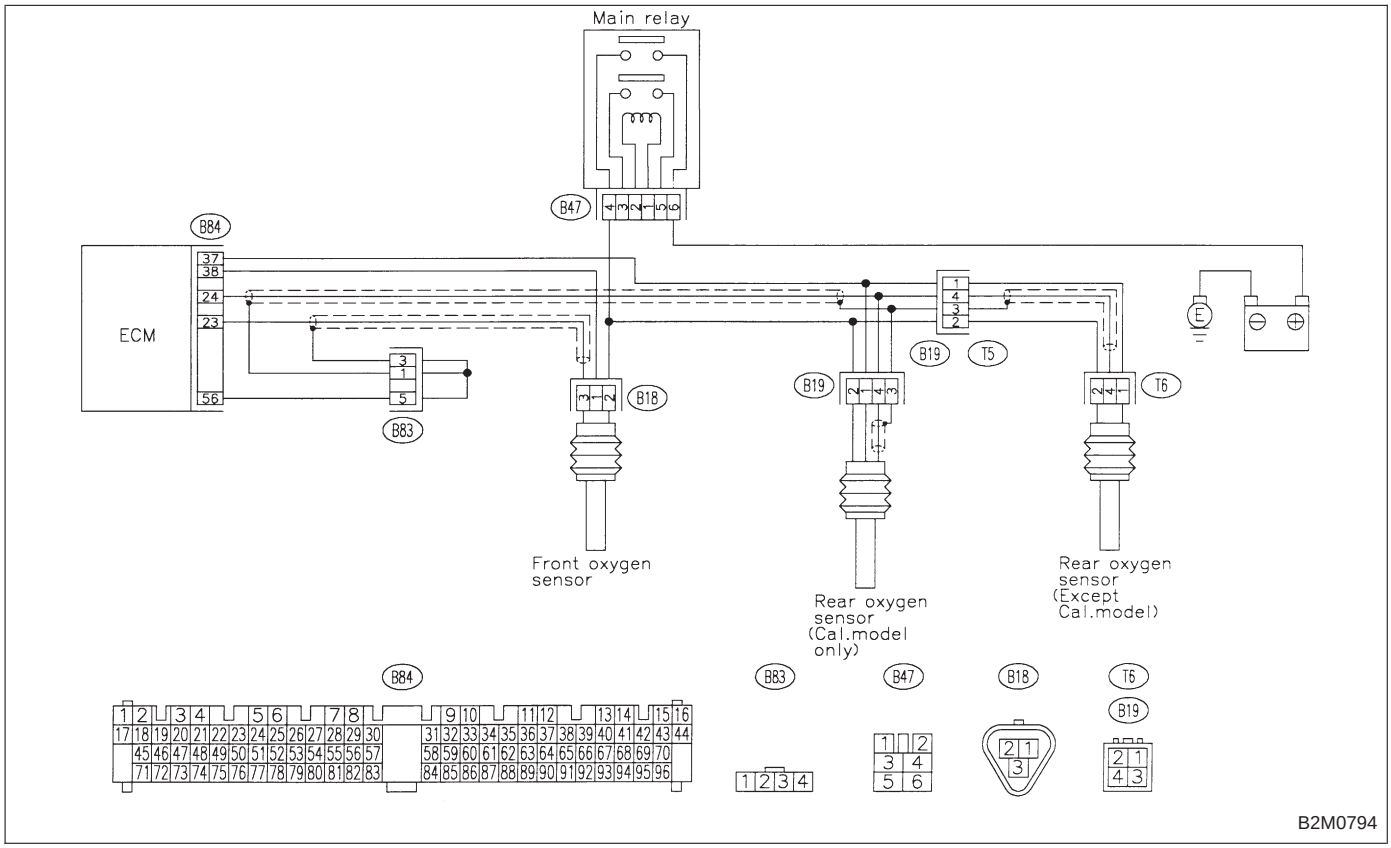
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



10AF1	CHECK ANY OTHER DTC P0130, P0133, P0135, P0136, P0139 AND P0141 ON DISPLAY.

CHECK : ***Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0130, P0133, P0135, P0136, P0139 and P0141?***

YES : Inspect the relevant DTC using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

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

NO : Go to step **10AF2**.

10AF2	CHECK EXHAUST SYSTEM.

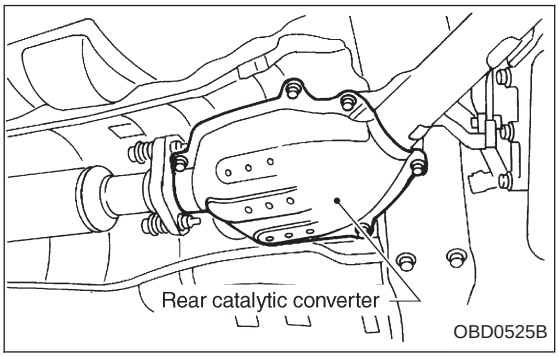
Check for gas leaks or air suction caused by loose or dislocated nuts and bolts, and open hole at exhaust pipes.

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

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

YES : Repair or replace exhaust system.

NO : Go to step **10AF3**.



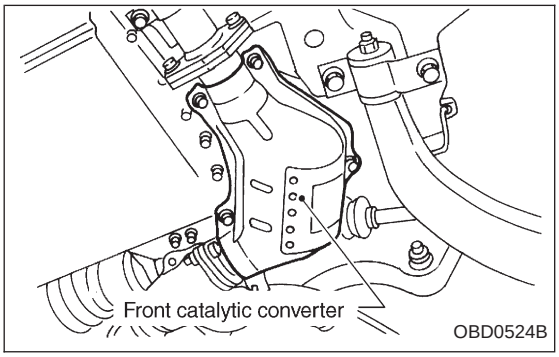
10AF3	CHECK REAR CATALYTIC CONVERTER.

1) Separate rear catalytic converter from rear exhaust pipe.

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

YES : Replace front and rear catalytic converters.

NO : Go to next step 2).



2) Remove front catalytic converter.

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

YES : Replace front catalytic converter.

NO : Contact with SOA service.

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

AG: DTC P0440 — EVAPORATIVE EMISSION CONTROL SYSTEM MALFUNCTION (EVAP) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

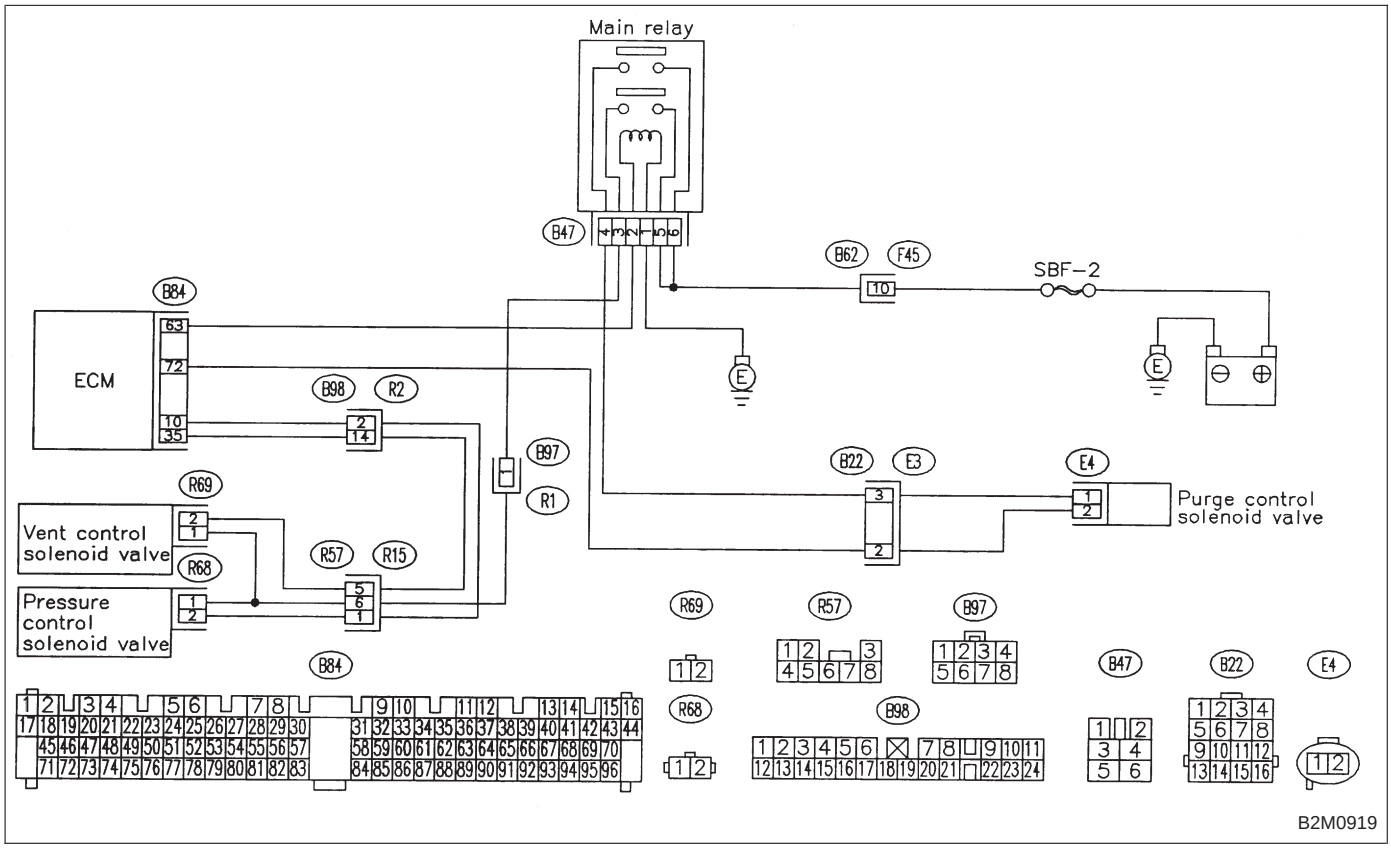
- Gasoline smell

10AG1	**Check any other DTC (besides DTC P0440) on display.**
10AG2	**Check fuel filler cap and fuel filler pipe.**
10AG3	**Check vent control solenoid valve.**
10AG4	**Check purge control solenoid valve.**
10AG5	**Check pressure control solenoid valve.**
10AG6	**Check evaporative emission control system line.**

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

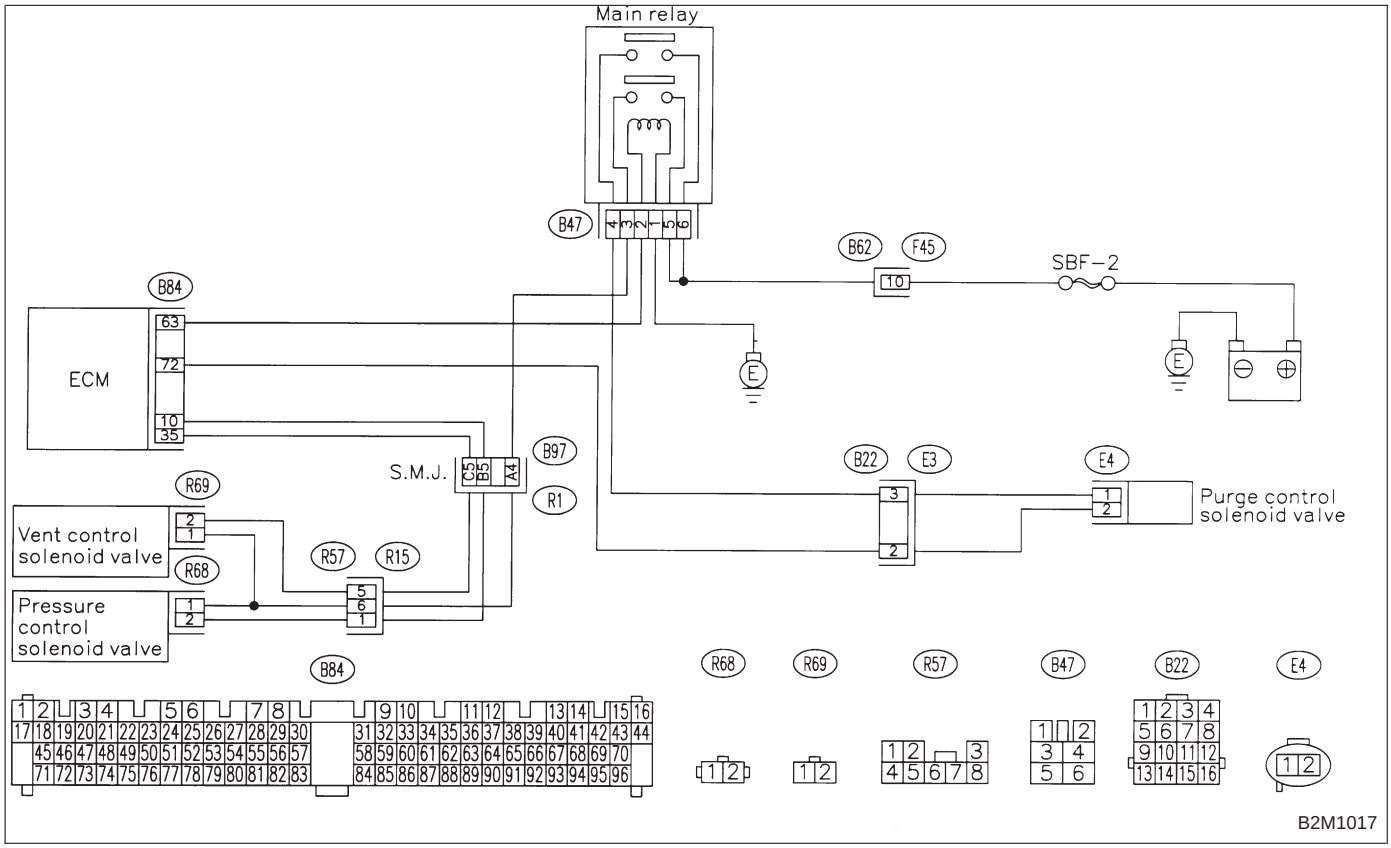
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



10AG1	CHECK ANY OTHER DTC (BESIDES DTC P0440) ON DISPLAY.

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

YES : Inspect the relevant DTC using “10. Diagnostics Chart with Trouble Code, 2-7 [T1000]”.

NO : Go to step **10AG2**.

10AG2	CHECK FUEL FILLER CAP AND FUEL FILLER PIPE.

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

CHECK ***: Is the fuel filler cap tightened securely?***

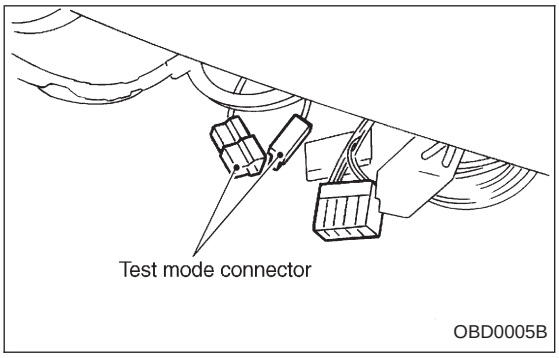
YES : Tighten fuel filler cap securely.

NO : Go to next CHECK .

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

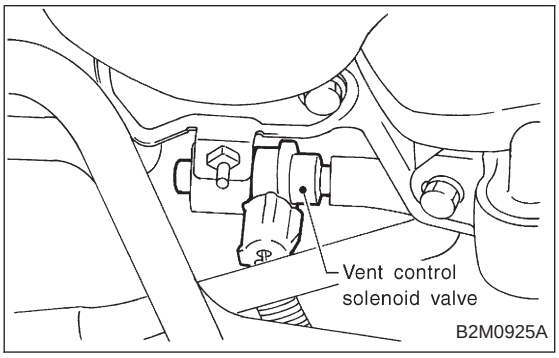
YES : Repair or replace fuel filler cap and fuel filler pipe.

NO : Go to step **10AG3**.



10AG3	CHECK VENT CONTROL SOLENOID VALVE.

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

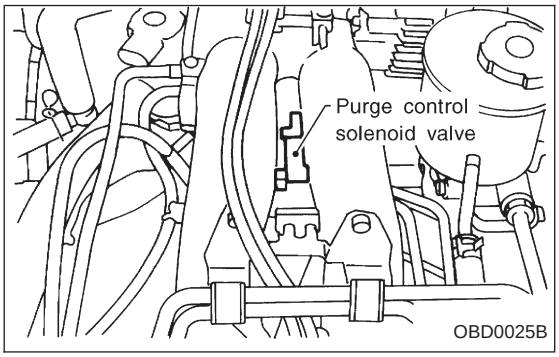


CHECK ***: Does vent control solenoid valve produce operating sound?***

NOTE:
Vent control solenoid valve operation check can also be executed using Subaru Select Monitor (Function mode: FD08). For the procedure, refer to “COMPULSORY VALVE OPERATION CHECK MODE” 2-7 [T3F0].

YES : Go to step **10AG4**.

NO : Replace vent control solenoid valve.



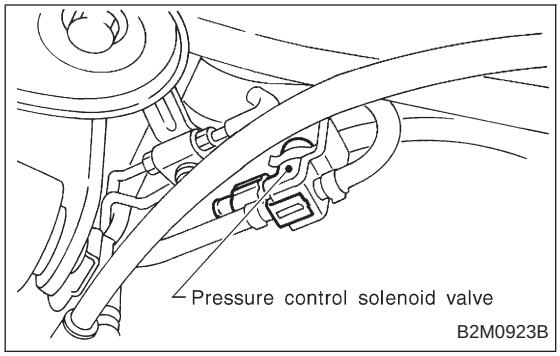
10AG4	CHECK PURGE CONTROL SOLENOID VALVE.

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

NOTE:
Purge control solenoid valve operation check can also be executed using Subaru Select Monitor (Function mode: FD02). For the procedure, refer to “COMPULSORY VALVE OPERATION CHECK MODE” 2-7 [T3F0].

YES : Go to step **10AG5**.

NO : Replace purge control solenoid valve.



10AG5	CHECK PRESSURE CONTROL SOLENOID VALVE.

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

NOTE:
Pressure control solenoid valve operation check can also be executed using Subaru Select Monitor (Function mode: FD07). For the procedure, refer to “COMPULSORY VALVE OPERATION CHECK MODE” 2-7 [T3F0].

YES : Go to step **10AG6**.

NO : Replace pressure control solenoid valve.

10AG6	CHECK EVAPORATIVE EMISSION CONTROL SYSTEM LINE.

Turn ignition switch to OFF.

CHECK ***: Does fuel leak in fuel line?***

YES : Repair or replace fuel line.

NO : Go to next CHECK .

CHECK ***: Is there any damage at canister?***

YES : Repair or replace canister.

NO : Go to next CHECK .

CHECK ***: Is there any damage at fuel tank?***

YES : Repair or replace fuel tank.

NO : Go to next CHECK .

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.

AH: DTC P0441 — EVAPORATIVE EMISSION CONTROL SYSTEM INCORRECT PURGE FLOW (CPC – F) —

DTC DETECTING CONDITION:

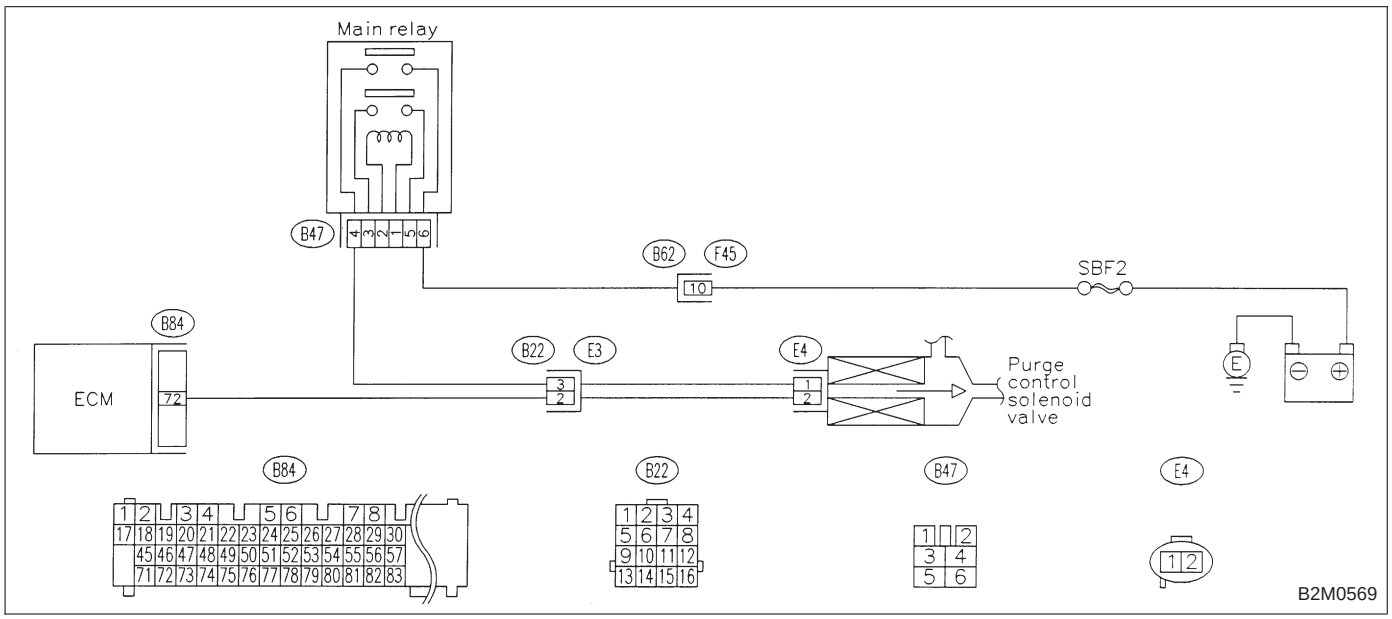
- Two consecutive trips with fault

10AH1	**Check any other DTC P0105, P0106, P0443 and P1102 on display.**
↓	
10AH2	**Check purge control solenoid valve operation.**

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

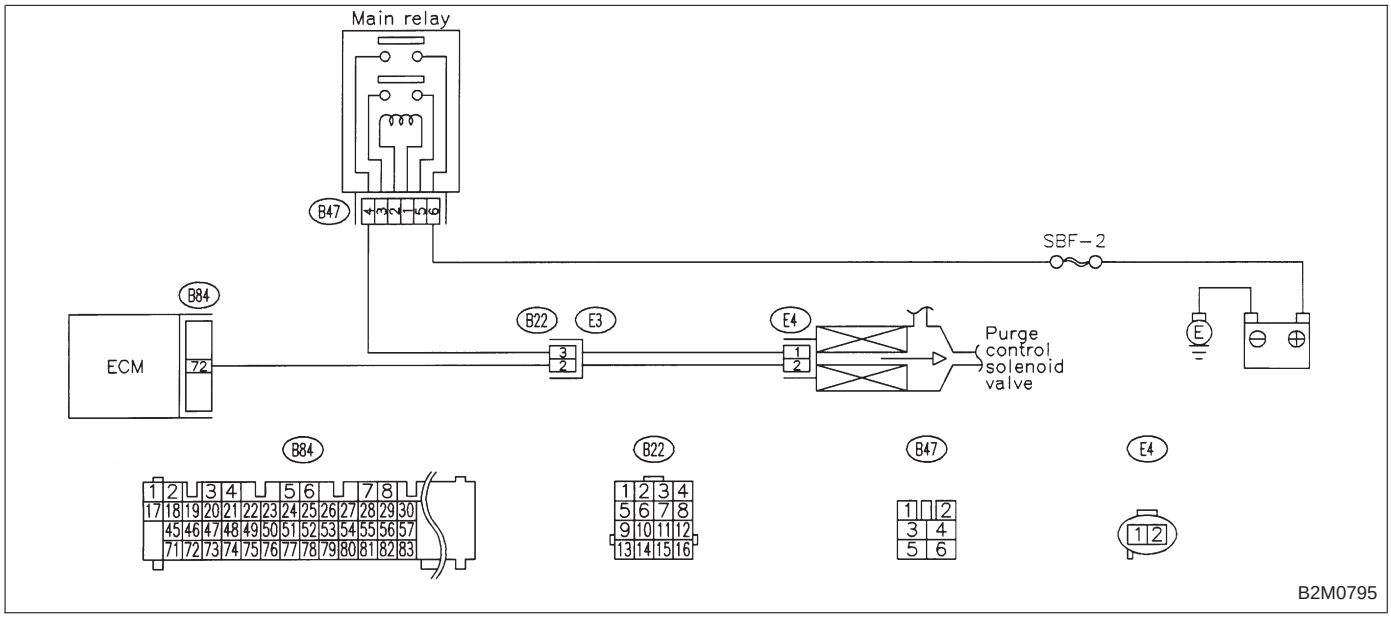
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



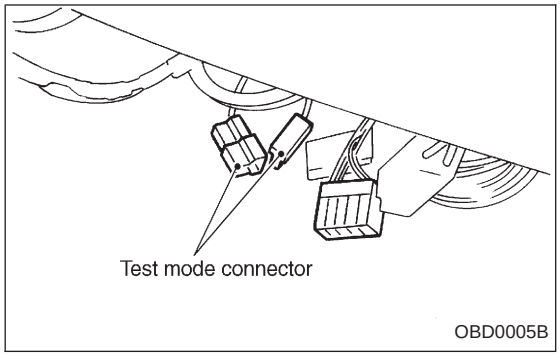
10AH1	CHECK ANY OTHER DTC P0105, P0106, P0443 AND P1102 ON DISPLAY.

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0105, P0106, P0443, and P1102?***

YES : Inspect the relevant DTC using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

NOTE:
In this case, it is not necessary to inspect DTC P0441.

NO : Go to step **10AH2**.



10AH2	CHECK PURGE CONTROL SOLENOID 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.

CHECK ***: Does purge control solenoid valve produce operating sound at about 0.3 Hz?***

NOTE:
Purge control solenoid valve operation check can also be executed using Subaru Select Monitor (Function mode: FD02). For the procedure, refer to "COMPULSORY VALVE OPERATION CHECK MODE" 2-7 [T3F0].

YES : Go to next step 4).

NO : Replace purge control solenoid valve.

4) Disconnect canister purge hose from canister.

CHECK ***: Does pulsation occur by blowing through the canister purge hose?***

YES : Repair or replace evaporation line.

NOTE:
In this case, repair the following:
- Loose connections in evaporation line
- Cracks in evaporation line
- Clogging in evaporation line

NO : Replace purge control solenoid valve.

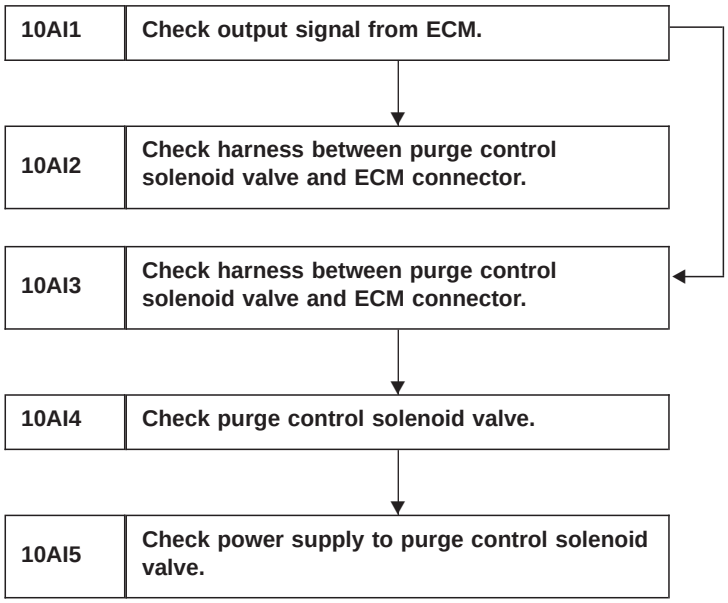
AI: DTC P0443 — EVAPORATIVE EMISSION CONTROL SYSTEM PURGE CONTROL VALVE CIRCUIT MALFUNCTION (CPC) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

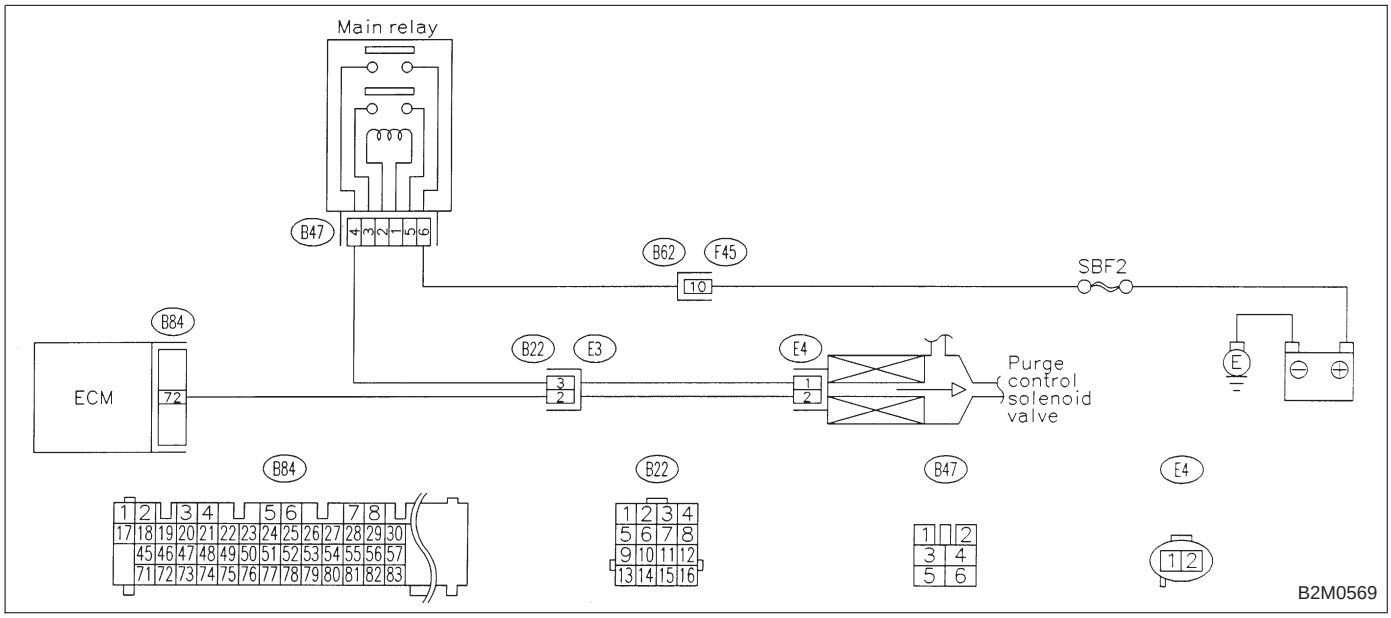
- Erroneous idling



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

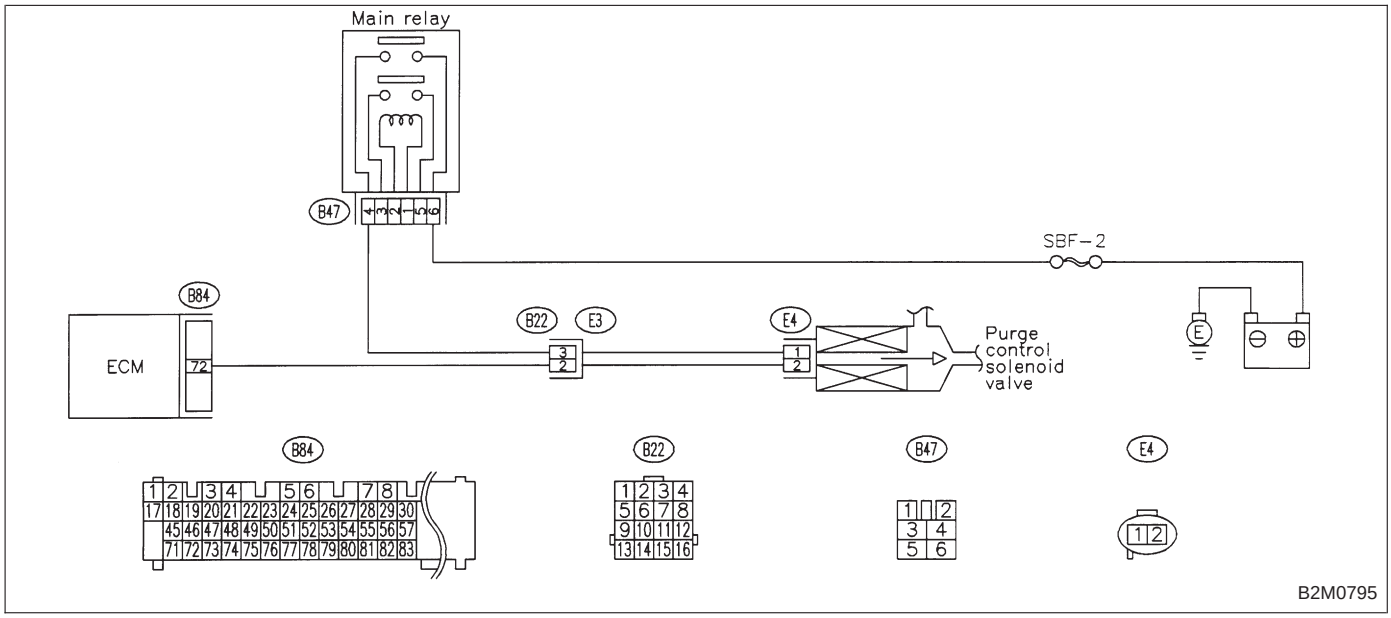
WIRING DIAGRAM:

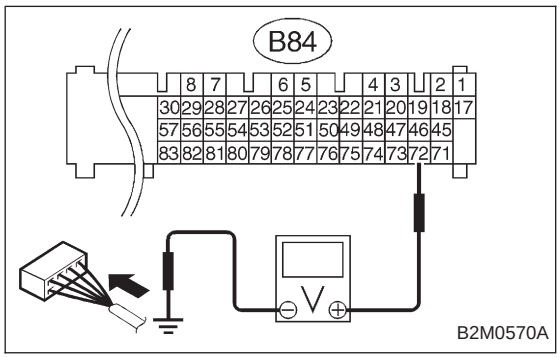
- LHD Model



WIRING DIAGRAM:

- RHD Model





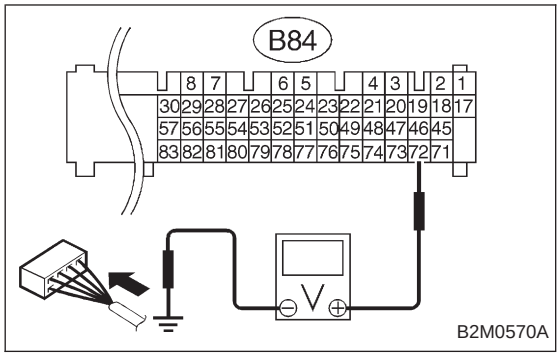
10AI1	CHECK OUTPUT SIGNAL FROM ECM.

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

CHECK ***: Connector & terminal (B84) No. 72 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Go to step **10AI2**.

NO : Go to step **10AI3**.



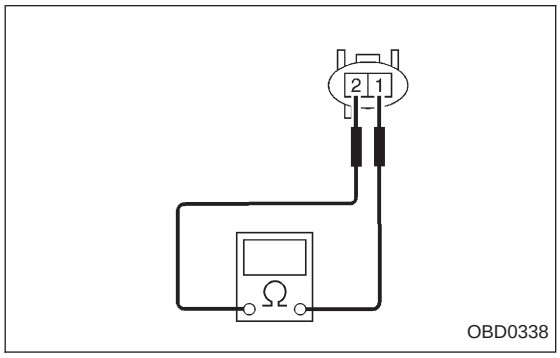
10AI2	CHECK HARNESS BETWEEN PURGE CONTROL SOLENOID VALVE AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from purge control solenoid valve.
3) Turn ignition switch to ON.
4) Measure voltage between ECM and chassis ground.

CHECK ***: Connector & terminal***
(B84) No. 72 (+) — Chassis ground (−):
Is the voltage more than 10 V?

YES : Repair short circuit in harness between ECM and purge control solenoid valve connector.

NO : Go to next step 5).



5) Turn ignition switch to OFF.
6) Measure resistance between purge control solenoid valve terminals.

CHECK ***: Terminals***
No. 1 — No. 2:
Is the resistance less than 1 Ω?

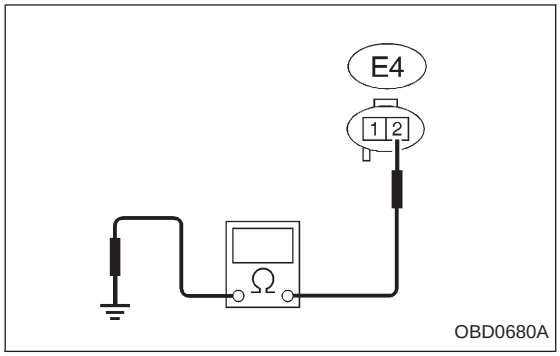
YES : Replace purge control solenoid valve and ECM.

NO : Go to next CHECK .

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

YES : Repair poor contact in ECM connector.

NO : Replace ECM.



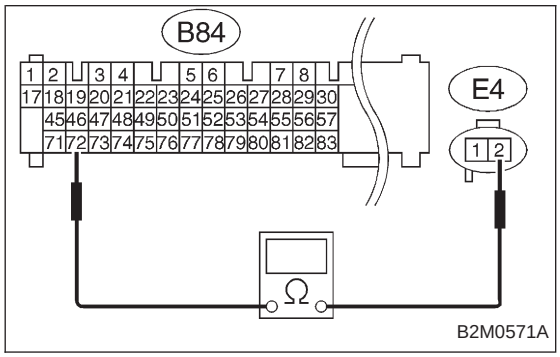
10AI3	CHECK HARNESS BETWEEN PURGE CONTROL SOLENOID VALVE AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connectors from purge control solenoid valve and ECM.
3) Measure resistance of harness between purge control solenoid valve connector and engine ground.

CHECK ***: Connector & terminal***
(E4) No. 2 — Engine ground:
Is the resistance less than 10 Ω?

YES : Repair short circuit in harness between ECM and purge control solenoid valve connector.

NO : Go to next step 4).

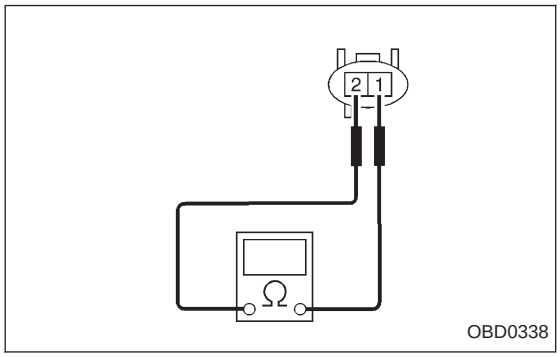


4) Measure resistance of harness between ECM and purge control solenoid valve of harness connector.

CHECK ***: Connector & terminal***
(B84) No. 72 — (E4) No. 2:
Is the resistance less than 1 Ω?

YES : Go to step **10AI4**.

NO : Repair open circuit in harness between ECM and purge control solenoid valve connector.



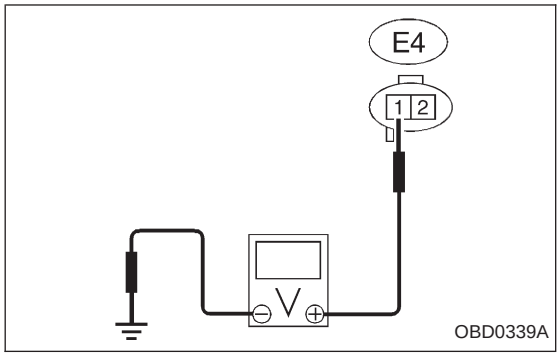
10AI4	CHECK PURGE CONTROL SOLENOID VALVE.

1) Remove purge control solenoid valve.
2) Measure resistance between purge control solenoid valve terminals.

CHECK ***: Terminals***
No. 1 — No. 2:
Is the resistance between 10 and 100 Ω?

YES : Go to step **10AI5**.

NO : Replace purge control solenoid valve.



10AI5	CHECK POWER SUPPLY TO PURGE CONTROL SOLENOID VALVE.

1) Turn ignition switch to ON.
2) Measure voltage between purge control solenoid valve and engine ground.

CHECK ***: Connector & terminal (E4) No. 1 (+) — Engine ground (−): Is the voltage more than 10 V?***

YES : Go to next CHECK .

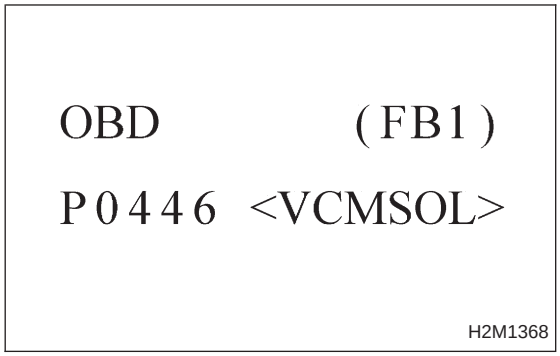
NO : Repair open circuit in harness between main relay and purge control solenoid valve connector.

CHECK ***: Is there poor contact in purge control solenoid valve connector?***

YES : Repair poor contact in purge control solenoid valve connector.

NO : Contact with SOA service.

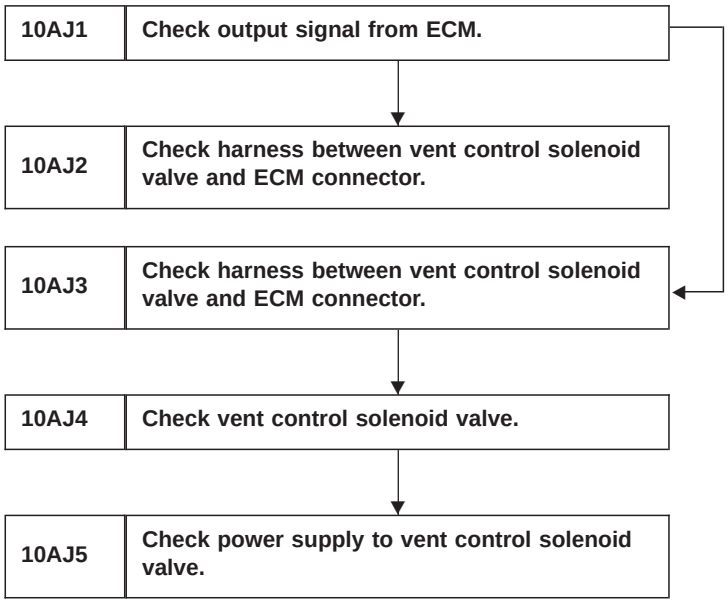
NOTE:
Inspection by DTM is required, because probable cause is deterioration of multiple parts.



AJ: DTC P0446 — EVAPORATIVE EMISSION CONTROL SYSTEM VENT CONTROL MALFUNCTION (VCMSOL) —

DTC DETECTING CONDITION:

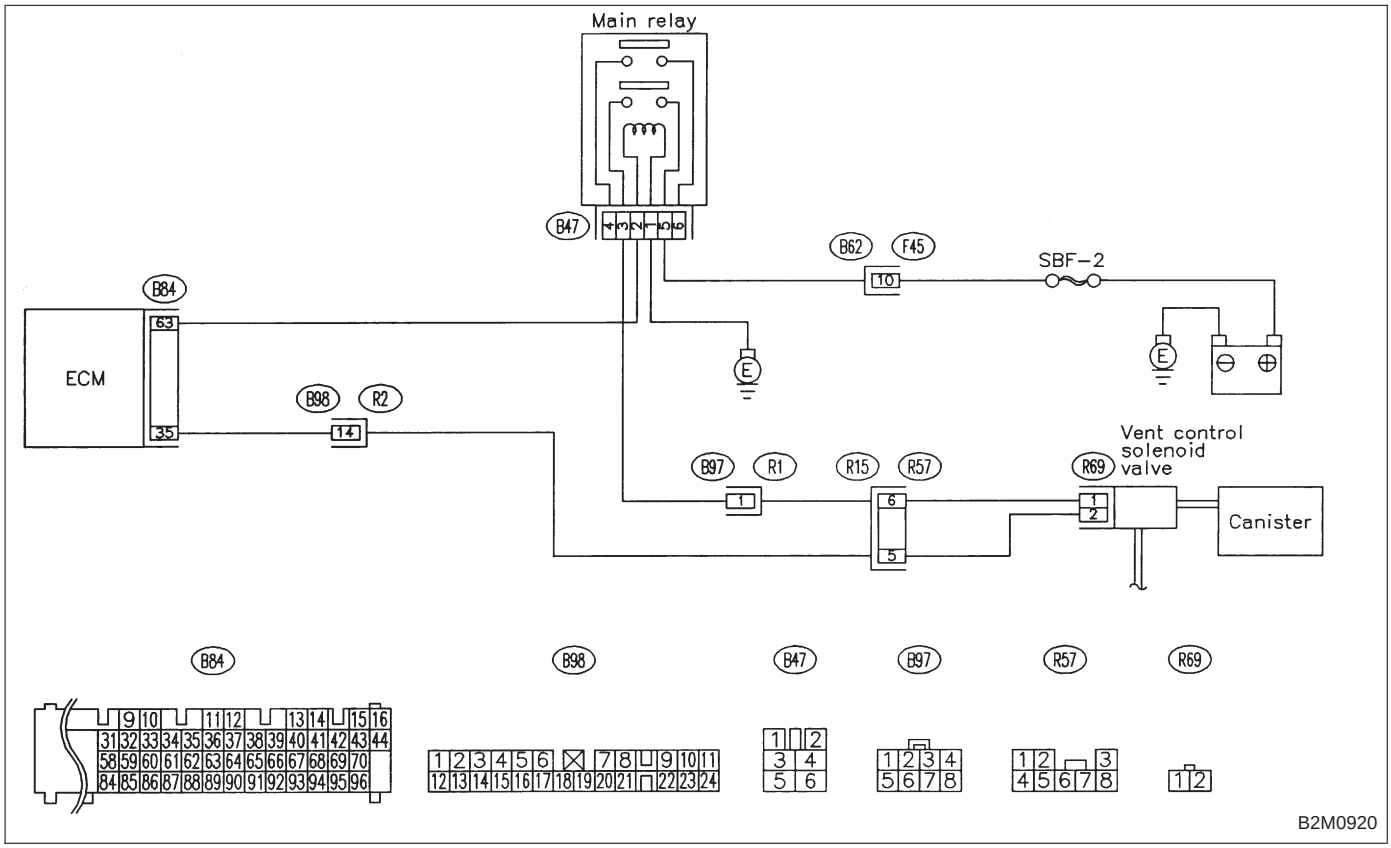
- Two consecutive trips with fault



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

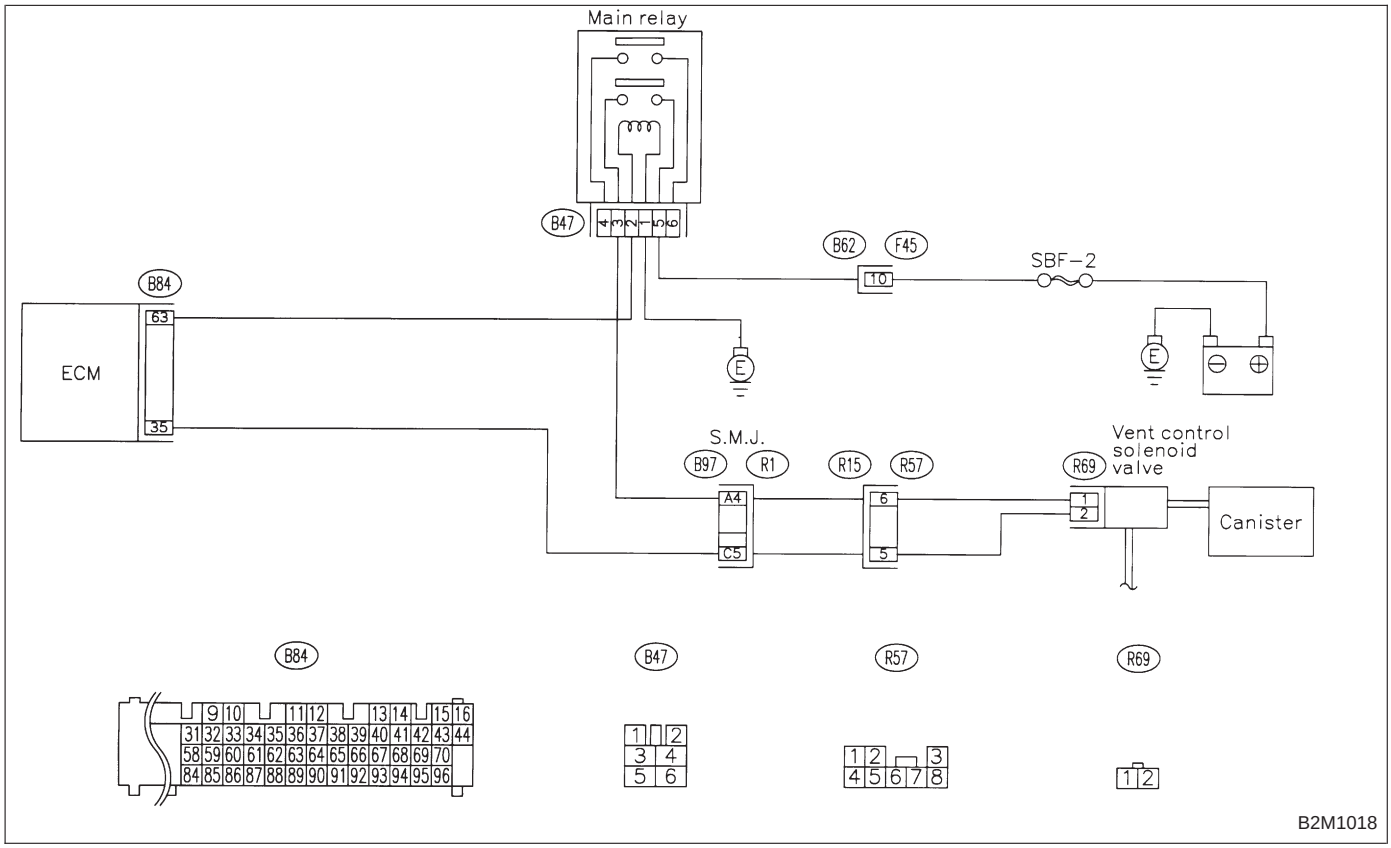
WIRING DIAGRAM:

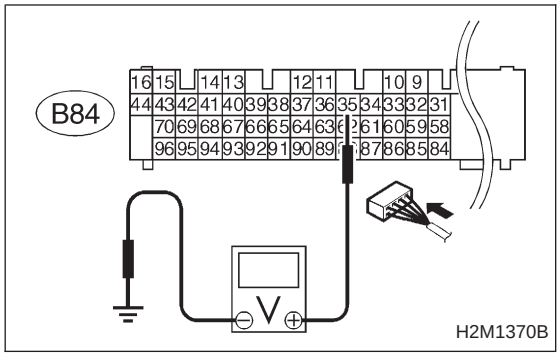
- LHD Model



WIRING DIAGRAM:

- RHD Model





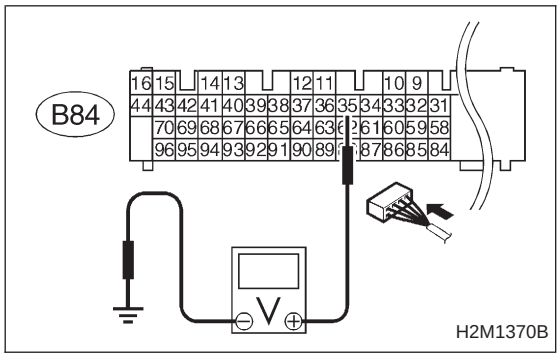
10AJ1	CHECK OUTPUT SIGNAL FROM ECM.

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

CHECK ***: Connector & terminal (B84) No. 35 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Go to step **10AJ2**.

NO : Go to step **10AJ3**.



10AJ2	CHECK HARNESS BETWEEN VENT CONTROL SOLENOID VALVE AND ECM CONNECTOR.

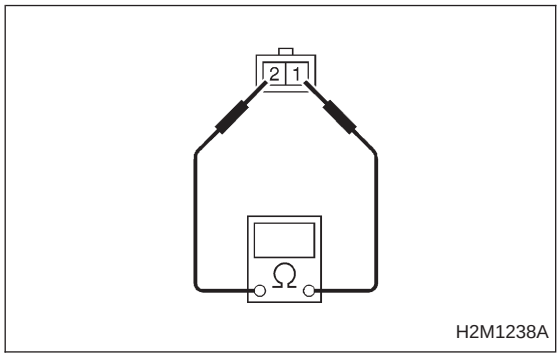
1) Turn ignition switch to OFF.
2) Disconnect connector from vent control solenoid valve.
3) Turn ignition switch to ON.
4) Measure voltage between ECM and chassis ground.

CHECK ***: Connector & terminal (B84) No. 35 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Repair short circuit in harness and replace ECM.

NOTE:
The harness between ECM and vent control solenoid valve is in short circuit.

NO : Go to next step 5).



5) Turn ignition switch to OFF.
6) Measure resistance between vent control solenoid valve terminals.

CHECK ***: Terminals No. 1 — No. 2: Is the resistance less than 1 Ω?***

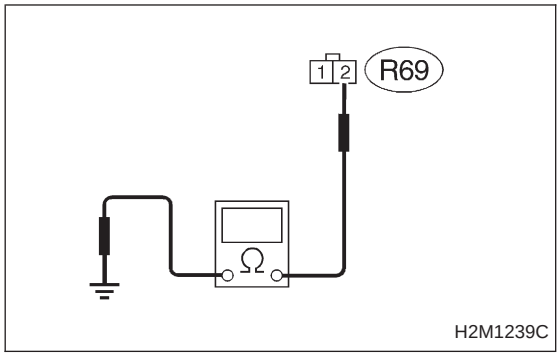
YES : Replace vent control solenoid valve and ECM.

NO : Go to next CHECK .

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

YES : Repair poor contact in ECM connector.

NO : Replace ECM.



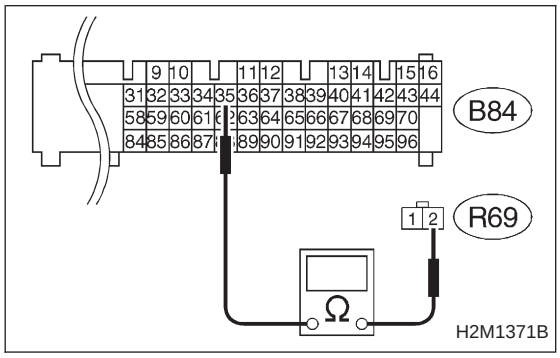
10AJ3	CHECK HARNESS BETWEEN VENT CONTROL SOLENOID VALVE AND ECM CONNECTOR.

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

CHECK ***: Connector & terminal***
(R69) No. 2 — Chassis ground:
Is the resistance less than 10 Ω?

YES : Repair short circuit in harness between ECM and vent control solenoid valve connector.

NO : Go to next step 4).



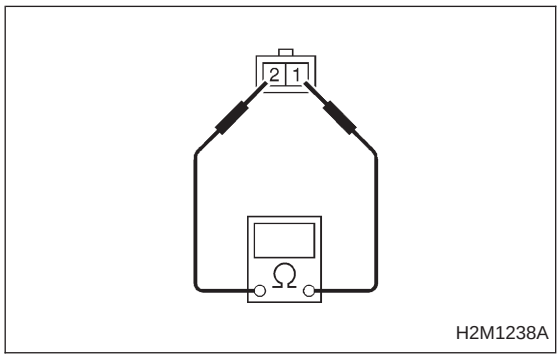
4) Measure resistance of harness between ECM and vent control solenoid valve connector.

CHECK ***: Connector & terminal***
(B84) No. 35 — (R69) No. 2:
Is the resistance less than 1 Ω?

YES : Go to step **10AJ4**.

NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and vent control solenoid valve connector
- Poor contact in coupling connectors (B98 (LHD)/B97 (RHD), and R57)



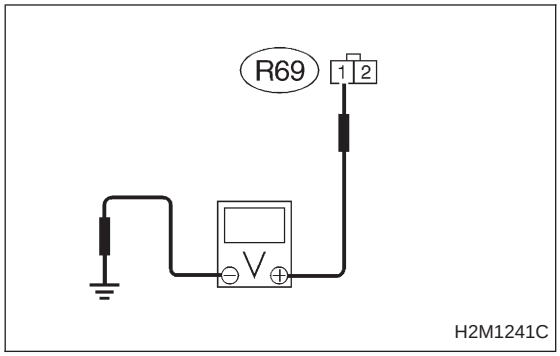
10AJ4	CHECK VENT CONTROL SOLENOID VALVE.

Measure resistance between vent control solenoid valve terminals.

CHECK ***: Terminals***
No. 1 — No. 2:
Is the resistance between 10 and 100 Ω?

YES : Go to step **10AJ5**.

NO : Replace vent control solenoid valve.



10AJ5	CHECK POWER SUPPLY TO VENT CONTROL SOLENOID VALVE.

1) Turn ignition switch to ON.
2) Measure voltage between vent control solenoid valve and chassis ground.

CHECK ***: Connector & terminal (R69) No. 1 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Go to next CHECK .
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between main relay and vent control solenoid valve
- Poor contact in coupling connectors (B97 and R57)
- Poor contact in main relay connector

CHECK ***: Is there poor contact in vent control solenoid valve connector?***

YES : Repair poor contact in vent control solenoid valve connector.

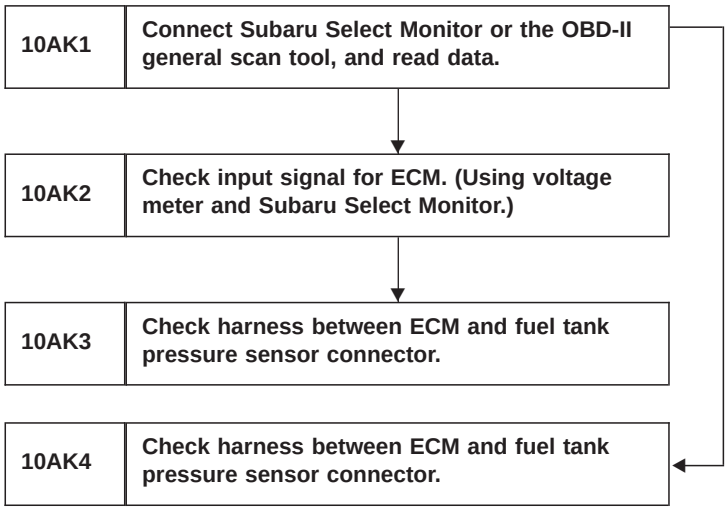
NO : Contact with SOA service.

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

AK: DTC P0450 — EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR MALFUNCTION (TNKP) —

DTC DETECTING CONDITION:

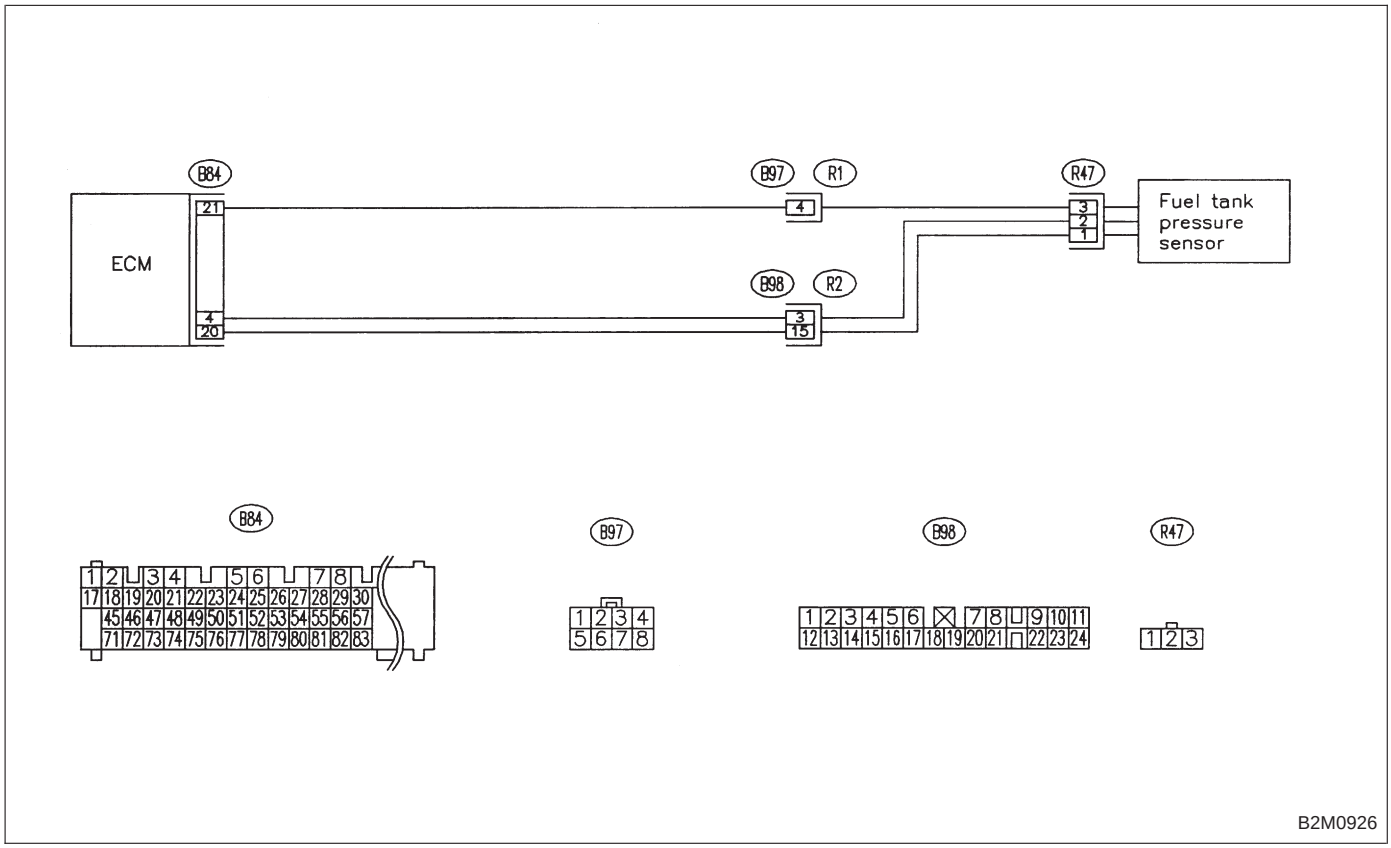
- Immediately at fault recognition



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

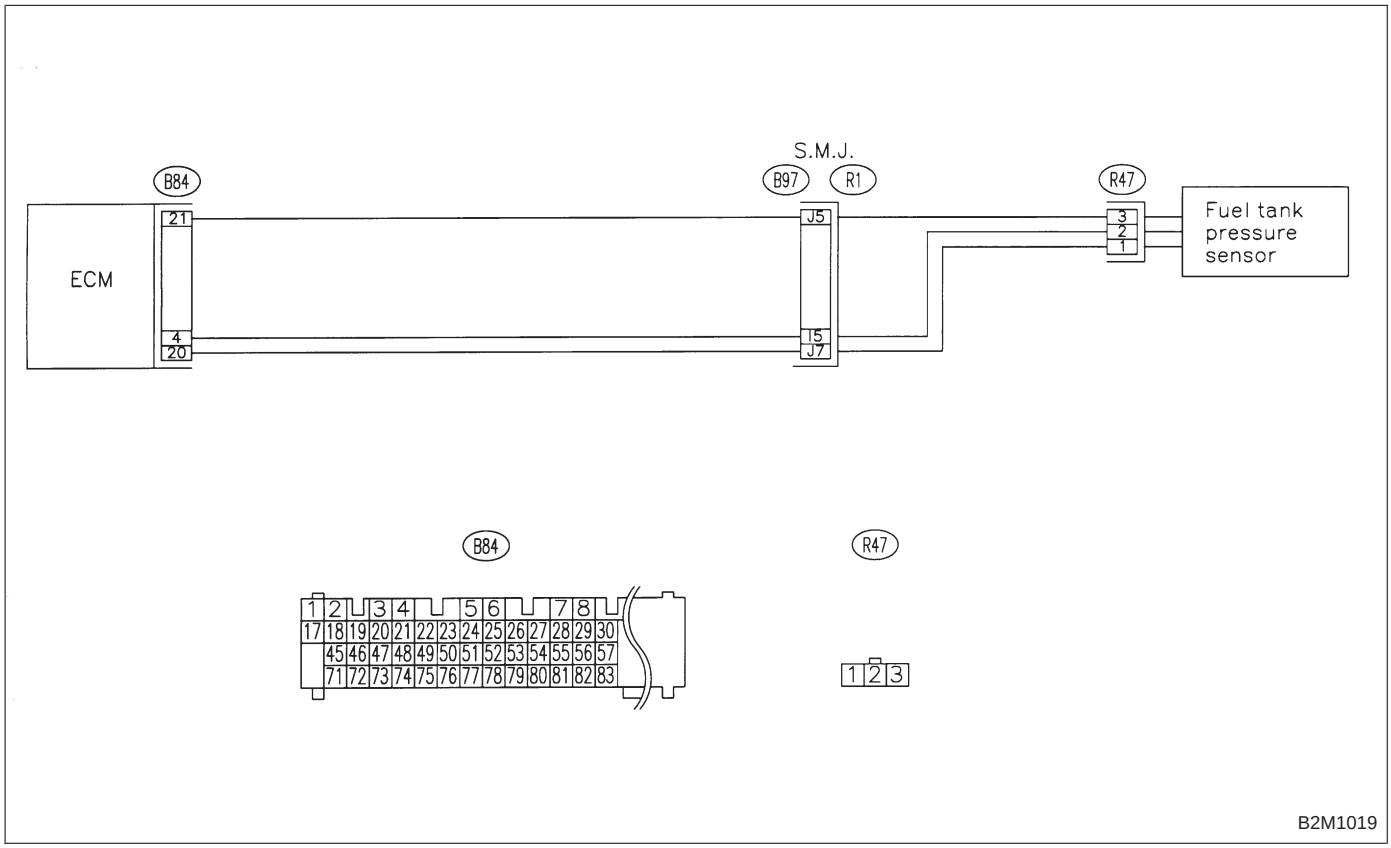
WIRING DIAGRAM:

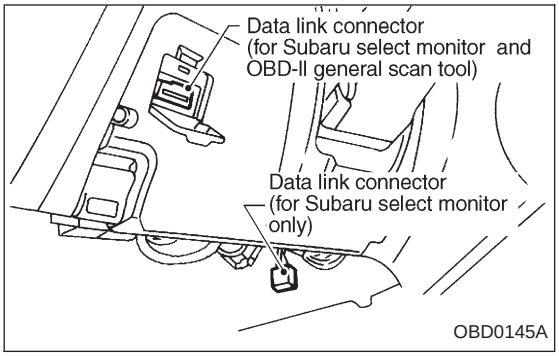
- LHD Model



WIRING DIAGRAM:

- RHD Model



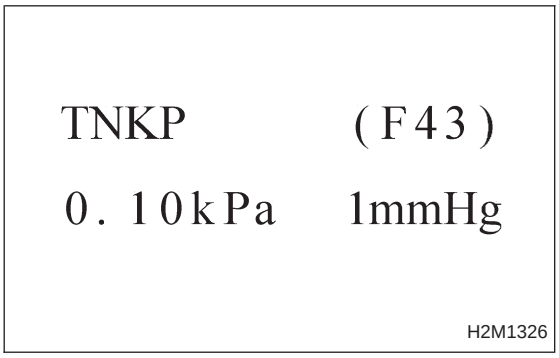


10AK1	**CONNECT SUBARU SELECT MONITOR OR THE OBD-II GENERAL SCAN TOOL, AND READ DATA.**

1) Turn ignition switch to OFF.
2) Remove fuel filler cap.
3) Install fuel filler cap.
4) Connect Subaru Select Monitor or the OBD-II general scan tool to data link connector.
5) Turn ignition switch to ON and Subaru Select Monitor or the OBD-II general scan tool switch to ON.
6) Read the data on Subaru Select Monitor or the OBD-II general scan tool.
● Subaru Select Monitor
Designate mode using function key.

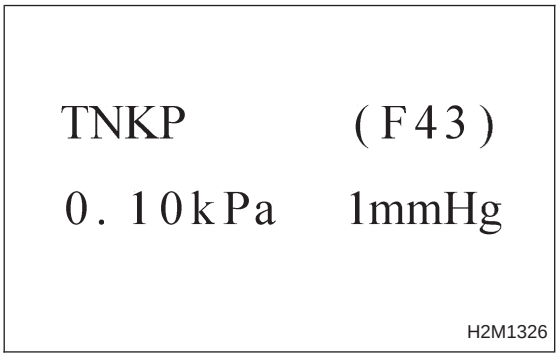
Function mode: F43

● F43: Display shows pressure signal value sent from fuel tank pressure sensor.



CHECK ***: Is the value less than −2.8 kPa in function mode F43?***

YES : Go to step **10AK2**.
NO : Go to next CHECK .

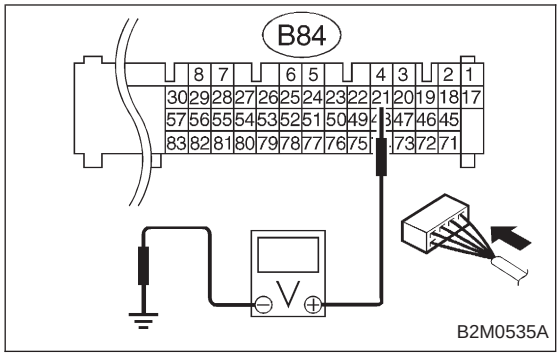


CHECK ***: Is the value more than 2.8 kPa in function mode F43?***

YES : Go to step **10AK4**.
NO : Repair harness and connector.

NOTE:
In this case, repair the following:
● Open or short circuit in harness between fuel tank pressure sensor and ECM connector
● Poor contact in coupling connectors (B97, and B98 (LHD only))
● Poor contact in fuel tank pressure sensor
● Poor contact in ECM connector
● OBD-II general scan tool

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



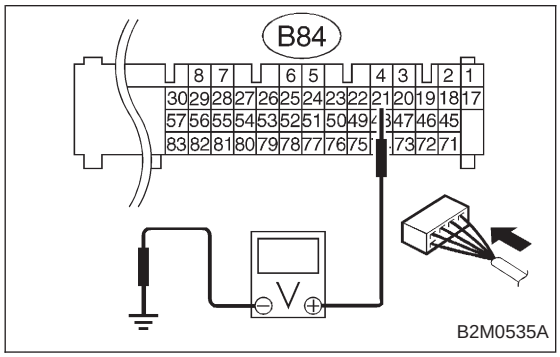
10AK2	CHECK INPUT SIGNAL FOR ECM. (USING VOLTAGE METER AND SUBARU SELECT MONITOR.)

1) Measure voltage between ECM connector and chassis ground.

CHECK ***: Connector & terminal (B84) No. 21 (+) — Chassis ground (−): Is the voltage more than 4.5 V?***

YES : Go to next step 2).

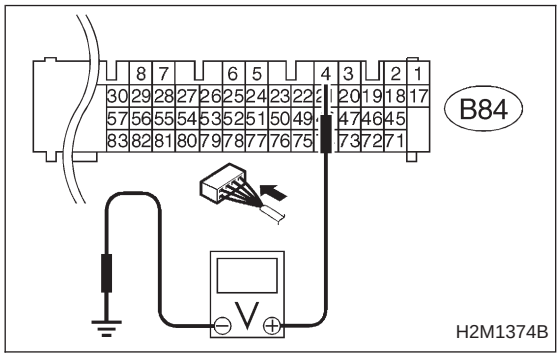
NO : Go to next CHECK .



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 : Replace ECM.

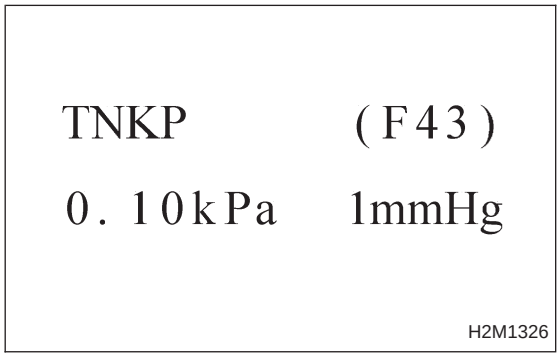


2) Measure voltage between ECM and chassis ground.

CHECK ***: Connector & terminal (B84) No. 4 (+) — Chassis ground (−): Is the voltage less than 0.2 V?***

YES : Go to step **10AK3**.

NO : Go to next step 3).



3) Read data on Subaru Select Monitor.

- Subaru Select Monitor

Designate mode using function key.

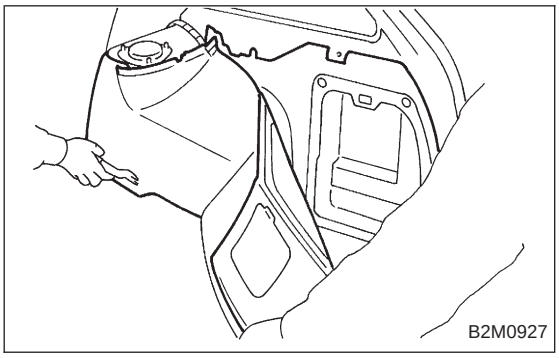
Function mode: F43

- F43: Display shows pressure signal value sent from fuel tank pressure sensor.

CHECK : ***Does the value change more than −2.8 kPa by shaking harness and connector of ECM while monitoring the value with Subaru select monitor?***

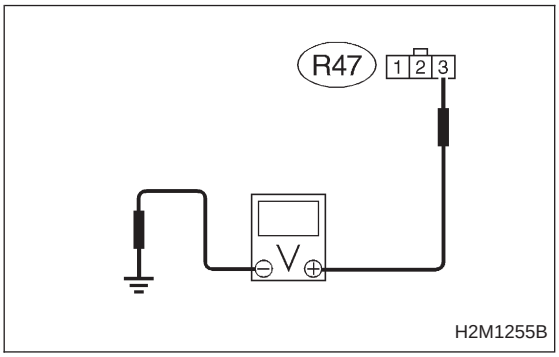
YES : Repair poor contact in ECM connector.

NO : Go to step **10AK3**.



10AK3	**CHECK HARNESS BETWEEN ECM AND FUEL TANK PRESSURE SENSOR CONNECTOR.**

1) Turn ignition switch to OFF.
2) Detach right side trunk side trim panel (Sedan) or right side rear quarter trim panel (Wagon).
3) Remove right side rear quarter trim pocket (Wagon model only).
4) Detach right side rear quarter insulator (Wagon model only).



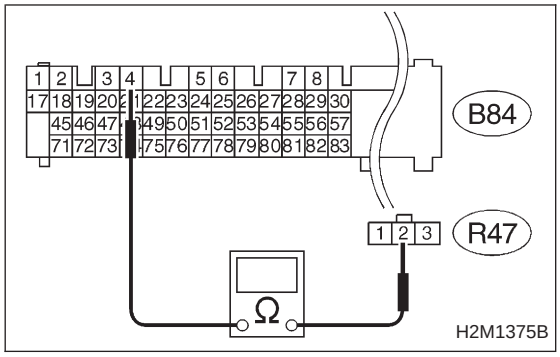
5) Disconnect connector from fuel tank pressure sensor.
6) Turn ignition switch to ON.
7) Measure voltage between fuel tank pressure sensor connector and chassis ground.

CHECK : ***Connector & terminal (R47) No. 3 (+) — Chassis ground (−): Is the voltage more than 4.5 V?***

YES : Go to next step 8).

NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and fuel tank pressure sensor connector
- Poor contact in coupling connector (B97)



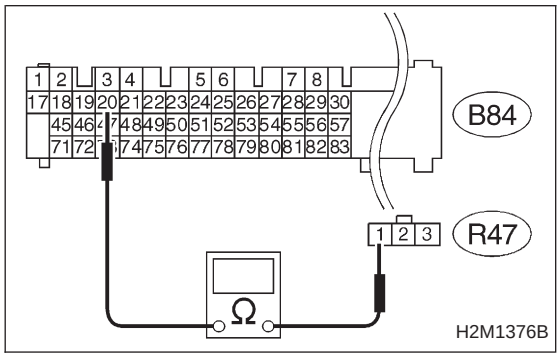
8) Turn ignition switch to OFF.
9) Disconnect connector from ECM.
10) Measure resistance of harness between ECM and pressure sensor connector.

CHECK ***: Connector & terminal (B84) No. 4 — (R47) No. 2: Is the resistance less than 1 Ω?***

YES : Go to next CHECK .

NO : Repair harness and connector.

NOTE:
In this case, repair the following:
● Open circuit in harness between ECM and fuel tank pressure sensor connector
● Poor contact in coupling connector (B98 (LHD)/B97 (RHD))

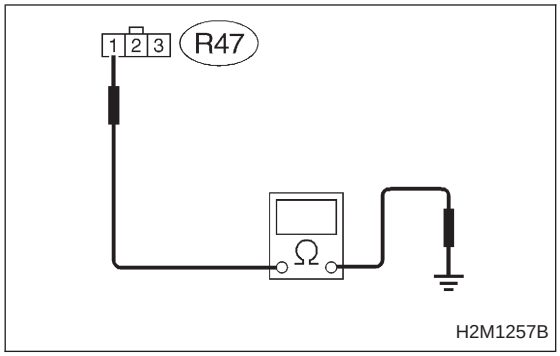


CHECK ***: Connector & terminal (B84) No. 20 — (R47) No. 1: Is the resistance less than 1 Ω?***

YES : Go to next step 11).

NO : Repair harness and connector.

NOTE:
In this case, repair the following:
● Open circuit in harness between ECM and fuel tank pressure sensor connector
● Poor contact in coupling connector (B98 (LHD)/B97 (RHD))



11) Measure resistance of harness between fuel tank pressure sensor connector and chassis ground.

CHECK ***: Connector & terminal (R47) No. 1 — Chassis ground: Is the resistance more than 500 kΩ?***

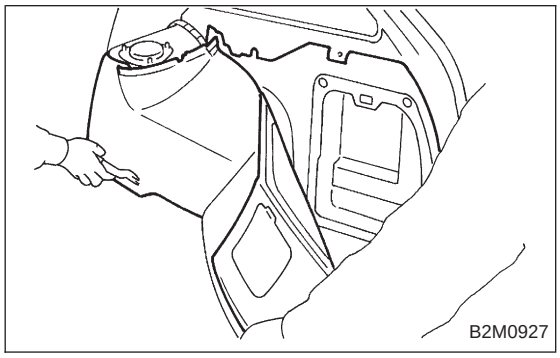
YES : Go to next CHECK .

NO : Repair short circuit in harness between ECM and fuel tank pressure sensor connector.

CHECK ***: Is there poor contact in fuel tank pressure sensor connector?***

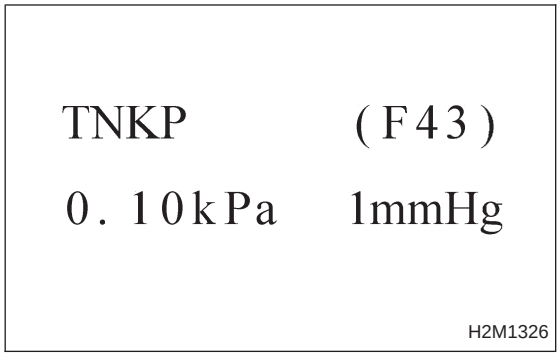
YES : Repair poor contact in fuel tank pressure sensor connector.

NO : Replace fuel tank pressure sensor.



10AK4	CHECK HARNESS BETWEEN ECM AND FUEL TANK PRESSURE SENSOR CONNECTOR.

1) Turn ignition switch to OFF and Subaru Select Monitor or the OBD-II general scan tool switch to OFF.
2) Detach right side trunk side trim panel (Sedan) or right side rear quarter trim panel (Wagon).
3) Remove right side rear quarter trim pocket (Wagon model only).
4) Detach right side rear quarter insulator (Wagon model only).



5) Disconnect connector from fuel tank pressure sensor.
6) Remove fuel filler cap.
7) Install fuel filler cap.
8) Turn ignition switch to ON and Subaru Select Monitor or the OBD-II general scan tool switch to ON.
9) Read data on Subaru select monitor or the OBD-II general scan tool.

● Subaru Select Monitor

Designate mode using function key.

Function mode: F43

CHECK ***: Is the value more than 2.8 kPa in function mode F43?***

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

NO : Replace fuel tank pressure sensor.

● OBD-II general scan tool

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

OBD (FB1)

P0451 <TNKP_F>

H2M1377

AL: DTC P0451 — EVAPORATIVE EMISSION CONTROL SYSTEM PRESSURE SENSOR RANGE/PERFORMANCE PROBLEM (TNKP – F) —

DTC DETECTING CONDITION:

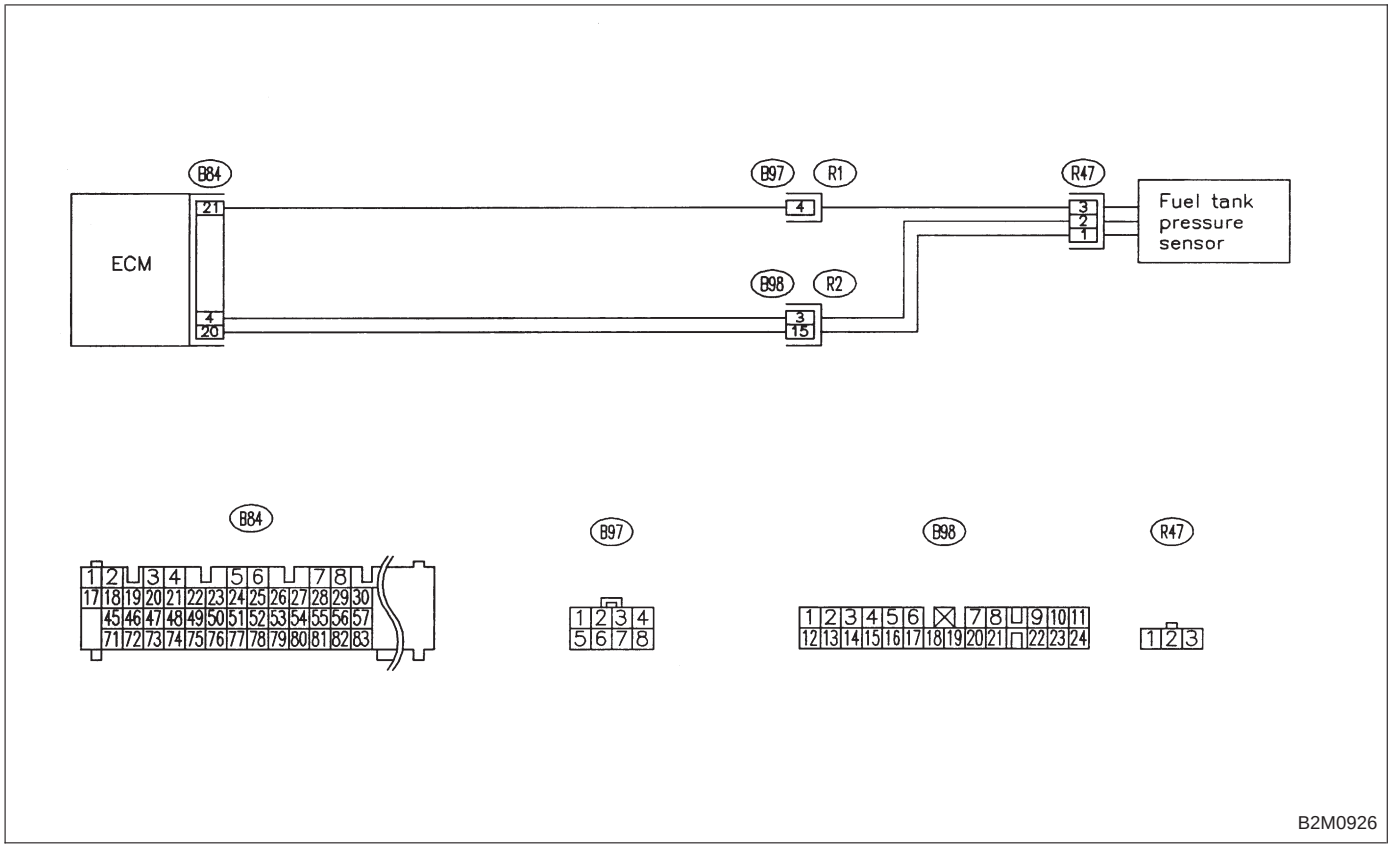
- Two consecutive trips with fault

10AL1	**Check pressure/vacuum line.**

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

WIRING DIAGRAM:

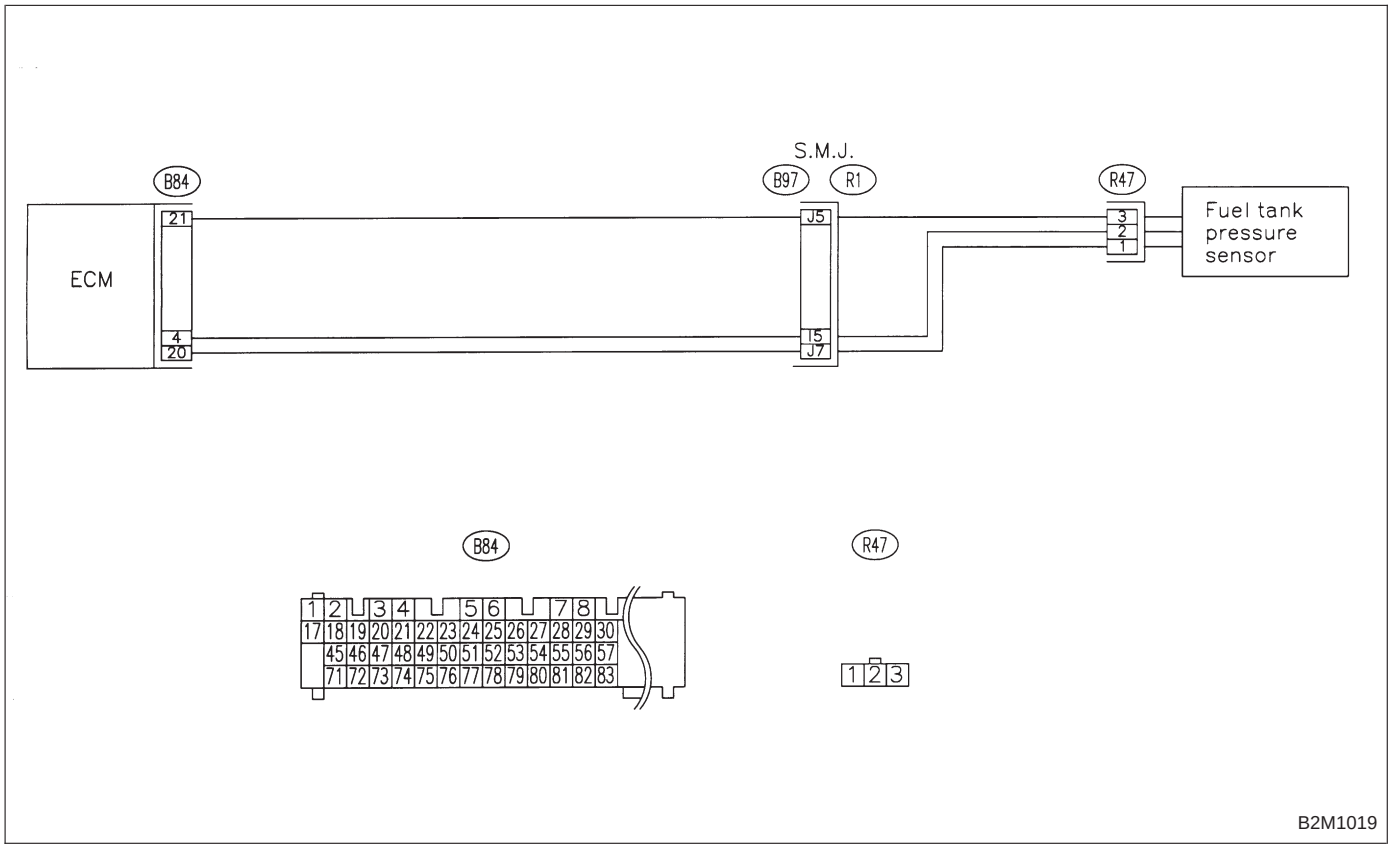
- LHD Model



B2M0926

WIRING DIAGRAM:

- RHD Model



10AL1	CHECK PRESSURE/VACUUM LINE.

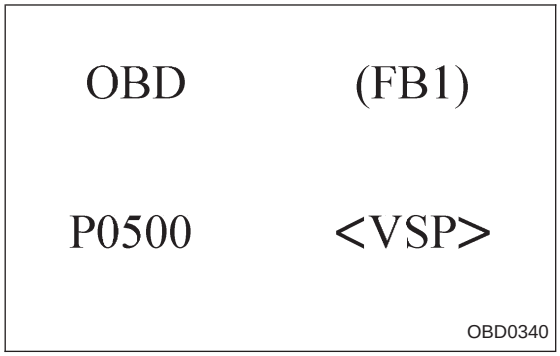
CHECK ***: Is there a fault in pressure/vacuum line?***

NOTE:
Check the following items.

- Disconnection, leakage and clogging of the vacuum hoses and pipes between fuel tank pressure sensor and fuel tank
- Disconnection, leakage and clogging of air ventilation hoses and pipes between fuel filler pipe and fuel tank

YES : Repair or replace hoses and pipes.

NO : Replace fuel tank pressure sensor.



AM: DTC P0500 — VEHICLE SPEED SENSOR MALFUNCTION (VSP) —

DTC DETECTING CONDITION:

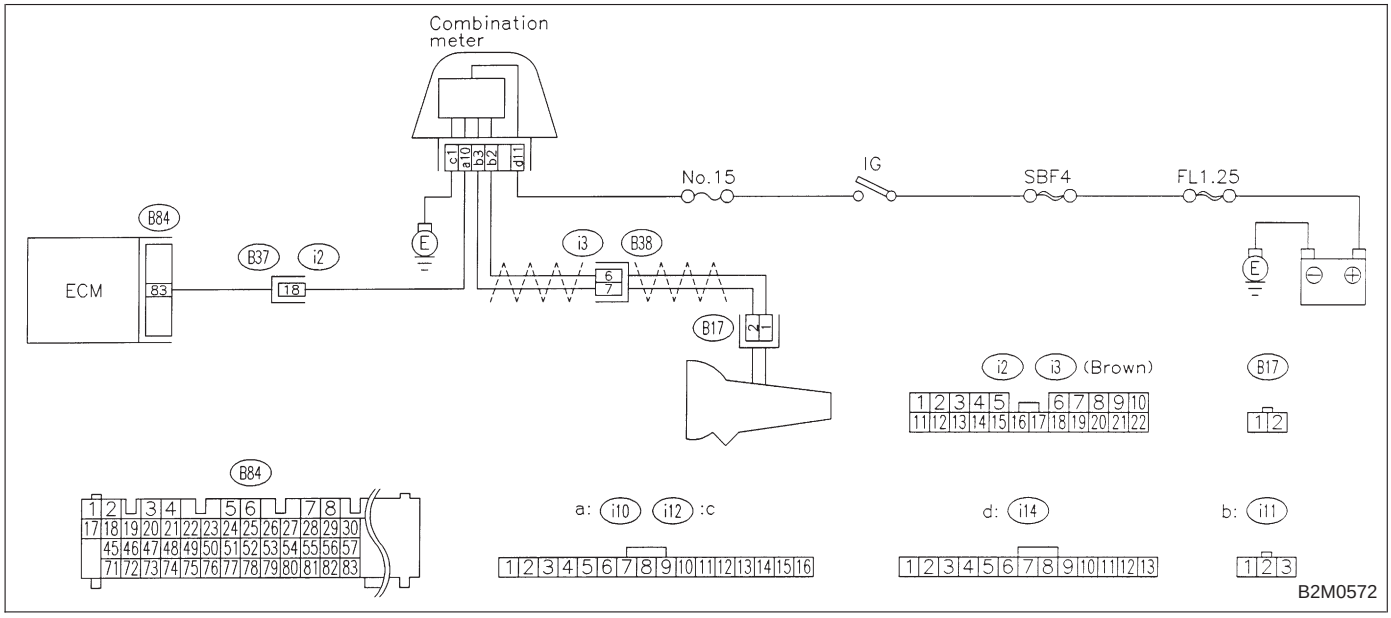
- Immediately at fault recognition

10AM1	**Check speedometer operation in combination meter.**
↓	
10AM2	**Check harness between ECM and combination meter connector.**
↓	
10AM3	**Check harness between ECM and combination meter connector.**

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

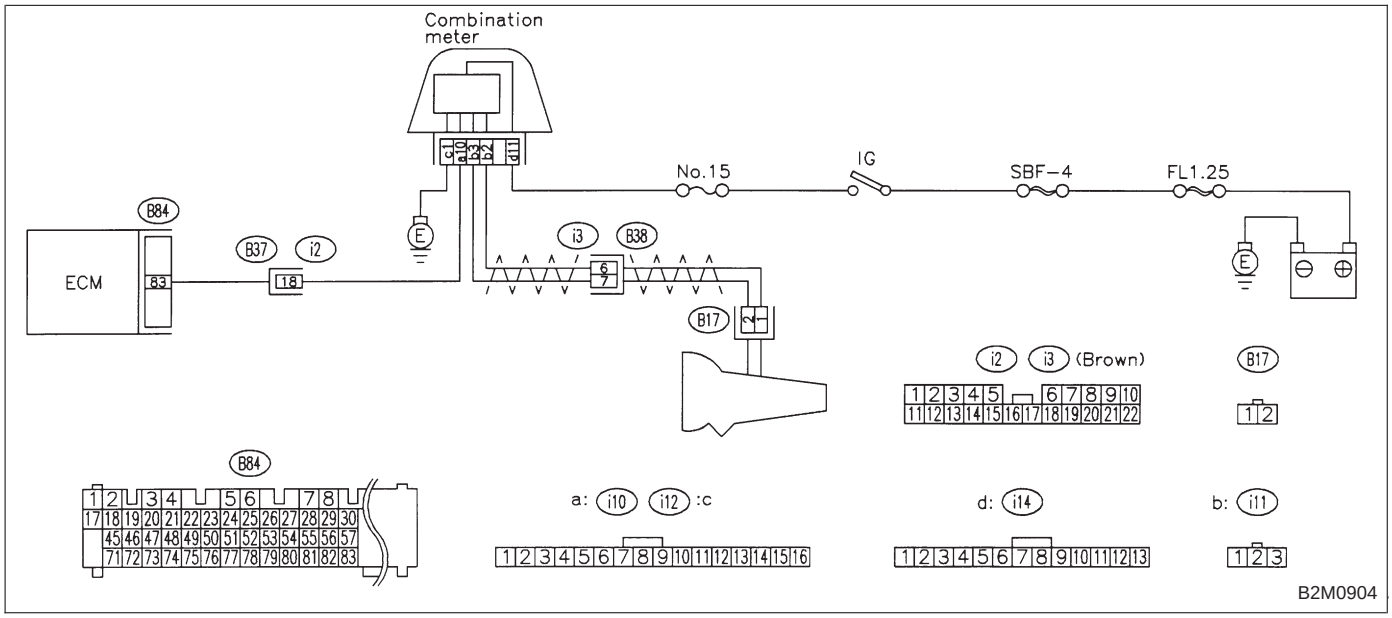
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model

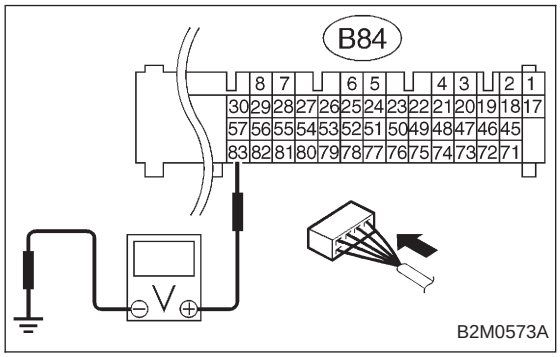


10AM1	CHECK SPEEDOMETER OPERATION IN COMBINATION METER.

CHECK ***: Does speedometer operate normally?***

YES : Go to step **10AM2**.

NO : Check speedometer and vehicle speed sensor <Ref. to 6-2 [K3A0].>.



10AM2	CHECK HARNESS BETWEEN ECM AND COMBINATION METER CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from TCM.
3) Turn ignition switch to ON.
4) Measure voltage between ECM and chassis ground.

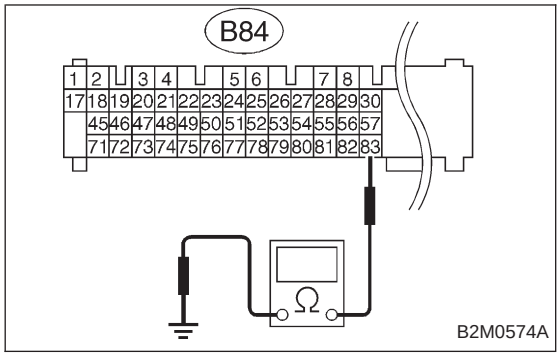
CHECK ***: Connector & terminal***
(B84) No. 83 (+) — Chassis ground (−):
Is the voltage more than 2 V?

YES : Repair harness and connector.

NOTE:
In this case, repair the following:

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

NO : Go to step **10AM3**.



10AM3	CHECK HARNESS BETWEEN ECM AND COMBINATION METER CONNECTOR.

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

CHECK ***: Connector & terminal (B84) No. 83 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Repair short circuit in harness between ECM and combination meter connector.

NO : Repair poor contact in ECM connector.

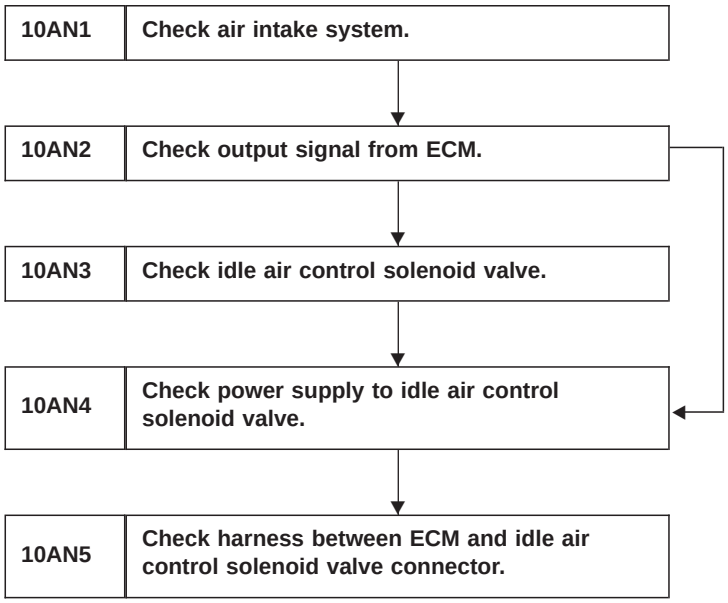
AN: DTC P0505 — IDLE CONTROL SYSTEM MALFUNCTION (ISC) —

DTC DETECTING CONDITION:

- Immediately at fault recognition

TROUBLE SYMPTOM:

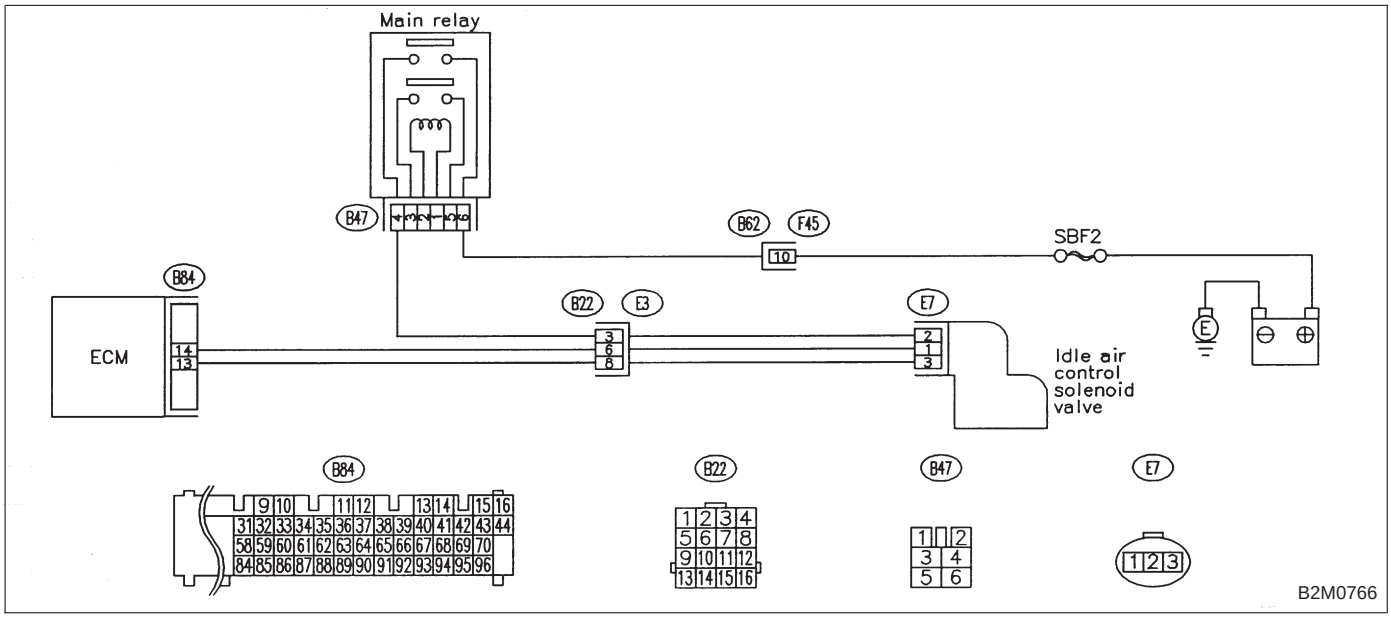
- Erroneous idling
- Engine stalls.
- Engine breathing



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

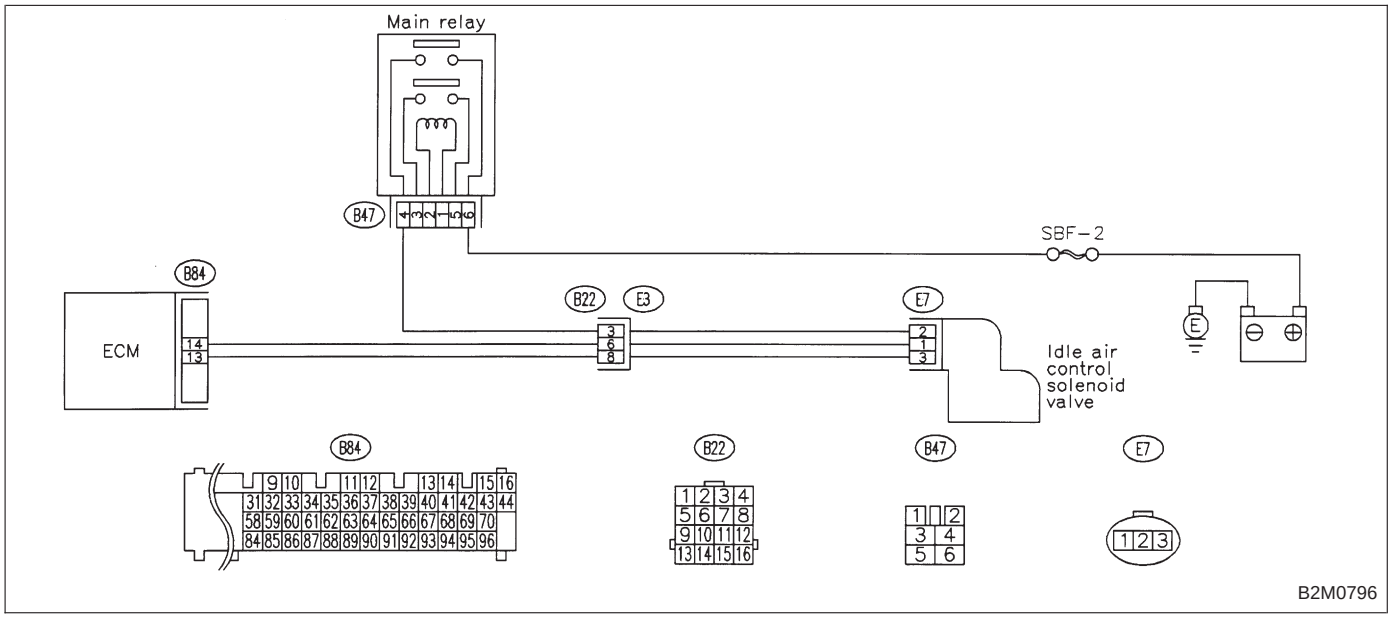
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



10AN1	CHECK AIR INTAKE SYSTEM.

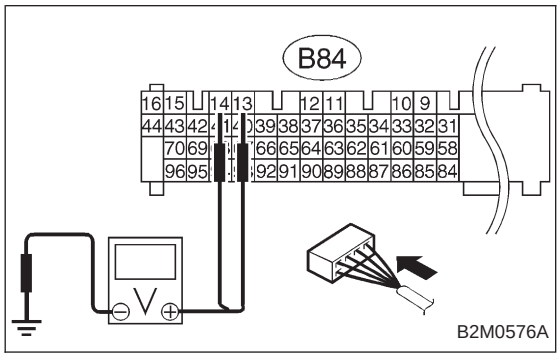
1) Turn ignition switch to ON.
2) Start engine, and idle it.

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

NOTE:
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
- Loose connections and cracks of idle air control solenoid valve by-pass hoses
- Disconnections of vacuum hoses

YES : Repair or replace air intake system.

NO : Go to step **10AN2**.



10AN2	CHECK OUTPUT SIGNAL FROM ECM.

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

CHECK ***: Connector & terminal (B84) No. 13 (+) — Chassis ground (−): Is the voltage more than 3 V?***

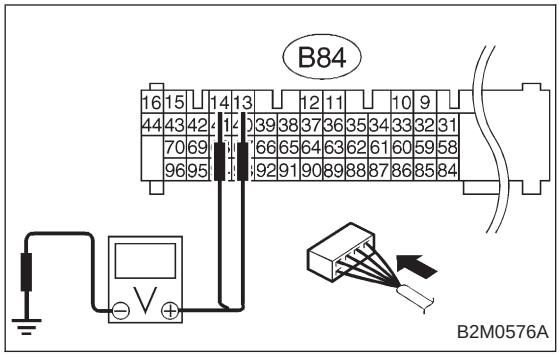
YES : Go to next CHECK .

NO : Go to step **10AN4**.

CHECK ***: Connector & terminal (B84) No. 14 (+) — Chassis ground (−): Is the voltage more than 3 V?***

YES : Go to next step 3).

NO : Go to step **10AN4**.



3) Turn ignition switch to OFF.
4) Disconnect connector from idle air control solenoid valve.
5) Turn ignition switch to ON.
6) Measure voltage between ECM and chassis ground.

CHECK ***: Connector & terminal (B84) No. 13 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Repair short circuit in harness between ECM and idle air control solenoid valve connector.

NO : Go to next CHECK .

CHECK ***: Connector & terminal (B84) No. 14 (+) — Chassis ground (−): Is the voltage more than 10 V?***

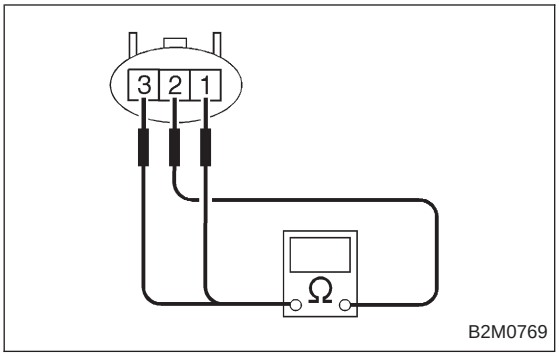
YES : Repair short circuit in harness between ECM and idle air control solenoid valve connector and replace ECM.

NO : Go to next CHECK .

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

YES : Repair poor contact in ECM connector.

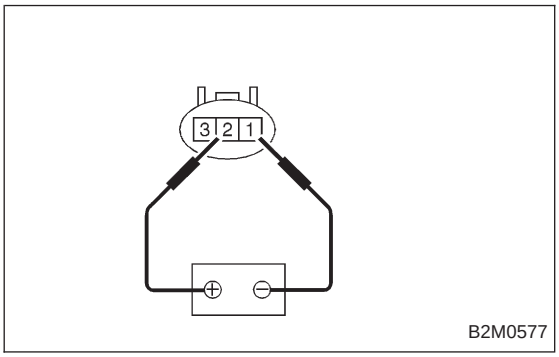
NO : Go to step **10AN3**.



10AN3	CHECK IDLE AIR CONTROL SOLENOID VALVE.

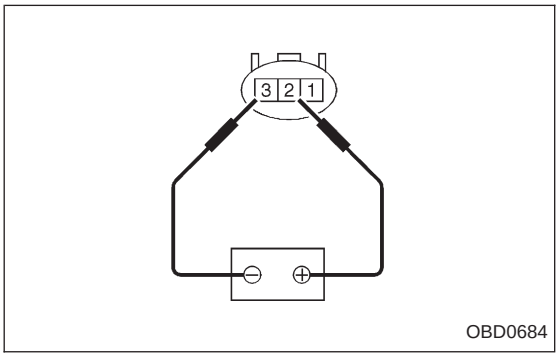
1) Turn ignition switch to OFF.
2) Measure resistance between idle air control solenoid valve connector terminals.

CHECK : ***Terminals No. 1 — No. 2: Is the resistance more than 20 Ω?***
YES : Replace idle air control solenoid valve.
NO : Go to next CHECK .
CHECK : ***Terminals No. 2 — No. 3: Is the resistance more than 20 Ω?***
YES : Replace idle air control solenoid valve.
NO : Go to next CHECK .
CHECK : ***Terminals No. 1 — No. 2: Is the resistance less than 5 Ω?***
YES : Replace idle air control solenoid valve and ECM.
NO : Go to next CHECK .
CHECK : ***Terminals No. 2 — No. 3: Is the resistance less than 5 Ω?***
YES : Replace idle air control solenoid valve and ECM.
NO : Go to next step 3).

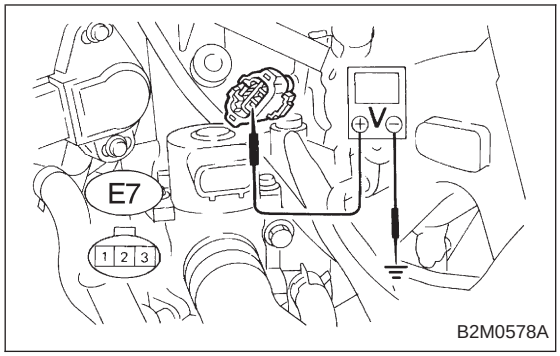


3) Remove idle air control solenoid valve. <Ref. to 2-7 [W12A0].>
4) Check operation of idle air control solenoid valve.

CHECK : ***Is idle air control solenoid valve fully opened when applying the battery to terminals No. 2 (+) and No. 1 (−)?***
YES : Go to next CHECK .
NO : Clean idle air control solenoid valve. <Ref. to 2-7 [W12B0].>



CHECK : ***Is idle air control solenoid valve fully closed when applying the battery to terminals No. 2 (+) and No. 3 (−)?***
YES : Go to step **10AN4**.
NO : Clean idle air control solenoid valve. <Ref. to 2-7 [W12B0].>



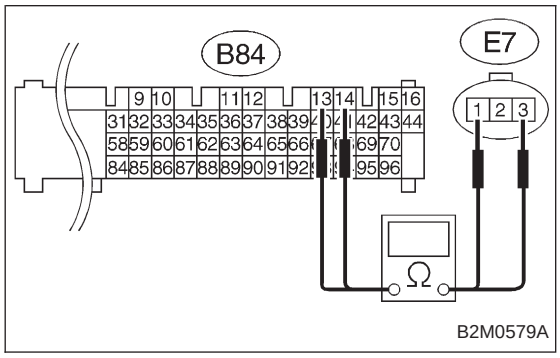
10AN4	CHECK POWER SUPPLY TO IDLE AIR CONTROL SOLENOID VALVE.

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 and engine ground.

CHECK ***: Connector & terminal***
(E7) No. 2 (+) — Engine ground (−):
Is the voltage more than 10 V?

YES : Go to step **10AN5**.

NO : Repair open circuit in harness between idle air control solenoid valve and main relay connector.



10AN5	CHECK HARNESS BETWEEN ECM AND IDLE AIR CONTROL SOLENOID VALVE CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from ECM.
3) Measure resistance of harness between ECM and idle air control solenoid valve connector.

CHECK ***: Connector & terminal***
(B84) No. 14 — (E7) No. 1:
Is the resistance less than 1 Ω?

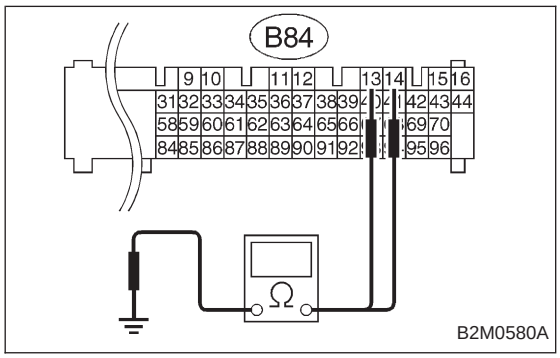
YES : Go to next CHECK .

NO : Repair open circuit in harness between ECM and idle air control solenoid valve connector.

CHECK ***: Connector & terminal***
(B84) No. 13 — (E7) No. 3:
Is the resistance less than 1 Ω?

YES : Go to next step 4).

NO : Repair open circuit in harness between ECM and idle air control solenoid valve connector.



4) Measure resistance of harness between ECM and chassis ground.

CHECK ***: Connector & terminal***
(B84) No. 13 — Chassis ground:
Is the resistance less than 10 Ω?

YES : Repair short circuit in harness between ECM and idle air control solenoid valve connector.

NO : Go to next CHECK .

CHECK ***: Connector & terminal (B84) No. 14 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Repair short circuit in harness between ECM and idle air control solenoid valve connector.

NO : Go to next CHECK .

CHECK ***: Is there poor contact in idle air control solenoid valve connector?***

YES : Repair poor contact in idle air control solenoid valve connector.

NO : Contact with SOA service.

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

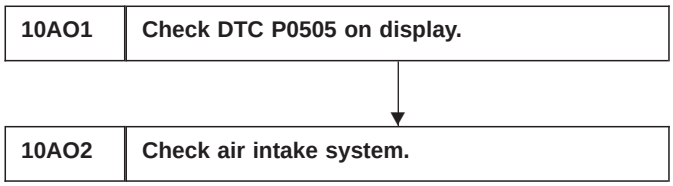
AO: DTC P0506 — IDLE CONTROL SYSTEM RPM LOWER THAN EXPECTED (ISC – L) —

DTC DETECTING CONDITION:

- Two consecutive trips 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 and INSPECTION MODES.
<Ref. to 2-7 [T3D0] and [T3E0].>

10AO1	CHECK DTC P0505 ON DISPLAY.

CHECK : ***Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0505?***

YES : Inspect DTC P0505 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

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

NO : Go to step **10AO2**.

10AO2	CHECK AIR INTAKE SYSTEM.

1) Turn ignition switch to ON.
2) Start engine, and idle it.

CHECK : ***Is clogging the by-pass line between by-pass hose and intake duct?***

YES : Repair the by-pass line.

NO : Replace idle air control solenoid valve.

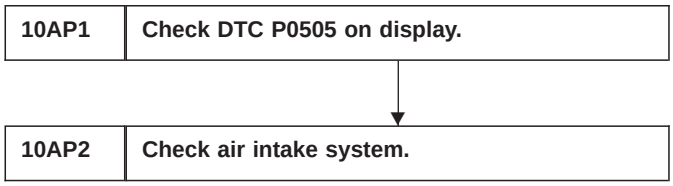
AP: DTC P0507 — IDLE CONTROL SYSTEM RPM HIGHER THAN EXPECTED (ISC – H) —

DTC DETECTING CONDITION:

- Two consecutive trips 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 and INSPECTION MODES.
<Ref. to 2-7 [T3D0] and [T3E0].>

10AP1	CHECK DTC P0505 ON DISPLAY.

CHECK : ***Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0505?***

YES : Inspect DTC P0505 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

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

NO : Go to step **10AP2**.

10AP2	CHECK AIR INTAKE SYSTEM.

1) Turn ignition switch to ON.
2) Start engine, and idle it.

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

NOTE:
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
- Loose connections and cracks of idle air control solenoid valve by-pass hoses
- Disconnections of vacuum hoses

YES : Repair air suction and leaks.

NO : Replace idle air control solenoid valve.

AQ: DTC P0600 — SERIAL COMMUNICATION LINK MALFUNCTION —

DTC DETECTING CONDITION:

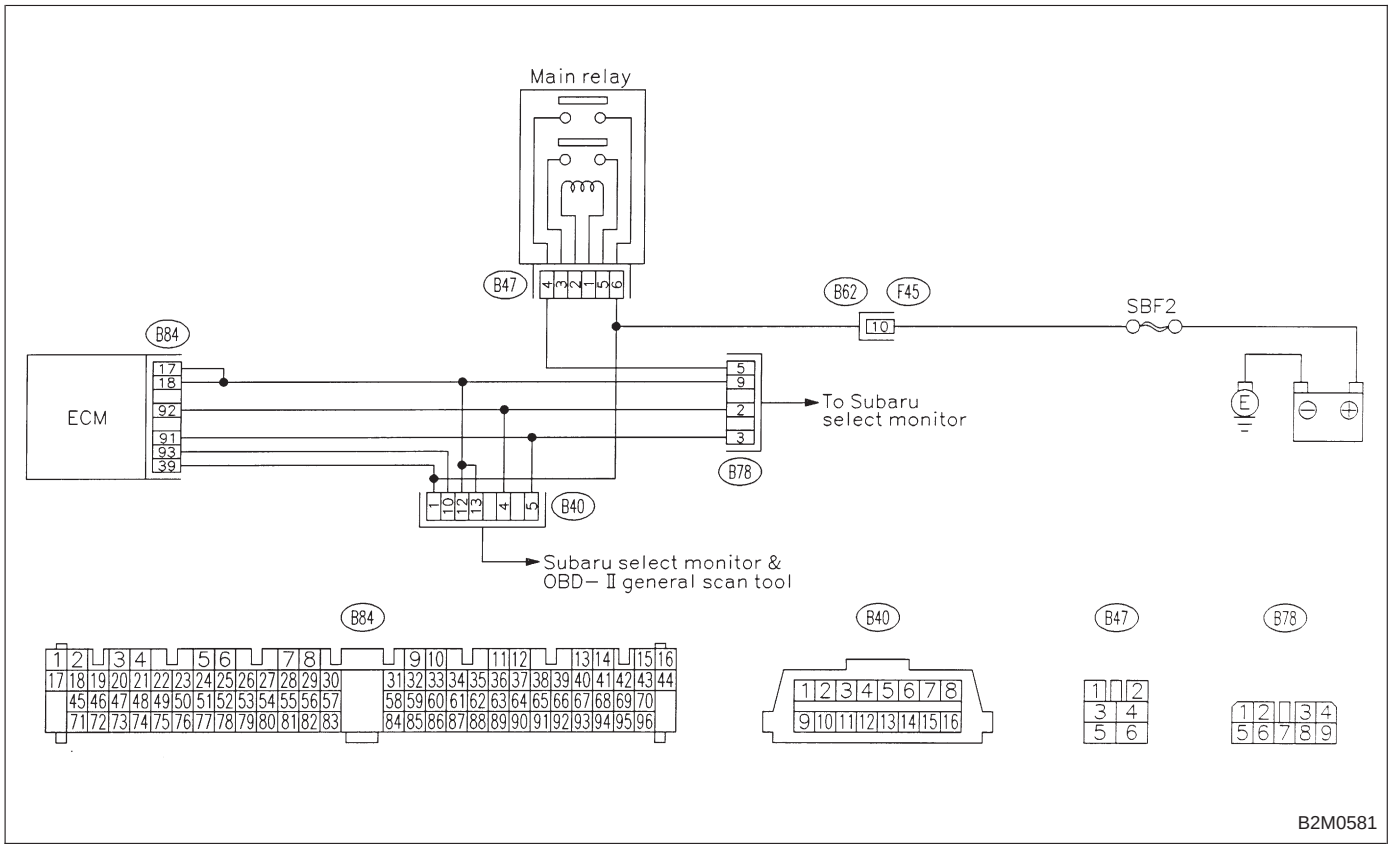
- Two consecutive trips with fault

10AQ1	**Check harness between ECM and data link connector.**

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

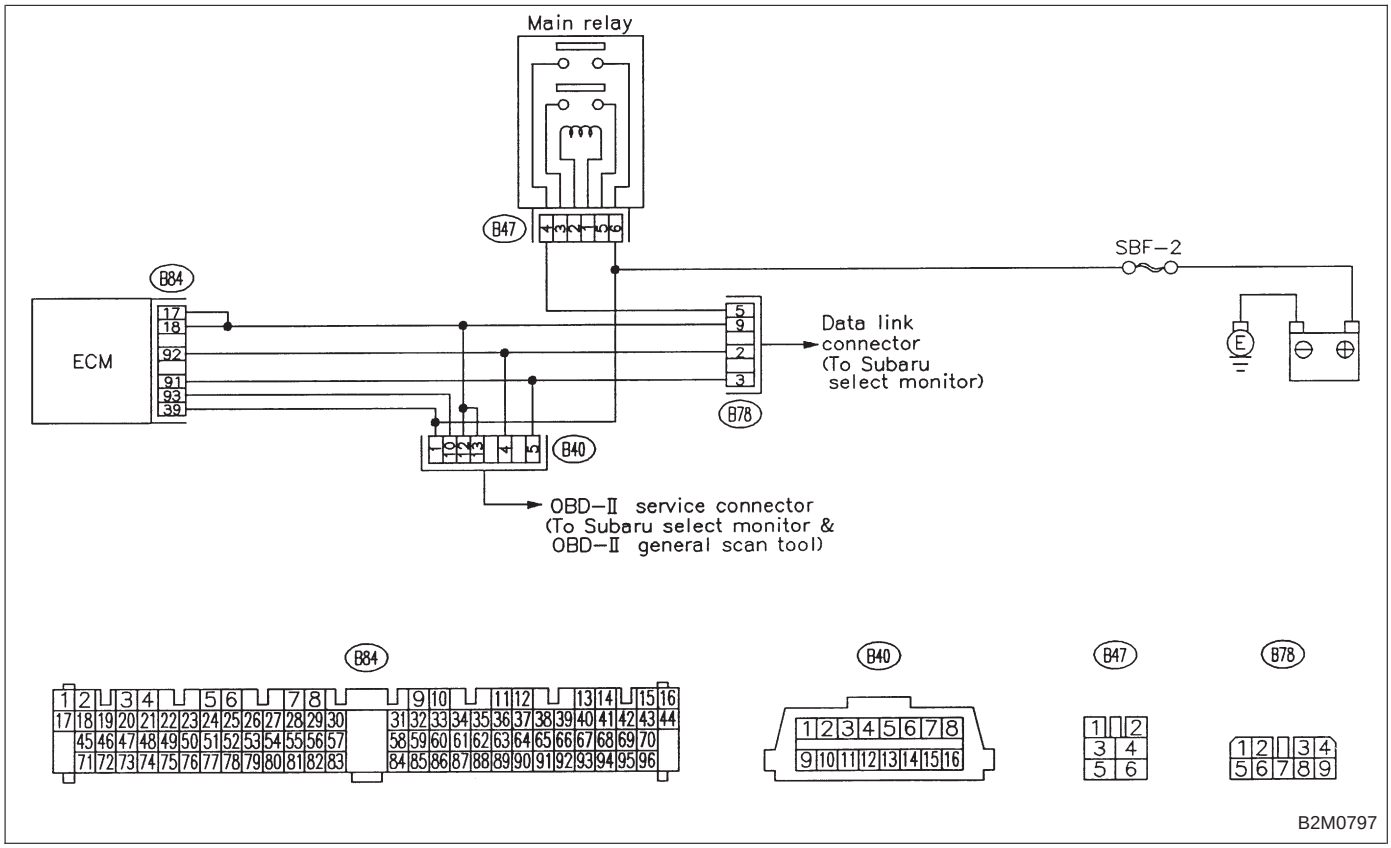
WIRING DIAGRAM:

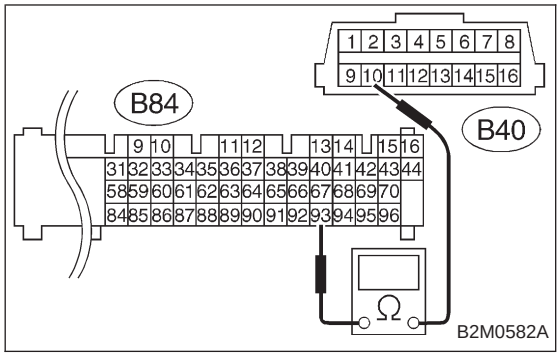
- LHD Model



WIRING DIAGRAM:

- RHD Model





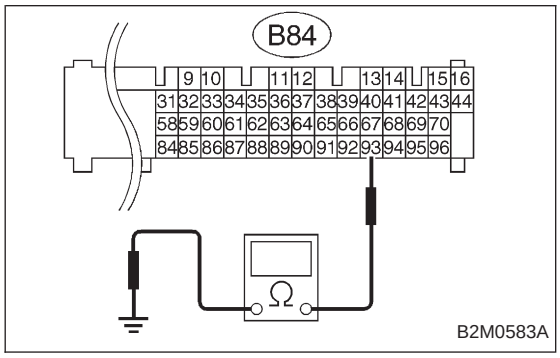
10AQ1	CHECK HARNESS BETWEEN ECM AND DATA LINK CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connector from ECM.
3) Measure resistance of harness between ECM and data link connector (for Subaru Select Monitor & OBD-II general scan tool).

CHECK ***: Connector & terminal (B84) No. 93 — (B40) No. 10: Is the resistance less than 1 Ω?***

YES : Go to next step 4).

NO : Repair open circuit in harness between ECM and data link connector.



4) Measure resistance of harness between ECM and chassis ground.

CHECK ***: Connector & terminal (B84) No. 93 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Repair short circuit in harness between ECM and data link connector.

NO : Repair poor contact in ECM connector and data link connector.

OBD (FB1)

P0601 <RAM>

OBD0376

AR: DTC P0601 — INTERNAL CONTROL MODULE MEMORY CHECK SUM ERROR (RAM) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

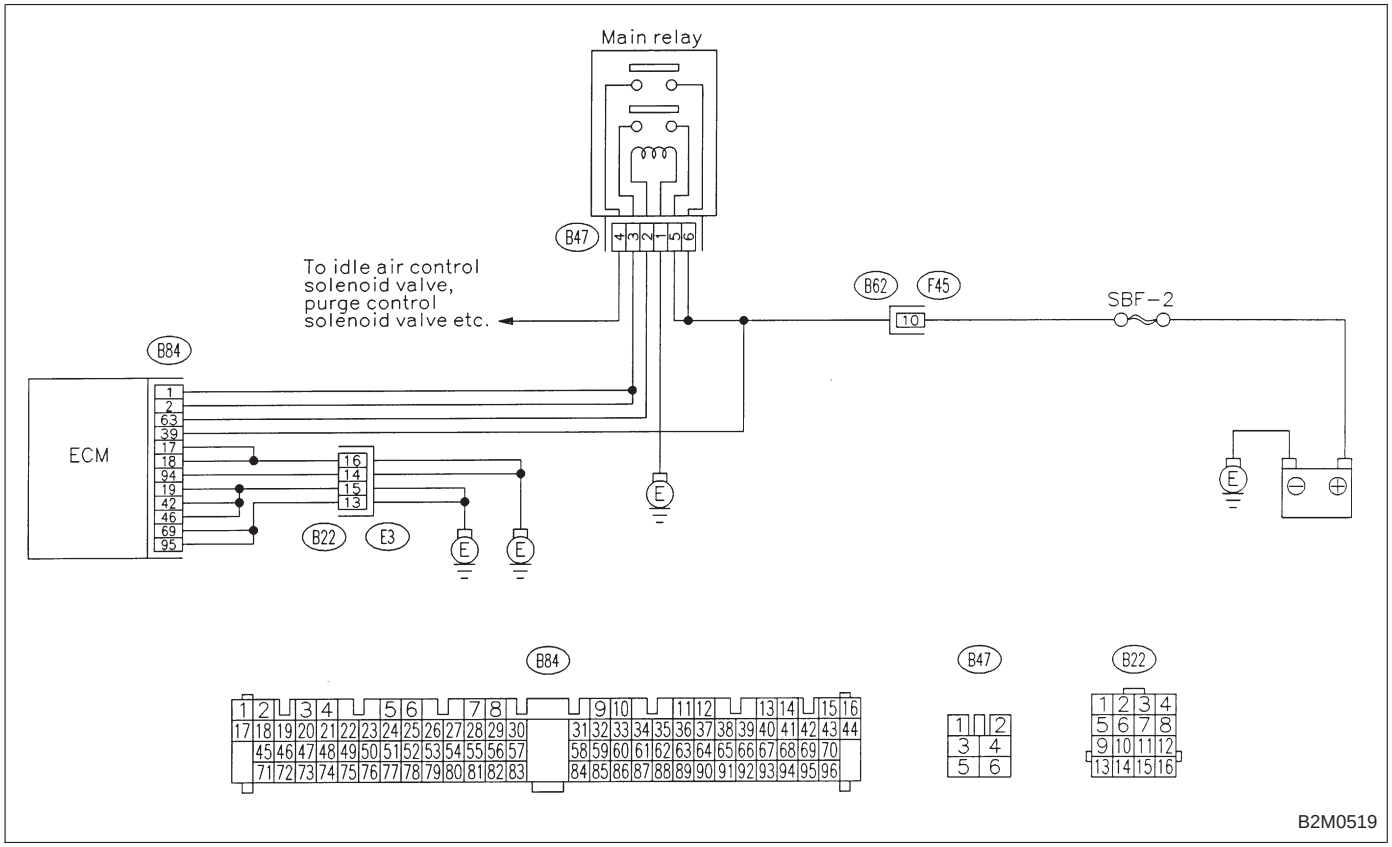
- Engine does not start.
- Engine stalls.

10AR1	**Check DTC P0601 on display.**

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

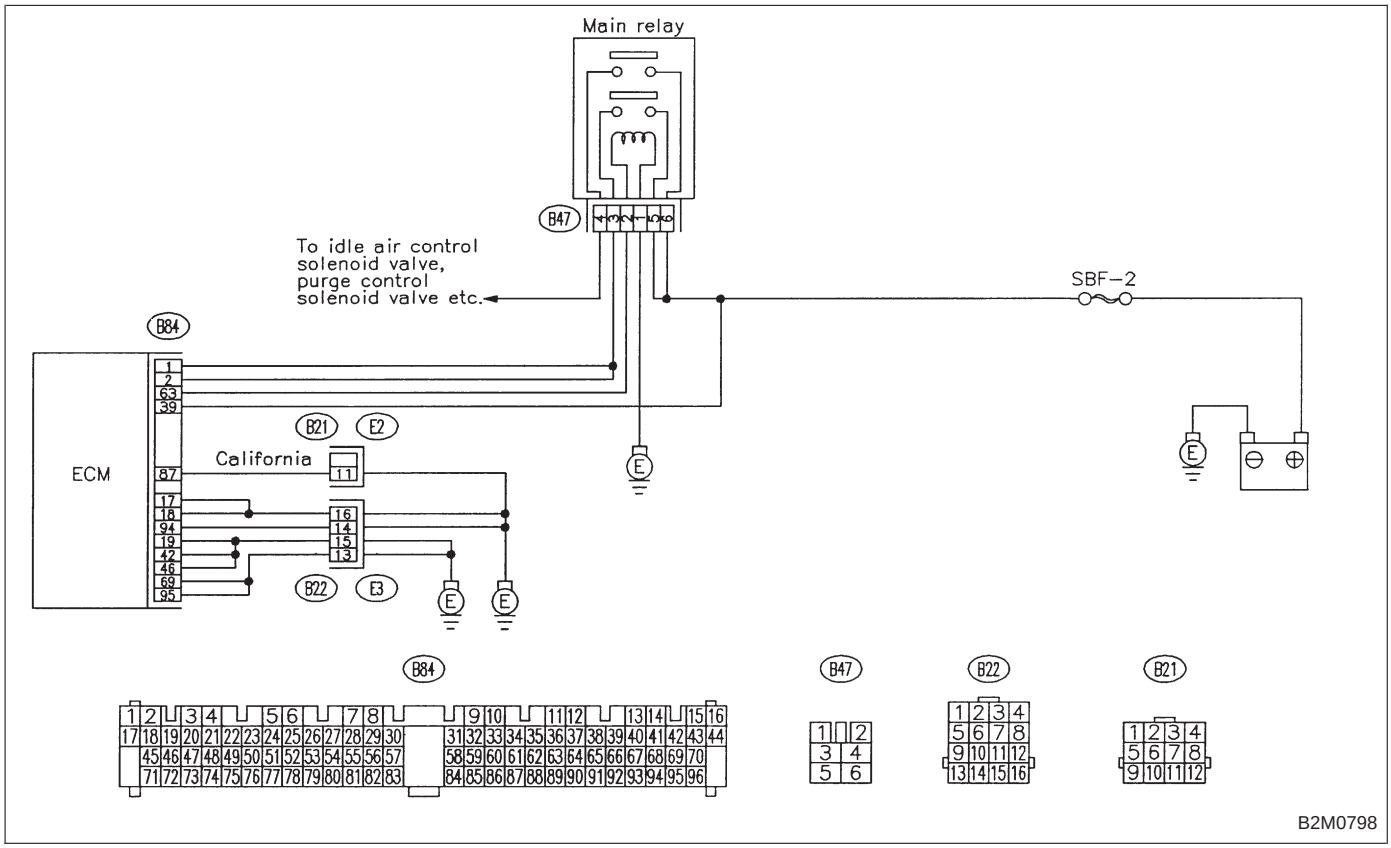
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

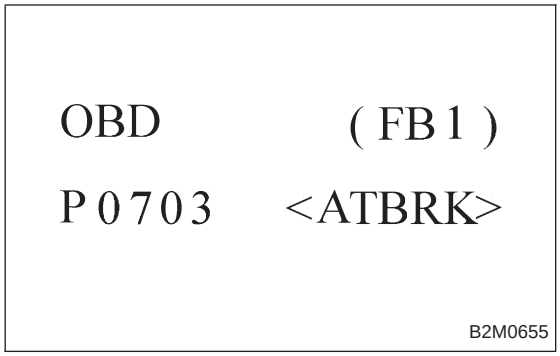
- RHD Model



10AR1	CHECK DTC P0601 ON DISPLAY.

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

YES : Replace ECM.



AS: DTC P0703 — BRAKE SWITCH INPUT MALFUNCTION (ATBRK) —

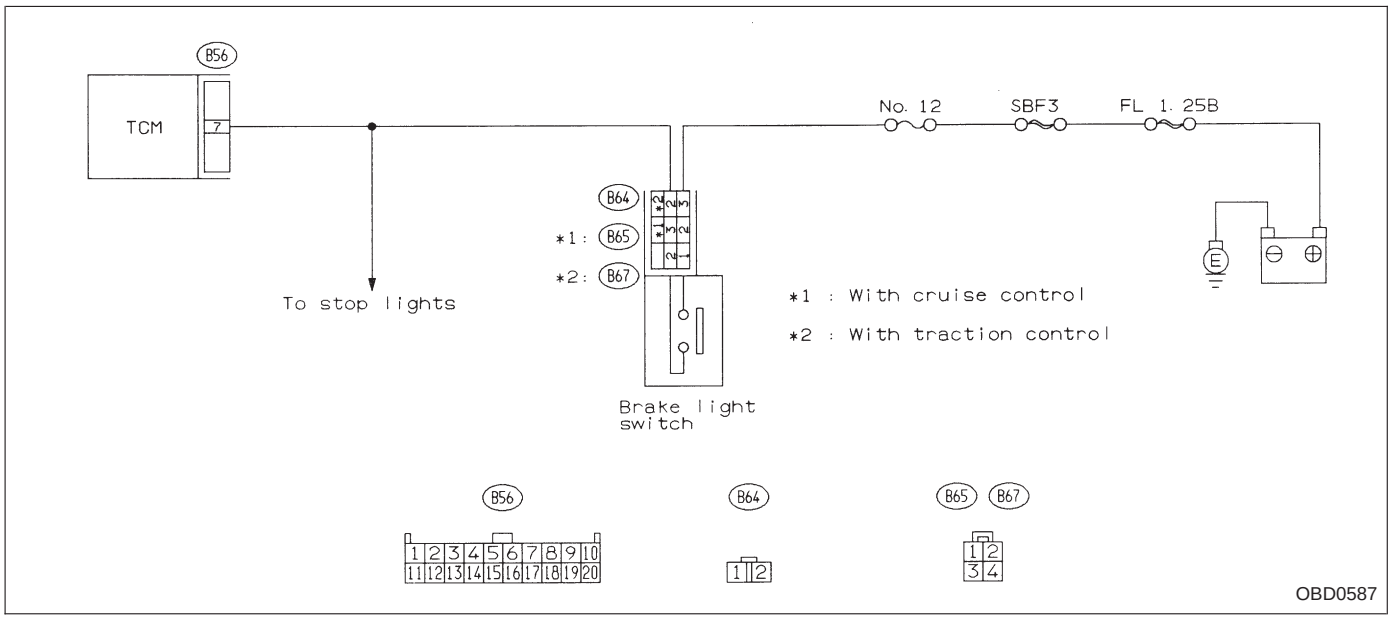
DTC DETECTING CONDITION:

- Two consecutive trips with fault

10AS1	**Check operation of brake light.**
↓	
10AS2	**Check harness between TCM and brake light switch connector.**
↓	
10AS3	**Check input signal for TCM.**

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

WIRING DIAGRAM:

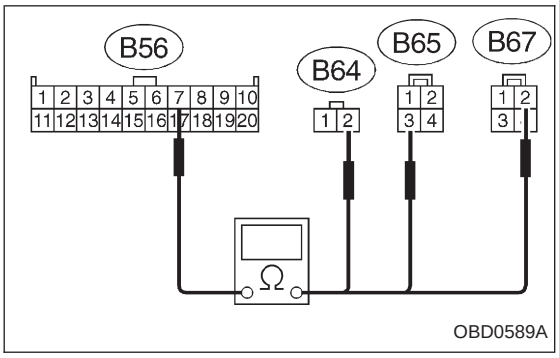


10AS1	CHECK OPERATION OF BRAKE LIGHT.

CHECK : ***Does brake light come on when depressing the brake pedal?***

YES : Go to step **10AS2**.

NO : Repair or replace brake light circuit.



10AS2	CHECK HARNESS BETWEEN TCM AND BRAKE LIGHT SWITCH CONNECTOR.

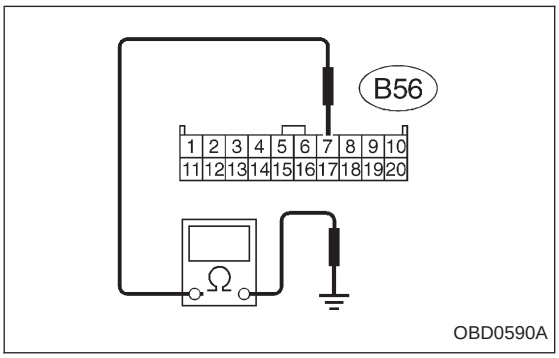
1) Disconnect connectors from TCM and brake light switch.
2) Measure resistance of harness between TCM and brake light switch connector.

CHECK : ***Connector & terminal***
(B56) No. 7 — (B64) No. 2:
(B56) No. 7 — (B65) No. 3 (With cruise control):
(B56) No. 7 — (B67) No. 2 (With traction control):
Is the resistance less than 1 Ω?

YES : Go to next step 3).

NO : Repair or replace harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between TCM and brake light switch connector
- Poor contact in TCM connector
- Poor contact in brake light switch connector

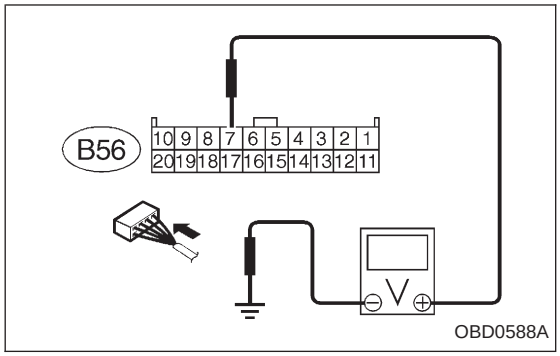


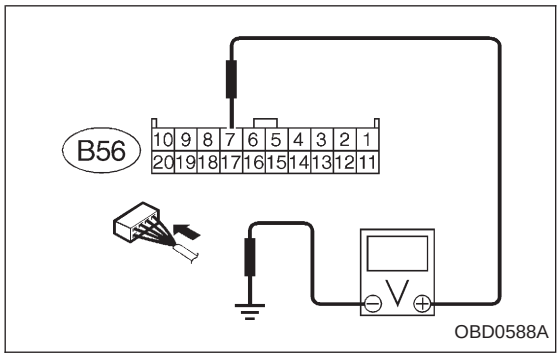
3) Measure resistance of harness between TCM and chassis ground.

CHECK : ***Connector & terminal***
(B56) No. 7 — Chassis ground:
Is the resistance more than 1 MΩ?

YES : Go to step **10AS3**.

NO : Repair short circuit in harness between TCM and brake light switch connector.





10AS3	CHECK INPUT SIGNAL FOR TCM.

1) Connect connectors to TCM and brake light switch.
2) Measure voltage between TCM and chassis ground.

CHECK ***: Connector & terminal (B56) No. 7 (+) — Chassis ground (−): Is the voltage less than 1 V when releasing the brake pedal?***

YES : Go to next CHECK .

NO : Adjust or replace brake light switch.

CHECK ***: Connector & terminal (B56) No. 7 (+) — Chassis ground (−): Is the voltage more than 10 V when depressing the brake pedal?***

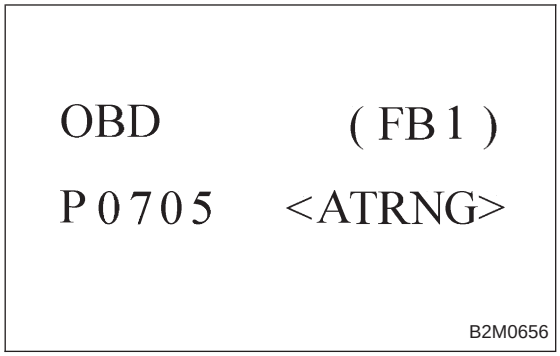
YES : Go to next CHECK .

NO : Adjust or replace brake light switch.

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

YES : Repair poor contact in TCM connector.

NO : Replace TCM.



AT: DTC P0705 — TRANSMISSION RANGE SENSOR CIRCUIT MALFUNCTION (ATRNG) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

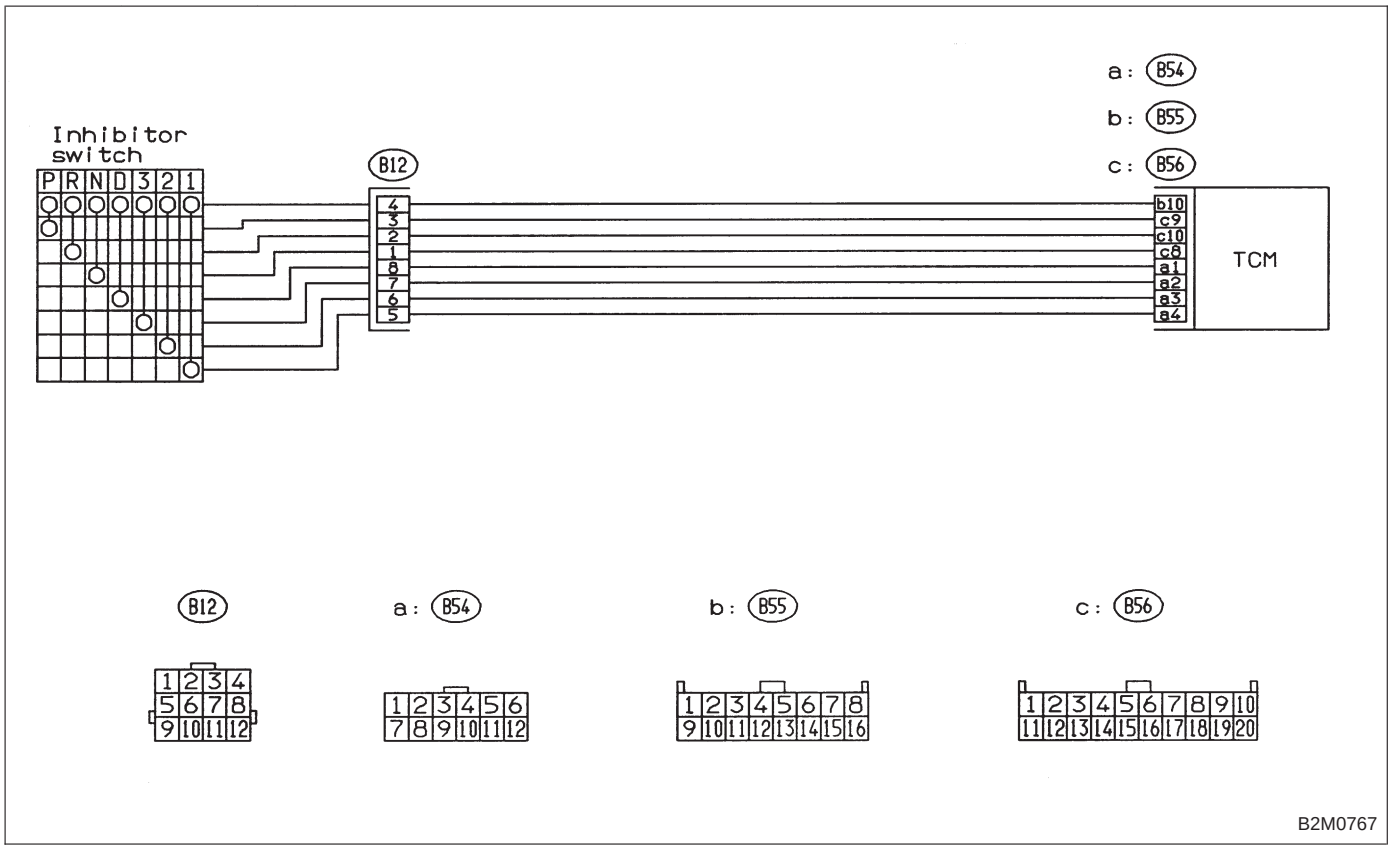
TROUBLE SYMPTOM:

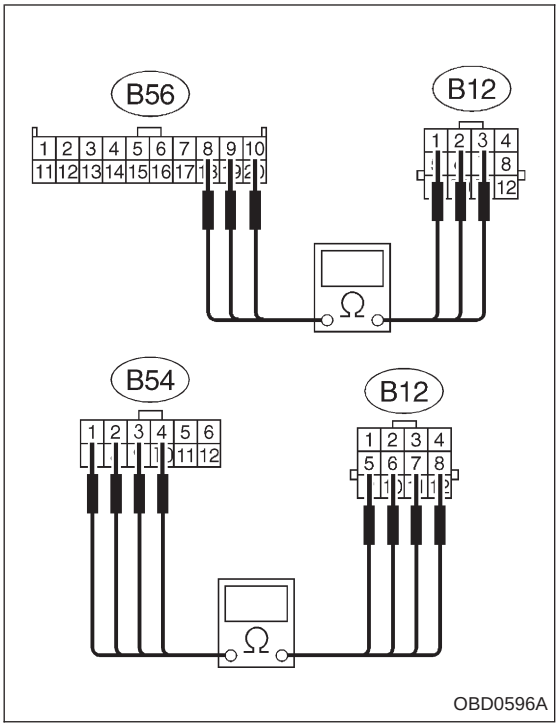
- Starter does not rotate when selector lever is in “P” or “N” range.
- Starter rotates when selector lever is in “R”, “D”, “3”, “2” or “1” range.
- Engine brake is not effected when selector lever is in “3” range.
- Shift characteristics are erroneous.

10AT1	**Check harness between TCM and inhibitor switch connector.**
↓	
10AT2	**Check inhibitor switch.**
↓	
10AT3	**Check input signal for TCM.**

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

WIRING DIAGRAM:





10AT1	CHECK HARNESS BETWEEN TCM AND INHIBITOR SWITCH CONNECTOR.

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

CHECK ***: Connector & terminal (B56) No. 9 — (B12) No. 3: Is the resistance less than 1 Ω?***

YES : Go to next CHECK .

NO : Repair open circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B56) No. 10 — (B12) No. 2: Is the resistance less than 1 Ω?***

YES : Go to next CHECK .

NO : Repair open circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B56) No. 8 — (B12) No. 1: Is the resistance less than 1 Ω?***

YES : Go to next CHECK .

NO : Repair open circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B54) No. 1 — (B12) No. 8: Is the resistance less than 1 Ω?***

YES : Go to next CHECK .

NO : Repair open circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B54) No. 2 — (B12) No. 7: Is the resistance less than 1 Ω?***

YES : Go to next CHECK .

NO : Repair open circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B54) No. 3 — (B12) No. 6: Is the resistance less than 1 Ω?***

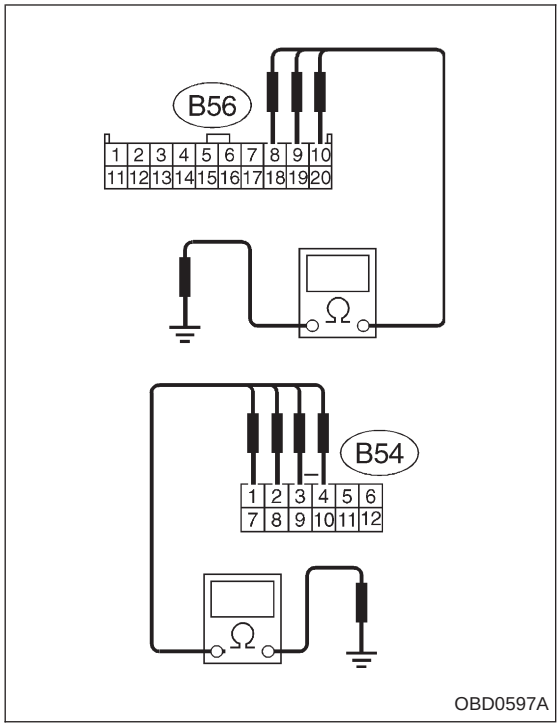
YES : Go to next CHECK .

NO : Repair open circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B54) No. 4 — (B12) No. 5: Is the resistance less than 1 Ω?***

YES : Go to next step 4).

NO : Repair open circuit in harness between TCM and transmission harness connector.



4) Measure resistance of harness between TCM and chassis ground.

CHECK ***: Connector & terminal (B56) No. 9 — Chassis ground: Is the resistance more than 1 MΩ?***

YES : Go to next CHECK .

NO : Repair short circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B56) No. 10 — Chassis ground: Is the resistance more than 1 MΩ?***

YES : Go to next CHECK .

NO : Repair short circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B56) No. 8 — Chassis ground: Is the resistance more than 1 MΩ?***

YES : Go to next CHECK .

NO : Repair short circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B54) No. 1 — Chassis ground: Is the resistance more than 1 MΩ?***

YES : Go to next CHECK .

NO : Repair short circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B54) No. 2 — Chassis ground: Is the resistance more than 1 MΩ?***

YES : Go to next CHECK .

NO : Repair short circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B54) No. 3 — Chassis ground: Is the resistance more than 1 MΩ?***

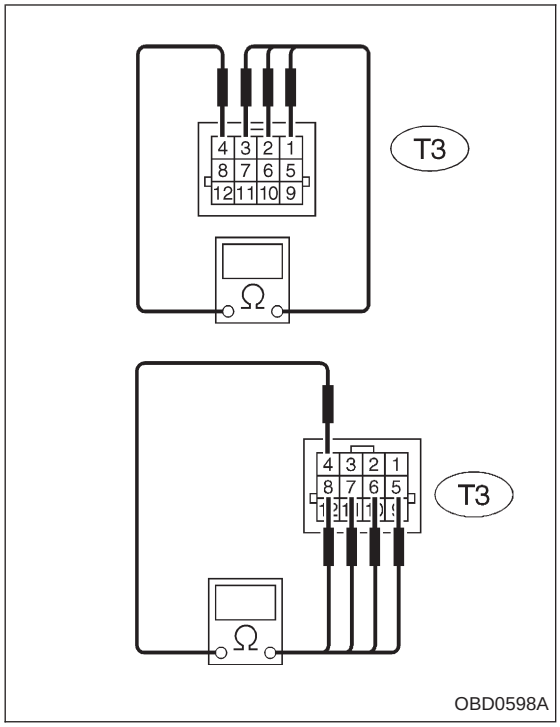
YES : Go to next CHECK .

NO : Repair short circuit in harness between TCM and transmission harness connector.

CHECK ***: Connector & terminal (B54) No. 4 — Chassis ground: Is the resistance more than 1 MΩ?***

YES : Go to step **10AT2**.

NO : Repair short circuit in harness between TCM and transmission harness connector.



10AT2	CHECK INHIBITOR SWITCH.

Measure resistance between transmission harness connector receptacle's terminals.

CHECK : ***Connector & terminal (T3) No. 3 — No. 4***
- ***Is the resistance less than 1 Ω in "P" position?***
- ***Is the resistance more than 1 MΩ in other positions?***

YES : Go to next CHECK .
NO : Go to CHECK1 .

CHECK : ***Connector & terminal (T3) No. 2 — No. 4***
- ***Is the resistance less than 1 Ω in "R" position?***
- ***Is the resistance more than 1 MΩ in other positions?***

YES : Go to next CHECK .
NO : Go to CHECK1 .

CHECK : ***Connector & terminal (T3) No. 1 — No. 4***
- ***Is the resistance less than 1 Ω in "N" position?***
- ***Is the resistance more than 1 MΩ in other positions?***

YES : Go to next CHECK .
NO : Go to CHECK1 .

CHECK : ***Connector & terminal (T3) No. 8 — No. 4***
- ***Is the resistance less than 1 Ω in "D" position?***
- ***Is the resistance more than 1 MΩ in other positions?***

YES : Go to next CHECK .
NO : Go to CHECK1 .

CHECK : ***Connector & terminal (T3) No. 7 — No. 4***
- ***Is the resistance less than 1 Ω in "3" position?***
- ***Is the resistance more than 1 MΩ in other positions?***

YES : Go to next CHECK .
NO : Go to CHECK1 .

CHECK : ***Connector & terminal***
(T3) No. 6 — No. 4
● Is the resistance less than 1 Ω in "2" position?
● Is the resistance more than 1 MΩ in other positions?

YES : Go to next CHECK .

NO : Go to CHECK1 .

CHECK : ***Connector & terminal***
(T3) No. 5 — No. 4
● Is the resistance less than 1 Ω in "1" position?
● Is the resistance more than 1 MΩ in other positions?

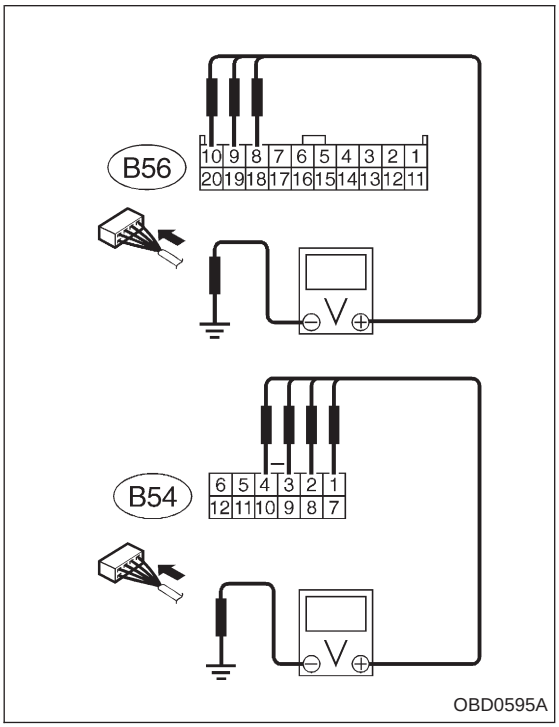
YES : Go to step **10AT3**.

NO : Go to CHECK1 .

CHECK1 : ***Is there faulty connection in the selector cable?***

YES : Repair connection of selector cable.

NO : Replace inhibitor switch.



10AT3	CHECK INPUT SIGNAL FOR TCM.

1) Turn ignition switch to OFF.
2) Connect connector to TCM and transmission.
3) Turn ignition switch to ON.
4) Measure voltage between TCM and chassis ground.

CHECK : ***Connector & terminal***
(B56) No. 9 (+) — Chassis ground (−):
● Is the voltage less than 1 V in "P" and "N" positions?
● Is the voltage more than 8 V in other positions?

YES : Go to next CHECK .

NO : Go to CHECK1 .

CHECK : ***Connector & terminal***
(B56) No. 10 (+) — Chassis ground (−):
● Is the voltage less than 1 V in "R" position?
● Is the voltage more than 6 V in other positions?

YES : Go to next CHECK .

NO : Go to CHECK1 .

CHECK : ***Connector & terminal***
(B56) No. 8 (+) — Chassis ground (−):
● Is the voltage less than 1 V in "N" and "P" positions?
● Is the voltage more than 8 V in other positions?

YES : Go to next CHECK .

NO : Go to CHECK1 .

CHECK : ***Connector & terminal (B54) No. 1 (+) — Chassis ground (−):***
- ***Is the voltage less than 1 V in "D" position?***
- ***Is the voltage more than 6 V in other positions?***

YES : Go to next CHECK .
NO : Go to CHECK1 .

CHECK : ***Connector & terminal (B54) No. 2 (+) — Chassis ground (−):***
- ***Is the voltage less than 1 V in "3" position?***
- ***Is the voltage more than 6 V in other positions?***

YES : Go to next CHECK .
NO : Go to CHECK1 .

CHECK : ***Connector & terminal (B54) No. 3 (+) — Chassis ground (−):***
- ***Is the voltage less than 1 V in "2" position?***
- ***Is the voltage more than 6 V in other positions?***

YES : Go to next CHECK .
NO : Go to CHECK1 .

CHECK : ***Connector & terminal (B54) No. 4 (+) — Chassis ground (−):***
- ***Is the voltage less than 1 V in "1" position?***
- ***Is the voltage more than 6 V in other positions?***

YES : Repair poor contact in TCM connector.
NO : Go to CHECK1 .

CHECK1 : ***Is there poor contact in TCM connector?***
YES : Repair poor contact in TCM connector.
NO : Replace TCM.

AU: DTC P0710 — TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT MALFUNCTION (ATF) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

- No shift up to 4th speed (after engine warm-up)
- No lock-up (after engine warm-up)
- Excessive shift shock

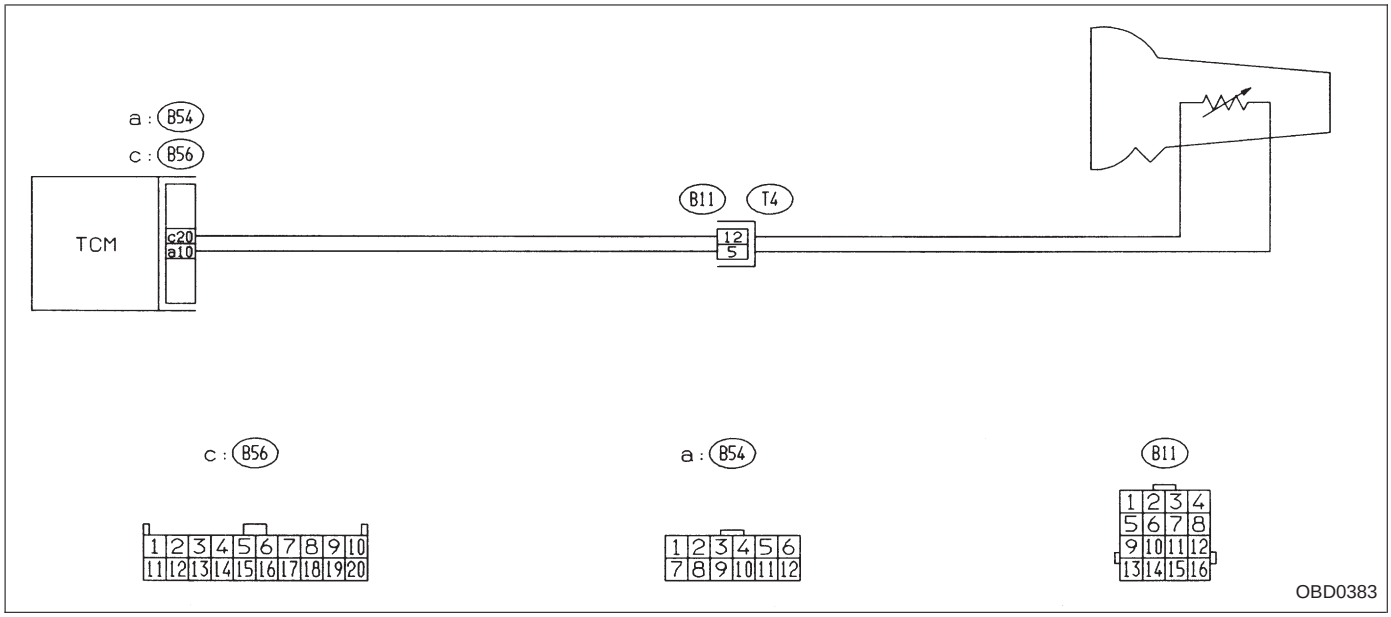
10AU1	**Check DTC P0710 on display.**

↓

Check ATF temperature sensor circuit. <Ref. to 3-2 [T7F0].>

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

WIRING DIAGRAM:

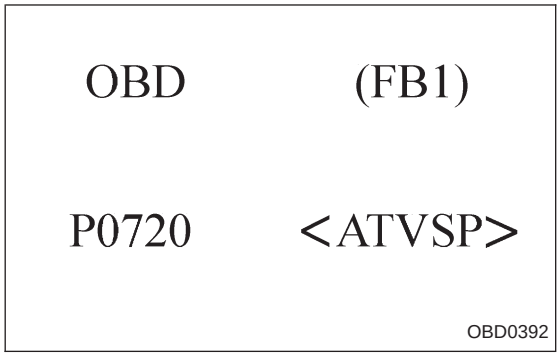


10AU1	**CHECK DTC P0710 ON DISPLAY.**

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0710?***

YES : Check ATF temperature sensor circuit.

NOTE:
For the diagnostic procedure on transmission fluid temperature sensor circuit, refer to 3-2 [T7F0].



AV: DTC P0720 — OUTPUT SPEED SENSOR (VEHICLE SPEED SENSOR 1) CIRCUIT MALFUNCTION (ATVSP) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

- No shift or excessive tight corner “braking”

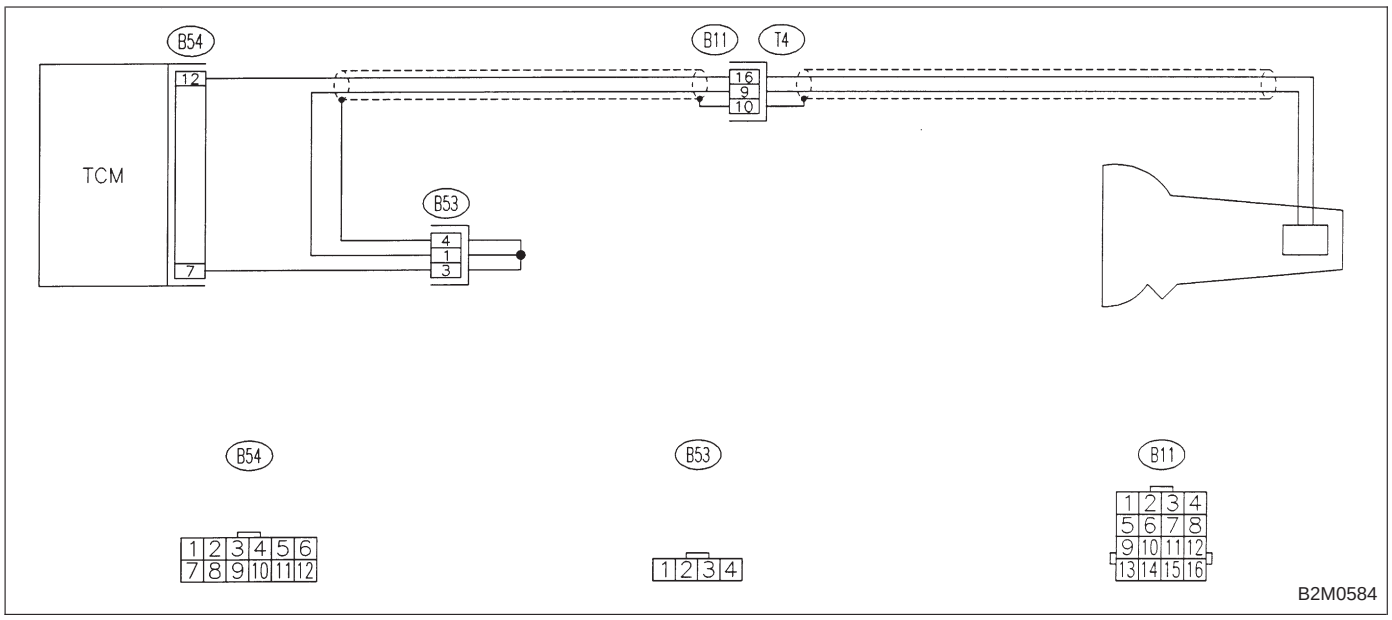
10AV1	**Check DTC P0720 on display.**

↓

Check vehicle speed sensor 1 circuit. <Ref. to 3-2 [T7L0].>

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

WIRING DIAGRAM:

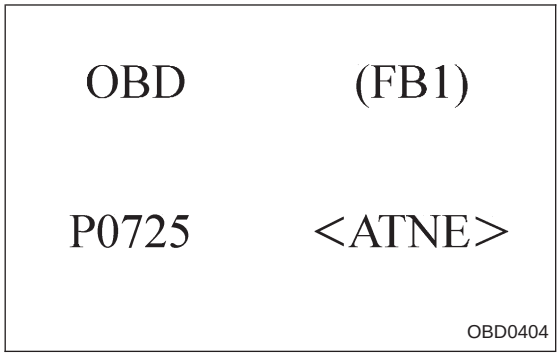


10AV1	**CHECK DTC P0720 ON DISPLAY.**

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0720?***

YES : Check vehicle speed sensor 1 circuit.

NOTE:
For the diagnostic procedure on vehicle speed sensor 1 circuit, refer to 3-2 [T7L0].



AW: DTC P0725 — ENGINE SPEED INPUT CIRCUIT MALFUNCTION (ATNE) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

- No lock-up (after engine warm-up)
- AT diagnostic indicator light (AT OIL TEMP indicator light) remains on when vehicle speed is “0”.

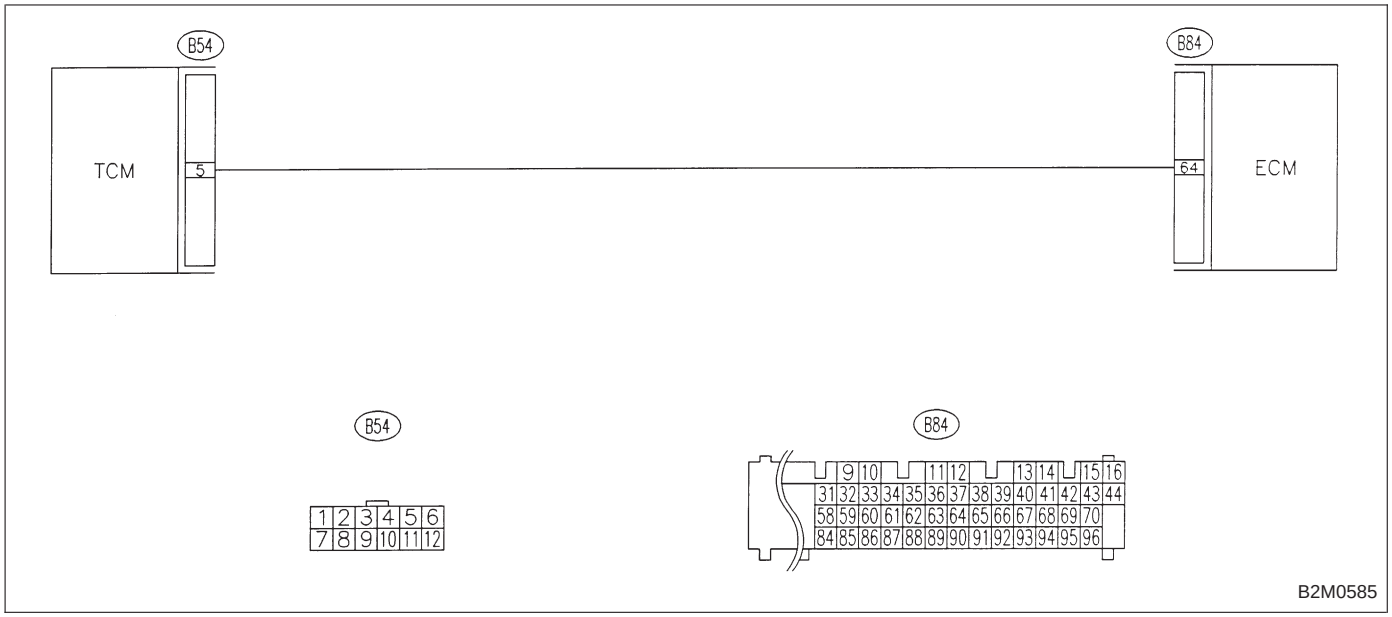
10AW1	**Check DTC P0725 on display.**

↓

Check engine speed input signal circuit. <Ref. to 3-2 [T7H0].>

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

WIRING DIAGRAM:

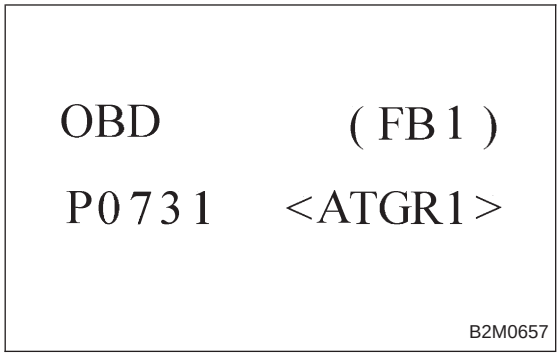


10AW1	**CHECK DTC P0725 ON DISPLAY.**

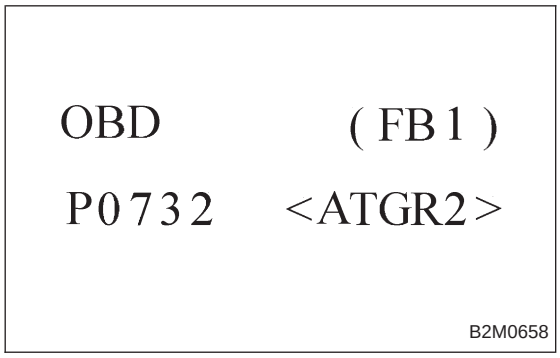
CHECK : ***Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0725?***

YES : Check engine speed input signal circuit.

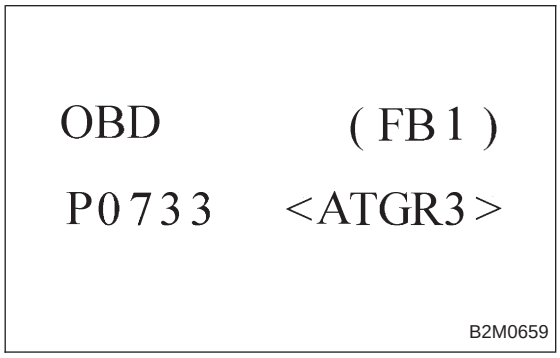
NOTE:
For the diagnostic procedure on engine speed input circuit, refer to 3-2 [T7H0].



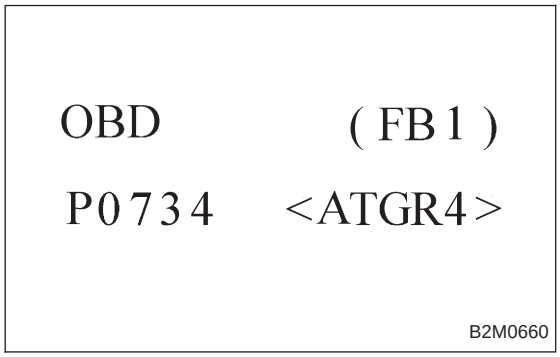
AX: DTC P0731
— GEAR 1 INCORRECT RATIO (ATGR1) —



AY: DTC P0732
— GEAR 2 INCORRECT RATIO (ATGR2) —



AZ: DTC P0733
— GEAR 3 INCORRECT RATIO (ATGR3) —



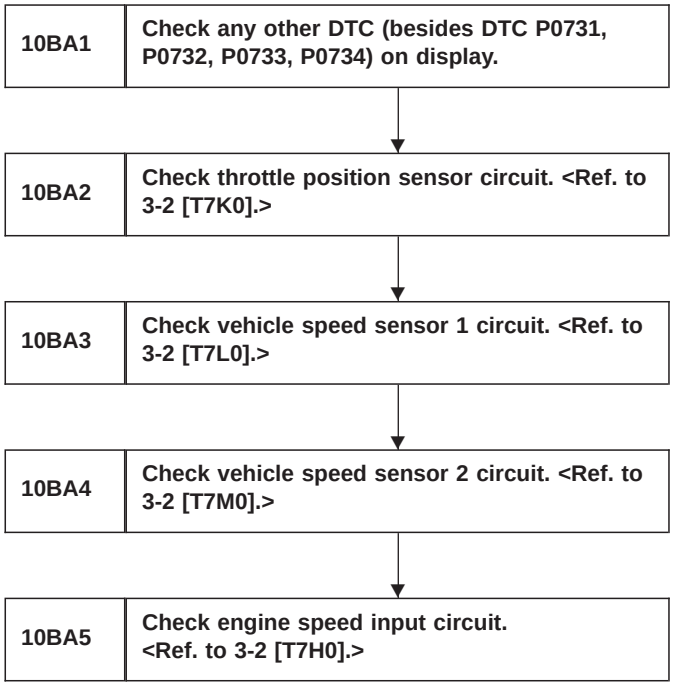
BA: DTC P0734
— GEAR 4 INCORRECT RATIO (ATGR4) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

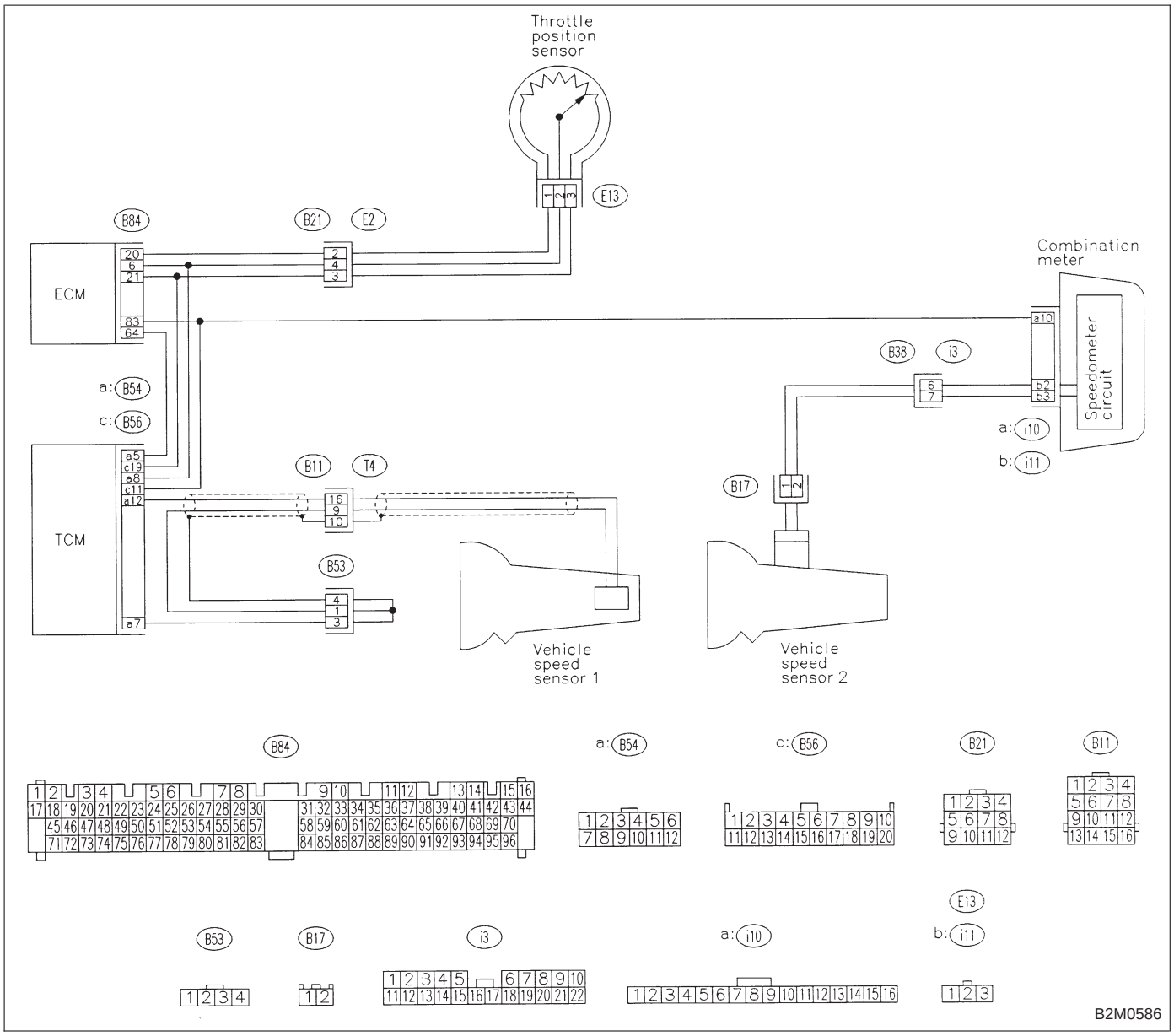
TROUBLE SYMPTOM:

- 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 and INSPECTION MODES. <Ref. to 2-7 [T3D0] and [T3E0].>

WIRING DIAGRAM:



10BA1	**CHECK ANY OTHER DTC (BESIDES DTC P0731, P0732, P0733, P0734) ON DISPLAY.**

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

YES : Inspect relevant DTC using “10. Diagnostics Chart with Trouble Code, 2-7 [T1000]”.

NO : Go to step **10BA2**.

10BA2	CHECK THROTTLE POSITION SENSOR CIRCUIT.

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

NOTE:
For the diagnostic procedure on throttle position sensor circuit, refer to 3-2 [T7K0].

YES : Repair or replace throttle position sensor circuit.

NO : Go to step **10BA3**.

10BA3	CHECK VEHICLE SPEED SENSOR 1 CIRCUIT.

CHECK ***: Is there any trouble in vehicle speed sensor 1 circuit?***

NOTE:
For the diagnostic procedure on vehicle speed sensor 1 circuit, refer to 3-2 [T7L0].

YES : Repair or replace vehicle speed sensor 1 circuit.

NO : Go to step **10BA4**.

10BA4	CHECK VEHICLE SPEED SENSOR 2 CIRCUIT.

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

NOTE:
For the diagnostic procedure on vehicle speed sensor 2 circuit, refer to 3-2 [T7M0].

YES : Repair or replace vehicle speed sensor 2 circuit.

NO : Go to step **10BA5**.

10BA5	CHECK ENGINE SPEED INPUT CIRCUIT.

CHECK ***: Is there any trouble in engine speed input circuit?***

NOTE:
For the diagnostic procedure on engine speed input signal circuit, refer to 3-2 [T7H0].

YES : Repair or replace engine speed input circuit.

NO : Go to next CHECK .

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

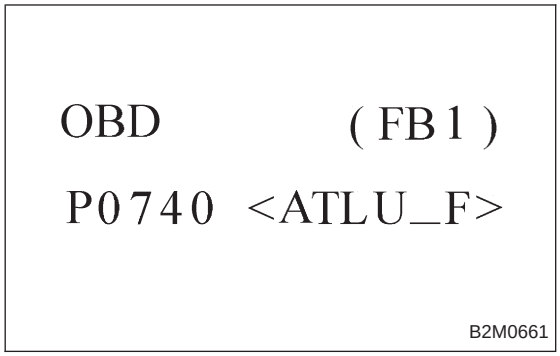
YES : Repair poor contact in TCM connector.

NO : Go to next CHECK .

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

YES : Repair or replace automatic transmission.

NO : Replace TCM.



BB: DTC P0740 — TORQUE CONVERTER CLUTCH SYSTEM MALFUNCTION (ATLU – F) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

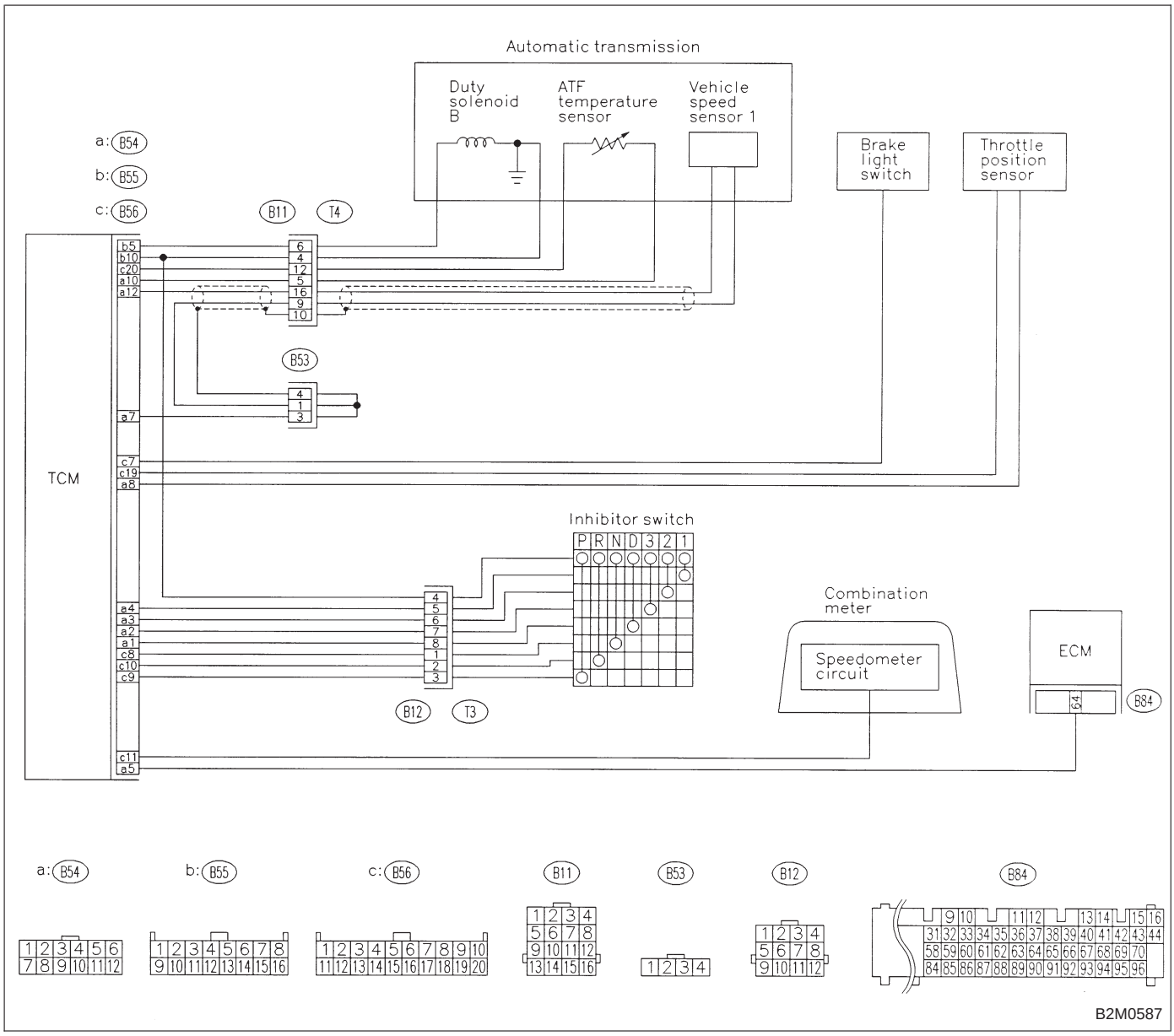
TROUBLE SYMPTOM:

- No lock-up (after engine warm-up)
- No shift or excessive tight corner “braking”

10BB1	Check any other DTC (besides DTC P0740) on display.
10BB2	Check duty solenoid B circuit. <Ref. to 3-2 [T7B0].>
10BB3	Check throttle position sensor circuit. <Ref. to 3-2 [T7K0].>
10BB4	Check vehicle speed sensor 1 circuit. <Ref. to 3-2 [T7L0].>
10BB5	Check vehicle speed sensor 2 circuit. <Ref. to 3-2 [T7M0].>
10BB6	Check engine speed input circuit. <Ref. to 3-2 [T7H0].>
10BB7	Check inhibitor switch circuit. <Ref. to AT: DTC P0705, 2-7 [T10AT0].>
10BB8	Check brake light switch circuit. <Ref. to AS: DTC P0703, 2-7 [T10AS0].>
10BB9	Check ATF temperature sensor circuit. <Ref. to 3-2 [T7F0].>

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

WIRING DIAGRAM:



10BB1	CHECK ANY OTHER DTC (BESIDES DTC P0740) ON DISPLAY.

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

YES : Inspect the relevant DTC using “10. Diagnostics Chart with Trouble Code, 2-7 [T1000]”.

NO : Go to step **10BB2**.

10BB2	CHECK DUTY SOLENOID B CIRCUIT.

CHECK ***: Is there any trouble in duty solenoid B circuit?***

NOTE:
For the diagnostic procedure on duty solenoid B circuit, refer to 3-2 [T7B0].

YES : Repair or replace duty solenoid B circuit.

NO : Go to step **10BB3**.

10BB3	CHECK THROTTLE POSITION SENSOR CIRCUIT.

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

NOTE:
For the diagnostic procedure on throttle position sensor circuit, refer to 3-2 [T7K0].

YES : Repair or replace throttle position sensor circuit.

NO : Go to step **10BB4**.

10BB4	CHECK VEHICLE SPEED SENSOR 1 CIRCUIT.

CHECK ***: Is there any trouble in vehicle speed sensor 1 circuit?***

NOTE:
For the diagnostic procedure on vehicle speed sensor 1 circuit, refer to 3-2 [T7L0].

YES : Repair or replace vehicle speed sensor 1 circuit.

NO : Go to step **10BB5**.

10BB5	CHECK VEHICLE SPEED SENSOR 2 CIRCUIT.

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

NOTE:
For the diagnostic procedure on vehicle speed sensor 2 circuit, refer to 3-2 [T7M0].

YES : Repair or replace vehicle speed sensor 2 circuit.

NO : Go to step **10BB6**.

10BB6	CHECK ENGINE SPEED INPUT CIRCUIT.

CHECK ***: Is there any trouble in engine speed input circuit?***

NOTE:
For the diagnostic procedure on engine speed input signal circuit, refer to 3-2 [T7H0].

YES : Repair or replace engine speed input circuit.

NO : Go to step **10BB7**.

10BB7	CHECK INHIBITOR SWITCH CIRCUIT.

CHECK ***: Is there any trouble in inhibitor switch circuit?***

NOTE:
For the diagnostic procedure on inhibitor switch circuit, refer to 2-7 [T10AT0].

YES : Repair or replace inhibitor switch circuit.

NO : Go to step **10BB8**.

10BB8	CHECK BRAKE LIGHT SWITCH CIRCUIT.

CHECK ***: Is there any trouble in brake light switch circuit?***

NOTE:
For the diagnostic procedure on brake light switch circuit, refer to 2-7 [T10AS0].

YES : Repair or replace brake light switch circuit.

NO : Go to step **10BB9**.

10BB9	CHECK ATF TEMPERATURE SENSOR CIRCUIT.

CHECK ***: Is there any trouble in ATF temperature sensor circuit?***

NOTE:
For the diagnostic procedure on ATF temperature sensor circuit, refer to 3-2 [T7F0].

YES : Repair or replace ATF temperature sensor circuit.

NO : Go to next CHECK .

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

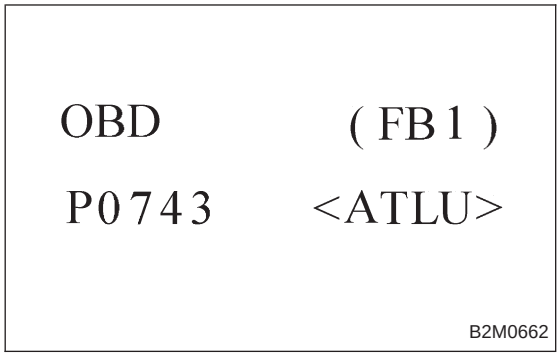
YES : Repair poor contact in TCM connector.

NO : Go to next CHECK .

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

YES : Repair or replace automatic transmission.

NO : Replace TCM.



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

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

- No lock-up (after engine warm-up)

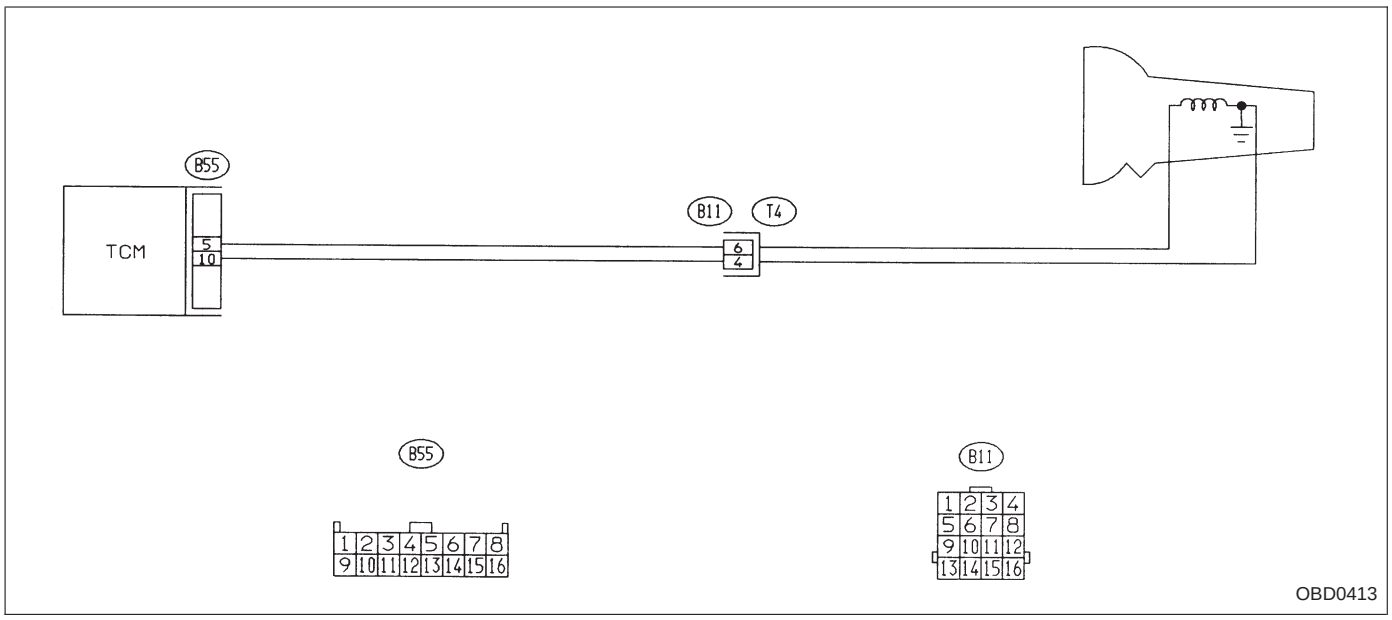
10BC1	**Check DTC P0743 on display.**

↓

Check duty solenoid B circuit. <Ref. to 3-2 [T7B0].>

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

WIRING DIAGRAM:

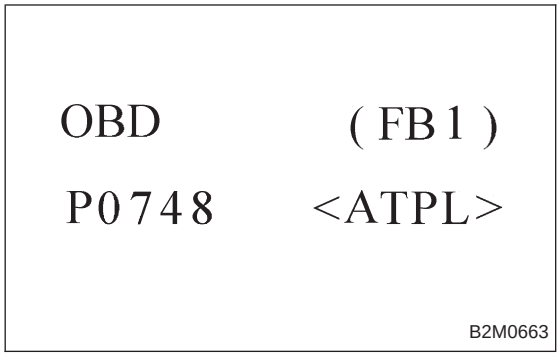


10BC1	**CHECK DTC P0743 ON DISPLAY.**

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0743?***

YES : Check duty solenoid B circuit.

NOTE:
For the diagnostic procedure on duty solenoid B circuit, refer to 3-2 [T7B0].



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

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

- Excessive shift shock

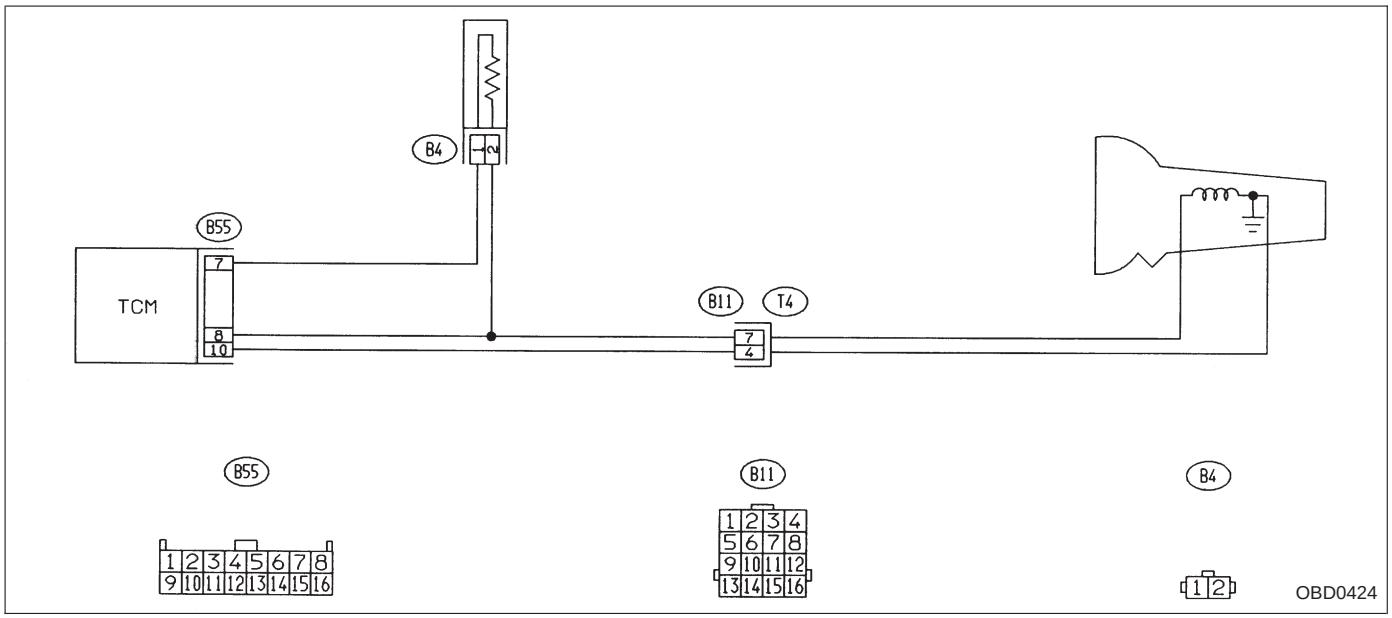
10BD1	**Check DTC P0748 on display.**

↓

Check duty solenoid A circuit. <Ref. to 3-2 [T7A0].>

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

WIRING DIAGRAM:

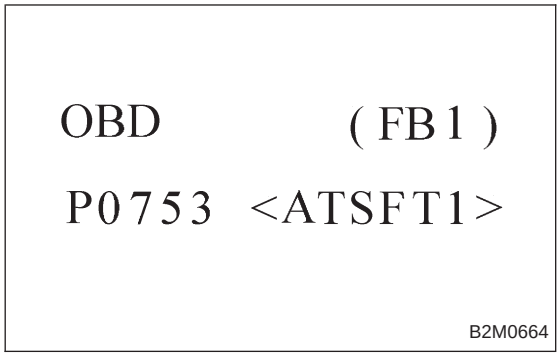


10BD1	**CHECK DTC P0748 ON DISPLAY.**

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0748?***

YES : Check duty solenoid A circuit.

NOTE:
For the diagnostic procedure on duty solenoid A circuit, refer to 3-2 [T7A0].



BE: DTC P0753 — SHIFT SOLENOID A (SHIFT SOLENOID 1) ELECTRICAL (ATSFT1) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

- No shift

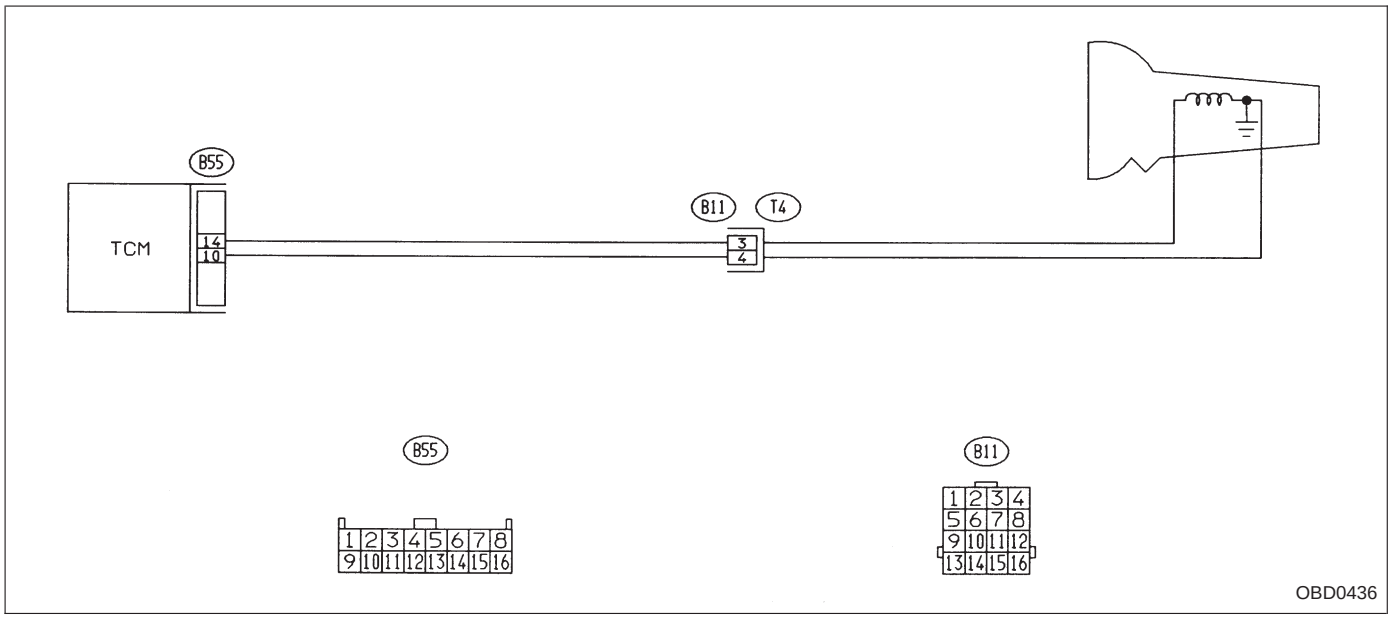
10BE1	**Check DTC P0753 on display.**

↓

Check shift solenoid 1 circuit. <Ref. to 3-2 [T7E0].>

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

WIRING DIAGRAM:

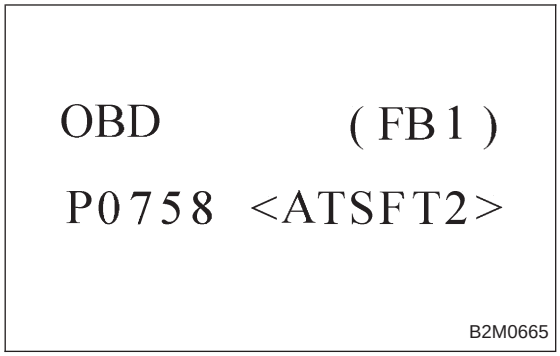


10BE1	**CHECK DTC P0753 ON DISPLAY.**

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0753?***

YES : Check shift solenoid 1 circuit.

NOTE:
For the diagnostic procedure on shift solenoid 1 circuit, refer to 3-2 [T7E0].



BF: DTC P0758 — SHIFT SOLENOID B (SHIFT SOLENOID 2) ELECTRICAL (ATSFT2) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

- No shift

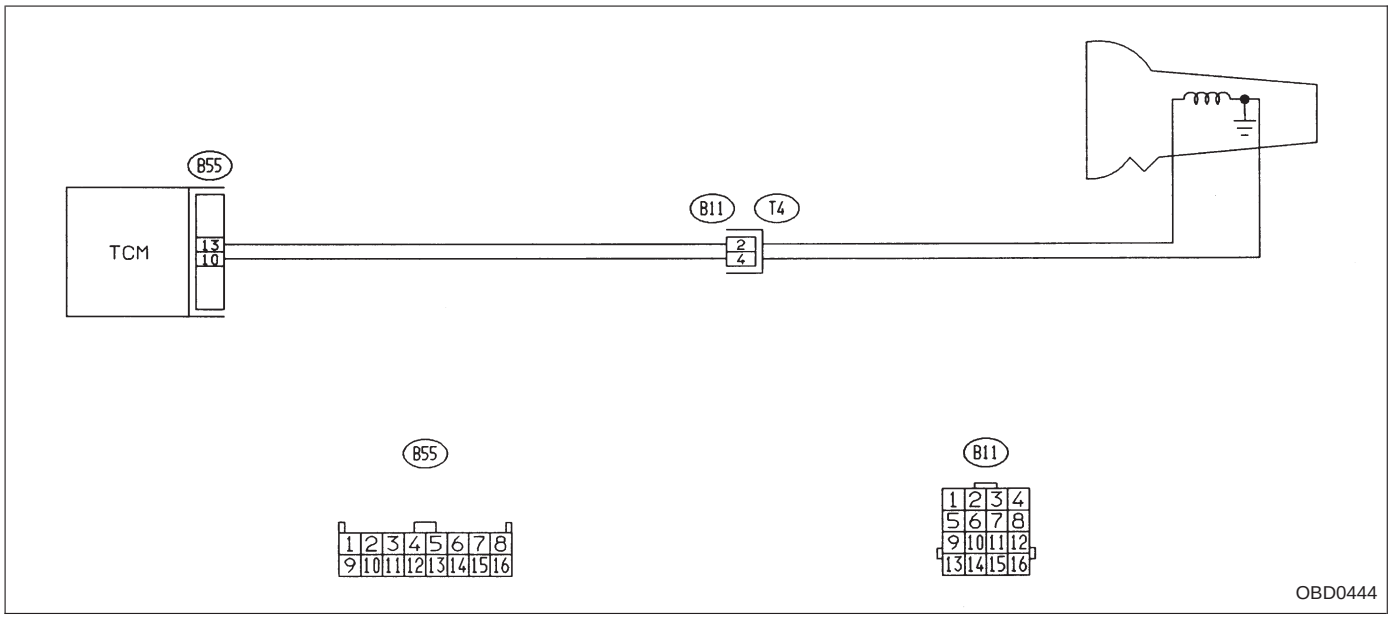
10BF1	**Check DTC P0758 on display.**

↓

Check shift solenoid 2 circuit. <Ref. to 3-2 [T7D0].>

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

WIRING DIAGRAM:

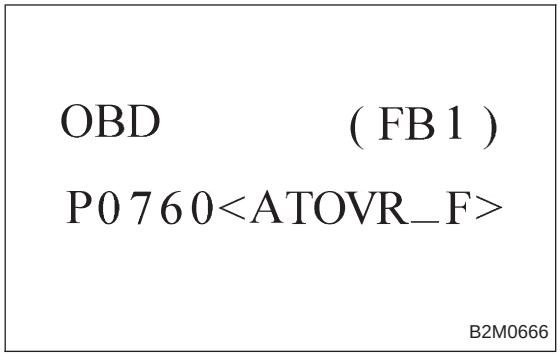


10BF1	**CHECK DTC P0758 ON DISPLAY.**

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0758?***

YES : Check shift solenoid 2 circuit.

NOTE:
For the diagnostic procedure on shift solenoid 2 circuit, refer to 3-2 [T7D0].



BG: DTC P0760 — SHIFT SOLENOID C (SHIFT SOLENOID 3) MALFUNCTION (ATOVR — F) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

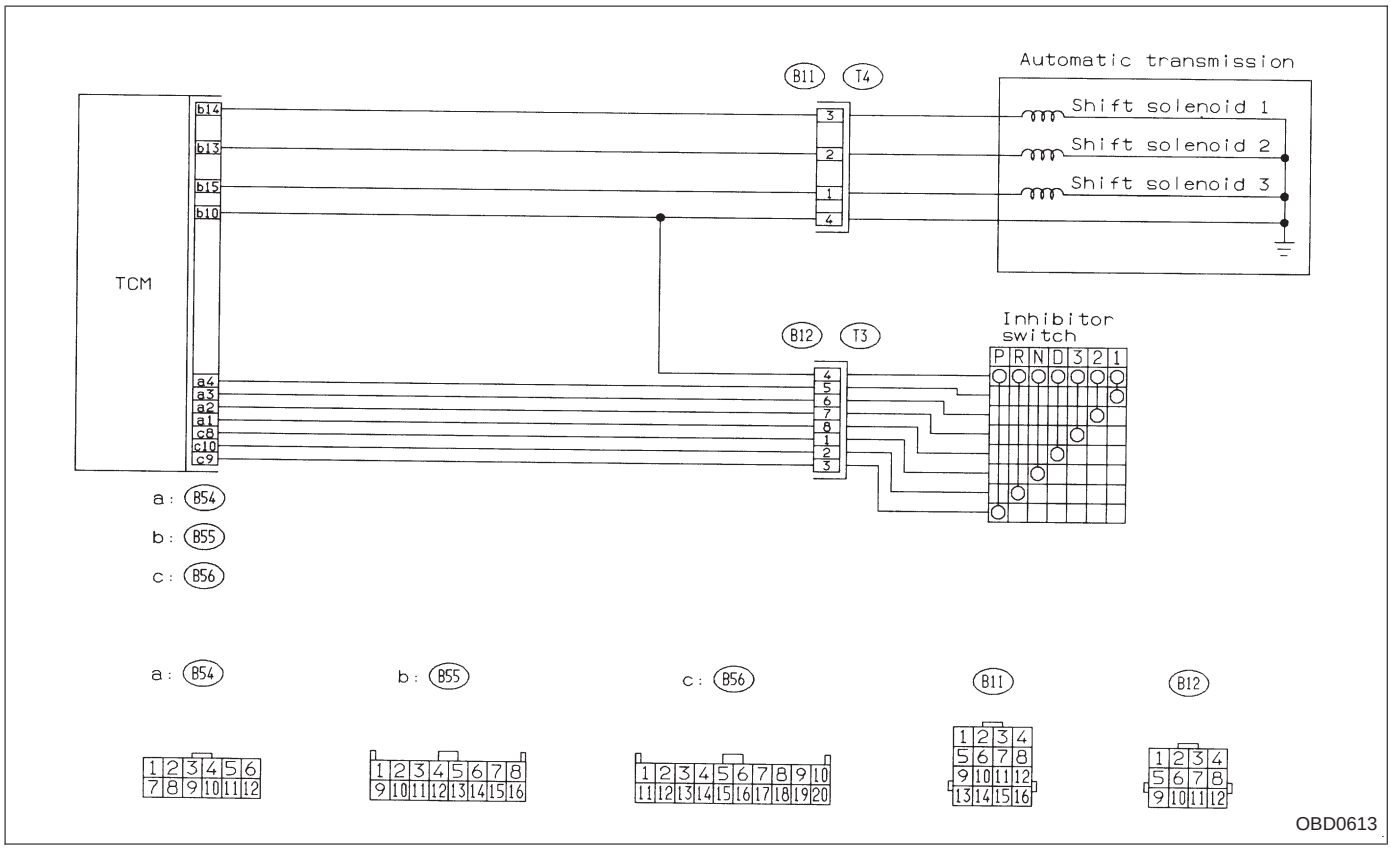
TROUBLE SYMPTOM:

- Ineffective engine brake with selector lever in “3”

10BG1	Check any other DTC (besides DTC P0760) on display.
10BG2	Check inhibitor switch circuit. <Ref. to AT: DTC P0705, 2-7 [T10AT0].>
10BG3	Check gear position.
10BG4	Check shift solenoid 1 circuit. <Ref. to 3-2 [T7E0].>
10BG5	Check shift solenoid 2 circuit. <Ref. to 3-2 [T7D0].>
10BG6	Check shift solenoid 3 circuit. <Ref. to 3-2 [T7C0].>

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

WIRING DIAGRAM:



10BG1	CHECK ANY OTHER DTC (BESIDES DTC P0760) ON DISPLAY.

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

YES : Inspect relevant DTC using “10. Diagnostics Chart with Trouble Code, 2-7 [T1000]”.

NO : Go to step **10BG2**.

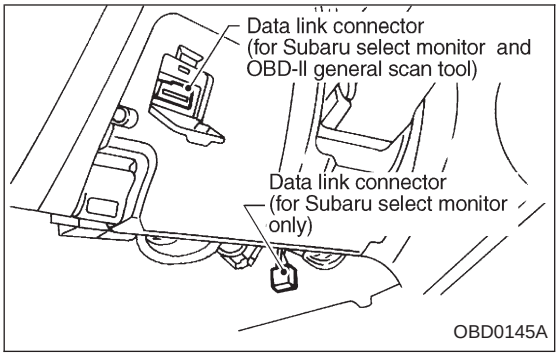
10BG2	CHECK INHIBITOR SWITCH CIRCUIT.

CHECK ***: Is there any trouble in inhibitor switch circuit?***

NOTE:
For the diagnostic procedure on inhibitor switch circuit, refer to 2-7 [T10AT0].

YES : Repair or replace inhibitor switch circuit.

NO : Go to step **10BG3**.

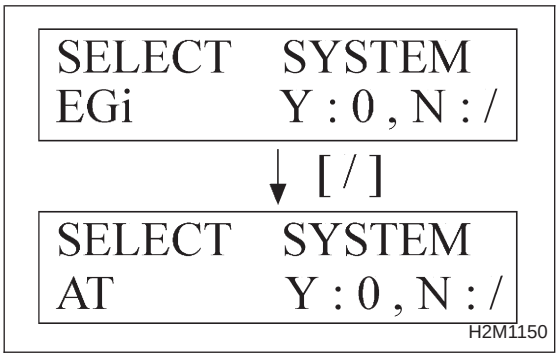


10BG3	CHECK GEAR POSITION.

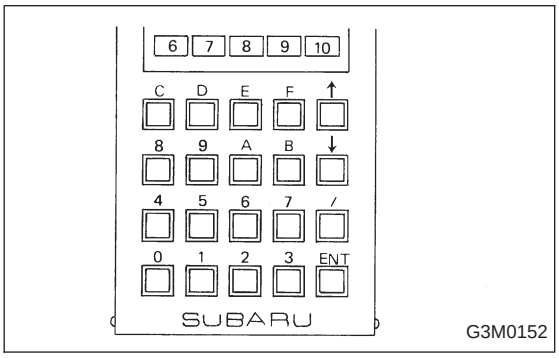
1) Turn ignition switch to OFF.
2) Connect the Subaru select monitor to data link connector.
3) Lift-up or raise the vehicle and support with safety stands.

CAUTION:
On AWD models, raise all wheels off ground.

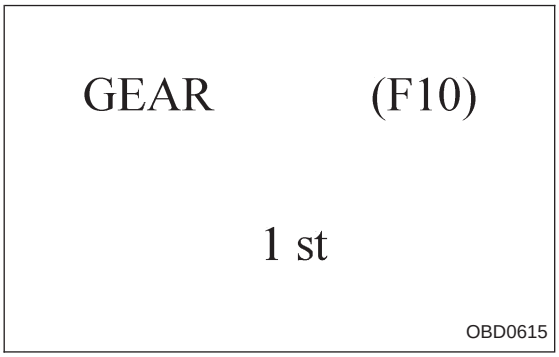
4) Start and warm-up the engine and transmission.



5) Subaru select monitor switch to ON.
6) Select AT mode using function key.
Press the function key [/], and change to AT mode.
7) Press the function key [0].



8) Designate mode using function key.
Function mode for AT: F10



9) Move selector lever to “D” and drive the vehicle.
10) Read data on Subaru select monitor.

CHECK ***: Does gear position change according to throttle position and vehicle speed?***
YES : Go to next CHECK .
NO : Go to step **10BG4**.
CHECK ***: Is there poor contact in TCM connector?***
YES : Repair poor contact in TCM connector.
NO : Go to next CHECK .
CHECK ***: Is there any mechanical trouble in automatic transmission?***
YES : Repair or replace automatic transmission.
NO : Replace TCM.

10BG4	CHECK SHIFT SOLENOID 1 CIRCUIT.

CHECK ***: Is there any trouble in shift solenoid 1 circuit?***

NOTE:
For the diagnostic procedure on shift solenoid 1 circuit, refer to 3-2 [T7E0].

YES : Repair or replace shift solenoid 1 circuit.

NO : Go to step **10BG5**.

10BG5	CHECK SHIFT SOLENOID 2 CIRCUIT.

CHECK ***: Is there any trouble in shift solenoid 2 circuit?***

NOTE:
For the diagnostic procedure on shift solenoid 2 circuit, refer to 3-2 [T7D0].

YES : Repair or replace shift solenoid 2 circuit.

NO : Go to step **10BG6**.

10BG6	CHECK SHIFT SOLENOID 3 CIRCUIT.

CHECK ***: Is there any trouble in shift solenoid 3 circuit?***

NOTE:
For the diagnostic procedure on shift solenoid 3 circuit, refer to 3-2 [T7C0].

YES : Repair or replace shift solenoid 3 circuit.

NO : Go to next CHECK .

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

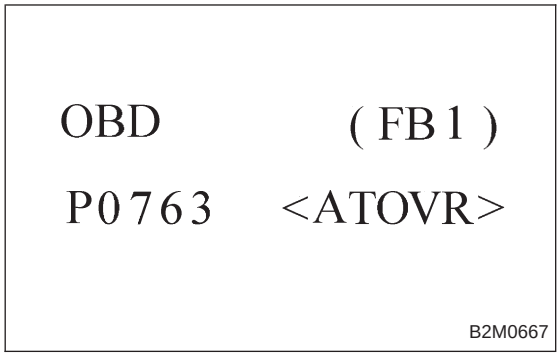
YES : Repair poor contact in TCM connector.

NO : Go to next CHECK .

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

YES : Repair or replace automatic transmission.

NO : Replace TCM.



BH: DTC P0763 — SHIFT SOLENOID C (SHIFT SOLENOID 3) ELECTRICAL (ATOVR) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

- Ineffective engine brake with selector lever in “3”

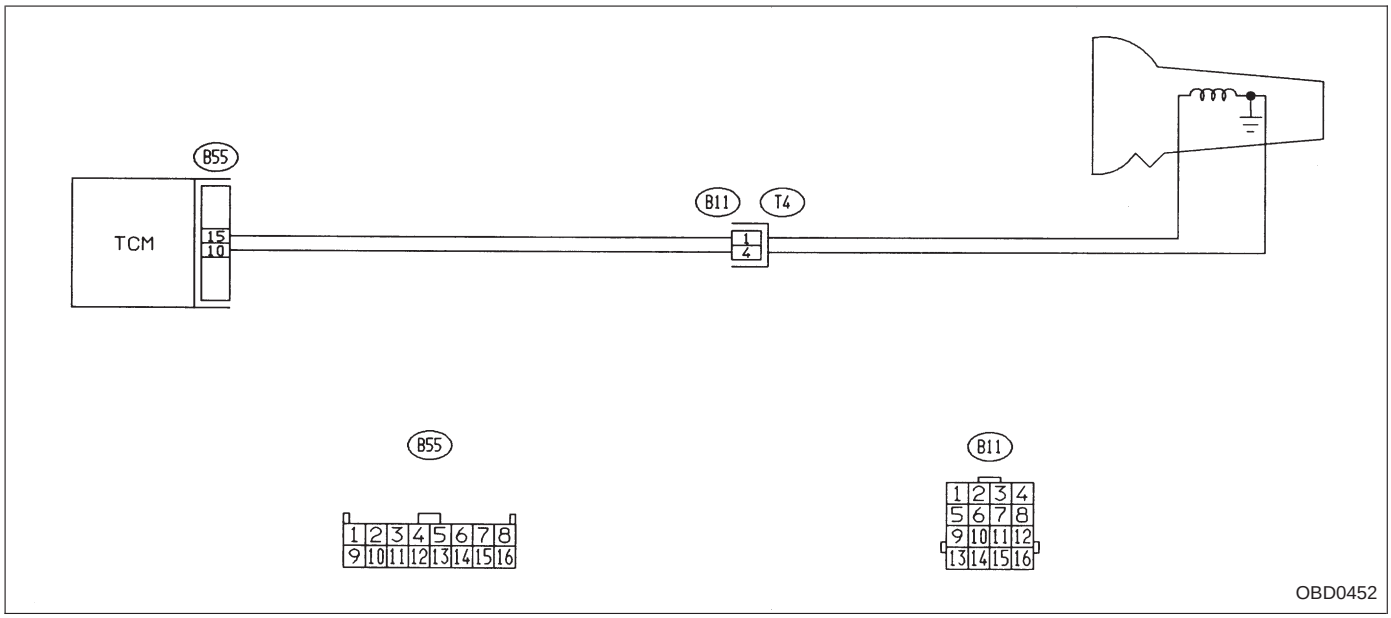
10BH1	**Check DTC P0763 on display.**

↓

Check shift solenoid 3 circuit. <Ref. to 3-2 [T7C0].>

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

WIRING DIAGRAM:



10BH1	**CHECK DTC P0763 ON DISPLAY.**

CHECK ***: Does the Subaru select monitor or OBD-II general scan tool indicate DTC P0763?***

YES : Check shift solenoid 3 circuit.

NOTE:
For the diagnostic procedure on shift solenoid 3 circuit, refer to 3-2 [T7C0].

OBD	(FB1)
P1100	<ST_SW>

OBD0458

BI: DTC P1100 — STARTER SWITCH CIRCUIT MALFUNCTION (ST — SW) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

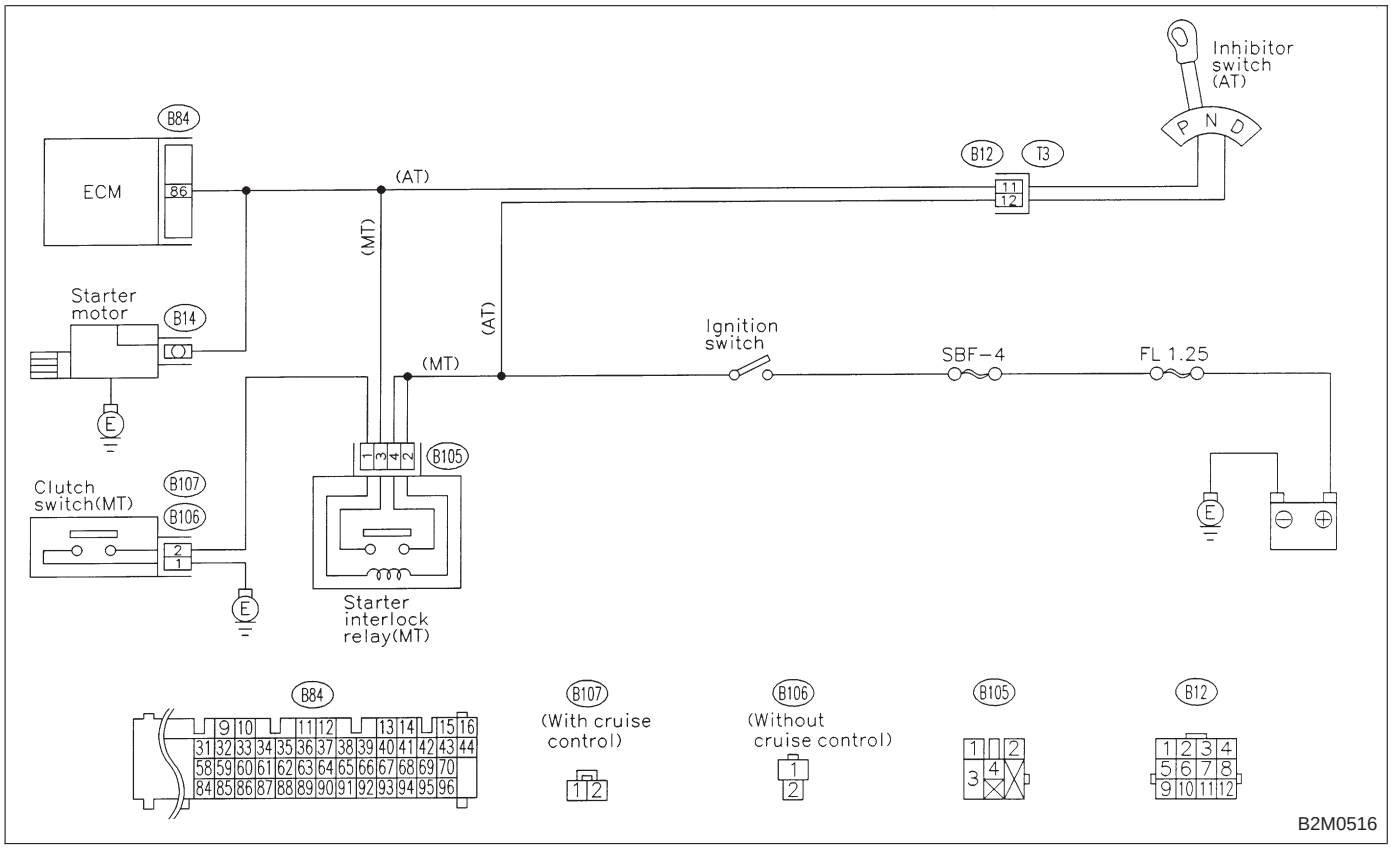
TROUBLE SYMPTOM:

- Failure of engine to start

10BI1	**Check operation of starter motor.**

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

WIRING DIAGRAM:



10BI1	CHECK OPERATION OF STARTER MOTOR.

CHECK ***: Does starter motor operate when ignition switch to “ST”?***

NOTE:
- On AT vehicles, place the inhibitor switch in the “P” or “N” position.
- On MT vehicles, depress the clutch pedal.

YES : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM and starter motor connector.
- Poor contact in ECM connector.

NO : Check starter motor circuit.

NOTE:
For the diagnostic procedure on starter motor circuit, refer to 2-7 [T8B0].

OBD (FB1)

P1101 <N/P_SW>

B2M0668

BJ: DTC P1101 — NEUTRAL POSITION SWITCH CIRCUIT MALFUNCTION [MT VEHICLES] (N/P — SW) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

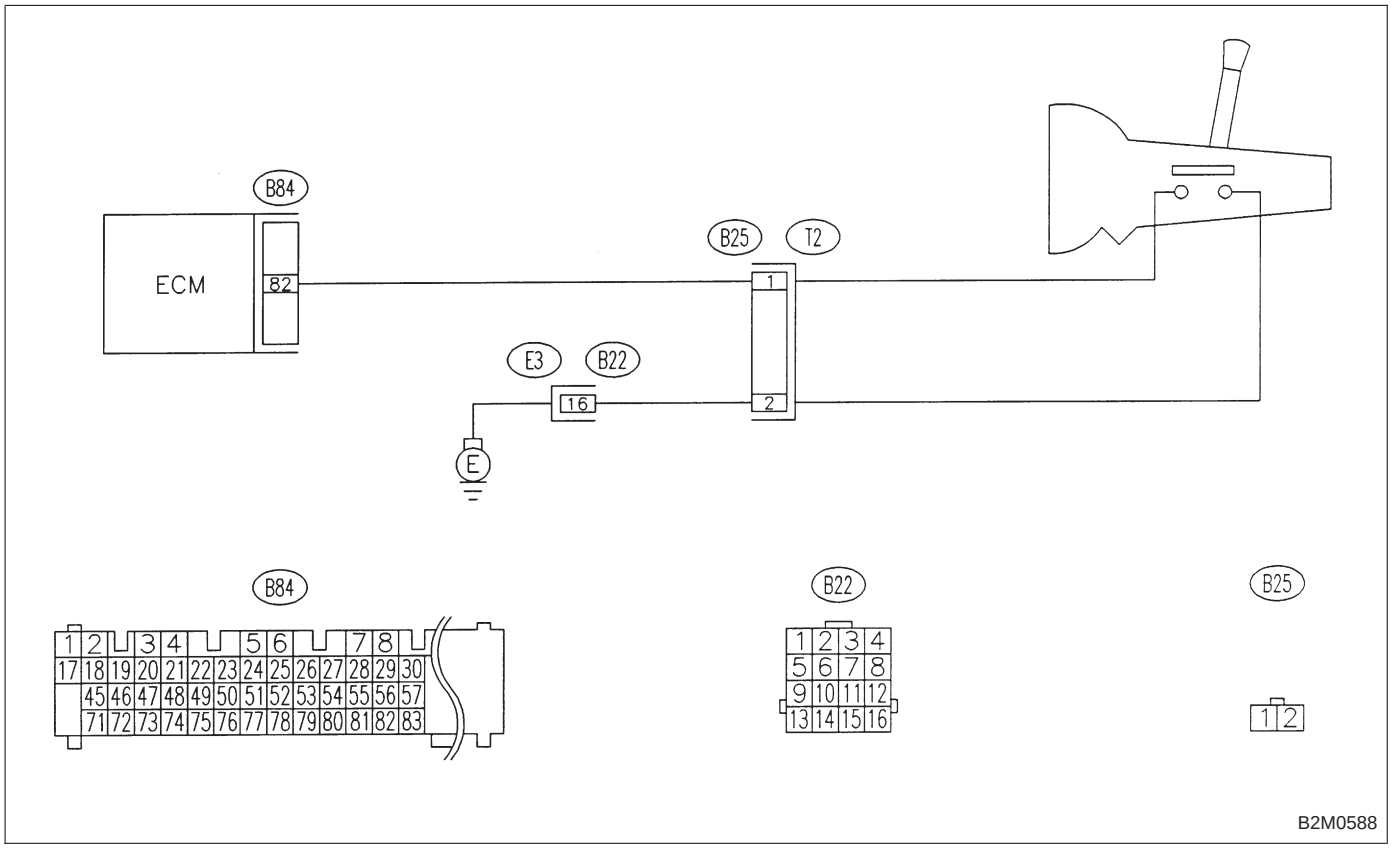
TROUBLE SYMPTOM:

- Erroneous idling

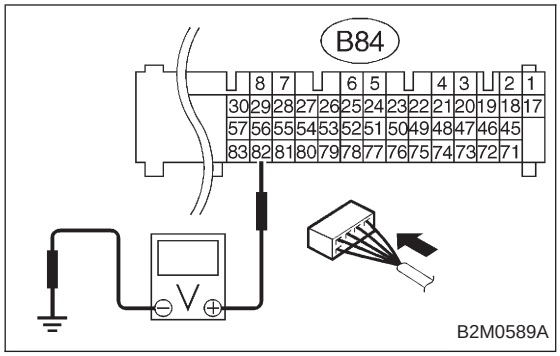
10BJ1	**Check input signal for ECM.**
↓	
10BJ2	**Check neutral position switch.**
↓	
10BJ3	**Check harness between ECM and neutral position switch.**

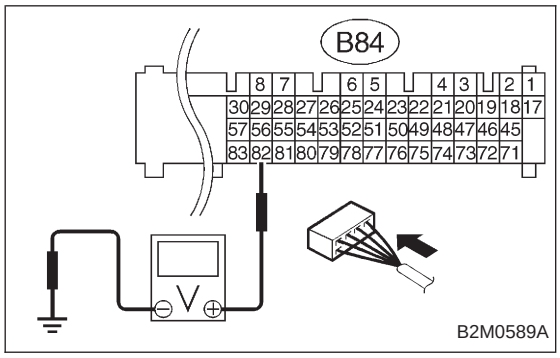
CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY and INSPECTION MODES.
<Ref. to 2-7 [T3D0] and [T3E0].>

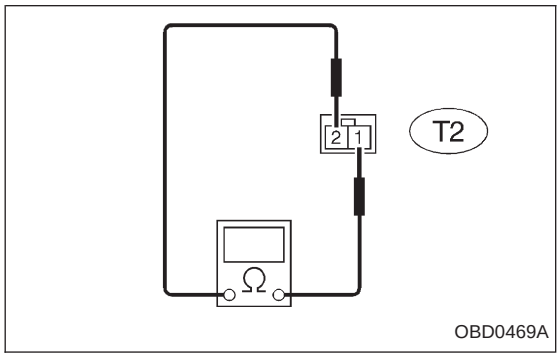
WIRING DIAGRAM:



B2M0588







10BJ1	CHECK INPUT SIGNAL FOR ECM.

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

CHECK : ***Connector & terminal (B84) No. 82 (+) — Chassis ground (−): Is the voltage between 4.5 and 5.5 V in neutral position?***

YES : Go to next CHECK .

NO : Go to step **10BJ2**.

CHECK : ***Connector & terminal (B84) No. 82 (+) — Chassis ground (−): Is the voltage less than 1 V in other positions?***

YES : Go to next CHECK .

NO : Go to step **10BJ2**.

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

YES : Repair poor contact in ECM connector.

NO : Replace ECM.

10BJ2	CHECK NEUTRAL POSITION SWITCH.

1) Turn ignition switch to OFF.
2) Disconnect connector from transmission harness.
3) Measure resistance between transmission harness and connector terminals.

CHECK : ***Connector & terminal (T2) No. 1 — No. 2: Is the resistance more than 1 MΩ in neutral position?***

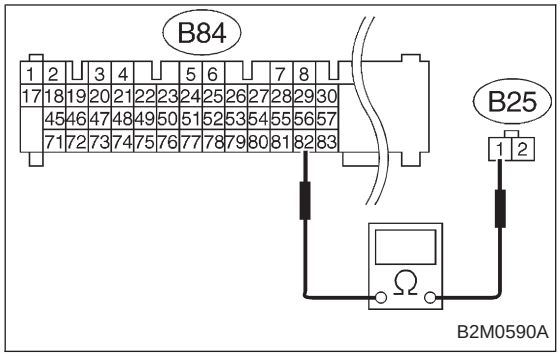
YES : Go to next CHECK .

NO : Repair short circuit in transmission harness or replace neutral position switch.

CHECK : ***Connector & terminal (T2) No. 1 — No. 2: Is the resistance less than 1 Ω in other positions?***

YES : Go to step **10BJ3**.

NO : Repair open circuit in transmission harness or replace neutral position switch.



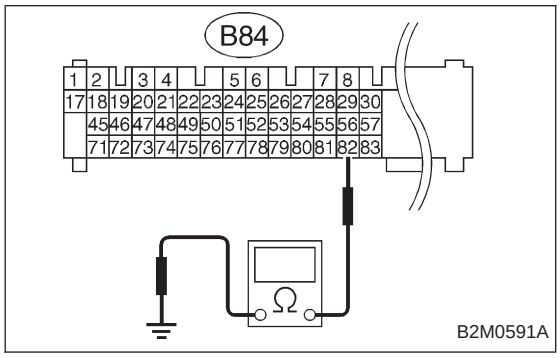
10BJ3	CHECK HARNESS BETWEEN ECM AND NEUTRAL POSITION SWITCH.

1) Disconnect connector from ECM.
2) Measure resistance of harness between ECM and transmission harness connector.

CHECK : ***Connector & terminal (B84) No. 82 — (B25) No. 1: Is the resistance less than 1 Ω?***

YES : Go to next step 3).

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

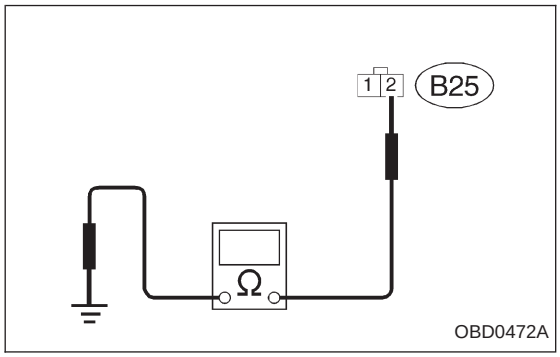


3) Measure resistance between ECM and chassis ground.

CHECK : ***Connector & terminal (B84) No. 82 — Chassis ground: Is the resistance less than 10 Ω?***

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

NO : Go to next step 4).



4) Measure resistance of harness between transmission harness connector and engine ground.

CHECK : ***Connector & terminal (B25) No. 2 — Engine ground: Is the resistance less than 5 Ω?***

YES : Go to next CHECK .

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)

CHECK : ***Is there poor contact in transmission harness connector?***

YES : Repair poor contact in transmission harness connector.

NO : Replace ECM.

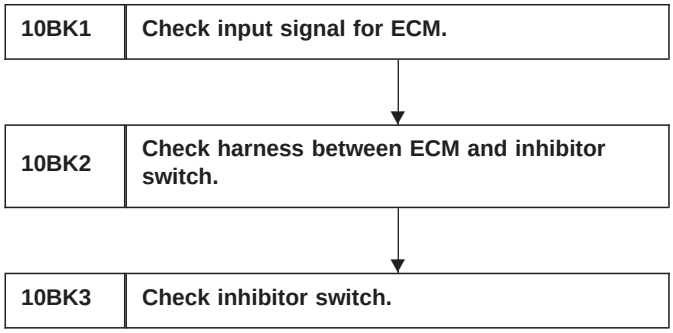
BK: DTC P1101 — NEUTRAL POSITION SWITCH CIRCUIT MALFUNCTION [AT VEHICLES] (N/P – SW) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

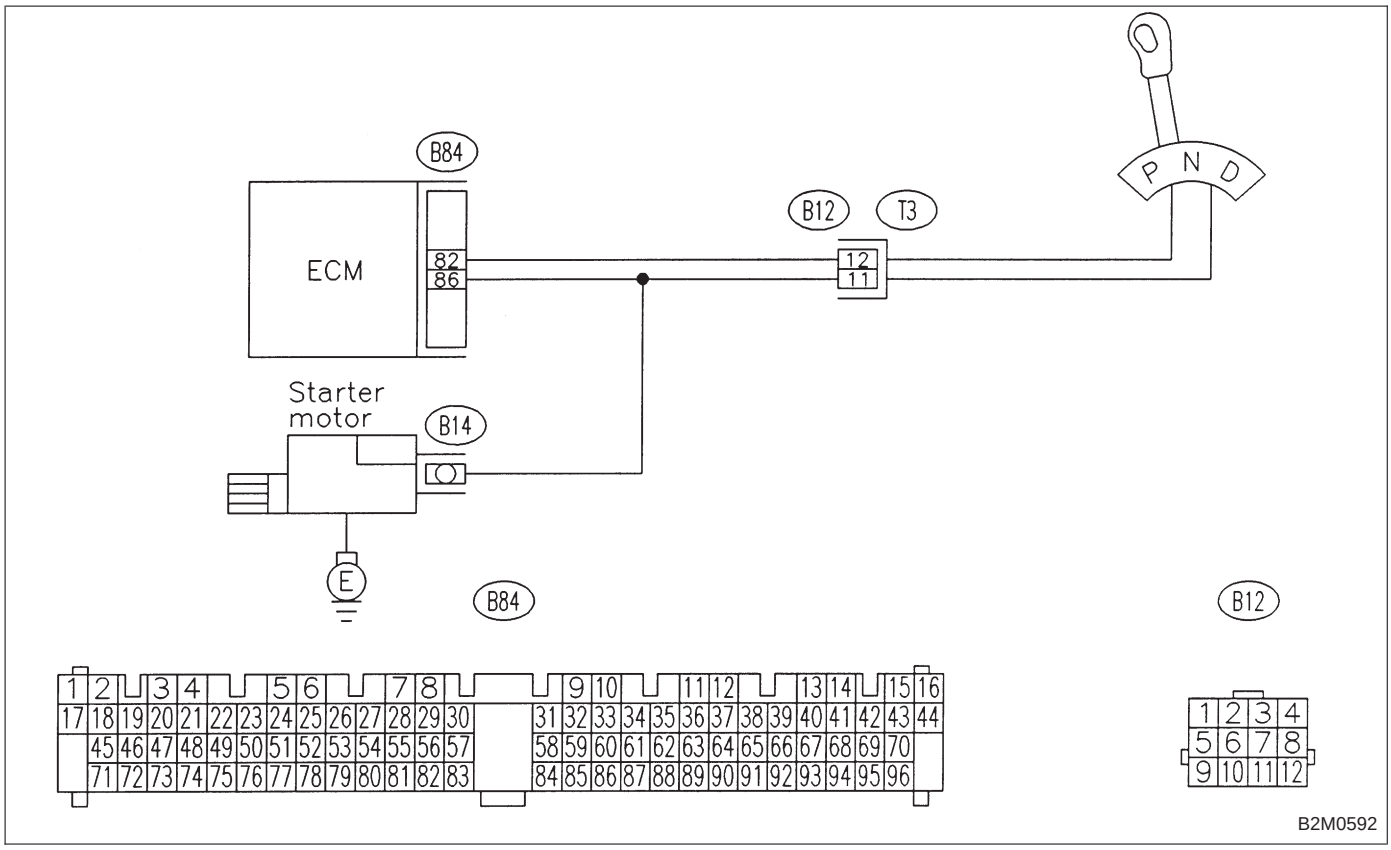
TROUBLE SYMPTOM:

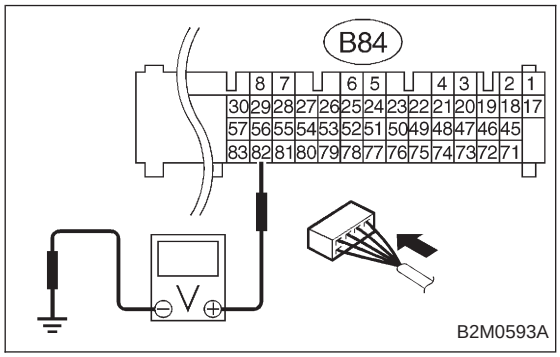
- Erroneous idling

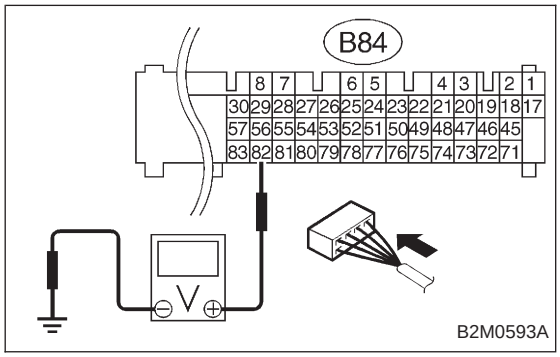


CAUTION:
After repair or replacement of faulty parts, conduct CLEAR MEMORY and INSPECTION MODES.
<Ref. to 2-7 [T3D0] and [T3E0].>

WIRING DIAGRAM:







10BK1	CHECK INPUT SIGNAL FOR ECM.

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

CHECK ***: Connector & terminal (B84) No. 82 (+) — Chassis ground (−): Is the voltage less than 1 V in "N" and "P" positions?***

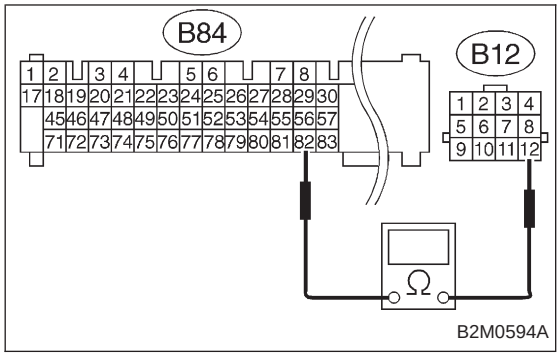
YES : Go to next CHECK .
NO : Go to step **10BK2**.

CHECK ***: Connector & terminal (B84) No. 82 (+) — Chassis ground (−): Is the voltage between 4.5 and 5.5 V in other positions?***

YES : Go to next CHECK .
NO : Go to step **10BK2**.

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

YES : Repair poor contact in ECM connector.
NO : Replace ECM.



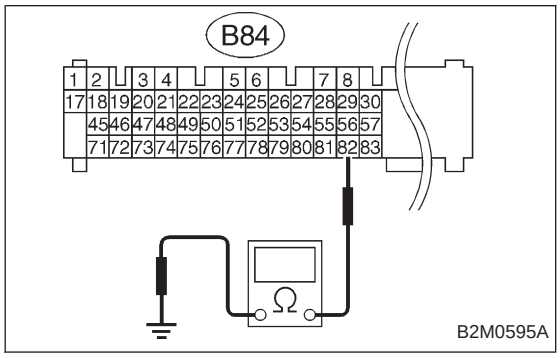
10BK2	CHECK HARNESS BETWEEN ECM AND INHIBITOR SWITCH.

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

CHECK : ***Connector & terminal***
(B84) No. 82 — (B12) No. 12:
Is the resistance less than 1 Ω?

YES : Go to next step 4).

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

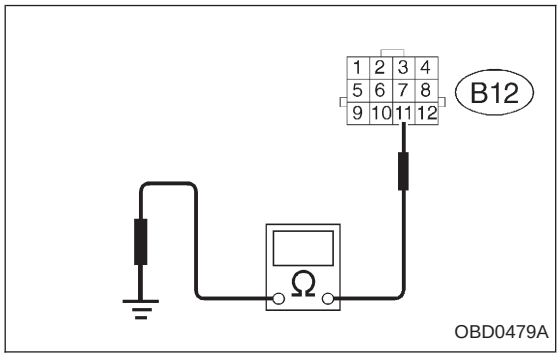


4) Measure resistance of harness between ECM and chassis ground.

CHECK : ***Connector & terminal***
(B84) No. 82 — Chassis ground:
Is the resistance less than 10 Ω?

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

NO : Go to next step 5).

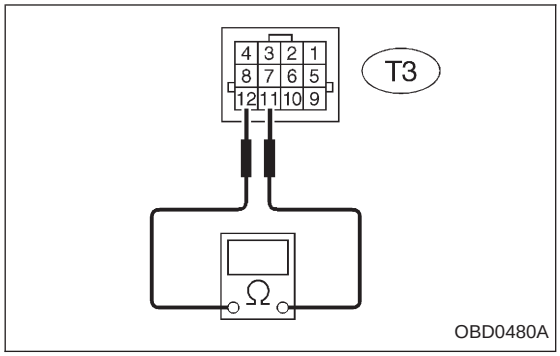


5) Measure resistance of harness between transmission harness connector and engine ground.

CHECK : ***Connector & terminal***
(B12) No. 11 — Engine ground:
Is the resistance less than 5 Ω?

YES : Go to step **10BK3**.

NO : Repair open circuit in inhibitor switch ground line.



10BK3	CHECK INHIBITOR SWITCH.

Measure resistance between transmission harness connector receptacle's terminals.

CHECK ***: Connector & terminal (T3) No. 12 — No. 11: Is the resistance less than 1 Ω in "N" and "P" positions?***

YES : Go to next CHECK .

NO : Repair open circuit in transmission harness or replace inhibitor switch.

CHECK ***: Connector & terminal (T3) No. 12 — No. 11: Is the resistance more than 1 MΩ in other positions?***

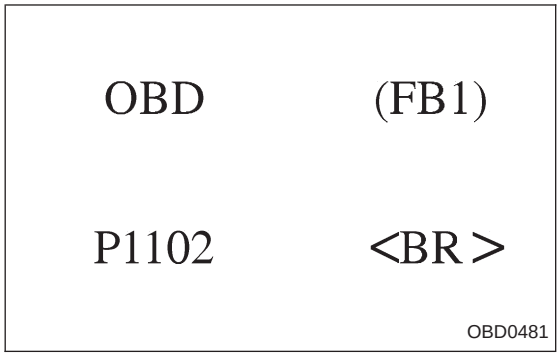
YES : Go to next CHECK .

NO : Repair short circuit in transmission harness or replace inhibitor switch.

CHECK ***: Is there any fault in selector cable connection to inhibitor switch?***

YES : Repair selector cable connection. <Ref. to 3-2 [W2B2].>

NO : Replace ECM.



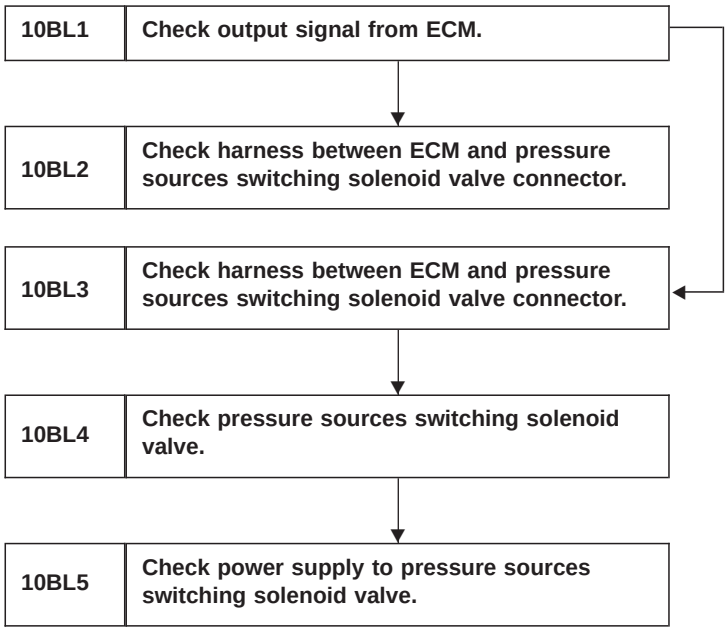
BL: DTC P1102 — PRESSURE SOURCES SWITCHING SOLENOID VALVE CIRCUIT MALFUNCTION (BR) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

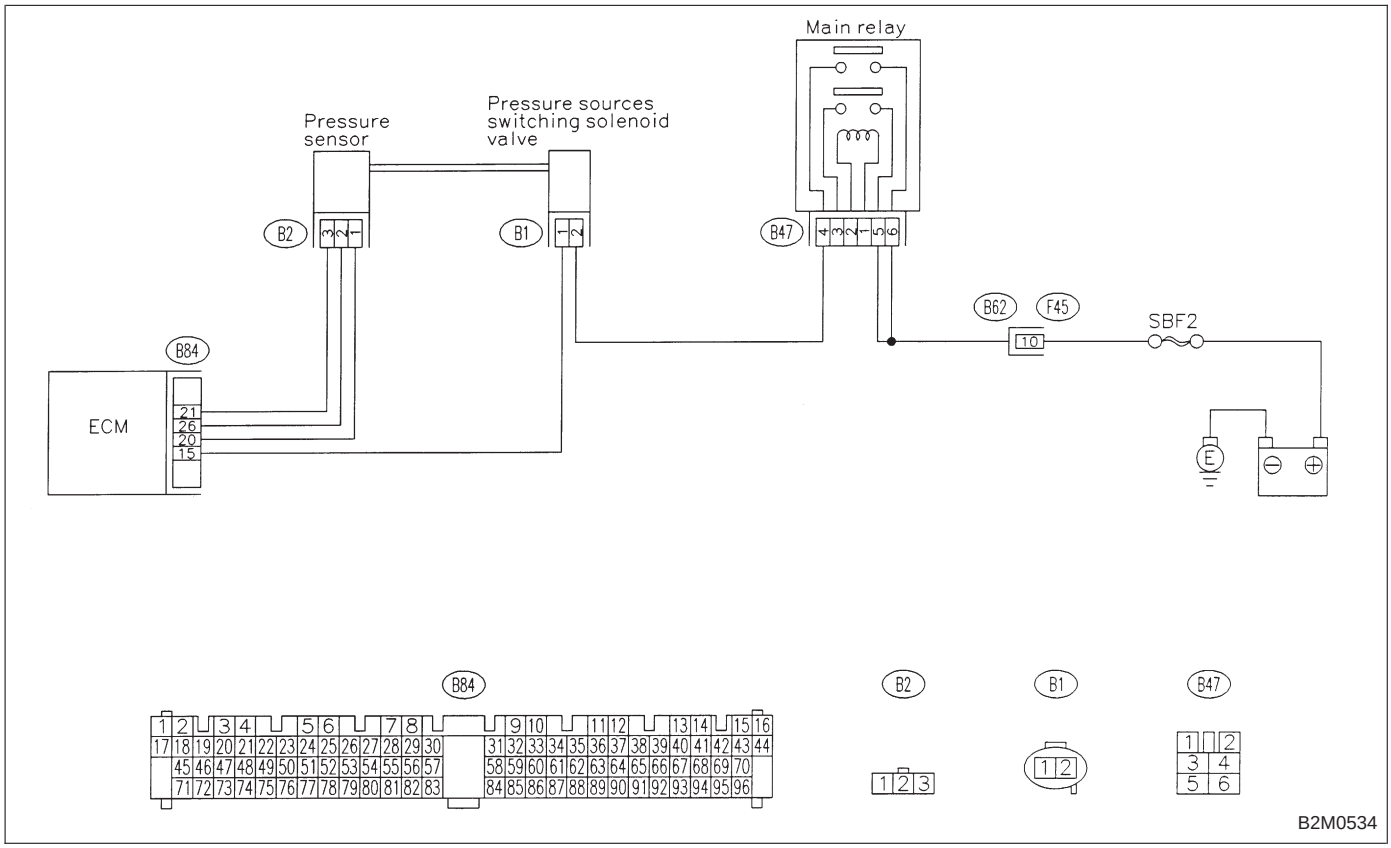
- Erroneous idling
- Failure of engine to start



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

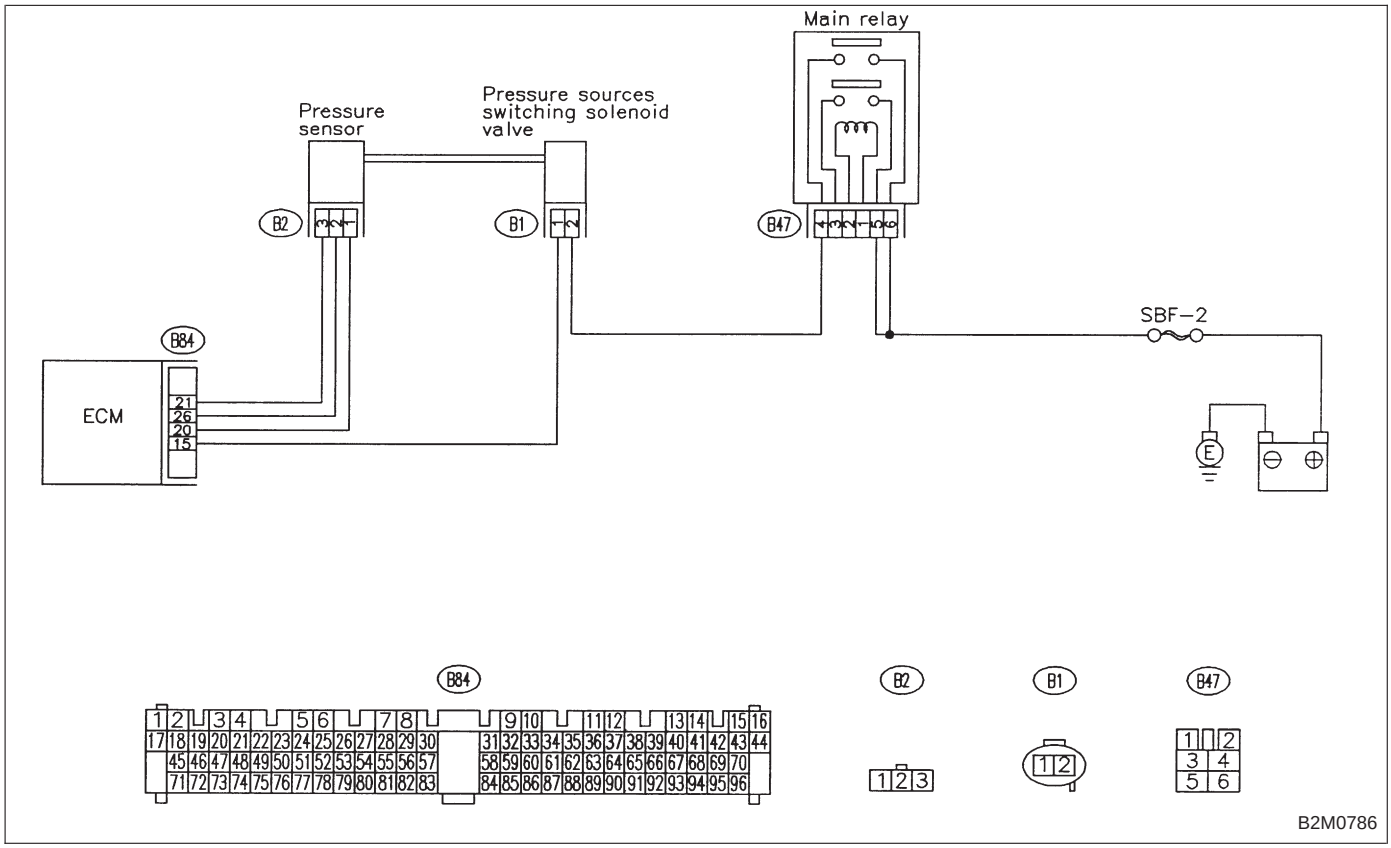
WIRING DIAGRAM:

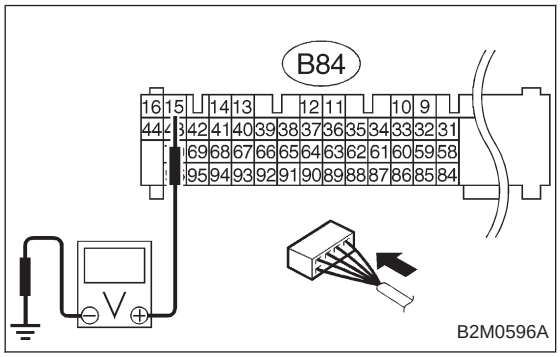
- LHD Model



WIRING DIAGRAM:

- RHD Model





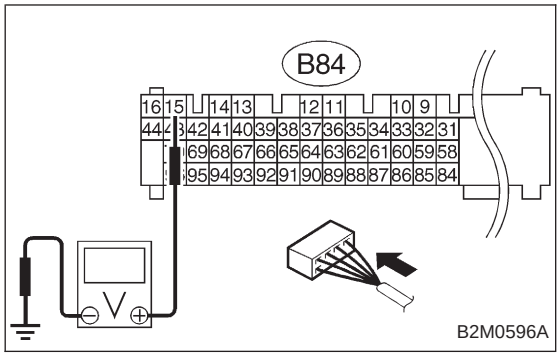
10BL1	CHECK OUTPUT SIGNAL FROM ECM.

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

CHECK ***: Connector & terminal (B84) No. 15 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Go to step **10BL2**.

NO : Go to step **10BL3**.



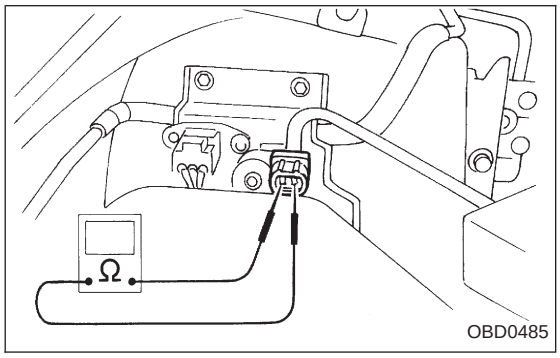
10BL2	CHECK HARNESS BETWEEN ECM AND PRESSURE SOURCES SWITCHING SOLENOID VALVE CONNECTOR.

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.

CHECK ***: Connector & terminal (B84) No. 15 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Repair short circuit in harness between ECM and pressure sources switching solenoid valve connector and replace ECM.

NO : Go to next step 5).



5) Turn ignition switch to OFF.
6) Measure resistance between pressure sources switching solenoid valve connector terminals.

CHECK ***: Terminals No. 1 — No. 2: Is the resistance less than 1 Ω?***

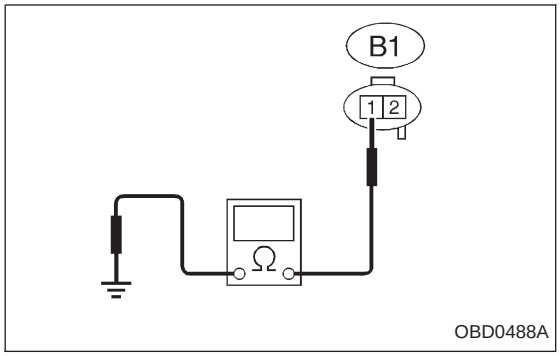
YES : Replace pressure sources switching solenoid valve and ECM.

NO : Go to next CHECK .

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

YES : Repair poor contact in ECM connector.

NO : Replace ECM.



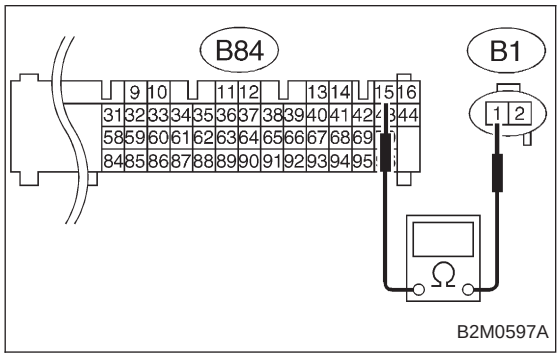
10BL3	CHECK HARNESS BETWEEN ECM AND PRESSURE SOURCES SWITCHING SOLENOID VALVE CONNECTOR.

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.

CHECK ***: Connector & terminal***
(B1) No. 1 — Engine ground:
Is the resistance less than 10 Ω?

YES : Repair short circuit in harness between ECM and pressure sources switching solenoid valve connector.

NO : Go to next step 4).

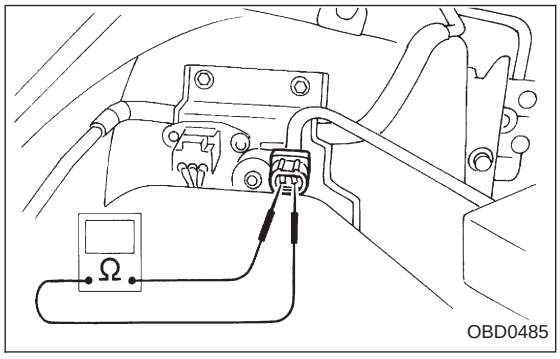


4) Measure resistance of harness between ECM and pressure sources switching solenoid valve connector.

CHECK ***: Connector & terminal***
(B84) No. 15 — (B1) No. 1:
Is the resistance less than 1 Ω?

YES : Go to step **10BL4**.

NO : Repair open circuit in harness between ECM and pressure sources switching solenoid valve connector.



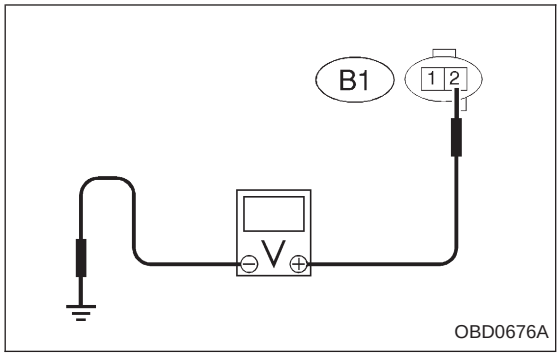
10BL4	CHECK PRESSURE SOURCES SWITCHING SOLENOID VALVE.

Measure resistance between pressure sources switching solenoid valve connector terminals.

CHECK ***: Terminals***
No. 1 — No. 2:
Is the resistance between 10 and 100 Ω?

YES : Go to step **10BL5**.

NO : Replace pressure sources switching solenoid valve.



10BL5	**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.

CHECK ***: Connector & terminal (B1) No. 2 (+) — Engine ground (−): Is the voltage more than 10 V?***

YES : Go to next CHECK .

NO : Repair open circuit in harness between main relay and pressure sources switching solenoid valve connector.

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.

BM: DTC P1103 — ENGINE TORQUE CONTROL SIGNAL CIRCUIT MALFUNCTION (TRQ) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

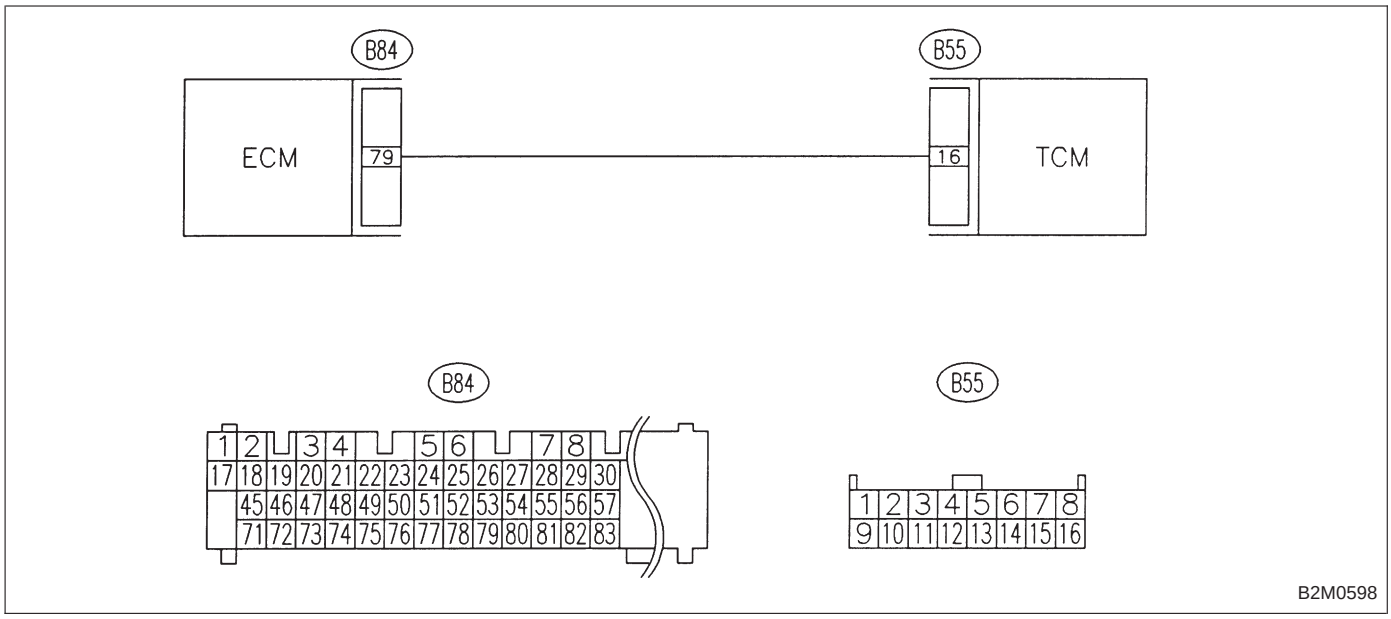
TROUBLE SYMPTOM:

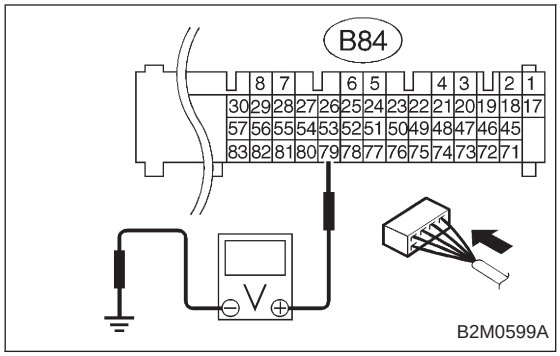
- Excessive shift shock

10BM1	**Check input signal for ECM.**
↓	
10BM2	**Check harness between ECM and TCM connector.**

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

WIRING DIAGRAM:





10BM1	CHECK INPUT SIGNAL FOR ECM.

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

CHECK ***: Connector & terminal (B84) No. 79 (+) — Chassis ground (−): Is the voltage more than 4.5 V?***

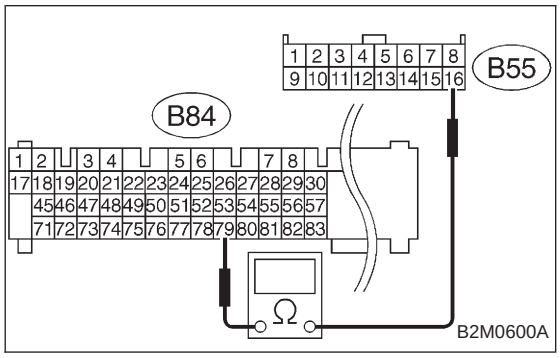
YES : Go to next CHECK .

NO : Go to step **10BM2**.

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

YES : Repair poor contact in ECM connector.

NO : Replace ECM.



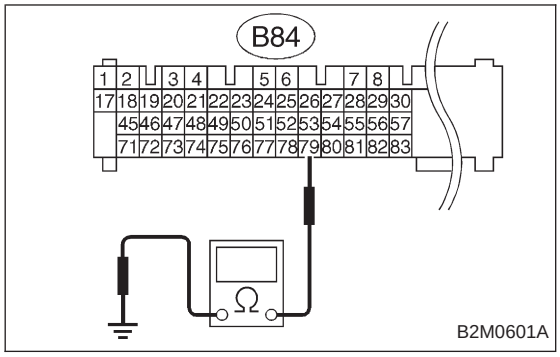
10BM2	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR.

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

CHECK ***: Connector & terminal (B84) No. 79 — (B55) No. 16: Is the resistance less than 1 Ω?***

YES : Go to next step 4).

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



4) Measure resistance of harness between ECM and chassis ground.

CHECK ***: Connector & terminal (B84) No. 79 — Chassis ground: Is the resistance less than 10 Ω?***

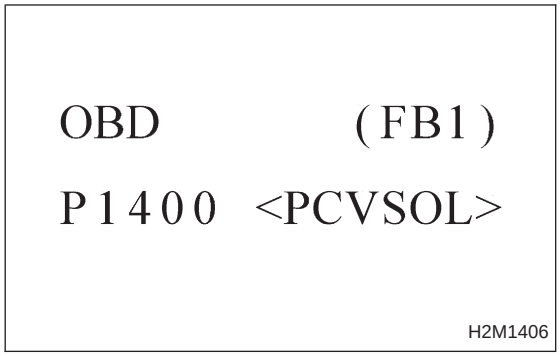
YES : Repair short circuit in harness between ECM and TCM connector.

NO : Go to next CHECK .

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

YES : Repair poor contact in TCM connector.

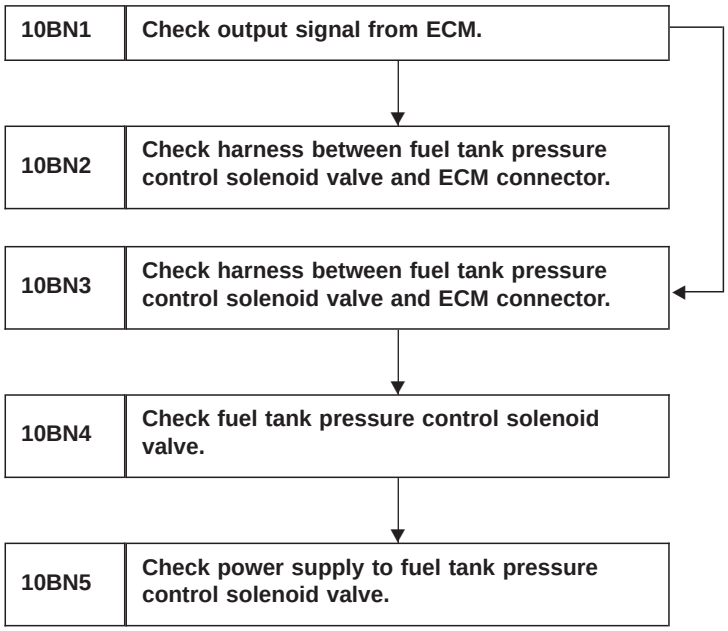
NO : Replace TCM.



BN: DTC P1400 — FUEL TANK PRESSURE CONTROL SOLENOID VALVE CIRCUIT MALFUNCTION (PCVSOL) —

DTC DETECTING CONDITION:

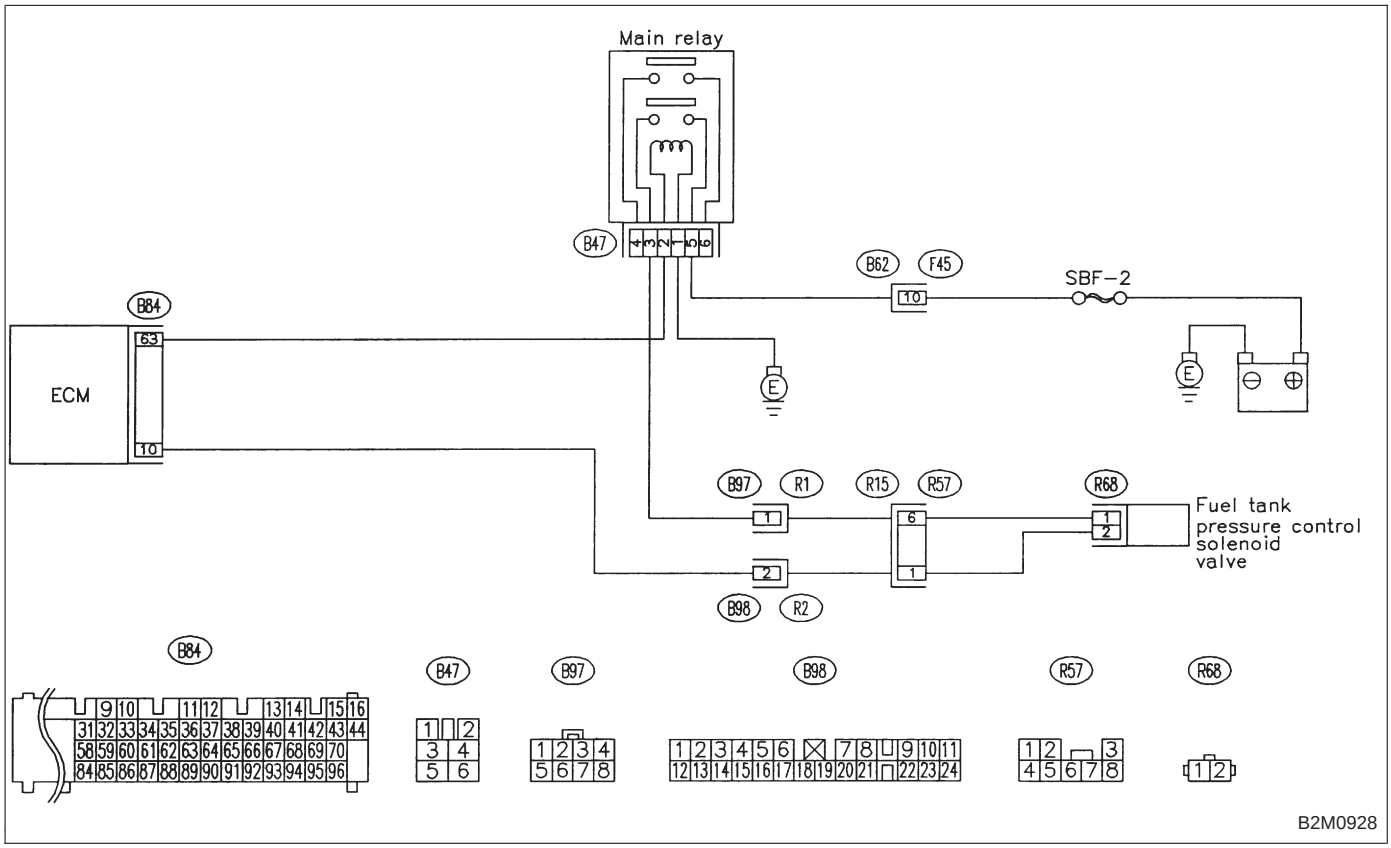
- Two consecutive trips with fault



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

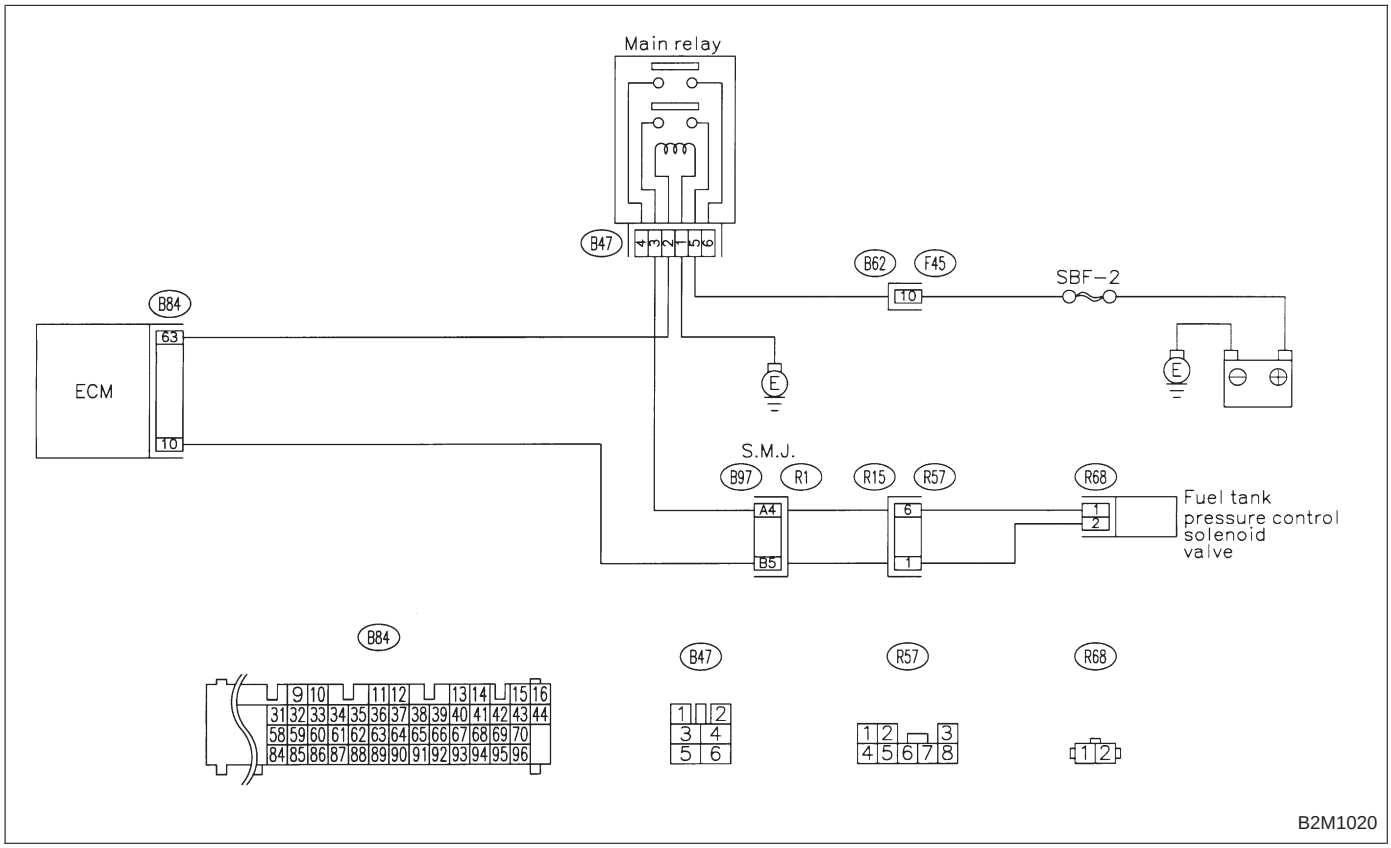
WIRING DIAGRAM:

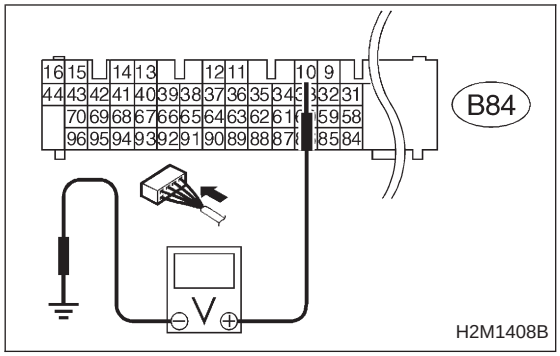
- LHD Model



WIRING DIAGRAM:

- RHD Model





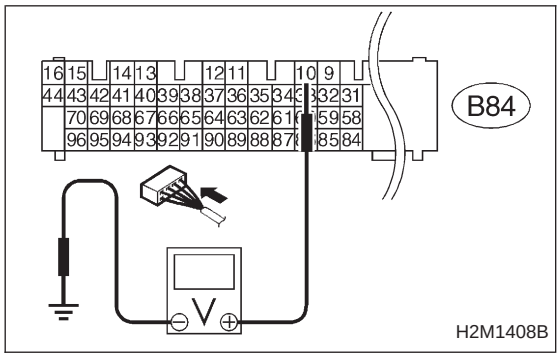
10BN1	CHECK OUTPUT SIGNAL FROM ECM.

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

CHECK : ***Connector & terminal (B84) No. 10 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Go to step **10BN2**.

NO : Go to step **10BN3**.



10BN2	CHECK HARNESS BETWEEN FUEL TANK PRESSURE CONTROL SOLENOID VALVE AND ECM CONNECTOR.

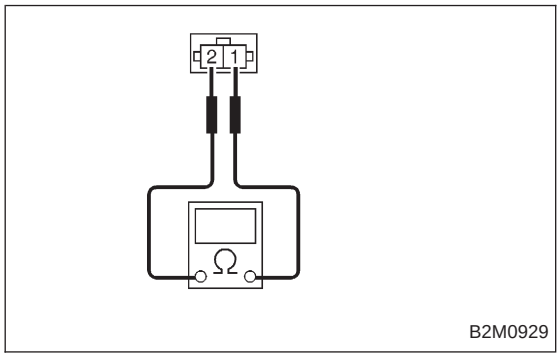
1) Turn ignition switch to OFF.
2) Disconnect connector from fuel tank pressure control solenoid valve.
3) Turn ignition switch to ON.
4) Measure voltage between ECM and chassis ground.

CHECK : ***Connector & terminal (B84) No. 10 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Repair short circuit in harness and replace ECM.

NOTE:
The harness between ECM and fuel tank pressure control solenoid valve is in short circuit.

NO : Go to next step 5).



5) Turn ignition switch to OFF.
6) Measure resistance between fuel tank pressure control solenoid valve terminals.

CHECK : ***Terminals No. 1 — No. 2: Is the resistance less than 1 Ω?***

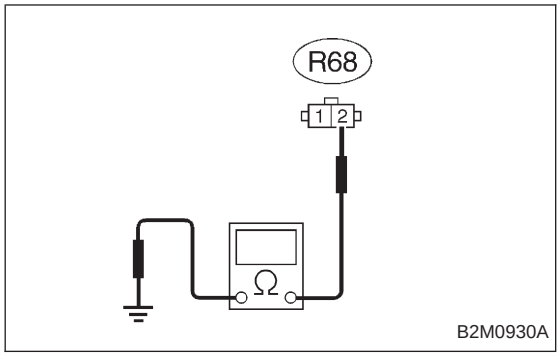
YES : Replace fuel tank pressure control solenoid valve and ECM.

NO : Go to next CHECK .

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

YES : Repair poor contact in ECM connector.

NO : Replace ECM.



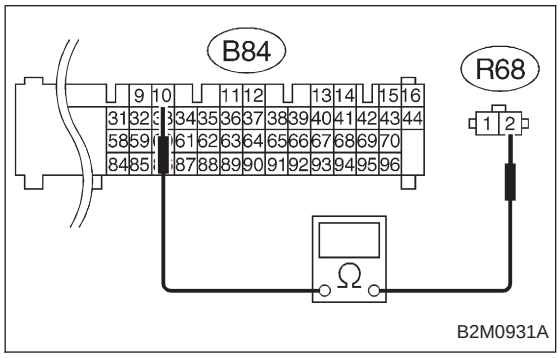
10BN3	CHECK HARNESS BETWEEN FUEL TANK PRESSURE CONTROL SOLENOID VALVE AND ECM CONNECTOR.

1) Turn ignition switch to OFF.
2) Disconnect connectors from fuel tank pressure control solenoid valve and ECM.
3) Measure resistance of harness between fuel tank pressure control solenoid valve connector and chassis ground.

CHECK : ***Connector & terminal***
(R68) No. 2 — Chassis ground:
Is the resistance less than 10 Ω?

YES : Repair short circuit in harness between ECM and fuel tank pressure control solenoid valve connector.

NO : Go to next step 4).



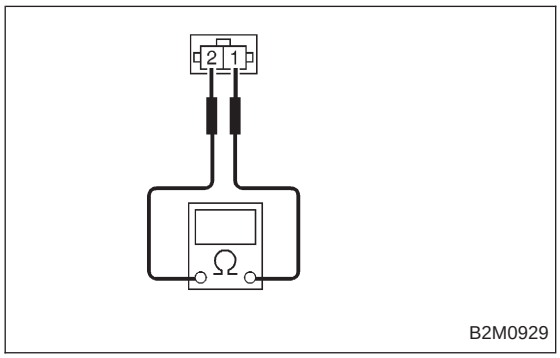
4) Measure resistance of harness between ECM and fuel tank pressure control solenoid valve connector.

CHECK : ***Connector & terminal***
(B84) No. 10 — (R68) No. 2:
Is the resistance less than 1 Ω?

YES : Go to step **10BN4**.

NO : Repair harness and connector.

NOTE:
In this case, repair the following:
● Open circuit in harness between ECM and fuel tank pressure control solenoid valve connector
● Poor contact in coupling connectors (B98 (LHD)/B97 (RHD), and R57)



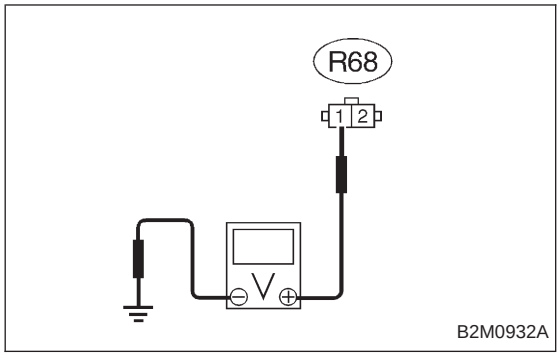
10BN4	CHECK FUEL TANK PRESSURE CONTROL SOLENOID VALVE.

Measure resistance between fuel tank pressure control solenoid valve terminals.

CHECK : ***Terminals***
No. 1 — No. 2:
Is the resistance between 10 and 100 Ω?

YES : Go to step **10BN5**.

NO : Replace fuel tank pressure control solenoid valve.



10BN5	**CHECK POWER SUPPLY TO FUEL TANK PRESSURE CONTROL SOLENOID VALVE.**

1) Turn ignition switch to ON.
2) Measure voltage between fuel tank pressure control solenoid valve and chassis ground.

CHECK ***: Connector & terminal (R68) No. 1 (+) — Chassis ground (−): Is the voltage more than 10 V?***

YES : Go to next CHECK .

NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between main relay and fuel tank pressure control solenoid valve connector
- Poor contact in coupling connectors (B97 and R57)
- Poor contact in main relay connector

CHECK ***: Is there poor contact in fuel tank pressure control solenoid valve connector?***

YES : Repair poor contact in fuel tank pressure control solenoid valve connector.

NO : Contact with SOA service.

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

OBD (FB1)
P1401 <PCV_F>
H2M1410

BO: DTC P1401 — FUEL TANK PRESSURE CONTROL SYSTEM FUNCTION PROBLEM (PCV — F) —

DTC DETECTING CONDITION:

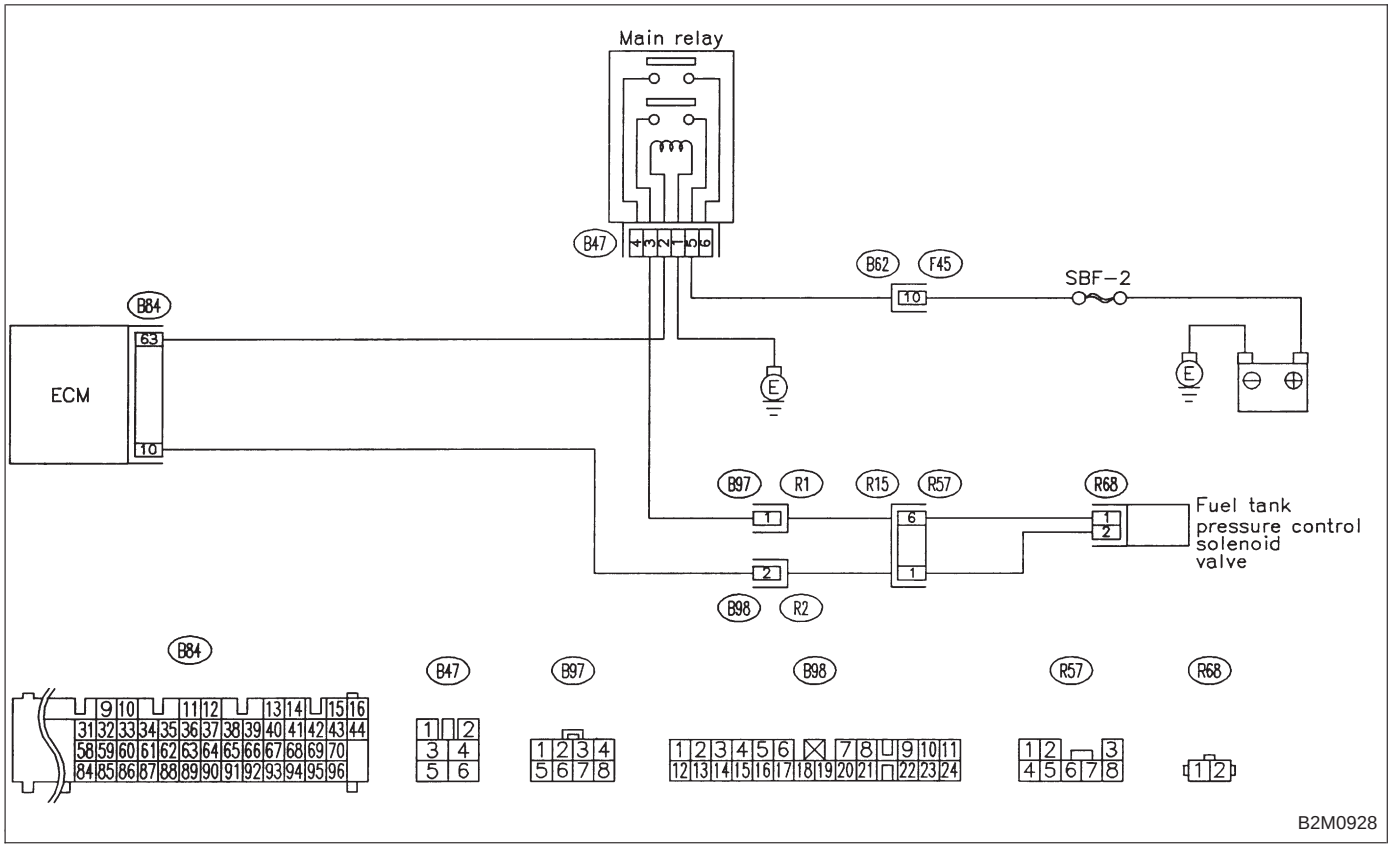
- Two consecutive trips with fault

10BO1	**Check fuel tank pressure control solenoid valve.**

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

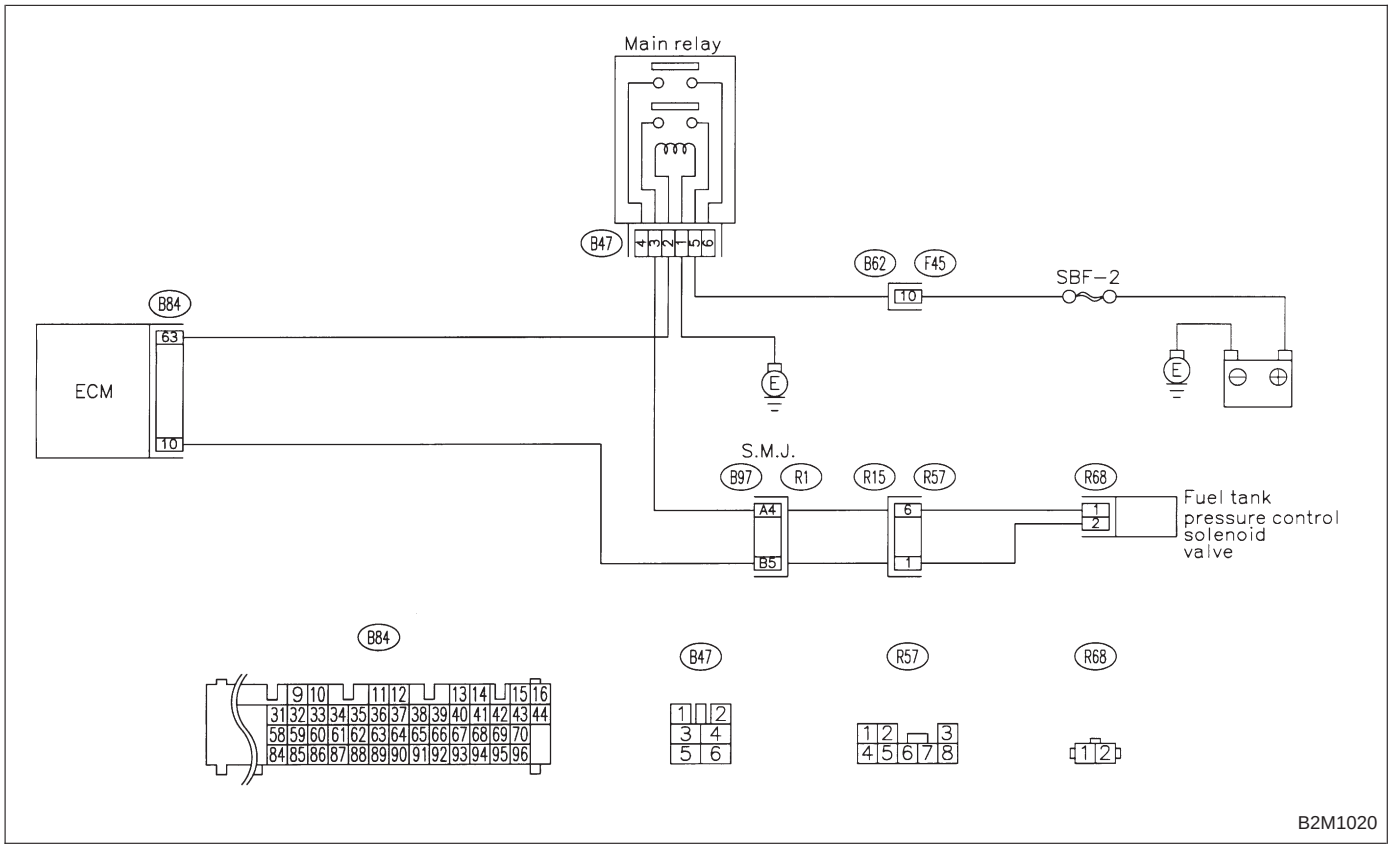
WIRING DIAGRAM:

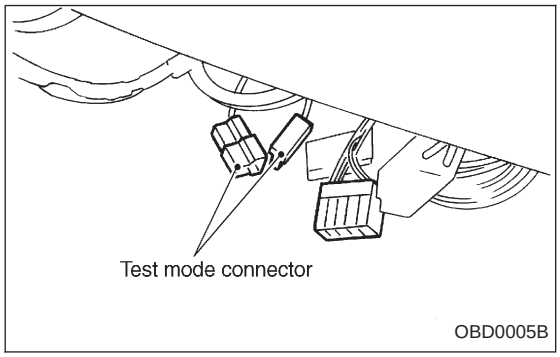
- LHD Model



WIRING DIAGRAM:

- RHD Model





10BO1	CHECK FUEL TANK PRESSURE CONTROL SOLENOID VALVE.

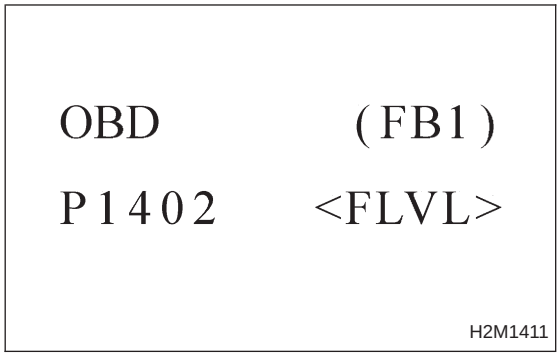
1) Turn ignition switch to OFF.
2) Connect test mode connector.
3) Turn ignition switch to ON.

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

NOTE:
Fuel tank pressure control solenoid valve operation check can also be executed using Subaru Select Monitor (Function mode: FD07). For the procedure, refer to “COMPULSORY VALVE OPERATION CHECK MODE” 2-7 [T3F0].

YES : Check evaporative emission control system. <Ref. to 2-7 [T10BN0].>

NO : Replace fuel tank pressure control solenoid valve.



BP: DTC P1402 — FUEL LEVEL SENSOR CIRCUIT MALFUNCTION (FLVL) —

DTC DETECTING CONDITION:

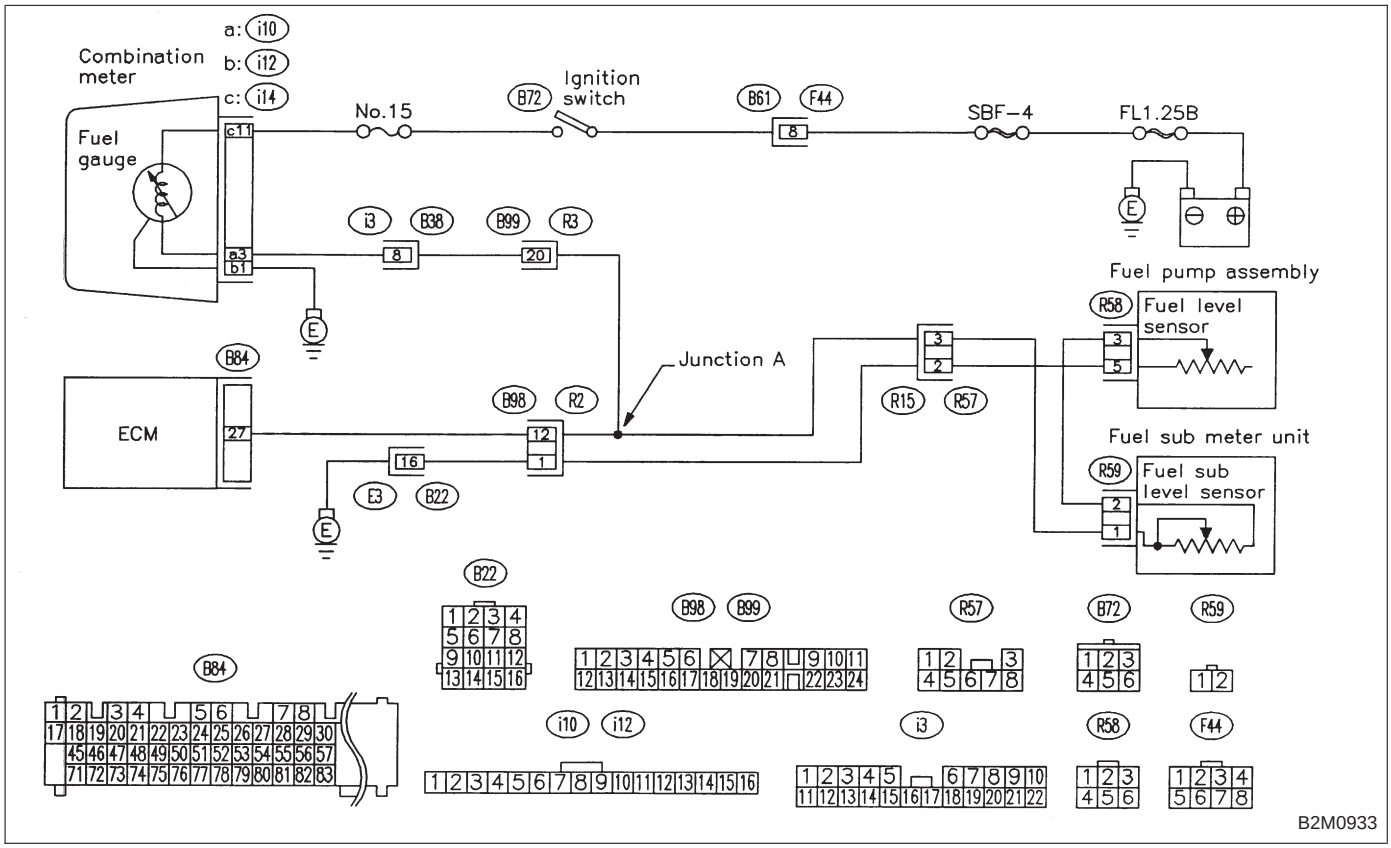
- Two consecutive trips with fault

10BP1	Check speedometer and tachometer operation in combination meter.
10BP2	Check ground circuit of combination meter.
10BP3	Check input signal for ECM. (Using voltage meter and Subaru Select Monitor.)
10BP4	Check fuel level sensor.
10BP5	Check fuel sub level sensor.
10BP6	Check harness between fuel pump and fuel sub meter unit connector.
10BP7	Check ground circuit of fuel level sensor.
10BP8	Check harness between ECM and fuel pump connector.
10BP9 (LHD) 10BP10 (RHD)	Check harness between ECM, combination meter and fuel pump connector.
10BP11	Check harness between combination meter and fuel pump connector.
10BP12	Check combination meter.

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

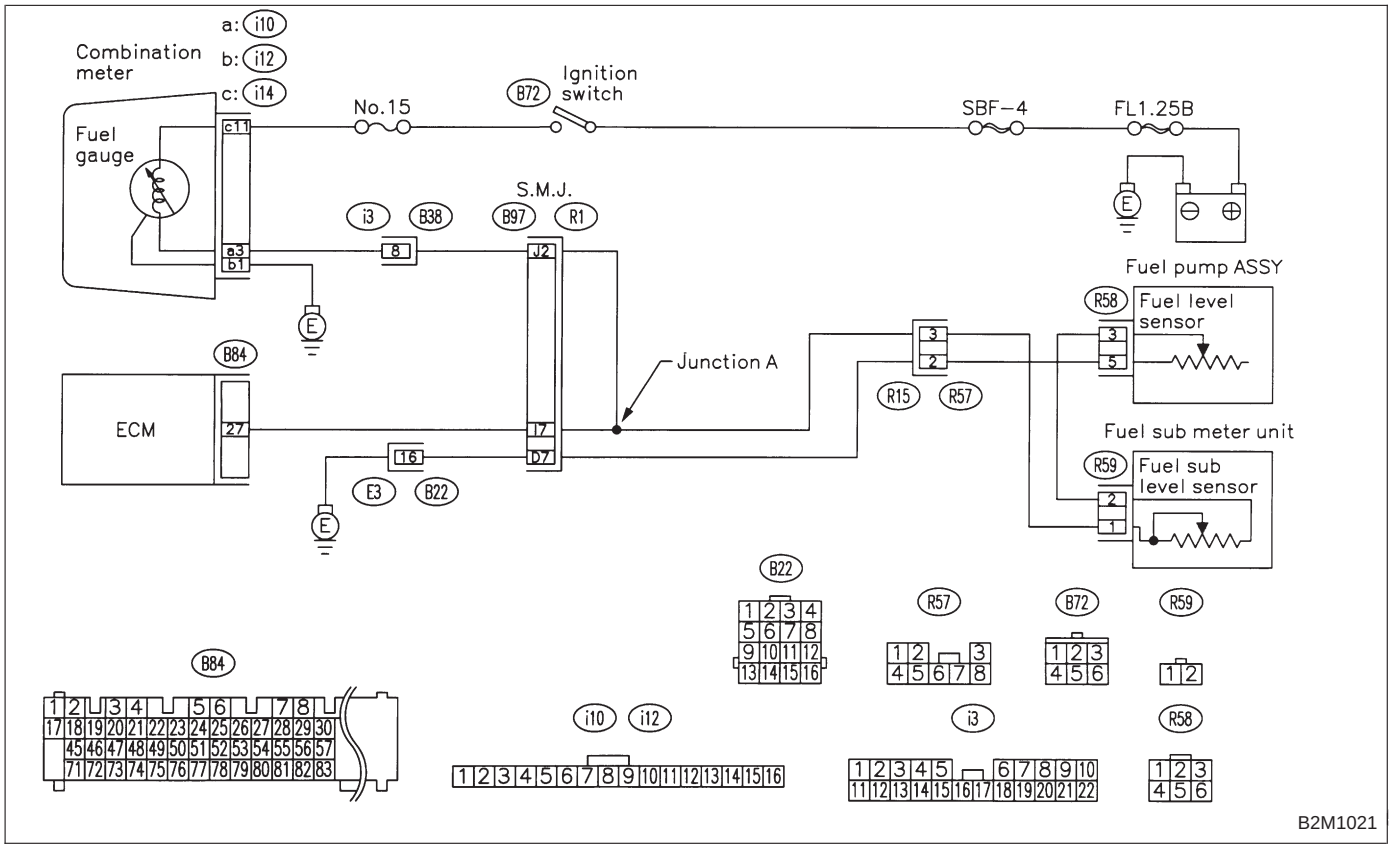
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



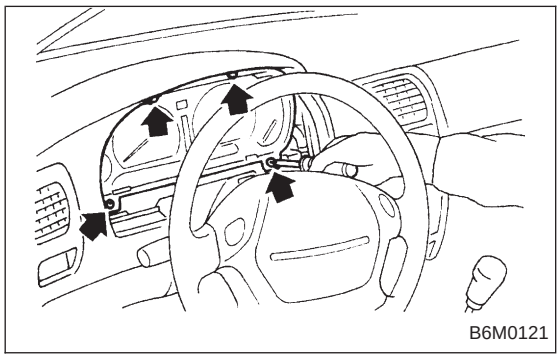
B2M1021

10BP1	CHECK SPEEDOMETER AND TACHOMETER OPERATION IN COMBINATION METER.

CHECK : ***Does speedometer and tachometer operate normally?***

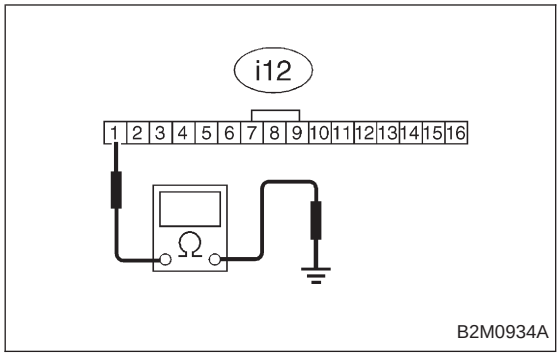
YES : Go to step **10BP3**.

NO : Go to step **10BP2**.


B6M0121

10BP2	CHECK GROUND CIRCUIT OF COMBINATION METER.

1) Turn ignition switch to OFF.
2) Pull out combination meter from instrument panel. <Ref. to 6-2 [W13A1].>
3) Disconnect connector from combination meter.



4) Measure resistance of harness between combination meter connector and chassis ground.

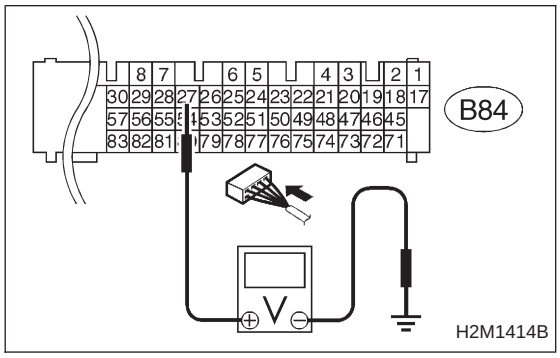
CHECK ***: Connector & terminal***
(i12) No. 1 — Chassis ground:
Is resistance less than 5 Ω?

YES : Repair or replace combination meter.

NO : Repair harness and connector.

NOTE:
In this case, repair the following:

- Open circuit in harness between combination meter connector and grounding terminal
- Poor contact in combination meter connector
- Poor contact in grounding terminal



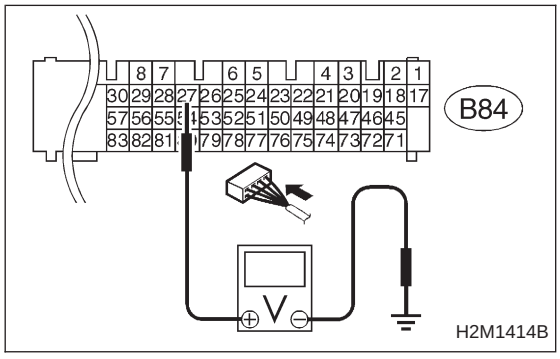
10BP3	CHECK INPUT SIGNAL FOR ECM. (USING VOLTAGE METER AND SUBARU SELECT MONITOR.)

1) Turn ignition switch to ON. (Engine OFF)
2) Measure voltage between ECM connector and chassis ground.

CHECK ***: Connector & terminal***
(B84) No. 27 (+) — Chassis ground (−):
Is the voltage more than 4.75 V?

YES : Go to step **10BP4**.

NO : Go to next step 3).

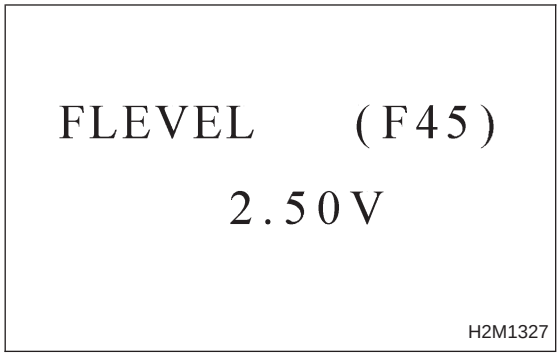


3) Measure voltage between ECM connector and chassis ground.

CHECK ***: Connector & terminal***
(B84) No. 27 (+) — Chassis ground (−):
Is the voltage less than 0.12 V?

YES : Go to step **10BP9** (LHD) or **10BP10** (RHD).

NO : Go to next CHECK .



CHECK : ***Does the value change less than 0.12 V by shaking harness and connector of ECM while monitoring the value with Subaru Select Monitor?***

- Subaru Select Monitor

Designate mode using function key.

Function mode: F45

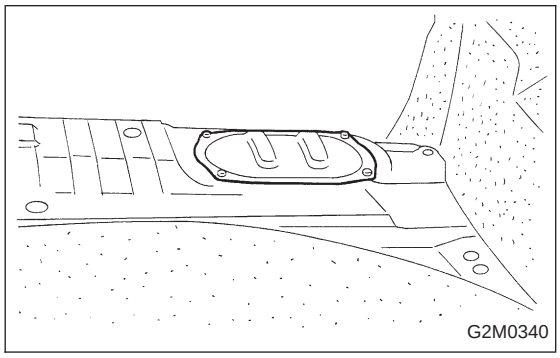
- F45: Fuel level sensor output signal is indicated.

YES : Repair poor contact in ECM connector.

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.

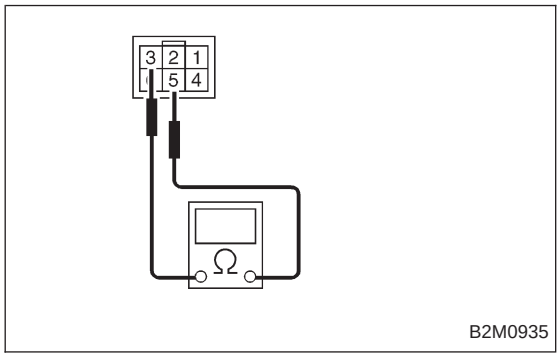
NOTE:
In this case, repair the following:

- Poor contact in fuel pump connector
- Poor contact in combination meter connector
- Poor contact in ECM connector
- Poor contact in coupling connectors (i3, B99 (LHD only), B22, B98 (LHD)/B97 (RHD), and R57)



10BP4	CHECK FUEL LEVEL SENSOR.

1) Turn ignition switch to OFF.
2) Remove fuel pump access hole lid located on the right rear of trunk compartment floor (Sedan) or luggage compartment floor (Wagon).

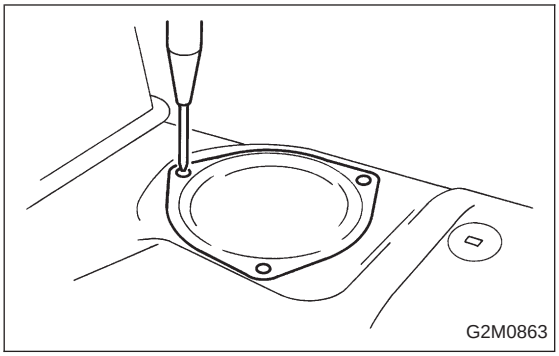


3) Disconnect connector from fuel pump.
4) Measure resistance between connector terminals of fuel pump.

CHECK : ***Terminals***
No. 3 — No. 5:
Is the resistance less than 100 Ω?

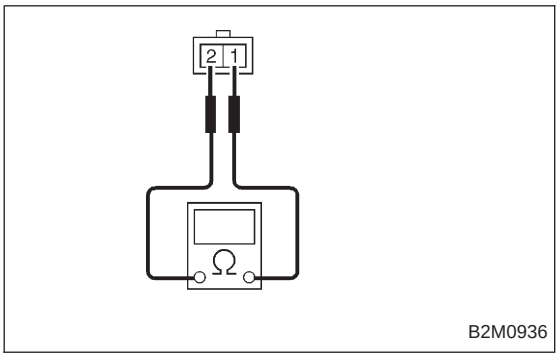
YES : Go to step **10BP5**.

NO : Replace fuel sending unit.


G2M0863

10BP5	CHECK FUEL SUB LEVEL SENSOR.

1) Remove service hole cover located on the left rear of trunk compartment floor (Sedan) or luggage compartment floor (Wagon).



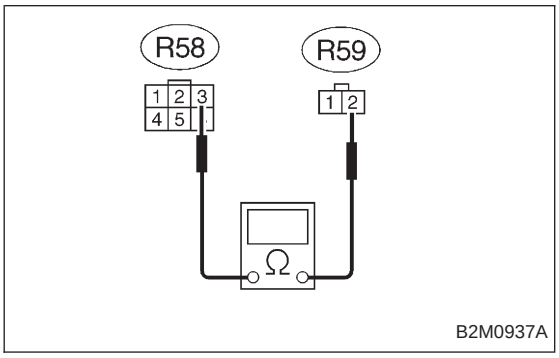
B2M0936

2) Disconnect connector from fuel sub meter unit.
3) Measure resistance between connector terminals of fuel sub meter unit.

CHECK ***: Terminals***
No. 1 — No. 2:
Is the resistance less than 100 Ω?

YES : Go to step **10BP6**.

NO : Replace fuel sub meter unit.



B2M0937A

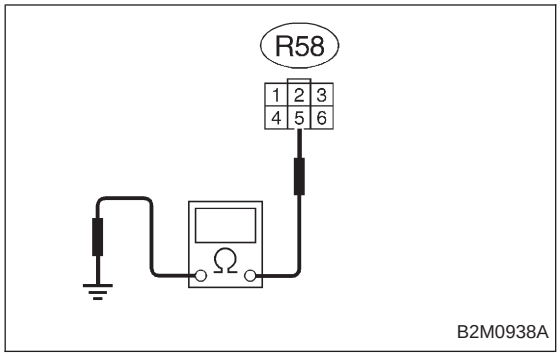
10BP6	CHECK HARNESS BETWEEN FUEL PUMP AND FUEL SUB METER UNIT CONNECTOR.

Measure resistance of harness between fuel pump and fuel sub meter unit connector.

CHECK ***: Connector & terminal***
(R58) No. 3 — (R59) No. 2:
Is the resistance less than 1 Ω?

YES : Go to step **10BP7**.

NO : Repair open circuit in harness between fuel pump and fuel sub meter unit connector.



10BP7	CHECK GROUND CIRCUIT OF FUEL LEVEL SENSOR.

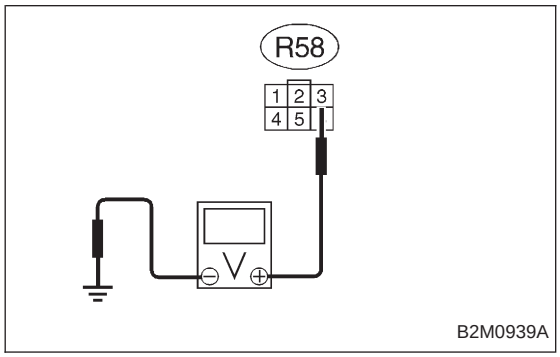
Measure resistance of harness between fuel pump connector and chassis ground.

CHECK ***: Connector & terminal (R58) No. 5 — Chassis ground: Is the resistance less than 5 Ω?***

YES : Go to step **10BP8**.

NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between fuel pump connector and chassis grounding terminal
- Poor contact in fuel pump connector
- Poor contact in coupling connectors (R57, B98 (LHD)/ B97 (RHD), and B22)



10BP8	CHECK HARNESS BETWEEN ECM AND FUEL PUMP CONNECTOR.

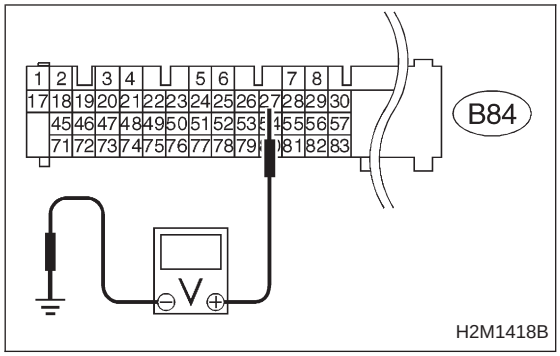
1) Connect connector to fuel sub meter unit.
2) Turn ignition switch to ON.
3) Measure voltage between fuel pump connector and chassis ground.

CHECK ***: Connector & terminal (R58) No. 3 (+) — Chassis ground (−): Is the voltage less than 1 V?***

YES : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between fuel pump connector and junction A on rear wiring harness
- Poor contact in fuel sub meter unit connector
- Poor contact in fuel pump connector
- Poor contact in coupling connector (R57)

NO : Go to next step 4).



4) Turn ignition switch to OFF.
5) Disconnect connector from ECM.
6) Turn ignition switch to ON.
7) Measure voltage between ECM connector and chassis ground.

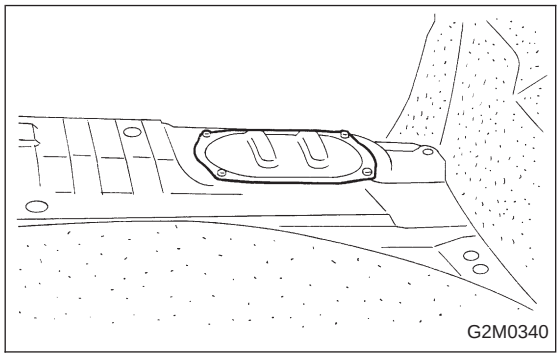
CHECK ***: Connector & terminal (B84) No. 27 (+) — Chassis ground: Is the voltage less than 1 V?***

YES : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between ECM connector and junction A on rear wiring harness
- Poor contact in coupling connector (B98 (LHD)/B97 (RHD))

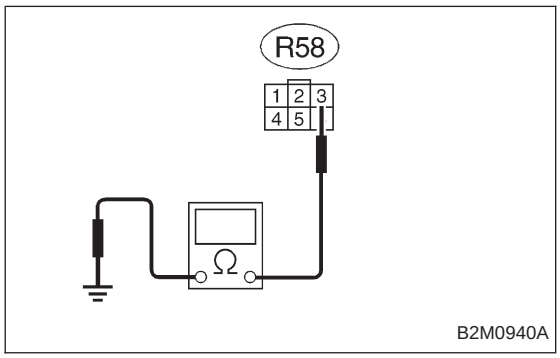
NO : Repair connector.

NOTE:
In this case, repair the following:
- Poor contact in fuel pump connector
- Poor contact in fuel sub meter unit
- Poor contact in ECM connector



10BP9	**CHECK HARNESS BETWEEN ECM, COMBINATION METER AND FUEL PUMP CONNECTOR. (LHD MODEL)**

1) Turn ignition switch to OFF.
2) Remove fuel pump access hole lid located on the right rear of trunk compartment floor (Sedan) or luggage compartment floor (Wagon).

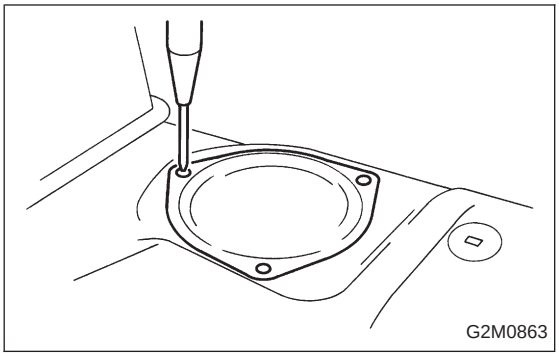


3) Disconnect connector from fuel pump.
4) Measure resistance of harness between fuel pump connector and chassis ground.

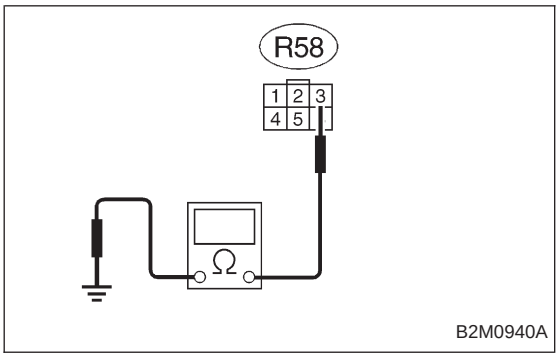
CHECK ***: Connector & terminal (R58) No. 3 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Go to next step 5).

NO : Go to step **10BP11**.


G2M0863

5) Remove service hole cover located on the left rear of trunk compartment floor (Sedan) or luggage compartment floor (Wagon).



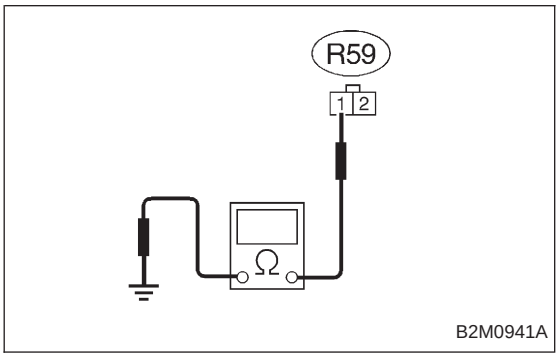
B2M0940A

6) Disconnect connector from fuel sub meter unit.
7) Measure resistance of harness between fuel pump connector and chassis ground.

CHECK : ***Connector & terminal (R58) No. 3 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Repair short circuit in harness between fuel pump and fuel sub meter unit connector.

NO : Go to next step 8).



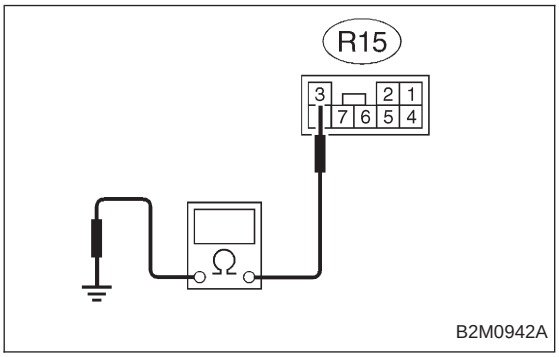
B2M0941A

8) Separate fuel tank cord connector (R57) and rear wiring harness connector (R15).
9) Measure resistance of harness between fuel sub meter unit connector and chassis ground.

CHECK : ***Connector & terminal (R59) No. 1 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Repair short circuit in fuel tank cord.

NO : Go to next step 10).



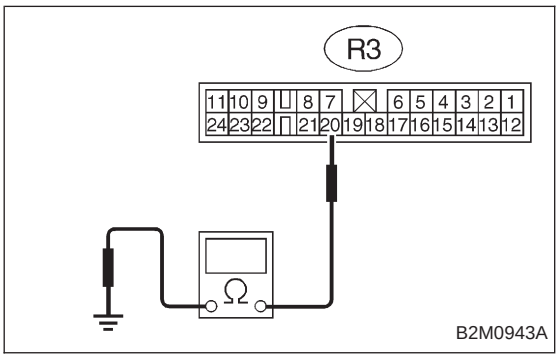
B2M0942A

10) Separate rear wiring harness connector (R2) and bulkhead wiring harness connector (B98).
11) Measure resistance of harness between rear wiring harness connector and chassis ground.

CHECK : ***Connector & terminal (R15) No. 3 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Go to next step 12).

NO : Repair short circuit in bulkhead wiring harness.



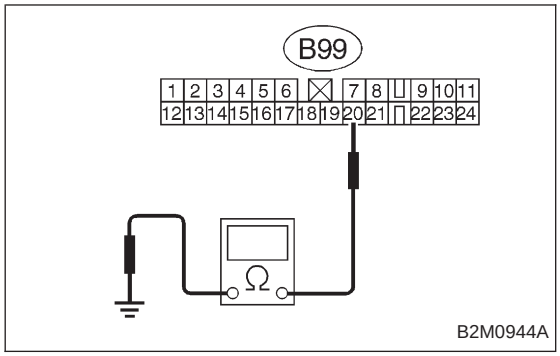
B2M0943A

12) Separate rear wiring harness connector (R3) and bulkhead wiring harness connector (B99).
13) Measure resistance of harness between rear wiring harness connector and chassis ground.

CHECK : ***Connector & terminal (R3) No. 20 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Repair short circuit in rear wiring harness.

NO : Go to next step 14).

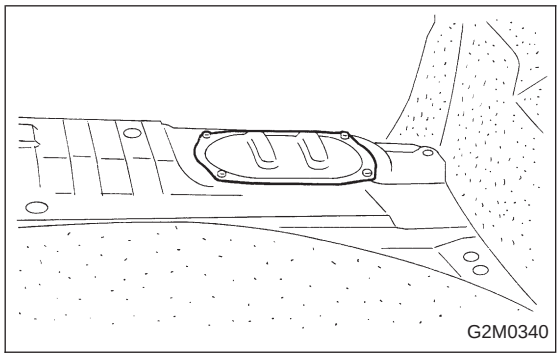


14) Separate bulkhead wiring harness connector (B38) and instrument panel wiring harness connector (i3).
15) Measure resistance of harness between bulkhead wiring harness connector and chassis ground.

CHECK ***: Connector & terminal (B99) No. 20 — Chassis ground: Is the resistance less than 10 Ω?***

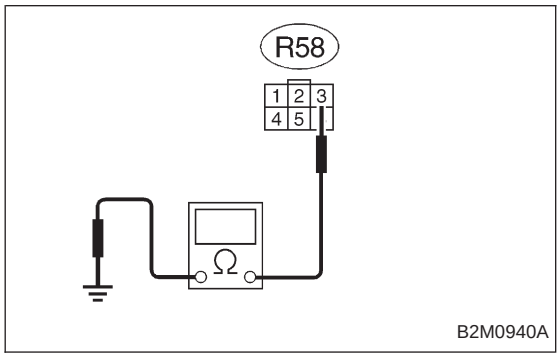
YES : Repair short circuit in bulkhead wiring harness.

NO : Repair short circuit in instrument panel wiring harness.



10BP10	CHECK HARNESS BETWEEN ECM, COMBINATION METER AND FUEL PUMP CONNECTOR. (RHD MODEL)

1) Turn ignition switch to OFF.
2) Remove fuel pump access hole lid located on the right rear of luggage compartment floor.

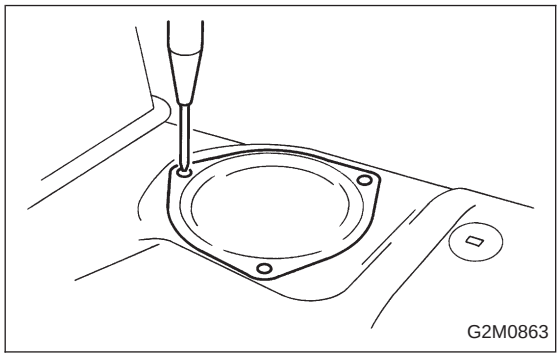


3) Disconnect connector from fuel pump.
4) Measure resistance of harness between fuel pump connector and chassis ground.

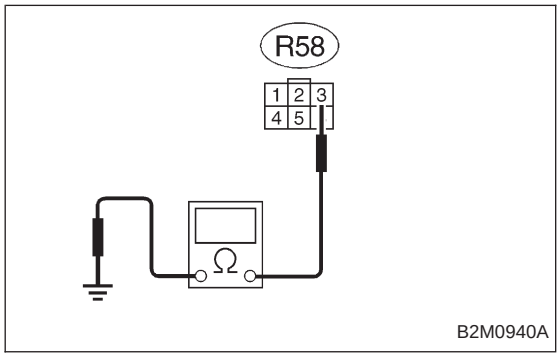
CHECK ***: Connector & terminal (R58) No. 3 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Go to next step 5).

NO : Go to step **10BP11**.



5) Remove service hole cover located on the left rear of luggage compartment floor.

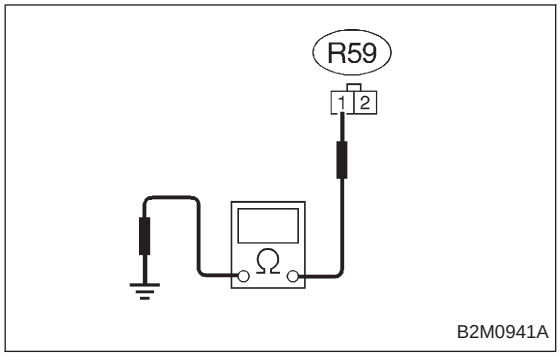


6) Disconnect connector from fuel sub meter unit.
7) Measure resistance of harness between fuel pump connector and chassis ground.

CHECK ***: Connector & terminal (R58) No. 3 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Repair short circuit in harness between fuel pump and fuel sub meter unit connector.

NO : Go to next step 8).

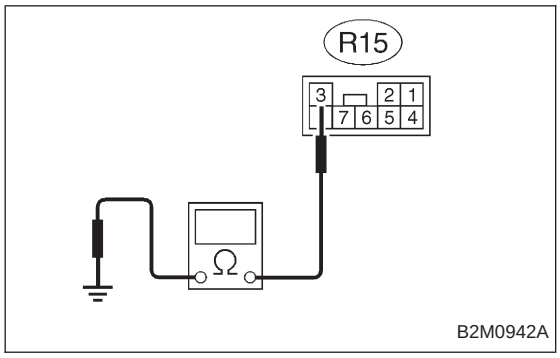


8) Separate fuel tank cord connector (R57) and rear wiring harness connector (R15).
9) Measure resistance of harness between fuel sub meter unit connector and chassis ground.

CHECK ***: Connector & terminal (R59) No. 1 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Repair short circuit in fuel tank cord.

NO : Go to next step 10).

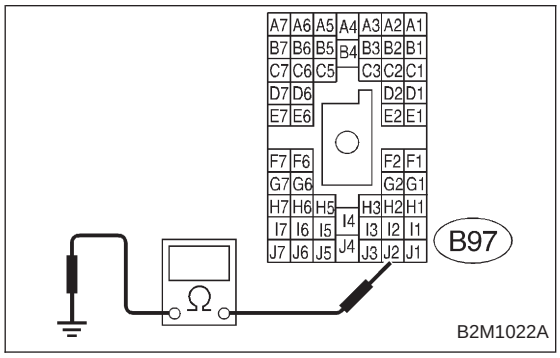


10) Separate rear wiring harness connector (R1) and bulkhead wiring harness connector (B97).
11) Measure resistance of harness between rear wiring harness connector and chassis ground.

CHECK ***: Connector & terminal (R15) No. 3 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Go to next step 12).

NO : Repair short circuit in rear wiring harness.

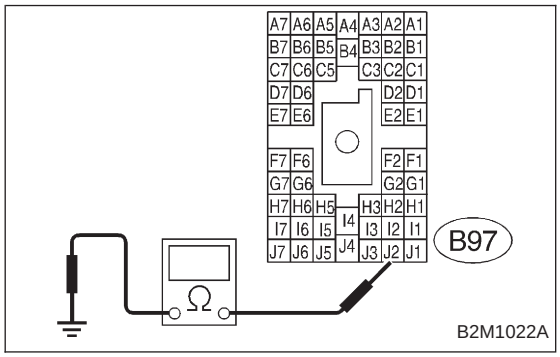


12) Measure resistance of harness between bulkhead wiring connector and chassis ground.

CHECK ***: Connector & terminal (B97) No. J2 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Go to next step 13).

NO : Repair short circuit in harness between S.M.J. and ECM connector.

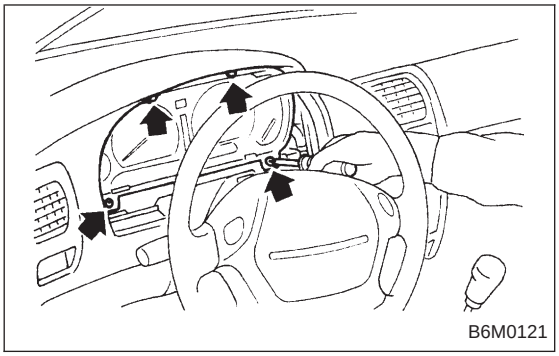


13) Separate bulkhead wiring harness connector (B38) and instrument panel wiring harness connector (i3).
14) Measure resistance of harness between bulkhead wiring harness connector and chassis ground.

CHECK ***: Connector & terminal (B97) No. J2 — Chassis ground: Is the resistance less than 10 Ω?***

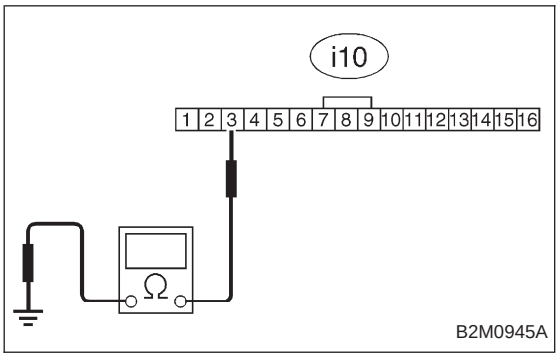
YES : Repair short circuit in bulkhead wiring harness.

NO : Repair short circuit in instrument panel wiring harness.


B6M0121

10BP11	CHECK HARNESS BETWEEN COMBINATION METER AND FUEL PUMP CONNECTOR.

1) Connect connector to fuel pump.
2) Pull out combination meter from instrument panel. <Ref. to 6-2 [W13A1].>
3) Disconnect connector from combination meter.



B2M0945A

4) Measure resistance of harness between combination meter connector and chassis ground.

CHECK ***: Connector & terminal (i10) No. 3 — Chassis ground: Is the resistance less than 200 Ω?***

YES : Go to step **10BP12**.

NO : Repair harness and connector.

NOTE:
In this case, repair the following:
- Open circuit in harness between combination meter connector and junction A on rear wiring harness
- Poor contact in coupling connectors (i3, and B99 (LHD)/ B97 (RHD))

10BP12	CHECK COMBINATION METER.

1) Disconnect speedometer cable from combination meter and remove combination meter.

CHECK ***: Is the fuel meter installation screw tightened securely?***

YES : Go to next step 2).

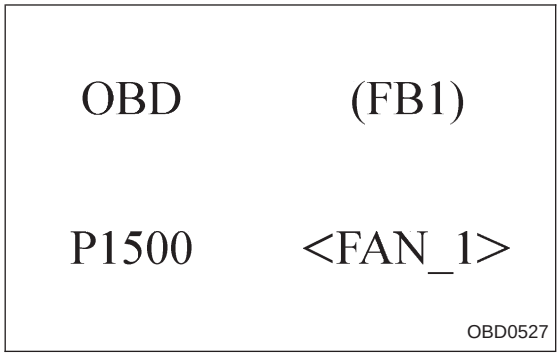
NO : Tighten fuel meter installation screw securely.

2) Remove printed circuit plate assembly from combination meter assembly.

CHECK ***: Is there flaw or burning on printed circuit plate assembly?***

YES : Replace printed circuit plate assembly.

NO : Replace fuel meter assembly.



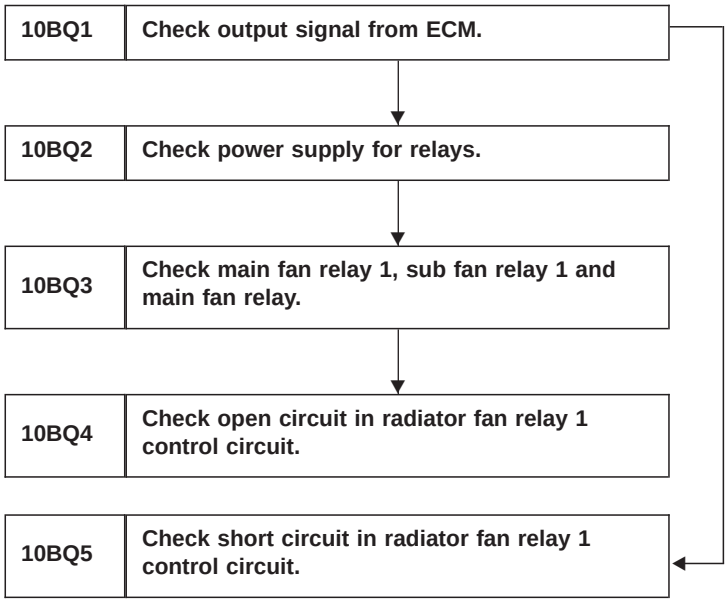
BQ: DTC P1500 — RADIATOR FAN RELAY 1 CIRCUIT MALFUNCTION (FAN — 1) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

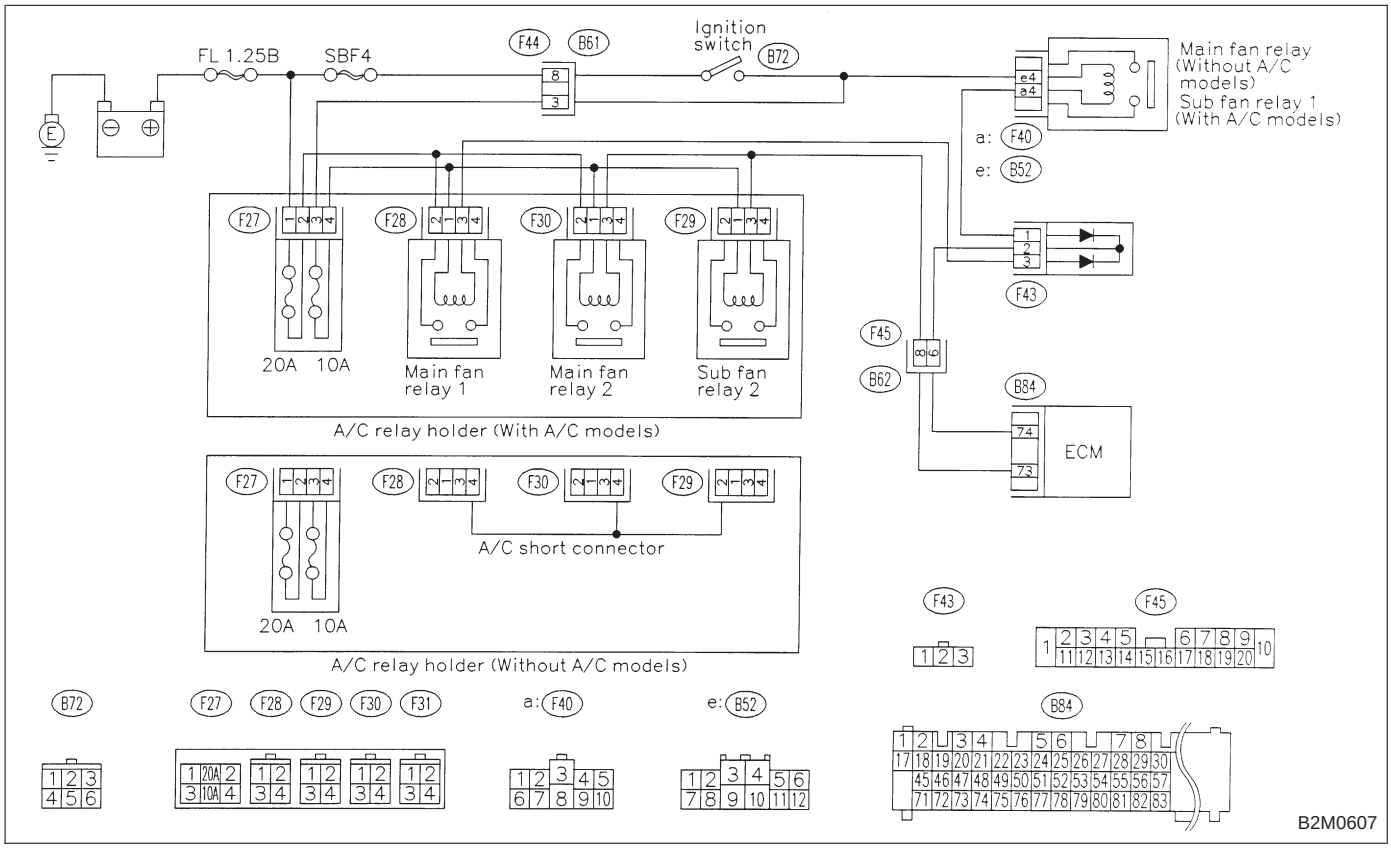
- Radiator fan does not operate properly.
- Overheating



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

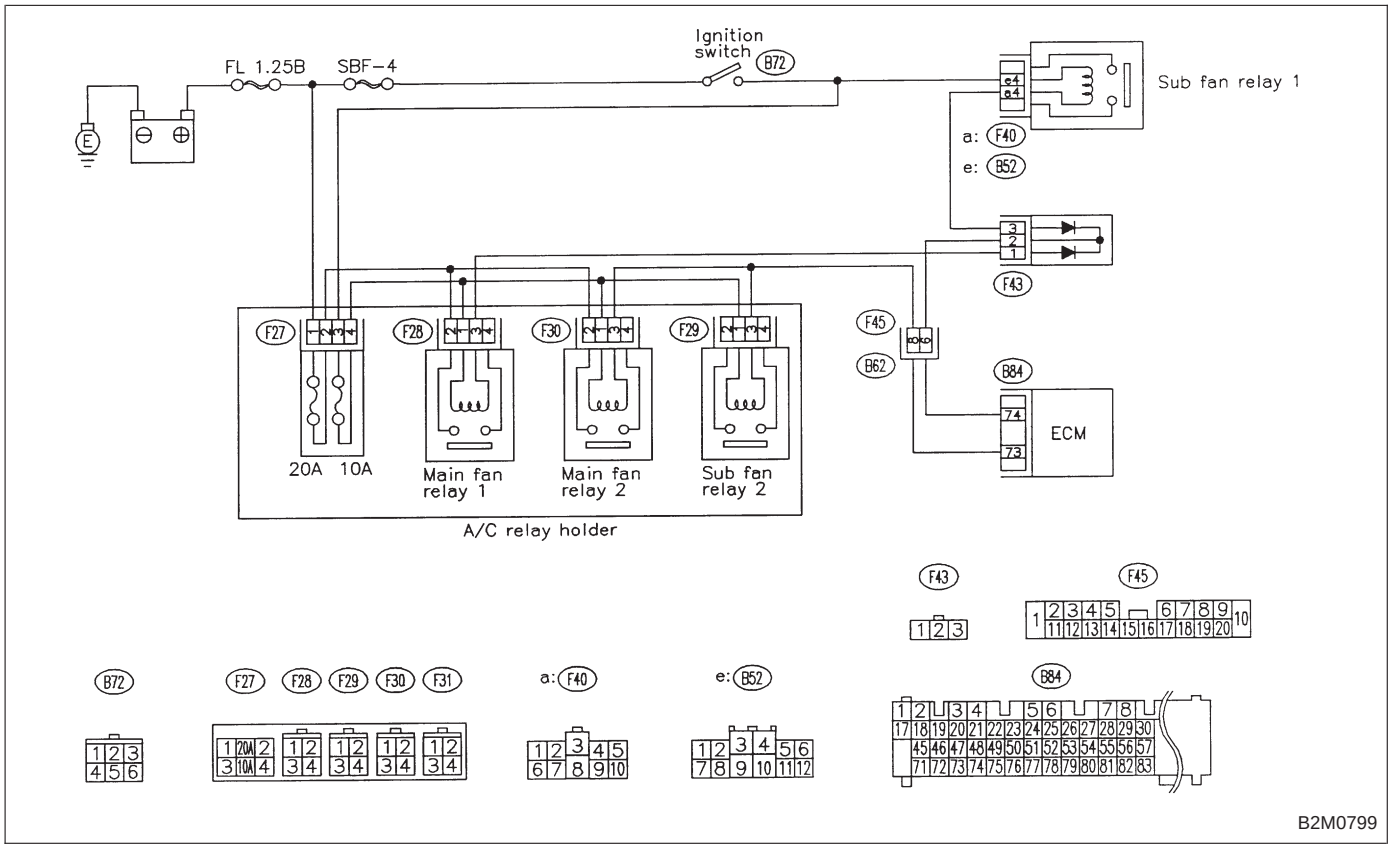
WIRING DIAGRAM:

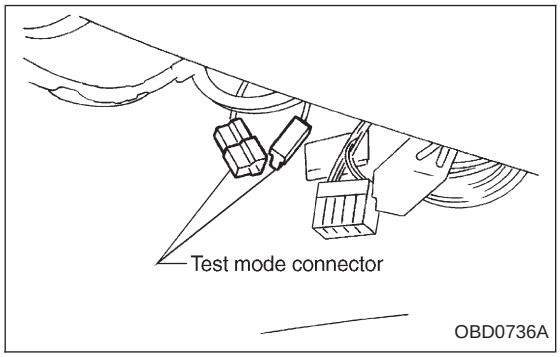
- LHD Model



WIRING DIAGRAM:

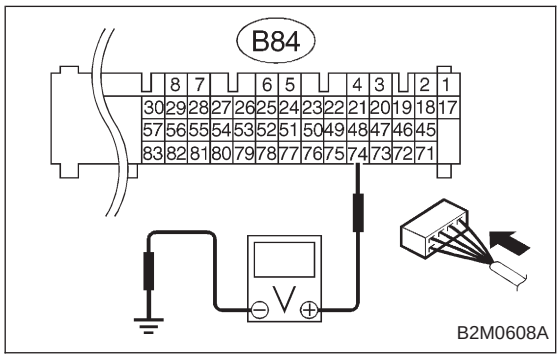
- RHD Model





10BQ1	CHECK OUTPUT SIGNAL FROM ECM.

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.



4) Measure voltage between ECM and chassis ground.

CHECK ***: Connector & terminal (B84) No. 74 (+) — Chassis ground: Is the voltage more than 10 V?***

YES : Go to step **10BQ5**.

NO : Go to step **10BQ2**.

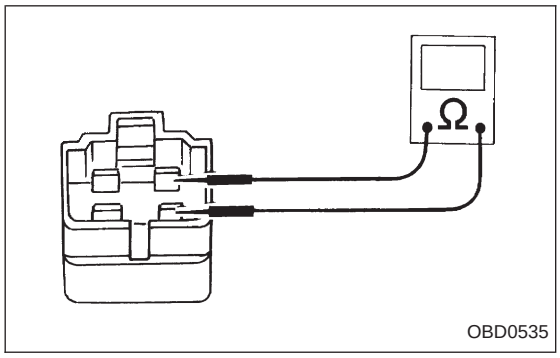
10BQ2	CHECK POWER SUPPLY FOR RELAYS.

Turn ignition switch to OFF.

CHECK ***: Is the fuse in power supply circuit broken?***

YES : Replace the fuse.

NO : Go to step **10BQ3**.



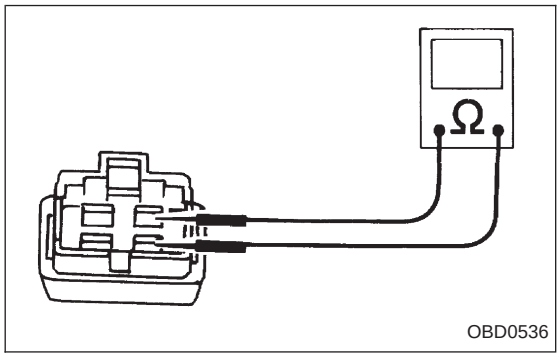
10BQ3	CHECK MAIN FAN RELAY 1, SUB FAN RELAY 1 AND MAIN FAN RELAY.

1) Remove main fan relay 1. (With A/C models only)
2) Measure resistance between main fan relay 1 terminals.

CHECK ***: Terminal***
No. 1 — No. 3:
Is the resistance between 87 and 107 Ω?

YES : Go to next step 3).

NO : Replace main fan relay 1.

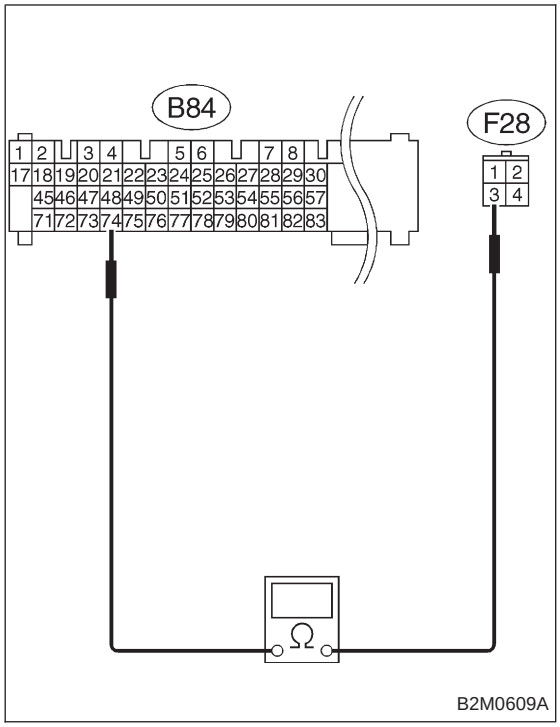


3) Remove sub fan relay 1. (With A/C models only)
   Remove main fan relay. (Without A/C models only)
4) Measure resistance between sub fan relay 1 or main fan relay terminals.

CHECK ***: Terminal***
No. 1 — No. 3:
Is the resistance between 83 and 117 Ω?

YES : Go to step **10BQ4**.

NO : Replace sub fan relay 1.



10BQ4	CHECK OPEN CIRCUIT IN RADIATOR FAN RELAY 1 CONTROL CIRCUIT.

1) Disconnect connector from ECM.
2) Disconnect connector from sub fan relay 1 or main fan relay.
3) Measure resistance of harness between ECM and main fan relay 1 connector.

NOTE:
With A/C models only.

CHECK ***: Connector & terminal (B84) No. 74 — (F28) No. 3: Is the resistance less than 1 Ω?***

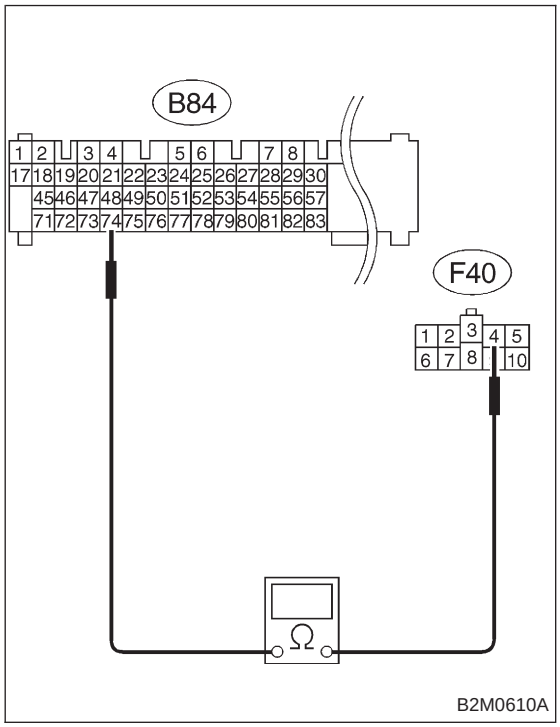
YES : Go to next CHECK .

NO : Repair open circuit in harness between ECM and main fan relay 1 connector.

CHECK ***: Is there poor contact in ECM or main fan relay 1 connector?***

YES : Repair poor contact in ECM or main fan relay 1 connector.

NO : Go to next step 4).



4) Measure resistance of harness between ECM and sub fan relay 1 (with A/C models) or main fan relay (without A/C models) connector.

CHECK ***: Connector & terminal (B84) No. 74 — (F40) No. 4: Is the resistance less than 1 Ω?***

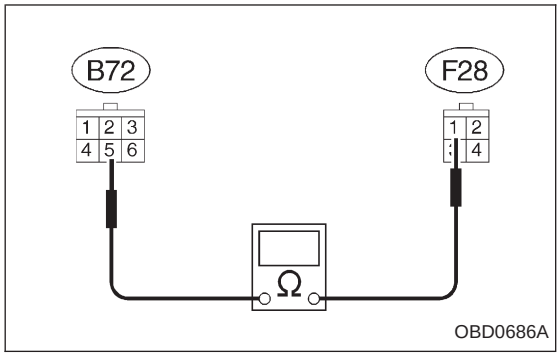
YES : Go to next CHECK .

NO : Repair open circuit in harness between ECM and sub fan relay 1 (with A/C models) or main fan relay (without A/C models) connector.

CHECK ***: Is there poor contact in ECM or sub fan relay 1 (with A/C models) or main fan relay (without A/C models) connector?***

YES : Repair poor contact in ECM or sub fan relay 1 (with A/C models) or main fan relay (without A/C models) connector.

NO : Go to next step 5) (with A/C models) or step 6) (without A/C models).



5) Measure resistance of harness between main fan relay 1 and ignition switch connector.

NOTE:
With A/C models only.

CHECK ***: Connector & terminal (F28) No. 1 — (F72) No. 5: Is the resistance less than 1 Ω?***

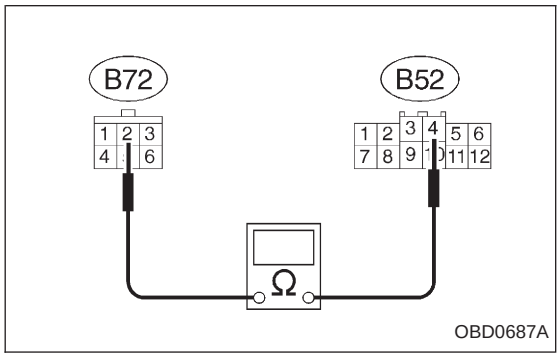
YES : Go to next CHECK .

NO : Repair open circuit in harness between main fan relay 1 and ignition switch connector.

CHECK ***: Is there poor contact in main fan relay 1 or ignition switch connector?***

YES : Repair main fan relay 1 or ignition switch connector.

NO : Go to next step 6).



6) Measure resistance of harness between sub fan relay 1 (with A/C models) or main fan relay (without A/C models) and ignition switch connector.

CHECK ***: Connector & terminal (B52) No. 4 — (F72) No. 2: Is the resistance less than 1 Ω?***

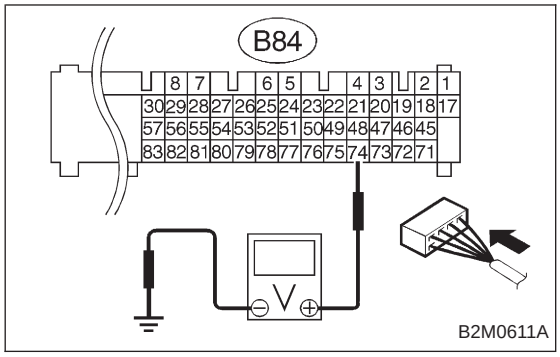
YES : Go to next CHECK .

NO : Repair open circuit in harness between sub fan relay 1 (with A/C models) or main fan relay (without A/C models) and ignition switch connector.

CHECK ***: Is there poor contact in sub fan relay 1 (with A/C models) or main fan relay (without A/C models) or ignition switch connector?***

YES : Repair poor contact in sub fan relay 1 (with A/C models) or main fan relay (without A/C models) or ignition switch connector.

NO : Replace ECM.



10BQ5	CHECK SHORT CIRCUIT IN RADIATOR FAN RELAY 1 CONTROL CIRCUIT.

1) Turn ignition switch to OFF.
2) Remove main fan relay 1 and sub fan relay 1. (with A/C models)
   Remove main fan relay. (without A/C models)
3) Disconnect test mode connector.
4) Turn ignition switch to ON.
5) Measure voltage between ECM and chassis ground.

CHECK ***: Connector & terminal (B84) No. 74 (+) — Chassis ground (−): Is the voltage more than 10 V?***

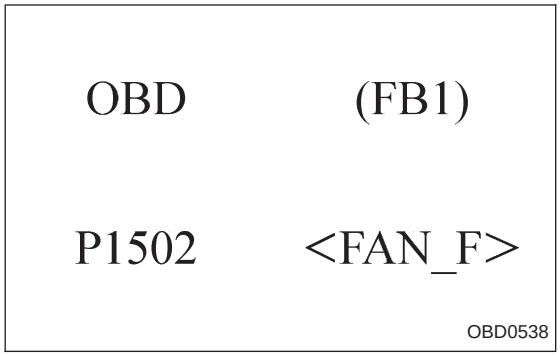
YES : Repair short circuit in radiator fan relay 1 control circuit and replace ECM.

NO : Go to next CHECK .

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

YES : Repair poor contact in ECM connector.

NO : Replace ECM.



BR: DTC P1502 — RADIATOR FAN FUNCTION PROBLEM (FAN – F) —

DTC DETECTING CONDITION:

- Two consecutive trips with fault

TROUBLE SYMPTOM:

- Occurrence of noise
- Overheating

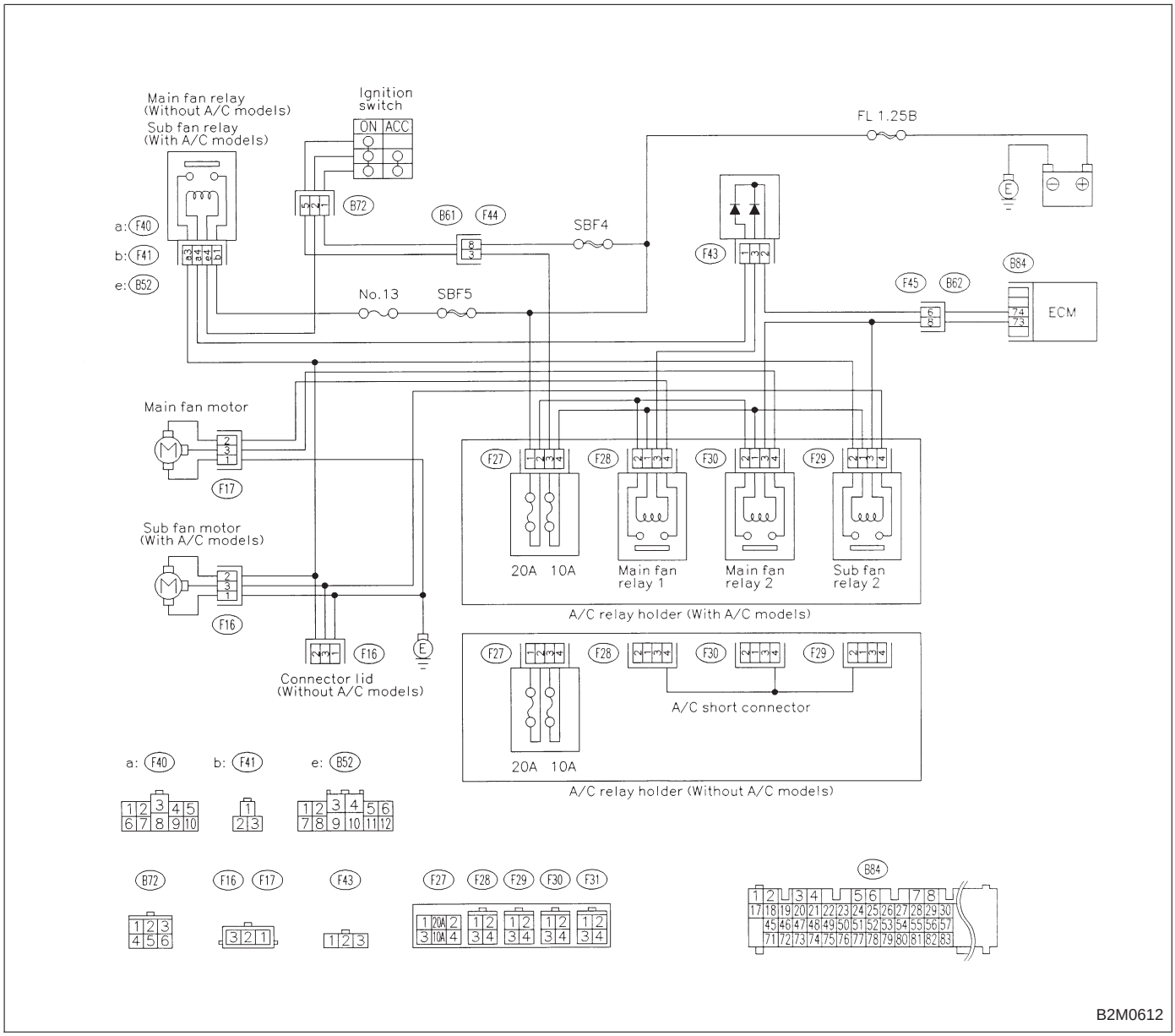
10BR1	**Check any other DTC (beside DTC P1502) on display.**

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

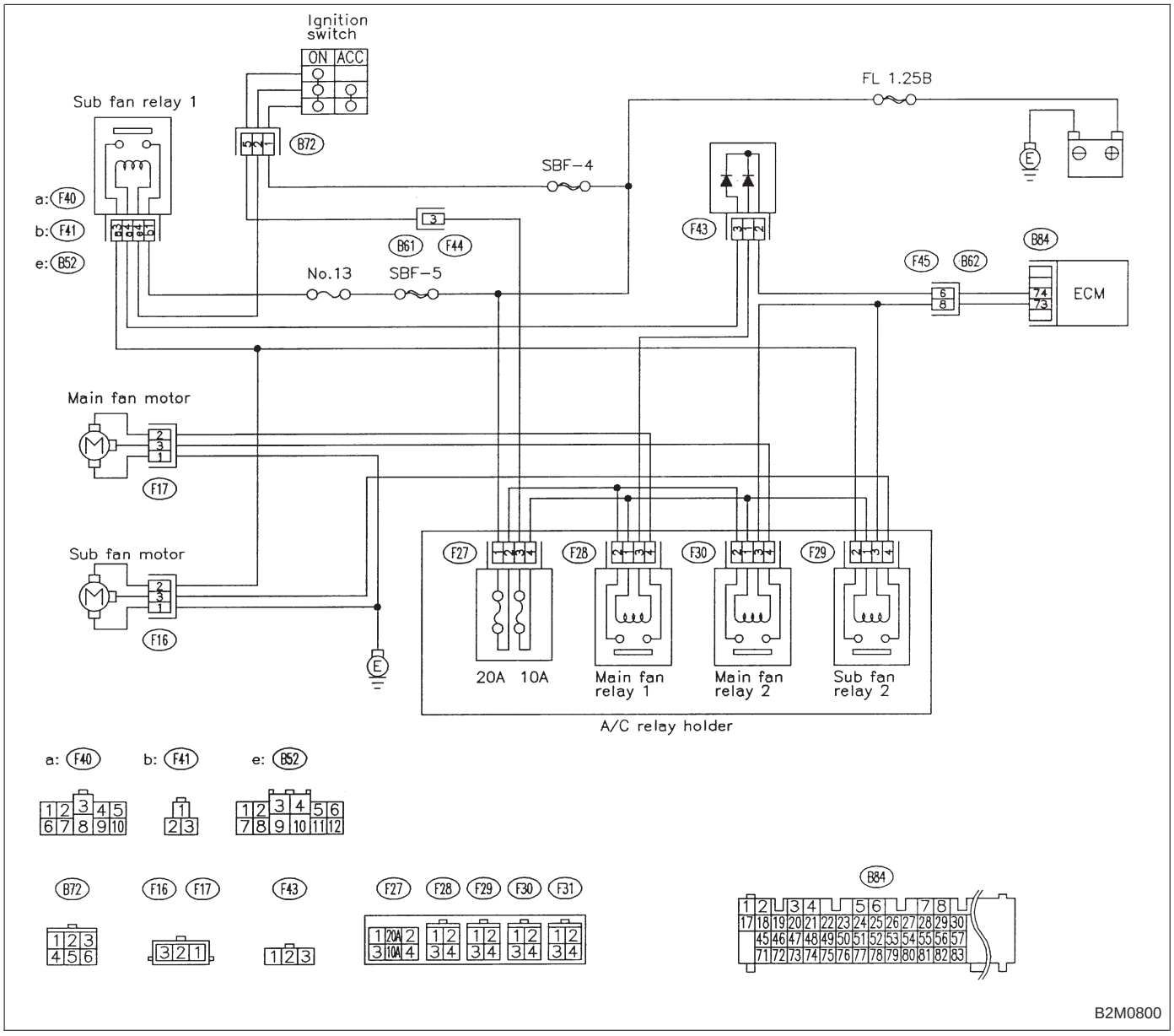
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



10BR1	CHECK ANY OTHER DTC (BESIDE DTC P1502) ON DISPLAY.

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

YES : Inspect the relevant DTC using “10. Diagnostics Chart with Trouble Code, 2-7 [T1000]”.

NO : Check engine cooling system. <Ref. to 2-5 [K100].>

BS: DTC P1700 — THROTTLE POSITION SENSOR CIRCUIT MALFUNCTION FOR AUTOMATIC TRANSMISSION (ATTH) —

DTC DETECTING CONDITION:

- Two consecutive trips 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”

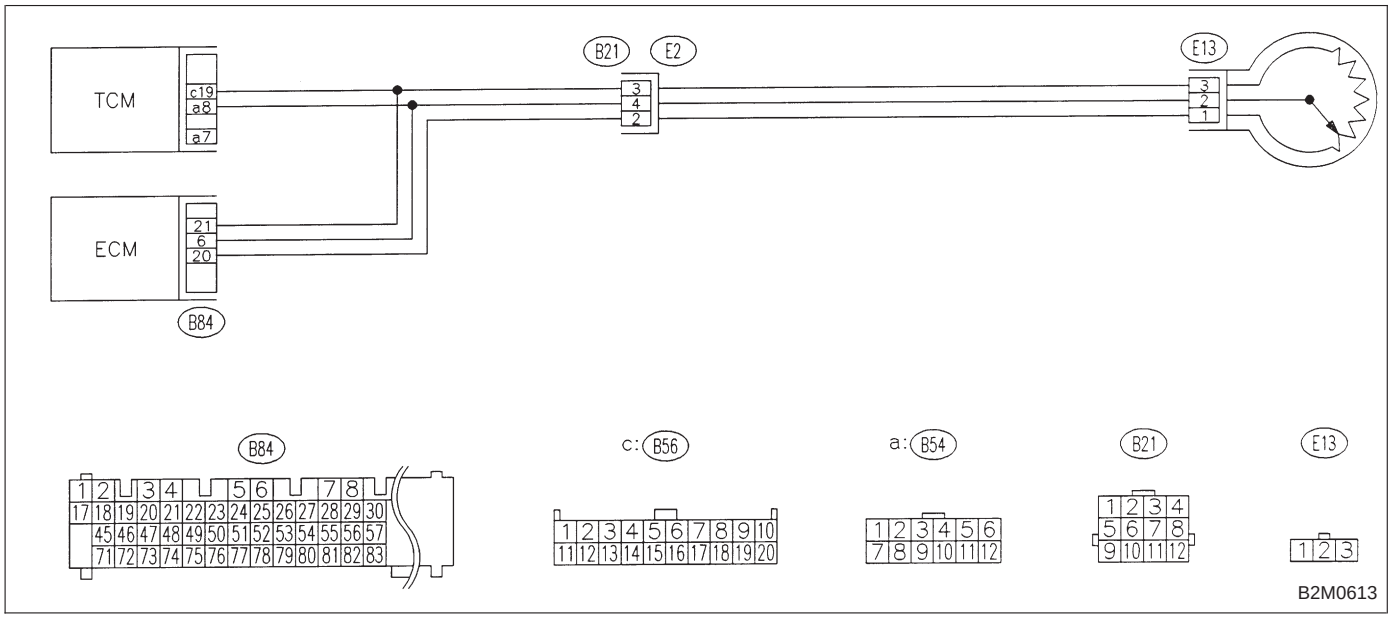
10BS1	Check DTC P1700 on display.

↓

Check throttle position sensor circuit. <Ref. to 3-2 [T7K0].>

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

WIRING DIAGRAM:

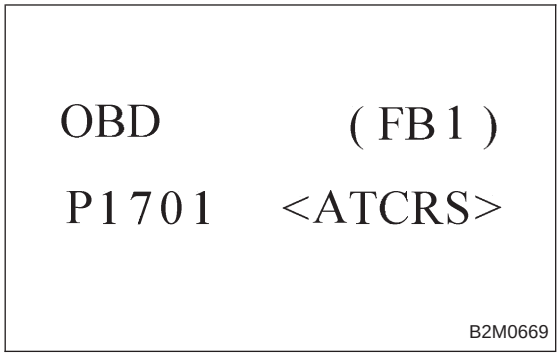


10BS1	CHECK DTC P1700 ON DISPLAY.

CHECK : ***Does the Subaru select monitor or OBD-II general scan tool indicate DTC P1700?***

YES : Check throttle position sensor circuit.

NOTE:
For the diagnostic procedure on throttle position sensor circuit, refer to 3-2 [T7K0].



BT: DTC P1701 — CRUISE CONTROL SET SIGNAL CIRCUIT MALFUNCTION FOR AUTOMATIC TRANSMISSION (ATCRS) —

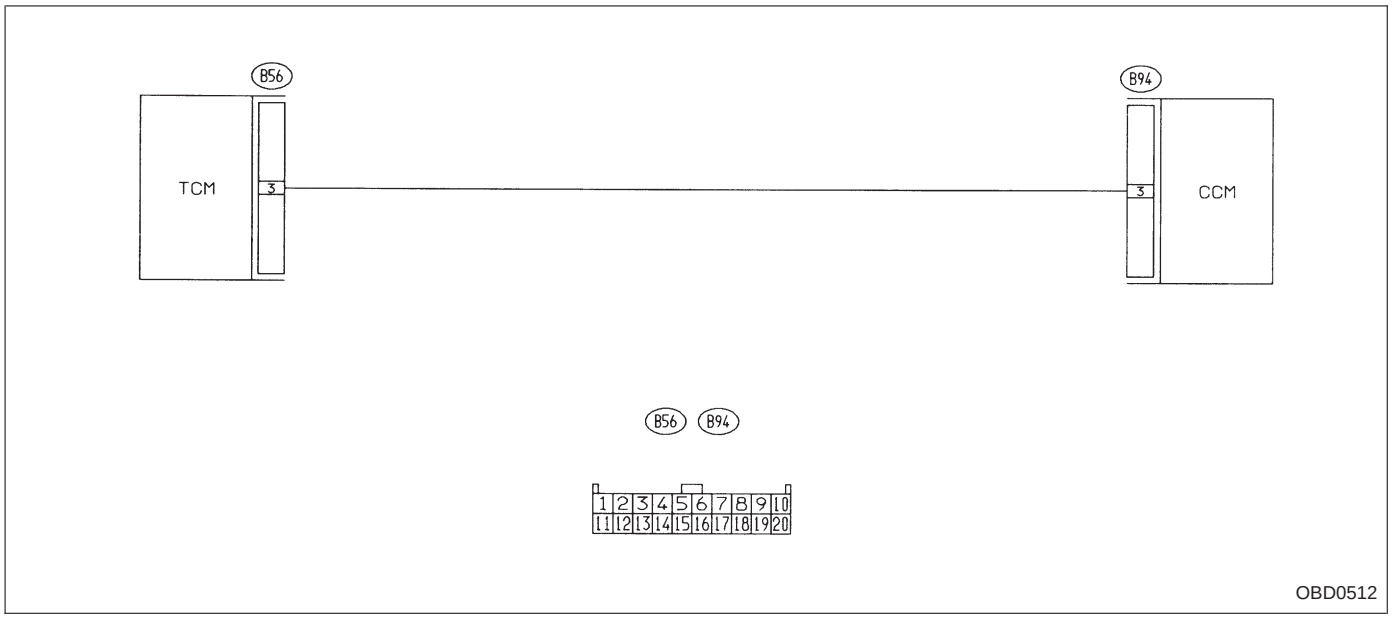
DTC DETECTING CONDITION:

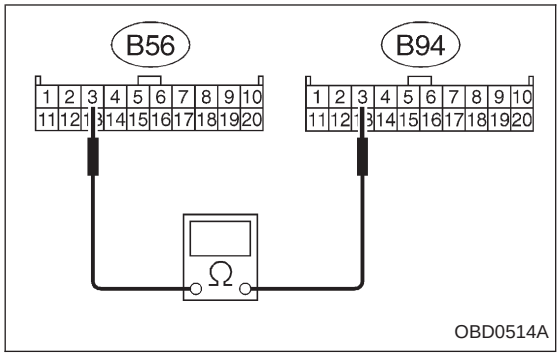
- Two consecutive trips with fault

10BT1	**Check harness between TCM and CCM connector.**
↓	
10BT2	**Check input signal for TCM.**

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

WIRING DIAGRAM:





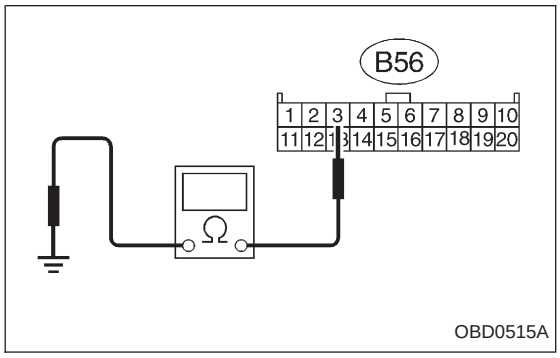
10BT1	CHECK HARNESS BETWEEN TCM AND CCM CONNECTOR.

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

CHECK ***: Connector & terminal (B56) No. 3 — (B94) No. 3: Is the resistance less than 1 Ω?***

YES : Go to next step 4).

NO : Repair open circuit in harness between TCM and CCM connector.

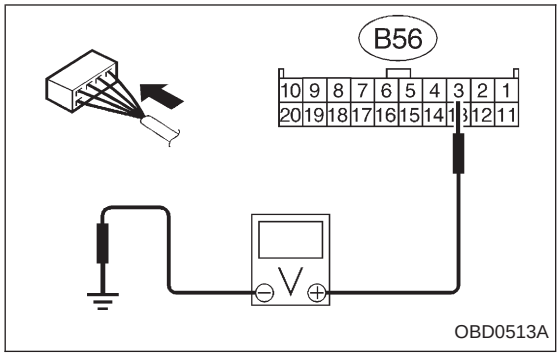


4) Measure resistance of harness between TCM and chassis ground.

CHECK ***: Connector & terminal (B56) No. 3 — Chassis ground: Is the resistance less than 10 Ω?***

YES : Repair short circuit in harness between TCM and CCM connector.

NO : Go to step **10BT2**.



10BT2	CHECK INPUT SIGNAL FOR TCM.

1) Connect connector to TCM and CCM.
2) Lift-up the vehicle or set the vehicle on free rollers.

CAUTION:
On AWD models, raise all wheels off ground.

3) Start the engine.
4) Cruise control main switch to ON.
5) TCS OFF switch to ON. (with TCS models only)
6) Move selector lever to “D” and slowly increase vehicle speed to 50 km/h (31 MPH).
7) Cruise control set switch to ON.
8) Measure voltage between TCM and chassis ground.

CHECK ***: Connector & terminal (B56) No. 3 (+) — Chassis ground (−): Is the voltage less than 1 V?***

YES : Go to next CHECK .

NO : Check cruise control set circuit. <Ref. to 6-2 [T7A0].>

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

YES : Repair poor contact in TCM connector.

NO : Replace TCM.

BU: DTC P1702 — AUTOMATIC TRANSMISSION DIAGNOSIS INPUT SIGNAL CIRCUIT MALFUNCTION (ATDIAG) —

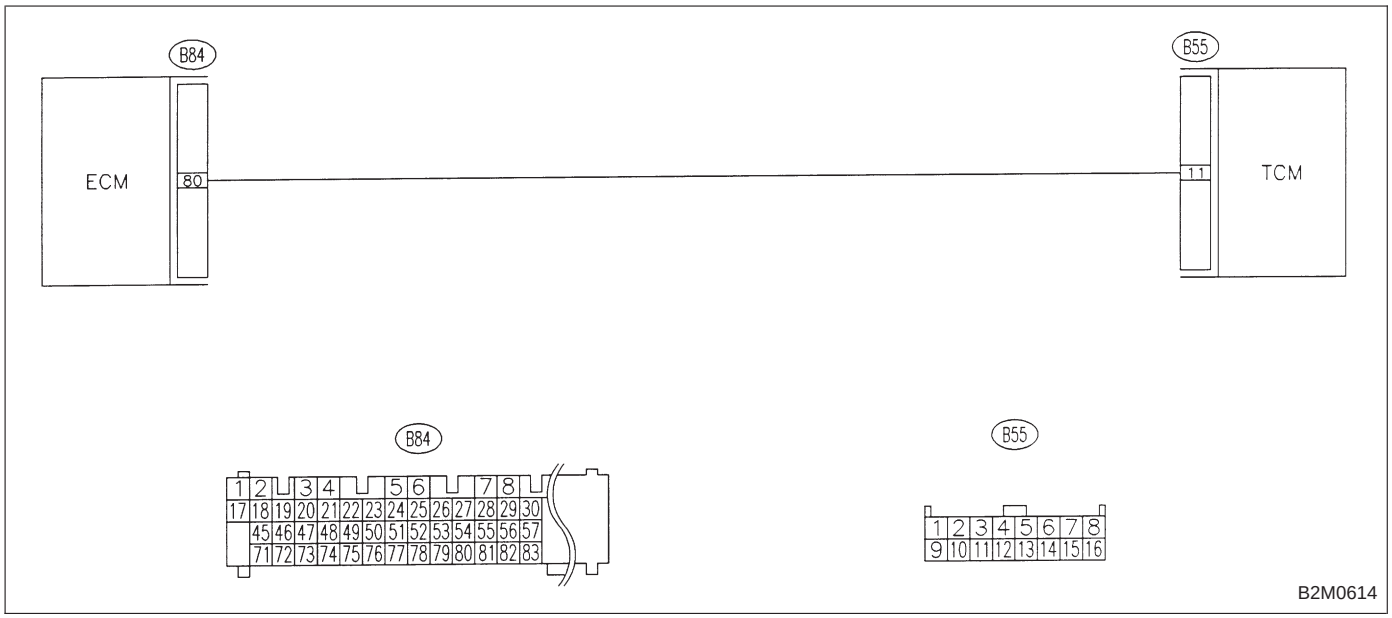
DTC DETECTING CONDITION:

- Two consecutive trips with fault

10BU1	**Check transmission type.**
10BU2	**Check harness between ECM and TCM connector.**
10BU3	**Check harness between ECM and TCM connector.**

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

WIRING DIAGRAM:

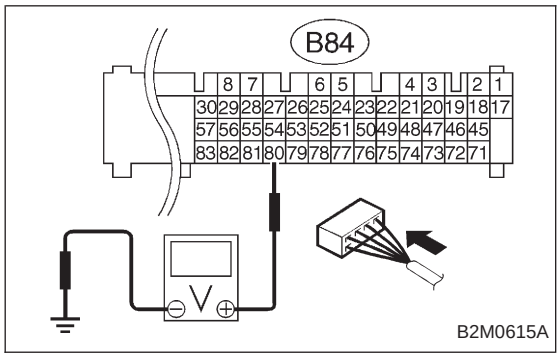


10BU1	CHECK TRANSMISSION TYPE.

CHECK ***: Is transmission type AT?***

YES : Go to step **10BU2**.

NO : Check AT/MT identification circuit. <Ref. to 2-7 [T10BW0].>



10BU2	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR.

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

CHECK ***: Connector & terminal (B84) No. 80 (+) — Chassis ground (−): Is the voltage more than 4 V?***

YES : Repair harness and connector.

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

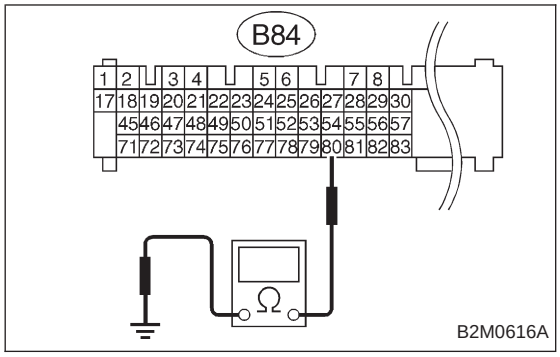
NO : Go to next CHECK .

CHECK ***: Connector & terminal (B84) No. 80 (+) — Chassis ground (−): Is the voltage less than 1 V?***

YES : Go to step **10BU3**.

NO : Although MIL illuminates, circuit is now normal.

NOTE:
In this case, repair the following:
- Poor contact in ECM connector
- Poor contact in TCM connector



10BU3	CHECK HARNESS BETWEEN ECM AND TCM CONNECTOR.

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

CHECK ***: Connector & terminal (B84) No. 80 — Chassis ground: Is the resistance less than 10 Ω?***

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

NO : Repair poor contact in ECM connector.

OBD (FB1)

EXERR22

B2M0947

BV: DTC P0461 — FUEL LEVEL SENSOR CIRCUIT RANGE/ PERFORMANCE PROBLEM (EXERR22) —

DTC DETECTING CONDITION:

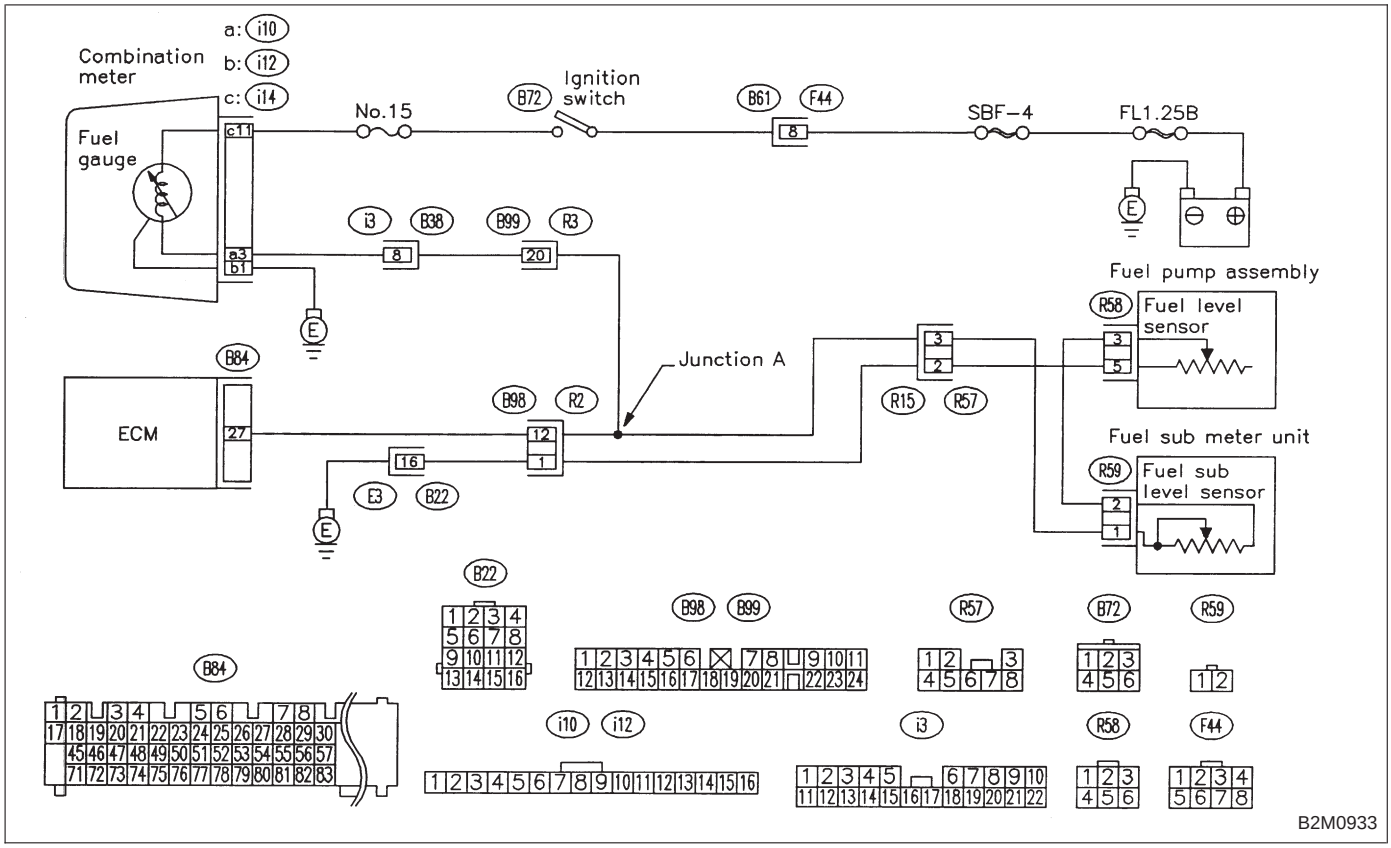
- Two consecutive trips with fault

10BV1	**Check DTC P1402 on display.**

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

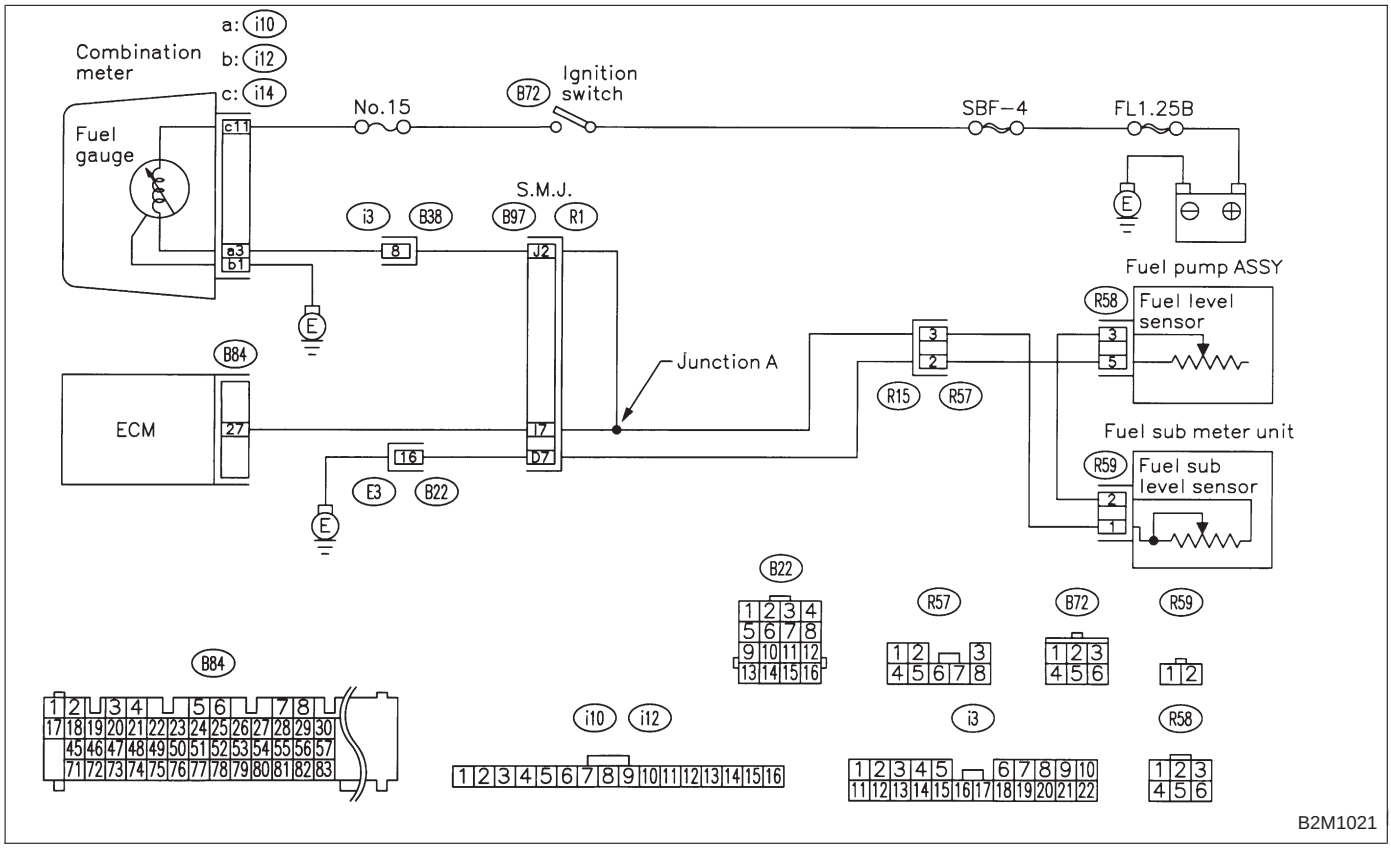
WIRING DIAGRAM:

- LHD Model



WIRING DIAGRAM:

- RHD Model



10BV1	CHECK DTC P1402 ON DISPLAY.

CHECK : ***Does the Subaru select monitor or OBD-II general scan tool indicate DTC P1402?***

YES : Inspect DTC P1402 using “10. Diagnostics Chart with Trouble Code 2-7 [T1000]”.

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

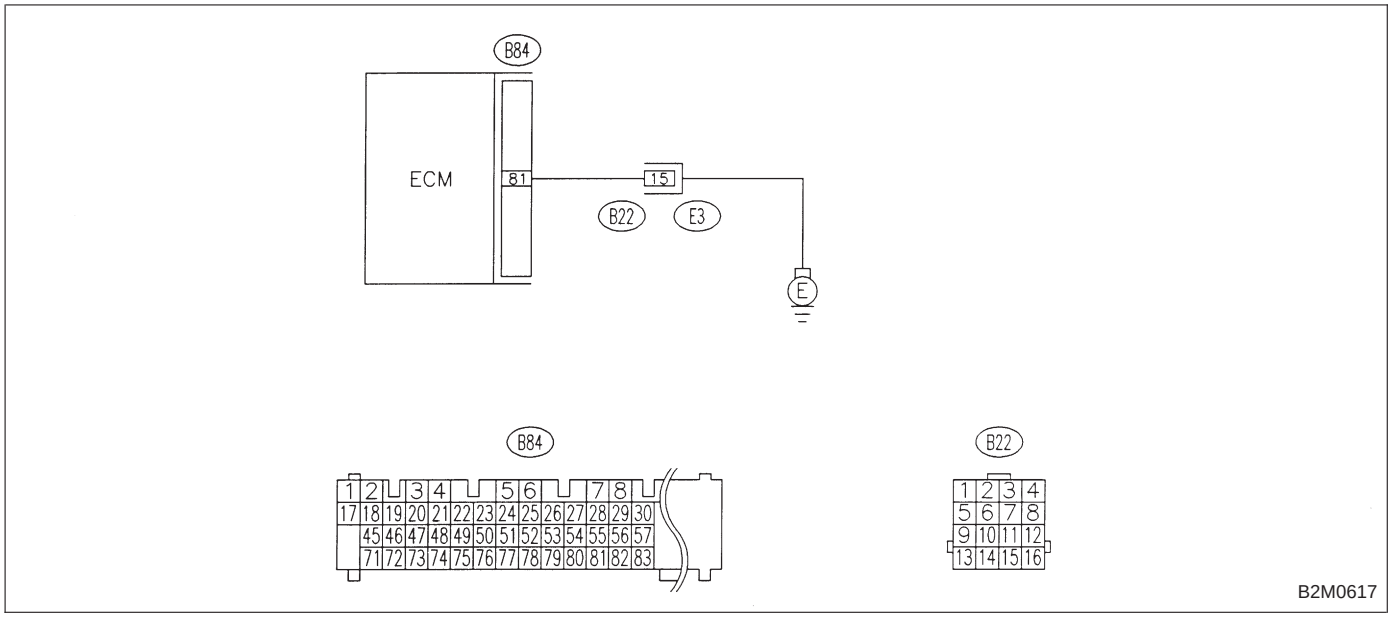
NO : Replace fuel sending unit and fuel sub meter unit.

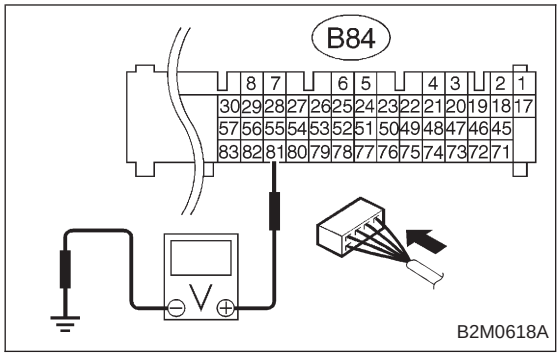
BW: — AT/MT IDENTIFICATION CIRCUIT MALFUNCTION [MT VEHICLES] —

10BW1	**Check harness between ECM connector and engine grounding terminal.**

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

WIRING DIAGRAM:





10BW1	CHECK HARNESS BETWEEN ECM CONNECTOR AND ENGINE GROUNDING TERMINAL.

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

CHECK ***: Connector & terminal (B84) No. 81 (+) — Chassis ground (−): 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 next CHECK .

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.