13.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC U0073 CONTROL MODULE COMMUNICATION BUS OFF

Detected when CAN line abnormality is detected.

NOTE:
Perform the diagnosis for LAN system. <Ref. to LAN(w/o HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.> <Ref. to LAN(HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

B: DTC U0100 LOST COMMUNICATION WITH ECM/PCM “A”

Detected when CAN data from the engine control module (ECM) does not arrive.

NOTE:
Perform the diagnosis for LAN system. <Ref. to LAN(w/o HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.> <Ref. to LAN(HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

C: DTC U0101 LOST COMMUNICATION WITH TCM

Detected when CAN data from TCM does not arrive.

NOTE:
Perform the diagnosis for LAN system. <Ref. to LAN(w/o HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.> <Ref. to LAN(HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

D: DTC U0122 LOST COMMUNICATION WITH VEHICLE DYNAMICS CONTROL MODULE

Detected when CAN data from VDC does not arrive.

NOTE:
Perform the diagnosis for LAN system. <Ref. to LAN(w/o HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.> <Ref. to LAN(HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

E: DTC U0131 LOST COMMUNICATION WITH POWER STEERING CONTROL MODULE

Detected when CAN data is not received from electric power steering CM.

NOTE:
Perform the diagnosis for LAN system. <Ref. to LAN(w/o HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.> <Ref. to LAN(HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

F: DTC U0140 LOST COMMUNICATION WITH BODY CONTROL MODULE

Detected when CAN data is not received from body integrated unit.

NOTE:
Perform the diagnosis for LAN system. <Ref. to LAN(w/o HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.> <Ref. to LAN(HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

G: DTC U0151 LOST COMMUNICATION WITH RESTRAINTS CONTROL MODULE

Detected when CAN data is not received from airbag CM.

NOTE:
Perform the diagnosis for LAN system. <Ref. to LAN(w/o HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.> <Ref. to LAN(HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

H: DTC U0164 LOST COMMUNICATION WITH HVAC CONTROL MODULE

Detected when CAN data is not received from A/C CM.

NOTE:
Perform the diagnosis for LAN system. <Ref. to LAN(w/o HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.> <Ref. to LAN(HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

I: DTC U0293 LOST COMMUNICATION WITH HYBRID POWERTRAIN CONTROL MODULE

Detected when CAN data from HPCM does not arrive.

NOTE:
Perform the diagnosis for LAN system. <Ref. to LAN(HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

J: DTC U0327 SOFTWARE INCOMPATIBILITY WITH VEHICLE SECURITY CONTROL MODULE

Detected when CAN data is not received from keyless access CM.

NOTE:
Perform the diagnosis for LAN system. <Ref. to LAN(w/o HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.> <Ref. to LAN(HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

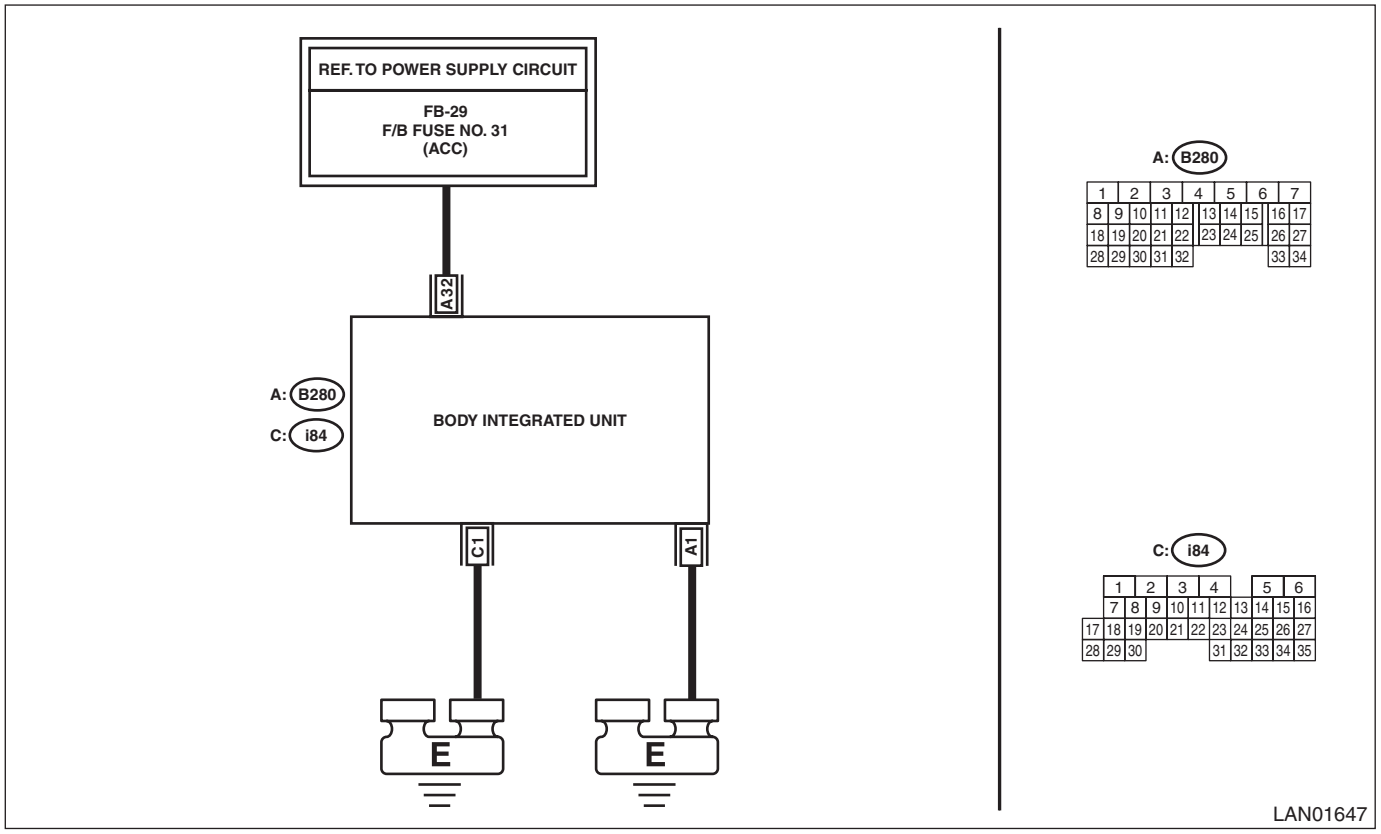
K: DTC U1201 CAN-HS COUNTER ABNORMAL

Detected when CAN data is abnormal.

NOTE:
Perform the diagnosis for LAN system. <Ref. to LAN(w/o HEV)(diag)-2, PROCEDURE, Basic Diagnostic Procedure.>

L: DTC U1650 INVALID DATA RECEIVED FROM METER (UART)

DTC DETECTING CONDITION:
There is an abnormality in UART data from combination meter.
TROUBLE SYMPTOM:
LCD is not displayed.
WIRING DIAGRAM:
Clearance Light and Illumination Light System <Ref. to WI(w/o HEV)-68, Clearance Light and Illumination Light System.>

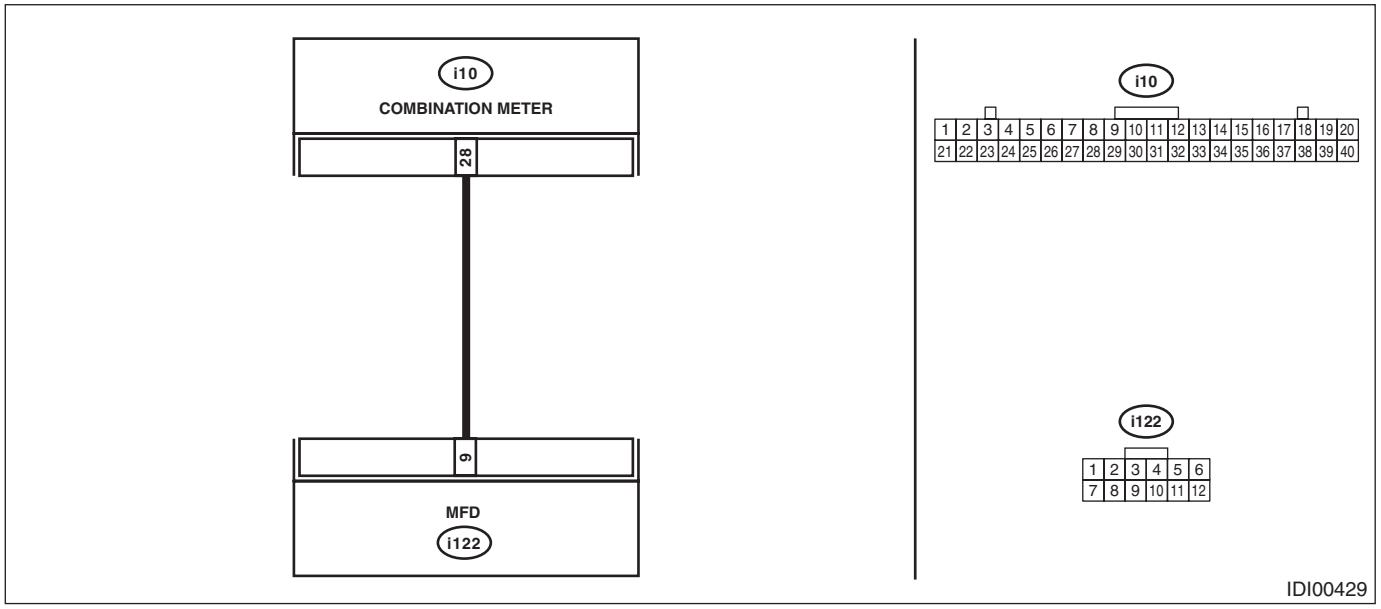


	Step	Check	Yes	No
1	**CHECK LAN SYSTEM.** Read the DTC of body integrated unit and LAN system using Subaru Select Monitor. <Ref. to BC(diag)-10, Read Diagnostic Trouble Code (DTC).> <Ref. to LAN(w/o HEV)(diag)-25, Read Diagnostic Trouble Code (DTC).>	Is any DTC other than U1650 displayed?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK FUSE.** Check the fuse No. 31 in the fuse & relay box.	Is the fuse OK?	Go to step **3**.	Replace the fuse. When the fuse is blown easily, check the wiring.
3	**CHECK HARNESS.** 1) Disconnect the body integrated unit connector. 2) Turn the ignition switch OFF → ACC. 3) Measure the voltage between body integrated unit connector and chassis ground using tester. ***Connector & terminal*** ***(B280) No. 32 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **4**.	Repair the ACC power supply circuit of the body integrated unit.

	Step	Check	Yes	No
4	**CHECK CURRENT DATA OF INTEGRATED UNIT.** 1) Connect the Subaru Select Monitor. 2) Turn the ignition switch to ON. 3) Check the current data «ACC voltage» of the body integrated unit. <Ref. to BC(diag)-12, Read Current Data.>	Is the voltage 10 V or more?	Go to step **5**.	Inspect and correct the body integrated unit connector. If there is no abnormality, replace the body integrated unit. <Ref. to SL-87, Body Integrated Unit.> (There may be a poor contact in the body integrated unit connector ((B280) terminal No. 32), or an internal malfunction of the integrated unit.) (If the current data indicates ACC voltage value ≈ Battery voltage, there will be no malfunction up to inside of the integrated unit. If U1650 is still detected in this condition as current malfunction, perform step 5 and subsequent procedures.)
5	**CHECK CONNECTOR.** 1) Disconnect the MFD connector and the combination meter connector. 2) Connect the disconnected connectors. 3) Read the DTC of the MFD using the Subaru Select Monitor. <Ref. to IDI(diag)-15, Read Diagnostic Trouble Code (DTC).>	Is DTC U1650 a current malfunction?	Go to step **6**.	There was poor contact of connector. Repair the poor contact of connector. (Poor contact in combination connector (i10) terminal No. 20 or MFD connector (i122) terminal No. 9)
6	**CHECK COMBINATION METER.** 1) Replace the combination meter. <Ref. to IDI-20, Combination Meter.> 2) Read the DTC of the MFD using the Subaru Select Monitor. <Ref. to IDI(diag)-15, Read Diagnostic Trouble Code (DTC).>	Is DTC U1650 a current malfunction?	Replace the MFD. <Ref. to IDI-27, Multi-function Display (MFD).>	There was something wrong with the combination meter.

M: DTC U1651 LOST COMMUNICATION WITH METER (UART)

DTC DETECTING CONDITION:
UART data from combination meter is not received.
TROUBLE SYMPTOM:
LCD is not displayed.
WIRING DIAGRAM:
Multi-function display (MFD) system <Ref. to WI(w/o HEV)-164, WIRING DIAGRAM, Multi-function Display (MFD) System.> <Ref. to WI(HEV)-169, WIRING DIAGRAM, Multi-function Display (MFD) System.>

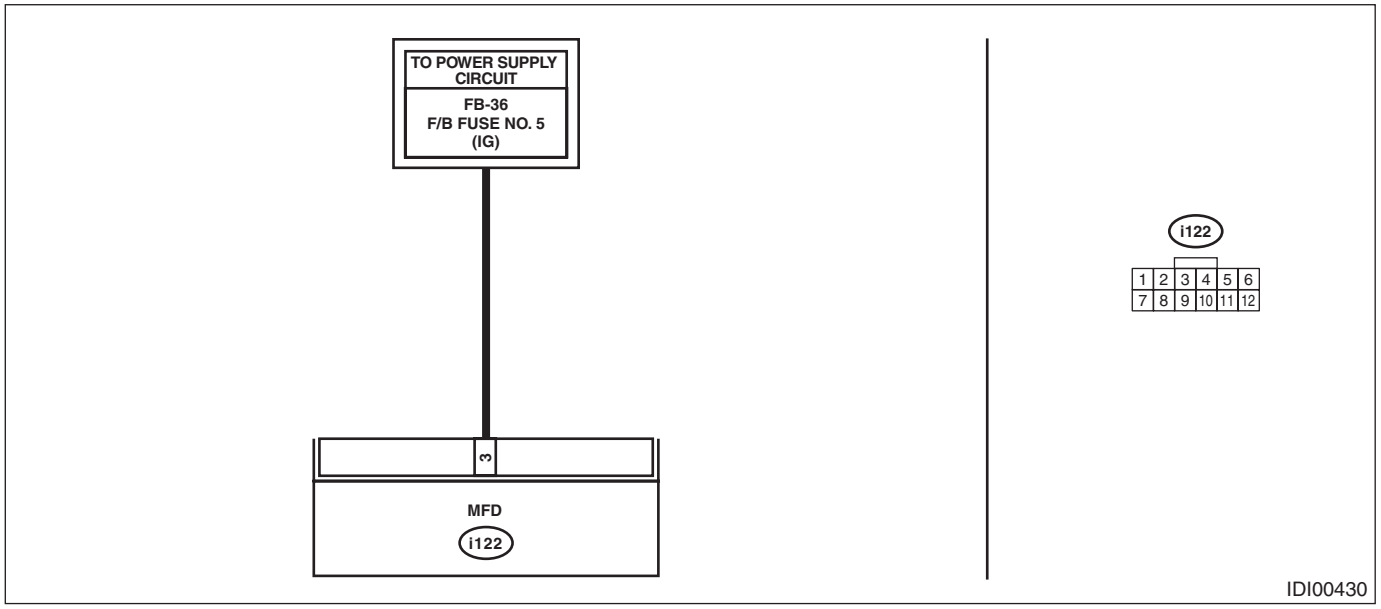


	Step	Check	Yes	No
1	**CHECK LAN SYSTEM.** Read the DTC of the LAN system using the Subaru Select Monitor. <Ref. to LAN(w/o HEV)(diag)-25, OPERATION, Read Diagnostic Trouble Code (DTC).> <Ref. to LAN(HEV)(diag)-27, OPERATION, Read Diagnostic Trouble Code (DTC).>	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK CONNECTOR.** 1) Disconnect the MFD connector and meter connector. 2) Connect the disconnected connectors. 3) Read the DTC of the MFD using the Subaru Select Monitor.	Is DTC U1651 a current malfunction?	Go to step **3**.	There was poor contact of connector.
3	**CHECK HARNESS.** 1) Disconnect the MFD connector and meter connector. 2) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i10) No. 28 — (i122) No. 9:***	Is the resistance 10 Ω or less?	Go to step **4**.	Repair the open circuit of harness or replace harness.
4	**CHECK HARNESS.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i122) No. 9 — Chassis ground:***	Is the resistance 10 Ω or less?	Repair the short circuit of harness or replace harness.	Go to step **5**.

	Step	Check	Yes	No
5	**CHECK COMBINATION METER.** 1) Replace the combination meter. <Ref. to IDI-20, Combination Meter.> 2) Read the DTC of the MFD using the Subaru Select Monitor.	Is DTC U1651 a current malfunction?	Go to step **6**.	There was something wrong with the meter.
6	**CHECK COMBINATION METER.** 1) Replace the current combination meter with the original combination meter. 2) Replace the MFD. <Ref. to IDI-27, Multi-function Display (MFD).> 3) Read the DTC of the MFD using the Subaru Select Monitor.	Is DTC U1651 a current malfunction?	Replace the meter. <Ref. to IDI-20, Combination Meter.>	There was an abnormality in MFD.

N: DTC B2220 BREAK THE WIRE OF IGN

DTC DETECTING CONDITION:
There was voltage malfunction caused by poor contact of IGN power supply circuits.
TROUBLE SYMPTOM:
Airbag indicator does not illuminate.
WIRING DIAGRAM:
Multi-function display (MFD) system <Ref. to WI(w/o HEV)-164, WIRING DIAGRAM, Multi-function Display (MFD) System.> <Ref. to WI(HEV)-169, WIRING DIAGRAM, Multi-function Display (MFD) System.>



Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of the MFD using the Subaru Select Monitor.	Is DTC B2220 a current malfunction?	Go to step **2**.	Go to step **5**.
2	**CHECK DTC.** 1) Turn the ignition switch to OFF. 2) Disconnect the MFD connector and reconnect it. 3) Turn the ignition switch to ON. 4) Read the DTC relating the MFD using the Subaru Select Monitor.	Is DTC B2220 a current malfunction?	Go to step **3**.	Go to step **5**.
3	**CHECK FUSE.** 1) Turn the ignition switch to OFF. 2) Check the fuse.	Is the fuse OK?	Go to step **4**.	Replace the defective fuse.
4	**CHECK HARNESS.** 1) Disconnect the MFD connector. 2) Turn the ignition switch to ON. 3) Using the tester, measure the voltage between terminals. ***Connector & terminal*** ***(i122) No. 3 (+) — Chassis ground (–):***	Is the voltage 8.5 — 16.5 V?	Replace the MFD. <Ref. to IDI-27, Multi-function Display (MFD).>	Repair the harness between MFD and fuse.
5	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect the MFD connector.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.

O: DTC B2222 SYSTEM MICROCOMPUTER FAIL

DTC DETECTING CONDITION:
When the microcomputer froze.
TROUBLE SYMPTOM:
MFD does not operate.

NOTE:
Reset the MFD. If it does not return to the normal operation, replace the MFD. <Ref. to IDI-27, Multi-function Display (MFD).>

P: DTC B2223 GERDA FAIL

DTC DETECTING CONDITION:
When the system microcomputer can not send/receive the data with the image microcomputer normally.
TROUBLE SYMPTOM:
There is no display on the TFT. Operation is normal.

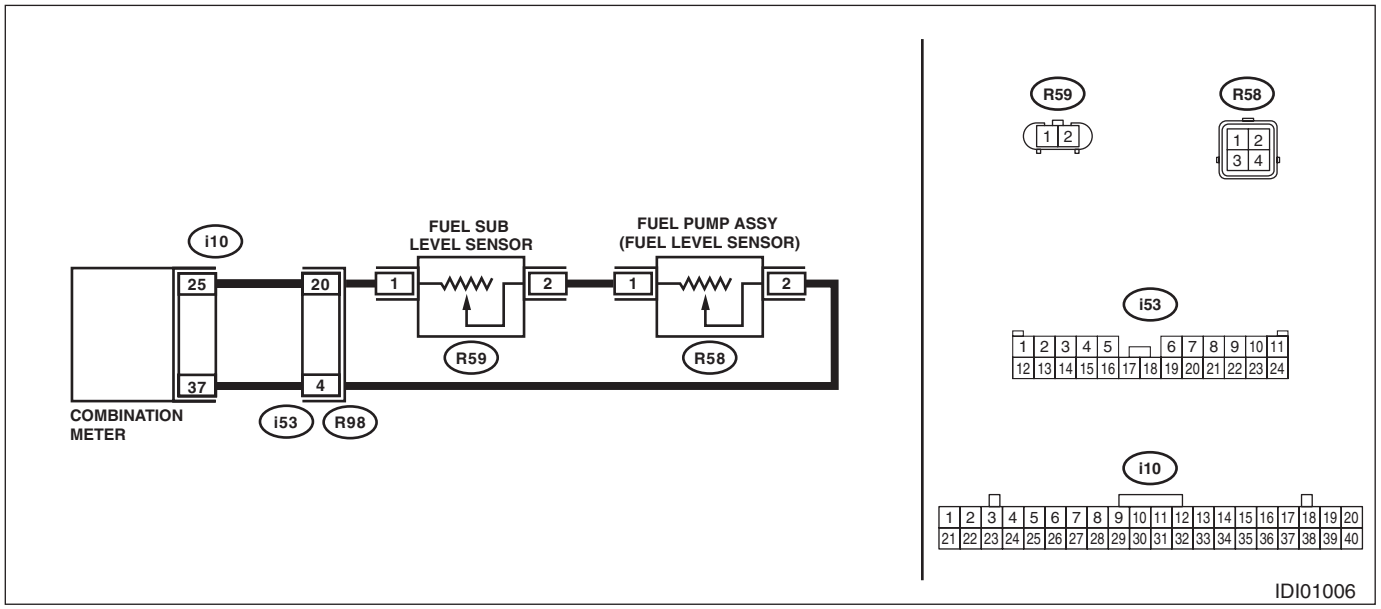
NOTE:
Replace the MFD. <Ref. to IDI-27, Multi-function Display (MFD).>

Q: DTC B1500 FUEL SENDER OPEN/SHORT-CIRCUIT DETECTION

DTC DETECTING CONDITION:
The fuel gauge circuit is open or shorted.
TROUBLE SYMPTOM:
- Defective fuel gauge.
- Fuel level warning light blinks.

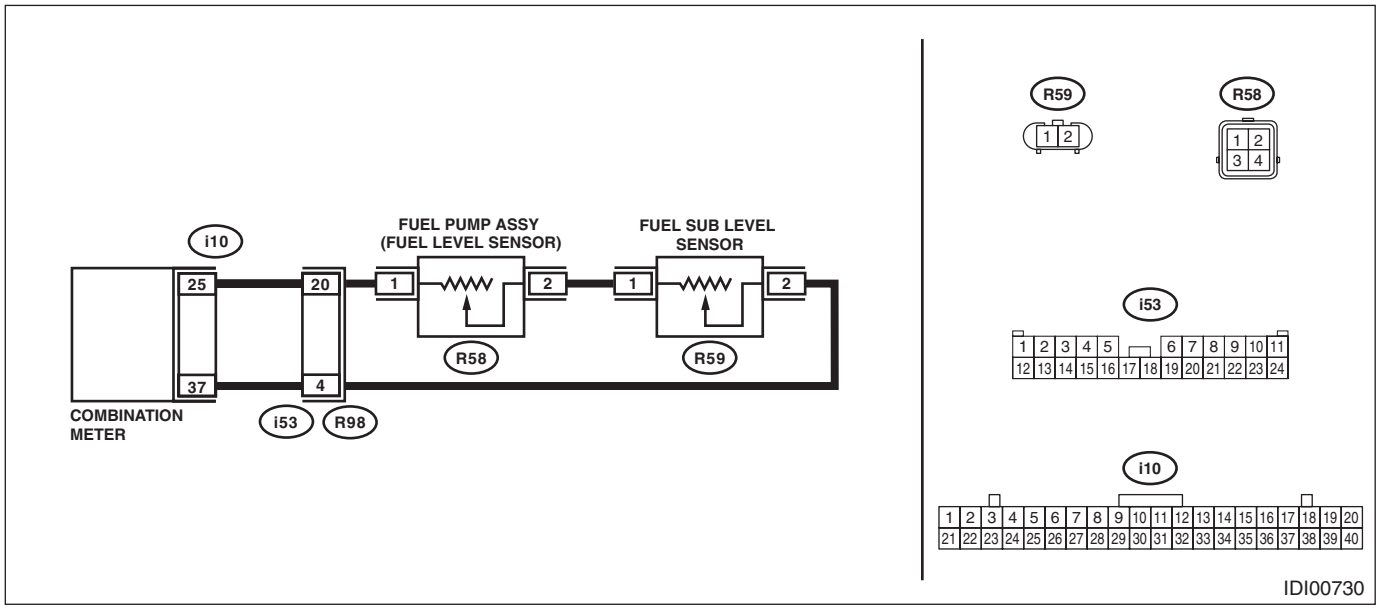
WIRING DIAGRAM:
- Gasoline engine model

Fuel gauge system <Ref. to WI(w/o HEV)-135, WIRING DIAGRAM, Fuel Gauge System.>



- HEV model

Fuel gauge system <Ref. to WI(HEV)-133, WIRING DIAGRAM, Fuel Gauge System.>

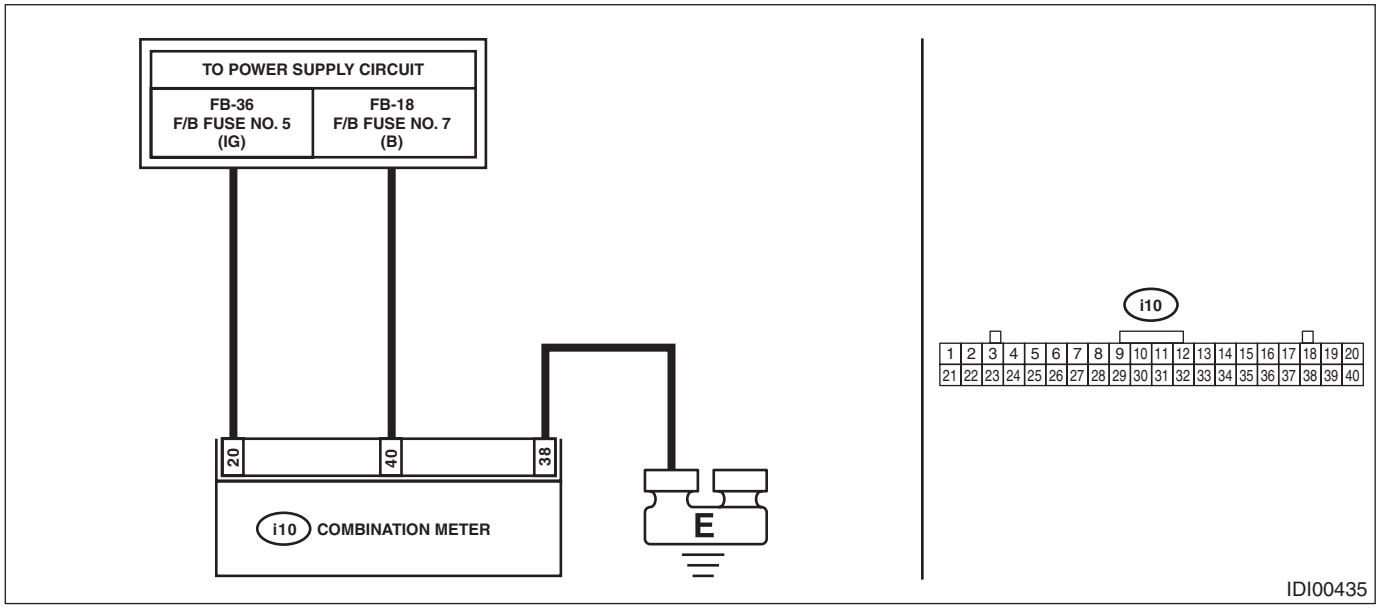


Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of the meter using the Subaru Select Monitor.	Is DTC B1500 a current malfunction?	Go to step **2**.	Go to step **7**.

	Step	Check	Yes	No
2	**CHECK COMBINATION METER.** 1) Check the operation of combination meter using Subaru Select Monitor. 2) From the {System Operation Check Mode}, select the «Fuel Meter Operation» and «Remaining fuel warning».	Is the operation of combination meter OK?	Go to step **3**.	Replace the combination meter. <Ref. to IDI-20, Combination Meter.>
3	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect the meter connector and the fuel sub level sensor connector and the fuel level sensor connector. 3) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***Gasoline engine model*** ***(i10) No. 25 — (R59) No. 1:*** ***(i10) No. 37 — (R58) No. 2:*** ***HEV model*** ***(i10) No. 25 — (R58) No. 1:*** ***(i10) No. 37 — (R59) No. 2:***	Is the resistance 10 Ω or less?	Go to step **4**.	Repair the open circuit of harness or replace harness.
4	**CHECK HARNESS.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i10) No. 25 — Chassis ground:*** ***(i10) No. 37 — Chassis ground:***	Is the resistance 10 Ω or less?	Repair the short circuit of harness or replace harness.	Go to step **5**.
5	**CHECK FUEL SUB LEVEL SENSOR.** Check the fuel sub level sensor as a single part. <Ref. to FU(H4DO(w/o HEV))-152, INSPECTION, Fuel Sub Level Sensor.>	Is the sensor normal?	Go to step **6**.	Replace the sensor.
6	**CHECK FUEL LEVEL SENSOR.** Check the fuel level sensor as a single part. <Ref. to FU(H4DO(w/o HEV))-145, INSPECTION, Fuel Level Sensor.>	Is the sensor normal?	Go to step **7**.	Replace the sensor.
7	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect connectors.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	Go to step **8**.
8	**CHECK CURRENT DATA.** Using the Subaru Select Monitor, display the «Fuel sensing value» from {Current Data Display & Save}.	Does the data display 10 — 570 Ω?	System is normal.	Replace the combination meter. <Ref. to IDI-20, Combination Meter.>

R: DTC B1501 POWER SUPPLY SYSTEM ERROR DETECTION

DTC DETECTING CONDITION:
Open or short in combination meter power supply circuit
TROUBLE SYMPTOM:
Defective operation of combination meter
WIRING DIAGRAM:
Combination meter system <Ref. to WI(w/o HEV)-73, WIRING DIAGRAM, Combination Meter System.> <Ref. to WI(HEV)-75, WIRING DIAGRAM, Combination Meter System.>



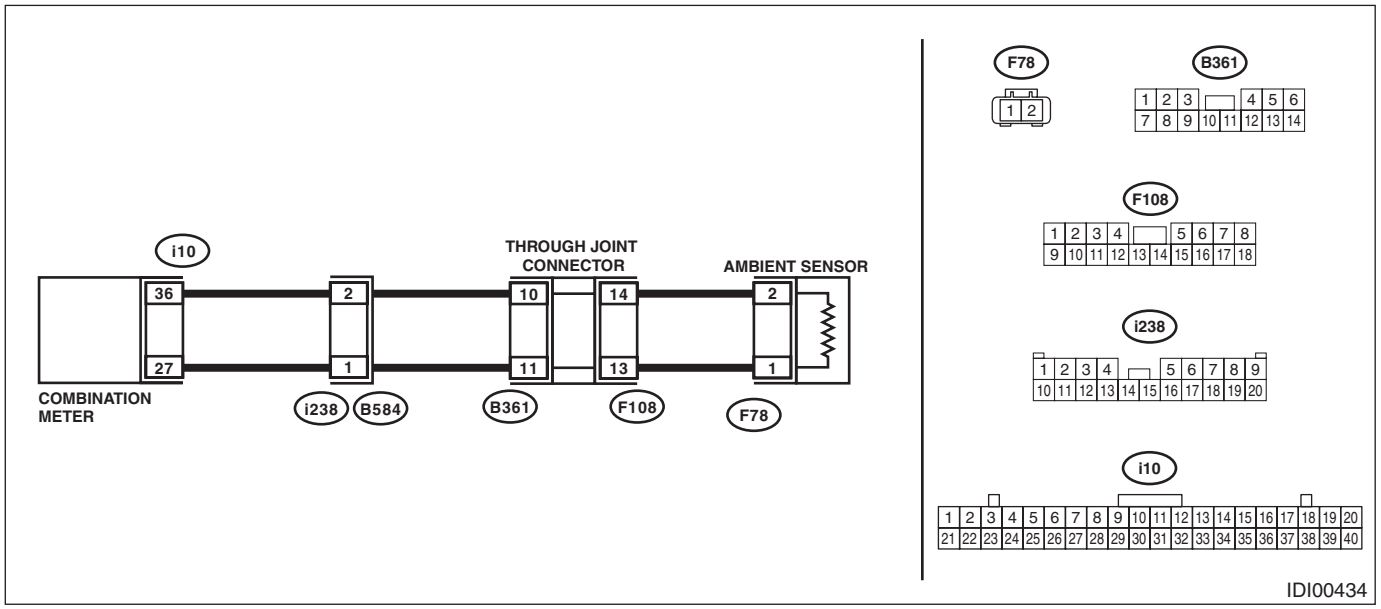
Step		Check	Yes	No
1	**CHECK POWER SUPPLY CIRCUIT.** Turn the ignition switch to ON, and confirm that the illumination of combination meter lights.	Does the illumination light?	Go to step **2**.	Go to step **3**.
2	**CHECK DTC.** Read the DTC of the meter using the Subaru Select Monitor.	Is DTC B1501 a current malfunction?	Go to step **3**.	Go to step **5**.
3	**CHECK FUSE.** 1) Turn the ignition switch to OFF. 2) Check the fuse.	Is the fuse OK?	Go to step **4**.	Replace the defective fuse.
4	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect the meter connector. 3) Using the tester, measure the voltage between terminals. ***Connector & terminal*** ***(i10) No. 20 (+) — Chassis ground (–):*** ***(i10) No. 40 (+) — Chassis ground (–):***	Is the voltage 8.5 — 16.5 V?	Go to step **5**.	Repair the open circuit of harness or replace harness.
5	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect connectors.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.

S: DTC B1507 EXTERNAL AIR TEMPERATURE OPEN/SHORT-CIRCUIT DETECTION

DTC DETECTING CONDITION:
Open or short circuit in ambient sensor
TROUBLE SYMPTOM:
- Defective ambient temperature display
- Defective air conditioner operation

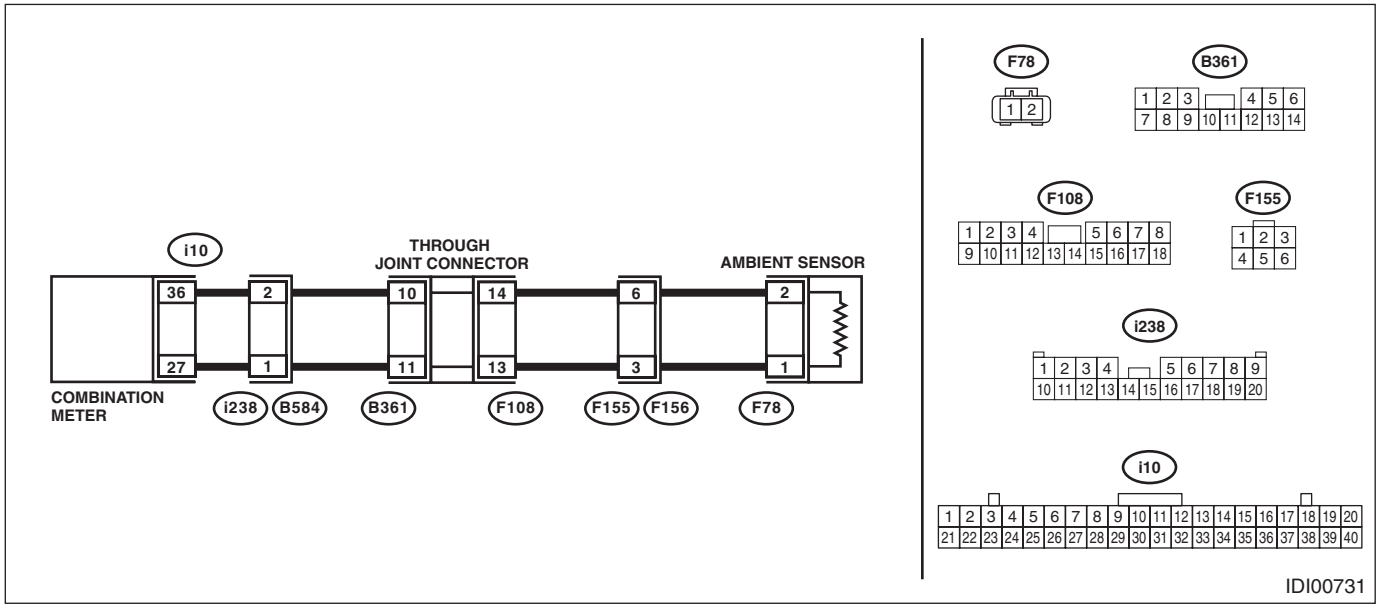
WIRING DIAGRAM:
- Gasoline engine model

Air conditioning system <Ref. to WI(w/o HEV)-45, WIRING DIAGRAM, Air Conditioning System.>



- HEV model

Air conditioning system <Ref. to WI(HEV)-56, WIRING DIAGRAM, Air Conditioning System.>



Step		Check	Yes	No
1	**CHECK DTC.** Read the DTC of the meter using the Subaru Select Monitor.	Is DTC B1507 a current malfunction?	Go to step **2**.	Go to step **6**.

	Step	Check	Yes	No
2	**CHECK CURRENT DATA.** Using the Subaru Select Monitor, display the «External air temperature sensing value» from {Current Data Display & Save}.	Is data displayed?	System is normal.	Go to step **3**.
3	**CHECK HARNESS.** 1) Turn the ignition switch to OFF. 2) Disconnect the meter connector and ambient sensor connector. 3) Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i10) No. 36 — (F78) No. 2:*** ***(i10) No. 27 — (F78) No. 1:***	Is the resistance 10 Ω or less?	Go to step **4**.	Repair the open circuit of harness or replace harness.
4	**CHECK HARNESS.** Using the tester, measure the resistance between terminals. ***Connector & terminal*** ***(i10) No. 36 — Chassis ground:*** ***(i10) No. 27 — Chassis ground:***	Is the resistance 10 Ω or less?	Repair the short circuit of harness or replace harness.	Go to step **5**.
5	**CHECK AMBIENT SENSOR.** Perform the inspection of ambient sensor unit. <Ref. to AC-80, INSPECTION, Ambient Sensor.>	Is the sensor normal?	Go to step **6**.	Replace the sensor.
6	**CHECK CONNECTOR.** 1) Turn the ignition switch to OFF. 2) Disconnect connectors.	Is there poor contact of connector?	Repair or replace the poor contact of connector.	A temporary change of voltage occurred.