

Diagnostic Procedure without Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

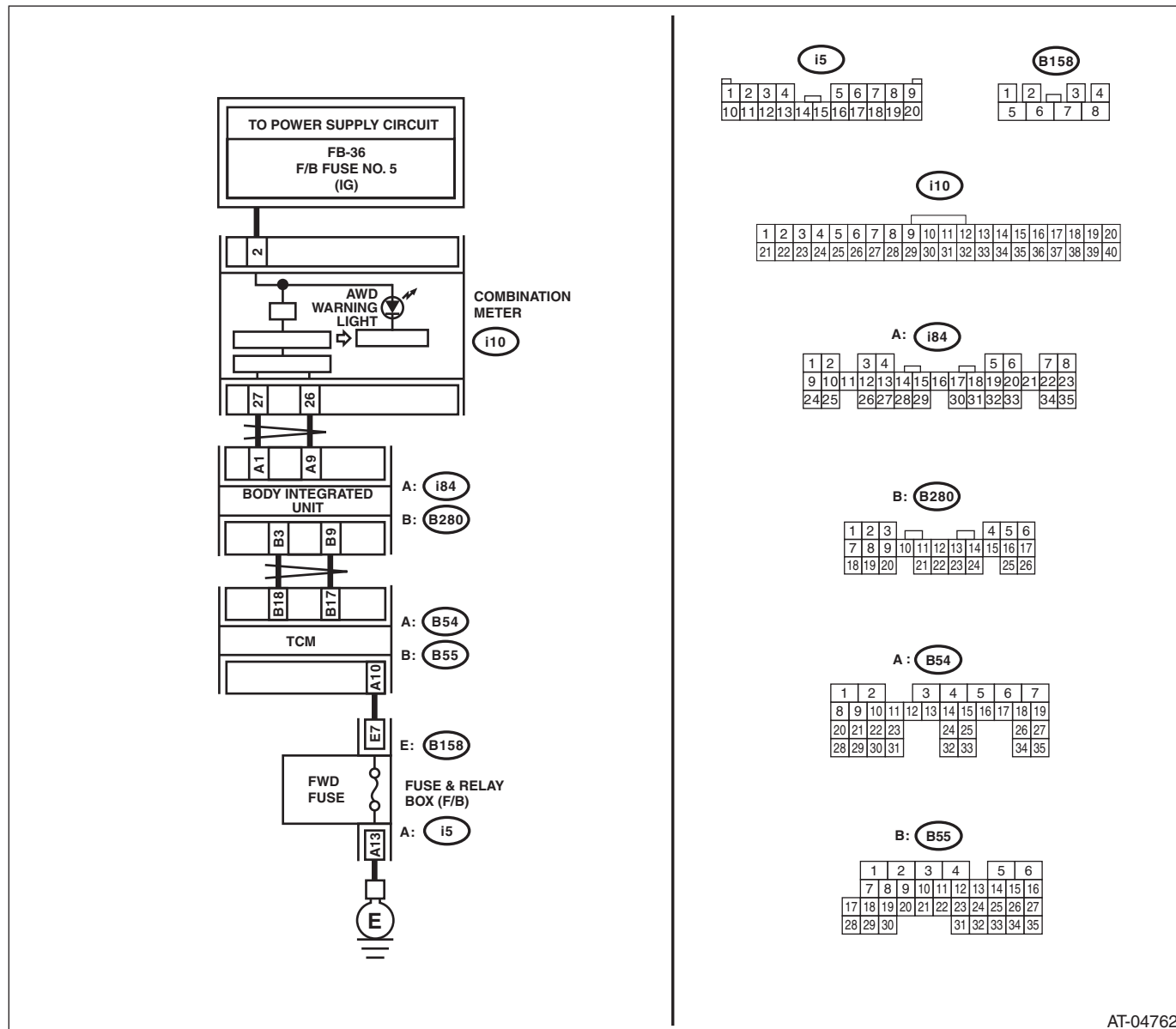
16.Diagnostic Procedure without Diagnostic Trouble Code (DTC)

A: CHECK FWD SWITCH

DIAGNOSIS:

- LED does not illuminate even if FWD switch is ON.
- FWD signal circuit is open or shorted.

WIRING DIAGRAM:



AT-04762

Step	Check	Yes	No
1	CHECK SPARE FUSE.	Go to step 2.	Replace the fuse.
2	CHECK FWD SWITCH. Connect the Subaru Select Monitor to the data link connector.	Go to step 3.	Go to step 4.

Diagnostic Procedure without Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
3 CHECK COMBINATION METER.	Does the AWD warning light illuminate?	Check the SPORT shift switch. <Ref. to 4AT(diag)-82, CHECK SPORT SHIFT SWITCH, Diagnostic Procedure without Diagnostic Trouble Code (DTC).>	Go to step 9.
4 CHECK HARNESS CONNECTOR BETWEEN TCM AND FWD SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM. 3) Measure the resistance of harness between TCM and FWD switch connector. Connector & terminal (B54) No. 10 — (B158) No. 7:	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the open circuit of harness between TCM and FWD switch connectors.
5 CHECK HARNESS CONNECTOR BETWEEN FWD SWITCH AND CHASSIS GROUND. Measure the resistance of harness between FWD switch and chassis ground. Connector & terminal (i5) No. 13 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit of harness between FWD switch connector and chassis ground.
6 CHECK HARNESS CONNECTOR BETWEEN TCM AND FWD SWITCH. Measure the resistance of the harness connector between the TCM and chassis ground to make sure that there are no shorts in the circuit. Connector & terminal (B54) No. 10 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 7.	Repair the short circuit of harness between TCM and FWD switch connectors.
7 CHECK INPUT SIGNAL FOR TCM. 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM. 3) Turn the ignition switch to ON. 4) Measure the signal voltage for TCM while installing the fuse to FWD switch connector. Connector & terminal (B54) No. 10 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 8.	Go to step 10.
8 CHECK INPUT SIGNAL FOR TCM. Measure the signal voltage for TCM with the fuse removed from FWD switch connector. Connector & terminal (B54) No. 10 (+) — Chassis ground (-):	Is the voltage 10.5 V or more?	Go to step 9.	Replace the TCM. <Ref. to 4AT-60, Transmission Control Module (TCM).>
9 CHECK BODY INTEGRATED UNIT. Check DTC of body integrated unit.	Is DTC of CAN communication displayed?	Perform diagnosis according to the DTC.	Go to step 10.
10 CHECK COMBINATION METER. Check the AWD warning light. <Ref. to IDI-4, INSPECTION, Combination Meter System.>	Is the AWD warning light OK?	Go to step 11.	Replace the combination meter assembly. <Ref. to IDI-16, Combination Meter.>
11 CHECK POOR CONTACT.	Is there poor contact in FWD switch circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-60, Transmission Control Module (TCM).>

Diagnostic Procedure without Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

B: CHECK SPORT SHIFT SWITCH

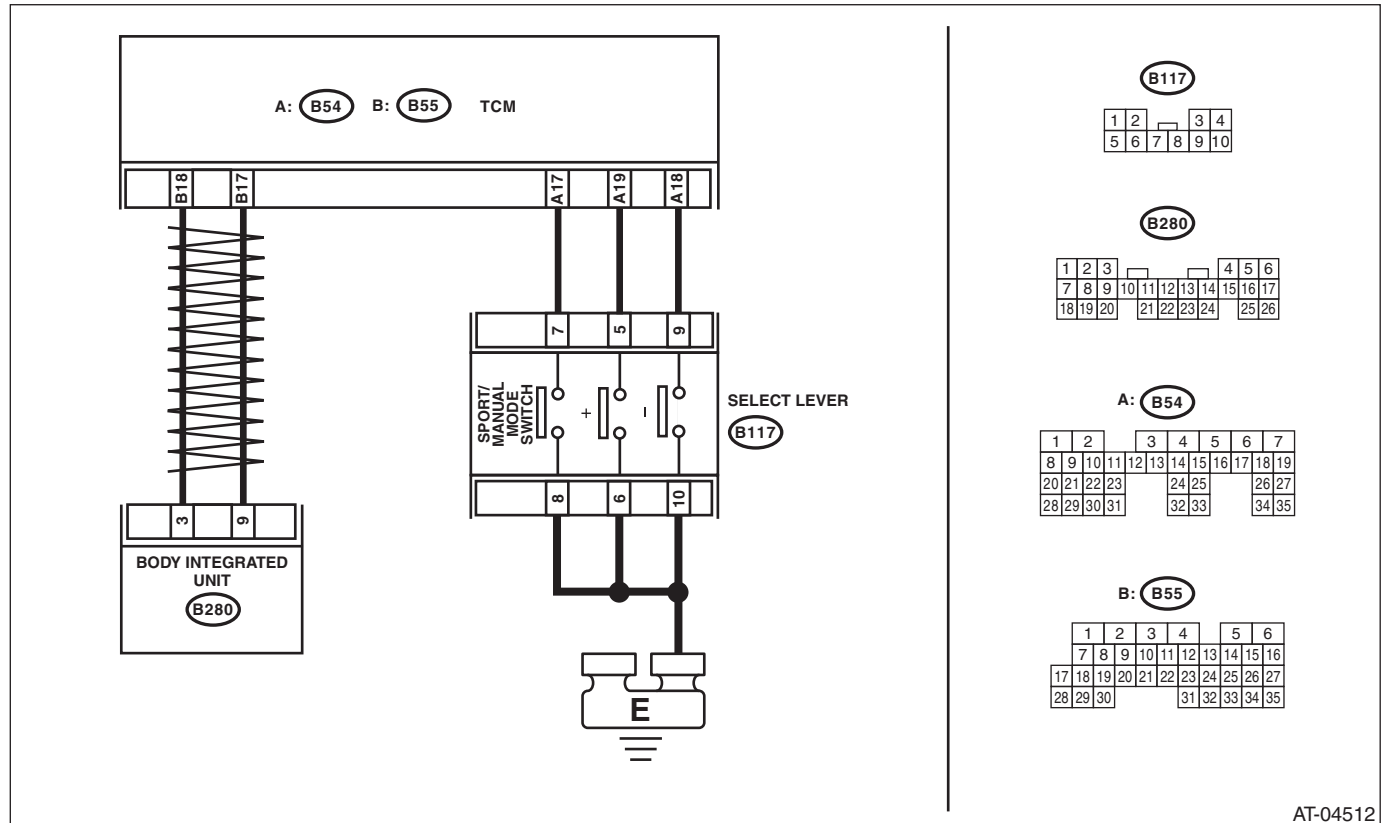
DIAGNOSIS:

Input signal circuit of SPORT shift switch is open or shorted.

TROUBLE SYMPTOM:

Does not shift on manual mode.

WIRING DIAGRAM:



AT-04512

Diagnostic Procedure without Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
1 CHECK SPORT SHIFT SWITCH. 1) Shift the select lever to the SPORT mode. 2) Set and hold the select lever at the + side. 3) Read the "Up Switch" data of the TCM using the Subaru Select Monitor. <Ref. to 4AT(diag)-16, Read Current Data.>	Is ON displayed?	Go to step 2.	Go to step 3.
2 CHECK SPORT SHIFT SWITCH. 1) Set and hold the select lever at the – side. 2) Read the "Down Switch" data of the TCM using the Subaru Select Monitor. <Ref. to 4AT(diag)-16, Read Current Data.>	Is ON displayed?	Go to the procedure "CHECK SPORT SHIFT INDICATOR". <Ref. to 4AT(diag)-85, CHECK SPORT SHIFT INDICATOR, Diagnostic Procedure without Diagnostic Trouble Code (DTC).>	Go to step 14.
3 CHECK BODY INTEGRATED UNIT. 1) Turn the ignition switch to ON. 2) Set and hold the select lever at the + side. 3) Read the "TIP UP SW Input" data of the body integrated unit using the Subaru Select Monitor. <Ref. to LAN(diag)-17, Read Current Data.>	Is ON displayed?	Go to step 4.	Go to step 5.
4 CHECK BODY INTEGRATED UNIT. Check the DTC of the body integrated unit. <Ref. to LAN(diag)-14, OPERATION, Subaru Select Monitor.>	Is DTC of CAN communication displayed?	Perform diagnosis according to the DTC.	Check the TCM.
5 CHECK SPORT SHIFT SWITCH GROUND CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from SPORT shift switch. 3) Measure the resistance of harness between SPORT shift switch connector and chassis ground. Connector & terminal (B117) No. 6 — Chassis ground: (B117) No. 10 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit of the harness between the SPORT shift switch and chassis ground.
6 CHECK SPORT SHIFT SWITCH. Measure the resistance between SPORT shift switch terminals. Connector & terminal (B117) No. 6 — No. 5: (B117) No. 10 — No. 9:	Is the resistance 1 M Ω or more?	Go to step 7.	Replace the guide plate assembly.
7 CHECK SPORT SHIFT SWITCH. 1) Set and hold the select lever at the + side. 2) Measure the resistance between SPORT shift switch terminals. Connector & terminal (B117) No. 6 — No. 5:	Is the resistance less than 1 Ω ?	Go to step 8.	Replace the guide plate assembly.
8 CHECK SPORT SHIFT SWITCH. 1) Set and hold the select lever at the – side. 2) Measure the resistance between SPORT shift switch terminals. Connector & terminal (B117) No. 10 — No. 9:	Is the resistance less than 1 Ω ?	Go to step 9.	Replace the guide plate assembly.

Diagnostic Procedure without Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
9 CHECK HARNESS CONNECTOR BETWEEN TCM AND SPORT SHIFT SWITCH. 1) Disconnect the connector from TCM. 2) Measure the resistance of harness between TCM connector and sport shift switch connector. <i>Connector & terminal</i> <i>(B117) No. 5 — (B54) No. 19:</i> <i>(B117) No. 9 — (B54) No. 18:</i>	Is the resistance less than 1 Ω ?	Go to step 10.	Repair the open circuit of harness between SPORT shift switch connector and TCM connector, or poor contact in connector.
10 CHECK HARNESS CONNECTOR BETWEEN TCM AND SPORT SHIFT SWITCH. Measure the resistance of harness between SPORT shift switch connector and chassis ground. <i>Connector & terminal</i> <i>(B117) No. 5 — Chassis ground:</i> <i>(B117) No. 9 — Chassis ground:</i>	Is the resistance 1 M Ω or more?	Go to step 11.	Repair the short circuit of the harness between the SPORT shift switch connector and TCM connector.
11 CHECK INPUT SIGNAL TO TCM. 1) Connect all connectors. 2) Turn the ignition switch to ON. 3) Measure the voltage of signal to TCM. <i>Connector & terminal</i> <i>(B54) No. 18 (+) — Chassis ground (-):</i> <i>(B54) No. 19 (+) — Chassis ground (-):</i>	Is the voltage 1.5 — 8 V?	Go to step 12.	Replace the TCM.
12 CHECK INPUT SIGNAL TO TCM. 1) Set and hold the select lever at the + side. 2) Measure the voltage of signal to TCM. <i>Connector & terminal</i> <i>(B54) No. 19 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 13.	Replace the TCM.
13 CHECK INPUT SIGNAL TO TCM. 1) Set and hold the select lever at the – side. 2) Measure the voltage of signal to TCM. <i>Connector & terminal</i> <i>(B54) No. 18 (+) — Chassis ground (-):</i>	Is the voltage less than 1 V?	Go to step 14.	Replace the TCM. <Ref. to 4AT-60, Transmission Control Module (TCM).>
14 CHECK BODY INTEGRATED UNIT. 1) Turn the ignition switch to ON. 2) Set and hold the select lever at the – side. 3) Read the “TIP UP SW input” data of the body integrated unit using the Subaru Select Monitor. <Ref. to LAN(diag)-17, Read Current Data.>	Is ON displayed?	Go to step 15.	Replace the body integrated unit. <Ref. to SL-42, Body Integrated Unit.>
15 CHECK POOR CONTACT.	Is there poor contact in the circuit?	Repair the poor contact.	A temporary poor contact of the circuit connector or harness.

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AUTOMATIC TRANSMISSION (DIAGNOSTICS)

C: CHECK SPORT SHIFT INDICATOR

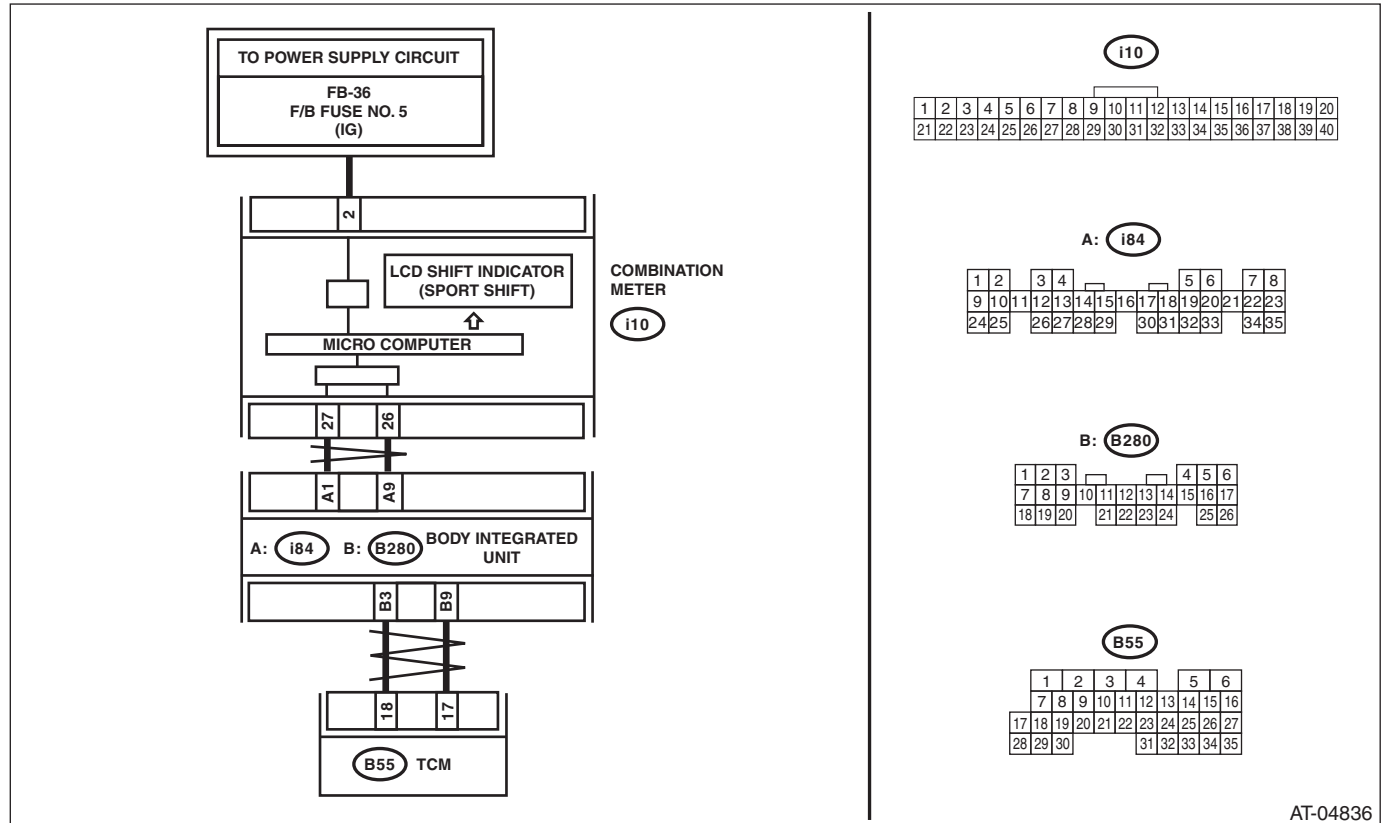
DIAGNOSIS:

Output signal circuit of SPORT shift indicator is open or shorted.

TROUBLE SYMPTOM:

- SPORT shift indicator does not display or remains displayed.
- SPORT shift indicator display does not change.

WIRING DIAGRAM:



AT-04836

Diagnostic Procedure without Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	CHECK BODY INTEGRATED UNIT. Check DTC of body integrated unit.	Is DTC of CAN communication displayed?	Perform diagnosis according to the DTC.	Go to step 2.
2	CHECK TCM. 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to the data link connector. 3) Turn the ignition switch to ON. 4) Run the Subaru Select Monitor. 5) Shift the select lever to the SPORT mode side. 6) Read the "Gear Position" data of TCM using Subaru Select Monitor.	Is the gear position 1?	Go to step 3.	Replace the TCM. <Ref. to 4AT-60, Transmission Control Module (TCM).>
3	CHECK TCM. 1) Shift the select lever up. 2) Read the "Gear Position" data of TCM using Subaru Select Monitor.	Is the gear position 2?	Go to step 4.	Replace the TCM. <Ref. to 4AT-60, Transmission Control Module (TCM).>
4	CHECK BODY INTEGRATED UNIT. Using the Subaru Select Monitor, read the data of "Shift Position".	Is the SPORT shift gear position 2?	Go to step 5.	Check the body integrated unit.
5	CHECK COMBINATION METER. <Ref. to IDI-4, INSPECTION, Combination Meter System.>	Is the SPORT shift indicator OK?	Check the buzzer. <Ref. to 4AT(diag)-87, CHECK BUZZER, Diagnostic Procedure without Diagnostic Trouble Code (DTC).>	Replace the combination meter assembly. <Ref. to IDI-16, Combination Meter.>

Diagnostic Procedure without Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

D: CHECK BUZZER

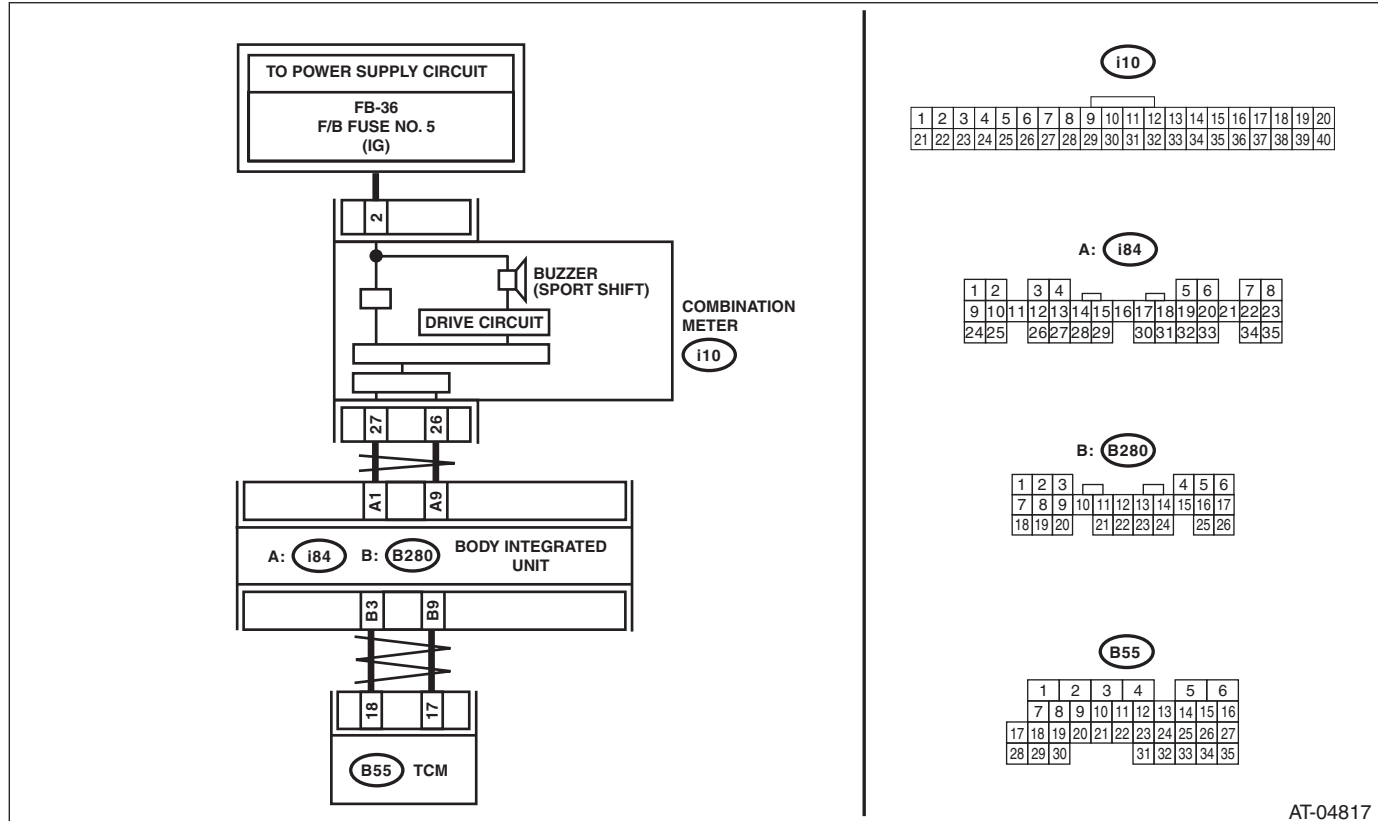
DIAGNOSIS:

Output signal circuit of buzzer is open or shorted.

TROUBLE SYMPTOM:

Buzzer remains beeping.

WIRING DIAGRAM:



AT-04817

Step	Check	Yes	No
1 CHECK BODY INTEGRATED UNIT. 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to the data link connector. 3) Turn the ignition switch to ON. 4) Run the Subaru Select Monitor. 5) Using the Subaru Select Monitor, read the data of "SPORT shift (buzzer 1)" and "SPORT shift (buzzer 2)".	Is ON displayed?	Replace the TCM. <Ref. to 4AT-60, Transmission Control Module (TCM).>	Go to step 2.
2 CHECK COMBINATION METER. <Ref. to IDI-4, INSPECTION, Combination Meter System.>	Is the buzzer OK?	Refer to "Diagnostics with Phenomenon". <Ref. to 4AT(diag)-88, Diagnostics with Phenomenon.>	Replace the combination meter assembly. <Ref. to IDI-16, Combination Meter.>