

Diagnostic Procedure without Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

16. Diagnostic Procedure without Diagnostic Trouble Code (DTC)

A: CHECK MANUAL MODE SWITCH

DIAGNOSIS:

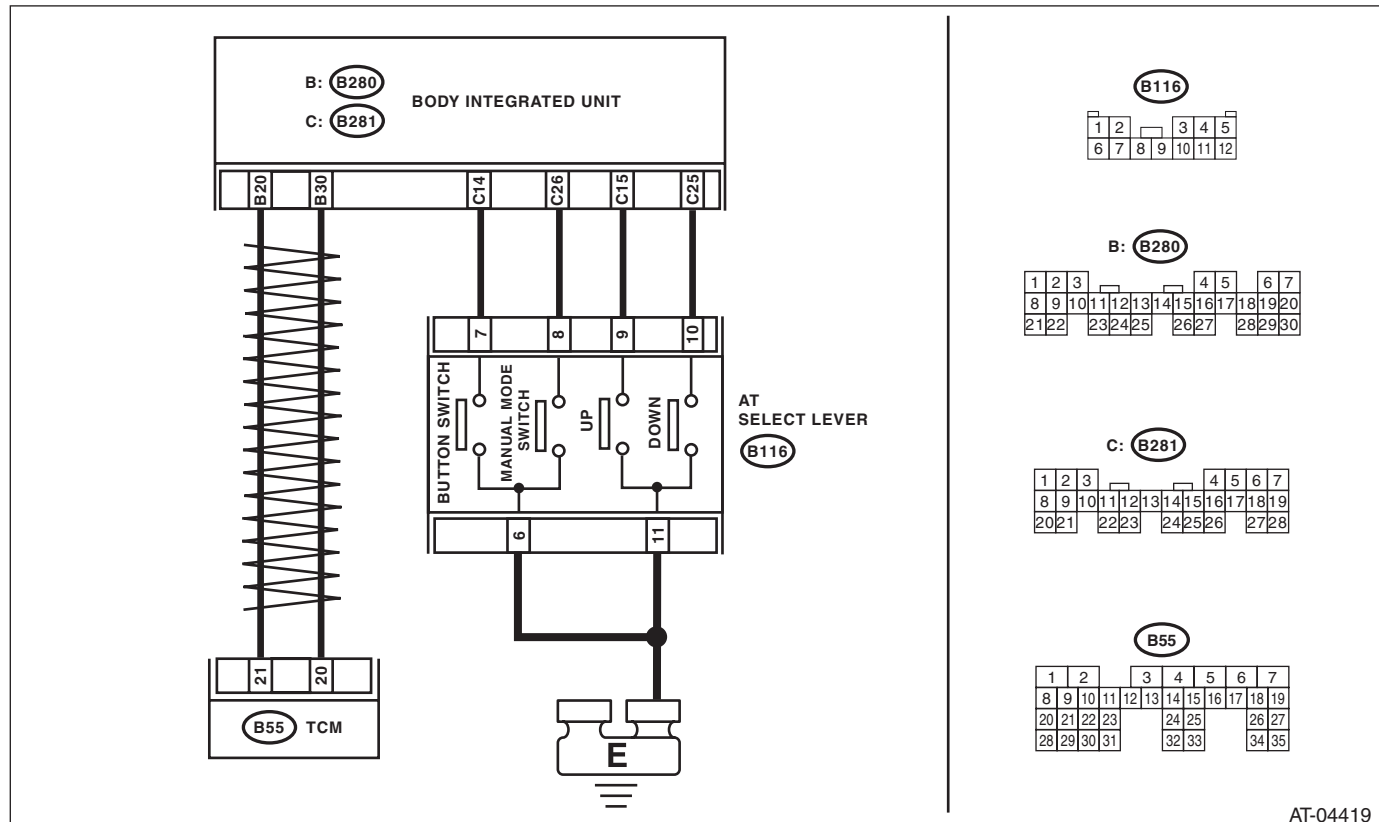
Input signal circuit of manual mode switch is open or shorted.

TROUBLE SYMPTOM:

Does not shift on manual mode.

WIRING DIAGRAM:

AT control system <Ref. to WI-50, AT Control System.>



Step	Check	Yes	No
1	CHECK BODY INTEGRATED UNIT. 1) Perform ON/OFF operation on the manual mode switch. 2) Read the data of «Tiptronic Mode Switch» using Subaru Select Monitor.	Go to step 2.	Go to step 7.
2	CHECK BODY INTEGRATED UNIT DTC.	Is DTC of CAN detected?	Perform the diagnosis according to DTC.
3	CHECK TCM. 1) Perform ON/OFF operation on the manual mode switch. 2) Read the data of «Tiptronic Mode Switch» using Subaru Select Monitor.	Go to step 4.	Go to step 5.
4	CHECK SHIFT INDICATOR OF COMBINATION METER.	Is the shift indicator light OK?	Go to step 6.
			Replace the combination meter assembly. <Ref. to IDI-11, Combination Meter.>

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Step	Check	Yes	No	
5	CHECK DTC OF TCM.	Is DTC of CAN detected?	Perform the diagnosis according to DTC.	Replace the TCM. <Ref. to 5AT-54, Transmission Control Module (TCM).>
6	CHECK METER DTC.	Is DTC of CAN detected?	Perform the diagnosis according to DTC.	Replace the meter.
7	CHECK GROUND CIRCUIT OF MANUAL MODE SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from manual mode switch. 3) Measure the resistance of the harness between the manual mode switch connector and chassis ground. Connector & terminal (B116) No. 11 — Chassis ground:	Is the resistance less than 1 Ω?	Go to step 8.	Repair the open circuit of the harness between the manual mode switch and chassis ground.
8	CHECK MANUAL MODE SWITCH. Measure the resistance between manual mode switch terminals. Connector & terminal (B116) No. 9 — No. 11: (B116) No. 10 — No. 11:	Is the resistance 1 MΩ or more?	Go to step 9.	Replace the guide plate assembly.
9	CHECK MANUAL MODE SWITCH. 1) Move the select lever to manual mode. 2) Measure the resistance between manual mode switch terminals. Connector & terminal (B116) No. 9 — No. 11: (B116) No. 10 — No. 11:	Is the resistance less than 1 Ω?	Go to step 10.	Replace the guide plate assembly.
10	CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND MANUAL MODE SWITCH. 1) Disconnect the connector from body integrated unit. 2) Measure the resistance of harness between body integrated unit connector and manual mode switch connector. Connector & terminal (B116) No. 9 — (B281) No. 15: (B116) No. 10 — (B281) No. 25:	Is the resistance less than 1 Ω?	Go to step 11.	Repair the open circuit of harness between the manual mode switch connector and body integrated unit connector, or poor contact of connector.
11	CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND MANUAL MODE SWITCH. 1) Disconnect the connector from body integrated unit. 2) Measure the resistance of the harness between the manual mode switch connector and chassis ground. Connector & terminal (B116) No. 9 — Chassis ground: (B116) No. 10 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 12.	Repair the short circuit of harness between manual mode switch connector and body integrated unit connector.

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Step	Check	Yes	No
12 CHECK INPUT SIGNAL TO BODY INTEGRATED UNIT. 1) Connect all connectors. 2) Turn the ignition switch to ON. (engine OFF) 3) Measure the voltage of signal to TCM. Connector & terminal (B281) No. 15 (+) — Chassis ground (-): (B281) No. 25 (+) — Chassis ground (-):	Is the voltage 9 V or more?	Go to step 13.	Replace the body integrated unit. <Ref. to SL-47, Body Integrated Unit.>
13 CHECK INPUT SIGNAL TO BODY INTEGRATED UNIT. 1) Shift up and hold the select lever. 2) Measure the voltage of signal to TCM. Connector & terminal (B281) No. 15 (+) — Chassis ground (-): (B281) No. 25 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 14.	Replace the body integrated unit. <Ref. to SL-47, Body Integrated Unit.>
14 CHECK GROUND CIRCUIT OF MANUAL MODE SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from manual mode switch. 3) Measure the resistance of the harness between the manual mode switch connector and chassis ground. Connector & terminal (B116) No. 11 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 15.	Repair the open circuit of the harness between the manual mode switch and chassis ground.
15 CHECK FOR POOR CONTACT.	Is there poor contact of the manual mode switch circuit?	Repair the poor contact.	Temporary poor contact of the manual mode switch circuit connector or harness.

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B: CHECK SHIFT INDICATOR

DIAGNOSIS:

Output signal circuit of shift indicator is open or shorted.

TROUBLE SYMPTOM:

- Shift indicator is not displayed.
- Shift indicator display does not change.
- Shift indicator remains displayed.

Step	Check	Yes	No
1 CHECK BODY INTEGRATED UNIT. Check DTC of body integrated unit.	Is DTC of AT CAN communication circuit displayed?	Perform the diagnosis according to DTC.	Go to step 2.
2 CHECK TCM. Check DTC of TCM.	Is DTC of AT CAN communication circuit displayed?	Perform the diagnosis according to DTC.	Go to step 3.
3 CHECK TCM. 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to data link connector. 3) Turn the ignition switch to ON. (engine OFF) 4) Run the Subaru Select Monitor. 5) Shift the select lever to the manual mode side, and then downshift with the select lever. 6) Read the shift indicator.	Is the gear position at 1 and "▲" displayed?	Go to step 4.	Replace the TCM. <Ref. to 5AT-54, Transmission Control Module (TCM).>
4 CHECK TCM. 1) Shift up the select lever. 2) Read the shift indicator.	Is the gear position at 2 and "▼" displayed?	Go to step 5.	Replace the TCM. <Ref. to 5AT-54, Transmission Control Module (TCM).>
5 CHECK BODY INTEGRATED UNIT. Read the data of «Shift Position» using Subaru Select Monitor.	Is "2" displayed?	Go to step 6.	Check body integrated unit. <Ref. to SL-47, Body Integrated Unit.>
6 CHECK COMBINATION METER.	Is the shift indicator OK?	Refer to "General Diagnostic Table". <Ref. to 5AT(diag)-103, General Diagnostic Table.>	Replace the combination meter assembly. <Ref. to IDI-11, Combination Meter.>

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C: CHECK BUZZER

DIAGNOSIS:

Output signal circuit of buzzer is open or shorted.

TROUBLE SYMPTOM:

Buzzer remains beeping.

Step	Check	Yes	No
1 CHECK BODY INTEGRATED UNIT. Check DTC of body integrated unit.	Is DTC of CAN communication displayed?	Perform the diagnosis according to DTC.	Go to step 2.
2 CHECK TCM. Check DTC of TCM.	Is DTC of CAN communication displayed?	Perform the diagnosis according to DTC.	Go to step 3.
3 CHECK BUZZER STOP. Disconnect the connector (B55).	Does the buzzer stop?	Replace the TCM. <Ref. to 5AT-54, Transmission Control Module (TCM).>	Go to step 4.
4 CHECK BODY INTEGRATED UNIT. 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to data link connector. 3) Turn the ignition switch to ON. (engine OFF) 4) Run the Subaru Select Monitor. 5) Read the «SPORT Shift (buzzer 1)» and «SPORT Shift (buzzer 2)» data using Subaru Select Monitor.	Is «ON» displayed?	Replace the body integrated unit. <Ref. to SL-47, Body Integrated Unit.>	Go to step 5.
5 CHECK COMBINATION METER.	Is the buzzer OK?	Refer to “General Diagnostic Table”. <Ref. to 5AT(diag)-103, General Diagnostic Table.>	Replace the combination meter assembly. <Ref. to IDI-11, Combination Meter.>