

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

16.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

A: DTC P0705 TRANSMISSION RANGE SENSOR CIRCUIT (PRNDL INPUT)

DTC DETECTING CONDITION:

- Inhibitor switch is faulty.
- Multiple range signals are input at a time.
- No range signal is input.

TROUBLE SYMPTOM:

The range position of the select lever and the select indicator light on the combination meter do not match.

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

TO POWER SUPPLY CIRCUIT

FB-36
F/B FUSE NO. 5
(IG)

2

LCD SHIFT INDICATOR
(SPORT SHIFT)

↑

MICRO COMPUTER

27 26

A1 A9

BODY INTEGRATED UNIT

A: i84
B: B280

B3 B9

18 17

B55 TCM

14 13 11 10

3 2 1 8

B12
T3

2 5 3 4

P
R
N
D

INHIBITOR SWITCH

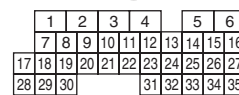
T7

1

4

T3
B12

E



	Step	Check	Yes	No
1	CHECK INDICATOR LIGHT. 1) Turn the ignition switch to ON. 2) Shift the select lever to "P" range.	Does the combination meter "P" range indicator light illuminate?	Go to step 2.	Go to step 6.
2	CHECK INDICATOR LIGHT. Set the select lever to "R" range.	Does the combination meter "P" range indicator light illuminate?	Go to step 20.	Go to step 3.

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Step	Check	Yes	No
3 CHECK INDICATOR LIGHT. Shift the select lever to "P" range.	Does the combination meter "R" range indicator light illuminate?	Go to step 27.	Go to step 4.
4 CHECK INDICATOR LIGHT.	Does the combination meter "N" range indicator light illuminate?	Go to step 34.	Go to step 5.
5 CHECK INDICATOR LIGHT.	Does the combination meter "D" range indicator light illuminate?	Go to step 41.	Go to step 7.
6 CHECK "P" RANGE SWITCH. Read the data of "P range" using Subaru Select Monitor.	Is "ON" displayed?	Go to step 17.	Go to step 13.
7 CHECK INDICATOR LIGHT. Set the select lever to "R" range.	Does the combination meter "R" range indicator light illuminate?	Go to step 9.	Go to step 8.
8 CHECK "R" RANGE SWITCH. Read the data of "R range" using Subaru Select Monitor.	Is "ON" displayed?	Go to step 24.	Go to step 21.
9 CHECK INDICATOR LIGHT. Set the select lever to "N" range.	Does the combination meter "N" range indicator light illuminate?	Go to step 11.	Go to step 10.
10 CHECK "N" RANGE SWITCH. Read the data of "N range" using Subaru Select Monitor.	Is "ON" displayed?	Go to step 31.	Go to step 28.
11 CHECK INDICATOR LIGHT. Set the select lever to "D" range.	Does the combination meter "D" range indicator light illuminate?	Check the harnesses or connectors between TCM and transmission, and repair the defective part.	Go to step 12.
12 CHECK "D" RANGE SWITCH. Read the data of "D range" using Subaru Select Monitor.	Is "ON" displayed?	Go to step 38.	Go to step 35.
13 CHECK HARNESS CONNECTOR BETWEEN INHIBITOR SWITCH AND CHASSIS GROUND. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from inhibitor switch. 3) Measure the resistance of harness between inhibitor switch and chassis ground. Connector & terminal (T7) No. 1 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 14.	Repair the open circuit of harness between inhibitor switch and chassis ground, and poor contact of the connector.
14 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and inhibitor switch. 3) Measure the resistance of the harness between TCM and inhibitor switch connector. Connector & terminal (B55) No. 14 — (T7) No. 2:	Is the resistance less than 1 Ω ?	Go to step 15.	Repair the open circuit of harness between TCM and inhibitor switch connector, and poor contact of the connector.

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AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
15 CHECK INPUT SIGNAL FOR TCM. 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and inhibitor switch. 3) Turn the ignition switch to ON. 4) Shift the select lever to "P" range. 5) Measure the voltage between TCM and chassis ground. Connector & terminal (B55) No. 14 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 16.	Go to step 42.
16 CHECK INPUT SIGNAL FOR TCM. 1) Set the select lever to other than "P" range. 2) Measure the voltage between TCM and chassis ground. Connector & terminal (B55) No. 14 (+) — Chassis ground (-):	Is the voltage 8 V or more?	Go to step 42.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
17 CHECK BODY INTEGRATED UNIT. Read the data of "Shift Position" using Subaru Select Monitor. <Ref. to LAN(diag)-15, OPERATION, Subaru Select Monitor.>	Is "7" displayed?	Go to step 18.	Check body integrated unit.
18 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 19.
19 CHECK COMBINATION METER. Check the "P" range indicator light. <Ref. to IDI-4, INSPECTION, Combination Meter System.>	Is the "P" range indicator light bulb OK?	Go to step 42.	Replace the combination meter assembly. <Ref. to IDI-14, Combination Meter.>
20 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and inhibitor switch. 3) Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 14 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 42.	Repair ground short circuit in "P" range circuit.
21 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and inhibitor switch. 3) Measure the resistance of the harness between TCM and inhibitor switch connector. Connector & terminal (B55) No. 13 — (T7) No. 5:	Is the resistance less than 1 Ω ?	Go to step 22.	Repair the open circuit of harness between TCM and inhibitor switch connector, and poor contact of the connector.
22 CHECK INPUT SIGNAL FOR TCM. 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and inhibitor switch. 3) Turn the ignition switch to ON. 4) Set the select lever to "R" range. 5) Measure the voltage between TCM and chassis ground. Connector & terminal (B55) No. 13 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 23.	Go to step 42.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
23 CHECK INPUT SIGNAL FOR TCM. 1) Shift the select lever to other than "R" range. 2) Measure the voltage between TCM and chassis ground. Connector & terminal (B55) No. 13 (+) — Chassis ground (-):	Is the voltage 8 V or more?	Go to step 42.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
24 CHECK BODY INTEGRATED UNIT. Read the data of "Shift Position" using Subaru Select Monitor. <Ref. to LAN(diag)-15, OPERATION, Subaru Select Monitor.>	Is "6" displayed?	Go to step 25.	Check body integrated unit.
25 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 26.
26 CHECK COMBINATION METER. Check the "R" range indicator light. <Ref. to IDI-4, INSPECTION, Combination Meter System.>	Is the "R" range indicator light OK?	Go to step 42.	Replace the combination meter assembly. <Ref. to IDI-14, Combination Meter.>
27 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and inhibitor switch. 3) Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 13 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 42.	Repair ground short circuit in "R" range circuit.
28 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and inhibitor switch. 3) Measure the resistance of the harness between TCM and inhibitor switch connector. Connector & terminal (B55) No. 11 — (T7) No. 3:	Is the resistance less than 1 Ω?	Go to step 29.	Repair the open circuit of harness between TCM and inhibitor switch connector, and poor contact of the connector.
29 CHECK INPUT SIGNAL FOR TCM. 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and inhibitor switch. 3) Turn the ignition switch to ON. 4) Set the select lever to "N" range. 5) Measure the voltage between TCM and chassis ground. Connector & terminal (B55) No. 11 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 30.	Go to step 42.
30 CHECK INPUT SIGNAL FOR TCM. 1) Shift the select lever to other than "N" range. 2) Measure the voltage between TCM and chassis ground. Connector & terminal (B55) No. 11 (+) — Chassis ground (-):	Is the voltage 8 V or more?	Go to step 42.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
31 CHECK BODY INTEGRATED UNIT. Read the data of "Shift Position" using Subaru Select Monitor. <Ref. to LAN(diag)-15, OPERATION, Subaru Select Monitor.>	Is "5" displayed?	Go to step 32.	Check body integrated unit.
32 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 33.

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AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
33 CHECK COMBINATION METER. Check the "N" range indicator light. <Ref. to IDI-4, INSPECTION, Combination Meter System.>	Is the "N" range indicator light OK?	Go to step 42.	Replace the combination meter assembly. <Ref. to IDI-14, Combination Meter.>
34 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and inhibitor switch. 3) Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 11 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 42.	Repair the ground short circuit in "N" range circuit.
35 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and inhibitor switch. 3) Measure the resistance of the harness between TCM and inhibitor switch connector. Connector & terminal (B55) No. 10 — (T7) No. 4:	Is the resistance less than 1 Ω?	Go to step 36.	Repair the open circuit of harness between TCM and inhibitor switch connector, and poor contact of the connector.
36 CHECK INPUT SIGNAL FOR TCM. 1) Turn the ignition switch to OFF. 2) Connect the connector to TCM and inhibitor switch. 3) Turn the ignition switch to ON. 4) Set the select lever to "D" range. 5) Measure the voltage between TCM and chassis ground. Connector & terminal (B55) No. 10 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 37.	Go to step 42.
37 CHECK INPUT SIGNAL FOR TCM. 1) Shift the select lever to other than "D" range. 2) Measure the voltage between TCM and chassis ground. Connector & terminal (B55) No. 10 (+) — Chassis ground (-):	Is the voltage 8 V or more?	Go to step 42.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
38 CHECK BODY INTEGRATED UNIT. Read the data of "Shift Position" using Subaru Select Monitor. <Ref. to LAN(diag)-15, OPERATION, Subaru Select Monitor.>	Is "4" displayed?	Go to step 39.	Check body integrated unit.
39 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 40.
40 CHECK COMBINATION METER. Check the "D" range indicator light. <Ref. to IDI-4, INSPECTION, Combination Meter System.>	Is the "D" range indicator light OK?	Go to step 42.	Replace the combination meter assembly. <Ref. to IDI-14, Combination Meter.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
41 CHECK HARNESS CONNECTOR BETWEEN TCM AND INHIBITOR SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and inhibitor switch. 3) Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 10 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 42 .	Repair ground short circuit in "D" range circuit.
42 CHECK FOR POOR CONTACT.	Is there poor contact of the inhibitor switch circuit?	Repair the poor contact.	Go to step 43 .
43 CHECK INHIBITOR SWITCH.	Is the inhibitor switch in the normal position?	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>	Adjust inhibitor switch and select cable. <Ref. to 4AT-45, Inhibitor Switch.> <Ref. to CS-24, Select Cable.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

B: DTC P0712 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT LOW INPUT

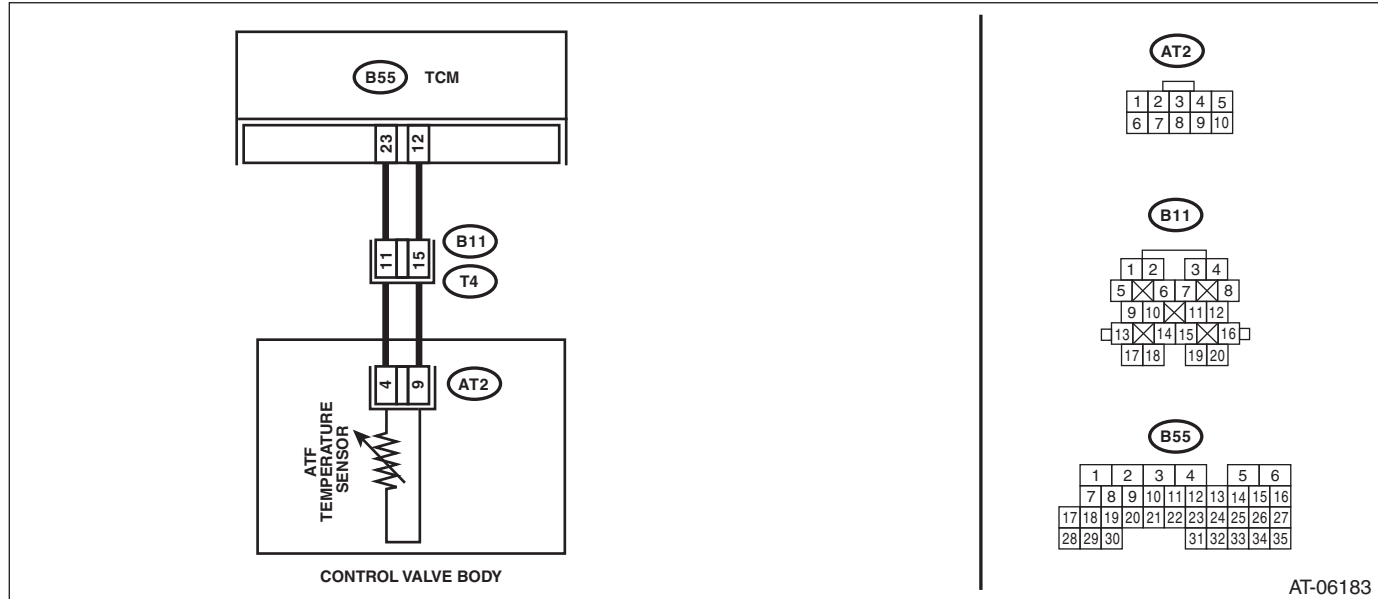
DTC DETECTING CONDITION:

Input signal circuit to ATF temperature sensor is open or shorted.

TROUBLE SYMPTOM:

Excessive shift shock

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK HARNESS CONNECTOR BETWEEN TCM AND ATF TEMPERATURE SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B55) No. 12 — (B11) No. 15: (B55) No. 23 — (B11) No. 11:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2 CHECK ATF TEMPERATURE SENSOR. 1) Turn the ignition switch to OFF. 2) Connect the connectors to TCM and transmission. 3) Start the engine. 4) Warm up the transmission until the ATF temperature exceeds 80°C (176°F). 5) Disconnect the connector from transmission. 6) Measure the resistance between transmission connector terminals. Connector & terminal (T4) No. 11 — No. 15:	Is the resistance 300 — 800 Ω?	Go to step 3.	Go to step 5.
3 CHECK ATF TEMPERATURE SENSOR. Measure the resistance between transmission connector terminals. Connector & terminal (T4) No. 11 — No. 15:	Does the resistance value increase gradually while the ATF temperature decreases?	Go to step 4.	Go to step 5.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK INPUT SIGNAL FOR TCM. 1) Connect the connector to transmission. 2) Connect the Subaru Select Monitor to data link connector. 3) Turn the ignition switch to ON. 4) Read the data of "ATF Temp." using the Subaru Select Monitor.	Does the ATF temperature gradually decrease?	Check for poor contact of the ATF temperature sensor and transmission connector harness, and repair the fault location.	Go to step 6.
5 CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND ATF TEMPERATURE SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from transmission. 3) Remove the transmission connector from bracket. 4) Lift up the vehicle. 5) Drain the automatic transmission fluid. CAUTION: Do not drain ATF until it cools down. 6) Remove the oil pan. 7) Disconnect the connector from the control valve body. 8) Measure the resistance of harness between ATF temperature sensor and transmission connector. Connector & terminal (T4) No. 11 — (AT2) No. 4: (T4) No. 15 — (AT2) No. 9:	Is the resistance less than 1 Ω ?	Replace the control valve body. <Ref. to 4AT-54, Control Valve Body.>	Repair the open circuit of harness between ATF temperature sensor and transmission connector.
6 CHECK FOR POOR CONTACT.	Is there poor contact of ATF temperature sensor circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

C: DTC P0713 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT HIGH INPUT

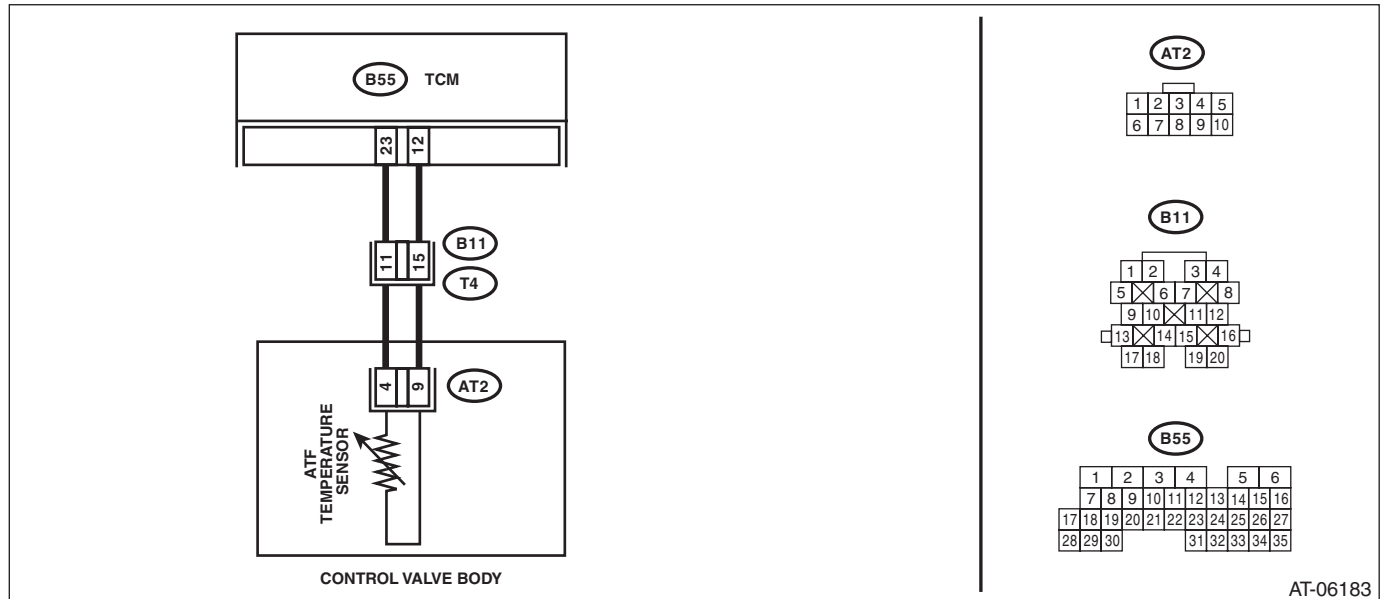
DTC DETECTING CONDITION:

Input signal circuit to ATF temperature sensor is shorted.

TROUBLE SYMPTOM:

Excessive shift shock

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK HARNESS CONNECTOR BETWEEN TCM AND ATF TEMPERATURE SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM. 3) Measure the resistance between TCM connector terminals. Connector & terminal (B55) No. 23 — No. 12:	Is the resistance 500 Ω or more?	Go to step 2.	Go to step 4.
2 CHECK HARNESS CONNECTOR BETWEEN TCM AND ATF TEMPERATURE SENSOR. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 23 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 3.	Go to step 4.
3 CHECK HARNESS. Measure the resistance between TCM connector terminals while shaking the harness. Connector & terminal (B55) No. 23 — No. 12:	Does the resistance change?	Go to step 4.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
4 CHECK HARNESS CONNECTOR BETWEEN TCM AND ATF TEMPERATURE SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from transmission. 3) Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 12 — Chassis ground: (B55) No. 23 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 5.	Repair the short circuit of harness between TCM and transmission harness.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK ATF TEMPERATURE SENSOR. Measure the resistance between transmission connector terminals. Connector & terminal (T4) No. 11 — No. 15:	Is the resistance 500 Ω or more?	Check short circuits in harnesses or connectors, and repair the defective part.	Go to step 6.
6 CHECK TRANSMISSION HARNESS. 1) Lift up the vehicle. 2) Drain the automatic transmission fluid. CAUTION: Do not drain ATF until it cools down. 3) Remove the oil pan. 4) Disconnect the harness connector from the control valve body. 5) Measure the resistance between transmission connector and transmission ground. Connector & terminal (T4) No. 11 — Transmission ground: (T4) No. 15 — Transmission ground:	Is the resistance 1 M Ω or more?	Go to step 7.	Replace the transmission harness.
7 CHECK ATF TEMPERATURE SENSOR. Measure the resistance between control valve connector terminals. Connector & terminal (AT2) No. 4 — No. 9:	Is the resistance 500 Ω or more?	Check short circuits in harnesses or connectors, and repair the defective part.	Replace the control valve body. <Ref. to 4AT-54, Control Valve Body.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

D: DTC P0715 INPUT/TURBINE SPEED SENSOR CIRCUIT

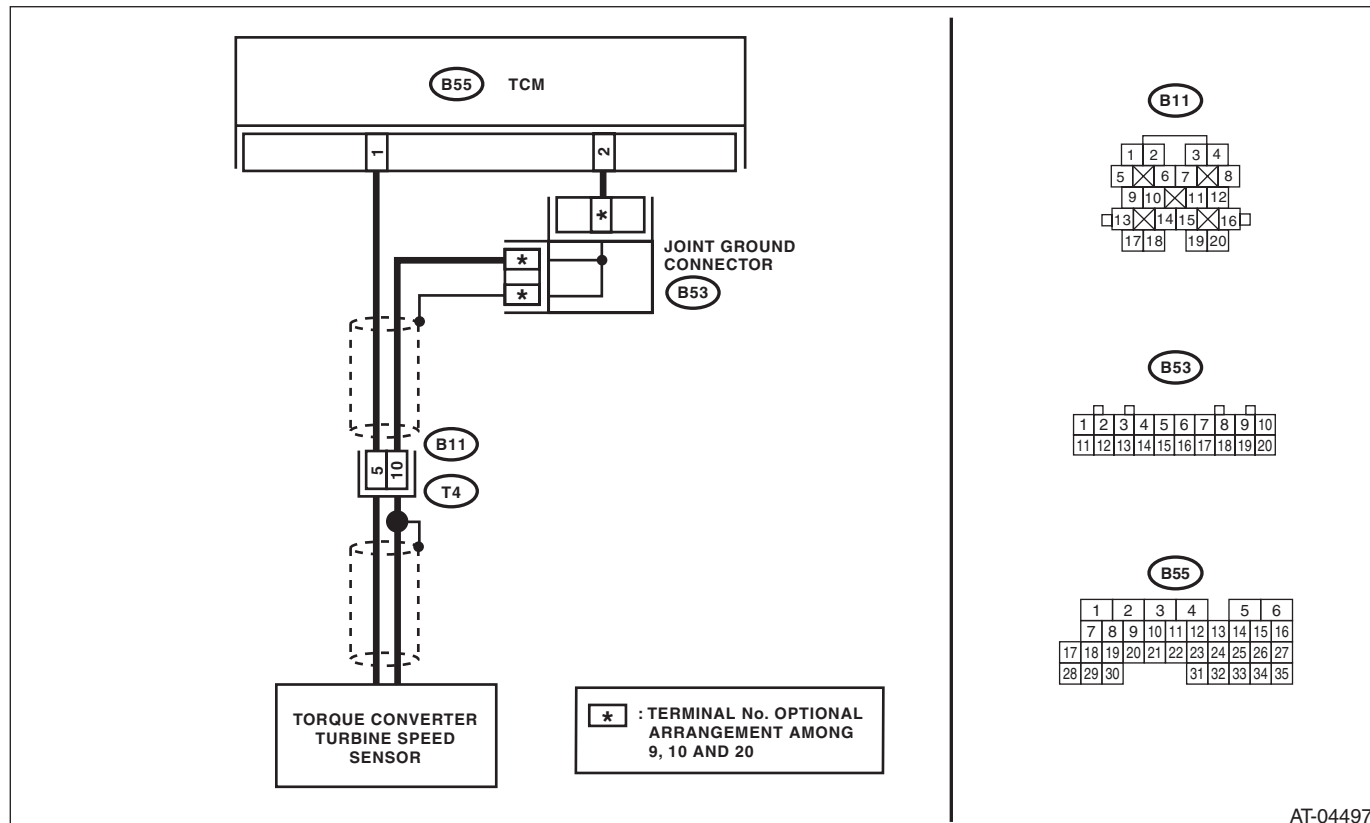
DTC DETECTING CONDITION:

Input signal circuit of TCM is open or shorted.

TROUBLE SYMPTOM:

Excessive shift shock

WIRING DIAGRAM:



AT-04497

Step	Check	Yes	No
1 CHECK TORQUE CONVERTER TURBINE SPEED SENSOR. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from transmission. 3) Measure the resistance between transmission connector receptacle's terminals. Connector & terminal (T4) No. 5 — No. 10:	Is the resistance 450 — 650 Ω ?	Go to step 2.	Replace the torque converter turbine speed sensor. <Ref. to 4AT-51, Torque Converter Turbine Speed Sensor.>
2 CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Disconnect the connector from TCM. 2) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B55) No. 1 — (B11) No. 5: (B55) No. 2 — (B11) No. 10:	Is the resistance less than 1 Ω ?	Go to step 3.	Repair the open circuit of harness between TCM and transmission connector, and poor contact of the connector.
3 CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 1 — Chassis ground: (B55) No. 2 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 4.	Repair the short circuit of harness between TCM and transmission connector.

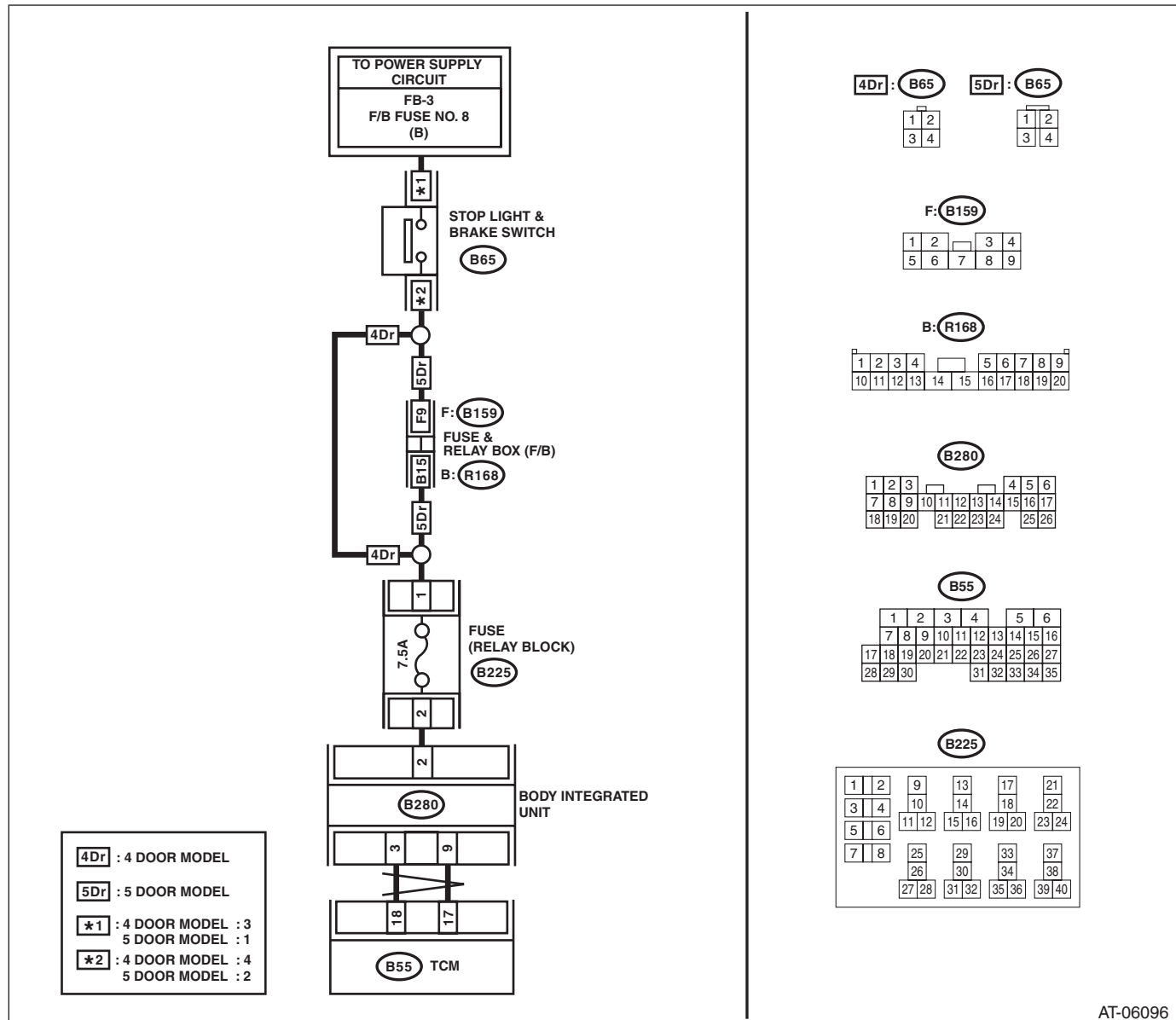
Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK INPUT SIGNAL FOR TCM. 1) Connect the connectors to TCM and transmission. 2) Connect the Subaru Select Monitor to data link connector. 3) Turn the ignition switch to ON. 4) Run the Subaru Select Monitor. 5) Start the engine. 6) Move the select lever to "P" or "N" range. 7) Read the data of "Turbine Revolution Speed" and "Engine Speed" using Subaru Select Monitor.	Are the "Turbine Revolution Speed" and "Engine Speed" almost the same?	Check the harnesses or connectors between TCM and transmission, and repair the defective part.	Go to step 5.
5 CHECK FOR POOR CONTACT.	Is there poor contact of torque converter turbine speed sensor circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK DTC.	Is DTC of CAN communication displayed?	Perform the diagnosis according to DTC.	Go to step 2.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
2 CHECK FUSE (NO. 8). 1) Turn the ignition switch to OFF. 2) Remove the fuse (No. 8).	Is the fuse (No. 8) blown out?	Replace the fuse (No. 8). If the new fuse (No. 8) has blown out easily, repair the short circuit of harness between fuse (No. 8) and stop light switch.	Go to step 3.
3 CHECK FUSE (RELAY BLOCK). Remove the fuse (7.5A) in the relay block.	Is the fuse (7.5A) blown out?	Replace the fuse (7.5A). If the replaced fuse (7.5A) blows out easily, repair the short circuit in the harness between the fuse (7.5A) and body integrated unit.	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. 4) Run the Subaru Select Monitor. 5) Depress the brake pedal. 6) Read the data of "Stop Light Switch" using Subaru Select Monitor. <Ref. to LAN(diag)-15, OPERATION, Subaru Select Monitor.>	Is "ON" displayed?	Go to step 5.	Go to step 6.
5 CHECK TCM. Read the data of "Stop Light Switch" using Subaru Select Monitor. <Ref. to 4AT(diag)-15, OPERATION, Subaru Select Monitor.>	Is "ON" displayed?	Check for poor contact in connectors or harnesses, and repair the defective part.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
6 CHECK BODY INTEGRATED UNIT INPUT SIGNAL. 1) Disconnect the connector from body integrated unit. 2) Depress the brake pedal. 3) Measure the voltage of harness between the body integrated unit and chassis ground. Connector & terminal (B280) No. 2 (+) — Chassis ground (-):	Is the voltage 10 V or more?	Go to step 9.	Go to step 7.
7 CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND STOP LIGHT SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from stop light switch. 3) Measure the resistance of harness between body integrated unit and stop light switch. Connector & terminal 4 door model (B280) No. 2 — (B65) No. 4: 5 door model (B280) No. 2 — (B65) No. 2:	Is the resistance less than 1 Ω ?	Go to step 8.	Repair the open circuit of harness between body integrated unit and stop light switch.

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AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
8 CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND STOP LIGHT SWITCH. Measure the harness resistance between the body integrated unit and chassis ground. Connector & terminal (B280) No. 2 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 9.	Repair the short circuit of harness between body integrated unit and stop light switch.
9 CHECK FOR POOR CONTACT.	Is there poor contact of input signal of brake switch?	Repair the poor contact.	Check body integrated unit.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

F: DTC P0720 OUTPUT SPEED SENSOR CIRCUIT

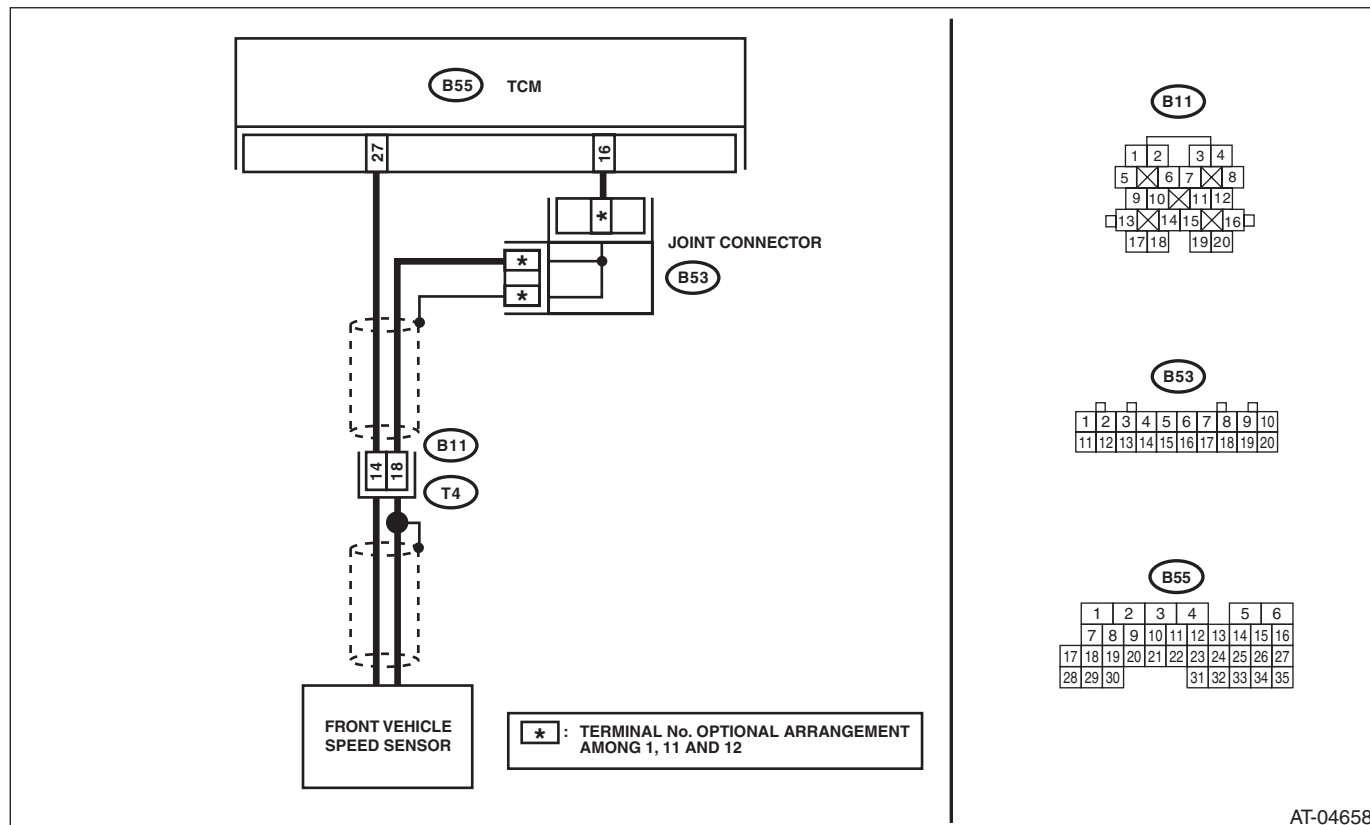
DTC DETECTING CONDITION:

- The vehicle speed signal is abnormal.
- The harness connector between TCM and vehicle speed sensor is shorted or open.

TROUBLE SYMPTOM:

- Neutral control does not operate.
- Slip lock-up control does not operate.
- Driving performance is poor.

WIRING DIAGRAM:



AT-04658

Step	Check	Yes	No
1 CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B55) No. 16 — (B11) No. 18: (B55) No. 27 — (B11) No. 14:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector, and poor contact of the connector.
2 CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 16 — Chassis ground: (B55) No. 27 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 3.	Repair the short circuit of harness between TCM and chassis ground, and poor contact of connector.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
3 CHECK FRONT VEHICLE SPEED SENSOR. Measure the resistance between transmission connector receptacle's terminals. Connector & terminal (T4) No. 14 — No. 18:	Is the resistance 450 — 650 Ω ?	Go to step 4.	Replace the front vehicle speed sensor. <Ref. to 4AT-48, Front Vehicle Speed Sensor.>
4 CHECK INPUT SIGNAL FOR TCM. 1) Connect all connectors. 2) Connect the Subaru Select Monitor to data link connector. 3) Lift up the vehicle. 4) Turn the ignition switch to ON. 5) Run the Subaru Select Monitor. 6) Start the engine. 7) Slowly increase the vehicle speed to 60 km/h (37 MPH). 8) Read the data of "front wheel speed" using Subaru Select Monitor. (Compare the speedometer with Subaru Select Monitor indications.) NOTE: The speed difference between front and rear wheels lights the ABS warning light or the VDC warning light, but this does not indicate a malfunction. If the warning light is illuminated, clear the memory of ABS or VDC after completing AT control diagnosis. <Ref. to VDC(diag)-25, Clear Memory Mode.>	Does the speedometer indication increase as the Subaru Select Monitor data increases?	Check the harness of the front vehicle speed sensor circuit, and repair the defective part.	Go to step 5.
5 CHECK FOR POOR CONTACT.	Is there poor contact of front vehicle speed sensor circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

G: DTC P0724 BRAKE SWITCH CIRCUIT HIGH

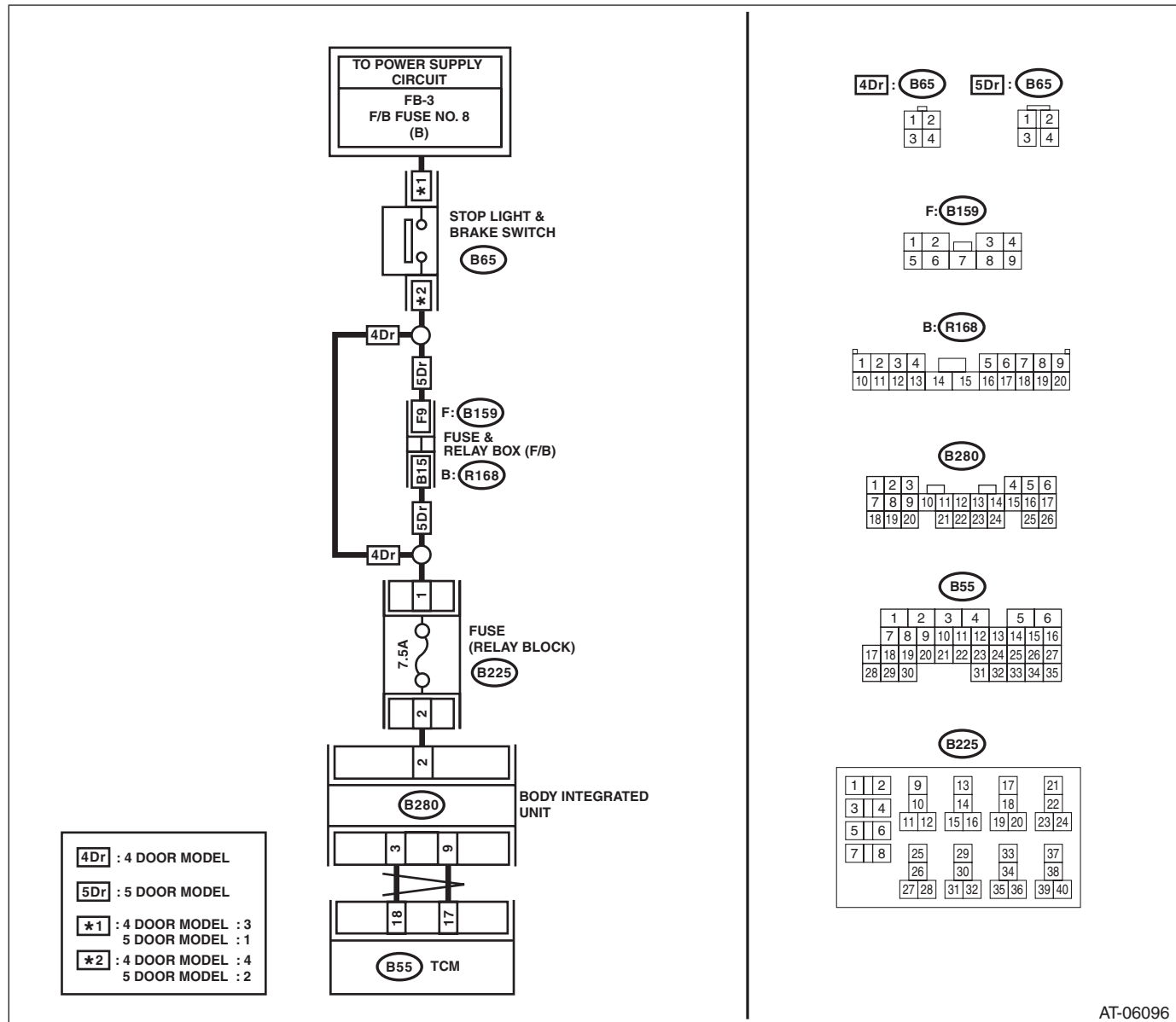
DTC DETECTING CONDITION:

Brake switch malfunction, open input signal circuit

TROUBLE SYMPTOM:

- Gear is not shifted down when driving a down hill.
- Neutral control does not operate.

WIRING DIAGRAM:



Step	Check	Yes	No
1	CHECK DTC.	Is DTC of CAN communication displayed?	Perform the diagnosis according to DTC.
		Go to step 2.	

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
2 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. 4) Run the Subaru Select Monitor. 5) Read the data of "Stop Light Switch" using Subaru Select Monitor. <Ref. to LAN(diag)-15, OPERATION, Subaru Select Monitor.>	Is "OFF" displayed?	Go to step 3.	Go to step 4.
3 CHECK TCM. Read the data of "Stop Light Switch" using Subaru Select Monitor. <Ref. to 4AT(diag)-15, OPERATION, Subaru Select Monitor.>	Is "OFF" displayed?	Check for poor contact in connectors or harnesses, and repair the defective part.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
4 CHECK BODY INTEGRATED UNIT INPUT SIGNAL. 1) Disconnect the harness connector of body integrated unit. 2) Measure the voltage of harness between body integrated unit and stop light switch. Connector & terminal (B280) No. 2 (+) — Chassis ground (-):	Is the voltage 10 V or more?	Go to step 5.	Go to step 7.
5 CHECK STOP LIGHT SWITCH. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from stop light switch. 3) Measure the resistance of harness between stop light switch connectors. Connector & terminal 4 door model: (B65) No. 3 — No. 4: 5 door model: (B65) No. 1 — No. 2:	Is the resistance 1 MΩ or more?	Go to step 6.	Replace the stop light switch.
6 CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND STOP LIGHT SWITCH. 1) Turn the ignition switch to ON. 2) Measure the voltage of harness between the body integrated unit and chassis ground. Connector & terminal (B280) No. 2 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 7.	Repair the short circuit of harness between TCM and stop light switch.
7 CHECK FOR POOR CONTACT.	Is there poor contact of input signal of brake switch?	Repair the poor contact.	Check body integrated unit.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

H: DTC P0731 GEAR 1 INCORRECT RATIO

NOTE:

Refer to DTC P0736 for diagnostic procedure. <Ref. to 4AT(diag)-54, DTC P0736 REVERSE INCORRECT RATIO, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

I: DTC P0732 GEAR 2 INCORRECT RATIO

NOTE:

Refer to DTC P0736 for diagnostic procedure. <Ref. to 4AT(diag)-54, DTC P0736 REVERSE INCORRECT RATIO, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

J: DTC P0733 GEAR 3 INCORRECT RATIO

NOTE:

Refer to DTC P0736 for diagnostic procedure. <Ref. to 4AT(diag)-54, DTC P0736 REVERSE INCORRECT RATIO, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

K: DTC P0734 GEAR 4 INCORRECT RATIO

NOTE:

Refer to DTC P0736 for diagnostic procedure. <Ref. to 4AT(diag)-54, DTC P0736 REVERSE INCORRECT RATIO, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

L: DTC P0736 REVERSE INCORRECT RATIO

DTC DETECTING CONDITION:

Vehicle sensor, torque converter turbine speed sensor or control valve malfunction

TROUBLE SYMPTOM:

- Shift point is too high or too low.
- Excessive shift shock
- Tight corner braking phenomenon occurs.
- Gear is not shifted to reverse.
- Gear position is held by fail safe function.

Step	Check	Yes	No
1 CHECK THROTTLE OPENING ANGLE SENSOR. Read the diagnostic trouble code (DTC) of engine using Subaru Select Monitor. <Ref. to EN(H4SO)(diag)-86, List of Diagnostic Trouble Code (DTC).>	Is DTC P0122, P0123, P0222, P0223, P2109 and P2135 displayed?	Perform the diagnosis according to DTC.	Go to step 2.
2 CHECK DTC.	Is DTC P1718 displayed?	Perform the diagnosis according to DTC.	Go to step 3.
3 CHECK AT VEHICLE SPEED SENSOR CIRCUIT. Perform the diagnosis according to DTC P0720. <Ref. to 4AT(diag)-50, DTC P0720 OUTPUT SPEED SENSOR CIRCUIT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any trouble?	Check the harness of the front vehicle speed sensor circuit, and repair the defective part.	Go to step 4.
4 CHECK AT TURBINE REVOLUTION SPEED SENSOR CIRCUIT. Perform the diagnosis according to DTC P0715. <Ref. to 4AT(diag)-45, DTC P0715 INPUT/ TURBINE SPEED SENSOR CIRCUIT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any trouble?	Check the torque converter turbine speed sensor circuit.	There are malfunctions in TCM, TCM connector poor contact, or transmission assembly mechanical malfunction.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

M: DTC P0741 TORQUE CONVERTER CLUTCH CIRCUIT PERFORMANCE OR STUCK OFF

DTC DETECTING CONDITION:

- Lock up clutch malfunction
- Sticky valve

TROUBLE SYMPTOM:

No lock-up occurs.

	Step	Check	Yes	No
1	CHECK ENGINE SPEED SIGNAL. 1) Idle the engine. 2) Read the data of "Engine Speed" using Subaru Select Monitor.	Does the value of "Engine Speed" almost match the value of the tachometer located in the combination meter?	Go to step 2.	Check the engine speed signal circuit.
2	CHECK AT TURBINE REVOLUTION SPEED SENSOR CIRCUIT. Perform the diagnosis according to DTC P0715. <Ref. to 4AT(diag)-45, DTC P0715 INPUT/ TURBINE SPEED SENSOR CIRCUIT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any trouble?	Check the torque converter turbine speed sensor circuit.	Go to step 3.
3	CHECK AT VEHICLE SPEED SENSOR CIRCUIT. Perform the diagnosis according to DTC P0720. <Ref. to 4AT(diag)-50, DTC P0720 OUTPUT SPEED SENSOR CIRCUIT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>	Is there any trouble?	Check the harness of the front vehicle speed sensor circuit, and repair the defective part.	There are malfunctions in TCM, TCM connector poor contact, or transmission assembly mechanical malfunction.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

N: DTC P0743 TORQUE CONVERTER CLUTCH CIRCUIT ELECTRICAL

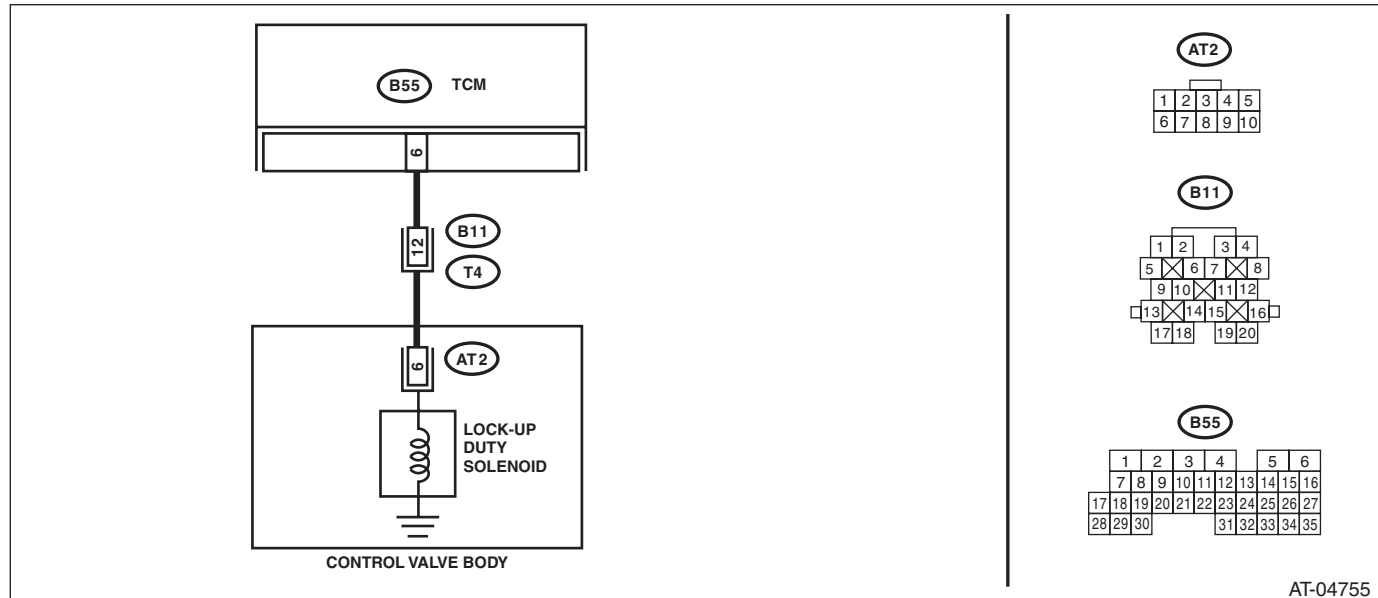
DTC DETECTING CONDITION:

Output signal circuit of lock-up duty solenoid is open or shorted.

TROUBLE SYMPTOM:

No lock-up occurs. (After engine is warmed up)

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK DTC.	Are DTCs other than P0743 displayed?	Perform the diagnosis according to DTC.	Go to step 2.
2	CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B55) No. 6 — (B11) No. 12:	Is the resistance less than 1 Ω?	Go to step 3.	Repair the open circuit of harness between TCM and transmission connector.
3	CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. Measure the resistance of the harness connector between TCM connector and chassis ground. Connector & terminal (B55) No. 6 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 4.	Repair the short circuit of harness between TCM and transmission connector.
4	CHECK LOCK-UP DUTY SOLENOID. Measure the resistance between transmission connector receptacle's terminals. Connector & terminal (T4) No. 12 — No. 20:	Is the resistance 2.0 — 6.0 Ω?	Go to step 5.	Go to step 8.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK OUTPUT SIGNAL OF TCM. 1) Connect the connectors to TCM and transmission. 2) Lift up the vehicle. 3) Run the Subaru Select Monitor. 4) Start the engine. NOTE: If the ambient temperature is below 0°C (32°F), drive the vehicle until the ATF reaches its operating temperature. 5) Shift the select lever to "D" range, and slowly increase vehicle speed to 60 km/h (37 MPH). 6) Read the data of "Lock Up Duty Ratio" using Subaru Select Monitor. NOTE: The speed difference between front and rear wheels lights the ABS warning light or the VDC warning light, but this does not indicate a malfunction. If the warning light is illuminated, clear the memory of ABS or VDC after completing AT control diagnosis. <Ref. to VDC(diag)-25, Clear Memory Mode.>	Is the measured value 95%?	Go to step 6.	Go to step 7.
6 CHECK OUTPUT SIGNAL OF TCM. 1) Return the engine speed to idle. 2) Set the select lever to "N" range. 3) Read the data of "Lock Up Duty Ratio" using Subaru Select Monitor. NOTE: The speed difference between front and rear wheels lights the ABS warning light or the VDC warning light, but this does not indicate a malfunction. If the warning light is illuminated, clear the memory of ABS or VDC after completing AT control diagnosis. <Ref. to VDC(diag)-25, Clear Memory Mode.>	Is the measured value 0%?	Check the harnesses or connectors between TCM and transmission, and repair the defective part.	Go to step 7.
7 CHECK FOR POOR CONTACT.	Is there poor contact of lock-up duty solenoid circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
8 CHECK LOCK-UP DUTY SOLENOID (IN TRANSMISSION). 1) Disconnect the transmission connector. 2) Drain the automatic transmission fluid. CAUTION: Do not drain ATF until it cools down. 3) Remove the oil pan. 4) Disconnect the connector from the control valve body. 5) Measure the resistance between lock-up duty solenoid and transmission ground. Connector & terminal (AT2) No. 6 — Transmission ground:	Is the resistance 2.0 — 6.0 Ω?	Go to step 9.	Replace the control valve body. <Ref. to 4AT-54, Control Valve Body.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
9 CHECK HARNESS CONNECTOR BETWEEN LOCK-UP DUTY SOLENOID AND TRANSMISSION. Measure the resistance of harness between lock-up duty solenoid and transmission connector. <i>Connector & terminal</i> <i>(T4) No. 12 — (AT2) No. 6:</i>	Is the resistance less than 1 Ω ?	Go to step 10.	Repair the open circuit of harness between TCM and transmission connector.
10 CHECK HARNESS CONNECTOR BETWEEN LOCK-UP DUTY SOLENOID AND TRANSMISSION. Measure the resistance of harness between transmission connector and transmission ground. <i>Connector & terminal</i> <i>(T4) No. 12 — Transmission ground:</i>	Is the resistance 1 M Ω or more?	Check the harnesses or connectors between lock-up duty solenoid and transmission, and repair the defective part.	Repair the short circuit of harness between lock-up duty solenoid and transmission connector.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

O: DTC P0748 PRESSURE CONTROL SOLENOID “A” ELECTRICAL

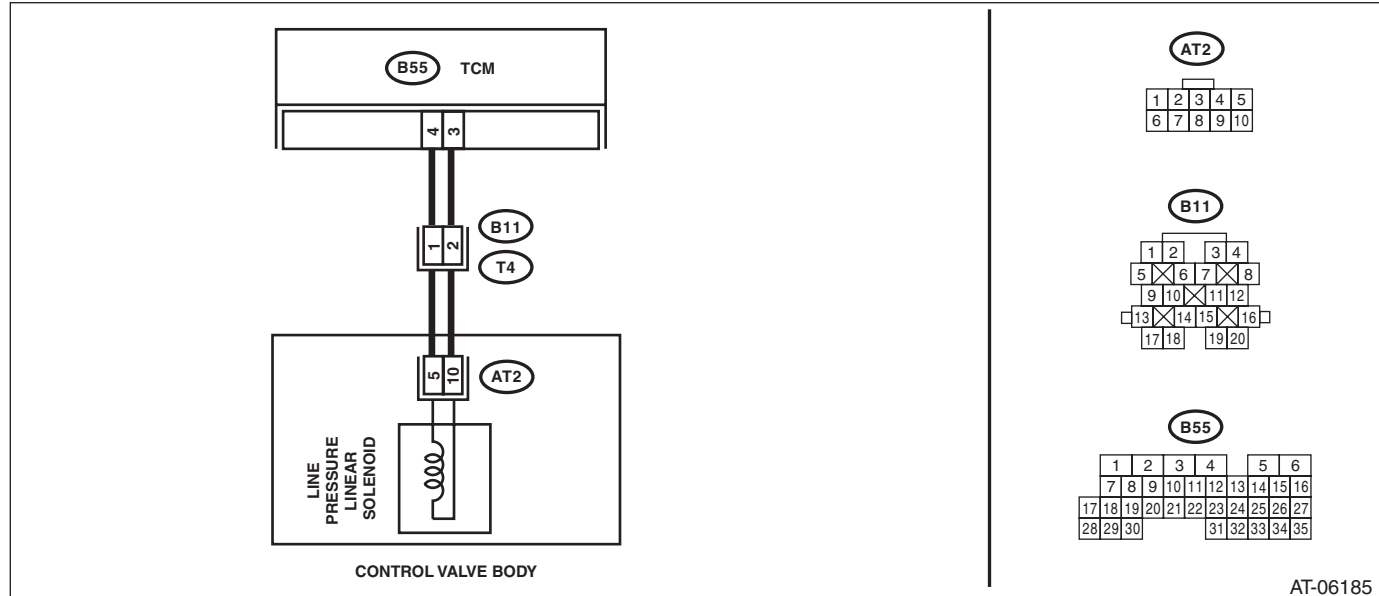
DTC DETECTING CONDITION:

Output signal circuit of line pressure linear solenoid is open or shorted.

TROUBLE SYMPTOM:

Excessive shift shock

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B55) No. 3 — (B11) No. 2: (B55) No. 4 — (B11) No. 1:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2 CHECK HARNESS CONNECTOR BETWEEN TCM AND CHASSIS GROUND. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 3 — Chassis ground: (B55) No. 4 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 3.	Repair the short circuit of harness between TCM and transmission connector.
3 CHECK LINE PRESSURE LINEAR SOLENOID. Measure the resistance between transmission connector receptacle's terminals. Connector & terminal (T4) No. 1 — No. 2:	Is the resistance 4.0 — 8.0 Ω?	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>	Go to step 4.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK LINE PRESSURE LINEAR SOLENOID (IN TRANSMISSION). 1) Remove the transmission connector from bracket. 2) Drain the automatic transmission fluid. CAUTION: Do not drain ATF until it cools down. 3) Remove the oil pan. 4) Disconnect the connector from the control valve body. 5) Measure the resistance of line pressure linear solenoid connector terminals. Connector & terminal (AT2) No. 5 — No. 10:	Is the resistance 4.0 — 8.0 Ω ?	Go to step 5.	Replace the control valve body. <Ref. to 4AT-54, Control Valve Body.>
5 CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND LINE PRESSURE LINEAR SOLENOID. Measure the resistance of harness between line pressure linear solenoid and transmission connector. Connector & terminal (T4) No. 1 — (AT2) No. 5: (T4) No. 2 — (AT2) No. 10:	Is the resistance less than 1 Ω ?	Go to step 6.	Repair the open circuit of harness between line pressure linear solenoid and transmission connector.
6 CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND LINE PRESSURE LINEAR SOLENOID. Measure the resistance of harness between transmission connector and transmission ground. Connector & terminal (T4) No. 1 — Transmission ground: (T4) No. 2 — Transmission ground:	Is the resistance 1 M Ω or more?	Check the harnesses or connectors between line pressure linear solenoid and transmission, and repair the defective part.	Repair the short circuit of harness between line pressure linear solenoid and transmission connector.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

P: DTC P0753 SHIFT SOLENOID “A” ELECTRICAL

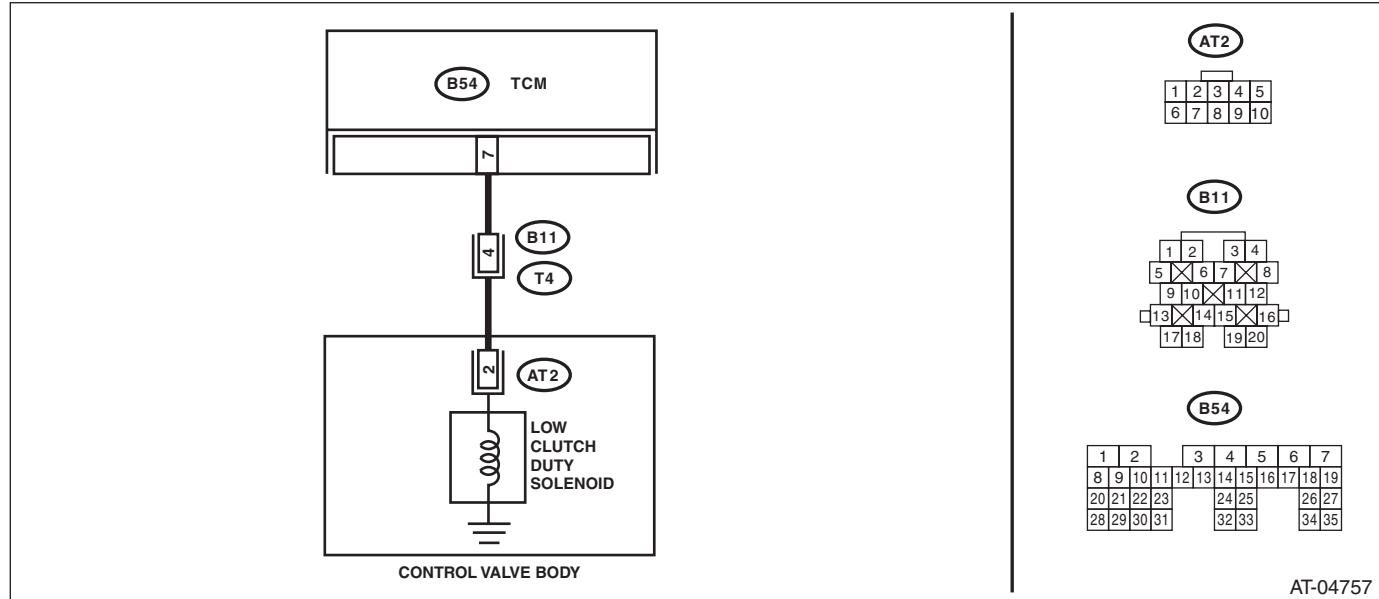
DTC DETECTING CONDITION:

Output signal circuit of low clutch duty solenoid is open or shorted.

TROUBLE SYMPTOM:

Excessive shift shock

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B54) No. 7 — (B11) No. 4:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2 CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. Measure the resistance of harness between TCM connector and transmission ground. Connector & terminal (B54) No. 7 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 3.	Repair the short circuit of harness between TCM and transmission connector.
3 CHECK LOW CLUTCH DUTY SOLENOID. Measure the resistance between transmission connector terminals. Connector & terminal (T4) No. 4 — No. 20:	Is the resistance 2.0 — 6.0 Ω?	Go to step 4.	Go to step 7.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK OUTPUT SIGNAL OF TCM. 1) Connect the connectors to TCM and transmission. 2) Connect the Subaru Select Monitor to data link connector. 3) Start the engine. 4) Run the Subaru Select Monitor. 5) Warm up the transmission until the ATF temperature exceeds approximately 80°C (176°F). 6) Stop the engine. 7) Turn the ignition switch to ON. 8) Shift the select lever to "P" or "N" range, and depress the accelerator pedal. 9) Read the data of "Low Clutch Duty" using Subaru Select Monitor.	Is the measured value 100%?	Go to step 5.	Go to step 6.
5 CHECK OUTPUT SIGNAL OF TCM. 1) Turn the ignition switch to ON. 2) Set the select lever to "D" range. 3) Read the data of "Low Clutch Duty" using Subaru Select Monitor.	Is the measured value 0%?	Check the harnesses or connectors between TCM and transmission, and repair the defective part.	Go to step 6.
6 CHECK FOR POOR CONTACT.	Is there poor contact of low clutch duty solenoid circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
7 CHECK LOW CLUTCH DUTY SOLENOID (IN TRANSMISSION). 1) Remove the transmission connector from bracket. 2) Drain the automatic transmission fluid. CAUTION: Do not drain ATF until it cools down. 3) Remove the oil pan. 4) Disconnect the connector from the control valve body. 5) Measure the resistance between low clutch duty solenoid connector and transmission ground. Connector & terminal (AT2) No. 2 — Transmission ground:	Is the resistance 2.0 — 6.0 Ω?	Go to step 8.	Replace the control valve body. <Ref. to 4AT-54, Control Valve Body.>
8 CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND LOW CLUTCH DUTY SOLENOID. Measure the resistance of harness between low clutch duty solenoid and transmission connector. Connector & terminal (T4) No. 4 — (AT2) No. 2:	Is the resistance less than 1 Ω?	Go to step 9.	Repair the open circuit of harness between low clutch duty solenoid and transmission connector.
9 CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND LOW CLUTCH DUTY SOLENOID. Measure the resistance of harness between transmission connector and transmission ground. Connector & terminal (T4) No. 4 — Transmission ground:	Is the resistance 1 MΩ or more?	Check the harnesses or connectors between low clutch duty solenoid and transmission, and repair the defective part.	Repair the short circuit of harness between low clutch duty solenoid and transmission connector.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Q: DTC P0758 SHIFT SOLENOID “B” ELECTRICAL

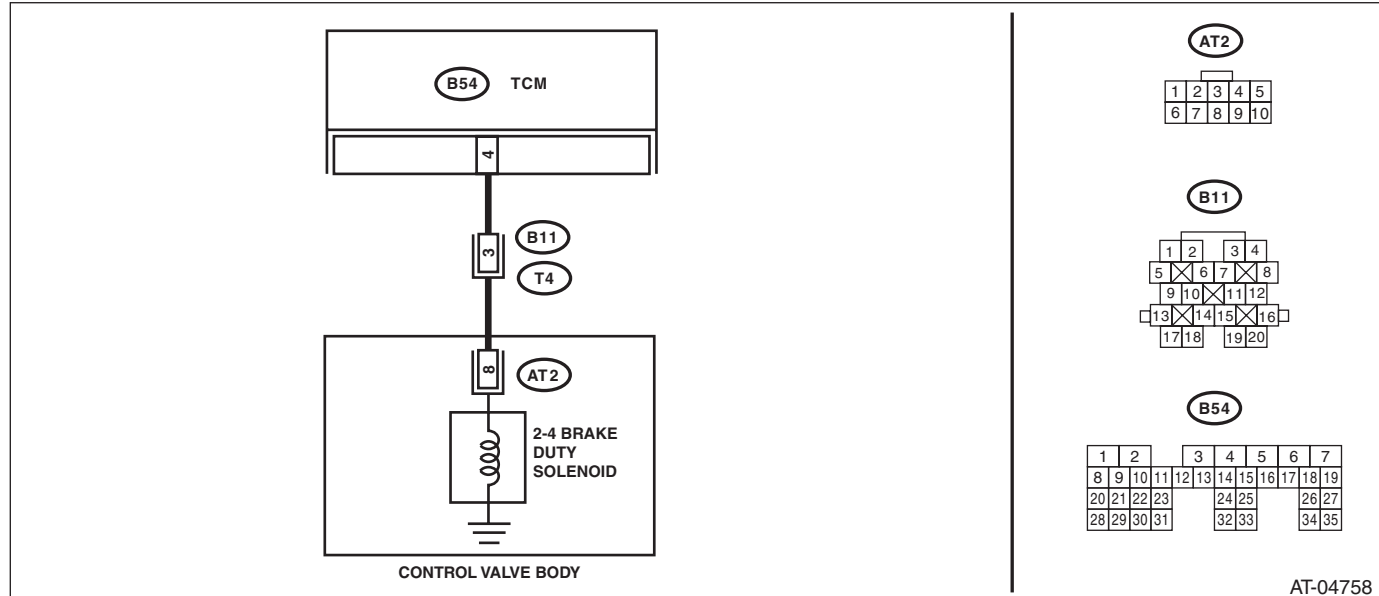
DTC DETECTING CONDITION:

Output signal circuit of 2-4 brake duty solenoid is open or shorted.

TROUBLE SYMPTOM:

Excessive shift shock

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B54) No. 4 — (B11) No. 3:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2 CHECK HARNESS CONNECTOR BETWEEN TCM AND CHASSIS GROUND. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B54) No. 4 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 3.	Repair the short circuit of harness between TCM and transmission connector.
3 CHECK 2-4 BRAKE DUTY SOLENOID. Measure the resistance between transmission connector terminals. Connector & terminal (T4) No. 3 — No. 20:	Is the resistance 2.0 — 6.0 Ω?	Go to step 4.	Go to step 7.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK OUTPUT SIGNAL OF TCM. 1) Connect all connectors. 2) Connect the Subaru Select Monitor to data link connector. 3) Start the engine. 4) Run the Subaru Select Monitor. 5) Warm up the transmission until the ATF temperature exceeds approximately 80°C (176°F). 6) Stop the engine. 7) Turn the ignition switch to ON. 8) Shift the select lever to "N", and depress the accelerator pedal. 9) Read the data of "Brake Clutch Duty Ratio" using Subaru Select Monitor.	Is the measured value 100%?	Go to step 5.	Go to step 6.
5 CHECK OUTPUT SIGNAL OF TCM. 1) Shift the select lever to "D" range. (2nd gear in manual mode). 2) Read the data of "Brake Clutch Duty Ratio" using Subaru Select Monitor.	Is the measured value 0%?	Check the harnesses or connectors between TCM and transmission, and repair the defective part.	Go to step 6.
6 CHECK FOR POOR CONTACT.	Is there poor contact of 2-4 brake duty solenoid circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
7 CHECK 2-4 BRAKE DUTY SOLENOID (IN TRANSMISSION). 1) Remove the transmission connector from bracket. 2) Drain the automatic transmission fluid. CAUTION: Do not drain ATF until it cools down. 3) Remove the oil pan. 4) Disconnect the connector from the control valve body. 5) Measure the resistance of harness between 2-4 brake duty solenoid connector and transmission ground. Connector & terminal (AT2) No. 8 — Transmission ground:	Is the resistance 2.0 — 6.0 Ω?	Go to step 8.	Replace the control valve body. <Ref. to 4AT-54, Control Valve Body.>
8 CHECK HARNESS CONNECTOR BETWEEN 2-4 BRAKE DUTY SOLENOID AND TRANSMISSION. Measure the resistance of harness between 2-4 brake duty solenoid and transmission connector. Connector & terminal (T4) No. 3 — (AT2) No. 8:	Is the resistance less than 1 Ω?	Go to step 9.	Repair the open circuit of harness between 2-4 brake duty solenoid and transmission connector.
9 CHECK HARNESS CONNECTOR BETWEEN 2-4 BRAKE DUTY SOLENOID AND TRANSMISSION. Measure the resistance of harness between transmission connector and transmission ground. Connector & terminal (T4) No. 3 — Transmission ground:	Is the resistance 1 MΩ or more?	Check the harnesses or connectors between 2-4 brake duty solenoid and transmission, and repair the defective part.	Repair the short circuit of harness between 2-4 brake duty solenoid and transmission connector.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

R: DTC P0763 SHIFT SOLENOID “C” ELECTRICAL

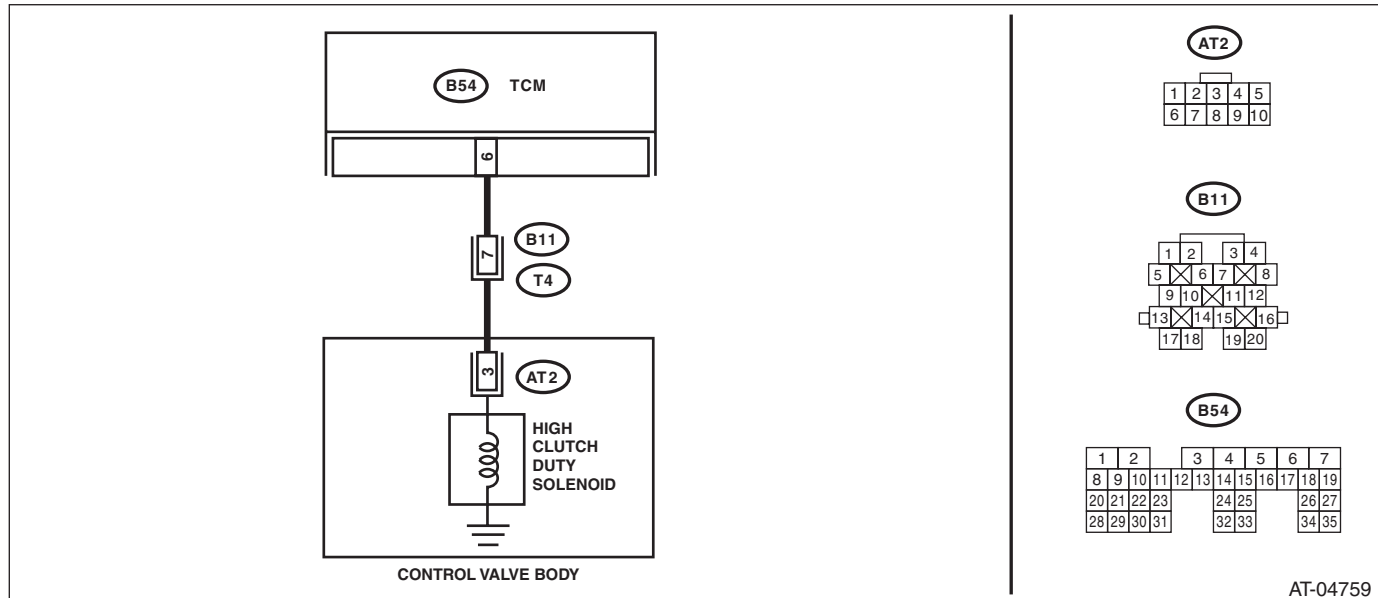
DTC DETECTING CONDITION:

Output signal circuit of high clutch duty solenoid is open or shorted.

TROUBLE SYMPTOM:

Excessive shift shock

WIRING DIAGRAM:



	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B54) No. 6 — (B11) No. 7:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2	CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. Measure the resistance of the harness connector between TCM connector and chassis ground. Connector & terminal (B54) No. 6 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 3.	Repair the short circuit of harness between TCM and transmission connector.
3	CHECK HIGH CLUTCH DUTY SOLENOID. Measure the resistance between transmission connector receptacle's terminals. Connector & terminal (T4) No. 7 — No. 20:	Is the resistance 2.0 — 6.0 Ω?	Go to step 4.	Go to step 7.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK OUTPUT SIGNAL OF TCM. 1) Connect the connectors to TCM and transmission. 2) Lift up the vehicle. 3) Connect the Subaru Select Monitor to data link connector. 4) Start the engine. 5) Run the Subaru Select Monitor. 6) Warm up the engine until the ATF temperature exceeds 80°C (176°F). 7) Shift the select lever to "D" range, and slowly increase vehicle speed to 3rd or 4th. 8) Read the data of "High Clutch Duty" using Subaru Select Monitor. NOTE: The speed difference between front and rear wheels lights the ABS warning light, but this does not indicate a malfunction. If the warning light is illuminated, clear the memory of ABS or VDC after completing AT control diagnosis. <Ref. to VDC(diag)-25, Clear Memory Mode.>	Is the measured value 0%?	Go to step 5.	Go to step 6.
5 CHECK OUTPUT SIGNAL OF TCM. 1) Return the engine speed to idle. 2) Set the select lever to "N" range. 3) Read the data of "High Clutch Duty" using Subaru Select Monitor. NOTE: The speed difference between front and rear wheels lights the ABS warning light or the VDC warning light, but this does not indicate a malfunction. If the warning light is illuminated, clear the memory of ABS or VDC after completing AT control diagnosis. <Ref. to VDC(diag)-25, Clear Memory Mode.>	Is the measured value 100%?	Check the harnesses or connectors between TCM and transmission, and repair the defective part.	Go to step 6.
6 CHECK FOR POOR CONTACT.	Is there poor contact of high clutch duty solenoid circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
7 CHECK HIGH CLUTCH DUTY SOLENOID (IN TRANSMISSION). 1) Remove the transmission connector from bracket. 2) Drain the automatic transmission fluid. CAUTION: Do not drain ATF until it cools down. 3) Remove the oil pan. 4) Disconnect the connector from the control valve body. 5) Measure the resistance between high clutch duty solenoid connector and transmission ground. Connector & terminal (AT2) No. 3 — Transmission ground:	Is the resistance 2.0 — 6.0 Ω?	Go to step 8.	Replace the control valve body. <Ref. to 4AT-54, Control Valve Body.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
8 CHECK HARNESS CONNECTOR BETWEEN HIGH CLUTCH DUTY SOLENOID AND TRANSMISSION. Measure the resistance of harness between high clutch duty solenoid and transmission connector. Connector & terminal (T4) No. 7 — (AT2) No. 3:	Is the resistance less than 1 Ω ?	Go to step 9.	Repair the open circuit of harness between TCM and transmission connector.
9 CHECK HARNESS CONNECTOR BETWEEN HIGH CLUTCH DUTY SOLENOID AND TRANSMISSION. Measure the resistance of harness between transmission connector and transmission ground. Connector & terminal (T4) No. 7 — Transmission ground:	Is the resistance 1 M Ω or more?	Check the harnesses or connectors between high clutch duty solenoid and transmission, and repair the defective part.	Repair the short circuit of harness between high clutch duty solenoid and transmission connector.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

S: DTC P0768 SHIFT SOLENOID “D” ELECTRICAL

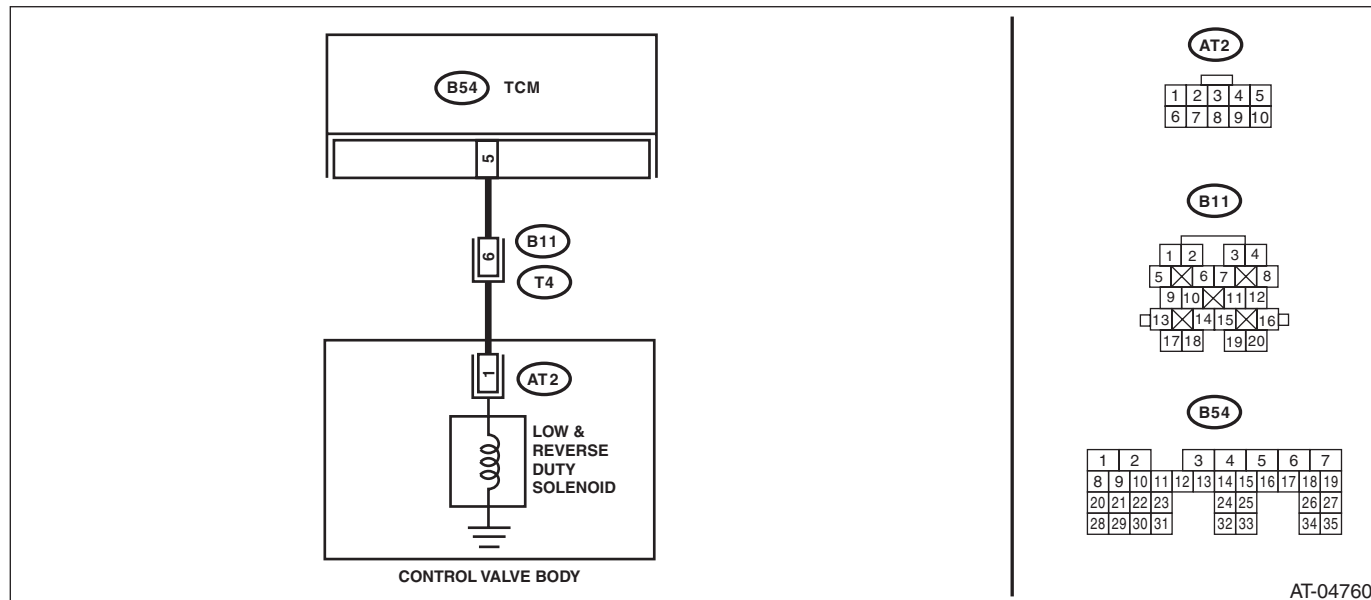
DTC DETECTING CONDITION:

The output signal circuit of low & reverse duty solenoid is open or shorted.

TROUBLE SYMPTOM:

Gear is not changed.

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B54) No. 5 — (B11) No. 6:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2 CHECK HARNESS CONNECTOR BETWEEN TCM AND CHASSIS GROUND. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B54) No. 5 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 3.	Repair the short circuit of harness between TCM and transmission connector.
3 CHECK LOW & REVERSE DUTY SOLENOID. Measure the resistance between transmission connector terminals. Connector & terminal (T4) No. 6 — No. 20:	Is the resistance 2.0 — 6.0 Ω?	Go to step 4.	Go to step 7.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK OUTPUT SIGNAL OF TCM. 1) Connect all connectors. 2) Connect the Subaru Select Monitor to data link connector. 3) Start the engine. 4) Run the Subaru Select Monitor. 5) Warm up the transmission until the ATF temperature exceeds approximately 80°C (176°F). 6) Stop the engine. 7) Turn the ignition switch to ON. 8) Set the select lever to "N" range. 9) Read the data of "L&R B Duty" using Subaru Select Monitor.	Is the measured value 100%?	Go to step 5.	Go to step 6.
5 CHECK OUTPUT SIGNAL FROM TCM USING SUBARU SELECT MONITOR. 1) Lift up the vehicle. 2) Set the select lever to manual mode, and then hold it in 1st gear. 3) Slowly increase the vehicle speed up to 15 km/h (9 MPH), and then return the accelerator pedal. 4) Read the data of "L&R B Duty" using Subaru Select Monitor. NOTE: The speed difference between front and rear wheels lights the ABS warning light or the VDC warning light, but this does not indicate a malfunction. If the warning light is illuminated, clear the memory of ABS or VDC after completing AT control diagnosis. <Ref. to VDC(diag)-25, Clear Memory Mode.>	Is the measured value 55%?	Check the harnesses or connectors between TCM and transmission, and repair the defective part.	Go to step 6.
6 CHECK FOR POOR CONTACT.	Is there poor contact of the low & reverse duty solenoid circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
7 CHECK LOW & REVERSE BRAKE DUTY SOLENOID (IN TRANSMISSION). 1) Remove the transmission connector from bracket. 2) Drain the automatic transmission fluid. CAUTION: Do not drain ATF until it cools down. 3) Remove the oil pan. 4) Disconnect the connector from the control valve body. 5) Measure the resistance between low & reverse duty solenoid connector and transmission ground. Connector & terminal (AT2) No. 1 — Transmission ground:	Is the resistance 2.0 — 6.0 Ω?	Go to step 8.	Replace the control valve body. <Ref. to 4AT-54, Control Valve Body.>
8 CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND LOW & REVERSE DUTY SOLENOID. Measure the resistance of harness between low & reverse duty solenoid and transmission connector. Connector & terminal (T4) No. 6 — (AT2) No. 1:	Is the resistance less than 1 Ω?	Go to step 9.	Repair open circuit of harness between low & reverse duty solenoid and transmission connector.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
9 CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND LOW & REVERSE DUTY SOLENOID. Measure the resistance of harness between transmission connector and transmission ground. Connector & terminal (T4) No. 6 — Transmission ground:	Is the resistance 1 M Ω or more?	Check the harnesses or connectors between low & reverse duty solenoid and transmission, and repair the defective part.	Repair the short circuit of the harness between the low & reverse duty solenoid and the transmission connector.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

T: DTC P0801 REVERSE INHIBIT CONTROL CIRCUIT

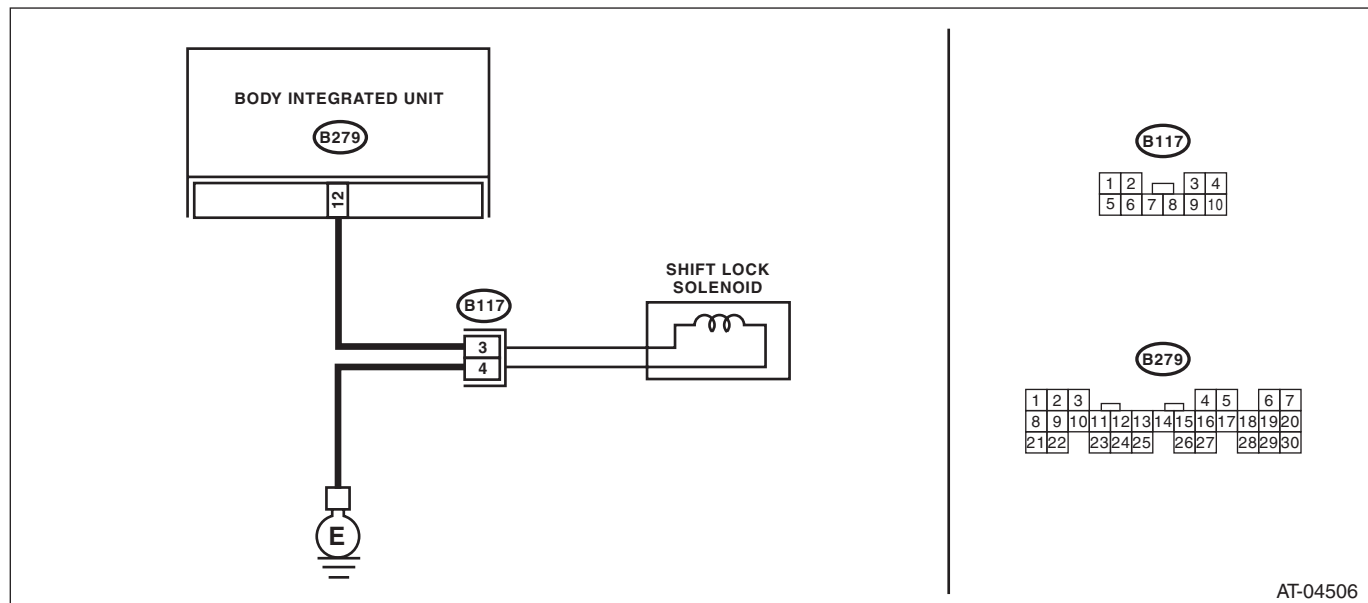
DTC DETECTING CONDITION:

Shift lock solenoid malfunction, open or short reverse inhibitor control circuit

TROUBLE SYMPTOM:

- Gear is shifted from “N” range to “R” range during driving at 20 km/h (12 MPH) or more.
- Gear cannot be shifted from “N” range to “R” range.

WIRING DIAGRAM:



Step	Check	Yes	No
1	CHECK SHIFT LOCK SOLENOID. 1) Forcibly activate the body integrated unit to check the operation of shift lock solenoid. <Ref. to LAN(diag)-15, OPERATION, Subaru Select Monitor.> 2) Move the select lever without depressing the brake pedal.	Does the select lever shift?	Go to step 2. Go to step 3.
2	CHECK OUTPUT SIGNAL OF BODY INTEGRATED UNIT. 1) Display the following items using Subaru Select Monitor. <Ref. to LAN(diag)-33, Read Current Data.> <ul style="list-style-type: none">• Key-lock warning SW• Shift position• P SW• Stop light switch 2) Set the select lever to the “P” range while stepping on the brake pedal.	Do the units of measure of items displayed change?	Go to step 3. Check the circuits of the items whose values do not change.
3	CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND SHIFT LOCK SOLENOID. Measure the harness resistance between the body integrated unit and chassis ground. Connector & terminal (B279) No. 12 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 4. Repair the short circuit of harness between body integrated unit and shift lock solenoid connector.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK HARNESS BETWEEN SHIFT LOCK SOLENOID AND CHASSIS GROUND TERMINAL. Measure the resistance of harness between shift lock solenoid and chassis ground. Connector & terminal (B117) No. 4 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 5.	Repair the open circuit of harness between chassis ground and shift lock solenoid connector.
5 CHECK SHIFT LOCK SOLENOID. Measure the resistance of shift lock solenoid terminals. Connector & terminal (B117) No. 3 — No. 4:	Is the resistance 7.0 — 21.0 Ω ?	Go to step 6.	Replace the shift lock solenoid.
6 CHECK OUTPUT SIGNAL OF BODY INTEGRATED UNIT. 1) Connect all connectors. 2) Turn the ignition switch to ON. 3) With the brake pedal depressed, shift the select lever to "D" range. 4) Measure the voltage between body integrated unit and chassis ground. Connector & terminal (B279) No. 12 (+) — Chassis ground (-):	Is the voltage 10.5 V or more?	Go to step 7.	Go to step 8.
7 CHECK OUTPUT SIGNAL OF BODY INTEGRATED UNIT. 1) Lift up the vehicle. 2) Start the engine. 3) Set the select lever to the "D" range and slowly increase vehicle speed to above 20 km/h (12 MPH). NOTE: The speed difference between front and rear wheels lights the ABS warning light or the VDC warning light, but this does not indicate a malfunction. If the warning light is illuminated, clear the memory of ABS or VDC after completing AT control diagnosis. <Ref. to VDC(diag)-25, Clear Memory Mode.> 4) Measure the voltage between body integrated unit and chassis ground. Connector & terminal (B279) No. 12 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Check the harnesses or connectors in reverse inhibitor control circuit, and repair the defective part.	Go to step 8.
8 CHECK FOR POOR CONTACT.	Is there poor contact of the reverse inhibitor control circuit?	Repair the poor contact.	Replace the body integrated unit. <Ref. to SL-47, Body Integrated Unit.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

U: DTC P1707 AT AWD SOLENOID VALVE CIRCUIT MALFUNCTION

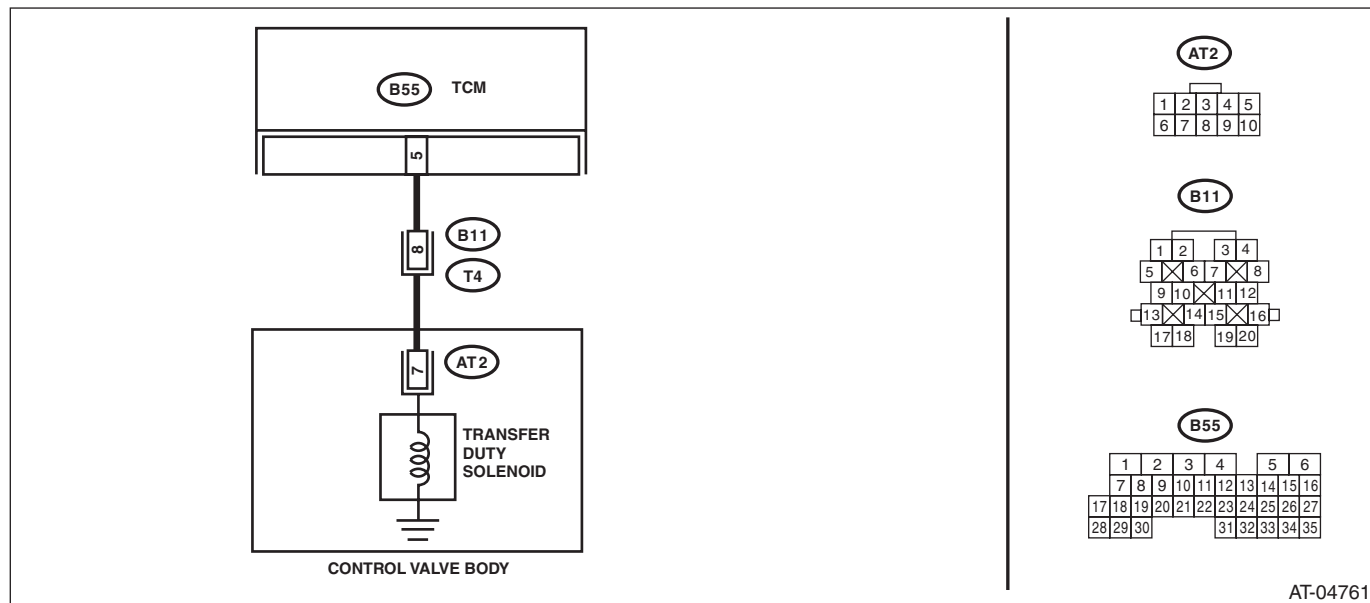
DTC DETECTING CONDITION:

Output signal circuit of transfer duty solenoid is open or shorted.

TROUBLE SYMPTOM:

- Tight corner braking phenomenon occurs.
- Front wheel slips on the slippery road.

WIRING DIAGRAM:



Step	Check	Yes	No
1 CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B55) No. 5 — (B11) No. 8:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2 CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. Measure the resistance of the harness connector between TCM connector and chassis ground. Connector & terminal (B55) No. 5 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 3.	Repair the short circuit of harness between TCM and transmission connector.
3 CHECK TRANSFER DUTY SOLENOID. Measure the resistance between transmission connector and transmission terminals. Connector & terminal (T4) No. 8 — No. 20:	Is the resistance 2.0 — 6.0 Ω?	Go to step 4.	Go to step 7.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
4 CHECK OUTPUT SIGNAL OF TCM. 1) Connect the connectors to TCM and transmission. 2) Connect the Subaru Select Monitor to data link connector. 3) Turn the ignition switch to ON. 4) Run the Subaru Select Monitor. 5) Shift the select lever to the "N" range, and fully close the throttle pedal. (Vehicle speed is 0 km/h (0 MPH)) 6) Read the data of "Transfer Duty Ratio" using Subaru Select Monitor.	Is the value approx. 5%?	Go to step 5.	Go to step 6.
5 CHECK OUTPUT SIGNAL OF TCM. 1) Set the select lever to "D" range. 2) Read the data of "Transfer Duty Ratio" using Subaru Select Monitor.	Is the measured value approx. 18 — 35%?	Check the harnesses or connectors between TCM and transmission, and repair the defective part.	Go to step 6.
6 CHECK FOR POOR CONTACT.	Is there poor contact of transfer duty solenoid circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
7 CHECK TRANSFER DUTY SOLENOID (IN TRANSMISSION). 1) Lift up the vehicle. 2) Drain the automatic transmission fluid. CAUTION: Do not drain ATF until it cools down. 3) Remove the oil pan. 4) Disconnect the connector from the control valve body. 5) Measure the resistance between transfer duty solenoid connector and transmission ground. Connector & terminal (AT2) No. 7 — Transmission ground:	Is the resistance 2.0 — 6.0 Ω ?	Go to step 8.	Replace the control valve body. <Ref. to 4AT-54, Control Valve Body.>
8 CHECK HARNESS CONNECTOR BETWEEN TRANSFER DUTY SOLENOID AND TRANSMISSION. Measure the resistance of harness between transfer duty solenoid and transmission connector. Connector & terminal (T4) No. 8 — (AT2) No. 7:	Is the resistance less than 1 Ω ?	Go to step 9.	Repair the open circuit of harness between transfer duty solenoid and transmission connector.
9 CHECK HARNESS CONNECTOR BETWEEN TRANSFER DUTY SOLENOID AND TRANSMISSION. Measure the resistance of harness between transmission connector and transmission ground. Connector & terminal (T4) No. 8 — Transmission ground:	Is the resistance 1 M Ω or more?	Check the harnesses or connectors between transfer solenoid and transmission, and repair the defective part.	Repair short circuit of the harness between the transfer duty solenoid and transmission connector.

V: DTC P1718 AT CAN COMMUNICATION CIRCUIT

NOTE:

Refer to "Body Integrated Unit" for diagnosis of P1718. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

W: DTC P1817 SPORTS MODE SWITCH CIRCUIT (MANUAL SWITCH)

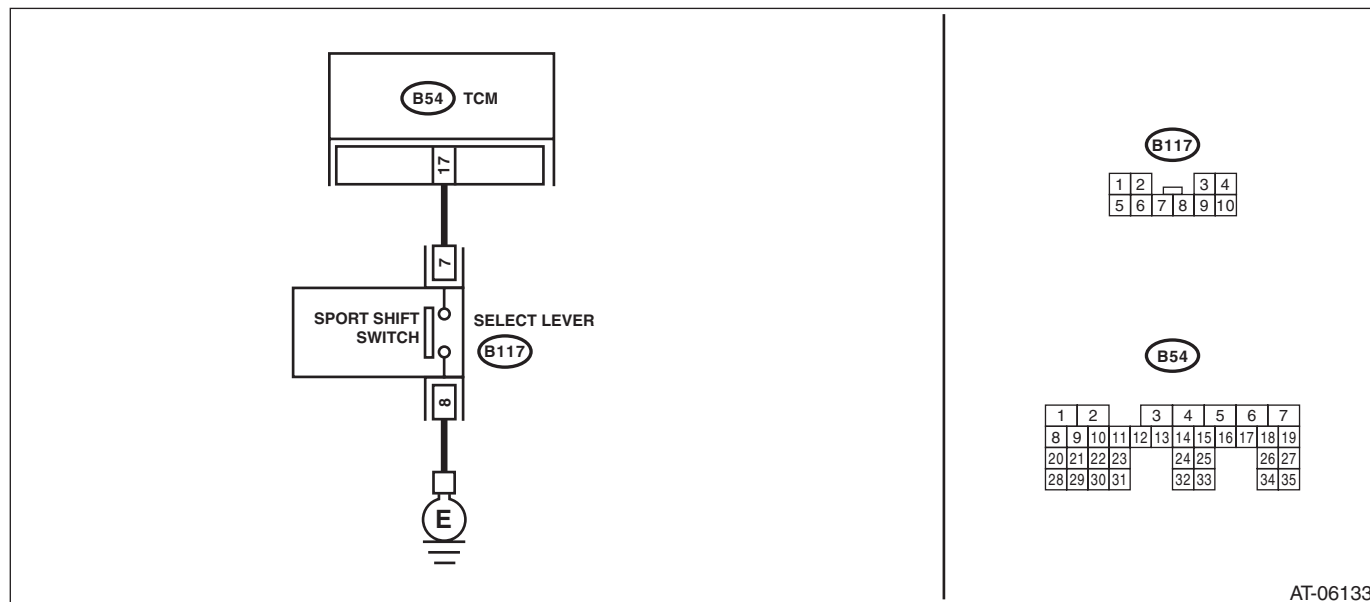
DTC DETECTING CONDITION:

Input signal circuit of SPORT shift switch is shorted.

TROUBLE SYMPTOM:

- Manual mode can not be set.
- The AT OIL TEMP light does not illuminate.
- No SPORT mode occurs.

WIRING DIAGRAM:



AT-06133

Step	Check	Yes	No
1 CHECK SPORT SHIFT SWITCH GROUND CIRCUIT. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from the SPORT shift switch. 3) Measure the resistance of harness between SPORT shift switch connector and chassis ground. Connector & terminal (B117) No. 8 — Chassis ground:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness between the SPORT shift switch and chassis ground.
2 CHECK SPORT SHIFT SWITCH. Measure the resistance between SPORT shift switch terminals. Connector & terminal (B117) No. 7 — No. 8:	Is the resistance 1 MΩ or more?	Go to step 3.	Replace the select lever assembly. <Ref. to CS-20, Select Lever.>
3 CHECK SPORT SHIFT SWITCH. 1) Shift the select lever to SPORT mode. 2) Measure the resistance between SPORT shift switch terminals. Connector & terminal (B117) No. 7 — No. 8:	Is the resistance less than 1 Ω?	Go to step 4.	Replace the select lever assembly. <Ref. to CS-20, Select Lever.>
4 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. Connector & terminal (B117) No. 7 — (B54) No. 17:	Is the resistance less than 1 Ω?	Go to step 5.	Repair the open circuit of the harness between the SPORT shift switch connector and TCM connector.

Diagnostic Procedure with Diagnostic Trouble Code (DTC)

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
5 CHECK HARNESS CONNECTOR BETWEEN TCM AND SPORT SHIFT SWITCH. 1) Disconnect the connector from TCM. 2) Measure the resistance of harness between SPORT shift switch connector and chassis ground. Connector & terminal (B117) No. 7 — Chassis ground:	Is the resistance 1 M Ω or more?	Go to step 6.	Repair the short circuit of harness between SPORT shift switch connector and TCM connector.
6 CHECK INPUT SIGNAL FOR TCM. 1) Connect the connector to TCM and SPORT shift switch. 2) Turn the ignition switch to ON. 3) Shift the select lever to normal mode. 4) Measure the voltage of signal to TCM. Connector & terminal (B54) No. 17 (+) — Chassis ground (–):	Is the voltage 10 V or more?	Go to step 7.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>
7 CHECK FOR POOR CONTACT.	Is there poor contact of the SPORT shift switch circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 4AT-58, Transmission Control Module (TCM).>