14.Diagnostic Procedure with Diagnostic Trouble Code (DTC)

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

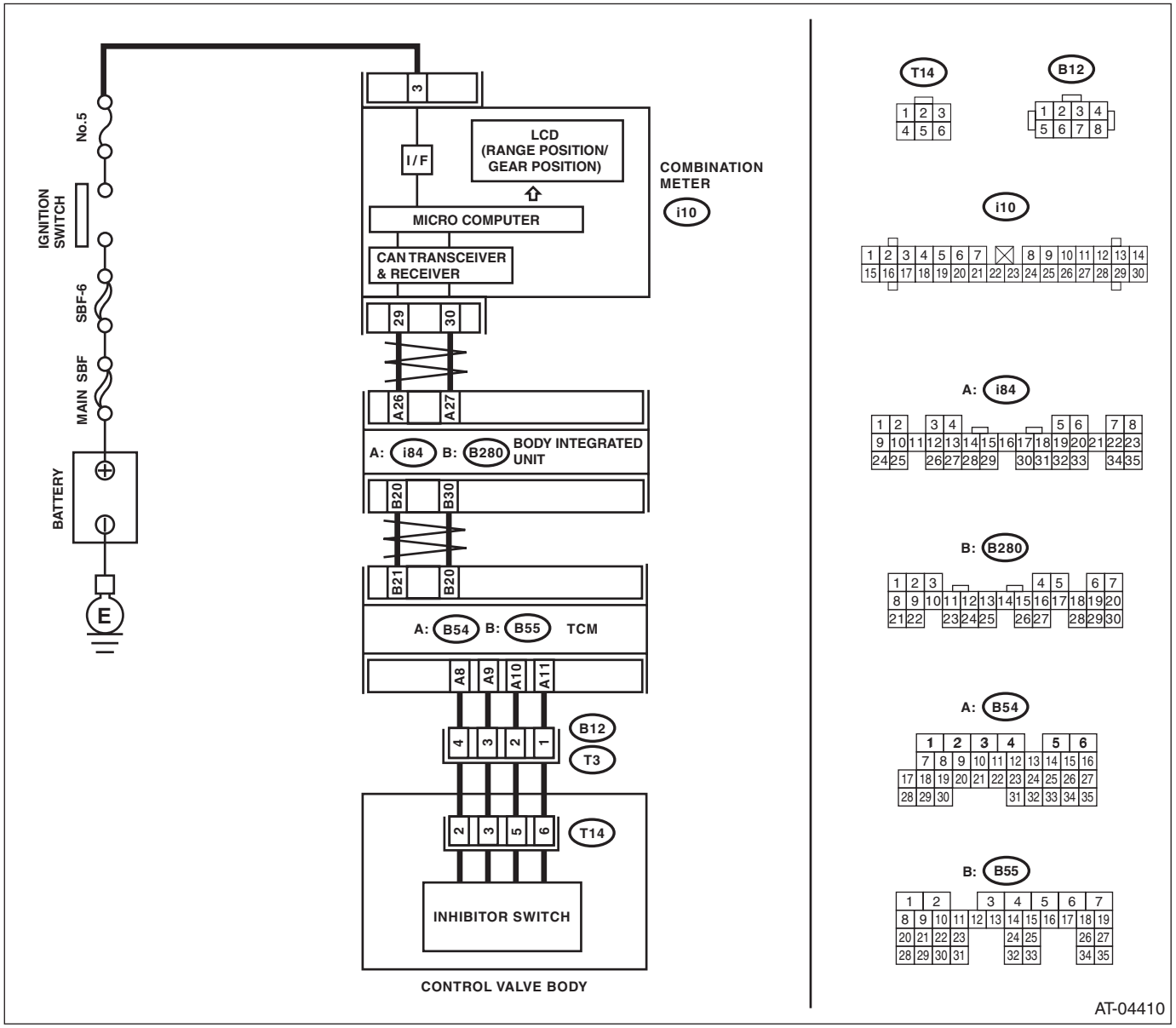
DTC DETECTING CONDITION:

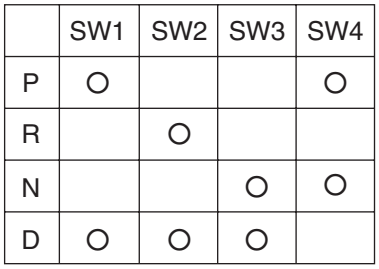
The inhibitor switch is open or short.

TROUBLE SYMPTOM:

- Shift characteristics are erroneous.
- Shift indicator light does not match with select lever.
- Shift indicator light does not illuminate.
- N-D, N-R shock occur.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK DTC OF TCM.**	Is DTC of AT CAN communication circuit displayed?	Perform diagnosis according to the DTC.	Go to step **2**.
2	**CHECK INHIBITOR SWITCH.** Read the data of “inhibitor SW 1 to 4” using Subaru Select Monitor.  ○=High AT-05083	Does the display match the chart shown in step 2?	Go to step **9**.	Go to step **3**.
3	**CHECK INHIBITOR SWITCH.** Read the data of “inhibitor SW 1” of “P” and “D” using Subaru Select Monitor.	Are the “P” and “D” displayed “High”?	Go to step **4**.	Go to step **7**.
4	**CHECK INHIBITOR SWITCH.** Read the data of “inhibitor SW 2” of “R” and “D” using Subaru Select Monitor.	Are the “R” and “D” displayed “High”?	Go to step **5**.	Go to step **7**.
5	**CHECK INHIBITOR SWITCH.** Read the data of “inhibitor SW 3” of “N” and “D” using Subaru Select Monitor.	Are the “N” and “D” displayed “High”?	Go to step **6**.	Go to step **7**.
6	**CHECK INHIBITOR SWITCH.** Read the data of “inhibitor SW 4” of “P” and “N” using Subaru Select Monitor.	Are the “P” and “N” displayed “High”?	Go to step **8**.	Go to step **7**.
7	**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 the harness between TCM connector and transmission connector. ***Connector & terminal*** ***(B54) No. 8 — (B12) No. 4:*** ***(B54) No. 9 — (B12) No. 3:*** ***(B54) No. 10 — (B12) No. 2:*** ***(B54) No. 11 — (B12) No. 1:***	Is the resistance less than 1 Ω?	Go to step **8**.	Repair the open circuit of harness between TCM connector and transmission connector.
8	**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 between TCM connector and chassis ground. ***Connector & terminal*** ***(B54) No. 8 — Chassis ground:*** ***(B54) No. 9 — Chassis ground:*** ***(B54) No. 10 — Chassis ground:*** ***(B54) No. 11 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **9**.	Repair the short circuit of harness between TCM connector and chassis ground.

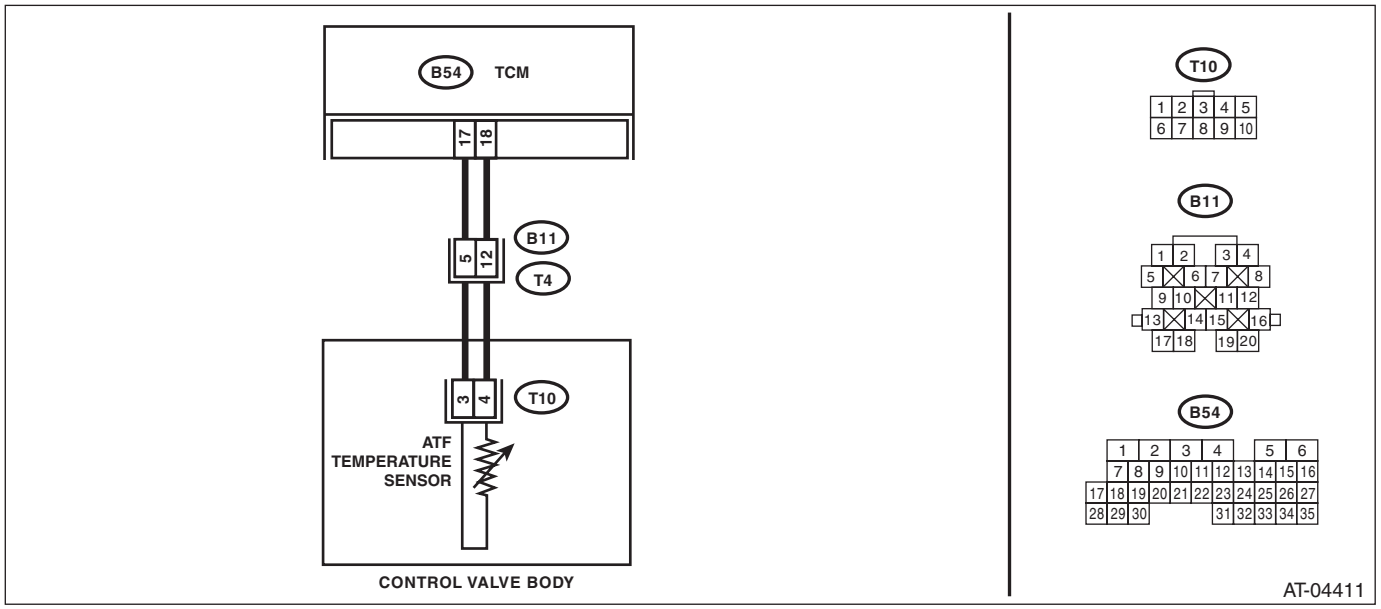
	SW1	SW2	SW3	SW4
P	○			○
R		○		
N			○	○
D	○	○	○	

	Step	Check	Yes	No
9	**CHECK INPUT SIGNAL FOR TCM.** 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector (B12). 3) Connect TCM connector. 4) Turn the ignition switch to ON. 5) Measure the voltage between TCM terminals. ***Connector & terminal*** ***(B54) No. 8 (+) — (B55) No. 23 (–):*** ***(B54) No. 9 (+) — (B55) No. 23 (–):*** ***(B54) No. 10 (+) — (B55) No. 23 (–):*** ***(B54) No. 11 (+) — (B55) No. 23 (–):***	Is the voltage of "inhibitor SW 1 to 4" 8 V or more?	Go to step **11**.	Go to step **10**.
10	**CHECK TCM I/O SIGNAL.** Check the I/O signals of power supply and ground. <Ref. to 5AT(diag)-12, ELECTRICAL SPECIFICATION, Transmission Control Module (TCM) I/O Signal.>	Is TCM I/O signal normal?	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>	For the power supply or ground, repair the open or short circuit.
11	**CHECK INPUT SIGNAL FOR TCM.** 1) Connect all connectors. 2) Lift up the vehicle. 3) Start the engine. 4) Read the data of "Front Wheel Speed" and "AT Turbine Speed 2" using Subaru Select Monitor. <Ref. to 5AT(diag)-16, READ CURRENT DATA, OPERATION, Subaru Select Monitor.> NOTE: The speed difference between the front and rear wheels will illuminate the ABS warning light or VDC warning light, but this does not indicate a malfunction. If the warning light illuminates, delete the ABS or VDC memory after completing the AT control diagnosis. <Ref. to VDC(diag)-31, Clear Memory Mode.>	Does the speedometer indication rise in response to the increasing value of "Front Wheel Speed" and "AT Turbine Speed 2"?	Go to step **12**.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>
12	**CHECK INPUT SIGNAL FOR TCM.** 1) Set the vehicle in run condition at 4th speed in manual mode. NOTE: The signal of turbine speed sensor 1 can be measured only in 4th speed. 2) Read the data of "Rear Wheel Speed" and "AT Turbine Speed 1" using Subaru Select Monitor. <Ref. to 5AT(diag)-16, READ CURRENT DATA, OPERATION, Subaru Select Monitor.> NOTE: The speed difference between the front and rear wheels will illuminate the ABS warning light or VDC warning light, but this does not indicate a malfunction. If the warning light illuminates, delete the ABS or VDC memory after completing the AT control diagnosis. <Ref. to VDC(diag)-31, Clear Memory Mode.>	Does the speedometer indication rise in response to the increasing value of "Rear Wheel Speed" and "AT Turbine Speed 1"?	Go to step **13**.	Repair the open circuit in harness or the poor contact of connector between TCM and rear vehicle speed sensor and turbine speed sensor 1.

	Step	Check	Yes	No
13	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan. 7) Disconnect the control valve body connector. 8) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T3) No. 4 — (T14) No. 2:*** ***(T3) No. 3 — (T14) No. 3:*** ***(T3) No. 2 — (T14) No. 5:*** ***(T3) No. 1 — (T14) No. 6:***	Is the resistance less than 1 Ω?	Go to step **14**.	Repair the open circuit between control valve body connector and transmission connector.
14	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** Measure the resistance between control valve body connector and transmission ground. ***Connector & terminal*** ***(T14) No. 2 — Transmission ground:*** ***(T14) No. 3 — Transmission ground:*** ***(T14) No. 5 — Transmission ground:*** ***(T14) No. 6 — Transmission ground:***	Is the resistance 1 MΩ or more?	Go to step **15**.	Repair the short circuit between control valve body connector and transmission connector.
15	**CHECK FOR POOR CONTACT.**	Is there poor contact in “inhibitor SW 1 to 4” monitor circuit?	Repair the poor contact.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>

B: DTC P0712 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT LOW INPUT

DTC DETECTING CONDITION:
Input signal circuit to ATF temperature sensor is open.
TROUBLE SYMPTOM:
Excessive shift shock
WIRING DIAGRAM:

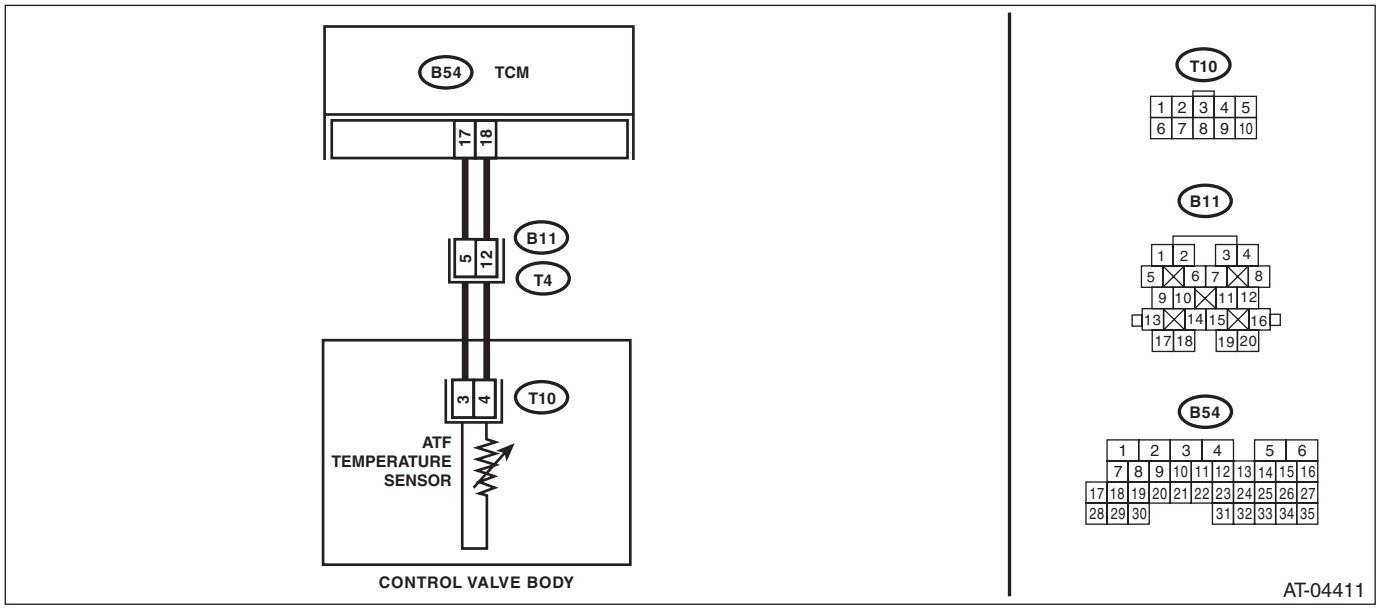


	Step	Check	Yes	No
1	**CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM and transmission connector. ***Connector & terminal*** ***(B54) No. 17 — (B11) No. 5:*** ***(B54) No. 18 — (B11) No. 12:***	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 transmission and TCM. 3) Turn the ignition switch to ON and start engine. 4) Warm-up the transmission until the ATF temperature exceeds 80°C (176°F). NOTE: If the ambient temperature is below 0°C (32°F), drive the vehicle until the ATF reaches its operating temperature. 5) Disconnect the connector from transmission. 6) Measure the resistance between transmission connector terminals. ***Connector & terminal*** ***(T4) No. 5 — (T4) No. 12:***	Is the resistance between 300 — 800 Ω?	Go to step **3**.	Go to step **5**.

	Step	Check	Yes	No
3	**CHECK ATF TEMPERATURE SENSOR.** Measure the resistance between transmission connector terminals. ***Connector & terminal*** ***(T4) No. 5 — (T4) No. 12:***	Does the resistance value increase while the ATF temperature decreases?	Go to step **4**.	Go to step **5**.
4	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Connect the connector. 2) Turn the ignition switch to ON. (engine OFF) 3) Read the data of "ATF oil temperature" using Subaru Select Monitor.	Does the ATF temperature gradually decrease?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the poor contact of harness between ATF temperature sensor and transmission connector.	Go to step **6**.
5	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the connector from control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 12 — (T10) No. 4:*** ***(T4) No. 5 — (T10) No. 3:***	Is the resistance less than 1 Ω?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Repair the open circuit of harness between transmission connector and control valve body connector.
6	**CHECK POOR CONTACT.**	Is there poor contact in ATF temperature sensor circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>

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 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 chassis ground. ***Connector & terminal*** ***(B54) No. 17 — Chassis ground:*** ***(B54) No. 18 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **2**.	Repair the short 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 transmission and TCM. 3) Turn the ignition switch to ON and start engine. 4) Warm-up the transmission until the ATF temperature exceeds 80°C (176°F). NOTE: If the ambient temperature is below 0°C (32°F), drive the vehicle until the ATF reaches its operating temperature. 5) Disconnect the connector from transmission. 6) Measure the resistance between transmission connector terminals. ***Connector & terminal*** ***(T4) No. 5 — (T4) No. 12:***	Is the resistance between 300 — 800 Ω?	Go to step **3**.	Go to step **5**.

	Step	Check	Yes	No
3	**CHECK ATF TEMPERATURE SENSOR.** Measure the resistance between transmission connector terminals. ***Connector & terminal*** ***(T4) No. 5 — (T4) No. 12:***	Does the resistance value increase while the ATF temperature decreases?	Go to step **4**.	Go to step **5**.
4	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Connect the connector. 2) Turn the ignition switch to ON. (engine OFF) 3) Read the data of "ATF oil temperature" using Subaru Select Monitor.	Does the ATF temperature gradually decrease?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the poor contact of harness between ATF temperature sensor and transmission connector.	Go to step **6**.
5	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the connector from control valve body connector. 7) Measure the resistance between chassis ground and control valve body connector. ***Connector & terminal*** ***(T10) No. 3 — Chassis ground:*** ***(T10) No. 4 — Chassis ground:***	Is the resistance more than 1 MΩ?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Repair the short circuit of harness between transmission connector and control valve body connector.
6	**CHECK POOR CONTACT.**	Is there poor contact in ATF temperature sensor circuit?	Repair the poor contact.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>

D: DTC P0715 INPUT/TURBINE SPEED SENSOR CIRCUIT

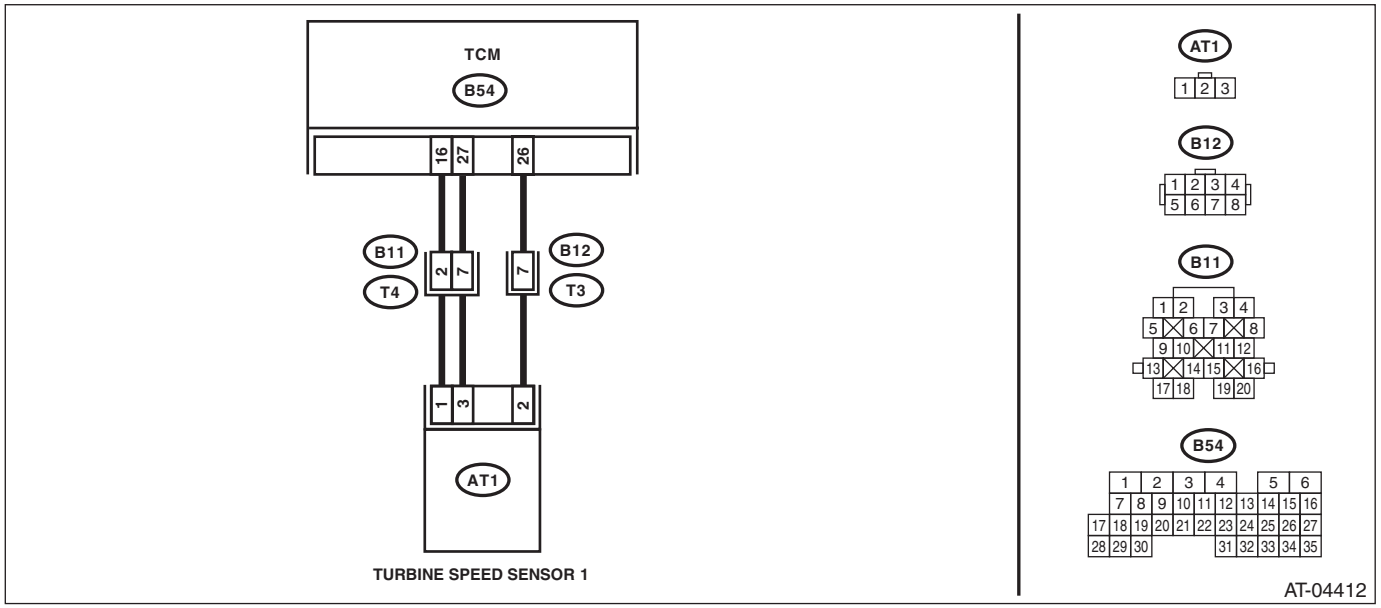
DTC DETECTING CONDITION:

Input signal circuit of TCM is open or shorted.

TROUBLE SYMPTOM:

- Excessive shift shock
- Does not shift to 5th

WIRING DIAGRAM:

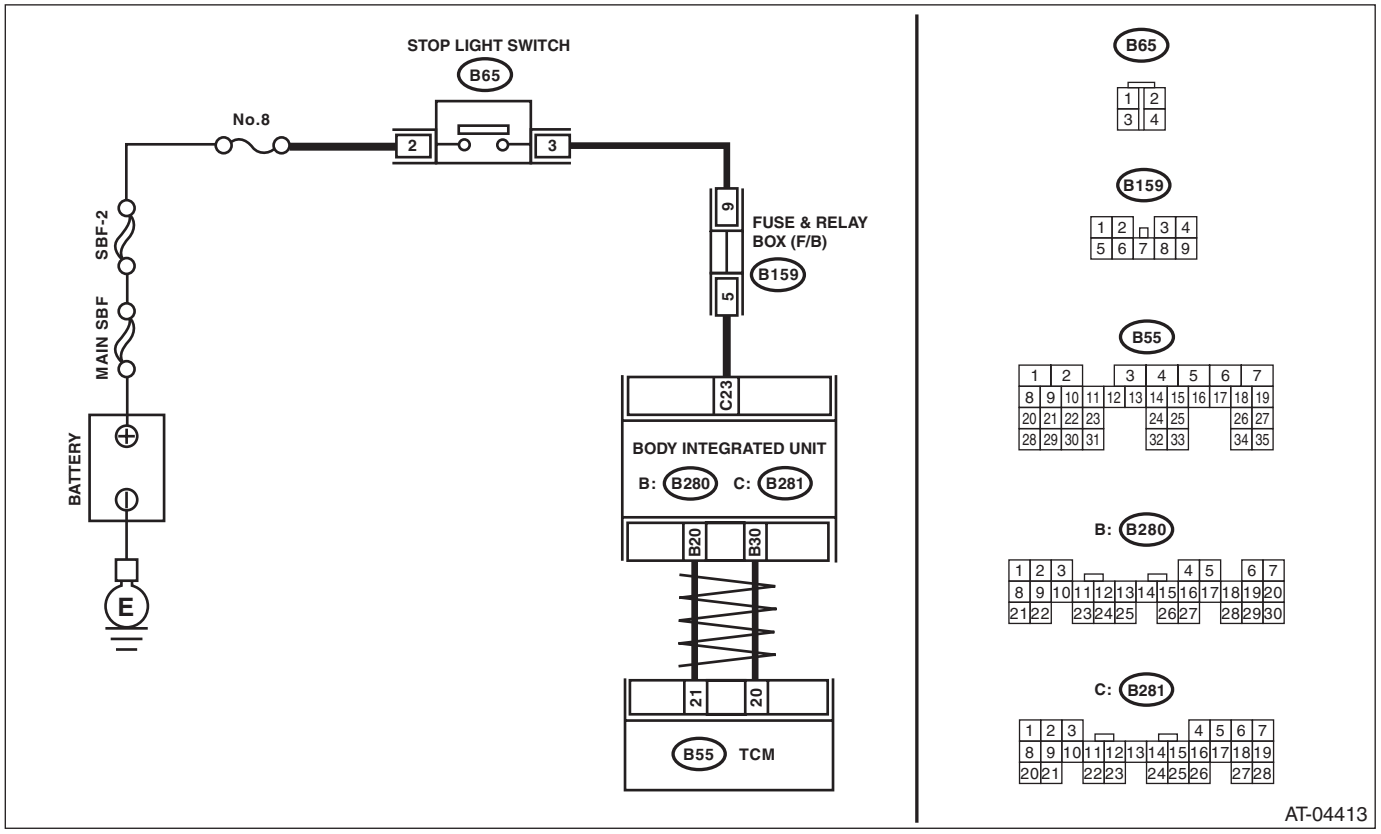


	Step	Check	Yes	No
1	**CHECK TCM I/O SIGNAL.** Check the power supply and ground I/O signals. <Ref. to 5AT(diag)-12, ELECTRICAL SPECIFICATION, Transmission Control Module (TCM) I/O Signal.>	Is TCM I/O signal OK?	Go to step **2**.	Repair the open or short circuit for power supply and ground.
2	**CHECK TCM AND TRANSMISSION HARNESS CONNECTOR.** 1) Disconnect the connectors from TCM and transmission. 2) Measure the resistance of harness between TCM connector and transmission connector. ***Connector & terminal*** ***(B54) No. 16 — (B11) No. 2:*** ***(B54) No. 26 — (B12) No. 7:*** ***(B54) No. 27 — (B11) No. 7:***	Is resistance less than 1 Ω?	Go to step **3**.	Repair the open circuit of harness between TCM and transmission connector.
3	**CHECK TCM AND TRANSMISSION HARNESS CONNECTOR.** Measure the resistance of harness between TCM connector and chassis ground. ***Connector & terminal*** ***(B54) No. 16 — Chassis ground:*** ***(B54) No. 26 — Chassis ground:*** ***(B54) No. 27 — 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 TCM POWER SUPPLY OUTPUT.** 1) Connect the connector to the TCM. (Transmission connector is disconnected) 2) Turn the ignition switch to ON. (Engine OFF) 3) Measure the voltage between transmission connector and chassis ground. ***Connector & terminal*** ***(B11) No. 7 (+) — Chassis ground (–):***	Is the voltage 10 — 13 V?	Go to step **5**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
5	**CHECK INPUT CIRCUIT OF TCM TURBINE SPEED SENSOR.** Measure the voltage between TCM connector terminals. ***Connector & terminal*** ***(B12) No. 7 (+) — (B11) No. 2 (–):***	Is the voltage 4 — 6 V?	Go to step **6**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
6	**CHECK HARNESS ASSEMBLY (TURBINE SPEED SENSOR GROUND).** Check the installing condition of ground connecting harness of harness assembly (used for both of turbine speed sensor 1, rear vehicle speed sensor).	Is the ground connecting harness installed securely to the transmission body? Is there any serious damage in the harness and terminal?	Go to step **7**.	When poor installation of ground occurs, install it securely. Replace the transmission assembly if the harness or terminal is damaged. <Ref. to 5AT-40, Automatic Transmission Assembly.>

	Step	Check	Yes	No
7	**CHECK HARNESS ASSEMBLY.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from transmission. 3) Disconnect the connector from turbine speed sensor 1. 4) Measure the resistance between transmission connector and turbine speed sensor 1 connector. ***Connector & terminal*** ***(T3) No. 7 — (AT1) No. 2:*** ***(T4) No. 7 — (AT1) No. 3:*** ***(T4) No. 2 — (AT1) No. 1:*** ***(AT1) No. 1 — Chassis ground:***	Is the resistance less than 1 Ω?	Go to step **8**.	Repair the open circuit of harness between TCM and transmission connector, or poor contact of connector.
8	**CHECK HARNESS ASSEMBLY.** Measure the resistance between transmission connector and chassis ground. ***Connector & terminal*** ***(T3) No. 7 — Chassis ground:*** ***(T4) No. 7 — Chassis ground:*** ***(T4) No. 2 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **9**.	Repair the short circuit of harness between TCM and transmission connector.
9	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Connect all connectors. 2) Lift up the vehicle. 3) Start the engine, and set the vehicle in 4th speed driving condition of manual mode. NOTE: Turbine speed sensor 1 signal can be measured only on 4th speed. 4) Read the data of “turbine speed 1” using Subaru Select Monitor. <Ref. to 5AT(diag)-16, READ CURRENT DATA, OPERATION, Subaru Select Monitor.> NOTE: The speed difference between front and rear wheels may light the ABS warning light, but this indicates no malfunction. When AT control diagnosis is finished, perform the VDC memory clear procedure of on-board diagnostics system. <Ref. to VDC(diag)-31, Clear Memory Mode.>	Does the value of the turbine speed sensor 1 change depending on the acceleration, deceleration and shifting range of the vehicle?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the poor contact of harness between ATF temperature sensor and transmission connector.	Replace the turbine speed sensor 1. <Ref. to 5AT-56, Turbine Speed Sensor 1.>

E: DTC P0719 BRAKE SWITCH CIRCUIT LOW

DTC DETECTING CONDITION:
Brake switch malfunction, open input signal circuit
TROUBLE SYMPTOM:
Brake down control is not operated at SPORT mode.
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK DTC.**	Is any of following DTC displayed? / AT CAN Communication Circuit / Output Speed Sensor Circuit / AT Vehicle Speed Sensor Circuit Malfunction (Rear Wheel)	Perform the diagnosis according to DTC.	Go to step **2**.
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. (engine OFF) 4) Turn the Subaru Select Monitor switch to ON. 5) Depress the brake pedal. 6) Read the data of “Stop Light Switch” using Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is ON 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 5AT(diag)-16, OPERATION, Subaru Select Monitor.>	Is ON displayed?	A temporary poor contact of connector or harness may be the cause. Check the poor contact.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
4	**CHECK BODY INTEGRATED UNIT INPUT SIGNAL.** 1) Disconnect the connector from body integrated unit. 2) Depress the brake pedal. 3) Measure the voltage between body integrated unit connector and chassis ground. ***Connector & terminal*** ***(B281) No. 23 (+) — Chassis ground (–):***	Is the voltage 10 V or more?	Go to step **7**.	Go to step **5**.
5	**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*** ***(B281) No. 23 — (B65) No. 3:***	Is the resistance less than 1 Ω?	Go to step **6**.	Repair the open circuit of harness between body integrated unit and stop light switch.
6	**CHECK HARNESS CONNECTOR BETWEEN BODY INTEGRATED UNIT AND STOP LIGHT SWITCH.** Measure the resistance of harness between body integrated unit connector and stop light switch. ***Connector & terminal*** ***(B281) No. 23 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **7**.	Repair the short circuit of harness between body integrated unit and stop light switch.
7	**CHECK POOR CONTACT.**	Is there poor contact in input signal of brake switch?	Repair the poor contact.	Check the body integrated unit.

F: DTC P0720 OUTPUT SPEED SENSOR CIRCUIT

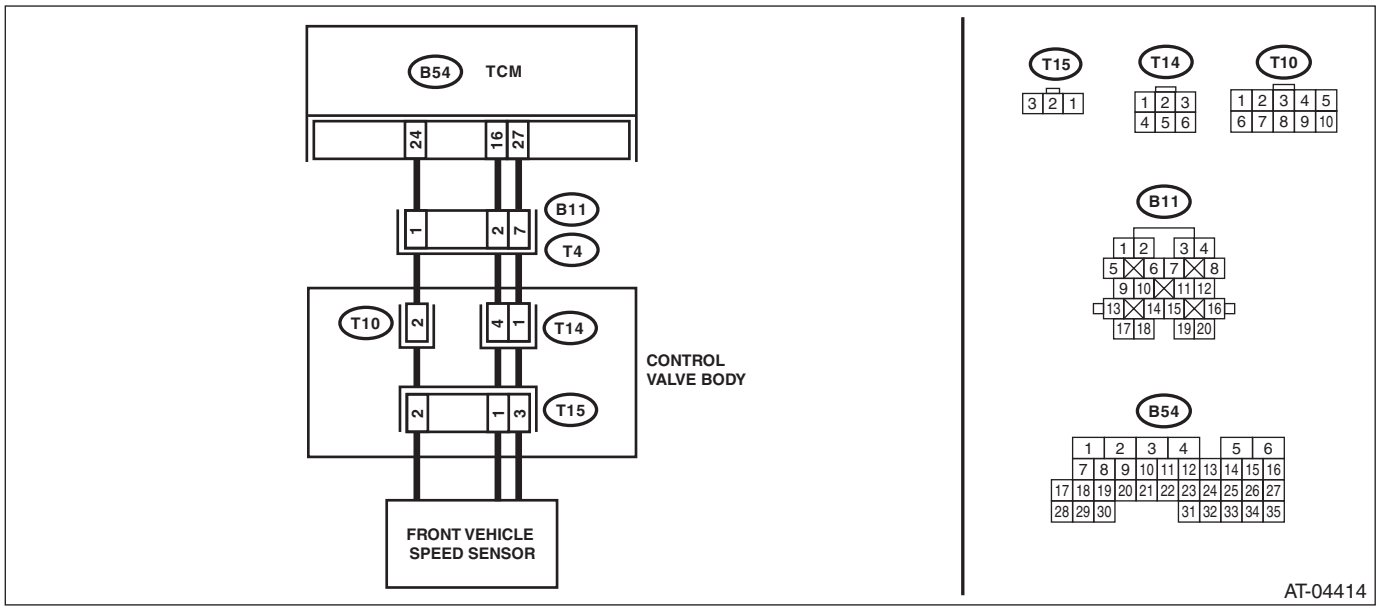
DTC DETECTING CONDITION:

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

TROUBLE SYMPTOM:

- Shifting quality malfunction
- Driving performance is poor.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK TCM I/O SIGNAL.** Check the power supply and ground I/O signals. <Ref. to 5AT(diag)-12, ELECTRICAL SPECIFICATION, Transmission Control Module (TCM) I/O Signal.>	Is TCM I/O signal OK?	Go to step **2**.	Repair the open or short circuit for power supply and ground.
2	**CHECK TCM AND TRANSMISSION HARNESS CONNECTOR.** 1) Disconnect the connectors from TCM and transmission. 2) Measure the resistance of harness between TCM connector and transmission connector. ***Connector & terminal*** ***(B54) No. 24 — (B11) No. 1:*** ***(B54) No. 16 — (B11) No. 2:*** ***(B54) No. 27 — (B11) No. 7:***	Is resistance less than 1 Ω?	Go to step **3**.	Repair the open circuit of harness between TCM and transmission connector.
3	**CHECK TCM AND TRANSMISSION HARNESS CONNECTOR.** Measure the resistance of harness between TCM connector and chassis ground. ***Connector & terminal*** ***(B54) No. 24 — 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 TCM POWER SUPPLY OUTPUT.** 1) Connect the connector to the TCM. (Transmission connector is disconnected) 2) Turn the ignition switch to ON. (Engine OFF) 3) Measure the voltage between transmission connector and chassis ground. ***Connector & terminal*** ***(B11) No. 7 (+) — Chassis ground (–):***	Is the voltage 10 — 13 V?	Go to step **5**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
5	**CHECK INPUT CIRCUIT OF TCM TURBINE SPEED SENSOR.** Measure the voltage variation between TCM connector terminals. ***Connector & terminal*** ***(B11) No. 1 (+) — (B11) No. 2 (–):***	Is the voltage 4 — 6 V?	Go to step **6**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
6	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Connect all the connectors. 2) Lift up the vehicle. 3) Start the engine, and drive it. 4) Read the data of “front wheel speed” using Subaru Select Monitor. <Ref. to 5AT(diag)-16, READ CURRENT DATA, OPERATION, Subaru Select Monitor.> NOTE: The speed difference between front and rear wheels may illuminate the ABS warning light, but this does not indicate a malfunction. When AT control diagnosis is finished, perform the ABS memory clearance procedure of on-board diagnostics system. <Ref. to VDC(diag)-22, CLEAR MEMORY MODE, OPERATION, Subaru Select Monitor.>	Does the value of the front wheel speed change depending on the acceleration and deceleration of the vehicle?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the poor contact of harness between ATF temperature sensor and transmission connector.	Go to step **7**.

	Step	Check	Yes	No
7	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the connector from control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 1 — (T10) No. 2:***	Is the resistance less than 1 Ω?	Go to step **8**.	Repair the open circuit of harness between control valve body connector and transmission connector.
8	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T10) No. 2 — Transmission ground:***	Is the resistance more than 1 MΩ?	Go to step **9**.	Repair the short circuit of harness between transmission connector and transmission ground.
9	**CHECK HARNESS CONNECTOR BETWEEN CONTROL VALVE BODY AND VEHICLE SPEED SENSOR.** 1) Disconnect the connector from vehicle speed sensor. 2) Measure the resistance of harness between control valve body connector and vehicle speed sensor connector. ***Connector & terminal*** ***(T14) No. 4 — (T7) No. 1:*** ***(T10) No. 2 — (T7) No. 2:*** ***(T14) No. 1 — (T7) No. 3:***	Is the resistance less than 1 Ω?	Go to step **10**.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>
10	**CHECK HARNESS CONNECTOR BETWEEN CONTROL VALVE BODY AND VEHICLE SPEED SENSOR.** Measure the resistance of harness between control valve body connector and transmission ground. ***Connector & terminal*** ***(T10) No. 2 — Transmission ground:***	Is the resistance more than 1 MΩ?	Replace the front vehicle speed sensor.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>

G: DTC P0724 BRAKE SWITCH CIRCUIT HIGH

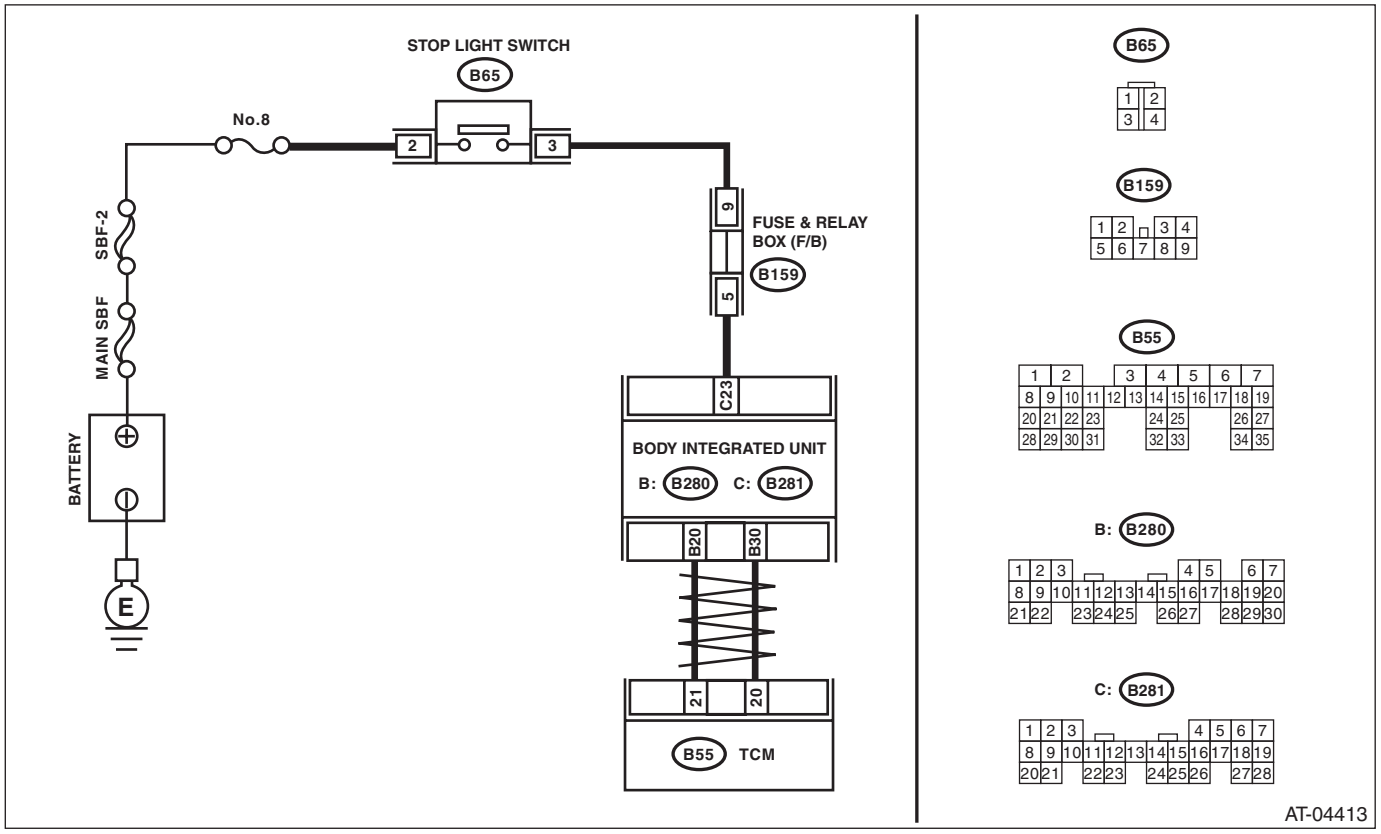
DTC DETECTING CONDITION:

Brake switch malfunction, open input signal circuit

TROUBLE SYMPTOM:

Gear is not shifted down when climbing a hill.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK DTC.**	Is any of following DTC detected? / AT CAN Communication Circuit / Output Speed Sensor Circuit / AT Vehicle Speed Sensor Circuit Malfunction (Rear Wheel)	Perform the diagnosis according to DTC.	Go to step **2**.
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. (engine OFF) 4) Turn the Subaru Select Monitor switch to ON. 5) Read the data of “Stop Light Switch” using Subaru Select Monitor. <Ref. to LAN(diag)-12, 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 5AT(diag)-16, OPERATION, Subaru Select Monitor.>	Is OFF displayed?	A temporary poor contact of connector or harness may be the cause. Check the poor contact.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
4	**CHECK BODY INTEGRATED UNIT INPUT SIGNAL.** 1) Disconnect the connector from body integrated unit. 2) Measure the voltage between body integrated unit connector and chassis ground. ***Connector & terminal*** ***(B281) No. 23 (+) — 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*** ***(B65) No. 3 — (B65) No. 2:***	Is the resistance more than 1 MΩ?	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 body integrated unit connector and chassis ground. ***Connector & terminal*** ***(B281) No. 23 (+) — 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 POOR CONTACT.**	Is there poor contact in input signal of stop light switch?	Repair the poor contact.	Check the body integrated unit.

H: DTC P0731 GEAR 1 INCORRECT RATIO

NOTE:
Refer to DTC P0736 for diagnostic procedure. <Ref. to 5AT(diag)-52, 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 5AT(diag)-52, 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 5AT(diag)-52, 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 5AT(diag)-52, DTC P0736 REVERSE INCORRECT RATIO, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

L: DTC P0735 GEAR 5 INCORRECT RATIO

NOTE:
Refer to DTC P0736 for diagnostic procedure. <Ref. to 5AT(diag)-52, DTC P0736 REVERSE INCORRECT RATIO, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

M: DTC P0736 REVERSE INCORRECT RATIO

DTC DETECTING CONDITION:
Target gear ratio and actual gear ratio do not match.
TROUBLE SYMPTOM:
- Shift point is too high or too low.
- Excessive shift shock
- Gear is not changed.
- The vehicle does not move in D or R range with the engine running at high speed.

	Step	Check	Yes	No
1	**CHECK DTC OF TCM.**	Is any DTC of the followings detected? P0715, P0720, P0753, P0758, P0763, P0768, P0773, P0751, P0756, P0761, P0766, P0771, P1706, P1710, P1718	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK TURBINE SPEED SENSOR USING SUBARU SELECT MONITOR.** 1) Lift up the vehicle. 2) Start the engine, and drive it. 3) Read the data of “turbine speed” using Subaru Select Monitor. <Ref. to 5AT(diag)-16, READ CURRENT DATA, OPERATION, Subaru Select Monitor.> NOTE: The speed difference between front and rear wheels may light the ABS warning light, but this indicates no malfunction. When AT control diagnosis is finished, perform the VDC memory clear procedure of on-board diagnostics system. <Ref. to VDC(diag)-22, CLEAR MEMORY MODE, OPERATION, Subaru Select Monitor.>	Does the displayed value of the Subaru Select Monitor change according to engine speed and shifting gear range?	Go to step **3**.	Perform the diagnosis according to DTC P0715, P1710.
3	**CHECK FRONT AND REAR VEHICLE SPEED SENSORS.**	Do the values displayed for each of the Subaru Select Monitor and the speedometer substantially match?	Go to step **4**.	Perform the diagnosis according to DTC P0720, P1706.
4	**CHECK INHIBITOR SWITCH.**	Do the values displayed for the Subaru Select Monitor and the meter indicator match?	Go to step **5**.	Perform the diagnosis according to DTC P0705.
5	**DRIVING CHECK.** 1) Turn the ignition switch to OFF. 2) After restarting the engine, check that the AT OIL TEMP light is not blinking, and perform a drive check based on the Inspection Mode. <Ref. to 5AT(diag)-20, PROCEDURE, Inspection Mode.>	Is DTC displayed again?	Check the DTC. Then, when proceeded again to step 5, go to step 6.	Go to step **6**.
6	**CHECK AFTER REPAIR.**	Is the trouble symptom inrepairable (malfunction in shifting such as excessive shift shock, engine speed increases excessively when shifting)?	Replace the transmission assembly.	Temporary poor contact occurs. Check that the harness connector is not faulty.

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

DTC DETECTING CONDITION:

- Defective lock-up clutch or torque converter assembly
- Defective control valve
- Defective turbine speed sensor 1 or 2

TROUBLE SYMPTOM:

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

	Step	Check	Yes	No
1	**CHECK DTC OF TCM.**	Is any DTC of the followings detected? P0715, P0720, P0753, P0758, P0763, P0768, P0773, P0751, P0756, P0761, P0766, P0771, P1710, P1718	Perform the diagnosis according to each DTC.	Go to step **2**.
2	**DRIVING CHECK FOR LOCK-UP CONDITION.** 1) Perform the Clear Memory Mode. 2) While keeping “Accel. Opening Angle” displayed on Subaru Select Monitor, drive at 85 km/h or more. 3) Check that “L/U Solenoid Current” is 0.6 A or more by using Subaru Select Monitor. 4) Read the data of “Engine Speed” and “Turbine Revolution Speed” using Subaru Select Monitor.	Is the difference between “Engine Speed” and “Turbine Revolution Speed” within 100 rpm?	Temporary poor contact or open circuit occurs. Recheck that the harness connector has no faulty.	Replace the transmission assembly when the difference is 100 rpm or more, or DTC P0741 is displayed. When DTC other than P0741 is displayed, perform the diagnosis corresponding to the DTC.

O: DTC P0743 TORQUE CONVERTER CLUTCH CIRCUIT ELECTRICAL

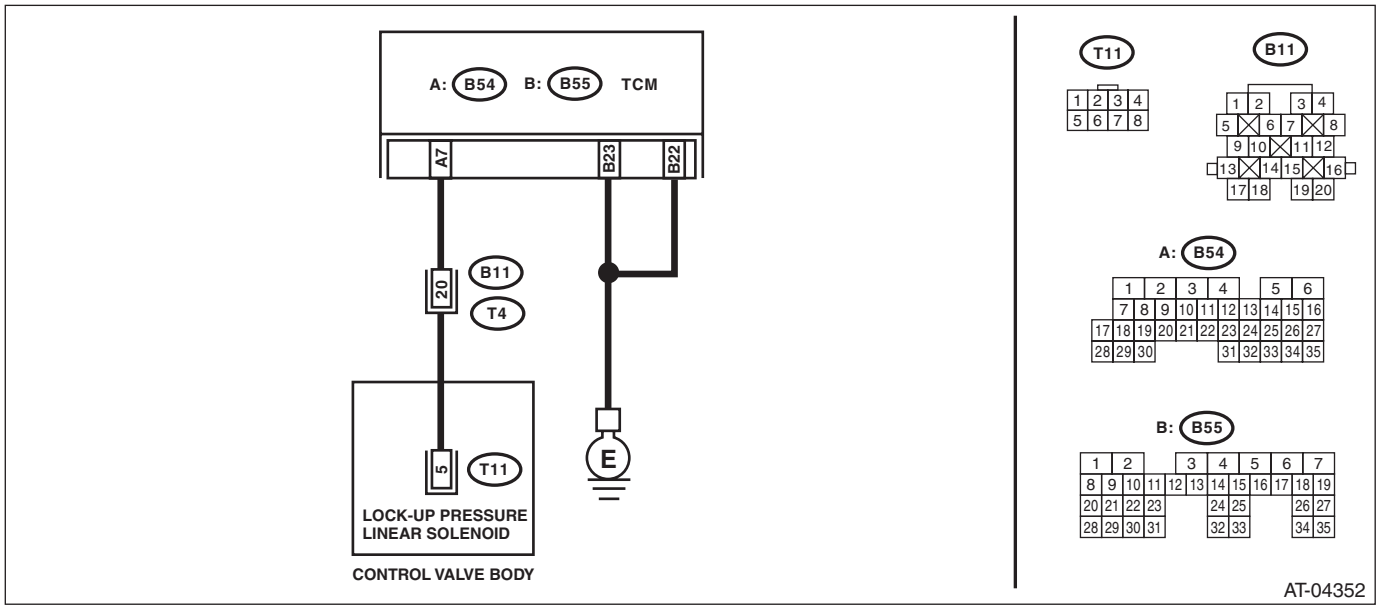
DTC DETECTING CONDITION:

The output signal circuit of lock up solenoid is open or shorted.

TROUBLE SYMPTOM:

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

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. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 7 — (B11) No. 20:***	Is the resistance less than 1 Ω?	Go to step **2**.	Repair the open circuit of harness between TCM connector 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. 7 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM connector and transmission connector.
3	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. NOTE: Do not drain ATF until it cools down. 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 20 — (T11) No. 5:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the open circuit of harness between transmission connector and control valve body connector.
4	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** Measure the resistance between chassis ground and control valve body connector. ***Connector & terminal*** ***(T11) No. 5 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **5**.	Repair the short circuit of harness between control valve body connector and transmission ground.
5	**CHECK LOCK-UP SOLENOID.** Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T21) No. 5 — Transmission ground:***	Is the resistance between 3 — 9 Ω?	Go to step **6**.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>
6	**CHECK POOR CONTACT.** Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact.	Go to step **7**.
7	**CHECK AFTER REPAIR.** 1) Perform the Clear Memory Mode. 2) Drive for a while, read the DTC, and check that there is no faulty.	Is DTC displayed?	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>	Temporary poor contact or open circuit occurs. Recheck that the harness connector has no faulty.

P: DTC P0748 PRESSURE CONTROL SOLENOID “A” ELECTRICAL

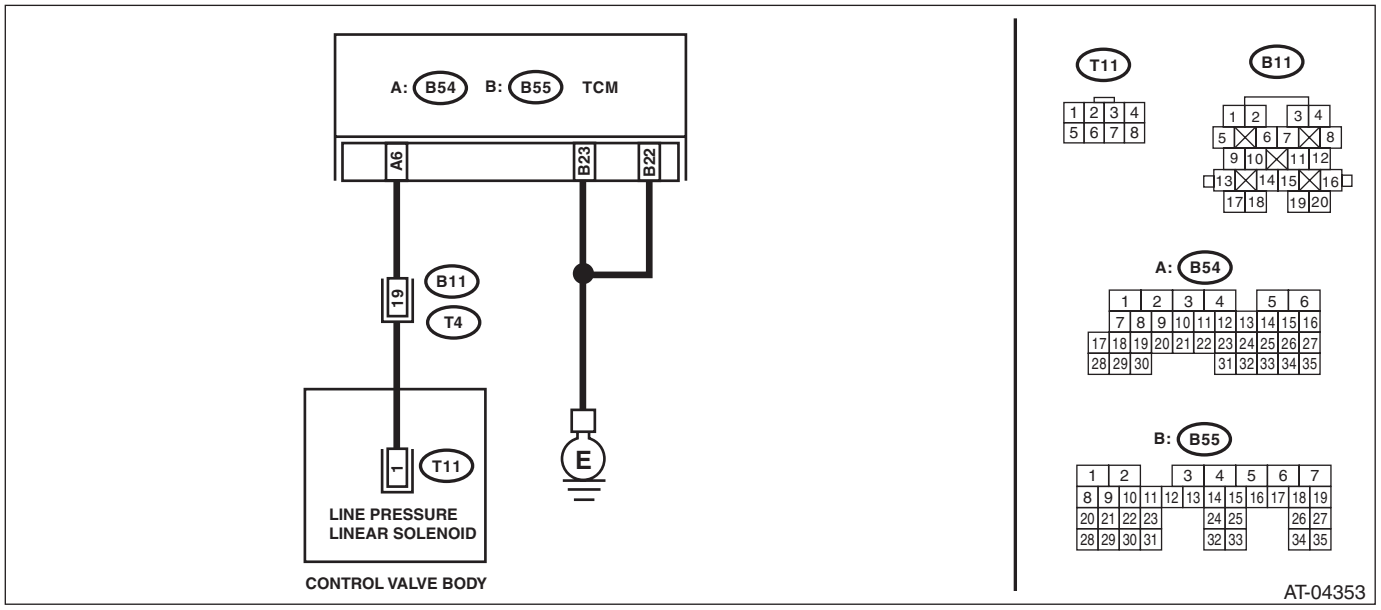
DTC DETECTING CONDITION:

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

TROUBLE SYMPTOM:

Excessive shift shock

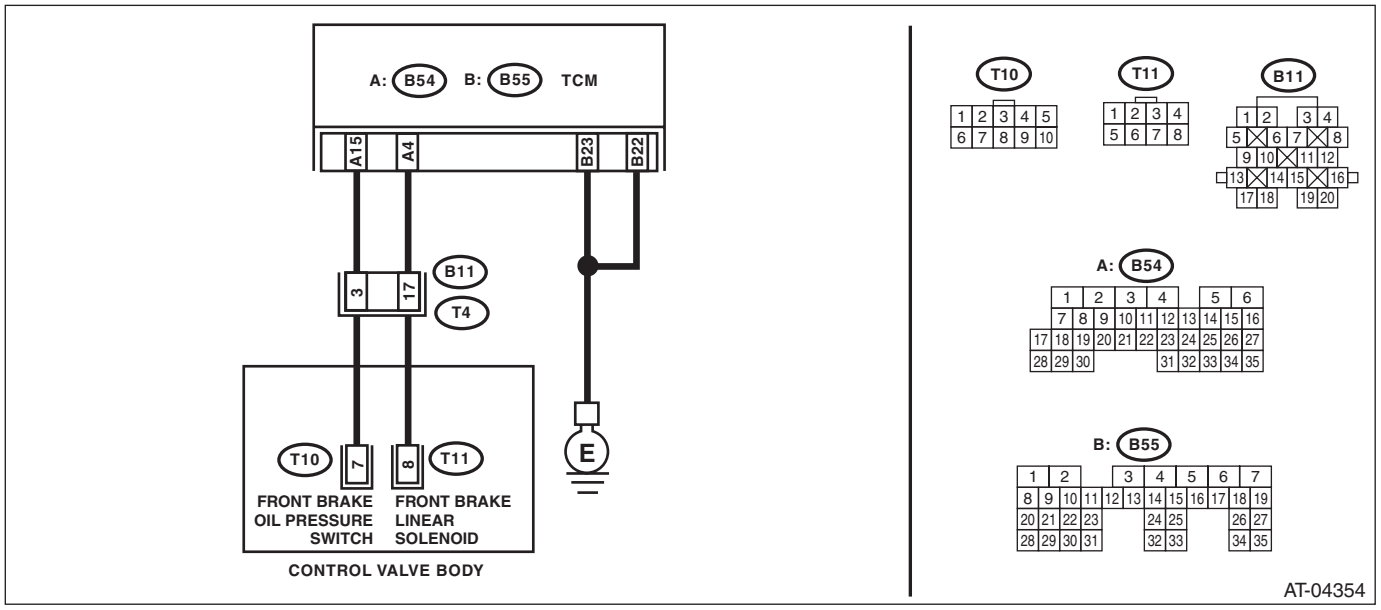
WIRING DIAGRAM:



	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. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 6 — (B11) No. 19:***	Is the resistance less than 1 Ω?	Go to step **2**.	Repair the open circuit of harness between TCM connector and transmission connector.
2	**CHECK HARNESS CONNECTOR BETWEEN TCM AND CHASSIS GROUND.** Measure the resistance between TCM connector and chassis ground. ***Connector & terminal*** ***(B54) No. 6 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM connector and transmission connector.
3	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 19 — (T11) No. 1:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the open circuit of harness between transmission connector and control valve body connector.
4	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T11) No. 1 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **5**.	Repair the short circuit of harness between control valve body connector and transmission ground.
5	**CHECK LINE PRESSURE SOLENOID.** Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T21) No. 1 — Transmission ground:***	Is the resistance between 3 — 9 Ω?	Go to step **6**.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>
6	**CHECK POOR CONTACT.** Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact.	Go to step **7**.
7	**CHECK AFTER REPAIR.** 1) Perform the Clear Memory Mode. 2) Drive for a while, read the DTC, and check that there is no faulty.	Is DTC displayed?	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>	Temporary poor contact or open circuit occurs. Recheck that the harness connector has no faulty.

Q: DTC P0751 SHIFT SOLENOID "A" PERFORMANCE OR STUCK OFF

DTC DETECTING CONDITION:
Output signal of front brake solenoid does not match with oil pressure.
TROUBLE SYMPTOM:
Locked to 1st gear.
WIRING DIAGRAM:

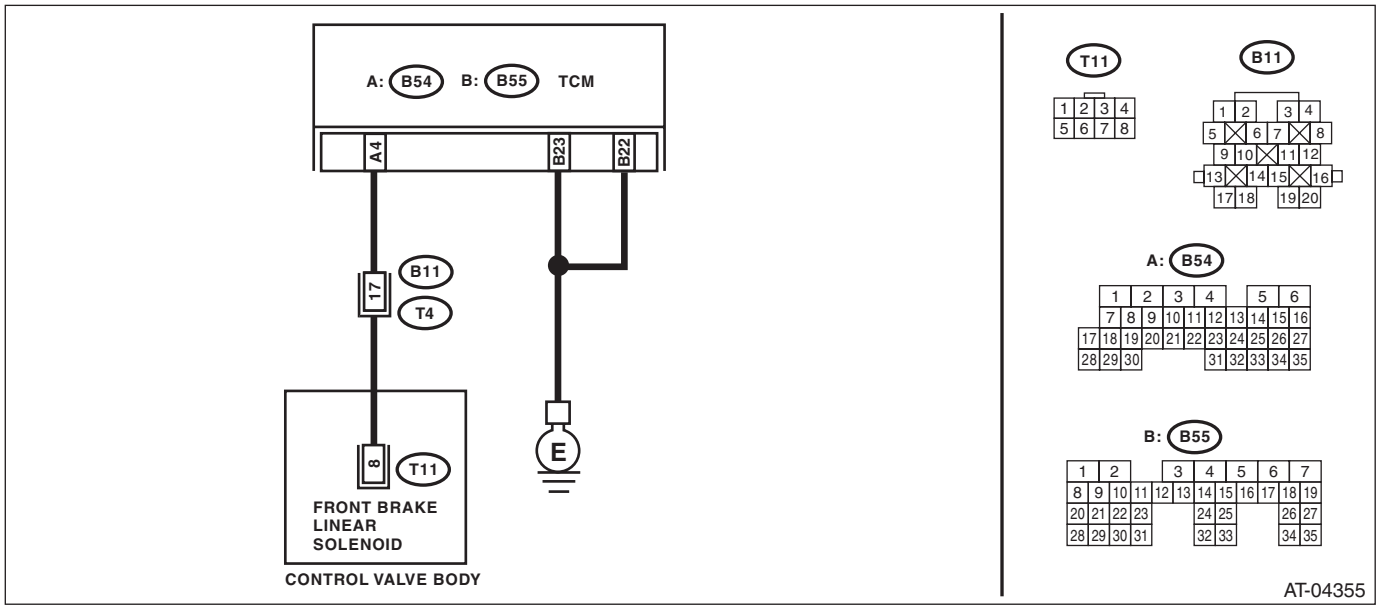


Step		Check	Yes	No
1	**CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM and transmission connector. ***Connector & terminal*** ***(B55) No. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 15 — (B11) No. 3:*** ***(B54) No. 4 — (B11) No. 17:***	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 more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM and transmission connector.
3	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Connect all the connectors. 2) Turn the ignition switch to ON. (Engine OFF) 3) Read the data of "Fr/B oil pressure SW".	Is OFF displayed?	Go to step **4**.	Go to step **6**.

	Step	Check	Yes	No
4	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Turn the ignition switch to OFF. 2) Turn the ignition switch to ON. (Engine ON) 3) Shift to 1st speed while checking the current gear position using Subaru Select Monitor. 4) Read the data of “Fr/B oil pressure SW”.	Is ON displayed?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the poor contact of harness in the solenoid output and oil pressure SW input.	Go to step **5**.
5	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(B11) No. 17 — (T11) No. 8:*** ***(B11) No. 3 — (T10) No. 7:***	Is the resistance less than 1 Ω?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Replace the transmission harness assembly.
6	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T10) No. 7 — Transmission ground:***	Is the resistance 1 MΩ or more?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Replace the transmission harness assembly.

R: DTC P0753 SHIFT SOLENOID “A” ELECTRICAL

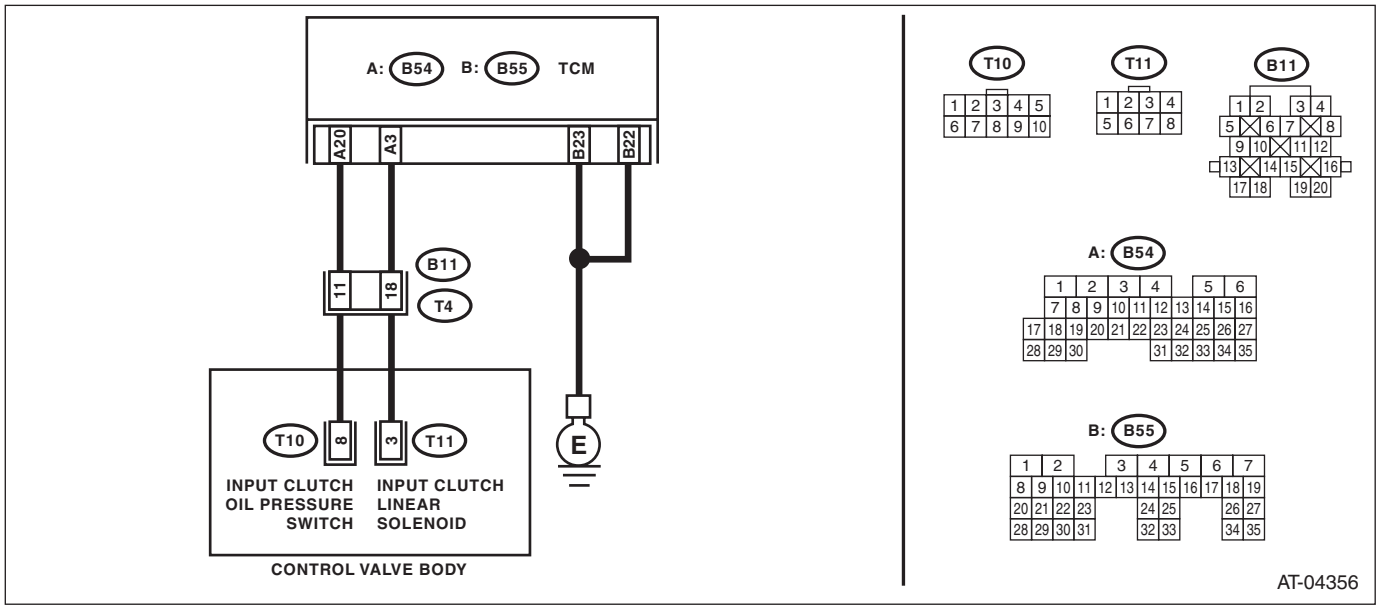
DTC DETECTING CONDITION:
Output signal circuit of front brake solenoid is open or shorted.
TROUBLE SYMPTOM:
Locked to 1st gear.
WIRING DIAGRAM:



	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. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 4 — (B11) No. 17:***	Is the resistance less than 1 Ω?	Go to step **2**.	Repair the open circuit of harness between TCM connector 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 more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM connector and transmission connector.
3	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 17 — (T11) No. 8:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the open circuit of harness between transmission connector and control valve body connector.
4	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T11) No. 8 — Transmission ground:***	Is the resistance more than 1 MΩ?	Go to step **5**.	Repair the short circuit of harness between control valve body and transmission connector.
5	**CHECK FRONT BRAKE SOLENOID.** Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T21) No. 8 — Transmission ground:***	Is the resistance between 3 — 9 Ω?	Go to step **6**.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>
6	**CHECK POOR CONTACT.** Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact.	Go to step **7**.
7	**CHECK AFTER REPAIR.** 1) Perform the Clear Memory Mode. 2) Drive for a while, read the DTC, and check that there is no faulty.	Is DTC displayed?	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>	Temporary poor contact or open circuit occurs. Recheck that the harness connector has no faulty.

S: DTC P0756 SHIFT SOLENOID "B" PERFORMANCE OR STUCK OFF

DTC DETECTING CONDITION:
Output signal value of input clutch solenoid and oil pressure does not match.
TROUBLE SYMPTOM:
Locked to 1st or 4th gear.
WIRING DIAGRAM:

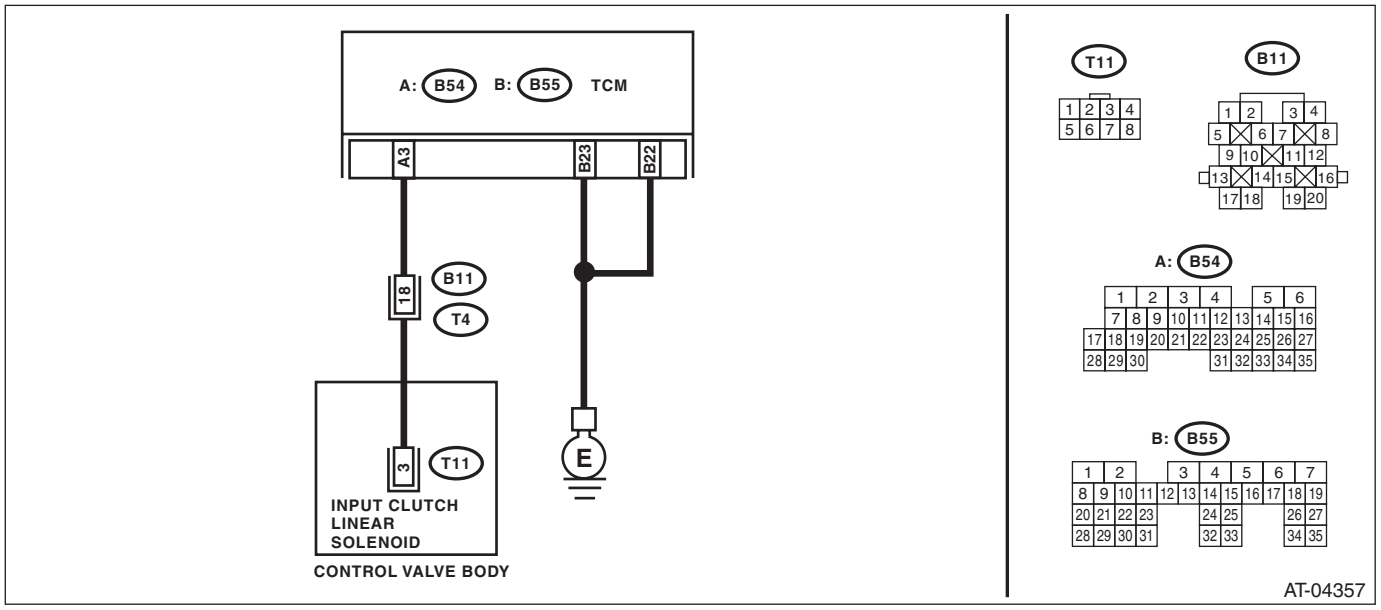


Step		Check	Yes	No
1	**CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. ***Connector & terminal*** ***(B55) No. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 3 — (B11) No. 18:*** ***(B54) No. 20 — (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 HARNESS CONNECTOR BETWEEN TCM AND CHASSIS GROUND.** Measure the resistance of harness between TCM connector and chassis ground. ***Connector & terminal*** ***(B54) No. 20 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM and transmission connector.
3	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Connect all the connectors. 2) Turn the ignition switch to ON. (Engine OFF) 3) Read the data of "I/C oil pressure SW".	Is OFF displayed?	Go to step **4**.	Go to step **6**.

	Step	Check	Yes	No
4	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Turn the ignition switch to OFF. 2) Turn the ignition switch to ON. (Engine ON) 3) Drive the vehicle on 4th speed of "D" range with checking current gear position using Subaru Select Monitor. 4) Read the data of "I/C oil pressure SW".	Is ON displayed?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the poor contact of harness in the solenoid output and oil pressure SW input.	Go to step **5**.
5	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 18 — (T11) No. 3:*** ***(T4) No. 11 — (T10) No. 8:***	Is the resistance less than 1 Ω?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Replace the transmission harness assembly.
6	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Check the insulation of transmission harness assembly. ***Connector & terminal*** ***(T10) No. 8 — Transmission ground:***	Is the resistance 1 MΩ or more?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Replace the transmission harness assembly.

T: DTC P0758 SHIFT SOLENOID “B” ELECTRICAL

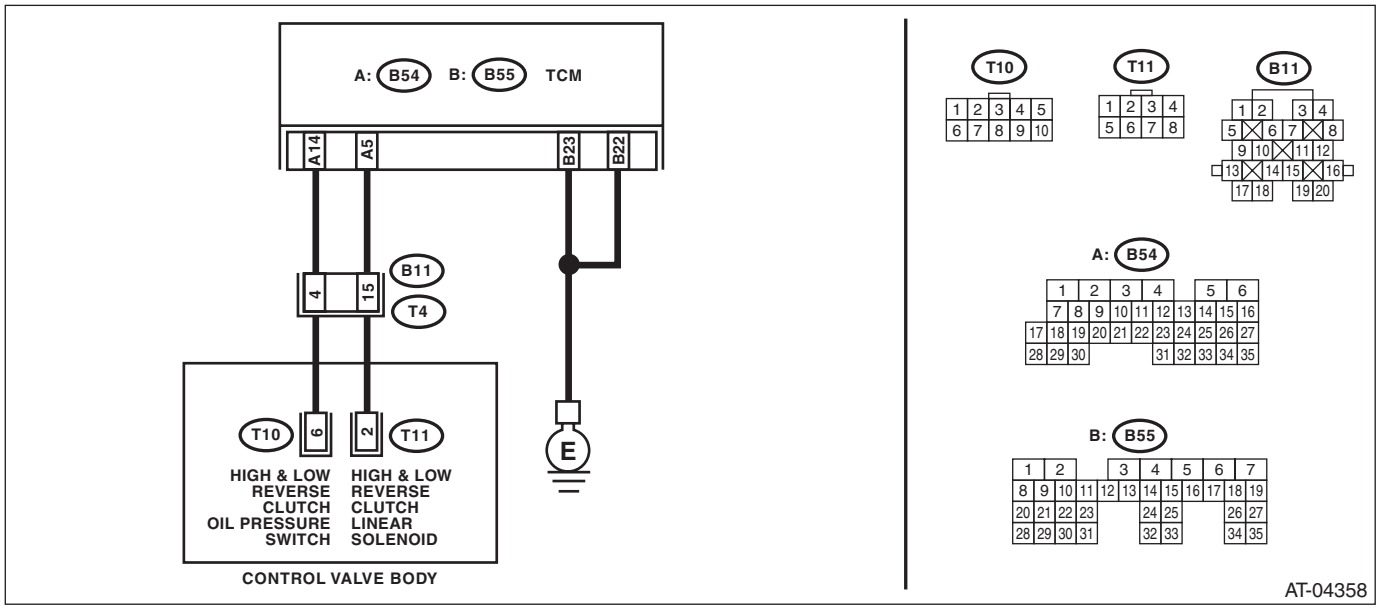
DTC DETECTING CONDITION:
Output signal circuit of input clutch solenoid is open or shorted.
TROUBLE SYMPTOM:
Locked to 1st or 4th gear.
WIRING DIAGRAM:



	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 and transmission connector. ***Connector & terminal*** ***(B55) No. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 3 — (B11) No. 18:***	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 BODY HARNESS.** Measure the resistance of harness between TCM connector and body harness. ***Connector & terminal*** ***(B54) No. 3 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM and transmission connector.
3	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 18 — (T11) No. 3:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the open circuit of harness between transmission connector and control valve body connector.
4	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** Measure the resistance between chassis ground and control valve body connector. ***Connector & terminal*** ***(T11) No. 3 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **5**.	Repair the short circuit of harness between transmission connector and control valve body connector.
5	**CHECK INPUT CLUTCH SOLENOID.** Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T21) No. 3 — Transmission ground:***	Is the resistance between 3 — 9 Ω?	Go to step **6**.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>
6	**CHECK POOR CONTACT.** Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact.	Go to step **7**.
7	**CHECK AFTER REPAIR.** 1) Perform the Clear Memory Mode. 2) Drive for a while, read the DTC, and check that there is no faulty.	Is DTC displayed?	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>	Temporary poor contact or open circuit occurs. Recheck that the harness connector has no faulty.

U: DTC P0761 SHIFT SOLENOID "C" PERFORMANCE OR STUCK OFF

DTC DETECTING CONDITION:
Output signal value of high & low reverse clutch solenoid and oil pressure does not match.
TROUBLE SYMPTOM:
Locked to 1st gear.
WIRING DIAGRAM:

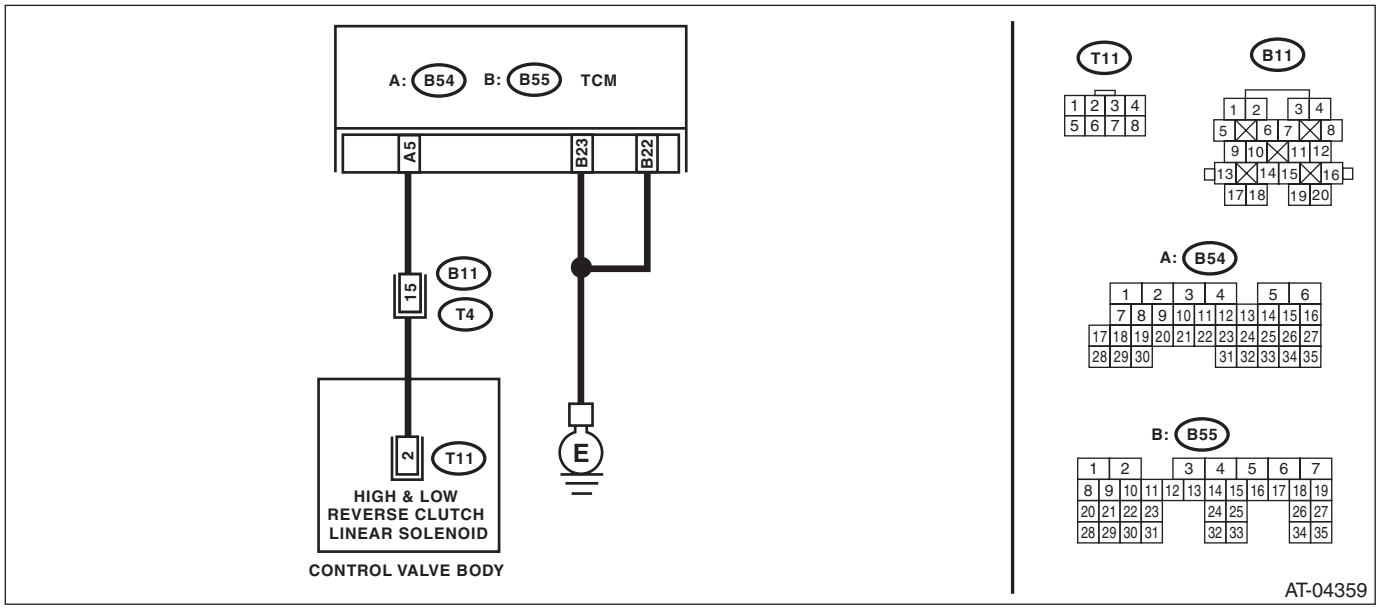


Step		Check	Yes	No
1	**CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM and transmission connector. ***Connector & terminal*** ***(B55) No. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 5 — (B11) No. 15:*** ***(B54) No. 14 — (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 CHASSIS GROUND.** Measure the resistance of harness between TCM connector and chassis ground. ***Connector & terminal*** ***(B54) No. 14 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM and transmission connector.
3	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Connect all the connectors. 2) Turn the ignition switch to ON. (engine OFF) 3) Read the data of "H&LR/C oil pressure SW".	Is OFF displayed?	Go to step **4**.	Go to step **6**.

	Step	Check	Yes	No
4	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Turn the ignition switch to OFF. 2) Turn the ignition switch to ON. (Engine ON) 3) Shift the select lever from "N" range to "D" range with the brake pedal depressed. 4) Read the data of "H&LR/C oil pressure SW" using Subaru Select Monitor.	Does display change from ON to OFF?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the poor contact of harness in the solenoid output and oil pressure SW input.	Go to step **5**.
5	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 15 — (T11) No. 2:*** ***(T4) No. 4 — (T10) No. 6:***	Is the resistance less than 1 Ω?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Replace the transmission harness assembly.
6	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Check the insulation of transmission harness assembly. ***Connector & terminal*** ***(T10) No. 6 — Transmission ground:***	Is the resistance 1 MΩ or more?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Replace the transmission harness assembly.

V: DTC P0763 SHIFT SOLENOID "C" ELECTRICAL

DTC DETECTING CONDITION:
Output signal circuit of high & low reverse clutch solenoid is open or shorted.
TROUBLE SYMPTOM:
Locked to 1st gear.
WIRING DIAGRAM:

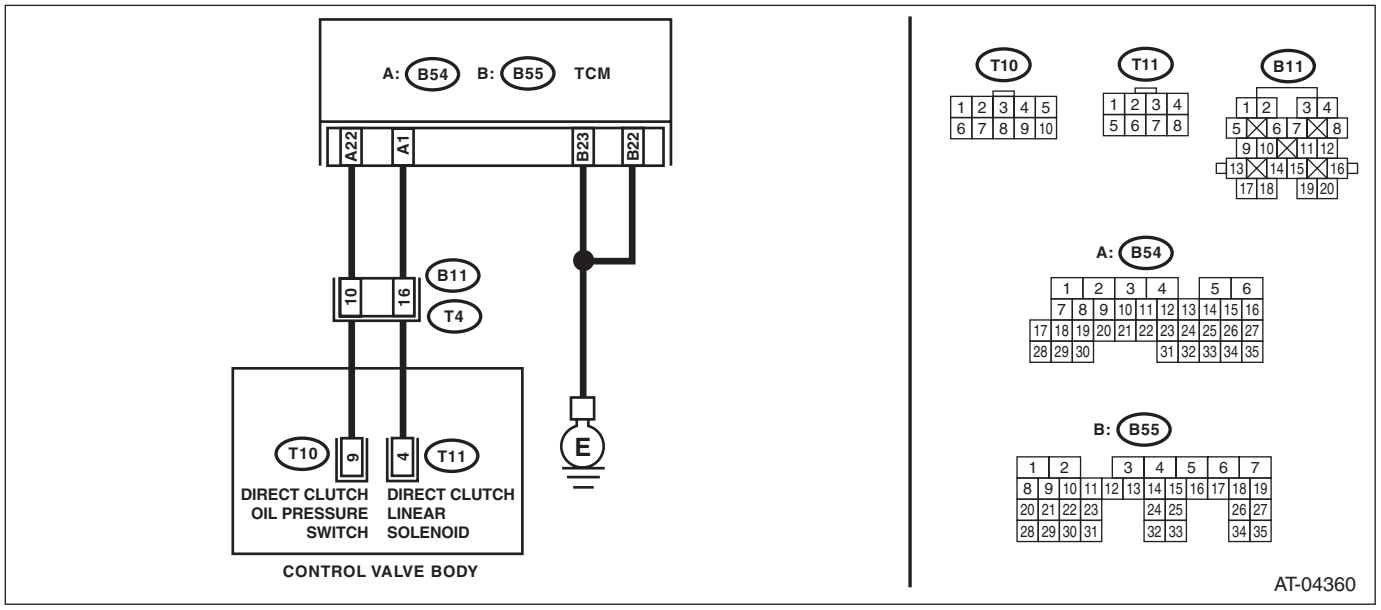


Step		Check	Yes	No
1	**CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM and transmission connector. ***Connector & terminal*** ***(B55) No. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 5 — (B11) No. 15:***	Is the resistance less than 1 Ω?	Go to step **2**.	Repair the open circuit of harness between TCM connector 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 more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM connector and transmission connector.

	Step	Check	Yes	No
3	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 15 — (T11) No. 2:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the open circuit of harness between transmission connector and control valve body connector.
4	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** Measure the resistance of harness connector between control valve body connector and chassis ground. ***Connector & terminal*** ***(T11) No. 2 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **5**.	Repair the open circuit of harness between control valve body connector and transmission ground.
5	**CHECK HIGH & LOW REVERSE CLUTCH SOLENOID.** Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T21) No. 2 — Transmission ground:***	Is the resistance between 3 — 9 Ω?	Go to step **6**.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>
6	**CHECK POOR CONTACT.** Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact.	Go to step **7**.
7	**CHECK AFTER REPAIR.** 1) Perform the Clear Memory Mode. 2) Drive for a while, read the DTC, and check that there is no faulty.	Is DTC displayed?	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>	Temporary poor contact or open circuit occurs. Recheck that the harness connector has no faulty.

W: DTC P0766 SHIFT SOLENOID "D" PERFORMANCE OR STUCK OFF

DTC DETECTING CONDITION:
Output signal value of direct clutch solenoid and oil pressure does not match.
TROUBLE SYMPTOM:
Locked to 1st or 4th gear.
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 and transmission connector. ***Connector & terminal*** ***(B55) No. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 1 — (B11) No. 16:*** ***(B54) No. 22 — (B11) No. 10:***	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 BODY HARNESS.** Measure the resistance of harness between TCM connector and body harness. ***Connector & terminal*** ***(B54) No. 22 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM and transmission connector.
3	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Connect all the connectors. 2) Turn the ignition switch to ON. (engine OFF) 3) Read the data of "D/C oil pressure SW".	Is OFF displayed?	Go to step **4**.	Go to step **6**.

	Step	Check	Yes	No
4	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Turn the ignition switch to OFF. 2) Turn the ignition switch to ON. (Engine ON) 3) Shift to 2nd speed of manual mode and brake ON with checking current gear position using Subaru Select Monitor. 4) Read the data of “D/C oil pressure SW”.	Is ON displayed?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the poor contact of harness in the solenoid output and oil pressure SW input.	Go to step **5**.
5	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 16 — (T11) No. 4:*** ***(T4) No. 10 — (T10) No. 9:***	Is the resistance less than 1 Ω?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Replace the transmission harness assembly.
6	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Check the insulation of transmission harness assembly. ***Connector & terminal*** ***(T10) No. 9 — Transmission ground:***	Is the resistance 1 MΩ or more?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Replace the transmission harness assembly.

X: DTC P0768 SHIFT SOLENOID “D” ELECTRICAL

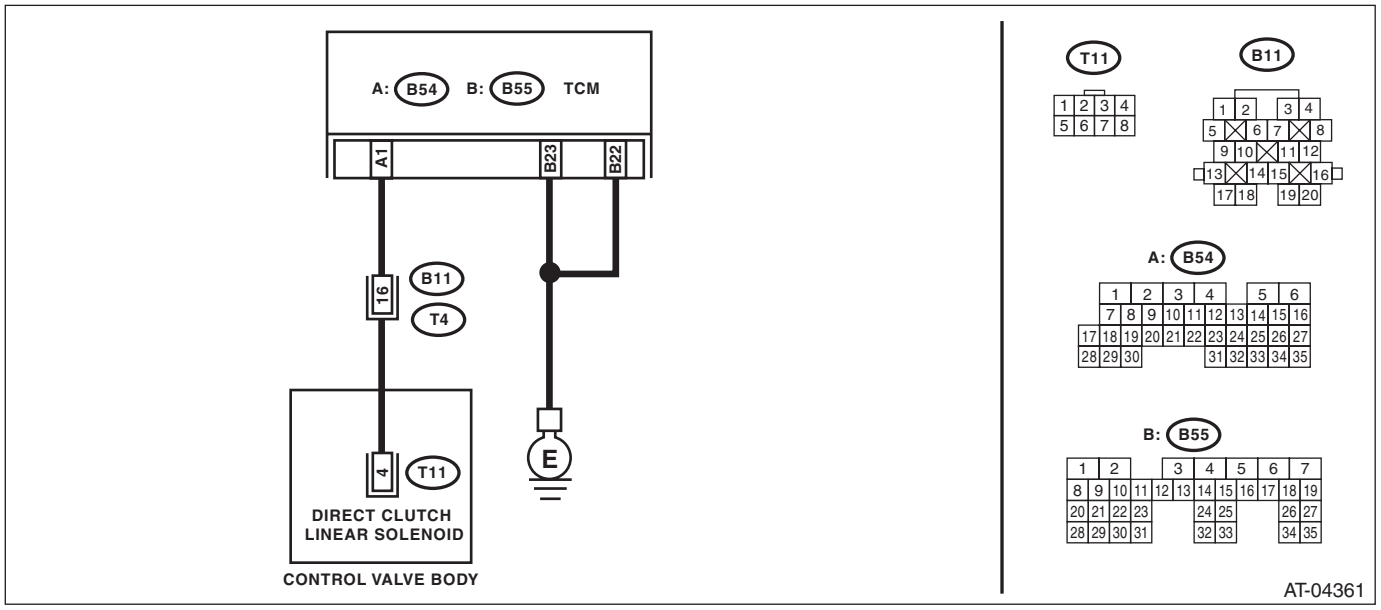
DTC DETECTING CONDITION:

The output signal circuit of direct clutch solenoid is open or shorted.

TROUBLE SYMPTOM:

Locked to 1st or 4th gear.

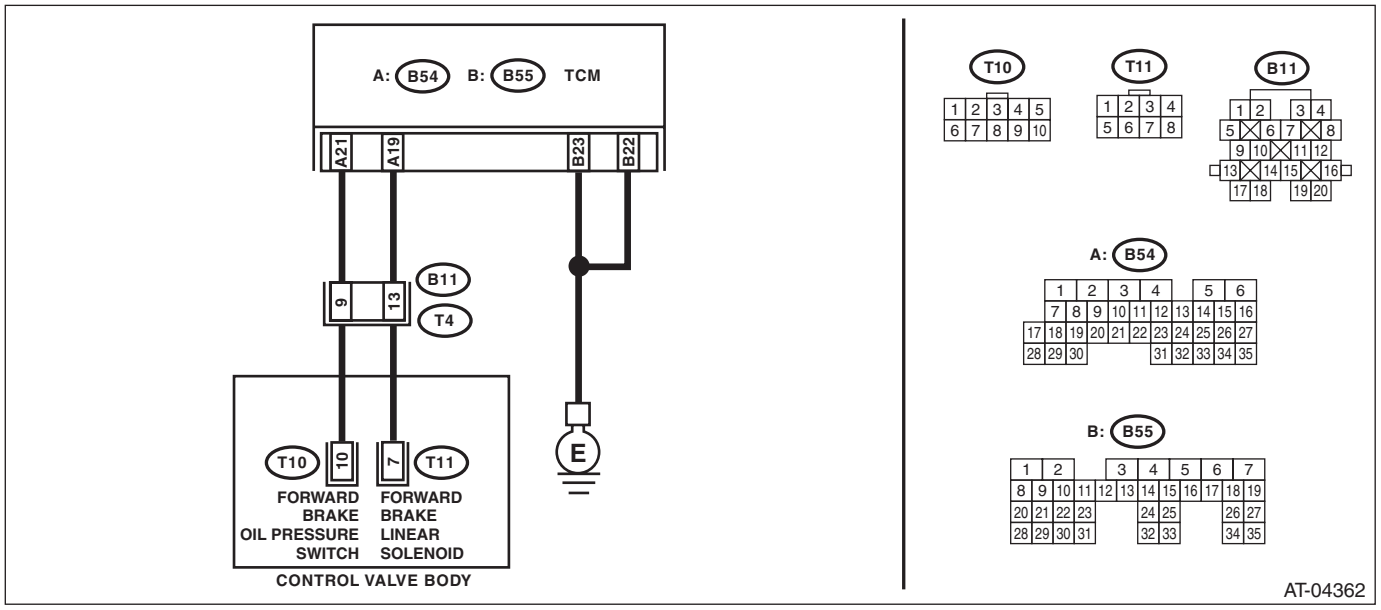
WIRING DIAGRAM:



	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 and transmission connector. ***Connector & terminal*** ***(B55) No. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 1 — (B11) No. 16:***	Is the resistance less than 1 Ω?	Go to step **2**.	Repair the open circuit of harness between TCM connector 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. 1 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM connector and transmission connector.
3	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 16 — (T11) No. 4:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the open circuit of harness between transmission connector and control valve body connector.
4	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** Measure the resistance between chassis ground and control valve body connector. ***Connector & terminal*** ***(T11) No. 4 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **5**.	Repair the short circuit of harness between control valve body connector and transmission ground.
5	**CHECK DIRECT CLUTCH SOLENOID.** Measure the resistance of harness connector between control valve body connector and transmission ground. ***Connector & terminal*** ***(T21) No. 4 — Transmission ground:***	Is the resistance between 3 — 9 Ω?	Go to step **6**.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>
6	**CHECK POOR CONTACT.** Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact.	Go to step **7**.
7	**CHECK AFTER REPAIR.** 1) Perform the Clear Memory Mode. 2) Drive for a while, read the DTC, and check that there is no faulty.	Is DTC displayed?	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>	Temporary poor contact or open circuit occurs. Recheck that the harness connector has no faulty.

Y: DTC P0771 SHIFT SOLENOID "E" PERFORMANCE OR STUCK OFF

DTC DETECTING CONDITION:
Output signal of forward brake solenoid does not match the oil pressure.
TROUBLE SYMPTOM:
Locked to 2nd, 3rd, 4th gear.
WIRING DIAGRAM:

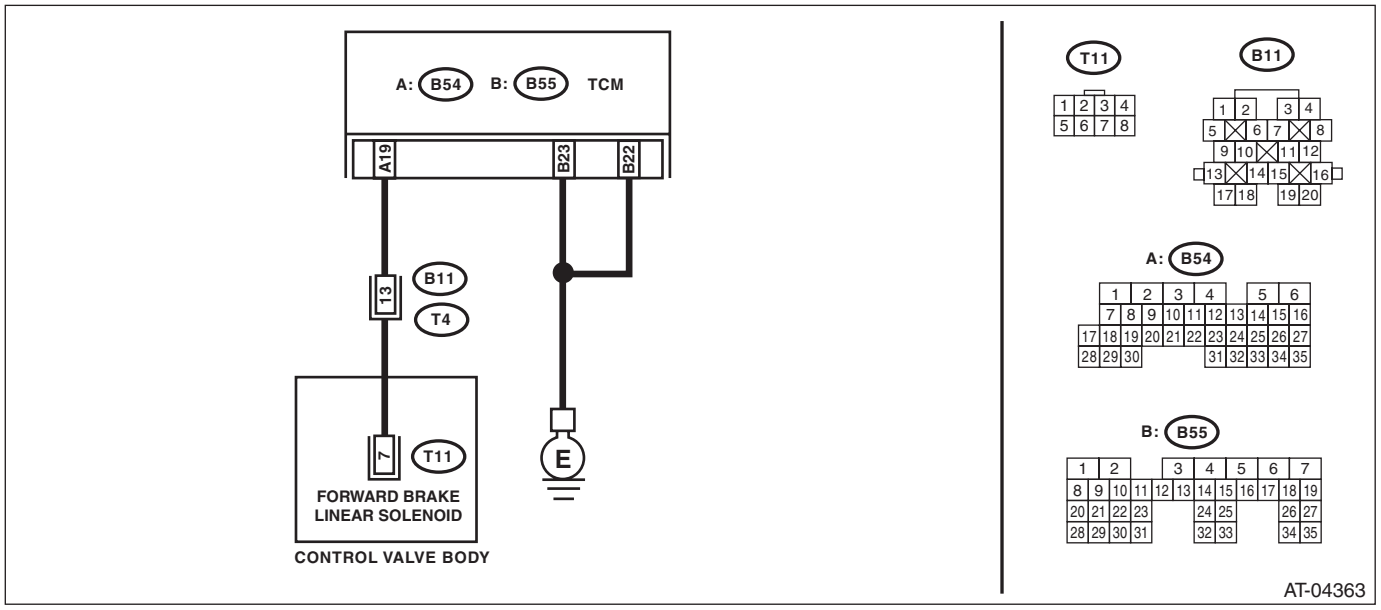


Step		Check	Yes	No
1	**CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM and transmission connector. ***Connector & terminal*** ***(B55) No. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 19 — (B11) No. 13:*** ***(B54) No. 21 — (B11) No. 9:***	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 between TCM connector and chassis ground. ***Connector & terminal*** ***(B54) No. 21 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM and transmission connector.
3	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Connect all the connectors. 2) Turn the ignition switch to ON. (engine OFF) 3) Read the data of "Fwd/B oil pressure SW".	Is OFF displayed?	Go to step **4**.	Go to step **6**.

	Step	Check	Yes	No
4	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Turn the ignition switch to OFF. 2) Turn the ignition switch to ON. (Engine ON) 3) Drive the vehicle on 2nd speed of manual mode 15 km/h (9 MPH) with checking current gear position using Subaru Select Monitor. 4) Read the data of “Fwd/B oil pressure SW”.	Is ON displayed?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the poor contact of harness in the solenoid output and oil pressure SW input.	Go to step **5**.
5	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 13 — (T11) No. 7:*** ***(T4) No. 9 — (T10) No. 10:***	Is the resistance less than 1 Ω?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Replace the transmission harness assembly.
6	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Check the insulation of transmission harness assembly. ***Connector & terminal*** ***(T10) No. 10 — Transmission ground:***	Is the resistance more than 1 MΩ?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Repair the short circuit of harness between transmission connector and control valve body connector.

Z: DTC P0773 SHIFT SOLENOID “E” ELECTRICAL

DTC DETECTING CONDITION:
Output signal circuit of forward brake solenoid is open or shorted.
TROUBLE SYMPTOM:
Locked to 2nd, 3rd, 4th gear.
WIRING DIAGRAM:

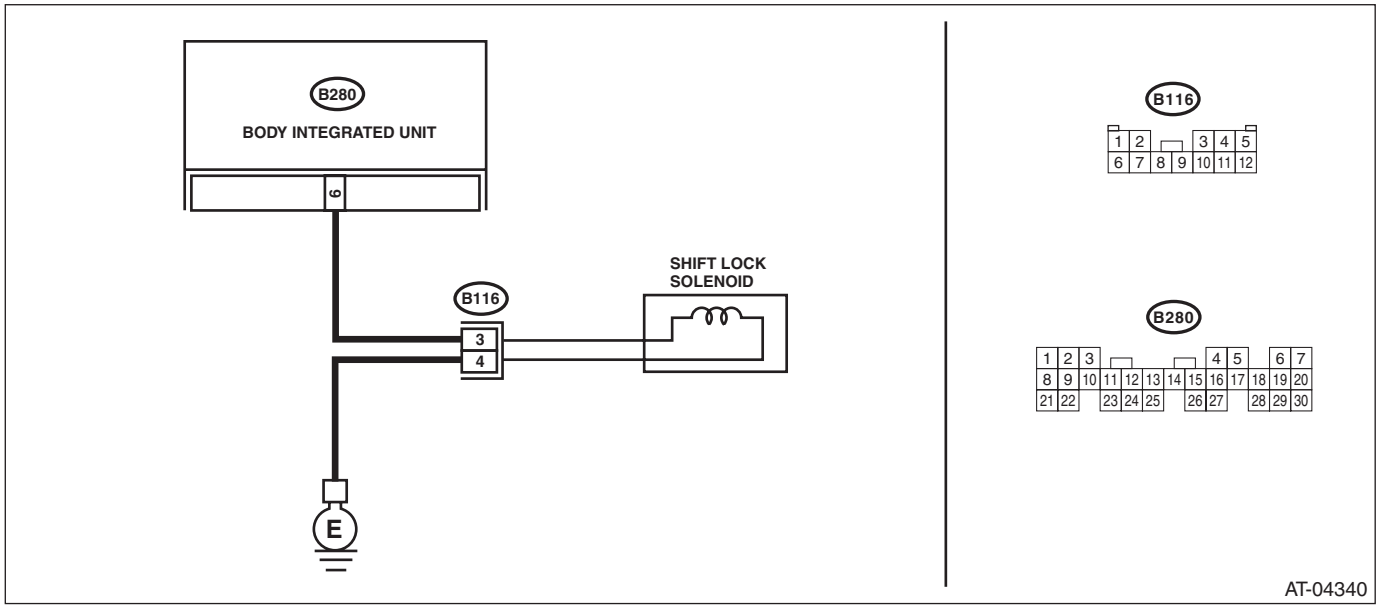


	Step	Check	Yes	No
1	**CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM and transmission connector. ***Connector & terminal*** ***(B55) No. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:*** ***(B54) No. 19 — (B11) No. 13:***	Is resistance less than 1 Ω?	Go to step **2**.	Repair the open circuit of harness between TCM connector and transmission connector.
2	**CHECK HARNESS CONNECTOR BETWEEN TCM AND BODY HARNESS.** Measure the resistance of harness between TCM connector and body harness. ***Connector & terminal*** ***(B54) No. 19 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **3**.	Repair the short circuit of harness between TCM connector and transmission connector.
3	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 13 — (T11) No. 7:***	Is resistance less than 1 Ω?	Go to step **4**.	Repair the open circuit of harness between transmission connector and control valve body connector.
4	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** Measure the resistance between chassis ground and control valve body connector. ***Connector & terminal*** ***(T11) No. 7 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **5**.	Repair the short circuit of harness between control valve body connector and transmission ground.
5	**CHECK LOW COAST BRAKE SOLENOID.** Measure the resistance of harness connector between control valve body connector and transmission ground. ***Connector & terminal*** ***(T21) No. 7 — Transmission ground:***	Is the resistance between 5 — 17 Ω?	Go to step **6**.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>
6	**CHECK POOR CONTACT.** Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact.	Go to step **7**.
7	**CHECK AFTER REPAIR.** 1) Perform the Clear Memory Mode. 2) Drive for a while, read the DTC, and check that there is no faulty.	Is DTC displayed?	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>	Temporary poor contact occurs. Recheck that the harness connector has no faulty.

AA: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 can not be shifted from “N” range to “R” range though the vehicle is parked.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK SHIFT LOCK SOLENOID.** 1) Start the integrated unit by force, and check the operation of shift lock solenoid. (<Ref. to LAN(diag)-12, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>) 2) Operate select lever without depressing the brake pedal.	Does the select lever operate?	Go to step **2**.	Go to step **3**.
2	**CHECK OUTPUT SIGNAL OF INTEGRATED UNIT.** 1) Display the following items using Subaru Select Monitor. • Key warning SW • Shift position • P SW • Stop light switch 2) Step on the brake and shift the select lever to “P” range.	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*** ***(B280) No. 6 — 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.

	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*** ***(B116) 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*** ***(B116) No. 3 — No. 4:***	Is the resistance between 7 — 21 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*** ***(B280) No. 6 (+) — 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) Shift the select lever to "D" range and slowly increase vehicle speed until exceeding 20 km/h (12 MPH). NOTE: The speed difference between front and rear wheels may light the ABS warning light, but this indicates no malfunction. When AT control diagnosis is finished, perform the VDC memory clear procedure of on-board diagnostics system. <Ref. to VDC(diag)-22, CLEAR MEMORY MODE, OPERATION, Subaru Select Monitor.> 4) Measure the voltage between body integrated unit and chassis ground. ***Connector & terminal*** ***(B280) No. 6 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Even if the AT OIL TEMP light illuminates, the circuit is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the harness or connector in reverse inhibitor control circuit.	Go to step **8**.
8	**CHECK POOR CONTACT.**	Is there poor contact in the reverse inhibitor control circuit?	Repair the poor contact.	Replace the body integrated unit. <Ref. to SL-52, Body Integrated Unit.>

AB:DTC P0817 STARTER DISABLE CIRCUIT

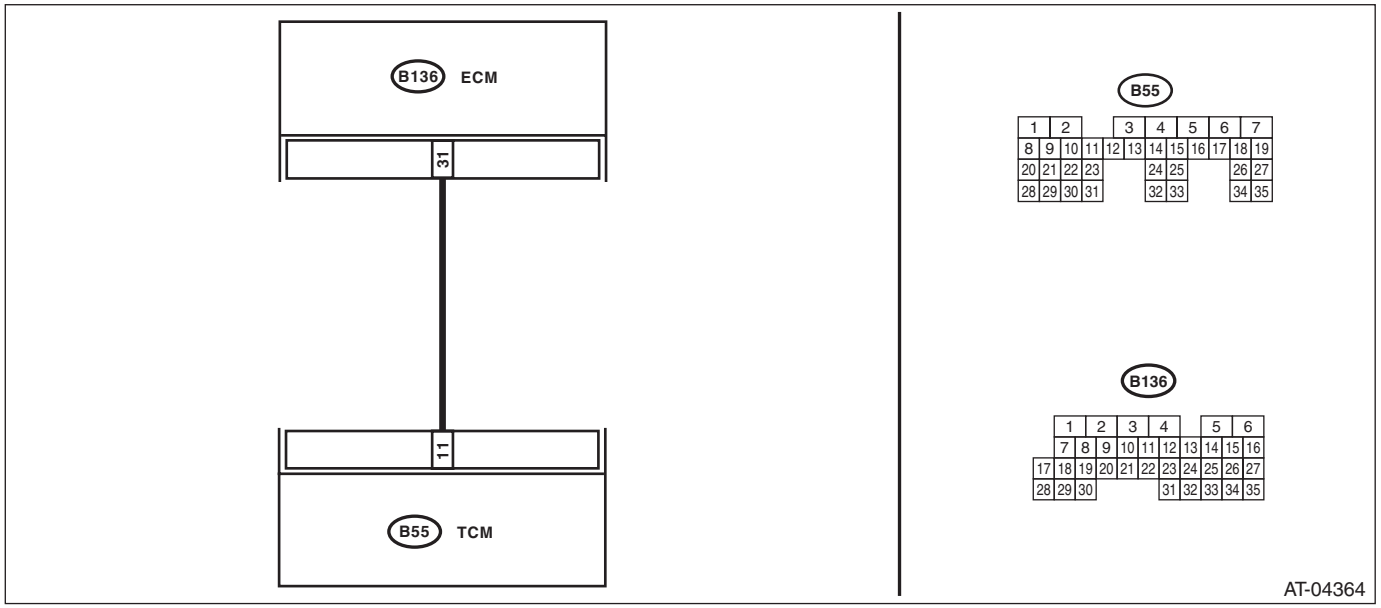
DTC DETECTING CONDITION:

Open or short in P/N signal output circuit

TROUBLE SYMPTOM:

- Engine can be started on other than “P” or “N” range
- Engine can not be started on “P” or “N” range.

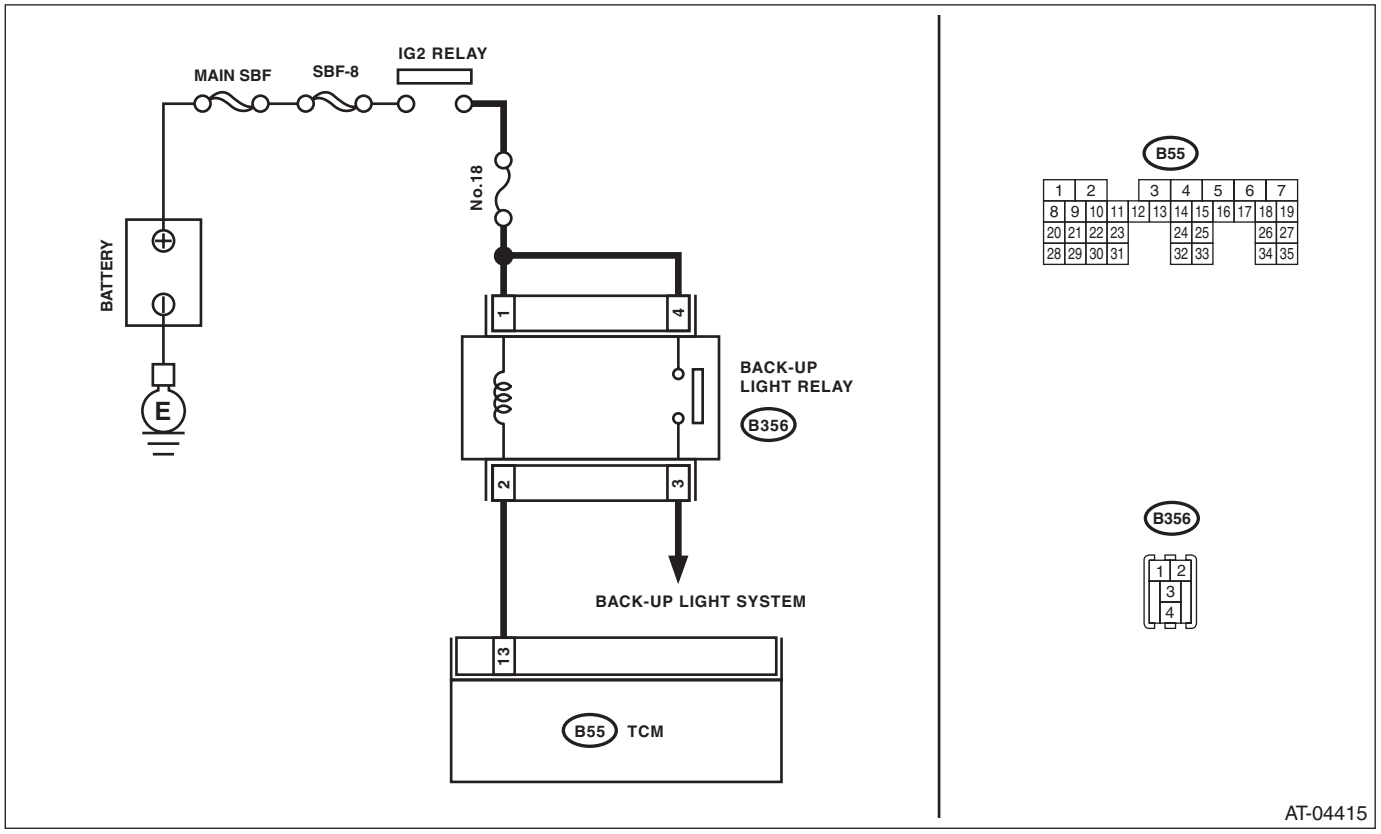
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK DTC OF TCM.**	Is DTC of Transmission Range Sensor Circuit (PRNDL Input) detected?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK ECM.**	Is the communication between Subaru Select Monitor and ECM normal?	Go to step **3**.	Perform the diagnosis according to DTC concerning ECM.
3	**CHECK FUSE (NO. 32).** 1) Turn the ignition switch to OFF. 2) Remove the fuse.	Is the fuse (No. 32) blown out?	Replace the fuse (No. 32). If the replaced fuse (No. 32) blows out easily, repair the short circuit of harness between fuse (No. 32) and TCM.	Go to step **4**.
4	**CHECK HARNESS CONNECTOR BETWEEN TCM AND ECM.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. ***Connector & terminal*** ***(B55) No. 11 — (B136) No. 31***	Is the resistance less than 1 Ω?	Go to step **5**.	Repair the open circuit of harness between TCM and transmission connector, or poor contact of connector.
5	**CHECK HARNESS CONNECTOR BETWEEN TCM AND ECM.** Measure the resistance of harness between TCM connector and chassis ground. ***Connector & terminal*** ***(B55) No. 11 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **6**.	Repair the short circuit of harness between transmission connector and chassis ground.
6	**CHECK TCM OUTPUT SIGNAL.** 1) Connect the TCM and ECM connector. 2) Turn the ignition switch to ON. (engine OFF) 3) Move the select lever to “P” range. 4) Measure the voltage between TCM connector and chassis ground. ***Connector & terminal*** ***(B55) No. 11 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **7**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
7	**CHECK TCM OUTPUT SIGNAL.** 1) Set the select lever to “D” range. 2) Measure the voltage between TCM connector and chassis ground. ***Connector & terminal*** ***(B55) No. 11 (+) — Chassis ground (–):***	Is the voltage 8 V or more?	Go to step **8**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
8	**CHECK POOR CONTACT.**	Is there any open or poor contact of connector (loosing terminal, entering foreign matter, damaging connector body)?	Repair the poor contact.	Check the neutral switch of ECM.

AC:DTC P0957 BACKUP LIGHT RELAY CIRCUIT LOW

DTC DETECTING CONDITION:
Output circuit of the back-up light relay is open or shorted
TROUBLE SYMPTOM:
Back-up light does not illuminate in “R” range.
WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK DTC OF TCM.**	Is DTC of Transmission Range Sensor Circuit (PRNDL Input) detected?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK HARNESS CONNECTOR BETWEEN TCM AND BACK-UP LIGHT RELAY.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and back-up light relay. 3) Measure the resistance of harness between TCM connector and back-up light relay connector. ***Connector & terminal*** ***(B55) No. 13 — (B356) No. 2:***	Is the resistance less than 1 Ω?	Go to step **3**.	Repair the open circuit of harness between TCM and transmission connector, or poor contact of connector.
3	**CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION.** Measure the resistance of harness between TCM connector and chassis ground. ***Connector & terminal*** ***(B55) No. 13 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **4**.	Repair the short circuit of harness between TCM and transmission connector.
4	**CHECK TCM OUTPUT SIGNAL.** 1) Turn the ignition switch to ON. (engine OFF) 2) Move the select lever to “P” range. 3) Measure the voltage between TCM connector and chassis ground. ***Connector & terminal*** ***(B55) No. 13 (+) — Chassis ground (–):***	Is the voltage 8 V or more?	Go to step **5**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
5	**CHECK TCM OUTPUT SIGNAL.** 1) Set the select lever to “R” range. 2) Is the voltage less than 1 V? 3) Measure the voltage between TCM connector and chassis ground. ***Connector & terminal*** ***(B55) No. 13 (+) — Chassis ground (–):***	Is the voltage less than 1 V?	Go to step **6**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
6	**CHECK INPUT VOLTAGE FOR BACK-UP LIGHT RELAY.** Measure the voltage between back-up light relay and chassis ground.	Is the voltage 10 — 13 V?	Replace the back-up light relay.	Check open or short circuit of harness between fuse (No. 18) and back-up light relay.

AD:DTC P0958 BACKUP LIGHT RELAY CIRCUIT HIGH

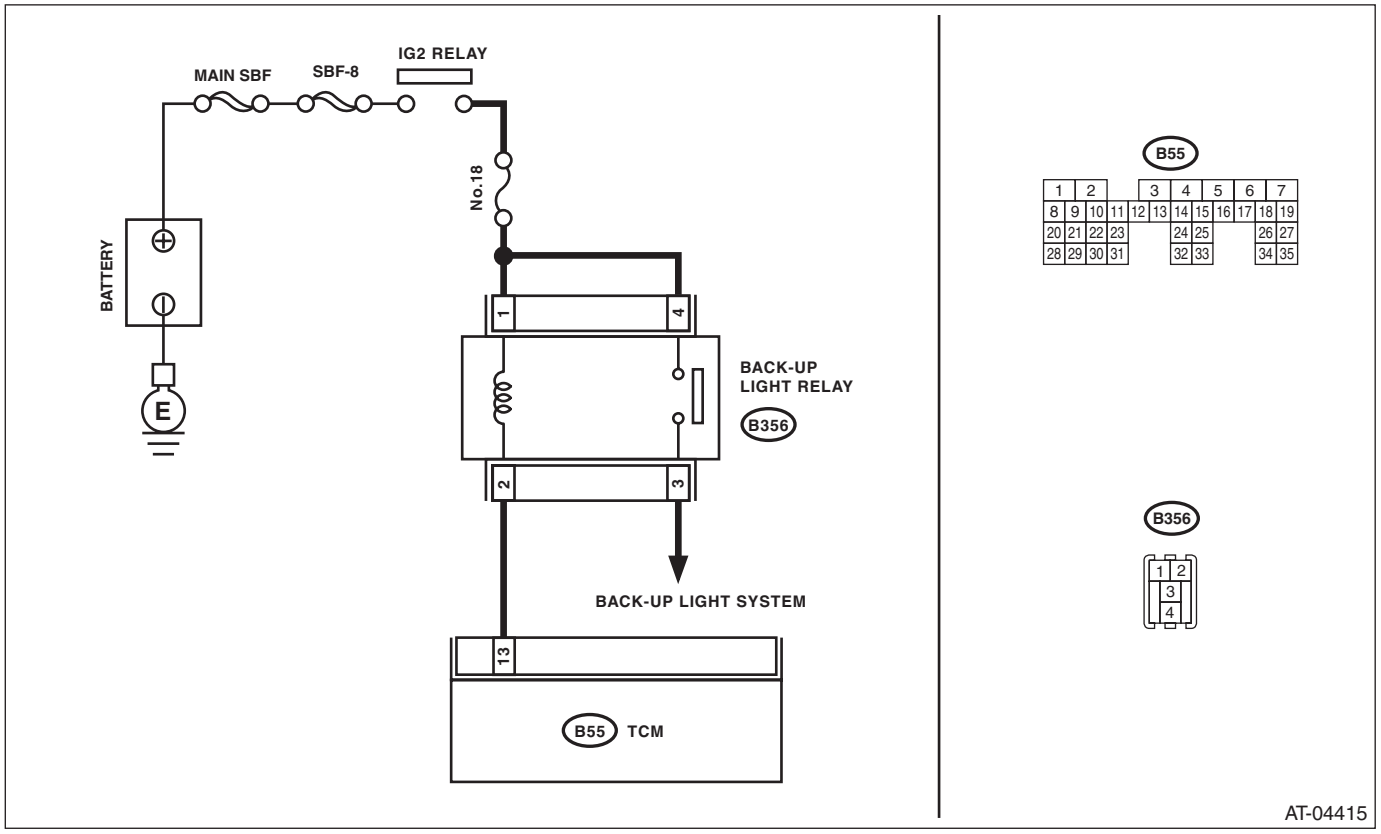
DTC DETECTING CONDITION:

Output circuit of the back-up light relay is open or shorted

TROUBLE SYMPTOM:

Back-up light does not illuminate in “R” range.

WIRING DIAGRAM:

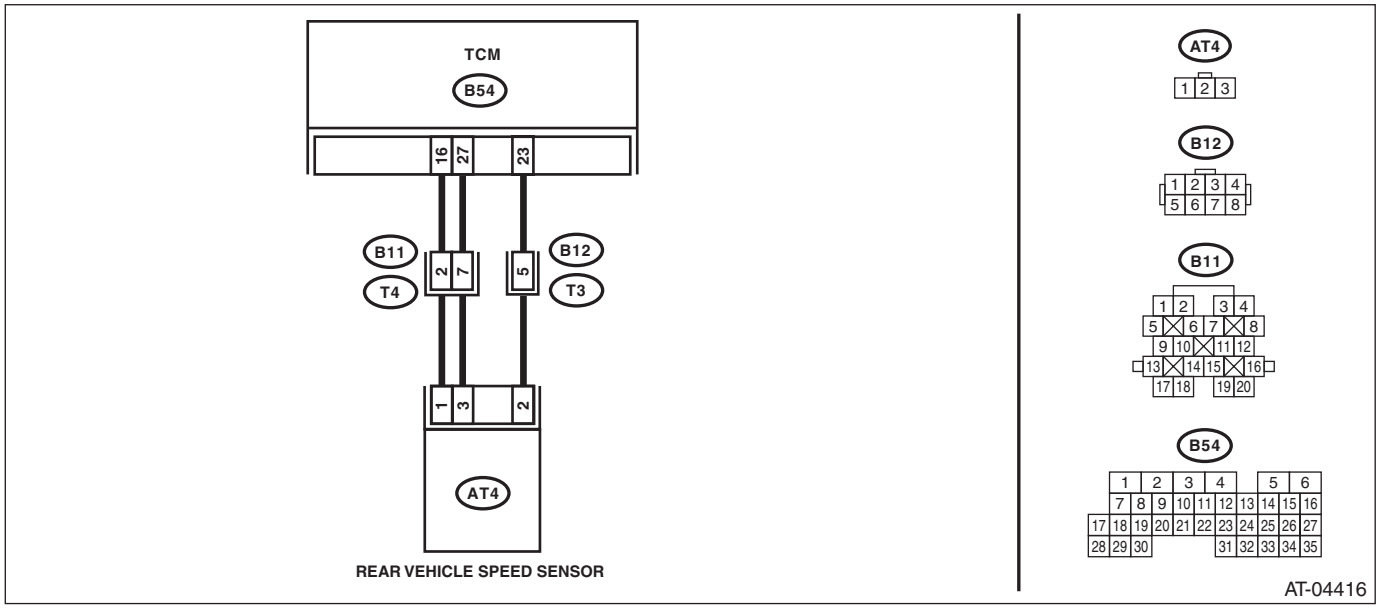


	Step	Check	Yes	No
1	**CHECK DTC OF TCM.**	Is DTC of Transmission Range Sensor Circuit (PRNDL Input) detected?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK HARNESS CONNECTOR BETWEEN TCM AND BACK-UP LIGHT RELAY.** 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM and back-up light relay. 3) Measure the resistance of harness between TCM connector and back-up light relay connector. ***Connector & terminal*** ***(B55) No. 13 — (B356) No. 2:***	Is the resistance less than 1 Ω?	Go to step **3**.	Repair the open circuit of harness between TCM and transmission connector, or poor contact of connector.
3	**CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION.** Measure the resistance of harness between TCM connector and chassis ground. ***Connector & terminal*** ***(B55) No. 13 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **4**.	Repair the short circuit of harness between TCM and transmission connector.
4	**CHECK TCM OUTPUT SIGNAL.** 1) Turn the ignition switch to ON. (engine OFF) 2) Move the select lever to “P” range. 3) Measure the voltage between TCM connector and chassis ground. ***Connector & terminal*** ***(B55) No. 13 (+) — Chassis ground (–):***	Is the voltage 8 V or more?	Go to step **5**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
5	**CHECK TCM OUTPUT SIGNAL.** 1) Set the select lever to “R” range. 2) Measure the voltage between TCM connector and chassis ground. ***Connector & terminal*** ***(B55) No. 13 (+) — Chassis ground (–):***	Is the voltage 1 V or less?	Go to step **6**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
6	**CHECK INPUT VOLTAGE FOR BACK-UP LIGHT RELAY.** Measure the voltage between back-up light relay and chassis ground.	Is the voltage 10 — 13 V?	Replace the back-up light relay.	Check open or short circuit of harness between fuse (No. 18) and back-up light relay.

AE:DTC P1706 AT VEHICLE SPEED SENSOR CIRCUIT MALFUNCTION (REAR WHEEL)

DTC DETECTING CONDITION:
Input signal circuit of TCM is open or shorted.
TROUBLE SYMPTOM:
- Shifting quality malfunction
- Tight corner braking phenomenon is occurred.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK TCM I/O SIGNAL.** Check the power supply and ground I/O signal. <Ref. to 5AT(diag)-12, ELECTRICAL SPECIFICATION, Transmission Control Module (TCM) I/O Signal.>	Is TCM I/O signal OK?	Go to step **2**.	Repair the open or short circuit for power supply and ground.
2	**CHECK TCM AND TRANSMISSION HARNESS CONNECTOR.** 1) Disconnect the connectors from TCM and transmission. 2) Measure the resistance of harness between TCM connector and transmission connector. ***Connector & terminal*** ***(B54) No. 23 — (B12) No. 5:*** ***(B54) No. 27 — (B11) No. 7:*** ***(B54) No. 16 — (B11) No. 2:***	Is resistance less than 1 Ω?	Go to step **3**.	Repair the open circuit of harness between TCM and transmission connector.
3	**CHECK TCM AND TRANSMISSION HARNESS CONNECTOR.** Measure the resistance of harness between TCM connector and chassis ground. ***Connector & terminal*** ***(B54) No. 23 — Chassis ground:*** ***(B54) No. 27 — Chassis ground:*** ***(B54) No. 16 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **4**.	Repair the short circuit of harness between TCM and transmission connector.

	Step	Check	Yes	No
4	**CHECK TCM POWER SUPPLY OUTPUT.** 1) Connect the connector to the TCM. (Transmission connector is disconnected) 2) Turn the ignition switch to ON. (Engine OFF) 3) Measure the voltage between transmission connector and chassis ground. ***Connector & terminal*** ***(B11) No. 7 (+) — Chassis ground (–):***	Is the voltage 10 — 13 V?	Go to step **5**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
5	**CHECK INPUT CIRCUIT OF TCM TURBINE SPEED SENSOR.** Measure the voltage variation between TCM connector terminals. ***Connector & terminal*** ***(B12) No. 5 (+) — (B11) No. 2 (–):***	Is the voltage 4 — 6 V?	Go to step **7**.	Go to step **6**.
6	**CHECK HARNESS ASSEMBLY (TURBINE SPEED SENSOR GROUND).** Check the installing condition of ground connecting harness (used for both of turbine speed sensor 1, rear vehicle speed sensor).	Is the ground connecting harness installed to transmission body correctly, or the harness and connector terminals not damaged?	Go to step **7**.	When the poor installation of ground connecting harness, install it securely. Replace the transmission assembly if the harness is damaged. <Ref. to 5AT-40, Automatic Transmission Assembly.>
7	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Connect all the connectors. 2) Lift up the vehicle. 3) Start the engine, and drive the vehicle. 4) Read the data of “rear wheel speed” using Subaru Select Monitor. <Ref. to 5AT(diag)-16, OPERATION, Subaru Select Monitor.> NOTE: The speed difference between front and rear wheels may illuminate the ABS warning light, but this does not indicate a malfunction. When AT control diagnosis is finished, perform the ABS memory clearance procedure of on-board diagnostics system. <Ref. to VDC(diag)-22, CLEAR MEMORY MODE, OPERATION, Subaru Select Monitor.>	Does the value of the rear wheel speed change depending on the acceleration and deceleration of the vehicle?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair poor contact of harness in ATF temperature sensor and transmission connector.	Replace the transmission harness.

AF:DTC P1707 AT AWD SOLENOID VALVE CIRCUIT MALFUNCTION

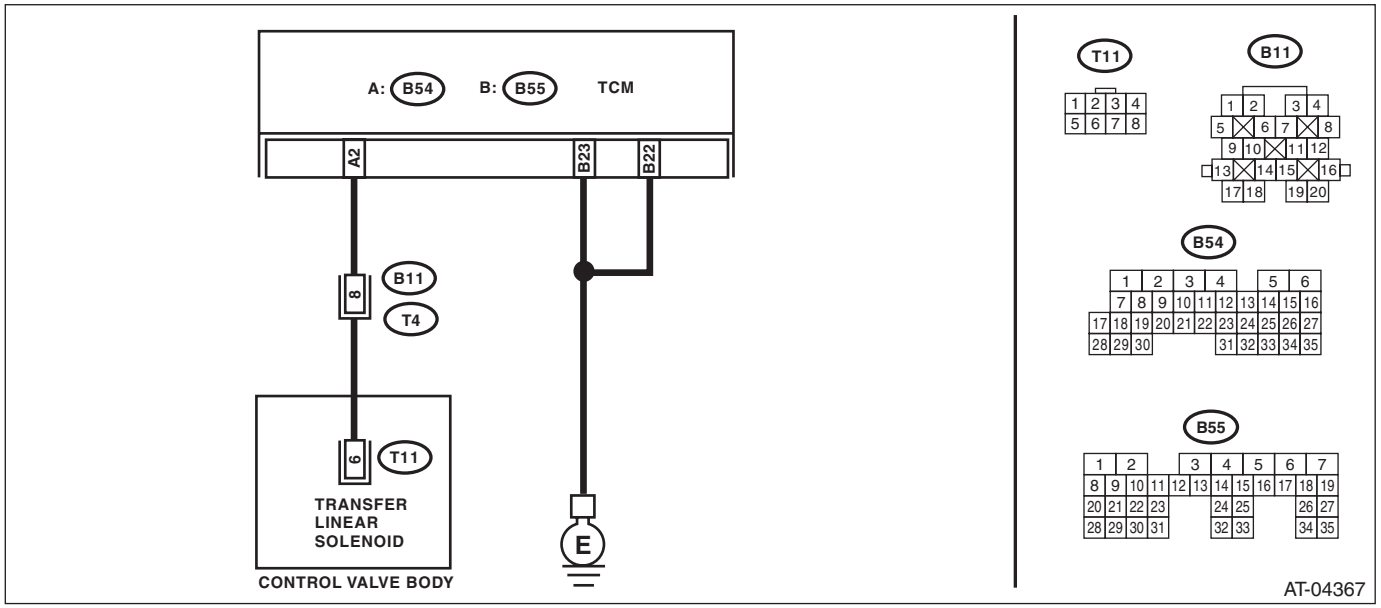
DTC DETECTING CONDITION:

Output signal circuit of transfer solenoid is open or shorted.

TROUBLE SYMPTOM:

- Tight corner braking phenomenon is occurred.
- Drivability getting worse.

WIRING DIAGRAM:

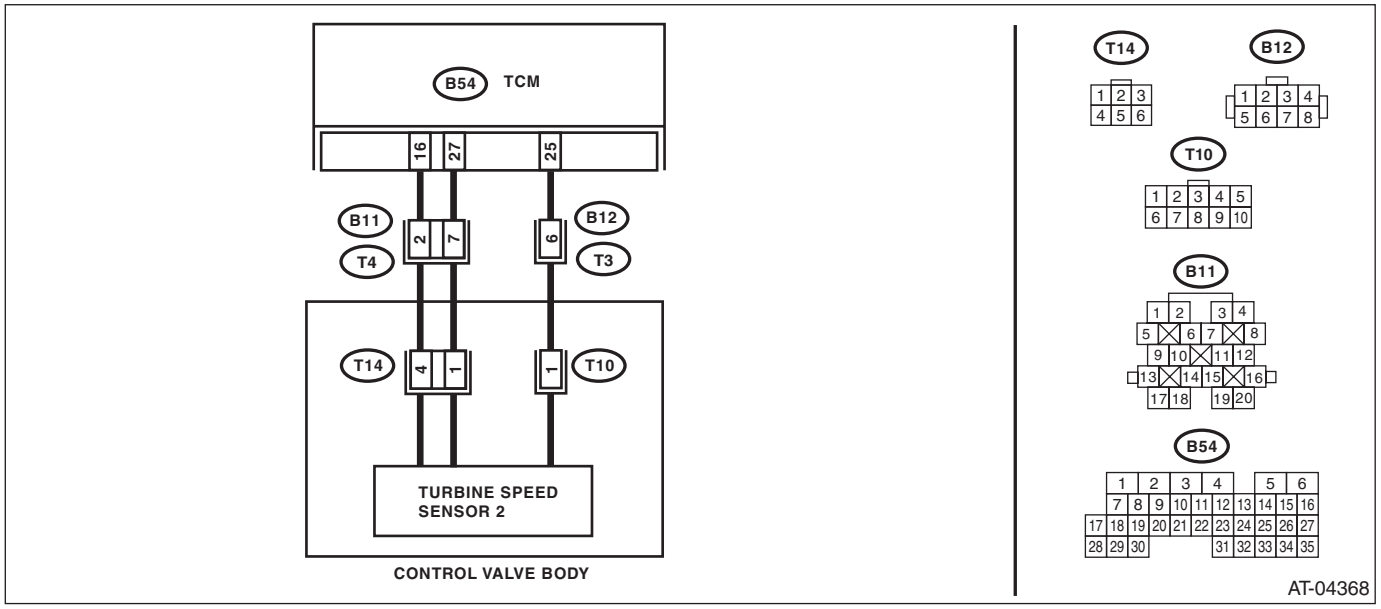


	Step	Check	Yes	No
1	**CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION.** 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM and transmission connector. ***Connector & terminal*** ***(B54) No. 2 — (B11) No. 8:*** ***(B55) No. 22 — Chassis ground:*** ***(B55) No. 23 — Chassis ground:***	Is the resistance less than 1 Ω?	Go to step **2**.	Repair the open circuit of harness between TCM connector 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. 23 — Chassis ground:***	Is the resistance more than 1 MΩ?	Go to step **3**.	Repair the short circuit of harness between TCM connector and transmission connector.
3	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T4) No. 8 — (T11) No. 6:***	Is the resistance less than 1 Ω?	Go to step **4**.	Repair the open circuit of harness between transmission connector and control valve body connector.
4	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T11) No. 6 — Transmission ground:***	Is the resistance more than 1 MΩ?	Go to step **5**.	Repair the short circuit of harness between control valve body connector and transmission ground.
5	**CHECK AWD SOLENOID.** Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T21) No. 6 — Transmission ground:***	Is the resistance between 3 — 9 Ω?	Go to step **6**.	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>
6	**CHECK POOR CONTACT.** Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact.	Go to step **7**.
7	**CHECK AFTER REPAIR.** 1) Perform the Clear Memory Mode. 2) Drive for a while, read the DTC, and check that there is no faulty.	Is DTC displayed?	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>	Temporary poor contact or open circuit occurs. Recheck that the harness connector has no faulty.

AG:DTC P1710 TORQUE CONVERTER TURBINE 2 SPEED SIGNAL CIRCUIT 2 MALFUNCTION

DTC DETECTING CONDITION:
Input signal circuit of TCM is open or shorted.
TROUBLE SYMPTOM:
- Excessive shift shock
- Does not shift to 5th

WIRING DIAGRAM:



Step		Check	Yes	No
1	**CHECK TCM I/O SIGNAL.** Check the power supply and ground I/O signal. <Ref. to 5AT(diag)-12, ELECTRICAL SPECIFICATION, Transmission Control Module (TCM) I/O Signal.>	Is TCM I/O signal OK?	Go to step **2**.	Repair the open or short circuit for power supply and ground.
2	**CHECK TCM AND TRANSMISSION HARNESS CONNECTOR.** 1) Disconnect the connectors from TCM and transmission. 2) Measure the resistance of harness between TCM connector and transmission connector. ***Connector & terminal*** ***(B54) No. 25 — (B12) No. 6:*** ***(B54) No. 16 — (B11) No. 2:*** ***(B54) No. 27 — (B11) No. 7:***	Is resistance less than 1 Ω?	Go to step **3**.	Repair the open circuit of harness between TCM and transmission connector.
3	**CHECK TCM AND TRANSMISSION HARNESS CONNECTOR.** Measure the resistance of harness between TCM connector and chassis ground. ***Connector & terminal*** ***(B54) No. 25 — 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 TCM POWER SUPPLY OUTPUT.** 1) Connect the connector to the TCM. (Transmission connector is disconnected) 2) Turn the ignition switch to ON. (Engine OFF) 3) Measure the voltage between transmission connector and chassis ground. ***Connector & terminal*** ***(B11) No. 7 (+) — Chassis ground (–):***	Is the voltage 10 — 13 V?	Go to step **5**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>

	Step	Check	Yes	No
5	**CHECK INPUT CIRCUIT OF TCM TURBINE SPEED SENSOR 2.** Measure the voltage between TCM connector terminals. ***Connector & terminal*** ***(B12) No. 6 (+) — (B11) No. 2 (–):***	Is the voltage 4 — 6 V?	Go to step **6**.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
6	**CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR.** 1) Connect all connectors. 2) Lift up the vehicle. 3) Start the engine, and set the vehicle in 1st speed driving condition of manual mode. 4) Read the data of "turbine speed 2" using Subaru Select Monitor. <Ref. to 5AT(diag)-16, OPERATION, Subaru Select Monitor.> NOTE: The speed difference between front and rear wheels may illuminate the ABS warning light, but this does not indicate a malfunction. When AT control diagnosis is finished, perform the ABS memory clearance procedure of on-board diagnostics system. <Ref. to VDC(diag)-22, CLEAR MEMORY MODE, OPERATION, Subaru Select Monitor.>	Does the value of the turbine speed sensor 2 change depending on the acceleration, deceleration and shifting gear of the vehicle?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the poor contact of harness of turbine speed sensor 2 and transmission connector.	Go to step **7**.
7	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** 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 ATF. **CAUTION:** **Do not drain ATF until it cools down.** 6) Remove the oil pan, and disconnect the connector from control valve body connector. 7) Measure the resistance between transmission connector and control valve body connector. ***Connector & terminal*** ***(T3) No. 6 — (T10) No. 1:***	Is resistance less than 1 Ω?	Go to step **8**.	Repair the open circuit of harness between transmission connector and control valve body connector.
8	**CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY.** Measure the resistance between transmission ground and control valve body connector. ***Connector & terminal*** ***(T10) No. 1 — Transmission ground:***	Is the resistance more than 1 MΩ?	Replace the control valve body. <Ref. to 5AT-57, Control Valve Body.>	Repair the short circuit of harness between transmission connector and transmission ground.

AH:DTC P1718 AT CAN COMMUNICATION CIRCUIT

NOTE:
DTC P1718 AT CAN communication circuit, refer to "LAN System". <Ref. to LAN(diag)-12, READ DIAGNOSTIC TROUBLE CODE (DTC), OPERATION, Subaru Select Monitor.>

AI: DTC P1817 SPORT MODE SWITCH CIRCUIT (MANUAL SWITCH)

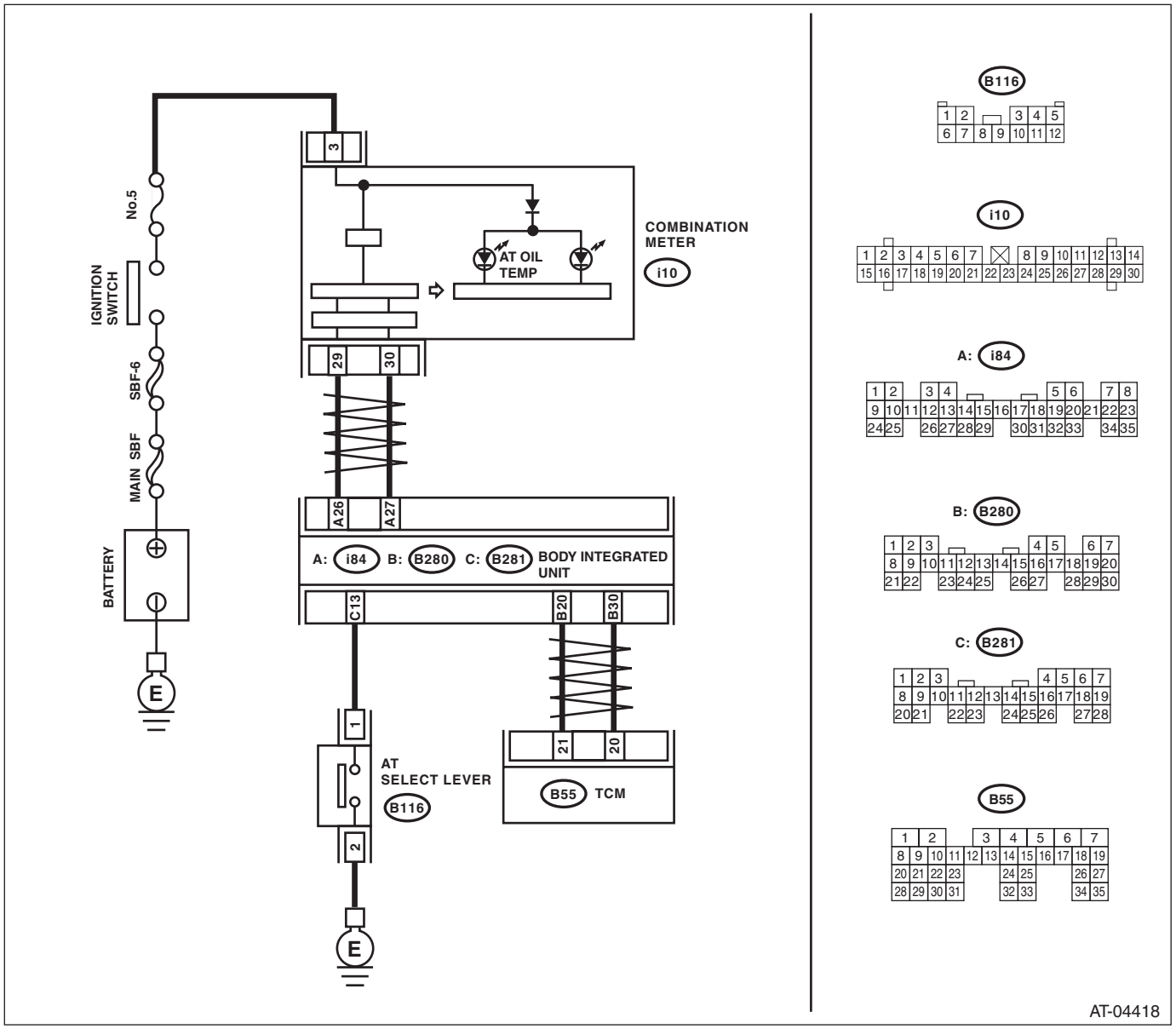
DTC DETECTING CONDITION:

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

TROUBLE SYMPTOM:

- Manual mode can not be set.
- When shifting to “N” → “D”, the SPORT shift indicator light illuminates.

WIRING DIAGRAM:



	Step	Check	Yes	No
1	**CHECK BODY INTEGRATED UNIT.** 1) Connect the Subaru Select Monitor to data link connector. 2) Turn the ignition switch to ON. (engine OFF) 3) Read the DTC of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step **2**.
2	**CHECK BODY INTEGRATED UNIT INPUT SIGNAL.** 1) Move the select lever to "P" range. 2) Read the "TIP mode SW" data of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is OFF displayed?	Go to step **3**.	Go to step **7**.
3	**CHECK BODY INTEGRATED UNIT INPUT SIGNAL.** 1) Move the select lever from "P" to "D" range. 2) Read the "TIP mode SW" data of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is the indication on each range OFF?	Go to step **4**.	Replace the select lever assembly. <Ref. to CS-20, Select Lever.>
4	**CHECK BODY INTEGRATED UNIT INPUT SIGNAL.** 1) Shift the select lever to manual mode. 2) Shift the select lever to other than "D" range. 3) Read the "TIP mode SW" data of body integrated unit using Subaru Select Monitor. <Ref. to LAN(diag)-12, OPERATION, Subaru Select Monitor.>	Is OFF displayed?	Go to step **5**.	Replace the select lever assembly. <Ref. to CS-20, Select Lever.>
5	**CHECK DTC OF TCM.**	Is DTC of Transmission Range Sensor Circuit (PRNDL Input) and AT CAN communication circuit displayed?	Perform the diagnosis according to each DTC.	Go to step **6**.
6	**CHECK INPUT SIGNAL FROM TCM.** 1) Move the select lever from "P" to "D" range. 2) Read the "TIP mode SW" data of TCM using Subaru Select Monitor. <Ref. to 5AT(diag)-16, OPERATION, Subaru Select Monitor.>	Is the indication on each range OFF?	Even if the AT OIL TEMP light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause.	Replace the TCM. <Ref. to 5AT-60, Transmission Control Module (TCM).>
7	**CHECK HARNESS BETWEEN BODY INTEGRATED UNIT AND MANUAL MODE SWITCH.** 1) Turn the ignition switch to OFF. 2) Disconnect harness connector from body integrated unit and select lever. 3) Measure the harness resistance between the body integrated unit and chassis ground. ***Connector & terminal*** ***(i84) No. 27 — Chassis ground:***	Is the resistance 1 MΩ or more?	Go to step **8**.	Repair the short circuit of harness between body integrated unit and manual mode.
8	**CHECK MANUAL MODE SWITCH.** 1) Move the select lever to "P" range. 2) Measure the resistance between harness connector terminals of manual mode switch. ***Terminals*** ***(B116) No. 1 — No. 2***	Is the resistance more than 1 MΩ?	Check the body integrated unit.	Replace the select lever assembly. <Ref. to CS-20, Select Lever.>

AJ:DTC P1840 TRANSMISSION FLUID PRESSURE SENSOR/SWITCH A CIRCUIT

DTC DETECTING CONDITION:
Front brake oil pressure switch malfunction
TROUBLE SYMPTOM:
Excessive shift shock

NOTE:
Refer to DTC P0751 for diagnostic procedure. <Ref. to 5AT(diag)-58, DTC P0751 SHIFT SOLENOID “A” PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AK:DTC P1841 TRANSMISSION FLUID PRESSURE SENSOR/SWITCH B CIRCUIT

DTC DETECTING CONDITION:
Forward brake oil pressure switch malfunction
TROUBLE SYMPTOM:
Excessive shift shock

NOTE:
Refer to DTC P0771 for diagnostic procedure. <Ref. to 5AT(diag)-74, DTC P0771 SHIFT SOLENOID “E” PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AL:DTC P1842 TRANSMISSION FLUID PRESSURE SENSOR/SWITCH C CIRCUIT

DTC DETECTING CONDITION:
Input clutch oil pressure switch is malfunction.
TROUBLE SYMPTOM:
Excessive shift shock

NOTE:
Refer to DTC P0756 for diagnostic procedure. <Ref. to 5AT(diag)-62, DTC P0756 SHIFT SOLENOID “B” PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AM:DTC P1843 TRANSMISSION FLUID PRESSURE SENSOR/SWITCH D CIRCUIT

DTC DETECTING CONDITION:
Direct clutch oil pressure switch malfunction.
TROUBLE SYMPTOM:
Excessive shift shock

NOTE:
Refer to DTC P0766 for diagnostic procedure. <Ref. to 5AT(diag)-70, DTC P0766 SHIFT SOLENOID “D” PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AN:DTC P1844 TRANSMISSION FLUID PRESSURE SENSOR/SWITCH E CIRCUIT

DTC DETECTING CONDITION:
High & low reverse clutch oil pressure switch malfunction.
TROUBLE SYMPTOM:
Excessive shift shock

NOTE:
Refer to DTC P0761 for diagnostic procedure. <Ref. to 5AT(diag)-66, DTC P0761 SHIFT SOLENOID “C” PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>