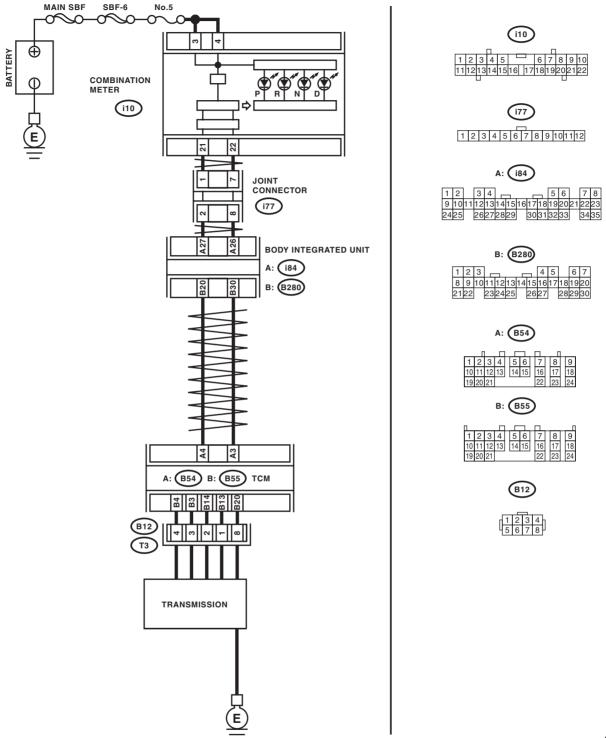
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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.



	Step	Check	Yes	No
1	CHECK DTC OF TCM.	Is DTC of AT CAN communica-		Go to step 2.
		tion circuit displayed?	nosis according to	S
		. ,	DTC.	
2	CHECK INHIBITOR SWITCH.	Is all displayed "High"?	Go to step 4.	Go to step 3.
	1) Shift the select lever to "P" range.			-
	2) Check input signal of inhibitor SW 1 — 4			
	and inhibitor SW 3 monitor using Subaru			
	Select Monitor.			
3		Is the resistance more than 1	Go to step 6.	Repair the short
	TCM AND TRANSMISSION.	ΜΩ?		circuit of harness
	1) Turn the ignition switch to OFF.			between TCM con-
	2) Disconnect the connectors from TCM and			nector and chassis
	transmission.			ground.
	Measure the resistance between TCM con- nector and chassis ground about the item.			
	nector and chassis ground about the item which indicated Low on step 3.			
	Connector & terminal			
	(B55) No. 4 — Chassis ground:			
	(B55) No. 3 — Chassis ground:			
	(B55) No. 14 — Chassis ground:			
	(B55) No. 13 — Chassis ground:			
	(B55) No. 20 — Chassis ground:			
4	CHECK INHIBITOR SWITCH.	Is all displayed Low?	Go to step 6.	Go to step 5.
	 Shift the select lever to "D" range. 			
	 Check input signal of inhibitor SW 1 — 4 			
	and inhibitor SW 3 monitor using Subaru			
	Select Monitor.			
5		Is the resistance less than 1	Go to step 6.	Repair the open
	TCM AND TRANSMISSION.	Ω?		circuit of harness
	1) Turn the ignition switch to OFF.			between TCM con-
	2) Disconnect the connectors from TCM and			nector and trans-
	transmission. 3) Measure the resistance of harness			mission connector.
	between TCM and transmission connector			
	about the item which indicated High on step 5.			
	Connector & terminal			
	(B55) No. 4 — (B12) No. 4:			
	(B55) No. 3 — (B12) No. 3:			
	(B55) No. 14 — (B12) No. 2:			
	(B55) No. 13 — (B12) No. 1:			
	(B55) No. 20 — (B12) No. 8:			
6	CHECK INPUT SIGNAL FOR TCM USING	Is the voltage 4 — 6 V for the	Go to step 8.	Go to step 7.
	CIRCUIT TESTER.	inhibitor SW 1 — 4? Is the volt-		
	Turn the ignition switch to OFF.	age 3.5 — 5.5 V for the inhibi-		
	Disconnect the transmission connector (P12)	tor SW 3 monitor?		
	(B12).			
	3) Connect the TCM connector.4) Turn the ignition switch to ON.			
	5) Measure the voltage between TCM termi-			
	nals.			
	Connector & terminal			
	(B55) No. 4 — (B54) No. 19:			
	(B55) No. 3 — (B54) No. 19:			
	(B55) No. 14 — (B54) No. 19:			
	(B55) No. 13 — (B54) No. 19:			
	(B55) No. 20 — (B54) No. 19:			

	Step	Check	Yes	No
7	CHECK TCM I/O SIGNAL. Check I/O signal of power supply, ground and PVIGN power supply relay. <ref. (tcm)="" 5at(diag)-12,="" control="" electrical="" i="" module="" o="" signal.="" specification,="" to="" transmission=""></ref.>	Is TCM I/O signal OK?	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>	Repair the open or short circuit for power supply and ground. Perform the diagnosis according to DTC for PVIGN power supply relay.
8	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 and place it on rigid racks. NOTE: Raise all wheels off floor. 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. 4 — (T5) No. 6: (T3) No. 3 — (T5) No. 5: (T3) No. 2 — (T5) No. 3: (T3) No. 8 — (T5) No. 2:	Is the resistance less than 1 Ω ?	Go to step 9.	Repair the open circuit of harness between control valve body connector and transmission connector.
9	CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T5) No. 6 — Transmission ground: (T5) No. 5 — Transmission ground: (T5) No. 4 — Transmission ground: (T5) No. 3 — Transmission ground: (T5) No. 2 — Transmission ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 10.	Repair the short circuit of harness between control valve body con- nector and trans- mission connector.
10	CHECK POOR CONTACT.	Is there any poor contact in inhibitor SW 1 — 4 or inhibitor SW 3 monitor circuit?	Repair the poor contact.	Replace the control valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""></ref.>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

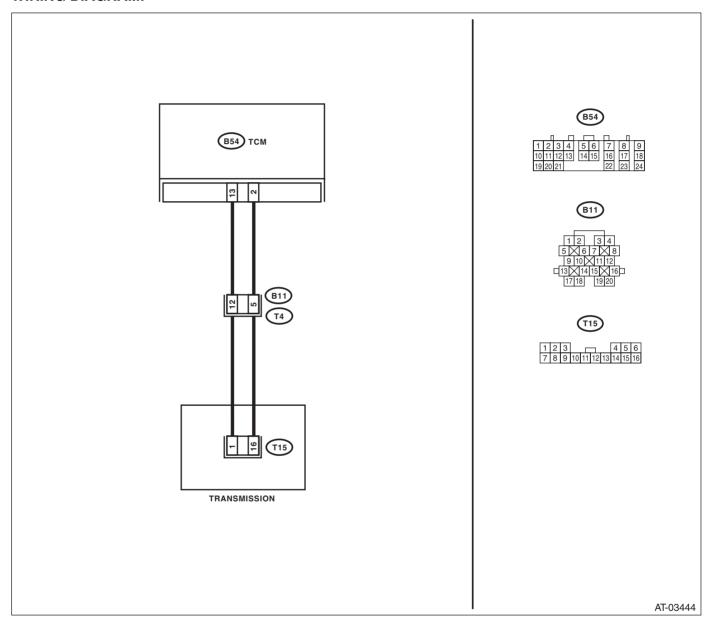
B: DTC P0712 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT LOW INPUT

DTC DETECTING CONDITION:

Input signal circuit to ATF temperature sensor 1 is open.

TROUBLE SYMPTOM:

Excessive shift shock



	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. 13 — (B11) No. 12: (B54) No. 2 — (B11) No. 5:	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 reaches to 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:		Go to step 3.	Go to step 5.
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 ATF temperature using Subaru Select Monitor.	Does the ATF temperature gradually decrease?	Even if the SPORT indicator 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.

	Step	Check	Yes	No
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 and place it on rigid racks. NOTE: Raise all wheels off floor. 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 — (T5) No. 1: (T4) No. 5 — (T5) No. 16:	Is the resistance less than 1 Ω ?	Replace the control valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""></ref.>	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 1 circuit?	Repair the poor contact.	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

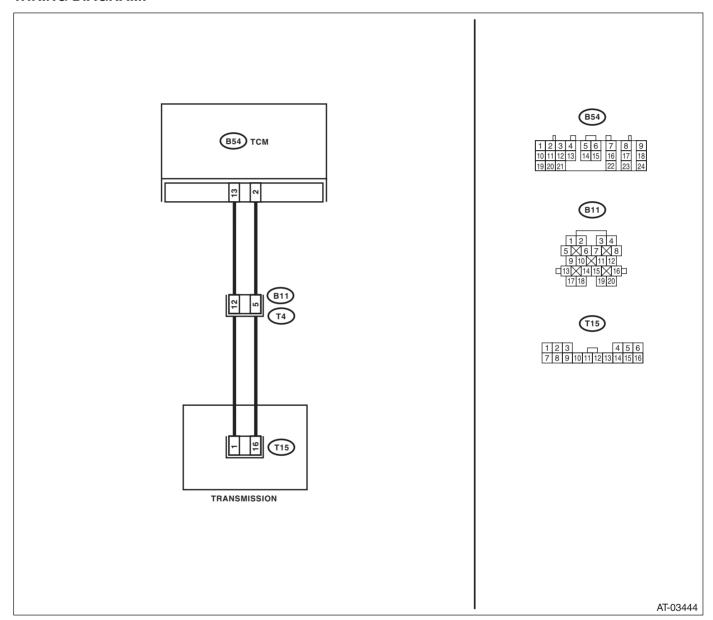
C: DTC P0713 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT HIGH INPUT

DTC DETECTING CONDITION:

Input signal circuit to ATF temperature sensor 1 is shorted.

TROUBLE SYMPTOM:

Excessive shift shock



	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN		Go to step 2.	Repair the short
-	TCM AND TRANSMISSION.	$M\Omega$?	G.6 16 616F 2.	circuit of harness
	1) Turn the ignition switch to OFF.			between TCM and
	2) Disconnect the connectors from TCM and			transmission con-
	transmission.			nector.
	3) Measure the resistance of harness			
	between TCM connector and chassis ground.			
	Connector & terminal			
	(B54) No. 13 — Chassis ground:			
	(B54) No. 2 — Chassis ground:			
2	CHECK ATF TEMPERATURE SENSOR.	Is the resistance between 500	Go to step 3.	Go to step 5.
	 Turn the ignition switch to OFF. 	— 1,200 Ω?		
	Connect the connectors to transmission			
	and TCM.			
	Turn the ignition switch to ON and start			
	engine.			
	 Warm-up the transmission until the ATF 			
	temperature reaches to 80°C (176°F).			
	NOTE:			
	If the ambient temperature is below 0°C (32°F),			
	drive the vehicle until the ATF reaches its oper-			
	ating temperature.			
	Disconnect the connector from transmis-			
	sion.			
	Measure the resistance between transmis-			
	sion connector terminals.			
	Connector & terminal			
	(T4) No. 5 — (T4) No.12:			
3	CHECK ATF TEMPERATURE SENSOR.	Does the resistance value	Go to step 4.	Go to step 5.
	Measure the resistance between transmission	increase while the ATF temper-		
	connector terminals.	ature decreases?		
	Connector & terminal			
4	(T4) No. 5 — (T4) No.12: CHECK INPUT SIGNAL FOR TCM USING	Doos the ATE temperature	Even if the SPORT	Co to oton 6
4	SUBARU SELECT MONITOR.	Does the ATF temperature gradually decrease?	indicator light	Go to step 6.
	Connect the connector.	gradually decrease:	blinks, the system	
	Turn the ignition switch to ON. (engine)		is in normal condi-	
	OFF)		tion. A temporary	
	3) Read the ATF temperature using Subaru		poor contact of	
	Select Monitor.		connector or har-	
	CO.CON MONITOR		ness may be the	
			cause. Repair the	
			poor contact of	
			harness between	
			ATF temperature	
			sensor and trans-	
			mission connector.	

	Step	Check	Yes	No
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 and place it on rigid racks. NOTE: Raise all wheels off floor. 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 (T15) No. 1 — Chassis ground: (T15) No. 16 — Chassis ground:	Is the resistance more than 1 $M\Omega$?	Replace the control valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""></ref.>	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 1 circuit?	Repair the poor contact.	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>

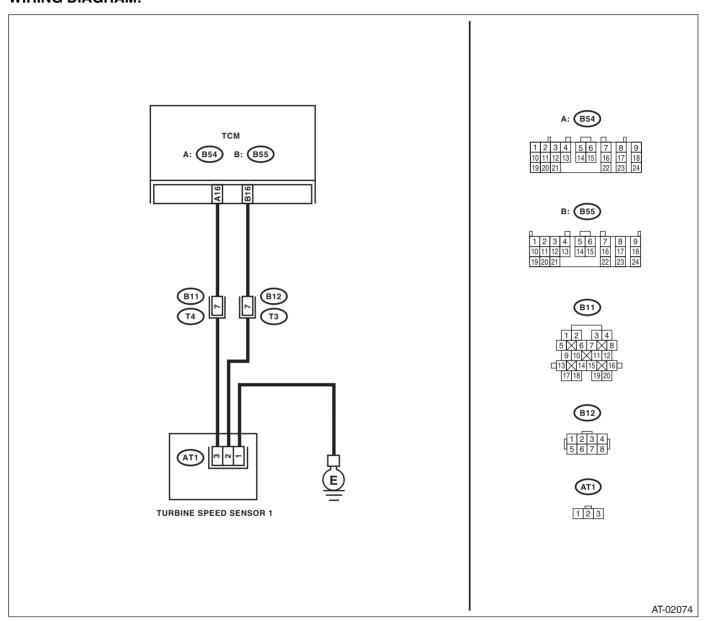
D: DTC P0715 INPUT/TURBINE SPEED SENSOR CIRCUIT

DTC DETECTING CONDITION:

Input signal circuit of TCM is open or shorted.

TROUBLE SYMPTOM:

- · Excessive shift shock
- · Does not shift to 5th



	Step	Check	Yes	No
1	CHECK TCM I/O SIGNAL. Check I/O signal of power supply, ground and PVIGN power supply relay. <ref. (tcm)="" 5at(diag)-12,="" control="" electrical="" i="" module="" o="" signal.="" specification,="" to="" transmission=""></ref.>	Is TCM I/O signal OK?	Go to step 2.	Repair the open or short circuit for power supply and ground. Perform the diagnosis according to DTC P0882 for PVIGN power supply relay.
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. 7: (B55) No. 16 — (B12) No. 7:	Is the 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: (B55) No. 16 — Chassis ground:	Is the resistance 1 $\mbox{M}\Omega$ 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 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. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>
5	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 har- ness installed securely to the transmission body? Is there any serious damage in the har- ness and terminal?	Go to step 6.	When poor installation of ground occurs, install it securely. Replace the transmission assembly if the harness or terminal is damaged. <ref. 5at-34,="" assembly.="" automatic="" to="" transmission=""></ref.>
6	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 (T4) No. 7 — (AT1) No. 3: (T3) No. 7 — (AT1) No. 2: (AT1) No. 1 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 7.	Repair the open circuit of harness between TCM and transmission connector, or poor contact of connector.

Step	Check	Yes	No
Measure the resistance between transmission connector and chassis ground. Connector & terminal (T4) No. 7 — Chassis ground: (T3) No. 7 — Chassis ground:	Is the resistance more than 1 $M\Omega$?	Go to step 8.	Repair the short circuit of harness between TCM and transmission connector.
SUBARU SELECT MONITOR. 1) Connect all connectors. 2) Lift-up the vehicle and support with rigid	Does the value of the turbine speed sensor 1 change depending on the acceleration, deceleration and shifting range of the vehicle?	Even if the SPORT indicator 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. 1.="" 5at-52,="" sensor="" speed="" to="" turbine=""></ref.>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

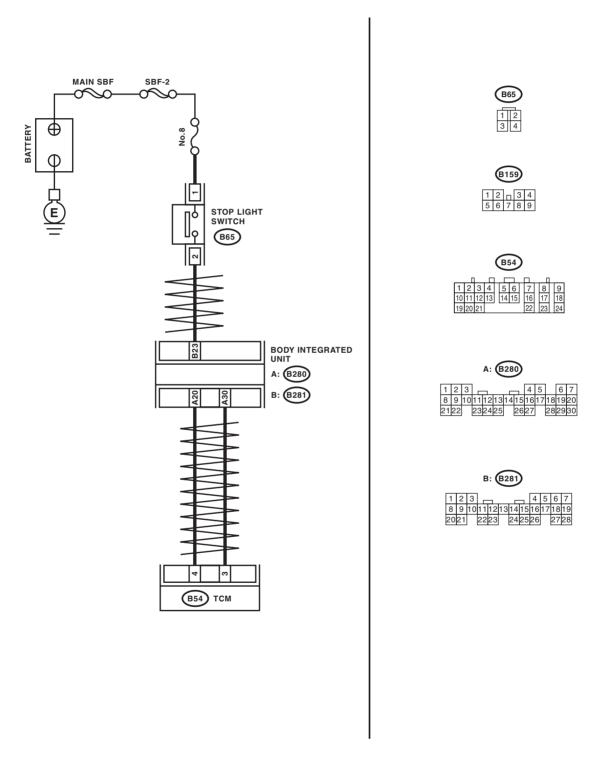
E: DTC P0719 TORQUE CONVERTER/BRAKE SWITCH "B" CIRCUIT LOW DTC DETECTING CONDITION:

Brake switch malfunction, open input signal circuit

TROUBLE SYMPTOM:

Brake down control is not operated at SPORT mode.

WIRING DIAGRAM:



AT-03287

	Step	Check	Yes	No
1	CHECK DTC.	Is any of following DTC dis- played? / AT CAN Communica- tion Circuit / Output Speed Sensor Circuit / AT Vehicle	Perform the diagnosis according to DTC.	Go to step 2.
		Speed Sensor Circuit Malfunction (Rear Wheel)		
2	CHECK BODY INTEGRATED UNIT. 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to the data link connector. 3) Turn the ignition switch to ON. (engine OFF) 4) Turn the Subaru Select Monitor switch to ON. 5) Depress the brake pedal. 6) Read the data of brake pedal switch using Subaru Select Monitor. <ref. lan(diag)-12,="" monitor.<="" operation.="" select="" subaru="" th="" to=""><th>Is ON displayed?</th><th>Go to step 3.</th><th>Go to step 4.</th></ref.>	Is ON displayed?	Go to step 3.	Go to step 4.
3	OPERATION, Subaru Select Monitor.> CHECK TCM. Read the data of brake pedal switch using Subaru Select Monitor. <ref. 5at(diag)-16,="" monitor.="" operation,="" select="" subaru="" to=""></ref.>	Is ON displayed?	A temporary poor contact of connector or harness may be the cause. Check the poor contact.	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>
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 more than 10 V?	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 — (B64) No. 2:	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	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 7.	Repair the short circuit of harness between body inte- grated 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.

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

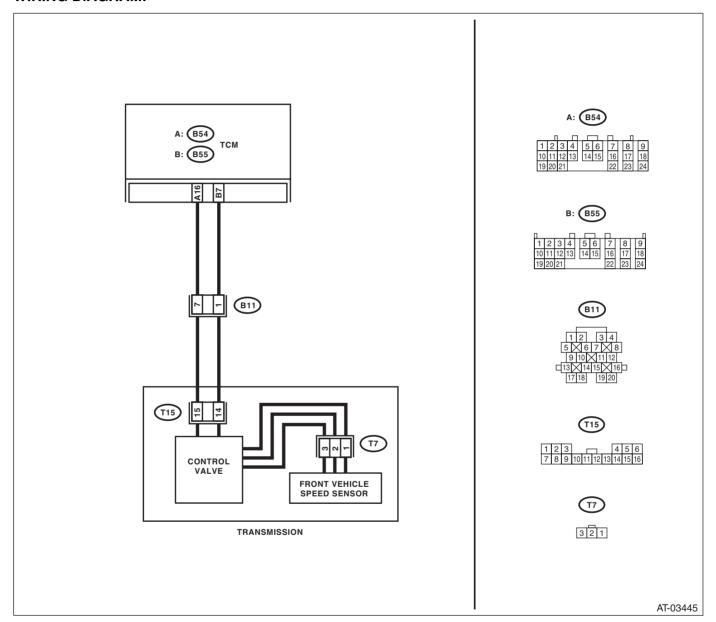
F: DTC P0720 OUTPUT SPEED SENSOR CIRCUIT

DTC DETECTING CONDITION:

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

TROUBLE SYMPTOM:

- Deterioration of shifting quality.
- Driving performance is poor.



	Step	Check	Yes	No
1	CHECK TCM I/O SIGNAL. Check I/O signal of power supply, ground and PVIGN power supply relay. <ref. (tcm)="" 5at(diag)-12,="" control="" electrical="" i="" module="" o="" signal.="" specification,="" to="" transmission=""></ref.>	Is TCM I/O signal OK?	Go to step 2.	Repair the open or short circuit for power supply and ground. Perform the diagnosis according to DTC P0882 for PVIGN power supply relay.
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. 7: (B55) No. 7 — (B11) No. 1:	Is the 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 (B55) No. 7 — Chassis ground: (B54) No. 16 — Chassis ground:	Is the resistance 1 $M\Omega$ 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 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. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>
5	CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR. 1) Connect all connectors. 2) Lift-up the vehicle and support with rigid racks. NOTE: Raise all wheels off floor. 3) Start the engine, and drive it. 4) Read the current data of front wheel speed using Subaru Select Monitor. <ref. 5at(diag)-16,="" current="" data,="" monitor.="" operation,="" read="" select="" subaru="" to=""> NOTE: The speed difference between front and rear wheels may light 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. clear="" memory="" mode,="" monitor.="" operation,="" select="" subaru="" to="" vdc(diag)-20,=""></ref.></ref.>		Even if the SPORT indicator 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.

	Step	Check	Yes	No
6	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 7.	Repair the open
	TRANSMISSION AND CONTROL VALVE	Ω ?	o.op	circuit of harness
	BODY.			between control
	Turn the ignition switch to OFF.			valve body con-
	2) Disconnect the connector from transmis-			nector and trans-
	sion.			mission connector.
	3) Remove the transmission connector from			
	bracket.			
	4) Lift up the vehicle and place it on rigid			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	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			
	sion connector and control valve body connector.			
	Connector & terminal			
	(B11) No. 7 — (T5) No. 15:			
	(B11) No. 1 — (T5) No. 14:			
7	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 8.	Repair the short
	TRANSMISSION AND CONTROL VALVE	MΩ?	,	circuit of harness
	BODY.			between transmis-
	Measure the resistance between transmission			sion connector
	ground and control valve body connector.			and transmission
	Connector & terminal			ground.
	(T15) No. 15 — Transmission ground:			
	(T15) No. 14 — Transmission ground:	la the variation of large the second	Co to oto - O	Danie as the same
8	CHECK HARNESS CONNECTOR BETWEEN CONTROL VALVE BODY AND VEHICLE	Is the resistance less than 1 Ω ?	Go to step 9.	Replace the control valve body.
	SPEED SENSOR.	25.		<ref. 5at-53,<="" td="" to=""></ref.>
	Disconnect the connector from vehicle			Control Valve
	speed sensor.			Body.>
	Measure the resistance of harness			
	between control valve body connector and			
	vehicle speed sensor connector.			
	Connector & terminal			
	(T15) No. 15 — (T7) No. 3:			
	(T15) No. 14 — (T7) No. 2:			
	(T7) No. 1 — Transmission ground:		D	D 1 "
9	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Replace the vehi-	Replace the con-
	CONTROL VALVE BODY AND VEHICLE SPEED SENSOR.	ΜΩ?	cle speed sensor.	trol valve body. <ref. 5at-53.<="" td="" to=""></ref.>
	Measure the resistance of harness between			Control Valve
	control valve body connector and transmission			Body.>
	ground.			Douy.
	Connector & terminal			
	(T15) No. 15 — Transmission ground:			
	(T15) No. 14 — Transmission ground:			
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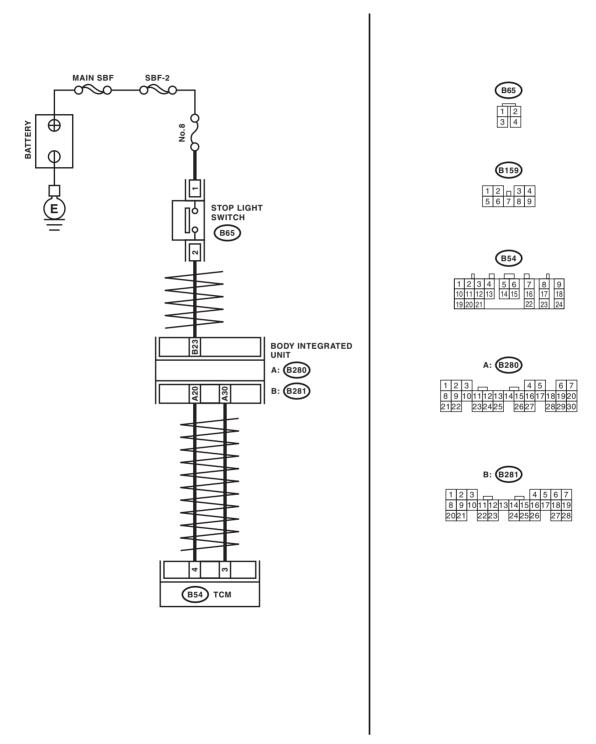
G: DTC P0724 TORQUE CONVERTER/BRAKE SWITCH "B" CIRCUIT HIGH DTC DETECTING CONDITION:

Brake switch malfunction, open input signal circuit

TROUBLE SYMPTOM:

Gear is not shifted down when climbing a hill.

WIRING DIAGRAM:



AT-03287

	Step	Check	Yes	No
1	CHECK DTC.	Is any of following DTC	Perform the diag-	Go to step 2.
		detected? / AT CAN Communi-	nosis according to	
		cation Circuit / Output Speed	DTC.	
		Sensor Circuit / AT Vehicle		
		Speed Sensor Circuit Malfunction (Rear Wheel)		
2	CHECK BODY INTEGRATED UNIT.	Is OFF displayed?	Go to step 3.	Go to step 4.
-	Turn the ignition switch to OFF.	lis of Fullsplayed:	αο το στορ σ .	GO 10 310P 4.
	2) Connect the Subaru Select Monitor to the			
	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 brake pedal switch using Subaru Select Monitor. <ref. lan(diag)-12,<="" td="" to=""><td></td><td></td><td></td></ref.>			
	OPERATION, Subaru Select Monitor.>			
3	CHECK TCM.	Is OFF displayed?	A temporary poor	Replace the TCM.
	Read the data of brake pedal switch using	is or a septayou.	contact of connec-	<ref. 5at-56,<="" td="" to=""></ref.>
	Subaru Select Monitor. <ref. 5at(diag)-16,<="" th="" to=""><th></th><th>tor or harness may</th><th>Transmission Con-</th></ref.>		tor or harness may	Transmission Con-
	OPERATION, Subaru Select Monitor.>		be the cause.	trol Module
			Check the poor	(TCM).>
			contact.	_
4	CHECK BODY INTEGRATED UNIT INPUT	Is the voltage more than 10 V?	Go to step 5.	Go to step 7.
	SIGNAL. 1) Disconnect the connector from body inte-			
	grated unit.			
	Measure the voltage between body inte-			
	grated unit connector and chassis ground.			
	Connector & terminal			
	(B281) No. 23 (+) — Chassis ground (–):			
5	CHECK STOP LIGHT SWITCH.	Is the resistance more than 1	Go to step 6.	Replace the stop
	1) Turn the ignition switch to OFF.	$M\Omega$?		light switch.
	Disconnect the connector from stop light switch.			
	3) Measure the resistance of harness			
	between stop light switch connectors.			
	Terminals			
	No. 1 — No. 2:			
6	CHECK HARNESS CONNECTOR BETWEEN	Is the voltage less than 1 V?	Go to step 7.	Repair the short
	BODY INTEGRATED UNIT AND STOP LIGHT			circuit of harness
	SWITCH.			between TCM and
	Turn the ignition switch to ON. Measure the voltage of barness between.			stop light switch.
	Measure the voltage of harness between body integrated unit connector and chassis			
	ground.			
	Connector & terminal			
	(B281) No. 23 (+) — Chassis ground (–):			
7	CHECK POOR CONTACT.	Is there poor contact in input	Repair the poor	Check the body
		signal of brake switch?	contact.	integrated unit.

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

H: DTC P0725 ENGINE SPEED INPUT CIRCUIT

DTC DETECTING CONDITION:

Information of engine speed is not correctly received from ECM.

TROUBLE SYMPTOM:

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

	Step	Check	Yes	No
1	CHECK DTC OF ECM.	Is DTC of AT CAN communication circuit detected?	Perform the diagnosis according to DTC.	Go to step 2.
2	CHECK DTC OF TCM.	Is DTC of AT CAN communication circuit detected?	Perform the diagnosis according to DTC.	Go to step 3.
3	CHECK DTC OF TCM.	Is any of following DTC detected? /Output Speed Sen- sor Circuit/AT Vehicle Speed Sensor Circuit Malfunction (Rear Wheel)	nosis according to DTC.	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>

I: DTC P0731 GEAR 1 INCORRECT RATIO

NOTE:

Refer to DTC P0736 for diagnostic procedure. <Ref. to 5AT(diag)-53, DTC P0736 REVERSE INCORRECT RATIO, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

J: DTC P0732 GEAR 2 INCORRECT RATIO

NOTF:

Refer to DTC P0736 for diagnostic procedure. <Ref. to 5AT(diag)-53, DTC P0736 REVERSE INCORRECT RATIO, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

K: DTC P0733 GEAR 3 INCORRECT RATIO

NOTF:

Refer to DTC P0736 for diagnostic procedure. <Ref. to 5AT(diag)-53, DTC P0736 REVERSE INCORRECT RATIO, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

L: DTC P0734 GEAR 4 INCORRECT RATIO

NOTE:

Refer to DTC P0736 for diagnostic procedure. <Ref. to 5AT(diag)-53, DTC P0736 REVERSE INCORRECT RATIO, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

M: DTC P0735 GEAR 5 INCORRECT RATIO

NOTE:

Refer to DTC P0736 for diagnostic procedure. <Ref. to 5AT(diag)-53, DTC P0736 REVERSE INCORRECT RATIO, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

N: 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, P1798, P1799	Perform the diagnosis according to DTC.	Go to step 2.
2	CHECK TURBINE SPEED SENSOR USING SUBARU SELECT MONITOR. 1) Lift-up the vehicle and support with rigid racks. NOTE: Raise all wheels off floor. 2) Start the engine, and drive it. 3) Read the current data of torque converter turbine speed using Subaru Select Monitor. <ref. 5at(diag)-16,="" current="" data,="" monitor.="" operation,="" read="" select="" subaru="" to=""> NOTE: The speed difference between front and rear wheels may light the ABS warning light, but this does not indicate a malfunction. When AT control diagnosis is finished, perform the VDC memory clearance procedure of on-board diagnostics system. <ref. clear="" memory="" mode,="" monitor.="" operation,="" select="" subaru="" to="" vdc(diag)-20,=""></ref.></ref.>	Does the displayed value of the Subaru Select Monitor change according to engine speed and shifting?	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 SPORT indicator light is not blinking, and perform a drive check based on the Inspection Mode. <ref. 5at(diag)-20,="" inspection="" mode.="" procedure,="" to=""></ref.>	Is DTC displayed again?	Check the DTC. Then, when pro- ceeded again to step 5, go to step 6.	Go to step 6.
6	CHECK AFTER REPAIR.	Is the trouble symptom inre- pairable (malfunction in shifting such as excessive shift shock, engine speed increases exces- sively when shifting)?	Replace the trans- mission assembly.	Temporary poor contact occurs. Check that the harness connector is not faulty.

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

O: 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, P0725, P0753, P0758, P0763, P0768, P0773, P0751, P0756, P0761, P0766, P0771, P1710, P1718, P1798, P1799 Are the engine speed and tur-	Perform the diag- nosis according to each DTC.	Go to step 2.
	 Perform a drive check based on the Inspection Mode with the following conditions. <ref. 5at(diag)-20,="" inspection="" mode.="" procedure,="" to=""> (1) Read the current data of throttle opening angle using Subaru Select Monitor. <ref. 5at(diag)-16,="" current="" data,="" li="" moni-<="" operation,="" read="" select="" subaru="" to=""> </ref.> </ref.> 		contact or open circuit occurs. Recheck that the harness connec- tor has no faulty.	
	tor.> (2) Keep the same vehicle speed at 60 km/h with 10% or less throttle opening angle which is read currently on Subaru Select Monitor. <ref. 5at(diag)-16,="" current="" data,="" monitor.="" operation,="" read="" select="" subaru="" to=""></ref.>			
	 (3) Read the current data of L/U solenoid target pressure using Subaru Select Monitor. <ref. 5at(diag)-16,="" current="" data,="" monitor.="" operation,="" read="" select="" subaru="" to=""></ref.> (4) Check the engine speed and turbine speed when the L/U solenoid target value displayed on Subaru Select Monitor is 500 kPa or more. 			

	Step	Check	Yes	No
3	DRIVING CHECK FOR LOCK-UP CONDI-	Is DTC P0741 displayed with	Replace the trans-	Temporary poor
		the SPORT indicator light	mission assembly	contact or open
	1) Clear the memory. <ref. 5at(diag)-18,<="" td="" to=""><td>blinking?</td><td>when DTC P0741</td><td>circuit occurs.</td></ref.>	blinking?	when DTC P0741	circuit occurs.
	OPERATION, Subaru Select Monitor.>		is displayed.	Recheck that the
	2) Perform a drive check based on the Inspec-		When DTC other	harness connec-
	tion Mode with the following conditions. <ref.< td=""><td></td><td>than P0741 is dis-</td><td>tor has no faulty.</td></ref.<>		than P0741 is dis-	tor has no faulty.
	to 5AT(diag)-20, PROCEDURE, Inspection		played, perform	
	Mode.>		the diagnosis cor-	
	(1) Read the current data of throttle open-		responding to the	
	ing angle using Subaru Select Monitor.		DTC.	
	<ref. 5at(diag)-16,="" current<="" read="" td="" to=""><td></td><td></td><td></td></ref.>			
	DATA, OPERATION, Subaru Select Moni-			
	tor.>			
	(2) Keep the same vehicle speed at 60 km/			
	h with 10% or less throttle opening angle			
	which is read currently on Subaru Select			
	Monitor. <ref. 5at(diag)-16,="" read<="" td="" to=""><td></td><td></td><td></td></ref.>			
	CURRENT DATA, OPERATION, Subaru			
	Select Monitor.>			
	(3) Read the current data of L/U solenoid			
	target pressure using Subaru Select Moni-			
	tor. <ref. 5at(diag)-16,="" cur-<="" read="" td="" to=""><td></td><td></td><td></td></ref.>			
	RENT DATA, OPERATION, Subaru Select			
	Monitor.>			
	(4) Drive the vehicle continuously for one			
	minutes or more with the L/U solenoid tar-			
	get value displayed on Subaru Select Moni-			
	tor at 500 kPa or more.			
	Turn the ignition switch to OFF.			
	4) Turn the ignition switch to ON. (Engine ON)			
	5) Perform the step 2) again.			

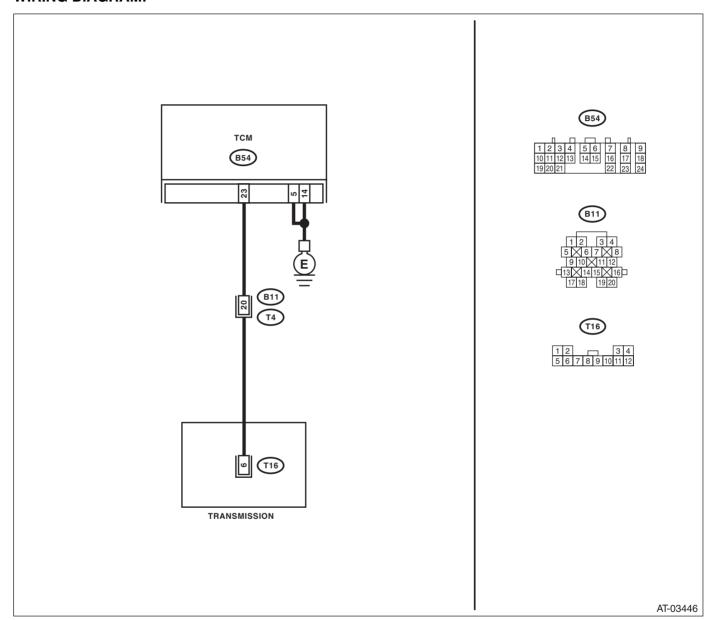
P: DTC P0743 TORQUE CONVERTER CLUTCH CIRCUIT ELECTRICAL

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)



	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 2.	Repair the open
	TCM AND TRANSMISSION.	Ω ?		circuit of harness
	 Turn the ignition switch to OFF. 			between TCM con-
	Disconnect the connectors from TCM and			nector and trans-
	transmission.			mission connector.
	3) Measure the resistance of harness			
	between TCM connector and transmission connector.			
	Connector & terminal			
	(B54) No. 23 — (B11) No. 20:			
	(B54) No. 5 — Chassis ground:			
	(B54) No. 14 — Chassis ground:			
2	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 3.	Repair the short
	TCM AND CHASSIS GROUND.	$M\Omega$?		circuit of harness
	Measure the resistance of harness between			between TCM con-
	TCM connector and chassis ground.			nector and trans-
	Connector & terminal			mission connector.
	(B54) No. 23 — Chassis ground:			
3	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 4.	Repair the open
]	TRANSMISSION AND CONTROL VALVE	Ω ?		circuit of harness
	BODY.			between transmis-
	Turn the ignition switch to OFF.			sion connector
	Disconnect the connector from transmis-			and control valve
	sion.			body connector.
	3) Remove the transmission connector from			
	bracket.			
	 Lift up the vehicle and place it on rigid 			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	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 transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
4	(T4) No. 20 — (T16) No. 6: CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 5.	Repair the short
*	TRANSMISSION AND CONTROL VALVE	Is the resistance more than 1 $M\Omega$?	ιο διέρ 3 .	circuit of harness
	BODY.	14177:		between control
	Measure the resistance between chassis			valve body con-
	ground and control valve body connector.			nector and trans-
	Connector & terminal			mission ground.
	(T16) No. 6 — Chassis ground:			inioonon ground.
5	CHECK LOCK-UP SOLENOID.	Is the resistance between 3 —	Go to step 6.	Replace the con-
]	Measure the resistance between transmission	9 Ω ?		trol valve body.
	ground and control valve body connector.			<ref. 5at-53,<="" td="" to=""></ref.>
	Connector & terminal			Control Valve
	(T16) No. 6 — Transmission ground:			Body.>
6	CHECK POOR CONTACT.	Is there any loosing terminal,	Repair the poor	Go to step 7.
]	Check that there are no poor contact in TCM	entering foreign matter, dam-	contact.	
	connector, transmission connector and control	aging connector body?		
	valve body connector.			
7	CHECK AFTER REPAIR.	Is DTC displayed?	Replace the TCM.	Temporary poor
	Perform the Clear Memory Mode.	. ,	<ref. 5at-56,<="" td="" to=""><td>contact or open</td></ref.>	contact or open
	2) Drive for a while, read the DTC, and check		Transmission Con-	circuit occurs.
	that there is no faulty.		trol Module	Recheck that the
	•		(TCM).>	harness connec-
			,	tor has no faulty.

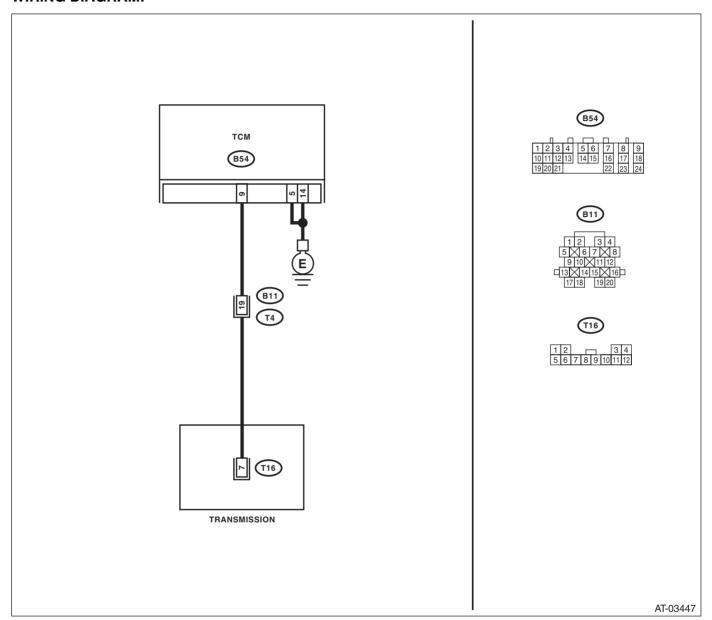
Q: DTC P0748 PRESSURE CONTROL SOLENOID "A" ELECTRICAL

DTC DETECTING CONDITION:

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

TROUBLE SYMPTOM:

Excessive shift shock



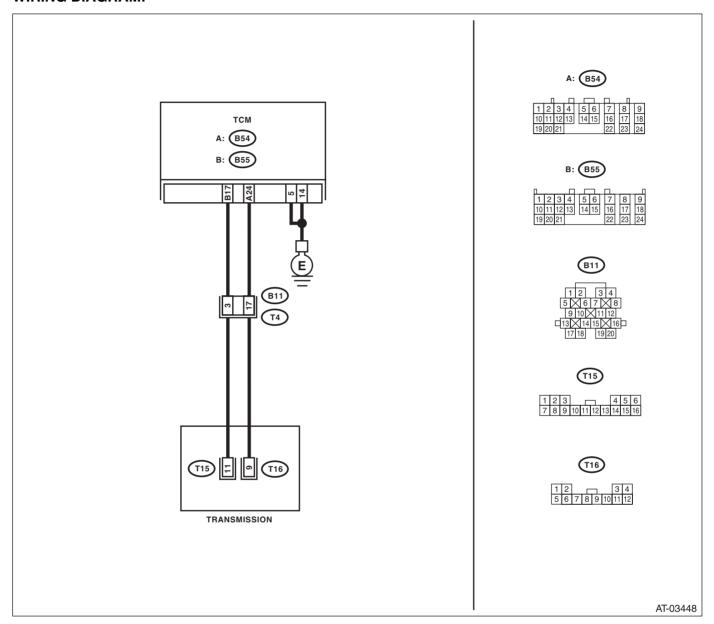
	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B54) No. 9 — (B11) No. 19: (B54) No. 5 — Chassis ground: (B54) No. 14 — 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 between TCM connector and chassis ground. Connector & terminal (B54) No. 9 — Chassis ground:	ΜΩ?	Go to step 3.	Repair the short circuit of harness between TCM con- nector and trans- mission 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 and place it on rigid racks. NOTE: Raise all wheels off floor. 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 — (T16) No. 7:	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		Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 5.	Repair the short circuit of harness between control valve body con- nector and trans- mission ground.
5	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T16) No. 7 — Transmission ground:	Is the resistance between 3 — 9 Ω ?	Go to step 6.	Replace the control valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""></ref.>
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, dam- aging 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. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>	Temporary poor contact or open circuit occurs. Recheck that the harness connector has no faulty.

R: 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 4th or 5th gear.



	Step	Check	Yes	No
1	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. 24 — (B11) No. 17: (B55) No. 17 — (B11) No. 3: (B54) No. 5 — Chassis ground: (B54) No. 14 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2	TCM AND CHASSIS GROUND. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 17 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	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 connectors. 2) Turn the ignition switch to ON. (Engine OFF) 3) Check input signal of Fr/B oil pressure SW.	Is OFF displayed?	Go to step 4.	Go to step 6.
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) Check input signal of Fr/B oil pressure SW.	Is ON displayed?	Even if the SPORT indicator 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.

	Step	Check	Yes	No
5	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Replace the con-	Replace the trans-
	TRANSMISSION AND CONTROL VALVE	Ω?	trol valve body.	mission harness
	BODY.		<ref. 5at-53,<="" th="" to=""><th>assembly.</th></ref.>	assembly.
	 Turn the ignition switch to OFF. 		Control Valve	
	Disconnect the connector from transmis-		Body.>	
	sion.			
	Remove the transmission connector from bracket.			
	 Lift up the vehicle and place it on rigid racks. 			
	NOTE:			
	Raise all wheels off floor.			
	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 transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
	(B11) No. 17 — (T16) No. 9:			
	(B11) No. 3 — (T15) No. 11:			
6	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Replace the con-	Replace the trans-
	TRANSMISSION AND CONTROL VALVE	ΜΩ?	trol valve body.	mission harness
	BODY.		<ref. 5at-53,<="" th="" to=""><th>assembly.</th></ref.>	assembly.
	 Turn the ignition switch to OFF. 		Control Valve	
	Disconnect the connector from transmis-		Body.>	
	sion.			
	Remove the transmission connector from bracket.			
	 Lift up the vehicle and place it on rigid 			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	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 transmis-			
	sion ground and control valve body connector.			
	Connector & terminal			
	(T4) No. 3 — Transmission ground:			

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

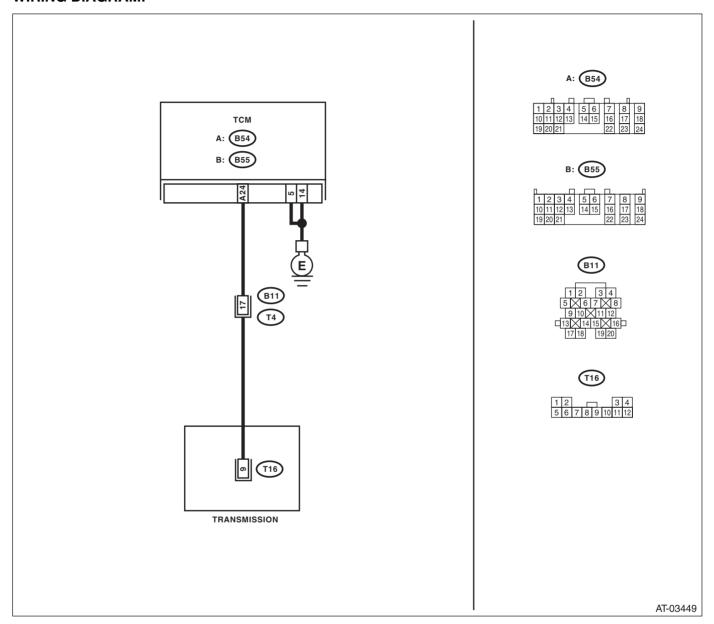
S: DTC P0753 SHIFT SOLENOID "A" ELECTRICAL

DTC DETECTING CONDITION:

Output signal circuit of front brake solenoid is open or shorted.

TROUBLE SYMPTOM:

Locked to 4th or 5th gear.



	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN		Go to step 2.	Repair the open
	TCM AND TRANSMISSION.	Ω ?		circuit of harness
	 Turn the ignition switch to OFF. 			between TCM con-
	2) Disconnect the connectors from TCM and			nector and trans-
	transmission.			mission connector.
	Measure the resistance of harness			
	between TCM connector and transmission			
	connector.			
	Connector & terminal			
	(B54) No. 24 — (B11) No. 17:			
	(B54) No. 5 — Chassis ground:			
	(B54) No. 14 — Chassis ground:			
	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 3.	Repair the short
	TCM AND CHASSIS GROUND.	ΜΩ?		circuit of harness
	Measure the resistance of harness between			between TCM con
	TCM connector and chassis ground.			nector and trans-
	Connector & terminal			mission connector
				THISSION CONNECTOR
	(B54) No. 24 — Chassis ground:	lla tha mariatana a la sa tha sa d	Co to oto - 4	Damain the area
	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 4.	Repair the open
	TRANSMISSION AND CONTROL VALVE	Ω?		circuit of harness
	BODY.			between transmis-
	 Turn the ignition switch to OFF. 			sion connector
	Disconnect the connector from transmis-			and control valve
	sion.			body connector.
	Remove the transmission connector from			,
	bracket.			
	4) Lift up the vehicle and place it on rigid			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	5) Drain the ATF.			
	CAUTION:			
	Do not drain ATF until it cools down.			
	Remove the oil pan, and disconnect the			
	control valve body connector.			
	7) Measure the resistance between transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
	(T4) No. 17 — (T16) No. 9:			
	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 5.	Repair the short
	TRANSMISSION AND CONTROL VALVE	$M\Omega$?	GO to ctop C.	circuit of harness
	BODY.	IVISE .		between control
	Measure the resistance between transmission			
				valve body and
	ground and control valve body connector.			transmission con-
	Connector & terminal			nector.
	(T16) No. 9 — Transmission ground:			
	CHECK FRONT BRAKE SOLENOID.	Is the resistance between 3 —	Go to step 6.	Replace the con-
	Measure the resistance between transmission	9 Ω?		trol valve body.
	ground and control valve body connector.			<ref. 5at-53,<="" td="" to=""></ref.>
	Connector & terminal			Control Valve
	(T16) No. 9 — Transmission ground:			Body.>
	CHECK POOR CONTACT.	Is there any loosing terminal,	Repair the poor	Go to step 7.
	Check that there are no poor contact in TCM	entering foreign matter, dam-	contact.	
	connector, transmission connector and control	aging connector body?		
	valve body connector.	aging connector body:		
	CHECK AFTER REPAIR.	Is DTC displayed?	Replace the TCM.	Temporary poor
		lis DTO displayed!	-	
	Perform the Clear Memory Mode.		<ref. 5at-56,<="" td="" to=""><td>contact or open</td></ref.>	contact or open
	2) Drive for a while, read the DTC, and check			circuit occurs.
	that there is no faulty.		trol Module	Recheck that the
			(TCM).>	harness connec-
		Ì	Î.	tor has no faulty.

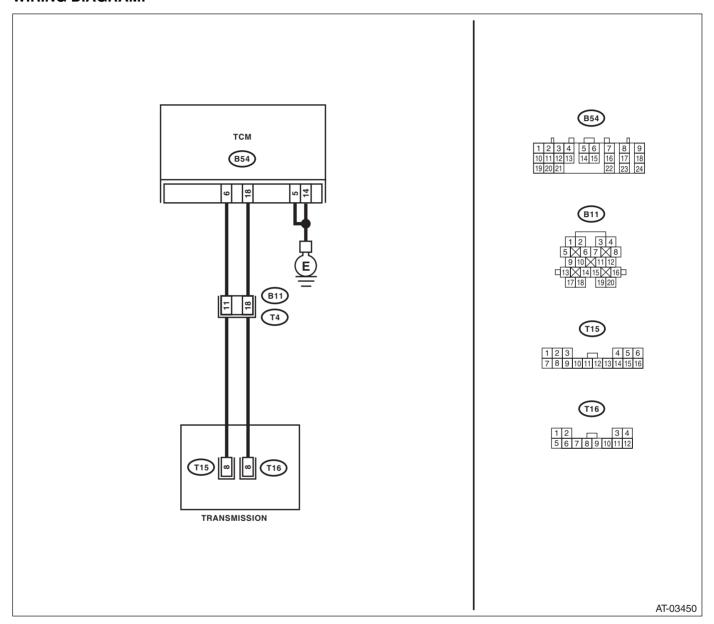
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

T: 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 4th gear.



	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B54) No. 18 — (B11) No. 18:	Check Is the resistance less than 1 Ω?	Yes Go to step 2.	No Repair the open circuit of harness between TCM and transmission connector.
	(B54) No. 6 — (B11) No. 11: (B54) No. 5 — Chassis ground: (B54) No. 14 — Chassis ground:			
2	CHECK HARNESS CONNECTOR BETWEEN TCM AND CHASSIS GROUND. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B54) No. 6 — Chassis ground:	Is the resistance more than 1 M Ω ?	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 connectors. 2) Turn the ignition switch to ON. (Engine OFF) 3) Check input signal of I/C oil pressure SW.	Is OFF displayed?	Go to step 4.	Go to step 6.
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) Check input signal of I/C oil pressure SW.	Is ON displayed?	Even if the SPORT indicator 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.

	Step	Check	Yes	No
5	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Replace the con-	Replace the trans-
	TRANSMISSION AND CONTROL VALVE	Ω ?	trol valve body.	mission harness
	BODY.		<ref. 5at-53,<="" th="" to=""><th>assembly.</th></ref.>	assembly.
	 Turn the ignition switch to OFF. 		Control Valve	
	Disconnect the connector from transmis-		Body.>	
	sion.			
	Remove the transmission connector from bracket.			
	Lift up the vehicle and place it on rigid			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	5) Drain the ATF.			
	CAUTION:			
	Do not drain ATF until it cools down.			
	Remove the oil pan, and disconnect the			
	control valve body connector.			
	Measure the resistance between transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
	(T4) No. 18 — (T16) No. 8:			
	(T4) No. 11 — (T15) No. 8:			
6	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Replace the con-	Replace the trans-
	TRANSMISSION AND CONTROL VALVE	ΜΩ?	trol valve body.	mission harness
	BODY.		<ref. 5at-53,<="" th="" to=""><th>assembly.</th></ref.>	assembly.
	Turn the ignition switch to OFF.		Control Valve	
	Disconnect the connector from transmission.		Body.>	
	Remove the transmission connector from bracket.			
	Lift up the vehicle and place it on rigid			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	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 har-			
	ness assembly.			
	Connector & terminal			
	(T4) No. 11 — (T15) No. 13:			

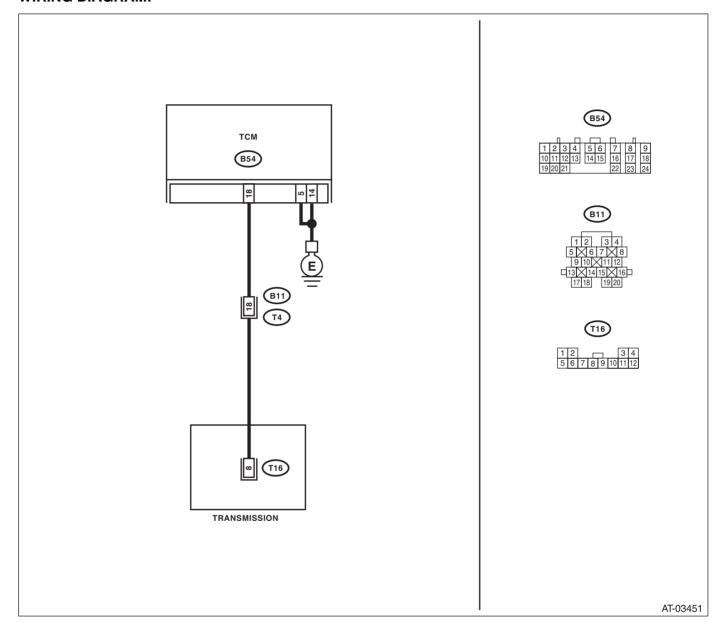
U: DTC P0758 SHIFT SOLENOID "B" ELECTRICAL

DTC DETECTING CONDITION:

Output signal circuit of input clutch solenoid is open or shorted.

TROUBLE SYMPTOM:

Locked to 4th gear.



	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 2.	Repair the open
	TCM AND TRANSMISSION.	Ω ?		circuit of harness
	 Turn the ignition switch to OFF. 			between TCM and
	Disconnect the connectors from TCM and			transmission con-
	transmission.			nector.
	Measure the resistance of harness			
	between TCM and transmission connector.			
	Connector & terminal			
	(B54) No. 18 — (B11) No. 18:			
	(B54) No. 5 — Chassis ground:			
	(B54) No. 14 — Chassis ground:			

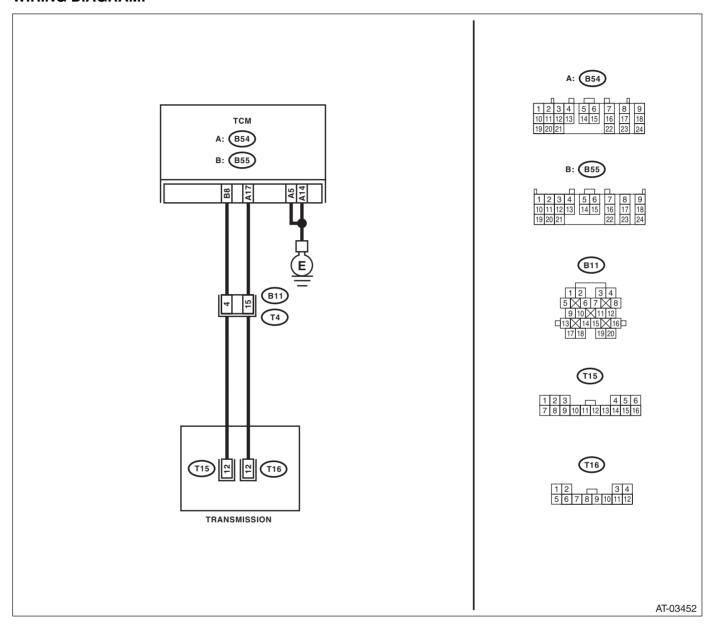
	Step	Check	Yes	No
2	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 3.	Repair the short
-	TCM AND BODY HARNESS.	$M\Omega$?	do to stop o .	circuit of harness
	Measure the resistance of harness between			between TCM and
	TCM connector and body harness.			transmission con-
	Connector & terminal			nector.
	(B54) No. 18 — Chassis ground:			
3	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 4.	Repair the open
	TRANSMISSION AND CONTROL VALVE	Ω ?		circuit of harness
	BODY.			between transmis-
	 Turn the ignition switch to OFF. 			sion connector
	Disconnect the connector from transmis-			and control valve
	sion.			body connector.
	3) Remove the transmission connector from			
	bracket.			
	4) Lift up the vehicle and place it on rigid			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	5) Drain the ATF.			
	CAUTION:			
	Do not drain ATF until it cools down.			
	Remove the oil pan, and disconnect the control valve body connector.			
	7) Measure the resistance between transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
	(T4) No. 18 — (T16) No. 8:			
4	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 5.	Repair the short
	TRANSMISSION AND CONTROL VALVE	$M\Omega$?		circuit of harness
	BODY.			between transmis-
	Measure the resistance between chassis			sion connector
	ground and control valve body connector.			and control valve
	Connector & terminal			body connector.
	(T16) No. 8 — Chassis ground:			
5	CHECK INPUT CLUTCH SOLENOID.	Is the resistance between 3 —	Go to step 6.	Replace the con-
	Measure the resistance between transmission	9 Ω?		trol valve body.
	ground and control valve body connector.			<ref. 5at-53,<="" td="" to=""></ref.>
	Connector & terminal			Control Valve
	(T16) No. 8 — Transmission ground:		_	Body.>
6	CHECK POOR CONTACT.	Is there any loosing terminal,	Repair the poor	Go to step 7.
	Check that there are no poor contact in TCM	entering foreign matter, dam-	contact.	
	connector, transmission connector and control	aging connector body?		
	valve body connector.	L DTO II I II	D 1 // TO:	-
7	CHECK AFTER REPAIR.	Is DTC displayed?		Temporary poor
	Perform the Clear Memory Mode.		<ref. 5at-56,<="" td="" to=""><td>contact or open</td></ref.>	contact or open
	2) Drive for a while, read the DTC, and check		Transmission Con-	
	that there is no faulty.		trol Module	Recheck that the
			(TCM).>	harness connec-
1				tor has no faulty.

V: 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 4th gear.



	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. 15: (B55) No. 8 — (B11) No. 4: (B54) No. 5 — Chassis ground: (B54) No. 14 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2	CHECK HARNESS CONNECTOR BETWEEN TCM AND CHASSIS GROUND. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 8 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	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 connectors. 2) Turn the ignition switch to ON. (engine OFF) 3) Check the input signal of the H&LR/C oil pressure SW.	Is OFF displayed?	Go to step 4.	Go to step 6.
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 "D" range and brake ON (1st) with checking current gear position using Subaru Select Monitor. 4) Check the input signal of the H&LR/C oil pressure SW.	Is ON displayed?	Even if the SPORT indicator 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.

	Step	Check	Yes	No
5	.	Is the resistance less than 1	Replace the con-	Replace the trans-
	TRANSMISSION AND CONTROL VALVE	Ω ?	trol valve body.	mission harness
	BODY.		<ref. 5at-53,<="" th="" to=""><th>assembly.</th></ref.>	assembly.
	 Turn the ignition switch to OFF. 		Control Valve	
	Disconnect the connector from transmis-		Body.>	
	sion.			
	Remove the transmission connector from bracket.			
	Lift up the vehicle and place it on rigid racks.			
	NOTE:			
	Raise all wheels off floor.			
	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 transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
	(T4) No. 15 — (T16) No. 12:			
	(T4) No. 4 — (T15) No. 12:			
6	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Replace the con-	Replace the trans-
	TRANSMISSION AND CONTROL VALVE	ΜΩ?	trol valve body.	mission harness
	BODY.		<ref. 5at-53,<="" th="" to=""><th>assembly.</th></ref.>	assembly.
	 Turn the ignition switch to OFF. 		Control Valve	
	Disconnect the connector from transmis-		Body.>	
	sion.			
	Remove the transmission connector from bracket.			
	 Lift up the vehicle and place it on rigid 			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	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 har-			
	ness assembly.			
	Connector & terminal			
	(T4) No. 4 — (T15) No. 13:			

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

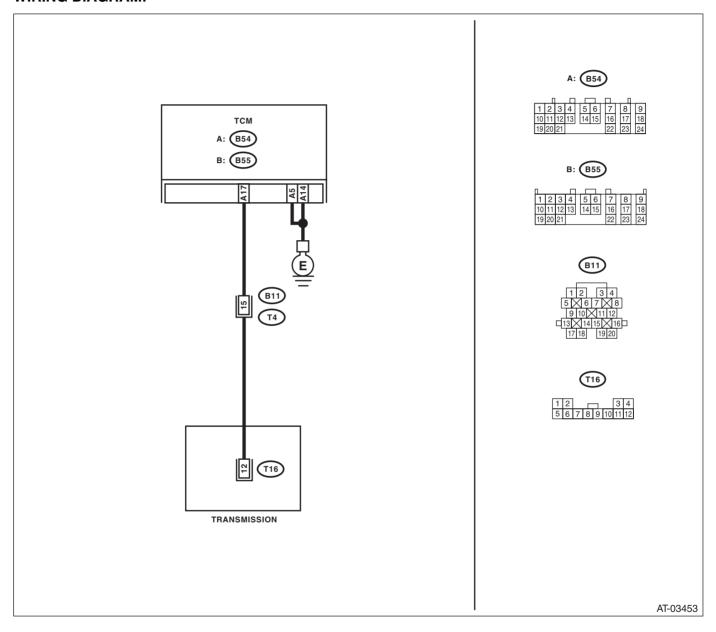
W: DTC P0763 SHIFT SOLENOID "C" ELECTRICAL

DTC DETECTING CONDITION:

Output signal circuit of high & low reverse clutch solenoid is open or shorted.

TROUBLE SYMPTOM:

Locked to 4th gear.



	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 2.	Repair the open
	TCM AND TRANSMISSION.	Ω ?		circuit of harness
	 Turn the ignition switch to OFF. 			between TCM con-
	Disconnect the connectors from TCM and			nector and trans-
	transmission.			mission connector.
	Measure the resistance of harness			
	between TCM and transmission connector.			
	Connector & terminal			
	(B54) No. 17 — (B11) No. 15:			
	(B54) No. 5 — Chassis ground:			
	(B54) No. 14 — Chassis ground:			

	Cton	Check	Yes	No
2	Step CHECK HARNESS CONNECTOR BETWEEN			No Denois the chast
2	TCM AND CHASSIS GROUND.	Is the resistance more than 1 MO?	Go to step 3.	Repair the short circuit of harness
	Measure the resistance of harness between	IVIS 2 :		between TCM con-
	TCM connector and chassis ground.			nector and trans-
	Connector & terminal			mission connector.
	(B54) No. 17 — Chassis ground:			mission connector.
3	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 4.	Repair the open
3	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 and place it on rigid racks. NOTE: Raise all wheels off floor. 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	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 (T16) No. 12 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 5.	Repair the open circuit of harness between control valve body connector and transmission ground.
5	CHECK HIGH & LOW REVERSE CLUTCH	Is the resistance between 3 —	Go to step 6.	Replace the con-
	SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T16) No. 12 — Transmission ground:	9 Ω?	·	trol valve body. <ref. 5at-53,<br="" to="">Control Valve Body.></ref.>
6	CHECK POOR CONTACT.	Is there any loosing terminal,	Repair the poor	Go to step 7.
	Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	entering foreign matter, damaging connector body?	contact.	
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. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>	Temporary poor contact or open circuit occurs. Recheck that the harness connector has no faulty.

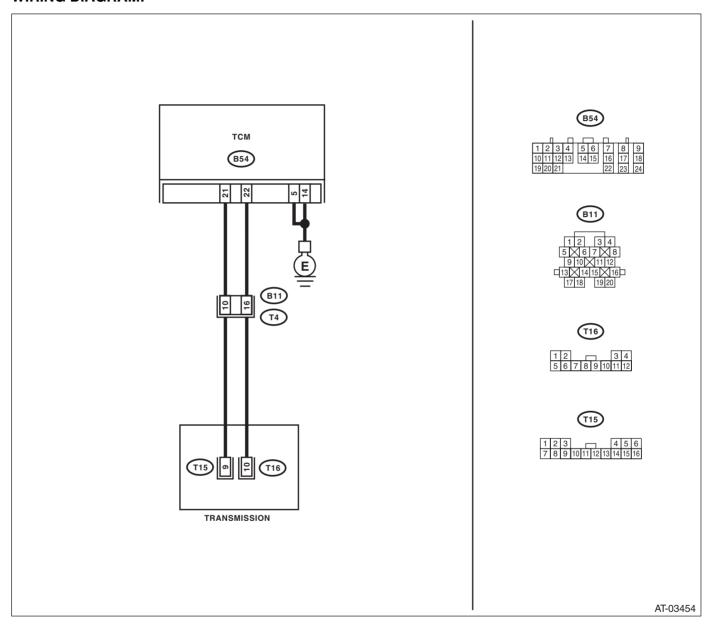
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

X: 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 4th gear.



	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. 22 — (B11) No. 16: (B54) No. 21 — (B11) No. 10: (B54) No. 5 — Chassis ground: (B54) No. 14 — Chassis ground:	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. 21 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	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 connectors. 2) Turn the ignition switch to ON. (engine OFF) 3) Check input signal of D/C oil pressure SW.	Is OFF displayed?	Go to step 4.	Go to step 6.
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) Check input signal of D/C oil pressure SW.	Is ON displayed?	Even if the SPORT indicator 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.

	Step	Check	Yes	No
5	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Replace the con-	Replace the trans-
	TRANSMISSION AND CONTROL VALVE	Ω?	trol valve body.	mission harness
	BODY.		<ref. 5at-53,<="" th="" to=""><th>assembly.</th></ref.>	assembly.
	 Turn the ignition switch to OFF. 		Control Valve	
	2) Disconnect the connector from transmis-		Body.>	
	sion.			
	Remove the transmission connector from bracket.			
	Lift up the vehicle and place it on rigid			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	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 transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
	(T4) No. 16 — (T16) No. 10:			
	(T4) No. 10 — (T15) No. 9:			
6	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Replace the con-	Replace the trans-
	TRANSMISSION AND CONTROL VALVE	ΜΩ?	trol valve body.	mission harness
	BODY.		<ref. 5at-53,<="" td="" to=""><td>assembly.</td></ref.>	assembly.
	 Turn the ignition switch to OFF. 		Control Valve	
	Disconnect the connector from transmis-		Body.>	
	sion.			
	Remove the transmission connector from bracket.			
	 Lift up the vehicle and place it on rigid 			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	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 har-			
	ness assembly.			
	Connector & terminal			
	(T4) No. 10 — (T15) No. 13:			

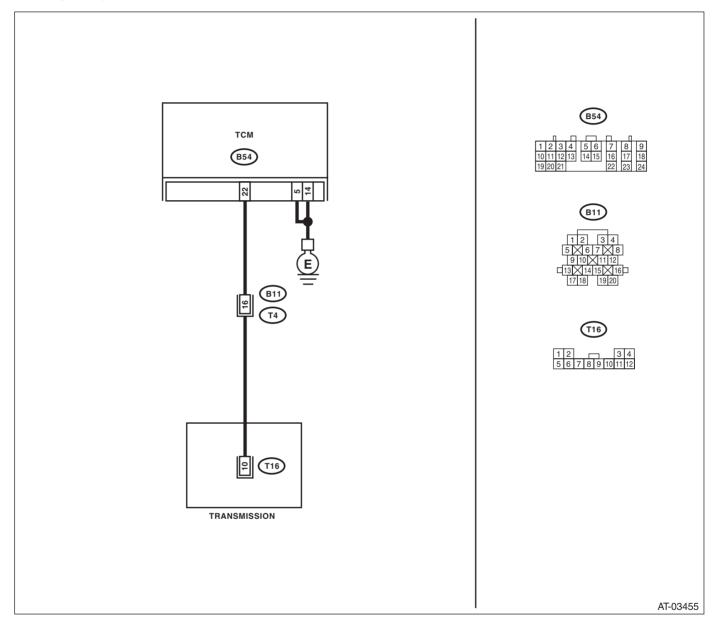
Y: DTC P0768 SHIFT SOLENOID "D" ELECTRICAL

DTC DETECTING CONDITION:

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

TROUBLE SYMPTOM:

Locked to 4th gear.



	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 2.	Repair the open
	TCM AND TRANSMISSION.	Ω ?		circuit of harness
	 Turn the ignition switch to OFF. 			between TCM con-
	Disconnect the connectors from TCM and			nector and trans-
	transmission.			mission connector.
	Measure the resistance of harness			
	between TCM and transmission connector.			
	Connector & terminal			
	(B54) No. 22 — (B11) No. 16:			
	(B54) No. 5 — Chassis ground:			
	(B54) No. 14 — Chassis ground:			

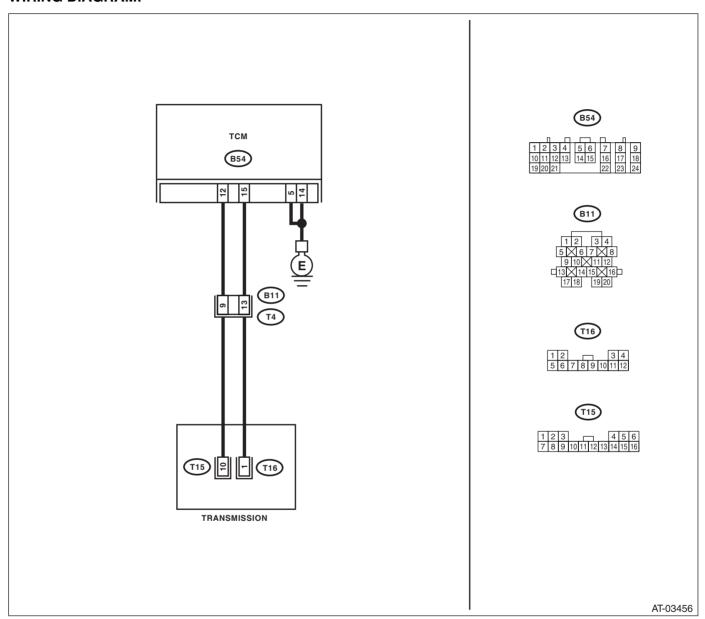
	Step	Check	Yes	No
2	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 3.	Repair the short
	TCM AND CHASSIS GROUND.	ΜΩ?		circuit of harness
	Measure the resistance of harness between			between TCM con-
	TCM connector and chassis ground.			nector and trans-
	Connector & terminal			mission connector.
	(B54) No. 22 — Chassis ground:			
3	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 4.	Repair the open
	TRANSMISSION AND CONTROL VALVE	Ω?		circuit of harness
	BODY.			between transmis-
	Turn the ignition switch to OFF.			sion connector
	 Disconnect the connector from transmis- 			and control valve
	sion.			body connector.
	3) Remove the transmission connector from			
	bracket.			
	 Lift up the vehicle and place it on rigid racks. 			
	NOTE:			
	Raise all wheels off floor. 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 transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
	(T4) No. 16 — (T16) No. 10:			
4	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 5.	Repair the short
	TRANSMISSION AND CONTROL VALVE	M Ω ?		circuit of harness
	BODY.			between control
	Measure the resistance between chassis			valve body con-
	ground and control valve body connector.			nector and trans-
	Connector & terminal			mission ground.
	(T16) No. 10 — Chassis ground:			
5	CHECK DIRECT CLUTCH SOLENOID.	Is the resistance between 3 —	Go to step 6.	Replace the con-
	Measure the resistance of harness connector	9 Ω?		trol valve body.
	between control valve body connector and			<ref. 5at-53,<="" td="" to=""></ref.>
	transmission ground.			Control Valve
	Connector & terminal			Body.>
6	(T16) No. 10 — Transmission ground: CHECK POOR CONTACT.	le there any lessing terminal	Repair the poor	Go to stop 7
6	Check that there are no poor contact in TCM	Is there any loosing terminal, entering foreign matter, dam-	contact.	Go to step 7.
	connector, transmission connector and control	aging connector body?	contact.	
	valve body connector.	aging connector body!		
7	CHECK AFTER REPAIR.	Is DTC displayed?	Replace the TCM	Temporary poor
'	Perform the Clear Memory Mode.	is DTO displayed?	Replace the TCM. <ref. 5at-56,<="" td="" to=""><td>Temporary poor contact or open</td></ref.>	Temporary poor contact or open
	2) Drive for a while, read the DTC, and check			circuit occurs.
	that there is no faulty.		trol Module	Recheck that the
	mat mere is no launy.		(TCM).>	harness connec-
			(1 Olvi).	tor has no faulty.
		1	I	tor has no laulty.

Z: DTC P0771 SHIFT SOLENOID "E" PERFORMANCE OR STUCK OFF DTC DETECTING CONDITION:

Output signal value of low coast brake solenoid and oil pressure does not match.

TROUBLE SYMPTOM:

- Locked to 2nd gear.
- Engine brake does not function at 1st or 2nd of manual mode.



	Step	Check	Yes	No
1	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. 15 — (B11) No. 13: (B54) No. 12 — (B11) No. 9: (B54) No. 5 — Chassis ground: (B54) No. 14 — Chassis ground:	Is the resistance less than 1 Ω ?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2	TCM AND CHASSIS GROUND. Measure the resistance between TCM connector and chassis ground. Connector & terminal (B54) No. 12 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	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 connectors. 2) Turn the ignition switch to ON. (engine OFF) 3) Check input signal of LC/B oil pressure SW.	Is OFF displayed?	Go to step 4.	Go to step 6.
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) Check input signal of LC/B oil pressure SW.	Is ON displayed?	Even if the SPORT indicator 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.

	Step	Check	Yes	No
5	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Replace the con-	Replace the trans-
	TRANSMISSION AND CONTROL VALVE	Ω?	trol valve body.	mission harness
	BODY.		<ref. 5at-53,<="" th="" to=""><th>assembly.</th></ref.>	assembly.
	 Turn the ignition switch to OFF. 		Control Valve	
	Disconnect the connector from transmis-		Body.>	
	sion.			
	Remove the transmission connector from bracket.			
	 Lift up the vehicle and place it on rigid racks. 			
	NOTE:			
	Raise all wheels off floor.			
	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 transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
	(T4) No. 13 — (T16) No. 1:			
	(T4) No. 9 — (T15) No. 10:			
6	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Replace the con-	Repair the short
	TRANSMISSION AND CONTROL VALVE	ΜΩ?	trol valve body.	circuit of harness
	BODY.		<ref. 5at-53,<="" td="" to=""><td>between transmis-</td></ref.>	between transmis-
	 Turn the ignition switch to OFF. 		Control Valve	sion connector
	2) Disconnect the connector from transmis-		Body.>	and control valve
	sion.			body connector.
	Remove the transmission connector from bracket.			
	4) Lift up the vehicle and place it on rigid			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	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 har-			
	ness assembly.			
	Connector & terminal			
	(T4) No. 9 — (T15) No. 13:			

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

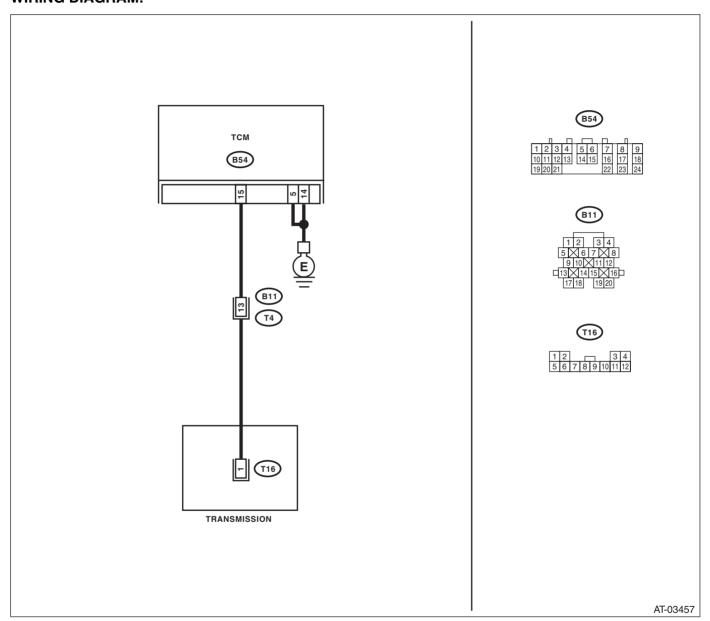
AA:DTC P0773 SHIFT SOLENOID "E" ELECTRICAL

DTC DETECTING CONDITION:

Output signal circuit of low coast brake solenoid is open or shorted.

TROUBLE SYMPTOM:

- Locked to 2nd gear.
- Engine brake does not function at 1st or 2nd of manual mode.



	Step	Check	Yes	No
1	CHECK DTC OF TCM.	Is DTC (P0802) of the PVIGN	Perform the diag-	<ref. 5at(diag)-<="" td="" to=""></ref.>
'	CHESK BIG OF TOM.	relay detected?	_	83, Diagnostic
		long detected.	DTC.	Procedure with
				Diagnostic Trou-
				ble Code (DTC).>
2	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 3.	Repair the open
	TCM AND TRANSMISSION.	Ω?		circuit of harness
	1) Turn the ignition switch to OFF.			between TCM con-
	2) Disconnect the connectors from TCM and			nector and trans-
	transmission.			mission connector.
	Measure the resistance of harness between TCM and transmission connector.			
	Connector & terminal			
	(B54) No. 15 — (B11) No. 13:			
	(B54) No. 15 — (B11) No. 13. (B54) No. 5 — Chassis ground:			
	(B54) No. 14 — Chassis ground:			
3		Is the resistance more than 1	Go to step 4.	Repair the short
1	TCM AND BODY HARNESS.	$M\Omega$?	F	circuit of harness
	Measure the resistance of harness between			between TCM con-
	TCM connector and body harness.			nector and trans-
	Connector & terminal			mission connector.
	(B54) No. 15 — Chassis ground:			
4		Is the resistance less than 1	Go to step 5.	Repair the open
		Ω?		circuit of harness
	BODY.			between transmis-
	Turn the ignition switch to OFF.			sion connector
	Disconnect the connector from transmission			and control valve
	sion. 3) Remove the transmission connector from			body connector.
	bracket.			
	4) Lift up the vehicle and place it on rigid			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	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 transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
5	(T4) No. 13 — (T16) No. 1: CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 6.	Renair the short
ا	TRANSMISSION AND CONTROL VALVE	Is the resistance more than 1 $M\Omega$?	ιο διέρ δ .	Repair the short circuit of harness
	BODY.	14127:		between control
	Measure the resistance between chassis			valve body con-
	ground and control valve body connector.			nector and trans-
	Connector & terminal			mission ground.
	(T16) No. 1 — Chassis ground:			J : 22
6	CHECK LOW COAST BRAKE SOLENOID.	Is the resistance between 5 —	Go to step 7.	Replace the con-
	Measure the resistance of harness connector	17 Ω?		trol valve body.
	between control valve body connector and			<ref. 5at-53,<="" td="" to=""></ref.>
	transmission ground.			Control Valve
1	Connector & terminal			Body.>
1	(T16) No. 1 — Transmission ground:			

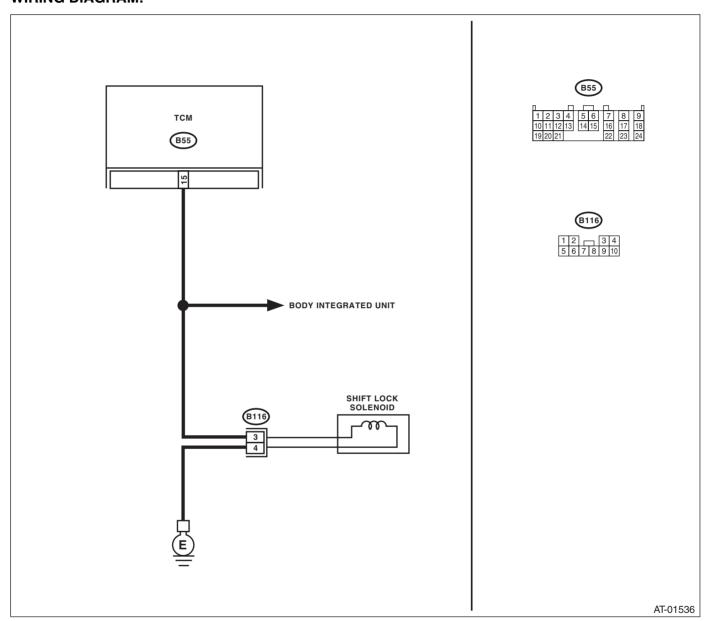
	Step	Check	Yes	No
7	CHECK POOR CONTACT. Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact.	Go to step 8.
8	CHECK AFTER REPAIR. 1) Perform the Clear Memory Mode. 2) Drive for a while, read the DTC, and check that there is no faulty.	Is DTC displayed?	<ref. 5at-56,<br="" to="">Transmission Con-</ref.>	Perform the P0882 diagnosis. <ref. to<br="">5AT(diag)-91, DTC P0882 TCM POWER INPUT SIGNAL LOW, Diagnostic Procedure with Diagnostic Trouble Code (DTC).></ref.>

AB: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 (12MPH) or more.
- Gear can not be shifted from "N" range to "R" range though the vehicle is parked.



	Step	Check	Yes	No
1	CHECK FUSE.	Is the fuse M/B (No. 12) blown	Replace the fuse	Go to step 2.
	 Turn the ignition switch to OFF. 	out?	M/B (No. 12). If the	
	2) Remove the fuse M/B (No. 12).		replaced fuse has	
			blown out easily,	
			repair short circuit	
			of harness	
			between fuse M/B	
			(No. 12) and TCM.	
2	CHECK OUTPUT SIGNAL OF TCM.	Is the voltage more than 10.5	Go to step 3.	Replace the TCM.
	 Turn the ignition switch to ON. 	V?		<ref. 5at-56,<="" td="" to=""></ref.>
	2) With the brake pedal depressed, shift the			Transmission Con-
	select lever to "D" range.			trol Module
	Measure the voltage between TCM and			(TCM).>
	chassis ground.			
	Connector & terminal			
	(B55) No. 15 (+) — Chassis ground (–):			
3	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 4.	Repair the open
	TCM AND SHIFT LOCK SOLENOID.	Ω?		circuit of harness
	1) Turn the ignition switch to OFF.			between TCM and
	Disconnect the connector from TCM and			shift lock solenoid
	shift lock solenoid.			connector.
	3) Measure the resistance of harness			
	between TCM and shift lock solenoid connec-			
	tor.			
	Connector & terminal			
	(B55) No. 15 — (B116) No. 3:	la tha maistana a mana than d	0-445	Danain tha aleant
4	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 5.	Repair the short
	TCM AND SHIFT LOCK SOLENOID.	ΜΩ?		circuit of harness
	Measure the resistance of the harness between TCM and chassis ground.			between TCM and
	Connector & terminal			shift lock solenoid connector.
	(B55) No. 15 — Chassis ground:			connector.
5		Is the resistance less than 1	Go to step 6.	Repair the open
3	SOLENOID AND CHASSIS GROUND TERMI-		Go to step 6 .	circuit of harness
	NAL.	52?		between chassis
	Measure the resistance of harness between			ground and shift
	shift lock solenoid and chassis ground.			lock solenoid con-
	Connector & terminal			nector.
	(B116) No. 4 — Chassis ground:			HECIOI.
6	CHECK SHIFT LOCK SOLENOID.	Is the resistance between 7 —	Go to step 7.	Replace the shift
ا	Measure the resistance of shift lock solenoid	$15 \text{ the resistance between } 7 - 21 \Omega$?	GO IO SIEP 1.	lock solenoid.
	terminals.	L 1 22:		IOUN SUICITUIU.
	Connector & terminal			
	(B116) No. 3 — No. 4:			
	טוו (טוו ב) — אט. א (טוו ב)	1	1	1

	Step	Check	Yes	No
7	CHECK OUTPUT SIGNAL OF TCM. 1) Lift-up the vehicle and support with rigid racks. NOTE: Raise all wheels off floor. 2) Start the engine. 3) Shift the select lever to "D" range and slowly increase vehicle speed to 20 km/h (12 MPH). NOTE: The speed difference between front and rear wheels may light the ABS warning light, but this does not indicate a malfunction. When AT control diagnosis is finished, perform the VDC memory clearance procedure of on-board diagnostics system. <ref. clear="" memory="" mode,="" monitor.="" operation,="" select="" subaru="" to="" vdc(diag)-20,=""> 4) Measure the voltage between TCM and chassis ground. Connector & terminal (B55) No. 15 (+) — Chassis ground (-):</ref.>		Even if the SPORT indicator light up, the circuit has returned to normal condition at this time. A temporary poor contact of connector or harness may be the cause. Repair the harness or connector in the 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 TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

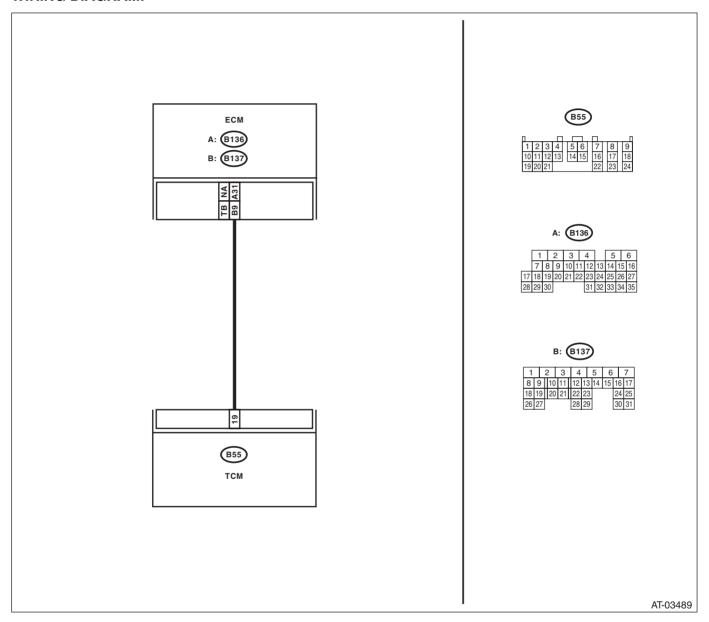
AC:DTC P0817 STARTER DISABLE CIRCUIT

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.



	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 new fuse (No. 32) has blown 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 Turbo model: (B55) No. 19 — (B137) No. 9: Non-turbo model: (B55) No. 19 — (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. 19 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 6.	Repair the short circuit of harness between transmis- sion 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) Shift the select lever to "P" range. 4) Measure the voltage between TCM connector and chassis ground. Connector & terminal (B55) No. 19 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 7.	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>
7	CHECK TCM OUTPUT SIGNAL. 1) Shift the select lever to "D" range. 2) Measure the voltage between TCM connector and chassis ground. Connector & terminal (B55) No. 19 (+) — Chassis ground (-):	Is the voltage more than 10 V?	Go to step 8.	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>
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.

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

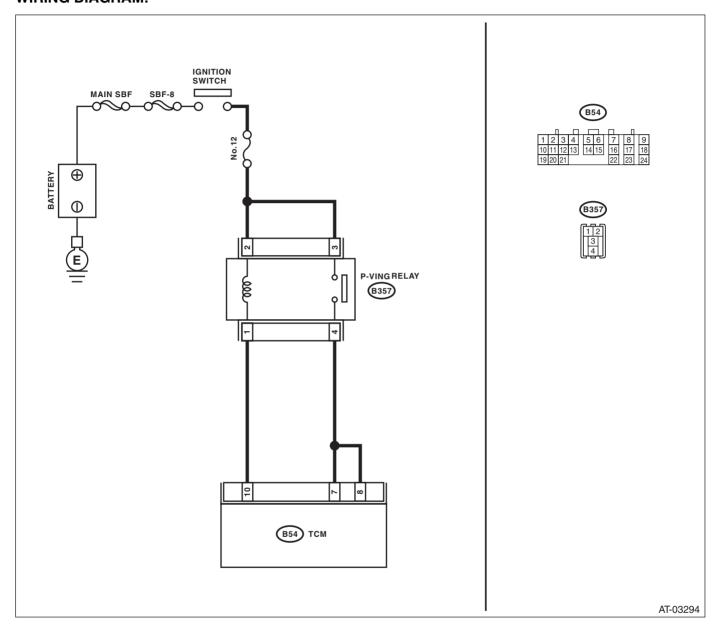
AD:DTC P0882 TCM POWER INPUT SIGNAL LOW

DTC DETECTING CONDITION:

Malfunction of PVIGN power supply relay or open, short circuit of PVIGN power supply circuit.

TROUBLE SYMPTOM:

Gear is not changed.



	Step	Check	Yes	No
1	CHECK FUSE. 1) Turn the ignition switch to OFF. 2) Remove the MAIN SBF, SBF 8 and fuse (No. 12), and then check those are not blown out.	Is the fuse blown out?	Replace the fuse. If the replaced fuse has blown out easily, repair the short circuit of har- ness of each fuse.	Go to step 2.
2	CHECK INPUT VOLTAGE FOR PVIGN RE- LAY. Measure the voltage between PVIGN relay and chassis ground. Connector & terminal (B357) No. 2 (+) — Chassis ground (-): (B357) No. 3 (+) — Chassis ground (-):	Is the voltage 10 — 13 V?	Go to step 3.	Repair the open circuit of harness between fuse (No. 12) and PVIGN relay.
3	CHECK HARNESS BETWEEN PVIGN RE- LAY OF TCM. Measure the resistance between TCM connec- tor and PVIGN relay connector. Connector & terminal (B54) No. 10 — (B357) No. 1: (B54) No. 7 — (B357) No. 4: (B54) No. 8 — (B357) No. 4:	Is the resistance less than 1 Ω ?	Go to step 4.	Repair the open circuit of harness.
4	CHECK PVIGN POWER SUPPLY CIRCUIT. 1) Turn the ignition switch to ON. (engine OFF) 2) Measure the voltage between TCM connector and chassis ground. Connector & terminal (B54) No. 7 (+) — Chassis ground (-): (B54) No. 8 (+) — Chassis ground (-):	Is the voltage 10 — 13 V?	Temporary poor contact. Recheck the harness between TCM and relay. (Lightly move the harness and check that the open or short circuit is not occurred.)	Go to step 5.
5	CHECK PVIGN RELAY OUTPUT OF TCM. Measure the voltage between TCM connector and chassis ground. Connector & terminal (B55) No. 11 (+) — Chassis ground (-):	Is the voltage less than 1.5 V?	Replace the PVIGN relay.	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

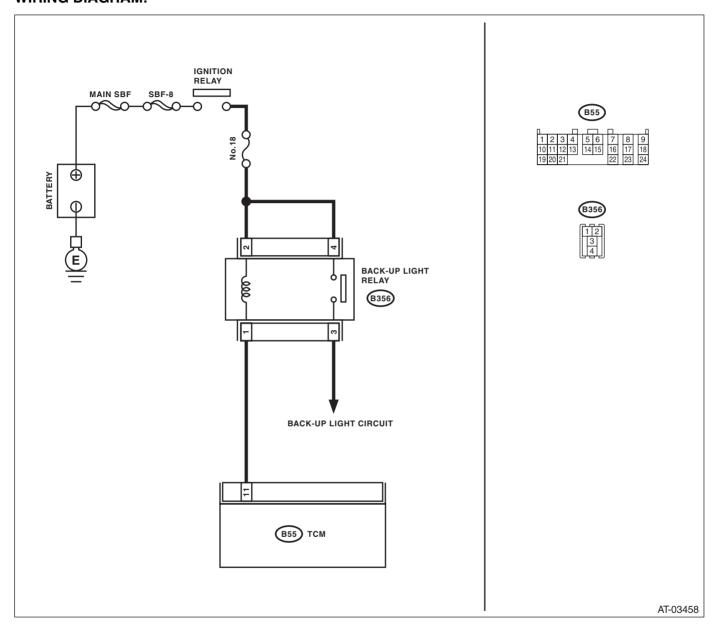
AE:DTC P0957 BACKUP LIGHT RELAY CIRCUIT LOW

DTC DETECTING CONDITION:

Short circuit of back-up light relay output circuit

TROUBLE SYMPTOM:

Back-up light does not illuminate in "R" range.



	Step	Check	Yes	No
1	CHECK DTC OF TCM.	Is DTC of Transmission Range	Perform the diag-	Go to step 2.
		Sensor Circuit (PRNDL Input)	nosis according to	
		detected?	DTC.	
2	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 3.	Repair the open
	TCM AND BACK-UP LIGHT RELAY.	Ω?		circuit of harness
	 Turn the ignition switch to OFF. 			between TCM and
	Disconnect the connector from TCM and			transmission con-
	back-up light relay.			nector, or poor
	Measure the resistance of harness			contact of connec-
	between TCM connector and back-up light			tor.
	relay connector.			
	Connector & terminal			
	(B55) No. 11 — (B356) No. 2:			
3		Is the resistance more than 1	Go to step 4.	Repair the short
	TCM AND TRANSMISSION.	ΜΩ?		circuit of harness
	Measure the resistance of harness between			between TCM and
	TCM connector and chassis ground.			transmission con-
	Connector & terminal			nector.
	(B55) No. 11 — Chassis ground:			
4	CHECK TCM OUTPUT SIGNAL.	Is the voltage more than 10 V?	Go to step 5.	Replace the TCM.
	1) Turn the ignition switch to ON. (engine			<ref. 5at-56,<="" td="" to=""></ref.>
	OFF)			Transmission Con-
	2) Move the select lever to "P" range.			trol Module
	Measure the voltage between TCM con-			(TCM).>
	nector and chassis ground.			
	Connector & terminal			
	(B55) No. 11 — Chassis ground:		_	
5	CHECK TCM OUTPUT SIGNAL.	Is the voltage 1.0 — 2.0 V?	Go to step 6.	Replace the TCM.
	A) O			<ref. 5at-56,<="" td="" to=""></ref.>
	1) Set the select lever to "R" range.			Transmission Con-
	2) Is the voltage less than 1 V?			trol Module
	3) Measure the voltage between TCM con-			(TCM).>
	nector and chassis ground.			
	Connector & terminal			
	(B55) No. 11 — Chassis ground:			
6	CHECK INPUT VOLTAGE FOR BACK-UP	Is the voltage 10 — 13 V?	Replace the back-	Check open or
	LIGHT RELAY.		up light relay.	short circuit of har-
	Measure the voltage between back-up light			ness between fuse
	relay and chassis ground.			(No. 18) and back-
				up light relay.

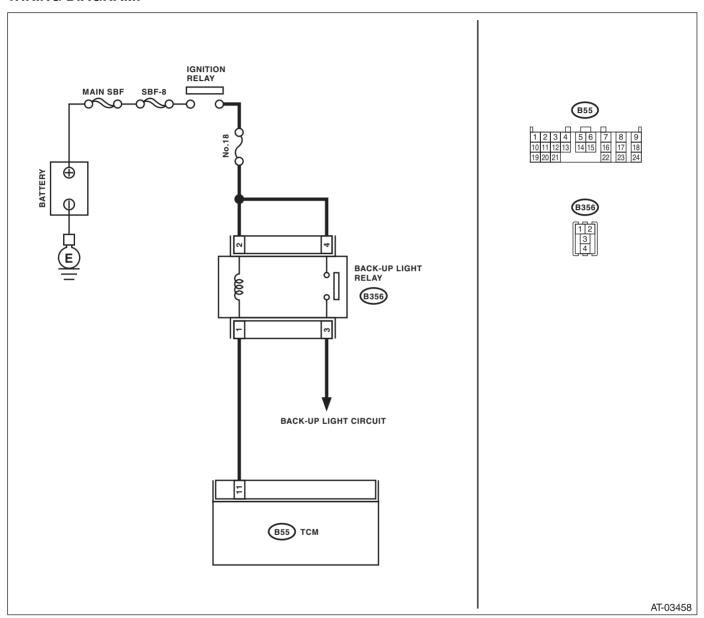
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

AF:DTC P0958 BACKUP LIGHT RELAY CIRCUIT HIGH

DTC DETECTING CONDITION:

Backup light relay malfunction, or open/short circuit in back-up light relay output circuit **TROUBLE SYMPTOM:**

- Back-up light does not illuminate in "R" range.
- Back-up light always illuminate except in "R" range.



	Step	Check	Yes	No
1	CHECK DTC OF TCM.	Is DTC of Transmission Range	Perform the diag-	Go to step 2.
		Sensor Circuit (PRNDL Input)	nosis according to	
		detected?	DTC.	
2	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 3.	Repair the open
	TCM AND BACK-UP LIGHT RELAY.	Ω ?		circuit of harness
	 Turn the ignition switch to OFF. 			between TCM and
	Disconnect the connector from TCM and			transmission con-
	back-up light relay.			nector, or poor
	Measure the resistance of harness			contact of connec-
	between TCM connector and back-up light			tor.
	relay connector.			
	Connector & terminal			
	(B55) No. 11 — (B356) No. 2:			
3	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 4.	Repair the short
	TCM AND TRANSMISSION.	ΜΩ?		circuit of harness
	Measure the resistance of harness between			between TCM and
	TCM connector and chassis ground.			transmission con-
	Connector & terminal			nector.
	(B55) No. 11 — Chassis ground:			
4	CHECK TCM OUTPUT SIGNAL.	Is the voltage more than 10 V?	Go to step 5.	Replace the TCM.
	1) Turn the ignition switch to ON. (engine			<ref. 5at-56,<="" td="" to=""></ref.>
	OFF)			Transmission Con-
	2) Move the select lever to "P" range.			trol Module
	3) Measure the voltage between TCM con-			(TCM).>
	nector and chassis ground.			
	Connector & terminal			
	(B55) No. 11 — Chassis ground:		_	
5	CHECK TCM OUTPUT SIGNAL.	ls the voltage 1.0 — 2.0 V or	Go to step 6.	Replace the TCM.
	4) O-14	less?		<ref. 5at-56,<="" td="" to=""></ref.>
	1) Set the select lever to "R" range.			Transmission Con-
	2) Measure the voltage between TCM con-			trol Module
	nector and chassis ground.			(TCM).>
	Connector & terminal			
	(B55) No. 11 — Chassis ground:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	D 1 " 1 1	
6	CHECK INPUT VOLTAGE FOR BACK-UP	Is the voltage 10 — 13 V?	Replace the back-	Check open or
	LIGHT RELAY.		up light relay.	short circuit of har-
	Measure the voltage between back-up light			ness between fuse
	relay and chassis ground.			(No. 18) and back-
1				up light relay.

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

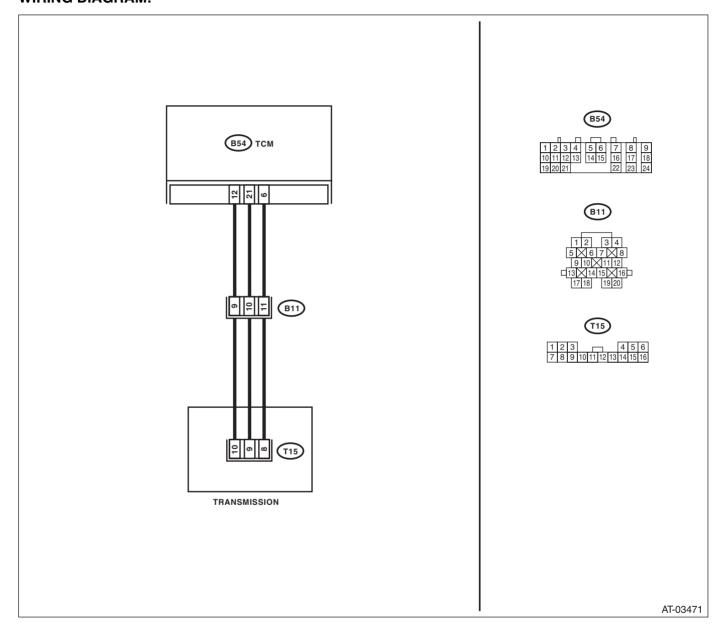
AG:DTC P1601 TCM DATA COMMUNICATION FAILURE

DTC DETECTING CONDITION:

Communication does not complete between control valve memory box.

TROUBLE SYMPTOM:

Shifting quality malfunction



	Step	Check	Yes	No
1	CHECK IMPROPER CONNECTION OF TRANSMISSION CONNECTOR. Check loose connection on TCM connector (B54).	Is there improper connection of connector?	Connect it securely.	Go to step 2.
2	CHECK DTC OF TCM.	Is DTC of oil pressure switch detected?	Perform the diagnosis according to DTC.	Go to step 3.

	Step	Check	Yes	No
3	CHECK TCM OUTPUT SIGNAL.	Is the voltage 10 — 13 V?	Go to step 4.	Go to step 5.
ľ	Turn the ignition switch to ON. (engine)	is the voltage to to v:	GO to Stop 4.	do to stop o .
	OFF)			
	Measure the voltage between TCM con-			
	nector and chassis ground.			
	Connector & terminal			
	(B54) No. 16 (+) — Chassis ground (–):			
4	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 5.	Repair the open
	TCM AND TRANSMISSION.	Ω ?		circuit of harness
	 Turn the ignition switch to OFF. 			between TCM and
	Disconnect the connectors from TCM and			transmission con-
	transmission.			nector, or poor
	Measure the resistance of harness			contact of connec-
	between TCM connector and transmission			tor.
	connector.			
	Connector & terminal			
	(B54) No. 12 — (B11) No. 9:			
	(B54) No. 21 — (B11) No. 10:			
_	(B54) No. 6 — (B11) No. 11:	la the mediate are as a second	0.4.5	Densignation
5	CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION.	Is the resistance more than 1 $M\Omega$?	Go to step 6.	Repair the short circuit of harness
	Measure the resistance of harness between	IVIS 2 ?		between TCM and
	TCM connector and chassis ground.			transmission con-
	Connector & terminal			nector.
	(B54) No. 12 — Chassis ground:			nector.
	(B54) No. 21 — Chassis ground:			
	(B54) No. 6 — Chassis ground:			
6	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 7.	Repair the open
	TRANSMISSION CONNECTOR AND CON-	Ω?		circuit of harness
	TROL VALVE BODY CONNECTOR.			between transmis-
	Measure the resistance between transmission			sion connector
	connector and control valve body connector.			and control valve
	Connector & terminal			body connector.
	(B11) No. 9 — (T15) No. 10:			
	(B11) No. 10 — (T15) No. 9:			
	(B11) No. 11 — (T15) No. 8:			
7	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 8.	Repair the short
	TRANSMISSION CONNECTOR AND CON-	ΜΩ?		circuit of harness
	TROL VALVE BODY CONNECTOR.			between transmis-
	Measure the resistance between transmission			sion connector and control valve
	connector and chassis ground. Connector & terminal			body connector.
	(B11) No. 9 — Chassis ground:			body confidence.
	(B11) No. 10 — Chassis ground: (B11) No. 10 — Chassis ground:			
	(B11) No. 10 — Chassis ground: (B11) No. 11 — Chassis ground:			
8	CHECK POOR CONTACT.	Is there any open or poor con-	Repair the poor	Replace the trans-
ľ	NOTE:	tact of connector (loosing ter-	contact.	mission assembly.
	Data communication malfunction is detected			<ref. 5at-34,<="" td="" to=""></ref.>
	when the malfunction occurred on inspection			Automatic Trans-
	area above while transmission assembly is re-			mission Assem-
	placing or "Clear Memory 2" is performing.			bly.>
	When the repair is performed with following di-			-
	agnosis above, perform the "Clear Memory 2",			
	and then recheck that the DTC of TCM data			
	communication malfunction is not detected.			

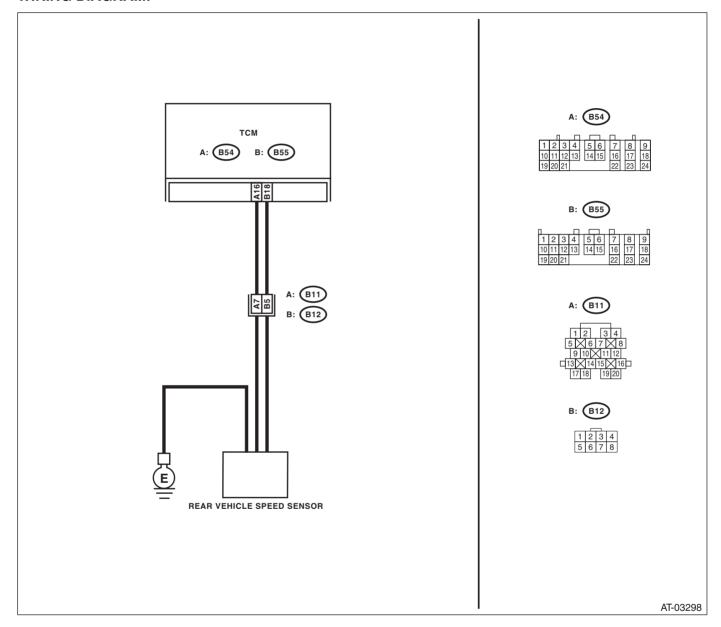
AH:DTC P1706 AT VEHICLE SPEED SENSOR CIRCUIT MALFUNCTION (REAR WHEEL)

DTC DETECTING CONDITION:

Input signal circuit of TCM is open or shorted.

TROUBLE SYMPTOM:

- Shifting quality malfunction
- Tight corner braking phenomenon occurs.



	Step	Check	Yes	No
1	CHECK TCM I/O SIGNAL. Check I/O signal of power supply, ground and PVIGN power supply relay. <ref. (tcm)="" 5at(diag)-12,="" control="" electrical="" i="" module="" o="" signal.="" specification,="" to="" transmission=""></ref.>			Repair the open or short circuit for power supply and ground. Perform the diagnosis according to DTC P0882 for PVIGN power supply relay.

	Step	Check	Yes	No
2	CHECK TCM AND TRANSMISSION HARNESS CONNECTOR.	Is the resistance less than 1 Ω ?	Go to step 3.	Repair the open circuit of harness
	1) Disconnect the connectors from TCM and transmission.			between TCM and transmission con-
	Measure the resistance of harness between TCM connector and transmission			nector.
	connector.			
	Connector & terminal (B55) No. 18 — (B12) No. 5:			
	(B54) No. 16 — (B11) No. 7:			
3	CHECK TCM AND TRANSMISSION HAR- NESS CONNECTOR.	Is the resistance more than 1 $M\Omega$?	Go to step 4.	Repair the short circuit of harness
	Measure the resistance of harness between	10122:		between TCM and
	TCM connector and chassis ground.			transmission con-
	Connector & terminal (B54) No. 16 — Chassis ground:			nector.
	(B55) No. 18 — Chassis ground:			
4	CHECK TCM POWER SUPPLY OUTPUT. 1) Connect the connector to TCM. (Transmis-	Is the voltage 10 — 13 V?	Go to step 5.	Replace the TCM. <ref. 5at-56,<="" th="" to=""></ref.>
	sion connector is disconnected)			Transmission Con-
	2) Turn the ignition switch to ON. (engine OFF)			trol Module (TCM).>
	3) Measure the voltage between transmission			(10W).>
	connector and chassis ground.			
	Connector & terminal (B11) No. 7 (+) — Chassis ground (–):			
5	CHECK HARNESS ASSEMBLY (TURBINE	Is the ground connecting har-	Go to step 6.	When the poor
	SPEED SENSOR GROUND). Check the installing condition of ground con-	ness installed to transmission body correctly, or the harness		installation of ground connect-
	necting harness (used for both of turbine	and connector terminals not		ing harness, install
	speed sensor 1, rear vehicle speed sensor).	damaged?		it securely. Replace the trans-
				mission assembly
				when the harness is damaged. <ref.< th=""></ref.<>
				to 5AT-34, Auto-
				matic Transmis-
6	CHECK INPUT SIGNAL FOR TCM USING	Does the value of the front	Even if the SPORT	sion Assembly.> Replace the trans-
	SUBARU SELECT MONITOR.	wheel speed depending on the	indicator light	mission harness.
	 Connect all connectors. Lift-up the vehicle and support with rigid 	acceleration and deceleration of the vehicle?	blinks, the system is in normal condi-	
	racks.	of the vehicle?	tion. A temporary	
	NOTE:		poor contact of	
	Raise all wheels off floor. 3) Start the engine, and drive the vehicle.		connector or har- ness may be the	
	4) Read the current data of front wheel speed		cause. Repair poor	
	using Subaru Select Monitor. <ref. 5at(diag)-16,="" operation,="" select<="" subaru="" td="" to=""><td></td><td>contact of har- ness in ATF tem-</td><td></td></ref.>		contact of har- ness in ATF tem-	
	Monitor.>		perature sensor	
	NOTE:		and transmission connector.	
	The speed difference between front and rear wheels may light the ABS warning light, but this		oonincotor.	
	does not indicate a malfunction. When AT con-			
	trol diagnosis is finished, perform the ABS memory clearance procedure of on-board diag-			
	nostics system. <ref. clear<="" td="" to="" vdc(diag)-20,=""><td></td><td></td><td></td></ref.>			
	MEMORY MODE, OPERATION, Subaru Select Manitors			
	lect Monitor.>			

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

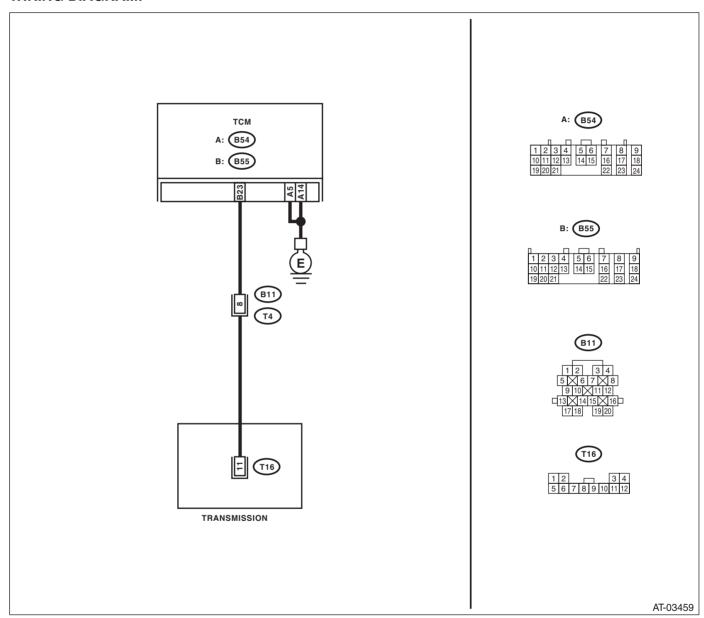
AI: DTC P1707 AT AWD SOLENOID VALVE CIRCUIT MALFUNCTION

DTC DETECTING CONDITION:

Output signal circuit of transfer solenoid is open or shorted.

TROUBLE SYMPTOM:

- Tight corner braking phenomenon occurs.
- · Drivability getting worse.



	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 2.	Repair the open
	TCM AND TRANSMISSION.	Ω ?	'	circuit of harness
	1) Turn the ignition switch to OFF.			between TCM con-
	2) Disconnect the connectors from TCM and			nector and trans-
	transmission.			mission connector.
	3) Measure the resistance of harness			mission connector.
	between TCM and transmission connector.			
	Connector & terminal			
	(B55) No. 23 — (B11) No. 8:			
	(B54) No. 5 — Chassis ground:			
	(B54) No. 14 — Chassis ground:			
2	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 3.	Repair the short
	TCM AND CHASSIS GROUND.	M Ω ?	,	circuit of harness
	Measure the resistance of harness between			between TCM con-
	TCM connector and chassis ground.			nector and trans-
	Connector & terminal			mission connector.
	(B55) No. 23 — Chassis ground:			
3		Is the resistance less than 1	Go to step 4.	Repair the open
3	TRANSMISSION AND CONTROL VALVE	Ω ?	do to step 4.	circuit of harness
	BODY.	22:		between transmis-
	 Turn the ignition switch to OFF. Disconnect the connector from transmis- 			sion connector
	•			and control valve
	sion.			body connector.
	3) Remove the transmission connector from			
	bracket.			
	4) Lift up the vehicle and place it on rigid			
	racks.			
	NOTE:			
	Raise all wheels off floor.			
	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 transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
	(T4) No. 8 — (T16) No. 11:			
4	CHECK HARNESS CONNECTOR BETWEEN	ls the resistance more than 1	Go to step 5.	Repair the short
-	TRANSMISSION AND CONTROL VALVE	$M\Omega$?	30 to step 3 .	circuit of harness
	BODY.	14125 :		between control
	Measure the resistance between transmission			valve body con-
				nector and trans-
	ground and control valve body connector.			
	Connector & terminal			mission ground.
_	(T16) No. 11 — Transmission ground:	lla tha mariatara a la ch	Co to star C	Dania - 4
5	CHECK AWD SOLENOID.	Is the resistance between 3 —	Go to step 6.	Replace the con-
		9 Ω?		trol valve body.
	ground and control valve body connector.			<ref. 5at-53,<="" td="" to=""></ref.>
	Connector & terminal			Control Valve
<u> </u>	(T16) No. 11 — Transmission ground:			Body.>
6	CHECK POOR CONTACT.	Is there any loosing terminal,	Repair the poor	Go to step 7.
	Check that there are no poor contact in TCM	entering foreign matter, dam-	contact.	
	connector, transmission connector and control	aging connector body?		
	valve body connector.			
7	CHECK AFTER REPAIR.	Is DTC displayed?	Replace the TCM.	Temporary poor
	1) Perform the Clear Memory Mode.		<ref. 5at-56,<="" td="" to=""><td>contact or open</td></ref.>	contact or open
	2) Drive for a while, read the DTC, and check		Transmission Con-	circuit occurs.
	that there is no faulty.		trol Module	Recheck that the
	· · · · · · · · · · · · · · · · · · ·		(TCM).>	harness connec-
			,	tor has no faulty.

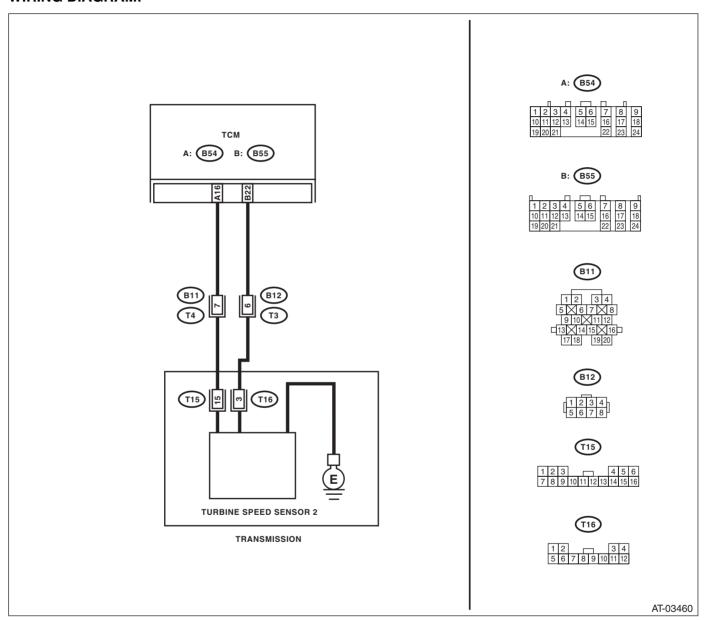
AJ:DTC P1710 TORQUE CONVERTER TURBINE 2 SPEED SIGNAL CIRCUIT 2 MALFUNCTION

DTC DETECTING CONDITION:

Input signal circuit of TCM is open or shorted.

TROUBLE SYMPTOM:

- Excessive shift shock
- Does not shift to 5th



	Step	Check	Yes	No
1	CHECK TCM I/O SIGNAL.	Is TCM I/O signal OK?	Go to step 2.	Repair the open or
	Check I/O signal of power supply, ground and PVIGN power supply relay. <ref. (tcm)="" 5at(diag)-12,="" control="" electrical="" i="" module="" o="" signal.="" specification,="" to="" transmission=""></ref.>	is TOM I/O signal OK?	Go to step 2.	short circuit for power supply and ground. Perform the diagnosis according to DTC
				P0882 for PVIGN power supply relay.
	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 (RES) No. 22 (R12) No. 6:	Is the resistance less than 1 Ω ?	Go to step 3.	Repair the open circuit of harness between TCM and transmission connector.
	(B55) No. 22 — (B12) No. 6: (B54) No. 16 — (B11) No. 7:			
	CHECK TCM AND TRANSMISSION HARNESS CONNECTOR. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 22 — Chassis ground: (B54) No. 16 — Chassis ground:	Is the resistance 1 $M\Omega$ or more?	Go to step 4.	Repair the short circuit of harness between TCM and transmission connector.
	CHECK TCM POWER SUPPLY OUTPUT. 1) Connect the connector to 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. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>
	CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR. 1) Connect all connectors. 2) Lift-up the vehicle and support with rigid racks. NOTE: Raise all wheels off floor. 3) Start the engine, and set the vehicle in 1st speed driving condition of manual mode. 4) Read the current data of torque converter turbine speed 2 using Subaru Select Monitor. <ref. 5at(diag)-16,="" monitor.="" operation,="" select="" subaru="" to=""> NOTE: The speed difference between front and rear wheels may light 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. clear="" memory="" mode,="" monitor.="" operation,="" select="" subaru="" to="" vdc(diag)-20,=""></ref.></ref.>		Even if the SPORT indicator 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 6.

	Step	Check	Yes	No
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 and place it on rigid racks. NOTE: Raise all wheels off floor. 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 — (T6) No. 3: (T4) No. 7 — (T5) No. 15:	Is the resistance less than 1 Ω ?	Go to step 7.	Repair the open circuit of harness between transmission connector and control valve body connector.
7	CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T6) No. 3 — Transmission ground: (T5) No. 15 — Transmission ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Replace the control valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""></ref.>	Repair the short circuit of harness between transmis- sion connector and transmission ground.

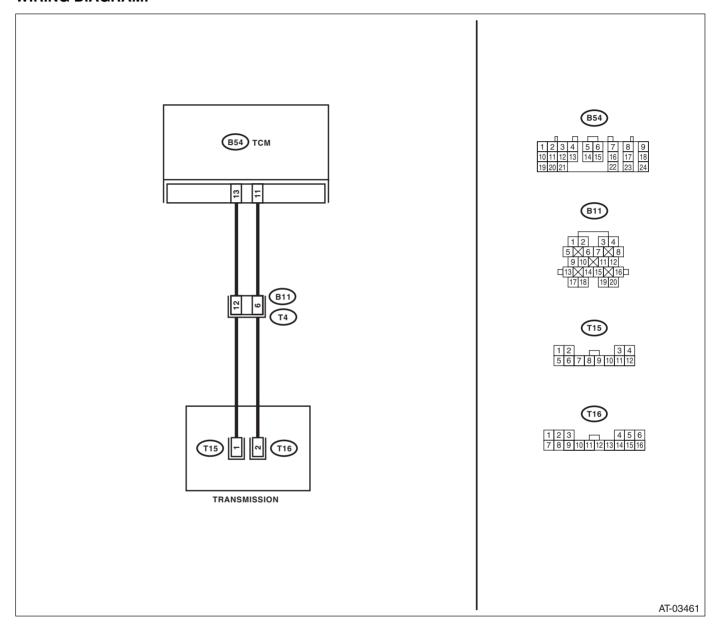
AK:DTC P1716 ATF TEMP. SENSOR 2 CIRCUIT LOW

DTC DETECTING CONDITION:

Input signal circuit to ATF temperature sensor 2 is open or shorted.

TROUBLE SYMPTOM:

Excessive shift shock



	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. 13 — (B11) No. 12: (B54) No. 11 — (B11) No. 6:	Is the resistance less than 1 Ω ?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2	CHECK 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 reaches to 80°C (176°F). NOTE: If the ambient temperature falls 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 (74) No. 6 — (74) No.12:		Go to step 3.	Go to step 5.
3	CHECK ATF TEMPERATURE SENSOR. Measure the resistance between transmission connector terminals. Connector & terminal (T4) No. 6 — (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 ATF temperature using Subaru Select Monitor.	Does the ATF temperature gradually decrease?	Even if the SPORT indicator light blinks, the system is in normal condition. A temporary poor contact of connector or harness may be the cause. Repair the poor contacts of harnesses of ATF temperature sensor and transmission connector.	Go to step 6.

	Step	Check	Yes	No
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 and place it on rigid racks. NOTE: Raise all wheels off floor. 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 — (T15) No. 1: (T4) No. 6 — (T16) No. 2:	Is the resistance less than 1 Ω ?	Replace the control valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""></ref.>	Repair the open circuit of harness between transmission connector and control valve body connector.
6	CHECK POOR CONTACT. Check poor contact of ATF temperature sensor 1 circuit.	Is there poor contact?	Repair the poor contact.	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

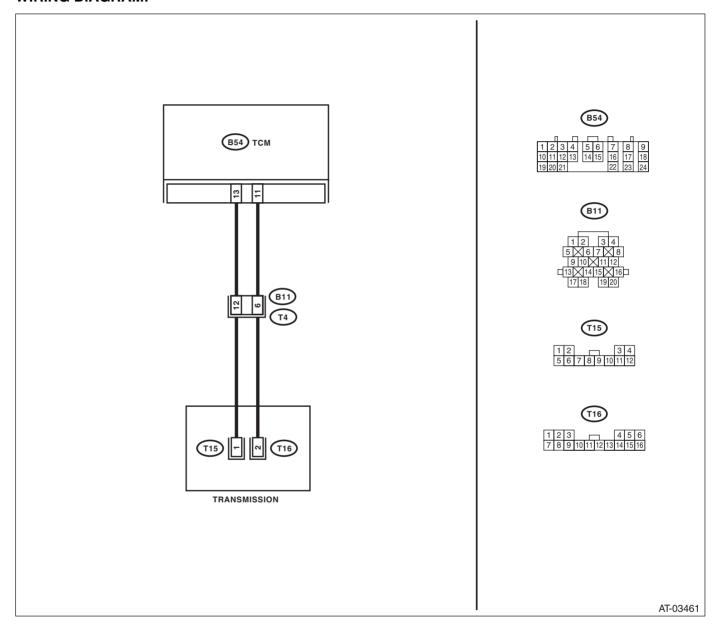
AL:DTC P1717 ATF TEMP. SENSOR 2 CIRCUIT HIGH

DTC DETECTING CONDITION:

Input signal circuit to ATF temperature sensor 2 is open or shorted.

TROUBLE SYMPTOM:

Excessive shift shock



	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN		Go to step 2.	Repair the short
1	TCM AND TRANSMISSION.	MΩ?	G.6 16 616F 2.	circuit of harness
	Turn the ignition switch to OFF.			between TCM and
	Disconnect the connectors from TCM and			transmission con-
	transmission.			nector.
	3) Measure the resistance of harness			
	between TCM connector and chassis ground.			
	Connector & terminal			
	(B54) No. 13 — (B11) No. 12:			
	(B54) No. 11 — (B11) No. 6:			
2	CHECK ATF TEMPERATURE SENSOR.	Is the resistance between 300	Go to step 3.	Go to step 5.
	1) Turn the ignition switch to OFF.	-700Ω ?		
	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 reaches to 80°C (176°F).			
	NOTE:			
	If the ambient temperature falls below 0°C			
	(32°F), drive the vehicle until the ATF reaches			
	its operating temperature.			
	5) Disconnect the connector from transmis-			
	sion.			
	6) Measure the resistance between transmis-			
	sion connector terminals.			
	Connector & terminal			
	(T4) No. 6 — (T4) No.12:			
3	CHECK ATF TEMPERATURE SENSOR.	Does the resistance value	Go to step 4.	Go to step 5.
	Measure the resistance between transmission	increase while the ATF temper-		
	connector terminals.	ature decreases?		
	Connector & terminal			
	(T4) No. 6 — (T4) No.12:			
4	CHECK INPUT SIGNAL FOR TCM USING	Does the ATF temperature	Even if the SPORT	Go to step 6.
	SUBARU SELECT MONITOR.	gradually decrease?	indicator light	
	 Connect the connector. 		blinks, the system	
	2) Turn the ignition switch to ON. (engine		is in normal condi-	
	OFF)		tion. A temporary	
	Read the ATF temperature using Subaru		poor contact of	
	Select Monitor.		connector or har-	
			ness may be the	
			cause. Repair the	
			poor contacts of	
			harnesses of ATF	
			temperature sen-	
			sor and transmis-	
			sion connector.	

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
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 and place it on rigid racks. NOTE: Raise all wheels off floor. 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 ground and control valve body connector. Connector & terminal (T15) No. 1 — Chassis ground: (T16) No. 2 — Chassis ground:	Is the resistance more than 1 $M\Omega$?	Replace the control valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""></ref.>	Repair the short circuit of harness between transmission connector and control valve body connector.
6	CHECK POOR CONTACT. Check poor contact of ATF temperature sensor 1 circuit.	Is there poor contact?	Repair the poor contact.	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>

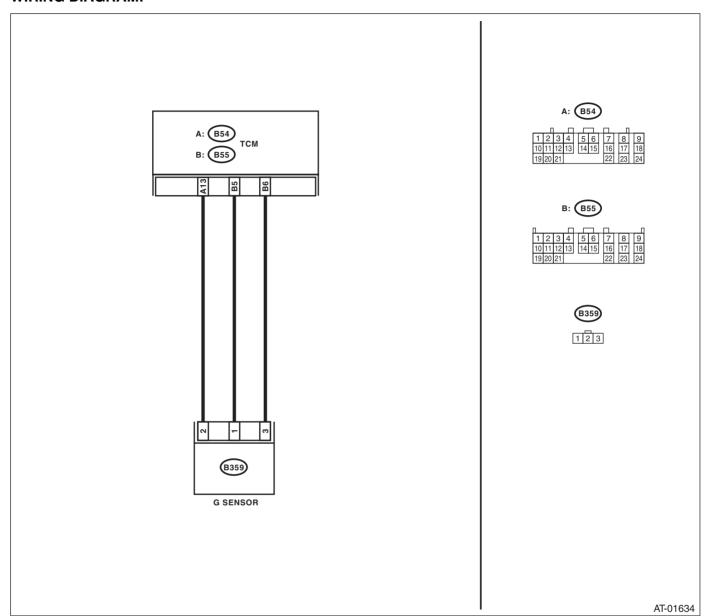
AM:DTC P1718 AT CAN COMMUNICATION CIRCUIT

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.>

AN:DTC P1760 LATERAL ACCELERATION SENSOR PERFORMANCE PROBLEM DTC DETECTING CONDITION:

Lateral G sensor output voltage fault **WIRING DIAGRAM**:



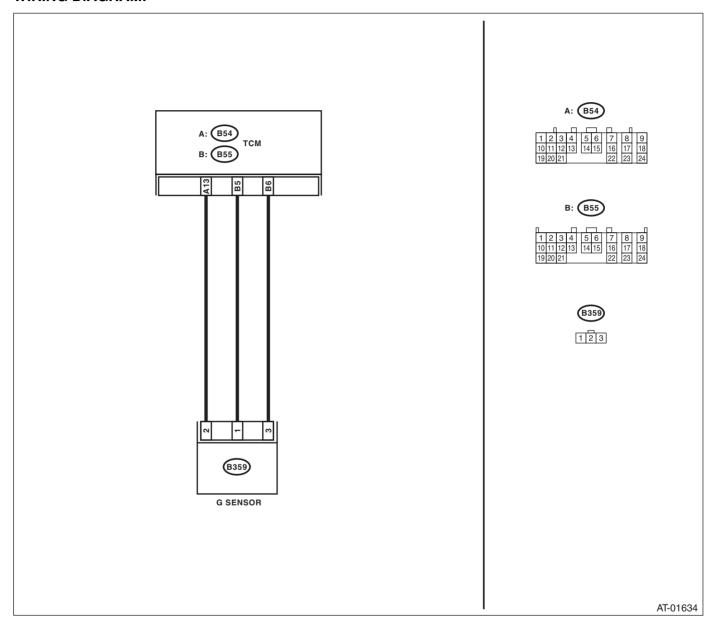
	Step	Check	Yes	No
1	CHECK VEHICLE CONDITION.	Is the vehicle a model with VDC, which has the VDC OFF switch on the instrument panel?	Go to step 2.	Go to step 4.
2	CHECK DTC OF TCM.	tion detected?	nosis according to DTC.	Go to step 3.
3	CHECK DTC OF ABS.	Is DTC of ABS detected?	Perform the diagnosis according to DTC of ABS.	Temporary poor contact occurs. Recheck for defective parts in harness and connectors.
4	CHECK OUTPUT OF LATERAL G SENSOR USING SUBARU SELECT MONITOR. 1) Select {Current Data Display & Save} in Subaru Select Monitor. 2) Read the Subaru Select Monitor display.	Is the reading indicated on monitor display 2.3 to 2.7 V?	Go to step 5.	Go to step 10.
5	CHECK OUTPUT OF LATERAL G SENSOR USING SUBARU SELECT MONITOR. 1) Turn the ignition switch to OFF. 2) Remove the console box. 3) Remove the lateral G sensor from vehicle. (Do not disconnect the connector.) 4) Turn the ignition switch to ON. 5) Select {Current Data Display & Save} in Subaru Select Monitor. 6) Read the Subaru Select Monitor display.	Is the value on the display 3.3 — 4.3 V with the lateral G sensor inclined 90° to right?	Go to step 6.	Replace the lateral G sensor. <ref. 5at-57,="" g="" lateral="" sensor.="" to=""></ref.>
6	CHECK OUTPUT OF LATERAL G SENSOR USING SUBARU SELECT MONITOR. Read the Subaru Select Monitor display.	Is the value on the display 0.7 — 1.7 V with the lateral G sensor inclined 90° to left?	Go to step 7.	Replace the lateral G sensor. <ref. 5at-57,<br="" to="">Lateral G Sensor.></ref.>
7	CHECK POOR CONTACT OF CONNECTOR. Turn the ignition switch to OFF.	Is there poor contact in con- nector between TCM and lat- eral G sensor?	Repair the connector.	Go to step 8.
8	CHECK ABSCM&H/U. 1) Connect all connectors. 2) Perform the Clear Memory Mode. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>	Go to step 9.
9	CHECK OTHER DTC DETECTION.	Is any other DTC displayed?	Perform the diagnosis according to DTC.	Temporary poor contact occurs.
10	CHECK OPEN CIRCUIT IN LATERAL G SENSOR OUTPUT HARNESS AND GROUND HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM. 3) Measure the resistance between TCM connector terminals. Connector & terminal (B54) No. 13 — (B55) No. 6:	Is the resistance between 5.0 and 6.0 k Ω ?	Go to step 11.	Repair the har- ness between lat- eral G sensor and TCM.

	Step	Check	Yes	No
11	CHECK LATERAL G SENSOR. 1) Remove the console box. 2) Remove the lateral G sensor from vehicle. 3) Connect the connector to lateral G sensor. 4) Connect the connector to ABSCM&H/U. 5) Turn the ignition switch to ON. 6) Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B359) No. 3 (+) — No. 2 (-):	Is the voltage 2.3 — 2.7 V when lateral G sensor is in horizontal position?	Go to step 12.	Replace the lateral G sensor. <ref. 5at-57,="" g="" lateral="" sensor.="" to=""></ref.>
12	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B359) No. 3 (+) — No. 2 (-):	Is the voltage 3.3 — 4.3 V when lateral G sensor is inclined 90° to right?	Go to step 13.	Replace the lateral G sensor. <ref. 5at-57,<br="" to="">Lateral G Sensor.></ref.>
13	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B359) No. 3 (+) — No. 2 (-):	Is the voltage 0.7 — 1.7 V when lateral G sensor is inclined 90° to left?	Go to step 14.	Replace the lateral G sensor. <ref. 5at-57,="" g="" lateral="" sensor.="" to=""></ref.>
14	CHECK ABSCM&H/U. 1) Turn the ignition switch to OFF. 2) Connect all connectors. 3) Perform the Clear Memory Mode. 4) Perform the Inspection Mode. 5) Read the DTC.	Is the same DTC displayed?	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>	Go to step 15.
15	CHECK OTHER DTC DETECTION.	Is any other DTC displayed?	Perform the diagnosis according to DTC.	Temporary poor contact occurs.

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

AO:DTC P1761 LATERAL ACCELERATION SENSOR CIRCUIT LOW DTC DETECTING CONDITION:

- Lateral G sensor open circuit or output voltage fault (Model without VDC)
- CAN communication failure (Model with VDC)



	Step	Check	Yes	No
1	CHECK VEHICLE CONDITION.	Is the vehicle a model with VDC, which has the VDC OFF switch on the instrument panel?	Go to step 2.	Go to step 4.
2	CHECK DTC OF TCM.	Is DTC of AT CAN communication detected?	Perform the diagnosis according to DTC.	Go to step 3.

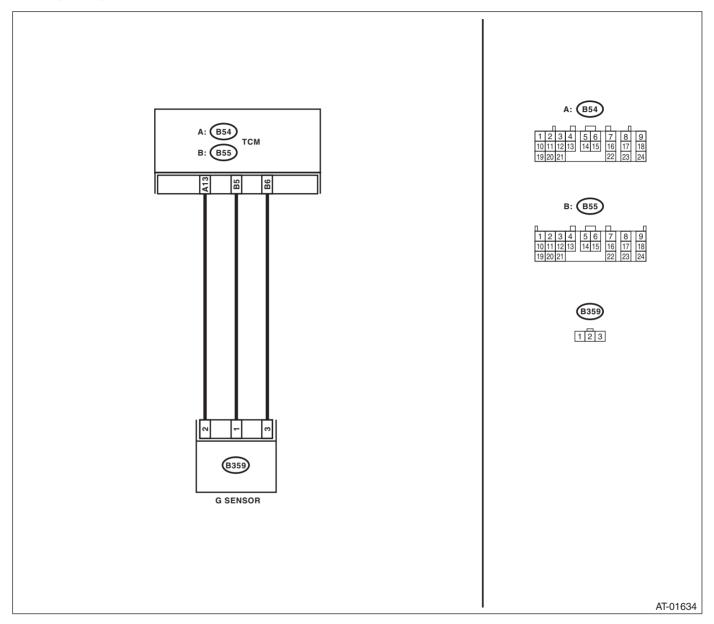
	Step	Check	Yes	No
3	CHECK DTC OF ABS.	Is DTC of ABS detected?	Perform the diagnosis according to DTC of ABS.	Temporary poor contact occurs. Recheck for defective parts in harness and connectors.
4	CHECK OUTPUT OF LATERAL G SENSOR USING SUBARU SELECT MONITOR. 1) Select {Current Data Display & Save} in Subaru Select Monitor. 2) Read the lateral G sensor output on Subaru Select Monitor.	Is the reading indicated on monitor display 2.3 to 2.7 V when lateral G sensor is level?	Go to step 5.	Go to step 8.
5	CHECK POOR CONTACT OF CONNECTOR. Turn the ignition switch to OFF.	Is there poor contact in con- nector between TCM and lat- eral G sensor?	Repair the con- nector.	Go to step 6.
6	CHECK ABSCM&H/U. 1) Connect all connectors. 2) Perform the Clear Memory Mode. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	<ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>	Go to step 7.
7	CHECK OTHER DTC DETECTION.	Is any other DTC displayed?	Perform the diagnosis according to DTC.	Temporary poor contact occurs.
8	CHECK OPEN CIRCUIT IN LATERAL G SENSOR OUTPUT HARNESS AND GROUND HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM. 3) Measure the resistance between TCM connector terminals. Connector & terminal (B54) No. 13 — (B55) No. 6:	Is the resistance between 5.0 and 6.0 k Ω ?	Go to step 9.	Repair the har- ness between lat- eral G sensor and TCM.
9	CHECK GROUND SHORT OF HARNESS. Measure the resistance between TCM connector and chassis ground. Connector & terminal (B54) No. 13 — Chassis ground:		Go to step 10.	Repair the harness between lateral G sensor and TCM. Replace the TCM. <ref. (tcm).="" 5at-56,="" control="" module="" to="" transmission=""></ref.>
10	CHECK LATERAL G SENSOR. 1) Remove the console box. 2) Remove the lateral G sensor from vehicle. 3) Connect the connector to lateral G sensor. 4) Connect the TCM connector. 5) Turn the ignition switch to ON. 6) Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B359) No. 3 (+) — No. 2 (-):	Is the voltage 2.3 — 2.7 V when lateral G sensor is in horizontal position?	Go to step 11.	Replace the lateral G sensor. <ref. 5at-57,="" g="" lateral="" sensor.="" to=""></ref.>
11	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B359) No. 3 (+) — No. 2 (-):	Is the voltage 3.3 — 4.3 V when lateral G sensor is inclined 90° to right?	Go to step 12.	Replace the lateral G sensor. <ref. 5at-57,<br="" to="">Lateral G Sensor.></ref.>

	Step	Check	Yes	No
12	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B359) No. 3 (+) — No. 2 (-):	Is the voltage 0.7 — 1.7 V when lateral G sensor is inclined 90° to left?	Go to step 13.	Replace the lateral G sensor. <ref. 5at-57,<br="" to="">Lateral G Sensor.></ref.>
13	CHECK TCM. 1) Turn the ignition switch to OFF. 2) Connect all connectors. 3) Perform the Clear Memory Mode. 4) Perform the Inspection Mode. 5) Read the DTC.	Is the same DTC displayed?	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>	Go to step 14.
14	CHECK OTHER DTC DETECTION.	Is any other DTC displayed?	Perform the diagnosis according to DTC.	Temporary poor contact occurs.

AP:DTC P1762 LATERAL ACCELERATION SENSOR CIRCUIT HIGH

DTC DETECTING CONDITION:

Lateral G sensor output voltage fault



	Step	Check	Yes	No
1	CHECK VEHICLE CONDITION.	Is the vehicle a model with VDC, which has the VDC OFF switch on the instrument panel?	Go to step 2.	Go to step 4.
2	CHECK DTC OF TCM.	Is DTC of AT CAN communication detected?	Perform the diagnosis according to DTC.	Go to step 3.
3	CHECK DTC OF ABS.	Is DTC of ABS detected?		Temporary poor contact occurs. Recheck for defective parts in harness and connectors.

	Step	Check	Yes	No
4	CHECK OUTPUT OF LATERAL G SENSOR USING SUBARU SELECT MONITOR. 1) Select {Current Data Display & Save} in Subaru Select Monitor. 2) Read the lateral G sensor output on Subaru Select Monitor.	Is the reading indicated on monitor display 2.3 to 2.7 V when lateral G sensor is level?	Go to step 5.	Go to step 8.
5	CHECK POOR CONTACT OF CONNECTOR.	Is there poor contact in con- nector between TCM and lat- eral G sensor?	Repair the con- nector.	Go to step 6.
6	CHECK ABSCM&H/U. 1) Connect all connectors. 2) Perform the Clear Memory Mode. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>	Go to step 7.
7	CHECK OTHER DTC DETECTION.	Is any other DTC displayed?	Perform the diagnosis according to DTC.	Temporary poor contact occurs.
8	CHECK INFORMATION STORED IN FREEZE FRAME DATA. Read the lateral G sensor output on Subaru Select Monitor.	Is the reading on monitor display more than 4.65 V?	Go to step 9.	Go to step 15.
9	CHECK OPEN CIRCUIT IN LATERAL G SENSOR OUTPUT HARNESS AND GROUND HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM. 3) Measure the resistance between TCM connector terminals. Connector & terminal (B55) No. 5 — No. 1:	Is the resistance between 4.3 and 4.9 k Ω ?	Go to step 10.	Repair the har- ness connector between the lateral G sensor and ABSCM&H/U.
10	CHECK BATTERY SHORT OF HARNESS. 1) Turn the ignition switch to OFF. 2) Remove the console box. 3) Disconnect the connector from the lateral G sensor. 4) Disconnect the connector from TCM. 5) Measure the voltage between TCM connector and chassis ground. Connector & terminal (B55) No. 6 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 11.	Repair the har- ness between lat- eral G sensor and TCM.
11	CHECK BATTERY SHORT OF HARNESS. 1) Turn the ignition switch to ON. 2) Measure the voltage between TCM connector and chassis ground. Connector & terminal (B55) No. 6 (+) — Chassis ground (-):	Is the voltage less than 1 V?	Go to step 12.	Repair the har- ness between lat- eral G sensor and TCM.
12	CHECK POOR CONTACT OF CONNECTOR.	Is there poor contact in con- nector between TCM and lat- eral G sensor?	Repair the connector.	Go to step 13.
13	CHECK TCM. 1) Connect all connectors. 2) Perform the Clear Memory Mode. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	<ref. 5at-56,<br="" to="">Transmission Control Module (TCM).></ref.>	Go to step 14.
14	CHECK OTHER DTC DETECTION.	Is any other DTC displayed?	Perform the diagnosis according to DTC.	Temporary poor contact occurs.

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
15	Step CHECK LATERAL G SENSOR INPUT VOLTAGE. 1) Turn the ignition switch to OFF. 2) Remove the console box. 3) Remove the lateral G sensor from vehicle. (Do not disconnect the connector.) 4) Turn the ignition switch to ON. 5) Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B359) No. 1 (+) — No. 2 (-): CHECK OPEN CIRCUIT IN LATERAL G SENSOR OUTPUT HARNESS AND GROUND	Is the voltage 4.75 — 5.25 V?	Yes Go to step 16. Go to step 17.	No Repair the harness between lateral G sensor and TCM. Repair the harness between laterals are th
	HARNESS. 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM. 3) Measure the resistance between TCM connector terminals. Connector & terminal (B55) No. 5 — No. 6:			eral G sensor and TCM.
17	CHECK LATERAL G SENSOR. 1) Connect the connector to lateral G sensor. 2) Connect the TCM connector. 3) Turn the ignition switch to ON. 4) Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B359) No. 3 (+) — No. 2 (-):	Is the voltage 2.3 — 2.7 V when lateral G sensor is in horizontal position?	Go to step 18.	Replace the lateral G sensor. <ref. 5at-57,="" g="" lateral="" sensor.="" to=""></ref.>
18	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B359) No. 3 (+) — No. 2 (-):	Is the voltage 3.3 — 4.3 V when lateral G sensor is inclined 90° to right?	Go to step 19.	Replace the lateral G sensor. <ref. 5at-57,<br="" to="">Lateral G Sensor.></ref.>
19	CHECK LATERAL G SENSOR. Measure the voltage between lateral G sensor connector terminals. Connector & terminal (B359) No. 3 (+) — No. 2 (-):	Is the voltage 0.7 — 1.7 V when lateral G sensor is inclined 90° to left?	Go to step 20.	Replace the lateral G sensor. <ref. 5at-57,<br="" to="">Lateral G Sensor.></ref.>
20	CHECK POOR CONTACT OF CONNECTOR. Turn the ignition switch to OFF.	Is there poor contact in con- nector between TCM and lat- eral G sensor?	Repair the con- nector.	Go to step 21.
21	CHECK ABSCM&H/U. 1) Connect all connectors. 2) Perform the Clear Memory Mode. 3) Perform the Inspection Mode. 4) Read the DTC.	Is the same DTC displayed?	<ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>	Go to step 22.
22	CHECK OTHER DTC DETECTION.	Is any other DTC displayed?	Perform the diagnosis according to DTC.	Temporary poor contact occurs.

AQ:DTC P1798 GEAR 1 ENGINE BRAKE

NOTE:

Refer to DTC P0771 for diagnostic procedure. <Ref. to 5AT(diag)-80, DTC P0771 SHIFT SOLENOID "E" PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

AR:DTC P1799 INTERLOCK

DTC DETECTING CONDITION:

Perform the interlock judgment when the oil pressure switch pattern detects the specified interlock patterns other than shifting.

TROUBLE SYMPTOM:

Locked to 2nd or 4th gear depending on the vehicle condition at the time of diagnosis.

	Step	Check	Yes	No
1	CHECK DTC OF TCM.	Is any DTC of the followings detected? P0751, P0753, P0756, P0758, P0761, P0763, P0766, P0768, P0771, P0773, P1798	Perform the diagnosis according to DTC.	Go to step 2.
2	DRIVING CHECK. 1) Turn the ignition switch to OFF. 2) After starting the engine again, perform a drive check with the following conditions. (1) Keep the speed at 20 km/h with SPORT shift mode in 1st. (2) Read the I/C oil pressure switch data of TCM while driving using Subaru Select Monitor.	Is OFF displayed?	Go to step 3.	Perform the diagnosis according to DTC P0756.
3	DRIVING CHECK. 1) Turn the ignition switch to OFF. 2) After starting the engine again, perform a drive check based on the Inspection Mode with the following conditions. <ref. 5at(diag)-20,="" inspection="" mode.="" procedure,="" to=""> (1) Keep the speed at 20 km/h with manual mode in 1st. (2) Read the D/C oil pressure switch data while driving using Subaru Select Monitor.</ref.>	Is OFF displayed?	Go to step 4.	Perform the diagnosis according to DTC P0766.
4	DRIVING CHECK. 1) Turn the ignition switch to OFF. 2) After starting the engine again, perform a drive check with the following conditions. (1) Drive the vehicle at the same speed with manual mode in 3rd, 4th and 5th. (2) Read the LC/B oil pressure switch data while driving using Subaru Select Monitor.	Is OFF displayed?	Go to step 5.	Perform the diagnosis according to DTC P0771.
5	DRIVING CHECK. 1) Turn the ignition switch to OFF. 2) After restarting the engine, perform a drive check based on the Inspection Mode. <ref. 5at(diag)-20,="" inspection="" mode.="" procedure,="" to=""></ref.>	Is DTC displayed?	Replace the control valve body.	Temporary poor contact occurs. Check that the harness connector is not faulty.

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

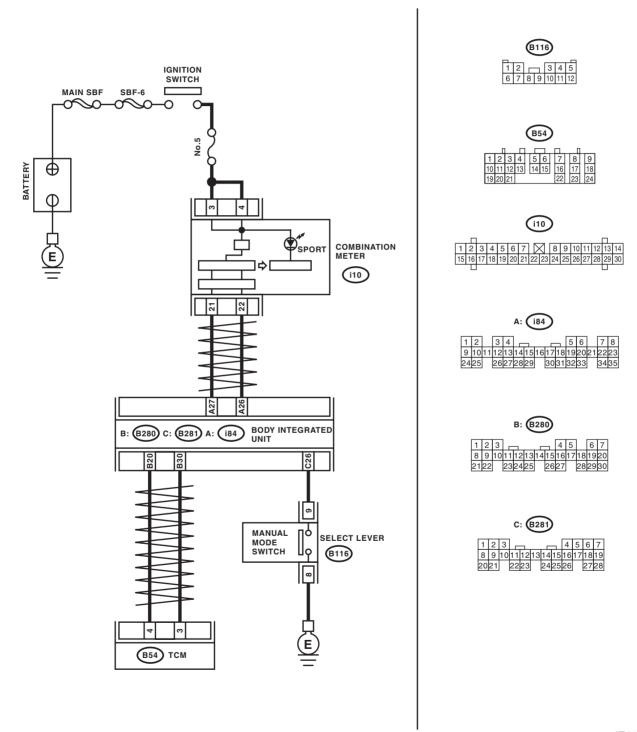
DTC DETECTING CONDITION:

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

TROUBLE SYMPTOM:

- Manual mode can not be set.
- "SPORT" light illuminates when shifting to "N" → "D" range.

WIRING DIAGRAM:



AT-03462

	Step	Check	Yes	No
1	CHECK BODY INTEGRATED UNIT. 1) Connect the Subaru Select Monitor to the 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. lan(diag)-12,<="" th="" to=""><th>Is DTC displayed?</th><th>Perform the diagnosis according to DTC.</th><th>Go to step 2.</th></ref.>	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step 2.
2	OPERATION, Subaru Select Monitor.> CHECK BODY INTEGRATED UNIT INPUT	Is OFF displayed?	Go to step 3.	Go to step 7.
	SIGNAL. 1) Shift the select lever to "P" range. 2) Read the TIP mode SW data of body integrated unit using Subaru Select Monitor. <ref. lan(diag)-12,="" monitor.="" operation,="" select="" subaru="" to=""></ref.>	is of the displayed:	do to step 0.	do to step 1.
3	CHECK BODY INTEGRATED UNIT INPUT SIGNAL. 1) Shift the select lever from "P" to "D" range. 2) Read the TIP mode SW data of body integrated unit using Subaru Select Monitor. <ref. lan(diag)-12,="" monitor.="" operation,="" select="" subaru="" to=""></ref.>	Is the indication on each range OFF?	Go to step 4.	Replace the select lever assembly. <ref. cs-19,<br="" to="">Select Lever.></ref.>
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. lan(diag)-12,="" monitor.="" operation,="" select="" subaru="" to=""></ref.>	Is OFF displayed?	Go to step 5.	Replace the select lever assembly. <ref. cs-19,<br="" to="">Select Lever.></ref.>
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) Shift the select lever from "P" to "D" range. 2) Read the TIP mode SW data of TCM using Subaru Select Monitor. <ref. 5at(diag)-16,="" monitor.="" operation,="" select="" subaru="" to=""></ref.>	Is the indication on each range OFF?	indicator light blinks, the system	Replace the TCM. <ref. 5at-56,<br="" to="">Transmission Con- trol Module (TCM).></ref.>
7	CHECK HARNESS BETWEEN BODY INTE-GRATED 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 (B281) No. 27 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 8.	Repair the short circuit of harness between body inte- grated unit and manual mode.
8	CHECK MANUAL MODE SWITCH. 1) Shift the select lever to "P" range. 2) Measure the resistance between harness connector terminals of manual mode switch. Terminals (B116) No. 9 — No. 8	Is the resistance more than 1 $\mbox{M}\Omega ?$	Check the body integrated unit.	Replace the select lever assembly. <ref. cs-19,<br="" to="">Select Lever.></ref.>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

AT:DTC P1840 TRANSMISSION FLUID PRESSURE SENSOR/SWITCH A CIR-CUIT

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)-60, DTC P0751 SHIFT SOLENOID "A" PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AU:DTC P1842 TRANSMISSION FLUID PRESSURE SENSOR/SWITCH C CIR-CUIT

DTC DETECTING CONDITION:

Input clutch oil pressure switch is malfunction.

TROUBLE SYMPTOM:

Excessive shift shock

NOTF:

Refer to DTC P0756 for diagnostic procedure. <Ref. to 5AT(diag)-65, DTC P0756 SHIFT SOLENOID "B" PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AV:DTC P1843 TRANSMISSION FLUID PRESSURE SENSOR/SWITCH D CIR-CUIT

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)-75, DTC P0766 SHIFT SOLENOID "D" PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AW:DTC P1844 TRANSMISSION FLUID PRESSURE SENSOR/SWITCH E CIR-CUIT

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)-70, DTC P0761 SHIFT SOLENOID "C" PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>