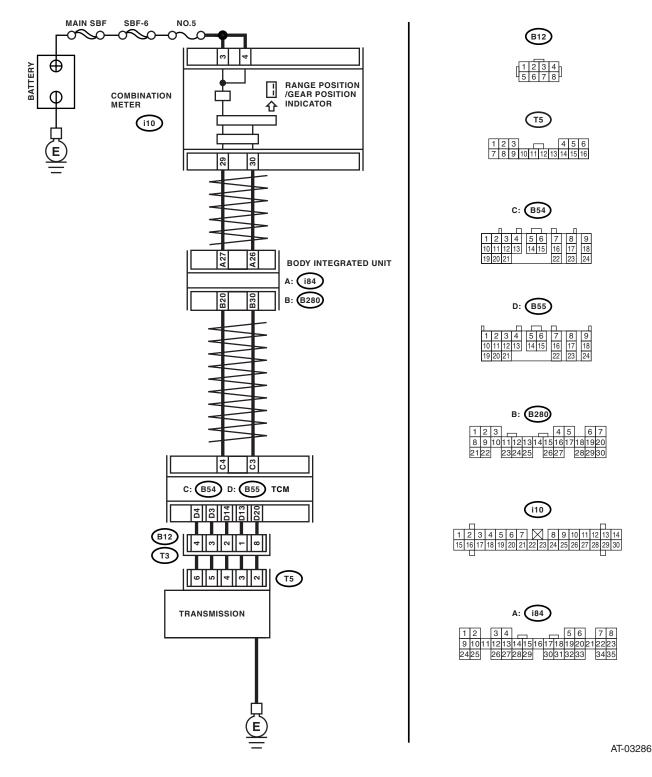
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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-	Perform the diag-	Go to step 2.
		tion circuit displayed?	nosis according to	
			DTC.	

	Step	Check	Yes	No
2	CHECK INHIBITOR SWITCH.	Are all indications High?	Go to step 4.	Go to step 3.
	Shift the select lever to shift to the "P"	The an indications riight.	GO to Stop 4.	αο το στορ σ .
	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.	MΩ?	Sec 12 232 Sec 12 23	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.
	3) Measure the resistance between TCM con-			·
	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.	Are all indications 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	CHECK HARNESS CONNECTOR BETWEEN	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-
	Disconnect the connectors from TCM and			nector and trans-
	transmission.			mission connector.
	3) Measure the resistance of harness			
	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.
١	CIRCUIT TESTER.	inhibitor SW 1 — 4? Is the volt-	do to step b .	do to step 7.
	Turn the ignition switch to OFF.	age 3.5 — 5.5 V for the inhibi-		
	Disconnect the transmission connector	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.	Is TCM I/O signal OK?		Repair the open or
	Check I/O signal of power supply, ground and	lis i siii ii s sigiiai si ii	<ref. 5at-56,<="" th="" to=""><th>short circuit for</th></ref.>	short circuit for
	PVIGN power supply relay.		Transmission Con-	power supply and
	<ref. 5at(diag)-11,="" electrical="" specifi-<="" th="" to=""><th></th><th>trol Module</th><th>ground. Perform</th></ref.>		trol Module	ground. Perform
	CATION, Transmission Control Module (TCM)		(TCM).>	the diagnosis
	I/O Signal.>		(- /	according to DTC
	G			for PVIGN power
				supply relay.
8	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 9.	Repair the open
	TRANSMISSION AND CONTROL VALVE	Ω ?	•	circuit of harness
	BODY.			between control
	1) 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 transmis-			
	sion connector and control valve body connec-			
	tor.			
	Connector & terminal			
	(T3) No. 4 — (T5) No. 6:			
	(T3) No. 3 — (T5) No. 5:			
	(T3) No. 2 — (T5) No. 4:			
	(T3) No. 1 — (T5) No. 3:			
	(T3) No. 8 — (T5) No. 2:	la tha wasistawaa waaya thay d	Co to oton 10	Danain tha abant
9	CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE	Is the resistance more than 1	Go to step 10.	Repair the short
	BODY.	ΜΩ?		circuit of harness
	Measure the resistance between transmission			between control
				valve body con-
	ground and control valve body connector. Connector & terminal			nector and trans- mission connector.
	(T5) No. 6 — Transmission ground:			THISSION CONNECTOR.
	(T5) No. 5 — Transmission ground:			
	(T5) No. 4 — Transmission ground:			
	(T5) No. 3 — Transmission ground:			
	(T5) No. 2 — Transmission ground:			
10	CHECK POOR CONTACT.	Is there any poor contact in	Repair the poor	Replace the con-
		inhibitor SW 1 — 4 or inhibitor	contact.	trol valve body.
		SW 3 monitor circuit?		<ref. 5at-53,<="" th="" to=""></ref.>
				Control Valve
				Body.>
			l	

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

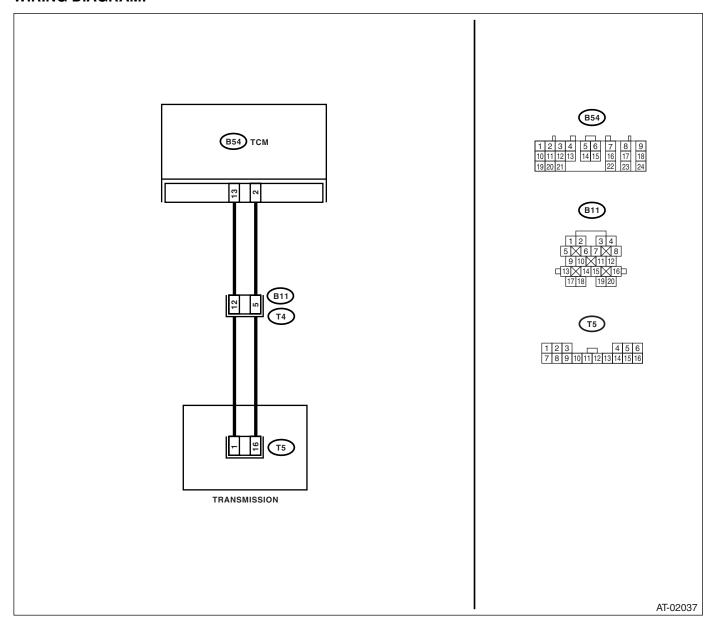
B: DTC P0712 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT LOW INPUT

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	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. 13 — (B11) No. 12:			
	(B54) No. 2 — (B11) No. 5:			
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?		
	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 oper-			
	ating temperature.			
	5) Disconnect the connector from transmis-			
	sion.			
	6) Measure the resistance between transmis-			
	sion connector terminals. Connector & terminal			
2	(T4) No. 5 — (T4) No.12: CHECK ATF TEMPERATURE SENSOR.	Door the registeres value	Co to oton 4	Co to stop F
3		Does the resistance value	Go to step 4.	Go to step 5.
	Measure the resistance between transmission connector terminals.	increase while the ATF temperature decreases?		
	Connector & terminal	ature decreases?		
	(T4) No. 5 — (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	αυ ιυ δι ε μ υ .
	Connect the connector.	gradually decrease:	blinks, the system	
	2) 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-	
			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 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 Control Module (TCM).></ref.>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

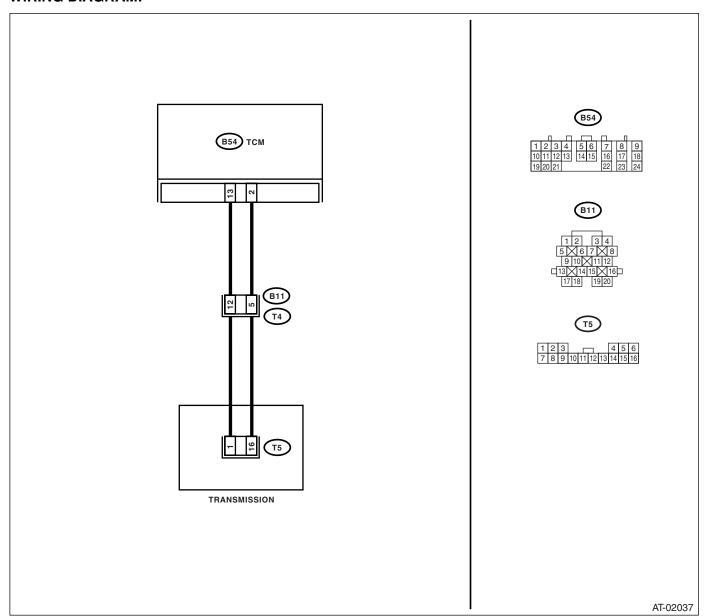
C: DTC P0713 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT HIGH INPUT

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.	MΩ?	G.6 16 616F	circuit of harness
	Turn the ignition switch to OFF.			between TCM and
	2) Disconnect the connectors from TCM and			transmission con-
	transmission.			nector.
	Measure the resistance of harness			11001011
	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.	$-1,200 \Omega$?	αο το step 3 .	αο το step 3 .
	2) Connect the connectors to transmission	1,200 \$2!		
	and TCM.			
	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 oper-			
	ating temperature.			
	5) Disconnect the connector from transmis-			
	sion.			
	6) 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			
	(T4) No. 5 — (T4) No.12:			
4	CHECK INPUT SIGNAL FOR TCM USING	Does the ATF temperature		Go to step 6.
	SUBARU SELECT MONITOR.	gradually decrease?	indicator light	
	1) Connect the connector.		blinks, the system	
	2) 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-	
			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.	Check Is the resistance more than 1 MΩ?	Yes Replace the control valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""></ref.>	No Repair the short circuit of harness between transmission connector and control valve body connector.
	7) Measure the resistance between chassis ground and control valve body connector. Connector & terminal (T5) No. 1 — Chassis ground: (T5) No. 16 — Chassis ground:			
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)

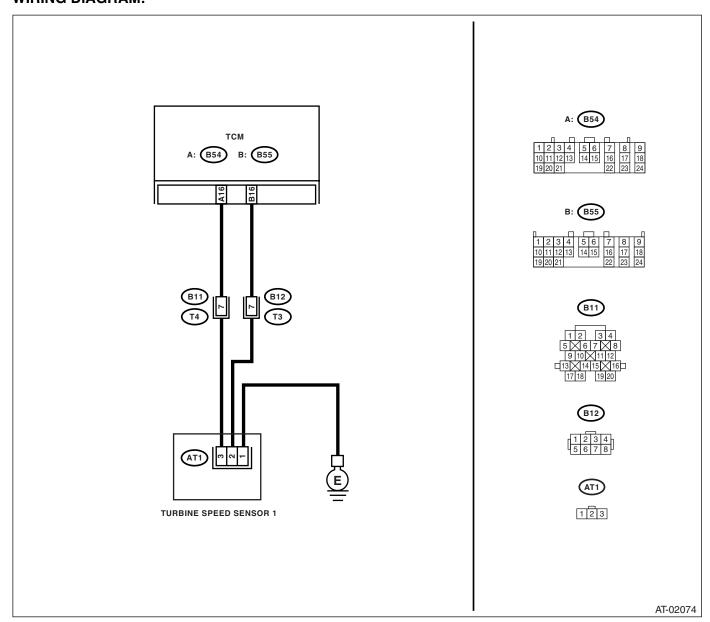
D: DTC P0715 INPUT/TURBINE SPEED SENSOR CIRCUIT

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
2	CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B55) No. 16 — (B12) No. 7: (B54) No. 16 — (B11) No. 7: CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1 Ω ?	Go to step 2. Go to step 3.	Repair the open circuit of harness between TCM and transmission connector.
	TCM AND TRANSMISSION. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 16 — Chassis ground: (B54) No. 16 — Chassis ground:	ΜΩ?		circuit of harness between TCM and chassis ground.
3	CHECK TCM POWER SUPPLY OUTPUT. 1) Connect the TCM connector. (Transmission connector is disconnected) 2) Turn the ignition switch to ON. (Engine OFF) 3) Measure the voltage between TCM connector and chassis ground. Connector & terminal (B54) No. 16 (+) — Chassis ground (-):	Is the voltage 10 — 13 V?	Go to step 4.	Go to step 5.
4	CHECK TURBINE SPEED SENSOR INPUT CIRCUIT OF TCM. Measure the voltage between TCM connector terminals. Connector & terminal (B55) No. 16 (+) — (B54) No. 19 (-):	Is the voltage 4 — 6 V?	Go to step 6.	Go to step 5.
5	CHECK TCM I/O SIGNAL. Check I/O signal of power supply, ground and PVIGN power supply relay. <ref. (tcm)="" 5at(diag)-11,="" control="" electrical="" i="" module="" o="" signal.="" specification,="" to="" transmission=""></ref.>	Is TCM I/O signal OK?	<ref. 5at-56,<br="" to="">Transmission Control 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.
6	CHECK HARNESS ASSEMBLY (TURBINE SPEED SENSOR GROUND). Check the installing condition of ground connecting harness of harness assembly (used for both of turbine speed sensor 1, rear vehicle speed sensor).	Is the ground connecting har- ness installed securely to the transmission body? Is there any serious damage in the har- ness and terminal?	Go to step 7.	When poor installation of ground occurs, install it securely. Replace the transmission assembly if the harness or terminal is damaged. <ref. 5at-34,="" assembly.="" automatic="" to="" transmission=""></ref.>

	Step	Check	Yes	No
7	CHECK HARNESS ASSEMBLY.	Is the resistance less than 1	Go to step 8.	Repair the open
	 Turn the ignition switch to OFF. 	Ω ?		circuit of harness
	Disconnect the connector from transmis-			between TCM and
	sion.			transmission con-
	3) Disconnect the connector from turbine			nector, or poor
	speed sensor 1.			contact of connec-
	4) Measure the resistance between transmis-			tor.
	sion 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:			
8	CHECK HARNESS ASSEMBLY.	Is the resistance more than 1	Go to step 9.	Repair the short
	Measure the resistance between transmission	ΜΩ?		circuit of harness
	connector and chassis ground.			between TCM and
	Connector & terminal			transmission con-
	(T4) No. 7 — Chassis ground:			nector.
	(T3) No. 7 — Chassis ground:			
9	CHECK INPUT SIGNAL FOR TCM USING	Does the value of the turbine	Even if the SPORT	Replace the tur-
	SUBARU SELECT MONITOR.	speed sensor 1 change	indicator light	bine speed sensor
	 Connect all the connectors. 	depending on the acceleration,	blinks, the system	1. <ref. 5at-52,<="" td="" to=""></ref.>
	Lift-up the vehicle and support with rigid	deceleration and shifting range	is in normal condi-	Turbine Speed
	racks.	of the vehicle?	tion. A temporary	Sensor 1.>
	NOTE:		poor contact of	
	Raise all wheels off floor.		connector or har-	
	3) Start the engine, and set the vehicle in 4th		ness may be the	
	speed driving condition of manual mode.		cause. Repair the	
	NOTE:		poor contact of	
	Turbine speed sensor 1 signal can be mea-		harness between	
	sured only on 4th speed.		ATF temperature	
	4) Read the current data of turbine speed sen-		sensor and trans-	
	sor 1 using the Subaru Select Monitor. <ref. td="" to<=""><td></td><td>mission connector.</td><td></td></ref.>		mission connector.	
	5AT(diag)-15, READ CURRENT DATA, OPER-			
	ATION, Subaru Select Monitor.>			
	NOTE:			
	The speed difference between front and rear			
	wheels may light the ABS warning light, but this			
	indicates no malfunction. When AT control di-			
	agnosis is finished, perform the VDC memory			
	clearance procedure of on-board diagnostics			
	system. <ref. clear="" memory<="" td="" to="" vdc(diag)-24,=""><td></td><td></td><td></td></ref.>			
	Mode.>			

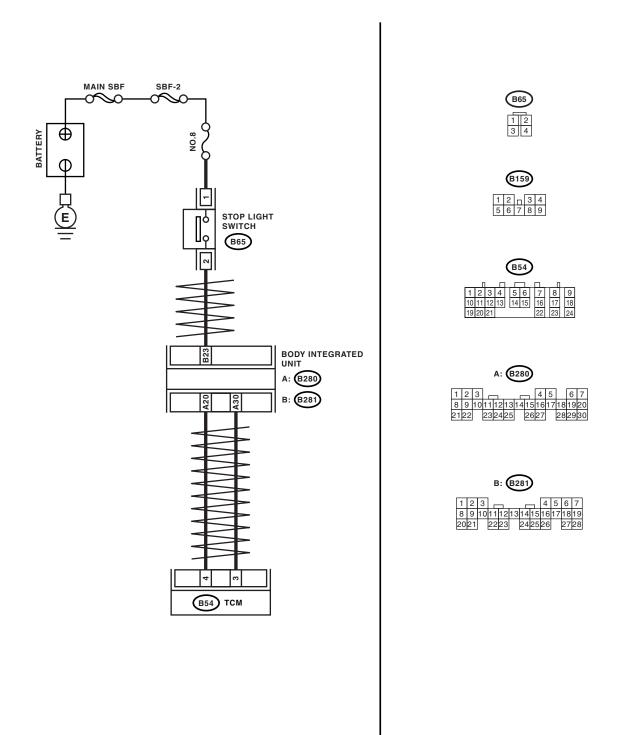
E: DTC P0719 TORQUE CONVERTER/BRAKE SWITCH "B" CIRCUIT LOW DTC DETECTING CONDITION:

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 Speed Sensor Circuit Malfunc- tion (Rear Wheel)	Perform the diagnosis according to DTC.	Go to step 2.
2 CHECK THE BODY INTEGRATED UNIT. 1) Turn the ignition switch to OFF. 2) Connect the Subaru Select Monitor to data link connector. 3) Turn the ignition switch to ON. (Engine OFF) 4) Turn the Subaru Select Monitor switch to ON. 5) Depress the brake pedal. 6) Read the data of brake pedal switch using Subaru Select Monitor. <ref. lan(diag)-12,="" monitor.="" operation,="" select="" subaru="" to=""></ref.>	Is ON displayed?	Go to step 3.	Go to step 4.
3 CHECK TCM. Read the data of brake pedal switch using Subaru Select Monitor. <ref. 5at(diag)-15,="" 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:		Go to step 6 .	Repair the open circuit of harness between body integrated unit and stop light switch.
	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)

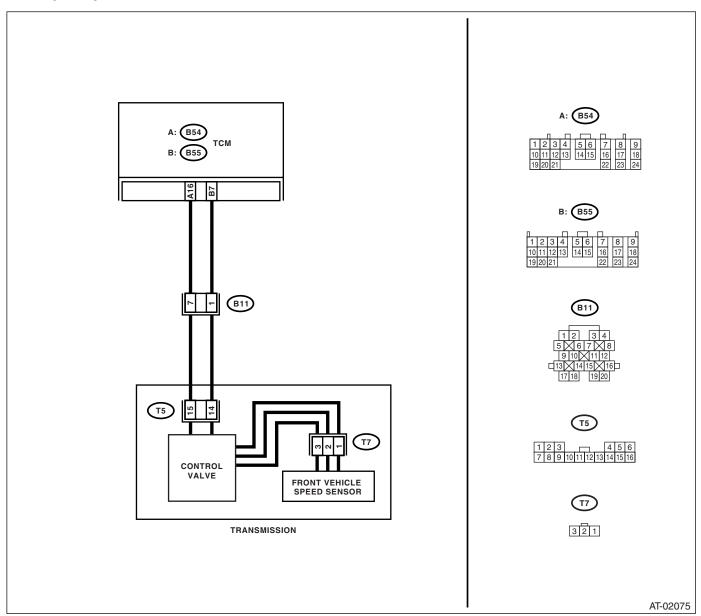
F: DTC P0720 OUTPUT SPEED SENSOR CIRCUIT

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 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. 16 — (B11) No. 7: (B55) No. 7 — (B11) No. 1:	Is the resistance less than 1 Ω ?	Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2	CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B54) No. 16 — Chassis ground: (B55) No. 7 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Go to step 3.	Repair the short circuit of harness between TCM and chassis ground.
3	CHECK TCM POWER SUPPLY OUTPUT. 1) Connect the connector to TCU. (Transmission connector is disconnected) 2) Turn the ignition switch to ON. (Engine OFF) 3) Measure the voltage between TCM connector and chassis ground. Connector & terminal (B54) No. 16 (+) — Chassis ground (-):	Is the voltage 10 — 13 V?	Go to step 4.	Go to step 5.
4	CHECK TURBINE SPEED SENSOR INPUT CIRCUIT OF TCM. Measure the voltage between TCM connector terminals. Connector & terminal (B55) No. 7 (+) — (B54) No. 19 (-):	Is the voltage 4 — 6 V?	Go to step 6.	Go to step 5.
5	CHECK TCM I/O SIGNAL. Check I/O signal of power supply, ground and PVIGN power supply relay. <ref. (tcm)="" 5at(diag)-11,="" 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.

	Char	Oh!-	V	N-
6	•			
6	CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR. 1) Connect all the 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)-15,="" 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 indicates no malfunction. When AT control diagnosis is finished, perform the VDC memory clearance procedure of on-board diagnostics system. <ref. clear="" memory="" mode,="" operation,="" select<="" subaru="" td="" to="" vdc(diag)-18,=""><td></td><td>Yes 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.</td><td>No Go to step 7.</td></ref.></ref.>		Yes 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.	No Go to step 7.
7	Monitor.> 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	Is the resistance less than 1 Ω ?	Go to step 8.	Repair the open circuit of harness between control valve body connector and transmission connector.
8	(B11) No. 7 — (T5) No. 15: (B11) No. 1 — (T5) No. 14: CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T5) No. 15 — Transmission ground: (T5) No. 14 — Transmission ground:	Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 9.	Repair the short circuit of harness between transmission connector and transmission ground.

	Step	Check	Yes	No
9	CHECK HARNESS CONNECTOR BETWEEN CONTROL VALVE BODY AND VEHICLE SPEED SENSOR. 1) Disconnect the connector from vehicle speed sensor. 2) Measure the resistance of harness between control valve body connector and vehicle speed sensor connector. Connector & terminal (T5) No. 15 — (T7) No. 3: (T5) No. 14 — (T7) No. 2: (T7) No. 1 — Transmission ground:	Is the resistance less than 1 Ω ?	Go to step 10.	Replace the control valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""></ref.>
10	CHECK HARNESS CONNECTOR BETWEEN CONTROL VALVE BODY AND VEHICLE SPEED SENSOR. Measure the resistance of harness between control valve body connector and transmission ground. Connector & terminal (T5) No. 15 — Transmission ground: (T5) No. 14 — Transmission ground:	Is the resistance more than 1 $\mbox{M}\Omega ?$	Replace the vehi- cle speed sensor.	Replace the control valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""></ref.>

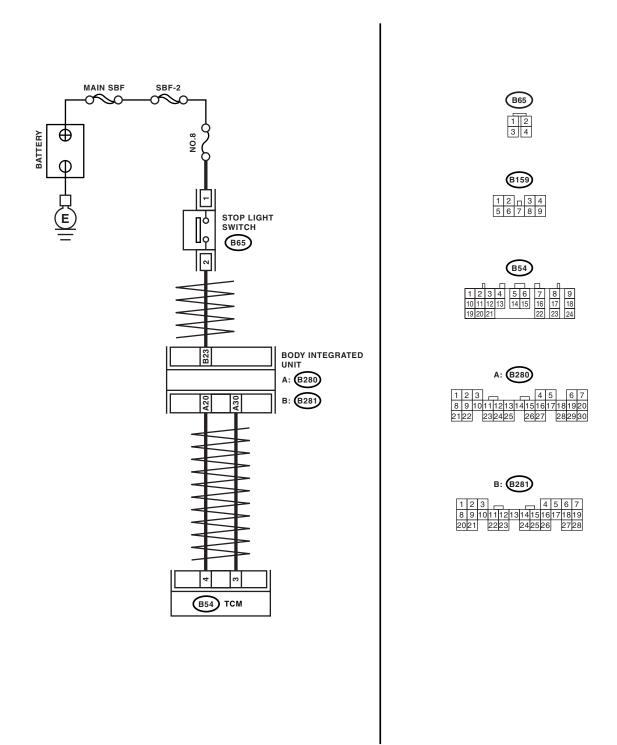
G: DTC P0724 TORQUE CONVERTER/BRAKE SWITCH "B" CIRCUIT HIGH DTC DETECTING CONDITION:

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 Malfunc-		
		tion (Rear Wheel)		
2	CHECK THE BODY INTEGRATED UNIT.	Is OFF displayed?	Go to step 3.	Go to step 4.
	 Turn the ignition switch to OFF. 			
	2) Connect the Subaru Select Monitor to data			
	link connector.			
	3) Turn the ignition switch to ON. (Engine			
	OFF)			
	4) Turn the Subaru Select Monitor switch to			
	ON.			
	5) Read the data of brake pedal switch using			
	Subaru Select Monitor. <ref. lan(diag)-12,<="" th="" to=""><th></th><th></th><th></th></ref.>			
	OPERATION, Subaru Select Monitor.> CHECK TCM.	In OFF diameter and	A +	Dania a a tha TOM
3		Is OFF displayed?	A temporary poor contact of connec-	Replace the TCM. <ref. 5at-56,<="" th="" to=""></ref.>
	Read the data of brake pedal switch using			Transmission Con-
	Subaru Select Monitor. <ref. 5at(diag)-15,="" monitor.="" operation,="" select="" subaru="" to=""></ref.>		tor or harness may be the cause.	trol Module
	OF ENATION, Subaru Select Monitor.		Check the poor	(TCM).>
			contact.	(TOIVI).>
4	CHECK BODY INTEGRATED UNIT INPUT	Is the voltage more than 10 V?	Go to step 5 .	Go to step 7.
	SIGNAL.	is the voltage more than 10 v:	αο το στερ 3 .	do to step 7.
	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 Ω ?	•	light switch.
	2) Disconnect the connector from stop light			
	switch.			
	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.			stop light switch.
	2) Measure the voltage of harness between			
	body integrated unit connector and chassis			
	ground.			
	Connector & terminal			
_	(B281) No. 23 (+) — Chassis ground (-):	la the second and a second in the second	Danais that is a si	Oh a alv ila a la a alv
'	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.	detected?/Output Speed Sen-	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

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).>

K: DTC P0733 GEAR 3 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).>

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)-15,="" 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 indicates no 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)-18,=""></ref.></ref.>		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)-19,="" inspection="" mode.="" procedure,="" to=""></ref.>	Is DTC displayed again?	Check the DTC. Then, when proceeded again to step 5, go to step 6.	Go to step 6.
6	CHECK AFTER REPAIR.	Is the trouble symptom inre- pairable (malfunction in shifting such as excessive shift shock, engine speed increases exces- sively when shifting)?	Replace the transmission 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	Perform the diagnosis according to each DTC.	Go to step 2.
DRIVING CHECK FOR LOCK-UP CONDITION 1) Perform a drive check based on the inspection mode with the following conditions. <ref. 5at(diag)-19,="" inspection="" mode.="" procedure,="" to=""> (1) Read the current data of throttle opening angle using Subaru Select Monitor. <ref. 5at(diag)-15,="" current="" data,="" monitor.="" operation,="" read="" select="" subaru="" to=""> (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)-15,="" current="" data,="" monitor.="" operation,="" read="" select="" subaru="" to=""> (3) Read the current data of L/U solenoid target pressure using Subaru Select Monitor. <ref. 5at(diag)-15,="" <ref.="" current="" data,="" monitor.="" operation,="" read="" select="" subaru="" to=""> (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.</ref.></ref.></ref.></ref.>	Are the engine speed and turbine speed almost the same?	Temporary poor contact or open circuit occurs. Recheck that the harness connector has no faulty.	Go to step 3.

	Step	Check	Yes	No
3	DRIVING CHECK FOR LOCK-UP CONDI- TION	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)-17,<="" 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)-19, 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)-15,="" 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)-15,="" 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)-15,="" 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.			
	o, i chomi me step 2) agam.			

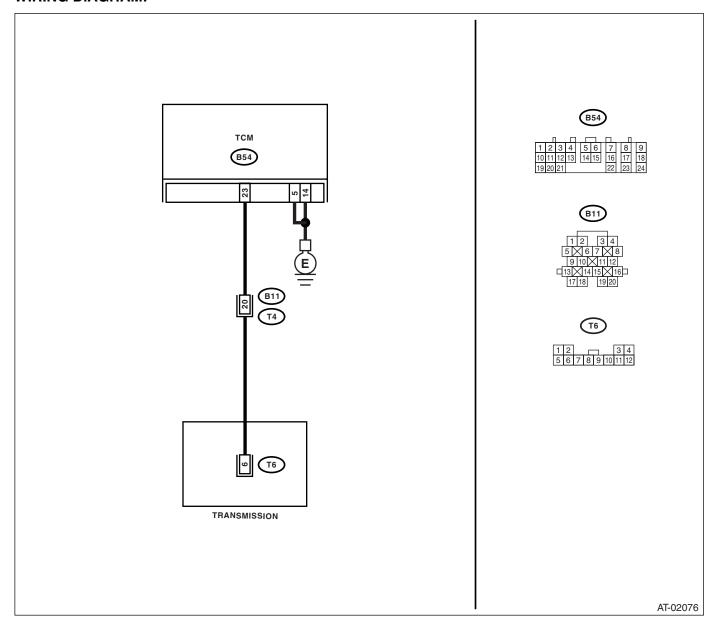
P: DTC P0743 TORQUE CONVERTER CLUTCH CIRCUIT ELECTRICAL

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		Go to step 2.	Repair the open
'	TCM AND TRANSMISSION.	Ω ?	Go to step 2.	circuit of harness
	Turn the ignition switch to OFF.	22:		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 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	le the resistance more than 1	Go to step 3.	Repair the short
-	TCM AND CHASSIS GROUND.	$M\Omega$?	Go to step 3 .	circuit of harness
	Measure the resistance of harness between	IVISZ:		between TCM con-
	TCM connector and chassis ground.			nector and trans-
	Connector & terminal			mission connector.
	(B54) No. 23 — Chassis ground:			mission connector.
3	. ,	Is the resistance less than 1	Go to step 4.	Repair the open
١	TRANSMISSION AND CONTROL VALVE	Ω ?	do to step 4.	circuit of harness
	BODY.	22:		between transmis-
	Turn the ignition switch to OFF.			sion connector
	2) Disconnect the connector from transmis-			and control valve
	sion.			body connector.
	Remove the transmission connector from			body conficctor.
	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			
	(T4) No. 20 — (T6) No. 6:			
4	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 5.	Repair the short
[TRANSMISSION AND CONTROL VALVE	$M\Omega$?	3.5 to otop 3 .	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.
	(T6) No. 6 — Chassis ground:			in contract
5	CHECK LOCK-UP 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
	(T6) No. 6 — Transmission ground:			Body.>
<u> </u>	(1.5) Hor o Handingston ground.			200y./

	Step	Check	Yes	No
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.

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

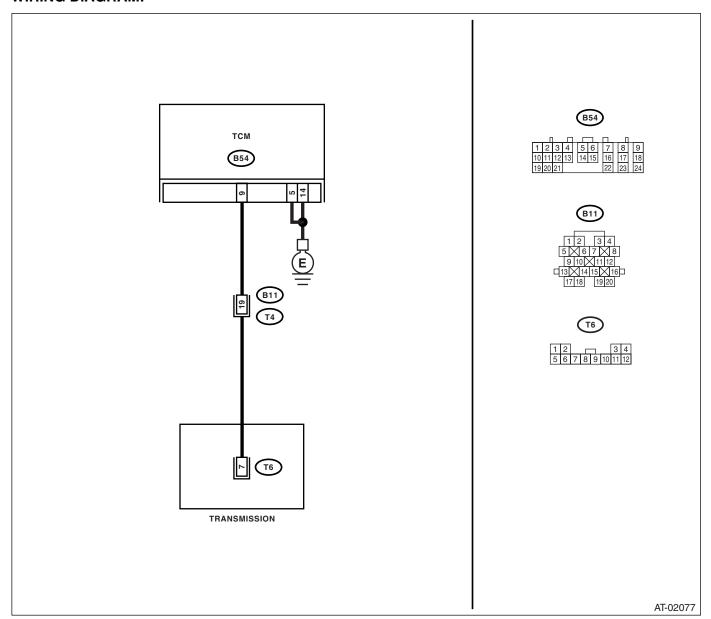
Q: DTC P0748 PRESSURE CONTROL SOLENOID "A" ELECTRICAL

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	Is the resistance less than 1	Go to step 2.	Repair the open
İ	TCM AND TRANSMISSION.	Ω?		circuit of harness
ĺ	 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			
	between TCM connector and transmission			
	connector.			
	Connector & terminal			
	(B54) No. 9 — (B11) No. 19:			
	(B54) No. 5 — Chassis ground:			
	(B54) No. 14 — Chassis ground:			
2	CHECK HARNESS CONNECTOR BETWEEN		Go to step 3.	Repair the short
	TCM AND CHASSIS GROUND.	ΜΩ?		circuit of harness
	Measure the resistance between TCM connec-			between TCM con-
	tor and chassis ground.			nector and trans-
	Connector & terminal			mission connector.
	(B54) No. 9 — Chassis ground:			
3	CHECK HARNESS CONNECTOR BETWEEN		Go to step 4.	Repair the open
		Ω?		circuit of harness
	BODY.			between transmis-
	1) Turn the ignition switch to OFF.			sion connector
	2) Disconnect the connector from transmission.			and control valve
	Remove the transmission connector from			body connector.
	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 connector. Connector & terminal			
	(T4) No. 19 — (T6) No. 7:			
4	CHECK HARNESS CONNECTOR BETWEEN	le the resistance more than 1	Go to step 5 .	Repair the short
7	TRANSMISSION AND CONTROL VALVE	$M\Omega$?	ωο το στ ο ρ σ .	circuit of harness
	BODY.	11122:		between control
	Measure the resistance between transmission			valve body con-
	ground and control valve body connector.			nector and trans-
	Connector & terminal			mission ground.
				inioolon ground.
	(16) No. / — Chassis arolina:	1	İ	
5	(T6) No. 7 — Chassis ground: CHECK LINE PRESSURE SOLENOID.	Is the resistance between 3 —	Go to step 6	Replace the con-
5	CHECK LINE PRESSURE SOLENOID.	Is the resistance between 3 — 9 Ω ?	Go to step 6.	Replace the con- trol valve body.
5	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission	Is the resistance between 3 — 9 Ω ?	Go to step 6.	trol valve body.
5	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector.		Go to step 6.	trol valve body. <ref. 5at-53,<="" td="" to=""></ref.>
5	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal		Go to step 6.	trol valve body. <ref. 5at-53,<br="" to="">Control Valve</ref.>
	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T6) No. 7 — Transmission ground:	9 Ω?		trol valve body. <ref. 5at-53,<br="" to="">Control Valve Body.></ref.>
	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T6) No. 7 — Transmission ground: CHECK POOR CONTACT.	$9\ \Omega?$ Is there any loosing terminal,	Go to step 6 . Repair the poor contact.	trol valve body. <ref. 5at-53,<br="" to="">Control Valve</ref.>
	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T6) No. 7 — Transmission ground: CHECK POOR CONTACT. Check that there are no poor contact in TCM	$9\;\Omega?$ Is there any loosing terminal, entering foreign matter, dam-	Repair the poor	trol valve body. <ref. 5at-53,<br="" to="">Control Valve Body.></ref.>
	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T6) No. 7 — Transmission ground: CHECK POOR CONTACT. Check that there are no poor contact in TCM connector, transmission connector and control	$9\ \Omega?$ Is there any loosing terminal,	Repair the poor	trol valve body. <ref. 5at-53,<br="" to="">Control Valve Body.></ref.>
6	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T6) No. 7 — Transmission ground: CHECK POOR CONTACT. Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	$9\;\Omega?$ Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact.	trol valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""> Go to step 7.</ref.>
6	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T6) No. 7 — Transmission ground: CHECK POOR CONTACT. Check that there are no poor contact in TCM connector, transmission connector and control valve body connector. CHECK AFTER REPAIR.	$9\;\Omega?$ Is there any loosing terminal, entering foreign matter, dam-	Repair the poor contact. Replace the TCM.	trol valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""> Go to step 7. Temporary poor</ref.>
6	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T6) No. 7 — Transmission ground: CHECK POOR CONTACT. Check that there are no poor contact in TCM connector, transmission connector and control valve body connector. CHECK AFTER REPAIR. 1) Perform the clear memory mode.	$9\;\Omega?$ Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact. Replace the TCM. <ref. 5at-56,<="" td="" to=""><td>trol valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""> Go to step 7. Temporary poor contact or open</ref.></td></ref.>	trol valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""> Go to step 7. Temporary poor contact or open</ref.>
6	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T6) No. 7 — Transmission ground: CHECK POOR CONTACT. Check that there are no poor contact in TCM connector, transmission connector and control valve body connector. CHECK AFTER REPAIR. 1) Perform the clear memory mode. 2) Drive for a while, read the DTC, and check	$9\;\Omega?$ Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact. Replace the TCM. <ref. 5at-56,="" con-<="" td="" to="" transmission=""><td>trol valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""> Go to step 7. Temporary poor contact or open circuit occurs.</ref.></td></ref.>	trol valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""> Go to step 7. Temporary poor contact or open circuit occurs.</ref.>
6	CHECK LINE PRESSURE SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T6) No. 7 — Transmission ground: CHECK POOR CONTACT. Check that there are no poor contact in TCM connector, transmission connector and control valve body connector. CHECK AFTER REPAIR. 1) Perform the clear memory mode.	$9\;\Omega?$ Is there any loosing terminal, entering foreign matter, damaging connector body?	Repair the poor contact. Replace the TCM. <ref. 5at-56,<="" td="" to=""><td>trol valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""> Go to step 7. Temporary poor contact or open</ref.></td></ref.>	trol valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""> Go to step 7. Temporary poor contact or open</ref.>

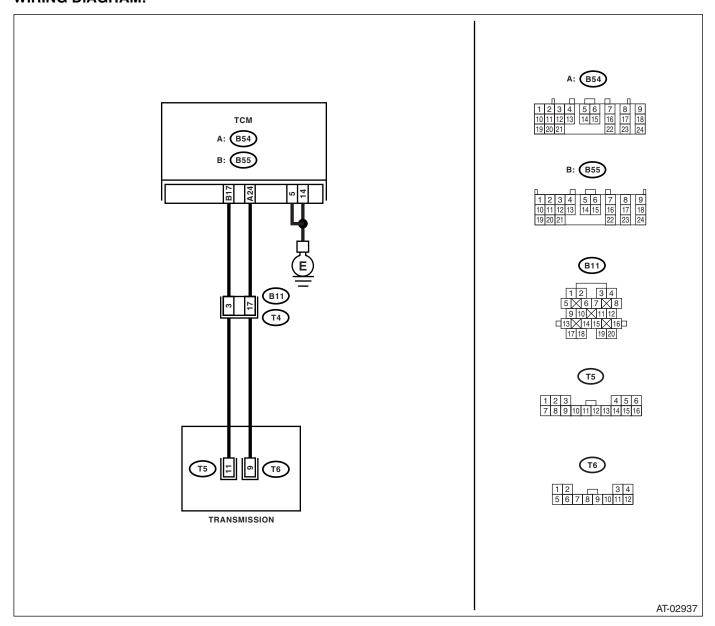
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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	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. 24 — (B11) No. 17: (B55) No. 17 — (B11) No. 3: (B54) No. 5 — Chassis ground: (B54) No. 14 — Chassis ground:		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. 17 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 3.	Repair the short circuit of harness between TCM and transmission con- nector.
3	CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR. 1) Connect all the connectors. 2) Turn the ignition switch to ON. (Engine OFF) 3) 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.		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.			
	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			
	(B11) No. 17 — (T6) No. 9:			
	(B11) No. 3 — (T5) 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.			
	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 ground and control valve body connector.			
	Connector & terminal			
	(T4) No. 3 — Transmission ground:			

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

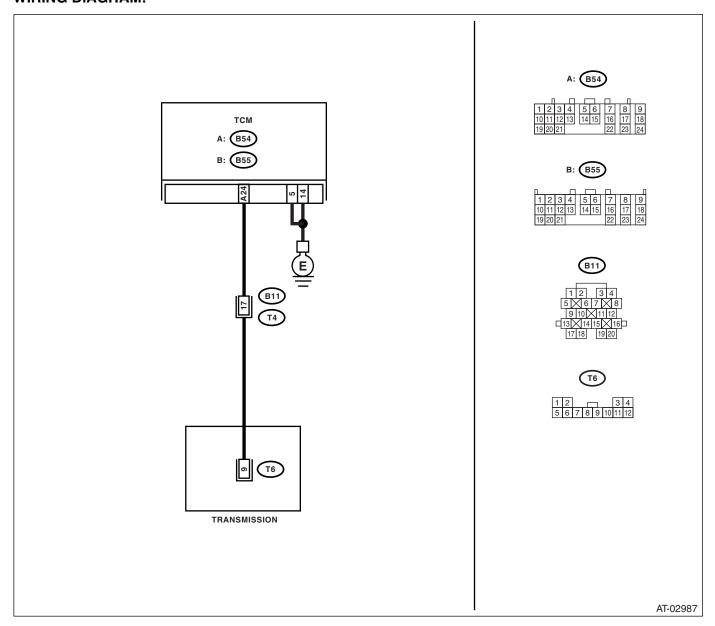
S: DTC P0753 SHIFT SOLENOID "A" ELECTRICAL

DTC DETECTING CONDITION:

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

TROUBLE SYMPTOM:

Locked to 4th or 5th gear.



Ī	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN		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			
	between TCM connector and transmission			
	connector.			
	Connector & terminal			
	(B54) No. 24 — (B11) No. 17:			
	(B54) No. 5 — Chassis ground:			
	(B54) No. 14 — Chassis ground:			
2	CHECK HARNESS CONNECTOR BETWEEN		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. 24 — Chassis ground:			
3		Is the resistance less than 1	Go to step 4.	Repair the open
	TRANSMISSION AND CONTROL VALVE	Ω?		circuit of harness
	BODY.			between transmis-
	1) 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.			
	 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. 17 — (T6) No. 9:			
4		Is the resistance more than 1	Go to step 5.	Repair the short
	TRANSMISSION AND CONTROL VALVE	ΜΩ?	,	circuit of harness
	BODY.			between control
	Measure the resistance between transmission			valve body and
	ground and control valve body connector.			transmission con-
	Connector & terminal			nector.
	(T6) No. 9 — Transmission ground:			
5	CHECK FRONT BRAKE 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
	(T6) No. 9 — Transmission ground:			Body.>

	Step	Check	Yes	No
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.

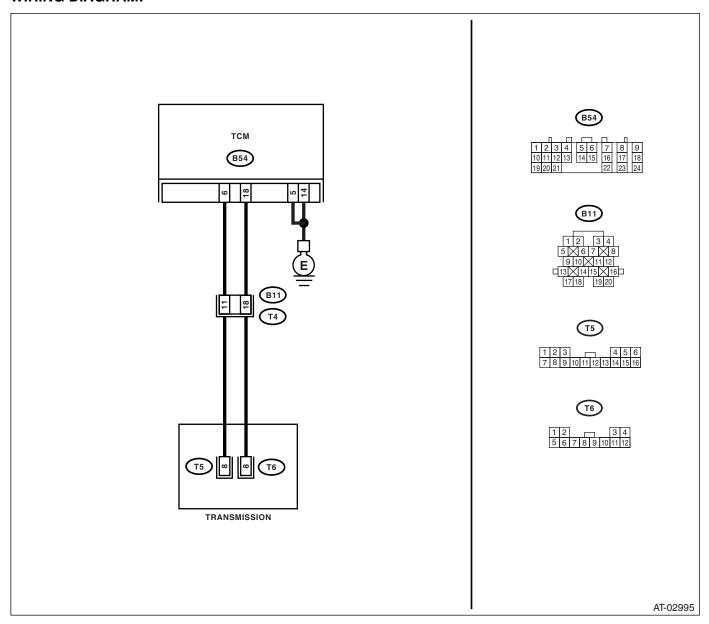
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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: (B54) No. 6 — (B11) No. 11: (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 (B54) No. 6 — 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 the 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.
	1) Turn the ignition switch to OFF.		Control Valve	,
	2) Disconnect the connector from transmis-		Body.>	
	sion.		,	
	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. 18 — (T6) No. 8:			
	(T4) No. 11 — (T5) No. 8:			
6	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Replace the con-	Replace the trans-
	TRANSMISSION AND CONTROL VALVE	$M\Omega$?	trol valve body.	mission harness
	BODY.		<ref. 5at-53,<="" th="" to=""><th>assembly.</th></ref.>	assembly.
	Turn the ignition switch to OFF.		Control Valve	dece
	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. 11 — (T5) No. 13:			
	(14) 110. 11 (10) 110. 10.			

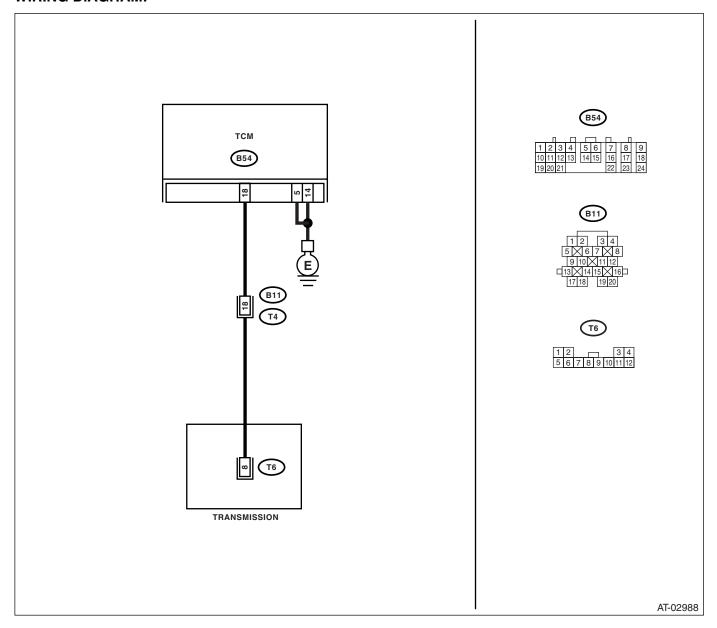
U: DTC P0758 SHIFT SOLENOID "B" ELECTRICAL

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
	2) Disconnect the connectors from TCM and			transmission con-
	transmission.			nector.
	3) 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:			

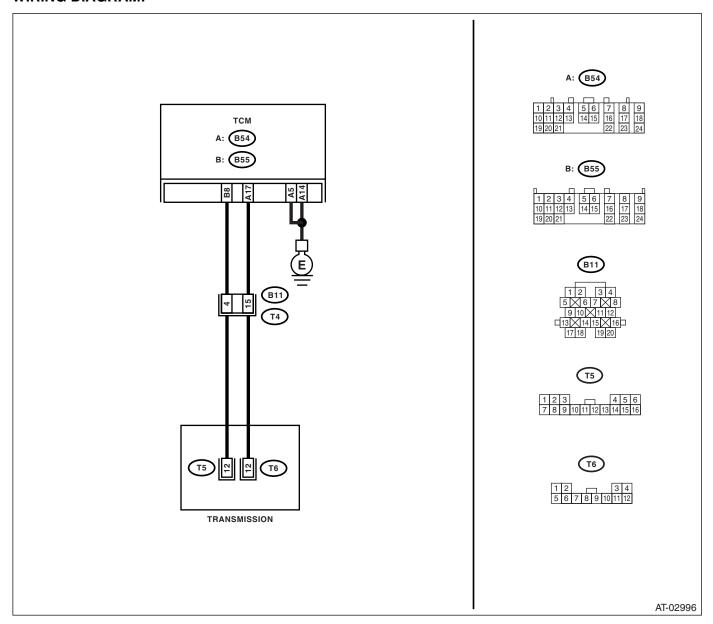
	Step	Check	Yes	No
2	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 3.	Repair the short
	TCM AND BODY HARNESS.	ΜΩ?		circuit of harness
	Measure the resistance of harness between			between TCM and
	TCM connector and body harness.			transmission con-
	Connector & terminal			nector.
	(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
	2) 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.			
	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. 18 — (T6) No. 8:			
4	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 5.	Repair the short
	TRANSMISSION AND CONTROL VALVE	ΜΩ?		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.
	(T6) 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
	(T6) 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.			
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.

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:	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 con- nector.
3	CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR. 1) Connect all the connectors. 2) Turn the ignition switch to ON. (Engine OFF) 3) 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 CHECK HARNESS CONNECTOR	BETWEEN IS	s the resistance less than 1	Replace the con-	Replace the trans-
TRANSMISSION AND CONTROL	VALVE S	Ω?	trol valve body.	mission harness
BODY.			<ref. 5at-53,<="" th="" to=""><th>assembly.</th></ref.>	assembly.
1) Turn the ignition switch to OFF.			Control Valve	•
2) Disconnect the connector from	transmis-		Body.>	
sion.			-	
Remove the transmission connection	ector from			
bracket.				
 Lift-up the vehicle and place it of 	n rigid			
racks.				
NOTE:				
Raise all wheels off floor.				
Drain the ATF.				
CAUTION:				
Do not drain ATF until it cools de				
6) Remove the oil pan, and discon	nect the			
control valve body connector.				
Measure the resistance betwee				
sion connector and control valve be	dy connec-			
tor.				
Connector & terminal				
(T4) No. 15 — (T6) No. 12:				
(T4) No. 4 — (T5) No. 12:				
6 CHECK HARNESS CONNECTOR		s the resistance more than 1	Replace the con-	Replace the trans-
TRANSMISSION AND CONTROL	VALVE N	MΩ?	trol valve body.	mission harness
BODY.			<ref. 5at-53,<="" th="" to=""><th>assembly.</th></ref.>	assembly.
Turn the ignition switch to OFF. Disconnect the connector from	ranamia		Control Valve	
Disconnect the connector from sion.	ilalisillis-		Body.>	
3) Remove the transmission conne	otor from			
bracket.	CIOI IIOIII			
4) Lift-up the vehicle and place it of	n rigid			
racks.	ii iigid			
NOTE:				
Raise all wheels off floor.				
5) Drain the ATF.				
CAUTION:				
Do not drain ATF until it cools do	own			
6) Remove the oil pan, and discon				
control valve body connector.				
7) Check the insulation of transmis	sion har-			
ness assembly.				
Connector & terminal				
(T4) No. 4 — (T5) No. 13:				

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

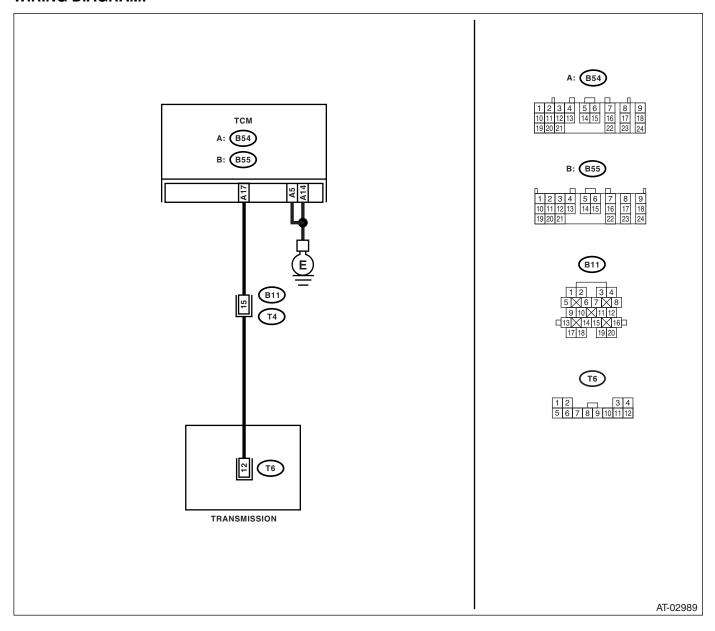
W: DTC P0763 SHIFT SOLENOID "C" ELECTRICAL

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-
	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. 17 — (B11) No. 15:			
	(B54) No. 5 — Chassis ground:			
	(B54) No. 14 — Chassis ground:			

	Cton	Charle	Vaa	N-
0	Step Step Step Step Step Step Step Step	Check	Yes	No Denois the about
2	CHECK HARNESS CONNECTOR BETWEEN TCM AND CHASSIS GROUND.	Is the resistance more than 1 $M\Omega$?	Go to step 3.	Repair the short
	Measure the resistance of harness between	IVIS2 !		circuit of harness 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	le the resistance less than 1	Go to stan 4	Renair the onen
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.	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	tor. Connector & terminal (T4) No. 15 — (T6) No. 12:	le the vecistore may athem t	Co to store 5	Danis the area
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 (T6) 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 SOLENOID. Measure the resistance between transmission ground and control valve body connector. Connector & terminal (T6) No. 12 — 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.

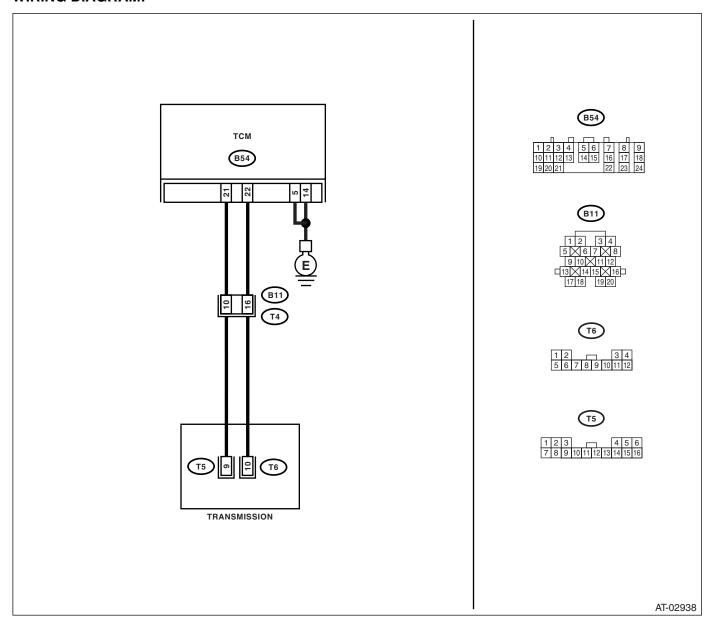
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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:		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 $\mbox{M}\Omega\mbox{?}$	Go to step 3.	Repair the short circuit of harness between TCM and transmission connector.
3	CHECK INPUT SIGNAL FOR TCM USING SUBARU SELECT MONITOR. 1) Connect all the connectors. 2) Turn the ignition switch to ON. (Engine OFF) 3) 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.
	1) Turn the ignition switch to OFF.		Control Valve	,
	2) Disconnect the connector from transmis-		Body.>	
	sion.			
	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. 16 — (T6) No. 10:			
	(T4) No. 10 — (T5) 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,<="" 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. 10 — (T5) No. 13:			

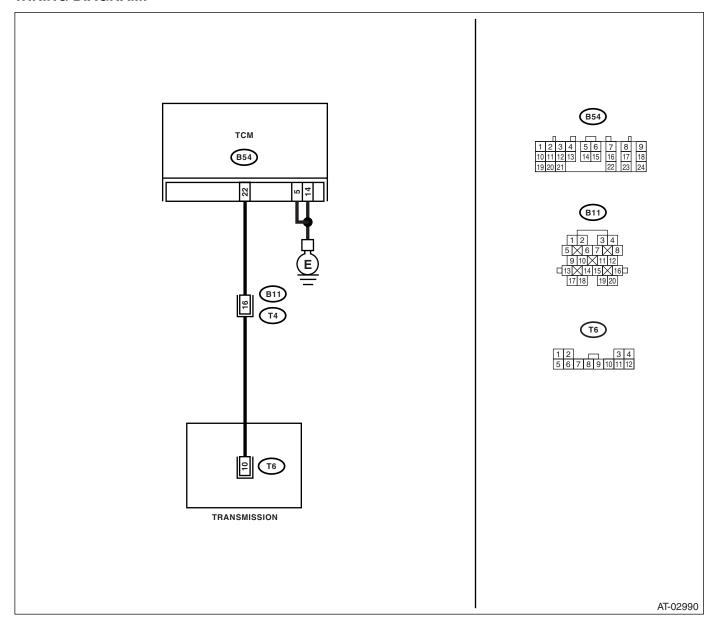
Y: DTC P0768 SOLENOID "D" ELECTRICAL

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-
	2) Disconnect the connectors from TCM and			nector and trans-
	transmission.			mission connector.
	3) 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		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. 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 BODY. 1) Turn the ignition switch to OFF.	Ω?		circuit of harness between transmis- sion connector
	2) Disconnect the connector from transmission.			and control valve 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 — (T6) No. 10:	la de a casista da de la desarra de la de	0-15	Density the 1
4	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 5.	Repair the short
	TRANSMISSION AND CONTROL VALVE BODY.	ΜΩ?		circuit of harness
	Measure the resistance between chassis			between control valve body con-
	ground and control valve body connector.			nector and trans-
	Connector & terminal			mission ground.
	(T6) No. 10 — Chassis ground:			inission 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 ?	GO 10 Stop 0 .	trol valve body.
	between control valve body connector and			<ref. 5at-53,<="" th="" to=""></ref.>
	transmission ground.			Control Valve
	Connector & terminal			Body.>
	(T6) No. 10 — Transmission ground:			
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,<="" th="" to=""><th>contact or open</th></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-
			,	tor has no faulty.

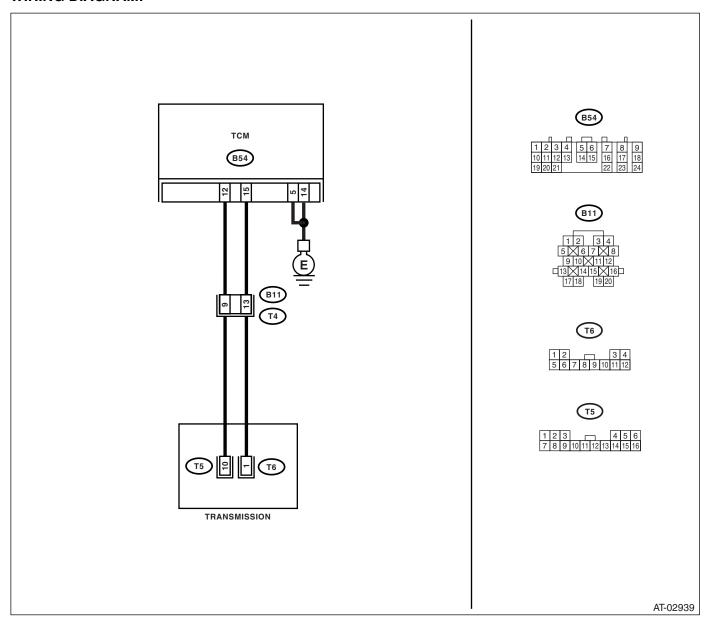
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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	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
	2) Disconnect the connectors from TCM and			transmission con-
	transmission.			nector.
	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:			
2	CHECK HARNESS CONNECTOR BETWEEN		Go to step 3.	Repair the short
	TCM AND CHASSIS GROUND.	ΜΩ?		circuit of harness
	Measure the resistance between TCM connec-			between TCM and
	tor and chassis ground.			transmission con-
	Connector & terminal			nector.
	(B54) No. 12 — Chassis ground:			
3	CHECK INPUT SIGNAL FOR TCM USING	Is OFF displayed?	Go to step 4.	Go to step 6.
	SUBARU SELECT MONITOR.			
	1) Connect all the connectors.			
	2) Turn the ignition switch to ON. (Engine			
	OFF)			
	3) Check input signal of LC/B oil pressure SW.			
4	CHECK INPUT SIGNAL FOR TCM USING	Is ON displayed?		Go to step 5.
	SUBARU SELECT MONITOR.		indicator light	
	Turn the ignition switch to OFF.		blinks, the system	
	2) Turn the ignition switch to ON. (Engine ON)		is in normal condi-	
	3) Drive the vehicle on 2nd speed of manual		tion. A temporary	
	mode 15 km/h (9 MPH) with checking current		poor contact of	
	gear position using Subaru Select Monitor.		connector or har-	
	Check input signal of LC/B oil pressure SW.		ness may be the	
			cause. Repair the	
			poor contact of	
			harness in the	
			solenoid output	
			and oil pressure	
			SW input.	

Γ	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.
	1) Turn the ignition switch to OFF.		Control Valve	-
	2) Disconnect the connector from transmis-		Body.>	
	sion.			
	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. 13 — (T6) No. 1:			
	(T4) No. 9 — (T5) 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,<="" th="" to=""><th>between transmis-</th></ref.>	between transmis-
	1) Turn the ignition switch to OFF.		Control Valve	sion connector
	Disconnect the connector from transmis-		Body.>	and control valve
	sion.			body connector.
	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. 9 — (T5) No. 13:			
	(17) $100.$ $3 - (10)$ $100.$ $10.$			

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

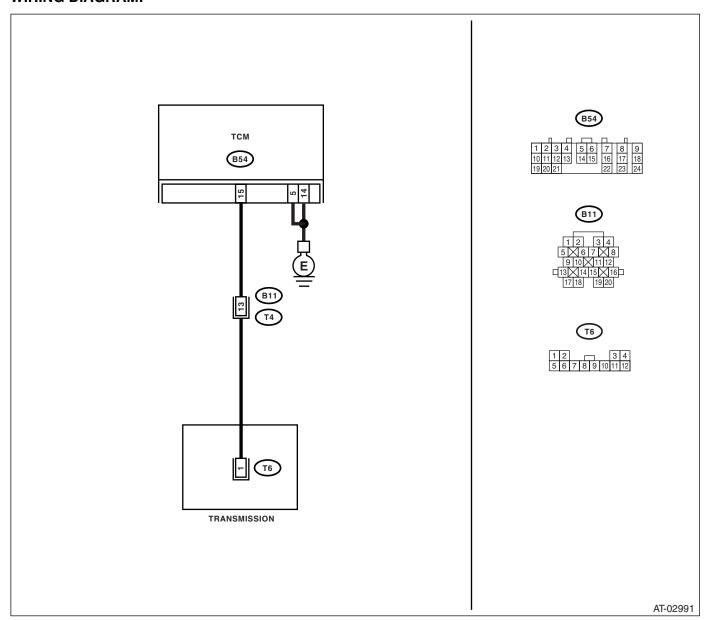
AA:DTC P0773 SHIFT SOLENOID "E" ELECTRICAL

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-	Go to step 2.
		relay detected?	nosis according to DTC.	·
2	CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM and transmission connector. Connector & terminal (B54) No. 15 — (B11) No. 13: (B54) No. 5 — Chassis ground: (B54) No. 14 — Chassis ground:	Ω?	Go to step 3.	Repair the open circuit of harness between TCM connector and transmission connector.
3	CHECK HARNESS CONNECTOR BETWEEN TCM AND BODY HARNESS. Measure the resistance of harness between TCM connector and body harness. Connector & terminal (B54) No. 15 — Chassis ground:	ΜΩ?	Go to step 4.	Repair the short circuit of harness between TCM con- nector and trans- mission connector.
4	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. 13 — (T6) No. 1:	Is the resistance less than 1 Ω?	Go to step 5.	Repair the open circuit of harness between transmission connector and control valve body connector.
5	CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION AND CONTROL VALVE BODY. Measure the resistance between chassis ground and control valve body connector. Connector & terminal (T6) No. 1 — Chassis ground:	Is the resistance more than 1 $\mbox{M}\Omega\mbox{?}$	Go to step 6.	Repair the short circuit of harness between control valve body con- nector and trans- mission ground.
6	CHECK LOW COAST BRAKE SOLENOID. Measure the resistance of harness connector between control valve body connector and transmission ground. Connector & terminal (T6) No. 1 — Transmission ground:	Is the resistance between 5 — 17 Ω ?	Go to step 7.	Replace the control valve body. <ref. 5at-53,="" body.="" control="" to="" valve=""></ref.>

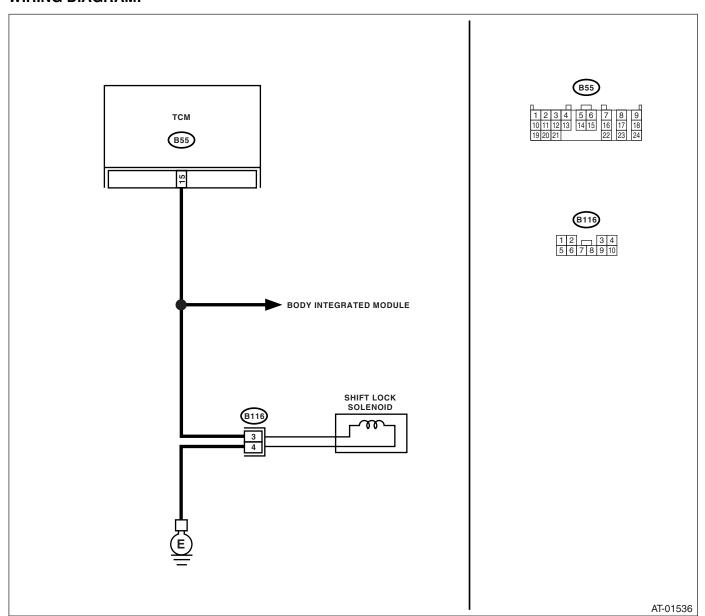
	Step	Check	Yes	No
7	CHECK POOR CONTACT. Check that there are no poor contact in TCM connector, transmission connector and control valve body connector.	Is there any loosing terminal, entering foreign matter, dam- aging connector body?	Repair the poor contact.	Go to step 8.
8	CHECK AFTER REPAIR. 1) Perform 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,<="" td="" to=""><td>Perform the P0882 diagnosis. <ref. to<br="">5AT(diag)-93, DTC P0882 TCM POWER INPUT SIGNAL LOW, Diagnostic Proce- dure with Diagnos- tic Trouble Code (DTC).></ref.></td></ref.>	Perform the P0882 diagnosis. <ref. to<br="">5AT(diag)-93, DTC P0882 TCM POWER INPUT SIGNAL LOW, Diagnostic Proce- dure with Diagnos- tic 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 (No. 32).	Is the fuse (No. 32) blown out?	Replace the fuse	Go to step 2.
	 Turn the ignition switch to OFF. 		(No. 32). If the	
	2) Remove the fuse (No. 32).		replaced fuse has	
			blown out easily,	
			repair short circuit	
			of harness	
			between fuse (No.	
			32) 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:		0	D : 11
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 harness between			between TCM and
	TCM and chassis ground. Connector & terminal			shift lock solenoid connector.
	(B55) No. 15 — Chassis ground:			connector.
_	CHECK HARNESS BETWEEN SHIFT LOCK	le the registeres less than 1	Co to stop 6	Danair the anan
5	SOLENOID AND CHASSIS GROUND TERMI-	Is the resistance less than 1	Go to step 6.	Repair the open circuit of harness
	NAL.	22?		between chassis
	Measure the resistance of harness between			ground and shift lock solenoid con-
	shift lock solenoid and chassis ground. Connector & terminal			nector.
				HECIOI.
6	(B116) No. 4 — Chassis ground: CHECK SHIFT LOCK SOLENOID.	Is the resistance between 7 —	Go to stop 7	Replace the shift
٥	Measure the resistance of shift lock solenoid	1s the resistance between $7-$ 21 Ω ?	Go to step 7.	lock solenoid.
	terminals.	C 1 22:		IOUR SOIEI IOIU.
	Connector & terminal			
	(B116) No. 3 — No. 4:		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 indicates no 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)-18,=""> 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 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)

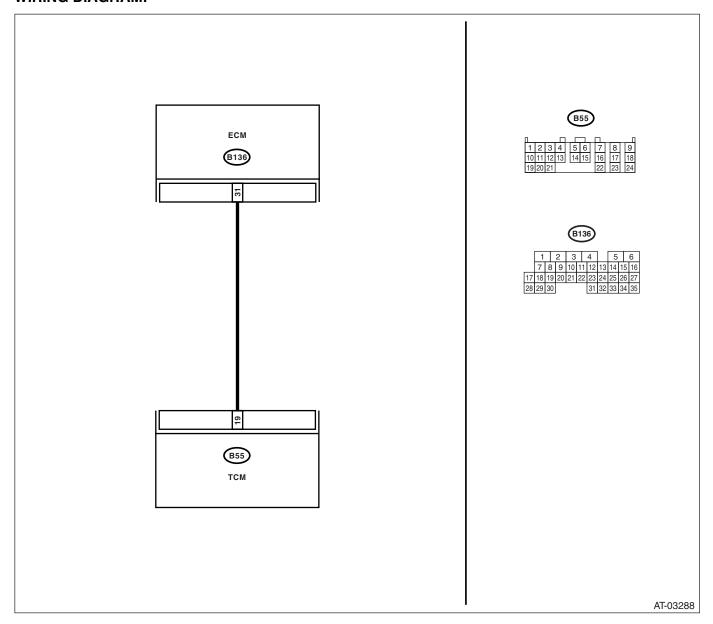
AC:DTC P0817 STARTER DISABLE CIRCUIT

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		Is DTC of Transmission Range Sensor Circuit (PRNDL Input) detected?		Go to step 2.
2		Is the communication between Subaru Select Monitor and ECM normal?		Perform the diagnosis according to DTC concerning ECM.

	Step	Check	Yes	No
3	CHECK FUSE (No. 32).	Is the fuse (No. 32) blown out?	Replace the fuse	Go to step 4.
	 Turn the ignition switch to OFF. 		(No. 32). If the	
	Remove the fuse.		replaced fuse (No.	
			32) has blown out	
			easily, repair the	
			short circuit of har-	
			ness between fuse	
			(No. 32) and TCM.	
4	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance less than 1	Go to step 5.	Repair the open
	TCM AND ECM.	Ω ?		circuit of harness
	 Turn the ignition switch to OFF. 			between TCM and
	2) Disconnect the connector from TCM and			transmission con-
	transmission.			nector, or poor
	3) Measure the resistance of harness			contact of connec-
	between TCM connector and transmission			tor.
	connector.			
	Connector & terminal			
	(B55) No. 19 — (B136) No. 31:			
5	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 6.	Repair the short
	TCM AND ECM.	ΜΩ?		circuit of harness
	Measure the resistance of harness between			between transmis-
	TCM connector and chassis ground.			sion connector
	Connector & terminal			and chassis
	(B55) No. 19 — Chassis ground:			ground.
6	CHECK TCM OUTPUT SIGNAL.	Is the voltage less than 1 V?	Go to step 7.	Replace the TCM.
	 Connect the TCM and ECM connector. 	-		<ref. 5at-56,<="" td="" to=""></ref.>
	2) Turn the ignition switch to ON. (Engine			Transmission Con-
	OFF)			trol Module
	3) Shift the select lever to shift to the "P"			(TCM).>
	range.			` '
	4) Measure the voltage between TCM con-			
	nector and chassis ground.			
	Connector & terminal			
	(B55) No. 19 (+) — Chassis ground (–):			
7	CHECK TCM OUTPUT SIGNAL.	Is the voltage more than 10 V?	Go to step 8.	Replace the TCM.
	1) Shift the select lever to "D" range.		·	<ref. 5at-56,<="" td="" to=""></ref.>
	2) Measure the voltage between TCM con-			Transmission Con-
	nector and chassis ground.			trol Module
	Connector & terminal			(TCM).>
	(B55) No. 19 (+) — Chassis ground (–):			- /
8	CHECK POOR CONTACT.	Is there any open or poor con-	Repair the poor	Check the neutral
	-	tact of connector (loosing ter-	contact.	switch of ECM.
		minal, entering foreign matter,		
		damaging connector body)?		
		damaging connector body):		

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

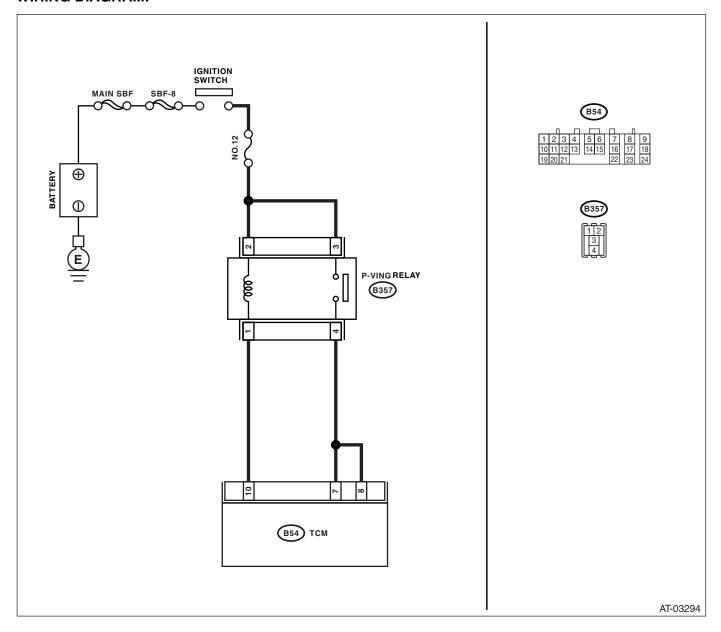
AD:DTC P0882 TCM POWER INPUT SIGNAL LOW

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.	

	Step	Check	Yes	No
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)

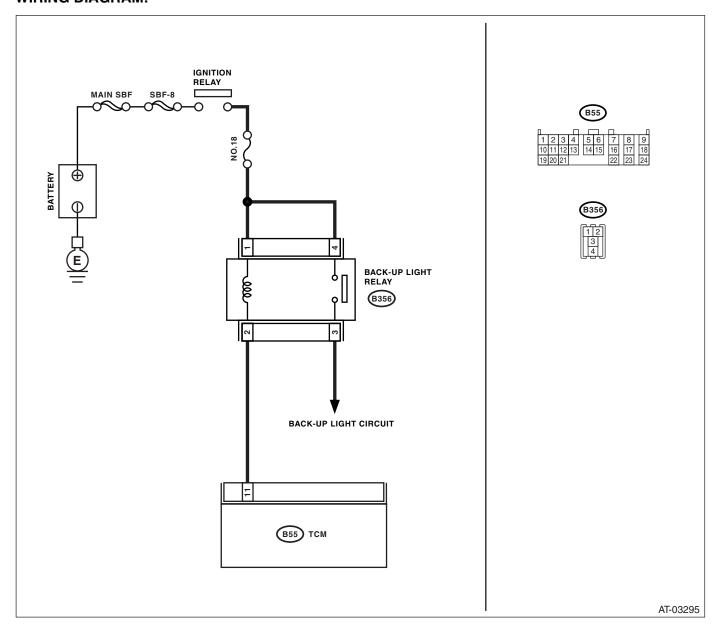
AE:DTC P0957 BACKUP LIGHT RELAY CIRCUIT LOW

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. 1:			
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.
	 Turn the ignition switch to ON. (Engine 			<ref. 5at-56,<="" td="" to=""></ref.>
	OFF)			Transmission Con-
	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.
				<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-
Ī				up light relay.

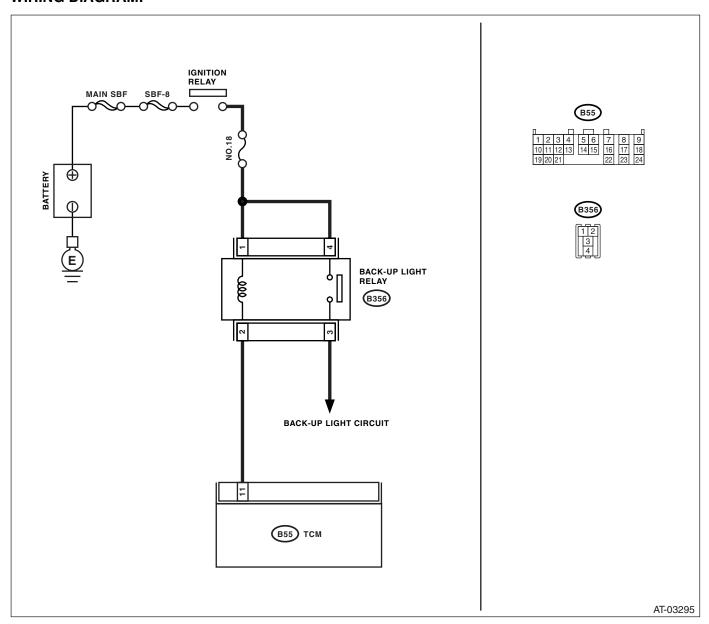
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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. 1:			
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.
	 Turn the ignition switch to ON. (Engine 			<ref. 5at-56,<="" td="" to=""></ref.>
	OFF)			Transmission Con-
	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 or	Go to step 6.	Replace the TCM.
	1) Set the select lever to "R" range.	below?		<ref. 5at-56,<="" td="" to=""></ref.>
	2) Measure the voltage between TCM con-			Transmission Con-
	nector and chassis ground.			trol Module
	Connector & terminal			(TCM).>
<u> </u>	(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)

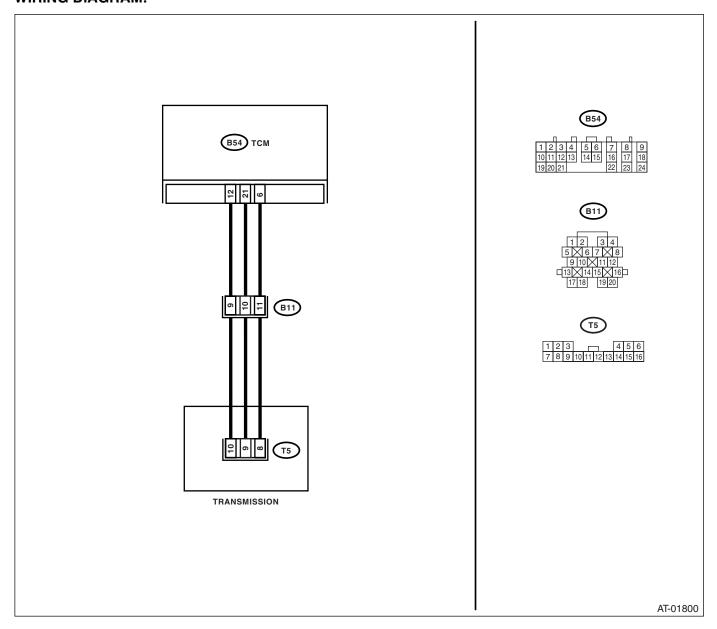
AG:DTC P1601 TCM DATA COMMUNICATION FAILURE

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?	Go to step 2.	Connect it securely.
2	CHECK DTC OF TCM.	Is DTC of oil pressure switch detected?	Perform the diagnosis according to DTC.	Go to step 3.

	Otari	Ob. 1	V	N.
	Step	Check	Yes	No
3	CHECK TCM OUTPUT SIGNAL.	Is the voltage 10 — 13 V?	Go to step 4.	Go to step 5.
	Turn the ignition switch to ON. (Engine			
	OFF)			
	Measure the voltage between TCM con- pacter and chaosis ground			
	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 ?	αο το στ ε ρ σ .	circuit of harness
	Turn the ignition switch to OFF.	25:		between TCM and
	2) Disconnect the connectors from TCM and			transmission con-
	transmission.			nector, or poor
	3) 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:			
5	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 6.	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- nector.
	Connector & terminal (B54) No. 12 — Chassis ground:			nector.
	(B54) No. 12 — Chassis ground: (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 — (T5) No. 10:			
	(B11) No. 10 — (T5) No. 9:			
<u> </u>	(B11) No. 11 — (T5) No. 8:		0 1 2	D : 11 1 1
7	CHECK HARNESS CONNECTOR BETWEEN TRANSMISSION CONNECTOR AND CON-	Is the resistance more than 1	Go to step 8.	Repair the short
	TROL VALVE BODY CONNECTOR.	ΜΩ?		circuit of harness between transmis-
	Measure the resistance between transmission			sion connector
	connector and chassis ground.			and control valve
	Connector & terminal			body connector.
	(B11) No. 9 — 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-
	NOTE:	tact of connector (loosing ter-	contact.	mission assembly.
		minal, entering foreign matter,		<ref. 5at-34,<="" th="" to=""></ref.>
	when the malfunction occurred on inspection	damaging connector body)?		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.			

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

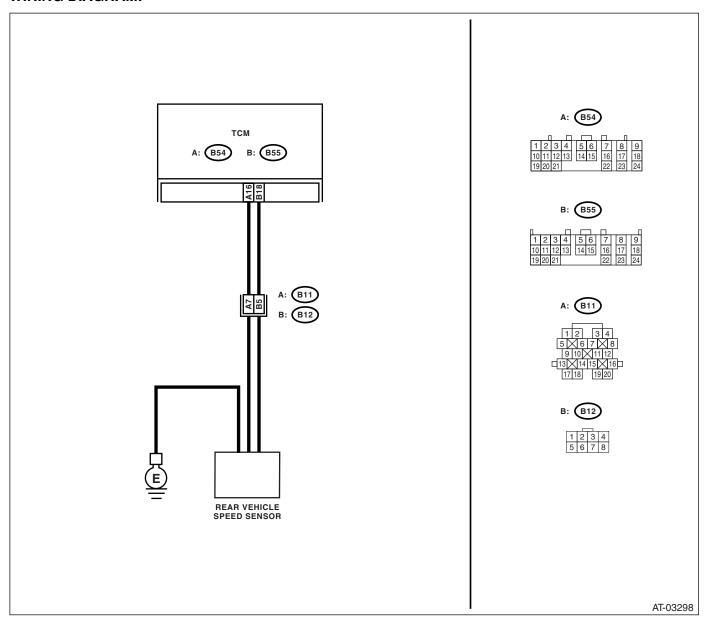
AH:DTC P1706 AT VEHICLE SPEED SENSOR CIRCUIT MALFUNCTION (REAR WHEEL)

DTC DETECTING CONDITION:

Input signal circuit of TCM is open or shorted.

TROUBLE SYMPTOM:

- Shifting quality malfunction
- Tight corner braking phenomenon is occurred.



	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 and
	Disconnect the connectors from TCM and			transmission con-
	transmission.			nector.
	Measure the resistance of harness			
	between TCM connector and transmission			
	connector.			
	Connector & terminal			
	(B54) No. 16 — (B11) No. 7:			
	(B55) No. 18 — (B12) No. 5:		0 1 1 0	D
2	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Go to step 3.	Repair the short
	TCM AND TRANSMISSION.	ΜΩ?		circuit of harness
	Measure the resistance of harness between			between TCM and
	TCM connector and chassis ground. Connector & terminal			chassis ground.
	(B54) No. 16 — Chassis ground:			
	(B55) No. 18 — Chassis ground:			
3	CHECK TCM POWER SUPPLY OUTPUT.	Is the voltage 10 — 13 V?	Go to step 4.	Go to step 5.
]	1) Connect the connector to TCM. (Transmis-		· · ·	
	sion connector is disconnected)			
	2) Turn the ignition switch to ON. (Engine			
	OFF)			
	Measure the voltage between TCM con-			
	nector and chassis ground.			
	Connector & terminal			
	(B54) No. 16 (+) — Chassis ground (–):			
4	CHECK TURBINE SPEED SENSOR INPUT	Is the voltage 4 — 6 V?	Go to step 6.	Go to step 5.
	CIRCUIT OF TCM.			
	Measure the voltage between TCM connector			
	terminals.			
	Connector & terminal (B55) No. 18 (+) — (B54) No. 19 (–):			
5	CHECK TCM I/O SIGNAL.	Is TCM I/O signal OK?	Replace the TCM.	Repair the open or
١	Check TCM I/O signal of power supply, ground	is TOW 1/O signal OIX:	<ref. 5at-56,<="" th="" to=""><th>short circuit for</th></ref.>	short circuit for
	and PVIGN power supply relay. <ref. th="" to<=""><th></th><th>Transmission Con-</th><th>power supply and</th></ref.>		Transmission Con-	power supply and
	5AT(diag)-11, ELECTRICAL SPECIFICA-		trol Module	ground. Perform
	TION, Transmission Control Module (TCM) I/O		(TCM).>	the diagnosis
	Signal.>		,	according to DTC
	· ·			for PVIGN power
				supply relay.
6	CHECK HARNESS ASSEMBLY (TURBINE	Is the ground connecting har-	Go to step 7.	When the poor
	SPEED SENSOR GROUND).	ness installed to transmission		installation of
	Check the installing condition of ground con-	body correctly, or the harness		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-
				sion Assembly.>

	Step	Check	Yes	No
7	CHECK INPUT SIGNAL FOR TCM USING	Does the value of the front	Even if the SPORT	Replace the trans-
	SUBARU SELECT MONITOR.	wheel speed depending on the	indicator light	mission harness.
	 Connect all the connectors. 	acceleration and deceleration	blinks, the system	
	Lift-up the vehicle and support with rigid	of the vehicle?	is in normal condi-	
	racks.		tion. A temporary	
	NOTE:		poor contact of	
	Raise all wheels off floor.		connector or har-	
	Start the engine, and drive the vehicle.		ness may be the	
	4) Read the current data of front wheel speed		cause. Repair poor	
	using Subaru Select Monitor. <ref. th="" to<=""><th></th><th>contact of har-</th><th></th></ref.>		contact of har-	
	5AT(diag)-15, OPERATION, Subaru Select		ness in ATF tem-	
	Monitor.>		perature sensor	
	NOTE:		and transmission	
	The speed difference between front and rear		connector.	
	wheels may light the ABS warning light, but this			
	indicates no malfunction. When AT control di-			
	agnosis is finished, perform the VDC memory			
	clearance procedure of on-board diagnostics			
	system. <ref. clear="" mem-<="" th="" to="" vdc(diag)-18,=""><th></th><th></th><th></th></ref.>			
	ORY MODE, OPERATION, Subaru Select			
	Monitor.>			

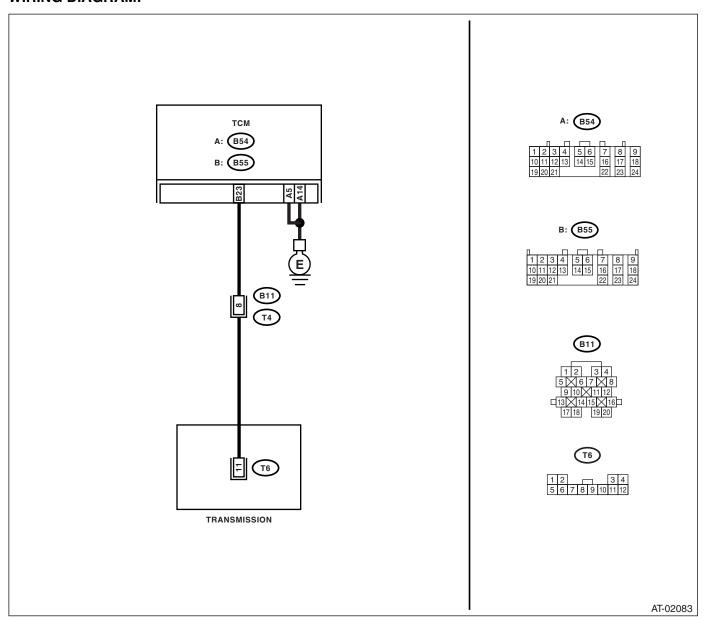
AI: DTC P1707 AT AWD SOLENOID VALVE CIRCUIT MALFUNCTION

DTC DETECTING CONDITION:

Output signal circuit of transfer solenoid is open or shorted.

TROUBLE SYMPTOM:

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



	Step	Check	Yes	No
1	CHECK HARNESS CONNECTOR BETWEEN		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			
	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.	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.
	(B55) 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
	2) 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.			
	6) 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. 8 — (T6) No. 11:			
4	CHECK HARNESS CONNECTOR BETWEEN		Go to step 5.	Repair the short
	TRANSMISSION AND CONTROL VALVE	ΜΩ?		circuit of harness
	BODY.			between control
	Measure the resistance between transmission			valve body con-
	ground and control valve body connector.			nector and trans-
	Connector & terminal			mission ground.
	(T6) No. 11 — Transmission ground:			
5	CHECK AWD SOLENOID.		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
	(T6) No. 11 — Transmission ground:			Body.>

	Step	Check	Yes	No
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.

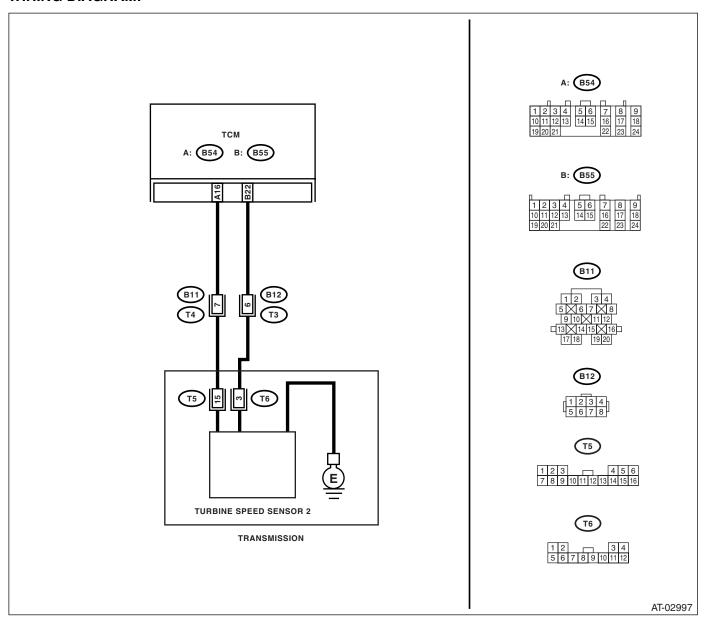
AJ:DTC P1710 TORQUE CONVERTER TURBINE 2 SPEED SIGNAL CIRCUIT 2 MALFUNCTION

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 HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. 1) Turn the ignition switch to OFF. 2) Disconnect the connectors from TCM and transmission. 3) Measure the resistance of harness between TCM connector and transmission connector. Connector & terminal (B55) No. 22 — (B12) No. 6: (B54) No. 16 — (B11) No. 7:		Go to step 2.	Repair the open circuit of harness between TCM and transmission connector.
2	CHECK HARNESS CONNECTOR BETWEEN TCM AND TRANSMISSION. Measure the resistance of harness between TCM connector and chassis ground. Connector & terminal (B55) No. 22 — Chassis ground: (B54) No. 16 — 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 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 TCM connector and chassis ground. Connector & terminal (B54) No. 16 (+) — (B54) No. 19 (-):	Is the voltage 10 — 13 V?	Go to step 4.	Go to step 5.
4	CHECK TURBINE SPEED SENSOR INPUT CIRCUIT OF TCM. Measure the voltage between TCM connector terminals. Connector & terminal (B55) No. 22 (+) — (B54) No. 19 (-):	Is the voltage 4 — 6 V?	Go to step 6.	Go to step 5.
5	CHECK TCM I/O SIGNAL. Check TCM I/O signal of power supply, ground and PVIGN power supply relay. <ref. (tcm)="" 5at(diag)-11,="" control="" electrical="" i="" module="" o="" signal.="" specifica-tion,="" to="" transmission=""></ref.>	Is 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.

	Step	Check	Yes	No
6	CHECK INPUT SIGNAL FOR TCM USING	Does the value of the turbine	Even if the SPORT	Go to step 7.
	SUBARU SELECT MONITOR.	speed sensor 2 change	indicator light	
	1) Connect all the connectors.	depending on the acceleration,	blinks, the system	
	Lift-up the vehicle and support with rigid	deceleration and shifting gear	is in normal condi-	
	racks.	of the vehicle?	tion. A temporary	
	NOTE:	of the vernois.	poor contact of	
	Raise all wheels off floor.		connector or har-	
	3) Start the engine, and set the vehicle in 1st		ness may be the	
	speed driving condition of manual mode.		cause. Repair the	
	4) Read the current data of torque converter		poor contact of	
	turbine speed 2 using Subaru Select Monitor.		harness of turbine	
			speed sensor 2	
	<ref. 5at(diag)-15,="" monitor.="" operation,="" select="" subaru="" to=""></ref.>		and transmission	
			connector.	
	NOTE:		Connector.	
	The speed difference between front and rear			
	wheels may light the ABS warning light, but this			
	indicates no malfunction. When AT control di-			
	agnosis is finished, perform the VDC memory			
	clearance procedure of on-board diagnostics			
	system. <ref. clear="" mem-<="" td="" to="" vdc(diag)-18,=""><td></td><td></td><td></td></ref.>			
	ORY MODE, OPERATION, Subaru Select			
	Monitor.>		0	5
7		Is the resistance less than 1	Go to step 8.	Repair the open
	TRANSMISSION AND CONTROL VALVE	Ω?		circuit of harness
	BODY.			between transmis-
	Turn the ignition switch to OFF.			sion connector
	2) 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.			
	6) Remove the oil pan, and disconnect the			
	connector from control valve body connector.			
	7) Measure the resistance between transmis-			
	sion connector and control valve body connec-			
	tor. Connector & terminal			
	(T3) No. 6 — (T6) No. 3:			
	(T4) No. 7 — (T5) No. 15:			
8	CHECK HARNESS CONNECTOR BETWEEN	Is the resistance more than 1	Replace the con-	Repair the short
	TRANSMISSION AND CONTROL VALVE	$M\Omega$?	trol valve body.	circuit of harness
	BODY.		<ref. 5at-53,<="" td="" to=""><td>between transmis-</td></ref.>	between transmis-
	Measure the resistance between transmission		Control Valve	sion connector
	ground and control valve body connector.		Body.>	and transmission
	Connector & terminal			ground.
	(T6) No. 3 — Transmission ground:			
l	(T5) No. 15 — Transmission ground:			

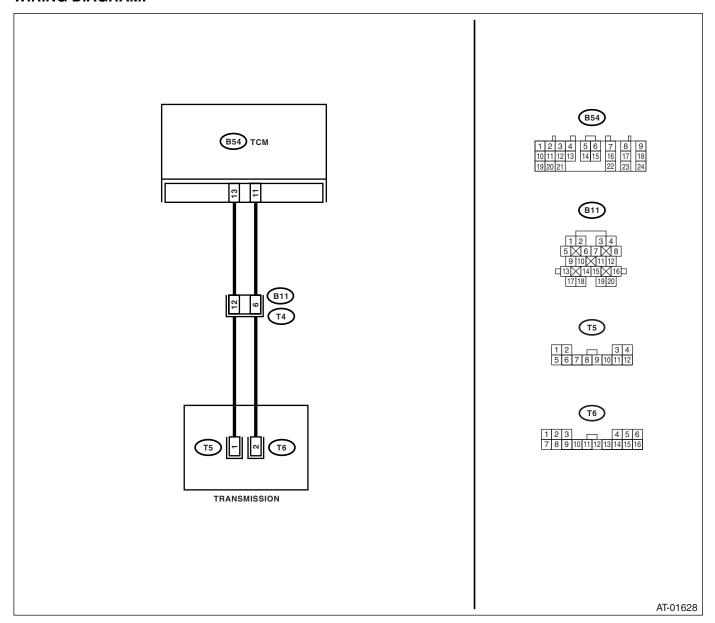
AK:DTC P1716 ATF TEMP. SENSOR 2 CIRCUIT LOW

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:		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 (T4) No. 6 — (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. 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	•	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)

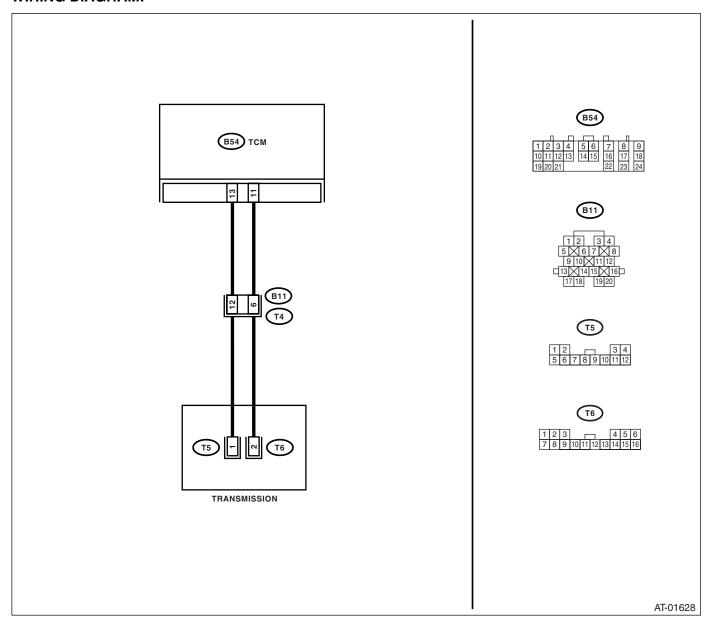
AL:DTC P1717 ATF TEMP. SENSOR 2 CIRCUIT HIGH

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
	TCM AND TRANSMISSION.	ΜΩ?		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 — (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.
	 Turn the ignition switch to OFF. 	— 700 Ω?		
	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.			
	Disconnect the connector from transmission.			
	Measure the resistance between transmission 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-	GO to Stop 4.	do to stop o .
	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	
	3) 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.	
			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 (T5) No. 1 — Chassis ground: (T6) 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 P1798 GEAR 1 ENGINE BRAKE

NOTE:

Refer to DTC P0771 for diagnostic procedure. <Ref. to 5AT(diag)-82, DTC P0771 SHIFT SOLENOID "E" PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

AO: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)-19,="" 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)-19,="" 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.

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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

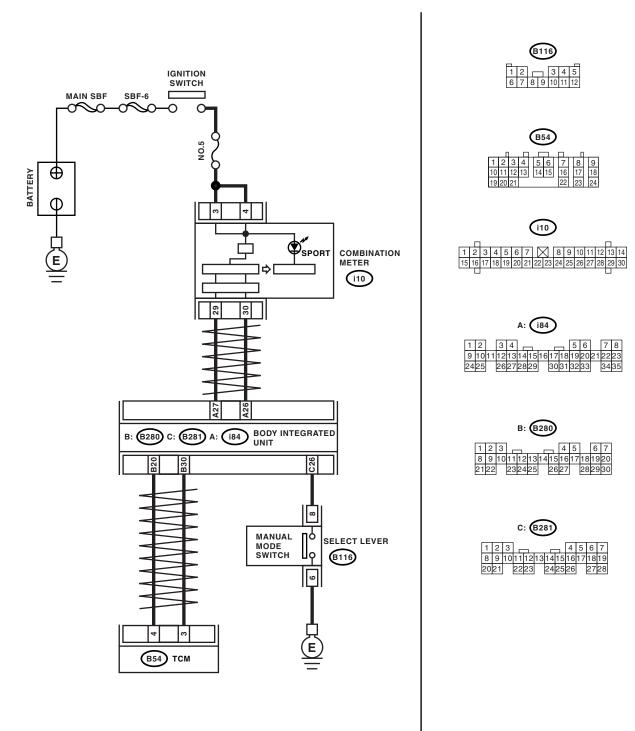
DTC DETECTING CONDITION:

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" \rightarrow "D" range.

WIRING DIAGRAM:



AT-03292

	Step	Check	Yes	No
1	CHECK THE BODY INTEGRATED UNIT.	Is DTC displayed?	Perform the diag-	Go to step 2.
	Connect the Subaru Select Monitor to data link connector.		nosis according to DTC.	
	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></th><th></th><th></th></ref.>			
	OPERATION, Subaru Select Monitor.>			
2	CHECK BODY INTEGRATED UNIT INPUT SIGNAL.	Is OFF displayed?	Go to step 3.	Go to step 7.
	Shift the select lever to shift to the "P"			
	range.			
	Read the TIP mode SW data of body integrated unit using Subaru Select Monitor. <ref.< li=""></ref.<>			
	to LAN(diag)-12, OPERATION, Subaru Select			
	Monitor.>			
3	CHECK BODY INTEGRATED UNIT INPUT SIGNAL.	Is the indication on each range OFF?	Go to step 4.	Replace the select lever assembly.
	 Shift the select lever from "P" to "D" range. 			<ref. cs-19,<="" th="" to=""></ref.>
	2) Read the TIP mode SW data of body inte-			Select Lever.>
	grated unit using Subaru Select Monitor. <ref. lan(diag)-12,="" operation,="" select<="" subaru="" th="" to=""><th></th><th></th><th></th></ref.>			
	Monitor.>			
4	CHECK BODY INTEGRATED UNIT INPUT	Is OFF displayed?	Go to step 5.	Replace the select
	SIGNAL. 1) Shift the select lever to manual mode.			lever assembly. <ref. cs-19,<="" th="" to=""></ref.>
	2) Shift the select lever to other than "D"			Select Lever.>
	range.			
	Read the TIP mode SW data of body integrated unit using Subaru Select Monitor. <ref.< li=""></ref.<>			
	to LAN(diag)-12, OPERATION, Subaru Select			
	Monitor.>			
5	CHECK DTC OF TCM.	Is DTC of Transmission Range Sensor Circuit (PRNDL Input)	Perform the diag- nosis according to	Go to step 6.
		and AT CAN communication	each DTC.	
		circuit displayed?		
6	CHECK INPUT SIGNAL FROM TCM.	Is the indication on each range	Even if the SPORT	Replace the TCM.
	 Shift the select lever from "P" to "D" range. Read the TIP mode SW data of TCM using 	OFF?	indicator light blinks, the system	<ref. 5at-56,<br="" to="">Transmission Con-</ref.>
	Subaru Select Monitor. <ref. 5at(diag)-15,<="" th="" to=""><th></th><th>is in normal condi-</th><th>trol Module</th></ref.>		is in normal condi-	trol Module
	OPERATION, Subaru Select Monitor.>		tion. A temporary	(TCM).>
			poor contact of connector or har-	
			ness may be the	
	OUEOK HADNEGO BETWEEN DODY	lla dha masiatana a dh	cause.	Dana in the
7	CHECK HARNESS BETWEEN BODY INTE- GRATED UNIT AND MANUAL MODE	Is the resistance more than 1 $M\Omega$?	Go to step 8.	Repair the short circuit of harness
	SWITCH.			between body inte-
	Turn the ignition switch to OFF.			grated unit and
	Disconnect harness connector from body integrated unit and select lever.			manual mode.
	3) Measure the harness resistance between			
	the body integrated unit and chassis ground.			
	Connector & terminal (B281) No. 27 — Chassis ground:			
I	(B281) No. 27 — Chassis ground:			1

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
8	CHECK MANUAL MODE SWITCH.	Is the resistance more than 1	Check the body	Replace the select
	 Shift the select lever to shift to the "P" range. 	ΜΩ?	integrated unit.	lever assembly. <ref. cs-19,<="" th="" to=""></ref.>
	2) Measure the resistance between harness			Select Lever.>
	connector terminals of manual mode switch.			
	Terminals			
	(B116) No. 7 — No. 8			

AQ: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)-61, DTC P0751 SHIFT SOLENOID "A" PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AR: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

NOTE

Refer to DTC P0756 for diagnostic procedure. <Ref. to 5AT(diag)-67, DTC P0756 SHIFT SOLENOID "B" PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AS: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)-77, DTC P0766 SHIFT SOLENOID "D" PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

AT: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)-72, DTC P0761 SHIFT SOLENOID "C" PERFORMANCE OR STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>