

# Basic Diagnostic Procedure

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 1. Basic Diagnostic Procedure

### A: PROCEDURE

Step	Check	Yes	No
<p><b>1 CHECK PRE-INSPECTION.</b>                      1) Ask the customer when and how the trouble occurred using the interview check list.&lt;Ref. to CVT(diag)-4, Check List for Interview.&gt;                      2) Before performing diagnostics, check the following items which might affect CVT problems.</p> <ul style="list-style-type: none"> <li>• General inspection&lt;Ref. to CVT(diag)-5, INSPECTION, General Description.&gt;</li> <li>• Disconnection of harness connector</li> <li>• Visual check for harness damage</li> <li>• Oil leakage</li> <li>• Stall speed test&lt;Ref. to CVT(TR580)-46, Stall Test.&gt; &lt;Ref. to CVT(TR690)-49, Stall Test.&gt;</li> <li>• Secondary pressure test&lt;Ref. to CVT(TR580)-48, Secondary Pressure (Line Pressure) Test.&gt; &lt;Ref. to CVT(TR690)-51, Secondary Pressure (Line Pressure) Test.&gt;</li> <li>• Transfer clutch pressure test&lt;Ref. to CVT(TR580)-51, Transfer Clutch Pressure Test.&gt; &lt;Ref. to CVT(TR690)-54, Transfer Clutch Pressure Test.&gt;</li> <li>• Time lag test&lt;Ref. to CVT(TR580)-47, Time Lag Test.&gt; &lt;Ref. to CVT(TR690)-50, Time Lag Test.&gt;</li> <li>• Road test&lt;Ref. to CVT(TR580)-45, Road Test.&gt; &lt;Ref. to CVT(TR690)-47, Road Test.&gt;</li> <li>• Inhibitor switch&lt;Ref. to CVT(TR580)-90, Inhibitor Switch.&gt; &lt;Ref. to CVT(TR690)-92, Inhibitor Switch.&gt;</li> </ul>	<p>Is the item that is thought to influence the CVT problem working properly?</p>	<p>Go to step 2.</p>	<p>Repair the items which may be affecting the CVT trouble.</p>
<p><b>2 CHECK AT OIL TEMP LIGHT.</b>                      Turn the ignition switch to ON and wait for at least 2 seconds.</p>	<p>Does the AT OIL TEMP light illuminate?</p>	<p>Go to step 3.</p>	<p>Check the AT OIL TEMP light.</p>
<p><b>3 CHECK AT OIL TEMP LIGHT.</b>                      Start the engine and wait for 2 seconds or more.</p>	<p>Does the AT OIL TEMP light blink?</p>	<p>Go to step 4.</p>	<p>Go to step 5.</p>
<p><b>4 CHECK DTC DISPLAY.</b>                      Read the DTC.                      NOTE:                      If the communication function of Subaru Select Monitor cannot be executed normally, check the communication circuit.&lt;Ref. to CVT(diag)-37, COMMUNICATION FOR INITIALIZING IMPOSSIBLE, Diagnostic Procedure for Subaru Select Monitor Communication.&gt;</p>	<p>Is DTC displayed on Subaru Select Monitor?</p>	<p>Record the DTC, time stamp and freeze frame data.                      Go to step 6.                      NOTE:                      • For the time stamp, refer to LAN section.&lt;Ref. to LAN(diag)-6, TIME STAMP, CAUTION, General Description.&gt;                      • Depending on DTCs, time stamp may not be stored.</p>	<p>Go to step 5.</p>

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# Basic Diagnostic Procedure

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<p><b>5</b>     <b>PERFORM GENERAL DIAGNOSTICS.</b></p> <p>1) Inspect using "Diagnostic Procedure without Diagnostic Trouble Code (DTC)".&lt;Ref. to CVT(diag)-154, Diagnostic Procedure without Diagnostic Trouble Code (DTC).&gt;</p> <p>2) Inspect using "Diagnostics with Phenomenon".&lt;Ref. to CVT(diag)-155, Diagnostics with Phenomenon.&gt;</p> <p>3) Perform the Inspection Mode.&lt;Ref. to CVT(diag)-25, Inspection Mode.&gt;</p> <p>4) Read the DTC.</p>	<p>Is DTC displayed on Subaru Select Monitor?</p>	<p>Go to step 6.</p>	<p>Finish the diagnosis.</p>
<p><b>6</b>     <b>PERFORM DIAGNOSIS.</b></p> <p>1) Inspect by referring to "Diagnostic Procedure with Diagnostic Trouble Code (DTC)".&lt;Ref. to CVT(diag)-44, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</p> <p>NOTE: For the DTC table, refer to "List of Diagnostic Trouble Code (DTC)".&lt;Ref. to CVT(diag)-40, List of Diagnostic Trouble Code (DTC).&gt;</p> <p>2) Repair the trouble cause.</p> <p>3) Perform the Clear Memory Mode.</p> <p>4) Perform the Inspection Mode.&lt;Ref. to CVT(diag)-25, Inspection Mode.&gt;</p> <p>5) Read the DTC.</p>	<p>Is DTC displayed on Subaru Select Monitor?</p>	<p>Inspect by referring to "Diagnostic Procedure with Diagnostic Trouble Code (DTC)".&lt;Ref. to CVT(diag)-44, Diagnostic Procedure with Diagnostic Trouble Code (DTC).&gt;</p>	<p>Finish the diagnosis.</p>

## Check List for Interview

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

### 2. Check List for Interview

#### A: CHECK

Check the following items when a problem has occurred.

NOTE:

Use copies of this page for interviewing customers.

Customer's name			
Date of purchase			
Date of repair			
Transmission model	Transmission	V.I.N.	
Odometer reading	km (miles)		
Frequency	<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent (    times/day)		
Weather	<input type="checkbox"/> Fine <input type="checkbox"/> Cloudy <input type="checkbox"/> Rainy <input type="checkbox"/> Snowy <input type="checkbox"/> Other (    )		
Place	<input type="checkbox"/> Highland <input type="checkbox"/> Suburbs <input type="checkbox"/> Inner city <input type="checkbox"/> Uphill <input type="checkbox"/> Downhill <input type="checkbox"/> Rough road <input type="checkbox"/> Other (    )		
Ambient air temperature	<input type="checkbox"/> Hot <input type="checkbox"/> Warm <input type="checkbox"/> Cool <input type="checkbox"/> Cold		
Vehicle speed	km/h (MPH)		
AT OIL TEMP light	<input type="checkbox"/> Blinks continuously		<input type="checkbox"/> Does not blink
Select lever position	<input type="checkbox"/> P <input type="checkbox"/> R <input type="checkbox"/> N <input type="checkbox"/> D <input type="checkbox"/> Manual mode <input type="checkbox"/> L		
Driving condition	<input type="checkbox"/> Not affected <input type="checkbox"/> At racing <input type="checkbox"/> While decelerating	<input type="checkbox"/> At starting <input type="checkbox"/> While accelerating <input type="checkbox"/> While turning ( <input type="checkbox"/> RH/ <input type="checkbox"/> LH )	<input type="checkbox"/> While idling <input type="checkbox"/> When cruising (Vehicle speed    km/h) <input type="checkbox"/> Immediately after starting the engine
Manual mode	<input type="checkbox"/> ON <input type="checkbox"/> OFF		
Symptoms	<input type="checkbox"/> Vehicle does not move ( <input type="checkbox"/> Any position <input type="checkbox"/> Particular position )		
	<input type="checkbox"/> Vehicle does not move (no load racing condition as in N range)		
	<input type="checkbox"/> Vehicle does not move (engine speed does not increase, felt as stall condition)		
	<input type="checkbox"/> Noise or vibration (Describe concretely:    )		
	<input type="checkbox"/> Shock felt at N → D selection (    seconds after shifting, when engine cold or after warm-up)		
	<input type="checkbox"/> Shock felt at N → R selection (    seconds after shifting, when engine cold or after warm-up)		
	<input type="checkbox"/> Shifting is wrong (Describe concretely:    )		
	<input type="checkbox"/> Shock or judder during driving		
	<input type="checkbox"/> Fails to accelerate.		
	<input type="checkbox"/> Engine speed increases abruptly during driving		
	<input type="checkbox"/> Shock or judder during standing start		
	<input type="checkbox"/> Select lever does not move		
	<input type="checkbox"/> Other (    )		

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# General Description

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 3. General Description

### A: CAUTION

#### 1. SUPPLEMENTAL RESTRAINT SYSTEM “AIRBAG”

The airbag system wiring harness is routed near the TCM.

#### CAUTION:

- All the airbag system wiring harnesses and connectors are colored yellow. Do not use an electric test equipment to check these circuits.
- Be careful not to damage the airbag system wiring harness when performing diagnostics or servicing the TCM.

#### 2. MEASUREMENT

When measuring the voltage and resistance of the ECM, TCM or sensor, use a tapered pin with a diameter of less than 0.64 mm (0.025 in) in order to avoid poor contact. Do not insert a pin of more than 0.65 mm (0.026 in) diameter.

### B: INSPECTION

#### 1. BATTERY

Measure the battery voltage and specific gravity of the electrolyte.

**Standard voltage: 12 V or more**

**Specific gravity: 1.260 or more**

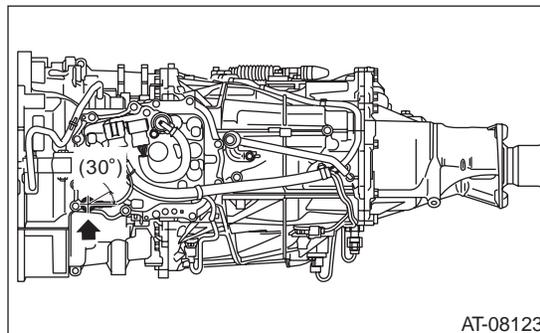
#### 2. TRANSMISSION GROUND

Make sure that the ground terminal bolt is tightened securely.

#### Tightening torque:

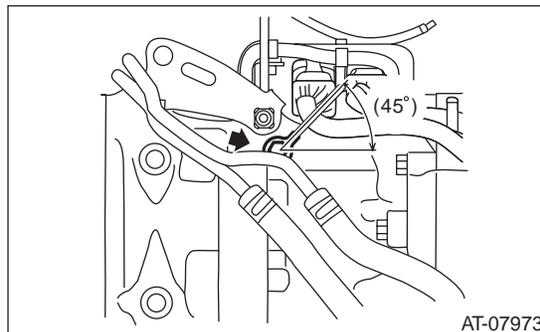
**Non-turbo model**

**14 N·m (1.4 kgf·m, 10.3 ft·lb)**



**Turbo model**

**16 N·m (1.6 kgf·m, 11.8 ft·lb)**



#### 3. OPERATION OF SHIFT SELECT LEVER

Make sure there is no noise, dragging or contact pattern in each select lever range.

#### WARNING:

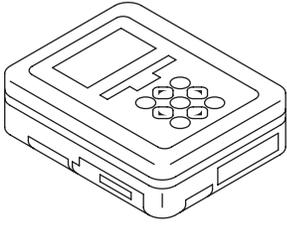
**Stop the engine while checking operation of the select lever.**

## General Description

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

### C: PREPARATION TOOL

#### 1. SPECIAL TOOL

ILLUSTRATION	TOOL NUMBER	DESCRIPTION	REMARKS
 ST1B022XU0	1B022XU0	SUBARU SELECT MONITOR III KIT	Used for troubleshooting the electrical system.

#### 2. GENERAL TOOL

TOOL NAME	REMARKS
Circuit tester	Used for measuring resistance, voltage and current.
Oscilloscope	Used for measuring the sensor.

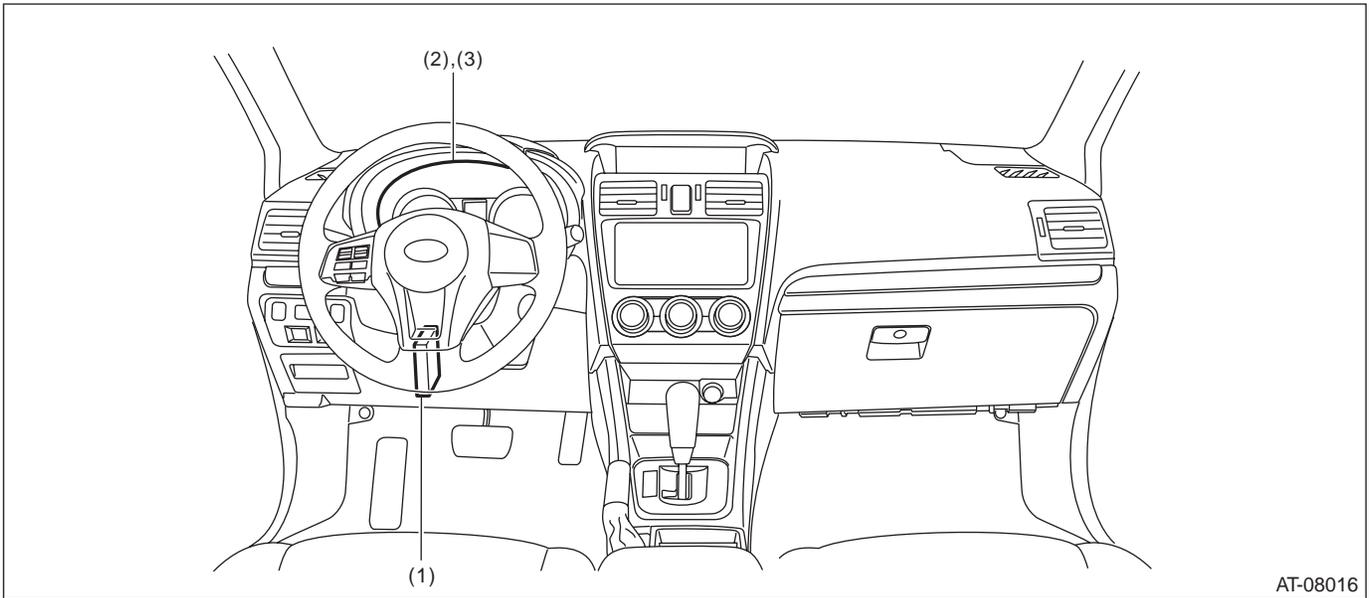
# Electrical Component Location

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 4. Electrical Component Location

### A: LOCATION

#### 1. CONTROL MODULE

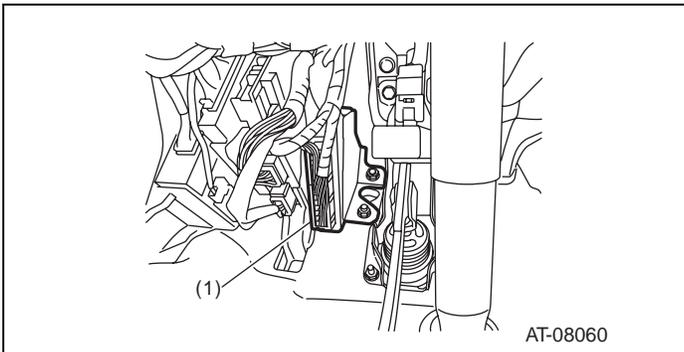


AT-08016

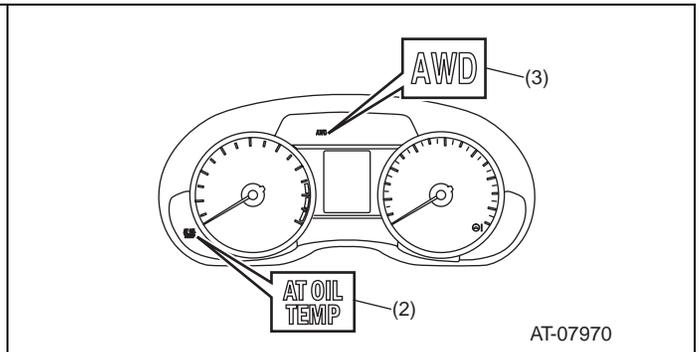
(1) Transmission control module (TCM)

(2) AT OIL TEMP light

(3) AWD light



AT-08060



AT-07970

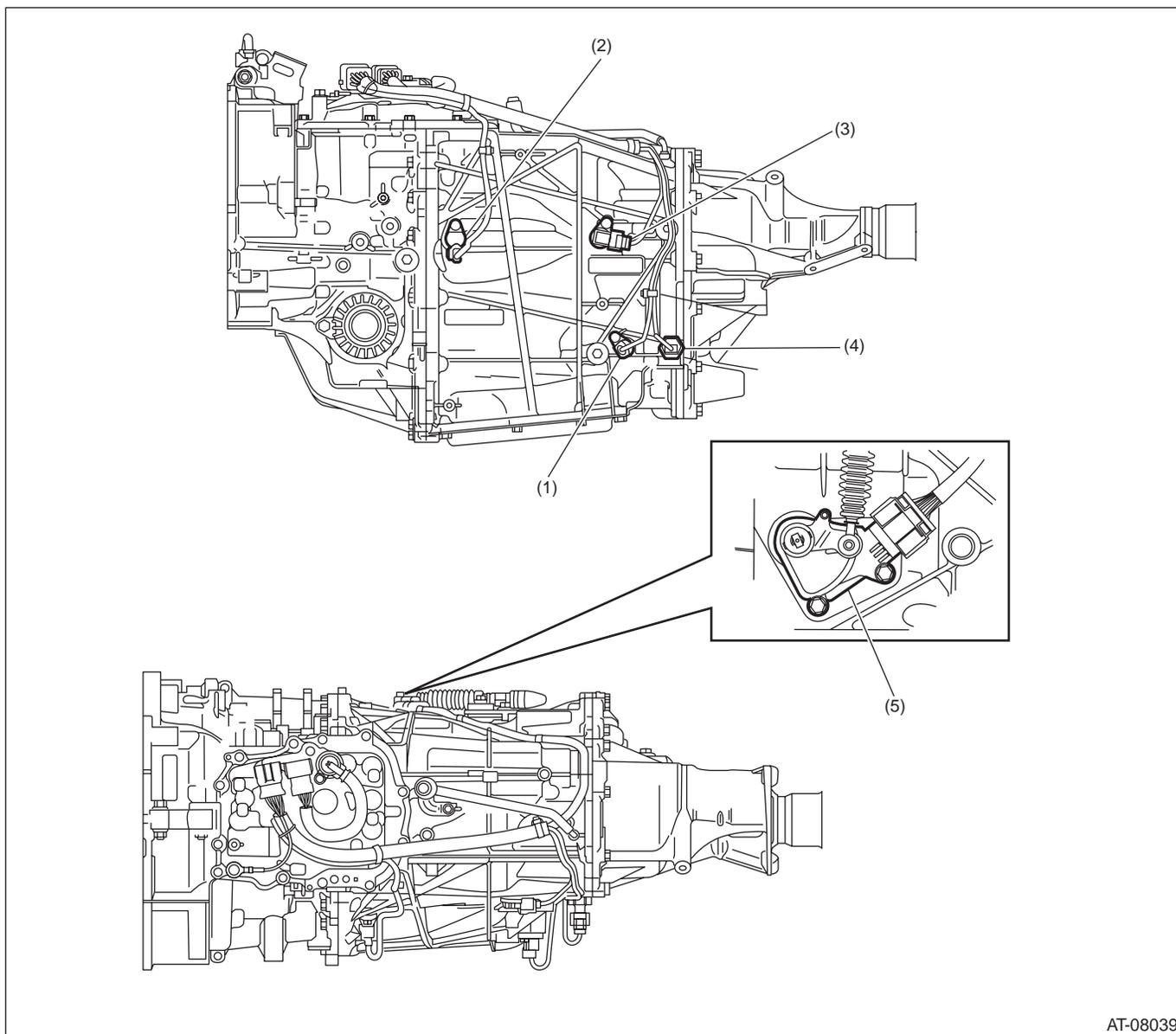
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# Electrical Component Location

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

### 2. SENSOR

- Non-turbo model



AT-08039

(1) Secondary speed sensor

(3) Primary speed sensor

(5) Inhibitor switch

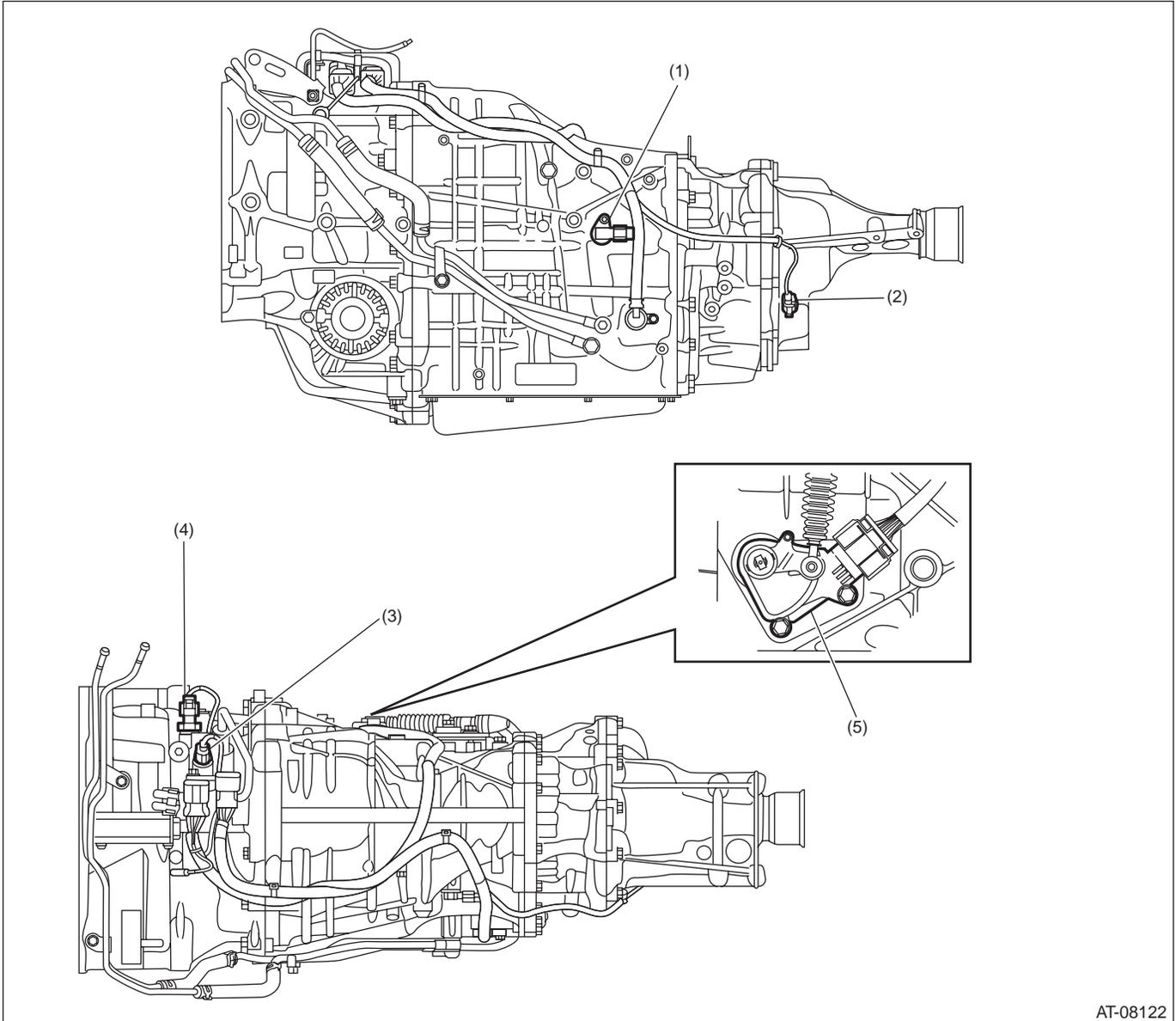
(2) Turbine speed sensor

(4) Secondary pressure sensor

# Electrical Component Location

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

- Turbo model



AT-08122

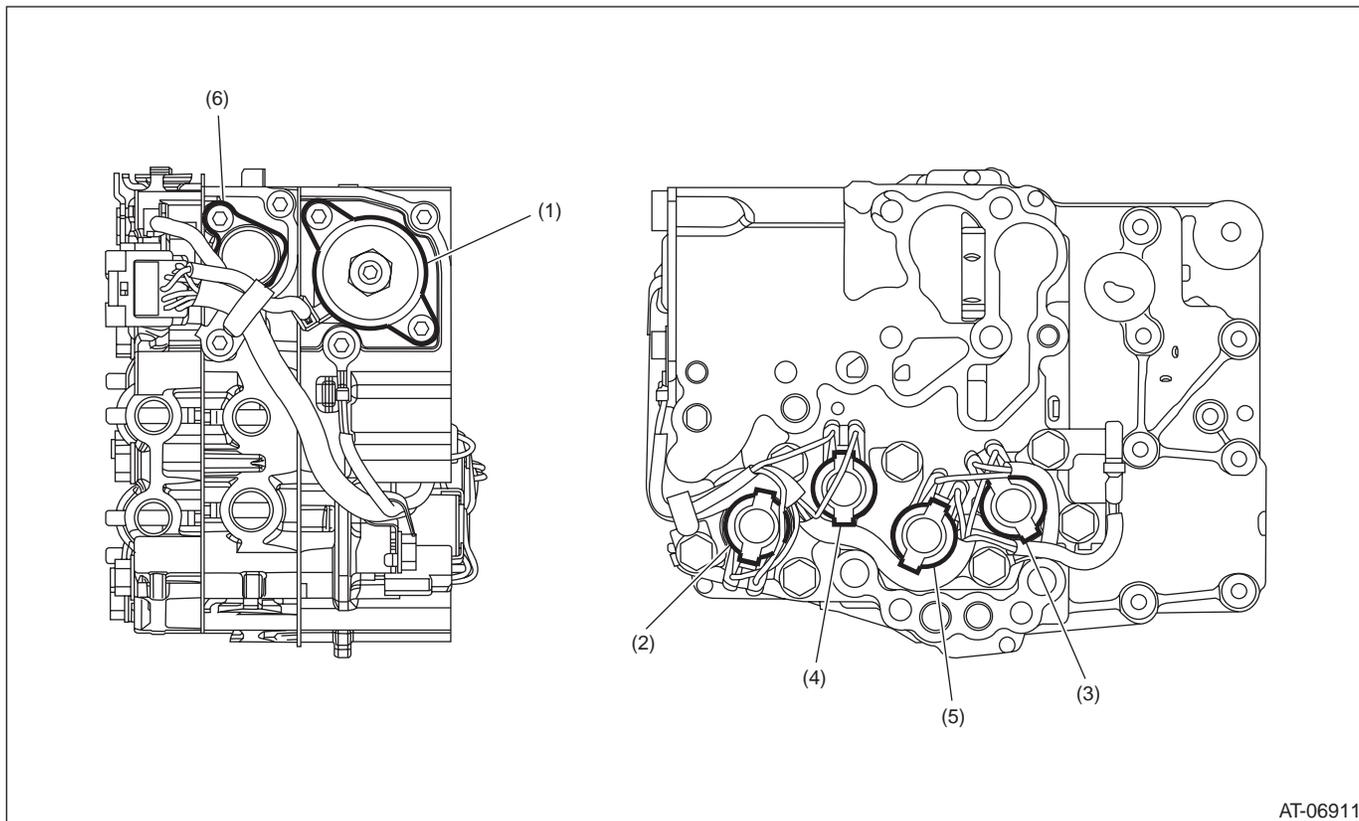
- |                              |                               |                      |
|------------------------------|-------------------------------|----------------------|
| (1) Secondary speed sensor   | (3) Primary speed sensor      | (5) Inhibitor switch |
| (2) Front wheel speed sensor | (4) Secondary pressure sensor |                      |

# Electrical Component Location

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

### 3. SOLENOID

- Non-turbo model



AT-06911

- (1) Secondary solenoid
- (2) AWD solenoid

- (3) Lock-up duty solenoid
- (4) Primary DOWN solenoid

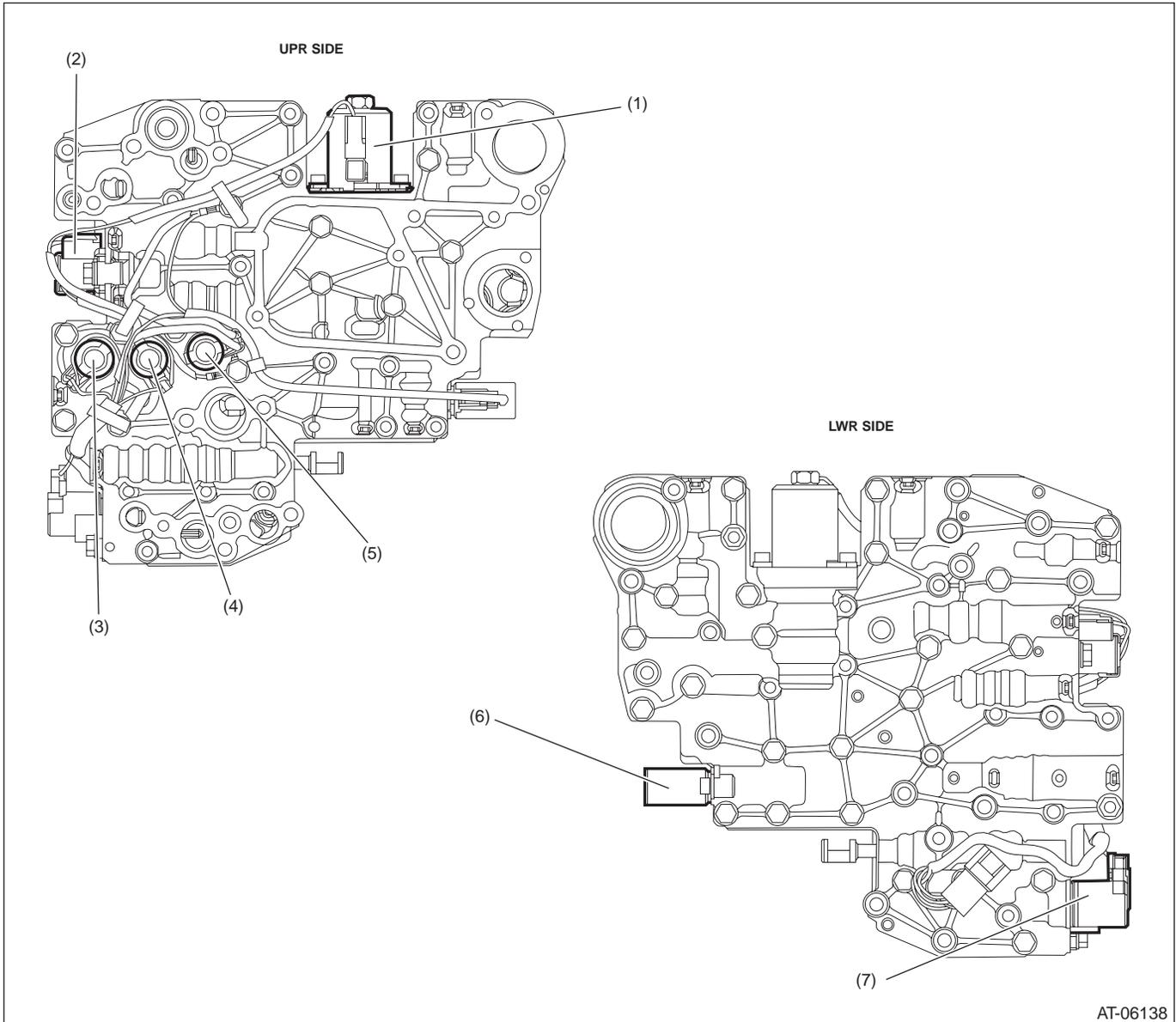
- (5) Primary UP solenoid
- (6) F&R solenoid

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# Electrical Component Location

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

- Turbo model



AT-06138

- (1) Secondary solenoid
- (2) AWD solenoid
- (3) Lock-up duty solenoid

- (4) Primary DOWN solenoid
- (5) Primary UP solenoid

- (6) F&R solenoid
- (7) Lock-up ON/OFF solenoid

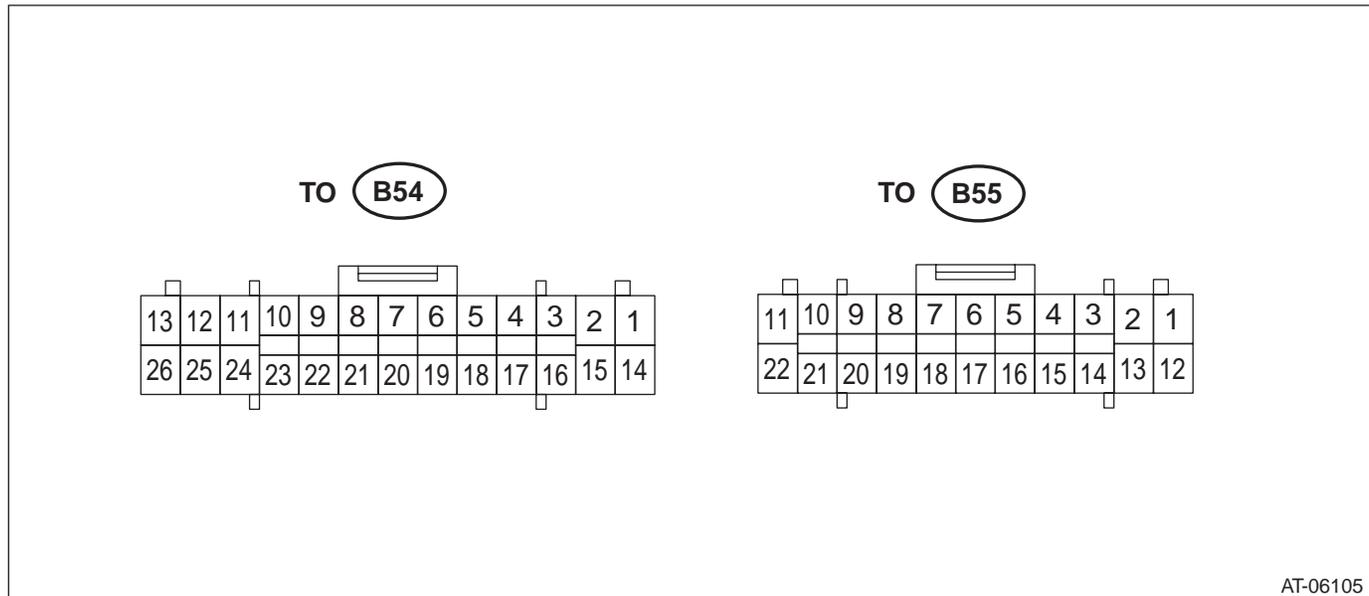
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# Transmission Control Module (TCM) I/O Signal

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 5. Transmission Control Module (TCM) I/O Signal

### A: ELECTRICAL SPECIFICATION



AT-06105

**NOTE:**

Measure after warming up.

- Non-turbo model

Item	Connector No.	Terminal No.	Measuring condition	Measurement value	Resistance between terminal and chassis ground	Remarks
Backup power supply	B55	1	—	10 — 13 V	—	
Ignition power supply	B55	21	—	10 — 13 V	—	
Main power supply	B55	11	—	10 — 13 V	—	
Main power supply	B55	2	—	10 — 13 V	—	
Main power supply	B55	22	—	10 — 13 V	—	
Manual mode switch	B55	4	Manual mode switch ON	Less than 1 V	—	
			Manual mode switch OFF	8 V or more	—	
Manual mode UP switch	B55	5	Manual mode UP switch ON	Less than 1 V	—	
			Manual mode UP switch OFF	8 V or more	—	
Manual mode DOWN switch	B55	16	Manual mode DOWN switch ON	Less than 1 V	—	
			Manual mode DOWN switch OFF	8 V or more	—	
Stop light switch	B55	13	Stop light switch ON	8 V or more	—	
			Stop light switch OFF	Less than 1 V	—	
P range switch	B54	5	P range	Less than 1 V	—	
			Except for P range	8 V or more	—	
R range switch	B54	18	R range	Less than 1 V	—	
			Except for R range	8 V or more	—	
N range switch	B54	9	N range	Less than 1 V	—	
			Except for N range	8 V or more	—	
D range switch	B54	22	D range	Less than 1 V	—	
			Except for D range	8 V or more	—	

# Transmission Control Module (TCM) I/O Signal

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Item	Connector No.	Terminal No.	Measuring condition	Measurement value	Resistance between terminal and chassis ground	Remarks
ATF temperature sensor	B54	3	ATF temperature at 20°C (68°F)	Approx. 2.5 V	Approx. 2.5 kΩ	
			ATF temperature at 80°C (176°F)	Approx. 0.7 V	Approx. 330 Ω	
ATF temperature sensor GND	B54	16	Always	Approx. 0 V	—	
Secondary pressure sensor power supply output	B54	2	Ignition switch ON	5 V	—	
Secondary pressure sensor	B54	17	Ignition switch ON, engine OFF	Approx. 0.5 V (0 MPa)	—	Value increases with increase of engine load. (0.5 — 4.5 V)
			Ignition switch ON, engine ON	Approx. 1.0 V (1.0 MPa)	—	
Secondary pressure sensor GND	B54	15	Always	Approx. 0 V	—	
Primary speed sensor	B54	6	While driving	0 or 5 V	—	Refer to the waveform (sensor)
Secondary speed sensor	B54	7	While driving	0 or 5 V	—	Refer to the waveform (sensor)
Turbine speed sensor	B54	20	Engine ON, "P" or "N" range	0 or 5 V	—	Refer to the waveform (sensor)
Self shut output	B55	20	For three seconds after ignition switch ON and OFF	Less than 1 V	—	
			Ignition switch OFF	8 V or more		
F&R solenoid	B54	11	Engine ON	Refer to the waveform (solenoid (1))	Approx. 4 — 6 Ω	Resistance value at 20°C (68°F). Value is higher as the temperature increase.
Secondary solenoid	B54	12	Engine ON	Refer to the waveform (solenoid (2))	Approx. 5 — 7 Ω	Resistance value at 20°C (68°F). Value is higher as the temperature increase.
Primary UP solenoid	B54	24	Engine ON, while UP shifting	Refer to the waveform (solenoid (3))	Approx. 10 — 13.5 Ω	Resistance value at 20°C (68°F). Value is higher as the temperature increase.
Primary DOWN solenoid	B54	25	Engine ON, while DOWN shifting	Refer to the waveform (solenoid (4))	Approx. 10 — 13.5 Ω	Resistance value at 20°C (68°F). Value is higher as the temperature increase.

## Transmission Control Module (TCM) I/O Signal

### CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Item	Connector No.	Terminal No.	Measuring condition	Measurement value	Resistance between terminal and chassis ground	Remarks
Lock-up duty solenoid	B54	26	Lock-up ON	Refer to the waveform (solenoid (5))	Approx. 10 — 13.5 $\Omega$	Resistance value at 20°C (68°F). Value is higher as the temperature increase.
AWD solenoid	B54	13	Engine ON, "P" or "N" range	Refer to the waveform (solenoid (6))	Approx. 2 — 4.5 $\Omega$	Resistance value at 20°C (68°F). Value is higher as the temperature increase.
			Engine ON, "D" range, brake ON	Refer to the waveform (solenoid (7))		
CAN communication line (+)	B55	18	—	—	—	
CAN communication line (-)	B55	17	—	—	—	
GND	B54	1	Always	Approx. 0 V	—	
GND	B54	14	Always	Approx. 0 V	—	

• Turbo model

Item	Connector No.	Terminal No.	Measuring condition	Measurement value	Resistance between terminal and chassis ground	Remarks
Backup power supply	B55	1	—	10 — 13 V	—	
Ignition power supply	B55	21	—	10 — 13 V	—	
Main power supply	B55	11	—	10 — 13 V	—	
Main power supply	B55	2	—	10 — 13 V	—	
Main power supply	B55	22	—	10 — 13 V	—	
Manual mode switch	B55	4	Manual mode switch ON	Less than 1 V	—	
			Manual mode switch OFF	8 V or more	—	
Manual mode UP switch	B55	5	Manual mode UP switch ON	Less than 1 V	—	
			Manual mode UP switch OFF	8 V or more	—	
Manual mode DOWN switch	B55	16	Manual mode DOWN switch ON	Less than 1 V	—	
			Manual mode DOWN switch OFF	8 V or more	—	
Stop light switch	B55	13	Stop light switch ON	8 V or more	—	
			Stop light switch OFF	Less than 1 V	—	
P range switch	B54	5	P range	Less than 1 V	—	
			Except for P range	8 V or more	—	
R range switch	B54	18	R range	Less than 1 V	—	
			Except for R range	8 V or more	—	
N range switch	B54	9	N range	Less than 1 V	—	
			Except for N range	8 V or more	—	
D range switch	B54	22	D range	Less than 1 V	—	
			Except for D range	8 V or more	—	

# Transmission Control Module (TCM) I/O Signal

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Item	Connector No.	Terminal No.	Measuring condition	Measurement value	Resistance between terminal and chassis ground	Remarks
ATF temperature sensor	B54	3	ATF temperature at 20°C (68°F)	Approx. 2.6 V	Approx. 2.6 kΩ	
			ATF temperature at 80°C (176°F)	Approx. 0.7 V	Approx. 370 Ω	
ATF temperature sensor GND	B54	16	Always	Approx. 0 V	—	
Secondary pressure sensor power supply output	B54	2	Ignition switch ON	5 V	—	
Secondary pressure sensor	B54	17	Ignition switch ON, engine OFF	Approx. 0.5 V (0 MPa)	—	Value increases with increase of engine load. (0.5 — 4.5 V)
			Ignition switch ON, engine ON	Approx. 1.0 V (1.0 MPa)	—	
Secondary pressure sensor GND	B54	15	Always	Approx. 0 V	—	
Primary speed sensor	B54	6	While driving	0 or 5 V	—	Refer to the waveform (sensor)
Secondary speed sensor	B54	7	While driving	0 or 5 V	—	Refer to the waveform (sensor)
Front wheel speed sensor	B54	20	While driving	0 or 5 V	—	Refer to the waveform (sensor)
Self shut output	B55	20	For three seconds after ignition switch ON and OFF	Less than 1 V	—	
			Ignition switch OFF	8 V or more		
F&R solenoid	B54	11	Engine ON	Refer to the waveform (solenoid (1))	Approx. 4 — 6 Ω	Resistance value at 20°C (68°F). Value is higher as the temperature increase.
Secondary solenoid	B54	12	Engine ON	Refer to the waveform (solenoid (2))	Approx. 5 — 7 Ω	Resistance value at 20°C (68°F). Value is higher as the temperature increase.
Primary UP solenoid	B54	24	Engine ON, while UP shifting	Refer to the waveform (solenoid (3))	Approx. 10 — 13.5 Ω	Resistance value at 20°C (68°F). Value is higher as the temperature increase.
Primary DOWN solenoid	B54	25	Engine ON, while DOWN shifting	Refer to the waveform (solenoid (4))	Approx. 10 — 13.5 Ω	Resistance value at 20°C (68°F). Value is higher as the temperature increase.

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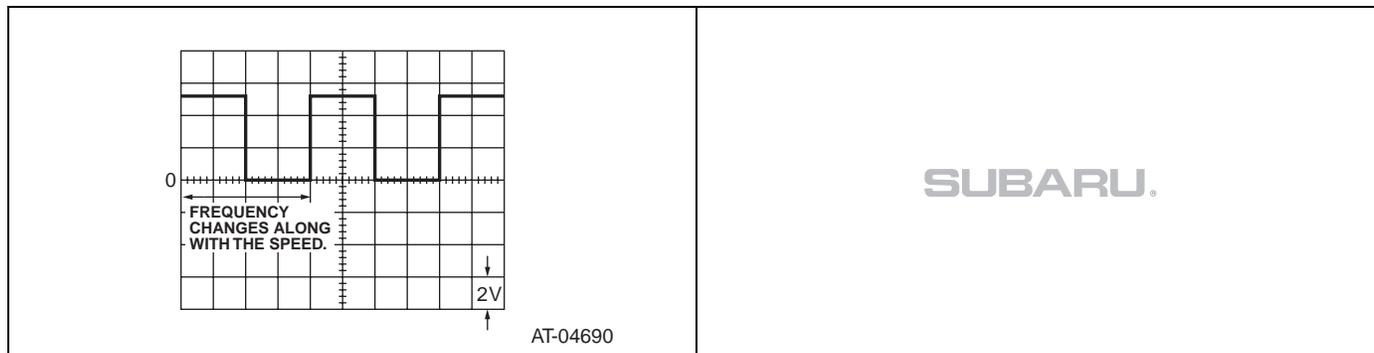
# Transmission Control Module (TCM) I/O Signal

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Item	Connector No.	Terminal No.	Measuring condition	Measurement value	Resistance between terminal and chassis ground	Remarks
Lock-up duty solenoid	B54	26	Lock-up ON	Refer to the waveform (solenoid (5))	Approx. 10 — 13.5 $\Omega$	Resistance value at 20°C (68°F). Value is higher as the temperature increase.
AWD solenoid	B54	13	Engine ON, "P" or "N" range	Refer to the waveform (solenoid (6))	Approx. 2 — 4.5 $\Omega$	Resistance value at 20°C (68°F). Value is higher as the temperature increase.
			Engine ON, "D" range, brake ON	Refer to the waveform (solenoid (7))		
Lock-up ON/OFF solenoid	B54	23	Lock-up OFF	Less than 1 V	Approx. 13 — 18.5 $\Omega$	Resistance value at 20°C (68°F). Value is higher as the temperature increase.
			With lock-up ON and R range	Battery voltage or higher		
CAN communication line (+)	B55	18	—	—	—	
CAN communication line (-)	B55	17	—	—	—	
GND	B54	1	Always	Approx. 0 V	—	
GND	B54	14	Always	Approx. 0 V	—	

## B: WAVEFORM

### 1. SENSOR



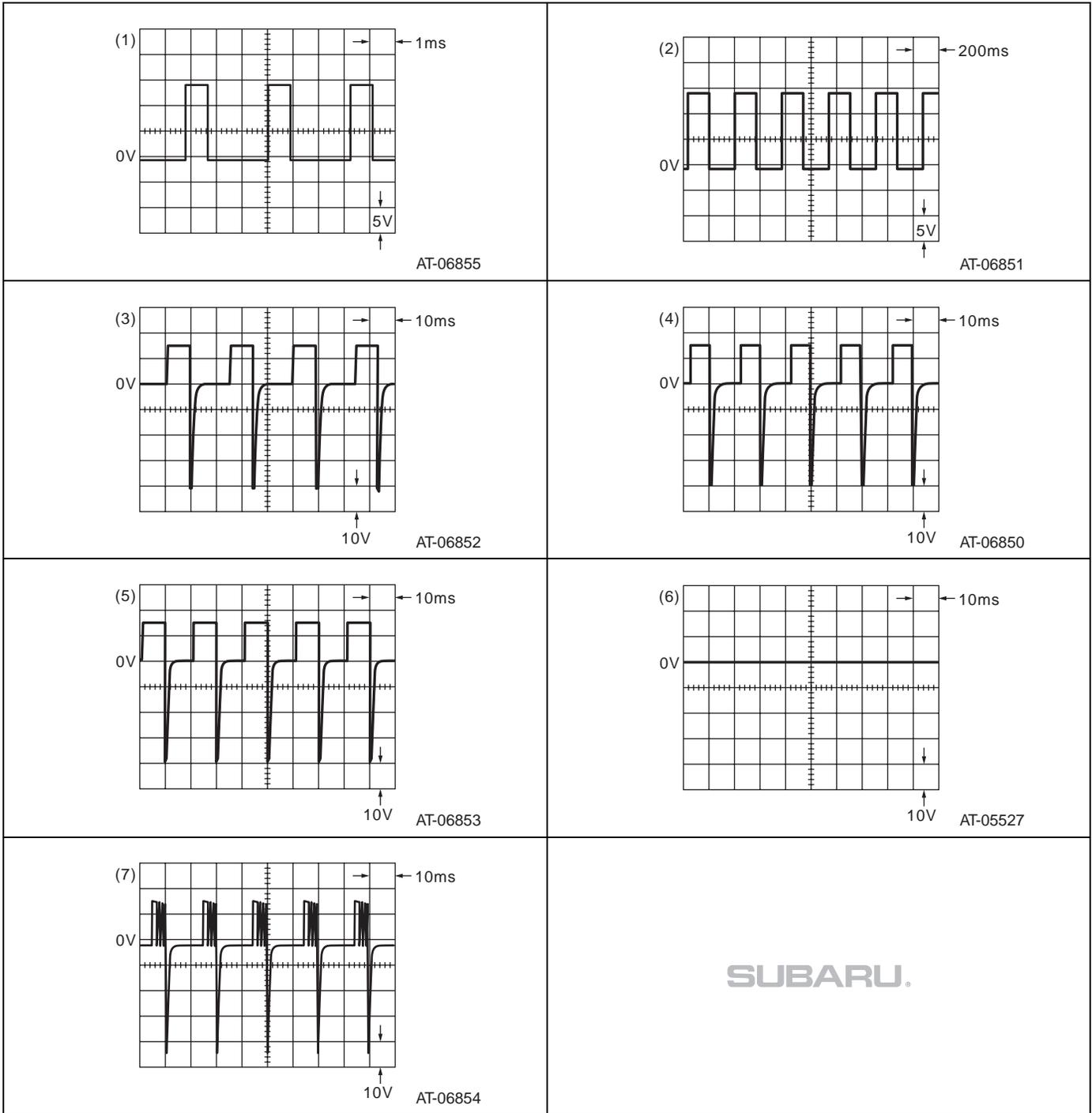
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# Transmission Control Module (TCM) I/O Signal

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 2. SOLENOID

- Non-turbo model

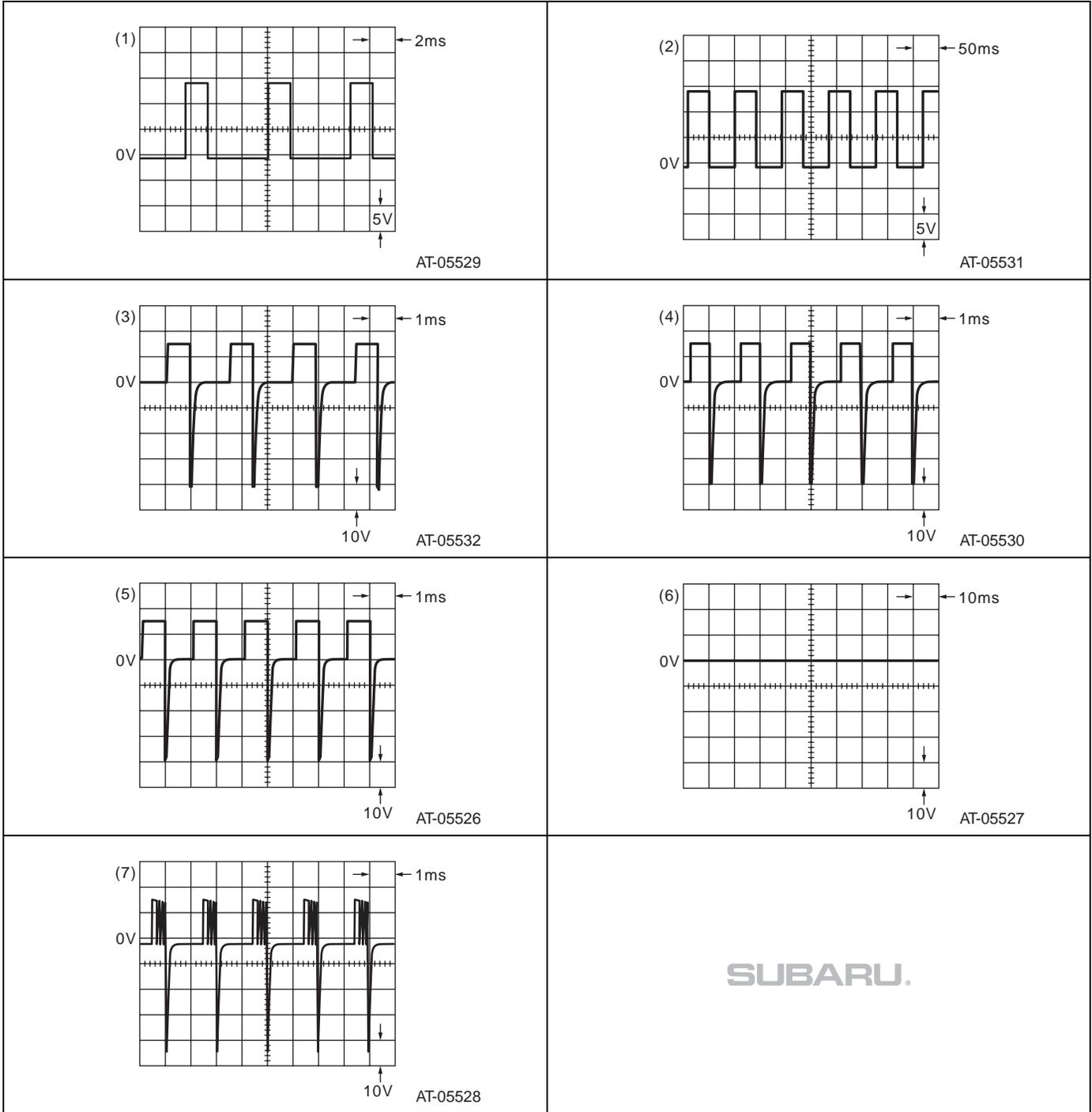


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# Transmission Control Module (TCM) I/O Signal

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

- Turbo model



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# Subaru Select Monitor

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 6. Subaru Select Monitor

### A: OPERATION

#### 1. HOW TO USE SUBARU SELECT MONITOR

For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

#### 2. READ CURRENT DATA

For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

- Non-turbo model

Item	Display	Unit of measure
Engine speed signal	Engine Speed	rpm
Turbine speed sensor signal	Turbine Speed	rpm
Accelerator position sensor	Accel opening angle	%
Vehicle speed converted from secondary speed sensor signal	Front Wheel Speed	km/h or MPH
ATF temperature sensor signal	ATF Temp.	°C or °F
Lock-up duty solenoid set duty ratio	Lock Up Duty Ratio	%
AWD solenoid set duty ratio	Transfer Duty Ratio	%
Gear ratio	Actual Gear Ratio	—
Primary speed sensor signal	Primary Rev Speed	rpm
Secondary speed sensor signal	Secondary Rev Speed	rpm
Stop light switch signal	Stop light SW	ON or OFF
Secondary fluid pressure sensor signal	Actual secondary pressure	MPa
Secondary solenoid indicator current	Secondary Set Current	mA
Secondary solenoid actual current	Secondary Actual Current	mA
F&R solenoid indicator current	F&R Linear Solenoid Set Current	mA
F&R solenoid actual current	F&R Linear Solenoid Actual Current	mA
Battery voltage	ECU ACC	V
Primary UP solenoid set duty ratio	Primary UP Duty	%
Primary DOWN solenoid set duty ratio	Primary DOWN Duty	%
Parking range signal	P Range	ON or OFF
Reverse range signal	R Range Signal	ON or OFF
Neutral range signal	N Range	ON or OFF
Drive range signal	D Range Signal	ON or OFF
L range signal	L-range	ON or OFF
X mode condition	X Mode	ON or OFF
Shift step in manual mode	Shift step in Manu. mode	—
Manual mode switch signal	Tiptronic Mode Switch	ON or OFF
Manual mode up switch signal	Up Switch	ON or OFF
Manual mode down switch signal	Down Switch	ON or OFF
Secondary fluid pressure A/D converted value	secondary pressure sensor voltage.	V
ATF temperature sensor voltage	ATF Temp sensor voltage.	V
AT OIL TEMP light 2 Hz blink condition	Diagnosis Lamp	ON or OFF
AT OIL TEMP light ON condition	ATF Temperature Lamp	ON or OFF
AT learning mode condition	AT learning	Completed or Not Completed

## Subaru Select Monitor

### CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

- Turbo model

Item	Display	Unit of measure
Engine speed signal	Engine Speed	rpm
Turbine speed signal converted from primary speed sensor signal	Turbine Speed	rpm
Accelerator position sensor	Accel opening angle	%
Vehicle speed converted from front wheel speed sensor signal	Front Wheel Speed	km/h or MPH
ATF temperature sensor signal	ATF Temp.	°C or °F
Lock-up duty solenoid set duty ratio	Lock Up Duty Ratio	%
Lock-up ON/OFF solenoid set	Lock-Up ON/OFF Solenoid	ON or OFF
AWD solenoid set duty ratio	Transfer Duty Ratio	%
Gear ratio	Actual Gear Ratio	—
Primary speed sensor signal	Primary Rev Speed	rpm
Secondary speed sensor signal	Secondary Rev Speed	rpm
Front wheel speed sensor signal	Front Wheel Speed	rpm
Stop light switch signal	Stop light SW	ON or OFF
Secondary fluid pressure sensor signal	Actual Secondary Pressure	MPa
Secondary solenoid indicator current	Secondary Set Current	mA
Secondary solenoid actual current	Secondary Actual Current	mA
F&R solenoid indicator current	F&R Linear Solenoid Set Current	mA
F&R solenoid actual current	F&R Linear Solenoid Actual Current	mA
Battery voltage	ECU ACC	V
Primary UP solenoid set duty ratio	Primary UP Duty	%
Primary DOWN solenoid set duty ratio	Primary DOWN Duty	%
Parking range signal	P Range	ON or OFF
Reverse range signal	R Range Signal	ON or OFF
Neutral range signal	N Range	ON or OFF
Drive range signal	D Range Signal	ON or OFF
SI drive mode (control data)	SI Drive mode(Control)	I, S or S#
X mode condition	X Mode	ON or OFF
Shift step in manual mode	Shift step in Manu. mode	—
Manual mode switch signal	Tiptronic Mode Switch	ON or OFF
Manual mode up switch signal	Up Switch	ON or OFF
Manual mode down switch signal	Down Switch	ON or OFF
AT OIL TEMP light 2 Hz blink condition	Diagnosis Lamp	ON or OFF
AT OIL TEMP light ON condition	ATF Temperature Lamp	ON or OFF
AT learning mode condition	AT learning	Completed or Not Completed
AT ignition power supply relay	AT Power Relay	ON or OFF

# Subaru Select Monitor

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 3. READ FREEZE FRAME DATA

For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

- Non-turbo model

Item	Display	Unit of measure
Relative time since detection	Relative time since detection	ms
Engine speed signal	Engine Speed	rpm
Turbine speed sensor signal	Turbine Speed	rpm
Accelerator position sensor	Accel opening angle	%
Vehicle speed converted from secondary speed sensor signal	Front Wheel Speed	km/h or MPH
ATF temperature sensor signal	ATF Temp.	°C or °F
Lock-up duty solenoid set duty ratio	Lock Up Duty Ratio	%
AWD solenoid set duty ratio	Transfer Duty Ratio	%
Gear ratio	Actual Gear Ratio	—
Primary speed sensor signal	Primary Rev Speed	rpm
Secondary speed sensor signal	Secondary Rev Speed	rpm
Stop light switch signal	Stop light SW	ON or OFF
Secondary fluid pressure sensor signal	Actual Secondary Pressure	MPa
Secondary solenoid indicator current	Secondary Set Current	mA
Secondary solenoid actual current	Secondary Actual Current	mA
F&R solenoid indicator current	F&R Linear Solenoid Set Current	mA
F&R solenoid actual current	F&R Linear Solenoid Actual Current	mA
Battery voltage	ECU ACC	V
Primary UP solenoid set duty ratio	Primary UP Duty	%
Primary DOWN solenoid set duty ratio	Primary DOWN Duty	%
Parking range signal	P Range	ON or OFF
Reverse range signal	R Range Signal	ON or OFF
Neutral range signal	N Range	ON or OFF
Drive range signal	D Range Signal	ON or OFF
L range signal	L-range	ON or OFF
X mode condition	X Mode	ON or OFF
Shift step in manual mode	Shift step in Manu. mode	—
Manual mode switch signal	Tiptronic Mode Switch	ON or OFF
Manual mode up switch signal	Up Switch	ON or OFF
Manual mode down switch signal	Down Switch	ON or OFF
Secondary fluid pressure A/D converted value	secondary pressure sensor voltage.	V
ATF temperature sensor voltage	ATF Temp sensor voltage.	V
AT OIL TEMP light 2 Hz blink condition	Diagnosis Lamp	ON or OFF
AT OIL TEMP light ON condition	ATF Temperature Lamp	ON or OFF

## Subaru Select Monitor

### CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

- Turbo model

Item	Display	Unit of measure
Relative time since detection	Relative time since detection	ms
Engine speed signal	Engine Speed	rpm
Turbine speed signal converted from primary speed sensor signal	Turbine Speed	rpm
Accelerator position sensor	Accel opening angle	%
Vehicle speed converted from front wheel speed sensor signal	Front Wheel Speed	km/h or MPH
ATF temperature sensor signal	ATF Temp.	°C or °F
Lock-up duty solenoid set duty ratio	Lock Up Duty Ratio	%
Lock-up ON/OFF solenoid set	Lock-Up ON/OFF Solenoid	ON or OFF
AWD solenoid set duty ratio	Transfer Duty Ratio	%
Gear ratio	Actual Gear Ratio	—
Primary speed sensor signal	Primary Rev Speed	rpm
Secondary speed sensor signal	Secondary Rev Speed	rpm
Front wheel speed sensor signal	Front Wheel Speed	rpm
Stop light switch signal	Stop light SW	ON or OFF
Secondary fluid pressure sensor signal	Actual Secondary Pressure	MPa
Secondary solenoid indicator current	Secondary Set Current	mA
Secondary solenoid actual current	Secondary Actual Current	mA
F&R solenoid indicator current	F&R Linear Solenoid Set Current	mA
F&R solenoid actual current	F&R Linear Solenoid Actual Current	mA
Battery voltage	ECU ACC	V
Primary UP solenoid set duty ratio	Primary UP Duty	%
Primary DOWN solenoid set duty ratio	Primary DOWN Duty	%
Parking range signal	P Range	ON or OFF
Reverse range signal	R Range Signal	ON or OFF
Neutral range signal	N Range	ON or OFF
Drive range signal	D Range Signal	ON or OFF
SI drive mode (control data)	SI Drive mode(Control)	I, S or S#
X mode condition	X Mode	ON or OFF
Shift step in manual mode	Shift step in Manu. mode	—
Manual mode switch signal	Tiptronic Mode Switch	ON or OFF
Manual mode up switch signal	Up Switch	ON or OFF
Manual mode down switch signal	Down Switch	ON or OFF
AT OIL TEMP light 2 Hz blink condition	Diagnosis Lamp	ON or OFF
AT OIL TEMP light ON condition	ATF Temperature Lamp	ON or OFF
AT learning mode condition	AT learning	Completed or Not Completed

## Read Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

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### 7. Read Diagnostic Trouble Code (DTC)

#### A: OPERATION

- For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.
- For details concerning DTC, refer to “List of Diagnostic Trouble Code (DTC)”. <Ref. to CVT(diag)-40, List of Diagnostic Trouble Code (DTC).>

## Clear Memory Mode

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

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### 8. Clear Memory Mode

#### A: OPERATION

For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

#### CAUTION:

- If the AT learning value is cleared, learned control memory is cleared.
- If the AT learning value is cleared, perform learning. <Ref. to CVT(diag)-30, Learning Control.>

## 9. Inspection Mode

### A: PROCEDURE

<Ref. to CVT(TR580)-45, Road Test.> <Ref. to  
CVT(TR690)-47, Road Test.>

# Drive Cycle

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

### 10. Drive Cycle

#### A: PROCEDURE

It is possible to complete diagnosis of the DTC by performing the indicated drive cycle. After the repair for the DTC, perform a necessary drive cycle and make sure the function recovers and the DTC is recorded.

#### 1. PREPARATION FOR DRIVE CYCLE

- 1) Check that the battery voltage is 12 V or more and fuel remains approx. half [20 — 40 L (5.3 — 10.6 US gal, 4.4 — 8.8 Imp gal)].
- 2) After performing the diagnostics and Clear Memory Mode, check that no DTC remains.<Ref. to CVT(diag)-24, Clear Memory Mode.>

#### NOTE:

Perform the drive cycle after warming up the engine except when the ATF temperature at engine start is specified.

#### 2. DRIVE CYCLE A

DTC	Item	Condition
P0601	Internal Control Module Memory Checksum Error	Perform the drive cycle A twice.
P0604	Internal Control Module Random Access Memory (RAM) Error	Perform the drive cycle A twice.
P062F	Internal Control Module EEPROM Error	Perform the drive cycle A twice.
P0712	Transmission Fluid Temperature Sensor Circuit Low Input	—
P0842	Secondary Oil Pressure Sensor Circuit (Low)	—
P0843	Secondary Oil Pressure Sensor Circuit (High)	—
P0890	AT Self-Shut Relay Diagnosis (Low)	—
P0962	Secondary Solenoid Circuit (Low)	—
P0963	Secondary Solenoid Circuit (High)	—
P0966	Forward & Reverse Solenoid Circuit (Low)	—
P0967	Forward & Reverse Linear Solenoid Circuit (High)	—
P160A	Random Access Memory (RAM) Error	Perform the drive cycle A twice.
P2530	Ignition Switch Run Position Circuit	—
P2763	Lock-Up Duty Solenoid Circuit (High)	Perform the drive cycle A, then perform the drive cycle C.

#### Diagnostic procedure:

- 1) Start the engine.
- 2) Depress the brake pedal and move the select lever to each range at an interval of five seconds.

#### NOTE:

Move the select lever in the following order: “P” → “R” → “N” → “D” → “N” → “R” → “P”.

#### 3. DRIVE CYCLE B

DTC	Item	Condition
P0711	ATF Temp. Sensor Circuit Range/Performance	—

#### Diagnostic procedure:

- 1) Start the engine under condition that ATF temperature is at 20°C (68°F) or below.
- 2) Drive in any driving pattern for 20 minutes. (Include driving at a constant legal speed (for 20 seconds) at least once.)

#### NOTE:

Repeat two or more driving cycles in this driving pattern.

# Drive Cycle

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

### 4. DRIVE CYCLE C

DTC	Item	Condition
P0500	Vehicle Speed Sensor "A"	—
P0716	Torque Converter Turbine Speed	—
P0717	Input/Turbine Speed Sensor "A" Circuit No Signal	—
P0720	Output Speed Sensor Circuit	—
P0721	Output Shaft Speed Sensor Circuit Range/Performance	—
P0970	Transfer Solenoid Circuit (Low)	—
P0971	Transfer Solenoid Circuit (High)	—
P0973	Primary Solenoid System A Circuit (Low)	—
P0974	Primary Solenoid System A Circuit (High)	—
P0976	Primary Solenoid System B Circuit (Low)	—
P0977	Primary Solenoid System B Circuit (High)	—
P2158	Vehicle Speed Sensor "B"	—
P2746	Primary Pulley Revolution Speed Sensor Circuit	—
P2747	Intermediate Shaft Speed Sensor "B" Circuit No Signal	—
P2750	Sec. Pulley Revolution Speed Sensor Circuit	—
P2751	Intermediate Shaft Speed Sensor "C" Circuit No Signal	—
P2763	Lock-Up Duty Solenoid Circuit (High)	Perform the drive cycle A, then perform the drive cycle C.
P2764	Lock-Up Duty Solenoid Circuit (Low)	—
P2769	Lock-Up On/Off Solenoid Circuit (Low)	—
P2770	Lock-Up On/Off Solenoid Circuit (High)	—

#### Diagnostic procedure:

- 1) Start the engine.
- 2) Accelerate slowly to a legal speed, and then decelerate slowly to a stop.

### 5. DRIVE CYCLE D

DTC	Item	Condition
P0713	Transmission Fluid Temperature Sensor Circuit High Input	—
P0730	Gearshift Control Performance Abnormal	—
P0746	Pressure Control Solenoid "A" Performance/Stuck Off	Perform the drive cycle D twice.
P0747	Pressure Control Solenoid "A" Stuck On	Perform the drive cycle D twice.
P0751	Shift Solenoid "A" Performance/Stuck Off	Perform the drive cycle D twice.
P0752	Shift Solenoid "A" Stuck On	Perform the drive cycle D twice.
P0756	Shift Solenoid "B" Performance/Stuck Off	Perform the drive cycle D twice.
P0757	Shift Solenoid "B" Stuck On	Perform the drive cycle D twice.
P0776	Pressure Control Solenoid "B" Performance/Stuck Off	Perform the drive cycle D twice.
P0841	Secondary Oil Pressure Sensor Performance	—
P0961	Pressure Control Solenoid "A" Control Circuit Range/Performance	—
P0965	Forward & Reverse Solenoid Function	—
P2757	Torque Converter Clutch Pressure Control Solenoid Control Circuit Performance/Stuck Off	Perform the drive cycle D twice.
P2758	Torque Converter Clutch Pressure Control Solenoid Control Circuit Stuck On	Perform the drive cycle D twice.

#### Diagnostic procedure:

- 1) Start the engine.
- 2) Drive in any driving pattern for 20 minutes. (Include driving at a constant legal speed (for 20 seconds) at least once.)

## Drive Cycle

### CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

#### 6. DRIVE CYCLE E

DTC	Item	Condition
P0801	Reverse Inhibit Control Circuit	—
U0073	Control Module Communication Bus Off	—
U0100	Lost Communication With ECM/PCM "A"	—
U0122	Lost Communication With Vehicle Dynamics Control Module	—
U0140	Lost Communication With Body Control Module	—
U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	—
U0164	Lost Communication With HVAC Control Module	—
U0401	Invalid Data Received From ECM/PCM "A"	—
U0416	Invalid Data Received From Vehicle Dynamics Control Module	—
U0422	Invalid Data Received From Body Control Module	—
U0423	Invalid Data Received From Instrument Panel Cluster Control Module	—
U0424	Invalid Data Received From HVAC Control Module	—

#### Diagnostic procedure:

- 1) Start the engine.

#### 7. DRIVE CYCLE F

DTC	Item	Condition
P0705	Transmission Range Sensor Circuit (PRNDL Input)	—

#### Diagnostic procedure:

- 1) Start the engine.
- 2) Depress the brake pedal and move the select lever to each range at an interval of five seconds.

#### NOTE:

Move the select lever in the following order: "P" → "R" → "N" → "D".

- 3) Maintain the engine speed to 2,000 rpm for five seconds or more.

#### 8. DRIVE CYCLE G

DTC	Item	Condition
P0708	AT Range Switch Not Inputted	—

#### Diagnostic procedure:

- 1) Start the engine.
- 2) Drive for three seconds at 16 km/h (10 MPH).

#### NOTE:

Drive in "D" range and "R" range.

## Drive Cycle

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

### 9. DRIVE CYCLE H

DTC	Item	Condition
P0719	Brake Switch Circuit Low	—
P0724	Brake Switch Circuit High	—
P0951	Manual Switch	—
P170A	L-Range SW System	—

#### Diagnostic procedure:

- 1) Start the engine.
- 2) Operate the stop light switch or the manual mode switch.

#### NOTE:

Drive in “D” range and “R” range.

- 3) Read the data of the stop light switch or the manual mode switch using the Subaru Select Monitor. Or measure the terminal voltage.

# Learning Control

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

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## 11. Learning Control

### A: GENERAL DESCRIPTION

- Follow the messages displayed on the Subaru Select Monitor when working.
- When the following work is performed, perform learning work for the transmission.

Replacement of TCM/Replacement or disassembly of transmission assembly/Replacement of control valve body/Clearing AT leaning value is executed.

### B: PROCEDURE

#### 1. PREPARATION FOR LEARNING

- 1) Warm up or cool down until the ATF temperature displayed on the Subaru Select Monitor is 40 — 65°C (104 — 149°F).
- 2) After stopping the vehicle, shift the select lever to “P” range.
- 3) Fully apply the parking brake.
- 4) Lift up the vehicle.

#### CAUTION:

**While working, be sure to keep the lower edge of the tires 30 cm or more above the ground as vehicle will vibrate.**

- 5) Connect the Subaru Select Monitor to data link connector.
- 6) Turn the ignition switch to ON.
- 7) Turn off all switches causing an electrical load, such as headlights, A/C, seat heater and rear defogger, etc.
- 8) Set SI-DRIVE to I mode. (Vehicles with SI drive)

#### 2. SIMPLE LEARNING

#### NOTE:

Simple learning is performed with the vehicle lifted, without actually running the vehicle.

#### CAUTION:

**Do not turn the power of the Subaru Select Monitor OFF during work, and do not disconnect the data link connector.**

- 1) Select {Work Support} in the «Transmission Diagnosis» display screen of the Subaru Select Monitor.
- 2) Select {Compulsory learning mode} in the «Work Support» display screen of the Subaru Select Monitor.
- 3) Follow the messages displayed on the Subaru Select Monitor screen when working.

#### NOTE:

During AT learning in progress, AT OIL TEMP light in the combination meter starts flashing at 2 Hz and the learning operation starts. The following message is displayed on the screen when the AT OIL TEMP light which was flashing at 2 Hz turns off.

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# Learning Control

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

4) When «AT learning normally ended.» is displayed, simple AT learning is completed.

### NOTE:

- If communication error occurs during learning, retry the “AT learning mode” from the beginning.
- If the message «Execute AT learning again after fixing troubles of the vehicle» appears during learning, select [OK] and display the DTC list. After repairing the locations indicated by the DTC, start the “AT learning mode” over from the beginning.
- When communication error occurs during learning, select lever does not shift occasionally. If select lever does not shift, turn the ignition switch to OFF before operating the select lever.
- If the message «AT learning ended abnormally.» is displayed, start the “AT learning mode” over from the beginning.

Message	Main causes for abnormal termination
«AT learning ended abnormally.»	<ul style="list-style-type: none"><li>• Fault is detected during AT learning.</li><li>• The accelerator pedal is depressed during AT learning.</li><li>• An unspecified operation was performed during AT learning</li><li>• ATF temperature becomes out of specification during AT learning.</li><li>• Battery voltage is low.</li><li>• Malfunction indicator light illuminates.</li><li>• Parking brake not applied strongly enough.</li><li>• Brake pedal is not fully depressed.</li><li>• Abnormal idle speed increase, etc.</li></ul>

- For detailed operation procedures, refer to “PC application help for Subaru Select Monitor”.

# AT OIL TEMP Warning Light Display

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 12. AT OIL TEMP Warning Light Display

### A: OPERATION

The AT OIL TEMP light illuminates or blinks, when the ATF temperature is high and malfunction occurs in CVT.

- When normal

AT OIL TEMP light always illuminates when the ignition switch is ON (engine OFF). Light goes off after two seconds from engine ON.

- When ATF temperature is high

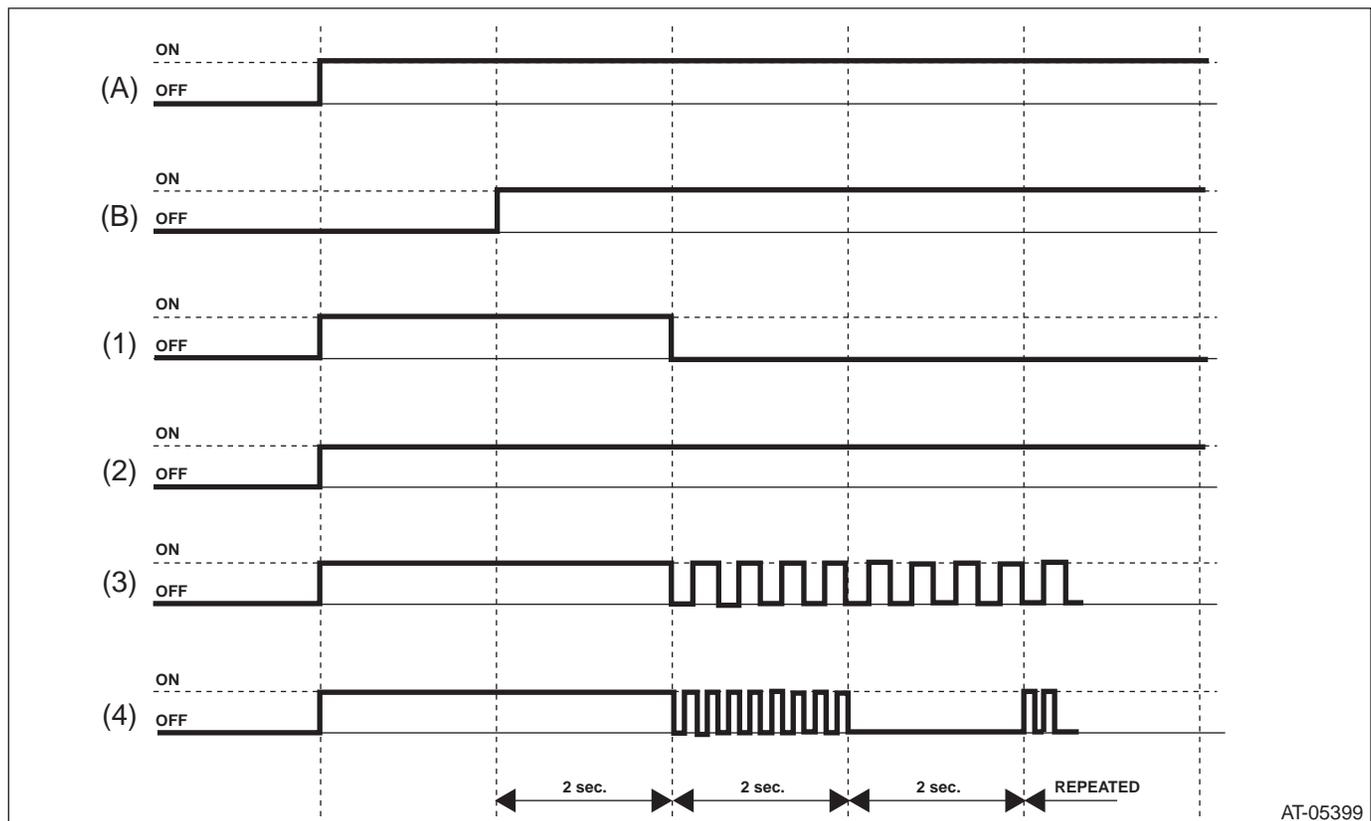
AT OIL TEMP light illuminates when the ATF temperature is abnormally high with engine ON.

- When malfunction is detected

AT OIL TEMP light blinks at 2 Hz when the TCM detects the malfunction of CVT with engine ON. In this case, inspect using "Diagnostic Procedure with Diagnostic Trouble Code (DTC)". <Ref. to CVT(diag)-44, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

- When AT learning is not finished

AT OIL TEMP light repeats "Blinking at 4 Hz → Turning OFF" every two seconds, when the AT learning is not finished with engine ON. In this case, perform the "Learning". (During AT learning, the light blinks at 2 Hz or illuminates.) <Ref. to CVT(diag)-30, Learning Control.>



(A) Ignition switch condition

(B) Engine condition

(1) When normal

(3) When malfunction is detected

(4) When AT learning is not finished

(2) When ATF temperature is high

If the AT OIL TEMP light does not illuminate, or illumination patterns are not as above, check the AT OIL TEMP light circuit. <Ref. to CVT(diag)-33, INSPECTION, AT OIL TEMP Warning Light Display.>

# AT OIL TEMP Warning Light Display

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## B: INSPECTION

### DIAGNOSIS:

- CAN communication is lost with the combination meter.
- Combination meter malfunction
- TCM is in special control mode.
- AT learning is not finished.

### TROUBLE SYMPTOM:

- When the ignition switch is turned to ON, the AT OIL TEMP light does not illuminate.
- AT OIL TEMP light remains lit after engine start.

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC relating the TCM using the Subaru Select Monitor.	Is DTC U0155 or U0423 displayed?	Perform the self-diagnosis of combination meter.	Go to step 2.
2	<b>CHECK DTC.</b> Read the DTC relating the TCM using the Subaru Select Monitor.	Are DTCs other than U0155 and U0423 displayed?	Perform the diagnosis according to DTC.	Go to step 3.
3	<b>CHECK COMBINATION METER.</b> Read DTC of combination meter.	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step 4.
4	<b>CHECK AT OIL TEMP LIGHT.</b> Turn the ignition switch to ON.	Does the AT OIL TEMP light illuminate?	Go to step 5.	Perform the self-diagnosis of combination meter.<Ref. to IDI-8, SELF-DIAGNOSIS DISPLAY MODE, OPERATION, Combination Meter System.>
5	<b>CHECK AT OIL TEMP LIGHT.</b> Start the engine.	Does AT OIL TEMP light go off after two seconds from engine start?	Current condition is normal. Go back to Basic Diagnostic Procedure.<Ref. to CVT(diag)-2, Basic Diagnostic Procedure.>	Go to step 6.
6	<b>CHECK DTC.</b> Read the DTC relating the TCM using the Subaru Select Monitor.	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step 7.
7	<b>CHECK TCM.</b> Read the data of «ATF Temperature Lamp» using the Subaru Select Monitor.	Is «ON» displayed?	Go to step 8.	Perform the self-diagnosis of combination meter.<Ref. to IDI-8, SELF-DIAGNOSIS DISPLAY MODE, OPERATION, Combination Meter System.>
8	<b>CHECK TCM.</b> Read the data of «ATF Temp.» using the Subaru Select Monitor.	Is the display 125°C or more?	Go to step 9.	Check the TCM.

# AT OIL TEMP Warning Light Display

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>9</b> <b>CHECK ATF TEMPERATURE.</b> Check the real fluid temperature from the transmission case surface temperature.	Does it clearly differ from the «ATF Temp.» displayed on Subaru Select Monitor?	Perform the diagnosis according to DTC P0712 procedure. If there is no problems, perform the diagnosis according to DTC P0713 procedure.	When ATF temperature can be judged as actually high, perform the diagnosis again after the ATF temperature lowers.

# AWD Warning Light Display

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 13.AWD Warning Light Display

### A: OPERATION

AWD light illuminates or blinks, when the AWD is in special control condition and AWD has malfunction.

- When normal

AWD light always illuminates when the ignition switch is ON (engine OFF). Light goes off after two seconds from engine ON.

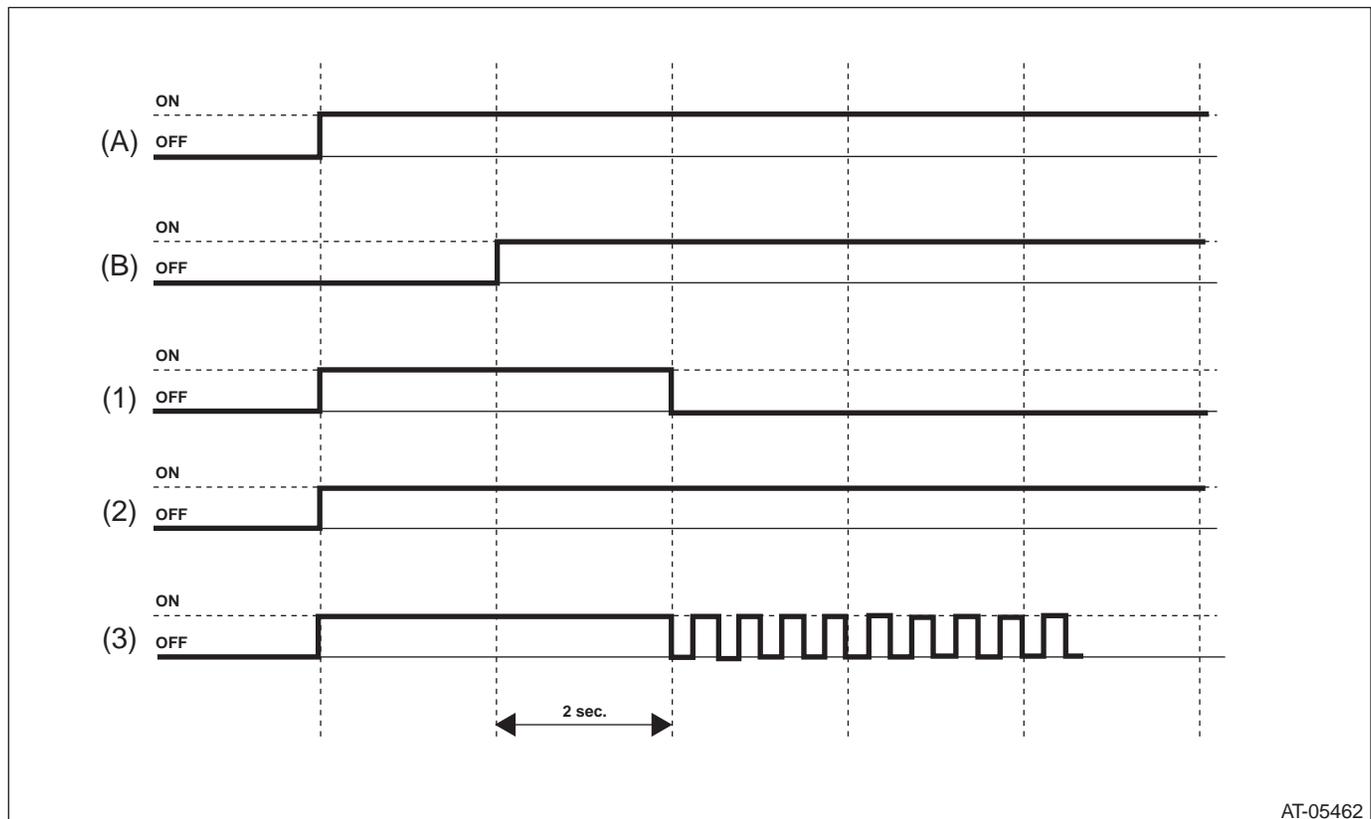
- When FF mode is selected

AWD light illuminates, when the AWD ON/OFF switching function is "FF mode" with engine ON.

- When malfunction is detected

AWD light blinks at 2 Hz when any of following malfunctions are detected with engine ON.

1. When tire with different diameter is installed, or air pressure of any of four wheels is excessively low
2. When "Rear differential inspection mode" is judged as NG <Ref. to DI-64, Rear Differential Inspection Mode.>



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(A) Ignition switch condition

(B) Engine condition

(1) When normal

(2) When FF mode is selected

(3) When malfunction is detected

If the AWD light does not illuminate, or illumination patterns are not as above, check the AWD light circuit.  
<Ref. to CVT(diag)-35, INSPECTION, AWD Warning Light Display.>

### B: INSPECTION

#### DIAGNOSIS:

- CAN communication is lost with the combination meter.
- Combination meter malfunction
- TCM is in AWD special control mode.

#### TROUBLE SYMPTOM:

- When the ignition switch is turned to ON, the AWD light does not illuminate.
- AWD light remains lit after engine start.

## AWD Warning Light Display

### CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

- AWD light is blinking immediately after engine start.

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC relating the TCM using the Subaru Select Monitor.	Is DTC U0155 or U0423 displayed?	Perform the self-diagnosis of combination meter.	Go to step 2.
2	<b>CHECK DTC.</b> Read the DTC relating the TCM using the Subaru Select Monitor.	Are DTCs other than U0155 and U0423 displayed?	Perform the diagnosis according to DTC.	Go to step 3.
3	<b>CHECK COMBINATION METER.</b> Read DTC of combination meter.	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step 4.
4	<b>CHECK AWD LIGHT.</b> Turn the ignition switch to ON.	Does the AWD light illuminate?	Go to step 5.	Perform the self-diagnosis of combination meter.<Ref. to IDI-8, SELF-DIAGNOSIS DISPLAY MODE, OPERATION, Combination Meter System.>
5	<b>CHECK AWD LIGHT.</b> Start the engine.	Does AWD light go off after two seconds from engine start?	Current condition is normal. Go back to Basic Diagnostic Procedure.<Ref. to CVT(diag)-2, Basic Diagnostic Procedure.>	Go to step 6.
6	<b>CHECK DTC.</b> Read the DTC relating the TCM using the Subaru Select Monitor.	Is DTC displayed?	Perform the diagnosis according to DTC.	Go to step 7.
7	<b>CHECK AWD LIGHT.</b> Check the display of AWD light after engine start.	Is AWD light illuminating?	Go to step 9.	Go to step 8.
8	<b>CHECK AWD LIGHT.</b> Check the display of AWD light after engine start.	Is AWD light blinking at 2 Hz?	Go to step 10.	Go to step 11.
9	<b>CHECK AWD ON/OFF SWITCHING FUNCTION.</b> Using the Subaru Select Monitor, select the {AWD ON/OFF switching mode} in {Maintenance mode} from «Work Support», and check the current mode.<Ref. to CVT(TR580)-44, AWD ON/OFF Switching Mode.> <Ref. to CVT(TR690)-46, AWD ON/OFF Switching Mode.>	Is the message «At present, the vehicle is in AWD. Switch to FF?» displayed?	Go to step 11.	If the message «At present, the vehicle is in FF. Switch to AWD?» is displayed, select “OK”, and switch to AWD mode.
10	<b>CHECK REAR DIFFERENTIAL.</b> Using the Subaru Select Monitor, select {Rear differential inspection mode} in {Maintenance mode} from «Work Support», and check.<Ref. to DI-64, Rear Differential Inspection Mode.>	Does AWD light go off after inspection is finished normally?	Current condition is normal. Go back to Basic Diagnostic Procedure.<Ref. to CVT(diag)-2, Basic Diagnostic Procedure.>	Go to step 11.
11	<b>CHECK COMBINATION METER.</b> Perform the self-diagnosis of combination meter.<Ref. to IDI-8, SELF-DIAGNOSIS DISPLAY MODE, OPERATION, Combination Meter System.>	Is there any trouble with the combination meter?	Repair the combination meter.	Check the TCM.

# Diagnostic Procedure for Subaru Select Monitor Communication

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 14. Diagnostic Procedure for Subaru Select Monitor Communication

### A: COMMUNICATION FOR INITIALIZING IMPOSSIBLE

#### DIAGNOSIS:

Defective harness connector

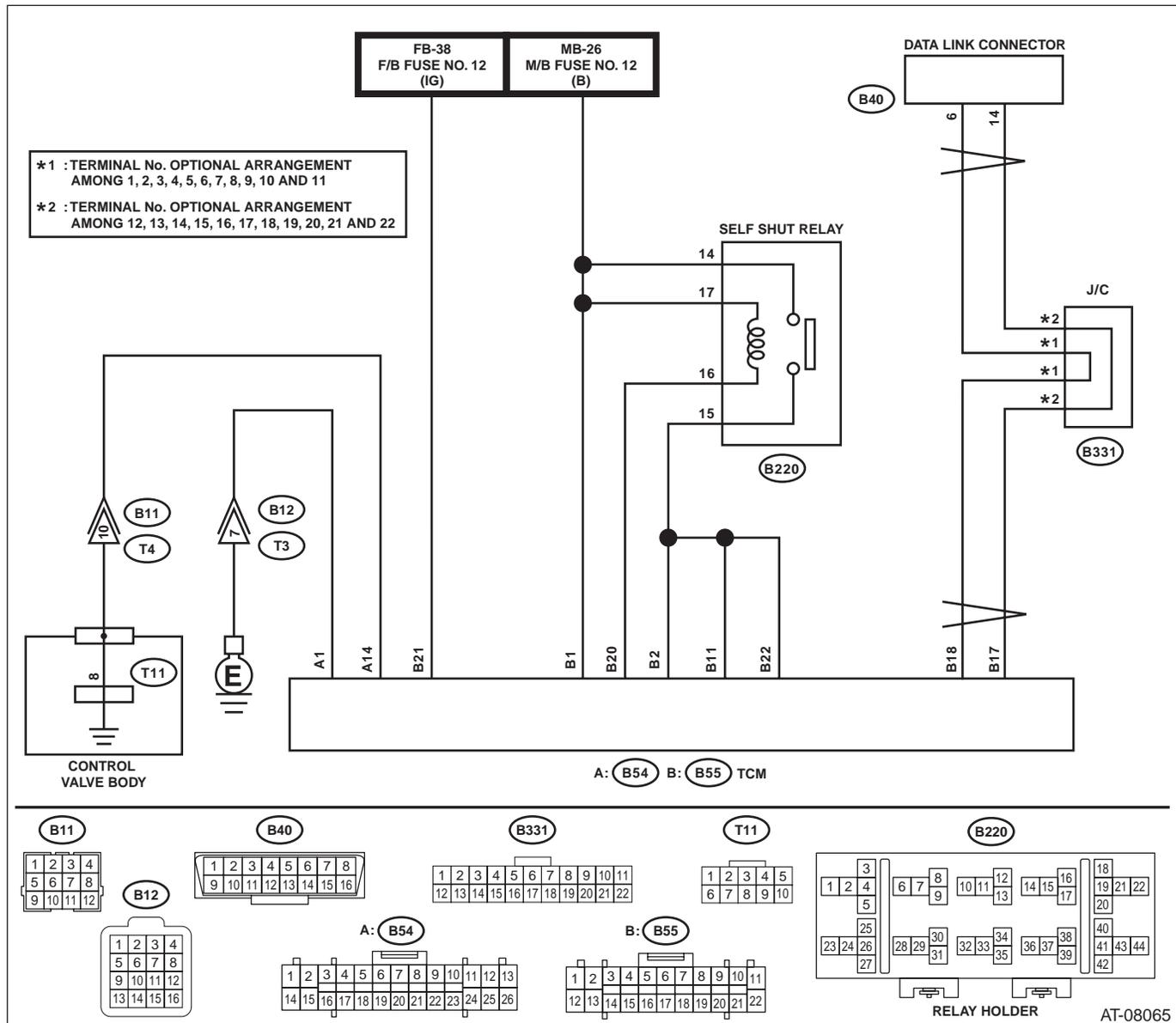
#### TROUBLE SYMPTOM:

Subaru Select Monitor communication failure

#### WIRING DIAGRAM:

- Non-turbo model

CVT control system <Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>

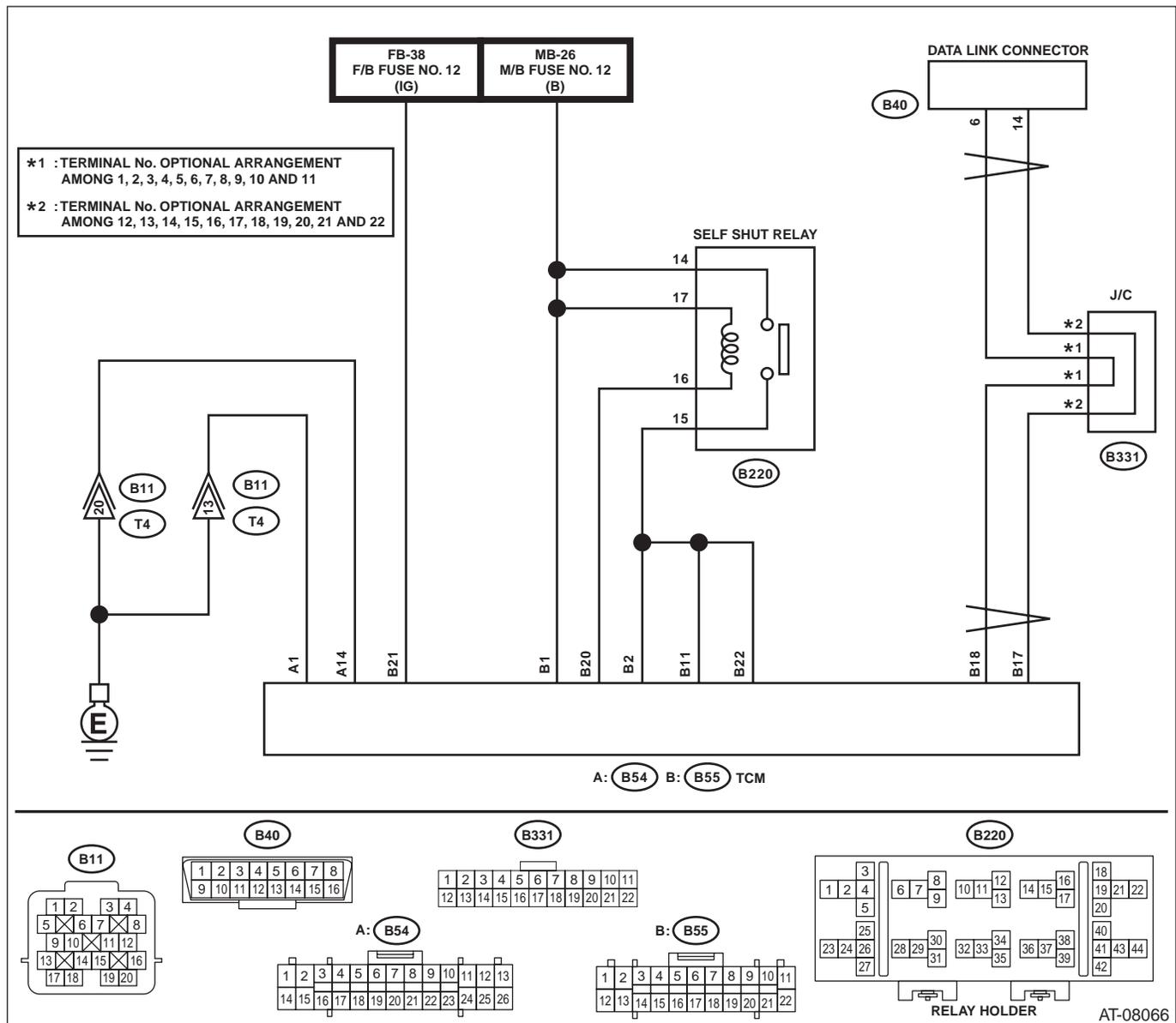


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# Diagnostic Procedure for Subaru Select Monitor Communication

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

- Turbo model  
CVT control system <Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



Step	Check	Yes	No
<b>1</b>	<b>CHECK IGNITION SWITCH.</b>		
	Is the ignition switch ON?	Go to step 2.	Turn the ignition switch to ON, and select the transmission mode using the Subaru Select Monitor.
<b>2</b>	<b>CHECK BATTERY.</b> 1) Turn the ignition switch to OFF. 2) Measure the battery voltage.		
	Is the voltage 11 V or more?	Go to step 3.	Charge or replace the battery.
<b>3</b>	<b>CHECK BATTERY TERMINAL.</b>		
	Is there poor contact at battery terminal?	Repair or tighten the battery terminal.	Go to step 4.
<b>4</b>	<b>CHECK INSTALLATION OF TCM CONNECTOR.</b> Turn the ignition switch to OFF.		
	Is the TCM connector inserted into the TCM until the clamp locks?	Go to step 5.	Insert the TCM connector to TCM.

# Diagnostic Procedure for Subaru Select Monitor Communication

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No	
5	<b>CHECK LAN SYSTEM.</b> Perform the diagnosis for LAN system. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>	Is there any fault in LAN system?	Perform the diagnosis according to DTC for LAN system. <Ref. to LAN(diag)-101, List of Diagnostic Trouble Code (DTC).>	Go to step 6.
6	<b>CHECK SUBARU SELECT MONITOR COMMUNICATION.</b> 1) Turn the ignition switch to ON. 2) Check whether communication to transmission system can be executed normally.	Is the system name displayed on Subaru Select Monitor?	Check DTC of TCM. <Ref. to CVT(diag)-23, Read Diagnostic Trouble Code (DTC).>	Go to step 7.
7	<b>CHECK POWER SUPPLY CIRCUIT.</b> 1) Turn the ignition switch to ON. (engine OFF) 2) Measure the ignition power supply voltage between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B55) No. 1 (+) — Chassis ground (-): (B55) No. 2 (+) — Chassis ground (-): (B55) No. 11 (+) — Chassis ground (-): (B55) No. 21 (+) — Chassis ground (-): (B55) No. 22 (+) — Chassis ground (-):	Is the voltage 10 — 13 V?	Go to step 8.	Repair the open circuit of harness between TCM and battery.
8	<b>CHECK HARNESS CONNECTOR BETWEEN TCM AND CHASSIS GROUND.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the connector from TCM. 3) Measure the resistance of harness between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 1 — Chassis ground:	Is the resistance less than 10 $\Omega$ ?	Go to step 9.	Repair the open circuit of the TCM ground circuit and poor contact of connector.
9	<b>CHECK POOR CONTACT OF CONNECTOR.</b>	Is there poor contact of control module power supply, ground circuit and data link connector?	Repair the connector.	Check the TCM.

## List of Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

### 15. List of Diagnostic Trouble Code (DTC)

#### A: LIST

DTC	Item	Content of diagnosis	Reference
P0500	Vehicle Speed Sensor "A"	Wheel speed data from VDC CM&H/U is abnormal.	<Ref. to CVT(diag)-44, DTC P0500 VEHICLE SPEED SENSOR "A", Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0601	Internal Control Module Memory Checksum Error	TCM ROM is faulty.	<Ref. to CVT(diag)-44, DTC P0601 INTERNAL CONTROL MODULE MEMORY CHECKSUM ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0604	Internal Control Module Random Access Memory (RAM) Error	TCM RAM is faulty.	<Ref. to CVT(diag)-44, DTC P0604 INTERNAL CONTROL MODULE RANDOM ACCESS MEMORY (RAM) ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P062F	Internal Control Module EEPROM Error	TCM EEPROM is faulty.	<Ref. to CVT(diag)-45, DTC P062F INTERNAL CONTROL MODULE EEPROM ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0705	Transmission Range Sensor Circuit (PRNDL Input)	Inhibitor switch malfunction or short circuit	<Ref. to CVT(diag)-46, DTC P0705 TRANSMISSION RANGE SENSOR CIRCUIT (PRNDL INPUT), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0708	AT Range Switch Not Inputted	Inhibitor switch malfunction or open circuit	<Ref. to CVT(diag)-48, DTC P0708 AT RANGE SWITCH NOT INPUTTED, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0711	ATF Temp. Sensor Circuit Range/Performance	ATF temperature sensor is faulty or input signal circuit is faulty.	<Ref. to CVT(diag)-50, DTC P0711 ATF TEMP. SENSOR CIRCUIT RANGE/PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0712	Transmission Fluid Temperature Sensor Circuit Low Input	ATF temperature sensor is faulty or input signal circuit is shorted.	<Ref. to CVT(diag)-51, DTC P0712 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT LOW INPUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0713	Transmission Fluid Temperature Sensor Circuit High Input	ATF temperature sensor is faulty or input signal circuit is open or shorted.	<Ref. to CVT(diag)-53, DTC P0713 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT HIGH INPUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0716	Torque Converter Turbine Speed	Turbine speed sensor is faulty or input signal circuit is open or shorted.	<Ref. to CVT(diag)-56, DTC P0716 TORQUE CONVERTER TURBINE SPEED, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0717	Input/Turbine Speed Sensor "A" Circuit No Signal	Turbine speed sensor signal no input	<Ref. to CVT(diag)-58, DTC P0717 INPUT/TURBINE SPEED SENSOR "A" CIRCUIT NO SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0719	Brake Switch Circuit Low	Brake switch is faulty or input signal circuit is open or shorted.	<Ref. to CVT(diag)-59, DTC P0719 BRAKE SWITCH CIRCUIT LOW, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0720	Output Speed Sensor Circuit	Front wheel speed sensor is faulty or input signal circuit is open or shorted.	<Ref. to CVT(diag)-61, DTC P0720 OUTPUT SPEED SENSOR CIRCUIT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0721	Output Shaft Speed Sensor Circuit Range/Performance	Front wheel speed sensor characteristics is abnormal.	<Ref. to CVT(diag)-63, DTC P0721 OUTPUT SHAFT SPEED SENSOR CIRCUIT RANGE/PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0724	Brake Switch Circuit High	Brake switch is faulty or input signal circuit is shorted.	<Ref. to CVT(diag)-64, DTC P0724 BRAKE SWITCH CIRCUIT HIGH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0730	Gearshift Control Performance Abnormal	Primary speed sensor, secondary speed sensor, control valve, or chain is faulty.	<Ref. to CVT(diag)-66, DTC P0730 GEARSHIFT CONTROL PERFORMANCE ABNORMAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0746	Pressure Control Solenoid "A" Performance/Stuck Off	Secondary solenoid is faulty, hydraulic circuit is stuck in low pressure side.	<Ref. to CVT(diag)-68, DTC P0746 PRESSURE CONTROL SOLENOID "A" PERFORMANCE/STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0747	Pressure Control Solenoid "A" Stuck On	Secondary solenoid is faulty, hydraulic circuit is stuck in high pressure side.	<Ref. to CVT(diag)-71, DTC P0747 PRESSURE CONTROL SOLENOID "A" STUCK ON, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# List of Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

DTC	Item	Content of diagnosis	Reference
P0751	Shift Solenoid "A" Performance/Stuck Off	Primary UP solenoid is faulty, hydraulic circuit is stuck in low pressure side.	<Ref. to CVT(diag)-74, DTC P0751 SHIFT SOLENOID "A" PERFORMANCE/STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0752	Shift Solenoid "A" Stuck On	Primary UP solenoid is faulty, hydraulic circuit is stuck in high pressure side.	<Ref. to CVT(diag)-77, DTC P0752 SHIFT SOLENOID "A" STUCK ON, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0756	Shift Solenoid "B" Performance/Stuck Off	Primary DOWN solenoid is faulty, hydraulic circuit is stuck in low pressure side.	<Ref. to CVT(diag)-80, DTC P0756 SHIFT SOLENOID "B" PERFORMANCE/STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0757	Shift Solenoid "B" Stuck On	Primary DOWN solenoid is faulty, hydraulic circuit is stuck in high pressure side.	<Ref. to CVT(diag)-83, DTC P0757 SHIFT SOLENOID "B" STUCK ON, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0776	Pressure Control Solenoid "B" Performance/Stuck Off	F&R solenoid is faulty, hydraulic circuit is stuck in low pressure side.	<Ref. to CVT(diag)-86, DTC P0776 PRESSURE CONTROL SOLENOID "B" PERFORMANCE/STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0801	Reverse Inhibit Control Circuit	Shift lock solenoid is faulty or output signal circuit is open or shorted.	<Ref. to CVT(diag)-88, DTC P0801 REVERSE INHIBIT CONTROL CIRCUIT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0841	Secondary Oil Pressure Sensor Performance	Secondary pressure sensor or control valve is faulty	<Ref. to CVT(diag)-89, DTC P0841 SECONDARY OIL PRESSURE SENSOR PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0842	Secondary Oil Pressure Sensor Circuit (Low)	Secondary pressure sensor is faulty or input signal circuit is open or shorted.	<Ref. to CVT(diag)-93, DTC P0842 SECONDARY OIL PRESSURE SENSOR CIRCUIT (LOW), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0843	Secondary Oil Pressure Sensor Circuit (High)	Secondary pressure sensor is faulty or input signal circuit is shorted.	<Ref. to CVT(diag)-96, DTC P0843 SECONDARY OIL PRESSURE SENSOR CIRCUIT (HIGH), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0890	AT Self-Shut Relay Diagnosis (Low)	Self-shut relay is faulty or input signal circuit is open or shorted.	<Ref. to CVT(diag)-98, DTC P0890 AT SELF-SHUT RELAY DIAGNOSIS (LOW), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0951	Manual Switch	Manual mode switch is faulty or input signal circuit is open or shorted.	<Ref. to CVT(diag)-100, DTC P0951 MANUAL SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0961	Pressure Control Solenoid "A" Control Circuit Range/Performance	Characteristics of secondary solenoid is abnormal.	<Ref. to CVT(diag)-102, DTC P0961 PRESSURE CONTROL SOLENOID "A" CONTROL CIRCUIT RANGE/PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0962	Secondary Solenoid Circuit (Low)	Secondary solenoid is faulty or output signal circuit is shorted.	<Ref. to CVT(diag)-104, DTC P0962 SECONDARY SOLENOID CIRCUIT (LOW), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0963	Secondary Solenoid Circuit (High)	Secondary solenoid is faulty or output signal circuit is open or shorted.	<Ref. to CVT(diag)-106, DTC P0963 SECONDARY SOLENOID CIRCUIT (HIGH), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0965	Forward & Reverse Solenoid Function	F&R solenoid, forward clutch or control valve is faulty.	<Ref. to CVT(diag)-108, DTC P0965 FORWARD & REVERSE SOLENOID FUNCTION, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0966	Forward & Reverse Solenoid Circuit (Low)	F&R solenoid is faulty or output signal circuit is shorted.	<Ref. to CVT(diag)-110, DTC P0966 FORWARD & REVERSE SOLENOID CIRCUIT (LOW), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0967	Forward & Reverse Linear Solenoid Circuit (High)	F&R solenoid is faulty or output signal circuit is open or shorted.	<Ref. to CVT(diag)-112, DTC P0967 FORWARD & REVERSE LINEAR SOLENOID CIRCUIT (HIGH), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0970	Transfer Solenoid Circuit (Low)	AWD solenoid is faulty or output signal circuit is shorted.	<Ref. to CVT(diag)-114, DTC P0970 TRANSFER SOLENOID CIRCUIT (LOW), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

## List of Diagnostic Trouble Code (DTC)

### CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

DTC	Item	Content of diagnosis	Reference
P0971	Transfer Solenoid Circuit (High)	AWD solenoid is faulty or output signal circuit is open or shorted.	<Ref. to CVT(diag)-116, DTC P0971 TRANSFER SOLENOID CIRCUIT (HIGH), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0973	Primary Solenoid System A Circuit (Low)	Primary UP solenoid is faulty or output signal circuit is shorted.	<Ref. to CVT(diag)-118, DTC P0973 PRIMARY SOLENOID SYSTEM A CIRCUIT (LOW), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0974	Primary Solenoid System A Circuit (High)	Primary UP solenoid is faulty or output signal circuit is open or shorted.	<Ref. to CVT(diag)-120, DTC P0974 PRIMARY SOLENOID SYSTEM A CIRCUIT (HIGH), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0976	Primary Solenoid System B Circuit (Low)	Primary DOWN solenoid is faulty or output signal circuit is shorted.	<Ref. to CVT(diag)-122, DTC P0976 PRIMARY SOLENOID SYSTEM B CIRCUIT (LOW), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P0977	Primary Solenoid System B Circuit (High)	Primary DOWN solenoid is faulty or output signal circuit is open or shorted.	<Ref. to CVT(diag)-124, DTC P0977 PRIMARY SOLENOID SYSTEM B CIRCUIT (HIGH), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P160A	Random Access Memory (RAM) Error	TCM RAM is faulty.	<Ref. to CVT(diag)-126, DTC P160A RANDOM ACCESS MEMORY (RAM) ERROR, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P170A	L-Range SW System	L range switch is faulty or input signal circuit is open or shorted.	<Ref. to CVT(diag)-126, DTC P170A L-RANGE SW SYSTEM, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P2158	Vehicle Speed Sensor "B"	Wheel speed data from VDC CM&H/U is abnormal.	<Ref. to CVT(diag)-127, DTC P2158 VEHICLE SPEED SENSOR "B", Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P2530	Ignition Switch Run Position Circuit	Ignition SW circuit is faulty.	<Ref. to CVT(diag)-128, DTC P2530 IGNITION SWITCH RUN POSITION CIRCUIT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P2746	Primary Pulley Revolution Speed Sensor Circuit	Primary speed sensor is faulty or input signal circuit is open or shorted.	<Ref. to CVT(diag)-130, DTC P2746 PRIMARY PULLEY REVOLUTION SPEED SENSOR CIRCUIT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P2747	Intermediate Shaft Speed Sensor "B" Circuit No Signal	Primary speed sensor signal no input	<Ref. to CVT(diag)-131, DTC P2747 INTERMEDIATE SHAFT SPEED SENSOR "B" CIRCUIT NO SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P2750	Sec. Pulley Revolution Speed Sensor Circuit	Secondary speed sensor is faulty or input signal circuit is open or shorted.	<Ref. to CVT(diag)-134, DTC P2750 SEC. PULLEY REVOLUTION SPEED SENSOR CIRCUIT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P2751	Intermediate Shaft Speed Sensor "C" Circuit No Signal	Secondary speed sensor signal no input	<Ref. to CVT(diag)-135, DTC P2751 INTERMEDIATE SHAFT SPEED SENSOR "C" CIRCUIT NO SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P2757	Torque Converter Clutch Pressure Control Solenoid Control Circuit Performance/ Stuck Off	Lock-up duty solenoid is faulty, hydraulic circuit is stuck in low pressure side.	<Ref. to CVT(diag)-138, DTC P2757 TORQUE CONVERTER CLUTCH PRESSURE CONTROL SOLENOID CONTROL CIRCUIT PERFORMANCE/STUCK OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P2758	Torque Converter Clutch Pressure Control Solenoid Control Circuit Stuck On	Lock-up duty solenoid is faulty, hydraulic circuit is stuck in high pressure side.	<Ref. to CVT(diag)-141, DTC P2758 TORQUE CONVERTER CLUTCH PRESSURE CONTROL SOLENOID CONTROL CIRCUIT STUCK ON, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P2763	Lock-Up Duty Solenoid Circuit (High)	Lock-up duty solenoid is faulty or output signal circuit is open or shorted.	<Ref. to CVT(diag)-144, DTC P2763 LOCK-UP DUTY SOLENOID CIRCUIT (HIGH), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P2764	Lock-Up Duty Solenoid Circuit (Low)	Lock-up duty solenoid is faulty or output signal circuit is shorted.	<Ref. to CVT(diag)-146, DTC P2764 LOCK-UP DUTY SOLENOID CIRCUIT (LOW), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
P2769	Lock-Up On/Off Solenoid Circuit (Low)	Lock-up ON/OFF solenoid is faulty or output signal circuit is shorted.	<Ref. to CVT(diag)-148, DTC P2769 LOCK-UP ON/OFF SOLENOID CIRCUIT (LOW), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# List of Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

DTC	Item	Content of diagnosis	Reference
P2770	Lock-Up On/Off Solenoid Circuit (High)	Lock-up ON/OFF solenoid is faulty or output signal circuit is open or shorted.	<Ref. to CVT(diag)-150, DTC P2770 LOCK-UP ON/OFF SOLENOID CIRCUIT (HIGH), Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0073	Control Module Communication Bus Off	CAN bus is shorted or communication error.	<Ref. to CVT(diag)-152, DTC U0073 CONTROL MODULE COMMUNICATION BUS OFF, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0100	Lost Communication With ECM/PCM "A"	Detected that the engine data has not yet arrived.	<Ref. to CVT(diag)-152, DTC U0100 LOST COMMUNICATION WITH ECM/PCM "A", Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0122	Lost Communication With Vehicle Dynamics Control Module	Detected that the VDC data has not yet arrived.	<Ref. to CVT(diag)-152, DTC U0122 LOST COMMUNICATION WITH VEHICLE DYNAMICS CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0140	Lost Communication With Body Control Module	Detected that the body integrated unit data has not yet arrived.	<Ref. to CVT(diag)-152, DTC U0140 LOST COMMUNICATION WITH BODY CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0155	Lost Communication With Instrument Panel Cluster (IPC) Control Module	Detected that the meter data has not yet arrived.	<Ref. to CVT(diag)-152, DTC U0155 LOST COMMUNICATION WITH INSTRUMENT PANEL CLUSTER (IPC) CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0164	Lost Communication With HVAC Control Module	Detected that the air conditioner data has not yet arrived.	<Ref. to CVT(diag)-152, DTC U0164 LOST COMMUNICATION WITH HVAC CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0401	Invalid Data Received From ECM/PCM "A"	Detected abnormality of the engine data.	<Ref. to CVT(diag)-152, DTC U0401 INVALID DATA RECEIVED FROM ECM/PCM "A", Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0416	Invalid Data Received From Vehicle Dynamics Control Module	Detected abnormality of the VDC data.	<Ref. to CVT(diag)-152, DTC U0416 INVALID DATA RECEIVED FROM VEHICLE DYNAMICS CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0422	Invalid Data Received From Body Control Module	Detected abnormality of the body integrated unit data.	<Ref. to CVT(diag)-152, DTC U0422 INVALID DATA RECEIVED FROM BODY CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0423	Invalid Data Received From Instrument Panel Cluster Control Module	Detected abnormality of the meter data.	<Ref. to CVT(diag)-152, DTC U0423 INVALID DATA RECEIVED FROM INSTRUMENT PANEL CLUSTER CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U0424	Invalid Data Received From HVAC Control Module	Detected abnormality of the air conditioner data.	<Ref. to CVT(diag)-153, DTC U0424 INVALID DATA RECEIVED FROM HVAC CONTROL MODULE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1235	Lost Communication With EyeSight	Detected that the EyeSight data has not yet arrived.	<Ref. to CVT(diag)-153, DTC U1235 LOST COMMUNICATION WITH EyeSight, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
U1433	Invalid Data Received From EyeSight	Detected abnormality of the EyeSight data.	<Ref. to CVT(diag)-153, DTC U1433 INVALID DATA RECEIVED FROM EyeSight, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

### 16. Diagnostic Procedure with Diagnostic Trouble Code (DTC)

#### A: DTC P0500 VEHICLE SPEED SENSOR "A"

##### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-5, DTC P0500 VEHICLE SPEED SENSOR "A", Diagnostic Trouble Code (DTC) Detecting Criteria.>

##### TROUBLE SYMPTOM:

VDC does not operate.

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC of VDC system using the Subaru Select Monitor.	Is DTC displayed?	Perform the diagnosis according to DTC.<Ref. to VDC(diag)-36, List of Diagnostic Trouble Code (DTC).>	Repair the poor contact of connector and harness between VDCCM&H/U and wheel speed sensor.

#### B: DTC P0601 INTERNAL CONTROL MODULE MEMORY CHECKSUM ERROR

##### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-6, DTC P0601 INTERNAL CONTROL MODULE MEMORY CHECKSUM ERROR, Diagnostic Trouble Code (DTC) Detecting Criteria.>

##### TROUBLE SYMPTOM:

TCM ROM malfunction

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> 1) Perform the Clear Memory Mode using the Subaru Select Monitor.<Ref. to CVT(diag)-24, Clear Memory Mode.> 2) Read the DTC.	Is DTC P0601 displayed?	Replace the TCM.<Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Current condition is normal. Check for interference from noise, etc.

#### C: DTC P0604 INTERNAL CONTROL MODULE RANDOM ACCESS MEMORY (RAM) ERROR

##### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-7, DTC P0604 INTERNAL CONTROL MODULE RANDOM ACCESS MEMORY (RAM) ERROR, Diagnostic Trouble Code (DTC) Detecting Criteria.>

##### TROUBLE SYMPTOM:

TCM RAM malfunction

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> 1) Perform the Clear Memory Mode using the Subaru Select Monitor.<Ref. to CVT(diag)-24, Clear Memory Mode.> 2) Read the DTC.	Is DTC P0604 displayed?	Replace the TCM.<Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Current condition is normal. Check for interference from noise, etc.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## D: DTC P062F INTERNAL CONTROL MODULE EEPROM ERROR

### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-8, DTC P062F INTERNAL CONTROL MODULE EEPROM ERROR, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

TCM EEPROM malfunction

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> 1) Perform the Clear Memory Mode using the Subaru Select Monitor.<Ref. to CVT(diag)-24, Clear Memory Mode.> 2) Read the DTC.	Is DTC P062F displayed?	Replace the TCM.<Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Current condition is normal. Check for interference from noise, etc.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## E: DTC P0705 TRANSMISSION RANGE SENSOR CIRCUIT (PRNDL INPUT)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-8, DTC P0705 TRANSMISSION RANGE SENSOR CIRCUIT (PRNDL INPUT), Diagnostic Trouble Code (DTC) Detecting Criteria.>

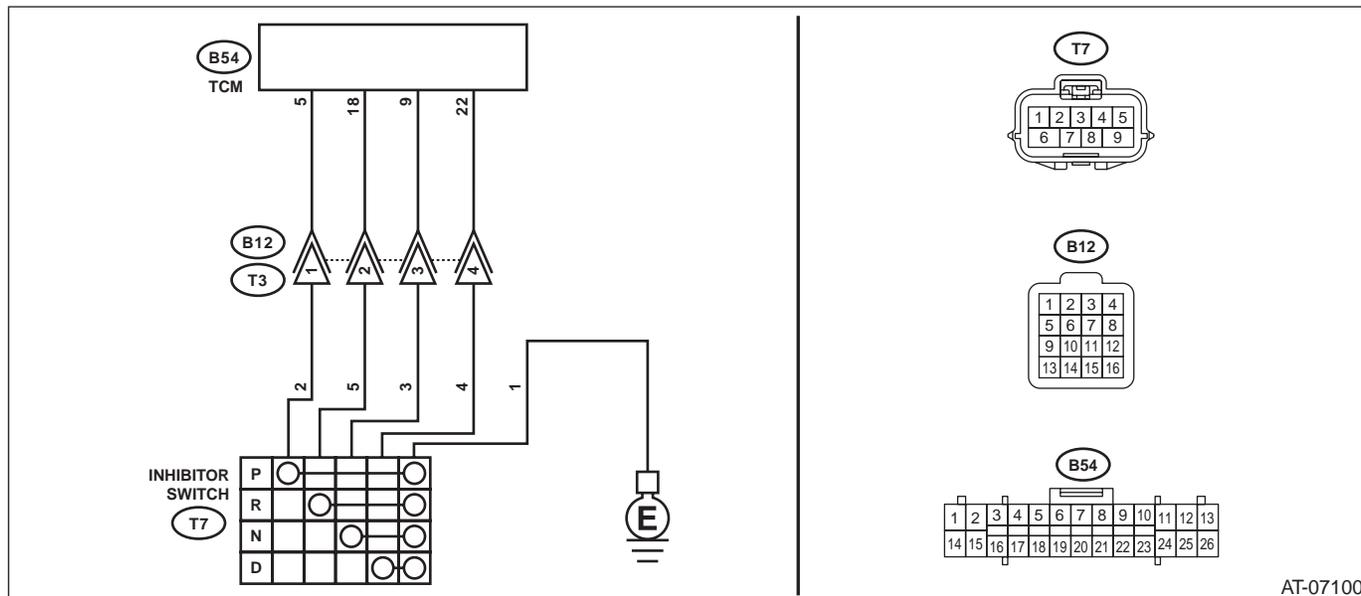
### TROUBLE SYMPTOM:

- Shift characteristics are erroneous.
- The range position of the select lever and the position of shift indicator display do not match.

### WIRING DIAGRAM:

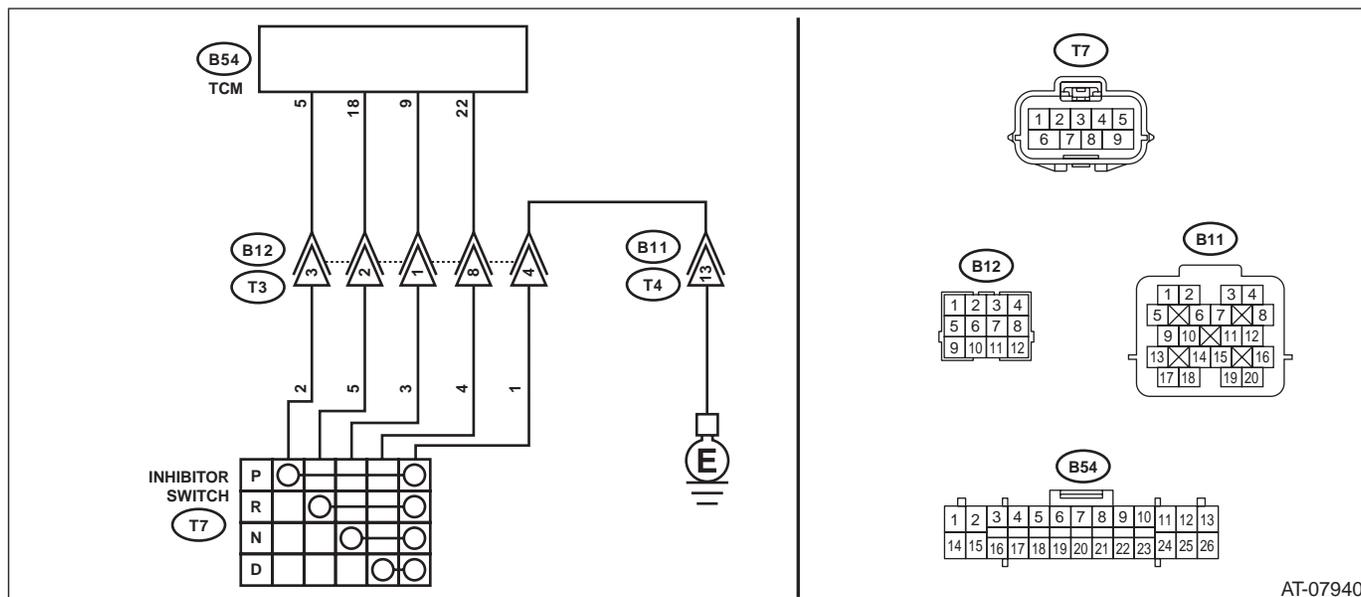
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to ON. 2) Move the select lever to each range, and read the data of «P range», «R Range Signal», «N range» and «D Range Signal» using the Subaru Select Monitor.	Is display "OFF" for the range other than corresponding range?	Go to step 5.	Go to step 2.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 5 — Chassis ground: (B54) No. 18 — Chassis ground: (B54) No. 9 — Chassis ground: (B54) No. 22 — Chassis ground:	Is each resistance 1 MΩ or more?	Go to step 3.	Repair the short circuit of body harness.
3	<b>CHECK HARNESS.</b> 1) Disconnect the inhibitor switch connector. 2) Measure the resistance between transmission connector and chassis ground. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T3) No. 1 — Chassis ground: (T3) No. 2 — Chassis ground: (T3) No. 3 — Chassis ground: (T3) No. 4 — Chassis ground: <b>Turbo model</b> (T3) No. 3 — Chassis ground: (T3) No. 2 — Chassis ground: (T3) No. 1 — Chassis ground: (T3) No. 8 — Chassis ground:	Is each resistance 1 MΩ or more?	Go to step 4.	Repair the short circuit of transmission harness.
4	<b>CHECK INHIBITOR SWITCH.</b> Move the select lever to each range, and measure the resistance between inhibitor switch connector terminals. <b>Connector &amp; terminal</b> (T7) No. 2 — (T7) No. 1: (T7) No. 5 — (T7) No. 1: (T7) No. 3 — (T7) No. 1: (T7) No. 4 — (T7) No. 1:	Is the resistance other than corresponding range 1 MΩ or more?	Go to step 5.	Replace the inhibitor switch.<Ref. to CVT(TR580)-90, Inhibitor Switch.> <Ref. to CVT(TR690)-92, Inhibitor Switch.>
5	<b>CHECK FOR POOR CONTACT.</b>	Is there poor contact between TCM, inhibitor switch, transmission ground?	Repair the poor contact.	Replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).><Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## F: DTC P0708 AT RANGE SWITCH NOT INPUTTED

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-9, DTC P0708 AT RANGE SWITCH NOT INPUTTED, Diagnostic Trouble Code (DTC) Detecting Criteria.>

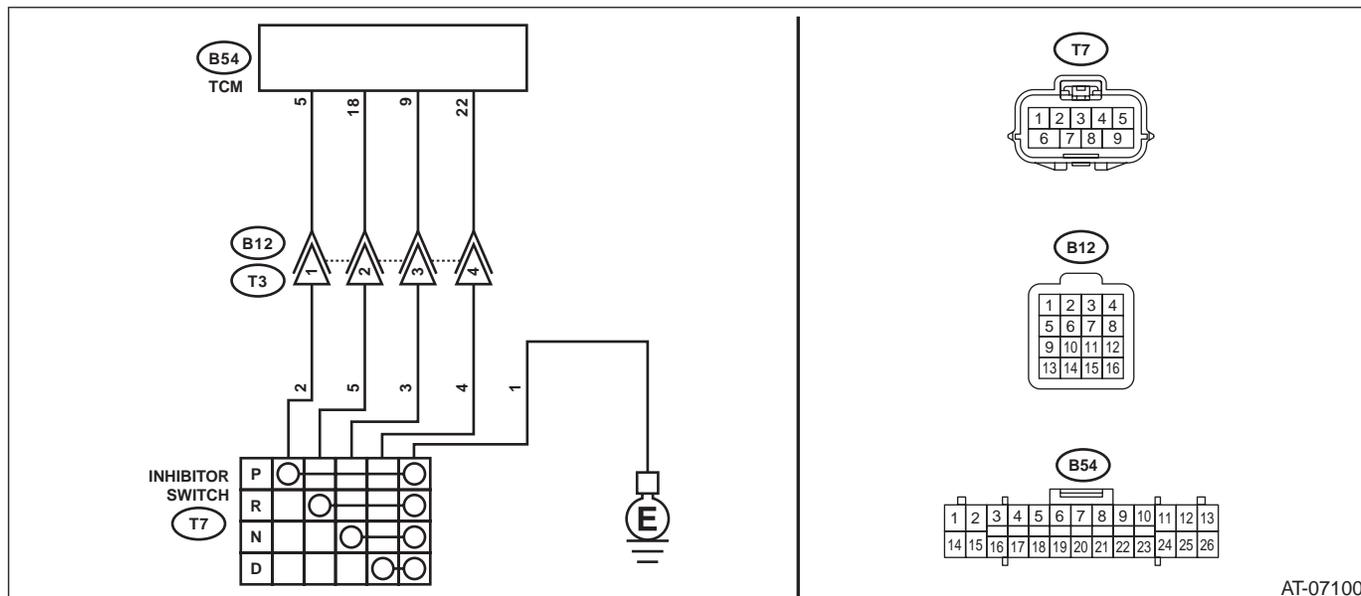
### TROUBLE SYMPTOM:

- Shift characteristics are erroneous.
- The range position of the select lever and the position of shift indicator display do not match.

### WIRING DIAGRAM:

- Non-turbo model

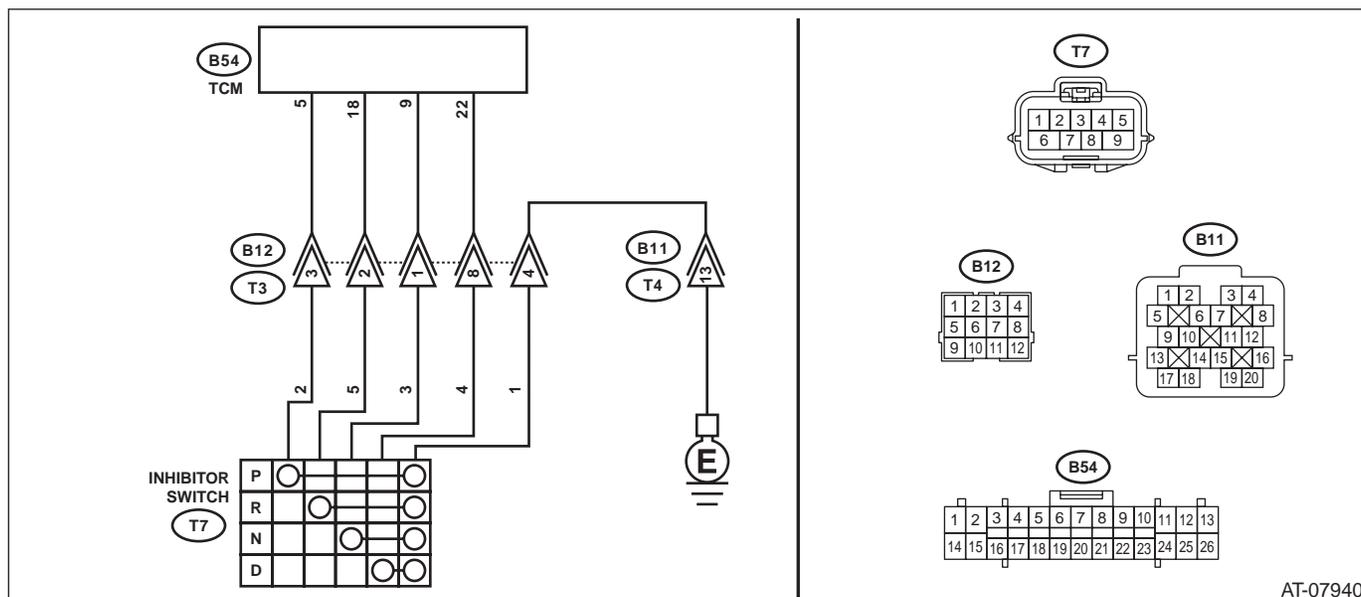
CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07100

- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07940

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to ON. 2) Move the select lever to each range, and read the data of «P range», «R Range Signal», «N range» and «D Range Signal» using the Subaru Select Monitor.	Is the display of the corresponding range "ON"?	Go to step 7.	Go to step 2.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance of harness between TCM connector and transmission connector. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B54) No. 5 — (B12) No. 1: (B54) No. 18 — (B12) No. 2: (B54) No. 9 — (B12) No. 3: (B54) No. 22 — (B12) No. 4: <b>Turbo model</b> (B54) No. 5 — (B12) No. 3: (B54) No. 18 — (B12) No. 2: (B54) No. 9 — (B12) No. 1: (B54) No. 22 — (B12) No. 8:	Is each resistance less than 1 Ω?	Go to step 3.	Repair the open circuit of body harness.
3	<b>CHECK HARNESS.</b> Measure the resistance of harness between inhibitor switch connector and transmission ground. <b>Connector &amp; terminal</b> (T7) No. 1 — Transmission ground:	Is the resistance less than 1 Ω?	Go to step 4.	Repair the open circuit of harness.
4	<b>CHECK HARNESS.</b> 1) Disconnect the inhibitor switch connector. 2) Measure the resistance between transmission connector and inhibitor switch connector. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T3) No. 1 — (T7) No. 2: (T3) No. 2 — (T7) No. 5: (T3) No. 3 — (T7) No. 3: (T3) No. 4 — (T7) No. 4: <b>Turbo model</b> (T3) No. 3 — (T7) No. 2: (T3) No. 2 — (T7) No. 5: (T3) No. 1 — (T7) No. 3: (T3) No. 8 — (T7) No. 4:	Is each resistance less than 1 Ω?	Go to step 5.	Repair the open circuit of transmission harness.
5	<b>CHECK INHIBITOR SWITCH.</b> Move the select lever to each range, and measure the resistance between inhibitor switch connector terminals. <b>Connector &amp; terminal</b> (T7) No. 2 — (T7) No. 1: (T7) No. 5 — (T7) No. 1: (T7) No. 3 — (T7) No. 1: (T7) No. 4 — (T7) No. 1:	Is the resistance of the corresponding range less than 1 MΩ?	Go to step 6.	Replace the inhibitor switch.<Ref. to CVT(TR580)-90, Inhibitor Switch.> <Ref. to CVT(TR690)-92, Inhibitor Switch.>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>6</b> <b>CHECK HARNESS.</b> 1) Turn the ignition switch to ON. 2) Measure the voltage between each connector and chassis ground. <b>Connector &amp; terminal</b> <b>Transmission connector (B12 side)</b> <b>Non-turbo model</b> (B12) No. 1 (+) — Chassis ground (-): (B12) No. 2 (+) — Chassis ground (-): (B12) No. 3 (+) — Chassis ground (-): (B12) No. 4 (+) — Chassis ground (-): <b>Turbo model</b> (B12) No. 3 (+) — Chassis ground (-): (B12) No. 2 (+) — Chassis ground (-): (B12) No. 1 (+) — Chassis ground (-): (B12) No. 8 (+) — Chassis ground (-): <b>Transmission connector (T7 side)</b> (T7) No. 2 (+) — Chassis ground (-): (T7) No. 5 (+) — Chassis ground (-): (T7) No. 3 (+) — Chassis ground (-): (T7) No. 4 (+) — Chassis ground (-):	Is each voltage less than 1 V?	Go to step 7.	Repair the harness which outputs 1 V or more.
<b>7</b> <b>CHECK FOR POOR CONTACT.</b>	Is there poor contact between TCM, inhibitor switch, transmission ground?	Repair the poor contact.	Replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>

## G: DTC P0711 ATF TEMP. SENSOR CIRCUIT RANGE/PERFORMANCE

### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-10, DTC P0711 ATF TEMP. SENSOR CIRCUIT RANGE/PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

- Excessive shift shock
- Shift characteristics malfunction

### NOTE:

For the diagnostic procedure, perform the diagnosis according to DTC P0712 and P0713.<Ref. to CVT(diag)-51, DTC P0712 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT LOW INPUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).> <Ref. to CVT(diag)-53, DTC P0713 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT HIGH INPUT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## H: DTC P0712 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT LOW INPUT

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-11, DTC P0712 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT LOW INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

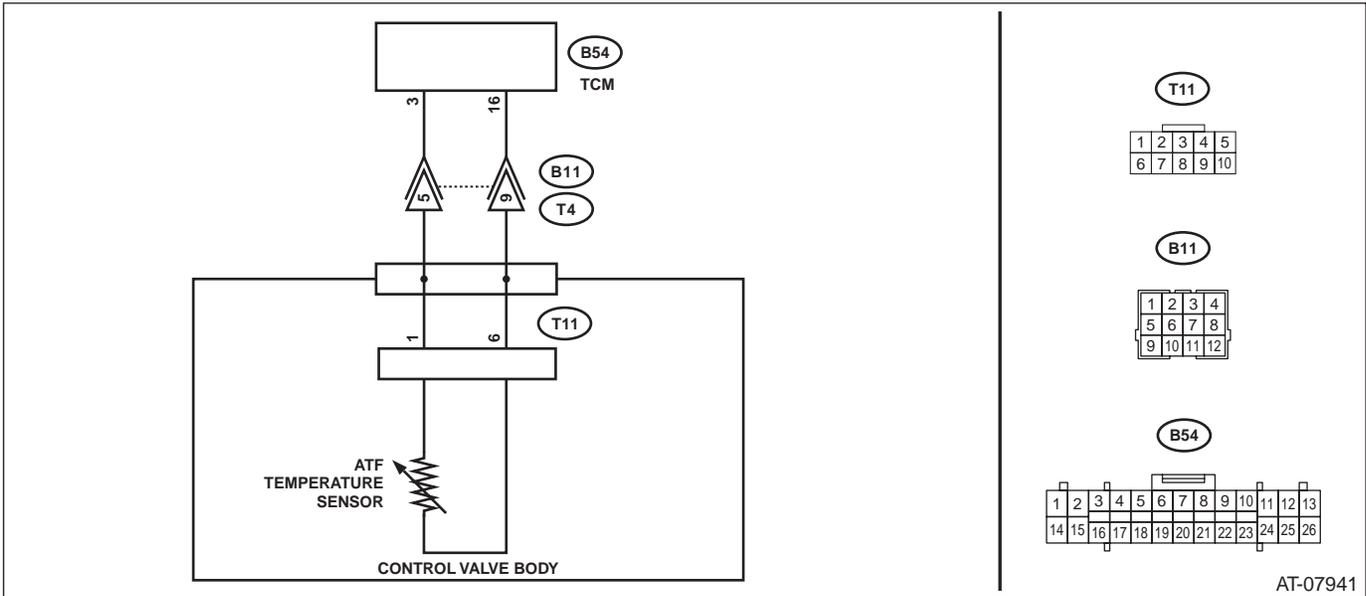
### TROUBLE SYMPTOM:

- Excessive shift shock
- Shift characteristics malfunction

### WIRING DIAGRAM:

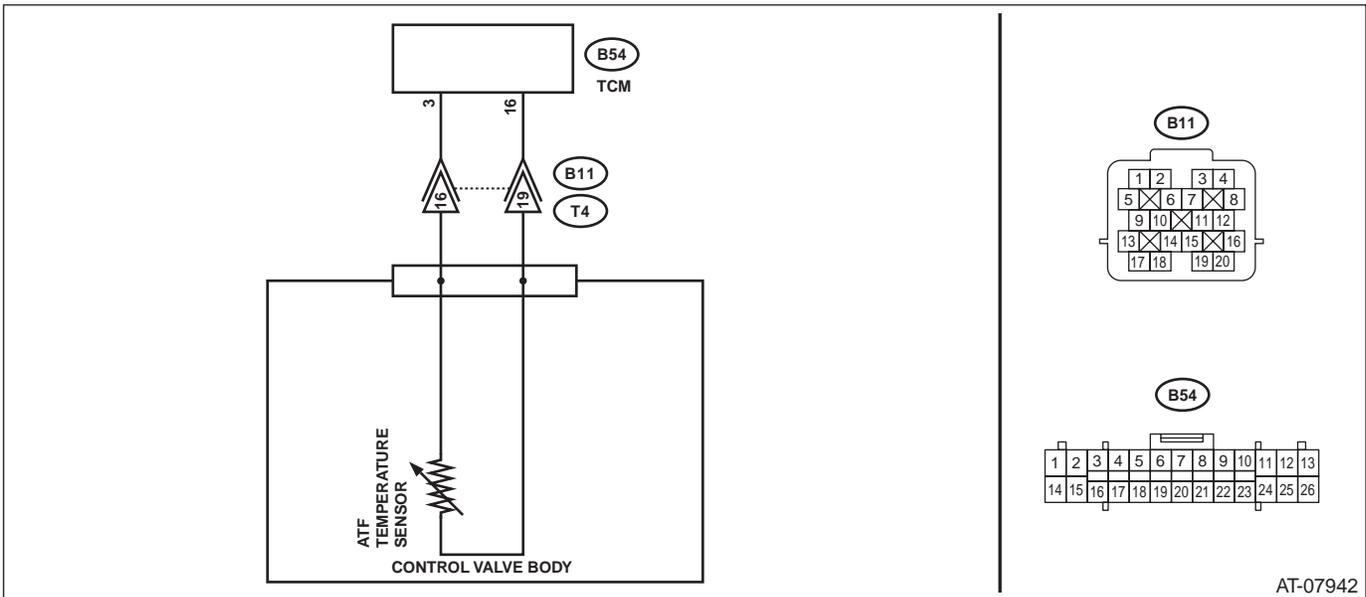
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM connector. 3) Measure the resistance of harness between TCM connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B54) No. 3 — Chassis ground:</b> <b>(B54) No. 16 — Chassis ground:</b>	Is the resistance 1 MΩ or more?	Go to step 4.	Go to step 2.
2	<b>CHECK HARNESS.</b> 1) Disconnect the transmission connector. 2) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 5 — Transmission body:</b> <b>(T4) No. 9 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 16 — Transmission body:</b> <b>(T4) No. 19 — Transmission body:</b>	Is the resistance 1 MΩ or more?	Repair the short circuit of body harness.	Go to step 3.
3	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the following parts. • Transmission valve cover (non-turbo model) • Transmission oil pan (turbo model) 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 4.
4	<b>CHECK ATF TEMPERATURE SENSOR.</b> Measure the resistance between transmission connector terminals. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T11) No. 1 — No. 6:</b> <b>Turbo model</b> <b>(T4) No. 16 — No. 19:</b>	Is resistance as follows? • Non-turbo model Fluid temperature 0°C → Approx. 6.0 kΩ Fluid temperature 20°C → Approx. 2.5 kΩ Fluid temperature 80°C → Approx. 330 Ω • Turbo model Fluid temperature 0°C → Approx. 6.2 kΩ Fluid temperature 20°C → Approx. 2.6 kΩ Fluid temperature 80°C → Approx. 370 Ω	Replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	• Non-turbo model Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> • Turbo model Replace the transmission harness.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## I: DTC P0713 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT HIGH INPUT

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-12, DTC P0713 TRANSMISSION FLUID TEMPERATURE SENSOR CIRCUIT HIGH INPUT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

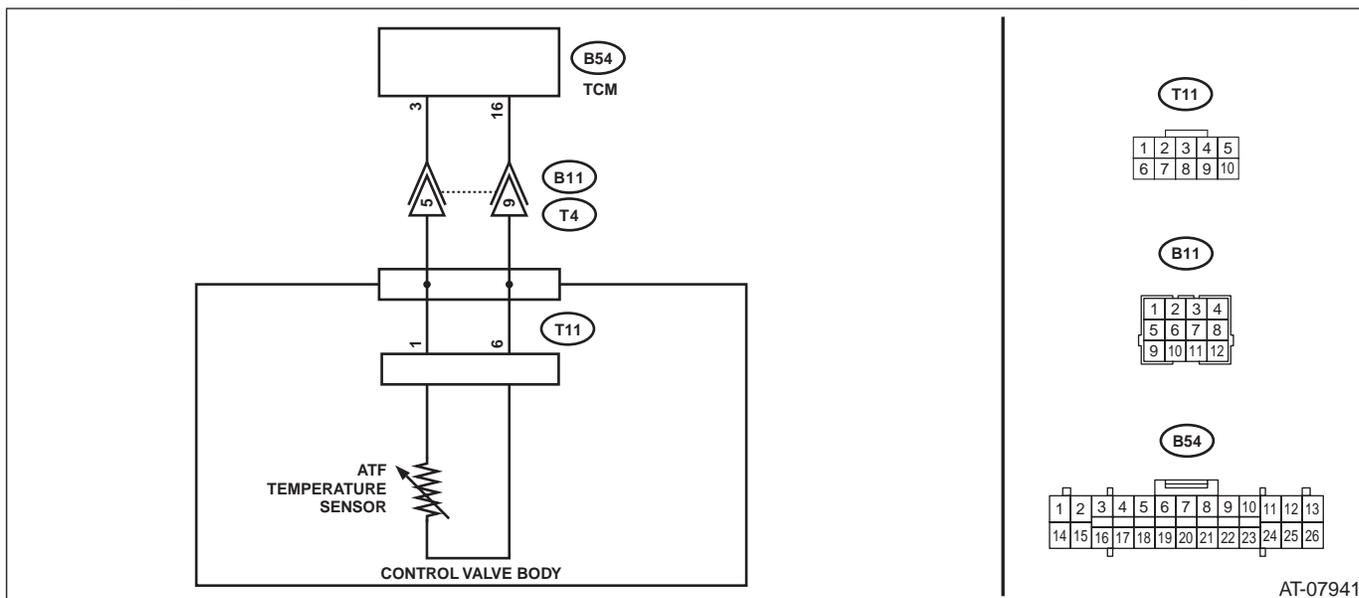
### TROUBLE SYMPTOM:

- Excessive shift shock
- Shift characteristics malfunction

### WIRING DIAGRAM:

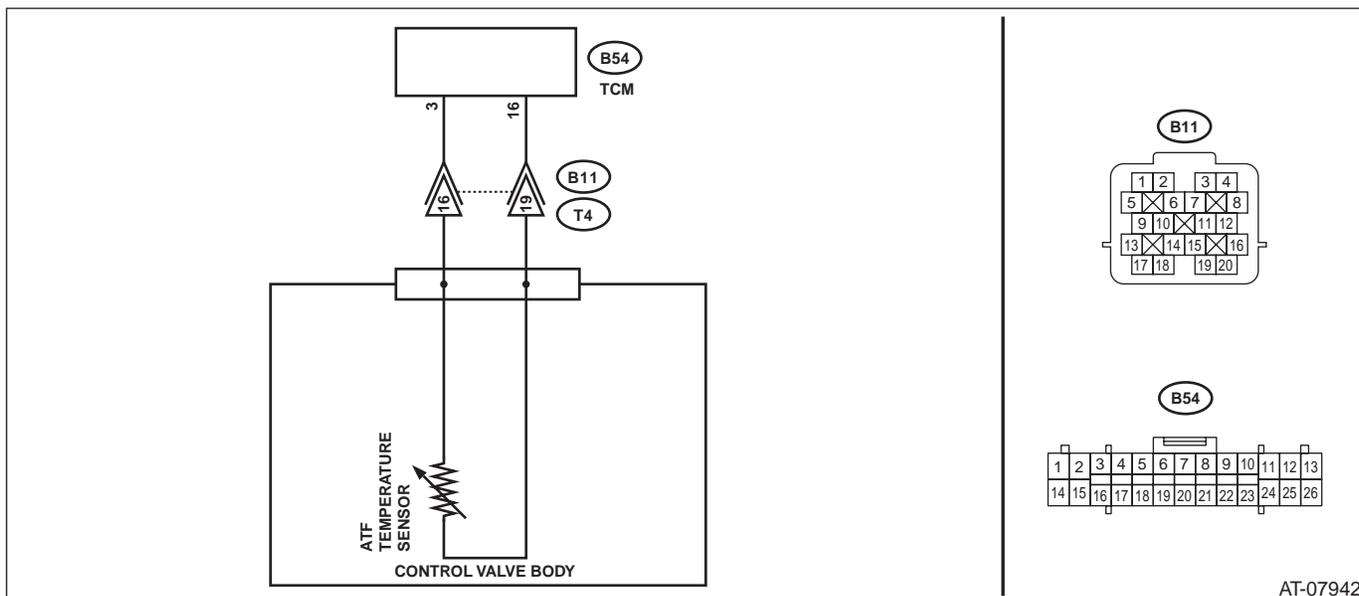
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>1</b> <b>CHECK HARNESS.</b> 1) Turn the ignition switch to ON. 2) Measure the voltage between TCM connectors. <b>Connector &amp; terminal</b> <b>(B54) No. 3 (+) — (B54) No. 16 (-):</b>	Is the voltage 5 V or more?	Repair the short circuit of harness.	Go to step 2.
<b>2</b> <b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(B54) No. 3 — (B11) No. 5:</b> <b>(B54) No. 16 — (B11) No. 9:</b> <b>Turbo model</b> <b>(B54) No. 3 — (B11) No. 16:</b> <b>(B54) No. 16 — (B11) No. 19:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 3.	Repair the open circuit of body harness.
<b>3</b> <b>CHECK ATF TEMPERATURE SENSOR.</b> Measure the resistance between transmission connector terminals. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 5 — No. 9:</b> <b>Turbo model</b> <b>(T4) No. 16 — No. 19:</b>	Is the resistance 1 M $\Omega$ or more?	<ul style="list-style-type: none"> <li>• Non-turbo model</li> <li>Go to step 4.</li> <li>• Turbo model</li> <li>Repair the open circuit of transmission harness.</li> </ul>	Go to step 5.
<b>4</b> <b>CHECK HARNESS.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the transmission valve cover. 2) Measure the resistance between transmission connector and control valve body connector. <b>Connector &amp; terminal</b> <b>(T4) No. 5 — (T11) No. 1:</b> <b>(T4) No. 9 — (T11) No. 6:</b>	Is the resistance less than 1 $\Omega$ ?	Repair the open circuit of transmission harness on the outside of the transmission.	Repair the open circuit of transmission harness on the control valve side.
<b>5</b> <b>CHECK ATF TEMPERATURE SENSOR.</b> 1) Connect the connectors to TCM and transmission. 2) Start the engine. 3) Warm up until the ATF temperature exceeds 50°C (122°F). 4) Turn the ignition switch to OFF. 5) Disconnect the transmission connector. 6) Measure the resistance between transmission connector terminals. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 5 — No. 9:</b> <b>Turbo model</b> <b>(T4) No. 16 — No. 19:</b>	Is resistance as follows? <ul style="list-style-type: none"> <li>• Non-turbo model</li> <li>650 — 990 <math>\Omega</math></li> <li>• Turbo model</li> <li>730 — 1120 <math>\Omega</math></li> </ul>	Go to step 6.	Go to step 8.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>6 CHECK ATF TEMPERATURE SENSOR.</b> Measure the resistance between transmission connector terminals. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 5 — No. 9: <b>Turbo model</b> (T4) No. 16 — No. 19:	Does the resistance value increase gradually while the ATF temperature decreases?	Go to step 7.	<ul style="list-style-type: none"> <li>• Non-turbo model Replace the control valve body.&lt;Ref. to CVT(TR580)-111, Control Valve Body.&gt;</li> <li>• Turbo model Replace the transmission harness.</li> </ul>
<b>7 CHECK INPUT SIGNAL FOR TCM.</b> 1) Connect the transmission connector. 2) Turn the ignition switch to ON. (Do not start engine.) 3) Read the data of «ATF Temp.» using the Subaru Select Monitor.	Does the ATF temperature gradually decrease?	Check for poor contact of the ATF temperature sensor and transmission connector harness, and repair the defective part.	Go to step 8.
<b>8 CHECK FOR POOR CONTACT.</b>	Is there poor contact of ATF temperature sensor circuit?	Repair the poor contact.	Replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## J: DTC P0716 TORQUE CONVERTER TURBINE SPEED

### DTC DETECTING CONDITION:

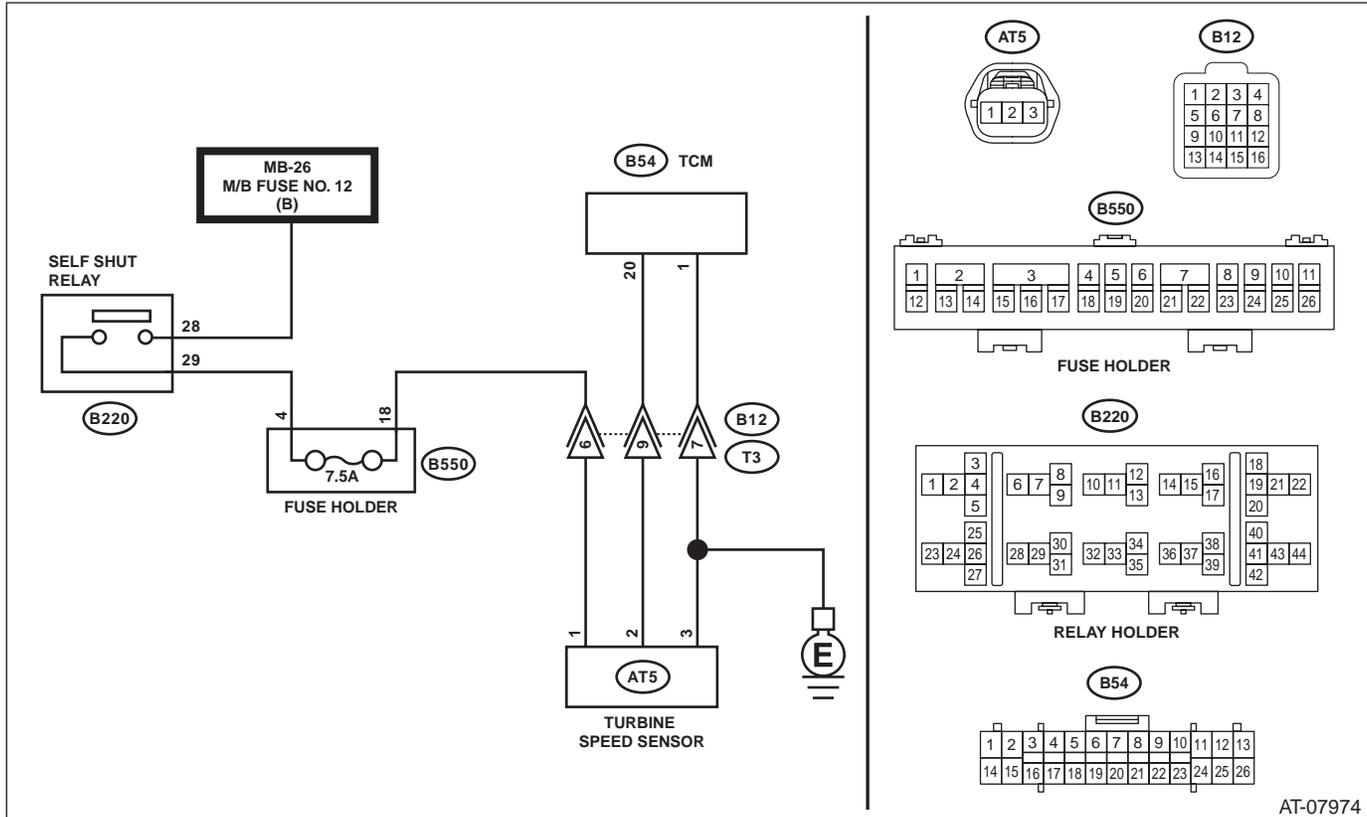
- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-13, DTC P0716 TORQUE CONVERTER TURBINE SPEED, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

- Standing start problems
- Shock occurs when engaging the lockup clutch.
- Shock occurs when selecting shift position.

### WIRING DIAGRAM:

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07974

Step	Check	Yes	No
<b>1 CHECK FUSE.</b> 1) Turn the ignition switch to OFF. 2) Remove the fuse (7.5 A) from the fuse holder.	Is the fuse OK?	Go to step 2.	Replace the fuse. If the fuse blows out easily, repair the short circuit of harness.
<b>2 CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> (B54) No. 1 — (B12) No. 7: (B54) No. 20 — (B12) No. 9: (B550) No. 18 — (B12) No. 6:	Is the resistance less than 1 Ω?	Go to step 3.	Repair the open circuit of harness.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>3</b> <b>CHECK HARNESS.</b> Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B54) No. 20 — Chassis ground:</b>	Is the resistance 1 M $\Omega$ or more?	Go to step 4.	Repair the short circuit of harness.
<b>4</b> <b>CHECK TRANSMISSION HARNESS.</b> 1) Connect the TCM connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between transmission connector terminals. <b>Connector &amp; terminal</b> <b>(B12) No. 6 (+) — (B12) No. 7 (-):</b>	Is the voltage 10 — 13 V?	Go to step 5.	Repair the open circuit of harness or poor contact of connector.
<b>5</b> <b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the transmission connector. 3) Start the engine. 4) Read the data of «Turbine Revolution Speed» using the Subaru Select Monitor.	Does the value of «Turbine Revolution Speed» change according to the engine speed?	Current condition is normal. Repair the poor contacts of harnesses of turbine speed sensor and transmission connector.	Go to step 6.
<b>6</b> <b>CHECK TRANSMISSION HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Lift up the vehicle. 4) Disconnect the turbine speed sensor connector. 5) Measure the resistance between transmission connector and turbine speed sensor connector. <b>Connector &amp; terminal</b> <b>(T3) No. 6 — (AT5) No. 1:</b> <b>(T3) No. 7 — (AT5) No. 3:</b> <b>(T3) No. 9 — (AT5) No. 2:</b>	Is the resistance less than 1 $\Omega$ ?	Replace the turbine speed sensor.<Ref. to CVT(TR580)-98, Turbine Speed Sensor.>	Replace the transmission harness.

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

### K: DTC P0717 INPUT/TURBINE SPEED SENSOR "A" CIRCUIT NO SIGNAL

#### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-14, DTC P0717 INPUT/TURBINE SPEED SENSOR "A" CIRCUIT NO SIGNAL, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### TROUBLE SYMPTOM:

- No lock-up occurs.
- Shock occurs when selecting shift position.
- Shift control malfunction

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0717, is DTC P0500 displayed?	Perform the diagnosis according to DTCs other than P0717.	Perform the diagnosis according to DTC P0716.<Ref. to CVT(diag)-56, DTC P0716 TORQUE CONVERTER TURBINE SPEED, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## L: DTC P0719 BRAKE SWITCH CIRCUIT LOW

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-15, DTC P0719 BRAKE SWITCH CIRCUIT LOW, Diagnostic Trouble Code (DTC) Detecting Criteria.>

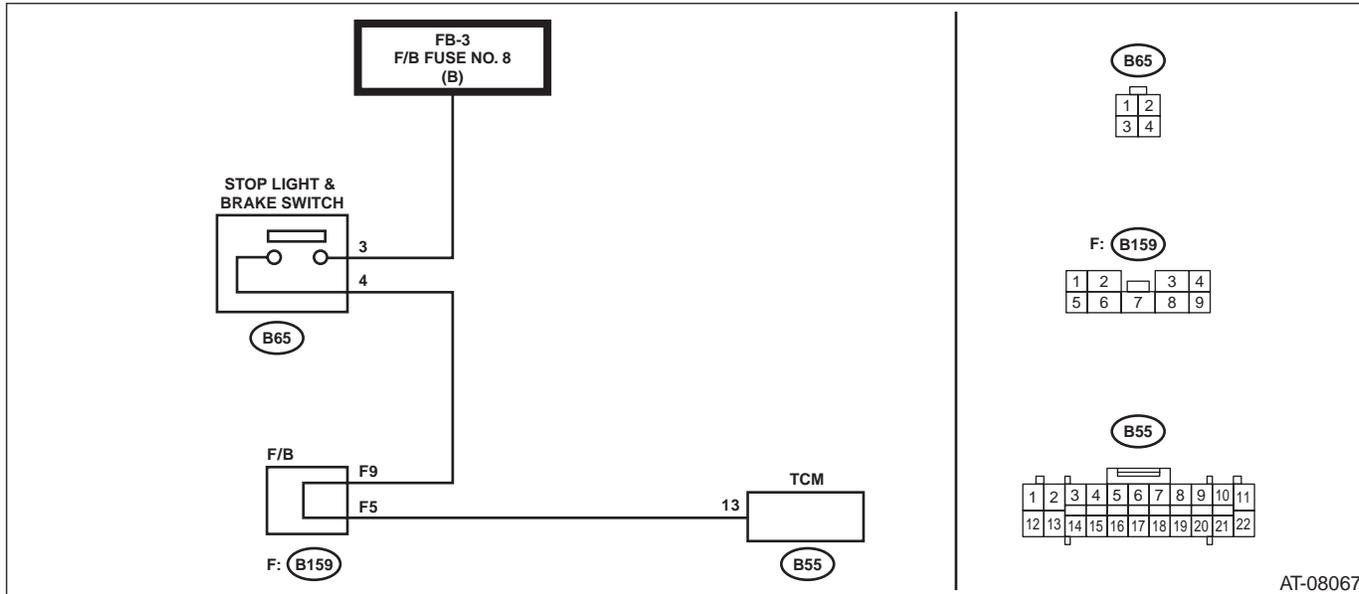
### TROUBLE SYMPTOM:

Gear is not shifted down when climbing a hill or driving down a hill.

### WIRING DIAGRAM:

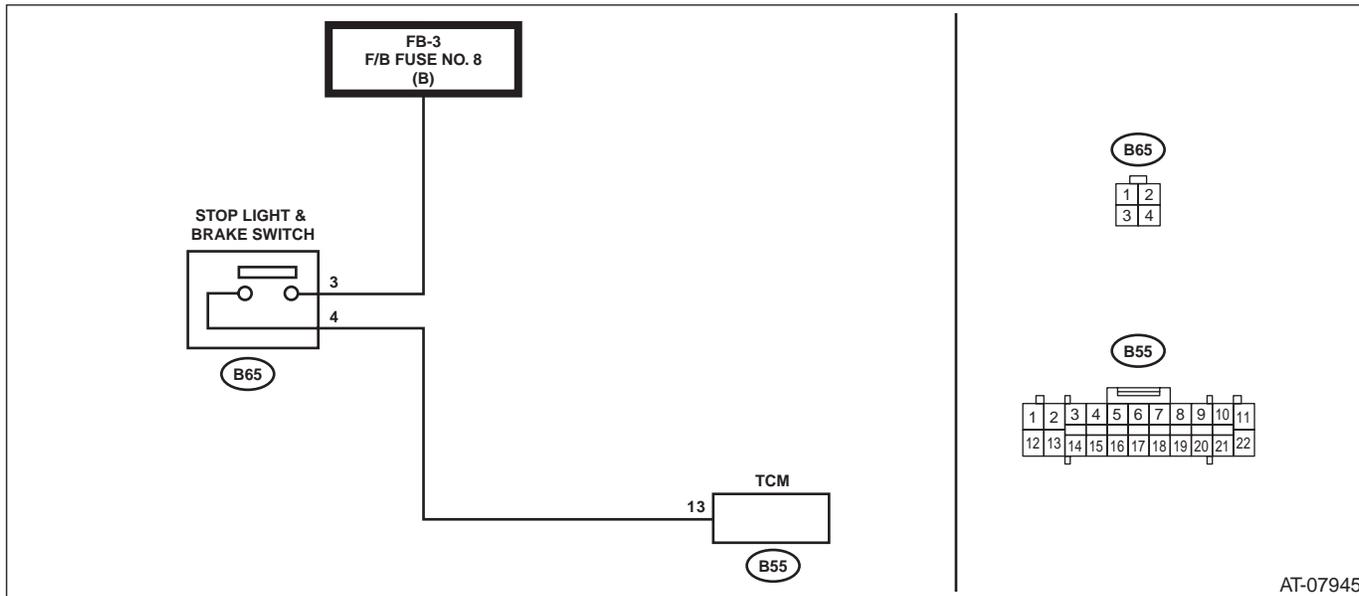
- Non-turbo model (without EyeSight and X mode)

Stop light system<Ref. to WI-395, WITHOUT EyeSight AND X MODE, WIRING DIAGRAM, Stop Light System.>



- Except for non-turbo model (without EyeSight and X mode)

Stop light system<Ref. to WI-397, EXCEPT FOR MODEL WITHOUT EyeSight AND X MODE, WIRING DIAGRAM, Stop Light System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>1 CHECK FUSE (NO. 8).</b> 1) Turn the ignition switch to OFF. 2) Remove the fuse (No. 8).	Is the fuse (No. 8) blown out?	Replace the fuse (No. 8). If the new fuse (No. 8) has blown out easily, repair the short circuit of harness between fuse (No. 8) and stop light switch.	Go to step 2.
<b>2 CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and stop light switch connector. 3) Measure the resistance between TCM connector and stop light switch connector. <b>Connector &amp; terminal</b> <b>(B55) No. 13 — (B65) No. 4:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 3.	Repair the open circuit of harness.
<b>3 CHECK HARNESS.</b> Measure the resistance between TCM connector and fuse (No. 8). <b>Connector &amp; terminal</b> <b>(B65) No. 3 — fuse (No. 8):</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 4.	Repair the open circuit of harness.
<b>4 CHECK INPUT SIGNAL FOR TCM.</b> 1) Install the fuse (No. 8). 2) Connect the TCM and stop light switch connector. 3) Depress the brake pedal. 4) Measure the voltage between TCM connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 13 (+) — Chassis ground (-):</b>	Is the voltage 10 V or more?	Go to step 5.	Replace the stop light switch. <Ref. to BR-69, Stop Light Switch.>
<b>5 CHECK INPUT SIGNAL FOR TCM.</b> With brake pedal depressed, read the data of «Stop Light Switch» using Subaru Select Monitor.	Is "ON" displayed?	Current condition is normal. Check for poor contact in connectors or harnesses, and repair the defective part.	Go to step 6.
<b>6 CHECK FOR POOR CONTACT.</b>	Is there poor contact of input signal of stop light switch?	Repair the poor contact.	Replace the TCM. <Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## M: DTC P0720 OUTPUT SPEED SENSOR CIRCUIT

### DTC DETECTING CONDITION:

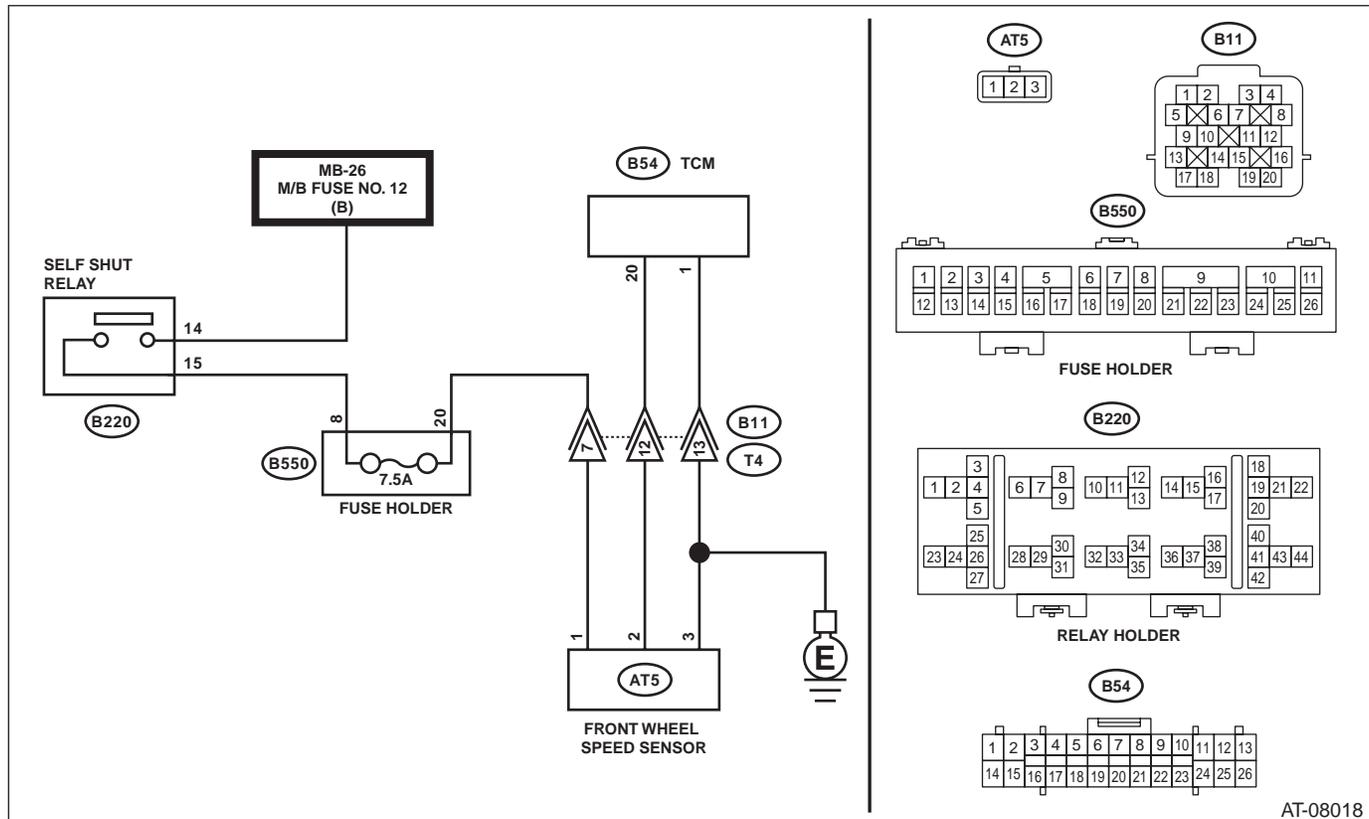
- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-16, DTC P0720 OUTPUT SPEED SENSOR CIRCUIT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

- Shock occurs when selecting shift position.
- Shift control malfunction

### WIRING DIAGRAM:

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-08018

Step	Check	Yes	No	
1	<b>CHECK FUSE.</b> 1) Turn the ignition switch to OFF. 2) Remove the fuse (7.5 A) from the fuse holder.	Is the fuse OK?	Go to step 2.	Replace the fuse. If the fuse blows out easily, repair the short circuit of harness.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> (B54) No. 1 — (B11) No. 13: (B54) No. 20 — (B11) No. 12: (B550) No. 20 — (B11) No. 7:	Is the resistance less than 1 Ω?	Go to step 3.	Repair the open circuit of harness.
3	<b>CHECK HARNESS.</b> Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 20 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 4.	Repair the short circuit of harness.

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

### CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>4 CHECK TRANSMISSION HARNESS.</b> 1) Connect the TCM connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between transmission connector terminals. <b>Connector &amp; terminal</b> <b>(B11) No. 7 (+) — (B11) No. 13 (-):</b>	Is the voltage approx. 10 — 13 V?	Go to step 5.	Repair the poor contact of harness or connector.
<b>5 CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the transmission connector. 3) Lift up the vehicle. 4) Start the engine. 5) Slowly increase the speed to 30 km/h (19 MPH). 6) Read the data of «Front Wheel Speed» using Subaru Select Monitor.	Does the value of «Front Wheel Speed» change according to the engine speed?	Current condition is normal. Repair the poor contacts of harnesses of front wheel speed sensor and transmission connector.	Go to step 6.
<b>6 CHECK TRANSMISSION HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Lift up the vehicle. 4) Disconnect the front wheel speed sensor connector. 5) Measure the resistance between transmission connector and front wheel speed sensor connector. <b>Connector &amp; terminal</b> <b>(T4) No. 7 — (AT5) No. 1:</b> <b>(T4) No. 12 — (AT5) No. 2:</b> <b>(T4) No. 13 — (AT5) No. 3:</b>	Is the resistance less than 1 $\Omega$ ?	Replace the front wheel speed sensor.<Ref. to CVT(TR690)-105, Front Wheel Speed Sensor.>	Replace the transmission harness.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## N: DTC P0721 OUTPUT SHAFT SPEED SENSOR CIRCUIT RANGE/PERFORMANCE

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-17, DTC P0721 OUTPUT SHAFT SPEED SENSOR CIRCUIT RANGE/PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

- Acceleration is poor during standing start.
- No lock-up occurs.
- The engine stalls when the vehicle is stopped.
- Shift control malfunction

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0721, is DTC P0500 displayed?	Perform the diagnosis according to DTCs other than P0721.	Perform the diagnosis according to DTC P0720.<Ref. to CVT(diag)-61, DTC P0720 OUTPUT SPEED SENSOR CIRCUIT, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## O: DTC P0724 BRAKE SWITCH CIRCUIT HIGH

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-18, DTC P0724 BRAKE SWITCH CIRCUIT HIGH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

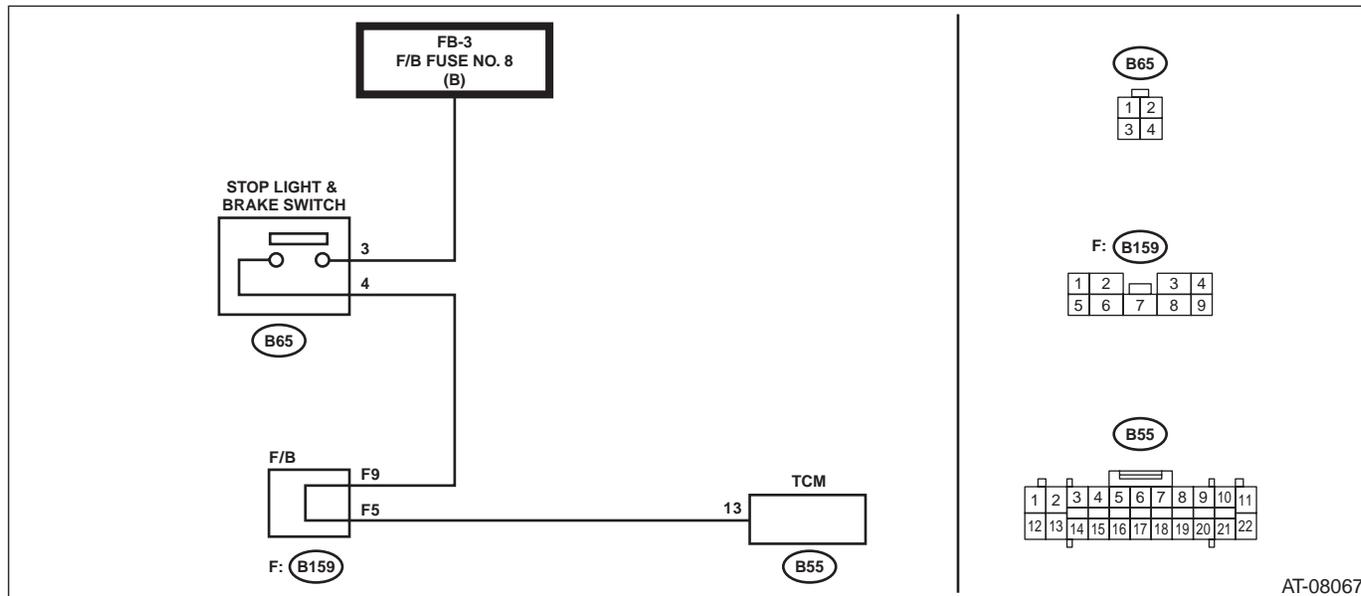
### TROUBLE SYMPTOM:

Gear is not shifted down when climbing a hill or driving down a hill.

### WIRING DIAGRAM:

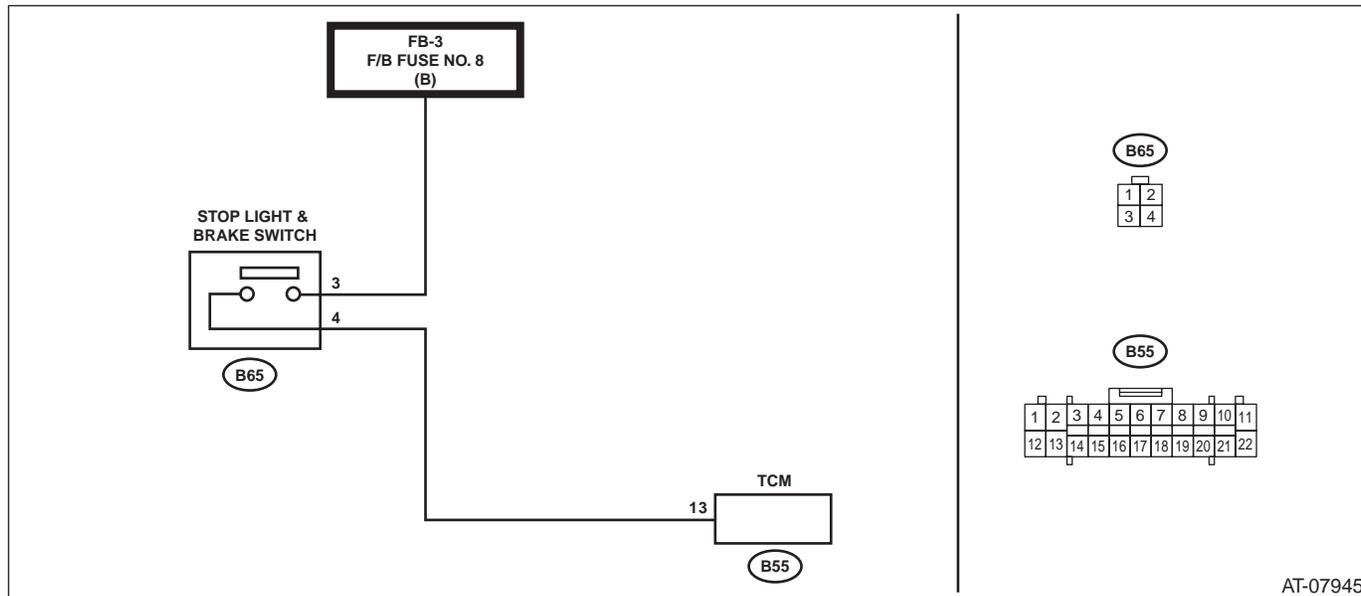
- Non-turbo model (without EyeSight and X mode)

Stop light system<Ref. to WI-395, WITHOUT EyeSight AND X MODE, WIRING DIAGRAM, Stop Light System.>



- Except for non-turbo model (without EyeSight and X mode)

Stop light system<Ref. to WI-397, EXCEPT FOR MODEL WITHOUT EyeSight AND X MODE, WIRING DIAGRAM, Stop Light System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK STOP LIGHT SWITCH.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the stop light switch connector. 3) Measure the resistance of harness between stop light switch connectors. <b>Connector &amp; terminal</b> <b>(B65) No. 3 — No. 4:</b>	Is the resistance 1 MΩ or more?	Go to step 2.	Replace the stop light switch.<Ref. to BR-69, Stop Light Switch.>
2	<b>CHECK HARNESS.</b> 1) Disconnect the TCM connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between TCM connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B55) No. 13 (+) — Chassis ground (-):</b>	Is the voltage 10 V or more?	Repair the short circuit of harness.	Go to step 3.
3	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Connect the TCM and stop light switch connector. 2) Turn the ignition switch to ON. 3) Read the data of «Stop Light Switch» using Subaru Select Monitor.	Is «OFF» displayed?	Current condition is normal. Check for poor contact in connectors or harnesses, and repair the defective part.	Go to step 4.
4	<b>CHECK FOR POOR CONTACT.</b>	Is there poor contact of input signal of stop light switch?	Repair the poor contact.	Replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## P: DTC P0730 GEARSHIFT CONTROL PERFORMANCE ABNORMAL

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-19, DTC P0730 GEARSHIFT CONTROL PERFORMANCE ABNORMAL, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

- Acceleration is poor during standing start.
- Shift control malfunction
- Engine speed increases abruptly.

Step	Check	Yes	No
1 <b>CHECK TRANSMISSION FLUID.</b> Check the amount of ATF.<Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>	Is the ATF amount correct?	Go to step 2.	Adjust the amount of ATF.<Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>
2 <b>CHECK TRANSMISSION FLUID.</b> Check the condition of ATF.<Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>	Is the ATF OK?	Go to step 3.	Check according to the "Corrective action" of ATF (CVTF) "CONDITION CHECK".<Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>
3 <b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Lift up the vehicle. 2) Start the engine. 3) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 4) Shift the select lever to "P" range. 5) Stabilize the engine speed at idle. 6) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Go to step 4.	Perform the diagnosis according to DTC P0841.<Ref. to CVT(diag)-89, DTC P0841 SECONDARY OIL PRESSURE SENSOR PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
4 <b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Set the select lever to "D" range. 2) Release the brake pedal to stabilize the engine speed and front wheel speed. 3) Read the data of «Actual Gear Ratio» using Subaru Select Monitor.	Is the «Actual Gear Ratio» as follows? • Non-turbo model 1.5 — 2.6 • Turbo model 2.0 — 2.4	Go to step 5.	Go to step 6.
5 <b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Set the select lever to "D" range. 2) Slowly increase the speed to 40 km/h (25 MPH) and keep the constant speed. 3) Read the data of «Actual Gear Ratio» using Subaru Select Monitor.	Is the «Actual Gear Ratio» as follows? • Non-turbo model 0.5 — 0.9 • Turbo model 0.5 — 0.8	Go to step 6.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>6</b> <b>DRIVING CHECK BY INSPECTION MODE.</b> 1) Turn the ignition switch to OFF. 2) Perform a drive check based on the "Inspection Mode".<Ref. to CVT(diag)-25, Inspection Mode.>	Does the AT OIL TEMP light blink and is DTC P0730 displayed?	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>	If there is shift problems, abrupt increase of engine speed, standing start problems, replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>If it is normal, temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## Q: DTC P0746 PRESSURE CONTROL SOLENOID "A" PERFORMANCE/STUCK OFF

### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-20, DTC P0746 PRESSURE CONTROL SOLENOID "A" PERFORMANCE/STUCK OFF, Diagnostic Trouble Code (DTC) Detecting Criteria.>

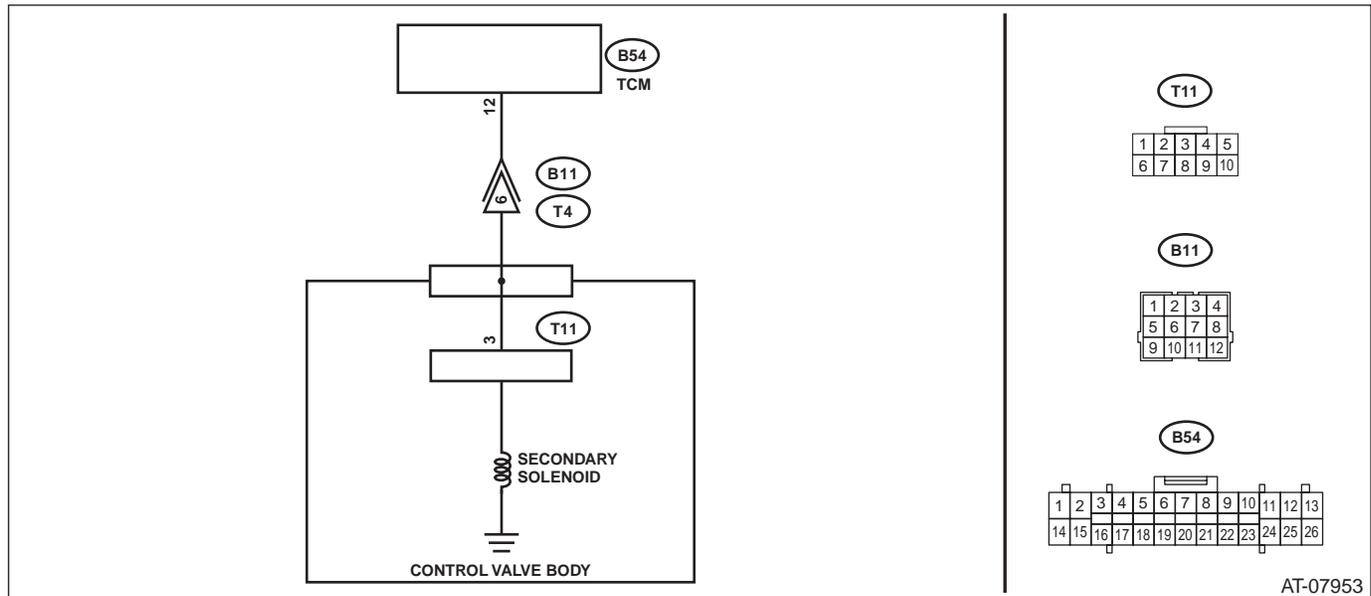
### TROUBLE SYMPTOM:

- Shift control malfunction
- CVT chain slippage

### WIRING DIAGRAM:

- Non-turbo model

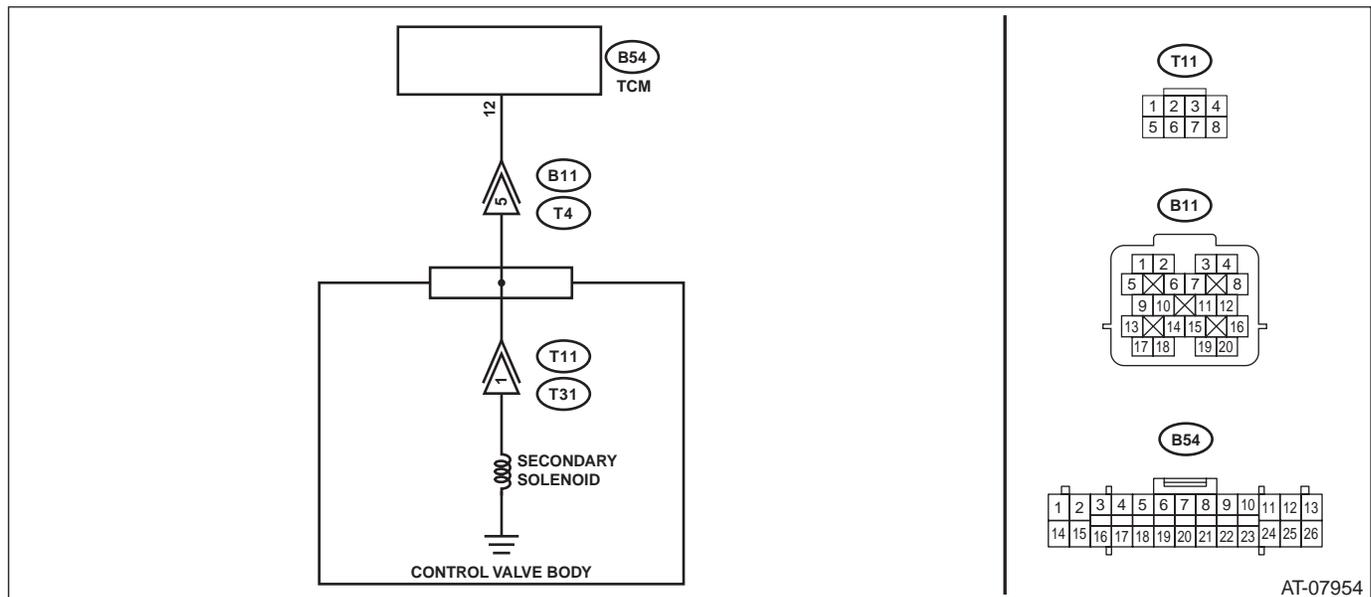
CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07953

- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07954

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0746, is any of the DTCs P0842, P0843, P0962 and P0963 displayed?	Perform the diagnosis according to DTCs other than P0746.	Go to step 2.
2	<b>CHECK SECONDARY SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 6 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 5 — Transmission body:</b>	Is the resistance approx. 5 — 7 Ω? (when cold)	Go to step 4.	Go to step 3.
3	<b>CHECK HARNESS.</b> Check the harness for continuity.	Is the harness normal? (Is it free from defects such as open circuit, power supply-output short or GND-output short circuit, or poor contact?)	Go to step 4.	Repair the harness.
4	<b>CHECK TRANSMISSION FLUID.</b> 1) Connect the transmission connector. 2) Check the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>	Is the ATF amount correct?	Go to step 5.	Adjust the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>
5	<b>CHECK TRANSMISSION FLUID.</b> Check the condition of ATF.<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>	Is the ATF OK?	Go to step 6.	Check according to the "Corrective action" of ATF (CVTF) "CONDITION CHECK".<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>
6	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Lift up the vehicle. 2) Start the engine. 3) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 4) Shift the select lever to "P" range. 5) Stabilize the engine speed at idle. 6) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Go to step 7.	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>
7	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Keep the engine speed at 3,000 rpm. 2) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» higher than step 6 value? Does the value change according to the engine speed, within the range of 1.5 — 2.5 MPa?	Go to step 8.	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

### CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>8 CHECK TCM INPUT SIGNAL (STALL TEST).</b> 1) Apply the parking brake. 2) Set the select lever to "D" range. 3) Depress the brake pedal firmly. 4) Slowly open the accelerator fully, and stabilize the engine speed. 5) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» higher than step 7 value? Does the value change according to the engine speed, within the range of 4.5 — 6.0 MPa?	Go to step 9.	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>
<b>9 DRIVING CHECK BY INSPECTION MODE.</b> 1) Turn the ignition switch to OFF. 2) Perform a drive check based on the "Inspection Mode".<Ref. to CVT(diag)-25, Inspection Mode.>	Does the AT OIL TEMP light blink and is DTC P0746 displayed?	Perform the secondary pressure test.<Ref. to CVT(TR580)-48, Secondary Pressure (Line Pressure) Test.> <Ref. to CVT(TR690)-51, Secondary Pressure (Line Pressure) Test.>	If there is shift problems, abrupt increase of engine speed, standing start problems, replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>If it is normal, temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## R: DTC P0747 PRESSURE CONTROL SOLENOID "A" STUCK ON

### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-24, DTC P0747 PRESSURE CONTROL SOLENOID "A" STUCK ON, Diagnostic Trouble Code (DTC) Detecting Criteria.>

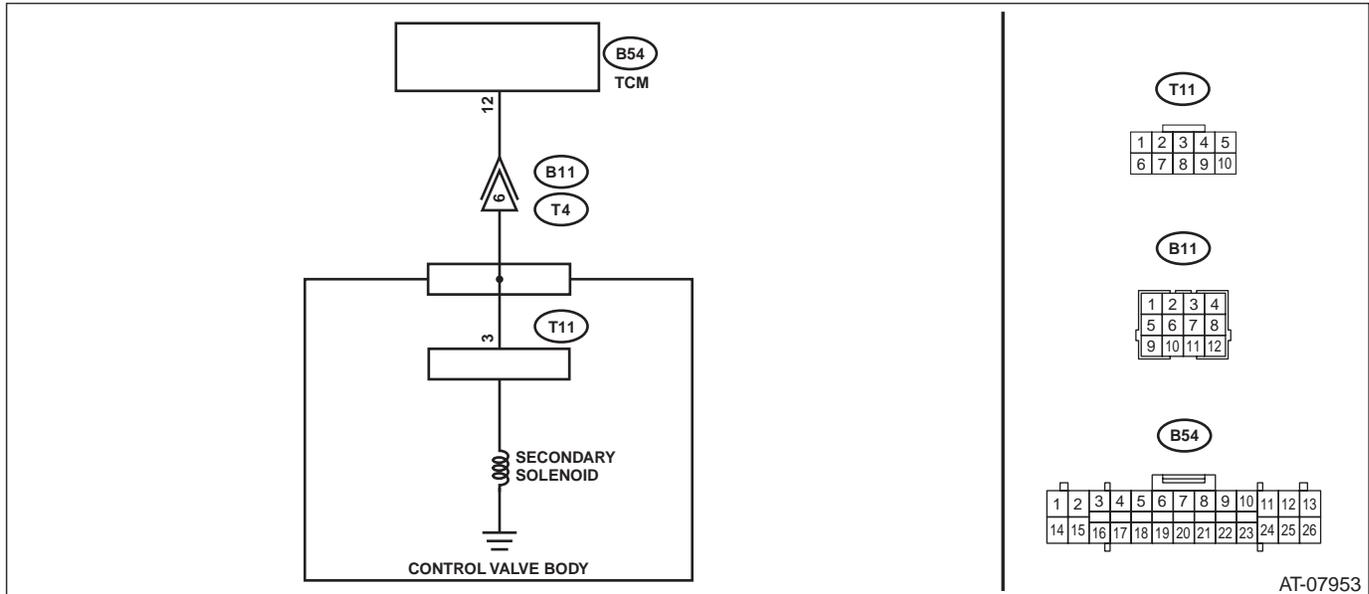
### TROUBLE SYMPTOM:

- Acceleration is poor during standing start.
- Shift control malfunction

### WIRING DIAGRAM:

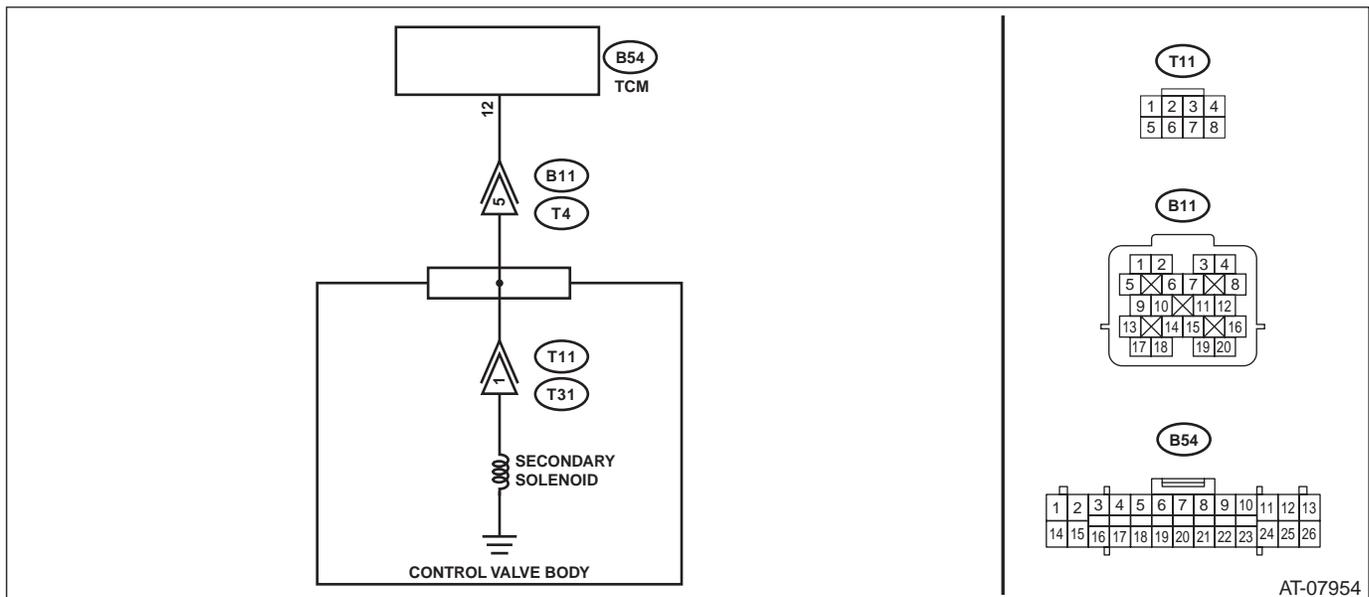
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0747, is any of the DTCs P0842, P0843, P0962 and P0963 displayed?	Perform the diagnosis according to DTCs other than P0747.	Go to step 2.
2	<b>CHECK SECONDARY SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 6 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 5 — Transmission body:</b>	Is the resistance approx. 5 — 7 Ω? (when cold)	Go to step 4.	Go to step 3.
3	<b>CHECK HARNESS.</b> Check the harness for continuity.	Is the harness normal? (Is it free from defects such as open circuit, power supply-output short or GND-output short circuit, or poor contact?)	Go to step 4.	Repair the harness.
4	<b>CHECK TRANSMISSION FLUID.</b> 1) Connect the transmission connector. 2) Check the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>	Is the ATF amount correct?	Go to step 5.	Adjust the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>
5	<b>CHECK TRANSMISSION FLUID.</b> Check the condition of ATF.<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>	Is the ATF OK?	Go to step 6.	Check according to the "Corrective action" of ATF (CVTF) "CONDITION CHECK".<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>
6	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Lift up the vehicle. 2) Start the engine. 3) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 4) Shift the select lever to "P" range. 5) Stabilize the engine speed at idle. 6) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Go to step 7.	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>
7	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Keep the engine speed at 3,000 rpm. 2) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» higher than step 6 value? Does the value change according to the engine speed, within the range of 1.5 — 2.5 MPa?	Go to step 8.	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>8 CHECK TCM INPUT SIGNAL (STALL TEST).</b> 1) Apply the parking brake. 2) Set the select lever to "D" range. 3) Depress the brake pedal firmly. 4) Slowly open the accelerator fully, and stabilize the engine speed. 5) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» higher than step 7 value? Does the value change according to the engine speed, within the range of 4.5 — 6.0 MPa?	Go to step 9.	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>
<b>9 DRIVING CHECK BY INSPECTION MODE.</b> 1) Turn the ignition switch to OFF. 2) Perform a drive check based on the "Inspection Mode".<Ref. to CVT(diag)-25, Inspection Mode.>	Does the AT OIL TEMP light blink and is DTC P0747 displayed?	Perform the secondary pressure test.<Ref. to CVT(TR580)-48, Secondary Pressure (Line Pressure) Test.> <Ref. to CVT(TR690)-51, Secondary Pressure (Line Pressure) Test.>	If there is shift problems, abrupt increase of engine speed, standing start problems, replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>If it is normal, temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## S: DTC P0751 SHIFT SOLENOID "A" PERFORMANCE/STUCK OFF

### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-28, DTC P0751 SHIFT SOLENOID "A" PERFORMANCE/STUCK OFF, Diagnostic Trouble Code (DTC) Detecting Criteria.>

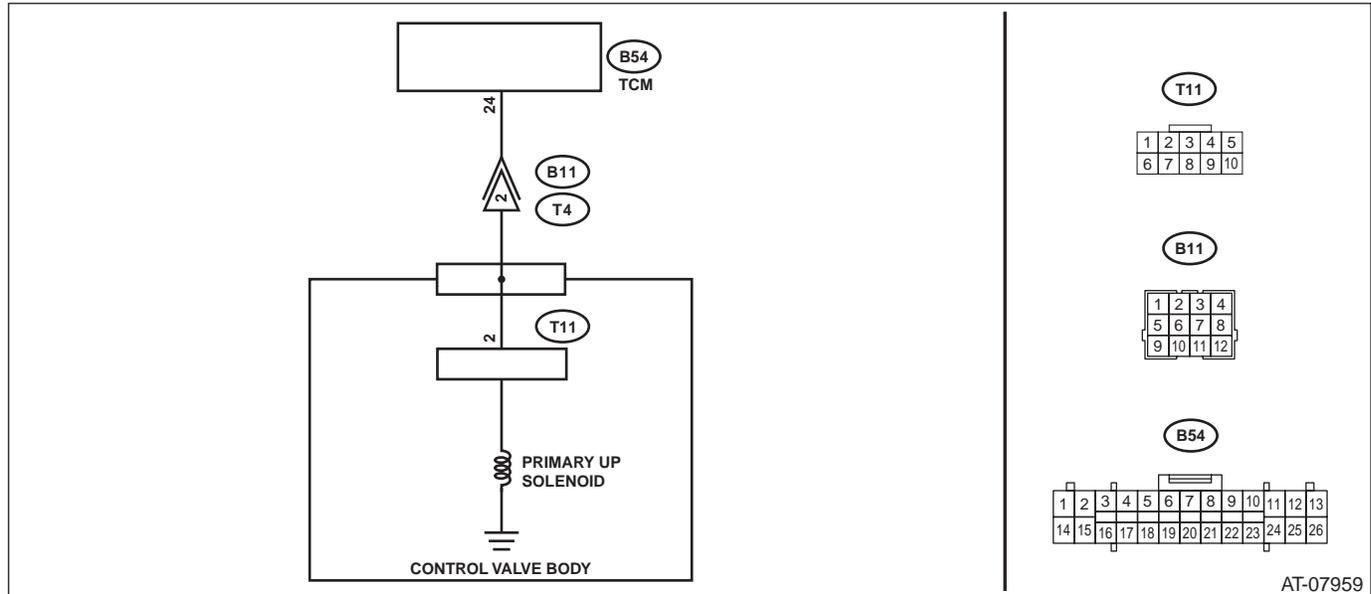
### TROUBLE SYMPTOM:

- Shift control malfunction
- Engine speed increases abruptly.

### WIRING DIAGRAM:

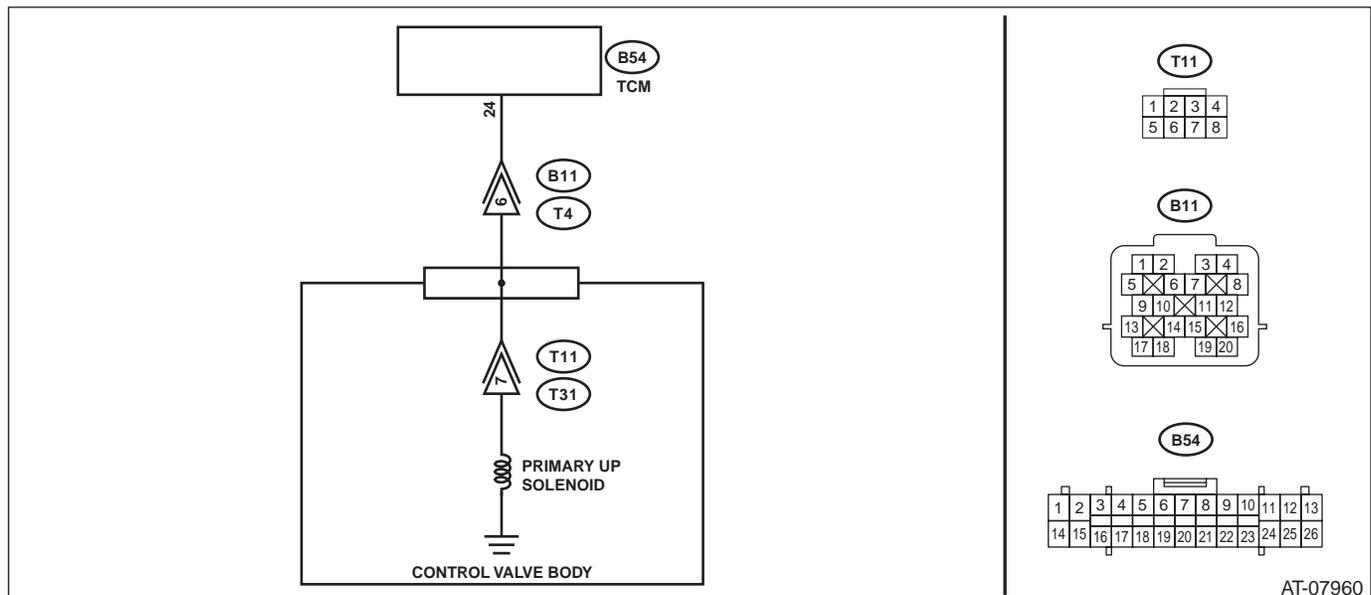
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0751, is any of the DTCs P0973, P0974, P0976, P0977, P2747 and P2751 displayed?	Perform the diagnosis according to DTCs other than P0751.	Go to step 2.
2	<b>CHECK PRIMARY UP SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 2 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 6 — Transmission body:</b>	Is the resistance approx. 10 — 13.5 Ω? (when cold)	Go to step 4.	Go to step 3.
3	<b>CHECK HARNESS.</b> Check the harness for continuity.	Is the harness normal? (Is it free from defects such as open circuit, power supply-output short or GND-output short circuit, or poor contact?)	Go to step 4.	Repair the harness.
4	<b>CHECK TRANSMISSION FLUID.</b> 1) Connect the transmission connector. 2) Check the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>	Is the ATF amount correct?	Go to step 5.	Adjust the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>
5	<b>CHECK TRANSMISSION FLUID.</b> Check the condition of ATF.<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>	Is the ATF OK?	Go to step 6.	Check according to the "Corrective action" of ATF (CVTF) "CONDITION CHECK".<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>
6	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Lift up the vehicle. 2) Start the engine. 3) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 4) Shift the select lever to "P" range. 5) Stabilize the engine speed at idle. 6) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Go to step 7.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
7	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Set the select lever to "D" range. 2) Release the brake pedal to stabilize the engine speed and front wheel speed. 3) Read the data of «Actual Gear Ratio» using Subaru Select Monitor.	Is the «Actual Gear Ratio» as follows? • Non-turbo model 1.5 — 2.6 • Turbo model 2.0 — 2.4	Go to step 8.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>
8	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Set the select lever to "D" range. 2) Slowly increase the speed to 40 km/h (25 MPH) and keep the constant speed. 3) Read the data of «Actual Gear Ratio» using Subaru Select Monitor.	Is the «Actual Gear Ratio» as follows? • Non-turbo model 0.5 — 0.9 • Turbo model 0.5 — 0.8	Go to step 9.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>
9	<b>DRIVING CHECK BY INSPECTION MODE.</b> 1) Turn the ignition switch to OFF. 2) Perform a drive check based on the "Inspection Mode".<Ref. to CVT(diag)-25, Inspection Mode.>	Does the AT OIL TEMP light blink and is DTC P0751 displayed?	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>	If there is shift problems, abrupt increase of engine speed, standing start problems, replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.> If it is normal, temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## T: DTC P0752 SHIFT SOLENOID "A" STUCK ON

### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-29, DTC P0752 SHIFT SOLENOID "A" STUCK ON, Diagnostic Trouble Code (DTC) Detecting Criteria.>

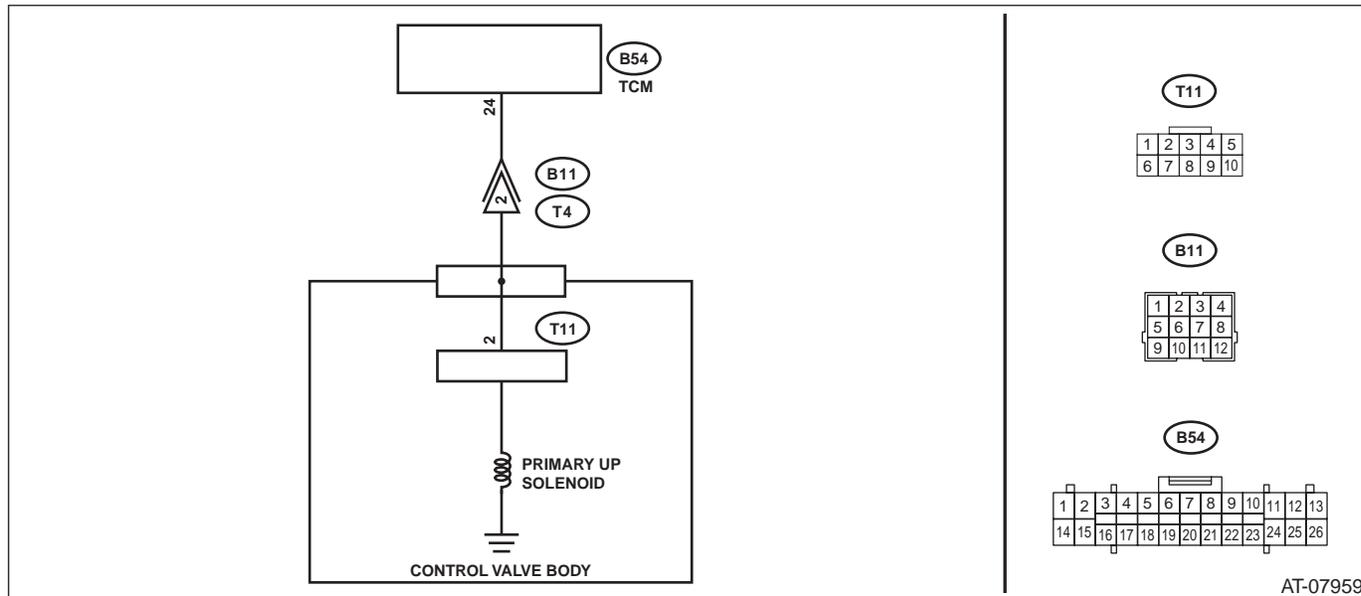
### TROUBLE SYMPTOM:

- Acceleration is poor during standing start.
- Shift control malfunction

### WIRING DIAGRAM:

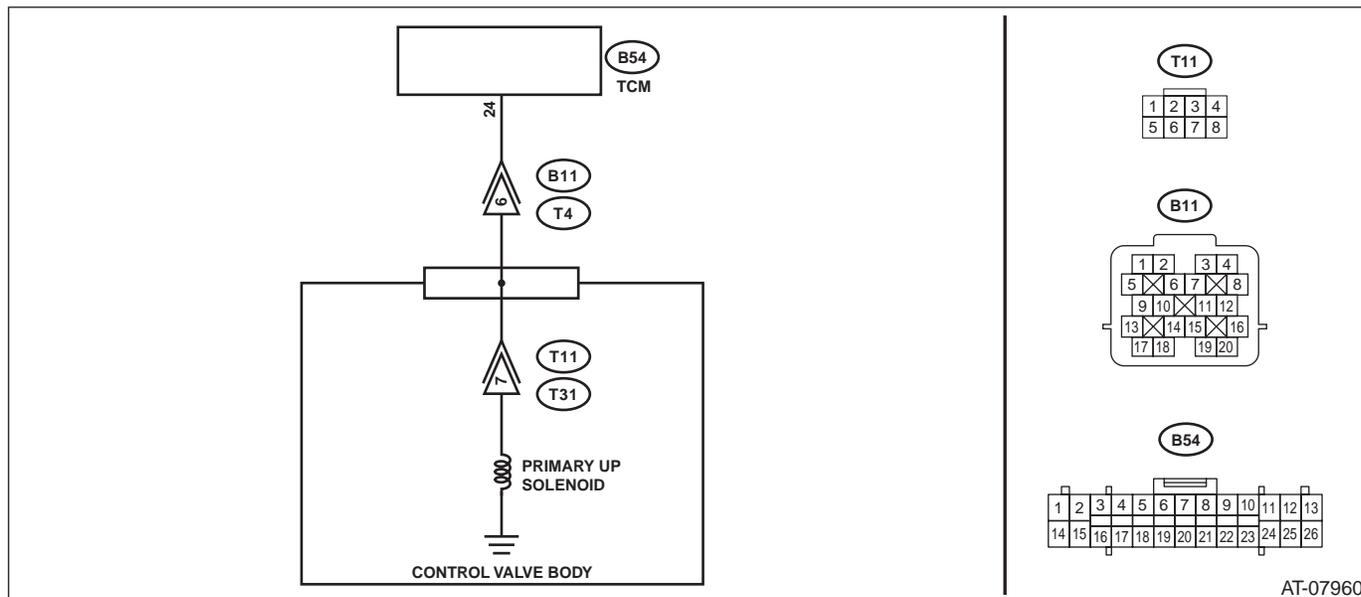
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0752, is any of the DTCs P0973, P0974, P0976, P0977, P2747 and P2751 displayed?	Perform the diagnosis according to DTCs other than P0752.	Go to step 2.
2	<b>CHECK PRIMARY UP SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 2 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 6 — Transmission body:</b>	Is the resistance approx. 10 — 13.5 Ω? (when cold)	Go to step 4.	Go to step 3.
3	<b>CHECK HARNESS.</b> Check the harness for continuity.	Is the harness normal? (Is it free from defects such as open circuit, power supply-output short or GND-output short circuit, or poor contact?)	Go to step 4.	Repair the harness.
4	<b>CHECK TRANSMISSION FLUID.</b> 1) Connect the transmission connector. 2) Check the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>	Is the ATF amount correct?	Go to step 5.	Adjust the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>
5	<b>CHECK TRANSMISSION FLUID.</b> Check the condition of ATF.<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>	Is the ATF OK?	Go to step 6.	Check according to the "Corrective action" of ATF (CVTF) "CONDITION CHECK".<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>
6	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Lift up the vehicle. 2) Start the engine. 3) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 4) Shift the select lever to "P" range. 5) Stabilize the engine speed at idle. 6) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Go to step 7.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>7</b> <b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Set the select lever to "D" range. 2) Release the brake pedal to stabilize the engine speed and front wheel speed. 3) Read the data of «Actual Gear Ratio» using Subaru Select Monitor.	Is the «Actual Gear Ratio» as follows? • Non-turbo model 1.5 — 2.6 • Turbo model 2.0 — 2.4	Go to step 8.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>
<b>8</b> <b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Set the select lever to "D" range. 2) Slowly increase the speed to 40 km/h (25 MPH) and keep the constant speed. 3) Read the data of «Actual Gear Ratio» using Subaru Select Monitor.	Is the «Actual Gear Ratio» as follows? • Non-turbo model 0.5 — 0.9 • Turbo model 0.5 — 0.8	Go to step 9.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>
<b>9</b> <b>DRIVING CHECK BY INSPECTION MODE.</b> 1) Turn the ignition switch to OFF. 2) Perform a drive check based on the "Inspection Mode".<Ref. to CVT(diag)-25, Inspection Mode.>	Does the AT OIL TEMP light blink and is DTC P0752 displayed?	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>	If there is shift problems, abrupt increase of engine speed, standing start problems, replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.> If it is normal, temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## U: DTC P0756 SHIFT SOLENOID "B" PERFORMANCE/STUCK OFF

### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-30, DTC P0756 SHIFT SOLENOID "B" PERFORMANCE/STUCK OFF, Diagnostic Trouble Code (DTC) Detecting Criteria.>

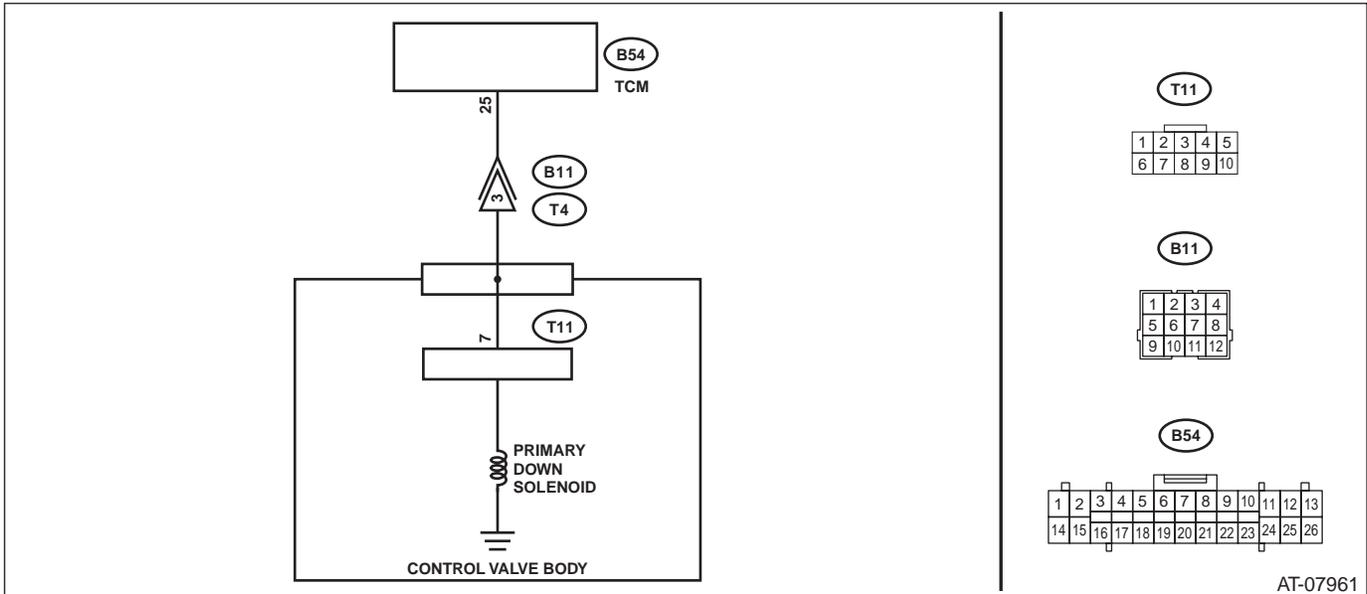
### TROUBLE SYMPTOM:

- Acceleration is poor during standing start.
- Shift control malfunction

### WIRING DIAGRAM:

- Non-turbo model

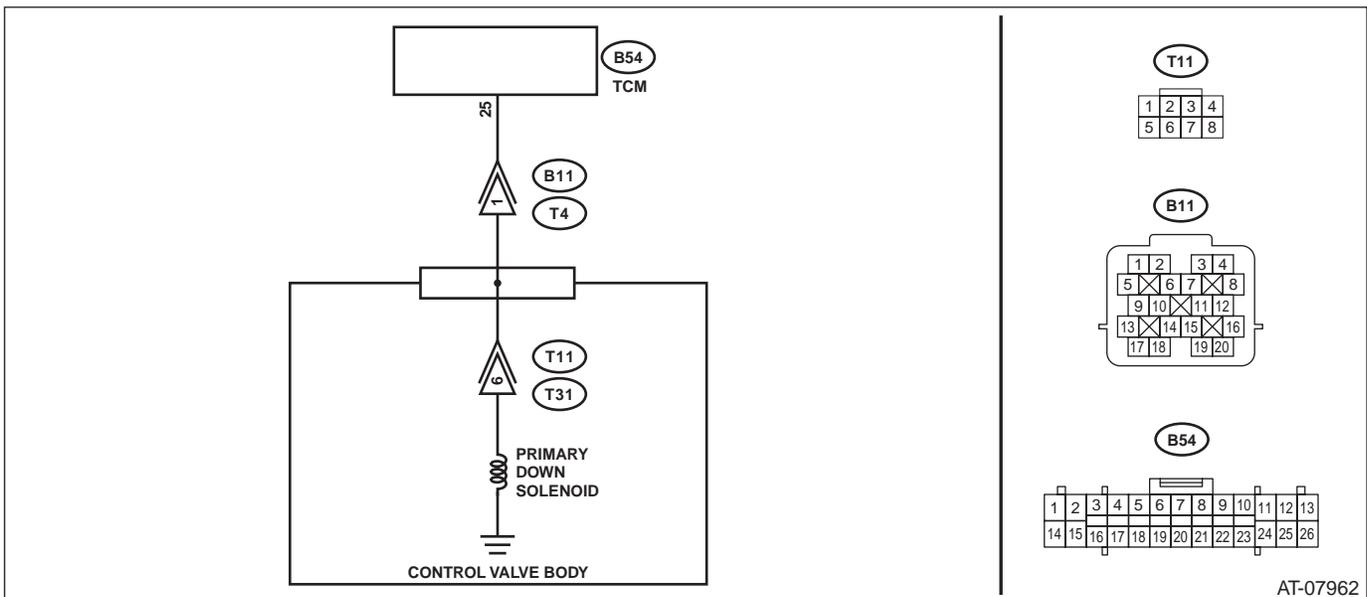
CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07961

- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07962

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0756, is any of the DTCs P0973, P0974, P0976, P0977, P2747 and P2751 displayed?	Perform the diagnosis according to DTCs other than P0756.	Go to step 2.
2	<b>CHECK PRIMARY DOWN SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 3 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 1 — Transmission body:</b>	Is the resistance approx. 10 — 13.5 Ω? (when cold)	Go to step 4.	Go to step 3.
3	<b>CHECK HARNESS.</b> Check the harness for continuity.	Is the harness normal? (Is it free from defects such as open circuit, power supply-output short or GND-output short circuit, or poor contact?)	Go to step 4.	Repair the harness.
4	<b>CHECK TRANSMISSION FLUID.</b> 1) Connect the transmission connector. 2) Check the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>	Is the ATF amount correct?	Go to step 5.	Adjust the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>
5	<b>CHECK TRANSMISSION FLUID.</b> Check the condition of ATF.<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>	Is the ATF OK?	Go to step 6.	Check according to the "Corrective action" of ATF (CVTF) "CONDITION CHECK".<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>
6	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Lift up the vehicle. 2) Start the engine. 3) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 4) Shift the select lever to "P" range. 5) Stabilize the engine speed at idle. 6) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Go to step 7.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
7	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Set the select lever to "D" range. 2) Release the brake pedal to stabilize the engine speed and front wheel speed. 3) Read the data of «Actual Gear Ratio» using Subaru Select Monitor.	Is the «Actual Gear Ratio» as follows? • Non-turbo model 1.5 — 2.6 • Turbo model 2.0 — 2.4	Go to step 8.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>
8	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Set the select lever to "D" range. 2) Slowly increase the speed to 40 km/h (25 MPH) and keep the constant speed. 3) Read the data of «Actual Gear Ratio» using Subaru Select Monitor.	Is the «Actual Gear Ratio» as follows? • Non-turbo model 0.5 — 0.9 • Turbo model 0.5 — 0.8	Go to step 9.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>
9	<b>DRIVING CHECK BY INSPECTION MODE.</b> 1) Turn the ignition switch to OFF. 2) Perform a drive check based on the "Inspection Mode".<Ref. to CVT(diag)-25, Inspection Mode.>	Does the AT OIL TEMP light blink and is DTC P0756 displayed?	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>	If there is shift problems, abrupt increase of engine speed, standing start problems, replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.> If it is normal, temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## V: DTC P0757 SHIFT SOLENOID "B" STUCK ON

### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-31, DTC P0757 SHIFT SOLENOID "B" STUCK ON, Diagnostic Trouble Code (DTC) Detecting Criteria.>

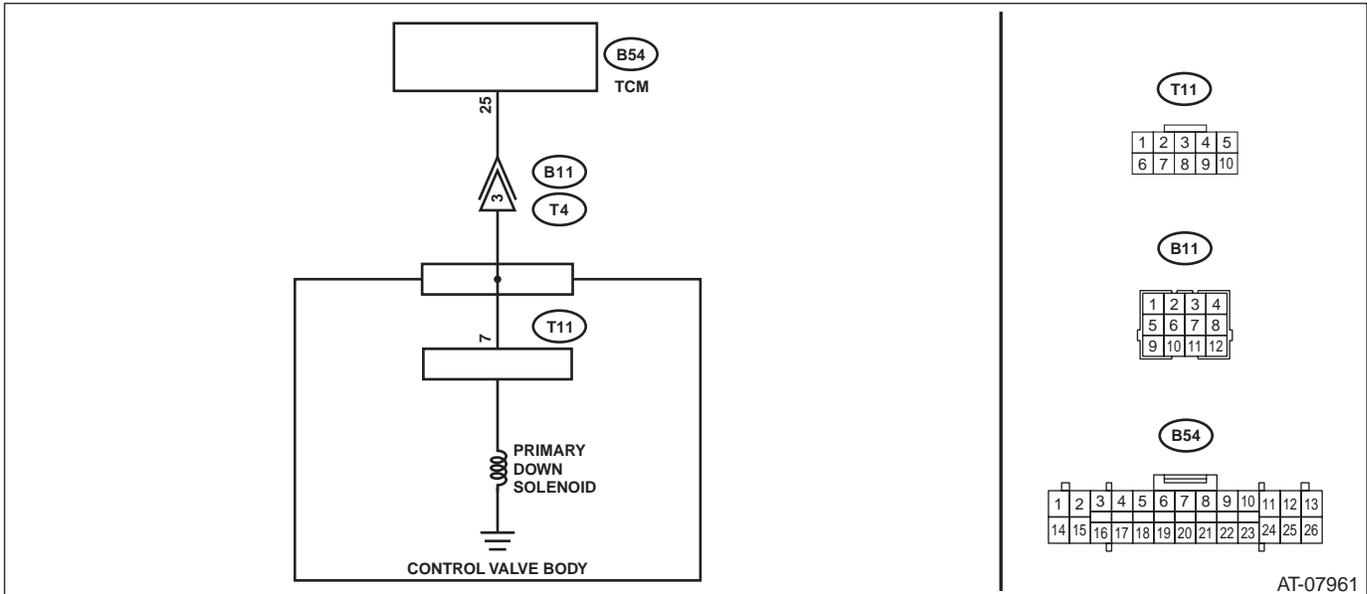
### TROUBLE SYMPTOM:

- Vibration occurs at shift change.
- Shift control malfunction

### WIRING DIAGRAM:

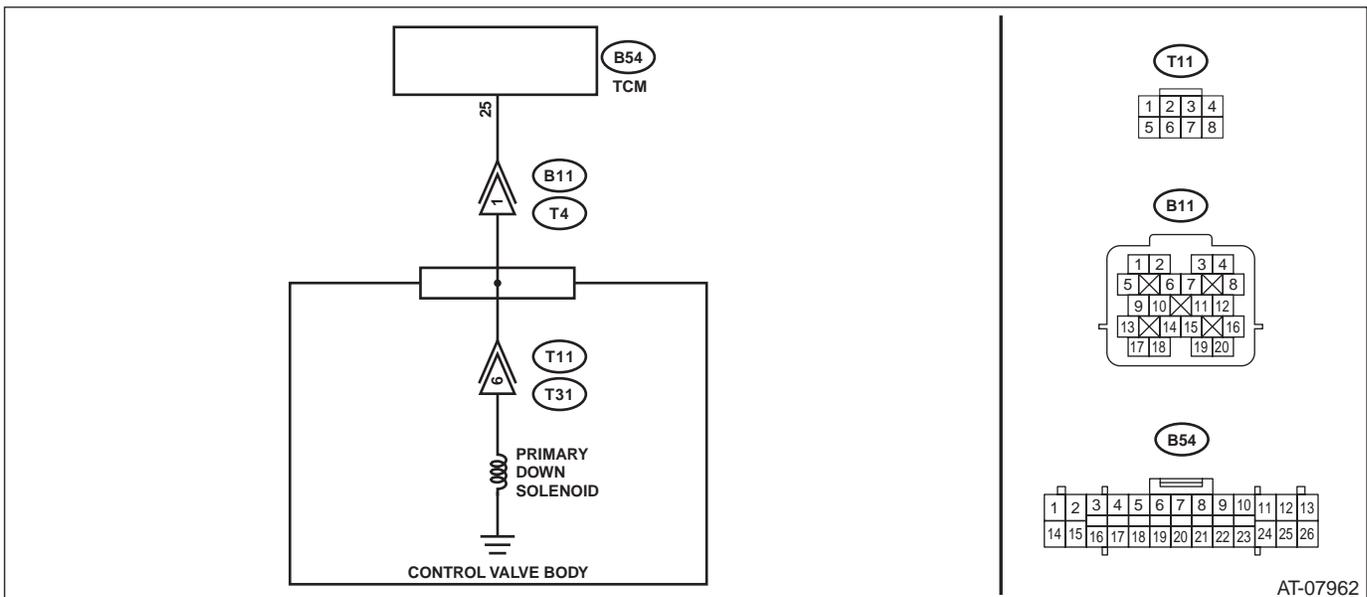
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0757, is any of the DTCs P0973, P0974, P0976, P0977, P2747 and P2751 displayed?	Perform the diagnosis according to DTCs other than P0757.	Go to step 2.
2	<b>CHECK PRIMARY DOWN SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 3 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 1 — Transmission body:</b>	Is the resistance approx. 10 — 13.5 Ω? (when cold)	Go to step 4.	Go to step 3.
3	<b>CHECK HARNESS.</b> Check the harness for continuity.	Is the harness normal? (Is it free from defects such as open circuit, power supply-output short or GND-output short circuit, or poor contact?)	Go to step 4.	Repair the harness.
4	<b>CHECK TRANSMISSION FLUID.</b> 1) Connect the transmission connector. 2) Check the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>	Is the ATF amount correct?	Go to step 5.	Adjust the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>
5	<b>CHECK TRANSMISSION FLUID.</b> Check the condition of ATF.<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>	Is the ATF OK?	Go to step 6.	Check according to the "Corrective action" of ATF (CVTF) "CONDITION CHECK".<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>
6	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Lift up the vehicle. 2) Start the engine. 3) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 4) Shift the select lever to "P" range. 5) Stabilize the engine speed at idle. 6) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Go to step 7.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>7 CHECK INPUT SIGNAL FOR TCM.</b> 1) Set the select lever to "D" range. 2) Release the brake pedal to stabilize the engine speed and front wheel speed. 3) Read the data of «Actual Gear Ratio» using Subaru Select Monitor.	Is the «Actual Gear Ratio» as follows? • Non-turbo model 1.5 — 2.6 • Turbo model 2.0 — 2.4	Go to step 8.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>
<b>8 CHECK INPUT SIGNAL FOR TCM.</b> 1) Set the select lever to "D" range. 2) Slowly increase the speed to 40 km/h (25 MPH) and keep the constant speed. 3) Read the data of «Actual Gear Ratio» using Subaru Select Monitor.	Is the «Actual Gear Ratio» as follows? • Non-turbo model 0.5 — 0.9 • Turbo model 0.5 — 0.8	Go to step 9.	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>
<b>9 DRIVING CHECK BY INSPECTION MODE.</b> 1) Turn the ignition switch to OFF. 2) Perform a drive check based on the "Inspection Mode".<Ref. to CVT(diag)-25, Inspection Mode.>	Does the AT OIL TEMP light blink and is DTC P0757 displayed?	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>	If there is shift problems, abrupt increase of engine speed, standing start problems, replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.> If it is normal, temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## W: DTC P0776 PRESSURE CONTROL SOLENOID "B" PERFORMANCE/STUCK OFF

### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-32, DTC P0776 PRESSURE CONTROL SOLENOID "B" PERFORMANCE/STUCK OFF, Diagnostic Trouble Code (DTC) Detecting Criteria.>

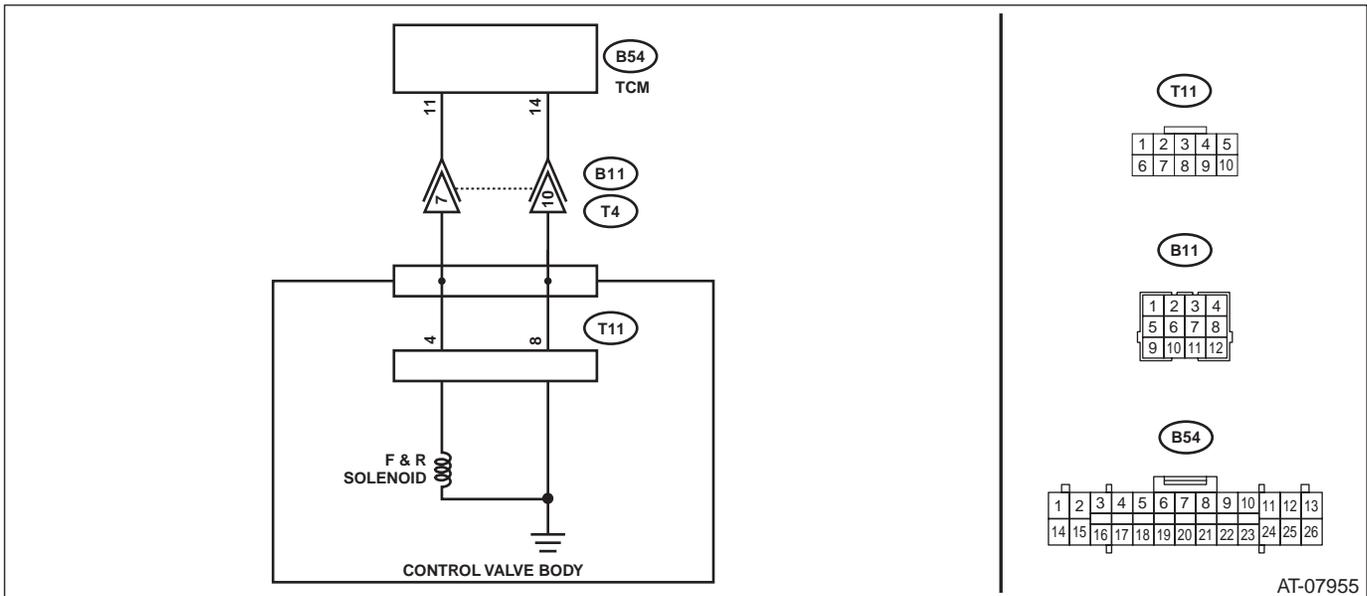
### TROUBLE SYMPTOM:

- Engine speed increases abruptly, and can not accelerate.
- Excessive slippage is felt.

### WIRING DIAGRAM:

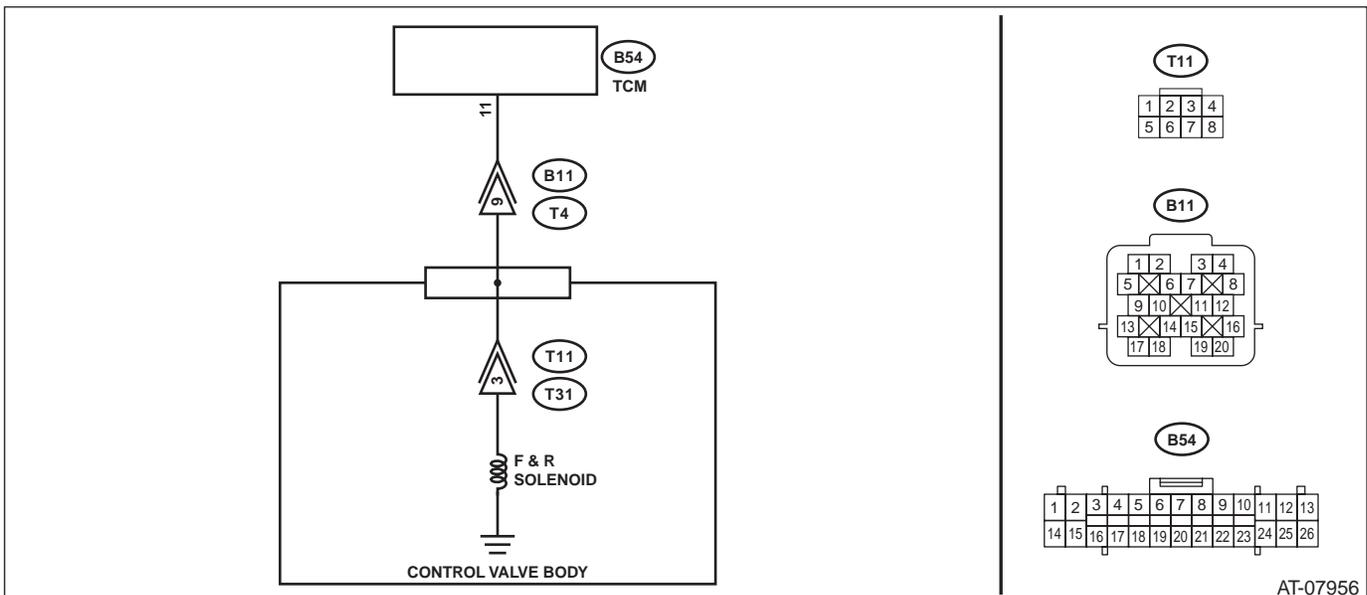
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0776, is any of the DTCs P0720, P0966, P0967, P1706 and P2751 displayed?	Perform the diagnosis according to DTCs other than P0776.	Go to step 2.
2	<b>CHECK F&amp;R SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 4 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 9 — Transmission body:</b>	Is the resistance approx. 4 — 6 Ω? (when cold)	Go to step 4.	Go to step 3.
3	<b>CHECK HARNESS.</b> Check the harness for continuity.	Is the harness normal? (Is it free from defects such as open circuit, power supply-output short or GND-output short circuit, or poor contact?)	Go to step 4.	Repair the harness.
4	<b>CHECK TRANSMISSION FLUID.</b> 1) Connect the transmission connector. 2) Check the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>	Is the ATF amount correct?	Go to step 5.	Adjust the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>
5	<b>CHECK TRANSMISSION FLUID.</b> Check the condition of ATF.<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>	Is the ATF OK?	Go to step 6.	Check according to the "Corrective action" of ATF (CVTF) "CONDITION CHECK".<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>
6	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Start the engine. 2) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 3) Shift the select lever to "P" range. 4) Stabilize the engine speed at idle. 5) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Go to step 7.	Perform the diagnosis according to DTC P0841.<Ref. to CVT(diag)-89, DTC P0841 SECONDARY OIL PRESSURE SENSOR PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
7	<b>STALL TEST.</b> Perform the stall test.<Ref. to CVT(TR580)-46, Stall Test.> <Ref. to CVT(TR690)-49, Stall Test.>	Is the stall test normal?	Go to step 8.	If the engine speed increases abruptly, replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>
8	<b>DRIVING CHECK BY INSPECTION MODE.</b> 1) Turn the ignition switch to OFF. 2) Perform a drive check based on the "Inspection Mode".<Ref. to CVT(diag)-25, Inspection Mode.>	Does the AT OIL TEMP light blink and is DTC P0776 displayed?	Replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>	If there is abrupt increase of engine speed, standing start problems, replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.> If it is normal, temporary poor contact occurs.

### X: DTC P0801 REVERSE INHIBIT CONTROL CIRCUIT

#### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-33, DTC P0801 REVERSE INHIBIT CONTROL CIRCUIT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### NOTE:

For diagnostic procedures, refer to "BODY CONTROL SYSTEM (DIAGNOSTICS)".<Ref. to BC(diag)-34, DTC B1106 SHIFT LOCK CIRCUIT FAILURE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## Y: DTC P0841 SECONDARY OIL PRESSURE SENSOR PERFORMANCE

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-34, DTC P0841 SECONDARY OIL PRESSURE SENSOR PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

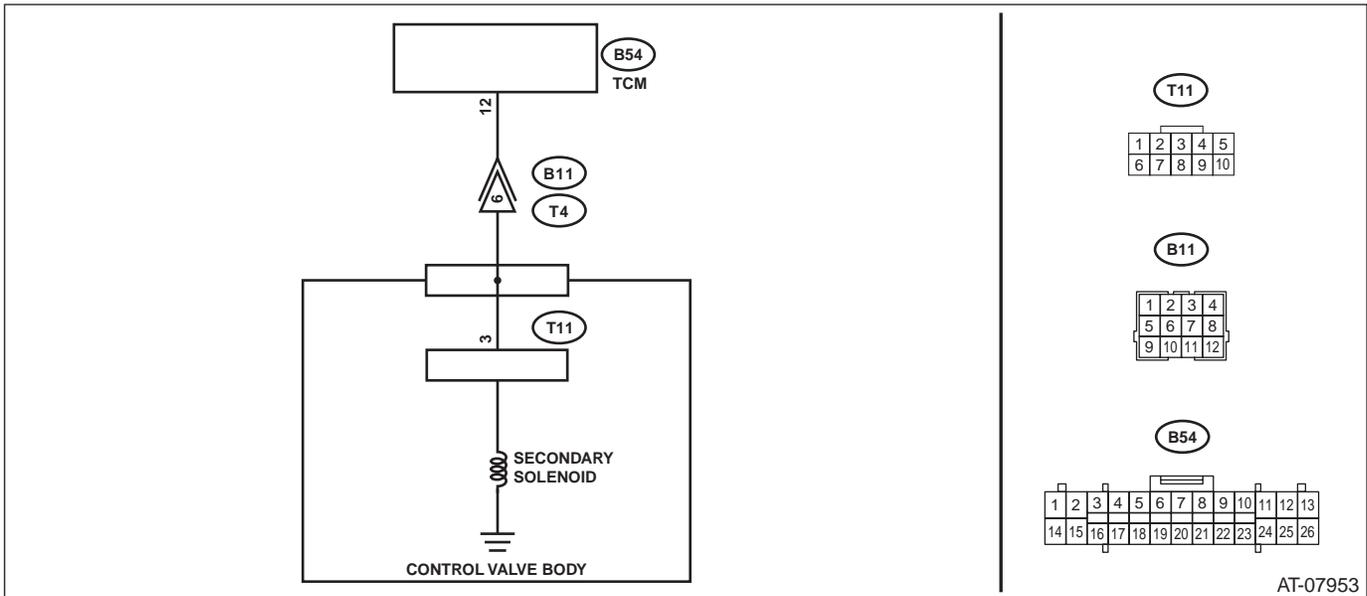
### TROUBLE SYMPTOM:

- Acceleration is poor during standing start.
- Shift control malfunction
- Engine speed increases abruptly.

### WIRING DIAGRAM:

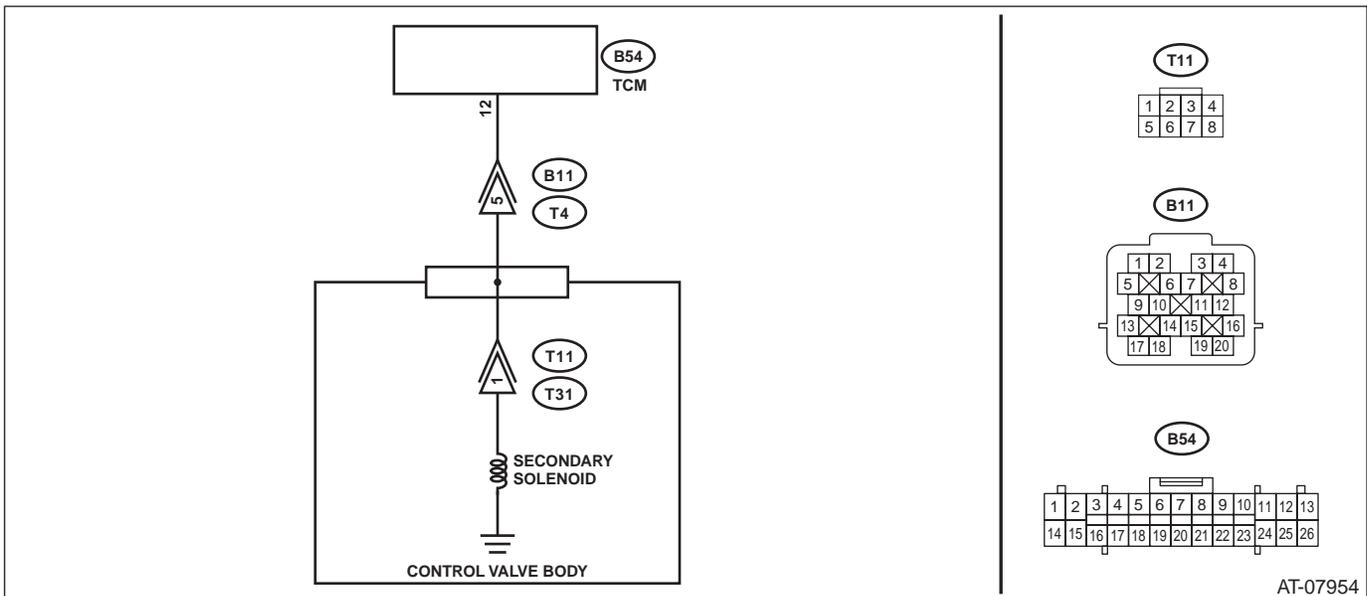
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>1 CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0841, is any of the DTCs P0842, P0843, P0962 and P0963 displayed?	Perform the diagnosis according to DTCs other than P0841.	Go to step 2.
<b>2 CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B54) No. 2 — (B12) No. 12: (B54) No. 15 — (B12) No. 10: (B54) No. 17 — (B12) No. 11: <b>Turbo model</b> (B54) No. 2 — (B11) No. 17: (B54) No. 15 — (B11) No. 18: (B54) No. 17 — (B11) No. 14:	Is the resistance less than 1 Ω?	Go to step 3.	Repair the open circuit of harness.
<b>3 CHECK HARNESS.</b> Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 2 — Chassis ground: (B54) No. 17 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 4.	Repair the short circuit of harness.
<b>4 CHECK TRANSMISSION HARNESS.</b> 1) Disconnect the secondary pressure sensor connector. 2) Measure the resistance between transmission connector and secondary pressure sensor connector. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T3) No. 10 — (AT6) No. 3: (T3) No. 11 — (AT6) No. 2: (T3) No. 12 — (AT6) No. 1: <b>Turbo model</b> (T4) No. 14 — (AT6) No. 2: (T4) No. 17 — (AT6) No. 1: (T4) No. 18 — (AT6) No. 3:	Is the resistance less than 1 Ω?	Go to step 5.	Repair the open circuit of harness.
<b>5 CHECK TRANSMISSION HARNESS.</b> Measure the resistance between transmission connector and chassis ground. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T3) No. 11 — Chassis ground: (T3) No. 12 — Chassis ground: <b>Turbo model</b> (T4) No. 14 — Chassis ground: (T4) No. 17 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 6.	Repair the short circuit of harness.
<b>6 CHECK SENSOR POWER SUPPLY.</b> 1) Connect the connectors of TCM and transmission. 2) Turn the ignition switch to ON. 3) Measure the voltage between secondary pressure sensor connector terminals. <b>Connector &amp; terminal</b> (AT6) No. 1 (+) — (AT6) No. 3 (-):	Is the voltage 4.5 V or more?	Replace the secondary pressure sensor.<Ref. to CVT(TR580)-105, Secondary Pressure Sensor.> <Ref. to CVT(TR690)-107, Secondary Pressure Sensor.>	Go to step 7.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>7 CHECK TRANSMISSION FLUID.</b> 1) Connect all connectors. 2) Check the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>	Is the ATF amount correct?	Go to step 8.	Adjust the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>
<b>8 CHECK TRANSMISSION FLUID.</b> Check the condition of ATF.<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>	Is the ATF OK?	Go to step 9.	Check according to the "Corrective action" of ATF (CVTF) "CONDITION CHECK".<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>
<b>9 CHECK INPUT SIGNAL FOR TCM.</b> 1) Lift up the vehicle. 2) Start the engine. 3) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 4) Shift the select lever to "P" range. 5) Stabilize the engine speed at idle. 6) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Go to step 10.	Replace the secondary pressure sensor.<Ref. to CVT(TR580)-105, Secondary Pressure Sensor.> <Ref. to CVT(TR690)-107, Secondary Pressure Sensor.>
<b>10 CHECK INPUT SIGNAL FOR TCM.</b> 1) Keep the engine speed at 3,000 rpm. 2) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» higher than step 9 value? Does the value change according to the engine speed, within the range of 1.5 — 2.5 MPa?	Go to step 11.	Replace the secondary pressure sensor.<Ref. to CVT(TR580)-105, Secondary Pressure Sensor.> <Ref. to CVT(TR690)-107, Secondary Pressure Sensor.>
<b>11 CHECK TCM INPUT SIGNAL (STALL TEST).</b> 1) Apply the parking brake. 2) Set the select lever to "D" range. 3) Depress the brake pedal firmly. 4) Slowly open the accelerator fully, and stabilize the engine speed. 5) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» higher than step 10 value? Does the value change according to the engine speed, within the range of 4.5 — 6.0 MPa?	Go to step 12.	Replace the secondary pressure sensor.<Ref. to CVT(TR580)-105, Secondary Pressure Sensor.> <Ref. to CVT(TR690)-107, Secondary Pressure Sensor.>

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

### CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>12</b> <b>DRIVING CHECK BY INSPECTION MODE.</b> 1) Turn the ignition switch to OFF. 2) Perform a drive check based on the "Inspection Mode".<Ref. to CVT(diag)-25, Inspection Mode.>	Does the AT OIL TEMP light blink and is DTC P0841 displayed?	Perform the secondary pressure test.<Ref. to CVT(TR580)-48, Secondary Pressure (Line Pressure) Test.> <Ref. to CVT(TR690)-51, Secondary Pressure (Line Pressure) Test.>	If there is shift problems, abrupt increase of engine speed, standing start problems, replace the transmission assembly.<Ref. to CVT(TR580)-57, Automatic Transmission Assembly.> <Ref. to CVT(TR690)-56, Automatic Transmission Assembly.>If it is normal, temporary poor contact occurs.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## Z: DTC P0842 SECONDARY OIL PRESSURE SENSOR CIRCUIT (LOW)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-35, DTC P0842 SECONDARY OIL PRESSURE SENSOR CIRCUIT (LOW), Diagnostic Trouble Code (DTC) Detecting Criteria.>

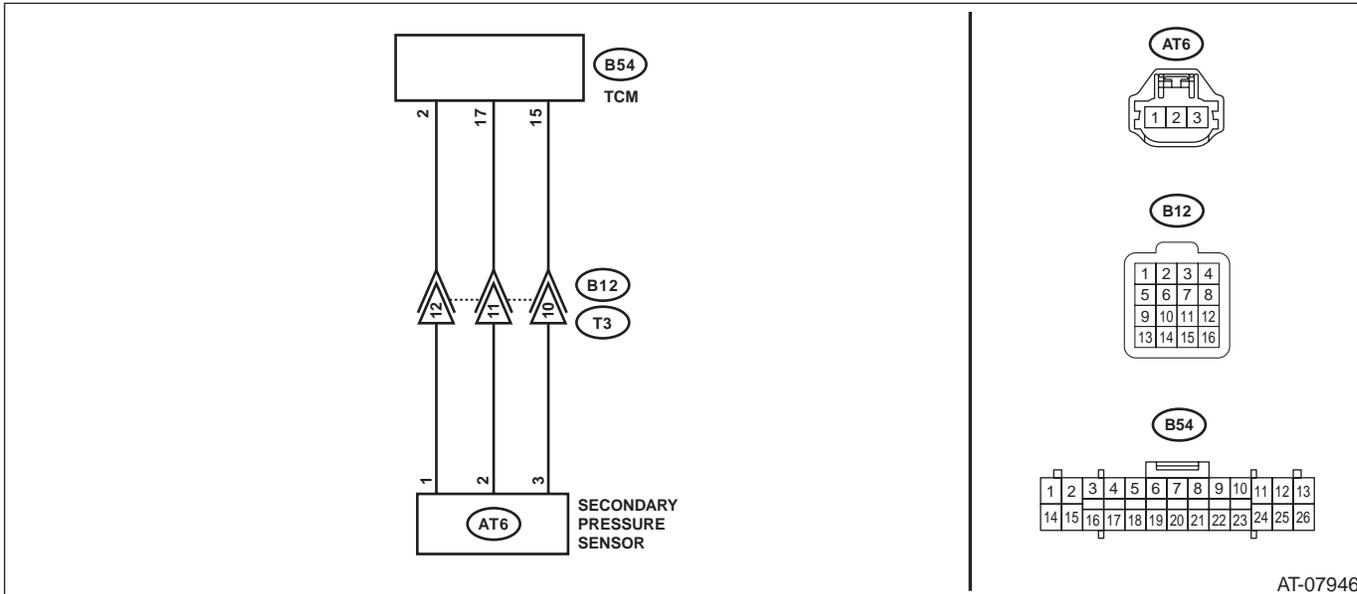
### TROUBLE SYMPTOM:

Shift characteristics malfunction

### WIRING DIAGRAM:

- Non-turbo model

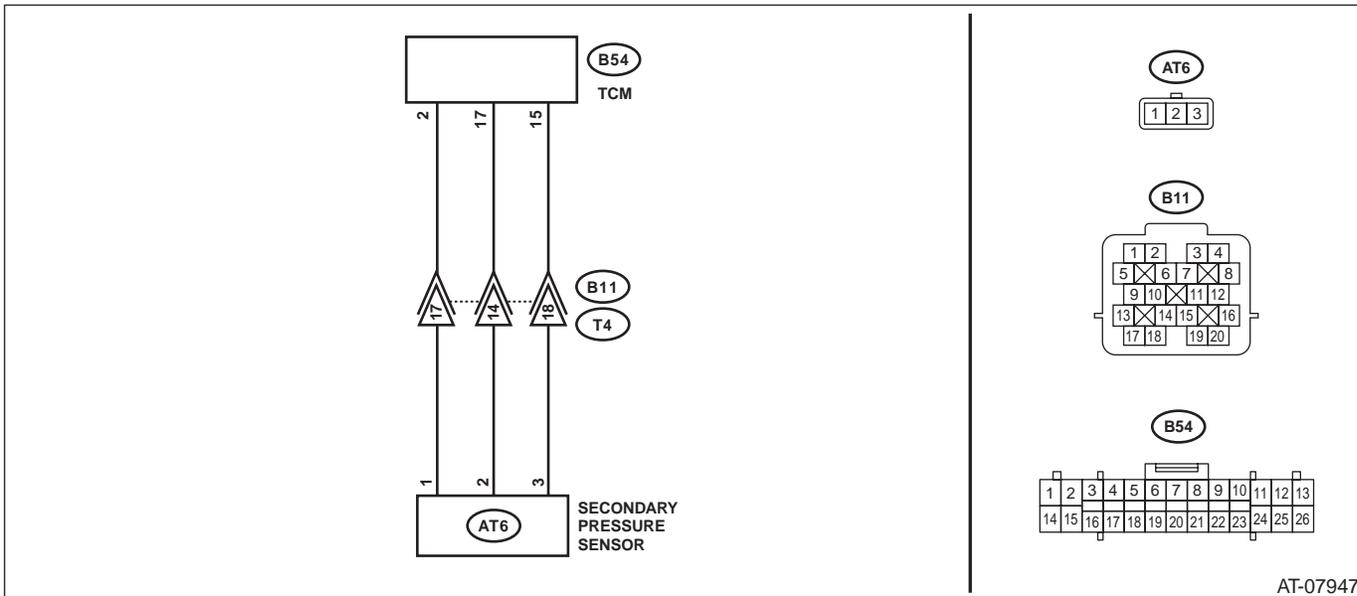
CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07946

- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07947

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>1 CHECK INPUT SIGNAL FOR TCM.</b> 1) Start the engine. 2) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 3) Shift the select lever to “P” range. 4) Stabilize the engine speed at idle. 5) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Check for poor contact of connector.	Go to step 2.
<b>2 CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B54) No. 2 — (B12) No. 12: (B54) No. 15 — (B12) No. 10: (B54) No. 17 — (B12) No. 11: <b>Turbo model</b> (B54) No. 2 — (B11) No. 17: (B54) No. 15 — (B11) No. 18: (B54) No. 17 — (B11) No. 14:	Is the resistance less than 1 Ω?	Go to step 3.	Repair the open circuit of harness.
<b>3 CHECK HARNESS.</b> Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 2 — Chassis ground: (B54) No. 17 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 4.	Repair the short circuit of harness.
<b>4 CHECK TRANSMISSION HARNESS.</b> 1) Disconnect the secondary pressure sensor connector. 2) Measure the resistance between transmission connector and secondary pressure sensor connector. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T3) No. 10 — (AT6) No. 3: (T3) No. 11 — (AT6) No. 2: (T3) No. 12 — (AT6) No. 1: <b>Turbo model</b> (T4) No. 14 — (AT6) No. 2: (T4) No. 17 — (AT6) No. 1: (T4) No. 18 — (AT6) No. 3:	Is the resistance less than 1 Ω?	Go to step 5.	Repair the open circuit of harness.
<b>5 CHECK TRANSMISSION HARNESS.</b> Measure the resistance between transmission connector and chassis ground. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T3) No. 11 — Chassis ground: (T3) No. 12 — Chassis ground: <b>Turbo model</b> (T4) No. 14 — Chassis ground: (T4) No. 17 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 6.	Repair the short circuit of harness.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<p><b>6</b>      <b>CHECK SENSOR POWER SUPPLY.</b>                      1) Connect the connectors of TCM and transmission.                      2) Turn the ignition switch to ON.                      3) Measure the voltage between secondary pressure sensor connector terminals.  <b>Connector &amp; terminal</b>  <b>(AT6) No. 1 (+) — (AT6) No. 3 (-):</b></p>	<p>Is the voltage 4.5 V or more?</p>	<p>Replace the secondary pressure sensor.&lt;Ref. to CVT(TR580)-105, Secondary Pressure Sensor.&gt;                      &lt;Ref. to CVT(TR690)-107, Secondary Pressure Sensor.&gt;</p>	<p>Check for poor contact of connector, and if no fault is found, replace the TCM.&lt;Ref. to CVT(TR580)-143, Transmission Control Module (TCM).&gt; &lt;Ref. to CVT(TR690)-125, Transmission Control Module (TCM).&gt;</p>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AA:DTC P0843 SECONDARY OIL PRESSURE SENSOR CIRCUIT (HIGH)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-36, DTC P0843 SECONDARY OIL PRESSURE SENSOR CIRCUIT (HIGH), Diagnostic Trouble Code (DTC) Detecting Criteria.>

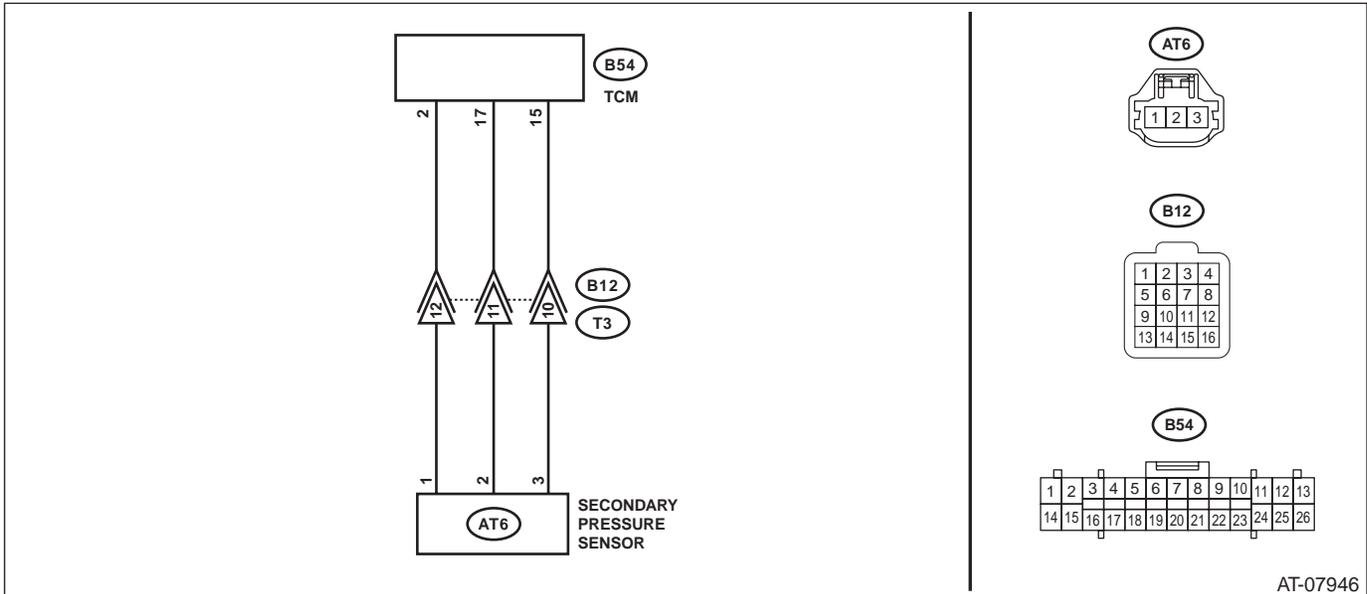
### TROUBLE SYMPTOM:

Shift characteristics malfunction

### WIRING DIAGRAM:

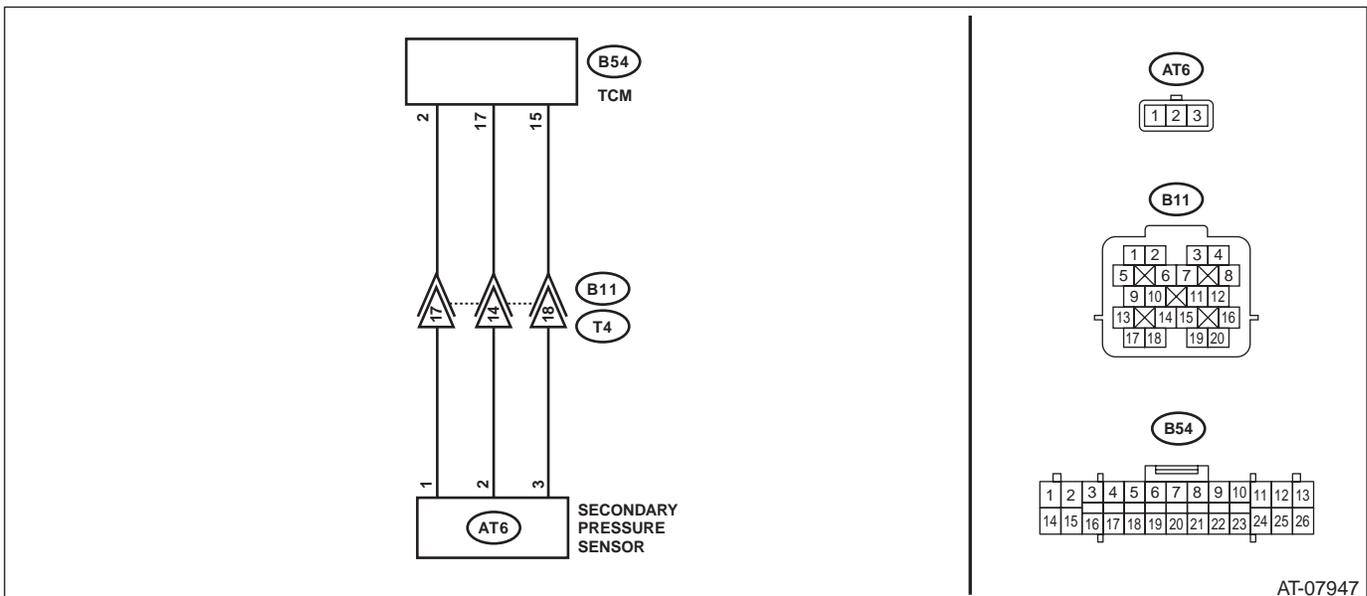
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Start the engine. 2) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 3) Shift the select lever to “P” range. 4) Stabilize the engine speed at idle. 5) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Check for poor contact of connector.	Go to step 2.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Turn the ignition switch to ON. 4) Measure the voltage between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 2 (+) — Chassis ground (-): (B54) No. 17 (+) — Chassis ground (-):	Is the voltage approx. 0 V?	Go to step 3.	Repair the short circuit of harness.
3	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Measure the resistance between TCM connector terminals. <b>Connector &amp; terminal</b> (B54) No. 2 — (B54) No. 17:	Is the resistance less than 1 Ω?	Repair the short circuit of harness.	Go to step 4.
4	<b>CHECK TRANSMISSION HARNESS.</b> 1) Disconnect the secondary pressure sensor connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between transmission connector and chassis ground. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T3) No. 11 (+) — Chassis ground (-): (T3) No. 12 (+) — Chassis ground (-): <b>Turbo model</b> (T4) No. 14 (+) — Chassis ground (-): (T4) No. 17 (+) — Chassis ground (-):	Is the voltage approx. 0 V?	Go to step 5.	Repair the short circuit of harness.
5	<b>CHECK TRANSMISSION HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Measure the resistance between transmission connector terminals. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T3) No. 11 — (T3) No. 12: <b>Turbo model</b> (T4) No. 14 — (T4) No. 17:	Is the resistance less than 1 Ω?	Repair the short circuit of harness.	Go to step 6.
6	<b>CHECK SENSOR POWER SUPPLY.</b> 1) Connect the connectors of TCM and transmission. 2) Turn the ignition switch to ON. 3) Measure the voltage between secondary pressure sensor connector terminals. <b>Connector &amp; terminal</b> (AT6) No. 1 (+) — (AT6) No. 3 (-):	Is the voltage 4.5 V or more?	Replace the secondary pressure sensor.<Ref. to CVT(TR580)-105, Secondary Pressure Sensor.> <Ref. to CVT(TR690)-107, Secondary Pressure Sensor.>	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AB:DTC P0890 AT SELF-SHUT RELAY DIAGNOSIS (LOW)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-37, DTC P0890 AT SELF-SHUT RELAY DIAGNOSIS (LOW), Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

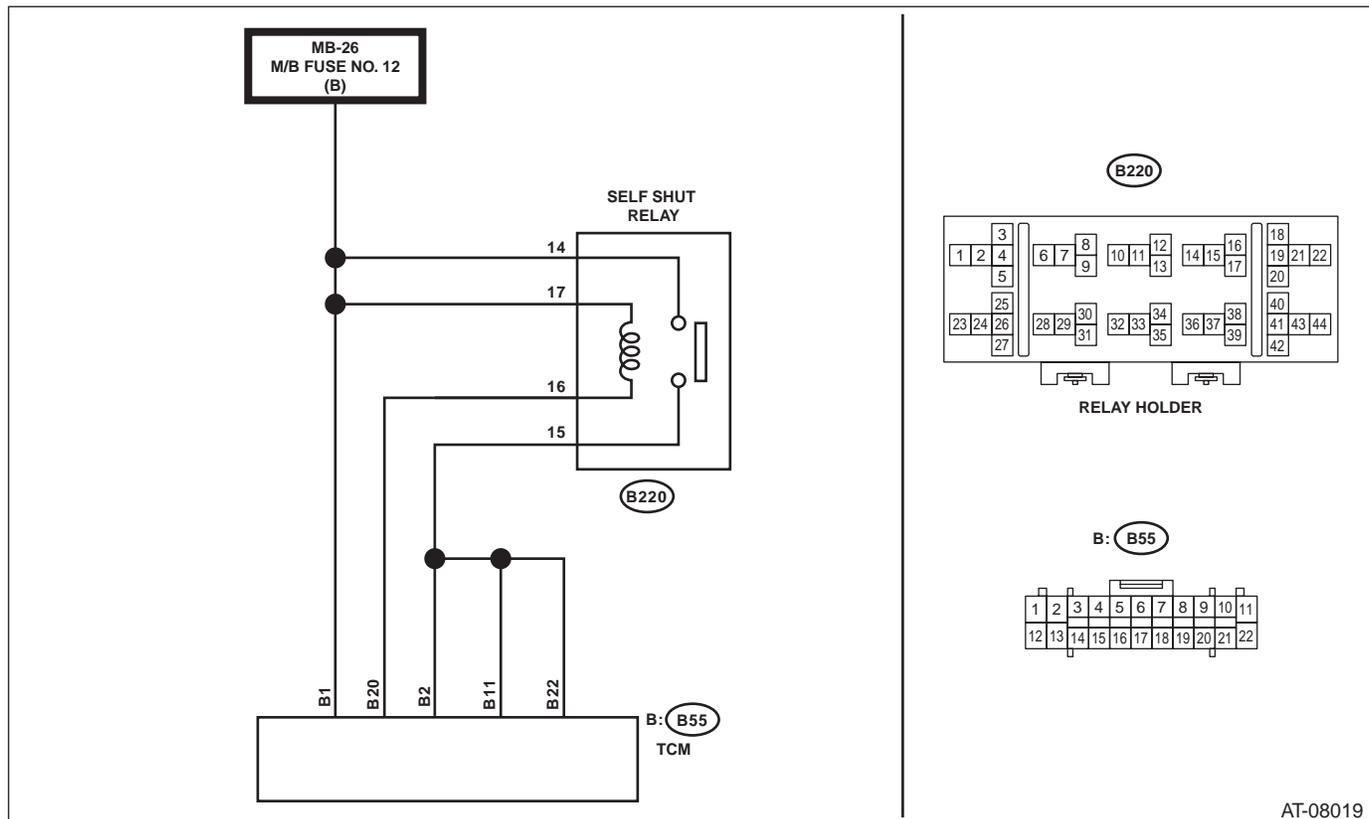
Gear is not changed.

### CAUTION:

After diagnosis, perform Clear Memory Mode for ECM.<Ref. to EN(H4DOTC)(diag)-61, Clear Memory Mode.> <Ref. to EN(H4DO)(diag)-58, Clear Memory Mode.>

### WIRING DIAGRAM:

CVT control system<Ref. to WI-138, CVT Control System.>



AT-08019

Step	Check	Yes	No
<b>1</b> <b>CHECK HARNESS.</b> 1) Disconnect the TCM and self shut relay connectors. 2) Measure the resistance between TCM connector and self shut relay connector. <b>Connector &amp; terminal</b> (B55) No. 20 — (B220) No. 16: (B55) No. 2 — (B220) No. 15: (B55) No. 11 — (B220) No. 15: (B55) No. 22 — (B220) No. 15:	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>2 CHECK HARNESS.</b> Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B55) No. 20 — Chassis ground: (B55) No. 2 — Chassis ground: (B55) No. 11 — Chassis ground: (B55) No. 22 — Chassis ground:	Is the resistance 1 M $\Omega$ or more?	Go to step 3.	Repair the short circuit of harness.
<b>3 CHECK RELAY POWER SUPPLY.</b> Measure the voltage between self shut relay connector and chassis ground. <b>Connector &amp; terminal</b> (B220) No. 14 (+) — Chassis ground (-): (B220) No. 17 (+) — Chassis ground (-):	Is the voltage 10 V or more?	Go to step 4.	Repair the open or short circuit of harness.
<b>4 CHECK SELF SHUT RELAY.</b> Measure the resistance between self shut relay terminals. <b>Connector &amp; terminal</b> (B220) No. 16 — (B220) No. 17:	Is the resistance 110 — 140 $\Omega$ ?	Go to step 5.	Replace the self shut relay.
<b>5 CHECK SELF SHUT RELAY.</b> Measure the resistance between self shut relay terminals. <b>Connector &amp; terminal</b> (B220) No. 14 — (B220) No. 15:	Is the resistance 1 M $\Omega$ or more?	Go to step 6.	Replace the self shut relay.
<b>6 CHECK INPUT SIGNAL FOR TCM.</b> 1) Connect the connectors of TCM and self shut relay. 2) Read the data of «Control module voltage» using Subaru Select Monitor.	Is the «Control module voltage» 10 V or more?	Current condition is normal. Check for poor contact in connectors or harnesses, and repair the defective part.	Go to step 7.
<b>7 CHECK FOR POOR CONTACT.</b>	Is there poor contact of the self shut relay circuit?	Repair the poor contact.	Replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AC:DTC P0951 MANUAL SWITCH

### DTC DETECTING CONDITION:

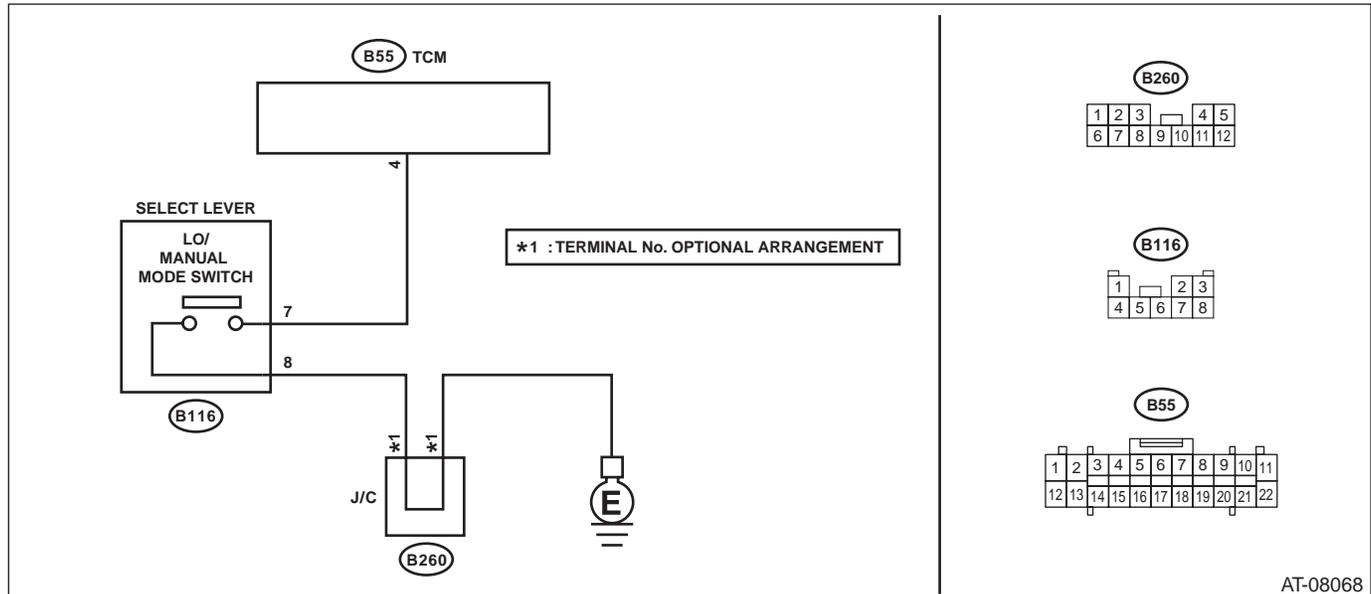
- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-38, DTC P0951 MANUAL SWITCH, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

Manual mode can not be set.

### WIRING DIAGRAM:

CVT control system<Ref. to WI-138, CVT Control System.>



Step	Check	Yes	No
<b>1 CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the manual mode switch connector. 3) Measure the resistance between manual mode switch connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B116) No. 8 — Chassis ground:</b>	Is the resistance less than 1 Ω?	Go to step 2.	Repair the open circuit of harness.
<b>2 CHECK MANUAL MODE SWITCH.</b> Measure the resistance between manual mode switch terminals. <b>Connector &amp; terminal</b> <b>(B116) No. 7 — No. 8:</b>	Is the resistance 1 MΩ or more?	Go to step 3.	Replace the select lever assembly.<Ref. to CS-24, Select Lever.>
<b>3 CHECK MANUAL MODE SWITCH.</b> 1) Shift the select lever to manual mode. 2) Measure the resistance between manual mode switch terminals. <b>Connector &amp; terminal</b> <b>(B116) No. 7 — No. 8:</b>	Is the resistance less than 1 Ω?	Go to step 4.	Replace the select lever assembly.<Ref. to CS-24, Select Lever.>
<b>4 CHECK HARNESS.</b> 1) Disconnect the TCM connector. 2) Measure the resistance between TCM connector and manual mode switch connector. <b>Connector &amp; terminal</b> <b>(B55) No. 4 — (B116) No. 7:</b>	Is the resistance less than 1 Ω?	Go to step 5.	Repair the open circuit of harness or poor contact of connector.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>5</b> <b>CHECK HARNESS.</b> Measure the resistance between manual mode switch connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B116) No. 7 — Chassis ground:</b>	Is the resistance 1 MΩ or more?	Go to step 6.	Repair the short circuit of harness.
<b>6</b> <b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Connect the TCM and manual mode switch connector. 2) Turn the ignition switch to ON. 3) Set the select lever to "D" range. 4) Read the data of «Tiptronic Mode Switch» using Subaru Select Monitor.	Does the value of «Tiptronic Mode Switch» change to "ON" with select lever in manual mode, and "OFF" with select lever in other than manual mode?	Current condition is normal.	Go to step 7.
<b>7</b> <b>CHECK FOR POOR CONTACT.</b>	Is there poor contact of the manual mode switch circuit?	Repair the poor contact.	Replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AD:DTC P0961 PRESSURE CONTROL SOLENOID "A" CONTROL CIRCUIT RANGE/PERFORMANCE

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-39, DTC P0961 PRESSURE CONTROL SOLENOID "A" CONTROL CIRCUIT RANGE/PERFORMANCE, Diagnostic Trouble Code (DTC) Detecting Criteria.>

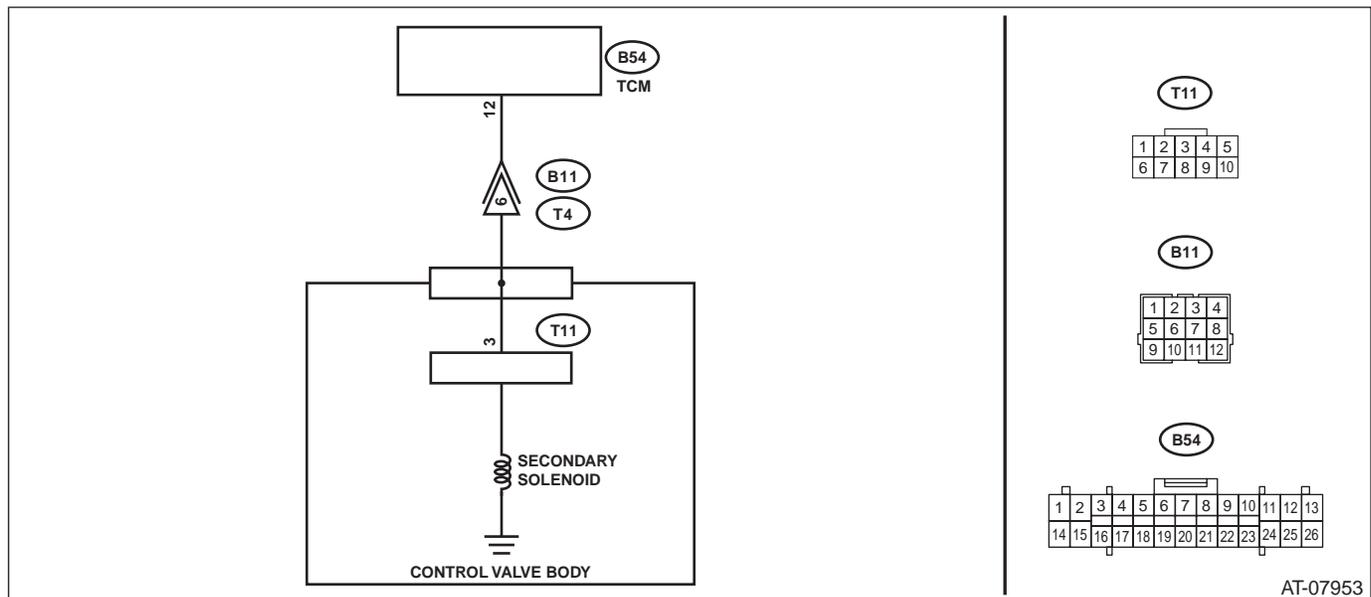
### TROUBLE SYMPTOM:

- Acceleration is poor during standing start.
- Shift control malfunction
- Engine speed increases abruptly.

### WIRING DIAGRAM:

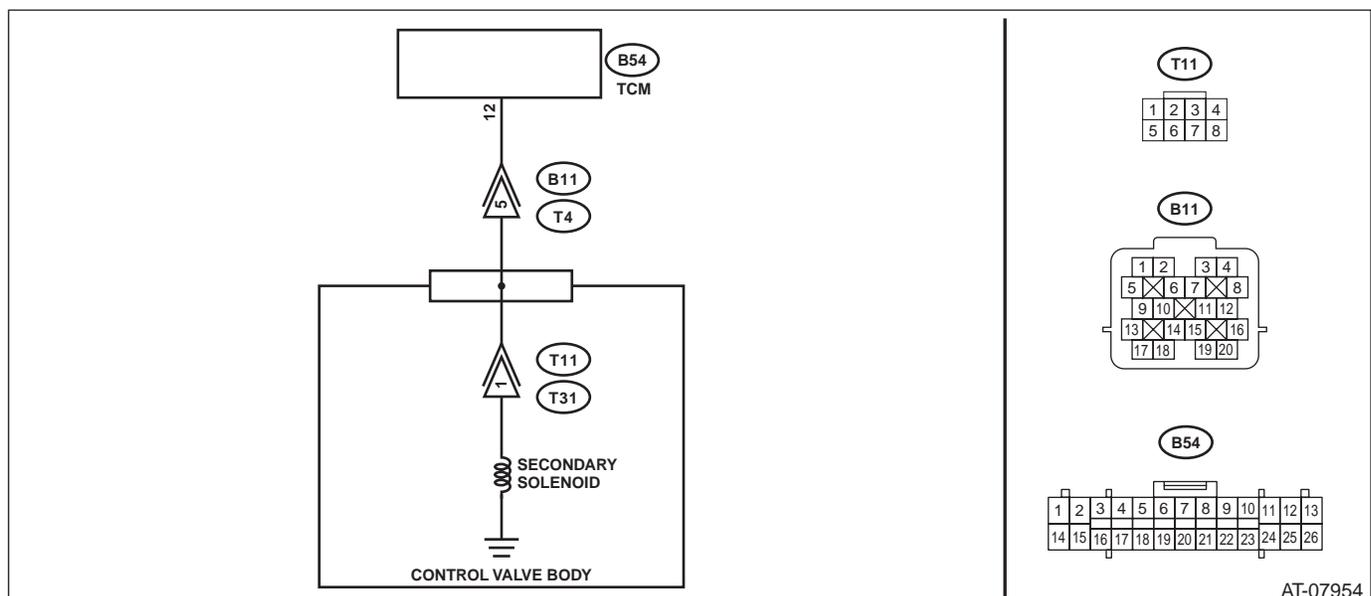
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0961, is DTC P0962 or P0963 displayed?	Perform the diagnosis according to DTCs other than P0961.	Go to step 2.
2	<b>CHECK FOR POOR CONTACT.</b> Check for poor contact of harness and connector between TCM and secondary solenoid.	Is there poor contact?	Repair the poor contact of harness and connector.	Go to step 3.
3	<b>CHECK SECONDARY SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <i>(T4) No. 6 — Transmission body:</i> <b>Turbo model</b> <i>(T4) No. 5 — Transmission body:</i>	Is the resistance approx. 5 — 7 Ω? (when cold)	Recheck the poor contact of harness and connector. Replace the TCM if no fault is found.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AE:DTC P0962 SECONDARY SOLENOID CIRCUIT (LOW)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-40, DTC P0962 SECONDARY SOLENOID CIRCUIT (LOW), Diagnostic Trouble Code (DTC) Detecting Criteria.>

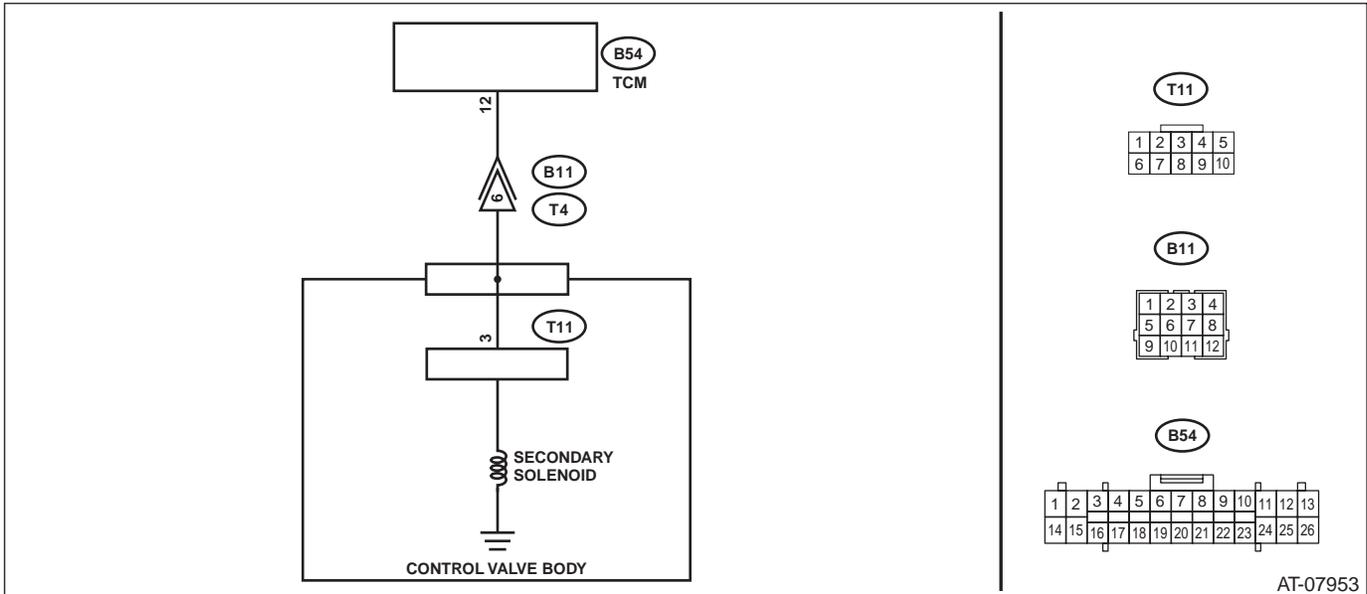
### TROUBLE SYMPTOM:

- Engine speed increases abruptly, and can not start.
- Engine speed increases abruptly during driving.

### WIRING DIAGRAM:

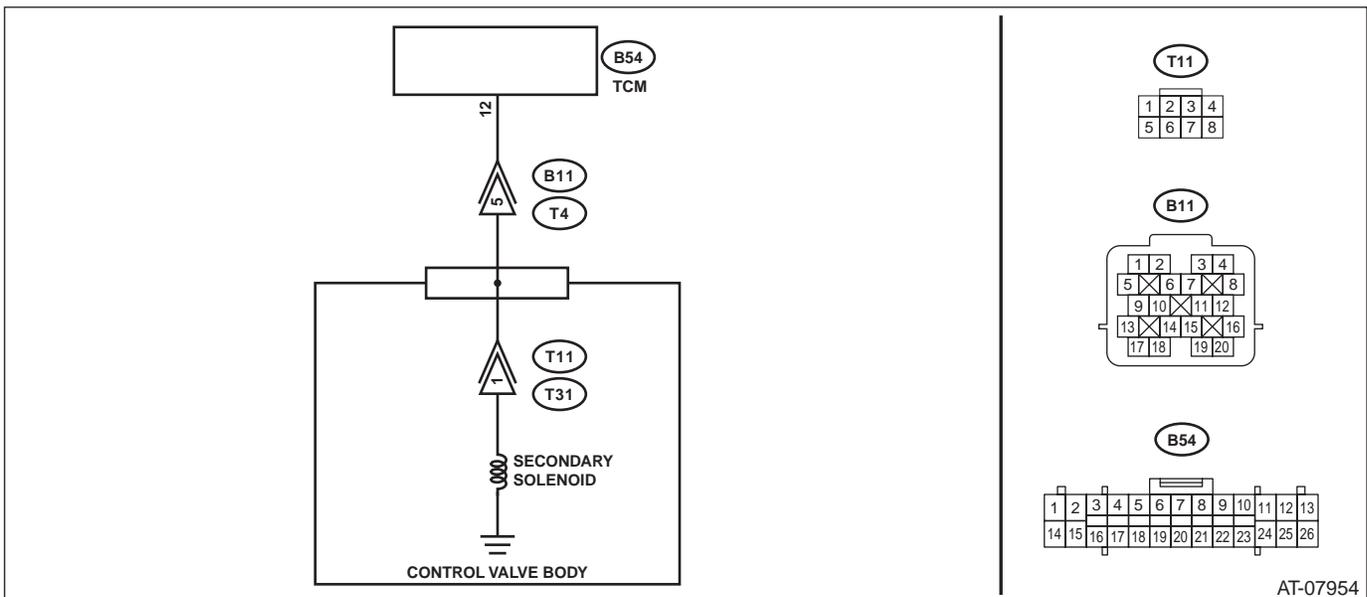
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) After driving with warm up condition, park the vehicle while depressing the brake pedal at "N" range. 2) Read the data of «Sec. Sol. Set Current» and «Sec. Sol. Actual Current» using Subaru Select Monitor.	Does the value of «Sec. Sol. Set Current» and «Sec. Sol. Actual Current» almost correspond?	Check for poor contact of connector.	Go to step 2.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B54) No. 12 — Chassis ground:</b>	Is the resistance 1 MΩ or more?	Go to step 3.	Repair the short circuit of harness.
3	<b>CHECK SECONDARY SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 6 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 5 — Transmission body:</b>	Is the resistance approx. 5 — 7 Ω? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 4.
4	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the following parts. <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 5.
5	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 6 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 5 — Transmission body:</b>	Is the resistance 1 MΩ or more?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AF:DTC P0963 SECONDARY SOLENOID CIRCUIT (HIGH)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-41, DTC P0963 SECONDARY SOLENOID CIRCUIT (HIGH), Diagnostic Trouble Code (DTC) Detecting Criteria.>

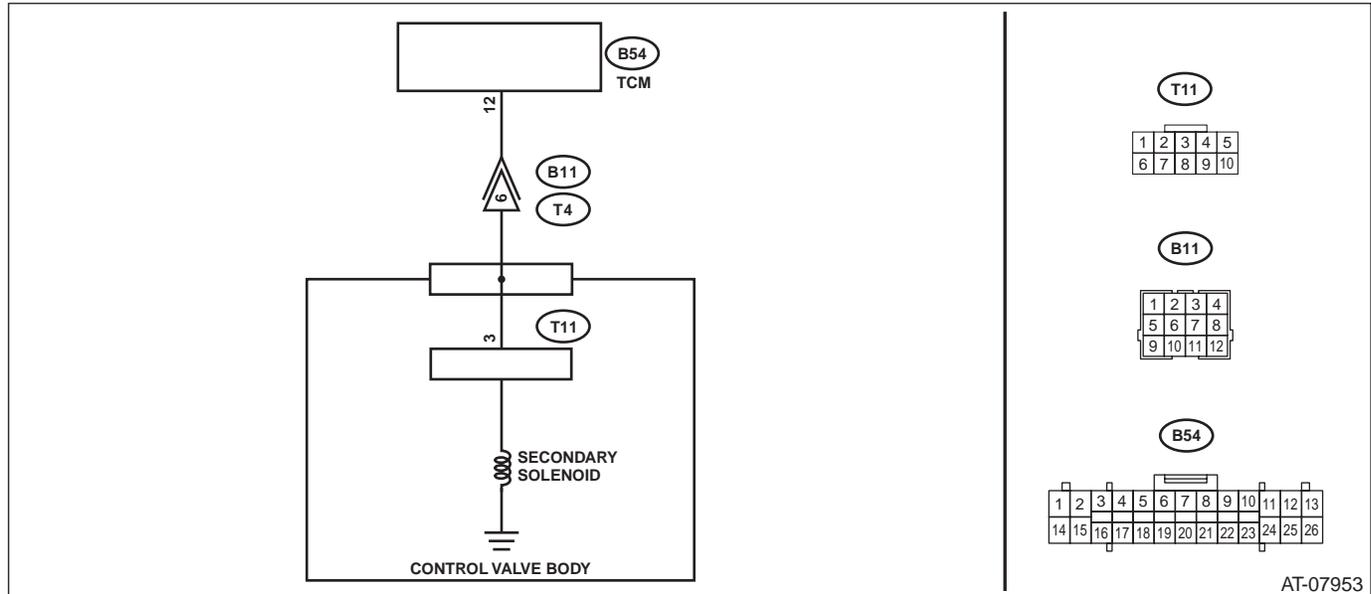
### TROUBLE SYMPTOM:

- Engine speed increases abruptly, and can not start.
- Engine speed increases abruptly during driving.

### WIRING DIAGRAM:

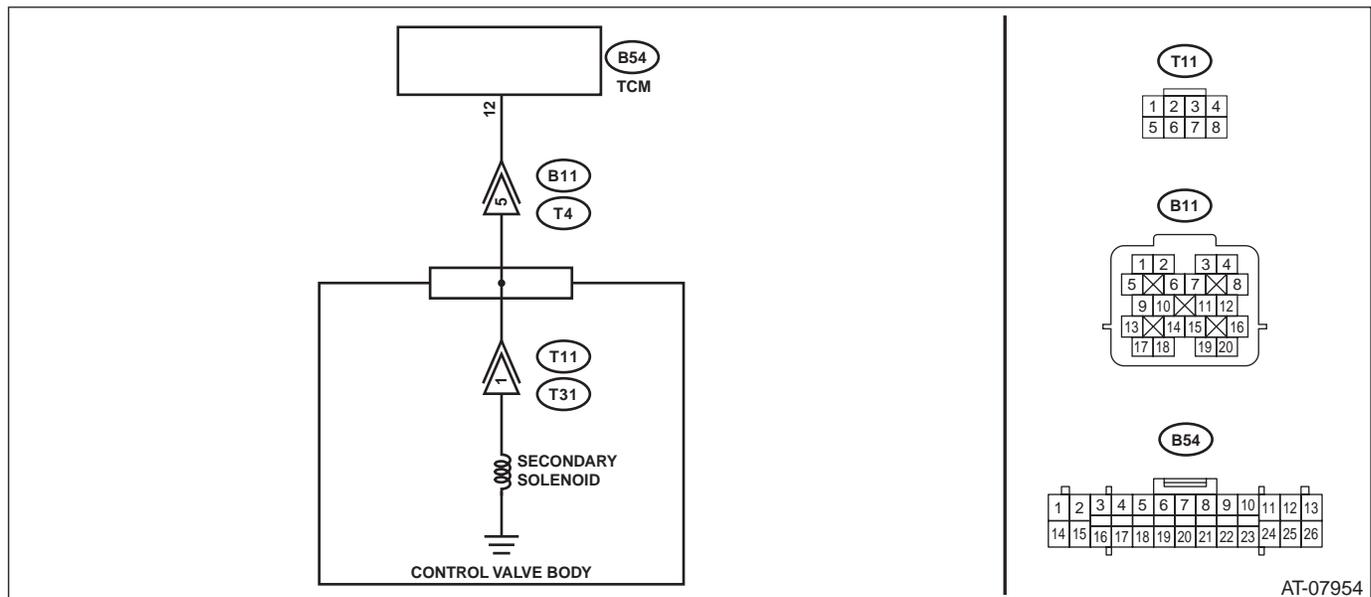
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) After driving with warm up condition, park the vehicle while depressing the brake pedal at "N" range. 2) Read the data of «Sec. Sol. Set Current» and «Sec. Sol. Actual Current» using Subaru Select Monitor.	Does the value of «Sec. Sol. Set Current» and «Sec. Sol. Actual Current» almost correspond?	Check for poor contact of connector.	Go to step 2.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B54) No. 12 — (B11) No. 6: <b>Turbo model</b> (B54) No. 12 — (B11) No. 5:	Is the resistance less than 1 Ω?	Go to step 3.	Repair the open circuit of harness.
3	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to ON. 2) Measure the voltage between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 12 (+) — Chassis ground (-):	Is the voltage approx. 0 V?	Go to step 4.	Repair the short circuit of harness.
4	<b>CHECK SECONDARY SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 6 — Transmission body: <b>Turbo model</b> (T4) No. 5 — Transmission body:	Is the resistance approx. 5 — 7 Ω? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 5.
5	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the following parts. <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 6.
6	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 6 (+) — Transmission body (-): <b>Turbo model</b> (T4) No. 5 (+) — Transmission body (-):	Is the voltage approx. 0 V?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AG:DTC P0965 FORWARD & REVERSE SOLENOID FUNCTION

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-42, DTC P0965 FORWARD & REVERSE SOLENOID FUNCTION, Diagnostic Trouble Code (DTC) Detecting Criteria.>

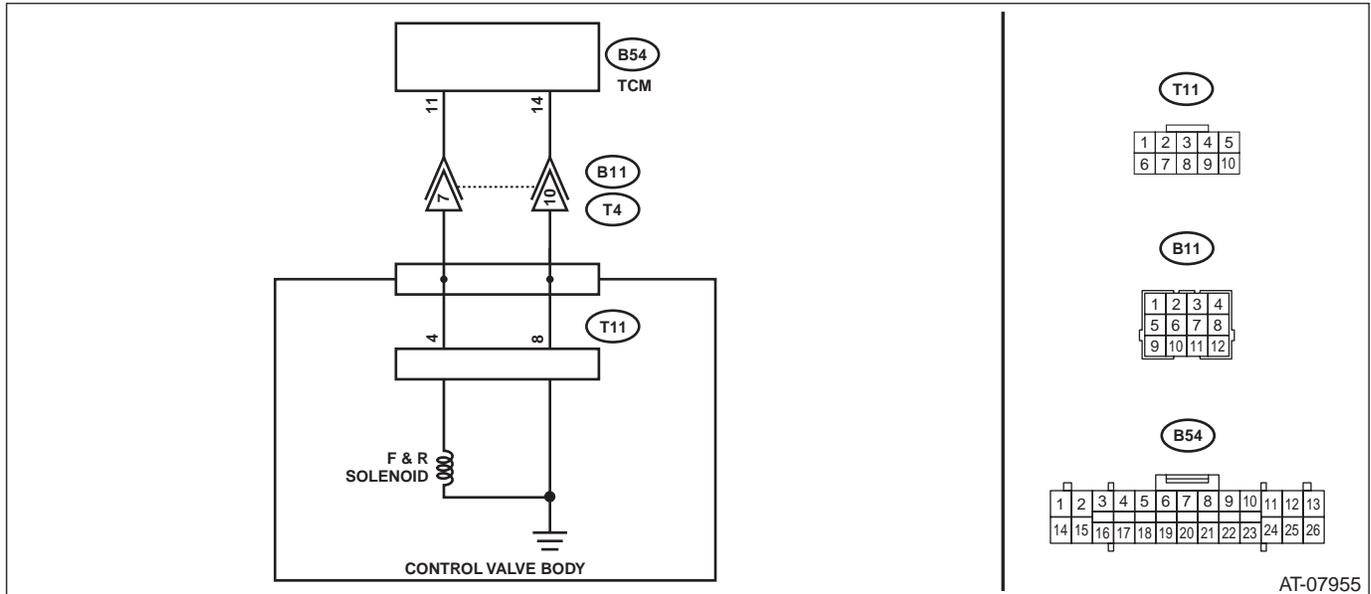
### TROUBLE SYMPTOM:

- Engine speed increases abruptly, and can not accelerate.
- Excessive slippage is felt.

### WIRING DIAGRAM:

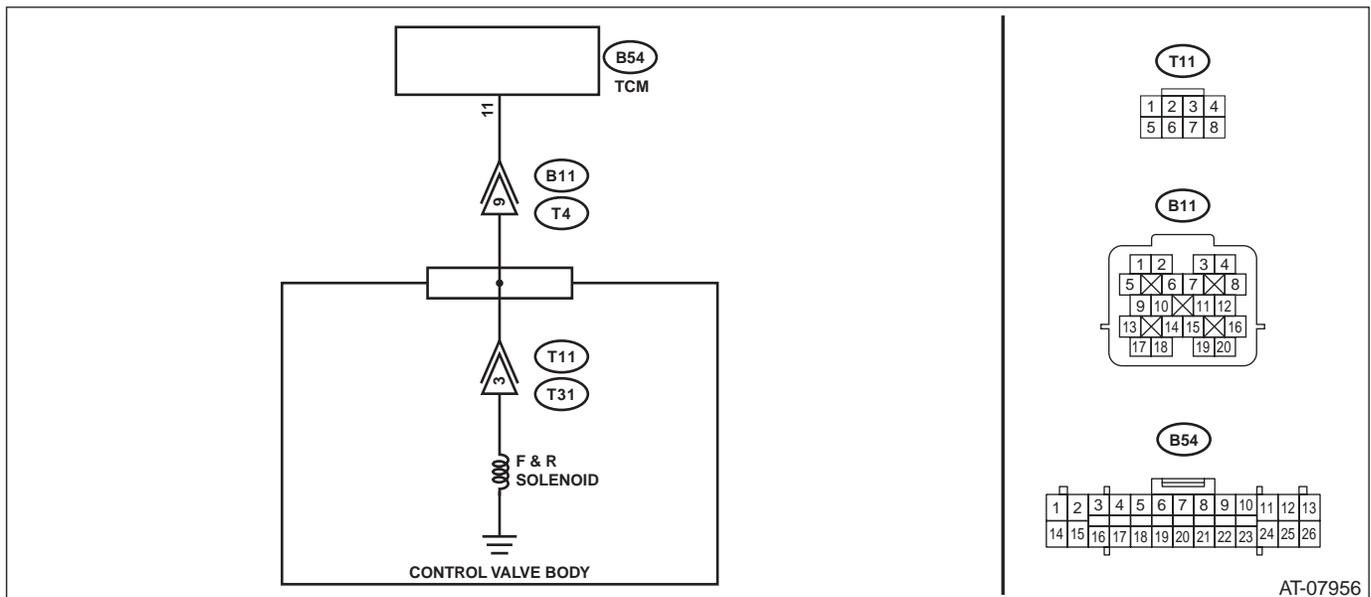
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P0965, is any of the DTCs P0720, P0966, P0967, P1706 and P2751 displayed?	Perform the diagnosis according to DTCs other than P0965.	Go to step 2.
2	<b>CHECK FOR POOR CONTACT.</b> Check for poor contact of harness and connector between TCM and F&R solenoid.	Is there poor contact?	Repair the poor contact of harness and connector.	Go to step 3.
3	<b>CHECK F&amp;R SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <i>(T4) No. 7 — Transmission body:</i> <b>Turbo model</b> <i>(T4) No. 9 — Transmission body:</i>	Is the resistance approx. 4 — 6 Ω? (when cold)	Recheck the poor contact of harness and connector. Replace the TCM if no fault is found.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AH:DTC P0966 FORWARD & REVERSE SOLENOID CIRCUIT (LOW)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-43, DTC P0966 FORWARD & REVERSE SOLENOID CIRCUIT (LOW), Diagnostic Trouble Code (DTC) Detecting Criteria.>

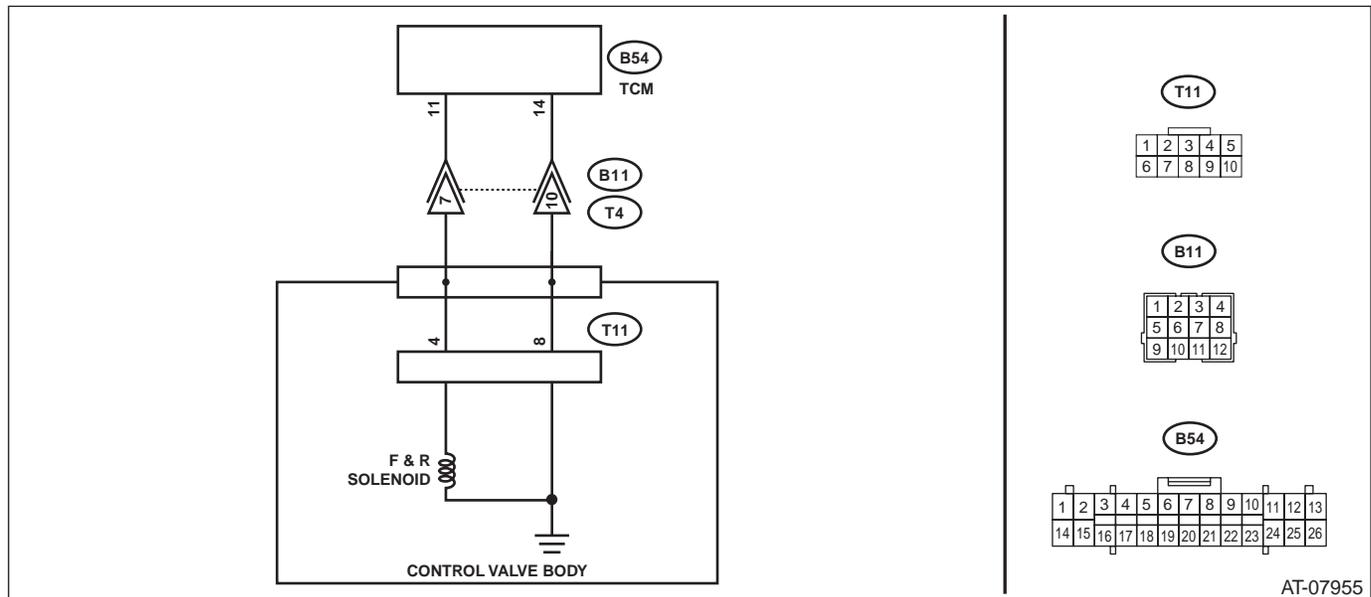
### TROUBLE SYMPTOM:

Excessive shift shock

### WIRING DIAGRAM:

- Non-turbo model

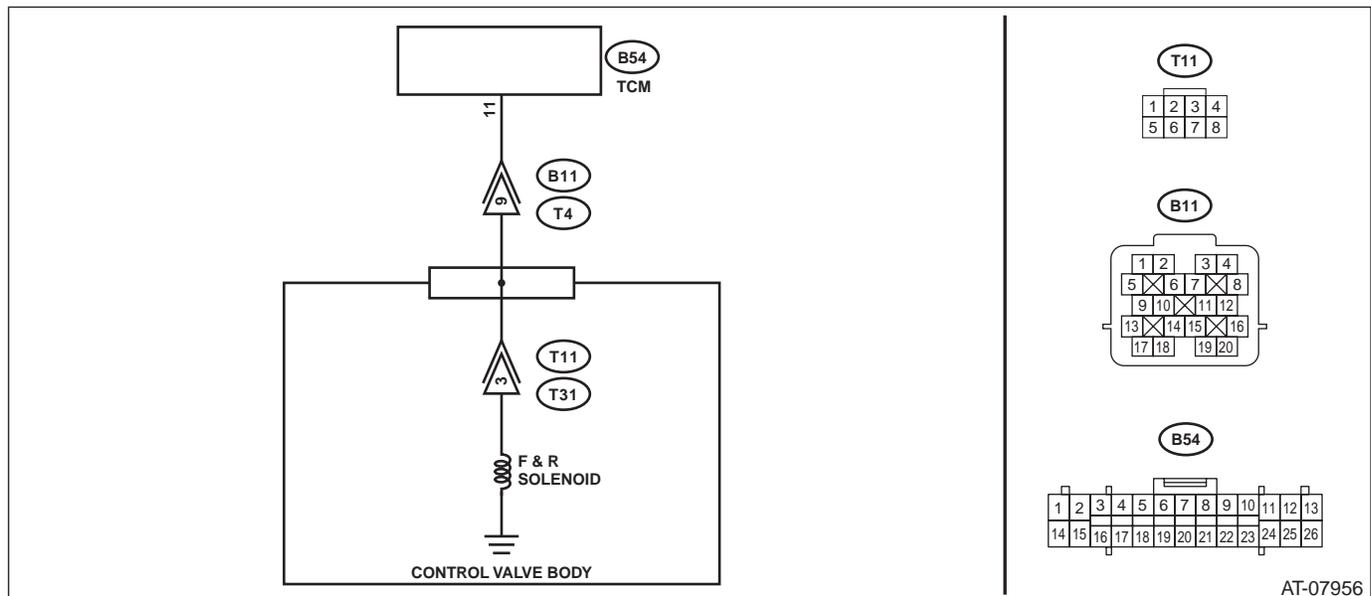
CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07955

- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07956

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) After driving with warm up condition, park the vehicle while depressing the brake pedal at "D" range. 2) Read the data of «F&R Linear Solenoid Set Current» and «F&R Linear Solenoid Actual Current» using Subaru Select Monitor.	Does the value of «F&R Linear Solenoid Set Current» and «F&R Linear Solenoid Actual Current» almost correspond?	Check for poor contact of connector.	Go to step 2.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B54) No. 11 — Chassis ground:</b>	Is the resistance 1 MΩ or more?	Go to step 3.	Repair the short circuit of harness.
3	<b>CHECK F&amp;R SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 7 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 9 — Transmission body:</b>	Is the resistance approx. 4 — 6 Ω? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 4.
4	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the following parts. <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 5.
5	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 7 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 9 — Transmission body:</b>	Is the resistance 1 MΩ or more?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AI: DTC P0967 FORWARD & REVERSE LINEAR SOLENOID CIRCUIT (HIGH)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-44, DTC P0967 FORWARD & REVERSE LINEAR SOLENOID CIRCUIT (HIGH), Diagnostic Trouble Code (DTC) Detecting Criteria.>

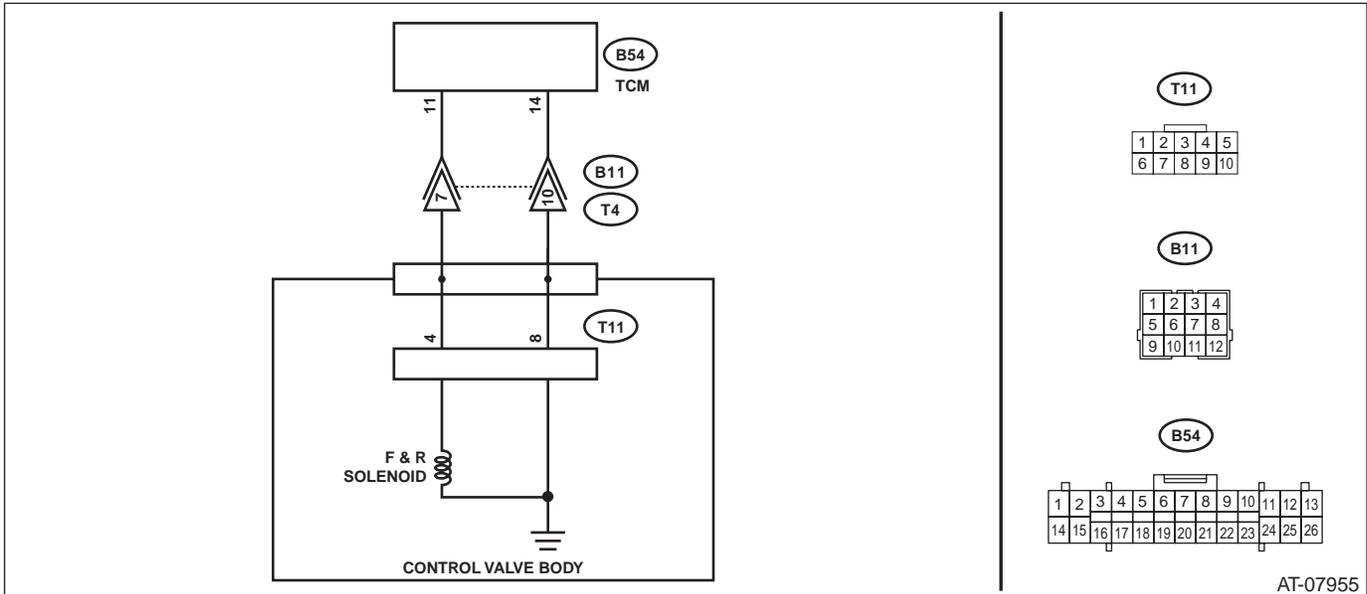
### TROUBLE SYMPTOM:

Engine speed increases abruptly, and can not start.

### WIRING DIAGRAM:

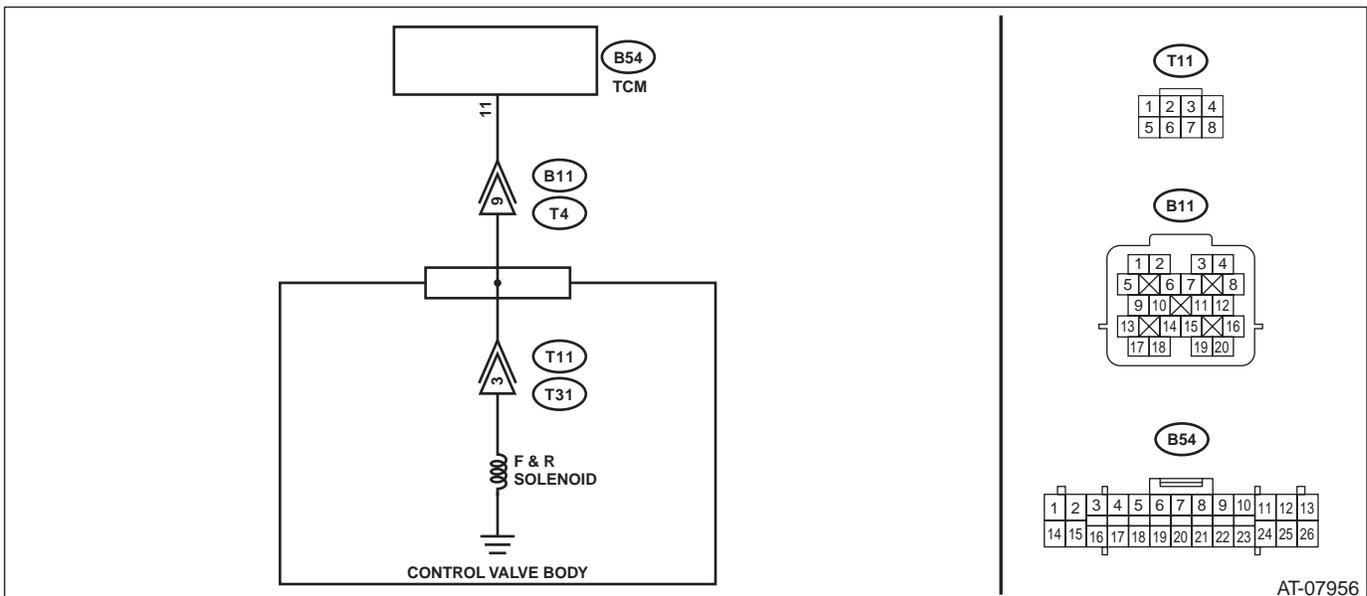
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) After driving with warm up condition, park the vehicle while depressing the brake pedal at "D" range. 2) Read the data of «F&R Linear Solenoid Set Current» and «F&R Linear Solenoid Actual Current» using Subaru Select Monitor.	Does the value of «F&R Linear Solenoid Set Current» and «F&R Linear Solenoid Actual Current» almost correspond?	Check for poor contact of connector.	Go to step 2.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B54) No. 11 — (B11) No. 7: <b>Turbo model</b> (B54) No. 11 — (B11) No. 9:	Is the resistance less than 1 Ω?	Go to step 3.	Repair the open circuit of harness.
3	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to ON. 2) Measure the voltage between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 11 (+) — Chassis ground (-):	Is the voltage approx. 0 V?	Go to step 4.	Repair the short circuit of harness.
4	<b>CHECK F&amp;R SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 7 — Transmission body: <b>Turbo model</b> (T4) No. 9 — Transmission body:	Is the resistance approx. 4 — 6 Ω? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 5.
5	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the following parts. <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 6.
6	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 7 (+) — Transmission body (-): <b>Turbo model</b> (T4) No. 9 (+) — Transmission body (-):	Is the voltage approx. 0 V?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AJ:DTC P0970 TRANSFER SOLENOID CIRCUIT (LOW)

### DTC DETECTING CONDITION:

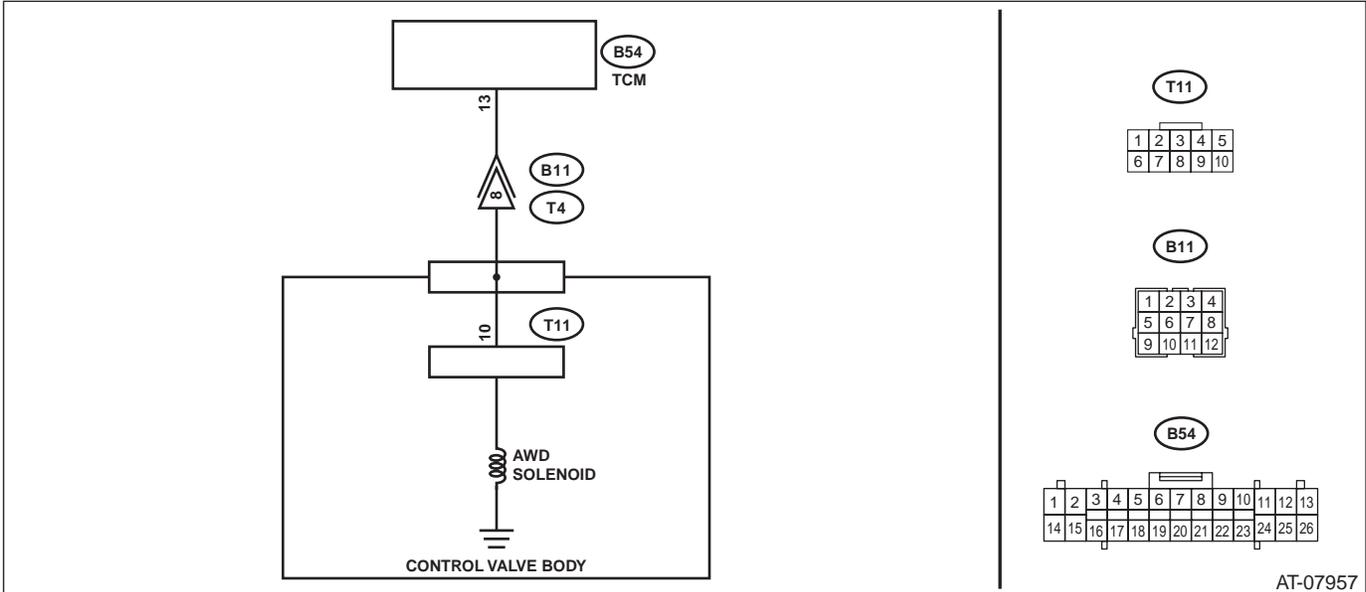
- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-45, DTC P0970 TRANSFER SOLENOID CIRCUIT (LOW), Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

Drivability getting worse.

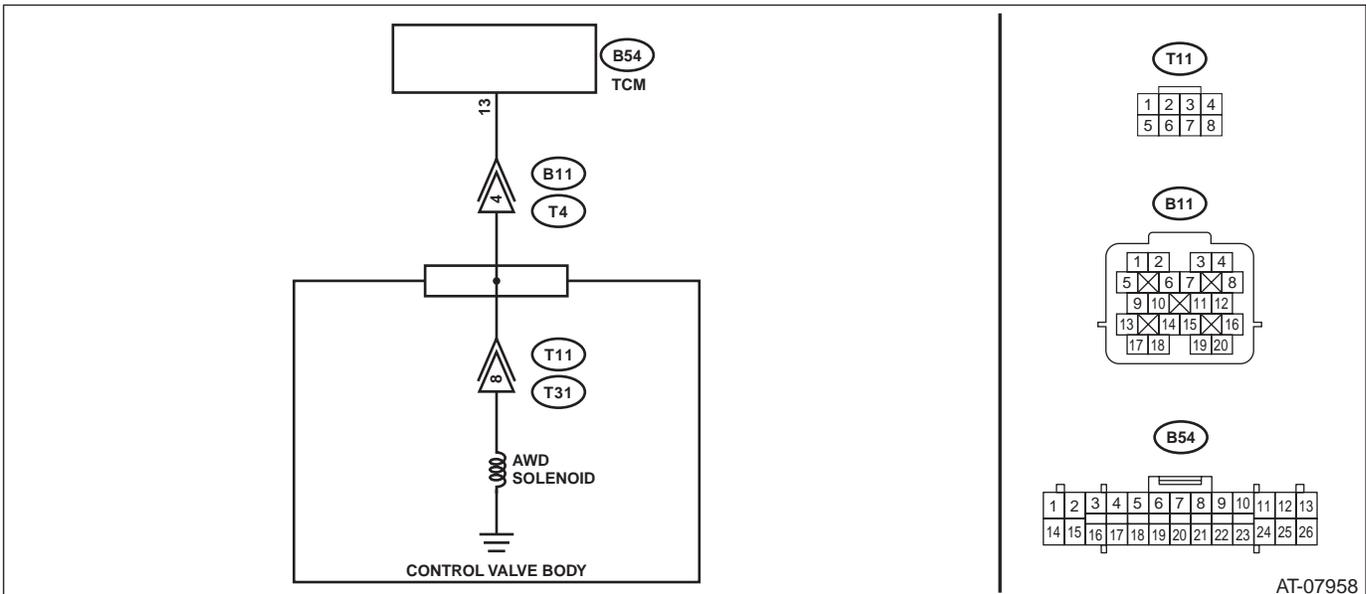
### WIRING DIAGRAM:

- Non-turbo model  
CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B54) No. 13 — Chassis ground:</b>	Is the resistance 1 M $\Omega$ or more?	Go to step 2.	Repair the short circuit of harness.
2	<b>CHECK AWD SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 8 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 4 — Transmission body:</b>	Is the resistance approx. 2 — 4.5 $\Omega$ ? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 3.
3	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the following parts. <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 4.
4	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 8 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 4 — Transmission body:</b>	Is the resistance 1 M $\Omega$ or more?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AK:DTC P0971 TRANSFER SOLENOID CIRCUIT (HIGH)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-46, DTC P0971 TRANSFER SOLENOID CIRCUIT (HIGH), Diagnostic Trouble Code (DTC) Detecting Criteria.>

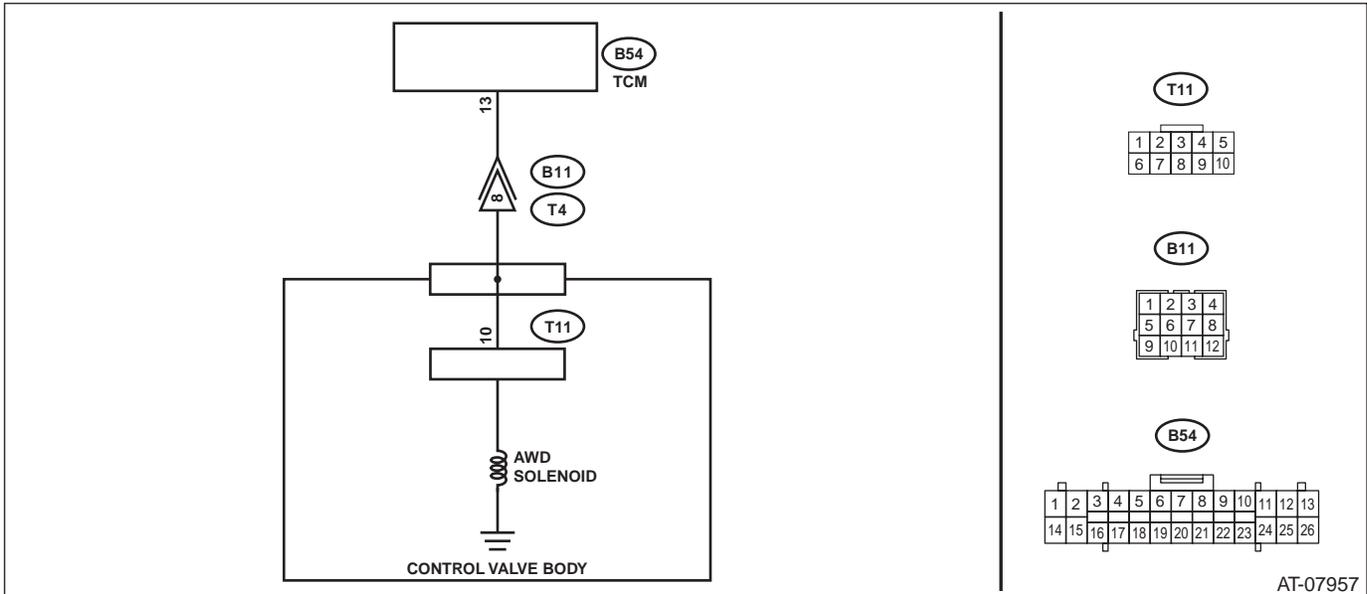
### TROUBLE SYMPTOM:

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

### WIRING DIAGRAM:

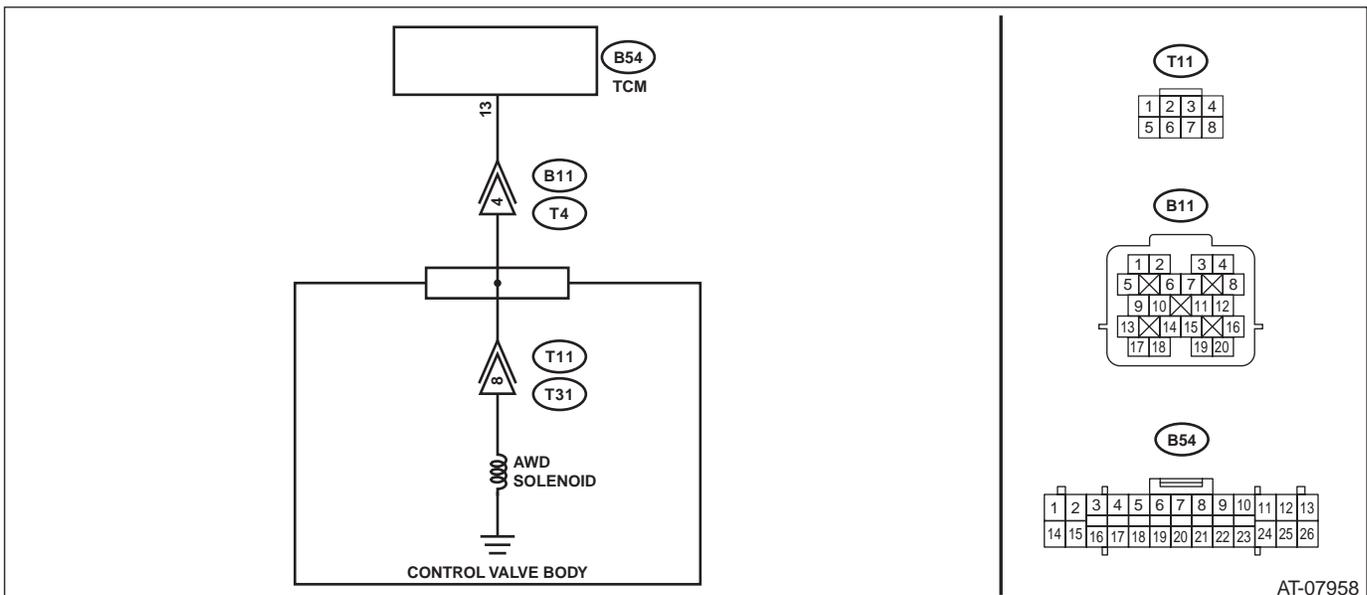
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B54) No. 13 — (B11) No. 8: <b>Turbo model</b> (B54) No. 13 — (B11) No. 4:	Is the resistance less than 1 $\Omega$ ?	Go to step 2.	Repair the open circuit of harness.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to ON. 2) Measure the voltage between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 13 (+) — Chassis ground (-):	Is the voltage approx. 0 V?	Go to step 3.	Repair the short circuit of harness.
3	<b>CHECK AWD SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 8 — Transmission body: <b>Turbo model</b> (T4) No. 4 — Transmission body:	Is the resistance approx. 2 — 4.5 $\Omega$ ? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 4.
4	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the following parts. <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 5.
5	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 8 (+) — Transmission body (-): <b>Turbo model</b> (T4) No. 4 (+) — Transmission body (-):	Is the voltage approx. 0 V?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AL:DTC P0973 PRIMARY SOLENOID SYSTEM A CIRCUIT (LOW)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-47, DTC P0973 PRIMARY SOLENOID SYSTEM A CIRCUIT (LOW), Diagnostic Trouble Code (DTC) Detecting Criteria.>

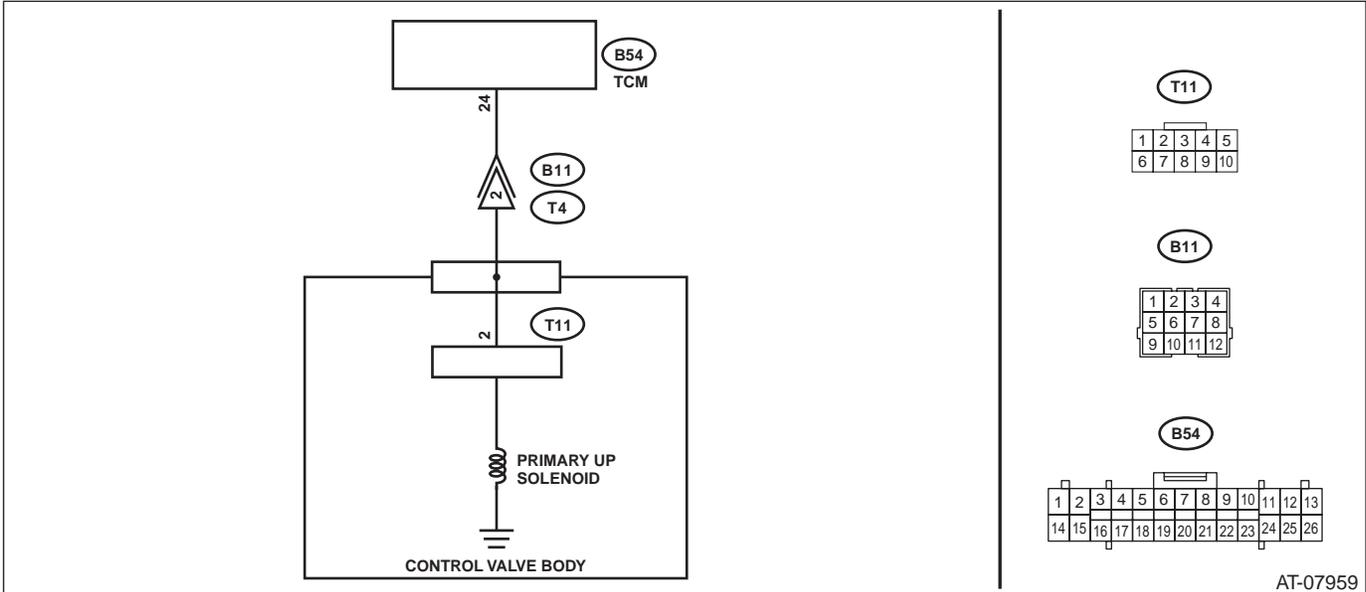
### TROUBLE SYMPTOM:

Gear is not changed. (No up-shift)

### WIRING DIAGRAM:

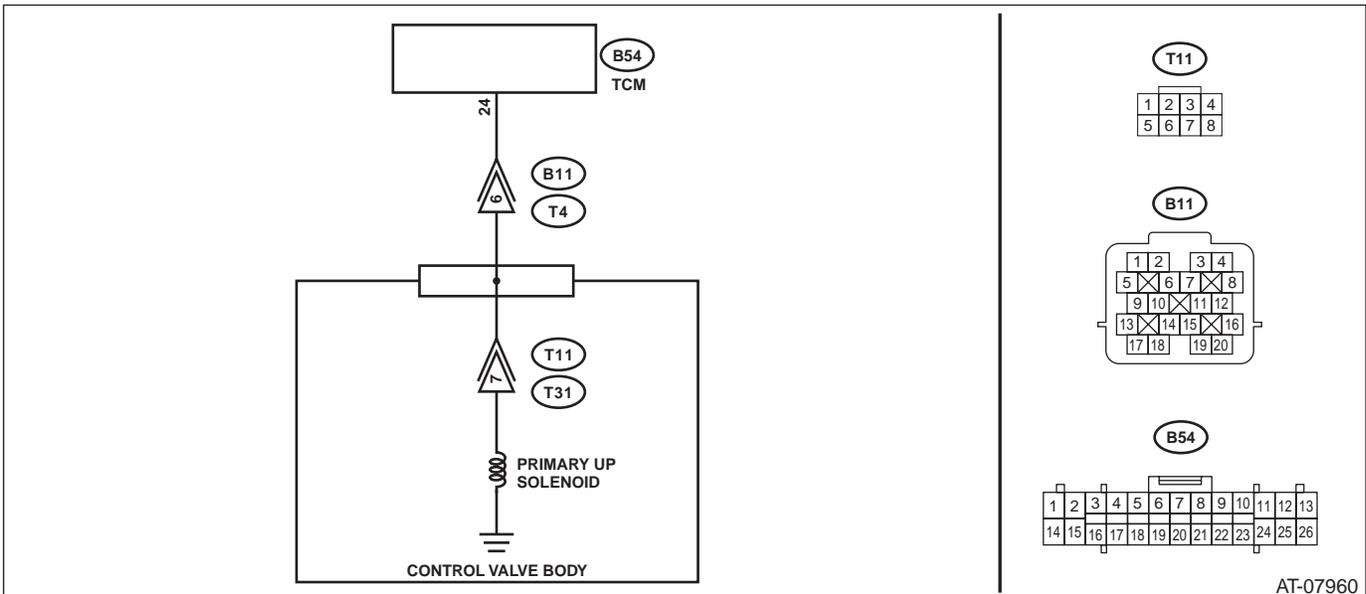
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<p><b>CHECK HARNESS.</b></p> <p>1) Turn the ignition switch to OFF.</p> <p>2) Disconnect the TCM and transmission connectors.</p> <p>3) Measure the resistance between TCM connector and chassis ground.</p> <p><b>Connector &amp; terminal</b> <b>(B54) No. 24 — Chassis ground:</b></p>	Is the resistance 1 M $\Omega$ or more?	Go to step 2.	Repair the short circuit of harness.
2	<p><b>CHECK PRIMARY UP SOLENOID.</b></p> <p>Measure the resistance between transmission connector and transmission body.</p> <p><b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 2 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 6 — Transmission body:</b></p>	Is the resistance approx. 10 — 13.5 $\Omega$ ? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 3.
3	<p><b>CHECK HARNESS INSIDE TRANSMISSION.</b></p> <p><b>CAUTION:</b> <b>Start work after ATF cools down.</b></p> <p>1) Remove the following parts.</p> <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> <p>2) Check for the harness pinch, damage.</p>	Is there any fault in the harness?	Replace the transmission harness.	Go to step 4.
4	<p><b>CHECK HARNESS INSIDE TRANSMISSION.</b></p> <p>1) Disconnect the control valve body connector.</p> <p>2) Measure the resistance between transmission connector and transmission body.</p> <p><b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 2 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 6 — Transmission body:</b></p>	Is the resistance 1 M $\Omega$ or more?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AM:DTC P0974 PRIMARY SOLENOID SYSTEM A CIRCUIT (HIGH)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-48, DTC P0974 PRIMARY SOLENOID SYSTEM A CIRCUIT (HIGH), Diagnostic Trouble Code (DTC) Detecting Criteria.>

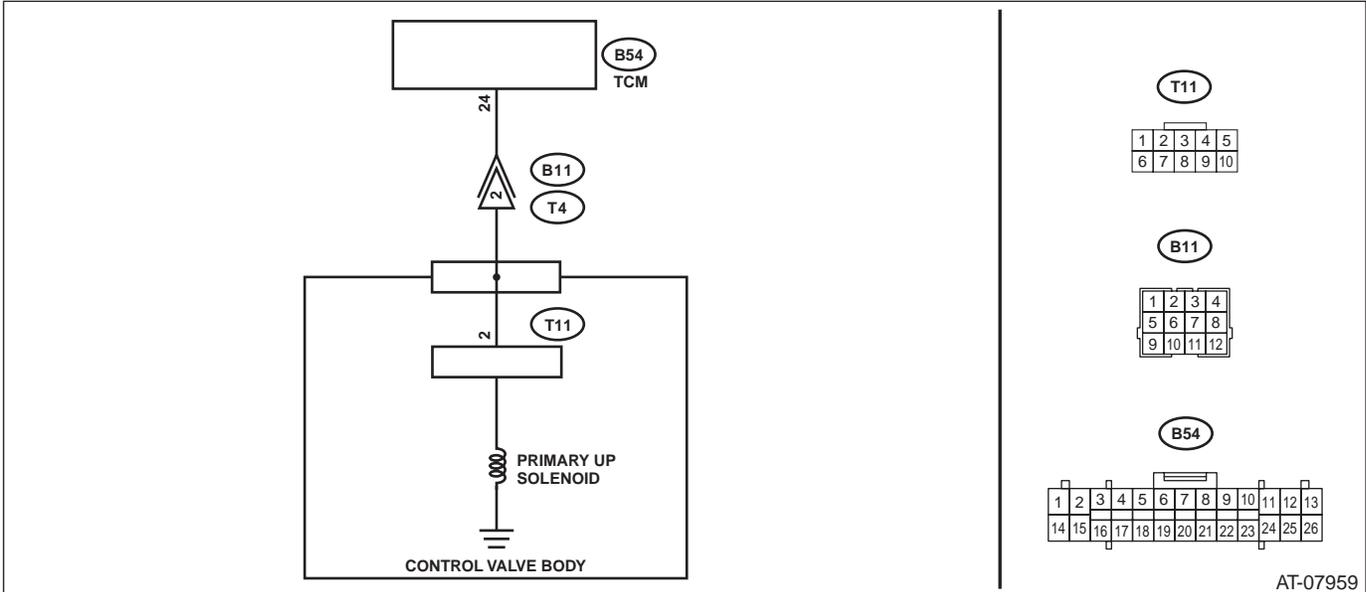
### TROUBLE SYMPTOM:

Gear is not changed. (No up-shift)

### WIRING DIAGRAM:

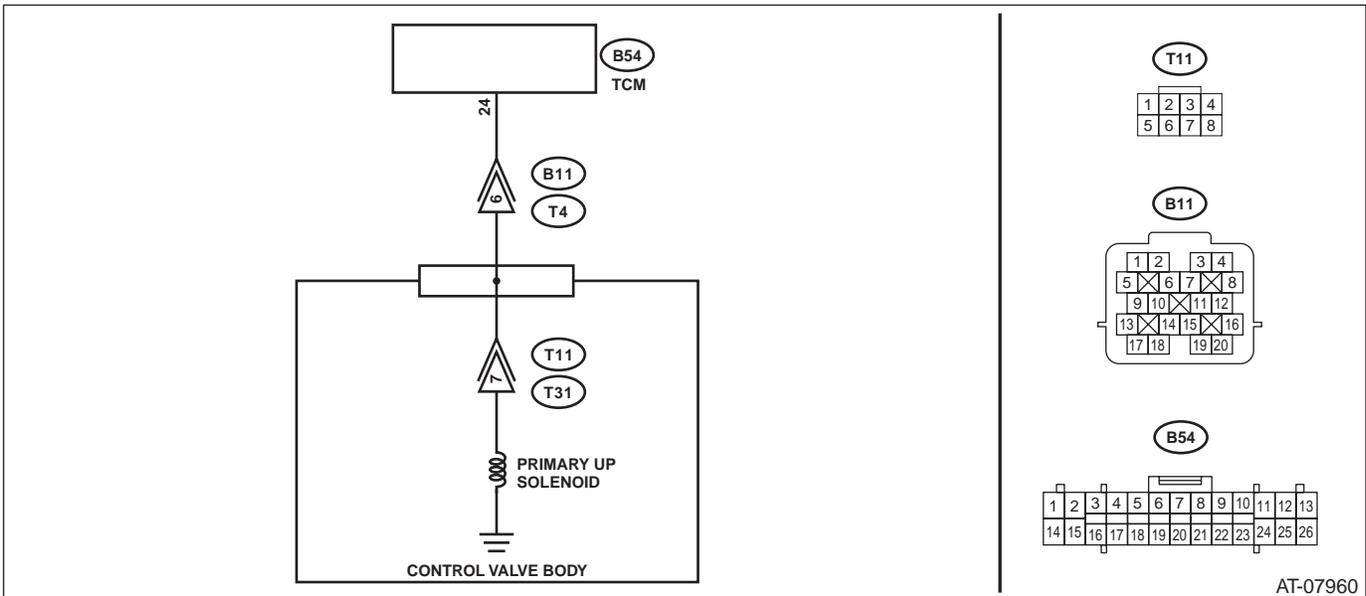
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B54) No. 24 — (B11) No. 2: <b>Turbo model</b> (B54) No. 24 — (B11) No. 6:	Is the resistance less than 1 $\Omega$ ?	Go to step 2.	Repair the open circuit of harness.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to ON. 2) Measure the voltage between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 24 (+) — Chassis ground (-):	Is the voltage approx. 0 V?	Go to step 3.	Repair the short circuit of harness.
3	<b>CHECK PRIMARY UP SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 2 — Transmission body: <b>Turbo model</b> (T4) No. 6 — Transmission body:	Is the resistance approx. 10 — 13.5 $\Omega$ ? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 4.
4	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the following parts. <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 5.
5	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 2 (+) — Transmission body (-): <b>Turbo model</b> (T4) No. 6 (+) — Transmission body (-):	Is the voltage approx. 0 V?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AN:DTC P0976 PRIMARY SOLENOID SYSTEM B CIRCUIT (LOW)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-49, DTC P0976 PRIMARY SOLENOID SYSTEM B CIRCUIT (LOW), Diagnostic Trouble Code (DTC) Detecting Criteria.>

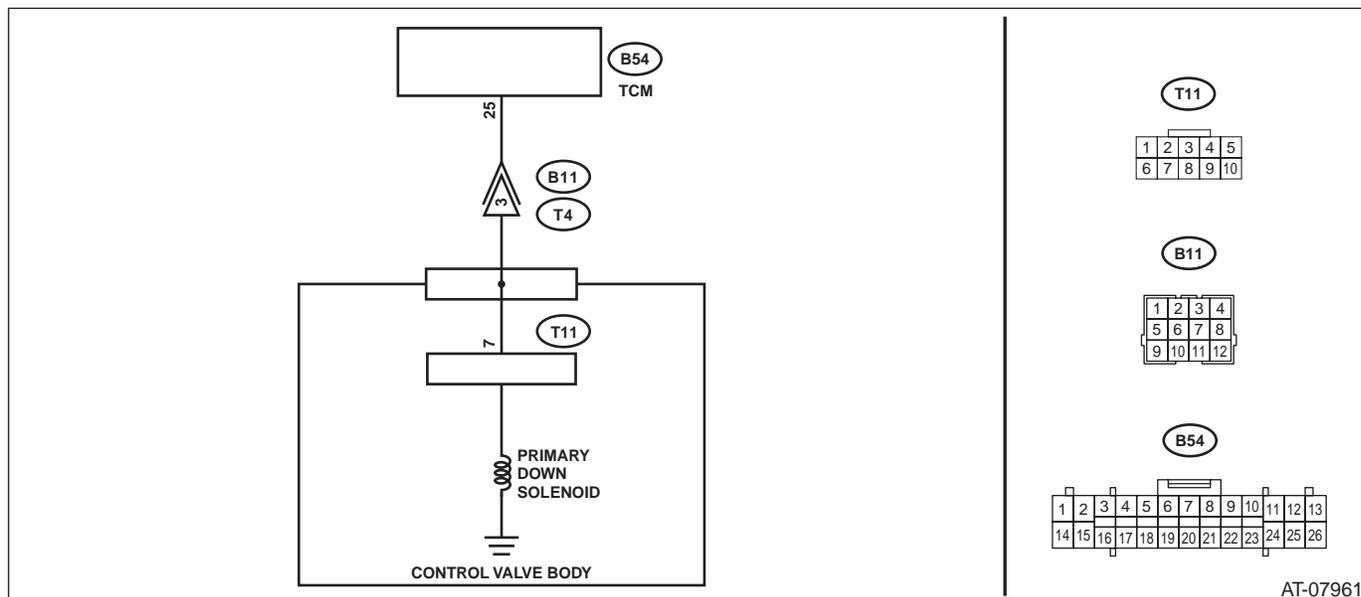
### TROUBLE SYMPTOM:

Gear is not changed. (No down-shift)

### WIRING DIAGRAM:

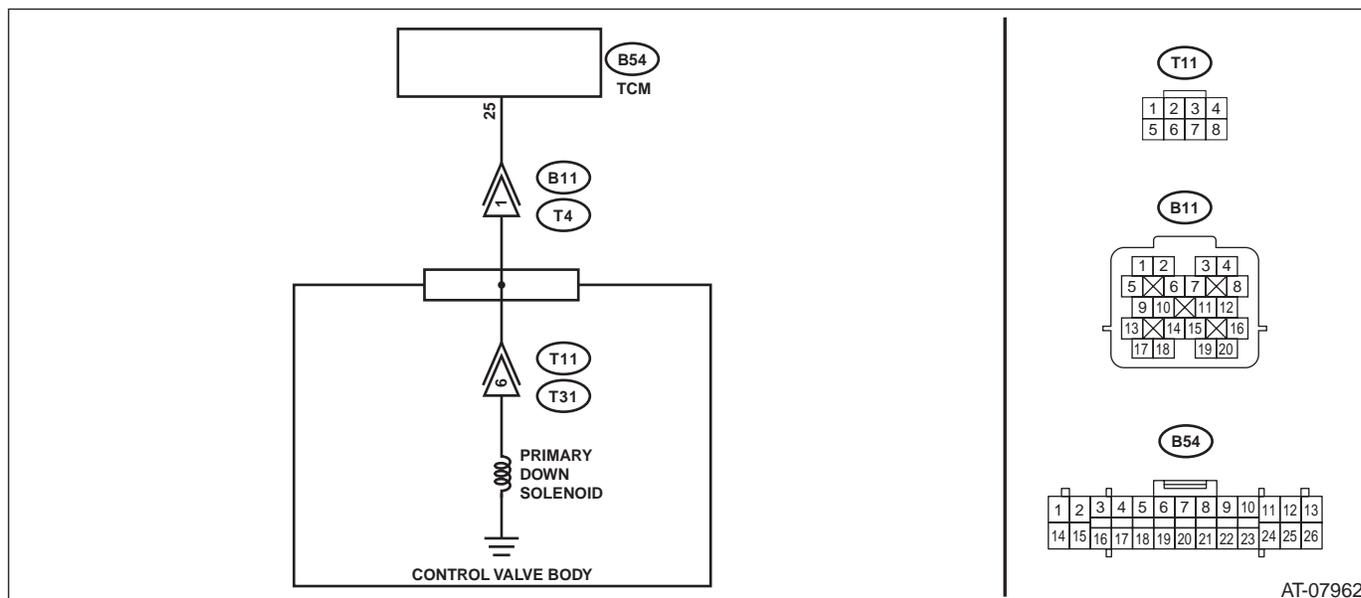
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<p><b>CHECK HARNESS.</b></p> <p>1) Turn the ignition switch to OFF.</p> <p>2) Disconnect the TCM and transmission connectors.</p> <p>3) Measure the resistance between TCM connector and chassis ground.</p> <p><b>Connector &amp; terminal</b> <b>(B54) No. 25 — Chassis ground:</b></p>	Is the resistance 1 M $\Omega$ or more?	Go to step 2.	Repair the short circuit of harness.
2	<p><b>CHECK PRIMARY DOWN SOLENOID.</b></p> <p>Measure the resistance between transmission connector and transmission body.</p> <p><b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 3 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 1 — Transmission body:</b></p>	Is the resistance approx. 10 — 13.5 $\Omega$ ? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 3.
3	<p><b>CHECK HARNESS INSIDE TRANSMISSION.</b></p> <p><b>CAUTION:</b> <b>Start work after ATF cools down.</b></p> <p>1) Remove the following parts.</p> <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> <p>2) Check for the harness pinch, damage.</p>	Is there any fault in the harness?	Replace the transmission harness.	Go to step 4.
4	<p><b>CHECK HARNESS INSIDE TRANSMISSION.</b></p> <p>1) Disconnect the control valve body connector.</p> <p>2) Measure the resistance between transmission connector and transmission body.</p> <p><b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 3 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 1 — Transmission body:</b></p>	Is the resistance 1 M $\Omega$ or more?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AO:DTC P0977 PRIMARY SOLENOID SYSTEM B CIRCUIT (HIGH)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-50, DTC P0977 PRIMARY SOLENOID SYSTEM B CIRCUIT (HIGH), Diagnostic Trouble Code (DTC) Detecting Criteria.>

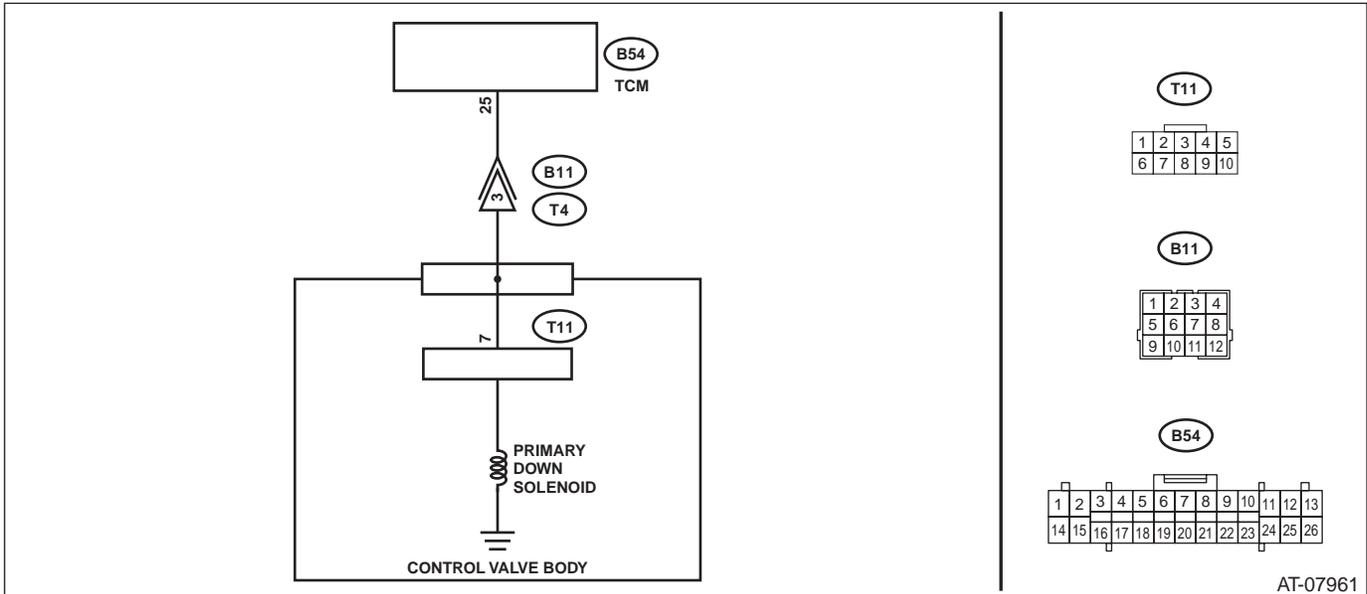
### TROUBLE SYMPTOM:

Gear is not changed. (No down-shift)

### WIRING DIAGRAM:

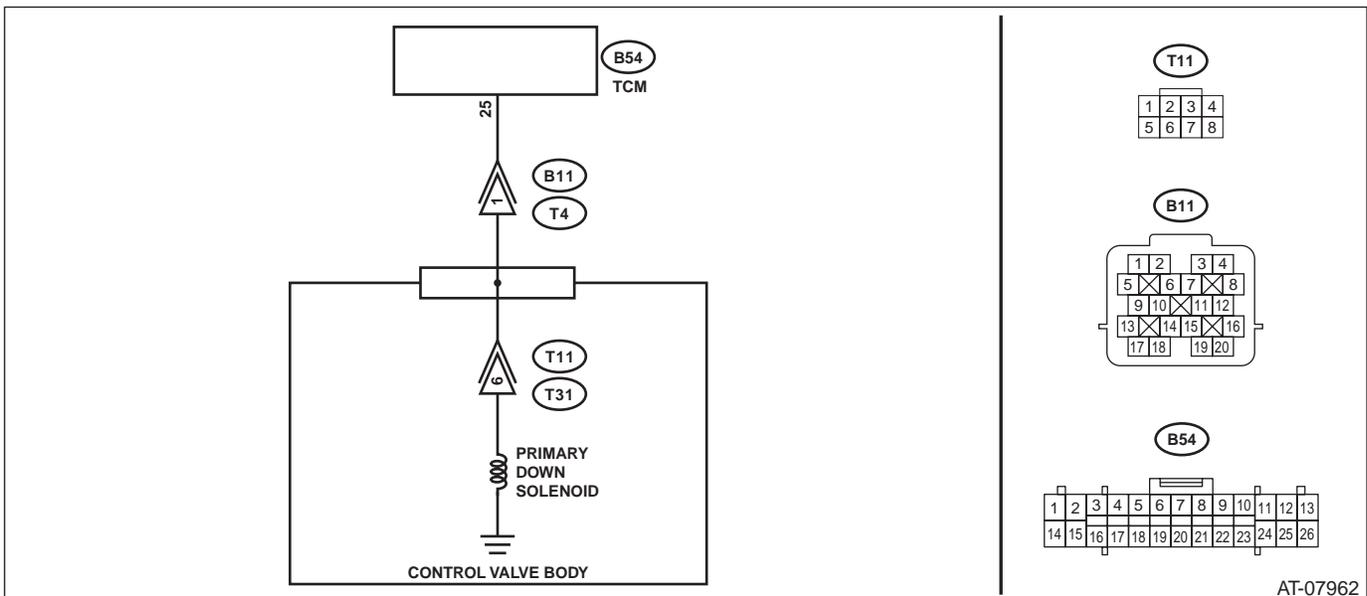
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B54) No. 25 — (B11) No. 3: <b>Turbo model</b> (B54) No. 25 — (B11) No. 1:	Is the resistance less than 1 $\Omega$ ?	Go to step 2.	Repair the open circuit of harness.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to ON. 2) Measure the voltage between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 25 (+) — Chassis ground (-):	Is the voltage approx. 0 V?	Go to step 3.	Repair the short circuit of harness.
3	<b>CHECK PRIMARY DOWN SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 3 — Transmission body: <b>Turbo model</b> (T4) No. 1 — Transmission body:	Is the resistance approx. 10 — 13.5 $\Omega$ ? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 4.
4	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the following parts. <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 5.
5	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 3 (+) — Transmission body (-): <b>Turbo model</b> (T4) No. 1 (+) — Transmission body (-):	Is the voltage approx. 0 V?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

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## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

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### AP:DTC P160A RANDOM ACCESS MEMORY (RAM) ERROR

#### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-51, DTC P160A RANDOM ACCESS MEMORY (RAM) ERROR, Diagnostic Trouble Code (DTC) Detecting Criteria.>

#### TROUBLE SYMPTOM:

TCM RAM malfunction

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> 1) Perform the Clear Memory Mode using the Subaru Select Monitor.<Ref. to CVT(diag)-24, Clear Memory Mode.> 2) Read the DTC.	Is DTC P160A displayed?	Replace the TCM.<Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Current condition is normal. Check for interference from noise, etc.

### AQ:DTC P170A L-RANGE SW SYSTEM

#### NOTE:

Refer to "DTC P0951 MANUAL SWITCH" for diagnostic procedure. <Ref. to CVT(diag)-100, DTC P0951 MANUAL SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AR:DTC P2158 VEHICLE SPEED SENSOR "B"

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-52, DTC P2158 VEHICLE SPEED SENSOR "B", Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

VDC does not operate.

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC of VDC system using the Subaru Select Monitor.	Is DTC displayed?	Perform the diagnosis according to DTC.<Ref. to VDC(diag)-36, List of Diagnostic Trouble Code (DTC).>	Repair the poor contact of connector and harness between VDCCM&H/U and wheel speed sensor.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AS:DTC P2530 IGNITION SWITCH RUN POSITION CIRCUIT

### DTC DETECTING CONDITION:

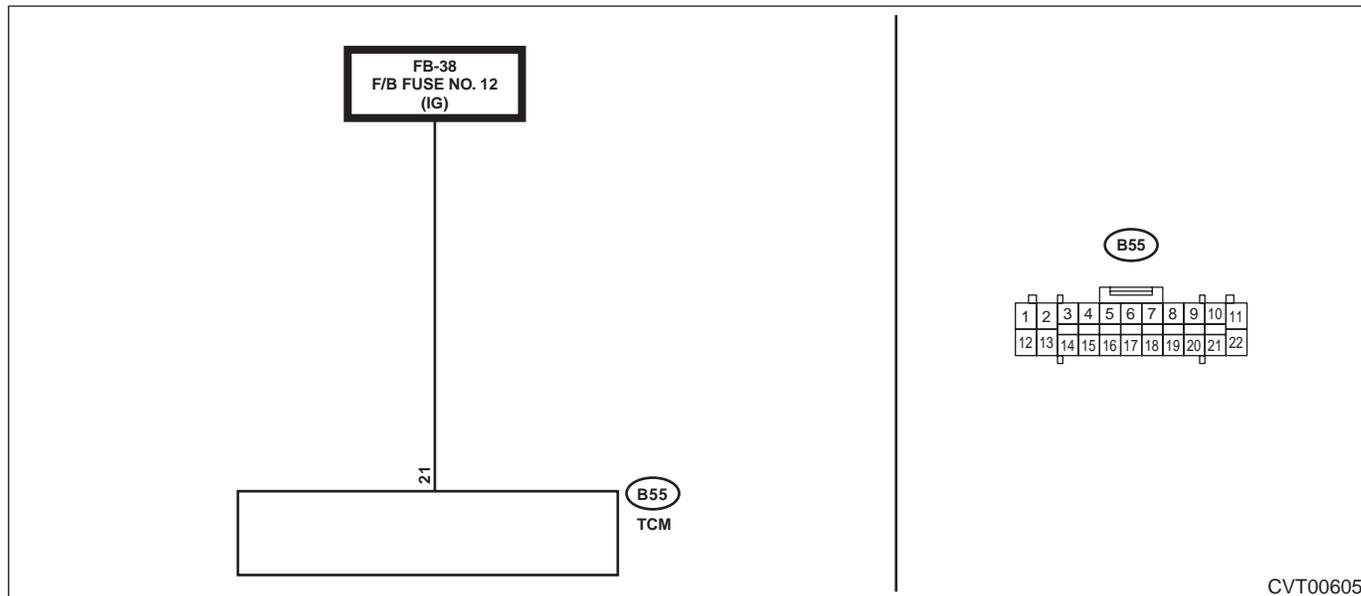
- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-53, DTC P2530 IGNITION SWITCH RUN POSITION CIRCUIT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

Faulty TCM operation

### WIRING DIAGRAM:

CVT control system<Ref. to WI-138, CVT Control System.>



CVT00605

Step	Check	Yes	No	
1	<b>CHECK CONNECTOR.</b> Check the installing condition of TCM connector.	Is the TCM connector installed properly?	Go to step 2.	Install the TCM connector.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<p><b>2</b></p> <p><b>CHECK INPUT VOLTAGE OF TCM.</b></p> <p>1) Turn the ignition switch to ON.</p> <p>2) Measure the voltage between TCM connector and chassis ground. (While wiggling the harness)</p> <p><b>Connector &amp; terminal</b>  <b>(B55) No. 21 (+) — Chassis ground (-):</b></p>	<p>Is the voltage 8 V or more?</p>	<p>Even if DTC is detected, the circuit has returned to a normal condition at this time. Reproduce the failure, and then perform the diagnosis again.</p> <p><b>NOTE:</b>                      In this case, the following items may be the cause of fault.</p> <ul style="list-style-type: none"> <li>• Open circuit or short circuit to ground of harness between TCM connector and ignition switch connector (IG relay 1 connector for model with push button start)</li> <li>• Poor contact of ignition switch connector (IG relay 1 connector for model with push button start)</li> <li>• Poor contact of ignition switch (IG relay 1 for model with push button start)</li> </ul>	<p>Repair the harness and connector.</p> <p><b>NOTE:</b>                      In this case, repair the following item:</p> <ul style="list-style-type: none"> <li>• Open circuit or short circuit to ground of harness between TCM connector and ignition switch connector (IG relay 1 connector for model with push button start)</li> <li>• Poor contact of ignition switch connector (IG relay 1 connector for model with push button start)</li> <li>• Poor contact of ignition switch (IG relay 1 for model with push button start)</li> </ul>

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AT:DTC P2746 PRIMARY PULLEY REVOLUTION SPEED SENSOR CIRCUIT

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-54, DTC P2746 PRIMARY PULLEY REVOLUTION SPEED SENSOR CIRCUIT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

- Standing start problems
- Shock occurs when engaging the lockup clutch.
- Shock occurs when selecting shift position.

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P2746, is any of the DTCs P2747, U0100 and U0401 displayed?	Perform the diagnosis according to DTCs other than P2746.	Perform the diagnosis according to DTC P2747.<Ref. to CVT(diag)-131, DTC P2747 INTERMEDIATE SHAFT SPEED SENSOR "B" CIRCUIT NO SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AU:DTC P2747 INTERMEDIATE SHAFT SPEED SENSOR "B" CIRCUIT NO SIGNAL

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-55, DTC P2747 INTERMEDIATE SHAFT SPEED SENSOR "B" CIRCUIT NO SIGNAL, Diagnostic Trouble Code (DTC) Detecting Criteria.>

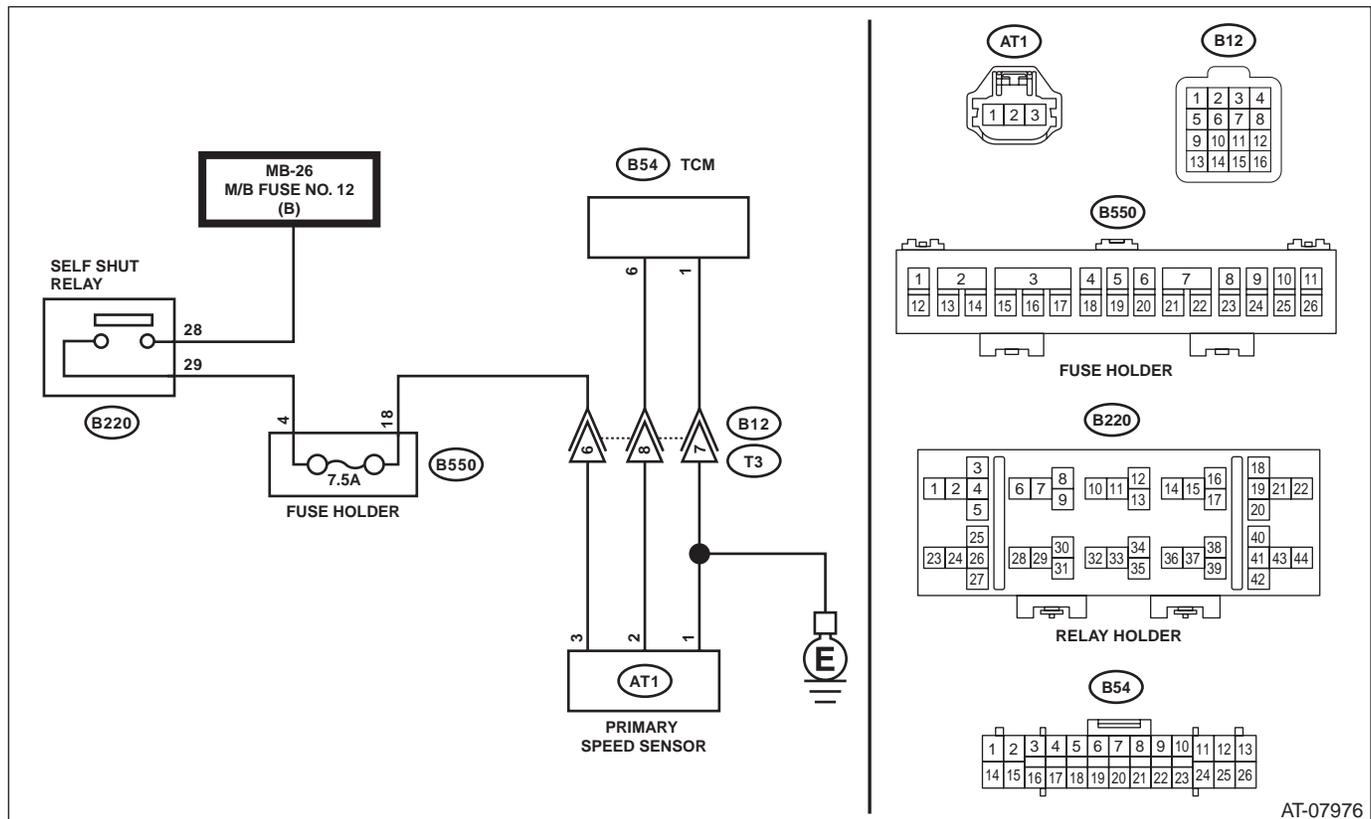
### TROUBLE SYMPTOM:

- Standing start problems
- Shock occurs when engaging the lockup clutch.
- Shock occurs when selecting shift position.

### WIRING DIAGRAM:

- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>

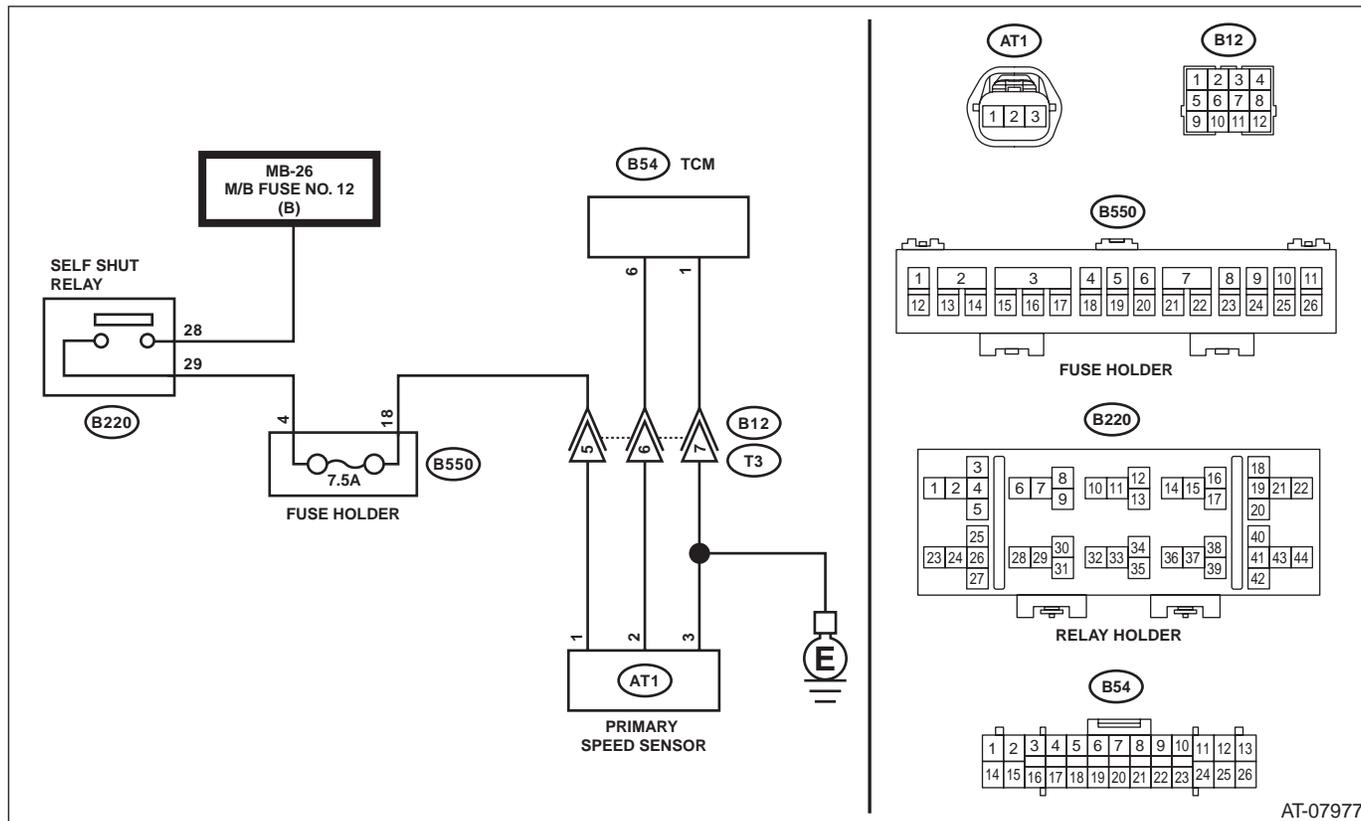


AT-07976

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

- Turbo model  
CVT control system <Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07977

Step	Check	Yes	No
<b>1 CHECK FUSE.</b> 1) Turn the ignition switch to OFF. 2) Remove the fuse (7.5 A) from the fuse holder.	Is the fuse OK?	Go to step 2.	Replace the fuse. If the fuse blows out easily, repair the short circuit of harness.
<b>2 CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B54) No. 1 — (B12) No. 7: (B54) No. 6 — (B12) No. 8: (B550) No. 18 — (B12) No. 6: <b>Turbo model</b> (B54) No. 1 — (B12) No. 7: (B54) No. 6 — (B12) No. 6: (B550) No. 18 — (B12) No. 5:	Is the resistance less than 1 Ω?	Go to step 3.	Repair the open circuit of harness.
<b>3 CHECK HARNESS.</b> Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 6 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 4.	Repair the short circuit of harness.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<p><b>4</b>     <b>CHECK TRANSMISSION HARNESS.</b>                      1) Connect the TCM connector.                      2) Turn the ignition switch to ON.                      3) Measure the voltage between transmission connector terminals.  <b>Connector &amp; terminal</b>  <b>Non-turbo model</b>                      (B12) No. 6 (+) — (B12) No. 7 (-):  <b>Turbo model</b>                      (B12) No. 5 (+) — (B12) No. 7 (-):</p>	<p>Is the voltage 10 — 13 V?</p>	<p>Go to step 5.</p>	<p>Repair the open circuit of harness or poor contact of connector.</p>
<p><b>5</b>     <b>CHECK INPUT SIGNAL FOR TCM.</b>                      1) Turn the ignition switch to OFF.                      2) Connect the transmission connector.                      3) Lift up the vehicle.                      4) Start the engine.                      5) Set the select lever to "D" range.                      6) Read the data of «Primary Pulley Speed» using Subaru Select Monitor.</p>	<p>Does the value of «Primary Pulley Speed» change according to those of «Turbine Revolution Speed»?</p>	<p>Current condition is normal. Repair the poor contacts of harnesses of primary speed sensor and transmission connector.</p>	<p>Go to step 6.</p>
<p><b>6</b>     <b>CHECK TRANSMISSION HARNESS.</b>                      1) Turn the ignition switch to OFF.                      2) Disconnect the transmission connector.                      3) Disconnect the primary speed sensor connector.                      4) Measure the resistance between transmission connector and primary speed sensor connector.  <b>Connector &amp; terminal</b>  <b>Non-turbo model</b>                      (T3) No. 6 — (AT1) No. 3:                      (T3) No. 7 — (AT1) No. 1:                      (T3) No. 8 — (AT1) No. 2:  <b>Turbo model</b>                      (T3) No. 5 — (AT1) No. 1:                      (T3) No. 6 — (AT1) No. 2:                      (T3) No. 7 — (AT1) No. 3:</p>	<p>Is the resistance less than 1 Ω?</p>	<p>Replace the primary speed sensor.&lt;Ref. to CVT(TR580)-102, Primary Speed Sensor.&gt; &lt;Ref. to CVT(TR690)-102, Primary Speed Sensor.&gt;</p>	<p>Replace the transmission harness.</p>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AV:DTC P2750 SEC. PULLEY REVOLUTION SPEED SENSOR CIRCUIT

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-56, DTC P2750 SEC. PULLEY REVOLUTION SPEED SENSOR CIRCUIT, Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

- Shifting shock is felt.
- Acceleration is poor during standing start.
- Shift control malfunction

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P2750, is DTC P2747 or P2751 displayed?	Perform the diagnosis according to DTCs other than P2750.	Perform the diagnosis according to DTC P2751.<Ref. to CVT(diag)-135, DTC P2751 INTERMEDIATE SHAFT SPEED SENSOR "C" CIRCUIT NO SIGNAL, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AW:DTC P2751 INTERMEDIATE SHAFT SPEED SENSOR "C" CIRCUIT NO SIGNAL

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-57, DTC P2751 INTERMEDIATE SHAFT SPEED SENSOR "C" CIRCUIT NO SIGNAL, Diagnostic Trouble Code (DTC) Detecting Criteria.>

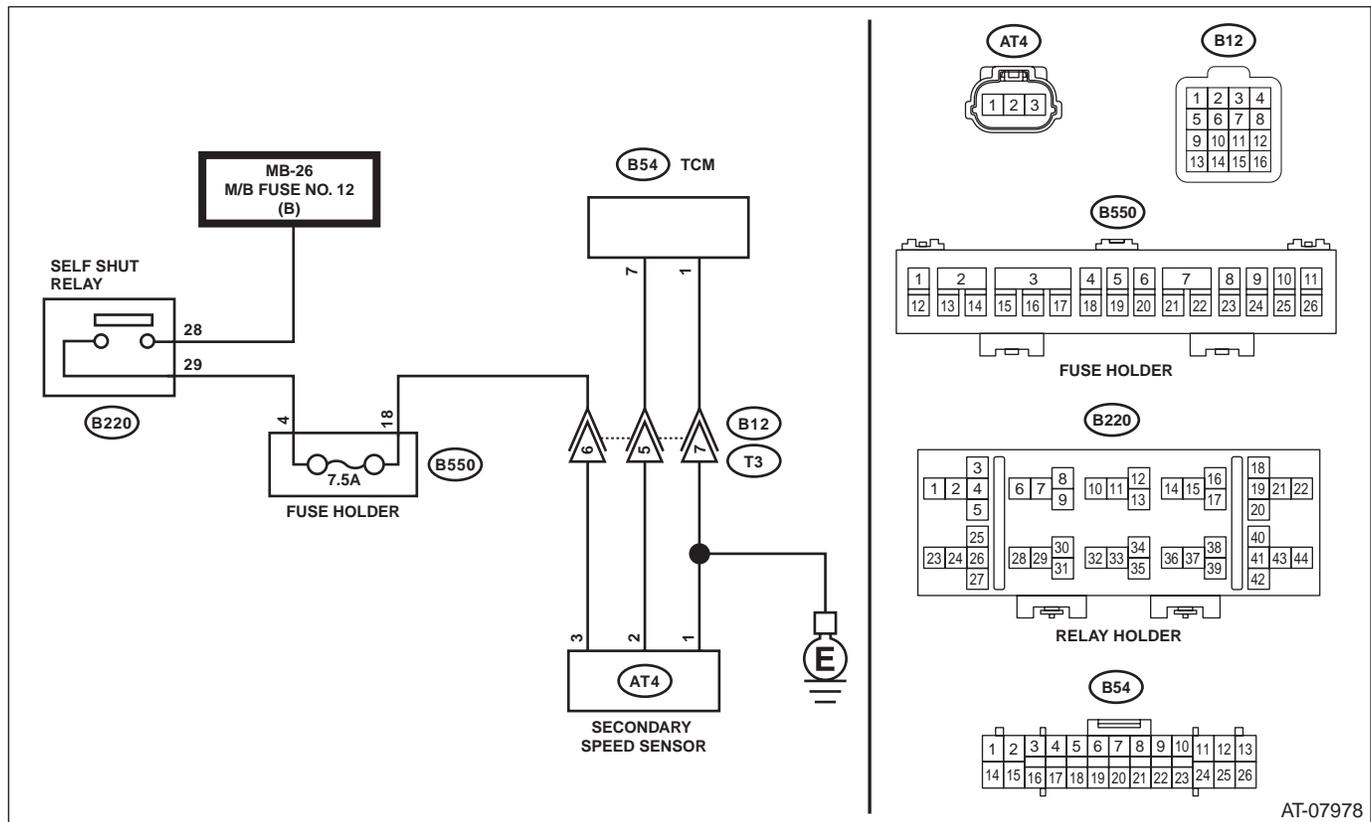
### TROUBLE SYMPTOM:

- Shifting shock is felt.
- Acceleration is poor during standing start.
- Shift control malfunction

### WIRING DIAGRAM:

- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



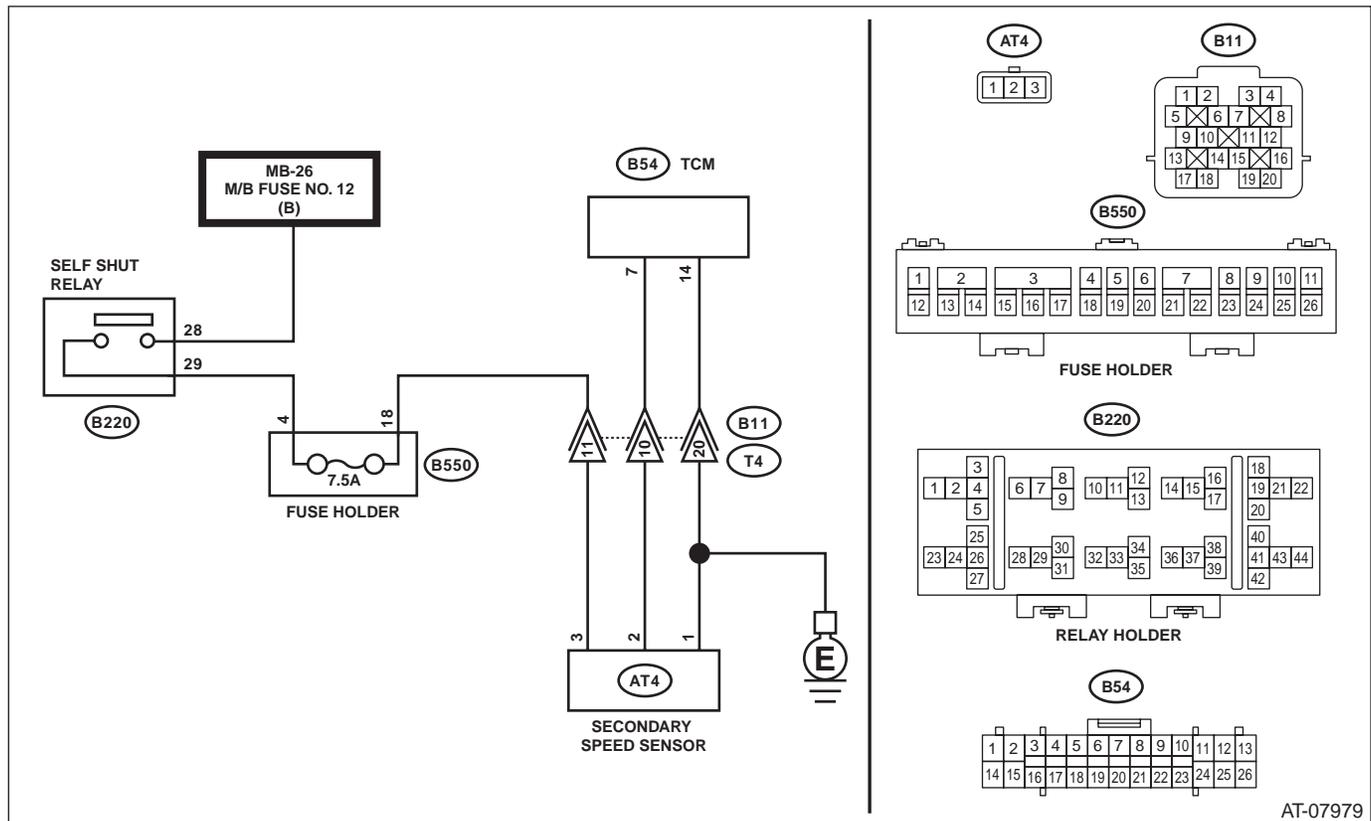
AT-07978

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

- Turbo model

CVT control system <Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07979

Step	Check	Yes	No
<b>1 CHECK FUSE.</b> 1) Turn the ignition switch to OFF. 2) Remove the fuse (7.5 A) from the fuse holder.	Is the fuse OK?	Go to step 2.	Replace the fuse. If the fuse blows out easily, repair the short circuit of harness.
<b>2 CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B54) No. 1 — (B12) No. 7: (B54) No. 7 — (B12) No. 5: (B550) No. 18 — (B12) No. 6: <b>Turbo model</b> (B54) No. 7 — (B11) No. 10: (B54) No. 14 — (B11) No. 20: (B550) No. 18 — (B11) No. 11:	Is the resistance less than 1 Ω?	Go to step 3.	Repair the open circuit of harness.
<b>3 CHECK HARNESS.</b> Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 7 — Chassis ground:	Is the resistance 1 MΩ or more?	Go to step 4.	Repair the short circuit of harness.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>4 CHECK TRANSMISSION HARNESS.</b> 1) Connect the TCM connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between transmission connector terminals. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B12) No. 6 (+) — (B12) No. 7 (-): <b>Turbo model</b> (B11) No. 11 (+) — (B11) No. 20 (-):	Is the voltage 10 — 13 V?	Go to step 5.	Repair the open circuit of harness or poor contact of connector.
<b>5 CHECK INPUT SIGNAL FOR TCM.</b> 1) Turn the ignition switch to OFF. 2) Connect the transmission connector. 3) Lift up the vehicle. 4) Start the engine. 5) Set the select lever to "D" range. 6) Read the data of «Secondary Pulley Speed» using Subaru Select Monitor.	Does the value of «Secondary Pulley Speed» change according to those of «Front Wheel Speed»?	Current condition is normal. Repair the poor contacts of harnesses of secondary speed sensor and transmission connector.	Go to step 6.
<b>6 CHECK TRANSMISSION HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Disconnect the secondary speed sensor connector. 4) Measure the resistance between transmission connector and secondary speed sensor connector. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T3) No. 5 — (AT4) No. 2: (T3) No. 6 — (AT4) No. 3: (T3) No. 7 — (AT4) No. 1: <b>Turbo model</b> (T4) No. 10 — (AT4) No. 2: (T4) No. 11 — (AT4) No. 3: (T4) No. 20 — (AT4) No. 1:	Is the resistance less than 1 Ω?	Replace the secondary speed sensor.<Ref. to CVT(TR580)-100, Secondary Speed Sensor.> <Ref. to CVT(TR690)-99, Secondary Speed Sensor.>	Replace the transmission harness.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AX:DTC P2757 TORQUE CONVERTER CLUTCH PRESSURE CONTROL SOLENOID CONTROL CIRCUIT PERFORMANCE/STUCK OFF

### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-58, DTC P2757 TORQUE CONVERTER CLUTCH PRESSURE CONTROL SOLENOID CONTROL CIRCUIT PERFORMANCE/STUCK OFF, Diagnostic Trouble Code (DTC) Detecting Criteria.>

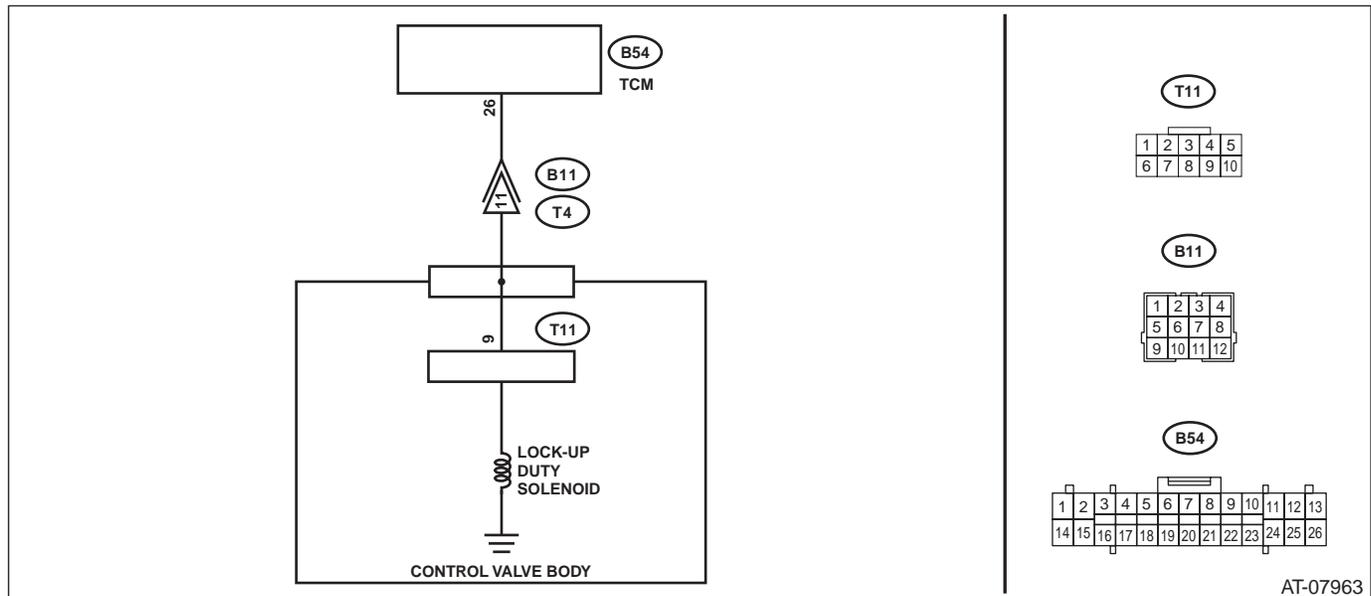
### TROUBLE SYMPTOM:

No lock-up occurs.

### WIRING DIAGRAM:

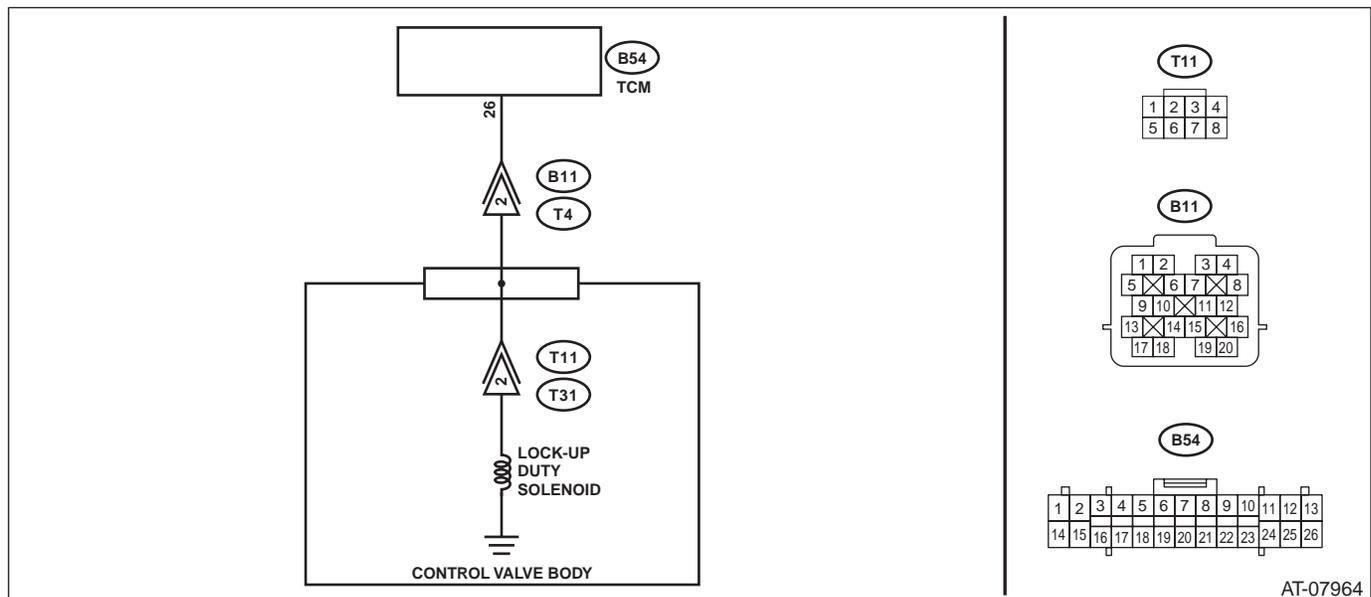
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P2757, is any of the DTCs P2747, P2763, P2764, U0100 and U0401 displayed?	Perform the diagnosis according to DTCs other than P2757.	Go to step 2.
2	<b>CHECK LOCK-UP DUTY SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 11 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 2 — Transmission body:</b>	Is the resistance approx. 10 — 13.5 Ω? (when cold)	Go to step 4.	Go to step 3.
3	<b>CHECK HARNESS.</b> Check the harness for continuity.	Is the harness normal? (Is it free from defects such as open circuit, power supply-output short or GND-output short circuit, or poor contact?)	Go to step 4.	Repair the harness.
4	<b>CHECK TRANSMISSION FLUID.</b> 1) Connect the transmission connector. 2) Check the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>	Is the ATF amount correct?	Go to step 5.	Adjust the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>
5	<b>CHECK TRANSMISSION FLUID.</b> Check the condition of ATF.<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>	Is the ATF OK?	Go to step 6.	Check according to the "Corrective action" of ATF (CVTF) "CONDITION CHECK".<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>
6	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Lift up the vehicle. 2) Start the engine. 3) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 4) Shift the select lever to "P" range. 5) Stabilize the engine speed at idle. 6) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Go to step 7.	Perform the diagnosis according to DTC P0841.<Ref. to CVT(diag)-89, DTC P0841 SECONDARY OIL PRESSURE SENSOR PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

### CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>7</b> <b>DRIVING CHECK FOR LOCK-UP CONDITION.</b> 1) Perform the "Clear Memory Mode". <Ref. to CVT(diag)-24, Clear Memory Mode.> 2) Turn the ignition switch to OFF. 3) Start the engine. 4) Warm up until the ATF temperature exceeds 50°C. 5) Drive the vehicle for one minute or more while keeping such constant speed that «Lock Up Duty Ratio» is 70% or more, and «Front Wheel Speed» is 40 km/h (25 MPH) or more, which are displayed on the Subaru Select Monitor. 6) Turn the ignition switch to OFF. 7) Start the engine. 8) Perform the procedure in step 5) again. 9) Read the DTC using Subaru Select Monitor.	Does the AT OIL TEMP light blink and is DTC P2757 displayed?	Perform the secondary pressure test.<Ref. to CVT(TR580)-48, Secondary Pressure (Line Pressure) Test.> <Ref. to CVT(TR690)-51, Secondary Pressure (Line Pressure) Test.> When DTC other than P2757 is displayed, perform the diagnosis corresponding to the DTC.	Current condition is normal. Temporary oil pressure malfunction.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AY:DTC P2758 TORQUE CONVERTER CLUTCH PRESSURE CONTROL SOLENOID CONTROL CIRCUIT STUCK ON

### DTC DETECTING CONDITION:

- Detected when two consecutive driving cycles with fault occur.
- GENERAL DESCRIPTION<Ref. to GD(CVT)-59, DTC P2758 TORQUE CONVERTER CLUTCH PRESSURE CONTROL SOLENOID CONTROL CIRCUIT STUCK ON, Diagnostic Trouble Code (DTC) Detecting Criteria.>

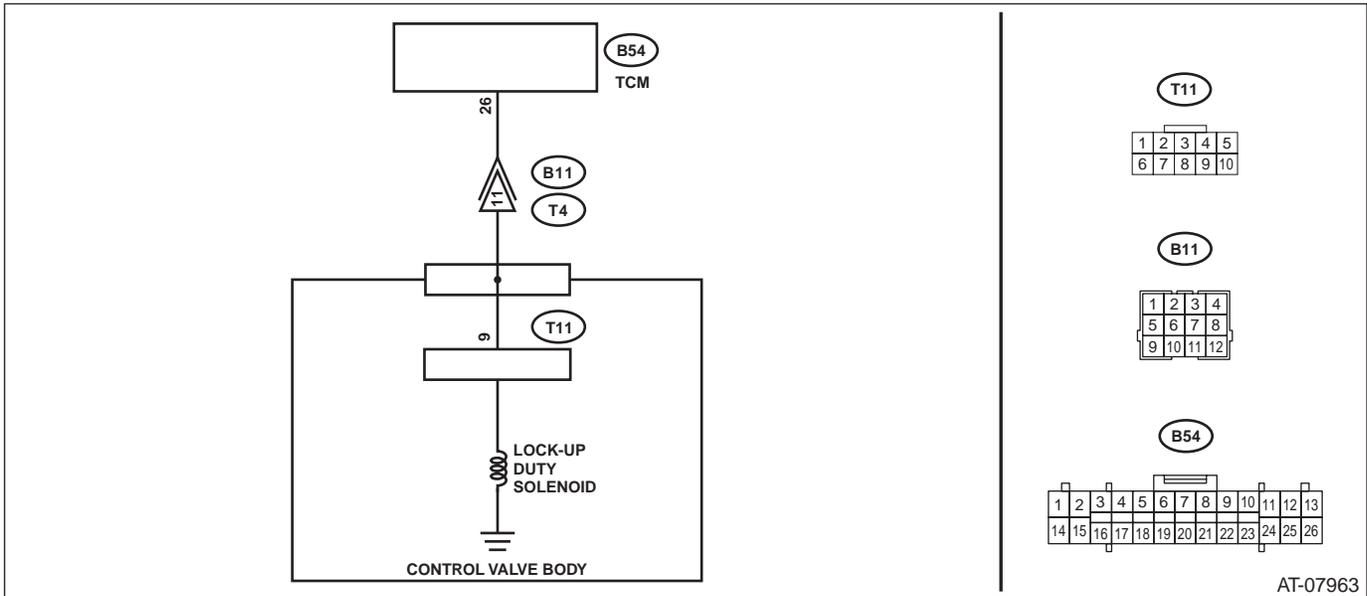
### TROUBLE SYMPTOM:

The engine stalls when the vehicle is stopped.

### WIRING DIAGRAM:

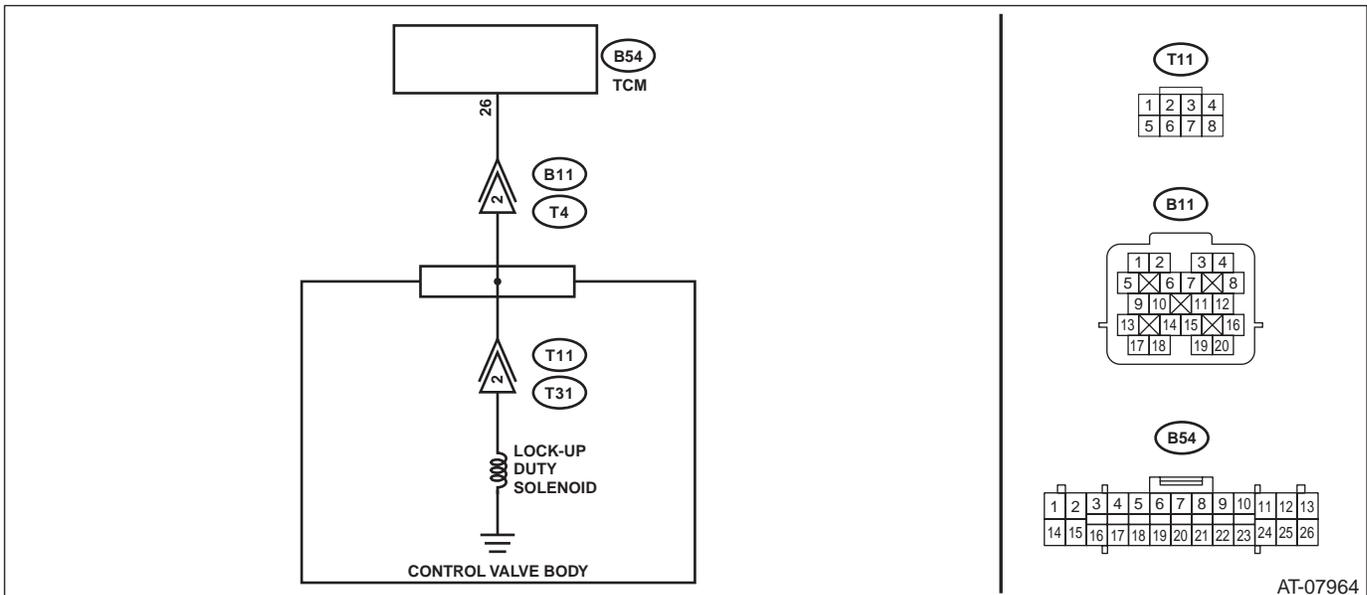
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

## CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC using Subaru Select Monitor.	Besides DTC P2758, is any of the DTCs P2747, P2763, P2764, U0100 and U0401 displayed?	Perform the diagnosis according to DTCs other than P2758.	Go to step 2.
2	<b>CHECK LOCK-UP DUTY SOLENOID.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the transmission connector. 3) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 11 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 2 — Transmission body:</b>	Is the resistance approx. 10 — 13.5 Ω? (when cold)	Go to step 4.	Go to step 3.
3	<b>CHECK HARNESS.</b> Check the harness for continuity.	Is the harness normal? (Is it free from defects such as open circuit, power supply-output short or GND-output short circuit, or poor contact?)	Go to step 4.	Repair the harness.
4	<b>CHECK TRANSMISSION FLUID.</b> 1) Connect the transmission connector. 2) Check the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>	Is the ATF amount correct?	Go to step 5.	Adjust the amount of ATF.<Ref. to CVT(TR580)-35, ADJUSTMENT, CVTF.> <Ref. to CVT(TR690)-36, ADJUSTMENT, CVTF.>
5	<b>CHECK TRANSMISSION FLUID.</b> Check the condition of ATF.<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>	Is the ATF OK?	Go to step 6.	Check according to the "Corrective action" of ATF (CVTF) "CONDITION CHECK".<Ref. to CVT(TR580)-39, CONDITION CHECK, CVTF.> <Ref. to CVT(TR690)-40, CONDITION CHECK, CVTF.>
6	<b>CHECK INPUT SIGNAL FOR TCM.</b> 1) Lift up the vehicle. 2) Start the engine. 3) Warm up until the ATF temperature reaches to 40 — 70°C (104 — 158°F). 4) Shift the select lever to "P" range. 5) Stabilize the engine speed at idle. 6) Read the data of «Actual secondary pressure» using Subaru Select Monitor.	Is the «Actual secondary pressure» 0.5 — 1.5 MPa?	Go to step 7.	Perform the diagnosis according to DTC P0841.<Ref. to CVT(diag)-89, DTC P0841 SECONDARY OIL PRESSURE SENSOR PERFORMANCE, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
7	<p><b>DRIVING CHECK FOR LOCK-UP CONDITION.</b></p> <ol style="list-style-type: none"> <li>1) Perform the "Clear Memory Mode". &lt;Ref. to CVT(diag)-24, Clear Memory Mode.&gt;</li> <li>2) Turn the ignition switch to OFF.</li> <li>3) Start the engine.</li> <li>4) Warm up until the ATF temperature exceeds 50°C.</li> <li>5) Drive the vehicle for one minute or more while keeping such constant speed that «Lock Up Duty Ratio» is 0%, and «Front Wheel Speed» is 5 km/h (3 MPH) or less, which are displayed on the Subaru Select Monitor.</li> <li>6) Turn the ignition switch to OFF.</li> <li>7) Start the engine.</li> <li>8) Perform the procedure in step 5) again.</li> <li>9) Read the DTC using Subaru Select Monitor.</li> </ol>	Does the AT OIL TEMP light blink and is DTC P2758 displayed?	Perform the secondary pressure test.<Ref. to CVT(TR580)-48, Secondary Pressure (Line Pressure) Test.> <Ref. to CVT(TR690)-51, Secondary Pressure (Line Pressure) Test.> When DTC other than P2758 is displayed, perform the diagnosis according to the DTC.	Current condition is normal. Temporary oil pressure malfunction.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## AZ:DTC P2763 LOCK-UP DUTY SOLENOID CIRCUIT (HIGH)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-60, DTC P2763 LOCK-UP DUTY SOLENOID CIRCUIT (HIGH), Diagnostic Trouble Code (DTC) Detecting Criteria.>

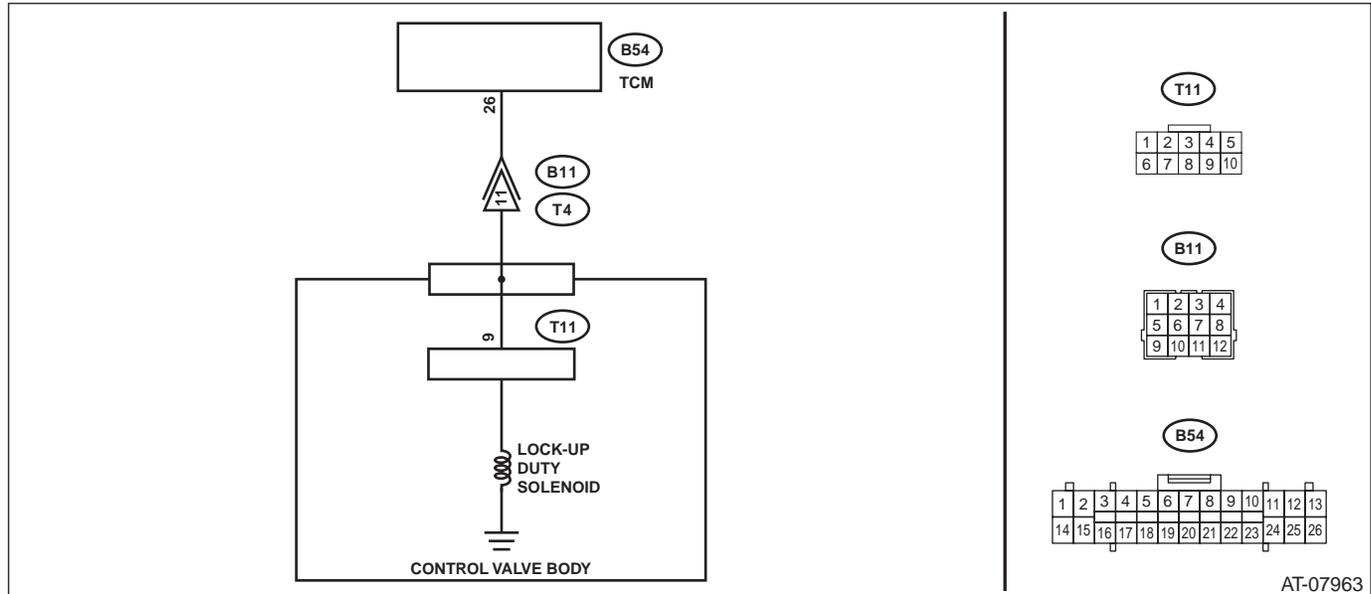
### TROUBLE SYMPTOM:

- No lock-up occurs.
- Engine stalls.

### WIRING DIAGRAM:

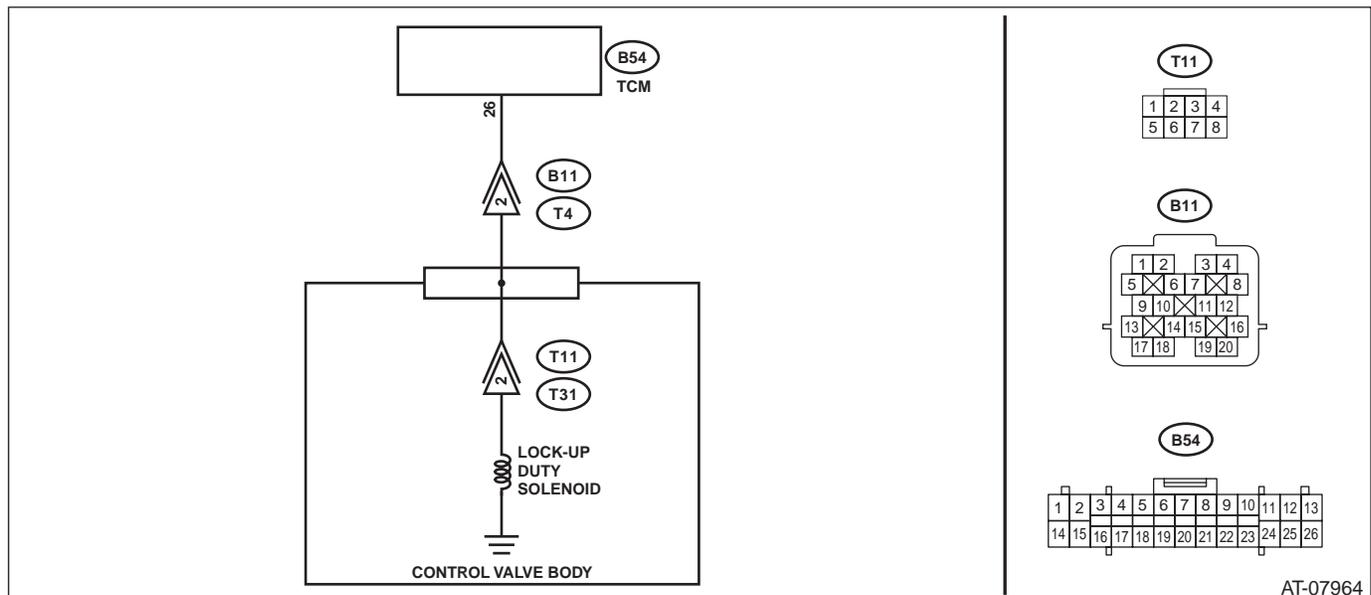
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (B54) No. 26 — (B11) No. 11: <b>Turbo model</b> (B54) No. 26 — (B11) No. 2:	Is the resistance less than 1 $\Omega$ ?	Go to step 2.	Repair the open circuit of harness.
2	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to ON. 2) Measure the voltage between TCM connector and chassis ground. <b>Connector &amp; terminal</b> (B54) No. 26 (+) — Chassis ground (-):	Is the voltage approx. 0 V?	Go to step 3.	Repair the short circuit of harness.
3	<b>CHECK LOCK-UP DUTY SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 11 — Transmission body: <b>Turbo model</b> (T4) No. 2 — Transmission body:	Is the resistance approx. 10 — 13.5 $\Omega$ ? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 4.
4	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the following parts. <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 5.
5	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> (T4) No. 11 (+) — Transmission body (-): <b>Turbo model</b> (T4) No. 2 (+) — Transmission body (-):	Is the voltage approx. 0 V?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## BA:DTC P2764 LOCK-UP DUTY SOLENOID CIRCUIT (LOW)

### DTC DETECTING CONDITION:

- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-61, DTC P2764 LOCK-UP DUTY SOLENOID CIRCUIT (LOW), Diagnostic Trouble Code (DTC) Detecting Criteria.>

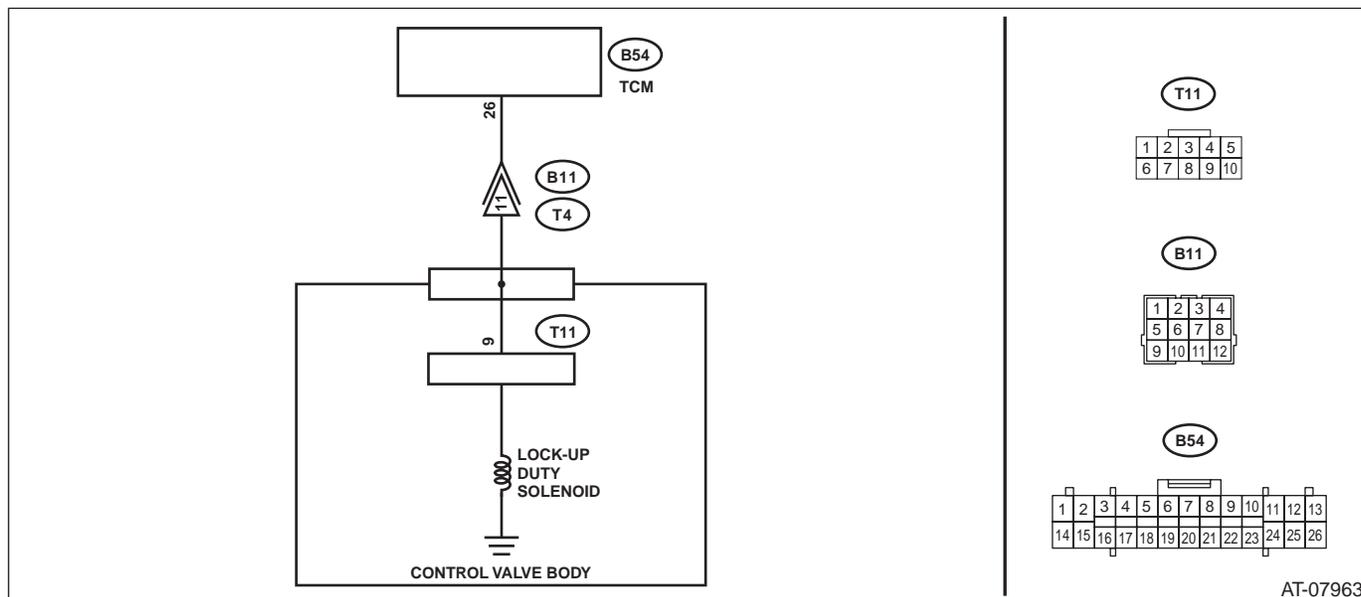
### TROUBLE SYMPTOM:

No lock-up occurs.

### WIRING DIAGRAM:

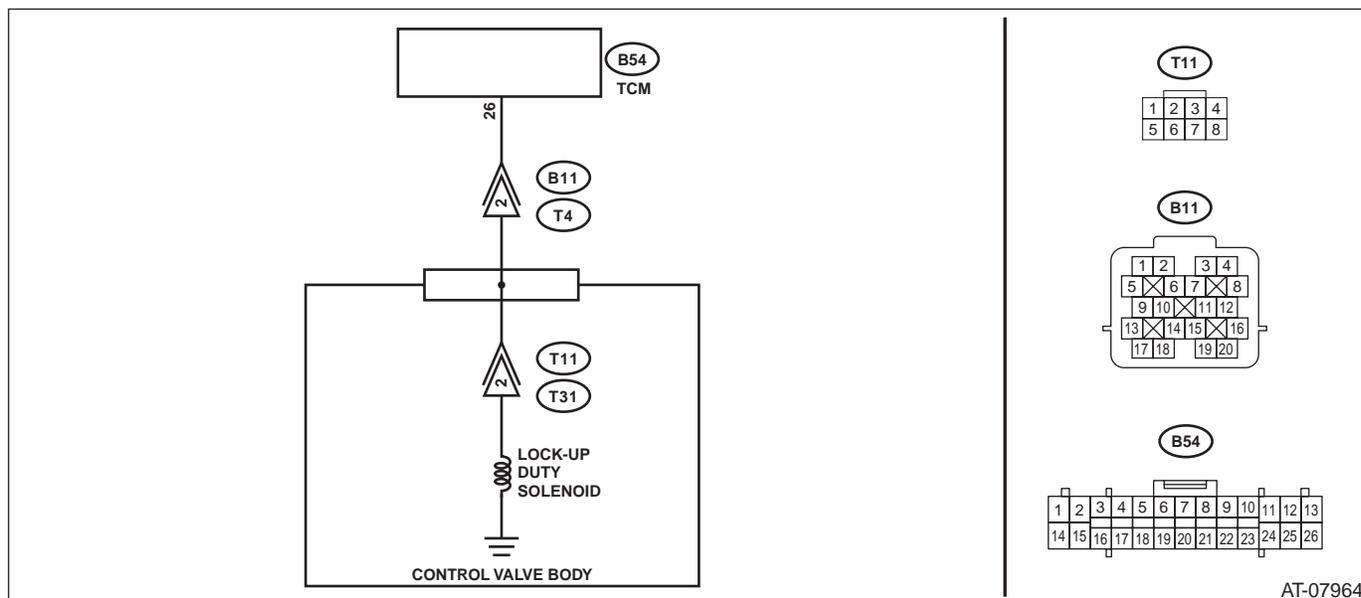
- Non-turbo model

CVT control system<Ref. to WI-138, NON-TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



- Turbo model

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

	Step	Check	Yes	No
1	<b>CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B54) No. 26 — Chassis ground:</b>	Is the resistance 1 M $\Omega$ or more?	Go to step 2.	Repair the short circuit of harness.
2	<b>CHECK LOCK-UP DUTY SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 11 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 2 — Transmission body:</b>	Is the resistance approx. 10 — 13.5 $\Omega$ ? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 3.
3	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the following parts. <ul style="list-style-type: none"> <li>• Transmission valve cover (non-turbo model)</li> <li>• Transmission oil pan (turbo model)</li> </ul> 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 4.
4	<b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>Non-turbo model</b> <b>(T4) No. 11 — Transmission body:</b> <b>Turbo model</b> <b>(T4) No. 2 — Transmission body:</b>	Is the resistance 1 M $\Omega$ or more?	Replace the control valve body.<Ref. to CVT(TR580)-111, Control Valve Body.> <Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

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# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## BB:DTC P2769 LOCK-UP ON/OFF SOLENOID CIRCUIT (LOW)

### DTC DETECTING CONDITION:

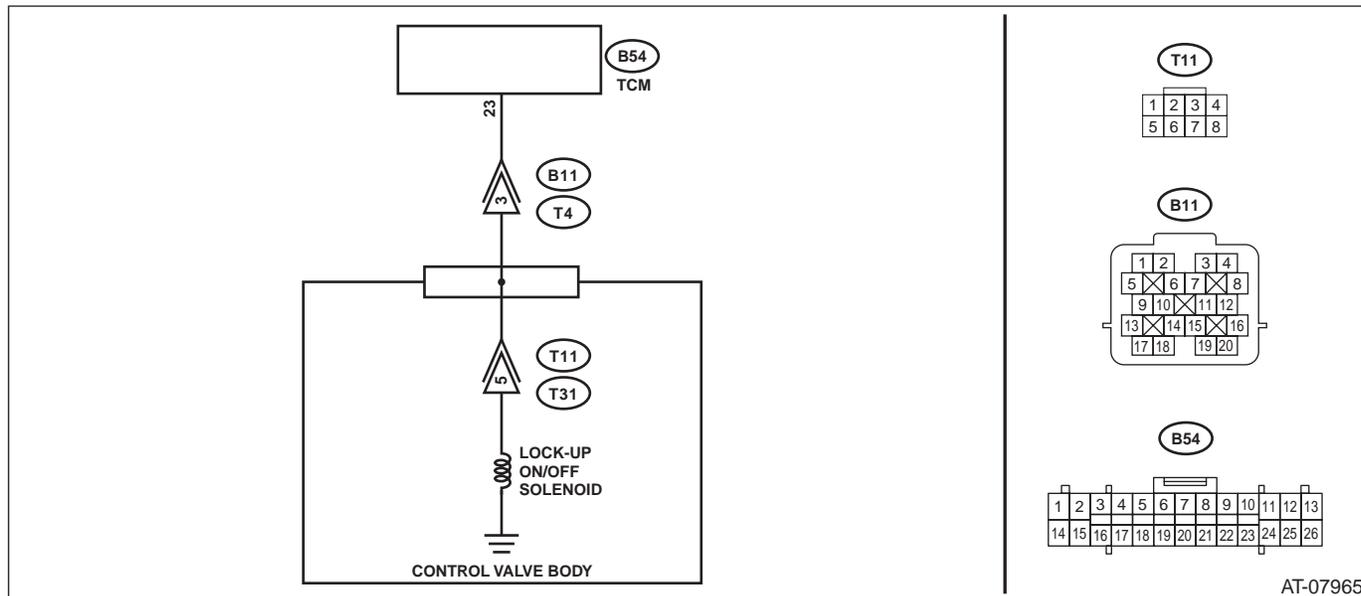
- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-62, DTC P2769 LOCK-UP ON/OFF SOLENOID CIRCUIT (LOW), Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

No lock-up occurs.

### WIRING DIAGRAM:

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07965

Step	Check	Yes	No
<b>1 CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B54) No. 23 — Chassis ground:</b>	Is the resistance 1 M $\Omega$ or more?	Go to step 2.	Repair the short circuit of harness.
<b>2 CHECK LOCK UP ON/OFF SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>(T4) No. 3 — Transmission body:</b>	Is the resistance approx. 13 — 18.5 $\Omega$ ? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 3.
<b>3 CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the transmission oil pan. 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 4.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>4</b> <b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>(T4) No. 3 — Transmission body:</b>	Is the resistance 1 M $\Omega$ or more?	Replace the control valve body.<Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## BC:DTC P2770 LOCK-UP ON/OFF SOLENOID CIRCUIT (HIGH)

### DTC DETECTING CONDITION:

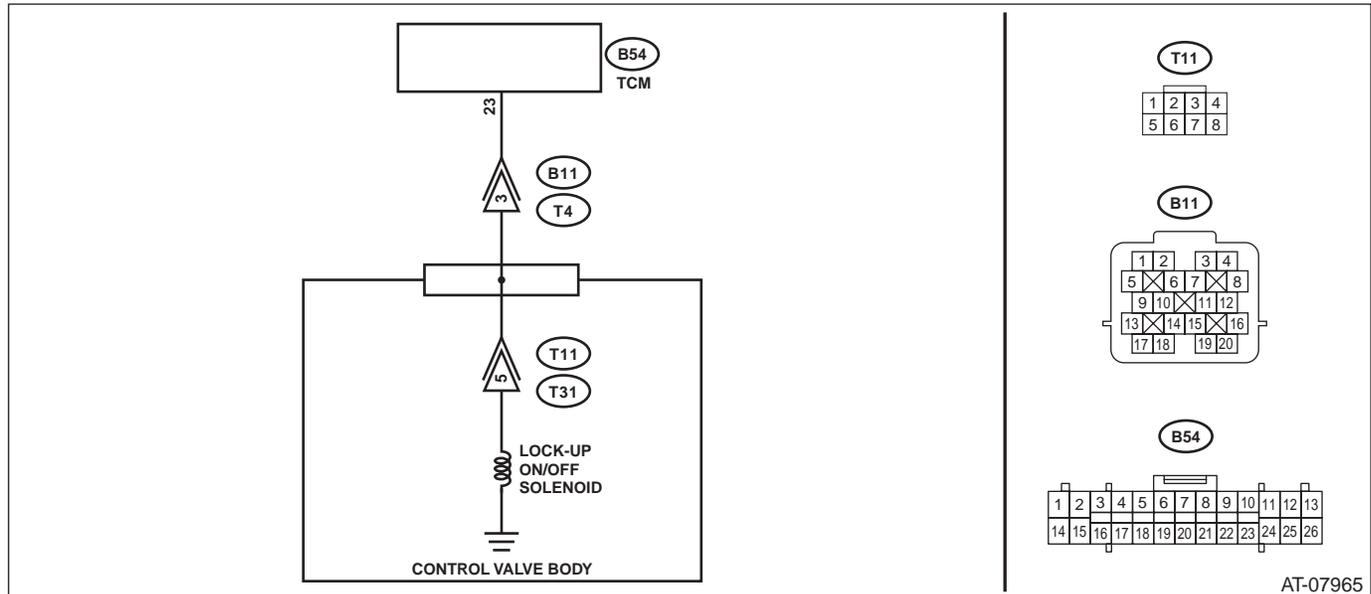
- Immediately at fault recognition
- GENERAL DESCRIPTION<Ref. to GD(CVT)-63, DTC P2770 LOCK-UP ON/OFF SOLENOID CIRCUIT (HIGH), Diagnostic Trouble Code (DTC) Detecting Criteria.>

### TROUBLE SYMPTOM:

No lock-up occurs.

### WIRING DIAGRAM:

CVT control system<Ref. to WI-148, TURBO MODEL, WIRING DIAGRAM, CVT Control System.>



AT-07965

Step	Check	Yes	No
<b>1 CHECK HARNESS.</b> 1) Turn the ignition switch to OFF. 2) Disconnect the TCM and transmission connectors. 3) Measure the resistance between TCM connector and transmission connectors. <b>Connector &amp; terminal</b> <b>(B54) No. 23 — (B11) No. 3:</b>	Is the resistance less than 1 $\Omega$ ?	Go to step 2.	Repair the open circuit of harness.
<b>2 CHECK HARNESS.</b> 1) Turn the ignition switch to ON. 2) Measure the voltage between TCM connector and chassis ground. <b>Connector &amp; terminal</b> <b>(B54) No. 23 (+) — Chassis ground (-):</b>	Is the voltage approx. 0 V?	Go to step 3.	Repair the short circuit of harness.
<b>3 CHECK LOCK UP ON/OFF SOLENOID.</b> Measure the resistance between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>(T4) No. 3 — Transmission body:</b>	Is the resistance approx. 13 — 18.5 $\Omega$ ? (when cold)	Check for poor contact of connector, and if no fault is found, replace the TCM.<Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>	Go to step 4.
<b>4 CHECK HARNESS INSIDE TRANSMISSION.</b> <b>CAUTION:</b> <b>Start work after ATF cools down.</b> 1) Remove the transmission oil pan. 2) Check for the harness pinch, damage.	Is there any fault in the harness?	Replace the transmission harness.	Go to step 5.

# Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

Step	Check	Yes	No
<b>5</b> <b>CHECK HARNESS INSIDE TRANSMISSION.</b> 1) Disconnect the control valve body connector. 2) Turn the ignition switch to ON. 3) Measure the voltage between transmission connector and transmission body. <b>Connector &amp; terminal</b> <b>(T4) No. 3 (+) — Transmission body (-):</b>	Is the voltage approx. 0 V?	Replace the control valve body.<Ref. to CVT(TR690)-109, Control Valve Body.>	Replace the transmission harness.

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

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### **BD:DTC U0073 CONTROL MODULE COMMUNICATION BUS OFF**

NOTE:

Refer to "LAN SYSTEM (DIAGNOSTICS)" for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

### **BE:DTC U0100 LOST COMMUNICATION WITH ECM/PCM "A"**

NOTE:

Refer to "LAN SYSTEM (DIAGNOSTICS)" for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

### **BF:DTC U0122 LOST COMMUNICATION WITH VEHICLE DYNAMICS CONTROL MODULE**

NOTE:

Refer to "LAN SYSTEM (DIAGNOSTICS)" for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

### **BG:DTC U0140 LOST COMMUNICATION WITH BODY CONTROL MODULE**

NOTE:

Refer to "LAN SYSTEM (DIAGNOSTICS)" for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

### **BH:DTC U0155 LOST COMMUNICATION WITH INSTRUMENT PANEL CLUSTER (IPC) CONTROL MODULE**

NOTE:

Refer to "LAN SYSTEM (DIAGNOSTICS)" for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

### **BI: DTC U0164 LOST COMMUNICATION WITH HVAC CONTROL MODULE**

NOTE:

Refer to "LAN SYSTEM (DIAGNOSTICS)" for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

### **BJ:DTC U0401 INVALID DATA RECEIVED FROM ECM/PCM "A"**

NOTE:

Refer to "LAN SYSTEM (DIAGNOSTICS)" for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

### **BK:DTC U0416 INVALID DATA RECEIVED FROM VEHICLE DYNAMICS CONTROL MODULE**

NOTE:

Refer to "LAN SYSTEM (DIAGNOSTICS)" for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

### **BL:DTC U0422 INVALID DATA RECEIVED FROM BODY CONTROL MODULE**

NOTE:

Refer to "LAN SYSTEM (DIAGNOSTICS)" for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

### **BM:DTC U0423 INVALID DATA RECEIVED FROM INSTRUMENT PANEL CLUSTER CONTROL MODULE**

NOTE:

Refer to "LAN SYSTEM (DIAGNOSTICS)" for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

## Diagnostic Procedure with Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

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### **BN:DTC U0424 INVALID DATA RECEIVED FROM HVAC CONTROL MODULE**

**NOTE:**

Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

### **BO:DTC U1235 LOST COMMUNICATION WITH EyeSight**

**NOTE:**

Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

### **BP:DTC U1433 INVALID DATA RECEIVED FROM EyeSight**

**NOTE:**

Refer to “LAN SYSTEM (DIAGNOSTICS)” for diagnostic procedure. <Ref. to LAN(diag)-2, Basic Diagnostic Procedure.>

# Diagnostic Procedure without Diagnostic Trouble Code (DTC)

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 17. Diagnostic Procedure without Diagnostic Trouble Code (DTC)

### A: CHECK SHIFT INDICATOR

#### DIAGNOSIS:

- CAN communication is abnormal with the combination meter.
- Combination meter malfunction

#### TROUBLE SYMPTOM:

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

Step	Check	Yes	No
1	<b>CHECK DTC.</b> Read the DTC relating the TCM using the Subaru Select Monitor.	Is DTC U0155 or U0423 displayed?	Perform the self-diagnosis of combination meter. Go to step 2.
2	<b>CHECK DTC.</b> Read the DTC relating the TCM using the Subaru Select Monitor.	Are DTCs other than U0155 and U0423 displayed?	Perform the diagnosis according to DTC. Go to step 3.
3	<b>CHECK COMBINATION METER.</b> Read DTC of combination meter.	Is DTC displayed?	Perform the diagnosis according to DTC. Go to step 4.
4	<b>CHECK TCM.</b> 1) Operate the + side of the paddle shift switch. 2) Read the data of «Up Switch» using the Subaru Select Monitor.	Does it change between ON and OFF according to the operation?	Go to step 5. Check for poor contact between TCM and paddle shift UP switch, and repair the defective part.
5	<b>CHECK TCM.</b> 1) Operate the – side of the paddle shift switch. 2) Read the data of «Down Switch» using the Subaru Select Monitor.	Does it change between ON and OFF according to the operation?	Go to step 6. Check for poor contact between TCM and paddle shift down switch, and repair the defective part.
6	<b>CHECK TCM.</b> 1) Turn the ignition switch OFF, then turn it ON again. 2) Shift the select lever to manual mode. 3) Read the data of «Shift step in Manual mode» using the Subaru Select Monitor.	Is "1" displayed?	Go to step 7. Perform the diagnosis according to DTC P0951. <Ref. to CVT(diag)-100, DTC P0951 MANUAL SWITCH, Diagnostic Procedure with Diagnostic Trouble Code (DTC).>
7	<b>CHECK TCM.</b> 1) Shift up the select lever. 2) Read the data of «Shift step in Manual mode» using the Subaru Select Monitor.	Is "2" displayed?	Currently, shift indicator is normal. Replace the TCM. <Ref. to CVT(TR580)-143, Transmission Control Module (TCM).> <Ref. to CVT(TR690)-125, Transmission Control Module (TCM).>

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# Diagnostics with Phenomenon

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

## 18. Diagnostics with Phenomenon

### A: INSPECTION

Symptoms	Faulty parts
Engine stalls when driving in "D" or "R" range, or selecting "N" → "D", "N" → "R".	<ul style="list-style-type: none"> <li>• Control valve</li> <li>• Engine control system</li> </ul>
While driving in "D" range, vibration occurs immediately before the stop or engine stalls.	<ul style="list-style-type: none"> <li>• Control valve</li> <li>• Torque converter</li> </ul>
Vehicle cannot shift while driving in "D" range.	<ul style="list-style-type: none"> <li>• Control valve</li> <li>• TCM</li> <li>• Shift mechanism</li> <li>• Power supply system</li> </ul>
Excessive shock when selecting "N" → "D", and "N" → "R".	<ul style="list-style-type: none"> <li>• Control valve</li> <li>• TCM</li> <li>• F&amp;R clutch pack</li> <li>• ATF deterioration or lack</li> </ul>
Excessive shock at standing start in "D" range.	<ul style="list-style-type: none"> <li>• Control valve</li> <li>• TCM</li> <li>• F&amp;R clutch pack</li> <li>• ATF deterioration or lack</li> </ul>
Engine speed increases abruptly during driving in "D" or "R" range.	<ul style="list-style-type: none"> <li>• Control valve</li> <li>• Secondary pressure sensor</li> <li>• F&amp;R clutch pack</li> <li>• ATF deterioration or lack</li> </ul>
Vehicle can not start when depressing the accelerator pedal in "D" or "R" range, or acceleration is very poor. (without abrupt engine increase)	<ul style="list-style-type: none"> <li>• Control valve</li> <li>• F&amp;R clutch pack</li> <li>• Shift mechanism</li> <li>• Parking mechanism</li> <li>• Engine control system</li> <li>• Power supply system</li> </ul>
Shift indicator in combination meter displays the position which differs from select lever position.	<ul style="list-style-type: none"> <li>• Inhibitor switch</li> <li>• Select cable related</li> <li>• Combination meter</li> </ul>
Manual mode enters even though the select lever and paddle shift switch is not operated.	<ul style="list-style-type: none"> <li>• Manual mode switch</li> <li>• Paddle shift switch</li> <li>• Select lever</li> <li>• TCM</li> </ul>
Engine speed increases abruptly in "D" or "R" range, vehicle can not start.	<ul style="list-style-type: none"> <li>• F&amp;R clutch pack</li> <li>• Select cable related</li> </ul>
Manual mode can not be set	<ul style="list-style-type: none"> <li>• Select lever</li> <li>• TCM</li> </ul>

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# Diagnostics with Phenomenon

CONTINUOUSLY VARIABLE TRANSMISSION (DIAGNOSTICS)

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# GENERAL DESCRIPTION (CVT)

# *GD(CVT)*

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