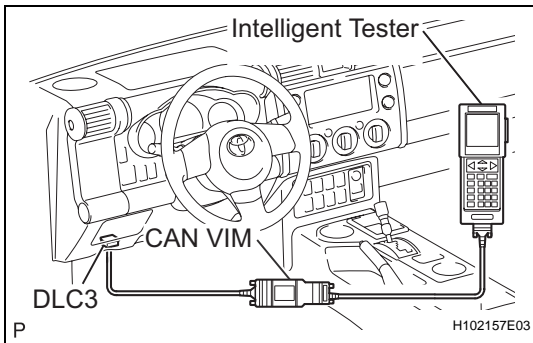


## TEST MODE PROCEDURE

### 1. TEST MODE PROCEDURE (for Using a Intelligent Tester)

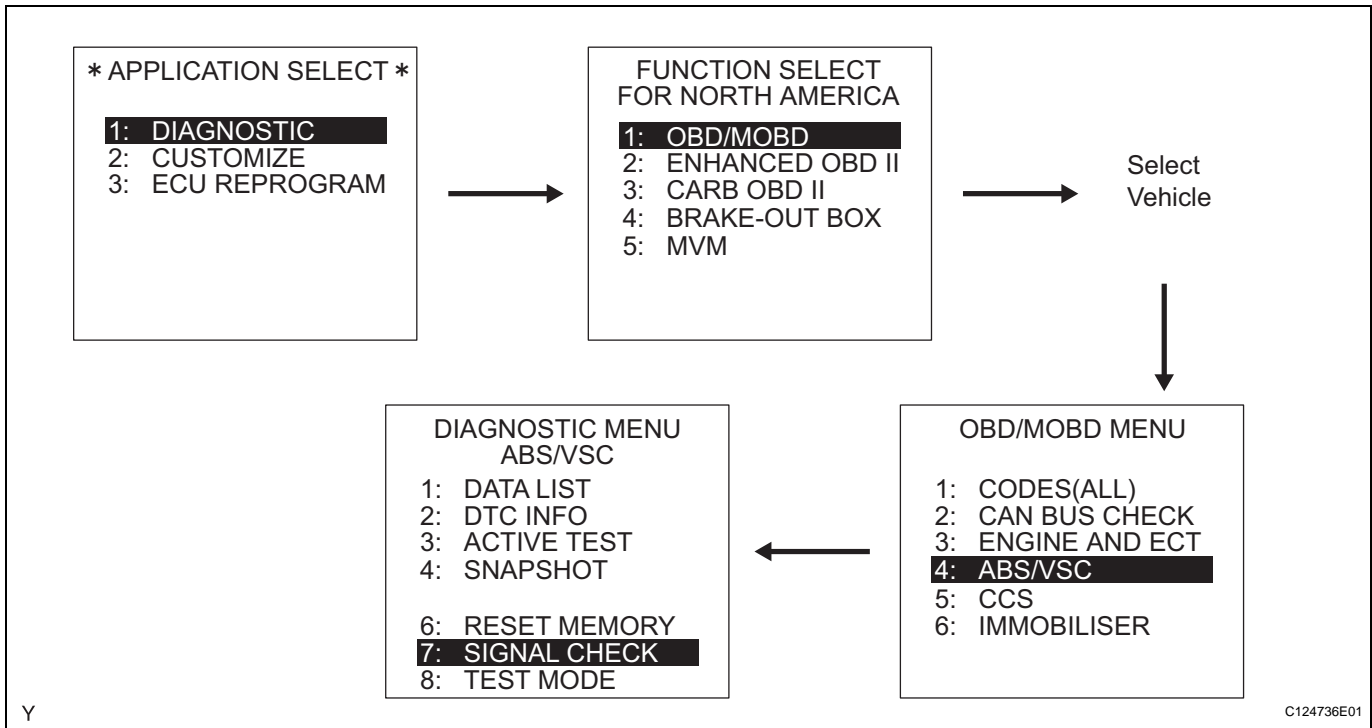
#### HINT:

- After replacing the yaw rate and deceleration sensor, be sure to clear the zero point calibration data in the skid control ECU and perform zero point calibration.
  - If the ignition switch is turned from the ON to the ACC or LOCK position during test mode, DTCs related to the signal check function will be erased.
  - During test mode, the skid control ECU records all DTCs related to the signal check function. By performing the signal check, the codes are erased if normality is confirmed. The codes left over are the codes where an abnormality was found.
- (a) Turn the ignition switch off.
  - (b) Check that the steering wheel is in the straight-ahead position.
  - (c) A/T: Check that the shift lever is in the P position and apply the parking brake.  
M/T: Check that the shift lever is in neutral and apply the parking brake.
  - (d) Connect the intelligent tester to the DLC3.
  - (e) Start the engine.

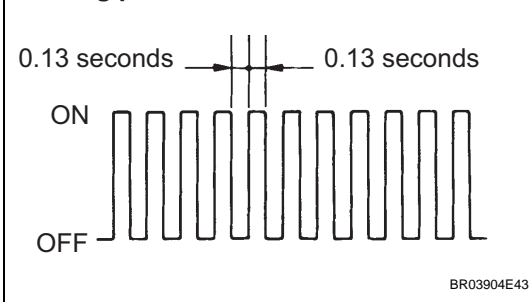


- (f) Switch the ECU to test mode using the intelligent tester. Select the following menu items:  
 DIAGNOSIS / OBD/MOBD /select vehicle / ABS/  
 VSC / SIGNAL CHECK.

BC



**Blinking pattern in TEST MODE:**



- (g) Check that the ABS and VSC TRAC warning lights blink as shown in the illustration.  
 HINT:  
 If the ABS warning light and VSC TRAC warning light do not blink, inspect the ABS warning light circuit and VSC TRAC warning light circuit.

Trouble area	See page
ABS warning light circuit	<a href="#">BC-151</a> <a href="#">BC-154</a>
VSC TRAC warning light circuit	<a href="#">BC-156</a> <a href="#">BC-159</a>

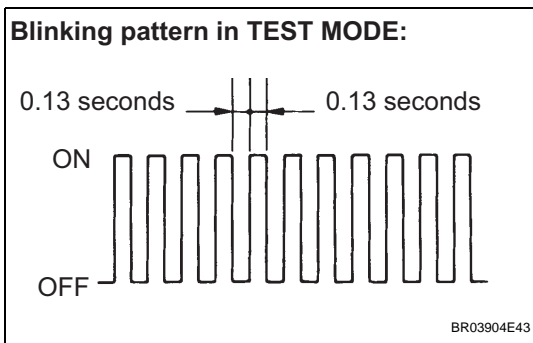
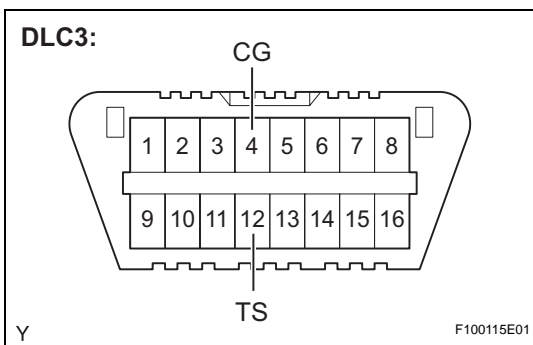
- (h) Activate the ABS sensors (deceleration sensor, master cylinder pressure sensor, 4WD detection switch, L4 detection switch and speed sensor) and VSC sensor (yaw rate and deceleration sensor) in test mode (SIGNAL CHECK) using a intelligent tester.

**2. TEST MODE PROCEDURE (for Using a SST Check Wire)**

**HINT:**

- After replacing the yaw rate and deceleration sensor, be sure to clear the zero point calibration data in the skid control ECU and perform zero point calibration.

- If the ignition switch is turned from the ON to the ACC or LOCK position during test mode, DTCs relating to the signal check function will be erased.
  - During test mode, the skid control ECU records all DTCs relating to the signal check function. By performing the signal check, the codes are erased if normality is confirmed. The remaining codes are those indicating where an abnormality was found.
- (a) Turn the ignition switch off.
  - (b) Check that the steering wheel is in the straight-ahead position.
  - (c) A/T: Check that the shift lever is in the P position and apply the parking brake.  
M/T: Check that the shift lever is in neutral and apply the parking brake.



- (d) Using SST, connect terminals TS and CG of the DLC3.  
**SST 09843-18040**
- (e) Start the engine.
- (f) Check that the ABS and VSC TRAC warning lights blink as shown in the illustration.  
**HINT:**  
If the ABS warning light and VSC TRAC warning light do not blink, inspect the TS and CG terminal circuit, the ABS warning light circuit and VSC TRAC warning light circuit.

Trouble area	See page
ABS warning light circuit	<a href="#">BC-151</a> <a href="#">BC-154</a>
VSC TRAC warning light circuit	<a href="#">BC-156</a> <a href="#">BC-159</a>
TS and CG terminal circuit	<a href="#">BC-193</a>

- (g) Activate the ABS sensors (deceleration sensor, master cylinder pressure sensor, 4WD detection switch, L4 detection switch and speed sensor) and VSC sensor (yaw rate and deceleration sensor) in test mode (SIGNAL CHECK) using a check wire.

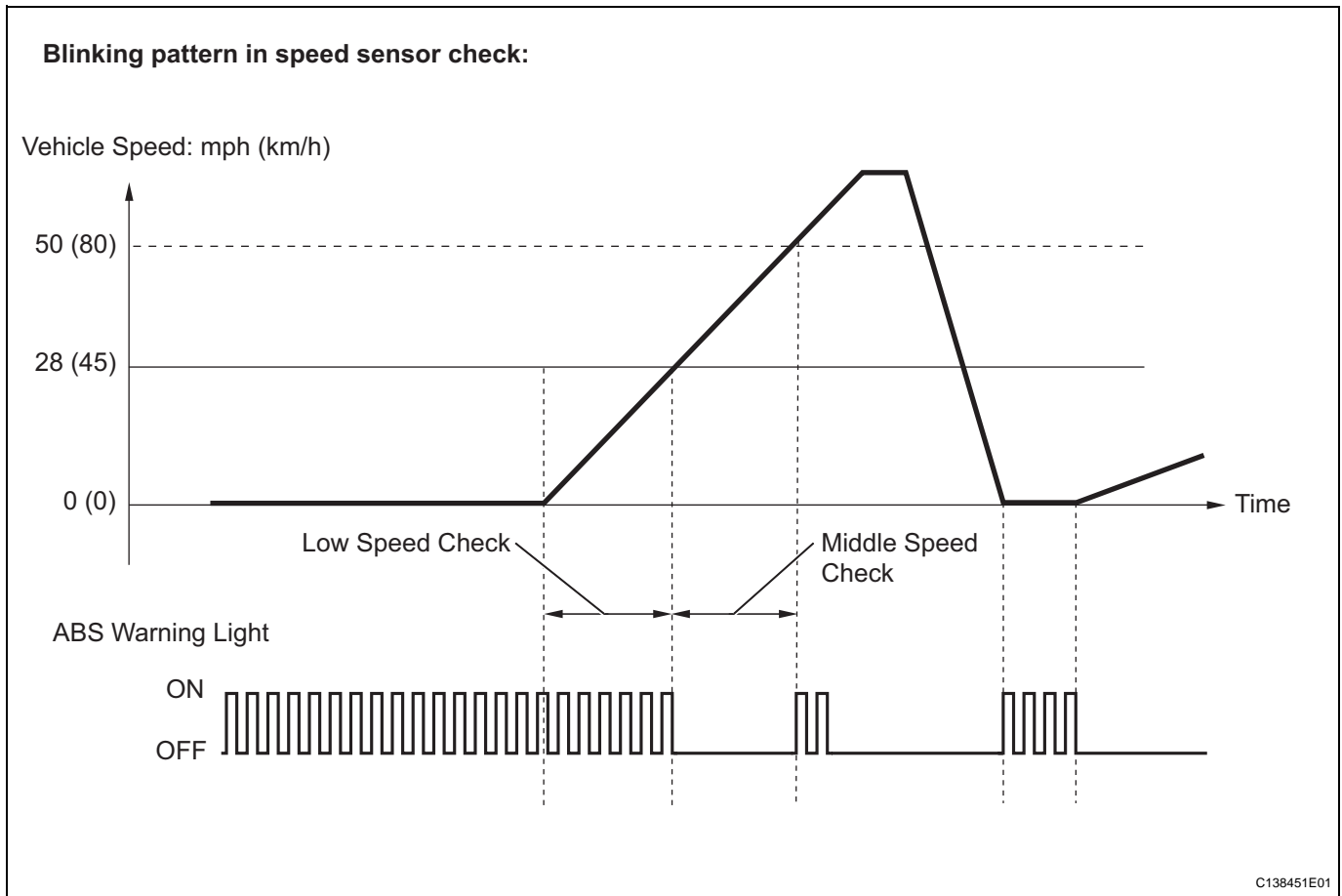
**3. DECELERATION SENSOR SIGNAL CHECK**

- (a) Keep the vehicle stationary on a level surface for 1 second or more.  
**HINT:**  
The ABS warning light continues blinking at this time.

4. **MASTER CYLINDER PRESSURE SENSOR CHECK**
  - (a) Keep the vehicle stationary and release the brake pedal for 1 second or more, and quickly depress the brake pedal with a force of 98 N (10 kgf) or more for 1 second or more.
  - (b) Check that the ABS warning light comes on for 3 seconds.  
HINT:
    - While the ABS warning light stays on, continue to depress the brake pedal with a force of 98 N (10 kgf) or more.
    - The ABS warning light comes on for 3 seconds every time the above brake pedal operation is performed.
5. **4WD DETECTION SWITCH SIGNAL CHECK (for 4WD models)**
  - (a) M/T:
    - (1) Move the transfer high and low shift lever to HL or HH to lock the center differential.
    - (2) Move the transfer high and low shift lever to H to unlock the center differential.
  - (b) A/T:
    - (1) Move the transfer high and low shift lever to H4 or L4 to put the vehicle in 4WD mode.
    - (2) Move the transfer high and low shift lever to H2 to put the vehicle in 2WD mode.
6. **L4 DETECTION SWITCH SIGNAL CHECK (for 4WD models of A/T)**
  - (a) Move the transfer high and low shift lever to the L4 position.
  - (b) Move the transfer high and low shift lever to H2 or H4.  
HINT:  
Move the vehicle either a little forward or a little backward to engage the L4 position.
7. **SPEED SENSOR CHECK**
  - (a) Drive the vehicle straight rearward at a speed of 1.9 mph (3 km/h) or more for 1 second or more.  
**NOTICE:**  
**At this time, if the vehicle speed exceeds 28 mph (45 km/h), a signal check code will be stored again. Decelerate or stop the vehicle before the speed reaches 28 mph (45 km/h).**
  - (b) Drive the vehicle straight forward at a speed of 56 mph (90 km/h) or more.
  - (c) Check that the ABS warning light goes off.  
**NOTICE:**
    - **Before performing the speed sensor signal check, complete the deceleration sensor, master cylinder pressure sensor, 4WD detection switch and L4 detection switch signal checks.**

- The speed sensor signal check may not be completed if the speed sensor signal check is started while turning the steering wheel or spinning the wheels.
- After the ABS warning light goes off, if the vehicle speed exceeds 28 mph (45 km/h), a signal check code will be stored again. Decelerate or stop the vehicle before the speed reaches 28 mph (45 km/h).
- If the signal check has not been completed, the ABS warning light blinks while driving and the ABS system does not operate.

BC



(d) Stop the vehicle.

HINT:

When the signal check has been completed, the ABS warning light goes off while driving and blinks in test mode while stationary.

#### 8. READ DTC OF ABS SENSOR (for Using a Intelligent Tester)

(a) Read the DTC(s) by following the tester screen.

HINT:

Refer to the intelligent tester operator's manual for further details.

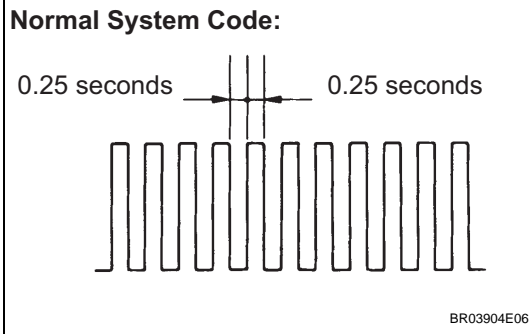
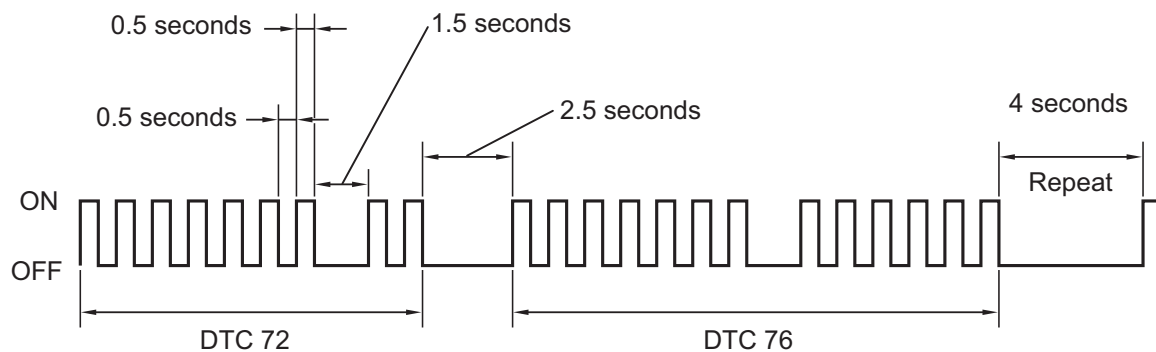
BC

**9. READ DTC OF ABS SENSOR (for Using a SST Check Wire)**

- (a) Using SST, connect terminals TC and CG of the DLC3.

**SST 09843-18040**

- (b) Turn the ignition switch on.
- (c) Read the number of blinks of the ABS warning light.
- If every sensor is normal, the normal code is displayed (A cycle of 0.25 seconds ON and 0.25 seconds OFF is repeated).
  - If 2 or more malfunctions are detected at the same time, the lowest numbered DTC is displayed first.

**Example: Indication of DTCs 72 and 76**

- (d) After the check, disconnect the SST from terminals TC and CG of the DLC3.
- (e) Turn the ignition switch off.

**10. AUTO LSD SWITCH CHECK (for vehicles with AUTO LSD)**

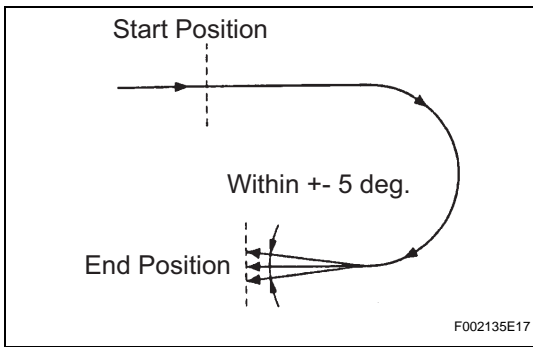
- (a) Press the AUTO LSD switch.
- (b) Check that the AUTO LSD indicator light comes on.
- (c) Press the AUTO LSD switch again to turn the AUTO LSD indicator off.

**11. A-TRAC SWITCH CHECK (for vehicles with A-TRAC)**

- (a) Press the A-TRAC switch.
- (b) Check that the A-TRAC indicator light comes on.
- (c) Press the A-TRAC switch again to turn the A-TRAC indicator off.

**12. YAW RATE SENSOR CHECK**

- (a) Keep the vehicle stationary on a level surface for 1 second or more.



- (b) Shift the shift lever to the D position (A/T) and drive the vehicle at a speed of approximately 3 mph (5 km/h), turn the steering wheel either to the left or right 90° or more, and turn the vehicle through 180 degrees.
- (c) A/T: Stop the vehicle, check that the shift lever is in the P position, and then apply the parking brake. M/T: Stop the vehicle, check that the shift lever is in neutral, and then apply the parking brake.
- (d) Check that the skid control (VSC warning) buzzer sounds for 3 seconds.

HINT:

- If the skid control (VSC warning) buzzer sounds, the signal check has been completed normally.
- If the skid control (VSC warning) buzzer does not sound, check the skid control buzzer circuit (See page BC-187), then perform the signal check again.
- If the skid control (VSC warning) buzzer still doesn't sound, there is a malfunction in the yaw rate sensor, so check the DTC.
- Drive the vehicle in a 180° semi circle. At the end of the turn, the direction of the vehicle should be within 180+/-5° of its start position.
- The vehicle turn should be completed within 20 seconds.
- Do not spin the wheels.

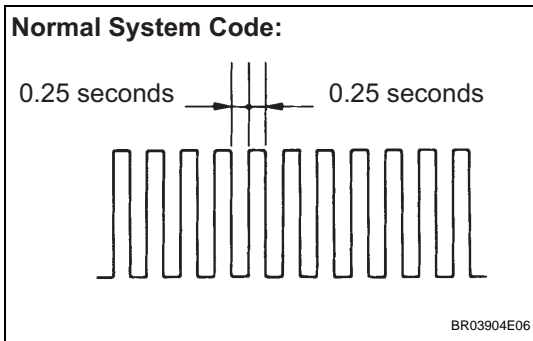
**13. READ DTC OF VSC SENSOR (for Using a Intelligent Tester)**

- (a) Read the DTC(s) by following the tester screen.
  - Refer to the intelligent tester operator's manual for further details.

**14. READ DTC OF VSC SENSOR (for Using a SST Check Wire)**

- (a) Using SST, connect terminals TC and CG of the DLC3.
 

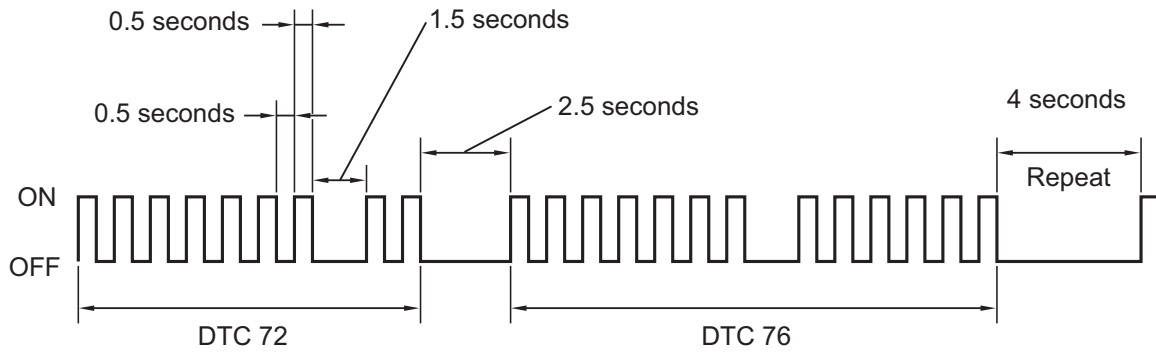
**SST 09843-18040**
- (b) Turn the ignition switch on.
- (c) Read the number of blinks of the VSC TRAC warning light.
  - If every sensor is normal, the normal code is displayed (A cycle of 0.25 seconds ON and 0.25 seconds OFF is repeated).



- If 2 or more malfunctions are detected at the same time, the lowest numbered DTC is displayed first.

BC

Example: Indication of DTCs 72 and 76



N

C124737E01

- After the check, disconnect the SST from terminals TC and CG of the DLC3.
- Turn the ignition switch off.

**15. DTC OF SIGNAL CHECK FUNCTION**

**ABS sensor**

DTC No.	Diagnosis	Trouble Areas
C1271/71	Low output voltage of right front speed sensor	<ul style="list-style-type: none"> <li>• Front speed sensor RH</li> <li>• Front speed sensor RH circuit</li> <li>• Sensor installation</li> <li>• Skid control sensor wire</li> <li>• Master cylinder solenoid (skid control ECU)</li> </ul>
C1272/72	Low output voltage of left front speed sensor	<ul style="list-style-type: none"> <li>• Front speed sensor LH</li> <li>• Front speed sensor LH circuit</li> <li>• Sensor installation</li> <li>• Skid control sensor wire</li> <li>• Master cylinder solenoid (skid control ECU)</li> </ul>
C1273/73	Low output voltage of right rear speed sensor	<ul style="list-style-type: none"> <li>• Rear speed sensor RH</li> <li>• Rear speed sensor RH circuit</li> <li>• Sensor installation</li> <li>• Skid control sensor wire</li> <li>• Master cylinder solenoid (skid control ECU)</li> </ul>
C1274/74	Low output voltage of left rear speed sensor	<ul style="list-style-type: none"> <li>• Rear speed sensor LH</li> <li>• Rear speed sensor LH circuit</li> <li>• Sensor installation</li> <li>• Skid control sensor wire</li> <li>• Master cylinder solenoid (skid control ECU)</li> </ul>
C1275/75	Abnormal change in output voltage of right front speed sensor	<ul style="list-style-type: none"> <li>• Front speed sensor RH</li> <li>• Front speed sensor RH circuit</li> <li>• Master cylinder solenoid (skid control ECU)</li> </ul>
C1276/76	Abnormal change in output voltage of left front speed sensor	<ul style="list-style-type: none"> <li>• Front speed sensor LH</li> <li>• Front speed sensor LH circuit</li> <li>• Master cylinder solenoid (skid control ECU)</li> </ul>
C1277/77	Abnormal change in output voltage of right rear speed sensor	<ul style="list-style-type: none"> <li>• Rear speed sensor RH</li> <li>• Rear speed sensor RH circuit</li> <li>• Master cylinder solenoid (skid control ECU)</li> </ul>
C1278/78	Abnormal change in output voltage of left rear speed sensor	<ul style="list-style-type: none"> <li>• Rear speed sensor LH</li> <li>• Rear speed sensor LH circuit</li> <li>• Master cylinder solenoid (skid control ECU)</li> </ul>
C1279/79	Deceleration sensor faulty	<ul style="list-style-type: none"> <li>• Yaw rate and deceleration sensor</li> <li>• Yaw rate and deceleration sensor circuit</li> </ul>



DTC No.	Diagnosis	Trouble Areas
C1281/81	Master cylinder pressure sensor output malfunction	<ul style="list-style-type: none"> <li>Hydraulic brake booster (master cylinder pressure sensor)</li> <li>Master cylinder solenoid (skid control ECU)</li> <li>Stop light switch circuit</li> </ul>
C1282/82 (*1)	Center differential lock position switch malfunction	<ul style="list-style-type: none"> <li>Transfer indicator switch (4WD position) (A/T)</li> <li>Transfer indicator switch (4WD position) circuit (A/T)</li> <li>Transfer indicator switch (center differential lock position) (M/T)</li> <li>Transfer indicator switch (center differential lock position) circuit (M/T)</li> </ul>
C1283/83 (*2)	L4 detection switch malfunction	<ul style="list-style-type: none"> <li>Transfer indicator switch (L4 position)</li> <li>Transfer indicator switch (L4 position) circuit</li> </ul>

## HINT:

- \*1: 4WD only
- \*2: 4WD + A/T

**VSC sensor**

DTC No.	Diagnosis	Trouble Areas
C0371/71	Yaw rate sensor output signal malfunction	Yaw rate and deceleration sensor

## HINT:

The codes in this table are output only in test mode (signal check).