

<b>DTC</b>	<b>C0210/33</b>	<b>RIGHT REAR SPEED SENSOR CIRCUIT</b>
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<b>DTC</b>	<b>C0215/34</b>	<b>LEFT REAR SPEED SENSOR CIRCUIT</b>
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## CIRCUIT DESCRIPTION

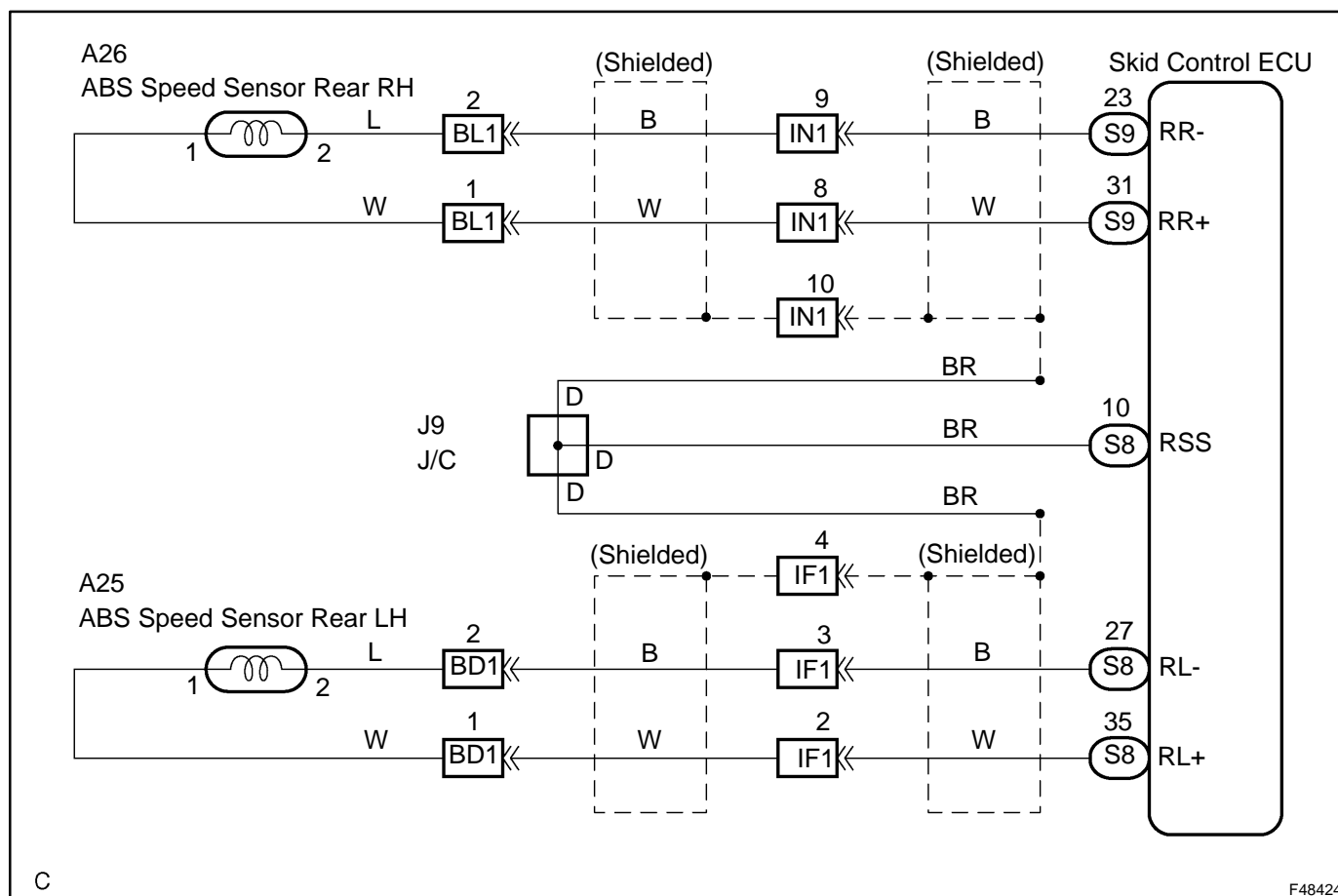
Refer to DTC C0200/31, C0205/32 on page 05-989 .

DTC No.	DTC Detecting Condition	Trouble Area
C0210/33 C0215/34	<ul style="list-style-type: none"> <li>• Speed of a malfunctioning wheel is 0 mph (0 km/h) for at least 15 sec. when vehicle speed is 6 mph (10 km/h) or more.</li> <li>• Speed of the slowest wheel is less than 1/7th of the 2nd slowest wheel for at least 15 sec. when vehicle speed is 6 mph (10 km/h) or more.</li> <li>• Abnormal high wheel speed pulse is input for at least 15 sec.</li> <li>• Abnormal high wheel speed pulse is input at least 7 times when ECU is on.</li> <li>• Speed sensor pulse signal is instantly cut 7 times or more.</li> <li>• Speed sensor signal line is open for at least 0.5 sec.</li> </ul>	<ul style="list-style-type: none"> <li>• Right rear and left rear speed sensor</li> <li>• Each speed sensor circuit</li> <li>• Sensor rotor</li> <li>• Sensor installation</li> <li>• Skid control ECU</li> </ul>

**HINT:**

- DTC C0210/33 is for the right rear speed sensor.
- DTC C0215/34 is for the left rear speed sensor.
- The BRAKE warning light comes on when speed sensor malfunctions are detected in two or more wheels.

## WIRING DIAGRAM



## INSPECTION PROCEDURE

### 1 CHECK HARNESS AND CONNECTOR(MOMENTARY INTERRUPTION)

- (a) Using the hand-held tester, check for any momentary interruption in the wire harness and connector corresponding to a DTC (see page [05-954](#) ).

Item	Measurement Item / Range (Display)	Normal Condition
SPD SEN RR	RR speed sensor open detection / OPEN or NORMAL	NORMAL : Normal condition
SPD SEN RL	RL speed sensor open detection / OPEN or NORMAL	NORMAL : Normal condition

**OK:**

**There are no momentary interruption.**

**HINT:**

Perform the above inspection before removing the sensor and connector.

**NG**

**Go to step 5**

**OK**

### 2 READ VALUE OF HAND-HELD TESTER(REAR SPEED SENSOR)

- (a) Connect the hand-held tester to the DLC3.  
 (b) Start the engine.  
 (c) Select the DATA LIST mode on the hand-held tester.

Item	Measurement Item / Range (Display)	Normal Condition
WHEEL SPD RL	Wheel speed sensor (RL) reading / min.: 0 km/h (0 MPH, max.: 326 km/h (202 MPH)	Actual wheel speed
WHEEL SPD RR	Wheel speed sensor (RR) reading / min.: 0 km/h (0 MPH, max.: 326 km/h (202 MPH)	Actual wheel speed

- (d) Check that there is no difference between the speed value output from the speed sensor displayed by the hand-held tester and the speed value displayed on the speedometer when driving the vehicle.

**OK:**

**There is almost no difference in the displayed speed value.**

**HINT:**

There is tolerance of  $\pm 10\%$  in the speedometer indication.

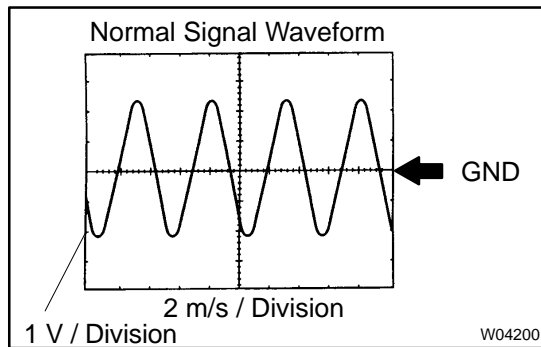
**NG**

**Go to step 4**

**OK**

## 3

## INSPECT SPEED SENSOR AND SENSOR ROTOR SERRATIONS



## INSPECTION USING OSCILLOSCOPE

- Connect the oscilloscope to terminals RR+ - RR- or RL+ - RL- of the skid control ECU.
- Drive the vehicle at approximately 19 mph (30 km/h), and check the signal waveform.

**OK:**

**A waveform as shown in a figure should be output.**

**HINT:**

- As the vehicle speed (wheel revolution speed) increases, a cycle of the waveform narrows and the fluctuation in the output voltage becomes greater.
- When noise is identified in the waveform on the oscilloscope, error signals are generated due to the speed sensor rotor's scratches, looseness or foreign matter attached to it.

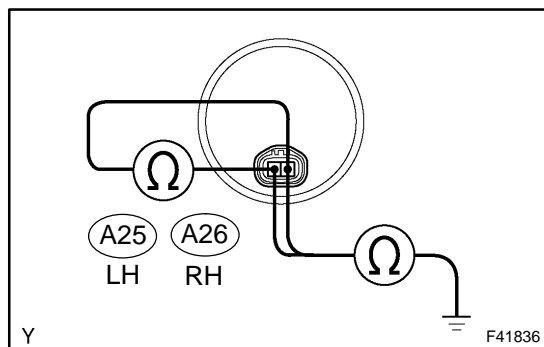
**NG****Go to step 7****OK**

**REPLACE SKID CONTROL ECU ASSY (SEE PAGE 32-68 )**

**NOTICE:**

When replacing the skid control ECU assy, perform initialization of linear solenoid valve and calibration (see page 05-956 ).

## 4 INSPECT REAR SPEED SENSOR



- Disconnect the rear speed sensor connector.
- Measure the resistance according to the value(s) in the table below.

### Standard:

Tester Connection	Specified Condition
1 - 2	1.04 to 1.30 k $\Omega$

- Measure the resistance according to the value(s) in the table below.

### Standard:

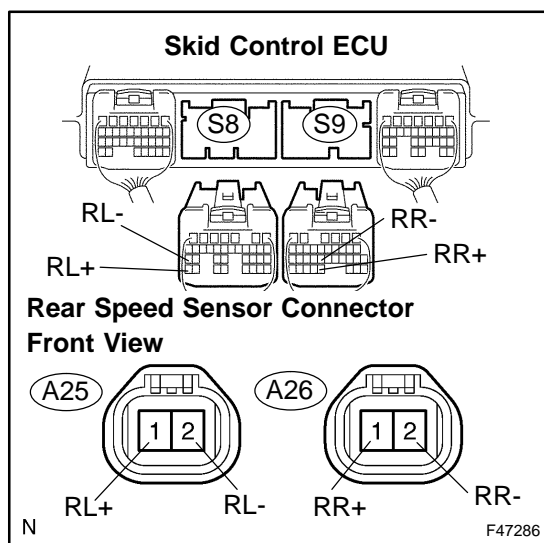
Tester Connection	Specified Condition
1 - Body ground	10 k $\Omega$ or higher
2 - Body ground	10 k $\Omega$ or higher

**NG**

**REPLACE REAR SPEED SENSOR**

**OK**

## 5 CHECK HARNESS AND CONNECTOR(REAR SPEED SENSOR - SKID CONTROL ECU)



- Disconnect the skid control ECU connector and rear speed sensor connector.
- Measure the resistance according to the value(s) in the table below.

### Standard:

#### LH:

Tester Connection	Specified Condition
A25-1 (RL+) - S8-35 (RL+)	Below 1 $\Omega$
A25-2 (RL-) - S8-27 (RL-)	Below 1 $\Omega$

#### RH:

Tester Connection	Specified Condition
A26-1 (RR+) - S10-31 (RR+)	Below 1 $\Omega$
A26-2 (RR-) - S10-23 (RR-)	Below 1 $\Omega$

- Measure the resistance according to the value(s) in the table below.

### Standard:

#### LH:

Tester Connection	Specified Condition
A25-1 (RL+) - Body ground	10 k $\Omega$ or higher
A25-2 (RL-) - Body ground	10 k $\Omega$ or higher

#### RH:

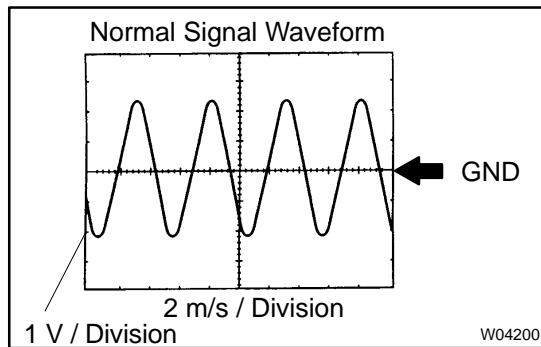
Tester Connection	Specified Condition
A26-1 (RR+) - Body ground	10 k $\Omega$ or higher
A26-2 (RR-) - Body ground	10 k $\Omega$ or higher

**NG**

**REPAIR OR REPLACE HARNESS OR CONNECTOR**

**OK**

## 6 INSPECT SPEED SENSOR AND SENSOR ROTOR SERRATIONS



### INSPECTION USING OSCILLOSCOPE

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**OK:**

**A waveform as shown in a figure should be output.**

**HINT:**

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**NG**

**Go to step 7**

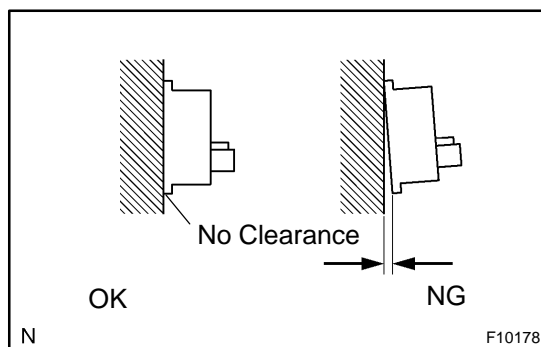
**OK**

**REPLACE SKID CONTROL ECU ASSY (SEE PAGE 32-68 )**

### NOTICE:

When replacing the skid control ECU assy, perform initialization of linear solenoid valve and calibration (see page 05-956 ).

## 7 INSPECT REAR SPEED SENSOR INSTALLATION



- Check the sensor installation.

**OK:**

**There is no clearance between the sensor and rear axle carrier.**

**NOTICE:**

**Check the speed sensor signal after the replacement (see page 05-959 ).**

**NG**

**REPLACE REAR SPEED SENSOR**

**OK**

**REPLACE SKID CONTROL ECU ASSY (SEE PAGE 32-68 )**

### NOTICE:

When replacing the skid control ECU assy, perform initialization of linear solenoid valve and calibration (see page 05-956 ).