

DTC	C0210/33	RIGHT REAR SPEED SENSOR
DTC	C0215/34	LEFT REAR SPEED SENSOR
DTC	C1238/38	FOREIGN MATTER IS ATTACHED ON TIP OF RIGHT REAR SENSOR
DTC	C1239/39	FOREIGN MATTER IS ATTACHED ON TIP OF LEFT REAR SENSOR

CIRCUIT DESCRIPTION

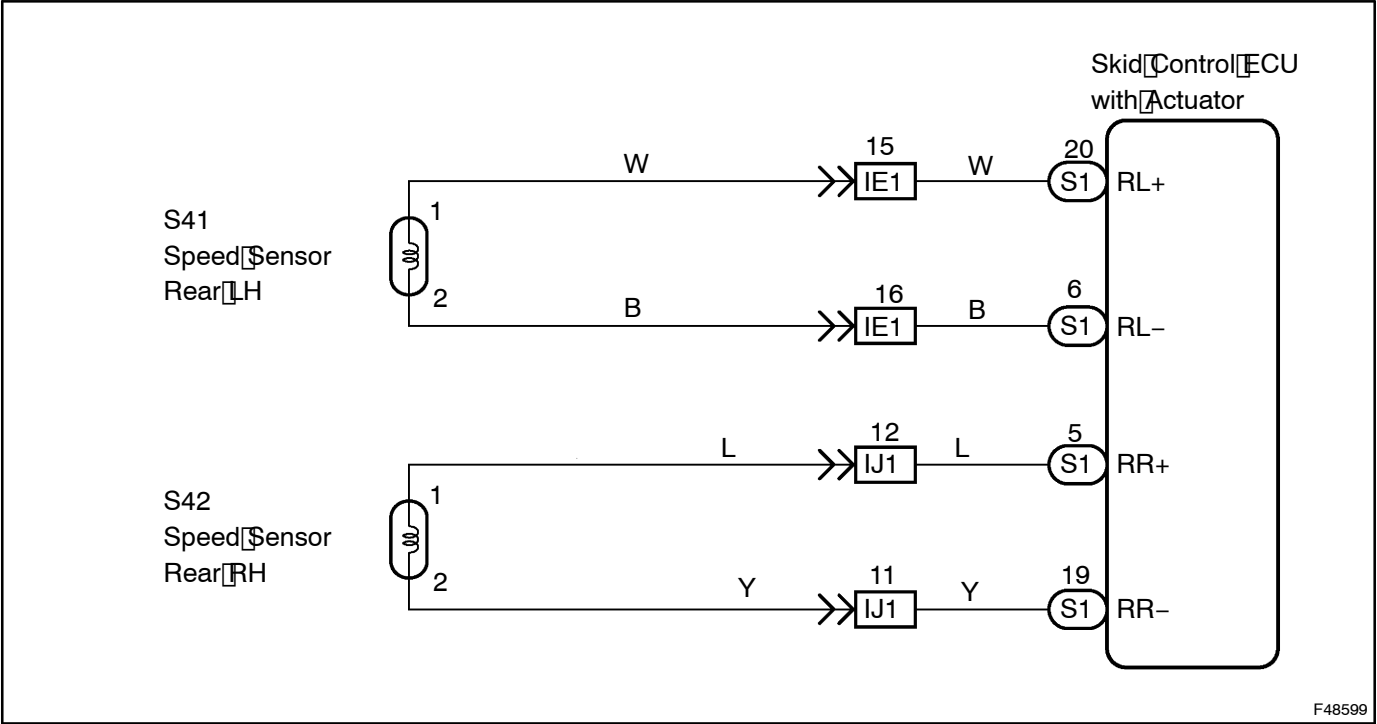
Refer to DTC C0200/31, C0205/32, C1235/35, C1236/36 on page 05-636.

DTC No.	DTC Detecting Condition	Trouble Area
C0210/33 C0215/34	(1) All the following conditions continue for at least 1 second. • Vehicle speed is more than 10 km/h (6 mph). • Open or short in vehicle speed sensor signal circuit. (2) Momentary interruption of the sensor signal of faulty wheel has occurred 7 times or more. (3) Sensor signal circuit is open for 0.5 seconds.	• Right rear and left rear speed sensor • Each speed sensor circuit • Sensor rotor • Sensor installation
C1238/38 C1239/39	All the following conditions continue for at least 5 seconds. • Vehicle speed is more than 20 km/h (12 mph). • Vehicle speed sensor signal receives.	• Right rear and left rear speed sensor • Each speed sensor circuit • Sensor installation

HINT:

- DTC C0210/33 and C1238/38 are for the right rear speed sensor.
- DTC C0215/34 and C1239/39 are for the left rear speed sensor.

WIRING DIAGRAM



## INSPECTION PROCEDURE

HINT:

Start the inspection from step 1 when using the intelligent tester II and start from step 3 when not using the intelligent tester II.

<b>1</b>	<b>READ VALUE OF INTELLIGENT TESTER II(REAR SPEED SENSOR)</b>
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- (a) Connect the intelligent tester II to the DLC3.
- (b) Start the engine.
- (c) Select the DATA LIST mode on the intelligent tester II.

Item	Measurement Item / Range (Display)	Normal Condition
RL Wheel Speed	Wheel speed sensor (RL) reading / min.: 0 km/h (0 MPH, max.: 326 km/h (202 MPH)	Actual wheel speed
RR Wheel Speed	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 intelligent tester II and the speed value displayed on the speedometer when driving the vehicle.

**OK:**

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

HINT:

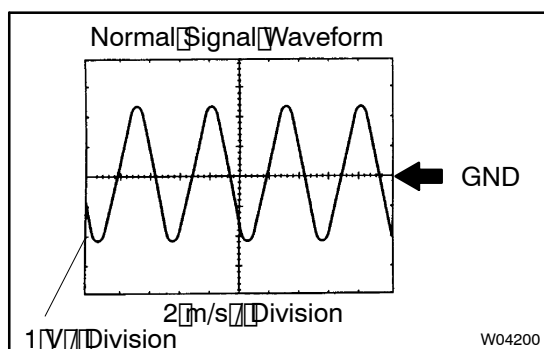
There is tolerance of  $\pm 10\%$  in the speedometer indication.

**NG**

**Go to step 3**

**OK**

## 2 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 30 km/h (19 mph), and check the signal waveform.

**OK:**

A waveform as shown in the figure should be output.

**HINT:**

- As 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 scratches, looseness or foreign matter attached to it.

**NG**

Go to step 6

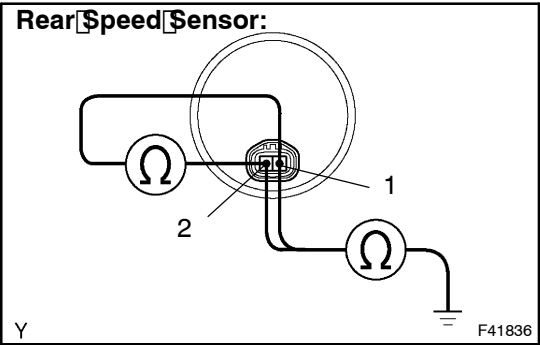
**OK**

REPLACE ABS & TRACTION ACTUATOR ASSY (SEE PAGE 32-20)

**NOTICE:**

When replacing the ABS & TRACTION actuator assy, perform zero point calibration (see page 05-610).

3 INSPECT REAR SPEED SENSOR



- (a) Disconnect the rear speed sensor S41 and S42 connectors.
- (b) Measure the resistance according to the value(s) in the table below.

**Standard:**

**LH:**

Tester Connection	Specified Condition
1 - 2	0.9 to 2.1 kΩ
1 - Body ground	10 kΩ or higher
2 - Body ground	10 kΩ or higher

**RH:**

Tester Connection	Specified Condition
1 - 2	0.9 to 2.1 kΩ
1 - Body ground	10 kΩ or higher
2 - Body ground	10 kΩ or higher

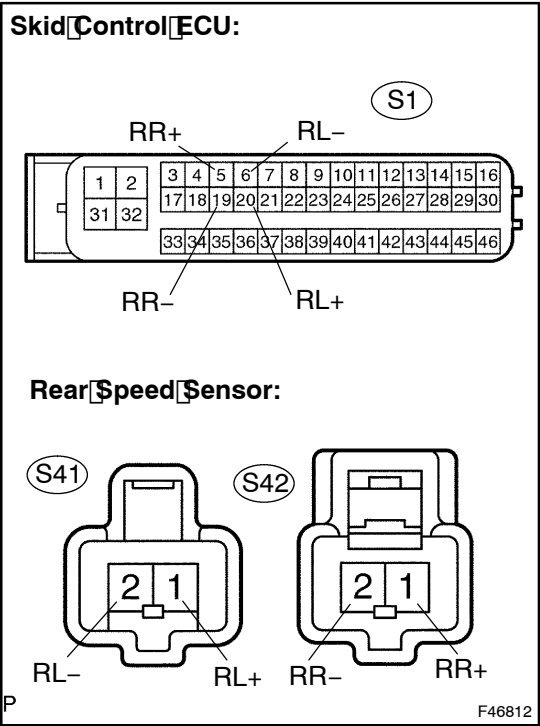
NG REPLACE REAR SPEED SENSOR

**NOTICE:**

Check the speed sensor signal after replacement  
(see page 05-613)

OK

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



- (a) Disconnect the skid control ECU S1 connector and the rear speed sensor S41 and S42 connectors.
- (b) Measure the resistance according to the value(s) in the table below.

**Standard:**

**LH:**

Tester Connection	Specified Condition
S1-20 (RL+) - S41-1 (RL+)	Below 1 Ω
S1-6 (RL-) - S41-2 (RL-)	Below 1 Ω
S1-20 (RL+) - Body ground	10 kΩ or higher
S1-6 (RL-) - Body ground	10 kΩ or higher

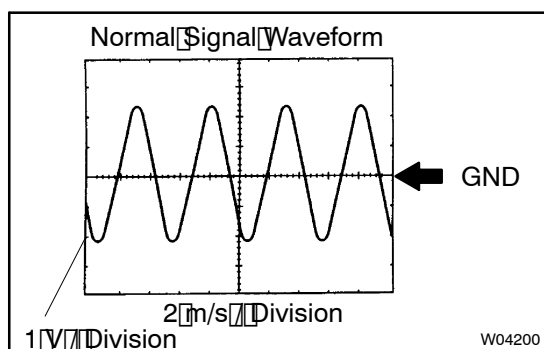
**RH:**

Tester Connection	Specified Condition
S1-5 (RR+) - S42-1 (RR+)	Below 1 Ω
S1-19 (RR-) - S42-2 (RR-)	Below 1 Ω
S1-5 (RR+) - Body ground	10 kΩ or higher
S1-19 (RR-) - Body ground	10 kΩ or higher

NG REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

## 5 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 30 km/h (19 mph), and check the signal waveform.

**OK:**

A waveform as shown in the figure should be output.

**HINT:**

- As 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 scratches, looseness or foreign matter attached to it.

**NG**

Go to step 6

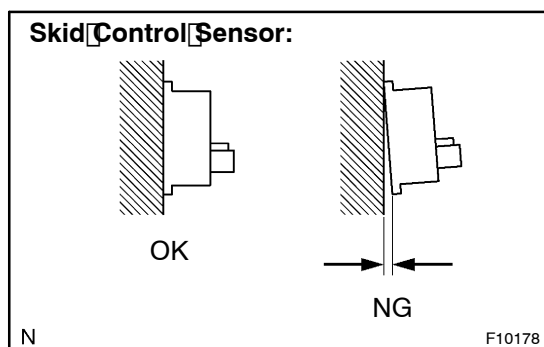
**OK**

## REPLACE ABS & TRACTION ACTUATOR ASSY (SEE PAGE 32-20)

**NOTICE:**

When replacing the ABS & TRACTION actuator assy, perform zero point calibration (see page 05-610).

## 6 INSPECT REAR SPEED SENSOR INSTALLATION



- Check the sensor installation.

**OK:**

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

**NG**

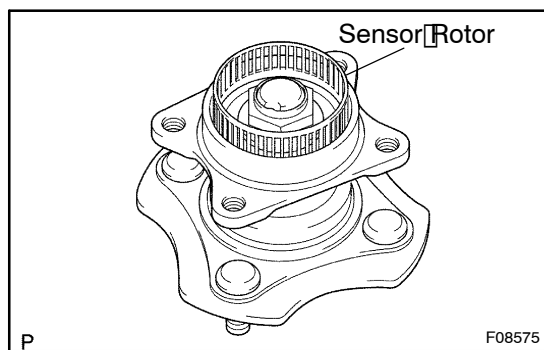
REPLACE REAR SPEED SENSOR

**NOTICE:**

Check the speed sensor signal after replacement (see page 05-613).

**OK**

## 7 INSPECT SENSOR ROTOR



- (a) Check the sensor rotor serrations.

**OK:**

No scratches, missing teeth or foreign matter on the rotor.

**NOTICE:**

Check the speed sensor signal after cleaning or replacement (see page 05-613).

**NG**

**CLEAN OR REPAIR REAR SPEED SENSOR**

**OK**

## 8 INSPECT REAR SPEED SENSOR TIP

- (a) Remove the skid control sensor.

- (b) Check the sensor tip.

**OK:**

No scratches or foreign matter on the sensor tip.

**NG**

**REPLACE SPEED SENSOR ROTOR**

**NOTICE:**

Check the speed sensor signal after cleaning or replacement (see page 05-613).

**OK**

**REPLACE ABS & TRACTION ACTUATOR ASSY (SEE PAGE 32-20)**

**NOTICE:**

When replacing the ABS & TRACTION actuator assy, perform zero point calibration (see page 05-610).