

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

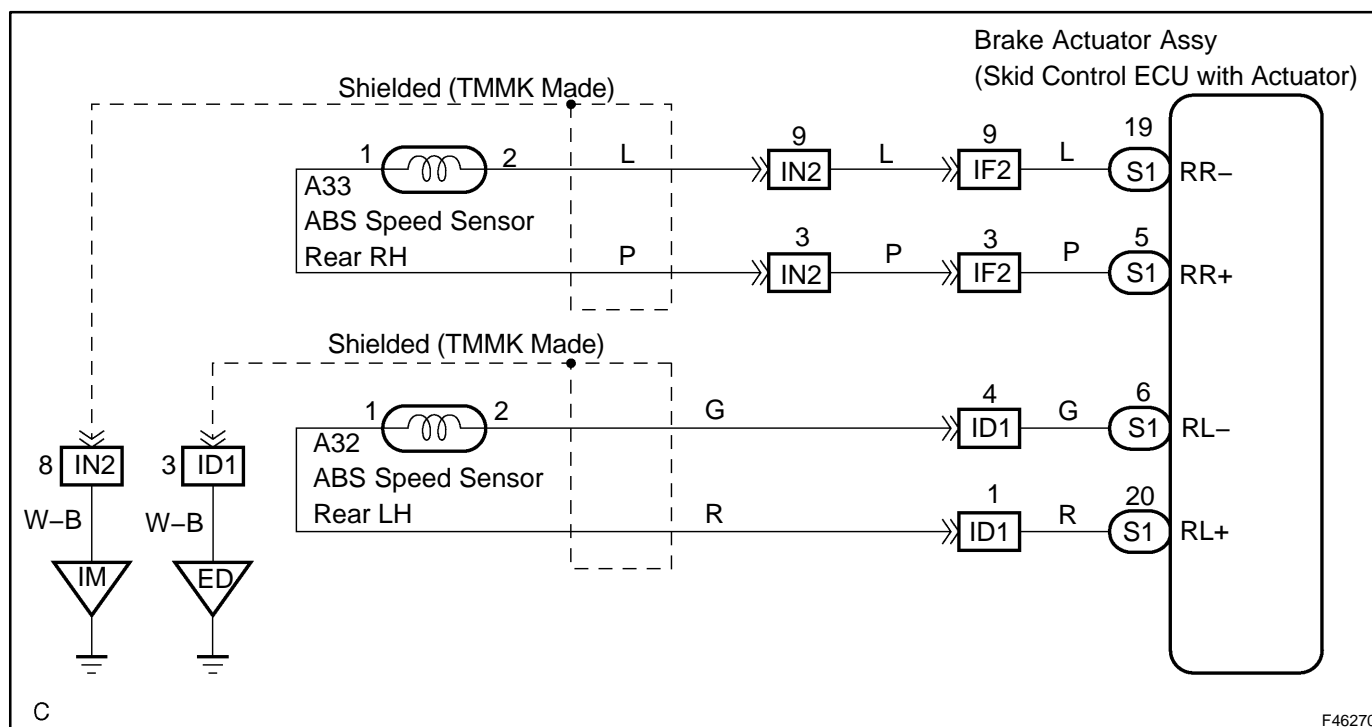
Refer to DTC C0200/31, C0205/32, C1235/35, and C1236/36 on page 05-1013.

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 6 mph (10 km/h). • 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.	<ul style="list-style-type: none"> • Right rear and/or 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 12 mph (20 km/h). • Vehicle speed sensor signal is received.	<ul style="list-style-type: none"> • Right rear and/or left rear speed sensor • Sensor rotor • 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

NOTICE:

When replacing the brake actuator assy, perform zero point calibration (see page 05-987).

HINT:

Start the inspection from step 1 when using the hand-held tester and start from step 2 when not using the hand-held tester.

1	READ VALUE OF HAND-HELD TESTER(REAR SPEED SENSOR)
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- (a) Connect the hand-held tester to the DLC3.
- (b) Start the engine.
- (c) Select DATA LIST mode on the hand-held tester.

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

OK:

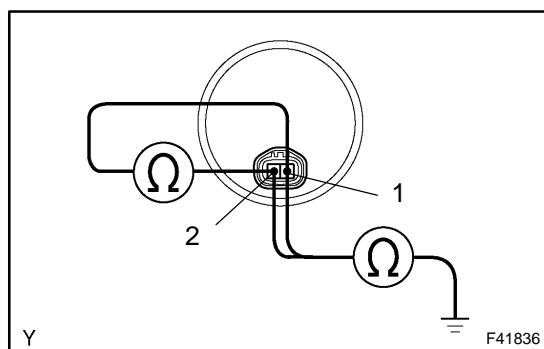
There is almost no difference in the displayed speed value.

HINT:

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

OK**Go to step 4****NG**

2 INSPECT REAR SPEED SENSOR



- (a) Disconnect the skid control sensor connector.
 (b) Measure the resistance according to the value(s) in the table below.

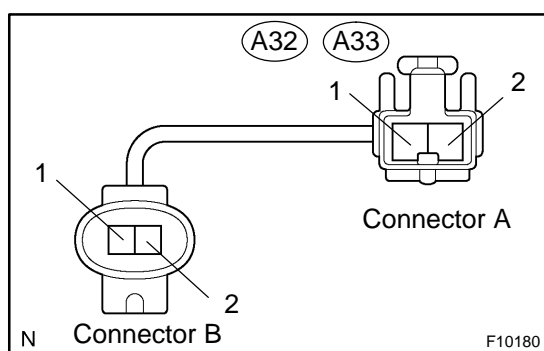
Standard:

Tester Connection	Specified Condition
1 – 2	0.9 to 2.1 k Ω

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

Standard:

Tester Connection	Specified Condition
1 – Body ground	10 k Ω or higher
2 – Body ground	10 k Ω or higher



Skid control sensor sub-wire harness:

- (a) Remove the seat cushion and seatback.
 (b) Make sure that there is no looseness at the locking part and connecting part of the connector.
 (c) Measure the resistance according to the value(s) in the table below.

Standard:

LH:

Tester Connection	Specified Condition
A32 (A-1) – A32 (A-2)	10 k Ω or higher

RH:

Tester Connection	Specified Condition
A33 (A-1) – A33 (A-2)	10 k Ω or higher

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

Standard:

LH:

Tester Connection	Specified Condition
A32 (A-1) – A32 (B-2)	Below 1 Ω
A32 (A-2) – A32 (B-1)	Below 1 Ω

RH:

Tester Connection	Specified Condition
A33 (A-1) – A33 (B-2)	Below 1 Ω
A33 (A-2) – A33 (B-1)	Below 1 Ω

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

Standard:

LH:

Tester Connection	Specified Condition
A32 (A-1) – Body ground	10 k Ω or higher
A32 (A-2) – Body ground	10 k Ω or higher

RH:

Tester Connection	Specified Condition
A33 (A-1) – Body ground	10 k Ω or higher
A33 (A-2) – Body ground	10 k Ω or higher

NG

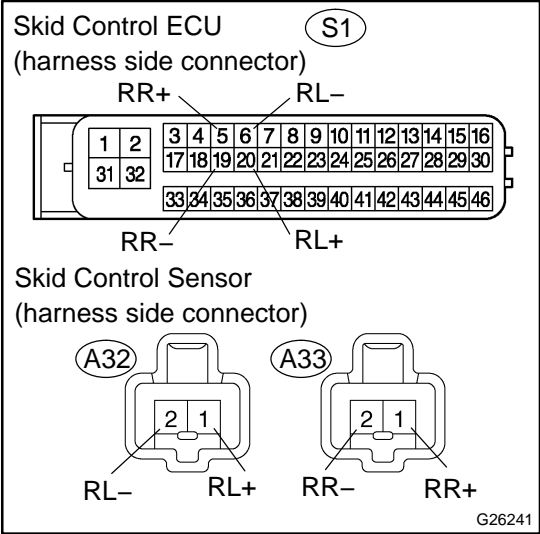
REPLACE REAR SPEED SENSOR OR SUB-WIRE HARESS

NOTICE:
Check the speed sensor signal after replacement
(see page 05-990).

OK

3

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



- (a) Disconnect the skid control ECU connector S1 and the skid control sensor connector S25 or S26.
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

LH:

Tester Connection	Specified Condition
S1-6 (RL-) – A32-2 (RL-)	Below 1 Ω
S1-20 (RL+) – A32-1 (RL+)	Below 1 Ω

RH:

Tester Connection	Specified Condition
S1-19 (RR-) – A33-2 (RR-)	Below 1 Ω
S1-5 (RR+) – A33-1 (RR+)	Below 1 Ω

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

Standard:

LH:

Tester Connection	Specified Condition
S1-6 (RL-) – Body ground	10 kΩ or higher
S1-20 (RL+) – Body ground	10 kΩ or higher

RH:

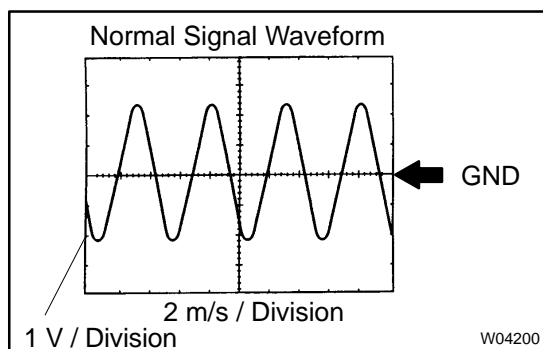
Tester Connection	Specified Condition
S1-19 (RR-) – Body ground	10 kΩ or higher
S1-5 (RR+) – Body ground	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4 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 about 19 mph (30 km/h) and check the signal waveform.

OK:

A waveform as shown in the 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.

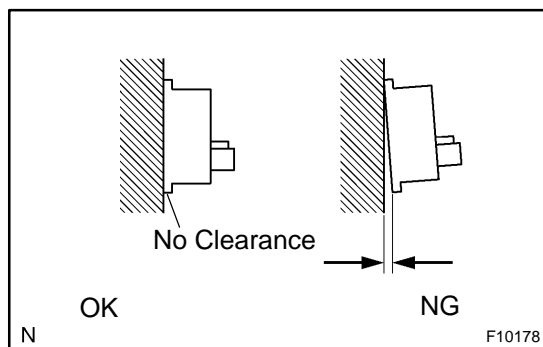
NG

Go to step 5

OK

REPLACE BRAKE ACTUATOR ASSY (SEE PAGE 32-63)

5 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 (SEE PAGE 32-68)

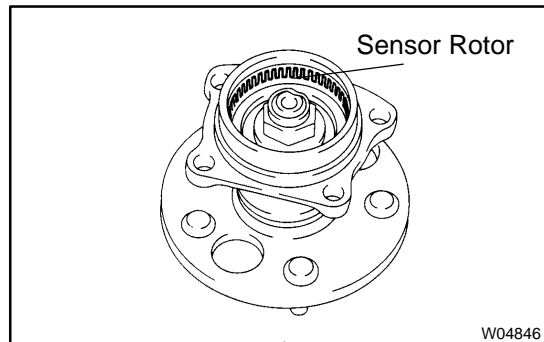
NOTICE:

Check the speed sensor signal after replacement (see page 05-990).

OK

6 INSPECT SPEED SENSOR ROTOR AND SENSOR TIP

- (a) Remove the skid control sensor (see page 32-68).
(b) Check the sensor tip.

OK:**No scratches or foreign matter on the sensor tip.**

- (c) Check the sensor rotor serrations.

OK:**No scratches, missing teeth or foreign objects.****NG****CLEAN OR REPLACE SPEED SENSOR AND
SENSOR ROTOR SERRATIONS****NOTICE:****Check the speed sensor signal after replacement
(see page 05-990).****OK****REPLACE BRAKE ACTUATOR ASSY (SEE PAGE 32-63)**