

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

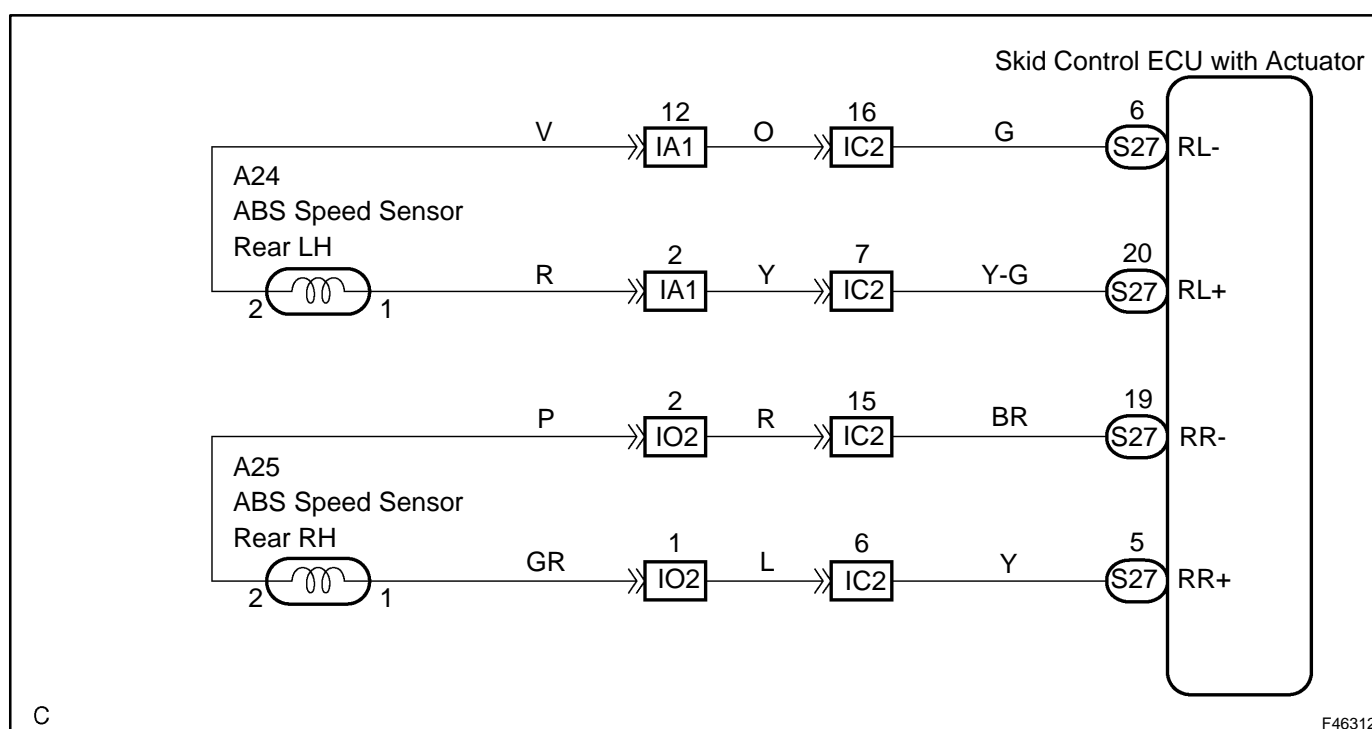
Refer to DTC C0200/31, C0205/32, C1235/35, C1236/36 on page [05-788](#) .

DTC No.	DTC Detecting Condition	Trouble Area
C0210/33 C0215/34	(1) All the following conditions continues for at least 1 second. • Vehicle speed is more than 6 mph (10 km/h). • Open or short in vehicle speed sensor signal circuit of faulty wheel continues for 1 second or more. (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 for at least 5 seconds. • Vehicle speed is more than 12 mph (20 km/h). • Vehicle speed sensor signal receives.	• Right rear and left rear speed sensor • Each speed sensor • 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 hand-held tester and start from step 3 when not using the hand-held tester.

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

- Connect the hand-held tester to the DLC3.
- Start the engine.
- Select the DATA LIST mode on the hand-held tester.
- 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.

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

OK:

There is almost no difference in the displayed speed value.

HINT:

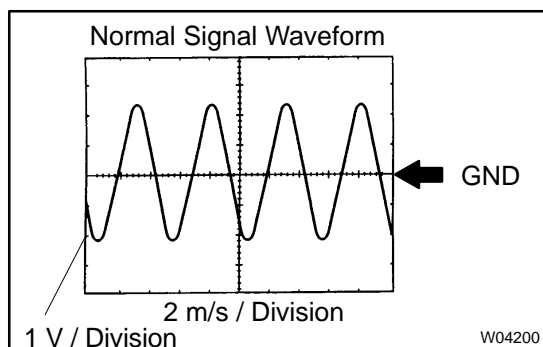
There is tolerance of $\pm 10\%$ in the speedometer indication.

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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 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.

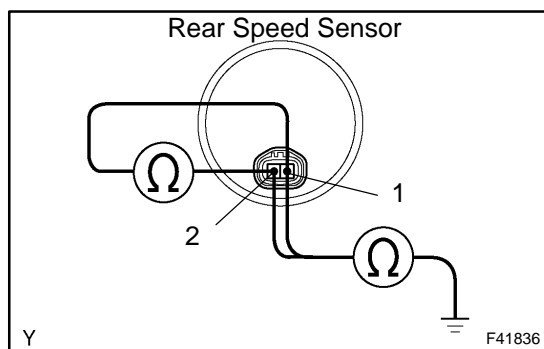
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Go to step 6

OK

REPLACE REAR SPEED SENSOR (SEE PAGE 32-37)

3 INSPECT REAR SPEED SENSOR



2WD:

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

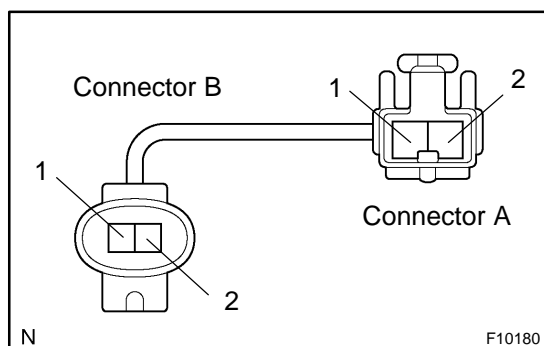
Standard:

Tester Connection	Specified Condition
1 - 2	0.9 to 2.1 kΩ

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

Standard:

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



2WD:

Skid control sensor sub-wire harness:

- Remove the seat cushion and seatback.
- Make sure that there is no looseness at the connector's locking part and connecting part of the connector.
- Measure the resistance between terminal 1 of connector A and terminal 2 of connector B.
- Measure the resistance between terminal 2 of connector A and terminal 1 of connector B.

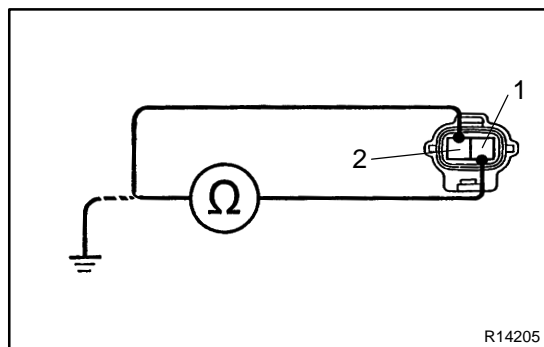
Standard:

Tester Connection	Specified Condition
A-1 - B-1	1 Ω or less
A-2 - B-2	1 Ω or less

- Measure resistance between terminals 1 and 2 of speed sensor connector A and body ground.

Standard:

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

**4WD:**

- (a) Disconnect the rear speed 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 1.3 kΩ at 25 °C

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

Standard:

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

NOTICE:

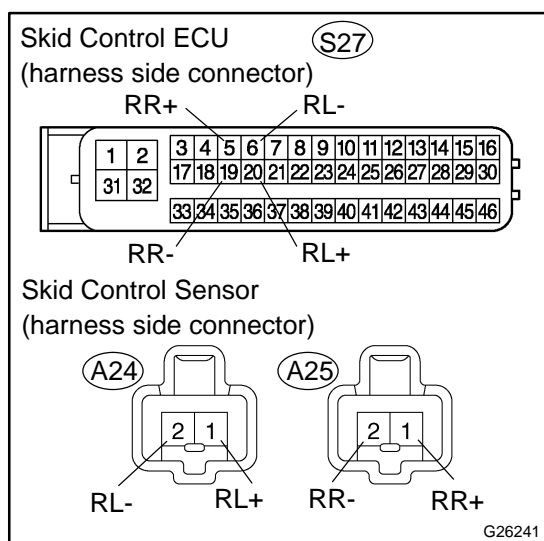
Check the speed sensor signal after replacement
(see page 05-765).

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**REPLACE REAR SPEED SENSOR
(SEE PAGE 32-37)**

OK

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



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

Standard:**LH:**

Tester Connection	Specified Condition
S27-20 (RL+) - A24-1 (RL+)	Below 1 Ω
S27-6 (RL-) - A24-2 (RL-)	Below 1 Ω

RH:

Tester Connection	Specified Condition
S27-5 (RR+) - A25-1 (RR+)	Below 1 Ω
S27-19 (RR-) - A25-2 (RR-)	Below 1 Ω

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

Standard:**LH:**

Tester Connection	Specified Condition
S27-20 (RL+) - Body ground	10 kΩ or higher
S27-6 (RL-) - Body ground	10 kΩ or higher

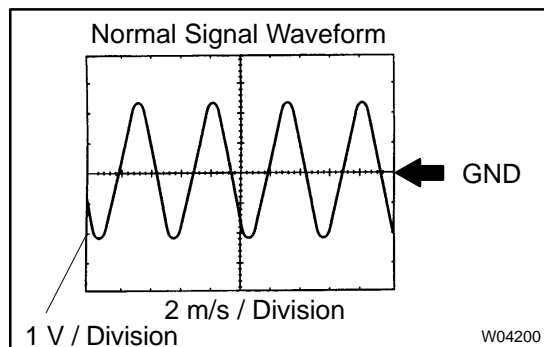
RH:

Tester Connection	Specified Condition
S27-5 (RR+) - Body ground	10 kΩ or higher
S27-19 (RR-) - Body ground	10 kΩ or higher

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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 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.

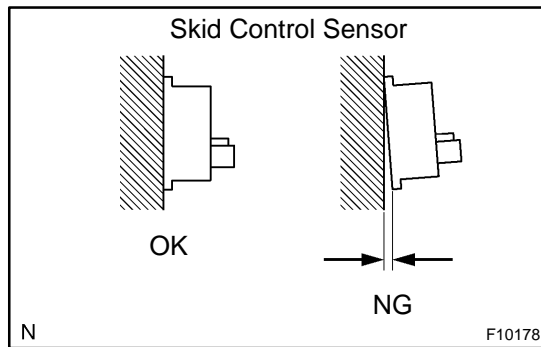
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Go to step 6

OK

REPLACE REAR SPEED SENSOR (SEE PAGE 32-42 (FF) OR 32-44 (4WD))

6 INSPECT REAR SPEED SENSOR INSTALLATION

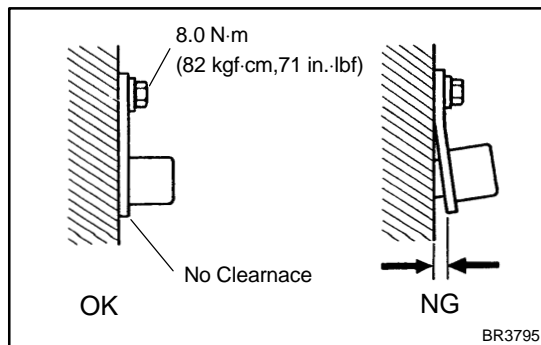


2WD:

- (a) Check the sensor installation.

OK:

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



4WD:

- (a) Check the speed sensor installation.

OK:

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

The installation bolt is tightened properly.

Torque: 8.0 N·m (82 kgf·cm, 71 in.-lbf)

NOTICE:

Check the speed sensor signal after replacement (see page 05-765).

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**REPLACE REAR SPEED SENSOR
(SEE PAGE 32-42 (FF) OR 32-44 (4WD))**

OK

7 INSPECT SPEED SENSOR ROTOR AND SENSOR TIP

2WD:

- (a) Remove the skid control sensor (see page 32-42).
- (b) Check the sensor tip.

OK:

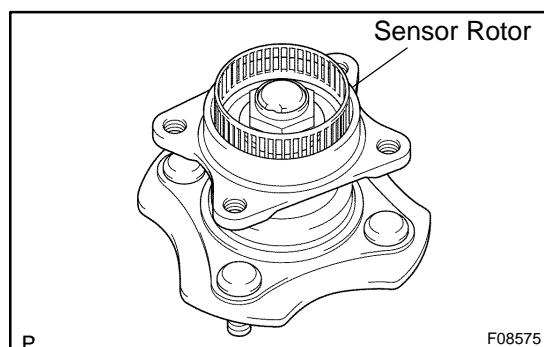
No scratches or foreign matter on the sensor tip.

4WD:

- (a) Remove the rear speed sensor (See page 32-44).
- (b) Check the sensor tip.

OK:

No scratches or foreign matter on the sensor tip.

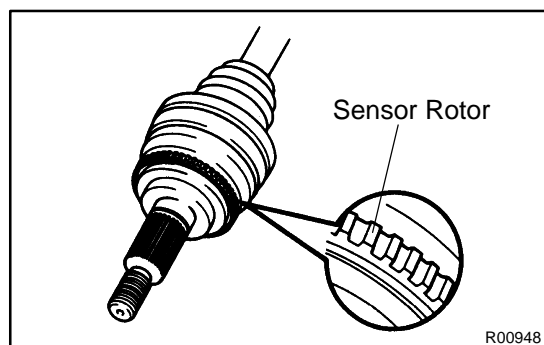


2WD:

- (a) Check the sensor rotor serrations.

OK:

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



4WD:

- (a) Remove the rear drive shaft (See page 30-45).
- (b) Check the sensor rotor serrations.

OK:

No scratches, missing teeth or foreign matter.

HINT:

If foreign matter is attached, remove it and after reassembling, check the output waveform.

NOTICE:

Check the speed sensor signal after the replacement (see page 05-765).

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CLEAN OR REPLACE SPEED SENSOR AND SENSOR ROTOR SERRATIONS

OK

REPLACE ABS & TRACTION ACTUATOR ASSY (SEE PAGE 32-37)