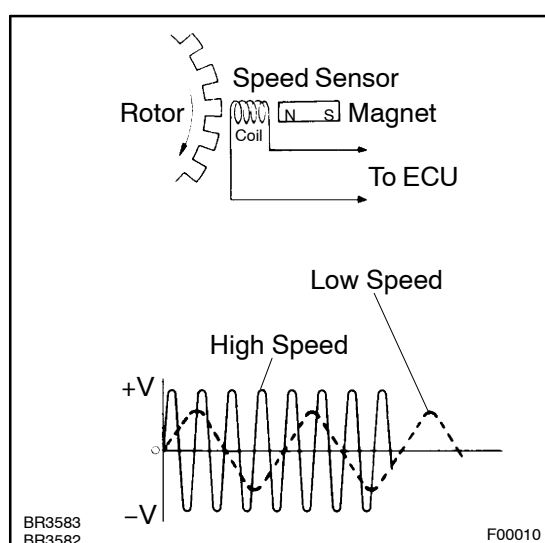


DTC	C0200/31	RIGHT FRONT SPEED SENSOR CIRCUIT
DTC	C0205/32	LEFT FRONT SPEED SENSOR CIRCUIT
DTC	C1235/35	FOREIGN MATTER IS ATTACHED ON TIP OF RIGHT FRONT SENSOR
DTC	C1236/36	FOREIGN MATTER IS ATTACHED ON TIP OF LEFT FRONT SENSOR

CIRCUIT DESCRIPTION



The speed sensor detects wheel speed and sends the appropriate signals to the ECU. These signals are used for control of the ABS control system. Each rotor of front and rear has 48 serrations.

When the rotors rotate, the magnetic field generated by the permanent magnet in the speed sensor induces an AC voltage. Since the frequency of this AC voltage changes in direct proportion to the rotor speed, ECU uses the frequency to detect the speed of each wheel.

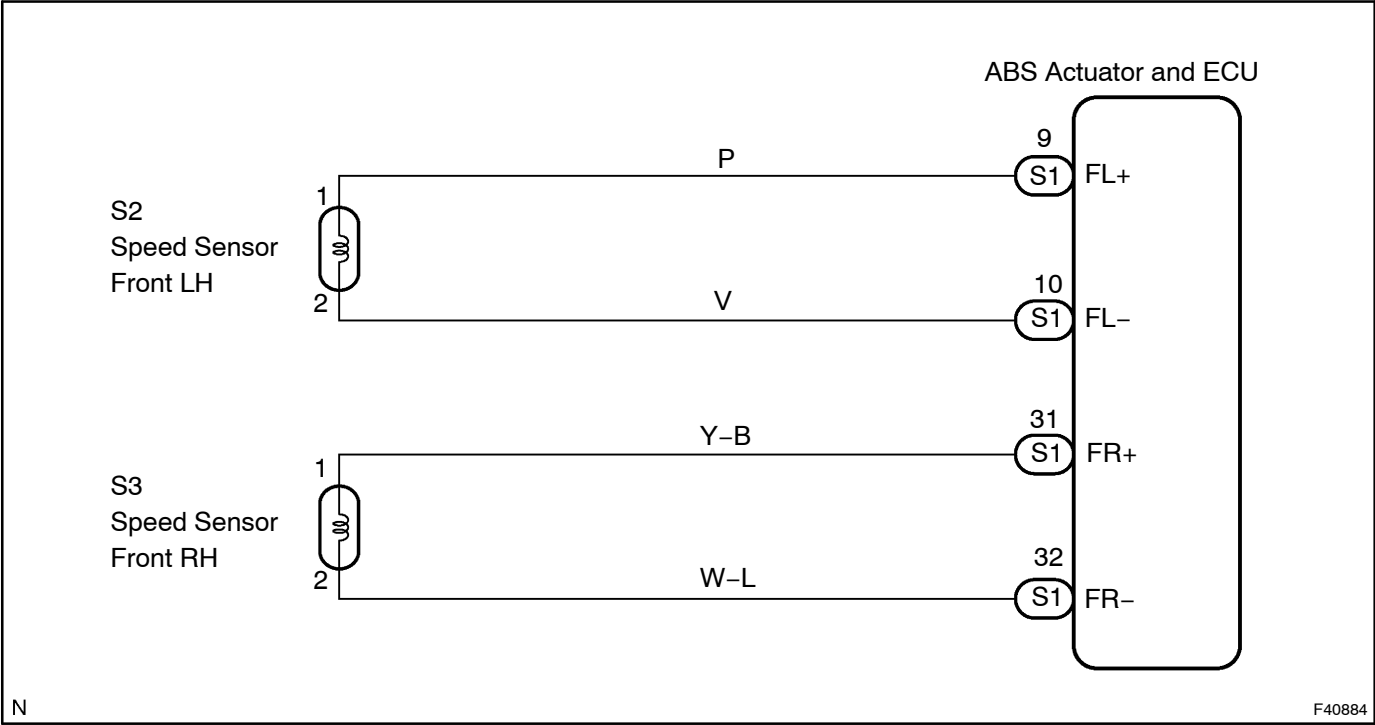
DTC No.	DTC Detecting Condition	Trouble Area
C0200/31 C0205/32	Detection of any conditions from 1. through 3.: 1. With vehicle speed at 10 km/h or more, sensor signal circuit of faulty wheel is open or short for 15 sec. or longer. 2. Momentary interruption of sensor signal of faulty wheel has occurred 7 times or more. 3. Sensor signal circuit is open for 0.025 sec. or longer.	<ul style="list-style-type: none"> • Right front, left front speed sensor • Speed sensor circuit • Sensor installation • Sensor rotor
C1235/35 C1236/36	Continuous noise occurs in to the speed sensor signals with the vehicle speed at 20 km/h (12 mph) or more continues for 5 sec or more.	<ul style="list-style-type: none"> • Right front, left front speed sensor • Speed sensor rotor

HINT:

DTC No. C0200/31, C1235/35 is for the right front speed sensor.

DTC No. C0205/32, C1236/36 is for the left front speed sensor.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

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

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

- Select the DATALIST mode on the hand-held tester.
- Check the 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 from the displayed speed value.

HINT:

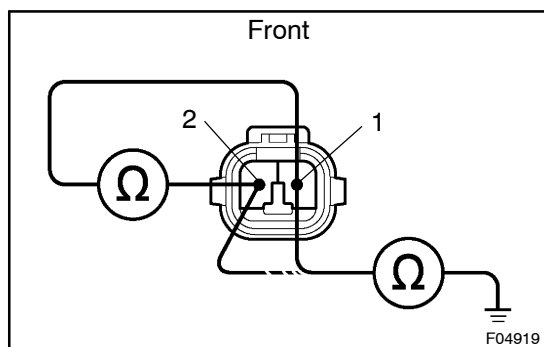
There is $\pm 10\%$ tolerance in the speedometer indication.

OK

CHECK AND REPLACE BRAKE ACTUATOR ASSY

NG

2 INSPECT SPEED SENSOR



- Remove the tender liner.
- Disconnect the speed sensor connector.
- Measure resistance between terminals 1 and 2 of the speed sensor connector.
Resistance: 1.4 – 1.8 kΩ at 20°C (68°F)
- Measure resistance between each of terminals 1 and 2 of speed sensor connector and body ground.
Resistance: 1 MΩ or higher

A	OK
B	NG (Right front speed sensor)
C	NG (Left front speed sensor)

NOTICE:

Check the speed sensor signal last ([See page 05-295](#)).

B

REPLACE SPEED SENSOR FRONT RH

C

REPLACE SPEED SENSOR FRONT LH

A

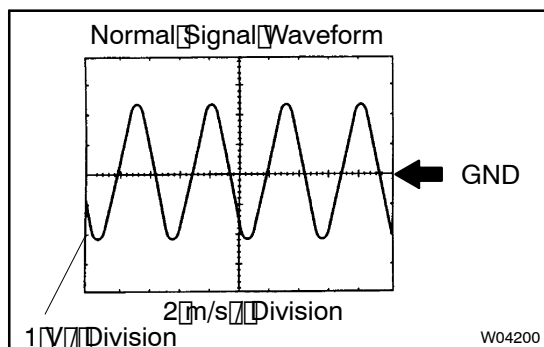
3 CHECK HARNESS AND CONNECTOR (FRONT SPEED SENSOR – BRAKE ACTUATOR ASSEMBLY) ([See page 01-30](#))

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

4 CHECK SPEED SENSOR AND SENSOR ROTOR SERRATIONS



(REFERENCE) INSPECTION USING OSCILLOSCOPE

- Connect the oscilloscope to the terminals FR+–FR– and FL+–FL– of the Skid Control ECU.
- Drive the vehicle at about 30 km/h (19 mph), and check the signal waveform.

HINT:

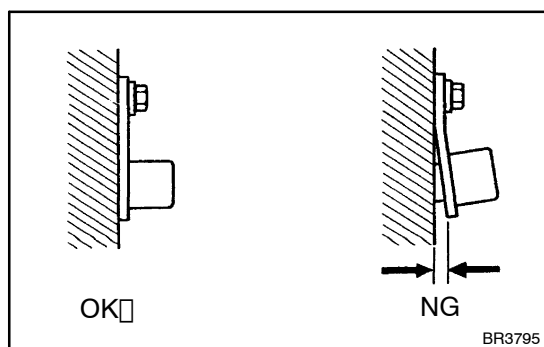
Check if the foreign objects stick on the sensor tip when noise occurs.

OK

CHECK AND REPLACE BRAKE ACTUATOR ASSY

NG

5 CHECK SPEED SENSOR INSTALLATION



- Check the speed sensor installation.

OK:

The installation bolt is tightened properly and there is no clearance between the sensor and front steering knuckle.

A	OK
B	NG (Right front speed sensor)
C	NG (Left front speed sensor)

NOTICE:

Check the speed sensor signal last (See page 05-295).

B

REPLACE SPEED SENSOR FRONT RH

C

REPLACE SPEED SENSOR FRONT LH

A

6 CHECK SPEED SENSOR TIP

- Remove the front speed sensor (See page 32-46).
- Check the sensor tip.

OK:

No scratches or foreign objects on the sensor tip.

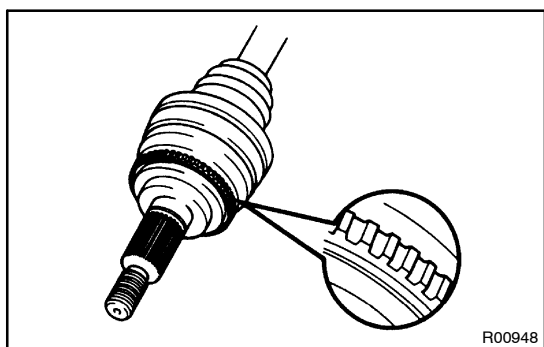
NOTICE:

Check the speed sensor signal last (See page 05-295).

NG

CLEAN OR REPAIR SPEED SENSOR

OK

7 CHECK SPEED SENSOR ROTOR

(a) Remove the drive shaft (See page 30-7).

(b) Check the sensor rotor serrations.

OK:

No scratches, missing teeth or foreign objects.

NOTICE:

Check the speed sensor signal last (See page 05-295).

NG

REPLACE SPEED SENSOR ROTOR

OK

CHECK AND REPLACE BRAKE ACTUATOR ASSY