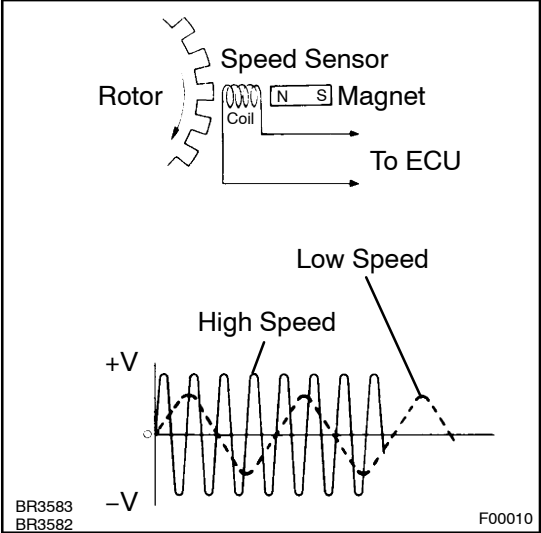


DTC	31, 32, 33, 34	Speed Sensor Circuit
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CIRCUIT DESCRIPTION



The speed sensor detects wheel speed and sends the appropriate signals to the ABS ECU. These signals are used to control the ABS system. The front and rear rotors each have 48 serrations.

When the rotors rotate, the magnetic field emitted by the permanent magnet in the speed sensor generates an AC voltage. Since the frequency of this AC voltage changes in direct proportion to the speed of the rotor, the frequency is used by the ABS ECU to detect the speed of each wheel.

DTC No.	DTC Detecting Condition	Trouble Area
31, 32, 33, 34	<ol style="list-style-type: none"> When the vehicle speed is 10km/h (6 mph) or more and the wire break or short circuit if the signal circuit of each vehicle speed sensor have been continued for 15 seconds or more. When the momentary wire break of each vehicle speed sensor signal has been occurred more than 7 times. When the vehicle speed is 20km/h (12 mph) and the abnormal speed sensor signal has been continued for more than 5 seconds. When the wire break of the vehicle speed sensor signal circuit has been continued for more than 0.5 seconds. 	<ul style="list-style-type: none"> Right front, left front, right rear, left rear speed sensor Each speed sensor circuit Speed sensor rotor

HINT:

DTC No. 31 is for the right front speed sensor.

DTC No. 32 is for the left front speed sensor.

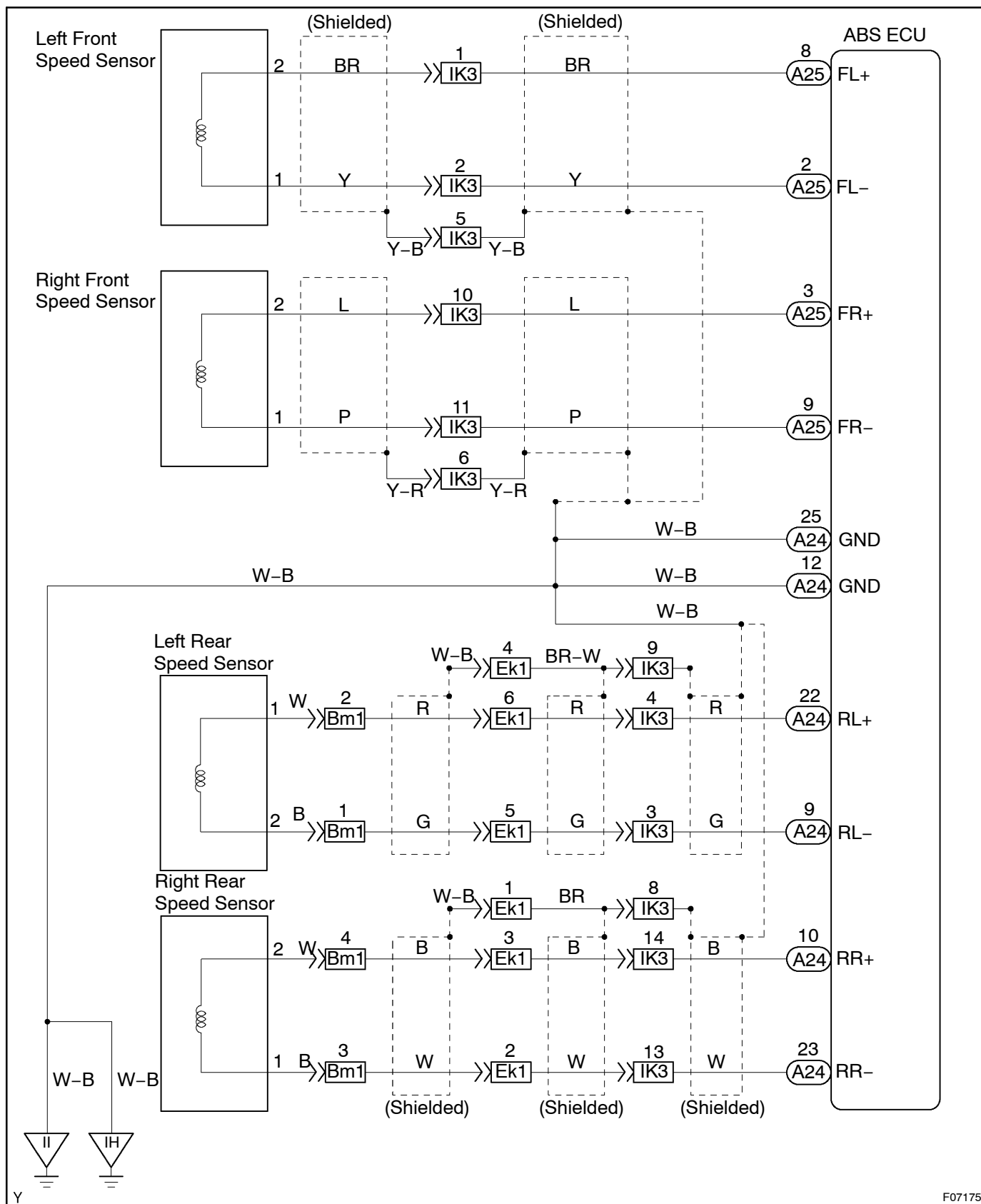
DTC No. 33 is for the right rear speed sensor.

DTC No. 34 is for the left rear speed sensor.

Fail safe function:

If trouble occurs in the speed sensor circuit, the ABS ECU cuts off current to the ABS solenoid relay and prohibits ABS control.

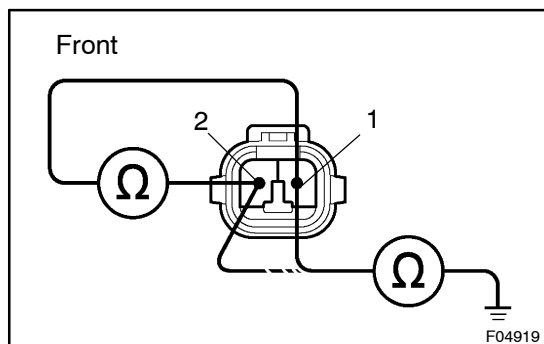
WIRING DIAGRAM



F07175

INSPECTION PROCEDURE

1 Check speed sensor.

**Front:****PREPARATION:**

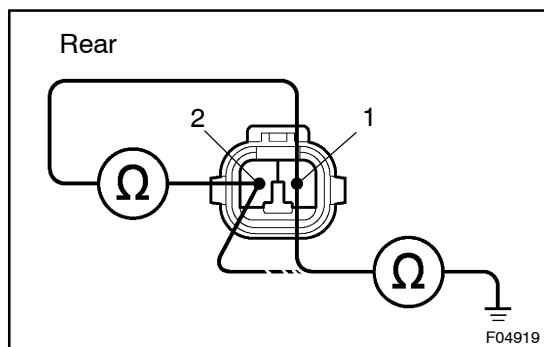
Disconnect speed sensor connector.

CHECK:

Measure resistance between terminals 1 and 2 of speed sensor connector.

OK:**Resistance:** 0.92 – 1.22 kΩ**CHECK:**

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

OK:**Resistance:** 1 MΩ or higher**Rear:****PREPARATION:**

Disconnect speed sensor connector.

CHECK:

Measure resistance between terminals 1 and 2 of speed sensor connector.

OK:**Resistance:** 0.89 – 1.29 kΩ**CHECK:**

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

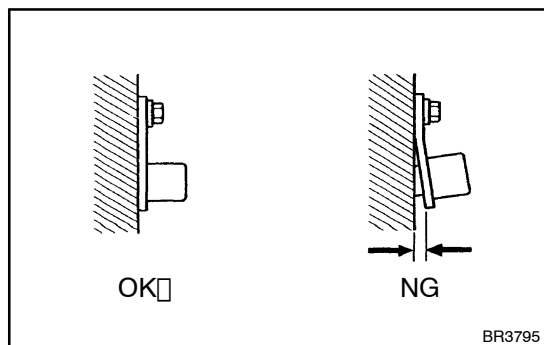
OK:**Resistance:** 1 MΩ or higher**NG****Replace speed sensor.****NOTICE:**

Check the speed sensor signal last (See page DI-52).

OK

2 Check for open and short circuit in harness and connector between each speed sensor and ABS ECU (See page IN-30).

NG**Repair or replace harness or connector.****OK**

3 Check sensor installation.**CHECK:**

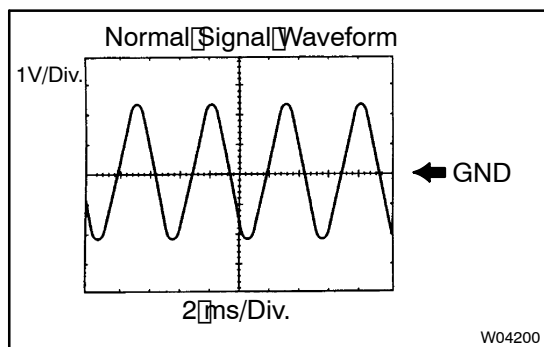
Check the speed sensor installation.

OK:

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

NG**Replace speed sensor.****NOTICE:**

Check the speed sensor signal last (See page DI-52).

OK**4 Check speed sensor and sensor rotor serrations.****(REFERENCE) INSPECTION USING OSCILLOSCOPE****PREPARATION:**

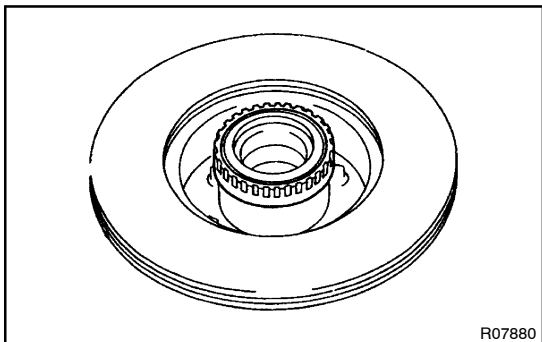
- (a) Remove the ABS ECU with connectors still connected.
- (b) Connect the oscilloscope to the terminals FR+, FL+, RR+, or RL+ and GND of the ABS ECU.

CHECK:

Drive the vehicle at 30 km/h (19 mph), and check the signal waveform.

OK**Check and replace ABS ECU.****NG**

5 Check sensor rotor and sensor tip.



Front:

PREPARATION:

Remove the front axle hub (Refer to Pub. No. RM156E on SA section).

CHECK:

Check the sensor rotor serrations.

OK:

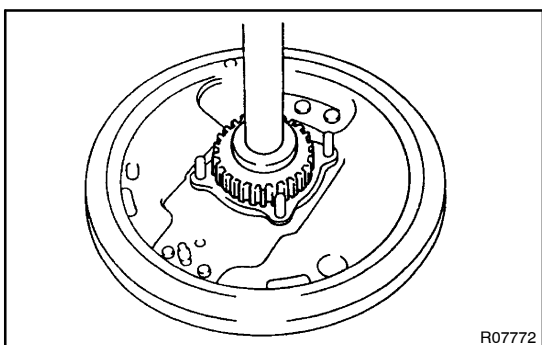
No scratches or missing teeth or foreign objects.

CHECK:

Check the sensor tip.

OK:

No scratches or foreign objects on the sensor tip.



Rear:

PREPARATION:

Remove the rear axle shaft (See page SA-11).

CHECK:

Check the sensor rotor serrations.

OK:

No scratches or missing teeth.

CHECK:

Check the sensor tip.

OK:

No scratches or foreign objects on the sensor tip.

NG

Replace speed sensor or rotor.

NOTICE:

Check the speed sensor signal last (See page DI-52).

OK

Check and replace ABS ECU.