

DIAGNOSIS AND TESTING > ANTI-LOCK BRAKE SYSTEM (ABS) AND STABILITY CONTROL > PINPOINT TESTS > PINPOINT TEST B : WHEEL SPEED SENSOR ERRATIC SIGNAL FAULTS > PINPOINT TEST B : WHEEL SPEED SENSOR ERRATIC SIGNAL FAULTS



NOTE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may cause damage to the connector

B1 CHECK FOR ABS (ANTI-LOCK BRAKE SYSTEM) MODULE DIAGNOSTIC TROUBLE CODES (DTCs)

Ignition ON.

Using a diagnostic scan tool, carry out the ABS module self-test.

Retrieve and record all ABS module Diagnostic Trouble Codes (DTCs).

Is DTC C003x:29 or C003x:64 present?

Yes	GO to B2
No	If DTC C0031:07, C0034:07, C0037:07 or C0039:0A is present, GO to B3If DTC C0031:2F, C0034:2F, C0037:2F or C0039:2F is present, GO to B3. If DTC C0030:07, C0033:07, C0036:07 or C0039:07 is present, GO to B6 For all other ABS module Diagnostic Trouble Codes (DTCs), GO to the DTC Chart: ABS Module in Diagnostic Trouble Code (DTC) Charts .

B2 CHECK THE TIRE SIZE AND PRESSURE

Ignition OFF.

Verify all the tires and wheels are the same size and the tire size and inflation pressures are correct as indicated on the VC label.

Are the tires and wheels OK?

Yes	GO to B3
No	INSTALL the correct size tire or wheel or ADJUST tire pressure as necessary.

B3 CHECK THE WHEEL SPEED SENSOR MOUNTING

With the transmission in NEUTRAL, position the vehicle on a hoist. REFER to: Jacking and Lifting - Overview .

Inspect the wheel speed sensor for correct installation and the fastener for looseness.

Is the wheel speed sensor installed correctly and the fastener tightened to specifications?

Yes	GO to B5
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No	REINSTALL the wheel speed sensor and tighten the fastener to specifications. REFER to: Front Wheel Speed Sensor . REFER to: Rear Wheel Speed Sensor . GO to B4
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B4 CHECK THE WHEEL SPEED SENSOR PARAMETER IDENTIFICATIONS (PIDS)

Ignition ON.

Using a diagnostic scan tool, access the ABS module Parameter Identifications (PIDs).

Drive the vehicle at a speed greater than 20 km/h (12 mph) while monitoring the following Parameter Identifications (PIDs):

Left front wheel speed sensor (LF_WSPD)

Right front wheel speed sensor (RF_WSPD)

Left rear wheel speed sensor (LR_WSPD)

Right rear wheel speed sensor (RR_WSPD)

Are the wheel speed Parameter Identifications (PIDs) within 5 km/h (3 mph) of each other and the vehicle speed as indicated on the speedometer?

Yes	The system is operating correctly at this time. The concern may have been caused by a loose or incorrectly installed wheel speed sensor.
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No	GO to B5
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B5 CHECK THE WHEEL SPEED SENSOR FOR DAMAGE

Ignition OFF.

With the transmission in NEUTRAL, position the vehicle on a hoist. REFER to: Jacking and Lifting - Overview .

Disconnect the suspect wheel speed sensor electrical connector.

Inspect the wheel speed sensor and harness for abrasions, broken connector tabs or water intrusion.

Is the wheel speed sensor and harness OK?

Yes	GO to B6
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No	INSTALL a new wheel speed sensor. REFER to: Front Wheel Speed Sensor . REFER to:
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	Rear Wheel Speed Sensor .
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B6 CHECK WHEEL SPEED SENSOR ENCODER FOR DAMAGE

Remove the suspect wheel speed sensor. REFER to: Front Wheel Speed Sensor . REFER to: Rear Wheel Speed Sensor .

Inspect the wheel speed sensor encoder for abnormal wear, deformation or contamination.

Is the wheel speed sensor encoder OK?

Yes	GO to B7
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No	INSTALL a new wheel hub as necessary. REFER to: Front Wheel Bearing and Wheel Hub . REFER to: Wheel Bearing and Wheel Hub .
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 **NOTE:** Use a meter with a min-max feature or recording capabilities to obtain accurate measurements. The ABS module disables the voltage output immediately if the wheel speed sensor is not present.

 **NOTE:** Make sure all test connections are made at the wheel speed sensor **before** the ignition is set to ON.

B7 CHECK FOR CORRECT ABS (ANTI-LOCK BRAKE SYSTEM) MODULE OUTPUT

Disconnect the suspect wheel speed sensor electrical connector.

Connect the meter to the suspect wheel speed sensor electrical connector, harness side.

Set the meter to measure DC voltage.

Set the meter range to greater than 15 volts.

Enable the min-max or recording feature on the meter.

Ignition ON.

For the LH front wheel speed sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C150-1		C150-2

For the RH front wheel speed sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C160-1		C160-2

For the LH rear wheel speed sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C440-1		C440-2

For the RH rear wheel speed sensor, measure:

Positive Lead	Measurement / Action	Negative Lead
C426-1		C426-2

Check the maximum recorded voltage on the meter.

Is the voltage greater than 10 volts?

Yes	INSTALL a new wheel speed sensor. REFER to: Front Wheel Speed Sensor . REFER to: Rear Wheel Speed Sensor .
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No	GO to B8
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B8 VERIFY ALL WIRING CONNECTIONS

Ignition OFF.

Disconnect ABS module C135 .

Using a good light source, inspect ABS module C135 for the following:

corrosion - install a new connector or terminal and clean module pins

damaged or bent pins - install new terminals or pins

pushed-out pins - install new pins as necessary

spread terminals - install new terminals as necessary

Yes	GO to B9
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No

B9 CHECK FOR CORRECT ABS (ANTI-LOCK BRAKE SYSTEM) MODULE OPERATION

Connect ABS module C135 . Make sure it seats and latches correctly.

Connect the suspect wheel speed sensor. Make sure it seats and latches correctly.

Operate the system and determine if the concern is still present.

Is the concern still present?