



ENGINEERED SOLUTIONS

Bulletin BES 01-01

Subject: Wheel Speed Sensor Testing

Vehicle Involved: 1999 and newer

Condition: Testing procedures for Magneto Resistive Wheel Speed Sensors as compared to Variable Reluctance Wheel Speed Sensors.

Repair Procedure: There are two types of wheel speed sensors that are available on 1999 and newer vehicles. Before testing sensors, Refer to the vehicle specific application and shop manual to determine which sensor types you may be testing.

Test Procedure for Variable Reluctance Wheel Speed Sensors

This type of wheel speed sensor produces it's own voltage when rotating the wheel. Ignition key off, utilizing a digital volt ohmmeter, coil-winding resistance can be measured. Refer to shop manual for specific resistance values. If the coil resistance checks good, position the vehicle safely on jack stands to test sensor voltage generating capability. Typically, rotating the wheel by hand will produce an AC voltage output of about 60mv or more.

Test Procedure for Magneto Resistive Wheel Speed Sensors

This type of wheel speed sensor relies on 12 volts DC from the ABS Computer. This new type of sensor has two wires and inside the sensor is a small power supply returning approximately .90 volts back to the computer. This reading occurs when the valley of the tone wheel is aligned with the magnet of the sensor. As the tone wheel tooth approaches the magnet of the sensor; signal voltage should increase to approximately 1.65 volts. The computer measures the digital voltage and amperage signal for the interpretation of wheel speed. To check a magneto resistive sensor, position vehicle safely on jacks stands and very carefully back probe the wheel speed sensor. With ignition key on (engine off) one wire should have supply voltage from the computer to sensor. The other wire a signal voltage back to the computer. Be sure to have a good ground connection to the negative lead of your meter. Rotating the wheel very slowly should result in signal voltages changing from a little less than one volt to a little more than 1.5 volts. A lab scope is recommended to test sensors with, look for consistent sharp corners on the DC signal to the computer. For comparison purposes, all four-wheel speed sensors should display similar waveforms.