Bulletin BES 07-15

Subject: Testing Magneto Resistive Wheel Speed sensor

Vehicle Involved: All vehicles using magneto Resistive wheel speed sensors

Condition: Trouble shooting magneto resistive wheel speed sensor

Repair Procedure: There are basically 2 types of WSS being used, the Variable Reluctance and the Magneto Resistive. The first thing to do is determine what type of WSS the vehicle has. Resistive types became popular on Chrysler and Jeeps in 1999-2000 and are used on many vehicles now.

Magneto Resistive WSS may have 2 or 3 wires (normally 2). Typically 1 wire going to each WSS is the same color (brown, red, orange etc). You *can not* check resistance or AC voltage output. This type of WSS has a circuit board inside so it needs voltage going to it.

Sometimes its battery voltage (12v) and sometimes its controlled voltage (7-9v) but it is always measured in **DC** voltage. If it has 3 wires (most don't) one wire will be voltage in, one wire will be ground, and the third wire will be a signal or trigger wire. As the tone ring turns and triggers the WSS, the signal wire puts out a square wave signal of 2 distinct voltages. This could be .9v then 1.6v then .9v then 1.6v and so on. You must turn the wheel slowly or the voltage will blend together and you will get 1.3v.

Voltage output can change per manufacture. If there are only 2 wires, the ground is through the spindle. Make sure you ground the meter at the spindle, not at the battery. If you have no voltage, check for continuity between the spindle and the chassis. Turn the wheels lock to lock while watching the meter, since it could loose ground while turning. Their will not be a test for ohms reading from the 2 wires coming out of the WSS.

If the WSS checks out, visually check the tone ring. Chipped teeth can set a code. A cracked ring can cause false activation. A misaligned ring will cause either a code or false activation. A misaligned ring may be caused by installation error when reinstalling an axle.

Resistive WSS are extremely accurate and work at 1 mph compared to the reluctive type which starts working at 4-5mph. The resistive type can be used for other systems in the vehicle like tire inflation monitor and electronic suspension.