

Oxygen Sensor Voltmeter Diagnosis

Meets NATEF Task: (A8-B-7) Inspect and test sensors, actuators, and circuits using a graphing multimeter (GMM)/digital storage oscilloscope (DSO); perform necessary action. (P-2)

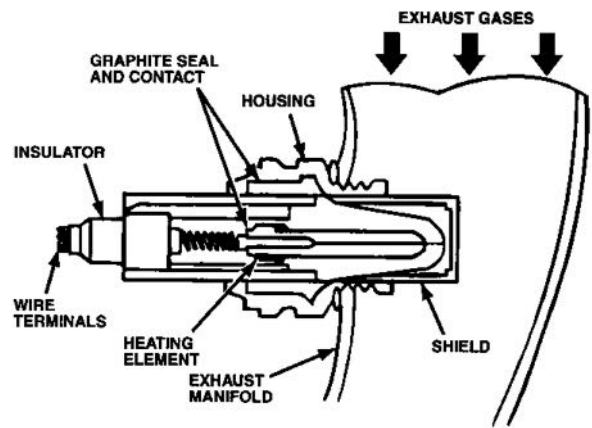
Name _____ Date _____ Time on Task _____

Make/Model/Year _____ VIN _____ Evaluation: 4 3 2 1

_____ 1. Locate the oxygen sensor(s) and carefully back probe the sensor wire at a connector with a "T" pin.

_____ 2. Set the digital multimeter to read DC volts (DCV).

_____ 3. Attach the red lead of the digital voltmeter to the sensor and ground the black meter lead to a good clean non-painted ground.



_____ 4. Start the engine and allow it to run at 2500 RPM for 2 minutes to get the oxygen sensor up to operating temperature and get the engine into closed loop.

_____ 5. Select MIN/MAX record and maintain the engine speed at 2500 RPM for 2 additional minutes.

Record the MIN _____ MAX _____ AVERAGE _____

_____ 6. Results: MIN should be below 200 mV and MAX should be above 800 mV. The average should be about 450 mV.

- a. If the average is higher than 450 mV, the engine is operating with a rich air-fuel mixture.
- b. If the average is lower than 450 mV, the engine is operating with a lean air-fuel mixture.

_____ 7. Based on the test results, what is the necessary action? _____
