

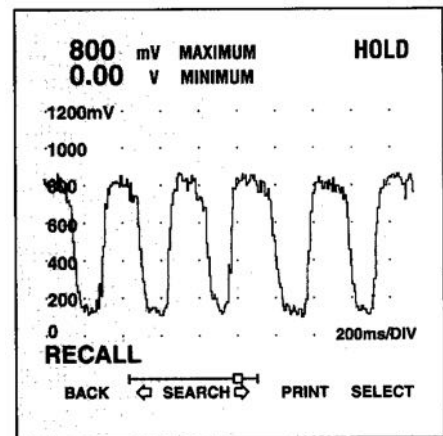
# Oxygen Sensor Scope Diagnosis

Meets NATEF Task: (A8-B-5) Inspect and test sensors, actuators, and circuits using a graphing multimeter (GMM)/digital storage oscilloscope (DSO); perform necessary action. (P-1)

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 scope to 1s/div time base and 200 mV/div for the volts per division setting.
- \_\_\_\_\_ 3. Attach the scope probe to the oxygen sensor signal wire. Connect the ground wire from the scope probe to a good engine ground.
- \_\_\_\_\_ 4. Start the engine and allow it to run at 2500 RPM for 2 minutes to allow the oxygen sensor to reach operating temperature and the engine to achieve closed loop operation.
- \_\_\_\_\_ 5. Select the proper time base and volts per division (try 200 mS per division and 200 mV per division).



- \_\_\_\_\_ 6. Observe the scope pattern:
  - a. What is the highest voltage observed?  
 \_\_\_\_\_ Max. volts
  - b. What is the lowest voltage observed?  
 \_\_\_\_\_ Min volts
  - c. How many times does the voltage cycle in one second? \_\_\_\_\_  
 (Should be 0.5 to 5.0 Hz.)

OK \_\_\_\_\_ NOT OK \_\_\_\_\_

- \_\_\_\_\_ 7. Based on the results of the test, what is the necessary action? \_\_\_\_\_  
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