Scan Tool Testing of the Ignition System

Meets NATEF Task: (A8-C-1) Diagnose ignition system-related problems; determine necessary action. (P-2)

Name _____ **Date** _____ **Time on Task** _____

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

_____ **1.** Check service information for the recommended procedures to follow when using a scan tool to monitor what the vehicle computer is looking at and what commands are being sent to the various engine actuators and components.

_____ **2.** Connect the scan tool to the data link connector (DLC) of the vehicle and scroll through the various parameters until engine RPM and ignition spark timing can be viewed.

Idle RPM = _____   Spark advance at idle = _____

_____ **3.** Slowly increase engine speed and observe the amount of spark advance.

Spark advance at 1000 RPM = _____ degrees

Spark advance at 1500 RPM = _____ degrees

Spark advance at 2000 RPM = _____ degrees

Spark advance at 2500 RPM = _____ degrees

_____ **4.** Scroll the display of the scan tool until knock sensor (KS) activity or timing retard is displayed (if the vehicle is so equipped).

KS signal at idle = _____ (should be zero) (The engine should not have detected an engine knock.)

_____ **5.** Increase engine speed while observing KS or timing retard amount. Did the computer retard timing?

Yes _____ **No** _____

_____ **6.** Lightly tap on the engine block and observe KS or timing retard with the engine warmed above idle speed. Was a knock detected?

Yes _____ **No** _____

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

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