▶ TASK Differentiate between electrical and engine mechanical problems that cause a slow-crank or no-crank condition.

MAST 6C6

Time off _____

Time on _____

Total time _____

CDX Tasksheet Number: C314

Vehicle used for this activity:

Year _____ Make _____ Model _____

Odometer _____ VIN _____

1. **Locate a no-crank or slow-crank starting system symptom chart in the appropriate service information for the vehicle you are working on.**
   a. **Research the repair procedures for the condition of the vehicle, as outlined in the service information, for the vehicle assigned to you.**

2. **Most vehicles can be tested using the following procedure to determine whether the vehicle is experiencing an electrical or mechanical problem: Turn on the headlights and try to start the engine while listening to the starter and watching the headlights. Place a check mark next to the condition below that happened during this test.**
   a. **No starter noises and the headlights stayed at the same intensity: _____**

NOTE This fault is likely an electrical fault in the starter itself or the control circuit to the starter.

   b. **Loud single click when the key is turned to "crank" and headlights don't dim, or only dim slightly _____.**

NOTE This fault is likely an electrical fault caused by solenoid contacts or starter motor brushes that are excessively worn.

   c. **Loud repeated clicking "machine guns" when the key is turned to "crank": _____**

NOTE This fault is likely an electrical fault that may be caused by high resistance in the starter feed cable, a short circuit in the main starter feed cable after the starter relay, or the hold-in windings in the solenoid are open.

   d. **The starter engages and tries to crank, or cranks the engine slowly and the headlights went substantially dim:**

NOTE This fault could be an electrical fault or a mechanical fault. It may be caused by a discharged or weak battery, a shorted or dragging starter motor, or an engine that is mechanically bound up, such as from a hydro-locked cylinder, spun main bearing, or seized accessory drive on the engine. Turn the engine over by hand to determine if It is caused by a mechanical condition.

e. The engine cranks substantially faster than normal:

> **NOTE** This fault is likely a mechanical fault caused by low compression due to a broken or slipped timing belt/chain, bent valves, or piston rings that are not sealing.

3. Diagnose the problem based on these conditions. List the steps you took to diagnose the problem and the results you obtained:

4. Determine any necessary actions:

5. Have your supervisor/instructor verify satisfactory completion of this procedure, any observations found, and any necessary action(s) recommended.

Performance Rating

CDX Tasksheet Number: C314

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0	**1**	**2**	**3**	**4**

Supervisor/instructor signature _____ Date _____