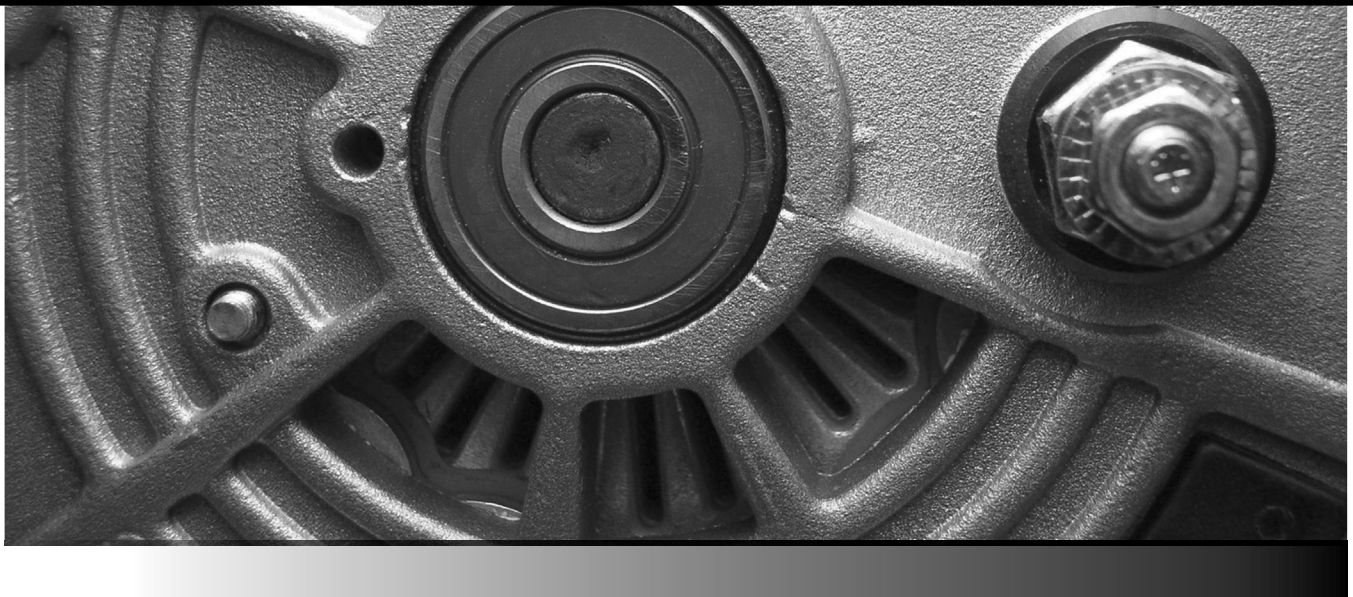


ELECTRICAL AND ELECTRONIC SYSTEMS



Tasksheet Manual for NATEF Proficiency

CDX Automotive



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The procedures and protocols in this book are based on the most current recommendations of responsible sources. The publisher, however, makes no guarantee as to, and assume no responsibility for, the correctness, sufficiency, or completeness of such information or recommendations. Other or additional safety measures may be required under particular circumstances.

For every task in ASE 6: Electrical/Electronic Systems, the following safety requirement must be strictly followed: Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.

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Resource Preview

2008 NATEF and CDX tasksheet numbers appear at the beginning and end of every task, as well as in the general information for the section.

Required and recommended materials and equipment are listed for each task.

Safety issues relevant to the tasks are listed at the beginning of every section.

Hybrid Electrical Safety

Student/Intern information: _____ Date _____ Class _____

Vehicle used for this task: _____ Year _____ Make _____ Model _____

Odometer: _____

Learning Objective/Task	CDX Tasksheet Number	2008 NATEF Reference Number	2008 NATEF Priority Level
Identify location of hybrid vehicle high-voltage circuit disconnect (service plug) location and safety procedures.	C560	6A18	P-2
Identify high-voltage circuits of electric or hybrid electric vehicle and related safety precautions.	C561	6B7	P-3
Identify hybrid vehicle auxiliary (12v) battery service, repair, and test procedures.	CB74	6B9	P-3

Recommended Resource Materials

- CDX Automotive program
- CDX eTextbook
- Technical service bulletins, shop manuals, and any other information applicable to the specific vehicle or components you are working on
- Class notes

Materials Required

- Hybrid or electric vehicle
- Depending on the type of concern, special diagnostic tools may be required. See your supervisor/instructor for instructions to identify what tools may be required.

Some Safety Issues to Consider

- Be cautious around electricity. High voltage (enough to injure or kill you) is present on many vehicles, ignition systems, hybrid vehicles, and 42-volt electrical systems are just a few to be careful of.
- Only students who have their supervisor/instructor's direct permission should perform this task due to the safety concerns involved.
- Use extreme caution when working around batteries. Immediately remove any electrolyte that may come in contact with you. Electrolyte is a mixture of sulfuric acid and water. Please consult with the shop safety and emergency procedures when working with or around batteries.
- Always wear the correct protective eyewear and clothing and use the appropriate safety equipment, as well as fender covers, seat protectors, and floor mat protectors.
- Make sure you understand and observe all legislative and personal safety procedures when carrying out practical assignments. If you are unsure of what these are, ask your supervisor/instructor.

Performance Standard

0-No exposure: No information or practice provided during the program; complete training required

1-Exposure only: General information provided with no practice time; close supervision needed; additional training required

2-Limited practice: Has practiced job during training program; additional training required to develop skill

3-Moderately skilled: Has performed job independently during training program; limited additional training may be required

4-Skilled: Can perform job independently with no additional training

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TASK Check electrical circuits with a test light; determine necessary action. C291 6A8

- Test for proper operation of the test light.
 - Connect the clip end (negative) of the test light to the negative battery terminal.
 - Touch the probe end of the test light to the positive battery terminal. The test light should light.
 - Did the test light operate correctly? **Yes/No** (Circle one)

NOTE Please notify your supervisor/instructor if the test light did not operate correctly.

- Check a circuit with a test light.
 - Using the assigned vehicle and the correct wiring diagram for the left tail lamp/parking light circuit, identify which wire is the power (voltage) and which wire is the ground (negative).
 - What are the colors of these two wires?
 - Power (voltage): _____
 - Ground (negative): _____
 - Using the appropriate tools, remove the taillight assembly and disconnect the tail lamp connector. The headlamp switch should be "OFF".
 - Locate the power and ground wires, as described in step 2a.
 - Connect the clip end of the test light to a non-painted metal surface that is a good ground.
 - Turn the headlamp switch to the "Park" position.
 - Touch the test light probe to the positive wire of the vehicle harness tail lamp connector cavity.
 - Did the test light come on? **Yes/No** (Circle one)
 - Please explain your results—Why did the test light come on?
 - With the test light probe still connected to the positive wire, test the ground wire by removing the clip end of the test light and touching it to the ground wire of the vehicle harness tail lamp connector cavity, being careful not to cause a short circuit by touching the clip to the probe. The light should come on if there is a good ground.
 - Did the light come on? **Yes/No** (Circle one)
 - Based on your observations, determine any necessary action/s:
- Have your supervisor/instructor verify satisfactory completion of this procedure, any observations found, and any necessary action/s recommended.

Performance Rating

CDX Tasksheet Number: C291 2008 NATEF Reference Number: 6A8

0 1 2 3 4

Supervisor/instructor signature _____ Date _____

TASK Inspect and test fusible links, circuit breakers, and fuses; determine necessary action. C298 6A13

- Using the appropriate service information, locate the fuse panel/s for the vehicle/simulator you are assigned to.
 - List the locations of the fuse panel/s and circuit protection devices for this vehicle/simulator:

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Time card feature appears at the beginning of every task and allows students to track the time they spend on each task.

Note boxes offer students vital information to consider while performing the task.

Performance standard and rating areas simplify the sign-off process for instructors.

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CDX Automotive

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