

Electrical 1

Course Information

Developers: Automotive Technology State Curriculum Committee

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KBOR Facilitators: Shirley Antes/ April Henry

Credit Hours: 3

Description:

In this course students will complete service work orders; describe the relationship between voltage, ohms and amperage; perform basic electrical circuit repairs; identify electrical system faults; identify basic wiring diagram symbols, components, and legend information; perform basic electrical circuit measurements using a DVOM; describe basic circuit characteristics of series, parallel and series parallel circuits through a variety of classroom and shop learning and assessment activities.

Competencies

- A. General
- 1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. P-1
- 2. Demonstrate knowledge of electrical/electronic series, parallel, and series-parallel circuits using principles of electricity (Ohm's Law). P-1
- 3. Use wiring diagrams to trace electrical/electronic circuits. P-1

4. Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits. P-1
5. Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits. P-2
6. Check operation of electrical circuits with a test light. P-2
7. Check operation electrical of electrical circuits with fused jumper wires. P-2
8. Measure key-off batter drain (parasitic draw). P-1
9. Inspect and test Fusible links, circuit breakers, and fuses; determine necessary action. P-1
10. Perform solder repair of electrical wiring. P-1
11. Replace electrical connectors and terminal ends. P1-

B. Batter Service

1. Perform battery state-of-charge test; determine necessary action. P-1
2. Conform proper batter capacity for vehicle application; perform batter capacity test; determine necessary action. P-1
3. Maintain or restore electronic memory functions. P-1
4. Inspect and clean battery; fill battery cells; check battery cables, connectors, clamps, and hold-downs. P-1
5. Perform slow/fast battery charge according to manufacturer's recommendations. P-1
6. Jump-start vehicle using jumper cables and a booster battery or an auxiliary power supply. P-1