

Name: _____

6. ELECTRICAL/ELECTRONIC SYSTEMS

A. GENERAL

AST-6-A-5: Demonstrate proper use of a digital multimeter (DMM) when measuring source voltage, voltage drop (including grounds), current flow, and resistance.

USING A DIGITAL MULTIMETER (DMM)

Equipment:

Digital multimeter (DMM)

Personal protective equipment (PPE)

Electronic service information

NOTE: Before performing the procedure, the instructor will set up an electrical circuit and components to be used to demonstrate the proper use of a DMM. The instructor will assign the type of test to be performed on each electrical circuit or component. The electrical circuits and components may be good or have faults.

Procedure:

1. Wear PPE while performing the procedures on this task sheet.
2. Demonstrate proper use of DMM to measure source voltage.
 - Set the meter to the correct settings to measure the expected source voltage.
 - Correctly connect the DMM test leads to the voltage source being tested.
 - Perform and record the source voltage reading for the item being tested.

3. Demonstrate proper use of DMM to measure voltage drop in an automotive power circuit.
- Set the meter to the correct setting to measure the voltage drop in the circuit to be tested.
 - Correctly connect the DMM test leads to the voltage source to the circuit being tested.
 - Determine the circuit conditions required to perform the voltage drop test on the circuit being tested.
 - Perform and record the voltage drop reading for the circuit being tested.

4. Demonstrate proper use of DMM to measure voltage drop in an automotive ground circuit.
- Set the meter to the correct setting to measure the voltage drop in the ground circuit to be tested.
 - Correctly connect the DMM test leads to the voltage source to the circuit being tested.
 - Determine the circuit conditions required to perform the voltage drop test on the circuit being tested.
 - Perform and record the voltage drop reading for the circuit being tested.

5. Demonstrate the proper use of DMM to measure current flow in a circuit.
- Identify how to prevent damage to DMM when measuring current flow in the circuit to be tested.
 - Set the meter to the correct setting to measure the current in the circuit to be tested.
 - Correctly connect the DMM test leads to the circuit being tested.
 - Determine the circuit conditions required to perform a current flow test on the circuit being tested.
 - Perform and record the current flow reading for the circuit being tested.

6. Demonstrate the proper use of DMM to measure resistance in a circuit or component.
- Identify how to prevent damage to DMM when measuring resistance in the circuit or component to be tested.
 - Set the meter to the correct setting to measure resistance in the circuit or component to be tested.
 - Determine circuit or component conditions required to safely perform resistance test.
 - Correctly connect the DMM test leads to the circuit being tested.
 - Perform and record the resistance reading for the circuit or component being tested.

Score:

___ 1 Task Introduced	___ 4 Works Independently
___ 2 Constant Supervision	___ 5 Task Mastered
___ 3 Limited Supervision	

Time on: _____ Time off: _____ Total time on task: _____

Instructor Signature: _____ Date Completed: _____