

**Charging
System
812FJ**

Student Manual

Charging System

Activity 6

On-Trainer Worksheet – Troubleshooting

The goal for this series of on-trainer worksheets is to provide the student as much troubleshooting experience as possible. Make as many copies of the worksheet as needed to cover all of the faults for each student.

On-Trainer Worksheet

Activity 6

Charging System Troubleshooting

Make as many copies of this worksheet as needed

Tools and Materials:

- ATech Model 812FJ Charging System Trainer
- Fully charged 12-Volt Battery
- Jumper Cables (to connect the battery to the trainer)
- Starting and Charging Tester with inductive ammeter and carbon-pile load (VAT 40 or equivalent)
- Digital Multi-Meter
- Tech 2 scan tool (optional)

Procedures:

- Set the System Power Switch to the OFF position.
- Set the Ignition Switch to the OFF position.
- Set the Motor Switch (located on the trainer side of the motor) to the OFF (down) position.
- Make sure both of the trainer's Connector switches are in the connected position.
- Make sure the Scan Tool Mode / User Mode switch is in the down (User Mode) position.
- Connect the ATech Charging System Trainer to the 12-Volt Battery.

Be sure to observe the correct polarity!

- Turn the System Power Switch on.
- Ask your instructor to insert a fault into the trainer.
- Turn the Ignition Switch on.
- Flip the Motor Switch (located on the trainer side of the motor) to the ON (up) position.
- Let the motor run for at least one minute.
- Flip the Motor Switch (located on the trainer side of the motor) to the OFF (down) position.
- Following the step-by-step Service Manual Information procedure, perform the Charging System Test on the trainer to locate the fault. Check off each step as you perform it. Use the Charging System Schematic provided at the beginning of this activity as needed.
- Either the trainer's scan tool mode or a Tech 2 can be used.

Note: When using a Tech 2 to diagnose the trainer, program the vehicle as a 2003 Chevrolet Impala 3.4 VIN E RPO LA1 engine. Functions and options not related to the charging system will not be available.

Note: The connect/disconnect switches on the trainer are to be used when the diagnostic procedure calls for harness or component disconnection.

1. Are there any charging system-related DTCs set?
 - a. Yes
 - b. No
 - If there are any charging system-related DTCs set, refer to the diagnostic information for that DTC in the Service Manual Information.
 2. Which circuit number contains the fault?
 - a. 001
 - b. 2
 - c. 140
 - d. 225
 - e. 1036
 - f. 1049
 3. What type of fault did you find in the circuit?
 - a. An open circuit
 - b. A short to ground
 - c. A short to voltage
 - d. Excessive resistance
- Set the Motor Switch (located on the trainer side of the motor) to the OFF (down) position.
 - Set the Ignition Switch to the OFF position.
 - Set the System Power Switch to the OFF position.
 - Disconnect the ATech Charging System Trainer from the 12-Volt Battery.

Conclusion:

Charging system diagnostics should be performed following manufacturer's procedures. Troubleshooting practice can sharpen your diagnostic skills.