

Your Home's Electrical System--Its Construction, Operation, and Repair

By George DeHart

- The different components of an electrical system
- How electricity flows through an electrical system
- The different types of electrical hazards
- How to troubleshoot electrical problems
- How to repair electrical problems

The Components of an Electrical System

- **Electrical panel:** The electrical panel is the central point of distribution for electricity in your home. It contains circuit breakers or fuses that protect your home from electrical fires.
- **Circuit breakers:** Circuit breakers are devices that automatically shut off electricity to a circuit when the current flow exceeds a safe level.
- **Fuses:** Fuses are devices that contain a thin wire that melts when the current flow exceeds a safe level, thereby breaking the circuit.
- **Wires:** Wires are used to conduct electricity from the electrical panel to the different outlets and fixtures in your home.
- **Switches:** Switches are used to turn on and off the flow of electricity to outlets and fixtures.
- **Outlets:** Outlets are the points where you plug in appliances and devices.

- **Fixtures:** Fixtures are the devices that use electricity, such as lights, fans, and appliances.

How Electricity Flows Through an Electrical System

The Different Types of Electrical Hazards

- **Electrical fires:** Electrical fires are the most serious type of electrical hazard. They can be caused by a number of factors, including faulty wiring, overloaded circuits, and damaged appliances.
- **Electrical shocks:** Electrical shocks can occur when you come into contact with a live wire. Even a small shock can be dangerous, and a large shock can be fatal.
- **Electrical burns:** Electrical burns can occur when you come into contact with a hot electrical component. Electrical burns can be very painful and may require medical treatment.

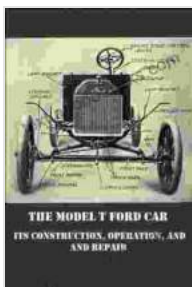
How to Troubleshoot Electrical Problems

- **Check the circuit breaker or fuse:** The first step is to check the circuit breaker or fuse that corresponds to the circuit that is experiencing the problem. If the circuit breaker has tripped or the fuse has blown, reset the circuit breaker or replace the fuse.
- **Check the wires:** If the circuit breaker or fuse is not the problem, check the wires for any damage. Look for any loose connections, frayed wires, or burnt wires.
- **Check the switches and outlets:** If the wires are not the problem, check the switches and outlets for any damage. Look for any loose connections, broken switches, or damaged outlets.

- **Check the appliances and devices:** If the switches and outlets are not the problem, check the appliances and devices that are plugged into the circuit. Unplug the appliances and devices one at a time to see if the problem goes away.

How to Repair Electrical Problems

- **Turn off the electricity:** Before you begin any electrical repairs, turn off the electricity to the circuit that is experiencing the problem. You can do this by turning off the circuit breaker or removing the fuse.
- **Repair the problem:** Once the electricity is turned off, you can repair the problem. The type of repair will depend on the cause of the problem. For example, if the problem is a loose connection, you will need to tighten the connection. If the problem is a damaged wire, you will need to replace the wire.
- **Turn on the electricity:** Once you have repaired the problem, turn on the electricity to the circuit. Test the circuit to make sure that the problem has been resolved.



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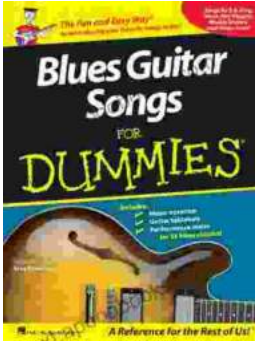
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