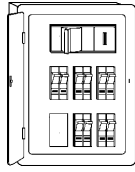
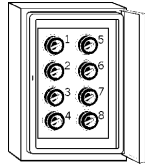


Understanding Your Home's Electrical System



Circuit Breakers

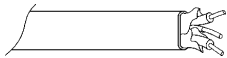


Fuse Box

The Main Service Panel

All electricity flowing into the home passes through the service panel. Inside this metal box, the electricity is divided into circuits, each of which provides power to specific lights, outlets and appliances located throughout the house. Circuit breakers, or fuses, cut all power to a circuit when they sense something in the system is amiss.

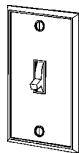
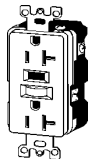
- Old-style service panels with fuses are still legal to operate, but not as safe as modern versions, which use circuit breakers (small switches) to immediately cut power when there's a problem.
- Service panels with fewer circuits are more likely to be overloaded by modern appliances. Older homes may have only two separate circuits; new homes can have 30 or more circuits contained in the service panel.
- After losing power in a circuit, do not replace the fuse or switch the breaker back on until the cause has been identified and remedied.



The Wiring

Aluminum or copper wires running through the walls of the house carry electricity from the service panel to every outlet, light fixture and appliance. Fabric coverings, plastic coatings or metal casings on these wires keep the electricity from shocking people.

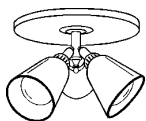
- The cloth-covered, "knob-and-tube" wiring used until the 1940s is still prevalent. But it's so old and brittle now that many insurance companies deem it a risk (and charge these homeowners more money).
- Aluminum wiring was used in the 1960s and early 1970s, but is now considered a fire hazard. If your wiring is silver, or if the white plastic cover is stamped "AL," have it all inspected immediately to ensure there's no danger.
- Only wiring installed after the mid-60s protects against short-circuits, thanks to the addition of a "grounding wire."



Switches and Outlets

Switches allow the homeowner to control the flow of electricity to lights and appliances. Electrical outlets provide plug-in access to this electrical current. Both switches and outlets are held in place by plastic or metal electrical boxes mounted in the wall.

- Most old homes only have one or two outlets per room. Upgraded electrical systems can have five times that amount, for the sake of convenience and to cut down on the risk of an overloaded outlet causing a fire.
- Replacing an old-style, two-prong outlet with a modern three-prong (grounded) version — or simply using an adapter — will not provide the necessary shock and fire protection. Only rewiring the outlet can accomplish that.
- Ground Fault Circuit Interrupter (GFCI) outlets — now required in all bathrooms and kitchens — provide an additional layer of protection against electrical shocks, which are always a danger when water is nearby.



Light Fixtures and Appliances

The end destination for all electricity running through the house is a fixture or an appliance. Most appliances plug into outlets. Most light fixtures — except lamps — are connected directly to the electrical wiring.

- For safety's sake, large electrical appliances — like the water heater, the furnace, the dishwasher, the clothes dryer, the stove and others — are all required to have their own electrical circuit. If the lights dim or a fuse blows when these appliances are operating, it's a sure sign that they aren't safely on a separate circuit.
- Faulty fixtures and appliances — or their plugs and cords — are more often the reason for an electrical problem than the outlets into which they're plugged. Before blaming the outlet, try plugging in another appliance.