

Arc Fault Circuit Interrupter

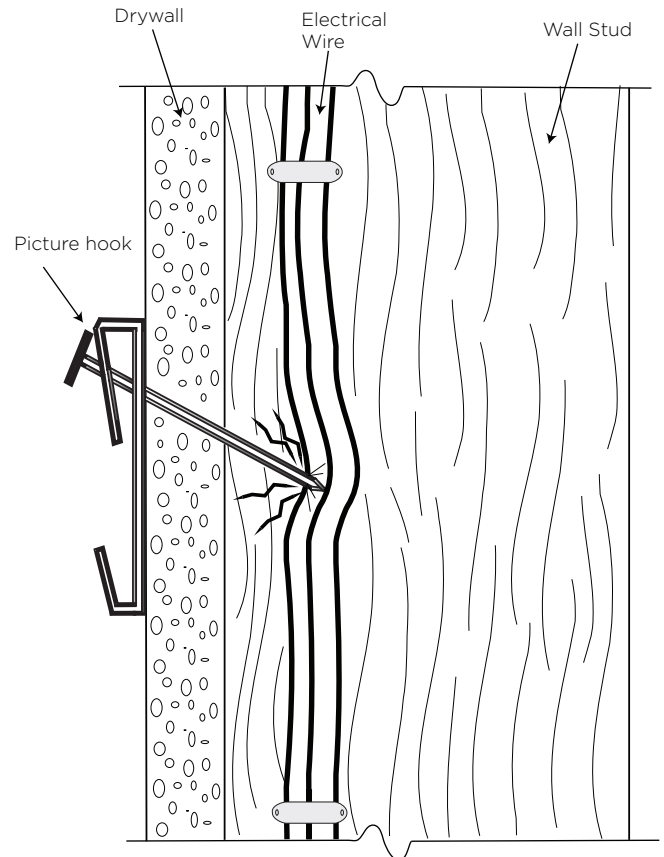
Increasing Electrical Fire Safety

An “arc fault circuit interrupter,” or AFCI, is a new type of circuit breaker designed to detect arcing in an electrical circuit, and to shut down the affected circuit before it causes a fire. The jury is still out on whether AFCIs actually save lives and property.

A household circuit can cause fire in two ways: circuit overload and arcing. Standard circuit breakers or fuses will protect a circuit from overload, but the breakers may not trip from intermittent arcing. For example, if you pierce or sever an electrical cable while hammering a nail into a wall, you could create an intermittent short, resulting in arcing. If the breaker does not trip, a fire could start. The AFCI is designed to detect such problems and shut the circuit down before it can start a fire.

Other Potential Causes of Arcing:

- A frayed extension cord
- A squeezed or pinched cord
- Old and cracked insulation on electrical wires and cables
- Loose electrical connections



What’s the Difference Between an AFCI and a GFCI?

A GFCI, or a “ground-fault circuit interrupter,” is installed in areas with a high risk for electrical shock, such as bathrooms, outdoors, etc. (see Pillar To Post® GFCI Info Series). A GFCI protects people from electric shock, while an AFCI protects homes from electrical fires.

What Do These Devices Look Like? Where Are They Installed?

An AFCI fits into the electrical panel in place of a standard circuit breaker. The AFCI breaker is much larger than the other breakers and will have a test button on it.

AFCIs are becoming mandatory in some jurisdictions since the National Electrical Code requires AFCIs for all bedroom electrical outlets and their branch circuits.

AFCIs may be retrofitted to any home with a modern circuit breaker panel. But before you ask your electrician to replace all your breakers with AFCIs, consider the following:

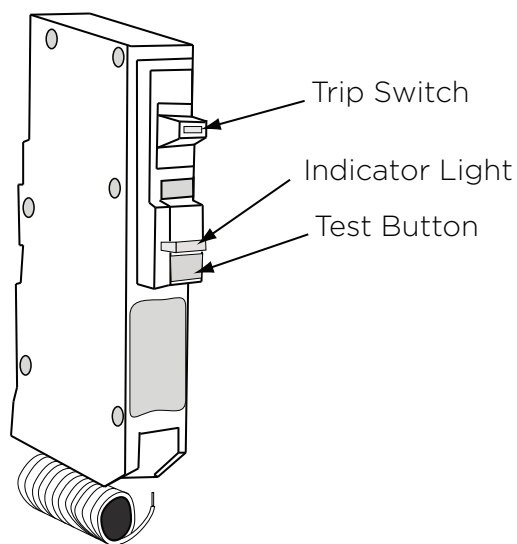
- AFCIs are expensive, about \$40 to \$60 dollars per breaker. For a typical panel, you might pay a sum of \$1,500, not including labor.
- AFCI breakers may not be available for an old panel.

Can an AFCI Make an Old Electrical System Safer?

Old wiring may have been subjected to years of modifications and abuse, making it a more likely candidate for arcing. Insurance companies may be concerned about the safety of knob and tube wiring in particular, making an AFCI seem an ideal retrofit.

Not Quite Electrical Nirvana

It will take several more years before statistics reflect anything concrete about how well AFCIs function. In the meantime, we can only assume that AFCIs reduce the chances of electrical arc-induced fires. Electrical authorities do plan, however, to ultimately mandate every breaker in your electrical panel as an AFCI or a GFCI, or a device that covers both, protecting people from electric shock and homes from electrical fires.



We would like to make one thing clear: we do not believe AFCIs are a quick fix for dangerous wiring, nor are they an excuse to live with an unsafe electrical system. A qualified electrician should promptly deal with unsafe wiring conditions.