

# Knob and tube wiring explained

## Does your home have “knob and tube wiring”?

**P**rior to 1950 “knob and tube” was the standard method of wiring a house. If your house was built before 1950 chances are the “knob and tube” is still present. Knob and tube refers to a type of wiring that runs from the electrical panel to the lights, switches and outlets throughout the old house. Instead of being secured with staples as with modern electrical cables, the knob and tube wires were secured with porcelain knobs, and when running through wooden beams they were protected by porcelain tubes, hence the term “knob and tube”.

Knob and tube wiring is not an inherently dangerous system and may in fact be in safe and excellent condition today. It is capable of handling the electrical demands of today equally as well as standard modern electrical cable. There are several features of knob and tube that make it an exemplary system of electrical wiring, even in today's world.

1. Knob and tube was a heavy gauge copper wire, thicker than the standard modern wire in today's homes. As a result the knob and tube conductors in the walls actually create less heat than standard modern wire for an equivalent application.
2. All wire-to-wire connections of knob and tube were “soldered”, making it a most robust system. Soldered electrical connections stay tight, do not emit heat, and do not deteriorate over time. The very best electrical connections today are soldered.
3. The two electrical conductors of a knob and tube circuit were spaced far apart from each other (never closer than 6” along the runs). In the event that rodents were to eat the insulation on the electrical conductors, the conductors will not flash together creating sparks.

## Should I be concerned about my knob and tube?

### Is it in good condition?

It may be old, but it may be in perfect condition. If the knob and tube has not been abused, light bulbs in fixtures fed by knob and tube have never exceeded 60 watts, and the circuit breakers were never oversized, the knob and tube is likely still in pristine condition today. However if any of these scenarios have occurred, your knob and tube has likely deteriorated, and some circuits may require replacement or repair.

### Is knob and tube suitable for my modern equipment?

Much electrical equipment today, such as kettles, toasters, and computers require a third wire (a ground wire). In the event of something going wrong (an electrical fault) this wire protects the metal of your equipment from becoming live—preventing sparks, shocks or electrocution. Knob and tube did not have this third wire, the ground wire for safety. Fortunately however, if the knob and tube wiring is in excellent condition, which usually is the case, the outlets throughout the house can be exchanged for “GFCI-type” outlets. These are special outlets that protect against sparks-to-ground and electrocution. GFCI type outlets are an excellent method of upgrading the knob and tube to be compatible with today's modern equipment, at a fraction of the cost of knob and tube replacement, and equally as safe.

### Can knob and tube be dangerous?

It can be dangerous if it has been tinkered with. A big concern in older houses is unqualified people adding outlets or lights to the existing electrical system without knowing how to install them safely. Electrical fire hazards can be found in most old homes. However the vast majority of knob and tube circuits in a home are usually in fine shape, and do not require replacement.

Contact PowerCheck for  
correct evaluation of your  
house electrical safety

1-800-517-3630  
info@powercheck.ca  
www.powercheck.ca

