Knob and Tube Wiring

Knob & tube wiring, what is it?

Knob & Tube Wiring is the oldest method of wiring homes, wires are connected with porcelain knobs to secure the wires in place. Where the wire passes through a stud or joist, holes are drilled and fitted with porcelain tubes; the wire is threaded through these tubes to prevent them from touching the wood; thus the name Knob & Tube Wiring. This old-fashioned wire is insulated by paper, cloth or asbestos-wrap and is designed to be air-cooled.

In the 1900's knob & tube was the new high tech and modern amenity bringing in the electrical age. It was the common way to wire a home until the 1950s. In the knob and tube era it was used to power relatively simple devices compared to today's standards. But, now knob and tube systems simply cannot handle the electrical draw of today's modern appliances and devices.

Is Knob & Tube Wiring Safe?

Knob and tube wiring is **NOT** safe — for a number of reasons:

- It is between 70 – 110 years old. The porcelain knobs and tubes crack or break, old wires sag and fray, and the sheathing turns brittle and falls off, exposing live wires.
- **Improper Splices.** Knob and tube wiring systems damaged by improperly done or faulty splices can create a major fire risk. Most homes that were originally knob and tube wiring now have a **dangerous combination of knob and tube and modern wiring**. The most dangerous problems with knob and tube wiring are caused by trying to add additional wiring to the original system.
- Knob and tube wiring is an UNGROUNDED system which is completely unacceptable by today's standards. Ungrounded knob and tube wiring cannot be used to wire modern grounded electrical outlets. While the science of an ungrounded system is not defective, knob and tube systems compromised to accommodate modern electrical devices may increase shock hazard.
- Knob and tube wiring is designed to be strung through open air so the heat can dissipate. Improved insulation techniques create hazards as loose-fill insulation blown into the attics and walls of older houses will come into contact with the wires creating a serious fire hazard.
- Modern appliance plugs get modified in order to make them compatible with the old and outdated 2 prong receptacles. Vastly higher electrical demand causes overuse of extension cords and power bars. In general modern living requires more power than the old system was intended to supply.

Benefits of knob and tube replacement

Modern day electrical standards include improvements in wire technology, the modern grounded electrical systems, and better wire installation methods. Temperature-rated wire contained in a nylon sheath, provides better protection than the old paper-wrapped wires. Properly grounded modern electrical

systems minimize shock hazards. Wire installation methods are designed for today's power consumption. Professional installation of a modern electrical system, and deactivation of your old knob and tube system, will improve your home's safety and will often increases your house value. Overall, it is generally considered a worthwhile expense to upgrade and modernize your electrical system.

Solutions to Fix Knob and Tube Wiring Should include:

- Removing Knob & Tube wiring and replacing it with new copper wiring to meet today's Electrical Code standards
- Upgrading to at least a 100 amp service (required by most insurance companies)
- Proper grounding and bonding (essential)
- Replacing the old ungrounded switches and receptacles with CSA approved devices.
- Interconnected Smoke and CO detectors

With care and skill, a beautiful old home CAN be rewired without demolition and major damage. The beauty and charm of a heritage home can remain intact but have the safety features and improved appraisal value of modern wiring.

Do I have knob and tube in my house?

If your house was built before 1950, you might have knob and tube in your house and not know it. Because knob & tube wiring is largely hidden in walls, floors, and ceilings, and because homeowners tend to have done partial electrical upgrades over the years, it is advisable have an electrician visit your house and tell you if you have knob & tube. Signs that knob and tube is present include 2-prong outlets and no junction boxes for electrical devices, although there are more determining factors.

What is the cost to replace knob and tube wiring?

Knob and tube wiring replacement cost depends on how many circuits and devices are in your home. A qualified electrician can provide an estimate.

Knob and tube wiring and insurance

Most insurance companies view this wiring method as a serious safety hazard and most require an insurance inspection before a policy is issued. The insurance inspection must be submitted by a certified electrical contractor before a home-owner's policy is issued or renewed. Some insurance companies will allow upgrading of the receptacles to GFCI protection when re-wiring is not an option. Although this method is not optimal, it does at least provide some protection from faulty electrical equipment.