

The Bigger Best! Dollhouse Wiring Set

the best quality products of what you need for wiring a 10 room house
• a Quickstart Guide

Real Good Toys' kit #7999 ©4/14

Begin with Confidence!

- 12 volt wiring systems are safe to work on and to use.
- Dollhouse wiring skills are easy to learn.
- www.dollhousewiring.com has photos and support for your wiring project.

Parts in the Bigger Best! Dollhouse Wiring Set:

CK-1009D 40watt Power Supply for up to 50 dollhouse lightbulbs

EL-66 electrification tool is a superior tool for making electrical connections (Bonus: includes a 1.5mm Collet and Drill)

E-247 Jack and Plug make a robust connection to dollhouses with foundations (Bonus: a Connection Wire is soldered to the jack)

Layout Stick for marking wiring runs in 1" scale dollhouses

CK-1023 Small Hollow Eyelets (80) make electrical connections

CK-1023-2 Large Hollow Eyelets (40) to make a receptacle for large-sized plugs that come pre-wired on most lamps

CK-204 Testlight

CK-1000 Tapewire (60 feet)

The **Bigger Best! Dollhouse Wiring Set** contains all the supplies you need for the wiring a 1" scale full sized dollhouse; extend this set for even larger houses or more intensive wiring.

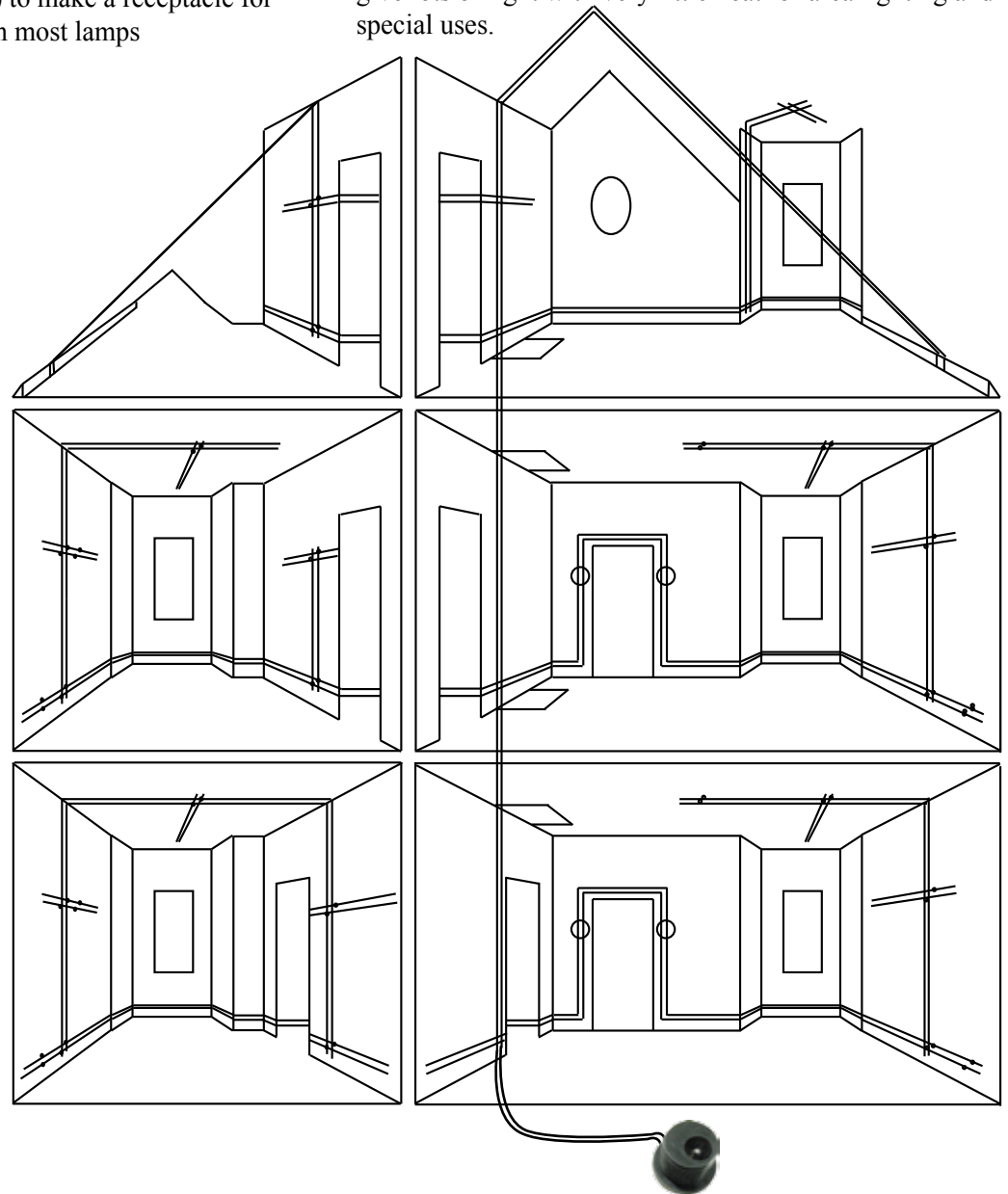
Other Supplies you may wish to purchase:

Extra Tapewire and Small Eyelets to extend the wiring (check transformer capacity)

CK-1023-6 Spring Loaded Eyelets for ceiling and sconce fixtures (included in many CirKit fixtures)

Fixtures: There are a great many lighting components available for your house.

ExtraBrite™ LED Striplights and **Light-It-Up™** fixtures give lots of light with very little heat for area lighting and special uses.



Note: Throughout this guide, the author refers to the cellar as the place for the Jack, but the Jack can live anywhere it can be hidden... in front of a staircase, in a kitchen cabinet - If you don't have a foundation tall enough for the jack (3/4" or more), put it somewhere else.

Tools, Techniques, and Planning

The most robust wiring has a single loop of tapewire all the way from the cellar to the ceiling of the attic, then back down the other side into the Cellar again. This “Main Loop” gives reliability to the dollhouse by being in one piece (the fewer connections, the better) and by being connected to the jack on both ends.

Electrification Slots make running tapewire from floor-to-floor easier. If your kit has electrification slots in all the floors, that’s good! If you need slots (or more slots), you can cut the floor with many small cuts of a sharp utility knife to give a slot 3/4” wide by 1/32” exposed (add that to the groove depth for houses with grooves for the floors).

http://dollhouseworkshop.net/electrical/electrification_slot/electrificationnotch.html

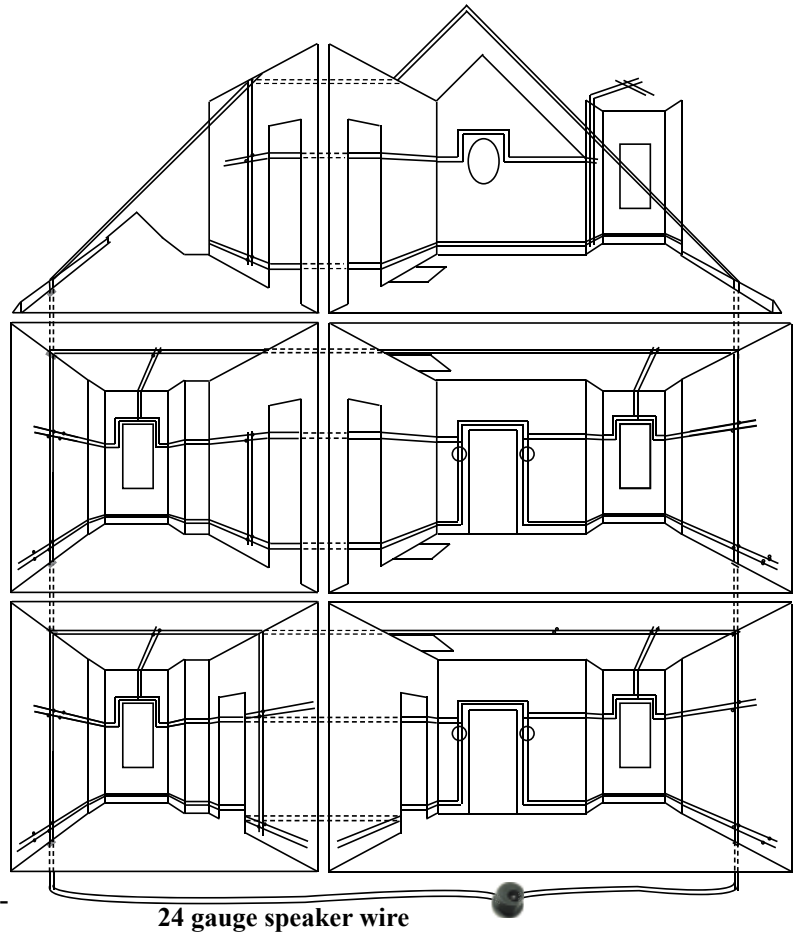
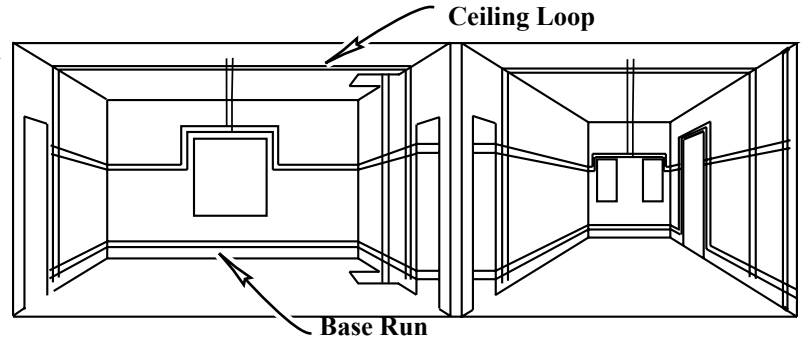


Cutting an Electrification Slot before building

The House is already built? That’s OK. Run the Vertical Feed up the stairwell (that’s been the “go-to” solution for years) or cut slots after construction with an Oscillating Multi-Tool (my new favorite tool!).



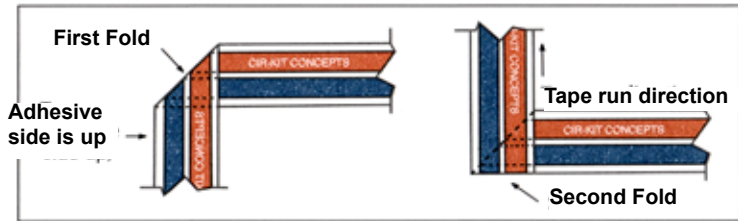
Ceiling Loops that connect to the Main Loop on both ends give extra security. It is easiest to lay the Ceiling Loop before installing the Dividers, and if Dividers are already in, a slot at the top of the Divider makes the Ceiling Loop simple. Here is a third option that is also reliable (the Ceiling Loop connects to the Base Run on both ends):



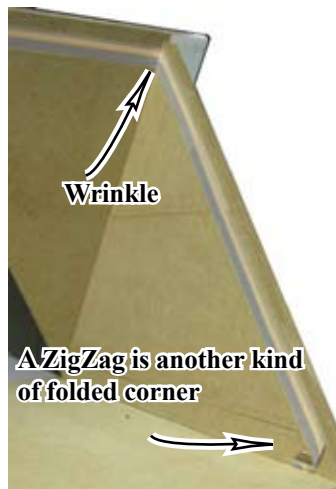
Pro Note: When I build and wire a house for a customer, I don’t often know where they will want fixtures, so I prepare for all the options I can. In addition, this house will travel to far away places and I must do everything possible to make it trouble free for many, many years. The diagram on the first page is standard wiring practice for tapewire, but this diagram shows what I do... every run is connected on both ends and the Main Loop goes through electrification slots all the way into the cellar. This does take a bit more effort and a few more feet of tapewire, but it eliminates questions about where things should go (they go everywhere), and when the house leaves my care, I don’t have to worry a bit about the durability of the wiring.

Re-directs are ways to change direction without making a connection (remember: fewer connections = more reliable). In the diagrams you see re-directs around the doors and windows, and in the photos lower in this column you can see a re-direct from one angled wall or roof to another.

Folded corner: About $\frac{3}{4}$ " before the door, make a turn upward. To do this, fold the tape, sticky side out, 90° in the opposite direction from where you want to go - in this case, the first fold is *down*. Push on the tape with your finger to make a 45° crease and then fold the tape onto itself in the direction that you *want* to go - *up* the side of the door. When you hit $\frac{3}{4}$ " over the top of the door, once again fold the tape, sticky side out, in the opposite direction from where you want to go. Press the tape to form a crease and then fold the tape onto itself making a right angle above the door. You will do this 2 more times for the tapewire around the front door; then continue running the tape along the pencil mark on the other side of the door.



A **“Wrinkle”** lets you control the tapewire direction when you go around an angled corner. To make a Wrinkle, lift a small bump of tapewire with a rounded tool (like an opened up paper clip) right at the corner, then lay the tapewire in its new direction. Once both runs of tapewire are correct, press the Wrinkle into the corner to hide it.



Precautions

1. The Cir-Kit tape wire system is to be used for “low voltage” application with 12 volt components only.
2. Miniature lights are FRAGILE... be careful.
3. Always disconnect the transformer when changing the electrical system in any way or moving the house.
4. Test all lamps prior to installing them into the system.
5. DO NOT cut wallpaper or moldings in place in the house - you WILL cut the tapewire!
 - Measurements are for 1” scale houses. Make accommodations when using this set for other scales.

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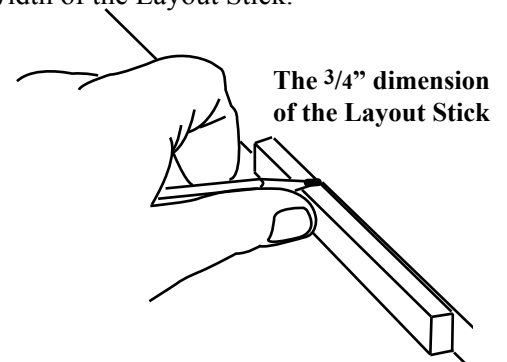
- Marking the Tapewire Runs
- Lay the Tapewire Runs
- Install the Jack and Plug
- Connections, Testing, Troubleshooting
- Fixtures: Outlets, Sconces, and Chandeliers



Remove any staircases and interior doors from your dollhouse

The Layout Diagram: Tapewire allows you to put wiring in standard locations for future lighting needs. Typically, a wired dollhouse has a baserun in every room, a ceiling run across each ceiling, and sconce runs in primary locations. Your wiring plan may be different. When you are done wiring your dollhouse, tape the plan into the cellar for future reference.

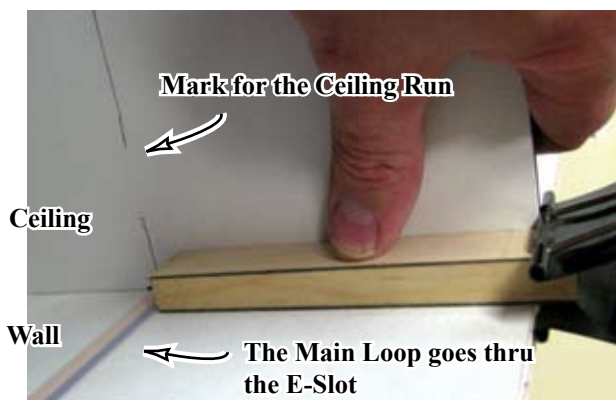
Mark for the Base Runs $\frac{3}{4}$ above the floor on every wall all the way around the dollhouse using the $\frac{3}{4}$ width of the Layout Stick.



Mark for Sconce Runs
using the 5 1/2" length of the
Layout Stick from the floor.



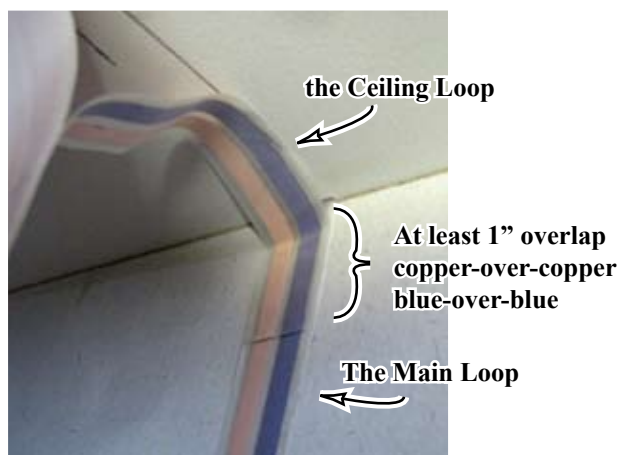
Mark the Ceiling Loops using the 5 1/2" length of the Lay-
out Stick from the back edge of the floor. If your house has
electrification slots ("e-slot") close to the middle of the floor
front-to-back, draw the Ceiling Loop to line up with the e-slot.



Lay the Main Loop using the e-slots or stair cutouts to get
from floor-to-floor. If you have an e-slot in the Base Floor,
run the Main Loop all the way into the cellar.

Lay the Sconce Runs just above the 5 1/2" sconce run mark.

Lay the Ceiling Loop following the Marks. The Ceiling
Loop will connect to the Main Loop or to the Baserun, up the
wall, across the ceiling, and back down the wall to the Base-
run again. The Ceiling Loop will connect the Sconce Runs
to the rest of the dollhouse wiring. Connect the Ceiling Loop
on both ends to make the dollhouse wiring connections more
trouble-free.

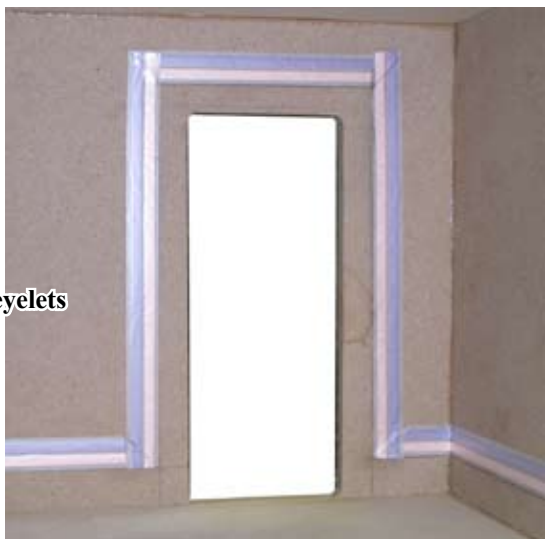


The Ceiling Loop is side-to-side, the Ceiling Run is front-to-back.

Lay a Ceiling Run front-to-back in the center of each room
or wherever your plan needs power for ceiling lights.

Lay the Base Run in a single piece with no cuts or interrup-
tions just above the Baserun line all the way around the doll-
house. Go thru the dividers' doors to get to the next rooms.

Get around the Front Door with folded corners to avoid
extra connections in the tapewire.



The Jack and Plug: Drill a 1/2" hole thru the foundation
(note, the Jack is sized for up to a 3/8" thick foundation. If
your foundation is thicker, create a pocket for the jack by
carving or drilling so that it can mount 3/8" from the outside
surface). The Jack must be close enough to the main loop so
the connection wire on the Jack can *easily* reach.

Remove the nut and glue the Jack into the hole. Let the glue dry.

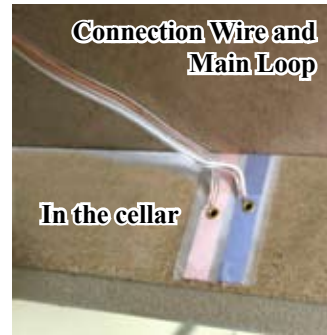


Making Connections: Where the Main Loop and the Base Run overlap, punch a hole in the tapewire as close to the center of both copper leads as possible. If you pound with a hammer, back up the wall with a weight to absorb the impact so the glue joints won't be stressed. A book-end, door-stop, or other weight with a smooth surface (gentle on the wall) is perfect.



The Jack's Connection Wire: Separate the wires and strip about 1/4" of the insulation from the end of each wire. Punch a hole in each lead of the Main Loop. Put the stripped wire ends into the holes and pin them there with eyelets.

If the Main Loop does not come into the cellar, drill holes thru the Base Floor tight against the wall directly under the end of the Main Loop for the Connection Wire to reach the Main Loop..



... or if the Main Loop doesn't come into the cellar

Eyelets: Put an eyelet on the pin in the EL-66 tool, push the eyelet and pin into the hole. Pound with a hammer (with a backer) to set the head of the eyelet flush.

Repeat: Set another eyelet where the blue overlaps the blue. Making the hole first is not strictly necessary, but it helps many builders get the eyelet closer to the center of both leads.

Eyelet copper-to-copper and blue-to-blue at every connection, joining all the runs back to the Main Loop.

Attach the Power Supply: Prepare the Plug's wire to attach to the screws of the Power Supply... a little more wire exposed and shaped to a hook makes the wires easier to hold under the screws. Loosen the screws, wrap each wire under the washer, tighten the screws.



Test and troubleshoot: Plug the Power supply into the wall and the plug into the jack. Test every run at the end of the run... every baserun, every sponce run, every ceiling run. If any run doesn't light up the tester, go back and test just before the connections to that run. If it lights the tester before the connection but not after the connection, inspect the connection carefully to see if one of the eyelets has missed. Poke the pin of the EL-66 into the copper/copper or the blue/blue to try to make the tester light up. When you find the place that succeeds, put another eyelet in right there.



Coachlamps or wall lights on the porch are wired thru the wall before wallpaper or other interior finishing. See www.dollhousewiring.com for photos of installing coach lamps.

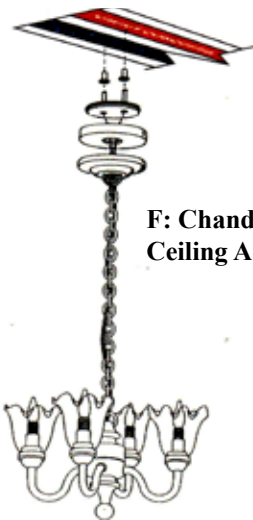


Now you can add the cross dividers and attic partitions if you left them out for access to the front of the house. They can be wired and connected to the existing wire runs.

Your dollhouse is electrified! Add additional tapewire if needed and connect each new length with eyelets. Remember to always test a new run of tapewire as it is installed.

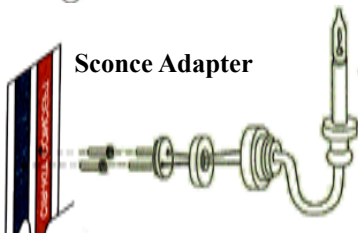
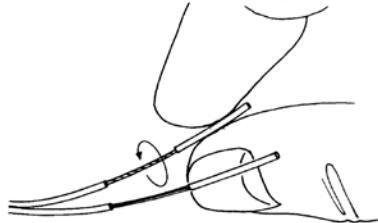
This is a perfect time to complete your record of the tapewire runs. Put notes and measurements into your diagram for future reference. Photos are also helpful. Once wallpaper is installed, it won't be as easy to see the *exact* position of the tapewire (although you can still find it by poking your tester through the wallpaper).

Finishing: Liner Paper (a paint store product) or several thin coats of lite spackle on the ceiling and a coat of paint will leave the tapewire 'findable' but not obvious in the decorated house. Wallpaper will also cover the tapewire with no other preparation. If you are painting the walls over tapewire, apply Liner Paper before painting.



F: Chandelier or Ceiling Adapter

Twist wires as shown. (Leave small amount of insulation at end of wires to simplify twisting.)



Sconce Adapter



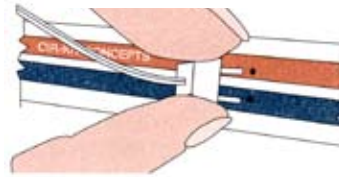
Fixtures of all types may be installed into the tapewire system using either a Chandelier adapter (figure F), a Ceiling Canopy adapter, or a Sconce adapter. The type of fixture to be mounted will dictate the type of adapter. Whenever you are shopping for a fixture, pay attention to how it is mounted and what kind of bulb it uses. Always select fixtures that can be removed for bulb replacement and have replaceable bulbs, and that *list what kind of adapter they use* (some come with the appropriate adapter). Although one adapter may work with more than one fixture, there are no "standard adapters"... make sure you know which one will work with *your* fixture.

Outlets: Floor and table lamps can be installed in any room. You must first install an outlet into your tapewire. This will allow you to insert a plug from the lamp to be illuminated.

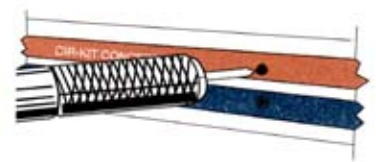
After you have finished wallpapering your dollhouse, arrange your furniture in your favorite position. Determine where you will need light and find your tapewire by using your tester. Once you have found the proper placement, make outlets.

"Large plug" outlet using CK1023-2 "Large" eyelets

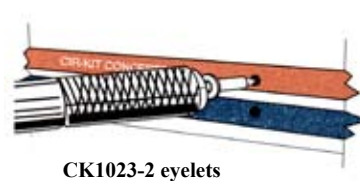
Step 1: use the plug's pins to make indentations in the wallpaper over the tapewire



Step 2: Drill* a 1.5mm hole deeper than the length of the plug's pin

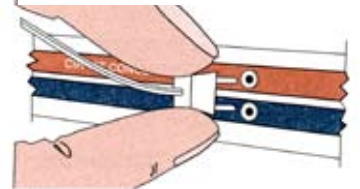


Step 3: install CK-1023-2 "Large Eyelets"



CK1023-2 eyelets

Step 4: This outlet is now ready for the CK-1004-4 size plug



***Drilling with the EL-66:** The big handle on the EL-66 can overpower a drillbit and break it. Use your fingertips, spin the drill a lot and don't push very hard, and pull the drill out of the hole often to clear off the sawdust.

Visit www.dollhousewiring.com for more information on dollhouse wiring, for house-specific tips, or to find wiring diagrams for a variety of houses

Acknowledgements:

- "Dollhouse Wiring" by the Dollhouse Builder's Workshop
- "Dollhouse Electrification" by Taylor Jade Miniatures
- "Tapewire Instruction Book" by CirKit Concepts inc