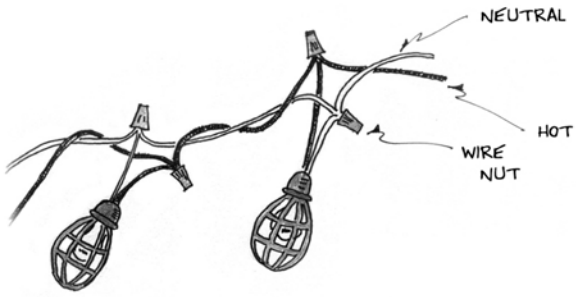
How Do You Make …

Cue Lights

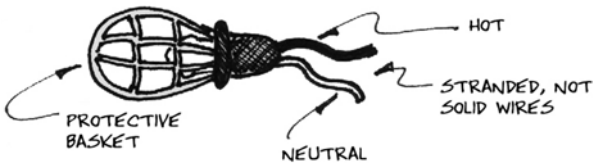
In commercial theatre, *cue lights* are used backstage to warn stagehands that a cue is coming up. They are frequently used on a fly rail, but are also helpful for deckhands. The advantage of a cue light is its simplicity. The light comes on as a warning, and when it goes off, the stagehands should take their cue immediately. A large number of people can see the light and all act at once. It leaves both hands free, and doesn't require headset wires. Of course, unlike with a headset, the communication is only one way. The cue light system has been around for decades.

Construction sites often need temporary lighting fixtures that can be tied up around the job. To accommodate this need, manufacturers offer a rubberized standard screw base socket with a basket around it that is used to protect the bulb in a harsh environment. In years past, the baskets were made of metal, but now the yellow plastic type predominates. You may find this product with a 50-foot or so run of wire that has sockets spaced along its length. At home stores, you can often find just the sockets and baskets themselves.



THIS IS HOW BASKET LIGHTS ARE INTENDED TO BE USED FOR TEMPORARY LIGHTING. WIRE NUTS ARE NOT SUITABLE FOR EXPOSED WIRING IN A THEATRE

Cut the sockets loose from the wire if they came that way, leaving at least 2 or 3 inches of tail. As the entire socket assembly is nonconductive, there isn't any ground wire, just a hot and a neutral, which are color-coded black and white, respectively.



Gang two sockets together to make one cue light. Doubling up may prevent some horrible mistake during a performance, for if one of the bulbs should happen to burn out or become disconnected in some way, there will be a second to carry on the fight.

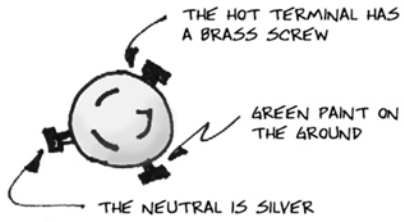
Strip both of the white wires and connect them to the neutral terminal in your connector. Strip both black wires and connect both of them to the hot terminal in your connector. Use a *terminal* end when appropriate.

doi: 10.1016/C2009-0-23409-X

ELECTRICAL TERMINALS

USED ON THE ENDS OF STRANDED WIRE TO CREATE A MORE SOLID CONNECTION

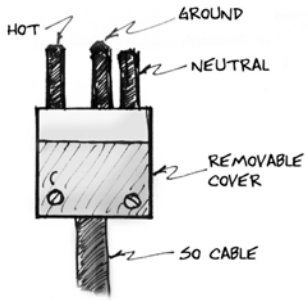
Different types of connectors are hooked up differently. In general, however, you will find that most wiring devices use a silver-colored, nickel-plated screw for the neutral terminal and a plain brass screw for the hot terminal.



TWIST-LOCK CONNECTOR

It is important to keep this procedure straight. The neutral wire should connect with the large metal screw base inside, which is easy to touch by accident. The hot wire should connect to a small conducting plate in the bottom of the fixture, where it is much less likely to cause harm. If you reverse the leads, the opposite will be true, and the risk of electrical shock will be greatly increased.

The 20-amp pin connector is the most common sort of cable end used for power circuits in a theatre. They are not used by any other field, and are available only from a theatrical supplier. On a grounded pin connector, the pin in the middle is the ground, which you won't need for this project. It's not exactly centered, but rather is a bit to one side. Of the remaining two pins, the one that is the closest to the ground is the neutral. The one that is farthest from the ground is the hot. The neutral terminal of a pin connector is generally not color-coded with nickel. You need a male connector for this project. That will allow you to use standard 20-amp jumpers to hook up the cue lights.



PIN CONNECTOR

It is curious that before the grounded pin connector was developed, there was no way to ensure that the hot/neutral dedication was preserved. The connector could be turned either way. This was also true of the standard household Edison, or parallel blade plug, before that type was polarized by making the neutral blade wider than the hot blade. Now the off-center placement of the grounding pin makes sure that the hot and neutral wires are connected to the appropriate terminals. That is a safety concern only—the lightbulbs work equally well either way.

Remember not to strip off too much insulation from the wires. That is probably the most common cause for a short circuit. Most devices have a chart that tells how much to strip, but a general rule of thumb is to limit this amount to what will just fit into the terminal or attachment point. Be sure to use whatever strain relief the manufacturer has provided.

THIS 7.5 WATT LAMP WAS COLORED RED WITH SPRAY PAINT.

It is common practice to use small, round, colored, 7.5-watt bulbs in cue lights. Colors are important when more than one cue light is used in the same location for different cues happening at nearly the same time. If you use these lights often, and move them around a lot, it is often helpful to color-code the light and any cable used with it so that it is easier to hook up. Use the same colored tape to mark the switches at the stage manager's desk. Cue lights make excellent circuit test lights, and can also be used as a dancer's spotting light.