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Electrical Repairs You Can Do

Michigan State University

Cooperative Extension Service

Revised by Carol W. Selby Saginaw County Extension Home Economist

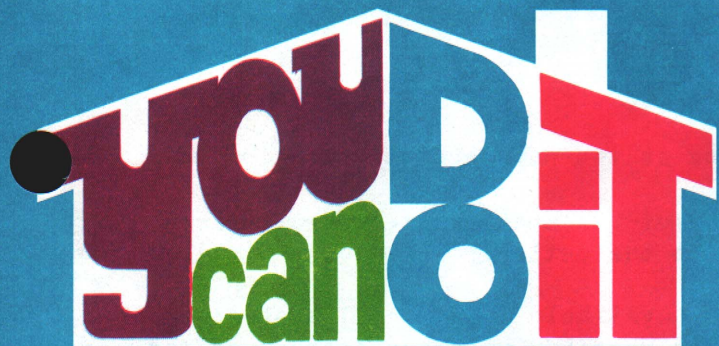
Betty A. Shelby Kent County Extension Home Economist

October 1983

4 pages

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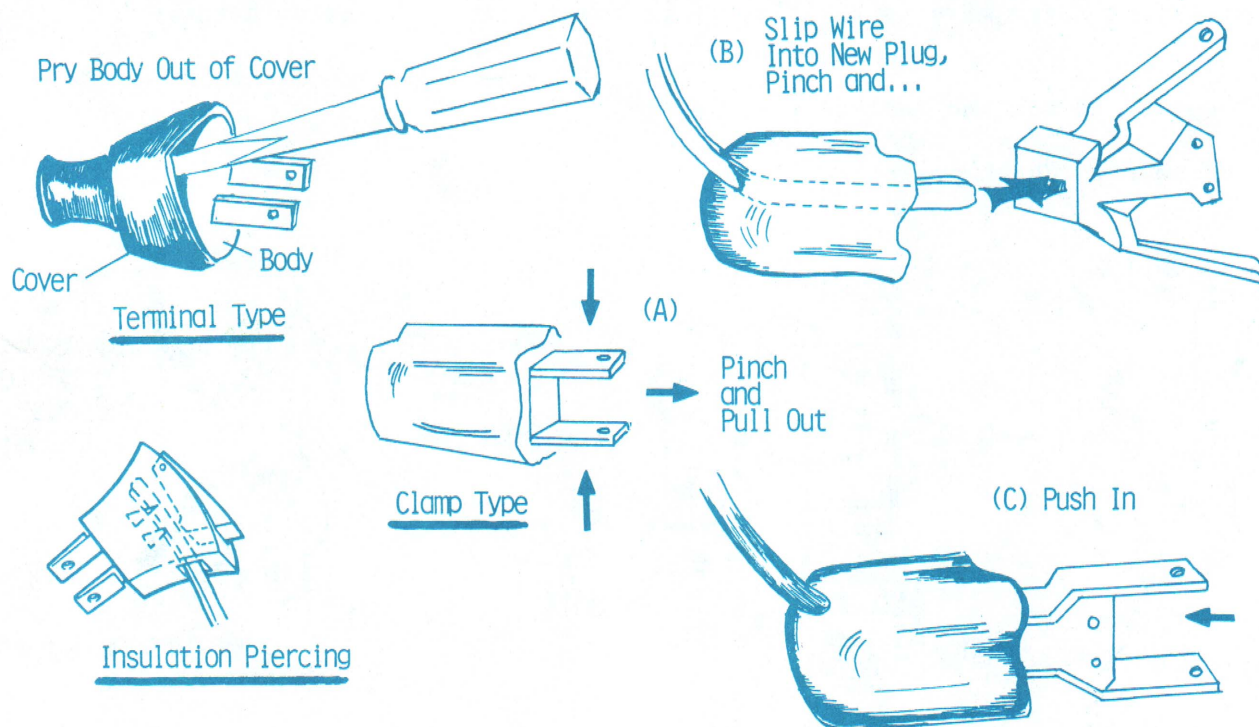
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ELECTRICAL REPAIRS YOU CAN DO

There are several types of electrical repairs that are extremely simple to do. All you need are a few tools, and the ability to follow step-by-step instructions. Remember too, that safety is foremost when making these repairs.

PLUGS AND LAMPS

Before starting to replace plugs on lamps or other appliances, be sure the cord is not plugged into a power source. A plug should be replaced if its casing is cracked or if its prongs are so loose that they no longer make a good connection at the receptacle. There are basically three types of plugs either having two or three prongs. They are terminal type, insulation piercing and clamp terminals.



On electrical resistance appliances or motor-driven ones, use only the terminal type. Insulation piercing or clamp terminals are inappropriate for toasters, electric drills and such. They are fine for lamps of low power.

Revised by Carol W. Selby, Saginaw County Extension Home Economist, and Betty A. Shelby, Kent County Extension Home Economist.



## WALL OUTLETS

An outlet is fast and easy to replace, as long as you pay careful attention to which color wire you attach to which terminal.

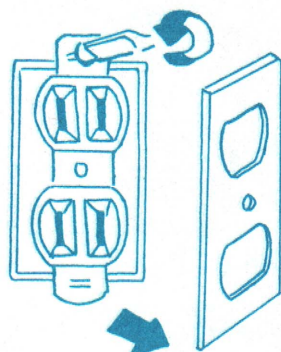
Outlet installations will have one or two sets of black and white wires. Black wires, also known as hot wires, carry current into the outlet. White or neutral wires return the current to its source.

A great variety of specialized receptacles are available to do the job of an ordinary one while adding safety and convenience. When buying a replacement of the same basic type, make sure it matches the old one in voltage and amperage rating.

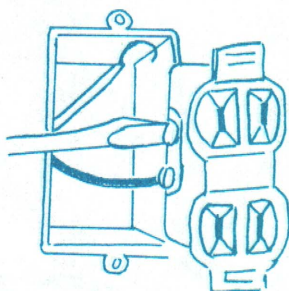
Always use a three slot grounded outlet even if the old one has only two. If your outlet doesn't have a ground wire for the new outlet, consult an electrician.

### To Replace Outlets:

- \* REMOVE FUSE OR TURN CIRCUIT BREAKER TO OFF. Use a circuit tester to make sure that the circuit(s) are completely dead. (Sometimes an outlet is wired to two circuits).
- \* Remove the wall plate screw and the plate.
- \* Loosen the outlet mounting screws and pull unit out.
- \* Notice how the wires are connected and connect them to the new unit the same way. White wires should be connected to silver screws and black wires connect to brass screws.
- \* If a bare, or green wire is visible, it is connected to the green hexhead screw.
- \* Mount outlet in box and replace cover plate.
- \* Turn on power. Check operation.



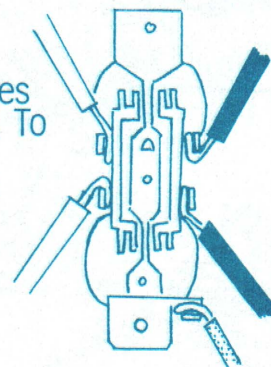
Remove Cover  
And Old Unit



Attach Wires on New Unit  
As They Were Located  
On Old Unit

White Wires  
Connected To  
"Silver"  
Terminals

Black Wires  
Connected To  
"Brass"  
Terminals



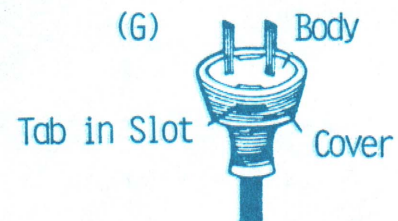
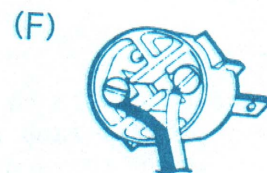
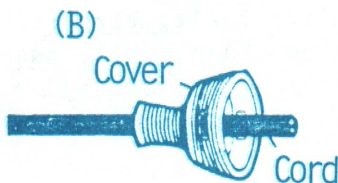
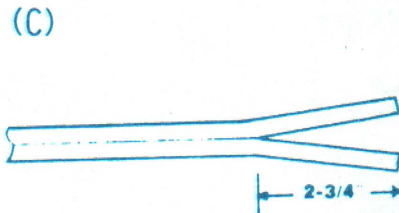
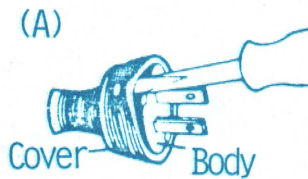
Green Grounding Wire

Replacing Convenience Outlet



## Replacing Terminal Type Plug:

- \* Be sure the cord is not plugged into a power source.
- \* Cut off old plug plus 1 inch of cord.
- \* Pry body on new plug out of cover (a), or remove insulation cover.
- \* Feed cord through cover (b)
- \* Separate wires (c)
- \* Tie an underwriters knot to reduce possible cord strain (d)
- \* Remove insulation from end of each wire to expose 1/2" copper strands (e)
- \* Loop wire clockwise, in same direction as screw tightens, 3/4 turn around screw shaft (f) and tighten screw head securely over loops.
- \* Push body into cover till both tabs (g) lock in slots, or replace insulation cover.



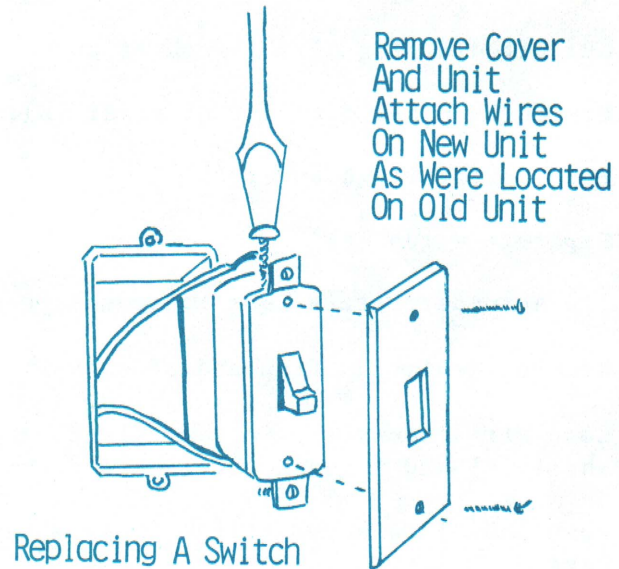
## REPLACING SWITCHES

### Wall Switch

Wall switches are very sturdy devices that usually take years to wear out. Before that happens though, you may want to replace it with a newer, more sophisticated model. Most switches in the home are either single-pole (controls one light or receptacle from one location), or three-way (one light controlled from two different locations). Most are available in several models such as quiet switches, mercury switches, and dimmer switches. When replacing, be sure to replace with the same type (single-pole, three-way, etc.). The single-pole switch is the easiest to replace.

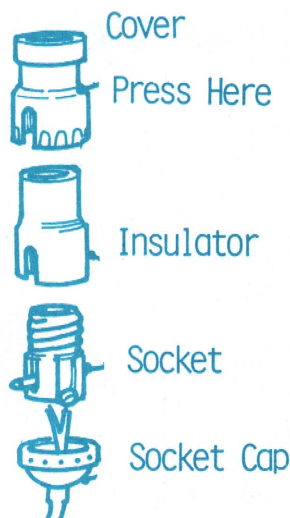
## To Replace Switches

- \* **TURN OFF POWER.** Remove fuse or flip circuit breaker to off. Use a circuit tester to make sure power is off.
- \* Remove face plate and old switch.
- \* Remove wires from old switch and reconnect to new switch in same manner.
- \* Wire should wrap in a clockwise direction around screw 3/4 of way around; or it can be inserted straight into push-in terminal if available.
- \* Be sure to connect the bare (grounding) wire to the green hexscrew. If no ground wire exists, check with electrician or handy-person to ground the box.
- \* Mount the new switch in the box, right side up, and replace face plate.
- \* Turn on power. Check operation.



## Lamp Switch

The vulnerable parts of a lamp are the bulb, socket and switch assembly, and the cord and plug. If a lamp goes out, first check to make sure the bulb is not bad. Also move it to another outlet to make sure the problem isn't a faulty circuit. If this fails, the switch has probably failed. The switch may be chain, pull, push-in, or knob-turn.



## To replace:

- \* Disconnect lamp from wall plug.
- \* Press on the side of the cover with your thumb and lift it and the insulator off.
- \* Disconnect the wires from each screw by loosening the screws. The screws should not be taken all the way out.
- \* If the socket cap is not bent or corroded, leave it in place and replace only the new socket.
- \* If the socket cap is damaged, loosen the set screw, and replace cap.