## Extension Cord Basics

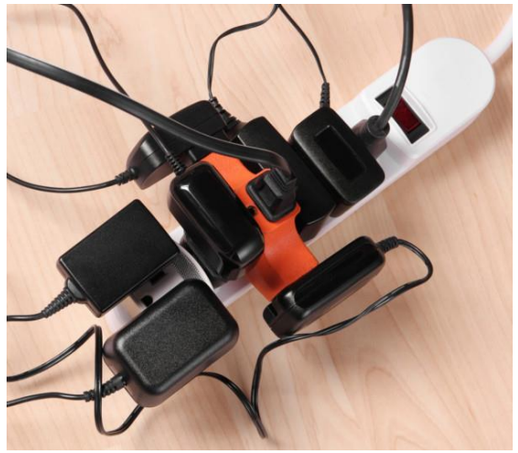
According to the Consumer Products Safety Commission, misused or damaged extension cords cause about 3,300 residential fires each year, killing 50 people and injuring 270 others.

**Extension cord safety begins with inspecting cords before you use them.**

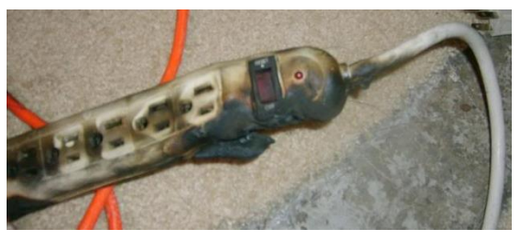
- Do not use extension cords that are cut or damaged. Touching even a single exposed wire can give you an electric shock or burn.
- Check the cord's plug to ensure that the blades and grounding pin are present.
- Never file or cut the plug blades or grounding pin of an extension cord or an appliance to plug it into an old outlet.

**Remember the important rules for using extension cords:**

- Always unplug by pulling on the plug, not the cord.
- Make sure you aren't overloading your extension cord. Extension cords have limits to the amount of power they can safely carry, be sure not to exceed their capacity.
- Never run cords under carpets or under doors. If the cord is covered the heat cannot escape which increases the likelihood of fires.
- Do not string multiple extension cords together.
- Make sure all extension cords placed outside are labeled for outdoor use.
- Every foot of cord decreases the power a cord can deliver, so use the shortest possible cord.

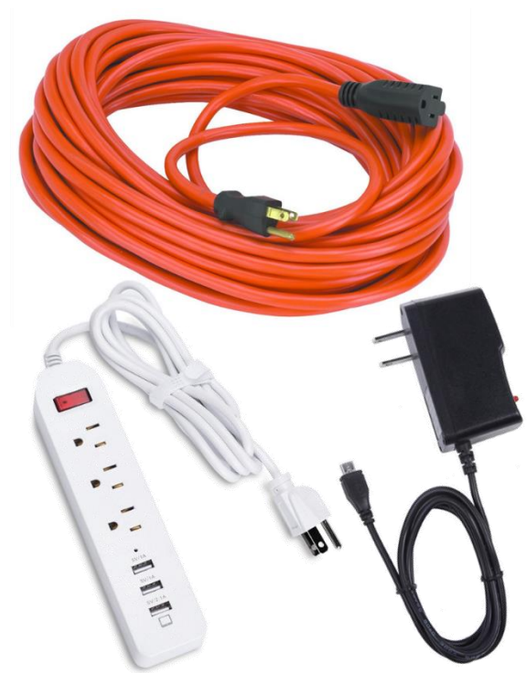


If your power strips look like the picture above, the pictures below may happen soon.



**Environmental Health & Safety**
002 Martin Hall, Cheney, WA 99004
P: 509.359.6496 | F: 509.359.4690
sites.ewu.edu/ehs/

# POWER CORD & POWER STRIP SAFETY



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## Why Worry About Electricity?

Death. Home electrical fires kill approximately 500 people per year and approximately 150 workers die each year from exposure to electricity. Electricity is used in almost every aspect of modern life which makes it easy to forget how dangerous it can be.

Electricity can kill. It can also cause painful injuries, damage sensitive equipment and cause fires.

## Electricity Overview

Information about the amount of power a cord can supply or the power an appliance needs is usually presented in a combination of amps (A), volts (V), and watts (W).

**Amps (A)** measure current, or the amount of electricity flowing through a point.

**Volts (V)** measure electrical potential, or the amount of energy that could be released if electric current is allowed to flow.

Using water for an analogy, amps are like the water's flow rate; volts are like water pressure.

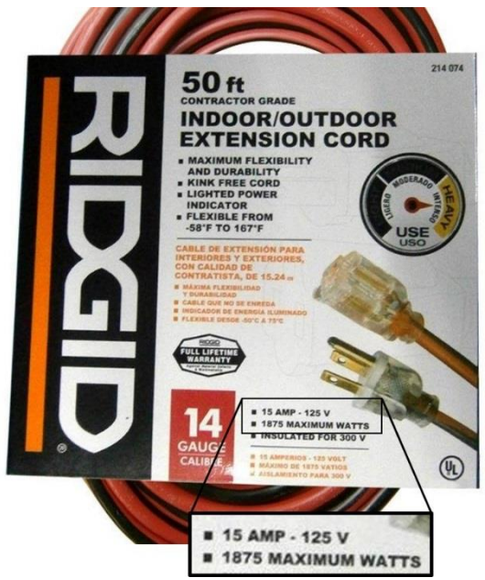
**Watts (W)** are units of power that equal the amps times the volts. **W = A x V**.

## Outlets and Power Cords

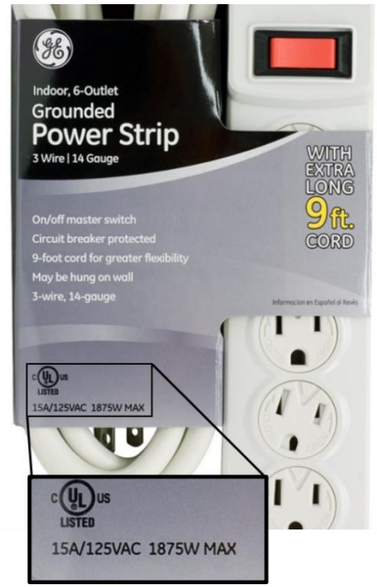
All outlets and power cords have a specific amount of power they can carry. Plugging in appliances that require more power than the outlet or cord can supply can cause circuits to trip or overheat (potentially causing fires).

Most electrical wall outlets supply 120 volts at 15 amps, giving a total of 1800 watts (120V x 15A). This means that if you add the watts for each appliance plugged into the wall, the total must be under 1800.

Extension cords and power strips come with information about how much power they can supply on them.




Just like with wall outlets, the cord can't be used with something that needs more power than it can supply. The cord above won't work for anything that requires more than 1875W.

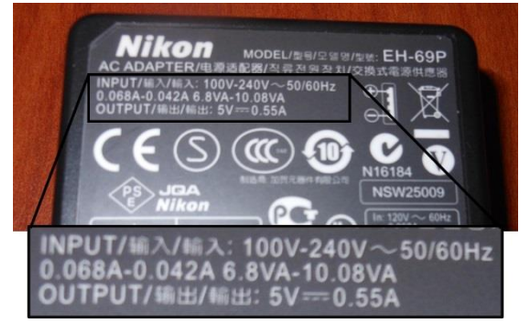



The maximum wattage for the power strip is 1875W. That maximum is for the whole strip, so the sum of the power requirements for each item plugged into the strip must not exceed 1875W.

Keep in mind though, most wall outlets can't supply more than 1800W, so even though the power strip could supply 1875W the wall outlet it is plugged into couldn't. So the total power requirements for everything plugged in to the power strip would need to be under 1800W because of the wall outlet.

## Electrical Power Requirements

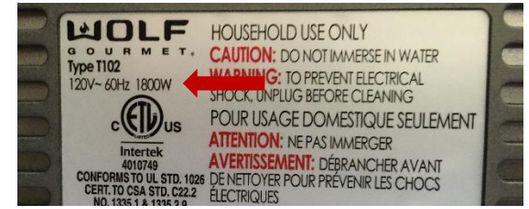
All the electrical devices you own have information on them about the amount of power they use. Small electronics have the important power requirements on the plug, not the device.




This Nikon AC Adapter is used to charge a camera. It has several interesting pieces of information on it. The range of voltages (100V-240V) means it will work in a variety of countries (in the US power is supplied at 120V). It also gives a range of amps and a range of numbers labeled VA. The VA numbers are volt amps (or watts). At a maximum this plug will require 10.08W.


This microwave oven uses 1600W. It is labeled as 1.60 kW or kilowatts. One kilowatt is equal to 1000 watts.


This LCD TV/DVD combo requires 180 watts.




This toaster oven requires 1800W.

## Adding Watts Together

The toaster oven requires 1800W, which is all the power a standard wall outlet can supply. So it would need to be plugged directly into the wall outlet and when it is on nothing else on that circuit could be on also.

It is best to plug electronics that require high amounts of power directly into the wall. So for the images shown it would be best to plug the microwave and toaster directly into their own wall outlet. If both appliances were plugged into the same wall outlet you would need to make sure that only one was working at a time.

## International Electronics

As mentioned with the Nikon AC Adapter, other countries supply power in different voltages. If you have electronics from other countries it is important to make sure you have a voltage adapter to avoid breaking your equipment when it is plugged in.