

Question: How does a washing machine work?

Notes:

- Outer tub holds water
- Inner tub holds the cloths
- Motor at the bottom of the machine
- Lots of Heavy components in a washing machine
- Heavy motor
- Top load and front load washing machines
- Front load washing machines spin generally faster.

Summary:

In a washing machine, many different components are controlled by electrical power. The main switch of the electric circuit is usually located on the door so that the circuit is only closed when the door is shut. The voltage flows into a control, where it is then sent to many different parts of the machine depending on the task.

Water flows into the machine when voltage is sent to the water inlet valve. This opens the valve, making water flow into the tub. The water level control has a switch that increased in air pressure as the tub is filled with water. When enough water has flowed into the tub, the tube will cause the water level switch to shut off voltage to the water valves. Water valves typically store both hot and cold water and can be combined to produce warm water.

The washing cycle then begins. The voltage is now sent to a machine part called a stator. A stator will become a magnet once it has been energized. The rotor, a machine part that is beside the stator will now spin, as it is a magnet. The stator also spins. The motor control is used to control the voltage flowing to the stator, therefore managing the speed of the rotation.

After the washing ends. The control will stop sending voltage to the stator and send voltage to the drain pump, draining the water from the tub in the washing machine. Some washing machines have traps at the pump to filter out coins and other objects.

After draining, the spinning cycle occurs. Similar to the washing cycle, the tub will begin to spin. However, the voltage sent to the stator will increase significantly. Front load washers usually spin faster than top load washers.

Diagram/Illustrations:

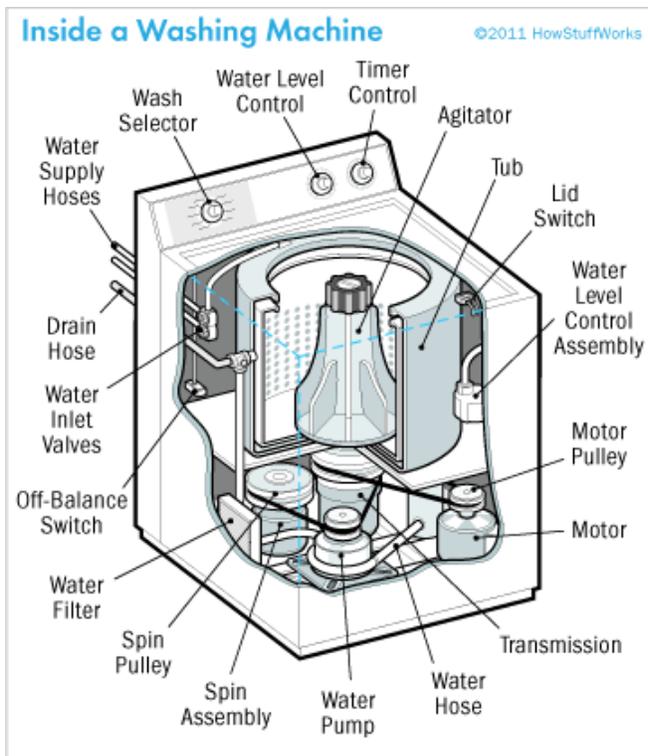


Image source: <https://external-content.duckduckgo.com/iu/?u=http%3A%2F%2Fs.hswstatic.com%2Fgif%2Fillustration-washer-repair-update-1a.gif&f=1&nofb=1>

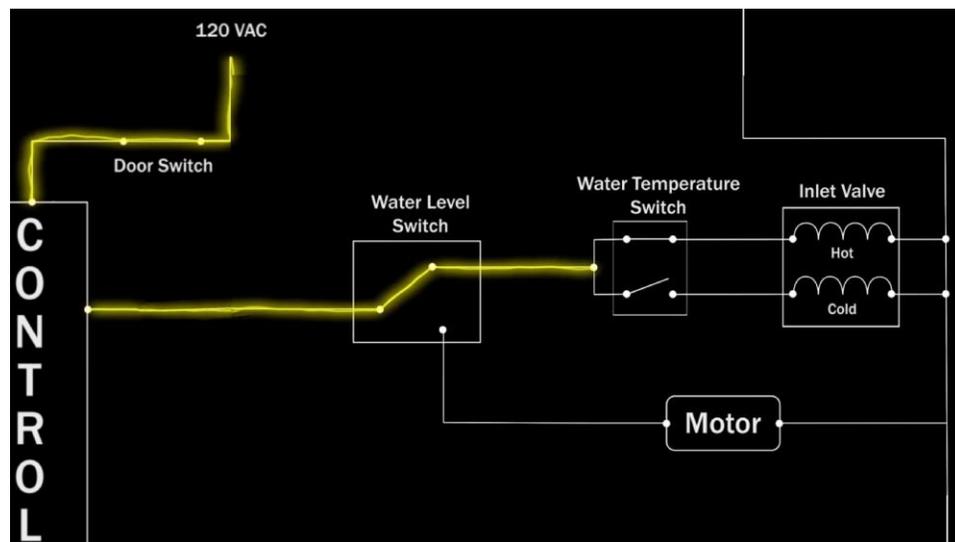


Image source: <https://www.youtube.com/watch?v=lj3U3ZvtgSs>

Conclusion:

The electric circuit of a washing machine, like many electric circuits in household appliances, are much more complex than we think. The electric circuit in a washing machine uses both parallel connection and series connection.

Sources:

Repair Clinic. (2012). *An explanation of how a front load washing machine works* [Video]. Retrieved from <https://www.youtube.com/watch?v=lj3U3ZvtqSs>