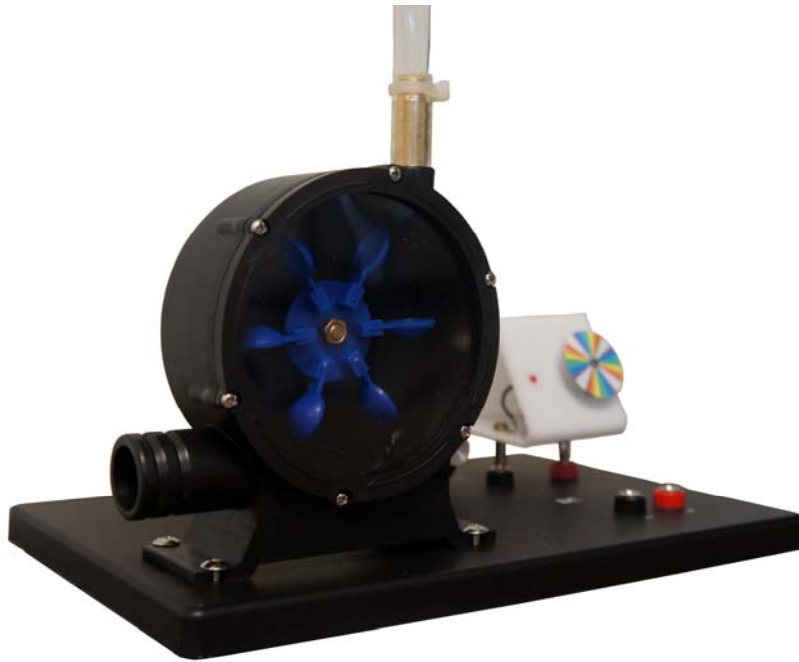


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## Water Turbine Demo

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- • Explore a clean, cheap method of power generation
- • Use water from a faucet to drive a small turbine and produce electricity
- • 6V DC nominal output
- • Small color wheel turns white when turbine reaches optimal speed

**Introduction:** The very first method of large scale electricity production used water power. Water wheels had existed for centuries, making it a logical progression. Falling water turns potential energy into kinetic. This energy source is dense enough to be tapped economically, even with simple technology. Producing electricity in this way is cheap, low maintenance, and clean. The primary disadvantage is the lack of good sites to position the turbine.

Today hydroelectric power is normally used to supply base load electricity. While very stable and predictable, it can not be scaled up or down easily. There are also not enough good sites to meet total electrical demand. For these reasons, hydroelectric plants are usually run at a constant output, with other forms of power generation handling the fluctuations in demand. Explore hydroelectric power on a small scale with this nifty demo. Using water from a faucet, you will spin a small wheel that in turn drives a generator. This generator produces up to six volts of DC current, making the turbine equivalent to about four AAA batteries. The turbine is constructed out of plastic and brass, which makes it resistant to water damage.

**Operation:** Using your water turbine is easy. You will first need to find a source of water. An ordinary faucet is perfect. Connect the smaller of the two tubes to the faucet, and to the hole at

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the top of the turbine. This allows water to enter the unit and spin the wheel, which in turn drives the generator. the generator is connected to the wheel using the small rubber belt. Loop it over the pulley on the back of the turbine chamber, and then again over the pulley on the generator shaft. As the turbine spins, it will drive the generator via this belt. Place the larger piece of tubing over the large hole on the turbine chamber and use it to exhaust the waste water back into the sink.

You will notice a small color wheel attached to the base of the turbine. This is driven by the generator, and will turn white when the turbine reaches its optimal speed. You can vary the speed of the turbine by adjusting water flow out of the faucet. When the turbine is running at peak output, this color wheel can be removed. Gently pull up on it to remove it. It will expose two banana jacks. You can connect your own leads into here to drive other devices. For example, you could use these jacks to drive a small light bulb or motor.

**Warranty and Parts:**

We replace all defective or missing parts free of charge. Additional replacement parts may be ordered toll-free. We accept MasterCard, Visa, checks and School P.O.s. All products warranted to be free from defect for 90 days. Does not apply to accident, misuse or normal wear and tear. Intended for children 13 years of age and up. This item is not a toy. It may contain small parts that can be choking hazards. Adult supervision is required

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