

## Evolution of Pumps

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Water is essential for everyone's life. Water plays a major role in the development of all civilizations. Water scarcity especially in ancient times greatly affected the development of settlements. A water pipe called a pump was created to fix it. Let's see its types in detail.

### Definition of pump

A pump is a device that moves fluids by mechanical action, usually by converting electrical energy into hydraulic energy.

The pumps we know today are the result of centuries of research.

### Types of Pumps

- Shadoof
- Water organ
- Archimedean screw pump
- Gear pump
- Centrifugal pump
- Steam pump
- Oil pump
- Water jet pump
- Electromagnetic pump

**Shadoof:** This pumping was used to raise water above the level of the Nile for irrigation purposes in Egypt. Shadoof is a hand-operated device for lifting water. It was invented in ancient times and is still used to irrigate land in India, Egypt and some other countries. Its structure consists of a long, narrow, nearly horizontal pole mounted like a saw. A skin or bucket is hung on a rope from the long end. And a counterweight is hung at the short end. The operator pulls down on a rope attached to the long end to fill the bucket and allows the counterweight to lift the bucket. A series of shadoof are sometimes mounted one above the other to raise the water to higher levels.



**Water organ:** Greek inventor and mathematician Ctesibius invented the water organ. Below this is fitted an air pump with valves, a water tank between them and a series of upper tubes. This is the primary design of what is now known as the reciprocating pump.



**Archimedean screw pump (auger):** Archimedean screw pump (auger) was designed by Archimedes. This type of pump is considered one of the greatest inventions of all time and is still used today to pump liquids, slurries and granular solids throughout the industrialized world and the third world.



**Gear pump:** In 1593, a Frenchman named Nicolas Grollier de Servière listed the earliest designs for a gear pump. Later in 1636, a German engineer named Pappenheim invented the double deep-toothed rotary gear pump, which is still used for lubricating engines today.

**Centrifugal pump:** In 1687, Denis Pepin developed what is documented as the first true centrifugal pump. He used straight vanes for drainage. A centrifugal pump is a motor-driven pump that draws water by creating a suction force. Since then, there have been various changes and design changes over the years. In 1849, the first all-metal centrifugal pump was produced.



**Steam pump:** The steam pump was a revolutionary method of pumping water that improved mine drainage and implemented widespread public water supply. The first commercially successful steam engine was the Savory Engine. This model boiled water in a metal tank to expel air and then pumped water from a large jug while cooling the tank.



**Oil pump:** In 1928, Armenian oil distribution system engineer and inventor Armais Arduonoff successfully installed the first submersible oil pump in the oil fields.



**Water jet pump:** A water jet pump is primarily used to draw water from a source through a pipe to provide water or domestic water pressure to cottages, homes and irrigation systems. A jet pump is a common pump used for shallow wells. Jet pumps are mounted above the well, in the house or well house, and draw water up by suction from the well. It is similar to centrifugal pump but mainly used to lift water from bore wells.



**Electromagnetic pump:** An electromagnetic pump is a pump that uses an electromagnet to move liquid metal, molten salt, brine, or other electrically conductive fluid. It is mainly used in advanced applications such as nuclear reactors. This is because electromagnetic pumps handle very high temperatures. We have explored the various designs of pumps and their uses in detail. This is the history of pumps as we know them.



## References

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