# Types of water turbines

Types of water turbines

Written by Zach Stein | Reviewed by Subject Matter Experts



Water turbines have been used for industrial power & power grids since the 19th century. The main drawback of a water turbine is its size because it restricts the flow rate & the head can be controlled. The movement from these turbines to current turbines took about several years. So, this development occurred throughout the Industrial revolution with scientific methods & principles. They also used different new materials & designing techniques to develop these turbines. This article discusses an overview of a water turbine and it"s working.

Definition: A rotating machine that is used to change the energies of water like kinetic & potential into mechanical work is known as a water turbine. These are used mostly in the dams for the generation of electric power using the potential energy of the fluid. Modern water turbines operating efficiency is higher than 90%. The Water turbine diagram is shown below.

# Types of water turbines

The most frequently used Francis water turbine is shown below. This can be designed with different components like the main shaft, operating ring, water guiding device, spiral case, guide vane, stay ring, runner, draft tube, headcover & fluid inlet. The construction of the water turbine is shown below.

This is a combination of both reaction & impulse turbine, where the blades in this turbine turn with both impulse & reaction water supply force so that it generates electricity very efficiently. In hydropower stations, this type is most frequently used for electricity production within hydropower stations.