

DIFFERENCE BETWEEN RADIAL AND AXIAL FLOW TURBINE

Axial flow turbines: If the water flows parallel to the axis of the rotation of the shaft, the turbine is known as axial flow turbine.

- If the head at the inlet of the turbine is the sum of pressure energy and kinetic energy and during the flow of water through runner a part of pressure energy is converted into kinetic energy, the turbine is known as reaction turbine.
- For the axial flow reaction turbines, the shaft of the turbine is vertical. The lower end of the shaft is made larger which is known as hub.
- The vanes are fixed on the hub and hence hub acts as runner for axial flow reaction turbine.

The following are the important type of axial flow turbines: 1. Propeller turbine 2. Kaplan turbine

1. When the vanes are fixed to the hub and they are not adjustable, the turbine is known as propeller turbine.
2. If vanes on hub are adjustable the turbine is known as a Kaplan turbine. This turbine is suitable where a large quantity of water at low heads is available.

Radial flow turbines are those turbines in which the water flows in radial direction.

- The water may flow radially from outwards to inwards or from inwards to outwards.
- If the water flows from outwards to inwards through the runner, the turbine is known as inward radial flow turbine.
- If the water flows from inwards to outwards, the turbine is known as outward radial flow turbine.
- Reaction turbine means that the water at inlet of turbine possesses kinetic energy as well as pressure energy.