

HYDRAULIC TURBINES —DEFINITION

The hydraulic turbine is a prime mover that uses the energy of flowing water and converts it into the mechanical energy in the form of rotation of the runner. (A prime mover is a machine which uses the raw energy of a substance and converts it into the mechanical energy.) Since the fluid medium is water, these turbines are also known as the 'water turbines'. Hydraulic turbines coupled with hydro — generators form the so —called 'hydrounits' which are widely used now a days for generating electrical power.

CLASSIFICATION OF TURBINES

Hydraulic turbines may be classified in the following ways:

i) According to the type of energy at inlet.

- a) Impulse turbine
- b) Reaction turbine.

ii) According to the direction of flow through runners.

- a) Tangential flow
- b) Radial flow
- c) Axial flow
- d) Mixed flow turbines.

iii) According to the head and quantity of water

- a) High head turbines —which work under high heads (above 250m) but with less

quantity of water.

Example: Pelton wheel

b) Medium head turbines —work under medium heads (60m to 25m) —they require relatively large quantity of water. Example: Francis turbines

c) Low head turbines —work under heads less than 60m —they require a very large quantity of water.

Example: Kaplan turbine

iv) According to position of shaft

a) Horizontal turbines —These turbines have horizontal shafts.

Example: Pelton wheel

b) Vertical turbines —These turbines have vertical shafts.

Example: Francis and Kaplan turbines.

Source : <http://mediatoget.blogspot.in/2011/11/hydraulic-turbines-definition.html>