

PUMP

Defn; Is a device that moves a fluids by increasing the energy level of a fluid and this is accomplished by converting an **Electrical energy** into **Hydraulic Energy**.

So simply we can say Pump moves fluids by **Mechanical Action**.

-Also another thing to consider about pump is that they operate by some mechanisms known as rotary and reciprocating.

The following are the energy sources for the pump to operate

- Electricity
- Engines
- Wind power

Applications of Mechanical Pumps

1. Pumping water from wells
2. Aquarium Filtering
3. Pond Filtering
4. Water cooling in car industry
5. Pumping oil in energy industry
6. Ventilation
7. Air Condition system.

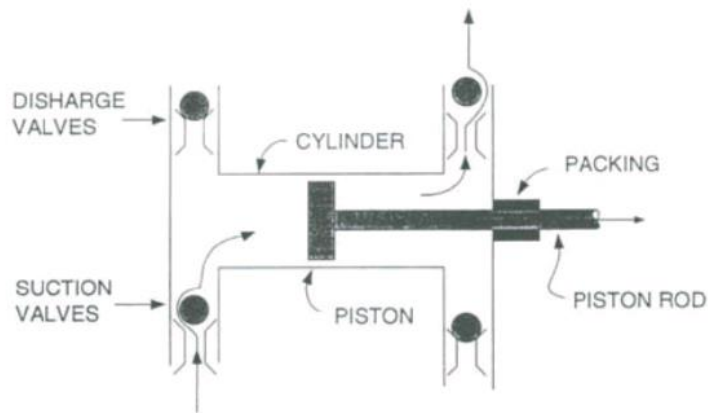
CLASSIFICATION OF PUMPS

1. Positive displacement
2. Centrifugal pumps
3. Axial flow pumps.

1. Positive Displacement

This is a type of a pump that make a fluid to move by transporting or taking a fixed amount of a fluid and forcing it into a discharge pipe.

Diagram for this type.



Fig; Positive Displacement pump

Also Positive Displacement Pump has got three types which are

- Rotary type
- Reciprocating type
- Linear type

2. Centrifugal Pump

This is a type of pump in which the fluid enters along the axis or center and is accelerated by impeller and exits at right angles to the shaft (i.e radially)

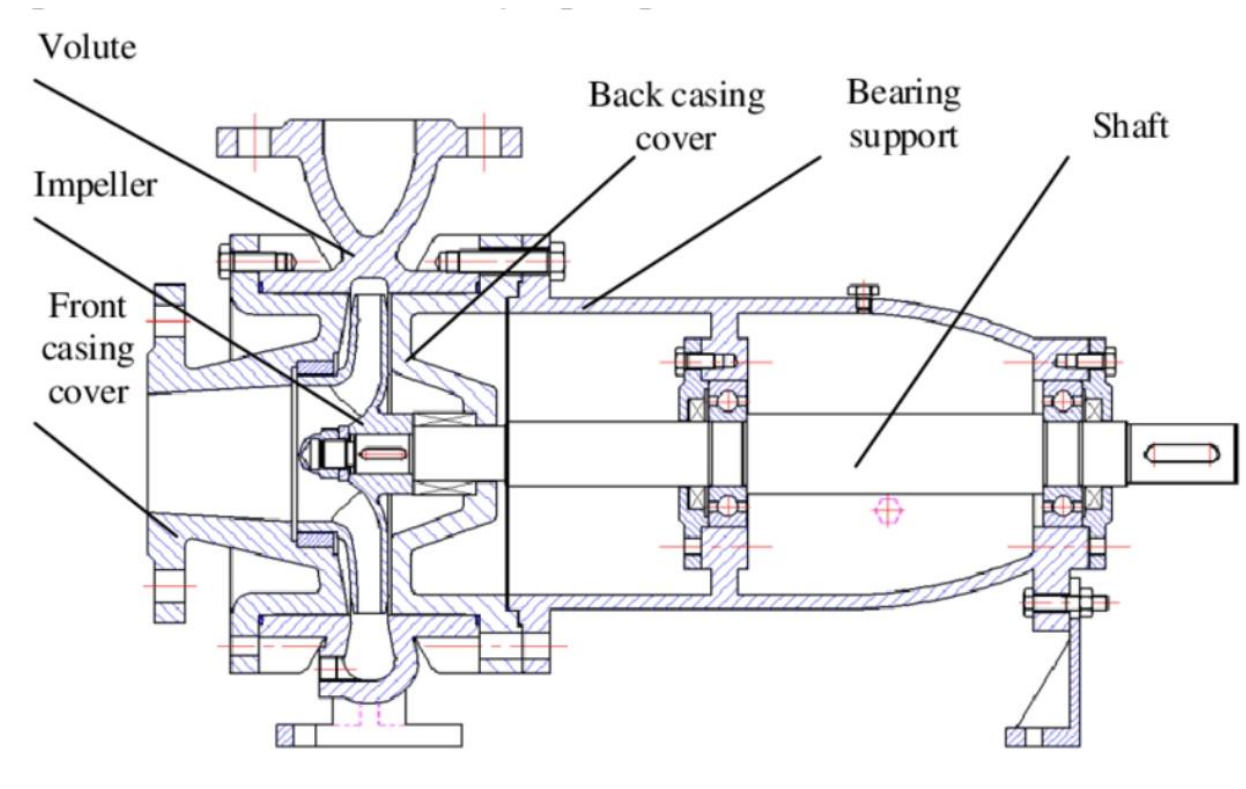
Another name for Centrifugal pump is Radial flow pump.

Examples of this type of pump are

- Centrifugal fan, this is used to implement vacuum cleaner.
- Vertex pump, here liquid moves in tangential direction around the working wheel.

Generally radial flow or centrifugal pump operates at higher pressures and lower flow rates than axial flow pump.

Diagram for Centrifugal or Radial Flow pump is



Fig; Centrifugal pump

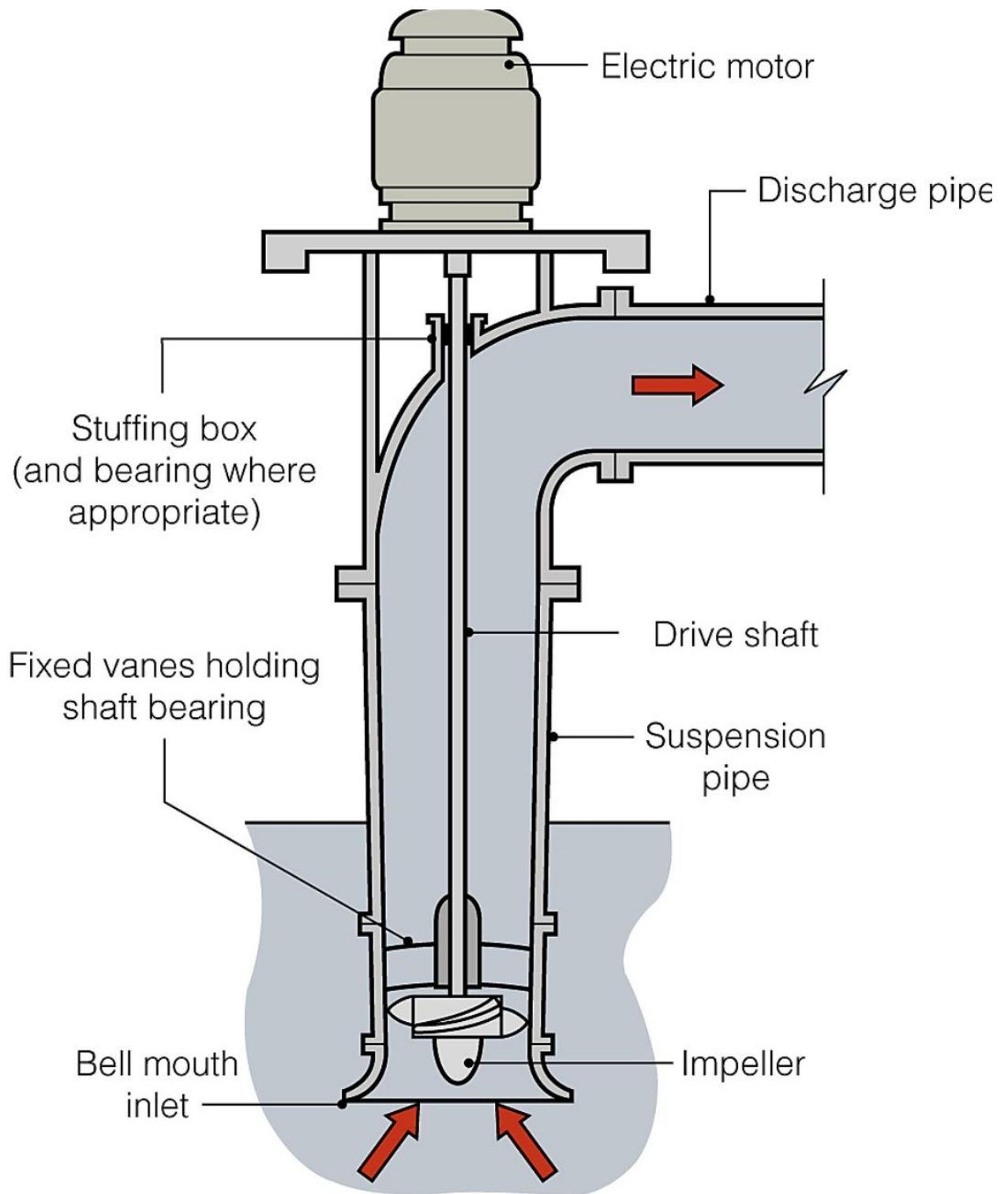
3. Axial Flow Pump

In this type of pump, the fluid is pushed outward or inward so as to move the fluid axially.

This pump operates at much lower pressures and higher flow rates than radial flow pump or centrifugal pump.

This pump type can not be run up to speed without special precaution.

Diagram for Axial Flow Pump is



Fig; Axial flow pump

Functions of Pump

The main function of pump is to raise pressure by producing the fluid movement or flow. It does not generate pressure but it produces the flow which is necessary for the development of pressure.

So simply we can say the functions of pump are as follows

- To transfer fluid between two points
- To produce the required flow rates of fluids
- To produce the required pressure.