

# TEACHING LEARNING MATERIALS



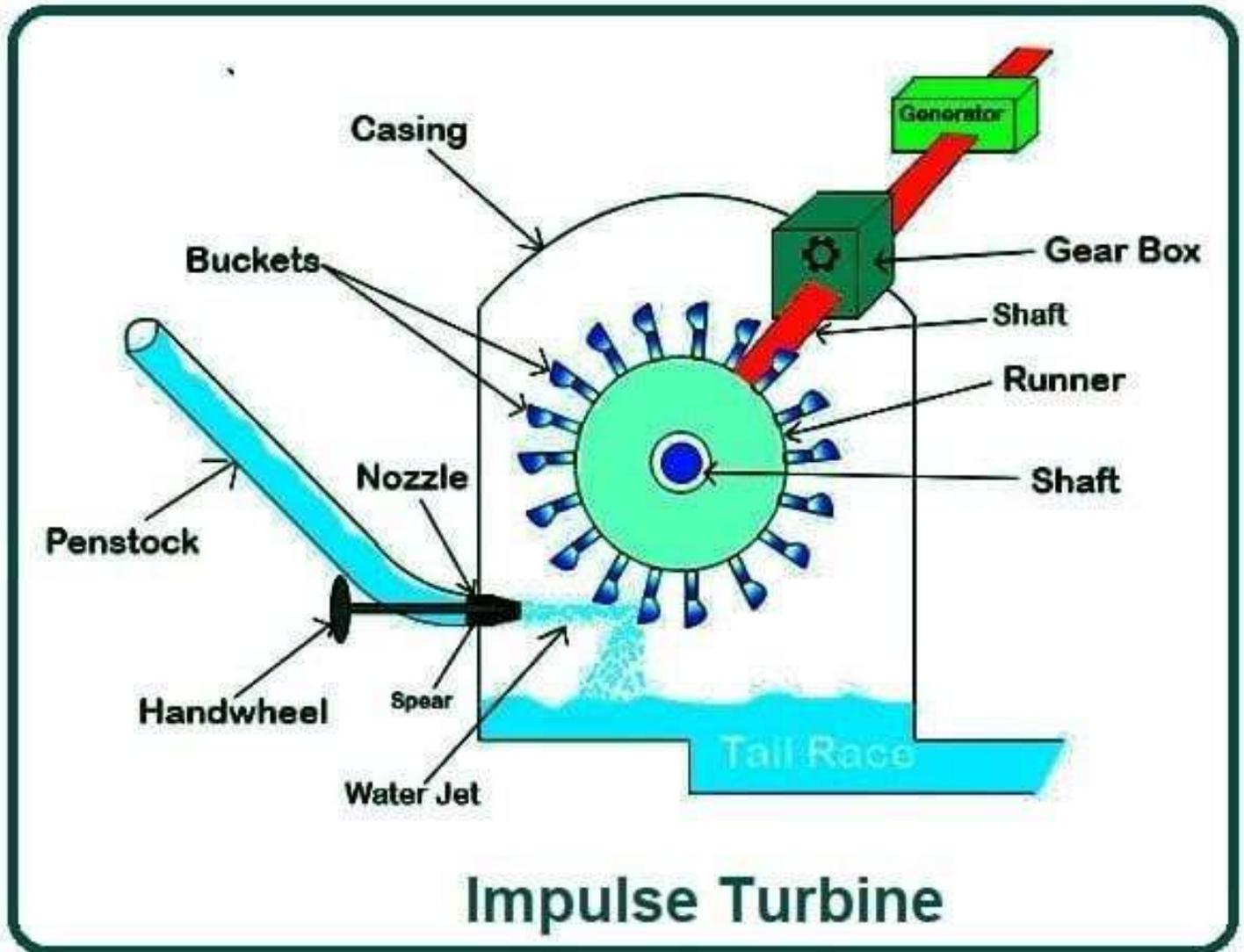
BRANCH:- MECHANICAL ENGINEERING

SEMESTER:- 5<sup>TH</sup> SEMESTER

SUBJECT:- HMFP

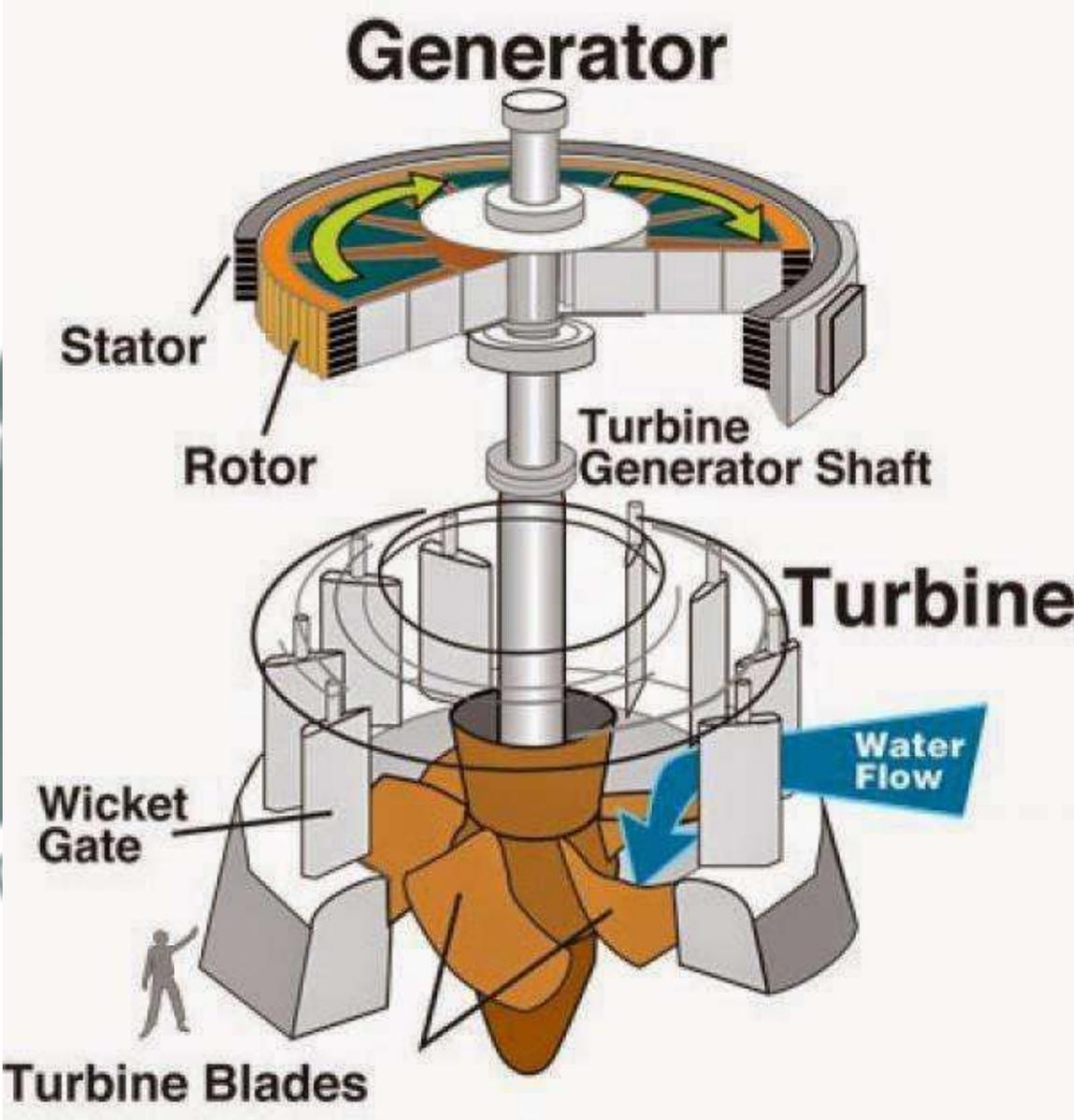
PREPARED BY:- ER. JAGNYA PRASAD BEHERA &  
ER. SANJAY KUMAR SAHU

# 1. IMPULSE TURBINE (PELTON WHEEL) –

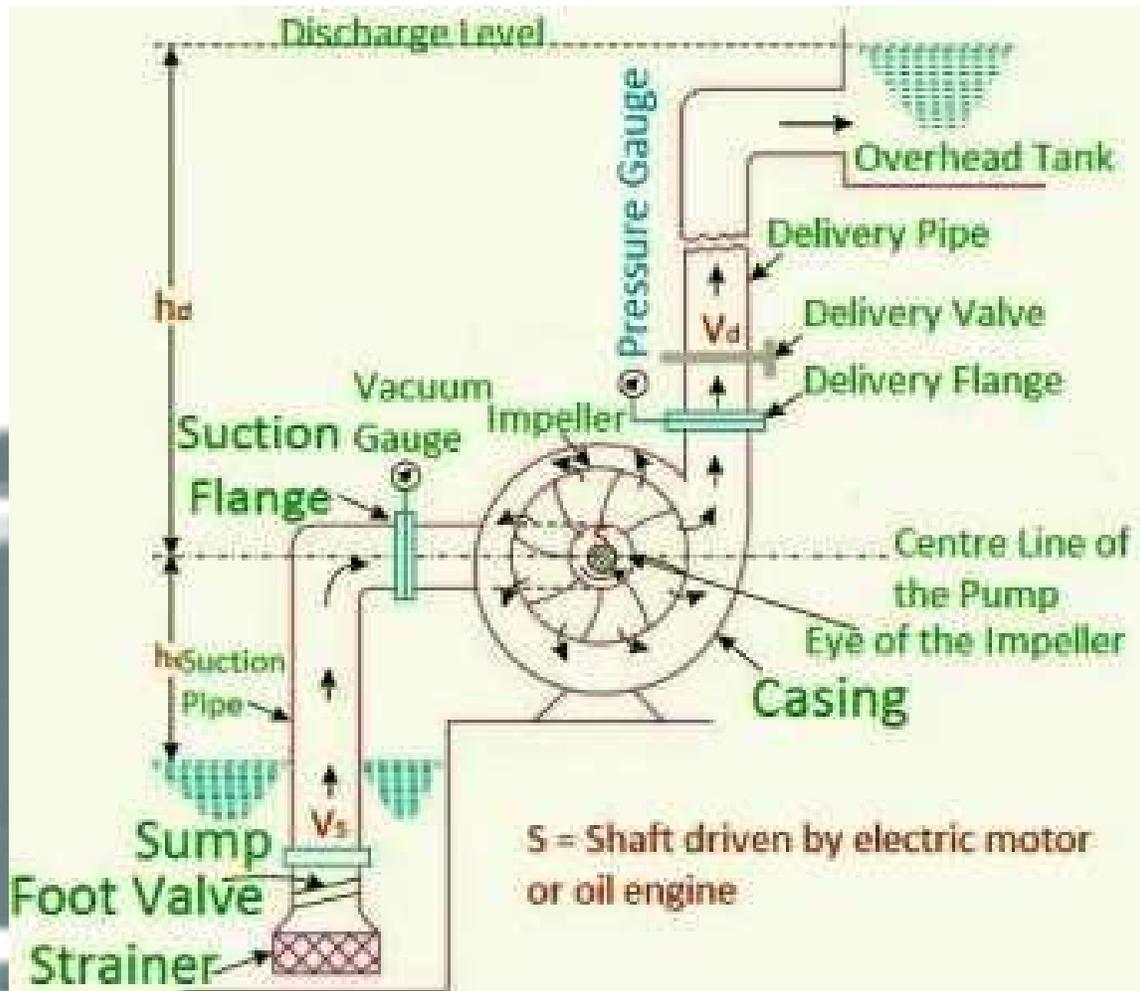




3. KAPLAN TURBINE -

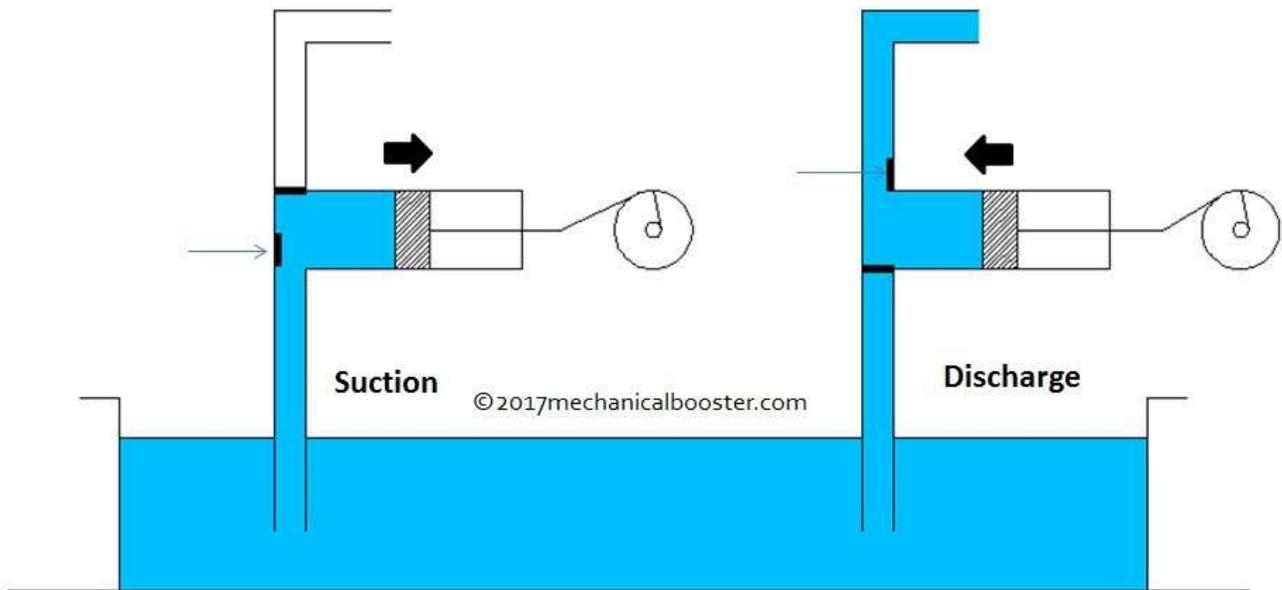


#### 4. CETRIFUGAL PUMP -

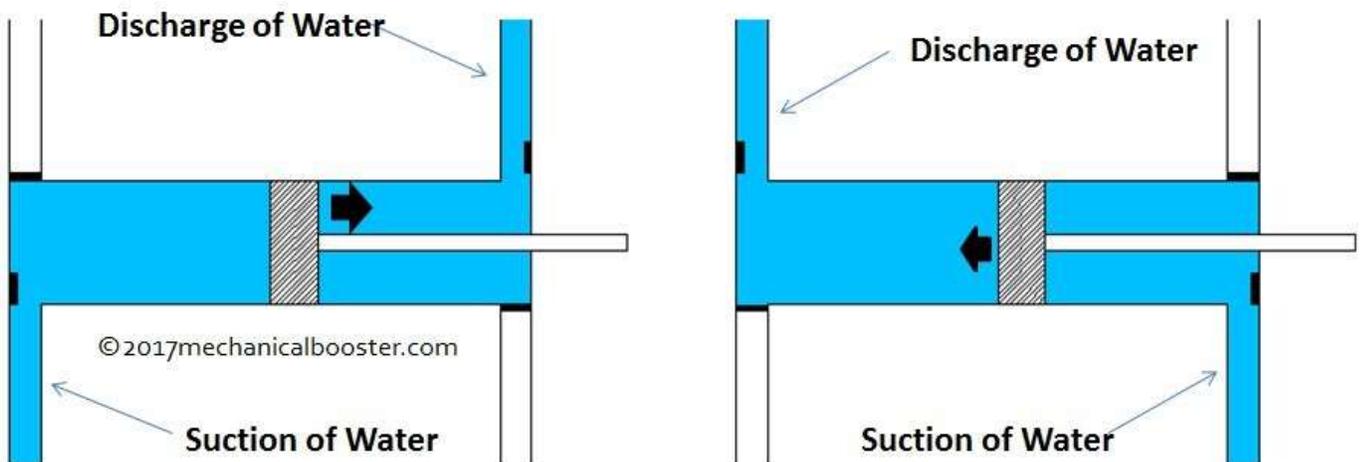


BRAHMAPUR  
Engineering Engineers

## 5. RECIPROCATING PUMP -



**Single Acting Reciprocating Pump**



**Double Acting Reciprocating Pump**

## 6. PNEUMATIC VALVES -



Sequence Valve



Pressure Reducing Valve



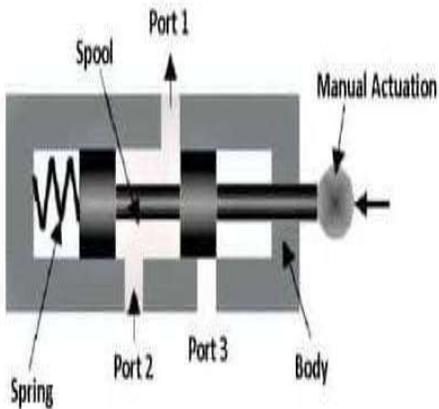
Pressure Regulator Valve



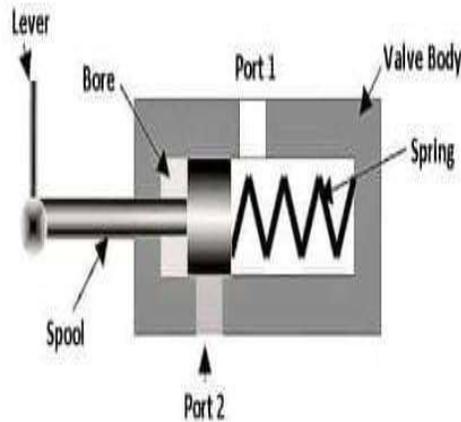
Direction Control Valve



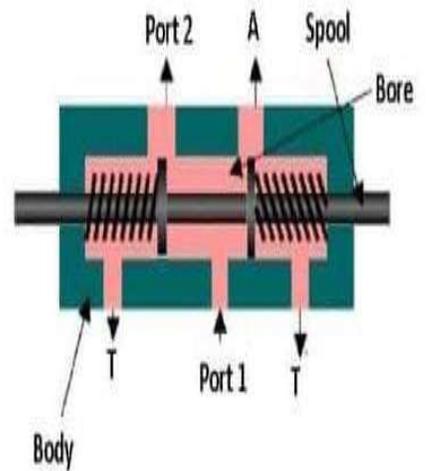
Flow Control Valve



3-way Direction Control Valve



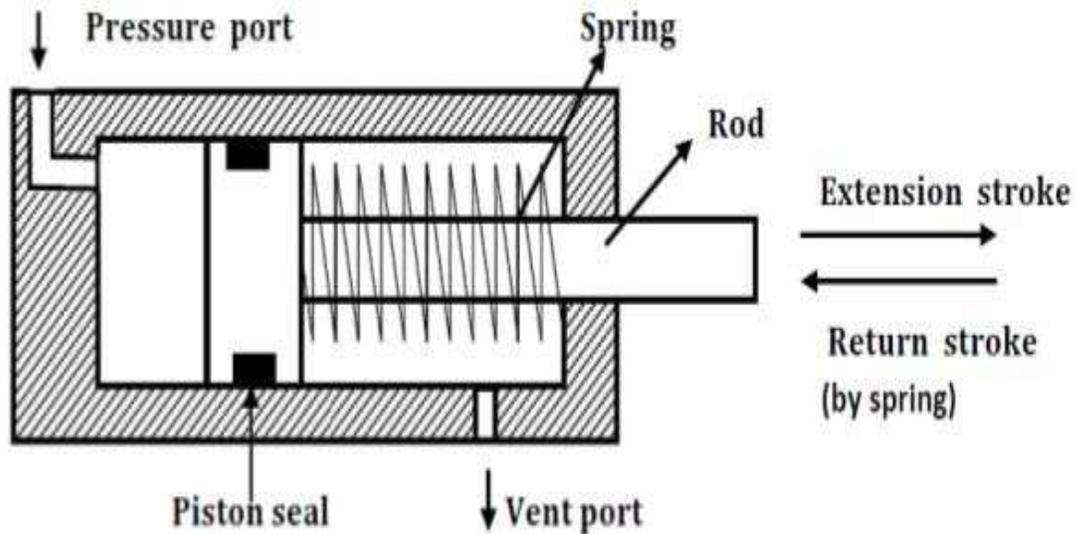
2-way Direction Control Valve



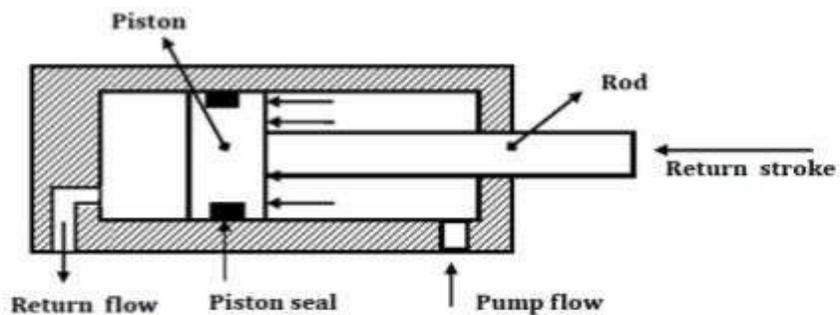
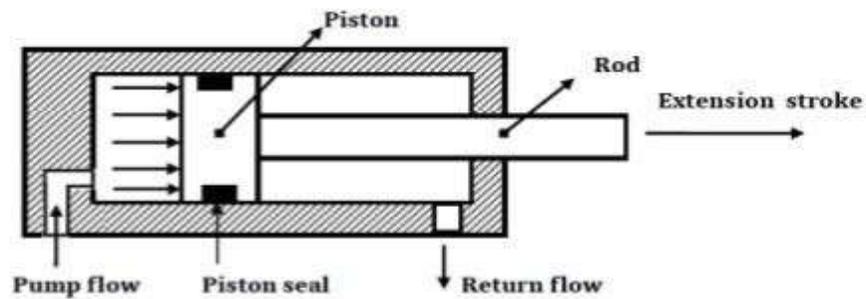
4-way Direction Control Valve

## 7. PNEUMATIC CYLINDERS –

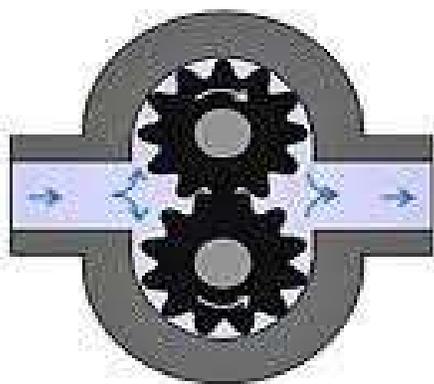
### **SINGLE ACTING CYLINDER**



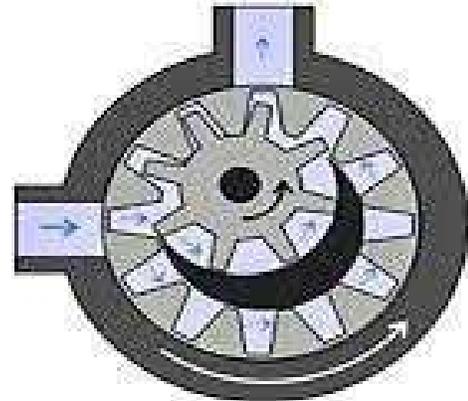
### **DOUBLE ACTING CYLINDER**



## 8. GEAR PUMP –



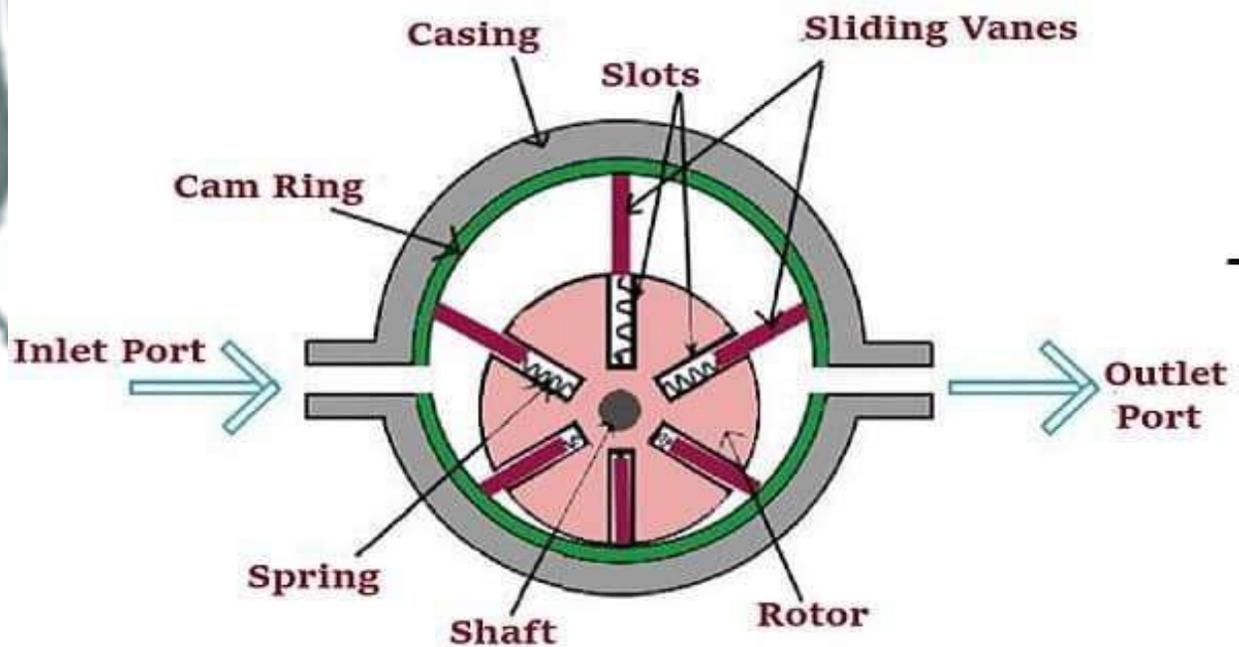
*External Gear Pump*



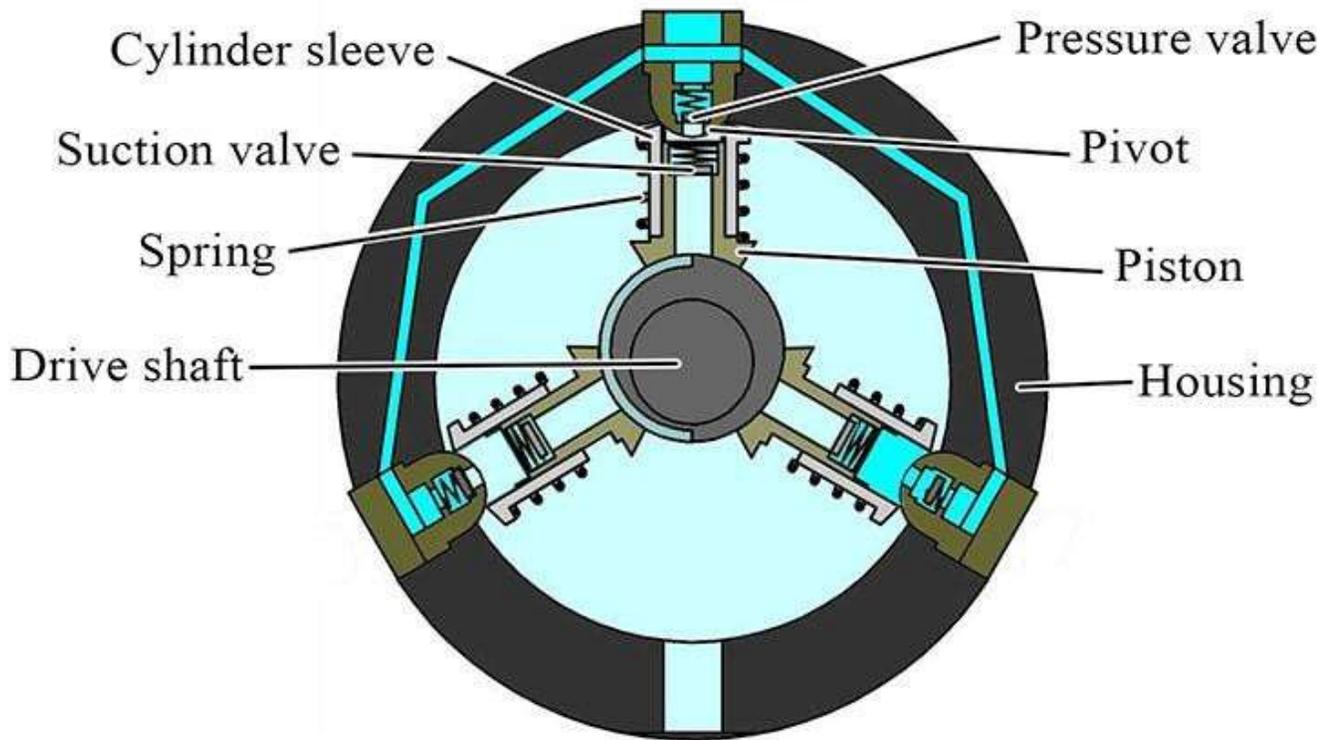
*Internal Gear Pump*

## 9. VANE PUMP –

### Vane Pump Components



## 10. RADIAL PISTON PUMP -



## 11. METERING IN AND OUT VALVE-

