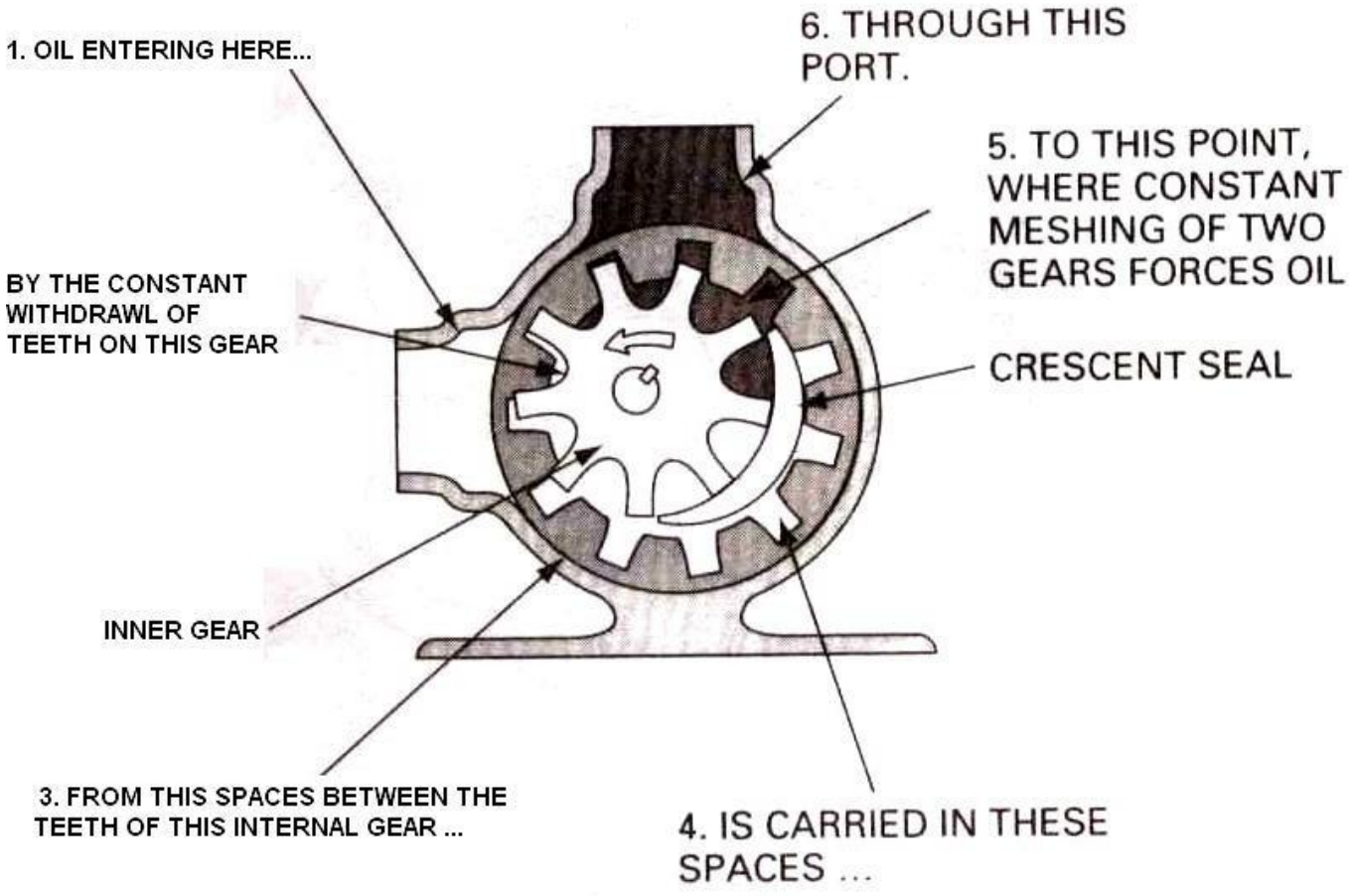
SNS COLLEGE OF TECHNOLOGY, Coimbatore - 641 035
(An Autonomous Institution)
Department of Mechatronics Engineering

UNIT I- FLUID POWER PRINCIPLES AND HYDRAULIC PUMPS

INTERNAL GEAR PUMP

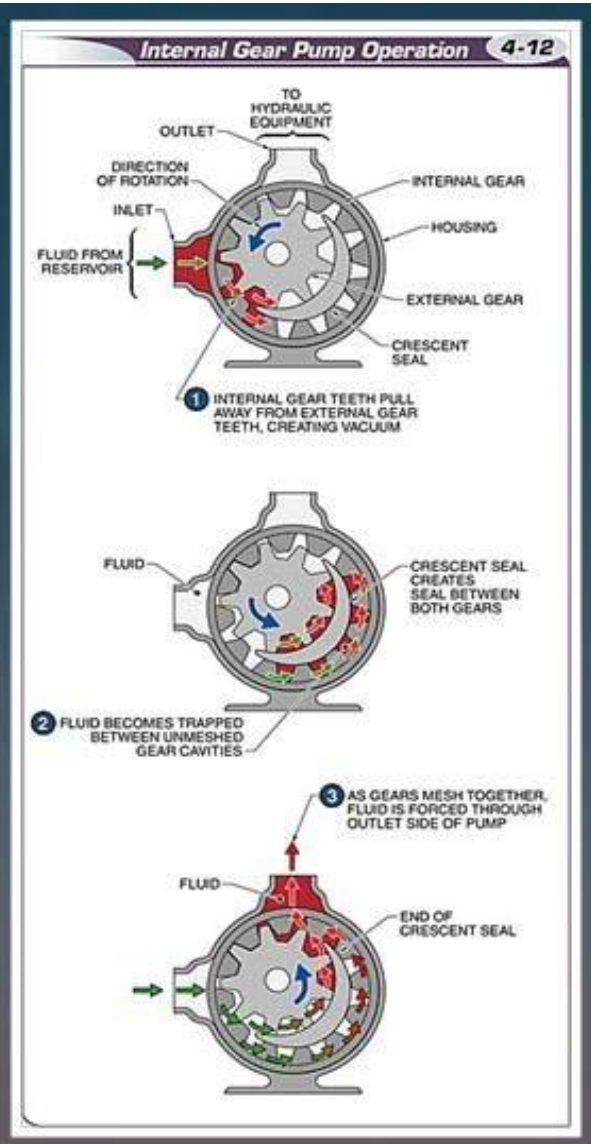


- An internal gear pump consist of a pinion gear and ring gear that are **eccentrically mounted.**

- The pinion gear is driven by the pump shaft; it in turn , drives the ring gear.

- As the teeth come out of mesh near the inlet port the increasing volume creates a **vaccum** , allowing atmospheric pressure to push fluid in.

An internal gear pump consists of a small external drive gear mounted inside a large internal gear.



- Consists of an internal gear, a regular spur gear, a crescent shaped seal & an external housing
- Power is applied to either gear
- Crescent seal acts as a seal between the suction & discharge ports
- Motion of the gear draws fluid from the reservoir & forces it around both sides of crescent seal
- Operates at lower capacities & pressures (up to 70 bar)

Advantages of internal gear pump

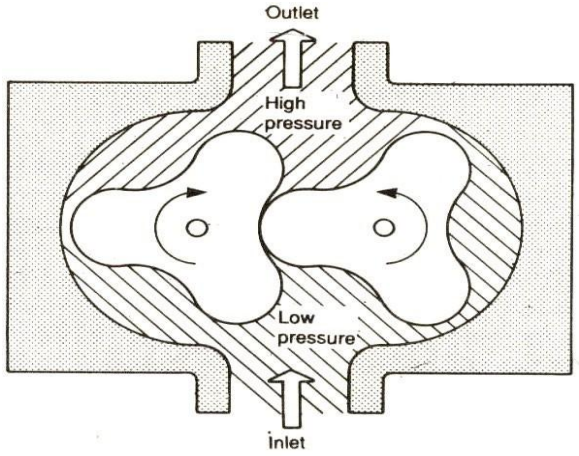
- Excellent for **high-viscosity liquids**
- Operates well in either direction
- Easy to maintain

Dis – Advantages

i) Usually requires **moderate speeds**

ii) Medium pressure limitations

LOBE PUMP



A lobe pump has two external-driven gears and operates similar to an external gear pump.