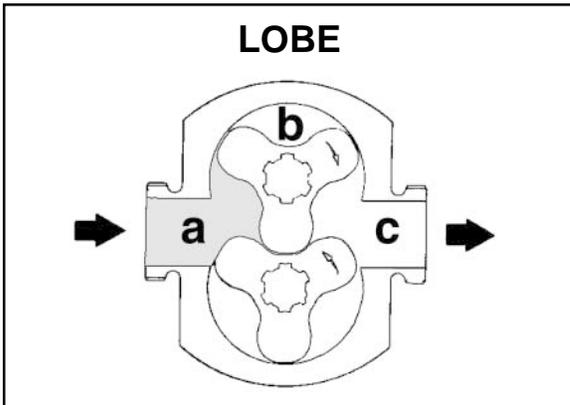


HOW IT WORKS:

- a.) As the gears separate on the inlet side of the pump, cavities are created between the gear teeth which create a vacuum that draws in the liquid.
- b.) Once the teeth clear the inlet port, the liquid is captured between the gear teeth and the housing.
- c.) As the teeth mesh, the liquid is squeezed out of the cavity and forced out the discharge port.

FEATURES:

- Metering:** thin to viscous liquids can be dispensed in a smooth repeatable flow
- High Pressure:** up to 500 psi can be achieved with low to high viscosity liquids
- Clean Liquids:** close fitting gears require clean non-abrasive liquids

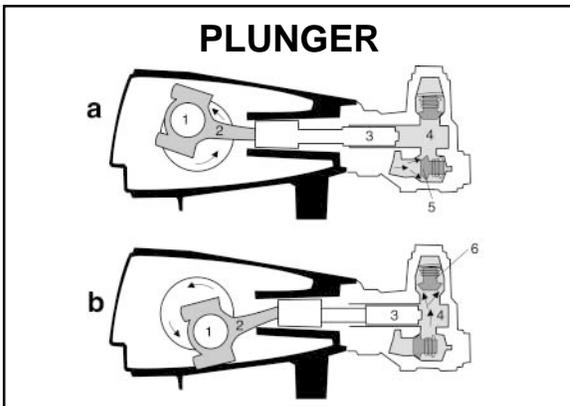


HOW IT WORKS:

- a.) The motion of the counter rotating lobe elements creates a partial vacuum which draws the liquid smoothly into the pump chamber.
- b.) As the lobes revolve, liquid is captured between the lobe cavities and the outer housing.
- c.) The liquid is forced out the discharge as the lobes mesh and eliminate the cavities the liquid occupies.

FEATURES:

- Versatile:** many rotor options are available to enable the handling of most viscosities, temperatures, and solids
- Solids Handling:** gentle low shear solids and abrasive handling
- Wide Viscosity Range:** from 1 to 1,000,000 centipoise

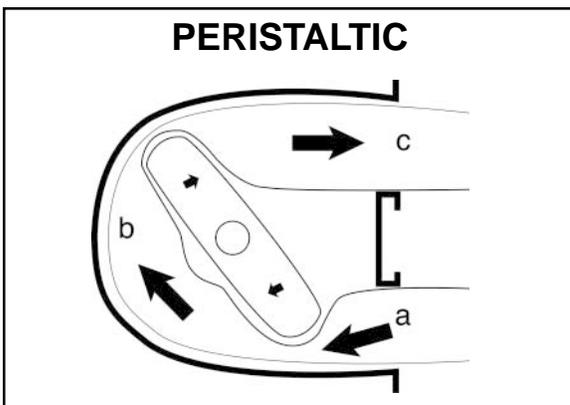


HOW IT WORKS:

- a.) As the crankshaft (1) rotates the connecting rod (2) pulls back the plunger (3) from the liquid chamber (4) within the manifold which increases the chamber's size. This creates a vacuum that draws in liquid through the inlet valve (5).
- b.) As the crankshaft's rotation continues, the connecting rod (2) pushes the plunger (3) toward the liquid chamber (4) reducing the chamber's size. This forces the liquid out the discharge valve (6).

FEATURES:

- High Pressure:** pressures of up to 15,000 PSI can be achieved
- Clean Liquids:** closed fitting components require clean non-abrasive liquids
- Durable:** ceramic plungers and an oil filled crankcase ensures a long operating life



HOW IT WORKS:

- a.) As the rollers compress the hose and move away from the inlet a vacuum is created drawing in liquid.
- b.) The rollers work together to capture liquid between the pinched areas of the tube and move the liquid toward the discharge.
- c.) The front roller leaves the hose, opening the captured area while the back roller pushes the liquid out the discharge.

FEATURES:

- No Liquid Contact:** liquid comes in contact only with the hose utilized within the pump
- Self-priming:** can lift up to 25 feet
- Viscous and Abrasive Liquids:** designed to handle viscous, corrosive, abrasive and high purity solutions