

# PUMPING PRINCIPLES

## HOW IT WORKS:

- As the flexible impeller blades leave the cam, the cavities between them increase in size and create a vacuum which draws in the liquid.
- Once the blades clear the inlet port, the liquid is captured in the cavity between the blades and the housing.
- As the blades contact the cam and bend, the cavity between them is reduced in size and the liquid is forced out the discharge.

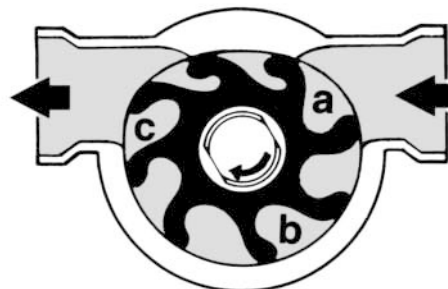
## FEATURES:

**Self-priming:** primes quickly from a dry or wet start / will lift up to 15 feet when wet

**Low Shear:** smooth gentle pumping action for liquids of low to high viscosity

**Batching:** smooth repeatable flow of low to high viscosity liquids

## FLEXIBLE IMPELLER



## HOW IT WORKS:

- Centrifugal force (and/or springs) keeps the blades in contact with the housing as each blade leaves the upper eccentric area. Liquid is drawn in as the size of the cavity between the blades and housing increases during this rotary motion.
- Once the blades clear the inlet port, the liquid is captured in the cavity between the blades and the housing.
- As the blades contact the eccentric portion of the housing and are pushed back into their slot, the cavity between the blades is reduced in size which forces the liquid out the discharge.

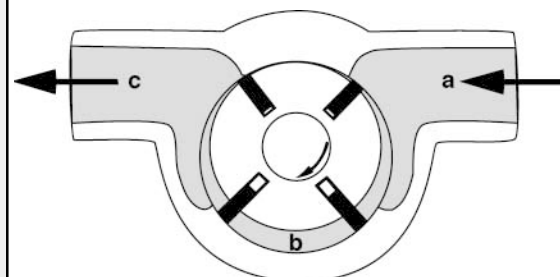
## FEATURES:

**Self-Priming:** lift liquids up to 3 feet / higher lifts are possible with some models

**Low to Medium Viscosity:** thin to medium viscosities are easily handled

**Simplicity:** few moving parts to fail or replace

## VANE



## HOW IT WORKS:

- Centrifugal force slings each roller out against the housing as each roller leaves the upper eccentric area. Liquid is drawn in as the size of the cavity between the rollers and housing increases during this rotary motion.
- Once the rollers clear the inlet port the liquid is captured in the cavity between the rollers.
- As the rollers contact the eccentric portion of the housing and are pushed back into their slot, the cavity between the rollers is reduced in size which forces the liquid out the discharge.

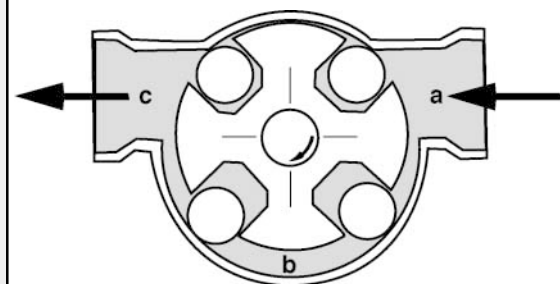
## FEATURES:

**Abrasive Handling:** the roller design allows the handling of powders in suspension

**High Pressure:** up to 300 psi can be achieved

**Simplicity:** few moving parts to fail or replace

## ROLLER



## HOW IT WORKS:

- Liquid is drawn into the suction of the pump as the corkscrew shaped rotor revolves within the rubber stator.
- Liquid is captured in the cavity between the rotor and stator. This cavity travels toward the discharge during rotation.
- The cavity opens into the discharge chamber and delivers its contents as it reduces in size. Liquid is forced out the discharge as more liquid is delivered by continued rotation.

## FEATURES:

**Abrasive Handling:** the rotor/stator design allows the handling of abrasive and/or viscous liquids

**Low Shear:** smooth gentle pumping action enables the pumping of shear sensitive and solid entrained liquids

**High Pressure:** up to 600 psi can be achieved with low to high viscosity liquids

## PROGRESSIVE CAVITY

