

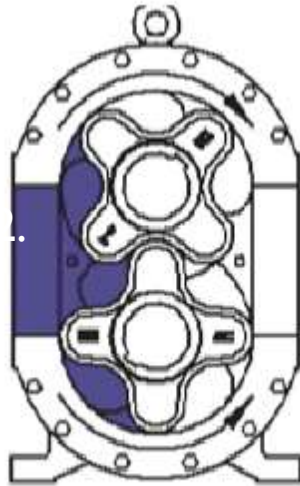
POSITIVE DISPLACEMENT ROTARY LOBE PUMPS

OPERATING PRINCIPLE (POSITIVE DISPLACEMENT)



1. Fluid enters suction side of the pump.

2. Fluid fills cavities between lobes.

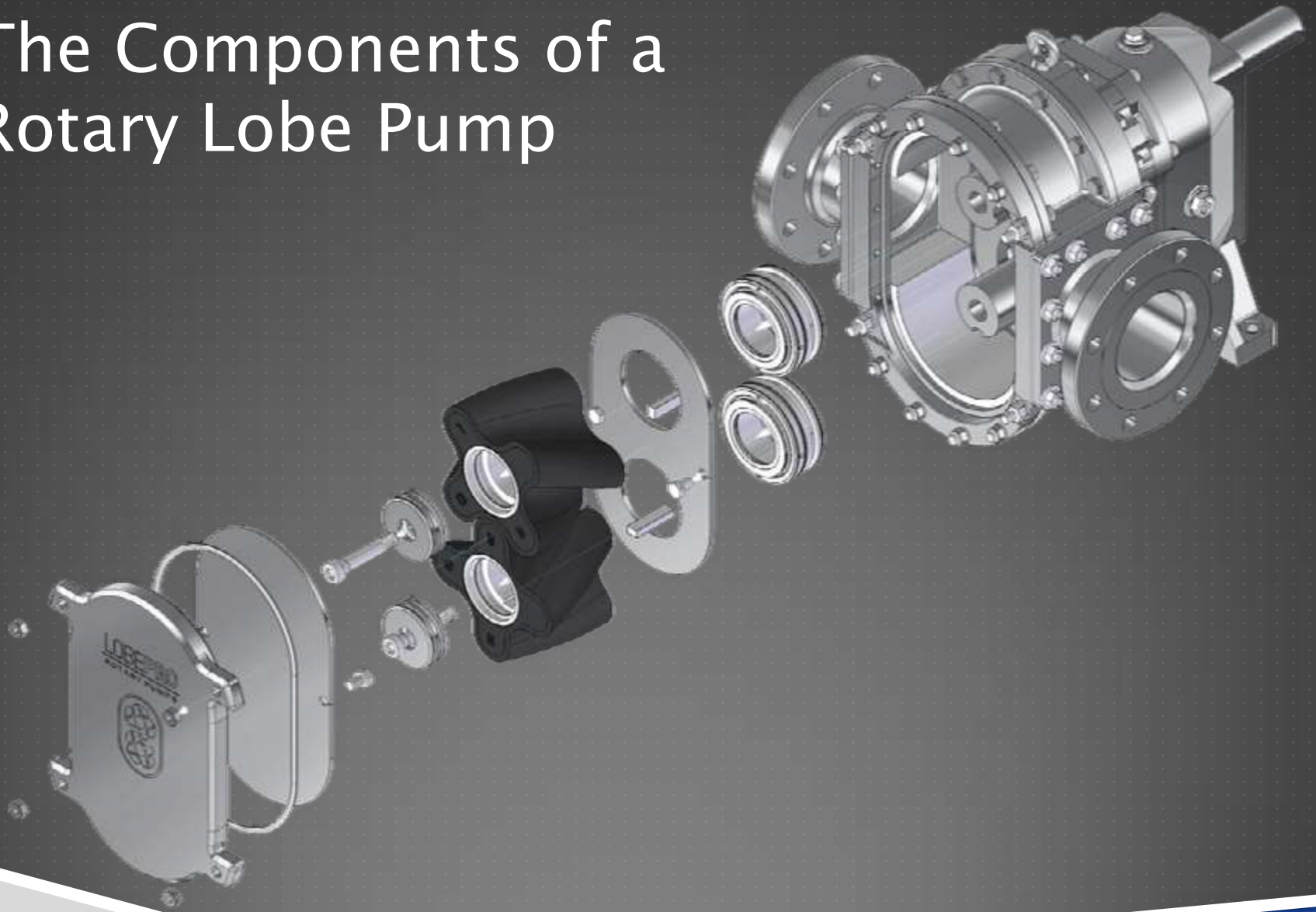


3. Fluid travels around interior of casing.

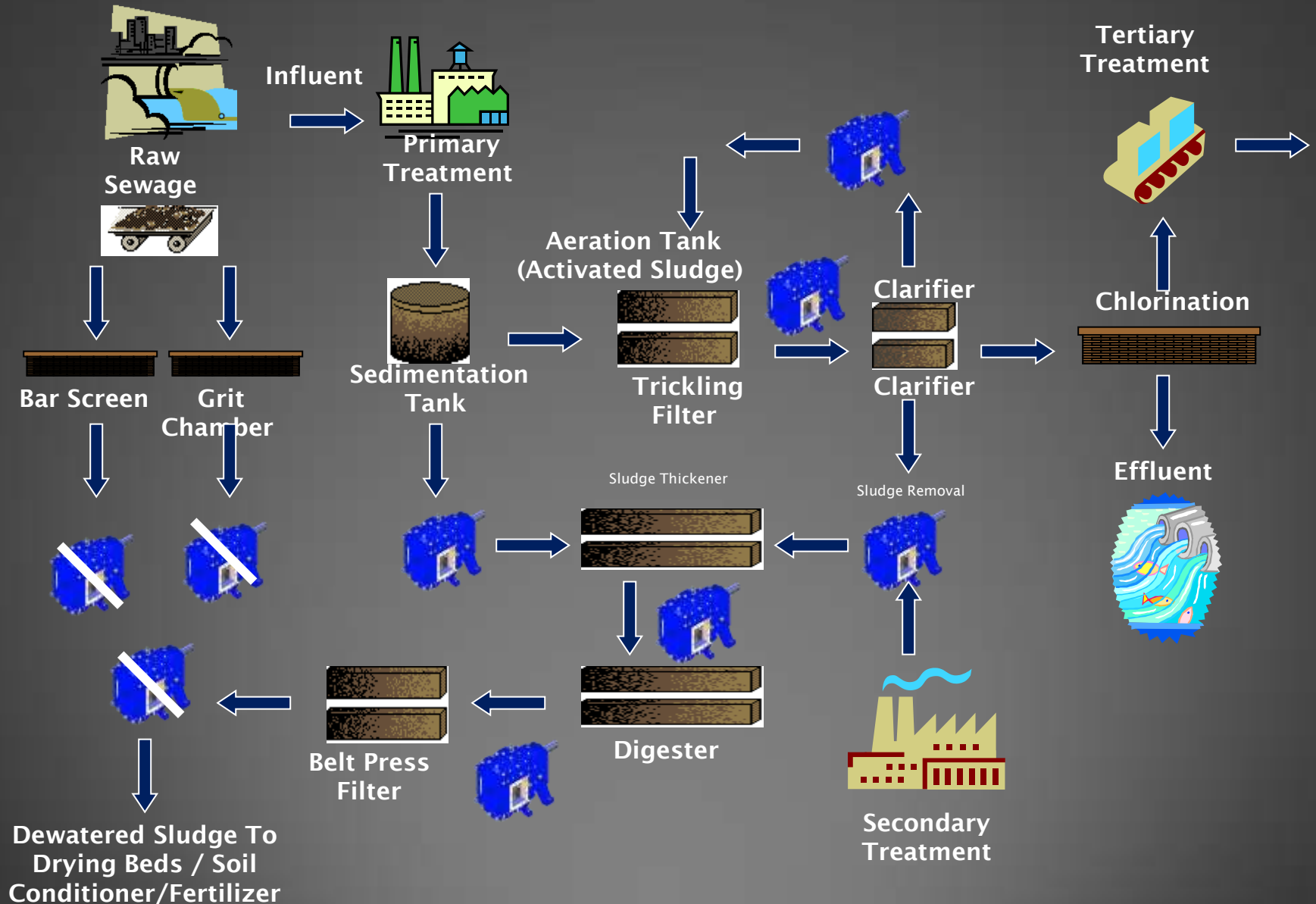
4. Lobes force fluid out discharge port.



The Components of a Rotary Lobe Pump



WATER & WASTEWATER SEWAGE TREATMENT PLANTS



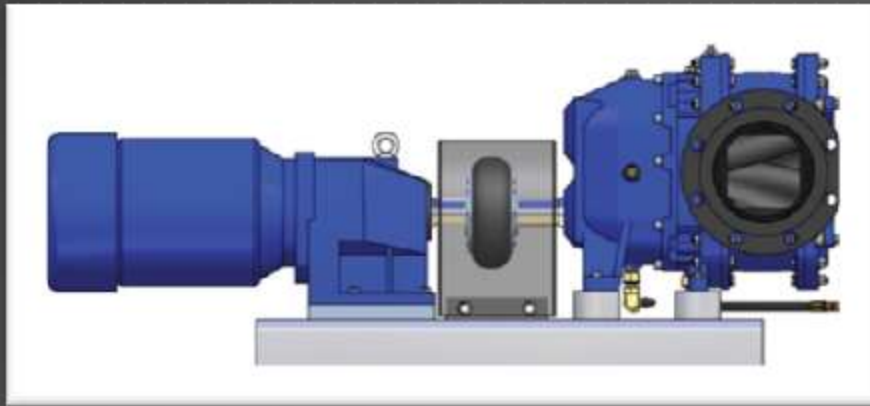
IMPORTANT PROPERTIES OF ROTARY LOBE PUMPS

- ▶ Handles highly viscous fluids
- ▶ Low shear
- ▶ Measured flow
- ▶ Self priming to 25' wet
- ▶ Low pulsation
- ▶ Forward & reverse pumping operation
- ▶ Long lifespan
- ▶ Excellent for solids, abrasives
- ▶ and viscous fluids
- ▶ Easy access to wet end for “in place” wear part replacement
- ▶ Low maintenance
- ▶ Space-saving compact design
- ▶ Run dry ability

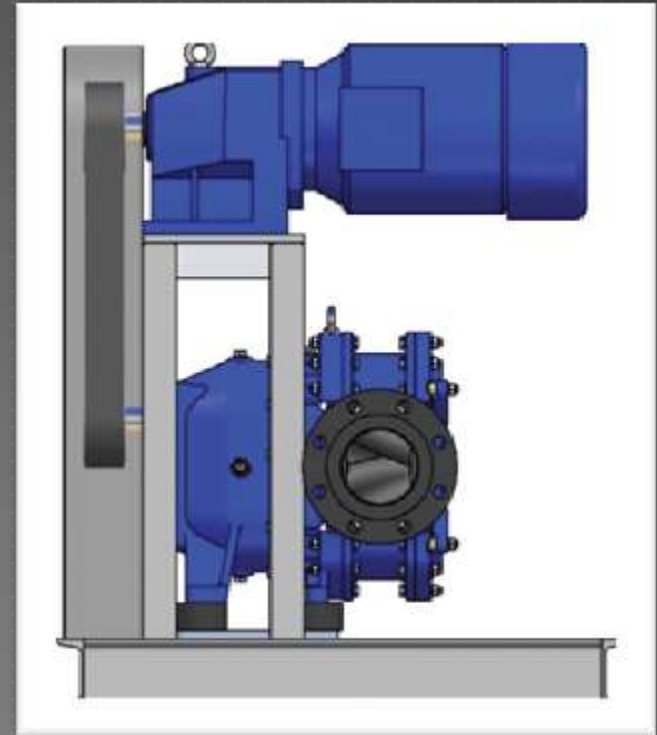
IS A ROTARY LOBE PUMP THE RIGHT OPTION?

1. Are you pumping sludge, mud, or thick fluids?
2. Does the slurry contain corrosive or fine abrasives?
3. Does your application require a pulse free or low shear flow?
4. Does your application require self-priming suction lift, strong vacuum or low NPSHR?
5. Are you pumping froth, DAF or other mixture of air and fluid?
6. Do you need a measured flow or constant pressure at different flow rates?

TYPICAL PUMP CONFIGURATIONS



In-line Gear Motor



**Space Saving "Piggyback"
Overhead V-Belt Drive**

ROTARY LOBE VS. GEAR PUMPS

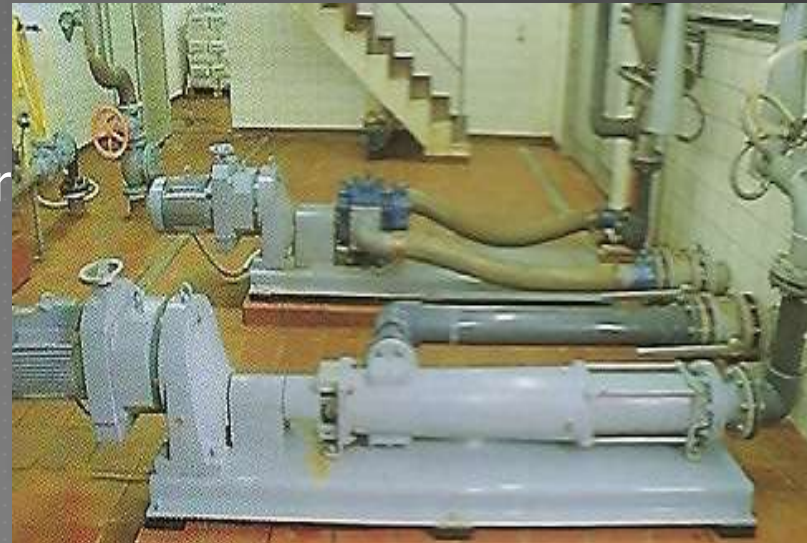
Rotary lobe pumps are similar to external gear pumps in operation in that fluid flows around the interior of the casing.

- Rotary lobe parts have a longer life span
 - Unlike external gear pumps, the lobes do not make contact. Lobe contact is prevented by external timing gears located in the gearbox.
- Rotary lobe pumps can handle higher abrasiveness
 - Because the lobes don't touch, abrasion will not affect operation as greatly as the always touching gears in a gear pump.
- Rotary lobe pumps can often handle higher pressures
 - Pump shaft support bearings are located in the gearbox, and since the bearings are out of the pumped liquid, pressure is limited by bearing location and shaft deflection.

ROTARY LOBE VS. PROGRESSIVE CAVITY (SCREW) PUMPS

Rotary Lobe pumps do the same jobs as well or better than screw pumps, they have the following advantages over progressive cavity pumps also known as screw pumps:

- Require approximately 1/3 their physical space. Because they are 1/3 the size:
 - Parts are typically 1/3 the cost
 - Maintenance labor time is 1/3 or less
 - Lifetime ownership cost is 1/3
- Ability to run dry for a period of



ROTARY LOBE VS. PROGRESSIVE CAVITY (SCREW) PUMPS



Installed LobePro SL133 to Replace a Moyno PC Pump, Tripled Life, Cut Repair Cost by 91%

Half the Footprint



PC Pump



Rotary Lobe Pump

WHAT PUMP HANDBOOK AUTHORS SAY

- ▶ Progressing Cavity Pumps:

“Progressing cavity pumps have a reputation for a high rate of wear and the requirement of more maintenance labor than any other widely used type... Replacement parts are expensive and difficult to install. Ample room is needed to slide internal pump parts out of the casing, so the pump requires significantly more floor space than other pumps.” (Pumping Station Design Edited by Garr M. Jones, 3rd Edition Chapter 19.11)

ROTARY LOBE VS. PROGRESSIVE CAVITY (SCREW) PUMPS

- Maintenance in place. Rotary lobes, seals and wear plates can often be replaced without removing attached piping or pumping.
- No Ragging. The PC Pump's screwing motion does an outstanding job of winding rags, stringy plastics, and hair around the rotor causing the pump to clog or 'rag.' This requires stopping the pump and cleaning out the 'rags' frequently (shown in the picture on right.)



Pulled from PC pumps every Friday. After installation of LobePro Rotary Lobe pump, ragging ceased.

ROTARY LOBE VS. CENTRIFUGAL PUMPS

Rotary Lobe Pumps have the following advantages over Centrifugal Pumps in sludge and slurry applications:

- Constant flow at different pressures or constant pressure at different flows
- Low fluid shear/low emulsion
- Easily pumps air/liquid mixtures
- Handles abrasives better because of low RPM's which greatly reduces wear. Pumps away all the fluids including solids and abrasives.
 - Centrifugal pumps tend to pump the lighter fluid away and leave the heavy material. Hence they are not suitable for fluids containing 3% or more solids
- Can be self-priming up to 25'

TESTIMONIALS

“The pumps are doing a great job, holding up well in the most demanding application in the municipal wastewater world.”

- Earle, WWTP Supervisor

“I love this pump. It takes three guys three days to rebuild a Moyno. It took three hours to rebuild the LobePro – and I did it myself. I can’t wait until we replace the other Moynos with LobePro.”

- Paul, WWTP Lead Mechanic

THANK YOU

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