

Function of the Rotary Lobe Pump










Clockwise Operation



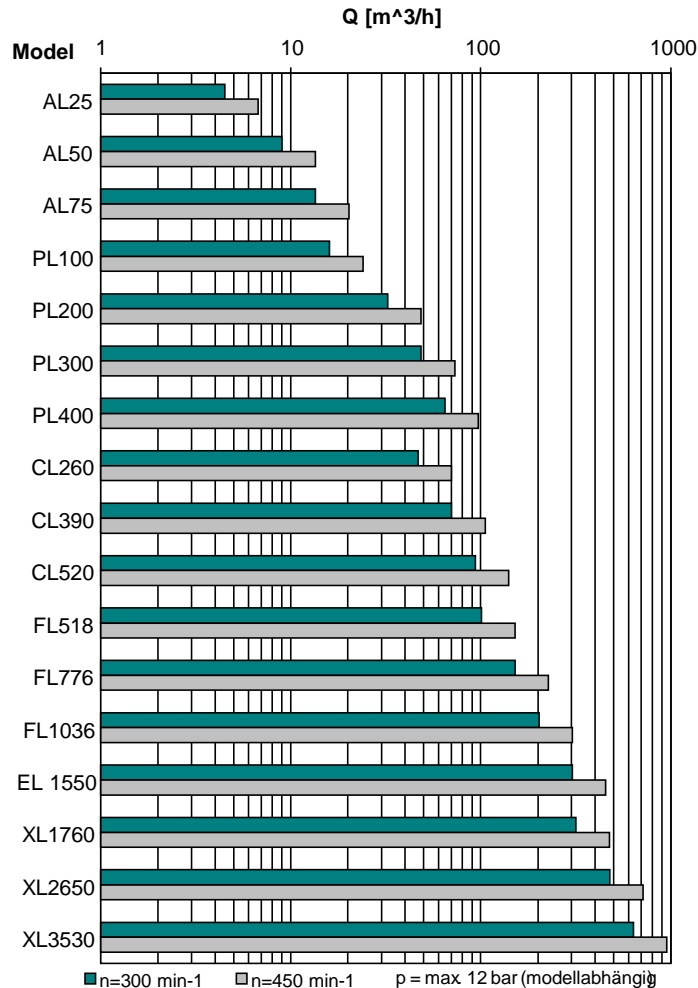
Counter-Clockwise Operation

- Self-priming, valve-less positive displacement pump
- Gentle, pulsation-free conveying
- For viscous, solids-laden, abrasive, shear-sensitive products
- Product fills the displacement-chambers on the suction side and is rotated circumferentially to the pressure outlet
- The displacement rotors operate with minimized axial and radial clearance
- The rotors isolate the suction and pressure areas of the pump
- Universally reversible operation.

Key Features & Benefits

-  Compact Design - Large Flow in a Small Footprint
-  Low Maintenance Costs - Maintenance In Place = MIP
-  Screw Rotors and Tips for Low Pulsation Operation
-  Insensitive to Dry Run - Suitable for Self-priming
-  Reversible Operation
-  Oil Lubricated Mechanical Seals - No Seal Water Needed
-  No Outboard Bearings - Larger pump diameters have eliminated the need for additional bearings in the front cover

Performance of Börger Rotary Lobe Pumps



AL - Series

•2 - 75 GPM

•free solid entry 1 inch

PL - Series

•30 - 300 GPM

•free solid entry 1.5 inches

CL - Series

•125 - 500 GPM

•free solid entry 2 inches

FL - Series

•300 - 900 GPM

•free solid entry 2.75 inches

EL - Series

•600 - 2000 GPM

•free solid entry 3.25 inches

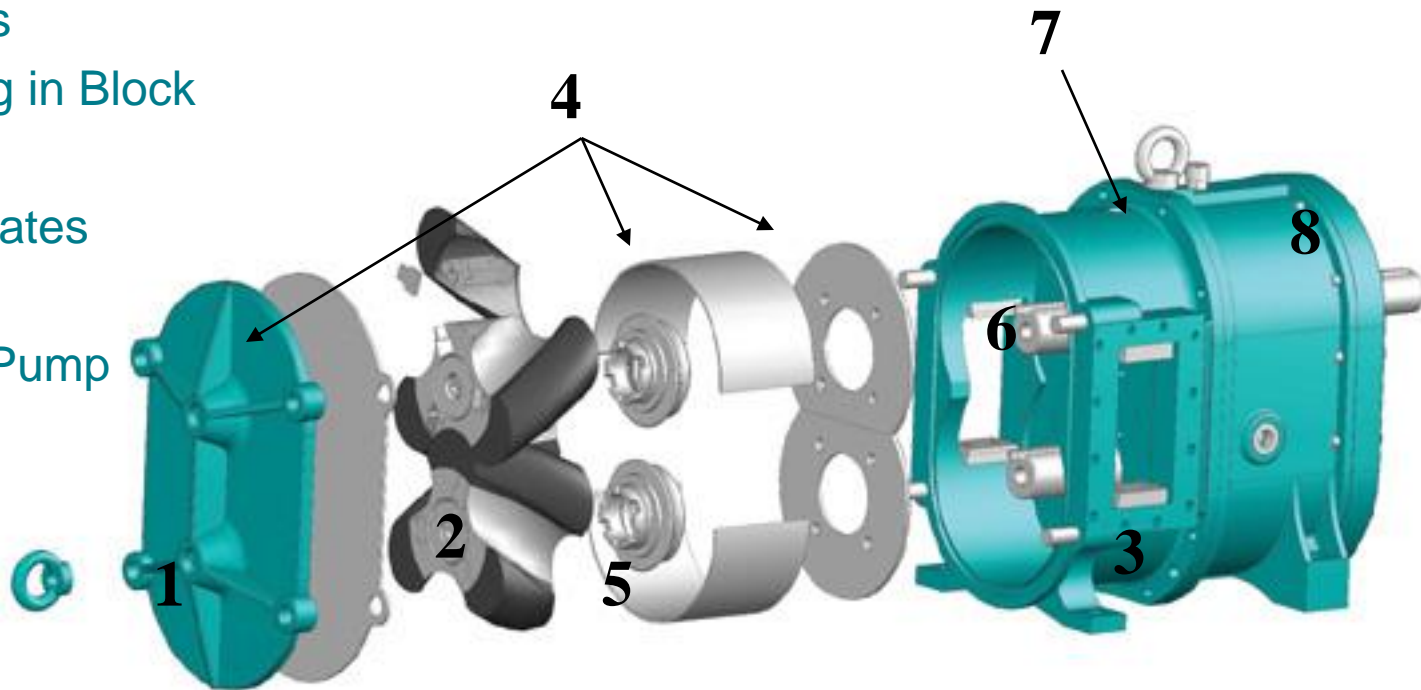
XL - Series

•1000 - 5000 GPM

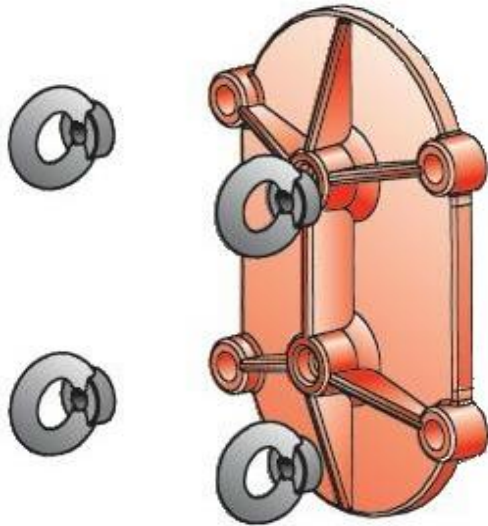
•free solid entry 3.75 inches

Components of the Rotary Lobe Pump

1. Quick Release Cover
2. Rotary Lobes
3. Pump Casing in Block Design
4. Protection Plates
5. Shaft Seals
6. Non-wetted Pump Shafts
7. Intermediate Chamber
8. Bearing & Timing Gear



1. Quick Release Cover

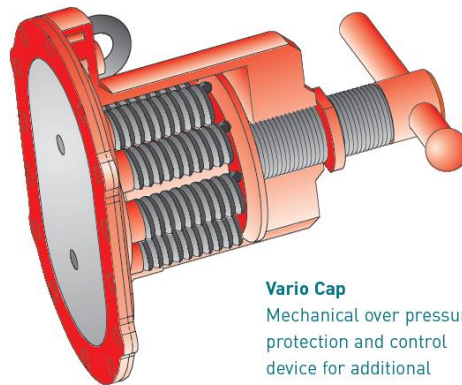


The door to the inside

- Easy access to all product loaded and wetted parts
 - simply remove four ring nuts

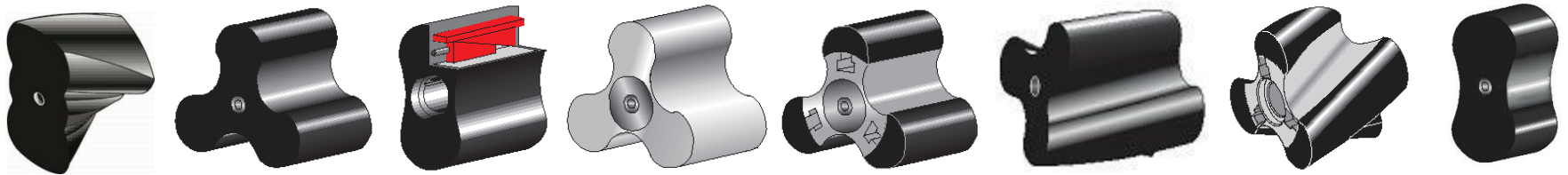
- The VarioCap reduces the risk of dangerous overpressure and increases the operation-safety
 - For continuous operation of the pump in dosing application
 - Pressure peaks are reduced

The VarioCap
Is a quick
release cover
as well!



Vario Cap
Mechanical over pressure
protection and control
device for additional
operational safety.

2. Rotary Lobes



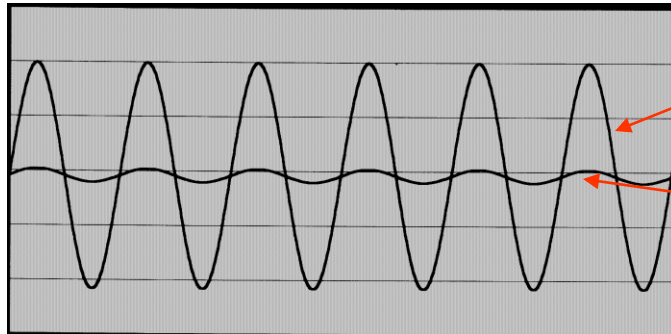
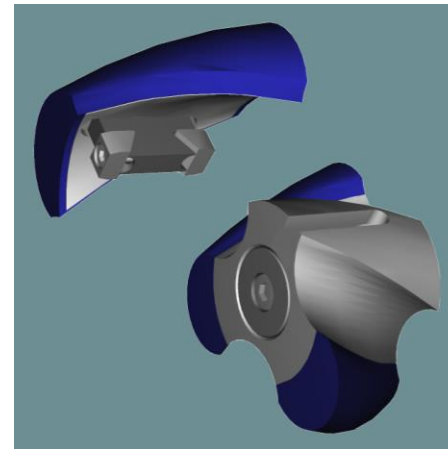
Rotor types and materials for best possible compatibility with each individual product

- Quick replaceable rotor tips for heavy duty operation ↑Patent
- Re-adjustable rotors for use with abrasive products ↑Patent
- Entirely elastomer coated rotors with non-wetted core ↑Patent
- Elastomers from NBR, EPDM, CSM, HNBR or FPM/FKM
- Stainless steel, PTFE, PUR etc for your specific application

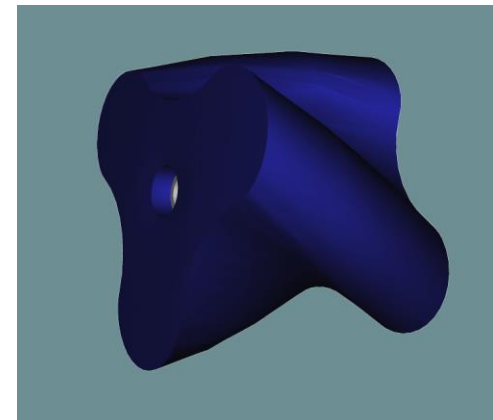
Additional elastomers, plastics or metals upon request

Rotors for Pulsation-free Operation

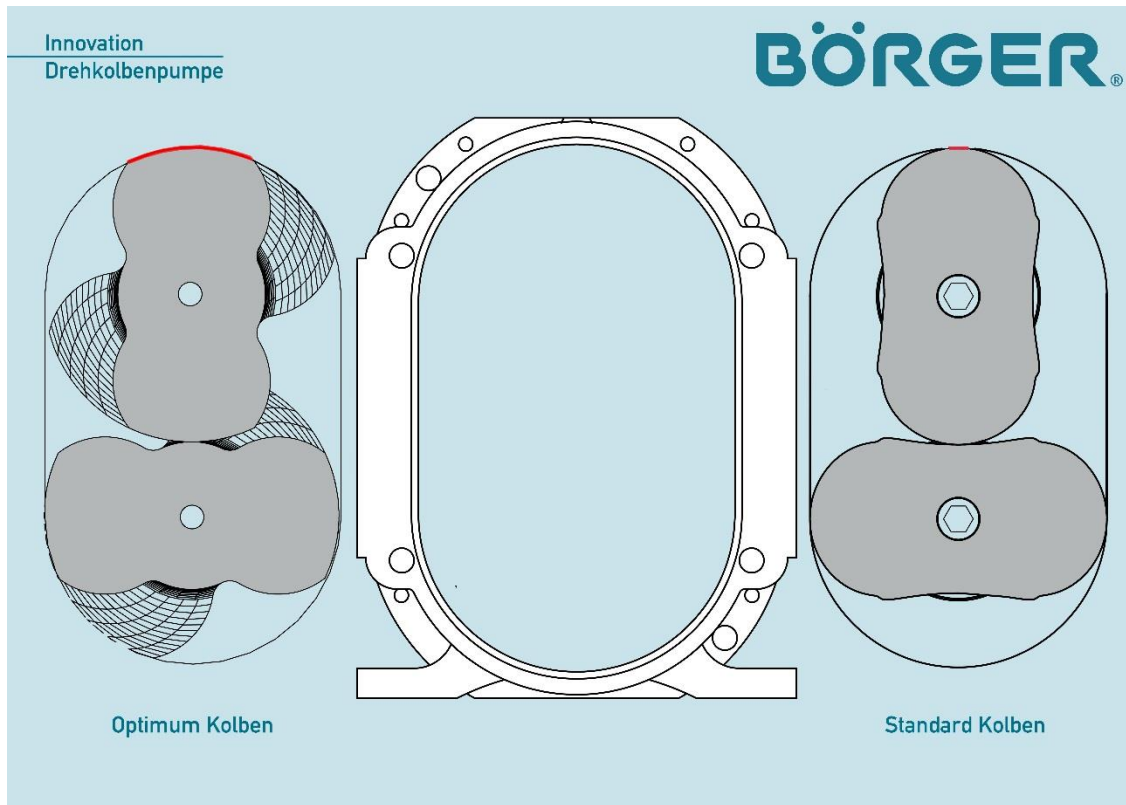
- Reduction of pulsation to a non measurable value
- Available as entirely rubber coated rotor or with replaceable tips



Linear rotor
Helical screw rotor

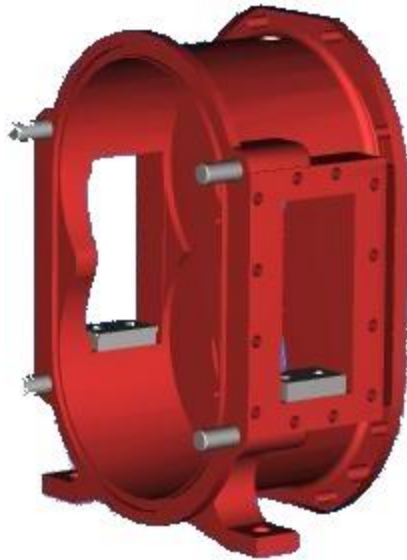


NEW! Optimum Rotor – A Revolution!



- Longer Sealing Lines
- Improved Suction Capabilities
- Increased Pressure Capabilities
- Pressure Stability
- Solids Handling
- Reduced Life Cycle Costs
- Optimal Efficiency
- Existing Units are Retro-fittable!

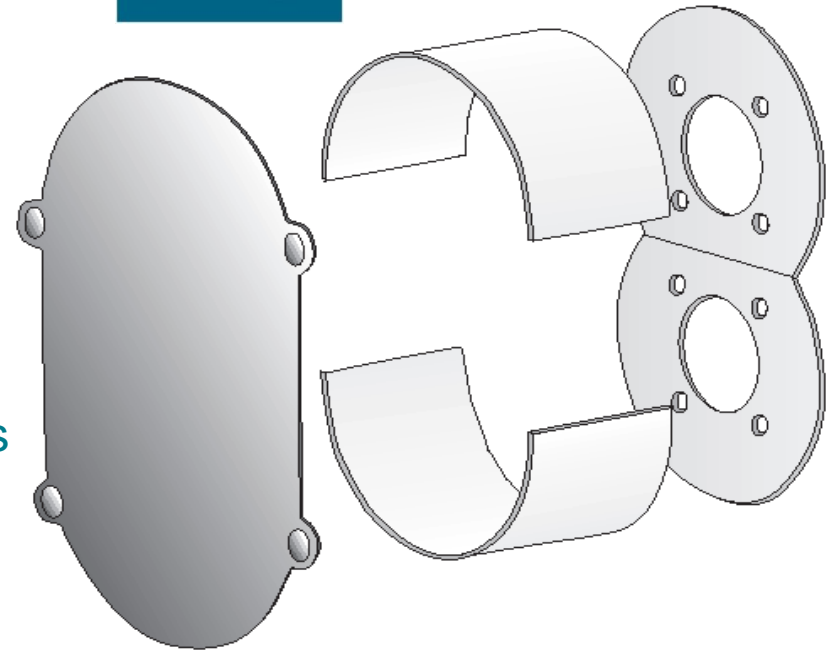
3. Pump Casing in Block Design



- Pump casing made from a single Block-casing and CNC-machined with low tolerances
- Available from high quality grey cast iron or stainless steel
- Large direct inlet / outlet openings for continuous flow, even with large solids and high viscosities
- Individual casing length for each pump size with one range
- ANSI flanges are included in our scope of supply. Configurations are limitless.

4. Protection Plates

- **MIP = Maintenance in Place** Enables the personnel on site to easily replace all product wetted parts at the place of operation.
- Axial lining plates and radial liners for maximum service life and easy maintenance.
- Available from through-hardened steel or hardened stainless steel, depending on the individual application.
- Eliminates the more-costly pump casing as a spare part. Pump casing **never** needs to be replaced!

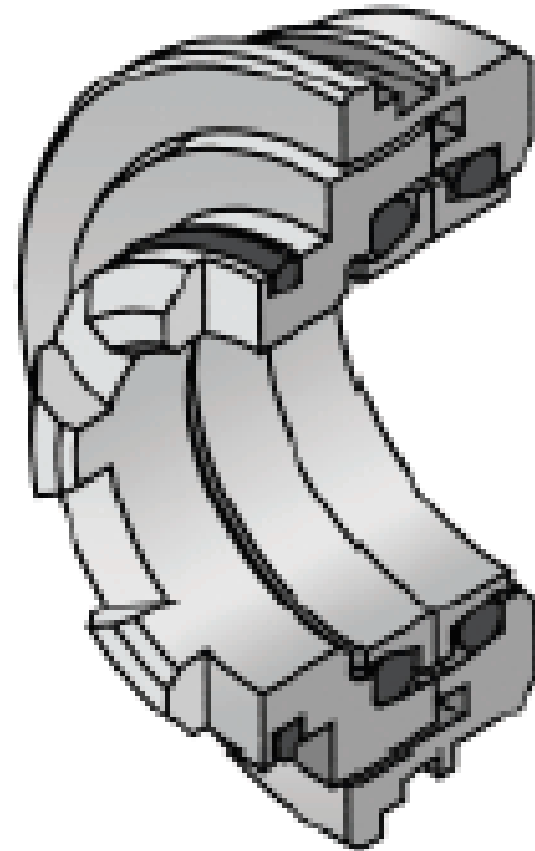


MIP = Maintenance In Place

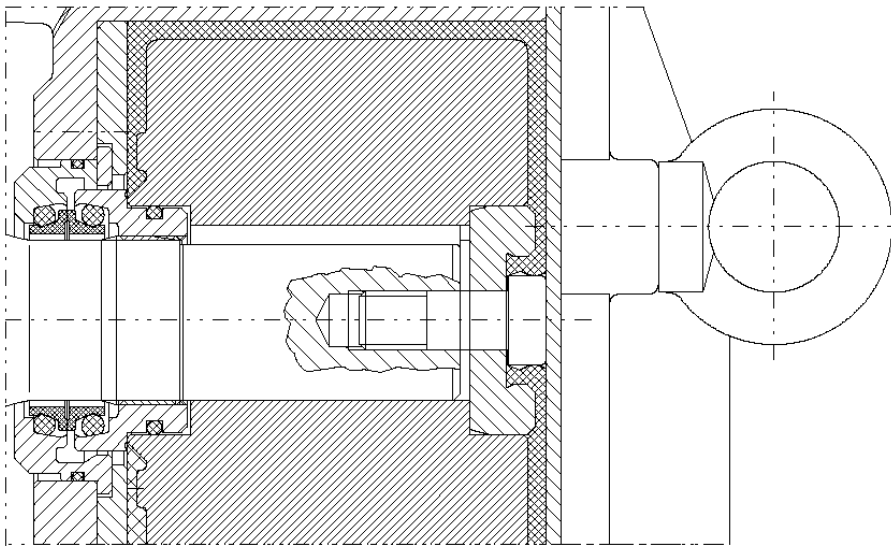


5. Shaft Seals

- Single acting mechanical seal with quench as standard
- All shaft seals are accessible through the quick release opening and are replaceable as a cartridge unit
- Available in Duronit (lapped cast iron) or Silicon Carbide.
- Seals are independent of the rotor (i.e. rotor replacement doesn't compromise seal compression).
- Special designs available, i.e. double acting, MultiSeal or gland packing.

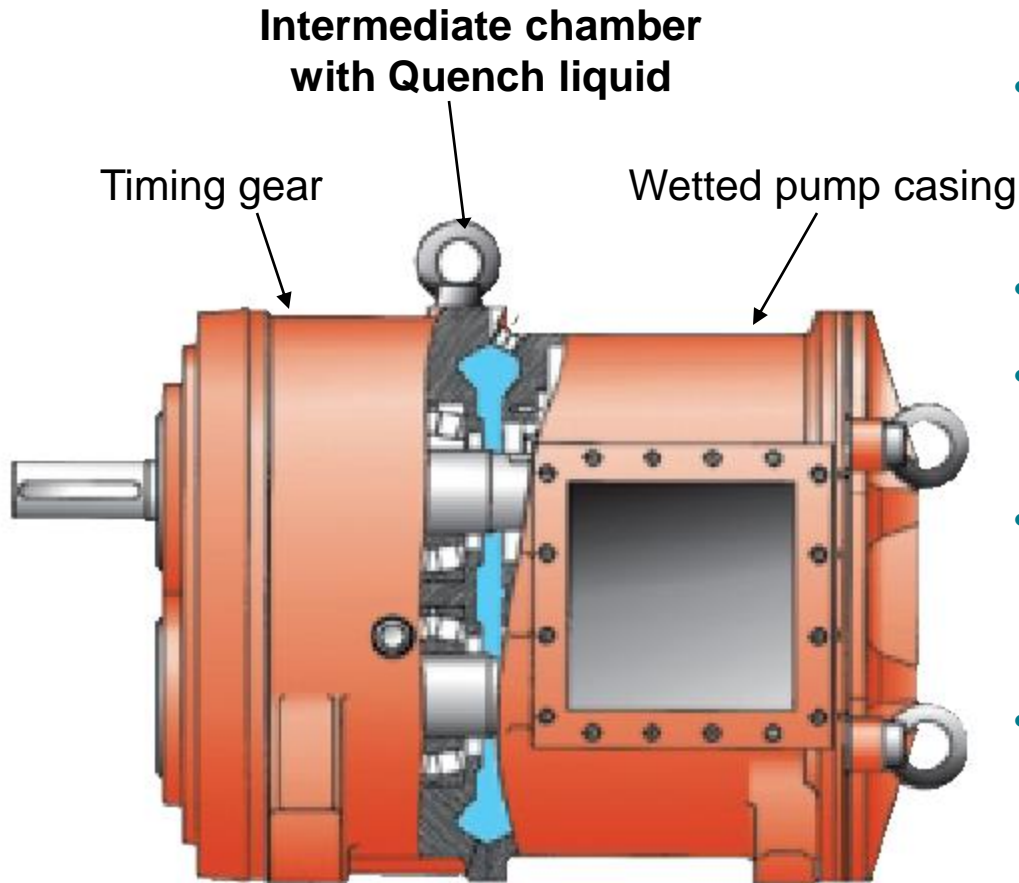


6. Non-wetted Shafts



- The connection between rotors and shafts is wetted by the lubricant quench liquid and thus protected from corrosion
- Entirely elastomer-coated rotors or O-rings prevent any contact of the shafts to the conveying liquid
- Shafts from high strength material
- Corrosion protected connection for easy rotor change even after extended operation

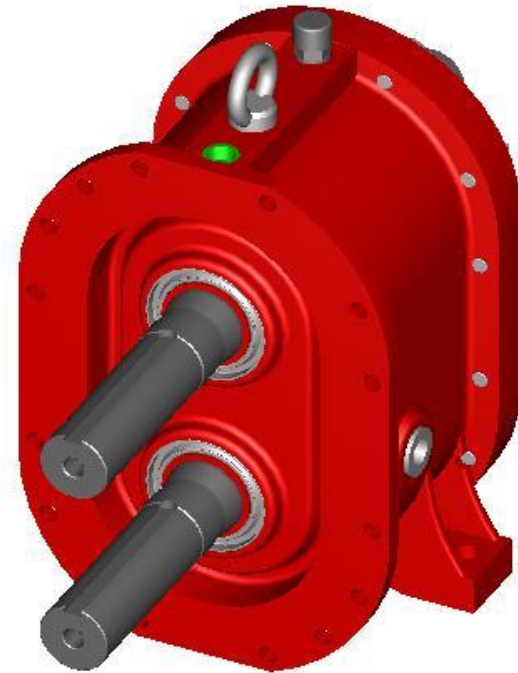
7. Intermediate Chamber



- Quench fluid for mechanical seals, rotor/shaft-connection and for seal-monitoring
- Non-pressurized
- Protects the gear against penetration of conveying liquid
- Protects the wetted pump chamber against contamination with gear oil
- Seal failures are indicated by displacement of the quench fluid from the intermediate chamber to the outside of the pump.

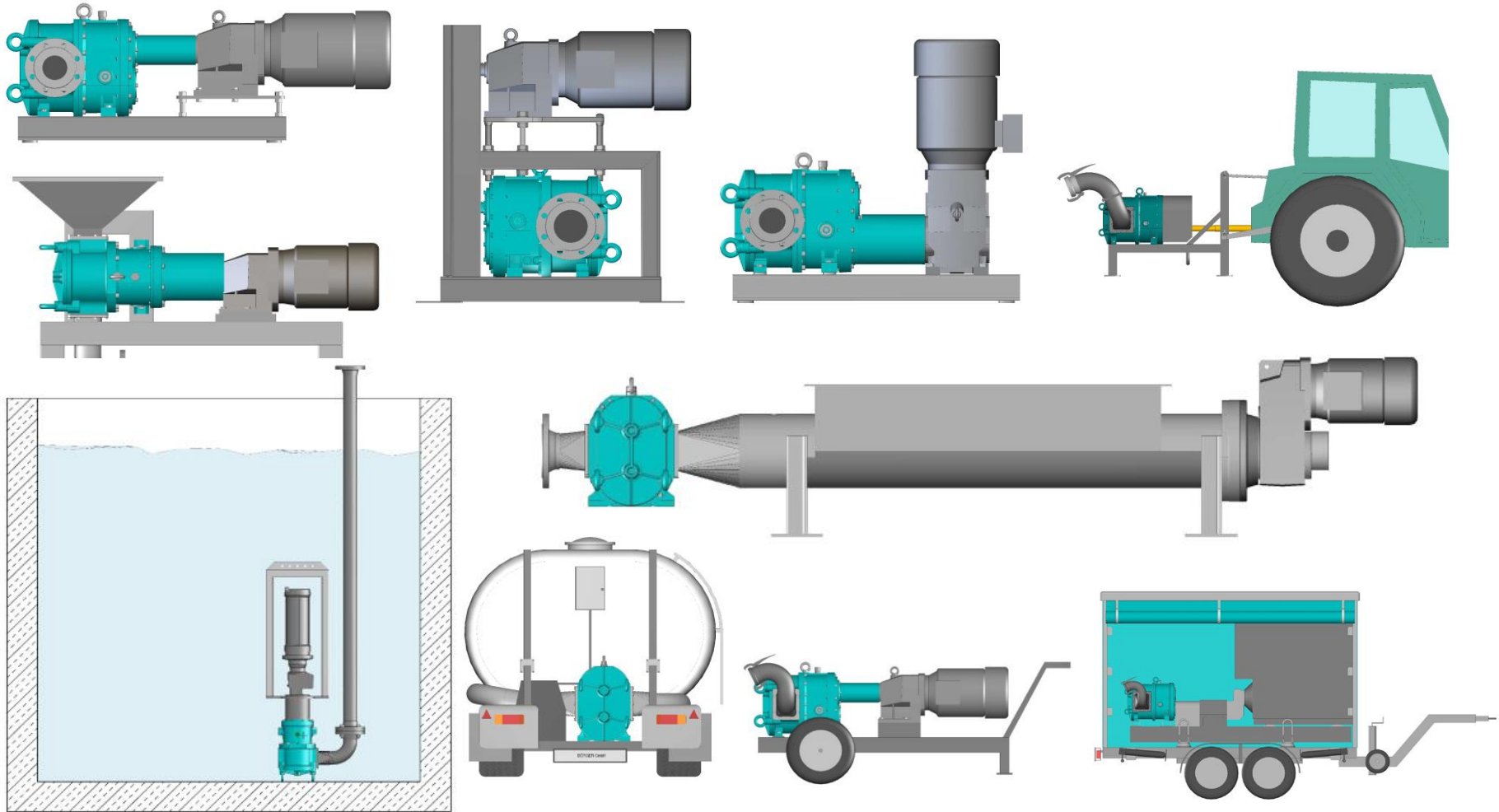
1. Bearing & Timing Gear

- Separately sealed construction
- Precisely made gear wheels
- Designed to be Maintenance-free for the life of the equipment
- Two gearwheels ensure the synchronizing of the rotating shafts
- Bearings are L-10 rated for 100,000 hours of service
- Five (5) Year Warranty



Construction Methods

Extract from the possible solutions



Applications in Wastewater Treatment

- Primary Sludge
- Scum & Grease
- Flotation Sludge
- Thickened Sludge
- Dewatered Sludge
- Digester Feed / Recirculation
- Membrane Bioreactors (MBR)
- Raw Sewage
- Mixed Liquor



... and also for any application requiring reversibility and / or continuous flow control.

Applications in Wastewater Treatment

BELT PRESS FEED

This **BOERGER** pump was chosen to replace an older lobe pump because of the low cost spare parts. The plant built and installed this unit on their own.



TECHNICAL SPECIFICATIONS

Model	PL 300
Flow	80-200 GPM
Pressure	30-35 Psi
Speed	140-300 RPM
Power	10 HP
DS Content	App. 2 %

Applications in Wastewater Treatment

PRIMARY SLUDGE

The space available was very limited and the design chosen features an overhead mounted drive arrangement. The dimensions of the whole unit is only 28" x 44".



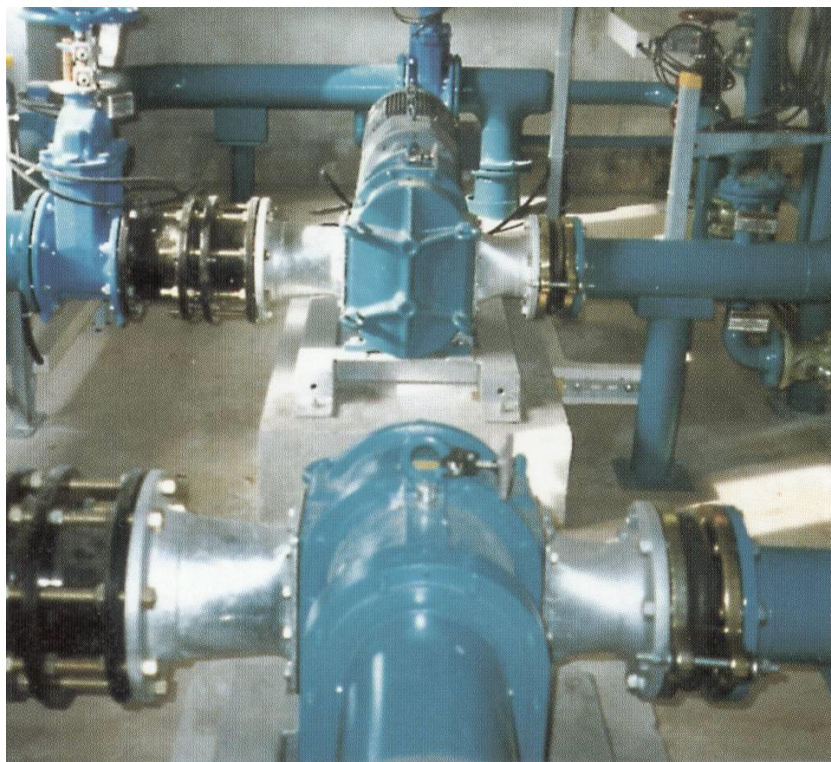
TECHNICAL SPECIFICATIONS

Model	FL 518
Flow	220 GPM
Pressure	30 psi
Speed	215 RPM
Power	7.5 HP
DS Content	App. 2 %

Applications in Wastewater Treatment

DIGESTER RECIRCULATION

The **BOERGER** rotary lobe pump was selected for its high efficiency, cost effective & space saving design, ease of maintenance, and low shear.



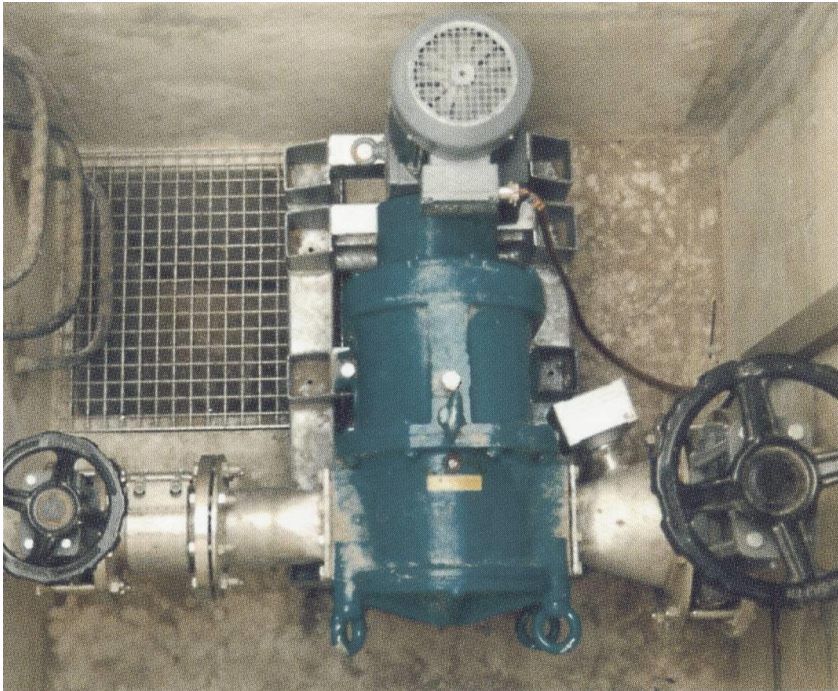
TECHNICAL SPECIFICATIONS

Model	FL 518
Flow	176-440 GPM
Pressure	60 Psi
Speed	120-330 RPM
Power	25 HP
DS Content	App. 5-6 %

Applications in Wastewater Treatment

SCUM AND GREASE

The **BOERGER** rotary lobe pump was selected because of space limitations. The vault shown here is only 4' x 4'.



TECHNICAL SPECIFICATIONS

Model	FL 518
Flow	264 GPM
Pressure	30 Psi
Speed	200 RPM
Power	10 HP
DS Content	App. 1-3 %

Applications in Wastewater Treatment

SCUM

This **BOERGER** pump was chosen to replace an older lobe pump because of the low cost spare parts. The plant built and installed this unit on their own.



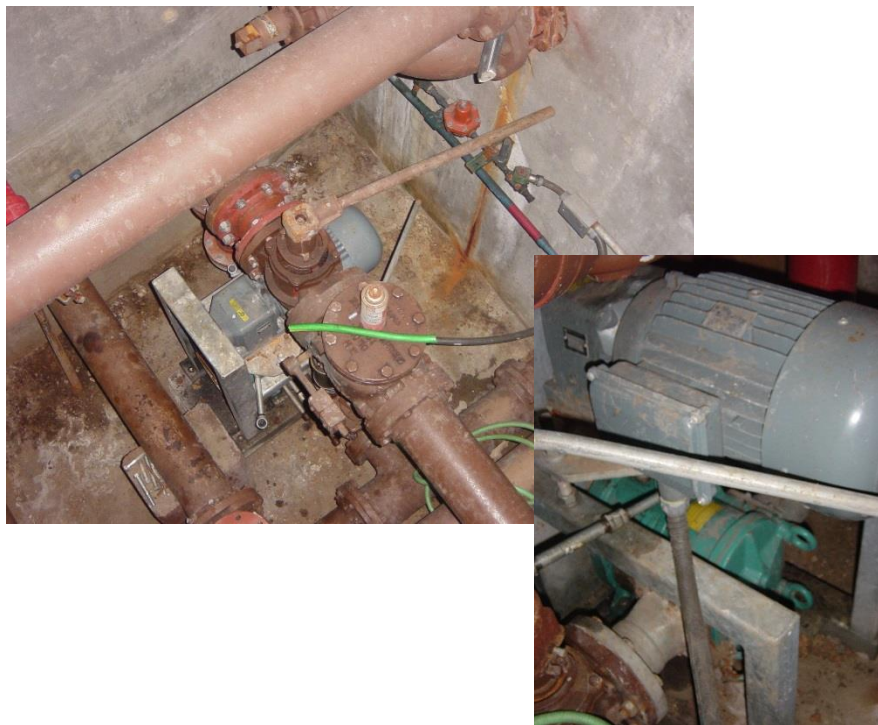
TECHNICAL SPECIFICATIONS

Model	PL 100
Flow	50-75 GPM
Pressure	30 Psi
Speed	275-355 RPM
Power	5 HP
DS Content	App. 1-2 %

Applications in Wastewater Treatment

COMBINED PRIMARY / WAS

This **BOERGER** pump was chosen due to extremely limited floorspace. The plant has since purchased a second unit.



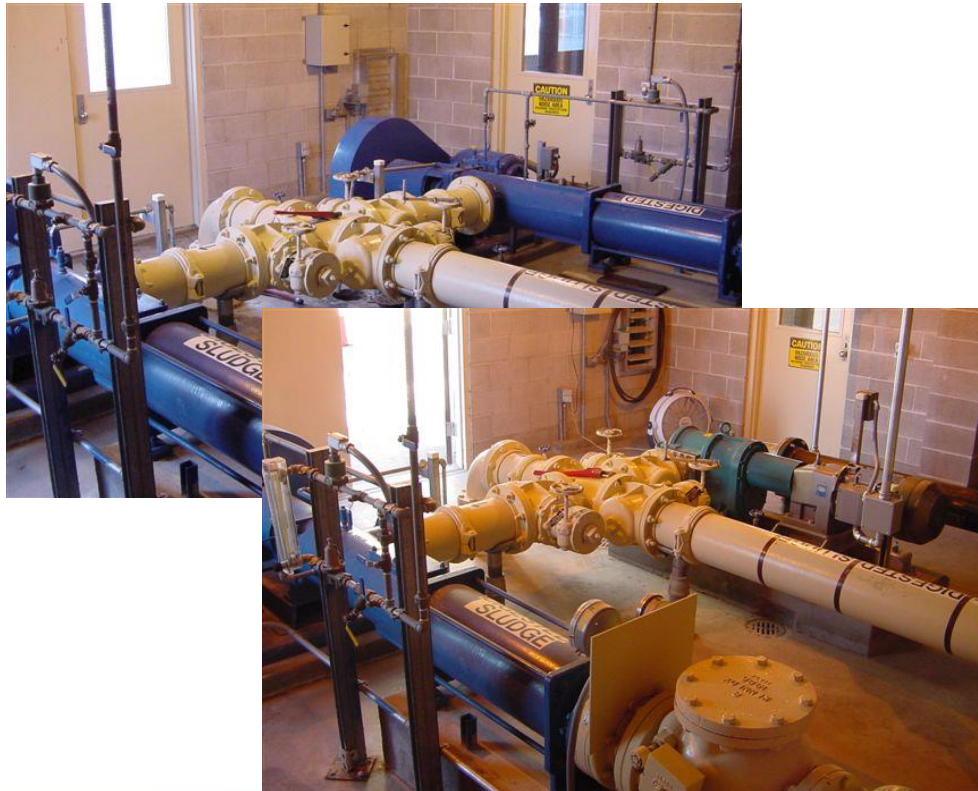
TECHNICAL SPECIFICATIONS

Model	PL 200
Flow	50-100 GPM
Pressure	30 Psi
Speed	200-325 RPM
Power	7.5 HP
DS Content	App. 1-4 %

Applications in Wastewater Treatment

DIGESTER FEED

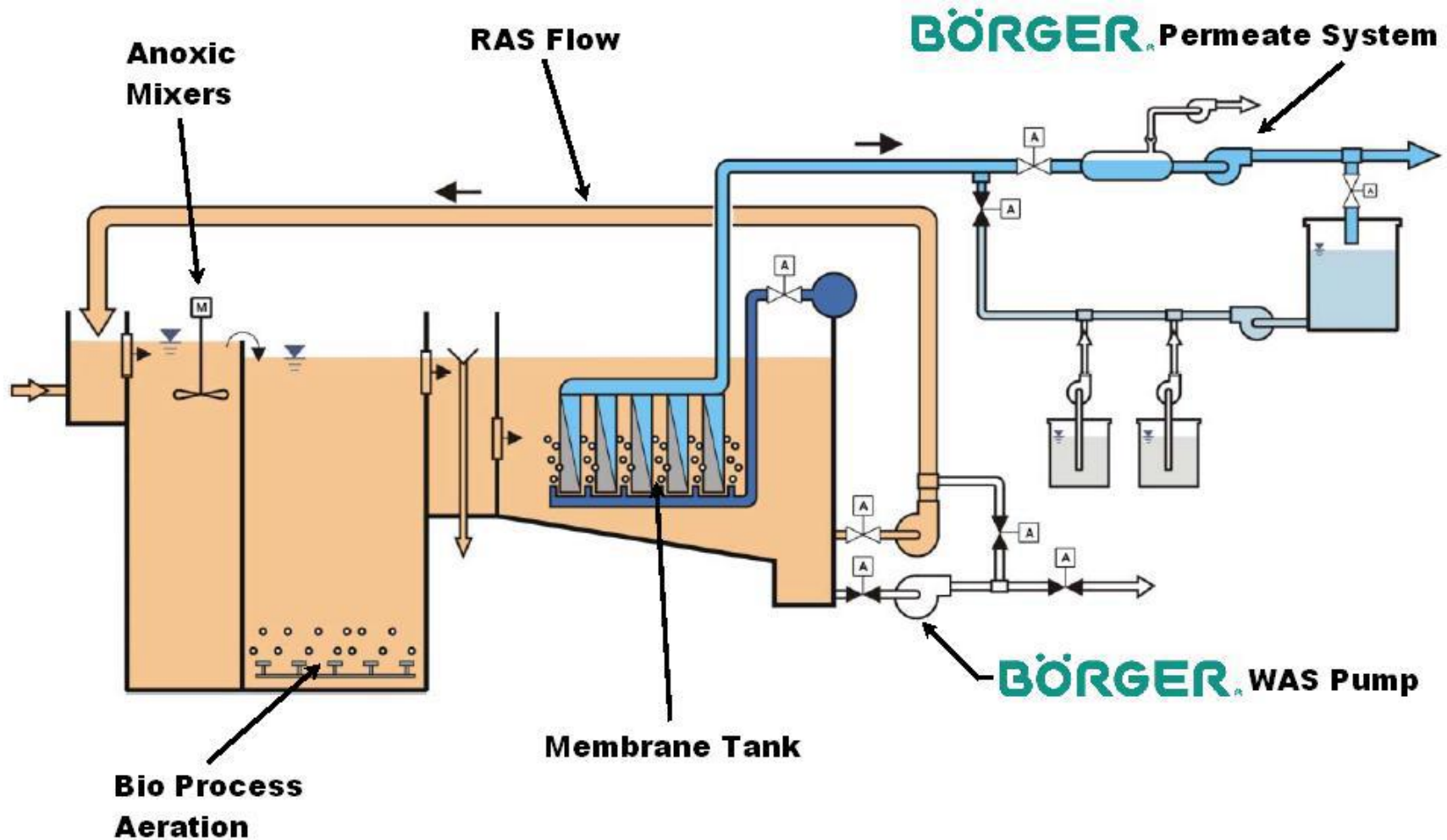
This **BOERGER** pump replaced a progressive cavity pump, freeing up additional floor space near the entrance.



TECHNICAL SPECIFICATIONS

Model	FL 776
Flow	500 GPM
Pressure	10 Psi
Speed	275 RPM
Power	25 HP
DS Content	2 %

Membrane Bioreactor (MBR) Process



MBR INSTALLATIONS



MBR INSTALLATIONS

