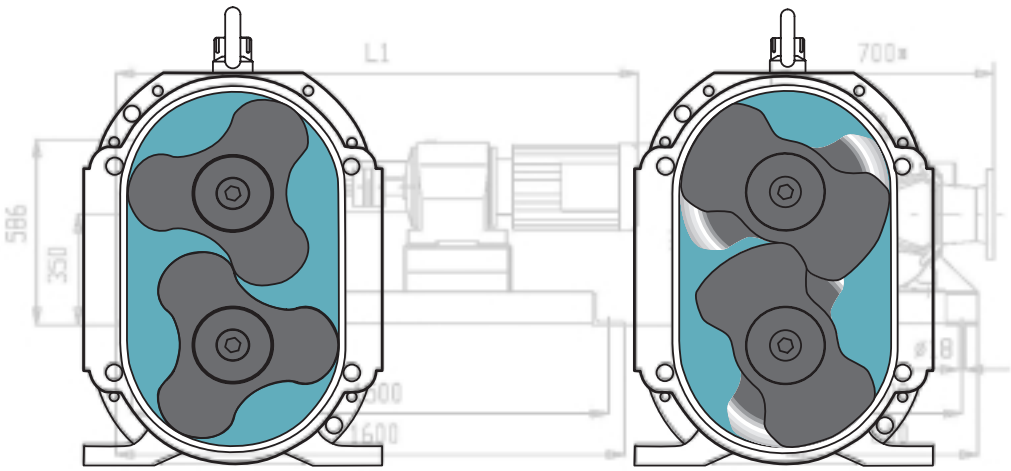
The New Optimum Rotor – A Revolution



- Longer Sealing Lines
- Improved Suction Capabilities
- Increased Pressure Capabilities
- Pressure Stability
- Solids Handling
- Reduced Life Cycle Costs
- Optimal Efficiency

New Rotor Design improves Efficiencies of Boerger Rotary Lobe Pumps

Processes in Water and Wastewater Treatment Plants need to incorporate dependable equipment. Pump technology is often described as the heart of a process and is an important factor for the success of plant operations. Boerger Rotary Lobe Pumps have a very good history in various applications in the environmental field. All Boerger Pumps incorporate our well known MIP – Design (Maintenance in Place), enabling the accessibility of all wetted parts through the front cover of the pump head without removal of pipe systems or drive units.

Innovation

The latest development from Boerger: The Optimum Rotor. This revolutionary, entirely coated rotor design combines the advantages of the dual lobe and the screw rotor. Performance tests show increased flows and efficiencies of Boerger Rotary Lobe Pumps equipped with the Optimum rotor. The tip radius of the Optimum rotor is identical to the radius of the pump casing. Therefore, the heavy-duty lobe tips incorporate long sealing lines to the pump casing and between the rotors. Slip is reduced to a minimum.

Improved volumetric efficiencies and the pressure stability of the Optimum rotor increase longevity and reduce the life cycle cost of the pump unit. Especially pump units in abrasive applications benefit from the Optimum Rotor Design. The modular design and the high manufacturing standards of Boerger Rotary Lobe Pumps make it possible, that most models in the field can be upgraded to the new Optimum Rotor.

Successful tests have been conducted on Wastewater Treatment Plants. A customer with a tough application for a Positive Displacement Pump was experiencing high maintenance with the existing pump unit. Boerger delivered a Rotary Lobe Pump with conventional rotor geometry and the pump unit held up 50% longer. In a second step, the Optimum Rotor was installed. The longevity was increased by another 50%. Combined, the Boerger pump doubled the run time before maintenance in comparison to the originally replaced pump unit. The customer is very satisfied. Boerger Rotary Lobe Pumps equipped with Optimum Rotor Technology stand for longevity and reduction in Life Cycle Costs.

The unique „Maintenance In Place“ Design - exclusive from Boerger.

FAQ – What you always wanted to know about MIP

What is MIP?

MIP stands for “Maintenance In Place”. As a sign of quality MIP describes to the point the easy access of all fluid wetted parts of our equipment without removal of pipes, drives or other components. Maintenance onsite.

Why MIP?

“Powerful, robust and durable equipment. Unrivalled ease of maintenance – if required.” These are basics of Boerger product philosophy.

How does maintenance onsite work with MIP?

A quick release cover as “door to the inside of the pump” enables quick access to modular rotor types, shaft seals and casing protections .

What is casing protection?

As a standard, Boerger Rotary Lobe Pumps are equipped with axial protection plates. Radial casing liners are optional for abrasive fluids. MIP in perfection. In case of wear only protection plates instead of the casing need to be replaced.

Can MIP radial liners be retrofitted?

Yes, Boerger Rotary Lobe Pumps can be modified to accommodate radial liners.

Relates MIP also to the rotors?

The rotors, available in various shapes, can easily be exchanged onsite. Additionally, there are readjustable rotors and rotors with replaceable tips available. Geometry and material of the rotors are selected based on fluid and hydraulic conditions.

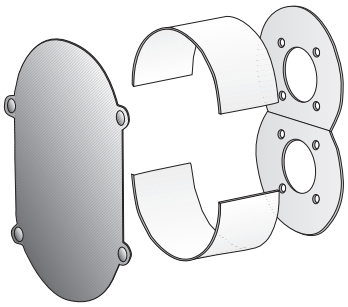
MIP available for all Boerger products?

Both, the pump based Multicrusher and the Multichopper I and T are MIP featured macerating aggregates, thanks to the quick release cover.

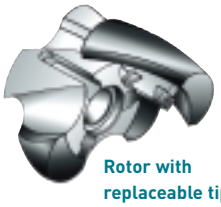
What are the advantages for the operator of Boerger equipment?

Boerger products incorporate low life cycle costs and ease of maintenance. Downtime and operation costs are reduced to a minimum with unrivalled MIP features.

Boerger Rotary Lobe Pumps – designed for cost effective operations.



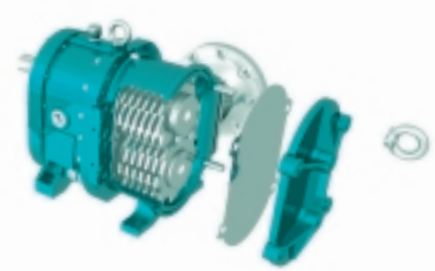
Pump Casing Protection Plates
Optional materials from Hardox, Stainless Steel, Plastic or Ceramic



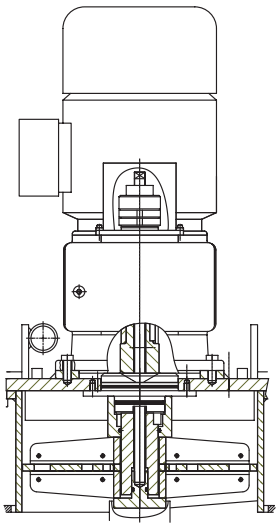
Rotor with replaceable tips
Uncomplicated maintenance and reasonable repair costs by exchanging the rotor tips.

Worldwide unique
and exclusive from Boerger: All aggregates with the unrivalled MIP-Design reduces life cycle cost and downtime.

MAINTENANCE® MIP IN PLACE
BÖRGER



The unique Multichopper - exclusive from Boerger.



Construction of the Macerating Device

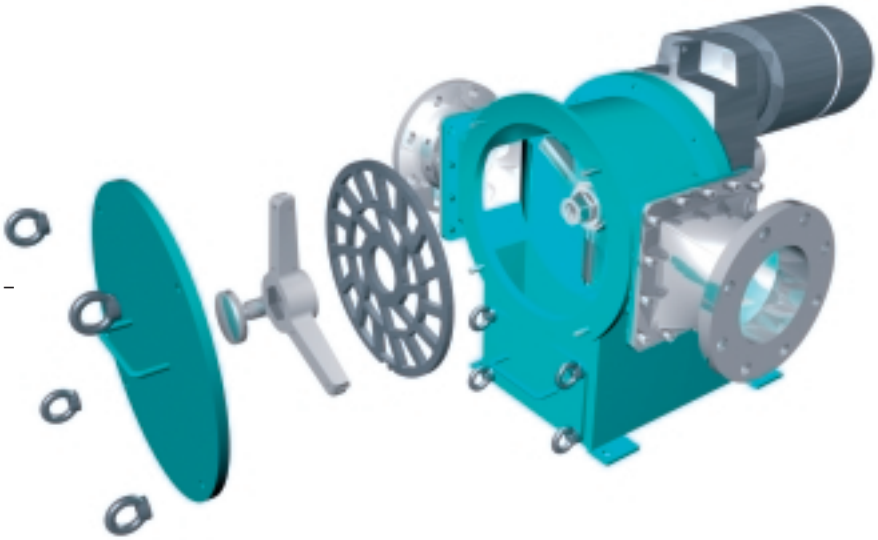
The second generation Multichopper incorporates technical, operation friendly design improvements. Knife tension to the plate is adjustable from the outside of the aggregate, a central shaft clamp construction keeps the assembly axially aligned. Both sides of the cutterblade are equipped with triple knifeheads, enabling six macerating cuts per rotation. The cutterblade is in a radial fixed position and is held in place between the two knifeheads along the shaft. The shaft seal is furnished with a proven Boerger mechanical seal with quench and control.
The Multichopper incorporates Boerger known maintenance friendly design.

By loosening a clamped construction, which is externally accessible, all rotating parts can be maintained and / or replaced onsite.
The MIP-Design allows the quick and convenient maintenance or replacement of all fluid wetted parts of the Börger Multichopper without removal of pipes, drives or other components of the pump unit by your own staff.
Quick - Uncomplicated – Inexpensive.

The Multichopper - designed for simple and effective operation.

Multichopper I

· Inline design
· large debris collection volume
· easy access to cutting assembly through quick release cover
· special, reversible flange connections – determination of flow direction onsite



Multichopper T

· cover opening with hydraulic support
· large debris collection tank
· central support with intermediate wall prohibits rag accumulation
· static O-ring seal between tank and cutter housing

Boerger, LLC
740 NE Harding Street
Minneapolis, MN 55413
USA
Toll Free 877-726-3743
Fax 612-331-8769
www.boerger-pumps.com
america@boerger-pumps.com

At a wastewater treatment plant, two Boerger Rotary Lobe Pumps are transferring sludge coming off a thickener. The max DS content of the thickened sludge is 8%. The readjustable rotors achieve triple the longevity in comparison to standard lobe designs.

TECHNICAL SPECIFICATION

Pump	PL 200	PL 200
Flow Rate	1-7 m³/h	4-31 usgpm
Pressure	up to 10 bar	up to 145 psi
Power	5,5 kW	7.5 HP

A sludge receiving station at a wastewater treatment plant is equipped with a self-priming Boerger Rotary Lobe Pump. For pump and downstream equipment protection, the station incor-porates a large volume stone catcher and a Boerger Multicrusher. Both aggregates are equipped with a space saving right angle geared motor.

TECHNICAL SPECIFICATION

Pump	PL 300	PL 300
Multicrusher	HPL 200	HPL 200
Flow Rate	45 m³/h	200 usgpm
Pressure	1,5 bar	22 psi
Power Pump	5,5 kW	7.5 HP
Power MC	4,0 kW	5 HP

Pictured is a mobile, self-priming Boerger Rotary Lobe Pump for various applications in wastewater treatment plants. The mobile pump is controlled via VFD for highest flexibility. The 360° rotatable flanges can be positioned as required, allowing quick setup at the jobsite.

TECHNICAL SPECIFICATION

Pump	FL 518	FL 518
Flow Rate	30-125 m³/h	132-550 usgpm
Pressure	1-9 bar	50-130 psi
Power	37 kW	50 HP

A brewery operates two Boerger Rotary Lobe Pumps conveying kieselgur (Diatomaceous Earth). Pump No. 1 feeds three clarifiers with low solids concentration kieselgur. After thickening, the same pump transfers the thickened fluid to a settling tank. Pump No. 2 works as a truck loading pump, transferring kieselgur with 26% DS content out of the settling tank into a pumper wagon.

TECHNICAL SPECIFICATION

Pump	FL 776	FL 776
Flow Rate	30-60 m³/h	132-264 usgpm
Pressure	4 bar	60 psi
Power	13,5/17,5 kW	18 HP/23 HP