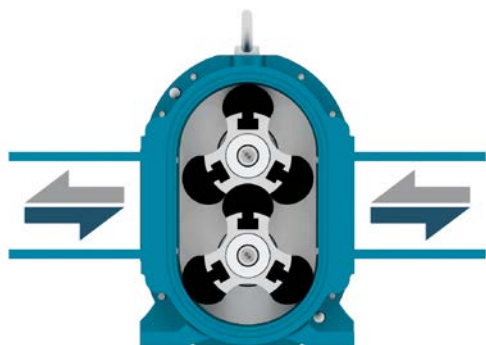


PUMP TECHNOLOGY
FOR
TANK TERMINALS



BÖRGER ROTARY LOBE PUMPS

THE VERSATILE PUMPS



Börger rotary lobe pumps have been successfully used in tank farms for many years. The solids handling pumps are powerful, reliable and efficient. Börger pumps convey dirty, sludgy and abrasive media without any issues.

OPERATING PRINCIPLE

Rotary lobe pumps are self-priming, valveless, positive displacement pumps. The synchronized rotation of the rotor pair creates a vacuum on the priming side of the pump. This vacuum draws the liquid into the pump chamber. The medium is pumped into the pressure area due to the rotation of the rotors. If the direction of rotation is changed, the flow is reversed.

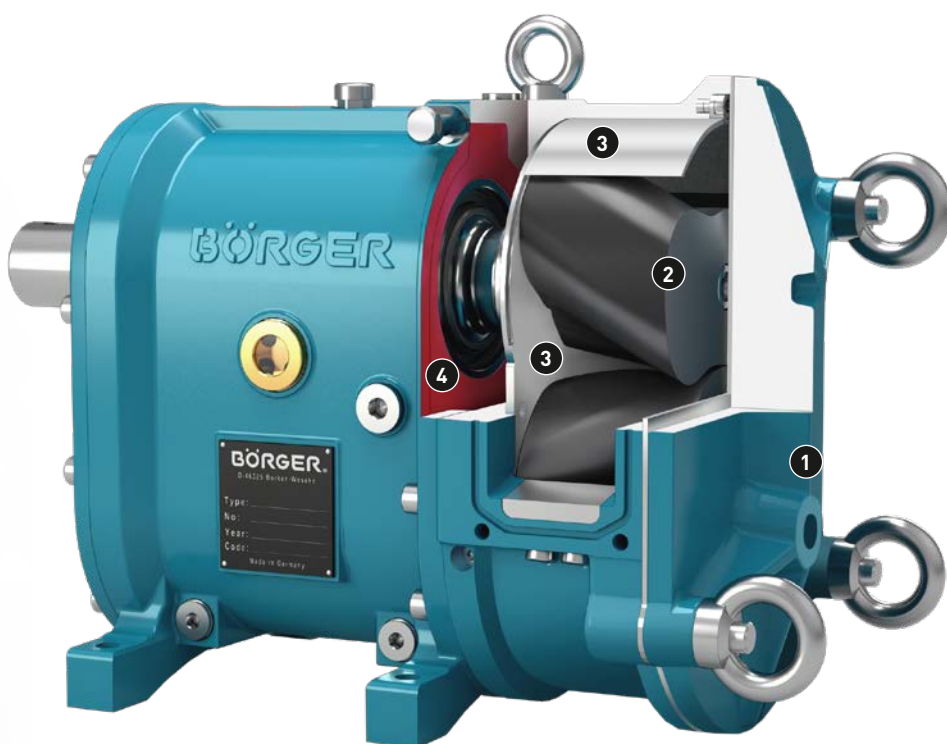
UNRIVALED LOW MAINTENANCE

Due to the cantilevered carrier design of the pump, the wear parts stressed by the pumped media can be replaced through the quick-release cover of the pump. All maintenance work are carried out without the need to remove the piping and the drive system.



CONSTRUCTION

- 1 The quick-release cover**
Access to all wetted parts by simply loosening four ring nuts.
- 2 The rotors**
Large selection of high-quality rotors. For almost pulsation-free pumping of the corresponding medium.
- 3 The casing protection**
The casing liners and casing protection plates protect the pump casing from wear and can be replaced in a matter of minutes.
- 4 The intermediate chamber and shaft seal**
The large-volume quench chamber is filled with oil and ensures the highest degree of safety. The ideal mechanical seal (single- or double-acting) is selected depending on the medium.



BLUEline Nova

Baureihe	Flow rate		Pressure Max. bar (psi)
	Min. m³/h (gpm)	Max. m³/h (gpm)	
BLUEline AN	0.03 (0.1)	35 (155)	10 (145)
ONIXline BJ	0.05 (0.2)	65 (295)	16 (230)
BLUEline PN	0.06 (0.3)	75 (340)	12 (175)
BLUEline QN	0.14 (0.6)	110 (475)	8 (115)
BLUEline PL	0.11 (0.5)	115 (500)	8 (115)
ONIXline BL	0.11 (0.5)	135 (590)	16 (230)
BLUEline CL	0.23 (1.0)	185 (825)	8 (115)
BLUEline FL	0.34 (1.5)	410 (1,805)	12 (175)
BLUEline EL	0.62 (2.7)	1,110 (4,900)	10 (145)
BLUEline XL	1.10 (4.6)	1,440 (6,335)	10 (145)

ROTARY LOBE PUMPS AT A GLANCE

- + 25 pump sizes with flow rates of 1 to 1,440 m³/h (1 to 6,400 gpm)
- + With and without casing protection plates and liners
- + Self-priming, pumping in slurr operation
- + Resistant to solids
- + Ease of maintenance (MIP®)
- + Compact, space-saving design
- + Cantilevered carrier design
- + Reversible



**BLUEline
NOVA**

FOR PURE MEDIA – PUMP WITHOUT CASING PROTECTION

The “clean” version of the BLUEline Nova has been designed for conveying pure, non-abrasive media. A casing protection is not required.

The pump with minimum dead space can be cleaned according to the hygiene procedures CIP (Cleaning-In-Place) and SIP (Sterilization-In-Place).

GUIDELINE-COMPLIANT DESIGN

All Börger pump units can be manufactured according to the European ATEX guidelines (2014/34/EU) intended for use in potentially explosive atmospheres.

In addition, a technically tight pump design according to the German TA Luft requirements or an API-676-compliant design are possible. Standard API 676 applies for rotary lobe pumps and standard API 682 for mechanical seals. Börger rotary lobe pumps can be designed, tested and delivered according to these requirements. Customer-specific requirements will be taken into account. It does not matter whether the pump units are stationary, mobile or submerged.

external

EX-marking

II 2G Ex h IIA T3 Gb (ext)

II 2G Ex h IIB T3 Gb (ext)

II 2G Ex h IIC T3 Gb (ext)

II 2G Ex h IIA T4 Gb (ext)

II 2G Ex h IIB T4 Gb (ext)

II 2G Ex h IIC T4 Gb (ext)

II 2GD Ex h IIB T135 °Db

internal

EX-marking

II 2G Ex h IIB T3 Gb (int)

II 2G Ex h IIB T4 Gb (int)

CUSTOMIZED EVERYTHING IS POSSIBLE

Börger offers ready-to-connect solutions. Our pump units are supplied from a single source. Börger designs and produces the base frame, the pump technology, the monitoring sensor system and the control technology themselves – in line with your requirements with perfectly matched components.

Each Börger rotary lobe pump is configured for its specific application using a modular principle. This also applies to the mobile pumps. In this respect, we deliver everything "from a single source". The entire unit is designed and manufactured for the corresponding application, including the mobile unit, the pump technology and the control unit.

BÖRGER CONTROL TECHNOLOGY

Our engineers develop, program and build the control technology tailored to your specific purpose in our electrical engineering department. All operating and monitoring devices, e.g. temperature monitoring, electronic seal monitoring or overpressure protection, are controlled and monitored by the control technology. Naturally, easy operation of the unit is ensured. In addition, an ATEX-compliant design is possible without any problems.



STATIONARY APPLICATION

- 1 Self-priming, pressure-resistant up to 16 bar
- 2 Compact design with overhead mounted drive
- 3 Overpressure protection through Variocapl
- 4 ATEX-compliant design



AS HANDCART PUMP

- 5 Portable pump
- 6 Heated pumps for use at temperatures of -50 °C in ATEX-compliant design
- 7 Handcart pump for conveying chemicals
- 8 Handcart pump with combustion engine



ON A TRAILER OR ON A MOBILE PLATFORM

- 9 Customized hose holders and storage compartments
- 10 Integrated flow monitoring on board
- 11 Driven by power generators and electric drives
- 12 With integrated filter system



BÖRGER SUBMERGED PUMPS

COMPACT AND CUSTOMIZED



Submerged pumps are required again and again. Submerged and semi-submerged pumps are used if dry installation is not possible due to the NPSH value of the plant. The compact design, chemical resistance, variable flow rate and ability to pump highly viscous media without any issues are the reasons why the Börger rotary lobe pump is an ideal submerged pump.



CONSTRUCTION AND FUNCTION

- 1 The drive**
The motor of the pump shown remains outside of the medium.
(alternative: submersible motor)
- 2 The installation cover**
The dome cover is available in different versions and dimensions.
- 3 The coupling**
The coupling connects the drive with the pump. The coupling is covered by a coupling guard tube.
- 4 The riser pipe**
The medium is pumped upwards through this pipe.
- 5 The sealing and fill level indicators**
monitor the fill levels of the intermediate chamber and the gear unit. An electronic monitoring unit can be installed on request.

IN USE ALL OVER THE WORLD

DURABLE AND RELIABLE



STRIPPING PUMP

Tankers are filled and emptied via loading arms. Residual quantities remain in these loading arms and have to be removed. Börger pumps are used for this purpose. These "stripping pumps" must convey reliably and very efficiently as the ships are supposed to depart as soon as possible after they have been loaded or unloaded. The pumps are configured individually according to the specific requirements of the media to be conveyed and the filling station. Above all, the high reliability of the Börger rotary lobe pump makes it an ideal stripping pump.



PUMPS FOR LOADING AND UNLOADING OF TRUCKS AND TANKER TRAINS

In a Thai tank farm, Börger rotary lobe pumps load and unload the incoming tanker trucks and trains. The pumps with dry-run capability can operate in reverse. This made it possible to design the piping system in a very simple way. Thanks to the high flow rate of the self-priming pumps, the tank terminal saves time during loading and unloading compared with the pumps previously used.



MOBILE ATEX-COMPLIANT REFINERY PUMP

A mineral oil company uses Börger mobile pumps for flexible use on the refinery premises and for "pigging" the pipelines. The entire pump unit including the pump itself, the drive and the control technology is manufactured in ATEX-compliant design. The Börger control technology ensures the highest degree of safety in potentially explosive atmospheres. To be able to use the pumps everywhere on the partially rough refinery premises, the entire mobile unit including the drive is mounted on a base frame equipped with forklift openings.



PUMPS FOR EMPTYING COLLECTING BASINS

A big tank farm in Singapore uses self-priming Börger pumps to empty the large collecting basins. The surface water consisting of rainwater, production residues, safety overflows etc. is collected here. The pumps with dry-run capability have a low shearing effect and were designed according to API 676 for rotary positive displacement pumps in compliance with the customer's requirements. As the pumps can master the required suction height of 6 m without any problems, the pumps could be installed above the collecting basin.



PUMPS FOR EMPTYING PIPELINES ON TANKERS

A shipping company uses Börger pumps on its 13 oil tankers for draining the pipe systems. The pumps had to be self-priming, not sensitive to dry running, and able to cope with high pressures and changing pumped media without problems. As the pumps are installed on deck, an explosion-proof design was required. The Börger pumps fulfilled these requirements.



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