Product information

varisco
solid pumping solutions

Self-priming diaphragm pumps

LB Series

variscopumps.com

Solid Pumping Solutions

Varisco is committed to providing innovative, durable and efficient solutions for industrial pumps intended for demanding applications. Our pumps are designed for strength, reliability and durability, ensuring consistent performance even in the most challenging environments.

Our pumps are recognized and used globally, particularly in handling abrasive and solids-laden fluids in the water treatment, chemical, and food industries.
Varisco is part of Atlas Copco Group.

Where reliability meets innovation

Active since 1932, Varisco boasts long and consolidated experience in the design and production of pumps for use in industrial processes. All products are distinguished by reliability and quality, and are tested at the internal Research and Development center.

We assist you in selecting your pump

From expert assistance with pump configurations to providing competitive quotes, our team is committed to supporting you through every stage of your project.

Optimize the performance of your pump with our after-sales service

Varisco is always at your side for pump assistance and repair services, anytime, anywhere. Thanks to scheduled maintenance, original spare parts and specialized technicians, we guarantee competence and professionalism to extend the life cycle of the pump.

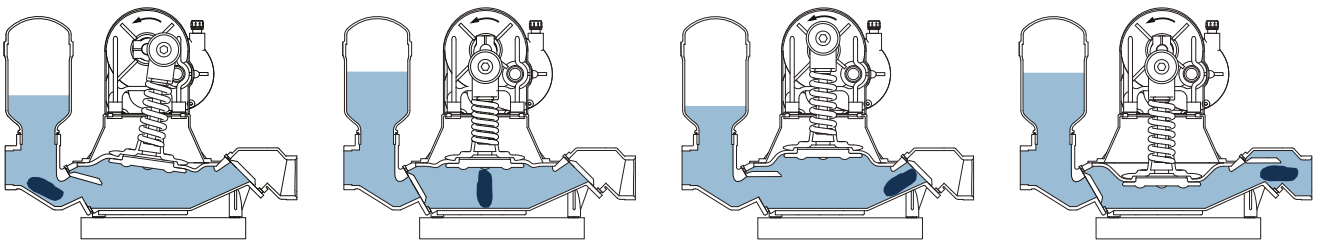
LB Series
Self-priming diaphragm pumps

The LB series self-priming diaphragm pumps are widely used wherever it is necessary to extract and evacuate foam, viscous, dense and sludgy liquids with abrasive debris and suspended solids. The high suction capacity and the ability to pump dry without damage make it particularly suitable for demanding applications.

Working principle

The LB pumps are of the diaphragm type driven by a connecting rod mechanically moved by a gear reducer. The flow generated by the movement of the diaphragm is controlled at the suction and discharge ends by “clapet” valves. As the diaphragm retracts from the bottom of the body, a vacuum is created in the chamber which draws the liquid into the body through the intake valve. As the diaphragm lowers again, the liquid is expelled through the delivery valve.

LB pumps are of the reciprocating volumetric type. Therefore, it is necessary for the delivery pipe to be of adequate diameter and free to discharge the pumped liquid to avoid overpressures that could reduce the life of the diaphragm and control elements. To prevent pump pulsations from being transmitted to the rest of the system, it is advisable to connect the pump to the system using an anti-vibration joint or a section of flexible hose.



Applications

Water treatment:

Flotation wastewater; addition of coagulants and sedimenting agents, pH correctors; primary and secondary sludge; draining and emptying of tanks and wastewater tanks.

Livestock industry:

Greasy wastewater and washing water; blood and animal by-products; feed and mixtures; addition of detergents and disinfectants; sludge tanks.

Paper industry:

Fibrous pastes and suspensions; paper sludge and white water; additives, glues, mineral fillers.

Textile industry:

Addition of dyes, bleaches, fixatives; exhausted baths and textile sludge; resins and finishing auxiliaries.

Marble and ceramic:

Abrasive sludge and mineral slurries; glazes, pastes; resins, additives and pigments..

Water jet cutting:

Transfer of waste water and washing water; recirculation and emptying of sludge tanks.

Food industry:

Transfer of slurry with suspended solids and fibres; addition of flavourings, additives, enzymes; food waste from tomatoes, fruit juices.

Chemical industry:

Transfer of solvents, acids, bases; addition of concentrated and aggressive products.

Naval industry:

Bilge drainage, sewage evacuation, stripping and cleaning of tanks.

LB Series
Constructive characteristics

LB Varisco self-priming diaphragm pumps are designed for the efficient transfer of dense and viscous liquids, even when containing abrasive particles and suspended solids. Their operation is based on a mechanically operated diaphragm, which allows them to handle difficult fluids with high reliability and precision. The rugged construction and durable diaphragm are designed to withstand wear from abrasive materials and suspended solids, ensuring long life and reduced maintenance. Thanks to its versatility and ease of maintenance,

LB Varisco self-priming diaphragm pumps represent a reliable solution for the transfer of complex liquids, combining high performance with simple and safe handling.

Materials

A Aluminium
G Cast Iron
K AISI 304 Stainless Steel
P Polypropylene

Viscosity

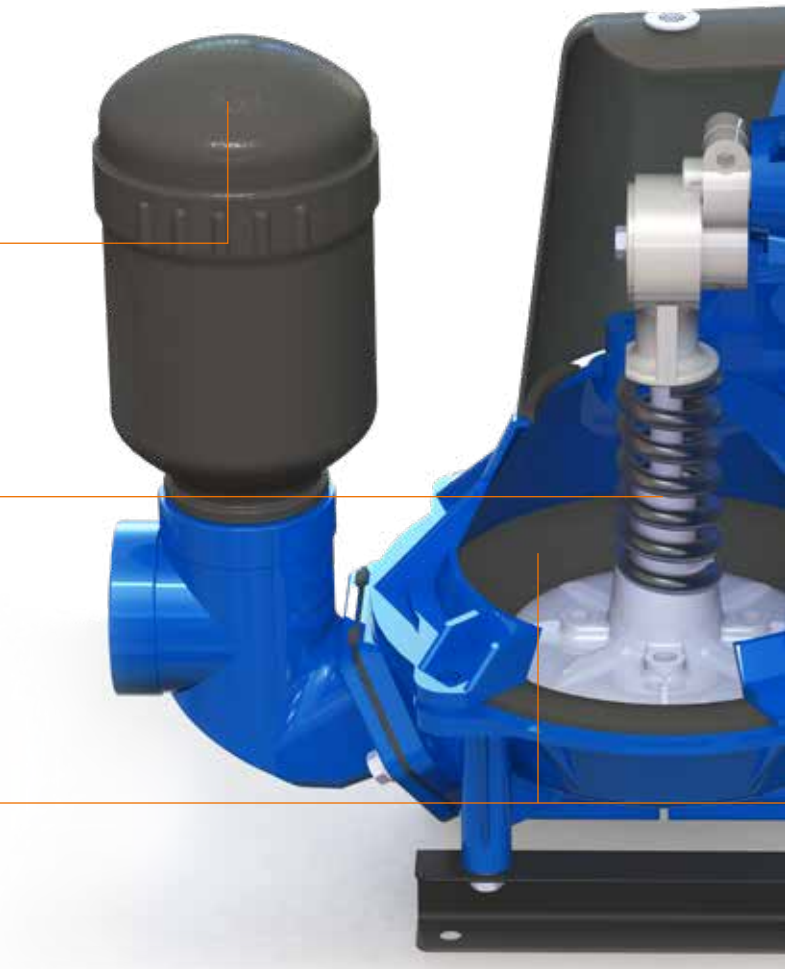
1 ÷ 1000 mm^2/s (cSt) (1 ÷ 150 °E) (30 ÷ 4500 SSU)

Operating temperature

TPV and Neoprene from - 20 a + 85 °C
Viton from - 10 a + 200 °C

Max. differential and operating pressure

LB 65: 1 bar
LB 70, LB 80: 1,5 bar



PNEUMATIC SHOCK ABSORBER

To reduce pulsations in the suction line.

ELASTIC CONNECTING ROD

Protection against blockage due to solid bodies or sedimentation in the pump body (not available in the models LB 65, LB 70 and LB 110).

NEOPRENE AND TPV DIAPHRAGMS AND VALVES

On request non-toxic oil-resistant rubber, FKM (Viton), EPDM.

SELF-PRIMING DRY IN SECONDS UP TO 6 M

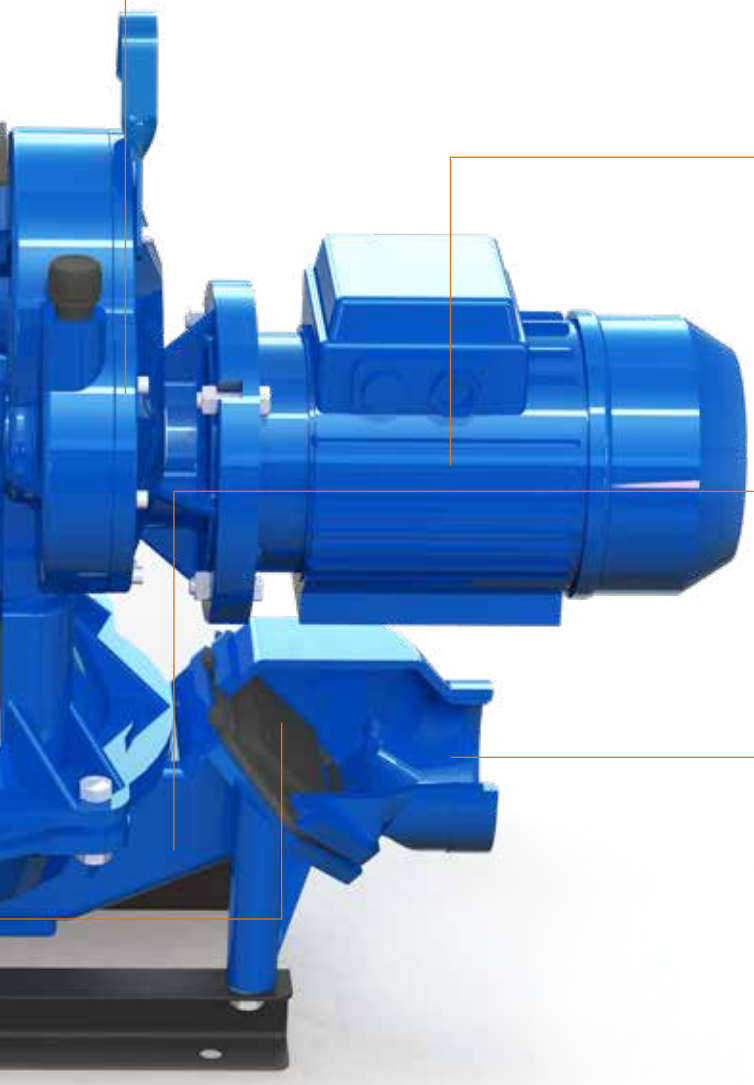
Ideal for emptying, frequent starts, speed of intervention.

HIGH ABRASION RESISTANCE

Its construction features allow the management of abrasive fluids with minimal wear and maintenance.

ABILITY TO HANDLE DIFFICULT FLUIDS WITHOUT DAMAGE

Foams, fatty and sticky substances, viscous fluids, with fibres and suspended solids.



GEAR REDUCTION UNIT

Made of treated steel, lubricated in an oil bath.

DIRECT COUPLING

To the electric motor flange.

PARTS IN CONTACT WITH THE LIQUID

Aluminium, cast iron or polypropylene (LB 65: in AISI 304 stainless steel).
On request in Rislan or SR60F coated aluminium.

SUCTION AND DELIVERY PORTS

Threaded and flanged UNI PN10 depending on the model.

LB Series
Advantages

- **Self-priming dry in seconds up to 6 m** (4.5 m for LB65), ideal for emptying, frequent starts, speed of intervention.
- **Damage-free dry running** thanks to diaphragm technology with no parts requiring cooling and lubrication.
- **Ability to handle difficult fluids:** foams, fatty and sticky substances, viscous fluids, with fibres and suspended solids.
- **High abrasion resistance:** Its construction features allow the management of abrasive fluids with minimal wear and maintenance.
- **Wide passage of suspended solids,** with maximum dimensions close to the dimensions of the suction and delivery ports.
- **Gentle handling** that preserves the integrity of the pumped product.
- **High chemical compatibility** with a wide choice of materials: polypropylene, cast iron, stainless steel, aluminium - TPV elastomers, FKM, neoprene.
- **Maximum operational safety** due to the absence of oil lubrication and elimination of the risk of contamination.
- **Quick and easy maintenance**, with reduced plant downtime.

Advantages of TPV diaphragms

- **Excellent tensile strength and elongation**: superior to other thermoplastic elastomers and traditional elastomers.
- **High mechanical strength**: up to 3 times higher than conventional rubbers.
- **Excellent abrasion resistance**: ideal for applications in heavy wear conditions.
- **High tear strength**: for greater durability and integrity of the material.
- **Wide temperature range of use**: from -60°C to +135°C.
- **Environmental resistance**: in extreme conditions, for long operating life.
- **Broad chemical compatibility**, with resistance to: acidic and alkaline solutions, oils and greases, polar solvents, contaminated or polluted water and fuels.

Optionals

✓ Available ✗ Not available

OPTIONALS	Ref.	LB65	LB70	LB80	LB110
Oil-resistant rubber diaphragm and valves	+O	✓	✓	✓	✓
FKM (Viton®) diaphragm and valves	+V	✓	✗	✓	✓
EPDM diaphragm and valves	+EM	✗	✓	✗	✗
Non-toxic rubber diaphragm and valves	+A	✓	✓	✓	✓
Trolley	+T	✓	✓	✓	✓
PN10 flanged ports	+F	✗	✗	✗*	✓

* LB80: Threaded ports for aluminium pumps; Flanged ports for cast iron and steel pumps

LB Series
Technical Data

Valid for standard pumps

MODEL	Flow rate (l/min)	Pressure (bar)	Reduction unit	Motor	Connections	Non-contact parts	Contact parts	Standard diaphragm and valves
LB 65 K/R43/ MC154+BP	55	1,2	ELIC. 1:43	Electric 230/400V IP55 kW 1,1 - 1400 rpm	Threaded 2"BSP	Aluminium	AISI 304	Neoprene
LB 65 K/R43/ MC152+BP	110	1,2	ELIC. 1:43	Electric 230/400V IP55 kW 1,1 - 2900 rpm	Threaded 2"BSP	Aluminium	AISI 304	Neoprene
LB 65 K+V/R43/ MC152+BP	110	1,2	ELIC. 1:43	Electric 230/400V P55 kW 1,1 - 2900 rpm	Threaded 2"BSP	Aluminium	AISI 304	FKM (Viton)
LB 70 G/R43/ MC154+BP	80	1,5	ELIC. 1:43	Electric 230/400V IP55 kW 1,1 - 1400 rpm	Threaded 2"BSP	Aluminium	Cast Iron	TPV Membrane / Neoprene Valve
LB 70 G/R43/ MC152 +BP	160	1,5	ELIC. 1:43	Electric 230/400V IP55 kW 1,1 - 2900 rpm	Threaded 2"BSP	Aluminium	Cast Iron	TPV Membrane / Neoprene Valve
LB 70 P/R43/ MC154 +BP	80	1,5	ELIC. 1:43	Electric 230/400V IP55 kW 1,1 - 1400 rpm	Threaded 2"BSP	Aluminium	Polypropylene	TPV Membrane / Neoprene Valve
LB 70 P/R43/ MC152+BP	160	1,5	ELIC. 1:43	Electric 230/400V IP55 kW 1,1 - 2900 rpm	Threaded 2"BSP	Aluminium	Polypropylene	TPV Membrane / Neoprene Valve
LB 80 A/R43/ MC204+BP	120	1,5	ELIC. 1:43	Electric 230/400V IP55 kW 1,5 - 1400 rpm	Threaded 3"BSP	Aluminium	Aluminium	TPV Membrane / Neoprene Valve
LB 80 A /R43/ MC204 +BP +INT	120	1,5	ELIC. 1:43	Electric 230/400V IP55 kW 1,5 - 1400 rpm	Threaded 3"BSP	Aluminium	Aluminium	TPV Membrane / Neoprene Valve
LB 80 A/R43/ MC202+BP	240	1,5	ELIC. 1:43	Electric 230/400V IP55 kW 1,5 - 2900 rpm	Threaded 3"BSP	Aluminium	Aluminium	TPV Membrane / Neoprene Valve
LB 80 K+F/R43/ MC302+BP	240	0,5	ELIC. 1:43	Electric 230/400V IP55 kW 2,2 - 2900 rpm	Flanged DN 80 PN 10	Cast Iron	Acciaio inox	TPV Membrane / Neoprene Valve
LB 80 G/R43/ MC302+BP	240	1,5	ELIC. 1:43	Electric 230/400V IP55 kW 2,2 - 2900 rpm	Flanged DN 80 PN 10	Cast Iron	Cast Iron	TPV Membrane / Neoprene Valve
LB 80 VG+F/R38/ MC204+BP	135	1,5	ELIC. 1:38	Electric 230/400V IP55 kW 1,5 - 1400 rpm	Flanged DN 80 PN 10	Cast Iron	Cast Iron	TPV Membrane / Neoprene Valve
LB 80 VG+F/R38/ MC156+BP	85	1,5	ELIC. 1:38	Electric 230/400V IP55 kW 1,1 - 900 rpm	Flanged DN 80 PN 10	Cast Iron	Cast Iron	TPV Membrane / Neoprene Valve
LB 80 VK+F/R38/ MC204 +BP	135	1,5	ELIC. 1:38	Electric 230/400V IP55 kW 1,5 - 1400 rpm	Flanged DN 80 PN 10	Cast Iron	Acciaio inox	TPV Membrane / Neoprene Valve
LB 80 VR+F/R38/ MC204+BP	135	1,5	ELIC. 1:38	Electric 230/400V IP55 kW 1,5 - 1400 rpm	Flanged DN 80 PN 10	Cast Iron	Aluminium riv. Rislan	TPV Membrane / Neoprene Valve
LB 80 V2G+F/R28/ MC204+BP	170	1,5	ELIC. 1:28	Electric 230/400V IP55 kW 1,5 - 1400 rpm	Flanged DN 80 PN 10	Cast Iron	Cast Iron	TPV Membrane / Neoprene Valve
LB 110 G/R31/ MC404+BP	425	1,5	ELIC. 1:31	Electric 230/400V IP55 kW 3 - 1400 rpm	Threaded 4"BSP	Aluminium/ Cast Iron	Cast Iron	TPV Membrane / Neoprene Valve
LB 110 G/R31/ MC306+BP	325	1,5	ELIC. 1:31	Electric 230/400V IP55 kW 2,2 - 900 rpm	Threaded 4"BSP	Aluminium/ Cast Iron	Cast Iron	TPV Membrane / Neoprene Valve
LB 110 A/R31/ MC404 +BP	425	1,5	ELIC. 1:31	Electric 230/400V IP55 kW 3 - 1400 rpm	Threaded 4"BSP	Aluminium/ Cast Iron	Aluminium	TPV Membrane / Neoprene Valve
LB 110 A/R31/ MC306 +BP	325	1,5	ELIC. 1:31	Electric 230/400V IP55 kW 2,2 - 900 rpm	Threaded 4"BSP	Aluminium/ Cast Iron	Aluminium	TPV Membrane / Neoprene Valve
LB 110 G/R31/ MC404+T	425	1,5	ELIC. 1:31	Electric 230/400V IP55 kW 3 - 1400 rpm	Threaded 4"BSP	Aluminium/ Cast Iron	Cast Iron	TPV Membrane / Neoprene Valve

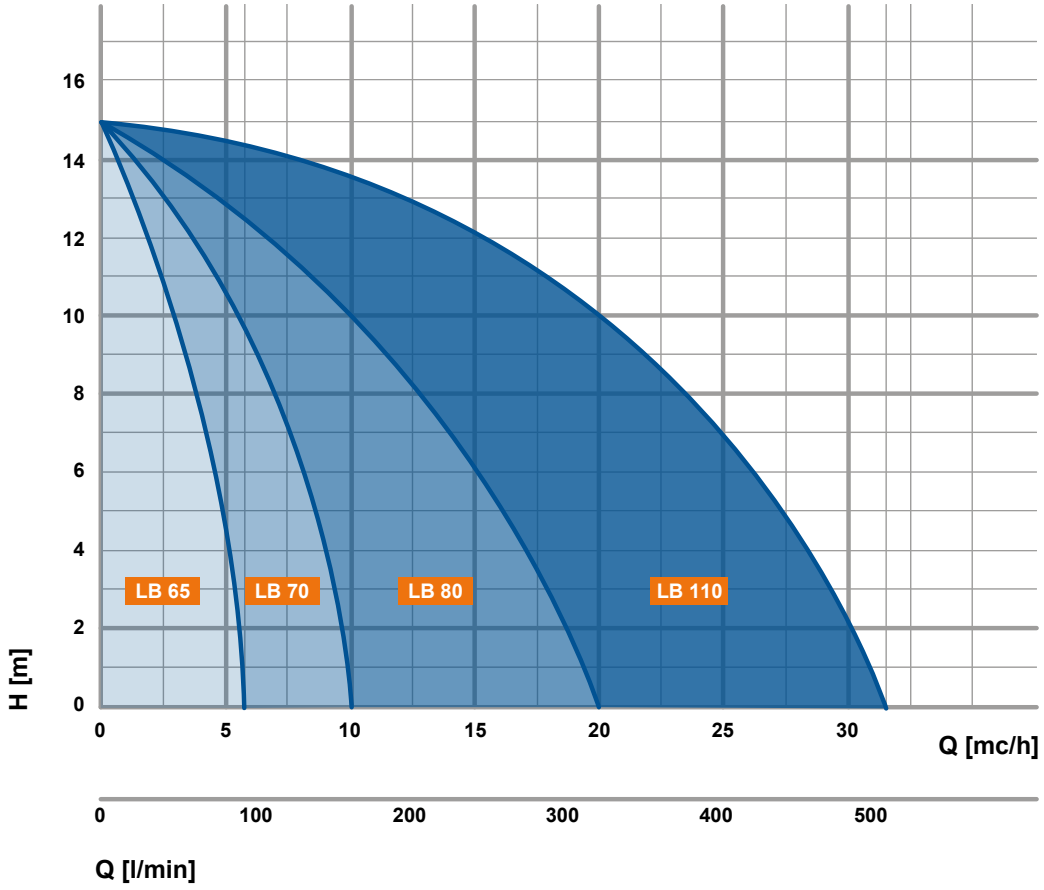
Standard equipment for all models: Metal base

Technical Data

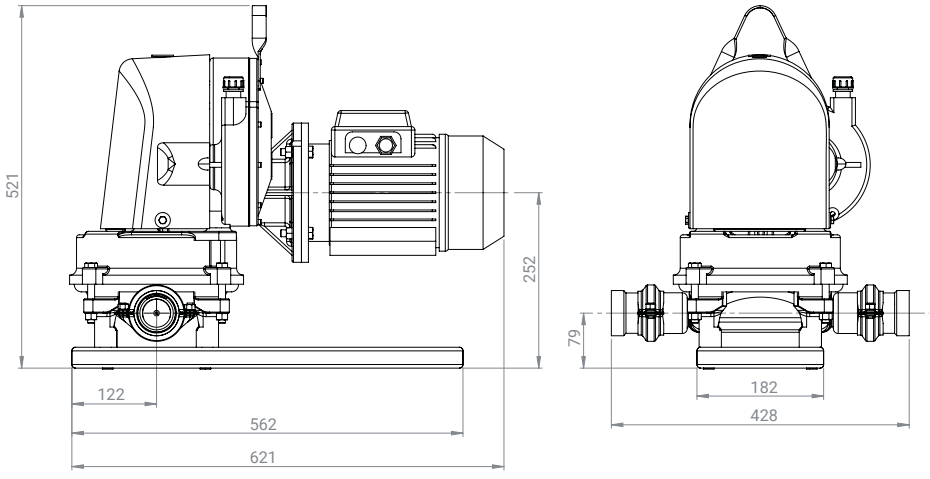
Configuration and construction

LB Series
Performance curves

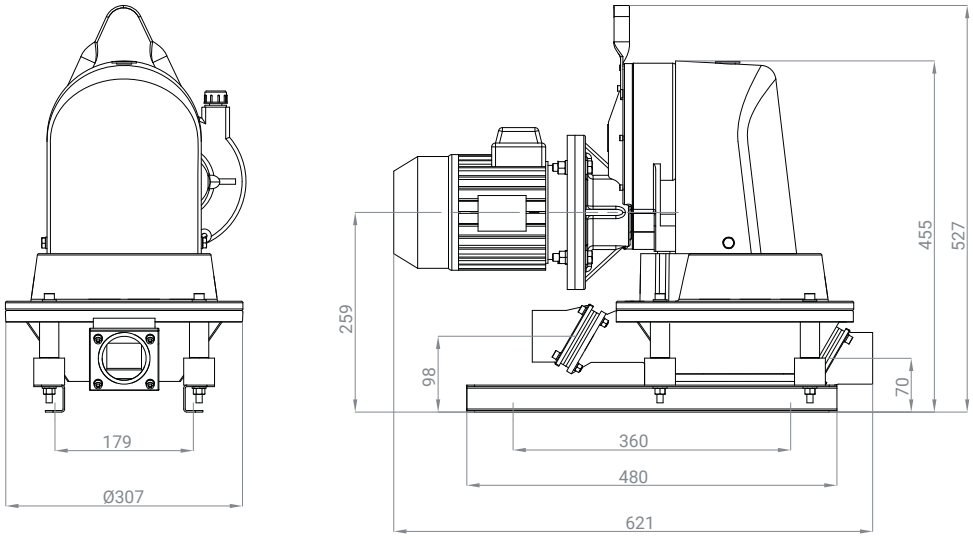
For continuous services the total manometric head must not exceed 10 metres



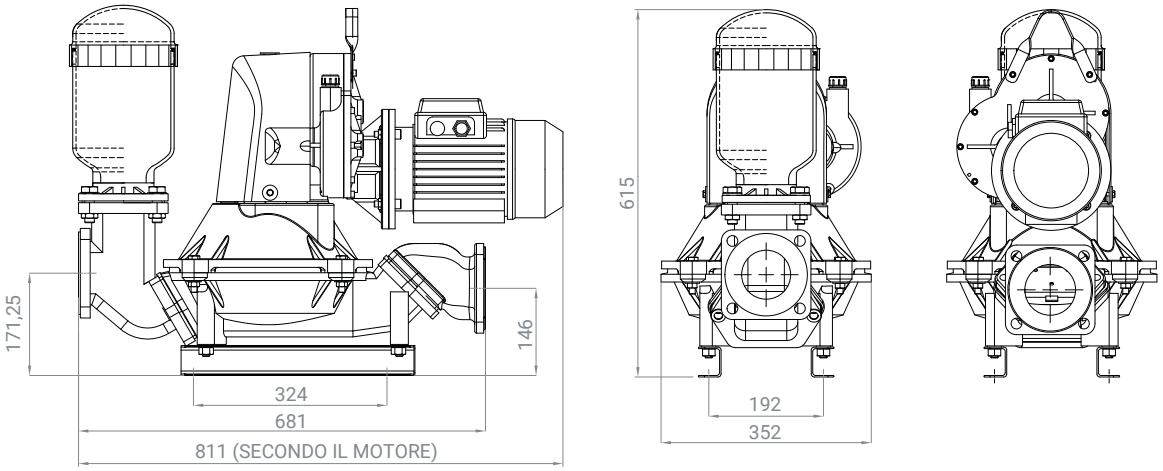
Dimensions



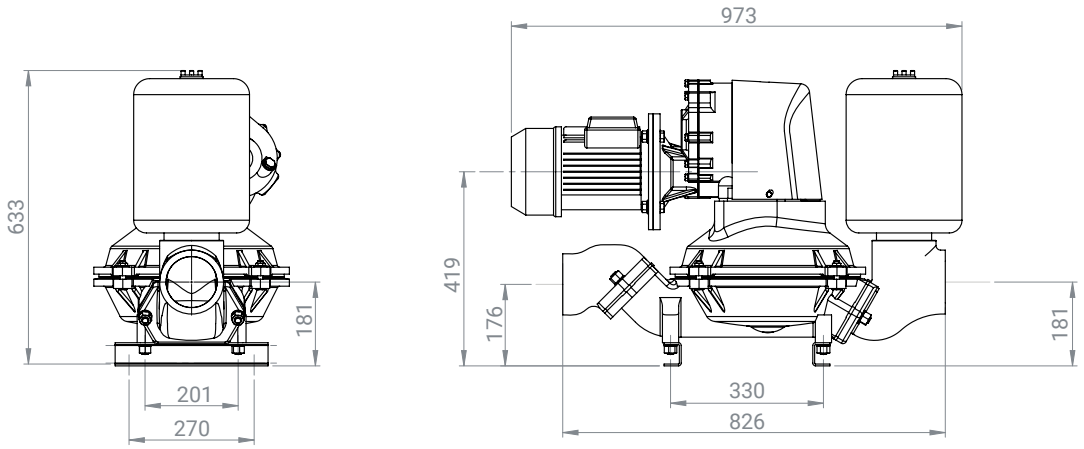
LB 65



LB 70



LB 80



LB 110

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