BELLIN

The Power of Experience

"Your Partner in Pumping Solutions"

Origins

1950

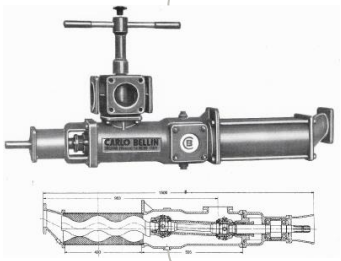
BELLIN company was established in Orgiano (Vicenza) in the 1950s by Giovanni Carlo Bellin (1922 – 2012).
Initially, the company focus was the agricultural sector, with the production of tractor trailers and irrigation tankers.





1970

The real industrialization process of BELLIN took place at the end of the 1970s with the engineering and development of the progressing cavity pump (first in Italy). In those years, the use of this pump was mainly concentrated in the agricultural sector.



1980

From an initially agricultural application field, the company then extends its presence to industry, wastewater plants, wine and agri-food industries.

1990

In the 90s the company, in search of more advanced technological innovations, designed and developed the new line of rotary lobe pumps. This extension of the product range permitted to offer a wide range of solutions to various pumping problems, becoming BELLIN one of the few companies in the world to have these two types of complementary pumps.



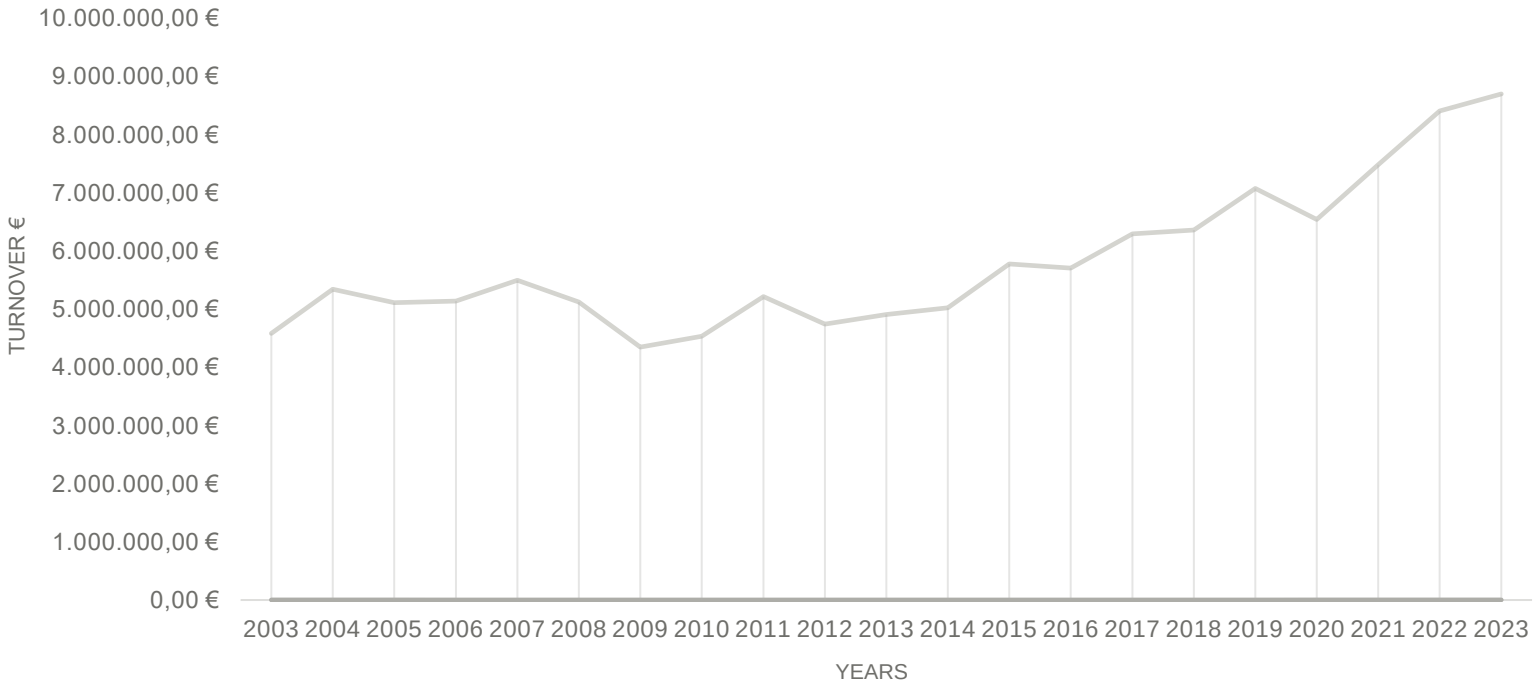
Company Today

- Company turnover: ~8.700.000€ (2023)
- People: ~40 employees
- Headquarters: ~10.000 mq
- Pumps produced: +2.500 pumps/year
- Theoretical production capacity: +3.000 pumps/year
- Export countries: +100 countries



Company Today

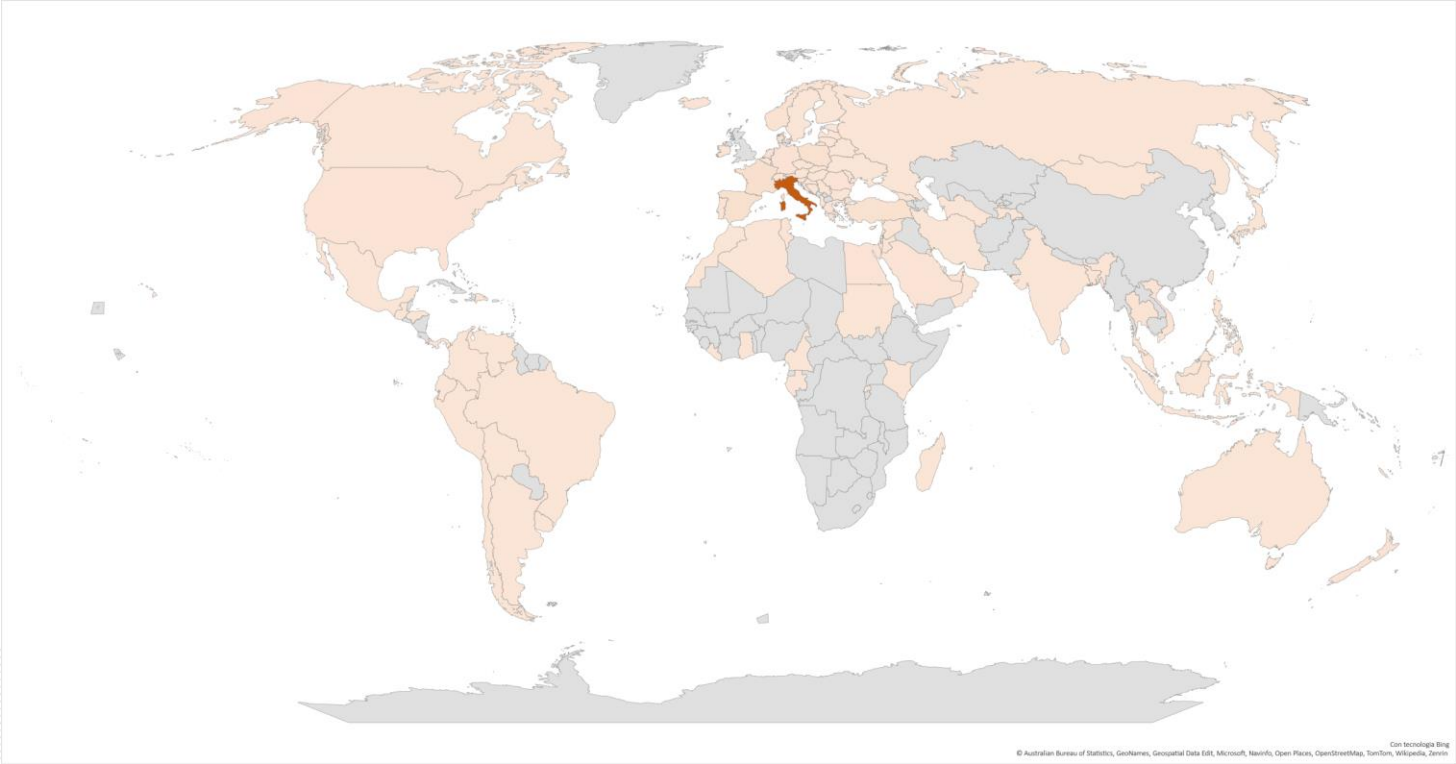
Turnover growth over the years



BELLIN
The Power of Experience

Company Today

Export countries



Product range

Progressing Cavity Pumps ... in a few words

- Ideal for high density and abrasive slurries, viscous fluids, fluids containing solid particles, thixotropic and dilatant fluids, oils and emulsions, corrosive mediums and much more.
- Self-priming up to 8 meters depth.
- Flow rates from 30 l/h up to 260 m3/h.
- Pressures that can reach up to 50 bar.
- Constant and pulsation-free pumping, with a flow rate almost proportional to the rotation speed of the pump.
- Simple design and heavy-duty construction.



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Product range

Rotary Lobe Pumps ... in a few words

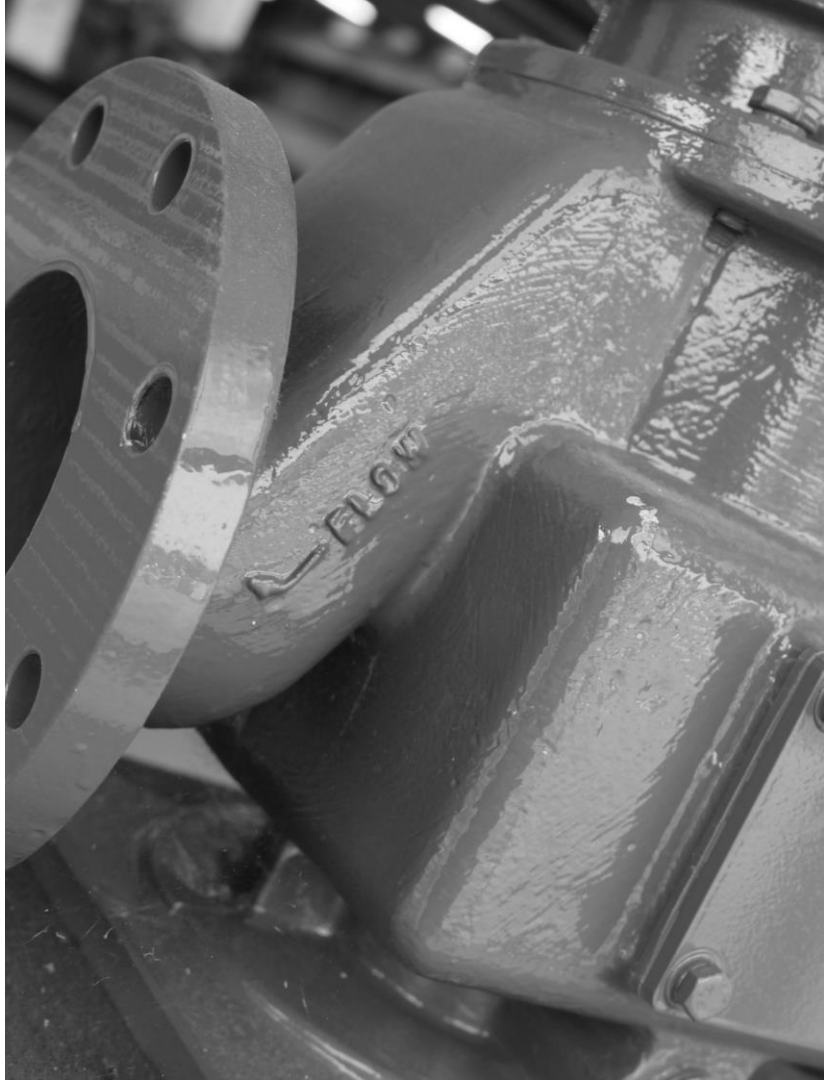
- Maximum efficiency in minimal space.
- Flow rates up to 500 m3/h and pressures up to 8 bar.
- Easy maintenance without dismantling pipes.
- Self-priming up to 8 meters deep.
- Constant and pulsation-free pumping, with a flow rate almost proportional to the rotation speed of the pump.
- The flow is reversible in both directions,



Product range

Macerators ... in a few words

- For homogenization of the pumped medium and improvement of the downstream process.
- For the protection of pumps from debris and fibers in solution.
- Lower management and maintenance costs.
- Flow rates up to 360 m3/h and pressures from -1 to +4 bar.
- Applications in wastewater treatment and various industries.



Applications

Wastewater treatment

To feed centrifuges, belts press, filter presses, to dose lime milk, flocculants, to convey primary sludge, digested sludge, dewatered sludge (up to a dry content solids of 30-35%), wastewater and much more.



Biogas, agriculture and livestock

To convey digestate, silage, corn, organic waste, grass, manure, liquid manure, poultry manure, for the evacuation of animal waste from stables and much more.



Applications

Disposal and recovery of waste oils

For collection and transfer of waste oils from industries, workshops, commercial activities and various collection centers. The pumps can be installed on trucks tank disposal.



Paper, chemical and ceramic industries

Pumping of clay sludge, lime, ceramic slip, acids, resins, caustic soda, soda lye, sulphates, cellulose, glues, patinas, kaolin, various types of starches and much more.



Applications

Mining, building and drilling industries

To transfer flotation sludge, lime milk, silt, settled and clarified sludge, aggregates, flocculants, mortar, light concrete, plaster, marble mud, cement slurry, drilling cooling water, raw bentonite and much more.



Sugar processing

To convey beet and sugar cane products, molasses, alcohol, ethanol, for extracting various juices and much more.



Applications

Wine industry

To convey wine and must, to feed filters, to transfer crushed and/or fermented grapes, or even for the transfer of whole grapes.



Olive oil industry

To feed of crusched olive paste to decanters, for transferring second extraction pomace, biogas pomace waste, olive oil.



Applications

Various industries

Pumping of many different products such as bilge water, sea water, meat and fish waste and entrails, silage, vegetable oils, blood and much more.



ATEX

To transfer products in ATEX potentially explosive environments according to directive 2014/34/EU II2GD Ex h IIB T4 Gb.



Progressing Cavity Pumps

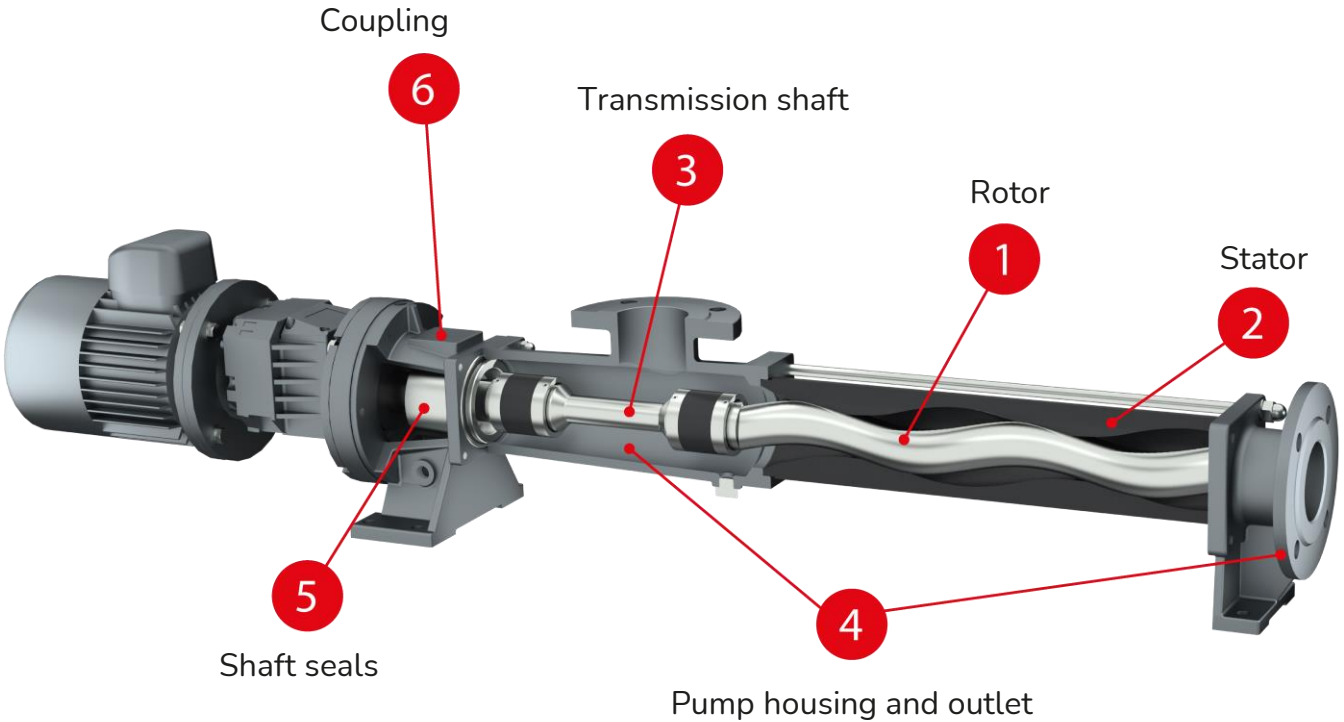
Operating principle

- Progressing cavity pumps are rotary positive displacement pumps. Operating principle is based on a rotor rotating in a stationary stator.
- The rotor has the shape of a screw conveyor and rotates "eccentrically" in the stator. The stator, in turn, has the shape of a matching, but a doubled thread worm with twice the pitch.
- Due to the geometry and the eccentric rotation of the rotor, cavities are formed in which the medium is enclosed and evenly conveyed from the suction to the discharge side.



Progressing Cavity Pumps

Technical details



Progressing Cavity Pumps

1. **Rotor:** is available in many materials depending on the application: carbon steel C45 with thick chrome plating, AISI 304L stainless steel, AISI 316L stainless steel.

2. **Stator:** is made of vulcanised rubber inside a steel tube. The rubber of stator can be in a variety elastomer (NBR, HNBR, EDPM, FPM Viton®) depending on the application.

3. **Transmission shaft:** different types of joints and transmissions are available to suit a variety of applications (cross joint, cross-cover joint, hygienic open joint, homokinetic joint, cross cardan joint, homocardanic joint).

4. **Pump housing and outlet:** different types of process connections are available according to international standards (EN, DIN, ANSI, GAS and others) or in special designs. Different types of materials (cast iron, AISI 304L stainless steel, AISI 316L stainless steel) are possible depending on application contexts.

5. **Shaft seals:** various types of seals are possible depending on the pumped medium: gland packing, single component mechanical seal (also with additional quench), single mechanical seal with protected springs, single mechanical seal for food grade products, single mechanical seal external.

6. **Coupling:** in monoblock pumps drive is direct coupled to the flanged pump lantern, these means compact dimensions, low total weight, easy maintenance and economic advantages. Pump execution with independent bearing support allows connection with any type of drive via an flexible coupling.

Progressing Cavity Pumps

Flanged progressing cavity pumps



SERIES L
monoblock with direct coupling



SERIES N
with independent bearing support



SERIES E
dosing monoblock

Progressing Cavity Pumps

Hopper progressing cavity pumps



SERIES T/LT
monoblock hopper or with bearing support



SERIES T/LT-BB
hopper with integral bridge-breaker system



SERIES B-Feed
special hopper with oversized infeed screw

Progressing Cavity Pumps

Agri-food progressing cavity pumps



SERIES LTS
monoblock hopper



SERIES U
monoblock flanged



SERIES H
monoblock flanged

Progressing Cavity Pumps

Vertical progressing cavity pumps



SERIES V
vertical monoblock

Progressing Cavity Pumps

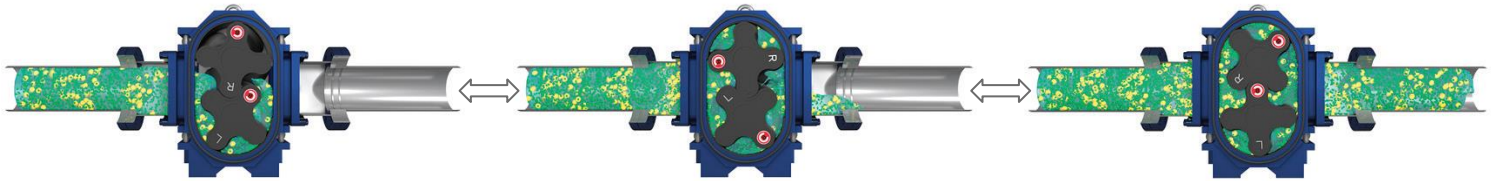
Performance table

PERFORMANCE TABLE OF BELLIN PROGRESSING CAVITY PUMPS											
MODEL	Max flowrate @ 0 bar	Max pressure	Max speed	MODEL	Max flowrate @ 0 bar	Max pressure	Max speed	MODEL	Max flowrate @ 0 bar	Max pressure	Max speed
	m^3/h	bar	rpm		m^3/h	bar	rpm		m^3/h	bar	rpm
50	0,035	28	1000	**450C**	25	6	600	**1000M**	45	6-7	500
100	0,09	12-14	1000	**500M**	5,5	9	500	**1200M**	55	8-9	500
120	0,25	12	1000	**500L**	5,5	20	500	**1200L**	45	12-14	400
150C	0,75	6-7	1000	**500AL**	15	6	600	**1200L2**	35	24-28	300
150M	0,75	12-14	1000	**500AL2**	12	12	500	**2000M**	70	6-7	450
200C	1,5	6-7	1000	**530L**	9	24	400	**3000M**	100	6-7	450
210C	3	6-7	1000	**550C**	15	6-7	600	**3000L**	80	12-14	400
200M	1	12-14	600	**550M**	12	12-14	500	**3000L2**	60	24-28	280
200L	0,8	24-28	500	**550L**	10	24-28	400	**3500M**	110	6-7	350
300C	4	6-7	700	**570L**	6,5	40	400	**4000M**	130	6-7	350
300M	3,5	12-14	600	**600C2**	25	6-7	500	**4000L**	110	12-14	300
300L	2,8	24-28	500	**600M**	25	9	500	**4000L2**	110	24	300
400C	7,5	6-7	600	**600M2**	25	12-14	500	**5000M**	180	6-7	300
400B	6	12-14	500	**600L**	20	24	400	**5500L**	240	12	300
400L	2	20	500	**800M**	30	8	500	**6000M**	260	5-6	300
400AL	3	6	200	**800L**	22	20	400				

Rotary Lobe Pumps

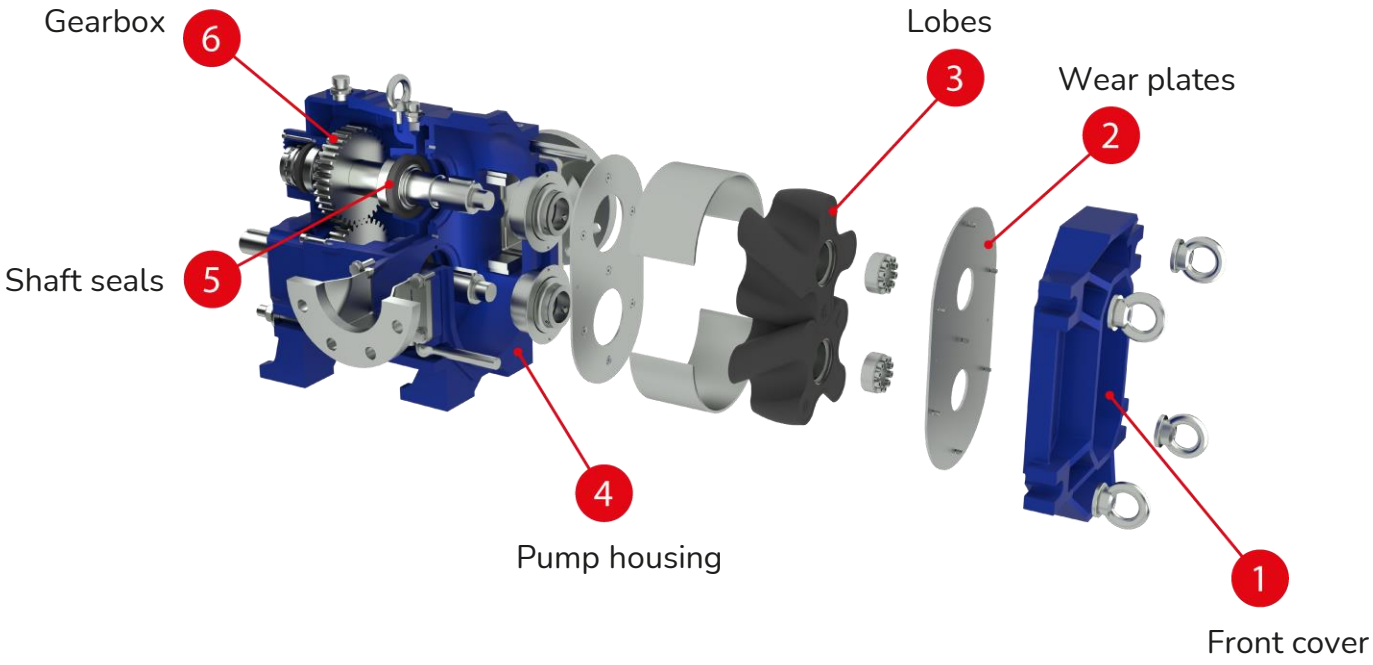
Operating principle

- Lobe pumps are rotating positive displacement pumps. Operating principle consists of two synchronized counter-rotating lobes inside a pump casing.
- Chambers are created between the lobe vanes and the casing surrounding them. Medium is displaced through the chambers from the inlet to the discharge side of the pump.
- Through their symmetrical design, lobe pumps are reversible, allowing them to pump in both directions without restriction.



Rotary Lobe Pumps

Technical details



Rotary Lobe Pumps

1. **Front cover:** lobes and wear plates can be easily replaced by removing the front cover, without dismantling pipe system and drive. The front cover can be supplied in cast iron or stainless steel.

2. **Wear plates:** removable radial and frontal plates avaible in hard wear steel (Hardox®), AISI 316L stainless steel or AISI 316Ti stainless steel.

3. **Lobes:** rubber coated lobes in a wide range of elastomers (NBR, EDPM, FPM Viton®). Lobes are avaible in linear trilobe or helical quadrilobe design.

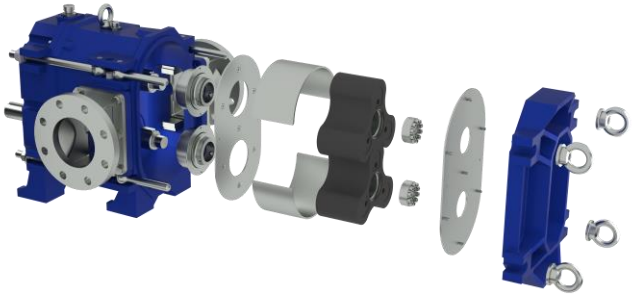
4. **Pump housing:** different types of process connections are available according to international standards (EN, DIN, ANSI and others) or in special designs. The pump casing can be supplied in cast iron or AISI 316L stainless steel.

5. **Shaft seals:** mechanical seals replaceable on-site without dismantling pump casing and pipes, in ceramic or tungsten carbide. Oil self-lubrificated system ensure the possibility of dry running operation for short periods.

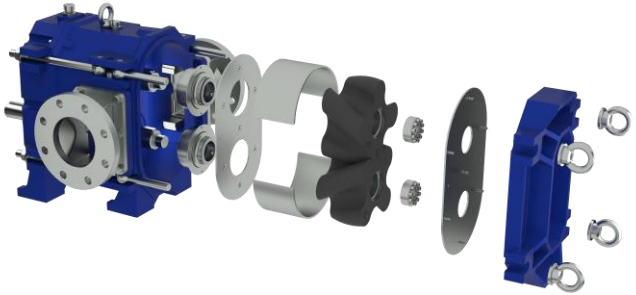
6. **Gearbox:** synchronised precision gears with a 1:1 ratio allow concentric counter-rotation of the lobes. Pairs of high-strength tapered roller bearings. Depending on the version, there is the option of having a separation chamber between the pump compartment and the gearbox, eliminating the possibility of any product contamination and allowing constant lubrication of the mechanical seals.

Rotary Lobe Pumps

Industrial lobe pumps



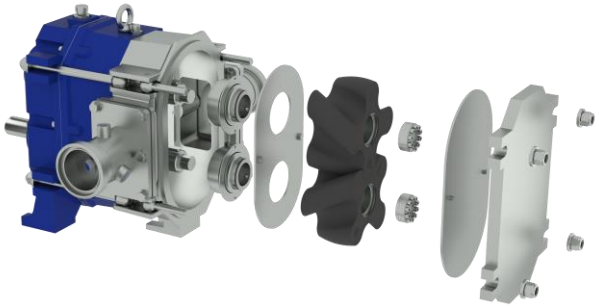
SERIES PLG
with linear trilobe



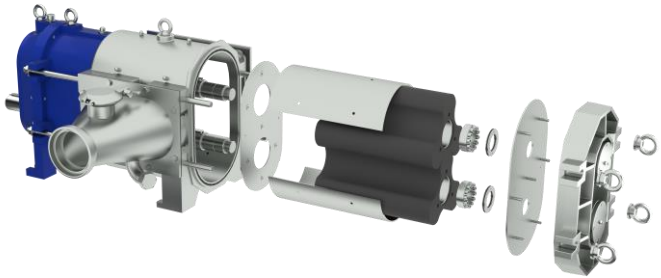
SERIES NPLG
with helical quadrilobes

Rotary Lobe Pumps

Agri-food lobe pumps



SERIES NPLO
with helical quadrilobes



SERIES PLWXF
with linear trilobe

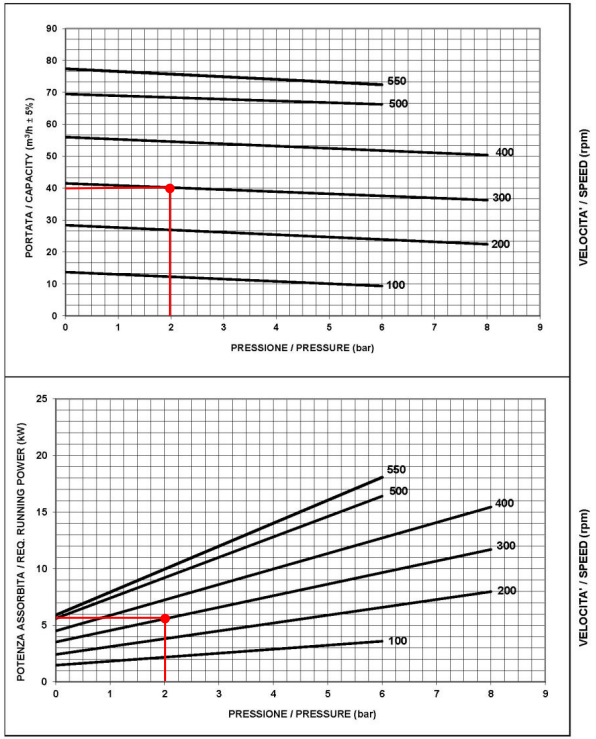
Rotary Lobe Pumps

Performance table

PERFORMANCE TABLE OF BELLIN LINEAR TRILOBE PUMPS			
MODEL	Max flowrate @ 0 bar	Max pressures	Max speed
	m^3/h	bar	r.p.m.
PL 500	35	8	550
PL 1500	80	8	500
PL 2500	132	8	500
PLWXF 4000	70	5	200
S_PLWXF 7000	140	5	200
PERFORMANCE TABLE OF BELLIN HELICAL QUADRILOBES PUMPS			
MODEL	Max flowrate @ 0 bar	Max pressures	Max speed
	m^3/h	bar	r.p.m.
N_PL 500	34	8	600
N_PL 1500	78	8	550
N_PL 2500	130	8	550
N_PL 35	200	6	500
N_PL 50	260	5	450
N_PL 70	350	3	450
N_PL 100	500	5	450

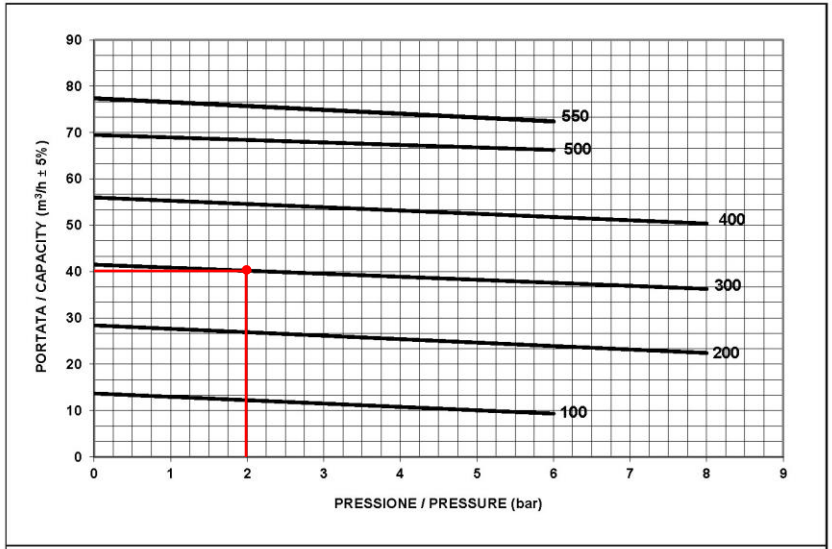
BELLIN PC Pumps & Lobe Pumps

How to read performance curve:



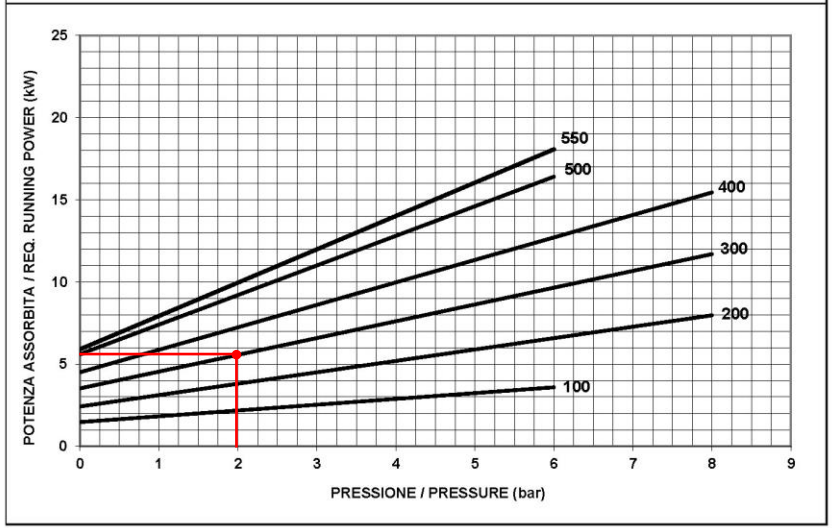
Operating point example:

- Flowrate = 40 m3/h
- Pressure = 2 bar
- Speed = 300 rpm



Absorbed power at operating point:

- Speed = 300 rpm
- Pressure = 2 bar
- Absorbed power = ~6 kW



BELLIN
The Power of Experience

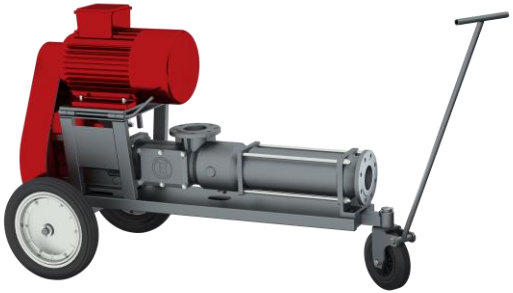
Drives



Execution with gearmotor



Execution with mechanical speed variator



Execution with electric motor by V-belt transmission on trolley or baseplate

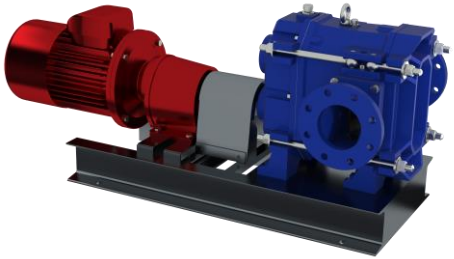


Execution with piston hydraulic motor

Drives



Execution with gearmotor and electrical panel with frequency converter



Execution with gearmotor



Execution with orbital hydraulic motor



Execution with gearmotor by V-belt transmission on baseplate

Thanks!

Do you have any questions?

info@bellinpompe.com

+39 0444 874900

www.bellinpompe.com