Progressive Cavity Pumps

PREMIUM LINE

KRONGA
Engineered Solutions















After more than 25 years of experience, and analysing the most common issues in different facilities, Kronoa has developed a high-quality progressive cavity pump virtually free of maintenance. It has been specially designed to carry out the most demanding tasks.

Kronoa Premium Line screw pumps series feature a compact and robust design with a double ball bearings support including an oil lubricated mechanical seal in its interior. A dual cardan shaft with needle roller bearings drives the transmission, and since it is a hydraulic system, we opt for stator/rotor geometries which enable large solid passage featuring high wear resistance.

The design of this unit has also been optimized to reduce the time for maintenance tasks including a quick disassembling system. The motor/reducer drive is completely IEC standardized, which not only hastens such tasks but also guarantees parts replacement at a fair market price.

Taking it all into account, and being integrally designed and manufactured in the EU, KRONOA proudly introduces a highly mechanical robust product, outstandingly reliable, and featuring low maintenance costs. We provide a first-rate product not commonly found in the sector.

KRONOA COMMITMENT

RELIABLE AND ROBUST SOLUTION

Our many years of experience in the sector has enabled us to develop reliable and robust solutions to all our units, which deliver superior performance.

RESEARCH AND DEVELOPEMENT

We are in continuous development and enhancement of our equipment taking always into account our clients' needs. For each problem we offer a reliable solution.

TECHNICAL SUPPORT

Our team of professionals with vast experience at your disposal. A made-to-measure development for each application.

MANUFACTURED IN EUROPE

Our units are integrally designed and manufactured in The European Union, thus guaranteeing the standards quality compliance of our products.

PREMIUM LINE MECHANICAL FEATURES



2RS DOUBLE BALL BEARINGS SUPPORT

Sturdy ball bearings support which absorbs axial and radial loads produced by the rotation of the rotor.



MECHANICAL SEAL LUBRICAITED IN OIL

Cartridge mechanical seal, springs free, not in contact with the fluid.



CARDAN TRANSMISSION

Cardan transmission with needle bearings lubricated in grease, totally maintenance free.



EDS: EASY DISASSEMBLY SYSTEM

Fast and easy disassembling system to facilitate maintenance tasks.

KRONOA
PROGRESSIVE CAVITY PUMPS

After more than 25 years of experience in studying common installation problems, Kronoa has developed a progressive cavity pump with virtually maintenance-free operation, specially designed for the most demanding applications.

The Kronoa Premium Line range of progressive cavity pumps is characterised by a compact design with a robust double row bearing support with an oil-lubricated mechanical seal. Power transmission is via a needle roller bearing universal joint, and the hydraulic design is based on rotor/stator geometries with large passage and high wear resistance.

The design of the equipment has also been optimised to reduce the time needed to carry out maintenance work, with a quick disassembly system and a fully IEC standardised motor-reducer, which not only speeds up these tasks, but also guarantees the replacement of these components at a price in line with the market.

With all this, and with an integral design and manufacturing in the European Union, Kronoa® is proud to offer you a product of great mechanical robustness, with high reliability and minimum maintenance costs, creating a high-quality product, above the standard in the sector.



Hydraulics with high solid passage and wear resistance



Cardan transmission



Oil-lubricated mechanical seal



Double row bearing support



EDS, easy disassembly system



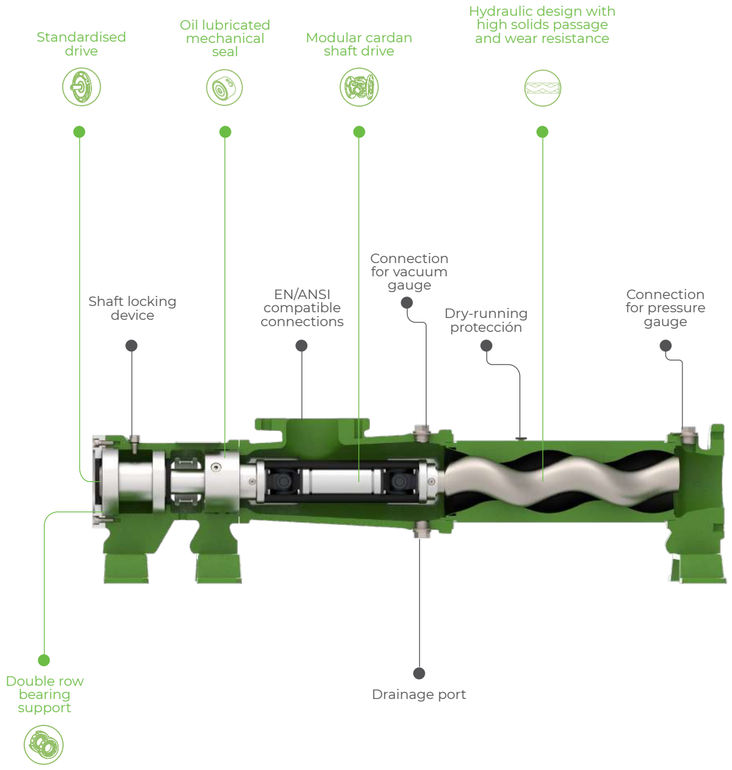
IEC standardised drive

Highly energy-efficient IEC electric motor



IEC standardised reducer





MAINTENANCE AND INSPECTION PORTS

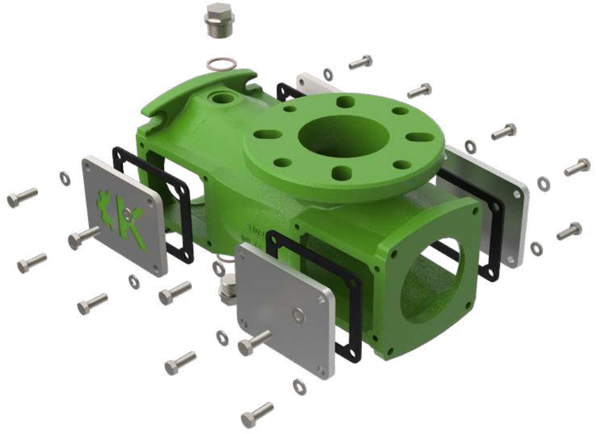
FOR AN EASY DISSASEMBLY MAINTENANCE

Our Premium pumps feature large inspection ports on each side of the pump.

The four inspection ports, considerably decreases the time dedicated to maintenance, facilitating the rotor and/or drive shaft disassembling through them.

In addition, we offer a drive shaft blocker present in the pump which prevents rotation when performing assembling and disassembling tasks.

At the same time, two connections may be found in the suction and discharge areas of the unit for the installation of vacuum gauges and/or any other monitoring system.





Cardan transmission pins for easy disassembly and maintenance



CARDAN TRANSMISSION

A HEAVY DUTY POWER TRANSMISSION

One of the least known mechanical aspects featuring progressive cavity pumps is its transmission. Currently, most of the pumps present on the market include a coupling rod with a closed coupling rod bush, covered with a rubber sleeve, as their transmission system. As a result, only after a few working months millions of rotations have taken place, resulting in a steady deterioration due to wear.

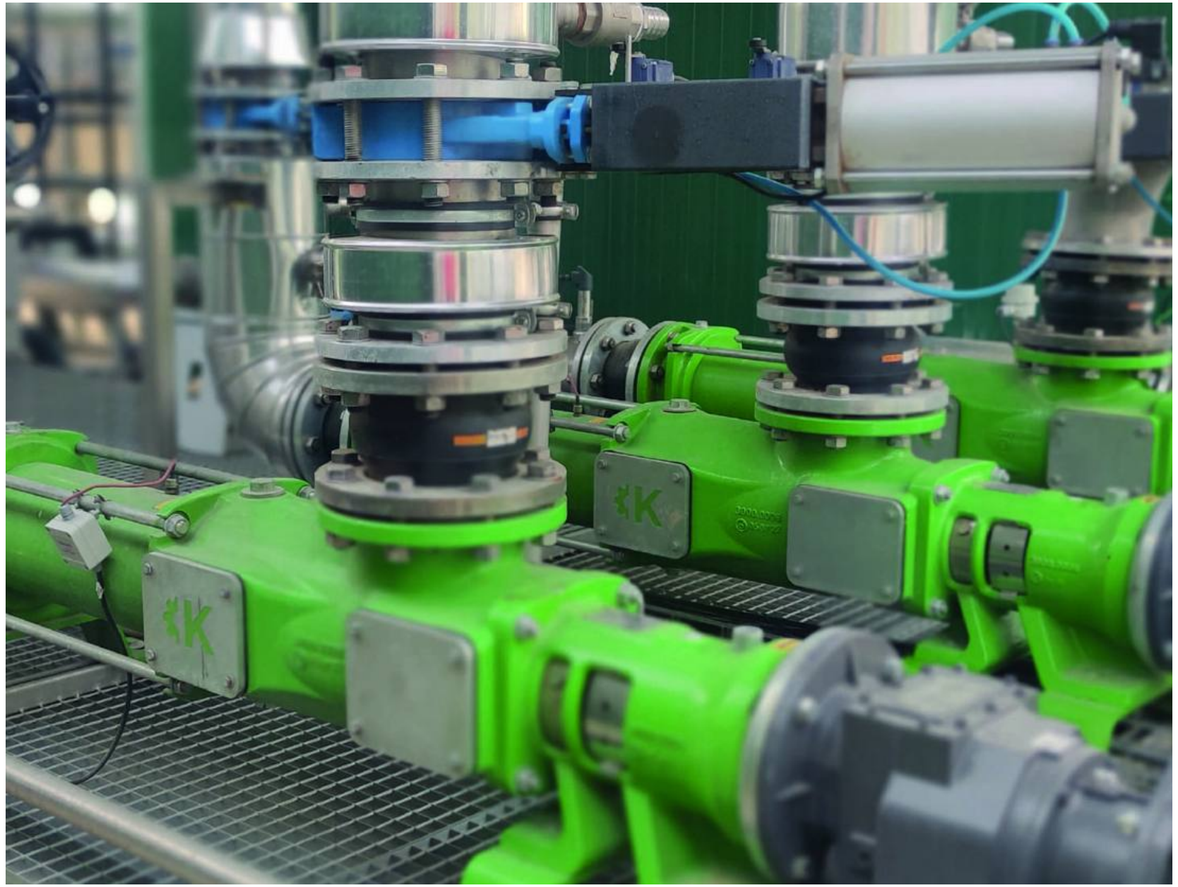
This is exactly the reason why, in a standardized way, all our KRONOA Premium pump series come fitted with a cardan joint transmission with needle bearings lubricated in grease ,thus eliminating torsion and early wear of the bearings.

It is a free maintenance transmission all through its service life and you will simply have to inspect the state of the rubber protection sleeve, which contains an inner textile ply reinforcement. It entirely protects both articulations by isolating them from the medium being pumped. Large inspection ports located on the sides of the pump will enable you to periodically inspect and monitor the rubber protection sleeve quickly and simply.

On the other hand, in order to disassemble the rotor or the drive shaft, the rubber sleeve needs not be disassembled, thus quickening maintenance tasks.

Optionally, we may provide you with our HT (high temperature) (page 17) designs, which may withstand temperatures up to 150 °C.





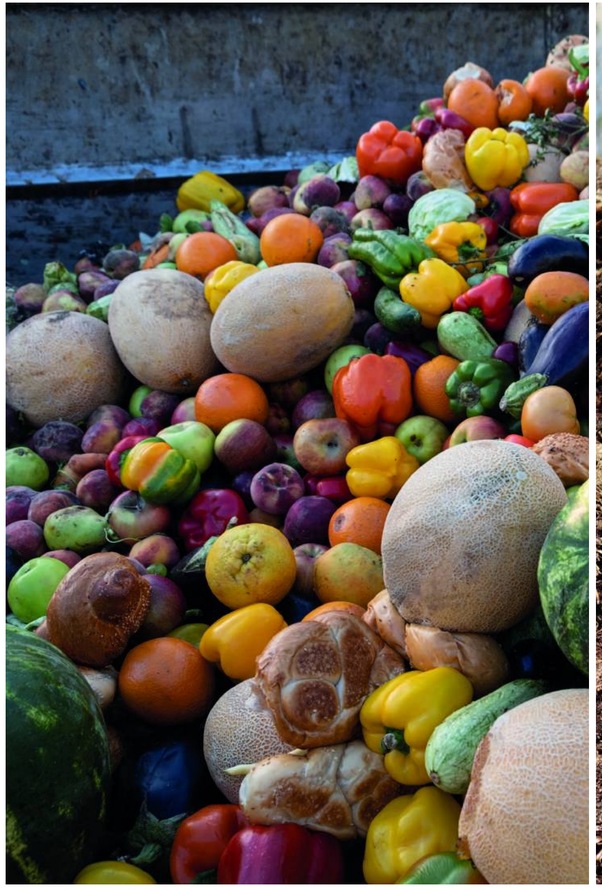
BIOCRUSH SYSTEM

REPLACEABLE VANES TO AVOID CLOGGING

The system is intended to deal with fluids containing a high percentage of large size organic matter, usually found in biogas agricultural industry facilities, such as manure and co-substrates.

A double detachable and replaceable vane, positioned at 180 °C from each other, is mounted at the front part of the cardan joint, right before the fluid intake in the rotor/stator area. Its fundamental role is to avoid clogging caused by fibers and solids and grind them into smaller size particles. By doing so, the product gets to the pump discharge area more easily becoming more biodegradable. Consequently, anaerobic digesters work more efficiently.







ROBUST DESIGN
DOUBLE BEARING SUPPORT

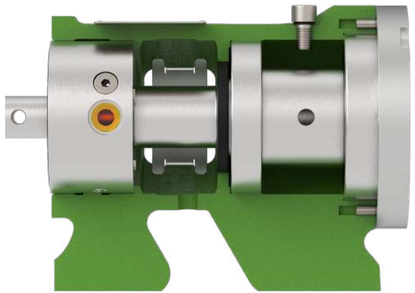
FOR THE ABSORPTION OF THE AXIAL AND RADIAL LOADS

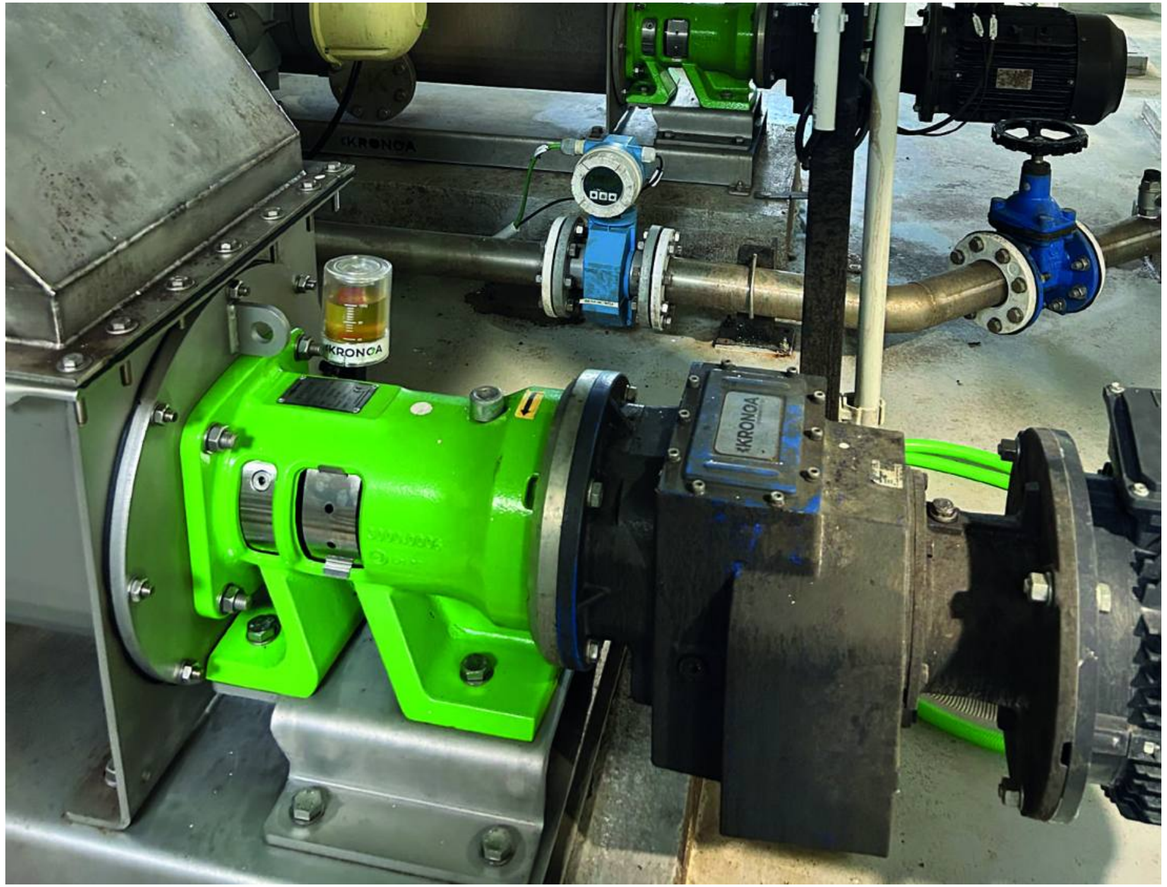
Unlike the monoblock pump design, KRONOA Premium series features a robust bearing support with double ball 2RS bearings, which will deal with the absorption of all radial and axial loads generated by the rotor of the pump. The faster the rotation speed is, and the higher operating pressures are, the heavier such loads will be.

In standard monoblock designs, such loads are absorbed by the bearings in the reducer, never by the pump itself as it does not feature particular shock absorber components. Consequently, it is common to see fatigue fractures in the reducers over time.

The assembly between the bearing support and the reducer is carried out by means of an IEC fully standardized connection. The reducer shaft is inserted into the hollow shaft of the pump by means of a key which activates the drive system.

By means of a shaft blocker, located in its upper part, we can stop the rotation of the unit while the disassembling of the stator is carried out.





OIL-LUBRICATED CARTRIDGE SEALING SYSTEM

FACES SEALS ALWAYS LUBRICATED BY A CLEAN FLUID

TEMPERATURES UP TO 150 °C AND WITHSTAND UP TO A 23 BAR PRESSURE

All KRONOA premium series pumps feature a standardized oil lubricated mechanical cartridge seal.

A lubricant fluid bathes the sides of the seal, which are siliconcarbide manufactured, unlike traditional simple seals which do so by means of the fluid that is being pumped.

Our technology does not implement outward springs which are in contact with the fluid. Hair and fibers are proned to get tangled up in such springs, causing leakages and fractures.

Thanks to this design, the cartridge can easily be extracted from the bearing support without risk for damaging inner parts.

Our system will never damage or scratch the surface of the pump drive shaft, a common issue found in units that have a sealing system containing gland packing rings used as a sealing system. Pumps with a forced-feeding system for dewatered sludges frequently must deal with this issue.

We have a wide range of qualities and manufacturing designs that can reach and withstand temperatures up to 150 °C and pressures up to 23 bar, should there be a reverse direction of rotation or in vertical performance pumps.

Silicon carbide faces seals
Balanced mechanical seal design
Multispring system





ROTOR AND STATOR
WEAR RESISTANCE

MAXIMAL DURABILITY NOT ONLY WITH SPEED DECREASE

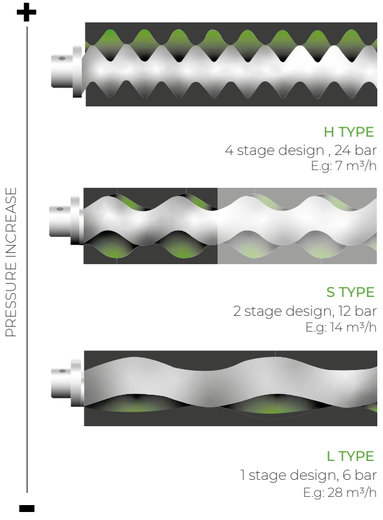
Within the market of helical rotor pumps the Long Pitch geometry type is commonly found, with a high rotation pumping capacity. Yet, it is designed for less abrasive fluids and low-pressure discharge.

KRONOA opts for an “S” geometry with a high angle pushing thrust, which guarantees great stability against pressure and extensive durability against abrasion and wear, thus offering a rotor/stator set long service life.

Besides, the “S” geometry features large solid passage ideal for the pumping of sludges and fluids carrying suspended solids. A design particularly thought for the end user, involving low maintenance costs and reducing unplanned corrective downtimes.
In Kronoa, you may also find the “H” geometry, rare on the market, designed to withstand high pressure and large solid passage.

Over time, volumetrically more efficient new three-lobe geometries have been developed at the expense of reducing solids pass, being more sensitive to wear, overloading unit joints, hence causing high maintenance costs.

Different stator materials
NBR / HNBR / EPDM
FPM / NR



H TYPE
4 stage design , 24 bar
E.g: 7 m³/h

S TYPE
2 stage design, 12 bar
E.g: 14 m³/h

L TYPE
1 stage design, 6 bar
E.g: 28 m³/h



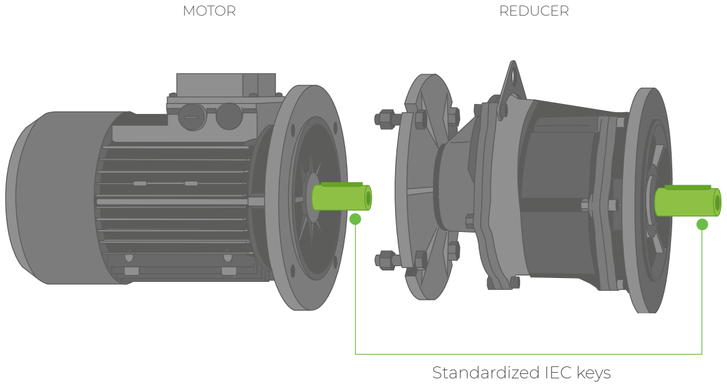
IEC STANDARDIZED DRIVE

FIND A REPLACEMENT ON ANY MARKET WORLDWIDE

Another advantage to be found in our Premium line units is that a standardized electric motor/reducer set is used.

Our motors and reducers are not integrated within each other, which means that if one of the two parts is damaged it is not necessary to replace both of them at the same time.
Thanks to IEC technology, our motors and reducers may be widely available on the market, thus ensuring a competitive price.

Kronoa may supply any electric motor or reducer type, regardless of the brand, required by the customer.





ANTICORROSIVE COATING

DIFFERENT COATINGS FOR DIFFERENT ENVIRONMENTS

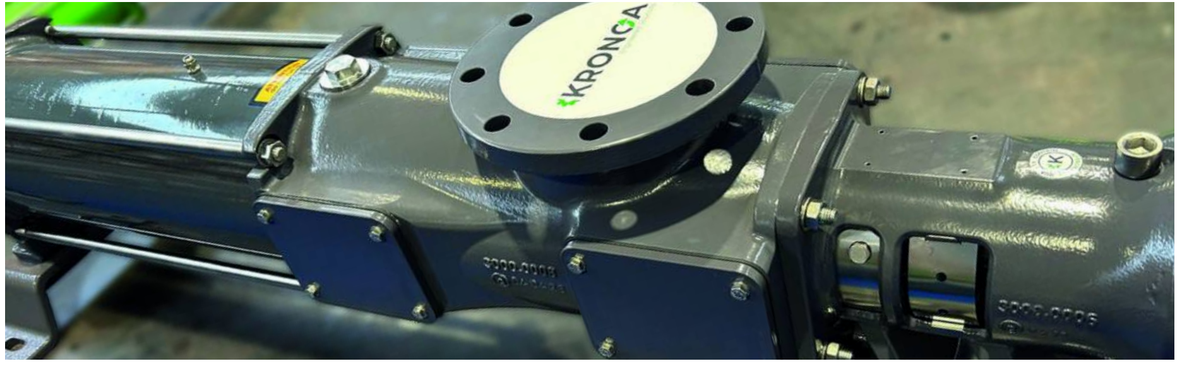
CATAPHORESIS COATING

All our casting parts are cleaned and phosphate coated before our standard painting or cataphoresis. Cleaning and phosphating is essential in obtaining the desired finish. After the cleaning and phosphating customer can choose the Kronoa standard powder coatings of saturated polyester nature with an excellent durability applied in, suitable for medium corrosive environments or increase the rustproof protection with a previous base of cataphoretic treatment.

This coating increases the anti-corrosive properties of the Kronoa pump and parts where a complete and optimal antirust protection is required.
It is an organic coating method that uses electrical current to deposit paint onto a part or assembled product. Kronoa cataphoretic coating consolidates and reinforces the quality of the pumps we offer our customers.
This process protects the parts against salt, dirt and water ingress, increasing strength and longevity, matching and exceeding OE specifications.

HALAR® / NIFLON® COATING

Is a polymer fluorine that has unique chemical and thermal properties. The thermal polymerization application procedure allows us to coat the pump body, discharge flange and other components of our units with a thickness from 200 to 1000 microns.
High resistance against chemical corrosion and solvents. Great stability against chemical attack.



AUTOMATION AND PUMPS CONTROL

DRY RUNNING PROTECTION

Digital electric micro thermostat to measure temperature of the stator in the pump. A PT100 lobe detects the temperature which is shown on a digital screen. It is recommended to configure the set point at 50%, above the working temperature, thus avoiding extended dry running of the pump. It comes with 1 digital output, 230 V, IP-65.

FREQUENCY CONVERTERS

For the adjustment and automation of the pumping capacity.
Constant torque/ heavy load/ overload at start-up 150%, EMC filter included.
6 digital inputs/ 2 analogical outputs/ 2 analogical bus RS485
Options:
>IP-20 control cabinet
>IP-66 outdoor installation
>IP-67 motor casing integrated

ELECTRICAL CONTROL PANELS

For pump automation, control and protection. Metal cabinet, working leds, malfunctioning and protection. Option for direct starting with circuit breaker, stop/start selector and protection against pump running dry.
Optional frequency converter, potentiometer, stop/auto manual selector, digital and analogical input for an automatic operation.

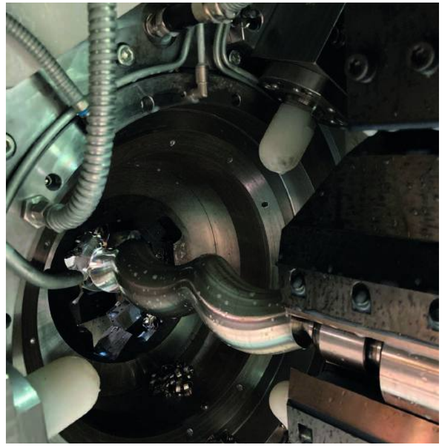
PRESSURE CONTROL

For the protection and monitoring of the pump. The detector provides you with the back pressure value caused by the load loss in the discharge pipe. In addition, it can give us information about the degree of wear of the rotor/stator set.
The reading of pressure is carried out by means of a front-flush ceramic diaphragm visualizing the figure on a display integrated in the meter itself.
Range-1....25bar. 2 configurable out-puts available. 24 V, IP-67.

LASER LEVEL TRANSMITTER

Used for the dewatered sludge pump automation. An actual reading of the dewatered sludge level inside the pump hopper will be obtained by means of the laser level transmitter.
Correspondingly, at this height, the transmitter will emit a 4-20 mA signal, transferred to a frequency converter in order to increase or decrease the speed of rotation of the pump.
By doing so, the pump will work at a constant adequate speed according to the entry of the product into the pump.
Owing to its switch mode output, stop and start signals from the pump will be received, thus obtaining a fully automated operation.









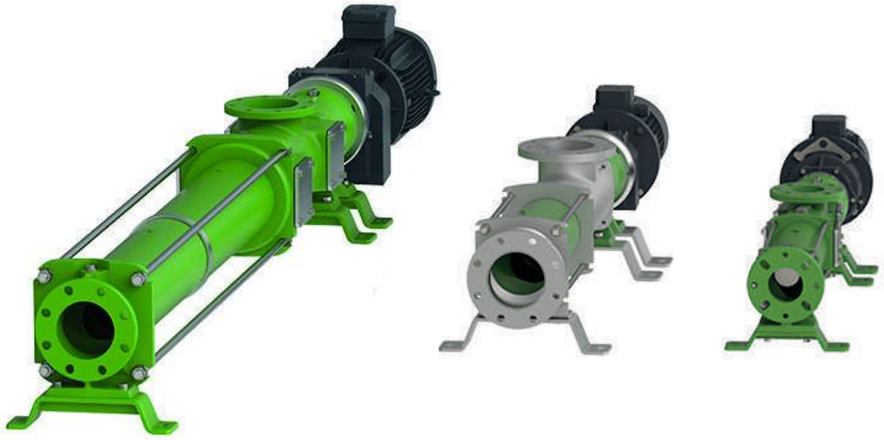


ROTOR PRODUCTION

PRP

KRONOA PREMIUM FAMILY

KRONGA
Engineered Solutions







SUCTION HOPPER BIOMIX VERTICAL

MULTIPORT CONFIGURATION

KRONOA progressive cavity pumps, Suction Line series, are designed to suck out fluid from up to 5 suction ports.

Commonly referred to as central pumps, they can suck out from several tanks or digesters at the same time.
With Kronoa's Multiport design, it is no longer necessary to rotate the pump casing by 90 degrees, and this option can be integrated at a later date when purchasing the pump.



FULL PLUS DESIGN



The Kronoa FULL PLUS series is the industrial series, manufactured with stainless steel wetted parts. Various material grades are possible, from stainless steel AISI 304, AISI 316 and Super Duplex.

In the sizes #30 and #50, Kronoa will have as an option a transmission without needle bearings completely made of stainless steel, which can be fitted with a protective sleeve in case of presence of hard solids.



PREMIUM LINE
SUCTION



Pipe-connected progressive cavity pump with high suction capacity (up to -0.8 bar), with the possibility of reversing the pumping direction according to process requirements.

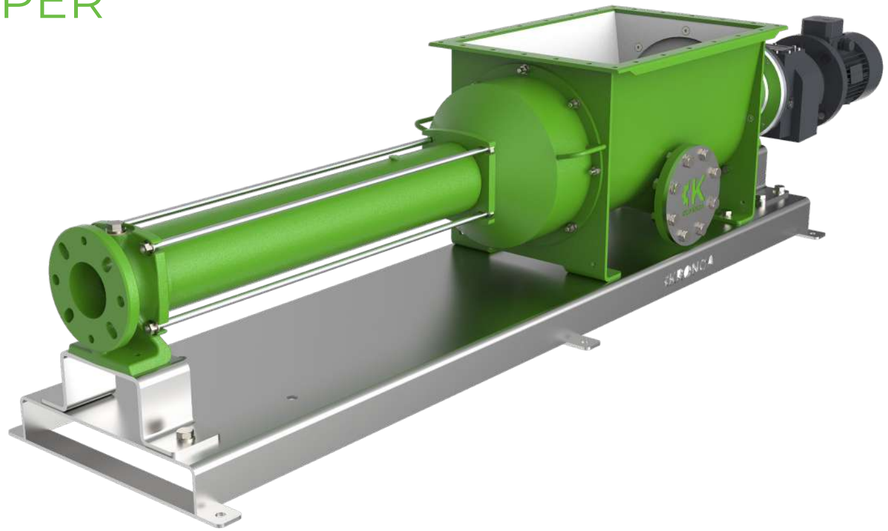
Fully modular premium design, four inspection ports (four cover plates) and an easy disassembly system, including a fully standardised drive.

The Premium series stands out for its robust mechanical construction, ideal for the most difficult applications with abrasive or highly heavy fluids, with designs that can operate at pressures of up to 36 bar.

150 m^3/h	36 bar	-0,8 bar
Maximum flow rate	Maximum pressure	Suction capacity



PREMIUM LINE
HOPPER

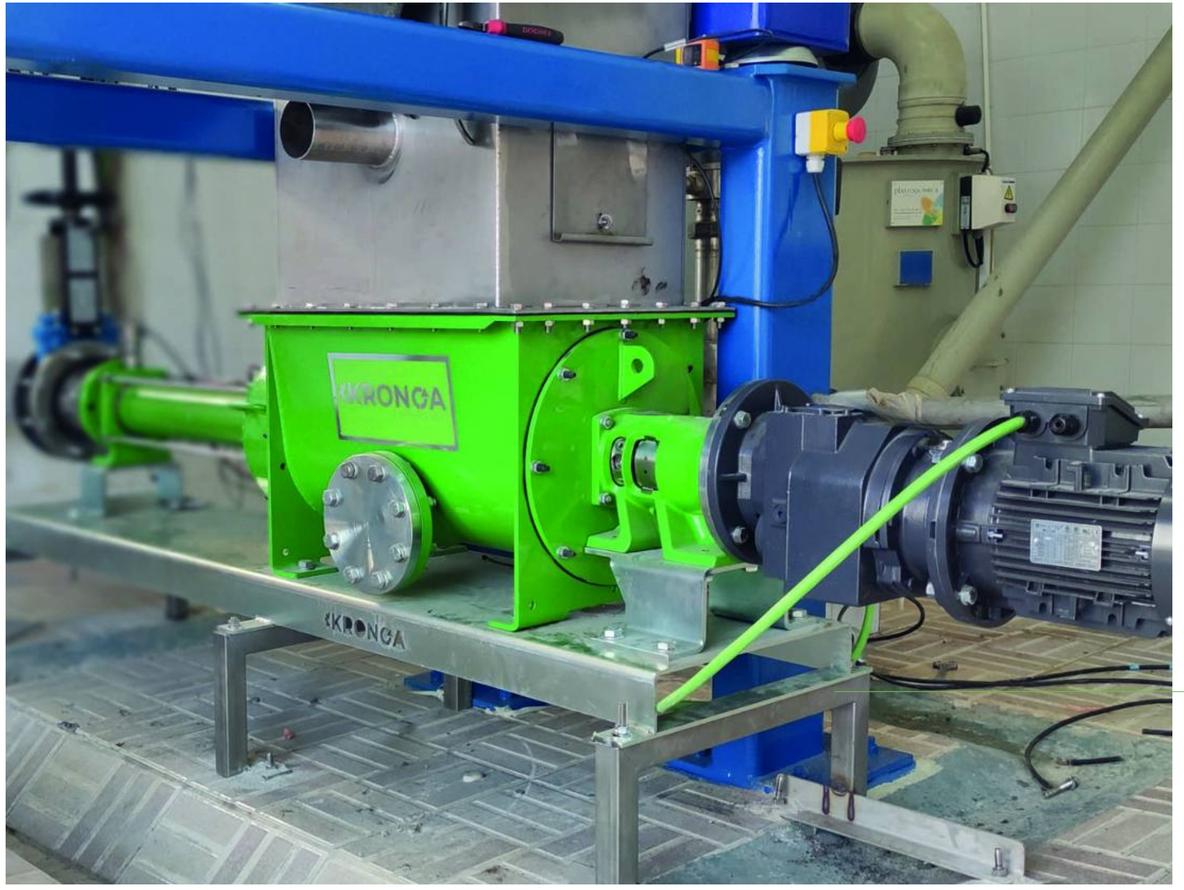


Progressive cavity pumps with a hopper and force-feed screw, designed for applications with fluids of high viscosity and consistency.

Modular design with a large diameter and thickness screw as well as a large hopper width which significantly reduce the possibility of bridges formation.

Our selection of very low speed rotation equipment, together with the recommended control and automation systems, drastically reduces electrical consumption and component wear, increasing the service life of the equipment.

55 m^3/h	36 bar	Up to 40%
Maximum flow rate	Maximum pressure	Dry matter



PREMIUM LINE
BIOMIX

Heavy-Duty
Feeding Screw

Stone Trap solids
decanter



Mixing pump for solid and liquid substrates specially designed for co-digestion applications.

The mixing is carried out in the body of the equipment itself, pumping a pre-mixed product.

This equipment allows great flexibility in the diet of the installation, as it is suitable for treating a large quantity of solid substrates, such as silage, manure, slurry, sludge, cereals, etc. even large vegetable waste such as melons, watermelons, pumpkins, and so on.

Due to the unusual intake of waste in this type of application, the pump has a stone decanter integrated in the hopper itself, preventing it from entering the process or damaging the equipment.

100 m^3/h	36 bar	Up to 18%
Maximum flow rate	Maximum pressure	Dry matter



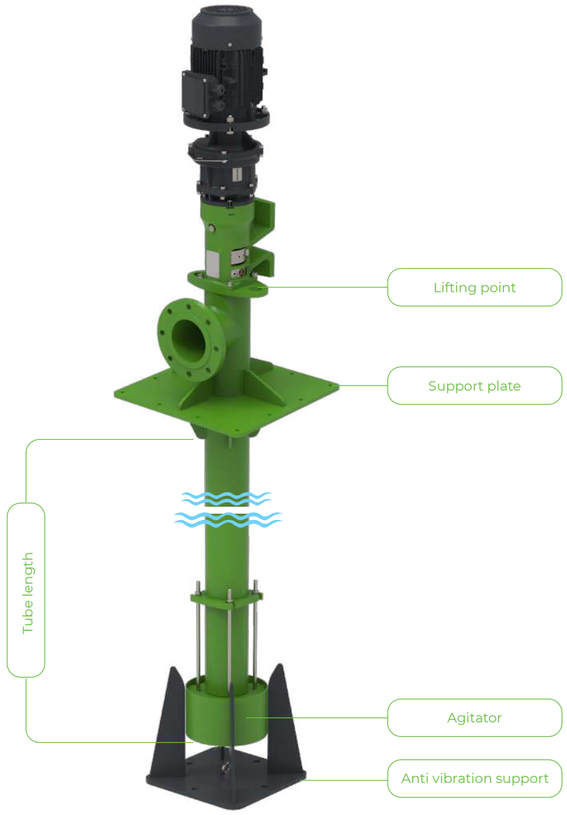
PREMIUM LINE
VERTICAL

Vertical screw pump for the suction of high viscosity fluids, with direct suction of the product.

The design is made with a shank/tube length and a fixing adapted to the characteristics of the pit/tank. The pump can be installed on a wall, on a 500 x 500 mm plate, or any other system as required.

In addition, a homogenising system or an inlet protection system can be installed at the inlet of the equipment.

100 m³/h	10 bar	Custom-made
Maximum flow rate	Maximum pressure	Length






KRONDA
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