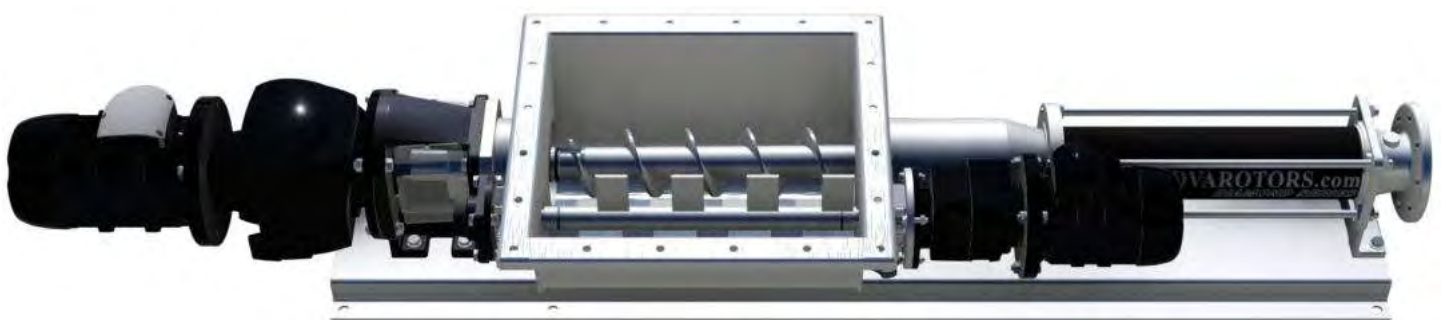




**OUR POWER, YOUR SATISFACTION**



**DIAMOND SERIES**

Industrial pumps

DHP / JHP series



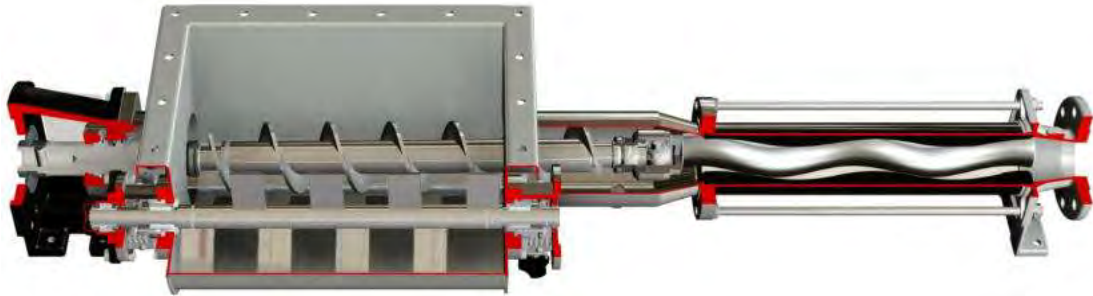
### Hopper series

Series with hopper an auger feed screw to convey directly the product to hydraulic part, are the ideal machines for pumping viscous and non-flowing, with a very high solids content.

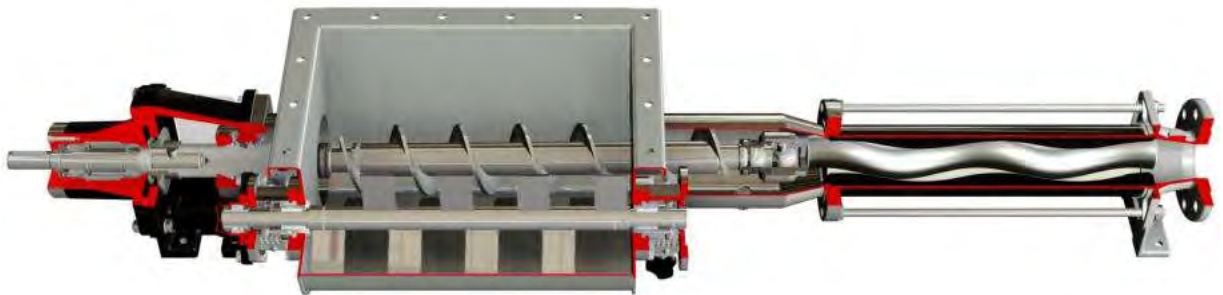
The DHP and JHP series are the hopper version large with shaft bridge breaker and auger feed screw to the hydraulics. Suitable for pumping substances poorly flowing which tend to form a bridge. Particularly suitable for doughs or solids of considerable size compressible or compressible such as whole fruits and vegetables. This pump can be used in a wide area of food applications for grapes, whole fresh grapes, loaded with tomatoes in pieces or mixtures of the confectionery sector.

Realized as standard in stainless steel AISI 304 or AISI 316. Design without death zone for an easy cleaning.

- DHP Series: the drive is coupled directly to the pump by a flange. This solution is extremely cost effective and compact, considerably reducing installation costs and simplifying maintenance. The forces generated by the hydraulic part are supported by the drive itself. Each drive used is adequately selected based on their specific technical parameters and are subject to numerous duration tests with heavy loads.



- JHP Series: the drive is connected to the shaft inlet by a flexible coupling. This configuration is the best solution in terms of performance and durability. All the forces generated by the pump are absorbed by the bearings in the housing. These bearings have very high resistance against loads. They are assembled with extreme precision on the highest quality manufactured parts. It is the best solution when you want to guarantee duration and reliability, yet with greater installation space requirements. The bearing unit designed is modular and can be adapted to a DHP Series pump with lantern. It is state of the art for this type of installation.



**Patented Pin Joint:** The pin-type joint, the actual heart of the single screw pump, is the best solution of its type on the market. It offers greater duration, reliability and reduced maintenance costs, managing to combine extreme compactness with unrivalled strength. Its particular manufacturing enables the sub-division of axial loads and torque in different elements, making it one of a kind. As well as the above, replacement of worn parts is cheap thanks to the bushes in the worn zones, avoiding costly replacement of parts (rotor, drive shaft, and female drive shaft). To resist high pressure in the pump casing up to 12 bar, the pin can be hydraulically balanced.



**Base plates:** The base plates, characterized by considerable thicknesses are very strong. Available in carbon steel or stainless steel. They can also be provided in a trolley version, with anti-vibration housing or on skids, according to the client's specifications.



**Modularity:** The Diamond series is based on the concept of modularity in every characteristic: hydraulic parts, casing, seals, base plates, housing, drive shafts. Each part can be manufactured in a series of variants without changing the structure of the machine, while keeping the main spare parts standard



**Performance:** Duration, efficiency, reliability and low consumption. With the Diamond series, we have reached the maximum levels of technological development in every aspect.

**Efficiency:** Maximum performance level, exceptional operating efficiency thanks to the optimum volumetric yield and high pressure and is consumption reduced to a minimum. All the Diamond series hydraulics efficiencies were calculated to guarantee the maximum found on today's market.

**Materials:** The parts in contact with the product of the DHB and JHB Diamond Series pumps can be manufactured in various materials. From the version in cast iron to stainless steel (AISI 304 and AISI 316), as well as other materials on request such as Duplex and Super Duplex. Also, in the version in cast iron, the rotating parts are still manufactured in stainless steel AISI 420 or on request in AISI 304 / AISI 316

**Low pulsating flows:** Tensional stress and pulsating flow are very low. The centrifugal effect is reduced to a minimum thanks to the low operating speeds and mainly the axial development of the pump.

**Shaft sealing:** Different sealing systems can be installed, each solution being suitable to specific usage. The types available are: single acting mechanical seal, with quench, double acting mechanical seal back to back or tandem, Gland packing with or without flush.

The type of seals are all interchangeable on the standard pump. Each solution was carefully engineered while taking into consideration all the operating conditions. As well as changing the sealing system, you can also install various types of mechanical seals based on the application.

The compartments are suitable for installation of the seals manufactured according to the standards ISO EN 12756. As well as this, it is possible to use cartridge seals from the main manufacturers.

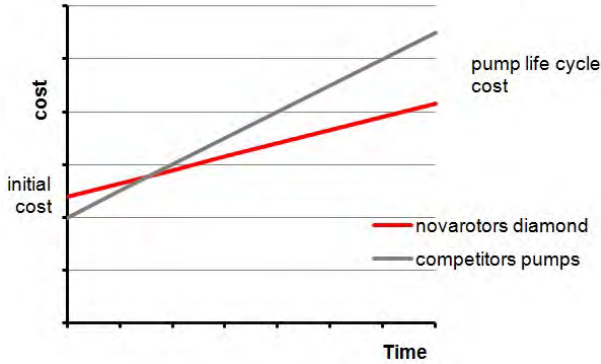


**Versatility:** The Diamond series was designed to be versatile whatever its use. For this reason it can be set up with various options and accessories suitable for every field of application. As well as the above, the peculiar features of the single screw pump are naturally taken advantage of with various types of fluids pumped, from low to the highest viscosity, clean and containing solids varying in size and nature.

**Motorizations:** All the drives which are installed on the Diamond series have been tested for long periods and subject to strict and rigorous technical checks. We can install both electric and hydraulic motors.

All the models of reducers and variators present determined characteristics in terms of strength, size of the bearings and the quality of the gears.

**Quality** Each part is manufactured according the highly restrictive quality specifications. Finishes and precision of each part are the basis of each pump manufactured. All parts are subject to specific controls based on their characteristics and functionality.



**Maintenance:** The Diamond series is designed to ensure easy maintenance and normally require the replacement of a minimum number of components.

In particular the joint bushes allow the replace of the same without having to replace shafts and rotors.

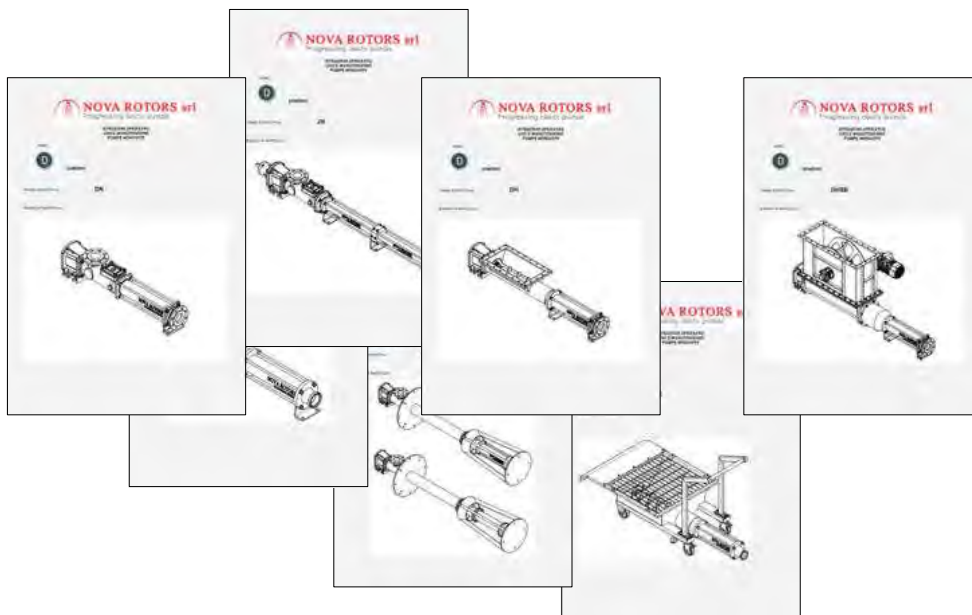
The costs of maintenance are really reduced. The cost of the pump, considered in his full life cycle, is highly competitive.

**Cost / benefit:** The Diamond series, thanks to the compactness of its elements combined technical success without comparison at very competitive costs. The modularity allows you to make the right solutions depending on the application to avoid paying for features you do not need, all in favor of its competitiveness.

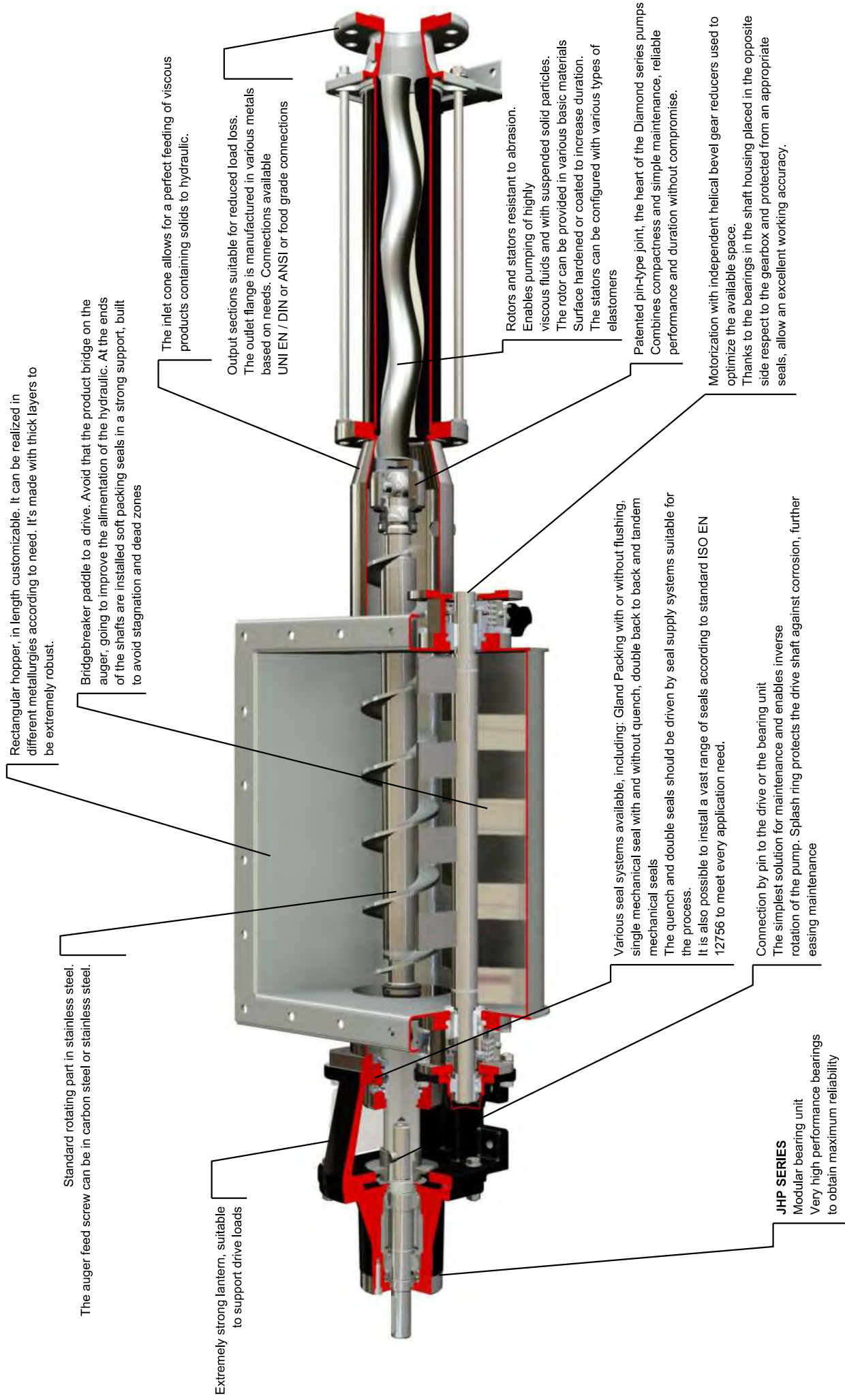
**Self-priming:** The peculiarities of the hydraulic parts of the progressive cavity pump allow excellent self-priming (up to 7m). The Diamond series were designed to create the minimum loss possible in the pump body, thanks to large sections and a joint compact design and fluid dynamic.

**Ease of installation:** The pumps of the Diamond series are easy to install due to compactness, simplicity of operation and operational flexibility thanks to the various features included.

**Detailed documentation:** Each pump comes with clear and detailed operating instructions. Orders are followed by experienced and qualified staff that integrates in providing detailed documentation on demand and specific for the product supplied.



# Detailed characteristics



Rectangular hopper, in length customizable. It can be realized in different metallurgies according to need. It's made with thick layers to be extremely robust.

Bridgebreaker paddle to a drive. Avoid that the product bridge on the auger, going to improve the alimentation of the hydraulic. At the ends of the shafts are installed soft packing seals in a strong support, built to avoid stagnation and dead zones

Standard rotating part in stainless steel. The auger feed screw can be in carbon steel or stainless steel.

Extremely strong lantern, suitable to support drive loads

The inlet cone allows for a perfect feeding of viscous products containing solids to hydraulic.

Output sections suitable for reduced load loss. The outlet flange is manufactured in various metals based on needs. Connections available UNI EN / DIN or ANSI or food grade connections

Rotors and stators resistant to abrasion. Enables pumping of highly viscous fluids and with suspended solid particles. The rotor can be provided in various basic materials Surface hardened or coated to increase duration. The stators can be configured with various types of elastomers

Various seal systems available, including: Gland Packing with or without flushing, single mechanical seal with and without quench, double back to back and tandem mechanical seals. The quench and double seals should be driven by seal supply systems suitable for the process. It is also possible to install a vast range of seals according to standard ISO EN 12756 to meet every application need.

Patented pin-type joint, the heart of the Diamond series pumps. Combines compactness and simple maintenance, reliable performance and duration without compromise.

Motorization with independent helical bevel gear reducers used to optimize the available space. Thanks to the bearings in the shaft housing placed in the opposite side respect to the gearbox and protected from an appropriate seals, allow an excellent working accuracy.

Connection by pin to the drive or the bearing unit. The simplest solution for maintenance and enables inverse rotation of the pump. Splash ring protects the drive shaft against corrosion, further easing maintenance

**JHP SERIES**  
Modular bearing unit  
Very high performance bearings to obtain maximum reliability

## VERSION AND OPTION

### Casing material

#### Base materials:

AISI 304, AISI 316

### Materials of the sealing shaft

#### Base materials:

AISI 420, AISI 304, AISI 316, F51(Duplex), F55 (Super Duplex)

#### Coatings:

Hardened Chrome plated HCP  
Chrome oxide plasma (ceramic coating)

### Rotor material

#### Base materials:

AISI 420, AISI 304, AISI 316, F51(Duplex), F55 (Super Duplex)

#### Heat treatments:

Hardening induction (only on AISI 420)

#### Coatings:

Hardened Chrome plated HCP  
Chrome oxide plasma (ceramic coating)  
Tungsten carbide HVOF

### Stator material

#### Base materials:

NBR, food grade NBR, white NBR food grade  
EPDM, EPDM food grade, white EPDM food grade  
FPM, FPM food grade  
HNBR, HNBR food grade  
SYLICON  
Buna-N (available on select models on request)  
HYPALON (available on select models on request)  
PTFE (available on select models on request)

### Base plates

Standard Base  
Base with anti-vibration housing (feet spacer)  
Base with risers  
Skid with lifting devices  
Cart for industrial sector (trolley)  
(For details, see the brochure constructive options, equipment and installations)

### Connections

Flange UNI 2278 PN16 for pumps at 1 and 2 stage  
Flange UNI 2284 or 6084 PN40 for outlet unions for pumps at 4 stage  
Flange UNI 2285 PN64 for outlet unions for pumps at 8 stage  
Flange ASME B16.5 #150 for pumps at 1 and 2 stage  
Flange ASME B16.5 #300 for outlet unions for pumps at 4 and 8 stage  
Threaded connection GAS BSP  
DIN 11851  
Clamp ISO 2852, Clamp ASME-3A, Clamp DIN 32676  
RJT  
SMS 1145  
Garolla  
Macon

### Sealing system

Gland packing seal B01  
Gland seal with flushing B02 (flush required)  
Single mechanical seal G0K9  
Single mechanical seal with Quench Q0K9 (buffer-Quench-pot required)  
Back-to-back double mechanical seal D0K9 (pressurized flushing required)  
Tandem double mechanical seal K0K9 (buffer / flush required)  
Single or double cartridge seals  
Seal supply systems are available  
(For construction details, see the brochure sealing systems and seals)

### Optional for coupling rod

Joint Protection  
Coupling rod with feed screw  
Ribbon auger feed screw  
Cardan Joint  
(For details, see the brochure constructive options, equipment and installations)

### Protection devices

Temperature probe for dry running protection (standard in the ATEX version)  
Flow switch  
Pressure switch  
(For details, see the brochure constructive options, equipment and installations)

### Control devices

Control panel  
Control panel with inverter  
Drive with integrated inverter  
(For details, see the brochure constructive options, equipment and installations)

### Equipment and optional

Stator heating jacket  
Hopper heating jacket  
Stainless steel stator cover  
Grinder  
Quench Pot flushing  
Stainless steel Lantern  
Hermetic lantern  
Carter to protect the motorization  
CIP connection  
Eccentric Outlet  
(For details, see the brochure constructive options, equipment and installations)

### Certifications

CE  
ATEX

## FEATURES OF USE

### Operating range

#### Flow

Up to 315 m<sup>3</sup>/h

#### Pressure

Up to 24 bar for the standard series (48 bar on request)

#### Temperature

from -40°C until to 150°C

### Typical applications

Sewage sludge

Water Treatment

Industrial sludge

Detergents and product for chemical industry

Product of papermaking industry

Agriculture

Product derived from petrochemical industry

Marine Industry

Crushed grapes with or without stalk

Grapes

Tomatoes Industry

Bakery and pastry industry

Milk and dairy industry, cheese and cheese pastry

## TABLE OF MODELS

### Flow and pressure

| Size        | Model | Qmax 2 bar<br>[m <sup>3</sup> /h] | rpm max | P max<br>[bar] |
|-------------|-------|-----------------------------------|---------|----------------|
| <b>D020</b> | 1L1   | 4,9                               | 1400    | 6              |
|             | 05K2  | 2,5                               | 1400    | 12             |
|             | 025K4 | 0,7                               | 800     | 24             |
| <b>D025</b> | 2L1   | 6,9                               | 1000    | 6              |
|             | 1K2   | 9,4                               | 1000    | 12             |
|             | 05K4  | 1,5                               | 800     | 24             |
|             | 025K8 | 0,5                               | 600     | 48             |
| <b>D030</b> | 4L1   | 11                                | 800     | 6              |
|             | 2K2   | 5,6                               | 800     | 12             |
|             | 1K4   | 2,2                               | 600     | 24             |
|             | 05K8  | 1                                 | 500     | 48             |
| <b>D040</b> | 10L1  | 16,5                              | 600     | 6              |
|             | 4K2   | 8,5                               | 600     | 12             |
|             | 2K4   | 3,7                               | 500     | 24             |
|             | 1K8   | 1,5                               | 400     | 48             |
|             | 16L1  | 23,5                              | 600     | 6              |
| <b>D060</b> | 8K2   | 12                                | 600     | 12             |
|             | 20L1  | 28                                | 500     | 6              |
|             | 10K2  | 14                                | 500     | 12             |
|             | 4K4   | 5,7                               | 400     | 24             |
|             | 2K8   | 2,6                               | 350     | 48             |
|             | 30L1  | 33                                | 500     | 6              |
| <b>D120</b> | 16K2  | 16,5                              | 500     | 12             |
|             | 40L1  | 43                                | 400     | 6              |
|             | 20K2  | 20                                | 400     | 12             |
|             | 10K4  | 10                                | 350     | 24             |
|             | 4K8   | 5                                 | 350     | 48             |
|             | 60L1  | 63,5                              | 400     | 6              |
| <b>D300</b> | 30K2  | 32                                | 400     | 12             |
|             | 80L1  | 76                                | 350     | 6              |
|             | 40K2  | 38                                | 350     | 12             |
|             | 20K4  | 15,4                              | 300     | 24             |
|             | 10K8  | 8,5                               | 300     | 48             |
|             | 120L1 | 110                               | 350     | 6              |
| <b>D400</b> | 60K2  | 55                                | 350     | 12             |
|             | 160L1 | 140                               | 350     | 6              |
|             | 80K2  | 78                                | 350     | 12             |
|             | 40K4  | 33                                | 300     | 24             |
|             | 20K8  | 16                                | 300     | 48             |
|             | 240L1 | 230                               | 350     | 6              |
| <b>D500</b> | 120K2 | 115                               | 350     | 12             |
|             | 320L1 | 220                               | 300     | 6              |
|             | 160K2 | 120                               | 300     | 12             |
|             | 80K4  | 66                                | 250     | 24             |
|             | 40K8  | 33                                | 250     | 48             |
|             | 480L1 | 315                               | 300     | 6              |
|             | 240K2 | 155                               | 300     | 12             |



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