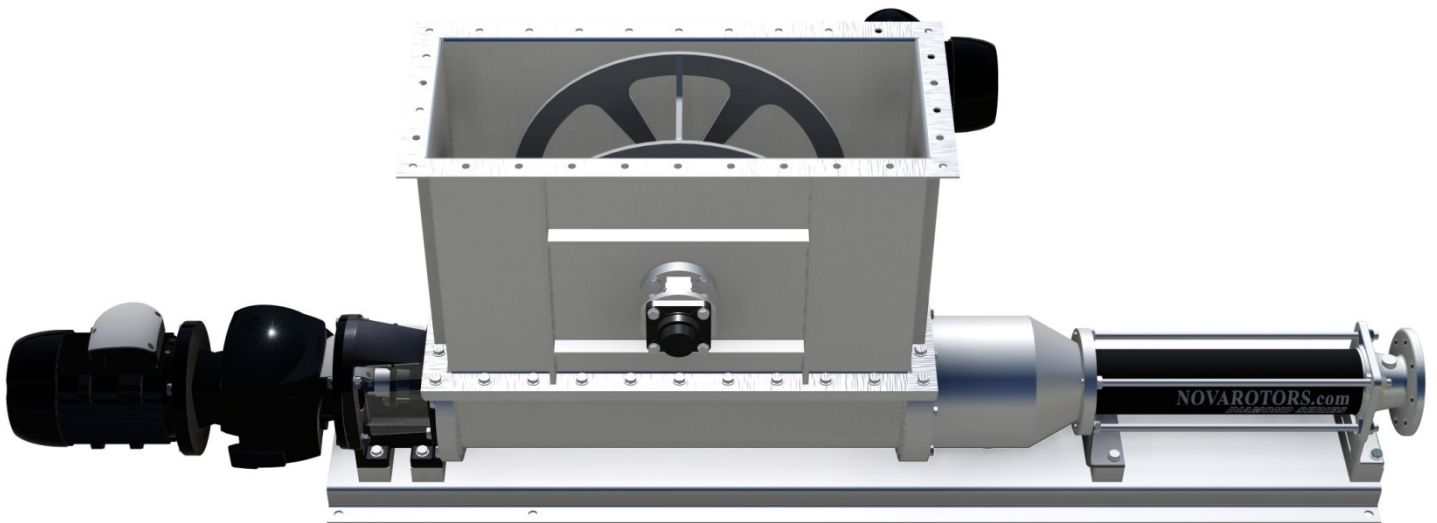




OUR POWER, YOUR SATISFACTION



DIAMOND SERIES

Industrial pumps

DHSB / JHSB series



Hopper series

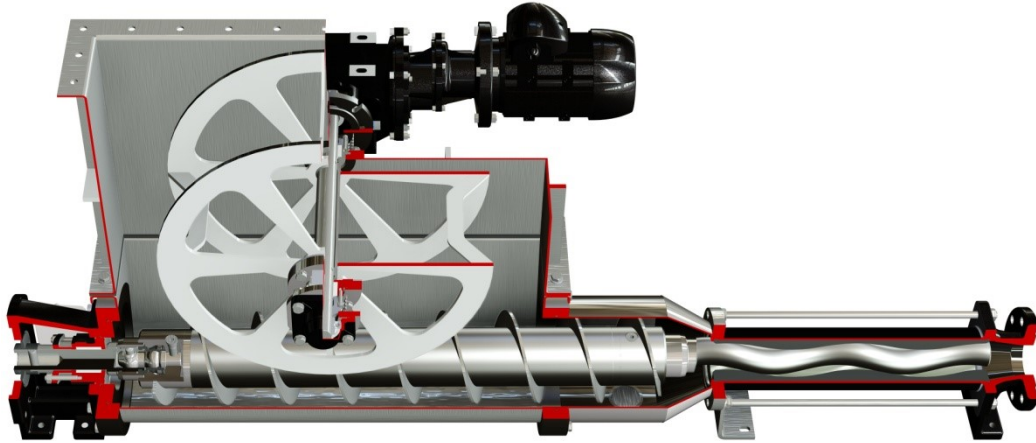
Series with hopper an auger feed screw to convey directly the product to hydraulic part, are the ideal machines for pumping viscous and non-flowing, with a very high solids content.

The DHS e JHS series are the hopper rectangular version with increased auger feed screw to the hydraulics.

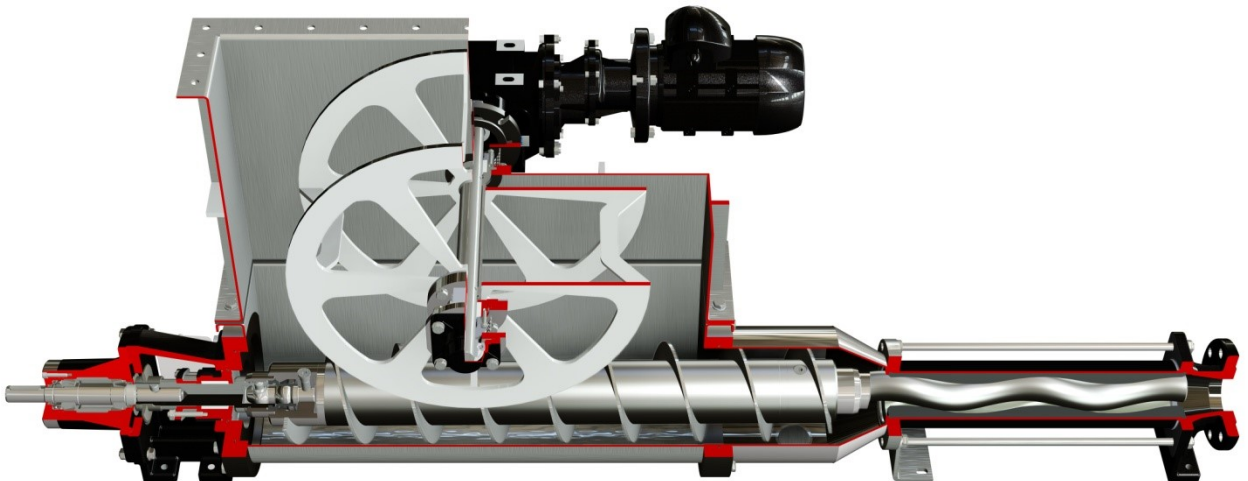
Suitable to pumping non flowing product up to 40% of dry that tend to create bridge or blocks that shut out, is particularly useful in the pumping product that tend to deform under load (pseudo plastic behavior).

The auger feed screw integrates a special device for joint protection.

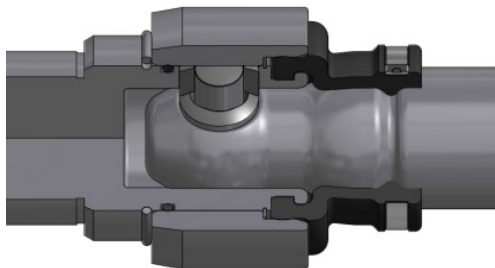
- DHSB series: the drive is coupled directly to the pump by a flange. This solution is extremely cheap and compact; it decreases considerably installation costs and simplify maintenance operations. The forces generated by the hydraulic part are self-supported by the motor. Each motor control gear drive used is adequately selected based on their specific technical parameters and are subject to numerous duration tests with heavy loads.



- JHSB Series: the drive is connected to the shaft inlet by a coupling joint. This configuration is the best solution in terms of performance and durability. All the stresses 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 DHSB Series pump with lantern. This represent the 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.



Materials: The parts in contact with the product of the DHS and JHS Diamond Series pumps can be manufactured in various materials.

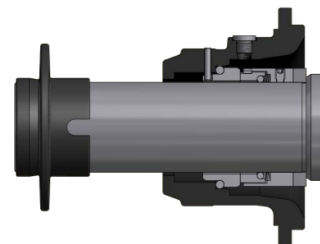
From the version in cast iron to stainless steel (AISI 304 and AISI 316). Also, in the version in cast iron, the rotating parts are still manufactured in stainless steel AISI 420 except the auger feed screw or on request in AISI 304 / AISI 316. In the stainless steel version all the parts in contact with product are in AISI304 or 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.

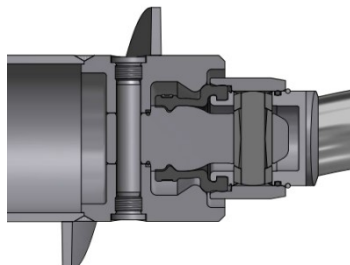
Shaft sealing: Different sealing systems can be installed, each solution being suitable to specific use. The types available are: single acting mechanical seal, with or without quench, double acting mechanical seal back to back or tandem, gland packing with or without flush.

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.

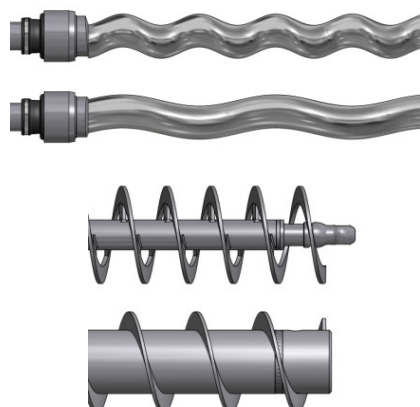
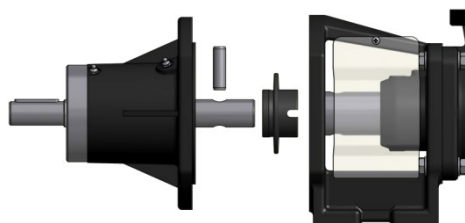


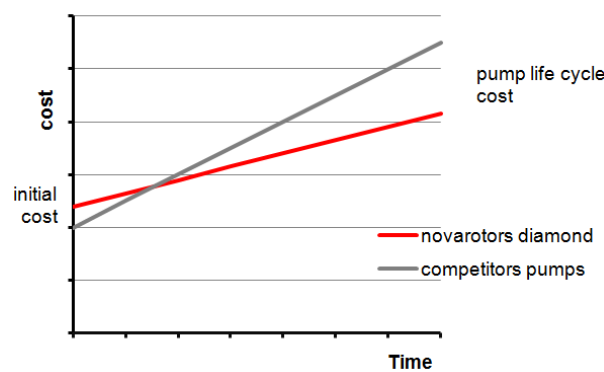

Joint protection: In the DHSB or JHSB series the joint rubber sleeve and clamp are protected from a particular device integrated inside the end of the auger feed screw. This characteristic is of considerable importance because it ensures the integrity of the joint in the case of pumping of abrasive substances or with solid blunt, without the needed to add expensive optional components.

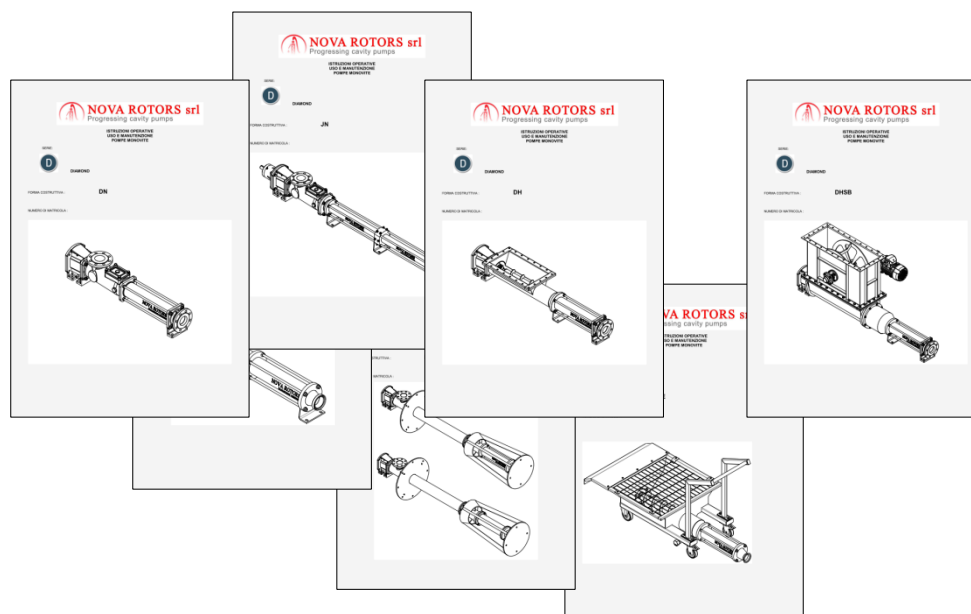


Performance: Duration, efficiency, reliability and low consumption. With the Diamond series, we have reached the maximum levels of technological development in every aspect.

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

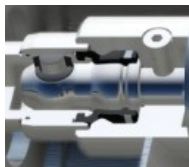


<p>Efficiency: Maximum performance level, exceptional operating efficiency thanks to the optimum volumetric yield and high pressure and is consumption reduced to a minimum. All the Diamond series hydraulics efficiencies were calculated to guarantee the maximum found on today's market.</p>	<p>Versatility: 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.</p>
<p>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.</p> <p>All the models of reducers and variators present determined characteristics in terms of strength, size of the bearings and the quality of the gears.</p>	<p>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.</p>
	 <p>Maintenance: The Diamond series is designed to ensure easy maintenance and normally require the replacement of a minimum number of components.</p> <p>In particular the joint bushes allow the replace of the same without having to replace shafts and rotors.</p> <p>The costs of maintenance are really reduced. The cost of the pump, considered in his full life cycle, is highly competitive.</p>
<p>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.</p>	<p>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.</p>
<p>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.</p>	
<p>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.</p>	



Detailed characteristics

Protection of the joint integrated on the end of auger feed screw.
Fundamental for pumping abrasive fluids containing solids blunt. It ensures a considerable increase of reliability of the joint



Bridgebreaker device Module "B" modular separately installable over the Pump hopper

Worm gear Helical bevel gear reducers. Used to optimize the available space. It is relieved by the efforts of the paddles thanks to these bearings in the gear housing as in the other side of the shaft.
Both are protected by appropriate seals and allow an excellent working accuracy

Bridge breaker wheel. It performs the function of avoiding the bridge on the auger, going to improve the power efficiency the same hydraulics. At the ends of the shafts are installed soft packing seals on sturdy supports.
Free construction to avoid stagnation and dead zones

Increased Auger feed screw conveyor to hydraulics for the transport of highly viscous substances. rotating parts in stainless steel as standard.
The auger feed screw can be either carbon steel or of stainless steel

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.

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

Extremely strong lantern, suitable to support drive loads

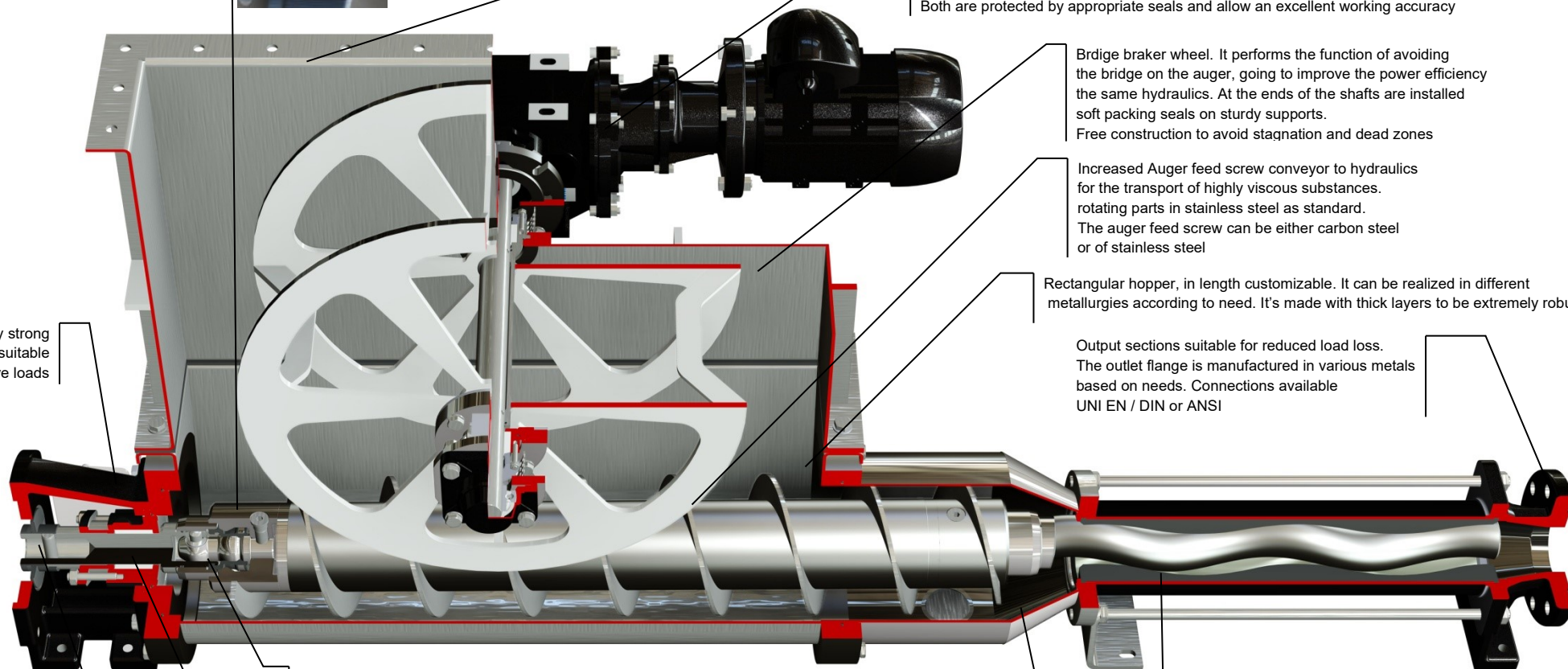
Patented pin-type joint, the heart of the Diamond series pumps
Combines compactness and simple maintenance, reliable performance and duration without compromise.

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 wide range of seals according to standard ISO EN 12756 to meet every application need.

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

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.

The inlet cone allows for a perfect feeding of viscous products containing solids to hydraulic. The inlet part is separated to facilitate the replacement of the rotor together with the coupling pins between the screw and joint



VERSION AND OPTION

Casing material

Base materials:

S275JR, AISI 304, AISI 316

Materials of the sealing shaft

Base materials:

AISI 420, AISI 304, AISI 316

Coatings:

Hardened Chrome plated HCP
Chrome oxide plasma (ceramic coating)

Rotor material

Base materials:

AISI 420, AISI 304, AISI 316

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 ASME B16.5 #150 for pumps at 1 and 2 stage
Flange ASME B16.5 #300 for outlet unions for pumps at 4
Threaded connection GAS BSP

Sealing system

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

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 device

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
Heating jacket for hopper
Stainless steel stator cover
Tangential flanged connection or with threaded connection
Quench Pot flushing
Stainless steel lantern
Hermetic lantern
Carter to protect the motorization
CIP connection
Outlet eccentric pipe
Separate entrance
(For details, see the brochure constructive options, equipment and installations)

Certifications

CE
ATEX

FEATURES OF USE

Operating range

Flow

Up to 820 m³/h

Pressure

Up to 24 bar for the standard series

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 petro-chemical
Marine Industry

TABLE OF MODELS
Flow and pressure

Size	Model	Qmax 2 bar [m³/h]	rpm max	P max [bar]
D040	10L1	22	800	6
	4K2	11,5	800	12
	2K4	4,2	600	24
	16L1	32,5	800	6
	8K2	16,8	800	12
	4K2EL	11,5	800	18
D060	20L1	39,1	700	6
	10K2	17,2	600	12
	4K4	7,2	500	24
	30L1	46	700	6
	16K2	21,5	600	12
	10K2EL	17,2	600	18
D120	40L1	65,5	600	6
	20K2	31	600	12
	10K4	11,7	400	24
	60L1	82	500	6
	30K2	40,5	500	12
	20K2EL	31	600	18
D300	80L1	88	400	6
	40K2	45	400	12
	20K4	21	400	24
	120L1	120	400	6
	60K2	64,5	400	12
	40K2EL	45	400	18
D400	160L1	161	400	6
	80K2	90	400	12
	40K4	45	400	24
	240L1	261	400	6
	120K2	116	350	12
	80K2EL	90	400	18
D500	40K2E	45	400	24
	320L1	255	350	6
	160K2	142	350	12
	80K4	56	250	24
	480L1	368	350	6
	240K2	185	350	12
D600	160K2EL	142	350	18
	80K2E	56	250	24
	640L1	540	350	6
	320K2	280	350	12
	160K4	101	250	24
	960L1	802	350	6
D600	480K2	403	350	12
	320K2EL	280	350	18
	160K2E	142	250	24



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