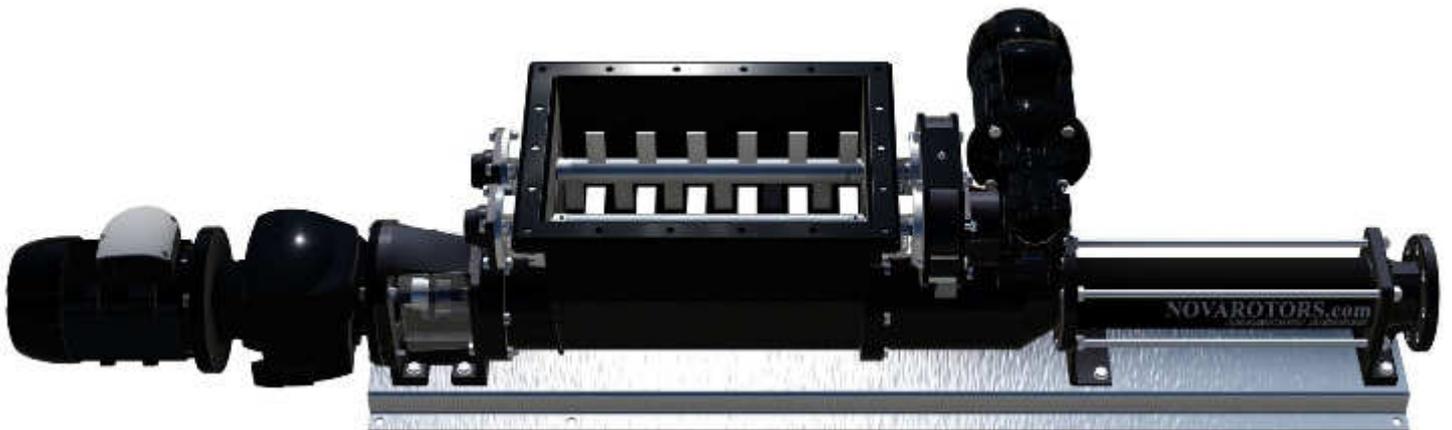




OUR POWER, YOUR SATISFACTION



DIAMOND SERIES

Industrial pumps

DHB / JHB series

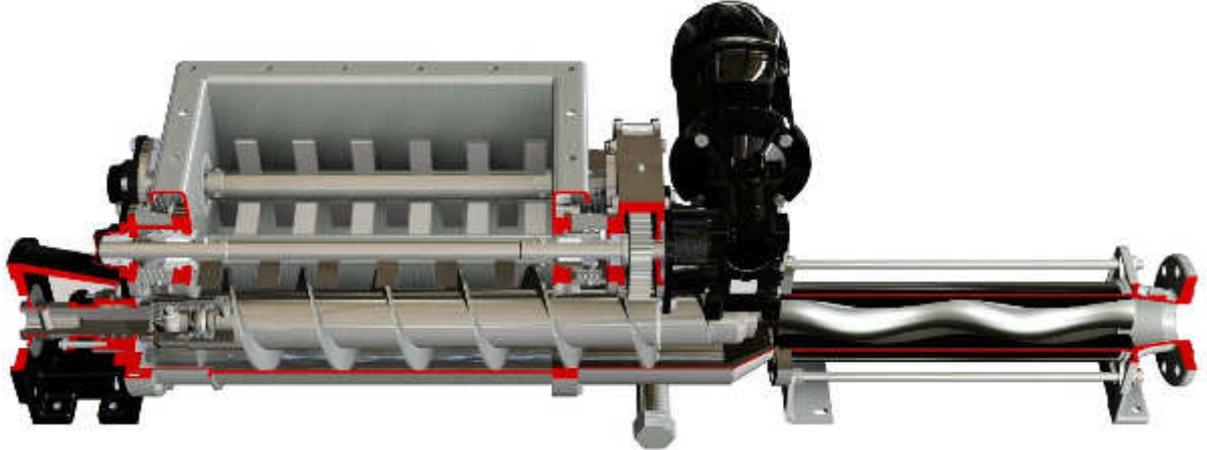


Hopper series

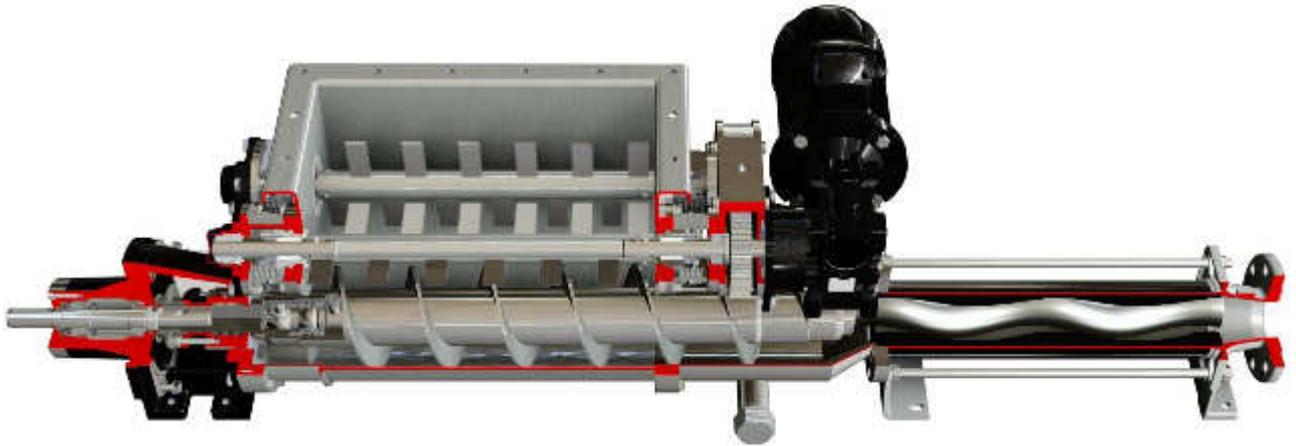
Series with hopper an auger feed screw to convey directly the product to hydraulic part, are the ideal machines for pumping viscous and non-flowing, with a very high solids content.

The DHB and JHB series are the hopper version with double shaft or bridge breaker and increased auger feed screw to the hydraulics. The length is customizable depending on application. Suitable for pumping substances poorly flowing up to 35% of dry substance with high viscosity which tend to form a bridge or blocks. The auger feed screw integrates a special device for joint protection.

- DHB Series: the drive is coupled directly to the pump via 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.



- JHB Series: the drive is connected to the shaft inlet via 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 by us is modular and can be **adapted to a DHB Series pump with lantern** installed after a pump with the DHB series block housing. 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.~~



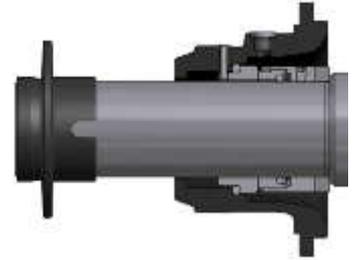
Materials: The parts in contact with the product of the DHB and JHB Diamond Series pumps can be manufactured in various materials. From the version in cast iron to stainless steel (AISI 304 and AISI 316). Also, in the version in cast iron, the rotating parts are still manufactured in stainless steel AISI 420 except the auger feed screw or on request in AISI 304 / AISI 316, also for the part in contact with product.

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.

Base plates: The base plates, characterized by considerable thicknesses are very strong. Available in carbon steel or stainless steel. They can also be provided according to standard API 676, in a trolley version, with anti-vibration housing or on skids, according to the client's specifications.



Shaft sealing: Different sealing systems can be installed, each solution being suitable to specific usage. The types available are: ~~mechanical seal, single mechanical seal, single mechanical seal~~

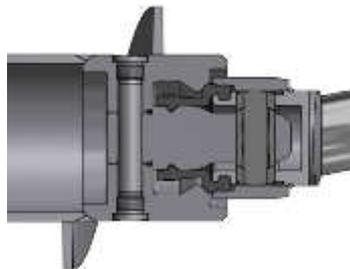


with quench, ~~back to back double~~ **acting mechanical seal back to back or tandem**, and ~~double mechanical seals in tandem, Gland packing with or without flush and flushed packing seal.~~

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, also available according to standards API 682 category 1.

Joint protection: In the DHB or JHB 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

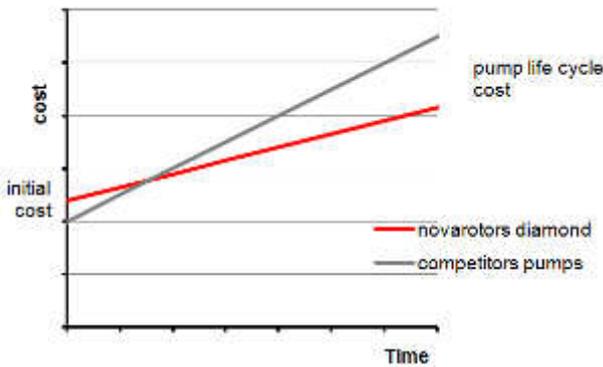


Efficiency: Maximum performance level, exceptional operating efficiency thanks to the optimum volumetric yield and high pressure and is consumption reduced to a minimum. All the Diamond series hydraulics efficiencies were calculated to guarantee the maximum found on today's market.

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 to 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.



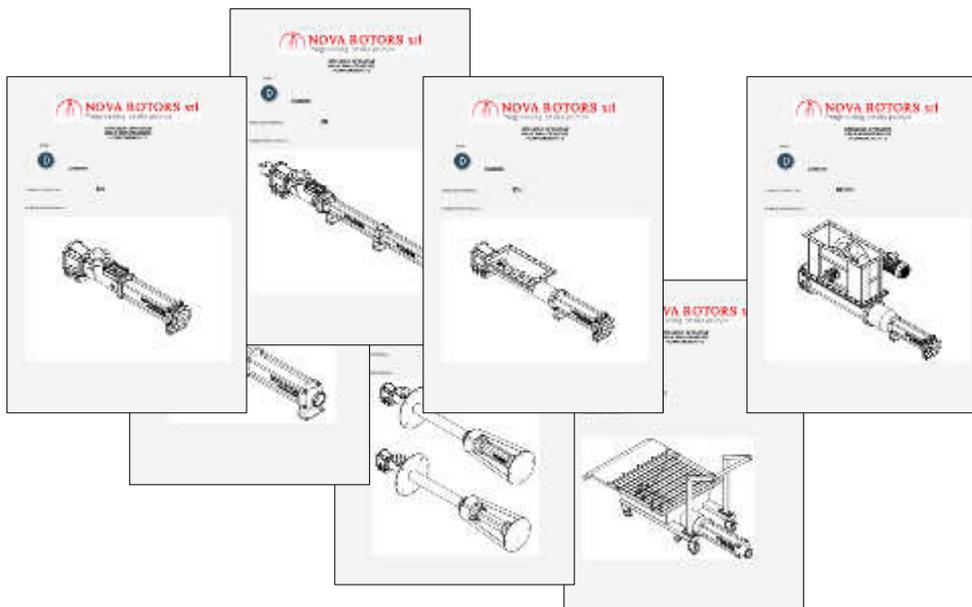
Maintenance: The Diamond series is designed to ensure easy maintenance and normally require the replacement of a minimum number of components. In particular the joint bushes allow the replace of the same without having to replace shafts and rotors. The costs of maintenance are really reduced. The cost 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.

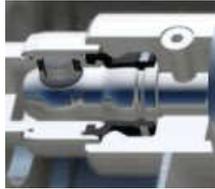
Ease of installation: The pumps of the Diamond series are easy to install due to compactness, simplicity of operation and operational flexibility thanks to the various features included.

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

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 and of stainless steel.



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 coupling joint

Extremely strong **lantern**, suitable to support drive loads

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 with 2 shafts with paddles . Avoiding the product bridge on the auger, going to improve the alimentation on the itself hydraulic. At the ends of the shafts are installed soft packing seals in a strong support, built to avoid stagnation and dead zones

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.

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

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, **also API compliant upon request**.
It is also possible to install a vast range of seals according to standard ISO EN 12756 to meet every application need.

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

Connection via the 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 couplings 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, 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 risers
Skid with lifting devices
(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 inlet unions for pumps at 4 stage
Flange UNI 2285 PN64 for inlet unions for pumps at 8 stage
Threaded connection GAS BSP

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 also in API 682 version category 1
Seal supply systems are available also in accordance to API
(For construction details, see the brochure sealing systems and seals)

Optional for coupling rod

Ribbon auger feed screw

(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)

Equipment and optional

Stator heating jacket
Stator cover in stainless steel
Tangential flanged connection or with threaded connection
Separate entrance
Quench Pot flushing
Lantern in stainless steel
Hermetic Lantern
Carter to protect the motorization
(For details, see the brochure constructive options, equipment and installations)

Certifications

CE
ATEX

FEATURES OF USE

Operating range

Flow

Up to 110 m³/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
 Water treatments
 Agriculture
 Product derived from petro-chemical
 Marine Industry

TABLE OF MODELS

Flow and pressure

Size	Model	Qmax 2 bar [m ³ /h]	rpm max	P max [bar]
D040	10L1	4	150	6
	4K2	2	150	12
	2K4	1	150	24
	16L1	6	150	4
	8K2	3	150	8
D060	20L1	8,4	150	6
	10K2	4,2	150	12
	4K4	2	150	24
	30L1	10	150	4
	16K2	5	150	8
D120	40L1	16,5	150	6
	20K2	7,5	150	12
	10K4	4,2	150	24
	60L1	25	150	4
	30K2	12,5	150	8
D300	80L1	32	150	6
	40K2	16	150	12
	20K4	8	150	24
	120L1	45	150	4
	60K2	22,5	150	8



Via Carlo Cattaneo, 19/25.
36040 SOSSANO (VI)
ITALY

Phone: +39-0444-888151
Fax: +39-0444-888152
E-Mail: info@novarotors.com
Web site: www.novarotors.com



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