

OUR POWER, YOUR SATISFACTION



DIAMOND SERIES

Industrial pumps

DH / JH series

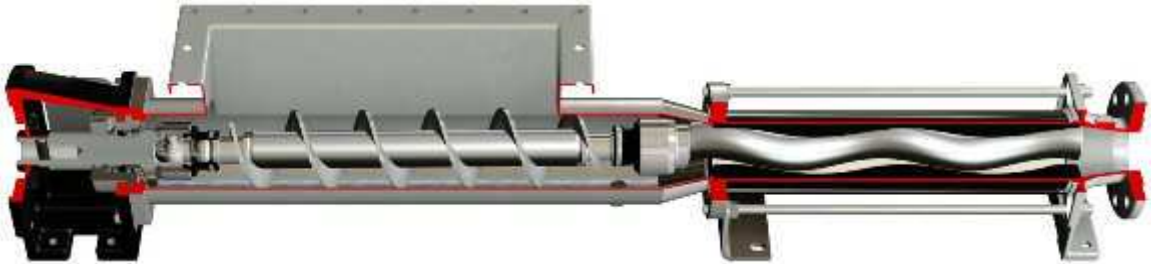


Hopper series

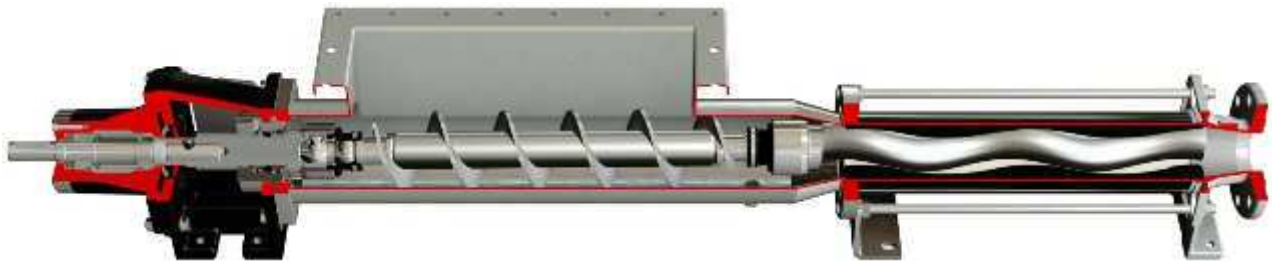
The Diamond Series with hopper an auger feed screw to convey directly the product to hydraulic part, are the ideal machines for pumping viscous and non-flowing, with a very high solids content.

DH and JH Series is the basic version with rectangular hopper and auger feed the hydraulics. The length is customizable depending on application. Suitable for pumping substances poorly flowing up to 18% of dry substance which does not tend to form a bridge. The DH and JN series are distinguished for the type of fitting of the pump to the drive.

- DH 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.



- JH Series: the drive is connected to the free bare 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 DH series pump with lantern** ~~after a pump with the JX 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 **joint** 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 according to standard API 676, 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.



Materials: The parts in contact with the product of the DN and JN 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: mechanical seal, single ~~outer~~ mechanical seal, **internal or external**, single mechanical seal with quench, ~~back to back~~ double mechanical seal **back to back or tandem** and ~~double mechanical seals in tandem~~, **gland packing with flush or without**. ~~Packing seal and flushed packing seal.~~

The **shaft seal variants** 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 **type of shaft seal**, 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.



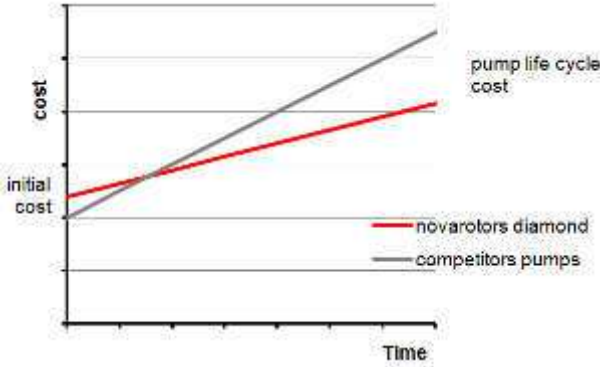
Performance: Duration, efficiency, reliability and low consumption. With the Diamond series, we have reached the maximum levels of technological development in every aspect.

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.

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.



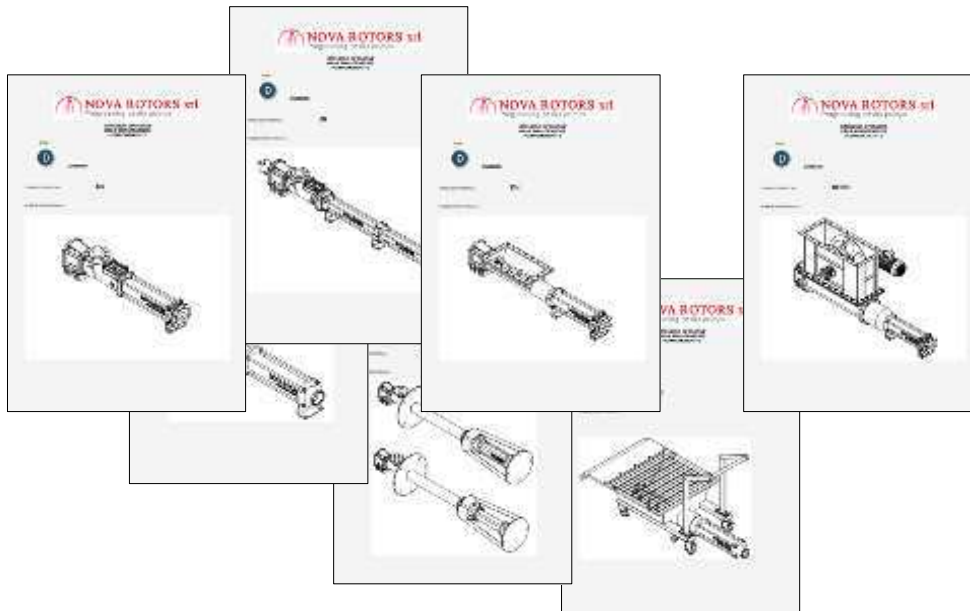
Maintenance: The Diamond series is designed to ensure easy maintenance and normally require the replacement of a minimum number of components. In particular the joint bushes allow the replace of the same without having to replace shafts and rotors. The costs of maintenance are really reduced. The cost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

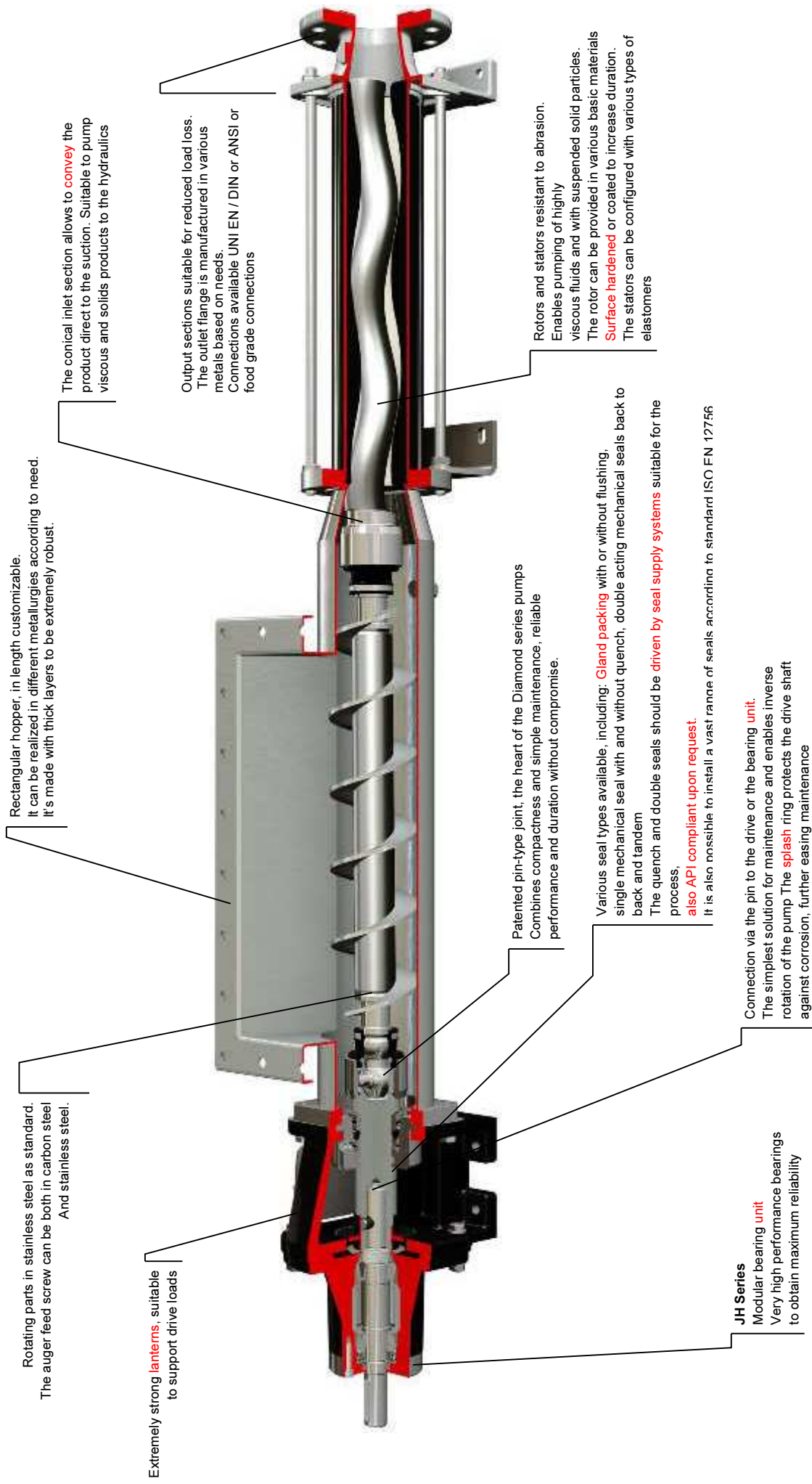
Self-priming: The peculiarities of the hydraulic parts of the progressive cavity pump allow excellent self-priming (up to 7m). The Diamond series were designed to create the minimum loss possible in the pump body, thanks to large sections and a joint compact design and fluid dynamic.

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



Rotating parts in stainless steel as standard.
The auger feed screw can be both in carbon steel
And stainless steel.

Extremely strong **lanterns**, 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.

The conical inlet section allows to **convey** the
product direct to the suction. Suitable to pump
viscous and solids products to the hydraulics

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 types available, including: **Gland packing** with or without flushing,
single mechanical seal with and without quench, double acting mechanical seals back to
back and tandem
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 FN 12756

JH 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

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 anti-vibration housing (feet spacer)

Base with risers

Skid with lifting devices

Cart for industrial sector (trolley)

Cart for food grade and winery sector

(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 according to API PLAN 51, 52, 55)

Single mechanical seal G0K9 (API PLAN 2 or flush recommended according to API PLAN 11, 32)

Single mechanical seal with Quench Q0K9 (Buffer Quench Pot required flushed according to API PLAN 51, 52, 55)

Back-to-back double mechanical seal D0K9 (pressurized flushing required flushed according to API PLAN 53A, 54)

Tandem double mechanical seal K0K9 (buffer / flush required flushed according to API PLAN 52, 53A, 55)

Single or double cartridge seals also in API 682 version category 1

Seal supply systems are available also in accordance to API (Plan 32, 52, 53A, 54, 62)

(For construction details, see the brochure sealing systems and seals)

Optional for coupling rod

Joint Protection

(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

Heating jacket for hopper

Stainless steel stator cover

CIP connection

Outlet eccentric pipe

Separate entrance

Tangential flanged connection or with threaded connection

Quench Pot flushing

Stainless steel lantern

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

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]
D025	2L1	6,9	1000	6
	1K2	9,4	1000	12
	05K4	1,5	800	24
D030	4L1	11	800	6
	2K2	5,6	800	12
	1K4	2,2	600	24
D040	10L1	16,5	600	6
	4K2	8,5	600	12
	2K4	3,7	500	24
	16L1	23,5	600	4
	8K2	12	600	8
D060	20L1	28	500	6
	10K2	14	500	12
	4K4	5,7	400	24
	30L1	33	500	4
	16K2	16,5	500	8
D120	40L1	43	400	6
	20K2	20	400	12
	10K4	10	350	24
	60L1	63,5	400	4
	30K2	32	400	8
D300	80L1	76	350	6
	40K2	38	350	12
	20K4	15,4	300	24
	120L1	110	350	4
	60K2	55	350	8



OUR POWER, YOUR SATISFACTION



DIAMOND SERIES

Industrial pumps

DHS / JHS 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.

The length is customizable depending on application. Suitable for pumping substances poorly flowing up to 35% of dry substance with high viscosity which don't tend to form a bridge or blocks. The auger feed screw integrates a special device for joint protection.

- DHS 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.



- JHS 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 DHS Series pump with lantern** installed after a pump with the DHS 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 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, 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.

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



single **acting** 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.**

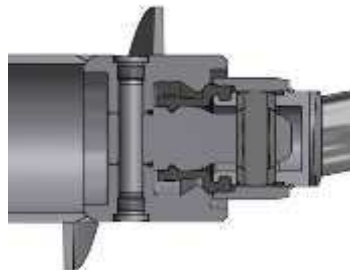
The **type of seals** are all interchangeable on the standard pump. Each solution was carefully engineered while taking into consideration all the operating conditions. As well as changing the sealing system, you can also install various types of mechanical seals based on the application.

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.

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.



Joint protection: In the **DHS or JHS** 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 need 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

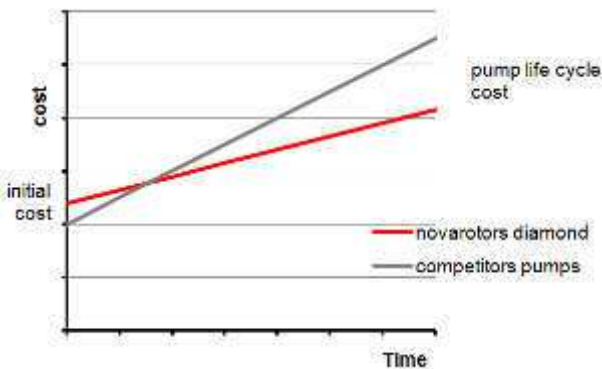


Efficiency: Maximum performance level, exceptional operating efficiency thanks to the optimum volumetric yield and high pressure and is consumption reduced to a minimum. All the Diamond series hydraulics efficiencies were calculated to guarantee the maximum found on today's market.

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.



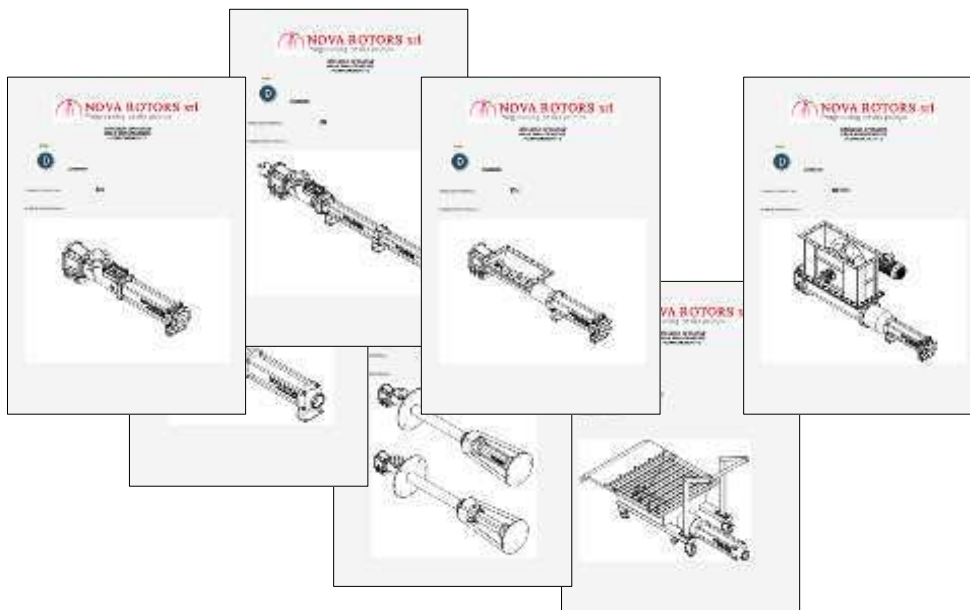
Maintenance: The Diamond series is designed to ensure easy maintenance and normally require the replacement of a minimum number of components. In particular the joint bushes allow the replace of the same without having to replace shafts and rotors. The costs of maintenance are really reduced. The cost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

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

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



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.

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

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

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

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)

Control device

Electric panel

Electric panel with inverter

Drive with inverter

(For details, see the brochure constructive options, equipment and installations)

Equipment and optional

Stator heating jacket

Hopper 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 45m³/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



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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.

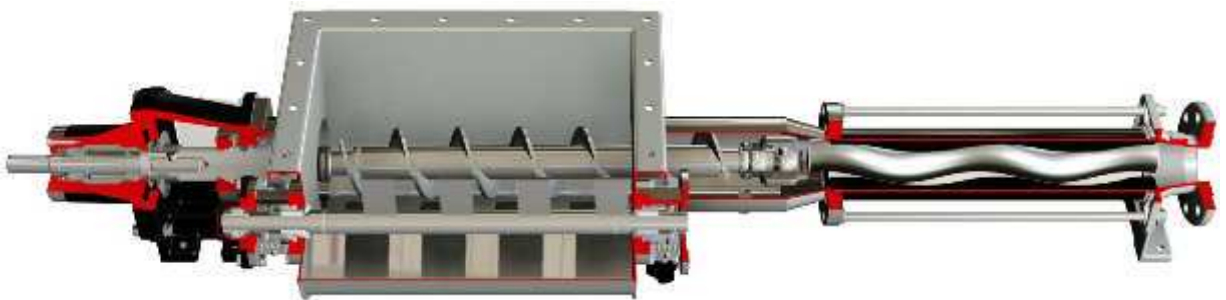
The DHP and JHP series are the hopper version large with shaft bridge breaker and auger feed screw to the hydraulics. Suitable for pumping substances poorly flowing which tend to form a bridge. Particularly suitable for doughs or solids of considerable size compressible or incompressible such as whole 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 dead zone for an easy cleaning.

- DHP 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.



- JHP 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 DHP Series pump with lantern installed after a pump with the DHS 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.~~



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.



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



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: ~~mechanical seal, single acting 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.



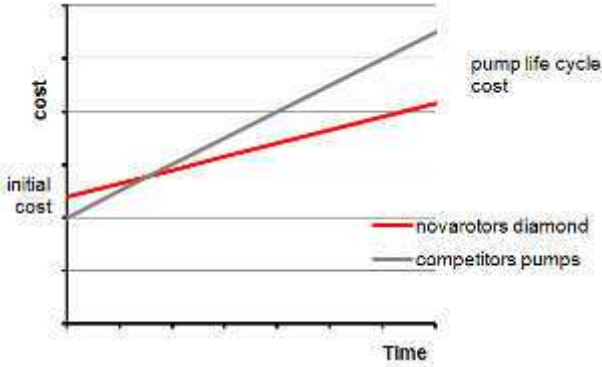
Performance: Duration, efficiency, reliability and low consumption. With the Diamond series, we have reached the maximum levels of technological development in every aspect.

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.

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.



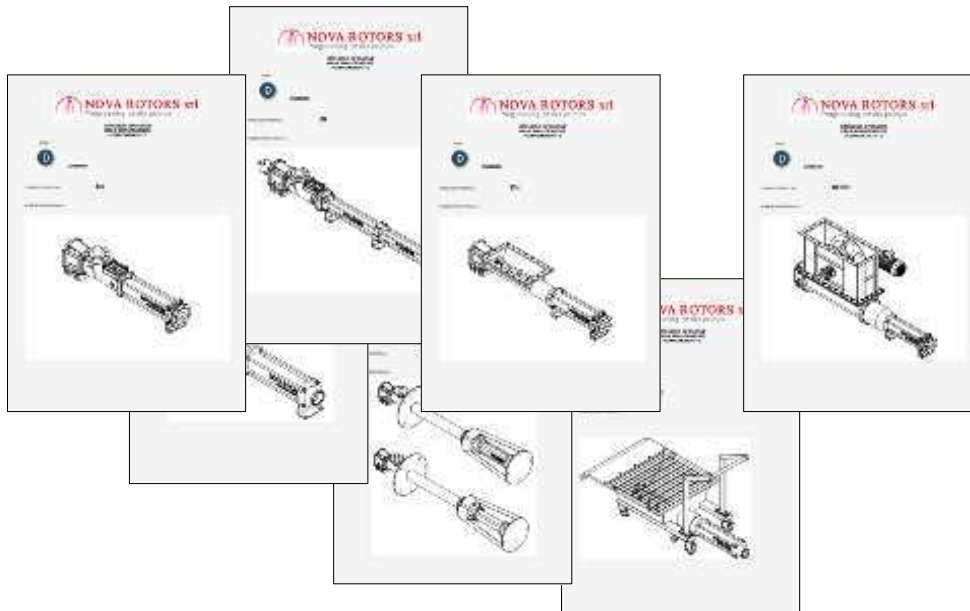
Maintenance: The Diamond series is designed to ensure easy maintenance and normally require the replacement of a minimum number of components. In particular the joint bushes allow the replace of the same without having to replace shafts and rotors. The costs of maintenance are really reduced. The cost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

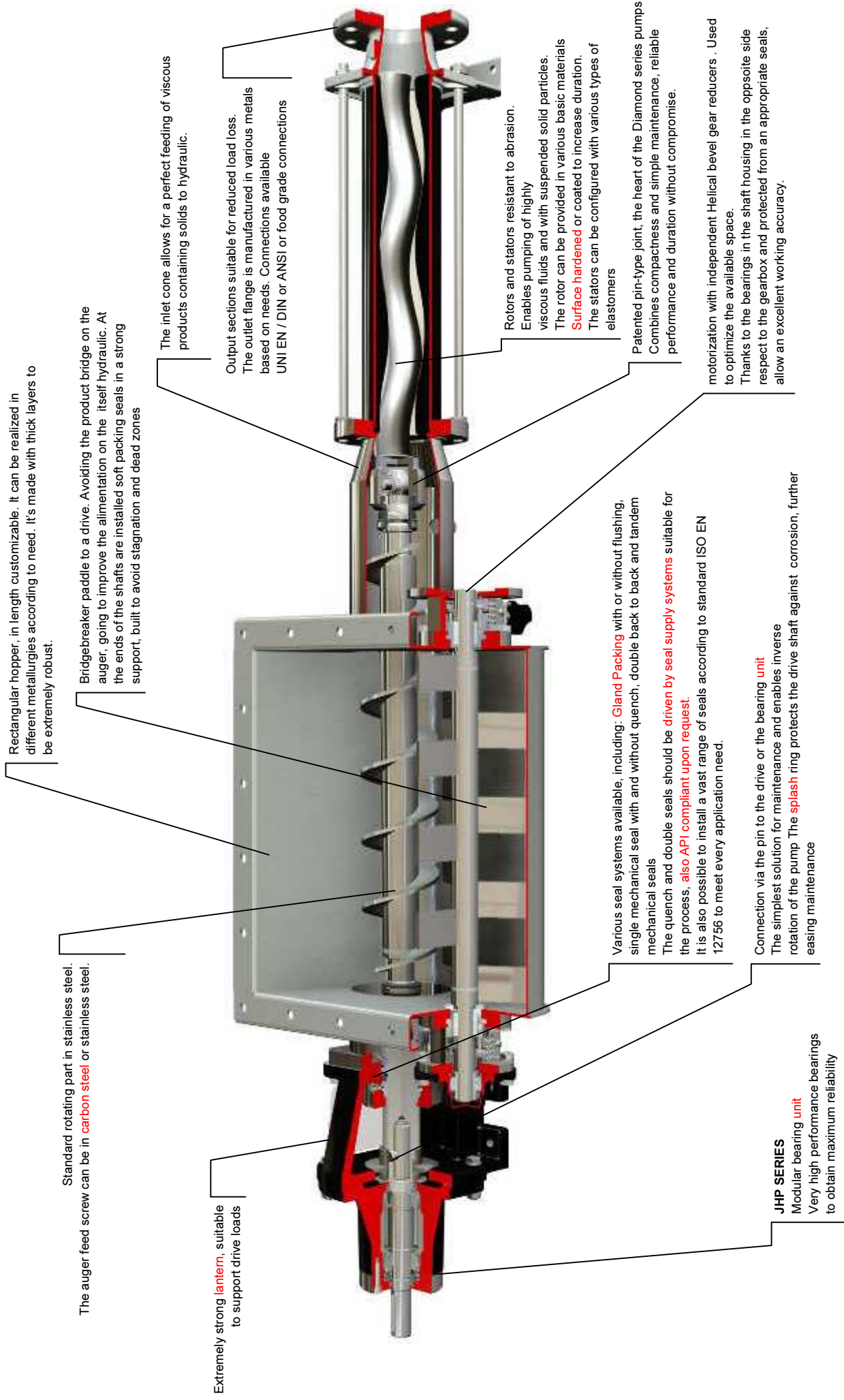
Self-priming: The peculiarities of the hydraulic parts of the progressive cavity pump allow excellent self-priming (up to 7m). The Diamond series were designed to create the minimum loss possible in the pump body, thanks to large sections and a joint compact design and fluid dynamic.

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



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.

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

Bridgebreaker paddle to a drive. 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

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

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

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

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

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.

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

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 in the opposite side respect to the gearbox and protected from an appropriate seals, allow an excellent working accuracy.

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

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 inlet unions for pumps at 4 stage

Flange UNI 2285 PN64 for inlet unions for pumps at 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 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)

Control devices

Electric panel

Electric 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

Stator cover in stainless steel

CIP connection realized in body pump

Bocchettone eccentrico

Tangential flanged connection or with threaded connection

Grinder

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 105 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
 Detergent and cleaning industrial product
 Product derived from petro-chemical
 Marine Industry
 tomatoes Industry
 oenological sector ,graper with rasp, whole grapes
 Bakery and pastry industry
 Milk and dairy industry, cheese and cheese pastry

TABLE OF MODELS

Flow and pressure

Size	Model	Qmax 2 bar [m ³ /h]	rpm max	P max [bar]
D025	2L1	2,5	350	6
	1K2	1,2	350	12
	05K4	0,6	350	24
D030	4L1	5	350	6
	2K2	2,5	350	12
	1K4	1,2	350	24
D040	10L1	9,4	350	6
	4K2	4,7	350	12
	2K4	2,3	350	24
	16L1	14	350	4
	8K2	7	350	8
D060	20L1	19	350	6
	10K2	9,5	350	12
	4K4	4,7	350	24
	30L1	23	350	4
	16K2	11,5	350	8
D120	40L1	38	350	6
	20K2	17,5	350	12
	10K4	9,7	350	24
	60L1	57	350	4
	30K2	28,5	350	8
D300	80L1	77,5	350	6
	40K2	38,5	350	12
	20K4	15	300	24
	120L1	105	350	4
	60K2	52,5	350	8



OUR POWER, YOUR SATISFACTION



DIAMOND SERIES

Industrial pumps

DHB / JHB series

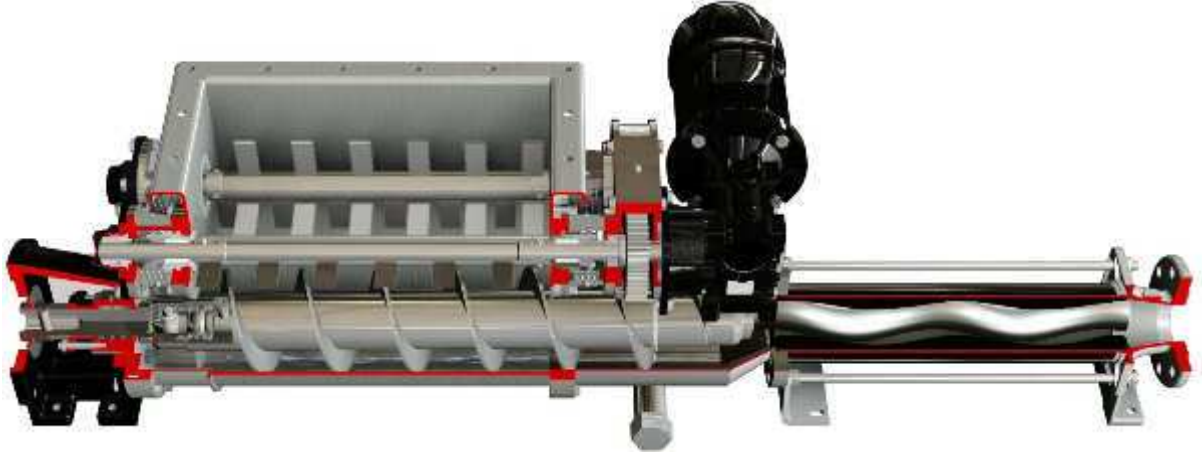


Hopper series

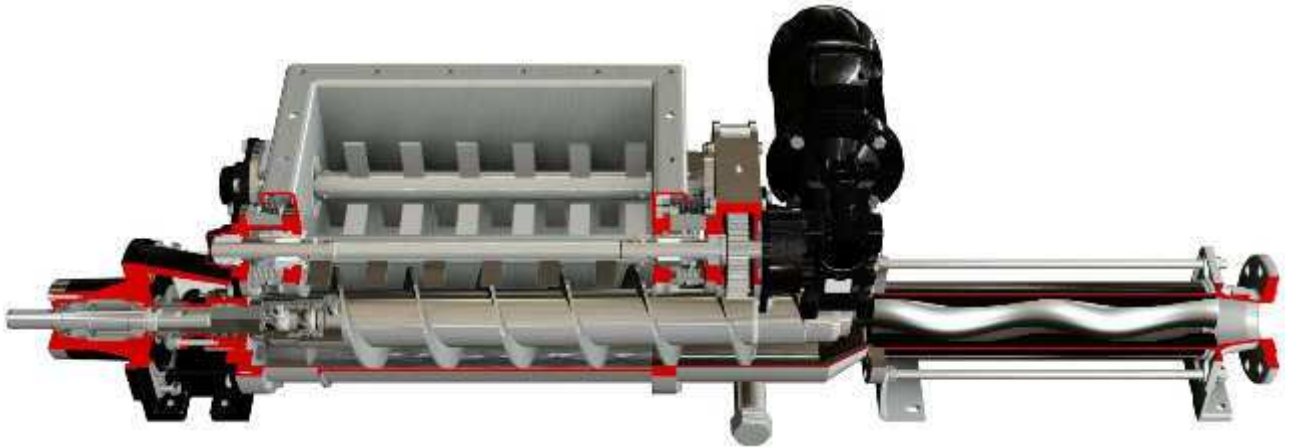
Series with hopper an auger feed screw to convey directly the product to hydraulic part, are the ideal machines for pumping viscous and non-flowing, with a very high solids content.

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.~~



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.



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.

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~~

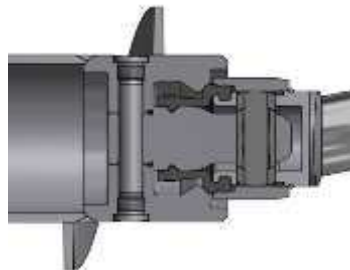


with quench, ~~back to back double mechanical seal back to back or tandem, and double mechanical seals in tandem, Gland packing with or without flush and flushed packing seal.~~

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

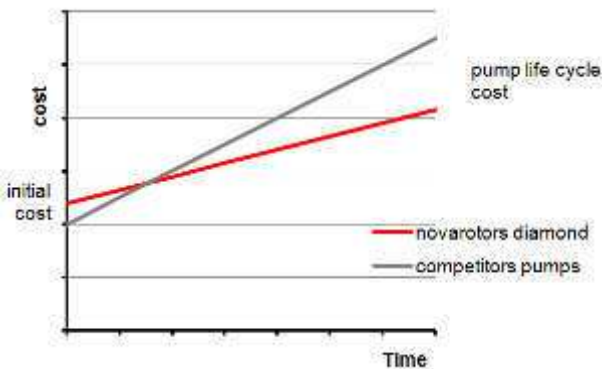


Efficiency: Maximum performance level, exceptional operating efficiency thanks to the optimum volumetric yield and high pressure and is consumption reduced to a minimum. All the Diamond series hydraulics efficiencies were calculated to guarantee the maximum found on today's market.

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.



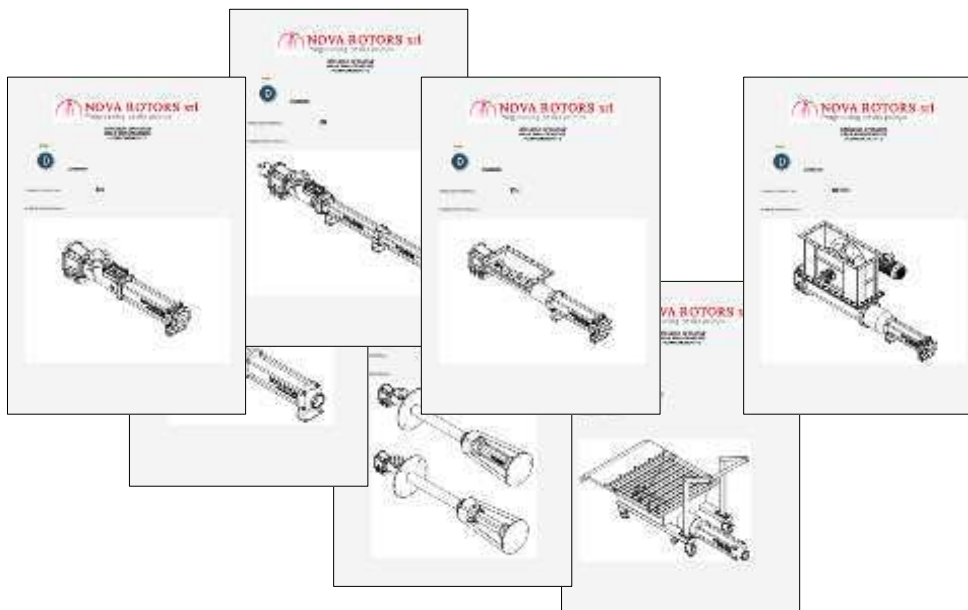
Maintenance: The Diamond series is designed to ensure easy maintenance and normally require the replacement of a minimum number of components. In particular the joint bushes allow the replacement of the same without having to replace shafts and rotors. The costs of maintenance are really reduced. The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



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.



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 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

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

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.

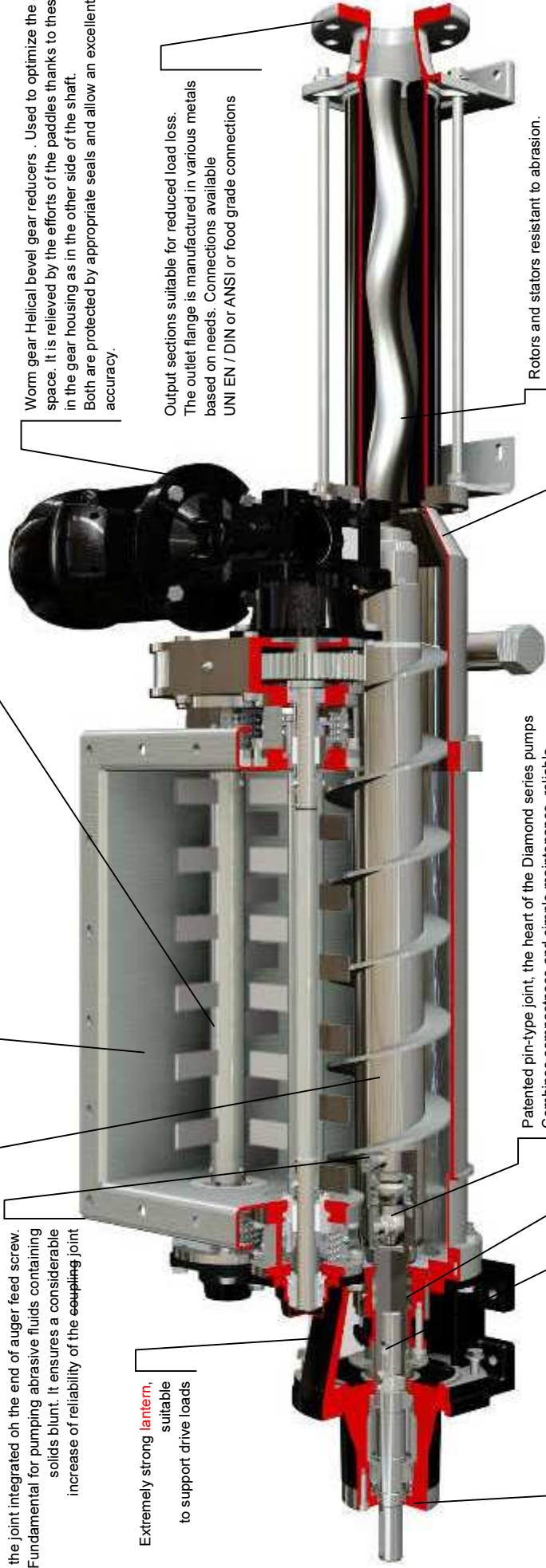
JHB SERIES
Modular bearing unit
Very high performance bearings to obtain maximum reliability

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

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



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

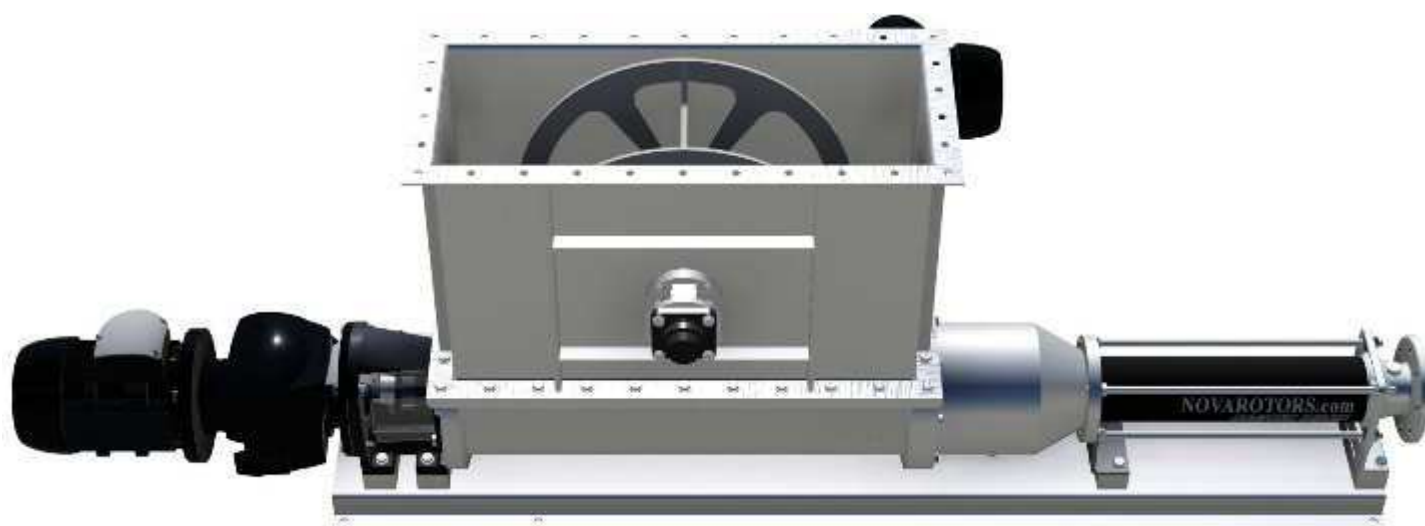
TABLE OF MODELS

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



OUR POWER, YOUR SATISFACTION



DIAMOND SERIES

Industrial pumps

DHSB / JHSB series



Hopper series

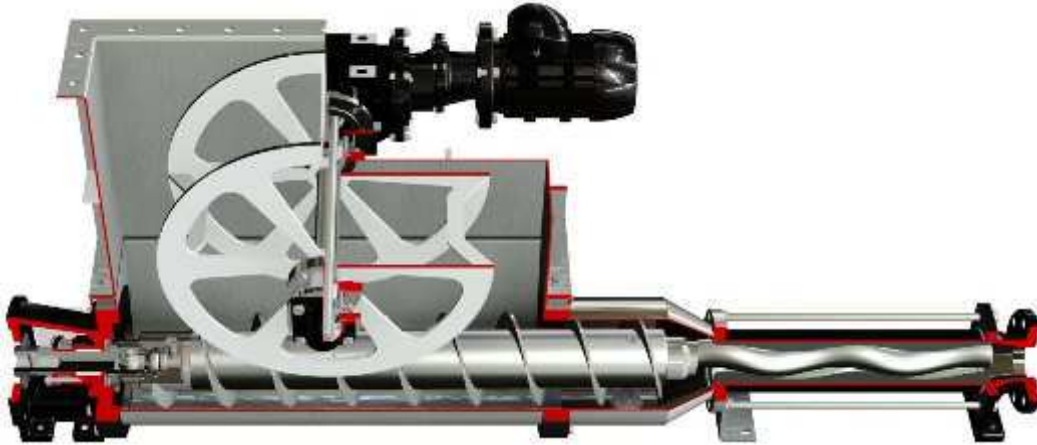
Series with hopper an auger feed screw to convey directly the product to hydraulic part, are the ideal machines for pumping viscous and non-flowing, with a very high solids content.

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

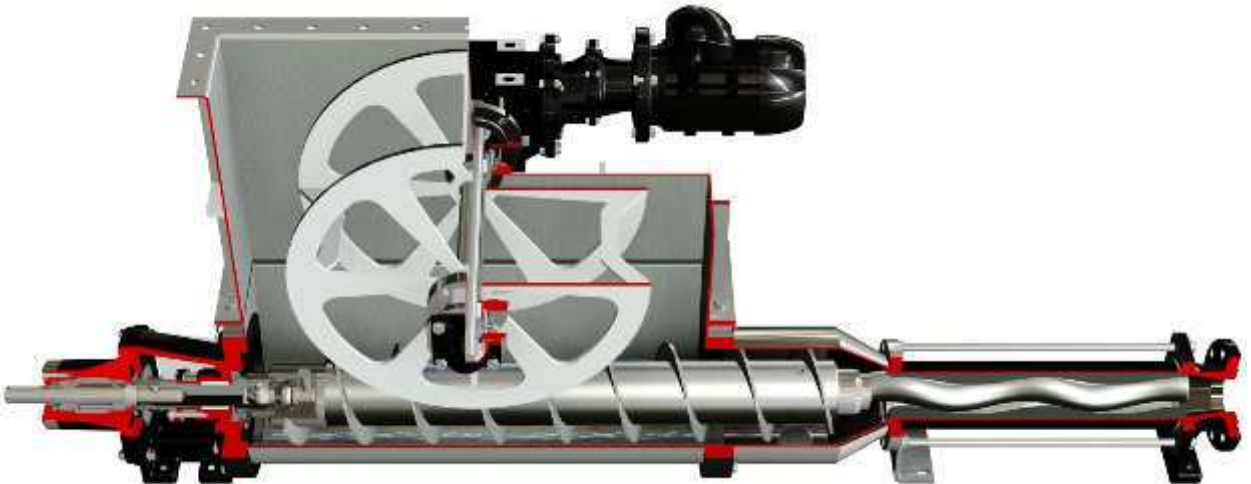
Suitable to pumping non flowing product up to 40% of dry that tend to create bridge or blocks that shut out, is particularly useful in the pumping product that tend to deform under load (pseudo plastic behavior) .

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

- DHSB series: the drive is coupled directly to the pump 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.



- JHSB 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 DHSB Series pump with lantern installed after a pump with the DHS 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.~~



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.



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 usage. The types available are: ~~mechanical seal, single acting mechanical seal, single mechanical seal~~

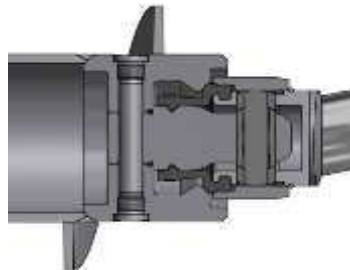


with quench, ~~back-to-back double acting mechanical seal back to back or tandem, and double mechanical seals in tandem, Gland packing with or without flush and flushed packing seal.~~

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 **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

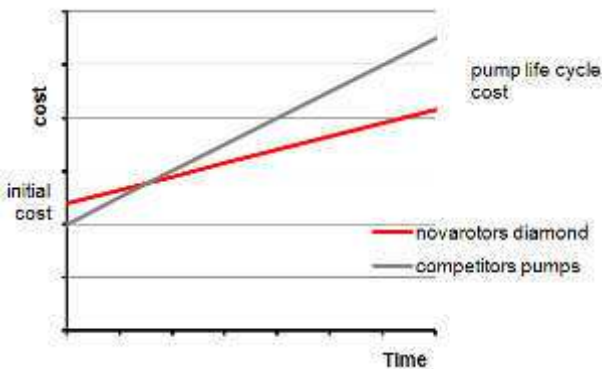


Efficiency: Maximum performance level, exceptional operating efficiency thanks to the optimum volumetric yield and high pressure and is consumption reduced to a minimum. All the Diamond series hydraulics efficiencies were calculated to guarantee the maximum found on today's market.

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.



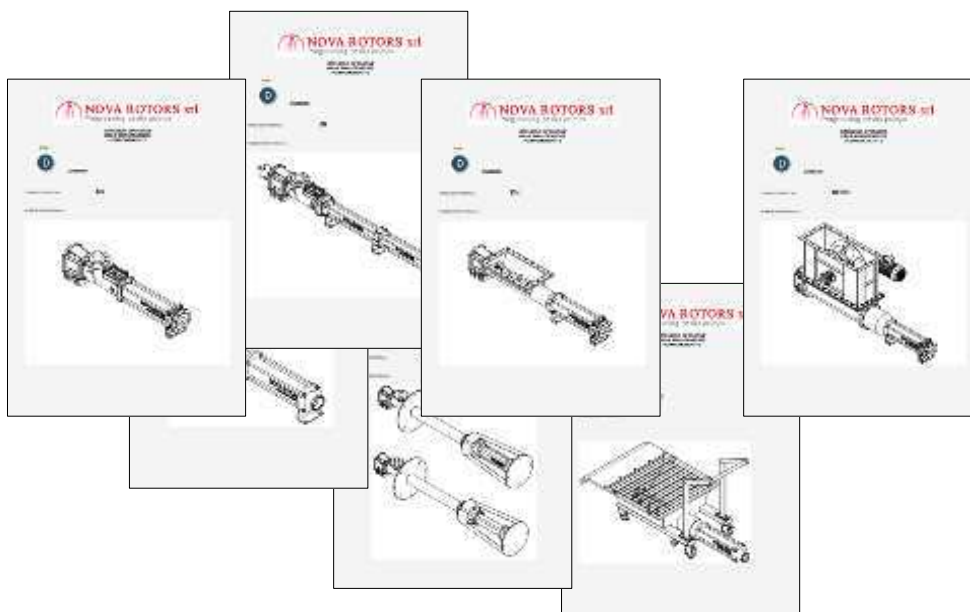
Maintenance: The Diamond series is designed to ensure easy maintenance and normally require the replacement of a minimum number of components. In particular the joint bushes allow the replacement of the same without having to replace shafts and rotors. The costs of maintenance are really reduced. The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

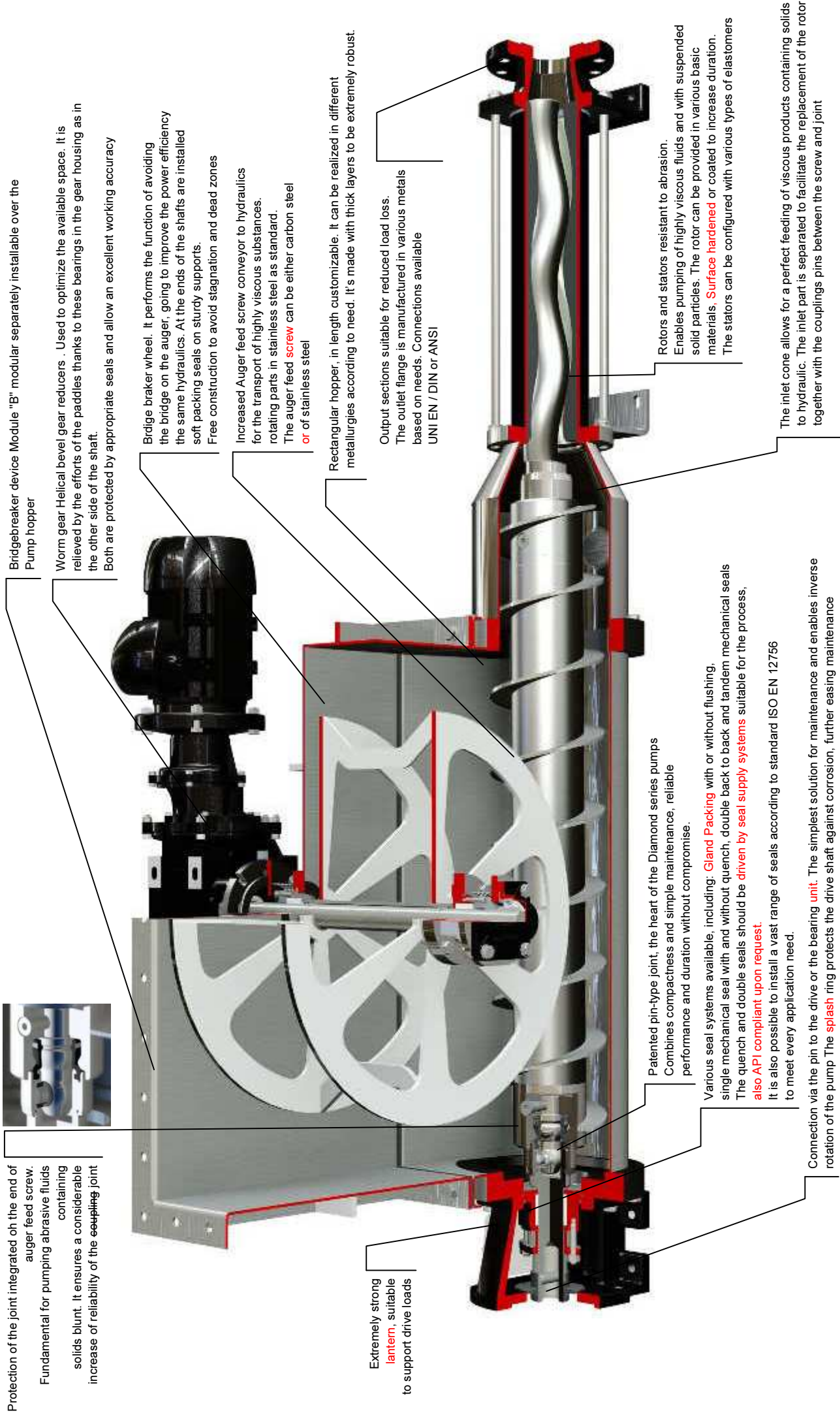
Self-priming: The peculiarities of the hydraulic parts of the progressive cavity pump allow excellent self-priming (up to 7m). The Diamond series were designed to create the minimum loss possible in the pump body, thanks to large sections and a joint compact design and fluid dynamic.

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



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

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.

Extremely strong lantern, suitable to support drive loads

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

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.

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

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

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)

Control device

Electric panel

Electric panel with inverter

Drive with inverter

(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 45m³/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

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DIAMOND SERIES

Biogas pumps

DHS-T / JHS-T series



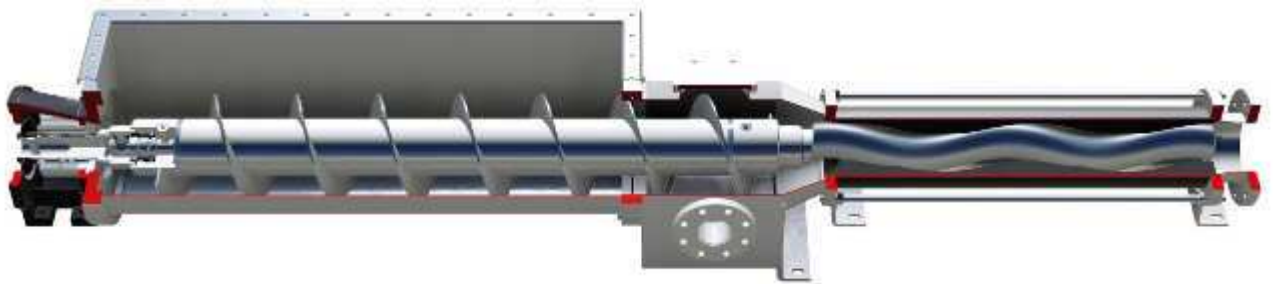
Hopper series

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.

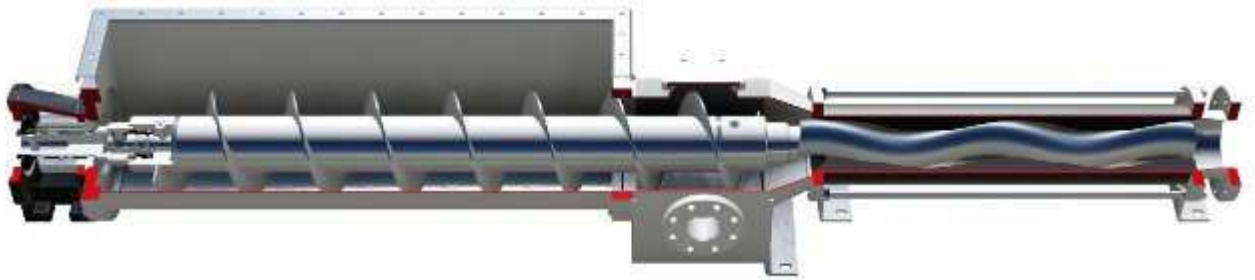
The DHS-T e JHS-T series are the hopper rectangular version with increased auger feed screw to the hydraulics.

Versione realizzata per il settore Biogas per il pompaggio di insilati con iniezione di fase liquida nell'imbocco per migliorare il pompaggio della parte solida. L'imbocco separato, oltre a prevedere i collegamenti per l'iniezione liquida ha un fondo rettangolare per la raccolta dei sassi che possono entrare nella tramoggia e che vengono trasportati dalla coclea. Ciò permette di evitare danni alla parte idraulica. Inoltre è presente un ampio portello di ispezione supplementare ad innesti rapidi che consente l'estrazione dei residui solidi nell'imbocco con estrema facilità.

DHS-T series: the drive is coupled directly to the pump via a flange. This solution is extremely cheap and compact, considerably reducing installation costs and simplifying maintenance. The stress generated by the hydraulic part is 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.



- Serie JHS-T: la motorizzazione è collegata all'albero in entrata della pompa tramite giunto di accoppiamento. Questa configurazione rappresenta la miglior soluzione dal punto di vista delle performance e della durata. Tutti gli sforzi generati dalla pompa vengono assorbiti dai cuscinetti presenti nel supporto. Tali cuscinetti hanno una resistenza ai carichi elevatissima. Vengono montati con precisione estrema su componenti di altissima qualità costruttiva. E' la miglior soluzione quando si vuole garantire la massima durata e affidabilità, pur necessitando di spazi di installazione maggiori. Il supporto cuscinetti da noi progettato, è modulare e può essere installato successivamente in una pompa con supporto monoblocco della serie DHS-T. Rappresenta lo stato dell'arte per quanto riguarda questo tipo di installazioni.



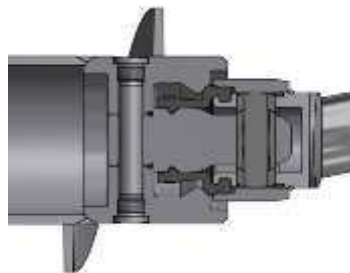
Patented Pin Joint: The pin-type joint, the actual heart of the single screw pump, is the best solution of its type on the market. It offers greater duration, reliability and reduced maintenance costs, managing to combine extreme compactness with unrivalled strength. Its particular manufacturing enables 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 according to standard API 676, in a trolley version, with anti-vibration housing or on skids, according to the client's specifications.



Joint protection: In the DHB e 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.



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.



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, 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.

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



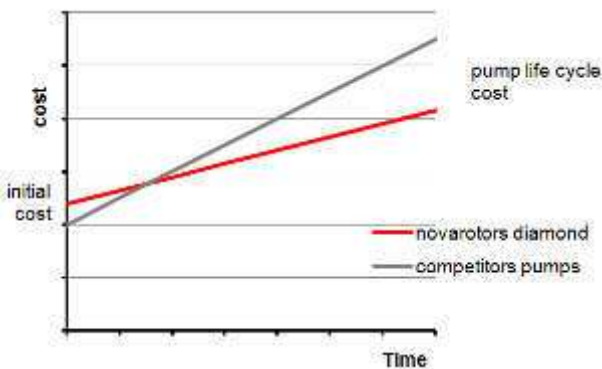
with quench, back to back double mechanical seal and double mechanical seals in tandem, Packing seal and flushed packing seal.

The sealing systems 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.



<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. 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>

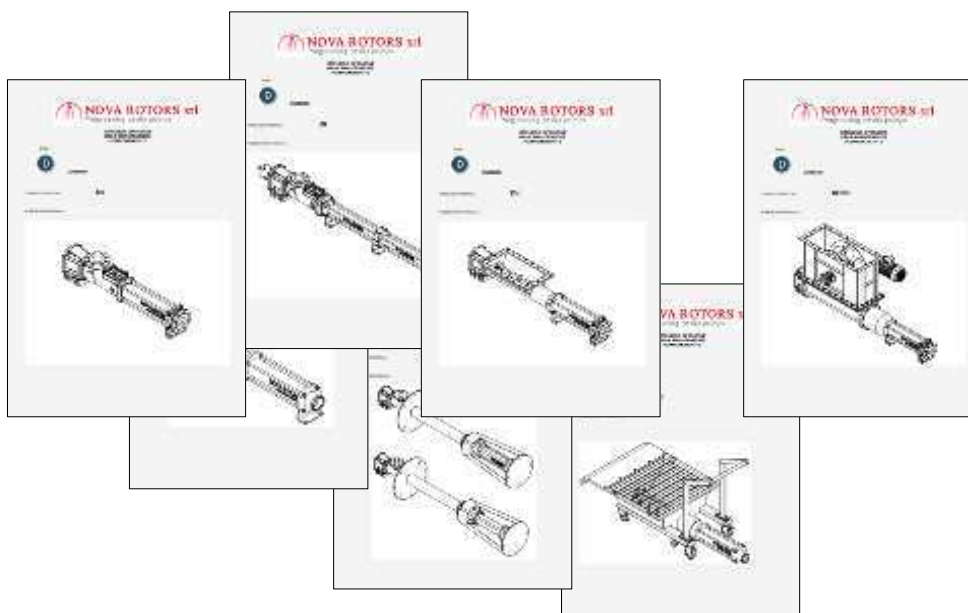


Maintenance: The Diamond series is designed to ensure easy maintenance and normally require the replacement of a minimum number of components. In particular the joint bushes allow the replace of the same without having to replace shafts and rotors. The costs of maintenance are really reduced. The cost of the pump, considered in his full life cycle, is highly competitive

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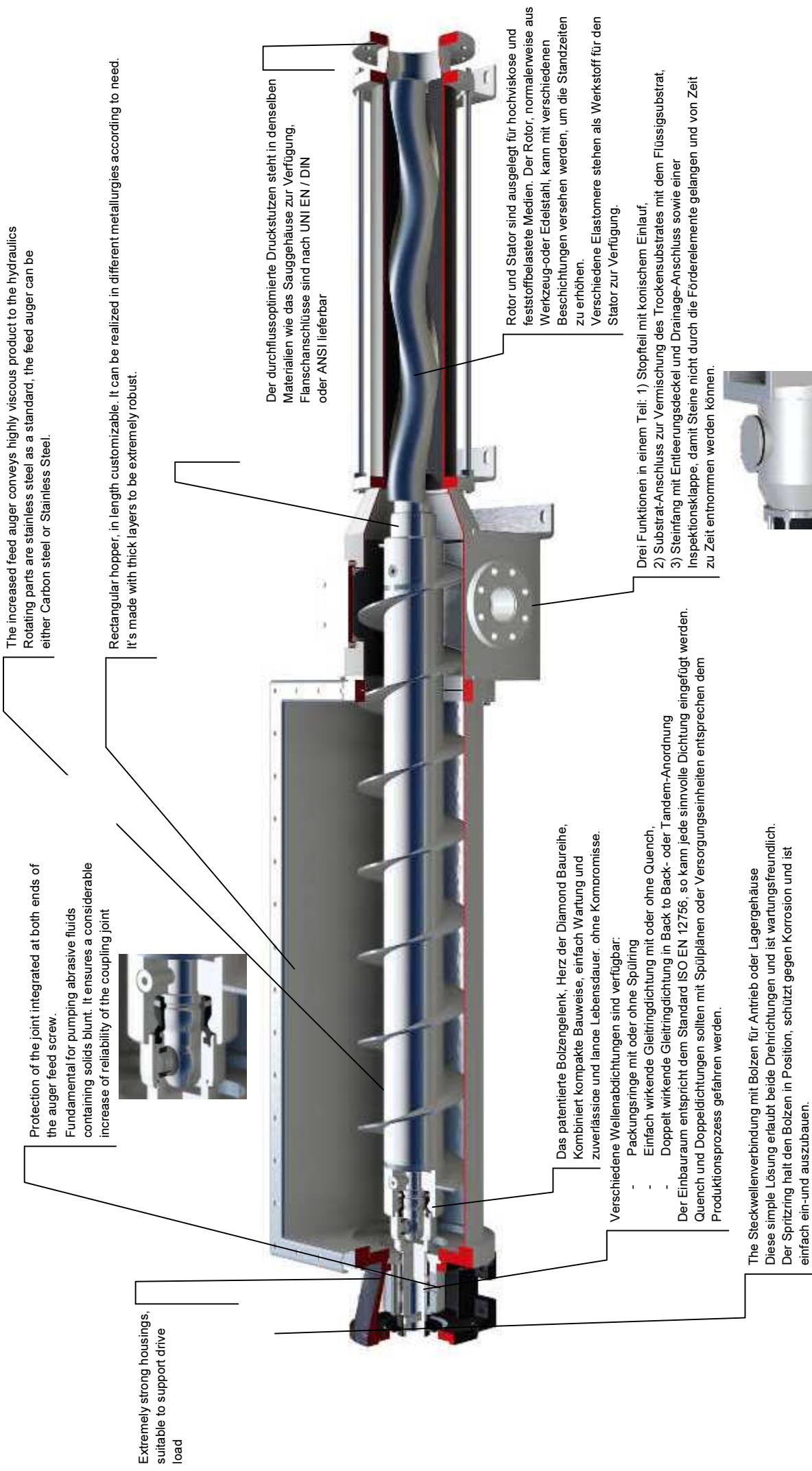
Ease of installation: The pumps of the Diamond series are easy to install due to compactness, simplicity of operation and operational flexibility thanks to the various features included.

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



The increased feed auger conveys highly viscous product to the hydraulics. Rotating parts are stainless steel as a standard, the feed auger can be either Carbon steel or 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.

Der durchflussoptimierte Druckstützen steht in denselben Materialen wie das Sauggehäuse zur Verfügung. Flanschanschlüsse sind nach UNI EN / DIN oder ANSI lieferbar

Rotor und Stator sind ausgelegt für hochviskose und feststoffbelastete Medien. Der Rotor, normalerweise aus Werkzeug-oder Edelstahl, kann mit verschiedenen Beschichtungen versehen werden, um die Standzeiten zu erhöhen. Verschiedene Elastomere stehen als Werkstoff für den Stator zur Verfügung.

Drei Funktionen in einem Teil: 1) Stopfteil mit konischem Einlauf, 2) Substrat-Anschluss zur Vermischung des Trockensubstrates mit dem Flüssigsustrat, 3) Steinfang mit Entleerungsdeckel und Drainage-Anschluss sowie einer Inspektionsklappe, damit Steine nicht durch die Fördererlemente gelangen und von Zeit zu Zeit entnommen werden können.

Protection of the joint integrated at both ends of the auger feed screw. Fundamental for pumping abrasive fluids containing solids blunt. It ensures a considerable increase of reliability of the coupling joint

Extremely strong housings, suitable to support drive load

Das patentierte Bolzengelenk, Herz der Diamond Baureihe, Kombiniert kompakte Bauweise, einfache Wartung und zuverlässige und langlebige Lebensdauer ohne Kompromisse.

- Verschiedene Wellenabdichtungen sind verfügbar:
- Packungsringe mit oder ohne Spülring
 - Einfach wirkende Gleitringdichtung mit oder ohne Quench.
 - Doppelt wirkende Gleitringdichtung in Back- oder Tandem-Anordnung

Der Einbauraum entspricht dem Standard ISO EN 12756, so kann jede sinnvolle Dichtung eingefügt werden. Quench und Doppeldichtungen sollten mit Spülplänen oder Versorgungseinheiten entsprechen dem Produktionsprozess gefahren werden.

The Steckwellenverbindung mit Bolzen für Antrieb oder Lagergehäuse. Diese simple Lösung erlaubt beide Drehrichtungen und ist wartungsfreundlich. Der Spritzring hält den Bolzen in Position, schützt gegen Korrosion und ist einfach ein- und auszubauen.



AUSFÜHRUNGEN UND OPTIONEN

Gehäuse Materialien

Grundmaterialien:

S275JR, 1.4301 (AISI 304), 1.4571/1.4404 (AISI 316/L)

Materialien der Antriebswelle

Grundmaterialien:

S275JR, AISI 420, AISI 304, AISI 316, F51(Duplex),

Beschichtungen:

Hartverchromung HCP

Plasma-Oxyd-Verchromung (Keramik-Beschichtung)

Rotor Materialien

Grundmaterialien:

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

Wärmebehandlung:

Induktionshärten (nur bei AISI 420)

Beschichtungen:

Hartverchromung HCP

Plasma-Oxyd-Verchromung (Keramik-Beschichtung)

Wolfram Karbide HVOF

Stator Materialien

Grundmaterialien:

NBR, NBR Lebensmittel, NBR hell Lebensmittel

EPDM, EPDM Lebensmittel, EPDM hell Lebensmittel

FPM, FPM Lebensmittel

HNBR, HNBR Lebensmittel

SYLIKON

Buna-N (nur bei bestimmten Größen verfügbar)

HYPALON (nur bei bestimmten Größen verfügbar)

PTFE (nur bei bestimmten Größen verfügbar)

Grundplatten

Maschinenfüße

Grundplatte auf einstellbaren Füßen

Trageösen

Wägezellen

(Einzelheiten können der Broschüre „Bauseitige Optionen, Equipment und Installationen“ entnommen werden)

Anschlüsse

Flansche UNI 2278 PN16 (für 1 - und 2 –stufige Pumpen)

Flansche UNI 2284 oder 6084 PN40 (für 4-stufige Pumpen)

Flansche UNI 2285 PN64 (für 8-stufige Pumpen)

Gewindeanschlüsse nach BSP

Wellenabdichtungsarten

Stopfbuchspackung B01

Stopfbuchspackung mit Spürling B02

Einfachwirkende Gleitringdichtung G0K9

Einfachwirkende Gleitringdichtung mit Quench

Doppeltwirkende Gleitringdichtung Back to Back D0K9

Doppeltwirkende Gleitringdichtung Tandem K0K9

Spülplane und Versorgungssysteme

(Einzelheiten können der Broschüre „Wellenabdichtungen“ entnommen werden)

Optionen der Kuppelstange

Hohlschnecke

(Einzelheiten können der Broschüre „Bauseitige Optionen, Equipment und Installationen“ entnommen werden)

Sicherheits- und Schutzeinrichtungen

Temperaturfühler für Trockenlaufschutzeinrichtung (Standard bei ATEX Ausführung)

Druckschalter

(Einzelheiten können der Broschüre „Bauseitige Optionen, Equipment und Installationen“ entnommen werden)

Bedienungseinrichtungen

Schaltschrank

Schaltschrank mit Frequenzumformer

Antrieb mit integriertem Frequenzumformer

(Einzelheiten können der Broschüre „Bauseitige Optionen, Equipment und Installationen“ entnommen werden)

Equipment und Optionen

Edelstahlabdeckung für Statorrohr

Quenchbehälter

Motorschutzhaube

(Einzelheiten können der Broschüre „Bauseitige Optionen, Equipment und Installationen“ entnommen werden)

Zertifikate

CE

ATEX

EIGENSCHAFTEN
Einsatzparameter

- Fördermenge:** bis zu 36m³/h
- Förderdruck:** bis zu 24 bar für die Standard Baureihen
- Temperatur:** -40°C bis zu 150°C

Typische Anwendung

Biogasanlagen für Industrie und Landwirtschaft

TABELE DER TYPEN UND BAUREIHEN
Fördermenge und Druck

Size	Model	Qmax 2 bar [m ³ /h]	rpm max	P max [bar]
D060	20L1	6,8	120	6
	10K2	3,4	120	12
	4K4	1,6	120	24
	30L1	8	120	4
	16K2	4	120	8
D120	40L1	13	120	6
	20K2	6	120	12
	10K4	3	120	24
	60L1	20	120	4
	30K2	10	120	8
D300	80L1	25	120	6
	40K2	12,5	120	12
	20K4	6	120	24
	120L1	36	120	4
	60K2	18	120	8

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