



**OUR POWER, YOUR SATISFACTION**



PRODUCT RANGE

**DIAMOND SERIES**



## THE COMPANY, ABOUT US



Nova Rotors was founded in 1990. Nowadays we are a national benchmark in the manufacturing and selling progressive cavity pumps and wobble pumps.

Our pumps are distributed throughout the world and applied in different sectors, from waste water treatment plants both civil and industrial, oil & gas, oenological, food and dairy sector to pharmaceutical industry. They satisfying the most varied demands and application needs.

Nova Rotors is situated in one of the most industrialised areas in Europe and has recently completed the construction of a new factory which is equipped with facilities for the production and testing of its pumps using the latest technologies available on the market.

The company's strategy is totally focussed on achieving the

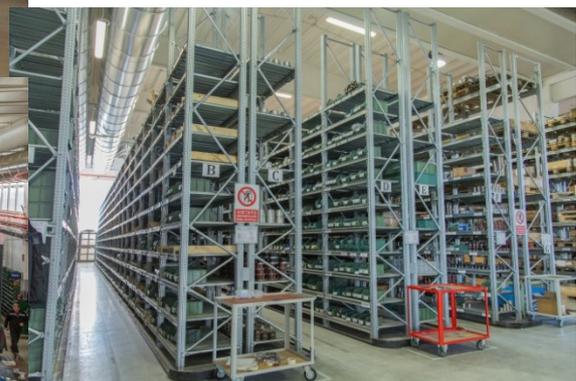
best quality and standardisation of its processes and products applied to each specific sector.

This choice enables us to produce innovative, highly technological products unique in the panorama of progressive cavity pumps.

We employ a computerized design and production process capable of controlling the quality targets throughout the manufacturing process as well as highly skilled personnel who are particularly receptive to customer demands. Nova Rotors is certified to ISO 9001:2008 and OHSAS 18001:2007 and implements the latest organizational techniques, based on "LEAN THINKING" and PLM (Product Life-Cycle Management) concepts, in order to guarantee high product quality and efficient, prompt service.

We are qualified to produce ATEX certified pumps intended for use in potentially explosive atmospheres.

Our product line features a vast selection of models and construction types covering a capacity range up to 420 m<sup>3</sup>/h and operating pressures up to 48 bar, which enable us to meet all possible market demands. Our history of new designs, customisations and innovations are testimony to the attention and dedication Nova Rotors devotes to its customer's needs.



## PROGRESSIVE CAVITY PUMPS, CHARACTERISTICS

Nova Rotors specialises in the construction of progressive cavity pumps. This type of pump is highly flexible in terms of operation and application, a factor which has enabled it to achieve considerable market success. Its unique features makes it suitable for use in a variety of different industries.

The main features of this pump is:

- Uniform flow proportional to the speed.
- Self-priming with a minimum suction capacity of 4 mWC (NPSH), depending on the size, the number of stages and pump speed.
- Capacity to pump heterogeneous products, containing gases, solid, abrasive and fibrous materials in the liquid matrix.
- Pumping of liquids with low or high viscosity.
- Liquid dosing capacity.
- Pulse-free pumping with minimum tensile strain of the product being processed.
- High pumping pressure (6 bar per stage). Pumps are available with one to eight stages, depending on the required pressure.

The progressive cavity pump is a volumetric self-priming rotary machine, and the “pumping” part of the machine consists of two elements, the rotor and the stator. The rotor, typically metallic, is a single or multi-start screw with round thread, extremely large pitch, considerable height and high eccentricity in relation to the core diameter.

The stator, typically made of elastic material, is impressed with a cavity in the shape of a 2 or more start screw, double thread compared to the rotor and with the same eccentricity.

The rotor, rotating within the stator, is forced to perform a hypocycloid roto-translational movement. This coupling of the two elements always creates a line of contact along the profile that guarantees the seal between them. This movement creates an airtight chamber that shifts with a helical movement, from the suction casing to the delivery casing.

The Diamond series features a patented universal pin joint that ensures top performance and unprecedented flexibility of use. The standardization throughout the entire range of products achieved with this joint has resulted in optimal spare parts management as well as simplified and economical maintenance, without sacrificing reliability and long life.

**Flanged Industrial Series**

The Flanged Industrial Series is the basis of the Diamond series.

The robust cast casings, also in the stainless steel model, with large inspection ports included, make this an ideal product for the toughest applications. The Diamond DN and JN series are the best solution for a wide range of fluid pumping industries. They are synonymous with sturdiness, reliability, performance and application flexibility. Available with UNI, DIN and ANSI flanged and GAS BSP threaded connections.

The drive system is coupled directly to the pump by means of a flange. This solution is extremely economical and compact, considerably reduces installation costs and simplifies maintenance. The stress generated by the hydraulic part is supported by the drive system itself.

The drive is connected to the shaft at the pump inlet by means of a coupling joint. This solution is the best solution in terms of performance and durability. All the stress generated by the pump is absorbed by the bearings present in the casing. The bearing housing of our design is modular and can be installed at a later date in a close-coupled pump of the DN series.

**DN SERIES**



**JN SERIES**



**Hopper pumps**

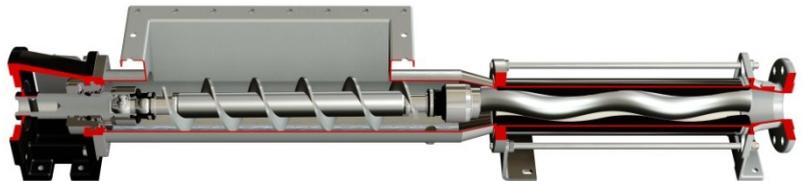
The open hopper pumps with hydraulic auger feed screw are ideal for handling high-consistency materials with a low degree of flowability and high solid content.

They are available in 7 different construction types, each with different screws and hoppers based on the type of product to be pumped. All the pumps can be made with a close coupled arrangement or a bearing housing arrangement with independent shaft (JH SERIES, JHS SERIES, JHP SERIES, JHB SERIES and JHSB SERIES) excepting the DHE SERIES which has a built-in gear motor.

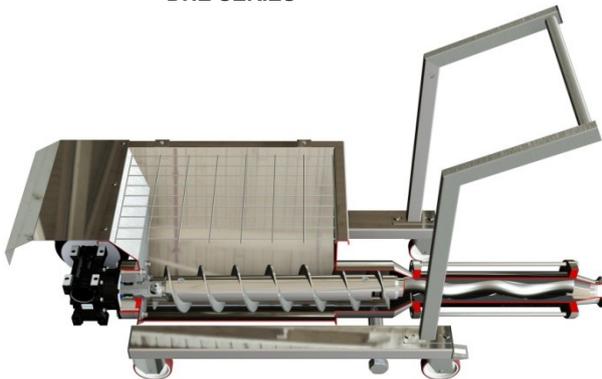
Standard model equipped with rectangular hopper and an auger feed screw that moves the product to the hydraulic part. The length can be adapted to suit the application.

Suitable for pumping materials with low flow-ability and up to 18% solids content and not creating a bridge / not tend to bridging.

**DH SERIES**



**DHE SERIES**



This model has a large eccentric hopper, with integrated trolley, ideal for the wine industry in conjunction with destemmers-crusher. For pumping crushed grapes with or without stems. Extremely compact standard construction with all parts made from AISI 304 stainless steel.

The worm gear motor significantly reduces the pump's footprint. The pump is supplied with safety grill on the hopper, protection guard for the drive system and a large handle that can accommodate electric panels and inverters. It can be supplied with a level probe on the hopper for automatic shutdown of the pump.

This model features a rectangular hopper and enlarged auger feed screw that moves the product to the hydraulic part. The length can be adapted to suit the application. Suitable for pumping high viscosity materials with low flowability and up to 28% solids content not tend to bridging. The screw drive shaft features a special integrated joint protection.

**DHS SERIES**



### DHP SERIES

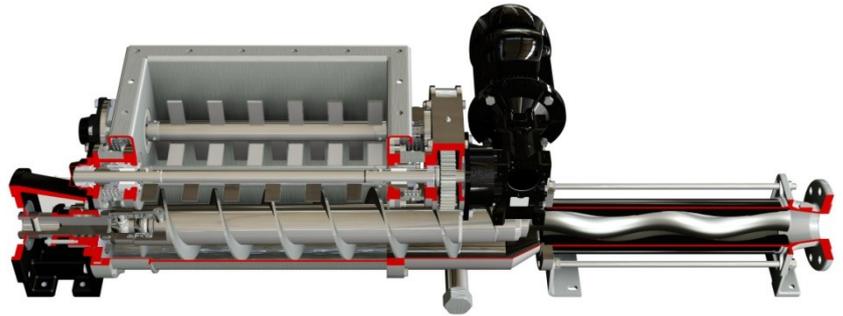


Model fitted with wide hopper, single bridge breaker shaft and auger feed screw that moves the product to the hydraulic part. Easy handling of materials with a low degree of flow ability and prone to bridging. Particularly suitable for easily compressible, large mixtures or solid materials such as whole fruits and vegetables. Ideal for food applications such as grapes, whole fresh grapes, chopped tomatoes or doughs for the confectionery industry. Standard AISI 304 or AISI 316 stainless steel construction. No dead zones and easy to clean design.

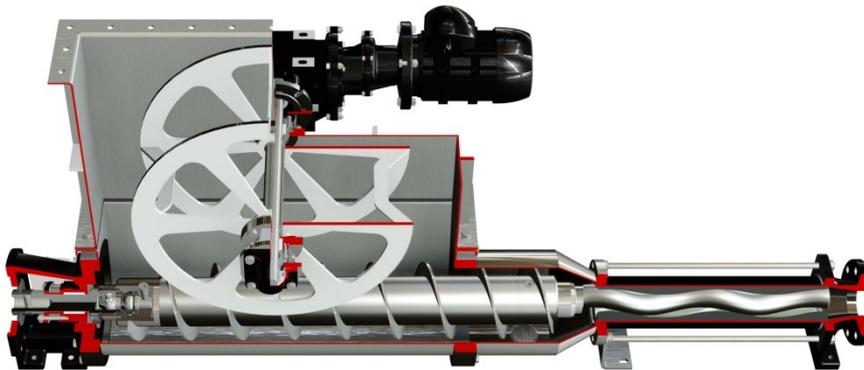
### DHB SERIES

This model features a hopper with double bridge breaker shaft and an enlarged auger feed screw that moves the product to the hydraulic part. The length can be adapted to suit the application. Suitable for pumping highly viscous, non-flowing materials with up to 35% solids content with blocks that tend to bridging.

The screw drive shaft features a special integrated joint protection.



### DHSB SERIES (DHS with "B" Module)

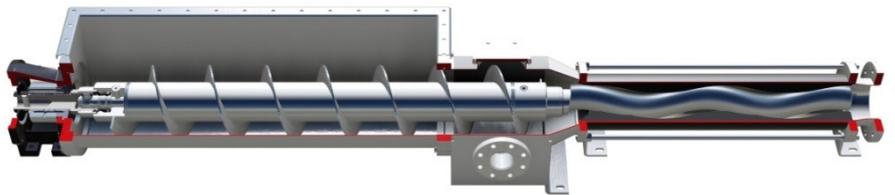


This model features a rectangular hopper and an enlarged auger feed screw that moves the product to the hydraulic part. The hopper is fitted with a "B" Module which features a special wheel device that feeds the screw to prevent bridging and increase flow ability of the plastic or pseudo plastic materials. Suitable for pumping non-flowing materials with up to 40% solids content with blocks that tend to bridging.

It is particularly effective in pumping products that tend to plasticize. The screw drive shaft features a special integrated joint protection.

### DHS-T SERIES

This model features a rectangular hopper and an enlarged auger feed screw that moves the product to the hydraulic part. It is designed for the Biogas sector for pumping silage with the injection of phase liquid at the inlet to increase pump-ability of the solids. The separate inlet provides the connections for the injection of liquids and has a rectangular bottom for collecting any stones that might enter the hopper and be conveyed away by the screw. This avoids damage to the hydraulic section. Moreover, a large additional inspection port is provided with quick couplings for easy removal of solid deposits from the inlet.



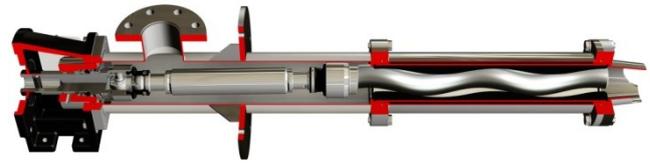
**Vertical Series**

The Vertical series is the ideal solution for pumping viscous or non-viscous, abrasive and aggressive materials from tanks and wells. These pumps are available with UNI, DIN and ANSI and GAS BSP discharge flanged connections; whereas the liquid suction port is designed specifically for priming the product in which it is immersed. The length can be adapted to suit the installation requirements. The stainless steel version (AISI 304 or AISI 316) is supplied with a stator jacket as standard to prevent corrosion of the stator.

There are two standard configurations: the short version and the long version. The difference is in the installation length with which they are constructed. The short version is compact robust and very easy to install. Whereas the long version is ideal for installation in deep wells or tanks and feature a number of dedicated optimizations such as the removable inlet for easy maintenance of the rotor, stator and coupling. A fundamental feature is the downhole plate with clamping cone to make the pump extremely stable and vibration-free even in extreme conditions of use.

They are always constructed in the close-coupled version.

**DV SERIES "SHORT VERSION"**



**DV SERIES "LONG VERSION"**



**Hygienic Series**

The sanitary pump series is the state of the art for food, pharmaceutical, chemical and cosmetic industries. The complete sanitary design, in compliance with EHEDG and 3A standards, ensure maximum sanitization. These pumps are top rated for "Clean in Place" and "Sterilisation in Place" procedures. The geometry of the pumps is designed specifically to allow complete draining and avoid dead zones. Each single component is manufactured with the utmost attention to finishing details and is thoroughly cleaned.

As well as the parts that come into contact with the product, the block construction and base (when requested) are also made of stainless steel (standard in AISI 304).

The available fittings include DIN 11851, Clamp ISO 2852, Clamp ASME-3A, Clamp DIN 32676, RJT, SMS 1145 and lastly Garolla and Macon fittings for the wine industry.

The complete range of pumps can be manufactured with block construction (DXO SERIES and DXC SERIES) or bearing housing with independent shaft (JXO SERIES, JXC SERIES).

**DXO SERIES**



The DXO series is a hygienic pump with open joint. The design of its casing and rotating parts that are completely free of stagnation point and dead zones makes it the absolute best sanitization solution. The pin-type joint has been suitably sized to ensure a long life. Lubrication of the joint is guaranteed by the actual product thanks to its open design, consequently it is suitable for non-abrasive fluids. Performance improves considerably when pumping lubricants

The DXC series is a hygienic pump with standard DN series joint. It is the solution that combines excellent sanitization characteristics thanks to the design of its casing that is completely free of stagnation point and dead zones, with the top performing patented pin joint of the Diamond series. Lubrication of the pin is independent of the pumped product, consequently it is also suitable for abrasive fluids.

**DXC SERIES**



## Wobble Pump Series

The wobble series of pumps is the ideal solution for applications requiring an extremely compact and versatile product. The small number of parts used in its construction makes maintenance simple and economical. It can be used in a broad range of industries because of its capacity to pump viscous products containing solids in the fluid or slightly abrasive products. It is ideal for those seeking an economical yet efficient product, as it boasts an unparalleled cost/benefits ratio. Pumping is pulse-free and the centrifugation effect is almost totally absent even at high speeds. The absence of dead zones inside the pump makes it suitable for use in the food industry as well.

The R and RL series pumps are all constructed with robust cast iron and stainless steel (AISI 304 and AISI 316) bodies made with lost wax casting technology.

Available with threaded GAS BSP fittings, and on request we can supply DIN 11851 type adapters.

### RL SERIES



The RL series is an extremely compact product thanks to the integrated pump-electric motor construction. The patented pin joint of the Diamond series ensures high reliability. The support between the body pump and drive unit has been eliminated which makes the pump more compact and easier to maintain.

### RJL SERIES



The RJL series is based on the same technology as the RL series. The difference lies in its use of a bearing housing with independent inlet shaft. The RJL series can be connected to the drive with a joint. The ideal solution for the supply of a bare shaft pump. The bearings ensure the highest reliability in all operating conditions.

### RFL SERIES



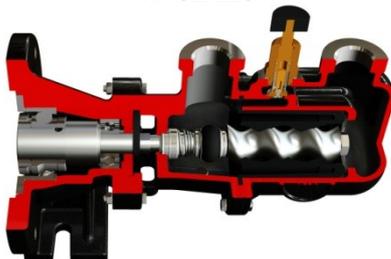
The RFL series is based on the same technology as the RL series. The difference lies in its use of a bearing housing with hollow inlet shaft. The RFL series can be connected directly to the drive with a flange. The ideal solution for the supply of a pump without a drive system, while maintaining compactness and easy installation. The bearings ensure the highest reliability in all operating conditions.

### R SERIES



The R series is the most compact product available due to its integrated pump-electric motor construction and an extremely short hydraulic section. It uses a cross joint, is reliable and easy to maintain. The support between the body pump and drive unit has been eliminated which makes the pump more compact and easier to maintain.

### RF SERIES



The RF series is based on the same technology as the R series. The difference lies in its use of a bearing housing with hollow inlet shaft. The RF series can be connected directly to the drive with a flange. The ideal solution for the supply of a pump without a drive system, while maintaining compactness and easy installation. The bearings ensure the highest reliability in all operating conditions.



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

Telefono: +39-0444-888151  
Fax: +39-0444-888152  
Mail: info@novarotors.com  
Sito web: www.novarotors.com



ISO 9001: 2008  
No.:2011/1353  
OHSAS 18001:2007  
No.:2010/915



CEC 07 ATEX 110 -  
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