



**OUR POWER, YOUR SATISFACTION**



**DIAMOND SERIES**

Sanitary pumps

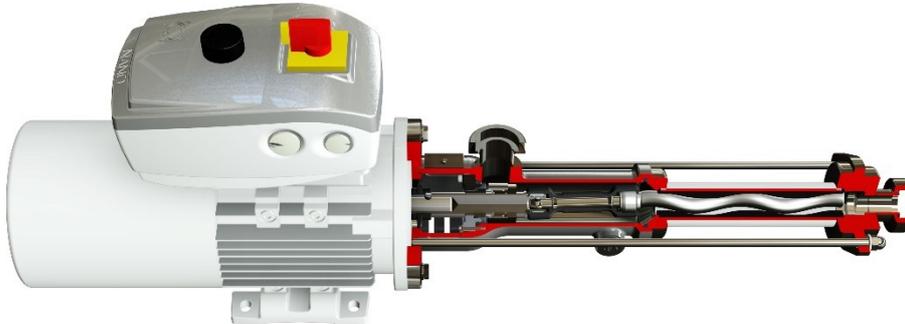
DMX / JMX / FMX series



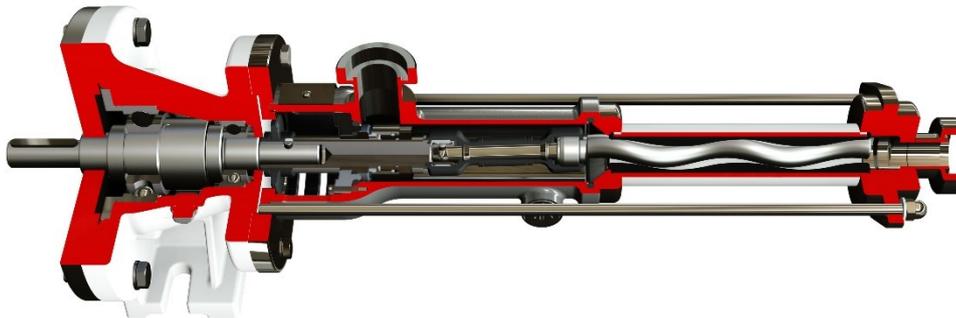
**DMX Hygienic serie**

The Diamond DMX, JMX and FMX series are the best solution for the food, pharmaceutical, chemical and cosmetic industries. These pumps are top rated for "Clean In Place" and "Sterilizing In Place". The geometry of the pumps is designed specifically to allow drainage and avoid dead zones. Each component is manufactured with the highest level of finish and utmost cleanliness. The DMX, JMX and FMX series is distinguished by the type of coupling of the pump to the drive.

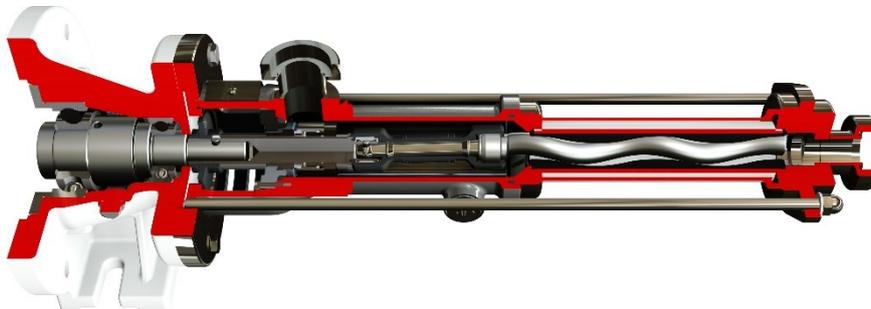
- **DMXC series:** The drive is coupled directly to the pump via a flange. This solution is highly economical and compact, and significantly reduces installation costs and simplifies maintenance. The stresses generated by the hydraulic section are taken up by the drive itself. Each drive used has been selected according to strict technical parameters and subjected to numerous endurance tests under heavy loads. The DMX series is the benchmark for almost all pumps installed in the industry.



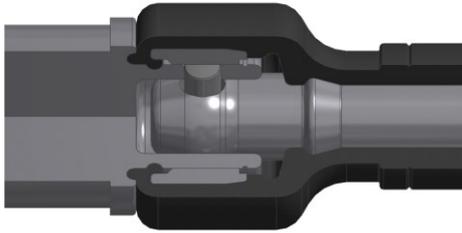
- **JMXC series:** The drive is connected to the pump input shaft via a coupling joint. This is the best solution in terms of performance and durability. All forces generated by the pump are absorbed by the bearings in the support. These bearings have a very high resistance to loads. They are mounted with extreme precision on components of the highest levels of construction quality. This is the best solution when optimum levels of durability and reliability are required with increased installation space. The bearing housing we have designed is modular and can be installed later in a pump with a DMX series close coupled housing. This is the state of the art for this type of installation.



- **FMXC Series:** The drive is coupled directly to the pump via the flange of the bearing housing module. This solution is the most versatile as it allows the use of reducers with flange and standard output shaft, coupling with hydraulic or pneumatic motors, maintaining the simplicity and compactness of the traditional close coupled solution and simultaneously guaranteeing total reversibility and superior performance of the bearing housing. This bearing housing module can be applied to the entire Diamond series and allows rapid maintenance of the drive unit. FMX is, therefore, a byword for modularity and reliability with all types of drive.



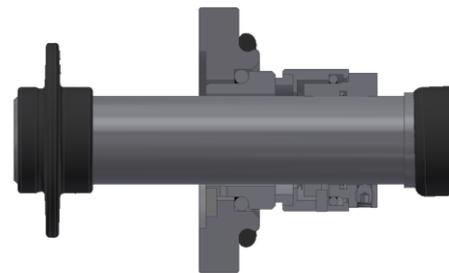
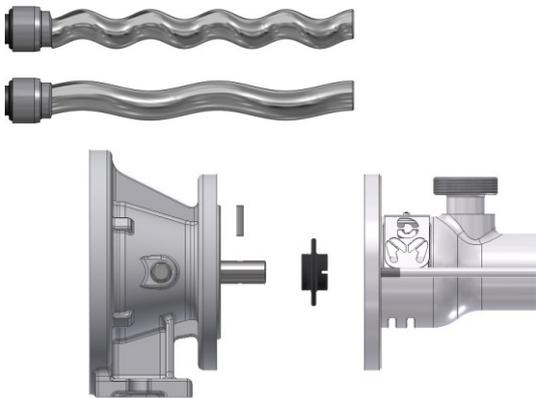
**Joint:** Pin type, the true heart of the progressive cavity pump, represents the best solution in this category on the market. Superior in durability, reliability and maintenance costs, it combines extreme compactness with unrivalled stability.



**Low pulsation:** Very low tensional stresses and pulsation. The centrifugal effect is minimised due to low operating speeds and the predominantly axial extension of the pump.

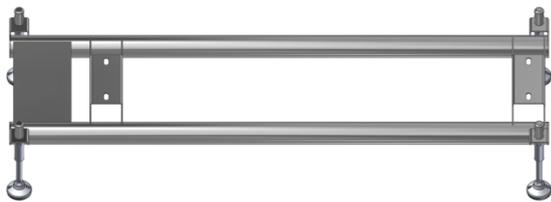
**Shaft sealing:** different sealing systems can be installed, each solution being suitable to specific usage. The types available are: single acting mechanical seal, with quench, double acting mechanical seal back to back or tandem. The type of seals are all interchangeable on the standard pump. Each solution was carefully engineered while taking into consideration all the operating conditions. You can also install various types of mechanical seals based on the application. The inner seals are in the advanced position for greater coverage of the pumped product, promoting its duration and cleaning.

**Modularity:** The Diamond series is based on the concept in terms of each single feature: hydraulic parts, casing, seals, base-plates, housings, transmission shafts. Each component can be manufactured in a number of variants without changing the structure of the machine, while keeping the main components standard.



**Versatility:** The Diamond series is designed to be versatile in all its range of uses, which is why it can be equipped with options and accessories suitable for all fields of application. In addition, the special features of progressive cavity pumps are naturally exploited when pumping fluids of various types, from low to very high viscosity, clear or containing solids of various types and sizes.

**Base plates:** the base plates are characterized by considerable thicknesses and are very strong. They are made in stainless steel as standard. They can be provided with hygienic housing, with adjustable anti-vibration, in the trolley version or on skids, based on the client's specifications.



**Materials:** the parts in contact with the product of the Diamond DMX series pumps can be in stainless steel (AISI 316), on request in other materials such as Duplex and Super Duplex. All parts have excellent finishes and the casings are polished to ensure utmost sanitization of the surfaces.

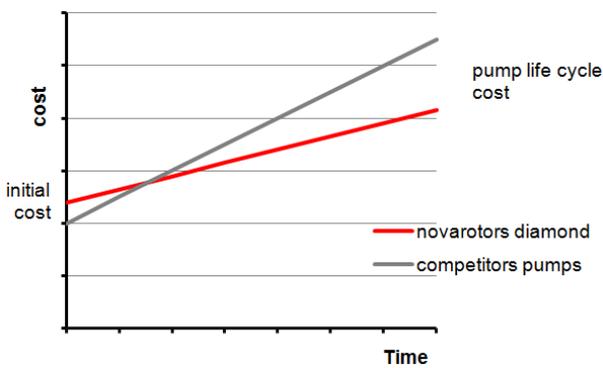
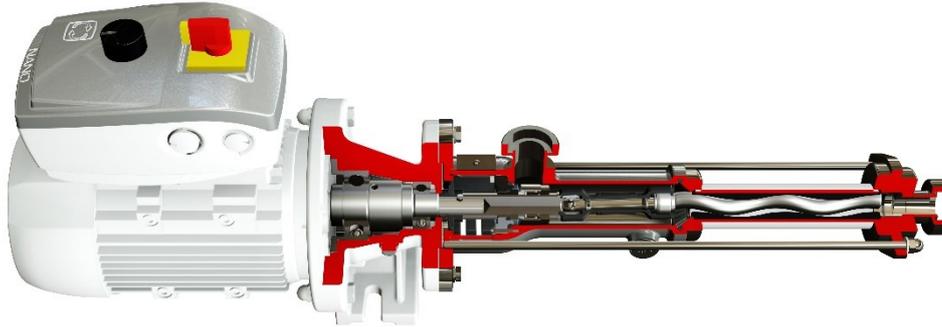
**Quality:** Each component is manufactured to very strict quality specifications. Finishing and precision of each single component are the foundation of each single pump manufactured. All components are subject to specific controls based on their features and functionality.

**Performance:** Durability, efficiency, reliability and low consumption. With the Diamond series, we have reached the highest levels of technological development in each single aspect.

**Efficiency:** Standard at the highest level, outstanding operating efficiency due to excellent volumetric performance even at high pressures and minimal consumption. All Diamond Series hydraulics have been calculated to provide the best that can be found on the market today.

**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.

**Drives:** All drives installed on the Diamond series have been extensively tested and subject to stringent, rigorous technical testing. All reducers and motor-inverter models have certain features in terms of stability, bearing size and gear quality. Drives with on-board inverters are the main solution in the field of metering pumps.

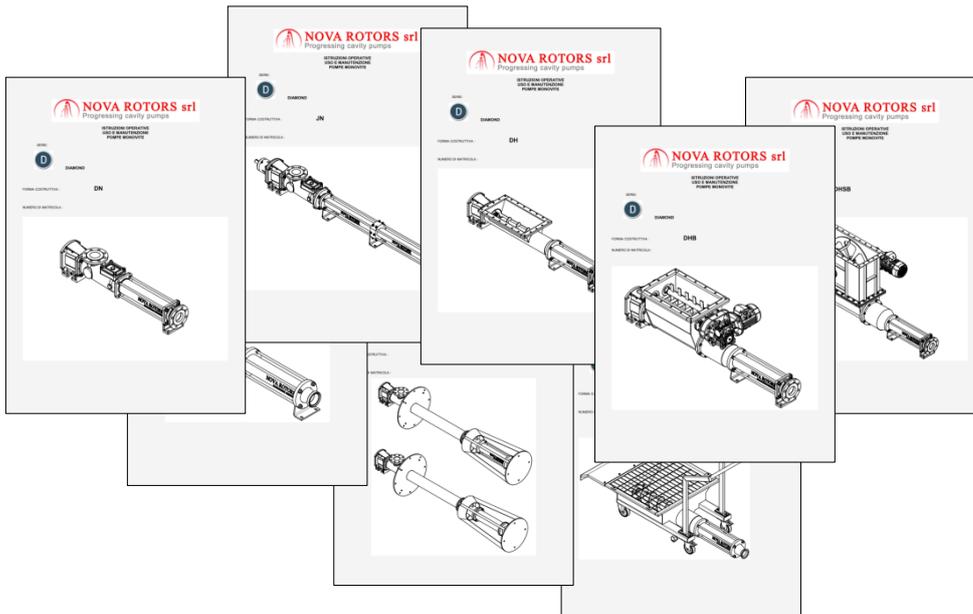


**Maintenance:** The Diamond series is designed to be easy to maintain, with only a minimum number of components that need to be replaced. Maintenance costs are thus reduced. The cost of the machine over its entire life cycle is highly competitive

**Cost / Benefit:** The compact design of the components in the Diamond series combines unrivalled technical features with very competitive costs. Modularity makes it possible to provide the right solutions for the application without having to pay for features that are not required, all for the benefit of competitiveness.

**Priming Capacity:** The special features of the hydraulic parts of the progressive cavity pump allow for excellent priming capacities. Diamond series pumps have been designed to create the lowest possible pressure drop in the pump casing, due to large sections and a compact, fluid-dynamic coupling design.

**Detailed documentation:** Each pump is accompanied by clear, detailed operating instructions. Orders are followed up by experienced, qualified staff who integrate detailed order and product-specific documentation into the shipment.



## Detailed characteristics

Various seal systems available, including: inner single mechanical seal with and without quench, internal single mechanical seal, double back to back and tandem mechanical seals. The position of the seal is advanced for maximum transfer of the product flow. This improves the duration of the seal thanks to the greater convection that facilitates cooling. Product stagnation on the seal is avoided. 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.



CIP connection built into pump body. This option enables insertion of washing fluid in the pump body to clean hygienic pumps in the best way possible. Manufactured tangential to the body, it avoids stagnation and enables efficient drainage of the fluids.

Extremely sturdy housings, suitable for tolerating drive loads

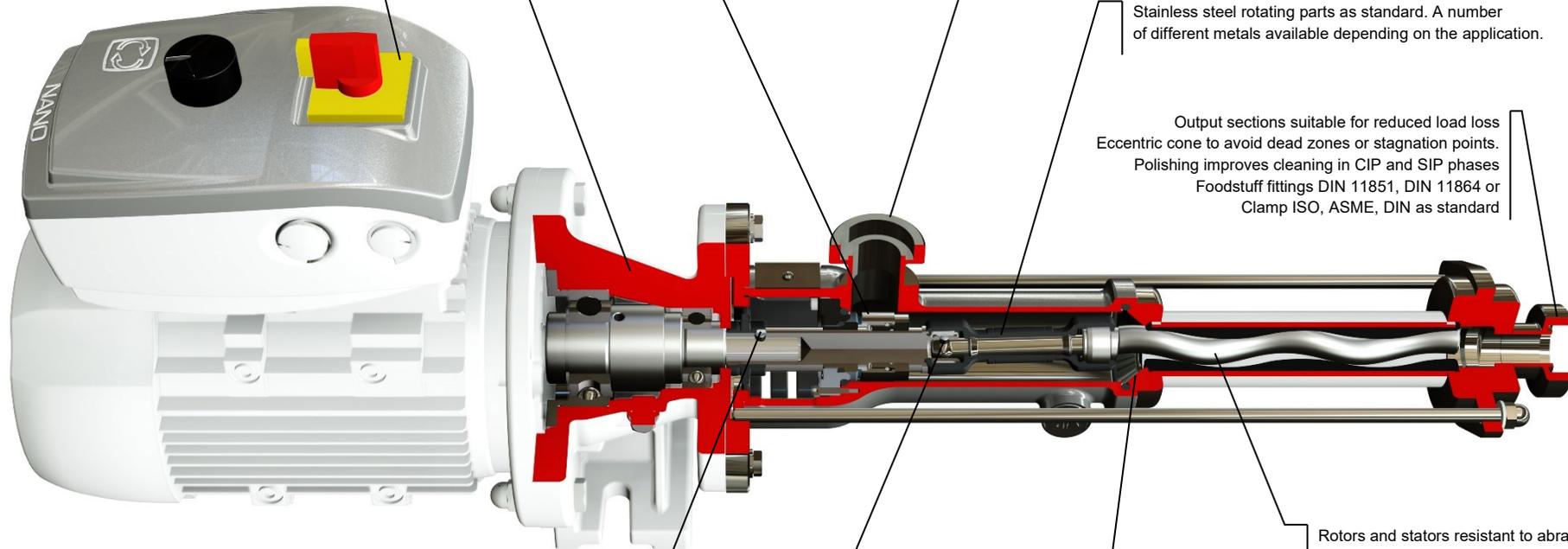
### Motoinverter

Energy savings by regulating speed. Can be programmed and controlled using PC via USB or wirelessly using smartphones or tablets via Bluetooth

Ample suction sections enable excellent drying capacity and makes pumping of viscous substances efficient. Design free of dead zones or stagnation points. Polished casing for improved cleaning in CIP and SIP phases. Foodstuff fittings DIN 11851, DIN 11864 or Clamp ISO, ASME, DIN as standard

Stainless steel rotating parts as standard. A number of different metals available depending on the application.

Output sections suitable for reduced load loss  
Eccentric cone to avoid dead zones or stagnation points.  
Polishing improves cleaning in CIP and SIP phases  
Foodstuff fittings DIN 11851, DIN 11864 or  
Clamp ISO, ASME, DIN as standard



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.

Patented pin joint, the beating heart of Diamond series pumps. Combining compactness and ease of maintenance with uncompromising performance, reliability and durability

The stator funnel is manufactured with rounded geometry to avoid deposits contaminating the product

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 and thermally treated or coated to increase duration. The stators can be configured with various types of elastomers.

## Detailed characteristics

Various seal systems available, including:  
 inner single mechanical seal with and without quench, internal and external single mechanical seal, double back to back and tandem mechanical seals.  
 The position of the seal is advanced for maximum transfer of the product flow. This improves the duration of the seal thanks to the greater convection that facilitates cooling. Product stagnation on the seal is avoided.  
 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.



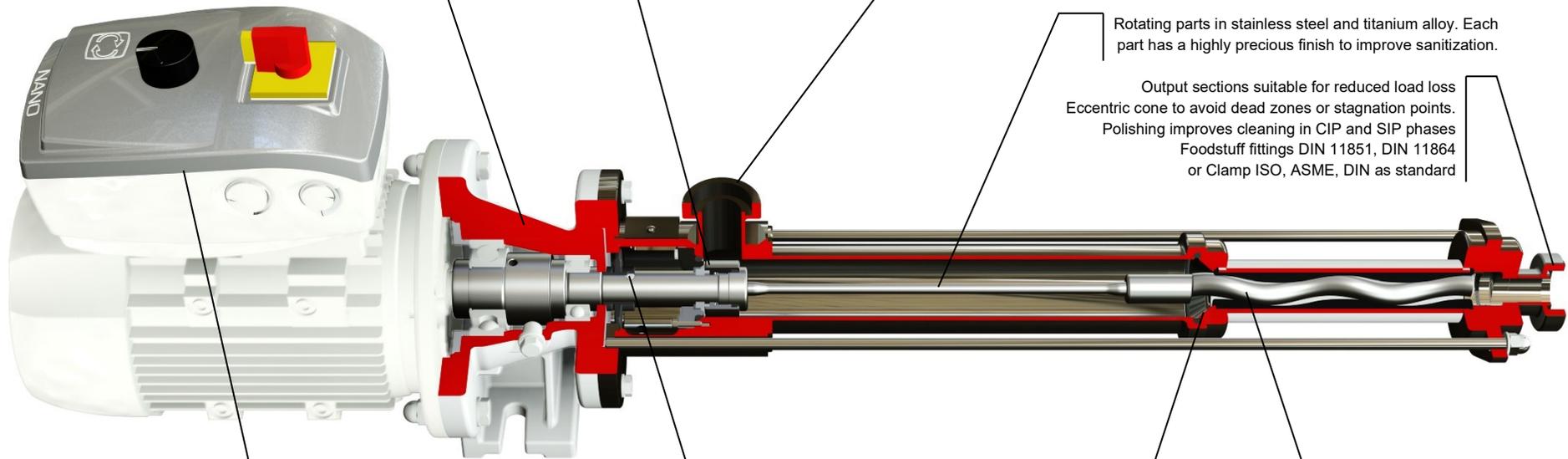
CIP connection built into pump body. This option enables insertion of washing fluid in the pump body to clean hygienic pumps in the best way possible. Manufactured tangential to the body, it avoids stagnation and enables efficient drainage of the fluids.

Extremely sturdy housings, suitable for tolerating drive loads

Ample suction sections enable excellent drying capacity and makes pumping of viscous substances efficient. Design free of dead zones or stagnation points. Polished casing for improved cleaning in CIP and SIP phases. Foodstuff fittings DIN 11851, DIN 11864 or Clamp ISO, ASME, DIN as standard

Rotating parts in stainless steel and titanium alloy. Each part has a highly precious finish to improve sanitization.

Output sections suitable for reduced load loss  
 Eccentric cone to avoid dead zones or stagnation points.  
 Polishing improves cleaning in CIP and SIP phases  
 Foodstuff fittings DIN 11851, DIN 11864 or Clamp ISO, ASME, DIN as standard



**Motoinverter**  
 Energy savings by regulating speed. Can be programmed and controlled using PC via USB or wirelessly using smartphones or tablets via Bluetooth

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.

The stator funnel is manufactured with rounded geometry to avoid deposits contaminating the product

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 and thermally treated or coated to increase duration. The stators can be configured with various types of elastomers.

## VERSION AND OPTIONS

### Casing material

#### Base Materials:

CF8M (AISI 316), AISI 316

### Sealing shaft material

#### Material base:

AISI 316, F51 (Duplex), F55 (Super Duplex), Titanium

### Rotor materials

#### Base Materials:

AISI 316, F51(Duplex), F55 (Super Duplex), Titanium

### Stator materials

#### Base Materials:

Food-grade NBR, food-grade white NBR  
 Food-grade EPDM, food-grade white EPDM  
 Food-grade FPM  
 Food-grade HNBR  
 Food-grade SILICONE

### Base-plates

Standard base

Base with adjustable anti-vibration, hygienic feets

Base with risers

Hygienic baseplate 3-A compliance and 3-A / EHEDG hygienic feets

Skid with lifting devices

Cart for food grade and winery sector

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

### Fittings

DIN 11851

DIN 11864-1 / DIN 11864-2 / DIN 11864-3

Clamp ISO 2852, Clamp ASME-3A, Clamp DIN 32676

RJT

SMS 1145

## FEATURES OF USE

### Flow

Up to 2,7 m<sup>3</sup>/h

### Pressure

Up to 24 bar for the standard series

### Temperature

From -40°C until to 150°C

### Sealing systems

Single internal mechanical seal AK9

Single mechanical seal with Quench FK9 (buffer-Quench-pot required)  
 Back-to-back double mechanical seal B1X9 (pressurized flushing system required)

Tandem double mechanical seal T1X9 (buffer / flushing system required)  
 (For construction details, see the brochure sealing systems and seals)

### Protection devices

Temperature probe for dry running protection (standard in the ATEX version)

Flow switch

Pressure switch

Hygienic overpressure valve

(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 and suction casing heating jacket

CIP connection integrated on the suction casing

CIP connection integrated on the discharge

Integrated Bypass in the pump construction

Quench pot flushing

Hygienic carter to protect the motorization

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

### Certifications

CE

ATEX

### Typical applications

Enology, wine transfer

Milk and diary

Sugar industry

Beverages industry

Breweries

Distilleries

Tomato industry

Industrial detergents and chemicals

## MODEL SUMMARY TABLE

### Flow rates and pressures

Size	Model	Qmax 2 bar [m <sup>3</sup> /h]	rpm max	P max [bar]
D010	05L1	2,7	1400	6
	025K2	1,4	1400	12
	012K4	0,5	1000	24
	012K2	0,6	1400	12
	006K4	0,2	1000	24
	003K4	0,1	1000	24
	0015K4	0,05	1000	24



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

Telefono: +39-0444-888151  
Fax: +39-0444-888152  
Mail: [info@novarotors.com](mailto:info@novarotors.com)  
Sito web: [www.novarotors.com](http://www.novarotors.com)



CEC 07 ATEX 110 -  
REV.1