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 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.

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.

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.

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.

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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.

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 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 EN 12756.

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.

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.

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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** Q0K9 (API PLAN 2 or flush recommended according to API PLAN 51, 52, 55)
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

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