Vertical Turbine Pump

Type VDL, VDF and VDM

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Water & responsibility

Today, markets look for business partners who think and support in a sustainable manner. Pentair Nijhuis anticipates this need with environment-friendly products and reliable services, which help customers reduce their energy consumption and carbon footprint. The employees of Pentair Nijhuis are committed to contributing to a better world by having as primary objectives: preserve the environment, protect society and enable customer's business to prosper.

Vertical turbine pump

An energy efficient solution

The Pentair Nijhuis vertical turbine pump is an energy efficient and reliable pump for specific applications. Pentair Nijhuis offers a quality line of vertical turbine pumps, suitable for various liquids and applications. The pump is available with either a dry (type VDL/VDF), or submersible (type VDM) motor installation, both in a wide range of flow rates, pressure heads and construction materials. Continuous research and implementation of new technologies ensures an optimized pump design for high efficiency and durability.

Applications:

- Potable water
- Cooling water
- Desalination
- Offshore
- Agriculture
- Fire fighting systems
- Mining

Customized solutions

A valuable and sustainable option

System design and performance are usually dependent on the availability and configuration of suitable pumps. At Pentair Nijhuis, we can modify our pump designs to meet the requirements of each individual system. This results in the best overall system performance for a specific application.

Our customers benefit from:

- High efficiency
- Reduced energy consumption
- Less environmental impact
- Low operating costs
- Extended service life and durability
- Low maintenance requirements

Design modification can range from minor changes like reshaping the impeller, to a dedicated design for a specific application. The vast experience and engineering know-how as well as advanced design software available at Pentair Nijhuis, ensure that custom designs are developed in an expedient way. Hydraulic performance can be accurately predicted and all designs are subjected to structural analysis. Design verification occurs in our test facility, except for very large pumps, of which either a scale model test is performed or extensive on-site measurements are conducted using our calibrated instrumentation. Consider a customized solution as a valuable and sustainable option when selecting your pumps.

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Dry motor configuration

Type VDL/VDF

The VDL/VDF pump range is the dry motor version of our vertical turbine pump program. The hydraulic design includes a suction bell, single or multiple pump stages with closed or open mixed flow impellers, column pipes with integrated line-shafts, and a discharge elbow that can be located either above or below the foundation level.

The type VDF is the vertical turbine pump, used in Pentair Nijhuis' fire fighting units for negative suction applications in, for instance, the offshore industry. This pump, driven by either a diesel or electric motor, moves seawater into the (containerized) fire fighting system to feed the sprinkler system with extinguishing water. The pump performance conforms to all international standards, including NFPA, FM, UL and VDS.

Submersible motor configuration

Type VDM

The VDM pump range is the submerged version of our vertical turbine pump program. The design includes a suction bell, a pump casing with closed or open impeller, seal housing and a submersible motor (IP68). The submersible configuration can be applied at greater depths or when expedient accessibility is required.

Features and benefits

High efficiency

The shapes of impeller and pump casings are optimized to achieve the highest possible efficiency for the specific design flow rate and pressure head. Also, off-design characteristics are optimized to give each pump a wide operating range, ensuring that cavitation limits are not exceeded.

Maintenance and durability

By constructing the vertical turbine pump using the materials and shaft seals appropriate for the application, maintenance requirements are kept to a minimum. Additionally, our service department offers service and maintenance contracts for on-going support to assure minimal downtime.
By selecting the correct combination of materials for each application to ensure against corrosion Pentair Nijhuis provides a durable solution with this pump.

Material options

To meet the demands of multiple applications, especially considering the type of liquid pumped, the vertical turbine pump can be constructed in a wide range of materials, e.g.:

- Cast iron
- Ductile cast iron
- Bronze
- Aluminum bronze
- Stainless steel
- (Super) duplex stainless steel

Single or multiple pump stages

Shaft seals and bearings

A variety of shaft seal configurations and bearings

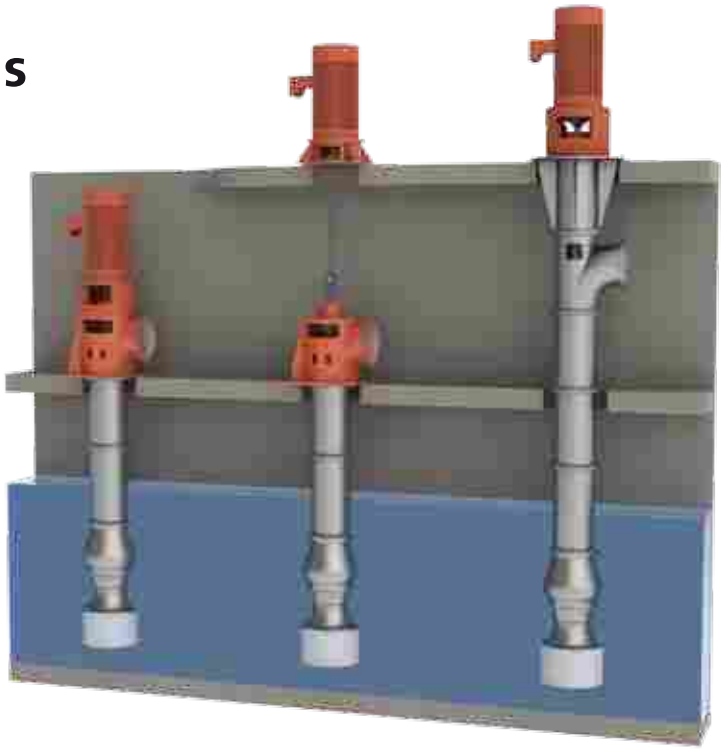
Shaft seal configurations for the vertical turbine pump range from packed stuffing-boxes to various types of mechanical seals. The selection of shaft seals and bottom and intermediate bearings depends on the operating conditions and composition of the medium being pumped. Pentair Nijhuis can advise on the appropriate configuration for your application, ensuring safe and reliable operation with minimal maintenance requirements.

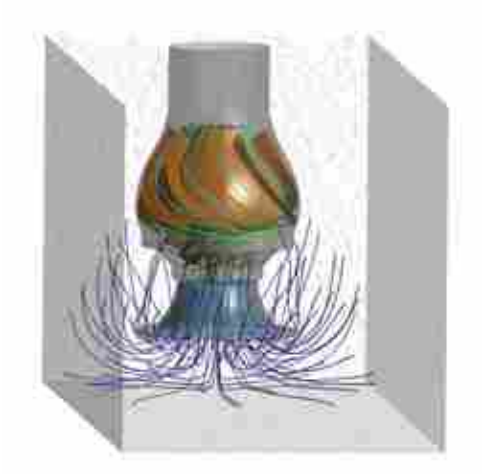
Oil lubricated thrust bearings

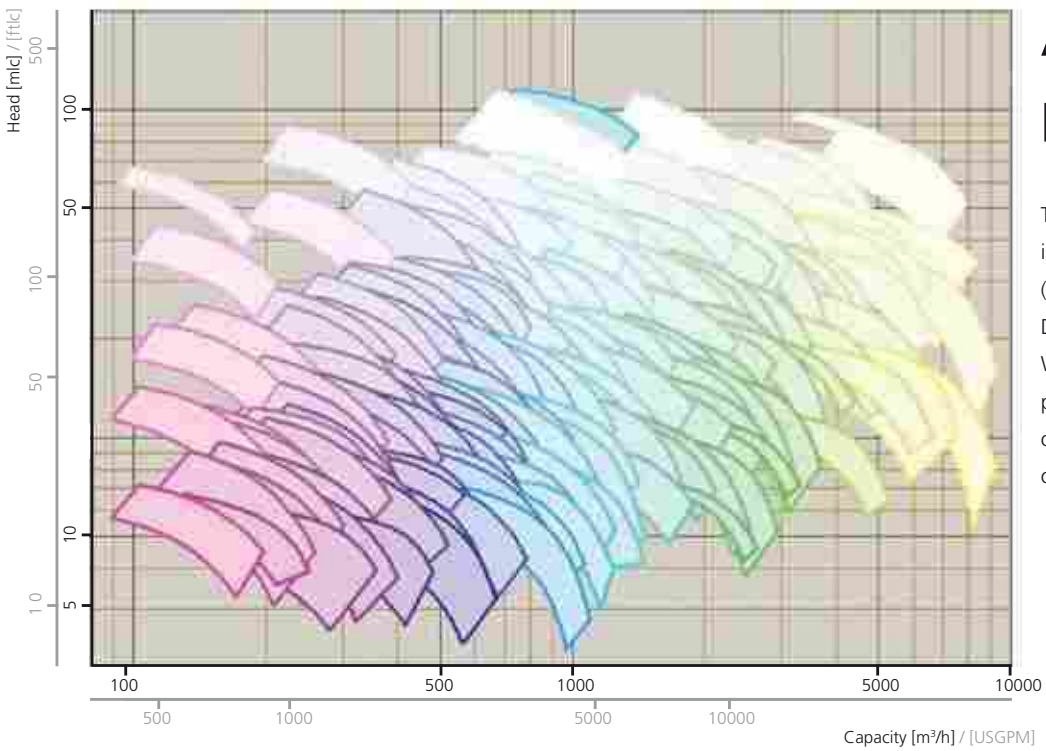
As standard, the vertical turbine pump has oil lubricated anti-friction thrust bearings. The bearings are integrated into the pump casing, making the choice of the driver and transmission, if required, independent of the pump configuration.

Intake sump configurations

Vertical turbine pumps are available in customized configurations to match the specific installation requirements for different applications. For open sumps, the ANSI/ HI guidelines are usually applied, ensuring sufficient submersion to avoid formation of vortices. Well designed intake channels ensure optimal hydraulic operation and can reduce the pump submersion depth, thus reducing excavation depth of the pump station. Using advanced CFD analysis, Pentair Nijhuis can assist in the design of the inlet channel to assure optimal design configuration.







About pump curves

The Pentair Nijhuis vertical turbine pump is available in a wide range of capacities (50 - 15,000 m³/h) and heads (25 - 255 mlc). Detailed pump curves are supplied on request. We can assist you in selecting the right pump for your application in order to ensure optimum performance for the complete operating range.

Delivering added value worldwide

The local availability of potable water and protection against flood water is vitally important for every individual, company and country. This is where the pumps of Pentair Nijhuis fulfill an important role: water transport from wet to dry areas, protect against floods, and in the process of "raw to potable" and "salt to fresh" water. Pentair Nijhuis embraces the values of sustainability, openness, reliability, and social responsibility within the company and especially in cooperation with customers, suppliers and the world around us.

Pentair Nijhuis is an independent pump manufacturer that delivers high-quality products and services based on more than 100 years experience in the design, production and application of centrifugal pumps and pumping systems according to customer's specifications.

In Winterswijk, the Netherlands, our dedicated staff continuously sets the standard for product improvement based on the latest developments in the market. Using advanced computer-aided technology, we develop tailor-made pumps with the highest achievable efficiencies. After sales-service is offered, supported by a global network of service centers, staffed by experts in state-of-the-art pump technology.

Customers who ordered pumps from Pentair Nijhuis decades ago are still regular customers, which indicate they trust and rely on our pumps and related services. The quality assurance program is certified by Lloyd's according to ISO 9001 and guarantees that products and services meet all international standards.

Nijhuis Pompen BV
Parallelweg 4 • 7102 DE Winterswijk • The Netherlands
P.O. Box 102 • 7100 AC Winterswijk • The Netherlands
T +31 543 547474 • **F** +31 543 547475
E info@nijhuis.com • **I** www.nijhuis.com
Please visit our website to obtain contact information.

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