

VERDERFLEX[®]

Industrial hose pumps



VEDDER
VERDER 

Solutions in Pumping Technology

Verderflex Industrial hose pumps

The Verderflex range of industrial hose pumps is a high quality family of peristaltic pumping solutions. These pumps reduce downtime, minimise maintenance costs and provide easy to operate and reliable solutions in difficult pumping situations. All pumps are supplied with a 2 year warranty covering any defects in workmanship and material under normal use.

Advantages of the Verderflex

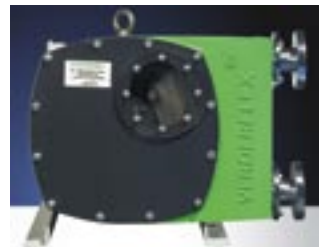
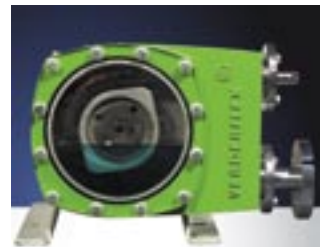
- Specially designed hose construction to postpone fatigue, resulting in longer service life of the hose
- Close coupled drive design or robust long coupled option with bearing cartridge
- Rigid pump housing design for heat dispersion and strength
- Simplified hose connection for easier maintenance and disaster proof pump design
- Channels for complete drainage prior to maintenance

Working principle

The principle of the peristaltic hose pump is based on alternating contraction and relaxation of the hose forcing the contents through, operating in a similar way to our throat and intestines.

A smooth walled, flexible hose is fitted inside the pump casing and is rolled and completely squeezed by two shoes on the rotor. The rotation action moves the product through the hose at a constant rate of displacement without slip, making the pump suitable for high dosing applications and pressure ratings up to 16 bar/230 PSI.

The hose restitution after the squeeze produces an almost full vacuum that draws the product in the hose, so very viscous liquids are pumped without problems using the Verderflex hose pump. The pump casing is half-filled with a specially formulated Verderlube, to lubricate and cool the pump to lengthen service life of the hose. Since the product only comes in contact with the hose and not with any rotating parts, the hose pump is very suitable for abrasive and corrosive applications.



The Verderflex pump range consists of:

Mini pumps:	VF10 and VF15
Small heavy-duty pumps:	VF25, VF32, VF40 and VF50
Medium heavy-duty pumps:	VF65 and VF80
Large heavy-duty pumps:	VF100 and VF125

Materials of construction:

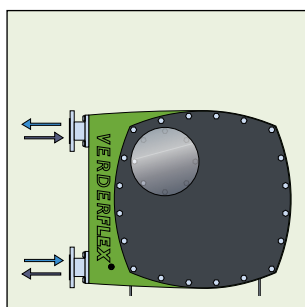
Pump housing	Cast iron (aluminum optional for mini pumps)
Rotor	Cast iron (aluminum optional for mini pumps)
Rotor shoes	Aluminum (stainless steel as option)
Inserts	Stainless steel, PP, PVDF
Base plate	Carbon steel
Bearing cartridge	Cast iron with high tensile steel shaft
Lubricant	Specially designed mixture (silicone-based oil as option)
Hose	NR, NBR, EPDM, NBRF and CSM

Options

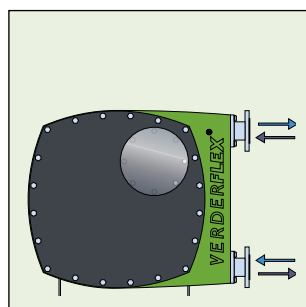
The following options can be supplied with the pump:

- Duplex units to increase flow rate per pump unit and decrease the rate of pulsation
- Aluminum housing and rotor for the mini pumps
- Stainless steel rotor shoes, base plates and fasteners
- Vacuum installation to improve suction capability
- Pulsation dampers
- Hose leakage detector
- DIN, ANSI or JIS flange or hygienic connections
- Hose tail connections on VF10 and VF15
- Customised coatings for pump and/or rotor

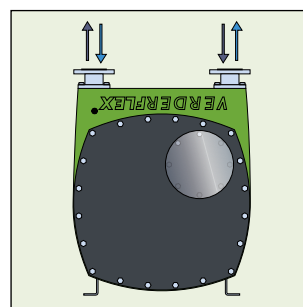
Mounting positions



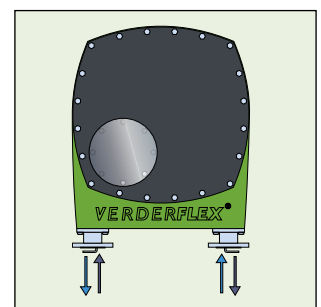
position 1



position 2



position 3



position 4





Application areas

The Verderflex peristaltic pump design makes the pump unique in its function. This results in a wide range of application areas where excessive demands to the pump system are required, for instance:

- Abrasive and highly corrosive products - abrasion is no limitation for the hose and no seals or rotating parts are in contact with the product.
- Shear sensitive applications - the very gentle method of pumping does not damage the product.
- Highly viscous products - the almost total vacuum of the pumps transports high viscosity liquids.
- Crystallising media - there are no valves or glands where crystals can build up and clog the pump.
- Dosing requirement - absence of product slip in the hose gives a 100% volumetric efficiency.
- High maintenance situations - the hose is the only wearing part and downtime is minimal.
- Self-priming applications - the pump can run dry as the hose is lubricated from outside.
- Products with high concentration of solids - 80% Inorganic solids can be handled, e.g. in mining applications.
- Potential blockages at suction port - pump can run dry and be reversed to unblock the suction line.
- Explosives - no metal to metal contact in the pump.

Market segments

The large experience within the Verder Group of peristaltic pumps has led to applications in diverse market segments such as:

- Mining industry and mineral processing
- Sewage and industrial wastewater works
- Chemical industry
- Paints and coatings
- Textile industry
- Ceramic industry
- Paper and pulp
- Cosmetics
- Recycling
- Food industry
- Sugar refining
- Abattoirs
- Breweries, wineries and beverages
- Fish industry
- Animal food

The Verderflex hose

The hose is the heart and soul of a peristaltic pump

The successful use of hose pumps in a number of industrial fields led Verder to develop a hose with a special construction. Hoses in peristaltic pumps fail due to fatigue between the rubber layers and the reinforcement. However, Verder successfully developed a hose designed to postpone fatigue within its construction, resulting in extremely long hose service life.

Internal diameter of the hose and rotor speed determine the flow rate of the pump. Hose wall thickness compared to its diameter and the number of reinforcement layers are responsible for the restoration forces of the hose after compression and creates a virtual vacuum in the hose. The construction of the textile reinforcement allows a discharge pressure of the pump of 16 bar/230 PSI for all pump types.

Surface properties of the hose

Some industrial hose pumps in today's market have machined exteriors, a process generally employed by others to achieve an equal wall thickness. In comparison, the unique Verderflex production process is so precise that the exact wall thickness tolerance is maintained at each and every point. For this reason Verderflex hoses do not have to undergo this additional process of external machining. Thus when Verderflex hoses are tested alongside their competitors, results indicate that there is no additional friction loss due to the wound surface, but that the Verderflex hose remains homogeneous and has no other surface area liable to contamination. All Verderflex hoses have a coloured lettering on the exterior which indicates the type of hose. The Verderflex lettering is white for a NR hose, in Yellow for a NBR and in red for a EPDM hose type, in yellow with a white stripe for the Food Grade, NBRF and green for Hypalon® or CSM.

Hypalon® is a registered trademark of DuPont Dow Elastomers



Hose selection

Verderflex NR

Most common hose for all market segments is the Natural Rubber (NR) hose. Both the core and cover are made from smooth NR and are highly resistant to abrasion. Suitable for use with lightly corrosive chemicals, highly abrasive slurries, inorganic products, etc.

Verderflex NBR

This hose is particularly suitable for use with oily and fatty products, along with organic materials. The core is of nitrile rubber (NBR) and the cover is of a blend of SBR/NR in black and is spiral wound.

Verderflex NBRF

The NBRF hose has an FDA approved food grade inner liner for use in EHEDG compliant and similar hygienic applications.

Verderflex EPDM

This hose is suitable for highly corrosive chemicals and inorganic products, its core is made of a smooth EPDM rubber.

A particularly noteworthy feature is the cover, which is also made of EPDM, in contrast to many other hoses whose cover is made of natural rubber. This feature makes the hose exceptionally resistant to chemicals, even those for diffusing media.

Verderflex CSM

The CSM, or Hypalon® hose, is used to pump highly corrosive materials such as strong oxidising agents. This hose has a CSM inner core and an SBR/NR outer cover; it has a maximum continuous temperature rating of 85° C/185° F



Technical hose data

	Natural rubber NR	Perbunan NBR	NBRF	EPDM	CSM
Colour mode	white	yellow	yellow/white	red	green
Material					
Innerlayer	NR (68° Shore A)	NBR (70° Shore A)	NBRF (69° Shore A)	EPDM (70° Shore A)	CSM (73° Shore A)
Cover	NR (55° Shore A)	NBR (55° Shore A)	SBR/NR (55° Shore A)	EPDM (70° Shore A)	NR (60° Shore A)
Temperature	-20° C / + 80° C	-20° C / + 80° C	-20° C / + 80° C	-20° C / + 100° C*	-20° C / + 85° C
	-5° F / + 175° F	-5° F / + 175° F	-5° F / + 175° F	-5° F / + 210° F*	-5° F / + 175° F
Pressure	16 bar / 230 psi	16 bar / 230 psi	16 bar / 230 psi	16 bar / 230 psi	16 bar / 230 psi

*For short time up to 120° C / 250° F

Type	Diameter		Length	Weight
	internal [mm / inch]	external [mm / inch]		
VF 10	10 / 3/8	32 / 1.26	510 / 20	0.75 / 1.7
VF 15	15 / 3/4	37 / 1.40	780 / 30.7	1.0 / 2.2
VF 25	25 / 1	55 / 2.17	1005 / 39.6	2.0 / 4.4
VF 32	32 / 1 1/4	62 / 2.44	1250 / 49.2	3.1 / 6.8
VF 40	40 / 1 1/2	65 / 2.6	1490 / 58.7	4.0 / 8.8
VF 50	50 / 2	81 / 3.19	1820 / 71.7	6.5 / 14.3
VF 65	65 / 2 1/2	101 / 4.00	2335 / 91.9	12.5 / 27.6
VF 80	80 / 3	123 / 4.84	2780 / 109.4	22 / 48.5
VF 100	100 / 4	144 / 5.67	3270 / 128.7	35.5 / 78.3
VF 125	125 / 5	170 / 6.69	4050 / 159.5	43.2 / 95.2

Dimensions of the Verderflex hose are nominal and allow it to be fitted to most brands of hose pumps in the market.

The Verder Group

Offering Solutions in Process Technology

The Verder Group offers a wide range of solutions for industrial applications:

- **Liquids Technology** – pumps, pumping systems and liquids/gas mixers
- **Solids Handling Technology** – equipment for processing and handling of solids materials
- **Sample preparation** – precise equipment for laboratory solids preparation and handling

The Verder Group; Liquids Technology

VERDER has affiliates throughout Europe, the USA, South Africa, China and Japan:

- **Van Wijk & Boerma B.V.** (Netherlands);
- **Empo Verder N.V.** (Belgium);
- **Verder** (Austria, China, Czech Republic, Denmark, France, Germany, Great Britain, Hungary, Japan, Poland, Romania, Slovakia, South Africa).

Verder Liquids is active in several industries: chemicals, food, environment, water and general industry, we also offer excellent OEM solutions. Within these industries pump requirements vary enormously and applications and needs change frequently. In order to ensure we provide the best solutions we analyse and monitor industrial trends as well as maintaining close relationships with our customers.

Your advantages

The advantages of working with us are clear, we offer you:

- **single-source solutions:** Verder's wide and complementary range of pumps allows you to source your entire pumping needs from one company, reducing your costs;
- **expertise:** years of providing pumping solutions to industry have given us valuable expertise and knowledge which we are able to use to supply the most appropriate and reliable pumps;
- **international affiliated company:** our size gives you the confidence that you are dealing with a powerful international pump company and if your project involves overseas work then you can profit from our international network of companies.
- **in addition to the Verder Group operating companies, the Verderflex range is supported by a worldwide distribution network that provides local support and spares availability on all 5 continents.**

Verder's position as a leading pump supplier is a result of our highly skilled and knowledgeable workforce who strive to offer the latest in technological and service standards. Moreover, they have access to the most modern customer information systems in order to be pro-active in assessing customers' needs.

The Verder Difference

Pumps form an essential part of industrial processes for all our customers, which is why our starting point is your process and your specific needs. We provide a wide and complementary range of pumps and accessories on the basis of application and need. What's more, by offering technical and logistic services alongside an extended knowledge of processes and applications we set our position as a leading supplier.

Try us...

VERDER Ltd

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