

VERDERFLEX[®]

Industrial hose pumps



Solutions in Pumping Technology



Verderflex Industrial hose pumps



The Verderflex range of industrial hose pumps are 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.

Advantages of Verderflex industrial hose pumps

- Operating pressures to 16 Bar / 230 PSI and flow rates to 90m³/hr / 390 US GPM
- Specially designed hose construction to reduce fatigue, resulting in longer hose service life
- Simplified disaster proof hose connection for easy maintenance
- Close coupled drive design or long coupled option with bearing housing
- Dry running - the pump will run dry without damage
- Certified to EHEDG Standards for use in the food & drinks industry, pharmaceutical industry and other sanitary related applications
- Rigid pump housing design for heat dissipation and strength
- All pumps are supplied with a 2 year warranty covering any defects in workmanship and material under normal use



Without any seals, or valves a Verderflex peristaltic pump is ideal for handling:

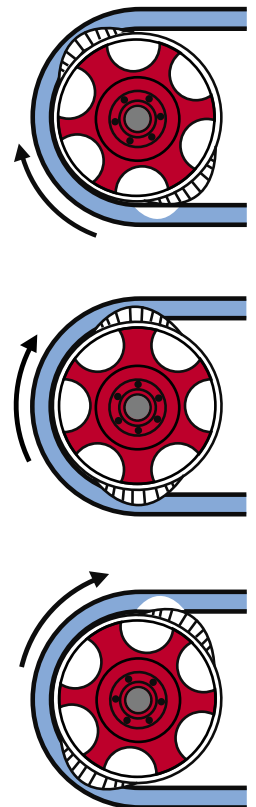
- Abrasive fluids
- Corrosive fluids
- Viscous fluids
- Shear sensitive fluids
- High density fluids
- High Solid content fluids

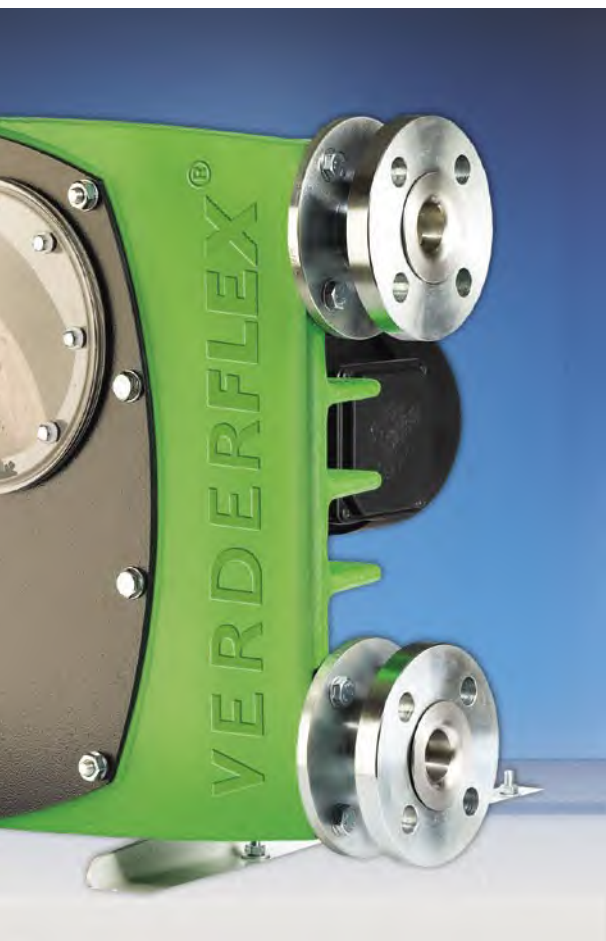
How does a peristaltic pump work?

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

The medium to be pumped does not come into contact with any moving parts and is totally contained within a robust, heavy-duty hose, which consists of an inner layer, 2-6 reinforcement layers and an outer layer. A rotating shoe passes along the length of the hose compressing it totally closed and upon restitution of the hose a strong vacuum is formed which draws the product in and along the hose without any product slip.

This pumping action makes the pump suitable for accurate dosing applications and pressure ratings up to 16 Bar/230 PSI.





“ the hose is the only part to come into contact with the fluid circulating through the pump”

The Verderflex pump range consists of:

Mini pumps:	VF5, VF10, VF15 and VF20
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:

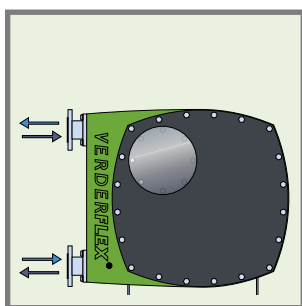
Pump housing	VF5-VF20 - Aluminium, VF25-VF125 - Cast Iron
Rotor	VF5-VF20 - Aluminium, VF25-VF125 - Cast Iron
Rotor shoe	Aluminum (stainless steel as option)
Inserts	Stainless steel, PP, PVDF
Base plate	Carbon steel
Lubricant	Specially formulated mixture - VERDERLUBE (silicone-based oil as option - VERDERSIL)
Hose	NR, NBR, EPDM, NBRF and CSM (Hypalon®)

Options

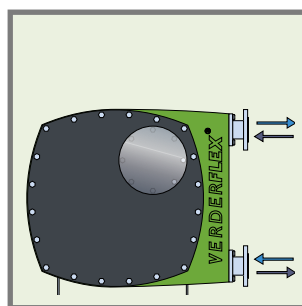
The following options can be supplied with the pump:

- Cast iron housing and rotor for the mini pumps
- Stainless steel rotor shoes, base plates and fasteners
- Vacuum installation to improve suction capability
- Pulsation dampeners
- Hose leakage detector
- DIN, ANSI or JIS flanges or hygienic compliant connections
- Hose tail connections on VF5, VF10, VF15 and VF20
- Customised coatings for pump and/or rotor e.g. Nickel
- Alternative colours

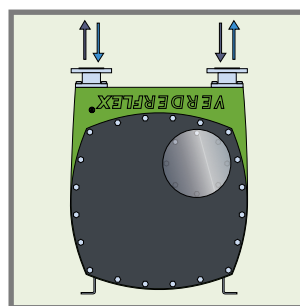
Mounting positions



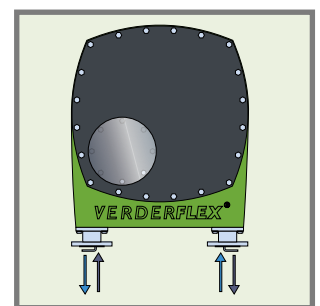
position 1



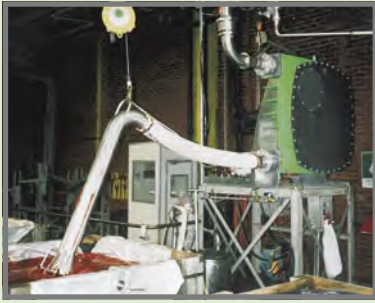
position 2



position 3



position 4



- Food processing -
Pumping food sauces



- Brewing -
Pumping shear sensitive yeast



- Water treatment -
Dosing hypochlorite



- Water treatment -
Lime dosing

Application areas

The unique design of Verderflex peristaltic pumps makes them ideally suited to a wide range of applications, for example:

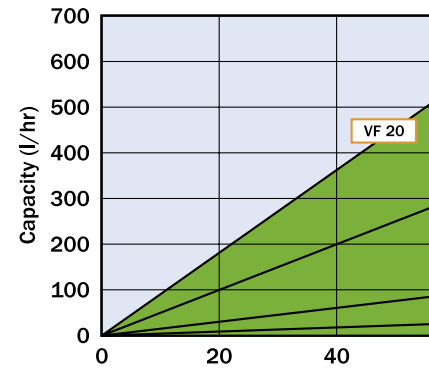
- Abrasive and highly corrosive products - abrasion is not a limiting factor for the hose and no seals or rotating parts are in contact with the product.
- Shear sensitive applications - the very gentle pumping action does not damage the product.
- Highly viscous products - the positive displacement action enables high viscosity liquids to be pumped.
- Crystallising media - there are no valves or glands where crystals or product can build up and clog the pump.
- Dosing requirement - the absence of product slip in the hose gives a 100% volumetric efficiency.
- High maintenance situations - the hose is the only wearing part, and with a rapid changeover, downtime is minimal.
- Self-priming applications - the pump can run dry without damage to the hose.
- Products with high concentration of solids - 80% Inorganic solids can be pumped, 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

- Mining industry - dosing process reagents, polymers and slurry transfer
- Water works - Lime, Hypochlorite, Polymer, Ferric Chloride dosing; transferring sludges and filter press feeds
- Chemical industry - corrosive acids, bases and hydrocarbons
- Paints and coatings - Dosing of inks
- Textile industry - Dosing of dyes
- Ceramic industry
- Paper and pulp - Pulp, dyes
- Cosmetics
- Recycling
- Food and beverage - Breweries, wineries, dairies, sugar refining, bakeries, abattoirs and fish processing
- Agriculture - Feed additives, animal vaccines and waste transfer

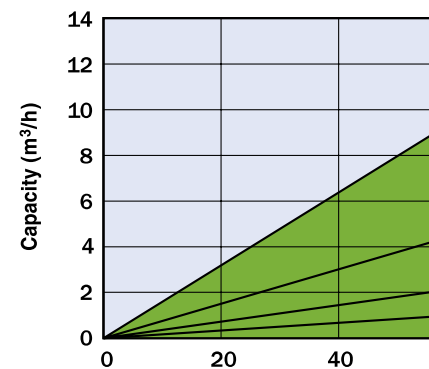
Technical information

Mini pumps



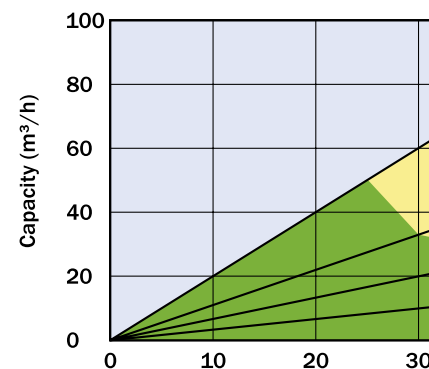
“...abrasion resistant - t
abrasive qualities

Small heavy duty pumps

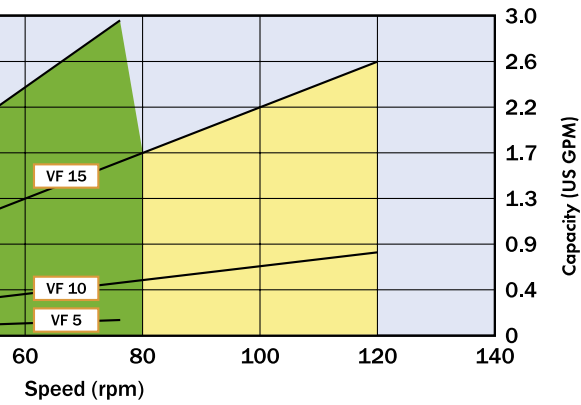


“...can pump prod
a hig

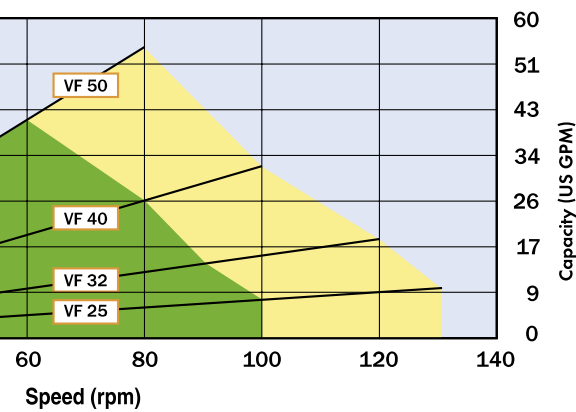
Medium and large heavy duty pumps



■ Continuous use

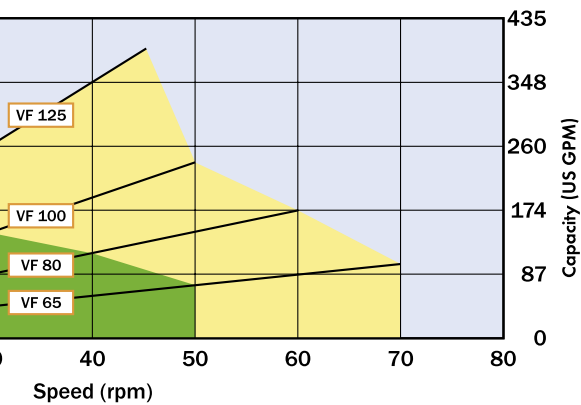


the hose life is unrelated to the of the product being pumped..."



ducts with h concentration of solids..."

pumps



Intermittent use

Max. 1 hour running
Min. 1 hour stopped

Technical information

MODEL	DISPLACEMENT		MAXIMUM SPEED rpm	MAXIMUM POWER		MAXIMUM PRESSURE	
	l/rev	USg/rev		kW	HP	bar	PSI
VF5	0.0067	0.0018	120	0.37	0.50	7.5 / 16	110 / 230
VF10	0.025	0.0066	120	0.37	0.50	7.5 / 16	110 / 230
VF15	0.083	0.022	120	0.55	0.75	7.5 / 16	110 / 230
VF20	0.145	0.039	75	0.55	0.75	7.5	110
VF25	0.28	0.075	130	2.2	3.0	16	230
VF32	0.60	0.154	120	3.0	4.0	16	230
VF40	1.25	0.33	100	4.0	5.5	16	230
VF50	2.67	0.71	80	5.5	7.5	16	230
VF65	5.67	1.5	70	11	15	16	230
VF80	11.1	2.9	60	15	20	16	230
VF100	18.3	4.8	50	22	30	16	230
VF125	33.3	8.8	45	37	50	16	230



CLOSE COUPLED

The pump casing is half-filled with our specially formulated Verderlube or Verdersil, to lubricate and cool the pump to lengthen the life of the hose.



LONG COUPLED

The Verderflex hose

The successful use of hose pumps in a number of fields led Verder to develop a hose with an enhanced construction. Hoses in peristaltic pumps generally fail due to fatigue between the rubber layers and the reinforcement.

However, Verder hoses are specifically designed and manufactured to reduce fatigue, resulting in an extremely long hose service life.

“...specifically designed to reduce fatigue...”



■ Water treatment -
Lime mixing & recirculation



■ Mining -
Process reagent dosing



■ Brewing -
Pumping Kieselguhr

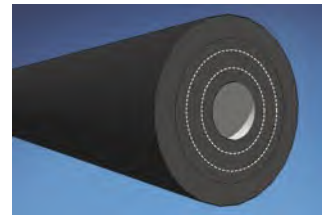
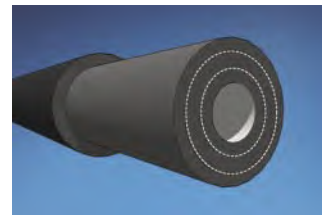
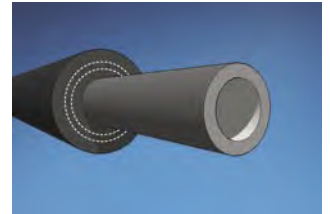


■ Manufacturing -
In-Process dosing & transfer

Technical Summary

- 12 standard hose sizes from 5mm ($\frac{3}{16}$ ") to 125mm (5").
- All are designed to maximise hose life by optimising the hoses' fatigue strength.
- Hoses are available in Natural Rubber (NR), Nitrile Buna Rubber (NBR), Food Grade NBRF, EPDM and Hypalon® (CSM).
- Hoses have colour coded identification tapes bonded into the outer surface during manufacture to clearly identify material type.

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 restitution of the hose after compression which creates a virtual vacuum in the hose. The construction of the textile reinforcement allows a discharge pressure of the pump of up to 16 Bar/230 PSI for all pump types.



“...resulting in an extremely long hose service life...”

Technical hose data

MODEL	DIAMETER				LENGTH		WEIGHT	
	Internal		External		mm	inch	kg	lb
	mm	inch	mm	inch				
VF 5	5	$\frac{3}{16}$	32	1.3	510	20	0.47	1
VF 10	10	$\frac{3}{8}$	32	1.3	510	20	0.43	0.9
VF 15	15	$\frac{5}{8}$	37	1.4	780	31	0.68	1.5
VF 20	20	$\frac{3}{4}$	37	1.4	780	31	0.73	1.6
VF 25	25	1	55	2.2	1005	40	2.0	4.4
VF 32	32	1 $\frac{1}{4}$	62	2.4	1250	50	3.1	6.8
VF 40	40	1 $\frac{1}{2}$	65	2.6	1490	59	4.0	8.8
VF 50	50	2	81	3.2	1820	72	6.5	14.3
VF 65	65	2 $\frac{1}{2}$	101	4.0	2335	100	12.5	27.6
VF 80	80	3	123	4.9	2780	109	22	48.5
VF 100	100	4	144	5.7	3270	129	35.5	78.3
VF 125	125	5	170	6.7	4050	160	43.2	95.2

Dimensions of the Verderflex hose are universal, this allows it to be fitted to most brands of hose pumps on the market.






Hose selection

Surface properties of the hose

Some industrial hose pumps in today's market have machined exteriors, a process generally employed to achieve an equal wall thickness. In comparison, the unique Verderflex production process is so precise that the exact wall thickness and outer diameter tolerances are maintained at each and every point. For this reason Verderflex hoses do not have to undergo this additional process of external machining. When Verderflex hoses are tested alongside their competitors, results indicate that there is no additional friction loss due to the wound surface. The textured surface actually

creates micropockets of lubrication which promotes even lubricant coverage. 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, yellow for a NBR, red for a EPDM hose type, 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

	PRINT COLOUR	TEMPERATURE		PRESSURE	
		CELSIUS	FARENHEIT	bar	PSI
 <p>NR</p> <p>Most common hose for all market segments is the Natural Rubber (NR) hose. Both the liner and cover are made from NR which is highly resistant to abrasion.</p> <p>Suitable for use with lightly corrosive chemicals, highly abrasive slurries, inorganic products, etc.</p>	White	-20°C to +80°C	-5°F to +175°F	16	230
 <p>NBR</p> <p>This hose is particularly suitable for use with oily or fatty products, and with organic materials. The inner liner is of nitrile buna rubber (NBR) and the cover is a blend of SBR/NR.</p>	Yellow	-20°C to +80°C	-5°F to +175°F	16	230
 <p>NBRF</p> <p>The NBRF hose has an FDA approved food grade inner liner for use in EHEDG compliant or similar hygienic applications.</p>	White / Yellow	-20°C to +80°C	-5°F to +175°F	16	230
 <p>EPDM</p> <p>This hose is suitable for corrosive chemicals and inorganic products, the liner is made of EPDM rubber. The cover of this hose 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 corrosive chemicals, even those for diffusing media.</p>	Red	-20°C to +100°C	-5°F to +210°F	16	230
*This hose can be run for short time up to 120° C / 250° F					
 <p>CSM</p> <p>The CSM, or Hypalon® hose, is used to pump highly corrosive products such as strong oxidising agents. This hose has a CSM inner liner and an SBR/NR outer cover; it has a maximum continuous temperature rating of 85° C/185° F</p>	Green	-20°C / +85°C	-5°F / +175°F	16	230



Solutions in Pumping Technology

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 extensive knowledge of processes and applications positions us as a leading supplier.

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 solid materials
- Sample preparation – precise equipment for laboratory solids preparation and handling

Verder Liquids is active in many 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 substantial international pump company and if your project involves overseas work then you can benefit 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 five continents.

The Verderflex Series

More from Verderflex...

Verderflex Dura

- Flows from 14 l/h (0.06 US GPM) to 170 l/h (0.75 US GPM)
- Maximum discharge pressures up to 12 bar (174 PSI)
- Longer hose life †
- Quick & easy maintenance †
- Close coupled pump with long coupled advantages
- 70% smaller footprint †
- Up to 25% reduction in operational noise †

Verderflex Smart Tube Pump

- Flows from 0.25ml/min (0.004 US GPH) to 27 l/min (428 US GPH)
- Maximum discharge pressures up to 4 bar (60 PSI)
- Four sizes of IP 55 digitally controlled programmable multi channel tube pumps
- Industrial style F series design using standard gear motor unit & optional inverter for process plants
- Wide range of tube materials including Verderprene and Silicone
- Easy-fit self adjusting tube saddle.
- External interfaces : 0-10V, 4-20 mA, RS 232

† compared with comparable products

