

VERDERFLEX®

Industrial hose pumps and hoses

Solutions
in Pumping
technology



VERDERFLEX Industrial hose pumps

The VERDERFLEX product group consists of a well-balanced high quality range of industrial hose pumps for heavy-duty applications. As with all series of VERDERFLEX pumps, current emphasis is on reduced downtime with minimal maintenance, easy operation and continuous quality improvement.

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

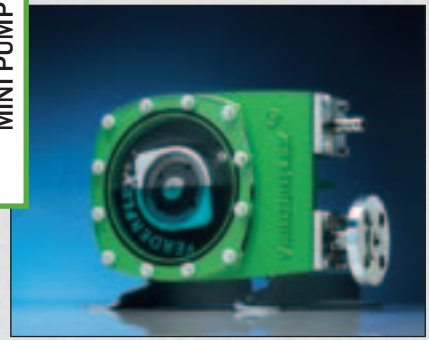
Working principle

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.

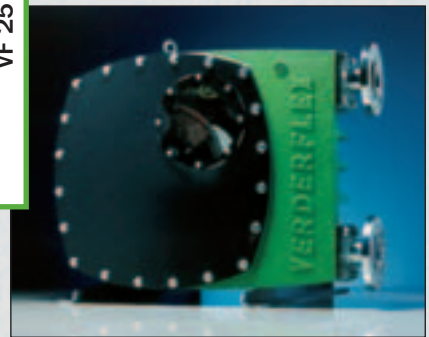
A smooth wall, flexible hose is fitted in the pump casing and is rolled and completely squeezed by two shoes on the rotor inside the pump casing. The rotation action moves the product through the hose at a constant rate of displacement without slip, making the pump suitable for high dosing applications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

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 specially designed VERDERLUBE to lubricate and cool the pump and to lengthen the 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.

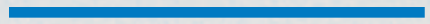
MINI PUMP

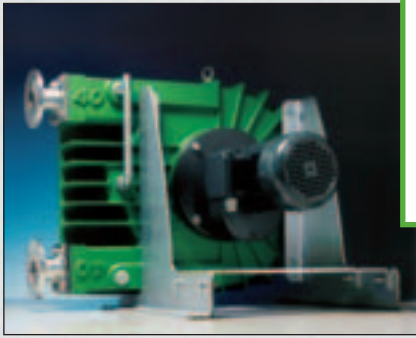


VF 25



INTERIOR





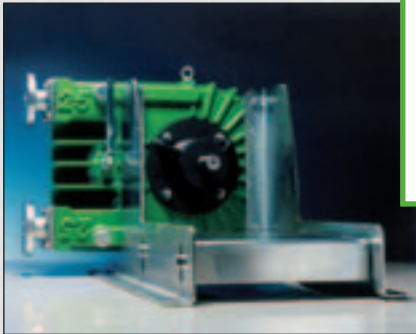
CLOSE COUPLED

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
Flanges	Mild Steel ANSI 150
	Option Hose Barbs VF10 & VF15
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 and CSM



LONG COUPLED

Options

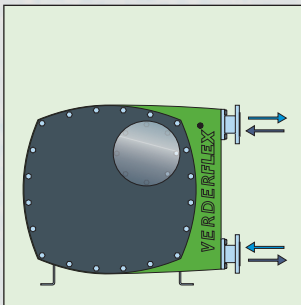
The following options can be supplied with the pump:

- 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
- Sanitary connections
- Customized coatings for pump and/or rotor

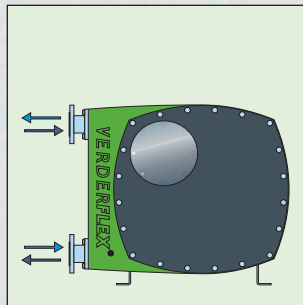


DUPLEX UNIT

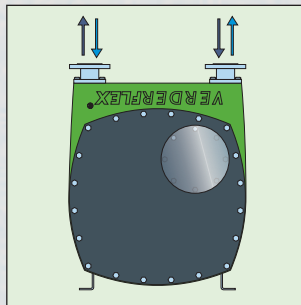
Mounting positions



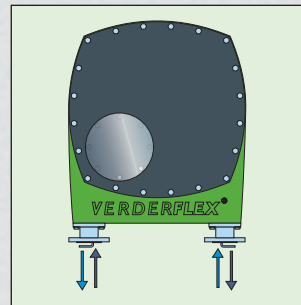
position 1



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 products - the very gentle method of pumping does not damage the product.
- High viscous products - the almost total vacuum of the pumps transports high viscosity liquids.
- Crystallization products – there are no valves or glands where crystals can build up and clog the pump.
- Dosing applications – absence of product slip in the hose gives a 100% volumetric efficiency.
- High maintenance applications - 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 concentrated solids - 80% solids can be handled, e.g. in mining applications.
- Potential blockage 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 VERDERFLEX 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
- Pulp and paper
- Cosmetics
- Recycling
- Food industry
- Sugar refining
- Abattoirs
- Breweries, wineries and beverages
- Fish industry
- Animal food

BREWERY



CHEMICAL



RECYCLING



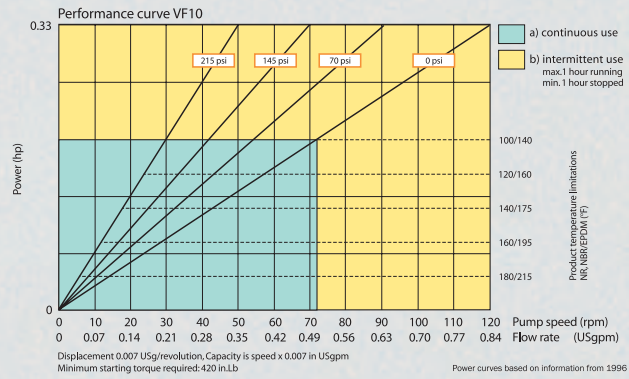
FOOD



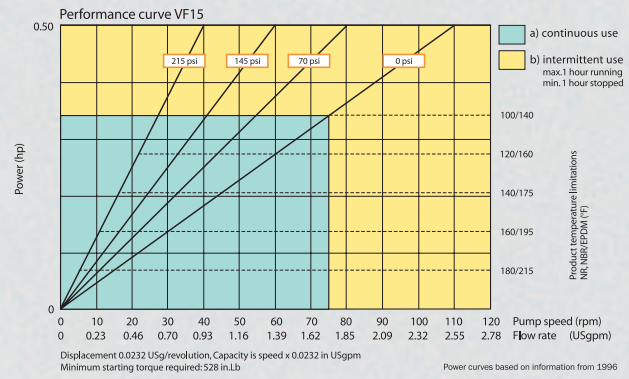


MUNICIPAL

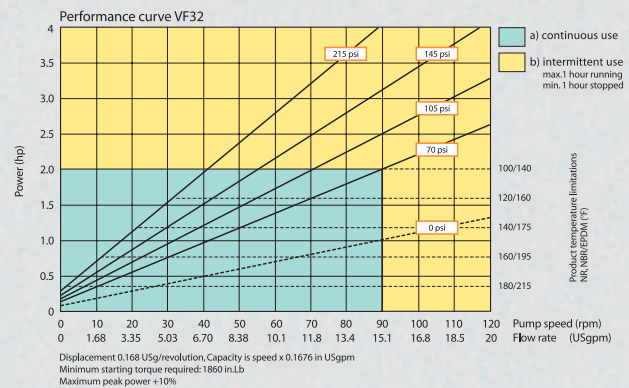
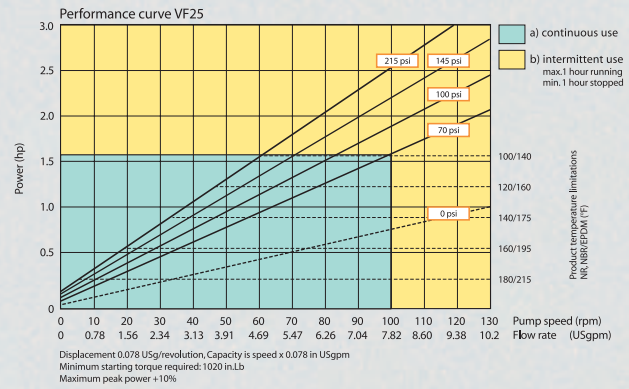
Technical information

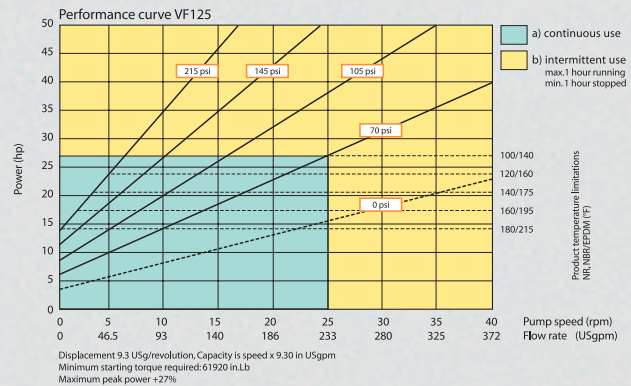
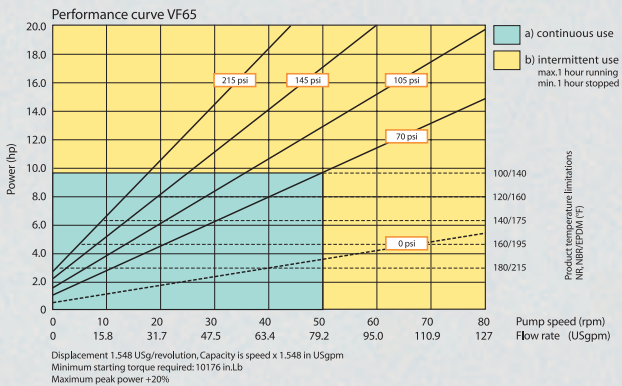
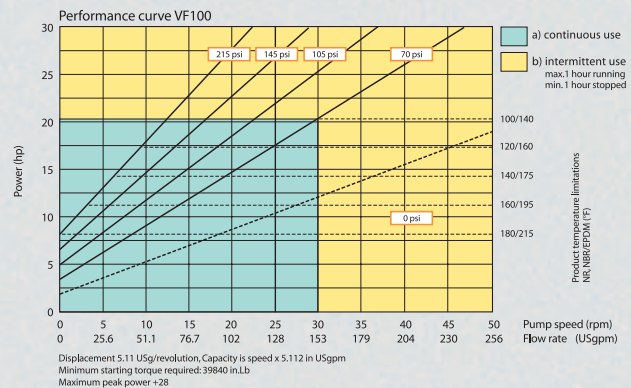
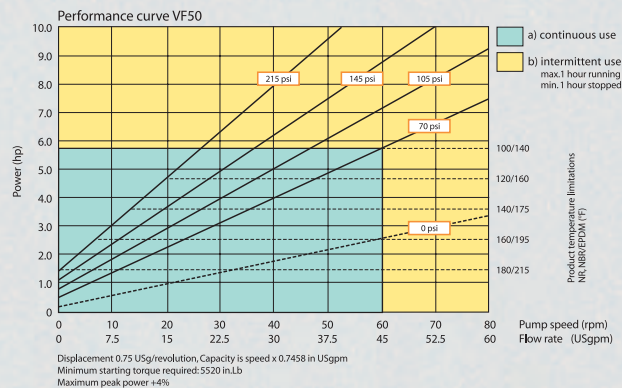
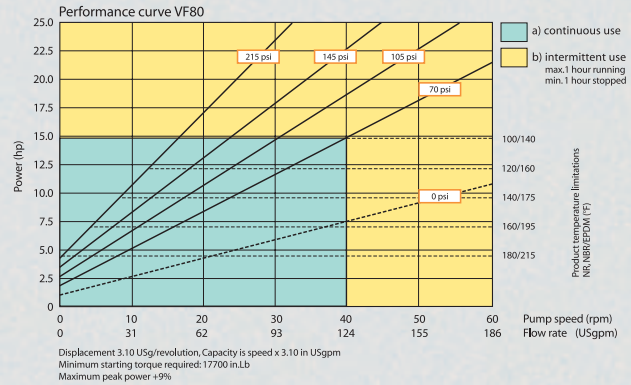
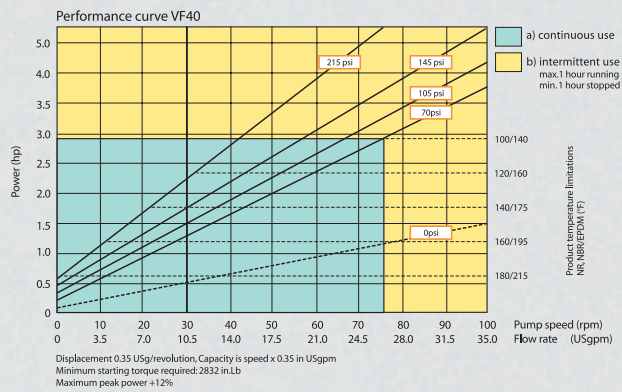


MINING



WATER TREATMENT





	VF10	VF15	VF25	VF32	VF40	VF50	VF65	VF80	VF100	VF125
displacement										
[gal/rev]	0.0066	0.022	0.075	0.159	0.33	0.71	1.5	2.9	4.8	8.8
[l/rev]	0.025	0.083	0.28	0.60	1.25	2.67	5.67	11.1	18.3	33.3
maximum speed										
[rpm]	120	120	130	120	100	80	70	60	50	45
maximum power										
[HP]	0.33	0.75	3.0	5.0	5.0	7.5	15	20	30	50
[kW]	0.25	0.55	2.2	3.0	4.0	5.5	11	15	22	37
maximum pressure										
[PSI]	110/230	110/230	230	230	230	230	230	230	230	230
[bar]	7.5/16	7.5/16	16	16	16	16	16	16	16	16





HOSES

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 VERDERFLEX to develop a hose with a special construction. Hoses in some peristaltic pumps could fail due to fatigue between the rubber layers and the reinforcement. However, VERDERFLEX successfully developed a hose designed to postpone fatigue within its construction, resulting in extremely long service life of the hose.

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 230 PSI/ 16 bar for all pump types.



VERDERFLEX NR

Surface properties of the hose.

Some industrial hoses 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 color 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.

Hose selection

VERDERFLEX NR

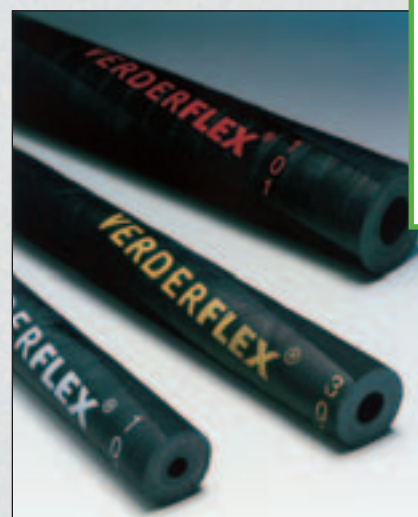
Most common hose for all market segments is the Natural Rubber (NR) hose. Both the core and cover are made from smooth NR and are highly resistant to abrasion. Suitable for use with lightly corrosive chemicals, highly abrasive slurries, inorganic products, etc.

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 EPDM

This hose is suitable for highly corrosive chemicals and inorganic products. The 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.



COLOR CODING

Technical hose data

	Natural rubber NR	Perbunan NBR	EPDM
Color code	white	yellow	red
Material			
Innerlayer	NR (68 °Shore A)	NBR (70 °Shore A)	EPDM (70 °Shore A)
Cover	NR (55 °Shore A)	SBR/NR (55 °Shore A)	EPDM (70 °Shore A)
Temperature	- 5° F / + 175° F	- 5° F / + 175° F	- 5° F / + 210° F, - 20° C / + 100° C
	- 20° C / + 80° C	- 20° C / + 80° C	for short time up to 250° F / 120° C
Pressure	230 psi / 16 bar	230 psi / 16 bar	230 psi / 16 bar

Type	Diameter		Weight [kg / lb]	Length [inch / mm]
	internal [inch / mm]	external [inch / mm]		
VF 10	3/8 / 10	1.26 / 32	0.75 / 1.7	20 / 510
VF 15	1/2 / 15	1.46 / 37	1.0 / 2.2	30.7 / 780
VF 25	1 / 25	2.17 / 55	2.0 / 4.4	39.6 / 1005
VF 32	1 1/4 / 32	2.44 / 62	3.1 / 6.8	49.2 / 1250
VF 40	1 1/2 / 40	2.64 / 67	4.0 / 8.8	58.7 / 1490
VF 50	2 / 50	3.19 / 81	6.5 / 14.3	71.7 / 1820
VF 65	2 1/2 / 65	4.00 / 101	12.5 / 27.6	91.9 / 2335
VF 80	3 / 80	4.84 / 123	22 / 48.5	109.4 / 2780
VF 100	4 / 100	5.67 / 144	35.5 / 78.3	128.7 / 3270
VF 125	5 / 125	6.69 / 170	43.2 / 95.2	157 / 4000

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



PUMPS Inc.

P.O. Box 26940, Macon, Georgia 31221
 Phone: 877-7VERDER (877-783-7337), Fax: 877-471-3569
 Website: www.gmpump.com

www.verderflex.com

06-04-2004