

VERDERFLEX HOSE PUMPS

—

NEW SOLUTIONS FOR OLD PUMPING PROBLEMS

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Verder Group

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WHO ARE VERDER ? AND OUR LONG TERM ASSOCIATION WITH CHINA

THE VERDER GROUP'S HISTORY & SOME KEY FACTS

- Founded 1959 in Vleuten, Holland by André Verder
- Andre's son Andries Verder, took over as CEO in 2003
- 100% family owned
- 500 employees worldwide
- Subsidiaries in 18 countries
- Turnover > \$200M





VERDERFLEX®

Industrial Hose & Tube Pumps



Programmable Tube Pumps



OEM Pump Modules



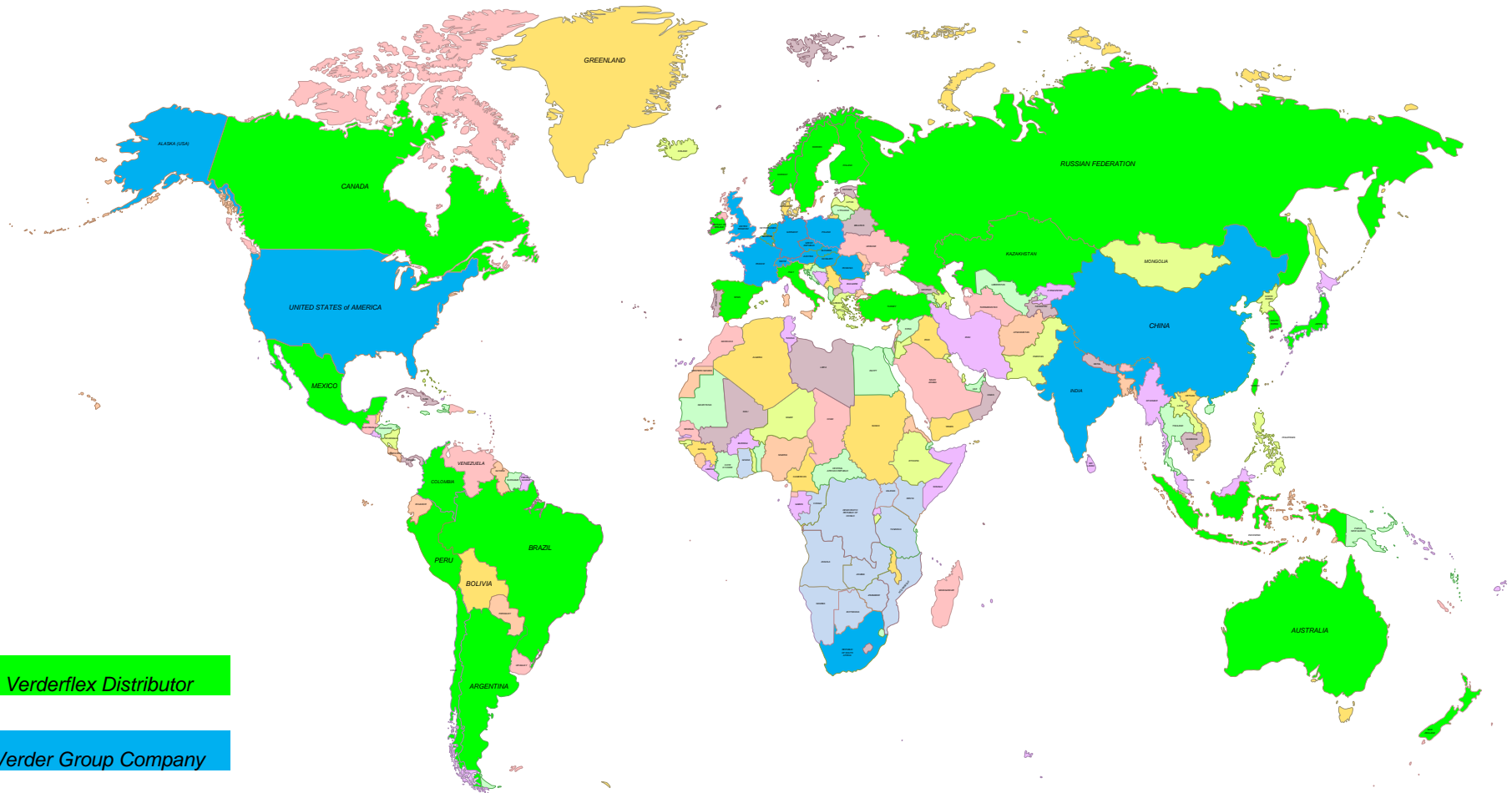
VERDERFLEX PRODUCTION



- VERDERFLEX pumps are produced in Leeds, Northern England
- Meeting the world's peristaltic pump needs since 1993
- Today over 1 million VERDERFLEX pumps in use

VERDERFLEX'S WORLDWIDE PARTNERS

A Global Support Network



Verderflex Distributor

Verder Group Company

Verder in China – A Long Term Partnership

2003 After several years of direct exports from Europe directly to China, the Verder group decided to invest in China : employing our first Chinese engineer

2006 Verder decided to make a strategic investment in China and officially registered Verder Retsch Shanghai, increasing its investment in 2007 by moving into new offices in Zhangjiang Hiteck Park

2010 To increase local support , the Beijing branch office was opened

2012 The Guangzhou branch office opens

Today, Verder employs over 35 Chinese engineers, managers and technicians

Verder's China Offices

- (Will insert map here when you send it)

Verder's Shanghai Headquarters

National Management, Marketing & Inventory & Regional Sales,
Service & Training



Verder Beijing Office : Regional Sales, Service & Training



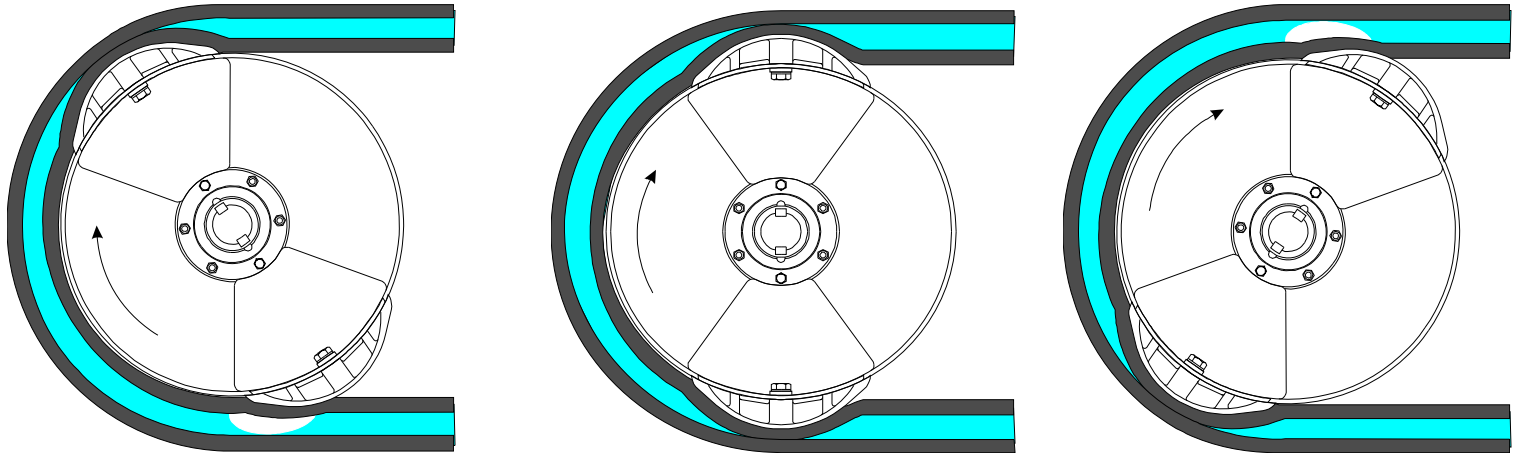
Verder Guangzhou

- Newly opened support office for Southern China
- Staffed by factory trained engineers
- Regional inventory base

- *Insert Suitable Picture*

WHAT ARE HOSE PUMPS ? AND HOW DO THEY WORK ?

A Working Peristaltic Pump



When the rotor turns the hose or tube is compressed by the rotor shoe, creating the same effect as when we swallow

(Animation Plays)



How We Create Suction Lift

Hoses have an inner layer, nylon reinforcement layers & an outer cover

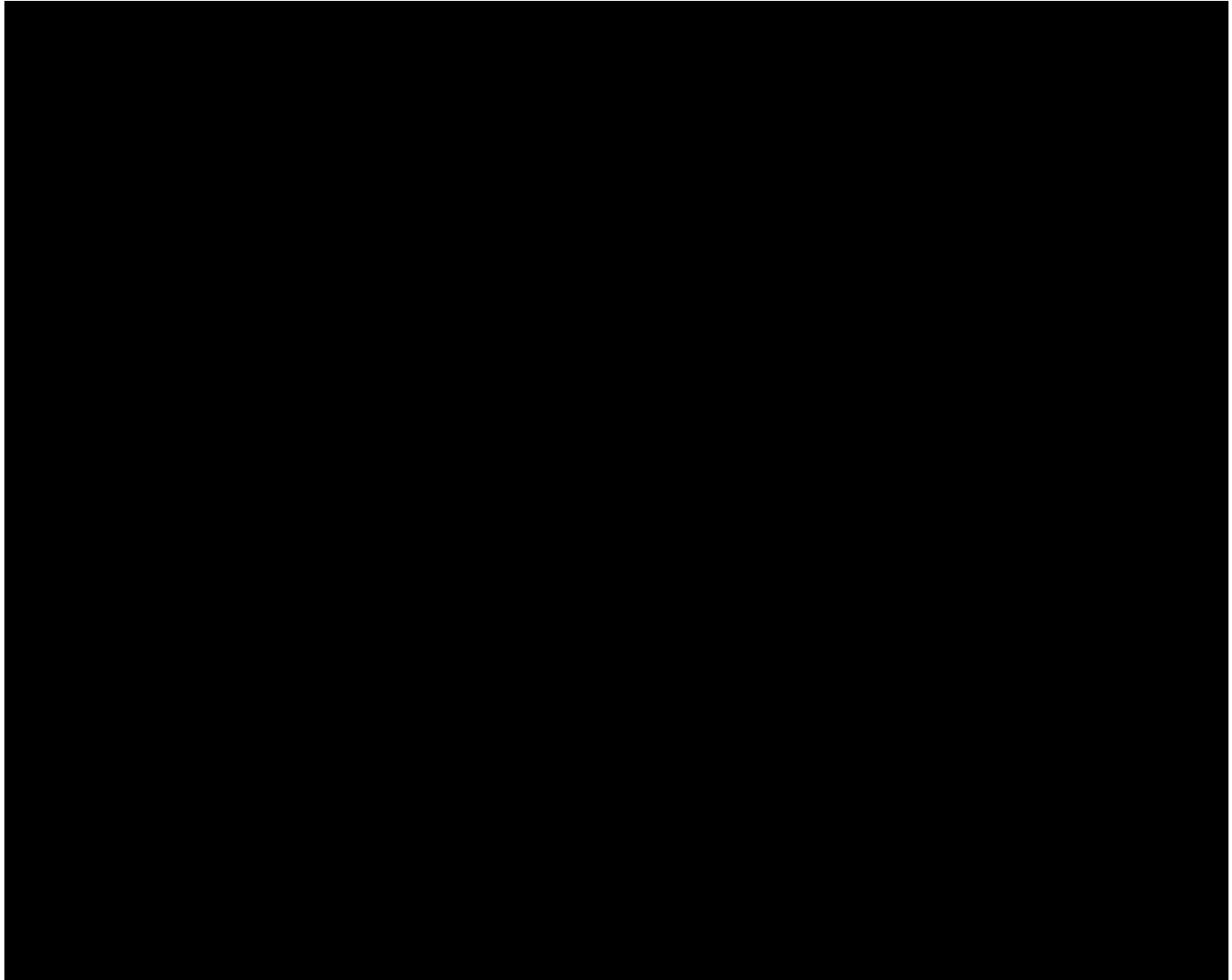
When the pressing shoe passes over the hose, it compresses the hose creating a seal between suction and discharge sides.

The shoe moves away, releasing the compression, the reinforcement springs back & the hose returns to its normal shape and creates a partial vacuum. This produces a high suction pressure, 95% vacuum, refilling the hose and giving a suction lift of up to 31 ft.w.c / 9.5 mWc

Tube pumps have no reinforcements and so have much reduced lifts of a few feet or 1 to 2 metres



From the hose's view



PUMPING PROBLEMS SOLVED WITH HOSE PUMPS

1 PUMPING ABRASIVE SLURRIES

Hose Pumps are ABRASION RESISTANT

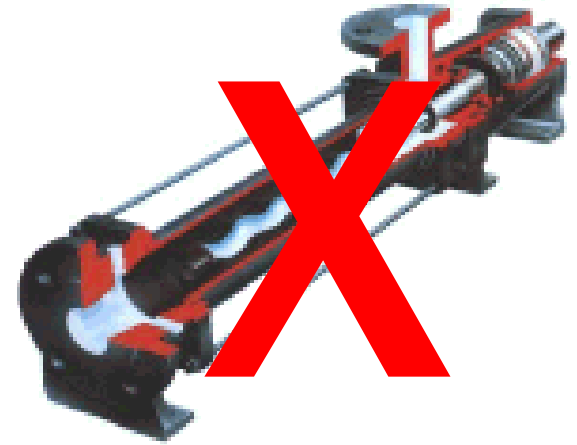
Typical products including lime (CaO , CaOH_2), SiC, Fly Ash, Activated Carbon, Kieselguhr & mining slurries are pumped without wear

.....Unlike many other pump types which have high stator or impeller replacement costs

plus

Hose life is not related to a product's abrasive qualities

Lime Mixing & Dosing in Water Treatment



Hose pumps have successfully replaced many Progressing Cavity Pumps on Lime Mixing, Metering and Dosing duties

Solving problems of Excessive rotor and stator wear and gland leakage

Dosing Activated Carbon into Smoke Stacks

- 2 x VF32 pumps dose (abrasive) activated carbon slurry as part of an exhaust gas dioxin removal system at a waste incineration plant in Holland.
- Typical carbon concentration is 15-20% by volume.
- We have many similar successful installations transferring Silicon Carbide in the Chinese semi-conductor industry.



Protecting the Chinese Environment : Transferring Refuse Leachate

12 Verderflex pumps are used in Suzhou to treat refuse leachate

The leachate includes abrasive dust particles that would cause other pumps severe wear

The smaller dosing pumps provide consistent variable dosing and can even run dry when no leachate is being produced

Additionally, these pumps help China by removing dioxins from the incineratorin line with the new 5year plan

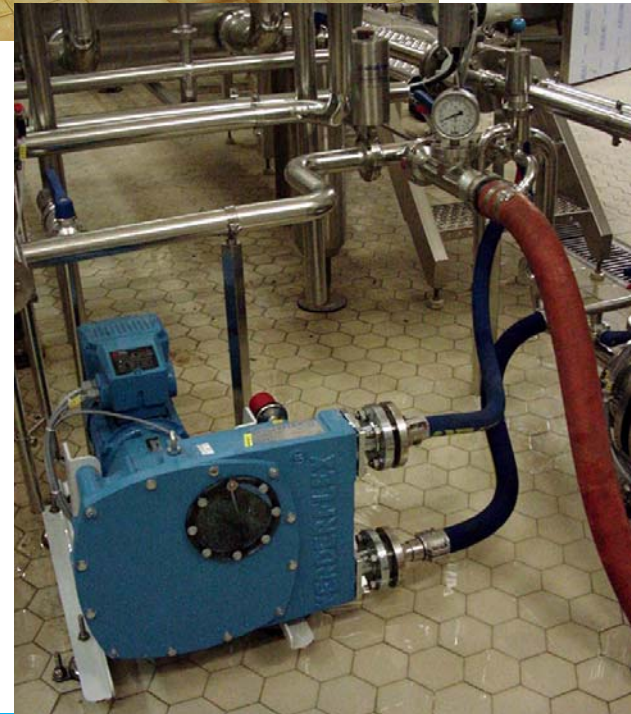
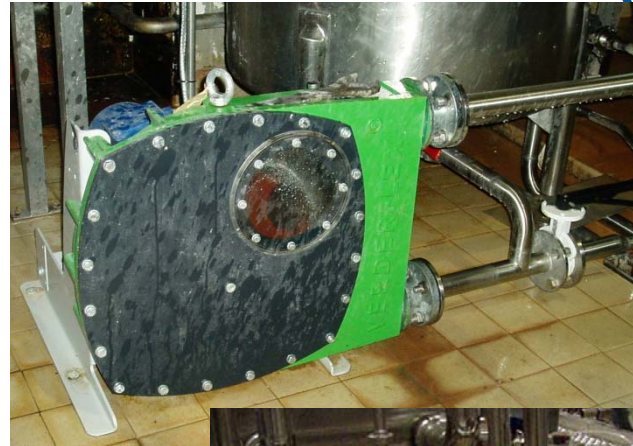


Pumping Kieselguhr (KG) or Diatomaceous Earth (DE)

- Diatomite (or Diatomaceous earth (DE)), regularly called Kieselguhr (KG) is used to filter beer between intermediate storage and the beer filling rack

Verderflex pumps dose KG into beer and pump the residual into Brewery filter press systems in breweries throughout China

- Previously, many other pumps were used but all suffered from excessive wear



2 PUMPING PRODUCTS THAT OFF GAS

Hose Pumps can DRY PRIME, PUMP AIR or TRAPPED
GASES

e.g. Off gassing liquids : Hypochlorites (NaOCl, KOCl)
& Yeast

.....Unlike many dosing pumps where the head
vapour locks and they don't dose

Water Treatment : Dosing Hypo



Hypo releases Cl_2 gas when pumped and many pumps vapour lock leading to undisinfect water supplies

3 HOSE PUMPS CAN RUN DRY

Hose Pumps can RUN DRY – the hose is lubricated from the outside

No Burnt Stators

Operator Proofing

No Need for Dry Running Protection

Dura Dosing Flocculent



- Polebridge WTP in USA uses 3 x Dura 10s to dose High Charge Cationic Emulsion, Clarifloc
- Replaced high operating cost PC pumps, constantly burning up stators when running dry

4 HOSE PUMPS CAN PUMP HIGH SG SLURRY WITH HIGH SOLID CONTENTS

Hose Pumps can pump 80% solid content sub-micron
Slurry

Liquid SGs >2.0

Mining Thickeners run more efficiently

Hose pumps also use less power than Slurry
Centrifugal Pumps

Solving a Problem in Mining : Thickener Underflows & Slurry Transfer



Hose pumps increase process yields by increasing thickened metal content & reducing maintenance costs

5 GENTLY PUMP SHEAR SENSITIVE POLYMERS

Suitable for handling shear sensitive products (polymers, flocculants, “live”/organic broths, biotech cultures)

- Product is not damaged
 - Shear rate $<150 \text{ s}^{-1}$

.....reduced chemical usage by maintaining particle size
e.g. Ocean County WWTP reports floc usage significantly reduced after a Dura 25 replaced a PC pump

Other Advantages

High suction capability : up to 95 % vacuum or a 9.5mWc lift

Reversible rotation : the pump can be used to empty lines or clear blockages

No metal to metal contact

No seals : no leaks or parts to replace

Easy maintenance & low cost of ownership :
Reduced down time & the hose is the only wearing part
- typically 10% of the pump head cost

Can pump solids

Fish Processing Waste



- VF80 pumping highly abrasive post-macerator waste at French fish processor
- Waste includes fish heads and bones

Finally, Some Installation Tips

- Pipework should be as short and direct as possible
- Piping should be over-sized, especially the suction line
- Include a short, removable section next to the pump for easy access (hose changes etc). Preferably this should be a flexible hose
- Lines should include valves and a discharge line pressure relief device (closed valve or “dead head” protection). They should also include a product drain down capability

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激情 发



Thank You