



**Any questions?** You may still have questions and/or comments after reading this brochure. Please feel free to contact us on +44 (0)1924 221 020. You can also respond via email to [info@verderflex.com](mailto:info@verderflex.com). For more information about Verderflex® please visit our website [www.verderflex.com](http://www.verderflex.com)

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VERDERFLEX®

VERDERFLEX®

Industrial Peristaltic Pumps



**VERDER**  
passion for pumps



# Verderflex® Industrial Peristaltic Pumps

## Why use peristaltic pumps?

Peristaltic pumps are excellent problem solving pumps and offer the following benefits:

- Abrasion Resistant
- No moving parts in the liquid stream
- Accurate Dosing
- Self Priming
- Can pump liquids containing up to 80% inorganic solids (fines)
- Aseptic pumping smooth liquid passage
- Easy and completely cleanable without disassembly
- Suitable for handling shear sensitive products
- Can run dry
- Low cost of ownership
- High suction capability of up to 95% vacuum or a 9.5 mWc
- No seals
- Reversible rotation, empties line or blockages
- Can pump abrasive, high viscous or high density fluids



## Application areas

The unique design of Verderflex® peristaltic pumps make them ideally suited to a wide range of application areas, including:

### Abrasive fluids

Lime mixing, circulation and dosing

### Corrosive fluids

Ferric Chloride, copper sulphate and similar activators, process chemicals, acids, including alkalis

### Shear sensitive fluids

Coagulants, flocculants and bacterial remediation treatments

### Mining Industry

Dosing process reagents, polymers and slurry transfer

### Water Treatment

Dosing lime, hypochlorite, silicate, polymer, ferric chloride, transferring sludge and filter press feeds

### Chemical Industry

Corrosive acids, bases and hydrocarbons

### Printing and packaging

Inks, paints, dyes and glue

### Battery Filling, Chemical Cleaning, Equipment Sterilising, Seed Coating

Biocides, hydrogen peroxide, sodium hypochlorite, caustic soda

### Laboratory Systems

Biological broths to polluted streams

### Agriculture

Feed additives, animal vaccines and waste transfer

### Paper and Pulp

Pulp and dyes

### Food and Beverage

Breweries, wineries, dairies, sugar refining, abattoirs

# Verderflex® Industrial Peristaltic Pumps

## The Heart Of Your Process

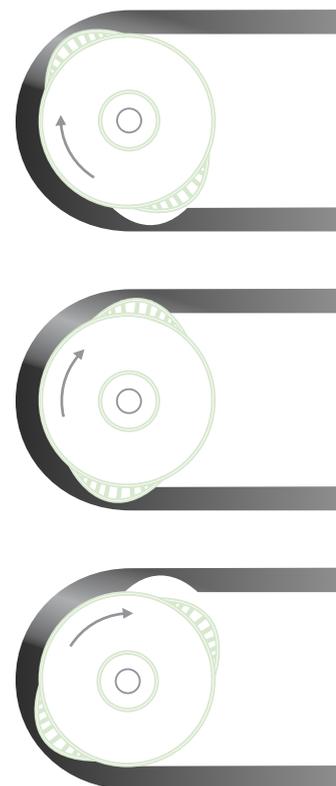
*Verderflex® Industrial peristaltic pumps are extremely robust, ideal for heavy duty operations on continuous or intermittent duty cycles. They are a simple to use, easy to control, versatile and a reliable way to pump liquids.*

With maximum flow rates ranging from 1.7 l/min to 90 m<sup>3</sup>/hr, there is a Verderflex® Industrial pump for most medium to high pressure pumping requirements.



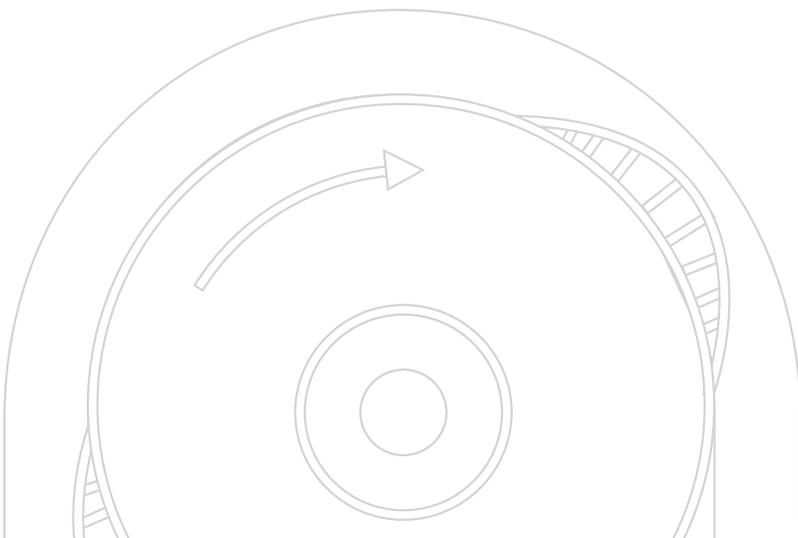
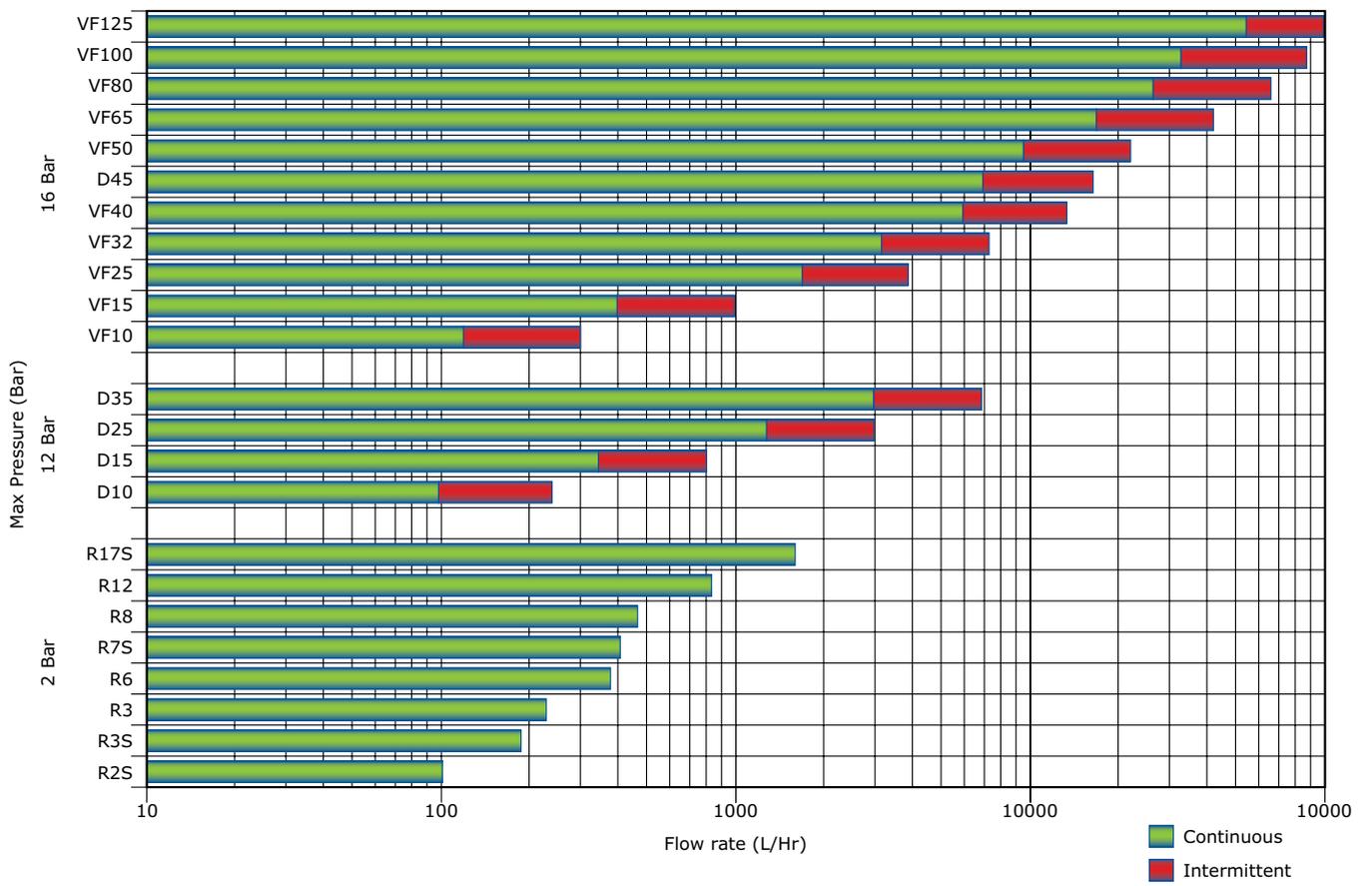
### Working principle

1. The peristaltic pump is based on alternating compression and relaxation of the hose or tube drawing the contents into the hose or tube, operating in a similar way to our throat and intestines.
2. A rotating shoe or roller passes along the length of the hose or tube totally compressing it and creating a seal between suction & discharge side of the pump, eliminating product slip.
3. Upon restitution of the hose or tube a strong vacuum is formed drawing product into the pump
4. The medium to be pumped does not come into contact with any moving parts and is totally contained within a robust, heavy-duty hose or a precision extruded tube.
5. This pumping action makes the pump suitable for accurate dosing applications and has a pressure rating up to 16 Bar (hose) and 2 Bar (tube).
6. The high pressure hose has inner layer of 2-6 reinforcement layers and an outer layer, which allow higher working pressures and generate higher suction lifts than non re-enforced tubing.





### Quick pump selection





# Verderflex® Rapide Tube Pumps

The Verderflex® Rapide is a range of industrial tube pumps that provide a balanced selection of simple to operate peristaltic pumps. The family offers the customer pump choices that are compact, are simple to use and require no tools during the tube change.

The range has been developed to offer reliable and cost effective pumping solutions for industrial applications. Standard designs incorporate rugged Aluminium pump heads with "thick-walled" tubing for increased suction lift and IP55 gear motors with both single and three phase options.

The Verderflex® Rapide is an excellent, low flow dosing pump capable of handling viscous, abrasive and chemically aggressive media with total containment and leak free pumping.

## Rapide

Flow rates	0.25 ml/min - 17 l/min*
Pressure range	up to 2 bar

\* Tested with Verderprene using water



## Advantages of the Rapide Tube Pump

- Compact and easy to use
- Can be integrated into third party equipment such as printing presses
- Designed for industrial environments including chemical, mining, printing and water treatment
- Can be used with variable frequency drives (VFDs)

## Rapide Specification

Standard Speeds	131, 191, 196 rpm
Control	Optional inverter
Voltage	3 Ph. 230/400V (Single Phase Option)
Frequency	50/60 Hz
Installed Motor Power	0.18 kW to 0.37 kW
Standard Tubes	Verderprene, Silicone



## Rapide S

The Rapide 'S' has an easy-fit saddle which allows for simple and fast tube changes.

The pump head provides:

Flow rates	3 ml/min - 17 l/min per channel*
Option	flexibility to specify up to 4 channels

\* Tested with Verderprene using water



### Rapide 'S' Specification

Standard Speeds	60, 113, 151 & 220 rpm
Control	Optional inverter
Multi-channel	up to 4 channels (when factory built)
Voltage	3 Ph. 230/400V (Single Phase Option)
Frequency	50/60 Hz
Installed Motor Power	0.37 kW
Standard Tubes	Verderprene, Silicone

### Advantages of the Rapide 'S' Tube Pump

- Easy-fit tube saddle for rapid tube changes
- Manufactured from chemically resistant Polyoxymethylene (POM)
- Transparent front cover manufactured from Polymethylmethacrylate (PMMA)
- Pressure range 0-2 bar
- 3 roller heads
- When connected the SSD Safety interlock can stop the drive whenever the saddle is opened or removed
- In-line tube arrangement, providing a kink free liquid path
- Can be used with variable frequency drives (VFDs)

### Lightning fast tube change

The easy-fit tube saddle is designed for single handed operation, allowing the tube to be loaded quickly and easily from above.



1. Insert the tube on top of the rollers



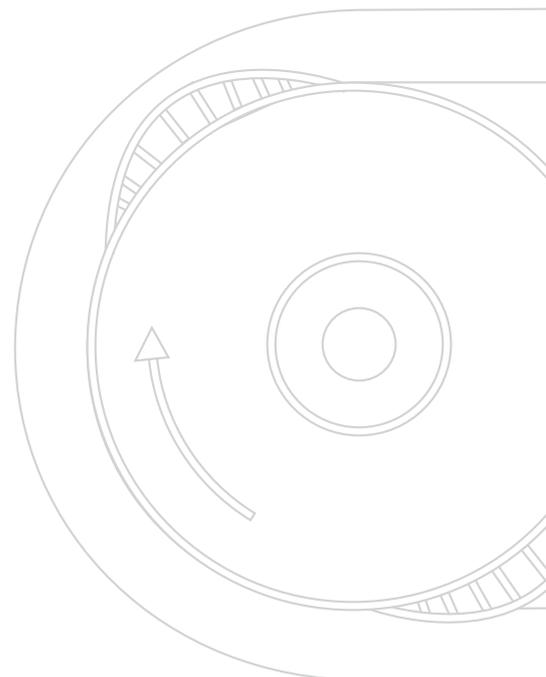
2. Fit the saddle to one set of dowels



3. Open up the lever and fit the claw over



4. Push the lever down to lock the saddle into place the other set of dowels





# Verderflex®

## D10 to D45 Industrial Hose Pump

*The Verderflex® Dura is the first real advance in hose pump technology since the high pressure hose. Combining the compactness of a close coupled pump with all the benefits of the traditional long coupled pump.*

Flow rates	3 l/hr - 3,920 l/hr
Pressure range	up to 12 bar for the D10 to D35 and 16 bar for the D45

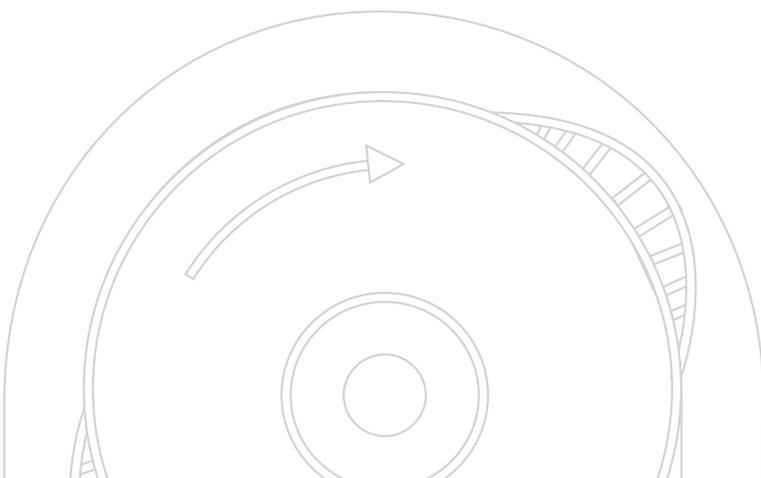


### Advantages of the Verderflex® Dura Hose

- One piece flange design
- Air gap between pump casing and gearbox for zero risk of cross contamination
- Long coupled design with close coupled advantages
- 70% smaller footprint
- Quick and easy maintenance
- No shimming requirements

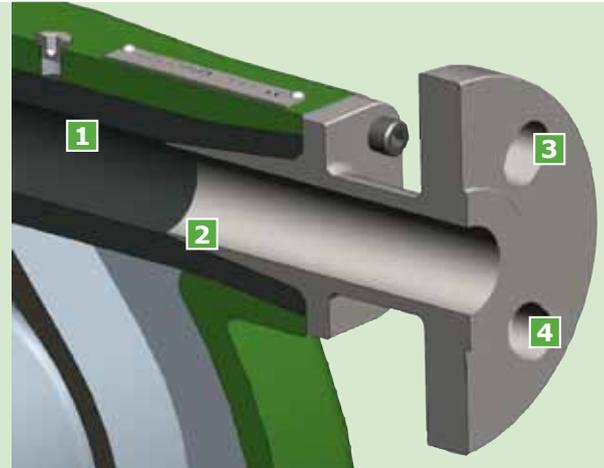
### Dura Specification

Speed	Max. 70 rpm as standard
Control	Optional inverter
Voltage	220/400V (Single phase option up to 1.1 kW)
Frequency	50/60 Hz
Installed Motor Power	0.15 kW to 2.2 kW
Hoses	NR, NBR, EPDM, NBRF, CSM, Verderprene



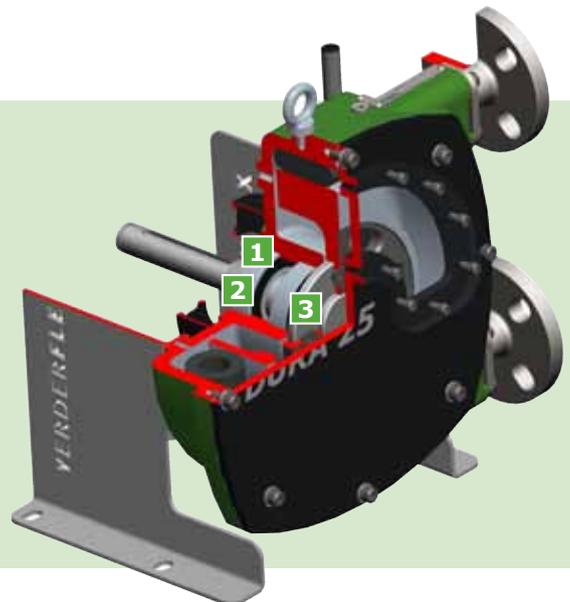
## The Standard Verderflex® Dura Port Flange

- 1 Speeds up hose change but is still disaster proof
- 2 Tapered insert section of port flange compresses the hose against the casing for secure hose clamping.
- 3 Cast 316 Stainless Flange
- 4 Universal slotted mating flange, allows connection to DIN PN16, ANSI 150 and JIS 10K



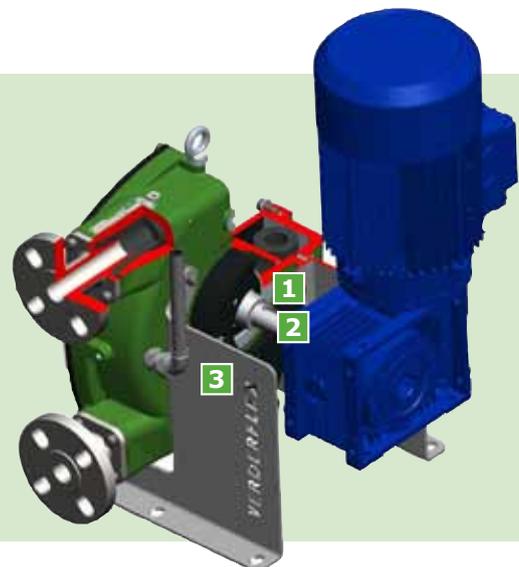
## Rotor Locates Over Bearing

- 1 Shaft seal options: Viton® & PTFE
- 2 Rotor mounts directly onto the shaft. Locates over the pair of bearings, removing overhung load
- 3 Sealed for life bearings are press fitted into the housing



## Gearbox Mounting

- 1 Gearbox is totally isolated from pump head - zero possibility of contamination
- 2 Gearbox slides onto shaft and over shaft key
- 3 Long coupled gearbox is free to move, dissipating energy away from pump





# Verderflex®

## VF Industrial Hose Pump

The Verderflex® range of industrial hose pumps are a proven 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.



Flow rates	to 90 m <sup>3</sup> /hr
Operating pressure	to 16 Bar

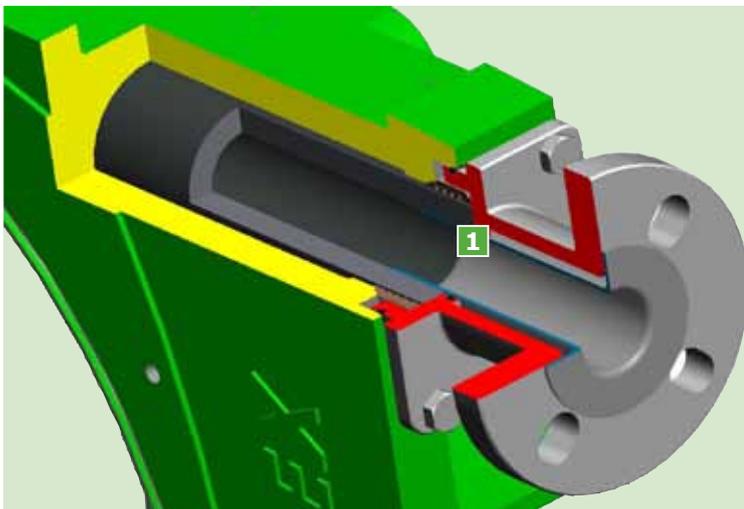
### Advantages of the Verderflex® VF Hose Pump

- Specially designed hose construction to reduce fatigue, resulting in longer hose service life
- Disaster proof hose connection for easy maintenance
- Close coupled drive design
- Rigid pump housing design for heat dissipation and strength
- Proven Design

### VF Specification

Speed	Max. 62 rpm as standard
Control	Optional inverter
Standard Voltage	220/400V to 7.5 kW, 400/690V above 11kW (Single phase option upto 1.1 kW)
Standard Frequency	50/60Hz
Installed Motor Power	0.12 to 37 kW
Hoses	NR, NBR, EPDM, CSM & NBRF

### The Verderflex® VF Port Flange



- 1 When fitted with hygienic flanges (e.g. DIN 11851, Triclamp or RJJ) the pump meets EHEDG Standards



# Hose and Tube

## Advancements of the Verderflex® hose

The Verderflex® hose has more re-enforcements than the competitors and maximises hose life by optimising the fatigue strength.

The hose is available in 12 standard hose sizes from 5 mm (3/16") to 125 mm (5"). The surface properties of the hose offer many advantages:

- Exact wall thickness and outer diameter tolerances are maintained at each and every point
- No additional process of external machining
- Tested alongside competitors, results indicate that there is no additional friction due to the textured finish surface
- Textured surface creates micropockets of lubrication, promoting more even lubricant coverage, extending hose life



<b>NR</b>		White	The most common hose for all market segments
<b>NBR</b>		Yellow	Suitable for use with oily and fatty products
<b>NBRF</b>		White/ Yellow	Has a FDA CFR21§/EC No. 1935/2004 approved food grade liner
<b>EPDM</b>		Red	Exceptionally resistant to corrosive chemicals
<b>CSM</b>		Green	Used to pump highly corrosive products
<b>Verderprene</b>		Beige	Special low pressure, low spallation hose for Dura

## VERDERFLEX® TUBE SELECTION

### Verderprene -

#### General Purpose Tubing

This opaque, cream coloured tube is the most popular choice for tube pumps (FDA & USP compliant).

### Platinum Cured Silicone - For Higher Purity

Platinum cured Silicone is a translucent, odourless tubing with low residuals (FDA & USP compliant).

**Other materials including Tygon® and Fluran are available on request!**

# Successful Applications



## Anaerobic Digestion Slurry Transfer

Verderflex® pumps were specified due to the high suction lift and the solid content of the slurry. The pumps are used to transfer the slurry to digestion tanks where energy is then produced.



## Thickener Underflow Slurry Re-Circulation & Transfer

6 x VF125 pumps were specified, on the basis of proven performance within Amplats, for use as Thickener Underflow pumps at Potgietersrus mine, South Africa, the world's largest Platinum concentrators.



## Dosing and transfer of refuse leachate to Incinerators

The Suzhou Waste Incineration Plant have installed 12 Verderflex® peristaltic pumps as part of the leachate process and injection system. The leachate is pumped from the collection reservoir, through an automatic leaning filter and collected in a draining reservoir.



## Calcium Hypochlorite $\text{Ca}(\text{ClO})_2$

3 x Dura 25 with PP flanges replaced problem vapour locking diaphragm dosing pumps on Calcium Hypo dosing. Sterilisation of water supply is dependent on Hypochlorite being dosed and this water is then supplied to one of Johannesburg's largest informal settlements.



### **Copperas Crystal Dosing**

Copperas crystal (solid Iron Sulphate) is turned into a liquid through mixing and recirculation. Dura 15 pumps then dose at a power station to form a protective iron coating on the titanium condensation tubes.



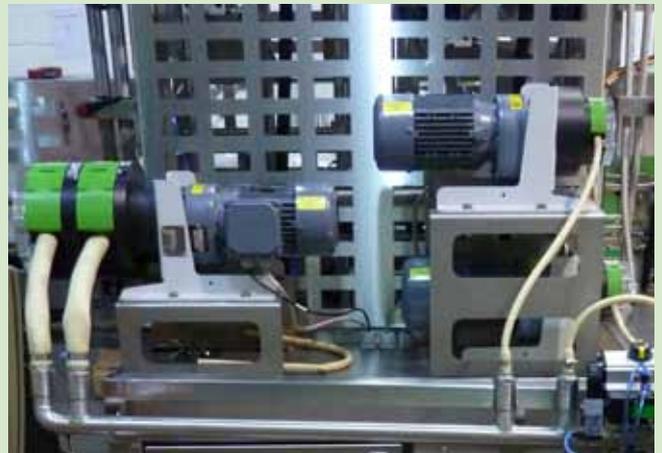
### **Pumping Kieselguhr**

A typical filtration process can be found in a Bavarian brewery, filtering 1200 hl of beer in a 8-10 hours filtration cycle. Several Dura 25 pumps are built into the process.



### **Water Based Ink**

After changing to water based inks, the original AODD pumps experienced foaming problems resulting in final product quality issues. Verderflex Dura 15's were fitted into each print line, resulting in no more bubbles in the ink due to the gentle pumping action.



### **UV Ink Bottle Filling**

Marco UK supplied an ink filling system to Fuji Film to eliminate manual filling of bottles of UV ink. Initial pumps were stand alone Rapide R3S & R17S, but after consultation with the customer the final solution will be 4 x 2 channel R17S per filling station.



## Contact Verderflex®

*If you would like to know more about Verderflex® peristaltic pumps then please visit our website [www.verderflex.com](http://www.verderflex.com). You will find the full breakdown of our pump range as well as application stories, latest news and technical datasheets.*

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