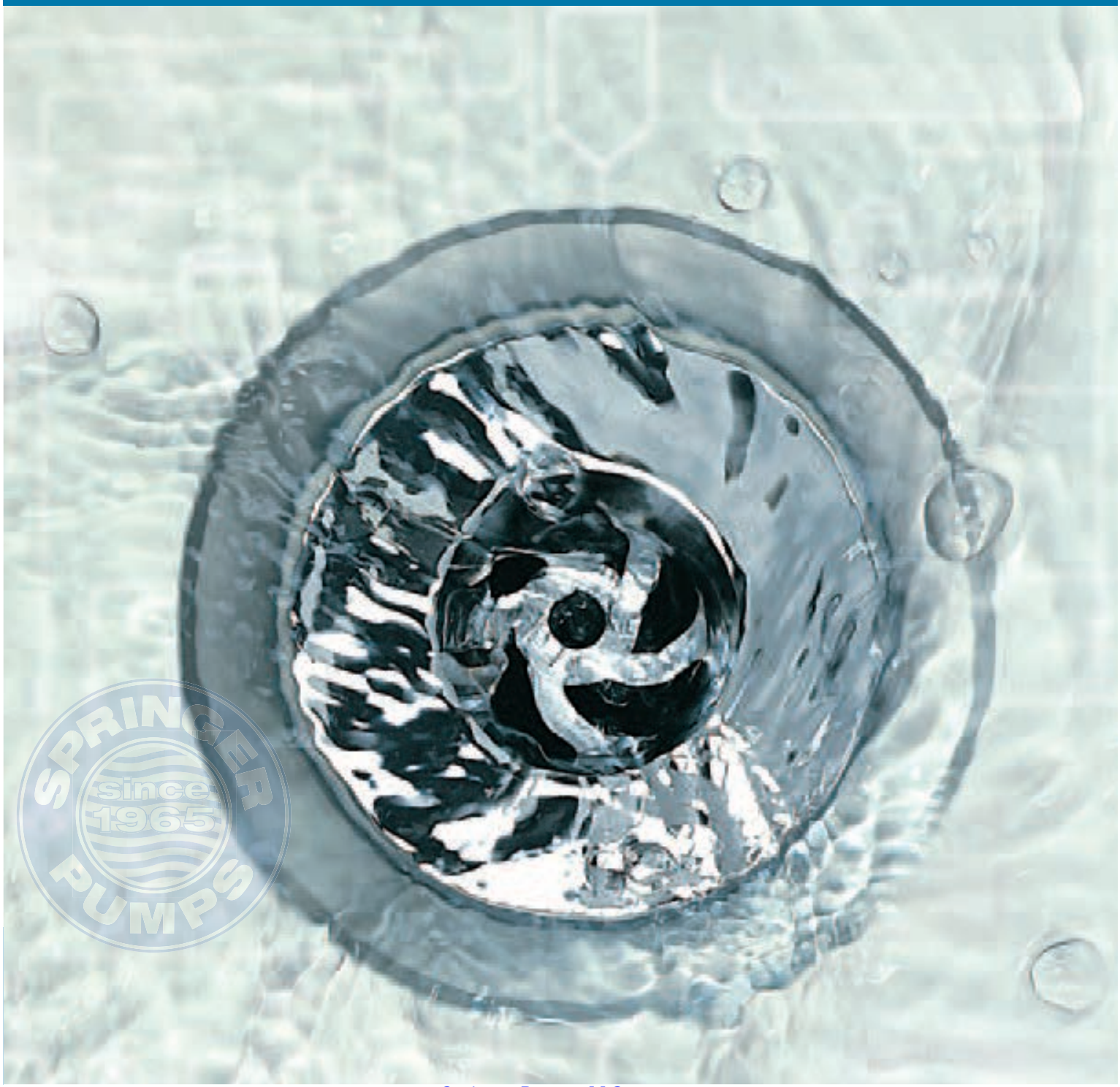
WATSON MARLOW Bredel PUMPS

Improve your Process, Lower your Costs

WATER and WASTE WATER Treatment



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Chemical Pumps

Superior potable water quality and reliability …

Supply of quality potable water within current permit levels is paramount, and efficient plant operation is essential in meeting these critical standards. Chemical injection and other metering applications, typically with sodium hypochlorite, lime or ferric chloride, often place arduous demands on pumps. These chemicals can cause vapor locking, abrasive wear and pump clogging, leading to poor performance and premature failure of traditional metering pumps. Watson-Marlow Bredel peristaltic pumps are a proven solution and exceed performance expectations.

• 100 psi for chemical injection • Self-priming to 30' and dry-running
• Million:1 flow range - same pump! • Accuracy to +/- 0.5% • Lowest Life Cycle Cost (LCC)
• No internal check valves • Reversible • 3 second pump rebuild • Will not vapor lock

• Sodium hypochlorite • Ferric chloride • Sodium bisulfite • Alum • Fluoride • Carbon and lime slurries • Polymers • Aqueous ammonia • Potassium permanganate • Caustic

… with greater plant control and 24 hour confidence …

Accuracy

Primary/secondary disinfection and pH control require accurate metering for assured potable water quality. The nature of the chemicals used demand that the pump must be able to handle conditions such as salt settlement, gassing, abrasive wear and clogging. These conditions can cause loss of performance in traditional pump types, however Watson-Marlow Bredel pumps unique design mean they do not suffer from these problems and are accurate up to ±0.5% for their service life.

Low shear

Liquid polymers are shear sensitive and their performance can be dramatically reduced by high velocities or arduous pump paths, such as impellers, rotors and stators, lobes, vanes or valves. Watson-Marlow Bredel pumps are exceptionally low shear, ensuring chemical quality, accurate and predictable performance with subsequent cost savings.

Elimination of ancillary equipment

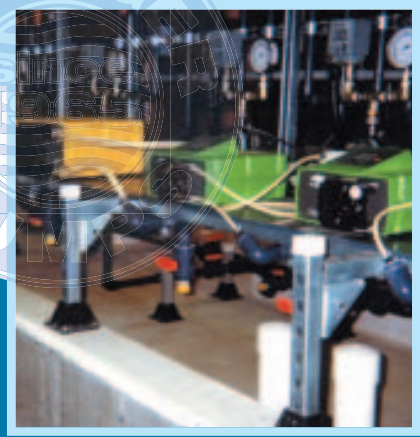
Because of our unique peristaltic design, artificial back pressure valves, strainers, check valves and pulsation dampeners are not required with Watson-Marlow Bredel tubing pumps, thus saving capital and maintenance costs.

Control options

Interfacing with today's SCADA systems is a must for any metering pump. Metering and sampling requirements often demand the pump to be easily and reliably controlled, ensuring quick response to changes in plant throughput. Watson-Marlow Bredel pumps will accept RS232, RS485, 4-20mA, 0-5V signals and are fitted with volt free and two analog contacts for proportional stroke and speed equivalent. Simple set-up and pump flexibility guarantees accurate plant control.

DuCoNite® Chemical Duty Protection

When extra corrosion protection is needed - ***DuCoNite***® is a three step metallic surface treatment process with proven excellent chemical resistance to the most aggressive chemicals used in water and wastewater treatment.



Ms. Joyce Kippen, Superintendent of the Ipswich, MA WTP has used Watson-Marlow Bredel tubing pumps for almost ten years in all of their chemical feed applications including sodium hypochlorite, alum and fluoride. "We have replaced all of our diaphragm pumps with tubing pumps as they offer superior reliability, accuracy and performance and do not vapor lock due to the off gassing of our hypo. Replacing the tubing takes only seconds and our maintenance costs have dropped to virtually zero."

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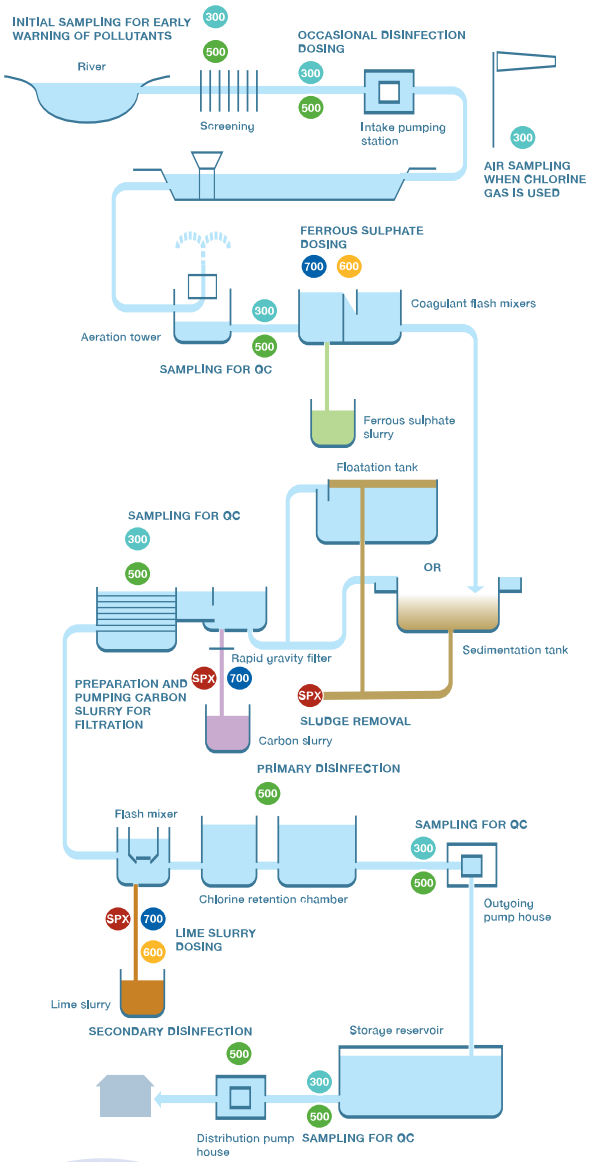
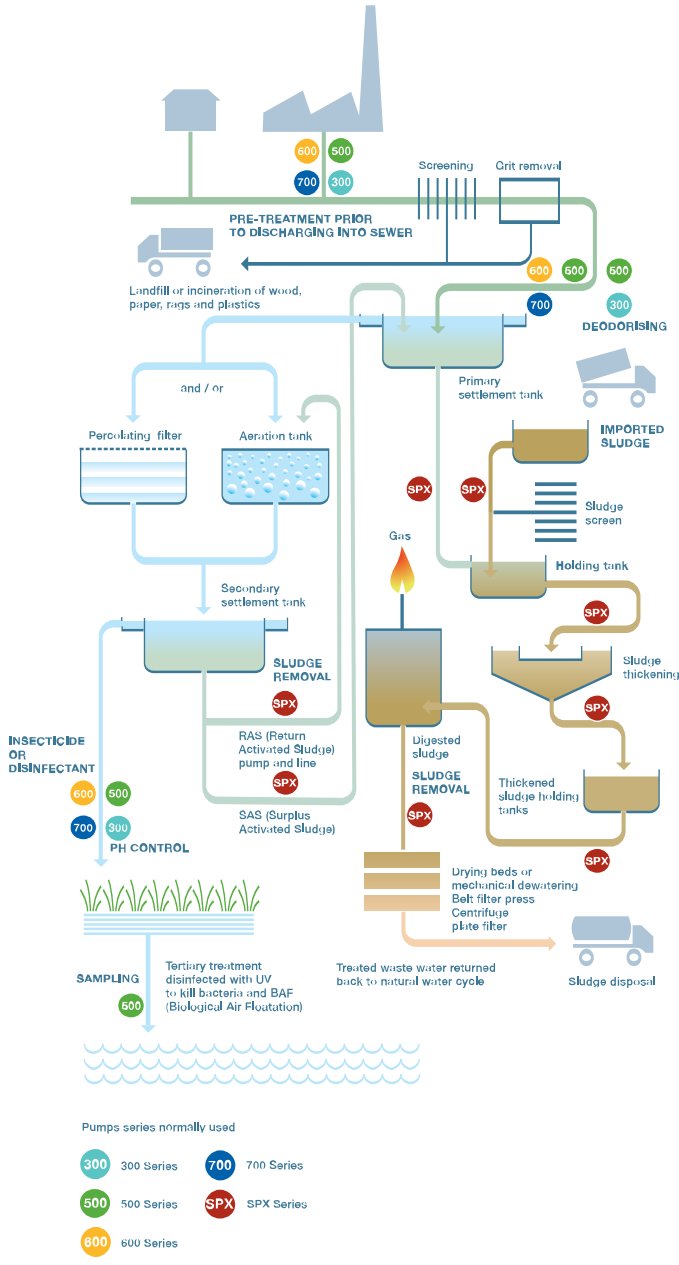
Water treatment - Potable Water



Waste treatment - Sewage



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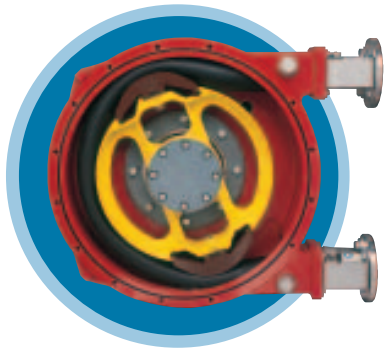
Sludge Pumps

Increased reliability and cost reductions for sludge applications…



All treatment plants must meet increasingly stringent levels of discharge consent, while reducing operating costs. Critical processes such as centrifuge feed must be carried out reliably. Watson-Marlow Bredel hose pumps are able to meet these demanding performance requirements.

- **Grit/abrasion does not affect hose life**
- **100% efficient - no slip**
- **0-350 GPM to 232 PSI**
- **Lowest Life Cycle Cost (LCC)**
- **Only one wearing part - the hose**
- **Reversible**
- **Dry-running**
- **Self priming to 30' suction**

• Belt filter press and centrifuge feed • Grit removal • Primary, secondary, digested and thickened sludge • RAS and WAS • Scum • DAF • Septage • Sampling

… with simple installation, enhanced pump operation and system performance…

Longer life and greater reliability

Pump failures can cause major problems resulting in downtime and high maintenance charges. Watson-Marlow Bredel pumps totally contain the pumped medium within the hose. It is resistant to abrasive wear, has a clear flow path and operates without the need for mechanical seals, packing or check valves. Pump operation is predictable, and even when transferring fibrous and solids laden materials, the risk of clogging and blockage is avoided.

Maintenance

All pumps require servicing throughout their working life. Dismantling and assembly of PC and lobe pumps can be time consuming, difficult and expensive. Watson-Marlow Bredel hose pumps require only one part - the hose. Hose replacement takes only minutes using the pump's "self-loading" feature and is performed in-situ without the need for special tools. No other pump is able to offer such ease of maintenance, low spares inventory and lowest life cycle cost.

Elimination of ancillary equipment

In-line check valves, seal water flush systems and run-dry protection devices are not required thus saving capital and maintenance costs.

The hose is the pump

The hose is the core of our pump and is resistant to abrasive wear. Its unique four-ply structure ensures excellent suction and pressure performance, and extends service life beyond other pump designs. The rapid wear of PC and lobe pumps means a quick drop in performance even before eventual failure. Watson-Marlow Bredel pumps offer consistent performance for the life of the hose.

A [illegible] treatment facility in Gwinnett County, GA utilizes [illegible] hose pumps for a myriad of chemical [illegible]s. Operations Superintendent, Mr. Richard Porter [illegible] pumps have preformed very well in both our sludge feed and chemical metering applications. We experience excellent hose life due to the hoses ability to resist the abrasion from our sludge.

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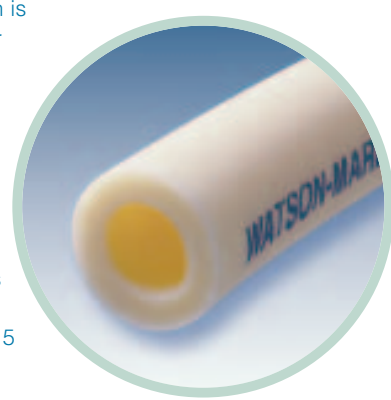
… using a unique design …

The most effective engineering solutions are the simplest. The peristaltic pump action is low-shear and is created by compressing the hose or tube between rotating shoes or rollers. In between each pass of a shoe, the hose recovers to create a vacuum and draws in fluid. This simple dynamic effect requires no seals or valves and the fluid is totally contained within the hose, separated from the pump. No other positive displacement pump offers this unique separation of pump and fluid. Watson-Marlow Bredel pumps clearly outperform other pump types, such as diaphragm, progressing cavity, lobe or double disc pumps.



The Marprene elastomer tube is the heart of our tubing pump. Marprene tubing costs only a few dollars per foot and is chemically compatible with most chemical applications found in a WTP. A 50 foot spool of tubing will typically last a minimum of 5 years keeping maintenance costs negligible.

… working together to give the best system and installation …

For perfect results, experienced selection and installation advice is essential. A Watson-Marlow Bredel Representative will carry out a full consultation to ensure that we know your precise needs, and are able to select a suitable pump with clear benefits and payback. These quotations were given to an independent marketing organization by customers who are delighted to have found Watson-Marlow Bredel.

WWTP Superintendent

"Our hosepump costs far less to operate than our old PC pumps ...only one wearing part instead of a dozen!"

Project Design Engineer

"The tubing pumps have proven to be the lowest cost chemical metering pump available."

WTP Operations Manager

"Our chemical metering pumps have paid for themselves in six months due to reduced chemical usage. They are much more accurate than our old diaphragm pumps."

Free trial pumps available on request!

… to produce results that exceed expectations.

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Pump Series		Flow Rates	
100	Single channel, low flow pumps. Fixed or variable speed.	1µl/min - 50ml/min	101U
200	Near pulseless, multi-channel pumps with up to 32 channels.	0.5µl/min - 21ml/min	205U
300	Single or multi-channel pumps with manual, remote or dispensing control.	2µl/min - 2 liter/min	323U
400	Instrument-quality, ultra-precise, single and multi-channel pumps with manual or process control.	1µl/min - 730ml/min	405U
500	Superb range of Nema 4X rated pumps for science and industry as well as fixed and variable. speed close-coupled pumps	10µl/min - 4.37 liter/min	520U
600	Nema 4X washdown mid-flow process pumps with full CIP and SIP capability. Fixed or variable speed. Operating at pressures up to 60 PSI	0.01 gpm - 4.8 gpm	620U
700	IP55 washdown industrial pumps with manual or auto control, single or twin channel.	0.4 gpm - 17.4 gpm	704U
800	...umps ...apability. ...up to 100 PSI	0.5 gpm - 35 gpm	840
SPX	...trial ...essures	0.08 gpm - 350 gpm	SPX

Put a peristaltic in your process

Improve your performance

SPRINGER PUMPS since 1965 SPX

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