APPLICATION

FOCUS

WASTEWATER TREATMENT

With Thermo Scientific Masterflex® Pump Systems, Wastewater Plants Can Finally Optimize NaOCl Feed

Challenge:

A common problem with feeding commercial sodium hypochlorite (NaOCl) and other high strength chemical oxidants is outgassing. Outgassing occurs when a pocket of vapor forms in the fluid line, obstructing nomal flow. Outgassing often vapor locks chemical metering pumps and can lead to system leaks and result in unscheduled downtime and poor process performance. Another common problem with feeding NaOCl is hard water scale, which can completely jam the operation of a pump's wet end.

Solution:

The inherent design of Masterflex peristaltic pumps eliminates the potential for vapor lock because the fluid being pumped never actually touches the pump, but rather is occluded – or "squeezed" – through elastomer tubing. This squeezing action of the flexible tubing generates a powerful vacuum that moves both gases and liquids simultaneously, without clogging or producing vapor lock. Scale problems in the pump also are a non-issue because there are no valves or seats to foul in the fluid stream.

Benefits:

Masterflex Pumps provide wastewater treatment operations extremely versatile liquid chemical feed and fluid handling with the highest reliability and long-term operation – plus simple, low maintenance. There is no unscheduled downtime to bleed the lines of vapor locked pumps, no problems with scaling, and no valves or seats to clog or wear out. Together with new formulations providing tubing life in excess of 1,000 hours, all this makes Masterflex the pump of choice "when performance counts."

APPLICATION
FOCUS
WASTEWATER TREATMEMT

OPTIMIZING CHEMICAL FEED

Accurate, Low Maintenance Pumps For Wastewater Treatment Applications

Safe, accurate, and efficient chemical dosing and transfer is the goal of every wastewater treatment operation, and this requires pumps designed to handle the most demanding applications. With Masterflex pumps, a well-balanced range of capacities and flexibility combines with excellent repeatability and optimal chemical resistance to provide for precision, high reliability and long-term operation for handling virtually all chemical products for wastewater treatment. This includes sodium hypochlorite and other high-strength chemical oxidants; extremely aggressive materials such as ferric chloride; shear-sensitive products like polymers; and even lime slurries and other highly viscous and abrasive materials.

AN ACCURATE, RELIABLE OPTION

Fluid being pumped never touches the pump, only the tubing, which means the pump lasts a long time – and the same pump can be used for various fluids by simply changing the tubing. Masterflex pumps are self-priming (to 29 feet down), can operate dry without damage, produce no siphoning effect when stopped, have an accuracy rate better than 1 percent and are easy to maintain.

With all this going for them, it's easy to see why Masterflex pumps are a highly viable alternative to diaphragm metering, lobe, gear and progressing cavity pumps in meeting the stringent challenges in waste-water treatment applications.

Masterflex Pumps are self-priming (to 29 feet down), can operate dry without damage, produce no siphoning effect when stopped, have an accuracy rate better than 1 percent, and are easy to maintain.

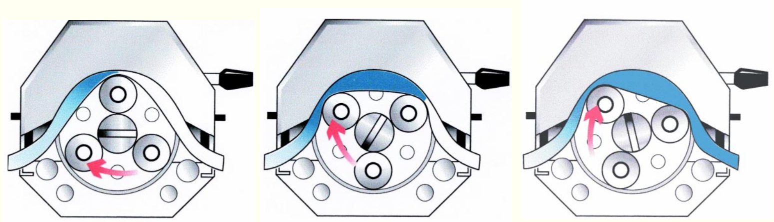
AN EFFECTIVE ALTERNATIVE

Masterflex Pumps Provide Multiple Advantages Over Diaphragm Liquid Metering Pumps

- Powerful vacuum moves both gases and liquids without clogging and no vapor lock.
- Peristaltic design means no valves, glands or seals to wear out.
- Superior performance in corrosive, viscous and abrasive handling applications.
- Pump acts as its own check valve – when the pump stops, the occluded portion of the tube stays squeezed shut.
- Very gentle method of pumping does not damage shear-sensitive products.
- Requires very little maintenance to keep in peak operating condition.

HOW A MASTERFLEX® PUMP WORKS

Peristaltic design makes it a primary choice for use in wastewater treatment



1. 2. 3.

1) A pump head consists of only two parts: the rotor and the housing. The tubing is placed in the tubing bed – between the rotor and housing, where it is occluded (squeezed). 2) The rollers on the rotor move across the tubing, pushing the fluid. The tubing behind the rollers recovers its shape, creates a vacuum, and draws fluid in behind it. 3) A "pillow" of fluid is formed between the rollers. This is specific to the ID of the tubing and the geometry of the rotor. Flow rate is determined by multiplying speed by the size of the pillow. This pillow stays fairly constant except with very viscous fluids.

Represented By:

28W092 Commercial Avenue
Barrington, IL 60010-2392
800-637-3739
847-842-2367 – Fax
www.thermo.com/fluidhandling

Thermo SCIENTIFIC