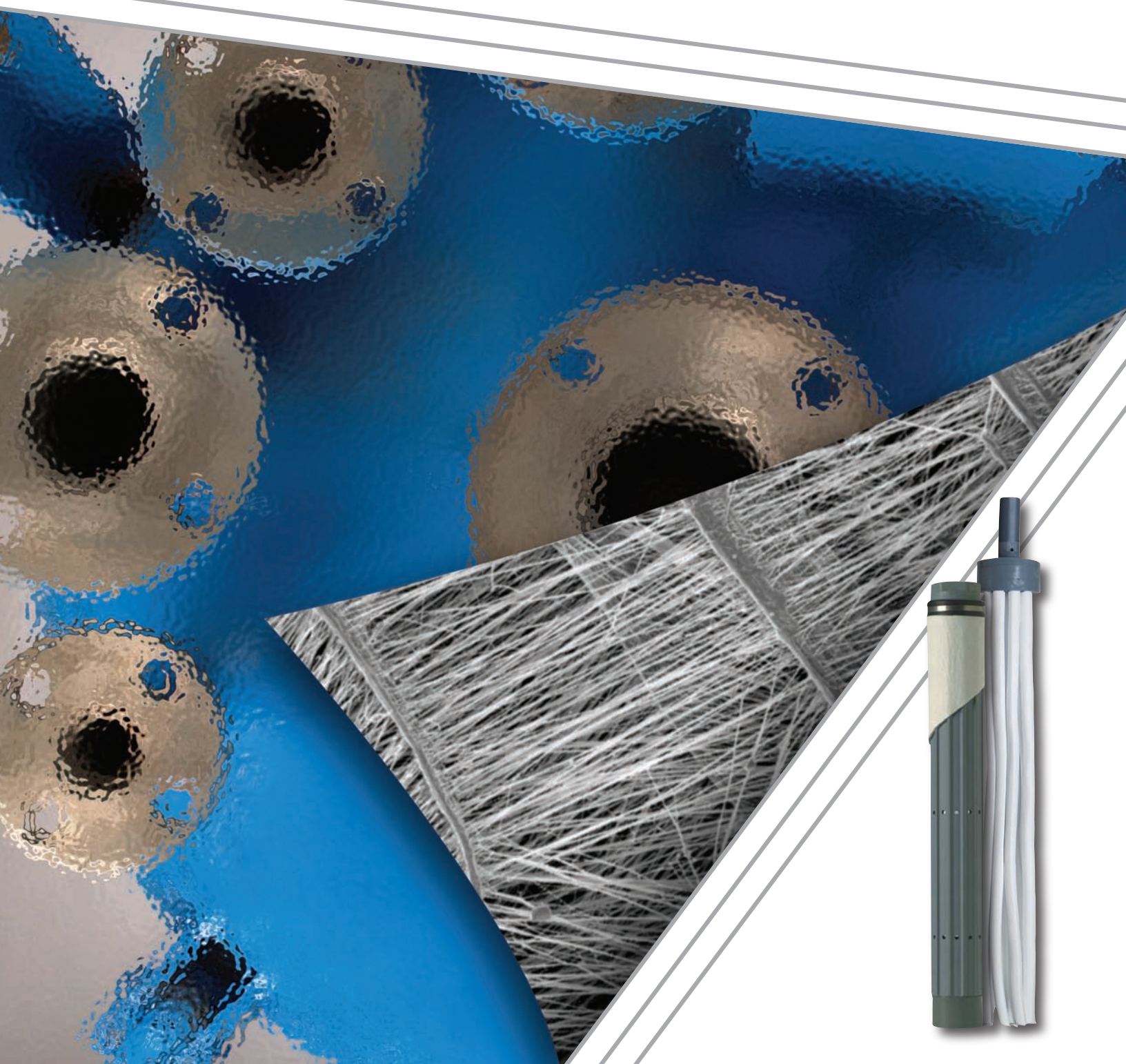
Tubular Back-Pulse Filters

Most Cost-Effective
Filtration Technology



Tubular Back-Pulse Filters

A highly efficient and cost effective me

A Thickener & Polisher Combination That Reduces Capital and Operating Expenses

GORE® Tubular Back-Pulse Filtration significantly reduces costs by handling variations in feed solids and flow rates without the need for precoat. This is possible because of the unique microporous structure of the GORE™ membranes and the overall geometry and operation of the filter. The GORE® Filter system offers a highly efficient and cost effective means of separating fine solids from high industrial flow rates. It is capable of economically filtering slurries as dilute as several ppm to over 5% by weight solids, and flow rates of 100 gpm to over 2000 gpm.

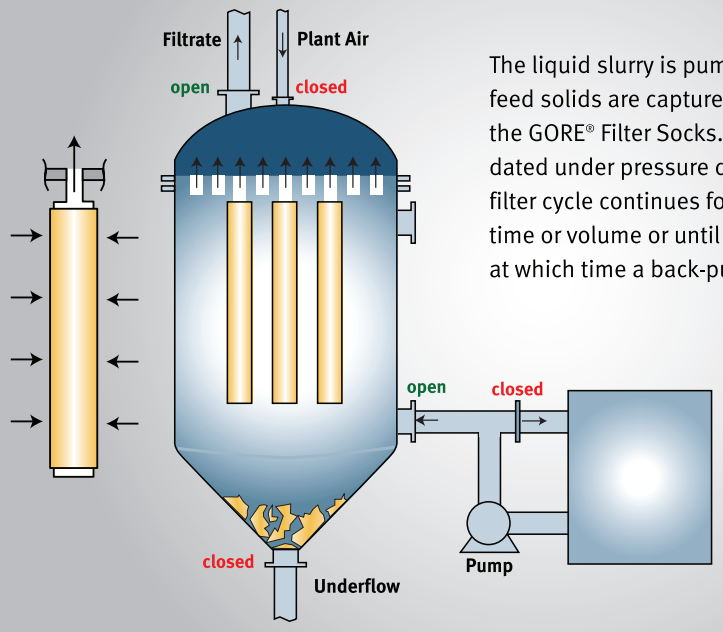
GORE® Membrane Filter Sock and Fluted Support Element

These filter socks are installed over fluted support elements, which have a patented ribbed construction that enhances the overall performance of the filter. This unique geometry reduces creasing of the filter sock when it is in service by accommodating excess sock material between the ridges. This configuration not only allows for slightly higher throughput and longer membrane life, but also allows the filter sock to be sized for quick and easy installation.

GORE™ Tube Assemblies

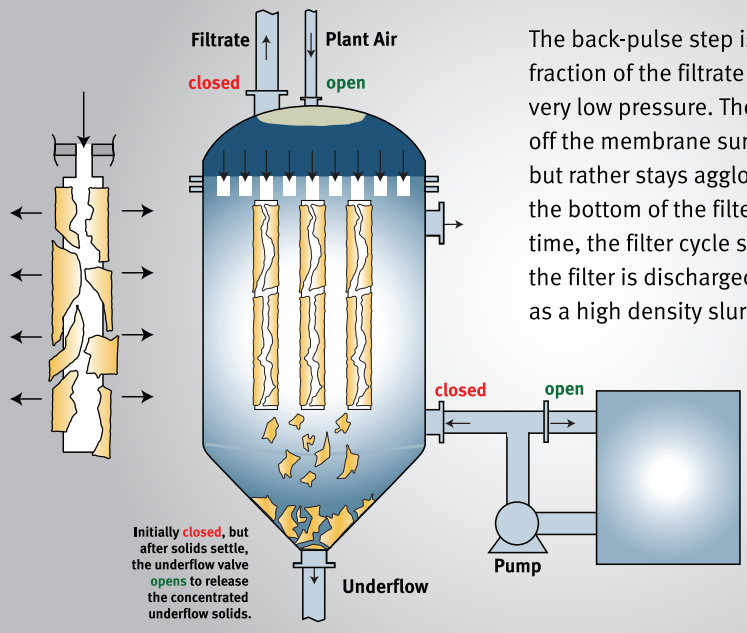
The new GORE™ Tube Assembly product is available, if membrane grade filtration is not essential. It has over twice the filtration area of the GORE® Filter Socks in a given volume. This leads to smaller and more economical filter vessels. They consist of a filter media and support element in one. It is a simple “drop in place” making installation very easy.

Tubular Back-Pulse Filter - Filter Mode



The liquid slurry is pump
feed solids are captured
the GORE® Filter Socks. T
dated under pressure du
filter cycle continues for
time or volume or until a
at which time a back-pul

Tubular Back-Pulse Filter - Back-Pulse Mo



The back-pulse step is
fraction of the filtrate b
very low pressure. The
off the membrane surfa
but rather stays agglom
the bottom of the filter
time, the filter cycle sta
the filter is discharged
as a high density slurry

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eans of separating fine solids

ed into the filter and the fine
immediately on the surface of
he fine solids are consoli-
ring filtration into a cake. The
a predetermined amount of
certain pressure drop occurs,
se cleaning step takes place.

- Filtrate
- Slurry
- Filter Cake/ Underflow

de

rapid flowing of a very small
ack through the membrane at
filter cake comes completely
ace and does not redisperse
nerated and settles rapidly to
vessel. After a short settling
rts again. The underflow from
on a batch or continuous basis
.

- Filtrate
- Slurry
- Filter Cake/ Underflow
- Plant Air

Design and Operation

A tubular back-pulse filter operates like a "liquid baghouse." Operating at low differential pressures with short filter cycles yields thin cakes, thereby maximizing the flux rate through the filter. Since cake removal is achieved by a flow reversal (pulsing) of only 1-3 seconds, filter cycle time can be as short as 3-4 minutes and for all practical purposes the operation is continuous. The filter vessel is not completely drained of liquid during or after pulsing. The filter operates as both a thickener and polishing filter in one.

GORE® Membrane Filter Socks

The filter elements of the tubular back-pulse filters are outfitted with GORE® Membrane Filter Socks. It is the GORE™ membrane that makes back-pulse filtration possible, because it gives immediate clarity, high flow rates and complete cake release with minimum back-pulse pressures. The filter socks consist of a GORE™ membrane laminated to a variety of different felts depending on the application. The all ePTFE laminate is inert to practically all chemicals and can be used at temperatures up to 500F. The laminate products combine the filtration efficiency of membranes with the durability of needled felts. The porosity and particle retention of the membrane can be controlled to fit specific filtration applications. The filter socks are constructed with either welded seams or sewn seams that are seam taped to make them leak-proof.

Applications

GORE® Tubular Back-Pulse filtration technology has been successfully used in numerous applications across a wide range of industries. The technology has been effective both as a concentrator and polish filter for both process and wastewater streams. These applications can be summarized in four principle categories:

- Replaces clarifier/sand filter/polish filter combo
- Preconcentrator prior to Dewatering filter
- Precoat Elimination
- Product Recovery

Features

- Versatility
- Thin cake/high rates
- Low filtration & backpulse pressures
- Immediate cake formation
- Short cake removal time
- Dense, high solids underflow
- Fully automated

Benefits

- Membrane quality separation at high industrial flow rates
- Low capital costs
- Low operating costs
- Thickener & polish filter combination
- Small (footprint)

For more information call: 1.800.638.5300

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