

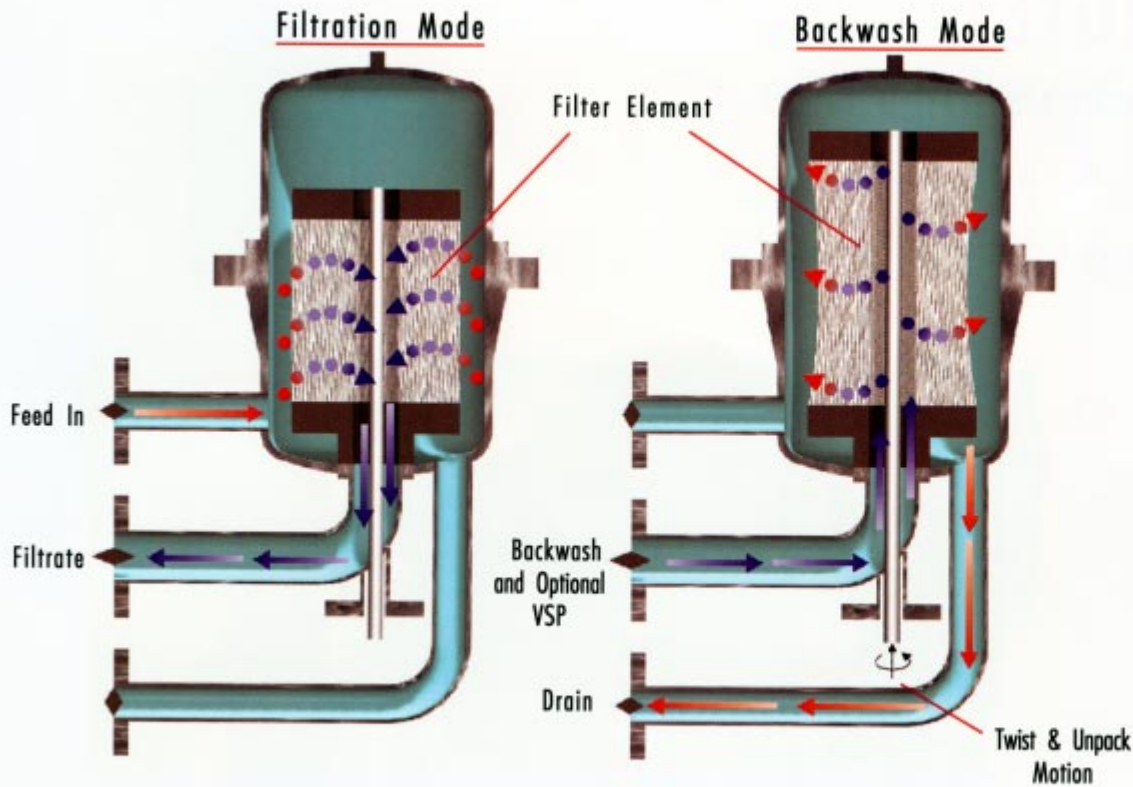
# FIBROTEX®

Backwashable Depth Filter



Smith & Loveless, Inc.

The Strength is in the Stretch



## How It Works

FIBROTEX's programmable logic controller (PLC) automatically governs the entire operation of the filter.

### Filtration Cycle

The PLC directs the motorized drive to twist and to compress the element tightly. The fibers are aligned in a tight matrix. Particulate matter in the feed is trapped within this fibrous matrix. The feedstream flows inward from outside the element, and the cleaned filtrate leaves the element through the central core. As the solids loading increases, the differential pressure across the element rises. The backwash cleaning cycle can be initiated by differential pressure, filtrate quality settings, timer signal, or manually.

### Backwash Cycle

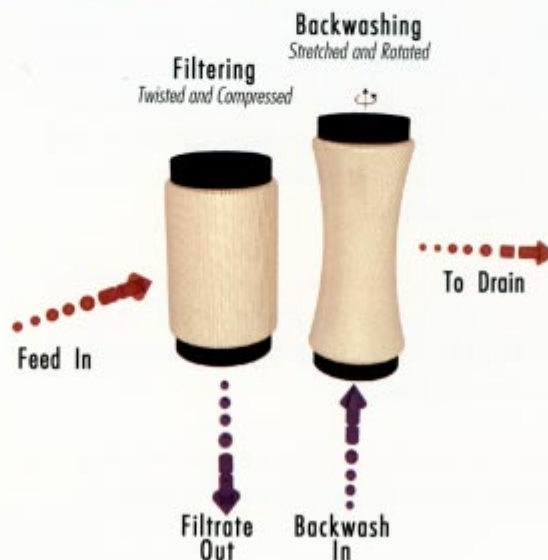
The PLC receives a signal when the element needs to be cleaned and directs the system to begin the backwash cycle. The backwash water is fed into the central core and taken off from the outside of the element while the element is first rotated clockwise, then counterclockwise in a wringing action.

The alternate stretching and relaxing of the fibers ensure that both the absorbed water and the trapped particles are expelled from the element. The backwash cycle takes approximately 3 minutes with a total downtime of typically less than 5 minutes, creating a large wastewater savings compared with multimedia filters.

### Steam Sanitizable

If the VSP option is provided, steam is employed during the backwash cycle to destroy organisms.

## FIBROTEX Operation



## Applications

The FIBROTEX is ideal for a variety of applications, including:

- **Fine particle filtration**
- **Reverse osmosis pre-treatment** for SDI reduction
- **Cryptosporidia and giardia** removal and destruction
- **Replacement** of multimedia and cartridge filters
- **Suspended solids removal** to protect downstream equipment, processes and discharge
- **Turbidity removal** of surface water and well water
- **Iron and manganese removal** from well water
- **Wastewater** recycling and reclamation
- **Polishing filtration**
- **Filter backwash** water processing
- **Sea water** filtration

# FIBROTEX

## Backwashable Depth Filter

### Flow Rate:

- 20 GPM (1.26 lps) to 50 MGD (2.2 m<sup>3</sup>/s) and beyond

### Configurations:

#### Standard

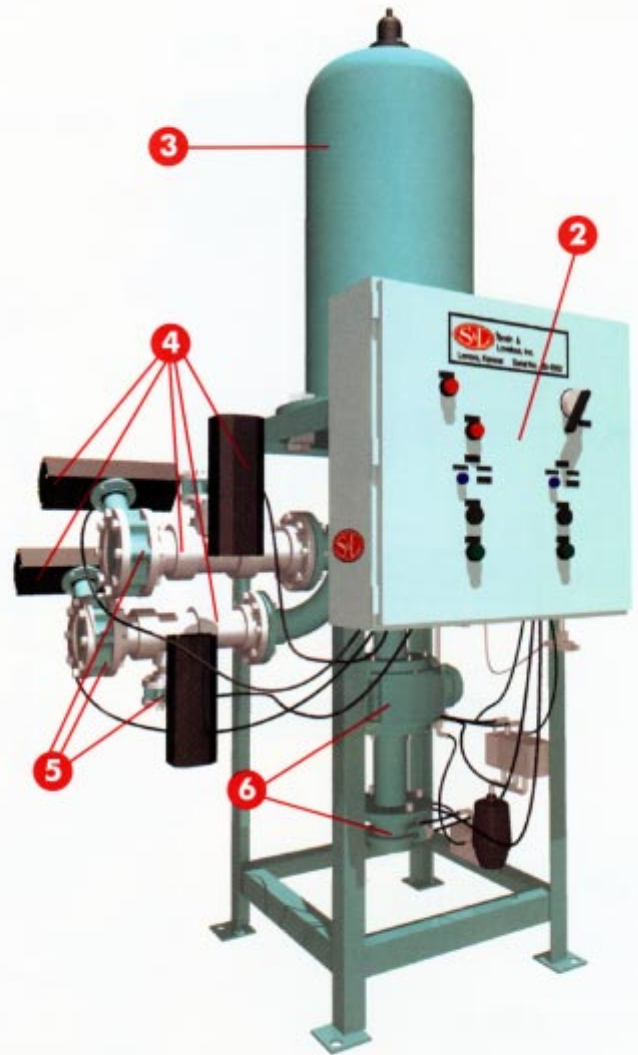
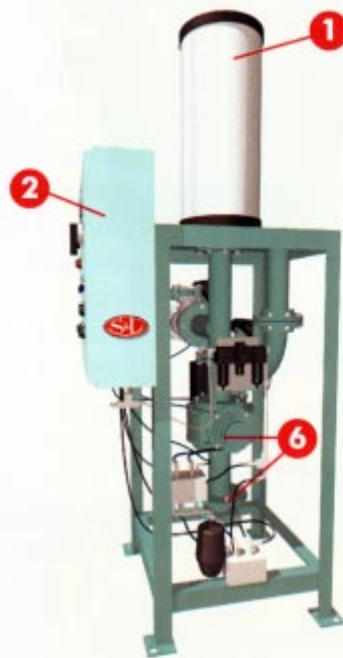
- AX5
- AX12
- AX25
- AX50

#### Multi-Vessel

- AX100
- AX150
- AX200
- AX2000
- Other

### Options:

- Vacuum Steam Pasteurization (VSP)
- Various materials of construction
- Can provide its own filtered backwash source
- Various controls and instrumentation



The **FIBROTEX** automatically filters particles down to 1 to 2 microns\* without the use of polymers. In comparison to traditional filtration methods, **FIBROTEX** is unique.

**1 The filter element** consists of crimped fibrous yarn, which is then woven into a cloth. Nylon staple yarn is the most widely used **FIBROTEX** element fiber, but other polymers and fiber types are available for applications requiring added chemical, pH or temperature resistance, and for various filtration ratings.

**2 The Programmable Logic Controller (PLC)** automatically controls the **FIBROTEX** filter during filtration and backwash modes.

**3 The standard element housing** is a carbon steel vessel. Alternative coatings

and materials of construction are also available. The filter system is standardly rated for ASME 150 PSIG.

**4 The headers, valves, actuators and face piping** are standardly constructed from PVC and plastic. Other materials, including stainless steel, are also available.

**5 The automatic process valves** are controlled by the PLC.

**6 The drive mechanism** is equipped with two separate air motors that provide the vertical and rotational motion of the element. This mechanism also provides the wringing action during the backwash cycle.

The **FIBROTEX** is designed to accommodate a variety of complex needs.

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