Efficient Performance for Filtration Versatility

The Durco Filters TF Tubular Filter Series is a family of tubular type, in-line pressure filters used for the separation of suspended solids from a liquid stream. The basic building block is the tubular filter which consists of two parts: the outer housing and a removable reusable filter element. TF Tubular Filters provide the flexibility to accommodate a wide variety of process filtration requirements.

Configurations range from single tube, manually cleaned filters to multiple tubes connected to common manifolds for inlet, outlet, backwash and drain. Custom designs are available to meet your space, piping, or process requirements. Multiple tube TF Filter Systems may be provided as a complete factory assembled package with PLC controlled operation of actuated valves to control backwashing of the system based on differential pressure or time.

Durco Filters TF Filters are available with wetted parts of T316 stainless steel as standard.

Common TF Tubular Filter Applications

- Cooling liquid to protect spray nozzles
- Pump seal water to extend seal life
- Lean white water filtration for process reuse
- Paper coating filtration to maintain finish quality
- Carbon fines removal in gold leaching process
- Protection from tramp solids during transfer of process liquids or finished liquids
- Prefilters to membrane filters
- Produced and injection water in oil and gas drilling
- Corn syrup dirt and fines removal

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<tr>
<th>Features</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>Multiple Filter Manifold</td>
<td>- Provides constant flow rates to 5000 gpm or more</td>
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<td>Design Various Vessel Sizes</td>
<td>- Compact footprint minimizes floor space</td>
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<td>- Allows for easy expansion</td>
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<tr>
<td>Internal/External Backwash</td>
<td>- Internal Backwash - utilizes a small portion of filtered liquid for element cleaning</td>
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<td>- External Backwash - utilizes fluid other than filtered liquid for element cleaning.</td>
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<tr>
<td>Automatic/Manual Backwash</td>
<td>- Constant filtration even while cleaning</td>
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<td>Cleaning</td>
<td>- PLC controlled - no operator involvement</td>
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<td>- On-line maintenance is standard.</td>
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<td>Wide Selection of Media</td>
<td>- Handles a wide variety of solids with mesh, fabric or slotted wire elements available</td>
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<td>- Provides solids removal down to 1 micron</td>
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Filter System Modes

**Durco Filters** Tubular Backwash Filter Systems are designed for continuous operation with high flow rates in applications with low solids loadings. These systems can operate in 2 different Backwash Modes depending upon your process requirements.

**External Backwash Filtration**
External backwashing systems use a clean, secondary stream (such as plant water) supplied by an additional header to clean the tubular filter media. External Backwash Mode should be considered when the process stream is:
- Not of sufficient flow and pressure to ensure adequate internal backwash
- Valuable, or if it creates a disposal problem

**Internal Backwash Filtration**
Internal backwashing systems use the system’s filtrate to clean the tubular filter media. Internal Backwash Mode should be considered when the process stream is:
- Of sufficient flow and pressure to ensure an adequate backwash
- Inexpensive and does not create a disposal problem
**PTF Series Filter**

**Long-lasting Endurance for Heavy Industrial Use**

The [Durco Filters](www.durcofilters.com) PTF Tubular Filter Series contains fluorocarbon-lined tubular backwashing filters for severe service application requiring high flow rates and supreme resistance to corrosion.

These fluorocarbon-lined tubes also contain reusable, backwashable and non-metallic filter elements to provide a cost-effective system for filtering corrosive liquids. They also eliminate the cost and handling of disposable media, thus avoiding operator contact with hazardous materials.

Common PTF Tubular Filter applications include:

- Tank car loading and unloading
- Chlorate production
- Heat exchanger protection
- Strong acids
- Brine polishing
- Pickling solutions
- Strong alkaline applications
- Aggressive solvents
- Acid recovery

**Features**

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<tr>
<td>Impervious Body Design</td>
<td>ANSI 150 carbon steel body with corrosion resistant exterior coating or stainless steel body</td>
</tr>
<tr>
<td>Particle Retention</td>
<td>Particle retention down to 1 micron (nominal)</td>
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<tr>
<td>Automation</td>
<td>Fully-automated systems available with fully lined manifolds and NEMA 4X control panels</td>
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<tr>
<td>Instrumentation</td>
<td>Diaphragm protected instrumentation</td>
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<tr>
<td>Manifold Design</td>
<td>Manifolds available with Teflon or polypropylene lining; also available with solid FRP manifolds</td>
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<tr>
<td>SS Air Tubing</td>
<td>Stainless steel air tubing for corrosive environments</td>
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[Cutaway: PTF Element with Teflon Bag]

[Cutaway: PTF Housing and Element]
Trusted Solutions for Every Filter Application

PVC Tubular Filter

Cost-Effective Filter for Mildly Aggressive Applications

The Durco Filters PVC Tubular Filter Series is the perfect choice for water and mildly aggressive applications where operating cost is a concern. All PVC construction, a wide variety of filter media, multiple-tube configurations, automatic backwash options and micron removal capability provide virtually unlimited flexibility in applications usually limited to cartridge and bag filters.

Durco Filters PVC Tubular Backwashing Filter has reusable, self-cleaning filter elements giving it lower operating costs. Multiple-tubular filter stations allow continuous process operation at high flow rates.

Common PVC Tubular Filter applications include:

- Well water filtration
- Sea water/brackish water filtration
- Prefiltration to reverse osmosis
- Prefiltration to resin beds
- Ionized water
- Mildly aggressive liquids (weak acids/caustics)
- Irrigation
- Surface finishing operations (plating, phosphate coating)
- Incoming plant water
- Low or ambient temperature processes
- Line pressures up to 110 psi at 120°F
- Final polishing

Features

- Clear Barrel and Outlet Option
- Multiple Station Configurations
- Compatibility

Benefits

- Barrel section and outlet piping is available in clear PVC to allow visual inspection of filter while on-stream
- Fully-automated, multiple-tube arrangements allow for continuous high-flow operation; PLC controls sequentially backwash individual stations to allow the system to be on line continuously
- Compatible with all PVC piping systems - PVC backwashing filter is ideal when the rest of the piping matrix is PVC
The basic objective in solid/liquid separation is efficient particulate removal. There are a number of methods of achieving this, one method being the tubular filter. The ability of a specific liquid containing suspended solids to filter through a septum for the removal of solids is called filterability. Factors which affect filterability include: pressure, temperature, cake compressibility, specific case resistance, and fluid viscosity.

Regardless of shape, a tube filter is a series of enclosed tubes containing a filter septum or element. Either slotted or perforated elements can be used in a multitude of mesh sizes depending on the particulate size needing to be filtered.

Due to the variety of applications, laboratory and/or “on-site” pilot testing are advisable. We have many pilot filters and a complete laboratory to thoroughly analyze process fluids and test for filterability.

We can equip any Durco Filters unit with an automated system to suit your needs. From semi-automatic, where sequence steps are activated by the operator, to fully-automatic with a central control panel, or even DCS controlled, we can equip your system with the control scheme that fits your operational requirements. If desired, these systems can be equipped with the ability to monitor process conditions such as flow rate, turbidity, etc.

Completely piped, wired, and skid mounted systems are available to ensure minimum installation time. We provide installation supervision, start-up services, and instructions to plant operators in the functioning and maintenance of the system, in all languages worldwide.
**Product Overview**

**Pressure Leaf Filter**
- Typical Applications: Mining, Molten Sulfur, Specialty Chemical, Biofuel, Amine, Pharmaceuticals, Chlor-Alkali, Brewery and Winery, Edible Oils, Sugar, Juice

**Filter Press**
- Typical Applications: Mining, Chemical, Industrial Waste Water, Pigments, Salt Precipitation, Environmental

**Pressure Nutsche**
- Typical Applications: Pharmaceuticals, Specialty Chemicals, Pilot Studies, Small Batch Products

**Sludge Dryer**
- Typical Applications: Inorganic Metal Hydroxide, Uranium Drying, Hazardous Waste

**Tubular Backwashing Filter**
- Typical Applications: Pulp and Paper, Water, Amine, Specialty Chemical, Mining, Cooling Tower, Petrochemical, Food & Beverage, Corn Syrup, RO Protection

**Complete Process Solutions**
- Ascension Industries offers a full range of capabilities from design to turnkey manufacturing with extensive experience in skid-mounted process systems, machine assemblies, and more.
Lab Testing
Durco Filters Application Engineers test customer samples to help ensure that our equipment meets the needs of your application. Our lab will determine the optimum set of equipment parameters for each application including: equipment type, sizing, filter media, flow rates, and filter aid requirements.

Pilot Testing
For new or difficult applications, pilot testing on or off-site is recommended. Durco Filters pilot test units confirm feed rates, filter media, filter aids, and other filtration factors supporting optimal operation.

Field Service
Durco Filters Field Service travels the world to keep filtration systems performing at peak efficiency. Services offered include:
- System startup
- Customer training
- Preventive and maintenance contracts
- Installation supervision
- Emergency repair and service
- Equipment upgrades and refurbishments


Continuing the tradition of over 130 years of Durco Filters™ quality and innovation, as well as custom turnkey systems, Ascension Industries is your provider of Proven, Trusted Solutions.