

[WWW.VELCONPROCESS.COM](http://WWW.VELCONPROCESS.COM)

*Velcon*<sup>®</sup>

*Velcon Process*

*A Division of Velcon Filters, LLC*



*Chemflo Products - Performance Separations<sup>™</sup> - [velconprocess.com](http://velconprocess.com)*

# About Velcon Process



- **Formed in Houston in 1998**
- **Over 30% Growth During Each of the Last 6 Years and over 50% in 2007 and over 91% in 2008**
- **Key Markets: Petrochemicals, Refining, Gas Processing, Chemicals, and Process Water**
- **Approved by Many Major Customers including: ConocoPhillips, Chevron, Exxon, Shell, Valero, DuPont, BASF, GE Plastics, Honeywell, Qatargas, 3M, SABIC, BP and many others**

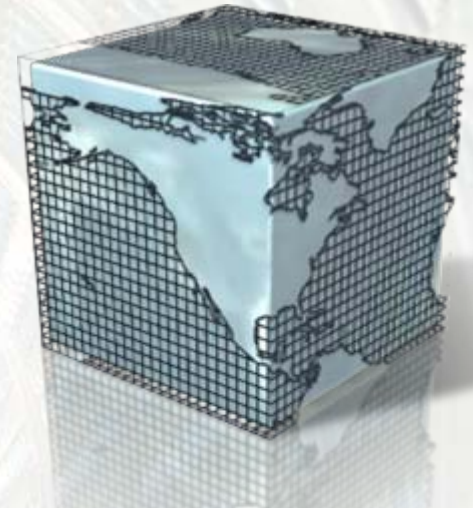


# Velcon Process Worldwide



## Distribution and Representative Partners:

- **Engineering-based Representative Network**
- **34 Engineer Reps in USA and Canada**
- **23 Engineer Reps in Asia and Middle East**
- **12 Engineer Reps in Europe**
- **Additional Engineer Reps in Africa and Australia**
- **Engineer Reps in International Distribution Network:**
  - **Middle East and Africa:** Saudi Arabia, Abu Dhabi, Kuwait, Dubai, Qatar, Bahrain, Oman, South Africa, Nigeria
  - **Asia:** China, Japan, Korea, Malaysia, Thailand, Vietnam, Australia, Indonesia, Singapore
  - **Americas:** Brazil, Chile, Argentina, Mexico
  - **Europe:** United Kingdom, France, Ireland, Spain, Italy, Belgium, Austria, Germany, Denmark, The Netherlands, Finland, Norway, Sweden, Belarus, Russia



# Velcon Process Products



- **High Capacity Filters**
  - **Absolute-rated Filters**
    - 2.5" & 6.0" Standard O.D.
    - 0.2  $\mu\text{m}$  to 100  $\mu\text{m}$
  - **HF Series for High Flow Rates**
- **High Capacity Coalescers**
  - **Liquid/Liquid Coalescers**
  - **Liquid/Gas Coalescers**
- **Vessels and Filtration Systems**
  - **ASME Code, 3-around to large systems**



# HIGH PERFORMANCE PRODUCTS

# High Capacity Medias

- **Velcon Process filter and coalescer medias are designed for high flow rate, process applications**
- **Our products are tested and validated at high flow rates**
- **This equals maximum dirt holding and separation capacity for your process**



# Pleated Filters

- **Duraflo Series**

**Pleated Surface Filters for removing hard particles**

- HF Duraflo
- HV Duraflo
- HT Duraflo
- HP Duraflo

- **Depthflo™ Series**

**Pleated Depth Filters for removing gels and soft particles**

- HF Depthflo™
- HV Depthflo™
- HT Depthflo™
- HP Depthflo™

- **Medias available: Polypropylene, Polyester, Nylon, Microfiberglass, Cellulose, Activated Carbon, Nomex®/Ryton®**
- **HF Series for High Flow Rate Applications**
- **HT Series for High Temperature**
- **HV Series for High Viscosity**
- **HP Series for High Purity Applications**



# PB Duraflo


- **Works with existing bag filter vessels which accept size 1 and size 2 filter bags**
  - No additional capital expenses required
  - Option of running conventional bags for short batches, for specific products, or for severe upsets
- **Retrofit Many Common Bag Filter Housings**
- **Fewer Element Change-outs**
- **Lower Maintenance Costs**
- **Lower Disposal Costs**
- **Smaller Filter Vessels**
- **Applications:** Food and Beverages, Syrups and Flavorings, Amines, Glycol, Chemicals, Reverse Osmosis Pre-filtration, Coolant Water and Process Water, Paints and Coatings



# Melt Blown Filters



**MB Pro Coreless 6" OD**



**MB Pro  
Oil Adsorber  
6" O.D.**



**Quad Pro™**



**MB Pro 2.5" OD**



## **HF SERIES FILTRATION SYSTEMS**

# HF Series – High Capacity Filters



**Technology  
Designed  
for High  
Flow  
Process  
Applications**



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# HF Series High Flow Filters



**Proprietary *HF*  
*Depthflo*<sup>™</sup> Filter**  
**Medias developed  
and tested for  
increased dirt  
holding at high flux  
rates.**

**Elements Available  
in 40", 44" and 60"  
lengths.**



# Media Features and Benefits



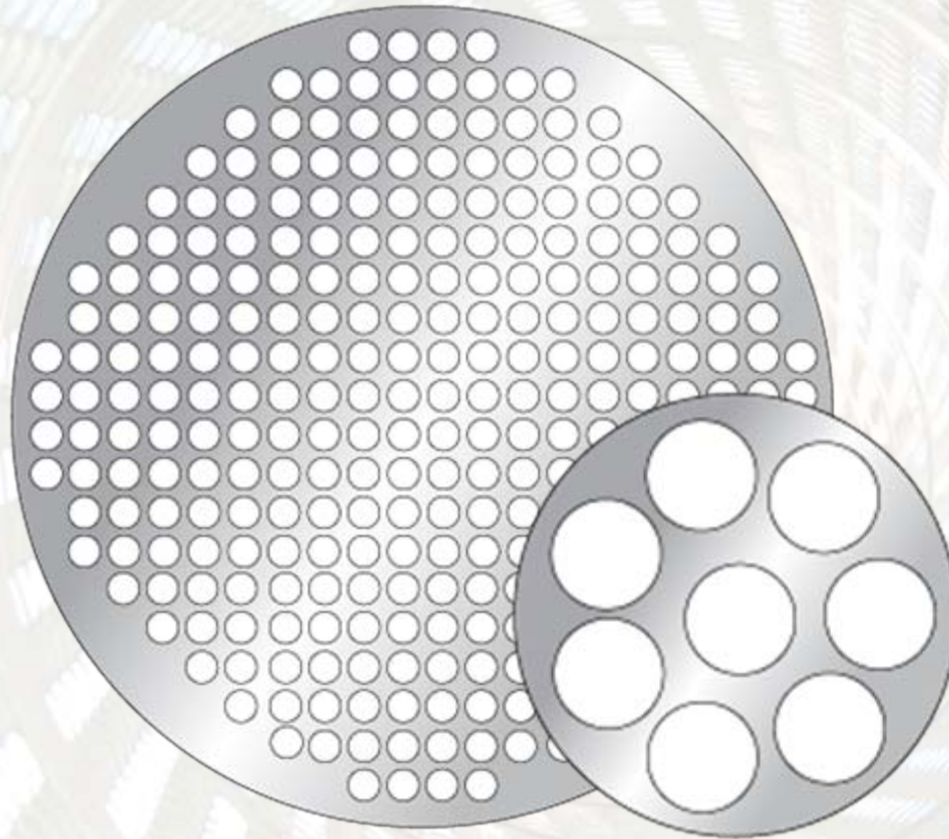
## HF Series Systems

- **Maximum Surface Area**
- **High Performance Media**
- **Absolute-rated Filtration**

## Benefits

- **More Dirt Holding**
  - Upfront and Operating Cost Savings
  - Smaller Vessels – Fewer Elements
- **3-D “Depthflo” Medias**
  - Reduced Blinding
  - Superior Performance at High Flows
- **Protects System**
  - Enhances Overall System
  - Protects Equipment, RO Membranes, and Final Products

# Fewer Elements = Lower Costs



**Each HF660 element replaces approximately 25 meltblowns**  
**Each HF660 element replaces approximately 35 stringwounds**

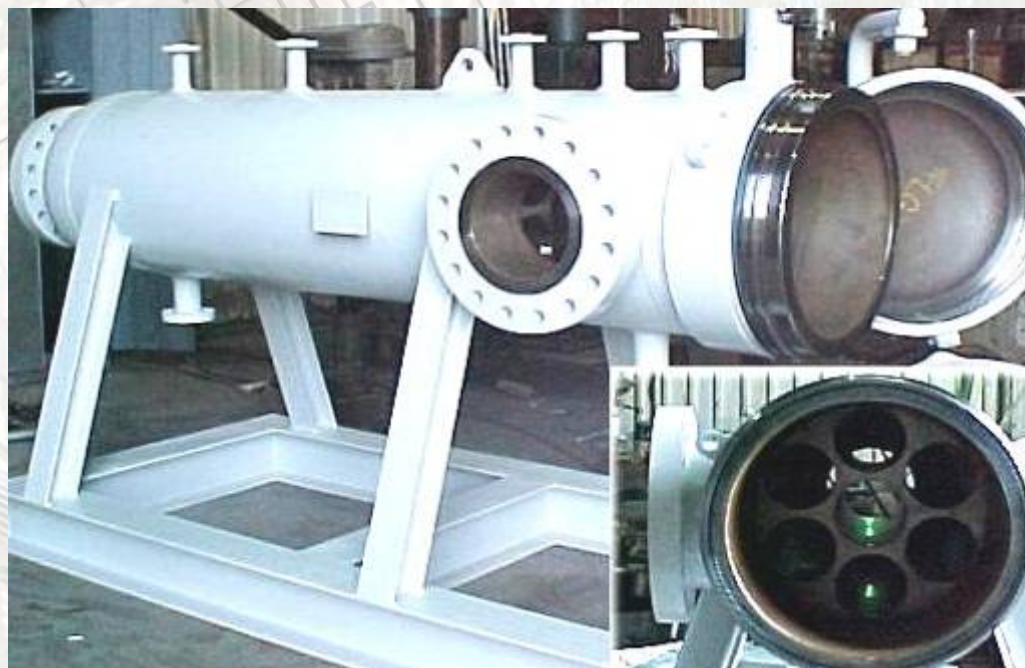
# HF Series Filtration Systems

- **Smaller Vessels = Capital Savings**
- **Few Elements = Operating Savings**



# HF Series Filtration Systems

- **Smaller Diameter**
- **Lower Cost**
- **Few Element Change-outs**
- **High Performance Medias**
- **Rental Vessels**



# Filter & Coalescer Vessels



# Metallurgy

- **Carbon steel**
- **304, 316L**
- **Alloys including AL6XN, Super Duplex for Salt Water**
- **FRP (in development)**



# HF Series – Applications

## HF Series Filtration Systems

- **Hydrocarbons**
- **Amine at Refineries**
- **R. O. Pre-filters/Desalination**
- **Produced Water**

### **What to look for:**

- **Flow rates over 300 gpm**
- **Efficiency needs**



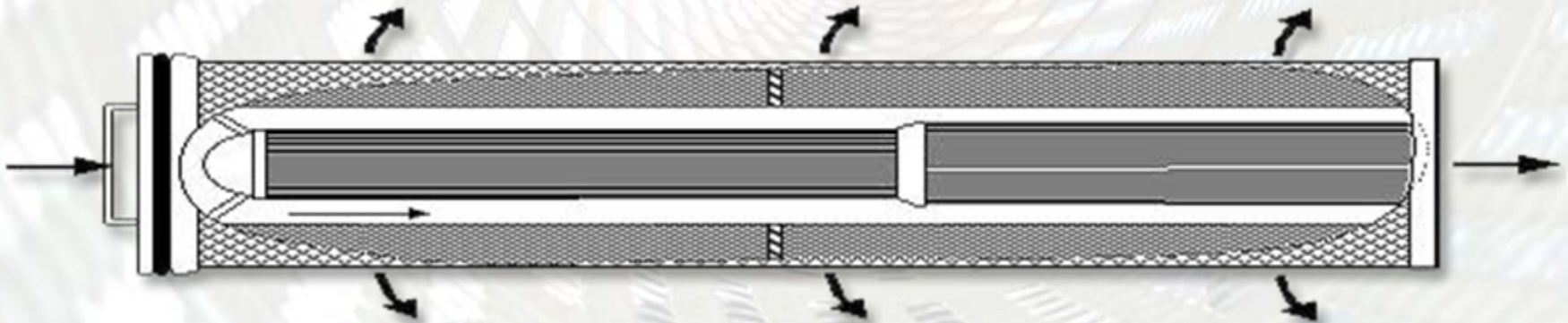
# HF Series Elements Technology for High Flows

## Patent-pending Design

- **Maximum Surface Area for Filter Media**

## Element optimized for high flow rates

- **flow channels**
- **drainage layers**



# HF Series Systems

- **Rental vessels available**
- **With ASME Code Stamp**
- **Up to ANSI 900 (2220 psi)**
- **24" & 36" diameter horizontal vessels are most common**
- **Economical single element vessels available**



HORIZONTAL RENTAL VESSELS, ANSI 600



SINGLE ELEMENT RENTAL VESSELS, 275 psig



Vertical

## “Optimized Products”

- **Products optimized for specific applications**
- **Customer involvement in design improvements**
- **Price and performance that fit the application**

# Cost Savings

- **Competitive Prices**
- **Delivery Times**
- **Dirt Holding Capacity**
- **High Efficiency**
- **Application Engineered Approach**
- **HF Series High Capacity Filters**



# Adding Value

## **Partnering – Tailoring – High Capacity Medias**

- **Competitive prices**
- **Delivery times**
- **Dirt holding**
- **Efficiency**
- **Application engineered approach**
- **Together we add value**

# Why Velcon Process Optimizes



- **Velcon Process optimizes cartridge filters and coalescers for your applications.**
  - **Help your customer get improved performance.**
  - **Usually for little increase in costs**
  - **Together we can match filter and coalescer medias to the unique attributes in the application to help the customer.**
- **As an engineered product salesperson, would you rather sell a similar product or one that has unique features?**
- **When your customer gets involved in optimizing or tailoring a product for his/her application, they get ownership over the design.**
- **Having a unique product protects against sniping by commodity products.**
- **We use proven combinations of medias to optimize a product for an application. For example, we get spent cartridges back and look for the depth and uniformity of the filter cake. Thin cake indicates surface blinding due to small particles or deformables**

# Why Velcon Process Optimizes (cont.)



- **The main things we do to optimize products for applications are:**
  - **Balancing pleated depth media (our Depthflo™ medias) with increased surface area of surface medias (our Duraflo medias.) We use a combination of layered medias and thicker medias to:**
    - **remove gels**
    - **remove deformable particles and asphaltines (insoluble, black, tarry components of asphalt usually present in all diesel fuel)**
    - **make coalescers that have longer life or perform at higher flux rates**
  - **Engineering drainage layers to prevent:**
    - **bunching and gathering**
    - **bridging**

# Why Chemflo Optimizes (cont.)



- Engineer drainage layers to improve performance for :
  - different viscosities and
  - flow rates
- Using different polymers
  - Chemical resistance
  - Lower clean pressure drops
  - Lower extractables
  - Surfactant resistant coalescers
  - Liquid-gas coalescers that drain away removed liquids faster

**Velcon Proces did a study several years ago and found that when just a part number is received, quote-order hit ratio is much lower. Of course, you must qualify what you work on, but for larger applications “Optimizing” medias for an application can be a very important tool.**

# Backwashable Elements

- **Ceramic, Metal, Sintered, Plastic, Sintered**
- **Nitrogen or Air Pulse**
- **Automatic Backwash**
- **Applications: Brine, produced water, chlor-alkali plants**



# Why Partner with Velcon Process



- **Quality Control**
- **High Capacity Products**
  - **Filters, Coalescers, and Vessels**
- **Tailoring**
  - **Optimized Products**
- **Cost Savings and Performance**



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# Quality Control

## Elements and Internals

- **Bubble-point integrity tests first article inspections of all thermally bonded elements. Redundant QC Checks. Critical Sealing Operations fully automated.**
- **Absolute Micron Ratings**
- **Extensive Product Testing**

## Vessels

- **ASME Code, ANSI Pipe Specs, NACE Specs**

