Gas Coalescers

Velcon Process
A Division of Velcon Filters, LLC
Chemflo Products • Performance Separations™
Why Partner with Velcon Process?

- Velcon Process works with customers as Partners, not as a traditional vendor-supplier
- Focus on your Process Margins
- “Optimized” Products for Applications
- New Technology and Improved Performance
Velcon Process Gas Products

• Coalescer Elements and Systems
  Often called “Reverse Flow Coalescers” or “Vertical Coalescers”
  – 0.1µm, 0.3µm and introducing 1µm, 5µm and 10µm
  – Inside-out flow, often vertical systems

• Pleated Filter-Separator Elements
  – Replace Filter Separator Depth tubes with Pleated, High Capacity Cartridge Elements

• Filter Separator Elements and Systems
  – Horizontal and Vertical and 1µm
  – Outside-in flow

• Mechanical Separators
  – Usually 5µm or 10µm
  – Mist Eliminators, Cyclonic, Vanes, Mesh Pads, Re-Packs
Liquid-Gas Coalescers Applications

Liquid-Gas Coalescers are used in:

- **Natural Gas**
  - Protect Screw & Reciprocating Compressors
  - Recover Lube Oil After Screw Compressors
  - Reciprocating Compressor Lube Oil Discharge
  - Coal Bed Methane
  - Protection of Sweetening and Dehydration Facilities
  - Protection of Catalysts and Mole Sieve Towers
  - Removal of Oil, Condensate and Water
  - Removal of Particulate and Aerosols

- **Fuel Gas**
  - Protect Gas Turbines and Engines
  - Protecting Burners at Steam Generators

- **Industrial Gases**
  - Acetylene, Hydrogen and other industrial gases
  - Instrument Air
Velcon Process Coalescers

Efficiencies:
- 0.3µm
- 0.1µm

and introducing:
- 1µm
- 5µm
- 10µm

“Optimized” Medias available for:
- Sour gas
- Amine Carry-over
- Glycol Carry-over
- Contaminant Loadings
**Vertical Gas Coalescer Vessel**

- **Inlet**: gas stream with contaminants enters the inlet
- **Lower Chamber**: removes bulk liquids and related solids from the Gas Stream
- **Filter Coalescing Section**: Gas travels into the upper section where finer Aerosol droplets are Coalesced and drain and removed
- **Outlet**: dry gas stream exits through outlet
“Reverse Flow Coalescer” Vessels

Typical Vertical Two Stage Coalescer

• Full Access Closure
• Two Separate compartments
• Level Controllers
• Level Gauges
• Differential Pressure Indicator
• Drains
• Vent
• Optional High Level Alarms and Shutdown
Velcon Process’ New LG Liquid-Gas Coalescers are designed to remove aerosols and fine particulate contaminants from natural gas streams. The LG Liquid-Gas Coalescers utilizes proprietary, high performance **ALL SYNTHETIC** coalescing media in a pleated configuration to improve performance.

- **High Performance Coalescing Media:**
  - Pleated Microfiber – **LOWER DRY PRESSURE DROPS**
  - Naturally hydrophobic/oleophobic microfibers – **LOWER SATURATED (WET) PRESSURE DROPS**
  - High Performance Microfiber Medias – **SUPERIOR DIRT HOLDING**

- **Applications:**
  - Lube Oil Recovery Systems
  - Reciprocating Compressor Discharge
  - Protecting Dehydration and Amine Systems
  - Turbines
  - Lean Burn Engines

- **Superior Contaminant Holding:**
  - Excellent for Coal Bed Methane (CBM)
  - High Liquid and Particulate Loadings
LG640 Sour Gas Coalescer

- **Synthetic Coalescer “Optimized” for Sour Natural Gas**
  - Remove aerosols and fine particulate contaminants from natural gas stream
  - Utilize proprietary, high performance polyester coalescing media in a pleated configuration that improves performance in severe applications

- **High Performance Synthetic Pleated Media**
  - Increased Separation Efficiencies
  - Superior Contaminate Handling Capacities
  - Excellent Performance in Low pH, High Contaminant Systems

- **Applications**
  - Sour Natural Gas
  - Removal of Hydrocarbons, Water and Particulate
  - Protection of Equipment and Catalysts

- **Product Performance**
  - Micron Rating: 0.3 µm
  - Removal Efficiency: up to 99.98%
Gas Coalescer Vessel Sizing

- **Flow** – Annular Velocity, Media Flux Rate and Nozzles. Most commonly specified:
  - 0.5 or less psid dry dP
  - 2 psid saturated (wet) dP
- **Specific Gravity/Density**
- **% Contaminant/Liquid Loading**
  - Size for liquid hold up volume
- **Temperature and Pressure**
  - Example: for LG640 All Synthetic Element 0.67 s.g. natural gas removing 100 ppmw condensate aerosol density 43.7 lb/cft
    - 300 psi up to 7500 scfm
    - 150 psi up to 5000 scfm
Velcon Process’ Pleated Filter-Separator

- Replaces Filter-Separator Tubes
- Lower clean pressure drop
- Better filtration and coalescing efficiencies
- Available in 4.5”, 5.5” & 6” outside diameter
- Available in lengths up to 72 inches
Velcon Process’ Pleated Filter-Separator

- New 1µm (coalescer usually 0.3µm)
- Available in Inside-out and Outside-in Flow
- Combines Filter-Separator and Coalescer into one element, thus, doing the same job in one element
- Pleated coalescing media with higher dirt holding than rolled fiberglass tubes or polyester tubular filters
- Allows flexibility in media choice to optimize efficiency and greater chemical compatibility: Polyester, Nylon, Microfiberglass, and Metal Medias Available
Filter Separator Elements

Outside-in flow direction - Usually 1µm

Benefits and Solutions:

• Handle High and Variable Liquid Loadings
• More efficient than a Vane alone
• Best for bulk removal not high tolerance polishing
Filter Separator Vessels

CHEMFLO PRODUCTS • PERFORMANCE SEPARATIONS™
Velcon Process’ CFG336 and CFG372 fiberglass elements are designed to remove aerosol contaminants and solid particulates from natural gas streams. These elements fit into Filter-Separator vessels.

- **Applications:**
  - Removes liquids and solids from natural gas applications
  - Protect Reciprocating Compressors
  - Protection of Engines, Catalysts, Compressors, Heat Exchangers, Dryers and Other Equipment

- **Performance**
  - Improve Gas Quality
  - Steel Core Construction
  - Outer Cotton Sock
  - Gasket Seal

- **Product Performance**
  - Micron Rating: 1µm
  - Also available in CFG536, CFG324 Style
Mechanical Separators

Equipment – usually 5µm or greater

- Mist Eliminators
  - Vanes
  - Mesh Pads
- Cyclonic Separators
- Scrubbers
- Knock-out Drums/Slug Catchers

Vanes and Cyclonic Separators are excellent in 2-stage systems