# Products for Fuel Handling

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![Parker Velcon Logo](image)
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Products for Aviation Fuel Handling
The Velcon Filtration Division of Parker Hannifin manufactures a wide range of filtration and separation solutions and fuel condition monitoring products for use in assuring clean dry aviation fuel.

Velcon’s product range includes micronic filters, fiberglass coalescers, separators, water absorbent cartridges, and clay canisters designed to meet required industry standards. This includes a complete line of cartridges qualified to the latest editions of EI specifications (EI 1581, EI 1583 & EI 1590).

Velcon’s research, testing and product development team continues to seek solutions to many fuel quality problems and issues. Some of Velcon’s innovative products include:

- **DPM™** – Differential Pressure Module – monitors differential

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**TYPICAL DISTRIBUTION SYSTEM FOR CLEAN DRY AVIATION FUEL**

EI 1581 Spec., 5th Edition

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*Optional dehydrator, prefilter, and clay treater vessels are not required per EI 1581 but are recommended to ensure delivery of clean dry fuel and to extend the life of the coalescer and separator cartridges in the filter/separator vessels.*
Three categories are based on the fuel being used:
- Category C: For commercial aviation turbine fuels
- Category M: For military aviation turbine fuels
- Category M100: For thermal stability enhanced military aviation turbine fuels

Three types of filter/separator vessels for various locations in an aviation fueling system:
- Type S – capable of handling significant amounts of water and dirt in the fuel
- Type S-LD – capable of handling fuels with low dirt content
- Type S-LW – capable of handling fuels with low water content

For more information about any of Velcon’s products and to discuss your specific filtration requirements and fuel handling needs, please contact your local Velcon Representative.
Filter/Separator
Filter/Separators are two-stage vessels designed to remove dirt and separate water from aviation fuel at refineries, product terminals, fuel farms, and on refueling vehicles.

They continuously coalesce and separate water, which collects in the vessel sump where it can be drained. Velcon Filter/Separators have passed numerous tests qualifying them to the latest EI 1581 edition. Construction is to ASME Code and EI1596 Specifications. Units qualified to military specifications are also available.

Vessels
- Fixed Installations
  - VV Vertical Vessels
  - HV Horizontal Vessels
  - V Vertical Vessels
- Mobile Fueling Equipment
  - HV Horizontal Vessels
  - HVS Horizontal Vessels

Coalescer Cartridges
Used as a first-stage cartridge in Filter/Separators. Remove particulates and coalesce water into large water droplets. Also available in threaded base design.

Separator Cartridges
Second stage cartridges in Filter/Separators repel coalesced water drops which then collect in the sump for easy removal. Available in Teflon® Coated Screen, Synthetic Media or Pleated Paper Media.

Water Absorption
Velcon’s Water Absorbent Filters are single-stage filter vessel systems which remove water and dirt from Avgas and Jet Fuel and provide protection from water at the point of final fuel filtration. When a monitor system’s water holding capacity is reached, the flow of fuel is restricted. Units meet EI 1583 Specifications. Construction is to ASME Code Section VIII.

Vessels
- Fixed or Mobile Units
  - AHM or HM Horizontal Monitor Vessels
  - AVM or VM Vertical Monitor Vessels
- High Capacity Aquacon® Units
  - HA Horizontal Vessels
  - VA Vertical Vessels

CDF® Fuel Monitor
Absorb water and filter solids from Avgas and Jet Fuel. Provide protection against water slug transmission.

Aquacon®
Filter particulate matter and absorb water with great efficiency. Water capacity is approximately 40 times greater than 2” diameter monitor cartridges. Also provide protection against water slugs.
Micronic Filtration
Micronic vessels offer economical particulate prefiltration upstream of clay units or Filter/Separators. Units meet EI1590 Specifications. Construction is to ASME Code Section VIII.

Vessels
- Fixed Installations
  - VF, VFAP (EI1590) Vertical Filter Vessels
  - HF Horizontal Filter Vessels

Pleated Filter
Corrugated pleated media with large surface area for filtration of granular contaminants. Also available in threaded base design.

Fiberglass Filter
Progressively finer layers of fiberglass filter colloidal or slimy contaminants.

Commissioning Cartridges
Commissioning Cartridges (FI Series) can be used in place of coalescers to remove heavy solid contaminants during start up. Our FO-754PL05 and other shorter length filter elements can be used in place of clay canisters for initial system flush.

Surfactant Removal
Clay Vessels & Elements are placed prior to pre-filtration to remove surfactants. Construction is to ASME Code Section VIII.

Vessels
- Fixed Installations
  - VC Clay Elements Vessel

Clay Cartridges
Attapulgus clay canisters for removal of surfactants from jet fuel and other petroleum products.
Fuel Condition Monitoring & Control

Velcon’s line of fuel condition monitoring solutions range from fixed on-line systems such as the Velcon Contaminant Analyzer (VCA®) to portable in-field systems such as the icountACM20, icountOS, and icountBSplus. All are designed to provide reliable accurate results in very short time.

The VCA is an on-line monitoring system with the capability of detecting solid and liquid contaminants and can be configured to shut off flow when contaminant levels exceed your defined threshold. In addition, the telemetry option allows for remote monitoring on a global scale via cellular network.

The icount particle analyzers are designed for monitoring and testing of solid contaminants. Velcon offers four types of systems depending on your application needs. All products can be used as an on-line monitoring system or be completely portable while providing real-time or immediate results with the capability of storing of test results.

VCA® (Velcon Contaminant Analyzer)

MILITARY GRADE IN-LINE, FULL-FLOW SENSOR SYSTEM THAT SIMULTANEOUSLY DETECTS AND DIFFERENTIATES BETWEEN PARTICULATE AND WATER CONTAMINANTS IN REAL TIME.

The VCA can detect pipe scales, particulate and water from truck pipelines, dirt and water from storage.

The VCA, in combination with a proper filtration system, can provide assurance that the fueling system receives, maintains and dispenses fuel that meets ASTM D975 and ISO 4406 cleanliness levels.

As a “full-flow” analyzer, the VCA mounts within a fuel delivery system thereby providing a true representation of the pipeline contents. The VCA analyzes fuel at flow rates higher than 1000 gallons per minute through a 3, 4, or 6-inch diameter pipeline.

FDPM® (Flow Differential Pressure Module)

AUTOMATIC CALCULATION OF CORRECTED DIFFERENTIAL PRESSURE FOR VARYING FLOW RATES

The FDPM® MK II builds on its field tested predecessor. Designed to comply with the requirements of industry standards such as ATA 103 and JIG Guidelines, the FDPM® MK II eliminates this normally complicated calculation by automatically calculating the condition of the filters inside a vessel based on the inputs from differential pressure and flow-rate sensors. FDPM® MK II can be used with either mobile or stationary equipment.

BENEFITS

- Designed with ATA 103 & JIG Guidelines data collection requirements in mind
- Removes human judgment regarding condition of filters
- Simplified for the refueling operator yet highly configurable by the fuel master
- Interactive touch screen display enables easy operation even for gloved users
- Condition based alarms can be set to halt the fueling operation
- Intelligent detection of sudden increases or decreases in differential pressure
- Security codes prevent resetting of key values by unauthorized personnel
- Over 3 years of data logging automatically stored via a MicroSD card

FDPM® & VCA® are registered trademarks of Velcon Filters, LLC.
**icountACM20**

STATE-OF-THE-ART FUEL CONTAMINATION MONITORING. THE FIRST FULLY FUNCTIONAL PARTICLE COUNTER APPROVED FOR USE ON AVIATION FUELS.

The icountACM20 Portable Particle Counter has been developed from existing technology for monitoring contamination in AVTur and other hydrocarbon fuels, in accordance with Energy Institute (EI) Method IP 564.

In addition, the ACM can also be used to monitor fuels from existing sampling points in locations from refineries, pipelines, distribution terminals, fuel supply storage.

**APPLICATIONS**

- Fuel Testing Laboratories - DEFSTAN 91-91 Issue 6
- Distribution Terminals/Hubs: use on receipt and outbound supply. Also provide checks for filtration performance, tank cleanliness and product quality
- Storage: reduce settling time by monitoring to determine if dispersed contamination are below acceptable levels
- Airport Fuel Farm: monitoring of fuels into storage, through fuel farm, hydrant system and during uplift into wing
- Oil and Gas Platforms: monitor filtration performance, system cleanliness and quality of delivered product

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**DPM™ (Differential Pressure Module)**

DIFFERENTIAL PRESSURE MONITORING AND SHUTDOWN SYSTEM

The DPM continuously monitors the differential pressure between the inlet and outlet of a filter monitor or filter water separator vessel in order to evaluate the condition of internal filter elements.

In the event that the filter differential pressure reaches maximum allowable pressure, the industrial strength relay on board the DPM control unit breaks the deadman circuit, immediately terminating the refueling operation. The system can only be overridden/reset by inserting a supervisor key. The DPM can also be placed in an override status in order to conduct the required DP Gauge free movement test.

**BENEFITS**

- Low Cost
- Simple installation
- Mobile or Fixed installation
- Removes human judgment regarding condition of filters
- Works with a variety of pressure inputs including differential pressure gauges, pressure transducers and momentary switches
- Easy upgrade to FDPM® MK II (monitors “flow corrected” differential pressure)
# Worldwide Filtration Manufacturing Locations

## North America
- **Compressed Air Treatment & Separation/Balston**
  - Haverhill, MA
  - 978 858 0505
  - [www.parker.com/balston](http://www.parker.com/balston)
- **Finite Airtek Filtration**
  - Airtek/domnick hunter/Zander
  - Lancaster, NY
  - 716 671 4640
  - [www.parker.com/faf](http://www.parker.com/faf)
- **Finite Airtek Filtration/Finite**
  - Oxford, MI
  - 248 626 6400
  - [www.parker.com/finitefilter](http://www.parker.com/finitefilter)
- **Engine Filtration & Water Purification**
  - **Racor**
    - Modesto, CA
    - 209 521 7860
    - [www.parker.com/racor](http://www.parker.com/racor)
  - Holly Springs, MS
    - 662 252 2656
    - [www.parker.com/racor](http://www.parker.com/racor)
  - Beaufort, SC
    - 843 866 6400
    - [www.parker.com/racor](http://www.parker.com/racor)
  - **Racor – Village Marine Tec.**
    - Gardena, CA
    - 310 516 9911
    - [www.desalination.parker.com](http://www.desalination.parker.com)
- **Parker Sea Recovery**
  - Carson, CA
  - 310 637 3400
  - [www.searecovery.com](http://www.searecovery.com)
- **Hydraulic Filtration**
  - **Hydraulic Filter**
    - Metamora, OH
    - 419 644 4311
    - [www.parker.com/hydraulicfilter](http://www.parker.com/hydraulicfilter)
  - Laval, QC Canada
    - 450 629 9594
    - [www.parkerfarr.com](http://www.parkerfarr.com)
- **Process Filtration**
  - **domnick hunter Process Filtration**
    - Oxnard, CA
    - 805 604 3400
    - [www.parker.com/processfiltration](http://www.parker.com/processfiltration)
  - Madison, WI
    - 608 824 0500
    - [www.scilog.com](http://www.scilog.com)
  - Phoenixville, PA
    - 61 933 1600
    - [www.parker.com/processfiltration](http://www.parker.com/processfiltration)
- **Aerospace Filtration**
  - **Velcon Filtration**
    - Colorado Springs, CO
    - 719 531 5855
    - [www.velcon.com](http://www.velcon.com)

## Europe
- **Compressed Air Treatment & Separation**
  - **domnick hunter Filtration & Separation**
    - Gateshead, England
    - +44 (0) 191 402 9000
    - [www.parker.com/dhfs](http://www.parker.com/dhfs)
  - **Parker Gas Separations**
    - Etten-Leur, Netherlands
    - +31 76 508 5300
    - [www.parker.com/dhfs](http://www.parker.com/dhfs)
  - **Hiross Zander**
    - Padova Business Unit
    - Padova, Italy
    - +39 049 9712 111
    - [www.parker.com/hzd](http://www.parker.com/hzd)
  - **Hiross Zander**
    - Essen Business Unit
    - Essen, Germany
    - +49 2054 9340
    - [www.parker.com/hzd](http://www.parker.com/hzd)
- **Engine Filtration & Water Purification**
  - **Racor**
    - Dewsbury, England
    - +44 (0) 1924 487 000
    - [www.parker.com/rfde](http://www.parker.com/rfde)
  - **Racor Research & Development**
    - Stuttgart, Germany
    - +49 (0) 711 7071 290-10
    - [www.parker.com/rfde](http://www.parker.com/rfde)
  - **Hydraulic Filtration**
    - **Hydraulic Filter**
      - Arnhem, Holland
      - +31 26 3760376
      - [www.parker.com/hfde](http://www.parker.com/hfde)
  - **Urjala Operation**
    - Urjala, Finland
    - +358 20 753 2500
    - [www.parker.com/hfde](http://www.parker.com/hfde)
  - **Condition Monitoring Centre**
    - Norfolk, England
    - +44 (0) 1842 763 299
    - [www.parker.com/hfde](http://www.parker.com/hfde)
  - **Parker Kittiwake**
    - West Sussex, England
    - +44 (0) 1903 731 470
    - [www.kittiwake.com](http://www.kittiwake.com)
  - **Parker Procal**
    - Peterborough, England
    - +44 (0) 1733 232 495
    - [www.kittiwake.com](http://www.kittiwake.com)
  - **Process Filtration**
    - domnick hunter Process Filtration
    - Birtley, England
    - +44 (0) 191 410 5121
    - [www.parker.com/processfiltration](http://www.parker.com/processfiltration)
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    - Zaandam, Netherlands
    - +31 (0) 75 655 50 00
    - [www.twinfilt.com](http://www.twinfilt.com)

## Asia Pacific
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  - [www.parker.com/australia](http://www.parker.com/australia)
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  - [www.parker.com/india](http://www.parker.com/india)
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  - Bangalore, India
  - +91 80 2783 6794
  - [www.johnfowlerindia.com](http://www.johnfowlerindia.com)
- **Japan**
  - Tokyo, Japan
  - +81 45 870 1522
  - [www.parker.com/japan](http://www.parker.com/japan)
- **Parker Techno**
  - Osaka, Japan
  - +81 66 340 1600
  - [www.techno.taiyo-tld.co.jp](http://www.techno.taiyo-tld.co.jp)
- **Korea**
  - Hwaseon-City
  - +82 31 359 0852
  - [www.parker.com/korea](http://www.parker.com/korea)
- **Singapore**
  - Jurong Town, Singapore
  - +65 6887 6300
  - [www.parker.com/singapore](http://www.parker.com/singapore)
- **Thailand**
  - Bangkok, Thailand
  - +66 2186 7000
  - [www.parker.com/thailand](http://www.parker.com/thailand)

## Latin America
- **Parker Comercio Ltda.**
  - Filtration Division
  - Sao Paulo, Brazil
  - +55 12 4009 3500
  - [www.parker.com/br](http://www.parker.com/br)
- **Pan American Division**
  - Miami, FL
  - 305 470 8800
  - [www.parker.com/panam](http://www.parker.com/panam)

## Africa
- **Parker Fowler (Kapstadt)**
  - Aeroporth Kempton Park, South Africa
  - +27 11 9610700
  - [www.parker.com/afrika](http://www.parker.com/afrika)
Function of Filter/Separator Accessories

1. **Automatic Air Eliminator**
   Provides air vent to permit escape of trapped air during filling of vessel. When unit is completely filled with fuel, air eliminator automatically closes.

2. **Check Valve**
   Prevents air from siphoning into the vessel through the air eliminator.

3. **Pressure Relief Valve**
   This valve can be set to open at a desired pressure to exhaust excess pressure built up in the system, due to thermal expansion in a non-flow condition.

4. **Coalescer Element**
   Designed to remove solid contaminants, to break the emulsion of water in the product into droplets, and to enlarge these droplets so that they will drop out of the product. The flow is from the inside to the outside of the coalescer.

5. **Separator Element**
   Repels coalesced water droplets and prevents them from going downstream. The flow is from the outside to the inside.

6. **Slug Valve**
   In the event of excessive water build-up, the slug valve, on signal from the float control, will shut down all flow through the system until excess water can be drained off. The slug valve can be provided with a rate-of-flow control which will prevent excessive flow rates through the filter/separator.

7. **Sampling Probe**
   The purpose of the probe is to insure that fuel samples are representative of the fuel in the pipe. The probe penetrates through the pipe coupling that is welded to the pipe. There is no possibility of rust and dirt that usually collects in stagnant pockets reaching the filter membrane test capsule.

8. **Manual Drain**
   Opened daily to remove any accumulated water and to sample the fuel in the sump. This also helps to evaluate the condition of the coalescer. It is also opened to completely drain the vessel when changing elements.
**Float Control**
Rides the interface between fuel and water, and by its up and down movement, opens and closes ports to generate hydraulic signals to automatic valves. Velcon recommends the “ballast” type float control for easier checking of the integrity of the float ball.

**Pressure Gauge**
The direct reading differential pressure gauge is used to measure the pressure difference between the inlet and outlet of a filter/separator, thus providing an indication of element condition.
V and VV Series
Vertical Filter/Separators
Compact Filter/Separator Vessels for Fixed Installations

FEATURES
• Compact Design
• Code Qualification
• Simplified Maintenance
• Field Proven Performance

DESCRIPTION
Units are designed for ease of maintenance with one piece threaded base coalescers and reusable one-piece Teflon® coated screen separators. The 85 Series coalescer cartridges used in most of these vessels have been field proven to give exceptionally long service life.

NOTE: These vessels were previously qualified to API 1581 3rd Edition, which has been superseded by EI 1581 5th Edition. For vessels qualified to this latest edition, please refer to data sheet #1947.

® Teflon is a registered trademark of E.I. du Pont de Nemours & Co., Inc.

Contact Information:
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Velcon Filtration Division
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Colorado Springs, CO 80907

phone 719 531 5855
fax 719 531 5690
vfsales@parker.com
www.velcon.com

SPECIFICATIONS
• 150 psi ASME Code Construction
• RF Flanged Connections
• Swing Bolted Closure
• Buna-N O-Ring Cover Seal
• MIL-PRF-4556 Epoxy Coated Interior, Primed Exterior

RECOMMENDED ACCESSORIES
• The following accessories are recommended for safe, effective operation at all installations.
  • Automatic Air Vent

OTHER ACCESSORIES AVAILABLE
• Pressure Relief Valve
• Differential Pressure Gauge
• Sampling Probes
• Interface Control
• ASME Code Stamp
• Water Slug Control Valve
• Manual Drain Valve
• Sump Heater
• Sight Glass
## CARTRIDGE SELECTION

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<td>I-65685</td>
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1. Based on fuel with minimum interfacial tension of 36 dynes per centimeter over water.
2. For gasoline and API 1581, Group I Class B.
3. For API 1581 Second and Third Editions, Group II Class B. All “85” Series Coalescers are also available as “87” Series. “87” Series Coalescers are also qualified to API 1581 Third Edition, Group II Class B.

## DIMENSIONAL DATA

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<tr>
<th>Velcon Vessel Model No</th>
<th>Dimensions (inches)</th>
<th>Weight w/ Skid (lbs)</th>
<th>Volume (US gal)</th>
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<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
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<td>6</td>
<td>17 ¼</td>
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<td>51 ¼</td>
<td>6</td>
<td>22 ¼</td>
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<td>28 ¼</td>
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<tr>
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<td>6</td>
<td>29 ¾</td>
</tr>
<tr>
<td>VV2328</td>
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<td>52 ¼</td>
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<td>9</td>
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<td>VV4856</td>
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</table>

- V12, V16, VV18, 20, and 23 Series Filter/Separators have flat covers. All other models have domes.
- V12 Series Filter/Separators have no jack. V16 Series Filter/Separators have screw-type jacks. All other models have hydraulic-type jacks.
- VV1633 vessels are built with the float chamber as a standard accessory.
- DIMENSIONS SHOWN ARE FOR ESTIMATING PURPOSES ONLY. FOR EXACT DIMENSIONAL DETAIL, OBTAIN CERTIFIED COPY OF VESSEL DRAWING.
Vertical Filter/Separators
EI 1581 5th Edition Qualified VV-series
Compact Filter/Separator Vessels for Fixed Installations

FEATURES
• Compact Design
• Code Qualification
• Simplified Maintenance
• Field Proven Performance

DESCRIPTION
Compact VV Series Filter/Separators comply fully with EI 1581, Fifth Edition, requirements for Category C equipment. Units are designed for ease of maintenance with one piece threaded base “C5” Series Coalescer Elements and reusable one-piece Teflon® coated screen “V5” Series Separator Elements (see Velcon Form 1923).

Specifications:
• 150 PSI ASME Code Construction
• RF Flanged Connections
• Swing Bolted Closure
• Buna-N O-ring Cover Seal
• MIL-PRF-4556 Epoxy Coated Interior, Primer Exterior
• 3% positive sloped deck plates or manifolds to facilitate drainage

Recommended Accessories:
The following accessories are recommended for safe, effective operation at all installations.
• Automatic Air Vent
• Pressure Relief Valve
• Differential Pressure Gauge
• Sampling Probes
• Interface Control
• ASME Code Stamp
• Water Slug Control Valve
• Manual Drain Valve

Contact Information:
Parker Hannifin Corporation
Velcon Filtration Division
1210 Garden of the Gods Road
Colorado Springs, CO 80907
phone 719 531 5855
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vfsales@parker.com
www.velcon.com

Velcon Filters at London Heathrow T5

ENGINEERING YOUR SUCCESS.
CARTRIDGE SELECTION

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Flow Rates (USGPM)</th>
<th>Coalescer Elements</th>
<th>Separator Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV1222(1)</td>
<td>50</td>
<td>1 I-622C5TB</td>
<td>1 SO-318V5</td>
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<td>VV1522</td>
<td>100</td>
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<td>1 SO-623VA5</td>
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<td>160</td>
<td>2 I-633C5TB</td>
<td>1 SO-629VA5</td>
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<tr>
<td>VV2028</td>
<td>200</td>
<td>3 I-628C5TB</td>
<td>1 SO-630V5</td>
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<tr>
<td>VV2328</td>
<td>340</td>
<td>5 I-628C5TB</td>
<td>2 SO-630PV5</td>
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<tr>
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<td>400</td>
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<td>2 SO-630PV5</td>
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<td>VV2828</td>
<td>475</td>
<td>7 I-628C5TB</td>
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<td>7 I-644C5TB</td>
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<td>3 SO-644PV5</td>
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<td>11 I-638C5TB</td>
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<td>1220</td>
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<td>5 SO-636PV5</td>
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<tr>
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<td>11 I-656C5TB</td>
<td>5 SO-644PV5</td>
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<tr>
<td>VV3756</td>
<td>1725</td>
<td>12 I-656C5TB</td>
<td>6 SO-644PV5</td>
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<tr>
<td>VV4244</td>
<td>2000</td>
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<td>7 SO-644PV5</td>
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<td>2300</td>
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<td>8 SO-644PV5</td>
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<td>VV4456</td>
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(1) Exceeds vessel’s length-to-diameter ratio

DIMENSIONAL DATA

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Dimensions in Inches*</th>
<th>Weight w/ Skid (lbs)</th>
<th>Volume (US gal)</th>
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<tbody>
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<td>500 28</td>
<td></td>
</tr>
<tr>
<td>VV2028</td>
<td>59 ¾ 6 29 ½ 13 8 ½ 4 23 ¾</td>
<td>825 63</td>
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<tr>
<td>VV2328</td>
<td>69 ½ 6 46 ¾ 15 ½ 14 ½ 4 29 ½</td>
<td>1170 85</td>
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<td>VV2333</td>
<td>69 ½ 8 36 ½ 15 ½ 9 ½ 6 29 ½</td>
<td>1170 85</td>
<td></td>
</tr>
<tr>
<td>VV2828</td>
<td>71 ¼ 8 37 ½ 18 9 ½ 6 35</td>
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<td>80 25⁄32 8 37 ½ 18 9 ½ 6 35</td>
<td>1600 155</td>
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<td>VV2844</td>
<td>86 25⁄32 8 37 ½ 18 9 ½ 6 35</td>
<td>1650 170</td>
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</tr>
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<td>VV2856</td>
<td>99 25⁄32 8 37 ½ 18 9 ½ 6 35</td>
<td>1750 200</td>
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<td>VV3644</td>
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<td>108 25⁄32 9 52 ½ 24 12 ½ 8 44</td>
<td>2300 355</td>
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<td>VV4244</td>
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</table>

VV15, VV20, and VV23 Series Filter/Separators have flat covers. All other models have domes.

VV15 Series Filter/Separators have screw-type jacks. All other models have hydraulic-type jacks.

*DIMENSIONS SHOWN ARE FOR ESTIMATING PURPOSES ONLY.
FOR EXACT DIMENSIONAL DETAIL, OBTAIN CERTIFIED COPY OF VESSEL DRAWING.

OTHER MODELS AVAILABLE UPON REQUEST

OTHER ACCESSORIES AVAILABLE

- Sump Heater
- Sight Glass

© 2014 Parker Hannifin Corporation. Product names are trademarks or registered trademarks of their respective companies. VEL1847R4-0514
HV Series
Horizontal Filter/Separators Vessels
Compact Vessels for Fixed Installations
Offers Significant Operating Advantages
Over Vertical Designs

EASIER CARTRIDGE CHANGE
The horizontal filter/sePARATOR design provides more convenient access to the cartridges than the vertical design.

EFFLUENT CLEANLINESS
A horizontal filter/sePARATOR must be drained to change the elements. This prevents the possibility of getting dirt in the effluent that can occur if the operator does not fully drain a vertical vessel when changing elements. The separator mounting holes on a horizontal vessel are in a vertical plane at the top of the vessel so it is nearly impossible to get dirt in the effluent when cartridges are being changed.

Contact Info:
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Colorado Springs, CO 80907

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fax 719 531 5690
vfsales@parker.com

www.velcon.com

INDUSTRY QUALIFIED
Velcon HV Series Horizontal Filter/Separators are fully qualified to API Publication 1581, Third Edition, Group II, Class B (fixed installations). These units incorporate one piece threaded base coalescer cartridges for easy, reliable installation and reusable one piece Teflon® coated screen separators.

LOWER COST
A horizontal filter/sePARATOR will often cost less than a vertical filter/sePARATOR of the same rated flow, for the same specifications.
CARTRIDGE SELECTION

<table>
<thead>
<tr>
<th>Vessel Model No.</th>
<th>Flow Rates USGPM&lt;sup&gt;(1)&lt;/sup&gt;</th>
<th>Coalescer Cartridges</th>
<th>Separator Cartridges</th>
<th>Qty</th>
<th>Model Number</th>
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</thead>
<tbody>
<tr>
<td>HV1422</td>
<td>100</td>
<td>1-6228STB</td>
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<td>2</td>
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<td>I-6338STB</td>
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<td>I-6388STB</td>
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Notes: 1. Based on fuel with minimum interfacial tension of 36 dynes per centimeter over water.
2. For gasoline and API 1581, Group I Class B.
3. For API 1581 Third Edition, Group II Class B. (Also qualified with 87 Series Coalescers.)

DIMENSIONAL DATA

<table>
<thead>
<tr>
<th>Model No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
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<td>35 ½</td>
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<td>18</td>
<td>18 ½</td>
<td>56</td>
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<td>23 ¾</td>
<td>10</td>
<td>35 ½</td>
<td>9 ½</td>
<td>4</td>
<td>13</td>
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<td>20 ½</td>
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<td>23 ¾</td>
<td>10</td>
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<td>20 ½</td>
<td>80</td>
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<tr>
<td>HV2233</td>
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<td>50 ¾</td>
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<td>23 ½</td>
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<td>4</td>
<td>16</td>
<td>29 ½</td>
<td>27 ½</td>
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<td>15</td>
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<td>16</td>
<td>6</td>
<td>22</td>
<td>22 ½</td>
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<td>34 ½</td>
<td>16 ¾</td>
<td>67 ¾</td>
<td>15</td>
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<td>20</td>
<td>82 ½</td>
<td>18 ½</td>
<td>6**</td>
<td>28</td>
<td>38 ½</td>
<td>39 ½</td>
<td>124</td>
<td>37 ½</td>
</tr>
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</table>

Notes: HV-14, -16 and -22 series filter/separators have flat covers while the HV-28, and HV-34 series have domed covers.
** If 8 in. flanges are desired, specify P/N 180-CC.

SPECIFICATIONS
- 150 psi ASME Code Construction
- RF Flanged Connections
- Swing Bolted Closure
- Buna-N O-ring Cover Seal
- MIL-PRF-4556 Epoxy Coated Interior, Primed Exterior

RECOMMENDED ACCESSORIES
The following accessories are recommended for safe effective operation at all installations:
- Automatic Air Vent
- Pressure Relief Valve
- Differential Pressure Gauge
- Sampling Probes
- Interface Control (ballast type float recommended)
- Water Slug Control Valve
- Manual Drain Valve
- ASME Code Stamp
- API Nameplate

OTHER ACCESSORIES AVAILABLE
- Sump Heater
- Sight Glass

WEIGHTS AND VOLUMES

<table>
<thead>
<tr>
<th>Vessel Model No.</th>
<th>Weight With Skid (lbs)</th>
<th>Volume (US gal)</th>
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<tbody>
<tr>
<td>HV1422</td>
<td>390</td>
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<td>HV1622</td>
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<td>90</td>
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<td>130</td>
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<tr>
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<td>1800</td>
<td>290</td>
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* Dimensions shown are for estimating purposes only. For exact dimensional detail, obtain copy of vessel drawing.