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aerospace
climate control
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Products for Industrial Filtration



PORTABLE INDUSTRIAL FILTER PUMPS



MP5 SERIES

The **Parker Velcon MP5** is a compact, portable filter system designed for use at the site of contaminated oil. It is easily wheeled to the sump or reservoir by one person.

The MP5 is completely self-contained and requires only electricity for operation. The unit incorporates a reliable gear pump with an integral pump pressure relief valve to prevent system over-pressure.



MP5E SERIES

The **Parker Velcon MP5E** is a complete filtration package on wheels. All you have to do is install the filter cartridge, plug it in, and watch it meet your toughest filtration requirements.

Designed for industrial applications, the MP5E uses a large filter cartridge with up to 4500 square inches of filter media. This improves filtration efficiency and capacity, reduces change-out frequency and gives the best long term operating costs.



MCP5E SERIES

The **Parker Velcon MCP5E Series-Flow** employs two different types of filter cartridges in series. Typically, the first of the MCP5E's two housings is utilized as a prefilter. With heavy carbon or dirt contamination, this prefilter holds a cost-effective particle or colloidal removal cartridge and the second in series holds an **Aquacon**[®] super-absorbent water removing cartridge.



MXP5E SERIES

The **Parker Velcon MXP5E** comes with all the features needed for proper use of Velcon **Superdri**[®] Cartridges for dissolved water removal from transformer oil. Parallel flow through the two filter housings assures the proper flow rate through each SD-718 Superdri[®] cartridge. The unit is also valved so that series flow is possible for non-dissolved water oil handling applications, such as removal of dirt and free water. Use FO Series filter cartridges in the first housing to remove dirt particles and **Aquacon**[®] AC Series cartridge in the second stage to remove free water.



HP SERIES

The double capacity **Parker Velcon HP Series** Portable Filter Pumps are recommended for oils with higher concentrations of dirt, water and other contaminants. Two models are offered with a choice of 10 and 30 gpm flow rates.

The 30 gpm model is the preferred choice at electrical utility installations for transferring and filtering insulating oil. It has been proven to be economical, fast, and efficient for applications of this type involving larger volumes of oil.

INDUSTRIAL SYSTEMS

TP3 SERIES TAP CHANGER SYSTEMS

The **Parker Velcon TP3** was developed in response to the industry's desire to reduce operation and maintenance costs and increase system reliability. TP3 Filter Systems have proven to be an effective means of combating load tap changer and other industrial oil problems. Tap changers retrofitted with a TP3 enjoy the following:

- Consistent high oil dielectric strength
- Extended maintenance/inspection intervals
- Reduced contact wear and coking
- Extended oil life
- Reduced contact erosion via reduced restrikes during tap changing

The Parker Velcon TP3 is recommended for installation on systems that:

- Perform a high number of operations
- Exhibit consistent sludging conditions
- Have a high tap-to-tap voltage difference
- Require frequent attention

TDS5 SERIES TRANSFORMER DRY-OUT SYSTEM

The **Parker Velcon TDS[®] 5** transformer dry-out system incorporates all the necessary features to allow a transformer to remain in-service while moisture from its insulation is effectively removed. The system is safe with several alarm features that shut the system off, isolating it from the transformer, in the event of any abnormal signal.

The TDS5-MK1 unit provides a non-intrusive, cost effective and convenient method of maintaining transformers in a dry condition. In addition, once the transformer is dried, the system can be retrofitted with Activated Alumina cartridges to reduce acidity in the transformer oil. This flexibility allows increased oil processing application compared to heat and vacuum systems.



TP3 Series
(TP3-MK3 Model Shown)

Quality components and comprehensive design features have made the TP3 an industry standard for on-line filtration. All components are fully enclosed in cabinet. Operation of the unit is unattended. A flow rate of 3 gpm keeps turbulence in the reservoir to a minimum and allows for maximum filter life.



TDS5 Series
(TDS5-MK1 Model Shown)

INDUSTRIAL FILTER HOUSINGS



SIX AND TWELVE CARTRIDGES FILTER HOUSINGS

VF166C, VF2012C SERIES

- ASME Code Design
- Carbon Steel Construction
- 150 psi operating pressure,
- 225 psi test
- O-ring closure
- Primed exterior, oil coated interior
- Positive seal tie-rod cartridge mounting
- Swing bolt lid closure
- Six types of cartridge media available
- Lid lifting mechanism
- 200°F Design temperature



SINGLE AND DOUBLE FILTER HOUSINGS

VF81SYS150, VF82SYS150 WITH 1 1/2" INLET/OUTLET

- Carbon steel construction
- 150 psi design pressure
- 195 psi hydro-test pressure
- Polyurethane almond powder coated interior & exterior
- 1-1/2" NPT female inlet/outlet
- 3/4" NPT drain couplings (qty 2)

RELATED SYSTEMS

- MP5 Series
- HP10 & HP30 Series

VF81SYS150 (left) and VF82SYS150 (right) Filter Housings



VF-81C

VF-82B

VF-82C

SINGLE AND DOUBLE FILTER HOUSINGS

VF-8 SERIES FILTER HOUSINGS

- VF-81C – a single element housing designed in accordance with the ASME code
- VF-82C – a double element housing designed in accordance with the ASME code.
- VF-82B – a non-code design that holds two cartridges.

VF-8 series vessels accommodate Aquacon® super absorbent or other special purpose filter cartridges.



FILTER HOUSING FOR DIRT, WATER AND ACID REMOVAL FROM OIL & FUELS

VF-71E SERIES FILTER HOUSING

- No tools required for changeout
- 150 psi design pressure
- TGIC Polyester powder coated interior and exterior
- Positive O-ring closure

RELATED SYSTEMS

- MP5E Series
- MCP5E Series
- MXP5E Series
- TP3 Series

FILTRATION CARTRIDGES



PLEATED SYNTHETIC MEDIA FILTER CARTRIDGES

FOS Series synthetic media cartridges provide excellent filtration performance for a wide variety of industrial applications. They excel in applications where water or chemicals cause softening or degradation of conventional resin impregnated cellulose (pleated paper) filter media.

Due to the finer synthetic fibers used, FOS cartridges have a low pressure drop. Replacing an equivalent size paper filter will, in many cases, result in improved filtration efficiency, higher flow rates, longer service life, and significant cost savings.



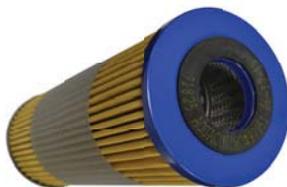
PLEATED MEDIA FILTER CARTRIDGES

FO Series Pleated Media Filter Cartridge provides an economical solution for particulate filtration. Pleated, resin impregnated, cellulose media provides a large surface area and allows for high flow rate with low initial pressure drop and maximum contaminant holding capacity. Thermoset bonding materials ensure durable bonding and prevent internal bypass.



DEPTH FIBERGLASS FILTER CARTRIDGES

FO-FGA Series Fiberglass Depth Filter Cartridges have proven superior in filtering colloidal or slimy contaminants. Lube oil and EDM coolant filtration are this type of application where fiberglass elements consistently filter better with dramatically longer life than other types of media.



PLEATED WATER ABSORBING FILTER CARTRIDGES

Aquacon® AC cartridges are constructed to remove dirt and water from hydrocarbon and other oils. The outer media layer filters out silt, rust and other particulate contaminants. The inner layers absorb water and chemically bond it so that no water will release downstream.

When the Aquacon Cartridge reaches its water holding limit, the media swells shut and the differential pressure rapidly increases. This signals the operator that the cartridge must be changed.



INSULATING OIL FILTERS

Aquacon AC-8 Series cartridges remove dirt and water with very high efficiency. The AC-8 Series Aquacon® Cartridges were developed specifically for use with insulating oils. These cartridges provide the most efficient, cost effective conditioning available for insulating and other oils. They have been field proven at numerous electrical utilities.

The Aquacon® accordion pleated style design provides large surface areas of filter media in compact, small diameter cartridges. Glass microfiber filtration medias are combined with water removing super-absorbent polymers in four different configurations; 01, 1/2, P3, and P4D. These four cartridge styles fill a range of cost/performance requirements.



Superdri is a registered Trademark of Parker Hannifin.

INSULATING OIL FILTER CARTRIDGE

Conventional oil filters are only effective in removing particulate solids contamination over the course of their service life. In a free breathing system where moisture levels of the oil are often in excess of 40 ppm total water. This moisture, combined with normal operating heat, cause oil breakdown to occur at accelerated rates. Consistent removal of dissolved water extends service life of the oil and increases the benefits of the oil filtration systems.



CARTRIDGES FOR REMOVAL OF DISSOLVED WATER FROM INDUSTRIAL OILS

Dissolved water removal from industrial oils is now possible without the need for heat and vacuum oil processing systems. Originally developed for dehydrating oil to be used in transformers, Superdri® cartridges can help reduce expenses and increase efficiency when processing oil.



ADSORBENT MEDIA CARTRIDGES

LA/LB Series adsorbent media cartridges combine the highest grade sorbing materials with specially selected structural components. Field proven at major semiconductor companies, these cartridges maintain oil quality in the most corrosive environments.

Models LA-61801B and LA-71801B contain a special grade of fuller's earth mined in Florida and Georgia. This clay is heat refined to increase sorbing capacity and water resistance.

Models LB-71801 and LB-1107B contain a granular form of activated alumina that has proven most effective for oil purification.

TYPICAL SOLUTIONS FOR INDUSTRIAL APPLICATIONS

- Oil & Gas
 - Plastic Injection Molding
 - Die Casting
 - Steel
 - General Industrial
- Power Generation:
Turbine Oil, Lube Oil
 - Transmission & Distribution:
Load Tap Changer, Voltage Regulator
 - Mining
- Off-Highway Heavy Duty Equipment
 - Food Processing
 - Refining
 - Paper Mills
 - Aircraft Ground Support

Problem	Type of Fluid	Solution	
Water and Dirt (Particulates & Colloids) in Oils	Circuit Breaker Oil Cutting Oil Degreasing Fluids Gear Oil Glycols ⁽²⁾ Toluol ⁽²⁾ Hydraulic Oil Insulating Oil Lube Oil Quench Oil Synthetic Oil Transformer Oil Turbine Oil	Systems:	< 30GPM: MP5, MP5E, MCP5E, MXP5E, HP10, HP30 ⁽¹⁾ , TP3 > 30 GPM: VF166C, VF2012C, VF-8
		Cartridges:	FOS, FO, FO-FGA, AC
		Application:	New Oil, Machine Oil Reservoir, Spilled and Leaked Oil, Injection Molding Machine, Mobile Hydraulic Equipment, Small Transformers, Circuit Breakers and Various Types of Equipment, Transfer of Oil, Preventive Maintenance, Reclamation Note that Aquacon [®] super-absorbent filters have become the industry standard for dirt and water removal.
Water and Carbon in Insulating Oils	Transformer Oil Circuit Breaker Oil Switch Gear Oil Tap Changer Oil	Systems:	TP3
		Cartridges:	FOS, FO, FO-FGA, AC-8
		Application:	Systems with high number of operations, systems that exhibit sludging conditions, systems with a high tap-to-tap voltage difference, systems that require frequent attention
Water and Dirt in Fuels	Diesel Fuel Biodiesel Fuel Kerosene	Systems:	MP5, MP5E, MCP5E, HP10, HP30 ⁽¹⁾
		Cartridges:	FOS, FO, FO-FGA, AC/AD
		Application:	Fuel loading/transfer, spilled fuel clean up, fuel tank storage, fuel maintenance check
Acid in Oils	Vacuum Pump Oil	Systems:	MCP5E
		Cartridges:	LA/LB
		Application:	Removes acids, gums, surfactants, varnishes, soaps, color bodies, corrosive gases, polar compounds, and oxidation products.
Dissolved Water Removal	Transformer Oil	Systems:	MP5, MP5E, MXP5E, TP3, TDS5
		Cartridges:	Superdri [®] SD-718, SD-1107, LB-1107
		Application:	Network transformer filling, drying wet LTC compartments, vacuum type LTCs, drum transferring operation, critical oil quality requirements, dry wet transformers and insulation, dry transformers not braced for vacuum, dry transformers that cannot be taken out of service, reduction of acidity

(1) Use of Aquacon or Fiberglass Depth Cartridges with the HP30 unit should be limited to oils with a viscosity of 100 SSU or less. Transformer and circuit breaker oils are acceptable. This limitation does not apply when using pleated media cartridges.

(2) Compatible with Synthetic Pleated Media Cartridges (FOS Series).

