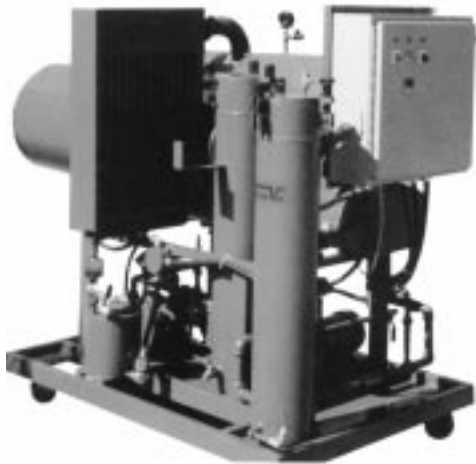


OIL DEHYDRATION EQUIPMENT

Vacuum Dehydrators - Model VPL



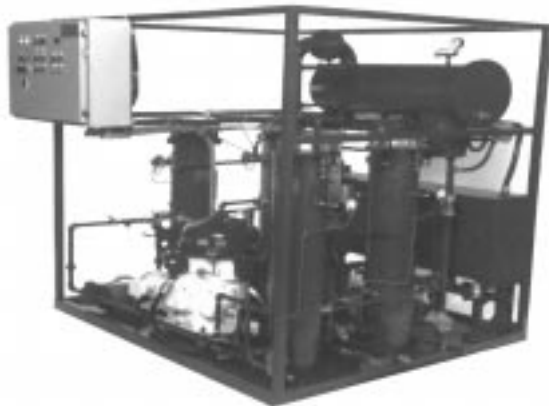
Water and particle contamination is one of the primary reasons for reduction in oil life and for machinery component degradation.

The **FILTERVAC** Vacuum Dehydrator, which uses a vacuum process to remove water, light hydrocarbons and solid contamination, has proved to be a cost effective solution in many applications such as:

- Lubricating Oils
- Hydraulic Oils
- Turbine Oils
- Compressor Seal Oils
- Cutting & Cooling Mineral Oils
- Synthetic Fluids
- Quenching Oils
- Paper Machine Oil

COMPLETE WASTE OIL RECLAMATION SYSTEMS

IN-PLANT OIL RECLAMATION SYSTEMS



FILTERVAC provides standardized and customized filtration systems that are designed to remove all types of contamination which are formed or introduced into the oils. Depending on the type and amount of contamination in the oil, **FILTERVAC** is able to package the appropriate system which can combine vacuum dehydrators, centrifuges, coalescence and many other filtration processes into one self-contained automated system for in-plant use.

These can be incorporated as a recirculating system or as a single-pass batch filtration system, allowing the customer to maintain oil at better than new oil specifications and eliminating the need for costly disposal of waste oil.

Discuss your situation with our engineers and let us make recommendations for a system and program to meet your needs.

MOBILE RECLAMATION SYSTEMS

MODEL
VPL-M



FILTERVAC manufactures roadworthy Mobile Oil Reclamation Systems for field service oil reclamation. These systems are designed for a variety of applications and can vary in the degree of automation and sophistication.

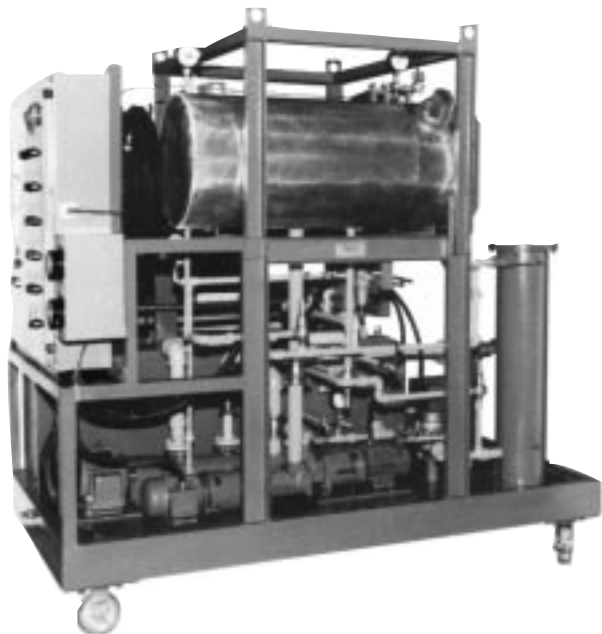
FILTERVAC has designed systems that allow for a computer interface between operator and all functions of the system for increased efficiency. Other optional equipment includes on-board generator, additive injector and mixing tank, on-line particle counter and filter crusher.

Given an approximate budget and a brief application analysis, our team of engineers will work with the customer to design the most effective and efficient reclamation system and service program.

TURBINE OIL PURIFICATION SYSTEMS

Studies by Electric Power Research Institute have concluded that over half of the forced outage hours related to bearings, journals and lube oil systems were due to contaminated oil. This contamination comes in the form of free, emulsified and dissolved water and also particulate matter.

Since it is often difficult if not impossible to prevent water from entering the lubricating system, it is extremely important to remove it from the oil before it causes permanent damage. **FILTERVAC** offers two (2) types of oil purifiers that remove both water and particles to provide a Total Turbine Oil Purification System.



Vacuum Turbine Oil Purification Systems

FILTERVAC Vacuum Oil Purifiers (Model VPL) utilize a vacuum dehydration process to remove emulsified and dissolved water from turbine oil as well as fine particulate and gasses. These systems are self-contained, skid mounted and offer a P.L.C. controlled full status control panel for fully automatic operation.

These systems come as either a dedicated Stationary System or as a Portable System for plant wide use with flow rates up to 1200 GPH.

Coalescer/Separator Purification Systems

FILTERVAC also offers Coalescer/Separator Purifiers that are able to remove free and emulsified water from turbine oil as well as particle contamination. High quality of oil cleanliness is achieved by the use of a series of coalescers, separators and high quality particulate filters.

These systems are self-contained, skid mounted, and offer a P.L.C. controlled full status control panel for fully automatic operation. These systems come as either a dedicated Stationary System or as a Portable System for plant wide use with flow rates up to 100 GPM.

FULLER'S EARTH FILTRATION

Fuller's Earth Filtration System are designed and engineered to remove such contaminants as acids, waxes, gums, resins, asphatees, sludges, carbon residue, surfactants and traces of free water from various oils and liquids. In addition these systems are able to rectify the colour of various liquids as well as being able to remove odour from the liquids. Many applications exist such as:

- Insulating Oil
- Seal Oil
- Quenching Oil
- Lubricating & Hydraulic Oil
- Aviation & Diesel Fuels
- White Oils
- Cooking Oils
- Oil Refinery & Recovery Process Application



Conventional Fuller's Earth Filtration Systems

Conventional Systems are commonly known as systems that utilize Fuller's Earth within a filtration process but once the earth has maximized its adsorptive quality, it must be disposed of as a hazardous substance and the vessel must be continuously replenished with new Fuller's Earth Medium. **FILTERVAC** offers four(4) broad ranges of Conventional Fuller's Earth Filtration Systems that either implement the use of removable Fuller's Earth Canisters or employ loose Fuller's Earth Clay in Columns/Towers. Each style of system is engineered to handle specific flow rates, processing times and specific applications.

Reactivable Fuller's Earth Filtration System

FILTERVAC offers a unique Fuller's Earth system that allows for up to 200-500 reactivations of the same Fuller's Earth before it has to be cheaply disposed of as a non-hazardous substance. This stationary or mobile system provide for better filtration efficiency, high return on investment and is an environmentally friendly system. In light of present and future governmental waste disposal restrictions, this system provides solutions for many years to come. A variety of flow rates and configurations are available to suit the application.

ECOIL TRANSFORMER OIL REGENERATION SYSTEMS



The Ecoil Mobile (Model RS-M) and Stationary (Model SRS) Transformer Oil Regeneration Systems are used to regenerate insulating mineral oil in Energized or Non-Energized Transformers as well as on a tank to tank basis. The Ecoil System uses a special blend of Fuller's Earth that is permanently installed in a set of columns. With the use of these packed Fuller's Earth Columns, the Ecoil System is able to completely regenerate oil with high acidic levels, rectifies colour and also provides for optional transformer desludging abilities. Incorporated into the Ecoil system is a degasifier and a set of particulate removing filters that allow for an operator to also degasify and dehydrate the oil. The ECOIL System is able to regenerate transformer oil to a specification that surpasses all ASTM and IEEE specifications/standards.



What makes the Ecoil process so unique is its ability to reactivate the same Fuller's Earth up to 300 times before it has to be cheaply disposed of as a non-hazardous and oil free substance. When the Fuller's Earth is no longer efficient in adsorption of contaminants, the Fuller's Earth is simply reactivated within the columns. In order to ensure a high degree of control and reliability, the Ecoil Regeneration System is controlled by a Process Logic Controller and monitored/interfaced by a computerized supervisory system which monitors and records all vital operating parameters.

TRANSFORMER OIL DEGASIFIERS/PURIFICATION SYSTEMS



FILTERVAC's Stationary, Portable and Mobile High Vacuum Transformer Oil Purification Systems (Model VPH) is used for dehydration and degasification of electrical insulating liquids such as transformer oils and silicone fluids. The VPH Process is able to increase and maintain the oil's dielectric strength and includes the removal of free and soluble water, free and dissolved air and gases and particulate matter. The standard VPH System is designed for processing oils in workshops, in storage tanks or directly in transformers (energized or de-energized transformers).

FILTERVAC offers a variety of flow rates and options to suit every customer's requirements. Optional features offered are conventional Fuller's Earth Filter(s) or Column(s) for acidity and colour rectification.

In addition, **FILTERVAC** offers High Vacuum Degasification/Purification System to treat cable oils (Model VPH-C) as well as for many other applications outside of the electrical industry, such as for electronic and radar equipment, vacuum pump sealing oils, brake fluids and refrigeration oils.

MOBILE & PORTABLE INSULATING OIL FILTER CARTS



Mobile Filter Carts

The **FILTERVAC** Filter Carts are used to clean insulating oils found in switch gear/circuit breaker applications. These mobile and roadworthy filtration systems come with processing rates from 10-40 GPM and come equipped with one(1) or more particulate removing filter cartridges. A variety of filters are available with micron ratings down to 0.5 micron as well as water adsorptive cartridges. Typical system features include on board dirty and clean oil tanks, hose reels and power cables. Each system is designed to ensure operator friendliness and maintenance ease.



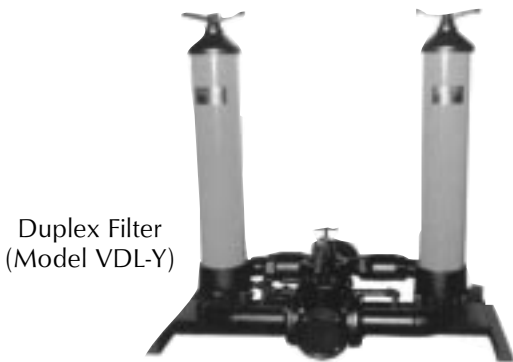
Portable Filter Carts

FV-P-UF Portable Filter Carts are used for oil circuit recloser, voltage regulator and tap changer applications where they are ideal for removing carbon and water contamination from insulating oils. The portable Filter Carts utilize Disc-Pak Filter Cartridges that provide a combination of high filtration efficiency and high dirt holding capacity.

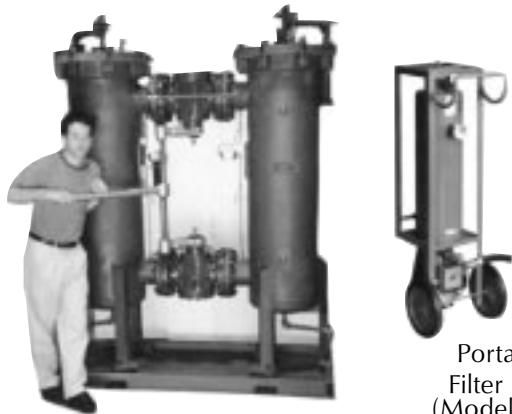
FILTERVAC also offers an On-Line Tap Changer Filtration System for the continuous removal of particulate and water contamination.

INDUSTRIAL LIQUID FILTRATION

FILTER HOUSINGS FOR LIQUIDS



Duplex Filter
(Model VDL-Y)



Duplex Filter (Model VDL)



Portable
Filter Cart
(Model FDP)

FILTERVAC offers A.S.M.E. Code Designed Housings for a variety of liquid filtration applications. A broad range of filtration vessels are offered, such as bag filters, basket strainers, filter separators and cartridge filters for a variety of flow rates.

These carbon or stainless steel vessels are available in many design configurations and styles to suit your flow rates and application requirements.

SPECIAL OPTIONS:

DUPLEX FILTRATION SYSTEMS (MODELS VDL): Many applications also require 100% continuous filtration and call for Duplex Filtration. **FILTERVAC** offers several styles of duplexing that utilize a Three-Way Transflow Valve for reliable flow transfer. The Y-Top Handle system is offered that allows for quick and easy changing of filters without using any tools.

FILTER CARTS (MODEL FDP): **FILTERVAC** engineers a light and compact filter cart that allows for quick filter changeouts to be achieved.

- Optional two (2) housings for dual-stage filtration.
- Flow rates: 3-10 GPM
- Accepts either 6"x18" or 6"x36" elements.

REPLACEMENT ELEMENTS & BAGS



FILTERVAC has a wide variety of high performance filter elements, filter bags, Fuller's Earth Filters, Disc Pac, coalescers, separators and rolled tubes for particle and water/moisture removal from air, gas, fuels, oils and liquids in general.

FILTERVAC offers various micron rated, pleated filter elements with several choices of media such as microglass, polyester/fibreglass, impregnated cellulose and plain pleated paper.

FILTERVAC also provides Fuller's Earth Filters, Disc Pac Filters, separators and rolled tubes.

For more information or a more detailed description of any product contained herein, please contact:
Filtervac International Inc., 250 Woolwich Street South, Breslau, ON, Canada N0B 1M0

Phone: (519) 648-2008 • Fax: (519) 648-2230

E-mail address: filtervac@kw.igs.net - Website address: www.filtervac.com