

THE CLARIFIER

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Testing is Complete

Repeller™

Velcon recently passed an API Group II, Class B series of tests with our horizontal Filter/Separator using the new synthetic separator, the Repeller. Now qualified for flow rates up to 2,000 GPM, these separators used with appropriate coalescers can be placed in the Facet horizontal vessels. For similarity reports fax the details of the vessel, model number, desired flow rate, etc... and we'll provide you with the information you'll need for the conversion.

Aquacon® ACI Series with Threaded Base Ends

There is an extensive line of newly qualified ACI series cartridges with threaded base ends now available. Using these cartridges eliminates the need for additional hardware thereby easing the conversion process in filter/separator vessels.

FYI

Some major airlines (British Airways and United Airlines, for example) are only accepting fuel which has been filtered using monitor/absorptive type elements, in particular, for twin engine planes operating across the sea (Extended Range Twin-Engined Operations (ETOPS)). ☞



The JFK Airport fuel farm underwent reconstruction to achieve greater efficiency.

JFK Airport Receives a Face-Lift

New York's JFK Airport recently completed a major remodeling at its fueling system. The need was to protect the airport fuel system from dirt, water, and the possibility of ruptured elements. The design had to be able to handle anything a pipeline could throw at it, and it had to be able to do all this simply, cheaply, and automatically.

The job was rated at 2,450 gpm. Velcon designed a custom F/S vessel model to meet the requirements. The vessel is now a standard production vessel (P/N VV-4356150, prefilter P/N VF3644150).

There is a combination of two filtration banks, each made up of a prefilter and filter separator. Each bank handles the full system flow rate. The system normally flows through only one bank. If that bank experiences high differential pressure or a trace of water, the system shifts to the other bank. If that second bank experiences high differential pressure or a trace of water, both filter banks are automatically activated, reducing flow

through each bank by half. If water builds up, automatic drains remove it. If too much water builds up, the slug valves close, protecting the fuel farm.

The tanks involved are floating roof tanks, with no fixed roof. We did not use oversized vessels, we used two parallel vessel banks and achieved the same goal with our control system.

The new system has prevented the infiltration of contaminants and reliably removed water, protecting the tankage.

Plans are now underway for a total of three such systems at JFK, and other bases have expressed interest in this design. ☞

** Thanks to Jim Gammon for his assistance in writing this article.*

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Frequently Asked Questions & Answers

Q Are Material Safety Data Sheets (MSDS) required for the products manufactured by Velcon?

A *The various filter vessels and filter elements that Velcon manufactures meet the definition of "Article" in section 1910.1200 (C) of the Code of Federal Regulations.*

"Articles" do not need Material Safety Data Sheets (MSDS) as they are exempt under section 1910.1200 (b) (5) (iv) of the Code of Federal Regulations.

Q How is the separator installed in vessel VV-1033?

A *The separator model number SI-818 is like a "Top Hat" and fits over the coalescer. Water droplets are repelled and drop in the annular gap between coalescer and separator.*

Q If I have a SPH-2 can it be converted to use an ACO-40901SP cartridge?

A *Yes, by attaching a steel bushing (P/N 08-490), the SPH-2 can be converted to an SPH-3. Permanently fasten with loctite 271. Then thread the ACO-40901SP onto the threaded bushing.*

Swimming Pools and Float Controls

How many readers are aware that some refueler vehicles at airports around the world also serve as "Swimming Pools"? Not intentionally, of course, and the only things "swimming" in them are dead birds, bugs, leaves, etc. We personally saw a 3" bug in one "pool" a year ago on one refueler in South America.

These "swimming pools" form when leaves and other matter (possibly ice and snow) plug up the hoses attached to the inside corners of the guard rail around the top of the refueler. The guard rail protects the dome covers from being crushed in the event of a refueler turnover.

If the hoses from the inside of the guard rails plug up, water will accumulate inside of the guard rails during the next rain or snow. Then, next time the refueler pumps fuel into an airplane, water enters the fuel tank through the open vents in the dome covers.

AHA! But if water gets into the refueler tank, and reaches the Filter/Separator vessel, it will be coalesced out of the fuel. True, but too much water in the vessel will eventually pool around the separators; then it will be forced downstream into the plane.

HOWEVER, we know that properly designed F/S vessels on these refuelers (at least the ones meeting the ATA-103 Spec.) will have a Water Defense System in conjunction with the API-1581 qualified F/S. How

many of these water defense systems are checked periodically to ensure they work properly??

We know of at least 3 occasions where float controls and/or electronic water sensing probes were not functioning properly, and LOTS of water got onboard the airplanes (one within the last 6 months). We also hear that one or more of these water defense systems may have been intentionally bypassed by some "sharp-witted" operator.

So, you can see the connection between "Swimming Pools" and "Float Controls" on your refuelers. Ensure "swimming pools" can't form on the tops of your refuelers, and ensure your water defense systems work properly.

Because some companies have been concerned about improper checking/working of the F/S water defense systems, more and more refueler and servicer F/S vessels are being converted to the IP Monitor Specification qualified ACI-6xx01CTB screw base **Aquacon**® cartridges in place of the coalescer elements. Conversion is easy - no hardware needed when switching from a screw base coalescer to the screw base ACI-6xx01CTB cartridge. Try it - you'll sleep better at night, and you will have a "warm, fuzzy" feeling when flying overseas on one of those ETOPS flights. ☸



Jim Crowther, SW regional manager for Velcon Filters plans to retire December of 1997. Crowther began working for Velcon in 1967 overseeing the SW region. He is credited with extensive business development in both the Aviation and Industrial/Utility markets in the SW region as well as the Mexico region. Pictured above with Marco Navarro of Purifica Plus, Velcon's aviation distributor in Mexico City.

JP8+100

JP-8+100 is currently being delivered into-plane at approximately 40 US Air Force and Air National Guard bases. The +100 additive was originally designed to increase the thermal stability of the JP-8 fuel by 100 degrees F. It also keeps the fuel systems in certain aircraft (such as the F-16, F-15, T-38, etc.) clean and decreases the maintenance time on the engines. A big cost savings!

Velcon's ACI-44001C (national stock no. 4330-01-439-2319) and ACI-63301CTB (national stock no. 4330-01-439-2314) **Aquacon**® cartridges are used by the Air Force when the +100 additive is injected into JP-8. ☞

The VF-609 is Now Available

The VF-609 is a versatile filter housing designed for use with several different high performance **Aquacon**® filter cartridges.

The unit features include:

- Positive Water Removal • Positive Water Holding
- Pressure Increase • Effective Dirt Removal

Applications include:

- Jet Fuel • Avgas • Motor Gasoline • Diesel Fuel
- Selected Solvents

For more information, please contact a member of the Order Entry Department. ☞

Velcon Filters Inc. CO-718CE Clay Canisters

Direction of flow is from outside to inside. Maximum rate of flow per canister is 7 USGPM. The lower the flow rate, the better, since the longer the residence time (time of contact between the fuel and the clay) the more efficient the clay becomes in removing surfactants.

See Velcon Data Sheets 1223 and 1231 for technical details on the clay and CO-718CE cartridges. See the ASTM Manual No. 5, Manual of Aviation Fuel Quality Control Procedures for more information on clay treatment.

It is emphasized that clay treatment is not a mechanical filtering process. The clay adsorbs surfactants from the fuel in a surface attachment process. This can be likened to magnetic attraction of magnetic particles by a magnet. Because it is not a mechanical filtering process, relying on differential pressure buildup to change clay canisters is not reliable. Monitoring the MSEP or Swiftkit values upstream and downstream of clay is the only reliable indicator for predicting when to change clay. If the differential pressure across a clay treatment vessel reaches 15 psid, it has long ago stopped removing surfactants and is now an expensive, and not too efficient prefilter.

Care should be used when removing and installing clay canisters to insure against bypass or tearing of the outerwrap. When removing the canisters when they are stacked 3-high, for example, remove one canister per tie rod carefully so that the outer wrap does not scrape adjacent canister end caps. If there are 31 stacks or tie rods in the vessel, remove the top 31 canisters. This will help prevent tearing of the outer wrap and spilling of spent clay in the vessel bottom, which could increase time spent in cleaning the deckplate before installing the new canisters.

After the old canisters are removed and the deckplate is cleaned, install the bottom tier of 31 canisters carefully. Do not drop the canisters in place, but lower them carefully to insure proper centering on the mounting adapters. Then install the center plates, and the next tier of canisters, etc.. ☞

In Memory

Monte and Linda Parrish, owners of NEI Fluid Technology of Anchorage, Alaska, left Sunday, July 6 with another Alaska couple on a "flightseeing" trip. In spite of a nine-day search, both couples are now presumed dead.

According to a spokesperson from the Alaska Air National Guard, "Regrettably we believe that Mr. Parrish's Cessna failed to make it over the 15,000-plus-foot edge of a box canyon wall. This radar evidence indicates the plane may have crashed into a canyon wall near the southeast spur of Mount McKinley."

Monte and Linda have been associated with Velcon since 1981 and were very well-known throughout Alaska in the aviation industry. In fact, NEI hosted a safe fueling seminar in May, 1997 with over 180 people in attendance.

Monte and Linda will be sadly missed by all their friends and associates in the industry.

If you know anyone who would like to receive *The Clarifier*, fax their name, company and address to:



We also welcome your comments and suggestions on topics covered in *The Clarifier*.

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