

# THE CLARIFIER

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## Velcon Filters, Inc. Recertifies for ISO 9001:2000 Registration

Velcon is pleased to announce that we have successfully recertified to ISO 9001:2000. Because of the efforts of many we were able to demonstrate that we continue to apply our Quality System throughout Velcon. The "Lloyd's Register Quality Assurance" (LRQA) representative audited our process from Design and Development, Order Entry, Manufacturing, through Shipments. The ISO 9001:2000 emphasizes input, process, and output requirements. Audits check to see that we know the input, process, and output of each of our functions. In addition LRQA does a thorough audit of records and calibration. The last major audit area is corrective and preventative action, which includes our "Field Problem Reports" (FPR) and "Internal Problem Reports" (IPR) systems.

## SWIFTKit<sup>®</sup> Predicts Coalescence

A Coordinating Research Council (CRC) study examined the test methods for fuel which focus on surfactant detection and the prediction of coalescence. These included various MSEP tests, interfacial tension, ASTM D1094, and the WASP test. These were compared to the Navy Coalescence Test, which is a lengthy test of coalescer performance. A variety of fuels were checked.

Out of the seven tests examined, the *SWIFTKit* ranked third in its coalescence predictability. Two of the more complicated MSEP tests beat it. Surprisingly, the *SWIFTKit* even beat out the standard interfacial tension test. The *SWIFTKit* measures interfacial tension, but it uses a glass capillary tube instead of the standard platinum ring. The fact that the capillary tube is glass, which is the same material used in most coalescers, may have played a role in improving its coalescence predictability.

*(The CRC study is over 50 pages long, but if you have a bit of insomnia, you can get a copy at [www.crao.org](http://www.crao.org). It is Report #632, titled, "Water Separation Methods Study." Click on the left side menu "Recent Reports and Study Results" and scroll down the page. Reports are listed by year with most recent first. Report # 632 is the last report listed for 2003, about 2/3 of the way down the page.)*



### CONTENTS

API/ IP 1581 Edition Updates .....	2	Velcon Service Awards .....	4
Velcon Filters' Newest: Nicolet™ 380 .....	2	Holiday Shutdown .....	4
Correction .....	3		
Caustic Coalescers .....	3		
Questions and Answers .....	3		

# API/IP 1581 5th Edition Updates:

## Dubai Int'l Airport

The photo at the right shows the new fuel farm at Dubai Int'l Airport, UAE. The vessels are API/IP 1581 5th Edition filter separator vessels, supplied by Warner Lewis Jr Industrie-Filter GmbH, Velcon's European affiliate.



## Drop-in Vessels

### Hong Kong Int'l Airport

Hanevel (Far East) Filters, PTE, Ltd., Velcon's affiliate in Singapore, has recently won an award for the Hong Kong Int'l Airport. The contract involves replacing existing vessels, which cannot qualify to the 5th Edition due to similarity limitations. The new filter separator vessels are being designed to "drop-in" to the existing piping.

### JFK Int'l Airport

The photo at the right shows a new API/IP 1581 5th Edition filter separator being set in the existing piping at the JFK fuel farm. The new 5th Edition filter separator vessels being installed will increase fuel throughput capacity as well as upgrade performance to the latest API/IP 1581 requirements and are replacing old filter separator vessels that were originally installed in the mid 1960's. This "retrofit" project focused on the replacement of one filter separator vessel per day without disturbing or reworking any of the existing main piping, concrete pad or causing any unwanted down time. This retrofit project involved unbolting and removing from service the old filter separator vessel which had been flowing that morning, "dropping in" and bolting up the new filter separator vessel to the existing main piping, and having fuel flowing again that evening. The expense of main piping and concrete rework as well as down time are all major factors in the upgrade of equipment in any existing facility. Depending upon the facility, sometimes extended down time can not be tolerated and can be a much bigger factor than the expense of piping and concrete rework. At this point it is very critical that a new "drop in" replacement vessel dimensionally fit into the existing piping. Budget and time are always major factors of any project, so if new "drop in" vessels may be the answer to upgrading your facility, contact us at Velcon Filters.



## Velcon Filters' Newest Addition: Nicolet™ 380

Velcon Filters, Inc. has recently purchased a special spectrometer to help identify particles and other contaminants found in filter elements taken from the field. The Nicolet™ 380 FT-IR (Fourier Transform-Infrared) Spectrometer analyzes both liquid and solid materials, using infrared light to determine molecular composition. The Nicolet 380, using computer-based mathematical expertise and a large database of chemical scans, allows Velcon Filters' laboratory analysts to identify compounds found in samples received from the field.

The state-of-the-art laser-regulated instrument allows milligram levels of material to be examined very quickly, giving Velcon Filters, Inc. a quick response time and other enhanced features, such as high rates of rapid scanning.

Because the Nicolet 380 can detect organic compounds, as well as some inorganic compounds, this equipment is particularly suitable for analyzing contaminants found in filter cartridges that have been in field service. This instrument, along with other complementary analytical techniques and analytical equipment in Velcon's laboratories, will help our customers diagnose a host of field problems, especially in determining the source of unknown contaminants that appear in various fuel streams.



## Questions & Answers

**Q** We have a technical question on the functions of the float control and discharge valve when not using an automatic drain valve. Recently the API recommends not using an automatic drain valve to get water out because of the possibility of fuel draining out with the water. If that is the case, then what function do the float control and discharge valve have? Without using an automatic drain valve the, float control and discharge valve seem to do nothing, because the reason float control and discharge valve are mounted there is to drain water. Please advise why these two units (float control & discharge valve) should still be used in spite of not using an automatic drain valve.

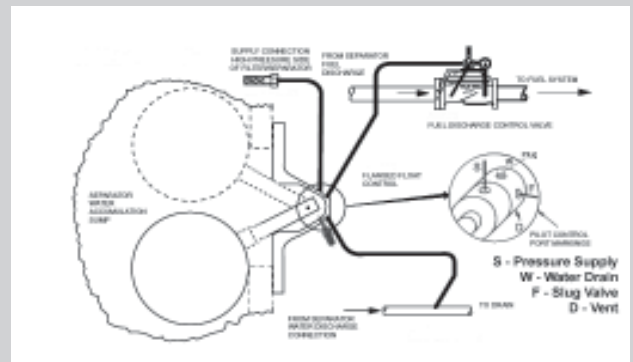
**A** For many years, Velcon has not recommended installation of automatic water drain valves because the general design and operation of these valves leaves open the possibility of the valve failing in the open position with possible catastrophic loss of fuel. The discharge valve or “slug” valve is an entirely different thing even though it operates off the same float control pilot valve that an automatic drain valve would operate from. The float control senses water level in the bottom of the filter/separator and when water reaches a pre-set level, the float control valve sends a pressure signal to the discharge valve. The discharge valve is a large full flow diaphragm valve mounted immediately downstream of the filter/separator vessel. When it receives the pressure signal, it closes tightly, stopping the flow. It will not open again until the pressure signal is gone which won’t happen until the vessel is manually drained and the float drops. This is all designed to prevent slugs of water from getting downstream of the filter/separator vessel and it operates independently of an automatic water drain. The float control and discharge valve offer excellent secondary protection against water getting downstream and is a recommended option for most filter/separator vessels.

## Caustic Coalescers

Velcon Filters, Inc. now has available a series of coalescers for caustic applications. These coalescers are made with all synthetic media, to stand up to caustic fluids. These applications are normally seen in refineries. The cartridges will be available in the traditional diameter, and in various lengths up to 56 inches. The part number “I-6xxCAU4”, where “xx” is the length of the cartridge in inches.

**Q** What is the correct way to hookup the slug valve for a new filter separator installation?

**A** Please see the diagram for a typical Hook-Up. Please note that the “D” port should be open to atmosphere and must not EVER be restricted. If this connection is tied to a drain line that can become pressurized due to a valve downstream, then the slug valve will not open. This port must be free to vent as the slug valve cycles. If the “D” port is not vented properly the slug valve would work for a few cycles, but then the vent line becomes pressurized. When this happens the slug valve will close and stay closed until the pressure is released. Then the slug valve will start working again. This is one of the most common problems in new installations of filter separators.



Typical Hook-Up for Flanged Float Control and Slug Valve on Filter Separator Vessels

## Correction

In our June 2006 Clarifier issue, on page 3, we stated “After changing cartridges circulate flow through vessel for at least 30 minutes...” A number of people have questioned the 30 minutes time, and have stated that the normal time is 3 minutes. After checking our data we confirmed that 3 minutes circulation time is perfectly acceptable. Additionally we also recommend that users follow their company’s fuel handling procedures. We apologize for any confusion caused by our earlier comments. We also appreciate the feedback to our Clarifier articles.

## Velcon Service Awards

*Congratulations to these Velcon employees who have recently celebrated special anniversaries with Velcon:*

### 30 Years

Elona F. Shrum (CO)

### 25 Years

Annie M. Weathers (AL)

### 10 Years

Joe W. Morford (CO)

Mary A. Glover (CO)

### 5 Years

Thomas D. Bennett (AL)

Freddie A. Jones (AL)

Marshelle A. Rowell (AL)

## Holiday Shutdown

Please note that Velcon will be closed the following dates in 2006 and 2007 due to holidays.

### Thanksgiving Holiday:

**November 23 through November 24, 2006**

### Christmas Holiday:

**December 22 through December 25, 2006**

### New Years Day:

**January 1, 2007**

**We wish you Happy Holidays and  
a wonderful New Year!**

Velcon Filters, Inc.

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

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