The Clarifier

CDF-X Update: Our Water Barrier Filter, CDF-X is now adopted in the A4A Operating Standard ATA-103 A4A Bulletin 2022.1: Bulletin 2022.1and CSA B836:22! In mid-January, A4A issued Bulletin 2022. 1 Water Barrier Filtration, January 2022 – the last step needed for full acceptance at airports that adhere to ATA-103. The next stage is acceptance by JIG and IATA.

We thank the JIPL and field test site personnel for engaging in these trials and collecting the data as well as all our Distributors and Customers for their continued support throughout the testing phase of CDF-X! We look forward to worldwide acceptance.

Data from some additional sites we've been testing outside of the JIPL field trails:

Site	In-Service Dates	Vessel / Element Throughput (USG)	Flow rate (est. GPM)
1	Nov 2020	153k / 15.3k	200
2	Feb 2021	119K / 39.6k	60
3	Aug 2021	1675k / 84k	600
4	Jul 2021	661k / 33k	600

1 - An FBO refueler (CDFX reached 12-month service life)
2 - An FBO fuel cabinet (CDFX reached 12-month service life)
3 - A refueler at a commercial site (still in operation)
4 - A hydrant dispenser at a commercial site (still in operation)

We noticed an error in JIGs Technical Newsletter #10 which they have corrected. For those that may have missed it, JIG sent the following:

It has come to our attention that we have incorrectly reported the data from location #6 in our recent Technical Newsletter #10 published on 29th December 2021.

The operational data for that airport location should be as follows:

Location [1]	Date entered service	#Days in vessel	# Days in service	Vessel Throughput ('000 litres)	Throughput per element ('000 litres)	#Outlet checks	Typical % rated flow (weighted ave)	#Outlet alarms
6	Nov'20	136	110	8,760 [2]	255	0	41%	0
	Apr'21	91	74	10,670 [2]	314	0	37%	0
	Oct'21	57	TBC	4,080	120	0	TBC	0

UPDATE TO TECHNICAL NEWSLETTER #10 at: JIG TN 10 Update

As CDF-X starts to go into the field, there are certain to be several questions which we will attempt to answer here:

1. Per A4A, annual change outs are required and the differential pressure change out is 15 psid.
2. An EI-1598 approved water sensor is not required. CDF-X is truly a drop-in replacement for 2" Ø monitor cartridges.
3. Unlike SAP-based monitors, CDF-X cartridges **CAN** be used in fuels containing FSII additive such as Prist®.
4. When accumulated water is the cause for increased dP, that water can be sumped and the differential pressure will most likely decrease.
5. We estimate the shelf life to be 5 years as long as the cartridges are stored properly.
6. We can supply a vessel conversion decal (VEL 2320 0221) which must be installed on the vessel. Please specify the quantity needed.

CDF Monitor Supply: We have received many questions concerning the supply of CDFs and our commitment to SAP monitor cartridge availability. *As we stated in February 2021 and restate today:*

Today, we reaffirm our commitment in continuing to support current users of 2" SAP filter monitors. When used in conjunction with the mitigating guidelines indicated in both A4A bulletin 2018.1 and JIG Bulletin 105, Parker Velcon's previously qualified EI 1583 products have proven to be a consistent and effective technology for ensuring delivery of Clean Dry Fuel.

Our CDF-X production line is fully operational and are building for orders and for inventory. We are advising all monitor users to consider planning their transition away from 2" SAP monitors. Please see Training & Technical Guidance section below.

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CDF-X Training & Technical Guidance

If you have *any* questions regarding CDF-X, the transition away from SAP or require training or technical support for change management, you can contact your Territory Sales Manager or email vfsales@parker.com

Because CDF-X is a true drop-in replacement for existing monitor housings, we recommend installing CDF-X on several pieces of equipment to determine if water barrier filtration is an appropriate solution for your facility.

Where CDF-X may not be an ideal solution to SAP monitors, there are alternatives depending upon your requirements:

- Replace the monitor vessel with a Filter Water Separator qualified to EI-1581 6th Edition Type S-LW for flow rates less than 600 GPM.
- Consider replacing the monitor with a Filter Water Separator qualified to EI-1581 6th Edition Type S-M for flow rates greater than 600 GPM. (See High Flow Update.)

ACO-X Update: In December 2021, we provided an update on our ACO-X 5"/6" diameter WBF products telling you that the necessary fabrication machinery crucial to building the elements safely and efficiently hadn't been received. We are happy to report that we are now installing that machinery and will soon start the full-scale production.
Furthermore, but not impeding to ACO-X availability, we have been working closely with the EI (Energy Institute) to develop and finalize the EI-1588 specification addendum where these ACO-X models would be qualified and included in the standard. However, there is still no final release of this document to date.

WIF Update: We have overcome many engineering and supply stream hurdles recently. We hope to qualify our *Water In Fuel* sensor with the Energy Institute sometime in the second quarter of 2022. With qualification, the sensor will also have ATEX/IECEx certification. WIF sensors will be introduced as a replacement for chemical water testing.

High-Flow Update: EI-1581 is currently in its sixth edition. A quick overview: This spec is for Filter Water Separators (FWS) either vertical or horizontal; fixed or mobile. There are 3 categories of fuel formulations: Category C – commercial fuel (Jet fuel without FSII), Category M – military fuel (Jet fuel with FSII) and Category M100 – specialized military fuel.

There are also 4 Types -Type S is intended for use where high levels of dirt and water can be expected. Type S-LD is for low dirt applications. Type S-LW is to be used where one would expect low water (mobile equipment). The new Type S-M is only to be used for mobile equipment. Our analysis points to flow rates greater than 600 GPM (2200 LPM) as the most cost-effective range for Type S-M. Since the diameter is a driving cost of the vessel, we expect Type S-M qualified vessels under 600 GPM (2200 LPM), to be only slightly smaller in diameter compared to our Type S-LW existing models.

We are currently testing various coalescer and separator medias to qualify to Type S-M using selected vessel configurations. We expect to be ready to qualify sometime in 2nd quarter and be ready for full scale production shortly thereafter.

Many refueler OEMs have asked if there are any advantages using aluminum rather than carbon steel vessels. The table below shows the impact on weight and price using an aluminum FWS vessel.

Flow Rate	Operating Weight	Price	Availability
300 GPM	-17%	+166%	+4 Weeks
600 GPM	-23%	+100%	+4 Weeks
900 GPM	-9%	+45%	+6 Weeks

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