

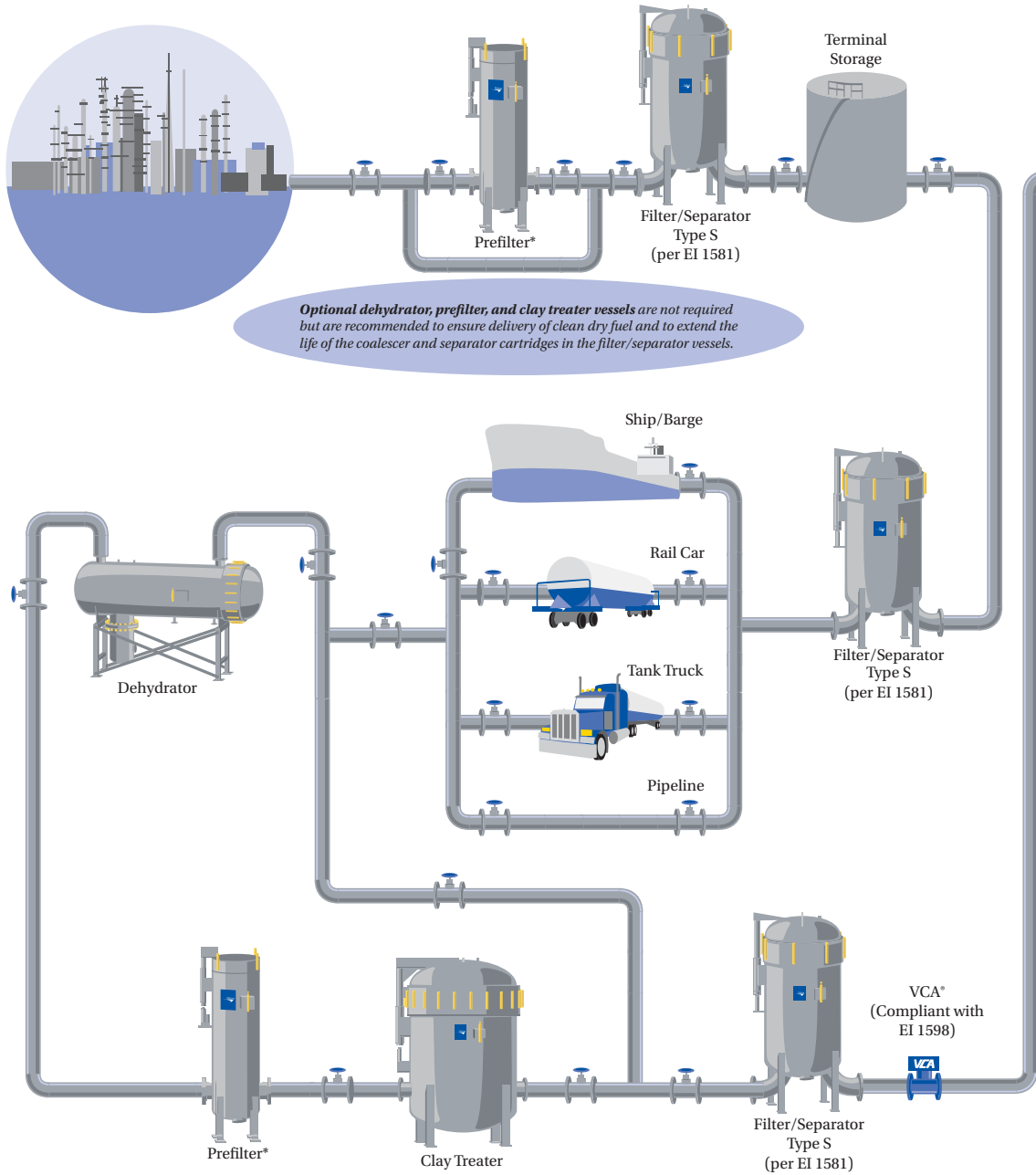


Monitor Cartridges for Aviation Fuel Handling

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

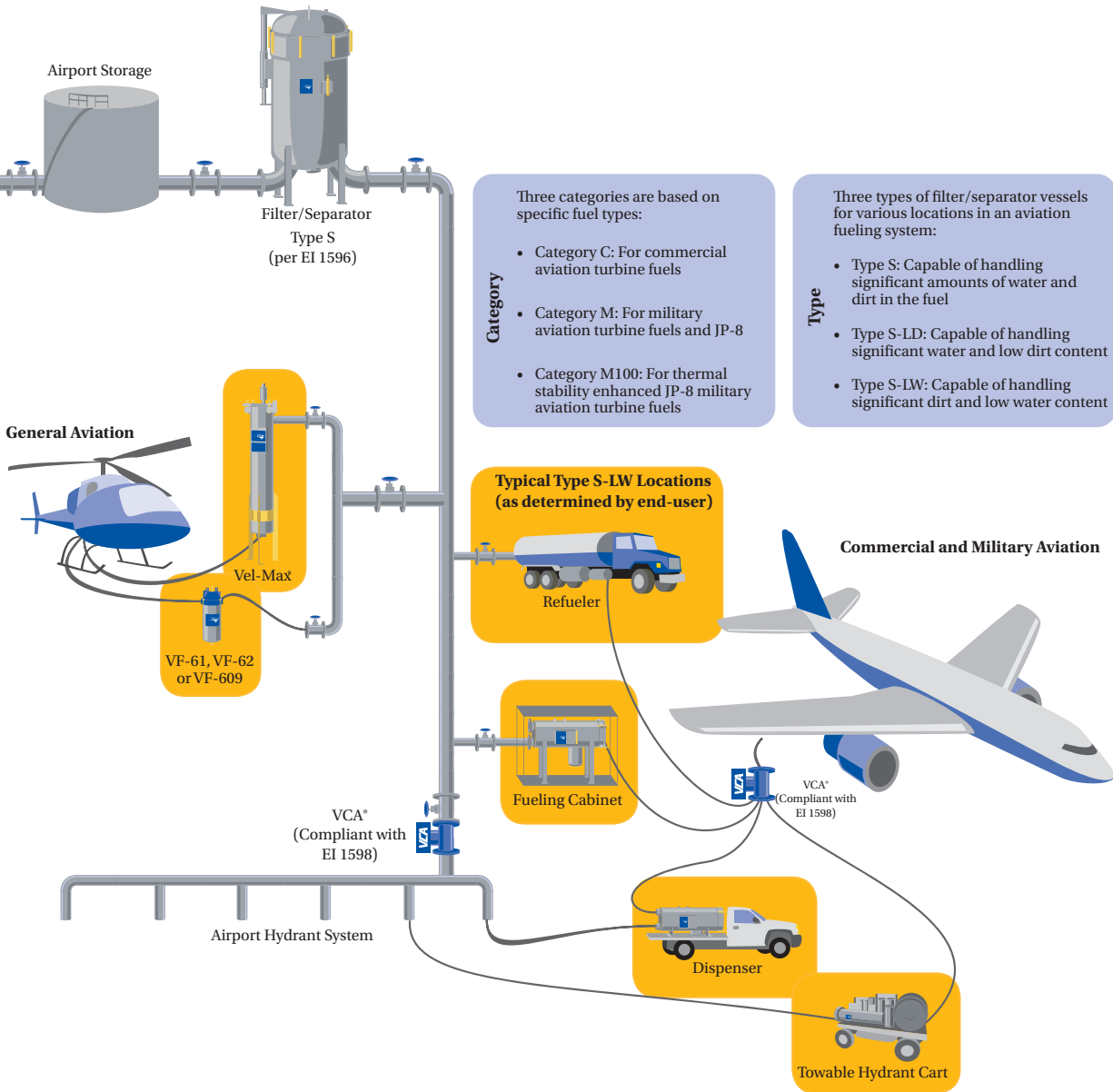
Typical Distribution System for Clean Dry Aviation Fuel - Fuel Monitor

EI 1581 Specification, 5th Edition



CONTENTS

Fuel Monitor Cartridges - 2" OD CDF Series	4	Aviation Aquacon® Spin-On ACO-40501SPP, ACO-40901SPP	10
Fuel Monitor Cartridges - 6" OD Aquacon ACO Series	6	Cartridge Changeout Curve ...	12
Fuel Monitor Cartridges - 6" OD Aquacon ACI Series	8		



* Prefilter elements compliance with EI 1590 and vessel compliance with EI 1596 is customer dependent.
Optional EI 1583 Qualified Vessels/Absorbent Type Cartridges for jet fuel without anti-icing additive.

CDF[®] Fuel Monitor Cartridges

EI 1583 6th Edition P Series

Field Proven: CDF[®] Replacement Cartridges Assure Clean Dry Fuel Delivery

FEATURES

- CDF[®] P SERIES are qualified to EI 1583 Sixth Edition specification for aviation fuel filter monitors
- IMPROVED SALT WATER PERFORMANCE
- CONDUCTIVE END CAPS and adhesive to reduce static charge within the vessel.
- O-RING SEAL minimizes the possibility of bypassing contaminated fuel at differential pressures up to 175 psi.
- RUGGED CONSTRUCTION collapse strength exceeds 175 psi differential pressure.

DESCRIPTION

The Parker Velcon CDF[®] P Series cartridges provide superior performance and reliability in standard fuel monitor housings through a unique combination of media that absorbs water and filters solids that might be present in the fuel while helping reduce static charge build-up inside the vessel.

The injection molded endcaps bond with the media and with the O-ring seal on the outlet end. This minimizes the possibility of bypassing contaminated fuel or transmission of water downstream at low flow rates.



As the cartridge removes water and/or contaminant from the influent fuel the pressure differential will increase along with a decrease in flow rate. These changes are the result of flow restriction caused by dirt retention or water absorption in the media. The rate of these changes depends on the quantity of water or contamination in the fuel.

ORDERING INFORMATION

Specify Parker Velcon model number from table on page 5. CDF[®] Cartridges are packaged 20 per carton.

*****CAUTION*****

DO NOT USE WITH PRE-MIXED FUEL CONTAINING ANTI-ICING ADDITIVES.

EI SPECIFICATION 1583 6TH EDITION INFORMATION

Parker Velcon's CDF®-P Series Cartridges incorporate several structural features due to requirements of the Sixth Edition of EI 1583. Some of these include:

- Increased product conductivity to decrease the risk of electrostatic discharges
- Improved media structure to lower the risk of media migration
- Lower initial DP - a major factor for installations that require changing cartridges at 15 PSID.
- New structure that provides longer cartridge life in the presence of small amounts of water

Some of the requirements of the sixth edition of EI 1583 are:

- Salt resistance tests
- Water slug test at low flow (10% of rated flow)
- Tests for trace SAP migration
- Structural integrity test
- Low water (50 ppmv) at low flow (10% of rated flow)
- Testing for cartridge conductivity



SPECIFICATIONS AND TECHNICAL INFORMATION

- 175 psid (12 bar) collapse strength
- 0.5 micron rating
- 160°F maximum operating temperature
- Recommended changeout differential pressure = 25 psid
- Typical water holding capacity for CDF-230P is 120 ml.
- For service life information, please refer to Operating Procedures #1839 or consult your company fuel handling procedures.

CARTRIDGE SELECTION TABLE

Cartridge Flow Rate USGPM	Parker Velcon Model Number	Overall Length	Replacements for:	
			Facet Model Number	Faudi Model Number
5	CDF-205P	5 13/16"	FG-205 (-3 or -4) GNG-205	M.2-134 (/4 or /E)
10	CDF-210P	10 13/16"	FG-210 (-3 or -4) GNG-210	M.2-261 (/4 or /E)
15	CDF-215P	15 13/16"	FG-215 (-3 or -4) GNG-215	M.2-387 (/4 or /E)
20	CDF-220P	20 13/16"	FG-220 (-3 or -4) GNG-220	M.2-515 (/4 or /E)
25	CDF-225P	25 13/16"	FG-225 (-3 or -4) GNG-225	M.2-642 (/4 or /E)
30	CDF-230P	30 13/16"	FG-230 (-3 or -4) GNG-230	M.2-770 (/4 or /E)

Aquacon® ACO Aviation Fuel Filter Monitor Cartridges

El 1583 6th Edition P Series 6" OD Aviation Fuel Filter Monitor
Remove Water and Dirt from Jet Fuel and Avgas
Outside-to-In Flow Cartridges



FEATURES

- Free and emulsified water removal to less than 5 ppm
- 1/2 micron particle removal
- Provides protection against “slugs” of water
- Pressure increase signals need for cartridge change
- Use with existing filter housings

DESCRIPTION

Patented **Aquacon®** Filter Cartridges have a unique high-capacity inner absorbent medium which removes all free and emulsified water from hydrocarbon fuels down to less than 5 ppm in the effluent. Absorbed water is chemically locked into this medium.

When a cartridge reaches its water holding capacity, its accordion pleats swell and cause an increase in the differential pressure which signals the operator to change the cartridge.

Solid contaminants are removed by the cartridge’s particulate filter media layers. The pleated accordion style design provides a large surface

area for maximum dirt holding capacity. Models are offered for particle filtration down to 1/2 micron size with 98% plus efficiency. Performance is not affected by the presence of common surface active agents.

Compact **Aquacon** Cartridges are quick and easy to install. Models are available to fit most existing standard housings. Refer to Cartridge Selection Table on reverse side.

Use Form 1846 for cartridge changeout recommendations at flow rates less than rated flow.

ACO CARTRIDGE SELECTION TABLE

Model Number	Micron Ratings	Inside DIA (in)	Outside DIA (in)	Length (in)	Col-lapse Pres-sure (psi)	Max. Flow Rate (USGPM)	Interchange Information
ACO-21001P	0.5	1 1/32	2 5/8	9 3/4	60	15	Fits VF-31E Housing
ACO-31001P	0.5	1 5/16	3	9 3/4	75	20	Fits Purolator Vessel PR-172-3
ACO-40501SPP	0.5	1-12NF	3 3/4	5 1/2	60	10	Use with head SPH-2
ACO-40801P	0.5	1 3/4	4	8	100	13	Rellumit Replacement
ACO-40901SPP	0.5	1 3/8 -12NF	3 3/4	8 1/2	60	15	Use with head SPH-3
ACO-41201P	0.5	1 3/4	4	12 1/4	100	20	Replaces Facet C-707; Purolator Vessel PAG-50
ACO-41601P	0.5	1 3/4	4	15 13/16	100	27	Rellumit Replacement
ACO-41801P	0.5	1 3/4	4	18	100	30	Replaces Facet C-706 and Keene BP-419, BP-518
ACO-41901P	0.5	1 3/4	4	19 7/8	175	32	Rellumit Replacement
ACO-51201P	0.5	1 7/8	5 5/8	12 1/4	75	50	Fits VF-61 Housing
ACO-512P3P	0.3	1 7/8	5 5/8	12 1/4	75	50	Fits VF-61 Housing
ACO-60801P	0.5	3 1/2	6	8 1/4	100	30	Omeco 6" x 8" Replacement
ACO-60901P	0.5	1 1/2	6	9 11/16	100	36	Fits Fram/Facet VFCS-21 (Element CC-21-7); VF-609
ACO-609P3P	0.3	1 1/2	6	9 9/16	100	36	Fits Fram/Facet VFCS-21 (Element CC-21-7); VF-609
ACO-61201P	0.5	1 1/2	6	13 3/4	100	48	Fits Fram/Facet VFCS-22 (Element CC-22-7)
ACO-61401P	0.5	3 1/2	6	14 1/2	175	58	Qualified to EI 1583 6th Edition
ACO-62201PTB	0.5	3 1/2	6	22	175	88	Qualified to EI 1583 6th Edition
ACO-62901P	0.5	3 1/2	6	28 3/4	175	115	Qualified to EI 1583 6th Edition
ACO-63301P	0.5	3 1/2	6	33 1/4	175	133	Qualified to EI 1583 6th Edition
ACO-64401P	0.5	3 1/2	6	43 1/4	175	173	Qualified to EI 1583 6th Edition
ACO-64401PTB	0.5	3 1/2	6	44	175	176	Qualified to EI 1583 6th Edition
ACO-71801P	0.5	2 1/2	6 1/4	18	75	65	Fits VF-71E Housing

TECHNICAL INFORMATION

1. Max. operating temp.: 160°F (71.1°C)
2. Micron ratings are nominal at 98%+ efficiency
3. **Aquacon** Cartridges can significantly reduce flow when loaded with water or dirt. Appropriate precautions should be taken in applications where fuel flow must be maintained or where surge conditions can occur.
4. Replace the cartridge if the differential pressure exceeds 25 psid. For service life information, please refer to Operating Procedure #1839 or consult your company fuel handling procedures.
5. Typical water holding capacity for ACO-61401P is 700-800 ml.

NOTE: 1/2 micron rated **Aquacon**® Cartridges are recommended for use with jet fuel and avgas. Effluent fuel quality meets requirements for EI 1583 6th Edition.

CAUTION: DO NOT USE WITH PRE-MIXED FUELS CONTAINING ANTI-ICING ADDITIVES (FSII)

ACI *Aquacon*[®] Aviation Fuel Filter Monitor Cartridges

Remove Water and Dirt from Jet Fuel and Avgas
Inside-to-Out Flow Cartridges



FEATURES

- Free and emulsified water removal to less than 5 ppm
- 1/2 micron particulate removal
- Provide protection against “slugs” of water
- Pressure increase signals need for cartridge change
- Not affected by surface active agents*
- Replace existing coalescers in into-plane filter separator vessels
- Inside-to-out flow pattern

DESCRIPTION

Patented* *Aquacon*[®] Filter Cartridges have a unique high-capacity inner filter media which removes all free and emulsified water from hydrocarbon fuels down to less than 5 ppm in the effluent. Absorbed water is chemically locked into this medium.

When a cartridge reaches its water holding capacity, its accordion pleats swell, and cause an increase in the differential pressure which signals the operator to change the cartridge.

Solid contaminants are removed by the cartridge’s two particulate filter media layers. The pleated accordion style design provides a large

surface area for maximum dirt holding capacity. Performance is not affected by the presence of common surface active agents.

The Parker Velcon ACI open-end and threaded-base *Aquacon*[®] Cartridges have been qualified to EI 1583, the “Energy Institute Specifications and Qualification Procedures for Aviation Fuel Filter Monitors with Absorbent Type Elements.”

The ACI-6xx01P open-end and ACI-6xx01PTB threaded base *Aquacon* elements are intended to be installed in the final filter/separator vessel in place of coalescers for more protection against dirt and water downstream.

CARTRIDGE SELECTION TABLE

Model Number	O. D. in.	Length in.	End-Cap Type	Maximum Flow Rate (USGPM)	Interchange Information
ACI-61401P	6	14 ½	3 ½" ID Open-Ends	58	CC-N18, CA14-3, CA14-9
ACI-61401PTB	6	14	Screw Base/Blind	56	CC-N18SB, CA14-3SB, CA14-9SB
ACI-62201P	6	22 ¼	3 ½" ID Open-Ends	89	CC-K2, CC-K28, CA22-3, CA22-9
ACI-62201PTB	6	22	Screw Base/Blind	88	CC-K28SB, CA22-3SB, CA22-9SB
ACI-62901P	6	28 ¾	3 ½" ID Open-Ends	115	CC-N28, CA28-3, CA28-9
ACI-62901PTB	6	27 15/16	Screw Base/Blind	111	CC-N28SB, CA28-3SB, CA28-9SB
ACI-63301P	6	33 ¼	3 ½" ID Open-Ends	133	CC-K38, CA33-3, CA33-9
ACI-63301PTB	6	33	Screw Base/Blind	132	CC-K38SB, CA33-3SB, CA33-9SB Has NSN: 4330-01-439-2314
ACI-63301FP	6	33 ¾	2" ID Open-Ends	133	Faudi F. 1-842 (1.066.020)
ACI-63801P	6	38 ¼	3 ½" ID Open-Ends	153	CC-K38-1, CA38-3, CA38-9
ACI-63801PTB	6	38	Screw Base/Blind	152	CC-K38SB-1, CA38-3SB, CA38-9SB
ACI-64401P	6	43 ¼	3 ½" ID Open-Ends	173	CC-N38, CA43-3 CA43-9
ACI-64401PTB	6	44	Screw Base/Blind	176	CC-N38SB, CA43-3SB, CA43-9SB
ACI-65601P	6	57	3 ½" ID Open-Ends	228	CC-N48, CA56-3, CA56-9
ACI-65601PTB	6	56 1/16	Screw Base/Blind	224	CC-N48SB, CA56-3SB, CA56-9SB

1 Overall length does not include the 1" bolt for the ACI-6xx01PTB threaded base ACI's.

Note: Drain vessels equipped with the ACI Aquacon® Cartridges on a daily basis from an upstream drain to ensure upstream water is removed to prolong element life.

TECHNICAL INFORMATION

- Maximum exposure temperature is 160°F.
- Cartridges are rated at 1/2 micron nominal efficiency.
- Aquacon** Cartridges can significantly reduce flow when loaded with water or dirt. Appropriate precautions should be taken in applications where fuel flow must be maintained or where surge conditions can occur.
- Replace the cartridge if the differential pressure exceeds 25 psid. For service life information, please refer to Operating Procedure # 1839 or consult your company fuel handling procedures.
- ACI burst strength exceeds 175 psid. If F/S vessel coalescer deckplate or manifold is not certified to 15 bar (220 psi) strength, a differential pressure limiting device, set from 25 - 30 psid, should be installed on the filter/separator vessel.
- Typical water holding capacity for ACI-61401P: 900 ml.

CAUTION: DO NOT USE WITH PRE-MIXED FUELS CONTAINING ANTI-ICING ADDITIVES.

Aviation *Aquacon*[®] Spin-On Filters ACO-40501SPP, ACO-40901SPP

Remove Dirt and Water from Jet Fuel and Avgas



ACO-40501SPP
Mounted to SPH-2
Head

ACO-40901SPP
Mounted to SPH-4
Head



ACO-40901SPP
Mounted to SPH-5
Parallel Flow Head

FEATURES

- Convenient Spin-On Design
- Removes free and emulsified water removal to less than 5 ppm, typical
- Filters out dirt and other particles to a ½ micron nominal rating
- Choice of four mounting head styles

DESCRIPTION

ACO-40501SPL is the popular 3 ¾" diameter x 5 ½" long size. The ACO-40901SPL is 3 ¾" diameter x 8 ½" long. Four mounting head styles are offered for use with these two cartridges. Refer to the back side of this sheet for details.

When an *Aquacon*[®] spin-on cartridge reaches its water holding capacity, its accordion pleats swell and cause an increase in the differential pressure which signals the operator to change the cartridge.

Solid contaminants are removed by the cartridge's two particulate filter media layers. The pleated accordion style design provides a

large surface area for maximum dirt holding capacity. Models are offered for particle filtration down to ½ micron size with 98% plus efficiency. Performance is not affected by the presence of common surface active agents.

These cartridges also effectively filter out dirt, rust, and other particles. (See caution below.)

CAUTION

DO NOT USE WITH PRE-MIXED FUEL CONTAINING ANTI-ICING ADDITIVES.

AVIATION AQUACON® ACO-40501SPP AND ACO-40901SPP SPIN-ON FILTERS

CARTRIDGE TECHNICAL INFORMATION

Maximum Operating Pressure: 50 psi
 Maximum Operating Temperature: 200°F
 1/2 micron nominal filtration rating at 98+% efficiency.
 Cartridges do not remove soluble (dissolved) water.
 Gaskets are Buna-N.

	ACO-40501SPP	ACO-40901SPP
Diameter:	3 3/4"	3 3/4"
Length:	5 1/2"	8 1/2"
Weight:	1 1/4 lbs.	1 1/2 lbs.
Thread:	1"-12 NF	1 3/8"-12 NF



ACO-40501SPP
and ACO-40901SPP

HEAD STYLES AND FLOW RATES



SPH-2



SPH-3



SPH-4



SPH-5

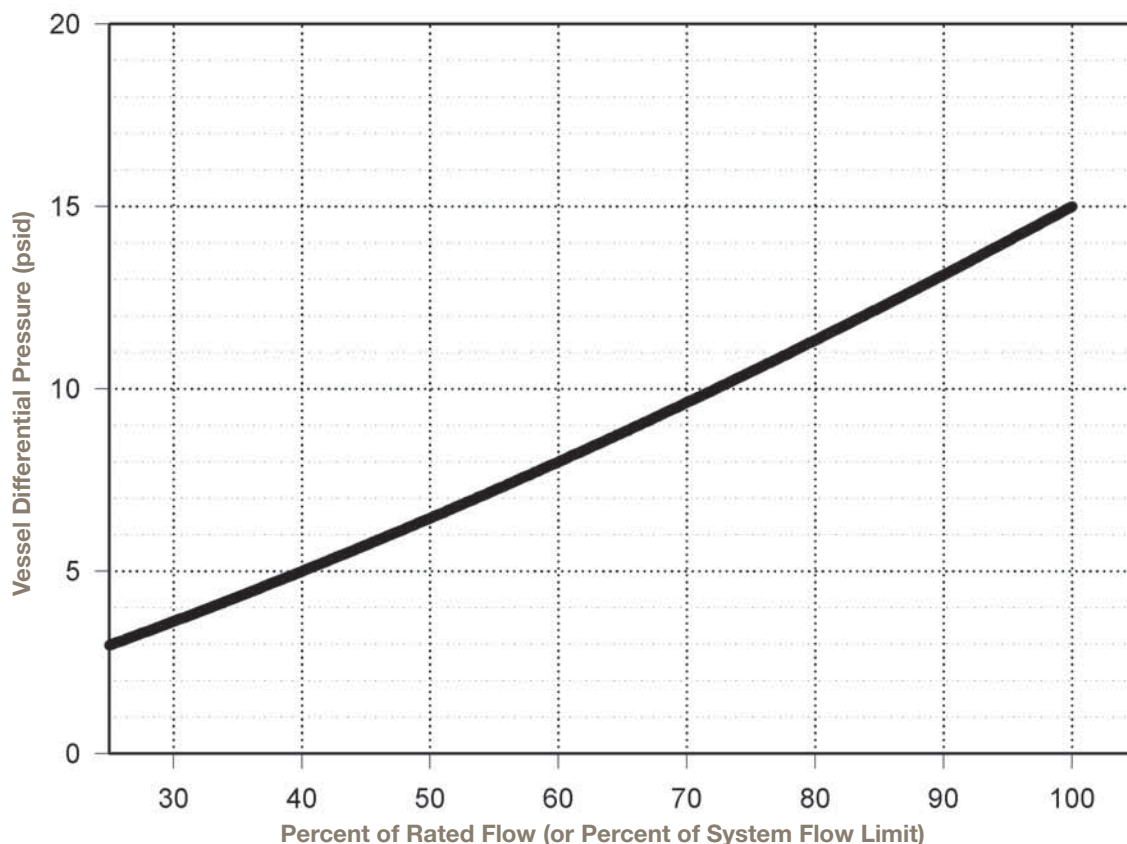


Head Part Number	Use with Aquacon® Cartridge(s)	Inlet/Outlet Size	Inlet/Outlet Face-to-Face	Head Weight, Lbs	US-GPM
SPH-2	1 ea. ACO-40501SPP	3/4" NPT	3 3/4"	1	10
SPH-3	1 ea. ACO-40901SPP	3/4" NPT	3 3/4"	1	15
SPH-4	1 ea. ACO-40901SPP	1/2" NPT	2 3/4"	1	7
SPH-5	2 ea. ACO-40901SPP	1/2" NPT	7"	1 3/4"	15

NOTES

- Differential pressure across head and cartridge at recommended maximum flow is 5 psi or less.
- SPH-2, -3, -4, and -5 are die cast aluminum 380 alloy.
- SPH-4 and -5 have dual inlets/outlets for plumbing flexibility.
- SPH-5 allows parallel flow through two cartridges.
- Heads have no internal bypass. Flow will stop if cartridges plug-up.
- Mounting holes on SPH-4 and -5 are 5/16".
- SPH-3, -4, and -5 have steel bushings or nipples for adapting to ACO-40901SPP. They are permanently fastened with Loctite® 271.

Cartridge Changeout Curve



Parker Velcon recommends changing coalescer and monitor cartridges when the differential pressure reaches 15 PSID and the filter/separator is being operated at its rated flow. The system, however, will often be operating at lower flow rates with a corresponding lower differential pressure. If, for example, a 600 GPM filter/separator shows a differential of 12 PSID at 300 GPM and the flow rate increases to 600 GPM, the differential would be about 28 PSID, which is considerably above the recommended pressure drop for changing cartridges.

Therefore to know the pressure differential characteristics at lower flow rates for a set of coalescer

cartridges which are plugged to the extent that the differential pressure would read 15 PSID. The graph reflects differential pressure and percentage of rated flow information for Parker Velcon cartridges.

EXAMPLES:

A 1000 GPM filter/separator operating at 600 GPM (60% of rated flow) with a differential pressure less than 8 PSID, the cartridges do not require changing. If the differential pressure is 8 PSID or more, however, the elements are due for a changeout.

EXCEPTION:

If the system in the Example is limited to a maximum flow of 750 GPM by pump capacity or some other factor then 750 GPM should be considered 100% of rated flow rather than higher rating of the filter/separator. In this case, the 600 GPM flow would be 80% of rated flow and the differential pressure at this rate can be as high as 11.50 PSID without changing elements.

NOTE:

Decals of the above graph can be obtained from Parker Velcon at 719-531-5580 and requesting decal #1979. These labels can be affixed to the vessel near the differential pressure gauge.

Mission

Parker HFFD is committed to being the world's preferred source for the expert aviation filtration solutions we deliver to our customers.

Values

Superior customer service

Profitable growth

Meet or exceed customer expectations

Accountability

Integrity

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