3L Filters™

Engineered Filtration Systems

- Cartridge Filters
- Bag Filters
- Fabricated Basket Strainers
- Gas Filter Separators
- Liquid Filter Separators
- Dehydrators
- Fuel Monitors
- Clay Treaters
- Activated Carbon Filters
- Head Lifts
- Closures
- Pressure Vessels
- Engineered Products
- Replacement Parts and Accessories
- Nuclear Products

CCI Thermal Technologies INC.

Heating and Filtration Solutions

Canada's 50 Best Managed Companies

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About

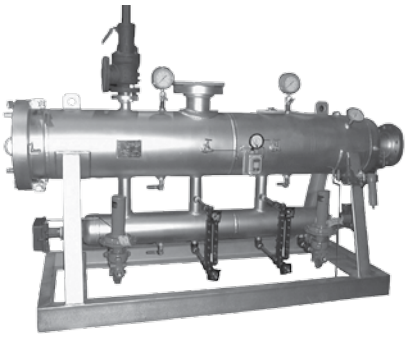
CCI Thermal Technologies INC.
Heating and Filtration Solutions

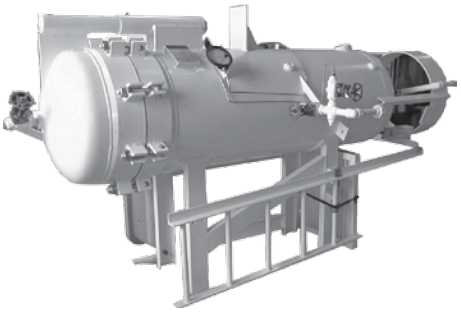
We engineer and manufacture a wide array of heating and filtration products for industrial, commercial and hazardous area applications throughout the world. Our products represent the broadest based industry expertise and the range of our technologies enables their application in any environment.

3L Filters™

Engineered Filtration Systems

3L Filters™ has exceeded the most demanding industrial filtration requirements for over 40 years. A broad range of standard and custom products includes liquid filters, strainers, separators, pressure vessels, and engineered products and systems. 3L Filters™ has special expertise for nuclear, oil & gas, petrochemical, water treatment and environmental applications.





About 3L Filters™

3L Filters™ upholds the very highest standards of quality in the design and production of filtration systems, making 3L Filters™ an industry leader. Products are specifically designed to meet ASME VIII Div. 1 and/or ASME Sec. III Nuclear CL-1, CL-2, CL-3. Additionally, 3L Filters™ has the capability to design and build engineered filtration systems to customer specifications for virtually any application in any environment.

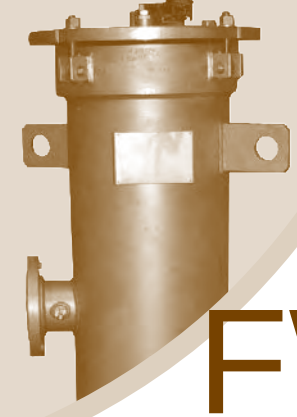
3L Filters™ products are used in a variety of applications, including:

- Paint and Ink Filtration
- Glue and Adhesive Filtration
- Oil, Fuel and Gasoline Filtration
- Hydrocarbon Gas and Fuel Filtration
- Coolant and Solvent Filtration
- Pre-filtering Applications
- Particulate/Contaminant Removal
- Water Treatment and Remediation
- Water Removal from Fuels
- Demineralization and Condensate Polishing

3L Filters™ engineering expertise and skilled craftsmen enable us to meet the specification requirements for a multitude of applications and industries. 3L Filters™ list of customers and projects represent a wide cross section of industries including:

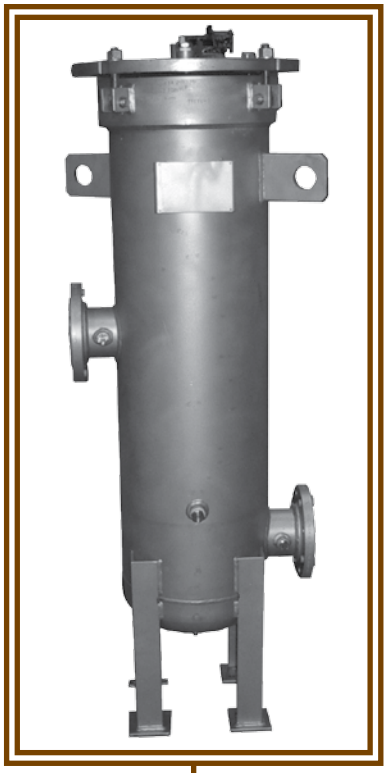
- Nuclear Power Generation
- Fossil Fuel Power Generation
- Refinery and Petrochemical Processing
- Fresh and Waste Water Treatment
- Environmental Applications
- Aviation Fueling
- Oil and Gas Production and Pipeline

Our commitment to research, product development and excellence in manufacturing has made our products the industry standard. Our dedication to customer service guarantees our success.



FW Series

Cartridge Filters (General Industrial)



FW Series Micronic Cartridge Filters remove particulates from liquid streams, often as a pre-filter ahead of finer particle separation equipment. The standard design is based upon the replaceable spunyarn cartridge, but can be adapted to many filter cartridge designs, configurations and sizes.

Applications

Used in many processing industries such as food and beverage, pharmaceutical, semi-conductor, chemical plants, water treatment and remediation.

Standard Features

- Designed to ASME Section VIII Div.1
- 150 psig standard design pressure
- -20°F/+150°F standard design temperature
- 150lb ANSI RF flanged inlet/outlet nozzles
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Stainless steel standard housings
- Stainless steel cartridge hardware
- Housing dimensions under 12” utilize handles, not headlifts
- 3L Pogo (spring-assisted) headlift on housing diameters 12” to 24”; hydraulic jack on housing diameters over 24”
- Quick access to replace cartridges
- Standard swing bolt closures
- O-ring closure seal
- Replaceable spunyarn cartridges
- Standard cartridge lengths 10”, 20”, 30” and 40” at 10 microns nominal
- External primer finish for carbon steel housings

Options & Accessories

- Custom design pressures to 3000 psig
- Higher design temperatures
- Custom flange ratings
- Custom housing materials
- Optional headlifts: handwheel or 3L Cantilever
- Optional closures: thru-bolt or patented Easy Access Closure
- O-ring closure seal in Buna, Viton, Teflon, Silicone, or EPDM
- Custom cartridge configurations and sizes
- Custom filter media
- Internal epoxy coating on carbon steel models
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Additional nozzles as needed
- Valves
- Safety relief valves
- Pressure gauges
- Duplex or multiplex arrangement
- Rubber, PVC, PVDF and other internal linings
- Steam jackets
- Working platform

Fig.	Model No.	Filter Elements		A Vessel OD	B1	B2	C	D	E	G	H	L	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	GPM (US)	Weight (lbs)
		Qty	Lg														
1	FWWFAV630E150	6	30	8.625	45	14.5	50	53	80	16.625	9.00	8	2” RF	3/4” NPT	1/2” NPT	90	210
1	FWWFAV1030E150	10	30	10.750	48	18.0	54	57	84	22.750	10.75	8	2” RF	3/4” NPT	1/2” NPT	150	315
2	FWWFAV1230E150	12	30	12.750	48	18.0	54	60	84	24.750	6.50	10	3” RF	3/4” NPT	1/2” NPT	180	360
2	FWWFAV1830E150	18	30	14.000	50	20.0	58	64	88	26.000	7.50	10	3” RF	3/4” NPT	1/2” NPT	270	440
2	FWWFAV2230E150	22	30	16.000	50	20.0	58	64	88	28.000	9.00	10	4” RF	3/4” NPT	1/2” NPT	330	480
2	FWWFAV2830E150	28	30	18.000	50	22.5	60	66	90	30.000	10.00	10	4” RF	3/4” NPT	1/2” NPT	420	575
3	FWWFAV3630E150	36	30	20.000	50	22.5	60	72	90	32.000	11.00	12	4” RF	3/4” NPT	1/2” NPT	540	625
3	FWWFAV5530E150	55	30	24.000	50	22.5	62	75	92	36.000	15.00	12	6” RF	3/4” NPT	1/2” NPT	825	725

Notes:
1. All units in inches unless otherwise stated.
2. Dimension ‘E’ is the minimum clearance required to remove 30” long cartridges. This dimension will vary for other cartridge lengths.
3. Flowrates are based on water. More viscous liquids will have lower flowrates.
4. Drawings for reference only. Certified drawings will be supplied after receipt of order.
5. Standard off the shelf products available.

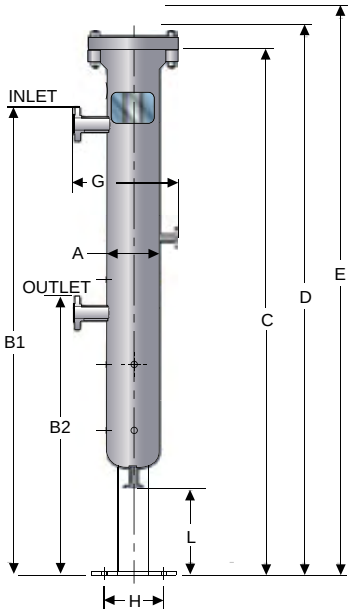


Fig. No. 1

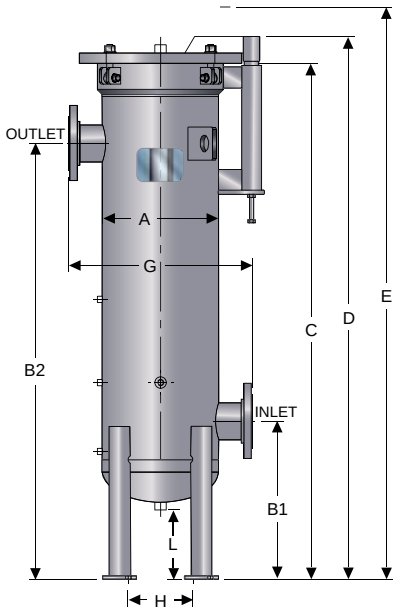


Fig. No. 2

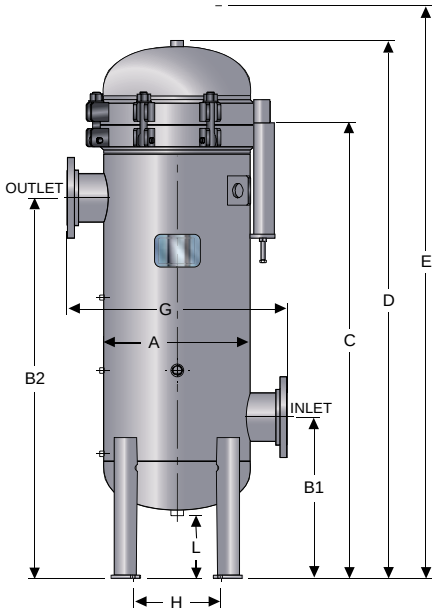


Fig. No. 3

Model Coding

FW	W	F	A	V	10	20	E	150
GENERAL INDUSTRIAL FILTER	ELEMENT TYPE M - METALLIC W - WOUND	ELEMENT SERIES F - DOE 7 - CODE 7 0 - 222 “O” RING	ELEMENT DIAMETER A - 2-1/2” OD B - 2-5/8” OD C - 2-3/4” OD D - 2-7/8” OD E - 3” OD F - 3-1/8” OD G - 1-1/2” OD H - 4” OD X - SPECIAL	VESSEL CONFIGURATION H - HORIZONTAL V - VERTICAL D - DUPLEX	NUMBER OF CARTRIDGES	CARTRIDGE LENGTH	MATERIAL A - ALUMINUM C - CARBON STEEL E - SS304 H - HASTALLOY M - MONEL S - SS316 X - SPECIAL	DESIGN PRESSURE (psig)

Request for Quote Form

Client Information:

Company Name: _____
Contact Name: _____
Contact Title: _____
Address: _____
City, State (Prov): _____
Country, Zip (Postal Code): _____
Phone/Fax: _____
E-mail: _____
Project Name: _____
Project Location: _____
Item: _____
Tag No: _____
Date: _____

Proposal Type Required: (please check mark or comment)

☐ Budgetary ☐ Bid ☐ Buy
Other: _____
Required Date for Proposal: _____
Anticipated Shipping Date for Project: _____

How did you hear about CCI Thermal Technologies?

Internet: Google Thomas Register MSN Global Spec Yahoo
Other: _____
Print Advertising: Publication name: _____
Distributor: Name: _____
CCI Thermal Employee: Name: _____
Other: Please define: _____
Are you a previous customer? ☐ Yes ☐ No

Required Data:

Type of Liquid _____
Max./Design Flow Rate _____ ☐ gpm ☐ ft^3/hr ☐ m^3/hr ☐ Other
Operating Pressure _____ ☐ psig ☐ bar g ☐ Other
Operating Temperature _____ ☐ ^0F ☐ ^0C
Desired Particle Retention _____ % _____ Particle Size _____ Microns _____ ☐ Nominal ☐ Absolute
Density of Liquid at Op. Condition _____ ☐ lb/ft^3 ☐ Other ☐ Liquid SP.GR.
Viscosity of Liquid at Op. Condition _____ ☐ cp ☐ SSU ☐ Other

Additional Data:

Solid Contaminants _____ ☐ % wt ☐ % vol ☐ Other
Type of Solid Contaminant
Allowable Clean Pressure Drop _____ ☐ psi ☐ bar ☐ Other
Max. Allowable Pressure Drop _____ ☐ psi ☐ bar ☐ Other
Material of Construction _____ Vessel _____ Internals _____ Support _____
Design & Code ☐ ASME ☐ Other CRN _____ ☐ Yes ☐ No Province _____
Design Pressure ☐ psig ☐ bar g ☐ kg/cm^2 g ☐ Other
Design Temperature _____ Min._____ Max. _____ ☐ ^0F ☐ ^0C
Corrosion Allowance _____ ☐ in ☐ mm
Radiography ☐ None ☐ Spot ☐ Full ☐ 100% All Butt Wells
Filter Element Type ☐ Disposable ☐ Cleanable
Filter Media ☐ Cotton ☐ Polypropylene ☐ Glass Fiber ☐ Other
Gasket ☐ Buna - N ☐ Viton A ☐ EPDM ☐ Other
Vessel Finish ☐ Clean & Dry ☐ Other Specify: _____
Inlet Nozzel Size _____ ☐ in _____
Outlet Nozzel Size _____ ☐ in _____
Notes or Comments:_____

_____

_____

_____

VF Series

Cartridge Filters (Aviation and Petroleum)

VF Series Micronic Cartridge Filters use specific pleated or depth media cartridges to remove particles as small as 0.5 micron.

Applications

Filtration of particulate from hydrocarbon liquids such as jet fuels, diesel, gasoline, solvents, coolants, lubricating oils, hydraulic oils and processing fluids.

Standard Features

- Designed to ASME Section VIII Div.1
- 150 psig standard design pressure
- -20°F/+150°F standard design temperature
- 150lb ANSI RF flanged inlet/outlet nozzles
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Carbon steel standard housings
- Stainless steel cartridge hardware
- Housing dimensions under 12” utilize handles, not headlifts
- 3L Pogo (spring-assisted) headlift on housing diameters 12” to 24”; hydraulic jack on housing diameters over 24”
- Quick access to replace cartridges
- Standard swing bolt closures
- O-ring closure seal
- Standard cartridge lengths 14”, 29”, 44”, and 56”
- External primer finish for carbon steel housings
- Epoxy coated interior

Options & Accessories

- Custom design pressures to 3000 psig
- Higher design temperatures
- Custom flange ratings
- Custom housing materials
- Optional headlifts: handwheel or 3L Cantilever
- Optional closures: thru-bolt or patented Easy Access Closure
- O-ring closure seal in Buna, Viton, Teflon.
- Custom cartridge configurations and sizes
- Custom filter media
- Additional nozzles as needed
- Valves
- Safety relief valves
- Pressure gauges
- Duplex or multiplex arrangement
- Working platform

Fig.	Model No.	Filter Elements		A Vessel OD	B	C	D	E	G	H	L	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	GPM (US)	Weight (lbs)
		Qty	Lg													
1	VF814C150	1	14	8.625	3.0	27.750	29.500	42.250	13.00	10.375	2	2” RF	3/4” NPT	1/2” NPT	50	225
1	VF829C150	1	29	8.625	3.0	41.750	43.500	70.750	13.00	10.375	2	2” RF	3/4” NPT	1/2” NPT	100	265
1	VF844C150	1	44	8.625	3.0	55.750	57.500	99.250	13.00	10.375	2	2” RF	3/4” NPT	1/2” NPT	150	305
2	VF1614C150	4	14	16.000	15.0	37.375	40.375	51.875	24.25	9.000	10	4” RF	3/4” NPT	1/2” NPT	200	500
2	VF1629C150	4	29	16.000	15.0	52.125	55.625	81.125	24.25	9.000	10	4” RF	3/4” NPT	1/2” NPT	400	560
2	VF2029C150	6	29	20.000	19.5	56.500	62.000	85.500	28.00	13.000	10	6” RF	3/4” NPT	1/2” NPT	600	1000
2	VF2044C150	6	44	20.000	19.5	71.000	76.375	114.500	28.00	13.000	10	6” RF	3/4” NPT	1/2” NPT	900	1100
3	VF2829C150	12	29	28.000	24.0	48.500	64.750	77.500	36.00	18.000	12	8” RF	3/4” NPT	1/2” NPT	1200	1500
3	VF2844C150	12	44	28.000	24.0	63.500	79.750	107.000	36.00	18.000	12	8” RF	3/4” NPT	1/2” NPT	1800	1600
3	VF3644C150	18	44	36.000	26.0	63.375	77.000	106.875	48.00	23.000	12	10” RF	3/4” NPT	1/2” NPT	2700	2250
3	VF4244C150	27	44	42.000	28.0	66.000	86.625	109.500	54.00	28.000	12	12” RF	3/4” NPT	1/2” NPT	4050	3800

Notes:
1. All units in inches unless otherwise stated.
2. Dimension ‘E’ is the minimum clearance required for cartridge removal.
3. Flowrates are based on a maximum liquid viscosity of 120 SUS.
4. Drawings for reference only. Certified drawings will be supplied after receipt of order.

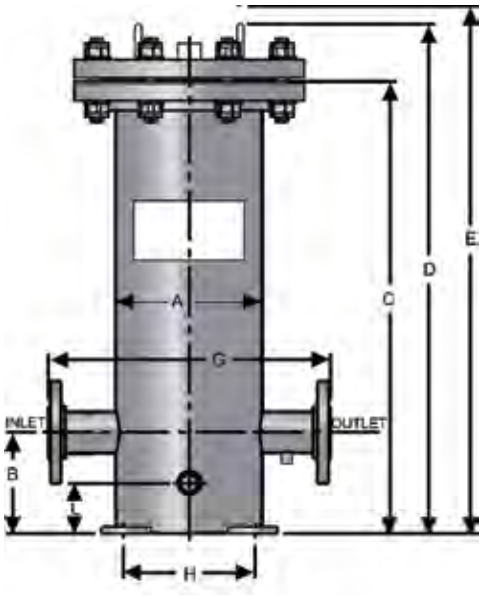


Fig. No. 1

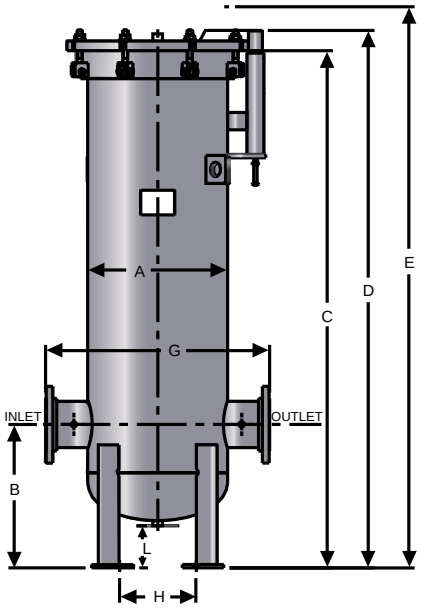


Fig. No. 2

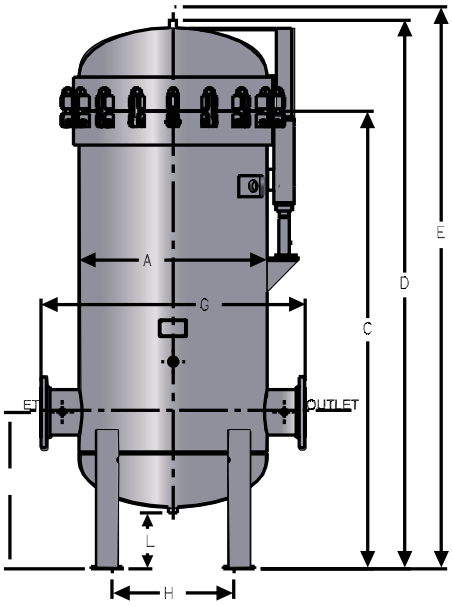


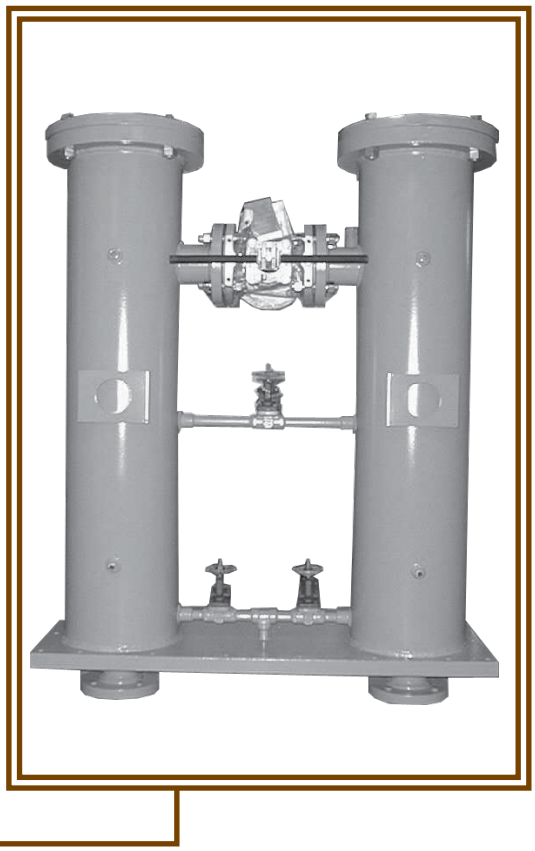
Fig. No. 3

Model Coding

VF	8	14	C	150
AVIATION AND PETROLEUM FILTER	VESSEL DIAMETER	CARTRIDGE LENGTH	MATERIAL A - ALUMINUM C - CARBON STEEL E - SS304 S - SS316 X - SPECIAL	DESIGN PRESSURE (psig)

F&FD Series

Cartridge Filters (Lube Oil, Seal Oil & Control Oil)



The F & FD Series provide continuous particulate filtration for critical and non-critical lube, seal and control oil applications. Many standard systems conform to API 614 requirements for system components, including filters and transfer valves as well as the required controls and instrumentation.

Applications

Turbine manufacturers, machine tool manufacturers, lube oil consol manufacturers, mining-gear lube oil filters, transformer oil filtration-distribution terminals, oil recycling plants, hydraulic systems, heat transfer oil filtration and any other rotating equipment such as compressors and motors.

Standard Features

- Designed to ASME Section VIII Div.1
- 150 psig @ 150^{0}F standard design pressure
- -20°F/+200°F standard design temperature
- 150lb ANSI RF50 flanged inlet/outlet nozzles
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Vertical housing of carbon steel material
- Stainless steel cartridge hardware
- Housing dimensions under 12” utilize handles, not headlifts
- 3L Pogo (spring-assisted) headlift on housing diameters 12” to 24”; hydraulic jack on housing diameters over 24”
- Quick access to replace cartridges
- Standard swing bolt closures
- O-ring closure seal
- Standard cartridge lengths 18” and 36”
- External primer finish for carbon steel housings

Options & Accessories

- Custom design pressures to 3000 psig
- Higher design temperatures
- Custom flange ratings
- Custom housing materials
- Optional headlifts: handwheel or 3L Cantilever
- Optional closures: thru-bolt or patented Easy Access Closure
- O-ring closure seal in Buna, Viton, Teflon, or EPDM
- Custom cartridge configurations and sizes
- Custom filter media
- Paint or coating to customer specifications
- Additional nozzles as needed
- Three way valves
- Safety relief valves
- Pressure gauges
- Steam jackets
- Working platform

Fig.	Model No.	Filter Elements		A Vessel OD	B1	B2	C	D	E	F	G	H	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	GPM (US)	Weight (lbs)
		Qty	Lg														
1	FD818C150	1	18	8.625	8.750	6	32.50	36	50.50	21.000		8.500	1-1/2" RF	3/4" NPT	1/2" NPT	50	215
1	FD836C150	1	36	8.625	10.000	6	51.00	55	87.00	21.000		8.500	2" RF	3/4" NPT	1/2" NPT	100	260
1	FD1436C150	2	36	14.000	11.500	6	51.75	56	87.75	33.000		12.375	3" RF	3/4" NPT	1/2" NPT	200	365
1	FD1636C150	3	36	16.000	11.500	6	51.75	56	87.75	39.000		13.750	3" RF	3/4" NPT	1/2" NPT	300	440
1	FD1836C150	4	36	18.000	13.000	6	52.50	57	88.50	45.000		15.250	4" RF	3/4" NPT	1/2" NPT	400	470
2	F818C150	1	18	8.625	14.75	6	32.50	36	50.50		20.625	8.500	1-1/2" RF	3/4" NPT	1/2" NPT	50	215
2	F836C150	1	36	8.625	16.00	6	51.00	55	87.00		20.625	8.500	2" RF	3/4" NPT	1/2" NPT	100	260
2	F1436C150	2	36	14.000	17.50	6	51.75	56	87.75		26.000	12.375	3" RF	3/4" NPT	1/2" NPT	200	365
2	F1636C150	3	36	16.000	17.50	6	51.75	56	87.75		28.000	13.750	3" RF	3/4" NPT	1/2" NPT	300	440
2	F1836C150	4	36	18.000	19.00	6	52.50	57	88.50		30.000	15.250	4" RF	3/4" NPT	1/2" NPT	400	470

Notes:
1. All units in inches unless otherwise stated.
2. Dimension 'E' is the minimum clearance required for cartridge removal.
3. Flowrates are based on a maximum liquid viscosity of 200 SUS.
4. Drawings for reference only. Certified drawings will be supplied after receipt of order.
5. 1-1/2" and 2" Inlet/Outlet nozzles are 3000# NPT. 3" and 4" Inlet/Outlet nozzles are 150# RFSO.

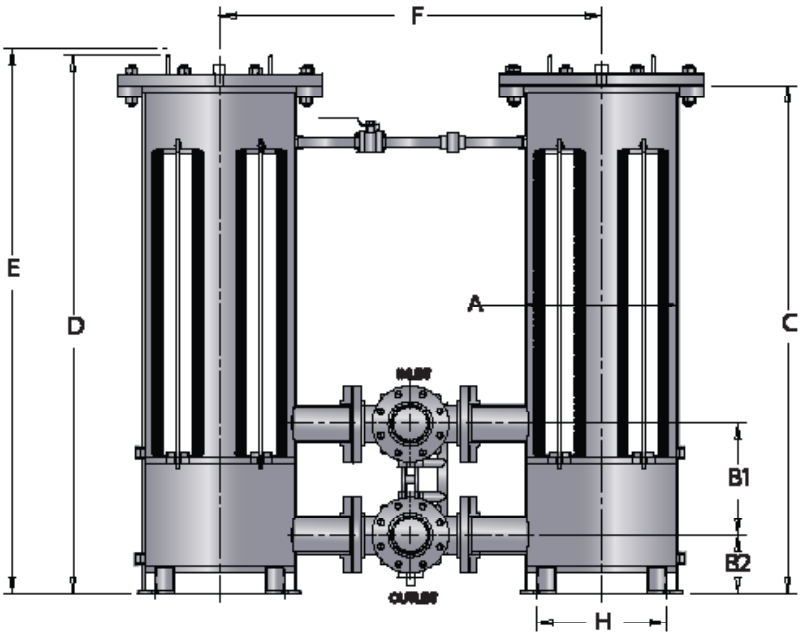


Fig. No. 1

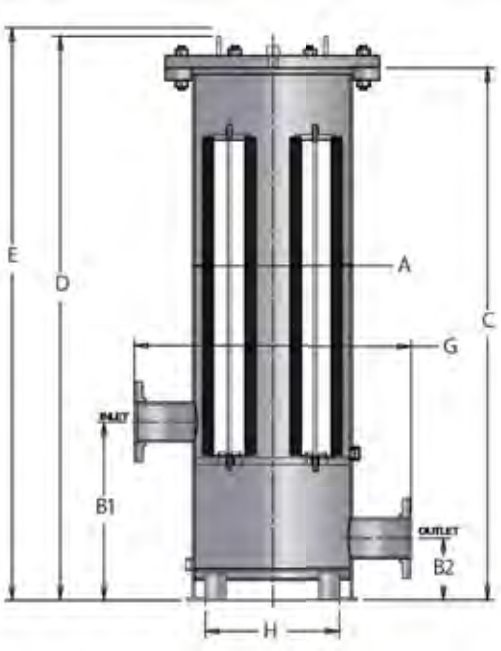


Fig. No. 2

Model Coding

F & FD — LUBE OIL, SEAL OIL CONTROL OIL FILTERS

8 — VESSEL DIAMETER

18 — CARTRIDGE LENGTH

C — MATERIAL
A - ALUMINUM
C - CARBON STEEL
E - SS304
S - SS316

150 — DESIGN PRESSURE (psig)

Request for Quote Form

Client Information:

Company Name: _____

Contact Name: _____

Contact Title: _____

Address: _____

City, State (Prov): _____

Country, Zip (Postal Code): _____

Phone/Fax: _____

E-mail: _____

Project Name: _____

Project Location: _____

Item: _____

Tag No: _____

Date: _____

Proposal Type Required: (please check mark or comment)

☐ Budgetary ☐ Bid ☐ Buy

Other: _____

Required Date for Proposal: _____

Anticipated Shipping Date for Project: _____

How did you hear about CCI Thermal Technologies?

Internet: Google Thomas Register MSN Global Spec Yahoo

Other: _____

Print Advertising: Publication name: _____

Distributor: Name: _____

CCI Thermal Employee: Name: _____

Other: Please define: _____

Are you a previous customer? ☐ Yes ☐ No

Required Data:

Liquid to be Filtered _____ ☐ Hydraulic Oil ☐ Lube Oil ☐ Seal Oil ☐ Other

Type of Oil _____

Maximum/Design Flow Rate _____ ☐ gpm ☐ ft^3/hr ☐ m^3/hr ☐ Other

Operating Pressure _____ ☐ psig ☐ bar g ☐ Other

Operating Temperature _____ ☐ °F ☐ °C

Particle Removal Size _____ Microns _____

Density of Liquid at Op. Condition _____ ☐ lb/ft^3 ☐ Other ☐ Liquid SP.GR.

Viscosity of Liquid at Op. Condition _____ ☐ cp ☐ SSU ☐ Other

Filter Style _____ ☐ Single ☐ Duplex

Additional Data:

Solid Contaminants _____ ☐ % wt ☐ % vol ☐ Other

Type of Solid Contaminant _____

Allowable Clean Pressure Drop _____ ☐ psi ☐ bar ☐ Other

Max. Allowable Pressure Drop _____ ☐ psi ☐ bar ☐ Other

Inlet/Outlet Nozzle Size _____ ☐ in

Material of Construction _____ Vessel _____ Internals _____ Support _____

Design & Code ☐ ASME ☐ Other CRN _____ ☐ Yes ☐ No Province _____

API 614 Compliance ☐ Yes ☐ No

Design Pressure ☐ psig ☐ bar g ☐ kg/cm^2 g ☐ Other

Design Temperature _____ Min._____ Max. _____ ☐ °F ☐ °C

Corrosion Allowance _____ ☐ in ☐ mm

Radiography ☐ None ☐ Spot ☐ Full ☐ 100% All Butt Wells

Gasket ☐ Buna - N ☐ Viton A ☐ EPDM ☐ Other

Vessel Internal Finish ☐ Clean & Dry ☐ Other Specify:_____

Vessel External Finish ☐ Primer ☐ Other Specify:_____

Closure ☐ Standard ☐ Quick Opening Specify:_____

Notes or Comments:_____

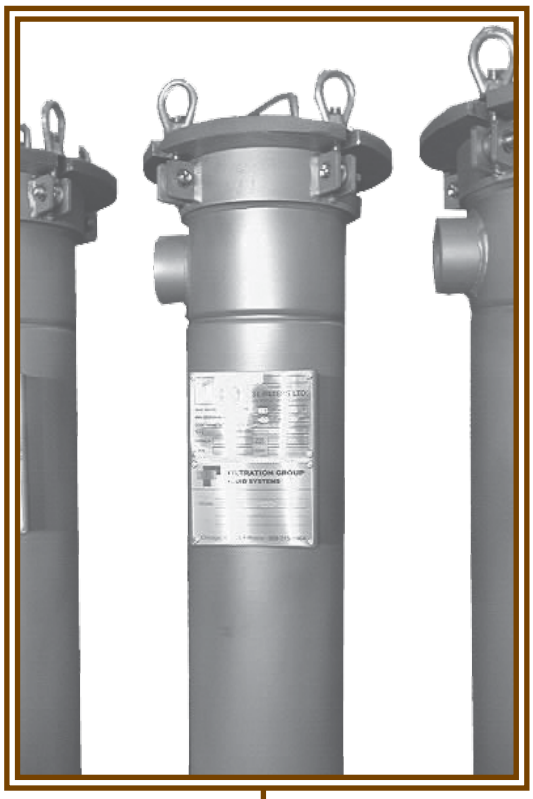
_____

_____

_____

FC Series

Bag Filters (Single Bag)



FC Series Single Bag Filters provide effective, economical filtration of liquids. Disposable filter bags are available in a wide range of materials and micron ratings to remove particulate matter down to 1 micron.

Applications

Filtration of liquids such as paints, inks, coolants, water, solvents, glues, recycled oils and beverages.

Standard Features

- Designed to ASME Section VIII Div.1
- 150 psig standard design pressure
- -20°F/+150°F standard design temperature
- 3000lb NPT couplings or 150lb ANSI RF flanged inlet/outlet
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Stainless steel or carbon steel housing material
- Perforated stainless steel (SS304 or SS316) basket construction
- Hinged lid
- Quick access to replace bags
- Standard swing bolt closures
- O-ring closure seal

Options & Accessories

- Custom design pressures to 3000 psig
- Custom flange ratings
- Custom housing materials
- Optional closure: thru-bolt
- O-ring closure seal in Buna, Viton, Teflon, Silicone, or EPDM
- Internal epoxy coating on carbon steel models
- External primer finish for carbon steel housings
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Additional nozzles as needed
- Valves
- Safety relief valves
- Pressure gauges
- Duplex or multiplex arrangement
- Working platform

Fig.	Model No.	Material	Bag Qty	A Vessel OD	B	C	D	E	Inlet/ Outlet	Drains	Press. Gauge	GPM (US)	Weight (lbs)
1	FC-C1502P	Carbon Steel	1	8 5/8	34.75	39.25	41.75	69.25	2” NPT	3/4” NPT	1/2” NPT	180	45
1	FC-E1502P	SS304	1	8 5/8	34.75	39.25	41.75	69.25	2” NPT	3/4” NPT	1/2” NPT	180	45

Notes:
1. All units in inches unless otherwise stated.
2. Dimension ‘E’ is the minimum clearance required for bag removal.
3. Flowrates are based on water. More viscous liquids will have lower flowrates.
4. Drawings for reference only. Certified drawings will be supplied after receipt of order.

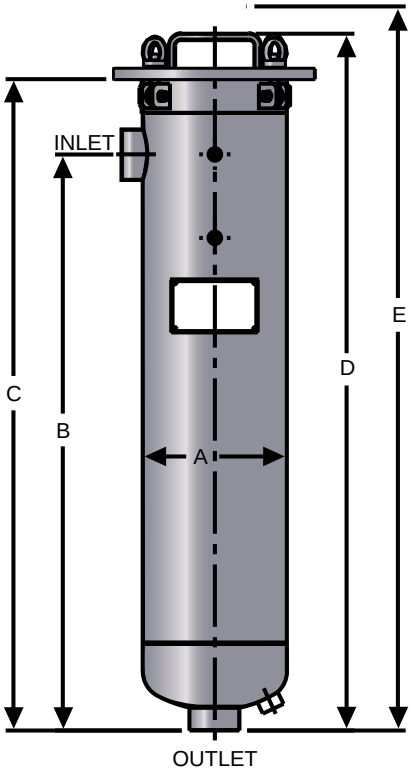


Fig. No. 1

Model Coding

FC	C	150	2P
SINGLE BAG FILTER	MATERIAL A - ALUMINUM C - CARBON STEEL E - SS304 S - SS316	DESIGN PRESSURE (psig)	NOZZLE P - NPT F - FLANGE

BF Series

Bag Filters (Multi Bag)

BF Series Multi Bag Filters provide economical bulk filtration for liquids. The BF is sized from 3 to 24 bags and accommodates replaceable filter bags to remove particulates down to 1 micron.

Applications

Filtration for liquids such as paints, inks, coolants, water, solvents, glues, recycled oils and beverages.

Standard Features

- Designed to ASME Section VIII Div.1
- 150 psig standard design pressure
- -20°F/+150°F standard design temperature
- 150lb ANSI RF flanged inlet/outlet
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Housing of carbon steel material
- Perforated stainless steel (SS304 or SS316) basket construction
- Housing dimensions under 12” utilize handles, not headlifts
- 3L Pogo (spring-assisted) headlift on housing diameters 12” to 24”; hydraulic jack on housing diameters over 24”
- Quick access to replace bags
- Standard swing bolt closures
- O-ring closure seal
- External primer finish for carbon steel housings

Options & Accessories

- Custom design pressures to 3000 psig
- Custom flange ratings
- Custom housing materials
- Optional headlifts: handwheel or 3L Cantilever
  Optional closures: thru-bolt or patented Easy Access Closure
- O-ring closure seal in Buna, Viton, Teflon, Silicone, or EPDM
- Internal epoxy coating on carbon steel models
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Additional nozzles as needed
- Valves
- Safety relief valves
- Pressure gauges
- Sampling probe
- Duplex or multiplex arrangement
- Working platform

Model Coding

BF	10	C	B	10F	LP	L
MULTIBAG FILTER	QUANTITY OF BAGS	MATERIAL C - CARBON E - SS304 S - SS316 X - SPECIAL	CLOSURE B - SWINGBOLT Q - QUICK CLOSURE	CONNECTION F - RF FLANGE N - NPT	NOZZLE ORIENTATION IL - INLINE LP - LOW PROFILE SBO - SIDE-IN/ BOTTOM OUT T - TEE INLINE O - OTHER	HEADLIFT P - POGO L - CANTILEVER W - HANDWHEEL J - HYDRAULIC JACK

Fig.	Model No.	Bag Qty	A Vessel OD	B		C	D	E	G	H	L	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	GPM (US)	Weight (lbs)
				B1	B2											
1	BF3CB3FLPP	3	18	27.50	13.25	45.5	55	75.0	15	10	10	3” RF	3/4” NPT	1/2” NPT	525	700
1	BF4CB4FLPP	4	22	27.50	15.75	48.5	58	78.0	17	13	12	4” RF	3/4” NPT	1/2” NPT	700	875
1	BF6CB6FLPP	6	24	27.50	16.75	49.0	60	78.5	18	15	12	6” RF	3/4” NPT	1/2” NPT	1050	1175
2	BF8CB6FLPJ	8	30	28.50	16.75	50.5	64	80.0	21	19	12	6” RF	3/4” NPT	1/2” NPT	1400	1250
2	BF10CB8FLPJ	10	36	32.50	19.75	54.0	69	83.5	24	23	14	8” RF	3/4” NPT	1/2” NPT	1750	1500
2	BF12CB8FLPJ	12	36	32.50	19.75	54.0	69	83.5	24	23	14	8” RF	3/4” NPT	1/2” NPT	2100	1700
3	BF3CB3FTP	3	18	27.50		45.5	55	75.0	30	10	10	3” RF	3/4” NPT	1/2” NPT	525	700
3	BF4CB4FTP	4	22	27.50		48.5	58	78.0	34	13	12	4” RF	3/4” NPT	1/2” NPT	700	875
3	BF6CB6FTP	6	24	27.50		49.0	60	78.5	36	15	12	6” RF	3/4” NPT	1/2” NPT	1050	1175
4	BF8CB6FTJ	8	30	28.50		50.5	64	80.0	42	19	12	6” RF	3/4” NPT	1/2” NPT	1400	1250
4	BF10CB8FTJ	10	36	32.50		54.0	69	83.5	48	23	14	8” RF	3/4” NPT	1/2” NPT	1750	1500
4	BF12CB8FTJ	12	36	32.50		54.0	69	83.5	48	23	14	8” RF	3/4” NPT	1/2” NPT	2100	1700

Notes:
1. All units in inches unless otherwise stated.
2. Dimension ‘E’ is the minimum clearance required for bag removal.
3. Flowrates are based on water. More viscous liquids will have lower flowrates.
4. Drawings for reference only. Certified drawings will be supplied after receipt of order.

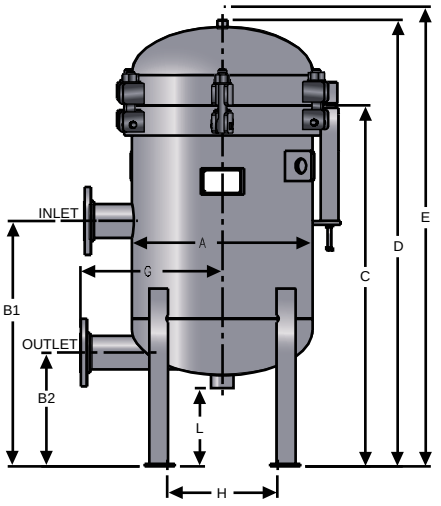


Fig. No. 1

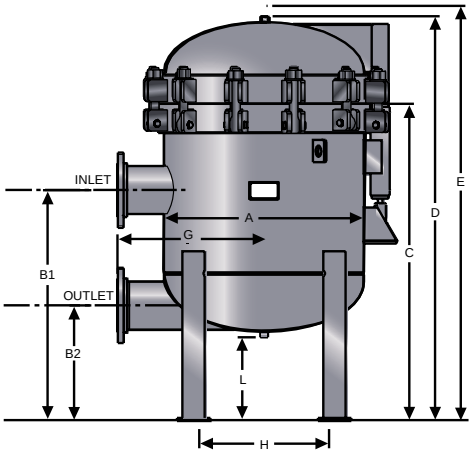


Fig. No. 2

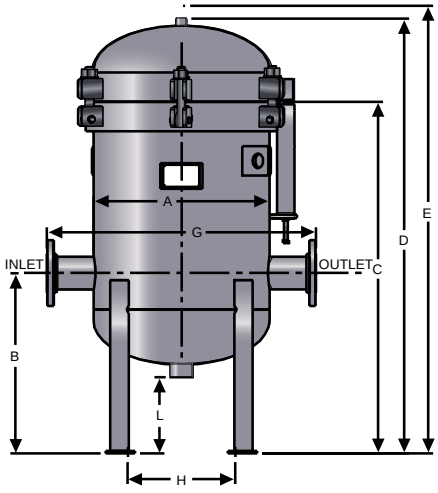


Fig. No. 3

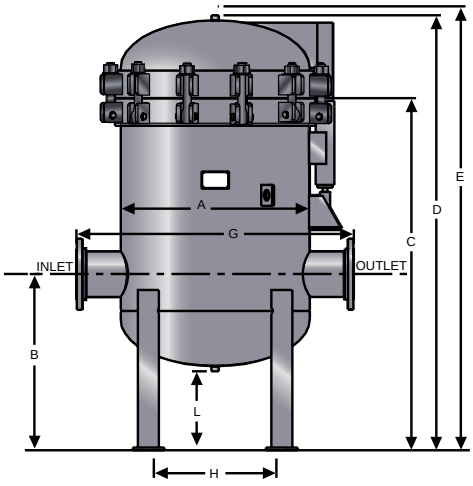


Fig. No. 4

Request for Quote Form

Client Information:

Company Name: _____
Contact Name: _____
Contact Title: _____
Address: _____
City, State (Prov): _____
Country, Zip (Postal Code): _____
Phone/Fax: _____
E-mail: _____
Project Name: _____
Project Location: _____
Item: _____
Tag No: _____
Date: _____

Proposal Type Required: (please check mark or comment)

☐ Budgetary ☐ Bid ☐ Buy
Other: _____
Required Date for Proposal: _____
Anticipated Shipping Date for Project: _____

How did you hear about CCI Thermal Technologies?

Internet: Google Thomas Register MSN Global Spec Yahoo
Other: _____

Print Advertising: Publication name: _____

Distributor: Name: _____

CCI Thermal Employee: Name: _____

Other: Please define: _____

Are you a previous customer? ☐ Yes ☐ No

Required Data:

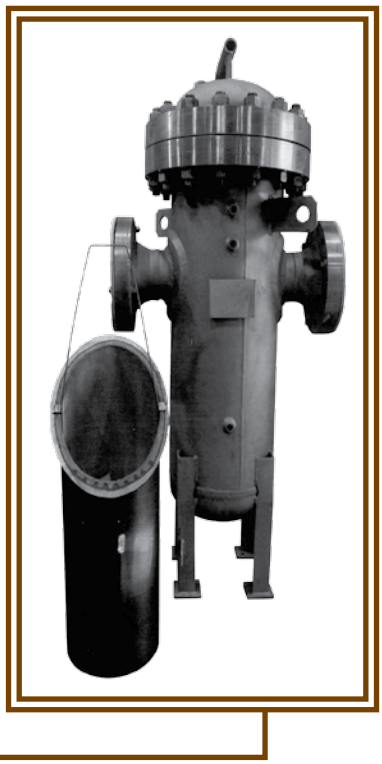
Type of Liquid _____
Max./Design Flow Rate _____ ☐ gpm ☐ ft^3/hr ☐ m^3/hr ☐ Other
Operating Pressure _____ ☐ psig ☐ bar g ☐ Other
Operating Temperature _____ ☐ °F ☐ °C
Desired Particle Retention _____ % _____ Particle Size _____ Microns _____ ☐ Nominal ☐ Absolute
Density of Liquid at Op. Condition _____ ☐ lb/ft^3 ☐ Other ☐ Liquid SP.GR.
Viscosity of Liquid at Op. Condition _____ ☐ cp ☐ SSU ☐ Other

Additional Data:

Solid Contaminants _____ ☐ % wt ☐ % vol ☐ Other
Type of Solid Contaminant
Allowable Clean Pressure Drop _____ ☐ psi ☐ bar ☐ Other
Max. Allowable Pressure Drop _____ ☐ psi ☐ bar ☐ Other
Bag Filter Media ☐ Polypropylene ☐ Polyester ☐ Nylon ☐ Other _____
Fiber ☐ Monofilament ☐ Multifilament ☐ Felt ☐ Other _____
Bag Size ☐ Size #1 ☐ Size #2 ☐ Size #3 ☐ Other _____
Nozzel Inlet/Outlet Size _____ ☐ in
Material of Construction _____ Vessel _____ Internals _____ Support _____
Design & Code ☐ ASME ☐ Other CRN _____ ☐ Yes ☐ No Province _____
Design Pressure ☐ psig ☐ bar g ☐ kg/cm^2 g ☐ Other
Design Temperature _____ Min._____ Max. _____ ☐ °F ☐ °C
Corrosion Allowance _____ ☐ in ☐ mm
Radiography ☐ None ☐ Spot ☐ Full ☐ 100% All Butt Wells
Filter Element Type ☐ Disposable ☐ Cleanable
Filter Media ☐ Cotton ☐ Polypropylene ☐ Glass Fiber ☐ Other
Gasket ☐ Buna - N ☐ Viton A ☐ EPDM ☐ Other
Vessel Internal Finish ☐ Clean & Dry ☐ Other Specify: _____
Vessel External Finish ☐ Primer ☐ Other Specify:_____
Closure ☐ Standard ☐ Quick Opening ☐ Other
Notes or Comments:_____

BSF Series

Fabricated Basket Strainers



BSF Series Fabricated Basket Strainers remove gross particles from a liquid stream. The BSF is often used as a pre-filter placed before finishing filtration equipment. A removable stainless steel basket allows easy cleaning and quick change out when heavy particle loading is present.

Applications

The BSF is ideal for removing large amounts of solid matter from liquids such as water, coolants, resins, adhesives, solvents, paints and inks.

Standard Features

- Designed to ASME Section VIII Div.1
- 150 psig standard design pressure
- -20°F/+200°F standard design temperature
- 150lb ANSI RF flanged inlet/outlet, offset or inline configuration
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Carbon steel housing material
- Perforated stainless steel (SS304 or SS316) basket construction
- Housing dimensions up to 12” utilize handles, not headlifts
- 3L Pogo (spring-assisted) headlift on housing diameters over 12”
- Quick access for replacement of basket
- Standard swing bolt or thru-bolt closures
- O-ring closure seal
- External primer finish for carbon steel housings

Options & Accessories

- Custom design pressures to 3000 psig
- Custom flange ratings
- Custom housing materials
- Optional headlifts: handwheel or 3L Cantilever
- Optional closures: thru-bolt or patented Easy Access Closure
- O-ring closure seal in Buna, Viton, Teflon, Silicone, or EPDM
- Strainer baskets available in a range of materials and mesh sizes
- Internal epoxy coating on carbon steel models
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Additional nozzles as needed
- Valves
- Safety relief valves
- Pressure gauges
- Duplex or multiplex arrangement
- Working platform

Fig.	Model No.	A Vessel OD	B1	B2	C	D	E	G	H	L	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	GPM (US)	Weight (lbs)
1	BSFV51B0150C03	6.625	21.5	21.5	32.0	34.0	47.0	19	8.0	8	3” RF	3/4” NPT	1/2” NPT	210	120
1	BSFV51B0150C04	8.625	25.0	25.0	37.0	39.0	55.0	21	9.0	8	4” RF	3/4” NPT	1/2” NPT	410	190
1	BSFV51B0150C06	12.750	33.0	33.0	48.0	50.0	70.0	25	13.0	10	6” RF	3/4” NPT	1/2” NPT	760	320
2	BSFV53C0150C08	14.000	40.0	24.0	52.0	56.0	82.0	26	7.5	10	8” RF	3/4” NPT	1/2” NPT	1000	430
2	BSFV53C0150C10	16.000	47.5	27.5	60.5	64.5	97.5	28	9.0	10	10” RF	3/4” NPT	1/2” NPT	1490	580
2	BSFV53C0150C12	18.000	57.0	33.0	71.0	75.0	117.0	30	10.0	10	12” RF	3/4” NPT	1/2” NPT	2640	750
2	BSFV53C0150C14	20.000	64.5	36.5	79.5	83.5	130.5	32	11.0	12	14” RF	3/4” NPT	1/2” NPT	3340	900
2	BSFV53C0150C16	24.000	72.5	40.5	88.5	92.5	146.5	36	15.0	12	16” RF	3/4” NPT	1/2” NPT	4310	1140

Notes:
1. All units in inches unless otherwise stated.
2. Dimension ‘E’ is the minimum clearance required for basket removal.
3. Flowrates are based on water. More viscous liquids will have lower flowrates.
4. Drawings for reference only. Certified drawings will be supplied after receipt of order.

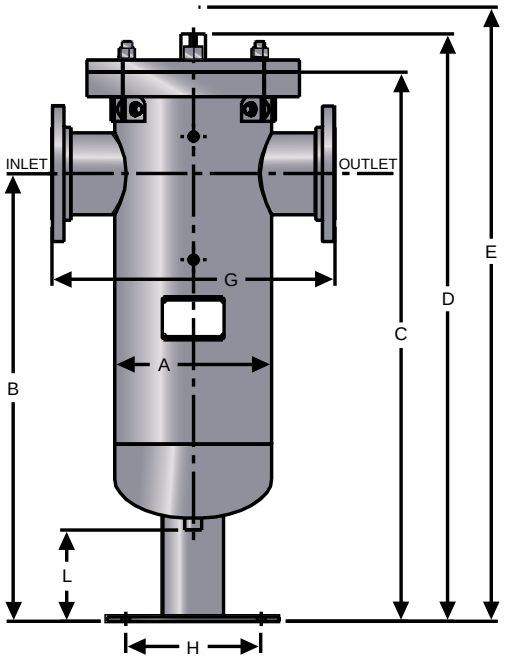


Fig. No. 1

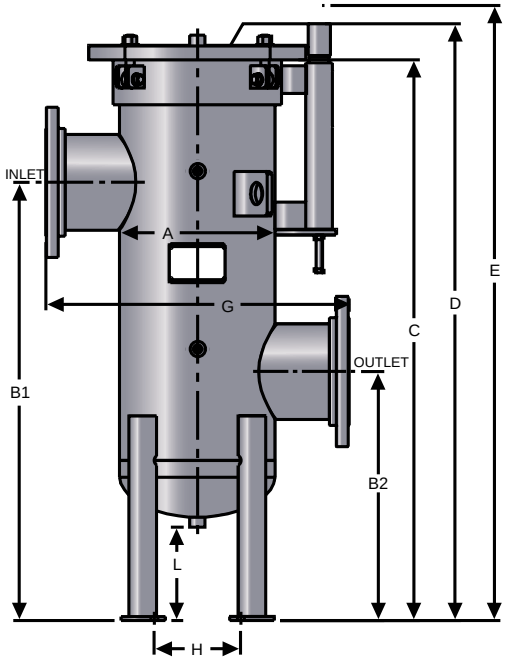


Fig. No. 2

Model Coding

BSF — BASKET STRAINER

V — VESSEL CONFIGURATION
- H - HORIZONTAL
- V - VERTICAL
- D - DUPLEX

53B — STRAINER SERIES
- 51A - INLINE NO LEGS
- 51B - INLINE WITH LEGS
- 51C - INLINE WITH LEGS AND HEADLIFT
- 53A - OFFLINE NO LEGS
- 53B - OFFLINE WITH LEGS
- 53C - OFFLINE WITH LEGS AND HEADLIFT

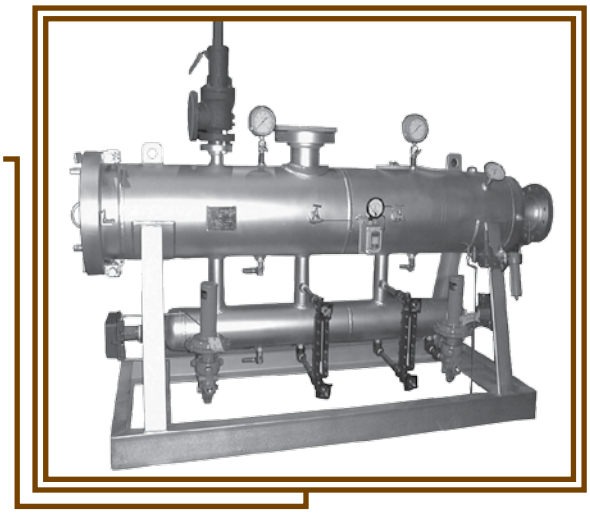
0150 — NOZZLE ANSI FLANGE RATING
- 0150 - 150lb
- 0300 - 300lb
- 0600 - 600lb
- 0900 - 900lb
- 1500 - 1500lb

E — MATERIAL
- C - CARBON STEEL
- E - SS304
- S - SS316
- X - SPECIAL

04 — NOZZLE SIZE
- 5 - 1/2”
- 34 - 3/4”
- 01 - 1”
- 15 - 1-1/2”
- 02 - 2”
- 25 - 2/1/2”
- 03 - 3”
- 04 - 4”
- 06 - 6”
- 08 - 8”
- 10 - 10”

GFS Series

Gas Filter Separators



GFS Series Gas Filter Separators remove moisture, liquid mists, aerosol and contaminants from hydrocarbon gases, including natural gas, propane, butane and methane, using a three-stage design. The first stage removes gross water by impingement on cartridge stools. The second stage coalesces water using cartridges, with particulate removal down to 0.5 micron. During the third stage, a stainless steel vane mist eliminator removes any remaining moisture. Water collects in the sump to be purged from the system, and clean, dry gas passes through the outlet.

Applications

Removal of water and contaminants from many hydrocarbon gases such as natural gas, propane, butane and methane. These applications include:

- Chemical plants
- Pipelines
- Natural gas plants
- Refineries
- Petrochemical plants
- Compressor stations
- Metering and regulation stations
- Power generation plants

Standard Features

- Designed to ASME Section VIII Div.1
- -20°F/+150°F standard design temperature
- 6000lb NPT couplings for vent, drain, and pressure gauge connections
- Carbon steel housing material
- Horizontal configuration with sump
- 3L Pogo (spring-assisted) or hydraulic jack headlift on vertical models
- Standard swing bolt closure with o-ring seal
- External primer finish for carbon steel housings
- Multi-staged for better efficiency
- Low pressure drops

Options & Accessories

- Custom design pressures to 3000 psig
- Custom housing materials
- Optional closure: thru-bolt
- O-ring closure seal in Buna or Viton
- Internal epoxy coating on carbon steel models
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Sump heater
- Additional nozzles as needed
- Valves
- Safety relief valves
- Pressure gauges
- Liquid level gauges
- Duplex or multiplex arrangement
- Working platform
- Skid packaged configurations with controls and heating equipment
- Quick access for replacement of cartridges
- Optional manual, pneumatic or electric drainage control package

Table 1 Gas Filter Separators (Vertical)

Fig.	Model No.	Filter Elements		A Vessel OD	B1	B2	C	D	E	G	H	L	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	Typical Operating Press. (psia)	Typical Flowrate (mmscfd) Note 1
		Qty	Lg														
1	GFSV636740	1	36	6.625	7.5	13.5	66.0	70.0	90.0	18.625	9.0	8	2” RF	3/4” NPT	1/2” NPT	600	8
1	GFSV6361480	1	36	6.625	7.5	13.5	66.0	70.0	90.0	18.625	9.0	8	2” RF	3/4” NPT	1/2” NPT	1200	11
2	GFSV1236740	3	36	12.750	17.0	18.0	76.5	80.5	112.5	24.750	6.5	10	3” RF	3/4” NPT	1/2” NPT	600	24
2	GFSV12361480	3	36	12.750	17.0	18.0	76.5	80.5	112.5	24.750	6.5	10	3”RF	3/4” NPT	1/2” NPT	1200	34
3	GFSV1836740	7	36	18.000	18.0	22.5	81.0	85.0	117.0	30.000	10.0	10	4” RF	3/4” NPT	1/2” NPT	600	55
3	GFSV18361480	6	36	18.000	18.0	22.5	81.0	85.0	117.0	30.000	10.0	10	4” RF	3/4” NPT	1/2” NPT	1200	67
3	GFSV2036740	8	36	20.000	20.0	22.5	86.0	90.0	122.0	32.000	11.0	12	6” RF	3/4” NPT	1/2” NPT	600	63
3	GFSV20361480	8	36	20.000	20.0	22.5	86.0	90.0	122.0	32.000	11.0	12	6” RF	3/4” NPT	1/2” NPT	1200	90
3	GFSV2436740	13	36	24.000	22.0	22.5	91.0	95.0	127.0	36.000	15.0	12	8” RF	3/4” NPT	1/2” NPT	600	103
3	GFSV24361480	12	36	24.000	22.0	22.5	91.0	95.0	127.0	36.000	15.0	12	8” RF	3/4” NPT	1/2” NPT	1200	134

Notes:
1. Flowrate based on natural gas at the operating pressure at 60^0F
2. All units in inches unless otherwise stated.
3. Dimension ‘E’ is the minimum clearance required for cartridge removal.
4. Drawings for reference only. Certified drawings will be supplied after receipt of order.
5. Standard off the shelf products available.

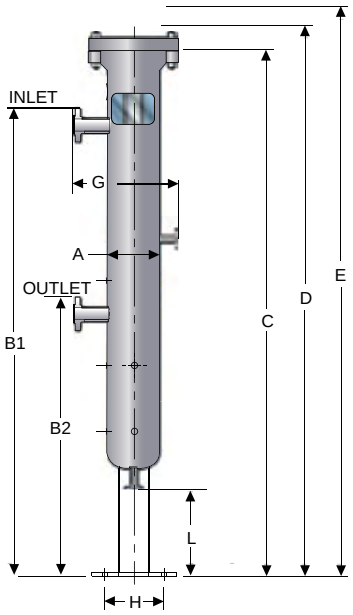


Fig. No. 1

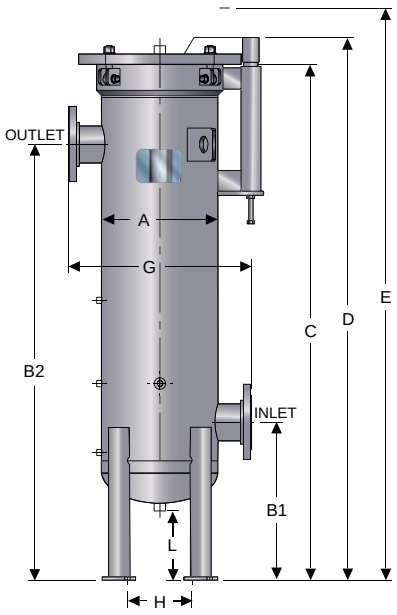


Fig. No. 2

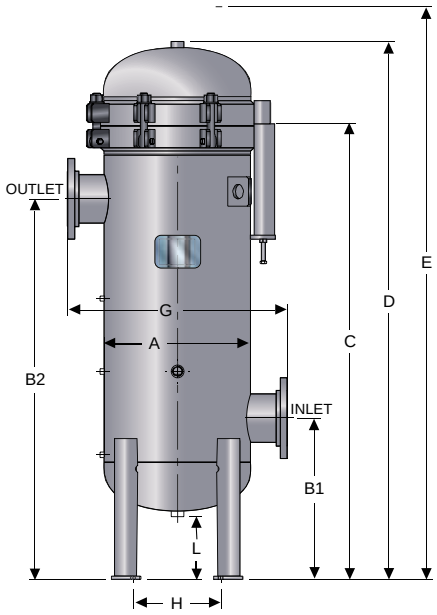


Fig. No. 3

Model Coding

GFS	V	6	36	740
GAS FILTER SEPARATORS	VESSEL CONFIGURATION V - VERTICAL H - HORIZONTAL	VESSEL DIAMETER	CARTRIDGE LENGTH	DESIGN PRESSURE (psig)

Table 2 Gas Filter Separators (Horizontal)

Fig.	Model No.	Filter Elements		A Vessel OD	B1	B2	C	D	E	G	H	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	Weight (lbs)	Typical Oper. Press. (psia)	Typical Flowrate (mmscfd) Note 1
		Qty	Lg														
4	GFSH636740	1	36	6.625	18.5	27	56.5	64.00	80.5	36.25	27	2” RF	3/4” NPT	1/2” NPT	250	600	8
4	GFSH6361480	1	36	6.625	18.5	27	56.5	64.00	80.5	36.25	27	2” RF	3/4” NPT	1/2” NPT	400	1200	11
4	GFSH1236740	3	36	12.750	43.5	32	96.5	104.00	132.5	44.50	57	3” RF	3/4” NPT	1/2” NPT	900	600	24
4	GFSH12361480	3	36	12.750	43.5	32	96.5	104.00	132.5	44.50	57	3” RF	3/4” NPT	1/2” NPT	1450	1200	34
4	GFSH1636740	6	36	16.000	44.0	34	101.5	110.00	137.5	48.00	61	4” RF	3/4” NPT	1/2” NPT	1400	600	47
4	GFSH16361480	4	36	16.000	44.0	34	101.5	110.00	137.5	48.00	61	4” RF	3/4” NPT	1/2” NPT	2275	1200	45
4	GFSH1836740	7	36	18.000	46.5	37	107.5	118.00	143.5	52.00	66	6” RF	3/4” NPT	1/2” NPT	1750	600	55
4	GFSH18361480	6	36	18.000	46.5	37	107.5	118.00	143.5	52.00	66	6” RF	3/4” NPT	1/2” NPT	2850	1200	67
4	GFSH2036740	8	36	20.000	48.0	38	115.5	126.50	151.5	54.00	67	6” RF	3/4” NPT	1/2” NPT	2175	600	63
4	GFSH20361480	8	36	20.000	48.0	38	115.5	126.50	151.6	54.00	67	6” RF	3/4” NPT	1/2” NPT	3600	1200	90
4	GFSH2472740	13	72	24.000	84.0	40	184.5	195.75	256.5	60.00	132	8” RF	3/4” NPT	1/2” NPT	6100	600	134
4	GFSH24721480	12	72	24.000	84.0	40	184.5	195.75	256.5	60.00	132	8” RF	3/4” NPT	1/2” NPT	9600	1200	175
4	GFSH2872740	18	72	28.000	84.0	44	213.0	227.50	249.0	66.00	158	12” RF	3/4” NPT	1/2” NPT	8200	600	185
4	GFSH28721480	18	72	28.000	84.0	44	213.0	227.5	249.0	66.00	158	12” RF	3/4” NPT	1/2” NPT	12700	1200	262
4	GFSH3872740	37	72	38.000	89.0	57	230.0	250.50	302.0	84.00	175	12” RF	3/4” NPT	1/2” NPT	14400	600	381
4	GFSH38721480	34	72	38.000	89.0	57	230.0	250.50	302.0	84.00	175	12” RF	3/4” NPT	1/2” NPT	21100	1200	495

Notes:
1. Flowrate based on natural gas at the operating pressure at 60^{0}F
2. All units in inches unless otherwise stated.
3. Dimension ‘E’ is the minimum clearance required for cartridge removal.
4. Drawings for reference only. Certified drawings will be supplied after receipt of order.
5. Standard off the shelf products available.

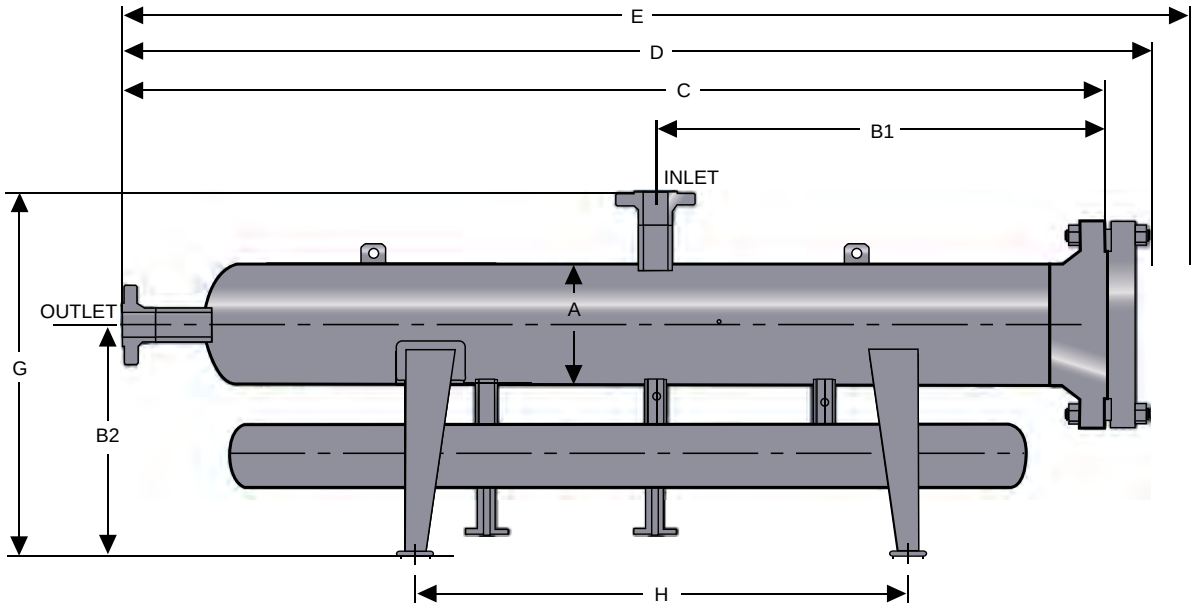


Fig. No. 4

Request for Quote Form

Client Information:

Company Name: _____
Contact Name: _____
Contact Title: _____
Address: _____
City, State (Prov): _____
Country, Zip (Postal Code): _____
Phone/Fax: _____
E-mail: _____
Project Name: _____
Project Location: _____
Item: _____
Tag No: _____
Date: _____

Proposal Type Required: (please check mark or comment)

☐ Budgetary ☐ Bid ☐ Buy
Other: _____
Required Date for Proposal: _____
Anticipated Shipping Date for Project: _____

Gas Data:

Gas _____ ☐ Natural Gas ☐ Other
Composition _____
Molecular Weight _____ or Specific Gravity _____
Flow Rate _____ ☐ scfm ☐ MMSCFD ☐ lb/hr ☐ Other
Operating pressure _____ ☐ psia ☐ psig ☐ Other
Operating temperature _____ ☐ °F ☐ °C
Compressibility (z) _____
Allowable pressure drop Inlet to Outlet _____

Entrained Liquid Data:

Liquid _____ ☐ Water ☐ Oil ☐ Other
Liquid Density _____ ☐ lb/ft³ ☐ Other ☐ Liquid SP. GR.
Liquid Loading ☐ gpm ☐ lb/hr ☐ kg/hr ☐ PPM ☐ Other
Solid Removal ☐ Yes ☐ No
Desired Removal Efficiency _____ %_____
Particle Size _____ Microns_____

Vessel Data:

Material of Construction Vessel _____ Internals _____
Design & Code ☐ ASME ☐ Other CRN _____ ☐ Yes ☐ No
Province _____
Design Pressure ☐ psig ☐ bar g ☐ kg/cm² g ☐ Other
Design Temperature Min. _____ Max._____ ☐ °F ☐ °C
Corrosion Allowance _____ ☐ in ☐ mm
Service ☐ Lethal ☐ Nace ☐ Other
Radiography ☐ None ☐ Spot ☐ Full ☐ 100% All butt welds

Vessel Connections:

Inlet	Size _____	Rating _____	Connection Type _____	Qty _____
Outlet	Size _____	Rating _____	Connection Type _____	Qty _____
Drain	Size _____	Rating _____	Connection Type _____	Qty _____
Vent	Size _____	Rating _____	Connection Type _____	Qty _____
Level Gauge	Size _____	Rating _____	Connection Type _____	Qty _____
Level Switch	Size _____	Rating _____	Connection Type _____	Qty _____
Level Controller	Size _____	Rating _____	Connection Type _____	Qty _____
Pressure	Size _____	Rating _____	Connection Type _____	Qty _____
Differential	Size _____	Rating _____	Connection Type _____	Qty _____
Relief	Size _____	Rating _____	Connection Type _____	Qty _____
Inspection / Manway	Size _____	Rating _____	Connection Type _____	Qty _____
Other	Size _____	Rating _____	Connection Type _____	Qty _____

Connection Notes:

Acceptance of NPT Connection	☐ Yes	☐ No
Quick Opening Closure	☐ Yes	☐ No
Prefer Inlet	☐ Yes	☐ No
Prefer Outlet	☐ Yes	☐ No
Other Notes	☐ Yes	☐ No

Instrumentation Options:

Manual Operation ☐ Yes ☐ No Level gauge & manual drain valves
Electric Level Controllers ☐ Yes ☐ No Level Switches controlling colenoid actuated drain valves
Pneumatic Level Controller ☐ Yes ☐ No Level float controlling pneumatic actuated drain valve
Differential Pressure ☐ Gauge ☐ Switch ☐ None
Relief Valve ☐ Yes ☐ No

How did you hear about CCI Thermal Technologies?

Internet: Google Thomas Register MSN Global Spec Yahoo
Other: _____

Print Advertising: Publication name: _____

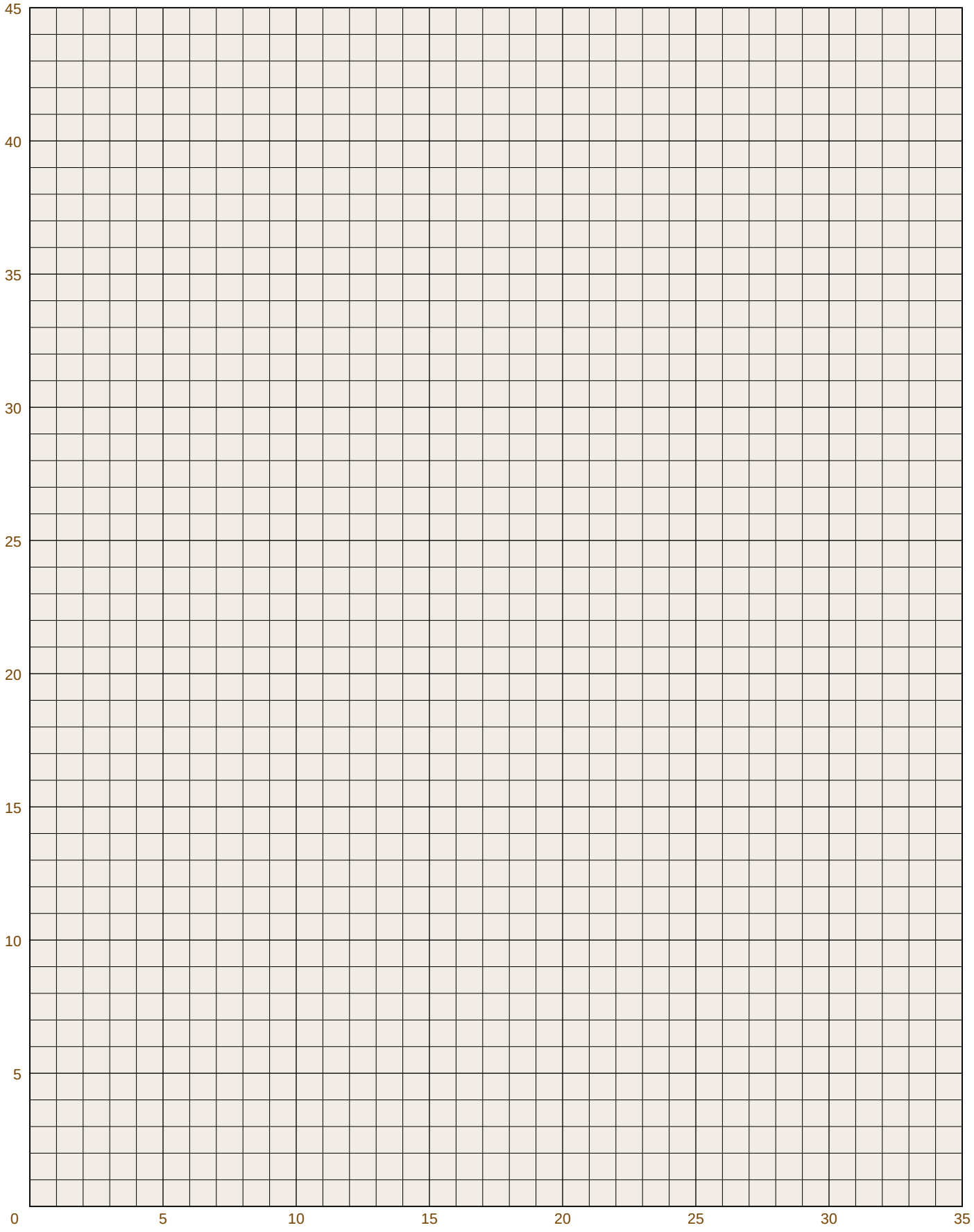
Distributor: Name: _____

CCI Thermal Employee: Name: _____

Other: Please define: _____

Are you a previous customer? Yes No

NOTES OR COMMENTS _____


45
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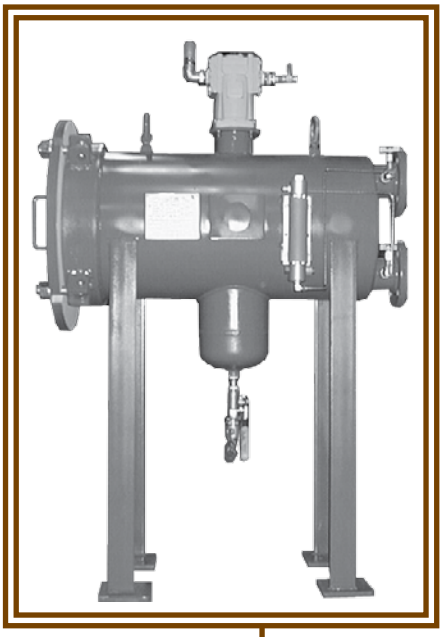
30
35

HV Series

Liquid Filter Separators (Two Stage Horizontal)



HV Series Liquid Filter Separators provide water coalescing and filtration of hydrocarbon fuels. The HV's horizontal layout and two-stage design effectively removes particulate from fuel and provides convenient access for cartridge replacement. Units can be engineered for either fixed or mobile applications.

Applications

Water coalescing and filtration of hydrocarbon fuels such as jet fuel, kerosene, diesel, gasoline and similar liquids.

Standard Features

- Designed to ASME Section VIII Div.1 and API Bulletin 1581
- 150 psig standard design pressure
- -20°F/+150°F standard design temperature
- 150lb ANSI RF flanged inlet/outlet
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Carbon steel housing material
- Leg supports for housings under 12" diameter
- Saddle supports for housings 12" diameter and over
- Quick access for replacement of cartridges
- Standard swing bolt closure with o-ring seal
- O-ring closure seal
- External primer finish for carbon steel housings
- Internal epoxy coating

Options & Accessories

- Custom design pressures to 3000 psig
- Custom flange ratings
- Custom housing materials
- Optional closure: thru-bolt
- O-ring closure seal in Buna or Viton
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Sump heater
- Additional nozzles as needed
- Air eliminators
- Valves
- Safety relief valves
- Automatic water dump valve
- Water slug shut-off device
- Pressure gauges
- Liquid level gauges
- Duplex or multiplex arrangement
- Working platform

Fig.	Model No.	Coalescer Elements		Separator Elements		A Vessel OD	B1	B2	C	D	E	G	H1	H2	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	GPM (US) Kerosene API Group II	GPM (US) Gasoline	Weight (lbs)
		Qty	Lg	Qty	Lg															
1	HV1422C150	2	22	1	23	14	8.125	25.125	33	37.0	56	35.750	9	18.00	2” RF	3/4” NPT	1/2” NPT	100	150	390
1	HV1622C150	3	22	1	24	16	10.000	23.375	34	38.0	58	36.375	13	16.00	4” RF	3/4” NPT	1/2” NPT	150	230	435
1	HV1633C150	3	33	1	36	16	10.000	23.375	44	48.0	80	36.375	13	27.00	4” RF	3/4” NPT	1/2” NPT	240	350	475
1	HV2233C150	4	33	2	30	22	10.000	38.500	50	54.0	83	53.000	16	23.50	4” RF	3/4” NPT	1/2” NPT	320	475	800
1	HV2244C150	4	44	2	36	22	10.000	38.500	61	65.0	105	53.000	16	29.50	4” RF	3/4” NPT	1/2” NPT	435	650	860
1	HV2838C150	7	38	2	36	28	16.750	34.250	45	57.0	83	55.750	22	22.00	6” RF	3/4” NPT	1/2” NPT	655	950	1050
1	HV2844C150	7	44	2	40	28	16.750	34.250	49	61.0	93	55.750	22	22.50	6” RF	3/4” NPT	1/2” NPT	765	1100	1100
1	HV2856C150	7	56	2	48	28	16.750	34.250	66	78.0	122	55.750	22	42.00	6” RF	3/4” NPT	1/2” NPT	990	1400	1200
1	HV3456C150	10	56	3	48	34	20.000	38.375	68	81.5	124	65.375	28	38.25	6” RF	3/4” NPT	1/2” NPT	1400	1900	1800

Notes:
1. All units in inches unless otherwise stated.
2. Dimension ‘E’ is the minimum clearance required for cartridge removal.
3. Drawings for reference only. Certified drawings will be supplied after receipt of order.

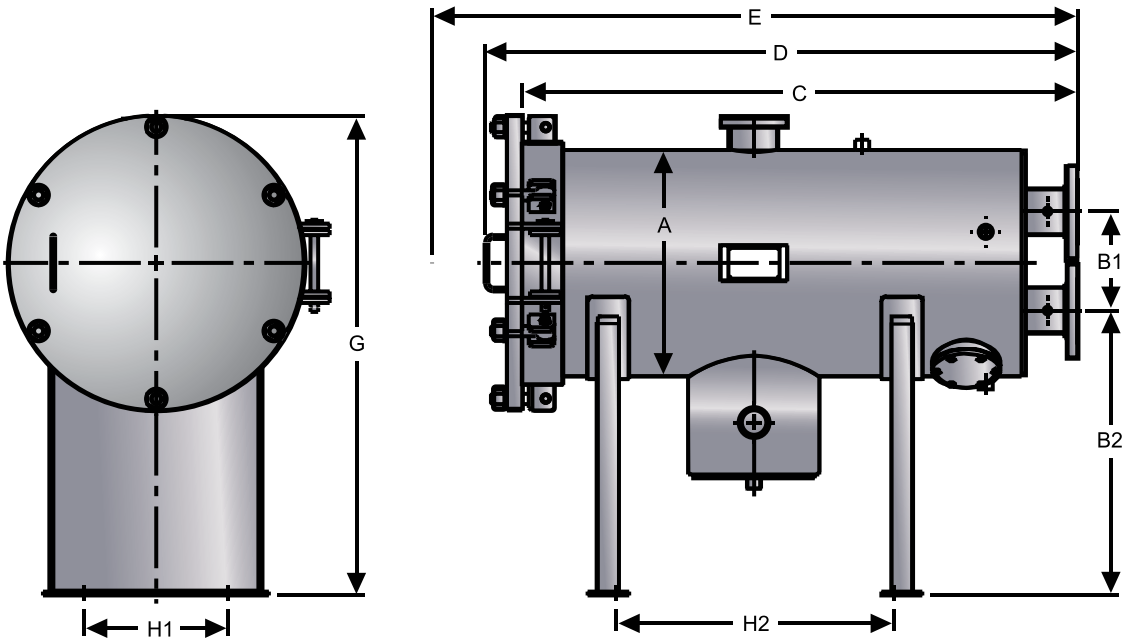


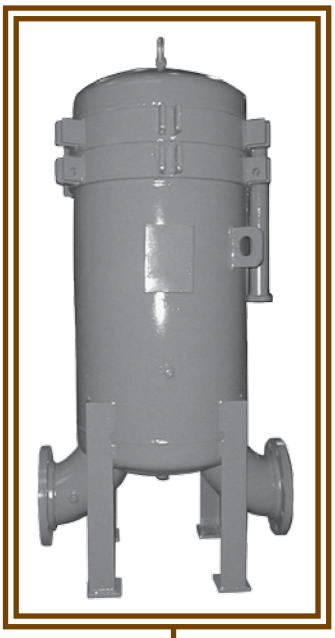
Fig. No. 1

Model Coding

HV	14	22	C	150
LIQUID FILTER SEPARATORS TWO STAGE HORIZONTAL	VESSEL DIAMETER	CARTRIDGE LENGTH	MATERIAL C - CARBON STEEL E - SS304 S - SS316 X - SPECIAL	DESIGN PRESSURE (psig)

VV Series

Liquid Filter Separators (Two Stage Vertical)



VV Series Liquid Filter Separators provide water coalescing and filtration of hydrocarbon fuels. The VV's vertical two stage design combines coalescer and separator cartridges based on flow and product.

Applications

Water coalescing and filtration of hydrocarbon fuels, such as jet fuel, kerosene, diesel, gasoline and similar liquids.

Standard Features

- Designed to ASME Section VIII Div.1 and API Bulletin 1581
- 150 psig standard design pressure
- -20°F/+150°F standard design temperature
- 150lb ANSI RF flanged inlet/outlet
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Carbon steel housing material
- Housing dimensions up to 24" utilize 3L Pogo (spring-assisted) headlift.
- Housing dimensions larger than 24" utilize hydraulic jack headlift
- Quick access for replacement of cartridges
- Standard swing bolt closure with o-ring seal
- External primer finish for carbon steel housings
- Internal epoxy coating
- Angle legs

Options & Accessories

- Custom design pressures to 3000 psig
- Custom flange ratings
- Custom housing materials
- Optional closure: thru-bolt
- O-ring closure seal in Buna or Viton
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Sump heater
- Additional nozzles as needed
- Air eliminators
- Valves
- Safety relief valves
- Automatic water dump valve
- Water slug shut-off device
- Pressure gauges
- Liquid level gauges
- Working platform

Fig.	Model No.	Coalescer Elements Qty	Coalescer Elements Lg	Separator Elements Qty	Separator Elements Lg	A Vessel OD	B Inlet/ Outlet	C	D	E	G	H	L	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	GPM (US) Kerosene API Group II	GPM (US) Gasoline	Weight (lbs)
1	V1222C150	1	22	1	18	12.75	6	35.25	39.25	57.25	17.125	8.0	6.5	1 1/2" RF	3/4" NPT	1/2" NPT	50	70	360
1	V1622C150	2	22	1	23	16.00	6	42.00	46.00	65.00	23.000	9.0	7.0	2 1/2" RF	3/4" NPT	1/2" NPT	100	140	500
1	V1633C150	2	33	1	29	16.00	6	52.50	56.50	85.50	23.000	9.0	7.5	2 1/2" RF	3/4" NPT	1/2" NPT	155	215	600
1	VV1633C150	3	33	1	36	16.00	6	58.00	62.00	91.00	28.250	9.0	7.5	4" RF	3/4" NPT	1/2" NPT	200	260	620
1	VV1833C150	3	33	1	33	18.00	6	59.50	63.50	92.50	29.375	10.5	8.0	4" RF	3/4" NPT	1/2" NPT	220	305	700
1	VV1838C150	3	38	1	40	18.00	6	64.50	68.50	102.50	29.375	10.5	8.0	4" RF	3/4" NPT	1/2" NPT	270	380	950
1	VV2044C150	3	44	1	44	20.00	6	71.50	75.50	115.50	29.625	13.0	8.0	4" RF	3/4" NPT	1/2" NPT	300	445	1075
1	VV2328C150	5	28	2	30	24.00	6	63.50	67.50	91.50	31.250	15.5	8.0	4" RF	3/4" NPT	1/2" NPT	335	450	1175
1	VV2333C150	5	33	2	30	24.00	8	63.50	67.50	96.50	35.813	15.5	11.0	6" RF	3/4" NPT	1/2" NPT	400	540	1175
1	VV2338C150	5	38	2	36	24.00	8	69.50	73.50	107.50	35.813	15.5	11.0	6" RF	3/4" NPT	1/2" NPT	465	630	1200
1	VV2344C150	5	44	2	40	24.00	8	74.00	78.00	118.00	35.813	15.5	11.0	6" RF	3/4" NPT	1/2" NPT	540	740	1225
2	VV2833C150	7	33	3	30	28.00	8	69.50	81.50	102.50	37.125	18.0	11.0	6" RF	3/4" NPT	1/2" NPT	560	760	1600
2	VV2838C150	7	38	3	30	28.00	8	69.50	81.50	107.50	37.125	18.0	11.0	6" RF	3/4" NPT	1/2" NPT	605	880	1600
2	VV2844C150	7	44	3	40	28.00	8	75.50	87.50	119.50	37.125	18.0	11.0	6" RF	3/4" NPT	1/2" NPT	765	1035	1650
2	VV2856C150	7	56	3	44	28.00	8	88.00	100.00	144.00	37.125	18.0	11.0	6" RF	3/4" NPT	1/2" NPT	900	1340	1750
2	VV3638C150	11	38	5	36	36.00	9	82.00	96.00	120.00	53.000	24.0	13.0	8" RF	3/4" NPT	1/2" NPT	1030	1390	2125
2	VV3644C150	11	44	5	36	36.00	9	83.00	97.00	127.00	53.000	24.0	13.0	8" RF	3/4" NPT	1/2" NPT	1205	1630	2150
2	VV3656C150	12	56	6	44	36.00	9	95.00	109.00	151.00	53.000	24.0	13.0	8" RF	3/4" NPT	1/2" NPT	1800	2340	2300
2	VV4856C150	20	56	10	44	48.00	9	96.00	113.00	152.00	56.500	32.0	14.0	10" RF	3/4" NPT	1/2" NPT	3000	3900	3600

Notes:
1. All units in inches unless otherwise stated.
2. Dimension 'E' is the minimum clearance required for cartridge removal.
3. Drawings for reference only. Certified drawings will be supplied after receipt of order.

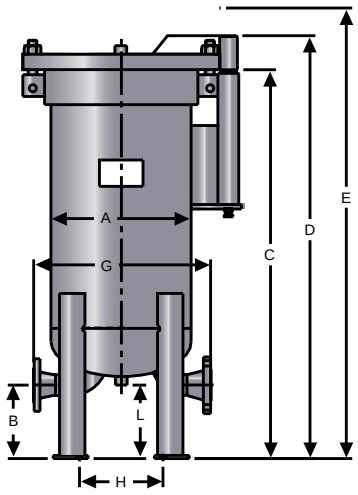


Fig. No. 1

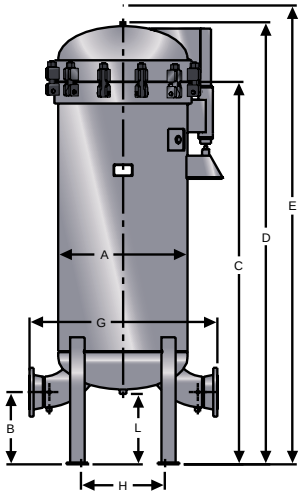
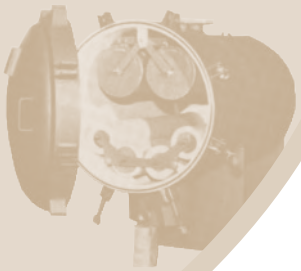


Fig. No. 2

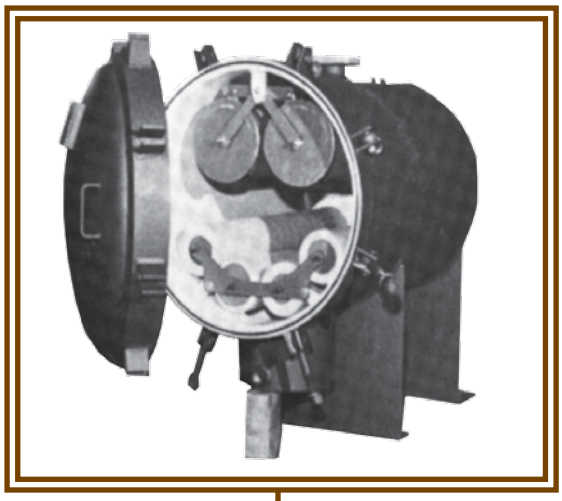
Model Coding

VV	12	22	C	150
LIQUID FILTER SEPARATORS TWO STAGE VERTICAL	VESSEL DIAMETER	CARTRIDGE LENGTH	MATERIAL A - ALUMINUM C - CARBON STEEL E - SS304 S - SS316 X - SPECIAL	DESIGN PRESSURE (psig)



WAL Series

Liquid Filter Separators (Three Stage Horizontal)



WAL Series Liquid Filter Separators provide water coalescing and filtration of hydrocarbon fuels. The WAL is a three-stage horizontal liquid filter separator. The first stage removes particulate and coalesces the water contaminant while the second stage separates water droplets from the fuel. The third stage is an extra safeguard to absorb any remaining water.

Applications

Water coalescing and filtration of hydrocarbon fuels, such as jet fuel, kerosene, diesel, gasoline and similar liquids where greater efficiency of water removal is required.

Standard Features

- Designed to ASME Section VIII Div.1
- 150 psig standard design pressure
- -20°F/+150°F standard design temperature
- 150lb ANSI RF flanged inlet/outlet
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Carbon steel housing material
- Leg supports for housings under 12” diameter
- Saddle supports for housings 12” diameter and over
- Quick access for replacement of cartridges
- Standard swing bolt closure with o-ring seal
- External primer finish for carbon steel housings
- Internal epoxy coating

Options & Accessories

- Custom design pressures to 3000 psig
- Custom flange ratings
- Custom housing materials
- Optional closure: thru-bolt
- O-ring closure seal in Buna or Viton
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Sump heater
- Additional nozzles as needed
- Air eliminators
- Valves
- Safety relief valves
- Automatic water dump valve
- Pressure gauges
- Liquid level gauges
- Working platform

Fig.	Model No.	Fuse Elements		Separator Elements		Coalescer Elements		A Vessel OD	B1	B2	C	D	E	G	H1	H2	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	GPM (US)	Weight (lbs)
		Qty	Lg	Qty	Lg	Qty	Lg														
1	WAL1422E150	5	10	1	13	1	22	14	8.125	25.125	33	37	55	37.500	9	18.0	2” RF	3/4” NPT	1/2” NPT	50	390
1	WAL1622E150	5	20	1	23	2	22	16	10.000	23.375	34	38	57	36.375	13	16.0	4” RF	3/4” NPT	1/2” NPT	100	435
1	WAL1633E150	5	30	1	33	2	33	16	10.000	23.375	44	48	77	36.375	13	27.0	4” RF	3/4” NPT	1/2” NPT	150	475
1	WAL2028E150	10	20	2	23	3	28	20	12.500	27.500	40	44	68	46.750	18	22.0	4” RF	3/4” NPT	1/2” NPT	200	600
1	WAL2044E150	10	30	2	33	3	44	20	12.500	27.500	56	60	100	46.750	18	30.0	4” RF	3/4” NPT	1/2” NPT	300	750
1	WAL2444E150	15	30	3	33	4	44	24	14.625	30.750	56	60	100	54.000	20	30.0	6” RF	3/4” NPT	1/2” NPT	450	900
1	WAL2844E150	20	30	4	33	5	44	28	16.750	34.250	49	61	93	55.750	22	22.5	6” RF	3/4” NPT	1/2” NPT	600	1100
1	WAL3056E150	25	30	5	33	6	56	30	18.000	36.000	68	80.5	124	63.500	24	30.0	6” RF	3/4” NPT	1/2” NPT	750	2000

Notes:
1. All units in inches unless otherwise stated.
2. Dimension ‘E’ is the minimum clearance required for cartridge removal.
3. Drawings for reference only. Certified drawings will be supplied after receipt of order.

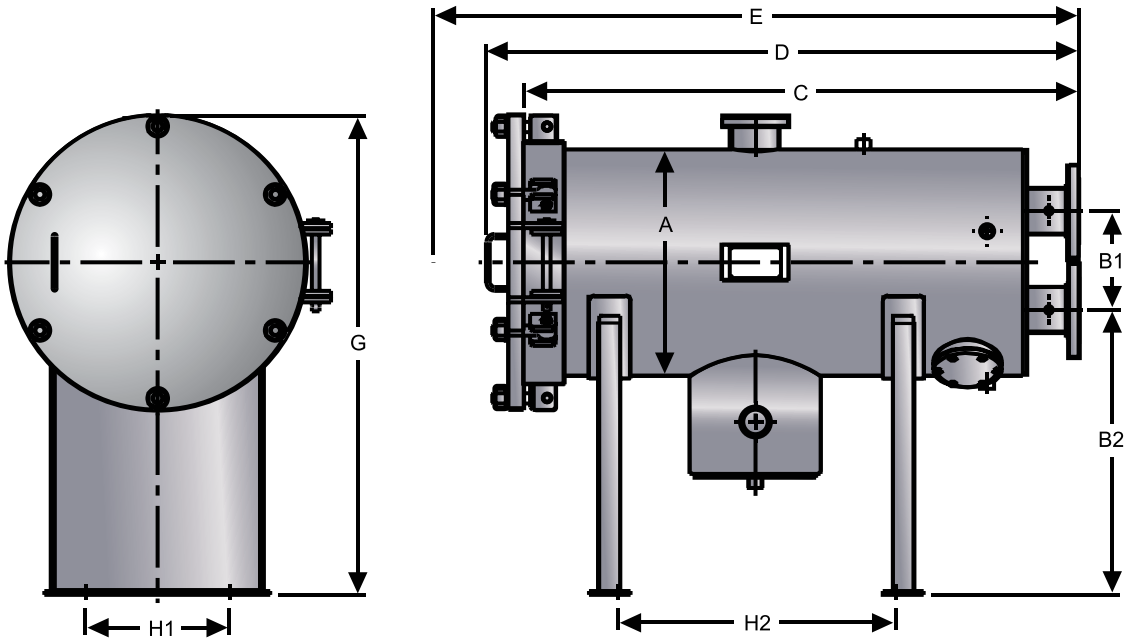


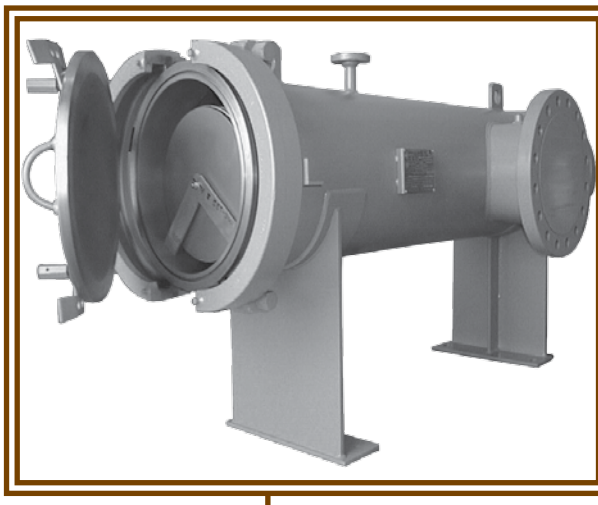
Fig. No. 1

Model Coding

WAL	14	22	E	150
LIQUID FILTER SEPARATORS THREE STAGE HORIZONTAL	VESSEL DIAMETER	CARTRIDGE LENGTH	MATERIAL A - ALUMINUM C - CARBON STEEL E - SS304 S - SS316 X - SPECIAL	DESIGN PRESSURE (psig)

L Series

Dehydrators



L Series Dehydrators provide gross water removal from liquid hydrocarbon fuels to an efficiency of 99%. They employ a variety of replaceable coalescent filter packs to trap particle contamination and coalesce water from the fuel. Free water is collected in a drainage sump.

Applications

Gross water removal from liquid hydrocarbon fuels such as aviation fuel, kerosene, gasoline, diesel and liquid propane.

Standard Features

- Designed to ASME Section VIII Div.1
- 150 psig standard design pressure
- -20°F/+150°F standard design temperature
- 150lb ANSI RF flanged inlet/outlet
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Horizontal vessel design
- Carbon steel housing material
- Hinged closure
- Excelsior repack media
- Water collection sump
- Quick access for replacement of filter packs
- Standard swing bolt closure with o-ring seal
- External primer finish for carbon steel housings
- Saddle support

Options & Accessories

- Custom design pressures to 2500 psig
- Custom flange ratings
- Custom housing materials
- Optional closure: thru-bolt
- O-ring closure seal in Buna or Viton
- Various application specific repack media available
- Internal epoxy coating on carbon steel models
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Sump heater
- Additional nozzles as needed
- Air eliminators
- Valves
- Safety relief valves
- Automatic water dump valve
- Pressure gauges
- Liquid level gauges
- Working platform

Fig.	Model No.	A Vessel OD	B1	B2	C	D	E	G	H	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	GPM (US)	Weight (lbs)
1	L50C150	10.75	4.50	30.0	38.00	42.00	62.00	8.125	20	2" NPT	3/4" NPT	1/2" NPT	50	240
1	L100C150	14.00	10.00	48.0	69.50	73.50	105.50	12.000	52	2" RF	3/4" NPT	1/2" NPT	100	430
1	L200C150	20.00	12.00	56.0	83.50	87.50	131.50	15.000	62	3" RF	3/4" NPT	1/2" NPT	200	650
1	L300C150	24.00	15.00	61.5	96.00	100.00	144.00	17.000	70	4" RF	3/4" NPT	1/2" NPT	300	790
1	L500C150	30.00	17.50	72.0	112.00	124.50	166.00	21.000	84	6" RF	3/4" NPT	1/2" NPT	500	1250
1	L750C150	36.00	22.50	88.0	138.00	152.00	210.00	24.000	100	6" RF	3/4" NPT	1/2" NPT	750	1650
1	L1000C150	42.00	24.25	98.0	152.75	169.25	224.75	29.000	108	8" RF	3/4" NPT	1/2" NPT	1000	2670
1	L1300C150	48.00	28.00	106.0	167.50	185.50	239.50	32.000	112	8" RF	3/4" NPT	1/2" NPT	1300	3500
1	L1600C150	54.00	32.00	114.0	182.50	204.00	262.50	35.000	116	10" RF	3/4" NPT	1/2" NPT	1600	4600
1	L2000C150	60.00	34.00	120.0	193.50	216.50	277.50	40.000	120	12" RF	3/4" NPT	1/2" NPT	2000	5700

Notes:
1. All units in inches unless otherwise stated.
2. Dimension 'E' is the minimum clearance required for removal of filter packs.
3. Flowrates are based on gasoline. More viscous liquids will have lower flowrates.
4. Drawings for reference only. Certified drawings will be supplied after receipt of order.

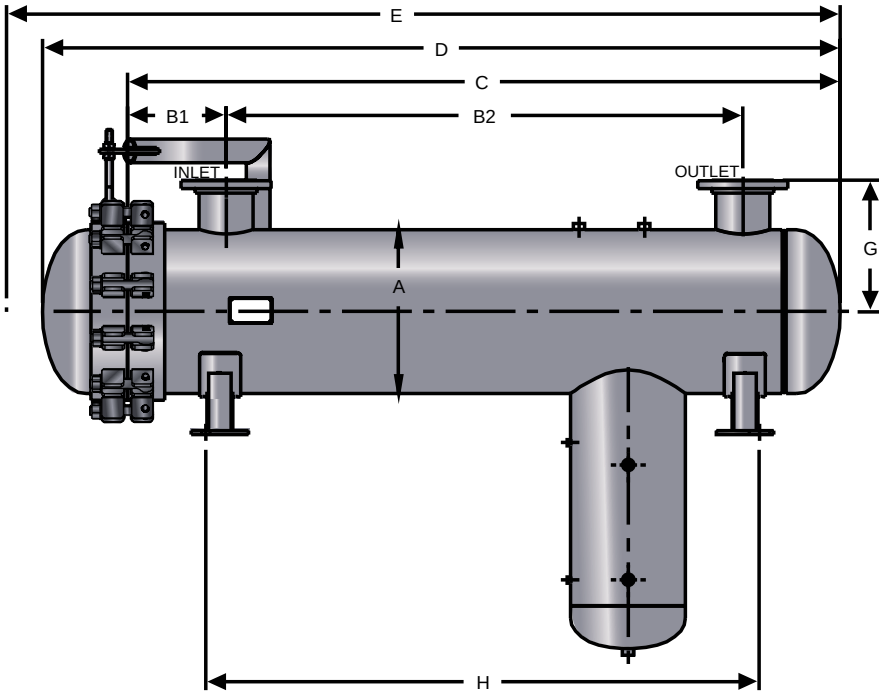
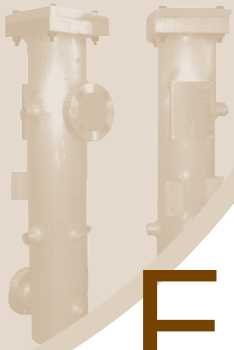


Fig. No. 1

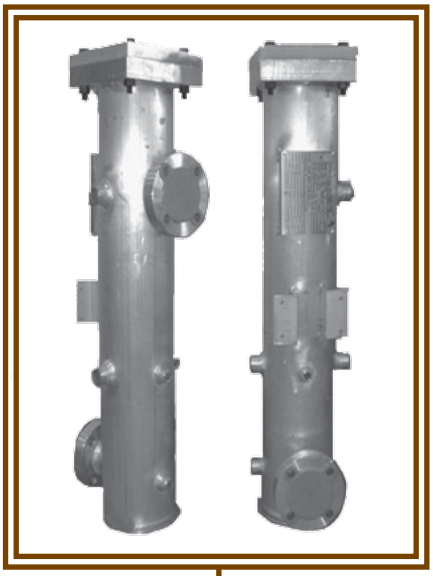
Model Coding

L	50	C	150
DEHYDRATOR	GPM SIZE 25 - 2000	MATERIAL C - CARBON STEEL E - SS304 S - SS316	DESIGN PRESSURE (psig)



FM Series

Fuel Monitors



FM Series Fuel Monitors provide clean, dry fuel in aviation fueling systems. An increase in differential pressure across the unit or a corresponding decrease in flow rate indicates water and/or dirt is present in the influent fuel.

Applications

Final point of filtration in aviation fueling systems.

Standard Features

- Designed to ASME Section VIII Div.1
- 150 psig standard design pressure
- -20°F/+160°F standard design temperature
- 150lb ANSI RF flanged inlet/outlet
- 600lb NPT couplings for vent, drain, pressure gauge, and air eliminator connections
- Victaulic connections for quick uncoupling
- Aluminum housing material
- Horizontal housings
- Quick access for replacement of cartridges
- Standard swing bolt closure with o-ring seal
- Saddle supports

Options & Accessories

- Custom design pressures to 2500 psig
- Custom flange ratings
- Custom housing materials
- Vertical housings in carbon or stainless steel
- Optional closure: thru-bolt
- O-ring closure seal in Buna or Viton
- Internal epoxy coating on carbon steel models
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Additional nozzles as needed
- Air eliminator
- Valves
- Safety relief valves
- Pressure gauges
- Sampling kit

Fig.	Model No.	Separator Elements		A	B1	B2	C	D	E	H	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	GPM (US) Light Fluids	Weight (lbs)
		Qty	Lg												
1	FMA505F	5	10 13/16	6.625	14.00	6.250	11.5	18.75	28	6.875	2" RF	3/4" NPT	1/2" NPT	50	40
1	FMA1005F	5	20 13/16	6.625	23.25	6.250	11.5	29.75	49	15.000	2" RF	3/4" NPT	1/2" NPT	100	45
1	FMA1505F	5	30 13/16	6.625	33.00	6.250	11.5	40.50	70	25.000	2" RF	3/4" NPT	1/2" NPT	150	50
1	FMA20020F	20	10 13/16	12.750	28.50	9.375	18.0	38.25	47	20.000	4" RF	3/4" NPT	1/2" NPT	200	110
1	FMA20010F	10	20 13/16	10.750	10.00	9.375	17.0	41.00	60	25.000	4" RF	3/4" NPT	1/2" NPT	200	155
1	FMA30020F	20	15 13/16	12.750	14.00	9.375	18.0	43.25	57	25.000	4" RF	3/4" NPT	1/2" NPT	300	130
1	FMA30010F	10	30 13/16	10.750	10.00	9.375	17.0	51.00	80	30.000	4" RF	3/4" NPT	1/2" NPT	300	165
1	FMA40020F	20	20 13/16	12.750	14.00	9.375	18.0	48.25	67	30.000	4" RF	3/4" NPT	1/2" NPT	400	155
1	FMA50020F	20	25 13/16	12.750	14.00	9.375	18.0	53.25	77	35.000	6" RF	3/4" NPT	1/2" NPT	500	175
1	FMA60020F	20	30 13/16	12.750	14.00	9.375	18.0	58.25	87	40.000	6" RF	3/4" NPT	1/2" NPT	600	200
1	FMA80027F	27	30 13/16	14.000	25.00	10.500	20.0	51.50	80	35.000	6" RF	3/4" NPT	1/2" NPT	800	170
1	FMA100034F	34	30 13/16	16.000	25.00	11.500	22.5	57.75	86	40.000	6" RF	3/4" NPT	1/2" NPT	1000	200
1	FMA120040F	40	30 13/16	18.250	25.00	15.125	27.5	57.75	86	40.000	6" RF	3/4" NPT	1/2" NPT	1200	290

Notes:
1. All units in inches unless otherwise stated.
2. Dimension 'E' is the minimum clearance required for cartridge removal.
3. Drawings for reference only. Certified drawings will be supplied after receipt of order.

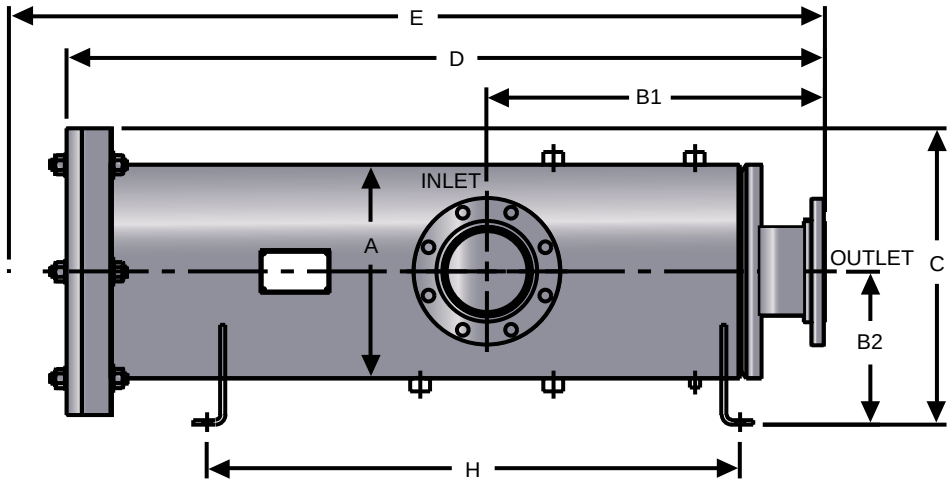


Fig. No. 1

Note: Drawings for reference only. Certified drawings will be supplied after receipt of order.

Model Coding

FM	A	50	5	F
FUEL MONITOR	MATERIAL A - ALUMINUM C - CARBON STEEL E - SS304 S - SS316 X - SPECIAL	FLOW RATE	NUMBER OF FUSES	NOZZLE TYPE F - FLANGED N - NPT V - VICTAULIC

VC Series

Clay Treaters

VC Series Clay Treaters provide removal of surfactants from liquid hydrocarbon fuels and removal of acids or oxidation products from lubrication or hydraulic oils. The VC uses clay canister filtration media to adsorb surfactants, often as a pre-filter.

Applications

Clay Treaters are commonly installed upstream of filter separators to remove surfactants that can disarm filter separators.

Standard Features

- Designed to ASME Section VIII Div.1
- 150 psig standard design pressure
- -20°F/+150°F standard design temperature
- 150lb ANSI RF flanged inlet/outlet
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Carbon steel housing material
- Hydraulic jack headlift
- Quick access for replacement of clay canisters
- Standard swing bolt closure with o-ring seal
- External primer finish for carbon steel housings
- Internal epoxy coating
- Angle leg supports

Options & Accessories

- Custom design pressures to 2500 psig
- Custom flange ratings
- Custom housing materials
- Optional handwheel headlift
- Optional closure: thru-bolt
- O-ring closure seal in Buna or Viton
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Additional nozzles as needed
- Air eliminator
- Valves
- Safety relief valves
- Pressure gauges
- Sampling kit
- Working platform

Fig.	Model No.	Element Qty	A Vessel OD	B	C	D	E	G	H	L	Inlet/ Outlet	Vent Safety Drains	Press. Gauge	GPM (US) Diesel	GPM (US) Gasoline	GPM (US) Kerosene	Weight (lbs)
1	VC3636C150	34	36	25.0	58.0	74.0	94.0	48	23.0	12	4" RF	3/4" NPT	1/2" NPT	140	300	230	2125
1	VC3654C150	51	36	25.0	74.5	90.5	128.5	48	23.0	12	4" RF	3/4" NPT	1/2" NPT	200	440	340	2375
1	VC4254C150	72	42	26.5	77.5	95.0	131.5	54	28.0	14	6" RF	3/4" NPT	1/2" NPT	280	600	465	3000
1	VC4854C150	93	48	28.0	79.0	99.0	133.0	60	32.0	14	6" RF	3/4" NPT	1/2" NPT	360	780	600	3500
1	VC5454C150	120	54	29.0	80.0	102.5	134.0	66	36.5	14	6" RF	3/4" NPT	1/2" NPT	480	1040	800	4100
1	VC6054C150	150	60	31.0	82.0	107.0	136.0	72	41.0	14	8" RF	3/4" NPT	1/2" NPT	590	1265	975	4750
1	VC6654C150	183	66	36.0	87.0	116.0	141.0	78	45.5	14	8" RF	3/4" NPT	1/2" NPT	700	1500	1200	6500

Notes:
1. All units in inches unless otherwise stated.
2. Dimension 'E' is the minimum clearance required for clay canister removal.

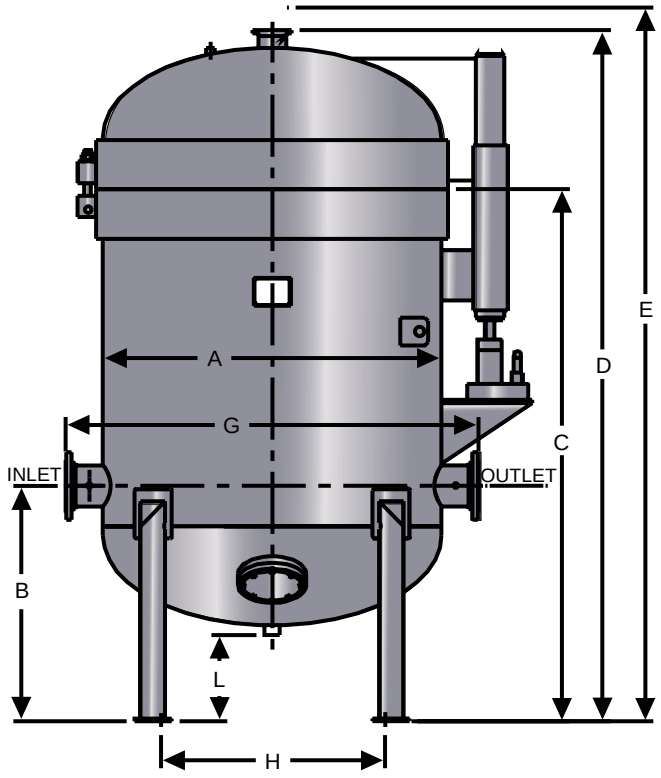


Fig. No. 1

Note: Drawings for reference only. Certified drawings will be supplied after receipt of order.

Model Coding

VC	36	36	C	150
CLAY TREATERS	VESSEL DIAMETER	CARTRIDGE LENGTH	MATERIAL C - CARBON STEEL E - SS304 S - SS316	DESIGN PRESSURE (psig)

ACF Series

Activated Carbon Filters

ACF Series Activated Carbon Filters remove dissolved organics from a liquid stream by adsorption.

Applications

Typical uses include removal of chlorine, dissolved organics, hydrocarbons and chlorinated hydrocarbons in water treatment systems as well removal of acids in amine treatment systems.

Standard Features

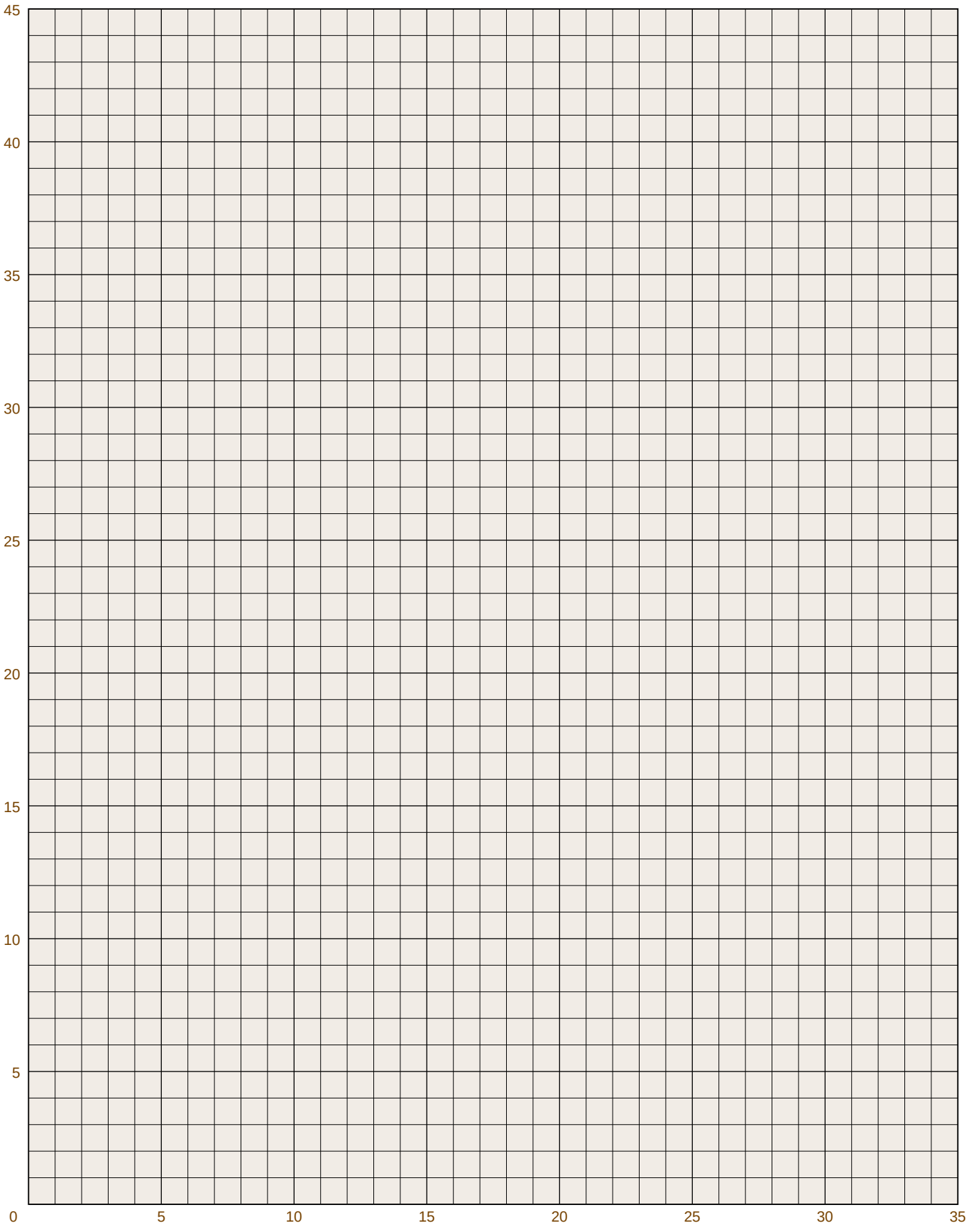
- Designed to ASME Section VIII Div.1
- 150 psig standard design pressure
- -20°F/+100°F standard design temperature
- 150lb ANSI RF flanged inlet/outlet
- 3000lb NPT couplings for vent, drain, and pressure gauge connections
- Welded carbon steel with double epoxy lining or stainless steel housing material
- Stainless steel interior mesh screen for carbon load
- Quick access for spent carbon removal
- Standard swing bolt closure
- Backwashable
- External primer finish for carbon steel housings

Options & Accessories

- Custom design pressures to 3000 psig
- Custom housing materials
- Optional closure: thru-bolt
- RF flanges and other connections
- Electropolishing of stainless steel housings
- Passivation of stainless steel housings
- Paint or coating to customer specifications
- Distribution head on outlet
- Additional nozzles as needed
- Valves
- Safety relief valves
- Differential pressure gauge
- Epoxy, Rubber, or Teflon linings
- Site glass

Model Coding

ACF	24	13	C	150
ACTIVATED CARBON FILTER	VESSEL DIAMETER	FLOW GPM	MATERIAL C - CARBON E - SS304 S - SS316	DESIGN PRESSURE (psig)


45
40
35
30
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20
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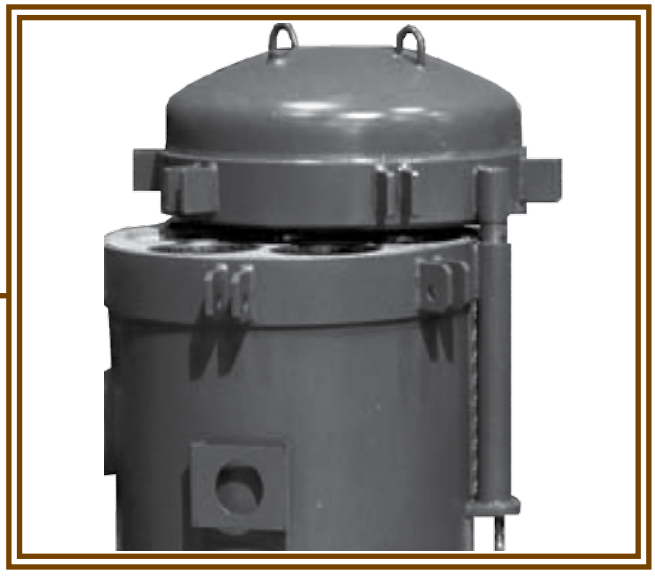
30
35

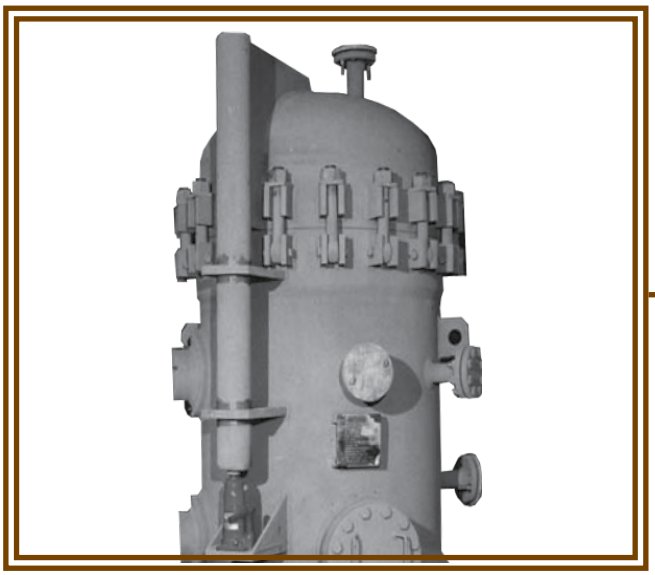
Headlifts

All 3L Filters™ products are designed for ease of maintenance and quick access to replace bags, cartridges, canisters and filter packs. 3L Filters™ has a variety of standard and optional headlifts for specific vessel designs. Let us help you select the optimal headlift to suit your operational requirements.



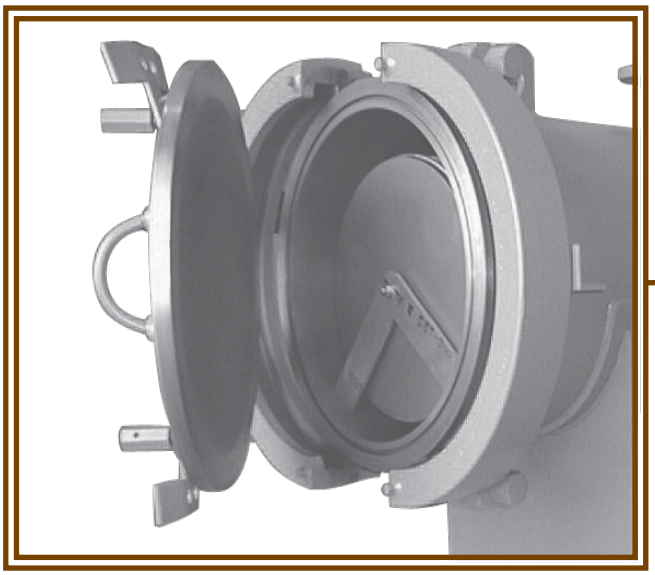
3L Pogo

- For vertical housings only
- Used on housings up to 24” OD
- Spring-assisted pop-up allows for lid to swing sideways for access



Jack

- For vertical housings only
- Used on housings 28” OD and over
- Lever actuated lift



Hinge

- For horizontal housings only
- Used on housings of any diameter
- Space saving

Davit (Handwheel)

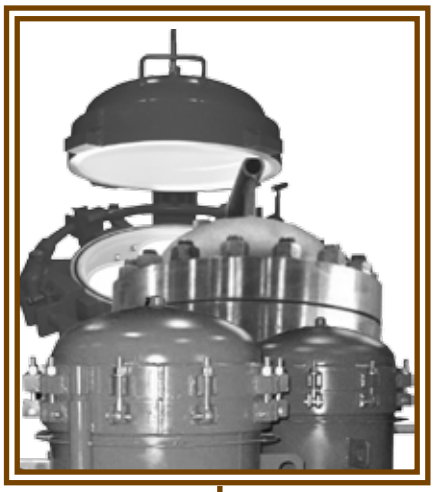
- For horizontal or vertical housings
- No limit on housing diameter
- Handle or handwheel designs available

Cantilever

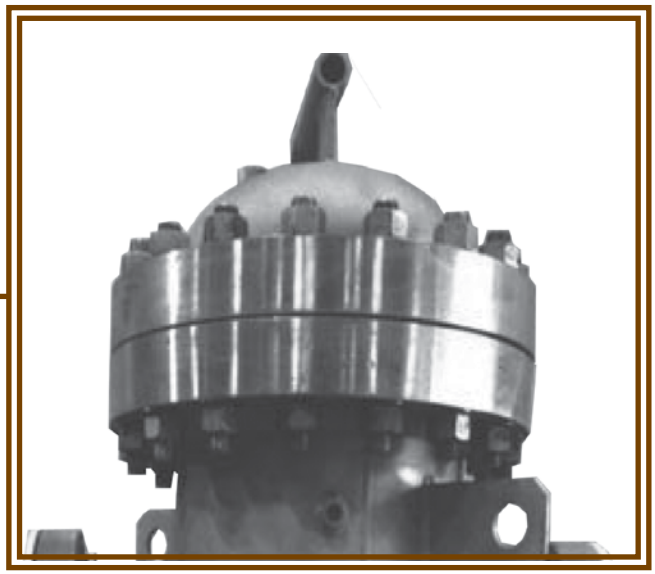
- For vertical housings only
- Used on housings from 18” to 36” OD
- Hinged lid for all vertical positions, 0 to 90 degrees
- Class 1 lever
- Complements Easy Access Closure
- Less area required for maintenance

CANADIAN PATENT	# 2,411,858
U.S. PATENT	# 6,378,249

Closures



3L Filters™ offers three closure options to suit a broad range of industries and process conditions. 3L Filters™ closures are designed to save time when opening and closing.



Thru-Bolt

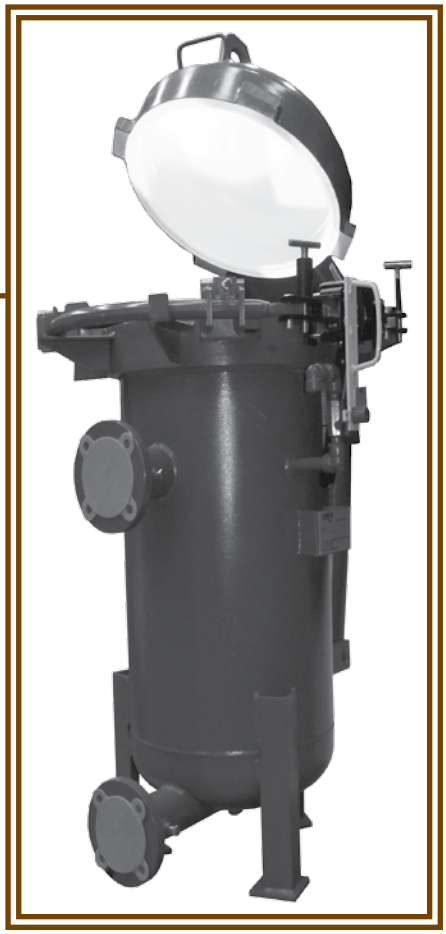
- For vertical or horizontal housings
- Suitable for any temperature or pressure
- O-ring, flat gasket and spiral wound seals available
- Slowest and least efficient for change out

Swing Bolt

- For vertical or horizontal housings
- Suitable up to 200°F
- Uses elastomer o-ring seal
- Bolting stays attached when released
- Quicker change out than thru-bolt closure

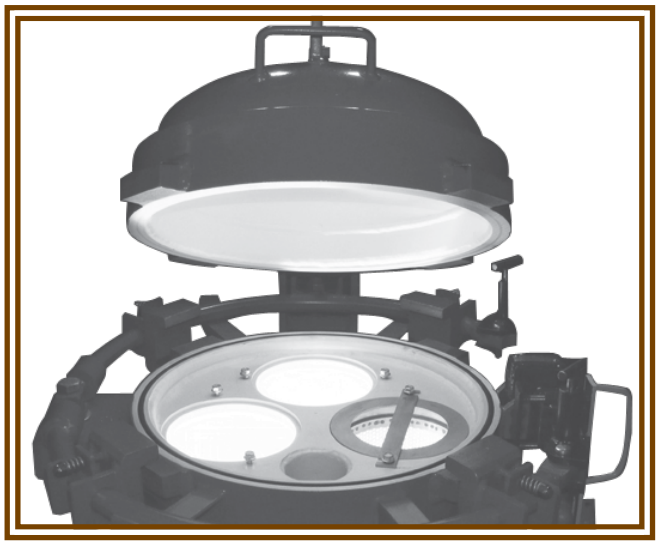
EAC Series

Easy Access Closures



1 PERSON • 0 TOOLS • 1 MINUTE

The EAC Easy Access Closure is a patented closure design that enables any single operator or technician to open a depressurized filtration vessel without the assistance of tools and perform cartridge or bag replacement, all in less than one minute. The EAC is typically used with the vertical lift Cantilever head positioner, but can be engineered to suit many applications.



CANADIAN PATENT # 2,393,693
U.S. PATENT # 6,401,958

Applications

Vertical bag or cartridge filters processing a wide array of liquids where frequent change outs are expected.

Features

- Significant reduction of downtime for cartridge or bag change out
- Opened and closed in under one minute. Safe, fool-proof operation, system pre-set at our shop
- Minimal force to lift lid after opening
- Registered design to ASME Section VIII Div. 1
- Design pressure 150 psig; maximum temperature 200°F
- For housing diameters 18”, 22”, 24”, 30” and 36” only
- Anti-tamper safety lock available
- Supplied in both carbon steel and stainless steel components
- Fast delivery of closures and components from factory stock
- Minimal price increase over manual swing bolt closures

Pressure Vessels

3L Filters™ has over 40 years of experience in the design and fabrication of tanks and pressure vessels. The engineering group can perform complete stress and seismic analysis and design registration. 3L Filters™ has registered Quality Assurance Programs for nuclear and non-nuclear applications.

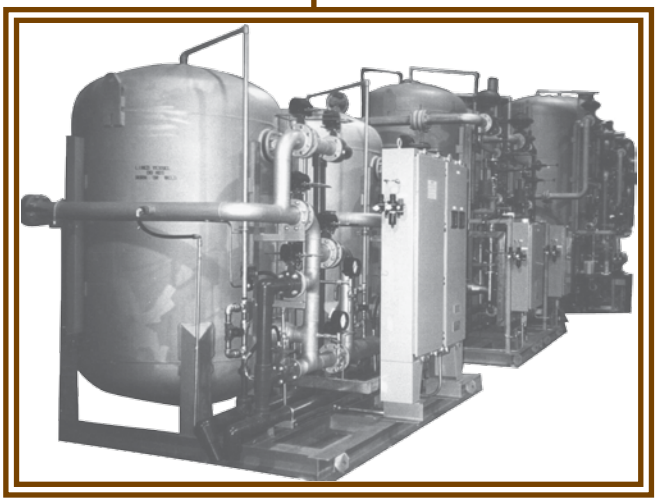
Applications

Tanks, pressure vessels, boiler shells and filter housings for most uses. 3L Filters™ has special expertise for nuclear, oil and gas, petrochemical, water treatment and environmental applications.

Manufacturing Certifications

Agency	Applicable Symbol or Standard	Description / Product Class
National Board	NB	Manufacture of boilers, pressure vessels or other pressure retaining items to ASME code - U, S and UM stamps
ASME	U	Manufacture of pressure vessels
ASME	S	Manufacture and assembly of power boilers
ASME	UM	Manufacture of miniature pressure vessels
TSSA	ASME Sec. VIII Div. 1 CSA B51	Manufacture of pressure vessels to ASME Boiler and Pressure Vessel Code, Section VIII Division 1; and CSA Standard B51 Boiler Pressure Vessel and Pressure Piping Code
TSSA	CSA N285.0	Construction of Class 1, 2, 3 & 4 Vessels and supports; in accordance with CSA Standard N285.0, General Requirements for Pressure Retaining Systems and Components in CANDU Nuclear Power Plants
CANPAC (Auditors)	CSA Z299.2	Manufacture of cartridge type filters, strainers, separators, purifiers, pressure vessels, tanks, and appurtenances and distribution of associated parts

Engineered Products



For over 40 years, 3L Filters™ has designed, manufactured and tested a wide variety of custom-engineered products and complete skid-mounted systems. 3L Filters™ has special expertise in liquid filtration systems for nuclear, petrochemical, water treatment and environmental applications.

Our experienced engineering team has created systems for a multitude of markets and customers. We apply our in-house talents to accommodate all aspects of design, from piping and structural to instrumentation and PLC programming. Systems can be designed to meet ASME codes, seismic requirements and military specifications as required.

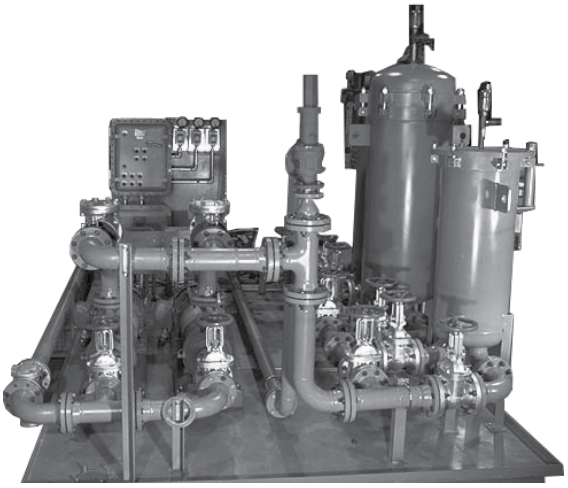
With designs on file from hundreds of successful applications, 3L Filters™ can provide a custom-engineered system that is guaranteed to perform to the customer's specifications.

Capabilities

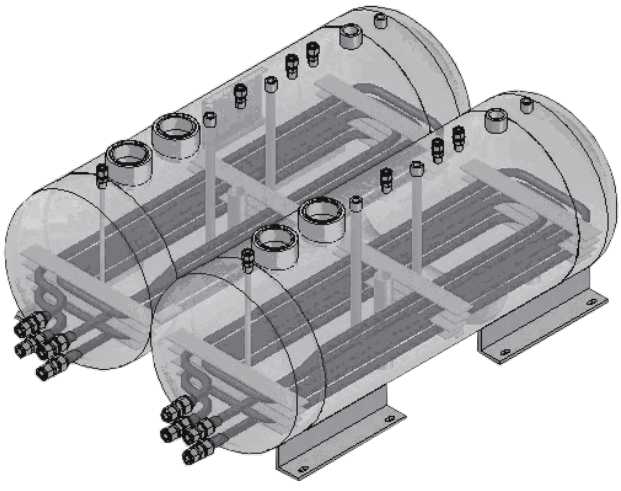
- Stress analysis, seismic analysis and design registration
- AutoCad & Solid Edge design drawings
- Fabrication in carbon steel, stainless steel, aluminum or specialty/exotic materials
- GMAW, SMAW, SAW, and GTAW welding methods
- Experienced, qualified welders
- Large library of approved welding procedures
- 25 ton lift capacity
- In-house machining, blasting and painting
- In-house and third-party NDE testing
- In-house pressure and performance testing

Typical Engineered Products and Skid Systems

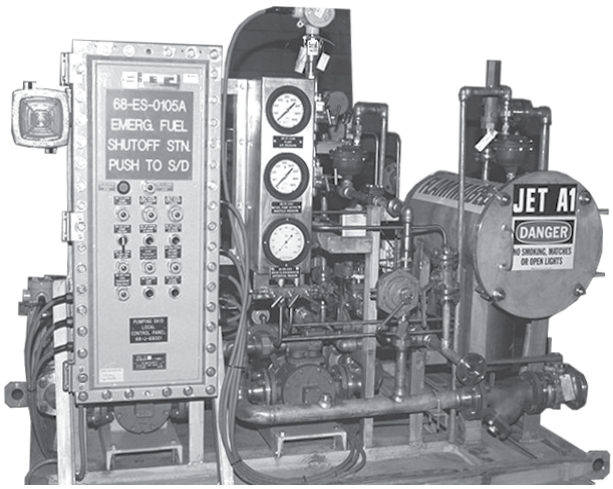
Groundwater Recovery System
Pre-filter plus oily water separator



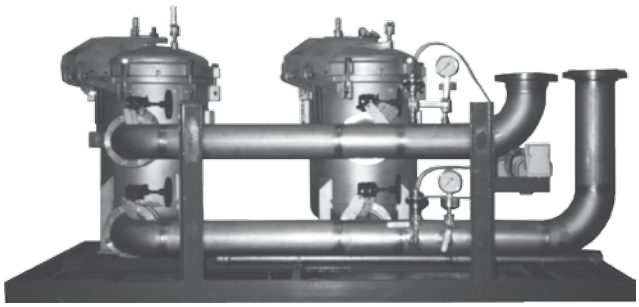
Fuel Forwarding Skid
Pumps, pre-filter & filter separator



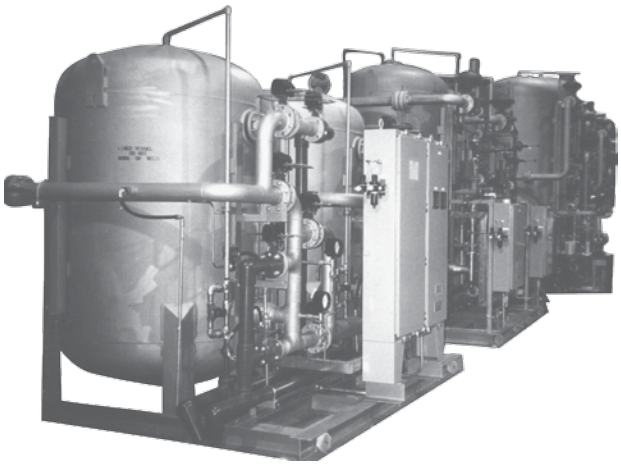
Gas Separator Assembly
For hydrogen gas production



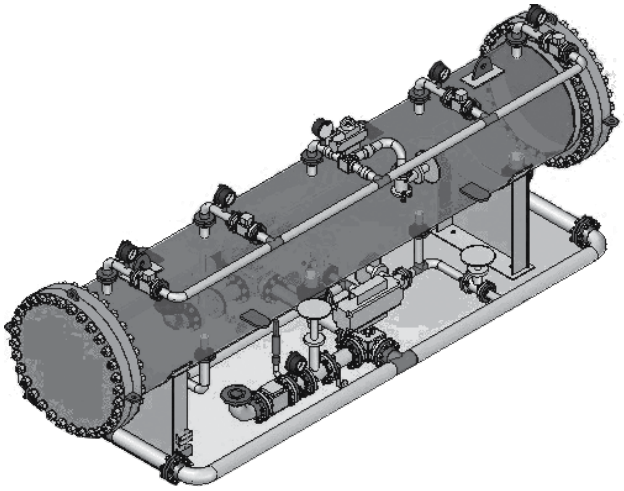
Helicopter Refuelling System
For offshore drilling platform



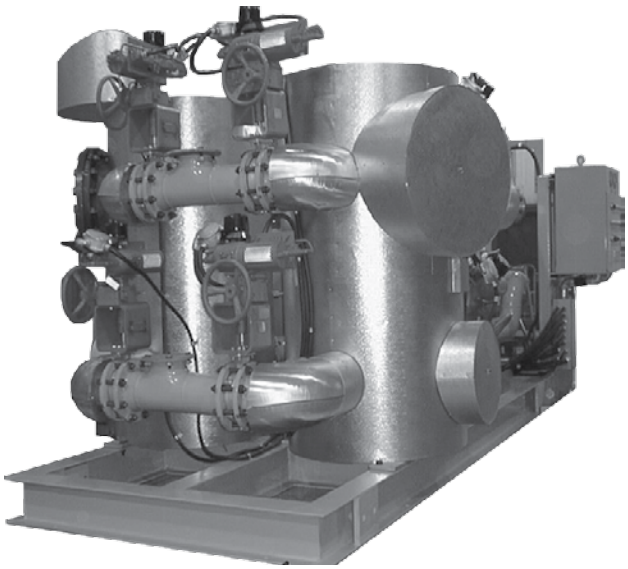
Automotive Paint System
Bag filters



Ion Exchanger
Anion and cation beds



Oil Coalescer
For water remediation

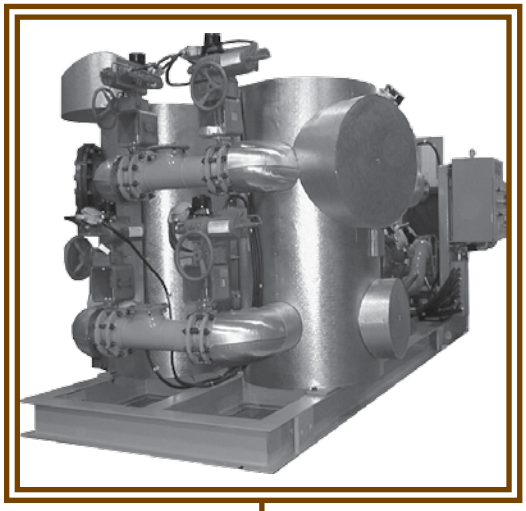


Vapour Recovery Dryer
Extracts heavy water vapour from air

Examples of other Engineered Products and Skid Systems

- Amine Filtration Skids
- Turbine Polishing Filtration Skids
- Turbine Fuel Gas Filter Separator Packages
- Turbine Jet Fuel Polishing Filtration Skids
- Helicopter Refuelling Skids
- Fuel Pumping Stations
- Water Filtration Skids
- Boiler Condensate Polishers
- Natural Gas Purification Skids
- Biogas Separators for Municipal Landfills
- Offshore Drilling Platform Fuel Dispensing Skids
- Ion Exchanger Skids

Nuclear Products



3L Filters™ designs and manufactures custom-engineered nuclear product for CANDU, PWR and BWR Nuclear Reactors. Nuclear Products from 3L Filters™ adhere to a rigorous Quality Assurance program based on ASME Sec. III NCA 4000, with additional requirements of CSA N285.0 for ASME Sec. III Nuclear CL-1, CL-2, CL-3 design and fabrication standards.

For non-nuclear components, 3L Filters™ maintains ASME Sec. VIII Div. 1 “U” and “UM” stamps. Our Quality Assurance Programs are regularly audited by TSSA, ASME and our clients.

3L Filters™ has been engaged in the nuclear business for 30 years. 3L Filters™ has a team of experienced engineers and technicians to design nuclear products in compliance with customer’s specifications and applicable codes. All design work, stress and seismic analysis and manufacturing is performed in house using our state of the art computer technology and manufacturing facility. Our R & D team is engaged in on-going product development and enhancements.

Nuclear Powerplants We Serve

3L Filters™ has supplied filtration systems and nuclear equipment to CANDU, BWR and PWR nuclear powerplants including:

Canada and the USA

- Bruce-A (4 Units)
- Bruce-B (4 Units)
- OPG Pickering-A (4 Units)
- OPG Pickering-B (4 Units)
- OPG Darlington (4 Units)
- NBEPC Point Lepreau
- HQ Gentilly
- Maple-1 (AECL Chalk River)
- Maple-2 (AECL Chalk River)
- Washington Power
- North East Utility

International

- Lungman, Taiwan
- Cordoba, Argentina
- KHNP Wolsong (4 Units), Korea
- Cernavoda (2 Units), Romania
- Qinshan Phase III (2 Units), China
- Qinshan Phase II Extension Project, China (under construction)
- Ling Ao Phase II Extension Project , China

3L Filters™ Nuclear Capabilities

Standard Equipment Supplied to CANDU Reactors

VAPOUR RECOVERY DRYERS
D_20 Vapour Recovery Dryers 4000 SCFM Single Tower
D_20 Vapour Recovery Dryers 4000 SCFM Dual Tower
D_20 Vapour Recovery Dryers 600 SCFM Dual Towers
Post LOCA Instrument Air Dryers
FILTERS
Primary Heat Transport
Moderator Purification
Gland Seal Filter
Annulus Gas Filters
Fuelling Machine Supply Filters
Miscellaneous Filters
Hydrogen Addition Filter
Irradiated Spent Fuel Bay Filters
Active Liquid Waste Filters
STRAINERS
Emergency Core Cooling System Strainers
Nuclear Y-Type Strainers
Fabricated Strainers
N/N Permanent Strainers
Temporary Strainers
F/M D_20 Supply System Ion Exchange Slurry Strainer
WRD Strainers
ION EXCHANGE COLUMNS
Primary Heat Transport Purification Circuit Ion Exchange Column
Miscellaneous Ion Exchangers for Service Building
Ion Exchange Columns and Charcoal Filters Nuclear CL-3

TANKS AND PRESSURE VESSELS
Tanks & Pressure Vessels Sec. III CL-3, and Sec. VIII Div-1
Liquid Injection Shutdown System Tanks
D_20 Collection Tanks
F/M D_20 System/D_20 Leak Collection Tank
D_20 Supply Storage Tanks
Instrument Air Tanks
SB Miscellaneous Tanks (Bulk Order)
Liquid Waste Sampling Tanks
RECOMBINERS
Recombination Units for Liquid Zone Control System
Moderator Main Cover Gas System
RESTRICTION ORIFICES AND FLOW ELEMENTS
Equipment Description
Restriction Orifice (Welded) & Crud Filters
Restriction Orifice Plate Type. Nuclear & Non-Nuclear
Pressure Breakdown Orifices
Flow Element Orifice Type
Nuclear Flow Elements
SS Orifice Plates
MISCELLANEOUS PACKAGES
WTRF Tritium Removal Skids
Helium Manifold Assemblies
Miscellaneous Items of Equipment for the Fuel Handling System
HTS D_2O Sample Coolers
Boron and Gadolinium Mixtures
Hypodermic Sample Station Assemblies Nuclear CL-3
Radioactive Material Transportation Packages
Engineered Skid Systems

3L Filters™ Nuclear Capabilities

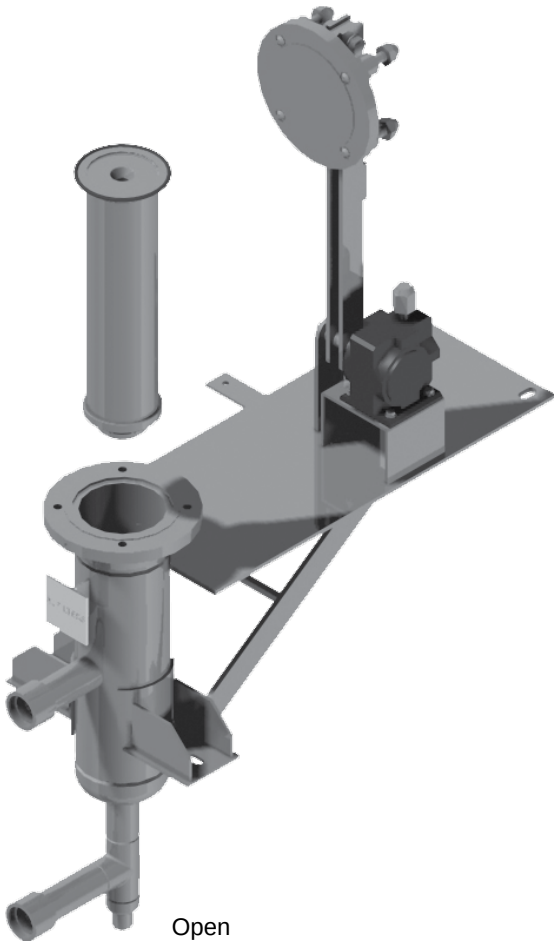
Nuclear Island Auxiliary Filters for Pressurized Water Reactors (PWR)

Equipment	Design Pressure (KPag)	Vessel Design Temp (°C)	Product Filtered	Flowrate (m^3/hr)	Filtration Rating Micron	Clean Pressure Drop (kPa)
Steam Generator Blowdown Filter	1600	80	Water	70	5	25
Spent Fuel Pit Water Filter	900	80	Borated Water	65	5	25
Reactor Cavity Filter	800	80	Borated Water	50	5	25
Spent Fuel Pit Skimmer Filter	700	80	Borated Water	7	5	25
Letdown Primary Filter	1380	110	Borated Water	27	5	33
Resin Retention Primary Filter	1380	110	Borated Water	27	5	33
Seal Water Injection Filter	2030	110	Borated Water	9	5	40
Seal Water Return Line Filter	1030	110	Borated Water	17	5	33
Boric Acid Filter	1200	100	Boric Acid Solution (4%)	27	5	33
Decontamination Filter	1590	60	Water	27	5	25
Resin Retention Filter	1590	60	Water	27	25	25
Concentrate Filter	1480	75	Boric Acid Solution (4%)	10	5	25
Resin Retention Filter	1480	75	Water	27	25	25
Evaporator Filter	1480	110	Water	4	100	25
Liquid Waste Release Filter	1480	70	Water	27	5	25
Demineralizer Filter	1480	70	Water	10	5	25
Resin Retention Filter	1480	70	Water	10	25	25
Laundry Rinsing Water Filter	600	70	Water	10	5	25
Nuclear Sampling System Filter	750	60	Sampling water	0.25	5	25
Nuclear Sampling System Filter	750	60	Sampling water	0.25	5	25

Remote Operated Filters for Pressurized Water Reactors (PWR)

3L Filters™ supplies various filters for the PWR nuclear island. These filters are designed for remote operation including opening and closing of the vessel cover and removal and insertion of a filter cartridge. There is no need to install a cover gasket as the disposable filter cartridge or filter basket is designed with an integral vessel cover gasket.

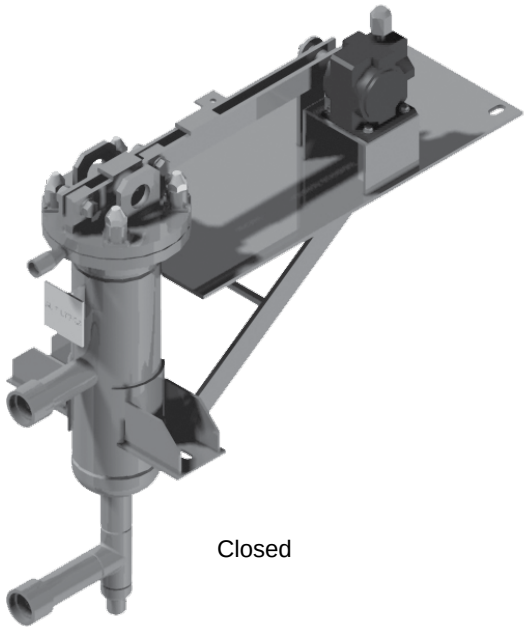
The vessel incorporates a captive bolt design so that when the cover is opened, the bolts stay with the cover and will not fall into the filter pit. The gear box for opening the cover is designed for long life lubrication and is virtually maintenance free. The filter media is high efficiency pleated fiberglass with stainless hardware. For smaller filters, a single cartridge is used and for large filter baskets multiple cartridges are used. These can withstand the high operating temperatures and radiation levels generally expected in the system (in the range of 4×10^{10}Bq/ℓ or 9100-40000 μSv/h) . All RCV and REA system filters are designed for primary circuit specifications. Filter cartridges are available in various micron from 0.45 to 100 micron with efficiency of over 98%.



Open

Filter system classification is as follows:

- APG: Steam Generator Blowdown System
- PTR: Reactor Cavity and Spent Fuel Pit Cooling and Treatment System
- RCV: Chemical and Volume Control System
- REA: Reactor Boron and Water Makeup System
- TEP: Boron Recycle System
- TEU: Waste Liquid Treatment System
- SRE: Laundry Drainage and Experiment System
- REN: Nuclear Sampling System



Closed

3L Filters™ Nuclear Capabilities

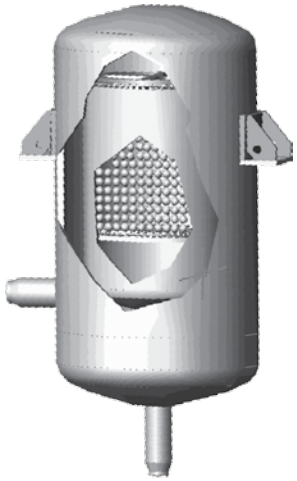
Nuclear Island Auxiliary Filters for Boiling Water Reactors (BWR)

Equipment	Design Pressure (kPag)	Design Temperature (°C)	Flow Rate (m^3/hr)	Clean Pressure Drop (kPa)
AFB Distribution Meter STN CNDS	1213	40	148	600
AFPC Skimmer Surge Tank CNDS	1213	40	27	35
Miscellaneous Supply Filter	1724	66	765	34
CRD Pump Suction Filter	330	60	31	22
CRD Pump Discharge Filter	15700	60	18	14
Miscellaneous Supply Filter	1034	66	60	10
Miscellaneous Supply Filter	1034	66	15	10
Instrument Relief Line Backfill Filter	12060	66	0.45	10
Instrument Relief Line Backfill Filter	18630	66	0.23	10
AFB Header Flow Element for Demin Water	1034	40	3.3	6
Precoat Filter Demineralizer System for Reactor Water, Cleaning Systems	10500	66	154	N/A
Precoat Filter Demineralizer System for Auxiliary Fuel Pool Cooling Systems	1309	66	225	N/A
Precoat Filter Demineralizer System for Fuel Pool Cooling Systems	1499	66	250	N/A
Miscellaneous Plate Screens	Various Ranges	Various Range	Various Ranges	N/A
Miscellaneous Cone Strainers	Various Ranges	Various Range	Various Ranges	N/A
Tanks and Pressure Vessels	Various Ranges	Various Range		N/A
Miscellaneous Wafer Type Primary Flow Element	Various Ranges	Various Range	Various Ranges	Various Ranges

Typical Nuclear Engineered Products

Disposable Nuclear Filters

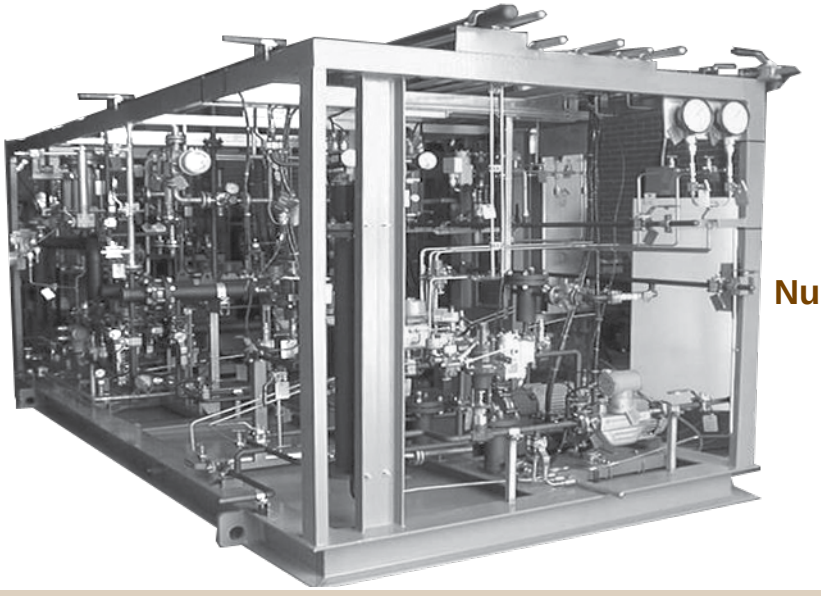
Nuclear Filter with Disposable Filter Basket



Liquid Zone Control and Main Moderator Cover Gas Control System Recombiners

Nuclear “Y” Strainer

Flow Elements & Restriction Orifices



Nuclear Engineered Modular Skid Design and Construction

Replacement Parts and Accessories

To ensure peak performance of 3L Filters™ equipment, use only certified 3L Filters™ original quality replacement parts and accessories.

Standard parts are usually available from our stock. Custom parts are fabricated quickly and accurately from our drawings.

Available Parts and Accessories

- Designed to ASME Section VIII Div.1
- Filter cartridges - spunyarn, pleated, depth media, coalescers, separators, specialized; available in disposable or cleanable stainless steel with ratings from 0.1 to 50 micron
- Strainer baskets - 304 or 316 stainless steel perforated or mesh-lined
- Repack media - excelsior, polypropylene, monel, stainless steel or fibreglass
- Demister pads - polypropylene or stainless steel mesh
- Liquid filter bags - standard size 1 and 2 in a variety of materials and micron ratings
- Cartridge mounting hardware
- O-rings and gaskets for housings
- Replacement closure bolting
- Valves - for shutoffs, transfer, 2-way or 3-way
- Differential pressure gauges & transmitters
- Liquid level gauges, switches & transmitters
- Safety reliefs
- Air eliminators
- Sump heaters

Filter Separator Accessories

- Water slug shut-off device
  - An automatic water discharge system, which is recommended for Filter Separator installations to prevent carry-over of accumulated water. Systems can also be equipped with a rate-of-flow control feature which will reduce or isolate the flow on high water levels.
- Water dump valve (mechanical float type)
  - These float valves operate on the interface between two liquids and only a slight difference in specific gravity is required to operate the valve.
- Air eliminator
  - Float-operated air eliminators exhaust trapped air during filling of the vessel. When air is exhausted and liquid fills the vessel dome, the float lifts to shut the valve.

Request for Quote

Client Information:

Company Name:_____

Address:_____

City, State (Prov): _____

Country, Zip (Postal Code):_____

Contact Name:_____

Phone / Fax:_____

E-mail:_____

Product Information:

Fluid:

☐ Gas

☐ Liquid

Flowrate:_____

Temperature:_____

Design Pressure:_____

Design Pressure:_____

Solid Contaminant:_____

Particle Size:_____

Liquid Contaminant:_____

Vessel Material:

☐ Carbon Steel

☐ SS304

☐ SS316

☐ Other: _____

Vessel Finish:

☐ Primer

☐ Internal Epoxy Coating

☐ Satin Bead Blast

☐ To Customer Spec:_____

_____

Code Design:

☐ ASME Sec. VIII

☐ ASME Sec. III

☐ Other: _____

Accessories:_____

_____

_____

Proposal Type Required:

☐ Budgetary Quote

☐ Formal Quote

☐ Other:_____

Required Date for Proposal:_____

Anticipated Shipping Date for Project:_____

How did you hear about CCI Thermal Technologies?

☐ Google

☐ Global Spec

☐ Print Advertising: _____

☐ Distributor: _____

☐ Authorized Sales Representative:

_____

☐ CCI Thermal Employee:_____

☐ Other:_____

Are you a previous customer: ☐Yes ☐No

3L Filters™
Engineered Filtration Systems

Fax page to (905) 829-4430

Other CCI Thermal Filtration Products

NGS Series

Natural Gas Scrubbing Systems

The NGS1000 Natural Gas Scrubbing System is engineered for supply lines to natural gas-fuelled equipment such as the Cata-Dyne™ series of gas catalytic heaters and other gas-fuelled appliances. Engineered with desiccant-based scrubber media for easy maintenance.

Applications

Removes contaminants found in fuel gas from natural gas wells, including H_2S, moisture, oil and solids, providing ultra clean gas for critical applications.

Features

- Designed to ASME Section VIII Div.1
- CRN number
- Flow rates to 10 SCFM or 25 SCFM
- 250 psig standard design pressure
- -40°F/+200°F standard design temperature
- Constructed from extruded, heat treated, machined anodized 6000 Series aluminum
- Removes particulate down to 0.5 micron in size
- Standard stainless steel universal mounting kit
- ¼" NPT or ¾" NPT inlet and outlet ports
- Drain cock
- Filter media change-out indicator plugs available
- Variety of filtration media available, including Activated Carbon, Activated Aluminum, and Molecular Sieve

Flo-Dri Series

Natural Gas Scrubbing Systems

Flo-Dri Filtration & Natural Gas Scrubbing Systems are designed for gas conditioning at the point of use. The system is engineered for long life, featuring easy media change out, low pressure drop, low maintenance and low cost operation.

Applications

Removes contaminants found in fuel gas from natural gas wells, including H_2S, moisture, oil and solids, providing ultra clean gas for critical applications.

Features

- Flow rates from 1 to 150 SCFM
- Working pressures up to 250 psig
- Variable flow rates with low pressure drop
- Removes particulate down to 0.5 micron in size
- ¼" NPT or ¾" NPT inlet and outlet ports
- Drain cock
- Patented "Quick Change" filters
- Variety of filtration media available, including Activated Carbon, Activated Aluminum, and Molecular Sieve

CCI Thermal Technologies INC.

Heating and Filtration Solutions

As a leader in advanced heating and filtration solutions with facilities across North America, CCI Thermal Technologies Inc. manufactures five of the top brands in industrial heating in addition to a comprehensive line of engineered industrial filtration products including:

Cata-Dyne™

Explosion-Proof Gas Catalytic Heaters

Cata-Dyne™ is the industry standard in infrared gas catalytic heaters, enclosures, pipeline systems and accessories. Customers across a wide range of industries rely on Cata-Dyne™ to supply them with safe, reliable, efficient and versatile infrared catalytic heating equipment for a variety of applications in both hazardous and non-hazardous environments.

Ruffneck™

Heaters for the Harshest Environments

Ruffneck™ is renowned for its rugged, reliable and versatile heavy-duty explosion-proof heaters, heating systems and heating accessories. Ruffneck™ has a long and proud history of supplying quality heating products for the harshest industrial environments to a worldwide customer base for over 30 years. Ruffneck™ is well-known in the industry for its "ship the heat in a week" policy, where 95% of all standard orders are shipped within one week of order placement.

Caloritech™

Engineered Electric Heat

Caloritech™ electric heaters, heating elements and heating accessories are well-known in the industry for their quality, reliability, performance and versatility. In addition to standard "off the shelf" industrial heaters and heating systems components, Caloritech™ also offers engineered heating solutions custom designed, manufactured and tested to satisfy customer specifications. No matter what your application or environment, Caloritech™ has a solution to fit your heating needs.

Norseman™

Electric Explosion-Proof Heaters

Norseman™ is the most technologically advanced line of explosion-proof electric air heaters and heating accessories, including both forced air heaters and natural convection heaters, as well as unit heaters, panel heaters and thermostats. Norseman™ offers innovative, low maintenance solutions for a wide range of applications in a variety of industrial and commercial environments. Custom engineered heaters or heating systems are available for specialized applications.

DriQuik™

Infrared Ovens

DriQuik™ is the market leader in infrared drying ovens and automated pre-finishing systems. DriQuik™ pioneered radiant oven technology in the 1930s and has since been setting the industry standard in infrared radiant heating systems and components for over 75 years.

3L Filters™

Engineered Filtration Systems

3L Filters™ has satisfied the most demanding industrial filtration requirements for over 40 years. A broad range of standard and custom products includes liquid filters, strainers, separators, pressure vessels, and engineered products and systems. 3L Filters has special expertise for nuclear, petrochemical, water treatment and environmental applications.

Visit www.ccithermal.com for detailed product information.

Edmonton Head Office	Oakville	Orillia	Greensburg
1-800-661-8529	1-800-410-3131	1-877-325-3473	1-800-473-2402
(780) 466-3178	(905) 829-4422	(705) 325-3473	(812) 663-4141
F 780-468-5904	F 905-829-4430	F 705-325-2106	F 812-663-4202

3L Filters™
Engineered Filtration Systems

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Edmonton, Alberta
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F 780-468-5904

Oakville
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Oakville, Ontario
Canada L6H 5R5
1-800-410-3131
F 905-829-4430

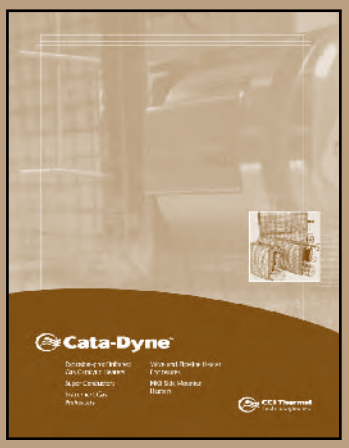
Orillia
1 Hunter Valley Road
Orillia, Ontario
Canada L3V 6H2
1-877-325-3473
F 705-325-2106

Greensburg, U.S.A.
1420 West Main Street
Greensburg, Indiana
U.S.A. 47240
1-800-473-2402
F 812-663-4202

www.ccithermal.com
info@ccithermal.com

CCI Thermal Technologies INC.
Heating and Filtration Solutions

Other CCI Thermal Catalogs



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