



# ***Stainless Steel Air Preparation Units***

***Filters, Regulators and Lubricators***

*Bulletin 1300 - 775/USA*



FRL's & Vacuum  
Exhaust Filters

## Finite®

## 1/4" and 1/2" Stainless Steel Filters, Regulators, Lubricators: **Performance you can count on!**

Parker Hannifin has specifically designed a line of 316 Stainless Steel Filter, Regulator, Lubricator (FRL) components that meet NACE specifications and handle the toughest and most corrosive environments. The regulator diaphragm to valve area ratio is large to assure precise pressure regulation and high flow capacity.

Of the major American FRL manufacturers, Parker provides the most comprehensive line

of miniature Stainless Steel components and has installed stainless steel FRLs worldwide. We use the latest techniques in design and manufacturing to meet today's stringent standards. You are assured of outstanding performance and long life from the stainless steel FRLs offered by Finite, thanks to our high quality materials, tough quality control checks and decades of experience in manufacturing FRLs.



*Stainless Steel FRLs in this pharmaceutical plant are used for valve protection and lubrication at point of use applications.*

### Applications

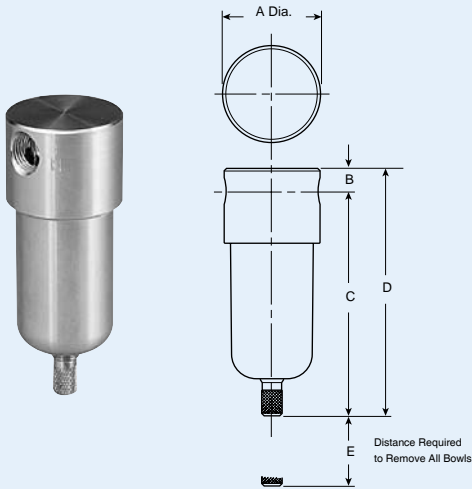
- Marine and Offshore Facilities
- Chemical and Petroleum Plants
- Process Industries
- Pollution Control
- Instrumentation
- Medical
- Pulp and Paper Products
- Research Labs
- Wastewater Treatment



*This oil refinery uses stainless steel filters, regulators and lubricators for protecting instrumentation and pneumatic equipment in corrosive environments.*

**Air Line Miniature Filter**

FF504-02DGSS



Dimensions

A	B	C	D	E
1.56	.31	3.69	4.00	1.58
40mm	8mm	94mm	102mm	40mm

**Specifications:**

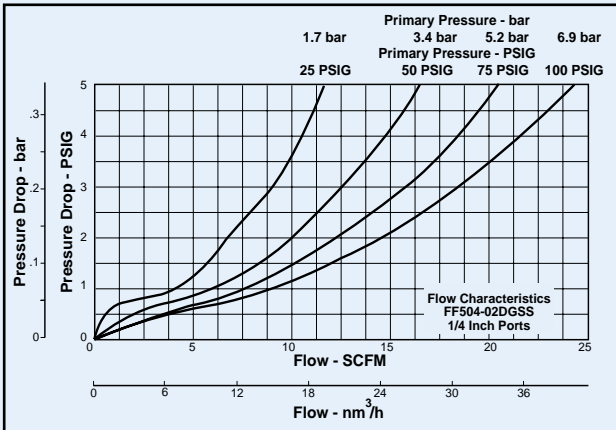
Flow: 23 SCFM  
Port Size: 1/4" NPT  
Drain: Manual  
Filter Rating: 5 micron  
Maximum Pressure: 300 PSIG (20.7 bar)  
Maximum Temperature: 180°F (82°C)  
Weight: 0.6 lbs  
Bowl Capacity: 1 oz.

**Materials of Construction:**

Body: 316 Stainless Steel  
Bowl: 316 Stainless Steel  
Seals: Fluorocarbon  
Element: Polyethylene  
Retainer: Acetal  
Drain: 316 Stainless Steel

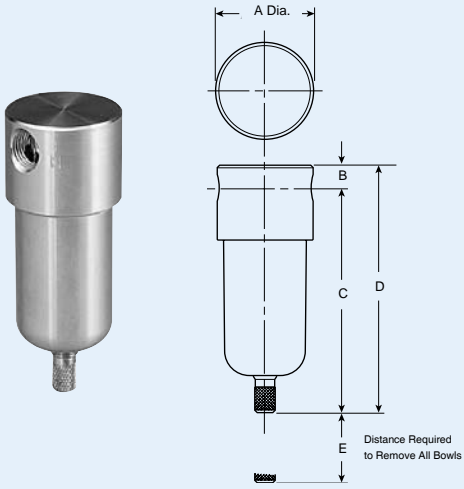
**Replacement Element: EK504VY**

**Performance Data:**



**Coalescing Miniature Filter**

FF501-02DHSS



Dimensions

A	B	C	D	E
1.56	.31	3.69	4.00	1.58
40mm	8mm	94mm	102mm	40mm

**Specifications:**

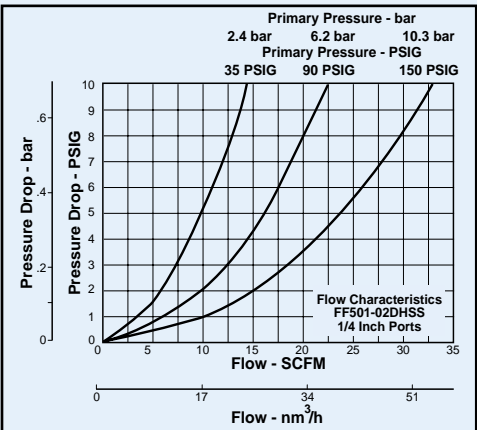
Flow: 8 SCFM @ 100 PSIG inlet with 1.5 PSIG drop  
Port Size: 1/4" NPT  
Drain: Manual  
Coalescing Efficiency: 99.97%  
Maximum Pressure: 300 PSIG (20.7 bar)  
Maximum Temperature: 180°F (82°C)  
Weight: 0.6 lbs  
Bowl Capacity: 1 oz.

**Materials of Construction:**

Body: 316 Stainless Steel  
Bowl: 316 Stainless Steel  
Seals: Fluorocarbon  
Element: Borosilicate Glass Fibers  
End Caps: Nylon  
Drain: 316 Stainless Steel

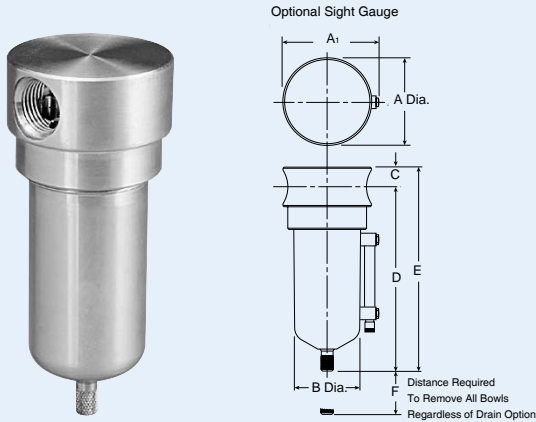
**Replacement Element: 6HM06-013 X 10**

**Performance Data:**



## Air Line Filter

FF10-04DGSS



Dimensions

A	A <sub>1</sub>	B	C	D	E	F
2.38	2.50	1.75	.56	5.00	5.56	2.12
60mm	64mm	44mm	14mm	127mm	141mm	54mm

### Specifications:

Flow: 72 SCFM  
 Port Size: 1/2" NPT  
 Drain: Manual  
 Filter Rating: 5 micron  
 Maximum Pressure: 300 PSIG (20.7 bar)  
 Maximum Temperature: 180°F (82°C)  
 Weight: 1.88 lbs.  
 Bowl Capacity: 4 oz.

### Materials of Construction:

Body: 316 Stainless Steel  
 Bowl: 316 Stainless Steel  
 Seals: Fluorocarbon  
 Vane Plate: Acetal  
 Element: Polyethylene  
 Retainer: Acetal  
 Drain: 316 Stainless Steel

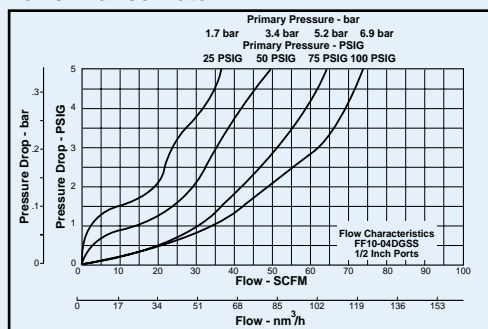
### Replacement Element: EK55G

#### Available Options:

Part Number	Auto Drain	Sight Glass
FF10-04DGSS		
FF10-04WGSS		✓
FF10-04DGRSS	✓	
FF10-04WGRSS	✓	✓

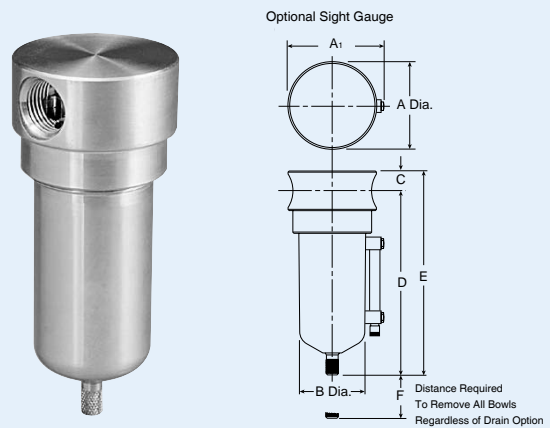
Note: The Max pressure with the auto drain is 175 PSIG and with the sight glass is 250 PSIG.

#### Performance Data:



## Coalescing Filter

FF11-04DJSS



Dimensions

A	A <sub>1</sub>	B	C	D	E	F
2.38	2.50	1.75	.56	5.00	5.56	2.12
60mm	64mm	44mm	14mm	127mm	141mm	54mm

### Specifications:

Flow: 16.5 SCFM @ 100 PSIG inlet with 1.5 PSIG drop  
 Port Size: 1/2" NPT  
 Drain: Manual  
 Coalescing Efficiency: 99.97%  
 Maximum Pressure: 300 PSIG (20.7 bar)  
 Maximum Temperature: 180°F (82°C)  
 Weight: 1.88 lbs  
 Bowl Capacity: 4 oz.

### Materials of Construction:

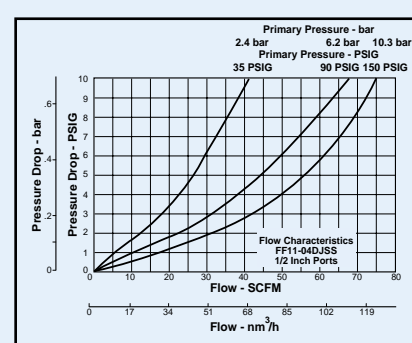
Body: 316 Stainless Steel  
 Bowl: 316 Stainless Steel  
 Seals: Fluorocarbon  
 Element: Borosilicate Glass Fiber  
 End Caps: Nylon  
 Drain: 316 Stainless Steel

### Replacement Element: 6HM07-019 X 10

#### Available Options:

Part Number	Auto Drain	Sight Glass
FF11-04DJSS		
FF11-04WJSS		✓
FF11-04DJRSS	✓	
FF11-04WJRSS	✓	✓

#### Performance Data:

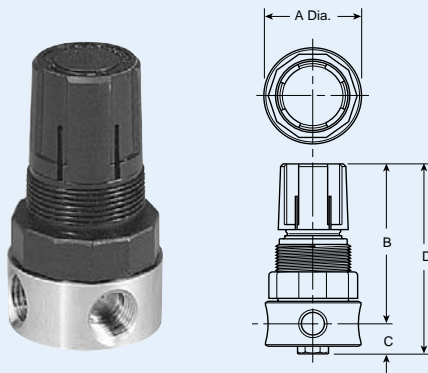


Note: The Max pressure with the auto drain is 175 PSIG and with the sight glass is 250 PSIG.



**Miniature Regulator**

FR364-02CSS



**Specifications:**

Flow: 16 SCFM  
Port Size: 1/4" NPT  
Gauge Port: 1/4" NPT  
Outlet Pressure Range: 0-125 PSIG (0-8.5 bar) std.  
Max Inlet Pressure: 300 PSIG (20.7 bar)  
Temperature Range: 40-150°F (4.4-65.6°C)  
Weight: 0.5 lbs  
Operation: Fluorocarbon Diaphragm  
Relieving: Standard (non-relieving optional)

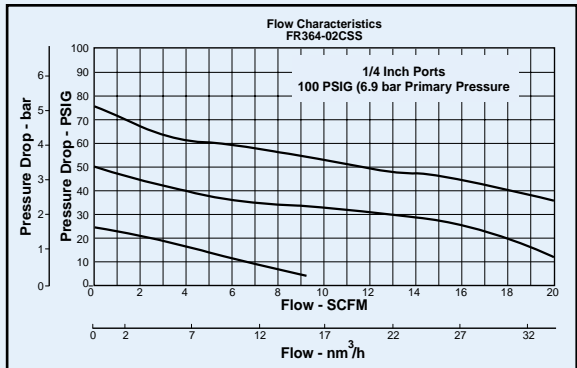
**Dimensions**

A	B	C	D
1.56	2.56	.50	3.06
40mm	65mm	13mm	78mm

**Materials of Construction:**

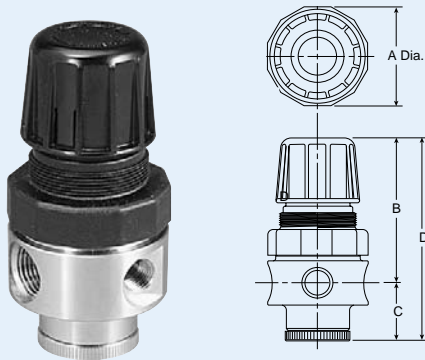
Body: 316 Stainless Steel  
Spring Cage: Celcon  
Inner Valve: 316 Stainless Steel  
Bottom Plug: 316 Stainless Steel  
Seals: Fluorocarbon  
Adjustment Mechanism:  
    316 Stainless Steel Spring and  
    316 Stainless Steel Adjusting Screw

**Performance Data:**



**Regulator**

FR10-04CSS



**Specifications:**

Flow: 80 SCFM  
Port Size: 1/2" NPT  
Gauge port: 1/4" NPT  
Outlet Pressure Range: 0-125 PSIG (0-8.5 bar) std.  
Max Inlet Pressure: 300 PSIG (20.7 bar)  
Temperature Range: 40-150°F (4.4-65.6°C)  
Weight: 1.79 lbs  
Operation: Fluorocarbon Diaphragm  
Relieving: Standard (non-relieving optional)

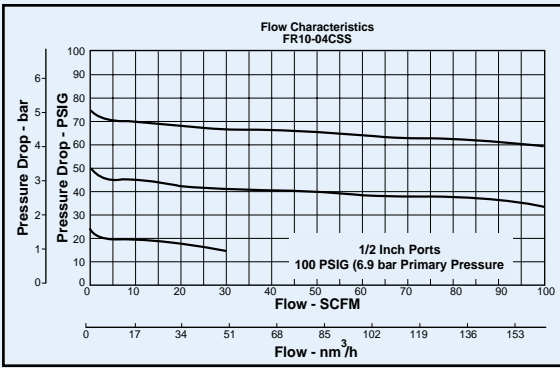
**Dimensions**

A	B	C	D
2.34	3.59	1.38	4.97
60mm	91mm	35mm	126mm

**Materials of Construction:**

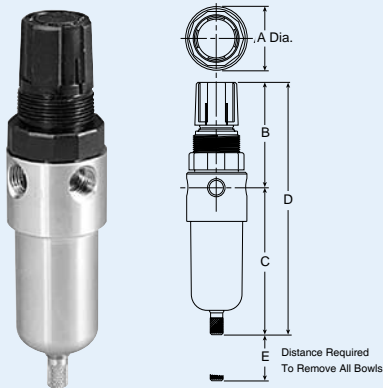
Body: 316 Stainless Steel  
Spring Cage: Glass-filled Celcon  
Inner Valve: 316 Stainless Steel  
Bottom Plug: 316 Stainless Steel  
Seals: Fluorocarbon  
Adjustment Mechanism:  
    316 Stainless Steel Spring and  
    316 Stainless Steel Adjusting Screw

**Performance Data:**



**"Piggyback" Filter/Regulators****Air Preparation Units  
Stainless Steel FRL****Miniature "Piggyback" Filter/Regulator**

FB548-02DGCSS

**Dimensions**

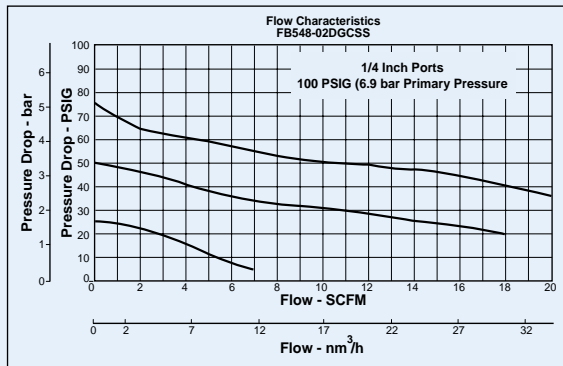
A	B	C	D	E
1.56	2.63	3.63	6.25	1.58
40mm	67mm	92mm	159mm	40mm

**Specifications:**

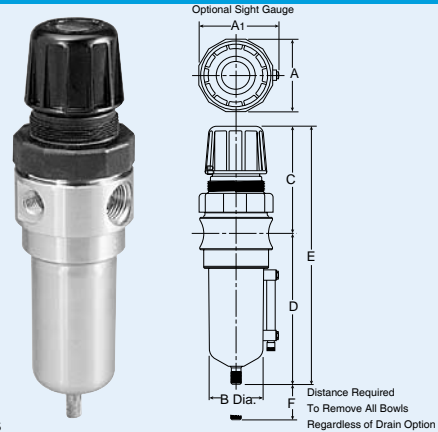
Flow: 20 SCFM  
 Port Size: 1/4" NPT  
 Gauge Port: 1/4" NPT  
 Drain: Manual  
 Filter Rating: 5 micron  
 Outlet Pressure Range: 0-125 PSIG (0-8.5 bar) std.  
 Max Inlet Pressure: 300 PSIG (20.7 bar)  
 Temperature Range: 40-150°F (4.4-65.6°C)  
 Weight: 0.6 lbs  
 Operation: Fluorocarbon Diaphragm  
 Relieving: Standard (non-relieving optional)  
 Bowl Capacity: 1 oz.

**Materials of Construction:**

Body: 316 Stainless Steel  
 Bowl: 316 Stainless Steel  
 Spring Cage: Celcon  
 Inner Valve: 316 Stainless Steel  
 Seals: Fluorocarbon  
 Adjustment Mechanism:  
     316 Stainless Steel Spring and  
     316 Stainless Steel Adjusting Screw

**Replacement Element: EK504VY****Performance Data:****"Piggyback" Filter/Regulator**

FB11-04DGCSS

**Dimensions**

A	A1	B	C	D	E	F
2.34	2.50	1.75	3.59	5.00	8.59	2.12
60mm	64mm	44mm	91mm	127mm	218mm	54mm

**Specifications:**

Flow: 72 SCFM  
 Port Size: 1/2" NPT  
 Gauge Port: 1/4" NPT  
 Drain: Manual (automatic optional)  
 Filter Rating: 5 micron  
 Outlet Pressure Range: 0-125 PSIG (0-8.5 bar) std.  
 Max Inlet Pressure: 300 PSIG (20.7 bar)  
 Temperature Range: 40-150°F (4.4-65.6°C)  
 Weight: 2.42 lbs  
 Operation: Fluorocarbon Diaphragm  
 Relieving: Standard (non-relieving optional)  
 Bowl capacity: 4 oz.

**Materials of Construction:**

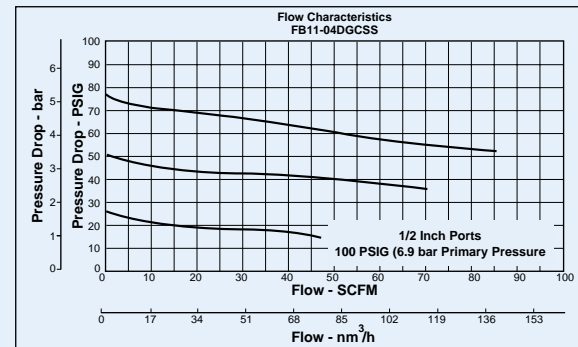
Body: 316 Stainless Steel  
 Bowl: 316 Stainless Steel  
 Spring Cage: Glass-filled Celcon  
 Inner Valve: 316 Stainless Steel  
 Seals: Fluorocarbon  
 Adjustment Mechanism:  
     316 Stainless Steel Spring and  
     316 Stainless Steel Adjusting Screw

**Replacement Element: EK55G**

Note: The Max pressure with the auto drain is 175 PSIG and with the sight glass is 250 PSIG.

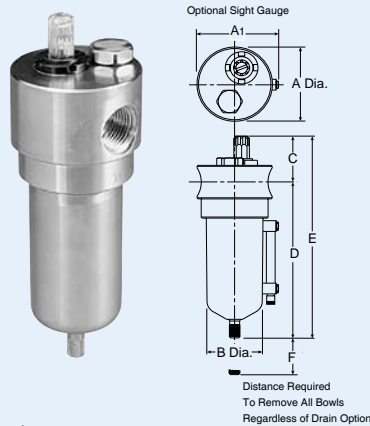
**Available Options:**

Part Number	Auto Drain	Sight Glass
FB11-04DGCSS		
FB11-04WGCSS		✓
FB11-04DGCSS	✓	
FF11-04WGCSS	✓	✓

**Performance Data:**

## Lubricator

FL10-04DSS



Dimensions

A	A <sub>1</sub>	B	C	D	E	F
2.38	2.50	1.75	1.81	5.00	6.81	3.50
60mm	64mm	44mm	46mm	127mm	173mm	89mm

## Specifications:

Flow: 105 SCFM

Port Size: 1/2" NPT

Maximum Pressure:

300 PSIG (20.7 bar)

Temperature Range:

40-150°F (4.4-65.6°C)

Weight: 2.3 lbs

Bowl Capacity: 4 oz.

## Materials of Construction:

Body: 316 Stainless Steel

Bowl: 316 Stainless Steel

Dip Tube: 316 Stainless Steel

Fill Plug: 316 Stainless Steel

Sight Dome/Drip Spout:

Polyurethane

Seals: Fluorocarbon

Retainer: Nylon

By-pass Assembly:

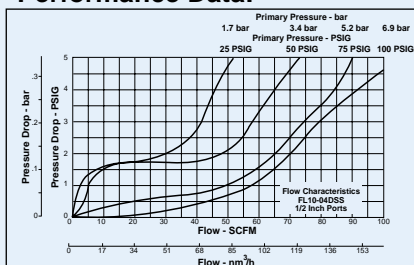
Polyurethane and 316 Stainless Steel

## Available Options:

Part Number	Sight Glass
FL10-04DSS	
FL10-04WSS	✓

Note: The Max pressure with a sight glass is 250 PSIG.

## Performance Data:



## Internal Auto Drain

FSA602MDSS

For installation in Filters

FF10, FF11 and FB11



## Materials of Construction:

- 316 Stainless Steel
- Elgiloy
- Fluorocarbon
- Buna-N
- 304 Stainless Steel
- Acetal
- Max. Pressure: 15-175 PSIG
- For use with H<sub>2</sub>S (sour gas), contact factory at 1-800-521-4357

## Pressure Gauges



## K4515N14160SS

(Recommended for FR364/FB548)

## Specifications:

Dial Size: 1 1/2"

Connection: 1/4" center back

## Materials of Construction:

Bourdon Tube: 316 Stainless Steel

Case: 304 Stainless Steel

Face: Glass

Connection: 316 Stainless Steel

## K4520N14160SS

(Recommended for FR10/FB11)

Note: This pressure gauge does not meet NACE specs.

## Specifications:

Dial Size: 2"

Connection: 1/4" center back

## Materials of Construction:

Bourdon Tube: 316 Stainless Steel

Case: 304 Stainless Steel

Face: Glass

Connection: 316 Stainless Steel

## Accessories and Kits

## Description

## Part Number

## Steel Panel Mount Nut

FR364/FB548	R05X51SS
FR10/FB11	R10X51SS

## Regulator Repair Kits

FR10/FB11 - Relieving	RKR10YSS
FR10/FB11 - Nonrelieving	RKR10KYSS
FR364 - Relieving	RKR364YSS
FR364 - Nonrelieving	RK364KYSS
FB548 - Relieving	RK549YSS
FB548 - Nonrelieving	RK548YSS

## Filter Element Kits

FF504 Particulate(5 micron)	EK504VY
FF501 Coalescing(.3 micron)	6HM06-013 X 10
FF10 Particulate(5 micron)	EK55G
FF11 Coalescing(.3 micron)	6HM07-019 X 10
FF548 Particulate(5 micron)	EK504VY
FB11 Particulate(5 micron)	EKF10VY

## Cage Kits

FR364/FB548	CKR364YSS
FR10/FB11	CKR10YSS

# Notes:

FRL's & Vacuum  
Exhaust Filters

[www.finitefilter.com](http://www.finitefilter.com)

[finitefilter@parker.com](mailto:finitefilter@parker.com)



Parker Hannifin Corporation  
Finite Filter Operation  
Oxford, MI





## Eliminates unwanted oil mist and reduces exhaust noise

from pneumatic valves, cylinders and air motors.

### Features:

- 99.97% oil removal efficiencies
- 25 dBA Noise attenuation
- 1/2" and 1" NPT
- Disposable Units
- Continuous or plugged drain option
- Metal retained UNI-CAST construction
- Fast exhaust time
- BSP (G) Thread option

## Improve Overall Plant Environment

**E**xhaust oil mist and noise pollution can have a direct impact on a worker's productivity and their environment.

Oil aerosol mist from lubricators and compressors enters the industrial plant environment through the exhaust ports of valves, cylinders and air motors. Rapidly expanding exhaust from valves, cylinders and air motors also produces sudden and excessive noise.

Finite's Exhaust Coalescing Silencer (ECS) is 99.97% efficient at removing the oil aerosols. The ECS also acts as a silencer to lower the dBA levels to below O.S.H.A. requirements.

The result is a cleaner, quieter, environment which equates to greater work productivity and safety.

## Finite® Technology

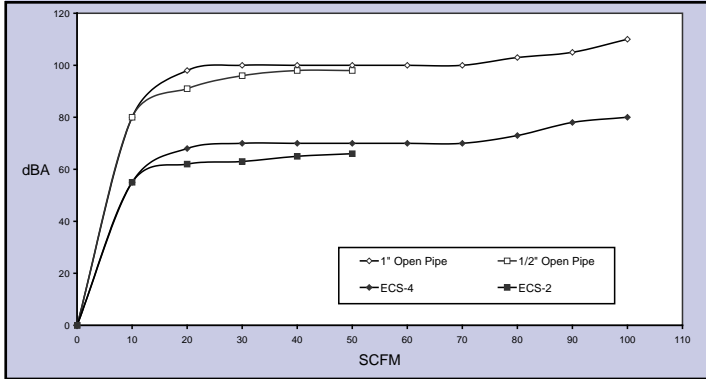
ECS units are constructed from the same materials that are used with our oil removal coalescing filter elements. Finite's UNI-CAST seamless design ensures media uniformity and strength. This proven technology provides high coalescing efficiency with low pressure drop.

The filter media is supported by cylindrical perforated steel retainers both inside and out. These galvanized retainers make for excellent corrosion resistance and give Finite's ECS units high rupture strength in either flow direction. ECS units can also be used as high efficiency inlet or bypass filters for vacuum pumps, or as breather elements to protect the air above critical process liquids.

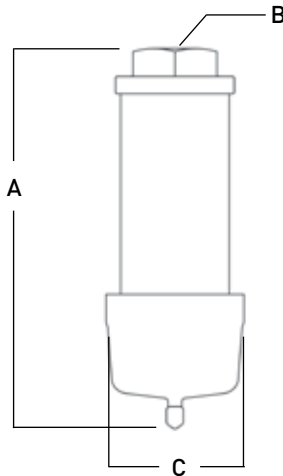
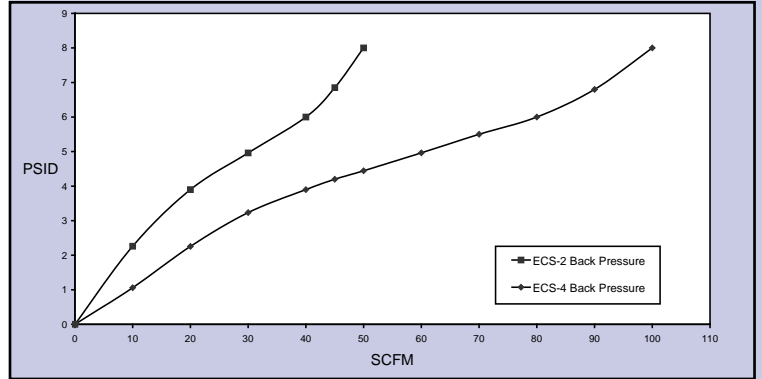
## How It Works

**C**ompressor oils and lubricating oils are exhausted from valves, cylinders and air motors into the ECS. Oil aerosols are coalesced into larger droplets and gravity pulls them into the attached drain sump. The sump can then be drained manually or by using a 1/4" ID plastic tube drain. The air flowing into the ECS is also muffled as it enters the inside of the ECS and passes through the filter media into the atmosphere.

Flow vs. Noise Level



Flow vs. Back Pressure



### Performance Specifications:

Maximum operating temperature: 125°F/52°C

Maximum Line Pressure: 100 PSIG/7bar

### Dimensions:

Model Number	A	B	C
ECS-2	5.3" (135mm)	1/2" NPT	2.57" (65mm)
ECS-4	7.3" (185mm)	1" NPT	2.57" (65mm)
ECSB-2	5.3" (135mm)	1/2" BSP	2.57" (65mm)
ECSB-4	7.3" (185mm)	1" BSP	2.57" (65mm)

### Typical Applications:

- Valve Exhaust
- Cylinder Exhaust
- Air Motor Exhaust
- Noise Reduction
- Oil Mist Elimination
- Safer Work Environment
- Tank Vents
- Vacuum Exhaust

### Ordering Information:

Use the following model numbers to place an order:

For NPT Porting:

ECS-2 X 1 (1/2" NPT)

ECS-4 X 1 (1" NPT)

ECS-2 X 6 (1/2" NPT - Carton of 6)

ECS-4 X 6 (1" NPT - Carton of 6)

For BSP Porting:

ECSB-2 X 1 (1/2" BSP - Parallel (G))

ECSB-4 X 1 (1" BSP - Parallel (G))

ECSB-2 X 6 (1/2" BSP - Parallel (G) - Carton of 6)

ECSB-4 X 6 (1" BSP - Parallel (G) - Carton of 6)