# ASME Coded Vessels

## *Compressed Air & Gas Filters*



- **Coalescing, Particulate & Hydrocarbon Adsorption**
- **Flows up to 37,000 SCFM (62,000 $m^3$/hr)**
- **3" NPT to 16" Flange**

*Bulletin 1300 - 400/USA*

# Finite®



**Parker Hannifin Corporation**
Finite Filter Operation
Oxford, MI

# **Finite**® Large Capacity

# ASME Vessels

**Finite** Filter's large capacity ASME filter vessels have been designed specifically for our coalescing elements and incorporate large sump capacities and generous exit cavities for maximum performance with low differential pressures.

All units are "U" stamped and conform to ASME Section VIII standard code for pressure vessels. With flow capacities to 37,000 SCFM and optional materials of construction, most compressor source filtration requirements can be met.

## Specifications:

**Porting to:** 16" Flange
**Flows to:** 37,000 SCFM (63,000 $m^3$/hr)
**Design:** ASME Code/CRN (Canadian Registration)

**Available Options:**
High Temperature
High Pressure
All Stainless Construction

## Typical Applications

### Coalescing (Oil Removal)

- Compressed air system protection
- Dryer protection
- Paint spray booths
- Microelectronics prefiltration

### Interceptor (Particulate Removal)

- Natural gas systems
- Desiccant dryer afterfilter
- Prefilter for coalescer
- Systems with high particulate concentration
- Particulate protection for non-lubricated systems

### Adsorber (Vapor Removal)

- Odor removal
- Food packaging
- Powder paint systems



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# Applications & International ISO Standards

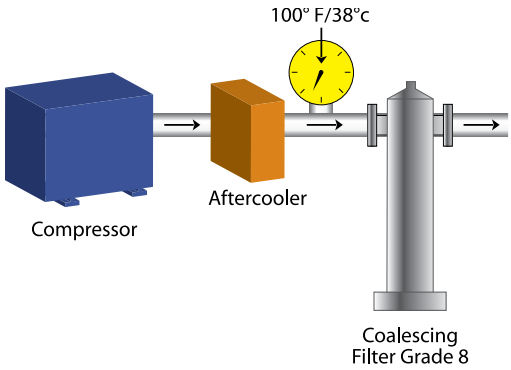
International Standard ISO8573-1 is fast becoming the industry standard method for specifying compressed air cleanliness. The chart to the right details the specifications of the classes. The diagrams below describe various systems in terms of their corresponding ISO classification.

Notification as specified in ISO8573 - 1

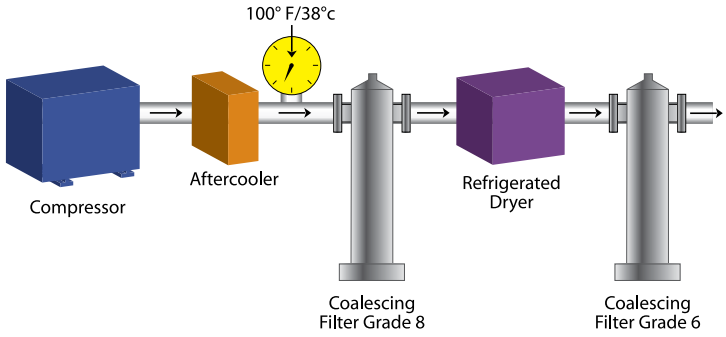
| Class | Solid | | Water | | Oil | |
|---|---|---|---|---|---|---|
| | Maximum particle size (µm) | Maximum Concentration ppm (mg/m³) | | Maximum Pressure Dew point °F | (°C) | Maximum Concentration ppm (mg/m³) | |
| 1 | 0.1 | 0.08 | (0.1) | -94 | (-70) | 0.008 | (0.01) |
| 2 | 1 | 0.8 | (1) | -40 | (-40) | 0.08 | (0.1) |
| 3 | 5 | 4.2 | (5) | -4 | (-20) | 0.83 | (1) |
| 4 | 15 | 6.7 | (8) | 37 | (+3) | 4.2 | (5) |
| 5 | 40 | 8.3 | (10) | 45 | (+7) | 21 | (25) |
| 6 | - | - | - | 50 | (+10) | - | - |

## Typical Applications

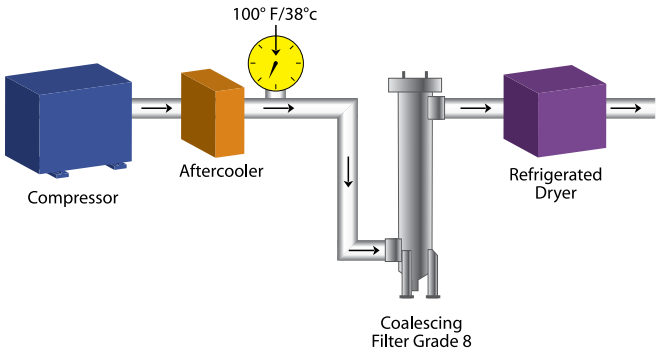
ISO Class [2] Solid [ ] Water [3] Oil



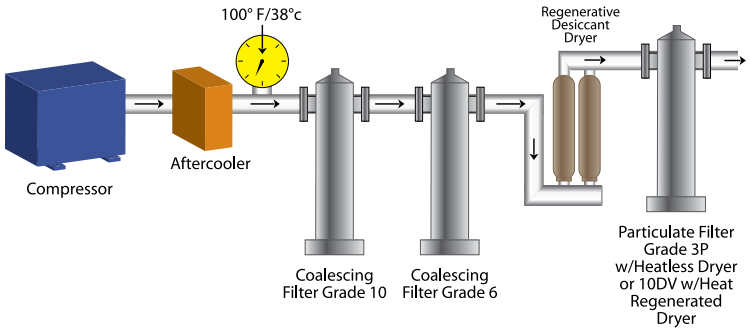

ISO Class [1] Solid [4] Water [1] Oil




ISO Class [2] Solid [4] Water [3] Oil




ISO Class [1] Solid [2] Water [1] Oil




Note: In the pictorial examples shown above, the contribution of hydrocarbon vapors has not been taken into account in determining the oil class category.



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# Determine your application, media grade, media type and end seals.

Find your (or similar) application from the descriptions below, from the basic application circuits on the previous page, or consult a **Finite**® application engineer. Determine media grade, media type and end seal required. If your application requires a coalescing element, use the information listed below. For other media types, please see the following page.

## Coalescing Elements (removal of liquids and particulate)

Media type Q is shown here. Media type C has the same coalescing outer layer, without the inner pleated layer.

### Media type C or Q

**Available in grades 6, 8 or 10**

Air Flow: Inside to Outside

This coalescing element is composed of an epoxy saturated, borosilicate glass micro-fiber tube. Type Q has a pleated cellulose inner layer as a built-in prefilter. This element is metal retained for added strength, and includes a synthetic fabric layer.

### Media type D

**Available in grades 6, 8 or 10**

Air Flow: Inside to Outside

This type D element is composed of a micro-glass coalescer, just like type C, however it is surrounded by two metal retainers. These metal retainers, coupled with a glass drain layer, make this a robust element designed to handle high temperatures.

### Media type 7CVP

Air Flow: Inside to Outside

Finite's 7CVP media consists of two layers. The outer layer consists of a dense matrix of glass fibers. This coalescing layer provides highly efficient aerosol removal and very low pressure drop. The inner layer effectively traps dirt particles, protecting and extending the life of the outer layer. A metal retainer is used for strength and stability.

This media is used in bulk coalescing applications and when relatively high efficiency and low pressure drop are required.

Type 7CVP elements are great prefilters for refrigerated air dryers. This element maintains dryer efficiency by preventing coating of coils with oil or varnish.

For a high temperature version of this element, specify type **7DVP**.

### For types C, Q and D... Choose your grade...

**Grade 6** filters are used when "total removal of liquid aerosols and suspended fines" is required. Because of its overall performance characteristics, this grade is most often recommended.

A grade 6 element is great prefilter protection for desiccant air dryers. This element prevents oil or varnish from coating the desiccant, while maintaining the dryer efficiency.

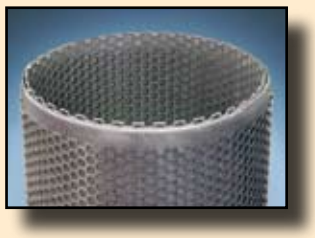
**Grade 8** filters combine high efficiency with high flow rate and long element life. A separate prefilter is not required for "normal to light" particulate loading.

A grade 8 element is great prefilter protection for refrigerated air dryers. This element maintains dryer efficiency by preventing coating of coils with oil or varnish.

**Grade 10** filters are used as prefilters for grades 6 or 8 to remove gross amounts of liquid aerosols or tenacious aerosols which are difficult to drain.

A grade 10 element coupled with media type D is a recommended afterfilter for heat regenerated type dryers. This grade is often referred to as a coarse coalescer.

## Water Separator Element
(removal of bulk liquids)



### Media type 100WS

Air Flow: Inside to Outside

This rolled stainless steel mesh element has two metal retainers with rolled mesh steel in between. It is an extremely robust design.

This media is used for the reduction and elimination of excess liquids in gas streams. Excellent prefiltration for coalescing grades 6 and 10 when extreme quantities of liquid contaminants are present.

## Interceptor Element
(removal of particulate)

### Media type 3P

Air Flow: Outside to Inside

This particulate element is constructed of pleated cellulose with a 3 micron rating. It is metal retained for added strength and includes an outer synthetic fabric layer.

3P particulate interceptor elements are used where very high dirt holding capacity and relatively fine pore structure are required.

## Adsorption Element
(removal of odor)

### Media type A

Air Flow: Outside to Inside

This hydrocarbon vapor removal element consists of an ultrafine grained, highly concentrated, activated carbon sheet media. It is metal retained for added strength and includes an outer synthetic fabric layer.

This media is used to remove hydrocarbon vapor and is safe for breathing air.

**Finite® Media Specifications**

| Grade Designation | Coalescing Efficiency 0.3 to 0.6 Micron Particles | Maximum Oil Carryover[1] PPM w/w | Micron Rating | Pressure Drop (PSID) @ Rated Flow[2] | |
|---|---|---|---|---|---|
| | | | | Media Dry | Media Wet With |
| 6 | 99.97% | 0.008 | 0.01 | 1.5 | 4.0 |
| 7 | 99.5% | 0.09 | 0.5 | 0.25 | 0.5 |
| 8 | 98.5% | 0.2 | 0.5 | 1.0 | 3.5 |
| 10 | 95% | 0.85 | 1.0 | 0.75 | 2.5 |
| 100WS | N/A | N/A | 100 | <0.25 | <0.50 |
| 3P | N/A | N/A | 3.0 | 0.25 | N/A |
| A | 99%+[3] | N/A | N/A | 1 | N/A |

[1]Tested per ADF-400 at 40 ppm inlet.
[2]Add dry + wet for total pressure drop.
[3]Oil vapor removal efficiency is given for A media.

## End Seals available:

| End Seals | Available on Media type: | Max temp of element with end seal |
|---|---|---|
| U: Molded Urethane (standard) | C | 225°F (107°C) |
| | Q | |
| | 3P | |
| S: Molded Silicone Rubber | C | 350°F (177°C) |
| | Q | 350°F (177°C) |
| | D | 450°F (232°C) |
| | 3P | 350°F (177°C) |
| V: Fluorocarbon gaskets on metal end caps | C | 350°F (177°C) |
| | Q | 350°F (177°C) |
| | D | 450°F (232°C) |
| | 7CVP | 225°F (107°C) |
| | 7DVP | 400°F (204°C) |
| | 100WS | 350°F (177°C) |
| | 3P | 350°F (177°C) |
| | A | 225°F (107°C) |



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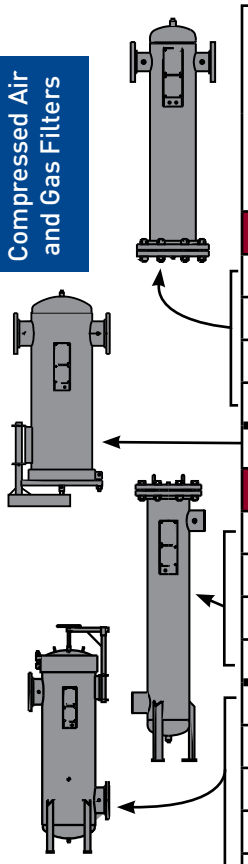
# Housing Selection Chart



| Housing Assembly | Replacement Element Number | Port Size (Inches) | Port Type | Number of Elements | Rated Flows: SCFM@ 100 PSIG (m³hr@ 7 bar) | | |
|---|---|---|---|---|---|---|---|
| | | | | | Grade 6/A | Grade 8 | Grade 10/3P/7CVP/100WS |
| **Line Mount Vessels** | | | | | | | |
| HT3-801 | 51-280 | 3 | NPT | 1 | 1500 (2540) | 1800 (3050) | 2490 (4230) |
| FT3-801 | 51-280 | 3 | FLANGE | 1 | 1500 (2540) | 1800 (3050) | 2490 (4230) |
| FT4-1201 | 85-250 | 4 | FLANGE | 1 | 2000 (3390) | 2400 (4070) | 3320 (5640) |
| FT6-1201 | 85-360 | 6 | FLANGE | 1 | 3000 (5090) | 3600 (6110) | 4980 (8460) |
| FT6-1603 | 51-280 | 6 | FLANGE | 3 | 4500 (7640) | 5400 (9170) | 7470 (12690) |
| **Floor Mount Vessels** | | | | | | | |
| HF3-801 | 51-280 | 3 | NPT | 1 | 1500 (2540) | 1800 (3050) | 2490 (4230) |
| FF3-801 | 51-280 | 3 | FLANGE | 1 | 1500 (2540) | 1800 (3050) | 2490 (4230) |
| FF4-1201 | 85-250 | 4 | FLANGE | 1 | 2000 (3390) | 2400 (4070) | 3320 (5640) |
| FF6-1201 | 85-360 | 6 | FLANGE | 1 | 3000 (5090) | 3600 (6110) | 4980 (8460) |
| FF6-1603 | 51-280 | 6 | FLANGE | 3 | 4500 (7640) | 5400 (9170) | 7470 (12690) |
| FF8-1804 | 51-280 | 8 | FLANGE | 4 | 6000 (10190) | 7200 (12230) | 9960 (16920) |
| FF10-2207 | 51-280 | 10 | FLANGE | 7 | 10500 (17830) | 12600 (21400) | 17430 (29610) |
| FF12-3011 | 51-280 | 12 | FLANGE | 11 | 16500 (28030) | 19800 (33640) | 27390 (46530) |
| FF16-3615 | 51-280 | 16 | FLANGE | 15 | 22500 (38220) | 27000 (45870) | 37350 (63450) |

# How To Order

| F | F | 6 | - | 12 | 01 | - | 6 | Q | U |
|---|---|---|---|---|---|---|---|---|---|
| Port Type | Config. | Port Size | | Filter Body (O.D. nom.) | Number of Elements | | Media Grade | Media Type | End Seals |

**Port Type**
**H** - NPT
**F** - Flange

**Config.**
**F** - Floor Mount
**T** - Line Mount

**Port Size**
**3** - 3"
**4** - 4"
**6** - 6"
**8** - 8"
**10** - 10"
**12** - 12"
**16** - 16"

**Filter Body (O.D. nom.)**
**8** - 8"
**12** - 12"
**16** - 16"
**18** - 18"
**22** - 22"
**30** - 30"
**36** - 36"

**Number of Elements**
**01** - 1 Element
**03** - 3 Elements
**04** - 4 Elements
**07** - 7 Elements
**11** - 11 Elements
**15** - 15 Elements

See chart above for more information.

See chart above for information on housing assemblies.

**Media Grade / Media Type**

| Media Grade | Media Type |
|---|---|
| **6**, **8**, **10** | **C** - Microglass coalescer<br>**Q** - Coalescer w/built in prefilter<br>**D** - High Temp. microglass |
| **7CVP** | Leave Blank for 7CVP |
| **100WS** | Leave Blank for 100WS |
| **3P** | Leave Blank for 3P |
| **A** | Leave Blank for A |

See pages 26-27 for more information.

**End Seals**
**U** - Urethane
Can be used for media types: C, Q, 3P

**S** - Silicone
Can be used for media types: C, Q, D, 3P

**V** - Fluorocarbon
Can be used for media types: C, Q, D, 3P
Standard on: 7CVP, 7DVP, 100WS, A

**Example: FF6-1201-6QU**

## How to order replacement elements:

1. Choose the media grade, type and end seals that you need.

2. Look in the Housing Selection Chart above and find the respective Replacement Element Number.

3. Put 1 & 2 together. For example: 6QU51-280 or 7CVP85-250.



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# Accessories



Temp: 200°F (93°C)
Pressure: 250 PSIG (17 bar)

## KBDPG-15
**Differential Pressure Gauge Kit**

Temp: 200°F (93°C)
Pressure: 250 PSIG (17 bar)

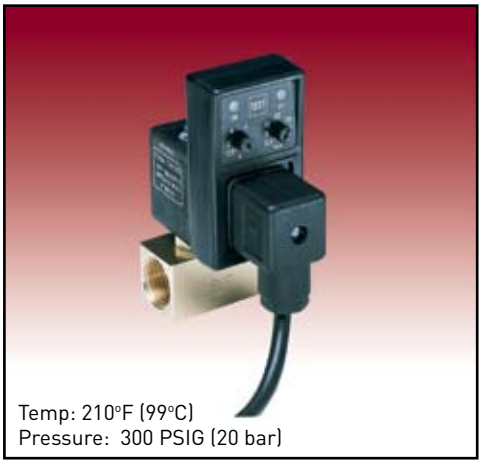
## KBDPI-25
**Differential Pressure Gauge Kit**

Temp: 450°F (232°C)
Pressure: 150 PSIG (10 bar)

## ADT-50
**Float Actuated Drain Trap**


Temp: 140°F (60°C)
Pressure: 250 PSIG (17 bar)

## ZLD-10
**Zero Air Loss Condensate Drain**



Temp: 210°F (99°C)
Pressure: 300 PSIG (20 bar)

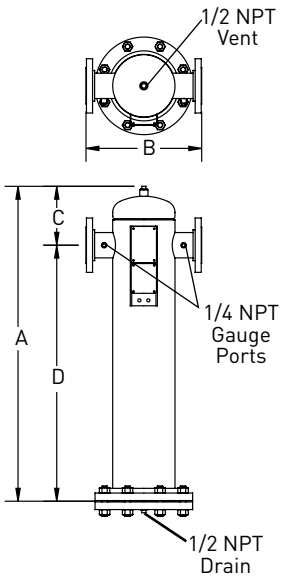
## TV-50
**Timed Solenoid Valve Drain Trap**


Temp: 450°F (232°C)
Pressure: 250 PSIG (17 bar)

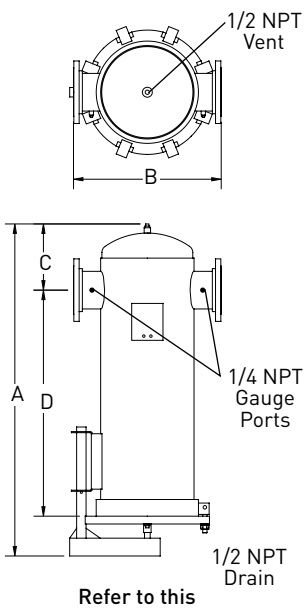
## ADS-50
**Float Actuated Stainless Steel Drain Trap**

**Note: All accessories are sold separately.**

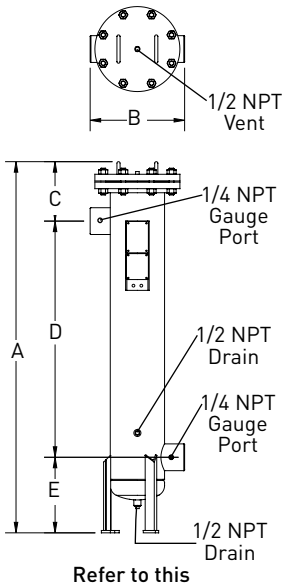
# Drawings, Dimensions & Specifications



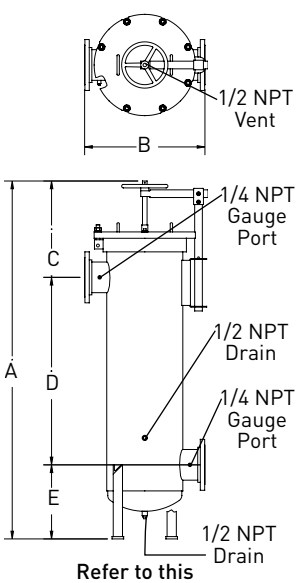

Refer to this drawing for:
**HT3-801(NPT)**
**FT3-801**
**FT4-1201**
**FT6-1201**




Refer to this drawing for:
**FT6-1603**




Refer to this drawing for:
**HF3-801(NPT)**
**FF3-801**
**FF4-1201**
**FF6-1201**




Refer to this drawing for:
**FF6-1603**
**FF8-1804**
**FF10-2207**
**FF12-3011**
**FF16-3615**

| Dimension[1] | A | B | C | D | E | Element Removal Clearance | Sump Capacity[2] | Weight[3] |
|---|---|---|---|---|---|---|---|---|
| HT3-801 | 43.1 (109.5) | 15.0 (38.1) | 7.7 (19.5) | 35.4 (89.9) | | 28 (71.1) | 0.81 (3) | 190 (86) |
| FT3-801 | 43.1 (109.5) | 16.0 (40.6) | 7.7 (19.5) | 35.4 (89.9) | | 28 (71.1) | 0.81 (3) | 190 (86) |
| FT4-1201 | 42.7 (108.5) | 20.0 (50.8) | 9.7 (24.6) | 33.0 (83.8) | | 25 (63.5) | 2.0 (7) | 380 (173) |
| FT6-1201 | 56.4 (143.3) | 20.0 (50.8) | 11.4 (29.0) | 45.0 (114.3) | | 36 (91.4) | 2.0 (7) | 380 (173) |
| FT6-1603 | 57.8 (146.8) | 26.0 (66.0) | 11.0 (27.9) | 39.8 (101.1) | | 28 (71.1) | 2.0 (7) | 340 (155) |
| HF3-801 | 58.9 (149.6) | 15.0 (38.1) | 9.4 (23.8) | 37.5 (95.2 ) | 12.0 (30.4) | 28 (71.1) | 1.1 (4) | 190 (86) |
| FF3-801 | 58.9 (149.6) | 16.0 (40.6) | 9.4 (23.8) | 37.5 (95.2) | 12.0 (30.4) | 28 (71.1) | 1.2 (4) | 200 (91) |
| FF4-1201 | 63.3 (160.7) | 20.0 (50.8) | 12.3 (31.2) | 35.0 (88.9) | 16.0 (40.6) | 25 (63.5) | 4.2 (16) | 370 (168) |
| FF6-1201 | 75.3 (191.2) | 20.0 (50.8) | 12.3 (31.2) | 47.0 (119.3) | 16.0 (40.6) | 36 (91.4) | 3.6 (14) | 410 (186) |
| FF6-1603 | 77.3 (196.3) | 26.0 (66.0) | 20.8 (52.8) | 40.5 (102.8) | 16.0 (40.6) | 28 (71.1) | 5.0(19) | 340 (155) |
| FF8-1804 | 87.3 (221.7) | 30.0 (76.2) | 25.8 (65.5) | 42.5 (108.0) | 19.0 (48.3) | 28 (71.1) | 8.7 (33) | 550 (250) |
| FF10-2207 | 96.0 (243.8) | 34.0 (86.3) | 28.5 (72.4) | 45.5 (115.5) | 22.0 (55.8) | 28 (71.1) | 14.8 (56) | 750 (341) |
| FF12-3011 | 101.0 (256.5) | 44.0 (111.7) | 27.5 (69.8) | 47.5 (120.6) | 26.0 (66.0) | 28 (71.1) | 25.5 (97) | 1300 (591) |
| FF16-3615 | 112.0 (28.4) | 52.0 (132.0) | 32.0 (81.3) | 50.0 (127.0) | 30.0 (76.2) | 28 (71.1) | 56.2 (231) | 1700 (773) |

[1]Dimensions are in inches (centimeters.) [2]Sump Capacity is in gallons (liters.) [3]Weight is in pounds (kilograms.)

## Materials of Construction

**Body:** Carbon Steel
**Paint:** Epoxy Enamel (Gray)
**Internals:** Epoxy powder painted carbon steel
**Max Temperature:** 450°F (232°C)
**Seals:** Inorganic flange gasket (single element vessels)
Fluorocarbon o-ring (multi element vessels)
**Internal Coating:** Epoxy enamel

## Specifications

**Max Pressure:**185 PSIG (12.5 bar)
**Meets** A.S.M.E. Code, Section VIII, Division 1
Note: Consult factory for special requirements.



**Parker Hannifin Corporation**
Finite Filter Operation
Oxford, MI

# Maintenance Bulletin - ASME Series
# (3" NPT to 16" Flange)



# Caution!

1. Vessels are shipped from the factory without element(s). The element(s) are shipped separately. The vessel should be set and plumbed before installation of element(s) and a differential pressure gauge to minimize the possibility of damage.

2. Air temperature must be below 200° F when using the nylon tubing supplied with the differential pressure gauge kit. Use copper or stainless steel tubing for higher temperature applications, and remote mount the gauge (do not attach to vessel nameplate bracket).

## Air Flow Direction for Coalescing:

When coalescing liquid aerosols from an airstream, the waste liquid must be drained from the vessel sump. In order for this liquid to be properly drained, the air must flow from the inside of the element to the outside. **

** Be especially careful when plumbing a vessel containing "DS" or "DV" element(s). This high temperature element is commonly used as either a coalescer (liquid removal) or a particulate filter. Inlet and outlet labels are installed at the factory denoting coalescing (in to out) flow.

## Proper Flow Directions:

Inside to Out: All elements used for coalescing, ("C", "Q" , "7CVP", "7DVP", and "D") and water separation ("100WS").

Outside to In: All elements used for particulate removal only; adsorbers, particulate, and high temperature ("A", "P" and "D") elements.

## WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application including consequences of any failure, and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

# Repair Parts

| Part Number | Complete Frame Kit | Frame | Seal Nut | End Cap | Housing Closure Seal |
|---|---|---|---|---|---|
| HT3-801 | KV-2A | 80055 | 71054 | 80000 | 80005 |
| FT3-801 | KV-2A | 80055 | 71054 | 80000 | 80005 |
| FT4-1201 | KV-5A | 80063 | 71054 | 80003 | 80007 |
| FT6-1201 | KV-6A | 80076 | 71054 | 80003 | 80007 |
| FT6-1603 | KV-2A | 80055 | 71054 | 80000 | 76463V |
| HF3-801 | KV-2A | 80055 | 71054 | 80000 | 80005 |
| FF3-801 | KV-2A | 80055 | 71054 | 80000 | 80005 |
| FF4-1201 | KV-5A | 80063 | 71054 | 80003 | 80007 |
| FF6-1201 | KV-6A | 80063 | 71054 | 80003 | 80007 |
| FF6-1603 | KV-2A | 80055 | 71054 | 80000 | 76463V |
| FF8-1804 | KV-2A | 80055 | 71054 | 80000 | 76467V |
| FF10-2207 | KV-2A | 80055 | 71054 | 80000 | 76472V |
| FF12-3011 | KV-2A | 80055 | 71054 | 80000 | 75035V |
| FF16-3615 | KV-2A | 80055 | 71054 | 80000 | 75036V |

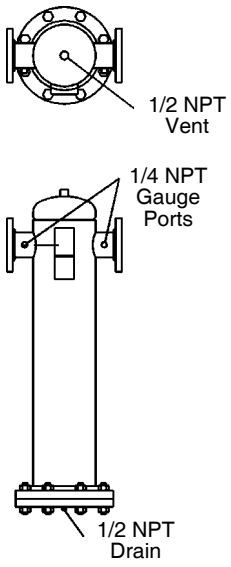
## Initial Installation Notes

1. Remove element from carton. Be careful not to damage media O.D. or elastomer end seals.
2. Inlet and outlet gauge ports should be plugged if unused.
3. Drain valve(s), whether manual or automatic, should be closed.
4. To avoid damage, install element(s) after housing has been plumbed and inspected. Follow "Element Replacement" procedure.
5. Check flow direction of elements on page 32.
6. Slowly initiate flow to avoid exceeding element Maximum flow rate, especially in high volume systems.
7. Avoid venting the air system so as to cause a reverse flow through the vessel.

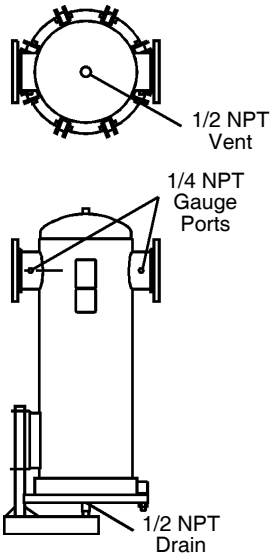
## Element Replacement

1. Depressurize housing, remove closure bolts and cover.
2. Unscrew and remove element retainer nut and blank end cap.
3. Pull clogged element straight out, avoiding element frame and discard.
4. Clean blank and closure end cap sealing surfaces and inspect for damage. (If sump requires cleaning, element frame is pipe thread mounted and can be removed by rotating C-C-W. - notch provided.)
5. Wipe new element seals off and carefully place element over element frame. Squarely seat against flat end cap sealing surface.
6. Replace blank end cap squarely against element seal and replace retainer seal nut.

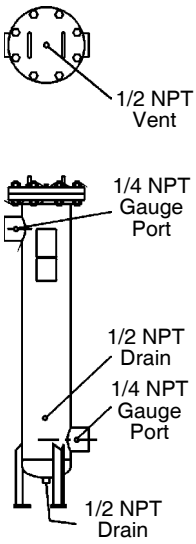
***Tighten only until element seals are slightly compressed.***



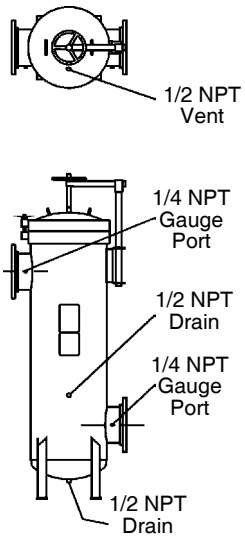

***Refer to this drawing for:***
HT3-801(NPT)
FT3-801
FT4-1201
FT6-1201




***Refer to this drawing for:***
FT6-1603




***Refer to this drawing for:***
HF3-801(NPT)
FF3-801
FF4-1201
FF6-1201




***Refer to this drawing for:***
FF6-1603
FF8-1804
FF10-2207
FF12-3011
FF16-3615



**Parker Hannifin Corporation**
Finite Filter Operation
Oxford, MI

## INSTALLATION

Finite filters should be installed in a level pipeline mounted vertically, the vessel sump downward with one element length clearance above or below vessel for element removal. The filter should be installed at the highest pressure point available, and as near as possible to the equipment to be protected and have a drip leg immediately upstream. The coalescers and particulate filters should be visible and easily accessible for periodic draining and maintenance.

The filters should be piped in accordance with the "IN" and "OUT" labels. Should these tags become unreadable, install the coalescer so that flow passes through the filter tube from inside-to-outside. Plumb particulate and adsorber filters so that flow passes through the filter from outside-to-inside. The various filter locations relative to other equipment should be as follows (unless specific instructions are given to the contrary):

(1) COALESCERS and WATER SEPARATORS (WS) (liquid removal) are placed before the dryer.
(2) The INTERCEPTOR (particulate removal) should be installed ahead of the COALESCER when prefiltration is required.
(3) The INTERCEPTOR (particulate removal) can also be installed downstream of desiccant dryers to prevent desiccant migration.
(4) The ADSORBER (vapor removal) is always preceded by a COALESCER.

When Coalescer or Interceptor differential pressure reaches clogged condition (6-8 PSID) replace element immediately. DO NOT ATTEMPT TO CLEAN FILTER TUBE. System contamination can result. DO NOT BY-PASS THE COALESCER unless the by-pass line is also filtered.

## OPERATION

Air coalescing is a continuous, balanced, steady-state process occurring at or below rated flow, which depends on two factors for high performance: (1) The vessel sump must be kept free of waste liquid buildup and (2) The element must be replaced when the differential pressure reaches 6-8 psid, 12 psid Maximum. Differential pressure can be sensed at the inlet and outlet ports by two gauges, or by Finite's KBDPI-25 differential pressure gauge.

Vessel sump draining is accomplished by opening the customer supplied manual drain valve, at least once every 8 hours depending on the liquid load. Connecting an automatic drain to the vessel sump is highly recommended. (See literature on Finite's TV-50, TD-50 or ZLD-10 timed drain valves.)

Floor standing vessels have two sumps and two drain connections. Never connect these drains together as contamination of the outlet gas will occur. Two separate drain lines with separate drain traps or valves should be used to ensure that contamination will not occur.

A Finite coalescer, under normal system conditions, will operate for 6 to 12 months before reaching its Maximum differential pressure. A "PU" series Interceptor, or a "QU" series coalescing element with a pleated prefilter can be employed ahead of the coalescer to increase its life. The interceptor should be replaced when its differential pressure reaches 8 - 10 psid.

Finite coalescers are designed for nominal operation with 10-20 wt. oil. Any viscosity increase over that of 20 wt. oil must be offset by a proportionate oversizing of the filter element. Consult your Finite representative.

# TROUBLESHOOTING CHART

| Problem | Probable Cause | Solution |
|---|---|---|
| Too High Initial Pressure Drop | Air flow Excessive for housing size. Filter media grade too fine. | Install larger filter housing. Install coarser element. |
| | Too much oil/water from compressor. | Pre-coalesce with grade 10 - oversize housing. |
| Premature Clogging (Air Flow Drops Off) | Lubricant improperly selected for compressor, causing varnish or carbonizing of lubricant. | Change oil, consult with lubricant supplier. |
| | Excessive inlet particulate contamination. | Prefilter with Interceptor. |
| | Excessive lubricants present on element caused by either high lubricant viscosity or very high inlet aerosol level. | Prefilter with Grade 10 and oversize coalescer to compensate. |
| | Oil/water emulsion forming on element. | Remove water by drip leg, aftercooler. Install mechanical separator upstream. |
| | Ice forming or oil viscosity too high due to Excessively low unit temperature. | Raise temperature. |
| Oil Present Down-stream of Filter | Bowl not properly drained of waste liquids. | Drain regularly, use auto drain. |
| | Element not sealing. | Clean sealing surfaces or replace element. |
| | Filter piped backwards. | See "INSTALLATION"; Re-pipe. |
| | Filter being by-passed by valving. | Close valve. |
| | Contaminated air entering system from second source downstream. | Change pipe or relocate filter. |
| | Excessive inlet oil level. | Check source and eliminate. |
| | Element damaged, chemically attacked or not installed in housing. | Change and consult distributor or factory for other than neutral pH. |
| | Oil present in pre-contaminated downstream piping. | Clean piping. |



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