

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

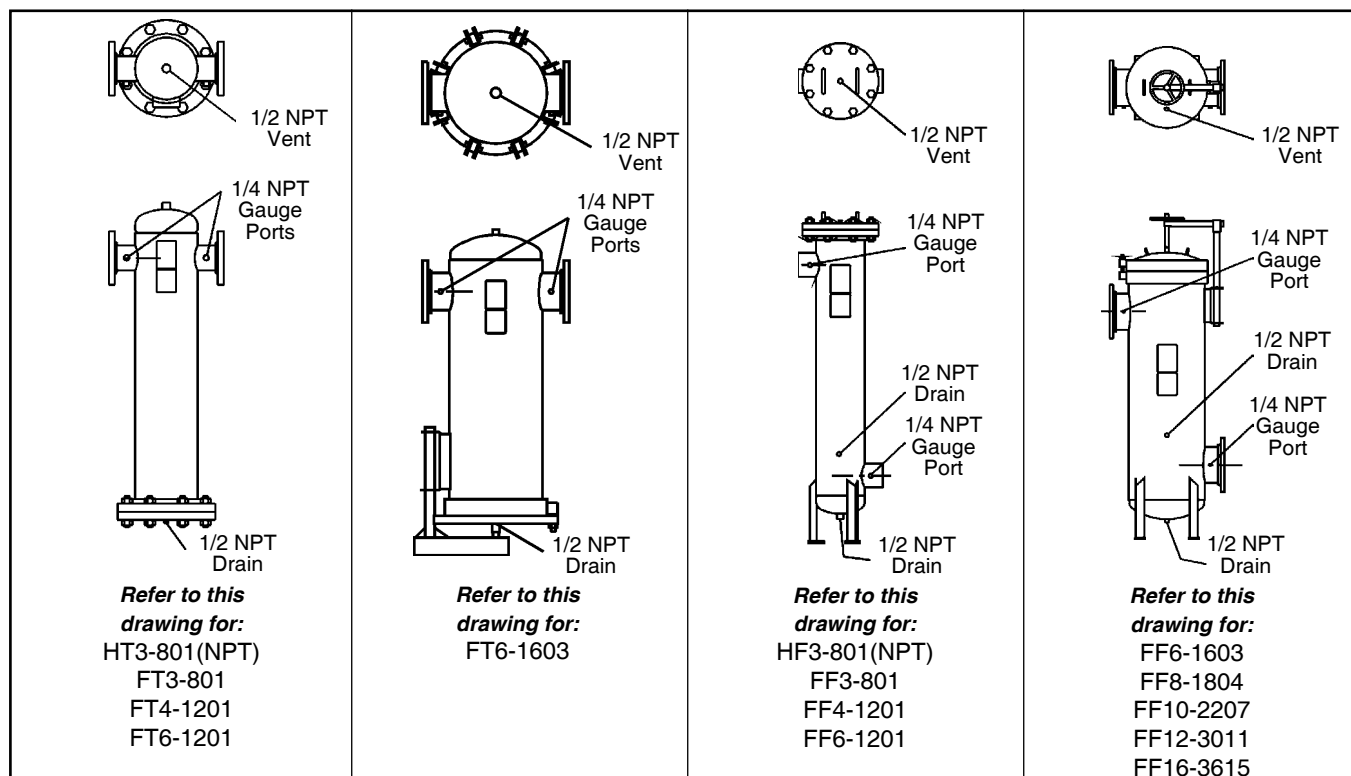
Initial Installation Notes

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.



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.
Oil Present Downstream of Filter	Ice forming or oil viscosity too high due to Excessively low unit temperature.	Raise temperature.
	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.

Notes:

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