

HYVAC PRODUCTS, INC.

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Capture Filters for Vacuum Pump Exhaust

Exhaust filters are often used on oil sealed rotary vane vacuum pumps. The main reason to use an exhaust filter is to eliminate or minimize oil mist that can often be a byproduct of the vacuum pumps operation.



Oil mist is often generated by vacuum pumps for a variety of reasons. The most prevalent and common cause is operating the vacuum pump at "high" pressures. Generally speaking operating pressures above 1 Torr or 1000 micron can cause oil mist to be apparent. Oil mist creation is not unusual and "No the pump isn't on fire." The most common cause is operating the pump by pumping against an "open" or leaky system. The pump then has very high gas flows going through it, and in the process will atomize oil molecules (aerosol) and they will then attempt to exit the pump and barring no filter media to prevent this, they will.

If you received an exhaust dome on one of our vacuum pumps, this is not really a substitute for a true exhaust filter. An exhaust dome keeps dirt and particulates from getting into your pumps' exhaust port and then into the oil. It is a very rudimentary filter, and sometimes just a mesh screen.

An exhaust filter or "oil mist eliminator" is a more advanced filter usually containing a replaceable element that will stop oil mist on a molecular basis or at least make a good effort at it. Exhaust (oil mist) discharge can be cut significantly by adding one of these filter items to your vacuum pump. Not only does it keep the oil mist out of your workspace; it also will keep the pump oil in the pump where it belongs.

HyVac has a new filter we call a capture filter. The filter includes an exhaust port from the exhaust filter body. With this port we can attach a hose nipple to the exhaust port of the filter and then route the exhaust from (after the filter) to a hood negating any potential for stray exhaust fumes coming into the workspace. It also serves the secondary purpose of being a coalescing filter.

Coalescing means that the oil drains back into the pump after it condenses on the insides of the filter element itself. The filter housing also has a 1/8" FNPT port to attach a drain hose to the filter should one be desired.

HyVac Filter elements have been designed to 99.999% DOP efficiency on .2- .3 micron particles. They are rated at 5 parts per million at 60 Torr maximum carryover.

Oil mist filters are designed for oil mist, pretty large molecules. If you are dealing with volatile solvents or other types of work place unfriendly items then the capture exhaust filter is the filter for you. These types of filters usually entail a little more installation cost due to need to run hoses from pump exhaust to the hood but because they present a closed loop to the hood for exhaust the user is assured a clean environment.

All of the exhaust filters from HyVac are very easy to install and either thread into the exhaust port of the pump or can be clamped on in some relatively simple manner using standard vacuum fittings provided from HyVac.

Filters will require changing from time to time and the frequency depends on the amount of use the filter element in the filter gets. A simple maintenance program can be put in place once the frequency of actual changes needed becomes apparent. If a filter is allowed to operate after being all clogged up over time, then back pressure may start to develop in your pump and may put undo pressure on the shaft seals or other exit ports from the pump itself. The motor will also tend to work harder in this situation, so it is important to replace the element every 6 months or so. Again it really depends on the amount of use the system gets. Filter change out generally should occur when there is a pressure differential of 2.5 psid across the filter. HyVac Capture filters are spring loaded so that when backpressure from a worn or "loaded" element becomes too great it vents automatically to atmosphere. This makes

sure backpressure of sufficient quantity does not develop in the exhaust filter because it is dirty and "blow" the seals on the pump.

Do I really need this thing? Depending on what you are pumping out of your system a good exhaust filter, with a port to a hood may be a prudent investment. Your pump has less of a chance of running out of oil with this type of item in place. There is less exposure for local personnel to the exhaust by products and vapor streams from the pump. It is feasible to port the exhaust directly to a hood, but then monitoring of the pumps oil level should be made a routine preventative maintenance practice. Take care to avoid any low spots in the exhaust line as oil may collect there and again cause backpressure during operation.

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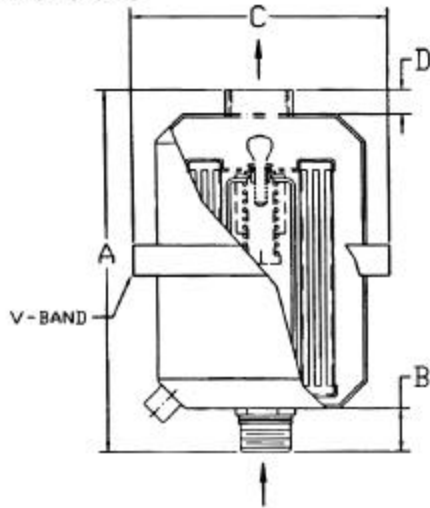
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Capture Filter
Dimensions



Model	(A.) Height	(C) Width	Flow Rate	Port
93126-100	4.125"	3.25"	5 cfm	3/8" FNPT
93126-101	4.310"	3.25"	10 cfm	1/2" FNPT
93126-102	7.750"	5.25"	20 cfm	3/4" FNPT
93126-103	7.750"	5.25"	20 cfm	1" FNPT
93126-104	4.125"	3.25"	50 cfm	1 1/2" FNPT
NW Style				
93126-100	4.125"	3.25"	5 cfm	NW16
93126-101	4.310"	3.25"	10 cfm	NW25

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Prices Exhaust Filters from HyVac

(Comes with a Filter Element)

Description	Catalog Number	
Prices		
0-10 SCFM		
Capture Filter 1/8" NPT	93126-100	213.06
Capture Filter 3/8" NPT	93126-101	213.06
Capture Filter 1/2" NPT	93126-102	213.06
Capture Filter 3/4" NPT	93126-103	213.06
Capture Filter NW16x1/2 FNPT	93126-110	220.00
11-20 SCFM		
Capture Filter 1" FNPT	93126-104	250.24
Capture Filter 1 1/2" FNPT	93126-105	240.86
Capture Filter NW25x1/2" FNPT	93126-111	365.00

Replacement Exhaust Filter Elements from HyVac

(Goes Inside Exhaust Filter Body)

Description	Catalog #	Price
Capture Filter Element For 93126-100	93127-100	98.58
Capture Filter Element For 93126-101	93127-100	98.58
Capture Filter Element For 93126-102	93127-100	98.58
Capture Filter Element For 93126-103	93127-103	98.58
Capture Filter Element For 93126-104	93127-004	98.58
Capture Filter Element For 93126-105	93127-004	98.58
Capture Filter Element For 93126-110	93127-110	127.20
Capture Filter Element For 93126-111	93127-110	127.20

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Other Types of Exhaust Filters and Elements from other Manufacturers

We have many other types really too numerous to mention. Just about all filter systems mentioned above are available in QF/NW/ISO standard adaptations. If you need one, call us with the following information and we can help you out.

How you want to hook to your pump, threads or quick release fittings. The best solution for finding a replacement element for your pump is to measure the element and call us. We could use the following dimensions to help you.

ID of Element

OD of Element

Length of Element

Please be prepared to talk about your system.

