Vacuum Pump Exhaust Filters

- **Eliminate 99.9% oil mist and smoke from vacuum pump Exhaust**
- **Easily adapts to most vacuum pumps**
- **Flows to 200 CFM**

Bulletin 1300 - 310/USA

Finite®

Parker Hannifin Corporation
Finite Filter Operation
Oxford, MI

What is a vacuum pump and what are they used for?

Applications:

- Industrial Vacuum Processes
- Pharmaceutical
- Medical
- Food Processing
- Meat Packaging
- Factory Automation
- Pneumatic Conveying
- Chemical Processing
- Print Production
- Woodworking

High Quality, Low Maintenance

Vacuum pumps are used in a variety of applications from manufacturing processes to medical devices. In general, a vacuum pump provides high quality, reliable performance and is a low maintenance piece of equipment.

> "In general, a vacuum pump provides high quality, reliable performance and is a low maintenance piece of equipment."

How it Works

Vacuum pumps convert mechanical energy into pneumatic energy by evacuating the air contained within a system. They use the same pumping mechanism as air compressors except that the unit is installed so that the air is drawn from a closed volume and Exhausted to the atmosphere.

In a compressed air system the compressor inlet is usually at atmospheric pressure, whereas in a vacuum system, the outlet is at atmospheric pressure.

Lubricated vs. Non-lubricated

Pumps are generally offered in an oil-less or oil-lubricated version. Oil-lubricated vacuum pumps have many advantages if they are properly maintained. They can usually provide 20% higher vacuum because the lubricant acts as a sealant. The life of an oil-lubricated vacuum pump is usually extended by 50% due to cooler operation and better protection against corrosion from condensed water vapor.

All Pumps Require Filtration Protection

A vacuum pump, whether it is oil-less or not, requires Exhaust filtration protection. One requirement of vacuum pump maintenance is making sure that the operator provides and maintains a filter for the vacuum Exhaust. Regardless of the type of vacuum pump you have, using a Finite Exhaust filter will ensure a cleaner work environment.

Why filter vacuum pump Exhaust?

Put 99.9% clean air into YOUR work environment

A vacuum pump will Exhaust smoke and visible oil mist into the air. Installing a Finite Exhaust filter will eliminate 99.9% of the oil mist and smoke from vacuum pump Exhaust. This will prevent oil accumulation in the ambient air, which could otherwise cause health hazards for employees and potential violations from OSHA and the EPA.

Eliminate oil in duct work

When oily air is emitted from a vacuum pump, the contaminants are circulated throughout the building through the duct work. This can create dirty intake air for other equipment such as air compressors, packaging machines, etc.

Recover expensive lubricating oils

Oil prices have risen dramatically in the past few years. Your Finite vacuum pump Exhaust filter can recover expensive lubricating oils and return filtered oil back to the pump. This reduces overall maintenance costs.

How to Choose a Finite Vacuum Pump Exhaust Filter

For most applications, simply select the filter assembly which has a flow capacity equal to or greater than the vacuum pump Exhaust flow output (see chart to the right). The filter assemblies are shipped with installed filter cartridges, pressure gauge, and stainless steel mesh final filter pad (20 cfm and larger). Finite vacuum Exhaust filters can be easily adapted to any vacuum pump with readily available connection fittings.

Filter Selection Chart

Max. Pump Flow Rate (CFM)	Recommended Filter Part Number
3	FVE003N, FVE003K
9	FVE009N
9	FVC009N (Stainless Steel)
20	FVE020N
43	FVE043N
100	FVE100N
200	FVE200N

Vacuum Pump Exhaust Filters

FVE003N,
Not pictured FVE003K

FVE009N

Use this on hazardous/corrosive applications.

FVC009N

FVE020N
Not pictured: FVE043N, similar but larger capacity

FVE200N
Not pictured: FVE100N similar but smaller capacity

Specifications

Part Number	Port Size	Max. Flow Rate	Materials of Construction			Max. Temperature	Max. Pressure	Shipping Weight	Dimensions
			Body	Internals	Seals				
FVE003N	1/2" NPT	3 CFM	Nylon	Nylon	None	250°F (121°C)	15 PSIG	0.25 lbs (0.1 kg)	2"Dia. X 3.7"H
FVE003K	KF-16	3 CFM	Nylon	Nylon	None	250°F (121°C)	15 PSIG	0.25 lbs (0.1 kg)	2"Dia. X 3.7"H
FVE009N	3/4" NPT	9 CFM	Steel	Steel	Fluorocarbon	400°F (204°C)	15 PSIG	0.8 lbs (0.4 kg)	3.5"Dia. X 5.4"H
FVC009N	3/4" NPT	9 CFM	304 SS	304 SS	None	250°F (121°C)	15 PSIG	0.8 lbs. (0.4 kg)	4.0"Dia. X 5.3"H
FVE020N	1" NPT	20 CFM	Steel	Anod. Alum.	Neoprene	400°F (204°C)	15 PSIG	8 lbs (4 kg)	7.4"Dia. X 8.8"H
FVE043N	1 1/2" NPT	43 CFM	Steel	Anod. Alum.	Neoprene	400°F (204°C)	15 PSIG	11 lbs (5 kg)	7.4"Dia. X 15"H
FVE100N	3" NPT	100 CFM	Steel	Anod. Alum.	Neoprene	400°F (204°C)	15 PSIG	17 lbs (8 kg)	10"Dia. X 18"H
FVE200N	3" NPT	200 CFM	Steel	Anod. Alum.	Neoprene	400°F (204°C)	15 PSIG	23 lbs (10kg)	10"Dia. X 28"H

Color Key:

Filter cartridge is permanently sealed into housing. The entire unit is disposable.

Filter cartridge is permanently sealed into housing. The entire unit is disposable. Housing is stainless steel.

The filter assemblies are shipped with installed filter cartridges, pressure gauge, and stainless steel mesh final filter pad. Replacement cartridges are available.

Parker Hannifin Corporation
Finite Filter Operation
Oxford, MI

Ordering Information

The filter assemblies are shipped with installed filter cartridges, pressure gauge, and stainless steel mesh final filter pad (20 cfm and larger).

Ordering Information		Optional Accessories			
Part Number	# of Replacement Filter Cartridges Required	Cover (includes pipe connection for remote Exhaust venting)	Element Bypass Valve Assembly* (2-5 PSIG)	Pressure Relief Valve (3-7 PSIG, 1/4" NPT male)	Weather Cap
FVE003N	N/A	N/A	N/A	N/A	N/A
FVE003K	N/A	N/A	N/A	N/A	N/A
FVE009N	N/A	N/A	N/A	N/A	N/A
FVC009N	N/A	N/A	N/A	N/A	N/A
FVE020N	RVE20-035 (need 3)	19158	20222 (need 1)	20217	N/A
FVE043N	RVE20-090 (need 3)	19158	20222 (need 1)	20217	N/A
FVE100N	RVE20-090 (need 7)	19206	20222 (need 2)	20217	19202
FVE200N	RVE20-187 (need 7)	19206	20222 (need 2)	20217	19202

*Note: Element bypass valve assembly prevents backpressure buildup at the outlet of the vacuum pump.

Look inside a Finite Exhaust filter...

In standard models FVE020N-FVE200N, the elements are covered by a stainless steel mesh pad. Remove the mesh pad to expose the elements for maintenance and filter replacement. This photo does not show the optional cover.

The elements are installed in the housing. They are held in place by a center rod and threaded end cap. This design allows for easy element changeout. The inlet is on the bottom of the housing and the air flows from the inside to the outside. The coalesced liquid collects at the bottom of the internal separator plate and can be easily drained away.