

Vacuum Pump Exhaust Filters

Background

In many packaging and manufacturing applications, the use of vacuum pump exhaust filters is quickly becoming the standard. With heightened regulations from OSHA and the EPA, it is absolutely necessary to use filtration on vacuum pump systems. Vacuum pumps, without exhaust filters will allow oil, used to lubricate the pump, to vent to atmosphere. This is a problem in all environments. It will coat every surface in the area and eventually collect and cause damage and/or health issues.

Application

Finite Vacuum exhaust filters remove all visible oil mist and smoke from vacuum pump exhaust. The high efficiency filter cartridge continuously drains the collected liquid, allowing the user to recover expensive lubricating fluid. The exhaust filters can

Case Study

Recently, the plant manager from a packaging company called and told us that his employees were complaining of an oily substance on the windshields of their cars in the company parking lot. After weeks of research and observations, they found the problem was from the heavy smoke coming from the vacuum exhaust port on the roof of the plant. When they went to the exhaust port, they found that oil had accumulated on their roof and had actually penetrated it in multiple areas. To repair the roof would cost around \$50,000. The



either be incorporated into a ducting system or installed to allow venting into the immediate work area. Vacuum Pump Exhaust Filters are available for pumps with flow ratings ranging from 3 cfm to 200 cfm.

accumulated oil had built up so much in the corners, that the fire department declared it a fire hazard. In addition to the roof problem, the packaging company was worried about pollution from rain runoff from the roof. That could cause them to pay large fines to the EPA. The obvious solution is the use of vacuum pump exhaust filters. The customer purchased a filter assembly and have solved the problem completely.

Solutions

Features and Benefits/Principal Specifications/Ordering Information

- Eliminate 99.99% oil mist and smoke from vacuum pump exhaust
- Prevent oil accumulation in ductwork
- Easily adapts to most vacuum pumps
- Recover expensive lubricating oils, and automatically return filtered oil to pump
- Eliminate potential OSHA and EPA violations
- Flows to 200 CFM

| Filter Selection Chart | |
|------------------------------|---------------------------------|
| Maximum Pump Flow Rate (CFM) | Recommended Filter Model Number |
| 3 | FVE003N, FVE003K |
| 9 | FVE009 |
| 9 | FVC009N (Stainless Steel) |
| 20 | FVE020N |
| 43 | FVE043N |
| 100 | FVE100N |
| 200 | FVE200N |

Principal Specifications

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

Notes:

- Filter cartridge is permanently sealed into housing. The entire unit is disposable.
- Filter cartridge is permanently sealed into housing. The entire unit is disposable. Consister is stainless steel.
- This unit comes with filter cartridge, a gauge and a standard stainless steel mesh pad. Replacement cartridges are available.
- Use this model on hazardous/corrosive applications.

Ordering Information (6)

| Ordering Information | | Optional Accessories | | | |
|----------------------|---|---|-----------------------------------|----------------------------------|---------------------------------------|
| Model | No. of Replacement Filter Cartridges Required | Cover (includes pipe connection for remote exhaust venting) | Element Bypass Valve assembly (5) | Pressure Relief Valve (2-5 PSIG) | Weather Cap (3-7 PSIG, 1/4" NPT male) |
| 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 |

Notes:

- Element bypass valve assembly prevents backpressure buildup at the outlet of the vacuum pump.
- The filter assemblies are shipped with installed filter cartridges, pressure gauge, and stainless steel mesh final filter pad (20 cfm and larger).



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