

Vacuum Filter FV

Design

The vacuum filter is a cost efficient and versatile filter for removing solid particles from metalworking fluids (emulsion or oil) or similar applications like parts washing. The filter pump creates a 0.3 bar differential pressure across the filter media so that flow rate and filtration quality exceed by far the gravity type filters. The filter may be equipped with disposable media and/or a permanent belt to reduce disposal cost.

Continuous operation is guaranteed by using a clean tank during the index cycle which is a fully automated action.

The main features of this filter type are:

- low maintenance / low complexity
- low energy (filter pump is system pump)
- low disposal costs (permanent belt media)
- high flow rates
- increased filtration quality
- small foot print

Function

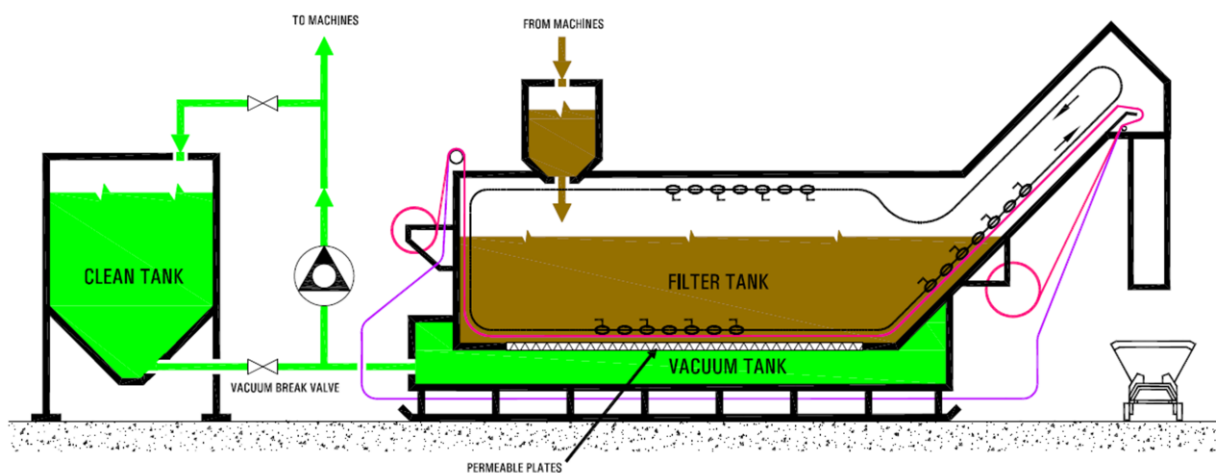
Contaminated liquid discharges from the machine tool into the filter tank where swarf settles out.

The bottom of the filter tank is separated from the vacuum tank by means of rigid permeable panels. A flight bar conveyor is installed on top of the panels. The filter media moves between the panels and the flight bar conveyor. The filter/system pump creates a vacuum and forces the liquid through the filter media into the vacuum tank. Clean liquid is supplied from the vacuum tank to the machines and the clean tank.

Due to the build-up of collected solids on the filter media (filter cake) the vacuum will increase and an automated index cycle will be initiated as soon as a predefined vacuum has been reached.

During the index the vacuum break valves opens and the conveyor moves both the filter media and the collected swarf to the filter discharge. To ensure a continuous flow to the machine tool clean liquid is taken from the clean tank until the vacuum break valves closes at the end of the index cycle.

If a permanent belt is used as filter media, the belt will be back flushed during the index cycle.



Technical Data

The vacuum filter FV is available in 3 base widths suitable for standard sized media. Within each base width one can select from a wide range of filter areas to fulfil the application specific requirements for the system flow and volume.

Model	Media Width	Filter Area	Typical Flow
FV-13	1300 mm	1.6-11.2 m ²	1000-7500 l/min
FV-18	1840 mm	5.6-35.0 m ²	3500-23000 l/min
FV-23	2280 mm	6.9-43.7 m ²	4500-28000 l/min