

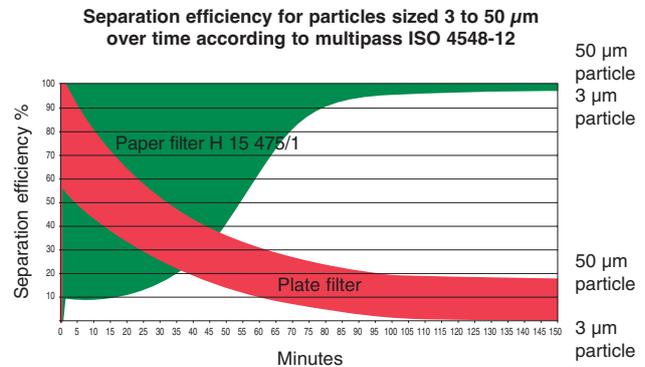
## **Technical background information: Paper filters optimise the erosion process**

# Technical background information: Paper filters optimise the erosion process

**In the filtration of dielectric fluid in EDM machines paper filters are gaining increasing acceptance with their defined filter fineness.**

Well-known producers of cavity sinking EDM machines have been long aware of the advantages of paper filters. They are using paper filters with a defined filter fineness more and more in OEM machines. The reason for this is the ever higher requirements regarding the precision of the material surface. The paper filter achieves a high filtration accuracy, as proven in extensive multipass tests according to ISO 4548-12 in the testing laboratories at MANN+HUMMEL. The test results show that paper filters offer a precise filtration and high process reliability.

MANN+HUMMEL, market leader in the field of the filtration of dielectric fluids for EDM machines, recommends the H 15 475/1 filter. Comparison tests with conventional plate filters have shown that the H 15 475/1 has considerably better filtration quality and service life. The end covers of the paper filter are directly connected to the paper bellows. This allows the dirtied dielectric fluid to flow 100 % through the paper medium, thereby guaranteeing the defined filter fineness. The filtration quality of the filter in fact increases after approx. 1 hour of operation when a filter cake has built up. Then the H 15 475/1 achieves its best efficiency and reliably separates particles larger than 3 µm.



The separation efficiency of the paper filter increases during the life time of the filter.

Furthermore, the paper filters give machine users clear information about the filter servicing requirement since the differential pressure

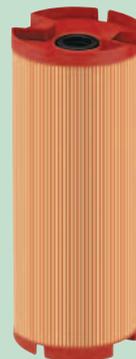
re on the filter reliably displays when the maximum possible amount of dirt has been reached and the filter should be replaced.

Today, plate filters are still often found in use with EDM machines. The comparison test from MANN+HUMMEL clearly illustrates the disadvantages of the plate filter:

- 1) No defined filter fineness. The dirtied liquid flows through cavities between the plates and not through the plates.
- 2) The separation efficiency reduces to lower than 10 % after just a short time in operation.

- 3) After a certain point the differential pressure stops increasing. This signifies that the filter only achieves a low separation efficiency.

**The MANN+HUMMEL conclusion about plate filters: Bad value for money.**



The H 15 475/1 from MANN+HUMMEL for high filtration precision through defined filter fineness



Conventional plate filters for cavity sinking EDM machines

