



**In Harmony
with the Environment**

**MANN+HUMMEL Plastic filter elements
for EDM machines**

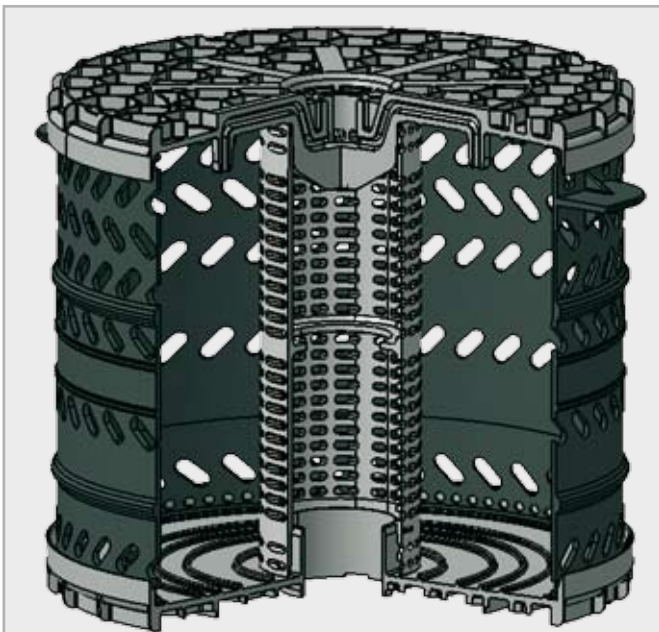




MANN+HUMMEL and environmental protection

Increased environmental problems in recent years around the world have led to an increase in public awareness of environmental concerns and nature. MANN+HUMMEL is aware of its economic and ecological responsibility to society. Accordingly, we are committed to an **environmental management system** dedicated to the continual improvement of our products.

During the development of our metal-free EDM filter series the content of this **environmental management system** was our top priority. As a result, we have completely eliminated the need for metal components, which is a responsible and efficient use of resources. In addition, MANN+HUMMEL uses modern development and production processes with the emphasis on materials which are environmentally friendly and energetically reusable.



A great thing - for the environment and your application: MANN+HUMMEL plastic filters conserve the environment and your financial resources.

End caps, centre tube and external housing are 100% made of environmentally-friendly plastic.



The difference is in the design

Traditional EDM filter elements usually consist of an external housing of metal with a metal centre tube, an internal filter bellow and the two metal end caps bonded with adhesive.

Furthermore there are also **hybrid designs** available with housings in metal and plastic.

MANN+HUMMEL plastic filters are made of homogeneous plastic and completely free of metal.

The shape and weight of all the plastic components has been optimised and the parts are efficiently produced in an injection moulding process.

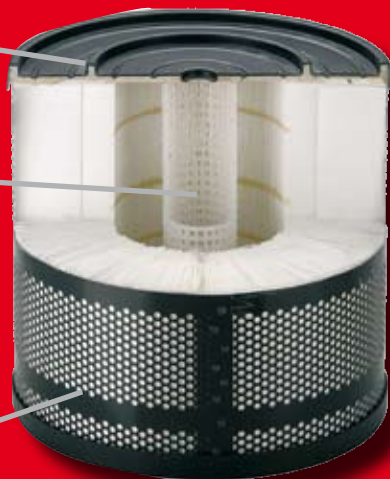
A double bonus for the environment: A modern production process and the easy disposal of the product afterwards conserve resources and support the environment.

Design of hybrid filter

Plastic end caps

Plastic centre tube

Metal external housing



Design of MANN+HUMMEL filter

Plastic end caps

Plastic centre tube

Plastic external housing





Hybrid or metal filter elements

MANN+HUMMEL plastic filter elements

Be environmentally-conscious and act responsibly:

Many benefits tip the scale towards the use of MANN+HUMMEL plastic filter elements

Disposal of material

(e.g. hybrid or metal filter elements)

- Shred
- Centrifuge
- Separate material according to:
 - Metal
 - Plastic, rubber
 - Paper
- Send metal to be recycled
- Thermally treat plastic and rubber

High costs for:

- Energy
- Logistics
- Process

Incineration disposal - energetic value

(MANN+HUMMEL plastic filter elements)

The loaded filter elements are completely thermally disposed, i.e. are used in appropriate systems in the steel industry, in cement works or in waste incineration power stations as an additional source of energy and incinerated without leaving any deposits.

In economic and ecological terms the thermal disposal of plastic filter elements is the best solution!



Be environmentally-conscious...

Karin Knödler

Head of Spares and Consumables at Agie Charmilles GmbH, Schorndorf, Germany

“As one of the leading manufacturers of EDM machines, the aim of GF AgieCharmilles is to satisfy the varied requirements of our customers by using quality products while simultaneously acting in a responsible way towards society. MANN+HUMMEL is a long-term high performance partner for us and excels with innovative products and a high degree of technical competence. The development of environmentally-compatible EDM filters is an important step for us as it allows us to make an active contribution towards a clean environment.”



...and act responsibly!

Stefan Kempf

Head of the Business Unit “Environmental Management and Consulting” at the technical inspection agency “TÜV Rheinland Group” Kaiserslautern, Germany



“MANN+HUMMEL commissioned us to do research in the field of waste specifications for the correct disposal of plastic EDM filters. Our report documents that, due to the calorific value of plastic filters, thermal disposal makes sense and is recommendable.

This environmentally friendly filter concept conserves valuable resources in two ways. Firstly it partly replaces primary fuels such as coal or oil and secondly it generates heat, steam or power in waste incineration plants.”



Homogeneous plastic material, customer-friendly and environmentally compatible!

The MANN+HUMMEL plastic filter range with many advantages:

- Corrosion protection with paint or powder coatings no longer necessary
- Efficient plastic parts production through the use of modern injection moulding technologies
- Incineration disposal through the use of 100% plastic filters
- Disposal process offers renewable energy source similar to common heating oil
- No material separation or intermediate processing as is required with classic recycling
- Up to 30% weight saving enabling easier manual handling and lower transportation costs



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