



MANN EDM Filters **for wire and sink erosion**



MANN+HUMMEL – Partner to Industry

MANN+HUMMEL's extensive product range comprises products and services for various industries. The company organization consists of two company divisions for automotive and industrial applications divided into seven business units. This specialisation enables us to react more flexibly to the individual needs of our customers.

Automotive Technology

- Air cleaner systems
- Intake Manifold Systems
- Liquid filter systems
- Filters

Industrial Technology

- Industrial Filters
- ProTec
- Hydromation

Industrial Filters Business Unit – Solutions for numerous filtration applications

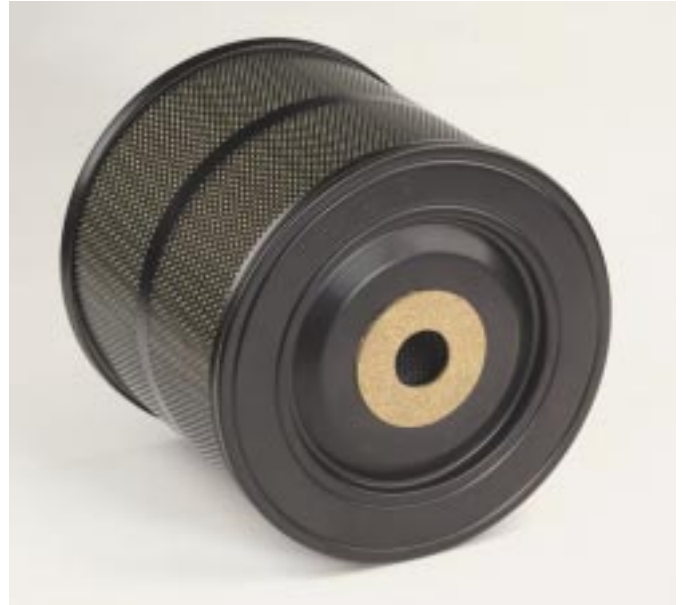
The Industrial Filters business unit in Speyer has customers in almost all technical fields:

- Mechanical engineering and production technology
- Industrial engines, construction and agricultural machines
- Compressed-air and vacuum technology
- Representatives and subsidiaries

The product range includes:

- Air cleaners and cabin filters
- Liquid filters
- Process filters
- EDM filters
- Air/oil separators

Be on the safe side with MANN+HUMMEL



The demands made on EDM filters for wire and sink erosion are constantly rising. That is why you should rely on the quality of MANN+HUMMEL products. Years of development expertise and close co-operation with machine producers have made us what we are today: experts for the filtration of dielectric fluids in EDM machines.

MANN+HUMMEL can offer you a wide range of products for all renowned producers worldwide, with a filter fineness range of 1 to 25 µm.

Our development engineers work closely together with machine producers to fine tune the filters to the respective EDM machine. This guarantees best possible running of the system. Therefore when servicing you should also opt for MANN+HUMMEL original parts. Efficient filtration enables high quality for the processed workpiece and also for economic running costs.

Quality defects with filters can become expensive. These defects can be identified through the following effects:

- bad surface quality and accuracy on the processed workpiece
- blocked rinsing nozzles
- increasing resin consumption
- sediment in the cooler and supply system
- increased corrosion deposits.

The results are increased running costs and extensive wear on your EDM machine.

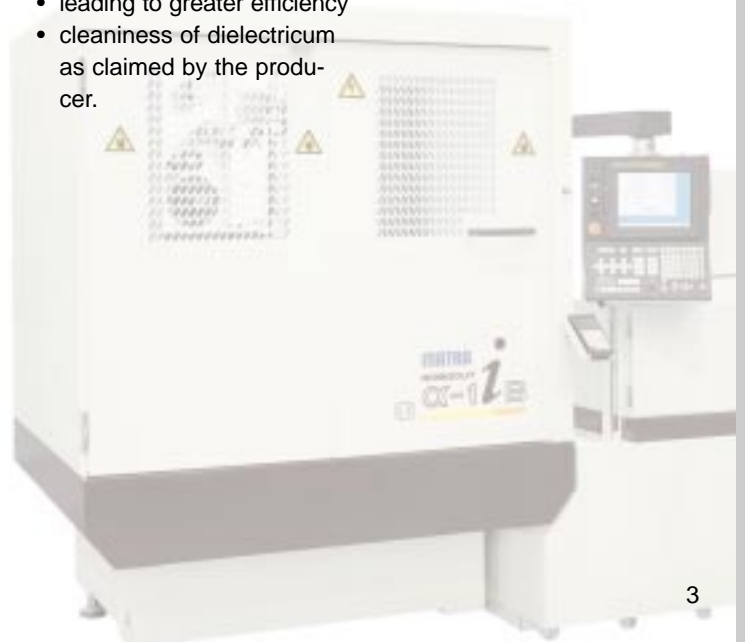
So choose MANN+HUMMEL products for security. Through a specified filter fineness and selection of first class materials you will gain:

- process reliability
- excellent machining quality of workpiece
- smooth running of the EDM machine
- long filter and machine service life
- leading to greater efficiency
- cleanliness of dielectricum as claimed by the producer.

Apart from that opting for MANN+HUMMEL filters also offer you the following advantages:

We can supply quickly and flexibly to your specifications, also for large volumes.

The MANN-FILTER brand name is established and recognized with the producers and operators of EDM machines.



EDM filters with paper media of 3 - 25 µm



Producer

suitable MANN EDM filters¹⁾

AEG	H 15 135 n, H 15 135 P, H 15 190 n
Agema	H 15 190 n
Agemaspark	H 1096
Agie	H 15 190 n, H 15 190/11, H 15 190/16, H 15 475, H 15 475/1
BES	H 15 190 n
Brother	H 31 967
Charmilles	H 15 190 n, H 15 190/14, H 15 190/16, H 34 1158/4, H 34 1158/6
Deckel	H 15 190 n, H 15 190/16
Exeron	H 31 967
EMV Erodiermaschinen	H 15 190 n
Fanuc	H 34 1070, H 34 1158/2, H 34 1158/4, H 34 1158/6
Hostek	H 15 190 n, H 15 190/16
Hitachi	H 31 1033/2
Ingersoll	H 15 190 n, H 15 190/16, H 31 1033/3
Japax	H 15 190 n, H 15 190/16
Jiten	H 15 190 n, H 15 190/16
Makino	H 26 644/1, H 31 1033
Mitsubishi	H 31 1033, H 31 967
Multiform	H 15 190 n, H 15 190/16
Nassovia	H 31 967, H 15 190 n, H 15 190/16
Sinitron	H 15 190 n, H 15 190/16
Sodick	H 34 1070, H 34 1158/2, H 34 1158/3, H 34 1158/5
Seibu-Walter	H 15 190 n, H 15 190/16
Zimmer+Kreim	H 15 190 n, H 15 190/16

¹⁾ You can find the respective filter fineness and dimensions in the charts on pages 5 and 7.

EDM filters with paper media of 3 - 25 µm

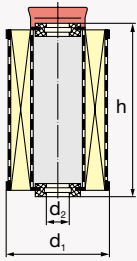


Figure A

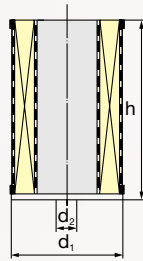


Figure B

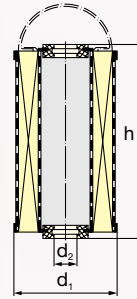


Figure C

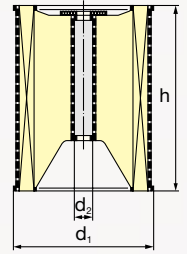


Figure D

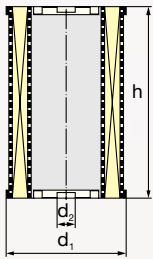


Figure E

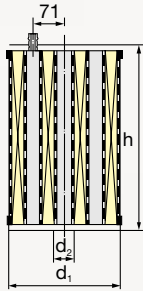


Figure F

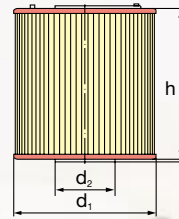


Figure G

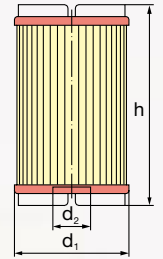


Figure H

Order No.	Figure	Filter surface area [cm ²]	Dimensions in mm			Filter fineness [µm]	Flow direction
			d ₁	d ₂	h		
H 1096 ²⁾	C	9 300	100	22 ¹⁾	202	3 – 5	outside to inside
H 15 135 n	A	17 900	150	32 ¹⁾	252	10	outside to inside
H 15 135 P	A	21 200	150	32 ¹⁾	252	3 – 5	outside to inside
H 15 190	A	20 500	150	32 ¹⁾	364	10	outside to inside
H 15 190/6	A	27 500	150	32 ¹⁾	364	3 – 5	outside to inside
H 15 190/11	A	27 500	150	32 ¹⁾	364	3 – 5	outside to inside
H 15 190/12	A	21 600	150	32 ¹⁾	364	25	outside to inside
H 15 190/14	A	27 500	150	32 ¹⁾	364	3 – 5	outside to inside
H 15 190/16	H	30 000	150	32 ¹⁾	375	3 – 5	outside to inside
H 15 475	A	47 000	150	32 ¹⁾	364	3 – 5	outside to inside
H 15 475/1	H	45 320	150	32 ¹⁾	375	3 – 5	outside to inside
H 26 644/1 ²⁾	G	53 700	261	46	280	3 – 5	outside to inside
H 31 967	E	95 300	302	29	507	3 – 5	inside to outside
H 31 1033	F	99 125	302	54	503	3 – 5	inside to outside
H 31 1033/2	F	99 125	302	54	503	3 – 5	inside to outside
H 31 1033/3	F	99 125	302	54	503	3 – 5	inside to outside
H 34 1158/2	D	113 200	340	45.5	450	3 – 5	inside to outside
H 34 1158/3 ²⁾	D	113 200	340	45.5	450	3 – 5	inside to outside
H 34 1158/4	D	145 000	340	45.5	450	3 – 5	inside to outside
H 34 1158/5 ^{2) 3)}	D	145 000	340	45.5	450	3 – 5	inside to outside
H 34 1158/6 ³⁾	D	145 000	340	45.5	450	3 – 5	inside to outside
H 34 1070	B	107 000	340	45.5	300	3 – 5	inside to outside

1) External diameter accord. to DIN 2391

2) with handle

3) painted black, corrosion-resistant

EDM filter with multilayer medium of 1 - 2 µm

MANN+HUMMEL has developed an innovative triple layer medium and has thus set the standard for EDM filters with respect to filter service life and filter fineness.

The new product generation for Japanese EDM machines offers advantages through:

- filter fineness range of 1 to 2 µm
- considerably longer service life
- use of corrosion-resistant materials
- clear dielectric right from the start.

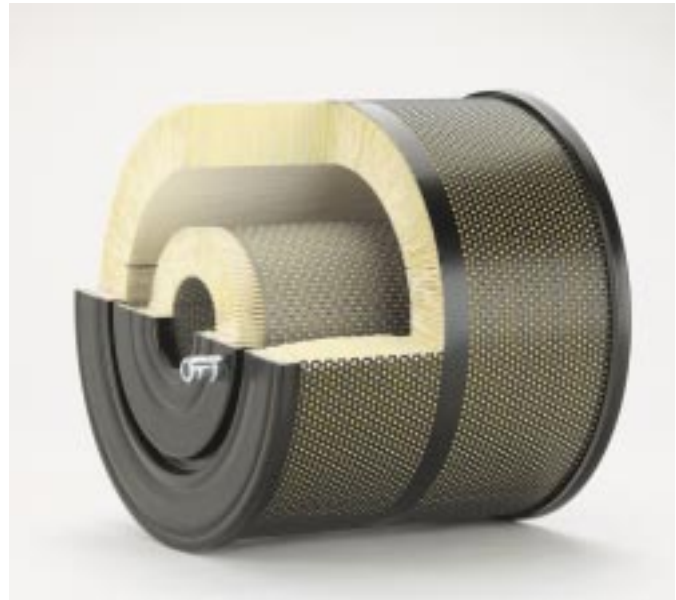
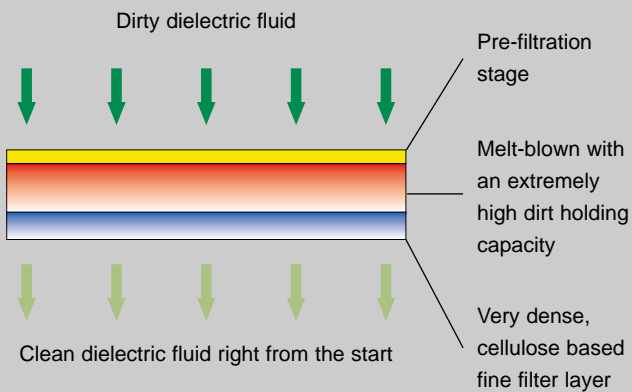


Diagram of filter medium



Structure

The triple layer filter medium enables an extremely high separation efficiency and a large dirt holding capacity. The advantage is a considerably longer service life

in comparison to conventional filter elements. Defined folding geometry, star pleating and a special impregnation combine to realise a large filter area.

EDM filter with multilayer medium of 1 - 2 μm

Producer suitable MANN EDM filters

Fanuc	H 34 1070/1; H 34 1070/4
Hitachi	H 34 1070/3
Mitsubishi, Makino	H 34 1070/2
Sodick	H 34 1070/1

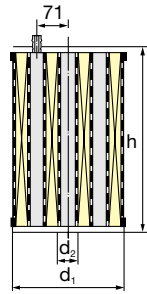


Figure A

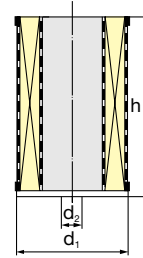


Figure B

Order No.	Figure	Filter surface area [cm ²]	Dimensions in mm			Filter fineness [μm]	Flow direction
			d ₁	d ₂	h		
H 34 1070/1	B	92.000	340	45.5	300	1 – 2 μm	inside to outside
H 34 1070/2	A	100.000	340	45.5	300	1 – 2 μm	inside to outside
H 34 1070/3	A	100.000	340	45.5	300	1 – 2 μm	inside to outside
H 34 1070/4	A	120.000	340	45.5	300	1 – 2 μm	inside to outside



All EDM filters at a glance*



H 1096



H 15 135 n



H 15 135 P



H 15 190



H 15 190/6



H 15 190/11



H 15 190/12



H 15 190/14



H 15 190/16



H 15 475



H 15 475/1



H 26 644/1



H 31 967



H 31 1033



H 31 1033/2



H 31 1033/3

* not to scale

All EDM filters at a glance*



H 34 1070



H 34 1070/1



H 34 1070/2



H 34 1070/3



H 34 1070/4



H 34 1158/2



H 34 1158/3



H 34 1158/4



H 34 1158/5



H 34 1158/6



* not to scale



Further information on our products is obtainable under the following brochure titles:

Air cleaners

- ◆ Single stage air cleaners
- ◆ Two stage air cleaners
- ◆ Vacuum filters
- ◆ Filters for two-way ventilation
- ◆ Oil-wetted air cleaners
- ◆ Oil bath air cleaners
- ◆ Accessories, e.g. supports, sludge outlet valves, service switches, etc

Liquid filters

- ◆ Spin-on filters
- ◆ Fuel filters
- ◆ Filter elements for liquid filters
- ◆ In-line filters
- ◆ Suction filters
- ◆ Two-way ventilation filters

Process filters

- ◆ Automatic filters
- ◆ Gap-type filters
- ◆ High pressure filters

Air/oil separator elements

- ◆ Standard wrap elements
- ◆ Depth Separator element
- ◆ Air-oil separator boxes
- ◆ Air-oil separator filters



International locations

„Made by MANN+HUMMEL“, worldwide.

- Locations
- Licensees

- FILTERWERK MANN+HUMMEL GMBH, Ludwigsburg (Germany)
- FILTERWERK MANN+HUMMEL GMBH, Marklkofen (Germany)
- FILTERWERK MANN+HUMMEL GMBH, Speyer (Germany)
- FILTERWERK MANN+HUMMEL GMBH, Sonneberg (Germany)
- MANN+HUMMEL ProTec GmbH, Königswinter (Germany)
- MANN+HUMMEL ProTec GmbH, Ludwigsburg (Germany)
- MANN+HUMMEL ProTec GmbH, Weiterstadt (Germany)
- MANN+HUMMEL HYDROMATION GMBH, Ludwigsburg (Germany)
- MHB FILTRATION GMBH+CO. KG, Erkrath (Germany)
- FILTROS MANN S.A., Buenos Aires (Argentina)
- MANN AND HUMMEL AUSTRALIA PTY LIMITED, Sydney (Australia)
- MANN+HUMMEL HYDROMATION N.V., Tongeren (Belgium)
- FILTROS MANN LTDA., Indaiatuba (Brazil)
- FILTERWERK MANN+HUMMEL GMBH, Shanghai (China)
- HYDROMATION FRANCE S.A.R.L., Paris (France)
- MANN+HUMMEL FRANCE S.A.R.L., Argenteuil (France)
- MANN+HUMMEL (UK) LTD., Wolverhampton (United Kingdom)
- MANN+HUMMEL (UK) LTD., Ilminster (United Kingdom)
- MANN+HUMMEL JAPAN LTD., Yokohama (Japan)
- FILTROS MANN S.A. de C.V., Tlalnepantla (Mexico)
- FILTERWERK MANN+HUMMEL GMBH, Warsaw (Poland)
- MANN+HUMMEL FILTER TECHNOLOGY (S.E.A.) PTE LTD, (Singapore)
- FILTROS MANN S.A., Saragossa (Spain)
- G.U.D. MANN+HUMMEL FILTER SYSTEMS (PTY) LTD, Atlantis (South Africa)
- MANN+HUMMEL (CZ) s.r.o., Nová Ves (Czech Republic)
- MANN+HUMMEL FILTER TECHNOLOGY, INC., Greensboro, NC (USA)
- UNIVERSAL DYNAMICS, INC., Woodbridge, VA (USA)
- MANN+HUMMEL AUTOMOTIVE, INC., Bloomfield Hills, MI (USA)
- MANN+HUMMEL ADVANCED FILTRATION CONCEPTS, INC., Louisville, KY (USA)
- MANN+HUMMEL AUTOMOTIVE, INC., Portage, MI (USA)
- J. Riveros S.A.I.C., Santiago (Chile)
- G.U.D. Filters Pty. Ltd., Durban (South Africa)

The Group

The MANN+HUMMEL Group has its head offices in Ludwigsburg in the German state of Baden-Württemberg close to the state capital of Stuttgart.

MANN+HUMMEL is represented in 30 locations all over the world and its workforce consists of approximately 8,000 employees.

The automotive industry, mechanical engineering and the plastics processing industry are among the international customers of MANN+HUMMEL. To meet the different requirements of all these customers efficiently, MANN+HUMMEL is divided into seven business units.

Automotive Technology Division

Air Filter Systems Business Unit

- Air cleaners and air filter systems for automobiles and commercial vehicles
- Components, e.g. mufflers, control cabinets, heating pipes, control valves, design covers
- Crankcase ventilation systems

Intake Manifold Systems Business Unit

- Engine intake manifolds, intake manifold modules and systems made of plastic and metal for automobiles and commercial vehicles
- Components for automobiles and commercial vehicles, e.g. fuel rails, oil mist separators, cylinder head covers

Liquid Filter Systems Business Unit

- Plastic and aluminum liquid filter systems for automobiles and commercial vehicles
- Components, e.g. integrated oil-water heat exchangers
- Oil sumps, valves

Filters Business Unit (AM)

- Filter elements for air and liquids, and cabin filters (MANN-FILTER)
- Cabin filters for particle filtration and gas adsorption, and combined filters for automobiles and commercial vehicles
- Air-drying boxes
- Cooling-water filters
- Spin-on oil filters and fuel filters
- Elements for oil mist separators

Industrial Technology Division

Industrial Filters Business Unit

- Air and liquid filters for industrial engines, construction and agricultural machinery, compressors
- Air-oil separators for compressed air systems
- Process filters for mechanical engineering and process technology
- Cabin filters

ProTec Business Unit

- Installations, equipment and systems for materials handling and material preparation in the plastic, rubber, recycling and chemical industries

Hydromation Business Unit

- Systems and equipment, e.g. chip handling systems and chip conveying systems for filtering machining liquids in mechanical production
- Oil extraction devices

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