

PRODUCT BROCHURE

Universal duct air filter
DELBAG® MultiMaster-Vario

More versatile by variable adaptation



MODULAR DIVERSITY WITH ITS OWN SYSTEM

Variable and adaptable to requirements



SUSTAINABILITY FOR YOUR PROCESSES

Air Eco2nomy is more than just engineering. It is an attitude that creates values with a future: quality of life for people. Protection of the climate and environment. Security for companies and investors.

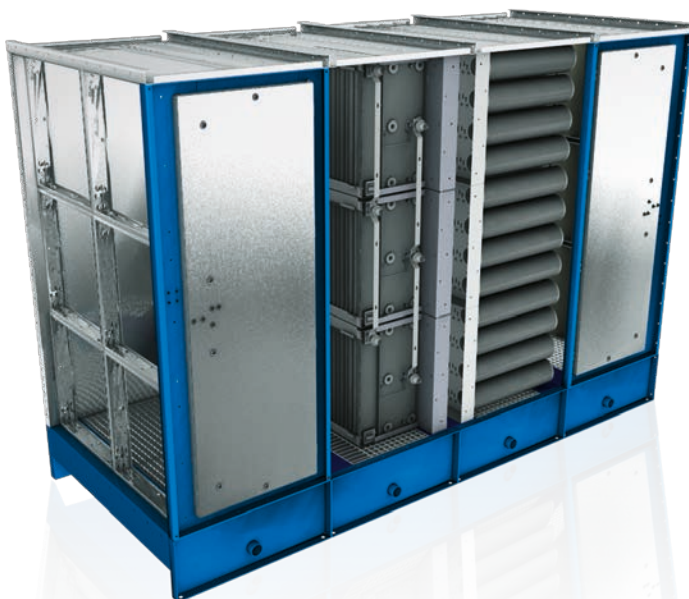
In the past it was a recurrent problem to interlink different filter systems in process and HVAC systems. With MultiMaster-Vario, DELBAG® Air Filtration now offers a modular system that can intelligently combine mechanical filter media, as well as roll, electrostatic, and activated-carbon filters.

DELBAG® Air Filtration stands for competence and experience from more than 100 years of market leadership in air-filter technology. Under the motto Air Economy, we offer you comprehensively oriented solutions that set economic and ecological standards.

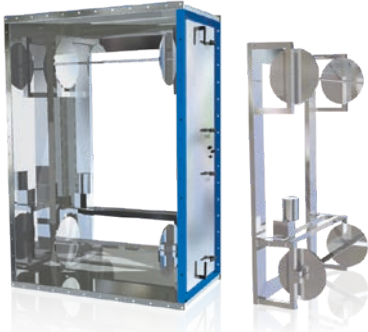
The MultiMaster-Vario duct-air filter system is a highly convincing example here. This modular duct air filter system ideally matches your requirements. You have the following two options: to integrate only the filter modules with functional components into your system – or to install a complete filter system with enclosure and base plate or drain pan. The enclosure consists of steel (2 mm galvanized, or 3 mm powder coated), or stainless steel, according to requirements. The following filter systems are available: wall frames with the required filter elements, roll filters, electrostatic precipitators with or without mobile washing system, MultiCase Box mounting system, activated-carbon cartridges, and HEPA filters.

The MultiMaster-Vario duct air filter system is successfully used in general HVAC systems and in process-air applications. It reliably filters dry and liquid aerosols. Enclosures are available with base plates for dry aerosols, and with drain pans for liquid aerosols. The possible air flows cover a wide spectrum: up to 400,000 m³/h, depending on application and model size. The filter systems shown below are available for selection, and can be combined as required.

- Modular duct-air filter system with universal application spectrum
- Intelligent interfacing of various filter systems
- Extensive applications: for example, process-air extraction, HVAC systems, supply and disposal of air to hall-type buildings
- Innovative system that can be adapted to all requirements
- A great diversity of combination possibilities
- Designed in Euro modular grid dimensions of 610/610



Diversity for any situation



Roll-band filter RolloMat, GDB

The GDB RolloMat roll-band filter features automatic advance of the filter medium as controlled by recording the pressure drop. This function therefore maintains optimal pressure drop at all times. Support wires on both sides provide effective guidance of the filter roll.

The RolloTronic filter control system regulates the automatic advance of the filter roll. As a result, the system requires very little maintenance.

The RolloMat roll-band filter is made of welded and paint-coated steel.

Application areas:

- General HVAC-installations
- Process-air application



Mounting system (MCB)

A special feature of the MultiCase-Box holding system MCB is the possible high air volume on a small cross section, achieved by the V-shaped arrangement of the filter media. Filter pads, metal filters, and filter cells are possible in multi-stage configurations.

The system enables great operational reliability, and tolerates reverse air flow without difficulty.

Steel, powder-coat, and stainless-steel versions are offered.

Application areas:

- General HVAC-installations
- Process-air application
- Air-extraction systems



Wall frame (KLW)

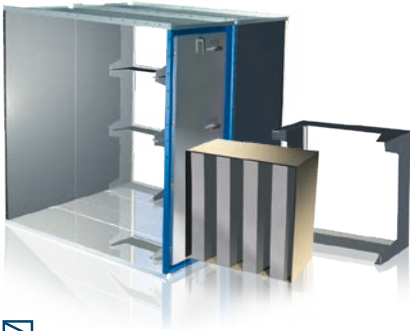
Filters with clamping heights of 25 and 50 mm can be installed in the KLW wall frame. These include metal filters, bag filters, and various other filter elements.

An endless PU seal has been foamed onto the frame to seal the filter elements.

Frames can be made of galvanized steel or stainless steel.

Application areas:

- General HVAC-installations
- Process-air application
- Air-extraction systems



HEPA filters wall frames (MPW)

The HEPA-filter wall frame MPW is most effectively used whenever high efficiency HEPA filter systems are required. Each frame has 4 mounting holders for installation of the filter elements, which are delivered with a seal on the clean-air filter side. Corner clamps are provided to assure the necessary pressure.

The user has the choice between galvanized steel and stainless steel.

Application areas:

- Safety and final filters
- Process-air application
- General HVAC-installations



Activated carbon cartridges-wall frames (CKG)

The CKG activated-carbon wall frames are employed when it is necessary to separate odors and gaseous pollutants by adsorption. Each frame holds 16 cartridges, which are held by bayonet fasteners. Secure sealing is provided by a sealing ring on the activated-carbon filter cartridges.

There are galvanized steel or stainless steel versions available for the frame.

Application areas:

- Separation of gas and odors
- Process-air application
- Ventilation and air conditioning units
- Kitchen exhaust



Fan modules (Fan)

A series of standard fans rounds off the program of the MultiMaster-Vario range.

The fans are integrated in 1 to 3 enclosure modules. The air flows range up to 30,000 m³/h, for which total pressures of up to 2,000 Pa can be implemented.

Built-in systems for electrostatic precipitators



Electrostatic precipitator wall frames (DELFI, E)

All electrostatic precipitator wall frames DELFI, E have two mounting holders for installation of the electrostatic filter cells. Stainless steel is the standard material for the frame. The VarioTronic filter control system activates the electrostatic precipitator system.

The VarioTronic filter control system activates the electrostatic precipitator system.

Application areas:

- Central air-extraction and exhaust systems
- Oil mist separation (flash point > 120 °C)
- Steel rolling mills and textile plants



Slide-in electrostatic filter cells (VEk, Ek)

The electrostatic precipitator slide-in unit Ek represents a compact model and variant for the electrostatic precipitator wall frame DELFI: one intended especially for relatively small air flows.

Here, the electrostatic precipitator cells are slid in from the side, which saves up to 50 % of the installation length in comparison to the electrostatic precipitator wall frame system.

With model VEk, metal filter cells can additionally be slid in from the side, to serve as pre-filters.

This compact range can be installed in sizes up to 3 cells next to the other, and in 3 levels over the other.

The control of the electrostatic filter system is via the MultiTronic control device.

Application areas:

- Central air-extraction and exhaust systems
- Oil mist separation (flash point > 120 °C)
- Steel rolling mills and textile plants

Year after year, we at DELBAG® Air Filtration invest considerably in developments that not only keep pace with growing requirements – but also set standards in quality and functionality. We assure this progress by research and development in our own laboratories and by intensive collaboration in the scientific working groups of our professional societies and in the German Employers' Liability Insurance Association (Berufsgenossenschaften). Nothing highlights the extent of our expertise better than fact that standardization bodies and specialist congresses on worker protection regularly ask for support from the professional know-how of our experts. Convince yourself on our latest innovations, including the following:

Lotus insulators – nanotechnology for clean surfaces

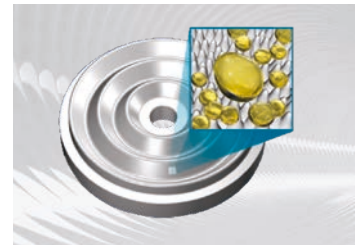
Once insulators in filter systems become dirty, the voltage – and, in turn, the filtration efficiency of electrostatic precipitators – must be reduced to ensure uninterrupted production operations. Our Lotus insulator solves this problem, by a technology copied from nature: the lotus effect of the new surface structures ensures that dirt merely forms beads and rolls off.

Wave-shaped ionizers – for greater aerosol removal

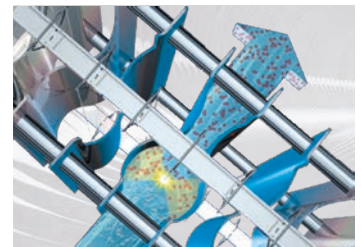
Electrostatic precipitators from DELBAG® Air Filtration, with patented wavelshaped ionizers, remove significantly more particles than do conventional technologies. This results from the optimized flow geometry for the ionization.

MultiTronic – worldwide unique filter control system

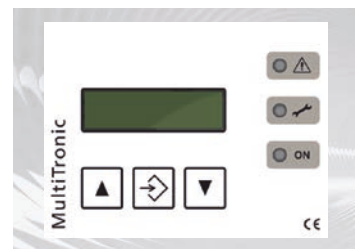
DELBAG® Air Filtration is the only supplier of this patented innovation. The processor-controlled MultiTronic system automatically controls the high voltage. In case of malfunctions, the MultiTronic temporarily reduces the voltage and later increases the voltage in stages to the optimal level. The filtration efficiency remains constantly at the maximum possible level. Conventional electrostatic filters do not offer these functions. In addition, the system permanently monitors the central values of the system. This documentation function is likewise unique and allows determination of the optimal point in time for maintenance work.



A Lotus insulator



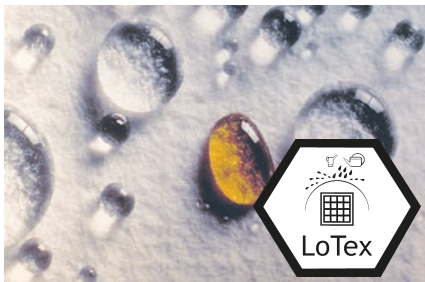
A wave-shaped ionizer



The MultiTronic filter control system

Filter media

The variability of the filter system MultiMaster-Vario allows the use of a variety of filter types and filter classes. The insights gained from years of experience and constant technical advancements have led to innovative and customer-oriented technologies and products.



LoTex® Filter pads – Technology for low energy consumption

DELBAG® has developed LoTex as a brand new filter media based on lotus effect. It is used primarily for separating of liquid droplets from the air stream, as the unique media treatment allows for a significantly reduced wettability. Water, oils, and emulsions easily pearl off, instead of evaporating in the filter and resinifying there. These characteristics mean that relatively large amounts of liquids can be separated and – if desired - can be effectively reused. A further benefit: since the pressure drops with DELBAG® Air Filtration LoTex filters are appreciably less than those experienced in conventional demisters (droplet separators), power consumption for air filtration is cut in half. The advantages are double: cost reduction and protection of the environment



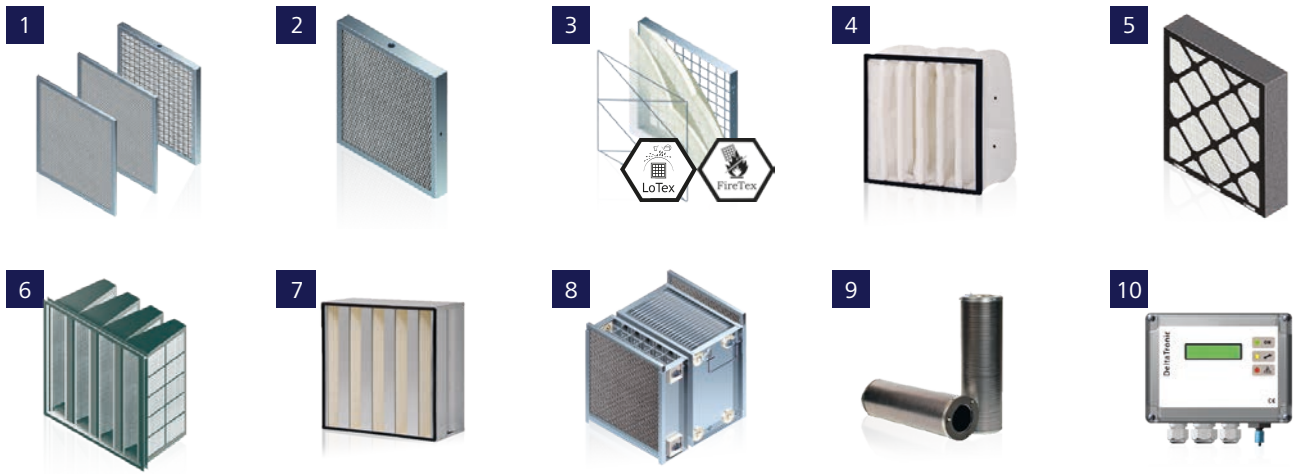
FireTex® – Technology

Products with very good fire retardant features

In an array of industrial processes as for instance, welding or grinding of metals in the automotive industry, in foundries or steel mills, the fire hazard is omnipresent. The new FireTex line of DELBAG® encompasses filters which greatly reduce the fire hazards and consequently protect processes and human lives. FireTex filters are fire resistant, do not emit smoke and do not drop of when in contact with flames. The well renowned test laboratory DMT has successfully tested FireTex filter media and has accredited the FireTex filter media in accordance with DIN EN 45545-2 (requirement approach R5, hazard grade HL3) and DIN 4102-1 (B1). The FireTex filter media was additionally tested for toxicity and certified according to DIN EN ISO 5659-2. The special treatment of FireTex filter media products has no influence on the pressure drop or the dust holding capacity of the filter garment.



Fine-particle air filters made by DELBAG® Air Filtration are tested by Eurovent for conformity to filter-class and initial pressure-drop specifications. The Eurovent seal verifies that the data in suppliers' brochures for a particular product category conform with all the systems of regulations applying to the filters being offered. The testing data can be systematically found under www.eurovent-certification.com – and this means in turn that you benefit from a maximum of transparency.



Coarse-dust filters

- 1 Metal filters, expanded metal mesh**
Multi-layer, expanded-mesh aluminum layers; robust U-profile frame; regenerable
- 2 Metal filters, woven mix**
Woven metal made of aluminum or stainless steel, in a robust U-profile frame; regenerable
- 3 Filter pads FireTex® G4**
Synthetic-fiber fleece with progressive depth structure; regenerable
- 4 Bag filter G4**
Synthetic or glass fiber fleece in plastic or metal frame, not regenerable

HEPA filters

- 7 E11, H13 HEPA filters**
Pleated micro-glass-fiber fleece, in wooden or metal frames; not regenerable

Fine-dust filters

- 3 Filter pads FireTex® M5**
Synthetic-fiber fleece with progressive depth structure; not regenerable
- 4 Bag filter M5–F9**
Synthetic or glass fiber fleece in plastic or metal frame, not regenerable
- 6 Filter Elements M6–F9**
Pleated hydrophobic micro-glass-fiber fleece in plastic frame; not regenerable

Special filters

- 8 Electrostatic filter cells**
- 9 Activated carbon cartridges**
Activated carbon enclosed in perforated sheet steel or stainless steel
- 10 Pressure-drop monitoring**
Type DeltaTronic

Aerosol separators

- 1 Metal filters, expanded metal mesh**
Multi-layer, expanded-mesh aluminum layers; robust U-profile frame; regenerable
- 1 Metal filters, woven mix**
High-quality woven mixture in a robust U-profile frame; regenerable
- 3 Filter pads LoTex® M5**
Synthetic-fiber fleece with progressive depth structure; not regenerable
- 5 F7 and F9 filter cells**
Pleated micro-glass-fiber fleece, oleoand hydrophobic, in plastic frame; not regenerable
- 6 Filter Elements F8**
Pleated hydrophobic micro-glass-fiber fleece, in re-usable metal frame; not regenerable

Technical Data

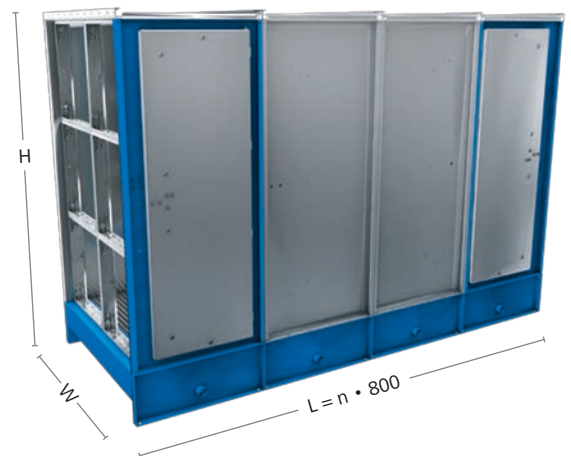
Filter systems		Filter media			
Wall frame, KLW	Metal filters	Filter mats	Pocket filter	Filter element	Filter element (change system)
Filter classes as per EN 779	G2 – M5	G4 – M5	G4 – F9	M6 – F9	F8
Max. air flow V_N [m³/h]	3,500	1,800	4,250	5,100	3,400
Mounting system, MCB	Metal filters	Filter mats	Filter cell		
Filter classes as per EN 779	G2 – M5	G4 – M5	F7 – F9		
Max. air flow V_N [m³/h]	8,500	7,200	6,000		
Electrostatic precipitator wall frames, DELFI, E	Oil- and plasticizer mist	HVAC system			
Derived from Filter classes in EN 779	F7 – F9	F7 – F9			
Max. air flow V_N [m³/h]	3,200	4,500			
Electrostatic precipitator mounting system, VEK, Ek	Oil- and plasticizer mist	HVAC system			
Derived from Filter classes in EN 779	F7 – F9	F7 – F9			
Max. air flow V_N [m³/h]	3,200	4,500			
HEPA filters wall frames, MPW	HEPA filter				
Filter classes as per EN 1822	E11, H13				
Max. air flow V_N [m³/h]	3,800				
Activated carbon cartridges-wall frames, CKG	Cartridge 708	Cartridge 709			
Minimum contact period [s]	0.10				
Max. air flow V_N [m³/h]	2,300				
Roll-band filter RolloMat, GDB	FIBROBAND	Filter band 412			
Filter classes as per EN 779	G3				
Max. air flow V_N [m³/h]	2,750				
Standard fans					
Max. air flow V_N [m³/h]	30,000				
Pressure [Pa]	750 – 2,000				

Air flow constant K		Maximum total air flow VN-Total = K • VN					
Height/width	020/xx ²	030/xx ²	040/xx	050/xx	060/xx	070/xx	080/xx
xx/20 ²	4	6	8	10	12	14	16
xx/30 ²	6 ¹	9	12	15	18	21	24
xx/40	8	12	16	20	24	28	32
xx/50	10	15	20	25	30	35	40
xx/60	12	18	24	30	36	42	48

¹ Dimension shown above in the illustration; n = 4

² Available units of systems VEK, Ek, and standard fans

Size								
Width indicator		020/xx	030/xx	040/xx	050/xx	060/xx	070/xx	080/xx
Interior dimension W	mm	1,220	1,830	2,440	3,050	3,660	4,270	4,880
Height indicator		xx/20	xx/30	xx/40	xx/50	xx/60		
Interior dimension H	mm	1,220	1,830	2,440	3,050	3,660		
Number of modules	ea.	1	2	3	4	n		
Length L	mm	800	1,600	2,400	3,200	n • 800		



***DELBAG® Air Filtration is a dynamic globally active company
within air treatment - filter technology - air quality.***

Our local consultant and service teams gladly take their time to develop ideas and solutions together with our clients – creatively and professionally.

