HS-HomeAir

HS-HomeAir is a standardized, easy-to-install upgrade solution for residential ventilation that provides maximum air quality through a multi-stage filter system.

Due to the structural conditions, many ventilation systems for residential buildings are not always able to ensure a satisfactory filter performance. The following problems or demands frequently arise in connection with classic MVHR systems:

- odour emissions in passive houses, e.g. from chimney heating systems in neighbours, odours from spreading liquid manure, burning of garden waste, flue gases from fireworks and road traffic
- Entry of pollutants such as pesticides from agriculture, allergens, etc.
- insufficient effect on fine dust in ePM1 and ePM2.5 spectrum
- no Bio-Shielding, e.g. safe filtration of airborne germs, viruses and bacteria
- no accident protection, e.g. in the event of chemical accidents, etc.
- no protection against gases from road traffic, e.g. ozone, SO₂ or NOx

This is usually due to the following weaknesses in the ventilation systems:

- weak filter performance, e.g. due to the use of simple filter pads or low-class supply air filter of classes ISO Coarse or ISO ePM10 (prev. EN 779 G3 - M5)F
- Filter whose specification does not correspond to actual performance
- Weaknesses in the sealing of the filter holder, e.g. missing sealing of the filters against the filter holder by means of seals, use insert rails instead of professional clamping
- filters are "overrun", i.e. the specified filter class is not reached for the control volume flows, since the filters are sometimes dimensioned far too small
 - Overflow effects, as the filters filter treat supply and exhaust air simultaneously
- short service life, as the filter surfaces are usually of small dimensions
- no possibility to use activated carbon filters and if so, then only those with such a small design constructions that a real effect is doubtful

Our laboratory tests have shown that many systems with a high level of diffusion improve air quality, but not to the extent that users would expect. The installation of filter upgrades for existing systems can be difficult because the fans of the MVHR units do not usually allow every customer request. The MVHR performance is usually only designed for the existing filters.

HS-HomeAir has an intelligent pressure control which supports existing systems in overcoming the filter resistances. This allows even filters with the highest separation performance to be operated without any problems. HS-HomeAir only supplies as much air as the existing MVHR system requires. This means that, as a rule, no changes need to be made to the settings of the existing system during installation.

HS-HomeAir can be equipped with different filter types to provide perfect protection against pollen, odours, smokes, pesticides, chemical or even radiological air pollution. The pressure and sealing of the filters comply with the appropriate standards for protection against hazard-ous substances. Due to the larger filter areas, the design of the filters allows a much longer service life than with stock filters.

If there is enough space, the supply air pipe to the existing system is simply cut and the HS-HomeAir is installed between the air inlet and the intake of the existing system. We offer a suitable wall bracket for this purpose. A measuring line is installed at the inlet of the inventory system and connected to a household socket. After the filters are installed and both systems are turned on again, the HS-HomeAir is calibrated with a simple action on the existing system.

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The following filter stages can be installed in the professional filter holder as required:

Installable filtertypes		Filterpoperties		
pre-filter coarse dust:	HS-Metalmesh HS-Alpha Pak 55	ISO Coarse 55 - 95% ISO Coarse >80% bis ISO ePM10 65%	Metal mesh filters can be regenerated in the dishwasher	
pre-filter fine dust:	HS-Beta Pak HS-Makro F	ISO ePM1 65 - 95% ISO ePM1 65 - 95%	perfect protection against fine dust, pollen and many allergens	
main filter HEPA:	HS-Mikro SF H13 HS-Mikro SF H14	E10 to H14	smoke gases, viruses and bacteria, harmful aerosols such as pesticides or other chemicals in form of aerosols	
main filter activated carbon, gas filtration:	HS-Kombizelle HS-Carbo Block HS-Carbo Panel	VOC's, Gerüche, Schadgase, gasförmige Gefahrstoffe. Bei Bedarf nach individueller Anforderung	Activated carbon filters with reasonable dimensioning against odours, e.g. agricu- lture, solvents, chemicals, pesticides and other gaseous impurities such as ozone, sulphur dioxides and other harmful gases resulting from road traffic. Special filters for disaster ope- ration with activated carbon, e.g. against radiological gases such as iodine 131.	



Installation example HS-HomeAir 500



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Rear view, wall bracket





View diagonally above, open maintenance door

HS-Luftfilterbau GmbH Bunsenstraße 31 D-24145 Kiel Germany Tel.: +49 (0) 431 71953 0 Fax: +49 (0) 431 71953 30 www.luftfilterbau.de info@luftfilterbau.de Filterunit

HS-HomeAir 500 is manufactured in two versions with left or right flow direction. If required, it is also possible to define other widths for the air inlet and outlet. As an option, we also offer transition pieces on request.

Part numbers: HS-HomeAir	Description
51-HOMEAIR500-RL-001	HS-HomeAir support unit vor MVHR systems Air flow direction: right to left max. airflow: 500 m³/h
51-HOMEAIR500-LR-001	HS-HomeAir support unit vor MVHR systems Air flow direction: left to right max. airflow: 500 m³/h

Filters

Various filter types are available for HS-HomeAir, which can be combined as required. Up to 4 stages are provided. Pre-filters, fine dust filters, particle filters and molecular filters (against gases and odours).

Part numbers: Filters	Description	Function
27-HomeAir5-2025-714	HS-Z-Panel Filter, frame: polystyrene, gasket: endless foamed ISO 16890: ISO Coarse 60% EN 779:2012: G4	pre-filter, high dust holding capacity
33-HomeAir5-025-2-00	HS-Rapid-Change filterholder for filter pads, with support grid and pressure clasp, gasket: endless foamed, suitable for HS-Synthetic or HS-Glassfibre filter pads ISO Coarse / ePM10 (available separately)	pre-filter, replaceable filter mats, the filter class depends on the prefilter mat.
30-HomeAir5-4025-1-C	HS-Metalmesh filter, frame and filtermedia : Aluminium, gasket: foamed ISO 16890: ISO Coarse 35% EN 779:2012: G2	pre-filter, for coarse soiling, can be cleaned in the dishwasher
27-HomeAir5-B048-P17	HS-Beta Pak 85 frame: polystyrene, gasket: endless foamed ISO 16890: ISO ePM1 60% EN 779:2012: F7	fine dust filter
27-HomeAir5-C150J980	HS-Makro F 85, fine dust filter (LONGLIFE,because of the depth no HEPA filter can be installed downstream), frame: polystyrene, gasket: endless foamed ISO 16890: ISO ePM1 60% EN 779:2012: F7	fine dust filter, for long operating times and low energy consumption, cannot be combined with HEPA filters
40-HomeAir5-L096G980	HS-Mikro SF, HEPA Filter frame: polystyrene, gasket: endless foamed KI. EN 1822: H13, 99,95% MPPS efficiency	particle filter / HEPA Filter
40-HomeAir5-M096G980	HS-Mikro SF, HEPA Filter frame: polystyrene, gasket: endless foamed KI. EN 1822: H14, 99,995% MPPS Effizienz	particle filter / HEPA filter with higher efficiency
55HomAir5G3G000D2C03	HS-Carbo Block, activated carbon filter for the ad- sorbtion / chemisorbtion of harmful gases, VOC's and radiological contaminants, frame: Polystyrene, gasket: foamed, filter: filled with impregnated broad band activated carbon granulate (filters radioactive iodine, mercury compounds, fluorine compounds, benzene and a variety of other inorga- nic substances)	activated carbon bed filter, effective against harmful gases and odours
55-HomeAir5G000D2D86	HS-Carbo Panel, activated carbon filter for the adsorbtion of unpleasant odours, ozone and VOC's frame: polystyrene, gasket: endless foamed filter: activated carbon plates	activated carbon plate filter, effective against odours (e.g. chimney smokes, manure)



HS-HomeAir

Technical Data

HS-HomeAir 500			
Luftleistung max.	up to 500 m³/h		
Types	direction of inflow right / direction of inflow left		
Number of filter stages	up to 4 (ISO Coarse to H14 resp. Aktivkohle)		
Filter fixation	quick-release clamp, four-point contact pressure		
Particle filter class max.	EN 1822 H14		
Height	560 mm		
Width	650 mm		
Length	1000 mm		
Nominal size Duct connection	160 mm		
Space req. for maintenance	1600 mm		
Weight	45 kg		
Montage	wall-hung		
Housing	powder-coated, steel-sheet		
Insulation	thermic and noise		
Voltage	230V, 50 Hz		
Protection class	IP 40		
Electrical efficiency $\eta_{\mbox{\tiny es}}$	56% (default EU327/2011: 43,1%)		
Efficiency category	static		
Efficiency class N	74,9 (default EU327/2011: 62)		
Nominal rot. speed n	4070 min ⁻¹		
Measurement of filter lifetime	pressure drop		
Indication of req. filterchange	multifunctional light (yellow / red)		
as-received condition	ready for connection		
operational limit	0°C to 40°C in the installation room		



Fan

HS-HomeAir 500 has an advanced fan technology. The intelligent control only supplies as much air as the already installed MVHR unit requires. It's sole purpose is to overcome the additional filter resistances of the HS-HomeAir. It supplies only as much air as the existing MVHR system needs. The fan characteristic shows the potential and the power values.

Measure- point	n min-1	Ped W	l A	LpAin dB(A)	LwAin dB(A)	qV m3/h	pfs Pa
1	4440	161	1,35	72	81	975	0
2	4230	165	1,35	67	75	795	300
3	4120	169	1,35	63	71	585	500
4	4180	160	1,35	67	75	355	700
5	3700	93	0,8	68	77	815	0
6	3700	110	0,94	63	72	695	230
7	3700	126	1,07	60	69	535	417
8	3700	111	0,95	64	72	315	548
9	3000	50	0,43	63	71	660	0
10	3000	59	0,5	58	67	565	152
11	3000	67	0,57	55	64	430	274
12	3000	59	0,51	58	66	255	360
13	2300	22	0,19	56	65	505	0
14	2300	27	0,22	51	60	435	89
15	2300	30	0,26	48	57	330	161
16	2300	27	0,23	52	60	195	212





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