Application

Duct HEPA filter unit AKF is being used in the network of inlet and outlet ducts used to supply or extract air from the rooms with highest demands regarding air cleanness. They can be installed as follows:

- air supply and extract in laboratories,
- air supply and extract in operation rooms, infection- and sterile departments,
- air supply in electronics, precision mechanics, chemistry, pharmaceutics and food industry,
- air supply in film and audio tape industry,
- air supply and extract in nuclear technology etc.

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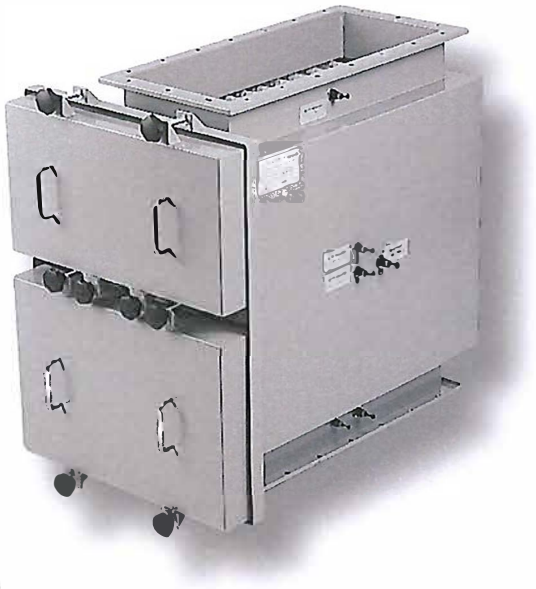
RAL 9010

F

Description

AKF unit is made of filter housing, connection flanges and HEPA filter. Filter is fitted with washer of a rectangular cross-section. Filter housing is made of sheet metal air-tight welded according to DIN 1946 and coloured in RAL 9010. Two pressure gauge attachments for measuring of a pressure drop are incorporated into the housing.



AKF-I

Bag-in/Bag-out (Safe filter replacement with the use of bags)

Bag-in/Bag-out is intended for filtration of air in processes during which hazardous or toxic substances are produced. The Bag-in/Bag-out system prevents any contact with the contents of a waste filter when replacing it. The installation of a pre-filter prolongs the life of a HEPA filter. The procedure of pre-filter replacement is the same as HEPA filter replacement.

Installation and design executions

AKF housing are designed for installation of single AKF-I filter units. (Fig. 1, Fig. 2) as well as installation of several AKF-II units (Fig. 3, Fig. 4) into the duct system. To replace the filter, 700 mm of free space is required on the front side of the unit. AKF-II unit is made in several set-up combinations, determined by the position of connection flanges A1, A2, B1, B2 (Fig. 5, Fig. 6).

Accessories

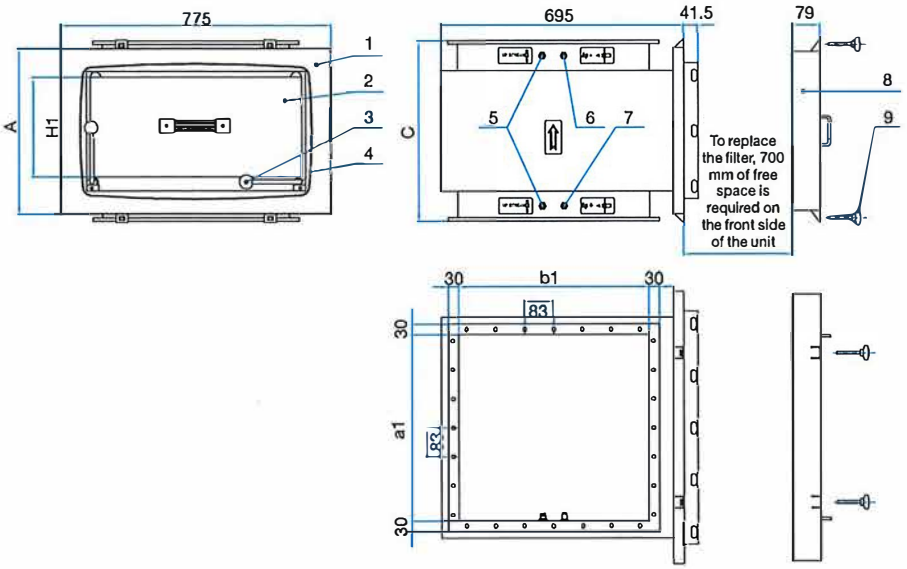
See chapter Accessories.

AKF-II

AKF-I

Fig. 1

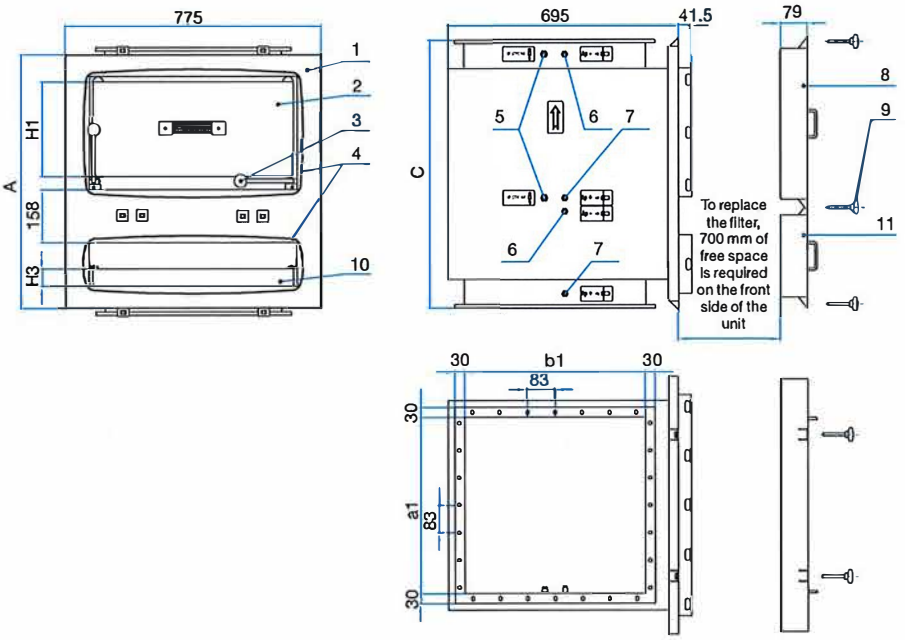
1. Filter housing
2. HEPA filter
3. Filter assembly levers
4. Bag-in/Bag-out spigot (only Bag-in/Bag-out version)
5. Connection (UPSTREAM) for scan test
6. Static pressure connection after filter – Δp
7. Static pressure connection before filter + Δp
8. HEPA filter cover
9. Screw for cover fixing



AKF-I+KPF

Fig. 2

1. Filter housing
2. HEPA filter
3. Filter assembly levers
4. Bag-in/Bag-out spigot (only Bag-in/Bag-out version)
5. Connection (UPSTREAM) for scan test
6. Static pressure connection after filter – Δp
7. Static pressure connection before filter + Δp
8. HEPA filter cover
9. Screw for cover fixing
10. PRE-filter
11. PRE-filter cover



Material and surface protection

Filter housing and filter covers are made from cold rolled steel.

On customer's request any other material can be chosen.

Filter housing and filter covers are powder coated in RAL 9010. On customer's request any other color in RAL can be chosen.

Table 1: Filter housing AKF-I dimensions and weight

Designation	H1	H3	A	C	a1	b1	Weight
HEPA filter 610 x 610 x 150	150	/	331	373	530	545	25.3 kg
HEPA filter 610 x 610 x 292	292	/	473	515	530	545	30.7 kg
HEPA filter 610 x 610 x 150 + PRE-filter 610 x 610 x 50	150	50	621	663	530	545	40.9 kg
HEPA filter 610 x 610 x 292 + PRE-filter 610 x 610 x 50	292	50	763	805	530	545	46.4 kg

Note: Deviation of weight is ±10 %.

AKF-II (nominal size 1, 2, 3, 4)

Material and surface protection

Fig. 3

- Connection ducts are made from cold rolled steel.
- Flat gasket is made from EPDM.
- Basses are made from square steel tubes.

On customer's request any other material can be chosen.

Filter housing, connection ducts, bases and filter covers are powder coated in RAL 9010. On customer's request any other color in RAL can be chosen.

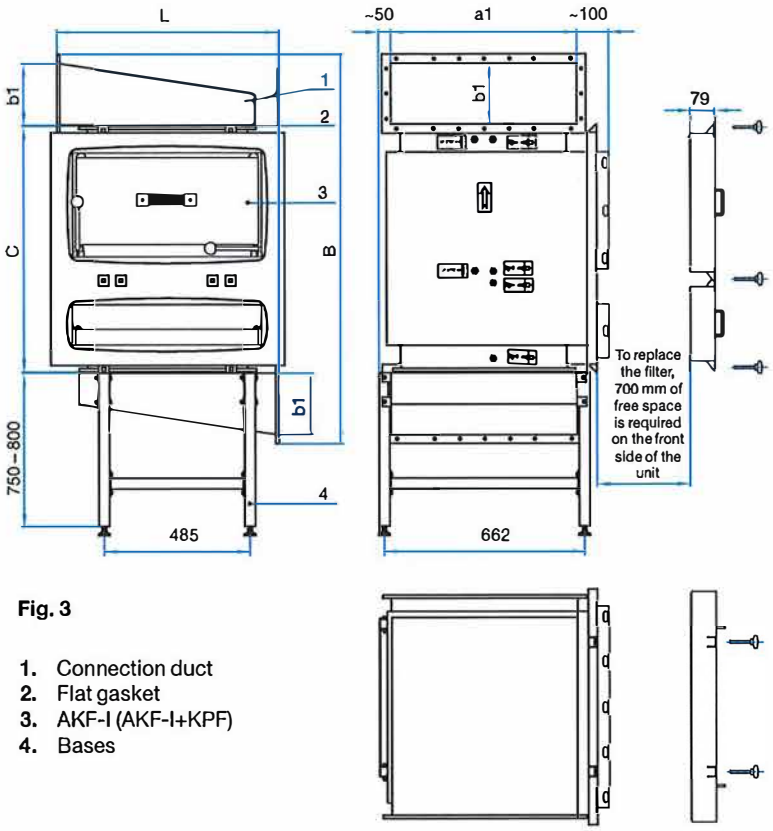
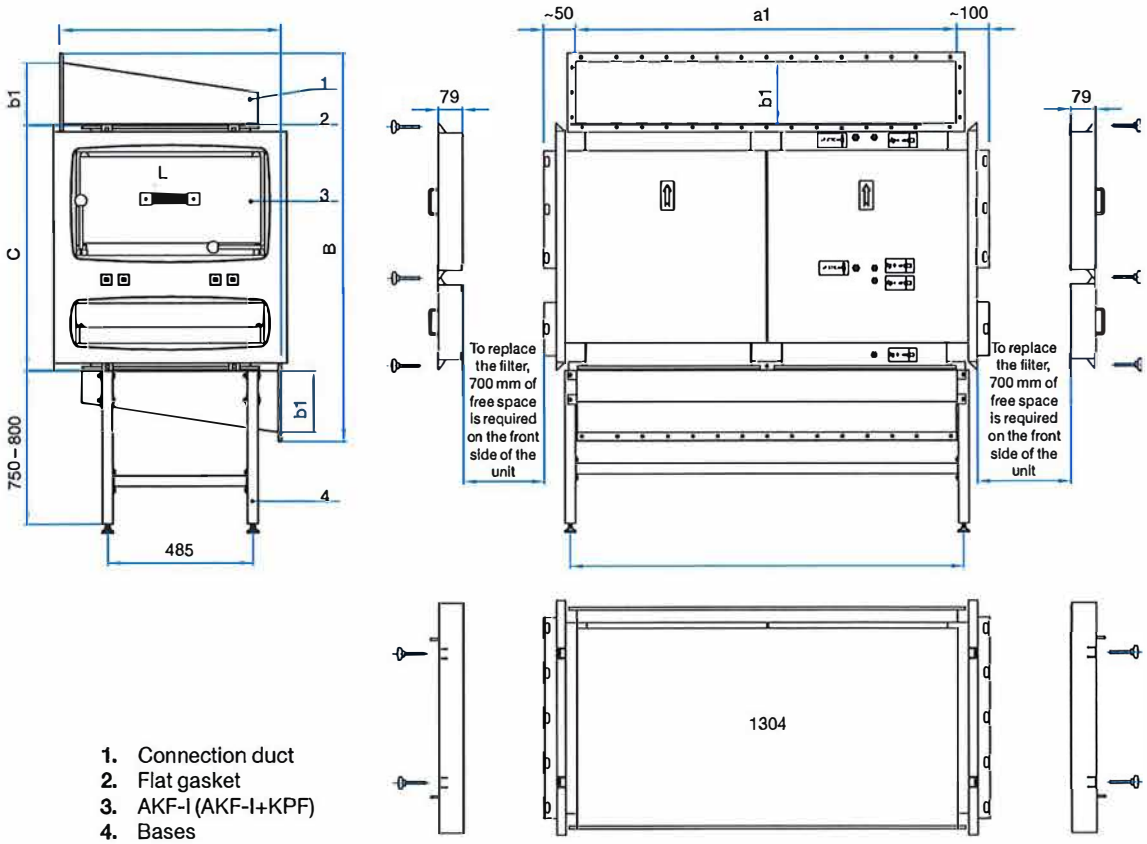


Fig. 3

1. Connection duct
2. Flat gasket
3. AKF-I (AKF-I+KPF)
4. Bases

AKF-II (nominal size 2D, 4D, 6D, 8D)

Fig. 4



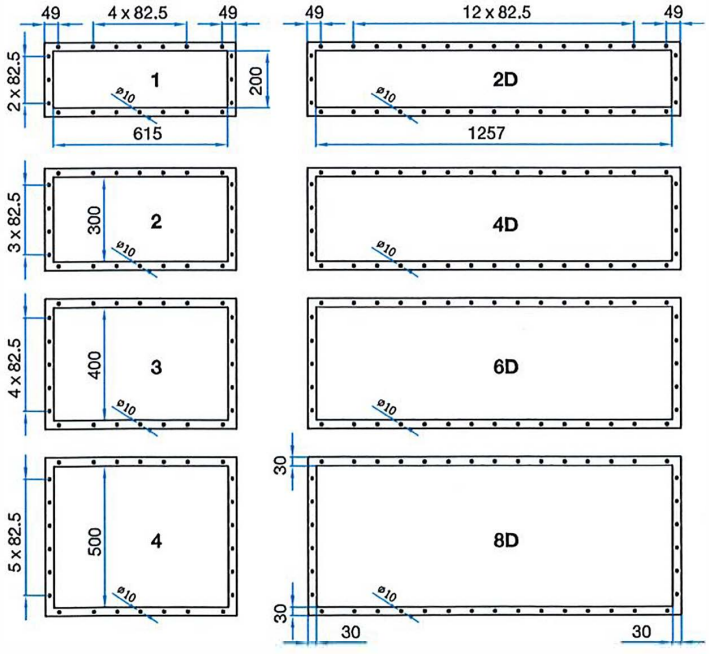
1. Connection duct
2. Flat gasket
3. AKF-I (AKF-I+KPF)
4. Bases

Table 2: Filter housing AKF-II dimension and weight table

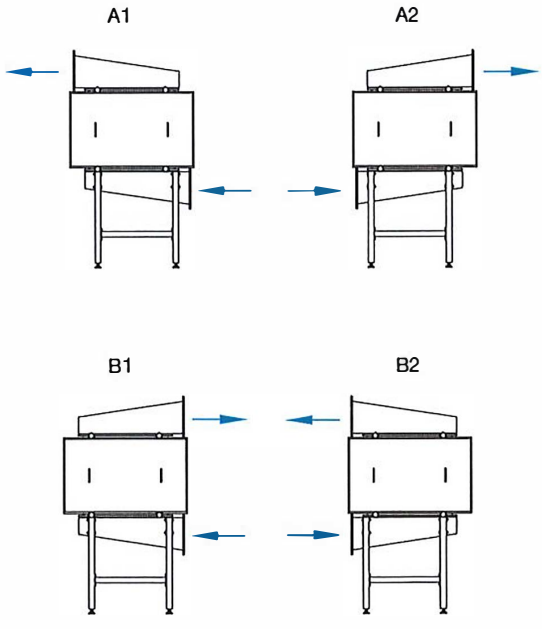
Designation		AKF-II/1, 2, 3, 4				AKF-II/2D, 4D, 6D, 8D			
Nominal size		**1**	**2**	**3**	**4**	**2D**	**4D**	**6D**	**8D**
No. of filters in length	n_L	1	2	3	4	1	2	3	4
No. of filters in width	n_W	/				2			
	L	734	1522	2312	3102	734	1522	2312	3102
Flange	a1	615				1257			
	b1	200	300	400	500	200	300	400	500
HEPA filter 610x610x150	B	846	1047	1247	1447	846	1047	1247	1447
	C	373				373			
	H1	150				150			
	weight	57 kg	123 kg	192 kg	266 kg	103 kg	217 kg	335 kg	457 kg
HEPA filter 610x610x150 + PRE-filter 610x610x50	B	1136	1337	1537	1737	1136	1337	1537	1737
	C	663				663			
	H1	150				150			
	H3	50				50			
	weight	73 kg	154 kg	239 kg	328 kg	134 kg	279 kg	429 kg	582 kg
HEPA filter 610x610x292	B	988	1189	1389	1589	988	1189	1389	1589
	C	515				515			
	H1	292				292			
	weight	63 kg	134 kg	209 kg	288 kg	113 kg	239 kg	368 kg	501 kg
HEPA filter 610x610x292 + PRE-filter 610x610x50	B	1278	1479	1679	17879	1278	1479	1679	17879
	C	805				805			
	H1	292				292			
	H3	50				50			
	weight	78 kg	165 kg	256 kg	350 kg	145 kg	301 kg	473 kg	626 kg

Note: Deviation of weight is ±10 %.

AKF-II (connection flange dimensions)
Fig. 5



AKF-II (position of flange connections)
Fig. 6



Expected service life of HEPA filter and replacement

HEPA filter are constructed for single use only. Expected service life of filter depends on air flow volume, pressure drop and amount of dust particles. When air flow volume is reduced for 25 %, expected service life of HEPA filter doubles. Service life can be considerably increased with installation of pre-filter.

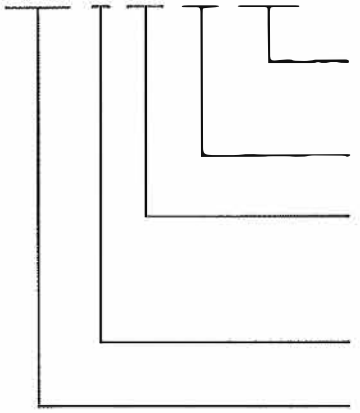
HEPA filter pollution is controlled by means of a differential manometer which can be fitted on the housing. Connections for plastic tubes are fitted on AKF housing.

When the pressure drop has reached double its initial value, it is recommended to replace the HEPA filter. When replacing the AKF filter, remove cover, release the lever and finally remove the frame with used HEPA filter. When installing the new filter, use the above instructions in opposite order.

In case of replacement of filters using bags (bag-in, bag-out system), the procedure is the same with the exception of a bag attached to the extension. The waste filter is removed into a bag, which has been attached to the extension since the last replacement. The bag is then hermetically closed so that after the separation of the part of the bag with the filter, a part of the bag remains on the extension, hermetically closed as well. A new filter is put in a bag and then placed over the remaining part closing the duct. Upon the placement of the new bag, the remaining part of the old bag is first removed into the new bag. A new filter is installed from the new bag. The bags are attached to the extension by means of a rubber collar.

Ordering key

AKF-I / 1 / H1 / H3 / BIBO



BIBO Bag-in/Bag-out ... safe filter replacement

H3 592 x 592 x 50 ... for PRE-FILTER size

H1 610 x 610 x 150 ... for HEPA FILTER size

H2 610 x 610 x 292

1 Nominal size

AKF-I Duct mounted filter unit with HEPA filter

AKF-I + KPF Duct mounted filter unit with HEPA and PRE-filter

Note:
- Filter is not included in AKF housing and must be ordered separately.
- On request it is possible to produce also AKF unit for other sizes of HEPA filters.
- Manometers have to be ordered separately.

Ordering key

AKF-II / 1 / H1 / H3 / A1 / BIBO

BIBO Bag-in/Bag-out ... safe filter replacement

A1 Connection flange position
A2
B1
B2

H3 592 x 592 x 50 ... for PRE-filter size

H1 610 x 610 x 150 ... for HEPA filter size
H2 610 x 610 x 292

1 Nominal size
2
3
4
2D
4D
6D
8D

AKF-II Duct mounted filter unit with HEPA filter

AKF-II + KPF Duct mounted filter unit with HEPA and PRE-filter

Note:
- Filter is not included in AKF housing and must be ordered separately.
- On request it is possible to produce also AKF unit for other sizes of HEPA filters.
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