

Ceiling HEPA filter units with flat gasket AFV-8

Application

Ceiling HEPA filter units AFV-8 are used in supply or extract air applications in air conditioning and ventilating installations of the rooms with highest demands regarding air cleanliness. They can be installed as follows:

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

Description

Ceiling HEPA filter unit AFV-8 is made of filter housing, standard diffusers KD-1A, KD-6, OD-8KR or OD-9KK and HEPA filter. Filter is fitted with washer of a rectangular cross-section. Housing of sheet steel is 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. Diffusers made of sheet steel are coloured in white (RAL 9010). AFV-8 housing has a special sealing frame designed to perform sit tightness test.

Installation

AFV-8 unit is constructed to fit into suspended ceilings.

Types

The following HEPA filter units AFV-8 are possible:

- With circular side entry spigot (AFV-8 RS) (fig. 2, table 1).
- With circular top entry spigot (AFV-8 RV) (fig. 3, table 2).
- With rectangular side entry spigot (AFV-8 KS) (fig. 4, table 3).

Accessories

See chapter Accessories.

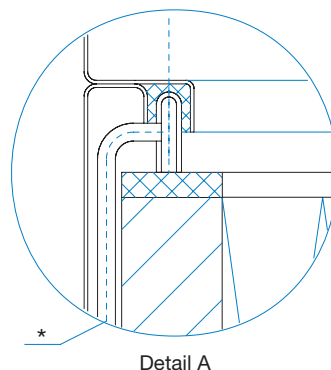
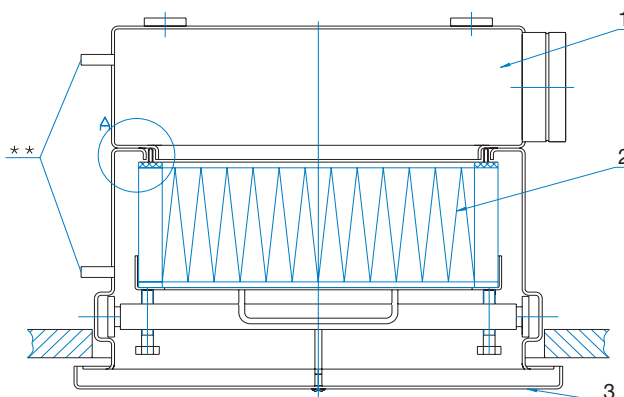


Fig. 1: Overview



* Sit tightness test
 ** Pressure drop test

AFV-8/RS with circular side entry spigot

Fig. 2

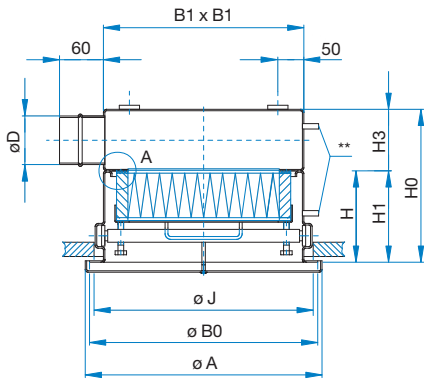


Table 1: Dimensions of AFV-8/RS

Size	HEPA filter	øD	A	B0	B1	J	H0	H1	H3
1	305 x 305 x 150	148	355	348	319	324	450	270	178
2A	457 x 457 x 78	198	507	500	471	476	428	198	230
2B	457 x 457 x 150	198	507	500	471	476	500	270	230
3	610 x 610 x 78	198	660	653	624	629	428	198	230
4	610 x 610 x 150	298	660	653	624	629	600	270	330
5	610 x 610 x 292	348	660	653	624	629	792	412	378

AFV-8/RV circular top entry spigot

Fig. 3

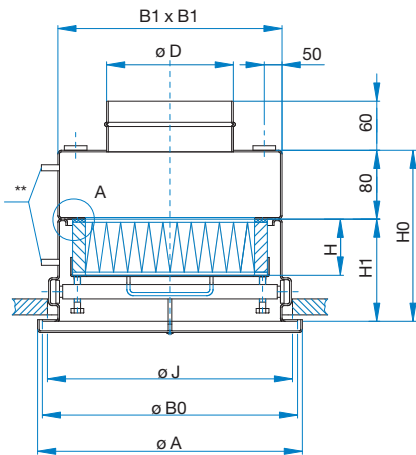


Table 2: Dimensions of AFV-8/RV

Size	HEPA filter	øD	A	B0	B1	J	H0	H1
1	305 x 305 x 150	148	355	348	319	324	350	270
2A	457 x 457 x 78	198	507	500	471	476	278	198
2B	457 x 457 x 150	198	507	500	471	629	350	270
3	610 x 610 x 78	198	660	653	624	629	278	198
4	610 x 610 x 150	298	660	653	624	629	350	270
5	610 x 610 x 292	348	660	653	624	629	492	412

AFV-8/KS rectangular side entry spigot

Fig. 4

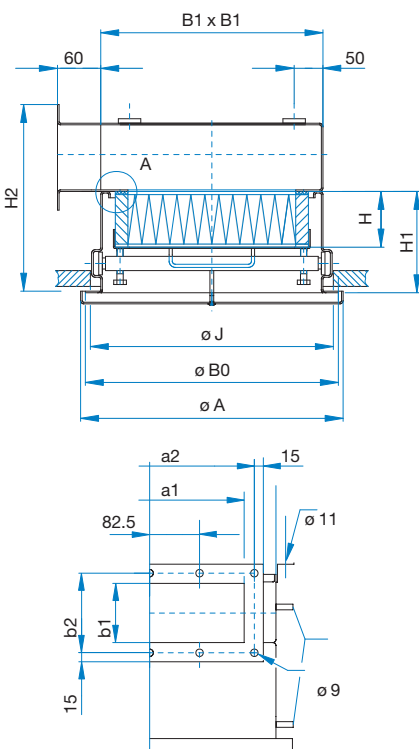


Table 3: Dimensions of AFV-8/KS

Size	HEPA filter	A	B0	B1	J	H1	H2	a1	b1	a2	b2
1	305 x 305 x 150	355	348	319	324	270	400	250	100	285	136
2A	457 x 457 x 78	507	500	471	476	198	328	400	100	435	131
2B	457 x 457 x 150	507	500	471	476	270	400	400	100	435	136
3	610 x 610 x 78	660	653	624	629	198	328	500	100	535	136
4	610 x 610 x 150	660	653	624	629	270	460	560	160	595	196
5	610 x 610 x 292	660	653	624	629	412	642	560	200	595	236

Diffuser types

- Sheet steel painted in RAL
- Stainless sheet steel (except KD-1)
- Standard deflector colours are black

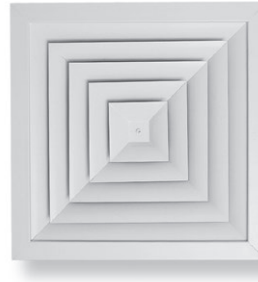
Technical data

Possible combinations of diffuser size regarding the size of housing and HEPA filter is specified in table 4. Mounting dimensions of diffusers to be installed in AFV-8 are specified in tables 1, 2 and 3 and in column A.

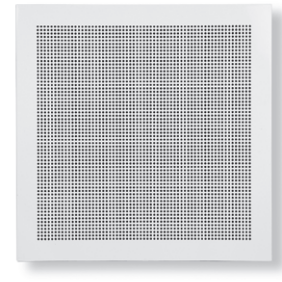
Technical data of HEPA filters

Size and flow characteristics of HEPA filters installed in AFV-8 are specified in Filter chapter.

KD-1A



KD-6



OD-8KR



OD-9KK

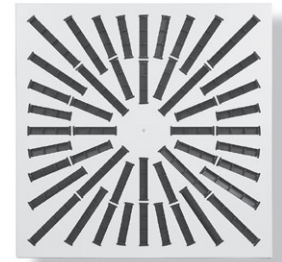


Table 4: Filter and front plate combinations

Filter unit size	HEPA filter	A*	Diffuser size**			
			KD-1A	KD-6	OD-8KR	OD-9KK
1	305 x 305 x 150	355 x 355	1,2,3	√	-	400
2A	457 x 457 x 78	507 x 507	3,4	√	500/16	500
2B	457 x 457 x 150	507 x 507	3,4	√	500/16	500
3	610 x 610 x 78	660 x 660	5,6,7,8	√	600/24, 625/54	600
4	610 x 610 x 150	660 x 660	7,8	√	600/24, 625/54	600
5	610 x 610 x 292	660 x 660	7,8	√	600/24, 625/54	600

*Outer dimension of diffuser front plate.

AFV-8 with airtight damper DTU

Application

On the ceiling HEPA filter unit AFV-8 a shut-off damper DTU is installed in the housing connection. The shut-off damper DTU conforms to the EN 1751 class 4 standard requirements.

The advantage of such a combination of an HEPA filter housing and a shut-off damper is the ability to close the shut-off damper during the filter exchange and thereby to prevent room air pollution. Upon the completion of the filter exchange, the shut-off damper is reopened. Such a filter exchange procedure eliminates the need to disinfect the room, which is mandatory in the case of exchanging the filter without shutting-off the inlet of non-filtered air.

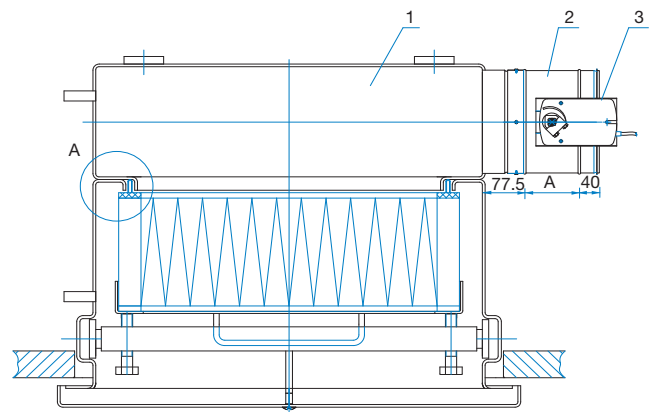


Fig. 5

1. AFV-8/RS, RV
2. DTU
3. Electric motor (with spring LF24, LF230)

Description

On the connection of the standard ceiling HEPA filter unit AFV-8, a galvanised sheet steel shut-off damper is mounted by means of four screws. The damper may be controlled either manually or by means of an electric motor.

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. The dirtiness of the filter is controlled by the means of differential manometer. Connections for plastic tubes are fitted on AKF housing.

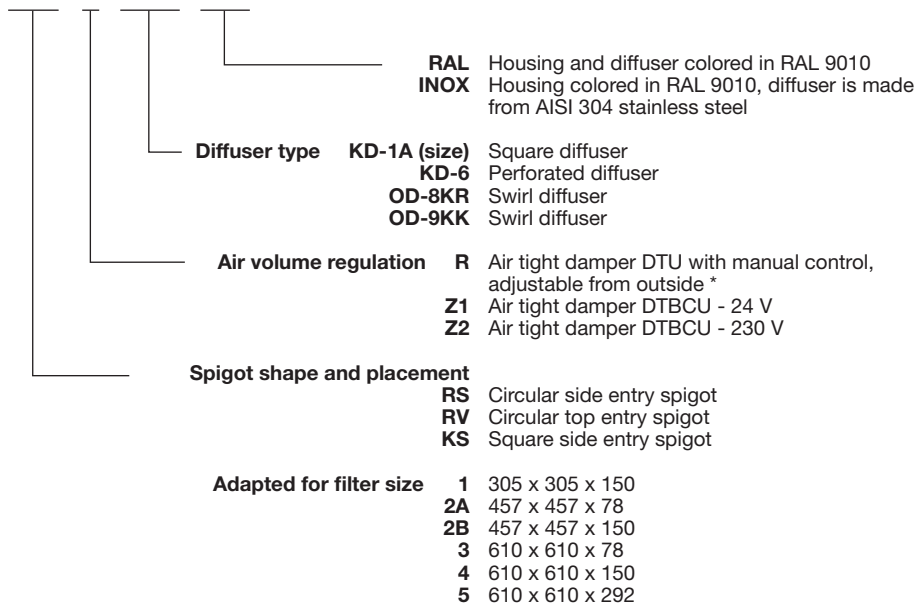
The initial pressure drop is specified in Filter chapter. When the pressure drop has reached double its initial value, it is recommended to replace the HEPA filter. When replacing the AFV-8 filter, remove diffuser and screws on the holding bar and then remove the bar together with used filter. When installing the new filter use the above instructions in opposite order. The sit tightness is to be tested according to DIN 1946 standard, chapter 4. The permeability at the test pressure of 2000 Pa should not exceed the values stated in standard. The checking is carried out with sit-tightness measuring device.

Table 5: Dimensions of AFV-8 with shut-off damper DTU

AFV-8	HEPA filter	DTU		
		φD	size	A
1	305 x 305 x 150	148	150	100
2A	457 x 457 x 78	198	200	130
2B	457 x 457 x 150	198	200	130
3	610 x 610 x 78	198	200	130
4	610 x 610 x 150	298	300	130
5	610 x 610 x 292	348	350	130

Ordering key

AFV-8 / RS1 / R / KD-6 / RAL



Note:

Filter is not included and must be ordered separately.

* Air tight damper DTU is possible only with version RS and RV.