

# Ceiling HEPA filter units with flat gasket AFV-8

## Application

Ceiling HEPA filter units AFV-8 are used in supply or extract air in air conditioning and ventilation installations in rooms with the highest air cleanliness requirements. They can be used for:

- Air supply and extraction in laboratories,
- Air supply and extraction in operating theatres, infection-free and sterile environments,
- Air supply in electronics, precision mechanics, chemistry, pharmaceuticals and food industry,
- Air supply in film and audio tape industry,
- Air supply and extraction in nuclear technology etc.

## Description

The ceiling HEPA filter unit AFV-8 is made of a filter housing, standard diffusers KD-1A, KD-6, OD-8KR or OD-9KK and a HEPA filter. The filter is fitted with a rectangular cross-section washer. The sheet steel housing is airtight welded according to DIN 1946 and coated in RAL 9010. Two pressure gauge attachments for pressure drop measurement are fitted into the housing. Sheet steel diffusers are coated in white (RAL 9010). The AFV-8 housing has a special sealing frame designed to perform a sit-tightness test.

## Installation

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

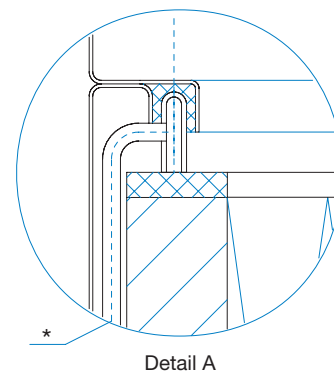
## Types

The following AFV-8 HEPA filter units are available:

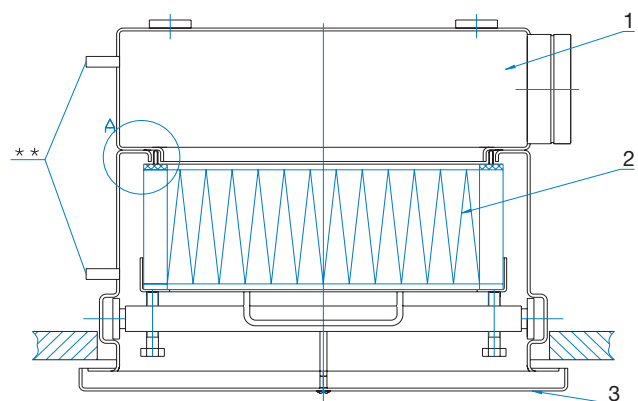
- With circular side entry spigot (AFV-8 RS) (fig. 2, table 1).
- With circular top entry spigot (AFV-8 RV) (fig. 3, table 2).
- With rectangular side entry spigot (AFV-8 KS) (fig. 4, table 3).

## Accessories

See chapter Accessories.



**Fig. 1: Overview**



\* Sit-tightness test  
 \*\* Pressure drop test

## AFV-8/RS with circular side entry spigot

Fig. 2

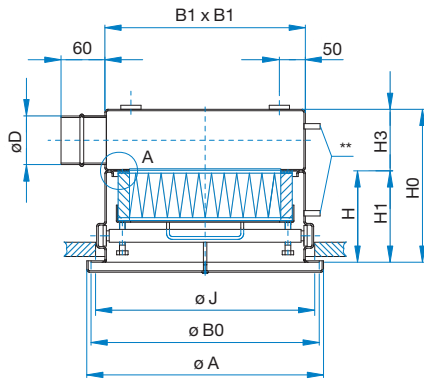


Table 1: Dimensions of AFV-8/RS

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

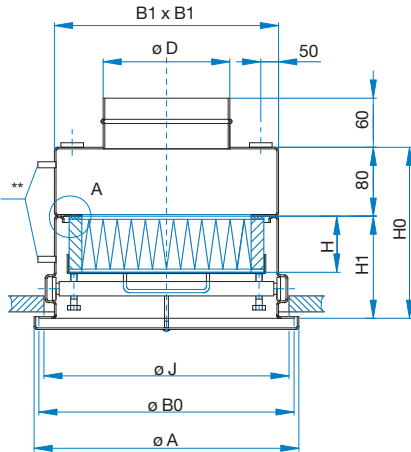


Table 2: Dimensions of AFV-8/RV

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

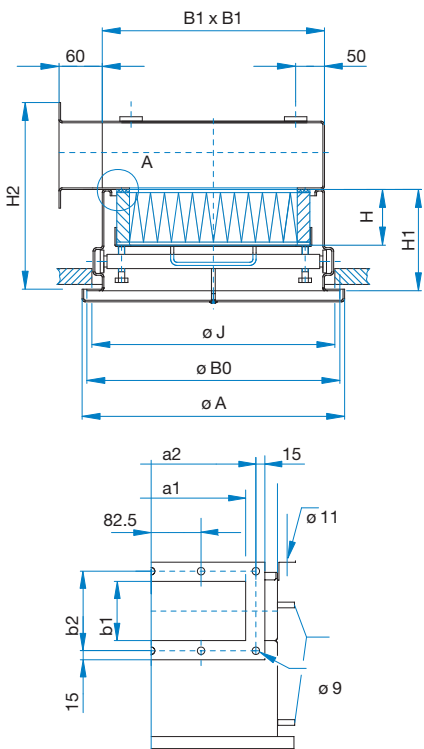


Table 3: Dimensions of AFV-8/KS

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

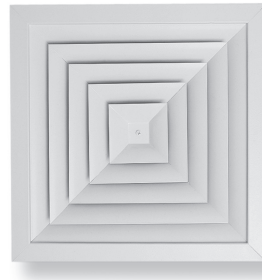
- Sheet steel coated in RAL
- Stainless sheet steel (except KD-1A)
- Standard deflector colour is black

## Technical data

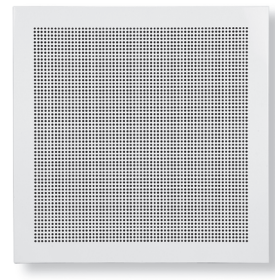
Available combinations of diffuser size in relation to the size of the housing and HEPA filter are specified in Table 4. Mounting dimensions of diffusers to be installed in AFV-8 are specified in Tables 1, 2 and 3 and in column A.

## Technical data of HEPA filters

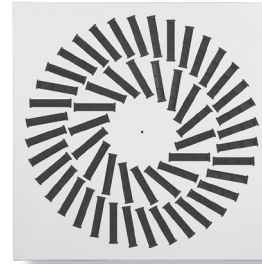
KD-1A



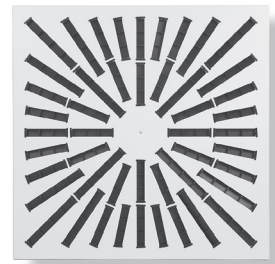
KD-6



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
<b>1</b>	305 x 305 x 150	355 x 355	1,2,3	√	-	400
<b>2A</b>	457 x 457 x 78	507 x 507	3,4	√	500/16	500
<b>2B</b>	457 x 457 x 150	507 x 507	3,4	√	500/16	500
<b>3</b>	610 x 610 x 78	660 x 660	5,6,7,8	√	600/24, 625/54	600
<b>4</b>	610 x 610 x 150	660 x 660	7,8	√	600/24, 625/54	600
<b>5</b>	610 x 610 x 292	660 x 660	7,8	√	600/24, 625/54	600

\*Outer dimension of diffuser front plate.

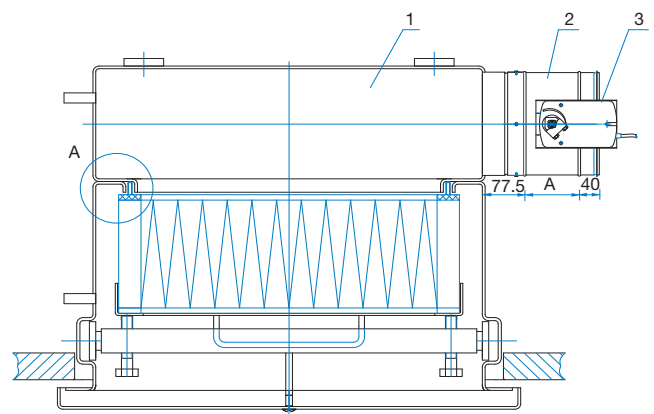
Size and flow characteristics of HEPA filters installed in AFV-8 are specified in chapter Filters.

## AFV-8 with airtight damper ZL-3N

### Application

On the ceiling HEPA filter unit AFV-8 a shut-off damper ZL-3N is installed in the housing connection.

The advantage of the combination of an HEPA filter housing and a shut-off damper is the ability to close the shut-off damper during the filter replacement procedure to prevent room air pollution. Once the filter is replaced, the shut-off damper is reopened. This procedure eliminates the need to disinfect the room, which is mandatory in the case of replacing the filter without shutting off the inlet of non-filtered air.



**Fig. 5**

1. AFV-8/RS, RV
2. ZL-3N
3. Electric actuator (24 V or 230 V)

## Description

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

## Expected service life of HEPA filters and their replacement:

HEPA filters are constructed for single use only. Expected filter service life depends on airflow volume, pressure drop and the amount of dust particles. The dirtiness of the filter is controlled with a differential manometer. Connections for plastic tubes are fitted on the AFV housing.

The initial pressure drop is specified in the chapter Filters. 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 the used filter. When installing a new filter, use the above instructions in the 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 test is carried out with a sit-tightness measuring device.

## Ordering key

### AFV-8 / RS - 1 / R / KD-6 / RAL

1      2a      3b      4      5

#### 1 Type

**AFV-8**      for flat filter gasket on filter

#### 2a Spigot type and placement

**RS**      Circular side entry spigot  
**RV**      Circular top entry spigot  
**KS**      Square side entry spigot

#### 2b Adapted for filter size

**1**      305 x 305 x 150  
**2A**      457 x 457 x 78  
**2B**      457 x 457 x 150  
**3**      610 x 610 x 78  
**4**      610 x 610 x 150  
**5**      610 x 610 x 292

#### 3 Air volume regulation

**R**      Airtight damper ZL-3N - with manual control, adjustable from outside\*  
**Z1**      Airtight damper ZL-3N - with 24 V actuator  
**Z2**      Airtight damper ZL-3N - with 230 V actuator

#### 4 Diffuser type

**KD-1A**      Square 4-way diffuser  
**KD-6**      Perforated diffuser  
**OD-8KR**      Swirl diffuser  
**OD-9KK**      Swirl diffuser

#### 5 Finish

**RAL**      Housing and diffuser coated in RAL 9010  
**INOX**      Housing coated in RAL 9010, diffuser made from AISI 304

**Table 5:** Dimensions of AFV-8 with shut-off damper ZL-3N

AFV-8	Size	ZL-3N		
		HEPA filter	φD	size A
<b>1</b>	305 x 305 x 150		148	150 195
<b>2A</b>	457 x 457 x 78		198	200 195
<b>2B</b>	457 x 457 x 150		198	200 195
<b>3</b>	610 x 610 x 78		198	200 195
<b>4</b>	610 x 610 x 150		298	300 195
<b>5</b>	610 x 610 x 292		348	350 195

**Note:**

Filter is not included and must be ordered separately.  
 \* Airtight damper ZL-3N is possible only with version RS and RV.