

Ceiling HEPA filter units with gel gasket AFV-8G

Application

Ceiling HEPA filter unit with gel gasket AFV-8G are installed in ventilating and air conditioning systems in rooms which require absolutely clean air. They can be used for both, air supply and extract applications.

Applications

- Air supply and extract in laboratories,
- Air supply and extract in operating theatres, 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 with gel gasket AFV-8G is made filter housing, standard diffusers KD-1A, KD-6, OD-8KR, OD-9KK or OD-15KK and HEPA filter. Housing of sheet steel is air tight welded according to DIN 1946. Diffusers are made of sheet steel and powder painted with epoxy paint in white (RAL 9010). AFV-8G housing has a special sealing frame designed to fit "gasket" filters.

Advantage of gel gasket:

With liquid sealant force, necessary to hold the filter is smaller, compared with neoprene washers, permitting lighter and cheaper housing and faster filter replacement.

Installation

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

Types

The following ceiling HEPA filter units with gel gasket are possible:

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

Accessories

See chapter Accessories.

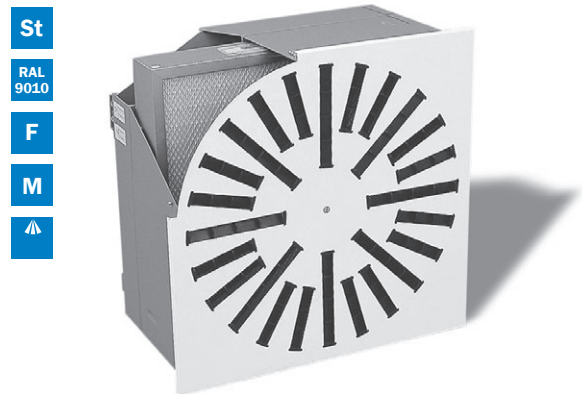
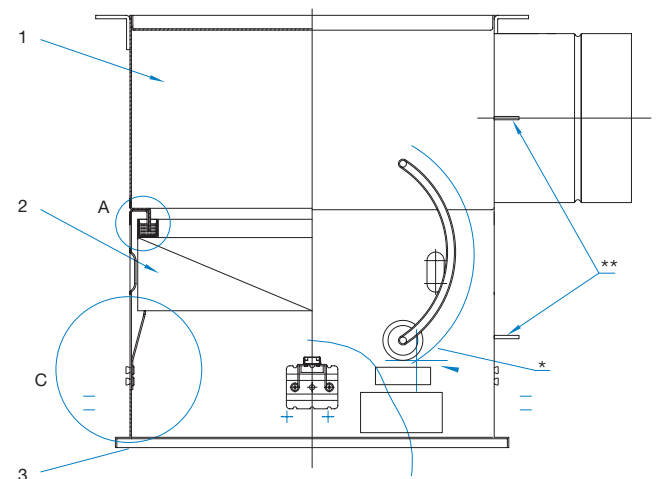


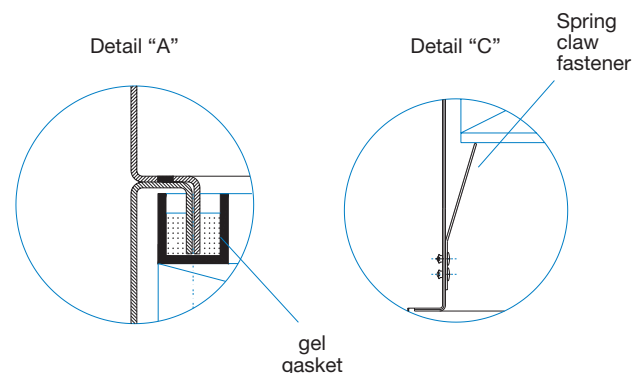
Fig. 1: Overview



* PAO (before: DOP) connection on the housing top section

** Pressure drop test

1. Housing
2. HEPA filter (with gel gasket)
3. Diffuser



AFV-8G/RS circular side entry spigot

Fig. 2

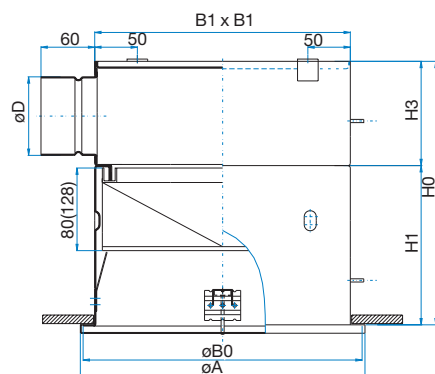


Table 1: Dimensions of AFV-8G/RS

HEPA filter unit size	HEPA filter	ϕD	A	B0	B1	H0	H1	H3
1	305 x 305 x 80	158	355	348	319	395	200	195
2	457 x 457 x 80	198	507	500	471	435	200	235
3A	610 x 610 x 80	198	660	653	624	435	200	235
3B	610 x 610 x 128	248	660	653	624	535	250	285
3C	305 x 610 x 80	198	355 x 660	348 x 653	319 x 624	435	200	235
4	610 x 915 x 80	313	660 x 965	653 x 958	624 x 929	550	200	350
5	610 x 1220 x 80	353	660 x 1270	653 x 1263	624 x 1234	590	200	390
6	545 x 545 x 80	198	595	588	559	435	200	235

For the data ϕD , H0, H3 for version with DTU or DTBCU add 5 mm to the basic version.

AFV-8G/RV circular top entry spigot

Fig. 3

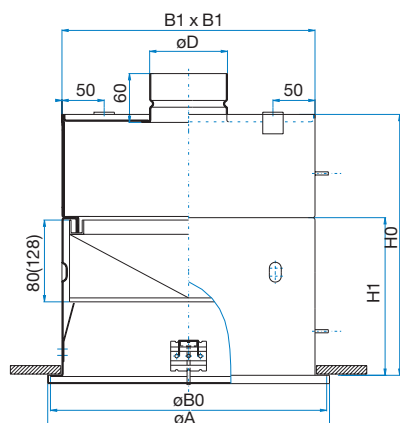


Table 2: Dimensions of AFV-8G/RV

HEPA filter unit size	HEPA filter	ϕD	A	B0	B1	H0	H1
1	305 x 305 x 80	158	355	348	319	280	200
2	457 x 457 x 80	198	507	500	471	280	200
3A	610 x 610 x 80	198	660	653	624	280	200
3B	610 x 610 x 128	248	660	653	624	330	250
3C	305 x 610 x 80	198	355 x 660	348 x 653	319 x 624	280	200
4	610 x 915 x 80	313	660 x 965	653 x 958	624 x 929	280	200
5	610 x 1220 x 80	353	660 x 1270	653 x 1263	624 x 1234	280	200
6	545 x 545 x 80	198	595	588	559	280	200

AFV-8G/KS rectangular side entry spigot

Fig. 4

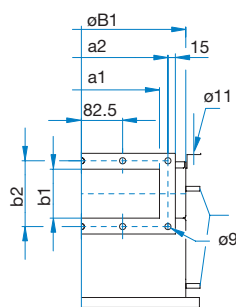
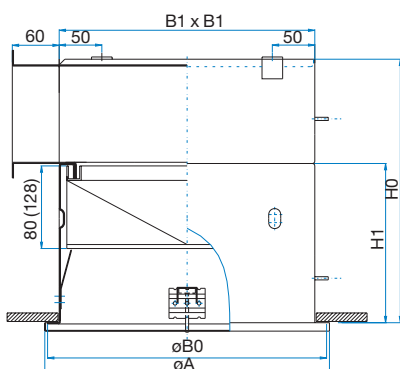


Table 3: Dimensions of AFV-8G/KS

HEPA filter unit size	HEPA filter	øD	A	B0	B1	H0	H1	a1	b1	a2	b2
1	305 x 305 x 80	158	355	348	319	314	200	250	100	285	135
2	457 x 457 x 80	198	507	500	471	314	200	400	100	435	135
3A	610 x 610 x 80	198	660	653	624	314	200	500	100	535	135
3B	610 x 610 x 128	248	660	653	624	414	250	500	150	535	185
3C	305 x 610 x 80	198	355 x 660	348 x 653	319 x 624	314	200	500	100	535	135
4	610 x 915 x 80	313	660 x 965	653 x 958	624 x 929	314	200	800	100	835	135
5	610 x 1220 x 80	353	660 x 1270	653 x 1263	624 x 1234	314	200	1000	100	1035	135
6	545 x 545 x 80	198	595	588	559	314	200	400	100	435	135

Diffuser types

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

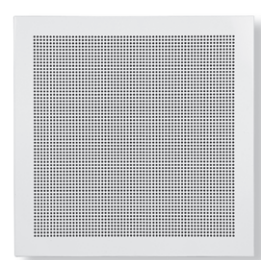
Technical data

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

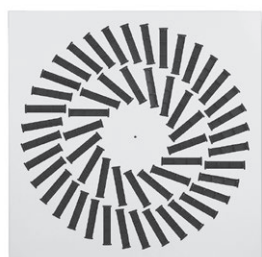
KD-1A



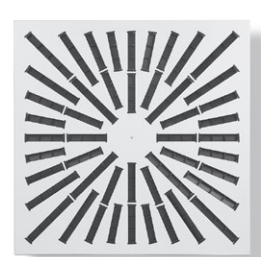
KD-6



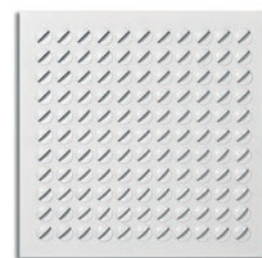
OD-8KR



OD-9KK



OD-15KK



Technical data for HEPA filters

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

In case filters operate under the air flow volume larger or smaller then nominal air flow, pressure drop is being increased or decreased.

Definition of symbols

$A_{ef} (m^2)$ Effective area

Table 4: Combinations of HEPA filter units with different front plate shapes

HEPA filter unit size	HEPA filter	A*	KD-6	OD-8KR	OD-9KK	OD-15KK
1	305 x 305 x 80	355 x 355	√	-	√	√
2	457 x 457 x 80	507 x 507	√	√	√	√
3A	610 x 610 x 80	660 x 660	√	√	√	√
3B	610 x 610 x 128	660 x 660	√	√	√	√
3C	305 x 610 x 80	660 x 355	√	-	√	√
4	610 x 915 x 80	660 x 965	√	-	√	√
5	610 x 1220 x 80	660 x 1270	√	-	√	√
6	545 x 545 x 80	595 x 595	√	√	√	√

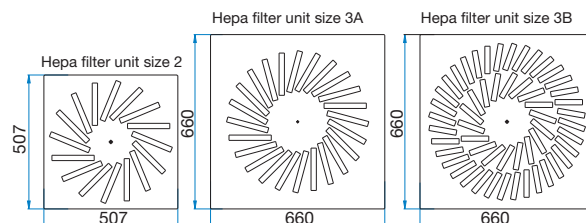
* Outer dimension of diffuser front plate.

Table 5: Effective discharge area A_{ef}

Filter unit size	KD-6	OD-8KR A _{ef} (m ²)	OD-9KK	KD-1A	A _{ef} (m ²)
1	0.0342	-	0.0189	1	0.0104
2	0.0743	0.0300	0.0414	2	0.0185
3A	0.1368	0.0450	0.0651	3	0.0279
3B	0.1368	0.0639	0.0651	4	0.0440
3C	0.0684	-	0.0288	5	0.0628
4	0.1980	-	0.1088	6	0.0728
5	0.2664	-	0.1348	7	0.1175
6	0.1095	0.0450	0.0509	8	0.1280

Filter and front plate combinations

Front plate OD-8KR



Front plate OD-9KK

