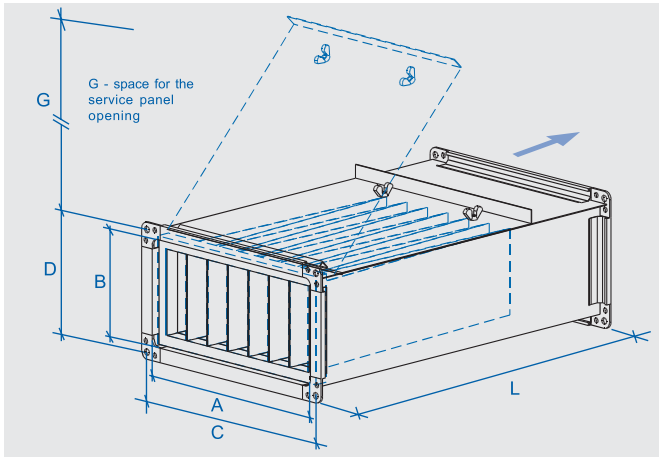
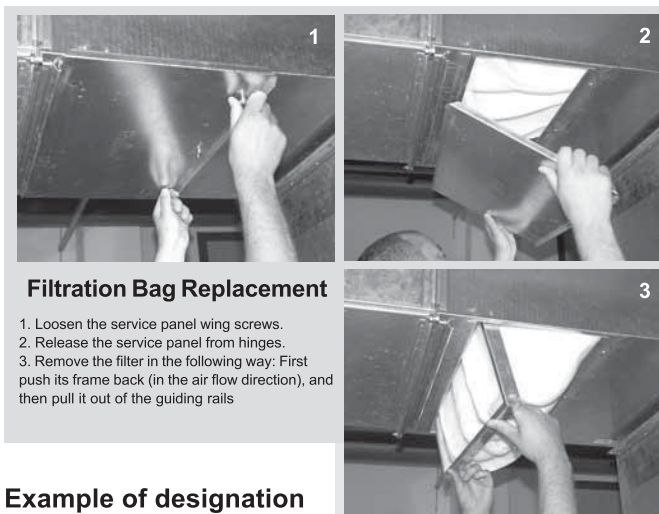
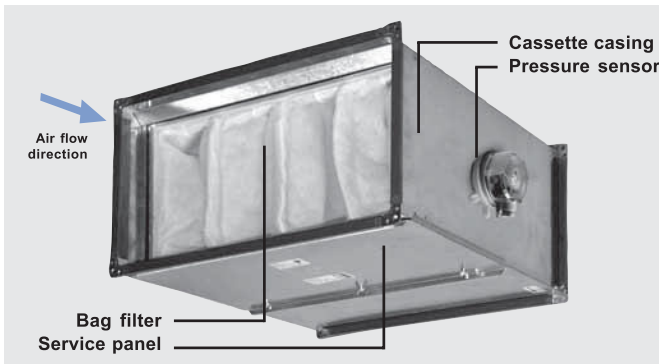


KFD Bag Filter Cassette

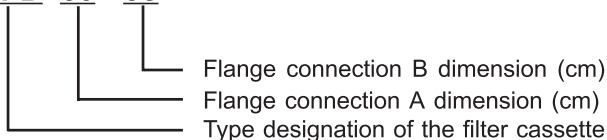


	A	B	C	D	G	L	m ±10%
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
KFD 30-15	300	150	320	170	310	550	6,5
KFD 40-20	400	200	420	220	410	550	8
KFD 50-25	500	250	520	270	410	650	11
KFD 50-30	500	300	520	320	410	650	12
KFD 60-30	600	300	620	320	410	650	13
KFD 60-35	600	350	620	370	410	650	14
KFD 70-40	700	400	720	420	410	720	18
KFD 80-50	800	500	820	520	410	800	21
KFD 90-50	900	500	930	530	405	800	24
KFD 100-50	1000	500	1030	530	410	800	27



Example of designation

KFD 60 - 35



Application

After inserting the required filter insert, the bag filter cassette is intended for trapping solid and fibre particles from the transported (outdoor or circulating) air. The bag filter protects the environment of the ventilated rooms and air-handling components (fans, heaters, coolers, and heat exchangers).

Operating Conditions and Position

The KFD bag filter cassette should be installed in the air-handling duct at the beginning of the assembly (always in front of the exchangers, heat exchanger, and fan). The horizontal or vertical (the air flow direction downward) positions are recommended. The filters are designed for indoor use. When installed outside, they must be protected against water by a cover. Transported air must be free of corrosive substances or chemicals aggressive to zinc and rubber. Acceptable temperature of transported air can range from -30 °C to +70 °C.

Dimensional and Type Range

The back filter cassettes are manufactured in all ten dimensional ranges, from 30-15 to 100-50.

Materials

The external casing and connecting flanges are made of galvanized steel sheets. The connecting bar flanges are 20 mm (KFD 30-15 to KFD 80-50) or 30 mm (KFD 90-50 and 100-50) high. Perfect tightness of the filter insert and service panel is ensured by rubber sealing.

Installation, Maintenance and Service

The KFD bag filter cassettes must be installed in the air-handling duct so that the air-flow direction through the filter will follow the arrow on the casing. Before installation, paste self-adhesive sealing onto the connecting flange face. To connect the filter flanges, use galvanized M8 screws and nuts (M10 only for KFD 100-50). It is necessary to ensure conductive connection of the flange using fan-washers placed on both sides at least on one flange connection. To brace the flanges with a side longer than 40 cm, it is advisable to connect them in the middle with another screw clamp which prevents flange bar gapping. The removable inspection panel must be easily accessible. If installed into a ceiling, space for the service panel opening and filter replacement must be taken into account. This service space is specified by the G dimension, see the table

Accessories

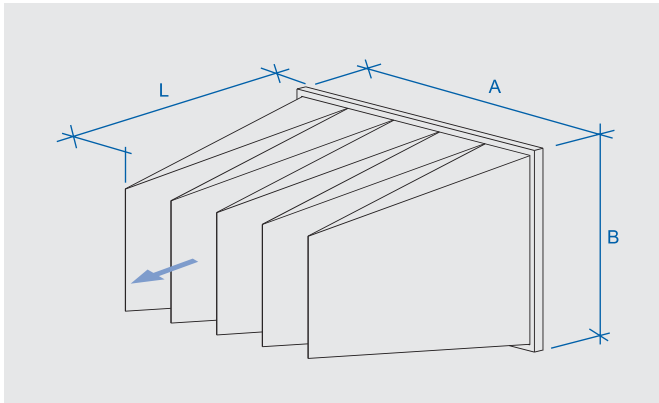
A bag filter of the corresponding size and required filtration class is an essential accessory of the KFD filter cassette, while the P33N differential pressure sensor is a recommended accessory

- KF3 – G3 class bag filter
- KF5 – F5 class bag filter
- KF7 – F7 class bag filter
- P33N – differential pressure sensor

Service

The filters require regular inspection for fouling and replacement, if necessary. Inspection and filter replacement can be performed after loosening the wing screws and removing the service panel from the cassette casing. The filter can be removed in the following way: First push its frame back (in the air flow direction), and then pull it out of the guiding rails. Install the new filter following the reverse way.

KF3 Bag Filters



Application

KF3 bag filters are designed to be used in KFD filter cassettes. They are used for single-stage air filtration in simpler air-handling systems or as pre-filters for the first filtration stage to separate coarser dust particles.

Operating Conditions and Position

Maximum temperature of the transported air can be up to +100 °C while air relative humidity is not limited (it can be up to 100 %).

Dimensional and Type Range

KF3 bag filters are manufactured in all ten dimensional ranges, from 30-15 to 100-50.

Materials

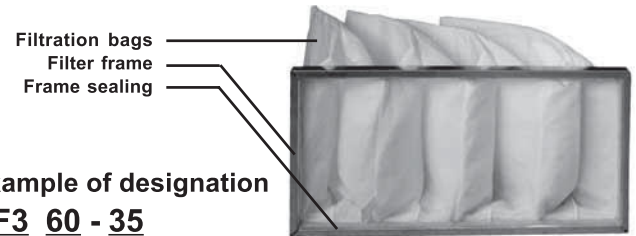
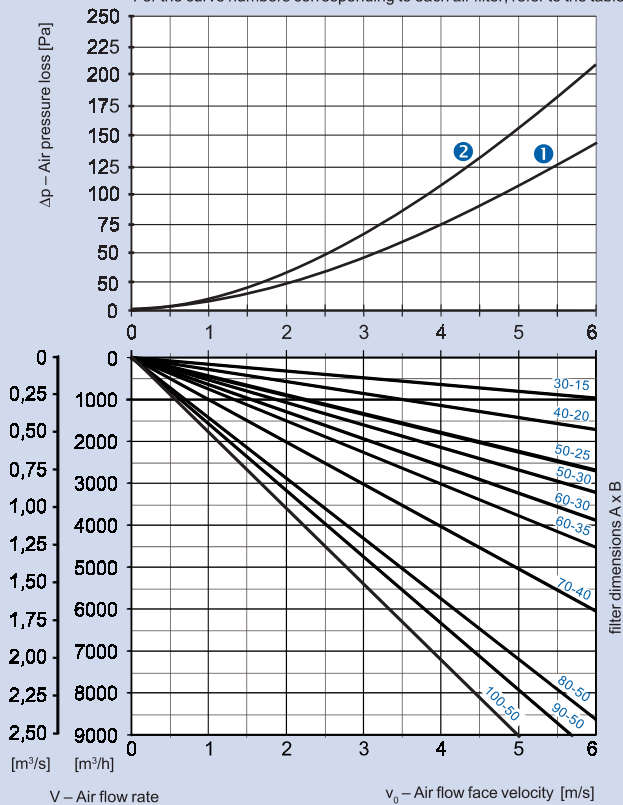
Filtration bags are made of unwoven, thermally and mechanically reinforced 100 % polyether textile of 150 g/m² surface density. After inflating, the geometric shape of the filter bags is maintained by plastic braces which enable maximum utilization of the bag filtration surface. The fixing frame is made of galvanized sheets. The filter bags are fixed to the frame and sealed with a PE strip.

Installation, Maintenance and Service

The filters require regular inspections for fouling. During operation, pressure loss gradually rises due to the filter fouling with dust. Final air pressure loss at the nominal air flow is 250 [Pa]. At air flow rates different from the nominal air flow rate we recommend replacing the filter if the actual air pressure loss is double that of the clean filter pressure loss. After reaching the final pressure loss, replace the filter with a new one⁽¹⁾.

Air Pressure Loss of KF3 Bag Filters
Clean filter inserts

For the curve numbers corresponding to each air filter, refer to the table



Example of designation

KF3 60 - 35

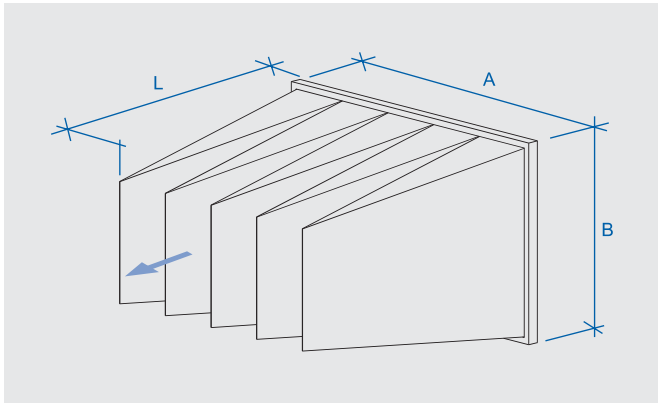
- Filtration bags
 - Filter frame
 - Frame sealing
- Example of designation: **KF3 60 - 35**
- Cassette flange connection B dimension (cm)
 - Cassette flange connection A dimension (cm)
 - G3 class bag filter

Filter Type		KF3									
A-B dimensions	[cm]	30-15	40-20	50-25	50-30	60-30	60-35	70-40	80-50	90-50	100-50
L dimension	[cm]	42	42	52	52	52	52	60	68	68	68
Filtration Class - ČSN EN 779	[-]	G 3									
Mean rate of synthetic dust separation A_m	[%]	83,3									
Filtration area	[m ²]	0,49	0,66	1,28	1,49	1,54	1,75	2,79	3,91	3,98	4,15
Number of bags	[ks]	3	3	4	4	4	4	5	5	5	5
Weight	[kg]	1,5	1,5	2	2,5	2,5	3	3	3,5	3,5	4
Rated (nominal) air flow	[m ³ /h]	670	900	1740	2030	2090	2380	3790	5320	5410	5644
Initial pressure loss ⁽²⁾	[Pa]	114	71	101	68	54	52	68	67	57	61
Clean state pressure loss	Curve No.	2	2	2	1	1	1	1	1	1	1
Final pressure loss ⁽²⁾	[Pa]	250	250	250	250	250	250	250	250	250	250
Holding capacity	[g]	216	291	565	657	679	772	1231	1725	1756	1830
Thermal resistance	[°C]	max. + 100									
Combustibility class	[-]	F1 (according to DIN 53 438)									
Recoverability	[-]	Limited via a dry process (impaired filter properties can be expected)									

⁽¹⁾ Fouled filter can only be partly recovered via a dry process (dusted or vacuumed); however, impaired filter properties can be expected after the filter recovery.

⁽²⁾ At the nominal air flow

KF5 Bag Filters



Application

KF5 bag filters are designed to be used in KFD filter cassettes. They are used for the second stage or single air filtration in more sophisticated air-handling systems to separate fine dust particles.

Operating Conditions and Position

Maximum temperature of the transported air can be up to +100 °C while air relative humidity is not limited (it can be up to 100 %).

Dimensional and Type Range

KF5 bag filters are manufactured in all ten dimensional ranges, from 30-15 to 100-50.

Materials

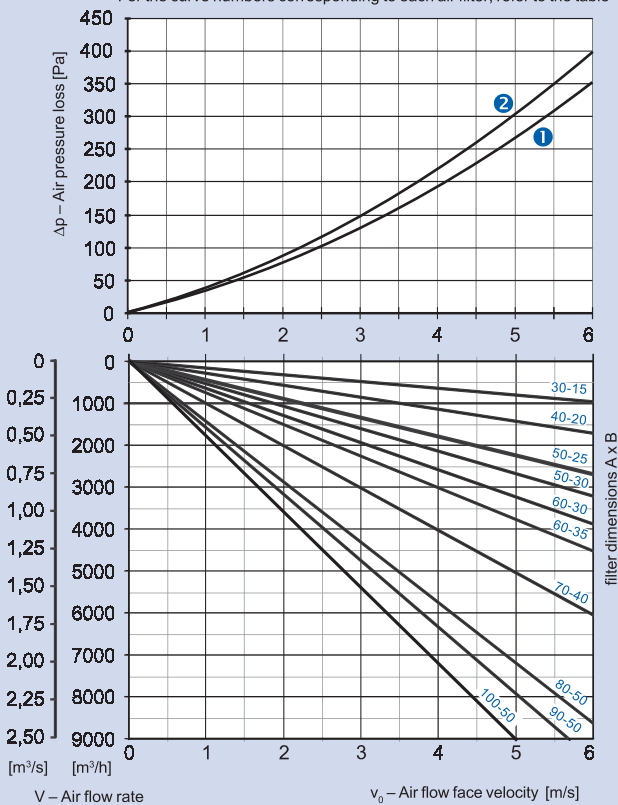
Filtration bags are made of progressively designed, unwoven 100 % synthetic textile of 185 g/m² surface density. After inflating, the geometric shape of the filter bags is maintained by plastic braces which enable maximum utilization of the bag filtration surface. The fixing frame is made of galvanized sheet. The filter bags are fixed to the frame and sealed with a PE strip.

Installation, Maintenance and Service

The filters require regular inspections for fouling. During operation, pressure loss gradually rises due to the filter fouling with dust. Final air pressure loss at the nominal air flow is 400 Pa. At other air flow rates we recommend replacing the filter if the actual air pressure loss is double that of the clean filter pressure loss. This filter cannot be recovered; after reaching the final pressure loss, replace the filter with a new one.

Air Pressure Loss of KF5 Bag Filters
Clean filter inserts

For the curve numbers corresponding to each air filter, refer to the table



Filtration bags
Filter frame
Frame sealing



Example of designation

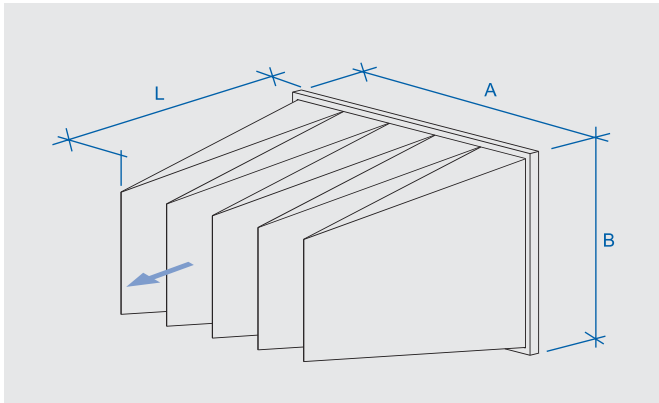
KF5 60 - 35



Filter Type		KF5									
		30-15	40-20	50-25	50-30	60-30	60-35	70-40	80-50	90-50	100-50
A-B dimensions	[cm]	30-15	40-20	50-25	50-30	60-30	60-35	70-40	80-50	90-50	100-50
L dimension	[cm]	42	42	52	52	52	52	60	68	68	68
Filtration Class - ČSN EN 779	[-]	F5									
Mean rate of synthetic dust separation A_m	[%]	97,2									
Mean rate of atmosph. dust separation E_m	[%]	60,1									
Filtration area	[m ²]	0,49	0,66	1,28	1,49	1,54	1,75	2,79	3,91	3,98	4,15
Number of bags	[ks]	3	3	4	4	4	4	5	5	5	5
Weight	[kg]	1,5	1,5	2	2,5	2,5	3	3	3,5	3,5	4,5
Rated (nominal) air flow	[m ³ /h]	310	420	837	975	1010	1145	1825	2560	2600	2711
Initial pressure loss ⁽²⁾	[Pa]	82	59	68	65	54	59	73	72	63	70
Clean state pressure loss		②	②	①	①	①	②	②	②	②	②
Final pressure loss ⁽²⁾	[Pa]	450	450	450	450	450	450	450	450	450	450
Holding capacity	[g]	19	25	48	56	58	66	105	147	150	156
Thermal resistance	[°C]	max. + 100									
Combustibility class	[-]	F1 (according to DIN 53 438)									
Recoverability	[-]	Unrecoverable									

⁽¹⁾ At nominal air flow

KF7 Bag Filters



Application

KF7 bag filters are designed to be used in KFD filter cassettes. They are mostly used for second-stage air filtration in highly sophisticated and clean air-handling systems to separate fine dust particles.

Operating Conditions and Position

Maximum temperature of the transported air can be up to +100 °C while air relative humidity is not limited (it can be up to 100 %).

Dimensional and Type Range

KF7 back filters are only manufactured in eight dimensional ranges, from 50-25 to 100-50.

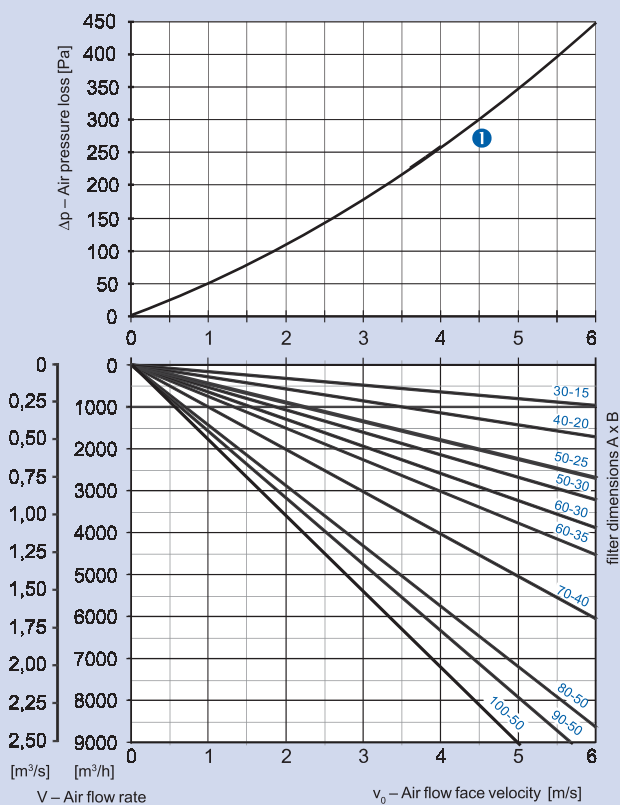
Materials

Filtration bags are made of progressively designed, unwoven 100 % synthetic textile of 205 g/m² surface density. After inflating, the geometric shape of the filter bags is maintained by plastic braces which enable maximum utilization of the bag filtration surface. The fixing frame is made of galvanized sheet. The filter bags are fixed to the frame and sealed with a PE strip.

Installation, Maintenance and Service

The filters require regular inspections for fouling. During operation, pressure loss gradually rises due to the filter fouling with dust. Final air pressure loss at the nominal air flow is 400 Pa. At other air flow rates, we recommend replacing the filter if the actual air pressure loss is double that of the clean filter pressure loss. This filter cannot be recovered; after reaching the final pressure loss, replace the filter with a new one.

Air Pressure Loss of KF5 Bag Filters
Clean filter inserts



Filtration bags
Filter frame
Frame sealing



Example of designation

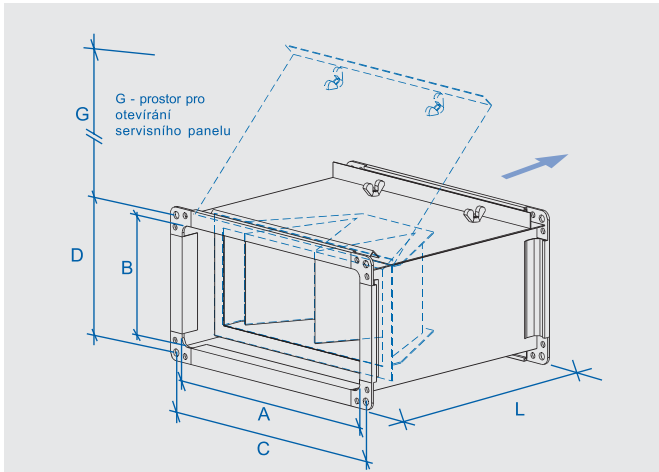
KF3 60 - 35



Filter Type		KF7							
A-B dimensions	[cm]	50-25	50-30	60-30	60-35	70-40	80-50	90-50	100-50
L dimension	[cm]	52	52	52	52	60	68	68	68
Filtration Class - ČSN EN 779	[-]	F7							
Mean rate of synthetic dust separation A_m	[%]	98,11							
Mean rate of atmosph. dust separation E_m	[%]	80,46							
Filtration area	[m ²]	1,28	1,49	1,54	1,75	2,79	3,91	3,98	4,15
Number of bags	[ks]	4	4	4	4	5	5	5	5
Weight	[kg]	2	2,5	2,5	3	3	3,5	3,5	4,5
Rated (nominal) air flow	[m ³ /h]	837	975	1010	1145	1825	2560	2600	2711
Initial pressure loss ⁽²⁾	[Pa]	100	96	81	94	97	94	84	88
Clean state pressure loss		①	①	①	①	①	①	①	①
Final pressure loss ⁽²⁾	[Pa]	450	450	450	450	450	450	450	450
Holding capacity	[g]	98	115	119	135	215	302	308	321
Thermal resistance	[°C]	max. + 100							
Combustibility class	[-]	F1 (according to DIN 53 438)							
Recoverability	[-]	Unrecoverable							

⁽¹⁾ At nominal air flow

VFK Insert Air Filter Cassette

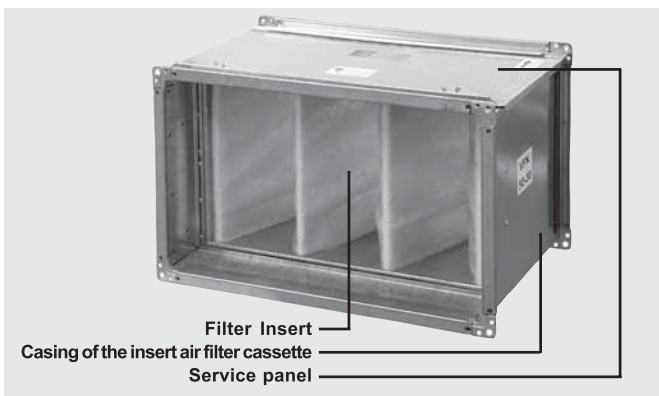


	A	B	C	D	G	L	m ±10%
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
VFK 30-15	300	150	320	170	230	300	5
VFK 40-20	400	200	420	220	230	300	6
VFK 50-25	500	250	520	270	230	300	7
VFK 50-30	500	300	520	320	230	300	7
VFK 60-30	600	300	620	320	230	300	8
VFK 60-35	600	350	620	370	230	300	8
VFK 70-40	700	400	720	420	230	300	10
VFK 80-50	800	500	820	520	230	300	12
VFK 90-50	900	500	930	530	225	300	13
VFK 100-50	1000	500	1030	530	230	300	14

Example of designation

VFK 60 - 35

- Flange connection B dimension (cm)
- Flange connection A dimension (cm)
- Type designation of the insert air filter cassette



Application

After inserting the required filter insert, the filter cassette is intended for trapping solid and fibre particles from the transported (outdoor or circulating) air. The insert air filter protects the environment of the ventilated rooms and air-handling components (fans, heaters, coolers, and heat exchangers).

Operating Conditions and Position

The filter cassette should be installed in the air-handling duct at the beginning of the assembly (always in front of the exchangers, heat exchanger, and fan). It can work in any position. The filters are designed for indoor use. When installed outside, they must be protected against water by a cover. Transported air must be free of corrosive substances or chemicals aggressive to zinc and rubber. Acceptable temperature of transported air can range from -30 °C to +70 °C.

Dimensional and Type Range

VFK filter cassettes are part of the Vento air-handling modular system. They are manufactured in nine dimensional ranges, from 30-15 to 90-50.

Materials

The external casing and connecting flanges are made of galvanized steel sheets. The connecting bar flanges are 20 mm (VFK 30-15 to VFK 80-50) or 30 mm (VFK 90-50) high. Perfect tightness of the filter insert and service panel is ensured by rubber sealing.

Installation, Maintenance and Service

The filter cassettes must be installed in the air-handling duct so that the air-flow direction through the filter will follow the arrow on the casing. Before installation, paste self-adhesive sealing onto the connecting flange face. To connect the filter flanges, use galvanized M8 screws and nuts (M10 only for VFK 90-50). It is necessary to ensure conductive connection of the flange using fan-washers placed on both sides at least on one flange connection. To brace the flanges with a side longer than 40 cm, it is advisable to connect them in the middle with another screw clamp which prevents flange bar gapping. The removable inspection panel must be easily accessible. If installed into a ceiling, space for the inspection panel opening and filter insert replacement must be taken into account. This service space is specified by the G dimension, see the table.

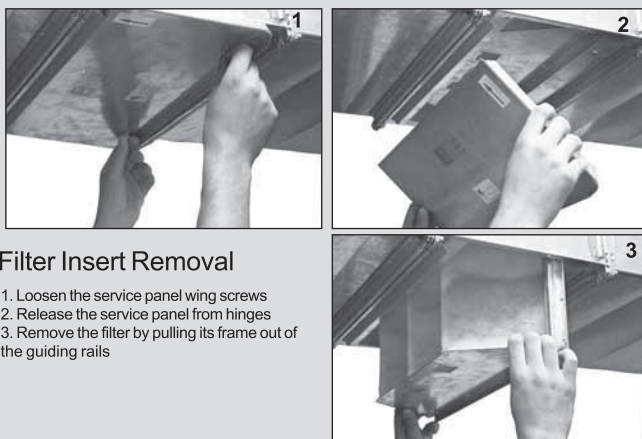
Accessories

A bag filter of corresponding size and required filtration class is an essential accessory of the VFK filter cassette, while the P33N differential pressure sensor is a recommended accessory.

- VF3 – G3 filter insert (page 198)
- VF3N – Filter insert spare filtration textile
- P33N – differential pressure sensor

Service

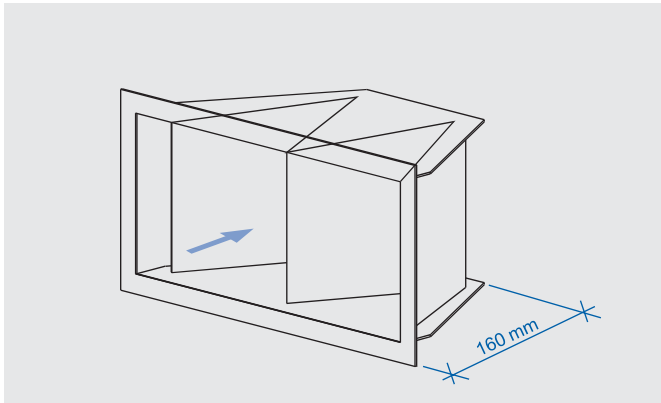
The filter inserts require regular inspection for fouling and replacement of the filtration textile, if necessary. Inspection and filter insert replacement can be performed after loosening the wing screws and removing the service panel from the cassette casing. The filter can be removed by pulling its frame out of the guiding rails. Install the new filter insert following the reverse way.



Filter Insert Removal

1. Loosen the service panel wing screws
2. Release the service panel from hinges
3. Remove the filter by pulling its frame out of the guiding rails

VF3 Spare Filter Inserts



Application

VF3 filter inserts are designed to be used in VFK filter cassettes. They are used for single-stage air filtration in simpler air-handling systems to separate coarser dust particles.

Operating Conditions and Position

Maximum temperature of the transported air can be up to +100 °C while air relative humidity is not limited (it can be up to 100 %).

Dimensional and Type Range

VF3 insert filters are manufactured in all nine dimensional ranges, from 30-15 to 90-50.

Materials

Filtration insert contains unwoven, thermally reinforced 100 % polyether textile of 220 g/m² surface density. Filtration textile is stretched between aluminium braces in a precise lightweight frame made of galvanized sheets, creating a predefined geometric shape. Filtration textile is fixed to the frame edges by grip bars.

Accessories

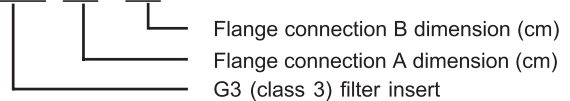
- Spare filtration textile is an accessory
- VF3N – Filter insert spare filtration textile

Installation, Maintenance and Service

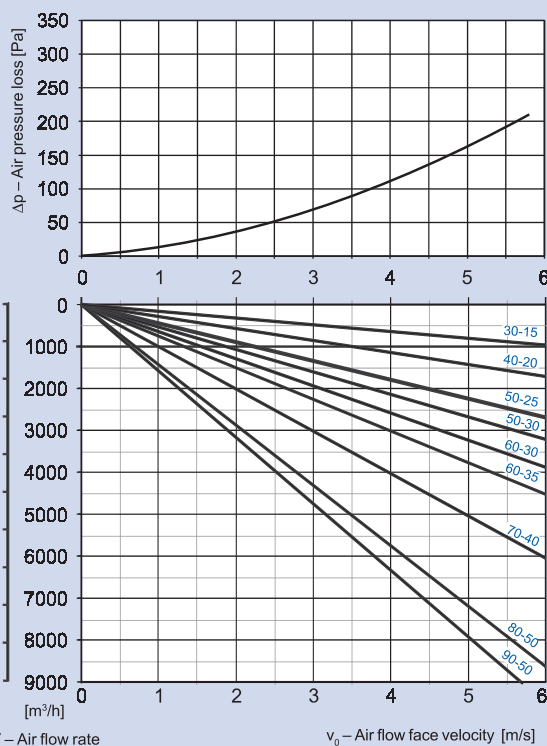
The filter insert requires regular inspection for fouling and replacement of the filtration textile, if necessary. During operation, pressure loss gradually rises due to the filter fouling with dust. Final air pressure loss at the nominal air flow is 250 Pa. At other air flow rates we recommend replacing the filter if the actual air pressure loss is double that of the clean filter pressure loss. Fouled filtration textile can only be partly recovered via a wet process (washing in detergent solution); however, impaired filter properties, compared with the original state of the filter, can be expected after the filtration textile recovery.

Example of designation

VF3 80 - 50



Air Pressure Loss of VFK Insert Filters
Clean filter inserts



Filter insert textile replacement

Using pliers, pull off the grip bar of the filtration textile.



Remove the filtration textile from the braces, and replace it with a new one.



Release the filtration textile edge.



Filter Type	A-B dimensions	VF3								
		30-15	40-20	50-25	50-30	60-30	60-35	70-40	80-50	90-50
Mean rate of synthetic dust separation Am	[%]	80 - 85								
Filtration area	[m ²]	0,07	0,11	0,21	0,25	0,33	0,4	0,6	0,86	1
Weight	[kg]	2	2	2,5	3	3	4	4	5	5
Rated (nominal) air flow	[m ³ /h]	380	600	1130	1350	1780	2160	3240	4640	5400
Initial pressure loss	[Pa]	47	39	52	52	60	64	77	78	82
Final pressure loss	[Pa]	250								
Holding capacity	[g]	35	56	106	126	167	202	303	434	505
Recoverability	[-]	Limited via a wet process (impaired filter properties can be expected)								