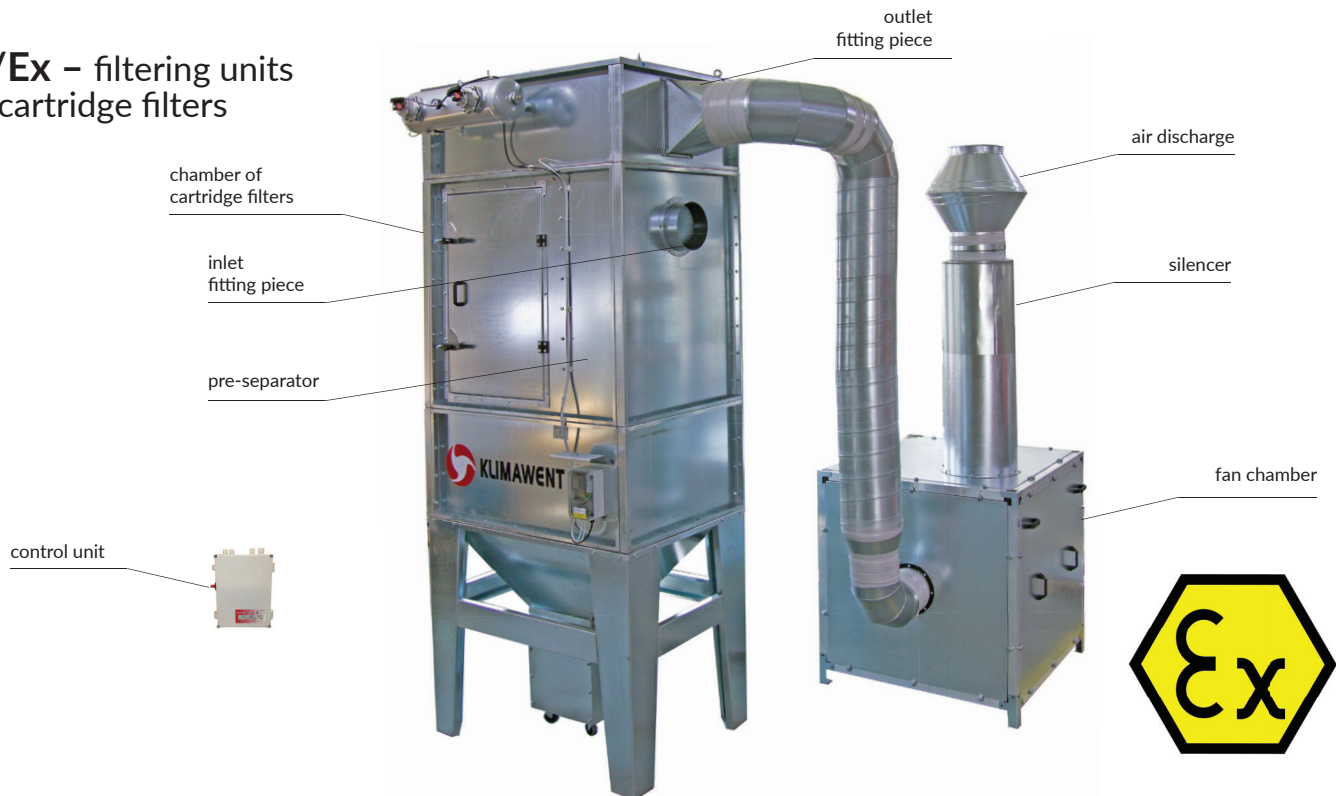


BIG/Ex – filtering units with cartridge filters



Purpose

BIG/Ex filtering system with cartridge filters are applied for cleaning the dust laden air from impurities, arising during manufacturing processes with powdery materials and dust of ST1 explosion class.

The filtering system is designed for application in areas of explosion hazard, according to the ATEX 94/9/EC Directive.

Maximum temperature of the conveyed air is +40°C. Filtering efficiency of the filters 99,9%.

Structure

BIG/Ex filtering system consists of a filtration unit, fan chamber and a control unit.

A. Filtration unit

Consists of following elements:

- base with a hopper chamber and a waste container,
- pre-separator,
- filtration chamber – with cartridge filters,
- chamber of electromagnetic valves – striking off the dust which accumulated on the filters
- decompression panels – to relieve an explosion, by discharging the blast effects (mainly pressure) outside the device (through the venting).

On the four-legs base (with hopper chamber and waste container), are placed two chambers: pre-separator chamber and a chamber with cartridge filters. The polluted air is drawn in, through the inlet, into the pre-separator. Here are captured the largest dust fractions. Subsequently, the air is directed to the cartridge filters for fine filtration.

Above the filtration chambers, there is an electro-valves chamber. The electromagnetic valves are cleaning the filters from the deposited dust, by means of compressed air impulses. This proceeds automatically. The appliance can work in a continuous mode. The separated dust is falling into a waste container on wheels.

On the side wall, there is a decompression panel, relieving the explosion by discharging the blast effects (mainly pressure) outside the device through the vent. In case of explosion, the internal device pressure will be reduced to the safe level. Due to explosion risk, it is recommended to install the whole device outside the building, (as the decompression panel, can cause impact hazard to people in the vicinity, while discharging).

B. Fan chamber

As a sound-isolated construction, the chamber contains a radial fan. The fan is manufactured according to the ATEX 94/9/EC Directive. The fan chamber must be placed near the filtering unit and connected with it through SPIRO spiral-seam ducts.

C. Control unit

The automation set provides continuous work of the fan and automatic filter cleaning by impulses of compressed air. As the control unit is not of Ex execution, it must be installed beyond the explosion risk area.

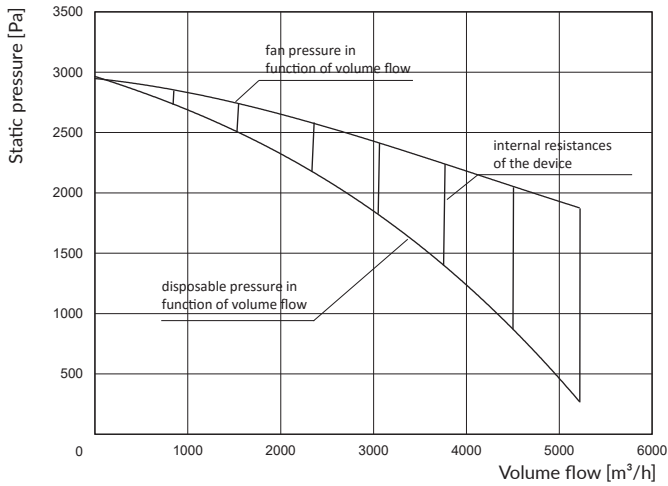
Additional accessories:

On demand of Customer we deliver:

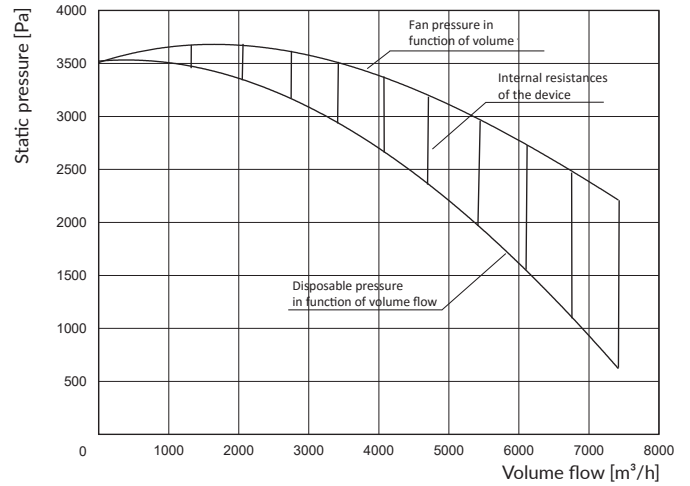
- non-return valves – in ATEX Directive compatible execution, to be installed on the extraction ductwork (in case of explosion, those valves protect from expanding the explosion blast further within the extraction installation),
- rotary-cell valve – to carry the dust onto a belt conveyor.

Flow charts of the filtration systems

Filtration system BIG-4000/Ex with chamber WPA-BOX-11/Ex



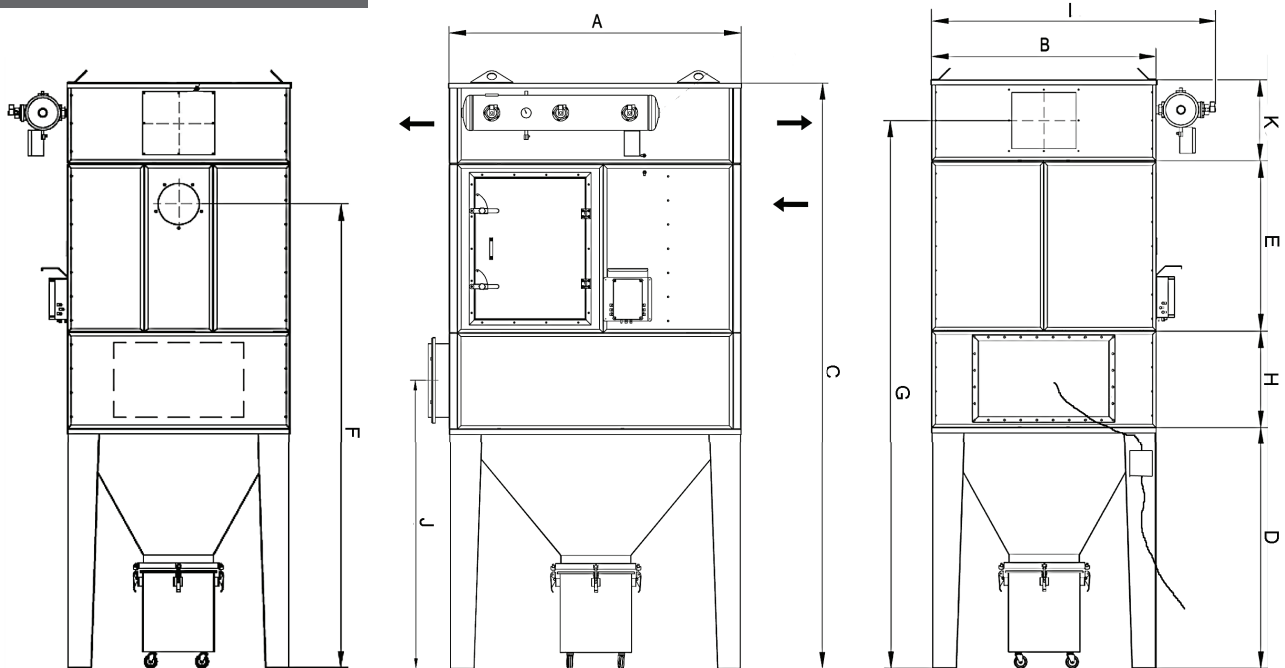
Filtration system BIG-5000/Ex with chamber WPA-BOX-13/Ex



Technical data

Type	BIG-4000/Ex	BIG-5000/Ex
Marking	II 3 D Ex tD A22 T200 ° C -10 ° C 40 ° <T <C.	
Part no.	815F02	815F00
Maximum volume flow [m³/h]	5200	7400
Weight [kg]	710	1075
Diameter of inlet [mm]	250	315
Size of outlet [mm]	200x350	200x350
Required compressed air pressure [MPa]	0,6	0,6
Quantity of cartridge filters	4	6
Capacity of waste container [dm³]	99	99
Consumption compressed air [Nm³/h]	4,8	7,2

Dimensions

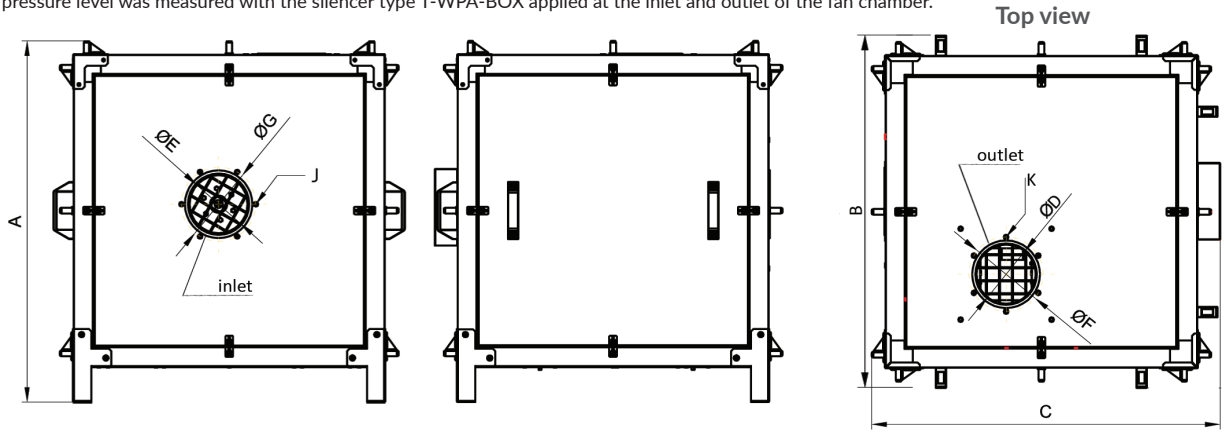


Type	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	I [mm]	K [mm]
BIG-5000/Ex	1820	960	3856	1500	1253	3050	3600	600	1320	503
BIG-4000/Ex	1390	960	3556	1200	1253	2750	3300	600	1320	503

Technical data of the fan chambers

Type	Part no.	Marking	Synchronous rotations [1/min]	Supply voltage [V]	Motor rate [kW]	Ingress protection IP	Acoustic pressure level [dB(A)] from a distance of:*		Maximum volume flow [m³/h]	Maximum vacuum [Pa]	Weight [kg]
							1 m	5 m			
WPA-BOX-11/Ex	888W36	II 3 G/D c Exe II T4	3000	3x400	5,5	54	75	61	8050	2950	300
WPA-BOX-13/Ex	888W37	II 3 G/D c Exe II T4	3000	3x400	7,5	54	77	63	10 800	3300	322

* Acoustic pressure level was measured with the silencer type T-WPA-BOX applied at the inlet and outlet of the fan chamber.




Dimensions


Type	A [mm]	B [mm]	C [mm]	Diameters of connections		Pitch diameters of the connection openings		K [mm]	J [mm]
				ØD [mm]	ØE [mm]	ØF [mm]	ØG [mm]		
WPA-BOX-11/Ex	1329	1336	1336	250	250	274	274	M8	M8
WPA-BOX-13/Ex	1329	1336	1336	315	315	344	344	M8	M8

Additional accessories (for the fan chamber)

Silencer T-WPA-BOX


	Type	Part no.	Inlet [mm]	Outlet [mm]	Remarks
	T-315 WPA-BOX	830T28	250	315	The set consists of: reducer, silencer, silencer bracket. Install the set on the inlet ferrule or/and on the outlet of the WPA-BOX fan chamber.
	T-400 WPA-BOX	808T28	315	400	

Air discharge


	Type	Part no.	Diameter inlet/outlet/height [mm]	Weight [kg]
	E-315	842W39	315/315/700	14
	E-400	842W40	400/400/900	18

Replaceable parts (for the filtration unit)

Cartridge filter

	Type	Part no.	Weight [kg]	Class	Filtration efficiency [%]
	PTA/Ex	838N16	8,55	H 13	99,9

Decompression panel

	Type	Part no.	Dimensions of the panel [mm]
	DP1/Ex	800P02	450x500