1.9 RESIDUAL RISKS

Depending on the use of the filter, the installer must use special signs to inform operators of the following residual risks:

1. Mechanical hazards. For the maintenance activities, the operator must always use the personal protection devices. Special warning signs in the individual sections of the machine indicate the personal protection devices that are compulsory:

2. Presence of possible high residual temperatures after the filter is stopped. During the course of maintenance and cleaning and in certain work areas, the operator may come into contact with very hot parts of the filter, with the machine stopped. Special warning signs applied at strategic points indicate the danger due to the presence of very hot surfaces, and the obligation for the operator to use personal protection devices, specifically safety gloves.

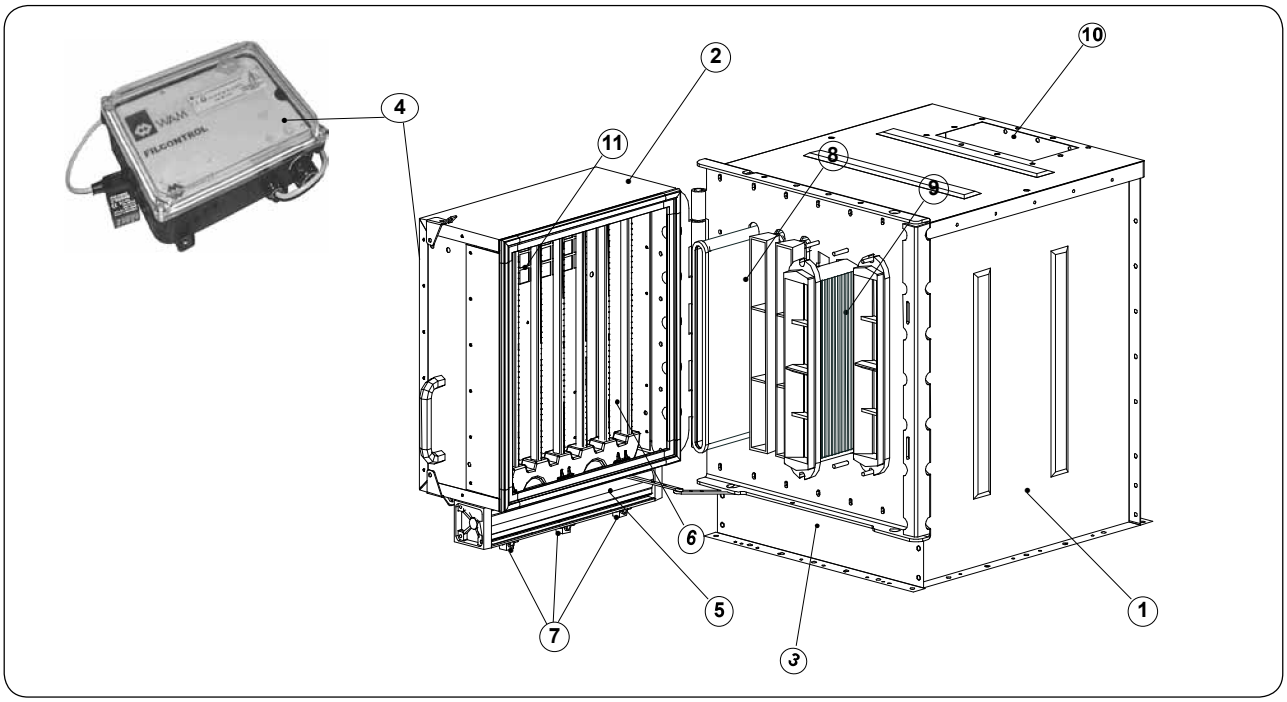
3. Presence of potentially hazardous dusts. While carrying out operations involved in routine or extraordinary maintenance, the operator must use suitable personal protection equipment, especially masks to protect the respiratory tract belonging to a class suitable for the type of dust filtered, as well as gloves or clothing. For more details, refer to the safety chart of the product handled.

In certain dusts handling operations, where harmful substances are present, the operator concerned with the routine or extraordinary operations must wear suitable personal protection equipment as indicated on the notices present.

2.0
TECHNICAL INFORMATION

2.0.1
FPH FILTERS TECHNICAL INFORMATION

2.0.2
BASIC VERSION

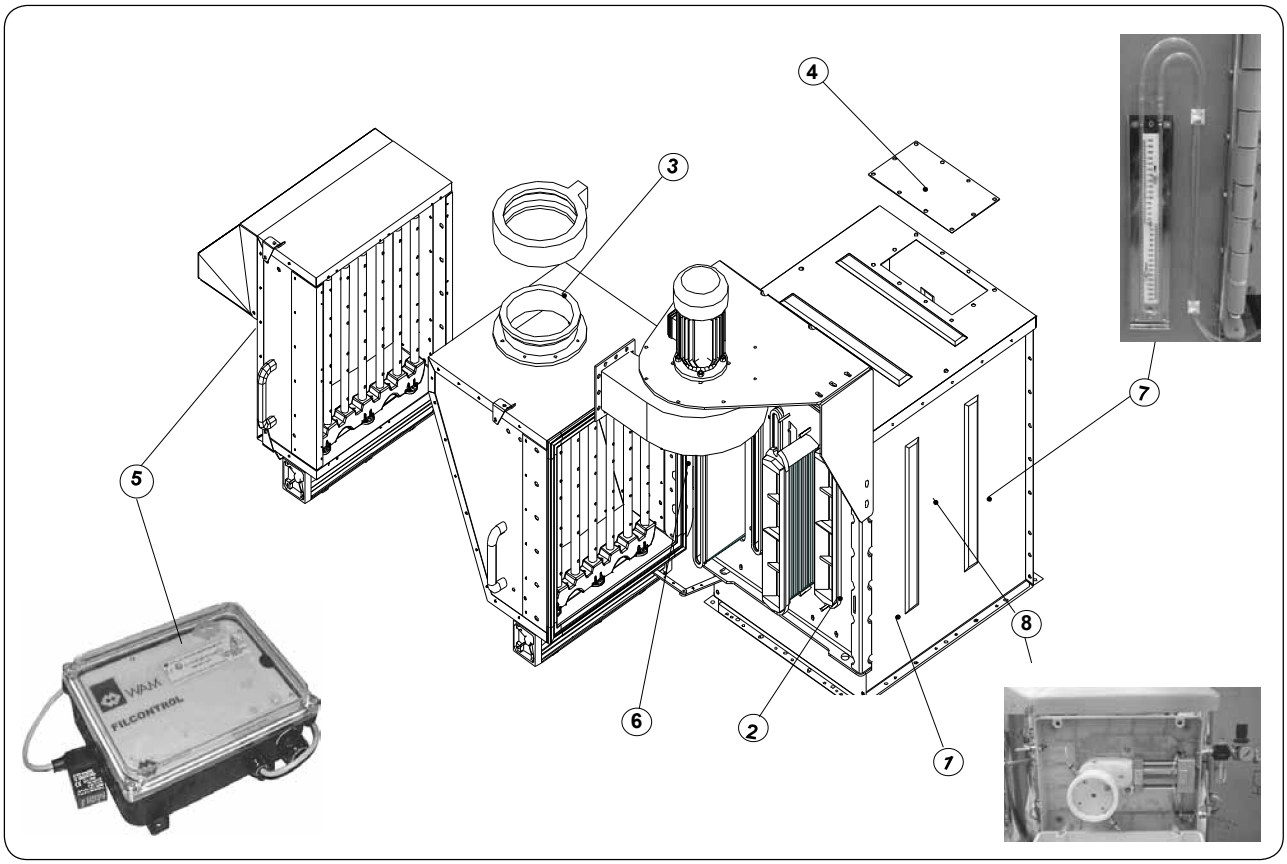


POS.	DESCRIPTION	MATERIAL	THICKNESS	FINISH
1	Filter body	AISI 304	1.2 mm	Satin finish 120 - 180 (4/4/IV*)
2**	Cover	AISI 304	1.2 mm	
3	Elements-holder plate	CARBON STEEL	6 mm	Powder painted RAL 7001
4	Electronic timer			
5	Compressed air tank	Aluminium	3 mm	Light anodized
6	Cleaning tubes	AISI 441	1.5 mm	Satin finish 120 - 180 (4/4/IV*)
7	Solenoid valve	Aluminium		Matt black cataphoresis
8	Pocket			
9	POLYPEAT®			
10	Foul air inlet			
11	Clean air outlet flange			

** Only for zone 22 Category 3D

*In accordance with UNI-EN 10088 (1997)/ AISI (1974) / DIN 17440 (1985)

2.0.3 VERSION WITH ACCESSORIES



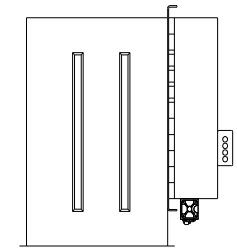
ITEM POS.	DESCRIPTION	MATERIAL	THICKNESS	FINISH
1	Filter body	AISI 316	1.2 mm	Satin finish 120 - 180 (4/4/IV*)
2	Elements-holder plate	AISI 304	6 mm	
		AISI 316	6 mm	
3	Filter outlet equipped with: connection			
4	Foul air inlet cover plate	AISI 304	2 mm	Satin finish 120 - 180 (4/4/IV*)
		AISI 316	2 mm	
5	MDPE			
6	Hinge	AISI 304	6 mm	Satin finish 120 - 180 (4/4/IV*)
		AISI 316	6 mm	
7	MDP			
8	Pneumatic timer			

*In accordance with UNI-EN 10088 (1997)/ AISI (1974) / DIN 17440 (1985)

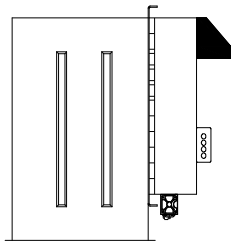
2.0.4 FILTER OUTLET

For **WAMAIR® ATEX** filters there are a series of options for filter outlet equipment:

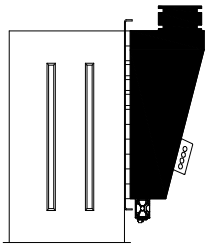
+ = Basic version; (only for category 3D filters)
P = With rain shield; (only for category 3D filters)
R = Extraction connection;
1,2....9,A,B with suction fan.



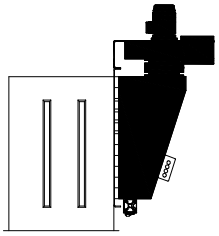
(+) Basic Version



(P) Version with rain shield

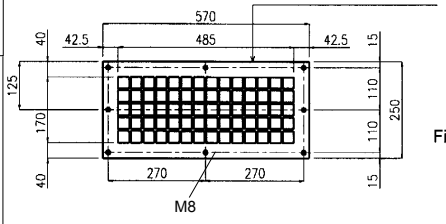
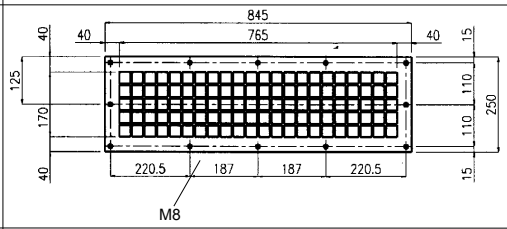
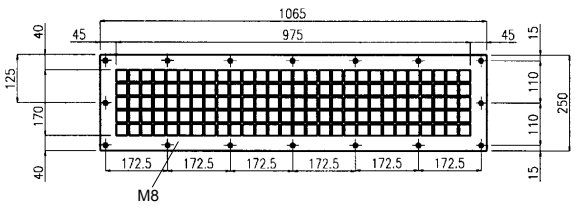
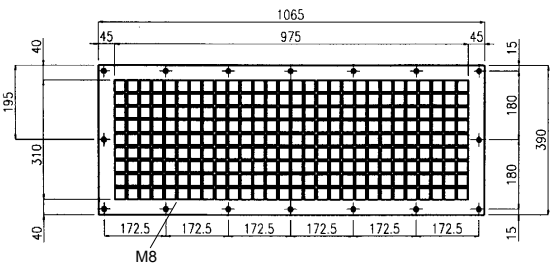


(R) Version with connection for centralized extraction

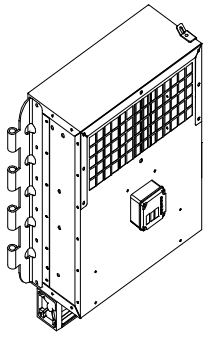


(1,2....9,A,B) Version with suction fan

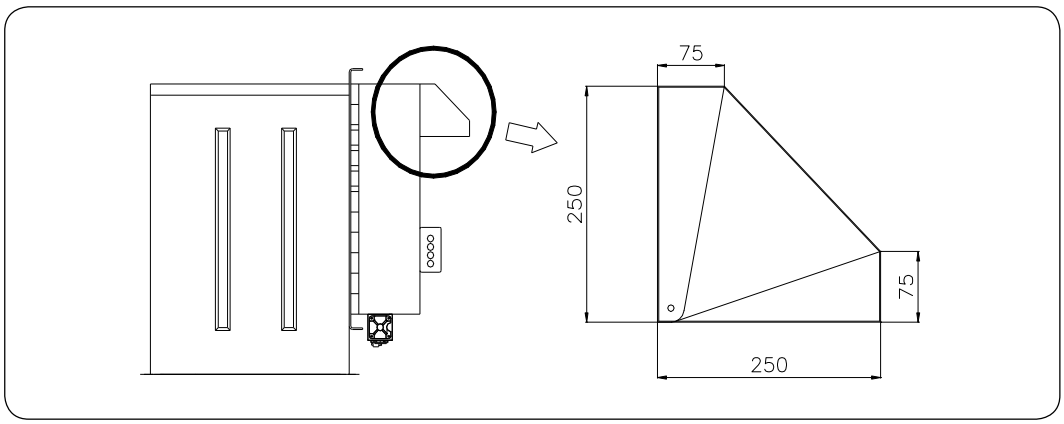
BASIC VERSION: CLEAN AIR OUTLET FLANGE (only for category 3D filters)

CUBIC VOLUME INDEX	
1-2-3-4-5 B-C-D-E-F	 Fig. 1
6-7-8-9 A-G-H-L-M-N	 Fig. 2
P-Q-R-S-T	 Fig. 3
Y - U	 Fig. 4

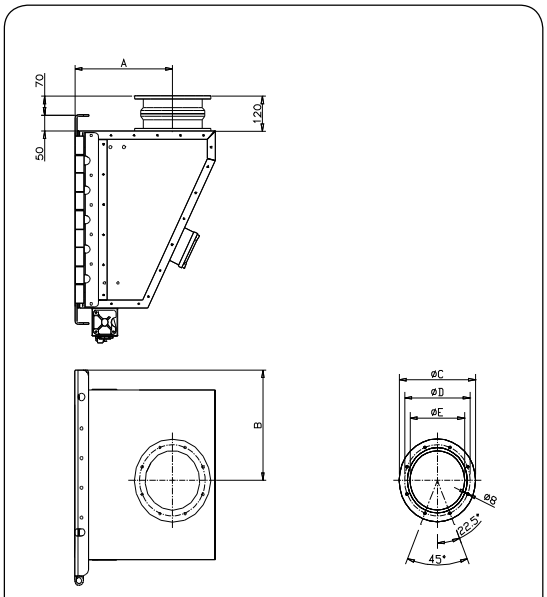
✻ **FILTER TOP EDGE**
FILTER-OBERKANTE
BORD SUPERIEUR FILTRE
BORDO SUPERIORE FILTRO

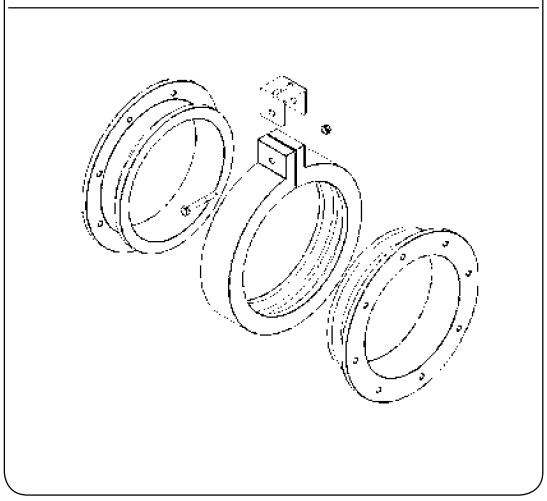


VERSION WITH RAIN SHIELD: PROTECTION FOR FLANGE (only for category 3D filters)



VERSION WITH CONNECTION FOR CENTRALIZED EXTRACTION (R)



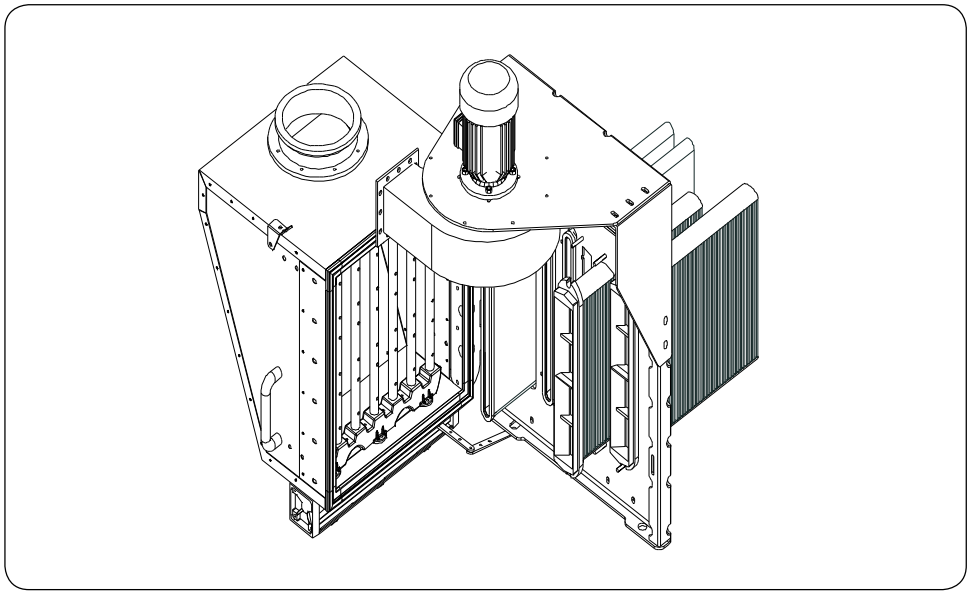


Volume index	A	B	C	D	E	No. of Holes
8 - D - E	350	371	280	241	200	8
M - S - T	456	496	362	332	250	8
Y - U	456	496	400	366	323	8

2.1 FPXI INSERTABLE POLYGONAL FILTERS

For dimensional requirements, it sometimes becomes necessary to insert the filter elements in the silo/hopper that is to be dedusted. This is why “INSERTABLE” filters are devoid of the filter body (i.e. that which contains the filter elements), and are installed directly on the silo/hopper to be dedusted, thereby reducing the height.

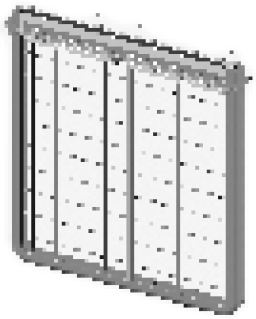
INSERTABLE FILTERS WITH HORIZONTAL ELEMENTS



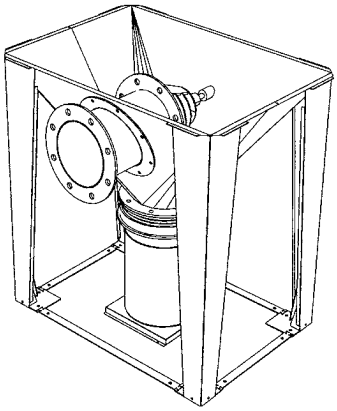
2.1.1 POLYGONAL FILTERS OPTIONALS

1

2



3



ITEM POS.	DESCRIPTION	MATERIAL/THICKNESS	THICKNESS	FINISH
1	VPA	Carbon steel		Galvanization
2	Plasticized frames	Carbon steel		Plasticized powder paint RAL 9001
3	Dust collection hopper	See PT Hoppers Catalogue		

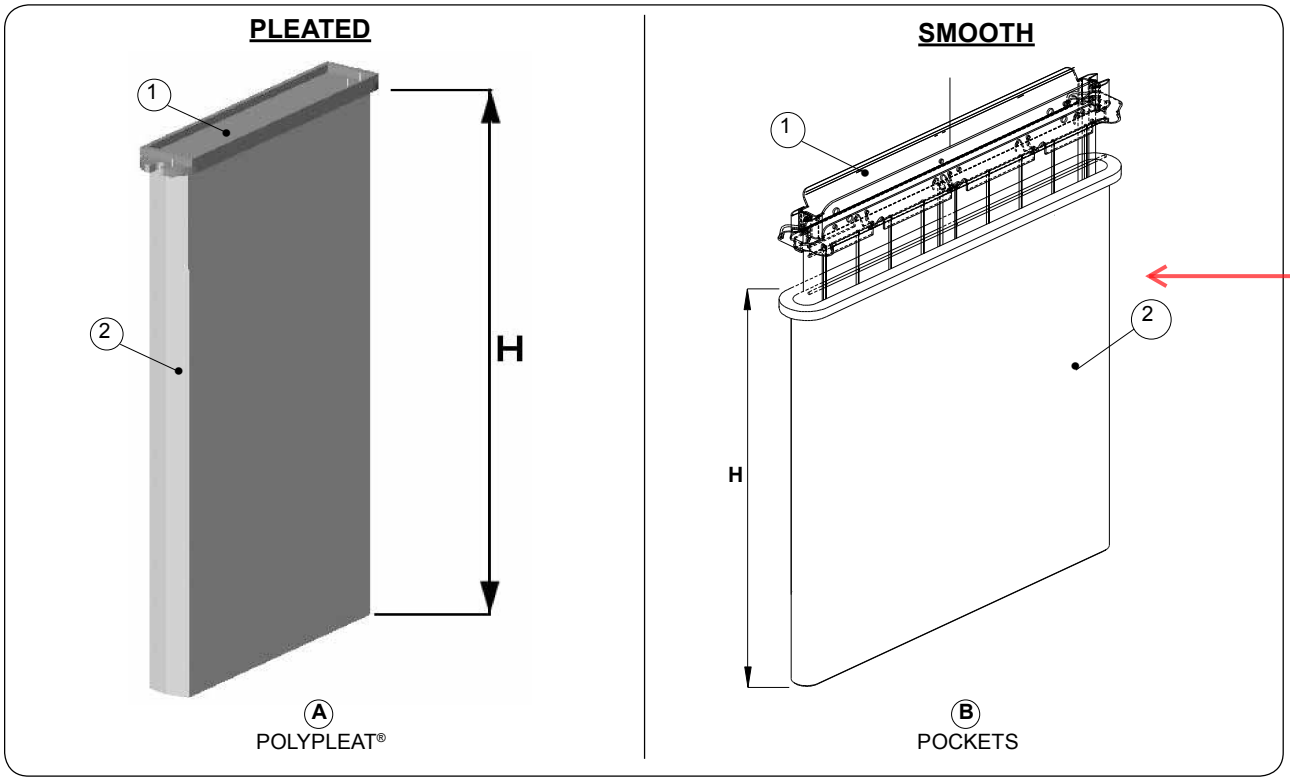
2.2 MAIN COMPONENTS

The **WAMAIR® ATEX** filters are made up of the following main components:
- Filter elements
- Cleaning system
- Timers
- Fans (if present)
- Other optionals

2.2.1 FILTER ELEMENTS

In **WAMAIR® ATEX** filters pocket or **Polypleat®** filter elements can be installed. The filter fabric may be smooth or pleated. The latter solution ensures optimum use of the space available, but is incompatible with certain types of applications. For more details consult the **WAM® technical-sales department.**

The Venturi system, applied in **WAMAIR® ATEX** filters, is specially designed by **WAM®** to make the compressed air cleaning system more efficient and is provided in the standard version. The Venturi system for the **POLYPLEAT®** and for pockets is directly built into the technopolymer top.



TYPE	ITEM POS.	DESCRIPTION	MATERIAL	H
POLYPLEAT®	01	Technopolymer	Head	520 770 920
	02	Filter medium	Non-woven-fabric polyester	
POCKET	01	Frame head	Galvanized carbon steel	1000 1250 1500
	02	Filter medium	Polyester felt	

FILTER MEDIA

For all filter elements different types of media can be used, to satisfy the requirements of all the applications in the various industrial sectors. The **WAM®** filter media are rigorously certified by the **"BIA" Professional Institute for workplace safety** (Germany).

WAM® Code	MATERIAL	g/m²	FIELDS OF APPLICATION	Class BIA
		SMOOTH		
FA	Smooth polyester felt	550	Filtrations of electrostatically charged materials	L
FB	Smooth polyester felt	550	Filtrations of electrostatically charged materials and containing moisture or oils	L
FZ	Smooth polyester felt	485	Extreme filtrations of electrostatically charged materials	M

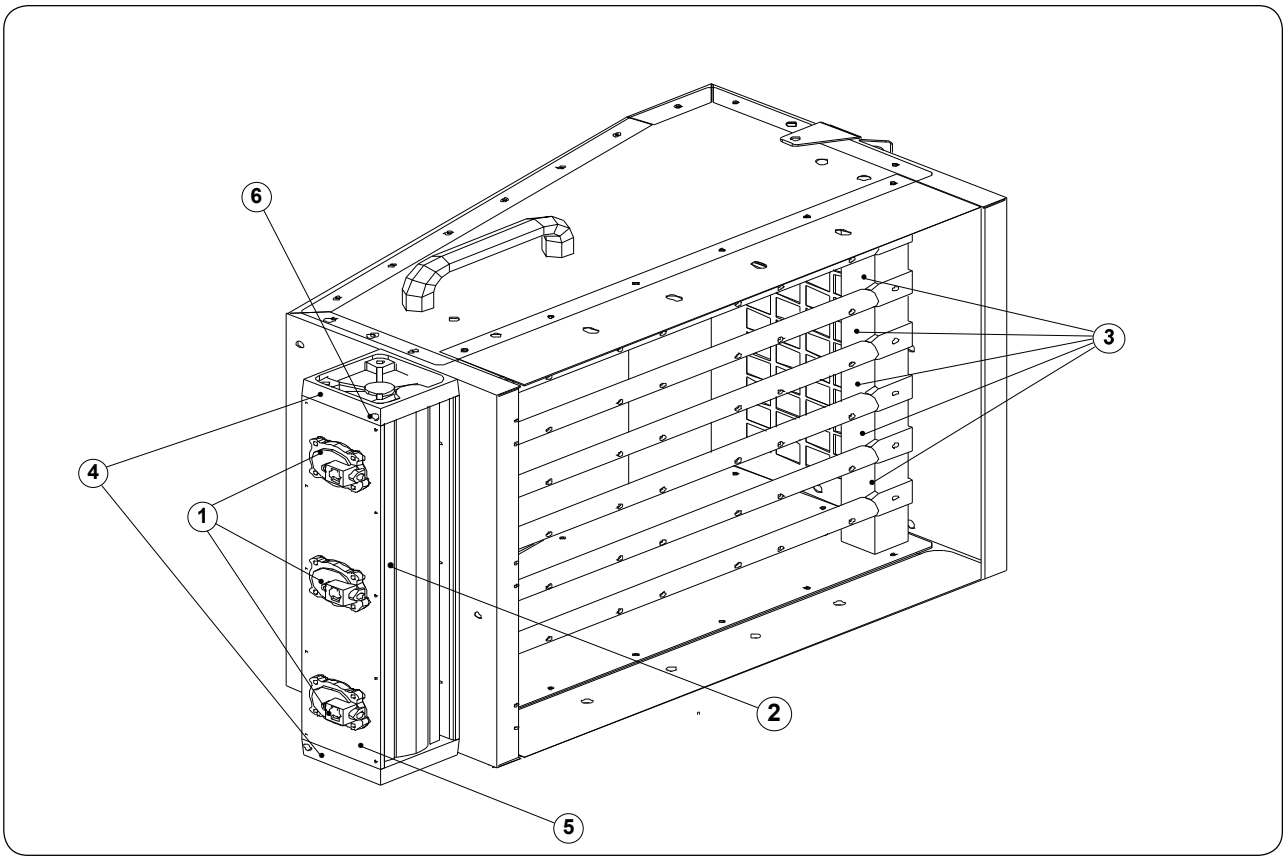
WAM® Code	MATERIAL	Gr./ m²	FIELDS OF APPLICATION	Class BIA
		PLEATED		
PA	Spunbond polyester felt	265	Filtrations of electrostatically charged materials	M
PB	Spunbond polyester felt	265	Filtrations of electrostatically charged materials and containing moisture or oils	M
PZ	Spunbond polyester felt	290	Extreme filtrations of electrostatically charged materials	M

Note | **For more information see "Filter Media" and "Selection Criteria" Catalogues.**

2.2.2
CLEANING SYSTEM

For **WAMAIR® ATEX** filters the filter elements cleaning system is a reverse compressed air jet type.

CLEANING WITH REVERSE COMPRESSED AIR JET



CLEANING UNIT

It consists of:
- Solenoid valves (1) mounted directly inside the compressed air tank (2) in such a way as to reduce load losses to the minimum;
- AISI Cleaning tubes (3);
- Externally anodized aluminium tank with two heads (4) also made of aluminium with black matt cataphoresis treatment;
- Air inlet valve (5)
- Valve for condensate drainage (6).

Timer which controls compressed air supply to the cleaning pipes in a sequential manner. The filter requires a connection with a compressed air pipe at constant 6 bar. The air must be cleaned, dehumidified and de-oiled.

COIL TABLE AVAILABLE

REF. ORDER CODE	COILS AVAILABLE	COMPATIBLE WITH WAM® BOARD
+	Without Coil	YES
1	1 24V 50/60 Hz	YES
Y	Pneumatic valves	NO

2.2.3 TIMERS

The timer has the function of sequential control of the filter elements cleaning cycle with compressed air, with the possibility of changing the cleaning time and pause time between one cleaning operation and the next.

Fig. 1

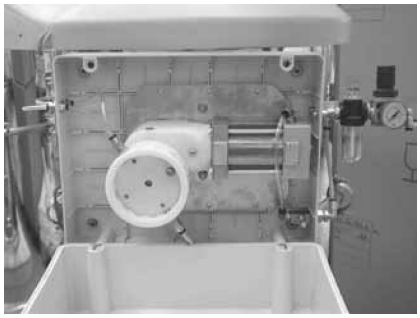


Fig. 2

ELECTRONIC TIMER (FIG.1) (NOT AVAILABLE FOR CATEGORY 2D FILTERS)

- The **WAM®** electronic controller board can be powered with a 24V - 260V AC/DC, 50/60 Hz supply and is installed inside a container which ensures a protection degree IP66 (according to CEI EN 60529)
- The pause times range from 5 to 90 sec., the work times range from 100 to 300 milliseconds. The board is provided with a timer fixed for 10 minutes to allow further cleaning of the filter at the end of the work cycle.

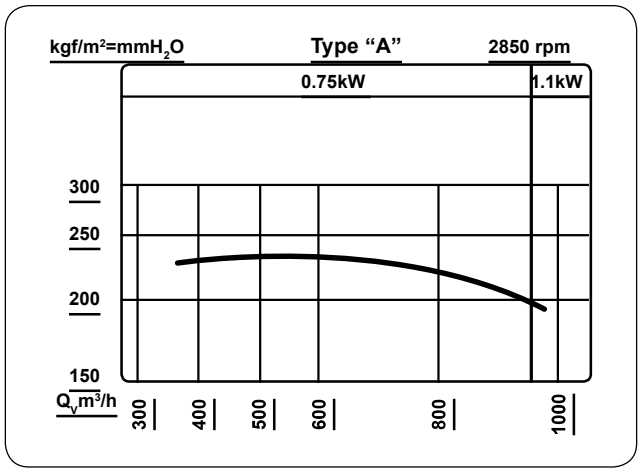
PNEUMATIC TIMER (FIG.1)

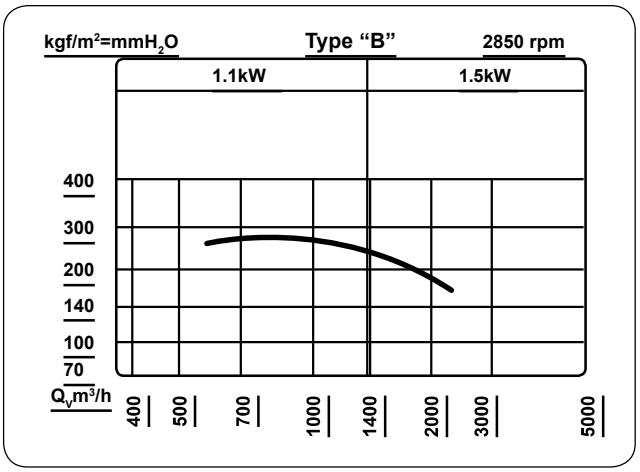
- The **WAM®** pneumatic actuator is used when no electricity is available in the plant.
- In this case it is enough to connect the compressed air (5-6 bar) for the working. The pause time can be adjusted. There is no cycle end cleaning.

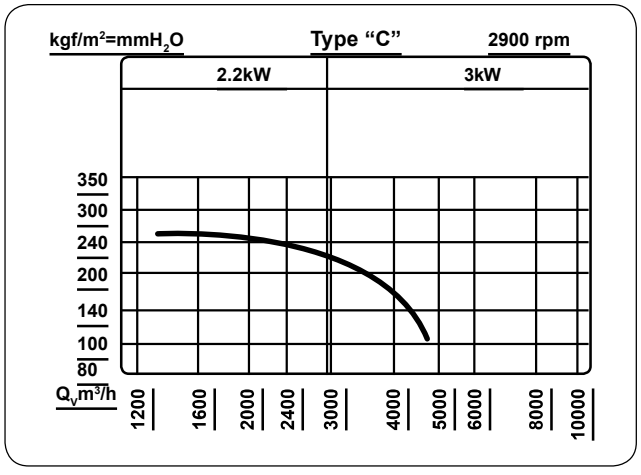
2.2.4
FANS (IF PRESENT)

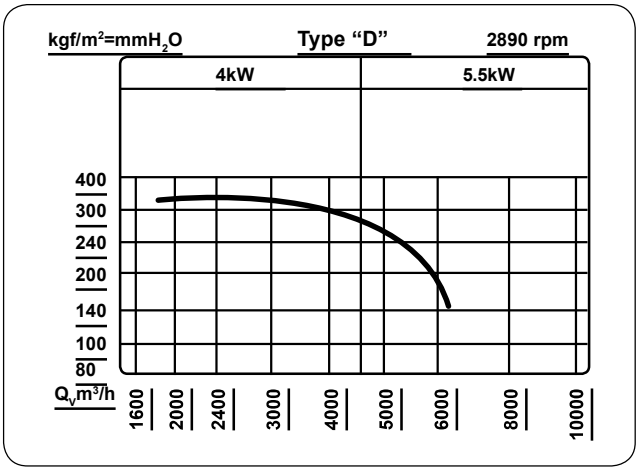
FANS PERFORMANCE CURVES

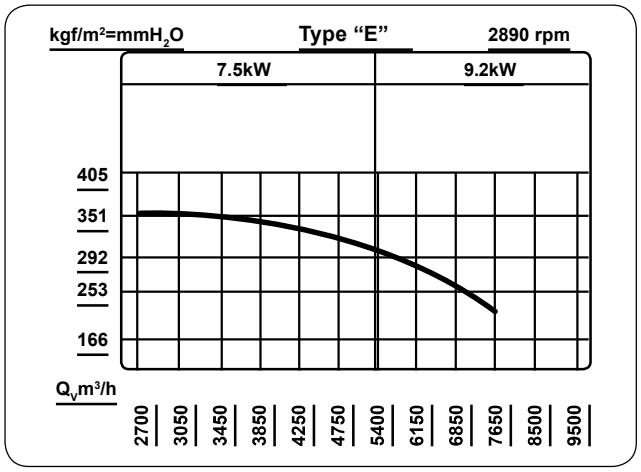
The curves of the fans indicate the throughputs and pressures available at the filter inlet with clean filter elements. For correct selection of the fan it is necessary to consider a load loss of the filter that can be estimated in 70-100 mm of H_2O variable according to the type, granulometry and concentration of the dusts.

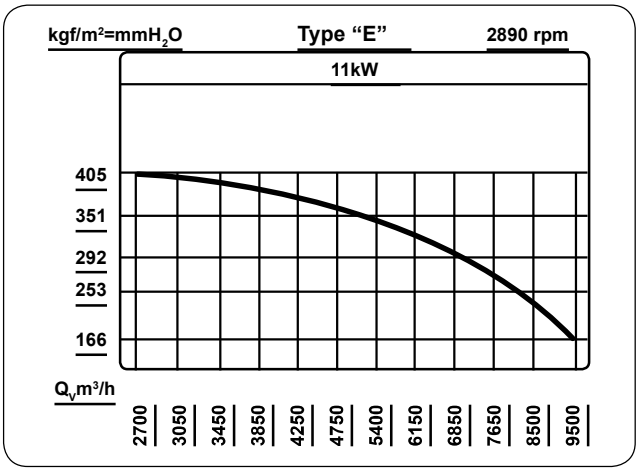












POSSIBLE FILTER/FAN COMBINATIONS

The **WAMAIR® ATEX** filters can be fitted with centrifugal suction fans having different dimensions and features.

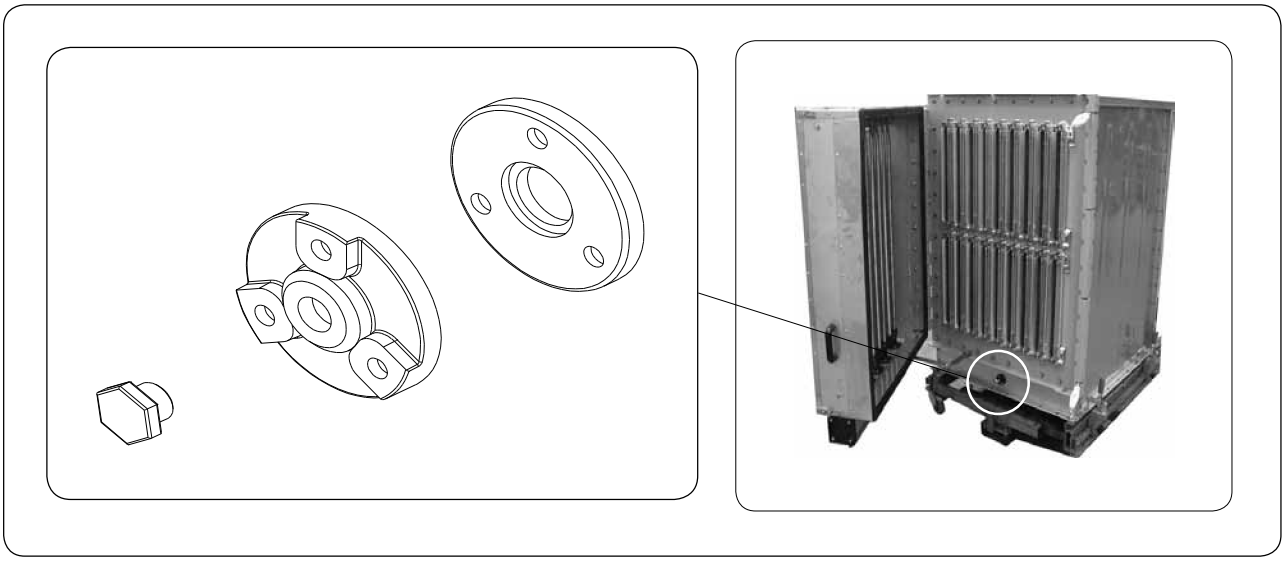
Filter cubic volume index	TYPE OF FAN										
	0.75 A	1.1 A	1.1 B	1.5 B	2.2 C	3 C	4 D	5.5 D	7.5 E	9.2 E	11 E
1	●	●	●	●	●	●					
2	●	●	●	●	●	●					
3	●	●	●	●	●	●					
4	●	●	●	●	●	●					
5	●	●	●	●	●	●					
6	●	●	●	●	●	●	●	●			
7	●	●	●	●	●	●	●	●			
8	●	●	●	●	●	●	●	●			
9	●	●	●	●	●	●	●	●			
A	●	●	●	●	●	●	●	●			
B	●	●	●	●	●	●	●	●			
C	●	●	●	●	●	●	●	●			
D	●	●	●	●	●	●	●	●			
E	●	●	●	●	●	●	●	●			
F	●	●	●	●	●	●	●	●			
G	●	●	●	●	●	●	●	●	●		
H	●	●	●	●	●	●	●	●	●		
L	●	●	●	●	●	●	●	●	●		
M	●	●	●	●	●	●	●	●	●		
N	●	●	●	●	●	●	●	●	●		
P			●	●	●	●	●	●	●	●	●
Q			●	●	●	●	●	●	●	●	●
R			●	●	●	●	●	●	●	●	●
S			●	●	●	●	●	●	●	●	●
T			●	●	●	●	●	●	●	●	●
Y						●	●	●	●	●	●
U						●	●	●	●	●	●

2.2.5 OPTIONS: PRESSURE DIFFERENTIAL MEASURING DEVICE

The **WAMAIR® ATEX** filters can be fitted with devices which measure the pressure difference between the dirty and clean parts of the flter, in order to monitor the degree of cleanliness of the flter elements.

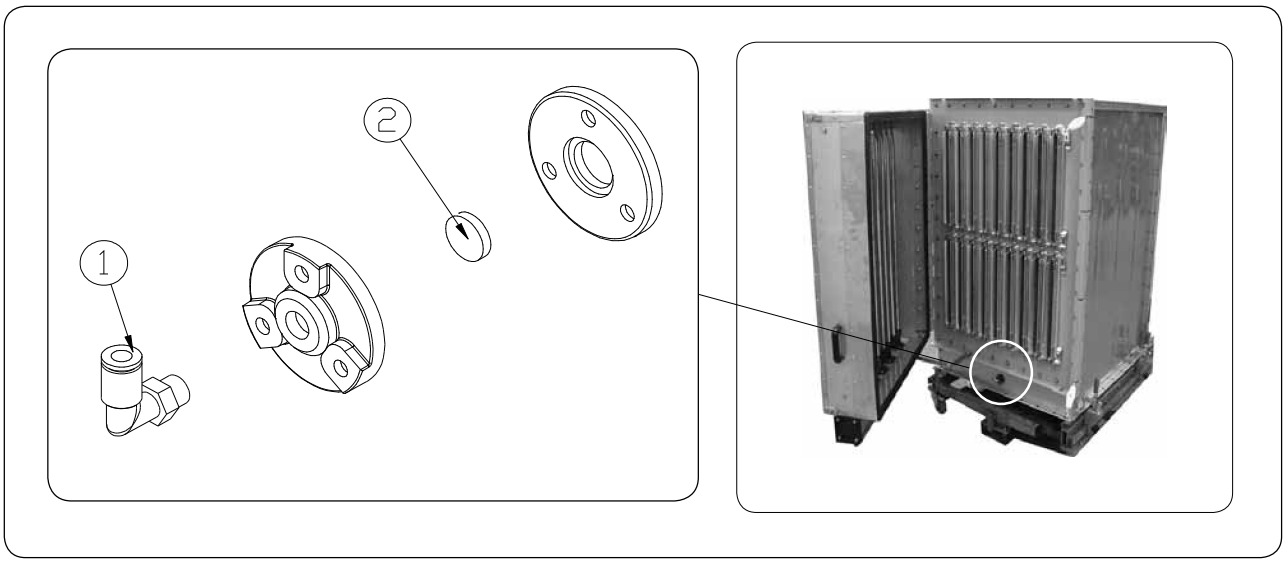
+ = WITHOUT PRESSURE MEASURING DEVICE

The pressure measuring device can be installed at a later stage. The filter body therefore already has provision for this purpose.



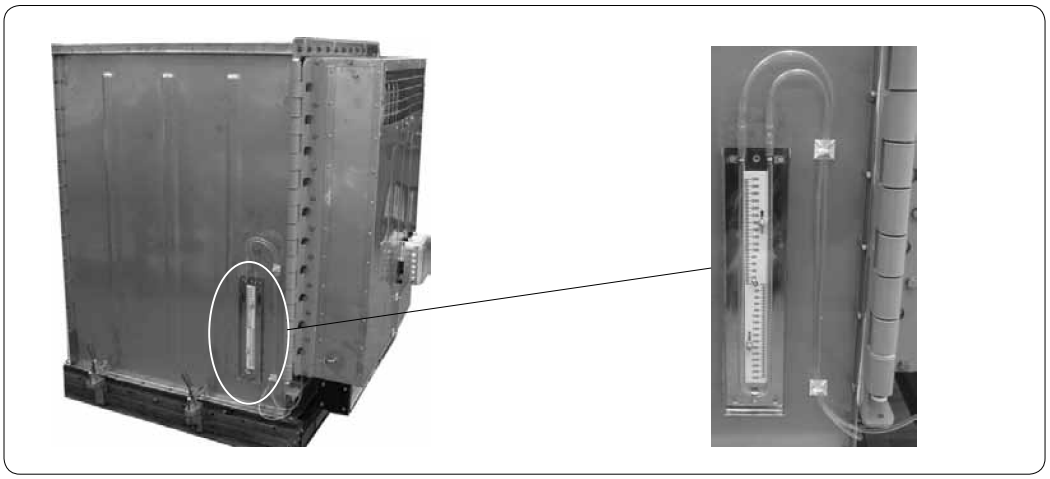
N = PROVISION FOR PRESSURE DIFFERENTIAL MEASURING DEVICE (MDN)

The filter body is already provided with the holes necessary for connecting the pressure differential measuring device. A Ø8 mm quick-release coupling (1) complete with filter pad (2) is inserted in the hole



H = WITH DIFFERENTIAL MEASURING DEVICE MDP

A transparent “U” shaped tube is installed on the body, connected at one end to the clean part and the other end to the fouled part of the filter. It must be filled with water and the PD can be read by means of a graduated scale



V = WITH DIFFERENTIAL MEASURING DEVICE MDPE

The MDPE module (electronic pressure differential measuring device) is mounted directly on the standard **WAM® electronic controller board.**

The pressure difference is expressed by means of a 3-digit display. By fixing two operating pressure thresholds (minimum and maximum), it is possible to run the filter cleaning cycle only when it is actually necessary, thus allowing a certain degree of energy saving. The preset values are shown in the Table below.

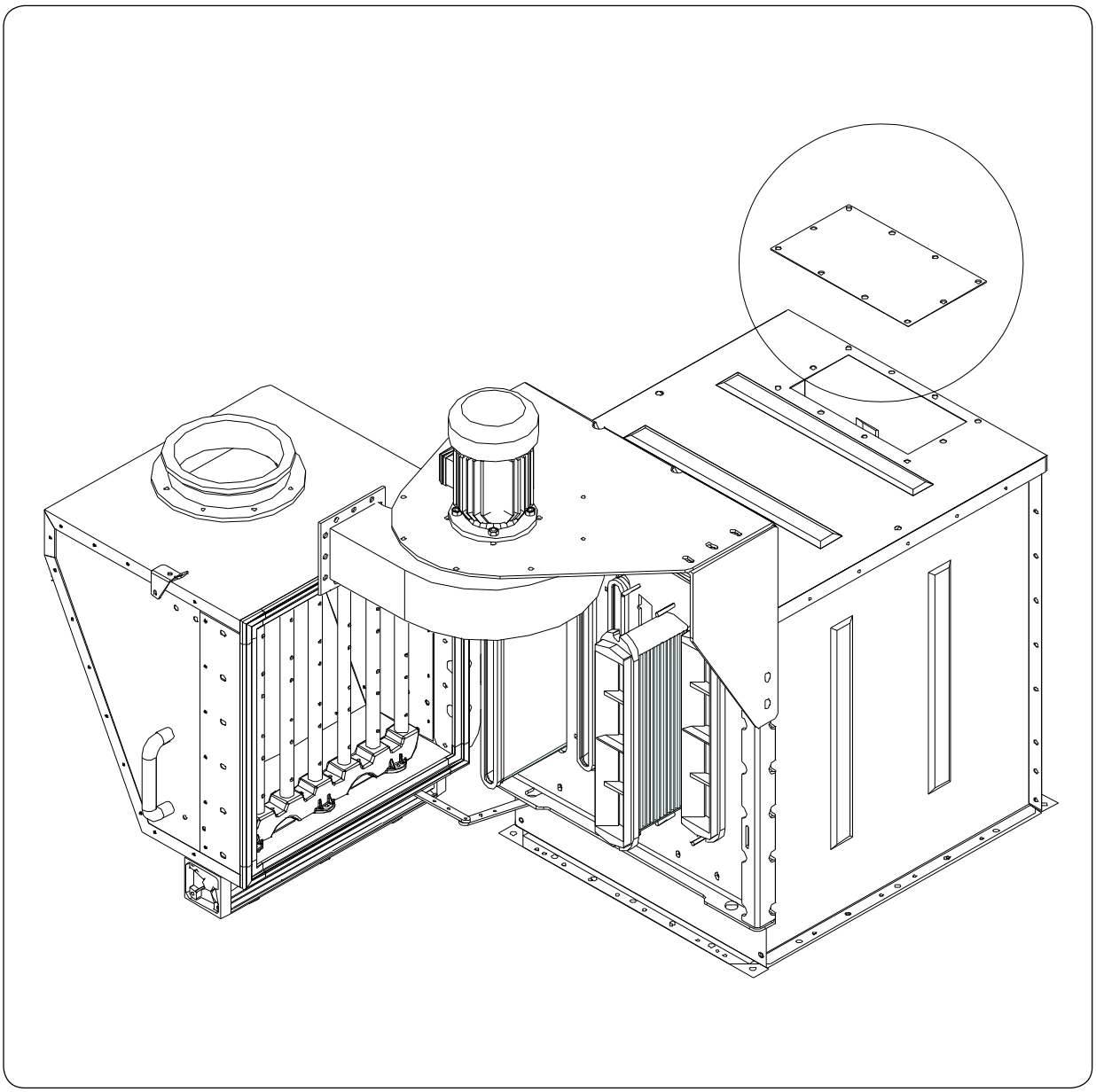
This instrument also allows the remote reading of the ΔP (4-20 mA output) as well as transmission of an alarm signal (WK output).

Activation pressure	90 mm H_2O
Deactivation pressure	40 mm H_2O

FOUL AIR INLET COVER PLATE

FOUL AIR INLET COVER PLATE IN CASE OF INSTALLATION ON TOP OF THE HOPPER

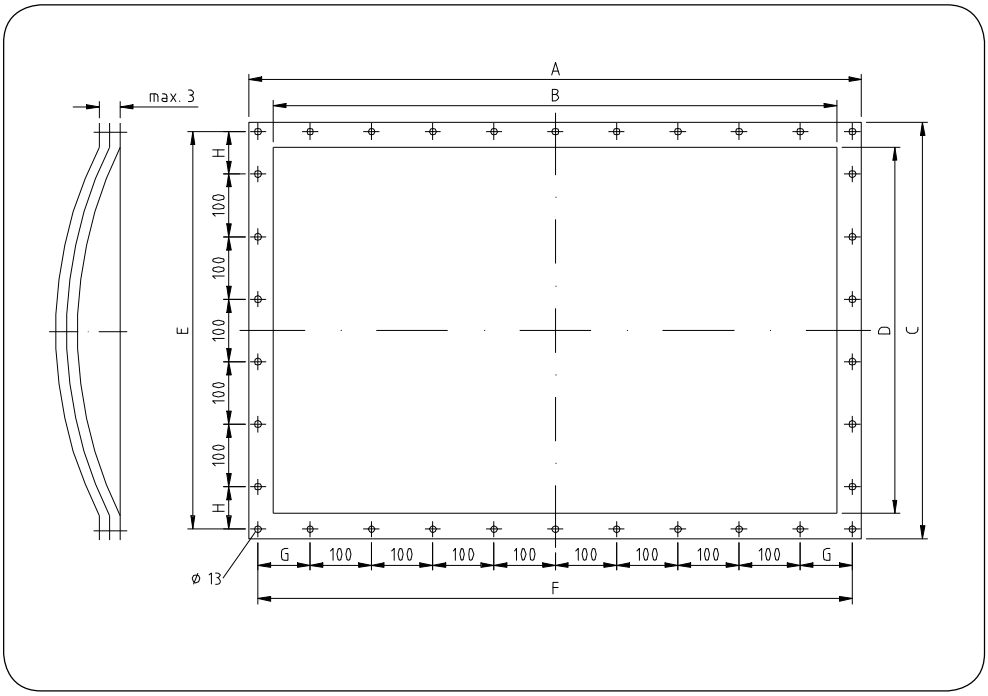
In case of filters with horizontal elements, the foul air inlet flange can be closed with a special plate. The material used for construction of said plate will be the same as that selected for the filter body.



EXPLOSION VENT PANEL SUPPLY

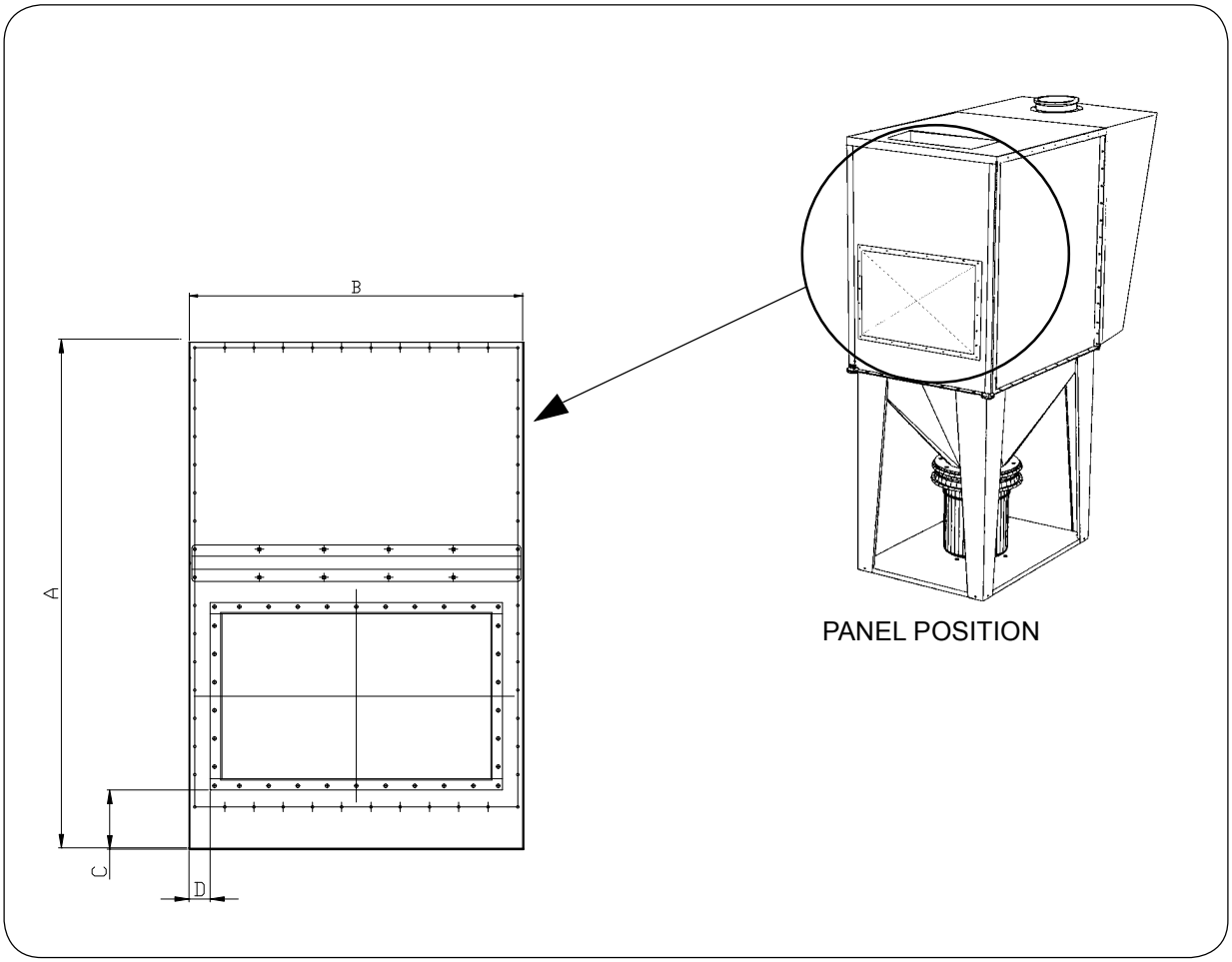
The **WAMAIR® ATEX** filters may be supplied with provision for installing explosion vent membranes. The membrane (B) may be supplied by **WAM®**, or can be purchased directly by the customer. Depending on the cubic volume index and explosiveness index of the powder handled (St1 or St2, see limits of use) the filter must be fitted with a membrane indicated in the Table below. To avoid damage during transport, the membrane is packed separately.

TYPE OF MEMBRANE	EFFECTIVE SURFACE	P_{stat}	VACUUM RESISTANCE	A	B	C	D	E	F	G	H	kg
490x590	0.26 m²	0.1 bar $_{rel}$	800mm H_2O	670	590	570	490	540	640	70	70	3
586x920	0.5 m²	0.1 bar $_{rel}$	500mm H_2O	1000	920	666	586	636	970	85	68	8



CUBIC VOLUME INDEX	EXPLOSION VENT PANEL	
	St 1	St 2
8	490x590	490x590
D	490x590	490x590
E	490x590	490x590
M	490x590	490x590
S	490x590	490x590
T	490x590	490x590
Y	586x920	586x920
U	586x920	586x920

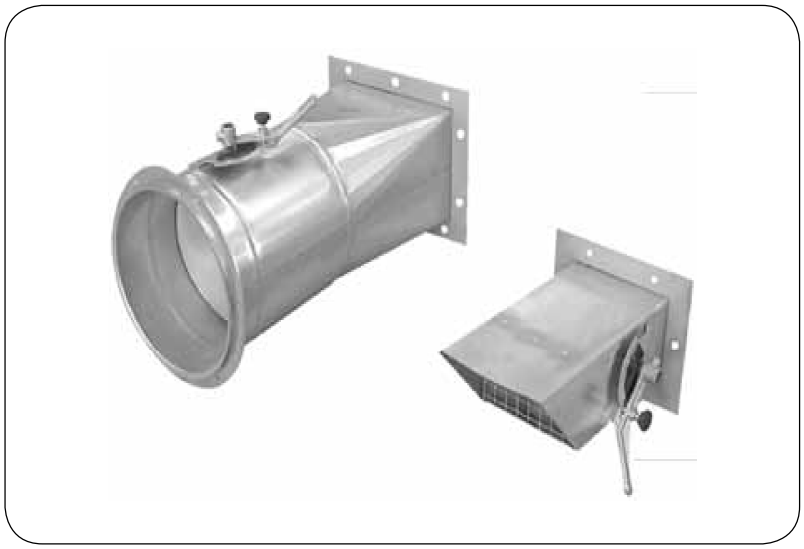
EXPLOSION VENT PANEL SUPPLY



			490x590		586x920	
CUBIC VOLUME INDEX	A	B	C	D	C	D
8	805	915	118	122.5	/	/
D	1300	640	215	35	/	/
E	1300	640	215	35	/	/
M	1300	915	215	122.5	23	124.5
S	1300	1135	215	232.5	215	67.5
T	1300	1135	215	232.5	215	67.5
Y	1795	1135	/	/	215	67.5
U	1795	1135	/	/	215	67.5

THROTTLE VALVE

VPA_



ATTENTION!
- Standard fans can be used in a number of applications different from one another. It is therefore advisable to use a throttle valve to be applied at the fan outlet spout to reduce and perfectly adapt the suction features to the needs of each application.

Two models are available:
- **VPA_T**, with round outlet flange **VPA_H, VPA_V** in which a rain shield cover is applied at the outlet.

Adjustment **VPA**
- Switch on the fan with the VPA open to 15-20% MAX.
- Then adjust the opening of the VPA to obtain efficient extraction for the application.

Note **Excessive opening of the VPA can reduce the average life of the filter media to a considerable extent.**

3.0

CONSUMPTION

COMPRESSED AIR CONSUMPTION

Cubic volume index	Tank volume (l)	P MAX (bar)	Cleaning interval*	Cleaning time	Nm³/h
1-2-3-4-5 B-C-D-E-F	4	6	28 sec	100 msec	4.5
				210 msec	9.0
6-7-8-9-A G-H-L-M-N	6.2			100 msec	4.5
				210 msec	9.0
P-Q-R-S-T-Y-U	7.9			100 msec	4.5
				210 msec	9.0

*The cleaning time preset for pleated fabrics (cartridges and **POLYPLEAT®**) is 100ms, for smooth fabrics (bag, pocket, elliptical bag) it is 210ms. For more information, see electronic controller board configuration page.

BOARD POWER ABSORPTION

Power supply voltage (VAC)	Power input (A)	Power (W)
24	0.220	5.3
115	0.090	10.4
230	0.050	11.5
260	0.045	11.7

3.1 TRANSPORT - WEIGHTS

On receiving the goods, check to make sure the type and quantity correspond to the data in the order confirmation. Damage, if any, must be immediately communicated in writing in the space provided for the purpose in the waybill.

The driver must accept the complaint and leave a copy with the user. If the supply is delivered free to destination, send the complaint to the manufacturer, or directly to the haulage contractors. Damages will be paid only if the report is made on receipt of the goods. Avoid all kinds of damage during unloading and handling; for this purpose lift the dismantled parts of the filter by means of the eyebolts provided.

DO NOT PUSH OR PULL THE FILTERS! Bear in mind that it is mechanical material which must be handled with care. f the load includes a number of filters, make sure the various components of the same filter show the same serial number on the identification plate.

STORING THE MACHINE FOR LONG PERIODS.

Avoid damp, salty environments as far as possible. If this is not possible, protect the product with heat-insulating film. Before installing the machine, check the electrical and pneumatic systems to make sure they are in perfect condition. To store the machine correctly for a shutdown period, clean the parts thoroughly and protect the metallic parts. Place the equipment on wooden pallets and store protected from inclement weather conditions.

Type	kg
FPXHT 8 09	270
FPXHT D 12	330
FPXHT E 15	360
FPXHT M 22	470
FPXHT S 30	560
FPXHT T 36	610
FPXHT Y 45	720
FPXHT U 54	780

Type	kg
FPXHW 8 16	240
FPXHW 8 24	260
FPXHW D 24	300
FPXHW D 32	360
FPXHW D 40	430
FPXHW M 48	470
FPXHW M 64	500
FPXHW S 56	530
FPXHW S 80	550

Type	kg
FPXIT 8 09	203
FPXIT D 12	248
FPXIT E 15	270
FPXIT M 22	353
FPXIT S 30	420
FPXIT T 36	458
FPXIT Y 45	540
FPXIT U 54	585

Type	kg
FPXIW 8 16	180
FPXIW 8 24	295
FPXIW D 24	225
FPXIW D 32	270
FPXIW D 40	323
FPXIW M 48	353
FPXIW M 64	375
FPXIW S 56	398
FPXIW S 80	413

Fan Type	Power kW	Weight kg
A	0.75	63
	1.1A	63
B	1.1B	75
	1.5	81
C	2.2	112
	3	122
D	4	137
	5.5	173
E	7.5	208
	9.2	227
	11	268

3.2 PACKING

The filter is supplied on a suitable sized pallet, covered with shrink-wrap. The filter elements and antiburst panel are always supplied separately in a box and will be installed at the end of all the other installation operations described on the following pages.

FPXH

Volume index	Without fan				With fan			
	A	B	C	NBR of cases	A	B	C	NBR of cases
FPXH_8	1100	1800	1000	1	1100	2000	1450	1
FPXH_D	800	1800	1500	1	800	2200	1950	1
FPXH_E	800	2000	1500	1	800	2400	2050	1
FPXH_M	1100	2000	1500	1	1100	2500	2100	1
FPXH_S	1300	2000	1500	1	1300	2600	2150	1
FPXH_T	1300	2300	1500	1	1300	2800	2150	1
FPXH_Y	1300	2000	2100	1	1300	2700	2700	1
					1300	2500	2100	2*
					850	1200	1200	
FPXH_U	1300	2500	2100	1	1300	2900	2700	1
					1300	2700	2100	2*
					850	1200	1200	

Note | **The dimensions are expressed in mm and are indicative.**

*For shipment overseas (filter body and fan dismantled and packed separately)