



FP 200



### Designed for larger dust volumes

The FP 211 ATEX and FP 213 ATEX are equipped with dedustable antistatic filter cartridges, which enable the filters to be freed from dust by compressed air blasts. The units are thus particularly well suitable for applications in which large quantities of dry dust are extracted and achieve enormously long service lives compared to systems with saturation filters.



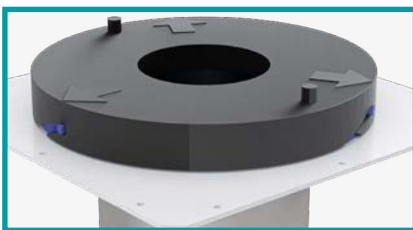
Illustration similar



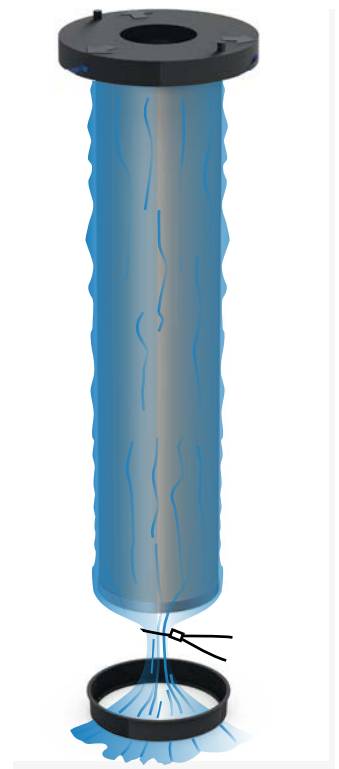
### Contamination-free filter change



### Patented technology



Bayonet lock: Tool-free filter exchanging



Filter cartridge - safe removal and packaging through patented technology.



## Application-dependent filter equipment

The filter and extraction system can be equipped with suitable filter cartridges depending on application. A differentiation is made between:

### Standard:

Dedusting processes with dry dusts that can be easily dedusted from the filter-cartridge surface. A polyester fleece cartridge with conductive aluminium coating is used here. The standard filter cartridge represents the optimum between filter efficiency and costs

### Optional:

Processes with dusts that are difficult to dedust, e.g. in connection with precoating. A polyester fleece cartridge with PTFE and aluminium coating is used here. Due to its special coating, the optional filter cartridge has a greatly improved cleaning characteristics and is optimally suited for difficult applications.

Apart of the available filter cartridge options, the system can be equipped ex works with a variety of filter modules.

This may be necessary depending on application and occupational safety regulations. As an example, a separately monitored particulate filter (H14) can optionally be connected downstream for carcinogenic substances.

A molecular filter (activated carbon/BAC) is also available for removal of odours and gases from the process air.



Illustration similar



## Simple dust removal

The dust generated during the process is disposed of via the removable dust container.

If required, a dust bag can be inserted for low-contamination dust removal.



Dust removal



## Filter-cleaning control

The FP 200 series is equipped with special filter-cleaning control, which enables the filter cartridge to be automatically freed from dust and thus increase the filter service life enormously.

Depending on the application, different options can be parameterized by the customer:

Differential-pressure controlled dedusting (factory setting)

- The system continuously measures the current filter saturation and automatically starts the dedusting cycle when a set value is reached (factory setting: 75% filter saturation).

- Interval filter dedusting (parameterizable via interface)

The system automatically starts the dedusting cycle at adjustable intervals (minutes/hours).

- After-run cleaning (parameterizable via interface)

The after-run cleaning can also be activated in addition to another mode. When the system is switched to standby, a dedusting cycle starts automatically. This allows the system to clean the filters at the end of a working shift without interrupting a work process.

- Start filter dedusting via interface (no automatic filter dedusting).

Depending on the application, the customer can easily activate the cleaning process via the interface. This function is recommended when the customer's work process may not be unexpectedly disturbed. Additionally, the dedusting can be started manually via the system's front foil. This setting is, as an example, is absolutely necessary for manual precoating and can already added in the order process.

### Additional functions:

Control of shut-off valve, system shut-down during dedusting, cycle times, etc.

### Precoating procedure

The FP 211 and FP 213 can be manually precoated with the Precofix 200 precoating powder. The precoating powder creates a thin separating layer between the filter medium and the extracted debris particles. This protects the surface of the filter cartridge and facilitates the cleaning of even sticky and moist particles (Fig.1). This enormously increases the application range of cartridge filter systems of the FPV and FP series and greatly extends the filter service life, even under difficult conditions.



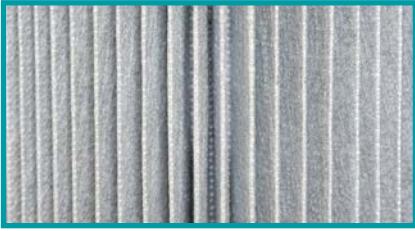
without Precofix 200

with Precofix 200

Figure 1



## Long service life due to effective filter cleaning



New filter cartridge



Filter cartridge in operation



Filter cartridge after dedusting

The FP 211 and FP 213 are equipped with six dedustable filter cartridges of dust class M. The filter cartridges are made of BGIA (USGC) tested filter material, which allows an optimized filter dedusting due to its special folding.

Depending on the application, specially coated variants can be used. Please contact the TBH sales department.



## Application-dependent Motor selection

TBH offers a selection of different motor concepts in its product range to ensure the optimum suitability of the filter and extraction system for the respective application. This enables the system to be ideally adapted to the conditions on site, for example through:

- short or long extraction lines,
- large or small line cross sections,
- coarse or fine particles,
- Single or multi-station extraction,
- noise-sensitive environment,
- industrial production hall.



## Double adsorption power



Active carbon



BAC granulate



Active carbon/BAC

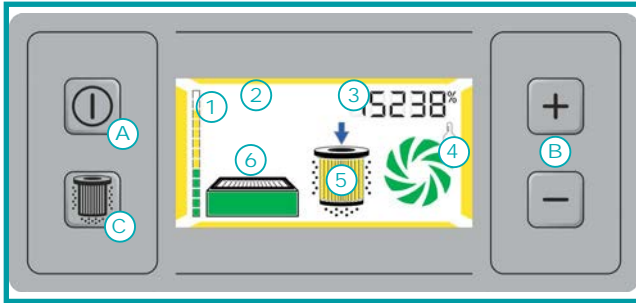
The adsorption of the gaseous substances takes place with activated carbon (physical adsorption) and BAC granulate (chemical adsorption).

-> Neutralization through chemical bonding with the reaction substance applied to the substrate material.

In addition, they take up a very broad spectrum of gases and odours.

## Inspiring control

Continuous full control over the system



- . A - Start / Stop button
- . B - Manual power control
- . C - Manual start of filter-cartridge dedusting
- . 1 - Saturated filter notification
- . 2 - System status indication
- . 3 - Power-setting indication/  
Hour meter
- . 4 - Temperature and turbine-status indication
- . 5 - Filter status indication

## SUB-D 25 interface

External control of the system



Illustration similar

Powerful control unit

- . Start / Stop button
- . "Filter full" pre-warning stage (75%)
- . Group-error output  
(speed, temperature, "filter full" 100%)
- . External power control
- . Parameterization access for activating  
special functions and dedusting mode
- . Message cache
- . Digital interface (RS232)

Further information on the series

Scan QR code:



## Applications



### **Refilling work, packaging processes, feeding and conveying processes**

When materials are moved from one place to another, such as during packaging or transportation, this process can cause particles to be released. Especially since they are not visible to the human eye, the risk should not be underestimated. Particles can develop from turbulences. TBH filter and extraction systems safely remove these particles from the ambient air.



### **Mechanical processing (grinding, deburring, milling, drilling, cutting)**

Processes such as grinding, deburring, milling, drilling or cutting generate dust, vapours and gases. These by-products must be extracted before their tiny particles are inhaled and can cause serious harm to the human body.



### **Laser technology**

Lasers are used for processing metals, woods and plastics. Due to this versatility, companies are intensively involved in laser technology. This not only increases efficiency, but also creates unwanted by-products, regardless of type and performance. TBH systems ensure safe extraction of fine dust and laser fumes.



### **Plastics processing**

Almost every industry today processes plastics. TBH systems are exactly the right solution for the safe extraction and filtration of grinding dusts and vapours that occur during the processing of plastics. Be convinced by our quality.

## Series configuration EP 200 series



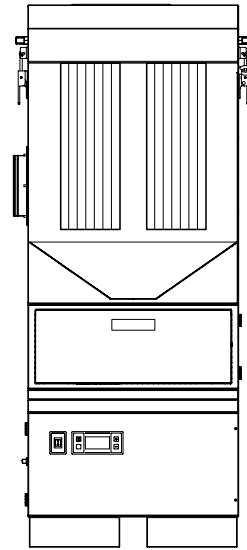
For easy configuration of your desired TBH filter and extraction system type FP 211 or FP 213, please observe the following steps:

### A - Selection of basic model

Depending on the application, select the suitable system based on its performance data (Fig. 2).

TECHNICAL DATA	UNIT	FP 211	FP 213
Air flow rate with free air delivery	m <sup>3</sup> /h	2000	700
Effective air flow rate	m <sup>3</sup> /h	300-1500	100-550
Max. static pressure	Pa	5500	15000
Voltage	V	400 (3P+N)	230

Figure 2



BASIC MODEL FP 211 / FP 213

### B - Selection of filter cartridges

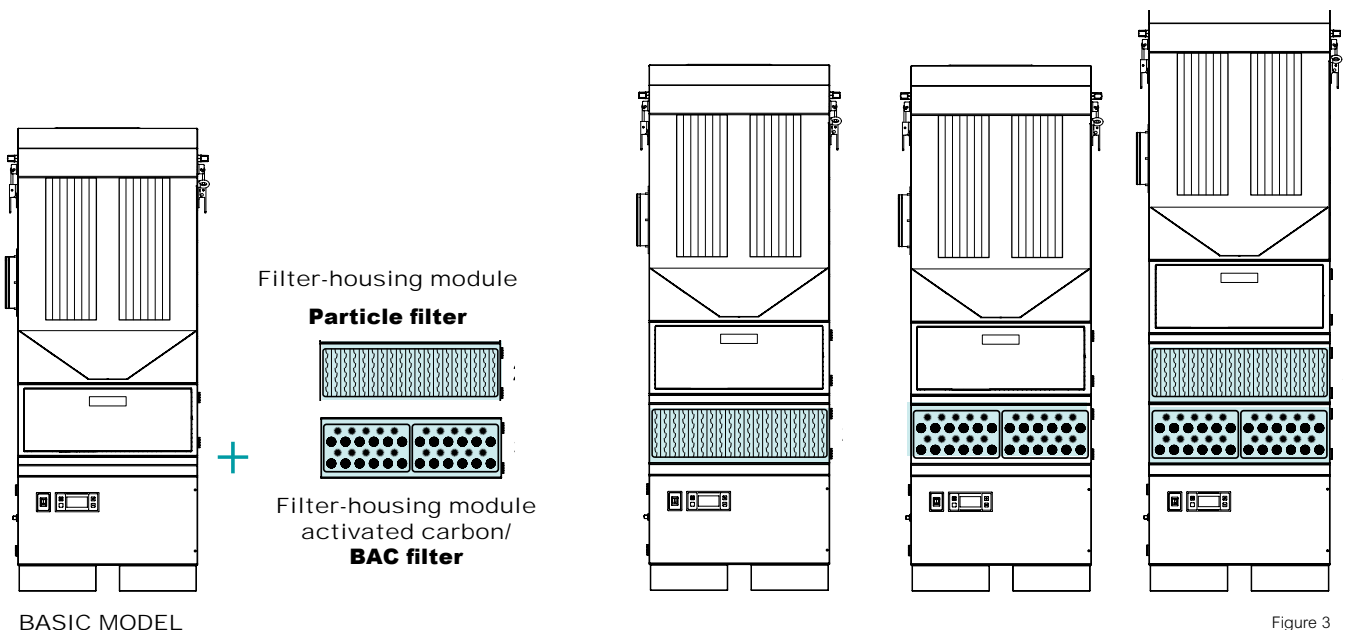
Select the appropriate filter cartridges for your system depending on application.

For any questions, please contact the TBH sales department.

### C - Selection of intermediate modules

Depending on the application, select additional filter stages for your system (Fig. 3). Depending on the application, a filter-housing module with particle filter and/or a filter-housing module with activated carbon/BAC filter can be selected.

When using activated carbon/BAC filters, it can also be checked whether a downstream filter module is the better solution for your application instead of a built-in filter, as this does not have a negative effect on the system performance (see accessories from page 15 on)





## Series configuration EP 200 series



### D - Selection of intake socket

Select the intake socket of your system (position and diameter) from (Fig. 4). Please note any existing connections, e.g. to laser systems or similar. Please also pay attention to a reasonable dimensioning of the line cross-sections in relation to your application (air velocity, pressure loss).

### E - Selection of dedusting

The system is factory-delivered with the function "Differential-pressure controlled dedusting". When the filter saturation reaches the set value, the system automatically starts its dedusting cycle.

The cleaning modes interval dedusting and follow-up dedusting can be easily parameterized by the customer via the system's interface. Please contact your country representative, if in doubt.

The filter cartridge dedusting can also be started externally via the interface.

### F - Selection of precoating socket

Select a possibly required precoating nozzle (Fig. 5) based on the selected intake socket.

Required replacement filters can be found in the corresponding ordering data tables.

For any questions, please contact the TBH sales department.



Figure 4

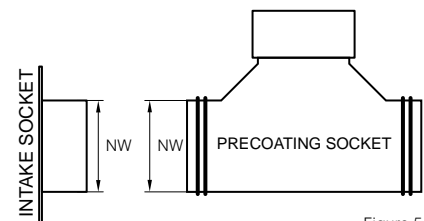


Figure 5

## Technical data FP 211



Illustration similar

### Delivery scope:

- Completely assembled (incl. the selected filter equipment)
- Base stands (suitable for forklift trucks)
- Crane eyelets (optional)
- Power cord

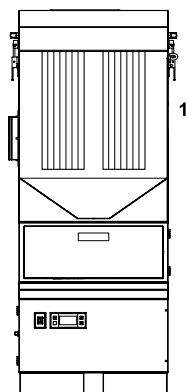
TECHNICAL DATA		UNIT	FP 211
Air flow rate with free air delivery		m <sup>3</sup> /h	2000
Effective air flow rate		m <sup>3</sup> /h	300-1500
Max. static pressure		Pa	5500
Voltage		V	400 (3P+N)
Frequency		Hz	50/60
Motor output		kW	3.0
Class of protection		-	1
Drive type		-	Continuous running
Sound level		db(A)	approx. 68
Serial interface		Sub-D	25-pin
Weight		kg	approx. 240
Dimensions (HxWxD)	Basic model	mm	1900x700x780
	with 1 intermediate module	mm	2145x700x780
	with 2 intermediate modules	mm	2380x700x780
Minimum ceiling height for filter removal	Basic model	mm	2450
	with 1 intermediate module	mm	2700
	with 2 intermediate modules	mm	2950
Intake sleeve		-	On rear side or left
Exhaust sleeve NW 250		-	Standard
Automatic dedusting		-	✓
Differential-pressure measurement		-	✓
Filter Surface		m <sup>2</sup>	16.2
Dust collection container		Liters	50
Color		RAL	7035

### FILTER CONFIGURATION

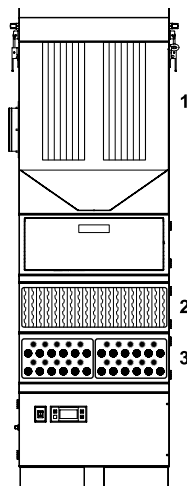
Filter cartridge, anti-static (dust category M), dedustable	6 x 2.7 m <sup>2</sup> *
Particle filter H14	optional
activated carbon/BAC filter	optional (2 x 26 liters)

\* you can choose between two filter materials

## Ordering data FP 211



BASIC MODEL



WITH INTERMEDIATE MODULE

A DESIGNATION	ART. NO.
FP 211 400V (3P+N) 50/60Hz	90194

B FILTER EQUIPMENT	ART. NO.
Filter-housing module, particle filter	14276 2
Filter-housing module, activated carbon/BAC filter*	14274 3

FILTER EQUIPMENT	ART. NO.
6 x filter cartridges, antistatic	STAN- DARD 1
6 x filter cartridges, antistatic PTFE	20185

\* reduces the extraction capacity of the system by approx. 20% - alternatively, an additional filter module can be connected downstream of the system so that the capacity is not negatively affected (see accessories from page 18 onwards)

SPARE FILTER	ART. NO.
Filter cartridge set, antistatic, pack of 6	20171 1
Filter-cartridge set, anti- static, pack of 6 PTFE	20183

SPARE FILTER	ART. NO.
Particle filter	15951 2
2 x activated carbon/ BAC filter	14517 3

D INTAKE SOCKET	ART. NO.
Left*	13171
Rear side*	13172
NW 160**	16536
NW 200**	16537

E DEDUSTING	ART. NO.
Differential-pressure controlled	Standard
only after-run dedusting	14407
no autom. dedusting	20223*

F PRECOATING SOCKET	ART. NO.
NW 160	14483
NW 200	13714

\* Indicates position only \*\* Sleeve dimension

\* Necessary for manual precoating or automated production lines. Automatic dedusting of the filters is no initiated. The filter dedusting is controlled manually via the button on the front foil or via the interface/ customer's PLC. Further filter-cleaning modes can be easily parameterized via the system's interface.

## Technical data FP 213



Illustration similar



### Delivery scope:

- Completely assembled (incl. the selected filter equipment)
- Base stands (suitable for forklift trucks)
- Crane eyelets (optional)
- Power cord

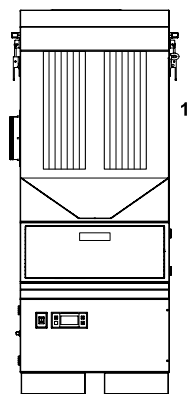
TECHNICAL DATA		UNIT	FP 213
Air flow rate with free air delivery		m <sup>3</sup> /h	700
Effective air flow rate		m <sup>3</sup> /h	100-550
Max. static pressure		Pa	15000
Voltage		V	230
Frequency		Hz	50/60
Motor output		kW	1.8
Class of protection		-	1
Drive type		-	Continuous running
Sound level		db(A)	approx. 68
Serial interface		Sub-D	25-pin
Weight		kg	approx. 240
Dimensions (HxWxD)	Basic model	mm	1900x700x780
	with 1 intermediate module	mm	2145x700x780
	with 2 intermediate modules	mm	2380x700x780
Minimum ceiling height for filter removal	Basic model	mm	2450
	with 1 intermediate module	mm	2700
	with 2 intermediate modules	mm	2950
Intake sleeve		-	On rear side or left
Exhaust sleeve NW 250		-	Standard
Automatic dedusting		-	✓
Differential-pressure measurement		-	✓
Filter Surface		m <sup>2</sup>	16.2
Dust collection container		Liters	50
Color		RAL	7035

### FILTER CONFIGURATION

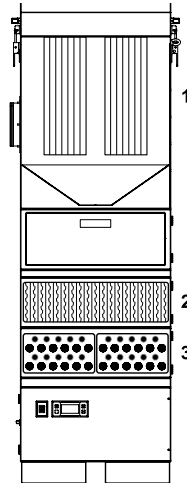
Filter cartridge, anti-static (dust category M), dedustable	6 x 2.7 m <sup>2</sup> *
Particle filter H14	optional
activated carbon/BAC filter	optional (2 x 26 liters)

\* you can choose between two filter materials

## Ordering data FP 213



BASIC MODEL



WITH INTERMEDIATE MODULE

### A DESIGNATION ART. NO.

FP 213 230V 50/60Hz	90208
------------------------	-------

### FILTER EQUIPMENT ART. NO.

6 x filter cartridges, antistatic	STAN- DARD	1
6 x filter cartridges, antistatic PTFE	20185	

### SPARE FILTER ART. NO.

Filter cartridge set, antistatic, pack of 6	20171	1
Filter-cartridge set, anti- static, pack of 6 PTFE	20183	

### D INTAKE SOCKET

Left*	13171
Rear side*	13172
NW 80**	16533
NW 100**	16534
NW125**	16535

\* Indicates position only \*\* Sleeve dimension

### B FILTER EQUIPMENT ART. NO.

Filter-housing module, particle filter	14276	2
Filter-housing module, activated carbon/BAC filter*	14274	3

\* reduces the extraction capacity of the system by approx. 20% - alternatively, an additional filter module can be connected downstream of the system so that the capacity is not negatively affected (see accessories from page 18 onwards)

### SPARE FILTER

Particle filter	15951	2
2 x activated carbon/ BAC filter	14517	3

### E DEDUSTING

Differential-pressure controlled	Standard
only after-run dedusting	14407
no autom. dedusting	20223*

\* Necessary for manual precoating or automated production lines. Automatic dedusting of the filters is not initiated. The filter dedusting is controlled manually via the button on the front foil or via the interface/customer's PLC. Further filter-cleaning modes can be easily parameterized via the system's interface.

### F PRECOATING SOCKET

NW 80	14481
NW 100	14482
NW 125	14484

## Electronic control system



FUNCTION	FP 211/213
Start / Stop button	✓
Manual output control	✓
Saturated filter notification (complete system)	✓
Visual and audible indication of filter saturation	✓
Display & notification of malfunctions	✓
Manual start of filter-cartridge dedusting*	✓
Indication of filter cleaning status *	✓

\* in conjunction with automatic dedusting

INTERFACE FUNCTION	
Interface	Sub-D
Start / Stop button	✓
Pre-warning, filter saturated to 75%*	✓
Visual and audible indication of filter saturated	✓
Group-error output (speed, temperature, "filter full"100%)	✓
External speed control	✓
External dedusting start**	✓
Message cache	✓
Parameterization access for activating special functions	✓

\* Message, e.g. to control the dedusting from an external source

\*\* in conjunction with automatic dedusting

## Accessories



### ELECTRIC FOOT SWITCH

USE	DESIGNATION	CABLE LENGTH	ART. NO.
FP 211 / 213	Electric foot switch	2 meters	16369

#### FUNKTIONS:

- Start / Stop button
- Switch-on status of the system: Standby operation

DELIVERY SCOPE: Foot switch (incl. cable)



### CABLE REMOTE CONTROL

USE	DESIGNATION	CABLE LENGTH	ART. NO.
FP 211 / 213	Cable remote control	7 meters	16477

#### FUNKTIONS:

- Indication „Filter saturated“
- Start / Stop button
- Speed control
- Switch-on status of the system: Standby operation

DELIVERY SCOPE: Remote control (incl. cable)

## Accessories



### USB CONNECTION

USE	DESIGNATION	CABLE LENGTH	ART. NO.
FP 211 / 213	USB connection cable	1.5 meters	16455

DELIVERY SCOPE: Connection cable (incl. software)

## Harting option



### HARTING MAINS CONNECTION

USE	DESIGNATION	ART. NO.
FP 211 / 213	Mains connection Harting option	17036



### INTERFACE HARTING

USE	DESIGNATION	ART. NO.
FP 211 / 213	Interface Harting option	15719

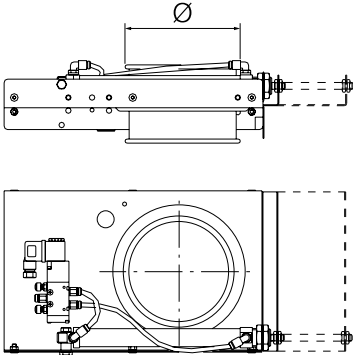


### USB CONNECTION HARTING

USE	DESIGNATION	CABLE LENGTH	ART. NO.
FP 211 / 213	USB connection cable Harting	1.5 meters	16466

DELIVERY SCOPE: Connection cable (incl. software)

## Accessories



### PNEUMATIC SHUT-OFF VALVES

- Automatic control via extraction system
- prevents the back-thrust of filtrate into the intake piping during filter-cartridge dedusting
- Shut-off valve can easily be integrated into the intake piping

Note: When mounting the shut-off valve in the working area, a protective hood must be installed to avoid crush hazards.

USE	DESIGNATION	NW (mm)	ART. NO.
FP 213	Pneumatic shut-off valve	80	15286
		100	15287
		125	15288
FP 211	Pneumatic shut-off valve	160	15289
		200	15290
FP 211 / FP 213	Shut-off valve control line	-	16371
FP 213	Protective cover	80	17015
FP 213	Protective cover	100	17016
FP 213	Protective cover	125	17017
FP 211	Protective cover	160	17018
FP 211	Protective cover	200	17019



### SPARK EXTINGUISHER (Use in piping)

USE	AIR VOLUME	Ø d (mm)	ART. NO.
FP 213	300-600 m³/h	80	16766

ATEX approval to EN1834

Installation: Depending on the application and size, the spark extinguishers can be installed on the wall or on a worktable using a special holder (incl. magnets, included in delivery scope) or with pipe clamps (please order separately).



### SIGNAL MODULE

USE	ART. NO.
FP 211 / 213	16621



## Accessories



### DUST BAG

Dust bag for low-contamination disposal of the dedusted filtrate

USE	DESIGNATION	ART. NO.
FP 211 / 213	Dust bag	16710



### FLOW-RATE MONITORING DEVICE

USE	Ø d (mm)	ART. NO.
FP 213	80	16642
FP 213	100	16643
FP 211 / 213	125	16644
FP 211	160	16762
FP 211	200	16661



### FILTER RUPTURE MONITORING

USE	Ø d (mm)	ART. NO.
FP 213	100	16651
FP 211	160	16652
FP 211 / 213	250	16653



### SET OF CRANE EYELETS

USE	DESIGNATION	ART. NO.
FP 211 / 213	Set of crane eyelets	14408

Accessories



PRECOATING SOCKET

USE	NW (mm)	ART. NO.
FP 213	NW 80	14481
FP 213	NW 100	14482
FP 213	NW 125	14484
FP 211	NW 160	14483
FP 211	NW 200	13714



PRECOATING ACCESSORIES

USE	DESIGNATION	ART. NO.
FP 211 / 213	Precofix 200, 15 liters	14389
FP 211 / 213	Precofix 200, 60 liters	14417



ACTIVATED CARBON/BAC SEPARATOR

USE	DESIGNATION	ART. NO.
FP211 / 213	Activated carbon/BAC separator	90461

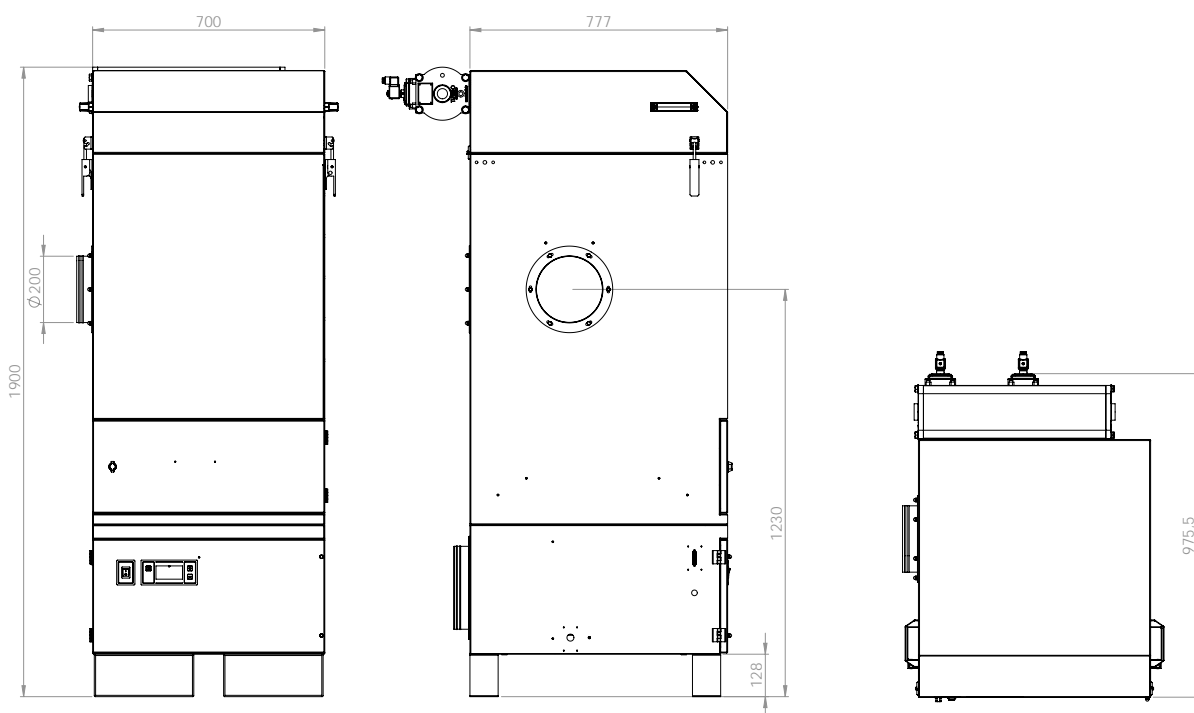
Is connected downstream of the filter and extraction system

- Optimum inflow and contact time
- 150 l activated carbon/BAC filter for longer service life
- Reduction of pressure losses / Increase of system performance

SPARE FILTER

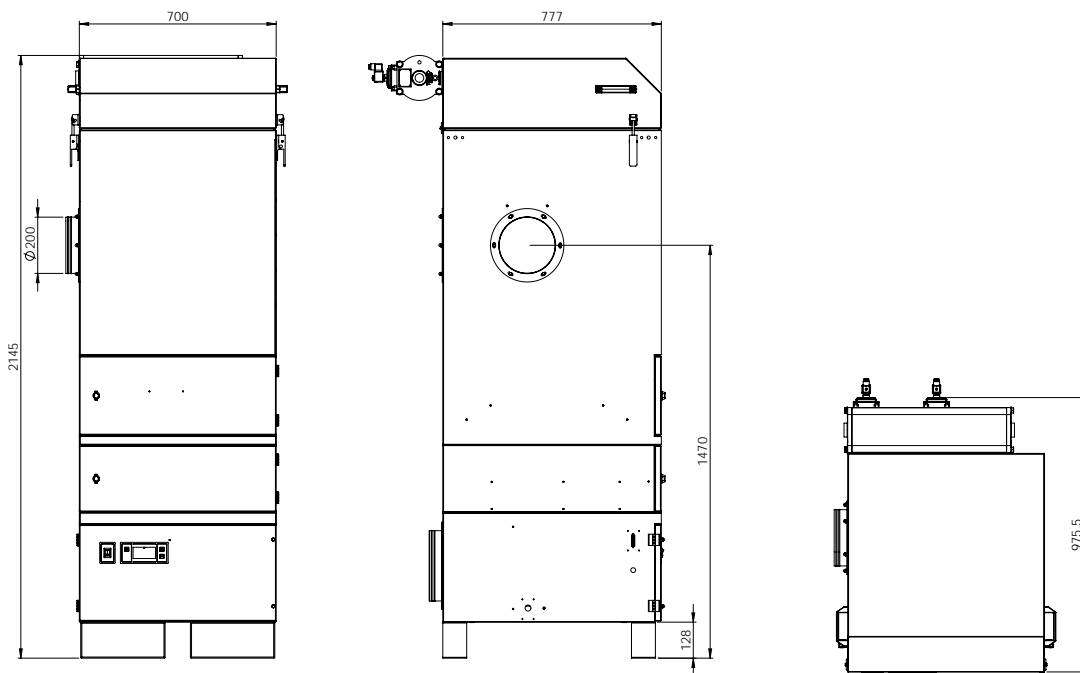
USE	DESIGNATION	ART. NO.
FP 211 / 213	4x activated carbon/BAC filter	20225

Technical drawings



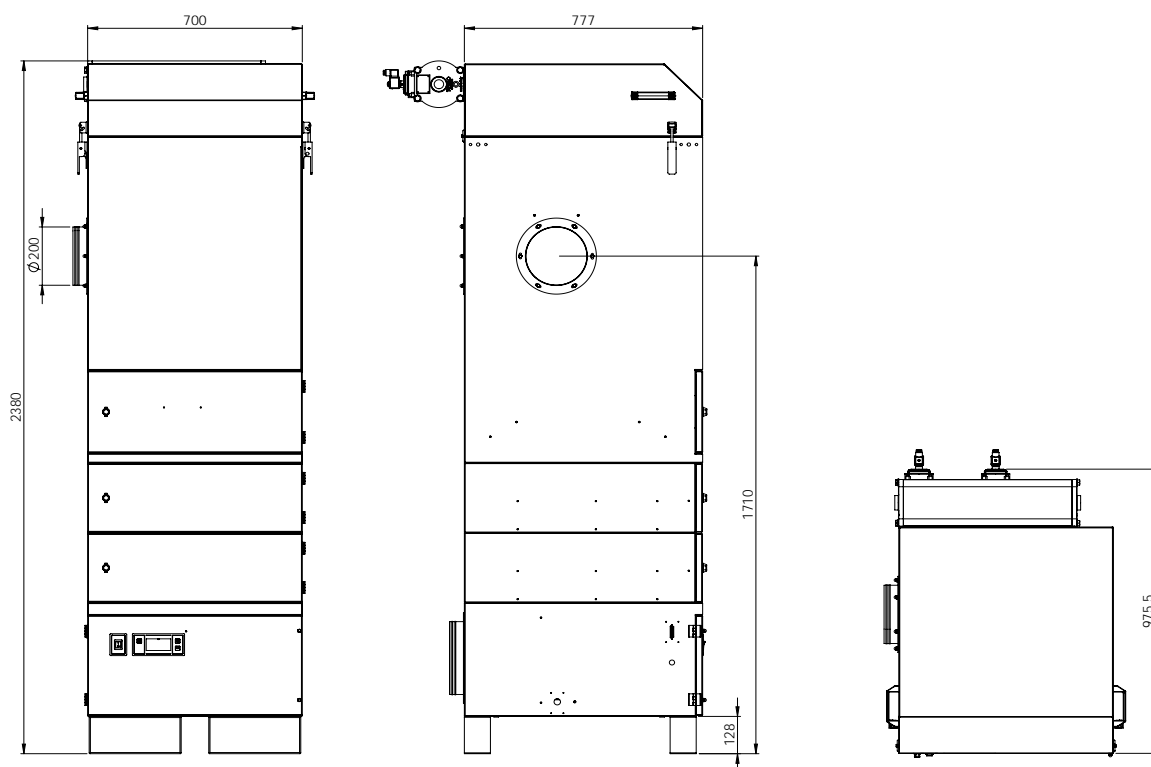
FP 211 / FP 213 basic model

Technical drawings



**FP 211 / FP 213 (with one intermediate module)**

Technical drawings



**FP 211 / FP 213 (with two intermediate modules)**

## TBH GmbH

Heinrich-Hertz-Str. 8  
D-75334 Straubenhardt  
Tel. +49 (0) 7082 / 9473 0  
Fax +49 (0) 7082 / 9473 20

[www.tbh.eu](http://www.tbh.eu)



Further information on the series

