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## Filter and extraction systems for oil and emulsion mist - the OEN series at a glance



Illustration similar

The use of coolant/lubricants (C/L) is inevitably, not only in metalworking. They are used for cooling in processes with strong heat build-up. Fast rotations, as in machining, cause tiny droplets of the C/L to swirl into the ambient air. Particles can either be inhaled by employees during their work or settle on surfaces, such as on machine components or floors. The resulting oil film thus represents a considerable health and accident risk. For this reason, the Employer's Liability Insurance Association (BG) prescribes the mandatory use of filter and extraction systems for such processes.

The type of particles that develop in a process is decisive for the choice of the right system. Are there primarily liquid components in the form of oil or emulsion mist without significant particle content? Are particles also being transported in the mist? A test delivers the respective values. Based on the result, TBH specifies the ideal extraction solution for your requirements.

For pure oil/emulsion mist, an OEN155 or OEN250 system is employed (depending on required extraction capacity). With the use of special oil-filter cartridges, these systems achieve enormous service life with reliable separation over the entire operation period.

If particles were also extracted out of the process, these would clog-up the filter cartridge and cause swift saturation. Therefore, this application calls for employment of the more suitable OEN150 or OEN710 system (depending on required extraction capacity). With the combination of aluminium-mesh liquid separation and downstream particle filter, these systems are particularly suitable for oil mist and particle applications. When using aluminium-mesh filters, however, the liquid content may not be too high.

Feel free to contact us for consultation on the correct filter and extraction system for your special application case. Your TBH Sales Team is readily available.

## OEN 155 - OEN 250



**Suitable for larger quantities of cooling-oil mist and cooling-emulsion mist.**

- Metal processing using cooling oil and cooling emulsions with little or no particle content
- Drilling
- Lathing
- Milling
- Eroding
- Industrial baths
- Work processes with high aerosol content in the process air
- OEN 155 for single-station extraction
- OEN 250 for multi-station extraction



Illustration similar

## OEN 150 - OEN 710



**Suitable for medium quantities of cooling-oil mist and cooling-emulsion mist with particle content.**

- Metal processing using cooling oil and cooling emulsions with particle content
- Drilling
- Lathing
- Milling
- Eroding
- Industrial baths
- Work processes with high aerosol content in the process air
- OEN 150 for single-station extraction
- OEN 710 for multi-station extraction



Illustration similar



## Applications OEN 155 - 250



P & R Günthner GmbH - OEN 250

This series was developed for the extraction of oil and emulsion mist.

Especially when operated in the metalworking industry or with industrial baths, the system can extract from the air and then filter the hazardous oil mist and oil-emulsion mist with low particle content developing in the process.

Special filter cartridges guarantee reliably long service life and very effective separation of even large quantities of liquids.



P & R Günthner GmbH - Production hall

### Usage of two OEN 250s

The P & R Günthner GmbH company in Bad Wildbad, Baden-Wuerttemberg, uses two OEN 250s for the extraction of oil mist on CNC lathes.



P & R Günthner GmbH - CNC lathe



P & R Günthner GmbH - CNC lathe in operation



## Applications OEN 150 - 710



Spilker GmbH - OEN 710

This series was developed for the extraction of emulsion mist.

It is particularly suitable in metalworking for applications with low content of oil-emulsion mist, yet at the same time with medium particle content in the contaminated air.

The aluminium mesh and the saturation filters ensure effective liquid separation along with optimised particle separation.

### Usage of an OEN 710

The Spilker GmbH company in Leopoldshoehe, North Rhine-Westphalia, uses an OEN 710 for the extraction of C/L mist from machine tools.



Metalworking - CNC milling machine



## Application-dependent filter equipment



Illustration similar

Various filter configurations possible depending on application.

**OEN 155 / 250** Special filter cartridges are used for pure oil mist and oil-emulsion mist with very low particle content. They guarantee long service life and very effective separation of even large quantities of liquids.

**OEN 150 - OEN 710** The systems are suitable for processes with low content of oil-emulsion mist, yet at the same time with medium particle content. The aluminium mesh and the saturation filters ensure effective liquid separation along with optimised particle separation.

Both systems are equipped with a particle filter (H13), which allows for safe air re-circulation into the work area. Optionally, a molecular sieve (activated charcoal/BAC) can also be connected downstream to remove gaseous pollutants to the greatest extent.



## 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).

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

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

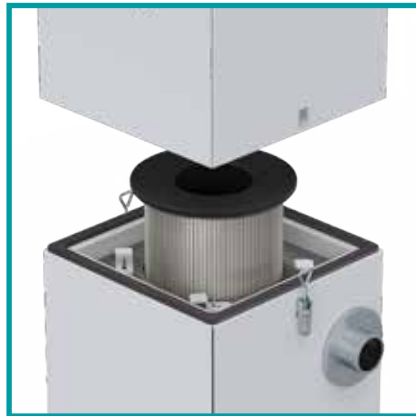


## Easy filter changing

### OEN 155



Filter change



Filter change



Collection container

Filter exchange takes place simply by removing the particle filter and filter cartridge from above.

With the OEN 155, the liquid can be disposed of via the collection container.

### OEN 250



Filter change



Filter change



Drain valve

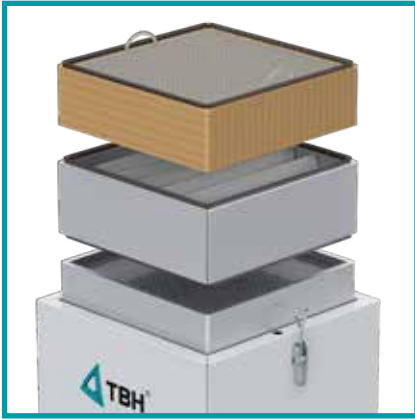
To change the cartridge, remove it from above. Remove the filter via the front doors to the front.

With the OEN 250, the liquid can easily be disposed of via the mounted drain valve.

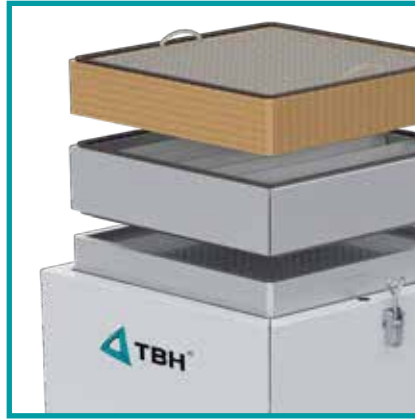


## Easy filter changing

### OEN 150



Filter changing OEN 150



Filter changing OEN 150



Collection container

Filter exchange takes place simply by removing the filters from above.

With the OEN155, the liquid can be disposed of via the collection container.

### OEN 710



Filter change



Filter change



Drain valve

The filter is changed via the front doors to the front. Open the front doors and remove the filter towards

the front. With the OEN 710, the liquid can easily be disposed of via the mounted drain valve.



## Inspiring checking



### Always full control over the system



- A - Start / Stop button
- B - Manual power control
- 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
- Message cache
- Digital interface (RS232)

## OFFICES

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Controlled  
Environments  
Accreditation  
No.15597



## Technical data OEN 155



Illustration similar

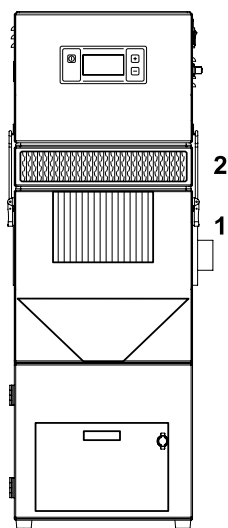
### Delivery scope:

- Fully mounted (incl. individual filter equipment)
- Please order position and dimensions of the connection socket separately.
- Power cord

TECHNICAL DATA	UNIT	OEN 155
Air flow rate with free air delivery	m³/h	max. 320
Effective air volume flow	m³/h	50-250
Max. static pressure	Pa	20000
Voltage	V	100-240
Frequency	Hz	50/60
Motor output	kW	1.1
Class of protection	-	1
Drive type	-	Continuous running
Sound level	db(A)	approx. 64
Serial interface	Sub-D	25-pin
Weight	kg	approx. 70
Dimensions (HxWxD)	mm	1235,5x350x350
Intake sleeve NW 50	Quantity	optional
Intake sleeve NW 63	Quantity	optional
Intake sleeve NW 80	Quantity	optional
Collection container	Liters	15
Color	RAL	7035

FILTER CONFIGURATION	
Oil/emulsion mist filter cartridge F9	✓
Particle filter H13	✓
Active carbon filter/BAC filter	optional (10 liters)

## Ordering data OEN 155

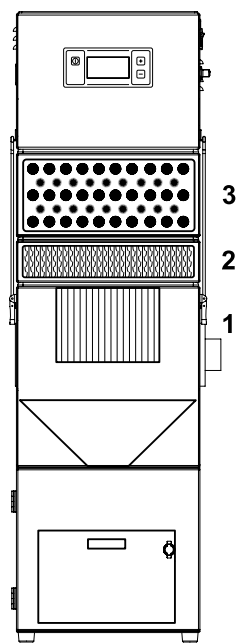


### STANDARD

DESIGNATION	ART. NO.
<b>OEN 155</b> 100-240V 50/60Hz	90348

SPARE FILTER		
Filter cartridge	15308	<b>1</b>
Particle filter	13755	<b>2</b>
Active carbon filter/ BAC filter	-	

INTAKE SOCKET	
Left NW 50	13159
Left NW 63	13161
Left NW 80	13163
Right NW 50	13160
Right NW 63	13162
Right NW 80	13164



### WITH ACTIVATED-CARBON FILTER MODULE

DESIGNATION	ART. NO.
Activated-carbon filter module	11610
Machine base*	16353

\* for mobile use, the height of the system increases by approx. 100 mm

SPARE FILTER		
Filter cartridge	15308	<b>1</b>
Particle filter	13755	<b>2</b>
Active carbon filter/ BAC filter	13021	<b>3</b>

## Technical data OEN 250



Illustration similar



### Delivery scope:

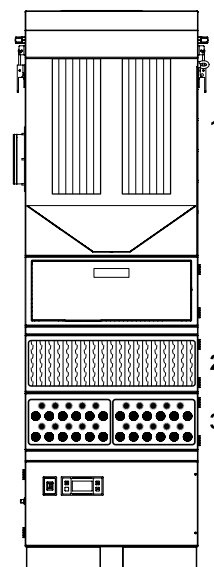
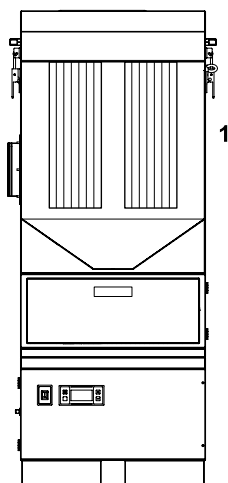
- Fully mounted (incl. individual filter equipment)
- Base stands (suitable for forklift trucks)
- Crane eyelets (optional)
- Power cord

TECHNICAL DATA	UNIT	OEN 250
Air flow rate with free air delivery	m <sup>3</sup> /h	2000
Effective air volume flow	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.70
Serial interface	Sub-D	25-pin
Weight	kg	approx. 240
Dimensions (HxWxD) - basic model	mm	1835x700x780
Dimensions (HxWxD) - with 1 expansion module	mm	2075x700x780
Dimensions (HxWxD) - with 2 expansion modules	mm	2315x700x780
Minimum ceiling height for filter removal - basic model	mm	2400
Minimum ceiling height for filter removal - with 1 expansion module	mm	2650
Minimum ceiling height for filter removal - with 2 expansion modules	mm	2900
Intake sleeve NW 200	-	Rear side or left
Discharge socket NW 250	-	Standard
Differential-pressure measurement		✓
Collection container incl. inspection glass	Liters	50
Color	RAL	7035

FILTER CONFIGURATION	
Oil/emulsion mist filter cartridge F9	✓
Particle filter H14	optional
Active carbon filter/BAC filter	optional (2x 26 liters)

## HUMANS / ENVIRONMENT/ MACHINERY

## Ordering data OEN 250



### STANDARD

A DESIGNATION	ART. NO.
<b>OEN 250</b> 400V 50/60Hz (3P + N)	90426

### FILTER EQUIPMENT

4x filter cartridges	Standard	<b>1</b>
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### SPARE FILTER

Filter cartridge set, Pack of 4	16982	<b>1</b>
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### C INTAKE SOCKET

Left*	13171
Rear side*	13172
NW 200 (Noro)**	17045
NW 200 (Linab)**	16537

\* Indicates position only

\*\* Sleeve dimension

Note: For applications with oil mist, the use of the Noro system is absolutely required

### WITH INTERMEDIATE MODULES

B FILTER EQUIPMENT	ART. NO.	
Filter-housing module Particle filter	17044	<b>2</b>
Filter-housing module Active carbon filter/BAC filter*	14274	<b>3</b>

\* 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 21 onwards)

### SPARE FILTER

Particle filter	17043	<b>2</b>
2x active carbon filter/BAC filter	14517	<b>3</b>

### Note for installation:

For processes with medium/high oil content, the use of flared flange tubes (e.g. "Noro" system) is recommended for the connection between customer process - filter and extraction system to ensure the necessary tightness. For further information or planning questions, please contact the TBH sales department.

## Technical data OEN 150



Illustration similar



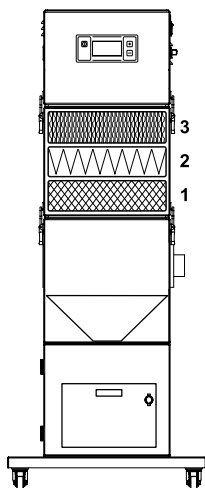
### Delivery scope:

- Fully mounted (incl. individual filter equipment)
- Please order position and dimensions of the connection socket separately.
- Machine base
- Power cord

TECHNICAL DATA	UNIT	OEN 150
Air flow rate with free air delivery	m <sup>3</sup> /h	max. 320
Effective air volume flow	m <sup>3</sup> /h	50-250
Max. static pressure	Pa	20000
Voltage	V	100-240
Frequency	Hz	50/60
Motor output	kW	1.1
Class of protection	-	1
Drive type	-	Continuous running
Sound level	db(A)	approx. 64
Serial interface	Sub-D	25-pin
Weight	kg	approx. 70
Dimensions (HxWxD)	mm	1340x550x550
Intake sleeve NW 50	Quantity	optional
Intake sleeve NW 63	Quantity	optional
Intake sleeve NW 80	Quantity	optional
Collection container	Liters	15
Color	RAL	7035

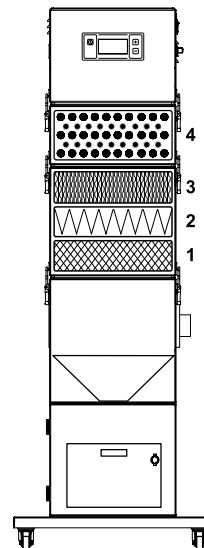
FILTER CONFIGURATION	
AI filter G3	✓
Z-line filter F7 (ISO ePM <sub>1</sub> 50-65%, ePM <sub>2.5</sub> 65-80%, ePM <sub>10</sub> > 85%)	✓
Particle filter H13	✓
Active carbon filter/BAC filter	optional (10 liters)

## Ordering data OEN 150



### STANDARD

DESIGNATION	ART. NO.
<b>OEN 150</b> 100-240V 50/60Hz	90180



### WITH ACTIVATED-CARBON FILTER MODULE

DESIGNATION	ART. NO.
Activated-carbon filter module	11610

### SPARE FILTER

Al filter	13589	<b>1</b>
Z-Line filter	11209	<b>2</b>
Particle filter	13755	<b>3</b>
Active carbon filter/ BAC filter	-	

### SPARE FILTER

Al filter	13589	<b>1</b>
Z-Line filter	11209	<b>2</b>
Particle filter	13755	<b>3</b>
Active carbon filter/ BAC filter	13021	<b>4</b>

### INTAKE SOCKET

Left NW 50	13159
Left NW 63	13161
Left NW 80	13163
Right NW 50	13160
Right NW 63	13162
Right NW 80	13164

## Technical data OEN 710



Illustration similar



### Delivery scope:

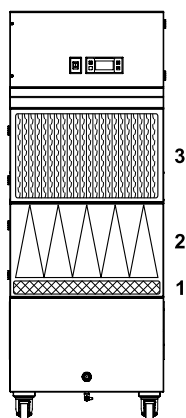
- Fully mounted (incl. individual filter equipment)
- Please order position and dimensions of the connection socket separately.
- Base stands (suitable for forklift trucks)
- Power cord

TECHNICAL DATA	UNIT	OEN 710
Air flow rate with free air delivery	m <sup>3</sup> /h	max. 2000
Effective air volume flow	m <sup>3</sup> /h	400-1500
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. 200
Dimensions (HxWxD)	mm	1880x700x777
Exhaust sleeve NW 250	-	Standard
Color	RAL	7035

FILTER CONFIGURATION	
AI filter G3	✓
Pocket filter M5/M6 (ISO ePM <sub>10</sub> > 50% / ISO ePM <sub>2,5</sub> 50-65%, ePM <sub>10</sub> > 60%)	✓
Particle filter H13	✓
Active carbon filter/BAC filter	optional (2x 60 liters)



## Ordering data OEN 710

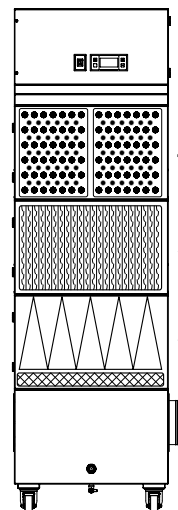


**BASIC MODEL**

DESIGNATION	ART. NO.
<b>OEN 710</b> 400V (3P + N) 50/60Hz	90079

SPARE FILTER		
Al filter	12351	<b>1</b>
Pocket filter	12906	<b>2</b>
Particle filter	12258	<b>3</b>
2x active carbon filter/ BAC filter	-	

INTAKE SOCKET	
Left NW 200	13175
Right NW 200	13176
Rear side NW 200	13177



**WITH ACTIVATEC-CARBON FILTER  
MODULE**

DESIGNATION	ART. NO.
Activated-carbon filter module	13232*

SPARE FILTER		
Al filter	12351	<b>1</b>
Pocket filter	12906	<b>2</b>
Particle filter	12258	<b>3</b>
2x active carbon filter/ BAC filter	13190	<b>4</b>

\* 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 21 onwards)

DISCHARGE SOCKET	
NW 250	Standard

## Electronic control system



FUNCTION	OEN 155	OEN 250	OEN 150	OEN 710
Switch between Run/Standby	✓	✓	✓	✓
Manual speed control	✓	✓	✓	✓
Indication of filter status (single-filter monitoring pre-filter/main filter)	-	✓	-	✓
Indication of filter status	✓	-	✓	-
Indication of system status	✓	✓	✓	✓
Indication of power setting/hour meter	✓	✓	✓	✓
Indication of temperature and turbine error	✓	✓	✓	✓

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

## Accessories



### USB CONNECTION

USE	DESIGNATION	CABLE LENGTH	ART. NO.
OEN 155/250/150/710	USB connection cable	1.5 meters	16455

**DELIVERY SCOPE:** Connection cable (incl. software)

## Harting option



### HARTING MAINS CONNECTION

USE	DESIGNATION	ART. NO.
OEN 155/250/150/710	Mains connection Harting option	17036



### INTERFACE HARTING

USE	DESIGNATION	ART. NO.
OEN 155/250/150/710	Interface Harting option	15719



### CONNECTION POINT USB

USE	DESIGNATION	CABLE LENGTH	ART. NO.
OEN 155/250/150/710	USB connection cable Harting	1.5 meters	16466

**DELIVERY SCOPE:** Connection cable (incl. software)



### ACTIVATED CARBON/BAC SEPARATOR

USE	DESIGNATION	ART. NO.
OEN 250/710	Activated carbon/BAC separator	90461

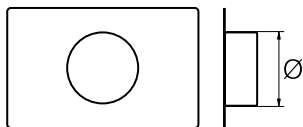
### SPARE FILTER

USE	DESIGNATION	ART. NO.
OEN 250/710	4x activated carbon/BAC filter	20225

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

## Accessories



### AIR OUTLET PLATE

USE	NW (mm)	ART. NO.
OEN 150/155	80	11709
OEN 150/155	100	12839
OEN 150/155	125	12232

\* Connection plate with socket for specific air discharge via hose

### AIR INLET - flexible connection hoses

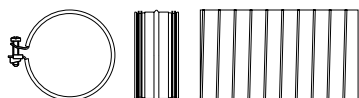
Hose set with connecting sleeve



USE	NW (MM)	LENGTH (M)	ART. NO.
OEN 150/155	50	2.5	10008
		5.0	10010

### AIR INLET - flexible connection hoses

Hose set with nipple and hose clamps



USE	NW (MM)	LENGTH (M)	ART. NO.
OEN 150/155	63	2.5	13210
		5.0	13211
		10.0	13212
	80	2.5	13179
		5.0	13180
		10.0	13197

### AIR INLET - flexible connection hoses

Hose set with 2 hose clamps



USE	NW (MM)	LENGTH (M)	ART. NO.
OEN 250/710	160	5.0	13213
		10.0	13214
	200	5.0	13215
		10.0	13216

For further connecting hoses, spiral ducts and pipe connectors, please refer to the TBH accessories catalog or contact the TBH service.



### SIGNAL MODULE

USE	ART. NO.
OEN 250/710	16621

For the air guidance on your OEN250 or OEN710, we will gladly advise you individually according to your application. Please contact the TBH sales department.

## Accessories



### VOLUME FLOW MONITORING

USE	Ø D <sub>1</sub> (MM)	ART. NO.
OEN 155/150	80	16642
OEN 155/150	100	16643
OEN 155/150	125	16644
OEN 250/710	160	16762
OEN 250/710	200	16661



### FILTER RUPTURE MONITORING

USE	Ø D <sub>1</sub> (MM)	ART. NO.
OEN 155/150	100	16651
OEN 155/250/150/710	160	16652
OEN 155/250/150/710	250	16653



### CABLE REMOTE CONTROL

USE	DESIGNATION	CABLE LENGTH	ART. NO.
OEN 155/250/150/710	Cable remote control	7 meters	16477

#### FUNKTIONS:

- Indication „Filter saturated“
- Run/Stand-by switch-over
- Speed control
- Switch-on status of the system: Stand-by operation

**DELIVERY SCOPE:** Remote control (incl. cable)



### ELECTRIC FOOT SWITCH

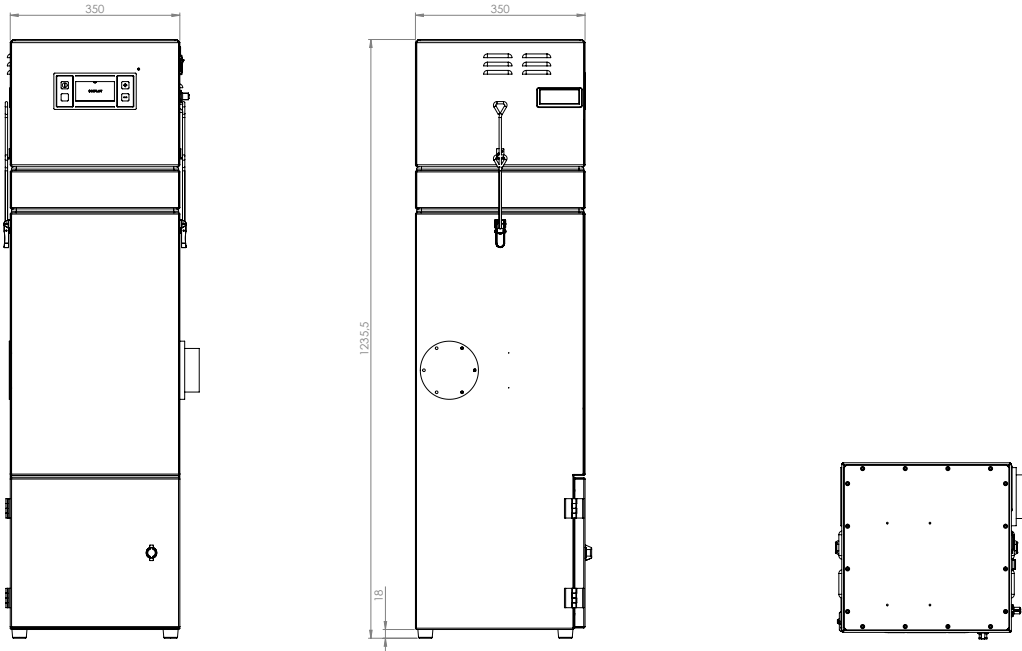
USE	DESIGNATION	CABLE LENGTH	ART. NO.
OEN 155/250/150/710	Electric foot switch	2 meters	16369

#### FUNKTIONS:

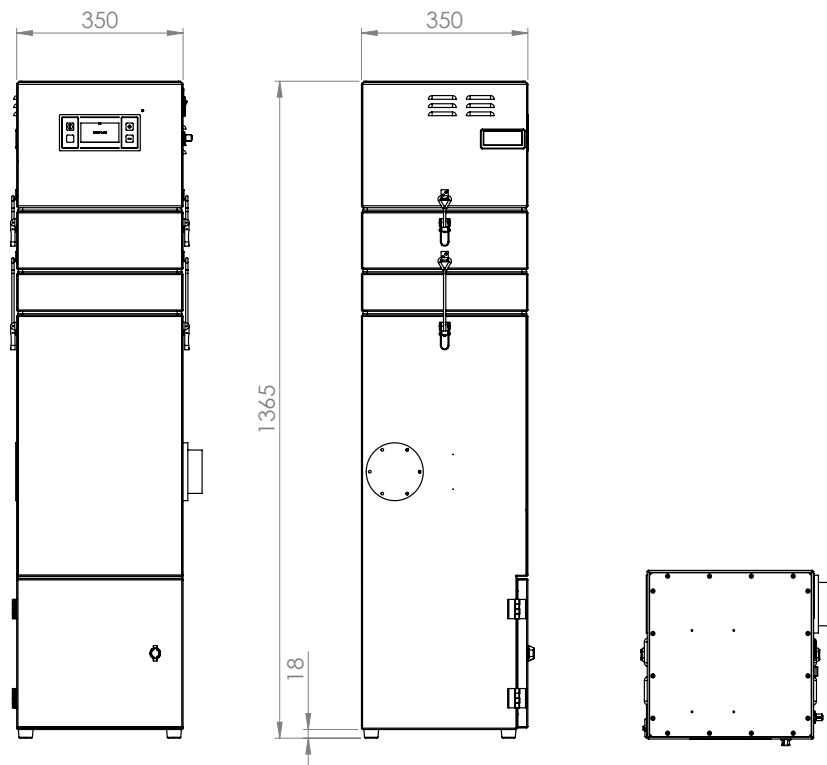
- Run/Stand-by switch-over
- Switch-on status of the system: Stand-by operation

**DELIVERY SCOPE:** Foot switch (incl. cable)

## Technical drawings



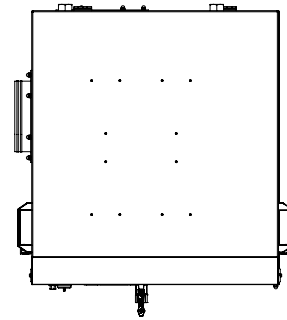
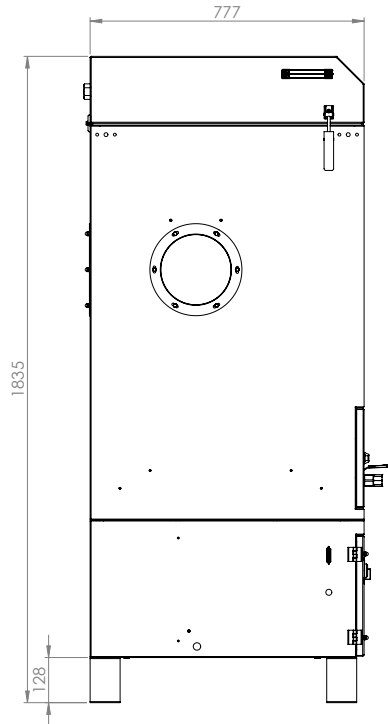
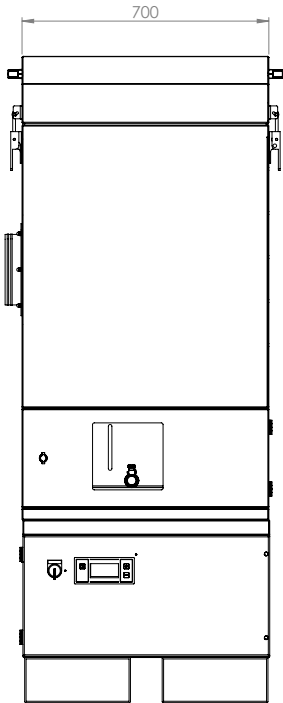
### OEN 155 STANDARD



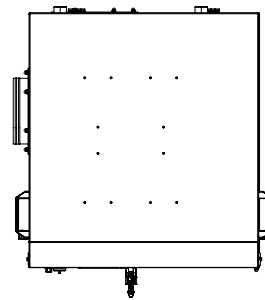
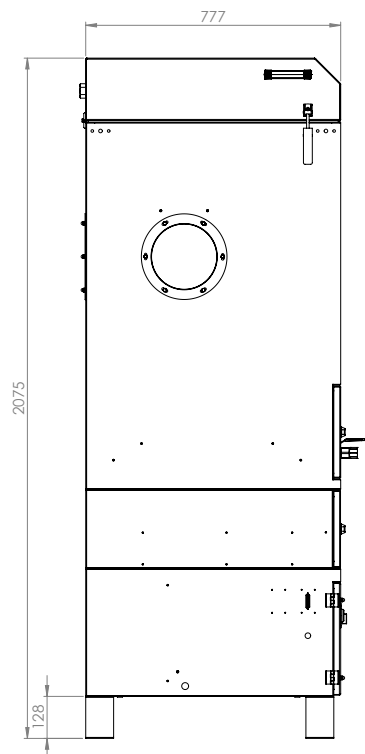
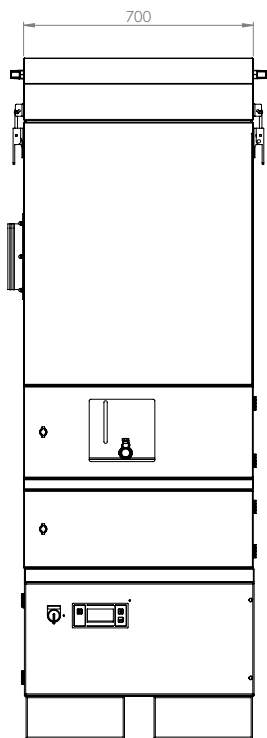
### OEN 155 AK MODULE

**HUMANS / ENVIRONMENT/ MACHINERY**

## Technical drawings

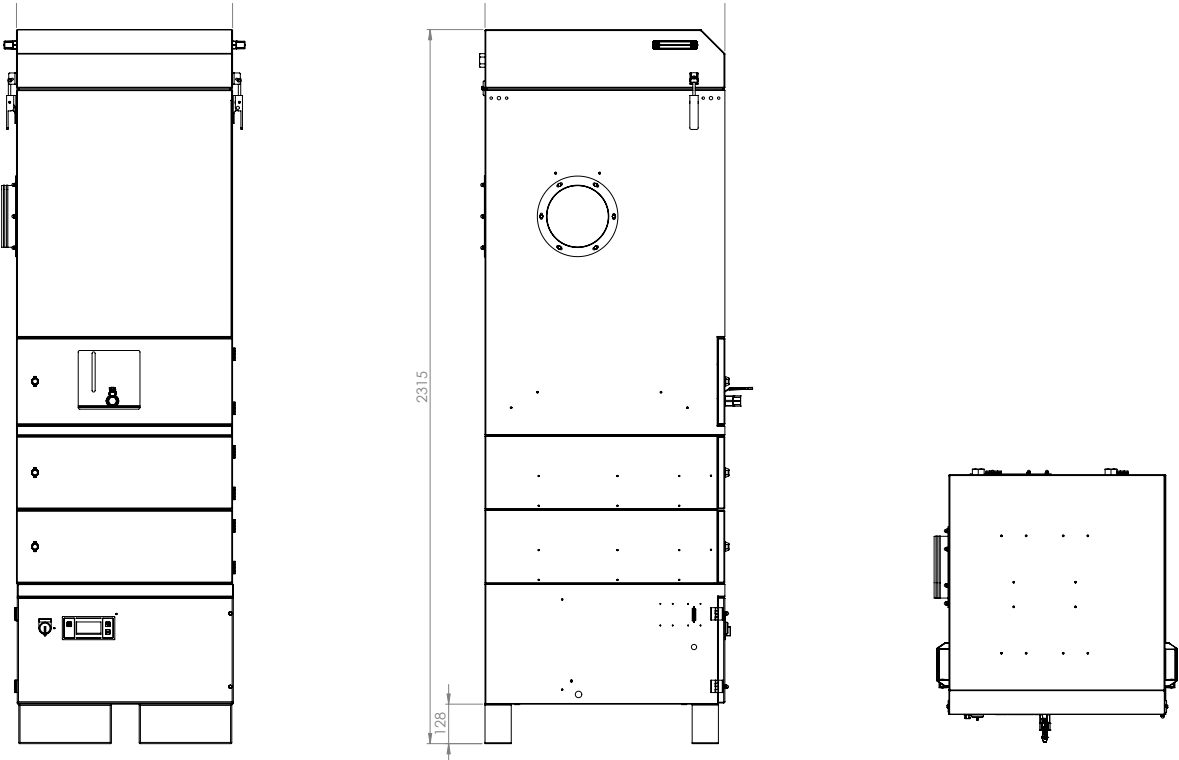


## OEN 250 STANDARD



## OEN 250 1 ESPANSION MODULE

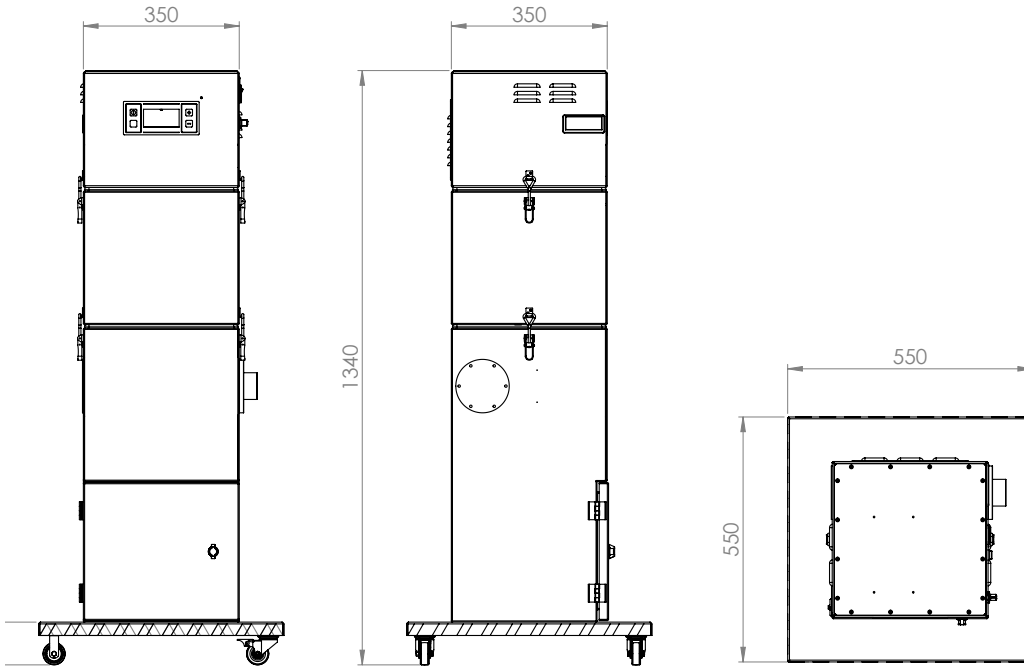
**HUMANS / ENVIRONMENT/ MACHINERY**



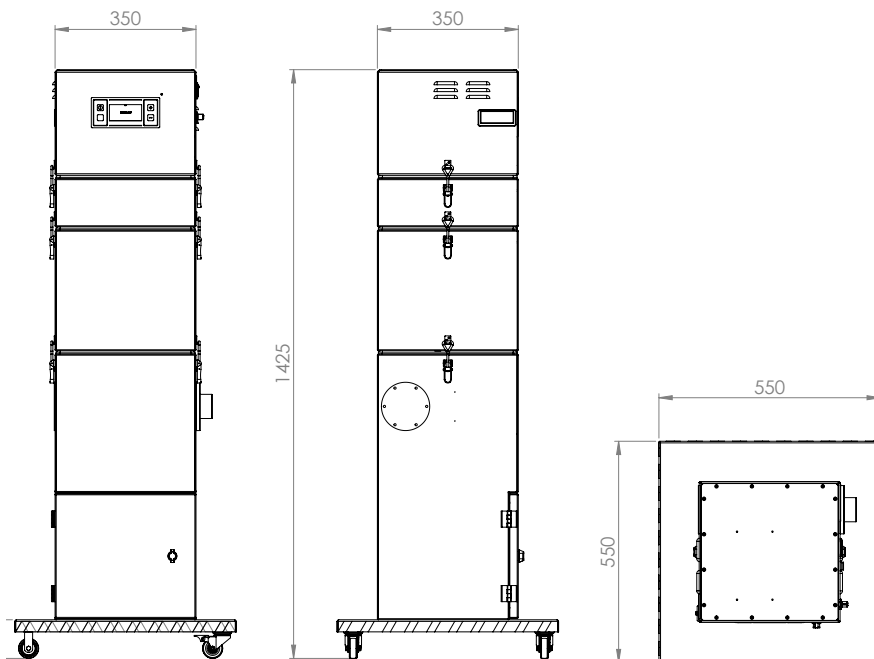
OEN 250 2 ESPANSION MODULES



## Technical drawings



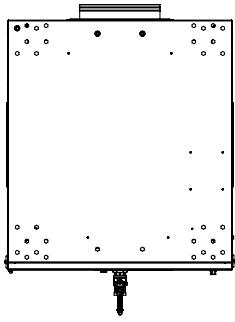
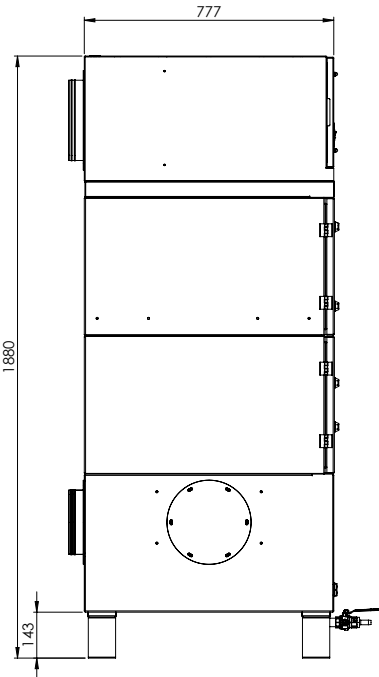
## OEN 150 STANDARD



## OEN 150 AK MODULE

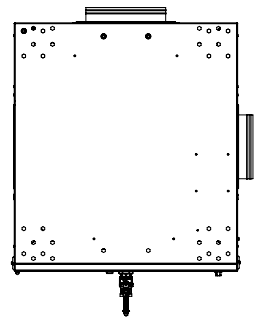
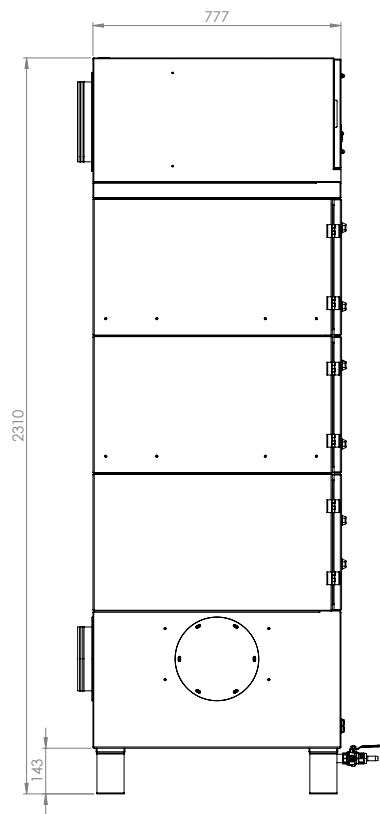
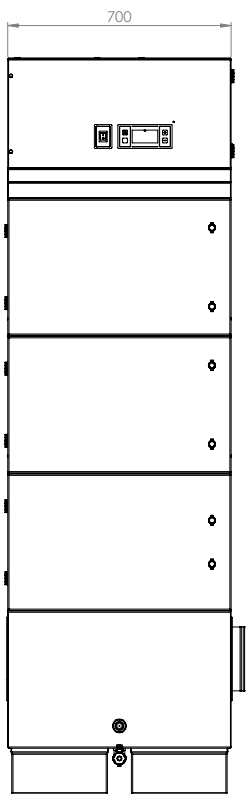
**HUMANS / ENVIRONMENT/ MACHINERY**

**Technical drawings**

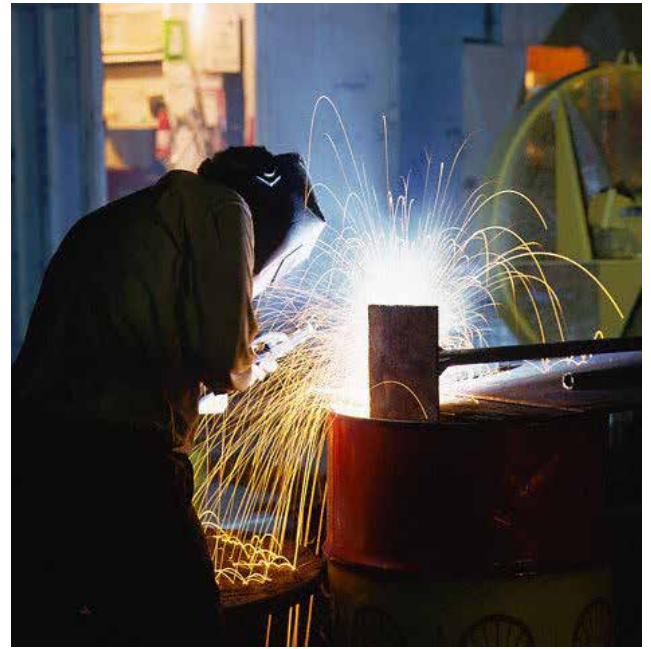


**OEN 710 STANDARD**

## Technical drawings



## OEN 710 AK MODULE



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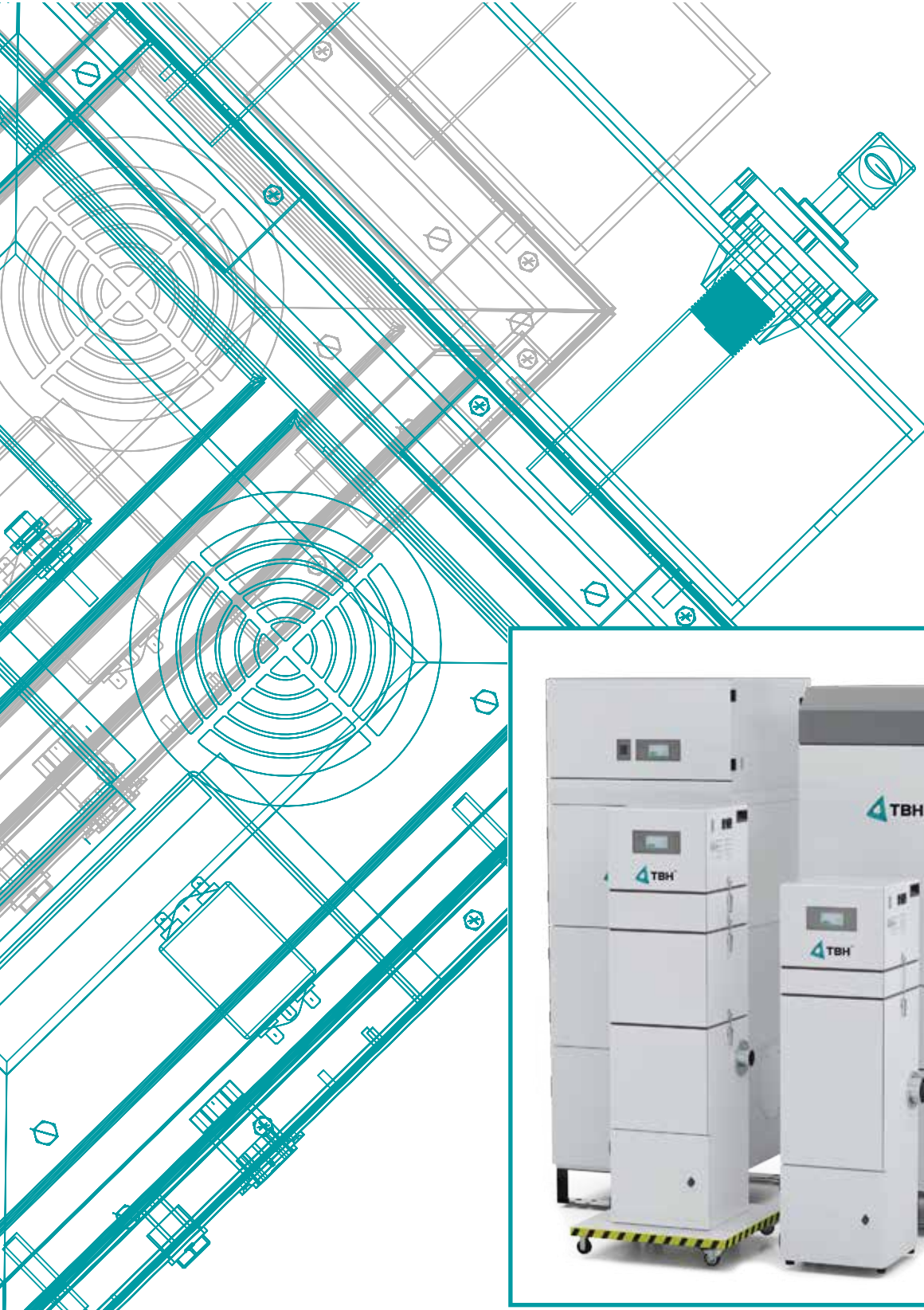
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