

# **TBH Health-Series**

**MEDICINE & AESTHETICS // EXPORT VN 2304**



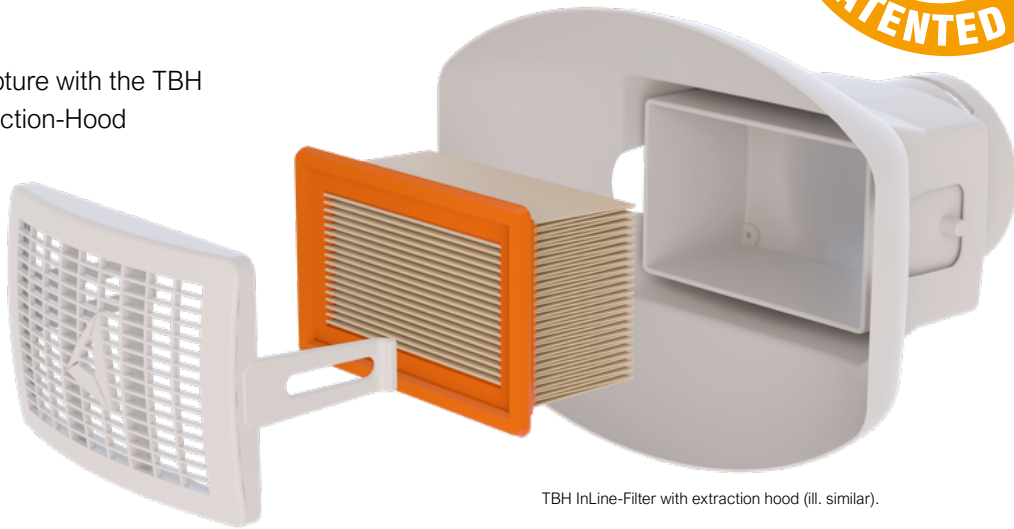


### The patented InLine filter

- The InLine filter has been designed and developed specifically for your applications and needs.
- Fewer cases of illness due to clean air in the treatment room
- Ensures optimal capture.
- Minimizes internal contamination of the extraction arm.
- Reduces cleaning effort and maintenance costs.
- Extends the service life of the high-tech main filters.



- ✓ Optimal capture with the TBH InLine-Extraction-Hood



TBH InLine-Filter with extraction hood (ill. similar).

- ✓ Spot capture possible closer to the point of origin



TBH InLine-Filter without extraction hood (ill. similar).



### InLine-Filters' hygiene features

- High-tech polycarbonate in medical quality
- High temperature stable - up to 121 ° C for autoclaving
- Improved durability for disinfectants
- Improved durability for alkaline and enzymatic cleaners
- Designed for cleaning in disinfection sink



## The TBH hygiene concept

- ✓ Tested by the laboratory CleanControlling Medical GmbH & Co. KG



Final Report Validation of manual processing  
Abschlussbericht manuelle Aufbereitungsvalidierung



TBH GmbH  
Absaugtechnik und Filtertechnik  
Heinrich-Hertz-Straße 8  
75334 Straubenhardt

Project No. 16658  
SA-Nr. 09.11.2020  
Begin of testing 26.11.2020  
End of testing 05.01.2021  
Date of Report 30756  
Date of Report 30756  
Customer No. 30756  
Kunden-Nr.

To comply with the TBH hygiene concept, we recommend:

Identification of test item / Identifikation des Prüfgegenstands	
<b>Test item name</b> Bezeichnung des Prüfgegenstands Absaugarm	<input type="checkbox"/> Intubator
<b>Test item no.</b> Nummer des Prüfgegenstands	<input type="checkbox"/> Endotrachealtubus
<b>Date test item received / Order number</b> Empfang Prüfgegenstand / Bestellnummer 31.08.2020 / LS-9L0012	<input type="checkbox"/> Laryngoskopt
<b>Batch No.</b> Chargen-Nr.	<input type="checkbox"/> Endotrachealtubus
<b>Condition at delivery</b> Anlieferzustand L.O.	<input type="checkbox"/> Endotrachealtubus
<b>Material</b> Material metall, polymer	<input type="checkbox"/> Laryngoskopt
<b>Total surface of test item</b> Größe der Oberfläche des Prüfgegenstands 5700 cm <sup>2</sup>	<input type="checkbox"/> Laryngoskopt
<b>Article No. Validation of processing</b> Kunden- Aufbereitungsvalidierung 7007313	<input type="checkbox"/> Endotrachealtubus
<b>Product-specific features</b> Produkt-spezifische Eigenschaften Delivery: non-sterile / unsteril angeliefert	<input type="checkbox"/> Endotrachealtubus
The information about the test items listed above was provided by the sponsor and has not been verified by the test facility. Die Informationen zu den Prüfgegenständen wurden vom Auftraggeber bereitgestellt und von der Prüfmaschine nicht verifiziert.	
Test results (summary) / Prüfergebnis (Zusammenfassung)	
The test items could be successfully cleaned and disinfected in three independent cycles following the processing instructions of the test item's manufacturer.	
Die Prüfgegenstände konnten unter Verwendung der vom Hersteller angegebenen Anleitung in drei unabhängigen Läufen erfolgreich gereinigt und desinfiziert werden.	
FB-M 15-639, 06.07.2020 Seite 1 von 23	



- Change InLine filter 1x daily
- Change the HEPA-main filter in the system only every six months



- Purify hood with clean cloth.



- Remove protective grid.



- Detach InLine filter, pack it safely into a closed, tear-proof bag and dispose of it.

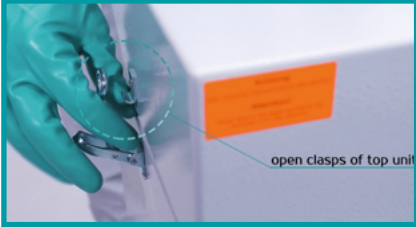


### Tip:

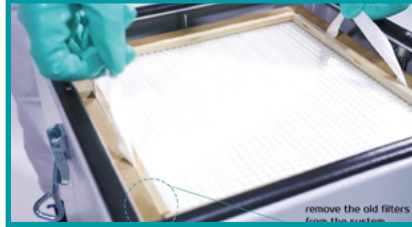
Only effective collection and filtration in combination with cleaning and disinfection of surfaces protects against the spread of viruses/bacteria between patients. Keeping the system on between treatments allows it to filter all the air in the treatment room several times an hour, significantly reducing the risk of contamination and infection.



### Tool-free filter change in the system



- Fast and smooth change



- No special skills / tools required



- Easy handling



### Cleaning instructions video



### Adsorption of gaseous substances

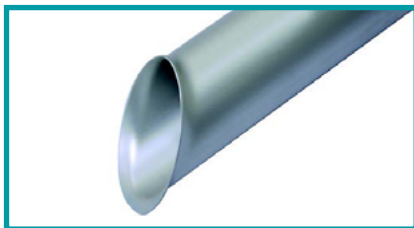


TBH activated carbon granules (ill. similar)

The adsorption of the gaseous substances takes place with activated carbon granules (physical adsorption). It collects a very wide range of gases and odors. If requested, special mixtures are possible that are adapted to each customer's process. For more information ask your TBH sales partner.



**Optional capture elements and accessories**



The suction tip is generally used for smoke and particles where no grid cover is required. (Optional)

TBH Suction tip (illustration similar)



The foot switch provides a hands-free Start/ Stopp operation. The foot switch is connected to the interface. (Optional)

Foot switch (illustration similar)



The cleaning set includes a brush and ten disposal bags and enables easy cleaning of the extraction arm. (Optional)

TBH cleaning set (illustration similar)



### TBH filter concept: operation principle

- InLine filter captures particles/bacteria/ aerosols.
- Protects the extraction arm from contaminants.
- HEPA Particle filter guarantees separation efficiency.
- Activated carbon filters gases/odors.

- Combined 2-stage filter:
- HEPA H13 particle filter ensures separation efficiency.
- Activated carbon filters gases/odors.



TBH Health Basic/ TBH Health Pro mit InLine-Filter & 2-Stage filter (Illustration similar).

#### TBH Heath Basic

- Best price baseline model
- Suitable for occasional use:  
Brush motor, for less than 1 operating hour a day
- Guarantee: 600 operating hours or 2 years

#### TBH Heath Pro

- Compact model with powerful motor
- Suitable for daily use:  
Brushless motor, for more than 1 operating hour a day
- Guarantee: 10000 operating hours or 2 years

#### TBH Health systems:



TECHNICAL DATA	UNIT	TBH HEALTH BASIC	TBH HEALTH PRO	TBH HEALTH PRO SILENCE
Effective air flow rate	m <sup>3</sup> /h	20-200	20-200	100-300
Motor input	kW	0.7	0.6	0.6
Drive type		brush motor	brushless	brushless
Sound level	db(A)	ca. 64	ca. 62	ca. 53
Weight	kg	ca. 24	25	45
Dimensions (HxWxD) System height without extraction arm	mm	510x300x300	510x300x300	700x350x440



**TBH filter concept: operation principle**

- InLine filter captures particles/bacteria/ aerosols
- Protects the extraction arm from contaminants.
- HEPA Particle filter guarantees separation efficiency.
- Activated carbon filters gases/odors.

- Larger filter area
- Lower follow-up costs of replacement filters: (HEPA Particle filter and activated carbon can be exchanged separately).
- HEPA particle filter H14



TBH Health Pro with InLine filter, particle filter HEPA H14 & activated carbon filter (ill. similar)

**TBH Heath Pro Silence**

- Quiet and pleasant
- Higher air volume and more power
- continuous running motor for more than 1 operating hour a day
- Garantie: 10000 operating hours or 2 years

**TBH Health systems:**



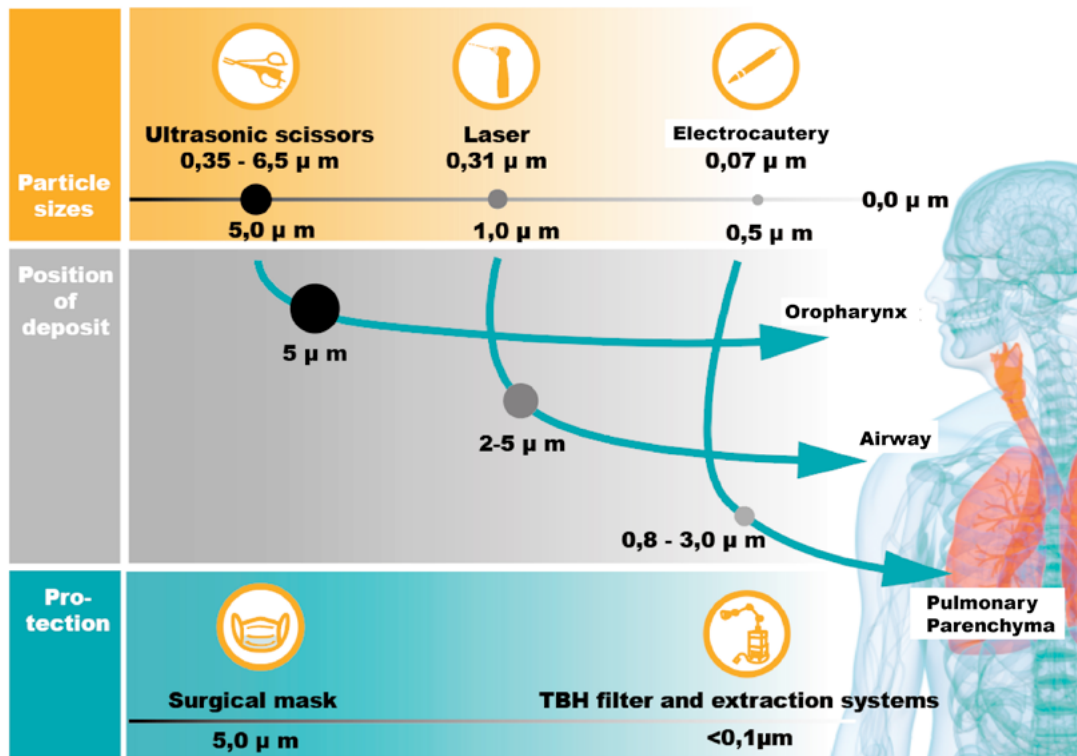
TECHNICAL DATA	UNIT	TBH HEALTH BASIC	TBH HEALTH PRO	TBH HEALTH PRO SILENCE
Effective air flow rate	m³/h	20-200	20-200	100-300
Motor input	kW	0.7	0.6	0.6
Drive type		brush motor	brushless	brushless
Sound level	db(A)	ca. 64	ca. 62	ca. 53
Weight	kg	ca. 24	25	45
Dimensions (HxWxD) System height without extraction arm	mm	510x300x300	510x300x300	700x350x440



### Dangers in dermatology practices

NOXIOUS GASES / GAS MOLECULES	IMPACTS
Benzene (classified as carcinogenic to humans by IARC)	Bone marrow aplasia, leukemia, nausea, dizziness, headache
Toluol and xylene	Depressive properties on nervous system, irritation of skin, eyes and respiratory mucosa
Formaldehyde	Irritation to airways, allergen to skin and respiratory system, carcinogen to sinuses
Acetaldehyde, acrolein	Irritation of the airways
Cresols	Affects nervous system, indigestions, damage to liver, kidneys and lungs
Phenol	Irritation of eyes and respiratory mucosa, difficulty swallowing, vomiting, diarrhea, hematuria, loss of appetite, headache, drowsiness
Hydrogen cyanide (HCN)	Do not cause acute symptoms, however, it is a chronic poisoning that shows in headache, weakness, dizziness, tremors, nausea, vomiting, stomach pain, weight loss and conjunctivitis, etc.

### Which sizes have particles in laser smoke when removing hair or warts?







## High protection against infection during laser treatment



Laser eye treatment (illustration similar)

Lasers are used in a variety of ways, for example in medical surgery, eye surgery and dermatological treatments. Laser surgery produces aerosols with a particle size of  $0.1\mu\text{m}$ - $2\mu\text{m}$ . These laser aerosols (LGAC = Laser Generated Airborne Contaminants) consist of various components of human tissue.



Laser treatment with TBH smoke evacuation (illustration similar)

Depending on the dose, surgical smoke can cause acute symptoms of poisoning in the form of headache, weakness, nausea, muscle weakness, and also irritation of the eyes and respiratory tract<sup>2</sup>. The danger comes from microorganisms such as bacteria, viruses and fungi. These have a particle size of less than  $2\mu\text{m}$ . Humans can inhale them completely. In this case, the particles are deposited in the lungs.



Laser treatment without TBH smoke evacuation (illustration similar)

During the removal of warts, for example, papillomaviruses and multidrug-resistant pathogens have been detected in laser smoke<sup>1</sup>. Please keep in mind that the surgical mask does not provide protection against airborne particles, as up to 25% of the respiratory air passes through the mask. Therefore, effective extraction is strongly recommended to protect patients and staff.

1: Ferency A, Bergeron C, Richart RM. Carbon dioxide laser energy disperses human papillomavirus deoxyribonucleic acid onto treatment fields. *Am J Obstet Gynecol.* 1990;163:1271-4  
 2: Eickmann U, Falcy M, Fokuhl I, Rügger M, Bloch M, Merz B. Chirurgische Rauchgase: Gefährdungen und Schutzmaßnahmen. Hrsg: Internationale Sektion der IVSS für die Verhütung von Arbeitsunfällen und Berufskrankheiten im Gesundheitswesen. 2011



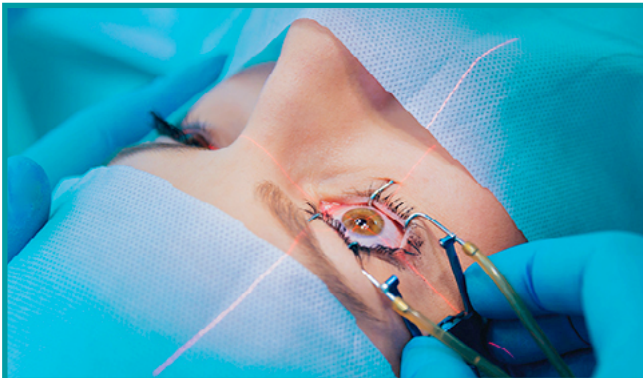
## Application areas



Removing skin tags (illustration similar)

### Removing skin tags / skin care

Skin tags are small growths which tend to hang off the skin. Laser therapy removes specific skin layers in a controlled manner. The particles that arise in this process, should be extracted from the air completely. Our filter and extraction systems collect all particles safely from the air.



Lasering eyes (illustration similar)

### Lasering eyes

Laser eye surgery is one of the most common procedures in modern laser surgery. More and more patients have their eyes lasered to see well without glasses or contact lenses.



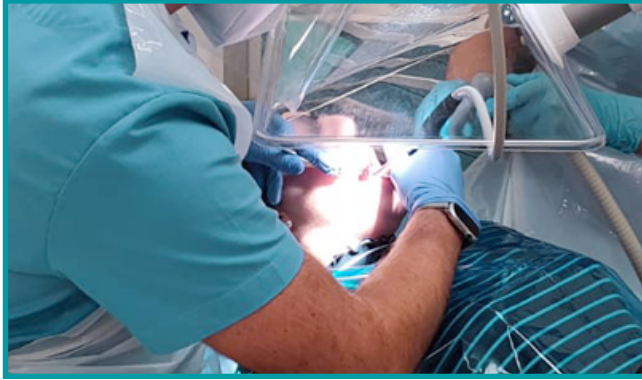
Pigment removal (illustration similar)

### Pigment removal

Laser therapy is an effective way of removing pigments such as age spots. The selective destruction of tattoo pigments takes place by adsorption of laser radiation. The doctor and medical staff want themselves and their patients to be safe during the treatment.



## Application areas



Dental treatment (illustration similar)

### Aerosol/ Dental

Any treatment in a dental practice creates high aerosol concentrations. Oral suction only eliminates coarse particles. The smallest ones are lighter than air and thus continuously whirl around and disperse when they are not extracted from the air.



Birthmarks removal (illustration similar)

### Removing birthmark with lasers

If a birthmark has to be removed, it can either be cut out completely or removed by laser treatment. All conspicuous moles that can potentially degenerate malignant should be completely removed. The birthmark removal takes place under local anesthesia.



Hair removal (illustration similar)

### Hair removal

A laser eliminates hair follicles. Its light destroys the target structures. The generated heat can cause slight burns. This leads to smoke, unpleasant smells from burned skin and dangerous gases.



**Technical data TBH Health Basic/ TBH Health Pro**



TBH Health Basic/ TBH Health Pro with InLine filter & 2-Stage filter (ill. similar)

TECHNICAL DATA	UNIT	TBH HEALTH BASIC	TBH HEALTH PRO
Air volume flow with free air delivery	m³/h	max. 220	max. 250
Effective air flow rate	m³/h	20-200	20-200
Motor output	kW	0.7	0.6
Drive type	-	brush motor	brushless motor
Sound level	db(A)	ca. 64	ca. 62
Serial interface	Sub-D	25-pin	25-pin
Weight	kg	ca. 24	ca. 25
Dimensions (HxWxD) <small>System height without extraction arm</small>	mm	510x300x300	510x300x300
Intake sleeve	Pcs.	2	2
Color (housing)	RAL	7035	7035
Color (of lid)	RAL	7037	7037

FILTER CONFIGURATION	TBH HEALTH BASIC	TBH HEALTH PRO
2-stage filter (HEPA particle filter H13 + activated carbon filter)	✓	✓
InLine filter (ISO ePM <sub>10</sub> 65%)	✓	✓

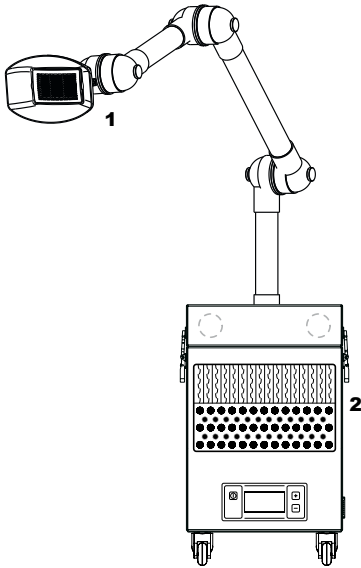


**Delivery scope**

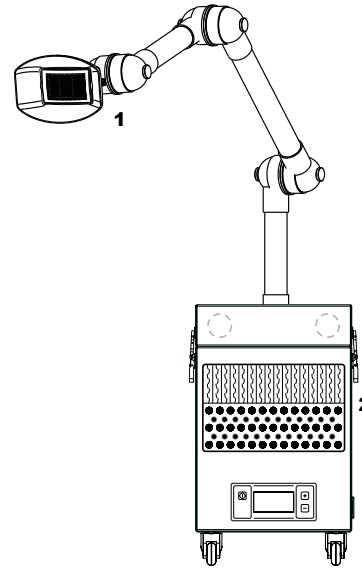
- System incl. extraction arm 50mm and extraction hood with InLine filter
- Incl. filter equipment
- 4 casters for mobile use
- Additional InLine filter (10 pieces)
- Power cord



**Ordering Data TBH Health Basic/ Health Pro**



**TBH Health Basic**



**TBH Health Pro**

DESIGNATION	ART. NO.
TBH Health Basic 230V	90483
TBH Health Basic 120V	90484

DESIGNATION	ART. NO.
TBH Health Pro 100-240V	90485

SPARE FILTER	ART. NO.	
InLine-filter (105 pieces)	20285	1
InLine-filter (50er pieces)	20288	1
2-Stage-Filter (HEPA particle & activated carbon filter)	11140	2

SPARE FILTER	ART. NO.	
InLine-filter (105 pieces)	20285	1
InLine-filter (50er pieces)	20288	1
2-Stage-Filter (HEPA particle & activated carbon filter)	11140	2



**Note medical device**

The TBH Health Basic and TBH Health Pro filter and extraction systems are not application parts according to DIN EN 60601-1, as the systems are designed and the extraction arm is positioned in such a way that they do not come into contact with the patient in the application, as intended. In order to guarantee the increased safety requirements in the medical field, testing according to DIN EN 62353 (VDE 0751-1), as required by DIN EN 60601-1, is possible.



**Technical data TBH Health Pro Silence**



TBH Health Pro Silence, ill. similar

TECHNICAL DATA	UNIT	TBH HEALTH PRO SILENCE
Effective air flow rate	m <sup>3</sup> /h	100-300
Motor output	kW	0.6
Class of protection	-	1
Drive type		brushless motor
Sound level	db(A)	ca. 53
Weight	kg	45
Dimensions (HxWxD) <small>System height without extraction arm</small>	mm	700x350x440
Color (housing & lid)	RAL	7035

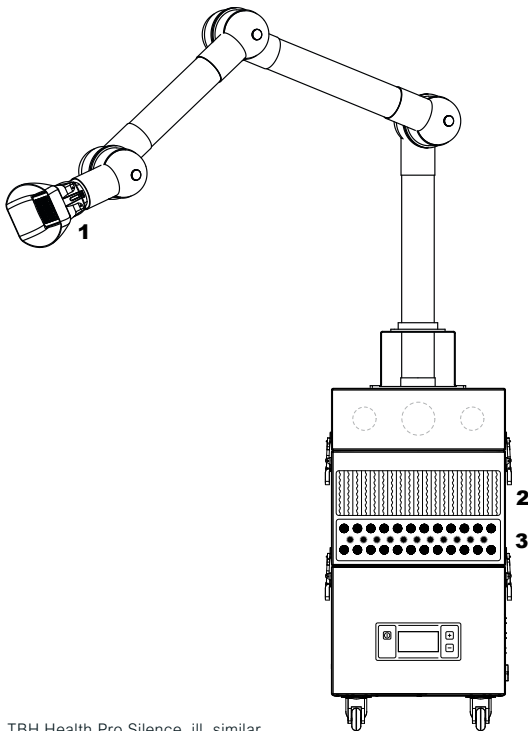


**Delivery scope**

- System incl. console and extraction arm 75mm and InLine filter
- Incl. filter equipment
- 4 casters for mobile use
- Additional InLine filter (10 pieces)
- Power cord



### Ordering data TBH Health Pro Silence



TBH Health Pro Silence, ill. similar

DESIGNATION	ART.-NO.
TBH Health Pro Silence 100-240V 50/60Hz	90486

SPARE FILTER	ART. NO.	
InLine-filter 105er pieces	20285	1
InLine-filter 50er pieces	20288	1
HEPA particle filter H14	13032	2
Activated carbon filter	10004	3

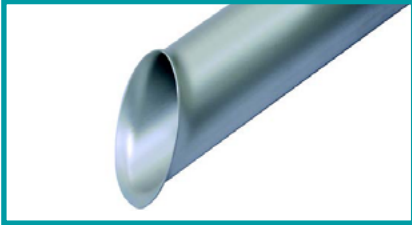


### Note medical device

The TBH Health Pro Silence filter and extraction systems are no application parts according to DIN EN 60601-1, as the systems are designed and the extraction arm is positioned in such a way that they do not come in contact with the patient during extraction, as intended. In order to guarantee the increased safety requirements in the medical field, testing according to DIN EN 62353 (VDE 0751-1), as required by DIN EN 60601-1, is possible.



**Ordering data accessories**



TBH suction tip (illustration similar)

USE	DESIGNATION	ART. NO.
TBH Health Basic TBH Health Pro	Suction tip, extraction arm 50mm	10199
TBH Health Pro Silence	Suction tip, extraction arm 75mm	10213



Foot switch (illustration similar)

USE	DESIGNATION	ART. NO.
TBH Health Basic TBH Health Pro	Cleaning set extraction 50 (1x cleaning brush 10 handling bags)	20291
TBH Health Pro Silence	Cleaning set extraction 75 (1x cleaning brush 10 handling bags)	20292



TBH cleaning set (illustration similar)

USE	DESIGNATION	ART. NO.
TBH Health Basic TBH Health Pro TBH Health Pro Silence	foot switch	16369





### Features

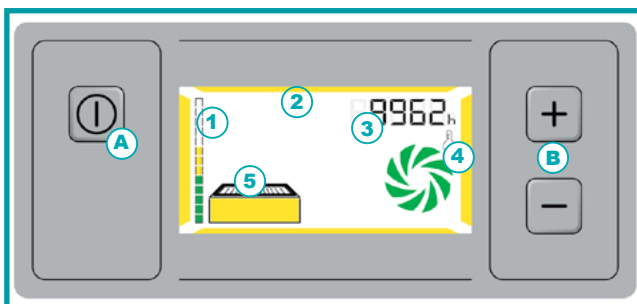
- Optional capture elements for different applications
- Electronic features and display functions
- Differential pressure indicator monitoring the filter saturation
- Easy and clean filter change from the top
- Optimize functionality by using the optional foot switch
- Warning when filter saturation reaches 75%



TBH Health Basic/ TBH Health Pro /ZBH Health pro silence, (ill. similar)



### Intuitive control panel

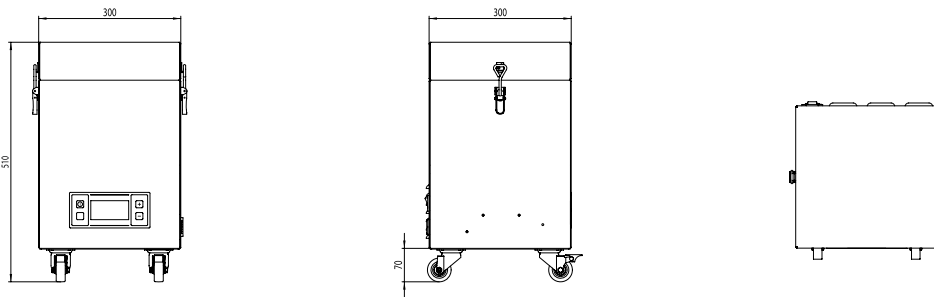


- A - Start/ Stopp button
- B - Manual speed control
- 1 - Saturated filter notification
- 2 - System status indication
- 3 - Power-setting indication/ operating hours counter
- 4 - Temperature and turbine-status indication\*
- 5 - Filter status indication

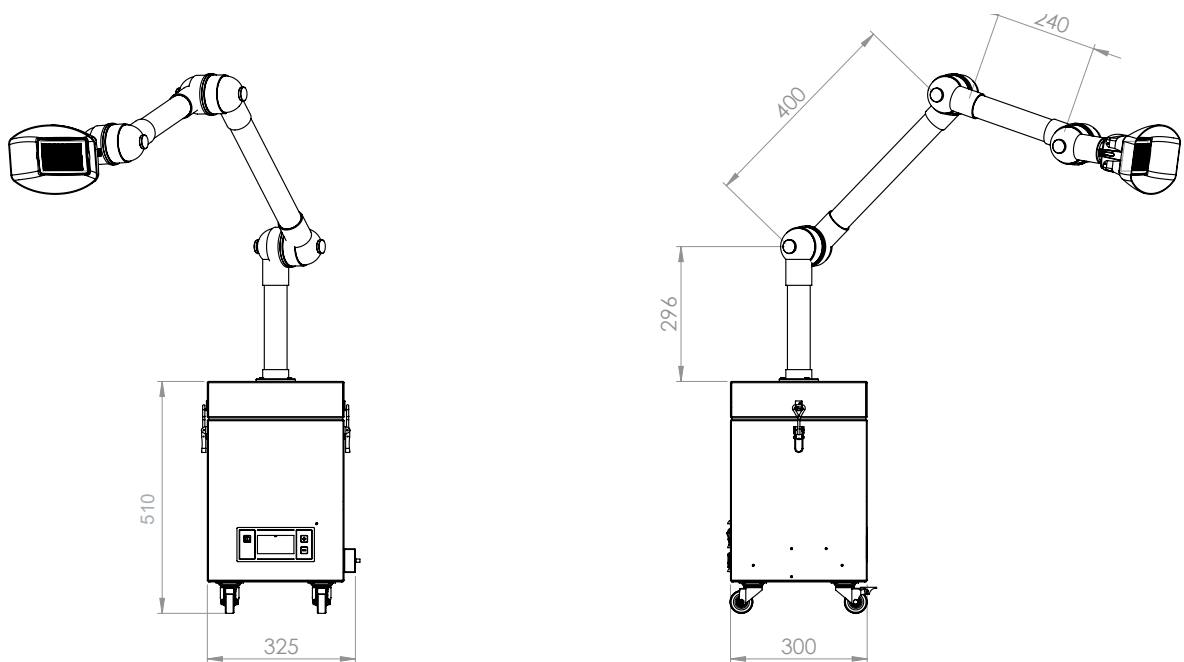
\*Exept TBH Health Basic



**Technical drawings**



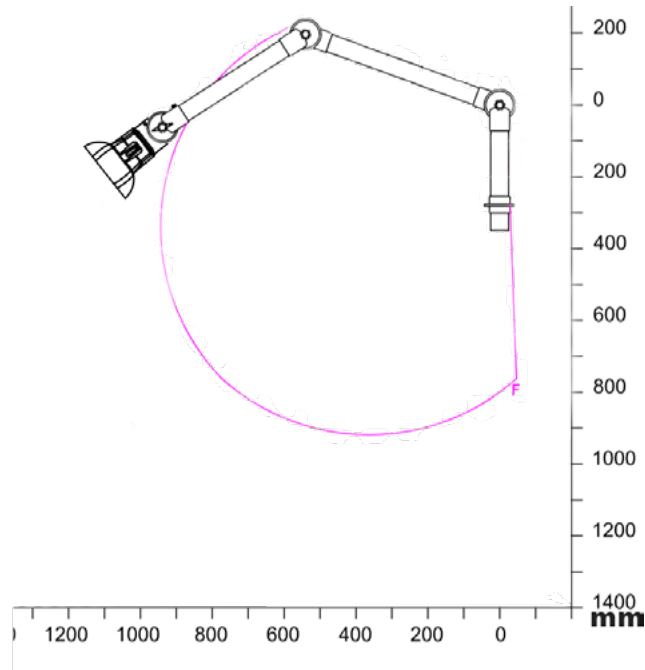
**TBH Health Basic / TBH Health Pro**



**TBH Health Basic / TBH Health Pro with InLine filter**



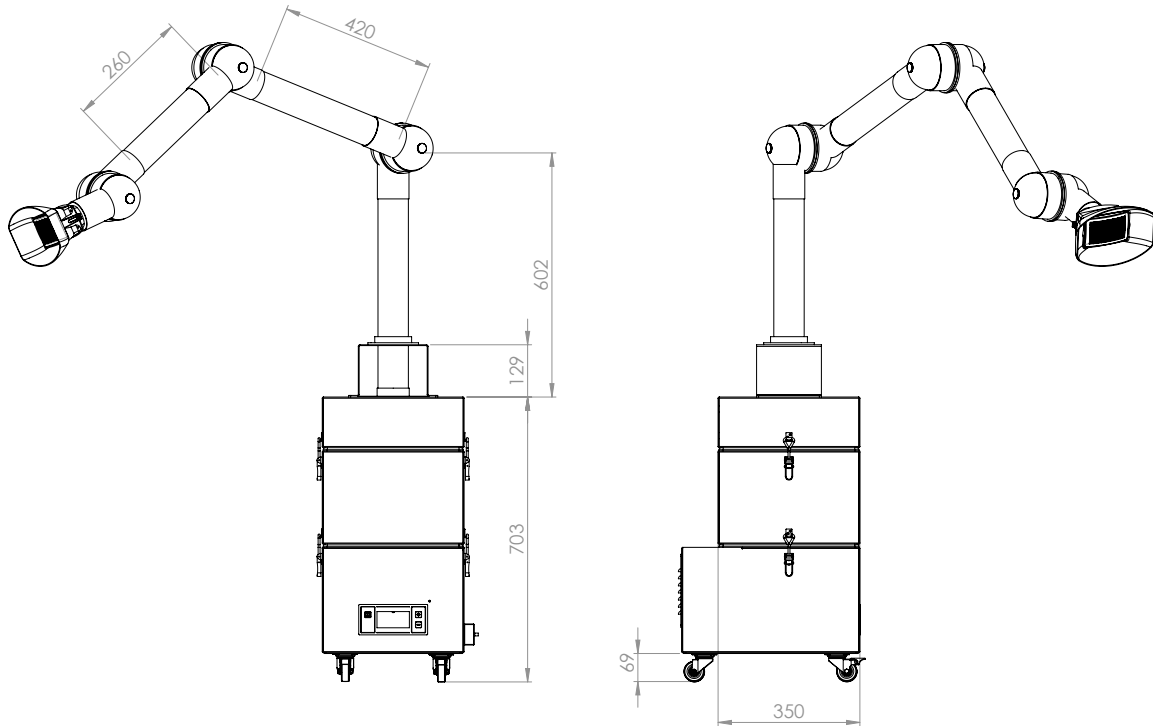
**Range**



F: Modell 50-4737-1-4 / 5 / -50

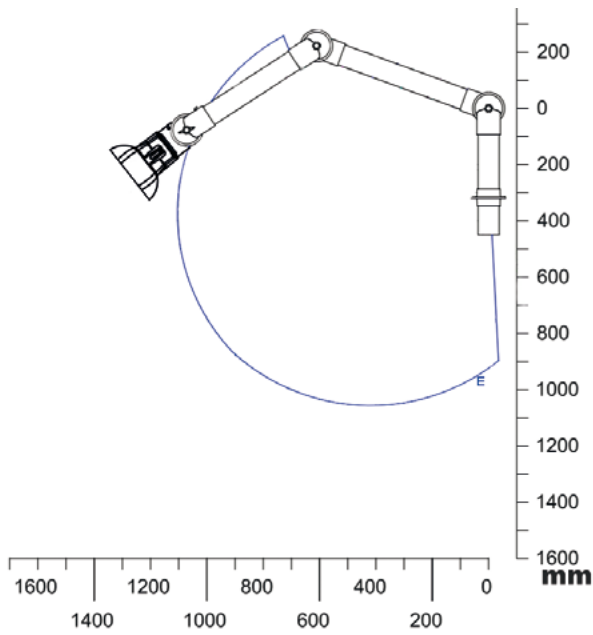


Technical drawings



TBH Health Pro Silence with InLine filter

Range



E: Modell 75-5545-1-4 / -5







# MIDIS laser

Calle Jaime Balmes, 8  
41007 Sevilla (Spain)  
info@midislaser.com  
www.midislaser.com

