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# TBH EXTRACTION SYSTEM FOR MEDICINE AND AESTHETIC FIELDS

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### APPLICATION

Protect yourself, your staff, and your patients with TBH Extraction- and Filtration Systems.

In the laser surgery aerosols will be generated with a particle size of  $0,1\mu - 2\mu\text{m}$ . Those laser aerosols (LGAC = Laser Generated Air-borne Contaminants) consist of several parts of human fabric. This one being removed from the fabric explosively as a steam or gas mixture. Dangers start out from microorganisms like bacteria, viruses and fungi. These have a particle size of smaller than  $2\mu$  and can be completely breathing in and therefore are deposited in the lungs. There is an acute infection risk with that for the operating staff and patient.

Please keep in mind, that the surgery facemask doesn't offer protection in front of air-supported particles. Up to 25% of the respiratory is passing the facemask! It was developed around the patient to protect him from an airborne infection by the operation staff.



Similar to image

### AREAS OF APPLICATION:

- Cosmetic surgery  
(Skin removal, Hair removal, Alteration of epidermis)
- HF surgery
- Dental medicine

### THE SYSTEM INCLUDES NUMEROUS FEATURES:

- Three optional extractors enables different processes and applications
- Electronic features and display functions
- Differential pressure indicator for monitoring the saturation filters
- Easy and clean filter change from the top
- Optimize convenience by using the optional foot switch

### FUNCTIONAL PRINCIPLE

The contaminated air is collected by the collection unit (extractor hood, suction arm, hose, etc.) and transported into the filter unit directly or through a pipe or flexible hose. In the filter unit, the contaminant particles are filtered into different filter levels according to their size and in downstream molecular sieve (activated carbon Filter) the gaseous pollutants are largely removed. Afterwards the purified air can either be circulated back into the work area or diverted outdoors through an exhaust duct. Recirculating the air in the work area is a way to easily reduce energy costs.

## PRODUCT FEATURES



### THREE OPTIONAL EXTRACTORS ENABLES DIFFERENT PROCESSES AND APPLICATIONS

*Extraction Tube (included in our standard model)*

The extraction tube is generally used for smoke and debris where there is no grid cover required.

*1. Extraction Tube with integrated protection grid to avoid extraction of foreign objects.*

The grid is a convex design to reduce the risk of material being sucked onto the grid surface during a procedure, blocking air flow. In addition, the protective grid prevents the extraction of foreign objects - non-intentionally or intentionally - that might block the extraction arm (optional).

*2. A reducer fitting that allows for the attachment of smaller diameter hoses (10.5 - 22 mm).*

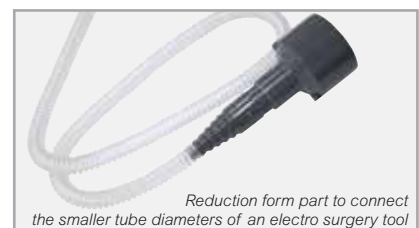
The shown reducer can be attached at the end of the extraction arm. This enables the connection of electro-surgical pencils and their smoke evacuation hand piece. That gives you the opportunity to use one extraction system for all your procedures and applications. These smaller hoses are often used to keep accessibility and visibility at a maximum (optional).



*Extraction tube*



*Extraction Tube with protection grid*



*Reduction form part to connect the smaller tube diameters of an electro surgery tool*



*3. Transparent extraction hood enables a wider coverage of pollution*

The extraction hood - dimension of 330x240 mm - enables a wider coverage of pollution. The transparent design – polycarbonate - allows a free view for the surgeon to the working surface (optional).



*4. Transparent extraction hood enables a wider coverage of pollution*

The extraction hood - dimension of 245x220 mm - enables a wider coverage of pollution. The transparent design – polycarbonate - allows a free view for the surgeon to the working surface (optional).



*5. Transparent extraction hood enables a wider coverage of pollution*

The extraction hood - diameter 385 mm - enables a wider coverage of pollution. The transparent design – polycarbonate - allows a free view for the surgeon to the working surface (optional).



## CONTROL ELECTRONICS

The BF-series systems feature **INSPIRE** control electronics in its basic configuration:

- Switching between run/standby
- Manual adjustment of the rotation speed
- Filter-saturation indicator of the extraction system
- Visual and acoustic display of the filter saturation
- Fault display and notification

### INTERFACE:

- System start/stop
- Warning at a filter saturation of 75%
- Preselection of run/standby at the system start-up



The extraction and filter system can thus easily be integrated into the customer system.

### OPERATING ELEMENTS:

- A) Switching between run/standby
  - B) Manual adjustment of the rotation speed
- 1) Filter-saturation indicator
  - 2) System status indicator
  - 3) Performance-setting indicator/ operating-hours meter
  - 4) Temperature and turbine-malfunction indicator (except of BF9 Set-D)
  - 5) Filter status indicator

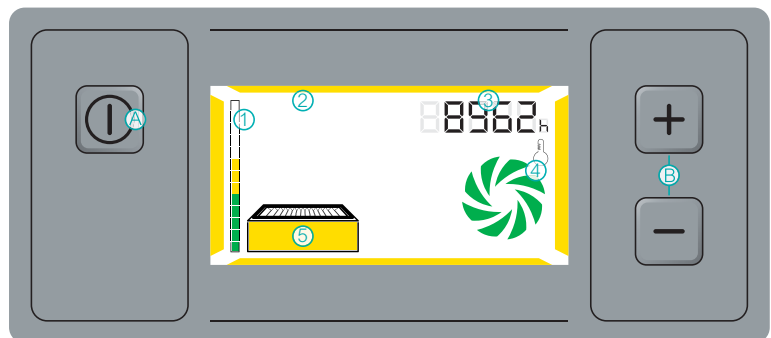


Figure 1

### EASY AND CLEAN FILTER CHANGE FROM THE TOP

The TBH design concept enables easy access from the top to the different filter stages. This makes filter changing simple and clean.



### OPTIMIZE CONVENIENCE BY USING THE OPTIONAL FOOT SWITCH

The optional foot switch provides a hands free Standby / Run operation. The foot switch is easily connected at the interface.



### ADSORPTION OF GASEOUS SUBSTANCES

Activated carbon is used for the adsorption of gaseous substances. The activated carbon facilitates a physical adsorption process so a wide range of gases and odours can be collected.



### MEDICAL DEVICES NOTE

The extraction and filtration system BF9 SET-D and BF10 SET-D is not an application part according to DIN EN 60601-1, as the system does not touch the patient in the application case in accordance with the intended use. The system is set up in a way and the extraction arm is positioned so that it does not touch the patient when vacuuming.

In order to guarantee the increased safety requirements in the medical field, a check according to DIN EN 62353 (VDE 0751-1) as required in DIN EN 60601-1 is possible.

## TECHNICAL DATA



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### AREAS OF APPLICATION:

- Cosmetic surgery  
(Skin renewal, Hair removal,  
Alteration of epidermis)
- HF surgery
- Dental medicine
- Endoscopy

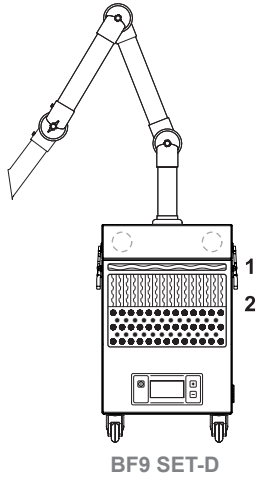
### INCLUDES:

- Complete unit with the interior filter accessories  
(incl. Exhaust arm)
- additional pre-filter mat set (3 pcs)
- 4 wheels for mobile use
- Power cable

TECHNICAL SPECIFICATIONS	UNIT	BF9 SET-D	BF10 SET-D
Unimpeded air flow rate	m <sup>3</sup> /h	max. 220	max. 250
Effective air flow rate	m <sup>3</sup> /h	20-200	20-200
Max. static pressure	Pa	14000	6000
Voltage	V	230/120	100-240
Frequency	Hz	50/60	50/60
Power input	kW	0.7	0.6
Protection class	-	1	1
Motor and drive system	-	brush motor	brushless motor
Noise level	db(A)	approx. 64	approx. 62
Serial interface	D-sub	25-pin	25-pin
Weight	kg	approx. 24	approx. 26
Dimensions (HxWxD)	mm	510x300x300	510x300x300
Intake socket N/D 50	count	2	2
Extraction Arm System 50 with extraction tube	mm	850	850
Colour (cabinet)	RAL	7035	7035
Colour (top cover)	RAL	7037	7037

### FILTER CONFIGURATION

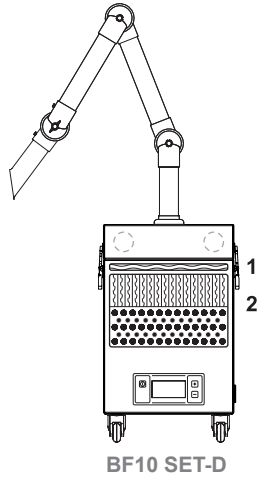
Pre-filter mat M5 (ISO ePM <sub>10</sub> > 50%)	✓	✓
2-stage filter (particle filter H13 + activated carbon filter)	✓	✓



**BF9 SET-D**

DESCRIPTION	ART.-NO.
<b>BF9 SET-D</b> 230V	90389
<b>BF9 SET-D</b> 120V	90390

SPARE FILTERS	
Pre-filter mat set (20 pcs)	11141 1
2-stage filter (particle filter + activated carbon filter)	11140 2



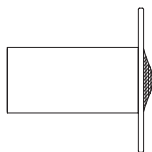
**BF10 SET-D**

DESCRIPTION	ART.-NO.
<b>BF10 Set-D</b> 100-240V	90374

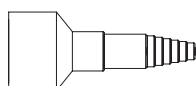
SPARE FILTERS	
Pre-filter mat set (20 pcs)	11141 1
2-stage filter (particle filter + activated carbon filter)	11140 2



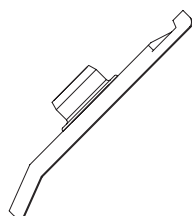
## ACCESSORIES



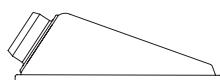
USE	DESCRIPTION	ART.-NO.
BF9 / BF10 Set-D	extraction tube with grid	12777



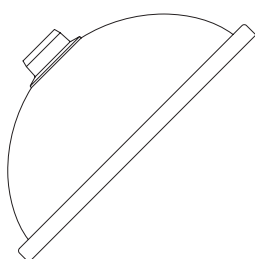
USE	DESCRIPTION	ART.-NO.
BF9 Set-D	hose connecting laboratory tubing	15232



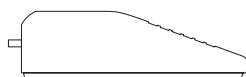
USE	DESCRIPTION	ART.-NO.
BF9 / BF10 Set-D	extraction hood PETG 330x240 mm white	13279



USE	DESCRIPTION	ART.-NO.
BF9 / BF10 Set-D	extraction hood PETG 245x220 mm white	10308



USE	DESCRIPTION	ART.-NO.
BF9 / BF10 Set-D	extraction hood round 385 mm (polycarbonate)	10359



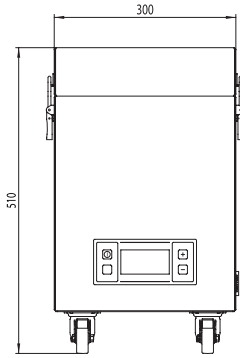
USE	DESCRIPTION	ART.-NO.
BF9 / BF10 Set-D	foot-switch	16369

## ELECTRONIC CONTROLS

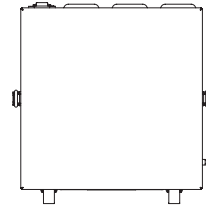
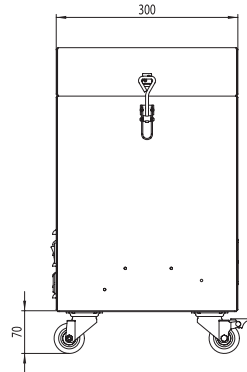
FUNCTION	BF9 SET-D	BF10 SET-D
Switching between run/standby	✓	✓
Manual adjustment of the rotation speed	✓	✓
Filter-saturation indicator (complete system)	✓	✓
Filter status indicator	✓	✓
System status indicator	✓	✓
Performance-setting indicator/operating-hours meter	✓	✓
Temperature and turbine-malfunction indicator	-	✓

INTERFACE FUNCTIONS		
Interface	D-sub	D-sub
System start/stop	✓	✓
Warning at a filter saturation of 75%	✓	✓
Preselection of run/standby at the system start-up	✓	✓

## TECHNICAL DRAWINGS



BF9 / BF10 SET-D



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