

# Instructions for use SMARTair Evo, SMARTair Evo mobile, SMARTair Evo FLEXspace



Always be on the safe side.



KaVo. Dental Excellence.

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## 1 User instructions

### 1.1 User guide

#### Requirement

Read these instructions prior to first use to avoid misuse and prevent damage.

#### 1.1.1 Symbols

	See the Safety/Warning Symbols section
	Important information for users and technicians
	CE mark (European Community). A product bearing this mark meets the requirements of the applicable EU directive.
	Action required

#### 1.1.2 Target group

This document is for dental technicians and laboratory personnel.

### 1.2 Service



Service-Hotline:

+49 7351 56-1000

Service.Zahntechnik@kavo.com

Please indicate the product serial number in all requests!

For further information, please visit: [www.kavo.com](http://www.kavo.com)

### 1.3 Warranty terms and conditions

Within the scope of the applicable KaVo delivery and payment conditions, KaVo guarantees proper function, absence of defects in material and workmanship for a period of 12 months from the date of purchase as confirmed by the salesperson. In case of justified complaints, KaVo will honour its warranty with a free replacement or repair.

The warranty does not cover defects and their consequences that arose or may have arisen due to natural wear, improper handling, cleaning or maintenance, non-compliance with operating, maintenance or connection instructions, corrosion, contaminated media supply or chemical or electrical influences deemed abnormal or impermissible in accordance with factory specifications.

The warranty does not usually cover lamps, light conductors made of glass and glass fibres, glassware, rubber parts and the colourfastness of plastic parts.

The warranty expires if defects or their consequences could possibly have arisen because the product has been modified or changed. Warranty claims can only be asserted when they are immediately reported to KaVo in writing.

This notification must be accompanied by a copy of the invoice or delivery note on which the manufacturing number is clearly visible. In addition to the guaranty, the statutory warranty claims of the purchaser also apply with a warranty period of 12 months.

## 1.4 Transportation and storage

### 1.4.1 Currently valid packaging regulations



#### Note

Only valid for the Federal Republic of Germany.

Dispose of and recycle the sales packaging appropriately in accordance with current packaging regulations, employing waste management or recycling companies. Comply with the comprehensive return system. KaVo has had its sales packaging licensed for this purpose. Please comply with the regional public waste-disposal system.

### 1.4.2 Damage in transit

#### In Germany

If the packaging is visibly damaged on delivery, please proceed as follows:

1. The recipient of the package must record the loss or damage on the delivery receipt. The recipient and the representative of the shipping company must sign this delivery receipt.
2. Leave the product and packaging in the condition in which you received it.
3. Do not use the product.
4. Report the damage to the shipping company.
5. Report the damage to KaVo.
6. You must consult with KaVo before returning a damaged product.
7. Send the signed delivery receipt to KaVo.

If the product is damaged but there was no discernable damage to the packaging upon delivery, proceed as follows:

1. Report the damage to the shipping company immediately and no later than 7 days after delivery.
2. Report the damage to KaVo.
3. Leave the product and packaging in the condition in which you received it.
4. Do not use a damaged product.



#### Note

Failure on the part of the recipient to comply with any of the above-mentioned obligations will mean that the damage will be considered to have arisen following delivery (in accordance with the General German Freight Forwarders' Terms and Conditions, Art. 28).

Outside Germany



**Note**  
KaVo shall not be held liable for damage arising from transportation.  
The shipment must be checked on arrival.

- If the packaging is visibly damaged on delivery, please proceed as follows:
1. The recipient of the package must record the loss or damage on the delivery receipt. The recipient and the representative of the shipping company must sign this delivery receipt.  
Without this evidence, the recipient will not be able to assert a claim for damages against the shipping company.
  2. Leave the product and packaging in the condition in which you received it.
  3. Do not use the product.

- If the product is damaged but there was no discernable damage to the packaging upon delivery, proceed as follows:
1. Report any damage to the shipping company either immediately or no later than 7 days after delivery.
  2. Leave the product and packaging in the condition in which you received it.
  3. Do not use a damaged product.



**Note**  
Failure on the part of the recipient to comply with any of the above-mentioned obligations will mean that the damage will be considered to have arisen following delivery (in accordance with CMR law, Chapter 5, Art. 30).

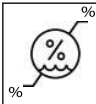

1.4.3 Information on the packaging: Storage and transportation



**Note**  
Please keep the packaging in case you need to return the product for servicing or repair.

The symbols printed on the outside are for transportation and storage, and have the following meaning:

	Transport upright with the arrows pointing upwards!
	Fragile - protect against impact!
	Protect from moisture!
	Permissible stacking load
	Temperature range

	Humidity
	Air pressure



## 2 Safety

### 2.1 Description of safety instructions

#### 2.1.1 Warning symbol



Warning symbol

#### 2.1.2 Description of hazard levels

Safety instructions distinguishing between three hazard levels are used in this document to prevent personal and property damage.

	<b>CAUTION</b>
	<b>CAUTION</b> indicates a hazardous situation that can cause damage to property or mild to moderate injuries.

	<b>WARNING</b>
	<b>WARNING</b> indicates a hazardous situation that can lead to serious or fatal injury.






	<b>DANGER</b>
	<b>DANGER</b> indicates a maximal hazard due to a situation that can directly cause death or fatal injury.

#### 2.1.3 Structure


	<b>DANGER</b>
	<b>The introduction describes the type and source of the hazard.</b> This section describes potential consequences of non-compliance. ► The optional step includes necessary measures for hazard prevention.



## 2.2 Safety instructions

### 2.2.1 General information

	<p><b>⚠ WARNING</b></p> <p><b>Injury or damage from damaged functional parts.</b> If functional parts are damaged, it can cause additional damage or personal injury.</p> <ul style="list-style-type: none"> <li>▶ Check the device, electrical cables and any accessories for possible damage to the insulation.</li> <li>▶ If functional parts are damaged: discontinue your work and repair the damage nor notify service technician!</li> </ul>
	<p><b>⚠ CAUTION</b></p> <p><b>Damage by liquids.</b> Faults on electrical components.</p> <ul style="list-style-type: none"> <li>▶ Protect openings of the product from any ingress of liquids.</li> <li>▶ Do not continue using the device and contact Customer Service, if there is any ingress of liquid into the device.</li> </ul>
	<p><b>⚠ CAUTION</b></p> <p><b>Product damage from incorrectly adjusting the tension.</b> Destruction of electrical components.</p> <ul style="list-style-type: none"> <li>▶ Adjust the voltage input for the product to the existing mains voltage.</li> </ul>
	<p><b>⚠ CAUTION</b></p> <p><b>Damage from overvoltage.</b> The product becomes damaged.</p> <ul style="list-style-type: none"> <li>▶ The nominal voltage and frequency must be the same as that on the rating plate.</li> </ul>
	<p><b>⚠ CAUTION</b></p> <p><b>Premature wear and malfunctions from improper servicing and care.</b> Reduced product life.</p> <ul style="list-style-type: none"> <li>▶ Perform regular proper care and maintenance!</li> </ul>

### 2.2.2 Product-specific

	<p><b>⚠ CAUTION</b></p> <p><b>Hazard from connection of wrong capture elements.</b> User may be exposed to elevated amounts of dust in the workplace.</p> <ul style="list-style-type: none"> <li>▶ For aspiration, exclusively use capture elements (suction hoods) designed for a volume flow of 15 l/s or less.</li> </ul>
---	--

	<p><b>⚠ CAUTION</b></p> <p><b>Damage from pointed or sharp-edged objects being aspirated.</b> User may be exposed to elevated amounts of dust in the workplace.</p> <ul style="list-style-type: none"> <li>▶ Do not aspirate pointed or sharp-edged objects.</li> </ul>
	<p><b>⚠ CAUTION</b></p> <p><b>Damage from pointed or sharp-edged objects being aspirated.</b> This damages the product.</p> <ul style="list-style-type: none"> <li>▶ Do not aspirate pointed or sharp-edged objects.</li> </ul>

## 2.3 Protective equipment

Protective equipment recommended during emptying or maintenance of the dust extraction equipment:

- Surgical mask
- Gloves
- Safety goggles

## 2.4 Disposal of electronic and electrical devices



### Note

According to EC directive 2002/96 concerning used electrical and electronic devices, this product is subject to the cited directive and must be disposed of accordingly within Europe.

For more information, please visit [www.kavo.com](http://www.kavo.com) or contact your specialised dental supplier.

For final disposal, please contact:

## In Germany

To return an electrical device, you need to proceed as follows:

1. On the homepage [www.enretec.de](http://www.enretec.de) of enretec GmbH, you can download a form for a disposal order under the menu item eom. Download the disposal order or complete it as an online order.
2. Enter the corresponding information to complete the order, and submit it as an online order or by fax (+49 (0)3304 3919 590) to enretec GmbH.  
The following contact options are also available for questions and for initiating a disposal order:  
Phone: +49 (0) 3304 3919-500  
Email: [eom@enretec.de](mailto:eom@enretec.de) and  
Postal address: enretec GmbH, Geschäftsbereich eomRECYCLING®  
Kanalstraße 17  
D-16727 Velten
3. A unit that is not permanently installed will be picked up at the office.  
A permanently installed unit will be picked up at the curb at your address on the agreed date.  
The owner or user of the device will have to bear the cost of disassembly, transportation and packaging.

## International

For country-specific information on disposal, contact your dental supplier.

### 3 Product description

#### 3.1 Purpose – Proper use

##### 3.1.1 General information

The overarching guidelines and/or national laws, national regulations and the rules of technology applicable to machines for the startup and use of the KaVo product for the intended purpose are to be applied and complied with.

In combination with KaVo control units, this KaVo product is suitable for the processing of materials in dentistry, industry and trade applications by means of rotating tools.

Any other type of use is not permitted.

"Proper use" includes following all instructions for use and ensuring that all inspections and service tasks are performed.

The user must ensure that the unit works properly and is in satisfactory condition before each use.

The following persons are authorised to repair and service the KaVo product:

- Technicians of KaVo branch offices after appropriate product training.
- Specifically KaVo-trained technicians of KaVo franchised dealers.



##### Note

The product must be cleaned and serviced according to instructions if it is not to be used for an extended period of time.

KaVo shall not be responsible for damage caused by:

- external influences, poor media quality or faulty installation.
- The use of incorrect information.
- repair work carried out incorrectly.



##### Note

Any waste which is generated must be recycled or disposed of in strict compliance with all applicable national regulations in a manner which is safe both for people and the environment.

If you have any questions regarding proper disposal of the KaVo product, please contact the KaVo branch.

##### 3.1.2 Product-specific

The KaVo product is for vacuuming and separating hazardous dust (with MAK values) and inert dusts and vapours (primarily methyl methacrylate).

The use of this KaVo product is not permitted in areas subject to an explosion hazard.


**Note**

The KaVo product is not suitable for vacuuming collected dust (such as on the floor).


**Note**

The KaVo product is not suitable for vacuuming hazardous mineral dusts as per VBG 119 and carcinogenic materials as per VBG 113.

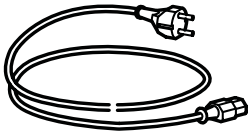



The materials are vacuumed with the aid of various collecting elements in accordance with ergonomic regulations.

Connectors on suction opening:

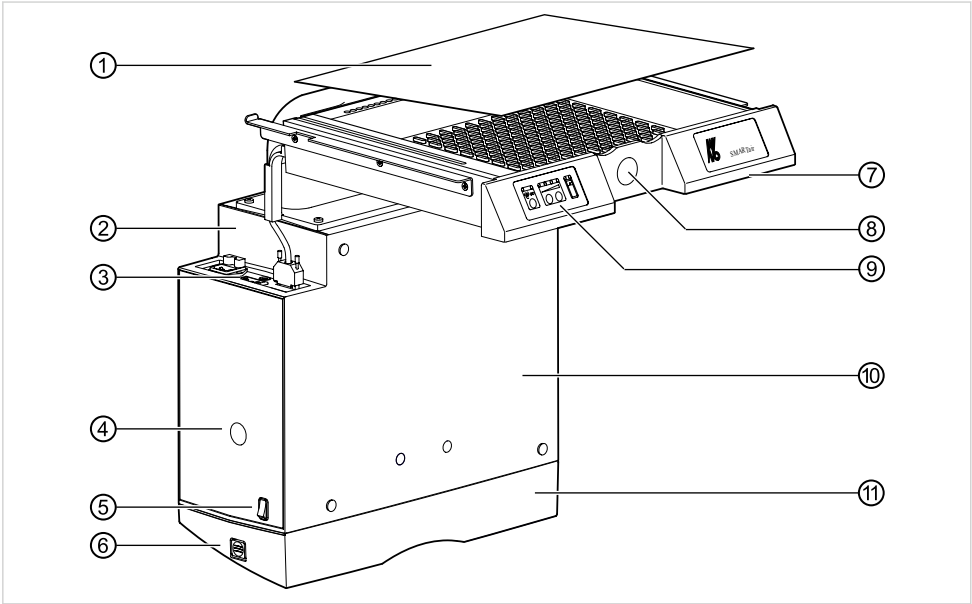
- SMARTair Evo: suction hoods
- SMARTair Evo mobile: suction hoods or direct connection to small devices

### 3.2 Scope of delivery

		SMARTair Evo mobile	SMARTair Evo	SMARTair Evo FLEXspace
①		Front panel	Front panel	Front panel
②			Motor filter drawer	Motor filter drawer
③				Blower box receptacle
④				Front door with handle
⑤		Blower box	Blower box	Blower box
⑥				Connection cable for membrane keypad
⑦				Suction hose
		Suction hose Ø 42 mm with coupling bushes		
		Power cable <ul style="list-style-type: none"> <li>▪ DE Mat. no. 1.001.8593</li> <li>▪ GB Mat. no. 0.692.6901</li> <li>▪ CH Mat. no. 1.001.8594</li> <li>▪ US Mat. no. 1.001.8595</li> <li>▪ AUS Mat. no. 1.001.8598</li> </ul>		

	Connection cable <ul style="list-style-type: none"><li>▪ DE Mat. no. 1.002.2525</li><li>▪ GB Mat. no. 1.002.2529</li><li>▪ CH Mat. no. 1.002.2527</li><li>▪ US Mat. no. 1.002.2528</li><li>▪ AUS Mat. no. 1.002.2530</li></ul>
	Replacement filter bag Mat. no. 0.658.2160
	Ultra-fine filter Mat. no. 0.658.9802
	Instructions for use Mat. no. 1.001.9704

3.3 Device parts



SMARTair Evo components

- ① Cover

② Rating plate

③ Connectors

④ Voltage selection switch

⑤ Power switch

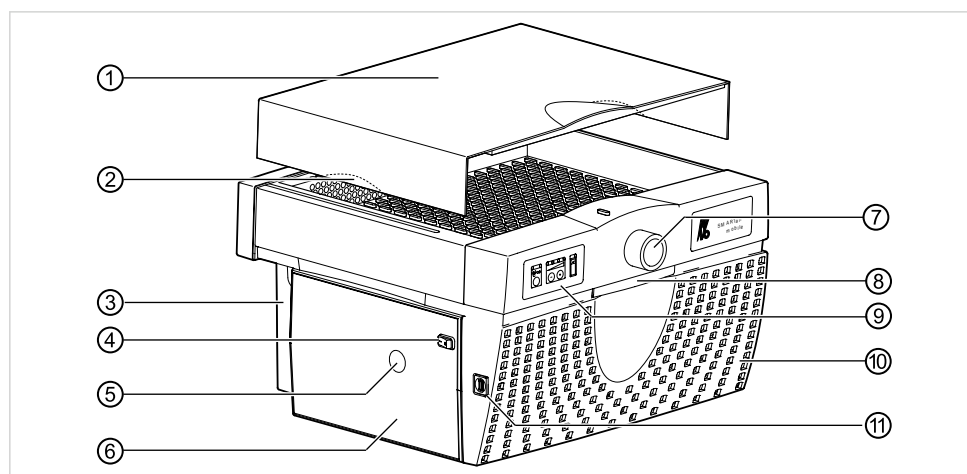
⑥ Closure of housing cover
- ⑦ Handle bar

⑧ Suction opening

⑨ Control panel

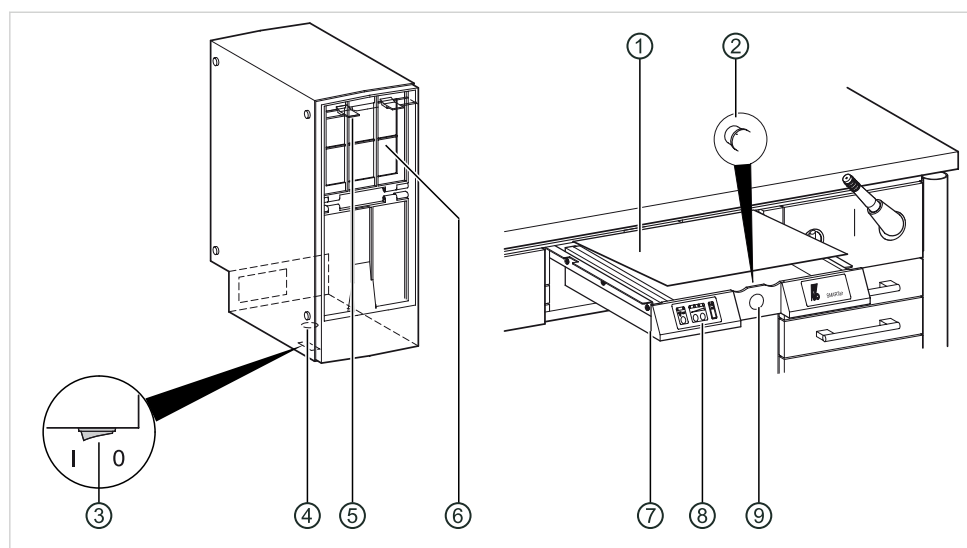
⑩ Filter box

⑪ Housing cover for filter box



SMARTair Evo mobile components

- |                            |                                |
|----------------------------|--------------------------------|
| ① Cover                    | ⑦ Suction opening              |
| ② Handle bar               | ⑧ Handle bar                   |
| ③ Connectors               | ⑨ Control panel                |
| ④ Power switch             | ⑩ Housing cover for filter box |
| ⑤ Voltage selection switch | ⑪ Closure of housing cover     |
| ⑥ Filter box               |                                |

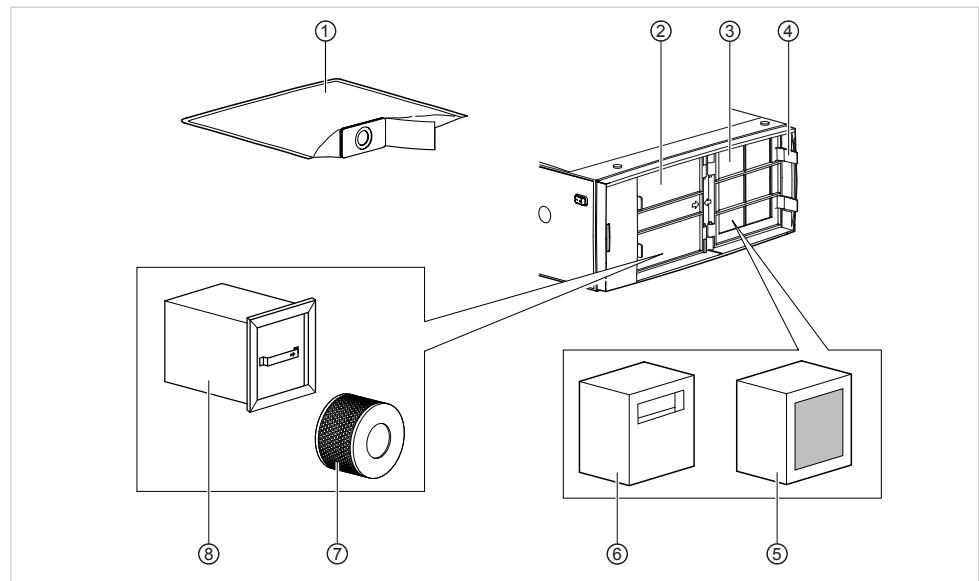


SMARTair Evo FLEXspace components

- |                             |                   |
|-----------------------------|-------------------|
| ① Cover                     | ⑥ Filter flap     |
| ② Filter muffle             | ⑦ Handle bar      |
| ③ Power switch              | ⑧ Control panel   |
| ④ Voltage selection switch  | ⑨ Suction opening |
| ⑤ Snap locks of filter flap |                   |



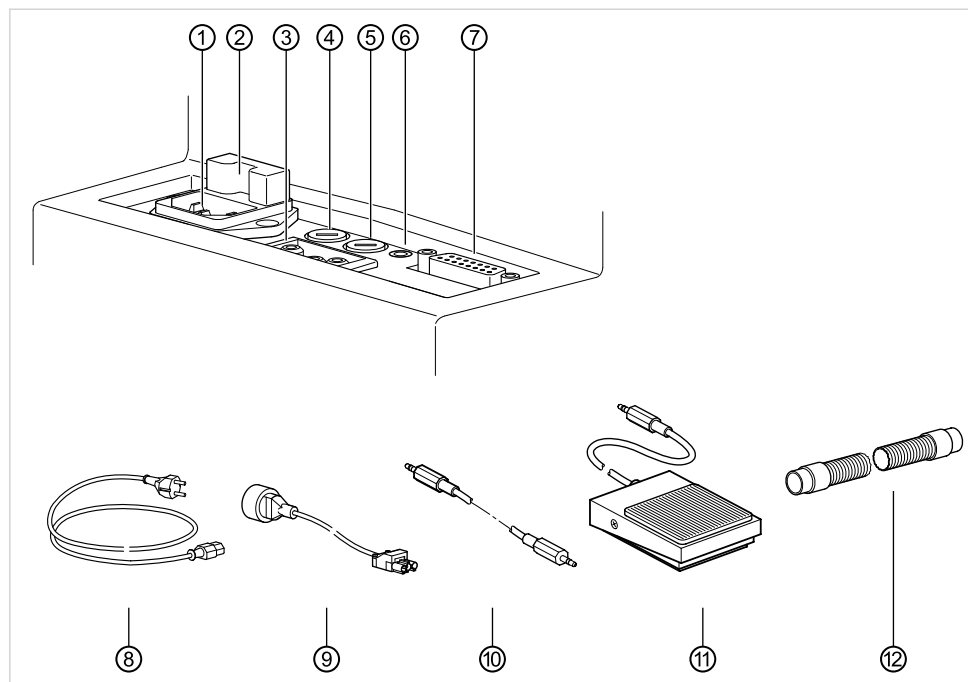
### 3.4 Filter box



- ① Filter bags
- ② Flap of blower box
- ③ Filter flap
- ④ Snap locks of filter box

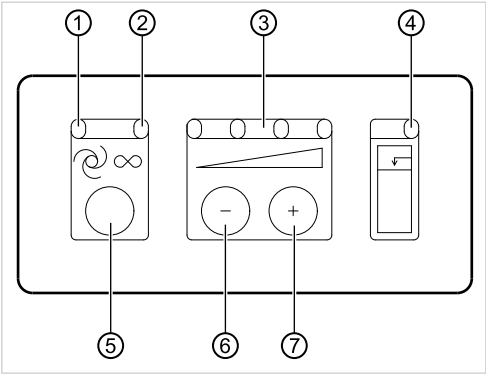
- ⑤ Adsorption filter (optional)
- ⑥ Silencer element
- ⑦ Ultra-fine filter
- ⑧ Blower box

### 3.5 Connections



- |   |  |
|---|--|
| ① Socket for power cable connector              | ⑦ Sub-D socket for connection to membrane keyboard       |
| ② Fuse for line input (10 A)                    | ⑧ Power cable (country-specific)                         |
| ③ Socket for connection to equipment            | ⑨ Connecting cable to equipment (country-specific)       |
| ④ Fuse for fan stage 2 (3.15 A)                 | ⑩ Control cable for K-Control / K-Control TLC (optional) |
| ⑤ Fuse for fan stages 1 through 4 (4 A)         | ⑪ Foot-operated button (optional)                        |
| ⑥ Socket for control cable to equipment (for ⑩) | ⑫ Suction hose (for SMARTair Evo mobile only)            |

3.6 Control panel



- ① LED automatic mode (green)

② LED continuous operation (green)

③ LEDs suction level display (green)

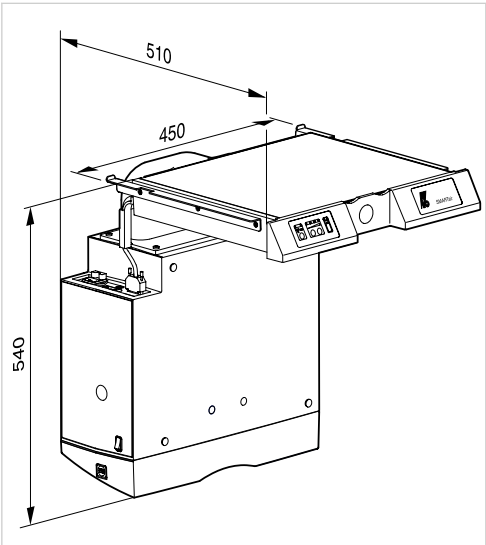
④ LED display: "Filter full" (red)
- ⑤ "Automatic" key

⑥ "Minus" key (reduction of the extraction level)

⑦ "Plus" key (increase of the extraction level)

3.7 Technical data

3.7.1 Dimensions of SMARTair Evo

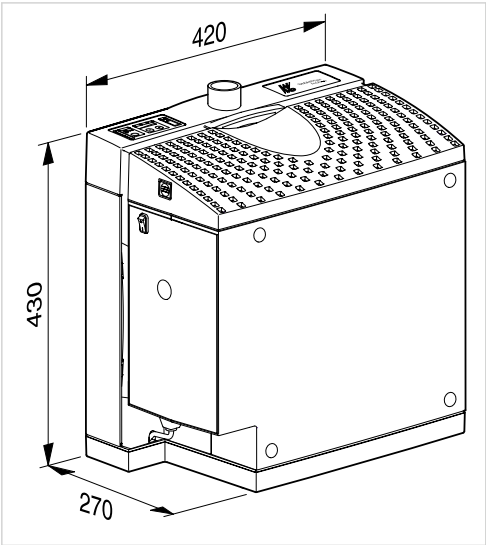


Weight	approx. 18 kg
--------	---------------

Package SMARTair Evo

Length	approximately 668 mm
Width	approximately 409 mm
Height	approximately 510 mm
Weight with packaging	20 Kg

3.7.2 Dimensions of SMARTair Evo mobile

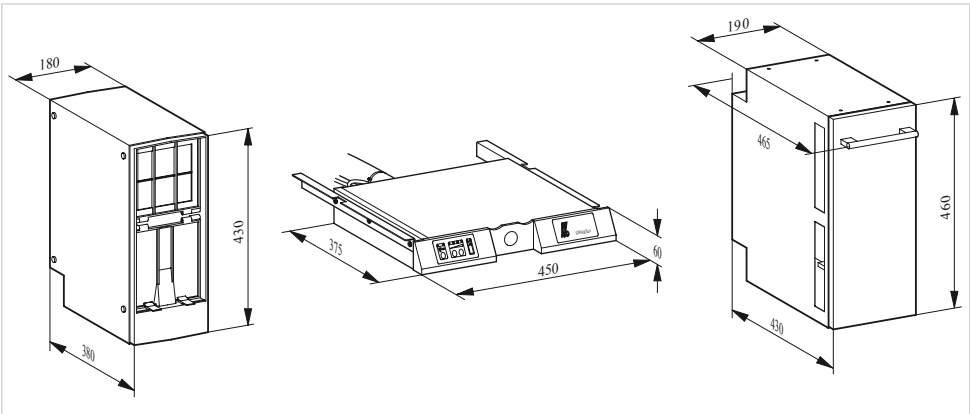


Weight	approx. 18 kg
--------	---------------

Package SMARTair Evo mobile

Length	approximately 668 mm
Width	approximately 409 mm
Height	approximately 510 mm
Weight with packaging	20.4 Kg

3.7.3 Dimensions of SMARTair Evo FLEXspace



Weight	approx. 25 kg
--------	---------------

## Package SMARTair Evo FLEXspace

Length	approximately 659 mm
Width	approximately 545 mm
Height	approximately 580 mm
Weight with packaging	27 Kg

### 3.7.4 Technical Specifications

#### Housing

Degree of soiling	2
Class of protection	I

#### Electrical system

Nominal voltage	100 / 115 / 230 V
Nominal frequency	50/60 Hz
Permissible leakage current	max. 0.5 mA
Mains input fuse	100 to 230 V T 10 A (H) / 250 V
Fan fuse for levels 1 to 4	T 4 A (L) / 250 V
Fan fuse for level 2	T 3.15 A (L) / 250 V
Unit input	max. 1000 W
Connection value for the unit	max. 500 W
Mode	Continuous operation
Overvoltage category	II


#### Output


Suction power	15 to 30 l/s
Filter surface	0.58 m <sup>2</sup>
Vacuum	max. 147 mbar

#### Noise emissions

Level	Noise level			
	with suction hood AT		without suction hood	
	0.3 m vertical	1.0 m horizontal	0.3 m vertical	1.0 m horizontal
	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
I	63	56	64	57
II	67	59	67	58
III	70	63	69	60
IV	74	66	72	63

Operating environment



 **WARNING**


**Inappropriate operating conditions.**  
Impairment of the electrical safety of the device.  
  
► It is essential to comply with the operating conditions specified in the "Technical Specifications" chapter and not to exceed those conditions.

Ambient temperature	+5 to +40 °C
Relative humidity	max. 80 %
Max. elevation for operation	max. 2,000 m above sea level
Permissible mains voltage fluctuation	max. ± 10 % of the nominal voltage
Permissible in enclosed rooms	

Transportation and storage conditions


Ambient temperature	-20 to +55°C
Relative humidity	5% to 95% non-condensing
Air pressure	700 to 1600 hPa



3.8 Identification plates









Kaltentbach & Voigt GmbH  
Bismarckring 39  
D-88400 Biberach

Type: **SMARTair Evo**  
SN: 2013-06 - ????????  
REF: 1.010.4071  
100V/ 115V/ 230V  
50/60Hz  
1000W

  
250V / T10A(H)  
**Made in Germany**









**Made in Germany**



SMARTair Evo









Kaltentbach & Voigt GmbH  
Bismarckring 39  
D-88400 Biberach

Type: **SMARTair Evo mobile**  
SN: 2013-06 - ????????  
REF: 1.010.4072  
100V/ 115V/ 230V  
50/60Hz  
1000W

  
250V / T10A(H)  
**Made in Germany**





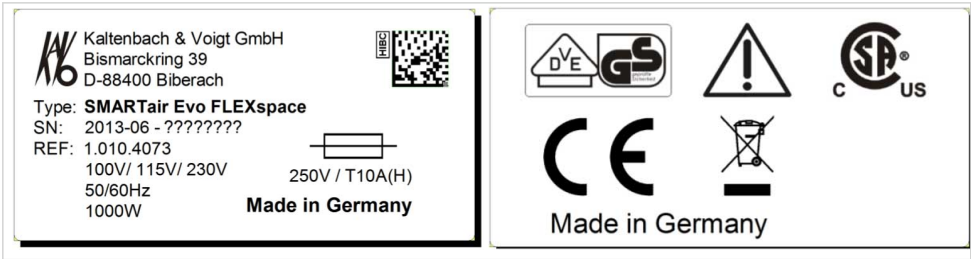


**Made in Germany**









SMARTair Evo mobile

20/51

3 Product description | 3.8 Identification plates



SMARTair Evo FLEXspace

Type	Device type
SN	Year of manufacture - month - serial number
REF	Material number
	CE mark
	VDE mark
	CSA mark
	GOST R mark
	Disposal instructions, intended use
	GS mark
	HIBC Code
	Follow the instructions for use

### 3.9 Dust test



#### **DGUV Test mark:**

Demonstrates compliance with the requirements of "Basic principles for the testing and certification of suction systems for dental laboratories - GS-IFA-M20". This test mark was granted by the Testing and Certification Board (Prüf- und Zertifizierungsstelle IFA), the Institut for Occupational Safety of Statutory German Accident Insurance (Deutsche Gesetzliche Unfallversicherung, DGUV).



## 4 Assembly



### Note

Repairs and service tasks may only be performed by qualified professionals except for the activities described in these instructions for use.

### 4.1 Location



#### ⚠ CAUTION

Exceeding the permissible thresholds.

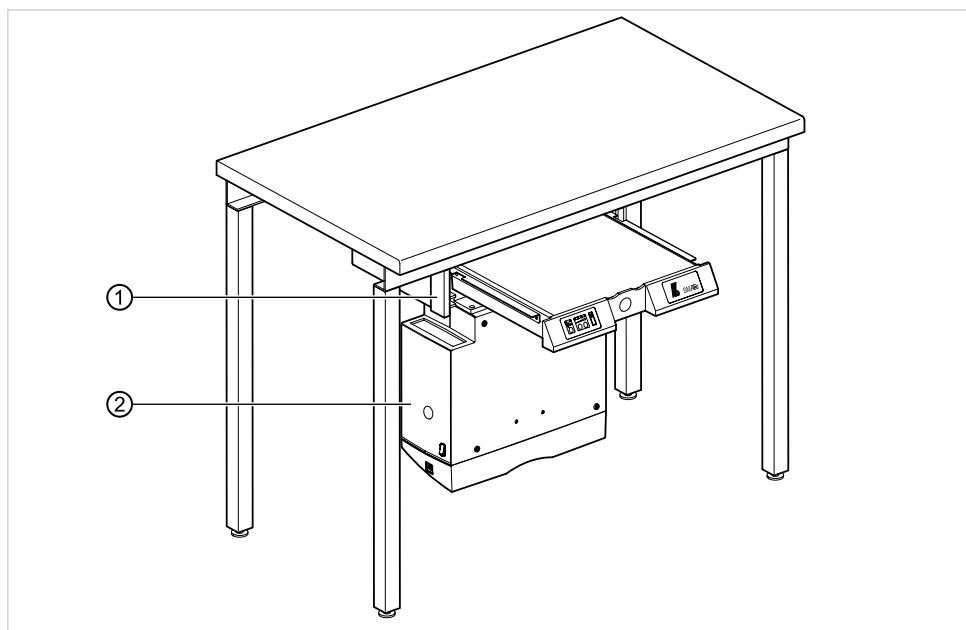
- Make sure that the maximum return airflow is 50% of the fresh air flow.



### Note

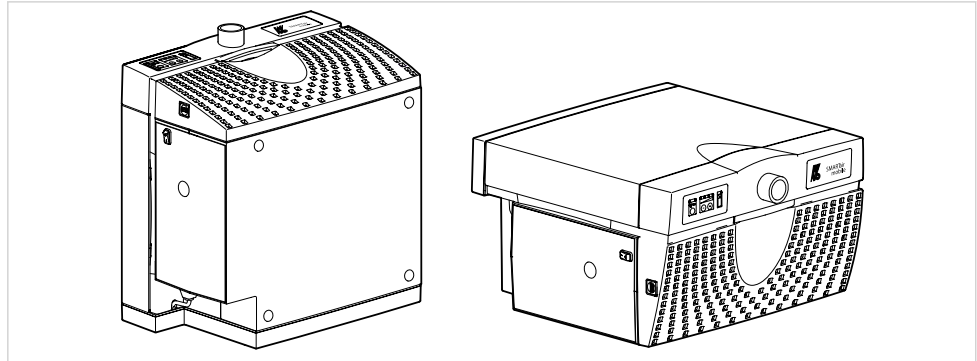
For transport purposes, cover the suction opening with adhesive tape. Select the installation site properly such as to not block the extracted air openings. Ensure sufficient ventilation if the unit is operated for extended periods of time!

The SMARTair Evo suction system ② is designed to be installed in support frame ① or system base 5.



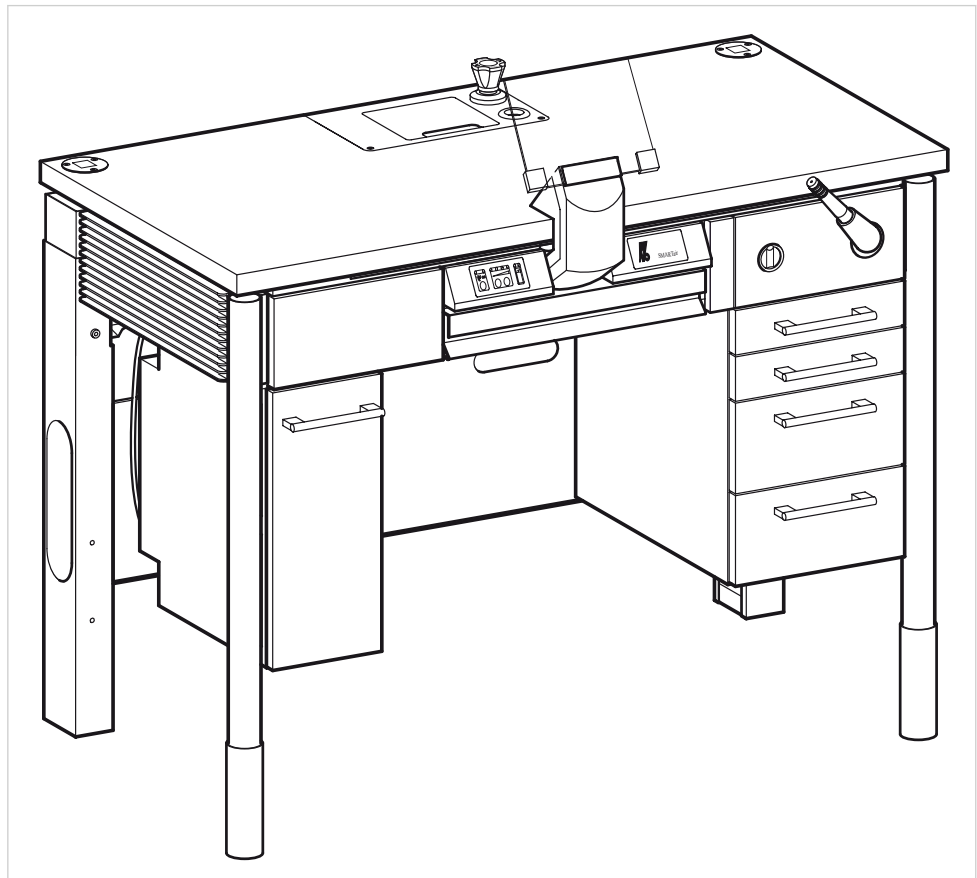
Set-up site of the SMARTair Evo

The SMARTair Evo mobile suction system can be set up upright or on its side.



Set-up site of the SMARTair Evo mobile

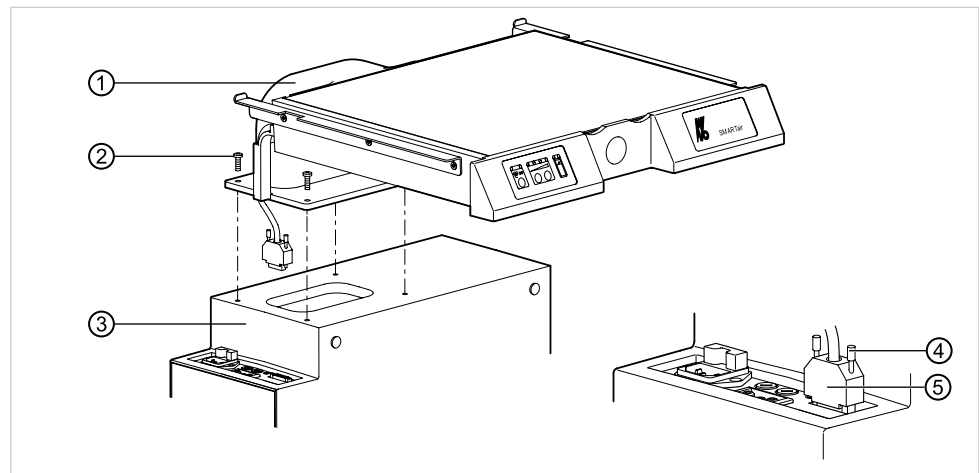
The SMARTair Evo FLEXspace suction system is designed to be incorporated into the FLEXspace workstation.



Set-up site of the SMARTair Evo FLEXspace

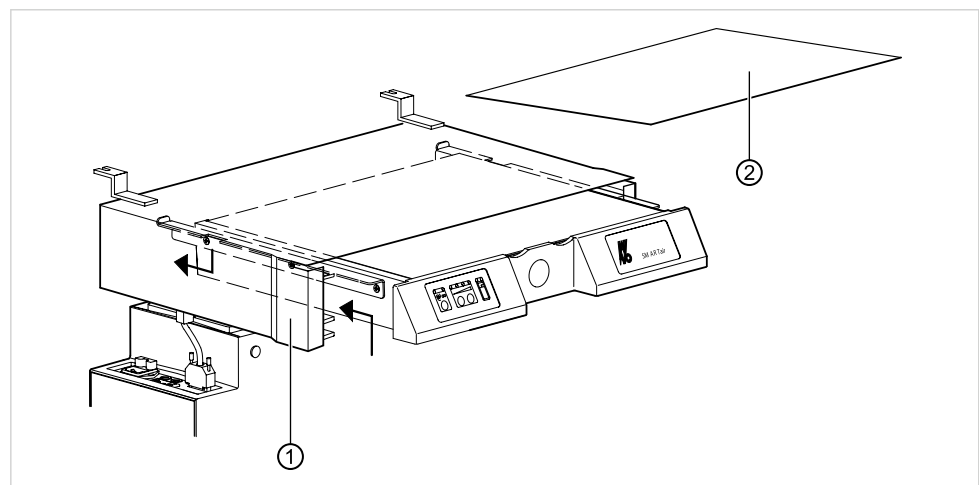
## 4.2 Installation of the SMARTair Evo

### Connect the motor housing to the flange



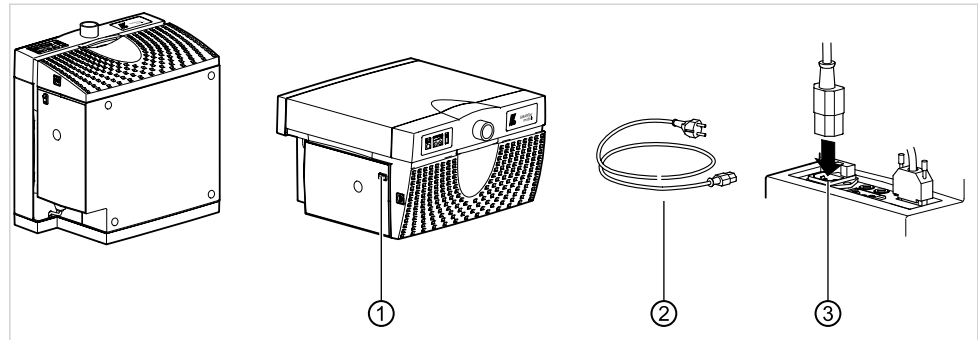
- ▶ Screw the motor housing ③ and flange ① together with four screws ②.
- ▶ Insert the Sub-D connector ⑤ into the provided socket in the housing, and affix it with two screws ④.

### Insert the SMARTair Evo into the support frame



- ▶ Take off the cover ② of the SMARTair Evo.
- ▶ Insert the SMARTair Evo into the support frame ①.

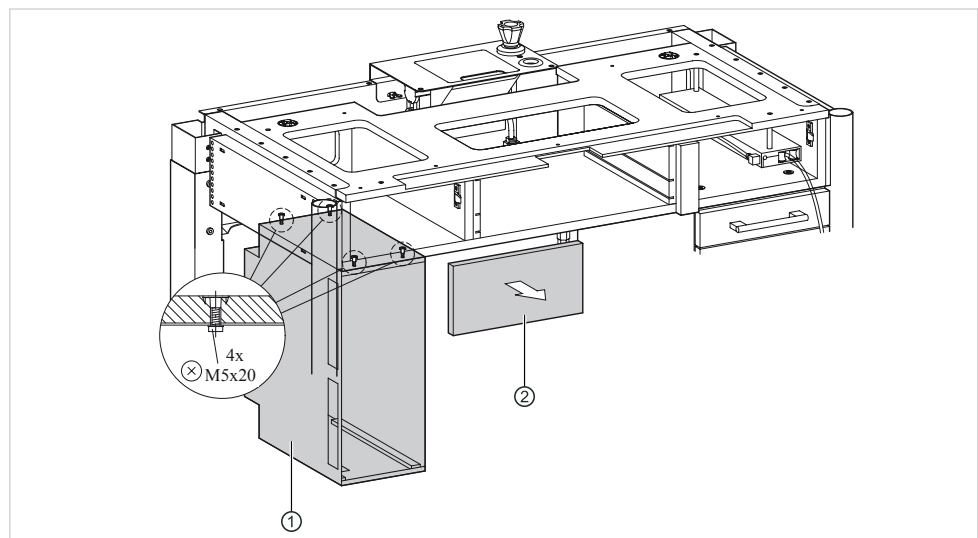
### 4.3 Installation of the SMARTair Evo mobile



- ▶ Place the SMARTair Evo mobile at the intended set-up site.
- ▶ Switch the power switch ① to "OFF".
- ▶ Plug the enclosed power cable ② into the designated connector ③ of the SMARTair Evo mobile and insert the plug into an easily accessible, properly installed (grounded) mains socket. Use an extension cable if needed.

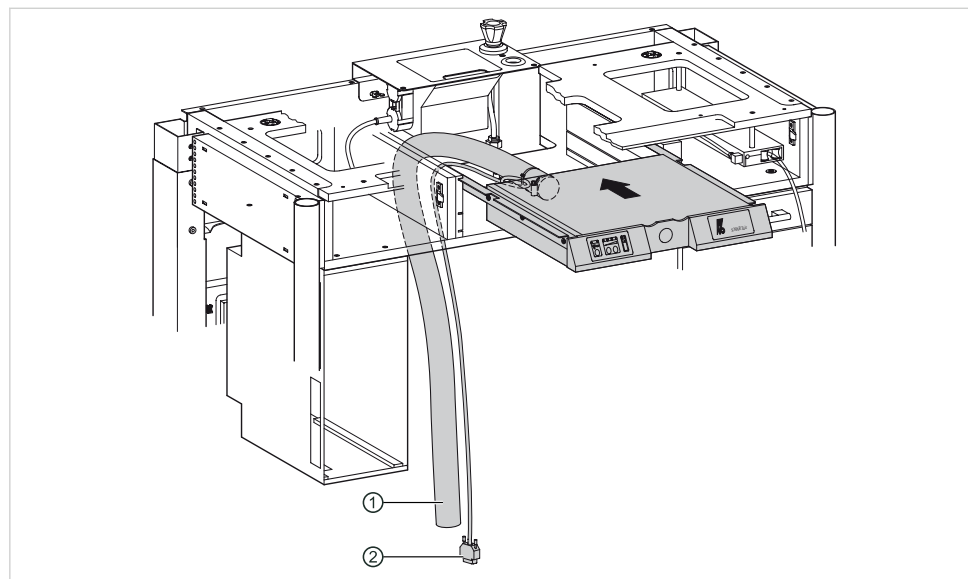
### 4.4 Installation of the SMARTair Evo FLEXspace

#### Screw down the housing



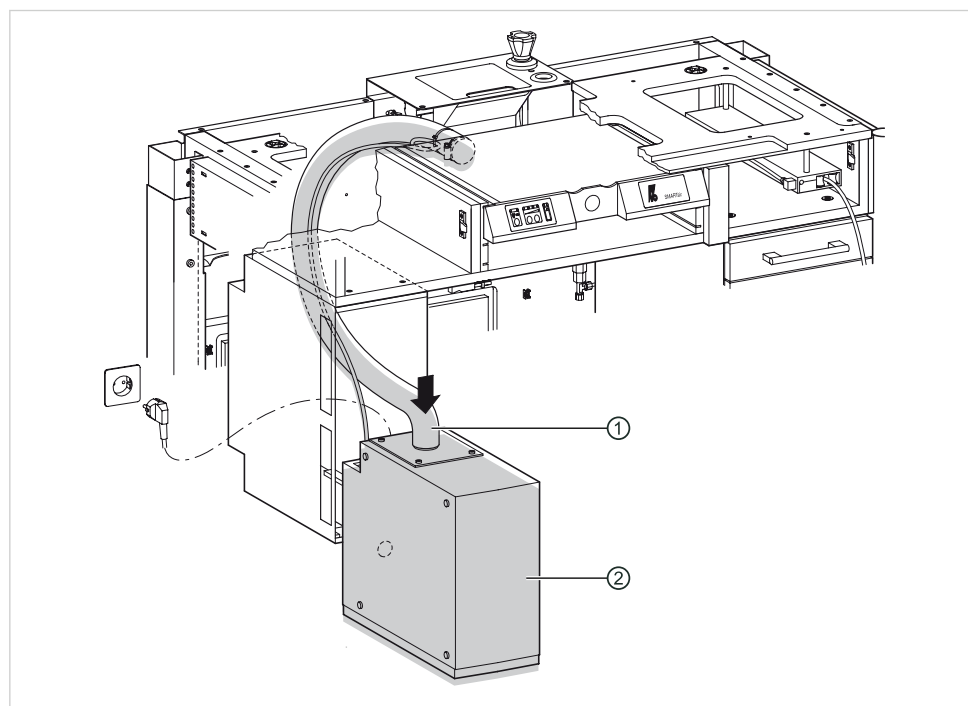
- ▶ Remove the cover ②.
- ▶ Screw the housing ① tight with 4 screws M5 x 20.

### Insert the filter drawer



- ▶ Guide the connection cable ② and the suction hose ① through the housing and towards the back.
- ▶ Insert the filter drawer of the SMARTair Evo FLEXspace into the guide element and slide it in.
- ▶ Route the cables properly such that the SMARTair Evo FLEXspace can be pulled out to the limit stop without unplugging any cables.

### Install the suction hose



- ▶ Place the blower box ② on the floor.

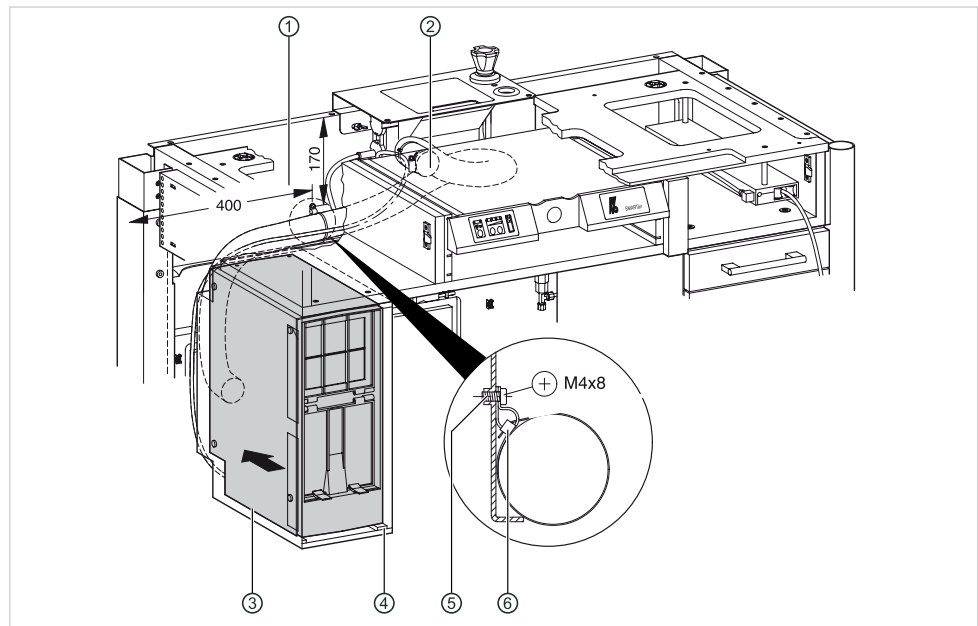
- ▶ Attach the suction hose ①.

## Left installation



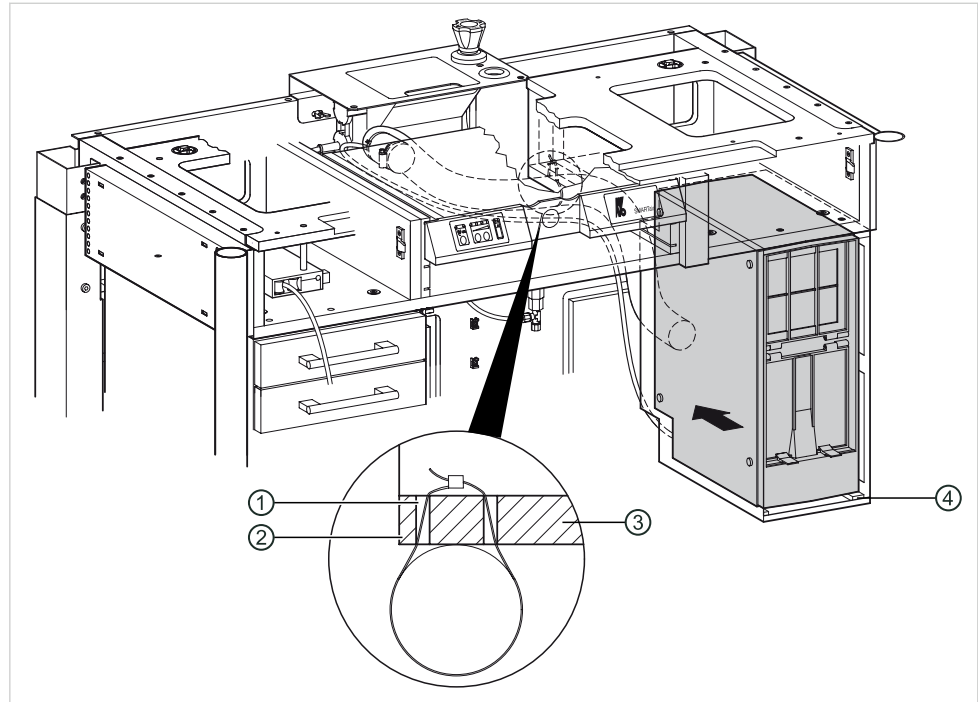
### Note

To allow the filter drawer to be removed and inserted when changing the filter, the installation instructions must be precisely followed.





- ▶ Insert the ② suction hose curved.
- ▶ Attach the suction hose with a clip ⑥ and strap ⑤ at the provided position (see dimensions ①).
- ▶ Insert the fan box ③. To keep the power switch free, make sure that the fan box ③ lies on the rails ④.


### Right installation

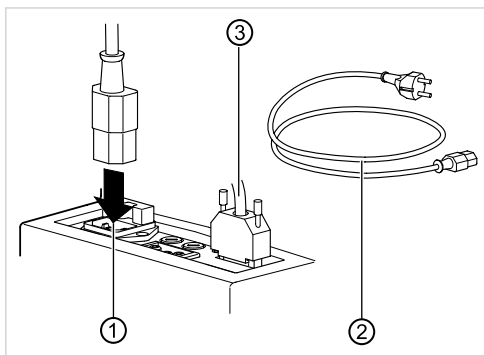


- ▶ Remove the rails ④.
- ▶ Rotate the fan box 180°.
- ▶ Reinstall the rails ④.
- ▶ Fasten the suction hose at the provided position with a strap ② through the opening ① in the bottom of the function line ③.

### 4.5 Installing the power cable


	<p><b>⚠ CAUTION</b></p>
	<p><b>Product damage from incorrect power cable.</b> Destruction of electrical components.</p> <ul style="list-style-type: none"> <li>▶ Before connecting, check if the provided power cable is the right one for the mains connection.</li> </ul>
	<p><b>⚠ CAUTION</b></p>
	<p><b>Product damage from incorrectly adjusting the tension.</b> Destruction of electrical components.</p> <ul style="list-style-type: none"> <li>▶ Adjust the voltage input for the product to the existing mains voltage.</li> </ul>

	<b>⚠ CAUTION</b>
	<p><b>Damage from overvoltage.</b> The product becomes damaged.</p> <ul style="list-style-type: none"> <li>▶ The nominal voltage and frequency must be the same as that on the rating plate.</li> </ul>



- ▶ Switch the power switch to "OFF".
- ▶ Plug the enclosed power cable ② into the designated connector ① of the SMARTair and insert the plug into an easily accessible, properly installed (grounded) mains socket. Use an extension cable if needed.
- ▶ Route the power cable ② properly such that the SMARTair can be pulled out to the limit stop without unplugging the power cable.
- ▶ Place the cover on the SMARTair.
- ▶ **SMARTair Evo:** slide the suction device into the support frame all the way to the limit stop.
- ▶ **SMARTair Evo FLEXspace:** Sub-D plug ③ may need to be plugged in and and voltage selection switch may need to be set to country-specific mains voltage.

#### 4.6 Connecting the SMARTair to the equipment

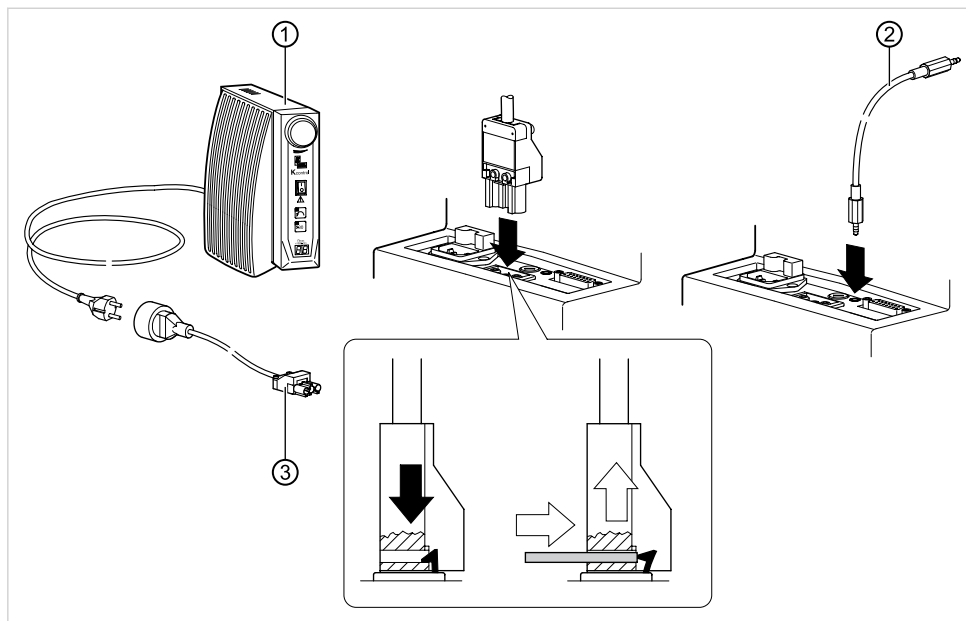
	<b>⚠ CAUTION</b>
	<p><b>Unsuitable electrical equipment.</b> Material damage and injury.</p> <ul style="list-style-type: none"> <li>▶ Connect equipment with max. 500 watt power exclusively.</li> </ul>





**Note**

When using the control cable (**Mat. no. 1.000.7198**), do not run a connecting line. In addition, the response sensitivity must not be adjusted.



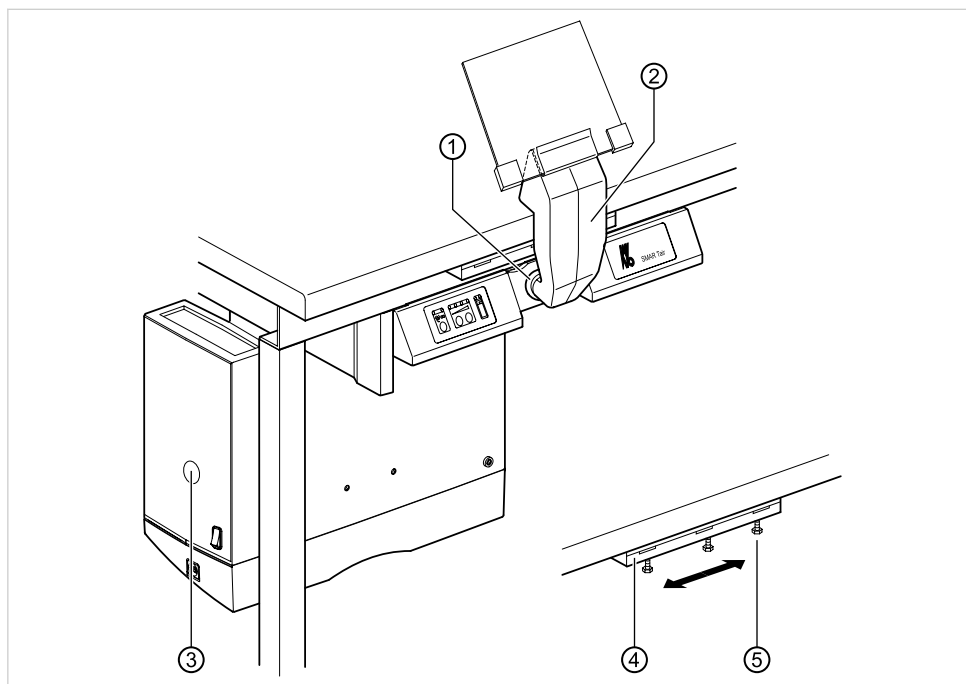
- ▶ Connect the equipment without control output ① via connection cable ③ to the **SMARTair**.

or

- ▶ Connect the equipment (e.g. K-Control) with control output (3.5 mm socket) via control cable (**Mat. no. 1.000.7198**) ② to the **SMARTair**.

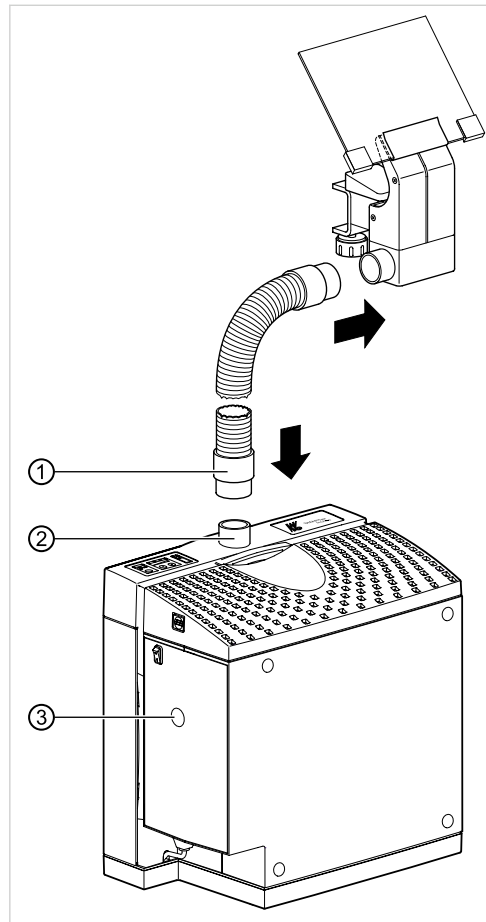
## 4.7 Installing the suction hood (optional)

### SMARTair Evo



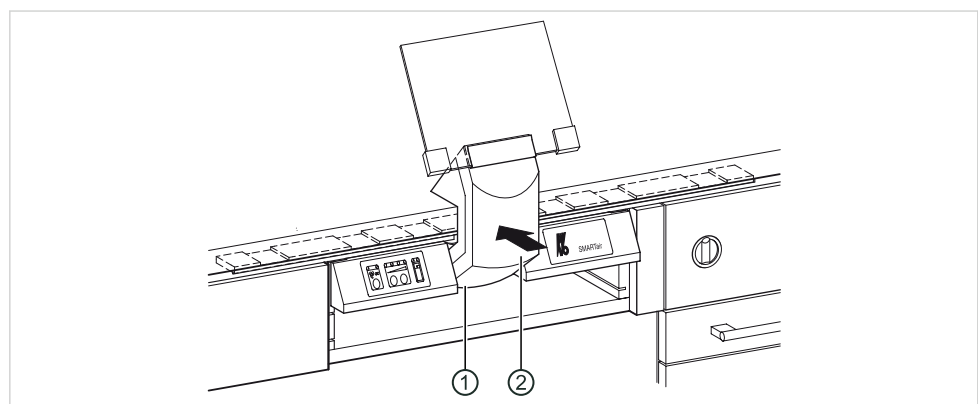
- ▶ Insert the extraction hood ② into the intake opening ① so that the intake opening is completely covered by the rubber lip.
- ▶ To adjust it, loosen the screws ⑤ in the connector ④.
- ▶ Move the connector ④ to the side, and retighten the screws ⑤.
- ▶ Adjust the voltage selection switch ③ to the national mains voltage.

### SMARTair Evo mobile



- ▶ Plug the suction hose ① onto the suction socket ② of the SMARTair Evo mobile.
- ▶ Establish the hose connection to the suction hood.
- ▶ Set the voltage selector switch ③ to the country-specific mains voltage.

### SMARTair Evo FLEXspace



4 Assembly | 4.7 Installing the suction hood (optional)

- ▶ When using an extraction hood ②, make sure that the intake opening ① is completely covered by the rubber seal.

## 5 First use

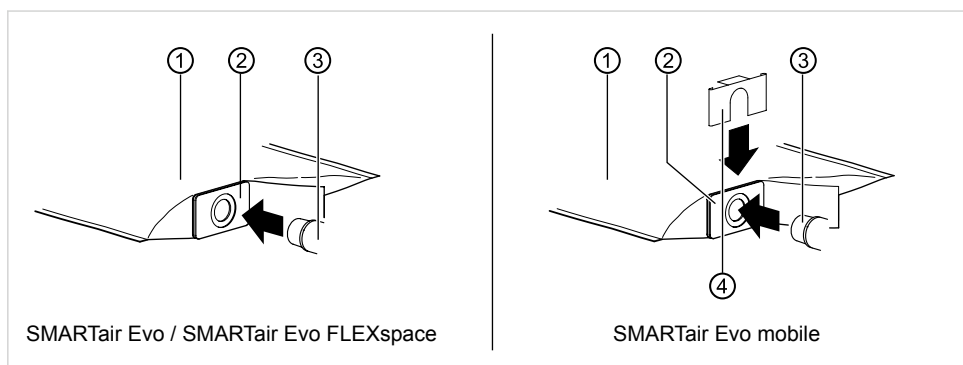
- ▶ Check if the rated voltage and rated frequency match the specifications on the rating plate.
- ▶ Check if the voltage selection switch is set to the country-specific value.
- ▶ Use the power plug as mains disconnecting device.

### 5.1 Checking the filter bag



#### Note

The unit may be only used when the filter bag is inserted. only original filter bags may be used.



- ▶ Check if the filter bag ① is properly affixed.  
The filter bag needs to be pushed with plastic frame ② onto the filter connector ③. **SMARTair Evo mobile:** secure it with bracket ④.

## 6 Operation



### Note

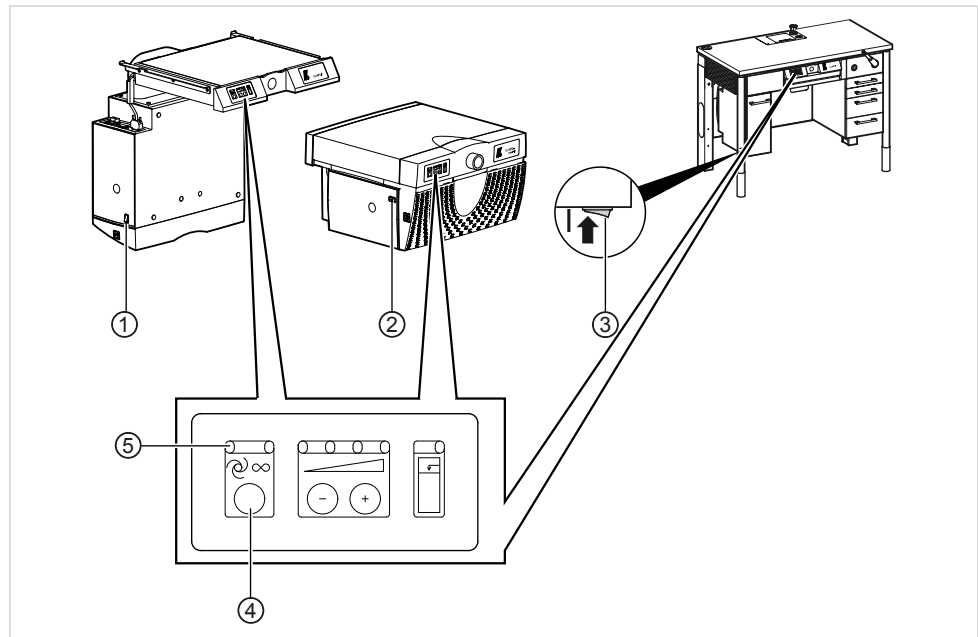
The distance between the item generating the dust (such as a cutter) and the intake opening may not exceed 50 mm.

### 6.1 Automatic mode



### Note

Automatic mode is recommended for units that have an electrical connection.



### Set automatic mode

- ▶ Set the power switch ①, ② or ③ to "ON".
- ▶ Press the "Automatic" button ④ until the "Automatic" LED ⑤ is on.

In "Automatic" position, the suction device is automatically switched on and off together with the equipment connected to it.

### Switch on and switch off

- ▶ Switch the equipment on.

Suction device starts-up automatically.

- ▶ Switch the equipment off.

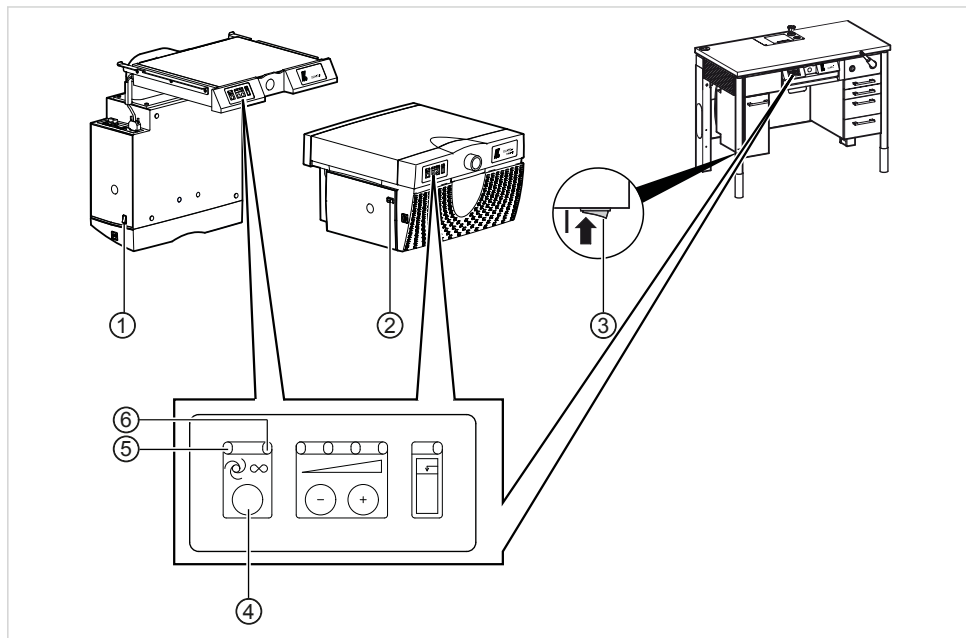
Suction device continues to run for a few seconds and then switches off automatically.

## 6.2 Manual mode



### Note

Units without an electrical connection (such as turbine systems) must be operated manually.



### Setting-up manual mode

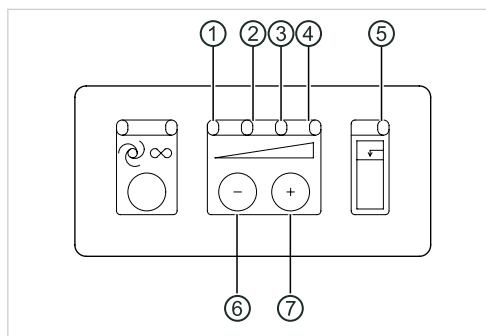
- ▶ Set the power switch ①, ② or ③ to "ON".
- ▶ Press button ④ until the "Continuous mode" LED ⑤ is on.

The device is switched on.

- ▶ Press the button ④ until the "Automatic mode" LED ⑥ is on.

The unit is switched off.

### Display of suction

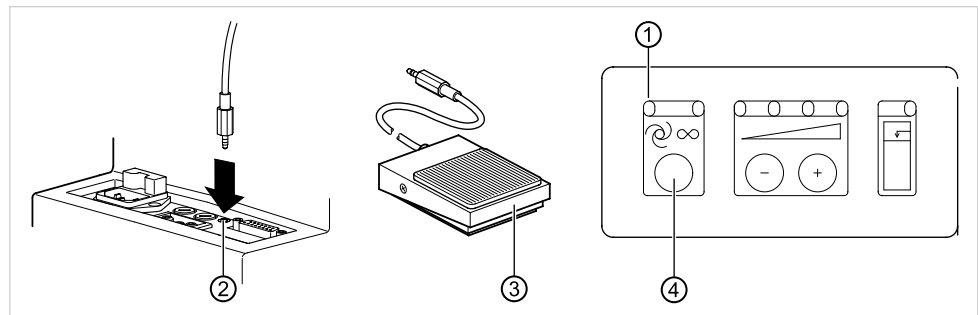


**Note**

When the suction decreases from soiling or a full filter, the suction automatically switches to the set suction. Only when the suction limit is reached does the "Filter full" ⑤ LED shine.

Display	Suction power	Malfunction	Action Step
The "Suction level display" LEDs ① to ③ shine.	The extraction level is sufficient.	No malfunction	Reduce the extraction level by pressing the "Minus" key ⑥. Increase the extraction level by pressing the "Plus" key ⑦.
The "Suction level display" LEDs ① to ④ shine.	The maximum extraction level has been reached.	No malfunction	Reduce the extraction level by pressing the "Minus" key ⑥.
The LED "Filter full" ⑤ flashes.	The suction threshold is almost reached.	The filter bag or ultrafine filter is almost full.	Change the filter bag or ultrafine filter.
		The suction hose or suction site is dirty.	Clean the suction hose or suction site.
The LED "Filter full" ⑤ shines.	The suction threshold has been reached.	The filter bag or ultrafine filter is almost full.	Change the filter bag or ultrafine filter.
		The suction hose or suction site is dirty.	Clean the suction hose or suction site.

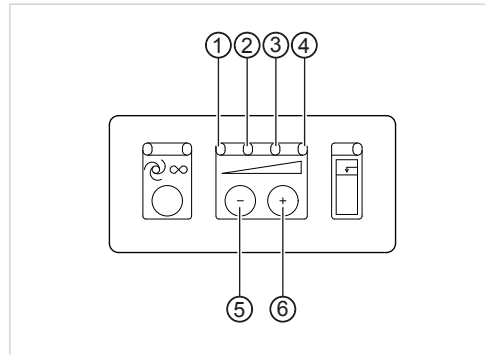
### 6.3 Operation via foot switch



- ▶ Inserted the cable of the foot switch ③ into the socket for the control line ②.
- ▶ Press the "Automatic" button ④ until the "Automatic" LED ① is on.
- ▶ Switch the suction device on and off using the foot switch ③.



## 6.4 Adjust the suction levels



- ▶ Press the buttons ⑤ and ⑥ to set suction levels ① to ④.

### Activate the suction level default



#### Note

The suction level thus set can be saved and stays saved after the device is switched off.

- ▶ Press and hold the "Plus" ⑥ button and switch the power switch on.

LEDs ① to ④ flash.

- ▶ Release the "Plus" ⑥ button.

Saving of the suction levels is now selected.

- ▶ Switch the power switch off and then on again after 2 seconds.

The selected suction level is saved.

### Deactivate the default suction level

- ▶ Press and hold the "Minus" ⑤ button and switch the power switch on.

LEDs ① to ④ flash.

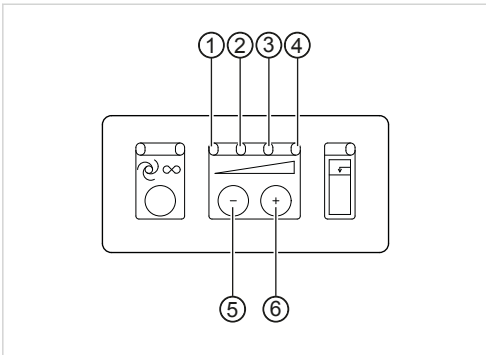
- ▶ Release the "Minus" ⑤ button.

Saving of the suction levels is now deactivated.

- ▶ Switch the power switch off and then on again after 2 seconds.

No suction level is pre-selected.

6.4.1 Recognition of software version and device properties



- ▶ Press the power switch to switch the suction device on.

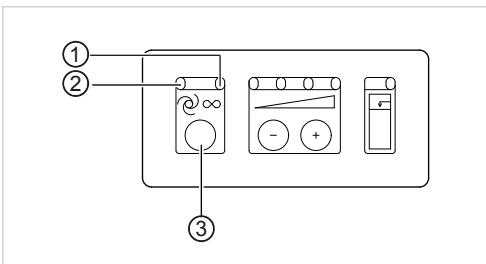
After two seconds, LEDs ① to ③ indicate the software version and device properties.

Number of flashes	LED 1	LED 2	LED 3
Twice	Software version 2	Device is connected to 50 Hz	Flow sensor is recognised (SMARTair Evo)
None		Device is connected to 60 Hz	No flow sensor is recognised (SMARTair Standard)

6.5 Setting the response sensitivity

Prepare the unit

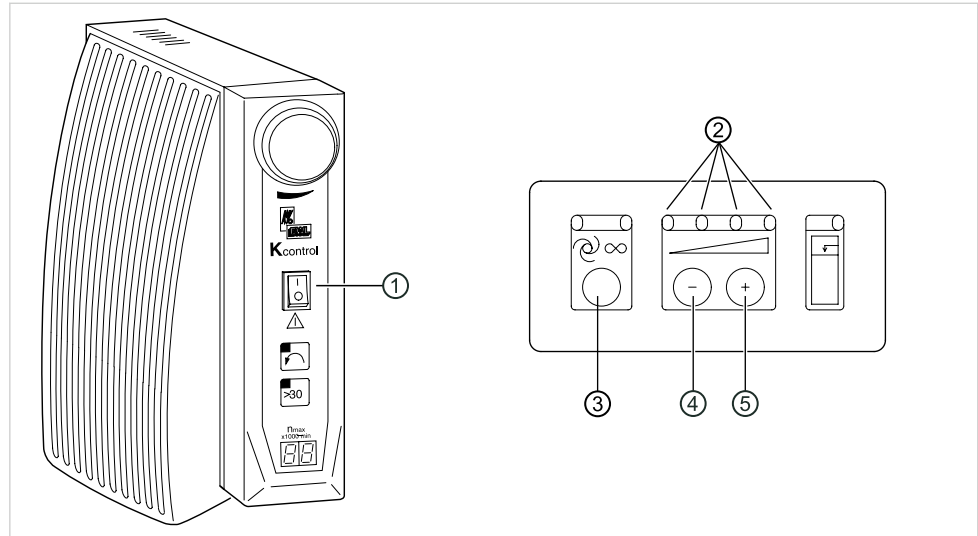
The response sensitivity is set in the "Automatic" position.



- ▶ Press the power switch to switch the suction device on.
- ▶ Press the "Automatic" button ③ (for approx. 3 seconds), until LEDs ① and ② flash.

The suction device is in "Setting mode".

## Setting and saving the response sensitivity



- ▶ Turn on the power switch on the control unit.
- ▶ Start the working device at a speed of 5,000 to 7,000 rpm and keep it running while performing the setting.

### Case 1: LEDs do not light up

- ▶ Briefly press the "Plus" ⑤ button several times until all LEDs ② light up.
- ▶ Press the "Automatic" ③ button to save the setting.

### Case 2: All LEDs light up

- ▶ Briefly press the "Minus" ④ button several times until all LEDs ② go off.
- ▶ Briefly press the "Plus" ⑤ button several times until all LEDs ② light up.
- ▶ Press the "Automatic" ③ button.

The values are saved.

The unit is in "normal mode" again.

## 7 Cleaning and servicing



### Note

Any change of filter bag, adsorption filter, ultra-fine filter and the cleaning of the filter chamber must be done in compliance with the chapter on protective equipment.

**See also:** 2.3 Protective equipment, Page 9

To guarantee constant readiness for use and maintenance of value of the KaVo product, the recommended servicing must be done.

This device contains harmful dust. Only professionals and wearing the appropriate protective equipment may empty and service the device including emptying the dust collector. Only original KaVo filters may be used.

Precautionary measures while servicing:

- Before removing the dust extraction system from the contaminated area, it should be aspirated or wiped clean, and the openings on the untreated air side must be sealed.  
Before removing the dust extraction system from the contaminated area, it should be aspirated or wiped clean, and the openings on the untreated air side must be sealed.
  - Accessory parts (hoses, etc.) are to be considered contaminated and treated correspondingly.
- Use suitable personal protective equipment.
- If possible, use a room with filtered automatic ventilation.
- Cleaning the servicing area.
  - All contaminated parts that are not sufficiently cleaned during repairs must be disposed of in sealable bags.
- They must be disposed of in accordance with valid regulations.

### 7.1 Cleaning



### Note

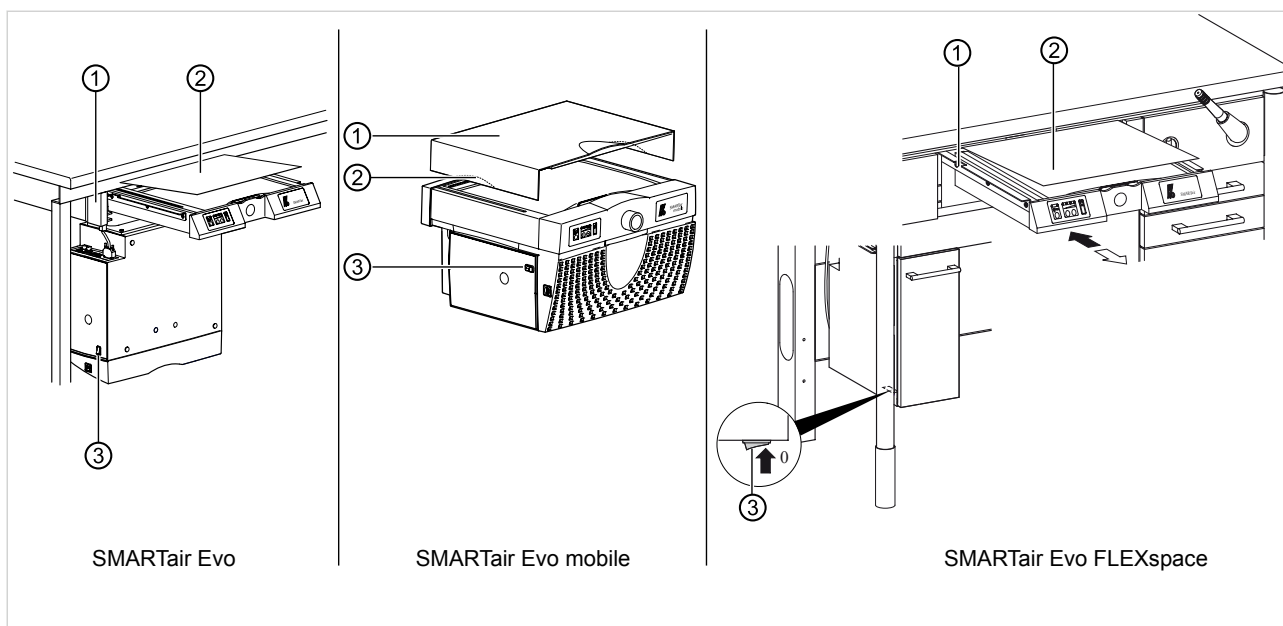
Liquids inside the device can cause malfunctions.  
When cleaning, make sure that no liquid enters the device.

Cleaners:

- New surfaces: water and non-abrasive mild cleanser.
- Surfaces with very sticky soiling: KaVo plastics cleanser (**Mat. no. 0.611.0030**)

## 7.2 Servicing

### 7.2.1 Getting the device ready for use



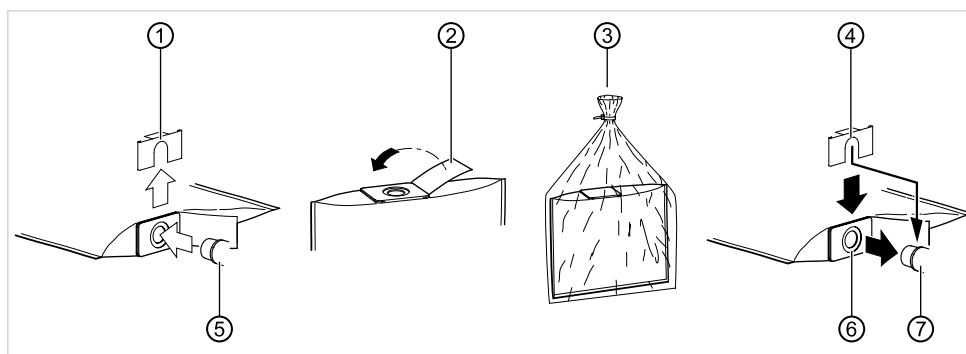
- ▶ Switch the power switch ③ to "OFF".
- ▶ Unplug the power plug and disconnect the connecting cable to the equipment.
- ▶ Move the SMARTair into an accessible position.
- ▶ Pull the filter drawer ② or system base ② out and take off the lid, if applicable.
- ▶ SMARTair Evo mobile: pull the handle bars ② apart to unlock the snap locks and take off the cover ①.

### 7.2.2 Changing the filter bag



#### Note

To keep the fan motor from being damaged, the filter chamber must be checked for dust and cleaned if necessary before inserting a new filter bag.



- ▶ Carefully remove the bracket ① from the filter socket ⑤ and take out the filter.
- ▶ Close the full filter bag with the adhesive strip ② and dispose it ③.
- ▶ Check if the filter space contains dust and clean it according to need.

- ▶ Carefully slide a new filter bag with plastic frame ⑥ onto the filter socket ⑦, in case of the **SMARTair Evo mobile** affix it with bracket ④ and check if it is properly affixed.
- ▶ Re-attach the cover and snap it into place and/or slide the filter drawer into the support arm or system base up to the limit stop.
- ▶ Move the **SMARTair** back to its functional location.

### 7.2.3 Changing the adsorption filter (optional accessory)

The adsorption filter is designed to adsorb various gaseous impurities in the air.



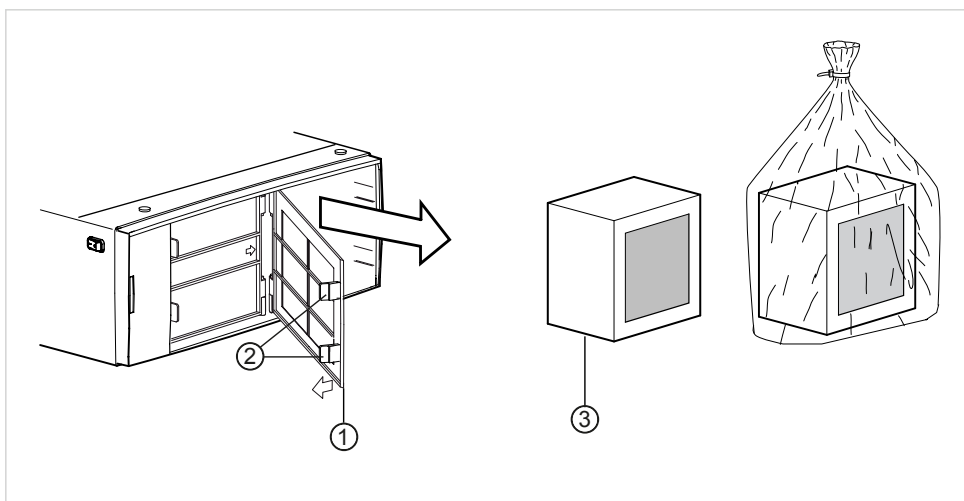
#### Note

The service life of the activated carbon filter is determined mainly by the number of prostheses fabricated at a workstation. Based on 10 to 15 prostheses per workday and workstation, the filter service life is 30 to 50 workdays.



#### Note

When the activated carbon filter is loaded with methylmethacrylate and other chemical substances, it needs to be disposed of as "hazardous waste".



- ▶ Release the snap locks ② and open the filter flap ①.
- ▶ Take out the spent adsorption filter ③.
- ▶ Insert new adsorption filter ③.
- ▶ Close and lock filter flap ① into place.

### 7.2.4 Changing the ultra-fine filter



#### Note

SMARTair Evo suction equipment may be operated only if an ultra-fine filter is inserted.

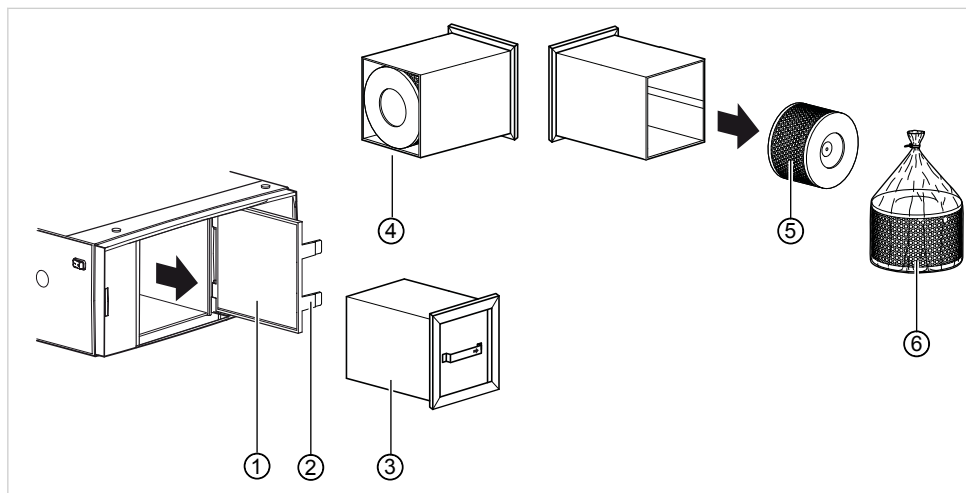


#### Note

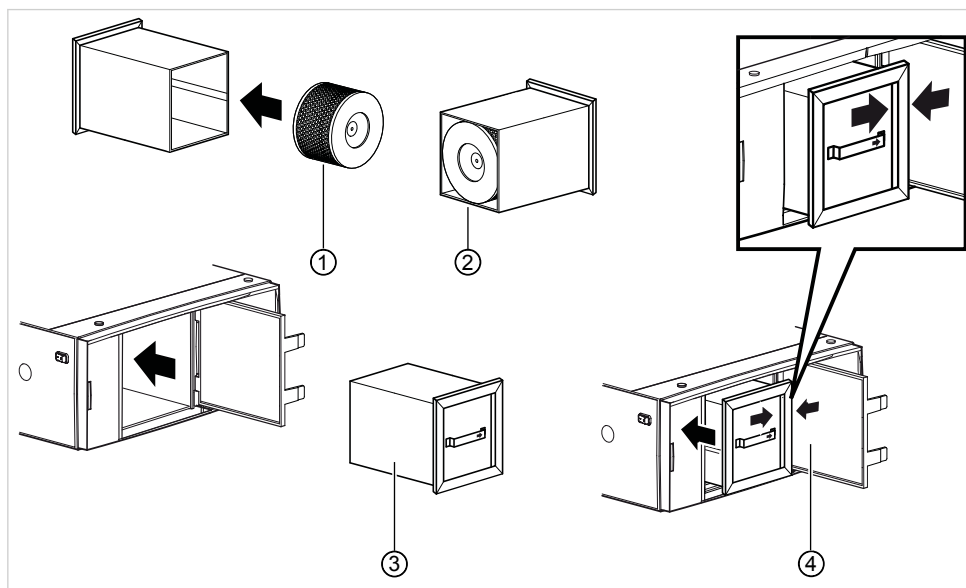
The ultrafine filter must be changed every two years.

**Note**

The ultrafine filter also needs to be exchanged when the LED "Filter full" indicates a malfunction after the filter bag has been changed.

**Remove the old ultrafine filter**

- ▶ Release the snap locks ② and open the flap of the blower box ①.
- ▶ Carefully remove the blower box ③ from the housing. Ensure that no fine dust penetrates the inside of the housing.
- ▶ From the back of the blower box ④ remove the soiled micro filter ⑤.
- ▶ Pack the soiled micro filter ⑤ in a dustproof plastic bag ⑥ and dispose of it in the appropriate manner.
- ▶ Remove any dust deposited in the the filter chamber by means of an IFA approved vacuum cleaner.

**Install a new ultrafine filter.**

- ▶ Insert the new micro filter ① with the opening pointing outwards into the blower box ②.
- ▶ Insert the blower box ③ into the housing. Observe the position arrows.
- ▶ Close the flap of the blower box ④ and snap into place.
  
- ▶ Move the SMARTair suction unit back to its functional location.



## 8 Safety checks in accordance with IEC 62638 (VDE 0701 / 0702)

The applicable national legal regulations must be observed during the use of the device, in particular:

- the applicable occupational health and safety regulations.
- the applicable accident prevention regulations.

The overarching guidelines and/or national laws, national regulations and the rules of technology applicable to the startup and use of the KaVo product for the intended purpose are to be applied and complied with.

Compliance with the requirements of IEC 62638 (VDE 0701/0702) concerning product safety upon start-up, changes, and repair as well as in repeat examinations is required.

**Caution:** Electrical safety checks have to be carried out by professionals in electrical engineering or by individuals trained in electrical engineering and supervised by a professional in electrical engineering.

A professional in electrical engineering is defined to be anyone whose training, knowledge and experience as well as knowledge of the pertinent regulations allow him or her to assess and recognise possible hazards. The professional in electrical engineering in charge of testing has to make a decision whether or not further individual tests are required in order to attain the safety target.

If safety deficiencies or damage is/are detected during the re-test, the testing process must be discontinued and the device must be labelled accordingly and blocked from further use or submitted for repair of the defect.

### Annual tests



#### Note

According to § 53 Para. 2 of the Workplace Ordinance, vacuum devices must be checked every two years for function by an expert. After consulting with the Trade Supervisory Office in Celle, the test can be performed by a dental technician who has been trained how to use equipment in his journeyman training.



#### Note

KaVo recommends checking function annually and observing the sections "Cleaning and servicing" and "Troubleshooting" in these instructions for use.

**See also:** 7 Cleaning and servicing, Page 42


**See also:** 9 Troubleshooting, Page 49

- ▶ Check the filter for damage.
- ▶ Check the housing and hose lines for leaks and cracks.
- ▶ Check the function of the control device and the amount of filtration.
- ▶ Make sure that dust extraction system has original filters and all the necessary filter.

8 Safety checks in accordance with IEC 62638 (VDE 0701 / 0702)

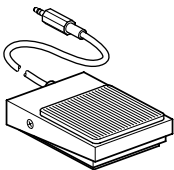
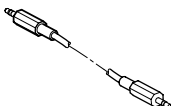
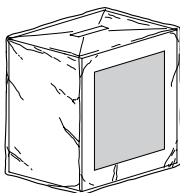
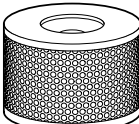

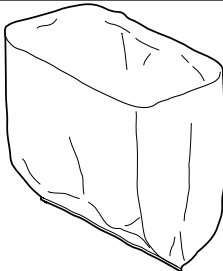

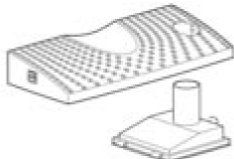
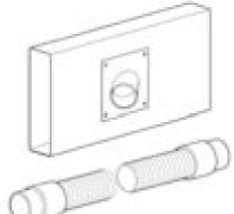
- ▶ Mount the cover loosely, and check if it is sucked tight from the vacuum when the unit is turned on. A flow of air must be detectable at the intake.
- ▶ The person performing the check must provide the date and signature.

## 9 Troubleshooting

	<b>⚠ DANGER</b>
	<p><b>Electrical power.</b> Risk of fatal injury.</p> <ul style="list-style-type: none"> <li>▶ Have the electrical part of the device repaired and serviced only by professionals or persons trained at the factory who have been advised of the safety instructions.</li> <li>▶ Before opening any housing parts, pull the power plug to turn off the power.</li> </ul>

Malfunction	Cause	Remedy
The extraction level is not sufficient.	The filter bag is full.	<ul style="list-style-type: none"> <li>▶ Change the filter bag.</li> </ul> <p><b>See also:</b> 7 Cleaning and servicing, Page 42</p>
	The default extraction level is set at the lowest level.	<ul style="list-style-type: none"> <li>▶ Press the "Plus" key to set a higher level.</li> </ul>
	Suction hose and/or suction site is leaky and soiled.	<ul style="list-style-type: none"> <li>▶ Clean the suction hose or suction site.</li> </ul>
The suction does not start when the unit starts.	The current switching threshold is not properly set.	<ul style="list-style-type: none"> <li>▶ Reset the current switching threshold.</li> </ul>
	The unit is not connected to the dust extraction system.	<ul style="list-style-type: none"> <li>▶ Connect the unit to the dust extraction system.</li> </ul>
	The fuse for the unit is defective.	<ul style="list-style-type: none"> <li>▶ Change the fuse for the unit and check if the unit is defective.</li> </ul>
	The fuse for the dust extraction system is defective.	<ul style="list-style-type: none"> <li>▶ Exchange the fuse.</li> <li>▶ Check if the mains voltage and frequency match the rating plate.</li> <li>▶ Check if the voltage selection switch is set to the national voltage.</li> </ul>
The dust extraction system does not start. The "Filter full" LED shines red.	The filter bag or ultrafine filter is full.	<ul style="list-style-type: none"> <li>▶ Change the filter bag or ultrafine filter.</li> </ul> <p><b>See also:</b> 7 Cleaning and servicing, Page 42</p>
	The filter bag or ultrafine filter is full.	<ul style="list-style-type: none"> <li>▶ Change the filter bag or ultrafine filter.</li> </ul>
	The suction hose or suction site is dirty.	<ul style="list-style-type: none"> <li>▶ Clean the suction hose or suction hose site.</li> </ul>

## 10 Accessories

Presentation	Brief description Mat. No.
	Foot switch (Mat. no. 1.000.3147)
	Connection cable K-Control (Mat. no. 1.000.7198)
	Adsorption filter (Mat. no. 0.658.1861)
	Ultra-fine filter (Mat. no. 0.658.9802)
	Filter bag, pack of 5 for all dust suction facilities (Mat. no. 0.658.2160)
	Plastic bag, pack of 50 (Mat. no. 0.228.3076)
	Cable tie (Mat. no. 0.222.6090)
	Extracted air set SMARTair for SMARTair mobile and SMARTair Evo mobile (Mat. no. 1.003.9276)
	Extracted air set SMARTair for SMARTair and SMARTair Evo (Mat. no. 1.003.9366)

## 11 Statement of conformance

EC-Declaration of Conformity  
EG-Konformitätserklärung  
CE-Déclaration de conformité  
Dichiarazione di conformità con le norme CE  
Prohlášení o shodě s normami ES  
Declaración de Conformidad de la CE



KaVo. Dental Excellence.

### Manufacturer:

**Kaltenbach & Voigt GmbH**  
**Bismarckring 39**  
**D-88400 Biberach**

### **SMARTair Evo, SMARTair Evo mobile, SMARTair Evo FLEXspace**

<b>2006/42/EC</b>	EC Directive - Machineries
<b>2006/95/EC</b>	EC Directive - Low Voltage
<b>2004/108/EC</b>	EC Directive - EMC – Electromagnetic Compatibility
<b>EN 61010-1</b>	Safety requirements for electrical equipment for measurement, control and laboratory use. General requirements
<b>EN 61326-1</b>	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements

GB

We declare in sole responsibility that the products manufactured by us to which this statement refers, conform to the essential requirements according to the above-mentioned directives. The specified standards or normative documents were applied to evaluate the product.

D

Wir erklären in alleiniger Verantwortung, dass die von uns hergestellten Produkte auf die sich diese Erklärung bezieht, mit den grundlegenden Anforderungen gemäß den Bestimmungen der obigen Richtlinien übereinstimmen. Zur Beurteilung des Erzeugnisses wurden die benannten Normen oder normative Dokumente angewandt.

FR

Nous déclarons sous notre seule responsabilité que les produits fabriqués par nos soins, auxquels se réfère cette déclaration, sont conformes aux exigences essentielles selon les dispositions de les directives susmentionnées. Les normes ou autres documents normatifs désignés sont utilisés pour l'évaluation de ce produit.

IT

Dichiariamo sotto nostra esclusiva responsabilità che i prodotti da noi fabbricati, a cui si riferisce la presente dichiarazione, sono conformi ai requisiti fondamentali ai sensi delle disposizioni della direttiva summenzionata. Per la valutazione del prodotto sono stati applicati le norme o i documenti normativi citati.

CZ

Prohlašujeme s výhradní odpovědností, že se námi vyráběné výrobky, na které se vztahuje toto prohlášení, shodují se základními požadavky podle předpisů výše uvedené směrnice. K posouzení výrobku byly použity uvedené normy nebo normativy.

ES

Por la presente declaramos que en nuestra propia responsabilidad los productos que nosotros fabricamos, y a los que hace referencia esta declaración, cumplen los requisitos básicos de conformidad con las disposiciones de la directiva arriba mencionada. Las normas o documentos normativos mencionados se aplican en la evaluación de dichos productos.

effective date Biberach, 03.02.2014

**Stefan Trampler**  
Head of QM / RA

**Notified Body** - Dekra Certification GmbH - Handwerkstrasse 15 - D-70565 Stuttgart - ID-Number: 0124

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