



## **OM/TK/OMF**

Mini Dust Collector

## Welcome to the sphere of suction technology

Your purchase of an **ESTA** machine has been a good decision. The design of our quality products complies with the latest state of the art. **ESTA** products have been devised to provide for clean air at the workplaces at which they are applied. This results in an even more enhanced level of quality and longer machine times and, particularly, healthier working conditions. Should you have any questions pertaining to suction technology issues, please feel free to contact us at any time. Our experts will be gladly at your disposal.

Your **ESTA Absaugtechnik** Team

**DEDUSTING  
EXTRACTION  
CLEANING**



# Installation instructions

## TK / OM / OMF

Item No. 31.041 (TK-4)  
Item No. 31.061 (TK-6)  
Item No. 41.032 (TK-H)  
Item No. 41.033 (TK-2.2)  
Item No. 21.081 (OM-8)  
Item No. 21.101 (OM-10)  
Item No. 21.122 (OM-12)  
Item No. 21.127 (OM-12 S)  
Item No. 21.308 (OMF-8)  
Item No. 21.310 (OMF-10)  
Item No. 21.312 (OMF-12)



Do not use this device unless you have read the installation instruction and understand it.

Translation of the original installation instructions  
31061-08-05

## Edition notice

Original installation instructions

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21.308 // 21.310 //21.312 and variations

## Publisher

ESTA Apparatebau GmbH & Co. KG  
Gotenstraße 2-6  
89250 Senden  
Germany

Tel.: +49 (0) 73 07 80 4 -0  
Fax: +49 (0) 73 07 80 4 -500  
E-mail: [info@esta.com](mailto:info@esta.com)  
[www.esta.com](http://www.esta.com)

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Warnings and safety instructions



Electrical current hazard



Note



Reference to ESTA customer service



Reference to legal regulations

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# 1. General safety notes

Before operation, all persons who are to use the device or perform maintenance on it must be provided with information, instructions and training in using the device and on the substances for which it is to be used, including the procedure for safe disposal of the collected material. Responsibilities must be clearly established for the following:

- **Installation**
- **Start-up**
- **Operation**
- **Maintenance and repair**

The device must be used only by persons who have been instructed in its handling and are explicitly authorized to use it.

Always keep the operating manual at the place where the dust extractor is being used, so that it can be seen by personnel at all times.

The dust extractor is intended only for dry cleaning and must not be used or stored outdoors or under wet conditions.

No liquids, aggressive gases, easily flammable materials or glowing particles (such as hot embers) may be aspirated. For example, it is prohibited to use the dust extractor in painting operations. It is forbidden to exhaust processing machines with active ignition sparks or hot embers (such as multi-blade saws).

Installation and operation in dust-explosive or gas-explosive areas is forbidden.

Only original ESTA replacement parts must be used; use of other products will void the warranty.

During exhaust, the volume flow returned from the dust extractor into the room must be no more than 50% of incoming air. With free room ventilation, the incoming airflow must equal the room volume every hour. This means that the rate of air replacement must be once per hour.

$$\text{Incoming airflow [m}^3\text{/h]} = \text{room volume [m}^3\text{]} \cdot \text{air replacement rate [1/h]}$$

Example:

When the ESTA dust extractor is operating at the nominal airflow volume of 1200 m<sup>3</sup>/h the same volume of fresh air must therefore be fed in. This occurs with natural ventilation if the volume of the work room is 1200 m<sup>3</sup> (e.g., 400 m<sup>2</sup> surface with a 3 m ceiling height).

The devices are delivered without a switching device. The operator of the device must properly determine that the device can be safely connected to the electrical source and operated. The motor must be electrically secured against overload. Operating the device without such protection voids the motor warranty. It is recommended that a motor safety switch be used, with which the device can be turned on or off immediately.



**The power cable must be connected or replaced only by an electrical specialist or by a person trained for the purpose.**

Only plugs and connectors complying with EN 61241-14 must be used for connecting electrically driven industrial vacuums and dust extractors. Coupling plugs and connectors or adapters are not permitted.

Make sure that the power cable does not become damaged by being run over, compressed, pulled, etc.

The power cable must be examined regularly for signs of damage or ageing.



**The device must not be used if damage to the power cable is determined.**



**Only original ESTA conductive accessories may be used for operating the dust extractor.**



**From its first use, the dust extractor contains toxic dust. Emptying and maintenance processes, including removal of the dust collection container, must be performed by expert personnel who are wearing appropriate protective gear. The dust extractor must not be operated without the complete filtration system!**



**According to directive 2009/104/EG and TRGS 560, safety devices for prevention or removal of hazards must be regularly maintained and regularly inspected by an expert for safe, flawless operation.**



**In all emergencies, the device must be disconnected from the power supply immediately. If there is a fire, the fire department is to be alerted immediately, and the fire must be contained by appropriate means.**

## 2. Preventing mechanical hazards

All movable machine parts driven by electric motors must be covered by fixed, securely fastened protective covers that can be removed only with tools.



**Residual risk:**

**If a covering that can only be unfastened with a tool is removed, there is risk of injury if the machine is running.**

## 3. Preventing electrical hazards

All electrical parts must be covered by fixed, securely fastened protective covers that can be removed only with tools. The device complies with Protection Class I according to EN 60 335.



**Residual risk:**

**If a covering that can only be unfastened with a tool is removed, a hazard is posed by electric current.**

## 4. Preventing dust hazards

When removing the dust collection container, it is possible to inhale dust. Following the instructions in the section “Disposing of collected materials” will minimize this hazard. When transporting the device, close the exhaust openings to prevent dust from escaping.



## 5. Intended use

ESTA dust extractors have been manufactured according to the state of the art and in compliance with safety regulations.

When used as intended, the devices are suitable for removing dry, non-flammable, non-explosive, nontoxic dusts.

The dust extractor must not be used outdoors or under wet conditions.

The devices are suitable for commercial use, such as in industrial enterprises and workshops.

Other applications are considered unintended use. ESTA is not liable for damages due to unintended use!

ESTA sets up the dust extractor according to the operator's information.

When connecting the suction hose, make sure to use only electrically conductive hoses and that the electrical connection between the hose and the port is perfect. If a so-called "spiral hose" is used, the metal spirals must be stripped and pressed to the bare wall of the exhaust port with a pipe clamp after the hose is attached.



**Only plugs and connectors complying with EN 61241-14 must be used for connecting electrically driven industrial vacuums and dust extractors. Extension cords, coupling plugs and connectors or adapters are not permitted.**

## 6. Technical data and description

### 6.1 Small dust extractor models

#### 6.1.1 TK

Model: (see model plate)		TK-4	TK-6	TK-H	TK-2.2
Max. air volume	[m <sup>3</sup> /h]	300	450	300	300
Max. vacuum	[Pa]	1.100	1.400	24.000	21.000
Connection voltage	[V]	400/230*		400	
Nominal frequency	[Hz]	50			
Drive output	[kW]	0,55		2,2	
RPM	[1/min]	2.800			
Filter area	[m <sup>2</sup> ]	1			
Connection diameter	[mm]	60	80	50	
Dimensions (L/W/H)	[mm]	400x400x590		400x630x 590	930x460x 655
Total depth	[mm]	600		-	900
Weight	[kg]	40		60	105
Environmental conditions	[°C]	5≤9≤40			
Max. air humidity	[%]	approx. 60			
Production year		See model plate			

\*Custom design for AC current

#### 6.1.2 OM

Model: (see model plate)		OM-8	OM-10	OM-12	OM-12S*
Max. air volume	[m <sup>3</sup> /h]	500	600	800	
Max. vacuum	[Pa]	1.600	1.500	1.800	
Connection voltage	[V]	400			
Nominal frequency	[Hz]	50			
Drive output	[kW]	0,55		1,1	
RPM	[1/min]	2.800			
Filter area	[m <sup>2</sup> ]	2,4			
Connection diameter	[mm]	80	100	150	
Dimensions (L/W/H)	[mm]	720x630x 1.120	740x610x 1.080	740x610x 1.150	720x600x 1.420
Total depth	[mm]	670			
Weight	[kg]	60		65	70
Environmental conditions	[°C]	5≤9≤40			
Max. air humidity	[%]	approx. 60			
Production year		See model plate			

\*Larger dust collection drawer

### 6.1.3 OMF

Model: (see model plate)		OMF-8	OMF-10	OMF-12
Max. air volume	[m <sup>3</sup> /h]	500	600	800
Max. vacuum	[Pa]	1.600	1.500	1.800
Connection voltage	[V]	400		
Nominal frequency	[Hz]	50		
Drive output	[kW]	0,55		1,1
RPM	[1/min]	2.800		
Filter area	[m <sup>2</sup> ]	2,4		
Connection diameter	[mm]	80	100	150
Dimensions (L/W/H)	[mm]	600x670x1.130		
Total depth	[mm]	670		
Weight	[kg]	65		85
Environmental conditions	[°C]	5≤9≤40		
Max. air humidity	[%]	approx. 60		
Production year		See model plate		

Technical changes reserved

### 6.2 Functional description

Depending on the model, the small dust extractor is equipped with a three-phase fan (custom equipment with AC current), with a suction turbine (TK-H) or with a side channel compressor (TK-2.2).

Through the intake port, the exhausted air enters a pre-separator area, which on the OMF models is additionally equipped with a spark separator. On the OMF variants, heavy dusts and any sparks fall directly into the dust collection drawer. The rest of the dust is separated into the connected bag filter, which, depending on the application, can be provided in various separation classes and materials. The clean air then enters the suction unit and is led back into the work area through an exhaust port with a muffler. Filter cleaning can be done manually during downtime using the installed tapping device. This knocks the adhered dust into the dust collection drawer.

## 7. Delivery, installation and start-up

### 7.1 Delivery and transport

The devices are delivered mounted to a Europallet or a one-way pallet. The devices are wound in stretch wrap to prevent scratches and transport damage. Please dispose of the packing material according to local regulations.

Upon delivery, please inspect the device for transportation damage. Detected damage must be documented and reported immediately.



**ESTA customer service: +49 (0) 7307 804 - 0**



**When setting up the device, make sure the ground can support it.**

### 7.2 Installation

The devices are delivered without a switching device. The operator of the device must properly determine that the device can be safely connected to the electrical source and operated. The motor must be electrically secured against overload. Operating the device without such protection voids the motor warranty. It is recommended that a motor safety switch be used, with which the device can be turned on or off immediately.



**Installation work must be performed only by an electrical specialist or by a person trained for the purpose!**



**Before setting up the cable connection between the device and the power grid, check to make sure the operating voltage shown on the model plate is the same as that of the grid.**



**Plugs and connectors complying with EN 61241-14 must be used for connecting electrically driven industrial exhausts and dust extractors. Coupling plugs and connectors or adapters are not permitted.**

The device must be set up so that the dust collection drawer and tapping device are accessible. When connecting a suction hose, make sure to use only electrically conductive hoses and that the electrical connection between the hose and the port is perfect. If a so-called "spiral hose" is used, the metal spirals must be stripped and pressed to the bare wall of the exhaust port with a pipe clamp after the hose is attached.

### 7.3 Start-up



**Only persons authorized in the section “General safety instructions” must commission the device.**



**Before the device is first used, its operation must be tested; such testing is required monthly.**



**Pay attention to the direction of rotation!**

Before the device is commissioned, check whether the direction of rotation of the impeller wheel (OM, OMF, TK-4/6), the suction turbine (TK/H) or the side channel compressor (TK-2.2) is correct. To do this, observe a brief start-up of OM, OMF, and TK4/6 model devices in the direction of the arrow shown on the motor. The motor's fan wheel must turn in the direction of the arrow. For TK/H and TK-2.2 internal suction units, the suction performance must be checked.



**When the direction of rotation is wrong, the device gets impermissibly hot, the airflow volume gets weaker, or reverses on the TK-2.2, and the device's performance suffers. This can also damage the device.**

## 8. Maintenance & troubleshooting

### 8.1 Maintenance instructions

For maintenance by qualified personnel, the device must be opened, cleaned and inspected at the given locations, as well as possible, without any hazard being posed to maintenance personnel or other persons. Proper precautions must be taken before cleaning and removal of wearing parts. This includes locally filtered forced-air ventilation in the area in which the device is being maintained, and proper personal protective gear.

During maintenance or repair work, all soiled objects that can no longer be adequately cleaned must be disposed of. Such objects must be discarded in an impermeable bag in compliance with applicable regulations for disposal of such refuse.

If necessary, the device can be cleaned with a damp cloth. It must never be cleaned with flowing water.



**The operator is obligated to have maintenance performed once per year. During maintenance, the entire system is to be tested by a trained expert for correct operation. A log is to be kept of the main annual inspection in the included maintenance book. It must document the date of inspection, deficiencies determined and the name of the inspector. The date of the next inspection can be read from the test plate installed on the device.**

## 8.2 Inspection and maintenance intervals

Regular maintenance consists of 3 intervals:

### 1. Daily inspection includes:

- ***By the dust extractor's user***

Visual inspection

- for damage to the device or its parts,
- for mechanical damage to the power cable,
- Cleaning the filter
- for a full dust collection container (regulations require that the container be emptied if it is more than 2/3 full)

### 2. Monthly inspection includes:

- ***By expert maintenance personnel***

Visual and functional inspection,

- for filter leaks (dust trails or deposits on the air outlets)
- to assure suction performance. During the inspection, the strength of the air flow at the exhaust opening must be checked. If the performance is too weak, the filter must be cleaned also.

### 3. The main annual inspection includes:

The last test by ESTA is documented on the device!

- ***In collaboration with the ESTA maintenance service***

- Flow volume measurement
- Vacuum measurement
- Current consumption measurement
- Visual check of filters
- Seal inspection

After maintenance, the device receives a new test plate to document that maintenance has been performed.



**This inspection must be done once per year!**



**The maintenance work must be recorded in writing in the maintenance book provided. This must make clear the equipment inspected and, if necessary, the deficiencies found, along with the name of the inspector and the date of the inspection.**

**If there is a malfunction, the dust extractor must be switched off immediately and the responsible maintenance service notified.**



**Maintenance must be performed according to accident prevention regulations. The device must be disconnected from the power supply.**



According to work equipment user directives 2009/104/EG and TRGS 560, safety devices for prevention or removal of hazards must be regularly maintained and regularly inspected by an expert for safe, flawless operation.



**Get the most from ESTA's maintenance service!**

A maintenance contract ensures a long life and top-notch operation for your dust extractor.

**We'll make you a great offer — just call us up:**



ESTA maintenance service:                   +49 (0) 7307 804 - 0  
 ESTA replacement part service:       +49 (0) 7307 804 - 0

### 8.3 Troubleshooting

Always use the following checklists if a malfunction is evident. Call ESTA maintenance service immediately if there is a malfunction that is not discussed in this list. Do not perform any repairs on the device yourself if they are not explicitly specified.

Problem	Possible cause	Possible solution
Device shuts off	The motor protection relay has been tripped due to low voltage or overload	Voltage too low  Clean filter Allow to cool for 30 min.
The housing is too hot	Suction unit is rotating in the wrong direction  Exhaust paths clogged	Change the connection polarity  Clean filter Clean the exhaust hose in an environmentally sound manner
Suction too weak	Main filter dirty  Suction hose clogged	Clean filter  Clean the exhaust hose in an environmentally sound manner
Suction too weak, even after filter cleaning	Clogged filter pores	Replace filter



**If dust escapes or clouds up from the air outlets, if smoke develops or the suction assembly runs loud, the device must be switched off immediately!**



## 9. Monitoring the minimum airflow volume

For safe dust exhaust at the work area, the minimum airflow volume must be checked before every use. If suction is too weak, turn off the device and clean the filter and the connected suction equipment.

## 10. Cleaning



The people assigned to disposal work must be instructed on the aspirated toxic materials and wear a breathing protection mask with a class P3 particle filter, as well as protective clothing. All distractions by uninvolved persons must be prevented.



During cleaning work, all soiled objects that can no longer be adequately cleaned must be disposed of. Such objects must be disposed of in an impermeable bag in compliance with applicable regulations for disposal of such refuse.

### 10.1 Cleaning the filter manually

Before each start-up and when suction decreases, turn the crank clockwise 3 to 5 times when the motor is still. After the filter has been cleaned, the dust collection container must be emptied (see the “Disposal” section).



Additionally, on OMF devices with a spark separator, before activating the hand crank, remove the spark separator drawer that is integrated into the device. For this, loosen the screws that lock the drawer. Then the hand crank can be turned for cleaning. To allow the dust to settle in the device, wait about 1-2 minutes. Then the spark separator drawer can be installed back into the device.

If fine dust is being exhausted, the filter needs to be cleaned more often.

## 10.2 Filter replacement



**Filter replacement must be performed in a well-ventilated room or outdoors. The people assigned to this work must be instructed on the aspirated toxic materials and wear a breathing protection mask with a class P3 particle filter, as well as protective gloves. All distractions by uninvolved persons must be prevented.**

After an extended operation period, the filter pores can be clogged by extremely fine dust. Even the cleaning equipment cannot remove this dust. The filter must be replaced with a new one.

If possible, filter replacement must be done when there is no work going on. Used filters must be discarded in compliance with local regulations.



**Before the filter is replaced, it must first be cleared of loose dust using the available cleaning system, and the power must be cut off.**

If the bag filter needs replacement, proceed as follows:

### 10.2.1 on TK model devices

1. Remove the housing cover by loosening the screws.
2. Loosen the 6 nuts on the filter fittings.
3. Remove the tapping device by loosening the three screws (bearing plate).
4. Loosen the 10 nuts on the filter frame and remove the filter.
5. Remove the filter fitting by loosening the screws.

To reinstall the filter, follow the same procedure in reverse.

## 10.2.2 OM / OMF model devices

1. Remove the fan housing, including the motor and fan
2. Undo the four latches and remove the two screws on the blower box.
3. Loosen the 8 nuts on the filter fittings.
4. Remove the tapping device by loosening the four screws (front side of the machine).
5. Loosen the 12 nuts on the filter frame and remove the filter.
6. Remove the filter fitting by loosening the screws.

To reinstall the filter, follow the same procedure in reverse.

# 11. Disposal



**The people assigned to disposal work must be instructed on the aspirated toxic materials and wear a breathing protection mask with a class P3 particle filter, as well as protective gloves. All distractions by uninvolved persons must be prevented.**

## 11.1 Disposing of collected dust materials

### 11.1.2 TK model devices

To dispose of the collected material, remove the dust collection drawer from the device by removing both knurled nuts. Now the dust collection drawer can be pulled out.

Dispose of the dust contained in the drawer in keeping with local regulations.

Reinsert the emptied container and tighten the knurled nuts again. The device is now ready to operate again.

### 11.1.3 OM / OMF model devices

For removing the collected material, the dust collection container's two latches (on the underside of the device) must be undone. Now the container can be pulled out. The collected material must be discarded in compliance with local regulations. Reinsert the emptied container and lock the latches again. The device is now ready to operate again.

## 11.2 Disposing of the device

Before disposing of the device, empty the dust collection drawer, remove the bag filter, and dispose of both of them in compliance with local regulations.

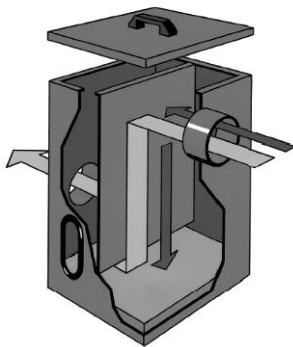
Pack the device in a suitable manner and also dispose of it in compliance with local regulations.

Due to contamination of the device with toxic dust, ESTA cannot take the device back.

## 12. Optional equipment

### 12.1 Water pre-separator for reducing fire hazards

Devices in the OM-8, OM-10, OM-12 and OM-12S line can be optionally equipped with a water pre-separator, if suction of glowing sparks cannot be ruled out.



The lower port is connected to the suction device and the upper one to the exhaust equipment.

The housing is filled with water up to the lower edge of the inspection glass.

Check the water level daily, and change the water every two weeks.

### 12.2 Muffler

All devices in the TK, OM and OMF lines can be equipped with a muffler.

### 12.3 Movable stand

All devices in the TK, OM and OMF lines and the water pre-separator can be equipped with a movable stand.

# 13. Device diagram

## Small dust extractors of models TK, OM and OMF

**TK-4; TK-6**  
**TK-H; TK-2.2** (internal motor)



Bag filter on TK models

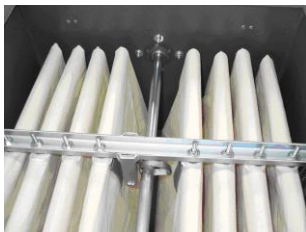


**OM-8; OM-10; OM-12**



**OMF-8; OMF-10; OMF-12**

Bag filter on OM / OMF models



Insertable spark protection pad (knurled nut attachment)



With the model information, request the replacement parts you need from the  
**ESTA replacement part service: +49 (0) 7307 804 - 0**

# 14. Declaration of incorporation

**Name of manufacturer:** ESTA Apparatebau GmbH & Co. KG  
**Address of manufacturer:** Gotenstraße 2 - 6  
 89250 Senden

Person in charge of documentation: ESTA Apparatebau GmbH & Co. KG  
 Gotenstraße 2 - 6  
 89250 Senden

**Here we explain that the design of the machine**

**Machine:** Dust extractor for collection, transport and elimination of dry dusts and welding fumes.

**Series:** Small dust extractor model TK / OM / OMF  
**Model:** TK-4; TK-6; TK-H; TK-2.2  
**Model:** OM-8; OM-10; OM-12; OM-12S  
**Model:** OMF-8; OMF-10; OMF-12

**conforms to the following regulations:**

<b>2006/42/EG</b>	EC Machine Directive,
<b>2014/30/EU</b>	EU Electromagnetic Compatibility Directive

The safety objectives of the **Low Voltage Directive 2014/35/EU** have been complied with in accordance of the Annex I, no. 1.5.1 of the Machinery Directive 2006/42/EC.

**Reconciled norms used:**

- DIN EN ISO 12100:2011-03** Safety of machinery - General principles for design - Risk assessment and risk reduction
- DIN EN ISO 13857:2008-06** Safety of machinery, devices and systems; safety distances to prevent hazard zones from being reached
- DIN EN 349:2008-09** Safety of machinery; minimum distances for preventing body parts from being crushed
- DIN EN 60335-1:2012-10** Household and similar electrical appliances - Safety - General requirements
- DIN EN 60335-2-69:2012-08** Household and similar electrical appliances - Safety - Particular requirements for wet and dry vacuum cleaners, including power brush, for commercial use
- DIN EN 61000-6-1:2007-10** EMC - Generic standards - Immunity for residential, commercial and light-industrial environments
- DIN EN 61000-6-2:2006-03** EMC - Generic standards - Immunity for industrial environments
- DIN EN 61000-6-3:2011-09** EMC - Generic standards - Emission standard for residential, commercial and light-industrial environments
- DIN EN 61000-6-4:2011-09** EMC - Generic standards - Emission standard for industrial environments
- DIN EN 61000-3-2:2015-03** EMC - Limits - Limits for harmonic current emissions (equipment input current ≤16A per phase)
- DIN EN 61000-3-3:2014-03** EMC - Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤16A per phase and not subject to conditional connection

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**National norms and technical specifications used:**

**VDI 3677**                      Filtering separators

Safety and health protection requirements according to 2006/42/EC Appendix I that are applied and observed:

1.1.1; 1.1.2; 1.1.3; 1.1.5; 1.3; 1.3.1; 1.3.2; 1.3.3; 1.3.4; 1.3.7; 1.3.9; 1.4; 1.4.1; 1.4.2; 1.4.2.1; 1.4.2.2; 1.5; 1.5.2; 1.5.4; 1.5.5; 1.5.6; 1.5.7; 1.5.8; 1.5.9; 1.5.10; 1.5.13; 1.6; 1.6.1; 1.6.2; 1.6.4; 1.6.5; 1.7; 1.7.1; 1.7.1.1; 1.7.2; 1.7.3; 1.7.4; 1.7.4.1; 1.7.4.2; 1.7.4.3

Safety and health protection requirements according to 2006/42/EC Appendix I that are applied and are still to be observed:

1.2; 1.2.1; 1.2.2; 1.2.3; 1.2.4; 1.2.4.1; 1.2.4.2; 1.2.4.3; 1.2.4.4; 1.2.5; 1.2.6; 1.4.3; 1.5.1; 1.5.9; 1.6.3; 1.7.1.2

**Note:**

The incomplete machine can be operated only once it has been determined that the building's capacities meet the specifications in the directives mentioned above.

Technical documentation was created according to Appendix VII Part B of this guideline. We agree to provide the responsible authorities with this documentation in electronic form upon justified request.

Senden, 26/04/2017

  
Dr. Peter Kultz  
Managing Director



# Notes

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ESTA Apparatebau GmbH & Co. KG  
 Gotenstraße 2 - 6  
 89250 Senden / Ay



Tel.: +49 (0) 7307 804 - 0  
 Fax: +49 (0) 7307 804 - 500  
 E-Mail: info@esta.com

[www.esta.com](http://www.esta.com)







ESTA Apparatebau GmbH & Co. KG  
Gotenstraße 2 - 6  
89250 Senden / Ay



Tel.: +49 (0) 7307 804 - 0  
Fax: +49 (0) 7307 804 - 500  
E-Mail: [info@esta.com](mailto:info@esta.com)

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### **ESTA Apparatebau GmbH & Co. KG**

Gotenstrasse 2 – 6  
D-89250 Senden, Germany

Phone: +49 (0) 73 07 - 8 04 - 0  
Fax: +49 (0) 73 07 - 8 04 - 500  
E-Mail: [info@esta.com](mailto:info@esta.com)  
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