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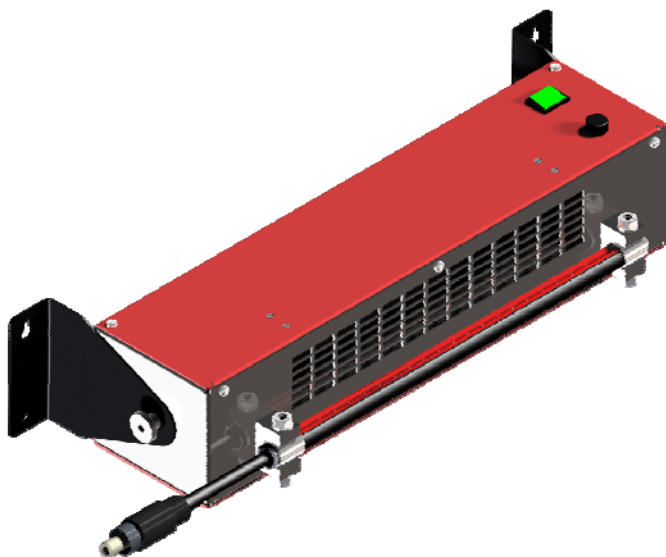
®

# Operating instructions

Air-assisted ionizing unit

## Ion-Air blower E

Ident number: 04.0360.000, 04.0361.000, 04.0362.000



Air Line

*Keep for future use!*



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# 1 Operator instructions

Before installation and commissioning read these operating instruction in full. Always observe the safety instructions. These operating instruction is a part of the product; make sure you retain them for later use or subsequent owners.

The ionizing unit is operationally safe when used as intended.

The term “high voltage” is abbreviated HV in these operating instructions (e.g. HV terminal).

The ionizing unit consists of two components:

- Blower
- Ionizing bar

## 1.1 Symbols used in operating instructions

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 **WARNING**

Always observe this safety instruction to avoid critical or fatal injuries.

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 **CAUTION**

Always observe this safety instruction to avoid slight injuries.

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**NOTICE**

Always observe this safety instruction to avoid damage to property.

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**NOTE:**

*Important notes and additional information.*



Never dispose of with household garbage.

## 1.2 Symbols on the ionizing unit



**WARNING!**  
High voltage

## 2 Safety

Only the persons authorized by the operator may carry out tasks on the ionizing unit.

The installer must be a trained and qualified electrician and must have basic knowhow in the field of mechanical engineering. He must read the operating instructions in full.

The operator or maintenance personnel must read the operating instructions in full.

Switch off the power supply before commencing work on the ionizing unit, and secure against inadvertent switching on.

### **Interference with pacemaker**

The high electrical field in the ionizing unit generates an electrical alternating field with 50 Hz. This may interfere with the function of a heart pacemaker which in turn may result in ventricular fibrillation or cardiac arrest.

- Persons wearing heart pacemakers must maintain a safety distance of more than 50 cm from the ionizing unit!
- The operator must mark the danger zone around the ionizing unit by means of a warning sign.
- The accident prevention regulations according to BGV A8 must be observed.
- An expert study on the influence of ionization systems on implanted heart pacemakers is available from HAUG GmbH & Co. KG.

**Electric shocks due to manipulated or faulty ionizing units**

In the case of unauthorized conversions, wetness, moisture, or damage to the ionizing unit, there is a risk of electric shock.

- The ionizing unit does not contain any repairable parts.
- Unauthorized conversions and modifications of the ionizing unit are prohibited for safety reasons.
- Immediately take the ionizing unit out of operation in the event of visible damage and suspected electrical failure, and protect against reuse (refer page 21).
- Protect the ionizing unit from wetness and moisture.
- Clean any wetness off the ionizing unit carefully and allow to dry.

**Danger of injury from ionizing pins**

The ionizing pins are sharp and pointed; when touched, the ionizing pins may lead to stab or tear injuries. This may cause a psychological shock reaction resulting in further accidents.

- Do not touch the ionizing pins.

**Physical complaints due to an excess of ozone**

During operation, small amounts of ozone are generated by the ionizing unit. A very high ozone concentration and prolonged continuous exposure times may result in headache, irritation to the eyes, circulatory problems etc.

- To ensure that the maximum permissible ozone concentration at the workplace is not exceeded, adequate ventilation must be provided during operation of the ionizing units.
- An expert study on ozone emissions of ionization systems is available from HAUG GmbH & Co. KG.

## 2.1 Intended use

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 **WARNING**

**Risk of explosion!**

The ionizing unit may generate sparks which ignite gases, dust or similar substances.

- Never install or use the ionizing unit in areas with potentially explosive atmospheres.
- 

The ionizing unit is intended for installation in production processes. It eliminates electrostatic charges in industrial production.

- It is ideally suited for ESD protection in the production of electronic equipment or in printed circuit board production.
- In winding and unwinding machines.
- In injection molding machines.
- In the plastics and packaging industry.

Always observe the installation and operating conditions indicated in these operating instructions.

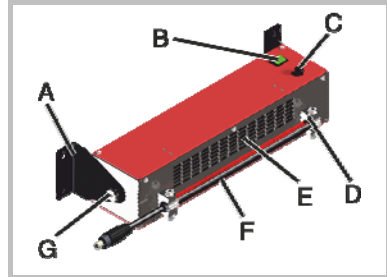
Warranty only covers products, accessories or spare parts of HAUG GmbH & Co. KG.



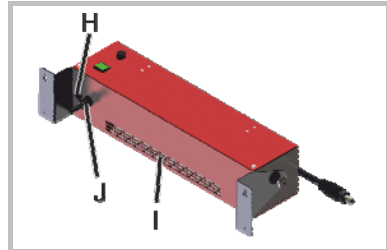
### 3 Product overview

#### Ion-Air blower (E)

- A Mounting bracket
- B Mains switch
- C Blower speed regulator
- D Bar holder
- E Air outlet
- F Ionizing bar
- G Clamping screw

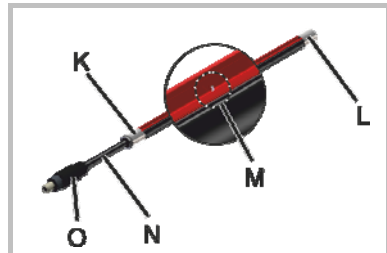


- H Fuse holder with fuse
- I Air inlet
- J Mains connection



#### Ionizing bar (F)

- K Connector
- L End piece
- M Ionizing pin
- N HV cable
- O HV plug



## 4 Install

### WARNING

#### Risk of explosion!

The ionizing unit may generate sparks which ignite gases, dust or similar substances.

- Never install or use the ionizing unit in areas with potentially explosive atmospheres.

### NOTICE

#### Damage to equipment!

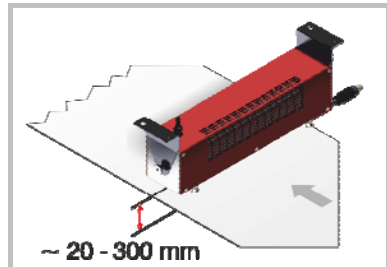
Kinking or bending may damage the HV cable and insulation. This may result in a short-circuit.

- The HV cable must not be kinked.
- When routing around bends, the bending radius must not be smaller than 50 mm.
- Check the HV cable for kinks, cuts etc.

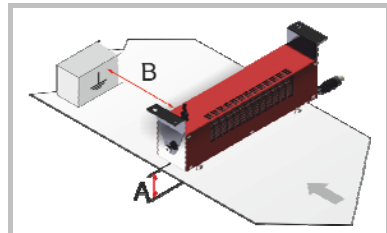
1. Prepare the selected mounting location in the production process with regard to the following parameters.

The most favourable distance of the ionizing unit to the material to be ionized is approx. 20 - 300 mm.

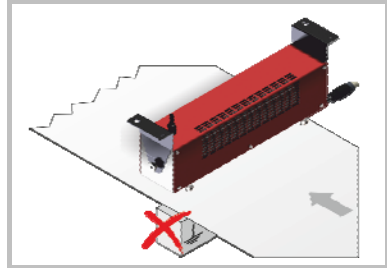
The limit values for the ionizing effect are at 10 mm min. and 500 mm max.



The distance of the ionizing unit to an earthed machine part (B) must be greater than the distance to the material to be ionized (A).



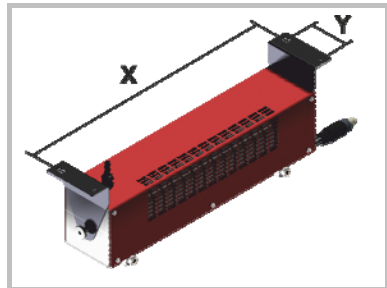
No earthed machine parts must lie behind the material to be ionized.



**NOTICE** Damage to equipment and risk of fire!

The ionizing pins must not be covered by mounting brackets or machine parts. If this rule is ignored, no ionizing effect will take place at that point, and electric sparks may form. The ionizing unit will be damaged as a result, and there is a risk of fire.

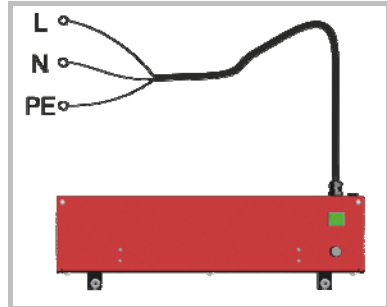
2. Attach the ionizing unit in the production process by using the mounting brackets.
  - $X = \text{housing length} + 27 \text{ mm}$
  - $Y = 83 \text{ mm}$



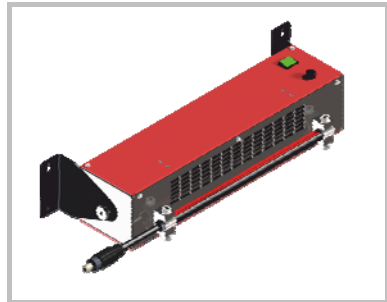
3. Before connecting, make sure that the correct supply voltage is available for the ionizing unit.
  - The model plate attached to the housing indicates the voltage.
  - If the supply voltage is incorrect, the ionizing unit may be damaged.



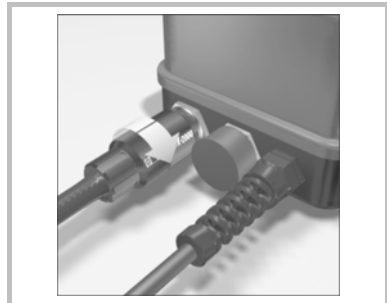
4. Connect the ionizing unit to the supply voltage. Always connect the protective earth conductor (green-yellow) with a functioning protective earth of the mains.
  - Connecting the PE conductor via parts of a machine body is insufficient.
  - L1 = conductor 1
  - N = conductor 2
  - PE = green/yellow conductor



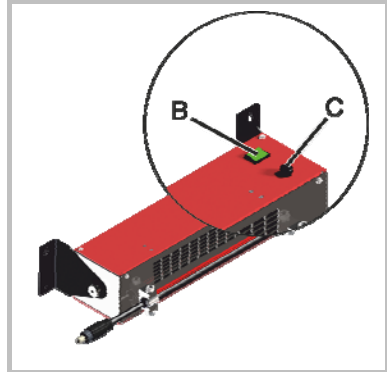
5. Install ionizing bar in the bar holder.
  - HV cable in direction of discharging power pack.
  - Insert connection and end piece into bar holder.
  - Align ionizing pins at a right angle to the airflow.
  - Tighten clamping screws and lock with nut.



6. Route the HV cable to the discharging power pack. Observe the operating instructions of the discharging power pack.
  - Insert the ionizing unit's HV plug in the HV terminal of the discharging power pack and press the HV cable until it reaches the stop.
  - Screw the screw cap onto the HV terminal and tighten by hand.



7. Adjusting the ionizing unit.
  - Use the mains switch (B) to switch on the blower.
  - Switch on the discharging power pack of the ionizing bar.
  - Use the blower regulator (C) to set the blower speed to the desired air flow velocity.



8. The ionizing unit is ready to operate.

## 5 Cleaning

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### CAUTION

#### **Risk of injury!**

The ionizing pins are sharp and pointed. During cleaning of the ionizing bar, there is a risk of injuries to the hand due to needle-pricks, tears or cuts.

- Protective gloves must be worn when working on the ionizing unit (EN 388 3122).
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### NOTICE

#### **Damage to equipment!**

An incorrect cleaning agent may result in damage to the ionizing unit.

- We strongly recommend the exclusive use of cleaning accessories from HAUG GmbH & Co. KG. Refer to Section Accessories.
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### 5.1 Cleaning interval

The efficiency of the ionizing unit suffers as a result of contamination of the unit. This can be eliminated by cleaning.

- Clean the ionizing pins of the ionizing units **at least every 14 days**.
- The cleaning interval should be shortened when working in a heavily contaminated environment.

## 5.2 Dry cleaning

1. Switch off discharging power pack and secure against inadvertent operation.
2. Switch off the blower.
3. Disconnect the ionizing unit from the discharging power pack.
4. Brush the ionizing pins of the ionizing unit using special cleaning brush **RB1**.
5. Blow off the ionizing unit with clean compressed air (max. 6 bar).

**NOTICE** Damage to equipment!

Contamination can cause short-circuits in the HV connection. Short-circuits cause failures of the discharging power pack and HV plug.

- Check the HV connections and HV plugs for contamination.
- The connections must be clean and dry.

6. Reconnect the ionizing unit to the discharging power pack.

## 5.3 Moist cleaning

1. Switch off discharging power pack and secure against inadvertent operation.
2. Switch off the blower.
3. Disconnect the ionizing unit from the discharging power pack.
4. Die Wet the special cleaning brush **RB1** with the special cleaning agent **SRM1**. The special cleaning system **RS2** may also be used for cleaning.
5. Brush the ionizing pins of the ionizing unit.
6. Blow off the ionizing unit with clean compressed air (max. 6 bar) and allow to dry.

**NOTICE** Damage to equipment!

Contamination can cause short-circuits in the HV connection. Short-circuits cause failures of the discharging power pack and HV plug.

- Check the HV connections and HV plugs for contamination.
- The connections must be clean and dry.

7. Reconnect the ionizing unit to the discharging power pack.

## 6 Troubleshooting

**NOTE:**

*If the defect cannot be eliminated in this way, return the ionizing unit to HAUG GmbH & Co. KG for checking (see back cover for address).*

<b>Error</b>	<b>Cause</b>	<b>Measure for removing fault</b>
No ionization	The ionizing bar is contaminated.	Clean the ionizing bar.
	No high voltage.	Check discharging power pack.
	The ionizing bar is defective.	Disconnect the ionizing bar and replace.
No blower	The fan impeller is not turning.	Check voltage supply.
		Check the fuse.



## 6.1 Replacing fuse

### NOTICE

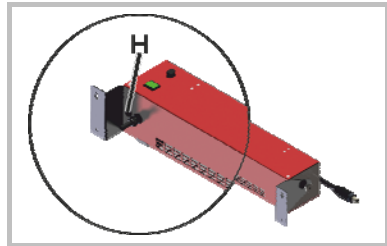
#### Damage to equipment!

An incorrect fuse in the ionizing unit may cause a fault. This may result in a cable fire.

- Only use fuses of the type indicated.
- Do not use repaired fuses.
- Do not bridge the fuse.

The unit type and the rated voltage are indicated on the nameplate.

1. Disconnect ionizing unit from supply.
2. Determine and remove the cause for the blown fuse.
3. Detach the fuse holder (H) using a screwdriver and lift out.
4. Replace fuse and reattach fuse holder.







#### Use the following fuse only:

- 2,0 A slow, 5 x 20 mm

## 7 Accessories/spare parts

Accessories and spare parts can be sourced from your authorized sales partner or directly from HAUG GmbH & Co. KG (for address, refer to back cover).

Article	Illustrations	Order number
Special cleaning fluid <b>SRM1</b>		10.7220.000
Special cleaning brush <b>RB1</b>		10.7218.000
Special cleaning system <b>RS2</b>		10.7218.004
Circular brush for special cleaning system		X – 5677

## 8 Technical data

### 8.1 Characteristics and specification

Reference temperature 23 °C

Supply voltage blower	~230 V
Supply voltage ionizing bar	7 – 8 kVAC
04.0360.000	1 blower
Length of ionizing bar	380 mm
04.0361.000	1 double blower
Length of ionizing bar	750 mm
04.0362.000	2 double blower
Length of ionizing bar	1490 mm
Unit fuse	2,0 A slow
Air velocity	2,5 – 5 m/s
Range of effectiveness	approx. 10 – 500 mm

### 8.2 Supply voltage

Unit type	Nominal value	Frequency range	Power input
04.0360.000	230 V~ ±10 %	50 – 60 Hz	P <sub>max</sub> = 70 VA
04.0361.000	230 V~ ±10 %	50 – 60 Hz	P <sub>max</sub> = 150 VA
04.0362.000	230 V~ ±10 %	50 – 60 Hz	P <sub>max</sub> = 220 VA

### 8.3 Ambient conditions

Never use in areas with potentially explosive atmospheres.	
Only use in interior.	
<b>Temperature:</b>	
Rated application range	+5 °C to +50 °C
Extreme range for storage and transport	-15 °C to +60 °C
<b>Humidity:</b>	
Rated application range	20 % to 65 % RF
Extreme range for storage and transport	0 % to 85 % RF

### 8.4 Housing

Protection type	IP 40
<b>Overall dimensions:</b>	
Height	130 mm
Width	153 mm
Length 04.0360.000 / 04.0361.000 / 04.0362.000	468 / 813 / 1549 mm
<b>Weight without ionizing bar:</b>	
04.0360.000	3,8 kg
04.0361.000	4,9 kg
04.0362.000	9,7 kg

## 9 Taking out of operation

1. Disconnect ionizing unit from supply.
2. Disconnect the blower from the power supply.
3. Disconnect the ionizing bar from the discharging power pack.
4. Remove the ionizing unit from the decommissioned production process.

### 9.1 Storing

Always store our products in a dry and cool place.

### 9.2 Disposing



Never dispose of electrical appliances together with household garbage.

Always collect separately and dispose of in an environmentally responsible way.

Always observe national and regional waste disposal regulations for the disposal of electrical appliances.

If proper disposal of our products is not possible, returning the units to us may be an option. We dispose of our products in an environmentally responsible way. For address refer back cover.





made by



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