



ziegener+frick



Cleaning hood

IONCLEAN HU

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Translation of the installation instruction

Cleaning hood

IONCLEAN HU





Chapters

1 General

2 Safety

3 Technical data

4 Transport / Installation

5 Operation

6 Maintenance



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1 General

This installation instruction supplements e.g. drawings and parts lists, supplier documentations and so on of the device documentation. Together with this it is to consider as a unit.

This chapter contains general information about the structure and the operation of the installation instruction.

1.1 Scope

The installation instruction applies only to those devices or device parts that are supplied by the company Ziegener + Frick GmbH.

The "Supplier Documentation A - Z" also belongs to the documentation. There you will find detailed information on the components assembled in the system.

The safety and maintenance instructions in the supplier documentation are not overridden by this installation instruction.

1.2 Basic information

This installation instruction contains important information about safe and correct use of the device.

Observance helps to

- Avoid risks,
- Reduce repair costs,
- Reduce down time and
- Increase the reliability and lifetime of the device.

In case of any error, damage, system malfunctions and resulting loss of production by not following this installation instruction, the company Ziegener + Frick GmbH assumes no liability.

The installation instruction complies with the European Machinery Directive 2006/42/EC and the DIN EN ISO 12100 part 1 and 2.

The installation instruction is part of the device and is supplied with the device documentation of the company Ziegener + Frick GmbH.

At handover, the documentation complies with the latest date at the delivery of the device.

The documentation must be retained permanently close to the device and must be readily available to any responsible person.

The content of the installation instruction must be read, understood and complied in all respects by all responsible persons. This is especially for safety instructions which are specially marked in the installation instruction.

In addition to the installation instruction and the locally valid rules for accident-prevention at the place of installation, the generally accepted technical rules and professional work are to be followed.

Technical changes that are necessary for the improvement of the device are reserved for the company Ziegener + Frick GmbH. Changes to the contents or the visual illustrations in the installation instruction are therefore possible.



DANGER

The partly complete machine must not be put into operation till it is determined that the machine / equipment in which the partly complete machine should be installed in confirms to the regulations of the Machinery Directive 2006/42/EC.



1.3 Structure of the installation instruction

Because of the considerably amount, the installation instruction can only seldom be read on the whole. It may be useful to become familiar with the information step by step.

Depending on the area of interest, we suggest reading the following chapters of this installation instruction.

1.3.1 Chapters

The installation instruction is divided into the following chapters:

1 General

Basic instructions,
Structure of the installation instruction,
Symbols / security markings

2 Safety

Detailed explanation of safety markings in the installation instruction and on the device
General safety information
Machine specific safety information
Use according to regulations
Foreseeable misuse

3 Technical data

Nameplate, specifications of the device, sound pressure level

4 Transport / Installation

Delivery, transportation, installation, cleaning, adjustment, storage, resale and disposal of the device

5 Operation

Switch on, operation, switch off

6 Maintenance

Maintenance (service, maintenance, repair) of the device and the components

1.3.2 Guidance

At the beginning of each chapter there is a table of contents.

Number and title of each chapter are listed top right on every page.

The page numbering is bottom right.

Example: 2 / 4

The first number is the page number, the second the total number of pages in the corresponding chapter.

1.3.3 Lists and References

Lists are marked with dashes. Example:

The device consists of:

- Part 1
- Part 2

Action steps are shown with points. Example:

- Action
- Action

Action steps that have to be done in a certain order are marked with numbers. Example:

1. Action 1
2. Action 2

References to other sections are marked with quotes and are underlined. Example:

See safety information in chapter "Safety".

1.4 Symbols / Safety signs

Particularly important information in the installation instruction is indicated with symbols.

Detailed information can be found in chapter "Safety".



Warning

Identifies situations that may cause injury or property- and environmental damage.



Instruction

Indicates instructions to wear personal protective equipment. In the installation instruction multiple symbols with different meanings are applied.



Information

Designates hints and other particularly important information.



Environmental Protection

Indicates notes to environmental protection which can cause hazards to the environment when not observed.



1.5 Note on language

Instructions and installation instructions of complete functional units or purchase parts (e.g. electrical and pneumatic components) can be found in the device documentation under "Supplier Documentation A - Z".

Please note that these manuals are partially written in several languages.

If you do not see your language directly on the cover, then it is possibly to find in a later section of the manual. In case of doubt, scroll the manual observantly.

If the manual (e.g. computer manuals) is enclosed in English instead of your own language, so these are documents that are usually written only in English.

1.6 Training

The implementation of the training is conducted on site by our commissioning staff. As training material is the existing installation instruction.

The training will ensure that the people involved with the device have been informed of the safety requirements of the device.

1.7 Copyright / Editor

This installation instruction is subject to copyright and may only be used for the agreed purpose which means as reference to internal purposes. A transfer to third parties or reproduction by any means is permitted in no instance.

All title and copyrights remain at the company Ziegenger + Frick GmbH.

1.8 Warranty and Liability

Basically our „General terms of sale and delivery“ apply

These are available for the operator.

Warranty and liability claims for personal injury and property damage are excluded when one or more of the following causes:

- Improper use of the device.
- Incorrect assembly, commissioning, operation and maintenance of the device.
- Operate the device with defective safety equipment or incorrectly placed or non-functional safety and protection equipment.
- Failure to observe the instructions in installation instruction regarding transport, installation, commissioning, operation, maintenance and setup of the device.
- Unauthorised modifications to the device.
- Unauthorised modifications to the software.
- Inadequate monitoring of device parts subjected to wear.
- Improper repair and force majeure.



DANGER

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2 Safety

This chapter contains

- Information about the used safety labellings
- General safety information and
- Device-specific safety information

The content of this chapter must be read, understood and complied in all respects by all responsible persons. This is especially for safety information which is specially marked in the installation instruction. This information must be considered exactly in all cases.

2.1 Safety signs

The used symbols, as far as they are standardised, conform to the accident prevention regulation BGV A8 and DIN 4844-2.

2.1.1 Warnings

In the installation instruction the warnings are classified according to seriousness of the danger and likelihood of occurrence.

- The described measures to avoid hazards must be considered implicitly.



DANGER

This symbol warns of an **immediate danger** to the health and life of persons. **Failure to heed** these warnings **leads** to serious personal injury or death.



WARNING

This symbol warns of **potentially dangerous situations** for the health and lives of persons.

Failure to heed these warnings **may** lead to serious personal injuries, even death.



CAUTION

This symbol warns of **potentially dangerous situations** for the health of persons or property- and environmentally damage.

Failure to heed these warnings **may** lead to injury or property- and environmental damage.

In the installation instruction warnings, ban- and instruction symbols with different meanings are used. These symbols can also be mounted on the device.

- All symbols on the device are to be observed implicitly! The symbols must always be readable and complete. Damaged or lost symbols must be replaced true to original.

2.1.2 Warning and ban symbols

These symbols identify hazard areas.



Warning of a hazard area

Life-threatening situation.



Warning of dangerous electrical voltage

Life-threatening voltage.



Warning of hand injuries

Risk of bruises.



Warning of hot surface

Risk of burnings.



Warning of coldness

Risk of frostbite.



Warning of laser beam

Risk of eye injury.



Prohibition for persons with pacemaker

Life-threatening situation caused by malfunction of the pacemaker.



No entry for unauthorised persons

Life-threatening situation.



2.1.3 Instruction symbols

The symbols indicate cross references to separate installation instructions and the personal protective equipment to be worn.

- For the denoted activity, the required personal protective equipment should be worn to avoid injury.



Wear eye protection

The safety glasses avoid eye injury from flying parts or mediums.



Wear protective gloves

Work gloves avoid cuts and bruises to hands and fingers.



Wear protective footwear

Protective footwear avoids bruises to feet and toes.



Wear hearing protection

The hearing protection prevents a damage of the hearing.



Wear protection helmet

The protection helmet prevents head injuries.



Observe the instructions

Observing the instructions avoids injuries caused by improper operation.



2.2 General safety information

The device is built according to the state of the art and accredited safety rules. Nevertheless threats to life and limb of the operator or third party respectively damage of the device and other property may arise by using the device.

Use the device only in perfect technical condition as well as in accordance with regulations, safety- and hazards-conscious considering the installation instruction! In particular failures that may affect safety must be removed immediately.

In addition to the installation instruction and the authoritative regulations for accident prevention in the country and place where it is used you also have to consider the accredited technical regulations for safe and professional work.

The installation instruction must be read and executed by each person that is responsible for working with or on the device and must be available and readily to hand for these persons any time.

The installation instruction must be completed by the operator for instructions regarding existing national regulations for accident prevention and environmental protection (see "Organisational measures of the operator")



DANGER

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2.3 Safety equipment

If the demounting of safety equipment during maintenance and repair is required, reassembly must be done immediately after finishing the maintenance and repair work.



WARNING

Risk of injury from moving parts

It is generally prohibited to stuck items through visual openings of safety equipments in order to reach moving parts. This hazard statement applies to all mechanical safety equipments.

This way there is a high risk of injury from moving parts!

Safety equipments that are connected to the device can be removed only with the help of tools. Before such safety equipments are removed you must switch off the main switch and secure it against restart.

In no way invalidate the safety equipments in its protection function.

No changes, additions or reconstructions to the device, in particular those who could affect the safety without authorisation from the manufacturer! The safety equipments are directly for your safety!

Injury or death hazard by removing / bridging of safety equipments!

This also applies to the installation and adjustment of safety equipments as well as for welding of supporting parts.



2.4 Organisational measures

The installation instruction must always be available and readily to hand near the device for the responsible person (operator, maintenance personnel, repair personnel etc).

In addition to the installation instruction, consider and instruct generally admitted, statutory and other authoritative regulations for accident prevention and environmental protection!

Such obligations may as well concern handling hazardous substances or the hiring / wearing of personal protection equipment.

Complete the installation instruction with instructions including supervisory and reporting duties to account for operational characteristics, such as in terms of work organisation, work processes, employed personnel etc. (see "Organisational measures of the operator").

The responsible personnel working on the device must read and understand the installation instruction, in particular the chapter "Safety", before starting work. During working on the device it is too late. This is especially true for personnel working occasionally on the device such as cleaning, lubrication, maintenance and repair work.

Regularly check the safety- and hazard-conscious work of the personnel in accordance with the manual.

Where necessary or required by regulations, use the personal protective equipment!

For safety regarding malfunctions or changes in the operation, stop the device immediately and report the malfunction to a competent body!

Spare parts must meet the technical requirements specified by the manufacturer. Therefore use only genuine spare parts. The use of other parts may cancel the liability of occurring consequences.

Generally keep animals away from the device.

Never modify the software on programmable control systems without written agreement with the manufacturer!

Adhere to the prescribed or in the installation instruction specified intervals for repeating checks /maintenance.

For the purpose of maintenance work appropriate work shop equipment is essential! For information about eventually necessary special tool please check chapter "Maintenance" in the installation instruction.

2.4.1 Fire fighting equipment

The operator must offer an appropriate fire fighting equipment.

- Advertise location and operation of fire extinguishers
- Note the fire alarm and the fire fighting possibilities

When using improper fire fighting equipment

- harmful gases (fumes) can occur
- risk of shock from electrical components occurs. Risk of injury or death by electric shock!



2.5 Personnel selection and qualification

As the operator of this device you are responsible for the prevention of personal injuries, damage of property and environmental damage.

Therefore please note:

- Employ only qualified personnel. Define the responsibilities of the personnel for operating work, checking, cleaning, maintenance and repair work!
- Consider the required minimum age of 18 years!
- Set operator responsibility and allow him rejecting unsafe instructions by third parties!
- Personnel to be trained, to be instructed or personnel being in a general in-firm training may only work with the device under permanent supervision of a competent person!
- Non-skilled workers, such as for loading and unloading activities, may only be employed under permanent supervision of competent persons. Non-skilled workers must also be trained in all safety regulations.
- The operator must advise all persons working on the device of this installation instruction at least once a year. This is especially for the observation of the safety regulations. This is to confirm by the signature of the personnel.
- Working on the electrical equipment of the device must be done by a qualified electrician or a competent person under direction and supervision of a qualified electrician in accordance with the electrical rules!
- Work on pneumatic systems may only be done by personnel with special knowledge and experiences in pneumatics!

2.5.1 First Aid

In case of accidents please refer to the local and internal regulations.

A sufficient number of workers for First Aid must be trained. This training must be repeated at appropriate time.

2.5.2 Fire fighting

For fire fighting, personnel must be trained to operate with appropriate fire fighting equipment. This training must be repeated at appropriate time.

At the outbreak of a fire you must switch off hazardous and vulnerable parts of the power supply unless they must retain under voltage for fire fighting or other hazards come up by switching it off.



DANGER

Risk of injury or death by electric shock!

Never use water to extinguish electrical equipments. Risk of electrical shock.



2.6 Safety information on certain phases of operation



DANGER

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2.6.1 Normal operation

Use the machine only when all protective and safety devices such as emergency stop devices, sensors, detachable safety devices, noise protection, exhaust equipment etc. are present and functioning!

Refrain from doing any unsafe method of working!

Check the device for external visible damage or defects at least once per shift! Any changes (including those of operating performance) immediately report to the responsible body. If necessary, stop the machine immediately and lock it!

Before switching on / starting the device make sure that no one can be endangered by the starting device!

The operation may only start after an adequately trained person over 18 years has established that the safety precautions have been implemented and are effective.

This person may not have done the works by himself.

2.6.2 Maintenance

Observe the service, maintenance and repair activities which are specified in the installation instruction!

Activities must be carried out only by competent persons!

Refrain from doing any unsafe method of working!

Inform the operator of the machine before beginning with maintenance work! Name a supervisor!

For all work relating to modifying, setting the device and its safety regulations as well as service, maintenance and repair, consider the on and off switching process according to the installation instruction.

Secure the maintenance area, where necessary, spacious!

Close off the working area with a red-and-white barricade and a warning sign!

Use the provided or other safety checked lifts and working platforms when assembly work over height of the head. The climbing of working platforms on a ladder and simultaneous transport of parts with the hands is not allowed.

Don't use device parts as a climbing help!

When working at bigger height use anti-fall guard!

2.6.2.1 Isolate

The device to be worked on must be isolated!

If the supervising or the working person didn't isolate the machine itself, he has to wait for the reporting of the isolation.

Setting a time when the device should be isolated doesn't replace the concrete report that it is actually isolated.



2.6.2.2 **Secure against resetting**

Operating materials for example main switches that have been used for unlocking must be secured from being resetted,

- Main switches off and fix.
- Mount warning sign at the main switch!

2.6.2.3 **Verify isolation**

The voltage isolation may only be established by a qualified electrician or an electro-technical instructed person.

The voltage isolation at the working position must be established at all poles.

2.6.2.4 **Cleaning**

Handles, steps, ladders, railings, platforms, stages, etc. keep free from contamination!



2.7 Notes on specific hazards

2.7.1 Electricity

The electrical equipment of the device is to be checked regularly. Defects such as loose connections or braised cables must be corrected immediately.

Use only original fuses with the specified current. In case of malfunctions in the electrical power supply turn off the device immediately!

Work on electrical devices or operating materials may only be executed by a qualified electrician or by a competent person under direction and supervision of a qualified electrician according to electrical engineering rules!

If required you must set device parts to zero potential where inspections, cleaning work, lubrication, maintenance and repair work will be performed. The zero potential set parts first check for no voltage, then short-circuit and ground them and isolate nearby parts being under voltage!

Components being worked on may only be under voltage when it is explicitly required.



DANGER

Warning of dangerous electrical voltage

Never assume that an electric circuit is dead.

- For safety reasons please check the electric circuit always before starting work!

Operate only with appropriate measuring instruments and non-conductive tools.

The main switch is also under voltage when it is turned off.

If maintenance on live components with voltage is necessary, please call a second person who can in case of an emergency switch off the main switch and thereby cut off the voltage.

2.7.2 Pneumatic

System sections and pressure pipes that have to be open must be depressurised before beginning with installation and maintenance work.

Work on pneumatic devices may only be arranged by persons with special knowledge and experience in pneumatics.



DANGER

Risk of injury from escaping compressed air!

Before working on the device it must be ensured that the power supply is interrupted.

- It is therefore not only to turn off and secure the main switch, but also shut off the pressure pipe.

2.7.3 Solvents and detergents

Detergents can contain solvents and are depending on flash point in liquid state (<21 °C) easily flammable or (>21 °C) flammable. While using them explosion and fire hazard can occur! All general rules to avoid explosions and fires have to be observed.

Solvents and detergents can lead to health damage if swallowed, inhaled or absorbed through the skin!



With the removal of the fat in the skin during unprotected handling solvents and detergents, the skin gets cracked and dry. This enables pathogens to penetrate and abets the emergence of skin diseases.

It is essential to pay attention to a skin care program which is well adapted to the solvents and detergents used during operation.

Incidental substances must be retained, recycled or disposed properly.

Ensure safe and environmentally disposal of operating supply items and additives!

2.7.4 Oils, greases and other chemical substances

When working with oils, greases and other chemical substances, please observe the product safety regulations!

Incidental substances (e.g. oil) must be retained, recycled or disposed properly.



CAUTION

Environmental hazard

With improper disposal, operating supply items and additives can lead to environmental damage.

- Provide a safe and environmentally disposal of operating supply items, additives and replacement parts.
- Conform to the existing national and regional regulations.

2.7.5 Noise

The noise protection equipment at the device must be in prescribed protective position during operation.



WARNING

Risk of hearing damage

- In the designated areas, the prescribed personal hearing protection must be worn!



2.8 Device-specific safety information



DANGER

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2.8.1 Proper use

Purpose of use

The device may only be used for dusting and vacuuming of dirt particles contractually defined parts.

Operating conditions

- The device must be installed only in enclosed spaces.
- The electrical equipment is designed for a maximum height of 1000 m above sea level.
- Ambient temperature + 5 °C to + 35 °C
- The average temperature in the vicinity of the electrical components must not exceed the value of + 35 °C within 24 hours.
If these conditions cannot be complied reliably, the customer has to provide an appropriate climatisation.
- Humidity max. 90 % at + 20 °C and 50 % at + 35 °C
- Further it must be assured that no short-term temperature fluctuations occur in such a manner that at any time the temperature falls below the dew point and condensate is produced.

Any other or further use of the device is considered unauthorized. The manufacturer is not liable for damage from improper use. Such risk lies entirely with the user.

2.8.2 Foreseeable misuse

The following are examples for foreseeable misuse:

- Cleaning of not contractually defined parts.
- Operate the device in an explosive atmosphere.
- Storage of explosive materials in the vicinity of the device.
- Operate the device with faulty or incorrectly fitted or not operational safety and protection equipment.
- Installation and operation of the device in rooms with high humidity.
- Unauthorized modification to the device or modifying the software.
- Failure to observe the instructions in the installation instruction regarding transport, installation, commissioning, operation and maintenance of the device
- Use by private users without technical training and education.



2.8.3 Safety equipment on the device



DANGER

Mortal danger due to not fixed safety equipment!

Safety equipment performs a personal protection function! They must not be bridged, removed or rendered ineffective in other ways in any case.

2.8.3.1 Safety covers

The assembled protective covers prevent the achievement of moving parts or parts under voltage during operation.

Protective covers provide a personal protection function. They may not be removed or circumvented ulteriorly.

2.9 Organisational measures of the operator

Please complement the installation instruction here with instructions regarding:

- Internal organisation of work
- Workflows
- Relevant responsible staff
- location and operation of fire extinguishers
- Fire detection and fire fighting facilities etc.



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3 Technical data

This chapter contains information about device data, noise level, nameplate and the addresses of the manufacturer.

3.1 Device data

3.1.1 Dimensions and weight

Dimensions (Length is variable)	xx x 180 x 160 mm
weight	depending on the length of the device
Working width	depending on the length of the device

3.1.2 Pneumatic connection

Connection pressure	max. 6 bar
Design pressure	5 bar

That may only be operated with compressed air conforming to the requirements of ISO 8573.1.

3.1.3 Noise level

When device is running	72 dB (A)
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3.1.4 Electrical connection – Power Supply unit (not included in delivery)

Typ SIMCO Typ A	
Voltage	230V AC 50 Hz
IP protection class	IP 54

3.1.5 Electrical connection – Dust collector (not included in delivery)

Typ Ries 240 D	
Voltage Motor	3 x 220V - 240V / 380V - 415Vz
Electrical power	1,5 kW
IP protection class	IP 55



3.2 Nameplate



Nameplates are documents that must not be modified or removed.

- Damaged or missing nameplates must be replaced true to the original.

INFORMATION



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Cleaning device

Model: **IONCLEAN HU**

Year: **2012**

3.3 Manufacturer

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4 Transport / Commissioning

This chapter provides information on transport, installation, connection and taking into operation as well as the storage of the device.

Transport and commissioning of the device will be done by qualified personnel of the company Ziegner + Frick GmbH.



INFORMATION

Also note:

- The safety information in chapter “Safety” and especially the operation requirements in the section “Use according to regulations”.
- Dimensions and weight of the device in chapter “Technical data”

4.1 Safety information

Transportation work may only be carried out by qualified and authorised personnel.

4.2 Transporting the device

4.2.1 Preparation for transport

If the device was already in operation:

- Decommission the device in a professional way.
- Depressurise all supply pipes.
- Disconnect all supply and connection pipes and secure them on the device.
- Mount transportation lock. Therefore secure all moving parts of the device with tape or tension belt which are in pressure- or current free status free moving.

4.2.2 Transport

- To transport the device lift it carefully.

If the device is transported with a crane or industrial truck, secure it from falling on the ground.



4.3 Installing the device

4.3.1 Requirements for the place of installation

For installing or fastening the device a base frame is required.

The base frame must be flat and horizontal in order to guarantee a secure mounting and adjustment of the device. There are no separate foundations for the device required.

The aggregates on the device must be accessible.

A sufficient free moving space for operating and maintenance personnel must be guaranteed.

The lighting conditions must comply with the valid safety regulations.

4.3.2 Install

- Mount the device with the mounting material and adjust it.
- Control the horizontal adjustment with a machine water-level.
- Install and if necessary mount separate transported parts.
- Remove transportation locks such as tape or tension belt.
- Reassemble components that were removed for transportation.

4.4 Connect the device



DANGER

Life threatening voltage!

The electrical installation of the device must only be done by trained and authorised electricians.

- Affix the pipe for the exhaust air to the plug of the device
- Affix all supply and connection cables according to the regulations.
- When laying pipes and cables meet the required bending radii.
- Mount all connections carefully and check for tightness.
- Check the operating pressures at the pressure controllers and if necessary adjust them (data see chapter "Technical data")

4.5 Put the device into operation



DANGER

The partly complete machine must not be put into operation till it is determined that the machine / equipment in which the partly complete machine should be installed in confirms to the regulations of the Machinery Directive 2006/42/EC.

Before putting into operation make sure that:

- The device is installed and adjusted correctly.
- All screw fittings are tight.
- All cables are connected correctly.
- The electrical cabling is installed accordingly and secured.



DANGER

Mortal danger from not mounted safety equipments!

Before commissioning, all safety equipments must be checked for proper function. In case of any defects the device must not be put into operation.

- Run a test.

4.6 Store the device

4.6.1 Preparation for storage

- Depressurise all pipes and disconnect the plugs.
- Disassemble the device into all components necessary for transport.
- Treat all blank parts with preservatives.

4.6.2 Storage

- Store the device in a dry, well ventilated area protected from fouling.
 - Temperature range + 5 °C to + 35 °C
 - Humidity 30 to 95 %, non-condensing
 - Protect from ozone impact, UV radiation, vibration and shock.
- Electronic components such as electronic cards must be stored or kept in the appropriate electrostatic covers. Removal not till short before installation.

Before putting the device into operation, the electrical components need to dry at least 24 hours in the temperature range acceptable for operation and under acceptable atmospheric conditions. Also during transport and storage ensure to avoid temperatures under dew point and the occurrence of condensation when the parts are not or no more packaged.

After removal of the electrical components from areas with temperatures below + 10 °C, they have to warm up to at least + 20 °C before put into operation in the machine.



CAUTION

Warming must not be carried out with heaters. For stabilisation of the electrical components it must be done for a minimum period of 3 hours.

4.7 Disposal



CAUTION

Risk of environmental damage!

For the disposal consider the existing national and regional regulations and instructions of the manufacturers.

- Separate the packaging materials and dispose them sorted.
- Separate operating supply items and additives and dispose them professionally.
- Separate device parts according to material and dispose them professionally.



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5 Design / Function / Operation

This chapter contains information on the design, function and operation of the device and on possibly appearing malfunctions.



Also consider:

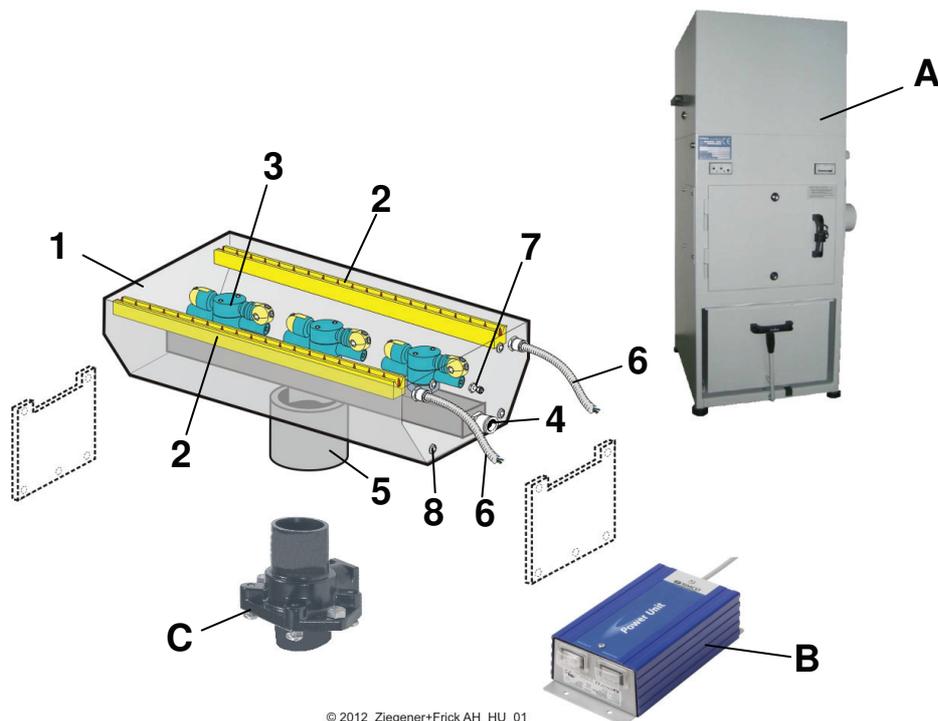
- The safety information in chapter “Safety”.
- The “Contractor documentation” in the device documentation.

INFORMATION

5.1 Design

The cleaning hood consists of rotating nozzles for blowing off the parts to be cleaned and ionisation bars, all covered in a stainless steel hood. The connecting plug for the compressed air is affixed lateral of the hood. On the connection for aspiration it is possible to affix an Transvector between the cleaning hood and the aspiration hose.

On the side of the hood are mounting holes for mounting the cleaning hood to a frame or to aluminium profiles.

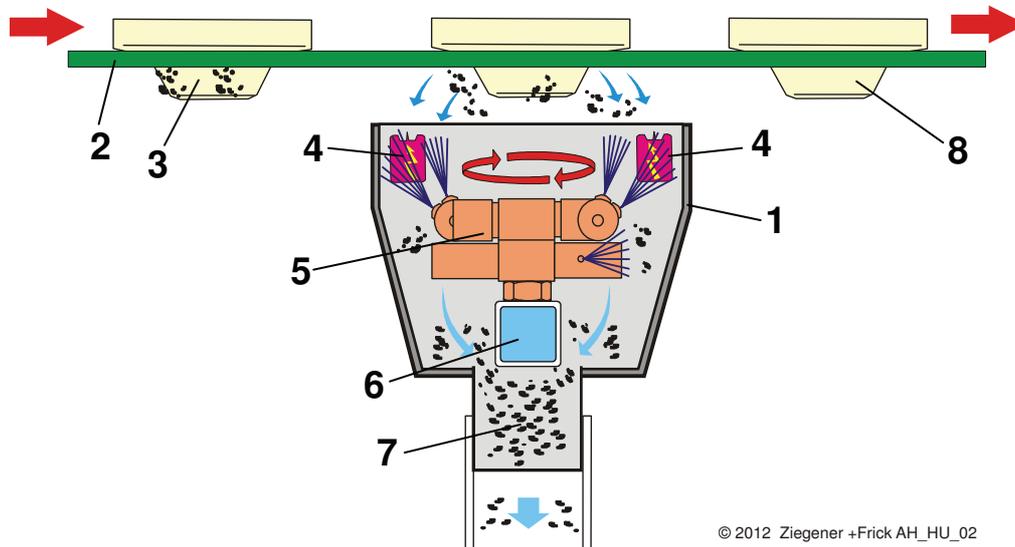


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- | | | | |
|---|--|---|------------------------------|
| 1 | Ionclean HU | A | Dust collector (Option) |
| 2 | Ion spray bars | B | Power supply device (Option) |
| 3 | Rotating nozzles | C | Transvector (Option) |
| 4 | Pneumatic connector | | |
| 5 | connection for aspiration | | |
| 6 | High voltage cable to the Power supply | | |
| 7 | Ground connection | | |
| 8 | Fastening holes | | |

5.2 Function

With the cleaning hood, particles clinging to workpieces are neutralised with ionised air. Inside the hood the particles are blown off with rotating nozzles. The loose particles are aspirated in a dust collector by a suction unit.



- 1 Cleaning hood
- 2 Conveyor belt
- 3 Workpiece with dirt particles
- 4 Ion spray bar

- 5 Rotating nozzles
- 6 Air duct for rotating nozzle
- 7 Aspirated, neutralised particles
- 8 Cleaned workpiece



5.3 Operation

The cleaning hood is fitted into an existing machine and involved in the operation of the machine.



DANGER

The partly complete machine must not be put into operation till it is determined that the machine / equipment in which the partly complete machine should be installed in confirms to the regulations of the Machinery Directive 2006/42/EC.

5.3.1 Switch on and off the device

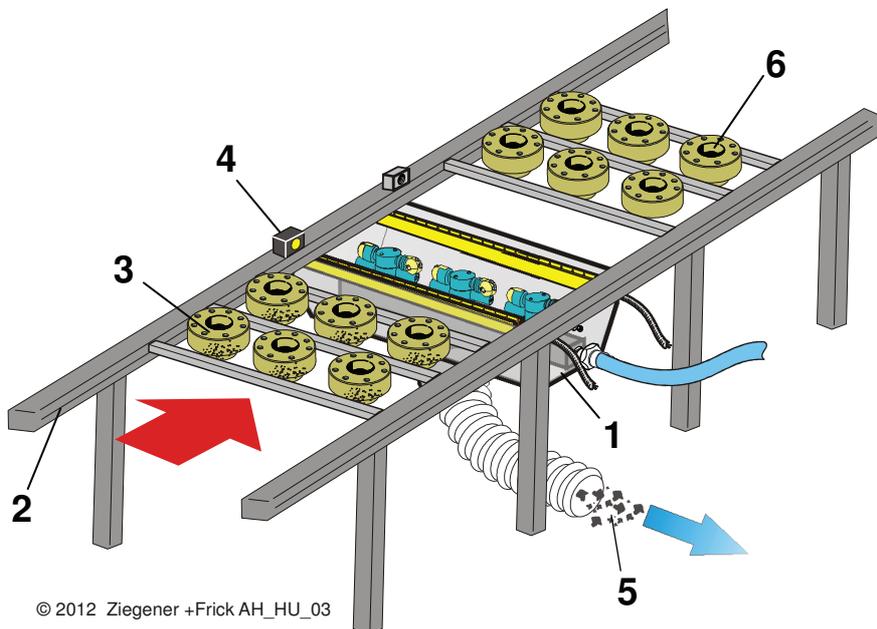
The device is switched on or off with the operating devices of the machine in which the cleaning hood is installed in.

5.3.2 Automatic operation

The device is switched on and ready for operation.

For switching on the cleaning hood, a start sensor (not included in delivery) can be installed at the conveyor.

The conveyor with the workpieces is running. When the workpieces reach an existing start sensor, the preset cycle is started.



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- | | | | |
|---|--------------------------------|---|---|
| 1 | Cleaning hood | 4 | Start sensor (not included in delivery) |
| 2 | Conveyor belt | 5 | Exhaust air with particles |
| 3 | Workpieces with dirt particles | 6 | Cleaned workpieces |



5.4 Malfunctions

Pos.	Malfunction	Cause	Repair
1	No air to the rotation nozzles and ion spray bars	No compressed air present	Check compressed air supply for correct connection and leakages
2	Device does not turn on	Power supply interrupted	Check cables and fuses
		Main switch is not turned on	Turn on the main switch
3	High voltage malfunction	Power supply interrupted	Check power supply and high voltage transformer
4	Malfunction dust collector	Dust collector defect	Check dust collector - see separate operating manual
5	Poor aspiration performance	workpiece is not correct above the hood	Adjust the hood to the workpiece
		Filter in dust collector is filled	Clean or replace the filter - see separate operating manual



Content

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6 Maintenance

This chapter provides information about service, maintenance and repair of the device and its components as well as the maintenance plan.



DANGER

The partly complete machine must not be put into operation till it is determined that the machine / equipment in which the partly complete machine should be installed in confirms to the regulations of the Machinery Directive 2006/42/EC.



INFORMATION

Also consider:

- The safety information in chapter "Safety".
- Die "Supplier documentation" in the device documentation.

6.1 Safety information

In the installation instruction you find general information about service, maintenance and repair which have to be observed.

For purchased parts such as engines, gears, pneumatic cylinders, linear guides etc. you must additionally consider the „Supplier documentation” in the device documentation.

Maintenance work must be done only by competent persons.

The maintenance personnel must be instructed by the operator and be acquainted with the installation instruction of the device and the valid safety and accident prevention regulations.

For all works, the maintenance personnel should view the drawings, parts lists and circuit diagrams.

Inform operating personnel before beginning with maintenance work! Call a supervisor!

Secure maintenance area wide-ranging. Indicate the work with appropriate signs. Especially mount information signs at the main switch, electrical enclosure, control elements and accessions.

When exchanging components and bigger assembly groups, mount and secure them carefully on lifting tool so that there is no danger from these parts. Use only suitable and technically correct lifting tools and load handling devices with sufficient carrying capacity! Do not stand or work under pending loads!

Use the provided or other safety checked lifts and working platforms when assembly work over height of the head. The climbing of working platforms on a ladder and simultaneous transport of parts with the hands is not allowed.

Don't use device parts as a climbing help!

When working at bigger height use anti-fall guard!

After completion of maintenance work and before each restarting, review the presence and function of the safety equipments.

6.1.1 Switch off the device and secure against restart

The supervisor must only allow the maintenance work, or the maintenance personnel may only begin working, if the following measures were taken:

- Turn off the device and all supply lines.
- Unlock.
- Secure against restart. Therefore turn off the main switch and lock it with a padlock. Keep the key safe or carry it! Mount a warning sign on the main switch!
- Verify voltage isolation. The voltage isolation may only be established by a qualified electrician or electro technical instructed person.
- Depressurise pneumatic pipes and secure against resetting (e.g. gate valve with padlock)

6.1.2 Cleaning

The device must be cleaned regularly in order to achieve trouble-free operation and a high quality of the products.

Use fibre-free cleaning cloths.

Do not use aggressive cleaning agents.

When using the cleaning agents you must observe the specifications of the manufacturer and the operator. Improper cleaning agents can damage or destroy components. They may also cause production problems.

When cleaning or removing of dirt, do not blow off the components with compressed air but aspirate the dirt or wipe it clean with fibre free cleaning cloths.

6.1.3 Lubrication

If parts must be lubricated, use only approved lubricants according to the specifications of the manufacturer and operator.

In no case different types of oils and fats may be mixed.



6.1.4 Maintenance

6.1.4.1 Electricity

When the electrical connection is completed, the direction of rotation of the motors must be tested.

Basically the electrician connecting the components should view the circuit diagram.

6.1.4.2 Pneumatic

Check all cables, hoses and fittings regularly for leaks and obvious damage. Repair damages immediately!

Lay and mount the compressed air lines professionally. Do not mix up the connections! Fittings, length and quality of the hoses must meet the requirements.

Before performing maintenance work on the pneumatic equipment, the piping system must be depressurised. Therefore lock the compressed air supply.

6.1.5 Disposal of operating supply items and additives

All operating supply items, for example used oil (also biologically degradable), filters, batteries, additives etc. must be separated carefully and disposed from other waste.

In order to keep the disposal costs as low as possible, used oils of the different categories should be collected separately.



CAUTION

Environmental hazard

With improper disposal, operating supply items and additives can lead to environmental damage.

- Provide a safe and environmentally disposal of operating supply items, additives and replacement parts.
- Conform to the existing national and regional regulations.



6.2 Structuring of the maintenance

The maintenance works are divided into the following measures:

1. Service (Measures to determine the actual condition)
2. Maintenance (Measure to preserve the nominal condition)
3. Repair (Measures to restore the nominal condition)

6.2.1 Service

Service includes the control of adjustment, function and wear.

Following things must be controlled:

- Mechanical damages, worn out bearings and guides, loosening parts, leaks in the hydraulic-pneumatic- and lubrication circuit.
- Visible damages of cables, hoses, fittings. Repair damages immediately.
- Remove defects in the electrical equipment immediately, such as loose connections or scorched cables.
- Regular functional testing of the safety equipment. Also of the equipment in which control the device is included.
- Foreign material, such as for example spare parts or tools, must be removed from the device.

6.2.2 Maintenance

Maintenance consists of cleaning and tightening of loose parts.

Cleaning:

- Clean the entire device regularly.
- After cleaning check all supply lines for leaks, loose connections and chafe marks. Repair defects immediately!

6.2.3 Repair

Repair involves the replacement of defective parts.



INFORMATION

The installation of new components happens, as far as not indicated in another way, in analogously reverse order of disassembly.

Defective components must only be replaced by original spare parts! When installing other components or components not decontrolled by Ziegner + Frick, the warranty of the company Ziegner + Frick GmbH expires.

The following parts must be replaced:

- All worn out, bent or defective parts.
- When screw fittings were loosening during maintenance work, retighten them with the specified locking torque.



Declaration of Incorporation

according to EC-Machinery Directive 2006/42/EC

We hereby declare that the design of the machine

Designation of the machinery: **IONCLEAN Cleaning hood**

Model: Cleaning hood HU incl. hoses

Year: 2012

conforms to the following relevant regulations:

EC-Machinery Directive 2006/42/EC

EC-Low Voltage Directive 2006/95/EC

EC-Electromagnetic Compatibility Directive 2004/108/EC

Applied harmonised standards, in particular:

Reference number	Designation
DIN EN ISO 12100-1	Safety of machinery, basic concepts
DIN EN ISO 12100-2	Safety of machinery, general design principles
DIN EN 60204-1	Electrical equipment of machines

Applied national technical specification, in particular:

BGV A1 (VBG1)	General accident prevention regulations, principles of prevention
BGV A3 (VBG4)	Electrical equipment, procedure instruction

all standards and technical specifications in the actually version

The partly complete machine must not be put into operation till it is determined that the machine / equipment in which the partly complete machine should be installed in confirms to the regulations of the Machinery Directive 2006/42/EC.

ZIEGENER + FRICK GMBH

Elektrostatic
Schillerstrasse 50
D-74248 Ellhofen

Ellhofen 6.12.13

Place, date

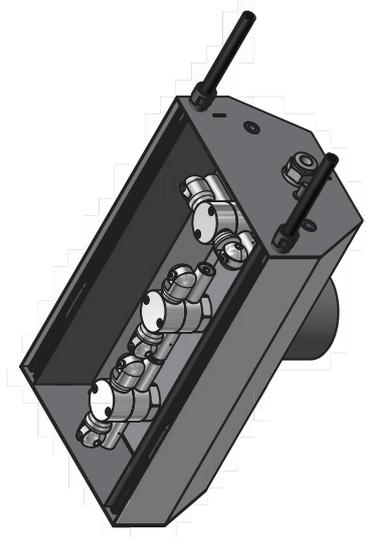
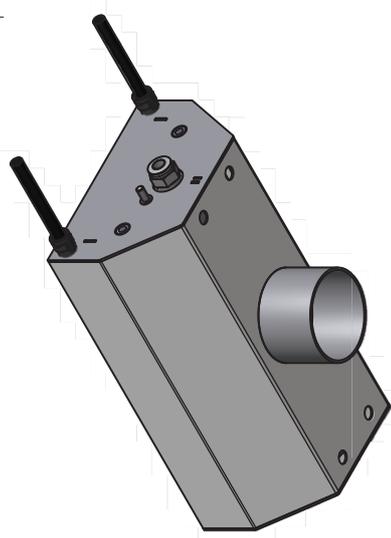
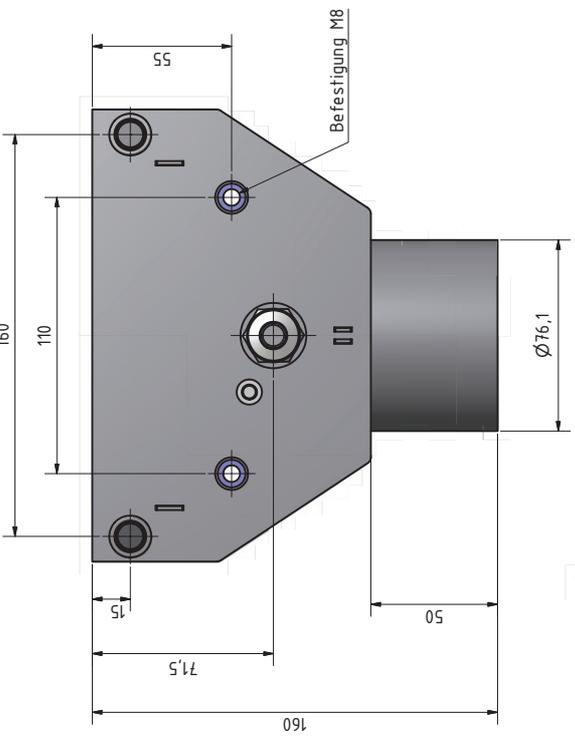
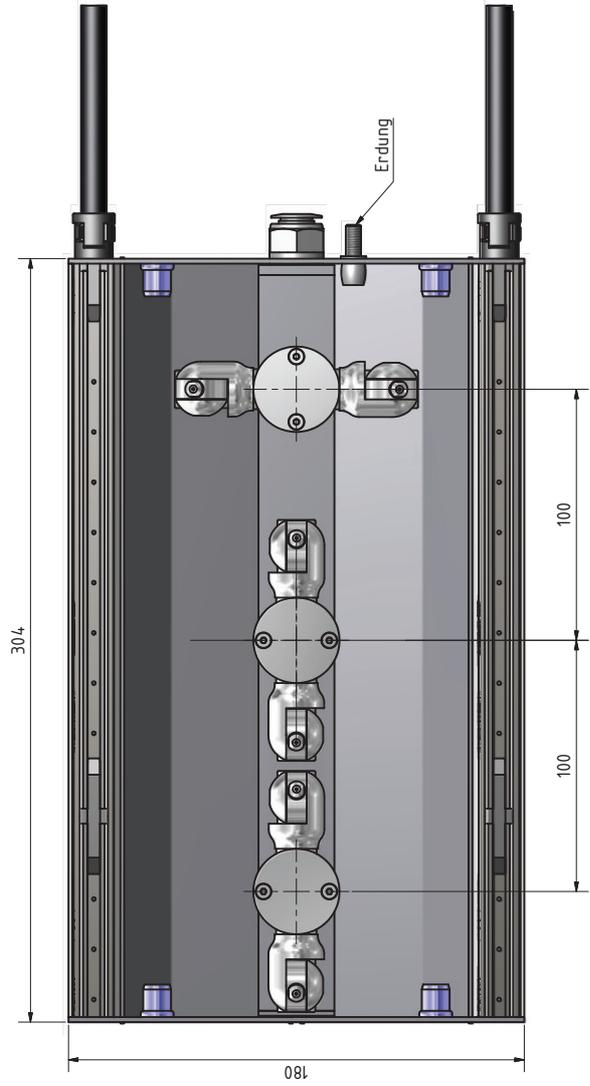
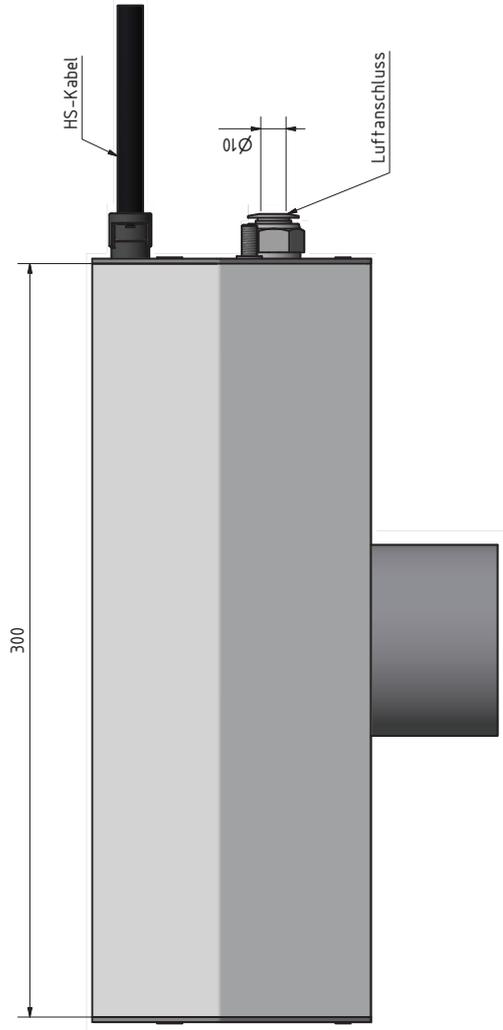
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Stamp/Signature

Managing director

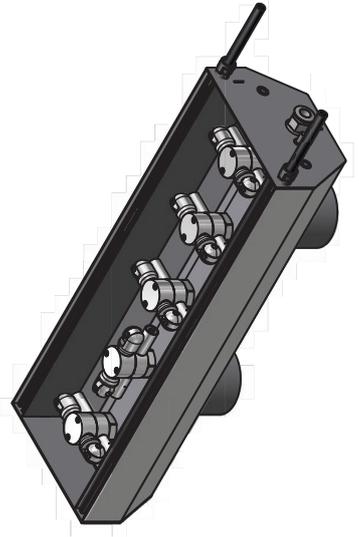
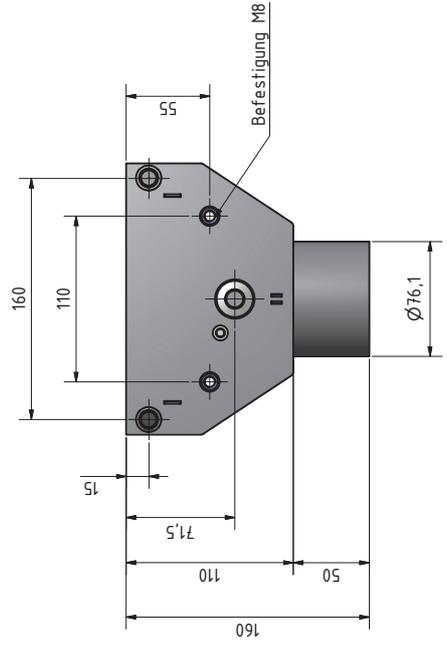
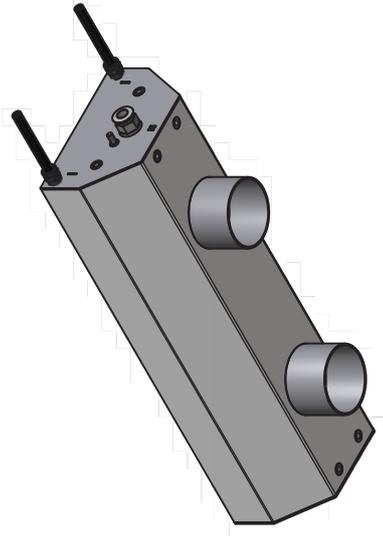
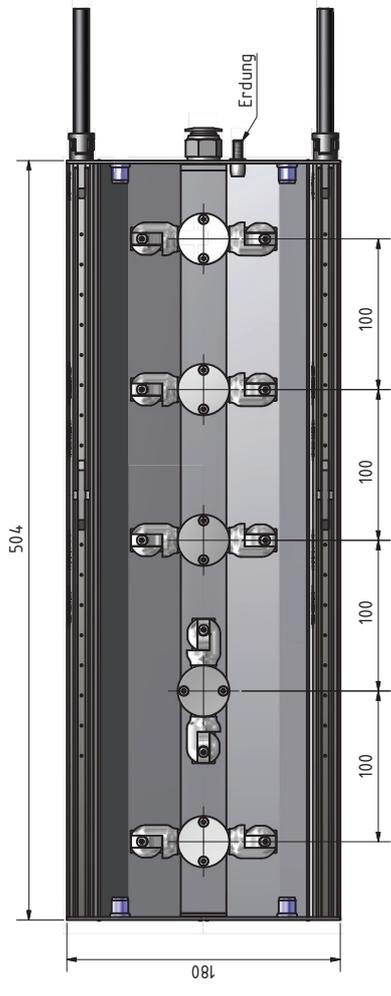
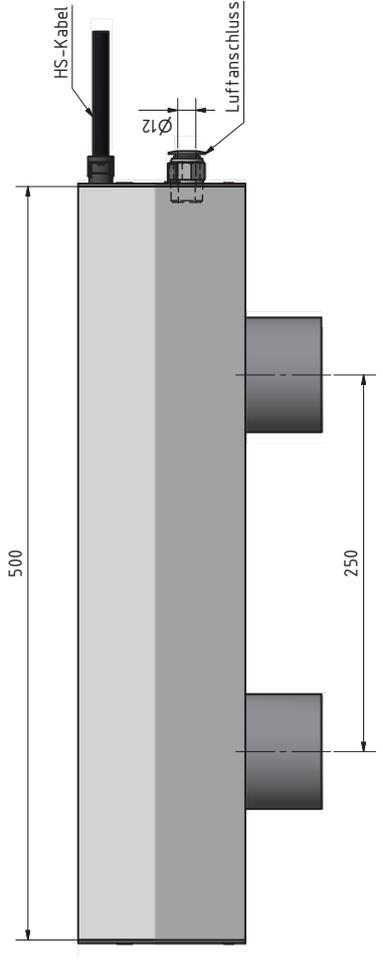
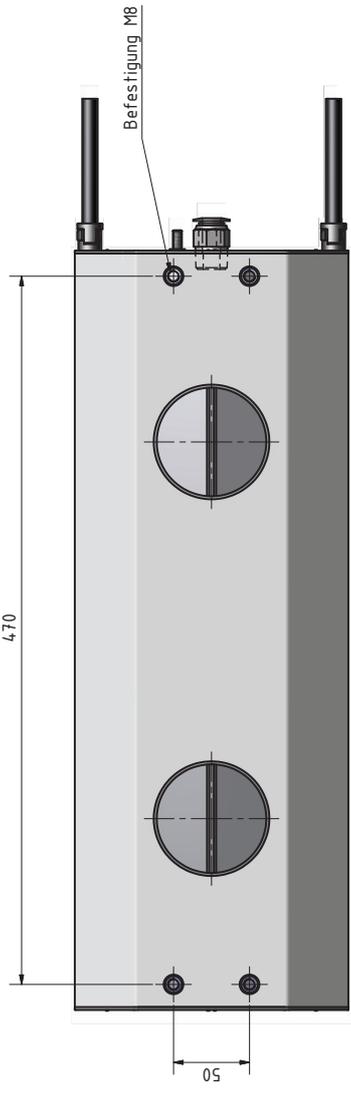
Signature

Authorised person to compile the documentation



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07.03.2012		23100259		AZ
IONclean HU 0300 VA 4KV		Technische Änderungen jederzeit vorbehalten!		

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Stk./Pcs.		Name		IONClean HU 0500 VA 4KV	
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Gezeichnet		Name		23100255	
20.08.2012		www.ziegeler-frick.de		Technische Änderungen jederzeit vorbehalten!	
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