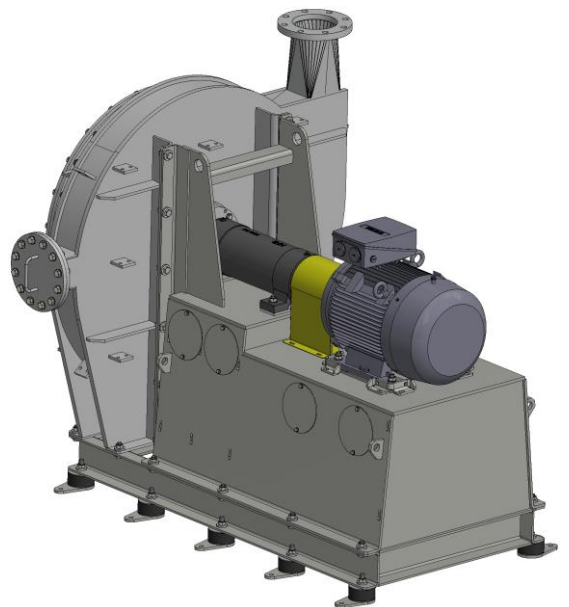
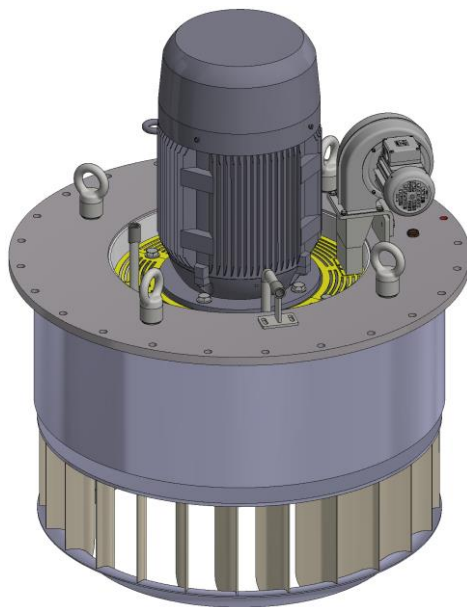


# Installation Manual

## Fan



Document number: BA-001.1  
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**This installation manual must be read and observed by the installer and the operator of the fan!**

**Translation of the original installation manual**

The figures on the title page are exemplary.

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# 1 Information

## 1.1 Information on the installation manual

This installation manual contains all important information on the installation, commissioning and operation of the fan.

You will also find information and important notes on your safety, as well as help with any issues that arise.

Secure work requires compliance with all safety and action instructions indicated in the installation manual.

Additionally, the local accident prevention provisions applicable for the area of use and the general safety provisions must be observed.

Read the installation manual carefully before starting any work!

## 1.2 Copyright protection

Provision of the installation manual to any third parties without the manufacturer's written consent is not permitted.



**NOTICE!**

*The content information, texts, drawings, figures and other illustrations are copyright-protected and subject to the commercial property rights. Any abuse is punishable.*

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Reproductions of any kind and form, even in excerpts, as well as utilization and/or disclosure of the content are not permitted without any written consent of the manufacturer.

## 1.3 Warranty

The warranty is stipulated in the general terms and conditions of Meierling Ventilatoren GmbH.

The warranty does not cover any damage caused by external influences, such as lightning strike, water, fires or transport damage. Any damage or defects that are caused by improper handling, non-intended use or improper operation, as well as any defects that are caused by use of non-genuine parts or accessories, are not covered by the warranty. All warranty claims expire if the fan has been converted or not used as intended.

Warranty claims are only accepted subject to the following conditions:

- The fan was used as intended.
- The instructions in the installation instructions and the also-applicable documents (see annex) were observed.
- No constructional and safety-technical changes were made.
- Only genuine spare parts were used.
- The maintenance and test intervals were observed.
- Installation, maintenance, servicing and repairs were performed by authorized specialists.

#### **1.4 Scope of delivery**

The scope of delivery is listed in the delivery receipt. Check that the delivery is complete and undamaged. Contact Meierling Ventilatoren GmbH at once if any parts are missing or defective.

#### **1.5 EC declaration of incorporation**

See chapter 12.

#### **1.6 Also-applicable documents**

See separate appendix.

## 2 Safety

### 2.1 Intended use

The fan was produced in correspondence with the applicable national standards and directives; it must only be used to convey air and gases. This shall not include transportation fans that may transport gases loaded with solids.

Other uses are not permitted.

The fan is designed as an incomplete machine and must be put into a safe condition by installation and assembly.

The technical data (intended temperature range, revolutions range, ambient conditions) must be observed.

Non-intended use shall be:

- Transportation of liquids and solids.
- Use in potentially explosive areas.

The fan must only be operated fully installed and in a technically impeccable condition.

On-site settings at the device must only be changed in coordination with Meierling Ventilatoren GmbH.

Meierling Ventilatoren GmbH assumes no liability for any fan changed by conversion.

### 2.2 Directives, laws and standards

The fan operator must observe the applicable laws, standards, directives and the recognized rules of the art and comply with them.

They must be observed for the entire life cycle of the fan.

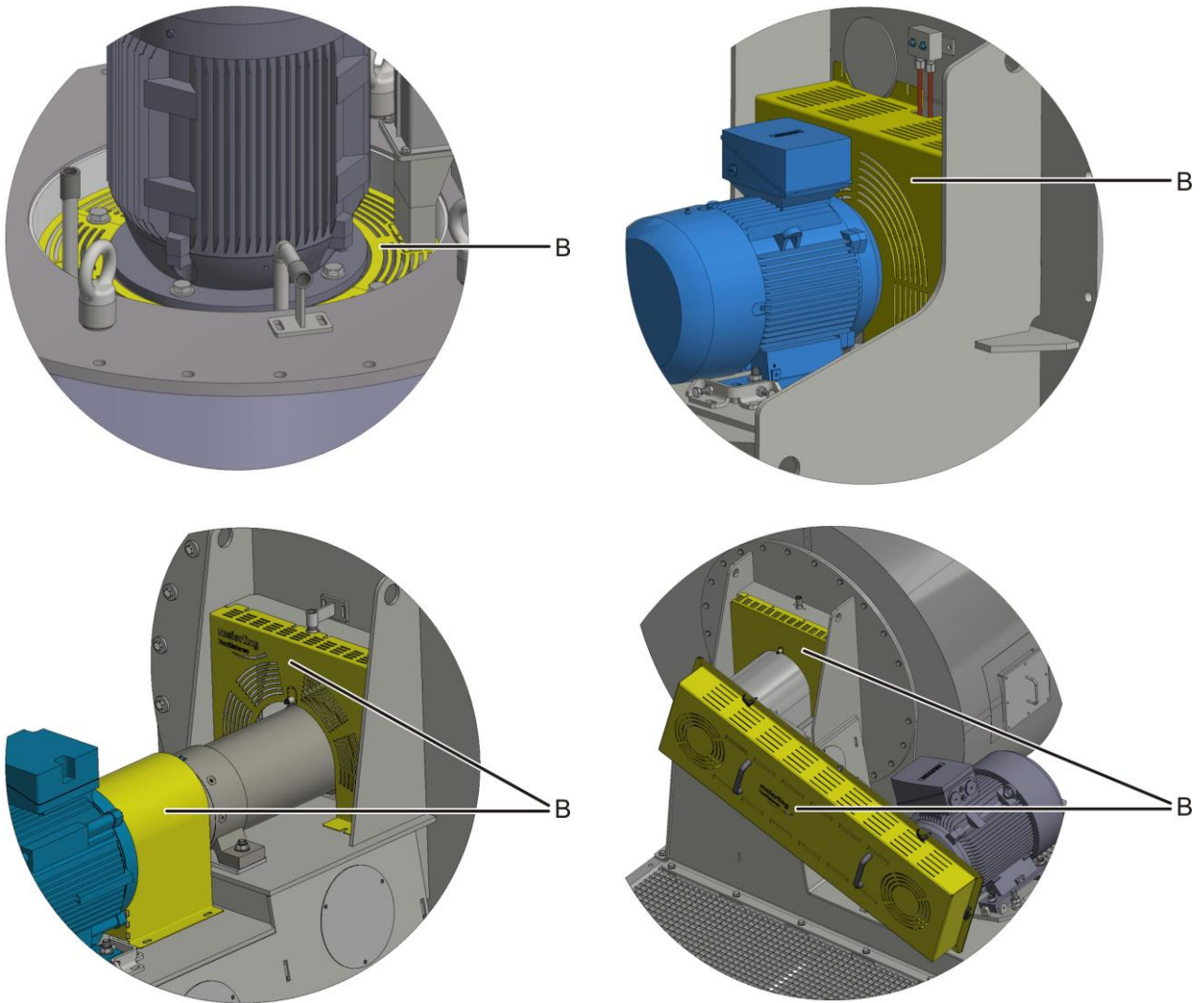
This includes the applicable, recognized work protection directives, operational specifications, etc.

### 2.3 Safety devices

The fan has the safety devices necessary for secure operation:

- Mechanical protection devices on turning parts (e.g. coupling, cooling vanes, belt drive).

The access protection for the impeller must be installed by the plant manufacturer.



*Fig. 1: Examples for contact/access protection at fans*

B Contact protection

## 2.4 Personal protection equipment

Personal protection equipment must be worn for maintenance, cleaning, assembly and disassembly work in order to minimize health risks. Therefore:

- Put on the respective designated protection equipment properly for any work, and wear it during work.
- Signs attached in the work area in addition to personal protection equipment must be observed.

### To be generally worn

Generally necessary for all work:



#### Work protection clothing

is close-fitting work clothing with low tear-resistance, tight sleeves and no protruding parts. Its main purpose is protection from being caught by movable parts.

Do not wear any rings, necklaces and other jewelry.



#### Protective gloves

to protect the hands from contact with health-hazardous substances, such as cleaning substances.



#### Safety shoes

to protect from heavy, falling parts and slipping on slippery ground.



#### Head protection


to protect from falling parts, e.g. for assembly work.



## Safety

### 2.5 Safety notes

#### 2.5.1 Structure of safety notes


<b>⚠ Signal word!</b>	
	<b>Type and source of the danger!</b> Danger sequence. – Danger remedy.

#### 2.5.2 Danger classification


The risks that may occur at the fan are classified as follows:

- Danger
- Caution


##### Danger

<b>⚠ DANGER!</b>	
	<b>DANGER!</b> This note marks a danger with a high risk. If the safety provisions are not observed, the danger may lead to death or severe injury.

##### Caution

<b>CAUTION!</b>	
	<b>Caution!</b> This note marks a danger. If the safety provisions are not observed, the danger may lead to property damage.

##### Advice and recommendations

	<b>NOTICE!</b> <i>... highlights useful advice and recommendations, as well as information for efficient and interference-free operation.</i>
---	--

## 2.6 Danger from the system

At the time of marketing, the fan corresponds to the state of the art. Nevertheless, a residual risk for people and the system remains.

### **⚠ DANGER!**



#### **Danger from electric shock!**

Electric shock may lead to death or very severe injuries. Therefore:

- Do not touch any electrical cables or exposed terminals if the power supply is not turned off!
- Turn off the power supply and secure it against accidental activation before performing any work on the electrical system.
- The electrical installation must only be performed by specialists! Applicable provisions and relevant standards must be observed.

### **⚠ DANGER!**



#### **Danger from falling off or tipping of the fan!**

The fan's weight may kill or severely injure persons or cause severe crushing. Therefore:

- Unload and assemble the fan with a stacker or gantry crane.  
The lifting points at the fan are designed for setup with a crane and must be used for installation.
- Stay outside of the danger area and never stand underneath the load.
- Use approved attachment and lifting gear for transport and installation. Its carrying strength must be suitable for the machine's weight!
- Observe the transport provision on the machine.
- The fan is heavy at the top and must be secured against falling off and turning in transport and lifting.
- The fan must be attached with the approved attachment materials.
- Secure parts against falling off during disassembly.

**⚠ DANGER!**

**Danger from pulling in and catching!**

The turning impeller of the fan causes a risk of pulling in and catching. This may kill or severely injure persons. Therefore:

- Install the fan so that a risk from turning parts is prevented.

**Commissioning**
**⚠ DANGER!**

**Danger from malfunctions of the fan!**

Malfunction of the fan may kill or severely injure persons. Therefore:

- Check all safety-relevant functions individually at initial commissioning!
- Check the rotating direction of the motor and free operation of the impeller!

**Operation**
**⚠ DANGER!**

**Danger to the hearing from noise!**

Noise may permanently damage hearing. Therefore:

- The operator must take measures against noise!
- Wear hearing protection when operating the machine!

**⚠ DANGER!**

**Danger of burns!**

Hot surfaces may cause burns. Therefore:

- Observe warning signs on the machine!
- Wear personal protection equipment!

**⚠ DANGER!**

**Danger of injury!**

Taking away covers and safety installations poses a risk of burns and injuries. Therefore:

- Do not remove safety covers in operation!

**WARNING!**



**Danger at damage to the bearings!**

When fan stops at a process temperature above 100 °C, the bearings may be damaged. Therefore:

- Let the fan lag until the temperature of the system drops to below 100 °C!
- When the fan stands still, cool the drive part by external ventilation! See chapter 0.

**Maintenance/troubleshooting**

**⚠ DANGER!**



**Danger of injury!**

Removing covers and safety installations poses a risk of burns and injuries due to hot or dangerous gases escaping under pressure. Wrong disassembly and installation of components may cause malfunctions. Therefore:

- Have maintenance and servicing/troubleshooting only performed by specialists.
- Shut down the machine by the main switch; power down the system and secure it against accidental activation.
- Re-install safety covers and protection devices after maintenance and servicing/troubleshooting!
- Wear personal protection equipment!

**⚠ DANGER!**



**Dangers from gas!**

Gas escaping during maintenance and servicing may lead to poisoning, dazing and breathing problems. Therefore:

- Inertize the machine with air before any maintenance and servicing/troubleshooting!
- After-treat the conveyed gas accordingly depending on its properties (operator's responsibility)!
- Wear personal protection equipment!

### 3 Technical data

For technical data, see the data sheet in the also-applicable documents.

For dimensions, see the dimensional sheet in the also-applicable documents.

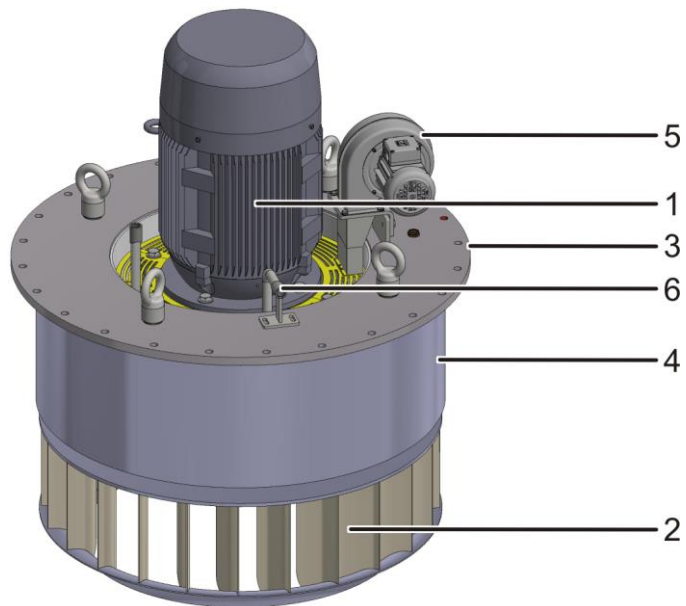
If all sensors are already wired ex works, see the wiring/circuit diagram in the also-applicable documents.

## 4 Setup of the fan



**NOTICE!**

*Equipment of the fan may deviate. The following figures show exemplary equipment.*



*Fig. 2: Setup – example 1*

- |   |                                   |
|---|-----------------------------------|
| 1 | Drive motor                       |
| 2 | Impeller                          |
| 3 | Carrying structure/carrying plate |
| 4 | Isolation plug                    |
| 5 | External cooling fan (optional)   |
| 6 | Blowing nozzle (optional)         |

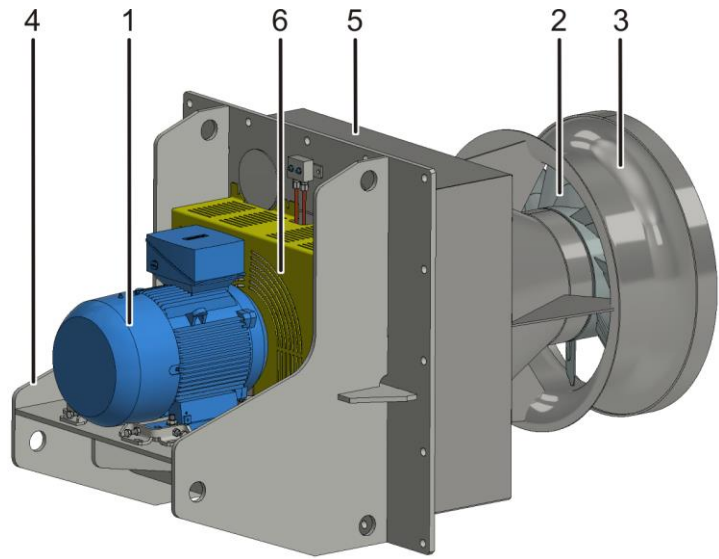


Fig. 3: Setup – example 2

- 1 Drive motor
- 2 Impeller
- 3 Inflow nozzle
- 4 Carrying structure
- 5 Isolation plug
- 6 Coupling & block bearing

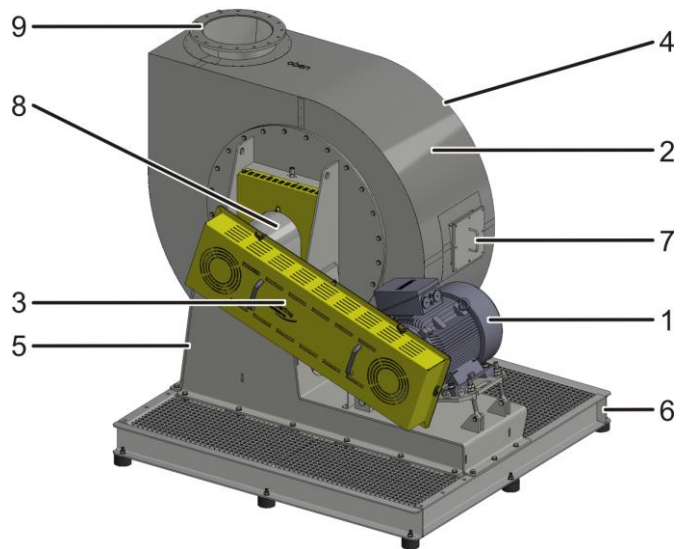
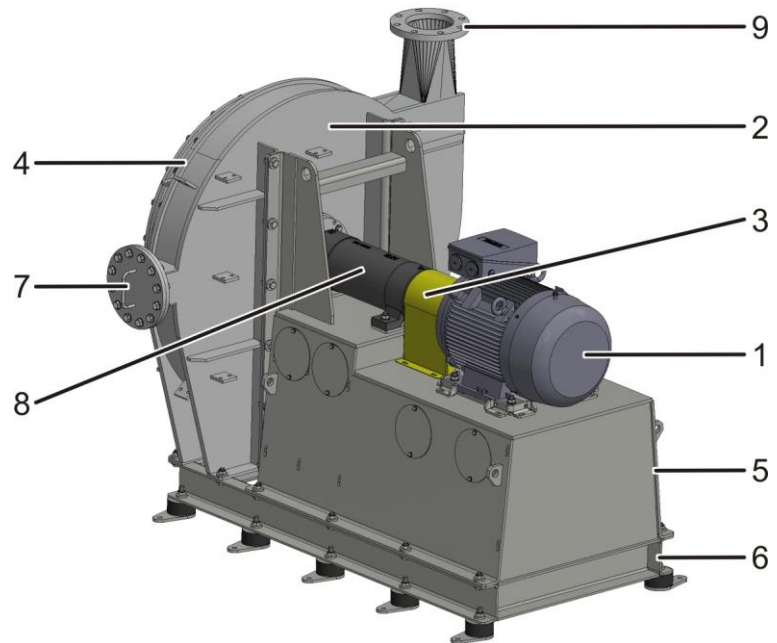


Fig. 4: Setup – example 3

- 1 Drive motor
- 2 Impeller
- 3 Belt drive
- 4 Spiral housing
- 5 Bracket
- 6 Basic frame
- 7 Inspection opening (optional)
- 8 Block bearing
- 9 Pressure flange




*Fig. 5: Setup – example 4*


- 1 Drive motor
- 2 Impeller
- 3 Coupling
- 4 Spiral housing
- 5 Bracket
- 6 Basic frame
- 7 Inspection opening (optional)
- 8 Block bearing
- 9 Pressure flange



## 5 Transport and storage

### 5.1 Transport

<b>⚠ DANGER!</b>	
	<p><b>Danger from falling off or tipping of the fan!</b></p> <p>The fan's weight may kill or severely injure persons or cause severe crushing. Therefore:</p> <ul style="list-style-type: none"> <li>– Unload and assemble the fan with a stacker or gantry crane. The lifting points at the fan are designed for setup with a crane and must be used for installation.</li> <li>– Stay outside of the danger area and never stand underneath the load.</li> <li>– Use approved attachment and lifting gear for transport and installation. Its carrying strength must be suitable for the machine's weight!</li> <li>– Observe the transport provision on the machine.</li> <li>– The fan is heavy at the top and must be secured against falling off and turning in transport and lifting.</li> <li>– The fan must be attached with the approved attachment materials.</li> </ul>

<b>WARNING!</b>	
	<p><b>Danger at damage to the impeller!</b></p> <p>If the fan is put down on the impeller, the impeller may be damaged. Therefore:</p> <ul style="list-style-type: none"> <li>– Do not put the fan down on the impeller!</li> <li>– If the fan must be put down, use the transport frame or support the fan to avoid strain on the impeller.</li> </ul>

The fan is transported with a wood transport frame. The fan is screwed to the transport frame via the carrying structure or the base frame.

The high center of gravity (the center of gravity is above the supporting surface) means that the fan must be secured against tilting when it is transported with a stacker.

When transporting with the gantry crane, use the lifting points at the fan and additionally secure the motor against turning and tilting by the ring screw.

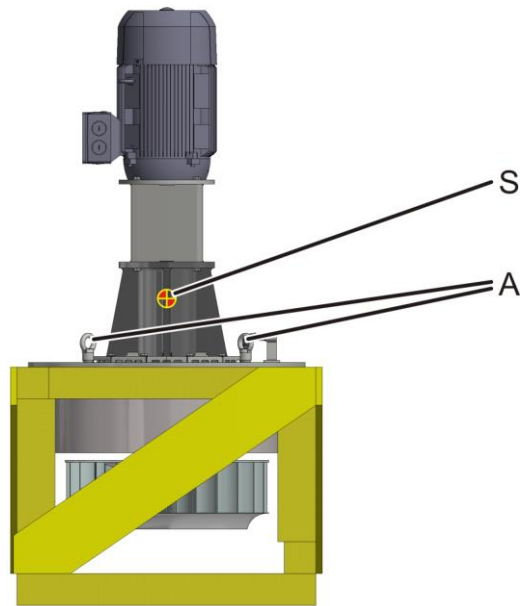


Fig. 6: Example for transport of a fan with a high center of gravity

- A Attachment points
- S Center of gravity

If the fan is already delivered in a housing, it can be taken to the site of setup with a stacker. For this, move the stacker fork under the basic frame or use stacker pockets (if present). Alternatively, lift it by the lifting points with shackles and slings. The fan must be secured against tipping here as well (see p. 17).

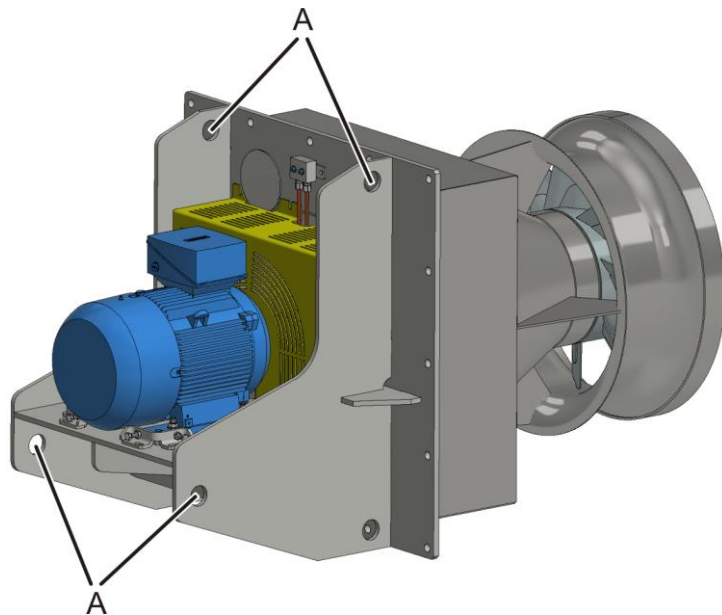


Fig. 7: Attachment points for transport at the fan – example 2

- A Attachment points

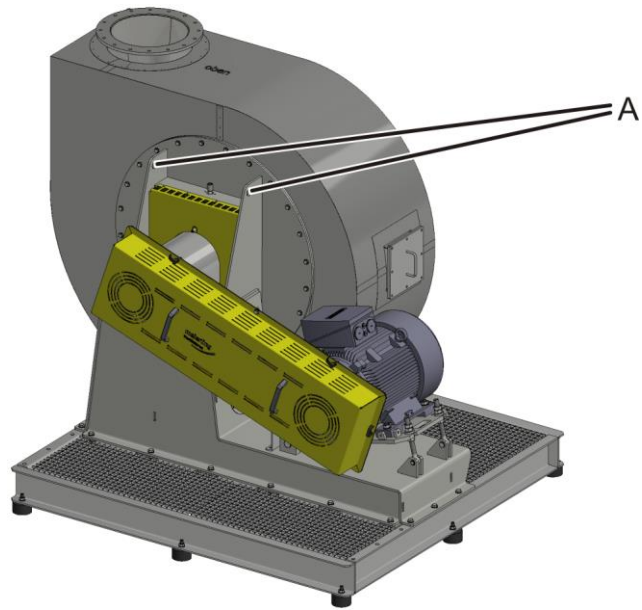


Fig. 8: Attachment points for transport at the fan – example 4

A Attachment points

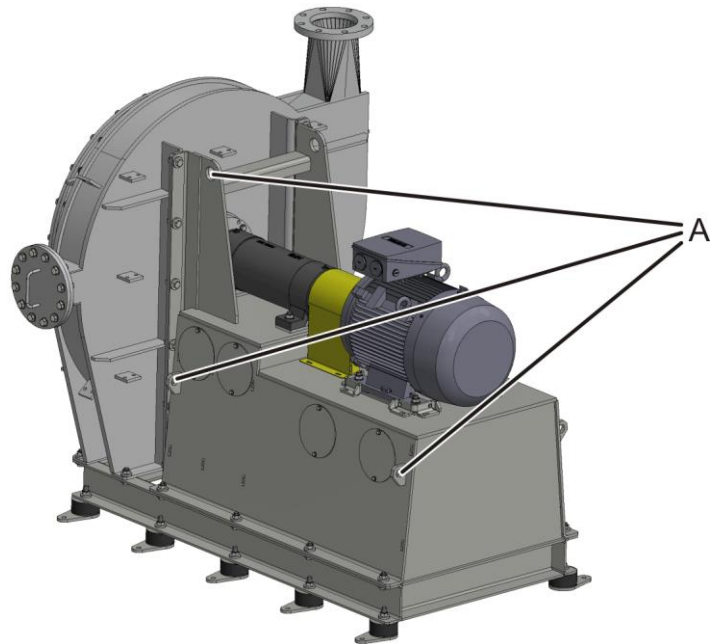


Fig. 9: Attachment points for transport at the fan – example 5

A Attachment points

## 5.2 Storage

Fans must be stored dry and at a temperature between 10 and 30 °C. Non-observation threatens to cause damage to the electrical motors, bearings, coats of paint and other electrical or mechanical parts.

During an extended storage period, the impeller/bearing/motor must be turned manually every month. Ensure that the shaft stops in a new, offset resting position after turning.

For storage periods of > 1 year, the old grease must be washed from the bearings and replaced with new grease before commissioning.

- Parts of rubber-like materials must be examined for brittleness every year.
- Parts of metal must be inspected for corrosion protection or preservation every year. It must be improved on demand.

## 6 Installation

### **⚠ DANGER!**



#### **Danger from falling off or tipping of the fan!**

The fan's weight may kill or severely injure persons or cause severe crushing. Therefore:

- Unload and assemble the fan with a stacker or gantry crane.  
The lifting points at the fan are designed for setup with a crane and must be used for installation.
- Stay outside of the danger area and never stand underneath the load.
- Use approved attachment and lifting gear for transport and installation. Its carrying strength must be suitable for the machine's weight!
- Observe the transport provision on the machine.
- The fan is heavy at the top and must be secured against falling off and turning while lifting.
- The fan must be attached with the approved attachment materials.

### 6.1 Mechanical installation

### **⚠ DANGER!**



#### **Danger from pulling in and catching!**

The turning impeller of the fan causes a risk of pulling in and catching. This may kill or severely injure persons. Therefore:

- Install the fan so that a risk from turning parts is excluded.

**WARNING!**



**Danger of damage to the impeller!**

If the fan is put down on the impeller, the impeller may be damaged. Therefore:

- Do not put the fan down on the impeller!
- If the fan must be put down, use the transport frame or support the fan to avoid strain on the impeller.

The fan is heavy at the top and must be secured against falling off, tilting and turning while lifting.

**Procedure:**

- Check the fan for transport damage.  
Turn the fan impeller manually and check it for free and silent operation.

**Fan without spiral housing**

- Attach the fan to the carrying plate on the crane by the 4 lifting points (ring screws). Additionally secure it against turning and tilting by the ring screw of the motor.
- Release the screws that hold the fan in the transport frame and lift the fan from the transport frame.
- Screw the fan to the carrying plate at the site of setup (for the screw specifications, see the dimensional sheet).
- Install access protection for the impeller.


**Horizontal installation position**


- If the fan is to be installed in the horizontal position, it must be tilted by 90° while suspended. It is recommended to use the two upper lifting points (ring screws) on the carrying plate and to stabilize the fan with a second crane on the ring screw of the motor. The fan must not be put down on the impeller.

**Fan with spiral housing**

- If the fan is already delivered in a spiral housing, it can be taken to the site of setup with a stacker. For this, move the stacker under the basic frame or use stacker pockets (if present). Alternatively, lift it by the lifting points with shackles and slings.
- Fans with housing may be partially put down directly with their dampers on the ground.  
If assembly plates are present, screw the fans on at the site of setup (for bore specifications for the screws, see the dimensional sheet).
- Install the intake and discharge flange at the intended pipe/expansion joint.

## 6.2 Electrical installation

<b>⚠ DANGER!</b>	
	<p><b>Danger from electric shock!</b></p> <p>Electric shock may cause death or very severe injuries. Therefore:</p> <ul style="list-style-type: none"> <li>– Do not touch any electrical cables or exposed terminals if the power supply is not turned off! Turn off the power supply before working on the electrical system.</li> <li>– The electrical installation must only be performed by specialists! Applicable provisions and relevant standards must be observed.</li> </ul>

<b>WARNING!</b>	
	<p><b>Danger of damage to the motor by overvoltage!</b></p> <p>Check the admissible voltage for the motor before connection!</p>

**Procedure:**

- Connect the earthing bolt (if present).
- Connect the motor (see operating instructions/connection diagram of the motor).
- Wire the sensors and connect them (see documentation of the sensors).

If the sensors are already wired, and if there is a terminal box, see the wiring/circuit diagram.

## 6.3 Installation inspection

**Procedure:**

- Check the mechanical installation.
- Check free operation of the impeller.
- Check electrical installations (see wiring/circuit diagram (optional)).
- Check the rotation direction of the impeller.

## 7 Commissioning

### **⚠ DANGER!**



#### **Danger from malfunctions of the fan!**

Malfunction of the fan may kill or severely injure persons. Therefore:

- Check all safety-relevant functions individually during initial commissioning!
- Check the rotating direction of the motor and free operation of the impeller!

#### **Procedure:**

- Check that the mechanical protection devices and the access protection at the impeller are present and have been properly installed.
- Turn the motor on briefly and then off again. Compare the rotating direction and running direction to the arrows on the housing or the carrying plate. If applicable, look at the cooling vanes of the motor from above in order to determine the rotating direction.
- Check the motor current consumption values and throttle the fan load if the motor is overloaded.
- Check that the sensors are supplying signals.



## 8 Operation

### **⚠ DANGER!**



#### **Danger to the hearing from noise!**

Noise may permanently damage hearing. Therefore:

- The operator must take measures against noise!
- Wear hearing protection when operating the machine!

### **⚠ DANGER!**



#### **Danger of burns!**

Hot surfaces may cause burns. Therefore:

- Observe warning signs on the machine!
- Wear personal protection equipment!

### **⚠ DANGER!**



#### **Danger of injury!**

Taking away covers and safety installations poses a risk of burns and injuries. Therefore:

- Do not remove safety covers in operation!

### **WARNING!**



#### **Danger at damage to the bearings!**

The bearings may be damaged if the fan stops at a process temperature above 100 °C. Therefore:

- Let the fan lag until the temperature of the system drops to below 100 °C!
- When the fan stands still, cool the drive part by external ventilation! See chapter 0.

The fans must only be started up from standstill.

Only operate the fans in the calmly running condition (see DIN ISO 10816-1/DIN ISO 10816-3).

## 8.1 Cooling of bearings

Cooling of the machine bearings via the cooling vane is only effective with the fan running. Therefore, the fan must lag until the temperature in the system drops below 100 °C when the machine system is stopped.

The grease in the bearings may leak or crust if the fan is turned off while hot.

The bearings may be damaged as a consequence.

If the fan must be turned off while the system has a temperature in excess of 100 °C or if the power fails, the cooling vane must be cooled by external ventilation.

The air jet of a second fan or a compressed air connection must be pointed directly at the area of the impeller-side bearing. This external cooling must start no later than 1 minute after standstill and it must continue until the temperature in the furnace has dropped to below 100 °C.

At  $T \geq 700$  °C, permanent external ventilation of the cooling vane must be ensured.

## 9 Maintenance and cleaning

### **⚠ DANGER!**



#### **Danger of injury!**

Removing covers and safety installations poses a risk of burns and injuries due to hot or dangerous gases escaping under pressure. Wrong disassembly and installation of components may cause malfunctions. Therefore:

- Have maintenance and servicing only performed by specialists.
- Shut down the machine by the main switch; power down the system and secure it against accidental activation.
- Re-install safety covers and protection devices after maintenance and servicing!
- Wear personal protection equipment!

### **⚠ DANGER!**



#### **Dangers from gas!**

Gas escaping during maintenance and servicing work may lead to poisoning, dazing and breathing problems. Therefore:

- Inertize the machine with air before any maintenance and servicing work!
- After-treat the conveyed gas accordingly depending on its properties (operator's responsibility)!
- Wear personal protection equipment!

**Maintenance and cleaning**

**⚠ DANGER!**



**Danger from electric shock!**

Electric shock may cause death or very severe injuries. Therefore:

- Disconnect the machine from the power supply before any maintenance and servicing and secure it against accidental activation (e.g. lockable main switch at the control cabinet).
- Do not touch any electrical cables or exposed terminals if the power supply is not turned off!
- Maintenance and servicing at the electrical installation must only be performed by a specialist!

**⚠ DANGER!**



**Danger of burns!**

Hot surfaces may cause burns. Therefore:

- Let the machine cool off before any work!
- Wear personal protection equipment!

**⚠ DANGER!**



**Danger of crushing!**

The weight of falling parts of the fan may kill or severely injure persons or cause severe crushing. Therefore:

- Secure parts against falling off during disassembly.

**9.1 Equipment**

Equipment	Type
Lubricant for bearings	See lubrication instructions
Lubricant for the motor	See operating manual/lubrication instructions for the motor

*Tab. 1: Equipment*

Only the lubricants specified by the manufacturer must be used. Contaminated and mixed lubricants are not permitted.

## Maintenance and cleaning

### 9.2 Maintenance

Corrosion, wear and more severe adhesions at the impeller are not permitted and must be avoided.

Clean the machine before any maintenance work. See chapter 9.3.

Maintenance interval	Maintenance work
Every 3 months	Check the fan for calm, vibration-free operation. Deposits of dust on the impeller blades cause imbalance, uneven operation and damage to the motor bearing. Impellers with an imbalance must be cleaned. If the imbalance continues, have the impeller balanced dynamically by Meierling Ventilatoren GmbH.
Semi-annually, more frequently if contamination is severe	Cleaning the accessories (e.g. protection and inflow grille) and the condensation drain (if present).
At least annually	Replace the grease lubrication of the two roller bearings. See lubrication instructions.
Annually	Check the seat of all screw connections (in particular the foundation and attachment screws for the impeller, motor and connections).
Annually	Check the electrical installation.
Annually	Check vibration dampers and flexible connection pieces for free movement (if applicable).
Annually	Check properties of the surface protection. Improve/replace if applicable.
Annually	Check the belt for wear and belt tension (for the tension force, see the rating plate).
Annually	Check the coupling (see maintenance instructions of the coupling).
Annually	Check the condition of the shaft seal.
See motor maintenance instructions	Service, lubricate and clean the drive motor. See maintenance instructions of the motor.
If vibrations appear	Adjust the coupling. Contact Meierling Ventilatoren GmbH.
If vibrations appear	Adjust the V-belt. Contact Meierling Ventilatoren GmbH.

Tab. 2: Maintenance work

### 9.3 Cleaning

Outwardly clean the fan, the hood of the motor fan blade and the ventilation slits of the contact protection, as well as the cooling fins of the motor.

## 9.4 Disassembly/assembly of the impeller

The impeller is placed on the shaft end of the drive motor with an extended hub (except for the design with bearing shaft or screw connection from the top).

The holding screw and the jacking thread are recessed in the hub under a layer of insulation wool.

### 9.4.1 Disassembly

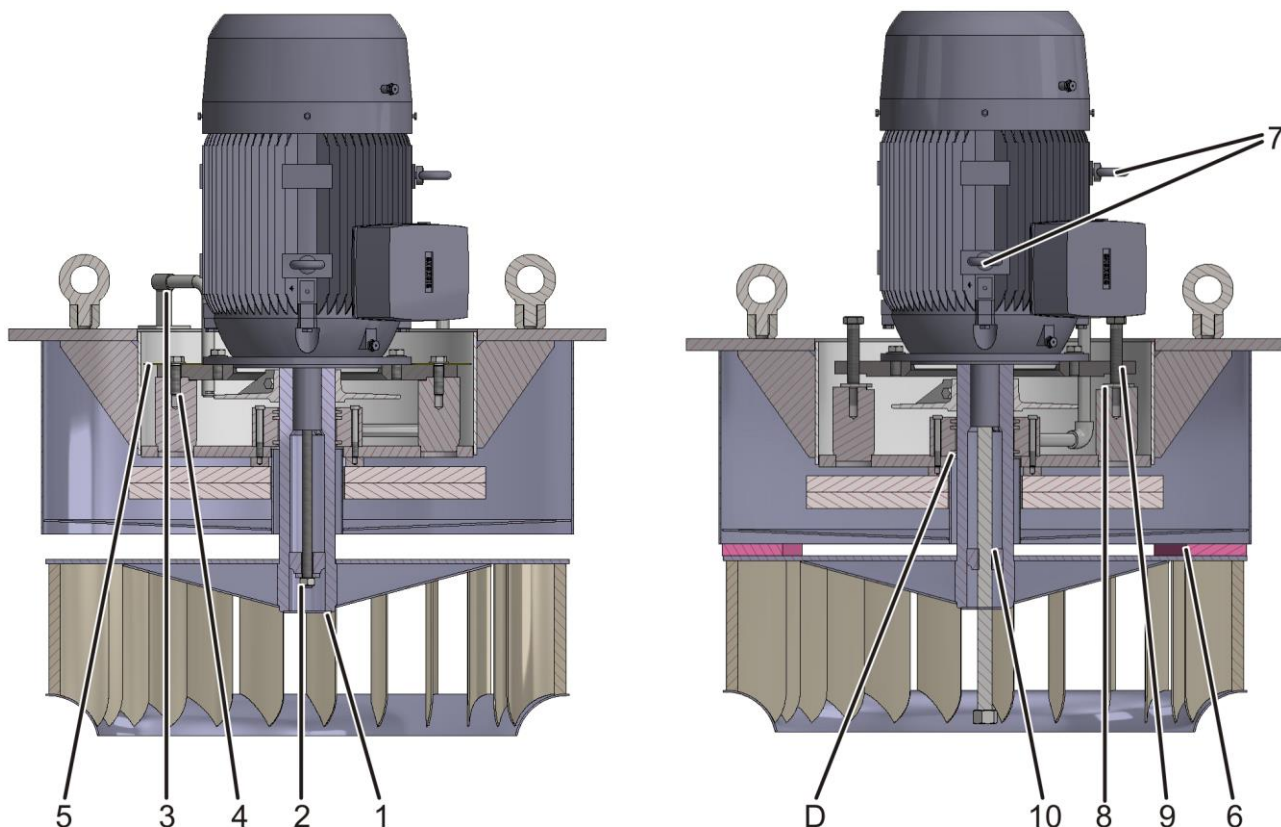


Fig. 10: Disassembly

#### Procedure:

1. Remove the hub lid.
2. Remove the holding screw.
3. Remove accessories if present.
4. Remove the hexagon screws.
5. Remove the contact protection.
6. Apply spacer strips between the impeller and the plug jacket.
7. Lift the fan with a crane by the engine crane rings.

## Maintenance and cleaning

8. Place the washers between the jacking screws and the motor support bolts.
  9. Push off the impeller by screwing in the hexagon screws evenly.
  10. Support jacking with the threaded rod if necessary.
- D Replace the sealing rings during reassembly.

### Disassembly of the fans with bearings

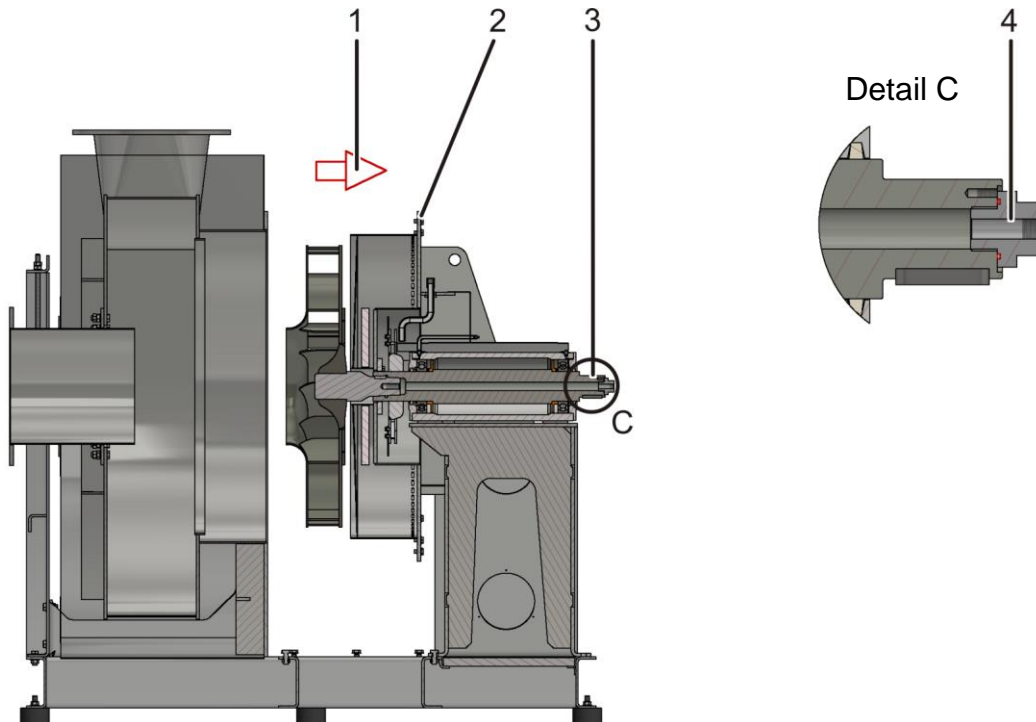


Fig. 11: Disassembly of the fans with bearings

#### Procedure:

1. Remove the fan and put it in the position appropriate for assembly (make the impeller accessible).
2. Secure the impeller against falling off.
3. Remove the contact protection, holding screw and safety screw/make the jacking thread accessible.
4. Screw the jacking adapter with O-ring (see spare parts list) and sealing tape into the shaft thread. Push the impeller out of the shaft cone with the hydraulic press (connection thread 3/8 NPT), applying max. 700 bar.

### **9.4.2 Assembly**

**Procedure:**

- The impeller is assembled in the reverse order as disassembly.
- Apply lubricant (high-temperature assembly paste) onto the surface of the hub bore before assembly.
- Use the hydraulic clamping device or threaded rod with washer and nut (in the same dimension) for applying the impeller.
- Secure the impeller with the holding screw. Observe the torque for the present thread size!

### **9.5 Spare parts**

The spare parts can be taken from the provided spare parts list (see also-applicable documents).

### **9.6 Repairs**

Repairs and service of the system must only be performed by trained specialists. Only genuine components from the spare parts list must be used as spare parts. Warranty shall lapse if any changes to the fan are made by unauthorized persons or if any third-party parts are installed.



## 10 Troubleshooting/remedy

### **⚠ DANGER!**



#### **Danger from electric shock!**

Electric shock may cause death or very severe injuries. Therefore:

- Disconnect the machine from the power supply before removing any faults, and secure it against accidental activation (e.g. lockable main switch at the control cabinet).
- Do not touch any electrical cables or exposed terminals if the power supply is not turned off!
- Fault removal at the electrical installation must only be performed by a specialist!

### **⚠ DANGER!**



#### **Danger of injury!**

Removing covers and safety installations poses a risk of burns and injuries due to hot or dangerous gases escaping under pressure. Wrong disassembly and installation of components may cause malfunctions. Therefore:

- Fault removal must only be performed by specialists.
- Re-install safety covers and protection devices after fault removal!
- Wear personal protection equipment!

### **⚠ DANGER!**



#### **Danger of burns!**

Hot surfaces may cause burns. Therefore:

- Let the machine cool off before any work!
- Wear personal protection equipment!

**⚠ DANGER!**



**Dangers from gas!**

Gas escaping during fault removal may lead to poisoning, dazing and breathing problems. Therefore:

- Inertize the machine with air before any fault removal work!
- After-treat the conveyed gas accordingly depending on its properties (operator's responsibility)!
- Wear personal protection equipment!

**⚠ DANGER!**



**Danger of crushing!**

The weight of falling parts of the fan may kill or severely injure persons or cause severe crushing. Therefore:

- Secure parts against falling off during disassembly.

## 10.1 Qualification of staff

Fault removal must only be performed by authorized specialists, under consideration of the described instructions and provisions.

## 10.2 Faults

Check the power supply before troubleshooting.

<b>Fault</b>	<b>Possible cause</b>	<b>Measure</b>
Vibrations, uneven operation of the fan	Bearing damaged	Replace bearing
	Imbalance in the impeller	Have the impeller dynamically balanced by Meierling Ventilatoren GmbH
	Dust deposits at the impeller	Clean the impeller
	Wear at the impeller	Replace the impeller
	Belt drive incorrectly adjusted	Adjust belt drive
	Coupling beaten out	Replace coupling
	Damaged motor bearing	Replace motor bearing
	Motor check	Motor instructions
Fan does not turn	Power supply interrupted, motor defective, cable broken	Check power supply, check motor, check cable
	Bearing stuck, bearing damaged	Replace bearing
	Impeller deformed/blocked	Replace the impeller
	Foreign bodies in the impeller	Remove foreign body, check impeller for damage
Sensor supplies no signal	Sensor defective, cable break	Replace sensor, check cable

*Tab. 3: Faults*

## 11 Disassembly and disposal

### **⚠ DANGER!**



#### **Danger of death from electrical current and other energies!**

Electrical current and other energies may cause death or severe injury. Therefore:

- The fan must only be disassembled by safety-technically instructed staff under observation of the local safety provisions.
- Disconnect the fan from any external power supply before disassembly.

### **⚠ DANGER!**



#### **Danger of injury!**

Pressurized gas in the machine that escapes suddenly may cause severe injury. Therefore:

- Before disassembly, adjust the pressure in the machine to ambient pressure by opening the ventilation valve!
- Check the pressure with the pressure gauge!

### **⚠ DANGER!**



#### **Dangers from gas!**

Gas escaping during disassembly may lead to poisoning, dazing and breathing problems. Therefore:

- Inertize the machine with air before disassembly!
- After-treat the conveyed gas accordingly depending on its properties (operator's responsibility)!
- Wear personal protection equipment!

**Disassembly and disposal****⚠ DANGER!****Danger of burns!**

Hot surfaces may cause burns. Therefore:

- Let the machine cool off before disassembly!
- Wear personal protection equipment!

**⚠ DANGER!****Danger from falling over or falling off of system parts!**

System parts falling off or falling down during disassembly of the machine poses a risk of crushing, pinching or shearing off of limbs. Therefore:

- Secure such parts against falling off during disassembly of the machine and system parts and use sufficiently sized load handling devices (suitable slings) for transport.
- Stay outside of the danger area and never stand underneath the load.
- Use suitable attachment and lifting gear for transport and installation. Its carrying strength must be suitable for the machine's weight!
- Observe the transport provision on the machine.
- Do not disassemble the components under load or tension.

A fan that can no longer be used should not be disassembled and recycled as one unit, but in its components sorted by the type of materials. Non-recyclable materials must be disposed of environmentally compatibly.

- Before disassembly and disposal of the fan, the fan must be completely disconnected from the power supply.
- Disassembly and disposal of the fan must only be performed by specialists.
- The components must be disposed of according to the specific provisions in the respective country.



**NOTICE!**

*Danger to the environment from hazardous substances!*

- *Incorrect handling of environmentally hazardous substances, and in particular incorrect disposal, may cause considerable damage to the environment.*
- *Suitable measures are required immediately if any environmentally hazardous substances accidentally enter the environment. In doubt, inform the competent municipal authority.*
- *Drain operating equipment into the intended containers and dispose of them professionally.*

## EC declaration of incorporation

### 12 EC declaration of incorporation

in accordance with the EC machinery directive 2006/42/EC, Annex II B

We hereby declare that the following machine corresponds to the basic safety and health requirements of the **EC directive 2006/42/EC** in its design and build, as well as in the version marketed by us. The machine component must only be taken into operation once it has been found that the machine into which the machine component is to be installed corresponds to the provisions of the directive (2006/42/EC).

Manufacturer's name: **Meierling Ventilatoren GmbH**  
**Dr.-Rudolf-Eberle-Str. 7**  
**D-79725 Laufenburg**

Type designation:	<b>VM, XM</b>	<b>RVM, RVR, RVK</b>	<b>VM-DE</b>
	<b>VMK</b>	<b>RTM, RTR</b>	<b>VM-WD</b>
	<b>VR</b>	<b>HVM, HVR, HVK</b>	<b>VM-WHV</b>
	<b>TM, TR</b>	<b>HTM, HTR</b>	<b>VM-LD</b>
	<b>AXR, AXK, AXM</b>	<b>TVM, TVR, TVK</b>	<b>VMK-LD</b>
		<b>DRVR, DRVM</b>	<b>VR-DE, VMK-DE</b>

Serial number: See rating plate

Year of construction: See rating plate

Applied harmonized standards, in particular:

<b>DIN EN ISO 12100-1</b>	Safety of machinery – basic terminology, general principles for design, part 1: General terminology, methodic
<b>DIN EN ISO 12100-2</b>	Safety of machinery – basic terminology, general principles for design, part 2: Technical principles and specifications
<b>DIN EN ISO 13857</b>	Safety of machinery – Safety distances to prevent hazard zones being reached by upper and lower limbs
<b>DIN EN 60204-1</b>	Safety of machinery – Electrical equipment of machines, part 1: General requirements

Applied national standards and technical specifications:

<b>VDMA 24167</b>	Fans – safety requirements
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We further declare that the special technical documents for this incomplete machine have been compiled in accordance with annex VII, part B, and commit to submitting them to the market supervisory authority upon request.

Laufenburg, March 11, 2020



Dr. Haas

Managing Director

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