ABSAUGWERK

OPERATING INSTRUCTIONS

SERIES M Compressor

ABSAUGWERK

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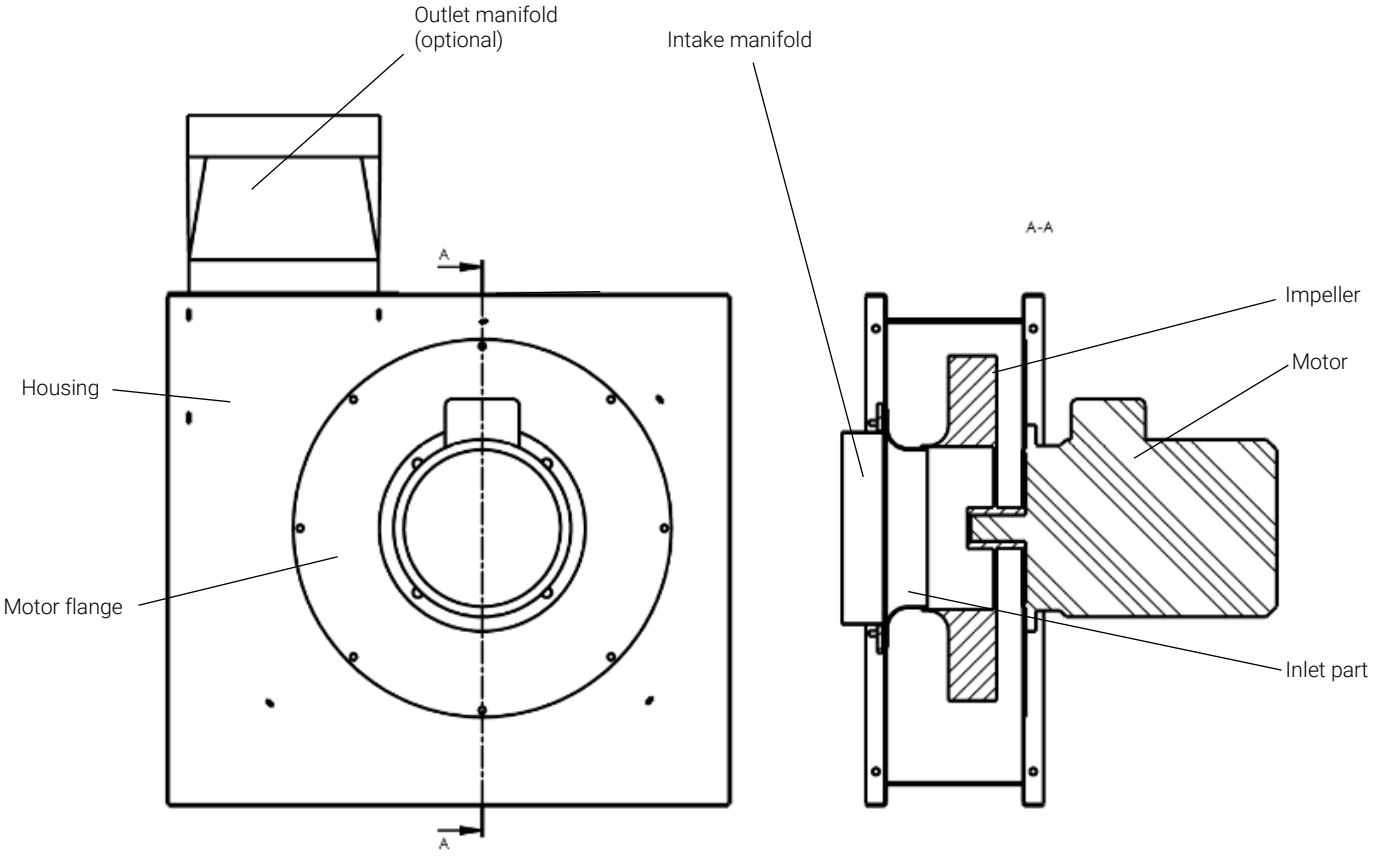
General

We congratulate you on having chosen a high-quality ABSAUGWERK product! Read this instruction manual carefully before installation and commissioning in order to ensure correct use! The present instruction manual serves to ensure safe work on and with our devices. It contains safety instructions that must be observed and information that is necessary for a faultless operation of the device. The system may only be used in accordance with its proper purpose. If you are not aware of this proper purpose, it can be found in our order confirmation or obtained upon request. It must be ensured that all persons who are to operate the system can consult the instruction manual at any time. Keep this instruction manual carefully! It is forbidden to operate the de vice without the presence of the instruction manual, which is to be requested without delay if not already present (service@absaugwerk.de). In order to claim the guarantee, the system parts must only have been used in accordance with their proper purpose, they must not have been changed and only original parts or replacement parts approved by the manufacturer must have been used. Our instruction manuals are regularly reviewed and kept up to date. Deviations may however occur; no liability is accepted regarding complete conformity. Technical changes and errors remain reserved.

Product Description

Sample presentation:



Placement

Depending on the version, the compressor can be supplied with adjustable feet, rubber dampers, etc. Please follow the instructions in the "Commissioning" chapter.

Intake Manifold

An appropriate suction accessory or pipe can be connected to the attached suction socket. A suitable guard must be fitted in front of the intake manifold.

Motor and Design

The compressor consists of a fan with motor and must be subjected to annual maintenance.
Depending on the design, the system consists of:

- A standard fan with motor. The fan is not suitable for extracting and/or conveying explosive dusts/gases.
- An ATEX zone 2 fan
- An ATEX zone 22 fan

For work on the motor / impeller, the system must be disconnected from the mains and the above safety instructions must be observed (e.g. secure against being switched on again). The ambient temperature of the system should be between -10°C and 40°C.
The ventilation slots of the motor must not be covered! This leads to overheating of the motor.

Outlet Manifold

An exhaust air pipe system can be connected via the optional outlet manifold. A suitable guard must be fitted downstream of the discharge opening or the exhaust air connection.

Enclosure

Optionally, the fan can be enclosed. The ventilation slots of the enclosure must not be covered! This leads to overheating of the motor.

Operation

The compressor can be operated with the optional control unit.

Safety

Intended Usage

The compressor (also called suction system) may only be used as intended. It is to be used exclusively for conveying gaseous media in accordance with the order confirmation and type plate. Any other use, as well as the use of non-original accessories, is considered improper. Ensure that burning or glowing substances are not extracted under any circumstances. If you are unsure, contact the manufacturer (contact details can be found under "How to contact ABSAUGWERK GmbH").

CAUTION:
The compressor may only be operated and maintained by personnel who have been explicitly trained for this purpose. The extraction system is only to be operated under supervision. The operator of the extraction system is responsible for ensuring that only authorised persons operate or maintain it. In doing so, the information under "Maintenance" must be observed and only the activities described must be carried out. Unauthorised work not listed under "Servicing, Maintenance and troubleshooting" does not correspond to proper use of the extraction system.

Safety Notices

The following safety instructions must absolutely be considered and observed in order to guarantee the safety of persons, machines and the surroundings. Damage to system components is to be avoided.
All guarantee and warrantee claims are void if the following instructions are not observed:

This symbol means that injury to persons and material damage may occur in case of non-observance!

1. The goods are to be verified for external damage in the presence of the freight carrier. Complaints after this point will not be taken into account.
2. Accident prevention regulations must be observed in every case.
3. Internal work and operating instructions of the operator must absolutely be observed in addition to the instruction manual!
4. Only instructed and trained staff is to operate the delivered goods. Keep this instruction manual carefully and accessible to all operators.
5. Guarantee and warranty claims are only valid with original accessories and replacement parts. Third party parts cause hazardous situations and may not be sufficient to bear the loads in the long-term.
6. Maintenance is only to be conducted by experts commissioned by the manufacturer.
7. All components are to be serviced in accordance with the applicable regulations, at least however 1 x per year. The exact maintenance intervals can be requested of the manufacturer. Guarantee and warranty claims are void if the maintenance is not performed.
8. The responsibilities regarding the servicing of the components are to be determined by the client on site.
9. The extraction system is exclusively designed for the determined usage. The system components are designed for granulated, dry dusts with a grain size of >1µ, unless otherwise specified in the order. Their function is not guaranteed for wet, adhesive or greasy substances. All guarantee and warranty claims are void in the event of improper use. The manufacturer does not accept any liability for function and possible hazards in these cases.
10. Parts connected to the extraction system may not be changed or removed. There is a danger of mechanical/electrical injury, due to moving and live parts. All guarantee and warranty claims are void in this case.
11. The necessary company protection equipment (for example protection glasses, safety shoes, respiratory protection etc.) is to be worn.
12. The extraction system is to be immediately disconnected from the power supply via the plug or the main switch in the event of danger.
13. The exhaust air area of the extraction system should not be accessible. This area is hazardous due to possible fine dust and particles.
14. Eating and drinking are not allowed when handling substances that are a health hazard in the vicinity of the extraction system.
15. The extraction system is to be operated between -10 and +40 °C and to be protected from vibrations, impacts, strong sunlight (weather protection cover in case of installation outdoors) and spray water.
16. The extraction system may only be stored upright and on a clean, dry, even and load-bearing base.
17. Ladders and other objects may not be leant against the extraction system. There is a risk of tipping.
18. The base must be checked regarding weight and suitability before the system is placed upon it. The necessary connections must be present at the place of installation. Stands/forklift hoops are to be bolted to the base.
19. Any steel construction (including structure analysis), foundation or ground works necessary to install the extraction system are to be performed by the client.

20. Earthing/lightning protection and potential equalisation, as well as any necessary sound and heat protection installations, spark/fire extinguishing and/or explosion protection installations, exhaust air measurements and any necessary administrative approvals are to be performed on site.
21. Operating a defective extraction system is not permitted. Please check the extraction system for any damage on a daily basis.
22. Dust build-up on the extraction system (interior and exterior) are to be removed without delay.
23. The rotation direction of the motor is to be adjusted with the attached green rotation direction arrow before commissioning. If no green arrow is attached, the extraction system may not be commissioned. The rotation direction of the motor may be tested for a maximum of 2-3 seconds, as the motor can otherwise be damaged in the event of an incorrect rotation direction.
24. Servicing/maintenance work may only be performed on system components that are free of current and pressure, with a still ventilator impellor and with the cleaning switched off, in a non-explosive environment, otherwise there is a risk of sever injury!
25. The manufacturers of the extraction system are not always aware of all usage details. This instruction manual is to be completed with the instructions of the operator (for example for extracting particles that are hazardous to health).
26. The operator is to avoid ignition sources arriving in the extraction system, as this can increase the risk of explosions and fires.
27. In case of a suspicion of the system burning (for example filter fire), the extraction system must immediately be switched off at the main switch. The service door/cover and dust collection device are not to be opened. All intake and exhaust flaps are to be closed. Observe company internal regulations in the event of a fire.
28. The client has been informed of the use possibility and function of a spark detector with extinguishing medium injection and of other fire protection and explosion protection measures and of the existing fire, fire residue and explosion risk. The manufacturer does not bear any liability for the consequences of fires and explosions.
29. Collecting elements and pipes may only be connected to the extraction system with the approval of the manufacturer. Movable extraction systems may not be moved with the collecting elements. There is a risk of tipping.
30. The extraction system was not designed according to ATEX 94/9/EG, unless otherwise explicitly stated. There is no division of zones. Note: aerosols (dust-air mixes) can constitute explosive mixes under certain conditions. The responsibility for the operation of the extraction system and the creation of the explosion protection document is borne by the operator according to ATEX 1999/92/EG. Whether the delivered extraction system is designed according to ATEX 94/9/EG can be determined by consulting the type plate of the notes on the drawings, replacement and wear part lists. The exact ATEX designations can be found on the cover of the instruction manual and/or our type plate.
31. An extraction system may only be installed and operated in EX-free rooms, according to ATEX. Relief openings/surfaces may not be covered, so that pressure and flames can escape without risk. The recoil force of the extraction system is to be secured on site. Access to the hazard area to be designated on site is to be prevented. A risk-free evacuation of gas from the system components is to be ensured on site.
32. The noise level of the extraction system amounts to 80 dB(A) max., unless otherwise specified. Every extraction system is tested and measured according to protocol before shipping. As the value can deviate or vary depending on the surroundings, the max. admissible values of the extraction system is to be ensured by the operator and measures are to be taken if necessary.

33. The extraction system is delivered in the protection class IP54 unless otherwise specified.
34. The extraction system is categorised as a process technical component and is not subject to the requirements of the eco-design directive 2009/125/EG.

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EC – Declaration of Conformity

In the sense of the EC Guideline for Machines 2006/42/EG, Annex II part 1. A
The structure of the machines designated below was developed, constructed and produced in compliance with the EC guidelines mentioned in this declaration.
In the design executed by us, the machine structure corresponds to the fundamental safety and health requirements of the EC guidelines mentioned in this declaration.
This declaration loses its validity in the event of a change to the machine that was not approved by us.

Authorised representative:	Sebastian Moll
System type:	Series P
Marking point:	System front / System side
Manufacturer and address:	ABSAUGWERK GmbH, Messerschmittstr. 22, D-89231 Neu-Ulm

Applicable EC guidelines :

2006/42/EG
2014/30/EU
2014/35/EU
2014/34/EU
2009/125/EG

Applicable harmonised norms, especially (depending on the machine design):

DIN EN ISO	12100	:2011-03
DIN EN ISO	13857	:2020-04
DIN EN ISO	13854	:2020-01
DIN EN	60204-1	:2019-06
DIN EN IEC	61000-6-4	:2019-11
DIN EN IEC	61000-6-2	:2020-09
DIN EN	61439-2	:2012-06
DIN EN IEC	60079-0	:2014-06
DIN EN IEC	60079-15	:2011-02

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Werz (managing Director)

Neu-Ulm, on the 08/07/2021

ABSAUGWERK

Contact details for ABSAUGWERK

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D-89231 Neu-Ulm

Telephone: +49 (0) 731 141 108 -0
Fax: +49 (0) 731 141 108 -10
E-Mail: info@absaugwerk.de

To be noted before the first commissioning

1. For the first commissioning, secure all freely accessible raw gas and clean gas nozzles, outputs, turning parts (motors) with protection equipment (in accordance with the applicable accident prevention regulations).
2. Check that the filter elements are properly placed.
3. Make sure that all protection equipment, covers and cleaning flaps are attached and closed.
4. Close of any hazard areas that cannot be avoided for the period of the first commissioning, with clear marking.
5. Make sure that all collection elements are open and that the exhaust air can be blown out unimpeded.
6. Close all service covers/doors of the filter unit.
7. The motor cooling element (suction unit) must not be encumbered.
8. The clamp fastenings to the discharge container (if any) must be closed.
9. Before the extraction system is switched on, it must be ensured that no-one is working on the system or is present at the intake manifold or clean gas exhaust.
10. The extraction system must have stable footing and be anchored to the ground. The roller brakes are to be secured, otherwise there is a risk of tipping. For extraction systems fastened to a wall, the system is to be fastened with appropriate mounting material. A structural analysis is to be performed if necessary.
11. Check that the compressor impeller is running freely and not grinding against anything. An electrical technician is to check the rotation direction and change it immediately if the compressor motor is turning in the wrong direction.
12. The power connection according to the control indications must be compatible with the power supply. Have this verified by an electrical technician before commissioning.
13. The power consumption is to be verified by an electrical technician in all three phases: directly after turning on, after 30 minutes and after 24 hours of operating time. The measured values must not exceed the nominal power on the type plate.
14. If you have a simple, manual pre-coating (see order confirmation), please proceed as follows:

    Upon commissioning (i.e. before extracting particles), the supplied pre-coating powder is to be aspirated into the system via the intake manifold or the discharge of the system (remove container/drawer).
15. If you have chosen a long-term pre-coating (see order confirmation), it is applied automatically via the supplied pre-coating device.

Unpacking the compressor

The compressor and the enclosed accessories (see scope of delivery) must be completely unpacked before commissioning.

Connection of the extraction system

The compressor must be connected to the mains or to a control system.
Depending on the type, this is done via the plug supplied or the cable must be connected in the control unit.
Cables may only be installed by skilled electricians.

Dangers due to electrical current

This warning symbol means that injuries to persons by electrical current may occur if the instructions are not observed.

1. The electrical connection must be made by an electrical technician, with a non-powered network. The 5 safety rules are to be observed. The indications on the type plate are to be observed.
2. If there is no electrical switch plan for the extraction system, it is to be requested of the manufacturer. The connection work must only be performed according to the switch plan.
3. Only electrical technicians or electrically trained persons may work on electrical parts of the extraction system. This also applies when opening the switch/terminal box.
4. The extraction system may only be operated in an impeccable condition. The switchbox/control unit is to be checked for damage. Faults that affect safety are to be remedied immediately.
5. Maintenance/servicing work must only be performed with a non-powered system.
6. The extraction system is to be secured against switching on through a lock on the main switch.
7. All bolts in/on the control unit must be tightened before commissioning.
8. After turning off the extraction system, residual voltage may remain in electrically conductive parts.

Commissioning	
1--0	Visual inspection – preparation
1--1	Compressor has been fixed, doweled, piped and aligned as specified.
1--2	Pipeline connected
1--3	Power connection available
2--0	Visual inspection of the direction of rotation of the impeller (flashlight) CAUTION RISK OF INJURY! Do not reach into fan or touch rotating parts
2--1	Establish power supply, actuate main switch
2--2	Switch on compressor briefly (2 sec.) and switch off again
2--3	Main switch in pos. "OFF", interrupt power supply
2--4	Open the enclosure if available, the direction of rotation can be checked on the motor fan, which is located behind the motor cover.
2--5	If the direction of rotation is IO, then close the enclosure; if not, then the direction of rotation must be changed at the power connection. CAUTION RISK OF DEATH! Only to be carried out by qualified electricians
2--6	The compressor is now ready for operation

Servicing and Maintenance

Proper maintenance is a prerequisite for granting the warranty. Maintenance is due after 2,500 operating hours, at the latest annually.
The operational safety and service life of your extraction system depend to a large extent on proper maintenance. Malfunctions caused by lack of or improper maintenance can result in high repair costs and long downtimes.
We are happy to offer you our full maintenance service.

Safety Notices

Checklist

At commissioning / 24 h after commissioning

Description	Date	Name
Check all lines, connections and the housing for leaks.		
Check the running direction of the suction unit.		
Retighten all screws.		
Check all terminals in the control cabinet by a qualified electrician and retighten the screws.		

Daily / before each switch-on - after each switch-off

Description	Date	Name
Check the suction unit for smooth running. Noises and vibrations indicate an impeller imbalance. This damage must be repaired.		
Check whether there are any fault messages on the control unit.		
Check the suction system including the cable for damage.		
Check all lines, connections and the housing for leaks.		

At regular, necessary intervals / after switching off the extraction system / after material changeel

Description	Date	Name
Check the suction system and piping for dirt deposits and clean if deposits are found.		

Every month / after 150 operating hours

Description	Date	Name
Check pipe system for deposits (remove if necessary).		
Check cooling filters on the motor, enclosure and switch cabinet (if present) for contamination (replace if necessary).		

Every six months / after 1,000 operating hours

Description	Date	Name
Retighten all screws.		
Check the impeller in the compressor for caking and imbalance.		
Check all electrical cables and supply lines for damage.		

Annually / after 2,000 operating hours

Description	Date	Name
Customer inspection according to BGV A3. We would be pleased to submit our offer to you in this regard.		
Maintenance of the entire extraction system by the manufacturer. Please instruct us to do this in good time.		

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Documentation of service and maintenance work

Date	Company	Contact partner	Next due date

Disassembly/disposal

Take care to observe the safety instructions in this instruction manual

1. Turn the extraction system off
2. Extraction system emptying
3. Have the power supply disconnected by an electrical technician
4. Clean the extraction system
5. Disassemble the extraction system into individual parts
6. Thorough cleaning of reusable parts

Dispose of the extraction system in accordance with the administrative and local waste disposal regulations.

Troubleshooting

The following overview may help you to remedy a fault. If a malfunction occurs that is not named below, contact the manufacturer.

Compressor

- Engine does not start
  - Failure of a fuse or circuit breaker
    - Inspection by qualified electrician
  - Motor overload
    - Switching on the circuit breaker by a qualified electrician
- Current consumption of the motor is too high
  - Wrong direction of rotation of the motor
    - Change of the direction of rotation by a qualified electrician
  - Air resistance in extraction system is too low
    - Contact the manufacturer
- Motor switches off before reaching operating speed
  - Incorrect setting of the motor protection switch
    - Adjustment of the motor protection switch by a qualified electrician
- Compressor runs out of round (possibly deformation)
  - The screws were overtensioned during tightening
    - Checking the screws on the compressor
  - Dirt on the impeller
    - Removing dirt from the impeller
    - Inspection of the bearings
    - Visual inspection of the filter elements
    - Possibly necessary rebalancing by a specialist
  - Impeller imbalance
    - Inspection of the impeller and troubleshooting by a specialist through balancing
  - Impeller bearing heating
    - Pumped medium is very hot
      - Reduction of the temperature of the pumped medium
      - Inspection of the bearing by a specialist
  - Wear on the impeller
    - Contact the manufacturer

Suction Power

- Suction power of the extraction system is not sufficient
  - Upcoming filter cleaning/replacement
    - Clean or replace the filters
  - Leakage at filter housing or raw gas line
    - Checking the housing for leaks
    - Checking all lines for leaks
    - Checking all joints for leaks

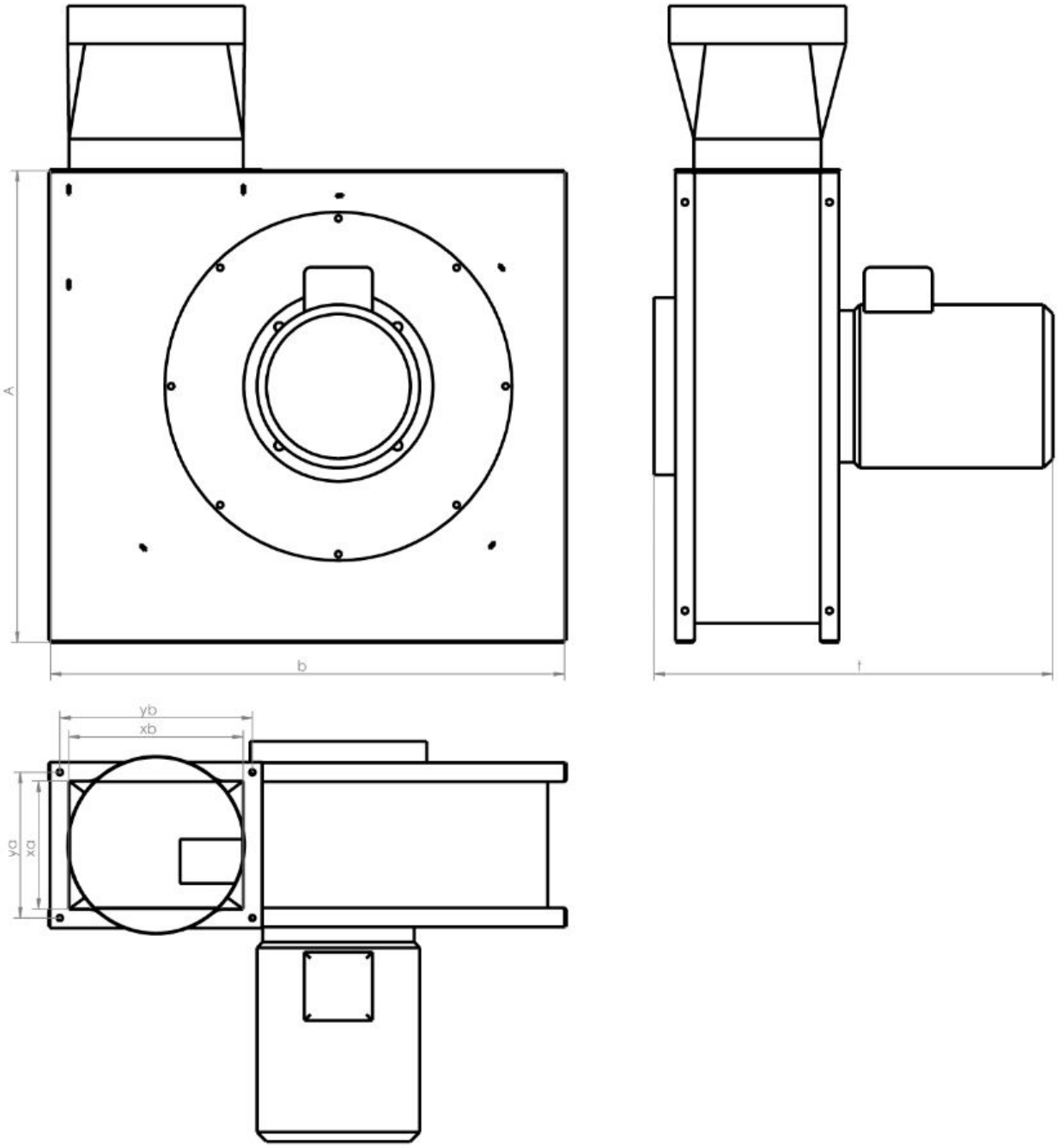
- The required air volume is no longer achieved
    - Motor runs the wrong way round
        - ➢ Change the direction of rotation of the motor by a qualified electrician.

Leakage of Dust

- Leakage of dust, deposits of dust plumes
    - Damage to the filters
        - ➢ Contact the manufacturer
    - Leakage at the housing
        - ➢ Eliminate the leaks

If you cannot permanently remedy a fault, contact the manufacturer.

Series M Compressor		M0,5KW	M1,1KW	M2,2KW	M3KW	M4KW	M5,5KW	M7,5KW	M11KW	M15KW	M18,5KW	M22KW
Supply voltage	V	400										
Frequency	Hz	50										
Current type	Ph	3										
Engine power	KW	0,5	1,1	2,2	3	4	5,5	7,5	11	15	18,5	22
Backup fuse	A	16	16	16	16	16	25	35	50	50	63	63
Fan power max.	m³/h	2.500	2.800	3.900	5.200	7.500	7.500	10.100	17.500	20.500	24.500	24.500
Negative pressure max.	Pa	1.250	1.950	2.500	3.100	3.800	3.800	4.800	4.400	5.100	5.500	6.500
Connection diameter	mm	160	180	200	224	250	250	280	355	400	400	450
Width (b)	mm	480	540	600	670	750	750	820	820	1.075	1.075	1.020
Depth (t)	mm	400	450	520	570	570	640	640	985	1.135	1.160	1.115
Height (A)	mm	430	470	530	600	670	670	745	745	915	915	915
Discharge flange (xa)	mm	120	130	150	165	150	205	200	275	290	320	270
Discharge flange (xb)	mm	160	180	200	225	245	245	275	295	380	380	295
Discharge flange (ya)	mm	150	160	180	195	185	235	230	305	320	350	300
Discharge flange (yb)	mm	190	210	235	255	275	275	305	325	410	410	325
Weight (approx.)	kg	22	30	44	55	80	85	95	185	220	245	295
Sound pressure level (approx.) (without acoustic measures)	dB(A)	81	83	85	89	90	95	95	96	97	97	99
Appr. ambient temp.	°C	5 bis 40										
Appr. Humidity	%	70										
		©ABSAUGWERK GmbH | technical data status 2021-08-16 | modifications excepted										



ATEX Version

Systems for the extraction of organic and inorganic dusts St1 or St2 comply with the ATEX Directive 2014/34/EU.
Please refer to the order confirmation or the type plate for the delivered version (category and temperature class).

Behavior in Case of Fire

Attention: Spark Detectors

Daylight can trigger the extinguishing system.

Turn off the extinguishing system before opening!

IN CASE OF FIRE

Report the fire

1. Stay calm!
2. Report the fire.

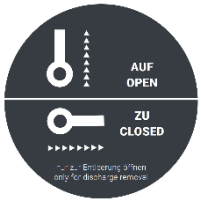
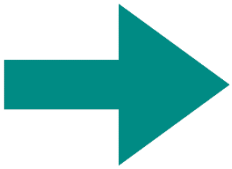
Extinguish correctly

1. Activate the extinguishing system by pressing the manual release switch firmly.
2. Turn off the extraction system ONLY via the control cabinet.
3. Check if the fan slows down (noise/suction power).
4. Shut off the compressed air supply to the filter unit.
5. DO NOT supply oxygen! By opening flaps, doors, or system parts.
6. Monitor the system's temperature (e.g., temperature strips).
7. If the temperature rises above 60°C.
8. Introduce extinguishing agent, e.g., via the manual extinguishing flap.
9. Immediately close the extinguishing flap and door.
10. DO NOT supply oxygen!
11. Monitor the system's temperature (e.g., temperature strips).
12. If the temperature does not decrease, return to step 10!
13. Once the system has cooled down.
14. Open the system in the presence of the fire brigade or a qualified professional.

After the Fire

1. Once the fire is extinguished: remove the filters and check the system for damage.
2. Repair the system and refill the extinguishing cylinder.

Legend pictograms

	Wear breathing protection!
	Sucking in ignition sources can lead to a fire or even an explosion in the system. Keep ignition sources away from the system and do not allow them to be sucked in.
	Compressed air requirements: oil and water free 4-6 bar
	Grounding
	The water level of the hose must be kept in the middle range during system operation.
	Open the drain cock only to dispose of the discharge.
	Extinguishing flap for manual extinguishing.
	Direction of rotation of the fan (left or right).

	CAUTION Power!
	CAUTION EX-Zone 2! A potentially explosive atmosphere is not expected to occur during normal operation. If it does occur, then only for a short time. Avoid ignition sources at all costs!
	CAUTION EX-Zone 21! During normal operation it is not to be expected that an explosive atmosphere in the form of a flammable dust cloud will occur. If it does occur, then only for a short time. Avoid ignition sources at all costs!
	CAUTION EX-Zone 22! During normal operation it is not to be expected that an explosive atmosphere in the form of a cloud of combustible dust will occur. Avoid ignition sources at all costs!