systemair

Installation, Operation and Maintenance Instructions EN

AXC
AXCBF
AXR
AJR
AJ8
AJ

Table of contents

1 Introduction

1.1 Document description

This document contains instructions for installation, operation and maintenance of the product. The procedures must be done by approved personnel only.

Speak to Systemair for more information on how to install the product in different installation locations.

1.2 Description

AXC/ AXR

- For B3 conventional motors, bracket is made from galvanized steel sheet.
- B30 “pad mounted” motors are fitted in housing via motor support.
- B5 Motors are mounted directly in integrated guide vanes.
- The motor with impeller is mounted to a sturdy supporting structure.

AXCBF

Directly powered axial fan with motor outside the air flow. The fan can be run in permanent operation up to a conveying media temperature of 200°C. Maximum ambient temperature 55°C. Housing flanges on both sides with bores according to eurovent 1/2 standard. B3 conventional motors with add-on terminal box.

Flange motors B5/B14 in shaft housing. Guide vane integrated in the housing.

AJ

- Jet fans for the ventilation of tunnels.
- Equipped with B30 “pad-mounted” motors and silencers.
- The acoustic insulation is non-flammable according to DIN 4102, as specified in directive 97/69 EC.

AJR/AJ8

- In B3 conventional motors, the motor bracket is made from galvanized steel sheet. B30 “pad mounted” motors are fitted in the housing via threaded rods or a welded motor support.
- The fan conveys air in an axial direction from the intake side via the electric motor to the outlet side.
- The silencers are equipped with protection grille made of galvanized steel.
- The acoustic insulation is non-flammable in accordance with DIN 4102 as described in directive 97/69 EC.
- The fan conveys air in an axial direction from the intake side via the electric motor to the outlet side. (except AXCBF).
- The electrical connection is made through a terminal box installed on the outside of the housing (except AXCBF)

Sensors (optional)

Sensors can be connected to the fan to monitor the roller bearings, the temperature or vibrations. Wire the sensors so that they switch off the fans when the vibrations or temperatures exceed the specified limits. For further information, contact Systemair.

Standstill heating (optional)

The standstill heating starts when the motor switches off and vice versa.

Fan and motor data

- The technical data of the fan can be seen on the name plate or the data sheet.
- The motor data can be found on the name plate of the motor or in the technical documents of the motor manufacturer.

Table 1 Constructive features

Constructive features	
AJR(K)/AJ8(K)/AJR (B)/AJ8 (B)/AJR (F)/AJ8 (F) AJR/AJ8	As a default, the fans are provided in protection class IP54/55, ISO H. The wiring from the motor to the terminal box is protected via an additional flexible metal hose. The standard motors (400 V type B3) are without motor protection.

1.2.1 Types & variants

Table 2 Axial fan base types

Type	Description
AXC	Standard fan of the AXC-series. As a default, the fans are provided in protection class IP55.
AXR	The conveying direction can be reversed by switching the direction of rotation.
AXC-H	High pressure fan.
AXC-EC	Standard fan of the AXC-series, equipped with an EC-motor and controller, protection class IP55.
AJ	Jet fan for tunnel ventilation. Available sizes: 560–1600 mm.
AJR; AJ8	Jet fan for car park ventilation. Available sizes: 315-400 mm.

Table 3 Axial fan variants

Type	Description
-P	Fan of AXC-series which uses impeller design of the "-P" generation.
-PV	Fan of AXC-series which uses impeller design of the "-P" generation and has a bolted-on guide vane.
AXC-Box	Fan of AXC-series inside a sound-insulated box.
-G	Fans constructed as garage version. Arrangement of two fans in series, switched behind one another.
(B)	Smoke extract fan suitable for 2 hours at 300°C.
(F)	Smoke extract fan suitable for 2 hours at 400°C.
-SC	Short Casing.
(K)	Smoke exract fan suitable for 2 hours at 250°C
—GC	Fans constructed as contra-rotating version. Arrangement of two fans in series, switched behind one another.

1.3 Intended use

All axial fans and Jet fans

- The temperature of the air transported through the fan must not exceed the temperature range stated on the name plate.
- For the temperature resistance of the smoke extraction fans (K), (B), (F), which can also be used to extract CO, please refer to the name plate (e.g. 300°C/120 min).

Jet fans

- Jet fans are intended for installation in tunnels, underground and above-ground parking structures, to facilitate ventilation and smoke extraction.
- For optimum operation, the jet fan must be mounted horizontally in such a position that intake and outlet are unobstructed.

Axial fans

- The axial fans of the series “AXC/AXR/AXCBF” are intended for installation in ventilation systems.
- The axial fans of the series “AXC /AXR/AXCBF” are ready-to-use products and are used as components for ventilation devices, machines and systems. These fans can be used to extract, draw in or convey air.
- The fans can be installed both in duct systems and also with free suction via an inlet cone and a suction side contact protection grille. Free discharge via a contact protection grille is also possible.

Incorrect use

Incorrect use refers mainly to using the fan in another way to that described.

- Only use the fans for the requirements described here and within the operating limits specified on the type plates.
- The fan is not suitable for intake of aggressive media or media with a dust content so high that dust deposits on the impeller or fan housing can affect the operation of the fan.
- The fan must not be installed in hazardous areas (areas with a potentially explosive atmosphere).
- The fans cannot be voltage controlled except the AXC-EC version.

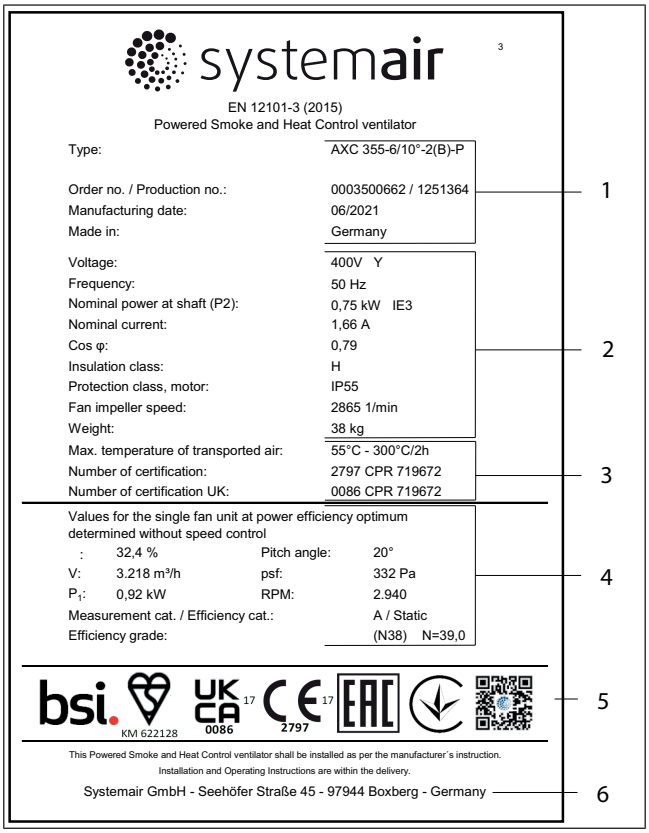
1.4 Air gap between housing and impeller

Table 4 Air gap

Air gap between housing and impeller											
		AXC AXR AXC-P AXC-PV AXC-H AJR AJ8 AJ		AXC(K) AXC(B) AXR(K) AXR(B) AJR(K) AJR(B) AJ8(K) AJ8(B) AJ(B) AJ(K)		AXC(K)-P AXC(B)-P AXC(K)-PV AXC(B)-PV		AXC(F) AXR(F) AJR(F) AJ8(F) AJ(F)		AXC(F)-P AXC(F)-PV	
		Standard temperature		250°C/ 2h + 300°C/ 2h				400°C/ 2h			
Size	Poles	Air gap		Air gap		Air gap		Air gap		Air gap	
		min	max	min	max	min	max	min	max	min	max
315	2–pol	1	3	2	3,5	4	6	2	4	-	-
355	2–pol	1	3	2	3,5	2	4	4	6	-	-
400	2–pol	1	3	2	3,5	2	4	4,5	6	-	-
450	2–pol	1	3	3	4,5	2,5	4,5	4,5	6,5	3	5
500	2–pol	1	3	3	4,5	2,5	4,5	5	7	3	5
560	2–pol	1	3	4	5,5	2,5	4,5	6	8	5	7
630	2–pol	1	3	4	5,5	2,5	4,5	7	9	6	8
710	4–pol	1	3	4	5,5	2,5	4,5	7	9	4	6
	2–pol					4	6			-	-
800	4–pol	1	3	5	6,5	3,5	5,5	8	10	4	6
	2–pol					5	7			-	-
900	4–pol	1	3	5	6,5	3,5	5,5	9	11	4	6
1000	4–pol	2	5	5	7	4	7	10	12	5	8
1120	4–pol	2	5	6,5	8,5	4	7	11,5	14	6,5	9
1250	4–pol	2	5	7	9	4,5	7,5	12,5	15	7,5	10
1400	4–pol	6	9	7,5	9,5			14	16		
1600	4–pol	7	10	8	11,5			16	18		
1800	4–pol	10	14	11,5	15,5			18	21		
2000	4–pol	10	14	11,5	15,5			20	23		
2240	4–pol	12	16	13	18,5			0	0		

Air gap between housing and impeller			
	nominal values	Air gap	
		min	max
AXCBF	250	2	4
	315	2	4
	400	2	4
	500	2,5	4,5
	630	2,5	4,5
	800	3,5	5,5

1.5 Name plate



1. General data
2. Technical data
3. Temp./Time information/ only listed on smoke extraction fans
4. ErP data
5. Certifications and QR— Codes
6. Manufacturer Address

1.5.1 Type key

Table 5

type key example
AXC \355 \–6 \ /16° \ –2 \ (B) \ –G \ SA \ –P \ V (160) \ (2 x 1.1 kW) \ SO \ IE3

Table 6

Type key explanation	
AXC	• AXC Axial fan • AXR Axial fan — reversible • • AJR Circular jet fan • AJ8 Octagonal jet fan • AJ jet fan • AXC-SC Axial fan-Short Case
355	Nominal diameter of the fan
-6	Number of blades
/16°	Blade angle
-2	Number of poles
(-)(K), (B), (F)	Temperature- Time information (smoke extraction fan)
P	• A — Low pressure impeller • P — plus (standard impeller generation) • H — High pressure fan • E- Excellence generation of standard impellers with higher efficiency.
G	G — Garage
V	• GC — counter-rotating • V — guide vane
(160)	Hub size
(2 x 1.1 kW)	Motor power or motor code
SO	• S — horizontal installation • SO — vertical upwards installation • SU — vertical downwards installation • D — Horizontal installation, airflow direction pushing over the motor. • DO — Vertical installation, upward direction, airflow pushing over the motor. • DU — Vertical installation, downward direction, airflow pushing over the motor.
IE3	Motor efficiency: • IE2 • IE3 • IE4 • EC (IE5)

1.6 Product liability

Systemair is not liable for damages that the product causes in these conditions:

- The product is incorrectly installed, operated or maintained.
- The product is repaired with parts that are not original spare parts from Systemair.
- The product is used together with accessories that are not original accessories from Systemair.
- The product is used without motor protection.
- The product was used wrong or changed so it is not like the original. All changes to the product or its design must be written down, approved, and reported.
- Failure to follow the maintenance and cleaning intervals.

If you don't follow this, product liability will be lost.

2 Safety

2.1 Safety definitions

Warnings, cautions and notes are used to point out especially important parts of the manual.

Warning

If you do not obey these instructions, there is a risk of fatal injury or injury.

Caution

If you do not obey these instructions, there is a risk of damage to the product, other materials or the adjacent area.

Note:

Information that is necessary in a given situation.

2.2 Instruction symbols

Instruction

- Carry out this action
- (if applicable, further actions)

Instruction with fixed sequence

1. Carry out this action
2. Carry out this action
3. (if applicable, further actions)

2.3 Safety instructions

Warning

Read the warning instructions that follow before you do work on the product.

- Read this manual and make sure that you understand the instructions before you do work on the product.
- Obey local conditions and laws.
- Any damage or problems with the product must be reported and fixed before installation or use (to keep it safe).
- The ventilation contractor and the operator are responsible for correct installation and intended use.
- Keep this manual at the location of the product.
- Do not install or operate the product if it is defective.
- Do not remove or disconnect safety devices.
- Make sure that you can read all warning signs and labels on the product when it is installed. Replace labels that have damage.
- Only permit adequately qualified persons to work on the product and to be in the adjacent area during all work on the product.
- Make sure that you know how to stop the product quickly in an emergency.
- Use suitable safety equipment for all work on the product. All work must be performed by approved personnel only.

- Before you do work on the product, stop the product and wait until the fan impeller stops. Make sure that there is no voltage on the motor terminals.
- If the maintenance is not correctly and regularly done, there is risk of injury and damage to the product.
- Only do the maintenance as given in this manual. Speak to Systemair technical support if other servicing is necessary.
- Always use spare parts from Systemair.
- Sound levels exceeding 70 dB(A) may occur depending on model and size. Visit www.systemair.com for more detailed information about your product.
- The product is not to be used by persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience and knowledge.
- Do not allow children to play with the device.

2.4 Personal protective equipment

Only by approved personnel may work on the product.

- Approved eye protection
- Approved protective helmet
- Approved hearing protection
- Approved protective gloves
- Approved protective shoes
- Approved work clothing

2.5 5 rules of electrical safety

Work on electrical systems, contacts, or connections must only be done by electrically qualified personnel.

1. Disconnect (disconnection of the electrical system from live components at all terminals)
2. Prevent reactivation
3. Test absence of voltage
4. Ground and short-circuit
5. Cover or restrict adjacent live parts

3 Transportation and storage

Warning

Make sure that the product does not get damaged or wet during transportation. A damaged or wet product can cause fire or electric shock.

- Before you move the product to the installation location, examine the packaging for damages.
- Do not move the product by the cables, terminal box, fan impeller, protection grille, inlet cone or silencer.
- If lifting equipment is used, make sure that the lifting equipment can hold the weight of the product. Refer to the name plate for information. Do not lift the product by the packaging.

Warning

Do not walk below a lifted product.

- Keep the correct side of the packaging up during transportation. Refer to the arrows on the packaging.
- Load and unload the product carefully.
- Keep the product in a dry and clean location during storage. Make sure that the ambient temperature during storage is between 5 and +40 °C. A stable ambient temperature prevents damage from condensation.
- Keep the product in storage for maximum 1 year.
- Remove the protective film from the device and any separately supplied accessories to prevent moisture from accumulating on the machine and accessories.

3.1 Storage

Safety information

Warning

Risk of injury and damage to the fan.

- Do not stack the fans on top of one another.
- Do not use transport packaging as hoisting aids.
- Use hoisting equipment that is suitable for the weight to be hoisted.

Storage more than 3 months

- Turn the impeller at least 10 rotations once a month.
- Ensure that the impeller is at a different position afterwards.
- Record the storage conditions and all maintenance activities during the storage period.

Preconditions

- Store the devices in a clean, dry and vibration-free environment.
- Storage temperature should be between 5°C and 40°C.

Storage more than 12 months

- We recommend an inspection by the after-sales service of Systemair before commissioning.

Motor

- If the motor manual is missing, check the motor manufacturer's website for information. Follow the manufacturer's inspection instructions exactly.
- Measure the insulation resistance of each motor winding against grounding at 500 V DC. The insulation resistance must be > 10 MΩ.
- Always refer to the motor manual (especially for the condensate stopper)!
- Clearly refer to the motor maker's instructions, and make sure they are followed.

Deflectors

- The deflectors must not be stacked on top of each other. They may be stacked on top of one another solely for transport purposes.
- The deflectors must be stored in such a way as to prevent bending and damage caused by external factors (weather, chemicals, or other conditions).

4 Installation

4.1 To do before the installation of the product

Installation must be done only by properly qualified personnel.

- Note the 2.5 5 rules of electrical safety
- Make sure that you have the necessary installation accessories:
  - Refer to 16 Accessory overview for an overview of the accessories.
  - To decrease vibrations transmitted from the product to the duct system, Systemair recommends to install vibration dampers, vibration dampers and flexible connections flexible connections.
  - If you install the product with free suction or free discharge, it is necessary to install a protection grille. Make sure that the safety distance agrees with the standard ISO 12499.
- Use installation material with fire resistance rating for the installation location.
- Examine the packaging for transportation damage and remove the packaging from the product carefully.
- Examine the product and all components for damage.
  - If damage is present, document this damage in detail and report it to Systemair.
- Make sure that the information on the name plate and the motor name plate agrees with the operation conditions.
- Install the product in a location where there is space for commissioning, troubleshooting, maintenance and an escape route.
- Make sure that the installation location is clean and dry, for full safety during electrical work.
- Make sure that the installation surface has sufficient capacity to hold the weight of the product.
- Refer to the airflow direction arrows on the name plate or on the product to install the product in the correct position.
- Make sure that all cable glands are tight against the cables to prevent leaks.
- Bear in mind that parts of the impeller may protrude out of the fan housing.
- Tightening torques of screw-type connections according to DIN 13.

4.2 Test the motor windings

Test the motor windings:

- Bear in mind that parts of the impeller may protrude out of the fan housing.
- Tightening torques of screw-type connections according to DIN 13.

1. If the motor has drain plugs, remove them to allow any moisture to drain and replace them when the motor windings are suitably dry.
2. Dry the motor in a warm dry airflow (typically 40 degrees Celsius).
3. Measure the insulation resistance of each motor winding against grouding at 500 V DC.
4. Repeat the aforementioned steps until the measurement outcome > 10 MΩ.
5. Insulation resistance must be more than 10 MΩ.

For more information about the motor, read the chapter 3.1 Storage

4.3 Vibration dampers

Important
Risk of damage to the fan due to incorrect vibration dampers • Use the vibration dampers suitable for the respective weight. • Use the vibration dampers with fire resistance classes that match the respective application.

Sylodyn vibration kit (if used)

The responsibility for the Sylodyn vibration kit installation is with the buyer/installer.

Important
Risk of damage to the fan due to incorrect vibration dampers • The fan shall rest entirely on the sylodyn anti vibration blocks. It is important that the fan is not pressed against the mounting frame, therefore the minimum distance of 15 mm has to be kept.

4.4 Lifting and positioning

The weight of the fan units varies depending on the motor size and accessories. As a result, the fan unit can also be very bulky and heavy. You can find precise information on the name plate or the data sheet.

Caution

Risk of parts falling down

- When fitting the fan, pay attention to its weight and the weight of the components.

Lifting

- Lift the fan unit slowly and carefully.
- Use hoisting gear permitted for the weight of the fan.
- Attach the hoisting equipment to flanges and foot bores or at the marked places.
- Use transport equipment (e.g. lifting eyes) if available.
- Please observe the marking “oben/top” on the fan.

Positioning

- Observe the arrows on the name plate or the housing of the fan. They show the direction of rotation and air flow.
- Position the fan unit so that it is standing in the planned direction of flow.
- Provide enough free space for inspection and maintenance work on the fan unit.

Anchor

- Use suitable fittings.

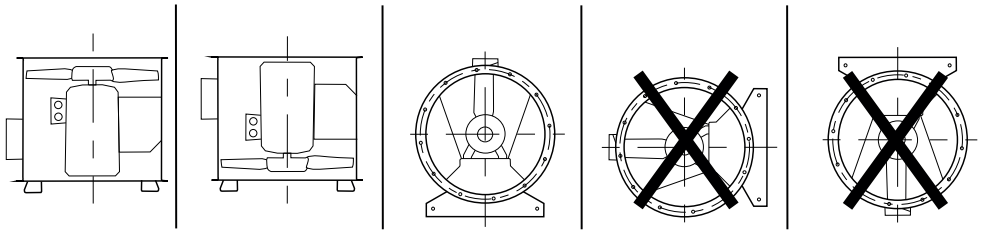
4.5 Installation positions

AXC, AXR

- Consider below guideline for installation positions.

Note:

- Order process (Systemair configurator): If the type of installation is e.g. "SO" (vertical installation, >= IEC 160), a suitable motor is automatically used (in this case with different bearings).
- Please contact Systemair if a position marked with a “black-cross” is required for an existing fan.

Fans equipped with	
• B3 < 160 and B30 (Pad) • B5 (AXC-H) • AXC-EC	The installation is possible in any mounting position.
B3 >= 160 B5/B14	

Important

Overheating motor AXCBF

- The motor opening must be faced upwards to avoid trapped heat.

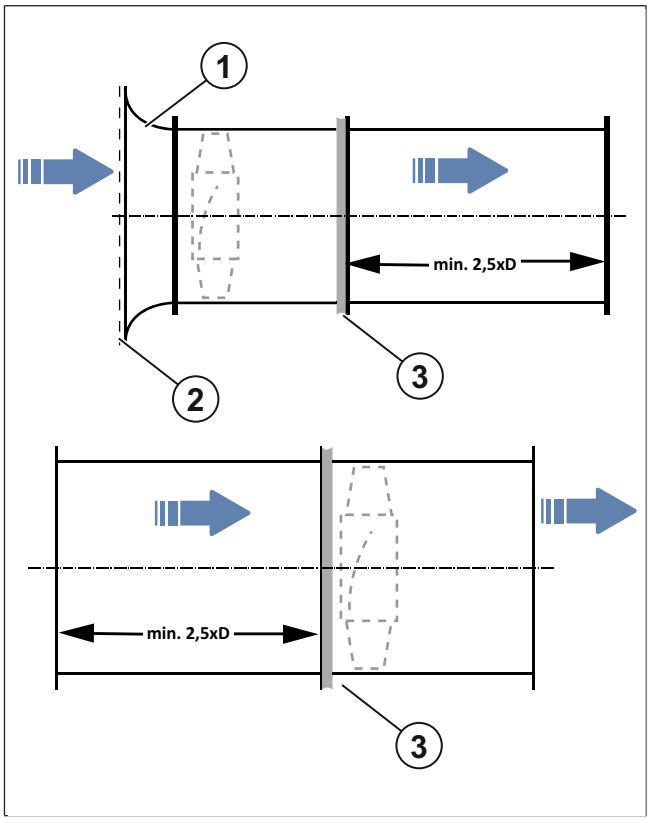
4.5.1 Installation of the ventilation system

Preconditions

- The air flow of the fan must be able to open the air operated damper (LRK).

Installation duct

- Do not place a duct bend directly before or after the fan!
  - This can cause damage to the bearings or other parts of the fan.
  - The duty point may not be reachable.
  - The fan may make noise.
- Ensure a direct, smooth and constant air flow to the device. Ensure a free exhaust, see the following pictures.
- Install an inlet cone or a channel section with a length of at least 2.5 x D. It is not recommended to install the protective guard directly in front of the impeller (without inlet cone), as additional noise and a deterioration of the air performance may result.
- To reduce transmission of vibration to the duct system, we recommend flexible connections from our accessory range 16.1 Accessory.



D = nominal diameter

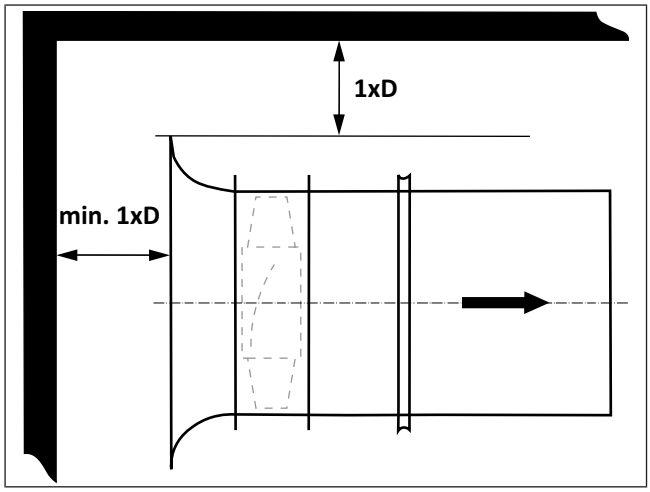
1. Inlet cone
2. Protective guard
3. Flexible connection

Distance from the wall/ceiling

- Ensure enough distance between the ceiling and the wall.
  - The duty point may not be reachable.

– The fan may make noise.

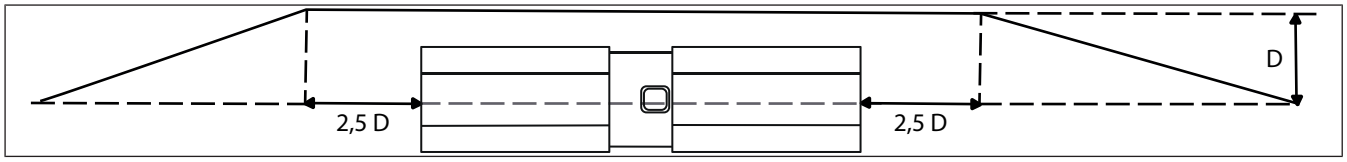
If the minimal distances are not possible for construction reasons, install a deflector in front of the fan in a way that ensures a direct, smooth and constant flow of air. Contact with rotating parts must be ruled out at all times – either by ducts of a corresponding length or by protective grids.



D = nominal diameter

Installation jet fans

- Ensure a direct, smooth and constant air flow to the device. Ensure a free exhaust, see the following pictures.
- The distance from the ceiling must be at least 1 x D, while the distance from walls or other fans, as well as from ceiling recesses and other structures, must be 2.5 x D.



D = nominal diameter

4.5.2 Installation of flexible connections

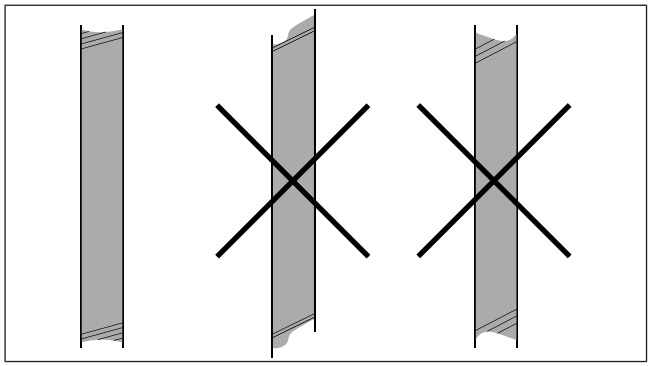
Important

Increasing noise emission

- Do not install the flexible connections at an angle.

Note:

When fitting the flexible connections, make sure that they are fitted according to the installation length, without compression or tensile strain. They must not be used to compensate any lack of precision in the assembly.



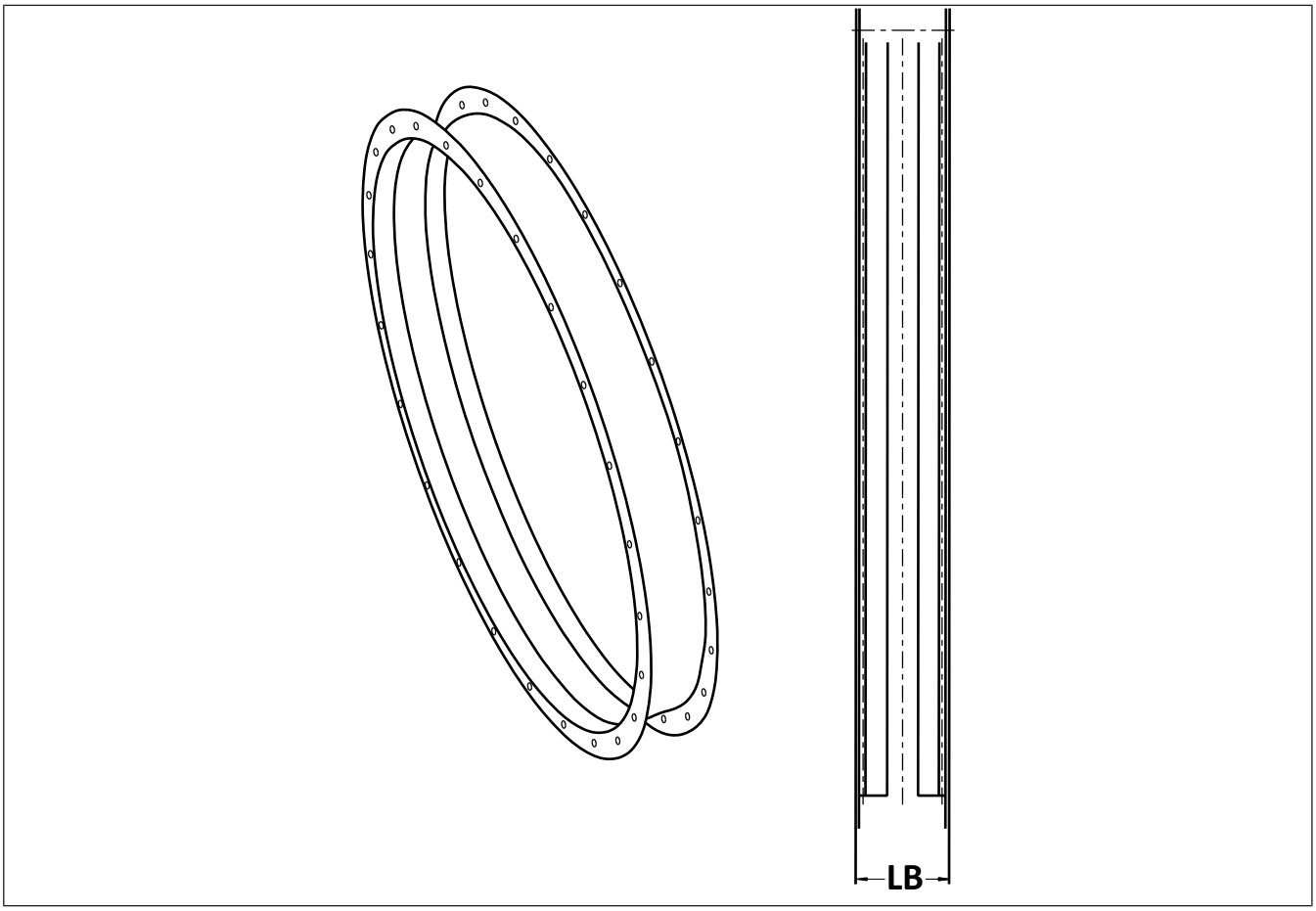
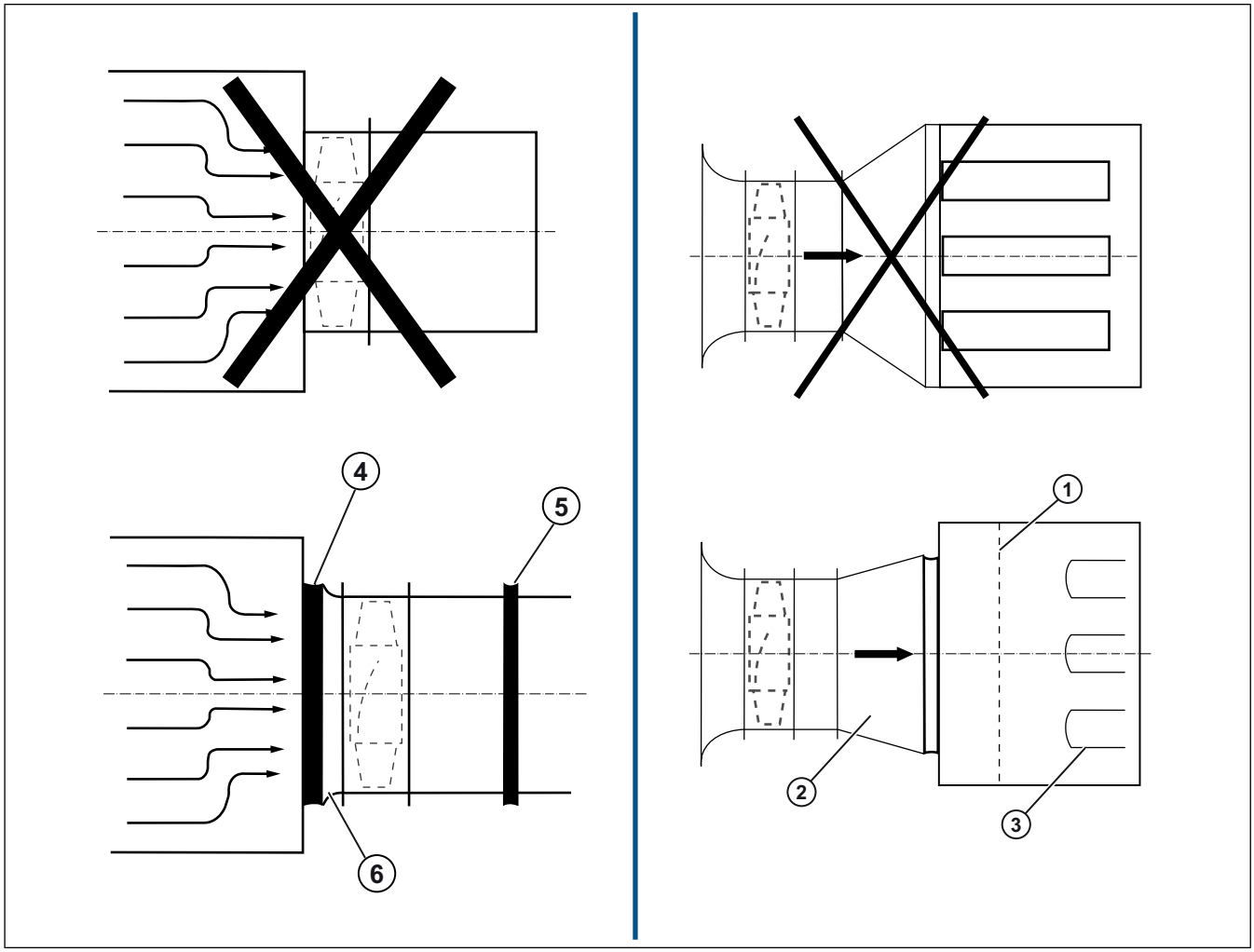


Table 7 Flexible connections — Installation length

EV (-25...70°C)			EVH (400°C/2h)	
Size	**LB full length [mm]**	**LE Installation length [mm]**	**LB Overall length [mm]**	**LE Installation length [mm]**
315	157 (+/-5)	LB — 10	147 (+/-5)	LB — 15
355	157 (+/-5)	LB — 10	147 (+/-5)	LB — 15
400	157 (+/-5)	LB — 10	147 (+/-5)	LB — 15
450	157 (+/-5)	LB — 10	147 (+/-5)	LB — 15
500	157 (+/-5)	LB — 10	147 (+/-5)	LB — 15
560	157 (+/-5)	LB — 10	147 (+/-5)	LB — 15
630	157 (+/-5)	LB — 10	147 (+/-5)	LB — 15
710	157 (+/-5)	LB — 10	147 (+/-5)	LB — 15
800	157 (+/-5)	LB — 10	147 (+/-5)	LB — 15
900	157 (+/-5)	LB — 10	147 (+/-5)	LB — 15
1000	157 (+/-5)	LB — 10	147 (+/-5)	LB — 15
1120	157 (+/-5)	LB — 15	147 (+/-5)	LB — 15
1250	157 (+/-5)	LB — 15	147 (+/-5)	LB — 15
1400	157 (+/-5)	LB — 15	200 (+/-5)	LB — 15
1600	157 (+/-5)	LB — 15	200 (+/-5)	LB — 15

4.5.3 Installation silencer

- Ensure correct installation of the silencer.
  - This can cause damage to the bearings or other parts of the fan.
  - The duty point may not be reachable.
  - The fan may make noise.
- Ensure a direct, smooth and constant air flow to the device. Ensure a free exhaust, see the following pictures.
- To reduce transmission of vibration to the duct system, we recommend flexible connections from our accessory range 16.1 Accessory



4. Plenum box with perforated sheet (flow straightener)
   not available as Systemair accessory
5. Deflector with inner core
   not available as Systemair accessory
6. Baffles
   not available as Systemair accessory
7. Flexible connection
   available as Systemair accessory
8. Flexible connection
   available as Systemair accessory
9. Inlet cone
   available as Systemair accessory

4.5.4 (K), (B), (F)— fans — special points

Table 8 (K), (B), (F)— fans — special points

Type	Special points for assembly
AXC(B), (K), (F)	Smoke exhaust fans are suitable for installation inside or outside a smoke reservoir, as well as outdoors. If positioned outside the smoke reservoir, the fan must be provided with heat insulation by the customer. The heat insulation must be provided with fire proof material L120 according to DIN 4102-4.
AXR(B), (K), (F)	
AXC-P (B), (F)	
AXC-PV (B), (F)	

4.5.5 Air gap

Ensure that the air gap between the housing and the impeller is complied with

- Contact Systemair.
- Check if the air gap complies with the table 1.4 Air gap between housing and impeller.
- Do not install the fan if the gap in the table is not complied with.

4.6 Installation jet fans

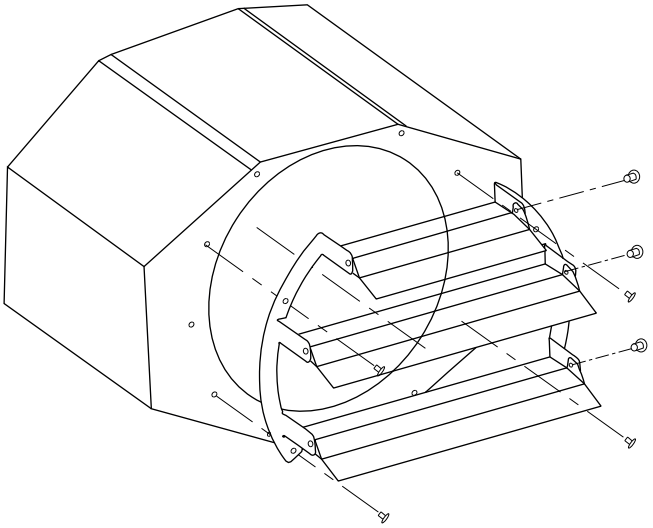
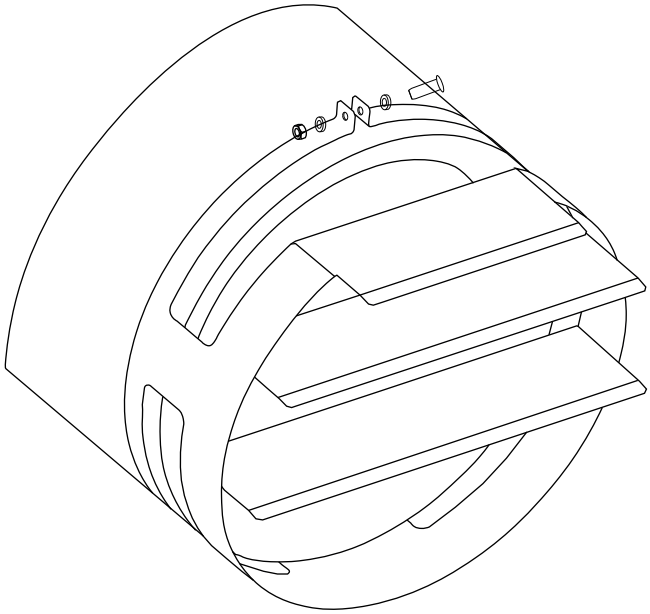
Always install in a horizontal position.

4.6.1 Deflector

For optimal guidance of the air flow, a deflector can be mounted on the silencer 16 Accessory overview.

The deflector as accessory for"AJR/AJ8" is delivered in a separate package.

- Before installing the jet fan, fasten the deflector on the silencer.
- Position the deflector fins so that after fastening the jet fan to the ceiling, the air flow is directed downwards at a 10° angle.

AJ8	AJR
	
Position the fins to the specified angle and secure them with 4.2 x 13 self-drilling screws. Use M4 x 12 selflocking screws to fasten the deflector to the fan.	Fasten the deflector with an M6 x 40 screw, an M6 nut and a Ø6 serrated washer.

5 Electrical connection

Safety information

Warning

Danger from electrical voltage.

- Observe the 2.5 5 rules of electrical safety.
- Prevent the ingress of water into the connection box.
- Electrical connection may only be carried out by adequately qualified persons.

5.1 To do before the electrical connection

- Make sure that the electrical connection agrees with the product specification on the motor name plate.
- Make sure that the environment for electrical connection is clean and dry.

- Make sure that the wiring diagram that is included with the supply of the product agrees with the terminals in the connection box.
- Check that the data on the name plate matches the connection data.

Table 9 Connection

Type	Electrical Connection
AXC (except AXC-EC), AXR, AXC -P, AXC PV, AJR, AJ8, AXC -H, AJ	Connection via terminal box. The terminal box is fitted on the outside of the housing.
AXCBF	Connection via terminal box. The terminal box is attached to the motor.
AXC-EC	Connection via controller fitted on the outside of the housing.

5.2 To connect the product to the power supply

- Complete the electrical connection for the motor or the controller. Refer to the motor/controller wiring diagram that is included with the product.
- Make sure that the cross section of the protective earthing is equal to or larger than the cross section of the phase conductor.
- Install a circuit breaker in the permanent electrical installation, with a contact opening of a minimum 3 mm at each pole.
- If a residual current device (RCD) is installed, make sure that it is an all-current sensitive RCD. All-current-sensitive residual current circuit breakers are required for use in alternating-current systems with 50/60 Hz, in combination with electronic devices such as EC motors, frequency converters or uninterruptible power supplies (UPS).
- Use all of the locking screws.
- Insert the screws by hand to avoid damaging the thread.
- Tighten all glands well in order to guarantee protection class IP.
- Screw the lid of the terminal box/inspection switch/controller evenly tight.
- Connect the cable end in a dry environment!

5.3 Frequency converter (if used) or AXC-EC

Risk from resonant frequencies when using different speeds, other than nominal speed.

- Only qualified personnel must connect and start the frequency converter/ fan/ controller
- Only operate the fan outside these speed ranges with **resonant frequencies**.
- Pass through these speed ranges so quickly that any vibration cannot exceed the admissible resonant frequency values.
- For speed-controlled fans, use continuous vibration monitoring to ensure safe operation outside resonance speeds.
- Observe the operating instructions of the frequency converter/ controller.

Commissioning of the frequency converter.

- Install the fan and frequency converter as near as possible to one another.
- Use shielded cables.
- All components (fan, frequency converter and motor) must be grounded.
- We recommend using all-pole sinus filters.

Operation of the frequency converter

- The rated electrical motor data indicated on the nameplate must not be exceeded during converter operation.
- Operation at frequencies below 10Hz and above 60Hz must be avoided. Do not exceed the values on the fan type plate.
- Smoke extract axial fans should be operated at maximum mains frequency. If the mains frequency is to be exceeded in individual cases, please contact Systemair in advance.
- Starting time: min. 60 sec.
- Check that the motor does not exceed the permissible temperature range during operation.

5.4 Standstill heating

If a standstill heater is installed in the fan motor, its terminals are located in the external terminal box. Connect the standstill heater externally so it starts automatically when the motor switches off. When the motor runs, the heater is not needed and must switch off automatically. Wire the standstill heater through an external circuit.

5.5 Fans for smoke extraction operation

- Controls and switches: In an emergency, all other controls and switches must be bypassed. The fan must stay on until a controlled shutdown is performed. Use an automatic control or a clearly marked switch.
- High-temperature specification: Use high-temperature cables between the switch and the fan unit. Follow country-specific regulations. Seal the cable entries properly.
- Power supply: Use a secure or separate power source to safely operate the fan in smoke extraction mode.

6 Commissioning

Warranty claims can only be made if commissioning work is carried out correctly and written evidence thereof is provided.

It is recommended that you complete the commissioning report. This can be found on the website in the documents section.

Commissioning must be performed only by properly qualified personnel. Observe the rules of 2.5 5 rules of electrical safety

6.1 To do before the commissioning

- Make sure that the installation and electrical connection are correctly done.
- Visually examine the product and accessories for damage.
- Make sure that the safety devices are correctly installed.
- Make sure that there are no blockages in the air inlet and the air outlet.
- Make sure that installation material and unwanted objects are removed from the product and the ducts.
- Ensure that the electrical connection, including earthing, is carried out in accordance with section “5 Electrical Connection”.

6.2 To do the commissioning

1. Disconnect the fan from the power supply (all-pole circuit breaker). If there is a safety switch set it in the OFF position.
2. Follow these steps:
   a. Turn the fan impeller by hand and make sure that it turn easily.
   b. Record the result in the commissioning report.
3. Make sure to turn the product in a direction that agrees with the related arrow on the product.
   a. Record the result in the commissioning report.
4. If you removed parts of the installation to get access to the fan impeller, install the removed parts again.
5. Start the product see7 Commissioning of speed-controlled fans.
6. Connect the fan to the power supply. If a safety switch is installed, set it to the ON position.
7. Set the minimum operation speed.
8. Increase the operation speed gradually to the maximum operation speed. The responsibility for gradually adjusting the speed lies with the system operator.
   a. Examine the vibrations in the casing and the bearing areas at all speed levels.
   b. Make sure that the vibrations agree with the specifications in ISO 14694.

      Operating the fan above the permitted vibration levels according to ISO 14694 is not allowed and will lead to early failure. In this case, the warranty is void.
   c. Make sure that none of the speed levels cause unwanted noise in the product.
   d. Record the result in the commissioning report.
9. Record the necessary data in the commissioning report.

7 Commissioning of speed-controlled fans

Caution

- If strong vibrations occur during commissioning, immediately increase or decrease the fan speed until the vibrations are decreased. Continuous strong vibrations can cause damage to components.
- Do not increase the fan speed to a higher rpm value than the maximum value that is given on the name plate.

Check the fan for vibrations at all normal operation speeds during commissioning. Determine and evaluate vibrations on the housing and bearing areas in accordance with DIN ISO 14694 depending on motor power and positioning.

Operating the fan above the allowed vibration levels according to ISO 14694 is not permitted and will cause early failure. In this case, there is no warranty.

Measurable vibration velocities depend e.g. on following factors:

- positioning
- bottom section/foundation state
- flow conditions/ Blockages in supply air or exhaust air.

The working point of the fan, as well as used external devices and accessories, also influence the running characteristics.

Important

The fan may be destroyed due to unpermitted frequencies/ speeds.

- Pay particular attention to damage from vibrations.
- After commissioning, start with shorter maintenance intervals.
- If no damage occurs, adjust the maintenance intervals up to the those stated in the operating instructions.
- Responsibility for gradual adaptation is with the system operator.

Natural Frequencies

When mechanical components are excited, natural frequencies can occur. These can cause excessive vibrations and potential component failure.

Excitation frequencies come from sources such as:

- Impeller rotation speed
- Blade passing frequency
- Motor rotation speed
- Aerodynamic forces

If an excitation frequency matches or is close to a component’s natural frequency, resonance may occur, potentially causing component failure.

Factors affecting excitation forces include:

- Rotational smoothness
- Balancing condition
- Aerodynamic forces
- Damping properties of the component parts

Caution

Danger from resonance frequencies!

Impellers, shafts, bearings, housings, or attachments can be damaged or destroyed!

- Skip speed ranges with high vibration levels or avoid them.
- Do not operate the fan continuously at speeds with high vibration levels!
- When starting, pass through these speed ranges quickly so that vibrations do not build up and allowed limits are not exceeded.
- Install permanent vibration monitoring.

8 Adjusting the blade angle

If the working point of the fan has to be changed and it is necessary to adjust the blade angle, please contact Systemair!

9 Operation

Safety information

Warning

Hazard from electrical voltage or moving components.

- Operation may only be carried out by adequately qualified persons.

Preconditions

- Ensure access only to persons who can safely handle the device.
- Only use the fan in accordance with the operating instructions and the operating instructions for the motor.
- A warning sign must be attached close to the air outlet, stating that the air outlet must not be covered.

Speed-controlled fan operation

For all speed controlled fans observe 5.3 Frequency converter (if used) or AXC-EC.

For AXC-EC

1. Make sure that the 0–10 V signal is set to “0” with the speed controller.
2. Set the installed safety switch in the ON position and wait 5 seconds.
3. Adjust the fan speed with the 0–10 V signal speed controller. If an external speed controller is not installed, adjust the fan speed directly with the integrated potentiometer.

10 Maintenance

Warning

Disconnect the fan from the power supply (all-pole circuit breaker). If there is a safety switch set it in the OFF position before you do the maintenance unless the instructions tell you differently. Obey local lockout procedures.

10.1 Maintenance safety information

- Troubleshooting/maintenance/repair may only be carried out by adequately qualified persons.
- Observe the 2.5 5 rules of electrical safety.
- The impeller must be at a standstill.

10.2 Maintenance schedule

Note:

Warranty claims can only be made if maintenance work is carried out correctly and written evidence thereof is provided.

We recommend regular maintenance intervals to ensure continuous fan operation. These maintenance intervals are specified in the table below. In addition, the operator must carry out follow-up activities such as cleaning, replacing defective components or other corrective measures. For traceability reasons, a maintenance plan must be created which documents the work carried out. This must be carried out by the operator.

Maintenance task	Usual operation conditions		Unusual operation conditions. [1]		
	Each 6 months	Each year	Each 3 months	Each 6 months	Each year
Visually examine the product and its components for damage, corrosion and dirt.		X		X	
Examine the fan impeller for damage and imbalance.		X		X	
Clean the product and the ventilation system.	X		X		
Do a check of all fasteners and make sure that they are fully tightened.		X			X
Make sure that the product and its components are correctly operated.	X			X	
Measure the current consumption and compare the result with the information on the name plate.		X		X	
If vibration dampers are installed, make sure that they operate correctly and examine them for damage and corrosion.		X			X

Maintenance task	Usual operation conditions		Unusual operation conditions. [1]		
	Each 6 months	Each year	Each 3 months	Each 6 months	Each year
Make sure that the electrical protective equipment and the mechanical protective equipment operates correctly.		X			X
Make sure that you can read the name plates of the product.		X		X	
Examine all cable connections for damage. Make sure that the cable glands are tight against the cables.		X			X
If flexible connections are installed, examine them for damage.	X			X	
Free the fan inlet from any contamination, dirt and loose parts.	X				
Check the function of the standstill heating (if used)					
Check and regrease the lubrication device (if available). See the manual of the motor.	X				
Check the condition and tension of tension chains, safety harnesses, and safety ropes, clean the safety devices, and replace them if there are signs of damage or rust.	X			X	
Check vibration and temperature sensors for condition and proper function. Test the operation using built-in test sensors or a dummy signal. Make sure the fan switches off automatically or gives a warning if the sensors or switches show a fault.	X			X	
Check the tightening torque of the fan fastenings to the base or foundation. Make sure the fastenings are present, correctly installed, tight, and fully seated.		X			X
Check the paint or galvanization and treat any damaged or rusty areas with suitable anti-corrosion paint.		X			X
Regrease the motor shaft.[2]	X		X		

1. The unusual operation conditions are classified as follows: Infrequent use of the fan (less than once a month); fan is used for emergency operation. Permanent ambient temperature >40°C or <-10°C, or temperature fluctuations >20K.
2. Only AJ 500-1600

Table 10 Activities for fans used for emergency operation

Check (if present)	Activity	Each 6 months
Operational readiness of the fan unit	Allow the fan to run for 1 hour	X
Operational readiness of the emergency system	Allow the "emergency" system to run for 15 minutes	X
Function of the “emergency” control	Test whether the “emergency” Control effectively bridges all the other controls and switches	X
Function of the standstill heating	Switch the motor off. The standstill heating must switch on automatically and remain switched on	X

10.3 To clean the product

Caution

- Do not clean the product with large amounts of water (e.g. high-pressure cleaner).
- Clean the impeller with a damp cloth or a soft brush.

- Remove dirt from the fan and the duct.
- If access to the fan impeller is possible, clean the fan impeller with a moist cloth or soft brush.
- The fans of the AJR and AJ8 series may only wiped down with a damp cloth.

Preconditions

- The power supply has been switched off (all-pole circuit breaker).

- The impeller must be at a standstill.
- After cleaning the product, regrease the motor shaft[1]

Note:

Dirt on the impeller can cause imbalance and increased vibrations, which can damage the fan and attached components.

10.4 Condensate openings

In the case of axial fans with condensate openings on the motor, it is necessary to open these at regular intervals, once a year, e.g. during maintenance work, in order to drain any condensate that may have collected. Ensure that the openings are unobstructed and point downwards.

After opening, draining and resealing the screw to drain the condensate, it is the customer's responsibility to restore the original anti-corrosion coating.

10.5 Spare parts

- When you send an order for spare parts, include the serial number of the product. The serial number is found on the name plate.
- For more information about spare parts, contact technical support.
- Always use spare parts from Systemair.

10.6 Overhaul/further maintenance

Pay attention to the safety references and preconditions as in normal maintenance. For the following activities and functions, contact Systemair:

- complete overhaul of motors
- replacement of bearings
- re-winding of motors
- monitoring of condition
- vibration analysis
- Impeller change, taking into account table 5 Air gap
- replacement of controller (AXC-EC)

Extension of maintenance intervals

- Systemair axial fans without Vibration Diagnostic Device (VDD) need to be maintained after a 20,000/40,000 hours of operation (depending on the type of motor bearing) or at the latest after 5 years.
- The maintenance intervals can be prolonged using Vibration Diagnostic Device (VDD), as shown in the table below.

Table 11

Extension of maintenance intervals				
	after the corresponding operating hours		at the latest after:	
	without VDD	with VDD	without VDD	with VDD
motor with closed bearings	40000 hours	60000 hours	5 years	8 years
motor with open bearings	20000 hours	40000 hours	5 years	8 years

If the fan is operating with VDD, maintenance action is necessary after above specified time or if the limit values for vibration according to ISO 14694:2003 are exceeded. Operating the fan above the limits of ISO 14694 is not allowed.

Steps to maintain a Systemair axial fan:

- Check the condition of the shaft sealing rings and shaft bearings and take action if necessary.
- If the motor is equipped with a relubrication device, please contact Systemair for information on relubrication of the motor bearings.:

Work before switching on again

- Attach all the safety and protective devices tightly and securely.
- Remove all the devices with which you have blocked the rotor.
- Remove all assembly residues and foreign bodies from the area around the fan unit.

10.7 Relubrication of the motor bearings

For information on relubrication of the motor bearings, please contact Systemair.

1. Only AJ 500-1600

11 Troubleshooting

Note:

If you cannot find a solution to your problem in this section, speak to Systemair technical support.

Safety information

- Troubleshooting/maintenance/repair may only be carried out by adequately qualified persons
- Note 2.5 5 rules of electrical safety
- The impeller must be at a standstill and the fan must be disconnected from the power supply (all-pole circuit breaker).

Problem	Possible causes	Corrective actions
The product does not operate smoothly.	The fan impeller is out of balance.	Speak to Systemair technical support.
	There is dirt on the fan impeller.	Clean the fan impeller carefully, rebalance. Refer to 10.3 To clean the product.
	The fan impeller has damages or deformations because the transported air contains aggressive media.	Speak to Systemair technical support.
	The fan impeller rotates in wrong direction.	Make sure that the electrical connection is correctly done. Change direction of rotation (swap two phases in case of a 3-phase motor).
	The fan impeller has deformations because of too high temperatures.	• Replace the fan impeller. • Make sure that the temperature of the transported air is not higher than the value on the name plate.
	There are unusually strong vibrations in the product or the duct system.	Make sure that the product is correctly installed. Do a check of the duct system.
	The product is operated in a resonant frequency range.	Increase or decrease the fan speed until the product operates smoothly. Refer to 6 Commissioning.
The air output is not sufficient.	The fan impeller does not turn in the correct direction.	Make sure that the electrical connection is correctly done. Change direction of rotation (swap two phases in case of a 3-phase motor).
	The electrical connection is not correctly done.	Make sure that the electrical connection agrees with the wiring diagrams.
	The air pressure is too low because of incorrect installation.	Do the necessary changes in the duct system and installed components to increase the air pressure. Refer to 4 Installation 6 Commissioning.
	The spring return damper on outdoor or exhaust duct is closed or not fully open.	Adjust the spring return damper.
	There is blockage in the air inlet or the duct system.	Remove the blockage.
	The product is not applicable for the installation location.	Make sure that the product is applicable for the installation location.
	The motor power is decreased because of too high temperature in the motor. **Note:** This is applicable for EC motors only.	• Do a check of the ambient temperature. • Make sure that the space around the motor is sufficient to keep the temperature down.
	Rotational speed is too low.	Check the program of the controller, contact Systemairtechnical support.

Problem	Possible causes	Corrective actions
There is unusual noise when the product starts or operates.	There is strain in the connections of the duct system.	Loosen the connections, align the parts of the duct system correctly and tighten the connections.
Thermal contacts, PTC or resistors are released.	The fan impeller does not turn in the correct direction.	Make sure that the electrical connection is correctly done. Change direction of rotation (swap two phases in case of a 3-phase motor).
	A phase loss occurred.	If the motor is a 3-phase motor, make sure that no phase is missing. **Note:** This is not applicable for EC motors.
	The motor is overheated.	• Do a check of the motor cooling impeller. (If used.) • If it is possible, measure the resistance to do a check of the motor winding. Speak to Systemair technical support.
	There is blockage in the motor.	Speak to Systemair technical support.
The fan speed does not get the nominal value.	Defective motor winding.	If it is possible, measure the resistance to do a check of the motor winding. Speak to Systemair technical support.
	The speed control is not correctly set.	Set the speed control correctly. Contact Systemair technical support.
	The fan impeller cannot turn freely because of mechanical blockage.	Remove the blockage.
	Phase loss occurs.	If the motor is a 3-phase motor, make sure that no phase is missing.
	The drive motor is improperly aligned.	Speak to Systemair technical support.
The motor does not rotate.	A component in the power supply is defective.	Do a check of the power supply. Replace defective components and connect the power supply again.
	The electrical connection is not correctly done.	Make sure that the electrical connection agrees with the wiring diagrams.
	The motor protection is released because the motor is overheated.	Let the motor cool down. Reset the motor protection. Find the cause of the overheated motor.
	A phase loss occurred.	If the motor is a 3-phase motor, make sure that no phase is missing.
	There is a mechanical blockage.	Remove the blockage.
	Controller properly programmed.	Contact technical support.
The electronic components or the motor is overheated.	The motor is overloaded or the ambient temperature is too high.	Let the motor cool down. Reset the motor protection. Find the cause of the overheated motor. Make sure that the product is applicable for the installation location.
	The cooling of the product is not sufficient.	Improve the cooling.

12 Disposal

- Ensure material is recycled. Observe national regulations.
- The device and the transport packaging are predominantly made from recyclable raw materials.
- Disassemble the fan into its components.
- Separate the parts according to:
  - reusable material
  - material groups to be disposed of (metal, plastics, electrical parts, etc.)

12.1 To disassemble and discard the parts of the product

Warning

During dismantling, live electrical parts are exposed and can cause electric shock if touched. Before dismantling, disconnect the fan from the power supply on all poles and secure it against being switched on again!

1. Disconnect and disassemble the product in the opposite sequence of electrical connection and installation.
2. Recycle the product parts and the packaging at an applicable disposal location.
3. Obey the local and national requirements for disposal.
4. After a smoke extraction event / fire event: Remove and dismantle the fan. Dispose of the fan and replace it.

13 Warranty

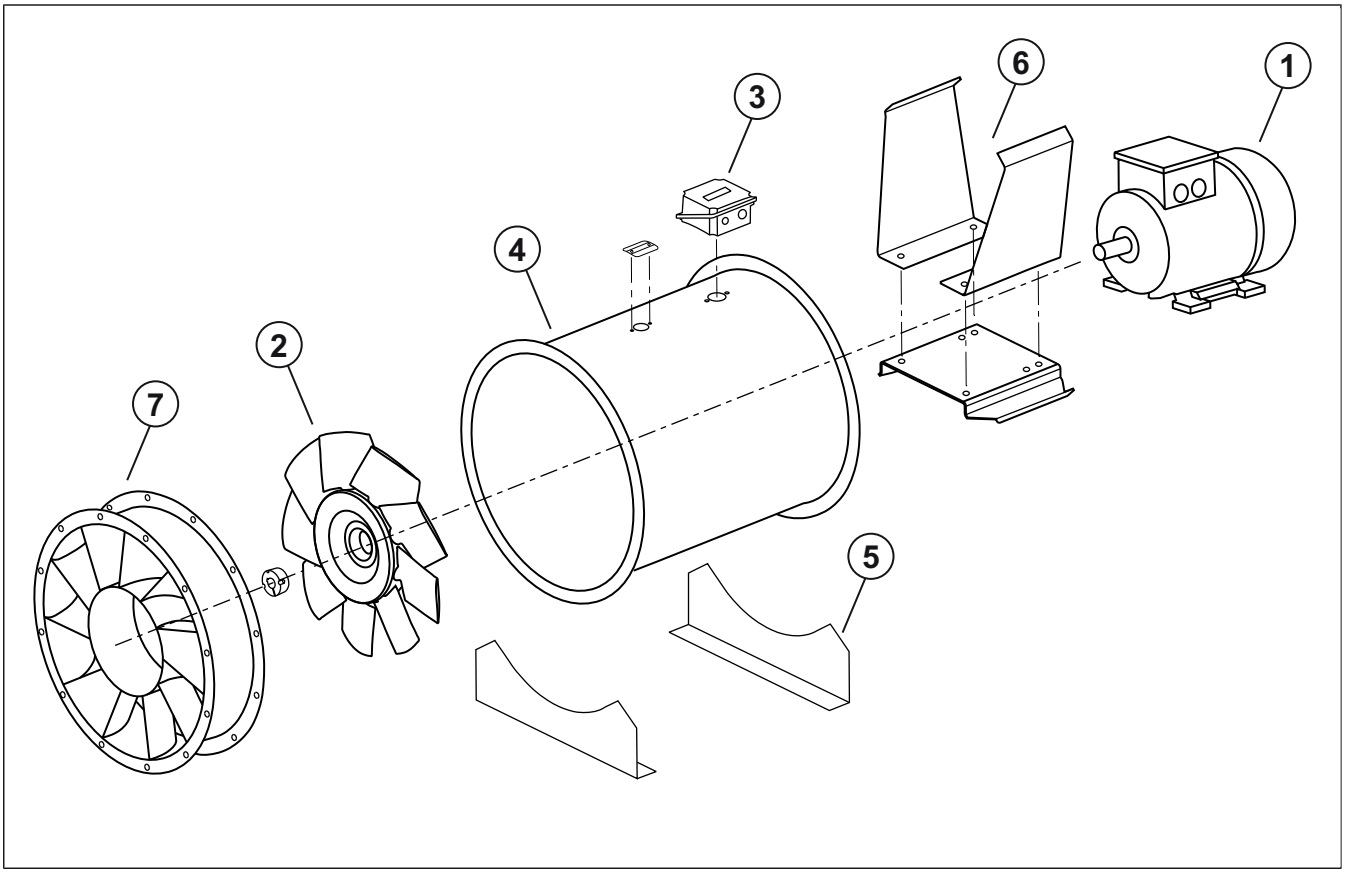
For warranty claims, send a written maintenance plan and the commissioning report to Systemair. The warranty is only applicable for these conditions:

- The product is correctly installed and operated.
- Warranty does not cover damage caused by external factors.
- Motor protection is used.
- The instructions in the data sheets are obeyed.
- Maintenance instructions are obeyed.
- Report any problems to Systemair right away with detailed description and photos.
- The product is operated for a minimum of 1 hour each month.
- No proof of intentional damage.

14 Technical data

14.1 Construction AXC, AXR

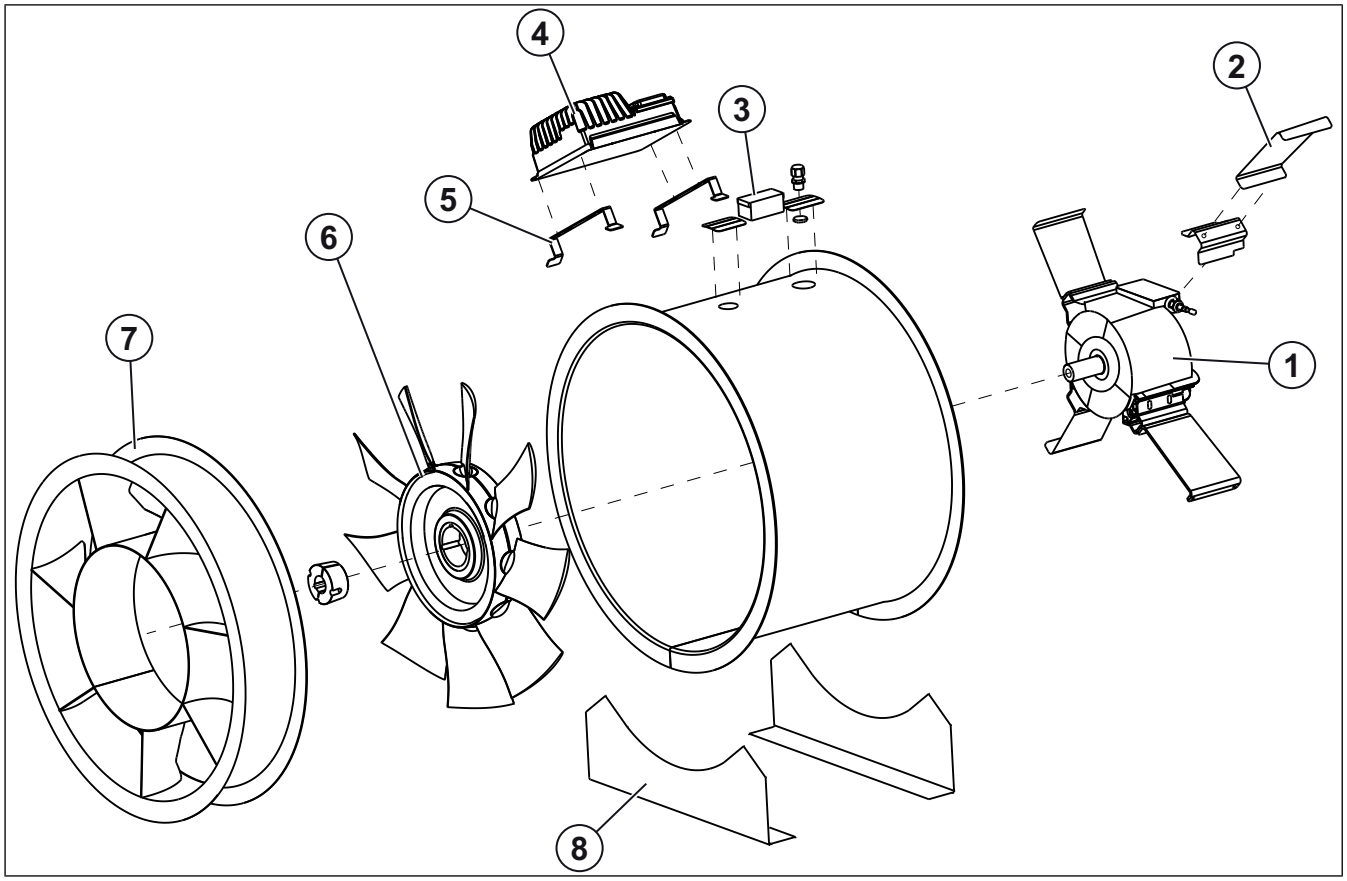
Construction AXC, AXR



10. Motor
11. Impeller
12. Terminal box
13. Housing
14. Mounting feet
15. Motor brackets
16. Guide vanes
    – only available for -PV version

14.2 Construction AXC-EC

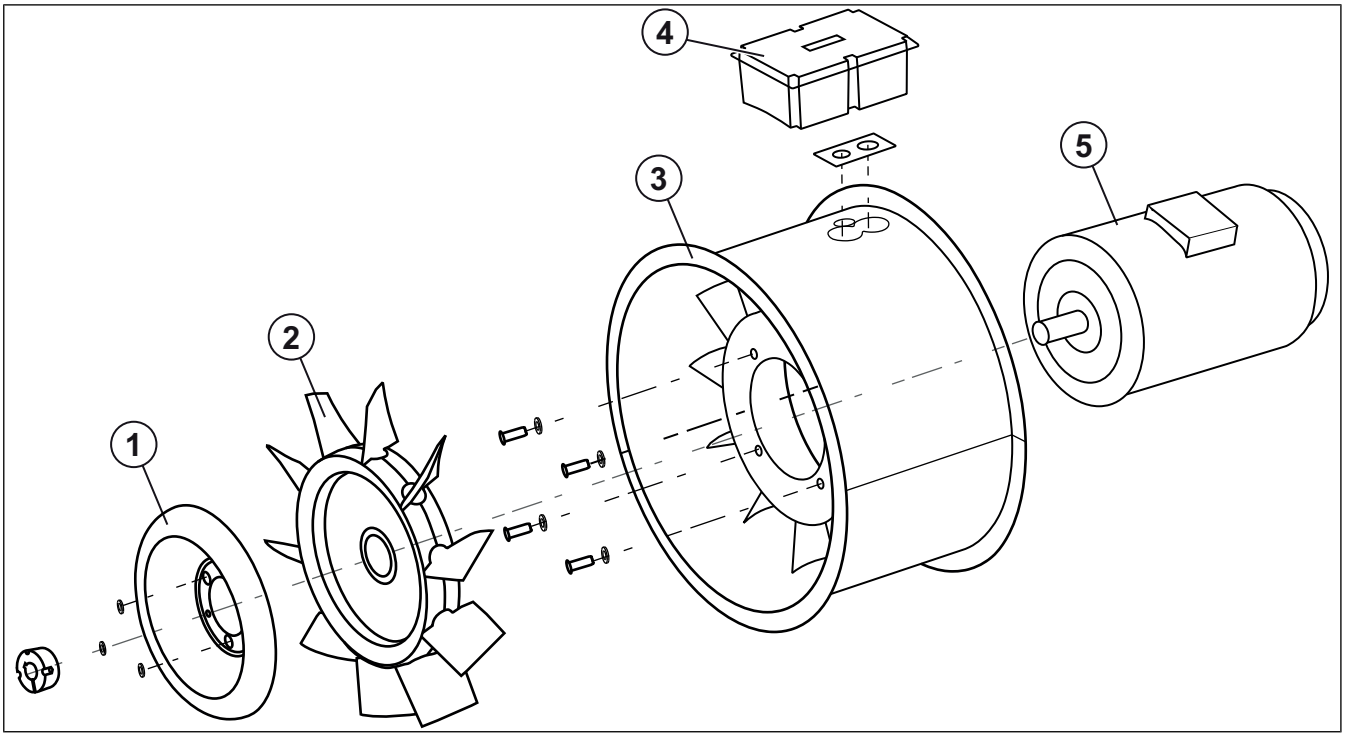
Construction AXC-EC



17. Motor
18. Motor brackets
19. Potentiometer
20. Controller
21. Controller support
22. Impeller
23. Guide vanes

14.3 Construction AXC-H

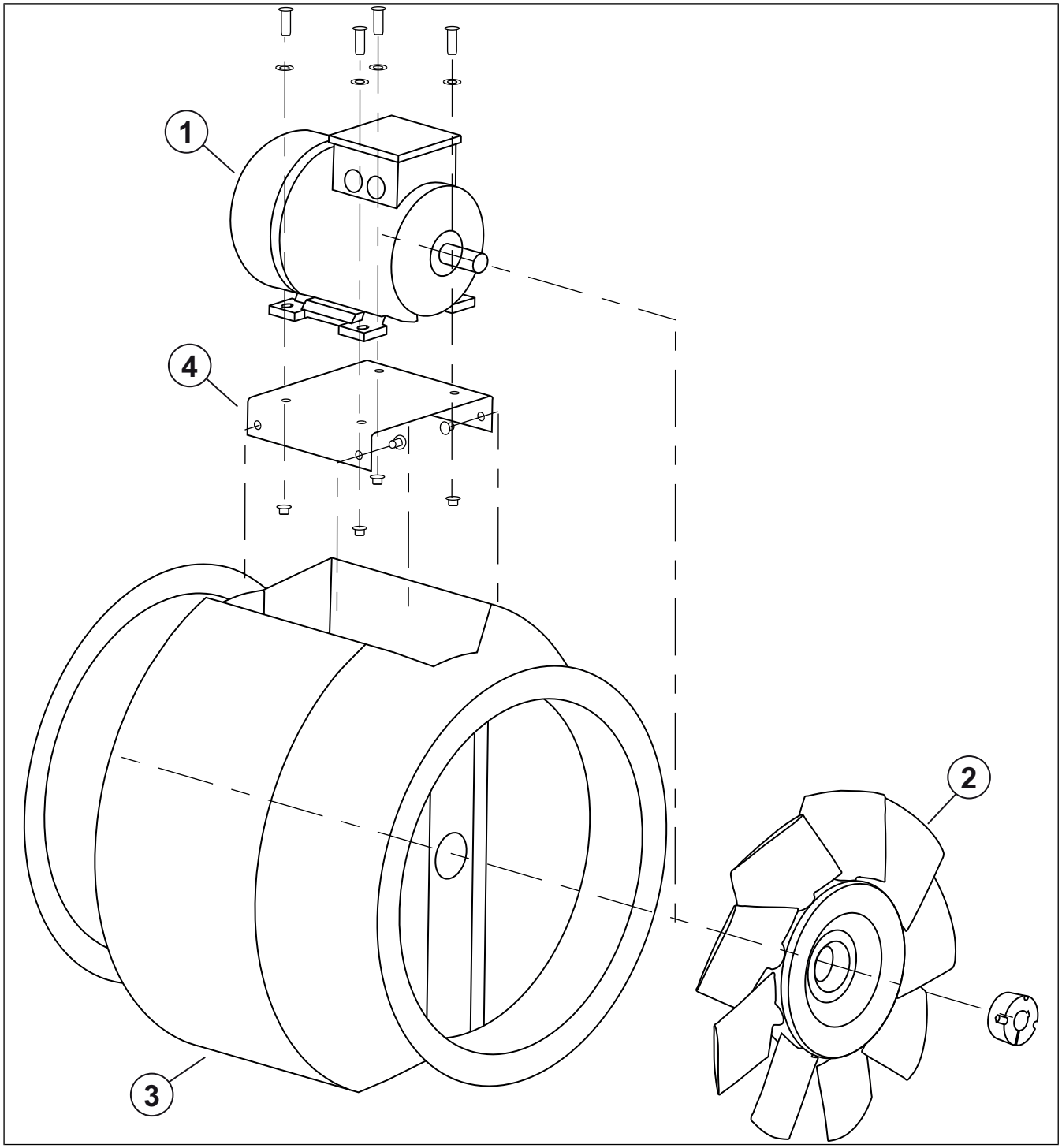
Construction AXC-H



24. Hub cover
25. Impeller
26. Housing with integratet guide vane
27. Terminal box
28. Motor

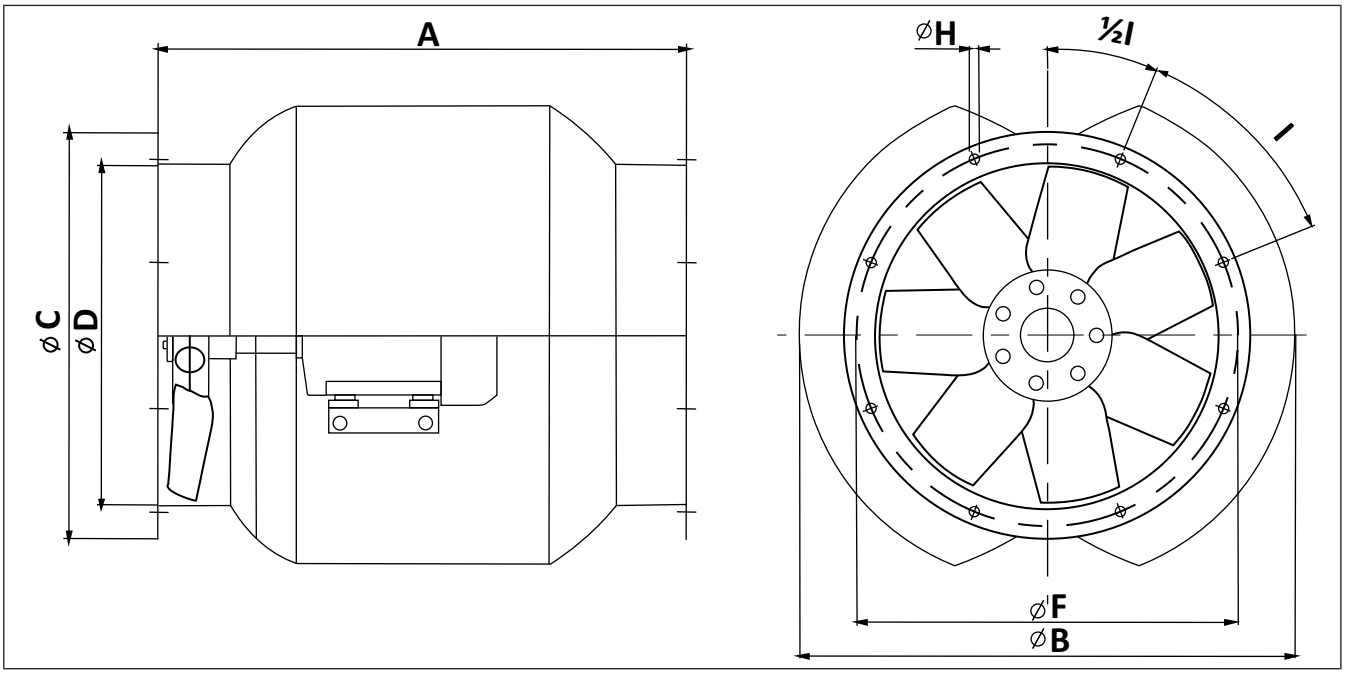
14.4 Construction AXCBF

AXCBF



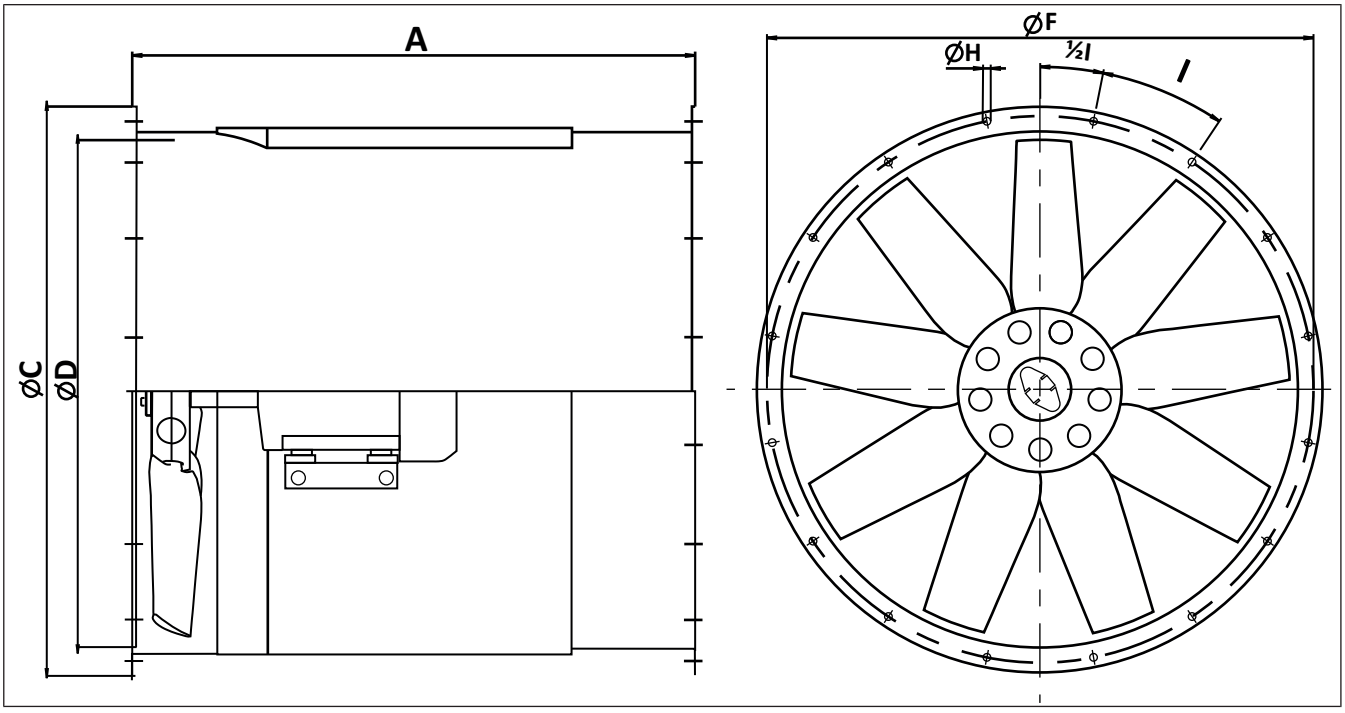
29. Motor
30. Impeller
31. Housing
32. Motor bracket

Size 250 — 500



Size [mm]	A	Ø B	Ø C	Ø D	Ø F	Ø H	l
AXCBF 250	535	448	328	250	280	10	8x45°
AXCBF 315	535	452	385	320	355	10	8x45°
AXCBF 400	535	585	480	400	450	10	8x45°
AXCBFF 500	660	695	590	500	450	12	12x30°

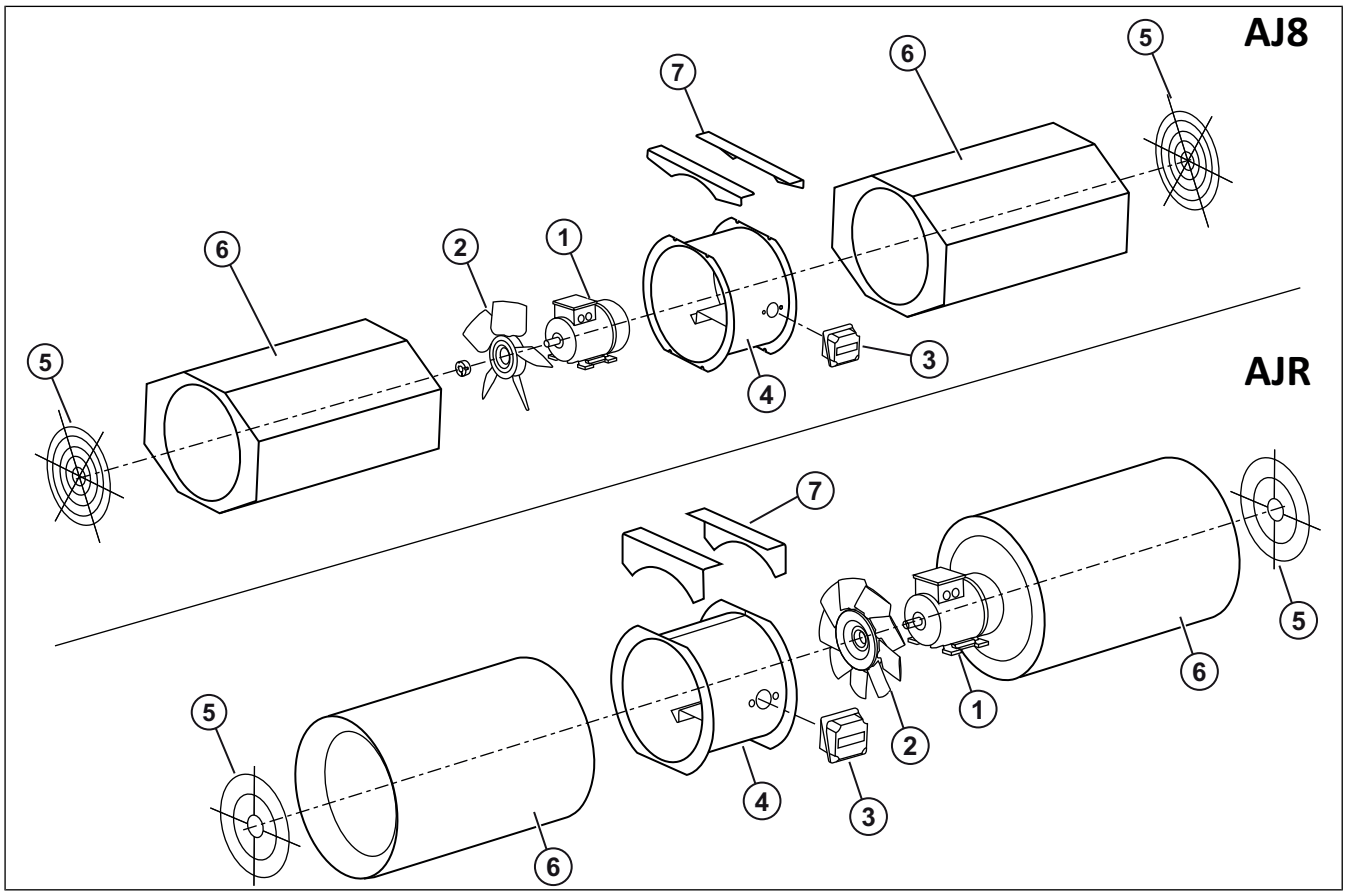
Size 630 — 800



Size [mm]	A	Ø B	Ø C	Ø D	Ø F	Ø H	l
AXCBF630	790	—	634	630	690	12	12x30°
AXCBF800	880	—	797	800	860	12	16x22.5°

14.5 Construction AJR, AJ8

AJR/ AJ8



33. Motor
34. Impeller
35. Terminal box
36. Housing
37. Protective guard
38. Silencer
39. Mounting bracket

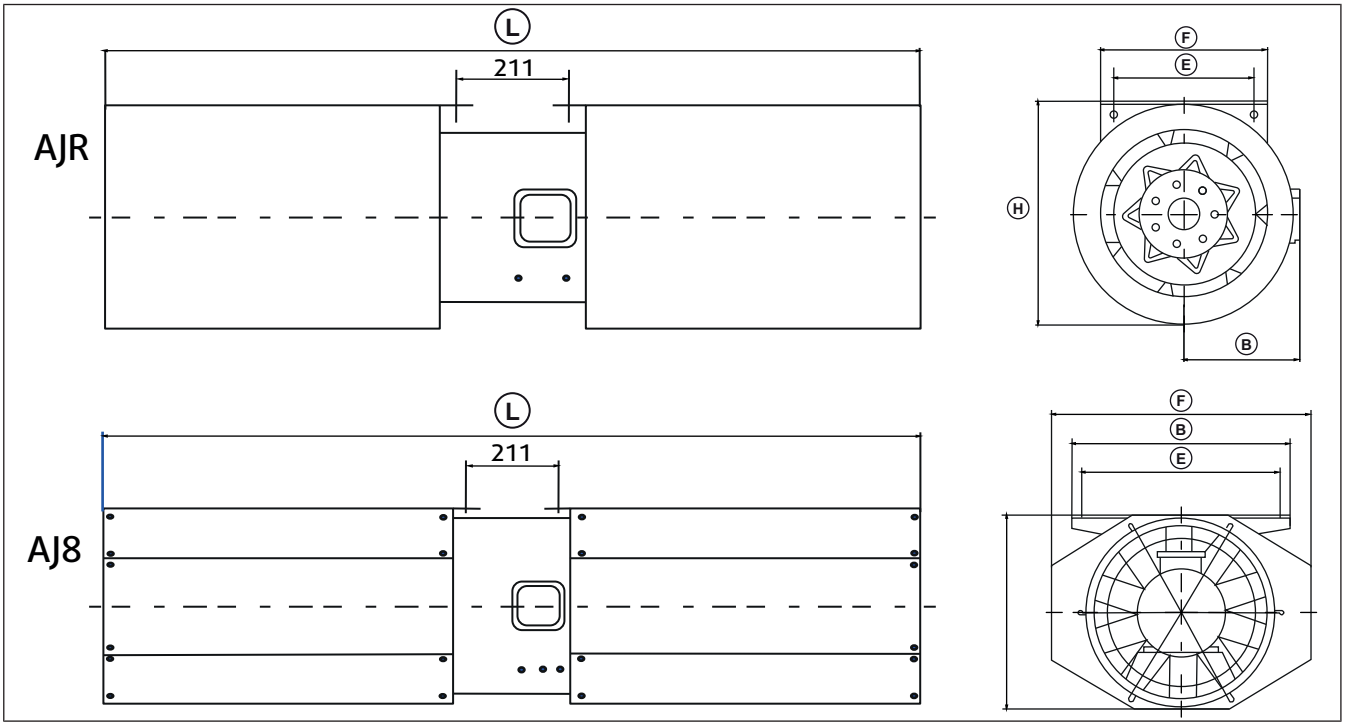
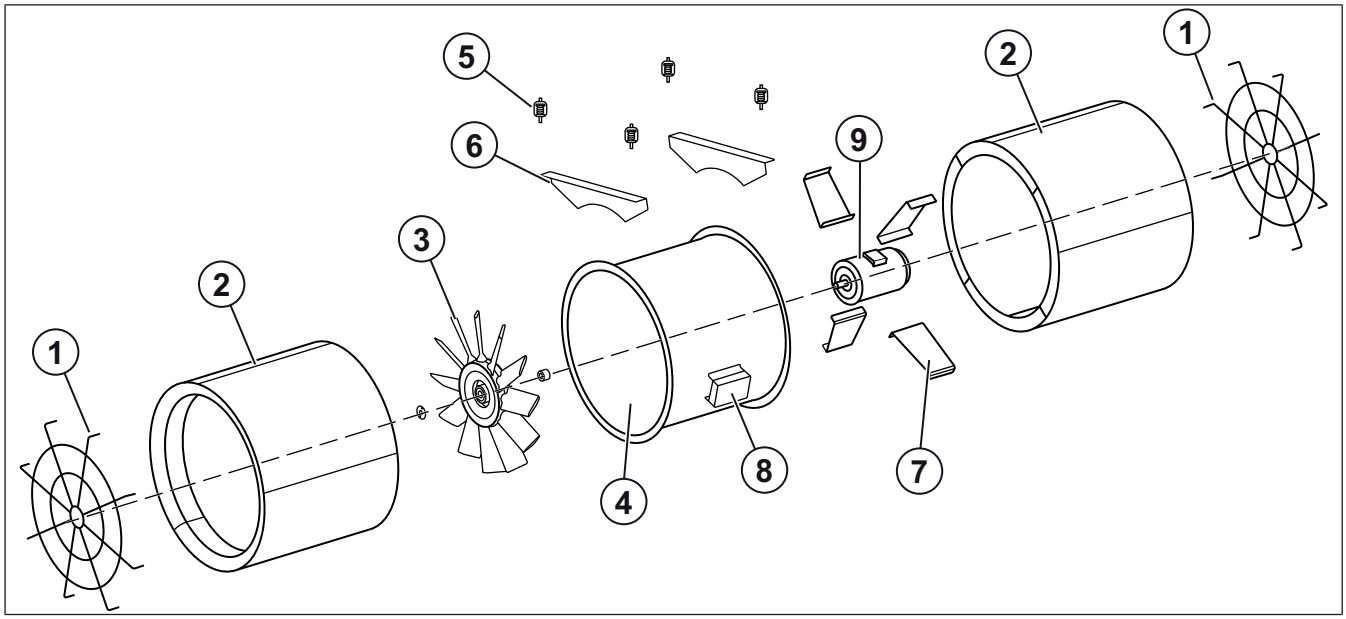


Table 12 Dimensions AJ8, AJR

Size	H [mm]	B [mm]	E [mm]	F [mm]	L [mm]
AJ8 315 (B), (F)	365	375	325	678	1535
AJ8 355 (B), (F)	395	400	1535	678	1695
AJ8400 (B), (F)	445	500	460	727	1875
AJR 315 (B), (F)	365	223	265	433	1875
AJR 355 (B), (F)	465	465	350	473	1695
AJR 400 (B), (F)	505	266	350	516	1875

14.6 Construction AJ

AJ



40. Protection grille
41. Silencer
42. Impeller
43. Housing
44. Vibration damper
45. Mounting feet
46. Motor brackets
47. Terminal box
48. Motor

14.7 Fan and motor data

- The technical data of the fan can be seen on the name plate or the data sheet.
- The motor data can be found on the name plate of the motor or in the technical documents of the motor manufacturer.
- The data on the name plate of the fan apply to "standard air" according to ISO 5801.

14.8 Temperature types

Table 13 Types of fans

Type	Diameter [mm]	Long-term operation –20° C...55°C	Long-term operation -20° C...200°C	(K) 250°C/120 min.	(B) 300°C/ 120 min.	(F) 400°C/ 120 min.
AXC*(1)/ AXR	315 — 2240	X				
AXCBF	250— 800	X	X			
AXC(B)/ AXR (B)	315 — 2240	X			X	
AXC(F)*(1)/ AXR(F)	315 — 2240	X				X
AJR/ AJ8	315 — 400	X				
AJR(B)/ AJ8(B)	315 — 400	X			X	
AXCAJR (F)/ AJ8(F)	315 — 400	X				X
AJ	560 — 1600	X				
AJ(K)	560 — 1600	X		X		
AJ(B)	560 — 1600	X			X	

Table 13 Types of fans (continued)

Type	Diameter [mm]	Long-term operation –20° C...55°C	Long-term operation -20° C...200°C	(K) 250°C/120 min.	(B) 300°C/ 120 min.	(F) 400°C/ 120 min.
AJ(F)	560 — 1600	X				X
AXC(K)/ AXR (K)	315 — 2240	X		X		

*(1) also —H and -EC

14.9 Protecting the motor

Important

Damage to motor due to overcurrent, overload or short circiut.

- Lead-out temperature monitors must be integrated in the control circuit in such a way that, if a fault occurs, the motor cannot switch on again automatically after it has cooled down.
- Motor lines and temperature monitor lines should be laid separately on principle.
- Without thermal protection: Use a motor protection switch!

Important

Damage to motor due to over temperature.

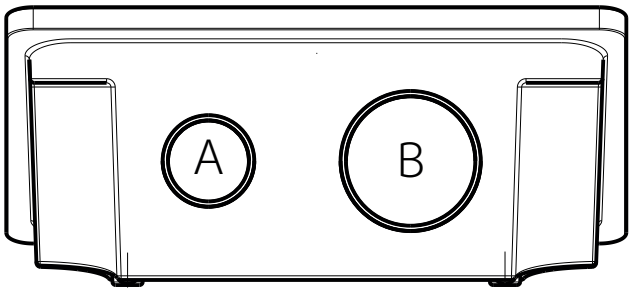
- To avoid too many starts and stops a falling delay time of minimum 5 minutes has to be realized in the control circuit.

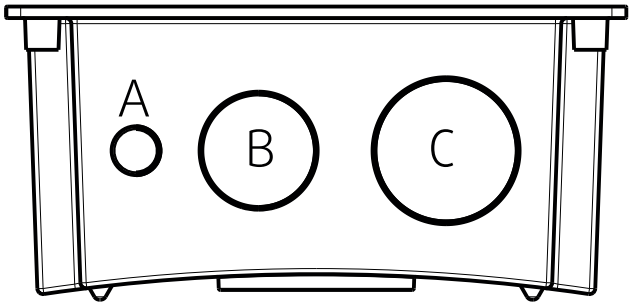
Table 14 Motor protection

Type	Motor protection	Thermal protection	Speed regulation
AXC, AXC-H, AXR, fans for long-term operation —20 ° C...55 °C only.	By customer	PTC	Possible via frequency converter
AXC (B),(F),(K)	By customer- must be bypassed in case of fire	without (PTC optional)	Possible via frequency converter
AXR (B),(F),(K), including jet fans for long-term operation -20°C...55°C only			
AXC (B)-P, (F)-P			
AXC (B)-PV, (F)-PV			
AXC (B)-PV, (F)-PV			
AJ, AJR, AJ8 (B), (K), (F), including jet fans for long-term operation -20°C...55°C only			
AXC-EC	motor protected by controller; controller should be protected by customer.		without Speed regulation: possible with potentiometer

14.10 Terminal box

The below terminal boxes are used for fans with AC-motor up to a nominal current of 100 A. If the nominal current exceeds 100 A other terminal boxes are used.

Terminal box size* 900	
• up to size* 900 • up to 63 A	
A: M16x1,5 B: M25x1,5 *nominal diameter of the fan	

Terminal box size* 1000	
• from size* 1000 • up to 100 A	
A: M16x1,5 B: M40x1,5 C: M50x1,5	

15 Wiring diagram

Important

Wrong connection can damage or destroy the motor

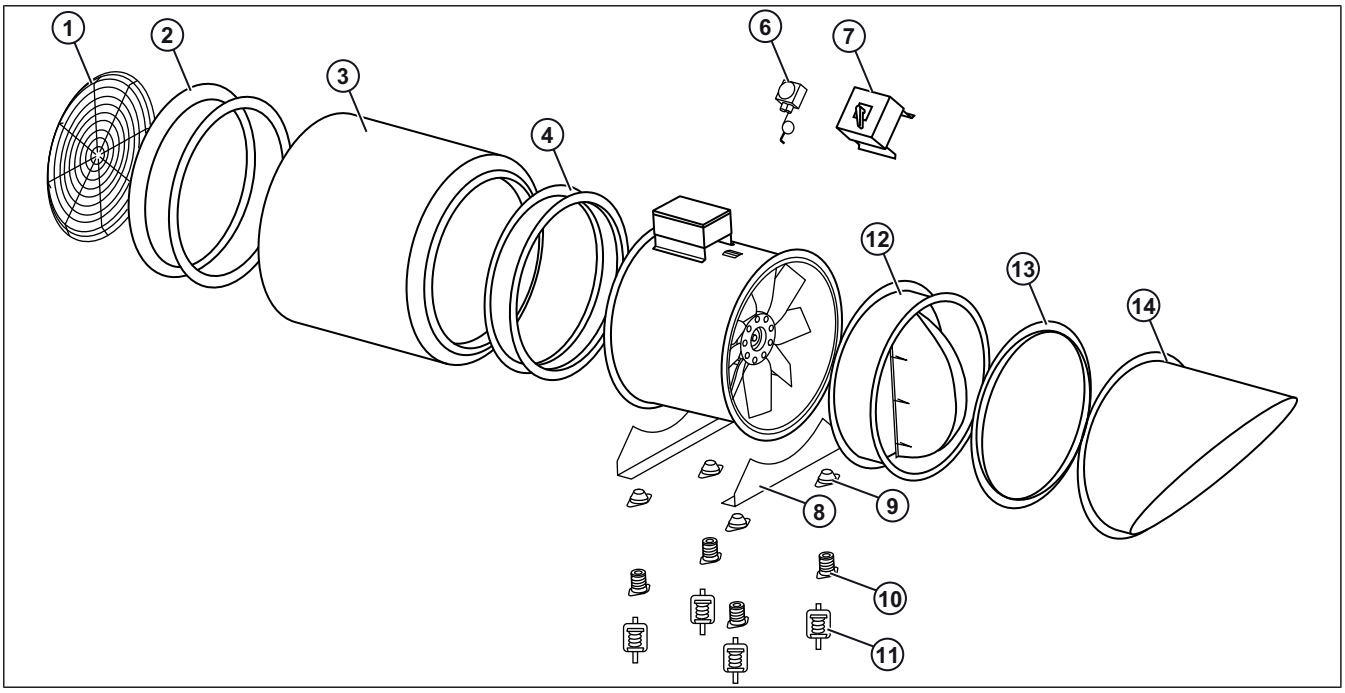
Caution

The motor/ controller circuit diagram is on the motor/ controller nameplate. Check the nameplate before installation or maintenancetoensurecorrectconnectioninformation. If the nameplate is not readable or if you need more information, contact the manufacturer or technical support.

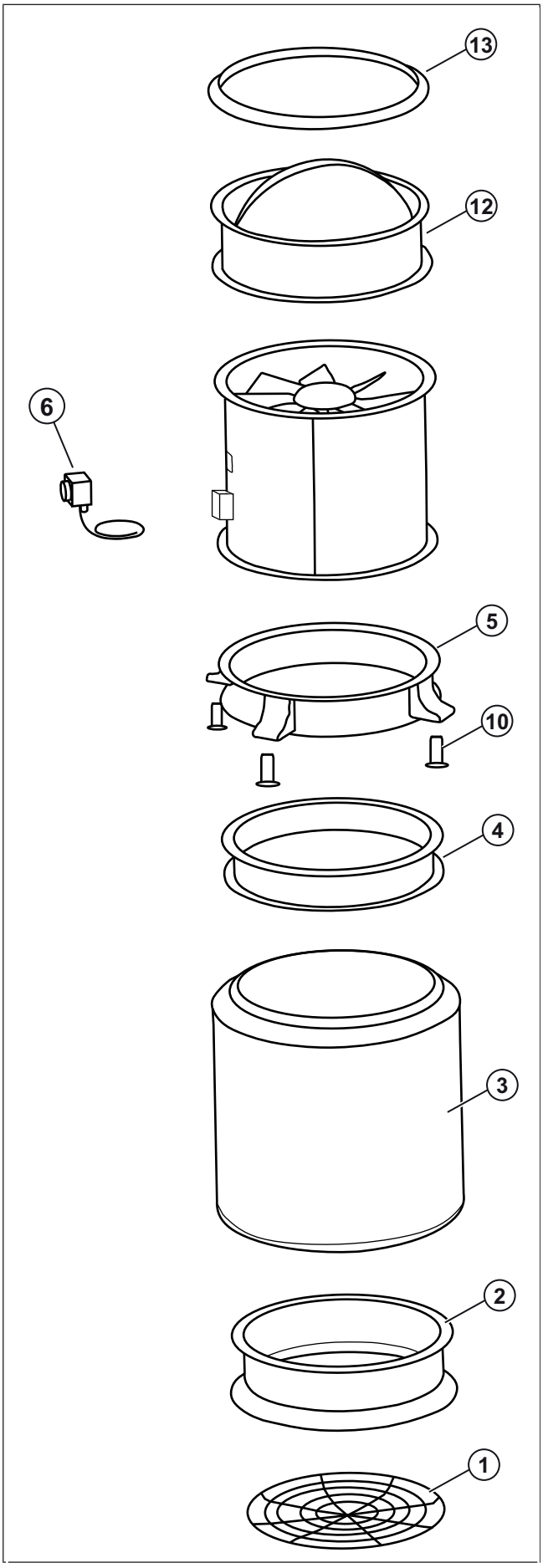
16 Accessory overview

16.1 Accessory

Horizontal installation



49. SG/ SG-20*: Protection guard
50. ESD-F: Inlet cone
51. RSA: Silencer
52. EV, EVH (F400): Flexible connection
53. MPR, Mounting ring from size 315 to 1000
54. REV (60°C): Isolator switch
55. REV, (fire rated): Isolator switch
56. MFA: Mounting foot
57. SD: Rubber anti-vibration mounts
58. FSD: Spring anti-vibration mounts
59. ZSD: Suspension spring anti-vibration mounts/ Rubber-metal damper for mounting on the ceiling
60. LRK: Air operated damper
61. GFL: Counter flange
62. ABS: Outlet cowl



Note:

- Some accessories are also available for jet fans and AXCBF, please check our online catalogue or contact Systemair.
- *The distance between safeguard SG-20 and the impeller must be ≥ 120 mm according to ISO 13857.

17 EU Declaration of Conformity Axial

We, the manufacturer

Manufacturer	Systemair GmbH
Address	Seehöfer Straße 45 97944 Boxberg, Germany

declare under our sole responsibility that the product

Product Designation	AXC: Axial fans AXR: Reversible axial fans AXCBF: Axial fans with motor outside the air flow	
Type/Model	AXC; AXC (K); AXC (B); AXC (F); AXC -G; AXC (K)-G; AXC(B) -G; AXC (F)-G; AXC-G-PV; AXC(B)-G-PV; AXC(F)-G-PV; AXC -GC; AXC -P; AXC (K)-P; AXC (B)-P; AXC (F)-P; AXC-G-P; AXC (K)-G-P; AXC (B)-G-P; AXC (F)-G-P; AXC -BOX; AXC -G -BOX; AXC -P-BOX; AXC -G-P-BOX; AXC (B)-BOX; AXC (B)-G -BOX; AXC (B)-P-BOX; AXC (B)-G-P-BOX; AXC (F)-BOX; AXC (F)-G -BOX; AXC (F)-P-BOX; AXC (F)-G-P-BOX; AXC-PV; AXC (K)-PV; AXC (B)-PV; AXC (F) -PV; AXC-SC-P; AXC-SC (B)-P; AXC-SC (F) -P; AXC-H; AXC-G-H; AXC-EC; AXR; AXR (K); AXR (B); AXR (F); AXCBF	
Notified body (only for smoke extraction fans)	Number 2797, BSI Group The Netherlands B.V. Say Building, John M. Keynesplein 9, 1066 EP Amsterdam, Netherlands	System 1 Certification number: 2797-CPR-719672 (EU)
Identification	Serial numbers dating from 2026 and onwards	

fulfils the relevant provisions of following directives and harmonized standards (for the presumption of conformity). When installed in accordance with the installation instruction and depending on their intended use the product is safe according with:

Directive 2006/42/EC (Machinery)

EN ISO 12100:2010

Safety of machinery - General principles for design - Risk assessment and risk reduction

EN 60204-1:2018

Safety of machinery - Electrical equipment of machines - Part 1: General requirements

Directive 2014/30/EU (Electromagnetic Compatibility)

EN 61000-6-2:2005 +AC:2005 (applicable to the products, where within scope)

Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments

EN 61000-6-4:2007 +A1:2011 (applicable to the products, where within scope)

Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

Directive 2011/65/EU (RoHS) and Commission Delegated Directive (EU) 2015/863

EN IEC 63000:2018

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Directive 2009/125/EC (Ecodesign)

Standard fans

Commission Regulation (EU) 2024/1834 ecodesign requirements for fans between 125 W and 500 kW, as amended by **Regulation (EU) 2025/2481**

Fans integrated into other products and/or spare part fans (subject to transitional provisions):

Commission Regulation (EU) No 327/2011 ecodesign requirements for fans between 125 W and 500 kW

This conformity is declared in accordance with the applicable transitional provisions set out in Annex II (a) to (d) of Commission Regulation (EU) 2024/1834. The requirements of Annexes I to III of Regulation (EU) No 327/2011 continue to apply.

Regulation 2024/3110/EU (Construction Products)

EN 12101-3:2015 +A1:2017 (applicable to the products, where within scope)

Smoke and heat control systems - Part 3: Specification for powered smoke and heat control ventilators (Fans)

Additional applied standards (State of the art):

EN IEC 61000-6-2:2019 (applicable to the products, where within scope)

EN IEC 61000-6-4:2019 (applicable to the products, where within scope)

Person authorized to compile the technical file:

i.V. Thorsten Sturm

Technical Director

This declaration applies only to the product as supplied and placed on the market by the manufacturer. Subsequent modifications or additions are not covered and may require a separate conformity assessment.

Boxberg, Germany 2026–07–24.

Martin Babczyk
Managing Director

18 EU Declaration of conformity Jet

We, the manufacturer

Manufacturer	Systemair GmbH
Address	Seehöfer Straße 45 97944 Boxberg, Germany

declare under our sole responsibility that the product

Product designation	AJ: Jet fans AJR; AJ8: Carpark Jet fans	
Type/Model	AJ 315-1600; AJ(K) 315-1600; AJ(B) 315-1600; AJ(F) 315-1600 AJ8 315-400; AJ8(B) 315-400; AJ8(F) 315-400 AJR 315-400; AJR(B) 315-400; AJR(F) 315-400	
Notified body (only for smoke extraction fans)	Number 2797, BSI Group The Netherlands B.V. Say Building, John M. Keynesplein 9, 1066 EP Amsterdam, Netherlands	System 1 Certification number: 2797-CPR-719672 (EU)
Identification	Serial numbers dating from 2026 and onwards	

fulfils the relevant provisions of following directives and harmonized standards. When installed in accordance with the installation instruction the product is safe according with:

Directive 2006/42/EC (Machinery)

EN ISO 12100:2010

Safety of machinery - General principles for design - Risk assessment and risk reduction

EN 60204-1:2018

Safety of machinery - Electrical equipment of machines - Part 1: General requirements

Directive 2014/30/EU (Electromagnetic Compatibility)

Not applicable due to the inherent physical characteristics of the product

Directive 2011/65/EU (RoHS) and Commission Delegated Directive (EU) 2015/863

EN IEC 63000:2018

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Directive 2009/125/EC (Ecodesign)

Commission Regulation (EU) 2024/1834 ecodesign requirements for fans between 125 W and 500 kW, as amended by **Regulation (EU) 2025/2481**

Regulation 2024/3110/EU (Construction Products)

EN 12101-3:2015 +A1:2017 (applicable to the products, where within scope)

Smoke and heat control systems - Part 3: Specification for powered smoke and heat control ventilators (Fans)

Person authorized to compile the technical file:

i.V. Thorsten Sturm

Technical Director

This declaration applies only to the product as supplied and placed on the market by the manufacturer. Subsequent modifications or additions are not covered and may require a separate conformity assessment.

Boxberg, Germany 2026–07–24.

Martin Babczyk

Managing Director

19 UKCA Declaration of conformity Axial

We, the manufacturer

Manufacturer	Systemair GmbH
Address	Seehöfer Straße 45 97944 Boxberg, Germany

declare under our sole responsibility that the product

Product designation	AXC: Axial fans AXR: Reversible axial fans AXCBF: Axial fans with motor outside the air flow	
Type/Model	AXC; AXC (K); AXC (B); AXC (F); AXC -G; AXC (K)-G; AXC(B) -G; AXC (F)-G; AXC-G-PV; AXC(B)-G-PV; AXC(F)-G-PV; AXC -GC; AXC -P; AXC (K)-P; AXC (B)-P; AXC (F)-P; AXC-G-P; AXC (K)-G-P; AXC (B)-G-P; AXC (F)-G-P; AXC -BOX; AXC -G -BOX; AXC -P-BOX; AXC -G-P-BOX; AXC (B)-BOX; AXC (B)-G -BOX; AXC (B)-P-BOX; AXC (B)-G-P-BOX; AXC (F)-BOX; AXC (F)-G -BOX; AXC (F)-P-BOX; AXC (F)-G-P-BOX; AXC-PV; AXC (K)-PV; AXC (B)-PV; AXC (F) -PV; AXC-SC-P; AXC-SC (B)-P; AXC-SC (F) -P; AXC-H; AXC-G-H; AXC-EC; AXR; AXR (K); AXR (B); AXR (F); AXCBF	
Notified body (only for smoke extraction fans)	Number 0086, BSI Assurance UK Ltd Kitemark Court Davy Avenue, Knowlhill Milton Keynes MK5 8PP , United Kingdom	System 1 Certification number: 0086-CPR-795391 (UK)
Identification	Serial numbers dating from 2026 and onwards	

fulfils the relevant provisions of following directives and designated standards. When installed in accordance with the installation instructionand and depending on their intended use the product is safe according with:

Supply of Machinery (Safety) Regulations 2008

BS EN ISO 12100:2010

Safety of machinery - General principles for design - Risk assessment and risk reduction

BS EN 60204-1:2018

Safety of machinery - Electrical equipment of machines - Part 1: General requirements

Electromagnetic Compatibility Regulations 2016

BS EN 61000-6-2:2019 (applicable to the products, where within scope)

Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments

BS EN 61000-6-4:2019 (applicable to the products, where within scope)

Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

BS EN IEC 63000:2018

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Ecodesign for Energy Related Products Regulations 2010

Standard fans

Commission Regulation (EU) 2024/1834 ecodesign requirements for fans between 125 W and 500 kW, as amended by **Regulation (EU) 2025/2481**

Fans integrated into other products and/or spare part fans (subject to transitional provisions):

Commission Regulation (EU) No 327/2011 ecodesign requirements for fans between 125 W and 500 kW

This conformity is declared in accordance with the applicable transitional provisions set out in Annex II (a) to (d) of Commission Regulation (EU) 2024/1834. The requirements of Annexes I to III of Regulation (EU) No 327/2011 continue to apply

Construction Products Regulations 2019

BS EN 12101-3:2015 +A1:2017 (applicable to the products, where within scope)

Smoke and heat control systems - Part 3: Specification for powered smoke and heat control ventilators (Fans)

Person authorized to compile the technical file:

i.V. Thorsten Sturm

Technical Director

This declaration applies only to the product as supplied and placed on the market by the manufacturer. Subsequent modifications or additions are not covered and may require a separate conformity assessment.

Boxberg, Germany 2026–07–24.

Martin Babczyk

Managing Director

20 UKCA Declaration of conformity Jet

We, the manufacturer

Manufacturer	Systemair GmbH
Address	Seehöfer Straße 45 97944 Boxberg, Germany

declare under our sole responsibility that the product

Product designation	AJ: Jet fans AJR; AJ8: Carpark Jet fans	
Type/Model	AJ 315-1600; AJ(K) 315-1600; AJ(B) 315-1600; AJ(F) 315-1600 AJ8 315-400; AJ8(B) 315-400; AJ8(F) 315-400 AJR 315-400; AJR(B) 315-400; AJR(F) 315-400	
Notified body (only for smoke extraction fans)	Number 0086, BSI Assurance UK Ltd Kitemark Court Davy Avenue, Knowlhill Milton Keynes MK5 8PP , United Kingdom	System 1 Certification number: 0086-CPR-795391 (UK)
Identification	Serial numbers dating from 2026 and onwards	

fulfils the relevant provisions of following directives and designated standards. When installed in accordance with the installation instruction the product is safe according with:

Supply of Machinery (Safety) Regulations 2008

BS EN ISO 12100:2010

Safety of machinery - General principles for design - Risk assessment and risk reduction

BS EN 60204-1:2018

Safety of machinery - Electrical equipment of machines - Part 1: General requirements

Electromagnetic Compatibility Regulations 2016

Not applicable due to the inherent physical characteristics of the product

Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

BS EN IEC 63000:2018

Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Ecodesign for Energy Related Products Regulations 2010

Commission Regulation (EU) 2024/1834 ecodesign requirements for fans between 125 W and 500 kW, as amended by **Regulation (EU) 2025/2481**

Construction Products Regulations 2019

BS EN 12101-3:2015 +A1:2017 (applicable to the products, where within scope)

Smoke and heat control systems - Part 3: Specification for powered smoke and heat control ventilators (Fans)

Person authorized to compile the technical file:

i.V. Thorsten Sturm

Technical Director

This declaration applies only to the product as supplied and placed on the market by the manufacturer. Subsequent modifications or additions are not covered and may require a separate conformity assessment.

Boxberg, Germany 2026–07–24.

Martin Babczyk

Managing Director

Systemair GmbH Seehöfer Str. 45

97944 Boxberg

Germany

Tel.: +49 (0)7930/9272-0

Fax: +49 (0)7930/9272-92

info@systemair.de

www.systemair.de

Document in original language

2026-07-14

308013 - 006