åkerstedts
INDUSTRIAL FANS SINCE 1977

Operating Instructions
FA, FML, FKL

EN

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This *operating instruction is a translation* from the Swedish original and has been compiled by Åkerstedts Verkstads AB in order to ensure safe handling of the fan series FA, FML and FKL. The operating instructions is intended for personnel involved in transport, installation, start-up, maintenance and repair as well as scrapping of the fan.

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1. General information

1.1. Information about the operating instructions

This operating manual enables safe and efficient handling of the machine of which the operating manual is a part.

The operating instruction must have been read and understood by the personnel concerned, before any work on the machine can take place.

The operating instruction should be kept for later use in the vicinity of the machine or in the place intended for it.

Additional measures according to local or legal regulations, standards, guidelines or ordinances must be considered.

The operating instructions supplemented by the following documents:

Document	Document name
Declaration of Conformity 2006/42/EG (Machinery directive)	EC-Declaration of Incorporation translation-en_2025_12
Declaration of Conformity 2014/34/EU (ATEX directive)	DoC-ATEX translation-en_2026_03
Declaration of Conformity 2011/65/EU (RoHS) och Declaration of Conformity EC 1907/2006 (REACH)	DoC REACH and RoHS translation-EN 2026-04
In addition to the above, the Operating Instructions for the Motor and, in specific cases, Bearings and Shaft Coupling are included.	

1.2. Explanation of symbols

	DANGER! This symbol indicates a potentially hazardous situation which, if not avoided, could result in personal injury. The symbol is accompanied by additional text explaining the nature of the risk.
	Warning of risks associated with electrical voltage and electrical installation.
	Warning of contact with rotating fan impeller.
	Warning of hand injuries.
	Warning of getting caught and/or pulled in between the belt and pulleys.
	Warning of hot surfaces.
	Warning of risks associated with installation in explosive atmospheres (ATEX).
	Warning for automatic start.
	The machine complies with current directives for use in potentially explosive environments.
	This symbol indicates useful tips and recommendations as well as information for an efficient and trouble-free operation.

2. General instructions and limitations

Åkerstedts Verkstads AB's fans are designed and manufactured in accordance with applicable standards and requirements. However, their operation may, under adverse circumstances, cause risks to the personnel involved and the environment if the conditions below are not followed. The user must ensure that the following conditions are met.

- The ambient temperature must be between -20°C and +40°C.
- Changes or modifications to the fan are not permitted without Åkerstedts Verkstads AB's express written consent.
- All personnel involved in handling the fan, during any phase of its life cycle, must have adequate personal protective equipment, such as safety shoes, gloves and helmets, in accordance with applicable requirements and guidelines.
- In the specific cases where the fan's working area is stated in the order acknowledgement, the fan must not be used outside of this. Use outside the working area may be associated with risks. Deviation from the working area may only occur after advice from Åkerstedts Verkstads AB.
- The fan's maximum speed must not be exceeded without consultation with Åkerstedts Verkstads AB, see Appendix 1. Maximum speed.
- The fan must be compatible with the transport medium through the fan and its surrounding environment for design, material and corrosion protection considerations.

- **Incorrect placement and/or application of the fan can lead to unpredictable risks.**
- The fan must be checked and serviced continuously to detect and prevent any damage that could compromise safety. In particular, vibrations (imbalance) and bearing damage are factors that can develop into potential risks over time if they are not identified and addressed in time.
- The vibration level must be checked regularly along with checking the bearing status.

  Table 1 is taken from ISO 14694 Industrial fans – Specifications for balance quality and vibration levels and shows the categories into which fans can be divided for the purpose of setting a relevant balancing degree. Åkerstedts Verkstads AB's fans comply with BV-3 as standard but are available according to BV-4 on request.

Application	Example	Efficiency limit (kW)	BV-category
HVAC och agriculture	Estate ventilation, commercial AC-system, etc.	≤3,7	BV-2
		>3,7	BV-3
Industry process och power generation	Mines, conveyor systems, flue gas applications, etc.	<300	BV-3
Tunnels	Tunnels fan, garage ventilation etc.	≤75	BV-3
		>75	BV-4
Transport, marine	Trains, trucks, vehicles, etc.	≤15	BV-3
		>15	BV-4
Petrochemical	Poisonous gas, process fans, etc.	≤37	BV-3
		>37	BV-4

Tabell 1. Relevant BV-levels for fans in different applications.

BV-category	Balanseringskrav på rotorn (impelleret)
BV-2	G 16
BV-3	G 6,3
BV-4	G 2,5

Tabell 2. Balancing level of the impeller in relation to BV category.

- In cases where the product is ATEX-classified:
  - The gas temperature must not exceed +60°C.
  - Shall the fan be grounded.

2.1. Fan lifecycle

Fan housing

The environment to which the fan is exposed has a high impact on its lifespan. Various factors such as UV light, mechanical wear, chemical exposure, humidity, etc. must be considered when choosing the design and materials for the application for which the fan is intended.

Properly designed for its application, there is no limiting time factor as long as the surface protection is kept intact and maintained according to Chapter 6.1. Surface treatment.

Fan impeller

All impellers are factory balanced, but mechanical damage, deposits (dirt) and corrosion can alter their balance. This has a major impact on bearing life and should be avoided to the greatest extent possible by regular inspection and cleaning according to chapter 6.4 Impellers.

Fans designed for material transport or dusty gas (flue gas) and which will therefore be exposed to an abrasive environment, should be replaced when their function is no longer considered sufficient. In these cases, the inspection intervals and maintenance should be adapted to each individual case and the service life assessed on a case-by-case basis.

Fan wheels must not be repaired or otherwise modified without consultation with Åkerstedts Verkstads AB.

Bearings

The bearings are the components that individually have the greatest impact on the service life. Properly maintained, these can theoretically achieve an operating time of 40,000 hours under favourable conditions. This gives an estimated service life of approximately 10 years at an operating time of 4,000 hours per year (standard process industry 16 hours x 250 days).

In continuous operation (ventilation fans 24 hours x 365 days = 8760 hours) this gives an operating time of approximately 5 years.

Belts

Belts (Device 3, belt drive) should be replaced at regular intervals according to chapter 6.3 Belt drive service.

Belt drives from Åkerstedts are dimensioned for a medium service factor as standard and have a typical service life of approximately 20 - 25,000 hours.

For higher service factors (tougher operating conditions), this should be communicated to Åkerstedts Verkstads AB to enable correct dimensioning.

2.2. Residual risks

- Despite a solid and proven design, there is a residual risk of the fan wheel breaking down, especially in cases where it cannot be ruled out that the conditions of use, according to Chapter 2, have been disregarded. A breakdown in combination with high torques and/or high speeds risks creating situations where a lot of energy is released, therefore the vicinity of the fan must be secured so that personal injury is excluded in the event of a malfunction or accident.

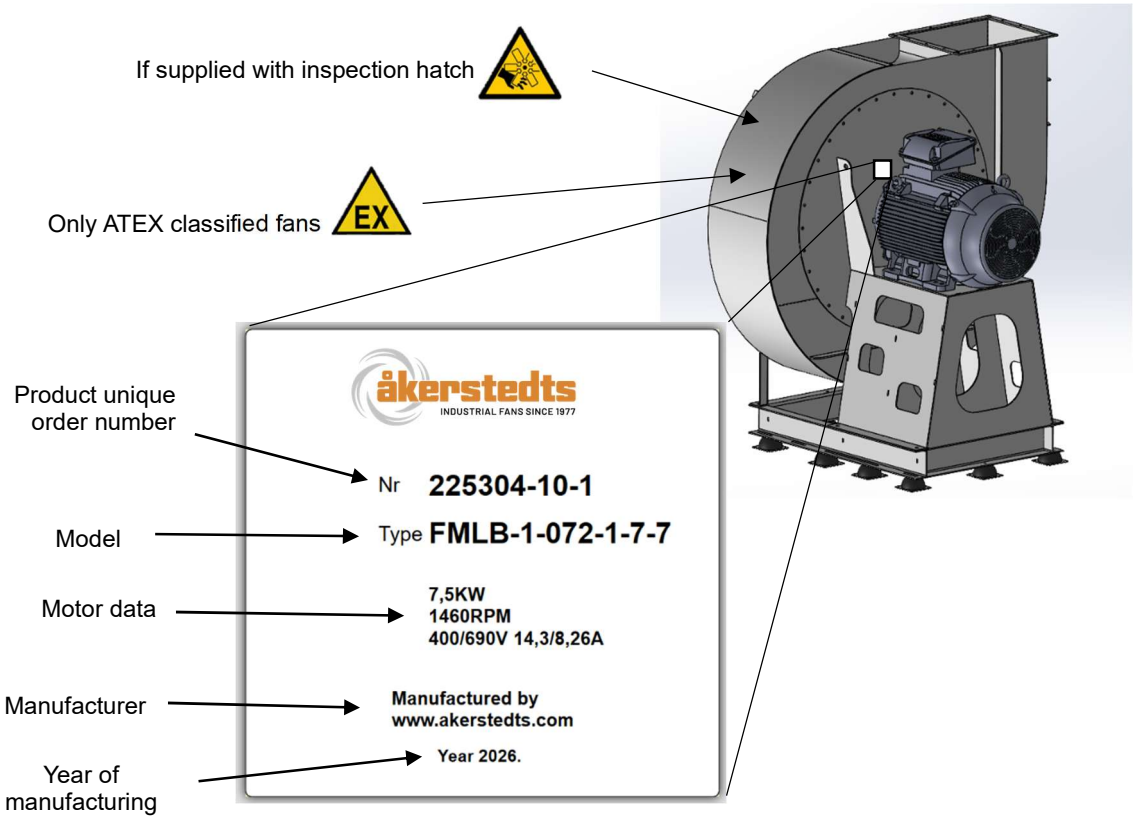
- Fans, due to their function, generally give rise to noise levels which under certain conditions may exceed permissible requirements. Appropriate measures to minimise risks to personnel in the area of the fan should be considered.

- Due to the fan's connection to a pipe system, loose, forgotten and other objects in the system can move and put structures and people at risk. Even when a protective grille is fitted to the outlet or inlet, particles can be passed through at high speed.

2.3. Fan identification

- All fans have a unique machine plate placed on the fan as shown in the picture below.

- The product-unique order number provides the fan with traceability.



3. Sound

3.1. Sound report

Sound data is stated in the associated documentation (order acknowledgement) if a specific operating point has been specified. If this is not the case, sound data is found in each fan's operating diagram, see www.akerstedts.com.

Sound data has been produced in accordance with ISO 3741 Acoustics - Determination of sound power levels and sound energy levels of noise sources - Precision methods for broadband sources in reverberation rooms and ISO 5136 Acoustics - Determination of sound power levels from fans in ventilation systems - Measurement in duct when connecting the fan to the duct (system).

4. Transport och storage

4.1. Receipt of delivery

- Check the fan for external damage immediately after delivery and report any complaints to the transport company.
- Ensure that the fan has not been deformed in any way. In particular, check that the fan wheel “runs freely” and does not touch the fan housing.

For ATEX-classified fans, this is of utmost importance as sparks can occur upon metallic contact.

4.2. Storage

- During transport and storage, the fan must be protected from environmental influences. Ensure that no water, snow, etc. penetrates the motor, bearings or other sensitive components.
- We recommend closed transport and storage in closed, temperature-controlled rooms.

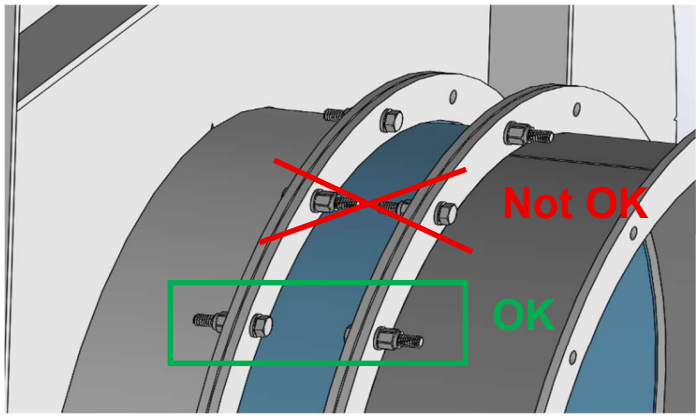
4.3. Transport of the fan to the place for installation

- When transporting the fans, the vibration dampers must not be tilted, dragged across the floor or loaded on one side, to avoid damage to them.

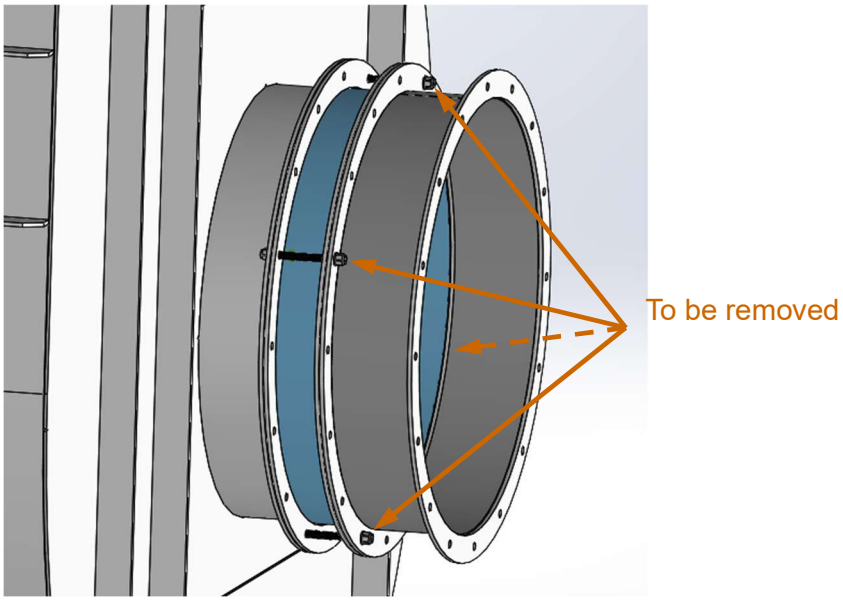
4.4. Mounting on site

- Check that connecting ducts are installed and do not burden the fan. Depending on the connection type, and where this is not included in the scope of delivery, the correct connection must be provided by the system owner.
- The fans may only be installed and set up in the mounting position for which they were ordered (horizontal / vertical). The installation must be done on a flat surface.
- If vibration dampers are used, they must be arranged so that an even load (indentation depth) is achieved equally on all dampers.
- Flexible joints in ventilation systems are used to absorb movement between the duct system (fixed) and the fan (vibration-damped).

- When installing soft connectors (blue in the picture below) on the fan flange and/or connecting pipes, the bolts should be turned so that their heads are towards the connector. This is to prevent sharp edges (threads) from wearing against the connector during movement.



- When delivered with pre-assembled connectors and any extensions/transitions, the transport protection (x4) must be dismantled for the connector to achieve its desired effect.



- The fan's direction of rotation is indicated by an arrow on the back of the fan housing.

5. Installation and commissioning

5.1. Electrical installation

- Electrical connection work may only be carried out by authorised specialists in accordance with the applicable protection and safety regulations.
- The fan motor must be connected according to the wiring diagram in the terminal box and the manufacturer's instructions.
- All motors must be protected by motor protection devices.
- The motor is connected to the correct mains voltage.
- All phases are connected and any fuses are intact.

5.2. Commissioning

Before start

- Any V-belts are correctly tensioned.

  For correct pre-tensioning of V-belts, see chapter 6.3 Belt drive service.
- Tools and other objects are not left in the fan or in connecting ducts.

People must never be exposed to or remain in the air stream.

After start

- Ensure the fan wheel's direction of rotation, check the motor's cooling fan.

If the direction of rotation is to be switched, this must not be done without the fan wheel having stopped completely. This is due to the very high moment of inertia that can damage the fan wheel.

- That the motor does require more than the rated current.
- The current in all phases is equal.
- Listen for any abnormal noises.

Noises that can be related to contact between the impeller and the fan housing must be identified and corrected immediately. Adjustment (mechanical) to create a gap is not acceptable without consulting Åkerstedts.

- Check vibration axially and radially. Values should be below the recommended values determined according to Table 3 below.

Operation phase	BV-category	Stiff (rigid) mounting		Flexible mounting (damper)	
		Peak	r.m.s.	Peak	r.m.s.
Commissioning	BV-2	7,6	5,6	12,7	9,0
	BV-3	6,4	4,5	8,8	6,3
	BV-4	4,1	2,8	6,4	4,5

Table 3. Alarm levels for different BV-categories at commissioning phase (ISO 14694).

5.3. Mechanical safety

- Ensure that the touch guards that the fan is equipped with, to prevent access to rotating parts, shafts, couplings, cooling discs, etc., are firmly mounted.

- In the case of a “free suction” or “free blowing” connection, protective nets must be applied to the intended connection flange to prevent access to the fan wheel. NOTE! These guards are optional and must be ordered upon delivery if necessary.

- If the fan is equipped with an inspection hatch, it must be remounted after use, with all the fasteners that were initially mounted.

5.4. Belt-driven fans

- Make sure that the belts run smoothly.

- The bearing temperature is normal.
  The temperature should not exceed 70 °C during normal operation.

- Check the belt tension after 50 hours of operation. Insufficiently tensioned belts pose a risk of slipping. Overtightened belts can pose a risk of bearing damage.

- Regularly checking the belt tension ensures the longest service life of the belts.

6. Maintenance

For all maintenance that requires access to the inside of the fan housing and/or ducts directly connected to the fan, the electrical connection must be interrupted and the fan wheel must be mechanically locked.

The electrical connection must be marked and secured so that it cannot be put into operation unintentionally.

Also ensure that no unintentional start can occur as controls and signals can come from places other than directly located at the fan.

6.1. Surface treatment

- Check the surface treatment regularly. The surface treatment is easily damaged by mechanical impact and then needs to be treated to prevent corrosion.
- Stainless steel can also show corrosion, especially in salty environments or in very humid environments.
- It should be noted that the fan's properties are not affected by minor damage to the surface treatment if the damage is prevented from growing.

6.2. Vibrations

- Check the fan balance. Measure the fan cover and confirm that there are no abnormal vibrations.
- Comparisons of measurements over longer periods of time are the most reliable method for determining changes.
- Check vibration guidelines according to. *Table 4*.
    - At “Alarm” levels, urgently investigate the cause of the vibrations, see Appendix 2. Troubleshooting for help in identifying sources of error.

NOTE: The cause of vibrations may lie in changed conditions in surrounding structures. During the identification of sources of error, one must also consider factors that indirectly can affect the stability on the fan.

- At level “Shut down”, the fan should be shut down immediately before further investigation. Restart should not take place until the source of the error has been identified and corrected.

Continued operation under these conditions may jeopardize the fan's intended use and may lead to bearing failure and cracking in the impeller and/or other structure.

During service	BV-category	Stiff (rigid) mounting		Flexible mounting (damper)	
		Peak	r.m.s.	Peak	r.m.s.
Alarm	BV-2	12,7	9,0	19,1	14,0
	BV-3	10,2	7,1	16,5	11,8
	BV-4	6,4	4,5	10,2	7,1
Shut off	BV-2	*	*	*	*
	BV-3	12,7	9,0	17,8	12,5
	BV-4	10,2	7,1	15,2	11,2

*Table 4. Alarm levels during service. * Values should be based on trends and historic data (ISO 14694).*

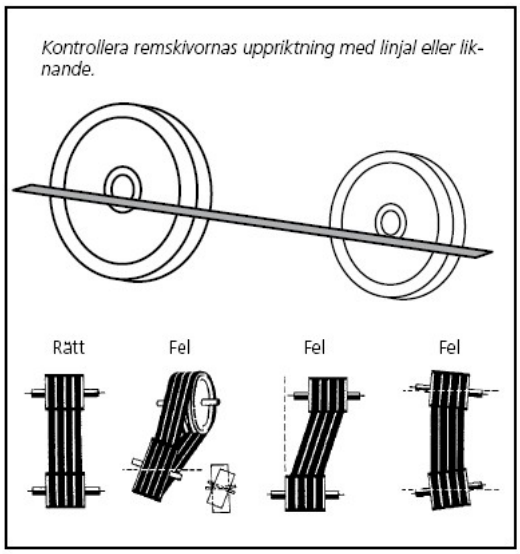
6.3. Belt drive service

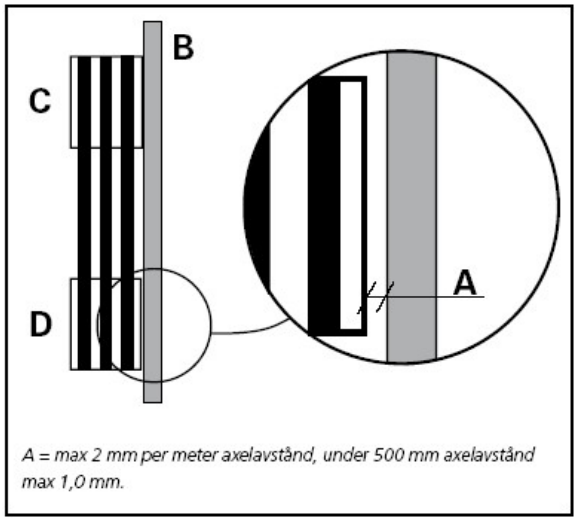
Replacing belts

When servicing a belt drive when the belt guard is removed, the fan must be turned off, and the fan wheel must have stopped rotating.

Ensure that no accidental start can occur as controls and signals can come from places other than those directly located at the fan.

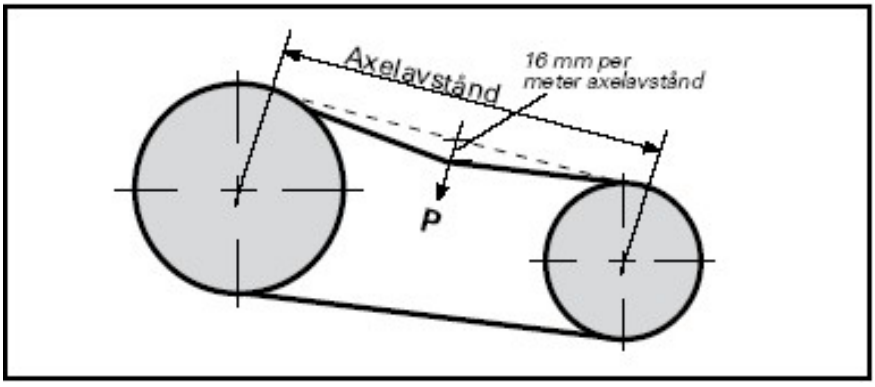
- When one or more belts in a drive are worn out, all belts should always be replaced.
- Adjust the centre distance so that the belts can be easily put on by hand. Under no circumstances should the belts be pried down into the grooves using a screwdriver or similar.
- Check that the shafts are parallel.
- Check that the pulleys do not throw when aligned.
- The check can be made using a ruler placed along the sides of the pulleys. The ruler should lie along the entire side of both pulleys.
- The maximum angular error of the belt (dimension A) must not exceed 2.0 mm/meter of axle distance.
- Below 500 mm axle distance, a maximum angular error of 1.0 mm is permitted.
- Place ruler B against both edges of pulley C. Turn pulleys C and D so that the largest distance A is found.





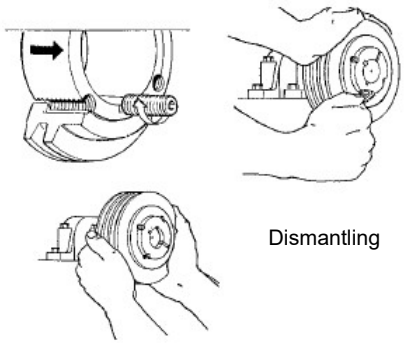
Tensioning of V-belts

- Measure the axle distance in meters.
- Measure the force **P** (N) required to push the belt in 16 mm per meter of axle distance.
- Increase the belt tension if the force is less than **P** in the table below and vice versa if **P** is greater.
- New belts should be tensioned to the higher value in the range.



Applied force P for 16 mm/m deflection		
V-belt profile	Small pulley	P (N)
SPZ	67–95	10–15
	100–140	15–20
SPB	160–224	35–50
	236–315	50–65

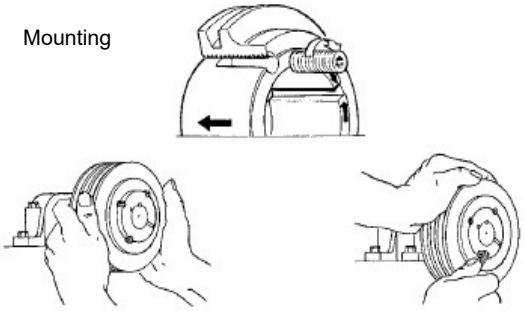
Replacing pulleys



Dismantling

Unscrew the screws, place one of them in the puller hole, i.e., the half-threaded part of the bushing, and tighten it. This will loosen the bushing. The loose disc can be pulled off by hand.

Mounting



Clean and degrease all shiny surfaces. Assemble the pulley and bushing, aligning the half-thread holes and inserting the screws loosely. Slide the pulley and bushing assembly onto the shaft, aligning them in place and tightening the screws evenly.

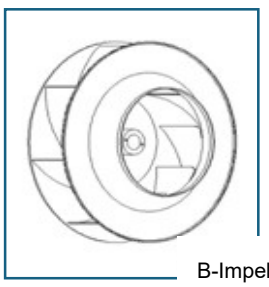
6.4. Impeller

- Cleaning and inspection can be done through the inspection hatch if available (optional), ensure that the fan is stationary and that no accidental start can occur during this time.
- Ensure that the inspection hatch is replaced with all the fasteners that were initially installed.
- Check the fan wheel for; wear due to abrasion, corrosion or dust coating.
- Check the fan wheel coating regularly. The risk of coating increases with the amount of dust but also its nature.

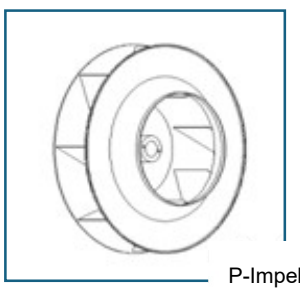
B-impeller are highly prone to build-up of deposits and should not be used for such an environment.

P-impeller Can withstand dustier environments but inspection and cleaning intervals should be very frequent.

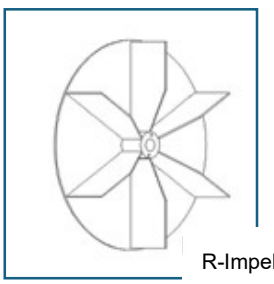
R-impeller is the best solution for dusty environments and works great for material transport. However, the frequency of inspection and cleaning intervals must be taken into account.



B-Impeller



P-Impeller



R-Impeller

6.5. Motor

- Cleaning depending on the environment is recommended at least once a year. Use a dry cloth. Clean the motor's cooling fan first.
- Listen to the motor bearings.
- If the bearing is correct, a faint buzzing sound should be heard.
- If a faint beeping sound is heard, the bearing has run dry - lubricate.
- A scraping sound indicates that the balls or ball raceways have been damaged.

- **För mer detaljerad service och underhåll av motorn, se vidare bruksanvisningen från motorleverantören.**

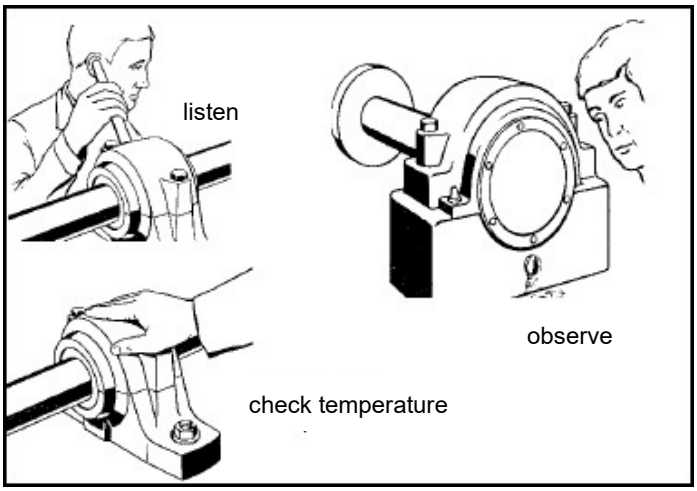
6.6. Bearings

Below are general guidelines for bearings. These are based on Åkerstedts Verkstads AB's experience and do not follow the bearing manufacturer's operating instructions 100%. The guidelines should be used with that reservation.

For more detailed service and maintenance of the bearings, see the accompanying operating instructions from the bearing supplier.

- Check that lubricant is not leaking through broken seals or poorly tightened plugs.
- Check the bearing temperature with a thermometer, heat-sensitive chalk or by feeling the bearing housing with your hand. If the temperature seems abnormally high or changes suddenly, this is a sign of a malfunction in the bearing.
- Check that any automatic lubrication system is working.
- Listen to the bearing by placing a wooden stick, screwdriver or similar against the bearing housing. Press your ear against the tool and listen.

- A correct bearing will make a soft, purring sound.
- A damaged bearing makes a loud noise, often irregular and noisy.
- A scraping sound indicates that balls or ball-tracks have been damaged.
- If a slight beeping sound is heard, the bearing has run dry – lubricate.



- Bearings installed in machines where operational interruptions have serious consequences should be checked more frequently. Less critical applications, where operating conditions are not severe, can often be left without any maintenance other than lubrication.

- Damaged bearings shall be replaced.

6.6.1. Bearing relubrication (not motor bearings)

The length of the lubrication interval can vary greatly for different types of grease, even if they appear to be the same. For more detailed information, see the instructions for use for the actual grease in question.

Fan model		Recommended lubrication interval in operating hours						
FAM	FAH	3000	2000	1500	1000	500	350	Grease (g)
size		Speed (rpm)						
012–016		<5000	5000–6000	6000–7500				10
020–025	010–012			<2700	2700–3500	3500–5500	5500–6500	10
031	025		<1800	1800–2000	2000–2500	2500–4000	4000–4800	10
040	031		<1500	1500–1800	1800–2200	2200–3200	3200–3800	15
050–071	040		<1400	1400–1700	1700–2000	2000–2700	2700–3000	20
080–090	050–071		<1300	1300–1400	1400–1700	1700–2400		20
100–112			<1100	1100–1300				30

Table 5. Lubrication intervals based on fan size and operation hours FA-series.

Fan model	Recommended lubrication interval in operating hours		
FKL	5000	3000	Grease (g)
size	Speed (rpm)		
090	<800	800–1450	10
100	<750	750–1300	10
112	<700	700–1150	10
125	<650	650–1050	15
140	<600	600–900	20

Table 6. Lubrication intervals based on fan size and operation hours FKL-series.

Tables above are Åkerstedts Verkstads AB recommendation.

At temperatures above 70° C:

- Reduce the lubrication intervals by half for each temperature increase of +15°C. NOTE! The maximum permissible temperature of the grease must of course not be exceeded.

At temperatures below +50°C:

- Extend lubrication intervals by up to double the values in the table.

6.7. Service/check of duct connection

- When servicing the duct connections, ensure that the fan is stopped.
- Replace worn soft bushings as necessary.

- Since the environment in which the fan is located is not classified as explosive, tight connections between the fan and duct are of utmost importance to avoid the risk of gas or dust spreading to an unclassified environment.

7. Decommissioning

7.1. Dismantling

- Before dismantling, make sure that the fan is disconnected from all electrical power.
- To dismantle the motor, the impeller must first be detached from the motor shaft (direct drive).

- During dismantling, be careful when lifting heavy objects.

7.2. Recycling

- The fan is mostly made of different metals. Sort metals according to local regulations. The composition is mainly steel, stainless steel (in special cases) or aluminium (in special cases). For the motor, copper wire (motor winding) applies and for different sizes, aluminium-housing or cast iron-housing. For more detailed information, see the respective motor supplier's operating instructions.

- Leave any plastic parts for recycling.

- Sort other components by material type and leave for recycling.

Appendix 1. Maximum speed

FAM

	B-impeller			P-impeller			R-impeller		
Storlek	Temp °C			Temp °C			Temp °C		
FAM	100	200	300	100	200	300	100	200	300
012	7500	7500	7500	7500	7500	7500	7000	6400	5700
016	7500	7500	6700	7500	7500	7300	7000	6400	5700
020	6500	6100	5300	6500	5900	5300	6000	5100	4500
025	5000	4800	4200	4600	4200	3700	4600	4100	3600
031	4200	3800	3300	3600	3300	2900	3600	3200	2800
040	3400	3000	2700	3000	2600	2300	3000	2600	2300
050	2600	2400	2200	2300	2100	1900	2300	2000	1800
063	2100	1900	1700	1800	1700	1500	1800	1600	1400
071	1800	1600	1400	1600	1400	1250	1600	1450	1300
080	1600	1450	1300	1300	1250	1100	1400	1300	1150
090	1400	1300	1150	1150	1000	900	1300	1150	1050
100	1300	1150	1000	950	850	750	1150	1050	900
112	1150	1000	900	800	700	600	800	700	600

For data regarding reinforced impellers please contact Åkerstedts Verkstads AB.

FAH

	B-impeller			P-impeller			R-impeller		
Storlek	Temp °C			Temp °C			Temp °C		
FAH	100	200	300	100	200	300	100	200	300
010	6500	6500	6500	6000	6000	6000			
012	6500	6500	6100	6000	6000	6000	5500	5000	4400
016	6500	6200	5500	6000	6000	6000	5500	5000	4400
020	6000	5400	4800	6000	5600	4900	5500	5000	4400
025	4800	4200	3800	4400	3900	3500	4400	3900	3500
031	3800	3400	3000	3400	3100	2700	3400	3100	2800
040	3000	2800	2400	2800	2500	2200	2800	2500	2200
050	2400	2100	1900	2200	2000	1700	2200	2000	1700
063	1900	1750	1550	1600	1450	1300	1600	1600	1400
071	1700	1550	1360	1300	1200	1050	1400	1250	1100
080	1600	1440	1280	1130	1000	910	1150	1000	950
090	1450	1300	1160	1050	900	750	1050	900	750
112	6500	6500	6500	6000	6000	6000	5500	5000	4400

For data regarding reinforced impellers please contact Åkerstedts Verkstads AB.

FAY

Please contact Åkerstedts Verkstads AB.

FML / FKL

	B-impeller	P-impeller	R-impeller
FML	Temp 100 °C		
025	5000	4400	3800
031	4000	3600	3000
039–040	3200	2800	2400
044-045	2800	2400	2100
050	2500	2200	1900
063	2000	1800	1500
071–072	1800	1600	1350
080	1600	1400	1200
FKL			
089–091	1450	1300	2200
100–101	1300	1200	1600
112	1150	1050	1400
125–129	1050	900	1150
132	985	800	1050
140–141	900	800	5500

Max bearing speed (An 3 och 7)

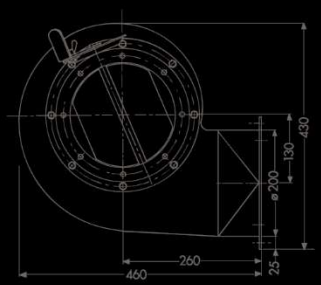
FAM	rpm	FAH	rpm
012	6500	010	5900
016	6500	012	5900
020	5900	016	5900
025	5900	020	5900
031	5300	025	5300
040	4000	031	4000
050	3200	040	3200
063	2600	050	2600
071	2600	063	2600
080	2600	071	2600
090	2600	080	2200
100	2200	090	2200
112	2200		

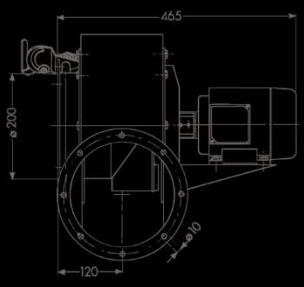
The maximum fan speed varies with the temperature of the transport medium in the fan, and this must be specified in order to make the correct fan selection initially. In the event of a possible increase in the temperature of the medium, the specified maximum speed must be adjusted.

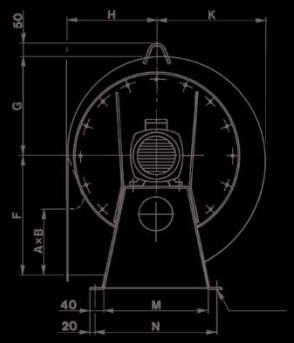
Appendix 2. Troubleshooting

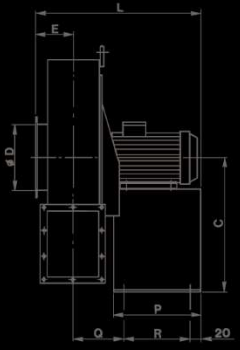
Symptom	Probable cause	Action
Fan do NOT start	Blown fuses	Replace fuses
	Incorrect electrical installation	Correct the electrical connection acc. to the connection scheme.
	Blocked impeller	Make sure the impeller can rotate without obstruction
Noise	The impeller scratches the inlet	Adjust the inlet carefully in order to make a gap
	Motor bolts not tightened	Tighten bolts
	Bearing damage	Replace bearings
	Seal damage	Replace seal
	Un-known objects in the fan housing	Remove all objects
Air flow to low	Wrong direction or rotation	Adjust the electric connection in the motor
	To low rpm	**Frequency drift:** Adjust rpm acc. to order confirmation to reach desired operating point. **V-Belt drift**: Verify rpm acc. to operating point.
	In- /outlet blocked	Check fan connections
	Damper(s) in the system are shut	Open any dampers
	Filters are obstructed	Replace/clean filter
	Impeller is dirty	Clean impeller
Air flow to high	To high rpm	**Frequency drift:** Adjust rpm acc. to order confirmation to reach desired operating point. **V-Belt drift**: Verify rpm acc. to operating point.
	Inspection hatch open	Close and secure inspection hatch.
För högt effektuttag	Wrong direction or rotation	Adjust the electric connection in the motor
	To high rpm	Se above
	Higher density of medium through the fan than expected	
Vibrations	Imbalance of the fan wheel due to dirt.	Clean the impeller
	Imbalance of the fan wheel due to damage	Replace the impeller
	Dampers equally loaded	Move dampers so load is equally distributed.
	Unstable foundation.	Add weight and/or reinforce underlying construction.
	Motor not fixed.	Tightened motor bolts
	Dampers not fixed.	Tightened damper bolts
To low rpm	V-belt slips	Tighten V-belt
	Wrong gearing (V-belt)	Check pulleys acc. to order confirmation
	Wrong drift parameters	Adjust frequency acc. to order confirmation.

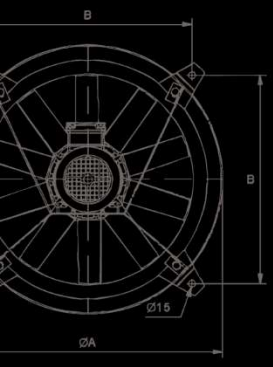
Notes

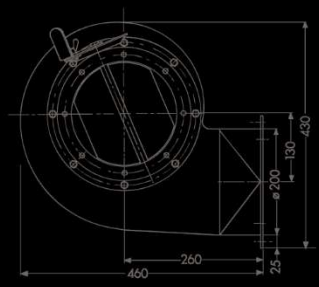


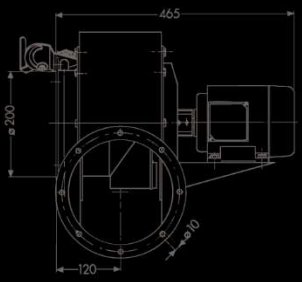


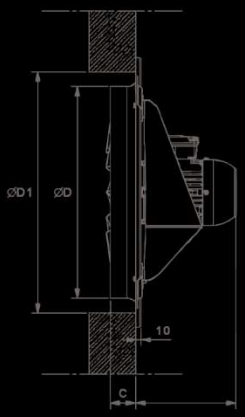


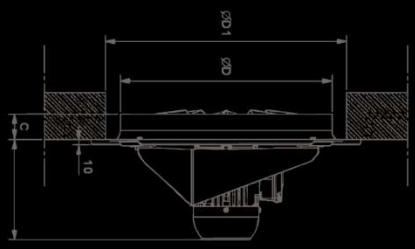


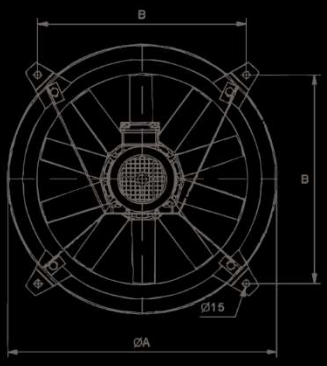


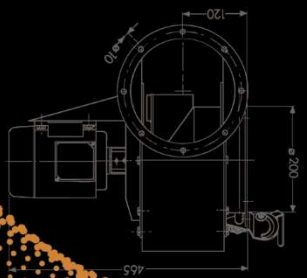


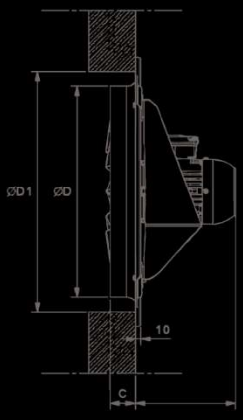


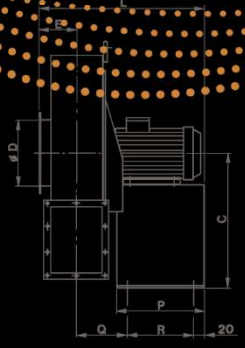












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