

WALPOL

Assembly and operating instructions

Axial fans type WPA

Tube fans type WPR and WPRP



Version 6.1
B16

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1. General information

1.1. Note symbols



Danger

Immediate hazard

Failure to observe the warning will result in immediate death or serious injury.



Caution

Low-risk hazard

Failure to observe the warning may result in moderate injury.



Warning

Potential hazard

Failure to observe the warning may result in death or serious injury.

Important

Danger with risk of property damage

Failure to observe the warning may result in property damage.



Note

Useful information and instructions

2. Important safety instructions

Planners, system builders and operators are responsible for proper installation and operation in accordance with the intended use.

- Read the operating instructions completely and carefully.
- Operating instructions and applicable documents, such as electrical connection diagrams or operating instructions for the motor, must be kept with the fan. They must always be available at the place of use.
- Local and national laws and regulations must be observed and complied with.
- Take into account the system-relevant conditions and requirements of the system manufacturer or system builder.
- Safety devices must not be dismantled, bypassed or rendered inoperative.
- The fan may only be used in perfect condition.
- The generally prescribed electrical and mechanical protective devices must be provided.
- Secure the installation site and the premises against access by unauthorised persons during installation, electrical connection, commissioning, troubleshooting and maintenance.
- Safety devices must not be dismantled, bypassed or rendered inoperative.
- Ensure that all warning labels on the fan are complete and legible.
- This appliance is not intended for use by persons (including children) with reduced physical or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

2.1. Personnel

The fan may only be operated by qualified, instructed and trained personnel. These persons must know the relevant safety regulations in order to recognise and avoid possible dangers. The individual actions and qualifications can be found in Table 1 Qualification.

Table 1 Qualification

Actions	Qualification	
Storage, operation, transport, cleaning, disposal	Trained personnel (see following instructions)	
Electrical connection, commissioning, electrical disconnection	Qualified electrician or persons with appropriate qualifications	
Installation, Dismantling	Assembly specialist or persons with appropriate qualifications	
Maintenance	Electrical specialist or persons with appropriate qualifications	Assembly specialist or persons with appropriate qualifications
Repair	Electrical specialist or persons with appropriate qualifications Assembly specialist or persons with appropriate qualifications	Assembly specialist or persons with appropriate qualifications



Note

The operator must ensure that the personnel have been instructed in the operation and have understood the operating instructions. If anything is unclear, please contact Walpol or our representatives.

2.2. Personal protective equipment

Protective equipment must be worn when carrying out any work in the vicinity of the fan.

- Protective clothing
- Safety shoes
- Hearing protection
- Hard hat
- Safety goggles

2.3. The 5 safety rules for working in and on electrical systems

1. Disconnect (all poles) an electrical system from live parts
2. Secure against being switched on again
3. Check that no voltage is present
4. Earth and short-circuit
5. Cover or isolate adjacent live parts

3. Warranty

In order for warranty claims to be asserted, the products must be properly connected and operated and used in accordance with the data sheets. Further prerequisites are a fully completed maintenance plan and commissioning report, which will be requested from Walpol in the event of a warranty claim. The commissioning report is part of this document, the maintenance plan must be prepared by the operator, see chapter 12.3 Maintenance

4. Delivery, transport, storage

Safety instructions

Warning: Danger due to rotating fan blades

- Prevent unauthorised persons from accessing the unit by security personnel or an access guard.

Warning: Suspended loads

- When carrying out any work in the vicinity of the fan, wear protective equipment, see 2.2 Personal protective equipment,
- Never step under a suspended load.
- Ensure that no one is under a suspended load.

Delivery

Each fan leaves our factory in perfect electrical and mechanical condition. It is recommended that the fan is transported to the installation site in its original packaging.

Check delivery

- Check the packaging for transport damage. Any damage must be noted in the cargo manifest.
- Check that the delivery is complete.

Unpacking



Warning

When removing the transport packaging, there is a risk of damage from sharp edges, nails, staples, splinters, etc.

- Unpack the fan carefully.
- Check the fan for obvious transport damage.
- Do not remove the packaging until shortly before installation.
- Wear protective equipment when carrying out any work in the vicinity of the fan, see 2.2 Personal protective equipment

Transport

Safety instructions

Warning: Electrical or mechanical hazard due to fire, moisture, short circuit or malfunction.

- The fan must never be carried by the connection cable, terminal box, impeller, guard grille, inlet connection or silencer.
- In the case of open transport, ensure that no water can penetrate the motor or other sensitive components.
- It is recommended that the fan is transported to the installation site in its original packaging.

Caution: Careless loading or unloading can cause damage to the fan.

- Carry out loading or unloading carefully.
- Use lifting equipment designed for the load.
- Observe the transport arrows on the packaging.
- The packaging is only used as transport protection and must not be used for lifting.

Storage

- Store the fan in its original packaging in a dry, dust-free place protected from the weather.
- Avoid exposure to extreme heat or cold.

Important

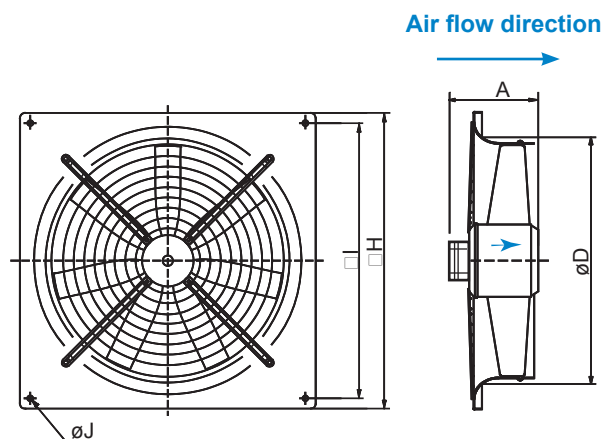
Danger due to loss of function of motor bearing

- Avoid too long storage periods [Recommendation: max. 1 year].
- Before installation, check that the motor bearing is functioning correctly.

5. Description

5.1. Axial fan with AC motor

Speed controllable via voltage reduction e.g. transformer controller



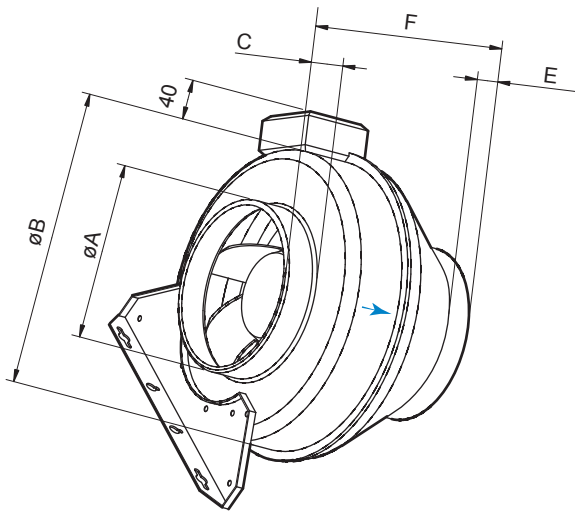
Dimensions (in mm)					Weight
A	H	I	D	J	
					kg
128	312	260	210	7	3,1
138	370	320	262	7	4,0
176	430	380	330	9	6,2
159	430	380	358	9	5,7
177	485	435	390	9	6,8
182	540	490	440	9	8,7
226	575	535	480	9	16,2
226	655	615	528	11	20,0
266	725	675	589	11	31,7
246	805	750	664	11	34,2

Model	Voltage	Motor-Power	Power consumption max.	Protection class IP	Flow rate max.	Sound pressure level at 1m
		Watt	Amp		m ³ /h	db(A)
WPA 200 / 230	230 V / 50Hz	71	0,32	44	893	59
WPA 250 / 230	230 V / 50Hz	148	0,64	44	1786	66
WPA 300 / 230	230 V / 50Hz	309	1,35	44	3413	71
WPA 315 / 230	230 V / 50Hz	145	0,65	44	2117	59
WPA 350 / 230	230 V / 50Hz	167	0,73	44	3305	62
WPA 400 / 230	230 V / 50Hz	241	1,0	54	3863	64
WPA 450 / 230	230 V / 50Hz	607	2,8	54	7301	67
WPA 500 / 230	230 V / 50Hz	727	3,2	54	8678	66
WPA 560 / 230	230 V / 50Hz	1157	5,5	54	11930	76
WPA 630 / 400	400 V / 50Hz	1935	3,41	54	15926	78

5.2. Description Tube fan

Speed controllable via voltage reduction e.g. transformer controller

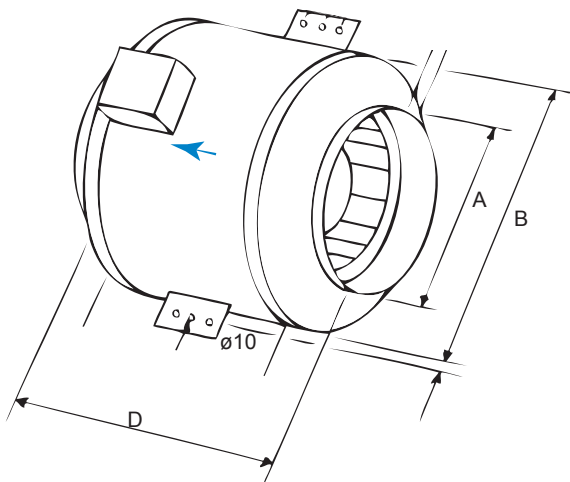
Type WPR



Dimensions (in mm)					Weight
A	B	C	E	F	kg
199	336	30	27	231	4,8
249	336	30,5	27	202	4,6

Model	Voltage	Motor Power	Current consumption max.	Degree of protection IP	Flow rate max.	Fluid temperature max.	Sound pressure level at 3m
		Watt	Amp		m ³ /h	°C	db(A)
WPR 200 / 230	230 V / 50Hz	145	0,63	44	965	70	47
WPR 250 / 230	230 V / 50Hz	147	0,63	44	950	70	46

Type WPRP



Dimensions (in mm)			Weight
A	B	D	kg
313	407	676	19,0
353	407	632	18,7

Model	Voltage	Motor Power	Current consumption max.	Protection class IP	Flow rate max.	Fluid temperature max.	Sound pressure level at 3m
		Watt	Amp		m ³ /h	°C	db(A)
WPRP 315	230 V / 50Hz	332	1,76	44	3812	50	58,1
WPRP 355	230 V / 50Hz	326	1,74	44	4212	50	52,1

5.3. Fan and motor data

- Max. temperature of the transported air, Max. temperature of the transported air, Max. temperature of the transported air, Max. temperature of the transported air. Temperature of transported air, Max. See data sheet, available in our online catalogue.
- Voltage, current, protection class, weight -> See type plate
- The motor data can be found on the type plate of the motor or in the technical documentation of the motor manufacturer.
- The data on the type plate of the fan apply to "normal air" according to ISO 5801.

5.4. Intended use

The unit is designed exclusively as a built-in unit for conveying air in accordance with the technical data. Any other use or use beyond this is considered improper and is a misuse of the unit. The customer's equipment must be able to withstand the mechanical and thermal loads that may be caused by this product. The entire service life of the system in which this product is installed must be taken into account.

Intended use also includes:

- using the unit in accordance with the permissible ambient temperature, see chapter 4 Transport and storage conditions and chapter 5.3 Nominal data.
- operating the unit with all protective devices.
- observing the operating instructions.



Note

Any use deviating from this is considered improper. Walpol accepts no liability for any resulting personal injury and/or damage to property!

5.5. Improper use

The following uses of the unit in particular are prohibited and can lead to hazards:

- Operating the unit with imbalance, e.g. caused by dirt deposits or icing.
- Resonance operation, operation with strong vibrations or oscillations. This also includes vibrations that are transmitted from the customer's system to the fan.
- Opening of the terminal box during operation.
- Conveying air containing abrasive particles.
- Conveying air that is highly corrosive, e.g. salt spray. Exceptions are units that are designed for salt spray and are protected accordingly.
- Conveying air that contains a high dust load, e.g. extraction of sawdust.
- Operating the unit in the vicinity of flammable substances or components.
- Operating the unit in an explosive atmosphere.
- Use of the unit as a safety-related component or for taking over safety-related functions.
- Operation with completely or partially dismantled or manipulated protective devices.
- Furthermore, all applications not mentioned in the intended use.

6. Type plate and type code

Each fan has a type plate.

Please compare the fan type/data with the version you ordered to avoid misunderstandings or incorrect deliveries.

7. Accessories

We recommend original accessories from Walpol.

8. Installation

Prerequisites

- Make sure that the fan and all its components are undamaged.
- Make sure that the information on the type plate (fan and motor) corresponds to the operating conditions.
- Make sure that there is sufficient space for mounting the fan.
- Mount the fans so that there is sufficient access for troubleshooting, maintenance and repair work.
- When mounting, protect the unit from dust and moisture.

Warning: Risk of impact from falling fan or fan parts.

- Check the surface for load-bearing capacity before installation.
- Take all static and dynamic loads into account when selecting lifting equipment and mounting parts.

General safety instructions

- The installation may only be carried out by appropriately qualified persons, for details, see table 1 Qualification.
- Take into account the system-relevant conditions and requirements of the system manufacturer or system builder.
- Safety devices must not be dismantled, bypassed or put out of function.
- Move the impeller of the fan by hand before installing it to check its free running.
- Provide contact protection, suction protection and safety distances according to DIN EN ISO13857 and DIN 24167-1.
- Use vibration dampers to prevent vibration transmission.
- Prevent foreign particles from being sucked in.
- To prevent vibration transmission to the duct system, we recommend using the flexible connectors.
- Replace guards that have been removed for installation work immediately after installation (and before electrical connection).
- Mount fans in such a way that stability or installation safety is ensured at all times during operation.
- Fasten fans to base construction / base frame or flange. CAUTION Catching the masses at other points will damage the fan and endanger safety. 5.2 Installation site
- The type, condition, ambient temperature and ambient medium of the installation site must be suitable for the respective fan.
- The substructure must be level and have sufficient load-bearing capacity.
- Fasten the fan or base frame to the substructure without tension.
- If fan feet are included in the scope of delivery (mounted or unmounted), they must be mounted in the desired position before installation, if necessary! CAUTION Tension causes fatigue fractures! They impair the function of the fan.
- No forces must be transmitted to the fan from system parts.
- Use flexible connection pieces for duct connection (ducted fan).
- Ensure uniform deflection of the vibration dampers.

**Note****Damage to the unit due to vibrations, bearing damage, shortening of the service life**

No forces or impermissibly strong vibrations may be transmitted to the fan from system parts

**Caution****Damage to the unit possible**

If the unit slips during assembly, this can result in serious damage. Make sure to fix the unit at the installation site until all fixing screws are tightened.

- The fan must be installed so that the terminal box at the top of the unit is at an angle of ± 90 degrees (ducted fan only).
- To maintain IP44, the fans must not be mounted with the terminal box/motor plate facing upwards (Fig.1) (ducted fan only).
- Fans with thermal contacts with external lines (TK) must always be connected to an external motor protection.
- Mount the fan in the direction of the air flow (see arrow on the unit).
- The fan must be installed so that no vibrations are transmitted via the duct system or the building structure. (Suitable accessories such as mounting clamps and diffusers are available).
- Make sure that the fan is securely and stably mounted (Fig. 3).
- The fan can be mounted in any direction unless otherwise specified.
- The fans must be installed in such a way that maintenance and servicing work can be carried out easily and safely.
- Noise can be reduced by installing silencers (available as accessories).
- When frequency regulation is used, an all-pole sine filter must be installed between the motor and the frequency regulator (version all poles: phase-to-phase, phase-to-earth).
- The fans are intended for continuous operation within the specified temperature range.
- Fans with manual thermal contacts (reset by interruption of the power supply, motor protection SP1) must be taken into account when connecting other units with automatic on/off function in the environment.
- When installed in non-heated rooms, the fan housing must be insulated to prevent condensation (tube fan only).
- They are intended for use after installation in machines or duct systems and after installation of a protective grille. (EN ISO 13857).
- Fans with duct connections must be connected to ducts on both sides (inlet/outlet).
- No moving parts must be accessible after installation.
- The fans must not be used in potentially explosive atmospheres or connected to exhaust ducts.
- The fans must not be installed outdoors (duct fan only).
- Fans installed without insulation in unheated areas are at risk of condensation.
- Safety accessories (e.g. motor protection, protective grille) must not be removed, short-circuited or disconnected.
- Precautions must be taken to prevent the backflow of exhaust gases from fume cupboards of other gas or other fuel-fired appliances installed in the same room.

9. Electrical connection

Safety instructions

Warning: Danger from electrical voltage!

- The 5 safety rules must be observed, see The 5 safety rules when working in and on electrical installations
- Prevent water from entering the terminal box.
- The electrical connection may only be carried out by suitably qualified persons, see Details. Table Qualification
- The electrical installation of the fan and the components may only be carried out by specially trained personnel in compliance with these operating instructions and the applicable regulations.

The following standards and guidelines must be observed:

- EN 60204-1, IEC 60364-1 / DIN VDE 0100
- Local regulations of the power supply companies
- To protect against unexpected start-up, install devices in accordance with DIN EN 60204 (e.g. lockable isolation switch).



Danger

Electrical voltage on the unit - risk of electric shock

- Always attach a protective earth conductor first.
- Check the protective earth conductor.



Danger

Faulty insulation - risk of fatal electric shock

- Lay cables so that they cannot be touched by rotating parts.



Caution

Electrical voltage

When working on the fan, you must secure the system/machine in which the fan is installed against being switched on again.



Note

Water ingress in cores or lines

Water enters at the customer cable end and can damage the unit.

Requirements

- For dimensioning the cross-section, observe the dimensioning principles according to EN 61800-5-1. The protective conductor must be dimensioned
- with at least the outer conductor cross-section.
- We recommend using 105°C cables.
- Do not dimension the minimum conductor cross-section below AWG26/0.13 mm².
- Earth conductor contact resistance according to EN 60335
- Compliance with the impedance specifications according to EN 60335 for the protective connection circuit must be checked in the final application.
- Depending on the installation situation, it may be necessary to connect an additional protective earth conductor via the additional protective conductor connection point available on the unit.

Voltage control

In the case of speed control by transformers or by electronic voltage control devices (e.g. phase control), the current may be excessive.

In the case of phase control, noise may also be generated, depending on the installation type of the unit.

Frequency inverter

- Please only use a frequency inverter after consulting Walpol.
- For operation with frequency inverters, install all-pole sinusoidal filters (phase-phase and phase-earth) between the inverter and the motor.
- An all-pole sinusoidal filter protects the motor during frequency inverter operation from high voltage transients that can destroy the winding insulation system and from harmful bearing currents.
- The heating of the motor when using a frequency converter must be checked by the customer in the application.

ATTENTION!

When regulating the speed by reducing the voltage, the motor current may exceed the rated current at a lower voltage. In this case, the motor windings are protected by the thermal contact. The minimum static pressure drop must be observed.

Connection

- Motor / Motor connection Make the motor connection according to the connection diagram enclosed in the terminal box.
- The cross-section of the protective earth conductor must be equal to or greater than the phase cross-section.

Maintenance, servicing and repair

Before maintenance, servicing or repair work, ensure that:

- the power supply is disconnected (all-pole load-break switch).
- the impeller of the fan has come to a standstill
- Observe personal safety instructions!
- In the event of damage to the supply cable, it must be replaced by the manufacturer, its service agent or a similarly qualified person in order to avoid a hazard.

9.1. Connection in the terminal box

- Check that the data on the type plate corresponds to the connection data.
- Make the electrical connection according to the wiring diagram.
- Install a disconnecting device permanently (all-pole contact opening min. 3 mm) in the electrical installation.
- Use all locking screws.
- Insert the screws by hand so that the thread is not damaged.
- Tighten all screws firmly to ensure IP protection.
- Screw the cover of the terminal box/revision switch on evenly.
- Connect the cable end in a dry environment.

Sheath the cable only to the extent that the cable gland is tight and the connections are strain-relieved. Tightness and strain relief depend on the cable used.

Connect cables to terminals

Remove the sealing cap from the cable gland.

Remove the sealing cap only where cables are also inserted.

Guide the cable(s) (not included in the scope of delivery) into the terminal box.

Connect the cables to the respective terminals.

Connect the temperature monitor (TW).

When connecting, make sure that no wires splice off.

The terminal strip is equipped with a push-through protection.

Insert the strands until the strands meet resistance.

No water may penetrate along the cable in the direction of the cable gland.



Note for axial fans

Fans installed horizontally

Make sure that the cable is laid in the form of a loop.

Fans installed vertically

When laying the cable, make sure that the cable glands are arranged at the bottom. The cables must always be routed downwards.

9.2. Motor protection

- The built-in motors are equipped with thermal contacts. (For exceptions, see the technical catalogue).
- The thermal contacts switch off the motor either directly (in series with the motor winding) or in conjunction with our full motor protection switching device if the permissible winding temperature is exceeded, thus guaranteeing optimum motor protection (observe the circuit diagrams!).
- Motors with a rated power of up to 4kW can generally be switched on directly.
- For more than three starts per hour, the suitability of the motor must be confirmed by Walpol.

Important

Fuses or circuit breakers are not sufficient motor protection.

Damage caused by inadequate motor protection will invalidate the manufacturer's warranty

Important

Motor damage due to overvoltage, overload or short circuit.

- Temperature monitors that are led out must be inserted in the control circuit in such a way that in the event of a fault they do not switch on again automatically after cooling down.
- Motor cables and temperature monitoring cables must always be laid separately.
- Without thermal protection: Use motor protection switches!

Resetting the thermal tripping devices

- Manual thermal tripping devices (SP1) are reset by interrupting the power supply for approx. 10-20 min.
- Fans with external lines for thermal tripping devices (TK) are reset by the external motor protection. This protection may not have an automatic reset.
- Make sure that the fan is not blocked and that the motor protection has not tripped.
- Contact the supplier if the motor does not start after regulating and/or resetting the motor protection.

10. Commissioning

The warranty is only valid if commissioning has been carried out correctly and written proof of this has been provided.

Safety instructions

Commissioning may only be carried out by appropriately qualified persons, for details see table Qualification

Prerequisites

- Assembly and electrical connection have been completed properly.
- Residual material from the installation and foreign bodies have been removed from the fan and ducts.
- Check the fan for visible damage before switching it on and ensure that the protective devices are functioning properly.
- Use all locking screws.
- Inlet and outlet are clear.
- The cable glands have been tightened.
- The data on the type plate correspond to the connection data.
- The safety devices have been fitted.
- Install a disconnecting device permanently in the electrical installation (all-pole contact opening min. 3 mm).

Safety check:

- Check whether all mechanical and electrical protective devices are fitted and connected.
- If, due to the type of use of the fan, inlet and outlet openings, as well as drive shaft or other rotating parts are freely accessible, protective devices must be fitted in accordance with DIN EN ISO 13857! Appropriate guards are available as accessories and must be expressly ordered.
- If the surface temperature of accessible fan parts exceeds +70°C (DIN EN ISO 13732-1), separating guards must be fitted. Before commissioning, carry out the following checks:
- Check the duct system and fan for foreign bodies (tools, small parts, construction debris, etc.).
- Check the impeller for free running by turning it by hand.
- Check the type of current, voltage and frequency of the mains connection for conformity with the fan or motor rating plate.

Check the function of connected control devices:

- Close the inspection openings (if any).
- The fan may only be put into operation if all protective devices are fitted and it is ensured that the impeller is protected in accordance with DIN EN ISO 13857!
- The suitability of the protective devices and their attachments to the fan must be evaluated in connection with the overall safety concept of the system.
- Test run Switch on the fan briefly and check the direction of rotation of the impeller by comparing it with the direction of rotation arrow on the fan. If the direction of rotation is incorrect, reverse the polarity of the motor electrically, observing the safety instructions.
- Check current consumption **CAUTION** After reaching the fan's operating speed, immediately measure the current consumption and compare it with the rated motor current on the motor or fan type plate.
- Switch off immediately if overcurrent persists.
- Check smooth running **CAUTION** Check fan for smooth running. There must be no unusual oscillations or vibrations.

Tests

The following sequence must be observed during commissioning:

AC motor

1. Switch on the fan.
2. Carry out the tests required in the commissioning protocol (19 Commissioning protocol, speed-controllable fans: "Measurement data during commissioning" at maximum speed.
3. Switch off the fan. When the mains voltage is switched on, the motor starts an initialisation (a few seconds). After initialisation, the control input is active.

11. Operation

Safety instructions

Warning: Danger from electrical voltage or moving parts.

- The unit may only be operated by appropriately qualified persons, for details see Table 1 Qualification,
- Operate the fan only in accordance with its operating instructions and the operating instructions for the motor.

The following points must be checked before initial operation:

- Electrical connection has been carried out correctly.
- Protective earth has been connected.
- Motor protection has been installed.
- Safety devices are in place (protective grille)
- Other installation materials and foreign bodies have been removed from the housing.



Note

To maintain operation and safety

We recommend having fans checked at regular intervals for function and condition by professionally qualified personnel or a specialist company and documenting this. The type, scope and maintenance intervals, as well as any additional activities required, must be determined depending on the use of the fans and the prevailing conditions on site. The maintenance and inspection recommendation based on VDMA 24186-1

12. Troubleshooting/maintenance/repair

12.1. Safety instructions

- Troubleshooting/maintenance/repair may only be carried out by suitably qualified persons, for details see Table 1 Qualification. Table 1 Qualification.
- The 5 safety rules must be observed, see 2.3 The 5 safety rules when working in and on electrical installations.
- The impeller must be stationary.

Do not carry out any repairs on your unit. Send the unit to Walpol for repair or replacement.

WARNING

Voltage at terminals and connections even when the unit is switched off

Electric shock

→ Do not open the unit until five minutes after all poles have been disconnected from the power supply.

CAUTION

Electrical charge on the capacitor after switching off the unit

Electric shock, risk of injury

→ Discharge the capacitors before working on the unit.

CAUTION

When the operating voltage is applied, the motor restarts automatically, e.g. after a mains failure.

Risk of injury

→ Do not stay in the danger zone of the unit.

→ When working on the unit, switch off the mains voltage and secure it against being switched on again.

→ Wait until the unit has come to a standstill.

→ Insert temperature monitors that have been led out into the control circuit in such a way that the cooled motor does not switch on again automatically after a malfunction.

If the unit is at a standstill for a longer period of time, e.g. during storage, we recommend that you operate the unit for at least two hours so that any condensate that may have entered can evaporate and the bearings are moved.

12.2. Troubleshooting

Table 13 Troubleshooting

Malfunction Remedy	Possible causes	Remedy
Fan runs unsteadily	Impeller is out of balance	If possible, have it rebalanced by a specialist company. Otherwise, please contact Walpol.
	Dirt on impeller	Clean carefully, rebalance
	Material degradation on impeller due to aggressive pumped media.	Contact Walpol
	Direction of rotation of impeller incorrect	Change direction of rotation if possible. Otherwise, please contact Walpol.
	Deformation of the impeller due to excessive temperature.	Make sure that the temperature does not exceed the certified value/mount a new impeller.
	Vibrations/vibrations	Check the installation of the fan/check the duct system, see .
	Fan operation in resonance frequency range	Consider chapter 9.2 Fans with variable speed
Fan air performance too low	Direction of rotation Impeller wrong	Change direction of rotation if possible. Otherwise please contact Walpol.
	Wrong connection wiring (e.g. star instead of delta).	Check connection wiring and correct if necessary.
	Pressure losses too high.	Optimise duct routing.
	Volume flow controllers are not or only partially open.	Check opening position on site.
Grinding noises when starting or operating the fan	Inlet or pressure paths blocked.	Remove blockage.
	Check whether the duct connections on the fan are strained.	Loosen duct connections and realign.
Thermal contact/ PTC thermistor tripped	Direction of rotation of impeller incorrect	Change direction of rotation if possible. Otherwise contact Walpol.
	Missing phase	If using a 3-phase motor (no EC), check that all 3 phases are present.
	Motor overheating	Check impeller cooling (if present), check resistance of motor windings (if possible) / contact Walpol.
	Capacitor (if used) not or not correctly connected	Connect capacitor correctly.
	Motor blocked	Contact Walpol

Fault Remedy	Possible causes	Remedy
Fan does not reach nominal speed	Defective motor winding	Contact Walpol
	Drive motor misaligned	Contact Walpol
	Control devices (if used), such as frequency converter or transformer are set incorrectly.	Set control devices correctly.
	Mechanical blockage	Remove blockage.
Motor does not rotate	Incorrect supply voltage	Check supply voltage, restore power supply.
	Connection defective	Disconnect from power supply, correct connection according to wiring diagram
	Temperature monitor has reacted.	Let motor cool down. Determine cause of error and correct.
Electronics/motor overheated	Cooling insufficient	Improve cooling.
	Motor overload	Check whether the correct fan is used for the application.
	Ambient temperature too high	Check whether the correct fan is used for the application.



Note

For all other damage/defects, please contact Walpol.

12.3. Maintenance

The warranty is only valid if maintenance has been carried out correctly and written proof of this has been provided.

To ensure continuous fan operation, we recommend regular maintenance intervals. These maintenance intervals are specified in the "Activities" table below. In addition, follow-up activities such as cleaning, replacement of defective components or other corrective measures must be carried out by the operator. For traceability, it is necessary to create a maintenance plan in which the work carried out is documented. This must be drawn up by the operator. If "extreme operating conditions" prevail, the maintenance intervals must be shorter. Examples of extreme operating conditions:

- Fans for kitchen exhaust air
- Permanent ambient temperature > 30 °C or < -10 °C, or temperature fluctuations > 20 K

Table 14 Activities

Actions	Normal Operating Conditions		Extreme Operating Conditions	
	Semi Annually	Annually	Quarterly	Semi Annually
Check the fan and its components for visible damage, corrosion and dirt.		X		X
Check the impeller for damage and imbalance.		X		X
Check the correct function of the condensate drain.		X	X	X
Clean the fan/ventilation system (see 13 Cleaning).	X		X	
Check the screw connections for tightness and damage/defects.		X	see normal operating conditions	
Make sure that the fan inlet is free of dirt.		X		X
Check that the fan and its components are used as intended.	X		see normal operating conditions	
Check the current consumption and compare this with the nominal data.		X		X
Check the vibration dampers (if used) for correct function, visible damage and corrosion.		X	see normal operating conditions	
Check the electrical and mechanical protective devices for correct function.		X	see normal operating conditions	
Check that the type plate of the fan is legible.		X		X
Check the connection terminals and cable glands for tight fit and visible damage/defects.		X	see normal operating conditions	
Check the flexible connectors for damage.	X		see normal operating conditions	



Note

For all other damage/failures, please contact Walpol.

12.4. Spare parts

- Only use original spare parts from Walpol!
- When ordering spare parts, state the serial number of the fan. This is indicated on the type plate.

13. Cleaning

The fan should be cleaned when necessary, at least once or twice a year, to avoid imbalance and unnecessary damage to the bearings. A filter will extend the time between cleaning the fan. (In some cases, the installation of a filter guard is recommended). The fan bearings are maintenance-free and should only be replaced if damaged. Make sure that the fan impeller balance weights have not been moved and that the fan impeller is not warped. Listen for abnormal operating noises.

NOTE

Damage to the unit during cleaning Malfunction possible

- Do not clean the unit with a water jet or high-pressure cleaner.
- Do not use cleaning agents containing acids, alkalis or solvents.
- Do not use pointed or sharp-edged objects for cleaning

Safety instructions

- Cleaning may only be carried out by appropriately qualified persons, for details see Table 1 Qualification. The 5 safety rules must be observed, see 2.3 The 5 safety rules for working in and on electrical installations.
- The impeller must be stationary.

- The rules of VDI 2052 apply.

Procedure

Important
<p>Keep the fan clean for a long period of use.</p> <ul style="list-style-type: none"> • Install a filter monitor. • Do not use steel brushes or sharp-edged objects. • Never use a high-pressure cleaner ("steam jet"). • Do not bend the fan blades when cleaning. • When cleaning the impeller, make sure that the balance weights are attached. • Keep the airways of the fan clean and clean them carefully with a brush if necessary.

14. Dismantling/dismantling

- Dismantling and dismantling of the motor must be carried out in the reverse order of assembly and electrical connection.
- Dismantling of the product must be carried out or supervised by qualified personnel with appropriate expertise.
- Dismantle the product into individual components suitable for disposal in accordance with general motor construction procedures.

WARNING

Heavy parts of the product may fall down!

The product partly consists of heavy individual components. These components may fall down during disassembly. Death, serious bodily injury and property damage may result.

→ Secure components to be detached against falling.

15. Disposal

- Ensure that the material is recycled. Observe the national regulations.
- The unit and the transport packaging consist mainly of recyclable raw materials.

16. Commissioning report

The warranty is only valid if commissioning has been carried out correctly and written proof of this has been provided.

Fan

Description:

Item no.:

Production order no.:

Installer

Company:

Contact person:

Company address:

Tel.No.:

E-mail:

Operator (installation site)

Company:

Contact person:

Company address:

Tel.No.:

E-mail:

Type of connection		Yes	No
Directly connected to the mains		<input type="checkbox"/>	<input type="checkbox"/>
Via contactor control		<input type="checkbox"/>	<input type="checkbox"/>
Transformer		<input type="checkbox"/>	<input type="checkbox"/>
Frequency converter		<input type="checkbox"/>	<input type="checkbox"/>
Sinus-Filter		<input type="checkbox"/>	<input type="checkbox"/>
Shielded cables		<input type="checkbox"/>	<input type="checkbox"/>
Motor protection		Yes	No
Motor protection switch or motor protection relay		<input type="checkbox"/>	<input type="checkbox"/>
PTC thermistor		<input type="checkbox"/>	<input type="checkbox"/>
Resistance value [Ω]:			
Thermal contact		<input type="checkbox"/>	<input type="checkbox"/>
Electrical motor protection		<input type="checkbox"/>	<input type="checkbox"/>
Other			
Function test		Yes	No
Impeller easily rotatable (by hand)		<input type="checkbox"/>	<input type="checkbox"/>
Direction of rotation corresponds to direction of rotation arrow		<input type="checkbox"/>	<input type="checkbox"/>
Smooth running without unusual noises / vibrations		<input type="checkbox"/>	<input type="checkbox"/>
Nominal data - fan (name plate on fan) Fan (nameplate on fan housing)			
Voltage [V]:	Current [A]:		
Frequency [Hz]	Power [kW]:		
Impeller speed [rpm]			
Measurement data at commissioning			
Voltage [V]:	Temp. of the conveyed air [$^{\circ}$ C]:		
Current L1 [A]*	Impeller speed [rpm]		
Current L2 [A]:	Volume flow [m^3/h]:		
Current L3 [A]:	Differential pressure [Pa]*:		

*For single-phase fans, enter in line "Current L1 [A]"

* Δ -pressure between suction and discharge side of the fan

If a volume flow measurement is not possible, the value can be calculated using the following formula:

	X	=
Duct cross-section [m^2]	Flow velocity [m/s]	Volume flow [m^3/h]:
<small>Grid measurement according to VDI 2044</small>		

	Yes	No
Commissioning of the fan successful?	<input type="checkbox"/>	<input type="checkbox"/>
Date, signature installer		
Date, Signature Operator		

17. EU declaration of conformity

The manufacturer: Walpol GmbH
Benzstr. 13
45891 Gelsenkirchen

Product designation: Axial fans

Type designation: WPA

From year of manufacture: 2016

The manufacturer hereby declares that the above-mentioned products, in their design and construction as well as the version placed on the market by us, comply with the relevant harmonisation legislation listed below: /

The manufacturer declares that the above mentioned products in their design and construction and the version marketed by us complies with the harmonization legislation listed below:

EU directives: 2006/42/EC - Maschinenrichtlinie / machinery directive

EU directives: 2014/30/EU - Richtlinie Elektromagnetische Verträglichkeit (EMV) / directive electromagnetic compatibility (EMC)

2011/65/EU - RoHS-Richtlinie / RoHS directive

2009/125/EC - ErP-Richtlinie / ErP guidelines

The following standards have been considered: / The following standards have been considered:

Harmonised standards: DIN EN ISO 12100:2013 - Safety of machinery - General principles for design - Risk assessment and risk reduction

Harmonized standards:

DIN EN 60204-1:2010 - Safety of machinery - Electrical equipment of machines, Part 1: General requirements

DIN EN 61000-6-1:2007 - Electromagnetic compatibility (EMC) - Part 6-1: Generic standards Immunity for residential, commercial and light-industrial environments

DIN EN 61000-6-2:2011 - Electromagnetic compatibility (EMC) - Part 6-2: Generic standards Immunity for industrial environments

Location: Gelsenkirchen

Date: 01.012.2021



Maximilian Girnus
Managing Director WALPOL GmbH

The manufacturer: Walpol GmbH
Benzstr. 13
45891 Gelsenkirchen

Product designation: Tube fans

Type designation: WPR, WPRP

From year of manufacture: 2016

The manufacturer hereby declares that the above-mentioned products, in their design and construction as well as the version placed on the market by us, comply with the relevant harmonisation legislation listed below: /

The manufacturer declares that the above mentioned products in their design and construction and the version marketed by us complies with the harmonization legislation listed below:

EU directives: 2006/42/EC - Machinery Directive
EU directives: 2014/35/EU Low Voltage Directive
2014/30/EU - EMC Directive
2011/65/EU RoHS Directive (equipment for domestic use)
Eco-Design Directive 2009/125/EC
327/2011 Requirements for fans over
125 W
1253/2014 Requirements for ventilation units
over 30 W
1254/2014 Requirements for
Energy consumption labelling for
residential ventilation units

The following standards have been considered: / The following standards have been considered:

Harmonised standards: EN ISO 12100:2010 - Safety of machinery - General principles for design - Risk assessment and risk reduction.
EN 13857 Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs.
EN 60 335-1 Household and similar electrical appliances - Safety - Part 1: General requirements.
EN 60 335-2-80 Household and similar electrical appliances - Safety - Part 2-80: Particular requirements for fans
EN 62233 Methods for measuring the electromagnetic fields of household and similar electrical appliances with respect to the safety of persons in electromagnetic fields.
EN 50 106:2007 Safety of household and similar electrical appliances - Particular rules for routine tests of appliances within the scope of EN 60 335-1 and EN 60967.
EN 60529 - Degrees of protection provided by enclosures (IP Code).
EN 60 204-1 - Safety of machinery Electrical equipment of machines - Part 1: General requirements
EN 61000-6-2 - Electromagnetic compatibility (EMC) - Part 6-2: Generic standard - Immunity for industrial environments

Harmonised standards:

EN 61000-6-3 - Electromagnetic compatibility (EMC) - Part 6-2: Generic standard
- Emission standard for residential, commercial and light-industrial environments.

EN ISO 5801 - Fans - Performance tests using standardised air shafts.

EN 13142 - Ventilation for buildings - Components/products for domestic ventilation
- Required and optional performance.

EN 14121 - Aluminium and aluminium alloys - Sheets, strips and blanks for electrical
applications.

Location: Gelsenkirchen

Date: 01.01.2012



Martin Farkasch

Managing Director WALPOL GmbH

www.WALPOL.eu