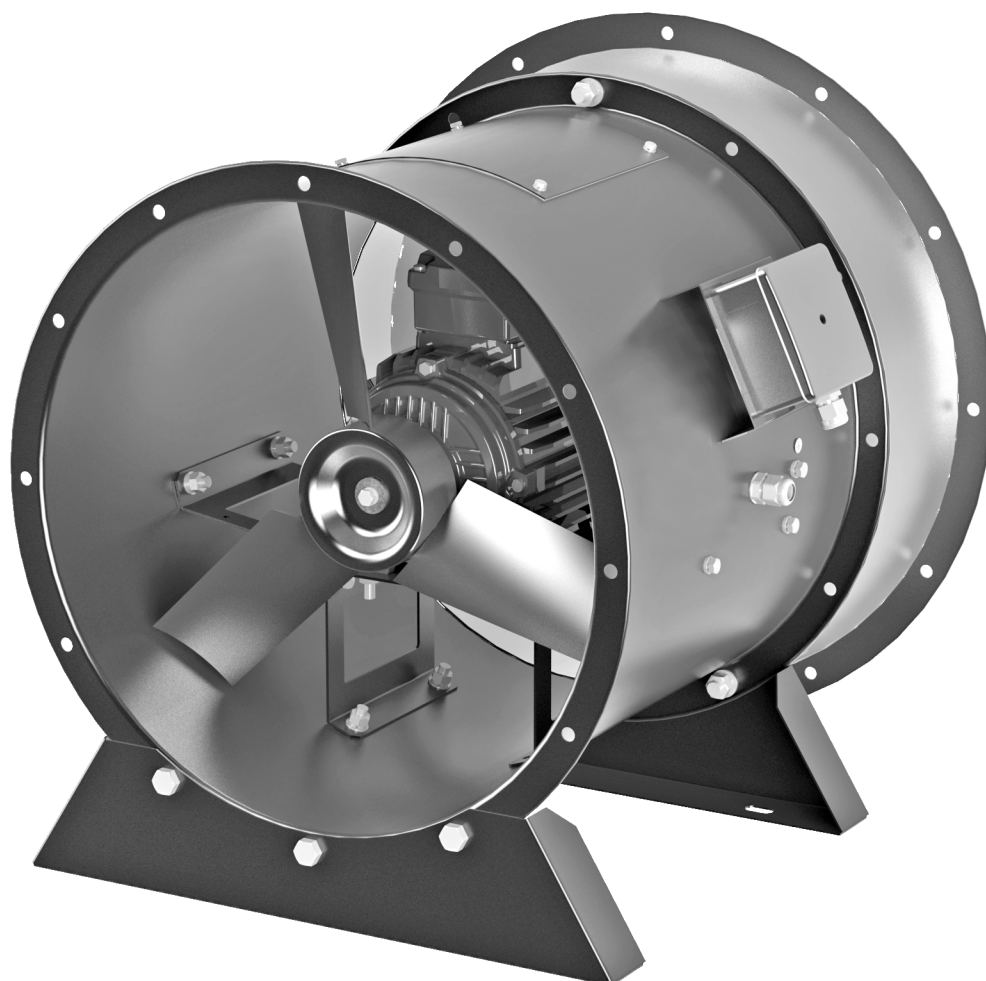


USER'S MANUAL



AXIAL PRESSURISATION FAN

VPVO series



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The user's manual consisting of the technical details, operating instructions and technical specification applies to the installation and mounting of the axial pressurisation fan VPVO (hereinafter «the unit» as mentioned in the «Safety Requirements» and «Manufacturer's Warranty» sections as well as in warnings and information blocks).

■ SAFETY REQUIREMENTS

- Read the user's manual carefully prior to installing and operating the unit.
- Fulfil the user's manual requirements as well as the provisions of all the applicable local and national construction, electrical and technical norms and standards.
- The warnings contained in the user's manual must be considered most seriously since they contain vital personal safety information.
- Failure to follow the rules and safety precautions noted in this user's manual may result in an injury or unit damage.
- After a careful reading of the manual, keep it for the entire service life of the unit.
- While transferring the unit control the User's manual must be turned over to the receiving operator.

Symbol legend:



WARNING!



DO NOT!

UNIT MOUNTING AND OPERATION SAFETY PRECAUTIONS



- Disconnect the unit from power mains prior to any installation operations.



- The unit must be grounded!



- Do not lay the power cable of the unit in close proximity to heating equipment.



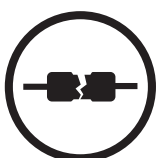
- While installing the unit follow the safety regulations specific to the use of electric tools.



- Do not change the power cable length at your own discretion.
- Do not bend the power cable.
- Avoid damaging of the power cable.
- Do not put any objects on the power cable.



- Do not operate the unit outside the temperature range stated in the user's manual.
- Do not operate the unit in aggressive or explosive environments.



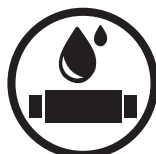
- Do not use damaged equipment or cables when connecting the unit to power mains.



- Unpack the unit with care.



- Do not touch the unit controls with wet hands.
- Do not carry out the installation and maintenance operations with wet hands.



- Do not wash the unit with water.
- Protect the electric parts of the unit against ingress of water.



- Do not allow children to operate the unit.



- Do not store any explosive or highly flammable substances in close proximity to the unit.



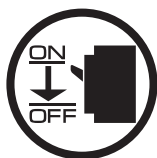
- Do not open the unit during operation.



- Do not block the air duct when the unit is switched on.



- Do not sit on the unit and avoid placing foreign objects on it.



- Disconnect the unit from power mains prior to any technical maintenance.



- When the unit generates unusual sounds, odour or emits smoke disconnect it from power supply and contact the Seller.



- Do not direct the air flow produced by the unit towards open flame or ignition sources.



- In case of continuous operation of the unit periodically check the security of mounting.



- Use the unit only for its intended purpose.

■ PURPOSE

The fan is intended for ventilation systems of industrial, administrative, residential and other buildings, pressurisation of fire-fighting equipment and fresh air supply in case of fire.



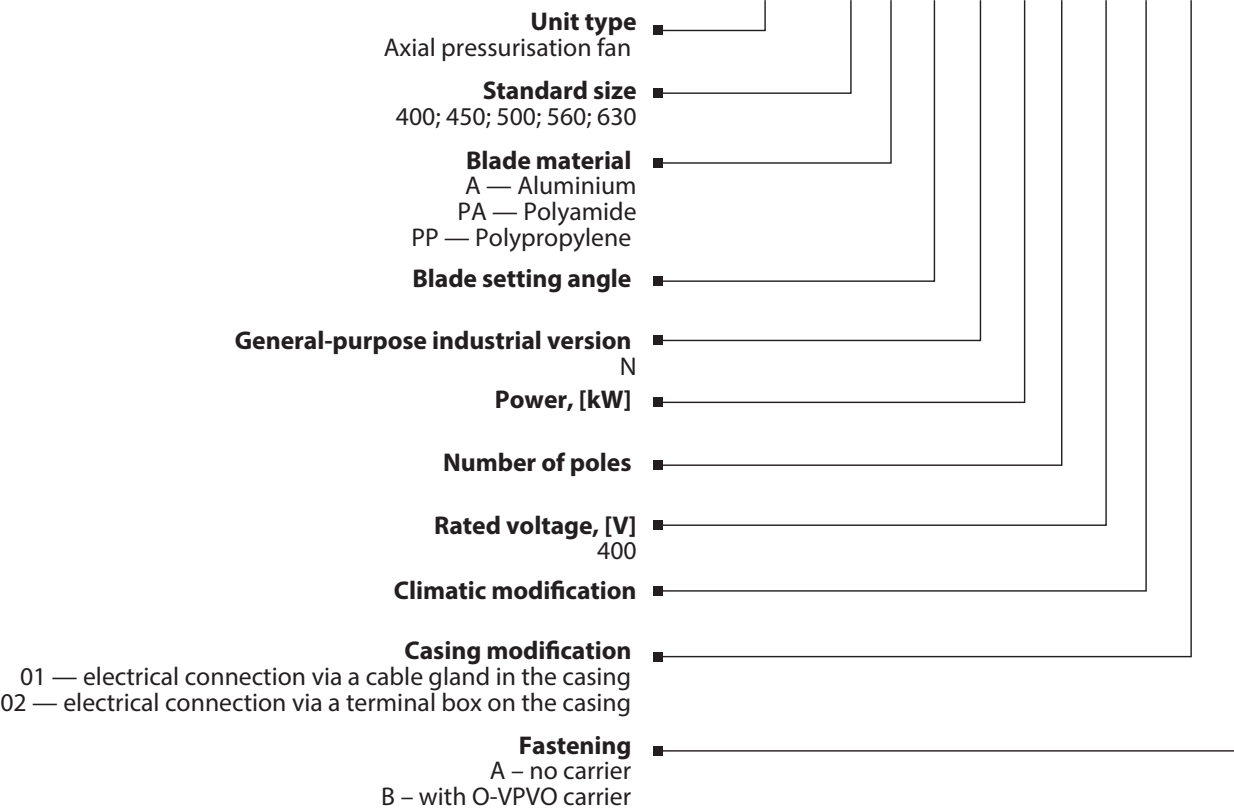
THE UNIT MAY NOT BE OPERATED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, MENTAL OR SENSORY CAPACITIES, OR LACKING THE APPROPRIATE TRAINING.
THE UNIT MUST BE INSTALLED AND CONNECTED ONLY BY PROPERLY QUALIFIED PERSONNEL AFTER THE APPROPRIATE BRIEFING.
THE CHOICE OF UNIT INSTALLATION PLACE MUST PREVENT UNAUTHORIZED ACCESS BY UNATTENDED CHILDREN.

■ DELIVERY PACKAGE

■ Fan	1 piece
■ User's manual	1 piece
■ Packing box	1 piece

■ DESIGNATION KEY

VPVO-X-X/X-X-X/X-X-X-X-X

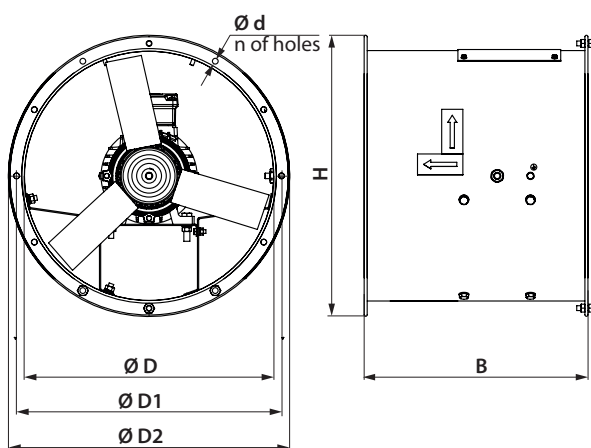


■ TECHNICAL DATA

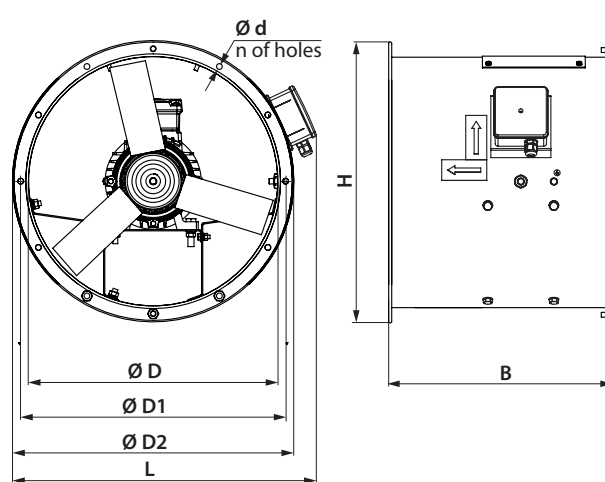
The fan is designed for smoke ventilation systems in special-purpose plenum smoke extraction systems for creating a positive pressure differential and preventing smoke penetration and fire propagation through duct ventilation systems as well as moving large amounts of air (e.g. in ventilation shafts of tunnels, underground railways etc.).

- The transported air temperature range is -40°C to $+40^{\circ}\text{C}$.
 - Maximum concentration of solids and dust in the transported air - 10 mg/m^3 .
 - The units meet the requirements of IP X4 hazardous parts access and water ingress protection standard.
- The fan design is regularly improved, so some models can slightly differ from those ones described herein.

Casing modification 01 fan



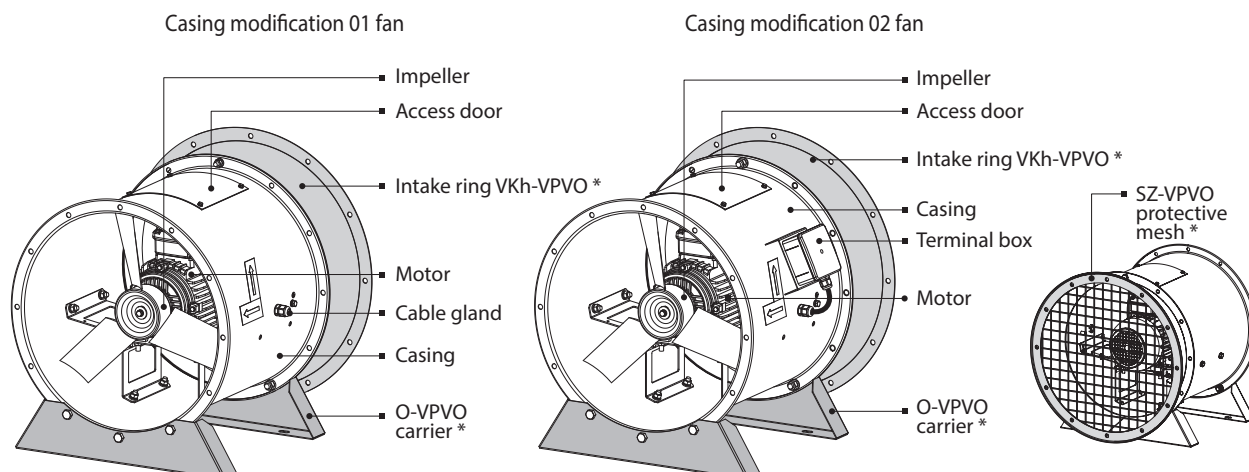
Casing modification 02 fan



Model	Dimensions, [mm]					
	Ø d / n	Ø D	Ø D1	Ø D2	B	L
VPVO 400-1.1/2	9.5 / 12	412	438	465	370	502
VPVO 450-1.1/2	9.5 / 12	462	487	515	370	550
VPVO 500-0.75/4	9.5 / 12	515	541	570	370	615
VPVO 500-2.2/2	9.5 / 12	515	541	570	370	615
VPVO 560-2.2/4	11.5 / 16	565	605	636	420	659
VPVO 630-3.0/4	11.5 / 16	645	674	715	470	751
VPVO 630-2.2/4	11.5 / 16	645	674	715	470	751

	VPVO 400-1.1/2	VPVO 450-1.1/2	VPVO 500-0.75/4	VPVO 500-2.2/2	VPVO 560-2.2/4	VPVO 630-3.0/4	VPVO 630-2.2/4
Voltage, [V] / 50 Hz	3~ 400	3~ 400	3~ 400	3~ 400	3~ 400	3~ 400	3~ 400
Rated power, [kW]	1.1	1.1	0.75	2.2	2.2	3.0	2.2
Rated current, [A]	2.7	2.7	2.2	5.0	5.27	7.2	5.27
Rotation speed, min. ⁻¹	2790	2790	1360	2840	1380	1480	1380
Motor IP code	54	54	54	54	54	54	54
Weight, [kg]	23.7	26.7	27.4	33.4	38.5	56.4	60.0
Transported air temperature, [°C]	from -40 to +40						

■ DESIGN AND OPERATING PRINCIPLE



The all-welded metal casing with rolled flanges results in outstanding rigidity and minimum clearances between the casing and the blades. There is an access door in the casing for easy maintenance. All the casing components are powder coated for improved protection against the environmental effects.

The fan impeller has a unitised construction. The profiled blades are cast aluminium. Low weight and mass moment of impeller inertia contribute help reduce the time required to start the fan. The impeller is linked to the motor and rotates counterclockwise on the pressure side.

The fan is driven by a three-phase asynchronous single-speed motor with a square-cage rotor installed inside the casing.

The fan casing modifications depend on the electrical cable connection options:

- in modification 01 the cable is connected to the terminal box of the electric motor via a cable gland in the casing;
- in modification 02 the cable is connected to the terminal box on the casing.

* Not included in the delivery set, available as a special accessory

- O-VPVO carriers. The carriers connect to the casing flanges and/or the intake ring.
- Intake ring VKh-VPVO and SZ-VPVO protective mesh. When connecting an air duct on the pressure side with a free intake the fan should be equipped with an intake ring and a protective mesh. The mesh prevents foreign objects from entering the fan. The intake ring at the fan inlet is required to smooth out the flow and reduce the inlet flow resistance. However, the intake ring becomes unnecessary if the intake air duct is sufficiently long.

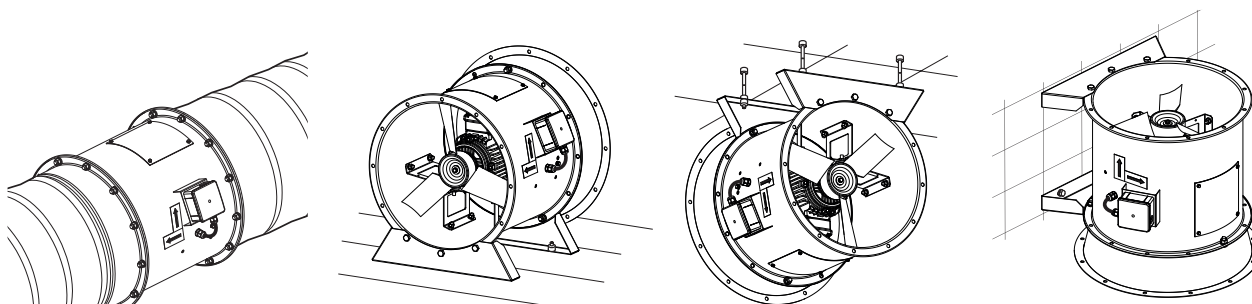
■ MOUNTING AND SETUP



THE UNIT MUST BE ASSEMBLED BY A QUALIFIED AND PROPERLY TRAINED TECHNICIAN USING THE NECESSARY TOOLS AND MATERIALS.

THE CHOSEN MOUNTING LOCATION OF THE UNIT MUST ENSURE UNOBSTRUCTED ACCESS AS MAY BE REQUIRED FOR TECHNICAL MAINTENANCE OR REPAIR.

The fan can be mounted in any position - vertically, horizontally or tilted at any angle.



Installation recommendations.

- In-duct installation requires flanges to attach the fan to the ductwork.
- To attach the fan to the floor, a wall or the ceiling use the O-VPVO carriers. The carriers are secured to the ceiling by means of threaded expansion anchors and mounting studs. To secure the carriers to the floor or a wall use anchor bolts.
- The fasteners required for mounting the fan are not included and should be purchased separately. The choice of fasteners should be based on the mating surface material and the fan weight (see the «Technical data» section). The fastenings must be selected by a maintenance service engineer.

■ CONNECTION TO POWER MAINS



**DISCONNECT THE UNIT FROM THE POWER SUPPLY PRIOR TO ANY WORK.
THE CONNECTION TO THE ELECTIC MAINS MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN.
THE NOMINAL ELECTRICAL PARAMETERS OF THE FAN ARE GIVEN ON THE MANUFACTURER'S LABEL.
ANY TAMPERING WITH THE INTERNAL CONNECTIONS IS PROHIBITED AND SHALL VOID THE WARRANTY.**

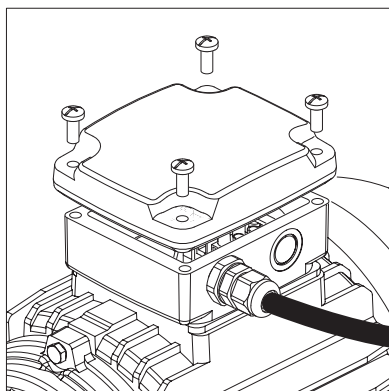
The pressurisation fan is not intended for standalone operation.

The fan must be integrated into a ventilation or smoke extraction system with an automatic control system.

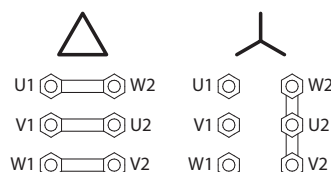
The fan motor takes 400 V / 50 Hz three-phase alternating current.

Connect the fan motor via the terminal block according to the electrical mains connections diagram using a strong heat-resistant insulated cable. The terminal block with the terminal markings is housed inside the terminal box.

The terminal box of the fans with casing modification 01 is located on the electric motor.

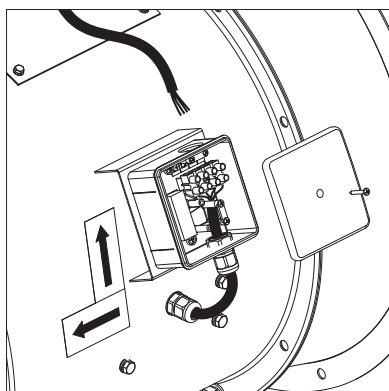


Electrical mains connections diagram for the fans with casing modification 01

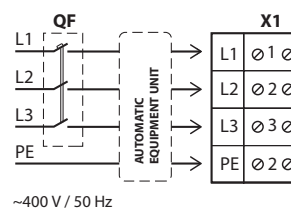


The connection pattern (i.e. triangle or star) is given on the motor nameplate.

The terminal box of the fans with casing modification 02 is located on the fan casing.



Power mains connections diagram for the fans with casing modification 02



Make sure that the rotational direction of the fan impeller corresponds to the arrow on the fan casing.

In case of a mismatch check the phases for proper connection.

The external power input of the system must be equipped with a QF automatic cut-out switch built into the stationary wiring to disconnect all the mains phases. The automatic cut-out switch mounting location must ensure quick access for emergency shutdown of the fan, if necessary.

The recommended cross section of the fan power conductors is 4x1.5 mm².

The cable cross-section selection must account for the maximum permissible cable heating temperature which depends on the type, insulation, length and cable installation method.

Model	Recommended nominal current of the automatic cut-out switch, [A]
VPVO 400-1.1/2	3.15
VPVO 450-1.1/2	3.15
VPVO 500-0.75/4	2.5
VPVO 500-2.2/2	6.3
VPVO 560-2.2/4	6.3
VPVO 630-3.0/4	6.3
VPVO 630-2.2/4	8

■ MAINTENANCE



DISCONNECT THE UNIT FROM THE ELECTRICAL MAINS PRIOR TO ANY TECHNICAL MAINTENANCE.



AVOID LIQUID SPILLS ON THE MOTOR! DO NOT USE AGGRESSIVE SOLVENTS AND SHARP OBJECTS FOR CLEANING!

The technical maintenance includes:

- checking the screw, riveted and welded joints;
- checking the tightness of the earthing clamps and electrical connections;
- checking the terminal connections of wires;
- cleaning the unit surfaces from dust and dirt.

■ STORAGE AND TRANSPORTATION RULES

Store the unit in the manufacturer's original packing box in a dry closed ventilated premise with temperature range from +5 °C to +40 °C.

Vapours or particles which can cause corrosion or damage the insulation or connection tightness are not allowed in the storage environment.

Use hoist machinery for handling and transportation to prevent possible mechanical damages of the unit.

Fulfil the requirements for transportation of the specified cargo type.

Use any vehicle types for the unit transportation provided that it is protected against mechanical or weather damage.

Avoid any mechanical shocks and strokes during handling operations.

■ MANUFACTURER'S WARRANTY

The warranty period is 24 months after the retail sale date provided the user's observance of the transportation, storage, mounting and operation regulations.

Should any malfunctions occur in the course of the unit operation through the Manufacturer's fault during the guaranteed period of operation the user is entitled to elimination of faults by the manufacturer by means of warranty repair at the factory free of charge.

The warranty repair shall include work specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:

- Routine technical maintenance;
- Unit installation / dismantling;
- Unit setup.

To benefit from warranty repair the user must provide the unit, the user's manual with the purchase date stamp and the payment document certifying the purchase.

The unit model must comply with the one stated in the user's manual.

Contact the Seller for warranty service.

The manufacturer's warranty does not apply to the following cases:

- User's failure to submit the unit with the entire delivery package as stated in the user's manual including submission with missing component parts previously dismounted by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packing and in the user's manual.
- User's failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- User's violation of the unit installation regulations.
- User's violation of the unit control regulations.
- Unit connection to the power mains with a voltage different from the one stated in the user's manual.
- Unit breakdown due to voltage surges in the power mains.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer's authorization.
- Expiration of the unit warranty period.
- User's violation of the unit transportation regulations.
- User's violation of the unit storage regulations.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user's manual.
- Failure to submit the user's manual with the unit purchase date stamp.
- Missing payment document certifying the unit purchase.



FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.



USERS' WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.

■ ACCEPTANCE CERTIFICATE

Unit Type	Axial pressurisation fan
Model	VPVO _____
Serial Number	
Manufacture Date	
<p>is compliant with the technical specifications and is hereby declared ready for service. We hereby declare that the product complies with the essential protection requirements of Electromagnetic Council Directive 2004/108/EC, 89/336/EEC and Low Voltage Directive 2006/95/EC, 73/23/EEC and CE-marking Directive 93/68/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. This certificate is issued following test carried out on samples of the product referred to above.</p>	
Quality Inspector's Stamp	

■ SELLER INFORMATION

Seller	
Address	
Phone number	
E-mail	
Purchase Date	

This is to certify delivery of the complete unit with the user's manual. The warranty terms are acknowledged and accepted.

Customer's signature

Seller's Stamp

■ INSTALLATION CERTIFICATE

The unit has been connected to power mains pursuant to the requirements stated in the present user's manual.

Company Name		
Address		
Phone Number		
Installation Technician's Full Name		
Installation date:		Signature:

Installation Company Stamp

This is to certify that the works specific to the unit installation has been performed in accordance with all the applicable provisions of local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.

Signature:

■ WARRANTY CARD

Unit Type	Axial pressurisation fan
Model	VPVO _____
Serial number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	

Seller's stamp



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