



OPERATION AND MONTAGE MANUAL

ROOF FANS

RF / RFV

Venture Industries Sp. z o.o. is not responsible for any damage caused by improper use of the fan and reserves the right to modify this document without informing the user.

INTRODUCTION

This manual covers fans in standard version, listed on the title page and it is source of information necessary for safe and proper use. Read this manual carefully before any use of the device, comply with its requirements and keep it in place with easy access for users and service. In case of any doubts about use of the fan, please contact with manufacturer.



After receiving the device - check

- whether the device is in compliance with order,
- whether the data on the rating plate are the same as desired (voltage, frequency, etc.)
- whether fan was not damaged during transport (e.g. there are no dents/cracks, impeller rotates freely)

In case of any irregularities, contact with your dealer or Venture Industries Sp. z o.o. service.

1. GENERAL INFORMATION

1.1 Information about device

• The fan is a not completed machine within the meaning of the Machinery Directive 2006/42/WE (please refer to the manufacturer's declaration – Appendix C). Product is in conformity with the Commission Regulation (EU) No 1253/2014 implementing ErP Directive 2009/125/EC with regard to eco-design requirements for ventilation units. Additional information can be found on the manufacturer's website (www.ventur.eu).

• Fan is designed for use by trained, qualified adult persons. The fan is not designed for household and similar use.

• **The device is designed to transport clean air or air with low level of contamination.** Do not transport the explosive mixtures, liquids, viscous substances, substances with high humidity, substances that cause erosion, solid elements, and chemically reactive compounds - we recommend the use of suitable filters. The maximum and minimum temperature of transported medium is specified on the fan nameplate.

• The fan is designed for outdoor use. It must be protected from effects of lightning. The fan surroundings cannot contain explosives atmospheres, substances causing abrasion, chemically aggressive substances and viscous substances. The maximum and minimum ambient temperature is specified on the fan nameplate.

• The fan is adapted for speed regulation by changes (reducing) of voltage. Regulation by changing the frequency of the supply is only permissible for units where the ability to control has been confirmed by the manufacturer. In addition, frequency regulation requires compliance with additional instructions.

• The fan has a removable cover – in order to gain access to the fan interior, move the cover after releasing the fasteners.

• The fan has following marks:

-warnings and information (optional): information about risk associated with use of the fan and about correct fan installation and operation

-fan nameplate with: logo and manufacturers name (Venture Industries Sp. z o.o.); full fan name; basic information – supply voltage and frequency, rated current, maximum temperature of ambient and transported medium (**Temp. max.** or **Temp. ambient max.**), weight (**Weight**), type of work; type of fan motor (Motor); information according to conformity with ERP Directive; article no. (**Art. No.**) serial no. (**No.**).

-direction arrows: information about correct direction of impeller rotation (rotation arrow can be placed on nameplate)

1.2 General risk and guidelines

During entire fan life cycle pay particular attention to **the risk and guidelines** presented below:

1.2.1 Mechanical risk and guidelines

• The fan has moving elements (e.g. impeller). Do not use the fan without installed proper protection structures (e.g. guards on inlet and outlet) protecting from contact with moving elements. Prevent from opening the fan by unauthorized persons

• The fan has high suction power. Clothing, hair, assembly elements, items, and even body elements can be easily sucked in.

Make sure that before start and during operation of the fan, near the fan inlet there is no person and items which can be sucked. It is forbidden to approach the fan in "loose" clothing or reaching toward inlet of working fan. Use appropriate inlet covers and if necessary – use relevant protective clothing (e.g. headgears).



Warning: Risk of serious injury.

• The air at the outlet of the fan has high energy. Elements sucked or placed inside the fan can be thrown with a high speed. In case of damage or improper operation, parts (with high kinetic energy) can be thrown out from fan. It is forbidden to look into the fan reaching toward inlet and outlet of the working fan. Make sure that before start and during operation of the fan there is no person on inlet side and in stream of transported medium. Do not use fan without proper safety constructions, inlet and outlet covers.

• During manufacturing the fan sharp edges was grinded. However the fan may have edges touching which may cause injury. We recommend the use of relevant protective gloves.

• Conveying equipments and fan support structures must be selected proper to the fan weight and ensure that fan would not move. Do not approach the hanging load during transport.

• The fan has a high inertness. In case of no permanent fix turning on the fan will lead to it uncontrolled movement. The unit can work only after proper installation.

• Uncontrolled start of the fan can create hazard situation. Prevent against unexpected start of the fan – see also 1.2.6.

1.2.2 risk and guidelines related with noise

• The sound pressure level is not the same over the fan whole range. We recommend to check the sound pressure level and if necessary use the silencer and relevant sound protection.

1.2.3 risk and guidelines related with used materials

• In case of fire or transport of improper medium – fan parts can generate fumes hazardous to health. See also 1.2.5.

1.2.4 risk and guidelines related with environment

• The fan can make over and under pressure. In areas where a specified air pressure and the quantity of air are required (eg. in places with combustion) make sure that there would be no deficit/excess of air. Ensure that the installation to which the fan is connected withstand the under/over pressure which can be made by fan (including work with forbidden parameters).

1.2.5 risk and guidelines related with temperature

• The housing and fan elements are not insulated and take the temperature of the transported medium. During transport the temperature of medium and fan components may increase. Electric motor may heat up to high temperatures (especially when overloaded/overheated – caused by eg. blocking the impeller, too low supply voltage, too high medium temperature). The appropriate steps should be made to prevent from fire and burns caused of high temperatures.

In case of fire – to extinguish a fire use fire extinguisher approved for electrical equipment and follow recommendation of fire department.

1.2.6 risk and guidelines related with electricity and unexpected start/ connecting power supply

• Before any work on the fan (e.g.: installation, maintenance and review, dismantling) the power supply must be completely disconnected (all poles, check there is no voltage, disconnecting switch with minimum 3mm insulation gap).

• Make sure that power supply won't be connected during the work on the unit, and that the moving parts do not move. It is recommended to wait 3 minutes after disconnecting unit before open the fan cover.



Warning: risk of electric shock.

• The appropriate steps should be made to prevent from electric shock. Protect from getting access to the electric elements by unauthorized person.

• Fan is not equipped with control system which blocks restart after a power shutdown or failure – the return of power supply cause in immediate start. Make sure that there will not be any dangerous and forbidden situation in case of temporary power supply failure.

• The built-in motor regulator protection turns off fan only during the failure. This protection after tripping (e.g. caused by motor temperature overload) resets automatically (e.g. after cooling down motor temperature). Make sure that there won't be any dangerous and forbidden situation after tripping motor protections.

• In case of blocking the impeller –release of impeller can provide to sudden movement. Take appropriate steps to prevent form blocking impeller, and in such case turn off power supply and review the fan (see chapter 5).

• After disconnecting power supply the fan rotating parts are still rotating for period of time under the accumulated energy. Take it into account when using the fan.

1.2.7 risk and guidelines related with use

• Improper installation and use may lead to damage of the device and to the dangerous situation. The unit can be installed, maintained, dismantled and used only by qualified and authorized personnel, in accordance to safety rules and current regulations in the country of use (including proper electrical authorization). Personnel need to be familiar with reactions of the fan.

• If it is necessary to remove parts of the unit (e.g. during montage or maintenance), users must be warned about the potential risk, and these parts of unit must be closed/mount after the completion of the work.

It is forbidden to use the unit if it is incomplete / disassemble.



Warning: Risk of serious injury.

• The device must not be exposed to radiation (such as microwave, UV, laser, x-ray).

• Any modifications of the unit are forbidden. Complicated maintenance work (such as dismantling the motor or impeller) need to be made by Venture Industries Sp. z o.o. service or with it permission. Improper assembly may lead to reduce the fan parameters, damage the unit and lead to the dangerous situation.

1.2.8 risk and guidelines related with explosive atmospheres

• Contact of the fan with explosive atmospheres could cause the ignition. It is forbidden to storage or use the fan with explosive atmospheres inside or outside the unit.

2. TRANSPORT AND STORAGE

During transport and storage follow the guidelines contained in 1 chapter and **transport and storage guidelines**.

2.1 transport and storage guidelines

• The fan should be transported and stored in original packaging, without excessive shocks. The device must be protected from weather conditions, transported and stored in dry, well ventilated, and free from substances harmful to the device areas. The fan cannot be transported and stored in areas with fertilizers, chlorinated lime, acids and other aggressive chemicals. Fan should be protected against foreign body entrance.

• During transport and storage protect the fan against damage (including crush).

• The unit should be lifted by the base. Do not lift the unit by wires, terminal box, grid, impeller, cover.

• It is recommended that storage time not exceed one year. After long storage, check the fan. (chapter 5).

3. MONTAGE AND INSTALLATION

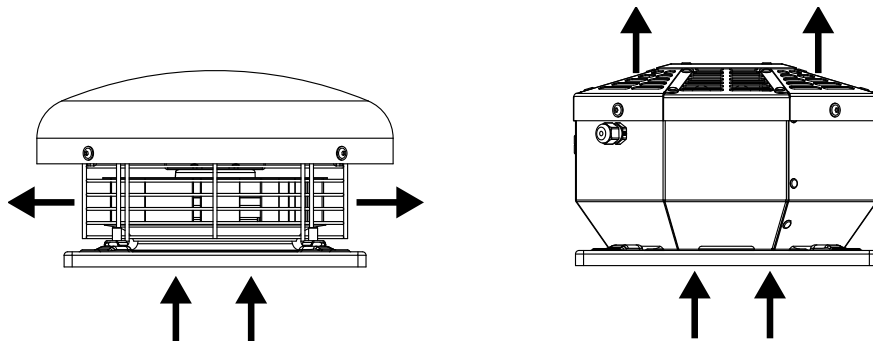
During installation follow the guidelines contained in 1 section of this instruction and **installation guidelines**.

3.1 installation guidelines

• The fan is a machine not ready for use (within the meaning of the Machinery Directive 2006/42/WE - before use ensure conformity with requirements of Machinery Directive 2006/42/EC and current editions (with changes) of: EN ISO 12100, EN ISO 13857, EN 349+A1, EN ISO 13850, EN 60204-1.

• Before installation remove temporary items that protect fan during transport and storage (e.g. box, foil, caps – do not remove any guards) – Starting the fan with those items could lead to damage of the fan. Make sure that the fan is not damaged.

• The device must be mounted in the horizontal orientation with cover on top, in accordance with drawing below (the arrows show the air flow direction). The fan needs to be mounted to external constructions (we recommend use of dedicated roof stand) with use all montage holes placed on the fan base. Due to the use of the fan outdoor – prevent form leakage of water between the fan base and montage construction by proper sealing.



• The fan support construction must be able to support the fan working with the full power (start-up, breakdown, improper use should by also consider). For installation use connecting elements secured against self-loosening.

Note: Fan housing is made of aluzinc steal / zinc steal (depending of fan model).

• Install proper protective structures, grids (inlet, outlet, moving parts), if not mounted by manufacturer. Open inlet of the fan need to be protected proper by proper grid.

Note: Although normally used shields the device should be installed in such a way that prevent from getting access to the device (rotor) from the outlet.

• It is recommended to use accessories to minimize the vibration transmitted from/to the fan.

• It is recommend to provide the distance of 3 inlet dimensions of clearance between inlet and any obstructions (such as filters, bends, wall) and distance guaranteeing free air movement.

• After fan mechanical installation make all electrical connections and check the impeller direction of rotation in accordance with points 3.2 and 3.3.

• Ensure that there are no foreign bodies (eg. mounting elements, tools) inside and near of the unit, that impeller is not blocked, the fan is properly secured after installation (the cover is closed and secured, the terminal box/service switch is closed, the fastening elements are properly tightened).

3.2 electrical connection guidelines

• The fan and power supply network must be secured in accordance with local law requirements.

• Use protection agianst short circuits, overloads and for fans with three phase power supply - voltage failure/unbalance. The protection need to be appropriate to the nominal fan current (see fan nameplate) and starting fan current.

Note 1: During regulation of rotation speed (only fan adapted to the control) the fan current will change.

• The electrical connection need to be made in accordance with the data on the fan and motor nameplates, wiring diagram and fan marking.

Note 2: Voltage and frequency of supply network cannot be higher than indicated on the fan nameplate (even if motor nameplate allows it).

• Use appropriate protection against electric shock - it is required to connect fan grounding terminal placed inside connection box to proper grounding system.

• The fan is equipped with thermal sensor (eg. TP/TK/TB) circuit (normally closed). Circuit is opening in case of motor overheating. In case of sensor connected with motor windings (no thermal sensor wires inside connection box) – after overheating the power supply is automatically disconnected until the sensor cools down. For other models (thermal sensor terminals in terminal box) the thermal sensor circuit needt be connected to the protection system that disconnect power in case of motor overheating.

• Use electrical wires with proepr insulation and size. Wires should be pleaced in way that in any situation will not touch the moving elements, and that the water (eg. from condensation) not flow inside the junction box. Wires should be connected to the terminal box, through properly tightened cable glands and wire fasteners.

3.3 rotor rotation direction

Make sure that after end of installation and when using the fan the impeller would rotate in correct direction. After mounting fan to the proper construction turn on fan for 1 sec. and check the impeller rotation direction and generates air flow in correct drection. The checking motor direction should be made in accordance with chapter 1 and 4 and with caution.

The work with impeller rotating in the wrong direction reduces fan parameters and may damage it. In case of improper impeller rotation turn off the power supply, wait until impeller stops to move, and change proper wires in the terminal box (three phase power supply), contact with manufacturer (single phase power supply fan).

4. USE

During fan use follow the guidelines contained in 1 section of this instruction and **use guidelines**.

Before first start of the fan follow guidelines from chapter 5.

4.1 use guidelines

- Make sure that turning on of the fan does not make any risk for personnel and property.
- Fan cannot work with voltage, frequency, current higher than shown on the fan nameplate.
- The fan is designed for continuous operations (S1) – too high frequency of turning may lead to the motor regulator overheat and damage (see also chapter 4.2 Guidelines for regulation).
- In case of activation of any electrical protection, detection of damage, working with current greater than specified on the fan nameplate – unit must by immediately turn out off use.
- During fan regulation – follow regulation guidelines in chapter 4.2.

4.2 Guidelines for regulation

- Regulation of rotation speed can only be made in the case of fan confirmed fan to regulate (Chapter 1).
- Do not set a higher frequency, voltage than that specified on the nameplate of fan (even if the motor nameplate allows it), because it may cause motor overload or fan failure due to overspeed.
- Make sure that the fan speed will not lead to a dangerous situation, damage to equipment, increase of vibrations.
- Please ensure that the device will be able to start on the minimum speed, while cold motor state.
- The parameters of the device (ambient and operation temperature, flow rate min and max) refer to the rated speed. Too slow rotation speed can lead to the deterioration of motor cooling and cause to overheating / damage.

5. MAINTENANCE, REVIEW

During maintenance and review follow the guidelines contained in 1 chapter of this instruction and maintenance guidelines.

5.1 maintenance guidelines

- Fan must be subject of regular review and maintenance (point 5.2). The set between routine checks and maintenance should be determined by user, based on the observation of unit and specific conditions and actions. If irregularities are found, the device must be taken out of service and repaired.
- To clean fan use slightly damp delicate material. It is prohibited to use detergents, liquids under pressure and tools that may scratch the unit surface. After fan cleaning (after end of maintenance) turn on the fan for 30 minutes (with full speed).
- In case of long fan downtimes it should be run at least once per month for 2 hours (with full speed).
- Prevent the accumulation of dust/dirt on and inside the fan. Dirt accumulated on: grids – may reduce the fan parameters; impeller – may lose its balance; housing and motor – can reduce the cooling; hot surfaces – in extreme situations may ignite. If the device is secured by filter - filter should be regularly inspected and replaced if its pollution is too high. The dirt accumulated on the filter reduces the fan parameters.
- Ensure that there are no foreign bodies near and inside the fan, the impeller is not blocked, the unit is clean, dry and secured after maintenance and review.
- Fan motor is equipped with bearing with life expectancy 40 000 hours (ambient temperature 40°C). Bearings do not need refill lubricate.

5.2 Unit maintenance and review

During review and before first use of the unit or after long time period of storage attention to the following should be paid:

- accumulation of the dirt on the unit and filter (if used), state of grid / covers,
- is the device stable, not damaged, the structure is complete, moving elements can move freely,
- if there are any foreign bodies or loose elements inside the fan,
- if there is loose bearing and rotating the shaft cause in its heavy/noisy work,
- are connecting elements tightened, is fan surface without corrosion, are electrical wires not damaged,
- is the safety equipment working and property set, is shock protection effective,
- if there are leaks from the motor, overheating and vibrations.

During operations, especially after first start pay attention to:

- correct operation,
- there are no unusual noises and vibrations, leaks from the motor, overheating or vibrations,
- the grids are in proper condition,
- the fan current is not higher than show on nameplate. Exceed of current placed on the name plate could be a sign of unit damage.

6. REPAIR, WARRANTY

Use only original spare parts and original accessories. Fan repairs need to be made by manufacturer or after manufacturer permission. Warranty conditions are placed in the fan warranty card.

7. DISMANTLING AND RECYCLING

Disconnect unit from its power supply, and dismantle according to the guidelines from section 1 of this instruction. Therefore, please deposit all left-over material and packaging in their corresponding recycling containers and hand in the replaced machines to the nearest handler of this type of waste product.

APPENDIX A - (THE DEVICE RECEIPT FORM)

| Before launch | Check confirmation |
|--|--------------------|
| Type and model of fan are in accordance with the order. | |
| The fan is undamaged. | |
| There is no foreign body inside fan and the fan is clean. | |
| The fan is reliably and solidly fixed in workplace. | |
| The fan is properly levelled | |
| Wires are properly tightened. | |
| Ambient temperature and transported medium temperature are compatible with fan nameplate | |
| Proper electrical protection is applied | |
| Grounding of fan is applied. | |
| Mains supply is compatible with fan power supply. | |
| Power supply disconnecting switch (with 3mm visible gap) is applied. | |
| Personnel using the fan read and understood the operation and montage manual. | |
| Proper inlet and outlet covers (grids) have been applied | |
| | |
| After fan launch (continuous work period minimum 30 minutes) | |
| Readings and set of vibration measurement device has been written (they are available in future) | |
| Readings and set of current measurement device has been written (they are available in future) | |
| Value of current for each of phase does not exceed nominal one | |
| The vibration value is not higher than permitted. | |

APPENDIX B - (EXAMPLES OF DEVICE FAULTY WORKING)

| SYMPTOMS | POSSIBLE REASON |
|--|---|
| Excessive vibration or noise | <ul style="list-style-type: none"> • Damaged impeller • Dirt accumulated on impeller caused loss of balance; • Impeller loss of balance; • Parts rubbing; • Damage or wear of bearings; |
| Failed fan start-up/ stop during operation. | <ul style="list-style-type: none"> • Rubbing between fan impeller and housing or foreign body (e.g. tool left after installation); • Overload of motor or electronic controller; • Damage or wear of bearings; • Power failure or phase failure; • Too high or too low supply voltage; |
| Protective modules or devices activation during fan work and overheating | <ul style="list-style-type: none"> • Excessive start-up time; • Motor overload; • Too often start-ups; • Improper set of protection circuit breaker and / or incorrect set of protective relays; |

APPENDIX C - DECLARATION OF MANUFACTURER

EU Declaration of Conformity in accordance with 2014/30/EU Directive

EC Declaration of Conformity in accordance with 2006/42/EC Directive

Manufacturer:

Venture Industries Sp. z o.o.
ul. Mokra 27
05-092 Łomianki-Kielpin
Polska



doc. no. R1.1.12122016_EN

declares that the product described below:

Name: Roof fan
Type: RF / RFV / RFHV
Model: all manufactured
Serial no.: all manufactured
CE marking date: 2010
Use/Function: transport of specified medium **after incorporation into machinery/installation**

complies with the requirements of:

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility Directive 2014/30/EU

Compliance with 2014/30/EU Directive applies to the single product. When product is used with other components the installer is responsible for compliance of entire system with the provisions of 2014/30/EU Directive.

Following standards were applied (partially or full):

EN ISO 12100 EN 60034-1 EN 60204-1

Furthermore:

- The machinery/installation into which the product is incorporated must particularly meet the requirements of current standards: EN ISO 12100, EN ISO 13857, EN 349+A1, EN ISO 13850, EN 60204-1. It is required to apply adequate protection (e.g. shield) from inlet side to prevent from contact with impeller.
- Product is in conformity with the Commission Regulation (EU) No 1253/2014 implementing ErP Directive 2009/125/EC with regard to eco-design requirements for ventilation units.
- The person authorized to comply the relevant technical documentation: Zbigniew Kosmecki (Lotnicza 21A, 86-300, Grudziądz, Poland).
- Quality system is in accordance with ISO 9001:2008.

Date: 12.12.2016
Kielpin

Wojciech Stawski
Managing Director

