

USER'S MANUAL

TwinFresh Comfo RA-50
TwinFresh Comfo RA1-50
TwinFresh Comfo RA-85
TwinFresh Comfo RA1-85



Single-room reversible energy recovery ventilator

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This user's manual is a main operating document intended for technical, maintenance, and operating staff.

The manual contains information about purpose, technical details, operating principle, design, and installation of the TwinFresh Comfo RA(1)-50/85 unit and all its modifications.

Technical and maintenance staff must have theoretical and practical training in the field of ventilation systems and should be able to work in accordance with workplace safety rules as well as construction norms and standards applicable in the territory of the country.

SAFETY REQUIREMENTS

All user's manual requirements as well as the provisions of all the applicable local and national construction, electrical, and technical norms and standards must be observed when installing and operating the unit.

Disconnect the unit from the power supply prior to any connection, servicing, maintenance, and repair operations.

Only qualified electricians with a work permit for electrical units up to 1000 V are allowed for installation and maintenance. The present user's manual should be carefully read before beginning works.

Check the unit for any visible damage of the impeller, the casing, and the grille before starting installation. The casing internals must be free of any foreign objects that can damage the impeller blades.

While mounting the unit, avoid compression of the casing! Deformation of the casing may result in motor jam and excessive noise.

Misuse of the unit and any unauthorised modifications are not allowed.

Do not expose the device to adverse atmospheric agents (rain, sun, etc.).

Transported air must not contain any dust or other solid impurities, sticky substances, or fibrous materials.

Do not use the unit in a hazardous or explosive environment containing spirits, gasoline,

insecticides, etc.

Do not close or block the intake or extract vents in order to ensure the efficient air flow.

Do not sit on the unit and do not put objects on it.

The information in this user's manual was correct at the time of the document's preparation.

The Company reserves the right to modify the technical characteristics, design, or configuration of its products at any time in order to incorporate the latest technological developments.

Never touch the unit with wet or damp hands.

Never touch the unit when barefoot.

This appliance is not intended for use by persons (including children) with reduced physical, sensory 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.

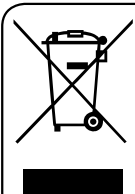
Children should be supervised to ensure that they do not play with the appliance.

The connection to the supply mains must be made through a means of disconnection, which is incorporated in the fixed wiring in accordance with the wiring rules, and has a contact separation in all poles that allows for full disconnection under overvoltage category III conditions.

If the supply cord is damaged, it must be replaced by the manufacturer, its service agent, or similarly qualified persons in order to avoid a safety hazard.

Ensure that the appliance is switched off from the supply mains before removing the guard.

Precautions must be taken to avoid the back-flow of gases into the room from the open flue of gas or other fuel-burning appliances.



**THE PRODUCT MUST BE DISPOSED SEPARATELY AT THE END OF ITS SERVICE LIFE.
DO NOT DISPOSE THE UNIT AS UNSORTED DOMESTIC WASTE.**

PURPOSE

The ventilator is designed to ensure continuous mechanical air exchange in flats, cottages, hotels, cafés and other domestic and public premises. It is equipped with a regenerator that enables supply of fresh filtered air heated by means of extract air heat energy recovery. The ventilator is designed for installation on external walls.

The ventilator is rated for continuous operation.



THE UNIT IS INTENDED ONLY FOR FREE-AIR DISCHARGE OR FOR CONNECTION TO A DUCT SUPPLYING ONLY ONE ROOM



**FOR RESEDENTIAL INSTALLATION ONLY
NOT FOR OUTDOORS USE**



THE UNIT SHOULD NOT BE OPERATED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, MENTAL, OR SENSORY CAPACITIES, OR THOSE WITHOUT THE APPROPRIATE TRAINING.

THE UNIT MUST BE INSTALLED AND CONNECTED ONLY BY PROPERLY QUALIFIED PERSONNEL AFTER THE APPROPRIATE BRIEFING.

THE CHOICE OF UNIT INSTALLATION LOCATION MUST PREVENT UNAUTHORISED ACCESS BY UNATTENDED CHILDREN.

DELIVERY SET

Name	Number
Indoor assembly unit of the ventilator	1 pc.
Telescopic air duct	1 pc.
Regenerator with filters, assembled	1 pc.
Outer ventilation hood	1 pc.
Remote control	1 pc.
Cardboard mounting plate	1 pc.
Sealing gasket	1 pc.
Mounting kit	1 pc.
Mounting wedges	1 kit
User's manual	1 pc.
Mounting hood installation instruction	1 pc.
Packing box	1 pc.

TECHNICAL DATA

The temperature in the room where the indoor unit of the ventilator is installed must be in the range from +1 °C (34 °F) to +40 °C (104°F) with relative humidity up to 65% (no condensation buildup). If the conditions for using the ventilator are beyond the specified limits, turn off the ventilator. Provide fresh air supply through windows.

The temperature of the transported air should be in the range from -20 °C (-4 °F) to +40 °C (104 °F).

The unit is rated as a class II electric appliance.

Ingress protection rating against access to hazardous parts and water ingress is IP22.

The ventilator design is constantly being improved, thus some models may be slightly different from those described in this manual.



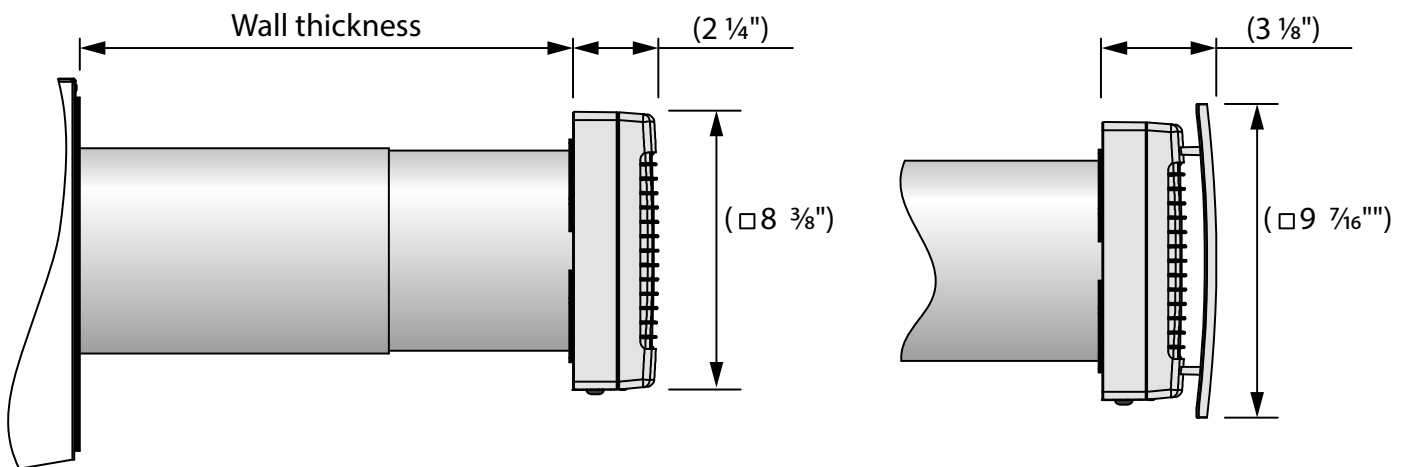
The telescopic design of the air duct allows its length to be adjusted without mechanical cutting. The thickness of the wall, in which the ventilator can be installed, depending on the used outer hood, is shown in the table below.

Ventilator model	Allowable wall thickness [mm]
TwinFresh Comfo RA(1)-50/85	240 – 425
TwinFresh Comfo RA(1)-50/85 – 2	120 – 300
TwinFresh Comfo RA(1)-50/85 – 3	240 – 440

The technical specifications of the particular model are indicated on the unit casing.

The overall and connecting dimensions of the outer ventilation hood, the outside protrusion length of the air duct A and the mounting sequence of the hood are stated in its installation instruction.

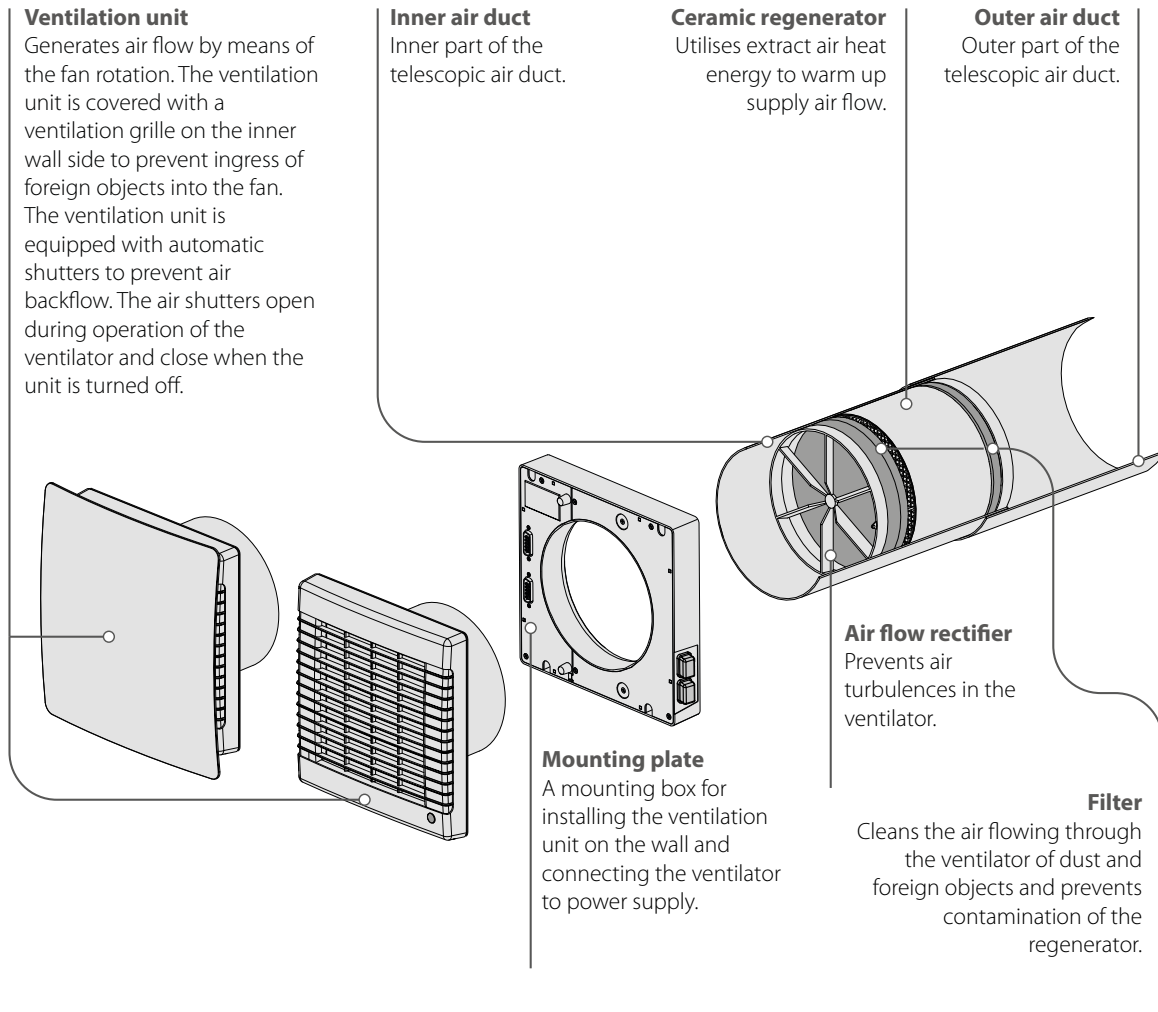
The overall dimensions of the front panel are stated in the figure below.



DESIGN AND OPERATING PRINCIPLE

The ventilator consists of an indoor unit with a decorative front panel, a telescopic air duct and an outer ventilation hood. Two filters, two air flow rectifiers and a ceramic regenerator are installed in the inner duct of the telescopic air duct. The air filters are designed to purify supply air and prevent foreign object ingress into the heat exchanger and the fan. The ceramic regenerator utilizes extract air heat energy to warm up supply air flow. The cord laid inside the regenerator is designed to pull the regenerator from the air duct. The heat exchanger is heat insulated with a special insulating material. The outer ventilation hood is used to prevent direct ingress of water and other objects to the ventilator.

VENTILATOR DESIGN



Openings for the humidity sensor

Provide contact of air with the humidity sensor that controls indoor humidity level.

Ventilator power indicator

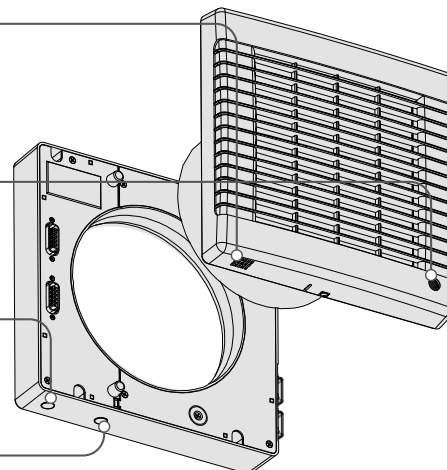
Shows operating status of the ventilator.

Filter replacement indicator

Indicates the need to replace the filter.

Infra-red receiver and light sensor

Responds to signals from the remote control and detects illumination level to activate/deactivate the night mode.



The indoor unit is equipped with automatic shutters. During the ventilator operation the automatic shutters are opened and let the air flow freely through the ventilator. The automatic shutters are closed for 2 minutes at the ventilator shut down.

Ventilator is off — the automatic shutters are closed



Ventilator is on — the automatic shutters are opened



The ventilator has four ventilation modes:

- **Natural air supply.** The automatic shutters are opened, the fan is idle.
- **Air supply.** The ventilator supplies fresh air to the premise.
- **Ventilation.** The ventilator operates in permanent supply or extract mode at a set speed depending on the CN7 jumper position.
- **Regeneration.** The ventilator operates in reversible mode with heat and humidity recovery.

In the **Regeneration** mode the ventilator operates in two cycles, 70 seconds each.

Cycle I. Warm stale air is extracted from the room. As it flows through the ceramic regenerator, it heats and moisturizes the regenerator, transferring up to 90 % of heat energy. In 70 seconds as the ceramic regenerator gets warmed the ventilator is switched to the supply mode.

Cycle II. Fresh intake air from outside flows through the ceramic regenerator, absorbs accumulated moisture and is heated up to the room temperature. In 70 seconds as the ceramic regenerator gets cooled down, the ventilator is switched to the exhaust mode and the cycle is renewed.

MOUNTING AND SET-UP

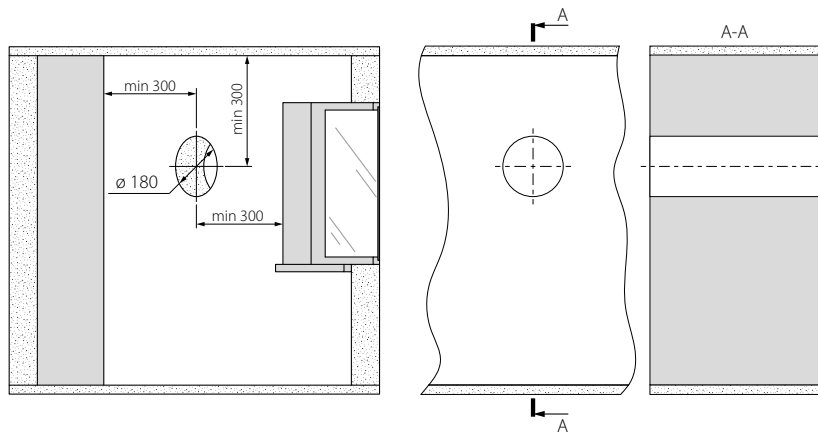


READ THE USER'S MANUAL BEFORE INSTALLING THE UNIT.

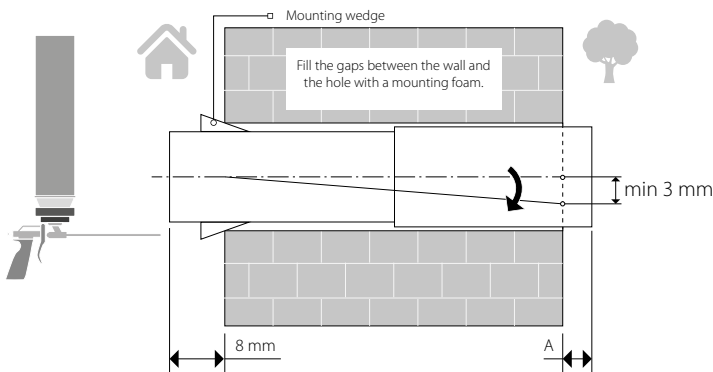


DO NOT BLOCK THE AIR DUCT OF THE INSTALLED VENTILATOR WITH DUST ACCUMULATING MATERIALS, SUCH AS CURTAINS, CLOTH SHUTTERS, ETC. AS IT PREVENTS AIR CIRCULATION IN THE ROOM.

1. Prepare a round core hole in the outer wall. The hole size is shown in the figure below. While preparing core holes it is recommended to make preparations for layout of the power cable and other required cables. Use the supplied cardboard template to mark the relative position of the duct opening and cable exit points.



2. Insert the air duct in the wall. For ease of installation use the mounting wedges included in the delivery set. The air duct end must protrude for the distance A that enables installation of an outer ventilation hood. The distance A is stated in the installation instruction for the ventilation hood.



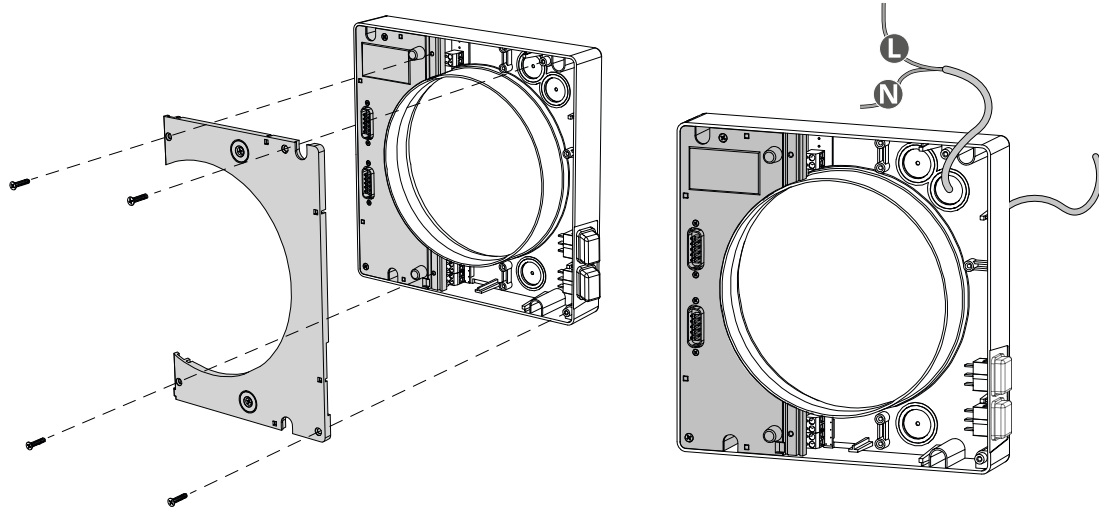
Insert the air duct into the wall as shown in the picture on the left. Install the air duct with the minimum slope of 3 mm down towards the street.

On the outer wall side the air duct end must protrude to a distance that enables installation of the outer ventilation hood. Distance A is stated in the installation instruction for the ventilation hood.

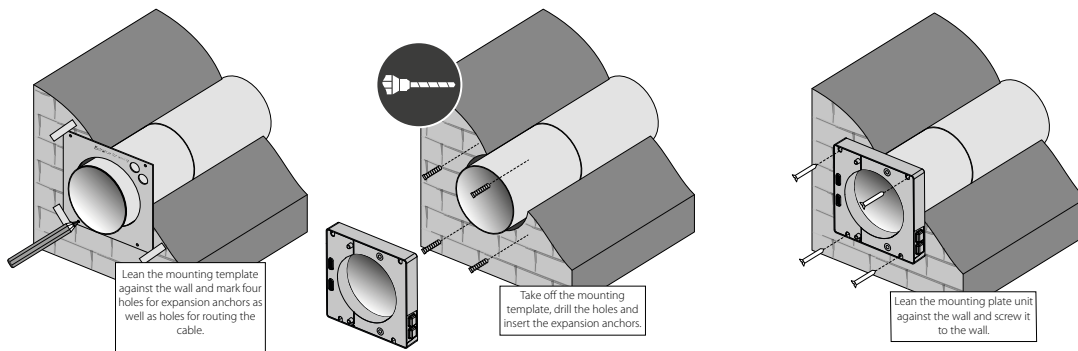
The air duct length can be changed before and after its fixation in the wall. In the former case, calculate the required length before mounting and in the second case, be sure to have enough access to cut the air duct length after its installation.

3. Remove the mounting plate to access the control board. It is necessary for connection of the ventilator to power supply and connection of other ventilators as stated in the "Connection to power mains" section.

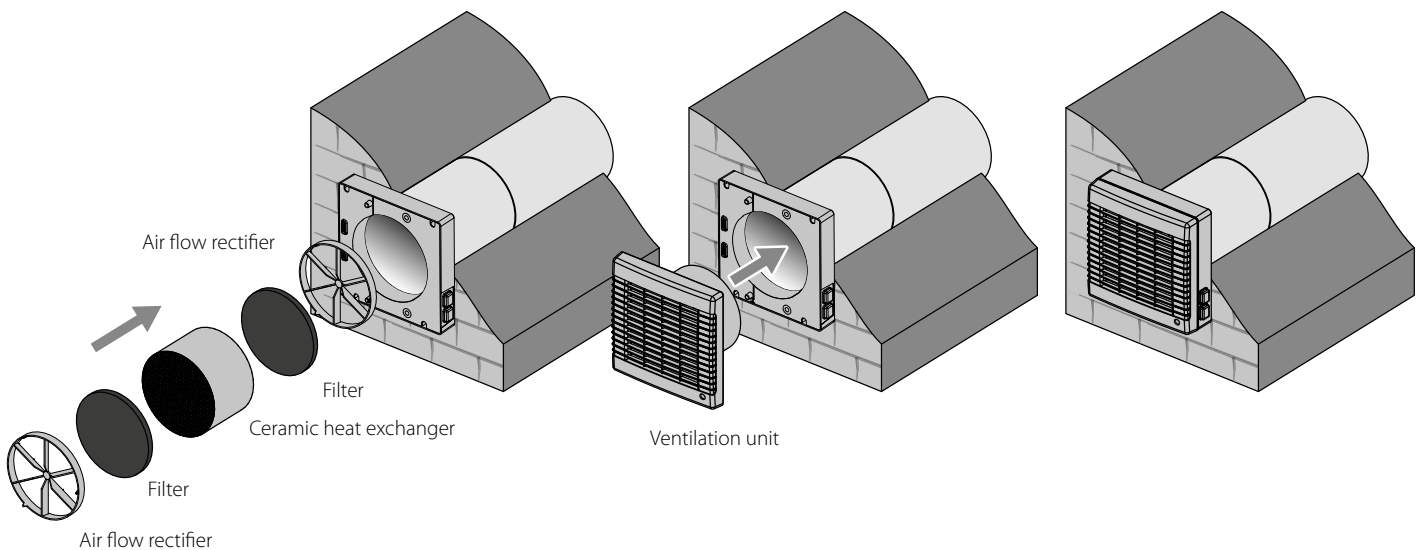
To remove the mounting plate, unscrew the four self-tapping screws as shown in the figure below. Then disconnect the mounting plate from the unit with care and push it aside to enable access to the control board. While doing that avoid abrupt movements not to damage the connecting cables between the control board and the mounting plate. Disconnect the mounting plate from the ventilation unit by disconnecting the two connectors. Assemble the mounting plate unit in the reverse order. Install the cables with care.




4. Using the cardboard template supplied, mark the holes for attaching the ventilator as shown in the figure below. Drill the holes and insert the dowels. Install the mounting plate unit on the wall, while laying a sealing gasket under it, fix the unit with self-tapping screws from the mounting kit. Install the mounting plate back with the connectors in place and secure it with four screws.



5. Install the air flow rectifier, filter, ceramic regenerator, one more filter and one more air flow rectifier inside the telescopic air duct. Then install the ventilation unit on the mounting plate unit.




CONNECTION TO POWER MAINS



DISCONNECT THE POWER SUPPLY PRIOR TO ANY OPERATIONS WITH THE UNIT.

CONNECTION OF THE UNIT TO POWER MAINS IS ALLOWED BY A QUALIFIED ELECTRICIAN WITH A WORK PERMIT FOR THE ELECTRIC UNITS UP TO 1000 V AFTER CAREFUL READING OF THE PRESENT USER'S MANUAL.

THE RATED ELECTRICAL PARAMETERS OF THE UNIT ARE GIVEN ON THE MANUFACTURER'S LABEL.



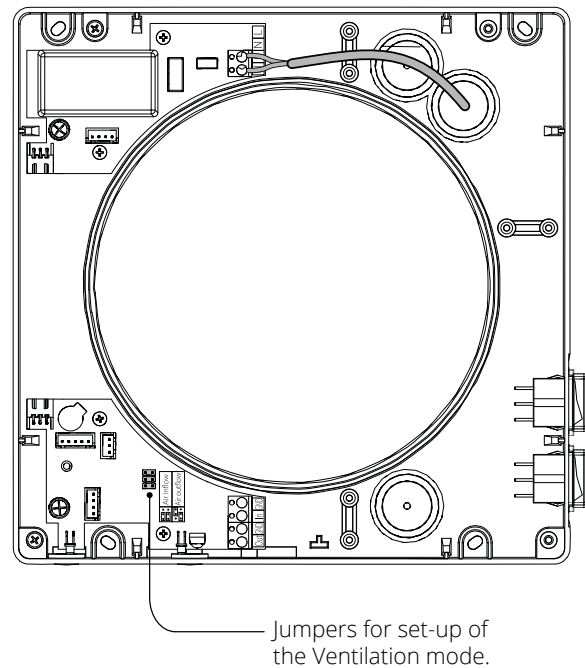
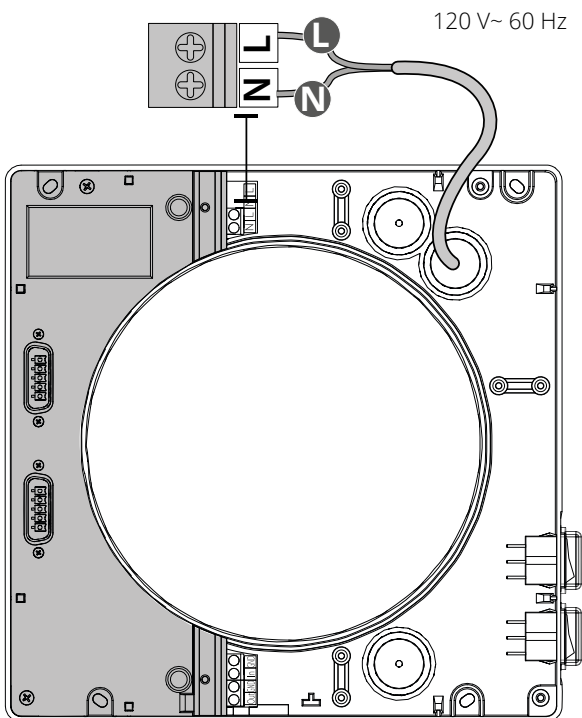
ANY TAMPERING WITH THE INTERNAL CONNECTIONS IS PROHIBITED AND WILL VOID THE WARRANTY.

The ventilator is rated for connection to single-phase AC 120 V~ 60 Hz power mains. Connect the ventilator to power mains through the external automatic circuit breaker with a magnetic trip integrated into the fixed wiring system.

The power cable is connected to the upper terminal block.

Use flexible wires for electrical connection.

The cross-section of the supply wires should be selected in the range from 0.5 mm² (20 AVG) to 2.5 mm² (14 AVG). The cable cross-section is given for reference only. The actual conductor cross-section selection must be based on its type, maximum permissible heating, insulation, length and installation method.

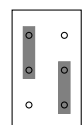
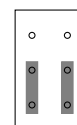


Ventilation mode setting

Air direction in the Ventilation mode is determined by position of the jumper on the control board. The circuit board of the controller is located inside the ventilation unit.

Air supply

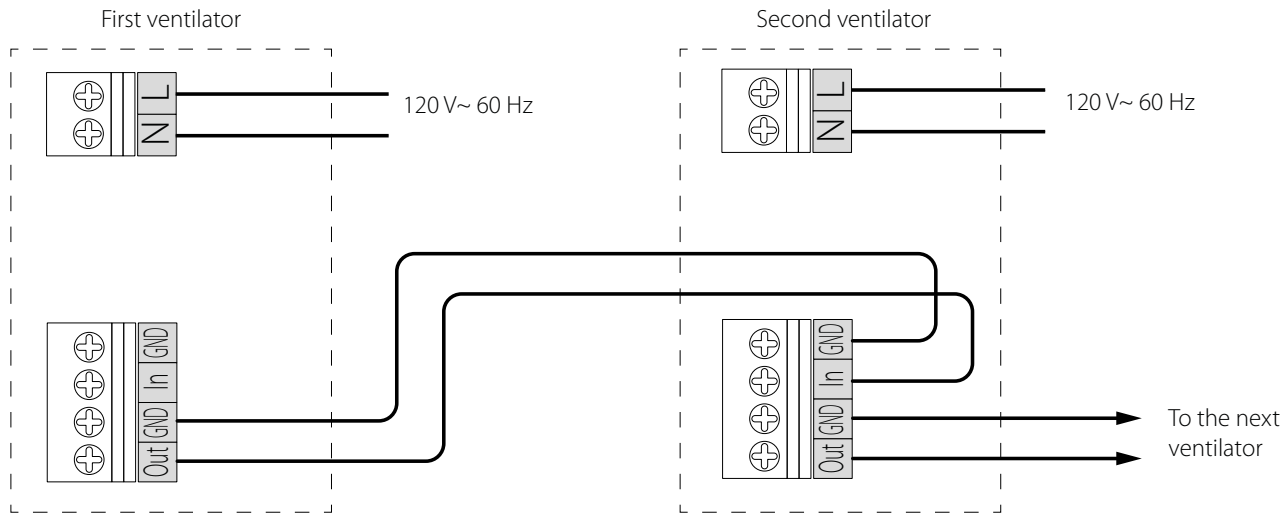
Air exhaust



Connection of several ventilators in series

When the ventilators are connected in series, all the connected ventilators are controlled with the first ventilator and a remote control. To connect the ventilators in series, connect the control terminals with a cable as shown in the diagram below. Connect the second ventilator with the third ventilator in the same way, etc.

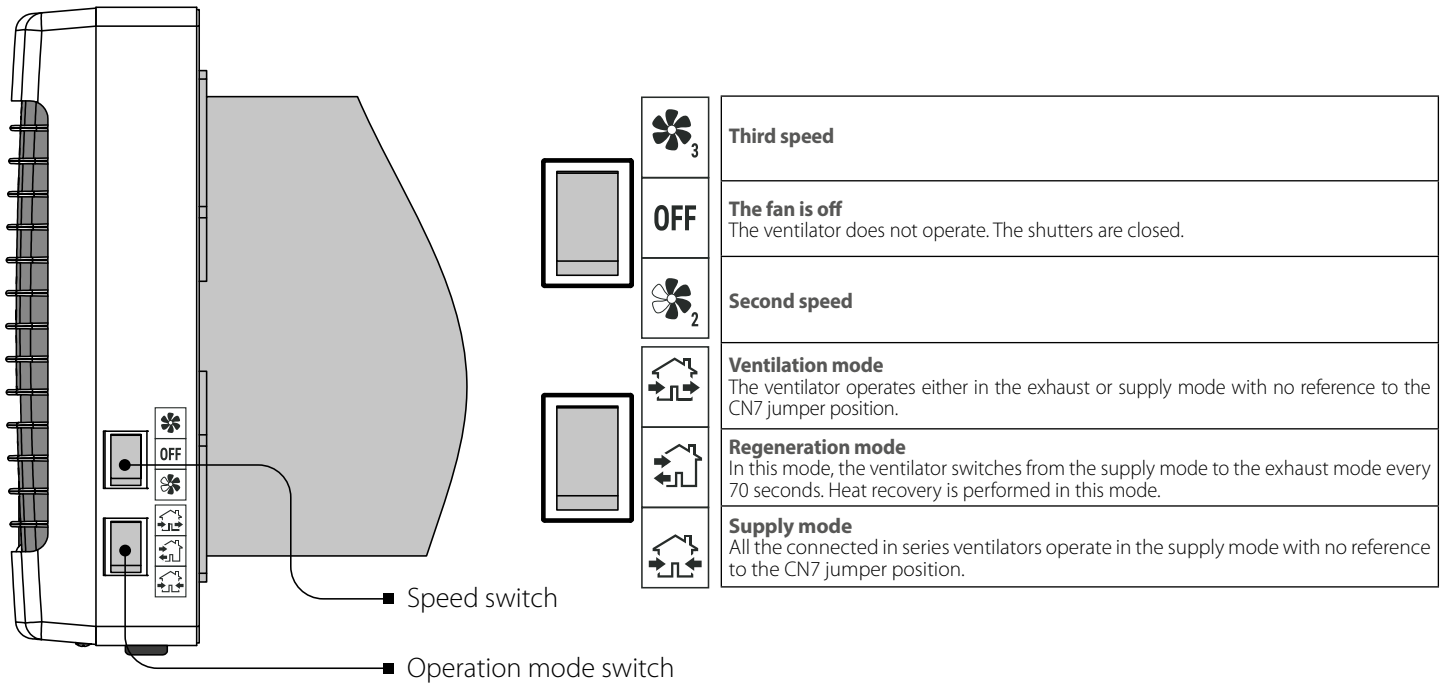
For connection, use a screened cable with a wire cross-section of at least 0.25 mm² (22 AWG) (not included in the delivery set). When the ventilators are connected in series, power must be supplied separately to each of them.



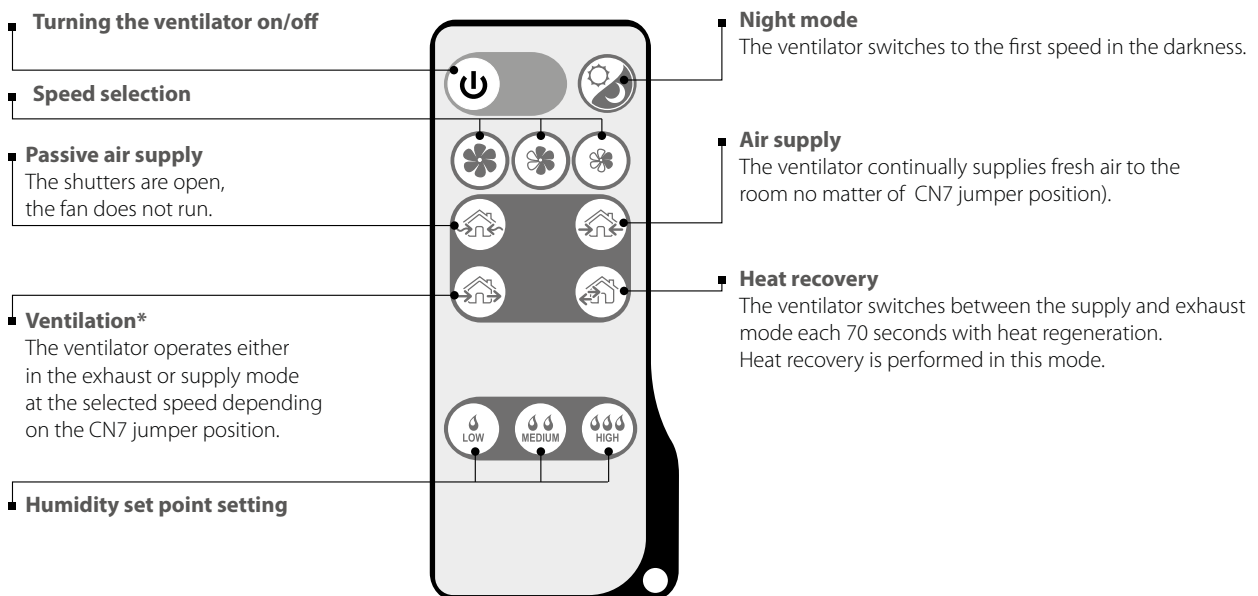
CONTROL

The ventilator is operated with a remote control or the buttons on the ventilator casing, see the figure below. The operation buttons on the ventilator casing have limited functionality and include activating the second and third speed and setting three of four ventilation modes. The remote control has wider control capabilities. The guaranteed minimum reach distance of the remote control is 3 m. The IR receiver is located at the bottom of the fan assembly. Please consider the location of the port while using the remote control.

In case of power failure, the ventilator reverts to the previous operation mode after power supply resumption.




REMOTE CONTROL



*When connected in series, the ventilators operate depending on the position of the jumper for setting the Ventilation mode on the control board. Setting of the Ventilation mode is described on page 10.

REMOTE CONTROL OF THE VENTILATION UNIT

Set the speed switch to **OFF** position and the operation mode switch to  position to enable remote control of the ventilation unit.

1. Turning the ventilator on/off



2. Night mode



If the **Night mode** is activated, the ventilator switches to the first speed in the dark time of the day when the light is turned off. Activation of the night mode is confirmed by a long sound signal. Exiting the night mode is confirmed by a short sound signal.

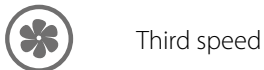
3. Speed changeover



First speed



Second speed



Third speed

4. Operation mode



Natural air supply mode. The room is ventilated in the natural way, the fan is off



Air supply mode. Air is supplied to the room at a set speed. All the connected in series ventilators operate in supply mode with no reference to the CN7 jumper position



Ventilation mode. Air is extracted (factory setting) or supplied at a selected speed. All the ventilators connected in series operate depending on the position of the CN7 jumper



Regeneration mode. The ventilator operates 70 seconds in the supply mode and 70 seconds in the exhaust mode. Heat recovery is also performed in this mode

5. Humidity Control mode.

The humidity control may be activated in the **Regeneration** mode only by pressing one of the humidity control buttons. In the **Humidity Control** mode the ventilator humidity sensor monitors the extract air humidity and controls the fan speed depending on difference between the set humidity point and actual indoor humidity. If indoor humidity is about the set range or has slight deviations, the ventilator operates at the second speed. If indoor humidity is above the set humidity point, the ventilator changes to the third speed. If indoor humidity is below the set humidity point, the ventilator changes to the first speed.



Humidity threshold – 45 %



Humidity threshold – 55 %



Humidity threshold – 65 %

HUMIDITY CONTROL FUNCTION MAY BE ACTIVATED WITH THE REMOTE CONTROL ONLY!

TECHNICAL MAINTENANCE

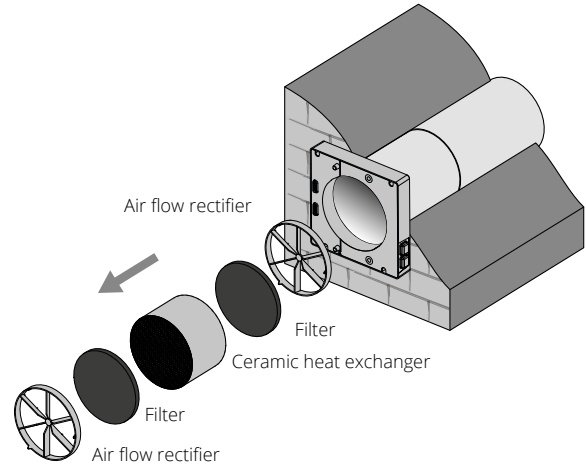


**ELECTRIC SHOCK MAY RESULT
DISCONNECT POWER BEFORE SERVICING UNIT**

Maintenance of the ventilator means regular cleaning of the ventilator surfaces of dust and cleaning and replacement of the filters.

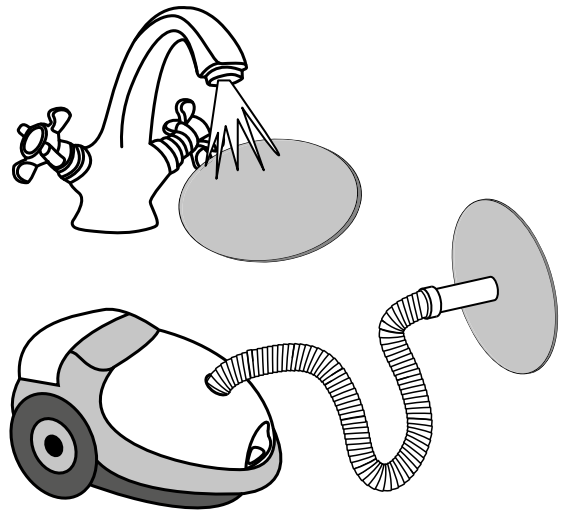
1. Heat exchanger and filter maintenance (3-4 times per year).

1. Remove the ventilation unit.
2. Remove the air flow rectifier.
3. Remove the filter upstream of the regenerator.
4. Pull the regenerator cord to remove the regenerator from the air duct.
5. Be careful while pulling the regenerator to avoid its damage.
6. Remove the filter downstream of the regenerator.



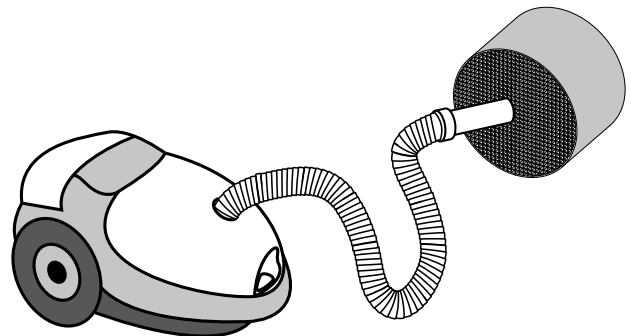
Clean the filters as often as required, but at least 3 times a year.

- After completion of the period set for the motor hour meter (factory setting 90 days) the filter replacement indicator in the bottom of the mounting plate glows to indicate the need of the filter cleaning or replacement.
- Wash the filters, let those dry out and install the dry filters inside the air duct.
- Vacuum cleaning is allowed.
- The filter rated service life is 3 years.
- For new filters contact the Seller.



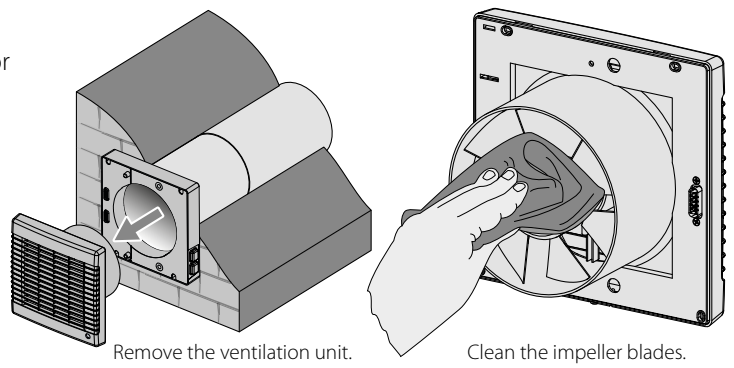
Some dust may accumulate on the regenerator block even in case of regular maintenance of the filters.

- Clean the heat exchanger regularly to ensure its high heat recovery efficiency.
- Vacuum clean the regenerator not less than once a year.



2. Fan inspection (once per year).

Take off the ventilation unit and clean the fan blades.
 Remove dust using a soft brush, cloth or a vacuum cleaner.
 Do not use water, abrasive detergents, solvents, sharp objects for cleaning.
 The impeller blades must be cleaned once a year.

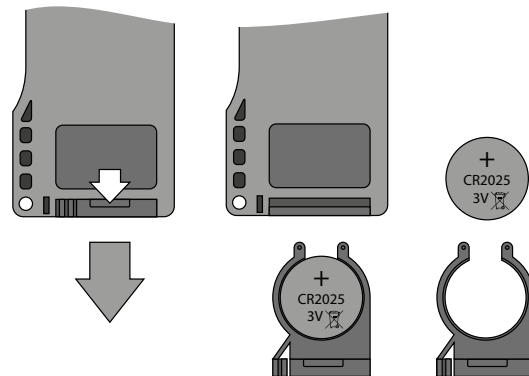


To reset the operating hours counter after installing filters and a regenerator in the ventilator, press and hold for 10 seconds. The red indicator, indicating that the filter is dirty, should go out.



3. Replacement of the remote control battery (if necessary).

Replace the battery of the remote control after prolonged use. No response of the ventilator for pressing the remote control buttons indicates the need to replace the battery.
 The battery type is CR2025.
 To replace the battery of the remote control, remove the battery holder with a battery.
 Replace the battery and install the holder with a new battery back to the remote control.



TROUBLESHOOTING

POSSIBLE MALFUNCTIONS AND TROUBLESHOOTING

Problem	Possible reasons	Troubleshooting
When switching on the ventilator, the fan does not start.	No power supply.	Make sure the power supply line is connected correctly, otherwise troubleshoot a connection error.
	The motor is jammed, the impeller blades are soiled.	Turn the ventilator off. Troubleshoot the motor jam and impeller clogging. Clean the blades. Turn the ventilator on.
Circuit breaker tripping during the ventilation unit start-up.	Overcurrent as a result of short circuit in the electric line.	Turn the ventilator off. Contact the Seller for further information.
Low air flow.	Low set fan speed.	Set higher speed of the fan.
	The filters, the fan or the regenerator are clogged.	Clean or replace the filter. Clean the fan and the heat exchanger.
Noise, vibration.	The impeller is clogged.	Clean the impeller.
	Loose screw connection of the unit casing or the outer ventilation hood.	Tighten the screws of the ventilator or the outer ventilation hood.

STORAGE AND TRANSPORTATION REGULATIONS

- Store the unit in the manufacturer's original packaging box in a dry closed ventilated premise with temperature range from +5 °C to + 40 °C and relative humidity up to 70 %.
- Storage environment must not contain aggressive vapors and chemical mixtures provoking corrosion, insulation, and sealing deformation.
- Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.
- Follow the handling requirements applicable for the particular type of cargo.
- The unit can be carried in the original packaging by any mode of transport provided proper protection against precipitation and mechanical damage. The unit must be transported only in the working position.
- Avoid sharp blows, scratches, or rough handling during loading and unloading.
- Prior to the initial power-up after transportation at low temperatures, allow the unit to warm up at operating temperature for at least 3-4 hours.

MANUFACTURER'S WARRANTY

Production meets standard operating requirements in the USA and Canada.

Vents US warrants to the original purchaser of the unit that it will be free from defects in materials or workmanship for a period of 24 months from the date of original purchase. The Vents US warrants to the original purchaser of the unit that the integrated control unit will be free from defects in materials and workmanship for a period of 24 months from the date of original purchase.

THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

During the stated warranty period, Vents US will, at its option, repair or replace, without charge, any product or part which is found to be defective under normal use and service. This warranty does not cover (a) normal maintenance and normal service or (b) any products or parts which have been subject to misuse, negligence, accident, improper maintenance or repair (other than by Vents US), faulty installation or installation contrary to recommended installation instructions. Labor to remove and replace products is not covered. The duration of any implied warranty is limited to the time period specified for the express warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

VENTS US OBLIGATION TO REPAIR OR REPLACE, AT VENTS US OPTION, SHALL BE THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY. VENTS US SHALL NOT BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH PRODUCT USE OR PERFORMANCE.

Some states do not allow the exclusion or limitations of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. This warranty supersedes all prior warranties. If proof of sales date is absent, warranty period is calculated from the production date. The unit can be exchanged at the following address:

Vents-US
400 Murray Road, Cincinnati, OH 45217, USA
Tel: 1-888-640-0925, 513-583-5786, Fax: 513-268-4597
E-mail: support@ventsus.com
www.vents-us.com

Please follow guidelines in this manual for product problem-free operation.



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



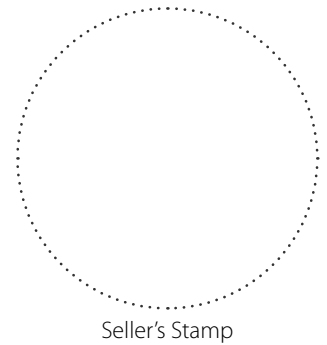
USER'S WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER'S MANUAL WITH THE PURCHASE DATE STAMP.

CERTIFICATE OF ACCEPTANCE

Unit Type	Single-room reversible energy recovery ventilator
Model	TwinFresh Comfo _____
Serial Number	
Manufacture Date	
Quality Inspector's Stamp	

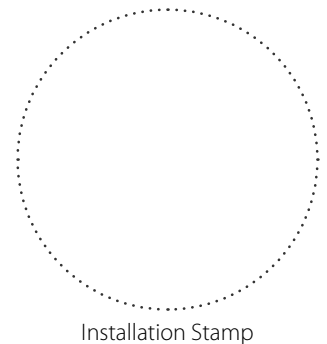
SELLER INFORMATION

Seller	
Address	
Phone Number	
E-mail	
Purchase Date	
This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.	
Customer's Signature	



INSTALLATION CERTIFICATE

The TwinFresh Comfo _____ unit is installed pursuant to the requirements stated in the present user's manual.	
Company name	
Address	
Phone Number	
Installation Technician's Full Name	
Installation Date:	Signature:
The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.	
Signature:	



WARRANTY CARD

Unit Type	Single-room reversible energy recovery ventilator
Model	TwinFresh Comfo _____
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	

