USER'S MANUAL

TwinFresh Comfo RA-50
TwinFresh Comfo RA1-50
TwinFresh Comfo RA-50-2
TwinFresh Comfo RA1-50-2



Single-room reversible energy regeneration ventilator





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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 single-room energy regeneration reversible ventilator TwinFresh Comfo RA(1)-50 (-2), (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:





UNIT INSTALLATION AND OPERATION SAFETY PRECAUTIONS



- The unit must be grounded!
- Do not bend the power cable.
- Avoid damaging the power cable.
- Do not put any foreign objects on the power cable.



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



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



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.



• Unpack the unit with care.





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



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



• Do not operate the unit outside the temperature range stated in the user's manual.





Do not wash the unit with water.

Protect the electric parts of the unit against ingress of water.



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



• When the unit generates unusual sounds, odor, 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.



RECYCLE AT THE END OF THE SERVICE LIFE.

DO NOT DISPOSE THE PRODUCT WITH UNSORTED MUNICIPAL TRASH.



PURPOSE

The unit is designed to ensure continuous mechanical air exchange in houses, offices, hotels, cafes, conference halls and other utility and public spaces. The ventilator is equipped with a ceramic regenerator that enables supply of fresh filtered air heated by means of extract air heat energy regeneration. The ventilator is designed for through-the-wall mounting.

The telescopic ventilator design enables its installation in the walls with various thickness, see the table below:

Model	Wall thickness
RA-50 RA1-50	240 mm - 425 mm (9 ⁷ / ₁₆ " - 16 ⁹ / ₁₆ ")
RA-50-2 RA1-50-2	120 mm - 300 mm (4 ³ / ₄ " - 11 ¹³ / ₁₆ ")

The unit is rated for continuous operation.

Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).

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.

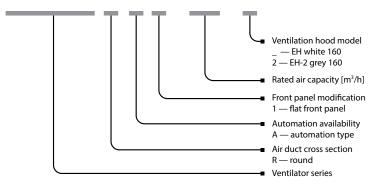
THE CHOICE OF UNIT INSTALLATION LOCATION MUST PREVENT UNAUTHORIZED ACCESS BY UNATTENDED CHILDREN.

DELIVERY SET

Name	Quantity
Ventilator	1 item
Mounting kit	1 item
Cardboard template	1 item
Remote control	1 item
Mounting hood installation instruction	1 item
User's manual for the ventilator	1 item
Packing box	1 item

DESIGNATION KEY

TwinFresh Comfo R A 1 - 50 - 2





TECHNICAL DATA

The ventilator is rated for indoor application with the ambient temperature ranging from -20 $^{\circ}$ C (-4 $^{\circ}$ F) up to +50 $^{\circ}$ C (+122 $^{\circ}$ F) and relative humidity up to 80 %.

The ventilator is rated as a class I electric appliance.

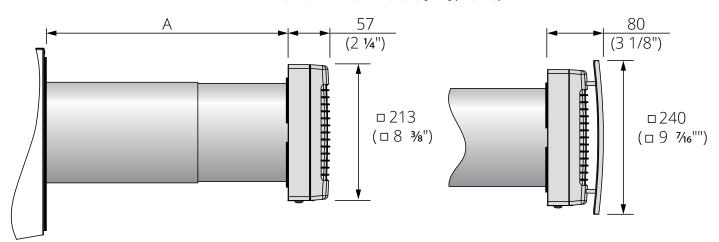
Ingress Protection (IP) rating from solid objects and liquids IP 24.

The ventilator design is regularly improved, so some models may slightly differ from those ones described in this manual.

TECHNICAL DATA

Speed	I	II	III
Supply Voltage, 50/60 Hz [V]		1~100-230	
Power consumption [W]	4,5	5,0	7,0
Total current consumption [A]	0,02	0,03	0,04
Air capacity [m³/h] (CFM)	21 (12)	32 (19)	50 (30)
RPM [min ⁻¹]	610	800	1450
Noise level, 1 m [dB(A)] (Sones)	22 (0,4)	29 (0,7)	32 (1,0)
Noise level, 3 m [dB(A)] (Sones)	13 (0,2)	20 (0,4)	23 (0,5)
Noise level attenuation [dB(A)] (Sones)		40 (2,5)	
Heat recovery efficiency [%]	up to 88		

VENTILATOR OVERALL DIMENSIONS [MM] (INCHES)



Model	Distance A		
Model	mm	inch	
TwinFresh Comfo RA-50	240-425	9 7/16" - 16 3/4"	
TwinFresh Comfo RA1-50	240-425	9 7/16" - 16 3/4"	
TwinFresh Comfo RA-50-2	120-300	4 3/4" - 11 13/16"	
TwinFresh Comfo RA1-50-2	120-300	4 3/4" - 11 13/16"	



night mode.

DESIGN AND OPERATING LOGIC

The ventilator consists of a telescopic air duct with adjustable length (inner part and outer part), a ventilation unit and an outer ventilation hood.

The inner telescopic part contains two air filters and a ceramic regenerator.

The air filters are designed to purify supply air and prevent foreign object ingress into the regenerator and the fan.

The ceramic regenerator utilises extract air heat energy to warm up supply air flow.

The regenerator is equipped with a pull cord inside to facilitate its withdrawal from the ventilator.

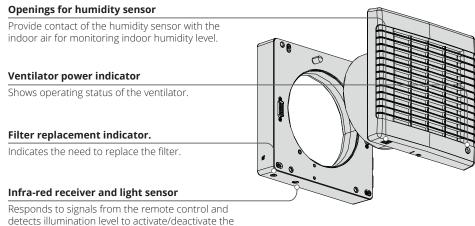
The regenerator has a special heat insulation.

The ventilation unit must be installed on inner side of the wall.

The outer ventilation hood is used for guided air discharge and prevention of direct ingress of water and other big objects to the ventilator.

VENTILATOR DESIGN

Ventilation unit Ceramic regenerator **Outer ventilation** Inner air duct **Outer duct** Generates air flow by means of the Inner part of the Utilises extract air heat Outer part of the hood fan rotation. The ventilation unit is telescopic air duct. energy to warm up telescopic air duct. Prevents direct covered with a ventilation grille on supply air flow. ingress of water and inner wall side to prevent ingress of foreign objects into foreign objects into the fan. The the ventilator. ventilation unit is equipped with automatic shutters to back draft prevention. The air shutters open during the ventilator activation and close during its shutdown. Air flow rectifier Filter Mounting plate A mounting box for Prevents air turbulences Cleans the air flowing through the ventiinstallation the ventilain the ventilator. lator of dust and foreign objects and tion unit on the wall and prevents contamination of the regeneraconnecting the ventilator to power supply.





OPERATING LOGIC OF THE AUTOMATIC SHUTTERS

Ventilator is off — the automatic shutters are closed





VENTILATOR OPERATION MODES

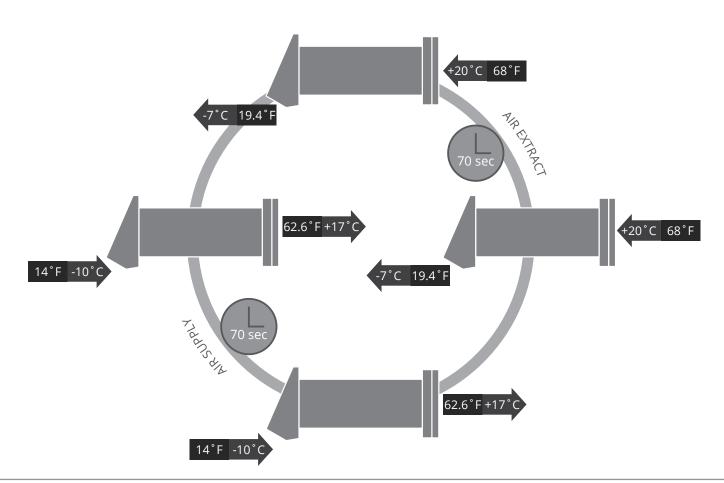
The ventilator has four ventilation modes:

- 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 set speed depending on CN7 jumper position.
- Regeneration. The ventilator operates in reversible mode with heat and humidity recovery.

In **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 regenerator, it heats and moisturizes the regenerator, transferring up to 90% heat energy. In 70 seconds as the ceramic regenerator gets warmed the ventilator is switched to supply mode.

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





MOUNTING AND SET-UP



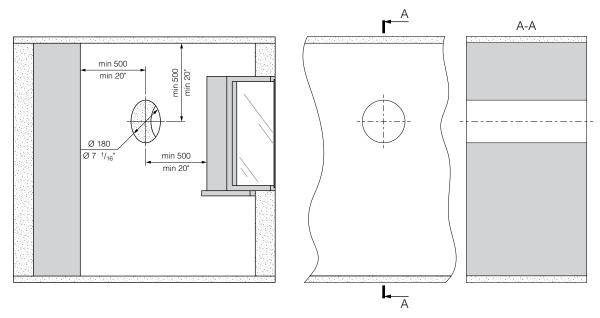
READ THE USER'S MANUAL PRIOR TO MOUNTING THE VENTILATOR.



ATTENTION!

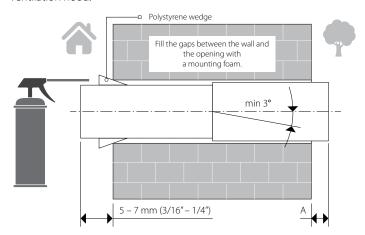
DO NOT BLOCK THE AIR DUCT OF THE INSTALLED VENTILATOR WITH DUST ACCUMULATING MATERIALS, SUCH AS CURTAINS, CLOTH SHUTTERS, ETC. AS IT PREVENTS AIR CIRCULATION IN THE ROOM.

1. Prepare a round thorough hole in the outer wall. The hole size in the wall is shown in the figure below. While preparing a core hole make preparations for layout of the power cable and other required cables.



2. Insert the air duct in the wall using the supplied polystyrene wedges and fix it with mounting foam.

The telescopic air duct end protruding part must enable installation of the outer ventilation hood. For details, refer to the installation instruction for the ventilation hood.



Install the air duct in the wall in such a way so it protrudes from the inner wall surface for maximum 5 - 7 mm (3/16'' - 1/4'').

Install the air duct with the minimum slope 3° downwards.

On the outer wall side the protruding part of the air duct must enable installation of the outer ventilation hood.

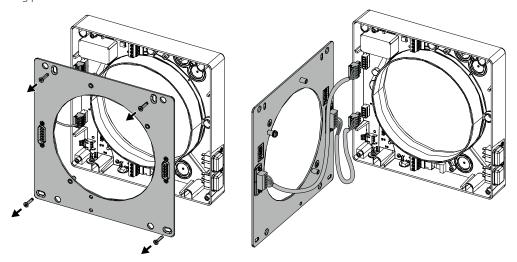
Distance **A** is stated in the installation instruction for the ventilation hood.



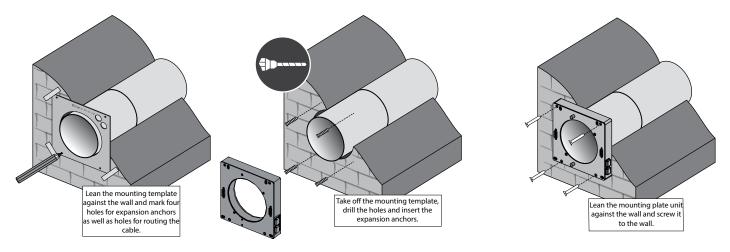
3. Remove the mounting plate to enable access to the control board and connection of the ventilator to power supply and connection of other ventilators as stated in **Unit connection**, page 10.

To enable access to the control board in the mounting plate remove the four fixing screws. Then disconnect the mounting plate from its fame 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.

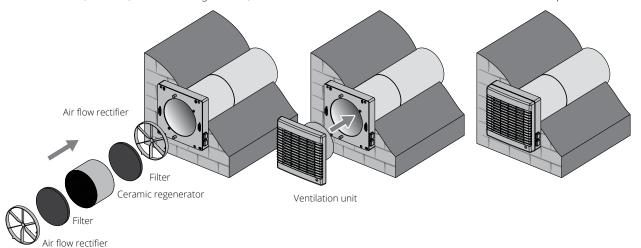
Re-assemble the mounting plate in the reverse order. Install the cables with care.



4. Install the mounting plate unit using the supplied cardboard mounting template and expansion anchors.



5. Install the air flow rectifier, the filter, the ceramic regenerator, one more filter and one more air flow rectifier inside the telescopic air duct.





CONNECTION TO POWER MAINS

DISCONNECT THE UNIT FROM POWER SUPPLY PRIOR TO ANY ELECTRIC INSTALLATION OPERATIONS.

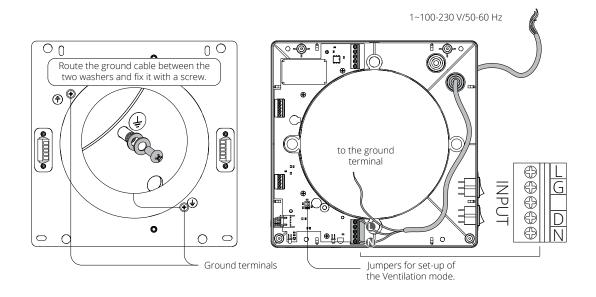


INSTALLATION SHALL ONLY BE PERFORMED BY A PROFESSIONAL ELECTRICIAN QUALIFIED FOR UNASSISTED OPERATIONS WITH ELECTRICAL INSTALLATIONS UP TO 1000 V AFTER CAREFUL STUDY OF THE PRESENT USER'S MANUAL. THE RATED ELECTRICAL PARAMETERS ARE STATED ON THE RATING PLATE. ANY TAMPERING WITH THE INTERNAL CONNECTIONS IS PROHIBITED AND WILL VOID THE WARRANTY.



WARNING: AN ALL-POLE DISCONNECTION MUST BE INCORPORATED INTO THE FIXED WIRING IN ACCORDANCE WITH THE WIRING RULES.

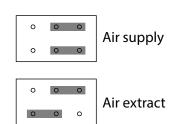
The ventilator is rated for connection to single-phase ac 100-230 V/ 50-60 Hz power mains. Connect the ventilator to power mains via a thermal magnetic circuit breaker, integrated into a house cabling system.



Setting the Ventilation mode.

Air direction in the **Ventilation mode** is determined by position of the jumper on the control board.

The control board of the ventilator is located inside of the ventilation unit.





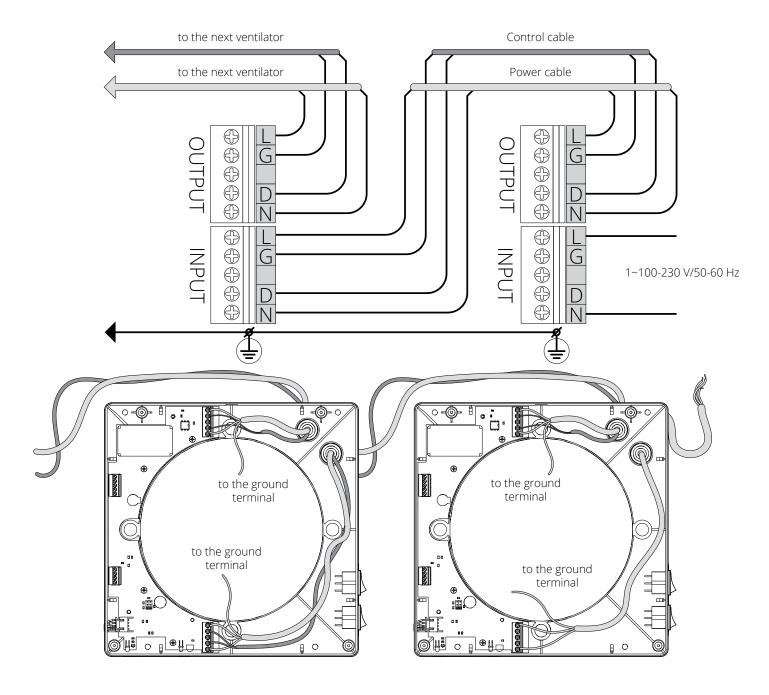
CONNECTION OF SEVERAL VENTILATORS IN SERIES

Connection of the ventilators in series enables controlling all the connected ventilators by the first ventilator and the common remote control. For connection of several in series follow the diagram below. Connect the second ventilator with the third ventilator in the same way, etc. Maximum 10 ventilators may be connected in series.

For electric installations use a power cable with the minimum wire cross section 0.5 mm² and a control cable with the minimum wire cross section 0.25 mm². The cables are not included in the delivery set.

The cable must be rated for operation in an alternating current power supply with the country-specific mains voltage.

Disconnect the power cord while connecting the second, third, etc. ventilator in series.





CONNECTION OF MORE THAN 10 VENTILATORS IN SERIES

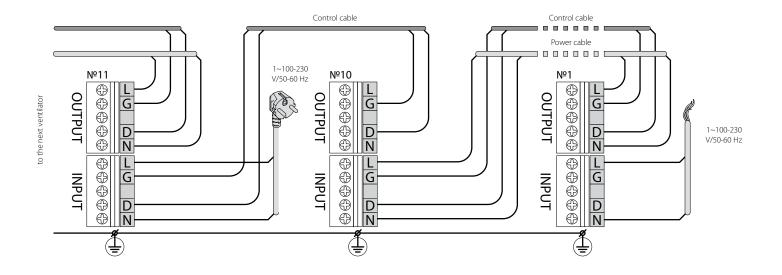
In case of connection above 10 ventilators the ventilator 11 is energized not though the previous ventilator but from power mains (L and N terminals). The control signals G and D from the 10th ventilator are transmitted through the cable 2xAWG23 (2 x 0.25 mm².)

Connect the ventilators no. 12...20 to the ventilator no. 11 in the same way as the ventilators no. 1...10.

All the connected ventilators are controlled with the ventilator no. 1.



ALL THE CONNECTED IN SERIES VENTILATORS MUST BE GROUNDED!





VENTILATOR CONTROL

The ventilator is operated with a remote controller or the buttons on the ventilator casing, see the figure below.

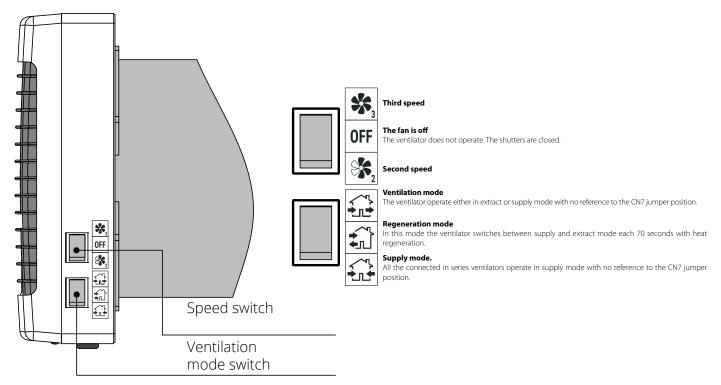
The operation buttons on the ventilator casing have limited functionality and include activating the second and third speed and setting three of four ventilation modes. The remote controller has wider control capabilities.

The guaranteed minimum reach distance of the remote control is 3 m.

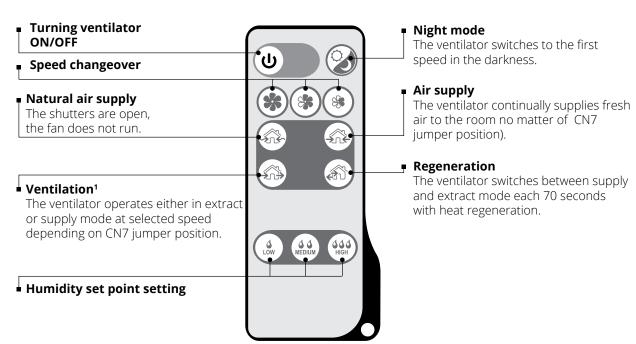
The infra-red receiver is located in the bottom of the unit and is covered by a transparent round port.

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



¹- operation of all the connected in series ventilators is determined by position of the jumper on the control board. Setting of the operation mode **«Ventilation»** is described in page 10.



REMOTE CONTROL

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

1. Turning ventilator ON/OFF.



ON/OFF

2. Night mode.



ON/OFF

If **Night mode** is activated, the ventilator switches to the first speed in the night, 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 setting



First speed.



Second speed.



Third speed.

4. Operation modes.



Natural air supply mode. During the fan standby the room is ventilated in the natural way.



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



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



Regeneration mode. The ventilator operates 70 seconds in **Supply mode** and then 70 seconds in **Extract mode** with heat regeneration.

5. Humidity control.

The humidity control may be activated in **Regeneration** mode only by pressing one of the humidity control buttons.

In **Humidity Control** mode the ventilator monitors the extract air humidity and controls the fan speed depending on difference between set humidity point and actual indoor humidity.

If indoor humidity is about the set range or has slight deviations, the ventilator operates with 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.



Setting humidity threshold - 45%



Setting humidity threshold - 55%



Setting humidity threshold - 65%

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



MAINTENANCE



DISCONNECT THE UNIT FROM POWER SUPPLY BEFORE ANY MAINTENANCE OPERATIONS!

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

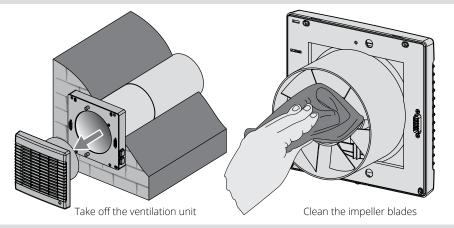
VENTILATOR MAINTENANCE

1. Fan maintenance (once per year).

Take off the ventilation unit and clean the fan blades. Remove dust using a soft brush, cloth or a vacuum cleaner.

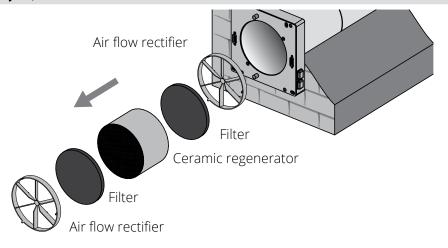
Do not use water, abrasive detergents, solvents, sharp objects for cleaning.

The impeller blades must be cleaned once in year.



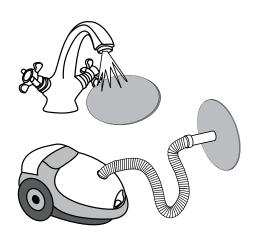
2. Regenerator and filter maintenance (3-4 times per year).

- 1. Remove the air flow rectifier.
- 2. Remove the filter in front of the regenerator.
- 3. Pull the regenerator cord to remove the regenerator from the air duct.
- **4.** Be careful while pulling the regenerator to avoid its damage.
- 5. Remove the filter behind the regenerator.



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

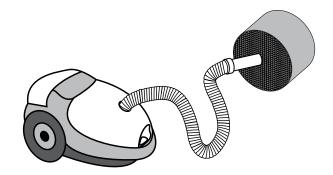
- After completion of the period set for the motor hour meter (factory setting 90 days) the filter replacement indicator in the bottom of the mounting plate glows to indicate the need of the filter cleaning of replacement.
- Wash the filters, let those dry out and install the dry filters inside the air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





Even regular technical maintenance may not completely prevent dirt accumulation on the regenerator.

- Clean the regenerator regularly to ensure its high heat recovery efficiency.
- Clean the regenerator with a vacuum cleaner at least once in a year.





To reset the motor meter install the filters and the regenerator into the ventilator and then press and hold the button red filter replacement indicator goes down.



for 10 sec. The

3. Battery replacement in the remote control (as required).

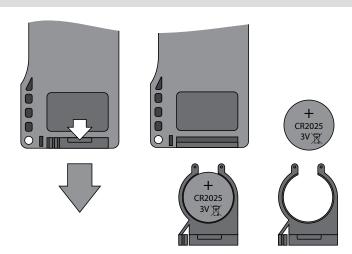
In case of a long operation of the remote control the battery must be replaced.

No response of the ventilator for pressing the remote control buttons indicates the need to replace the battery.

The battery type is CR2025.

Remove the holder with the battery from the lower part of the remote control.

Then replace the battery and re-install the holder with a new battery in site.



TROUBLESHOOTING

Fault	Possible reasons	Remedy
The fan does not start running during start-up of the	No power supply.	Make sure that the ventilator is properly connected to power mains and make any corrections, if required.
ventilator.	Motor is jammed, the impeller blades are clogged.	Turn the ventilator off. Troubleshoot the motor jam and the impeller clogging. Clean the blades. Restart the ventilator.
Circuit breaker tripping during the ventilator start-up.	Overcurrent as a result of short circuit in the electric circuit.	Turn the ventilator off. Contact the Seller for further information.
	Low set fan speed.	Set higher speed.
Low air flow.	The filters, the fan or the regenerator is soiled.	Clean or replace the filter. Clean the fan and the regenerator. Refer to section «Maintenance», Clause 1, 2.
	The impeller is soiled.	Clean the impeller.
High noise, vibration.	Loose screw connection of the ventilator 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 packing box in a dry ventilated premise at ambient temperatures from +5 °C (+41 °F) up to +40 °C (104 °F). Storage environment must not contain aggressive vapours 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 packing by any mode of transport provided proper protection against precipitation and mechanical damage.

Avoid sharp blows, scratches or rough handling during loading and unloading.

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:

11013 Kenwood Rd, Cincinnati, Ohio 45242 Tel: 1-888-640-0925, 513-583-5786

Fax: 513-268-4597

E-mail: sales@ventsus.com support@ventsus.com zoltan@ventsus.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.



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	The single-room reversible energy regeneration ventilator
Model	TwinFresh Comfo
Serial Number	
Manufacture Date	
	he product complies with the essential protection requirements of Electromagnetic Council Directive 2004/108/EC, 89/336/EEC ve 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.
Quality Inspector's Stamp	

SELLER INFORMATION

Outlet Name	
Address	
Phone Number	
E-mail	
Purchase Date	

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

Customer's Signature

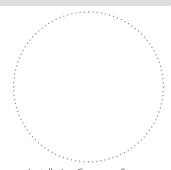


INSTALLATION CERTIFICATE

9	ergy regeneration ventilator TwinFrepursuant to the requirements stated		
Company Name			
Address			
Phone Number			
Installation Technician's Full Name			
Installation Date:	Signat	ure:	

The ventilator has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The ventilator operates normally as intended by the manufacturer.

Signature:



Installation Company Stamp

WARRANTY CARD

Unit Type	The single-room reversible energy regeneration ventilator
Model	TwinFresh Comfo
Serial Number	
Manufacture Date	
Purchase Date	
Warranty Period	
Seller	



