

LT - 50

English
Decentralized ventilation with heat recovery
Operation and installation instructions



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STORAGE AND TRANSPORTATION RULES

Store the ventilator in the manufacturer's original packing box in a dry ventilated premise at the temperatures from +5°C (5 °F) up to + 40°C (104°F). Storage environment must not contain aggressive vapours and chemical mixtures provoking corrosion, insulation and sealing deformation. Use hoist machinery for handling and storage operations to prevent the ventilator damage in consequence of falling or excessive oscillation. Fulfil the handling requirements applicable for the applicable freight type. Transportation with any vehicle type is allowed provided that the ventilator is protected against mechanical and weather damage. Avoid any mechanical shocks and strokes during handling operations.








SAFETY REQUIREMENTS

- Read the user's manual carefully prior to the operation and installation of the decentralized ventilation with heat recovery.
- Installation and operation of the ventilator shall be performed in accordance with the present user's manual as well as the provisions of all the applicable local and national construction, electrical and technical codes and standards.
- The warnings contained in the present user's manual must be considered most seriously since they contain vital personal safety information.
- Failure to follow the safety regulations may result in an injury or ventilator damage.
- Read the manual carefully and keep it as long as you use the ventilator.
- While transferring the ventilator control the user's manual must be turned over to the receiving operator.

Symbol legend used in the manual:


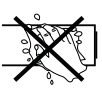
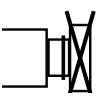
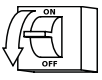


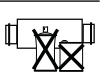
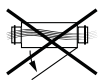
	WARNING!
	DO NOT!

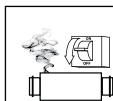
VENTILATOR MOUNTING SAFETY PRECAUTIONS

	The ventilator must be disconnected from the power supply prior to every installation or repair operation.
	The ventilator must not be operated outside the temperature range stated in the user's manual or in aggressive or explosive environments.
	Do not position any heating devices or other equipment in close proximity to the ventilator power cord.
	Do not use damaged equipment or conductors to connect the ventilator to power mains.
	While installing the ventilator follow the safety regulations specific to the use of electric tools.
	Unpack the ventilator with care.
	Use the ventilator only as intended by the manufacturer.

Operation Instruction for the user and the qualified installer

VENTILATOR OPERATING SAFETY PRECAUTIONS

	Do not touch the controller or the remote control with wet hands. Do not carry out the ventilator maintenance with wet hands.
	Do not wash the ventilator with water. Protect the ventilator electric parts from water ingress.
	Do not block the air duct when the ventilator is on.
	Disconnect the ventilator from power supply before maintenance.
	Do not let children operate the ventilator.
	Do not damage the power cable while operating the ventilator. Do not put any objects on the power cable.
	Keep explosive and inflammable products away of the ventilator.
	Do not open the operating ventilator.



In case of unusual sounds, or smoke, disconnect the ventilator from power supply and contact the service centre.



Do not let air flow from the ventilator be directed to the open flame devices or candles.

Operation Instruction for the user and the qualified installer

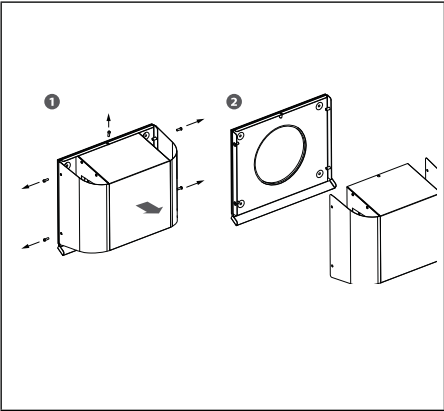
TROUBLESHOOTING

Possible faults and troubleshooting

Fault	Possible reasons	Fault handling
The fan does not start up during the ventilator start-up.	No power supply.	Make sure that the ventilator is properly connected to the power mains and make any corrections, if necessary.
	Motor is jammed, the impelles are clogged.	Turn the ventilator off. Troubleshoot the motor jam and the impeller clogging. Clean the blades. Restart the ventilator.
Automatic switch tripping following the ventilator turning on.	Overcurrent resulted from short circuit in the electric circuit.	Turn the ventilator off. Contact the service centre.
Low air flow.	Low set fan speed.	Set higher speed.
	The filter, the fan or the regenerator are dirty.	Clean or replace the filter, clean the fan and the regenerator. For the regenerator and the filter maintenance, refer to page 17.
The ventilator generates sound signals.	The operating time meter for filter replacement is activated.	For the regenerator and the filter maintenance, refer to page 18.
High noise, vibration.	The impeller is soiled.	Clean the impeller.
	Loose screw connection of the ventilator casing or the ventilation hood.	Tighten the screws of the ventilator or the outer ventilation hood.

3. Ventilation hood maintenance (once per year).

The ventilation hood grill may get clogged with leaves and other objects which impairs the unit performance. Check the ventilation hood twice per year and clean it as often as required. To clean the ventilation hood disassemble it, then clean the ventilation hood and the air duct.



INTRODUCTION

This user's manual includes technical description, operation, installation and mounting guidelines, technical data for the decentralized ventilation with heat recovery LT - 50

USE

- The ventilator is designed to arrange permanent controllable air exchange in apartments, villas, hotels, cafes and other domestic and public premises. The ventilator is equipped with a ceramic regenerator that enables supply of fresh air due to extract air heat energy regeneration.

- The ventilator is designed for through-the-wall mounting. The telescopic ventilator design enables its installation in the walls from 120 mm up to 470 mm (4 3/4") - (18 1/2") thick for the ventilator LT - 50

- The ventilator is rated for continuous operation always connected to power mains.

- Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, coarse dust, soot and oil particles, sticky substances, fibrous materials, pathogens or any other harmful substances.



THE VENTILATOR IS NOT INTENDED TO BE USED BY CHILDREN, PHYSICALLY OR MENTALLY DISABLED PERSONS, PERSONS WITH SENSORY DISORDER, PERSONS WITH NO APPROPRIATE QUALIFICATION. INSTALLATION AND CONNECTION OPERATIONS MUST BE PERFORMED ONLY BY PROPERLY QUALIFIED PERSONNEL AFTER THE APPROPRIATE SAFETY BRIEFING. THE VENTILATOR INSTALLATION SITES MUST PREVENT ACCESS BY UNATTENDED CHILDREN.

DELIVERY SET

Ventilator	1 item
Fastening set	1 item
Remote controller	1 item
User's manual	1 item
Packing box	1 item

Operation Instruction for the user and the qualified installer

MAIN TECHNICAL PARAMETERS

- The ventilator is designed for indoor application with the ambient temperature ranging from -20°C (-4 °F) up to +50°C (+122 °F) and relative humidity up to 80%.

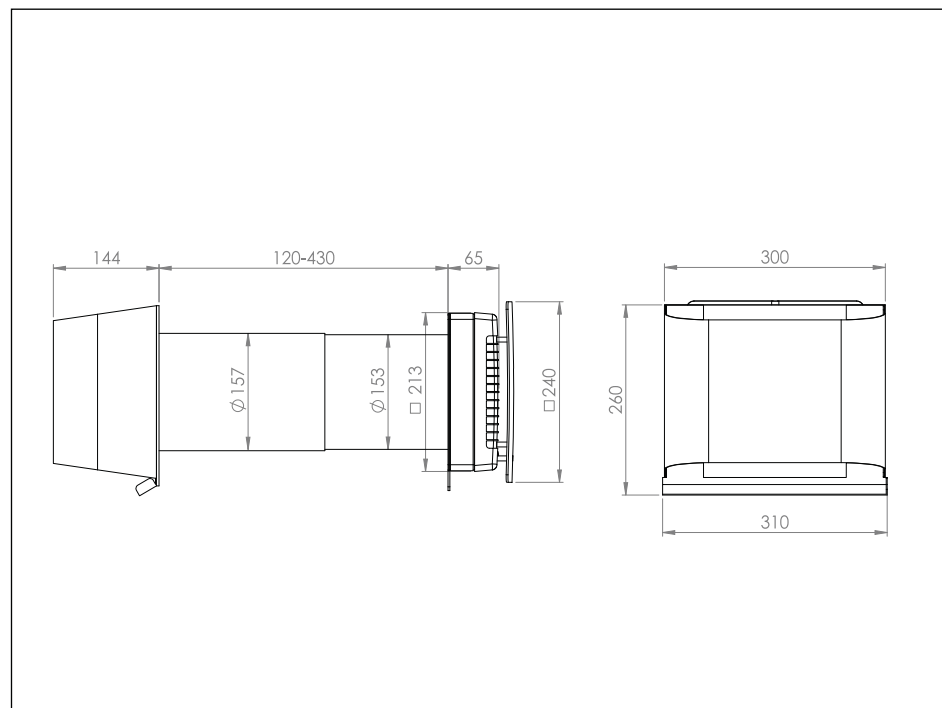
- The ventilator is classified as a class I electric appliance.

- 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.

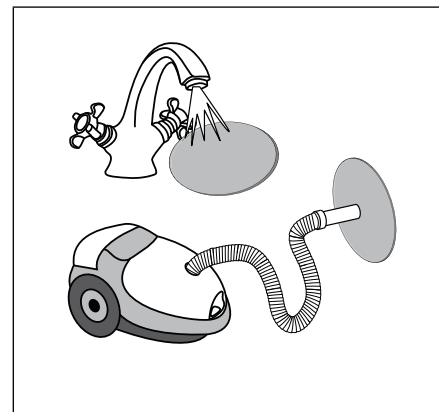
VENTILATOR OVERALL DIMENSIONS, MM (INCHES)

LT - 50



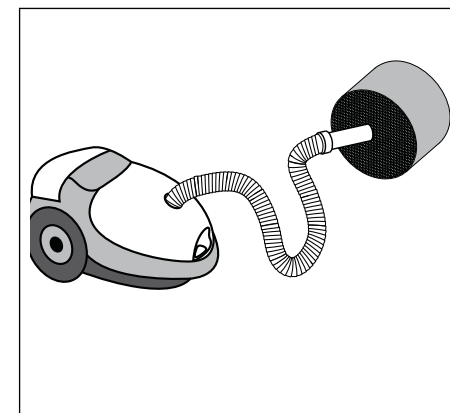
Operation Instruction for the user and the qualified installer

regenerator from the air duct.
Be careful while pulling the regenerator to avoid it being damaged.
Remove the filter after the regenerator.



Clean the filter as often as it gets soiled, but at least 3-4 times a year.


Once a 90 day period of operation expires, the ventilator generates a sound signal as a reminder of the need to replace or clean the filter. The signal is repeated every 5 minutes until the filter maintenance has been completed!. Clean the filters, let them get dry 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 assemblies.

Subject the regenerator to regular cleaning to ensure high heat exchange efficiency.


Clean the regenerator with a vacuum cleaner at least once in a year.

To reset the operating time meter indication, install the filters and the regenerator into the ventilator and then press and hold the button  for 10 sec. until a long sound signal.

Operation Instruction for the user and the qualified installer

HUMIDITY CONTROL MAY BE ACTIVATED WITH THE REMOTE CONTROL ONLY!

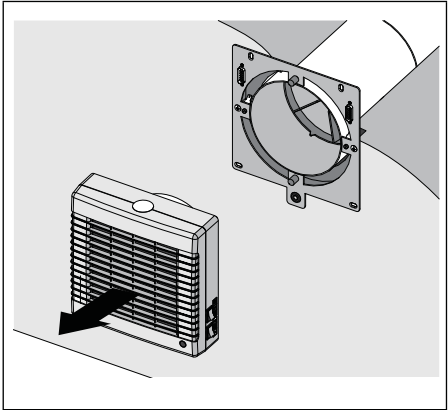
MAINTENANCE



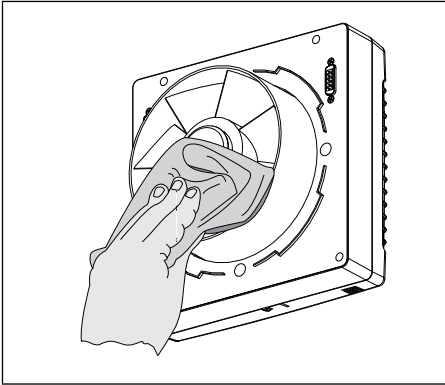
DISCONNECT THE VENTILATOR FROM POWER SUPPLY PRIOR TO ANY MAINTENANCE OPERATIONS.

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

1. Fan maintenance (once per year).

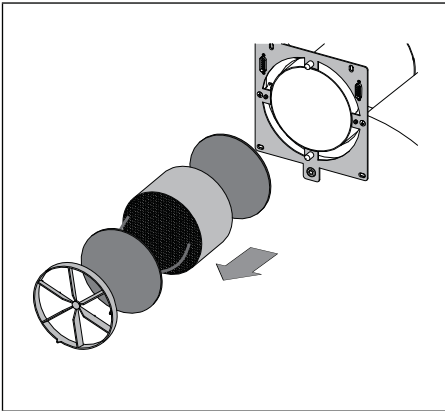


Pull the ventilator to remove.



Clean the impeller blades. To remove dust use a soft brush, cloth or a vacuum cleaner. Do not use water, abrasive detergents, solvents, sharp objects. The impeller blades must be cleaned once in year.

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



Remove the air flow rectifier.
Remove the filter in front of the regenerator.
Pull the regenerator cord to remove the

Operation Instruction for the user and the qualified installer

VENTILATOR TECHNICAL DATA

Speed	I	II	III
Supply Voltage, 50-60 Hz [V]	1~100-240		
Ventilator Total Power [W]	9	10	14
Max. Ventilator Current [A]	0,024	0,026	0,039
Max. Air Capacity [m³/h]	21	31	50
RPM [min ⁻¹]	610	800	1450
Noise Level, 3 m [dB(A)]	19	22	29
Max. Transported Air Temperature [°C] / (°F)	-20 (-4) up to +50 (+122)		
Heat Regeneration Efficiency	up to 90%		
Regenerator Type	Ceramic		

Operation Instruction for the user and the qualified installer

DESIGN AND OPERATING LOGIC

The ventilator consists of the telescopic air duct with adjustable length regulated by position of the inner air duct inside the outer air duct, the ventilation unit and the ventilation hood.

Two filters and the ceramic regenerator are located inside the inner duct of the telescope.

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

The ventilator generates a sound alarm reminding to clean or replace the filter every 90 days.

The ceramic regenerator uses extract air heat energy to warm up or cool down

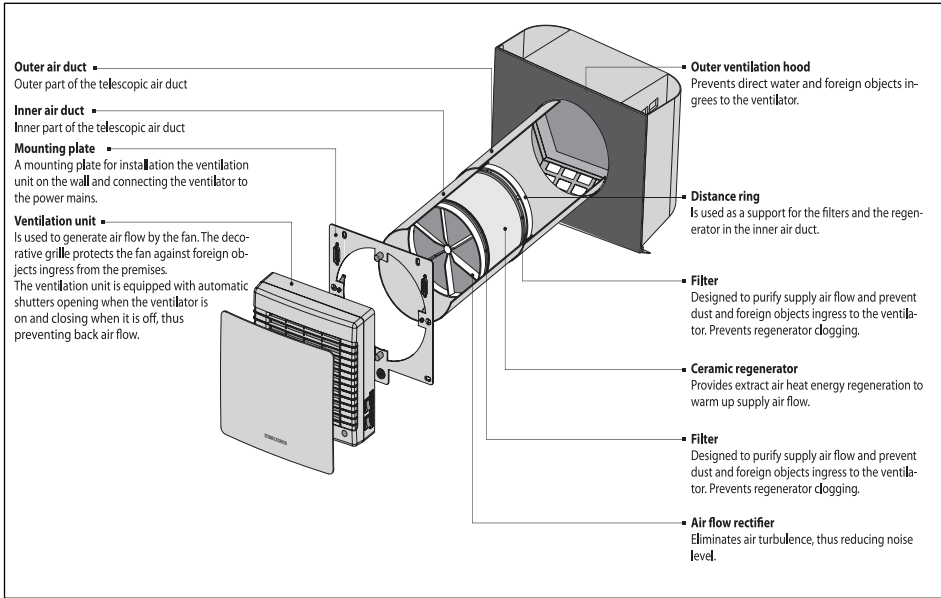
supply air flow.

The regenerator is equipped with a pull cord inside to facilitate its withdrawal from the ventilator. The regenerator is installed on an insulation material used as a sealant as well.

The ventilation unit must be installed on inner side of the wall. The ventilation unit is equipped with automatic shutters that shut the air duct off during the ventilator standby and prevent air back draft.

The ventilation hood must be installed on outer side of the wall to prevent ingress of water and other objects to the ventilator.

VENTILATOR DESIGN



Operation Instruction for the user and the qualified installer

OPERATION WITH THE CONTROL BUTTONS ON THE VENTILATOR CASING

1. Turning the ventilator ON. Setting operation speed.

	second speed.
	third speed.

2. Turning the ventilator OFF.

	Turning the ventilator OFF.
--	-----------------------------

REMOTE CONTROL

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

1. Turning ventilator ON/OFF.

	ON/OFF
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2. Night mode

	ON/OFF
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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 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 regardless of CN7 jumper.
	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. Humidity control is possible only in Regeneration mode.	
	Setting humidity threshold 45%
	Setting humidity threshold 55%
	Setting humidity threshold 65%

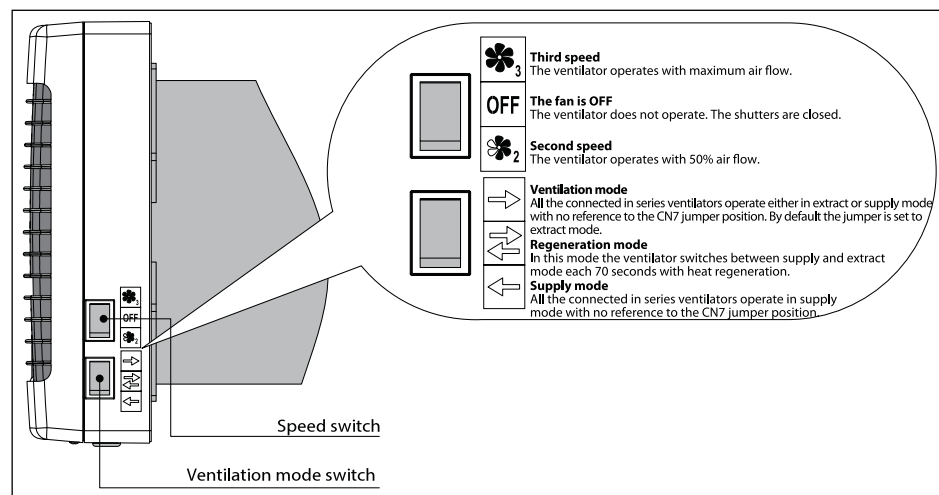
Operation Instruction for the user and the qualified installer

VENTILATOR CONTROL

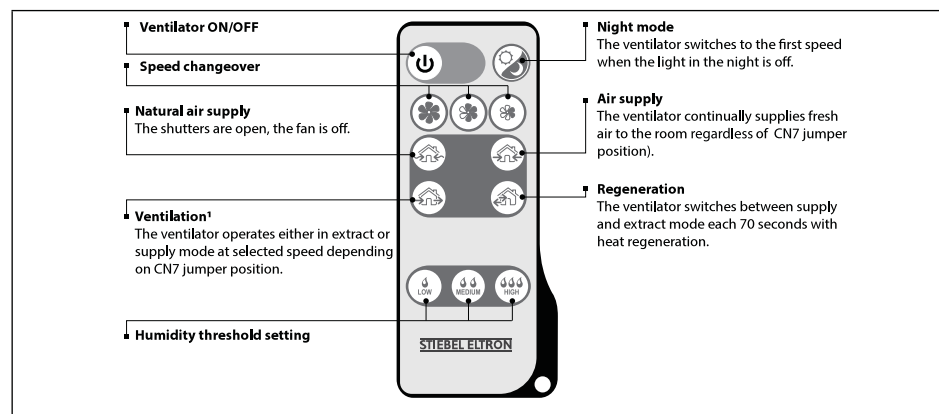
- The ventilator is operated with a remote controller or the buttons on the ventilator casing.
- The operation buttons on the ventilator casing have limited

functionality and include activating the second and third speed and setting three of four ventilation modes. The remote controller has wider control capabilities.

CONTROL BUTTONS ON THE VENTILATOR CASING



REMOTE CONTROL

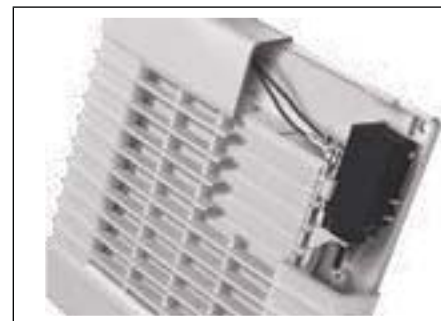


1 - operation of all the connected in series ventilators is determined by the CN7 jumper position.

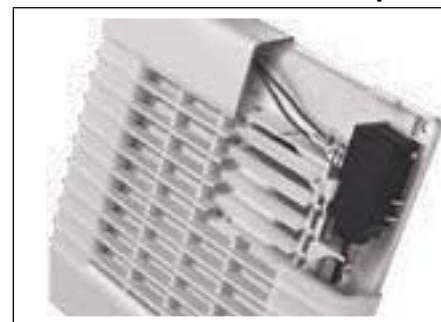
Operation Instruction for the user and the qualified installer

SHUTTERS OPERATION LOGIC

Ventilator is off - shutters are closed



Ventilator is on - shutters are open



VENTILATOR OPERATING MODES

The ventilator has three ventilation modes:

- **Natural air supply** - the ventilator is used for natural ventilation, the fan is not activated.
- **Supply** - the ventilator supplies fresh air to the premise regardless of CN7 jumper position.
- **Ventilation** - the ventilator operates in permanent supply or extract mode at set speed depending on CN7

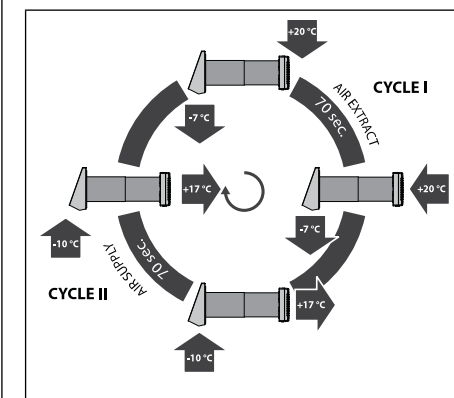
jumper position.

- **Regeneration** - the ventilator operates in reversible mode with heat and humidity regeneration.

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.

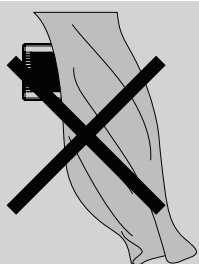
Cycle II. Fresh intake air from outside flows through the ceramic regenerator and absorbs accumulated moisture and heats up to the room temperature. In 70 seconds as the ceramic regenerator gets cooled down, the ventilator is switched into extract mode and the cycle is renewed.



Operation Instruction for the user and the qualified installer

MOUNTING AND SET-UP

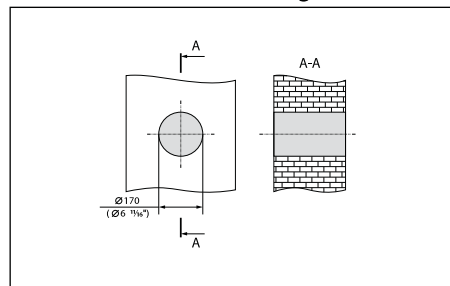
READ THE USER'S MANUAL PRIOR TO MOUNTING THE VENTILATOR.



CAUTION! THE VENTILATOR MUST NOT BE INSTALLED IN SITES WHERE THE AIR DUCT MAY BE CLOGGED BY THE BLINDS, CURTAINS, DRAPES, ETC., TO PREVENT THE ROOM DUST DEPOSITION AND ACCUMULATION. ALSO, CURTAINS MIGHT OBSTRUCT NORMAL AIRFLOW IN THE ROOM, THUS RENDERING VENTILATOR OPERATION NOT EFFICIENT.

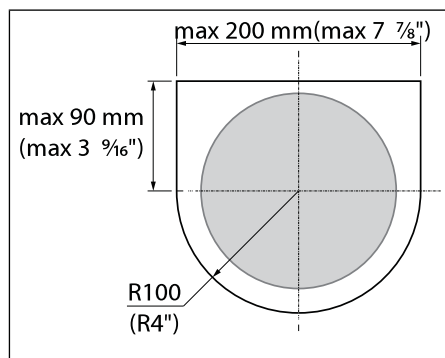
VENTILATOR MOUNTING

1. To mount the ventilator prepare a thorough round hole in the wall. The hole size is shown in the figure below.



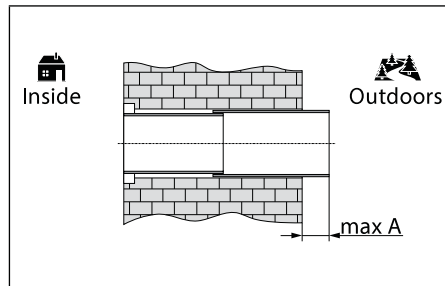
VENTILATOR MOUNTING

2. After preparing a through hole cut out a 25 mm (1") deep recess for laying of the cables and the contact sockets connected to the mounting plate. The recommended recess profile is shown in the drawing below.



While mounting several ventilators connected in series provide a recess for the cable layout during the hole preparation to enable series connection of several ventilators.

3. Install a telescopic air duct inside the wall. The telescopic air duct end must protrude to the distance A stated below:



Operation Instruction for the user and the qualified installer

CONNECTION OF MORE THAN 10 VENTILATORS IN SERIES

- In case of connection above 10 ventilators power is supplied to the 11th ventilator (L and N terminals) not from the previous ventilator but from power mains.

- The control signals G and D from the 10th ventilator are transferred through the cable 2 x 0.5 mm².

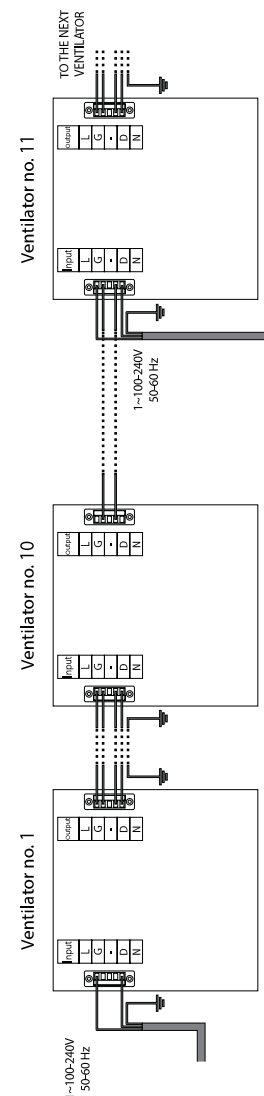
- The ventilators no. 12...20 are connected to the ventilator no. 11 in the same way as the ventilators no. 1...10.

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



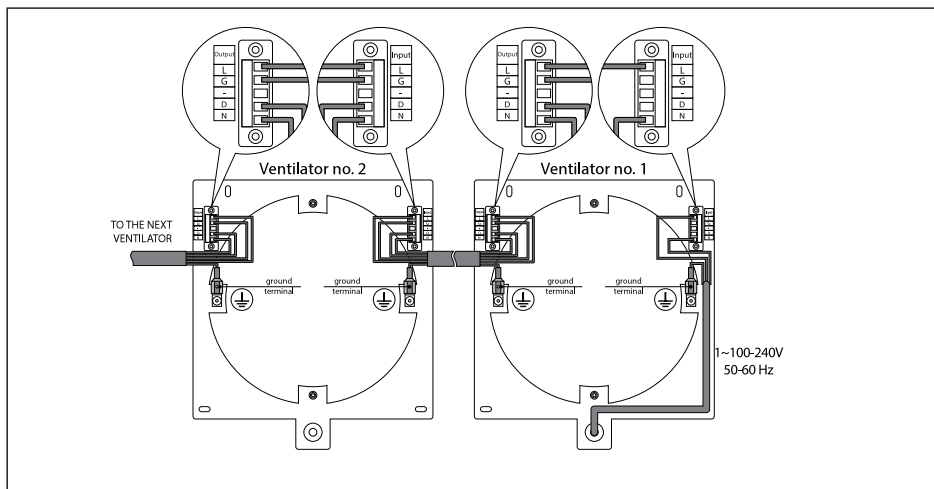
ALL THE CONNECTED IN SERIES VENTILATORS MUST BE GROUNDED!

Connection in series of above 10 ventilators



Operation Instruction for the user and the qualified installer

CONNECTION OF SEVERAL VENTILATORS IN SERIES (BACKSIDE VIEW)



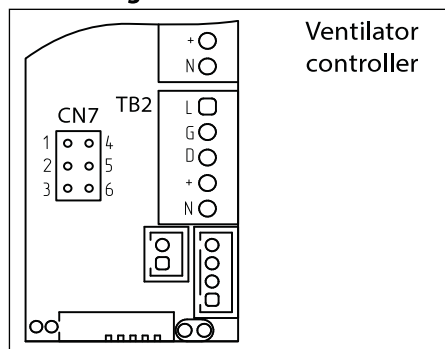
- The first ventilator controls all the connected ventilators.

- The jumper between the contacts 1 and 2 or 2 and 3 of CN7 socket connector determines a flow direction in **Ventilation mode**.

- If the jumper connects the contacts 1 and 2, air is extracted from the room in Ventilation mode (factory setting).
- If the jumper connects the contacts 2 and 3, air is supplied in **Ventilation mode**.

The jumper position at each connected in series ventilator determines a rotation direction in Ventilation mode and an operating phase in **Regeneration mode**. I.e. if the jumper at the first ventilator connects the contacts 2 and 3 and the jumper at the second ventilator connects the contacts 1 and 2, the

ventilators operate in opposite directions in **Regeneration mode**.

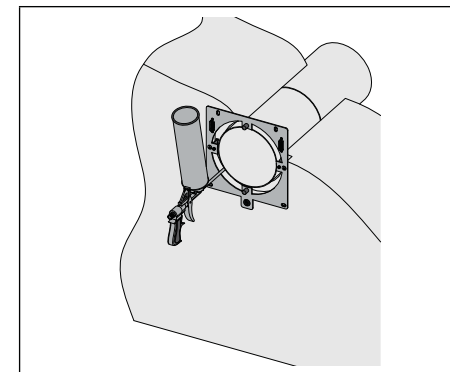
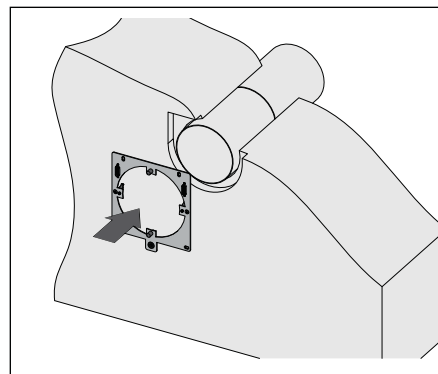


Operation Instruction for the user and the qualified installer

Ventilator model	A, mm
LT - 50	10 (3/8")-110 (4 5/16")

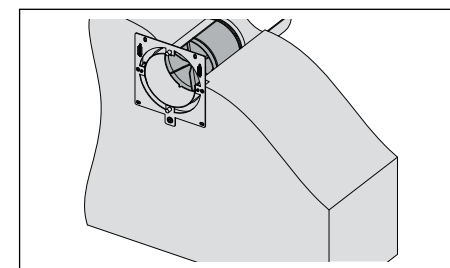
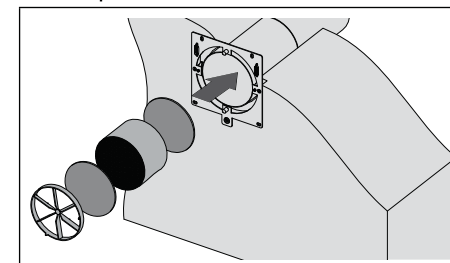
4. Connect the mounting plate following the wiring diagram, page 15. Prepare four fastening holes and fix the mounting plate on the wall with four 4x40 screws and 6x40 dowels (included in the delivery set).

Align the telescopic air duct with respect to the mounting plate and fill the gaps between the wall and the telescopic air duct with a mounting foam. The telescopic air duct must not protrude from the mounting plate surface.



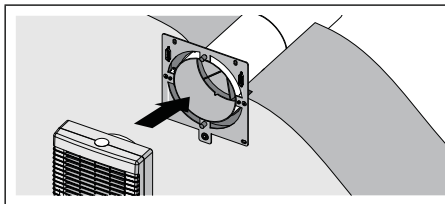
VENTILATOR MOUNTING

5. Install the filter, the ceramic regenerator, another filter and the air flow rectifier in consecutive order inside the telescopic air duct.



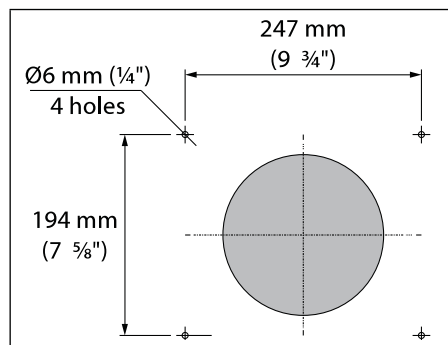
Operation Instruction for the user and the qualified installer

6. Install the ventilation unit on the mounting plate. The ventilation unit is fixed with magnets.



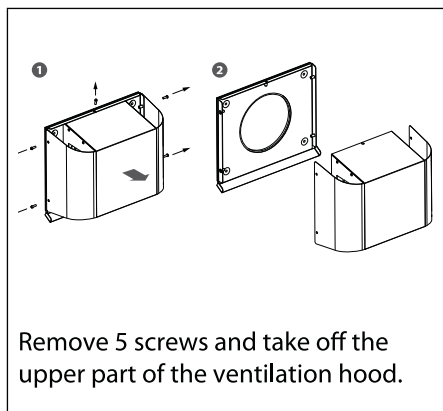
VENTILATION HOOD MOUNTING

1. Mark the fastening holes for the outer ventilation hood and drill holes for the dowel 6x40. For marking convenience use the ventilation hood back part.



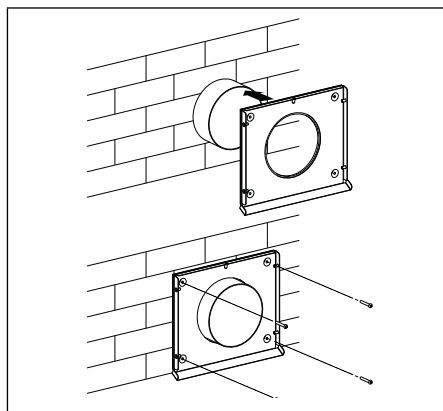
2. Insert the dowels 6x40 (included in the delivery set) into the holes.

3. Disassemble the outer ventilation hood to enable access to the fastening holes.



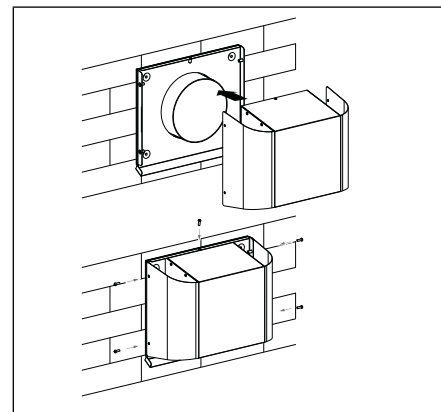
Remove 5 screws and take off the upper part of the ventilation hood.

4. Fix the back part of the ventilation hood on the wall with 4x40 screws from the delivery set.



Operation Instruction for the user and the qualified installer

5. Mount the upper part of the ventilation hood.



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 common remote control.

To connect the ventilators in series connect the Output contact socket of the first ventilator mounting plate with the Input contact socket of the second ventilator mounting plate.

- Connect the second ventilator with the third ventilator in the same way, etc. Up to 10 ventilators may be connected in series.

- For easy electric installations use a five-wire cable (not included in the delivery set) with the cable cross section not below 0.5 mm².

- 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 TO POWER MAINS



DISCONNECT THE VENTILATOR FROM POWER MAINS PRIOR TO ANY ELECTRIC INSTALLATION OPERATIONS. CONNECT THE VENTILATOR CORRECTLY WITH A GROUNDED TERMINAL. ANY INTERNAL CONNECTION MODIFICATIONS ARE NOT ALLOWED AND RESULT IN WARRANTY LOSS.

- The ventilator is rated for connection to single-phase ac 1~100-240 V / 50-60 Hz power mains.

- Connect the ventilator to power mains through the automatic circuit breaker with magnetic trip integrated into the fixed wiring system.