

ENGLISH VERSION

GENERAL INDEX

VERSIONE ITALIANA.....	1
1. INTRODUCTION	
a. PRECAUTIONS.....	37
b. INTENDED USE	38
c. PRODUCT OVERVIEW.....	39
d. TECHNICAL DATA.....	40
2. INSTALLATION	
a. INTRODUCTION.....	41
b. PREPARATION	41
c. PRODUCT MOUNTING	43
d. ELECTRICAL CONNECTIONS.....	47
e. CONFIGURATION.....	49
f. CONFIGURATION RESET.....	51
3. INSTRUCTIONS FOR USE	
a. BASE.....	52
b. ACTIVE AND WIRELESS.....	53
4. MAINTENANCE	
a. WHEN IS NEEDED	62
b. HOW TO PERFORM.....	63
5. FAQ.....	67
6. NOTES.....	68

INTRODUCTION – PRECAUTIONS

This product is artistically made in conformity to applicable CEE rules and is manufactured to allow rooms and similar air change, wherever the product is installed. Please follow all these indication to ensure performance, mechanical and electrical reliability and keep always this instruction leaflet. Do not use this product for different application unless indicated by us.

1. Remove packing and make sure that the appliance is undamaged.
2. Check that your electrical voltage and frequency correspond to those marked on the fan rating label; Install the product so that the blades are at a height of at least 2,3 m above the floor.
3. This appliance must only be used for the purpose it was built for, i.e. air replacement for domestic and similar purposes.
4. Do not operate the appliance in the presence of inflammable vapours (alcohol, petrol, etc.).
5. Before carrying out any cleaning or maintenance disconnect the mains electrical supply to the fan by means of a double pole switch or remove the plug. Any maintenance and cleaning operation that requires dismounting the unit must only be done by someone who is a property qualified person.
6. Make sure you have completely assembled the product before running.
7. Periodically, at least once a year or more frequently in case of heavy use, remove dirt and incrustation from the impeller and motor casing and, if necessary, clean or replace the filter. It is also very important to make sure the impeller is not deformed or cracked, is able to rotate freely and without oscillation, and is properly fixed to the shaft.
8. When the appliance is out of use, remove the power lead. Moreover, make potentially dangerous parts harmless, especially with regard to children who might

- play with appliance when it is not in use.
9. Installation must be carried out by qualified personnel according to manufacturer's instructions. Incorrect installation can cause damage to people, animals or properties for which the manufacturer cannot be considered liable.
 10. The fan is a fixed appliance and the main supply must be done by flexible cable with plug or by a onnipolar switch with a minimum opening of the contacts of 3 mm.
 11. When installing the fan in a room containing a combustion heater ensure that there is sufficient air to supply both appliances. This is to ensure the efficient operation of the heater and to allow a proper operation of the fan. The fan must discharge into a single fume pipe or directly outside.
 12. This appliance can be used by children aged from 8 years and above and persons with reduced physical sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision

INTRODUCTION – INTENDED USE

The product is artistically made and it is installed to allow a constant air exchange inside the room. The recovery system can be generally installed in residential or public places.

The product is supplied with a ceramic heat exchanger that accumulates heat during the extraction of hot air coming from the room while, during the air intake from the outside, the device transfers to the inlet cold air, the thermal energy stored in the heat exchanger.

The product is designed for wall installation. The duct containing the heat exchanger is supplied for walls with a maximum thickness of 500mm; the duct can be shorten to a minimum of 250mm.

The extracted or incoming air must not contain inflammable or explosive mixtures, chemical vapors, dusts, oils and other pathogenic substances in general.

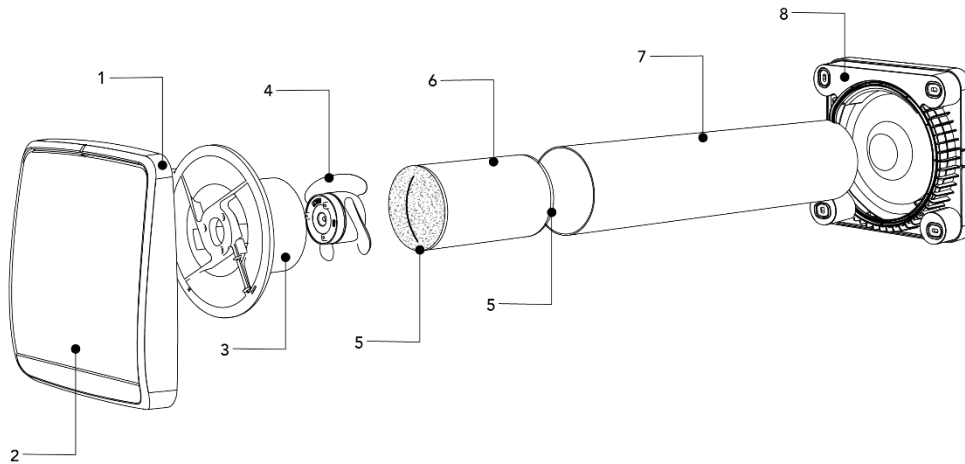
INTRODUCTION – PRODUCT OVERVIEW

The product is composed of a main unit with front tilting panel to be placed inside the room, a recessed duct that contains the ceramic heat exchanger and filters and an external soundproof grille.

GHOST 100

- 1- Main unit
- 2- Front tilting panel
- 3- Motor support
- 4- Fan

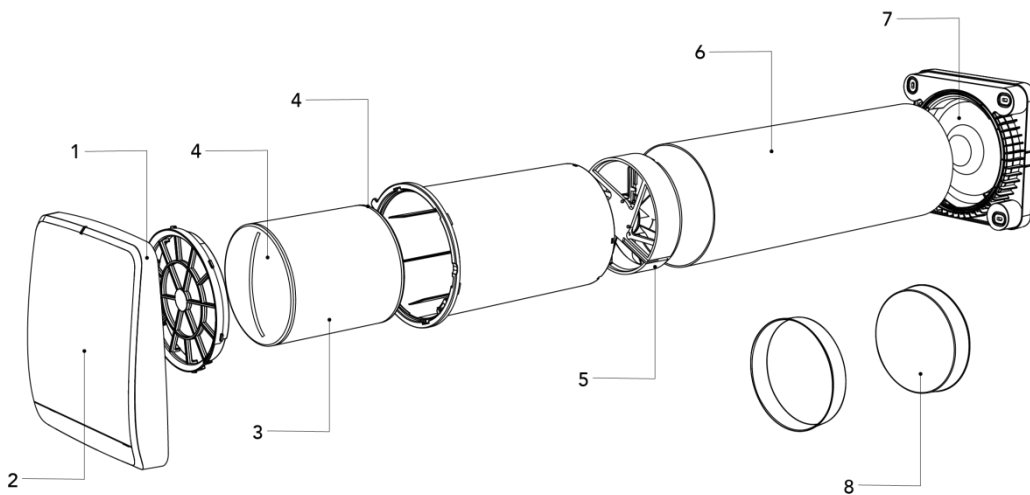
- 5- Filters
- 6- Heat exchanger
- 7- 500mm recessed duct
- 8- External grille



GHOST 160

- 1- Main unit
- 2- Front tilting panel
- 3- Heat exchanger
- 4- Filters

- 5- Motor-impeller
- 6- 500mm recessed duct
- 7- External grille
- 8- Caps for recessed duct

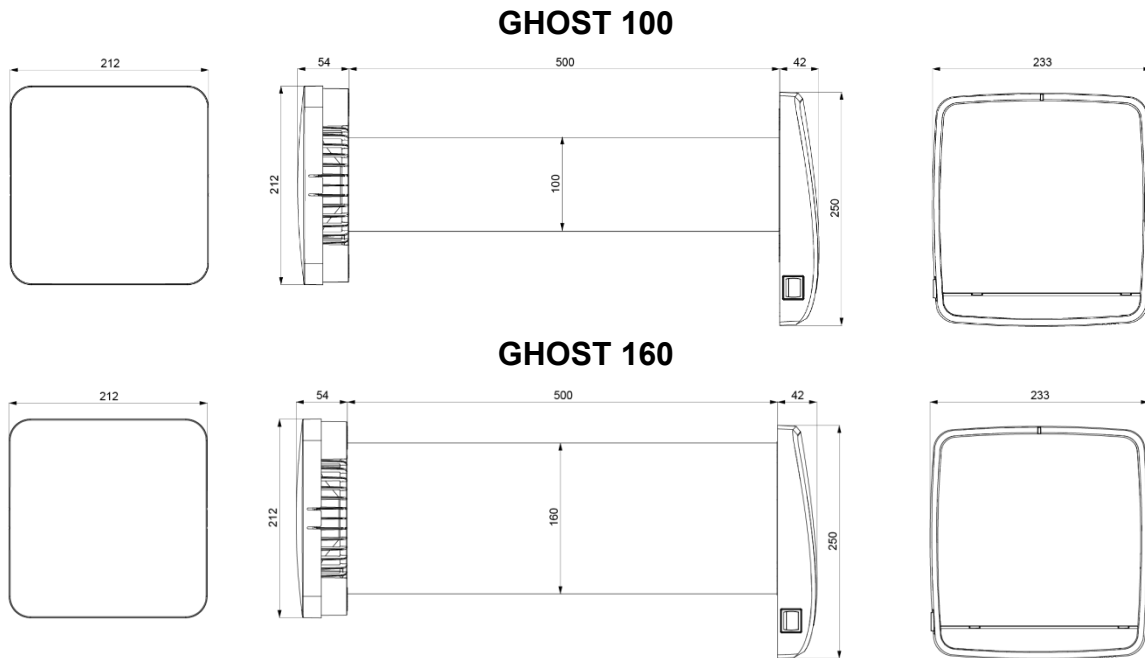


INTRODUCTION – TECHNICAL DATA

The heat recovery system is categorized as a class II product with IPX4 protection degree. The heat recovery system is projected for indoor installations with working temperatures between -30°C and +50°.

The design of the heat recovery system is in continuous evolution; therefore, some models may differ from those described in this manual.

DIMENSIONS (mm)



TECHNICAL PARAMETERS

GHOST 100 (BASE model only 1st and 3rd speed)				
Voltage at 50Hz [V]	220-240			
Max efficiency	93%			
Speed	Night	1	2	3
Flow rate [m3/h]	5	10	20	30
Power [W]	4,0	4,7	5,6	6,9
Noise at 3m dB(A)	13	18	28	37

GHOST 160 (BASE model only 1st and 3rd speed)				
Voltage at 50Hz [V]	220-240			
Max efficiency	93%			
Speed	Night	1	2	3
Flow rate [m3/h]	10	20	40	60
Power [W]	3,9	4,2	5,5	6,7
Noise at 3m dB(A)	4	9	21	30

INSTALLATION – INTRODUCTION

Installation must only be carried out by properly qualified person.

Make sure that the main electrical supply in the installation room is disconnected before starting the electrical operations of assembly.

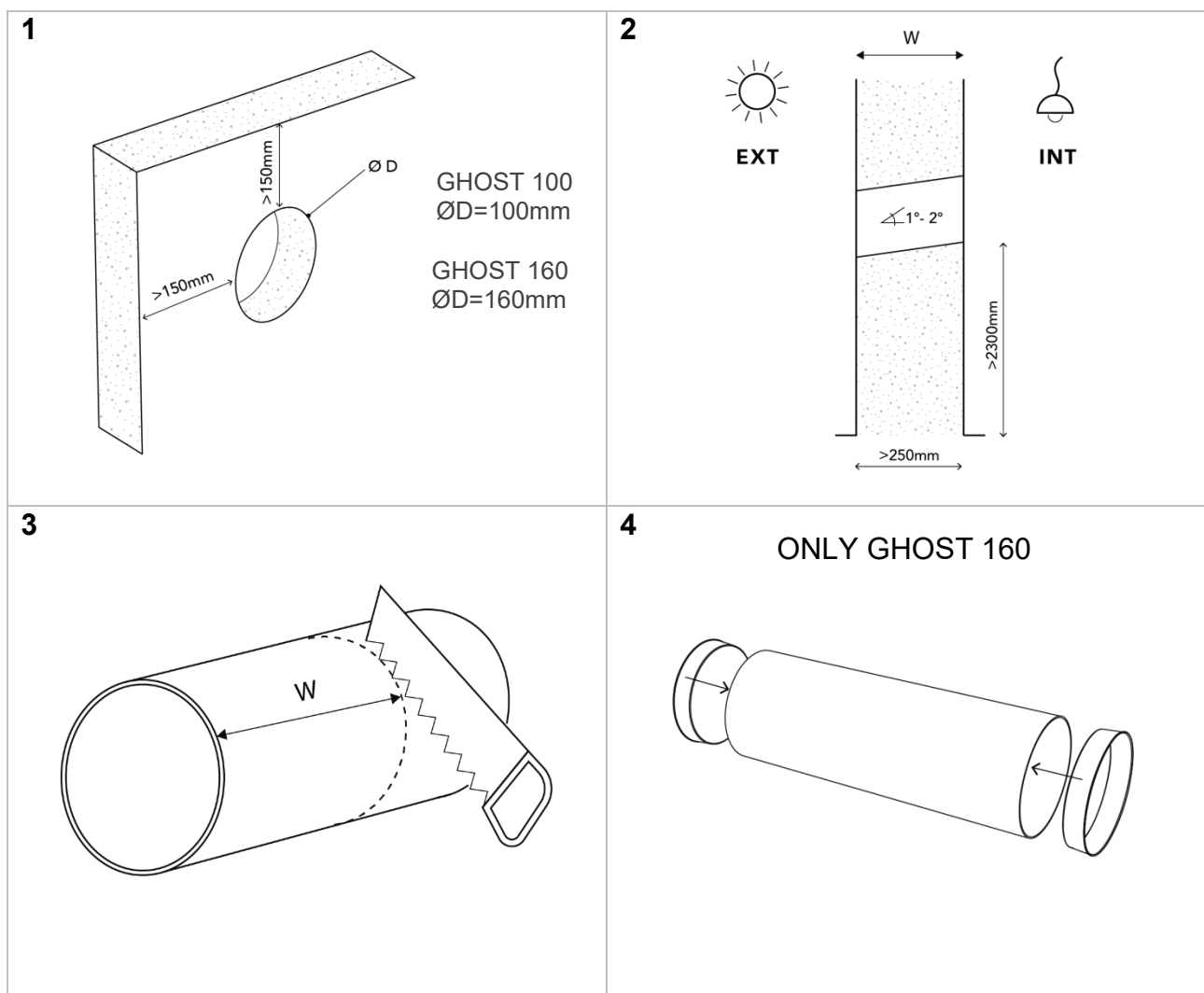
The appliance must not be installed near curtains, drapes, etc. as these could compromise the correct working of the product.

Make sure that, once installed, the fan blades are placed not less than 2,30m away from the floor below to the product. In case of installation of more than one appliance, the distance between the products must be at least 3 metres.

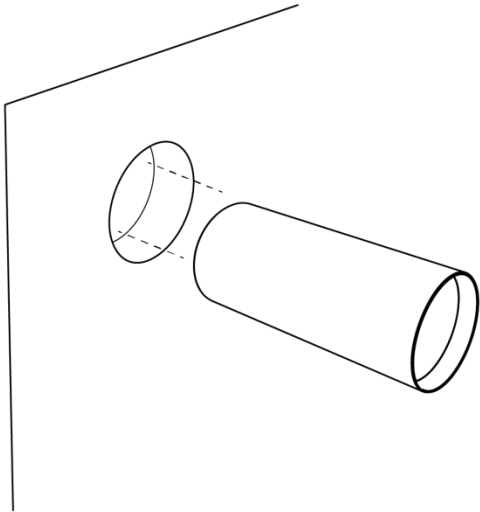
Before assembling or using this product, carefully read all the instructions in this manual and be sure to own all the necessary material for the installation.

Scrupulously follow the instructions in this manual.

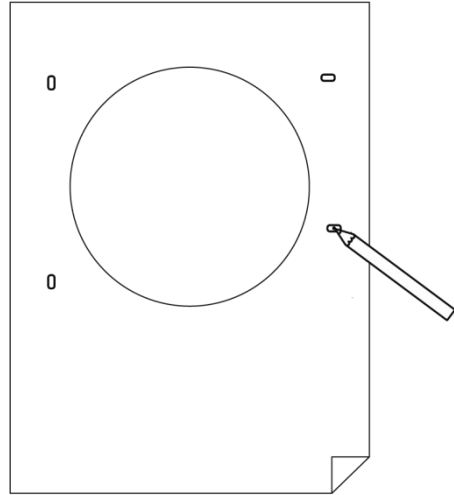
INSTALLATION – PREPARATION



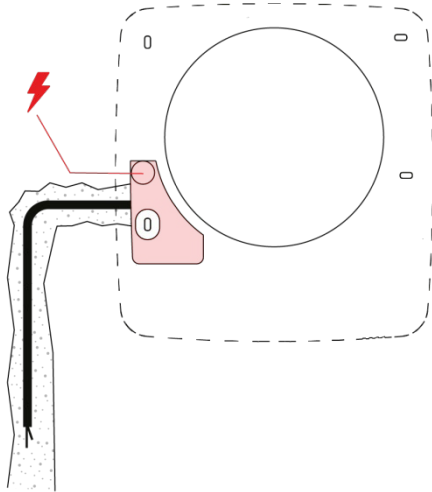
5



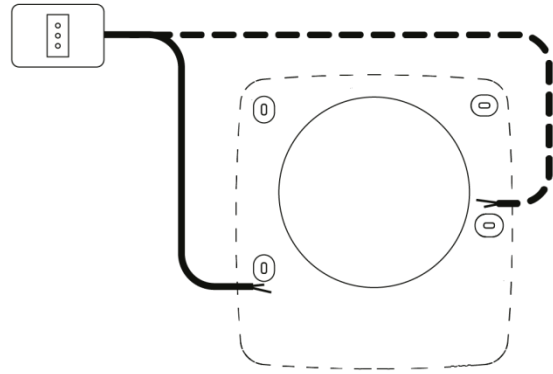
6



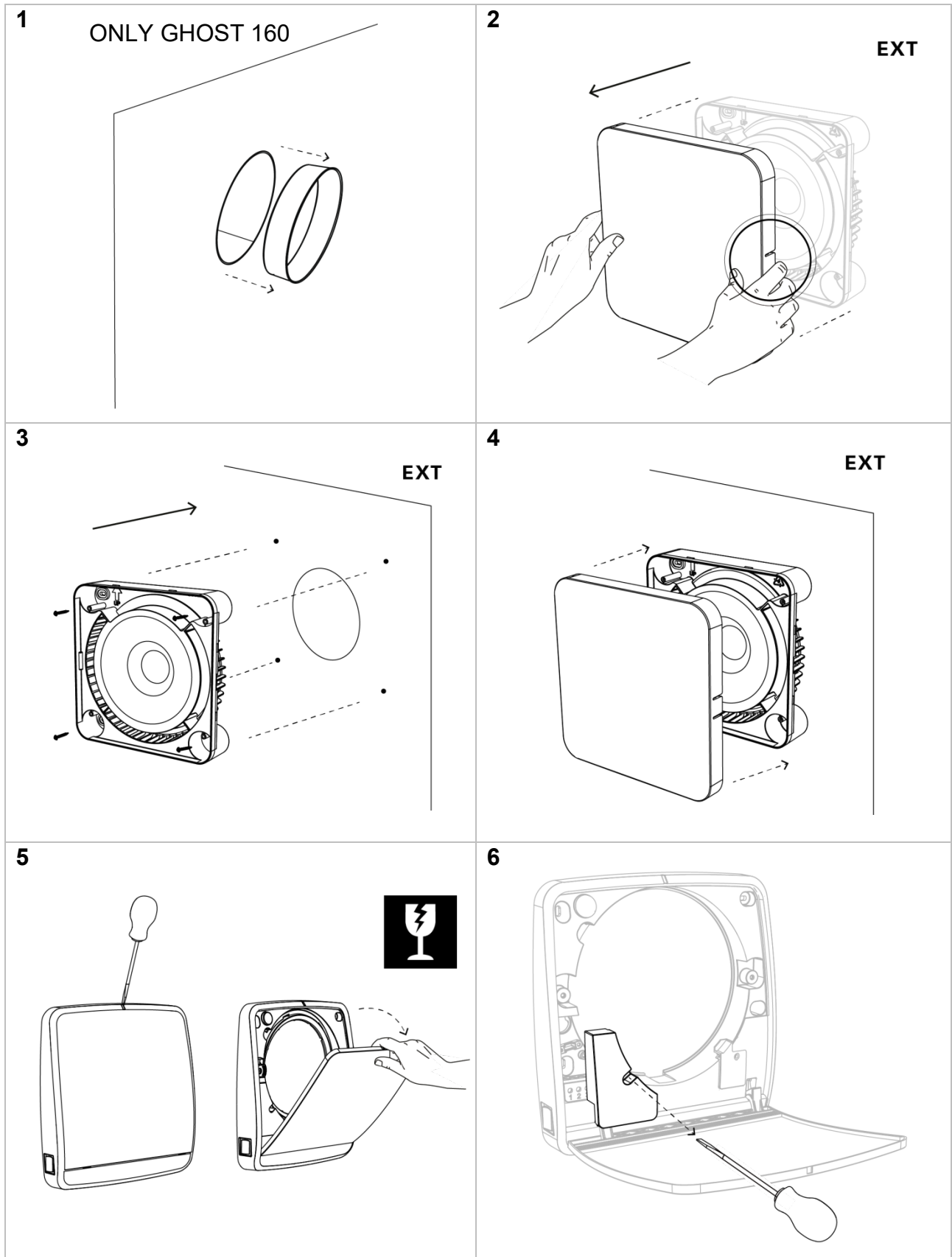
7 A



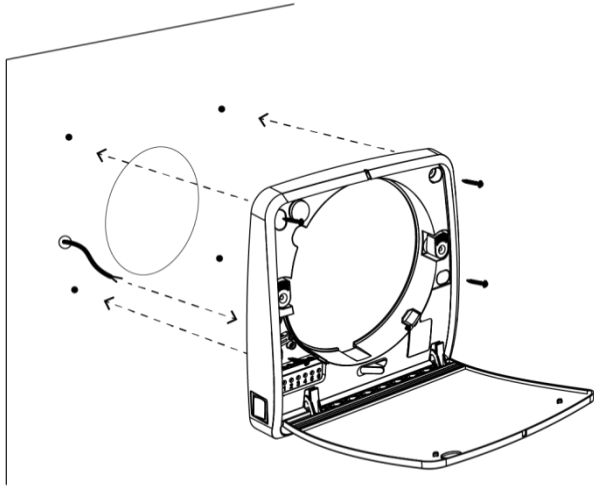
7 B



INSTALLATION – PRODUCT MOUNTING

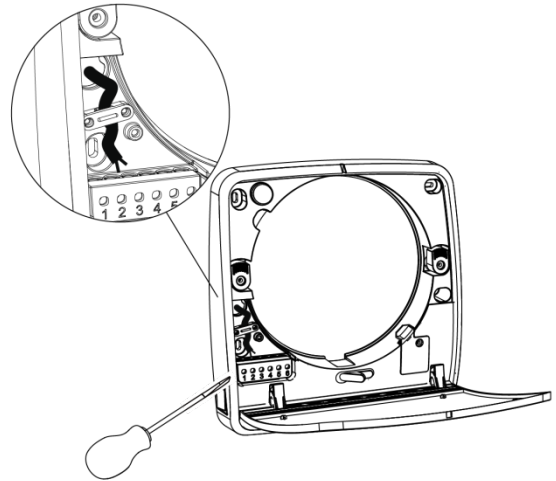


7

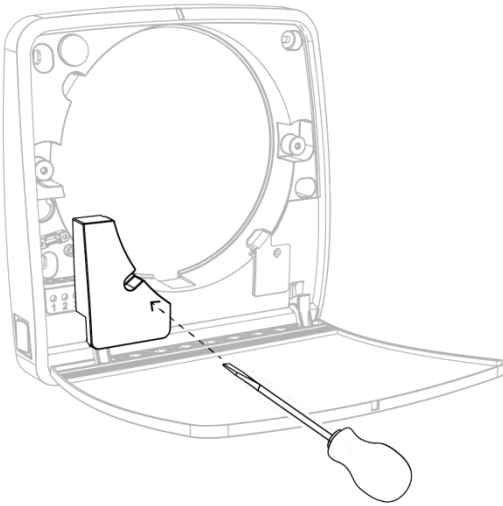


8

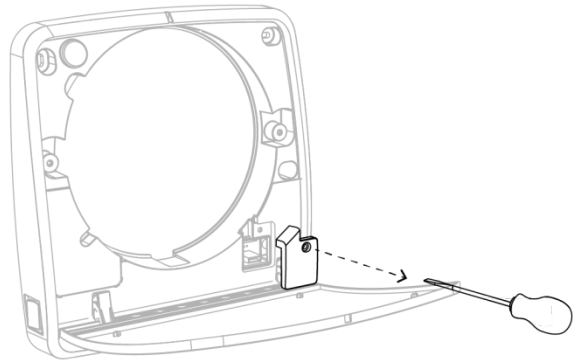
See section
"ELECTRICAL CONNECTIONS"



9

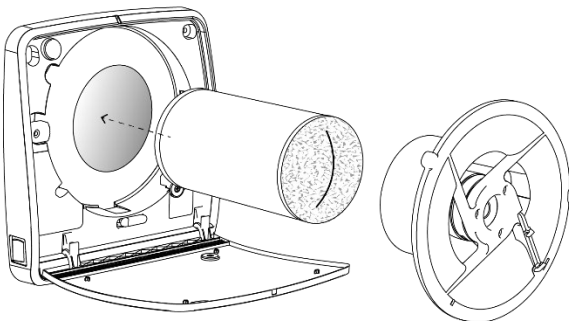


10



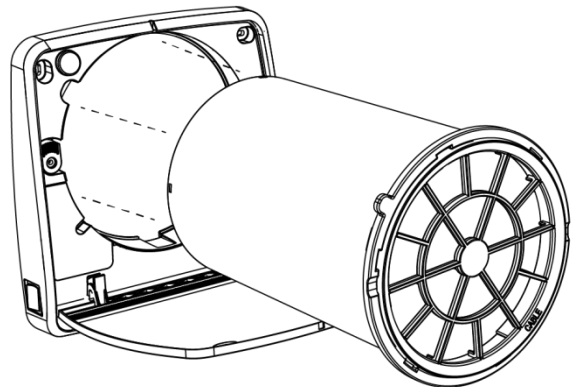
11 A

GHOST 100



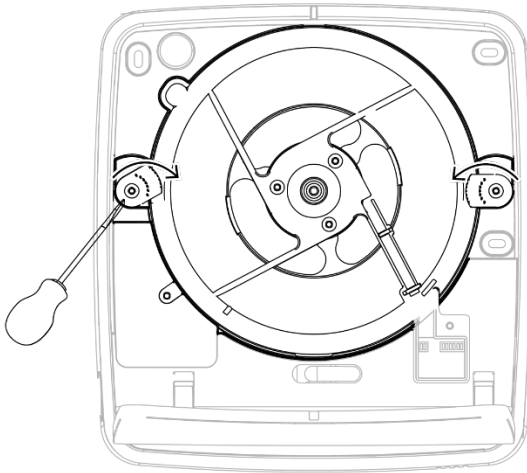
11 B

GHOST 160



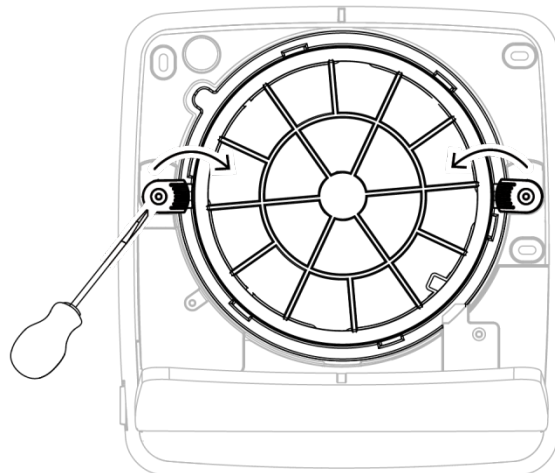
12 A

GHOST 100

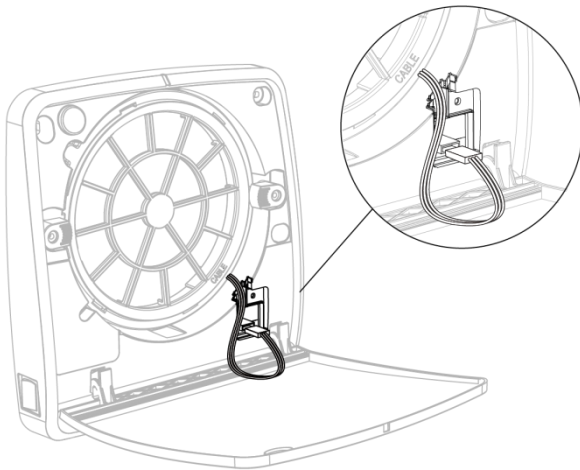


12 B

GHOST 160

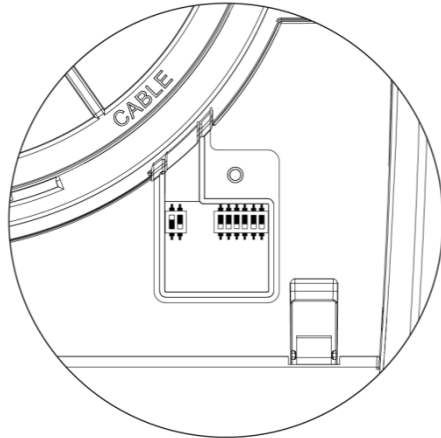


13

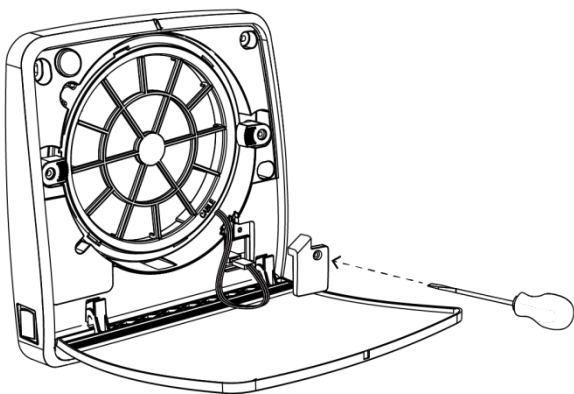


14

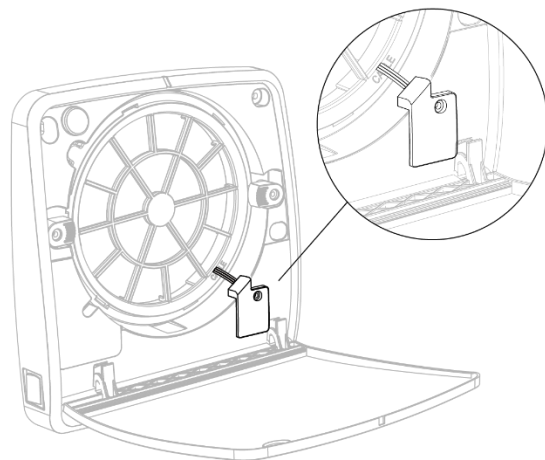
See sections
"CONFIGURATION"



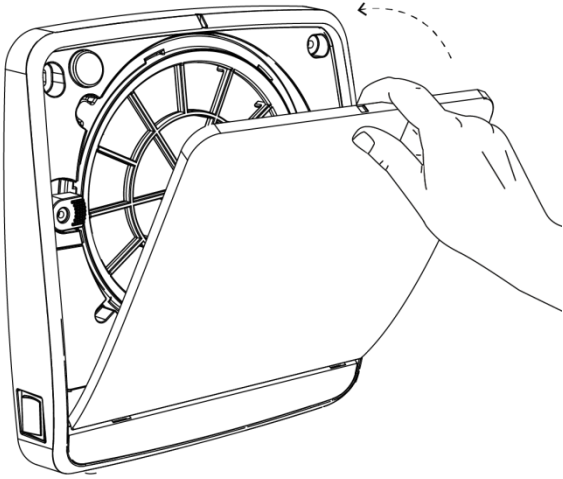
15



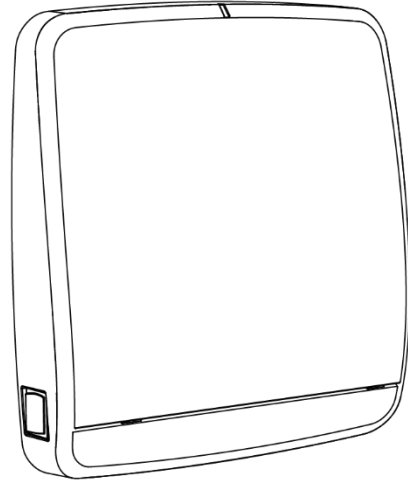
16



17



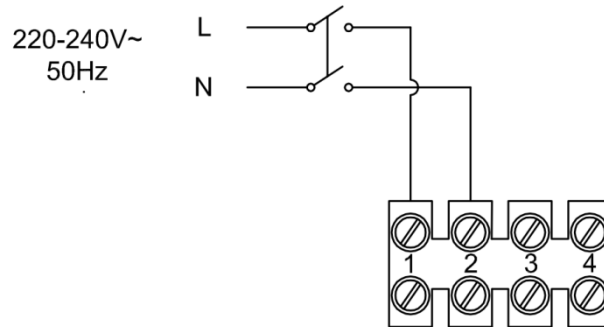
18



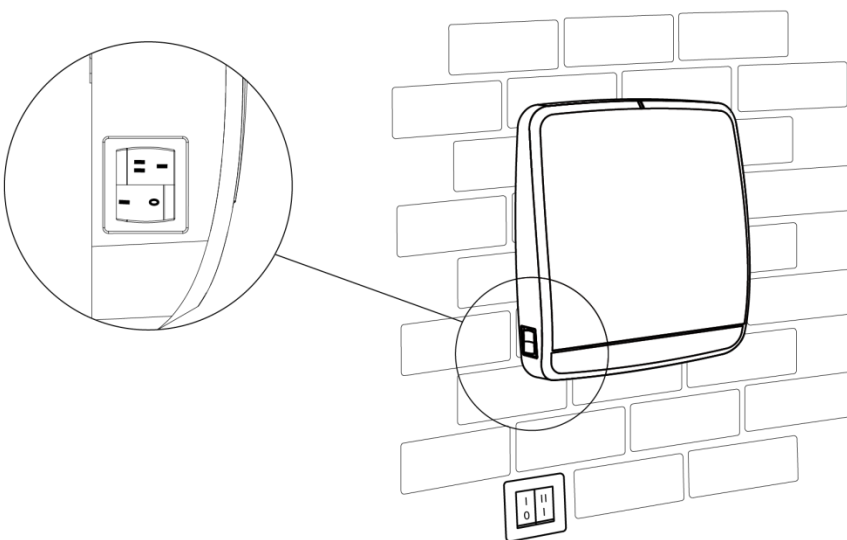
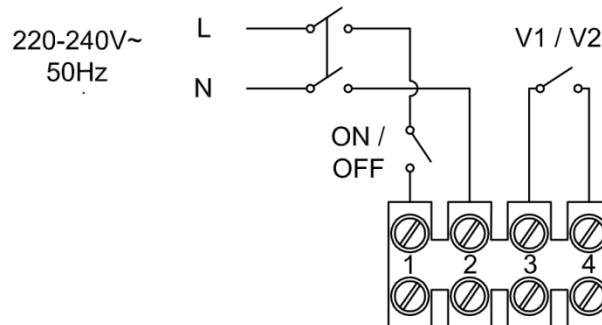
INSTALLATION – ELECTRICAL CONNECTIONS

BASE

Direct connection



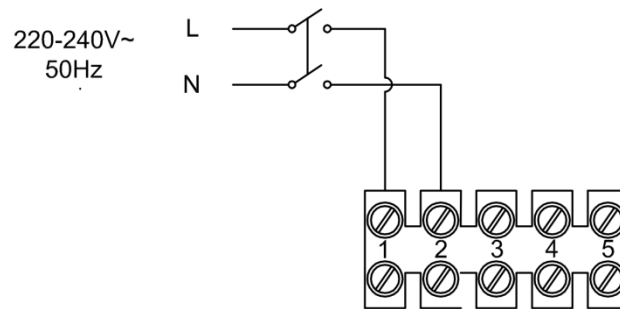
Connections with wall controls (not provided)



The two switches on the unit must be placed as picture shows.

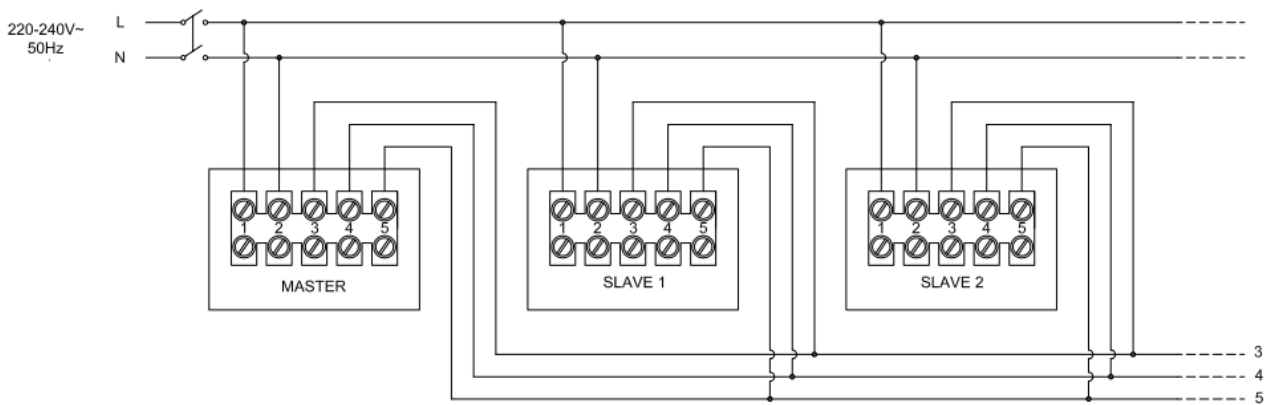
ACTIVE

Single unit connection



MASTER-SLAVE system connection

Warning: during this stage all the products must have the main switch set on "0".

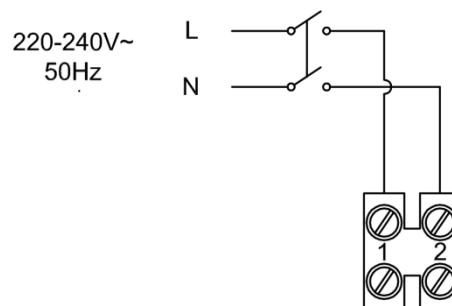


Warning: Humidity and twilight sensors will detect the values from the first unit connected. In case of a system with long wires or with a lot of electric/electronic equipment may cause signal disturbance to use shielded cables and connect a termination resistor of 120ohm on pin 3 and 4 of the terminal block of the last SLAVE.

WIRELESS

Products connections

Warning: during this stage all the products must have the main switch set on "0".



INSTALLATION – CONFIGURATION

BASE

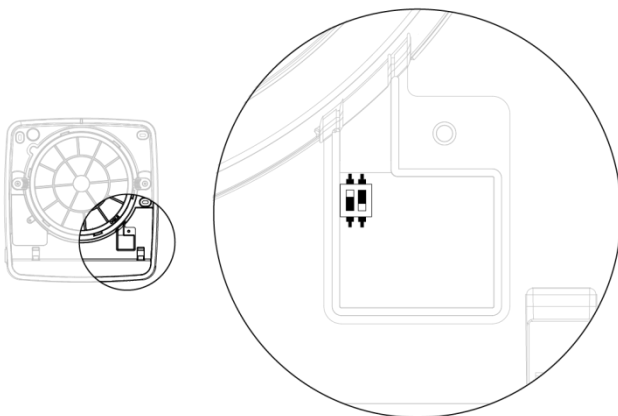
Direct connection, the product doesn't need any configuration.

ACTIVE

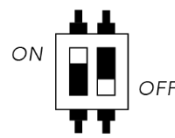
For configuration, please follow the instructions below, taking into consideration that the first unit installed will be the MASTER and all the others in sequence SLAVE OPPOSITE to MASTER and SLAVE SAME AS MASTER UNIT.

WARNING: the MASTER is the only unit receiving commands from control device, that will detect the ambient conditions through the sensors and thus controlling all the system.

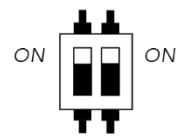
If you have a remote panel with CO₂ sensor, the CO₂ will be detected directly by the control panel.



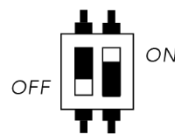
MASTER
(with remote control)



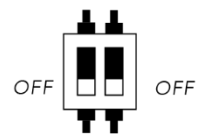
MASTER
(with remote panel)



SLAVE
OPPOSITE
TO MASTER



SLAVE
SAME
AS MASTER



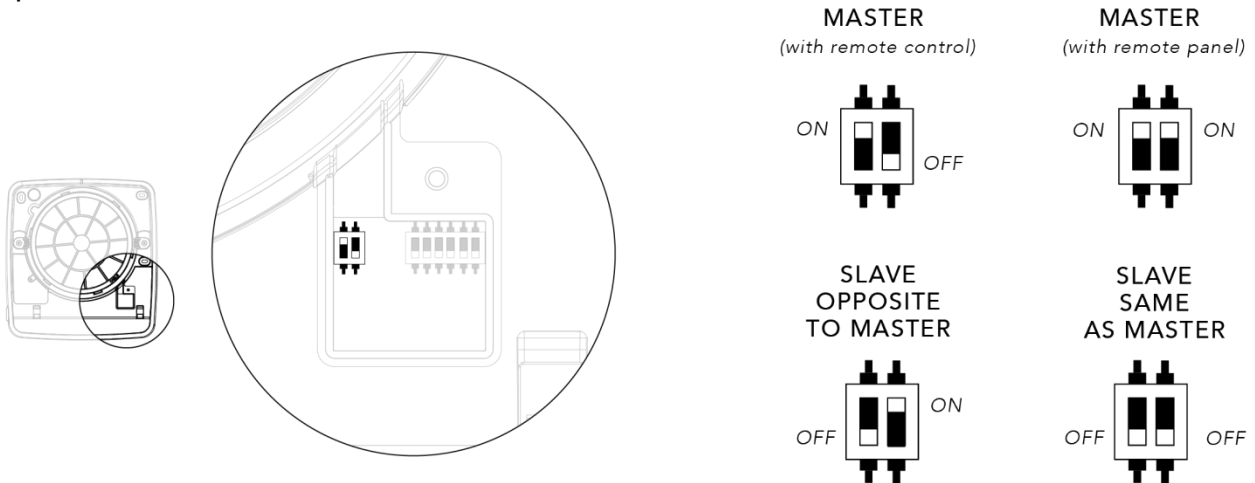
In case of large indoor space or systems on multi-floors, it is recommended to split the system into zones (living area-sleeping area or 1st floor-2nd floor) for easier control of the units.

WIRELESS

For configuration, please follow the instructions below, taking into consideration that the first unit installed will be the MASTER and all the others in sequence SLAVE OPPOSITE to MASTER and SLAVE SAME AS MASTER UNIT.

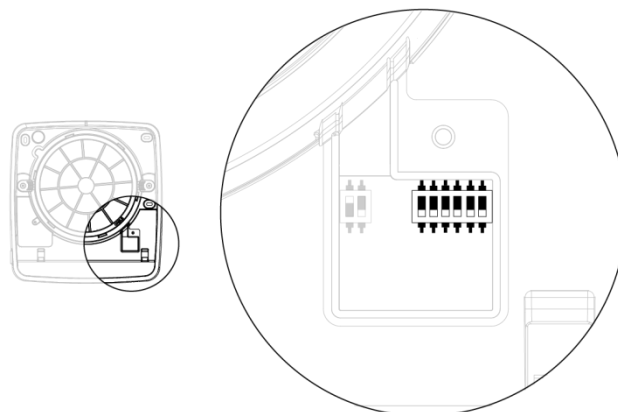
WARNING: the MASTER is the only unit receiving commands from control device, that will detect the ambient conditions through the sensors and thus controlling all the system.

If you have a remote panel with CO₂ sensor, the CO₂ will be detected directly by the control panel.



In case of large indoor space or systems on multi-floors, it is recommended to split the system into zones (living area-sleeping area or 1st floor-2nd floor) for easier control of the units.

After setting the single units, it is necessary to create one coding common to all the systems so that the units interact among them avoiding any interference with adjacent systems. In the scheme below see the 6 dip switches 0/1 needed to create one coding for each system.



WARNING: factory setting of dip switches is 0 (OFF), thus recommended to set on 1 (ON) at least one of the dip switches to uniquely codify the system.

INSTALLATION – CONFIGURATION RESET

ACTIVE AND WIRELESS

In case of mistakes in the configuration of the units through dip switches, both for system coding (WIRELESS version) and for MASTER-SLAVE configuration (ACTIVE and WIRELESS version) please follow the instructions:

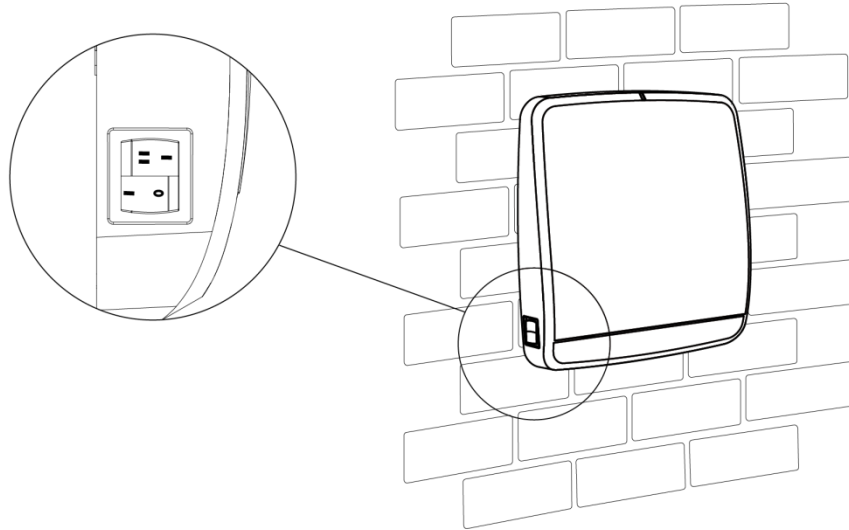
- Switch OFF the unit through main switch
- Change the configuration of dip switches as needed
- Switch ON the unit through main switch

The unit is properly set with the new configuration

WARNING: by keeping the unit ON, no change of configuration is possible. The unit will continue to run as per previous setting.

INSTRUCTIONS FOR USE – BASE

Possible to turn ON and OFF and select 2 speed through switch placed on the unit.

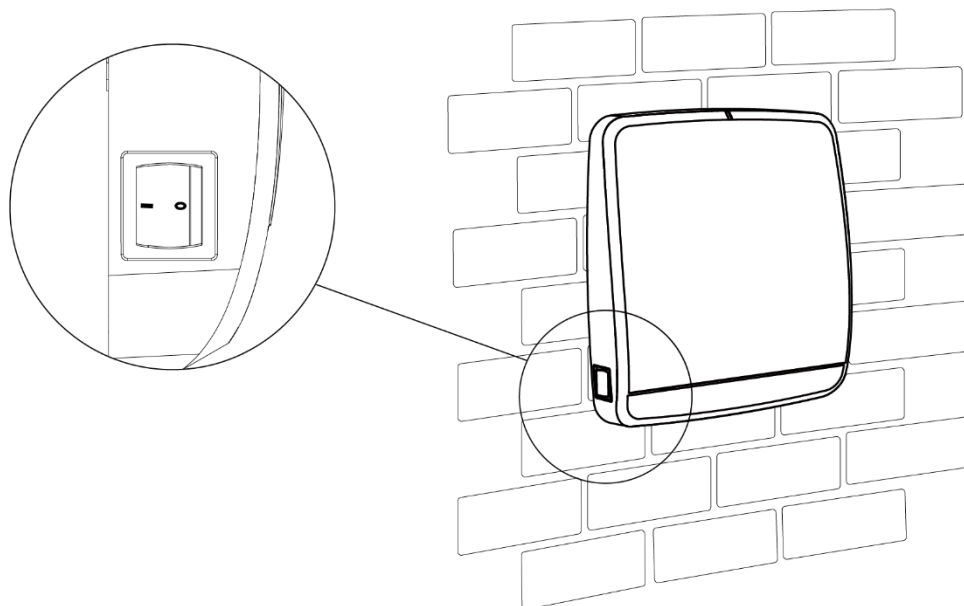


Both ON/OFF switch and speed selection can be controlled by remote as per connection diagram described in the previous paragraphs.

The product runs 70 seconds in extraction and 70 seconds in intake reversing the cycle with open tilting front cover.

INSTRUCTION FOR USE – ACTIVE AND WIRELESS

Possible to turn ON and OFF through switch placed on the unit.



The product has three main running modes and other six modes to be selected through quick buttons.

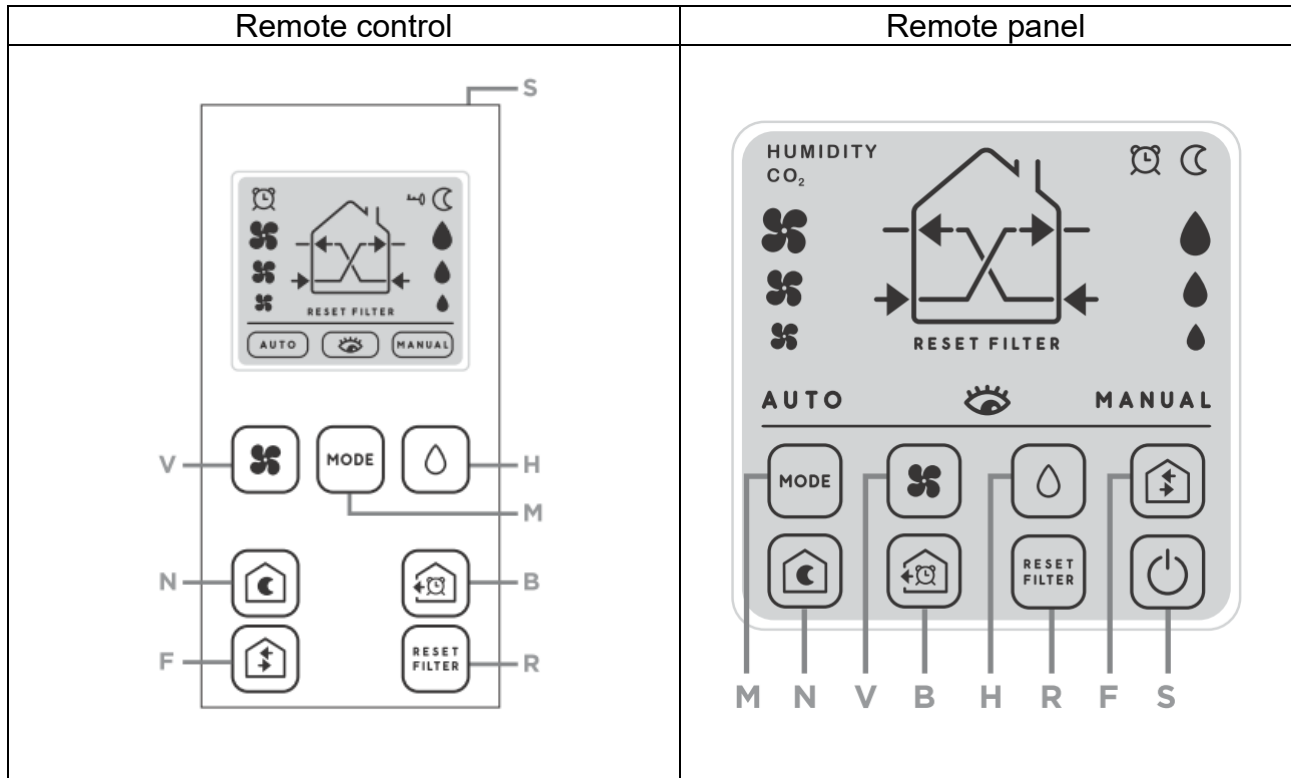
The three main modes to be selected through MODE button:

- AUTOMATIC mode
- SURVEILLANCE mode
- MANUAL mode

The six additional modes to be selected through quick buttons:

- NIGHT mode
- BOOST mode
- MASTER-SLAVE AIR FLOW mode
- SLAVE-MASTER AIR FLOW mode
- EXTRACTION mode
- INTAKE mode

BUTTONS FUNCTION LIST:



WARNING (Remote control): the remote control gets into stand-by mode after being inactive for 60 seconds when the icon with key appears on display. To unlock press the button (S) on the upper side of the remote control.

WARNING (Remote panel): the remote panel gets into stand-by mode after being inactive for 60 seconds. To unlock press the button (S).

WARNING: If the unit is connected to other units in the same system, only the MASTER unit will receive commands that will transfer to all the other SLAVE units connected in sequence.

AUDIO-VISUAL SIGNALS

- Command receipt: when the unit properly receives the command will make a “BIP” sound and the LED will flash white.
- Surveillance mode: when the product is in surveillance mode the red LED blinks every 60sec.
- Humidity alarm*: when the unit gets into humidity alarm the red LED will light up fixed.
- Filter Alarm: when the unit gets into filter alarm the red LED will blink every second.

* If you have a remote panel, humidity alarm and CO₂ alarm (only for CO₂ version) will be shown only on the remote panel display.

WARNING: When turning on the unit the first time and when passing from stand-by or switch OFF to switch ON, the tilting front cover will take 40 seconds to open.

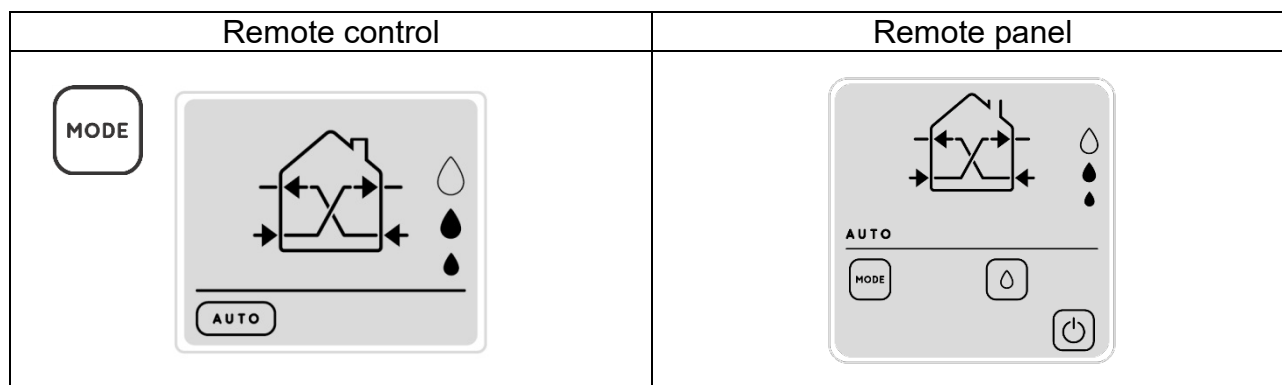
NOTE: The meaning of “heat recovery operation” corresponds to standard operation of the product i.e. 70 seconds in extraction and 70 seconds in intake reversing the cycle with open tilting front cover.

AUTOMATIC MODE

To get into this mode, repeatedly press the button MODE (M) to see the image below on display.

When pressing MODE button the mode will change in the sequence (AUTO, SURVEILLANCE, MANUAL, AUTO, SURVEILLANCE...).

In this mode the HUMIDITY button (H) is active to select the desired threshold.



In this mode both humidity and twilight sensors are active, the units will run by themselves without the need to give commands.

Hereinafter explaining how the units run in different situations with related operating mode:

In standard humidity (or CO₂*) conditions during the day the units run at the medium speed and with heat recovery.

In standard humidity (or CO₂*) conditions during the night the units run at the night speed and with heat recovery.

In case of humidity (or CO₂*) alarm during the day the units run in extraction at the medium speed.

In case of humidity (or CO₂*) alarm during the night the units run in extraction at the night speed.

The units get into humidity alarm when the MASTER unit detects in the room a humidity level higher than the set threshold among the three values available (40%, 60%, 90%).

* The CO₂ value will be detected only if you have a control panel with an integrated CO₂ sensor.

Advice for use

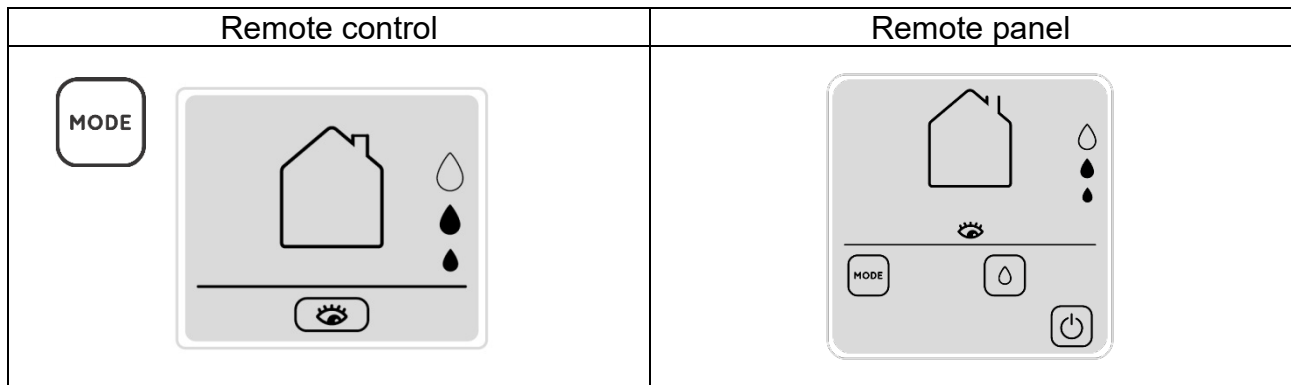
Recommended mode during standard use of product; once the humidity level is set, the system will run by itself without the need of any further action.

SURVEILLANCE MODE

To get into this mode, repeatedly press the button MODE (M) to see the image below on display.

When pressing MODE button the mode will change in the sequence (AUTO, SURVEILLANCE, MANUAL, AUTO, SURVEILLANCE...).

In this mode the HUMIDITY button (H) is active to select the desired threshold.



In this mode both humidity and twilight sensors are active, the units will be normally in stand-by with front panel closed, so that when the humidity level in the room exceeds the set threshold the units start running in extraction.

Hereinafter explaining how the units run in different situations with related operating mode:

In standard humidity (or CO₂*) conditions the units are in stand-by with the front panel closed and the sensors active.

In case of humidity (or CO₂*) alarm conditions during the day the units run in extraction at the medium speed.

In case of humidity (or CO₂*) alarm conditions during the night the units run in extraction at the night speed.

The units get into humidity alarm when the MASTER unit detects in the room a humidity level higher than the set threshold among the three values available (40%, 60%, 90%).

* The CO₂ value will be detected only if you have a control panel with an integrated CO₂ sensor.

Advice for use

Recommended mode when heat recovery is not needed but essential to have a proper ventilation in the room because of humidity (or CO₂).

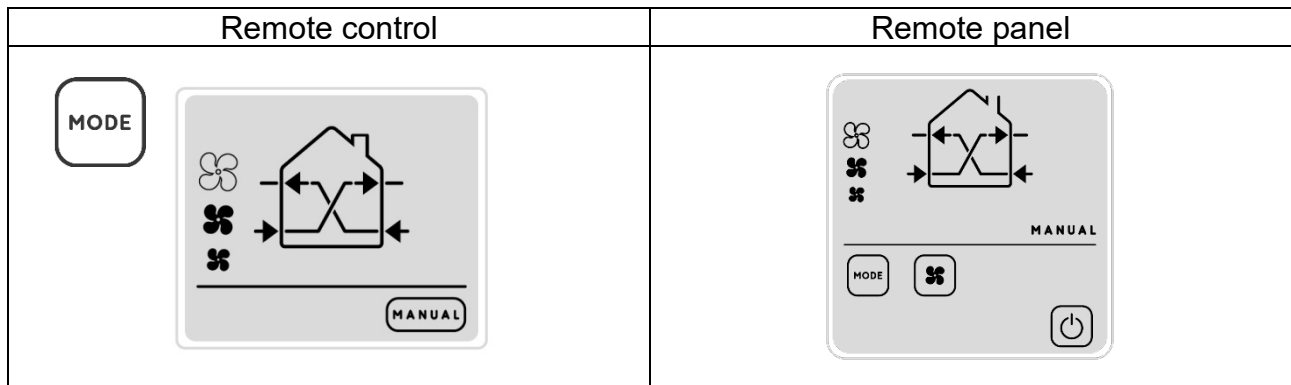
Typical use in holiday homes since heat recovery is not needed and just a proper ventilation is essential to prevent air stagnation in the premises.

MANUAL MODE

To get into this mode, repeatedly press the button MODE (M) to see the image below on display.

When pressing MODE button the mode will change in the sequence (AUTO, SURVEILLANCE, MANUAL, AUTO, SURVEILLANCE...).

In this mode the IMPELLER button (V) is active to select the desired speed.



In this mode the sensors are disabled and the units will run with heat recovery. The end user can select the desired speed to run the units and this condition remains until a different command is entered.

Advice for use

Recommended mode when heat recovery is required independently from humidity levels or when needed to set a fixed speed for all the products.

NIGHT MODE

To get into this mode, press the button NIGHT (N) to see the image below on display.



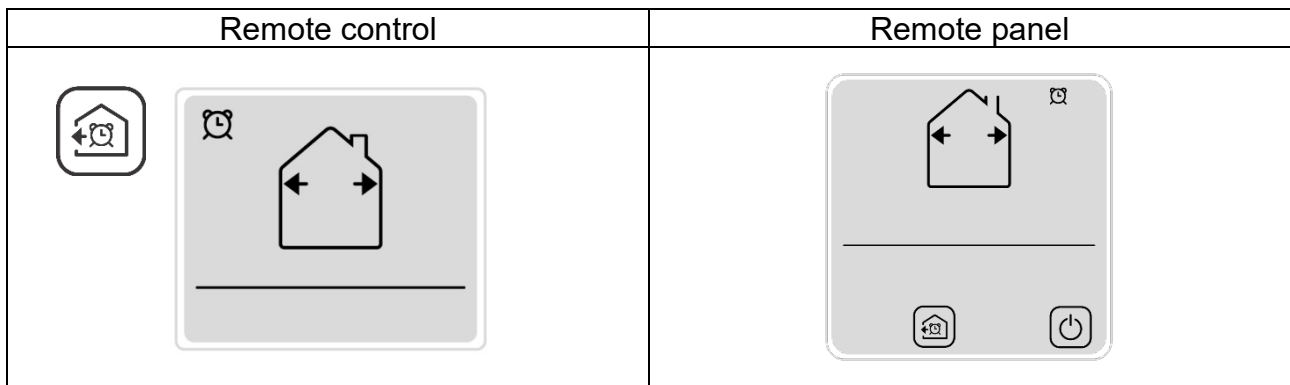
In this mode all the units will run at the night speed with heat recovery until another command is entered.

Advice for use

Recommended mode when the external environment is very quiet and even the minimum speed of the unit is perceived.

BOOST MODE

To get into this mode, repeatedly press the button TIMER (B) to see the image below on display.



By pressing this button in any of the modes all the products will run in extraction at the maximum speed for 20 minutes, at the end of the cycle they will resume the previous set mode.

Advise for use

Recommended mode to quickly extract unhealthy air or strong odors without the need to set again the units afterwards.

MASTER-SLAVE AIR FLOW MODE

To get into this mode, press the button FLOW (F) to see the image below on display.

When pressing FLOW button the mode will change in the sequence MASTER-SLAVE AIR FLOW, SLAVE-MASTER AIR FLOW, EXTRACTION, INTAKE, MASTER-SLAVE AIR AIRFLOW...).

In this mode the IMPELLER button (V) is active to select the desired speed.



In this mode the units generate a continuous air flow going from MASTER or SLAVE SAME AS MASTER units to SLAVE OPPOSITE TO MASTER excluding heat recovery.

Advise for use

Recommended mode to isolate odors in a room, like in the kitchen, generating a continuous air flow towards it.

This is also suitable for use as free-cooling in summer season, in fact when external temperature is lower than internal one, there is no need to recover heat but to blow fresh air into the house.

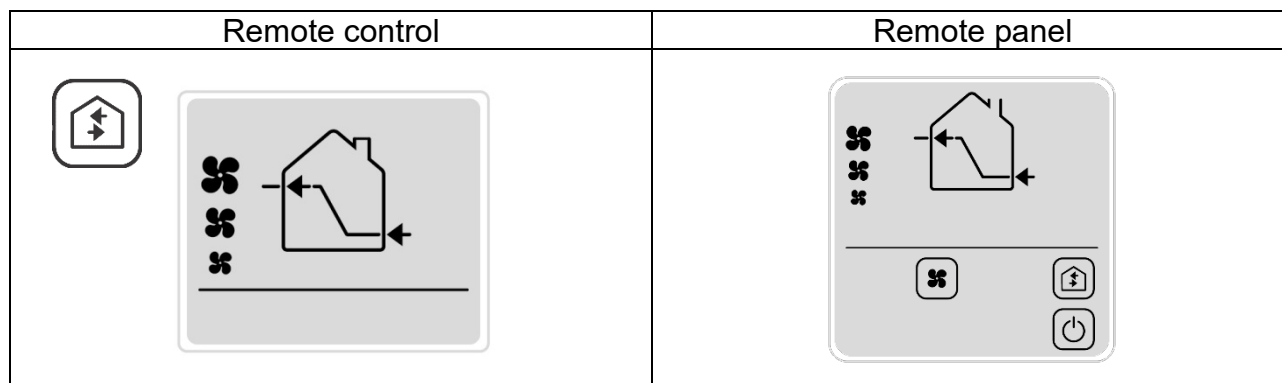
By pressing the specific function button all the units will constantly run in the desired direction with the possibility to change the speed as required.

SLAVE-MASTER AIR FLOW MODE

To get into this mode, repeatedly press the button FLOW (F) to see the image below on display.

When pressing FLOW button the mode will change in the sequence MASTER-SLAVE AIR FLOW, SLAVE-MASTER AIR FLOW, EXTRACTION, INTAKE, MASTER-SLAVE AIR FLOW...).

In this mode the IMPELLER button (V) is active to select the desired speed.



In this mode the units generate a continuous air flow going from SLAVE OPPOSITE TO MASTER to MASTER or SLAVE SAME AS MASTER units excluding heat recovery.

Advise for use

Recommended mode to isolate odors in a room, like in the kitchen, generating a continuous air flow towards it.

This is also suitable for use as free-cooling in summer season, in fact when external temperature is lower than internal one, there is no need to recover heat but to blow fresh air into the house.

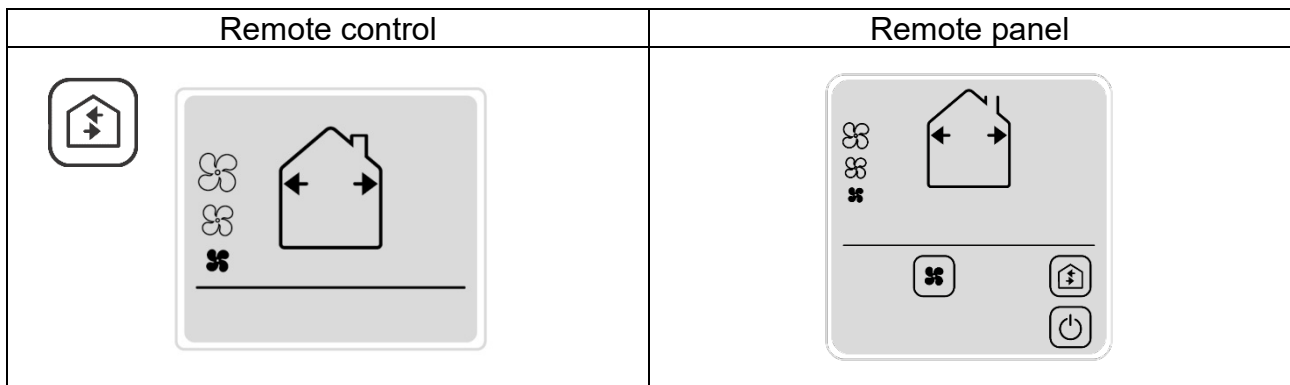
By pressing the specific function button all the units will constantly run in the desired direction with the possibility to change the speed as required.

EXTRACTION MODE

To get into this mode, repeatedly press the button FLOW (F) to see the image below on display.

When pressing FLOW button the mode will change in the sequence MASTER-SLAVE AIR FLOW, SLAVE-MASTER AIR FLOW, EXTRACTION, INTAKE, MASTER-SLAVE AIR AIRFLOW...).

In this mode the IMPELLER button (V) is active to select the desired speed.



By pressing the specific function button all the units will constantly run in extraction with the possibility to change the speed as required.

Advise for use

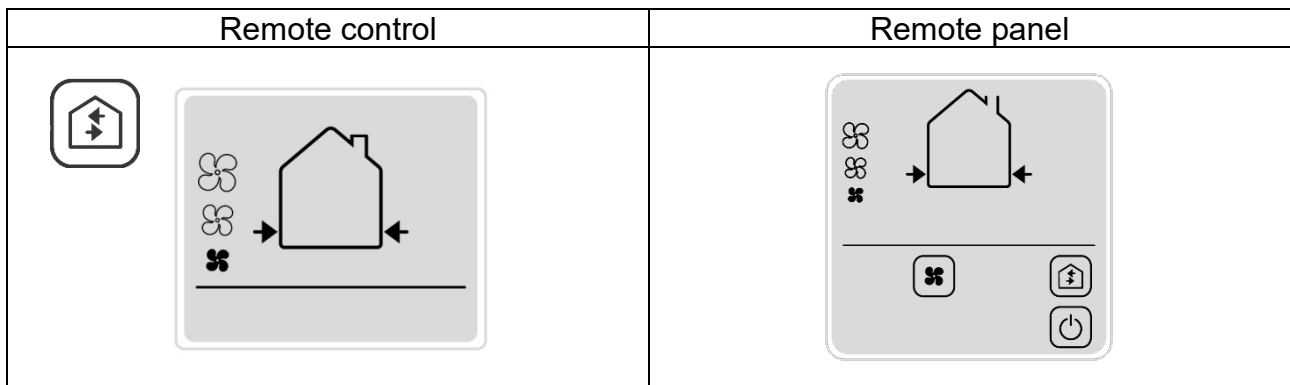
Recommended mode to extract a lot of stale air, to the disadvantage of the heat recovery, when rooms are very crowded like during parties, anniversaries...

INTAKE MODE

To get into this mode, repeatedly press the button FLOW (F) to see the image below on display.

When pressing FLOW button the mode will change in the sequence MASTER-SLAVE AIR FLOW, SLAVE-MASTER AIR FLOW, EXTRACTION, INTAKE, MASTER-SLAVE AIR AIRFLOW...).

In this mode the IMPELLER button (V) is active to select the desired speed.



By pressing the specific function button all the units will constantly run in intake with the possibility to change the speed as required.

Advise for use

Recommended mode to extract a lot of stale air, to the disadvantage of the heat recovery, when rooms are very crowded like during parties, anniversaries...

MAINTENANCE – WHEN IS NEEDED

BASE

The unit gives no indication when maintenance is required, thus recommended to do the cleaning of the filters and the ceramic heat exchanger every 3 months.

Also advisable to replace the filters when becoming worn thus compromising the proper air filtration and their efficiency, or at least within 2 years.

Contact your local retailer/distributor to get a filter kit replacement.

ACTIVE and WIRELESS

Every 3000 working hours the indicator blinking on the MASTER unit to alert that maintenance on the products is required.

All the units will continue to run according to the preset function without possibility to change it until the maintenance operations are carried out.

Once maintenance is performed, press the button FILTER (R) on the remote control to reset the alarm.

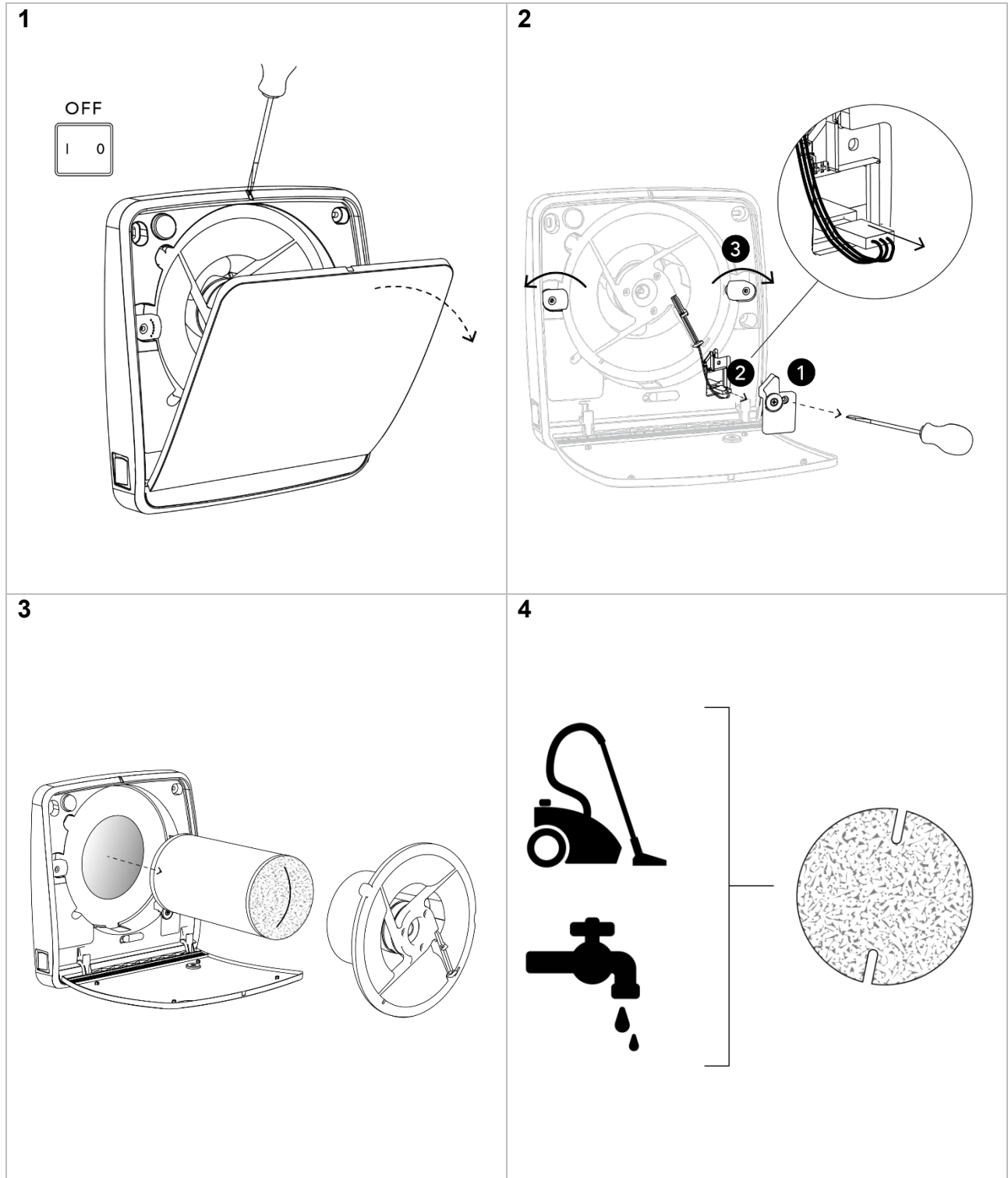
Advisable to replace the filters when becoming worn thus compromising the proper air filtration and their efficiency, or at least within 2 years.

Contact your local retailer/distributor to get a filter kit replacement.

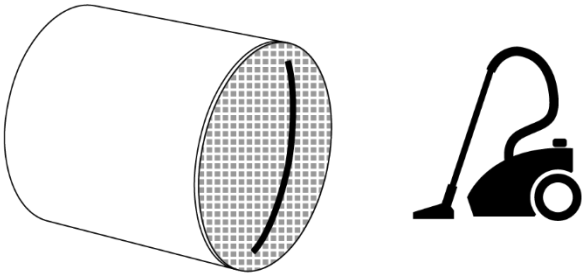
MAINTENANCE – HOW TO PERFORM

All the maintenance operations are intended for qualified personnel only.
Make sure that the network connection in the room is disconnected before performing maintenance operations.

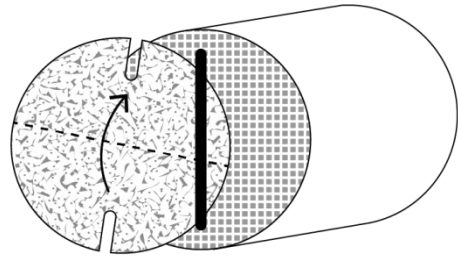
GHOST 100



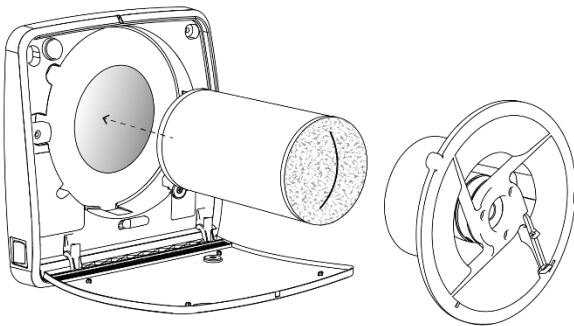
5



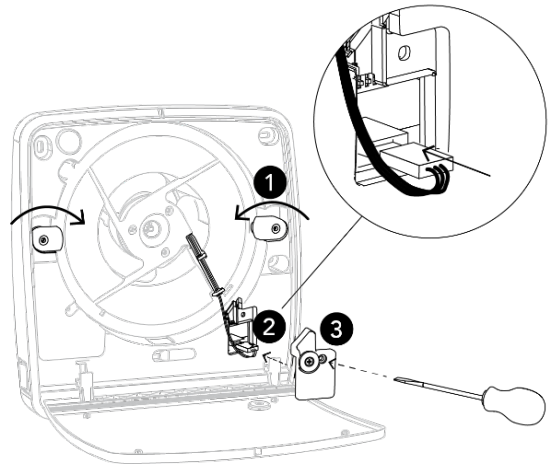
6



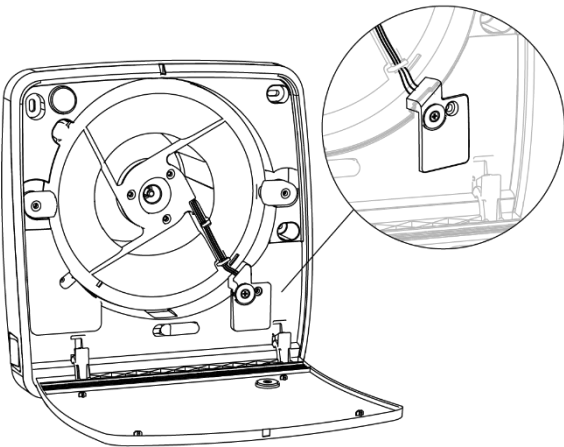
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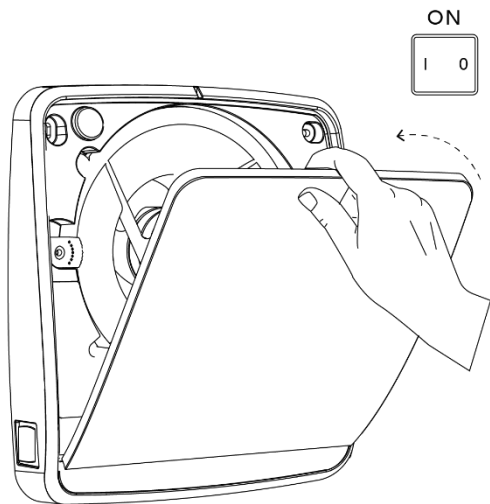
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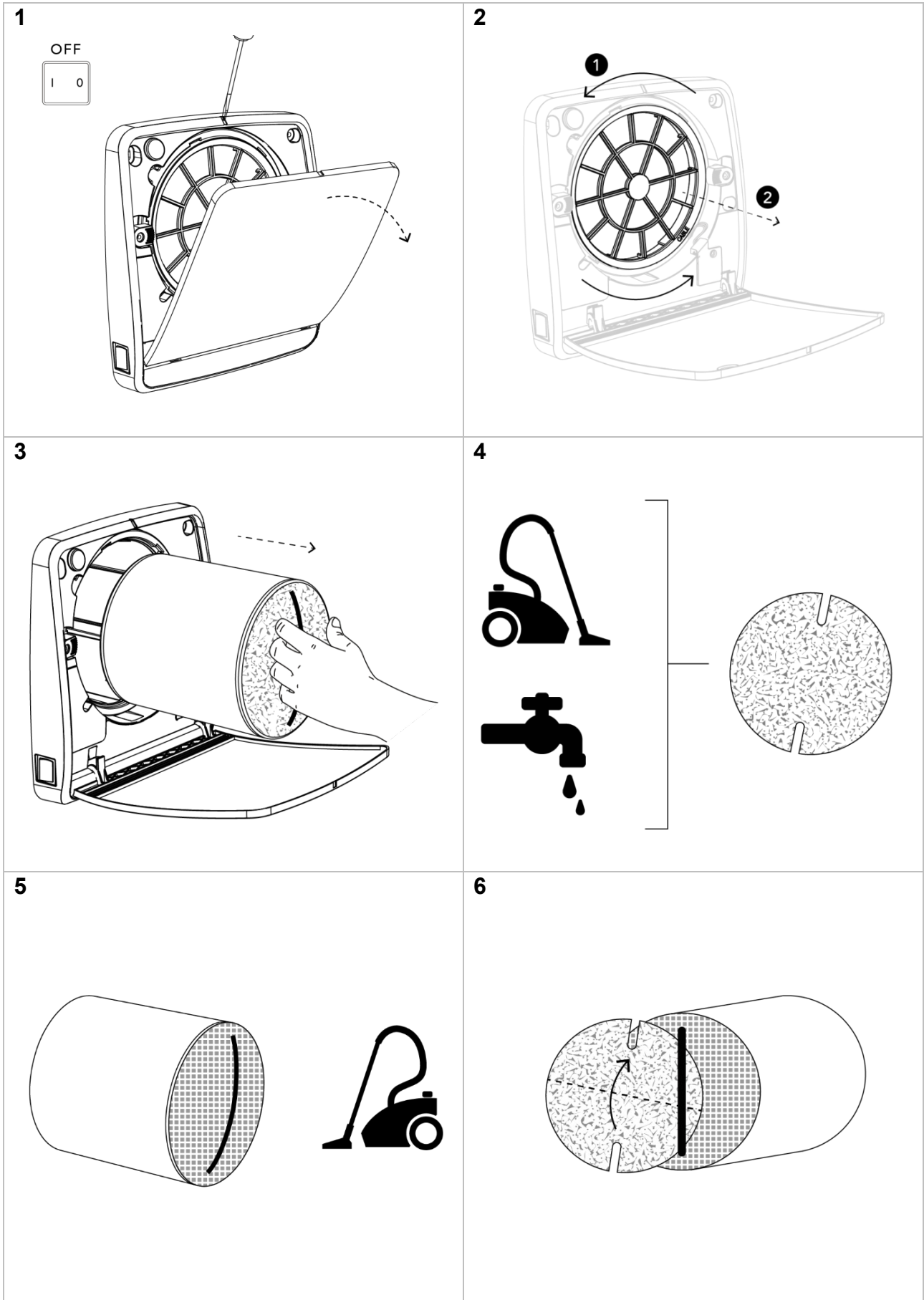
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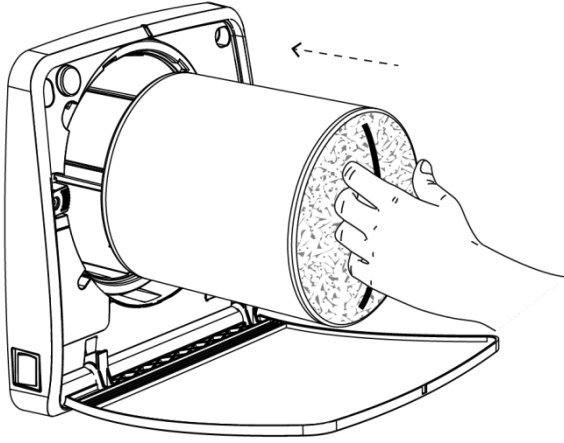
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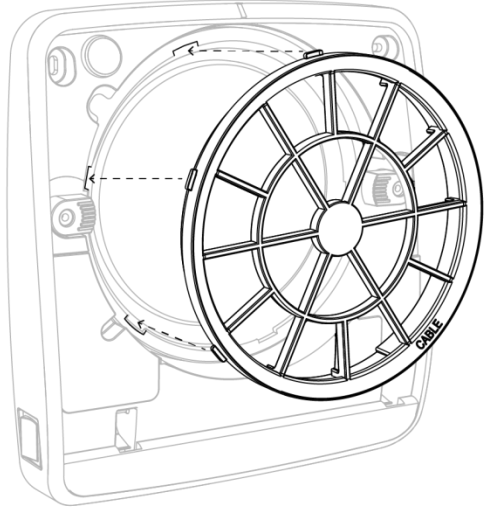
GHOST 160



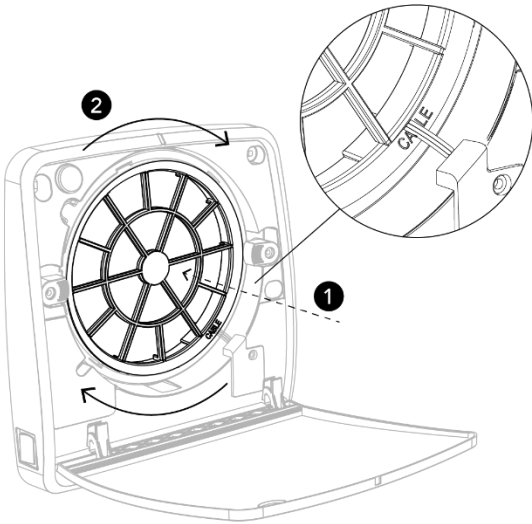
7



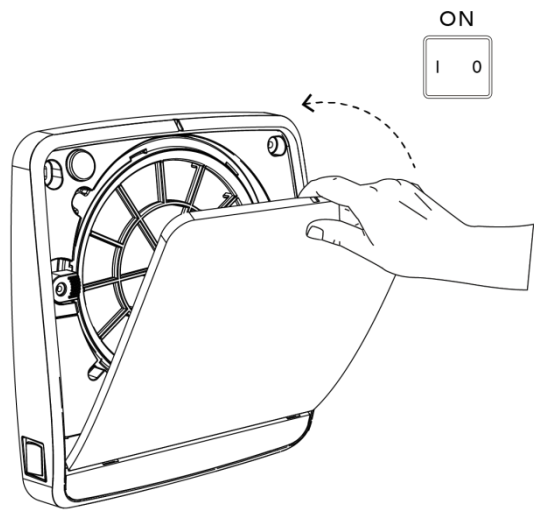
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9



10



FAQ

<p>The product doesn't start</p>	<p>Ensure that the product is properly connected to the mains. Ensure that the ON/OFF switch (I/O) is in ON (I) position.</p>
<p>The product properly starts but doesn't get any signal from the remote control</p>	<p>Ensure that the remote control is including the battery. Ensure that the battery in the remote control is charged. The commands re received only by the MASTER unit of the system, make sure to send the commands to the right unit. Ensure that the dip switches are properly set (MASTER).</p>
<p>The product properly starts, gets signals from the remote control but the impeller doesn't turn</p>	<p>Need to wait 40 seconds for the automatic shutter starts opening Ensure that the product is not in surveillance mode Ensure that the impeller is not obstructed</p>
<p>The product doesn't get any signal from the remote control and the red led flashes</p>	<p>Perform maintenance and filter reset as indicated in the manual. Ensure that the remote control is including the battery. Ensure that the battery in the remote control is charged.</p>
<p>The product runs only in extraction and the red led is ON</p>	<p>Raise the threshold of the hygostat with H button.</p>
<p>The red LED blinking on the SLAVE unit</p>	<p>No communication between MASTER and SLAVE units Ensure the proper connection among the units Ensure that the dip switches are properly set</p>

WARNING: If the problem detected is different from those listed above or whether the problem is not solved after following the indications, need to contact an authorized service center.



EP S.p.A.

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