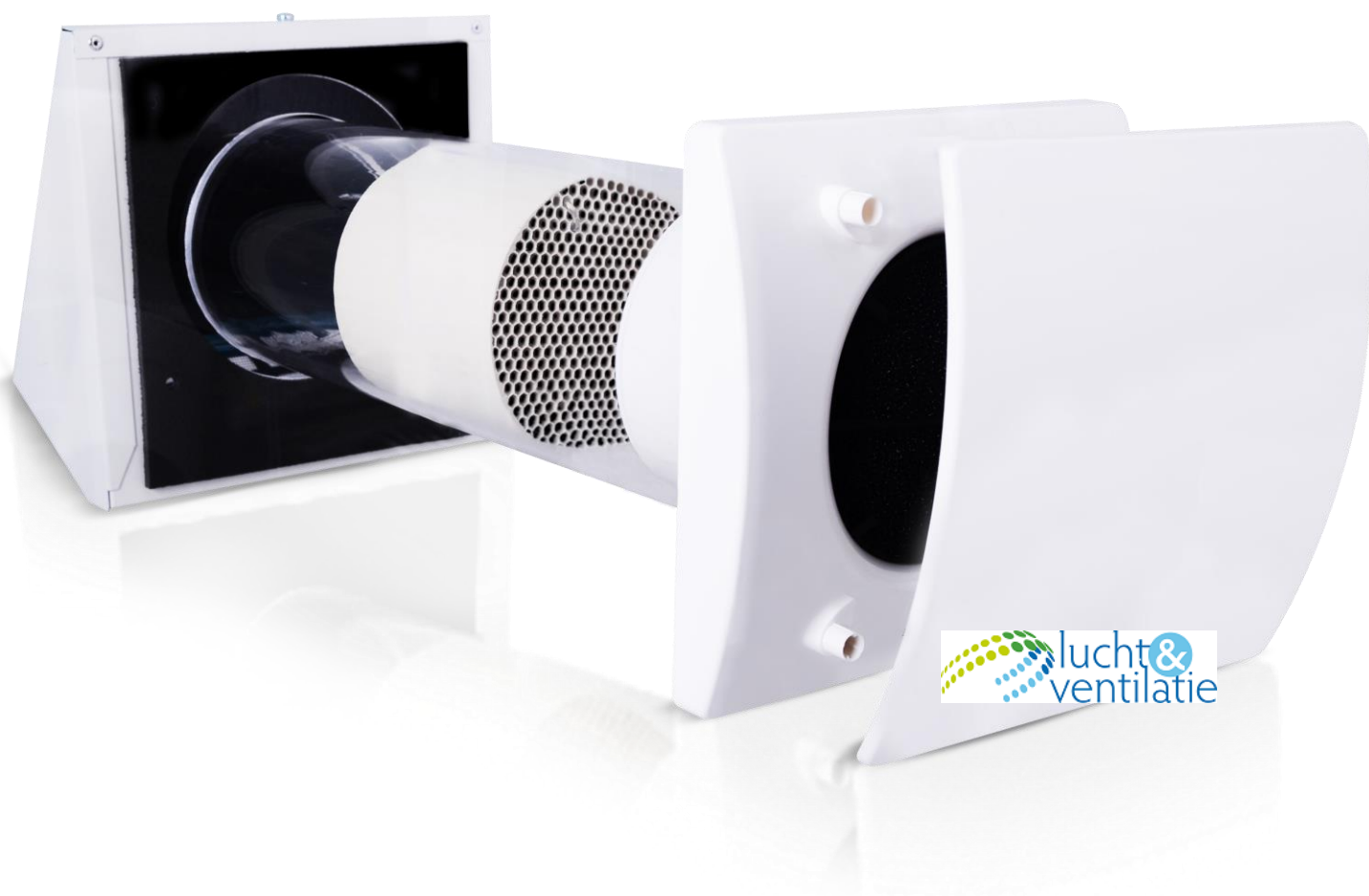


INSTRUKCJA OBSŁUGI

Rekuperatory decentralne WTW-WAND

USER MANUAL

Decentralized heat recovery units WTW-WAND



User Manual

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WTW-WAND

1. General information

1.1 Description of the unit

WTW-WAND is a single alternate flow decentralized (single point) residential heat recovery unit, also called «push&pull» unit, designed to ensure adequate ventilation in enclosed environments without energy losses. It is recommended that two units are installed in pair: when one unit is pulling, the other is pushing. Pair of units can be installed in the same room or in different rooms (i.e. livingroom and bedroom). The unit is suitable for installation on an outside wand.



The unit should operate continuously, and only stopped for maintenance or service. When heat exchange is not useful (for example in mid-seasons when indoor and outdoor temperatures are similar), or when heat exchange is not recommended (for example with the option "summer free cooling"), it is recommended to set the unit in "extract-only" or "intake-only" mode and NOT to switch it off.

1.2 How to use this manual

Read this manual carefully before using the product and keep it in a safe place for reference.

1.3 Admonitions



WARNING identifies a hazard that could lead to personal injury, including death



NOTE is used to highlight additional information.

2. Safety

2.1 General safety instructions

This product was constructed up to standard and in compliance with regulations relating to electrical equipment and must be installed by technically qualified personnel. The manufacturer assumes no responsibility for damage to persons or property resulting from failure to observe the regulations contained in this manual.

2.2 Precautions for installation, use and maintenance

- The device should not be used for applications other than those specified in this manual.
 - After removing the product from its packaging, verify its condition. In case of doubt, contact a qualified technician. Do not leave packaging within the reach of small children or people with disabilities.
 - Do not touch the appliance with wet or damp hands/feet.
 - 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.
 - Do not use the product in the presence of inflammable vapours, such as alcohol, insecticides, gasoline, etc.
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- If any abnormalities in operation are detected, disconnect the device from the mains supply and contact a qualified technician immediately. Use original spare parts only for repairs.
- The electrical system to which the device is connected must comply with regulations.
- Before connecting the product to the power supply or the power outlet, ensure that: the data plate (voltage and frequency) correspond to those of the electrical mains and the electrical power supply/socket is adequate for maximum device power. If not, contact a qualified technician.
- The device should not be used as an activator for water heaters, stoves, etc., nor should it discharge into hot air/fume vent ducts deriving from any type of combustion unit. It must expel air outside via its own special duct.
- Operating temperature: -20°C up to +50°C.
- The device is designed to extract clean air only, i.e. without grease, soot, chemical or corrosive agents, or flammable or explosive mixtures.
- Do not leave the device exposed to atmospheric agents (rain, sun, snow, etc.).
- Do not immerse the device or its parts in water or other liquids.
- Turn off the main switch whenever a malfunction is detected or when cleaning.
- For installation an omnipolar switch should be incorporated in the fixed wiring, in accordance with the wiring regulations, to provide a full disconnection under overvoltage category III conditions (contact opening distance equal to or greater than 3mm).
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- Do not obstruct the fan or exhaust grille to ensure optimum air passage.
- Ensure adequate air return/discharge into/from the room in compliance with existing regulations in order to ensure proper device operation.
- If the environment in which the product is installed also houses a fuel-operating device (water heater, methane stove etc., that is not a "sealed chamber" type), it is essential to ensure adequate air intake, to ensure good combustion and proper equipment operation.

2.2 Directives / Norms

- 2014/35/EU Low Voltage Directive (LVD) and 2014/30/EU Electromagnetic Compatibility (EMC), in conformity with the following standards:
- Electrical Safety: EN60335-1(2012)+A11+A13; EN 60335-2-80(2003) +A1+A2.
- Electromagnetic Compatibility: EN 55014-1(2017); EN 55014-2 (2015); EN 61000-3-2(2014); EN 61000-3-3(2013).

3. Technical data

3.1 Features

- Tube material: high quality, impact and UV-resistant ABS colour RAL 9010.
 - Design front cover removable for cleaning without the use of tools.
 - Easy maintenance installation plate, for easy access to the heat exchanger from inside the room.
 - Anti-dust filter, easily removable for washing by the user without tools.
 - Regenerative honeycombs ceramic heat exchanger.
 - External grille in high quality, external hood in aluminium, painted in white RAL 9010, acoustically lined.
 - High efficiency aerodynamic fan with "winglet" blades to optimise quietness and efficiency.
 - Single phase EC reversible brushless motor with integral thermal protection.
 - Motor mounted on high quality ball bearings.
 - The unit is double insulated: no earth connection is required.
 - Trickle speed selectable.
 - Boost mode.
 - Free-cooling (Bypass single direction) mode.
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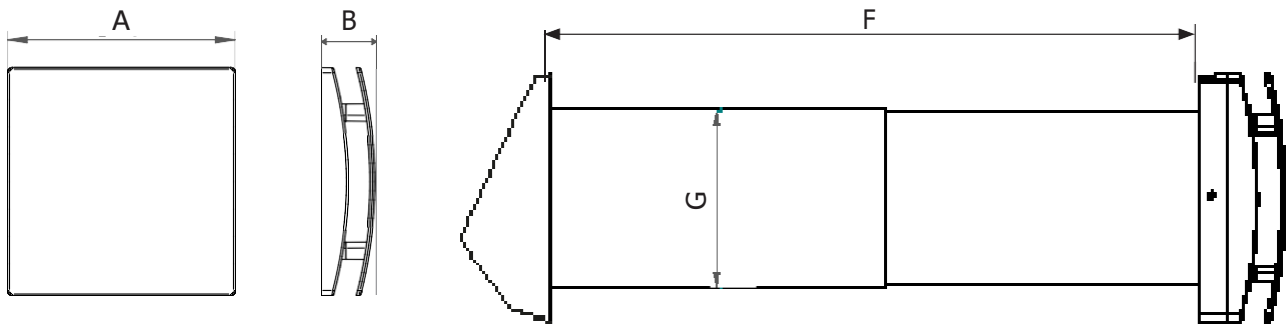
WTW-WAND

- IPX4 degree of protection.
- Power supply 220V to 240V~ 50Hz.

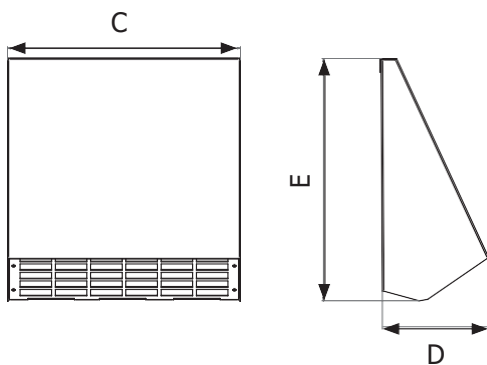
3.2 Technical specification

Model	Airflow [m ³ /h]	Power [W]	Weight [kg]
WTW-WAND-100-25	10/15/25	1.2/1.7/2.6	2.4
WTW-WAND-150-60	20/40/60	1.4/2.3/3.8	4.3

3.3 Dimensions (mm)



Front panel



External hood

	WTW-WAND-100-25	WTW-WAND-150-60
Dimension A	164	218
Dimension B	46	51
Dimension C	205	252
Dimension D	103	114
Dimension E	209	262
Dimension F	270÷510	300÷560
Dimension G	108	158

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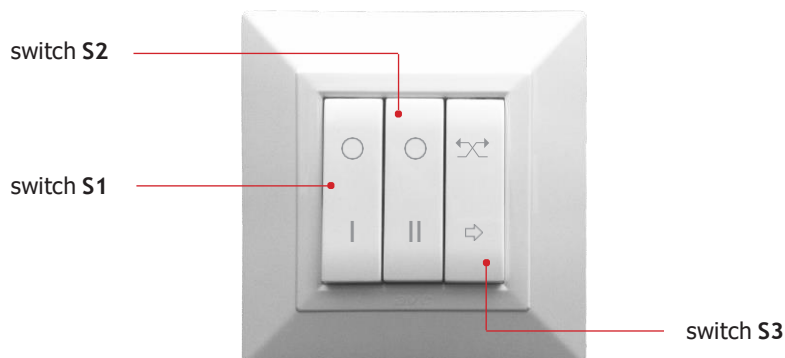
WTW-WAND

4. Operation



4.1 Description of the unit operation

The unit pulls air out for 70 seconds, then it pushes air in for the same time.

When heated air is pulled (extracted) from inside the room, it warms up the heat exchanger; when the cold air is pushed (supplied) in the room, it gets preheated, recovering most of thermal energy which would be otherwise lost in the ventilation process. The unit runs at the speed selected by activating the two-position switches "S1", "S2" and "S3" of the WTW-WAND-CONTR-I. The same functionality can be achieved with WTW- WAND-CONTR or with 3 two-position switches.



S1	S2	Mode
O	O	OFF
I	O	Speed 1
O	II	Speed 2
I	II	Speed 3

S3	Mode
	Heat recovery (Alternate flow)
	Free cooling

S3 switch activates the "Free cooling" (Bypass) mode, which stops alternate flow and keeps the fan in "extract-only" or "intake-only" mode, to avoid the heat exchange when necessary. To set the extract-only" mode or "intake-only", place the integral jumpers as per Fig.20A or Fig.20B. The front cover LED indicates when the Free cooling mode is on.

An automatic "Boost" mode can be achieved through a dedicated switch or room sensors like SEN-HY, SEN-PIR or SEN-CO2, connecting such switch in parallel to the S2 switch.

Wiring diagram of one unit: Fig. 18A.

Wiring diagram with ambient sensors: Fig.18B and Fig.18C.

Wiring diagram of two or more units: Fig.18D.



WARNING!

Ensure that the electric wiring to L and N is done correctly; an incorrect connection will lead to malfunction or permanent damage of the fan.

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4.2 Optional accessories (sold separately)



WTW-WAND-CONTR
Surface-mounted controller



WTW-WAND-CONTR-I
Flush-mounted controller

5. Synchronisation

5.1 Synchronisation of few units

When the units are installed in pair, they must be synchronised so that when one unit is extracting, the other is supplying, and viceversa.

This is achieved by setting the dedicated jumper (Fig. 20A-20B). One unit is set in A position, other in B position. Units which are supposed to work in synchronisation mode can be connected to a single WTW-WAND- CONTR / WTW-WAND-CONTR-I controller. One can connect up to 10 units to a single controller.

5.2 Reset of the synchronisation

OPTION 1: If two or more units are connected under the same main switch, to reset the synchronisation, the main switch must be switched first OFF and then ON to reactivate (Fig. 34).

OPTION 2: If two or more units are not connected under the same main switch, to reset the synchronisation, press at the same time the black pin of each unit (Fig. 36) for at least 3 seconds.

6. Jumper positioning

Integral jumper set in position A (Fig. 20A) means "extract-only" mode.

Integral jumper set in position B (Fig. 20B) means "supply-only" mode.

The jumper position defines both the air-flow direction when the unit is activated for the first time (for the synchronisation) and the air-flow direction of the free-cooling mode.

7. Maintenance and service

Maintenance can be carried out by the user as indicated at page 22.

Service must be performed only by technically qualified personnel in accordance with local rules and regulations. Make sure that the mains supply to the unit is disconnected (page 23).

Cleaning of the heat exchanger can be performed from outside as well.

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8. Disposal and recycling



Information on disposal of units at the end of life. This product complies with EU Directive 2002/96/EC. The symbol of the crossed-out dustbin indicates that this product must be collected separately from other waste at the end of its life. The user must, therefore, dispose of the product in question at suitable electronic and electro-technical waste disposal collection centres, or else send the product back to the retailer when purchasing a new, equivalent type device.

Separate collection of decommissioned equipment for recycling, treatment and environmentally compatible disposal helps to prevent negative effects on the environment and on health and promotes the recycling of the materials that make up the equipment.

Improper disposal of the product by the user may result in administrative sanctions as provided by law.

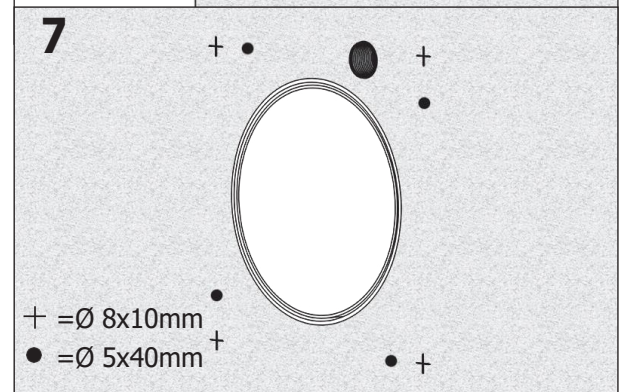
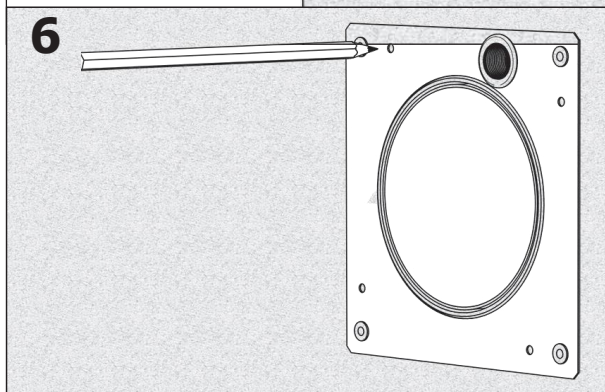
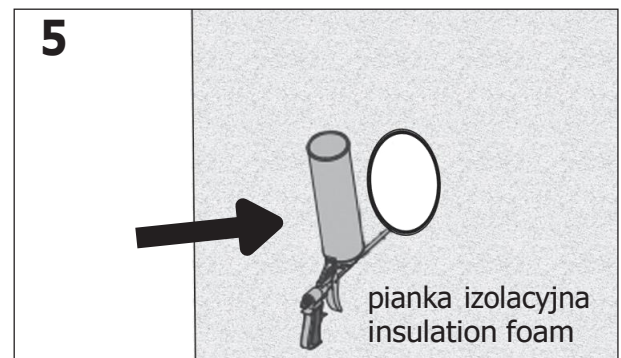
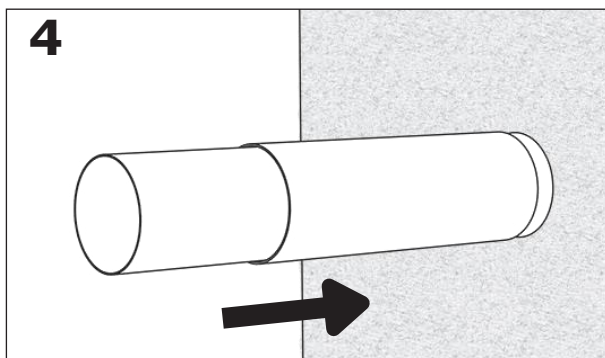
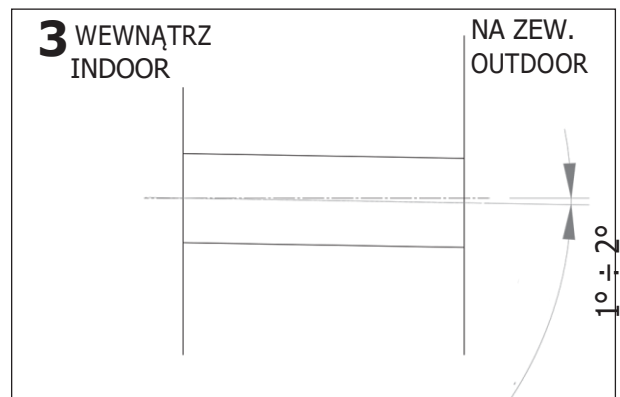
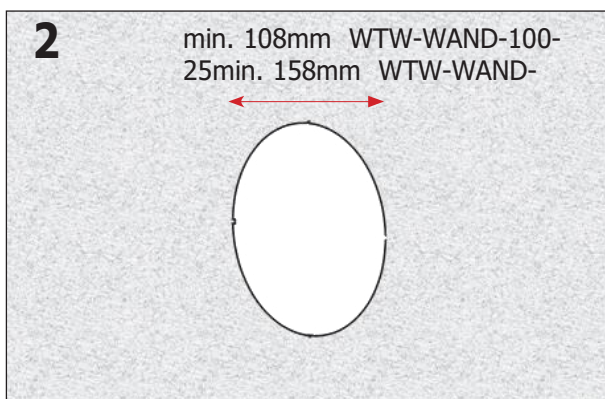
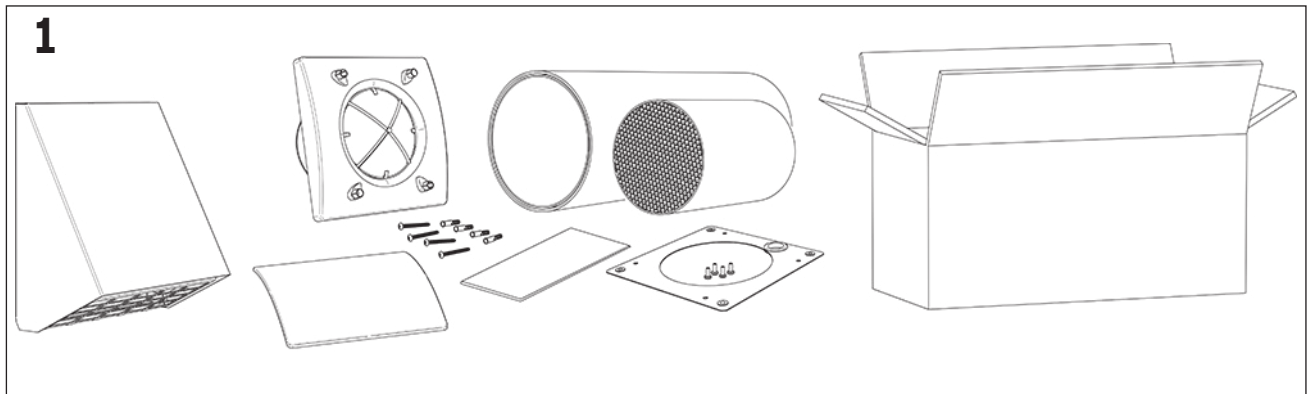


Instrukcja obsługi

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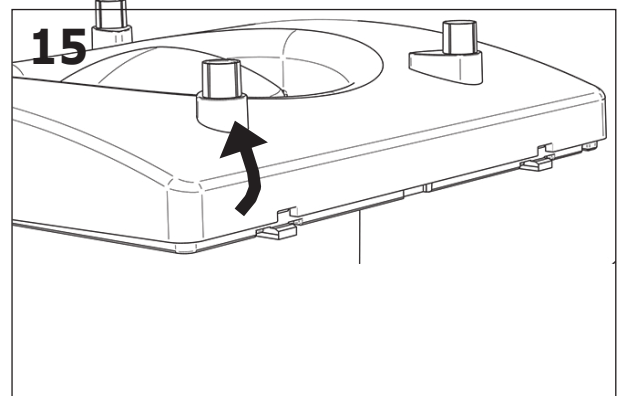
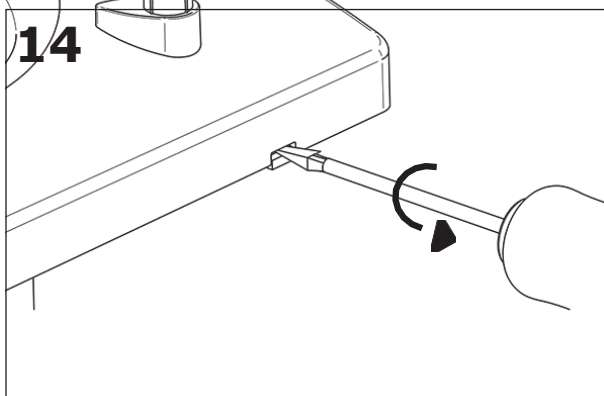
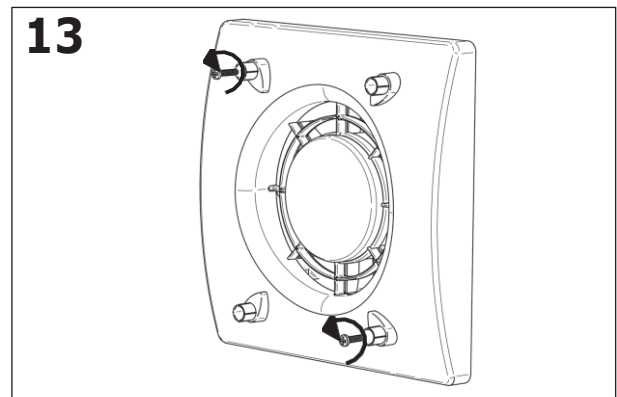
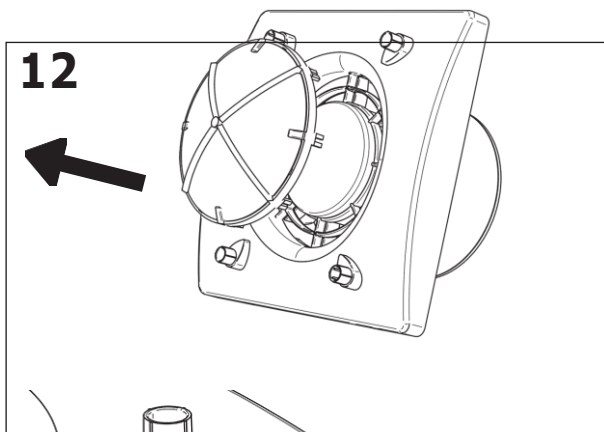
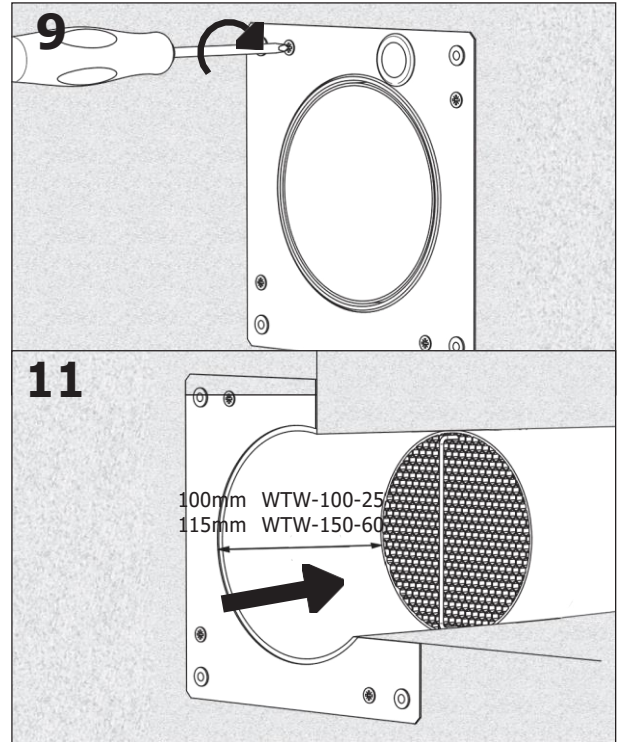
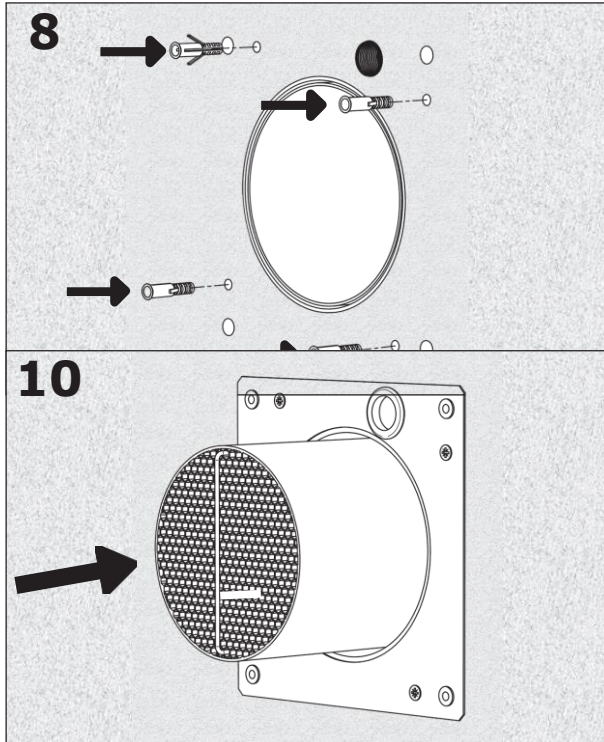
9. Montaż / Installation

Zawartość opakowania/ Package contents



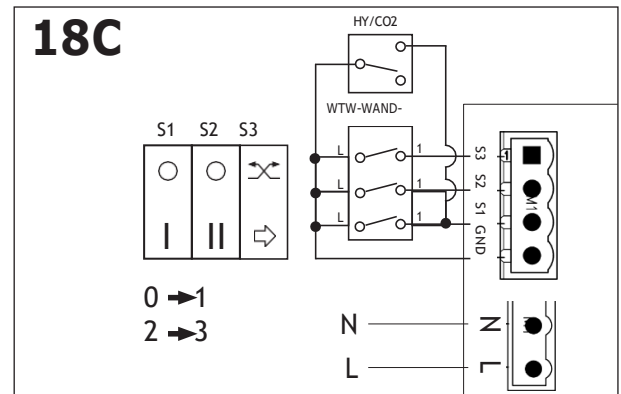
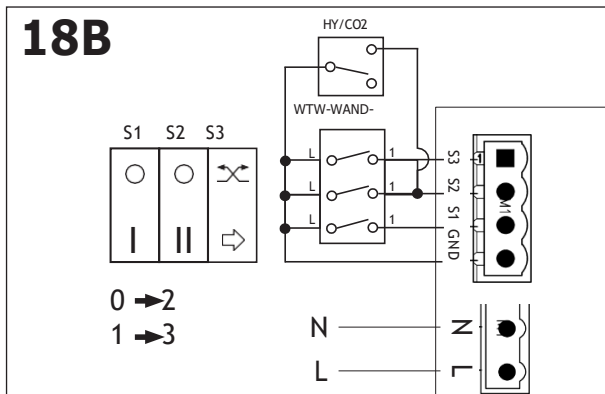
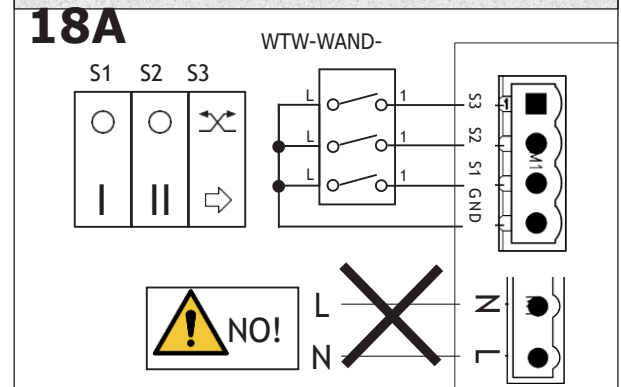
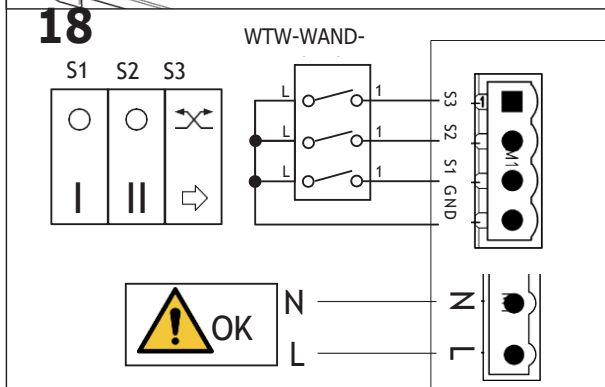
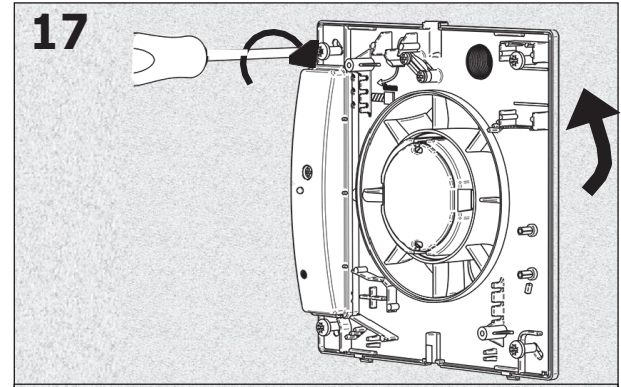
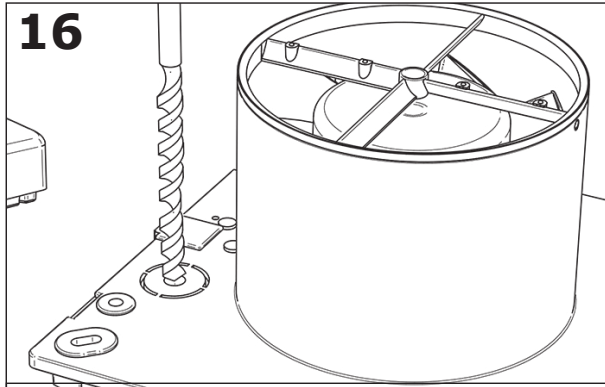
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WTW-WAND



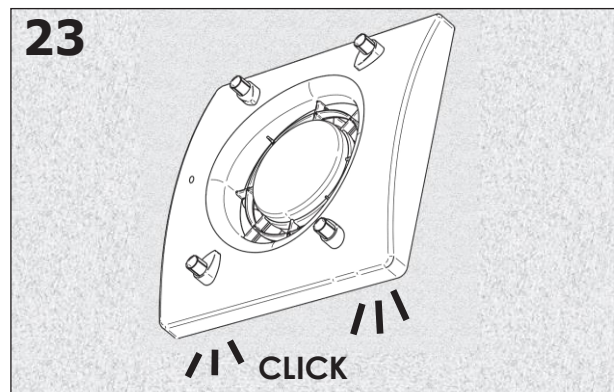
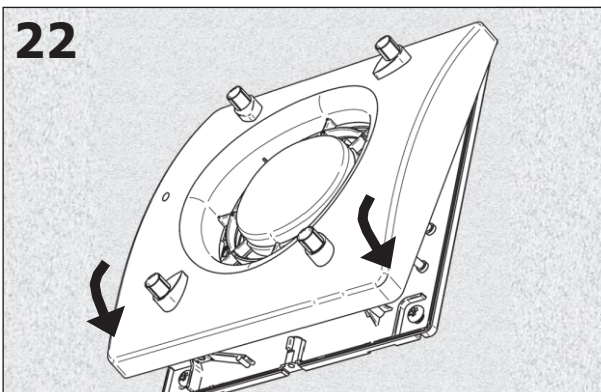
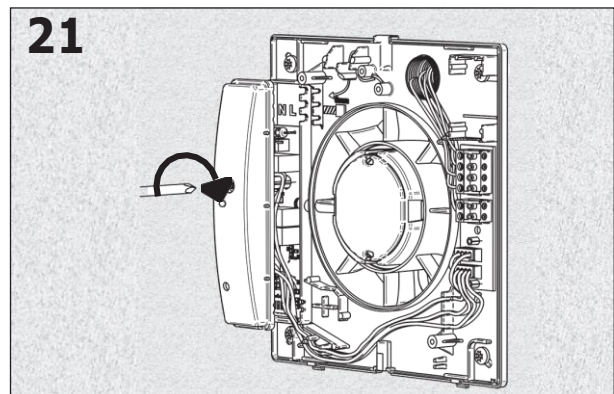
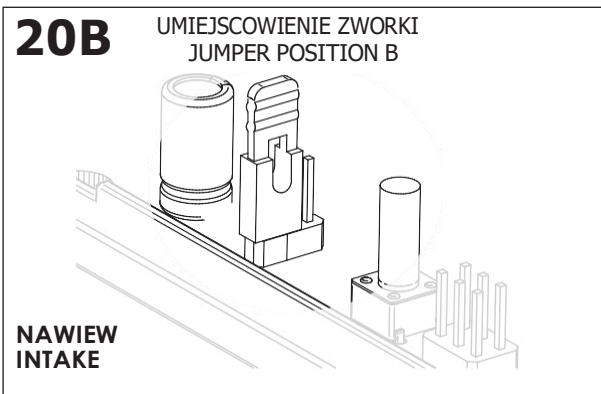
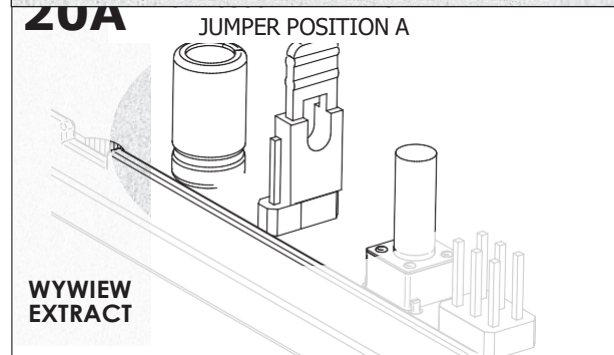
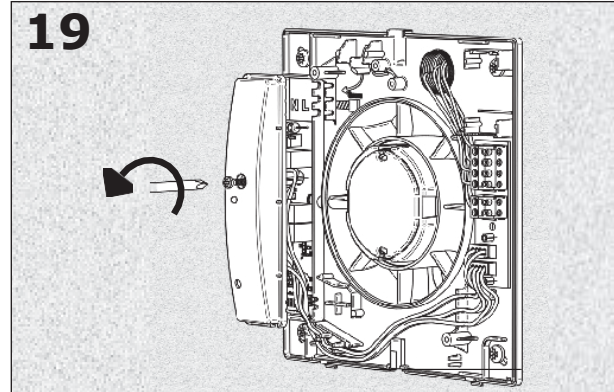
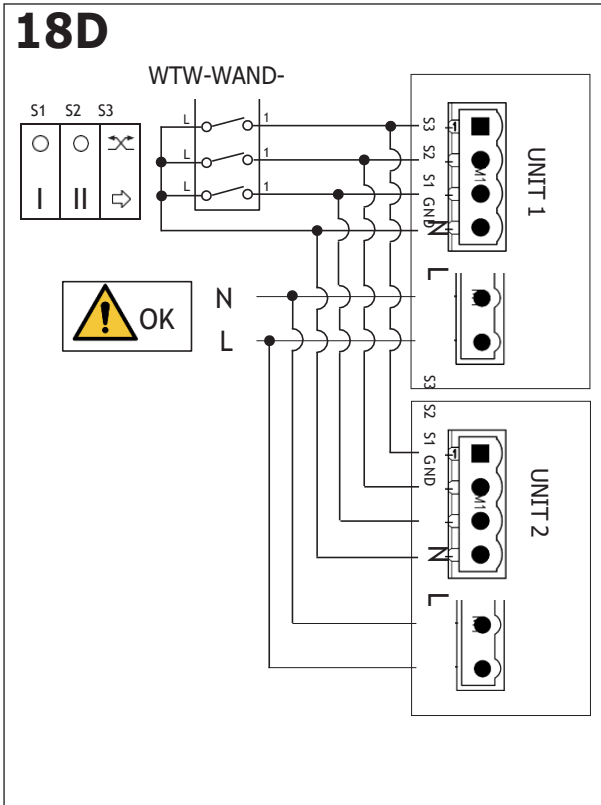
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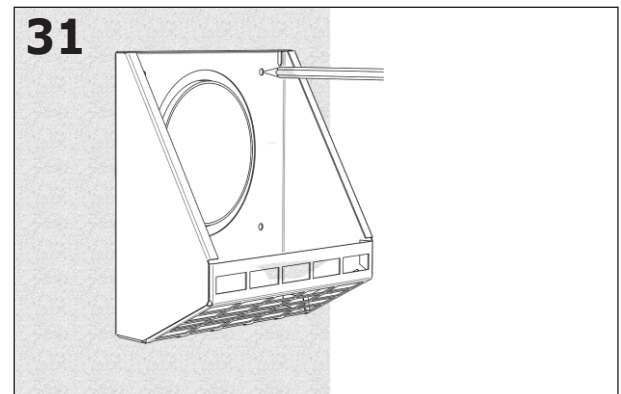
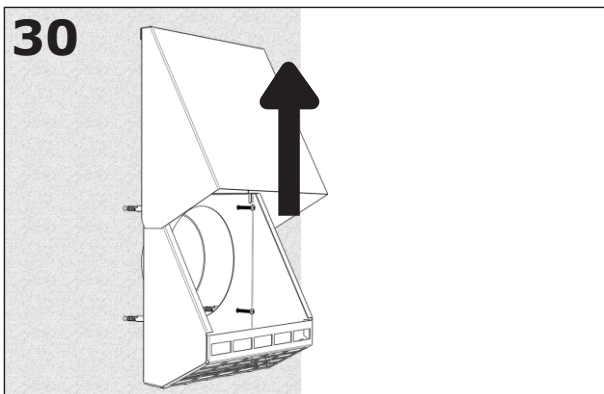
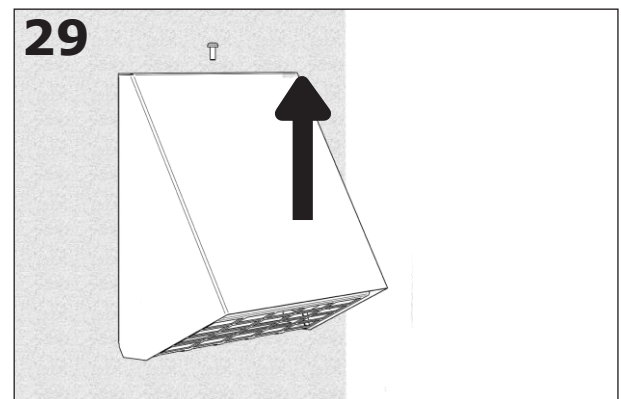
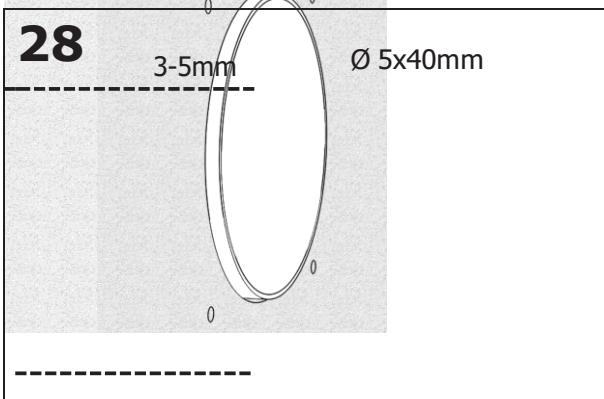
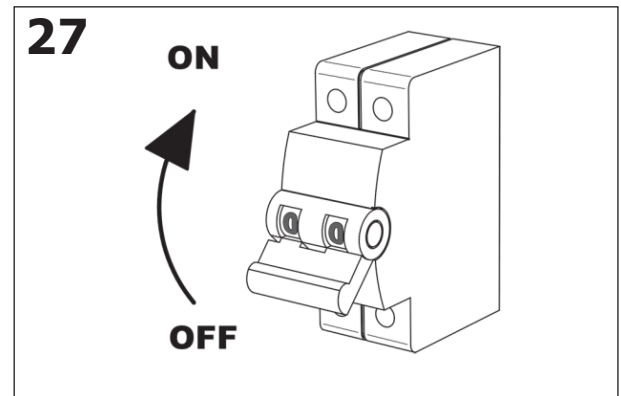
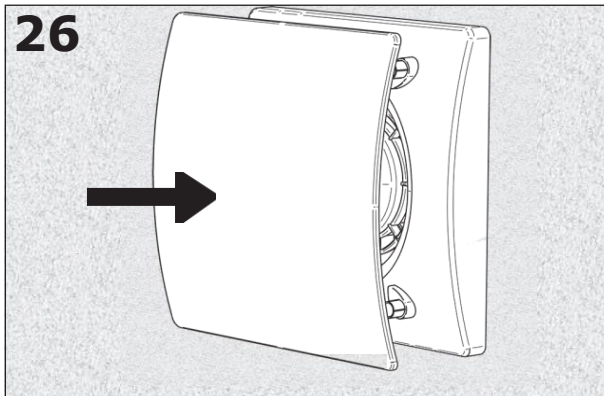
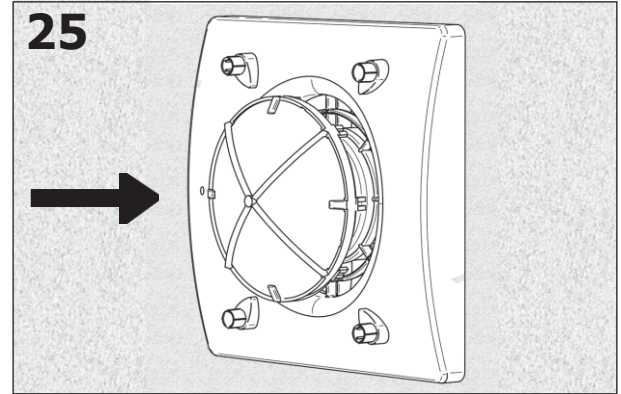
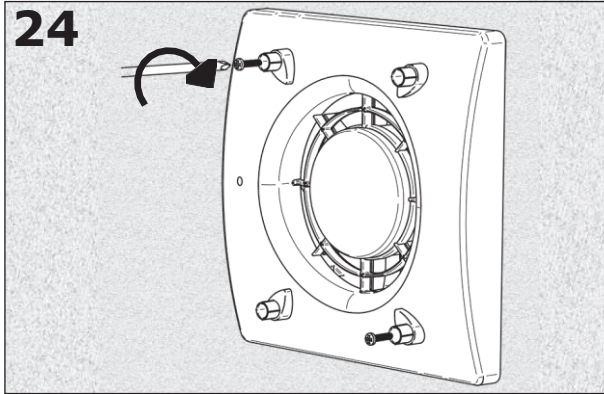
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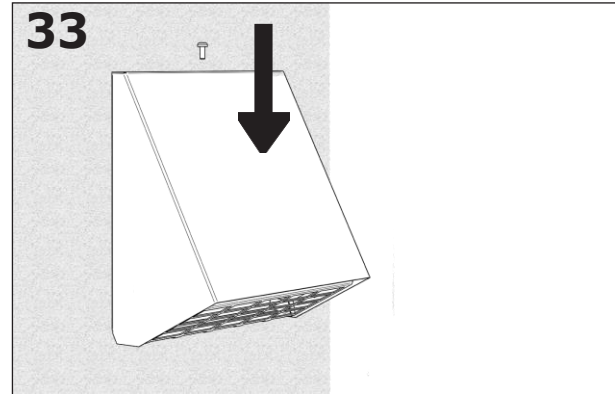
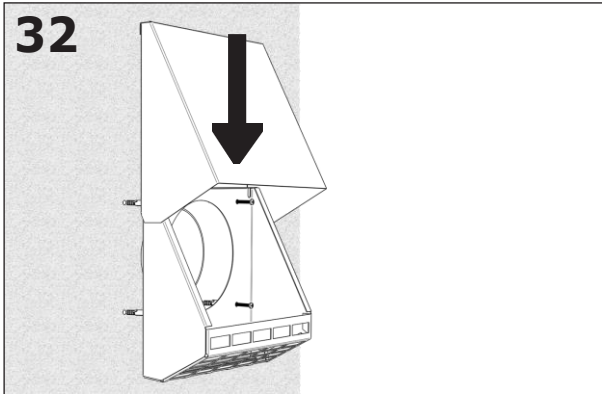
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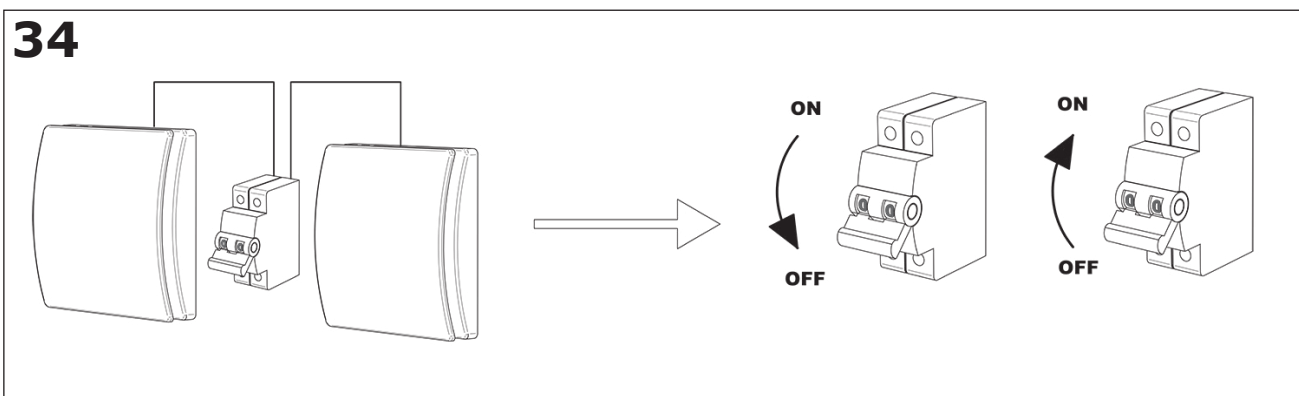
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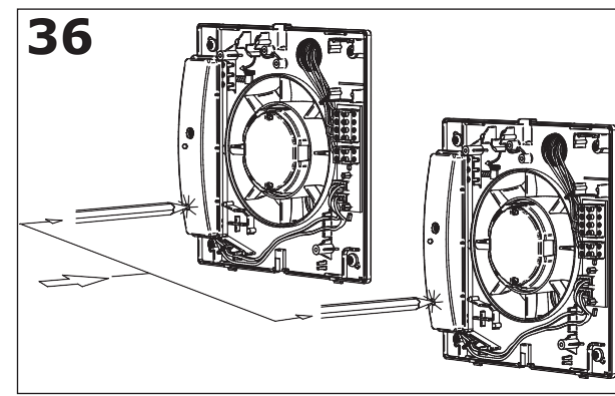
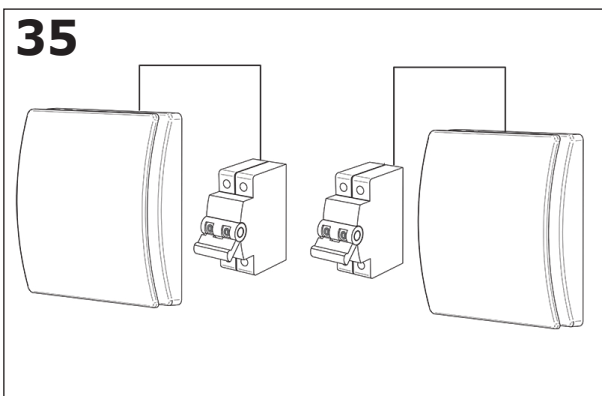


10. Ponowne ustawienie synchronizacji / Reset of the synchronization

OPCJA 1/ OPTION 1



OPCJA 2/ OPTION 2



Instrukcja obsługi

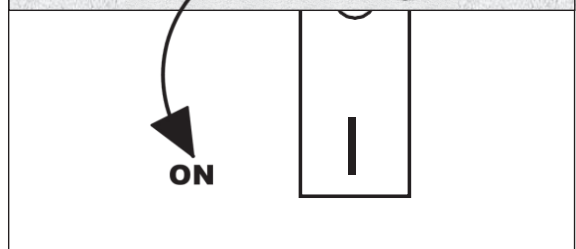
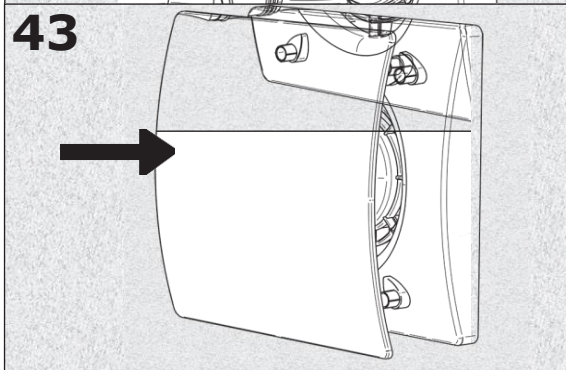
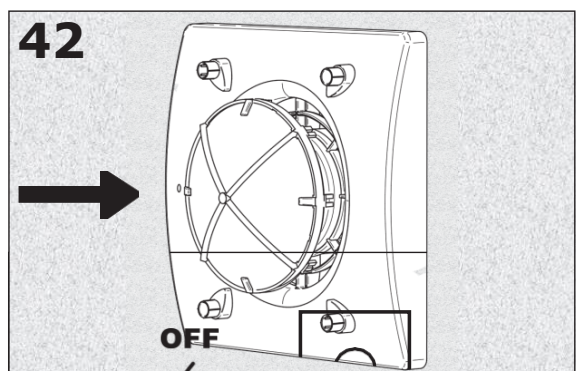
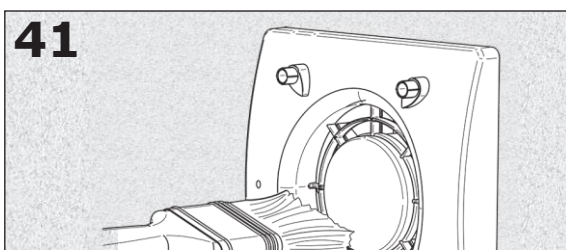
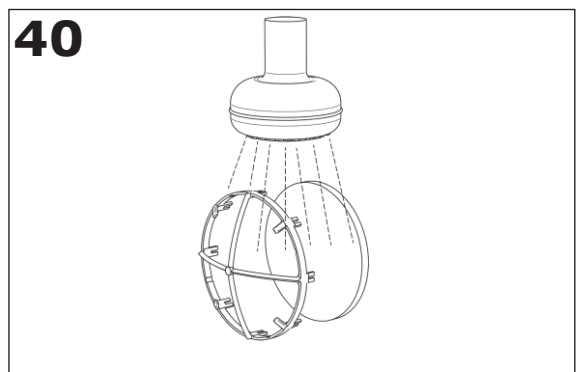
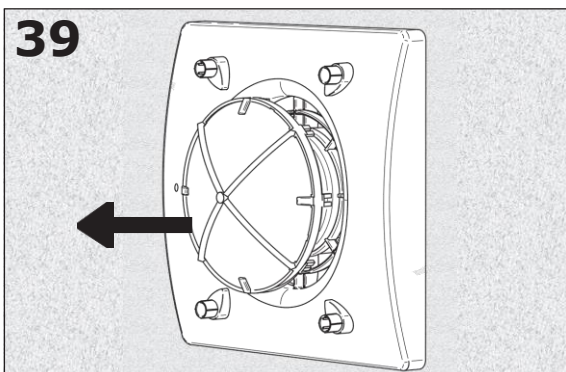
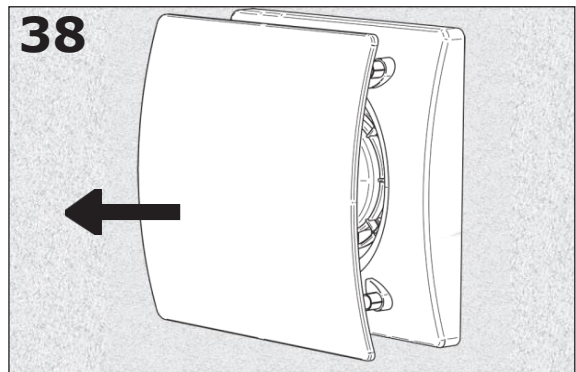
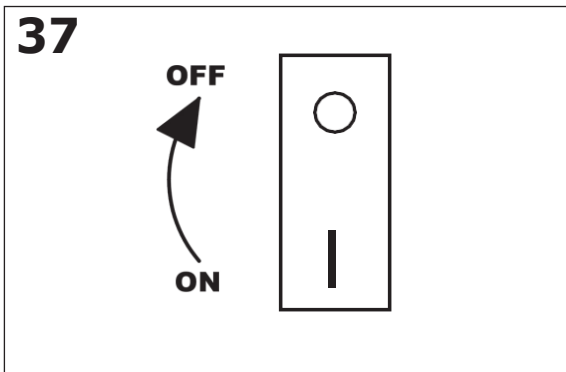
WTW-WAND

11. Czyszczenie filtra (konserwacja) / Filter cleaning (maintenance)



UWAGA! NOTE!

Czyszczenie filtra może być wykonane przez użytkownika.
Filter cleaning can be carried out by the user.



Instrukcja obsługi

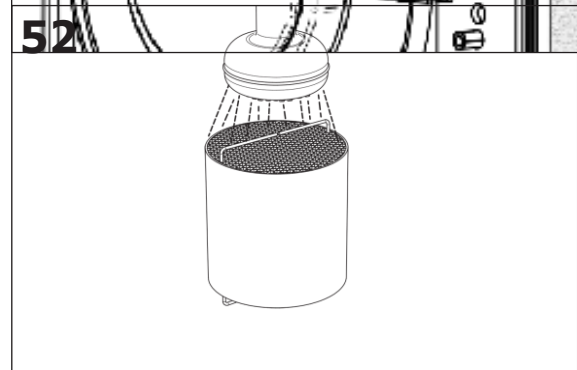
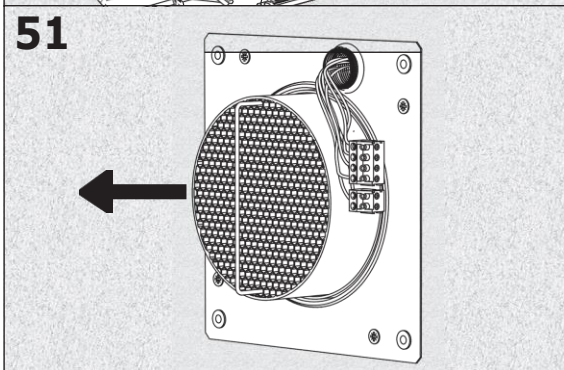
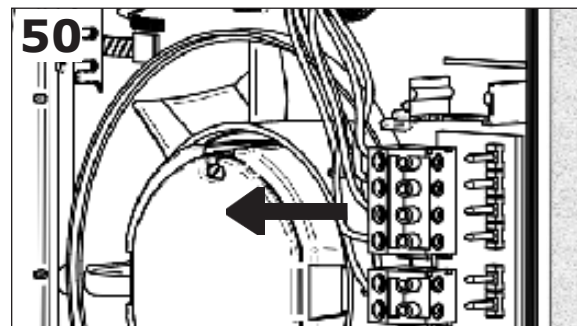
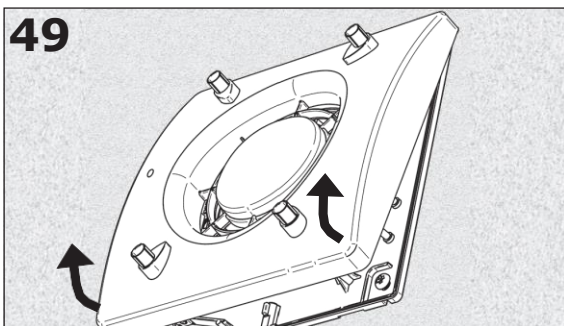
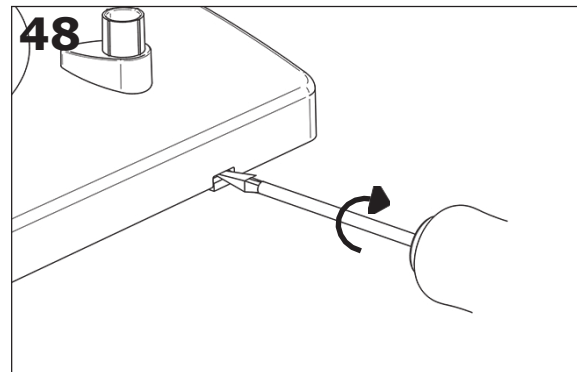
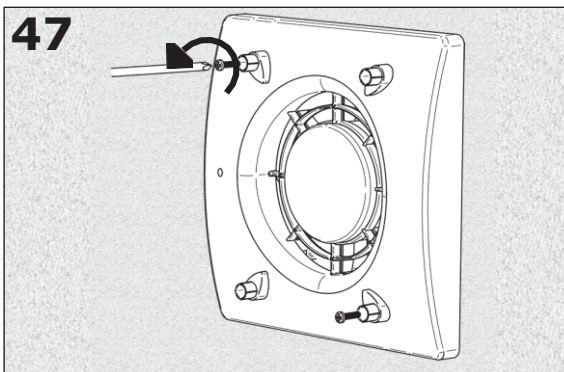
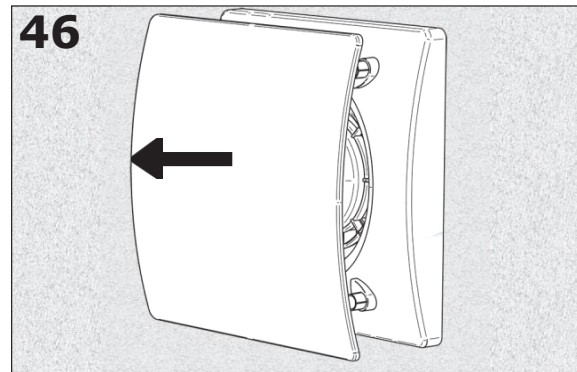
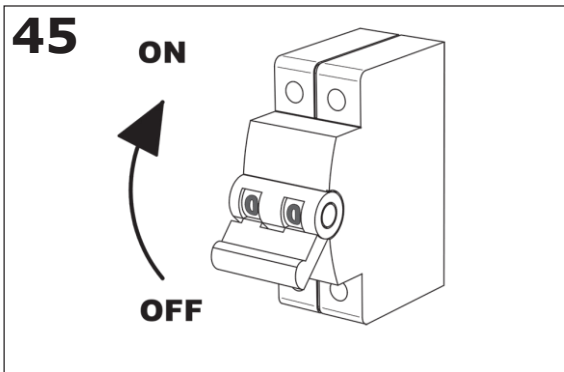
WTW-WAND

12. Czyszczenie wymiennika (serwis) / Heat exchanger cleaning (service)



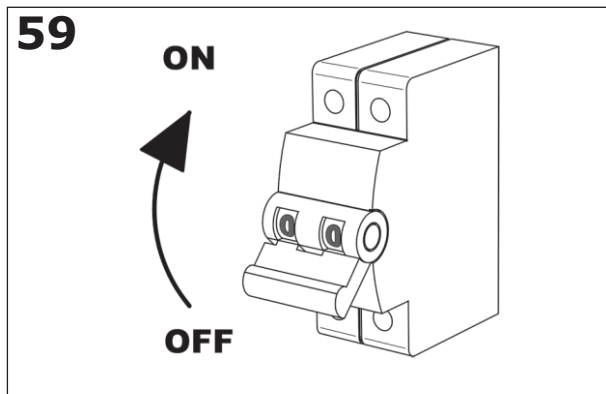
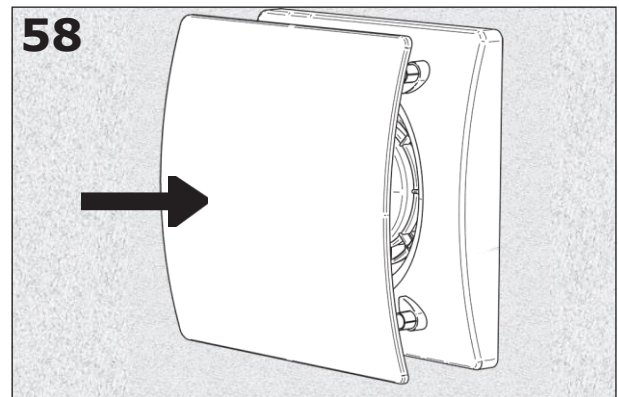
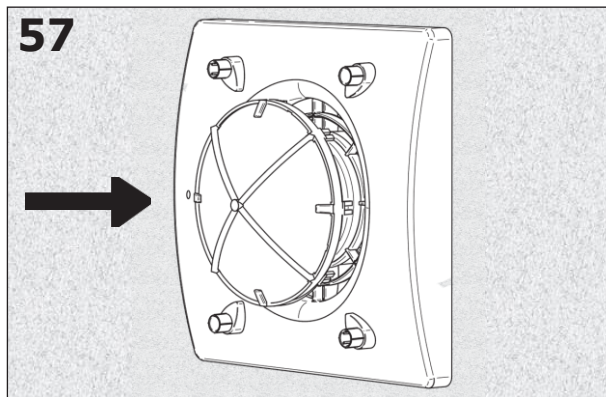
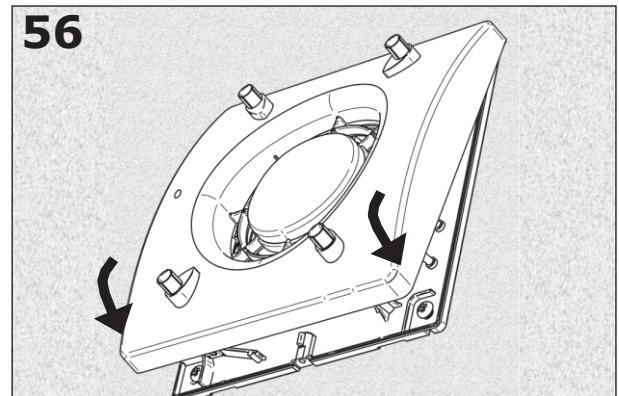
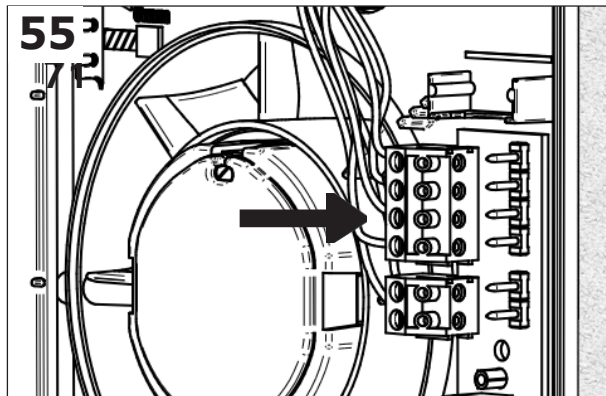
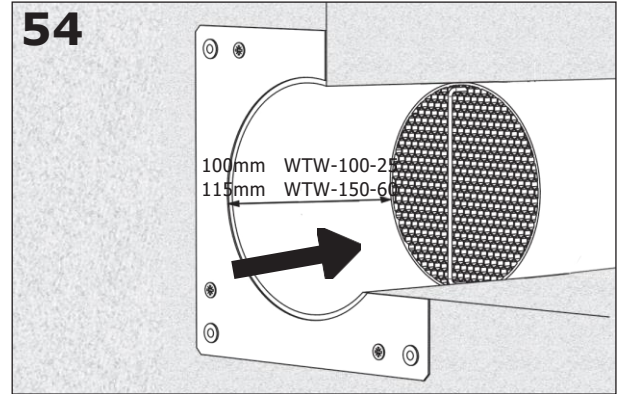
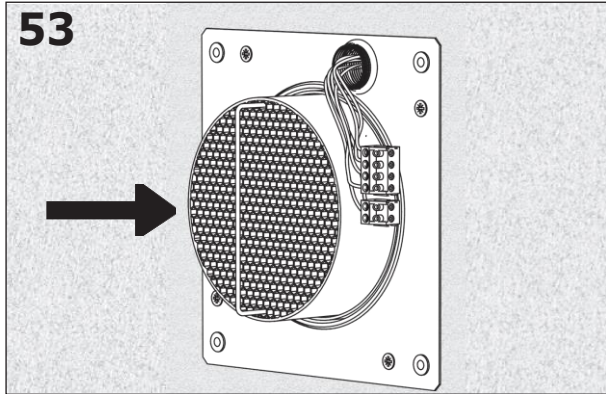
UWAGA! NOTE!

Czyszczenie wymiennika musi zostać wykonane przez uprawnionego instalatora.
Heat exchanger cleaning must be carried out only by technically qualified personnel.



Instructie obsługi

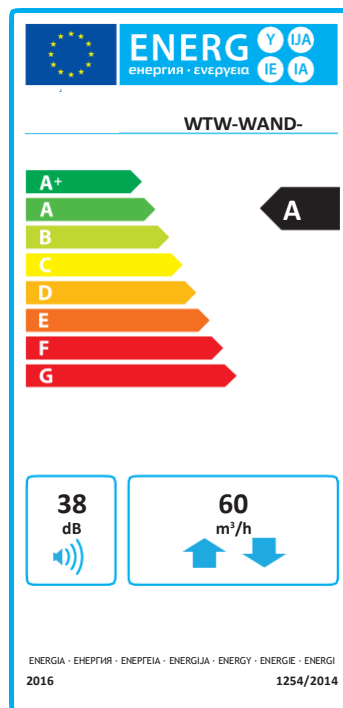
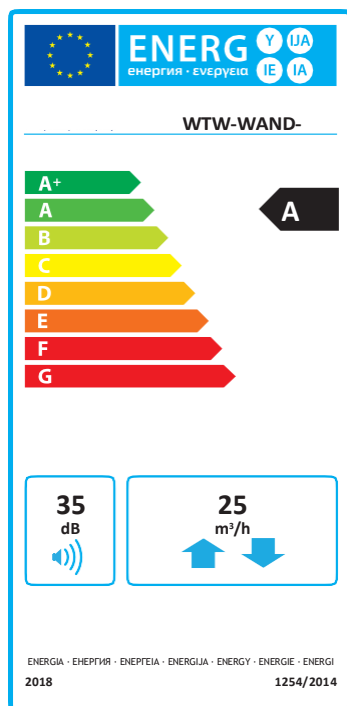
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Instrukcja obsługi

WTW-WAND

13. Etykieta energetyczna / Energy Label



Model	Poziom mocy akustyczne L_{wa} Sound power level L_{wa} [dB]	Wydajność Airflow [m ³ /h]	Klasa energetyczna Energy class
WTW-WAND-100-25	35	25	A
WTW-WAND-150-60	38	60	A

Instrukcja obsługi

WTW-WAND

14. Kartaproduktuzgodnastzw.DyrektywąERP,Rozporządzenia 1253/2014,1254/2014

Nazwa dostawcy lub znak towarowy						
Identyfikator modelu	WTW-WAND-100-25			WTW-WAND-150-60		
Jednostkowe zużycie energii (JZE) [kWh/(m ² /rok)] (ciepły, umiarkowany, chłodny)	-15,6	-37,5	-75,6	-16,2	-38,2	-76,4
Klasa energetyczna	A					
Typ jednostki	Mieszkalny - dwukierunkowy					
Rodzaj napędu	napęd wielobiegowy					
Rodzaj układu odzysku ciepła	odzysku ciepła					
Przy maksymalnej wydajności	82%					
przy 70% maksymalnego natężenia przepływu zgodnie z Rozporządzeniem 1253/2014 i 1254/2014	74%					
Maksymalna wartość natężenia przepływu	25 m ³ /h			60 m ³ /h		
Pobór mocy przy maksymalnym natężeniu przepływu	2,6 W			3,8 W		
Poziom mocy akustycznej (L _{WA})	35 dBA			38 dBA		
Wartość odniesienia natężenia przepływu	17 m ³ /h			41 m ³ /h		
Wartość odniesienia różnicy ciśnienia	10 Pa					
Jednostkowy pobór mocy	0,071 W/m ³ /h			0,054 W/m ³ /h		
Czynnik rodzaju sterowania	1			1		
Typ sterowania	Sterowanie ręczne (brak sterowania według zapotrzebowania)					
Współczynnik maksymalnych wewnętrznych przecieków powietrza	N/A					
Współczynnik maksymalnych zewnętrznych przecieków powietrza	1					
Współczynnik mieszania wewnętrznego	N/A					
Współczynnik mieszania zewnętrznego -	N/A					
Ostrzeżenia o konieczności wymiany filtra	N/A					
Instrukcja instalowania kratki	N/A					
Adres strony internetowej zawierającej instrukcje montażu wstępnego/demontażu						
Podatność przepływu powietrza na zmiany ciśnienia	N/A					
Szczelność między wnętrzem i obszarem na zewnątrz budynku	21 m ³ /h			60 m ³ /h		
Roczne zużycie energii elektrycznej [kWh/rok] (ciepły, umiarkowany, chłodny)	1	1	1	0,7	0,7	0,7
Roczne oszczędności w ogrzewaniu (ROO) [kWh/rok] (ciepły, umiarkowany, chłodny)	18	39,9	78	18,1	40	78,2

Instrukcja obsługi

WTW-WAND

Mark 14.Productfiche according to ERPDirective, Regulations 1253/2014, 1254/2014						
Model	WTW-WAND-100-25			WTW-WAND-150-60		
Specific energy consumption (SEC) [kWh/(m ² /rok)] (warm, average, cold climates)	-15,6	-37,5	-75,6	-16,2	-38,2	-76,4
Energy class	A					
Unit typology	Residential - bidirectional					
Type of drive	multi-speed drive					
Type of Heat Recovery System	heat recovery					
Maximum thermal efficiency	82%					
at 70% at least of the maximum flow rate to the Regulation 1253/2014 and 1254/2014	74%					
Maximum flow rate	25 m ³ /h			60 m ³ /h		
Electric power input at maximum flow rate	2,6 W			3,8 W		
Sound power level (L _{WA})	35 dBA			38 dBA		
Reference flow rate	17 m ³ /h			41 m ³ /h		
Reference pressure difference	10 Pa					
Specific power input (SPI)	0,071 W/m ³ /h			0,054 W/m ³ /h		
Control factor	1			1		
Control typology	Manual control (no DCV)					
Maximum internal leakage rate	N/A					
Maximum external leakage rate	1					
Internal mixing rate	N/A					
External mixing rate	N/A					
Visual filter warning	N/A					
Instructions to install regulated grilles	N/A					
Internet address for pre/disassembly instructions	.					
Airflow sensitivity to pressure variations	N/A					
Indoor/outdoor air tightness	21 m ³ /h			60 m ³ /h		
Annual electricity consumption (AEC) [kWh/year] (warm, average, cold climates)	1	1	1	0.7	0.7	0.7
Annual heating saved (AHS) [kWh/year] ((warm, average, cold climates)	18	39.9	78	18.1	40	78.2

