



**OPERATING AND INSTALLATION MANUAL**  
**RECOVERY AND HEATING UNIT**  
**XROOM**

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## 1. General information

### 1.1. Introduction

- This document “Operating and Installation Manual” is intended for decentralised Xroom recovery units (hereinafter referred to as the “Unit”) with a possible combination of water or electrical heating – 2in1. At the same time, it is superior to the brief manual placed directly on the unit, the so-called “Quick Manual”.
-  **Installation and connection of the unit may only be performed by a trained person with the appropriate authorisation for the connection of electrical equipment who has the appropriate tools and resources at his disposal. All the instructions and recommendations provided in this manual must be observed during installation.**
- Detailed familiarisation with this document is important for the unit's correct and safe installation and functioning. Failure to comply with the conditions set out in this document may lead to the unit's malfunction.
- Please, retain this unit installation manual for future reference after reading it thoroughly.
- It is forbidden to interfere in any way with the unit's internal connection other than as specified in this manual. Due to the continuous development of our products, we reserve the right to change this manual without prior notice.
- Children and persons with reduced physical, sensory, or mental capabilities, or lack of experience and knowledge, may use the unit only under supervision or if they were instructed on the unit's use in a safe way and understand potential risks.
- Children must not play with this device

### 1.2. Warnings and Symbols

- The following names and symbols shall be used in the operating manual, on the packaging, and on the product for particularly important information:



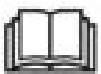
**Warning**, pay attention to all the risk alerts and warnings, as well as preventive measure instructions.



**Danger**, observe all the warnings; there is a risk of electric shock or a situation, which can result in death or serious injury, if not prevented.



Reference to other manual sections



Read the operating manual.



Protective conductor connection



**Notification** of the correct position when handling and storing the packaging.



**Notification** of the need for protection against moisture. The product – packaging marked with this symbol must not be transported on open vehicles and stored in roofless buildings and on the ground without a pad.



**Notification** of the content – product's fragility and the need for careful handling of the packaged product.



**Notification** of the need for protection against moisture and of the fragility of the product inside the packaging.



**Caution** – never cover the unit. This symbol on the unit indicates that any material covering the unit can cause a fire.



**Caution very hot surface.**

**Attention** – some parts of this device can become very hot and cause burns. Special attention should be paid where there are children and vulnerable people.

### 1.3. Use of the Xroom unit

#### 1.3.1. Unit Designation

- The Xroom is an air-conditioning unit using ventilation technology with recovery of heat (countercurrent recovery exchanger) and humidity (enthalpy exchanger) with the possibility of independent space heating at the unit's installation site (depending on the selected unit type). By default, the unit is equipped with a CO<sub>2</sub> air quality sensor (alternatively also with an RH humidity sensor), which allows it to ventilate only when needed. The user shall set only the unit's output (flow rate, temperature – based on the selected type) according to the place of use (how many people will be in the room) and the unit will ventilate and heat as per the actual needs.
- The unit can be connected and controlled remotely (if it is equipped with the unit) by the BMS system using the modbus RTU communication protocol. Described in a separate chapter 4.2.3.3.
- The unit can be used in spaces with the maximum nominal flow requirement:
  - o 100 m<sup>3</sup>/h – Xroom 100 – regular residential premises, smaller offices, hotel rooms, etc.
  - o 250 m<sup>3</sup>/h – Xroom 250 – larger office facilities, school classrooms, hospital rooms, etc.
- The unit is designed for horizontal installation on the perimeter wall, which provides simple access to the outside environment (fresh air).
- You can install the unit in the wall with the minimum thickness of 180 mm.
- The unit is intended for continuous operation with the possibility of using the manual operation mode (ventilates continuously) or the automatic operation mode (ventilates as needed – required by the air quality sensors – AQS).
- The unit can be used not only for controlled ventilation, but also for space with heating requirements (ventilation and heating are independent of each other). In case of type configuration with:
  - o Electric heating, the unit is equipped with advanced regulation with temperature sensor for the given area (installation site). Using an integrated temperature sensor, the user can choose the appropriate temperature degree that meets his requirements,
  - o Water heating, the unit is equipped with a water exchanger, which is connected to the standard heating system using an external G 3/4" thread and is controlled using an independent fitting – thermostatic valve and head (not included in the supply). The unit control is equipped with a temperature sensor that detects hot water in the exchanger and starts the heating function. The function of the water heater depends on the function of the boiler – heating system.
- The unit also allows for the antifreeze temperature function (tempering the heated space to prevent freezing). In the electric version, settings are on the controller, and in the water version, they are on the thermal head (snowflake symbol).
- The unit is intended for indoor covered and dry areas with a room temperature of +5 °C to +30 °C and the maximum relative humidity of 70%, non-condensing.
- The maximum working altitude of the unit is 2000 m above sea level.
- **The temperature of supplied fresh air from the outside may be between -20 °C and +40 °C (applies to the version with preheating). If the temperature of the supplied air is lower than -20 °C, the unit may be switched off automatically in order to protect it from possible damage.**



### 1.3.2. Prohibited environment, use, installation of Xroom:



- Exhausting burning or glowing substances!
- Exhausting readily flammable or explosive gases,
- Exhausting aggressive media,
- Exhausting liquids of any kind,
- In an environment with an increased incidence or risk of explosion, flammable substances, and increased dust and/or air containing other harmful impurities,
- In an environment with higher condensation humidity, such as: bathrooms, swimming pools, saunas, etc.,
- The unit must not be installed just below the electrical socket or wiring box,
- The unit must not be installed in a position that could affect its proper functioning, or near the curtains or other flammable materials.
- Neither the manufacturer nor the supplier is liable for damage caused by improper use of the units. The user bears the risk.

## 1.4. Transport, Delivery Control, and Storage

### 1.4.1. Transport

- During transport, keep the product in the position indicated by the symbol on the packaging.
- The packaging must not be loaded with a weight higher than that permitted by the manufacturer.
- The packaging must not be exposed to ambient effects.
- The transport air temperature must range between -25 to 55 °C,
- The transport relative humidity must range between 10 % and 90 % non-condensing.
- **Use adequate tools to prevent damage to the goods and damage to the health and safety of persons.**
- In the case of further transport without original packaging or with changed original packaging, it must be ensured that the equipment is optimally secured and protected against damage.



### 1.4.2. Delivery Inspection

- Before starting the installation and before unpacking the unit from the box, it is necessary to check for any traces of damage on the packaging. If the packaging is damaged, write a record of the damage and contact your carrier, please.
- Check if you have received the product actually ordered by you. After unpacking, check that the unit and other components are in order. Please, report any discrepancy with the order to the supplier immediately.

If an order complaint is not made immediately after delivery, it will not be considered later.

### 1.4.3. Storage

- If you do not plan to install the unit immediately after purchase, it must be stored in an indoor, non-condensing environment at temperatures ranging between +5 to +40 °C. If the product is transported at temperatures below 0 °C, it must be put into the working environment where it will be installed for at least 2 hours after unpacking.

## 1.5. Contents of the Package

### 1.5.1. Xroom 100 (XR1-010-EC...)

Box 1 – Xroom unit

- |                                            |      |
|--------------------------------------------|------|
| - Xroom unit body with front metal cover   | 1 pc |
| - installation template with assembly pins | 1 pc |
| - bolt M6x25                               | 5 pc |
| - bolt M6x20 with a plastic head           | 2 pc |
| - Quick manual + safety data sheet         | 1 pc |
| - serial plate                             | 1 pc |

Box 2 – mandatory installation accessories XR1-01-DUCT-1 (for installation into a wall with thickness of the max. 500 mm)

- |                                                           |      |
|-----------------------------------------------------------|------|
| - plastic white tube ø125 mm, length 500 mm               | 1 pc |
| - supply line assembly with damper ø125 mm, length 500 mm | 1 pc |

- plastic square outlet with damper 1 pc
- plastic square outlet without damper 1 pc
- self-tapping bolt  $\varnothing 4 \times 22$  4 pc
- insulation washer 170x170x5 with hole  $\varnothing 127$  mm 2 pc

### 1.5.2. Xroom 250 (XR1-025-EC...)

#### Box 1 – Xroom unit

- Xroom unit body with front metal cover 1 pc
- installation template with mounting pins 1 pc
- bolt M6x25 5 pc
- bolt M6x20 with a plastic head 3 pc
- Quick manual + safety data sheet 1 pc
- serial plate 1 pc

#### Box 2 – mandatory installation accessories XR1-025-DUCT-1 (for installation into a wall with thickness of the max. 500 mm)

- plastic white tube  $\varnothing 150$  mm, length 500 mm 1 pc
- supply line assembly with damper  $\varnothing 150$  mm, length 500 mm 1 pc
- plastic square outlet with damper 1 pc
- plastic square outlet without damper 1 pc
- Self tapping bolt  $\varnothing 4 \times 22$  4 pc
- insulation washer 210x200x5 with hole  $\varnothing 153$  mm 2 pc

### 1.6. Before Commencing the Installation

- Before commencing the installation, we recommend that you attach the serial plate (by default, supplied with the package) to the operating documentation (e.g.: equipment operating book, etc.), which is subsequently kept for a later maintenance records and servicing.



- **Check that there are no electrical or other lines (e.g. gas, water, etc.) at the point of installation of the unit on the wall that could be damaged during installation.**



- **Make sure that the installation of the unit does not endanger the building's statics and meets all the legislative safety requirements.**

- Select how you will drain the condensate:

- o Using supply piping through a facade outlet – standard solution.
- o Using a condensation piece – it is not part of the delivery, must be provided by the customer.



- **If condensate is drained through the facade outlet, check that there would be no damage to the construction or contact with live equipment.**



**2. Technical Parameters**

**2.1. Design of the Xroom unit**

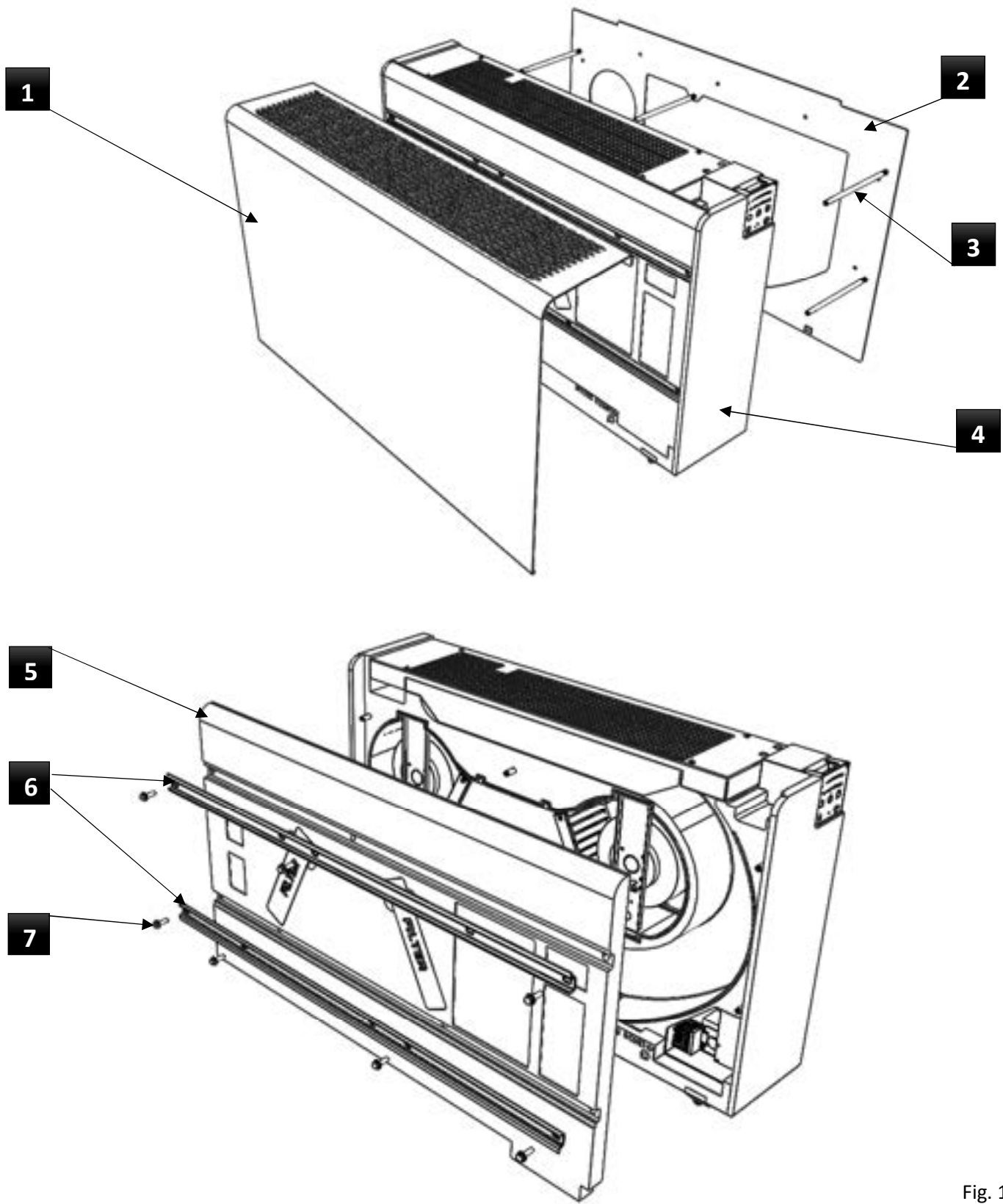


Fig. 1

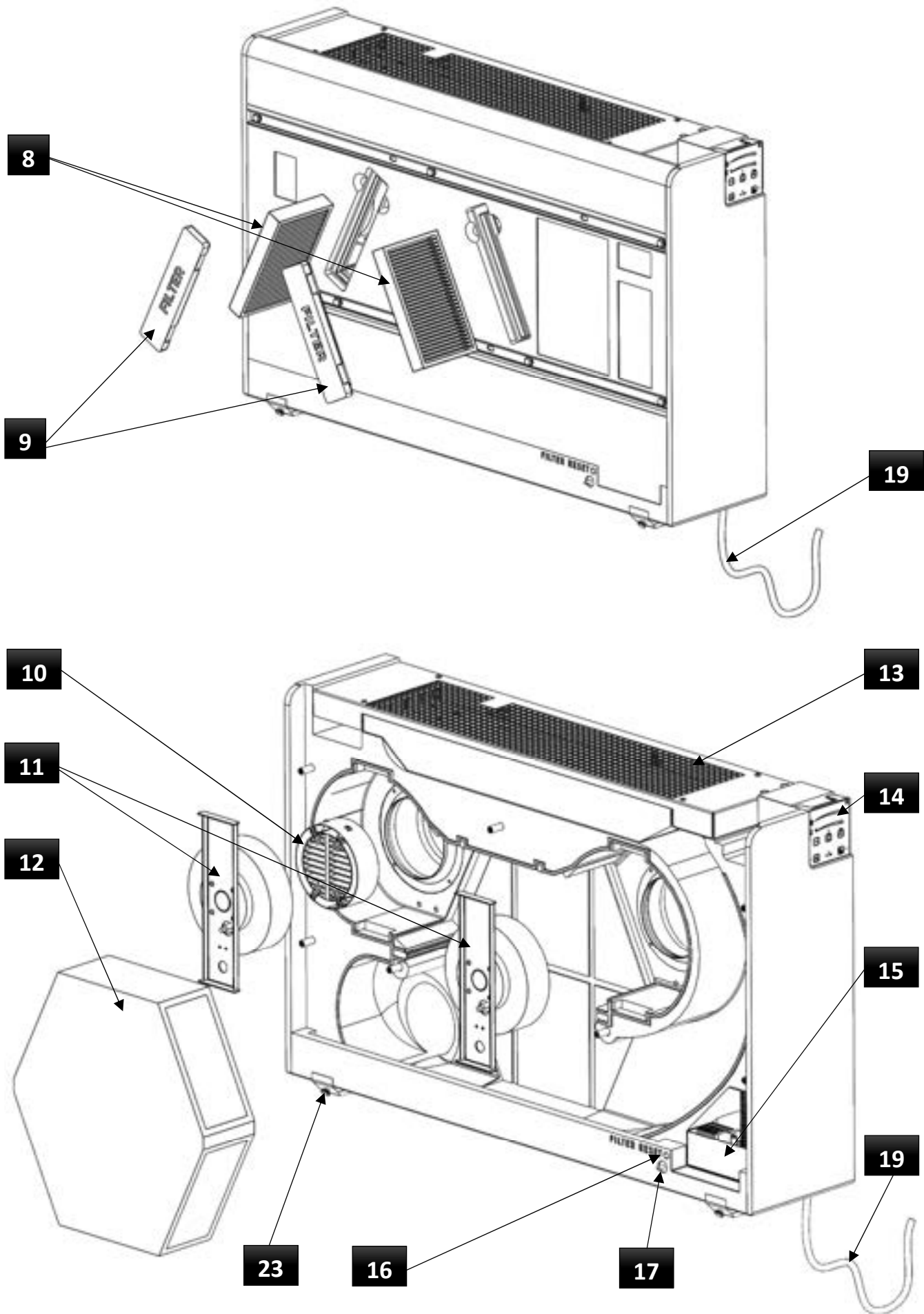


Fig. 2

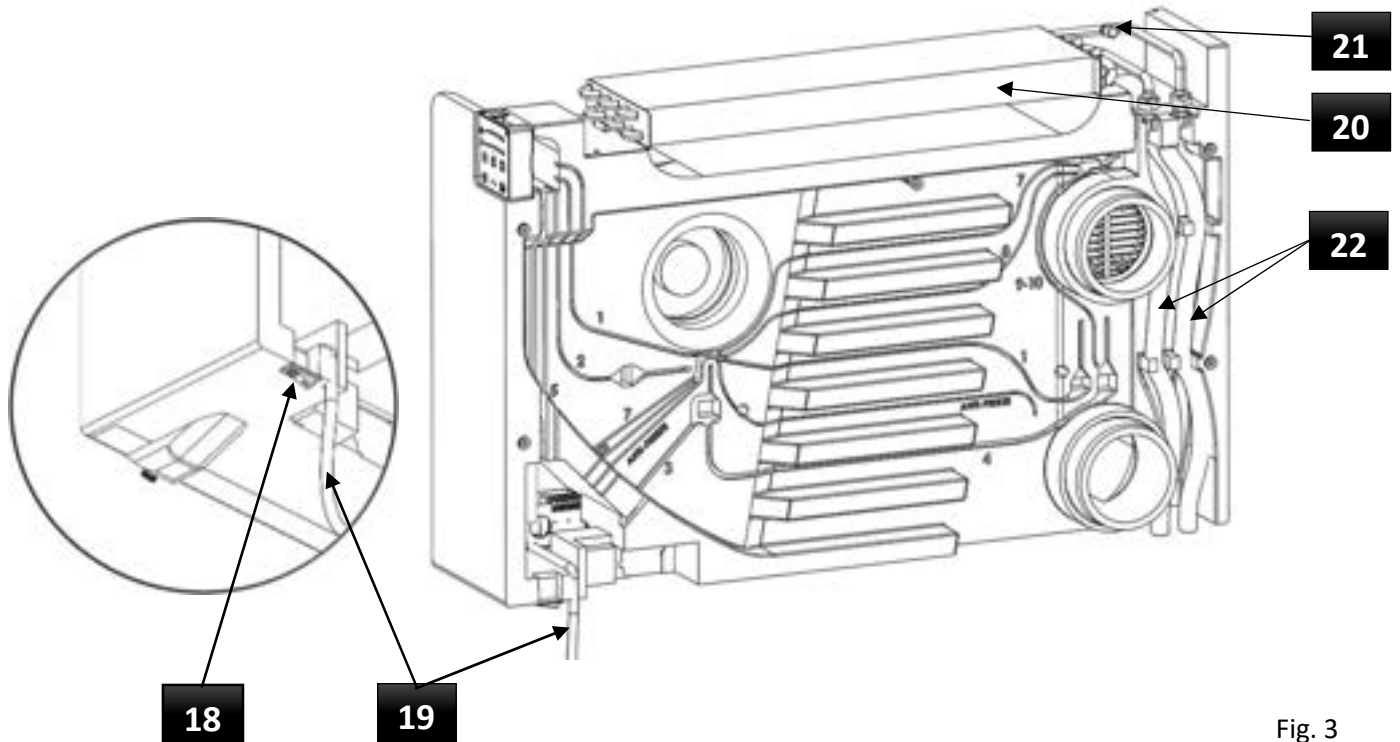


Fig. 3

**2.1.1. Front metal cover (position 1)**

- Metal cover made of aluminium sheet, thickness 2 mm with powder paint against corrosion. Standard version in two shades RAL 9003 (white), RAL 7016 (anthracite)

**2.1.2. Installation template (position 2)**

- aluminium sheet construction, thickness 2 mm treated with powder paint against corrosion. Standard version in two shades RAL 9003 (white), RAL 7016 (anthracite). The colour of the front metal cover and installation template is always the same. Cannot be combined.

**2.1.3. Mounting pins (position 3)**

- The pins are made of steel logs  $\varnothing 9$  mm featuring anti-corrosion galvanising. The M6 inner thread is located on one side of the pin. On the other side, the pin has an external M6 thread where the surfaces are created for tightening the pin into the installation template.

**2.1.4. Unit body – fitting (position 4)**

- The body of the unit is made of black pressed EPP plastic (expanded polypropylene). It ensures the accuracy and repeatability of the installation of components. The material itself is an advanced technical material with a unique combination of properties, such as strength at low weight, rebound elasticity, thermal insulation, chemical resistance, sound insulation, and recyclability.

**2.1.5. Unit cover (position 5)**

- The unit cover is made of black pressed EPP plastic (expanded polypropylene). It ensures the accuracy and repeatability of the installation of components. The material itself is an advanced technical material with a unique combination of properties, such as strength at low weight, rebound elasticity, thermal insulation, chemical resistance, sound insulation, and recyclability.

**2.1.6. Reinforcement (position 6)**

- Metal reinforcements are made of a 2 mm thick steel sheet with anti-corrosion powder paint RAL 9005.

**2.1.7. Bolt M6x30 (position 7)**

- Galvanised M6x30 hex head bolt.

**2.1.8. Filters** (position 8)

- M5 filters (ISO COARSE 70%) are included in the delivery. F7 filters (ISO ePM1 60%) can be supplied upon request. Evaluation of filters per ČSN EN ISO 16890.

**2.1.9. Filter caps** (position 9)

- Filter caps are used to seal the filters in the unit cover. They are made of black pressed EPP plastic (expanded polypropylene).

**2.1.10. Preheating** (position 10)

- Preheating is used to heat the air before it enters the recuperator. It ensures correct ventilation functionality at sub-zero temperatures – anti-freeze protection. It is controlled automatically, based on sensors and regulation.

**2.1.11. Fans** (position 11)

- The plastic radiant fan with EC motor from leading European manufacturers ensures smooth operation, minimal power consumption, and long service life of the unit.

**2.1.12. Recuperator** (position 12)

- The counter current recuperator provides heat recovery with the maximum efficiency (XR1-xxx-ECxxHR...).  
In the version with enthalpy exchanger (XR1-xxx-ECxxER...), it also allows transfer of moisture back to the ventilated area.

**2.1.13. Electric heat exchanger** (position 13)

- It is used to heat the air supplied to the room. It operates independently, even without ventilation requirements. The exchanger is regulated completely automatically at the temperature requirement of the user and the integrated temperature sensor, which reads and evaluates the temperature in the room.

**2.1.14. Controller** (position 14)

- The integrated touch controller is used to control the entire unit.

**2.1.15. Regulator box** (position 15)

- It ensures interconnection of the individual components and also serves for the customer's connection.

**2.1.16. FILTER RESET button** (position 16)

- The red "filter reset" button is used to reset the filters after their physical replacement. Filter clogging is indicated on the controller.

**2.1.17. Limit switch** (position 17)

- The switch is used to immediately switch off the unit from electrical voltage after uncovering – removing the front metal cover (position 1) – e.g. when servicing filters.

**2.1.18. Main switch** (position 18)

- 1 - pole main switch is used to connect/disconnect the unit from the mains.

**2.1.19. Supply cable** (position 19)

- It connects the unit and the connection point from the mains. Cable length approx. 1.5 m. The CYSY 3x1.5 mm<sup>2</sup> cable type with stripped and marked ends of 50 mm.

**2.1.20. Water exchanger** (position 20)

- The 2-line water exchanger is made of copper tubes and aluminium lamellas to increase the heat exchange surface. The entire exchanger is coated with a powder paint RAL 9005 to increase the corrosion resistance.

**2.1.21. Bleed valve** (position 21)

- The bleed valve is used to vent the heat exchanger. It is located on the drain – return pipe.

**2.1.22. Flexible hoses for connection to the heating system** (position 22)

- The hoses are used to connect the water exchanger to the heating system and are terminated by an external 3/4" thread.

**2.1.23. Bolt M6x20 with plastic head** (position 23)

- The bolts are used for manual securing of the front metal cover (position 1). This also ensures closing of the limit switch (position 17.) located under the cover.

**2.2. Main dimensions of the Xroom unit**

**2.2.1. Xroom-100 (XR1-010-EC...)**

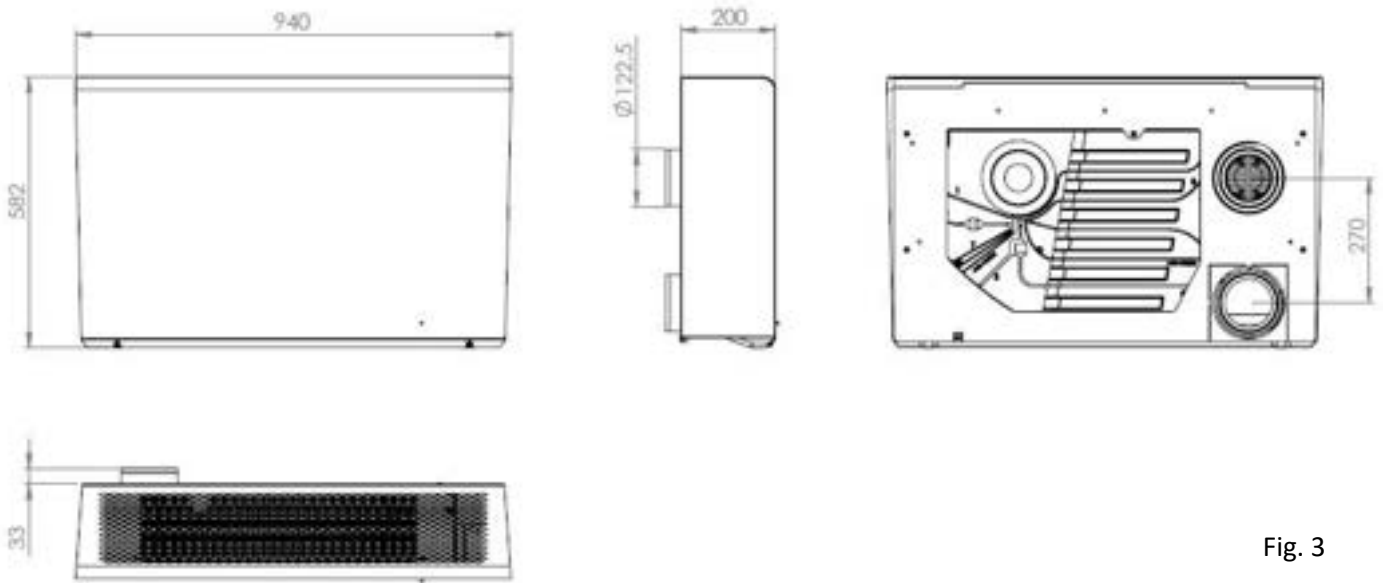


Fig. 3

**2.2.2. Xroom-250 (XR1-025-EC...)**

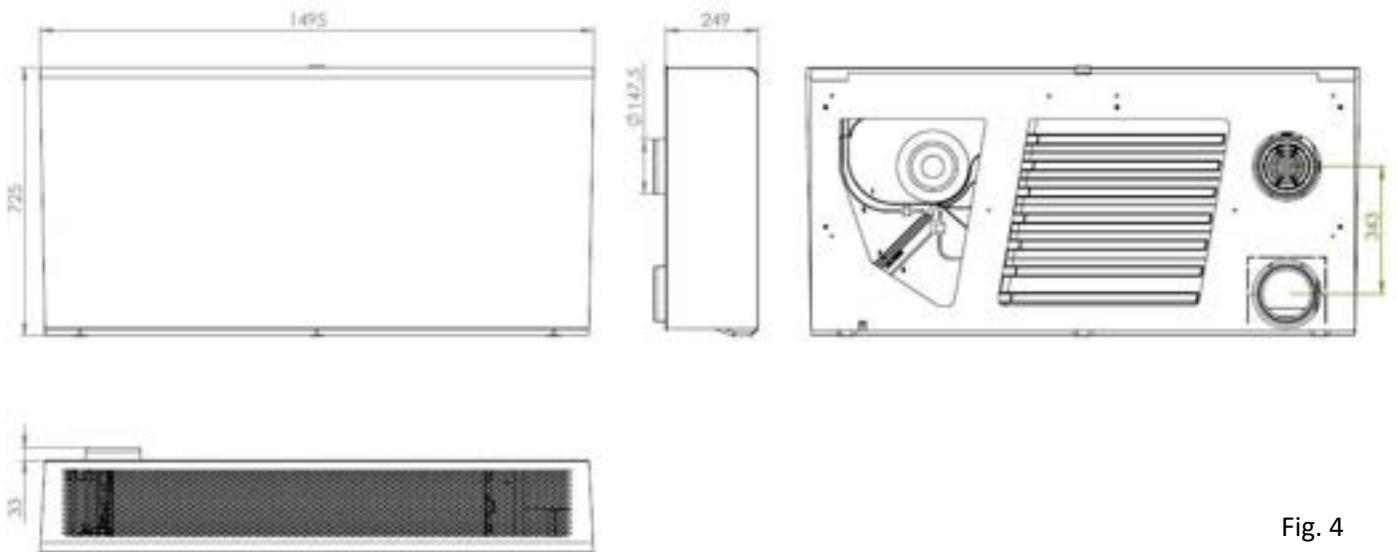


Fig. 4



## 2.3. Technical parameters of Xroom units

### 2.3.1. Basic technical parameters

#### - Basic technical parameters – Xroom-100 (XR1-010-ECxxHR...) – heat exchanger

Line		XR1-010-ECS0HRX...	XR1-010-ECV1HRX...	XR1-010-ECE1HRX...	XR1-010-ECS0HRP...	XR1-010-ECV1HRP...	XR1-010-ECE1HRP...
Type of recovery exchanger		HRV with temperature efficiency					
Unit equipment	pre-heater	-	-	-	electric	electric	electric
	after heater	-	water	electric	-	water	electric
Nominal airflow/ BOOST*		100/215					
Heat output (range) of heating**		-	0.33 - 1.38	0,5	-	0.33 - 1.38	0,5
Noise level**		32,1					
Weight****		16,3	18,3	19,3	16,8	18,8	19,8
Water volume in exchanger		-	0,51	-	-	0,51	-
Power supply of the unit		1 ~ 230 / 50-60					
Nominal input power of the unit /		30/167	30/167	530/667	300/437	300/437	800/937
Nominal current of the unit / BOOST*		0.3/1.32	0.3/1.32	2.5/3.5	1.5/2.5	1.5/2.5	3.7/4.7
Recovery efficiency per EN 308	heat	up to 87					
	humidity	-	-	-	-	-	-
Protection type		20					
Energy efficiency class (ERP)		cold climate A+, medium climate A, warm climate A					

\* BOOST mode - intensive ventilation for 10 minutes

\*\* at the temperature gradient of 75/60 and an inlet air temperature of 20 °C

\*\*\* Sound pressure level in free space at a distance of 3 m

\*\*\*\* unit weight, without water and packaging

Tab 1

#### - Basic technical parameters – Xroom-100 (XR1-010-ECxxER...) – enthalpy exchanger

Line		XR1-010-ECS0ERX...	XR1-010-ECV1ERX...	XR1-010-ECE1ERX...	XR1-010-ECS0ERP...	XR1-010-ECV1ERP...	XR1-010-ECE1ERP...
Type of recovery exchanger		ERV with temperature and humidity efficiency					
Unit equipment	pre-heater	-	-	-	electric	electric	electric
	after heater	-	water	electric	-	water	electric
Nominal airflow/ BOOST*		90/205					
Heat output (range) of heating**		-	0.29 - 1.24	0,5	-	0.29 - 1.24	0,5
Noise level**		32,1					
Weight****		16,3	18,3	19,3	16,8	18,8	19,8
Water volume in exchanger		-	0,51	-	-	0,51	-
Power supply of the unit		1 ~ 230 / 50-60					
Nominal input power of the unit /		30/167	30/167	530/667	300/437	300/437	800/937
Nominal current of the unit / BOOST*		0.3/1.32	0.3/1.32	2.5/3.5	1.5/2.5	1.5/2.5	3.7/4.7
Recovery efficiency per EN 308	heat	up to 90					
	humidity	up to 85					
Protection type		20					
Energy efficiency class (ERP)		cold climate A+, medium climate A, warm climate B					

\* BOOST mode - intensive ventilation for 10 minutes

\*\* at the temperature gradient of 75/60 and an inlet air temperature of 20 °C

\*\*\* Sound pressure level in free space at a distance of 3 m

\*\*\*\* unit weight, without water and packaging

Tab 2

#### - Basic technical parameters – Xroom-250 (XR1-025-ECxxHR...) – heat exchanger

Line		XR1-025-ECS0HRX...	XR1-025-ECV1HRX...	XR1-025-ECE1HRX...	XR1-025-ECS0HRP...	XR1-025-ECV1HRP...	XR1-025-ECE1HRP...
Type of recovery exchanger		HRV with temperature efficiency					
Unit equipment	pre-heater	-	-	-	electric	electric	electric
	after heater	-	water	electric	-	water	electric
Nominal airflow/ BOOST*		250/350					
Heat output (range) of heating**		-	1.34 - 3.49	1	-	1.34 - 3.49	1
Noise level**		32,6					
Weight****		36	39,4	41,2	37	40,4	42,2
Water volume in exchanger		-	1,17	-	-	1,17	-
Power supply of the unit		1 ~ 230 / 50-60					
Nominal input power of the unit /		61/169	61/169	1061/1169	479/709	480/709	1480/1709
Nominal current of the unit / BOOST*		0.61/1.42	0.61/1.42	5/5.8	3/3.8	3/3.8	7.3/8.2
Recovery efficiency per EN 308	heat	up to 87					
	humidity	-	-	-	-	-	-
Protection type		20					
Energy efficiency class (ERP)		cold climate A+, medium climate A, warm climate B					

\* BOOST mode - intensive ventilation for 10 minutes

\*\* at the temperature gradient of 75/60 and an inlet air temperature of 20 °C

\*\*\* Sound pressure level in free space at a distance of 3 m

\*\*\*\* unit weight, without water and packaging

Tab 3

**- Technical data – Xroom-250 (XR1-025-ECxxER...) – enthalpy exchanger**

Line		XR1-025-ECS0ERX...	XR1-025-ECV1ERX...	XR1-025-ECE1ERX...	XR1-025-ECS0ERP...	XR1-025-ECV1ERP...	XR1-025-ECE1ERP...
Type of recovery exchanger		ERV with temperature and humidity efficiency					
Unit equipment	pre-heater	-	-	-	electric	electric	electric
	after heater	-	water	electric	-	water	electric
Nominal airflow/ BOOST*	m3/h	240/335					
Heat output (range) of heating**	kW	-	1.34 - 3.49	1	-	1.34 - 3.49	1
Noise level**	dB(A)	32,6					
Weight****	kg	36	39,4	41,2	37	40,4	42,2
Water volume in exchanger	l	-	1,17	-	-	1,17	-
Power supply of the unit	V/Hz	1 ~ 230 / 50-60					
Nominal input power of the unit /	W	61/169	61/169	1061/1169	479/709	480/709	1480/1709
Nominal current of the unit / BOOST*	A	0.61/1.42	0.61/1.42	5/5.8	3/3.8	3/3.8	7.3/8.2
Recovery efficiency per EN 308	heat	up to 86					
	humidity	up to 75					
Protection type	IP	20					
Energy efficiency class (ERP)		cold climate A+, medium climate A, warm climate B					

\* BOOST mode - intensive ventilation for 10 minutes

\*\* at the temperature gradient of 75/60 and an inlet air temperature of 20 °C

\*\*\* Sound pressure level in free space at a distance of 3 m

\*\*\*\* unit weight, without water and packaging

Tab 4

- EC Declaration of Conformity – the current and full version of the EC Declaration of Conformity can be found on our website [www.xvent.cz](http://www.xvent.cz) in the “Download Documents” section for the Xroom product

**2.3.2. Acoustic Data**

- **XR1-010-EC... - the unit's interior radiating (inside the room)**

Tab 5

Degree of air output								Sound Power Level LWA [dB(A)]	Sound pressure level in the open field on the reflection plane	
	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz		LPA [dB] in 1 m	LPA [dB] in 3 m
1. min/heating mode	21,5 dB	25,9 dB	29,7 dB	27,6 dB	21,0 dB	18,7 dB	17,5 dB	33,7 dB	19,8 dB	12,1 dB
4.	28,8 dB	43,4 dB	41,3 dB	39,4 dB	34,3 dB	24,3 dB	18,0 dB	47,0 dB	33,1 dB	25,5 dB
7. nominal flow	32,0 dB	49,1 dB	48,7 dB	46,9 dB	43,0 dB	33,2 dB	23,1 dB	53,6 dB	39,7 dB	32,1 dB
Boost*	42,0 dB	56,9 dB	67,1 dB	62,4 dB	59,5 dB	51,9 dB	45,2 dB	69,3 dB	55,4 dB	47,8 dB

\* BOOST mode - intensive ventilation for 10 minutes

- **XR1-010-EC... - the unit's exterior radiating (suction, outdoor exhaust)**

Tab 6

Degree of air output								Sound power level LWA [dB (A)]	Sound pressure level in the open field on the reflection plane	
	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz		LPA [dB] in 1 m	LPA [dB] in 3 m
1. min/heating mode	34,7 dB	32,1 dB	35,8 dB	32,2 dB	22,0 dB	22,3 dB	24,7 dB	37,3 dB	23,7 dB	14,6 dB
4.	46,4 dB	53,7 dB	49,7 dB	45,9 dB	35,9 dB	28,9 dB	25,4 dB	52,1 dB	39,6 dB	30,8 dB
7. nominal flow	51,7 dB	60,7 dB	58,6 dB	54,6 dB	45,0 dB	39,5 dB	32,5 dB	59,4 dB	47,5 dB	38,7 dB
Boost*	67,7 dB	70,4 dB	80,8 dB	72,7 dB	62,3 dB	61,8 dB	63,6 dB	76,8 dB	66,3 dB	57,6 dB

\* BOOST mode - intensive ventilation for 10 minutes

- **XR1-025-EC... - unit radiating in the interior (inside the room)**

Tab 7

Degree of air output								Sound power level LWA [dB (A)]	Sound pressure level in the open field on the reflection plane	
	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz		LPA [dB] in 1 m	LPA [dB] in 3 m
1. min/heating mode	18,6 dB	29,5 dB	28,9 dB	25,7 dB	22,2 dB	15,8 dB	13,3 dB	34,4 dB	20,1 dB	12,7 dB
4.	23,5 dB	42,6 dB	42,0 dB	37,6 dB	33,8 dB	21,9 dB	13,2 dB	46,3 dB	31,9 dB	24,5 dB
7. nominal flow	27,9 dB	48,8 dB	50,9 dB	46,2 dB	43,2 dB	33,1 dB	19,7 dB	54,2 dB	39,8 dB	32,6 dB
Boost*	37,6 dB	56,6 dB	62,9 dB	59,6 dB	56,8 dB	47,7 dB	36,8 dB	65,9 dB	51,5 dB	44,2 dB

\* BOOST mode - intensive ventilation for 10 minutes

- **XR1-025-EC... - the unit's exterior radiating (suction, outdoor exhaust)**

Tab 8

Degree of air output								Sound power level LWA [dB (A)]	Sound pressure level in the open field on the reflection plane	
	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz		LPA [dB] in 1 m	LPA [dB] in 3 m
1. min/heating mode	30,0 dB	36,5 dB	34,8 dB	29,9 dB	23,3 dB	18,9 dB	18,7 dB	38,1 dB	24,0 dB	15,3 dB
4.	37,9 dB	52,6 dB	50,6 dB	43,8 dB	35,4 dB	26,0 dB	18,7 dB	51,3 dB	38,2 dB	29,6 dB
7. nominal flow	45,1 dB	60,4 dB	61,3 dB	53,8 dB	45,2 dB	39,4 dB	27,7 dB	60,1 dB	47,6 dB	39,3 dB
Boost*	60,7 dB	70,1 dB	75,7 dB	69,4 dB	59,5 dB	56,8 dB	51,8 dB	73,1 dB	61,6 dB	53,3 dB

\* BOOST mode - intensive ventilation for 10 minutes



- Accessibility of exterior sound

Tab 9

Line	Xroom-100				Xroom-250			
	Evaluated acoustic attenuation		Evaluated difference of the standard level		Evaluated acoustic attenuation		Evaluated difference of the standard level	
	$R_{W,P} (C, C_{tr})$ [dB]		$D_{n, e, w} (C, C_{tr})$ [dB]		$R_{W,P} (C, C_{tr})$ [dB]		$D_{n, e, w} (C, C_{tr})$ [dB]	
Standby	17 (-1; -3)		42 (-2; -3)		17 (-1; -3)		42 (-2; -3)	
7.- nominal flow	17 (-1; -3)		42 (-1; -2)		17 (-1; -3)		42 (-1; -2)	

2.3.3. Technical data of water heaters

- XR1-01-ECV1HR... (heat recovery exchanger)

Tab 10

Temperature gradient																						
Inlet air temperature °C	Degree of air output	Air flow m <sup>3</sup> /hr	63/50				55/45				45/35				40/30							
			Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa				
10	L-mechasing	28	0,47	75,3	0,01	0,2	0,40	71,9	0,01	0,4	0,40	71,9	0,01	0,4	0,39	67,9	0,04	0,9	0,07	64,1	0,01	0,2
	A	66	1,25	85,7	0,06	1	1,26	86,7	0,11	3,2	1,22	85	0,07	1,3	1,23	80,2	0,1	2,8	1,07	76,9	0,05	0,7
	T-nominal flow	100	3,76	80,8	0,08	1,7	3,76	80,1	0,16	5,8	3,7	78,3	0,1	2,7	3,62	76	0,08	5,1	3,88	72	0,08	1,3
15	L-mechasing	28	0,4	74,8	0,01	0,2	0,38	71,9	0,04	0,8	0,38	71,7	0,02	0,3	0,36	67,9	0,03	0,8	0,03	64,2	0,02	0,2
	A	66	1,16	86,5	0,09	0,8	1,14	85,5	0,1	2,7	1,1	81,7	0,08	1,3	1,04	76,9	0,09	2,3	0,95	74,8	0,04	0,6
	T-nominal flow	100	3,62	80,7	0,07	1,3	3,6	81,3	0,14	4,9	3,54	78,4	0,09	2,3	3,41	75,1	0,07	4,2	3,32	70	0,08	1,1
20	L-mechasing	28	0,35	74,9	0,01	0,2	0,35	73	0,01	0,5	0,35	73,5	0,01	0,2	0,31	67,9	0,01	0,5	0,24	64,2	0,01	0,1
	A	66	1,09	87,1	0,05	0,7	1,03	86,3	0,09	2,3	0,98	84,5	0,08	1	0,95	82,7	0,08	1,9	0,93	77,2	0,04	0,3
	T-nominal flow	100	3,46	82,7	0,06	1,2	3,44	82,4	0,11	4,1	3,36	80,5	0,08	1,9	3,3	78,1	0,07	3,5	3,18	73,9	0,05	0,8

-connection dimension male thread 3/4"

Temperature gradient																						
Inlet air temperature °C	Degree of air output	Air flow m <sup>3</sup> /hr	63/50				55/45				45/35				40/30							
			Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa				
10	L-mechasing	28	0,35	60,9	0,02	0,3	0,28	52,4	0,03	0,4	0,23	43,9	0,02	0,2	0,18	39,8	0,02	0,1	0,15	34,8	0,01	0,1
	A	66	0,68	57,4	0,04	0,6	0,56	49,5	0,05	0,8	0,42	39,6	0,04	0,5	0,35	34,8	0,03	0,3	0,27	30,4	0,02	0,2
	T-nominal flow	100	1,4	49,8	0,08	2	1,17	43,4	0,1	3,1	0,88	34,9	0,08	1,9	0,72	30,4	0,06	3,4	0,66	24,8	0,04	0,6
15	L-mechasing	28	0,31	60,9	0,03	0,2	0,25	52,3	0,02	0,3	0,19	43,9	0,02	0,1	0,15	36,9	0,01	0,1	0,1	32,9	0,01	0,1
	A	66	0,6	57,7	0,04	0,4	0,49	49,8	0,04	0,7	0,25	39,8	0,03	0,3	0,28	34,9	0,02	0,2	0,2	30,9	0,01	0,2
	T-nominal flow	100	1,24	50,9	0,07	1,6	1,02	44,4	0,09	2,4	0,72	35,8	0,06	1,3	0,58	31,1	0,05	3,9	0,52	26,9	0,01	0,1
20	L-mechasing	28	0,26	60,8	0,01	0,2	0,2	52,1	0,01	0,2	0,16	42,1	0,01	0,1	0,12	36,9	0,01	0,1	0,1	32,9	0,01	0,1
	A	66	0,52	57,9	0,03	0,4	0,41	50	0,04	0,5	0,28	40,1	0,02	0,2	0,21	35,1	0,02	0,2	0,21	31,1	0,02	0,2
	T-nominal flow	100	1,09	51,8	0,06	1,1	0,86	45,4	0,08	1,9	0,56	36,4	0,05	0,9	0,4	31,5	0,03	3,3	0,3	26,9	0,01	0,1

-connection dimension male thread 3/4"

- XR1-010-ECV1ER... (enthalpy recovery exchanger)

Tab 11

Temperature gradient																						
Inlet air temperature °C	Degree of air output	Air flow m <sup>3</sup> /hr	63/50				55/45				45/35				40/30							
			Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa				
10	L-mechasing	28	0,621	87,77	0,028	0,2	0,616	88,81	0,027	0,3	0,616	88,46	0,027	0,3	0,611	81,02	0,036	0,6	0,611	81,09	0,039	0,2
	A	66	1,125	85,31	0,094	0,9	1,114	86,33	0,099	3,86	1,098	86,7	0,093	1,35	1,091	84,19	0,09	2,32	0,963	80,47	0,045	0,63
	T-nominal flow	100	3,882	84,54	0,072	1,53	3,864	84,09	0,044	5,22	3,819	82,47	0,09	2,49	3,798	80,4	0,039	4,39	3,812	76,8	0,054	1,17
15	L-mechasing	28	0,36	67,41	0,009	0,2	0,341	65,81	0,006	0,6	0,341	64,53	0,009	0,2	0,306	61,11	0,017	0,5	0,292	57,79	0,018	0,1
	A	66	1,046	85,85	0,083	0,72	1,026	86,95	0,09	2,48	0,99	83,13	0,088	1,17	0,936	80,81	0,081	2,07	0,889	75,12	0,036	0,56
	T-nominal flow	100	3,458	85,53	0,083	1,68	3,44	85,17	0,138	4,41	3,388	83,46	0,083	2,07	3,288	81,89	0,077	3,78	3,189	81,7	0,034	0,99
20	L-mechasing	28	0,633	87,41	0,009	0,1	0,613	85,7	0,027	0,5	0,597	84,35	0,028	0,4	0,579	81,11	0,038	0,4	0,561	77,78	0,01	0,1
	A	66	0,945	80,29	0,045	0,63	0,927	80,58	0,081	2,07	0,911	80,05	0,084	0,9	0,897	85,53	0,072	1,71	0,847	81,46	0,036	0,45
	T-nominal flow	100	3,014	86,41	0,094	1,68	2,996	86,34	0,117	3,89	2,942	84,45	0,072	1,71	2,929	82,29	0,099	3,15	2,884	80,11	0,045	0,72

-connection dimension male thread 3/4"

Temperature gradient																						
Inlet air temperature °C	Degree of air output	Air flow m <sup>3</sup> /hr	63/50				55/45				45/35				40/30							
			Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa				
10	L-mechasing	28	0,315	54,83	0,018	0,2	0,252	47,38	0,027	0,3	0,189	37,71	0,027	0,2	0,162	33,12	0,018	0,1	0,1	29,16	0,018	0,1
	A	66	0,909	48,53	0,054	0,99	0,756	41,94	0,063	1,53	0,567	33,57	0,045	0,99	0,468	29,16	0,036	0,72	0,468	25,16	0,036	0,72
	T-nominal flow	100	1,26	44,82	0,072	1,8	1,053	39,06	0,09	2,79	0,792	31,41	0,072	1,71	0,648	27,36	0,054	3,26	0,648	23,36	0,054	1,26
15	L-mechasing	28	0,279	54,83	0,027	0,2	0,225	47,07	0,018	0,3	0,171	37,71	0,018	0,1	0,135	33,21	0,018	0,1	0,1	29,16	0,018	0,1
	A	66	0,801	49,05	0,045	0,81	0,657	42,57	0,054	1,17	0,459	33,93	0,036	0,63	0,369	29,81	0,036	0,45	0,369	25,81	0,036	0,45
	T-nominal flow	100	1,116	45,81	0,063	1,44	0,918	39,96	0,081	2,16	0,648	32,22	0,054	1,17	0,504	27,99	0,045	3,61	0,504	23,99	0,045	0,81
20	L-mechasing	28	0,284	54,72	0,009	0,2	0,18	46,89	0,027	0,2	0,144	37,89	0,01	0,1	0,108	33,21	0,009	0,1	0,1	29,16	0,009	0,1
	A	66	0,702	49,5	0,045	0,63	0,558	43,11	0,045	0,9	0,36	34,29	0,045	0,45	0,27	29,97	0,027	0,18	0,27	26,97	0,027	0,18
	T-nominal flow	100	0,981	45,62	0,054	1,17	0,774	40,86	0,072	1,62	0,504	32,76	0,045	0,81	0,36	28,62	0,027	2,7	0,36	24,62	0,027	0,7

-connection dimension male thread 3/4"

- XR1-025-ECV1HR... (heat recovery exchanger)

Tab 12

Temperature gradient																						
Inlet air temperature °C	Degree of air output	Air flow m <sup>3</sup> /hr	63/50				55/45				45/35				40/30							
			Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa				
10	L-mechasing	28	1,86	73,8	0,07	0,2	1,81	70,9	0,04	1,6	1,74	70	0,1	4,8	1,49	66,1	0,03	6,8	1,42	61,9	0,06	2,4
	A	117	2,87	86,2	0,12	0,1	2,79	86,3	0,27	26,3	2,71	84,9	0,17	12,3	2,35	60,7	0,22	22,9	2,42	56,8	0,12	6,1
	T-nominal flow	200	4,38	81,8	0,22	16,9	4,38	80,7	0,4	30,7	4,26	79,2	0,28	26	3,96	76,6	0,3	48,3	3,86	73,3	0,18	13,8
15	L-mechasing	28	1,56	73,8	0,06	2,8	1,48	71,1	0,12	8,7	1,46	70,3	0,09	8,2	1,36	66,3	0,12					



Temperature gradient				65/50				55/45				45/35				40/30			
Inlet air temperature °C	Degree of air output	Air flow m <sup>3</sup> /hr	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	
10	L-mechanical	64	1,32	40,2	0,08	3,6	0,85	55,9	0,07	3,5	0,84	43,7	0,07	3,5	0,7	36,7	0,06	2,7	
	A	107	2,26	55,7	0,13	9,2	1,44	49	0,13	8,8	1,42	38,9	0,12	9	1,2	34,2	0,1	6,7	
	T-nominal flow	200	3,45	50,8	0,2	19,4	2,2	45,9	0,19	18,5	2,17	35,7	0,29	18,8	1,81	31,5	0,28	14	
15	L-mechanical	64	1,2	40,3	0,07	3	0,97	51,7	0,08	4,4	0,71	43,8	0,06	2,6	0,57	36,7	0,05	1,9	
	A	107	2	56,2	0,12	7,7	1,66	48,6	0,15	11,3	1,2	39,3	0,1	6,7	0,97	34,6	0,08	4,7	
	T-nominal flow	200	3,1	51,7	0,18	16,2	2,54	45	0,22	23,9	1,83	36,6	0,28	13,9	1,46	32,3	0,13	9,6	
20	L-mechanical	64	1,07	40,5	0,06	2,5	1,1	51,5	0,1	5,5	0,58	43,8	0,05	1,9	0,44	36,5	0,04	1,2	
	A	107	1,82	56,7	0,11	6,3	1,88	48	0,16	14	0,98	39,7	0,09	4,7	0,74	34,8	0,06	2,9	
	T-nominal flow	200	2,77	52,6	0,16	13,2	2,88	44,1	0,25	29,7	1,48	37,4	0,13	9,6	1,11	33	0,1	5,9	

- connection dimension male thread 1/4"

- XR1-025-ECV1ER... (enthalpy recovery exchanger)

Tab 13

Temperature gradient				65/50				55/45				45/35				40/30			
Inlet air temperature °C	Degree of air output	Air flow m <sup>3</sup> /hr	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	
10	L-mechanical	62	1,89	79,9	0,07	3,2	1,81	79,9	0,04	3,9	1,78	79	0,1	4,8	1,49	86,1	0,12	8,8	
	A	110	2,87	88,1	0,12	8,1	2,78	86,1	0,27	28,1	2,71	84,9	0,17	12,8	2,15	81,7	0,22	23,9	
	T-nominal flow	200	4,39	83,8	0,22	18,9	4,28	80,7	0,4	35,7	4,18	79,2	0,28	28	3,94	76,4	0,33	48,8	
15	L-mechanical	62	1,58	79,9	0,06	2,8	1,48	71,1	0,02	3,7	1,48	70,3	0,09	4,2	1,38	86,1	0,12	7,8	
	A	110	2,65	88,6	0,11	7	2,57	86,8	0,21	22,7	2,5	85,5	0,15	10,7	2,34	81,3	0,21	19,6	
	T-nominal flow	200	4	82,7	0,2	16,7	3,86	81,7	0,27	48,5	3,83	80,2	0,33	22,5	3,62	77,5	0,32	41,8	
20	L-mechanical	62	1,42	78,1	0,05	2,4	1,36	71,4	0,01	3,5	1,34	70,3	0,08	3,8	1,33	86,1	0,11	6,4	
	A	110	2,48	89,1	0,1	6,3	2,31	87,4	0,21	18,5	2,28	86	0,13	9,1	2,12	82,8	0,19	18,8	
	T-nominal flow	200	3,71	83,6	0,18	12,7	3,61	82,4	0,2	41,8	3,49	81,3	0,25	19,2	3,27	78,5	0,29	35,1	

- connection dimension male thread 1/4"

Temperature gradient				65/50				55/45				45/35				40/30			
Inlet air temperature °C	Degree of air output	Air flow m <sup>3</sup> /hr	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	Heating power of a heater kW	Exhaust air temperature °C	Water flow m <sup>3</sup> /hr	Water pressure drop kPa	
10	L-mechanical	62	1,32	40,2	0,08	3,6	0,85	55,9	0,07	3,5	0,84	43,7	0,07	3,5	0,7	36,7	0,06	2,7	
	A	107	2,26	55,7	0,13	9,2	1,44	49	0,13	8,8	1,42	38,9	0,12	9	1,2	34,2	0,1	6,7	
	T-nominal flow	200	3,45	50,8	0,2	19,4	2,2	45,9	0,19	18,5	2,17	35,7	0,29	18,8	1,81	31,5	0,28	14	
15	L-mechanical	62	1,2	40,3	0,07	3	0,97	51,7	0,08	4,4	0,71	43,8	0,06	2,6	0,57	36,7	0,05	1,9	
	A	107	2	56,2	0,12	7,7	1,66	48,6	0,15	11,3	1,2	39,3	0,1	6,7	0,97	34,6	0,08	4,7	
	T-nominal flow	200	3,1	51,7	0,18	16,2	2,54	45	0,22	23,9	1,83	36,6	0,28	13,9	1,46	32,3	0,13	9,6	
20	L-mechanical	62	1,07	40,5	0,06	2,5	1,1	51,5	0,1	5,5	0,58	43,8	0,05	1,9	0,44	36,5	0,04	1,2	
	A	111	1,82	56,7	0,11	6,3	1,88	48	0,16	14	0,98	39,7	0,09	4,7	0,74	34,8	0,06	2,9	
	T-nominal flow	200	2,77	52,6	0,16	13,2	2,88	44,1	0,25	29,7	1,48	37,4	0,13	9,6	1,11	33	0,1	5,9	

- connection dimension male thread 1/4"

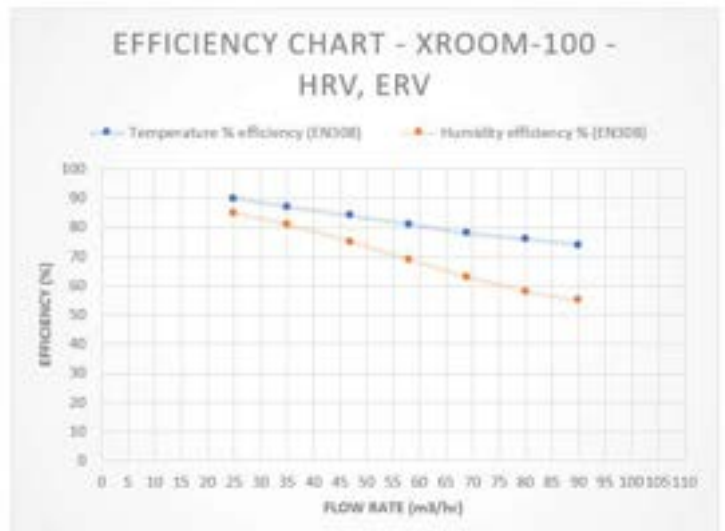
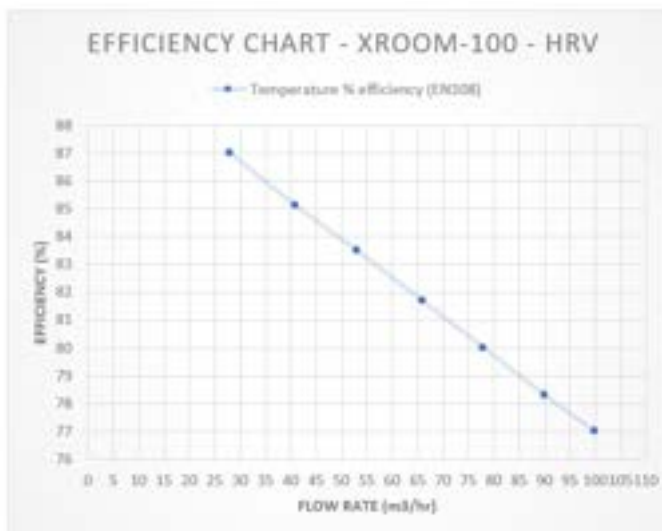
2.3.4. Heat and moisture recovery efficiency

- XR1-010-EC...

Tab. 14

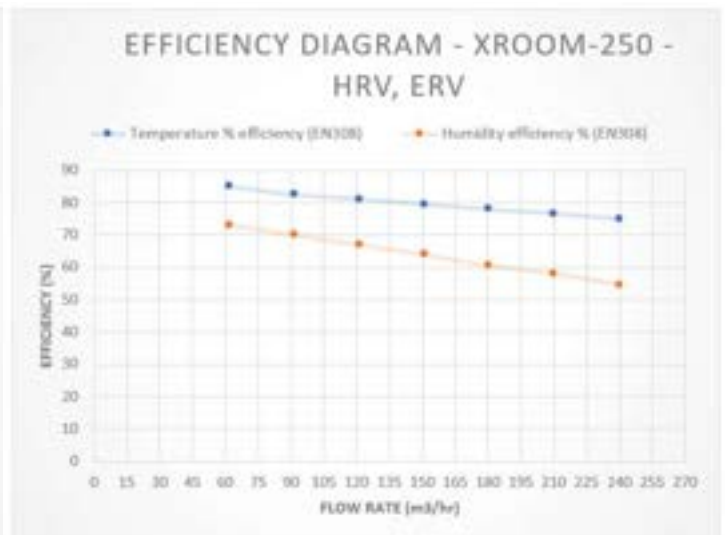
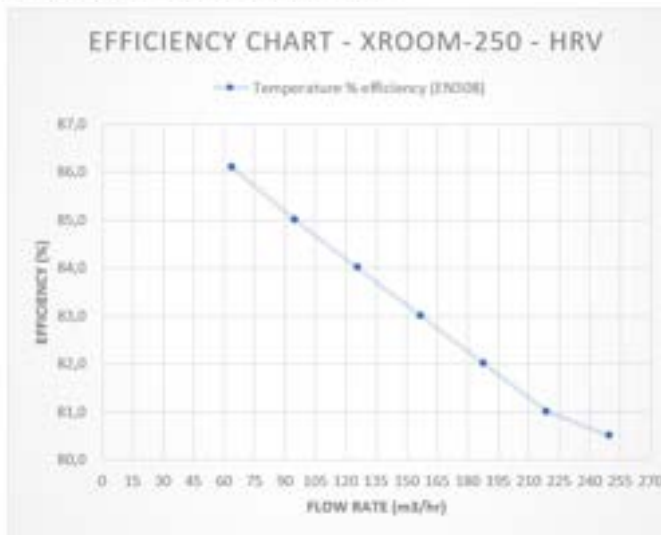
Line	Unit type	Xroom-100 efficiency of heat and humidity recovery								
		XR1-010-ECxHR...					XR1-010-ECxHR...			
		HRV					ERV			
Recovery exchanger type	AIRFLOW (m <sup>3</sup> /hr)	Temperature % efficiency	Current (A)	Power supply (W)	AIRFLOW (m <sup>3</sup> /hr)	Temperature % efficiency	Humidity efficiency %	Current (A)	Power supply (W)	
Degree of air output	1.	28	87	0,13	10	25	90	85	0,13	10
	2.	41	85,1	0,14	11	35	87	81	0,14	11
	3.	53	83,5	0,15	14	47	84	75	0,15	14
	4.	66	81,7	0,18	17	58	81	69	0,18	17
	5.	78	80	0,21	21	69	78	63	0,21	21
	6.	90	78,3	0,26	26	80	76	58	0,26	26
	7. - nominal	100	77	0,3	30	90	74	55	0,3	30
	8. BOOST*	215	N/A	1,32	167	205	N/A	N/A	1,32	167

\* BOOST mode - intensive ventilation for 10 minutes



Line		Xroom-250 efficiency of heat and humidity recovery								
Unit type		XR1-025-ECoolR...				XR1-025-ECoolR...				
Recovery exchanger type		HRV				ERV				
		AIRFLOW (m <sup>3</sup> /h)	Temperature % efficiency	Current (A)	Power supply (W)	AIRFLOW (m <sup>3</sup> /h)	Temperature % efficiency	Humidity efficiency %	Current (A)	Power supply (W)
Degree of air output	1.	64	86,1	0,17	13,5	62	85	73	0,17	13,5
	2.	95	85,0	0,20	17	92	82,5	70	0,20	17
	3.	126	84	0,25	23	123	81	67	0,25	23
	4.	157	83	0,32	30	151	79,5	64	0,32	30
	5.	188	82	0,45	40	180	78	60,5	0,45	40
	6.	219	81	0,52	51	210	76,5	58	0,52	51
	7. - nominal	250	80,5	0,61	61	240	75	54,5	0,61	61
	8. BOOST*	350	N/A	1,42	169	335	N/A	N/A	1,42	169

\* BOOST mode - intensive ventilation for 10 minutes



### 3. Unit Installation

#### 3.1. General information, recommendations, and safety when installing the Xroom units

##### 3.1.1. Electrical safety before installation of the unit



- Before starting any installation work, make sure that the wiring box or mains socket that you want to use to connect the unit is equipped with a protective (green-yellow) wire or contact (pin).
- If you use a wiring box to electrically connect the unit, you must turn off the power and secure the power supply against accidental turn on.



- Check that the electrical connection point (wiring box, outlet) meets the unit's power supply requirements (voltage, current, etc.) specified on the unit's serial plate. The electrical quantities necessary for the unit's operation can be found in Section 3.3.3. Display of electrical parameters

##### 3.1.2. Unpacking

###### 3.1.2.1. Unpacking the Xroom Unit – Box 1

- Always unpack the unit in a sufficiently large area to allow for removing the unit from the packaging.
- Never unpack the entire unit from the packaging, the unpacking of the unit must be gradual, as specified in this manual according to the installation work in progress (protection of the unit from damage and dust generated during installation)

- Proceed as follows:

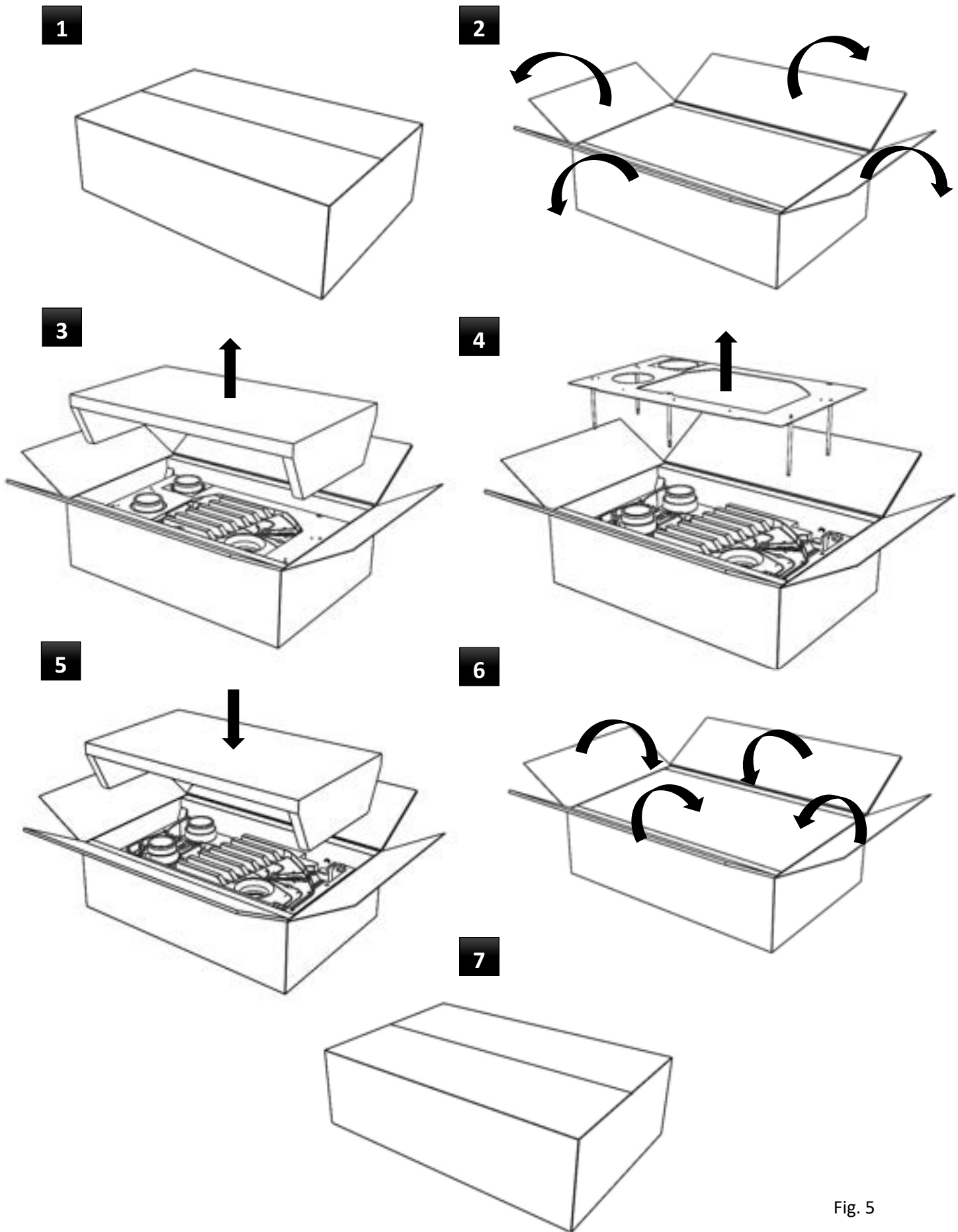


Fig. 5



**3.1.2.2. Unpacking Installation – Box 2**

- Unpacking of the installation accessories is carried out gradually, according to the installation work course, as specified in this manual:

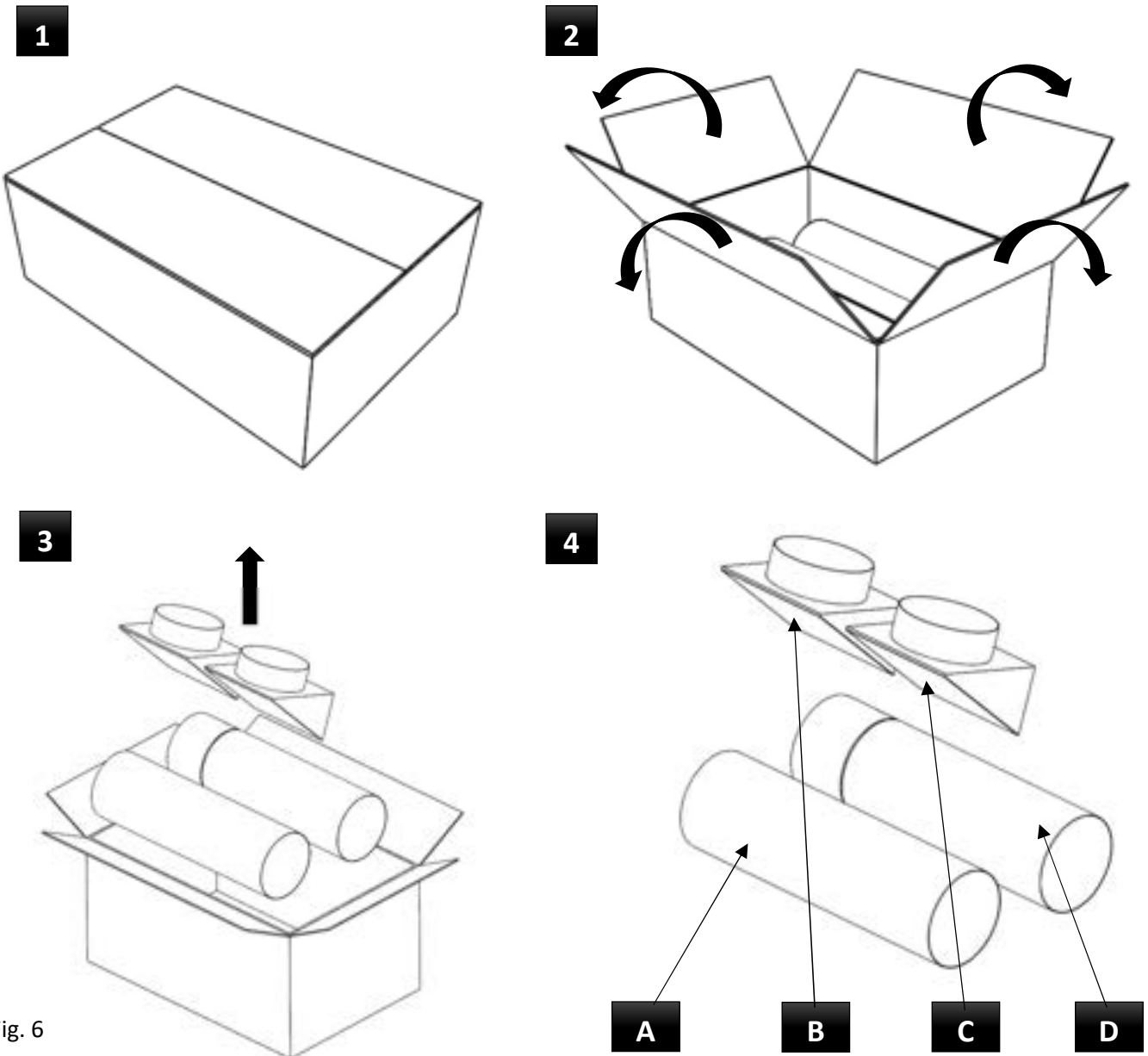


Fig. 6

**- Package Content Description – Box 2**

- A) Plastic white tube  $\varnothing 125$  mm (XR1-010-DUCT-1) or  $\varnothing 150$  mm (XR1-025-DUCT-1), length 500 mm
- B) plastic square outlet with damper
- C) plastic square outlet without damper
- D) Supply line assembly with damper  $\varnothing 125$  mm (XR1-010-DUCT-1) or  $\varnothing 150$  mm (XR1-025-DUCT-1), length 500 mm



Please, return all the not needed packaging to the appropriate recycling points where they will be disposed of professionally. Only packaging recycled in this way can be reused properly and returned to utility.



**3.1.3. Unit Location**

- The unit is installed on the interior side of the external perimeter wall of a ventilated room. The usual location for the unit is under the window.



- Consider placing the unit in the interior away from the surrounding objects with respect to the recommended distances from the unit (e.g., filter replacements, servicing) specified in Section 3.1.4. Minimum installation distances

- Consider placing the unit – square outlets in the exterior in a way to prevent damage, clogging (e.g. By surrounding vegetation, landscaping) due to air intake/exhaust and condensate drainage.

**3.1.3.1. Location During the Building Reconstruction**

- In the case of reconstruction of a building with water heating (radiator), it is possible to replace the existing water heating (radiator) with a unit with a water heater (XR1-0xx-ECV1...).
- The replacement must always be consulted with a heating expert or project designer.

**3.1.3.2. Location and operation of the unit in the area with a furnace (fire place)**

- The unit is designed for balanced flow between supply and drainage lines (i.e. the same amount of air is supplied and discharged) and can in no way replace a separate air supply to the furnace.
- For proper operation of the furnace and the unit, consult the location with the chimney sweep. Otherwise, the unit may malfunction.

**3.1.3.3. Unit Location and Operation in the Area with an Air Conditioning Unit**

- When operating the unit in summer months and using the air-conditioning system in a ventilated area, condensation may form inside the unit in a different area of the unit than intended.
- For trouble-free operation, we recommend installing a unit equipped with an enthalpy exchanger (XR1-0xx-ECxxER...).

**3.1.4. Minimum Installation Distances**

- The minimum wall thickness is 180 mm (pipe, damper).
- The maximum wall thickness is 1000 mm, provided that the piping is aligned with the unit sockets (straight piping without elbows only), in order to guarantee the correct functionality of the unit.
- If there is an installation requirement for a wall thicker than 1000 mm (only straight piping without elbows), consult your request with your HVAC supplier.
- Clearances from fixed objects:

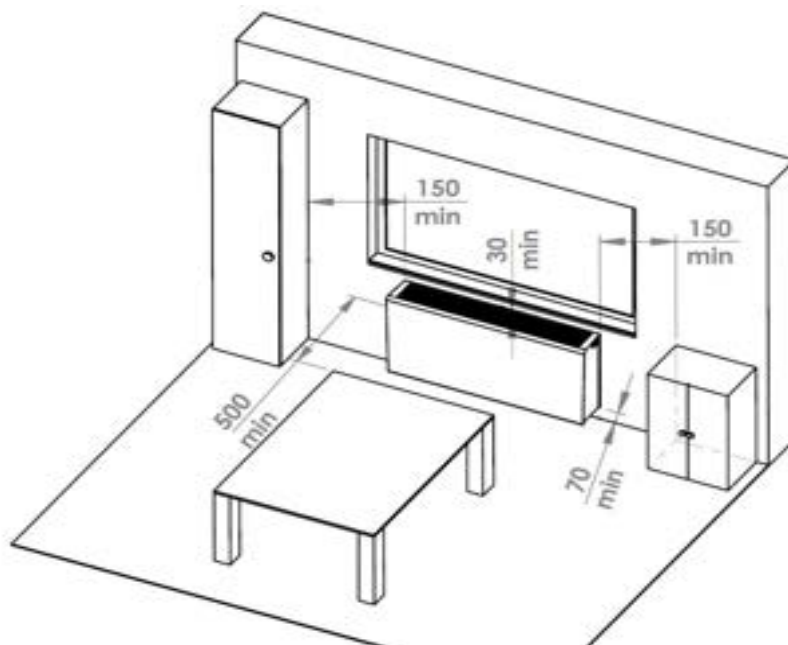


Fig. 7

- Failure to observe the specified clearances may not work properly and may damage the fan, increase noise, or prevent service access to the unit.

### 3.1.5. Installation Positions of the Xroom Unit

- All the Xroom unit types can be installed in the following position:

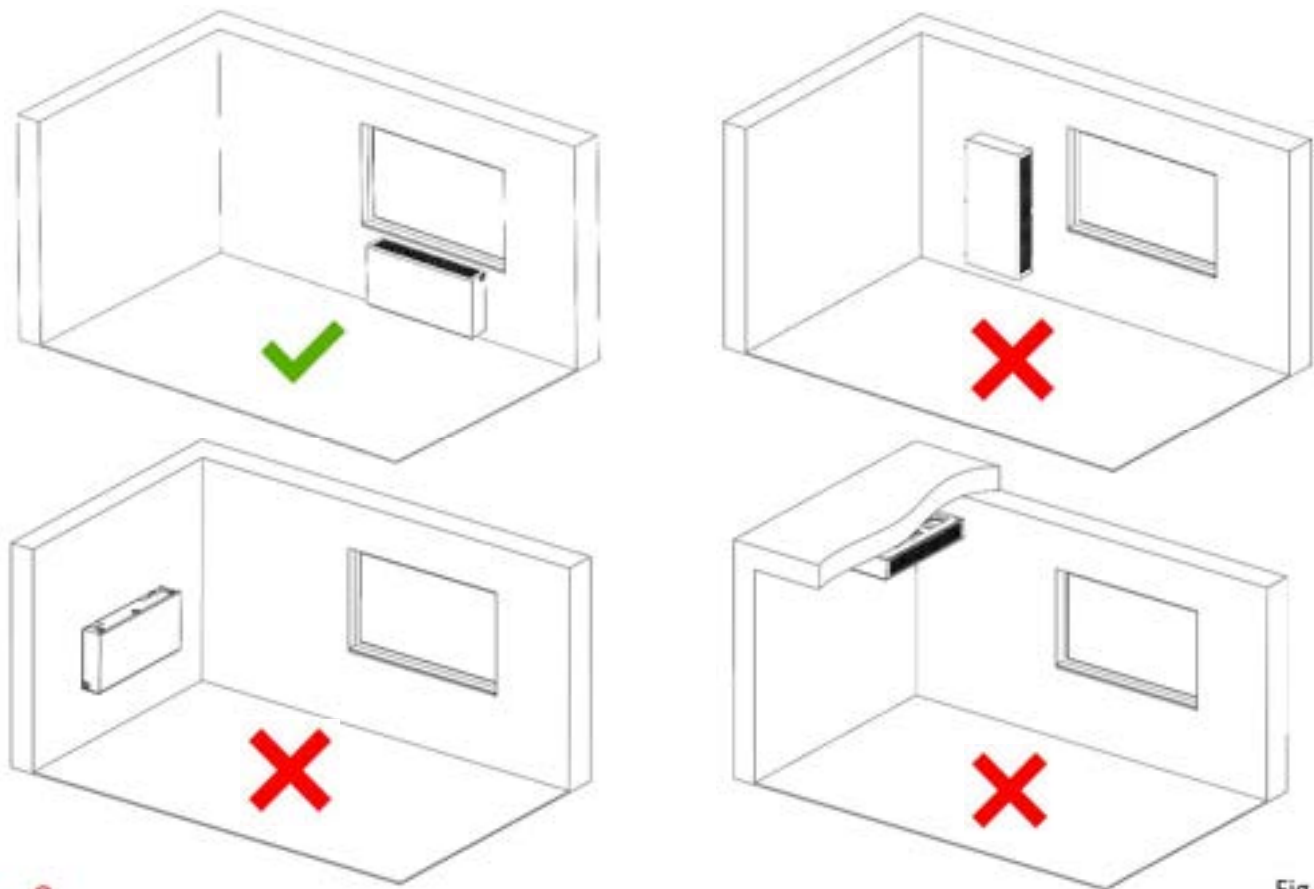


Fig. 8



- **Any other position is prohibited**

### 3.2. Xroom Unit Installation

- The unit must be operated in enclosed and dry areas with room temperature ranging between +5 °C and +30 °C.
- The recovery unit must be installed in accordance with the general and local safety regulations.
- The recovery unit may be installed, connected, commissioned, and repaired by a person with adequate education, experience, and knowledge of applicable regulations, standards, and potential risks and hazards, or by a properly trained service technician.
- **Failure to follow the installation procedure may result in the unit's damage or malfunction, or potential harm to the health and property of the user.**
- **Take special care when draining the condensate using a condensation sump (not a part of the supply) into the sewerage piping. The unit manufacturer accepts no liability for damage caused by incorrect installation of the condensate sump, drain piping, and other peripherals required for their operation.**



#### 3.2.1. Installation Components Required for Installation of the Xroom Unit

- Prepare the auxiliary installation material for the installation of the unit:
  - o Anchoring elements (e.g. dowels, dowel bolts). The diameter of the holes in the installation template is 7 mm.
    - Xroom 100 (XR1-010...) 7 pc
    - Xroom 250 (XR1-025...) 8 pc
  - o MS polymer based sealant 1 pc
  - o Low-expansion installation foam with an adapter according to wall thickness (e.g. tube) 1 pc
- The installation accessories supplied together with the unit are intended for installation on the wall with the maximum thickness of 500 mm.

- If you carry out the installation into the wall with a thickness greater than 500 mm, get also the material:
  - o Plastic air-conditioning piping with a length greater than the wall thickness:
    - Xroom 100 (XR1-010...) piping diameter 125 mm 2 pc
    - Xroom 250 (XR1-025...) piping diameter 125 mm 2 pc
  - o Direct coupling – insert
    - Xroom 100 (XR1-010...) piping diameter 125 mm 2 pc
    - Xroom 250 (XR1-025...) piping diameter 125 mm 2 pc
  - o Aluminium air-conditioning tape or other one for the same purpose 1 pc

### 3.2.2. Fitting and Mounting the Installation Template with Mounting Pins



- **Make sure that you have complied with all the principles necessary for correct installation specified in this manual:**
- Pull the installation template with pins upwards from box 1,
- Close the box with the remaining unit components and place it at a safe distance from the assembly site to prevent its damage by dust from the construction work during the installation,
- Remove the mounting pins; if the mounting pins cannot be removed by hand, use a size 8 wrench,
- Save the mounting pins for future use

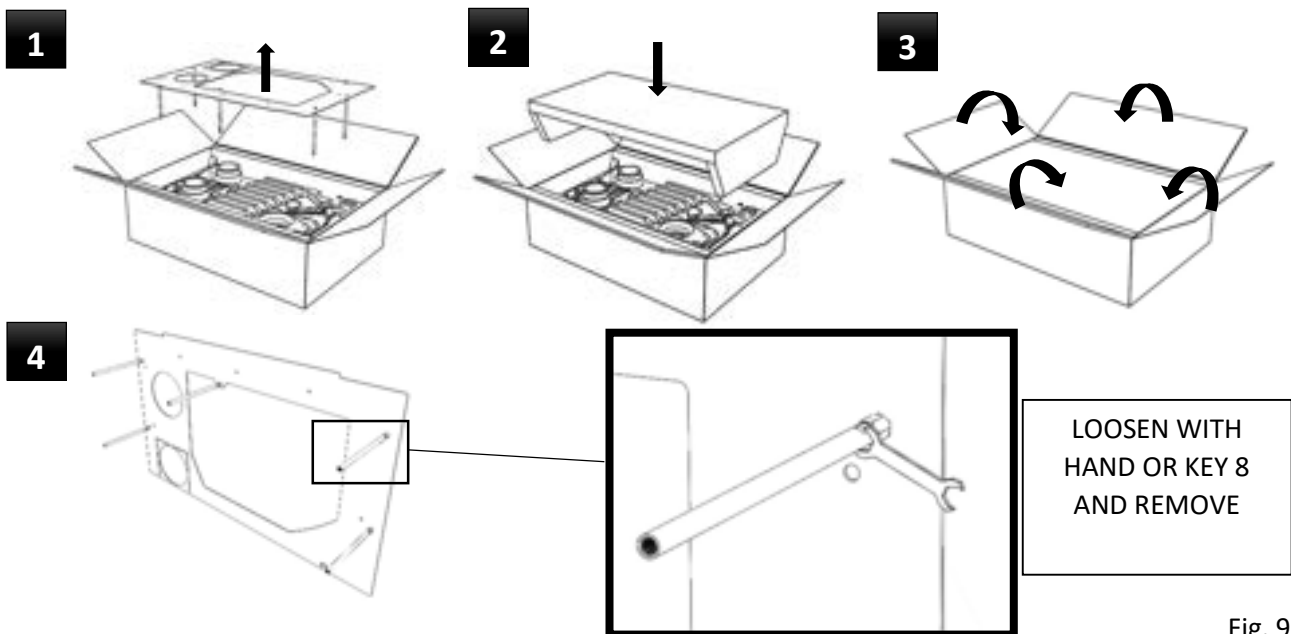


Fig. 9

#### 3.2.2.1. Fitting the installation template on the wall when using the construction module

- If you used a building module (XR1-xxx-DUCT-1) to build the wall, on which the unit will be located, proceed as follows:
  - o Remove the plugs from the construction module (cylinder) approx. 20 mm into the room
  - o Insert the installation template through the circular holes in the template on the plugs removed from the construction case
  - o Continue the installation as per 3.2.2.3



#### 3.2.2.2. Fitting the Installation Template on the Existing Wall

- Place the installation template at the desired location.
- Measure the required distances of the unit from the fixed surfaces while observing the minimum installation clearances specified in Section 3.1.4.
- Continue the installation as per 3.2.2.3



#### 3.2.2.3. Installation Template Mounting

- Use a spirit level to level the template,
  - o If necessary, the top nuts for the mounting pins can be used to adjust the spirit level. Make sure the level is correctly laid on the nuts.
- Mark all the mounting holes for installation of the template on the wall,

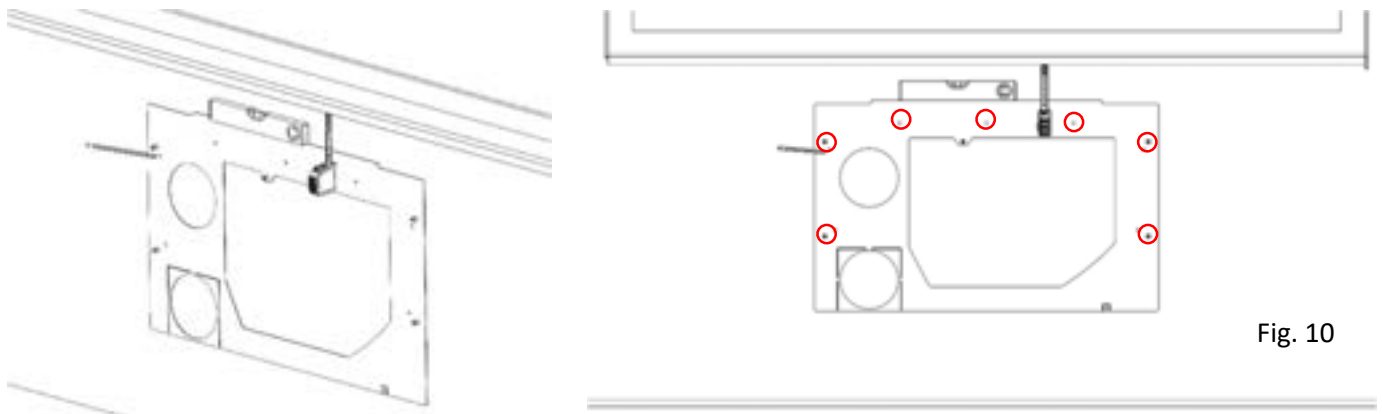


Fig. 10

- Select a suitable anchoring material (not included in the delivery) for the wall composition, the diameter of the holes in the template intended for anchoring the installation template is 7 mm,
- Drill the marked holes according to the selected anchoring material,
- Bolt the installation board to the wall,
- Check that the installation board is level or align it.

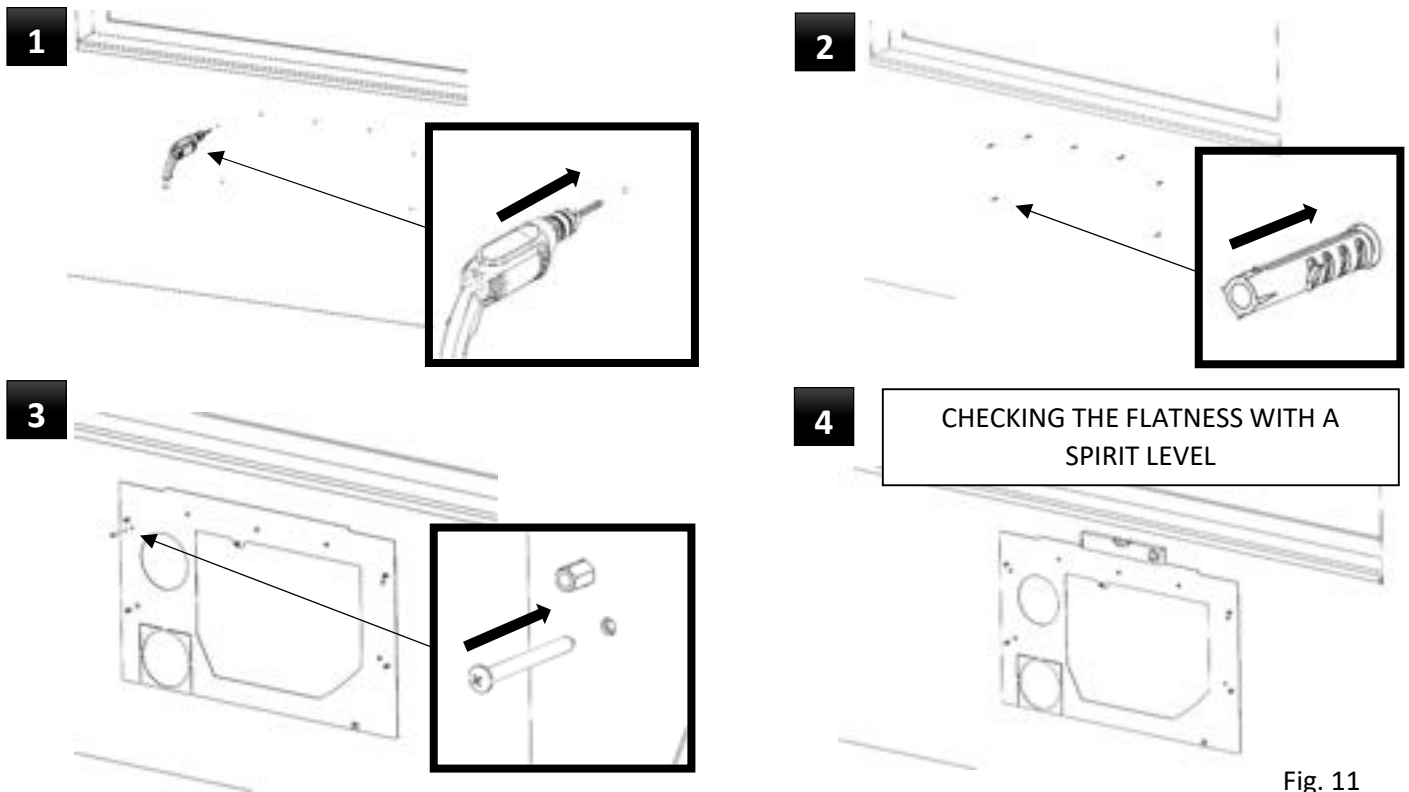


Fig. 11

### 3.2.3. Preparation of Piping Holes in the Existing Wall

- Use the prepared holes in the installation template to correctly align the piping holes. The installation template is also used as a drilling template.
- Do not remove the installation template when drilling the piping holes.
- Use the appropriate technology (core drilling) to drill holes into the wall or approach a specialised company that performs this service professionally.
- Core drill (drilled hole) diameter:
  - Xroom 100 (XR1-010...)                       $\varnothing 152$  mm (hole in installation template  $\varnothing 155$  mm)
  - Xroom 250 (XR1-025...)                       $\varnothing 182$  mm (hole in installation template  $\varnothing 185$  mm)



- If necessary, use the marks on the installation template to determine the centre of the holes

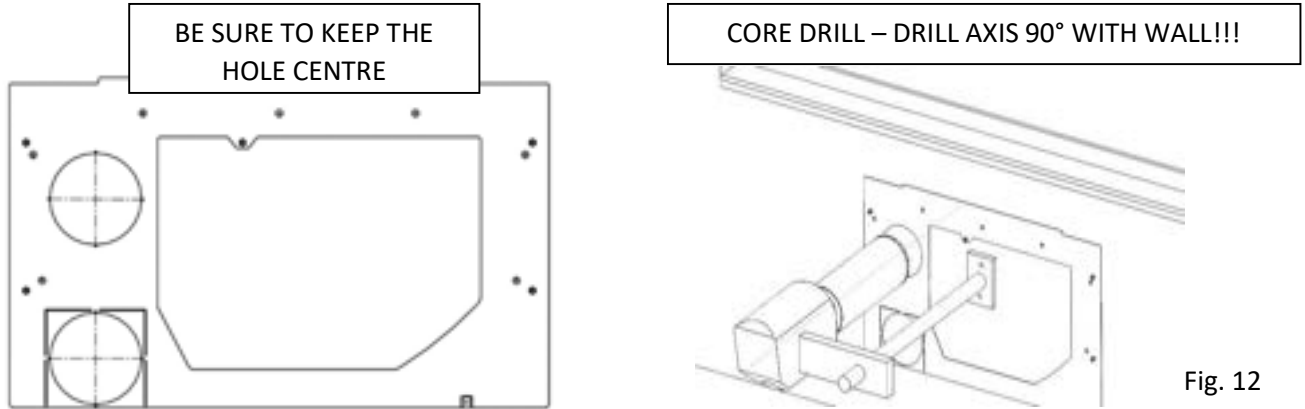


Fig. 12



- It is essential that the axis of the drilled hole is horizontal and 90° to the inner surface of the circumferential wall.
- Be sure to observe the diameter of the drilled holes in the wall. Otherwise, there is a real risk of incorrect installation and, consequently, poor functionality of the unit.

### 3.2.4. Preparation of Supply and Drain Piping



- The installation accessories, which are always supplied with the unit as mandatory accessories, are for walls with the maximum thickness of 0.5 m.
- Extension of the piping for walls with a thickness greater than 0.5 m is solved in Section 3.2.4.1.
- Measure the total wall thickness with the thickness of the installation template through the drilled hole (the thickness of the installation template itself is 2 mm).
- From box 2 – installation accessories, remove 1 pc “supply piping assembly with damper  $\varnothing 125$  mm, (Xroom250  $\varnothing 150$  mm), length 500 mm” – position D.
- Transfer the measured length to the supply piping assembly with damper where the measurement starts from the side where the damper and orientation blue point are located.
- From box 2 – installation accessories, remove “white plastic tube, length 500 mm” – position A.
- Transfer the measured length (wall thickness) to the other piece of plastic tube.
- Cut the supply pipe assembly with damper and the second pipe.

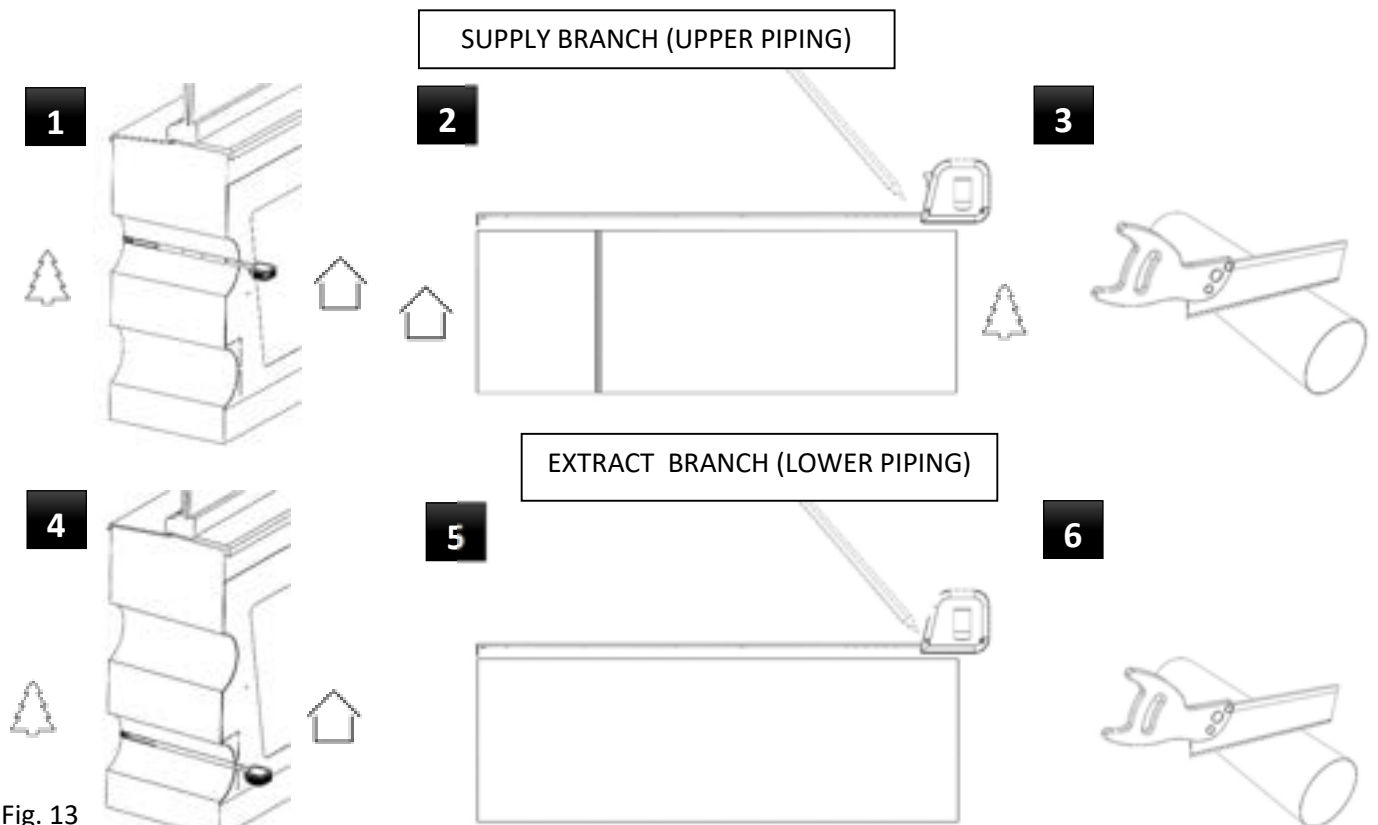


Fig. 13  
Version 2 – GBR (23.08.2022)



- **When cutting a plastic tube, the cut must be as smooth as possible, clean, and perpendicular to the pipe axis**

**3.2.4.1. Extension of piping for walls with a thickness greater than 500 mm**

- If there is a need for longer piping (plastic HVAC piping), contact your nearest HVAC seller. You will need:
  - o plastic HVAC piping (2 pcs) with a length greater than the thickness of the wall, on which the unit will be installed with a diameter of:
    - Xroom 100 (XR1-010...)                                                     $\varnothing 125$  mm
    - Xroom 250 (XR1-025...)                                                     $\varnothing 150$  mm
  - o straight clutch (1 pc) – insert with the diameter of the connecting pipe and according to the size of the unit

**3.2.4.1.1. Extension of the Supply Piping with a Damper Assembly**

- Fit the straight coupling – insert into the intake piping assembly with the damper to the side of the damper.
- Fit the extension tube to the other end of the straight coupling.
- Secure the established joint – wrap it with aluminium tape or its appropriate replacement.



- **The minimum length of the extension tube, which must be then be fitted on the socket of the unit, is 100 mm (i.e. the wall thickness is over 600 mm). If the total wall thickness does not allow for the minimum length of the extension tube to be 100 mm (i.e.: wall thickness is between 500 and 600 mm), a part of the tube from the supplied assembly must be shortened so that the minimum length of the extension tube of 100 mm can be ensured. Otherwise, it is not possible to guarantee the correct installation of piping on the unit.**

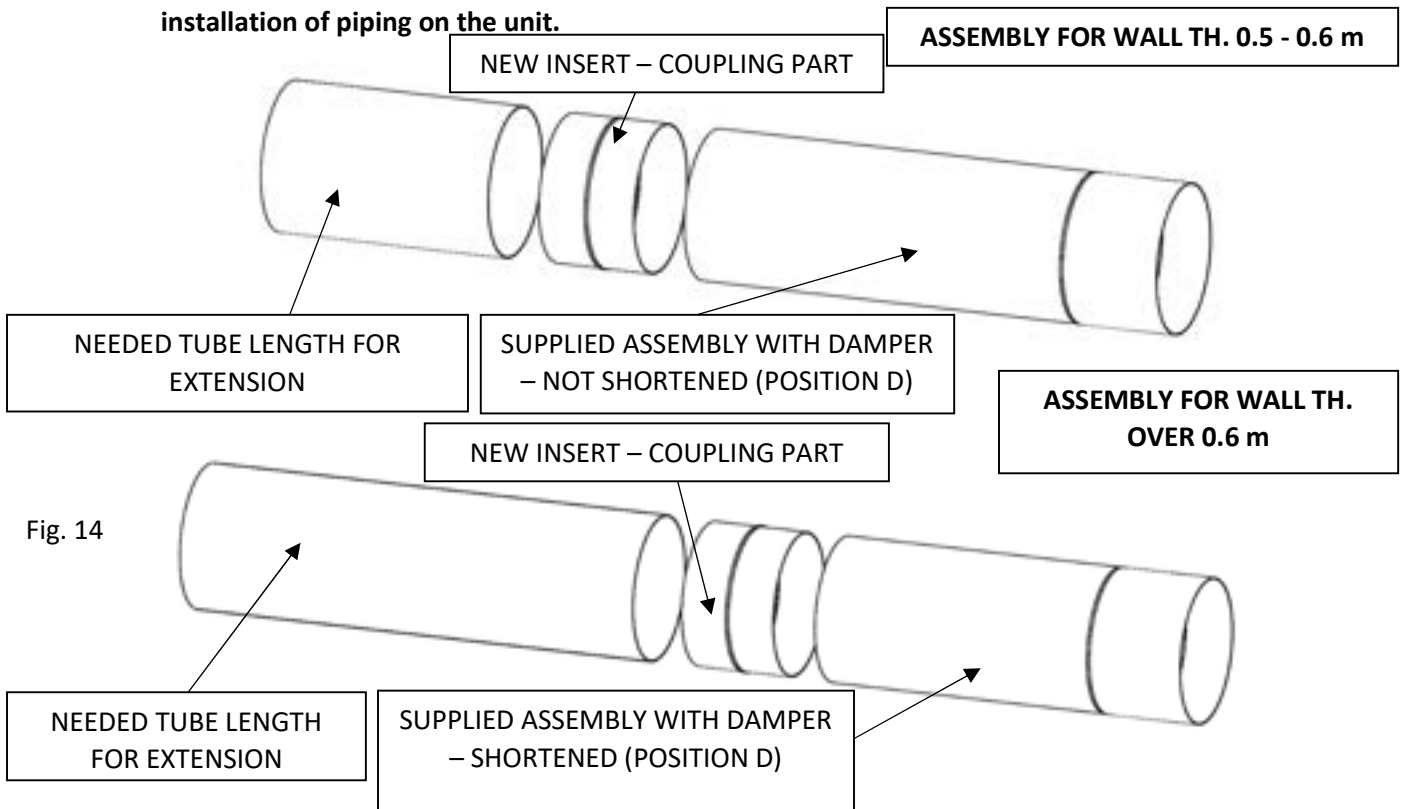


Fig. 14

**3.2.4.1.2. Drain piping extension – white plastic tubes**

- Replace the plastic tube that you bought to extend the piping with the 0.5 m tube that is included in the delivery.



- **The tube intended for the exhaust piping must not be extended, but must always be replaced with a one-piece tube. There is a risk of preventing condensation run-off and, therefore, of potentially leaking condensate into the wall.**



- The subsequent procedure for precise reduction of the pipeline is the same as in Section 3.2.4.

**3.2.5. Installation of the Supply and Drainage Piping on the unit**

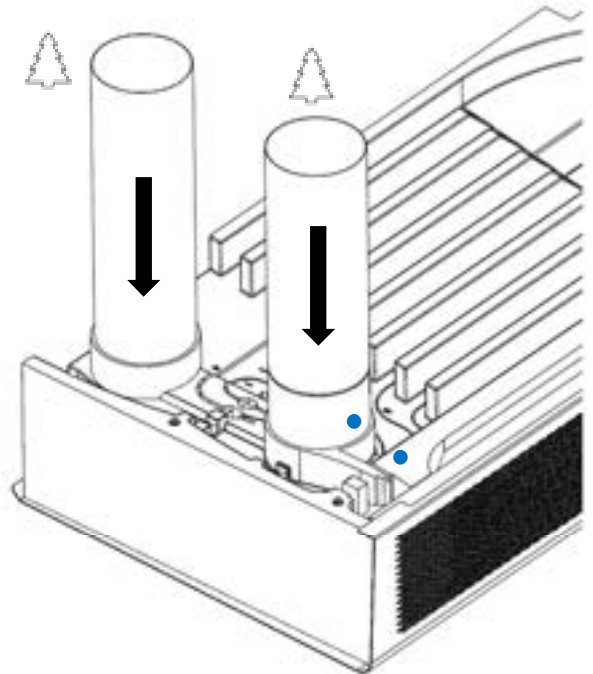
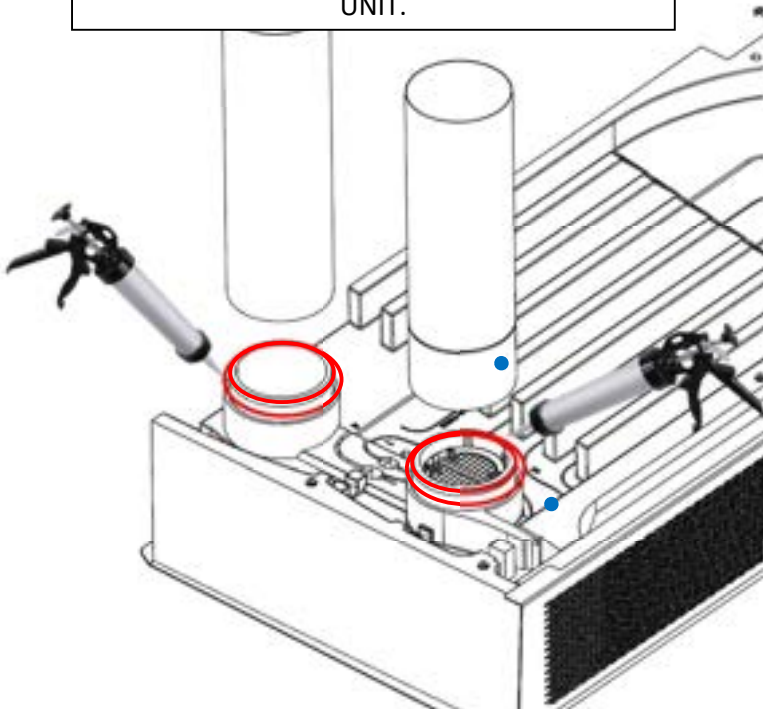
- Move box 1 - the "Xroom unit" back to the assembly area and open it. Do not unpack the unit from the box.
- Remove the plastic bag with connecting material from the box (M6x30 bolts, M6x20 bolt with plastic head) and store it for later use.
- Apply MS polymer based sealant to the grooves that are along the perimeter of the socket, so that it is filled up to the edge of the groove.
- Apply MS polymer based sealant to the outer side of the socket along the entire perimeter.
- Slide the length-adjusted tube (without damper) onto the lower socket of the unit by turning it back and forth while pushing it down into the groove.
- After fitting the pipe onto the lower socket, check its perpendicularity to the rear part of the unit and the correct installation

**1**

APPLY THE SEALANT INTO THE GROOVE AND ON THE OUTER SIDE OF THE SOCKET OF THIS UNIT.

**2**

PUSH THE PREPARED PIPING INTO THE GROOVES, BLUE POINTS MUST FIT – **TUBES ARE POSITIONED VERTICALLY TO THE UNIT,**



**3**

APPLY THE SEALANT AND INSTALL (ENTIRE CORNER) THE UNIT BODY AND PIPING DIVISION TO MAKE A CORNER JOINT

**4**

SECURE THE PIPING WITH SELF-CUTTING BOLTS FOR INITIAL HANDLING – 2 PCS ON THE SOCKET AGAINST EACH OTHER (LOCATION IS 20 mm FROM THE EPP SOCKET EDGE). CUT OPEN THE BOX, IN WHICH THE UNIT IS PACKAGED, AND REMOVE THE UNIT.

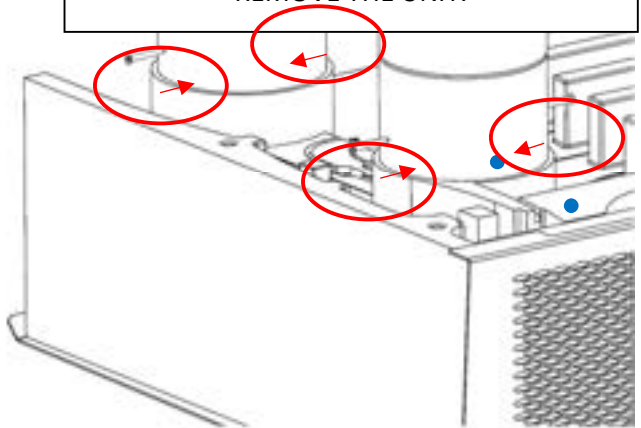
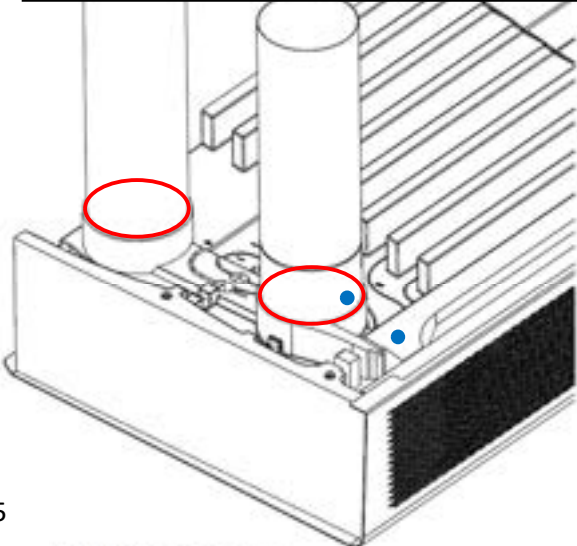


Fig. 15

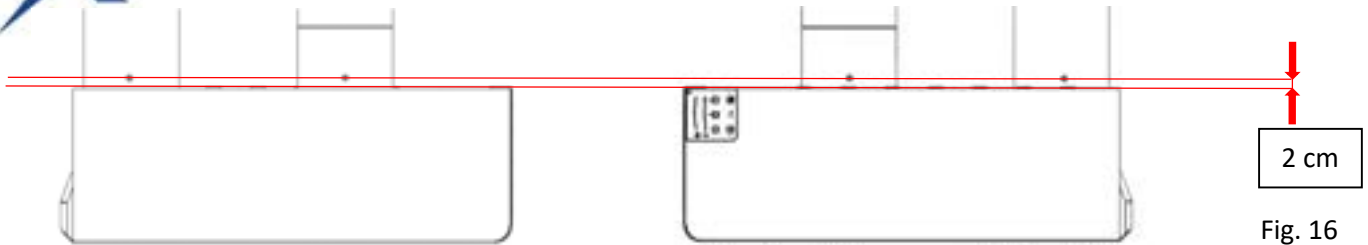


Fig. 16

- Cut the box on the shorter side of the installed piping for better access to the self-tapping locking bolts.
- Secure the installed piping with self-tapping bolts  $\varnothing 4 \times 22$  mm (part of the mandatory accessories delivery – box 2) against each other as shown in Fig. 15 – 4, at a distance of 20 mm from the edge of the unit, see Fig. 16.
- Tighten the self-tapping bolts with a reasonable force to prevent damage to the plastic tube and the socket of the unit.
- *Orient the length-adjusted piping – assembly with a damper* before sliding it onto the socket of the unit:
  - o The blue dot located on the tube body must be directed towards the blue dot on the body of the unit (the damper must be positioned towards the unit),
  - o Blue dots (on the tube and on the unit) must be also positioned in one axis to ensure the axial alignment of the tube with the damper and unit.
- Slide the assembly so oriented onto the top socket of the unit by rotating it back and forth while pushing it down, into the groove.
- After fitting the tube onto the top socket, check its perpendicularity to the back of the unit and the correct orientation of the blue dots.
- Seal the installed piping on the sockets around the perimeter and apply the MS polymer-based sealant to form a corner joint across the entire socket thickness.
- Secure the installed piping with self-tapping bolts  $\varnothing 4 \times 22$  mm against each other as shown in Fig. 15 – 4, at a distance of 20 mm from the edge of the unit, see Fig. 16.

### 3.2.6. Gluing Insulating Pads

- For proper sealing of the piping and unit in relation to the opening in the wall (construction module), apply a polyethylene insulating pad, which is included in the unit packaging, to the installation template.
- Remove the adhesive foil from the pad's back side.
- Attach the pad in line with the installation marks drawn on the installation template.

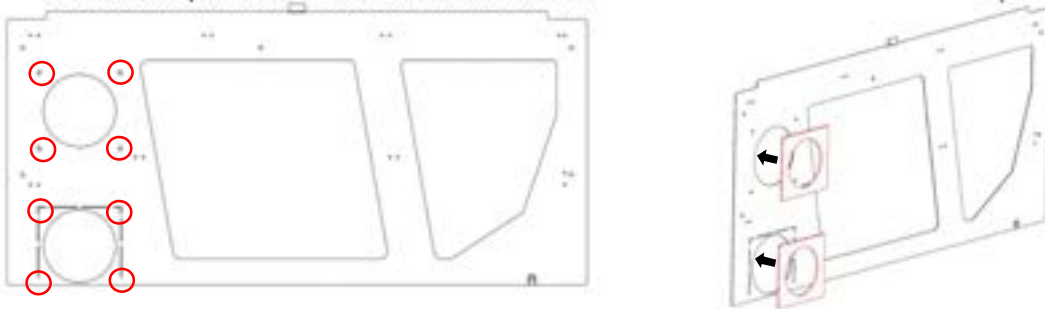


Fig. 17

#### CHECK POINT



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- **Before continuing work, check that the piping fits correctly:**
  - o piping without a damper (only a tube) is installed on the lower socket,
  - o piping with a damper is installed on the upper socket:
    - the damper is positioned towards the unit,
    - blue dots (on the piping and on the unit) face each other and are axially aligned,
  - o both the tubes are perpendicular in all the directions to the rear of the unit,
  - o both the tubes are sealed with MS polymer-based sealant in socket grooves,
  - o sealant is applied between the outer wall of the socket and the inner wall of the tube,
  - o both the tubes are fitted with sealant to the sockets via a corner joint over the entire thickness of the socket,
  - o supply (with damper) and exhaust piping are secured with self-tapping bolts.
  - o The insulation pads are glued to the installation template
- **IF ANY CHECK POINT IS NOT OBSERVED, FIX IT.**

### 3.2.7. Installation of the Xroom unit on the wall

- Bolt the removed installation pins back into the installation templates nuts and tighten them with an 8 mm wre

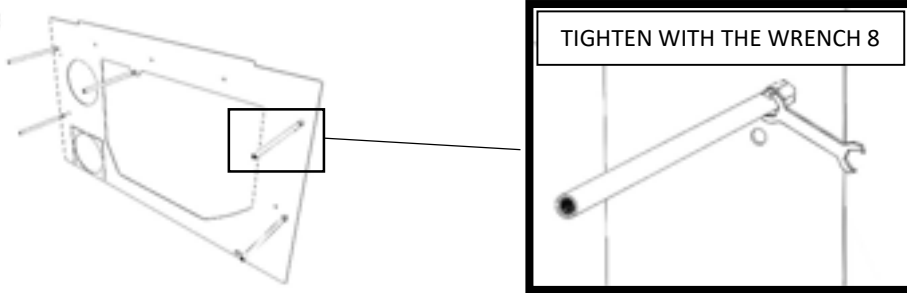


Fig. 18



- **During the entire handling of the unit from the box on the assembly template, work with caution to avoid damage to the sealed connections between the piping and the unit.**
- From box 1 – “Xroom unit”, remove the unit (black fitting) with the installed piping so that the front metal cover, which is located at the bottom of the package, still remained in the box, or use the cut box and slide the unit to the side; however, the metal front cover must remain in the box.
- Close box 1 – “Xroom unit” with the front metal cover and place it in a safe place outside the assembly area to prevent damage or dusting of the **front cover**.

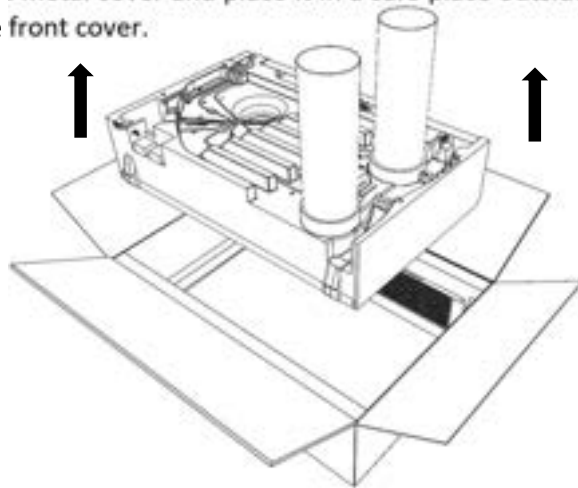


Fig. 19

### 3.2.8. Xroom Unit Final Fitting



- Partly slide the removed unit onto the installation template pins.
- **Connect the ground wire connector to the grounding point of the installation template to achieve a connection between the grounding of the unit and the installation template to ensure correct electrical safety of the unit.**

#### 3.2.8.1. Electric heater variant (XR1-010-ECE1...), without heating – cold (XR1-010-ECS0...)

- Press the rear wall of the unit towards the installation template and secure the unit with the supplied M6x25 bolts (part of the delivery, in a bag) into the installation pins.

Fig. 19

**1** FIT THE UNIT ON THE INSTALLATION PINS + SLIDE ALREADY GLUED PIPING INTO THE HOLES DRILLED IN THE WALL.

**2** PARTIALLY FIT THE UNIT ON THE BOLTED PINS AND CONNECT THE EARTHING CABLE TO THE PREPARED EARTHING CONNECTOR ON THE BOARD.

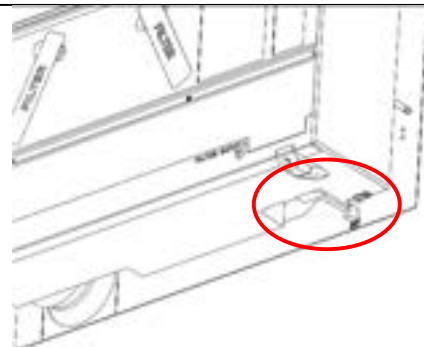
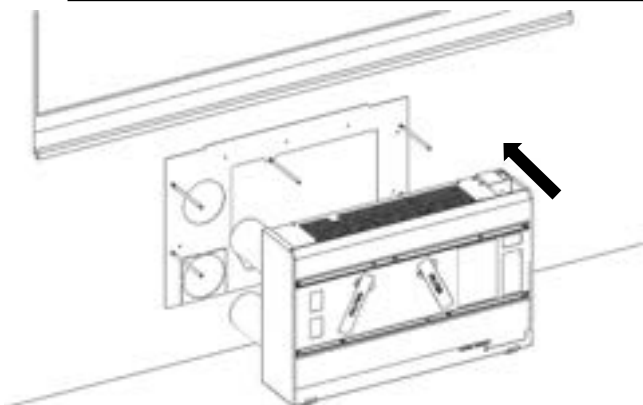


Fig. 20



**3** ATTACH THE UNIT TO THE INSTALLATION PINS USING M6x25 A BOLTS  
**TIGHTEN WITH APPROPRIATE STRENGTH – MAX 5 Nm** 

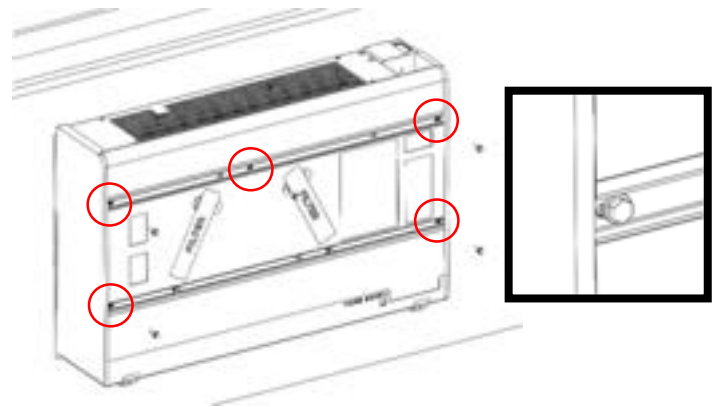



Fig. 20

-  - Pay special attention to the proper installation of the tubes into the prepared holes in the wall to avoid damaging them.
- Make sure that the locking bolts (M6x25) are properly tightened with the maximum force of 5 Nm, so that the fitting sits on the installation template with its entire rear surface. Otherwise, there is a risk of increased noise and incorrect function of the unit.

**3.2.8.2. Water heater variant (XR1-xxx-ECV1...)**

- Leave the unit inserted on the installation pins at a distance of approximately 100 mm from the wall.
- Connect flexible hoses ended with an external G 3/4" thread on the mixing valve (not included in the delivery). To distinguish the inlet and outlet of the heating water, the ends of the flexible hoses are marked with red (hot water inlet) and blue (return) dots.
- To ensure a flexible hose against turning when tightening, use size 27 wrench. This prevents the flexible hoses and outlets from the heat exchanger from turning, which can result in irreversible damage to the hoses, fitting, and water exchanger.

**1** ATTACH HOSES TO VALVE AND TIGHTEN PROPERLY USING SUITABLE TOOLS

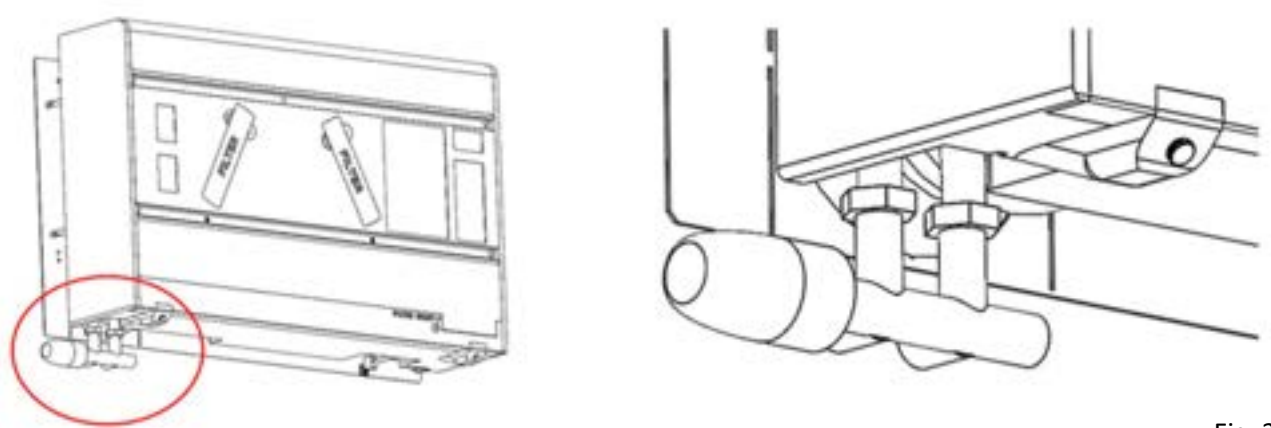



Fig. 21

- After connecting the water exchanger to the heating system, a pressure test of the unit connection is recommended.
-  - **The tests must be carried out by a person qualified in this field with knowledge of the applicable regulations and standards of the country concerned.**

- After connecting the water exchanger to the heating system, fit the rear wall of the unit to the installation template and secure the unit with 5 M6x25 bolts (part of the delivery, in a bag) to the installation pins.

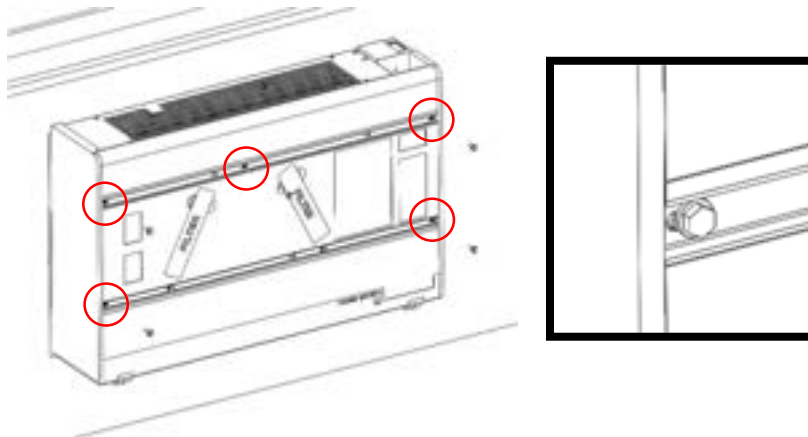


Fig. 22



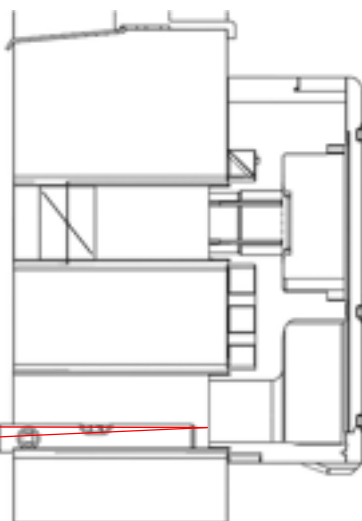
- **Pay special attention to the proper installation of the tubes into the prepared holes in the wall to avoid damaging them.**
- **Make sure that the locking bolts (M6x25) are properly tightened with adequate force – BUT MAX. 5 Nm, so that the fitting sits with its entire rear surface on the installation template. Otherwise, there is a risk of increased noise and incorrect function of the unit.**

### 3.2.9. Securing, Insulating Piping in the Wall

- Securing – foaming the supply (assembly with damper) and drain piping using low-expansion installation foam from the outside of the wall.
- Foam the whole perimeter and the entire length of the piping in the area between the piping and the inside of the wall. If the standard mounting foam adapter does not allow you to foam the entire wall thickness, use a suitable adapter that would allow you to do so (e.g. a tube).
- Immediately after foaming, set the supply and drainage piping into a slight gradient for the condensate to drain outwards.



- **Pay special attention to the drainage piping (the bottom tube without the damper) where the outward gradient must be at least 2° (¼ of the level bubble). If the gradient is not observed, there is a risk of condensate flowing into the interior.**
- After fitting the piping in the gradient, fix it against arbitrary movement until the foam hardens.



**THE FOAM MUST BE APPLIED AROUND THE ENTIRE PIPING LENGTH AND CIRCUMFERENCE – IN CASE OF NON-COMPLIANCE WITH THIS RULE, THERE IS A RISK OF CONDENSATION FORMING ON THE PIPING SURFACE AND FLOW OF THE CONDENSATE INTO THE WALL AND INDOOR AREAS**

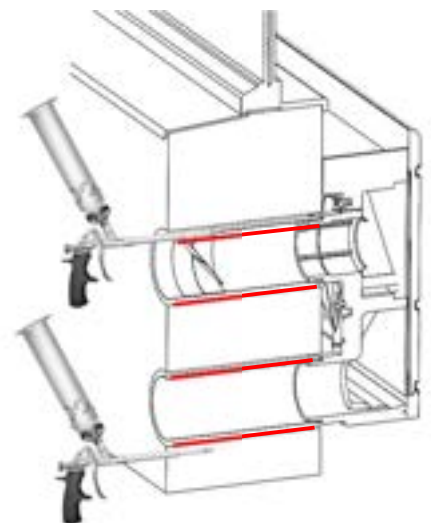


Fig. 23

- Once the installation foam is hardened, cut the foam along with the outside facade.
- Treat the foam cut for construction purposes to prevent penetration of moisture, water from the facade, between the drilled hole and the piping (e.g. through a liquid membrane).

### 3.2.10. Fitting the Piping on the Outer Side of the Wall with Outlet

- From box 2 – installation accessories, remove the plastic square outlet with a damper and square plastic outlet without the damper.
- Apply MS polymer-based sealant along the whole perimeter of the chamfered edge of the socket to seal the gap between the outlet socket and the tube.
- Fit the outlet with the damper to the lower tube.
- Fit the outlet without the damper on the upper tube.
- Align the dampers according to the flatness of the facade and fix them as needed (e.g. by cementing them to the facade)

<b>1</b>	APPLY CEMENT AROUND THE ENTIRE OUTLET SOCKET PERIMETER – TWICE	<b>2</b>	INSERT THE OUTLETS INTO PIPES
----------	----------------------------------------------------------------	----------	-------------------------------

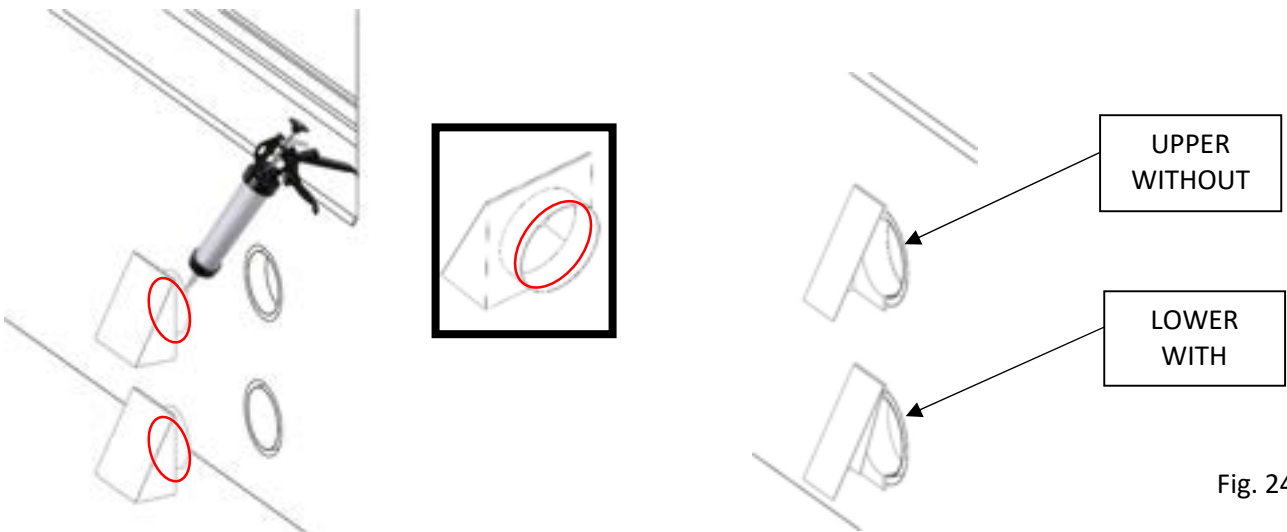


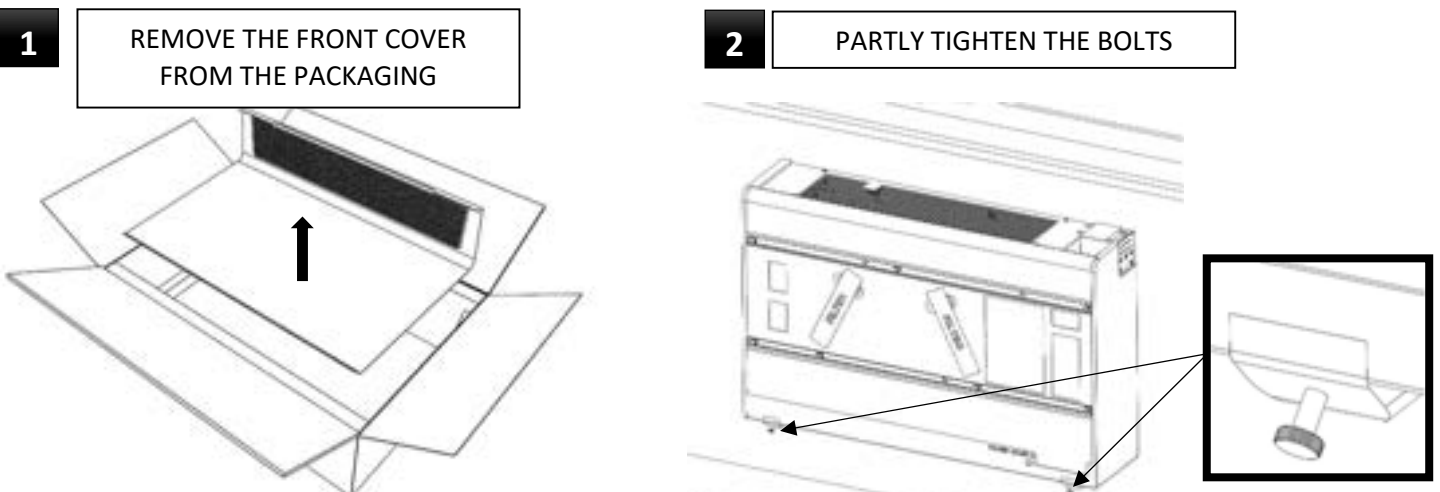
Fig. 24



- **Correct sealing between the damper socket and piping ensures correct condensate drainage through the outlet.**

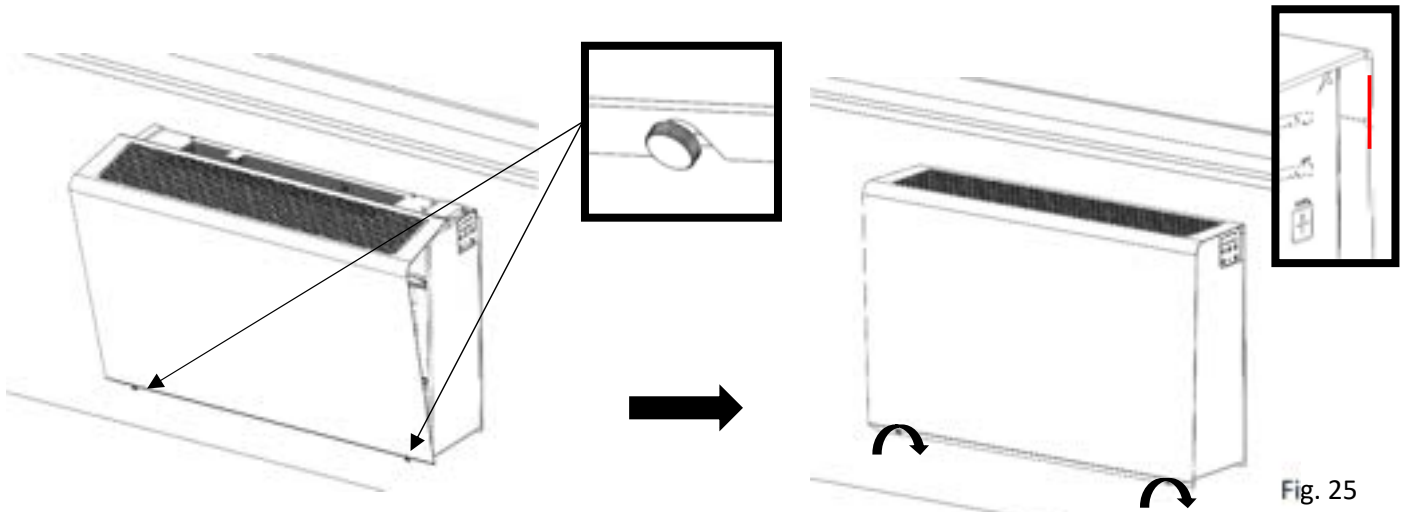
### 3.2.11. Installation of the Front Metal Cover

- Bolt in the M6x20 bolts with the plastic head (part of the delivery, in a bag) about 10 mm to the bottom of the unit.
  - o Xroom 100 size – 2 pc
  - o Xroom 250 size – 3 pc
- Remove the front cover of the unit from box 1 – "Xroom unit".
- Hook the unit cover behind the unit body and, at the same time, attach it to the partially bolted M6x20 bolts with plastic head. The side edge of the unit cover shall be positioned in alignment with the side edge of the installation template to form a "one edge".
- Tighten with your hand the partially tightened M6x20 bolt with the plastic head.





**3** ATTACH THE FRONT COVER, TIGHTEN THE BOLTS BY HAND – ALIGNING THE COVER WITH THE TEMPLATE



- Tighten the plastic head bolts with adequate force to prevent their damage or damage to the nuts in the unit body.

### 3.3. Electrical Installation – Connection to Mains

#### 3.3.1. General Information – Safety



- Before starting all the installation work, make sure that the wiring box or mains power outlet that you want to use to connect the unit is equipped with a protective (green-yellow) wire or contact (pin).
- If you use a mains plug to connect the unit, it must always remain accessible so that the unit can be safely disconnected from the mains in the event of danger.



- Check that the power supply meets the requirements for power supply of the unit (voltage, current, frequency, etc.) specified on the unit's serial plate. Section 3.3.3. Displaying the Electrical Parameters.
- The relevant current circuit must be protected in the electric power distribution system by the maximum of 16 A.
- The electrical cable to be connected to the mains must not be broken.
- Local electrical regulations must always be respected.
- Electrical connection of the unit to the mains may only be carried out by persons qualified for this activity with a valid authorisation and knowledge of relevant standards and directives in the country.
- Before starting any installation work, it is necessary to switch off the power supply. During the installation, the switch must be secured against being switched on again by an unauthorised person. The switch must have the minimum contact spacing of 3 mm.
- A two-pole disconnecting device (circuit breaker) must be connected to the unit's power supply.
- It is forbidden to interfere in any way with the internal connection of the unit, unauthorised interventions in the unit may lead to loss of warranty servicing claims
- This unit belongs to the product group with type Y connection. If the supply cord is damaged, it must be replaced by the manufacturer, its service centre, or similarly qualified person to avoid dangerous situations.
- The unit is classified as protection class 1 category of appliances in terms of protection against electric shock.
- The unit supply voltage of 1~230V/50-60Hz may not be modified in any way; otherwise, there is a risk of damaging the electrical elements of the unit.

#### 3.3.2. Connection to Mains

- The unit is equipped with a separate strand-type supply cable (stranded wire). The stripping of the cables to the individual wires is 50 mm. The individual wires are equipped with crimped terminals.
- The supply cable length of 1.5 m may be shortened by a qualified person as needed.
- The individual wires are colour-coded

- brown/black – Phase conductor – L
- blue – Neutral conductor – N
- green-yellow – Protective conductor – PE

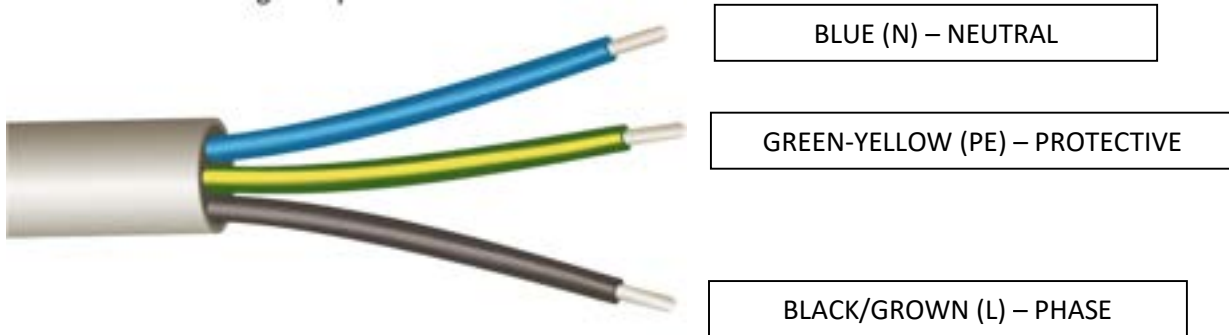


Fig. 26

**3.3.2.1. Connection of the Unit to the Wiring Box**

- The power supply cable is prepared by the manufacturer for connection to the wiring box.
- Use adequate connecting elements (e.g. terminal plates, spring terminals, etc.) to connect the power supply cable to the mains.
- **Installation of the power supply cable in the wiring box and connection to the mains must be carried out by a qualified person who has a valid authorisation for this activity and knowledge of the relevant standards and directives in the given country.**



**3.3.2.2. Connecting the Unit to the Electrical Outlet**

- The supply cable can be equipped with a fork with a protective wire (pin) – not included in the delivery.
- **Connection – installation of a plug on the supply cable must be performed by a qualified person who has a valid authorisation for this activity and knowledge of the relevant standards and directives in the given country.**



**3.3.2.3. Recommended Xroom Unit Protection**

Unit type		Circuit breaker capacity	Number of phases
Xroom 100	XR1-010-ECS0...	10 A	1x230V
	XR1-010-ECV1...		
	XR1-010-ECE1...		
Xroom 250	XR1-025-ECS0	10 A	
	XR1-025-ECV1	16 A	
	XR1-025-ECE1		

Tab.16

**3.3.3. Display of electrical parameters**

- all the unit's electrical parameters are provided on the serial plate

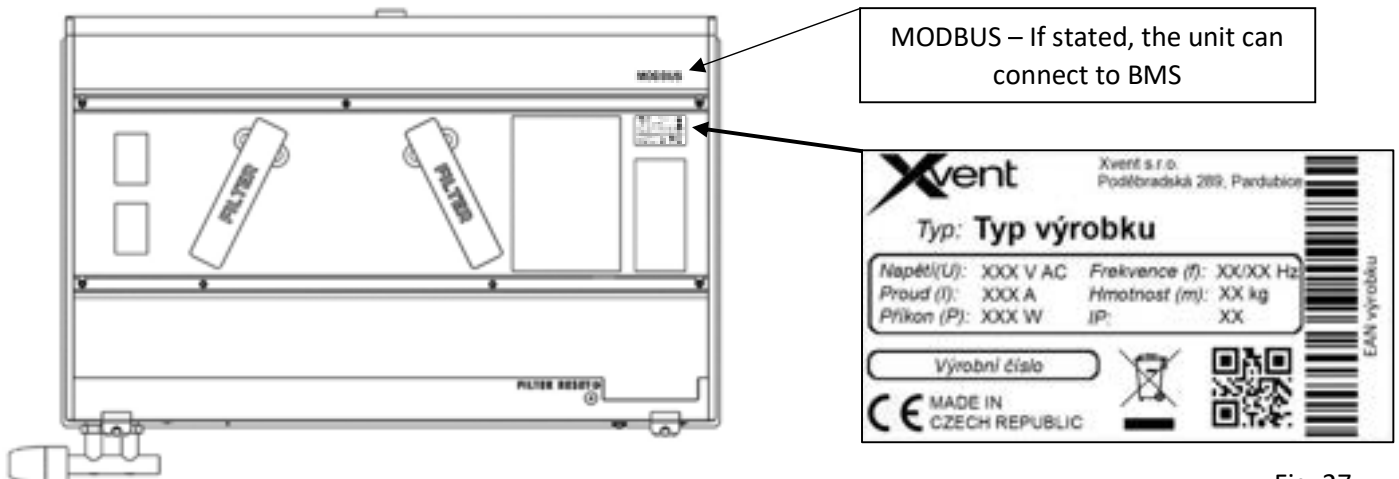


Fig. 27

#### 4. Regulation

##### 4.1. General Information – Safety

- There is no need to connect anything else to the unit for the correct operation of the unit. By default, the unit is supplied with complete integrated regulation and CO<sub>2</sub> air quality sensor. It is therefore ready for immediate use after installation on the wall.

##### 4.2. Electrical Accessories to the Xroom Unit



- **Before connecting electrical accessories, always switch off the unit on the controller and with the main switch (position 18).**

##### 4.2.1. Connecting Electrical Accessories

- Connect the electrical accessories in the control box. If necessary, the box can be pulled out above the fitting level by approx. 80 mm.
- Spring terminals with manual wire locking are used to connect the individual components. A strand-type conductor (stranded wire) and a solid conductor (wire) in the cross-section range from 0.5 to 1.5 mm<sup>2</sup> can be installed in the terminals. Before inserting the wire into the terminals, first press the locking orange button. Then retract the wire, release the lock, and slightly pull it out of the terminal to verify that the wire is properly secured. If the wire needs to be removed from the terminal, the procedure is the same.
- Pull the supply and communication cables necessary to connect the accessories and communication to the unit through the unit body into the area where the AQS sensors are located.

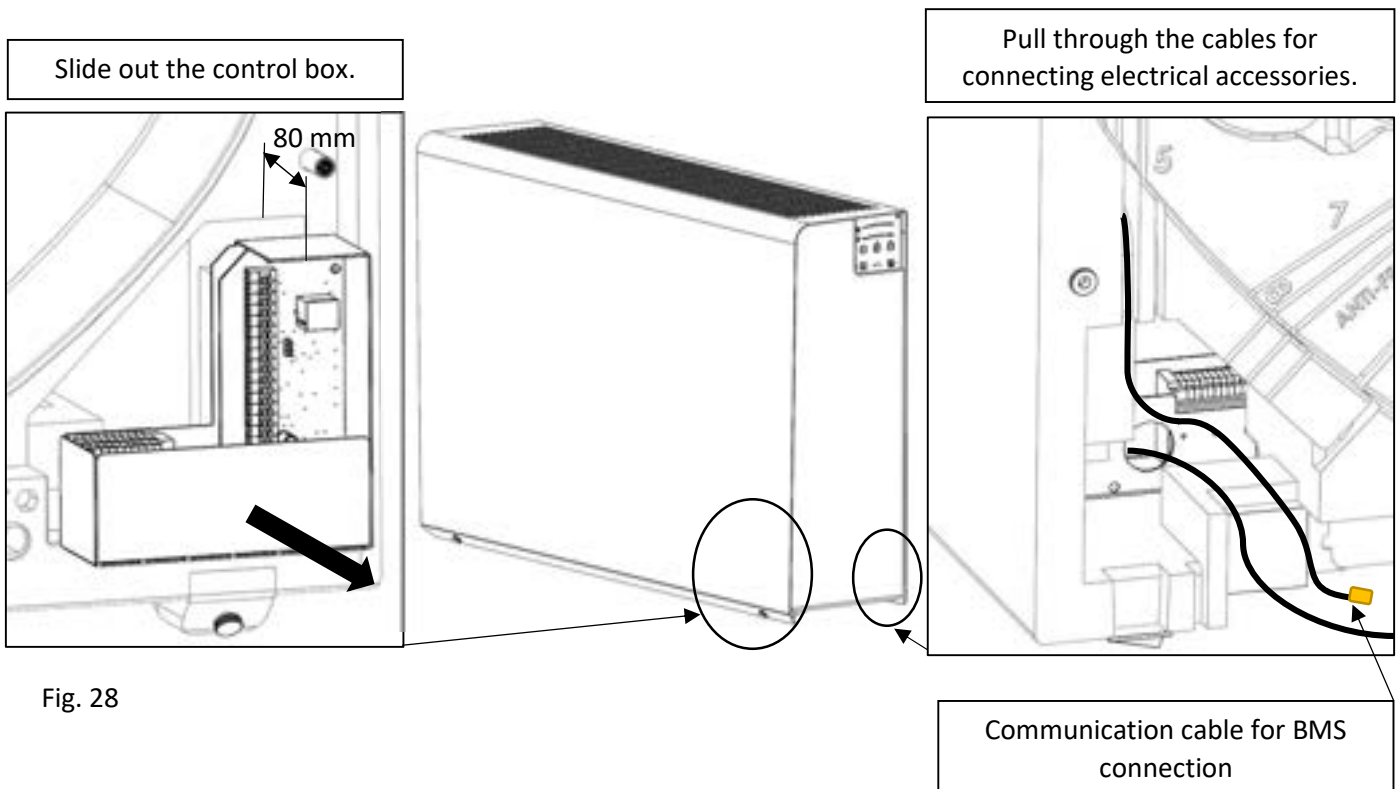


Fig. 28



- **The optimum cross-section of the conductor must be selected according to the actual length of the conductor route; however, the maximum diameter of the conductor may be 1.5 mm<sup>2</sup>.**
- **All the wires shall be connected to terminals with adequate force to prevent damage to them or damage to the electrical board. The insulation stripping on the individual conductors must be 10 mm. For strand wires, the terminal must be crimped (socket).**



- **The regulation is normally integrated into the body of the unit and in any case must not be handled in any other way than as specified in this manual.**
- Location of terminals in the control unit for connection of electrical accessories

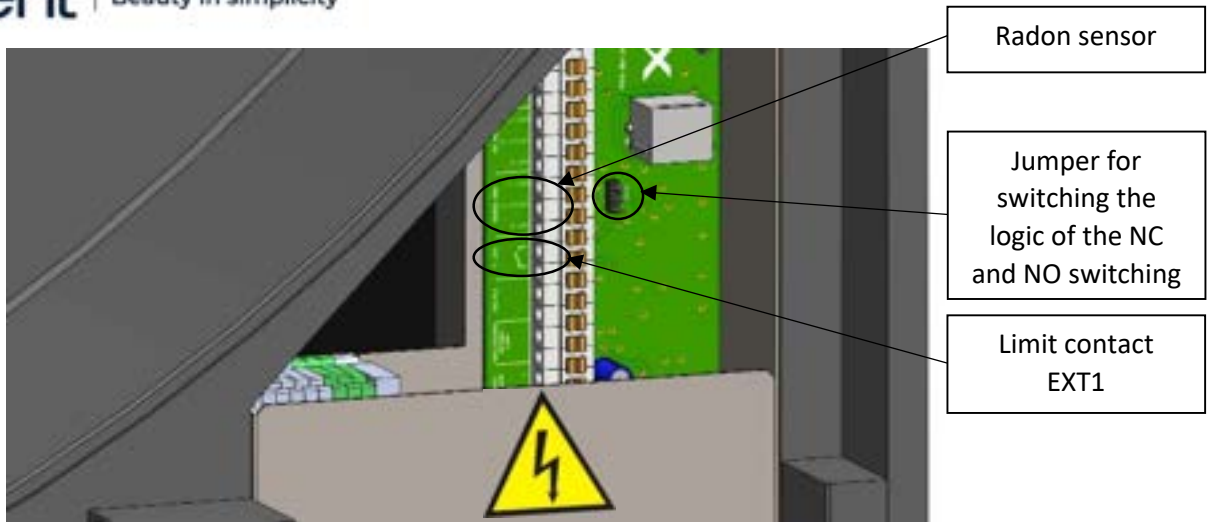


Fig. 29

**4.2.2. Radon Sensor Connection – AQS RADON**

- A radon sensor may be connected to the unit to measure the content of radon concentration in the air at the unit installation site. Thanks to the sensor, the radon is vented and thus its concentration in the space reduced. Venting is the only way to effectively get rid of the radon load contained in the air in the room.

**4.2.2.1. Technical Parameters of the Sensor for Connection to the Unit**

- o 24VDC sensor power supply
- o 0- 10VDC analog output
- o Max. sensor power consumption 5W
- o Analog sensor input resistance 100kΩ



Fig. 30



- **The power supply GND is shared with the GND of the analog input. If the connection is not carried out correctly, there is a risk of destroying the control board**

**4.2.2.2. Functionality of the unit after connecting the radon sensor**

- The unit responds with continuous control to the real-time need of ventilation induced by the sensor:
  - o after reaching the concentration of radon in a ventilated room of 350 Bq/m<sup>3</sup>, ventilation is switched on to the minimum flow rate,
  - o if the reduction of the room radon concentration is not achieved, the control of the unit increases the flow up to the maximum flow value set by the user,
  - o the control of the unit starts to decrease the flow rate continuously again as the concentration decreases,
  - o the objective of the regulation – ventilation rests in finding the ideal degree of ventilation (flow rate) depending on the concentration of the radon in the ventilated room, which is why the unit can ventilate for a long time until the safe limit of radon concentration or its complete removal is achieved,
  - o when the concentration is reduced to 300 Bq/m<sup>3</sup>, ventilation is switched off and the unit is switched to the standby mode.

**4.2.3. External Contact Connection – EXT 1**

- Unit control allows for connection of external contact for remote switching on and off of the unit (remote control ON/OFF).
- External contact is designed as potential-free and can be switched on e.g.:
  - o Using magnetic door contact (a contact used in security systems). The contact can be installed, for example, on the window. When the window is opened, the unit stops, and then restarts when the window is closed.
  - o Using a remote switch. In the facility, the electrical appliances are switched off by one button (the total stop system). The unit may be included in this system via this contact.
  - o Using a time relay. The unit may be switched on/off by a time relay located in the switchboard.

**4.2.3.1. Technical Parameters of External Contact**

- Switching voltage 24 VDC / 5 mA.
- The contact may change the switching logic by connecting the jumper to the NC or NO switching logic (factory settings).

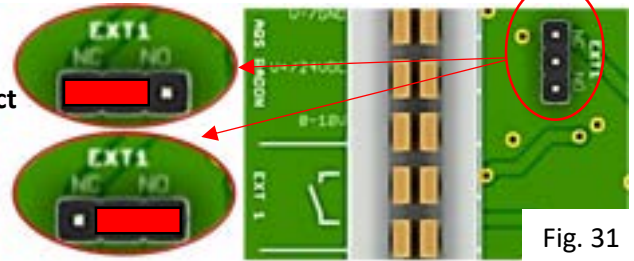


Fig. 31

**4.2.3.2. Functionality of the Unit when Controlled by External Contact EXT1**

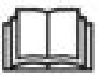
- External contact switches the unit on and off (the same functionality as on the ON/OFF button controller) with logical termination or activation of all running processes at the time of switching off, on.
- If the unit is switched on/off by an external contact, it can be switched off/on by the controller on the unit.
- An example of the external contact functioning – a timer is used as an external contact:
  - EXT1 activates the unit at the given time (in the morning) – the unit operates according to the user settings,
  - during operation, the unit is switched off by the controller on the unit – the unit switches off,
  - EXT1 switches the unit off at a given time (in the evening) – the unit remains switched off,
  - EXT1 activates the unit at the given time (the following morning) – the unit works according to the user settings.



- **If you want to prevent control of the unit by unauthorised persons and you want to control the unit by external contact, we recommend that after setting the unit parameters, you activate a child lock, which prevents access to unauthorised persons (the unit cannot be switched off on the unit controller). This ensures that the unit is switched on/off only via an external switch.**

**4.2.3.3. Connecting the unit to the superior BMS system using the modbus RTU protocol**

- A unit equipped with a connection to a superior BMS system (hereinafter referred to as BMS) is marked with a modbus label on the "unit cover" above the production label.
- The connection of the unit to the superior BMS system must be performed by a competent person, knowledgeable in the field.
- The cable for connection to the BMS is located in the space behind the regulation - the connector for connection is marked with a yellow cap - see point. 4.2.1. Connection of electrical accessories.
- The unit must always be connected to the BMS using the "XCONT-HUB" accessory. Described by a separate manual for the "XCONT-HUB" accessory
- Unit communication with the superior BMS system is handled by the Modbus RTU communication protocol. The description of the protocol is dealt with in the separate user manual "D-502-xxx-Vxxx-xxx-MN-XROOM-MODBUS"



**4.3. Wiring Block Diagram**

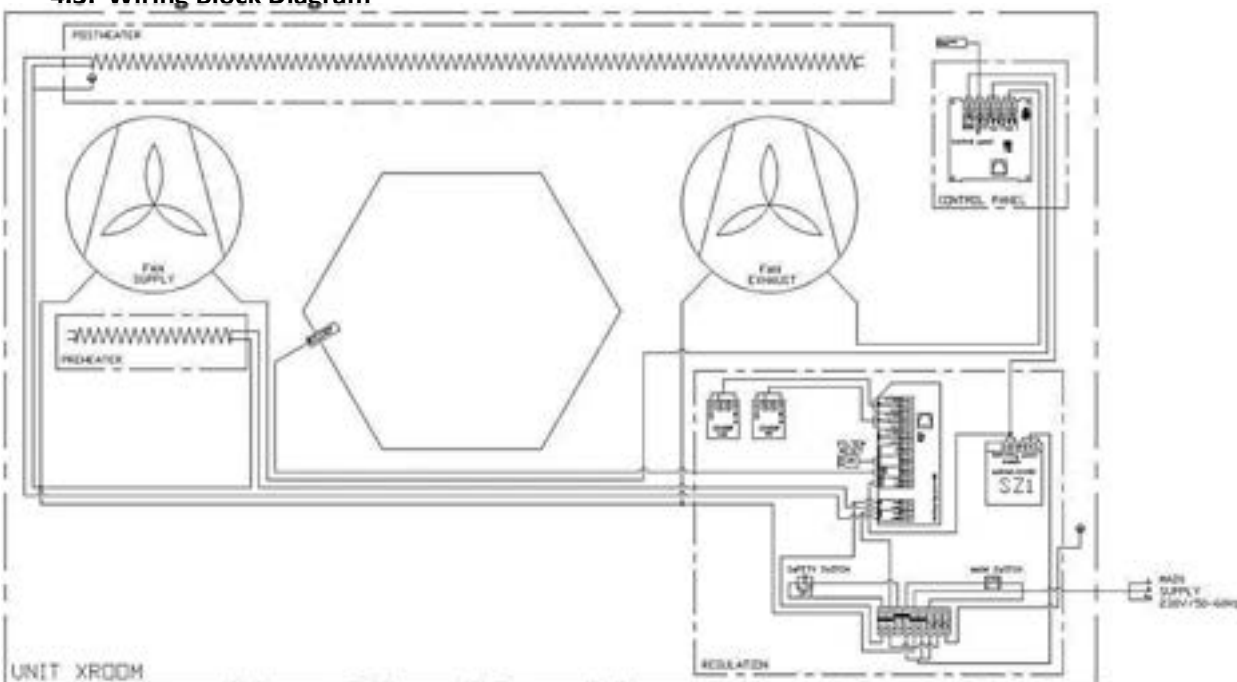


Fig. 32



## 5. Commissioning

### 5.1. Prior to first startup, check:



- that all the installation work has been duly completed as indicated in Section 3,
- whether the power supply cable of the unit is properly connected to the mains,
- whether the front metal cover of the unit (position 1) is properly tightened with M6x20 bolts with a plastic head.
- whether, in the case of the water heating unit (XR1-0xx-ECV1), all the heating system connections properly tightened.

### 5.2. Activation – Basic Unit Commissioning



- **The basic unit commissioning is used to verify the functionality of the unit after completion of the installation.**

**Further options and details on unit settings are provided in the following Sections.**

1. Switch the main switch from position 0 (OFF) to position 1 (ON).
  - 3x x all LEDs on the controller will flash
  - All status LEDs are flashing
  - The LEDs stop flashing - the driver is loaded - you can continue. Loading of the driver takes place only after connecting power to the unit.

} Loading the driver - can take up to 25 seconds

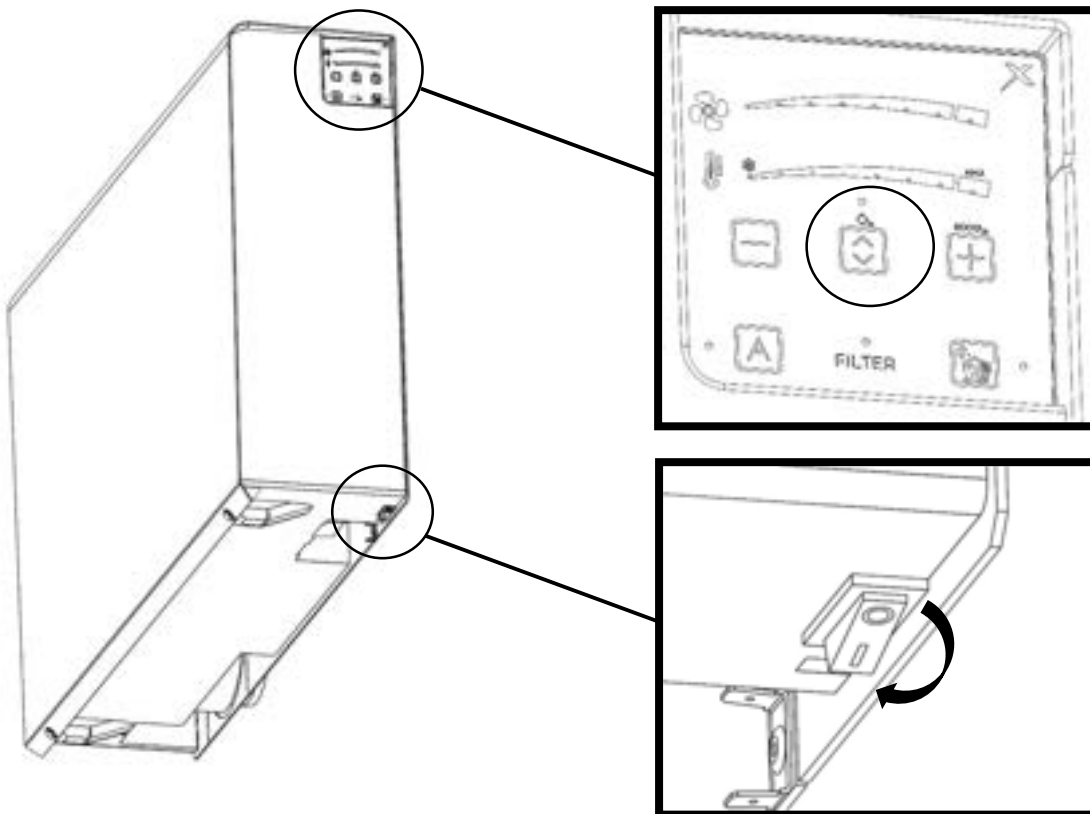


Fig. 33



2. Hold the ON/OFF button (up, down arrows) until the blue status diode (left button for the version with electric heating (XR1-xxx-ECE1) is lit, approx. 3 sec; right button for the version with water heating (XR1-xxx-ECV1...) and without heating-cold (XR1-xxx-ESS0...)). Unit is switched on
3. The unit is factory set to 4th ventilation level, which is used to verify the basic functionality of the unit.
4. Check the operation of the unit by placing the hand on the exhaust grille to the left from a front view to the unit.
5. The unit is operational.
6. Now, you can perform further unit settings according to your requirements.



**After the first start of the unit, the LED of the automatic mode starts flashing – the sensors are calibrated (approx. 5 sec.)**

**5.3. Controller Operating Modes**

- The controller operates in 3 display modes.

**5.3.1. Sleep Mode – Regular Operating Mode**

- Only the operating state is displayed – the unit is on and the LED on/off of the unit is on (button 2). The unit is fully functional, running according to user settings.

**5.3.2. Control Mode – 1 click**

- After clicking on any button, the control displays active functions and unit settings (ventilation power, temperature). The display is lit for approx. 4 sec., then the controller returns to the sleep mode.
- The functions that can be started from this mode are listed in Table 17. Description of the control functions of the Xroom units.

**5.3.3. Unit Setting Mode – 2 clicks**

- The setting or activation of some functions is only possible from this mode.
- The setting mode is activated by clicking on the button, for which the function is to be changed. The plus and minus button is intended for activation – adjustment of output, ventilation and temperature (flashing diode in the fan, thermometer pictogram)
- The functions that can be started from this mode are listed in Table 17. Description of the control functions of the Xroom units.

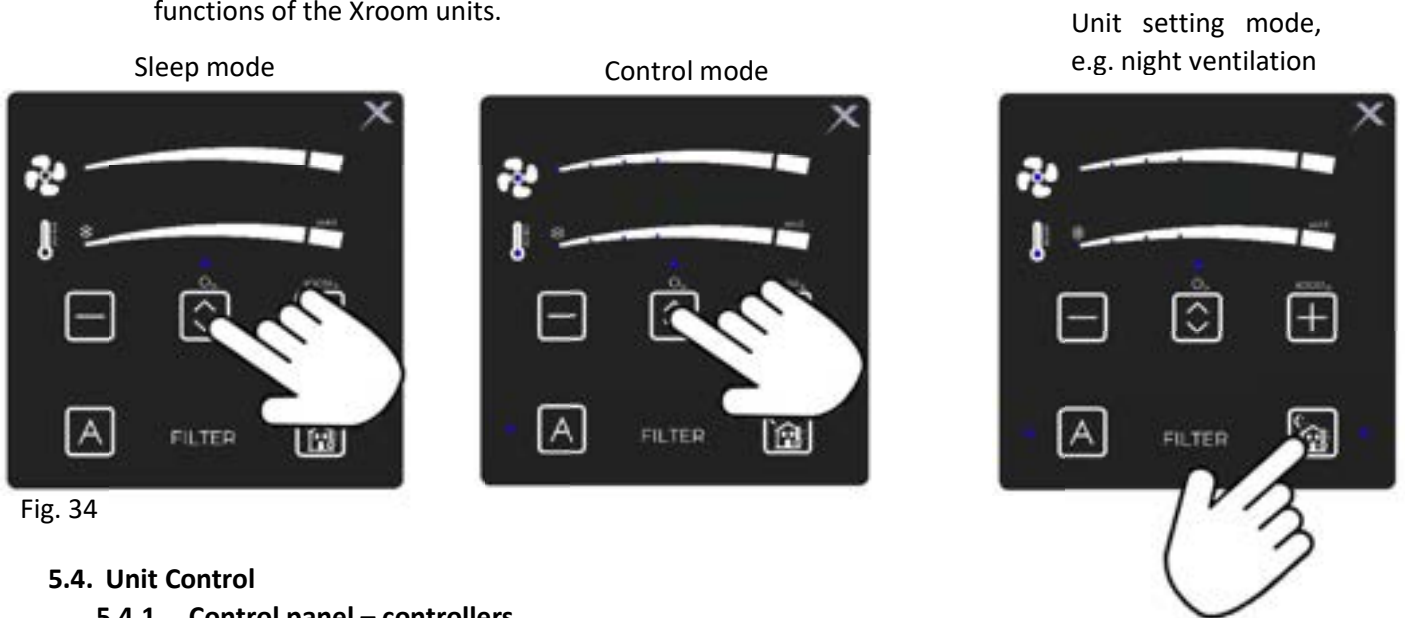


Fig. 34

**5.4. Unit Control**

**5.4.1. Control panel – controllers**

- Electric version (XR1-xxx-ECE1...)

- Water, cold version (XR1-xxx-ECS0...; XR1-xxx-ECV1...)

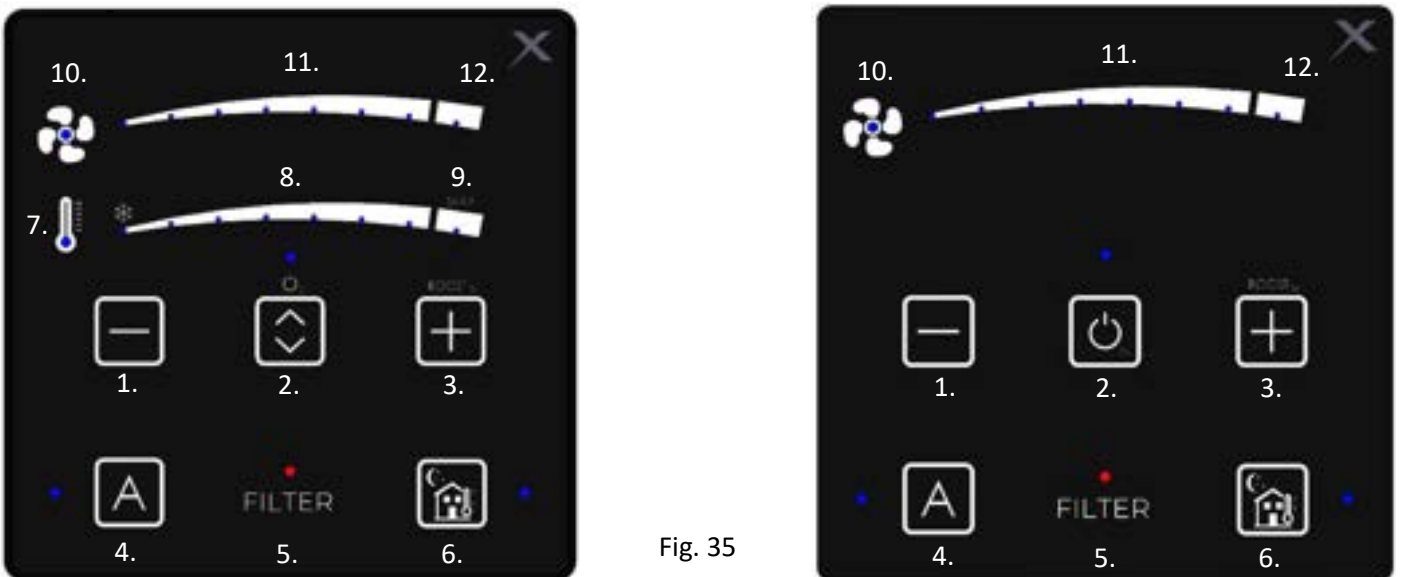


Fig. 35

### 5.4.2. Description of the functions of the buttons and regulation

Tab 17

Control scope (in order number)	Symbol	Button/Indication	Button description	Active in mode / number of Dormant Control Settings	Function	Note
				Ca		
				1a		
				2a		
1.		Button	Reduction of ventilation and temperature performance	⊗	<ul style="list-style-type: none"> <li>- Switches from the control mode to ventilation and temperature setting mode</li> <li>- Press the button to reduce the required level by one degree on the range of ventilation power or temperature setting</li> </ul>	<ul style="list-style-type: none"> <li>- Switching between setting the range of the ventilation power or required temperature is done using button 2.</li> </ul>
2.		Toggle and status indication button	Unit switching on (signaling)/switching off (switching between ventilation power and temperature setting)	⊗	<ul style="list-style-type: none"> <li>- By holding the button for 3 seconds, switch the unit on (LED lights up) or off (if the LED flashes after the unit is switched off, the heating is cooled down. Once finished, it will turn off)</li> <li>- In setting mode, you switch between live setting and temperature ramps. Indication of the selected range is displayed by flashing of symbols 7 and 10.</li> </ul>	<ul style="list-style-type: none"> <li>- In the cold and water versions, the display button has only the on/off function</li> <li>- Switching is only for the electric version (XR1-xxx-ECEEL...)</li> </ul>
3.		Toggle function button	Start of intensive ventilation BOOST (increase ventilation and temperature power levels)	⊗	<ul style="list-style-type: none"> <li>- Pressing the button for 3 seconds starts the intensive 18-minute ventilation. To switch it off before 30 minutes pass, press the button again for 3 seconds and the ventilation returns to the pre-set mode.</li> <li>- Switches from the control mode to ventilation and temperature setting mode</li> <li>- Press the button to increase the requirement on the range of the ventilation or temperature performance setting</li> </ul>	<ul style="list-style-type: none"> <li>- The function start indication is a flashing diode 12.</li> <li>- Switch between the ranges using button 2.</li> </ul>
4.		Status indication button	Switching between automatic mode (signaling) and manual mode	⊗	<ul style="list-style-type: none"> <li>- By pressing the button, switch to the manual mode, the requirement for permanent ventilation is operated upon request of the user, requirements of the AQDS sensors are ignored</li> <li>- Press again to activate automatic mode, ventilation as needed - ventilation is operated according to the AQDS sensor requirements</li> </ul>	<ul style="list-style-type: none"> <li>- Factory setting is operation in the automatic mode. Diode is lit.</li> <li>- When the unit is switched on, the LED diode next to the button is temporarily flashing - sensor calibration</li> </ul>
5.		Status indication	Filter clogged indication	⊗	<ul style="list-style-type: none"> <li>- The clogged filter indication is triggered after approx. 6 months of unit operation (only if the unit is ventilating).</li> <li>- The indication is expressed by a flashing red LED.</li> </ul>	<ul style="list-style-type: none"> <li>- Replace and reset the filter according to Section 6.</li> </ul>
6.		Night-cooling function and status indication button	Night cooling - on (signaling)/off (Child lock)	⊗	<ul style="list-style-type: none"> <li>- Press the button to start the night cooling function. Night cooling is used to cool the ventilated area in the summer with night cold air. The function is active for 8 hours from pressing the button.</li> <li>- The intensity of the supplied air can be changed even when the function is activated. When the function is completed, the values return to the settings before the function started.</li> <li>- protection against manipulation by unauthorized persons. It is activated/deactivated by pressing the button for more than 5 sec. Activation/deactivation is indicated by 3 flashes of all the status LEDs</li> </ul>	<ul style="list-style-type: none"> <li>- It is recommended to activate the function after 10 p.m. During the summer months, the air is coldest around 5 a.m.</li> <li>- When attempting to change the parameters during the activated function, all the status LEDs flash once</li> </ul>
7.		Status indication	Electric heating operation status diode	⊗	<ul style="list-style-type: none"> <li>- In the control mode, the diode is lit - the heating is on</li> <li>- In the setting mode, the diode flashes - you are in the desired temperature setting mode</li> <li>- heating can be switched off independently of the ventilation. In the setting mode, lower the temperature (button 1) until the last diode on the range turns off</li> </ul>	<ul style="list-style-type: none"> <li>- When heating is switched off (all the range diodes are off), all the ventilation functions remain operational.</li> </ul>
10.		Status indication	Ventilation operation status diode	⊗	<ul style="list-style-type: none"> <li>- In the control mode, the diode is lit - the unit is ventilating</li> <li>- In the setting mode, the diode flashes - you are in the required ventilation power setting mode</li> <li>- ventilation can be switched off independently of the heating requirement. In the setting mode, reduce the output (button 1) until the last diode on the range turns off.</li> </ul>	<ul style="list-style-type: none"> <li>- When ventilation is switched off (all the range diodes are off), all the heating requirements remain operational and satisfied.</li> </ul>



### 5.4.3. Description of the ventilation power setting range

Tab 18

Control description / number	Symbol	Display description	Note
11.		Indication of 7 ventilation levels. The LEDs are switched on and off gradually, as required by the user	The setting values are provided in Tab.19.
12.		Indication by flashing LED diode for 10 minutes - intensive ventilation function activated	If the intensive ventilation function is activated, the entire range for setting the ventilation level is also lit.

- Setting the correct performance of the unit

Tab 19

Displayed LED on the controller range	XR1-010-1-Cas/RL	XR1-010-1-Cas/RL	Usage examples	XR1-025-1-Cas/RL	XR1-025-1-Cas/RL	Usage examples
	m <sup>3</sup> /h	m <sup>3</sup> /h		m <sup>3</sup> /h	m <sup>3</sup> /h	
1.	28	25	1 person - rest mode, sleeping	64	62	2 - 3 persons - office activities, sleeping
2.	41	35	2 persons - rest mode, sleeping	95	92	3 - 4 persons - office activities, sleeping
3.	53	47	2 persons - rest mode, sleeping	126	121	4 - 5 persons - office activities, sleeping; 2 - 3 persons active
4.	66	58	3 persons - rest mode, office	157	151	6 - 7 persons - office activities, 3 - 4 persons active
5.	78	69	3 - 4 persons - rest mode, office	188	180	7 - 8 persons - office activities, 4 - 5 persons active
6.	90	80	4 persons - office activities	219	210	8 - 9 persons - office activities, 5 - 6 persons active
7.	101	90	4 - 5 persons - office activities	250	240	10 persons - office activities, 6 - 7 persons active
8. - BOOST*	215	204	Intensive ventilation	350	335	Intensive ventilation

\* BOOST mode - intensive ventilation for 10 minutes

### 5.4.4. Ventilation Power Settings

1. In regular mode, double-click on button 1 or 2 or 3 to enter the settings mode – LED 10 flashes (fan pictogram).
2. As long as LED 10 flashes (approx. 4 sec), set the required degree of ventilation according to Table 19 or according to your request with buttons 1 or 3:
  - o if you did not manage to complete the settings (LED 10 stopped flashing), repeat the procedure.
3. After setting the request, the newly set value is automatically saved (approx. within 4 sec) and the controller switches to the regular mode.

### 5.4.5. Temperature Setting Range – only in the electric version (XR1-xxx-ECE1...)

Tab. 20

Control description / number	Symbol	Display description	Note
8.		Indication of temperature setting in the selected range. 1st LED   Flake - anti-freeze temperature   5 - 7 °C 2nd to 7th LED   Regular temperature setting   19 - 24 °C	setting in approx. 0.5 °C increments -
9.		LED in the separate MAX field - signals the maximum possible temperature requirement (approx. 28 °C)	

The assignment of LEDs to the individual temperatures is only indicative. They cannot under any circumstances be regarded as binding.

### 5.4.6. Setting the Required Temperature:

1. In regular mode, double-click on button 1 or 2 or 3 to enter the settings mode – LED 10 flashes (fan pictogram).
2. As long as the LED 10 flashes (approx. 4 sec), click button 2 once – LED 7 will start starts (the thermometer pictogram).
3. As long as LED 7 flashes (approx. 4 sec), set the required temperature in the space according to Table 20 or according to your request using buttons 1 or 3:
  - o if you did not manage to complete the settings (LED 10 stopped flashing), repeat the procedure.
4. After setting the request, the newly set value is automatically saved (approx. within 4 sec) and the controller switches to the regular mode.

### 5.4.7. Display of the Indicated Statuses on the Controller by LEDs

- The LED indication on the controller is the same for all the unit types, except for the absence of a range of temperature settings (position 8; 9) for the type with a water exchanger and cold design.

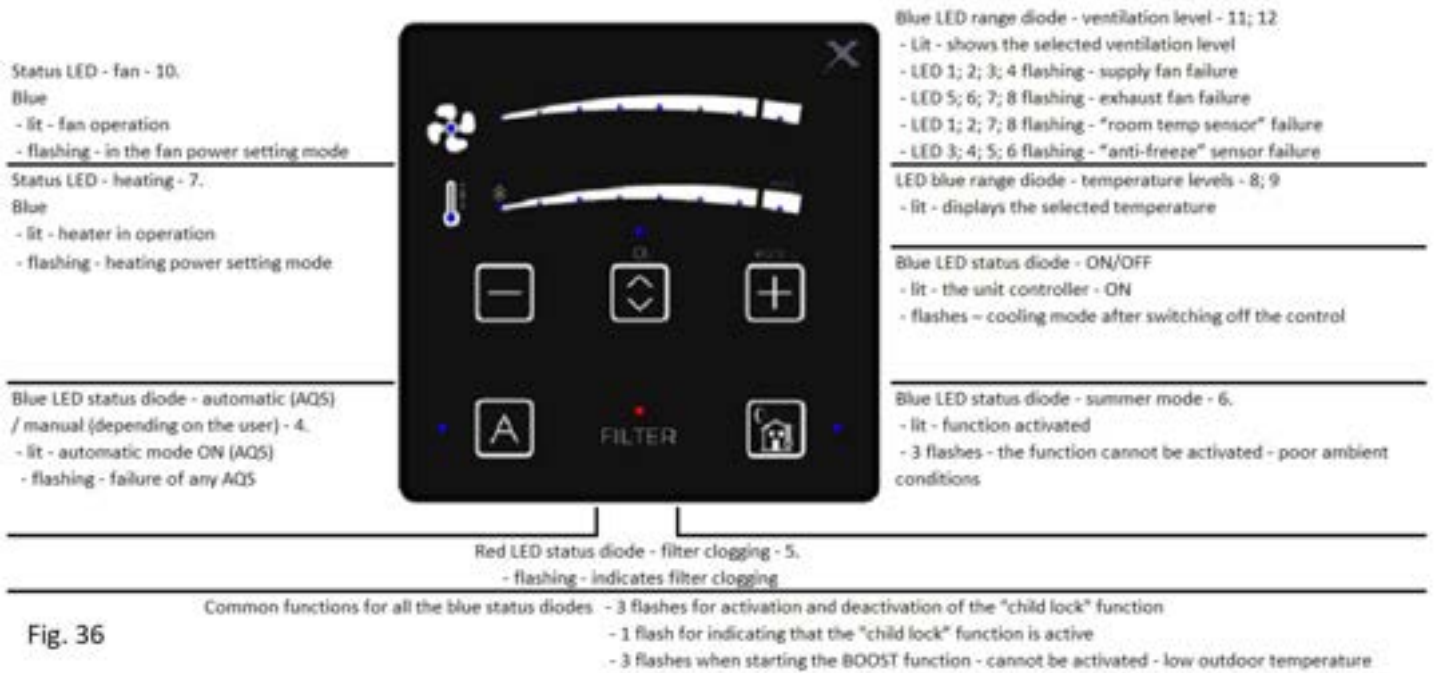


Fig. 36

#### 5.4.8. Hidden Regulation Functions

- The control behaviour includes automatic processes that ensure optimal operation of the unit with emphasis on the maximum service life and efficiency of the operation. These processes are part of the manufacturer's factory setup and know-how. The user cannot change them. As a result of these automatic processes, the behaviour of the unit may be different from that assumed by the user.
- These are mainly automatic processes:
  - o unit preheating control – switches only when necessary,
  - o anti-freeze logics triggering – measures against recuperator freezing,
  - o minimum preheating, heating operation time – protective function,
  - o cooling after switching off, heating – protective function against overheating of the exchanger,
  - o unit control using AQS sensors – automatic functionality according to ventilation needs,

#### 5.4.9. Automatic Unit Control using AQS Sensors

- The unit is equipped by default with the AQS sensor to read the CO<sub>2</sub> concentration in the space, possibly also with the RH humidity sensor or even the Radon sensor as part of electrical accessories.
- If you want to control the unit using AQS sensors, activate the automatic mode function – button 4.
- The unit responds by continually controlling the need for real-time ventilation triggered by sensors:
  - o When the concentration of the monitored substances is reached, ventilation shall be switched on with the minimum flow rate:
    - CO<sub>2</sub> – 800 ppm,
    - RH – 50%.
  - o If the reduction of the concentration of the monitored substances in the room is not achieved, the unit controller increases the flow up to the maximum flow value set by the user.
  - o The unit controller will start to decrease the flow rate continuously again while reducing the concentration.
  - o The aim of the regulation – ventilation, is to find the ideal degree of ventilation (flow rate) depending on the concentration of the monitored substance in the ventilation room. For this reason, the unit may ventilate for a long time until it reaches safe limits of concentration or complete ventilation of the substance being monitored.
  - o When the concentration is reduced to a specified value, ventilation is switched off and the unit is switched to the standby mode:
    - CO<sub>2</sub> – 700 ppm,
    - RH – 45%.
  - o If there is a requirement for ventilation from several sensors, the controller gives priority to a sensor with a higher ventilation requirement.

## 6. Replacing Filters

- The unit is equipped with a filter clogging countdown for approx. 6 months (approx. 4400 hours). The countdown reads the unit's real operation.
- Filter clogging depends on the environment, in which the unit operates. Especially, on the dustiness of the surrounding air – the more dust particles are contained in the air, the sooner the filter box is clogged. Therefore when filter clogging is indicated, always consider replacing them.
- The filter replacement control is indicated on the control panel by a red flashing LED titled “filter” (position 5 on the controller).
- Before starting to replace filters, make sure you have new ones:
  - o XR1-010-EC...                      XR-010-FILTER-M5 or XR-010-FILTER-F7
  - o XR1-025-EC...                      XR-025-FILTER-M5 or XR-025-FILTER-F7



- **Do not switch off the unit to replace the filter. Safe disconnection of electrical parts is provided by the integrated limit switch (position 18).**
- **After release – removal of the front metal cover (position 17), the limit switch will safely disconnect the electrical components, with which you can come into contact when replacing the filters.**
- **Removal of the front metal cover is not considered opening of the unit. Even after removal of the front metal cover, the unit ensures full electrical safety of the unit.**

### 6.1. Removal of a filter

- Loosen the M6x20 plastic bolts on the front metal cover, remove it from the unit, and put it in a safe place.
- Remove the plastic caps marked FILTER from the cover of the unit.
- Use the filter holders to pull them out, check them, or replace them with new filters

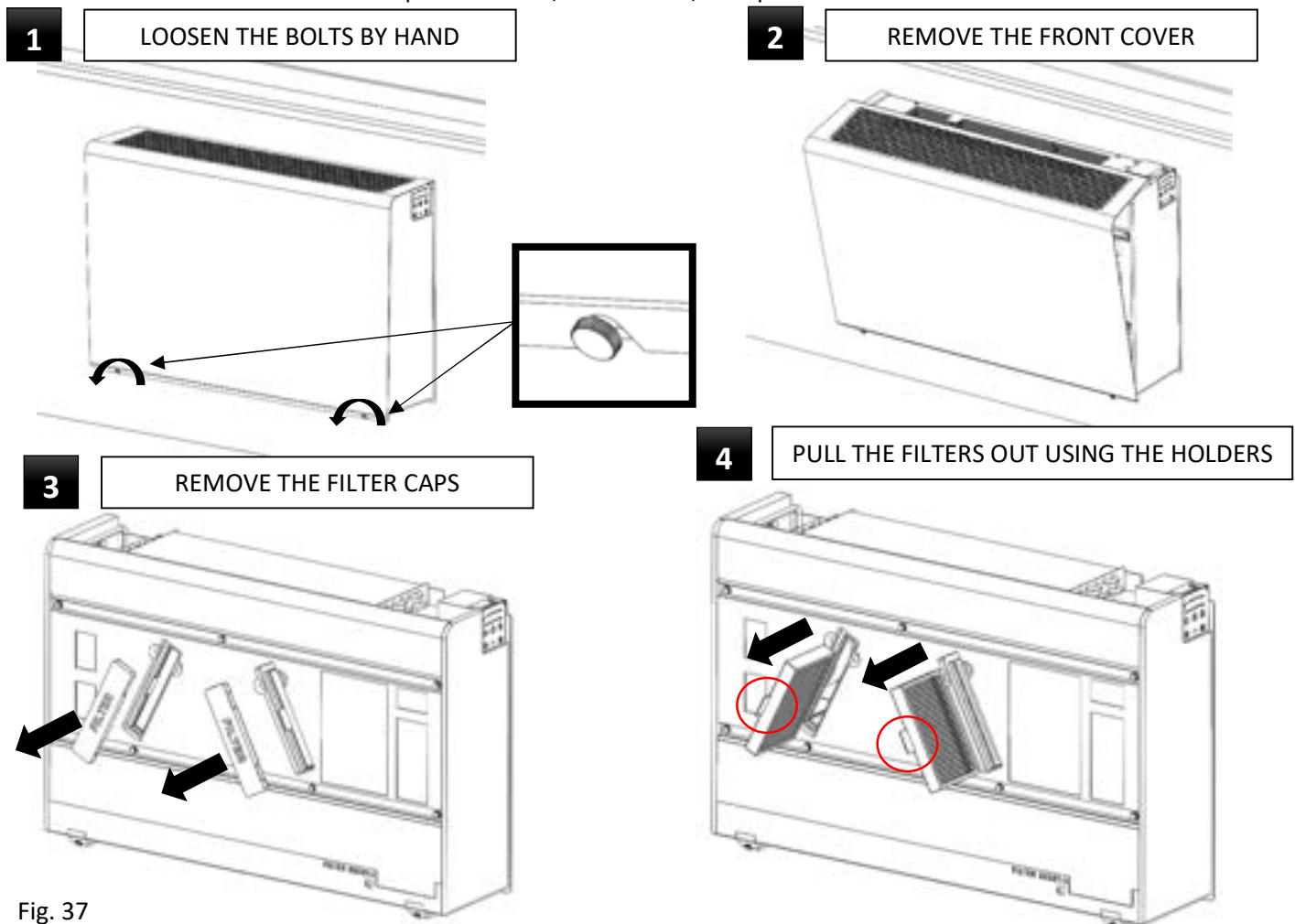


Fig. 37

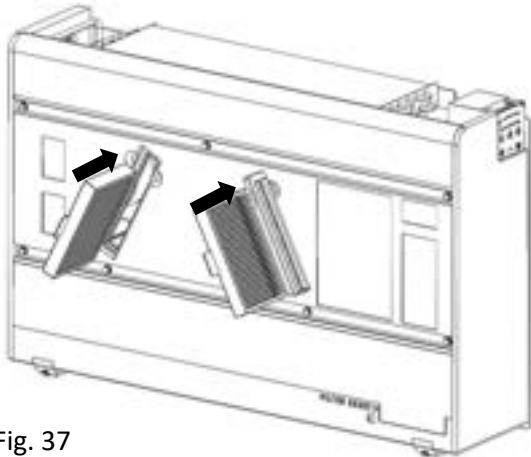
### 6.2. Filter Inserting



**Pay attention to the correct orientation of the filter before it is inserted into the unit with regard to the air flow**

- Insert new filters into the unit.
- Align the filter holders so that they do not interfere with the installation of the plastic filter caps.
- Install the filter caps into the unit cover.

**1** INSERT NEW FILTERS



**2** ATTACH THE FILTER CAPS

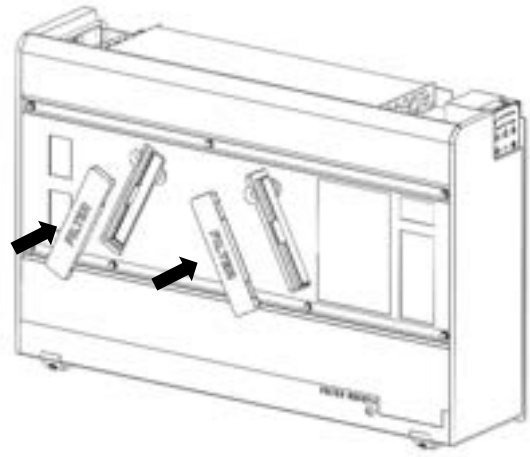


Fig. 37



- **Pay attention to the correct orientation of the caps, they fit only in one position. The FILTER sign must be oriented bottom-up.**

### 6.3. Reset filter countdown

- Press and hold the red (white) FILTER RESET button until the red LED on the controller switches off (approx. 2 sec).
  - o If the control flashes the error message – fan error (11 or 12 – see Section 8.1.), ignore it.

**3** PRESS THE FILTER RESET BUTTON

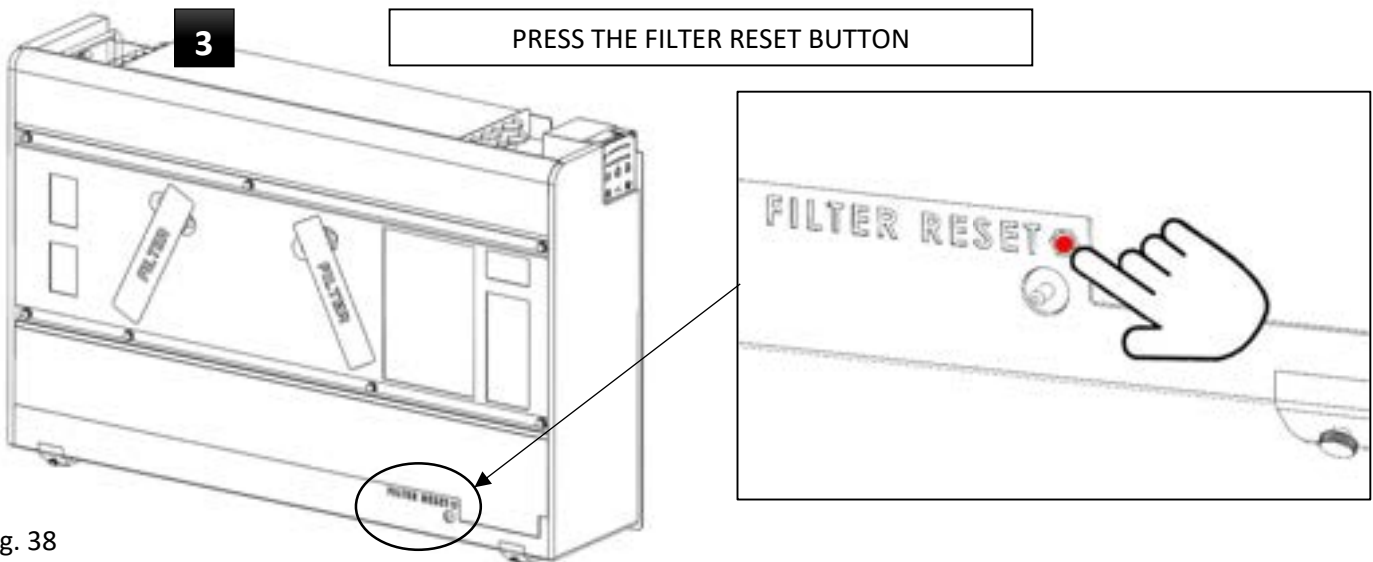


Fig. 38



- Switch off the unit on the controller by pressing button 2 for approx. 3 sec.
- Install the front metal cover on the unit according to Section 3.2.10.
- Switch on the unit on the controller by pressing button 2 according to Section 5.2. (2). All the error messages and filter clogging indication switched off.
- The unit is now ready to operate.



- **If the filters are not properly replaced (cleaned), the functionality of the unit may be reduced.**
- **Never operate the unit without air filters, the recuperator may be damaged.**



## 7. Regular Maintenance and Cleaning of Xroom Units



- Before opening the unit during its maintenance and cleaning, the unit must be disconnected from the power supply



- Maintenance and cleaning must be performed at regular intervals; otherwise, the functionality of the unit may be impaired.

- Cleaning and maintenance must not be carried out by children without supervision.
- Compressed air, steam, solvents, aggressive chemicals, abrasive cleaning agents, or sharp items must not be used to clean the unit.
- Perform maintenance and cleaning of the unit in regular cycles to ensure its hygienic operation. In the case of regular filter replacement (use the manufacturer's original filters) as indicated, the maintenance interval of the maximum of 2 years or at intervals determined by the relevant national regulations or practices must be observed.



- Independently of the unit maintenance, the contamination of the outer casing of the unit must be checked regularly, especially the exhaust grille located in the upper part of the metal cover. Any contamination must be removed immediately. Cover removal is described in Section 6.1. (1 and 2).
- If the unit is not used for a longer period of time, it is necessary to switch off the power supply to the unit.
- Service work that is beyond the scope of routine maintenance may only be performed by an authorised service centre or the manufacturer.



- Regular maintenance must include:
  - o visual inspection of the unit casing – Section 7.1,
  - o visual inspection of the supply cable – Section 7.1.2.,
  - o visual inspection and cleaning of the exchanger – Section 7.1.1.,
  - o cleaning of fan chambers and fans – Section 7.2.1.
  - o visual inspection – cleaning of preheating (XR1-xxx-ECxxxP...) – Section 7.1.3.2.,
  - o visual inspection – cleaning of supply and drainage piping – Section 7.1.3.3.,
  - o visual inspection and cleaning of heat recovery exchanger – Section 7.1.3.4,
  - o visual inspection of outdoor outlets – Section 7.1.4.
- For cleaning the unit from coarse dirt or dust, use a vacuum cleaner or damp cloth with a common cleaning agent (e.g. soapy water).

### 7.1. Visual Inspection of the Unit Casing

- The unit can be cleaned on its entire surface.
- Visually inspect the outer casing of the unit for excessive soiling, damage:
  - o in case of soiling of smooth casing surfaces (except for the exhaust grille), wipe with a damp cloth with a common cleaning agent (e.g. soapy water),
  - o in case of soiling of the exhaust grille on the metal front cover (position 1), loosen the plastic head bolts, remove the cover, and clean it. Remove the cover according to the Section 6.1. (1 and 2).



#### 7.1.1. Visual Inspection and Cleaning of the Heat Exchanger



- Inspection and cleaning of the exchanger follows the removal of the front metal cover (position 1), see Section 7.1.
- If necessary, clean the heat exchanger with a vacuum cleaner.

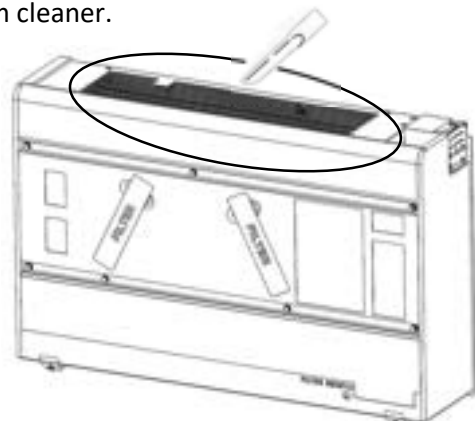
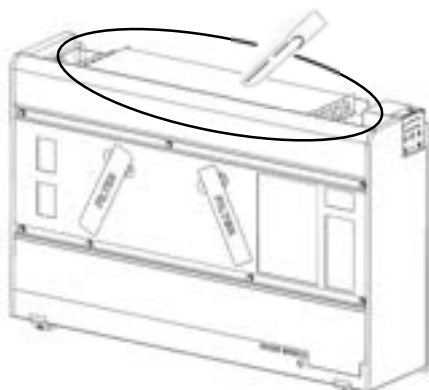


Fig. 39





- Never clean the heat exchanger with a damp cloth, as this could damage the unit or cause an electric shock (in the case of the version with the electric heat exchanger XR1-xxx-ECE1...) after restarting the unit.

**7.1.2. Visual Inspection of the Supply Cable**

- Visually check that the supply cable is not damaged, loosen, or torn from the connecting peripherals.



- In case of damage, consult with the person competent for this activity with the valid authorisation and knowledge of the relevant standards and directives.

**7.2. Inspection – cleaning of the inner area of the unit – disassembly**



- Pay increased attention to disassembly of the internal components of the unit. Improper disassembly may cause the unit to malfunction or limit its functions.

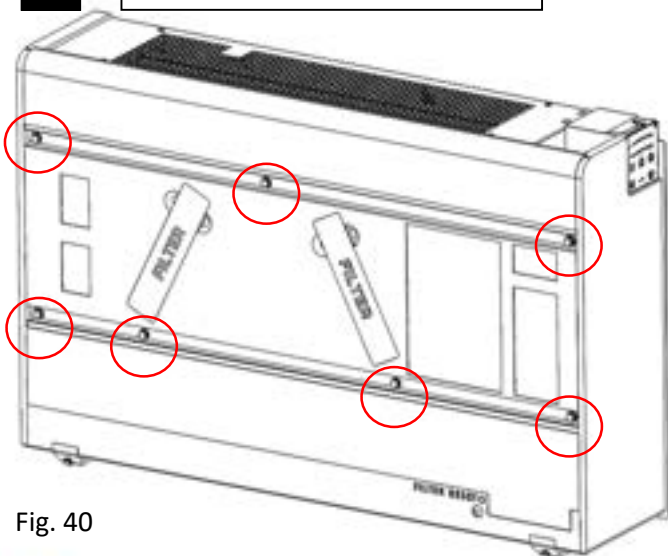
- Remove the front metal cover (position 1) – see Section 6.1. (1 and 2).

- Remove the M6x25 bolts that hold the unit cover (position 5)

- o XR1-010-EC... 7 pc
- o XR1-025-EC... 9 pc

- Slide out the unit cover (position 5)

**1** REMOVE THE BOLTS



**2** LIFT OFF THE UNIT COVER TO ACCESS ITS INTERNAL COMPONENTS

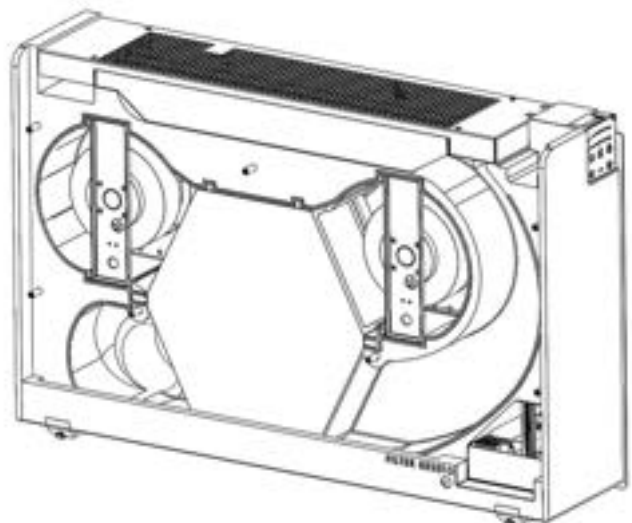


Fig. 40



- Subsequent sub-categories of the manual are successive operations to be followed in the indicated sequence.

- After removing the unit cover, the unit may be removed from the installation template (all the installation bolts are removed). After the re-assembly, tighten the unit back to the installation template.

**7.2.1. Cleaning the Fan Chamber and Fans**

- Remove the filters (position 8).
- Carefully slide the fan beam assembly (position 11) out of the groove in the unit body.
- With utmost caution, rotate the assembly around the cable axis down and the beam towards the unit body.

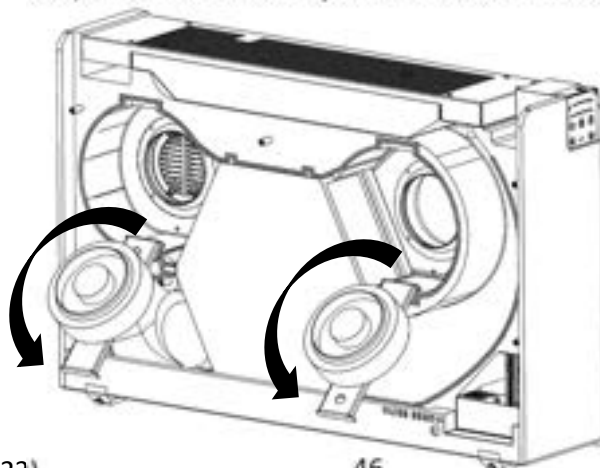


Fig. 41

- Vacuum dirt from the fan chamber and, if necessary, wipe it with a damp cloth with a common cleaning agent (e.g. soapy water).
- With extra care, vacuum dust from the fan assembly and, if necessary, wipe it with a damp cloth with a common cleaning agent (e.g. soapy water).

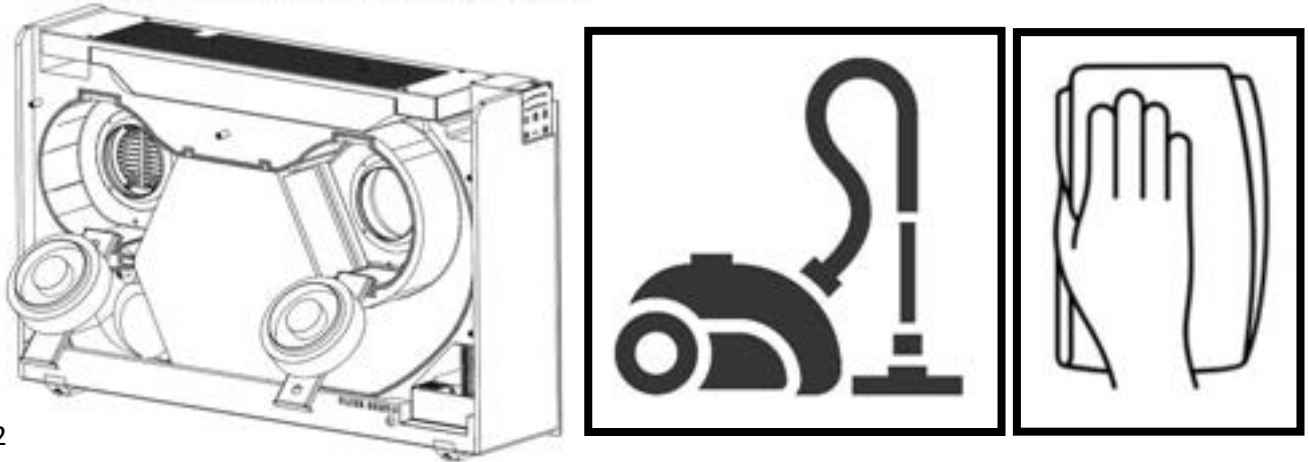


Fig. 42

**7.2.2. Visual Inspection – Cleaning of Preheating, if fitted with the unit (XR1-xxx-ECxxxP...)**

- After cleaning the fan assembly, check the preheating condition (position 10) in the drain pipe.
- Vacuum preheating if there is dust.
- **Never remove the preheating or clean it with a damp cloth.**

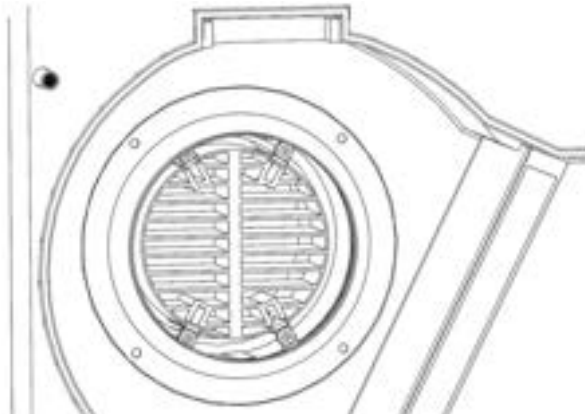


Fig. 43

**7.2.3. Visual Inspection – Cleaning of Inlet and Drainage Piping**

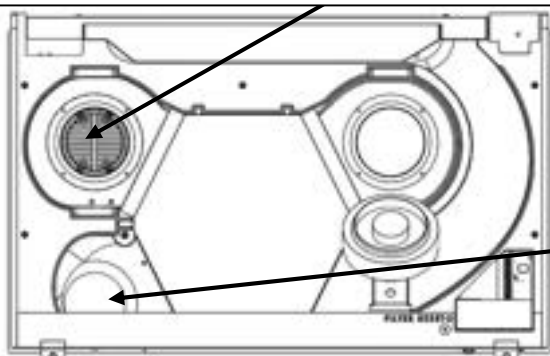
- A follow-up activity is to check the supply (only if the unit is not equipped with preheating, position 10), drainage piping.
- Visually check the piping clearance and remove dirt if clogged (e.g. by bird's nest).
- **Pay special attention when cleaning the supply piping (if the unit is not equipped with preheating) to prevent damage to the return damper located in the piping.**



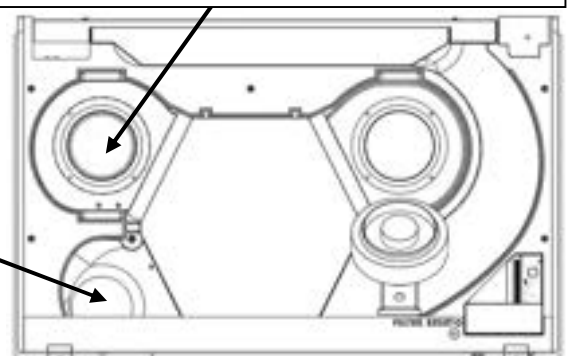
Fig. 44

UNIT WITH PREHEATING – VACUUM THE SUPPLY PIPING OR WIPE IT FROM OUTSIDE (BE CAREFUL NOT TO DAMAGE THE DAMPER IN THE PIPING)

UNIT WITHOUT PREHEATING – VACUUM THE SUPPLY PIPING AND WIPE IT FROM INSIDE (BE CAREFUL NOT TO DAMAGE THE DAMPER IN THE PIPING)



VACUUM THE DRAINAGE PIPING AND WIPE IT FROM OUTSIDE



**7.2.4. Visual Inspection and Cleaning of the Heat Recovery Exchanger**

- Then, visually inspect and clean the heat recovery exchanger (position 12)
- Vacuum the heat exchanger.
- **Beware of vacuuming around the heat recovery exchanger in the area of the air exhaust where the temperature sensor for anti-freeze protection is located in the heat exchanger.**

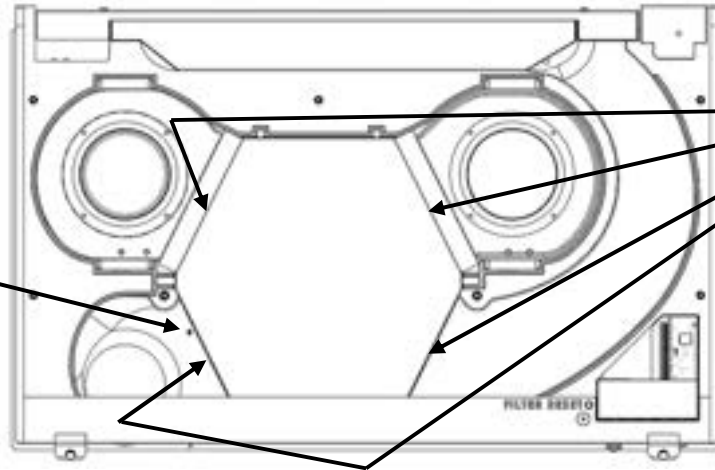


Fig. 45

**7.2.5. Re-installation of Internal Components into the Unit**

- After inspection and cleaning, re-install the internal components into the unit.
- Turn the removed fan assembly (position 11) back to the working position.
- Insert the fan assembly into the grooves of the fitting and check the correct laying of the cables from the fan assembly.
- Align the cables so that they cannot be damaged during the operation of the fan.

TURN THE FANS BACK AND INSERT THEM CAREFULLY TO THEIR GROOVES

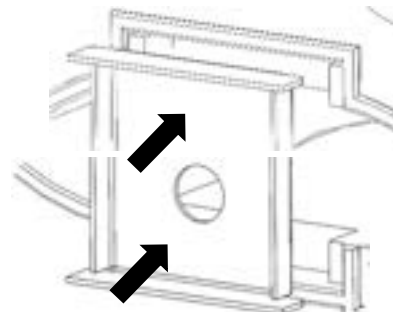
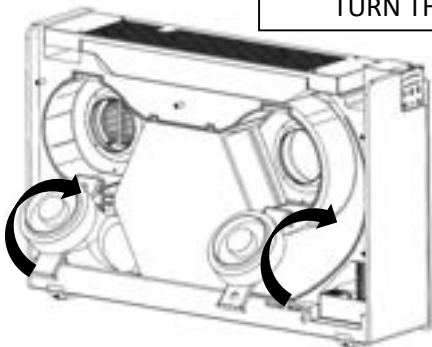


Fig. 46

- Fit the unit cover (position 5) on the bottom rail of the unit so that the bottom edge of the cover and the top edge of the rail of the unit are pressed together.
- Return the M6x25 bolts to secure the cover.
  - o XR1-010-EC... 7 pc
  - o XR1-025-EC... 9 pc
- Tighten the bolts with a reasonable force (by hand) to avoid damage to the unit while sufficiently tightening the cover to the unit and the unit to the installation template.
- Tighten the plastic head bolts with your hand.

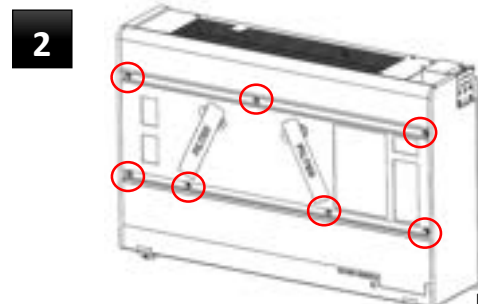


Fig. 47



- Insert filters according to Section 6.2.
- Install the front metal cover according to Section 3.2.11. (2 and 3).
- To turn the unit on, proceed according to Section 5.



## 8. Servicing



- Warranty and non-warranty servicing may only be performed by a qualified professionally trained worker and only using original spare parts.
- The manufacturer reserves the right to make changes to the device that do not affect the essential properties of the device.

### 8.1. Error Messages – Troubleshooting Procedure

Tab 21

Error No.	Error, fault message	Possible cause of failure	Troubleshooting
1.	The unit does not start	The power cable is not connected	- Check the mains connection - check the activation of the safety element
		The main switch is in position 0	- set the switch to position I
		Hold down button 2 (ON/OFF) for a short time, approx. 3 sec	- hold down button 2 (ON/OFF) until the LED above button 2 lights up
	The unit does not start when first commissioned - LED above button 2 is lit	The demand for ventilation and heating is switched off	- enter the unit setting mode and check the setting of the ventilation performance requirement and the required temperature (only in the version with electric heating) - make the adjustment according to Section 5.4.2. Tab. 17.
		Loosened M6x20 bolts with plastic head position 23 of the front metal cover	- securely tighten the bolts on the front metal cover with your hand, Section 5.2.11.
3.	Red indicator light above the FILTER sign is flashing	Filter clogging indication	- replace the filter according to Section 6.
4.	No or low ventilation output even when the unit is set to the maximum power	Clogged filter	- replace the filter according to Section 6.
		Contaminated - blocked piping, unit outlets	- Check and clean the unit according to Section 7.
5.	Unit started to be too noisy	Clogged filter	- replace the filter according to Section 6.
		Defective motor bearing	- contact the unit supplier
6.	Electrical heating of the unit does not heat	Clogged filter - no flow	- replace the filter according to Section 6.
		Contaminated - blocked piping, unit outlets	- Check and clean the unit according to Section 7.
		activated heat exchanger protection against overheating	- switch off the unit with the main switch. Turn the unit on again after 5 minutes (reset of protection). If the problem persists, contact the unit supplier
7.	The night cooling function cannot be switched on (button 6.) - the button signalling flashes 3 times and the function does not switch on	Function start conditions are not met - outdoor temperature is too low, heating requirement is too high	- wait for the outside temperature to rise. The function is active only at summer temperatures. - for XR1-xxx-ECE1... reduce the temperature requirement according to Section 5.4.2. Tab. 17 - for XR1-xxx-ECV1... the room air temperature exceeded 35 °C - the function cannot be used
8.	The night cooling function cannot be switched on (button 6.) - all the status diodes flash once (at buttons 6, 4, 7, 10), the function does not switch on	BOOST function active	- switch off the BOOST functions according to Section 5.4.2. Tab. 17
		Active child lock function	- switch off the child lock function according to Section 5.4.2. Tab. 17
9.	The BOOST mode cannot be switched on - status diodes flash once or 3 times (at buttons 6, 4, 7, 10), the function does not switch on	3 flashes - very low outdoor temperature	- wait for the outdoor temperature to rise
		1 flash - child lock function is active	- switch off the child lock function according to Section 5.4.2. Tab. 17
10.	The automatic mode cannot be started when the button 4 is pressed, the indicator flashes 3 times or lights	3 flashes - unit is not fitted with any AQ5 sensor	- You probably bought the unit without the AQ5 sensors or the external sensor is not connected - if you do not have an external Radon sensor connected to the unit, contact the unit supplier - switch to manual mode according to Section 5.4.2. Tab. 17
		It is still flashing - the sensor connected to the unit is faulty	- if you have an external radon sensor connected to the unit - contact the external sensor supplier - switch to manual mode according to Section 5.4.2. Tab. 17
11.	When any button is pressed, the status diodes flash once (at buttons 6, 4, 7, 10)	Active child lock function	- switch off the child lock function according to Section 5.4.2. Tab. 17
12.	The unit is inoperable and the 4 LEDs on the range for adjusting the ventilation power on the control panel are continuously flashing	- diodes 1; 2; 3; 4 are flashing	- turn off the unit on the controller, then by the unit's main switch to position 18, leave the unit off for approx. 10 sec - restart of the unit - if the error persists even after restarting the unit, contact the unit supplier, contact the unit supplier after restarting the unit
13.		- diodes 5; 6; 7; 8 are flashing	
14.		- diodes 1; 2; 7; 8 are flashing	
15.		- diodes 3; 4; 5; 6 are flashing	
		Supply fan failure	
		Exhaust fan failure	
		Faulty "room temperature sensor"	
		Faulty anti-freeze sensor	

## 8.2. Failure persists

- Restart the unit – switch off the unit on the controller (button 2), switch off the unit using the main switch (position 18). Wait approx. 30 sec. and restart the unit.
- In the event of a persistent failure of the unit, do not attempt to repair the unit yourself.
- Switch the unit off using the main switch and disconnect it from the mains.
- Secure the unit against restarting or handling by an unauthorised person.
- Contact your seller.

## 9. Final Decommissioning, Dismantling, and Disposal

- At the end of the machine's service life or when it would be uneconomical to repair it, dismantle the machine completely.
- During the dismantling process, the generally applicable safety regulations must be observed for the safe execution of all the work activities.
- Once the machine is completely dismantled, dispose of the individual parts in accordance with the requirements of the Waste Act No. 541/2020 Coll., as amended.
- Separate the metal components by the type of metal and hand them over to the relevant organisations dealing with the reusable waste collection.
- The parts made of plastic materials and rubber that are not subject to natural decomposition shall be sorted out and sold to an organisation dealing with collection of such reusable waste materials.
- Parts of electrical equipment are handed over to the organisation responsible for electrical waste collection.



Please, return all unwanted or obsolete products and packaging to the relevant recycling sites where they will be disposed of professionally. Dispose of the parts of the product that cannot be utilised to a controlled landfill. Only a product recycled in this way can be reused properly and returned to the utility.



## 10. Warranty

The warranty per unit is valid according to legal regulations. The warranty only applies if all the installation and maintenance instructions have been followed. The warranty covers manufacturing defects, material defects, or device operation defects. We do not guarantee the suitability of using the unit for special purposes, determination of suitability is fully within the customer's competence.

The warranty does not cover defects caused by:

- improper handling,
- during transport (damage caused by transport – financial compensation must be resolved with the carrier),
- failing to comply with the service conditions,
- incorrect electrical connection or protection,
- incorrect operation,
- product intervention,
- regular wear and tear,
- due to a natural disaster.

If the warranty is claimed, it is necessary to submit a report (provided in the product documentation) containing:

- complainant/company information,
- date and number of the sales document,
- detailed description of the defect,
- data on socket protection,
- photo of the product's manufacturing label and, where appropriate, a serial number,
- photo from the product's installation site,



- measured product values: air temperature, voltage, current.

In the case of both warranty and post-warranty service, contact your supplier or installation company that performed your installation. The method of handling a warranty repair is carried out at the unit installation site or as agreed. The method of resolving warranty repairs is exclusively at the discretion of the company's service centre. The complaining party shall receive a written statement on the result of the complaint – warranty repair. In the case of an unjustified complaint, all the costs relating to such complaint shall be borne by the complainant.

#### **11. In Conclusion**

If you have any questions about this product, do not hesitate to contact us.

#### **Contact Address:**

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