

# **NORD**canopy

## HM Installation, use and maintenance manual

[www.nordcooking.com](http://www.nordcooking.com)

## Installation, use and maintenance manual

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### WARNINGS!



Always power off the system before any maintenance work!



**Risk of electric shock!**

Electrical connections to the system may only be made by an authorized electrician.



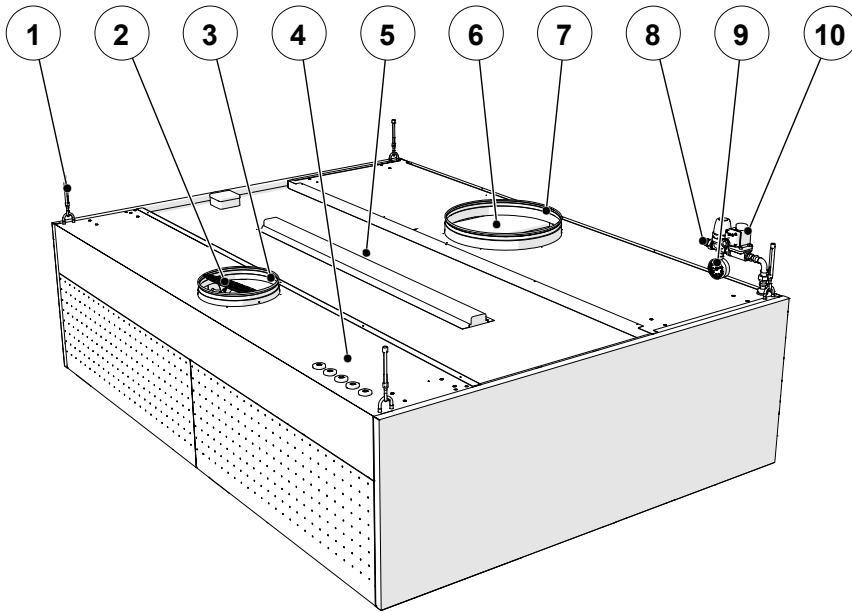
**Risk of falling!**

Make sure installation and service personnel have stable work platforms when installing the device.

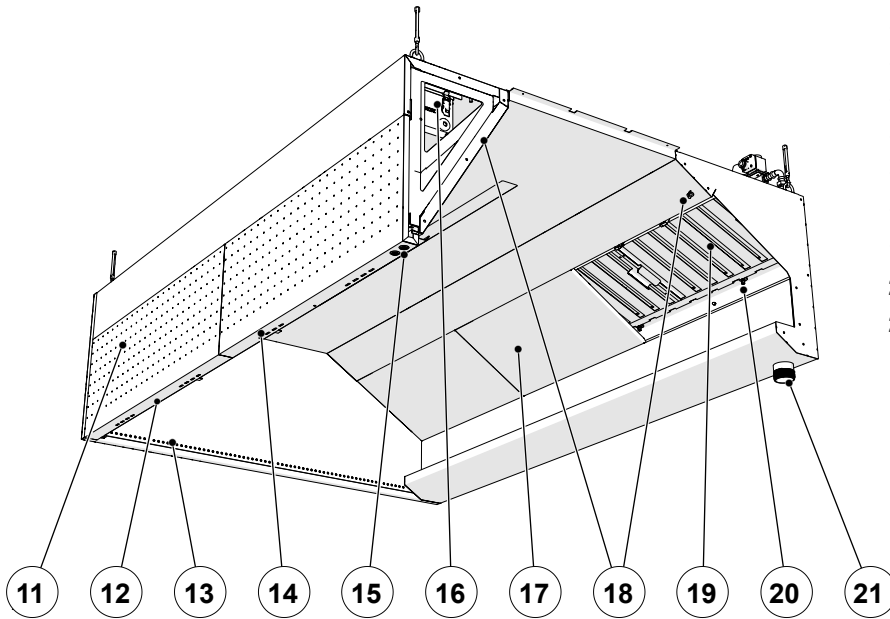


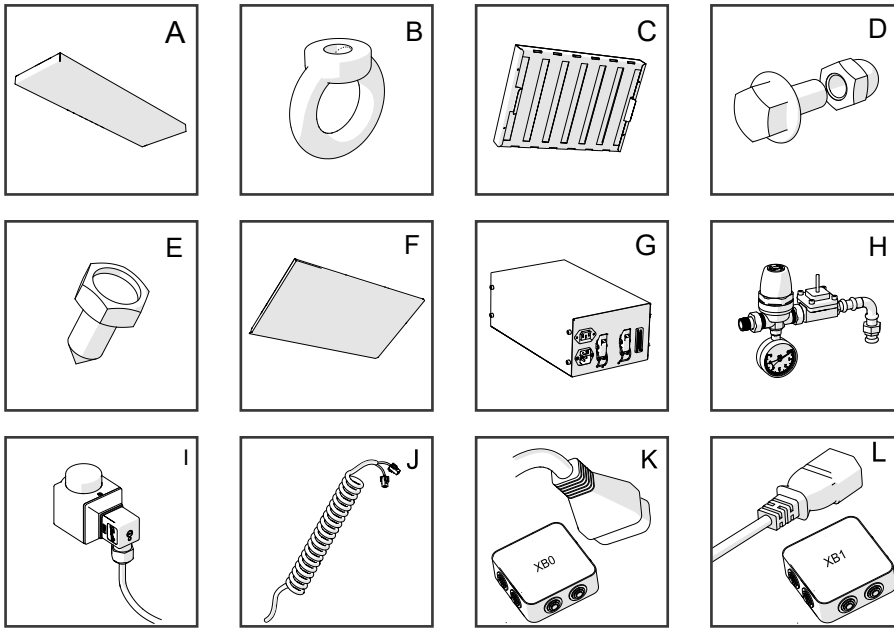
Only original spare parts purchased from ETS NORD may be used!

1. Included in the delivery



- 1 – Suspension points
- 2 – Supply air adjustment plate
- 3 – Supply air connection
- 4 – Cable bushings
- 5 – Lighting
- 6 – Exhaust air regulating plate
- 7 – Exhaust air connection
- 8 – 1/2" water inlet
- 9 – Pressure reducing valve
- 10 – Solenoid valve
- 11 – Front panel
- 12 – Front panel lock
- 13 – "AirGrip" air nozzle system
- 14 – Auxiliary air supply
- 15 – Control buttons
- 16 – Control unit
- 17 – Exhaust chamber access hatch
- 18 – Airflow measuring nozzles
- 19 – HFM labyrinth filters
- 20 – Water nozzles
- 21 – 2" water drain



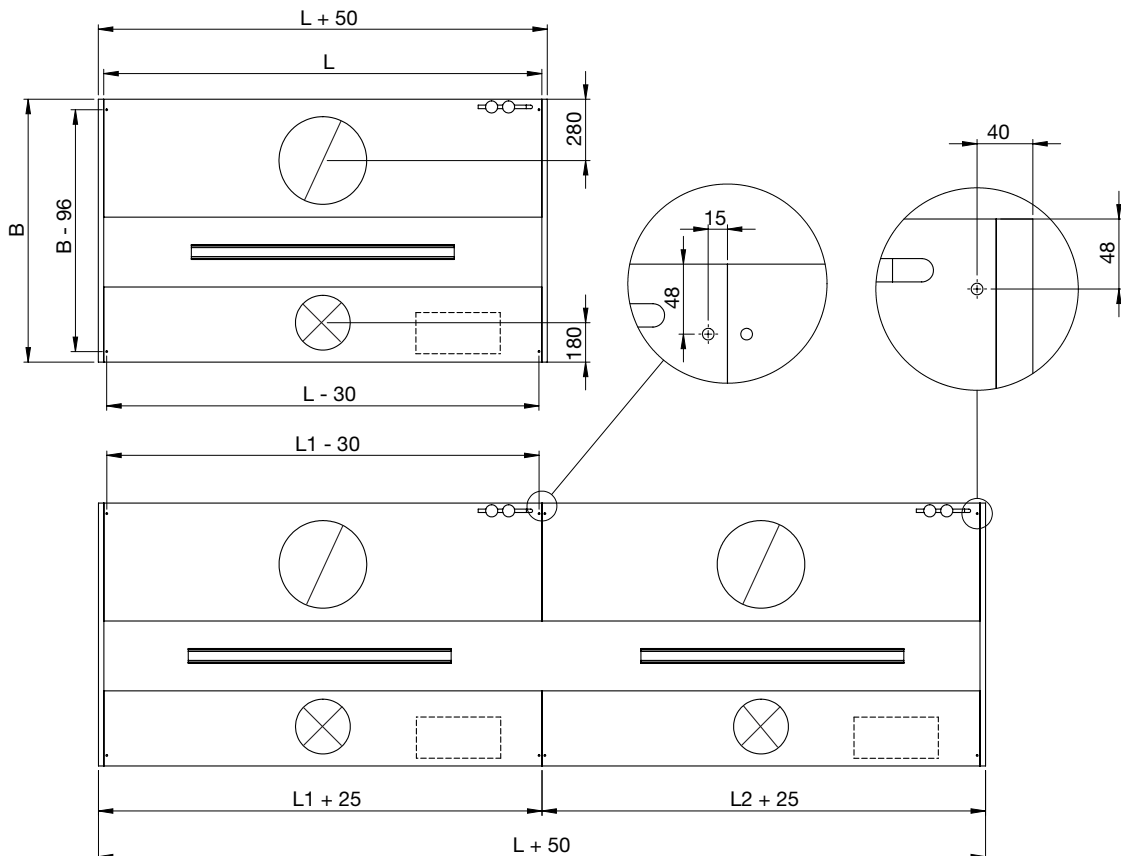


**In the kit:**

- A – Ceiling panel for modular connection
- B – Loop nut
- C – HFM Labyrinth filters
- D – Bolts and cap nuts
- E – Screws
- F – Exhaust chamber access hatches

- G – Control unit
- H – Water system assembly
- I – Solenoid
- J – W3 Spiral cable
- K – W0 Power cable with junction box XB0
- L – W1 Light cable with junction box XB1

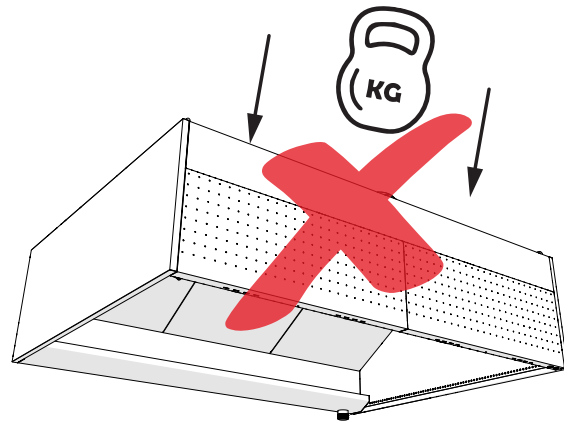
**1.1 Measurements**





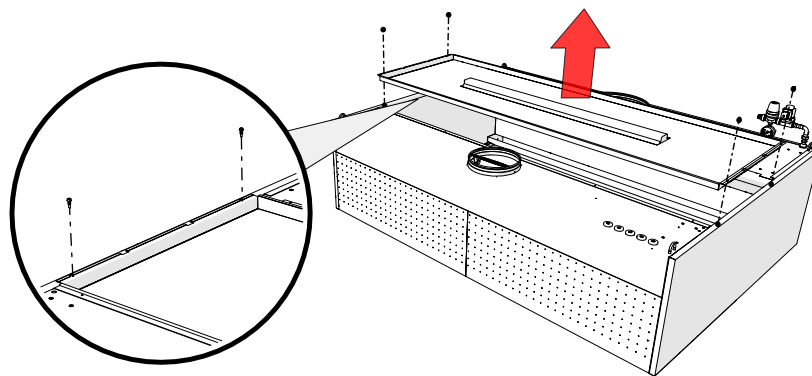
**Safety**

**It is prohibited to hold or add additional weight on the top of the canopy.**

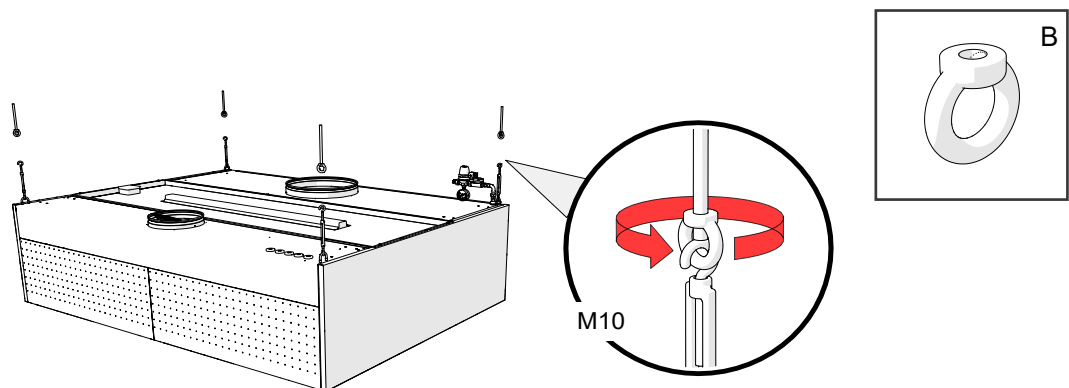


**2. Removing the ceiling panel (optional)**

With larger canopies, removing the center ceiling panel can provide better access for exhaust duct and insulation installation.

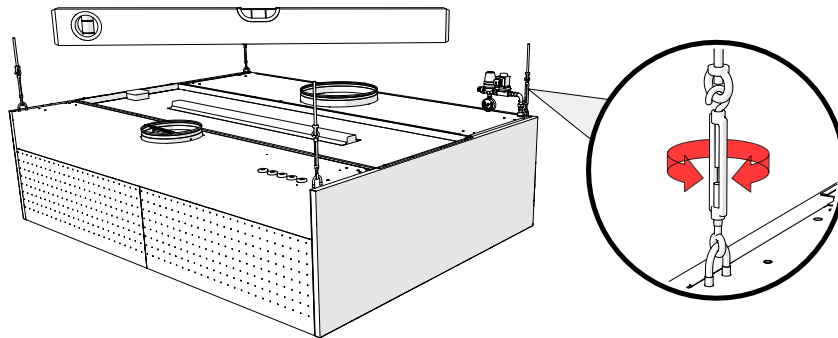


**3. Hanging the kitchen canopy**



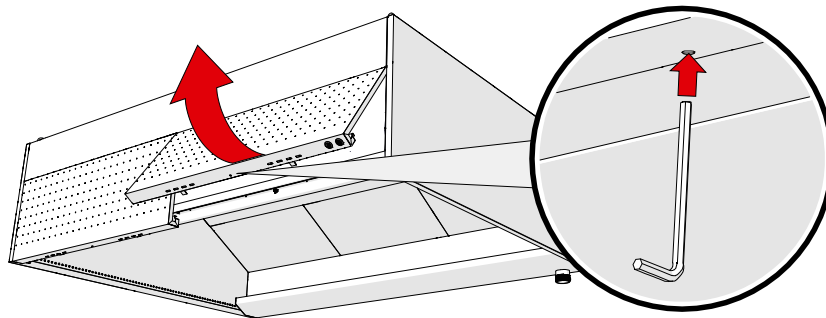
#### 4. Leveling the canopy

Is performed for each section.



#### 5. Opening the front panel

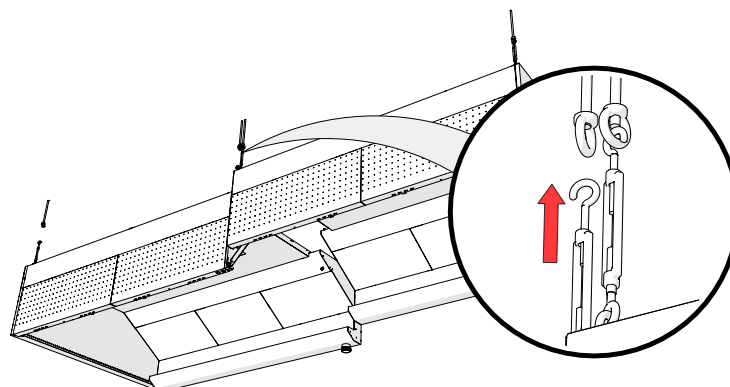
The panel locks automatically.  
**ATTN!** At the end of the installation, make sure that the panels are correctly fixed.



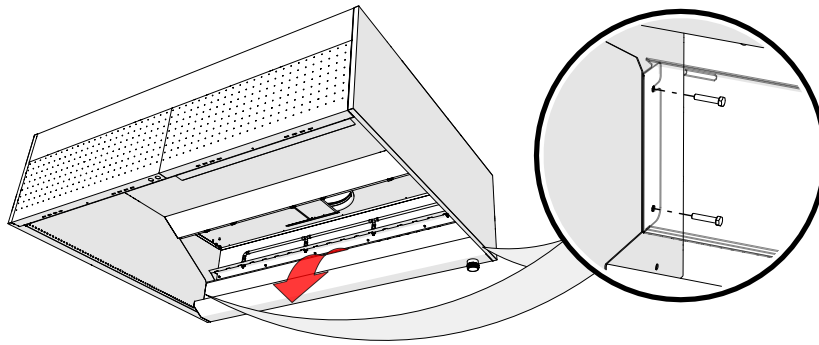
#### 6. Fastening kitchen canopy sections together

##### 6.1 Hanging the canopy sections

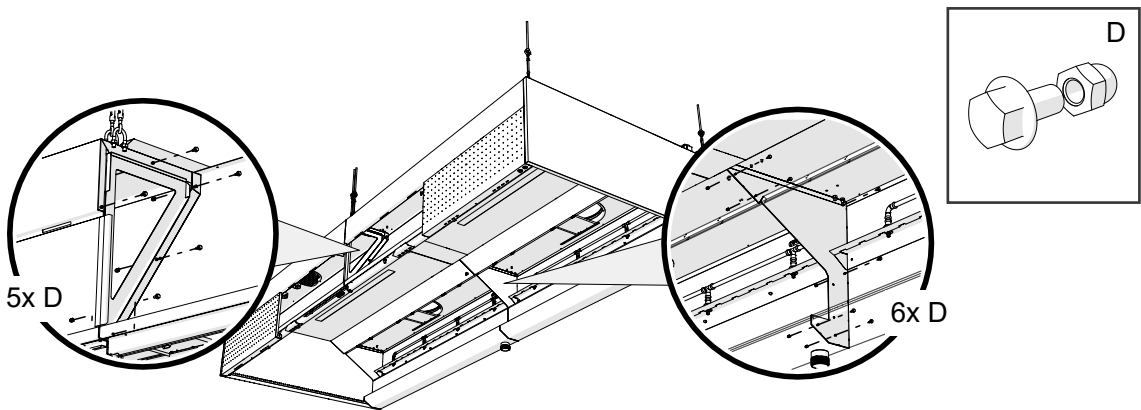
Each section has to be suspended at least from four anchor points.



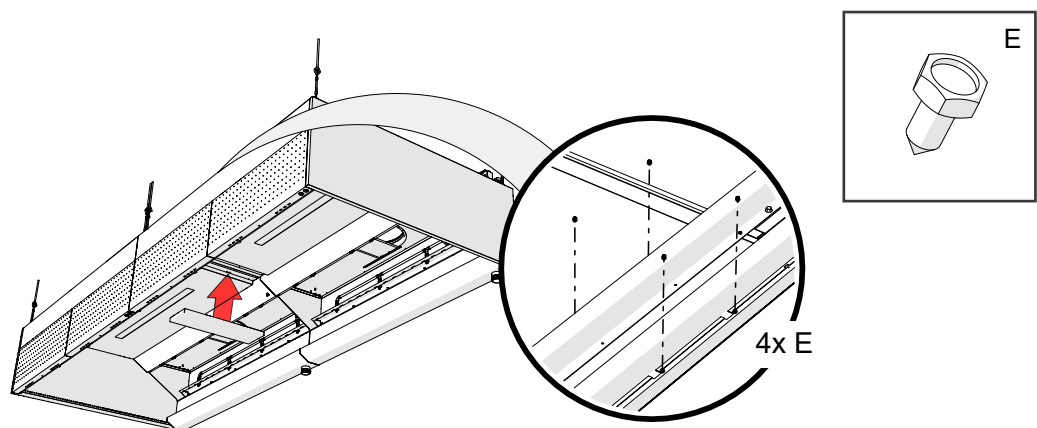
6.2 Removing the support strip for the exhaust chamber access hatch



6.3 Sequential connection

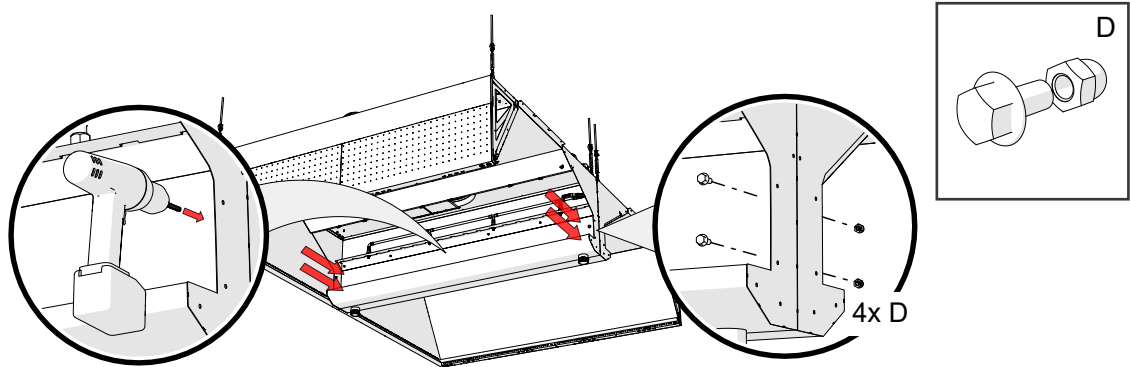


6.4 Installation of the ceiling panel between the sections

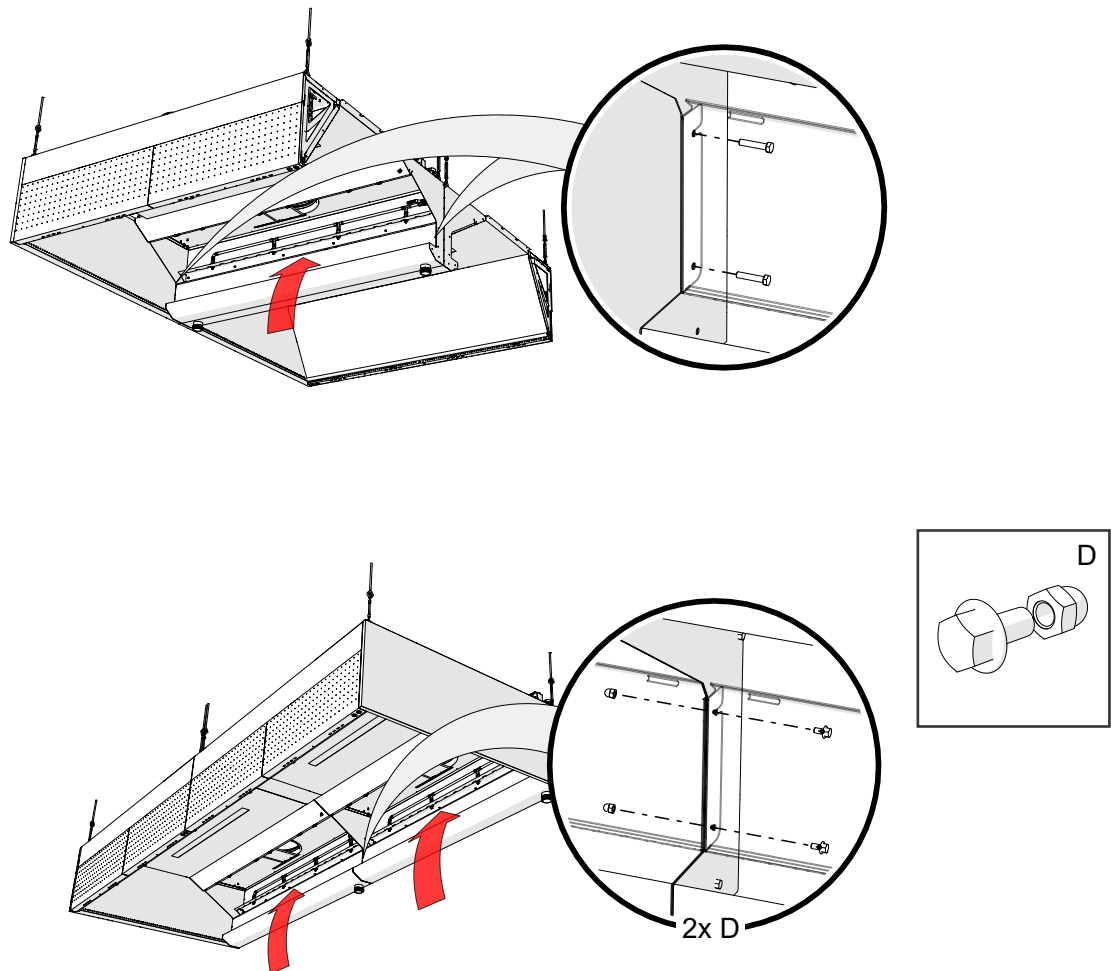


### 6.5 Fastening sides back-to-back

Requires additional bolt holes.

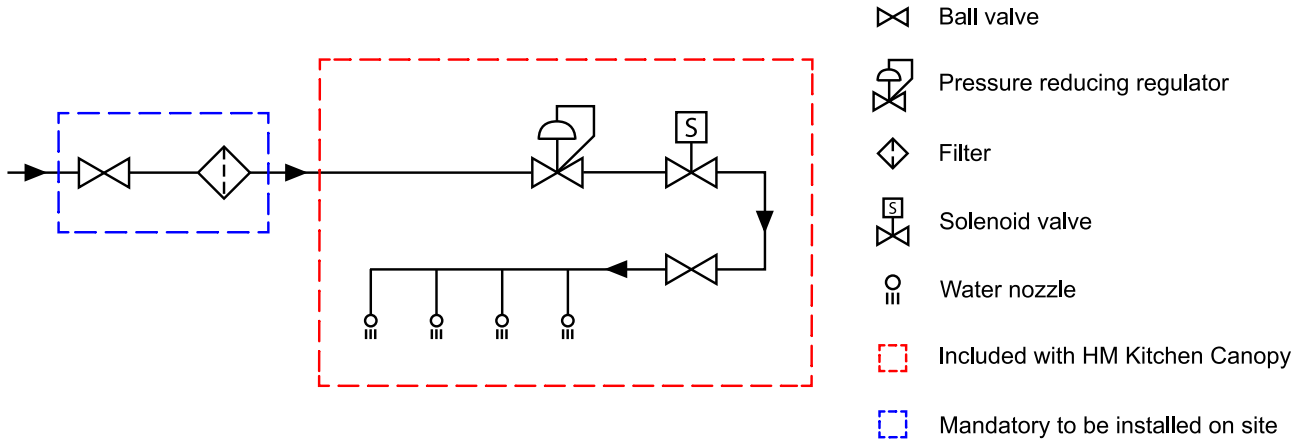


### 6.6 Installing exhaust chamber support strip

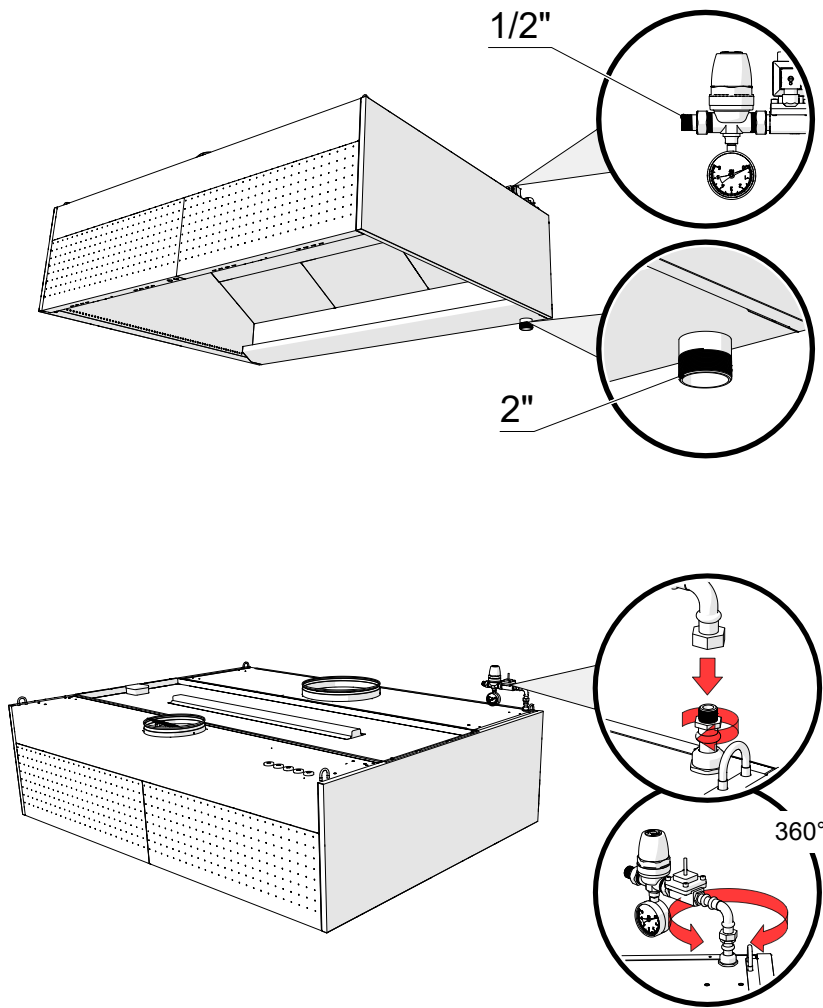


**7. Water connection**

**7.1 Plumbing Diagram**

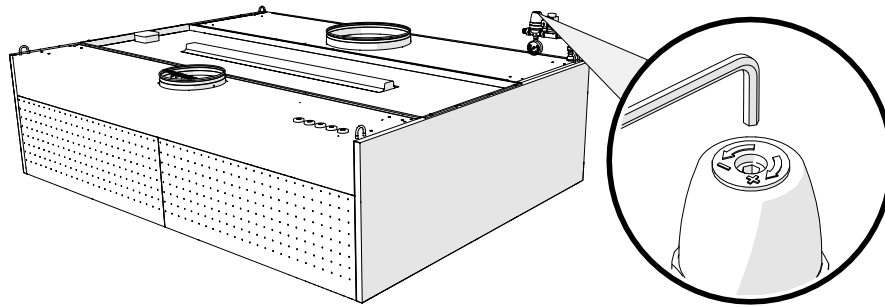


**7.2 Water connection sizes**

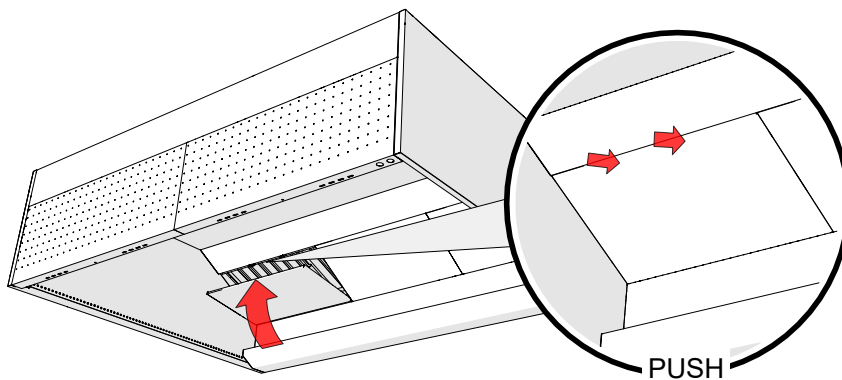
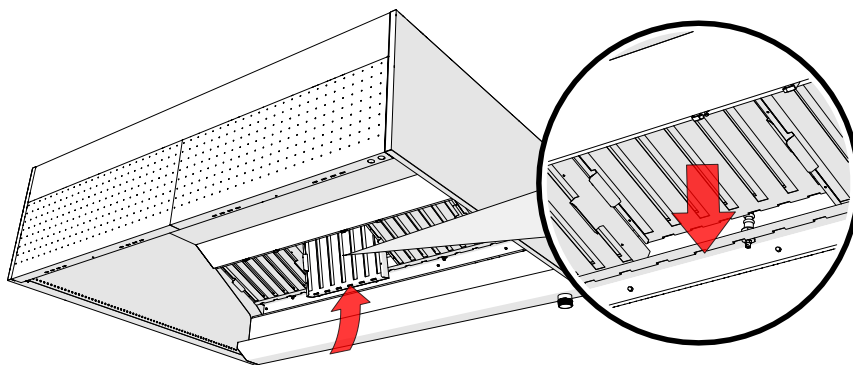


**NOTE! Use only potable water.**

7.3 Adjust the pressure reducing regulator to 2 bar



8. Installing HFM labyrinth filters



## 9. Electrical installation



**Risk of electric shock!**

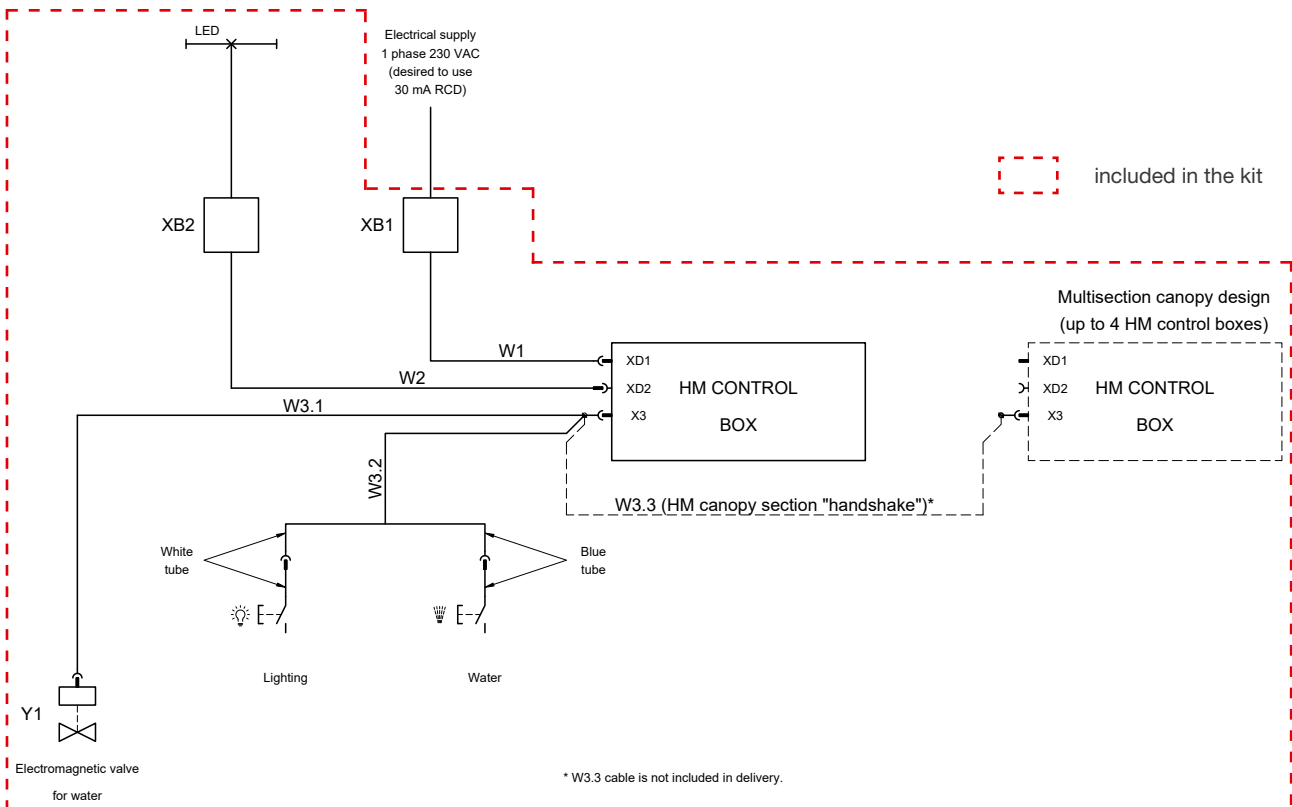
Electrical connections to the system may only be made by an authorized electrician.



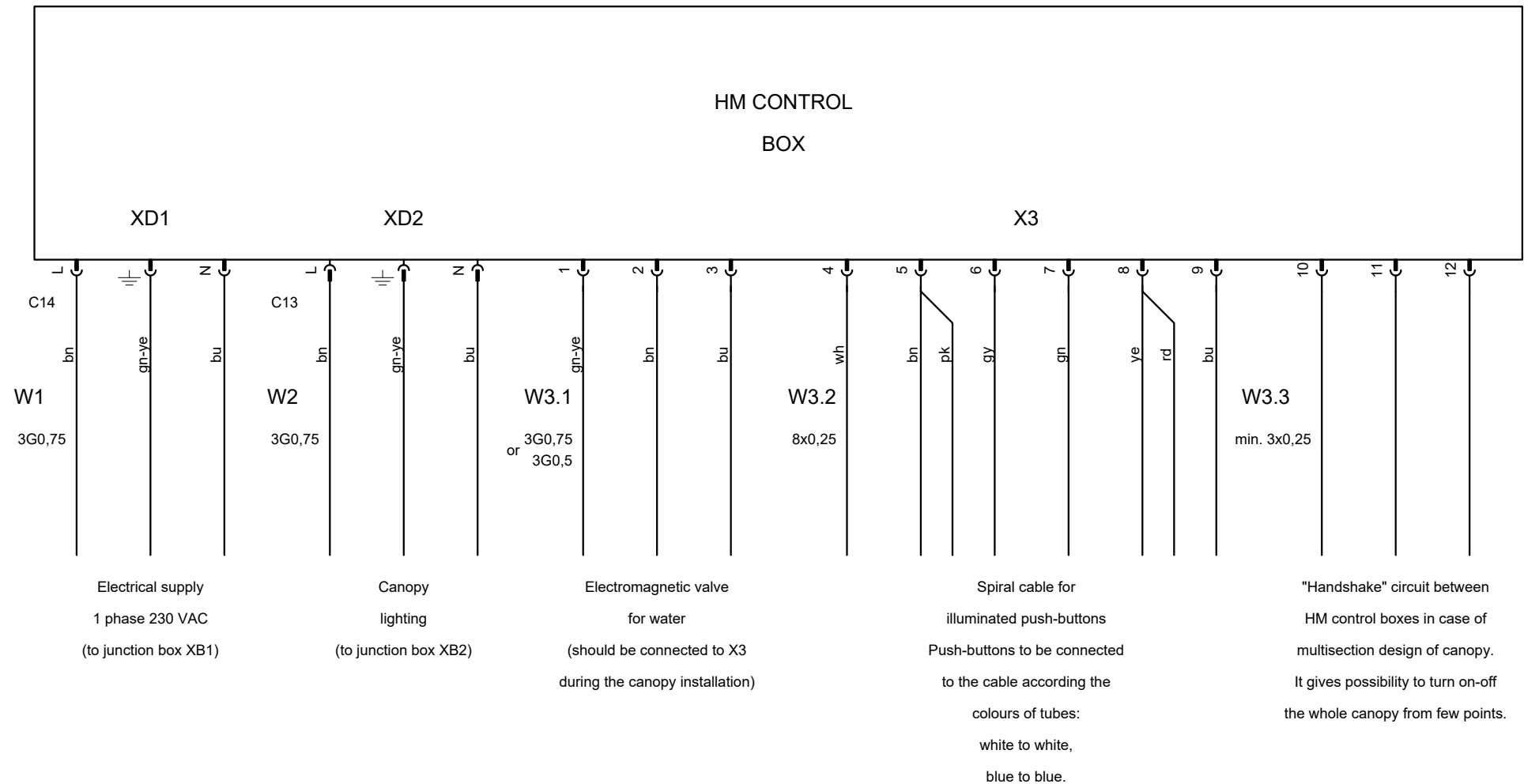
**Risk of falling!**

Make sure installation and service personnel have stable work platforms when installing the device.

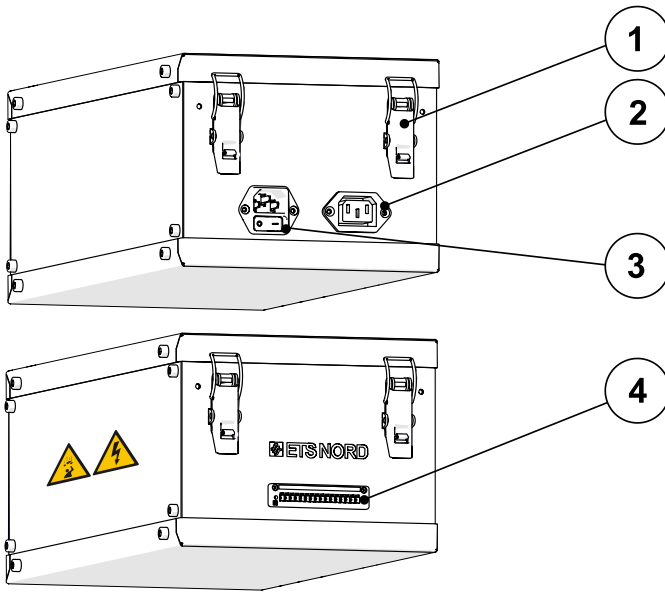
**NOTE! Electrical installation must be performed by an authorized electrician and follow local, regional and national standards and regulations.**



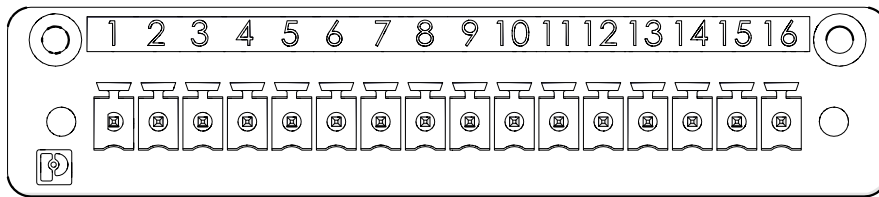
Connection diagram





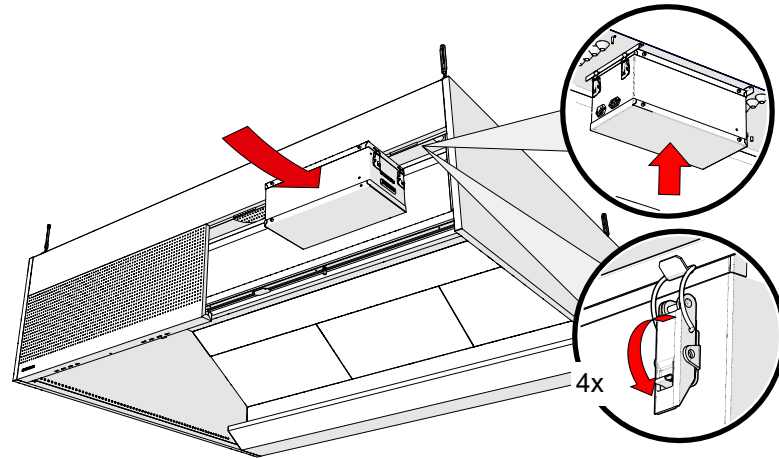


- 1 – Control box suspension clamps
- 2 – IEC C14 socket for lighting connection (XD2)
- 3 – IEC C13 socket for power connection (XD1)
- 4 – Terminal block for controls (X3)

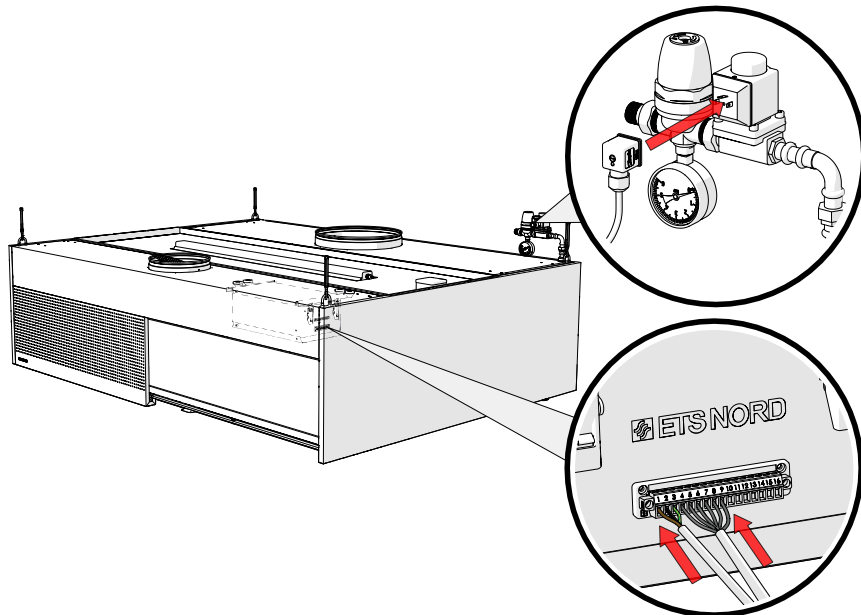


X3 signal connector	IO names	Explanation	Notes
1	PE	Water valve protective earth connection	W2 control cable green-yellow core
2	Water valve +	Water valve + connection	W2 control cable brown core
3	Water valve -	Water valve - connection	W2 control cable blue core
4	Canopy lighting on/off	Canopy lighting on/off signal	W3 spiral cable white core
5	+24V	+24V for pushbuttons	W3 spiral cable brown + pink cores
6	Water valve on/off	Water valve on/off signal	W3 spiral cable grey core
7	Lighting pushbutton illumination	Canopy lighting on/off pushbutton illumination	W3 spiral cable green core
8	0V	0V for pushbuttons	W3 spiral cable yellow + red cores
9	Water valve pushbutton illumination	Water valve on/off pushbutton illumination	W3 spiral cable blue core
10	Canopy lighting on/off pushbutton signal sharing	Canopy lighting on/off pushbutton signal sharing for "PLC handshake"	W4 control cable white core (cable and its installation from customer)
11	Water valve on/off pushbutton signal sharing	Water valve on/off pushbutton signal sharing for "PLC handshake"	W4 control cable brown core (cable and its installation from customer)
12	0 V (-) for sharing	0V sharing for "PLC handshake"	W4 control cable green core (cable and its installation from customer)

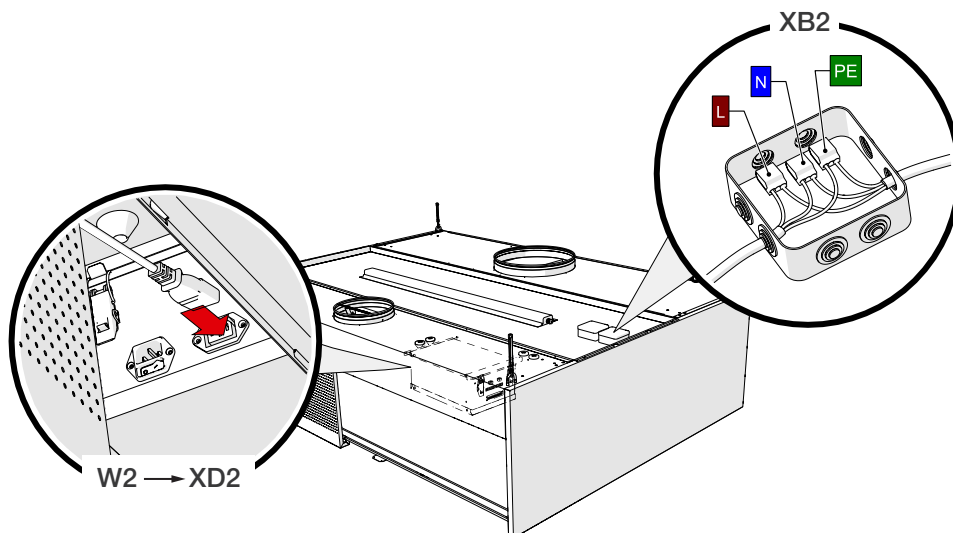
9.1 Installing the control unit



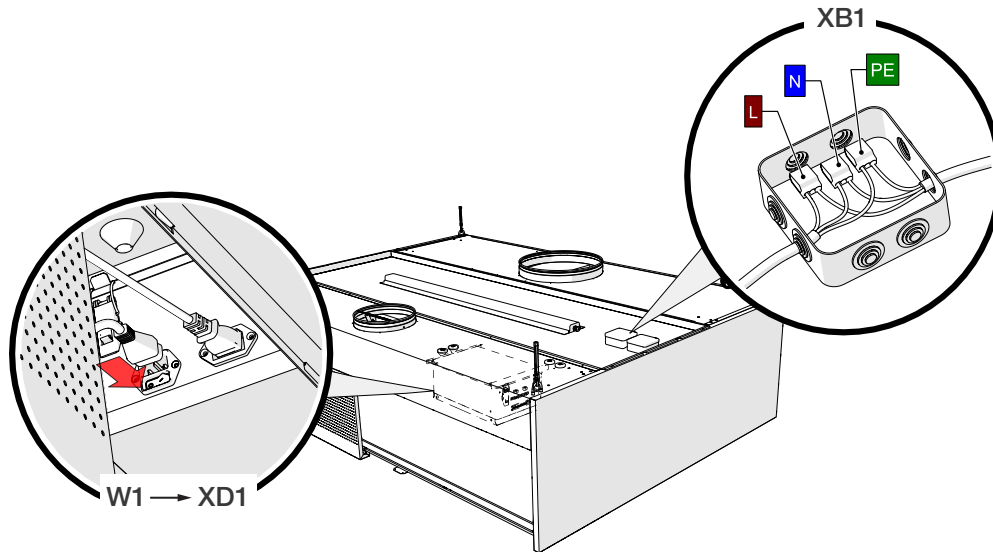
9.2 Connecting the solenoid valve to the control unit



9.3 Lighting connection

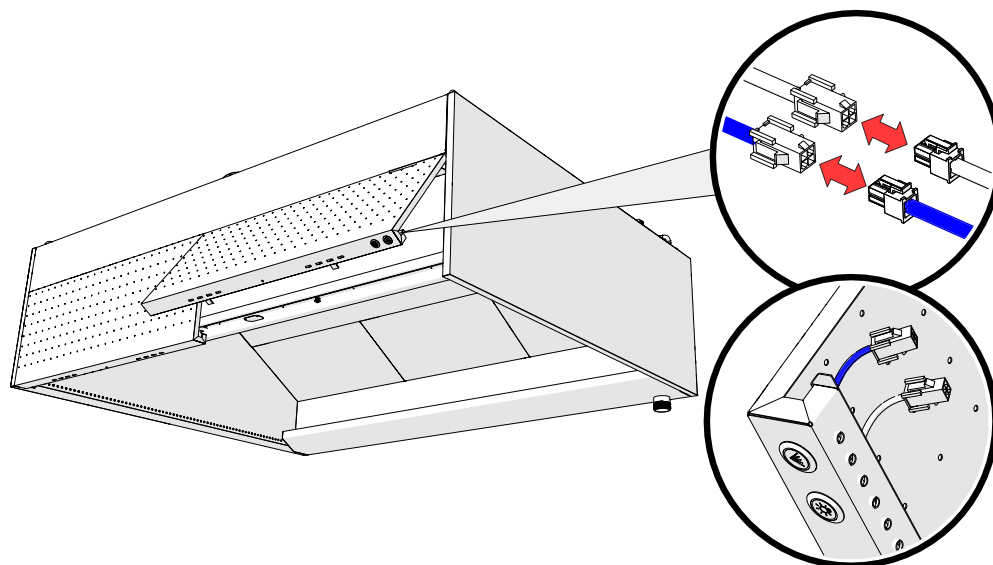


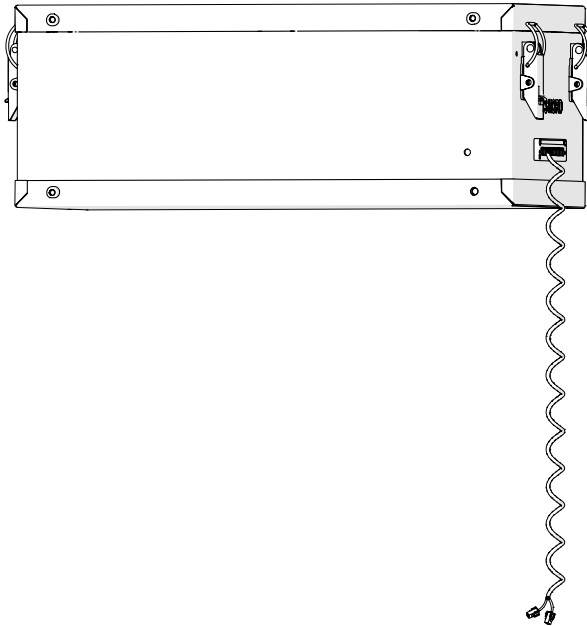
### 9.4 Connecting the power cable



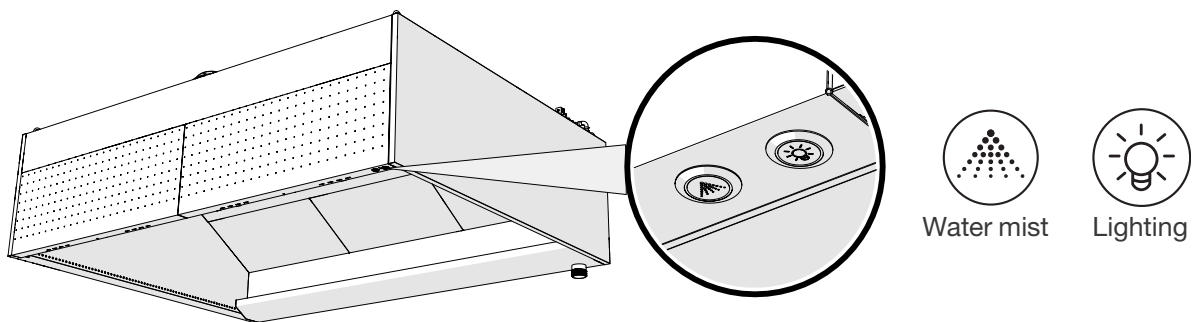
### 9.5 Connecting the front panel

Before closing the front panel connect control buttons.











10. Using the HM kitchen canopy



HM Canopy is controlled by two buttons located under front panel.

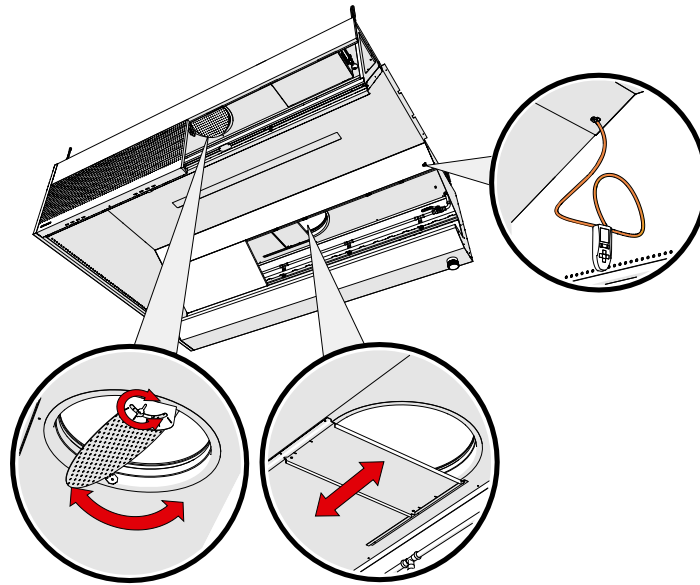
- 

Lighting and water mist are off
- 

Lighting is on but water mist is off
- 

Both lighting and water mist are turned on

Note that when you turn off the lights when the water mist is on it will turn off both the lights and water mist functions.

**NB! When cooking food with flames be sure to turn the mist shower on.**

### 11. Measuring and adjusting airflow

NORDcanopy canopies are fitted with measuring nozzles located inside the canopy.



**ATTN! During measurement, all HFM Labyrinth filters and exhaust chamber access hatches must be in place and the front panel must be closed.**

In order to adjust supply airflow, the position of the adjusting plate located in the supply chamber is adjusted. The exhaust airflow adjustment plate is located behind the HFM Labyrinth filters. Lock the adjustment plate in place using the butterfly nuts!

#### K-factor for measuring airflow

- Exhaust K-factor = 20,6 per filter

$$Q_v = k\sqrt{\Delta p_m}$$

Supply air	K-factor, per 1 m of front panel				
	SPx0	SPx1	SPx2	SPx3	SPxK
Front panel*	-	19,2	32,3	50,4	-
AirGrip	2,4	-	-	-	-
Side panel*	-	-	-	-	6,6

\* The supply panel k-factors above include the “AirGrip” air capture system K-factor.

\* If the side panel has perforation, add the side panel k-value to the front panel k-value.

#### Calculation example:

Supply air canopy L=2 meter with SPx2 front panel.

#### Calculation of the supply air volume:

Pressure in the supply air chamber is 26 Pa

Front panel SPx2 k-factor is 32,3

$$Q_s = 2 \times 32,3 \times \sqrt{26} = 330 \text{ l/s}$$

#### Calculation of the exhaust air volume:

Pressure in the exhaust air chamber is 22 Pa

4 x HFM labyrinth filter k-factor is 82,4

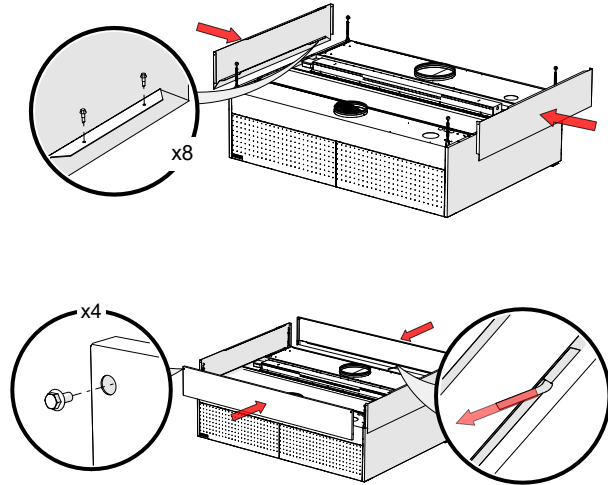
$$Q_e = 4 \times 20,6 \times \sqrt{22} = 386 \text{ l/s}$$

Number of HFM filters	K-value
1	20,6
2	41,2
3	61,8
4	82,4
5	103

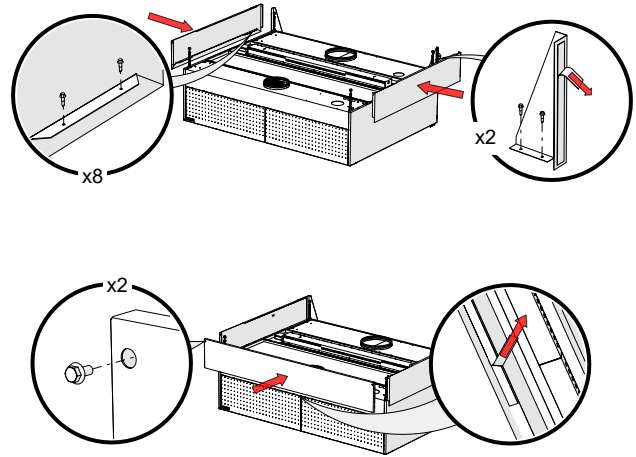
12. Accessories

12.1 Installation of cover plates

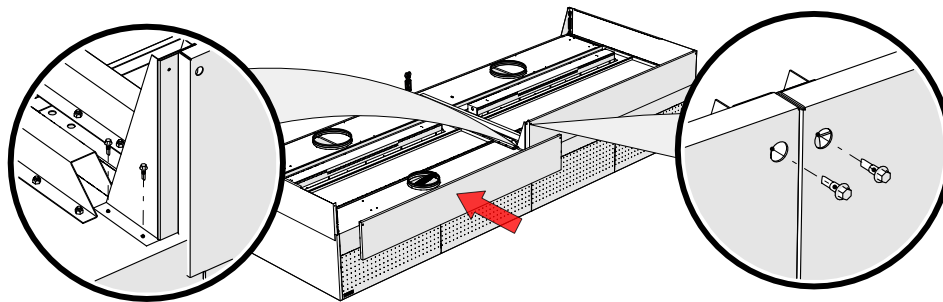
A



B



C



13. Kitchen canopy maintenance

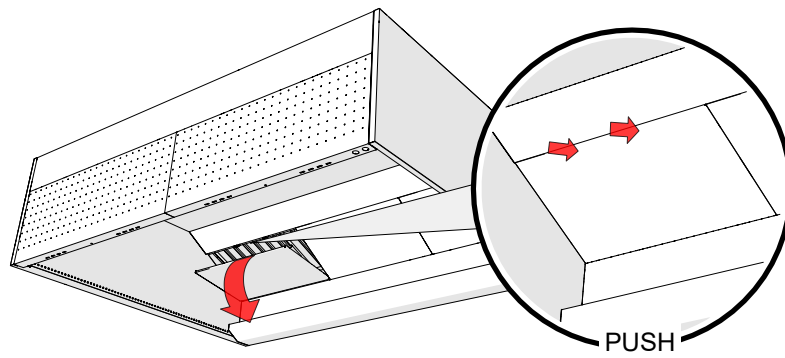
DEPENDING  
ON THE  
FREQUENCY OF  
KITCHEN USAGE

All internal and external surfaces of the kitchen canopy, including light fixtures, are cleaned using neutral cleaning agents. Carefully rinse the surfaces after cleaning, in order to avoid harmful interactions of cleaning agents and high temperatures. To clean the exhaust chamber, HFM filters and the COVER SUPPORT RAIL (pictured below) are removed from the kitchen canopy. To clean the supply chamber, the front panel of the kitchen canopy is removed. ATTN! Do not use hard or abrasive detergents, chlorine or bleach when cleaning the canopy! Never clean the kitchen canopy when any of its surfaces are hot.

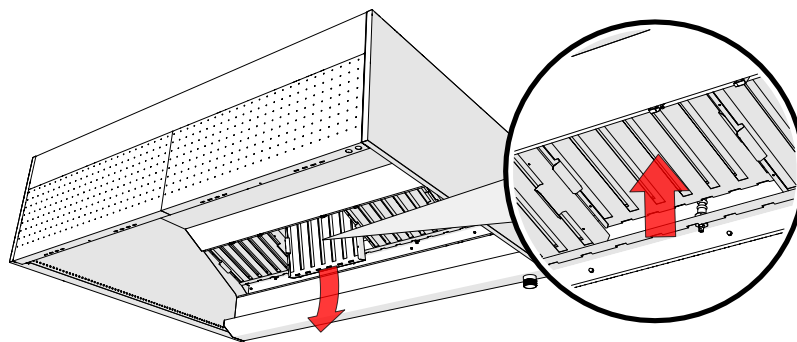
Occasionally check the water nozzles. These need to be cleaned if water spray pattern is changed (see below).

To clean HFM Labyrinth filters they must be removed from the kitchen canopy. Liquid grease must always be disposed of using methods approved according to local regulations.

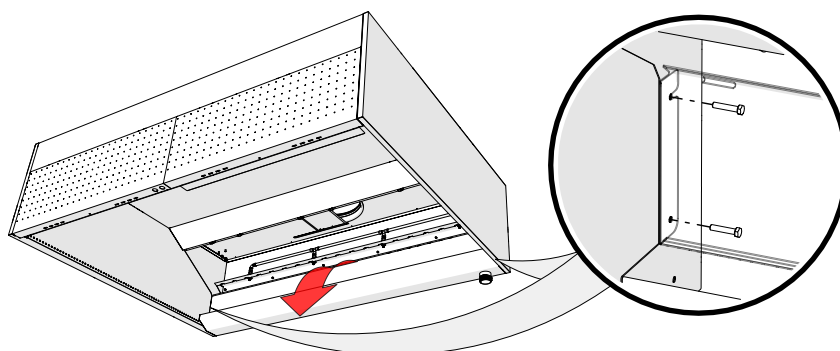
13.1 Removing exhaust chamber access hatches



13.2 Removing HFM labyrinth filters

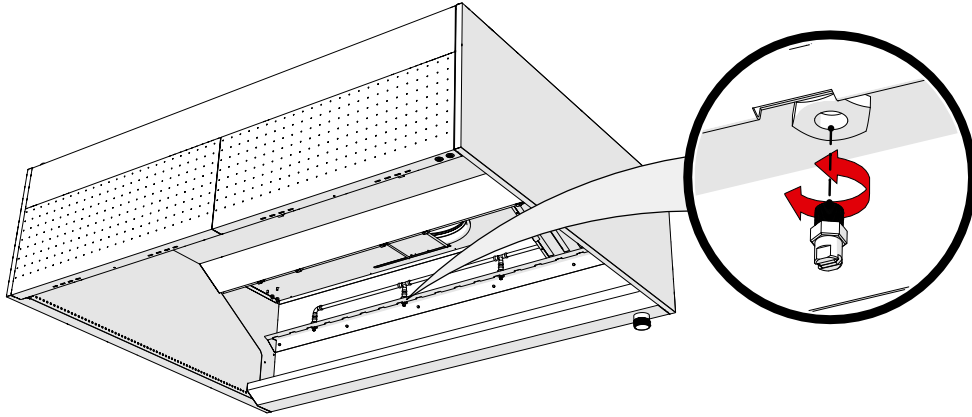


13.3 Removing the access hatch support strip

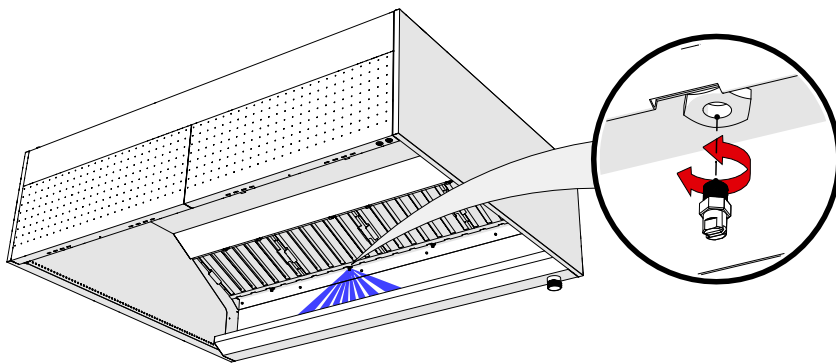


### 13.4 Removing water nozzles

When servicing nozzles, make sure they are installed in the right direction.



Water spray should be parrallel to the rear wall. Turn nozzles so that they are all in line.







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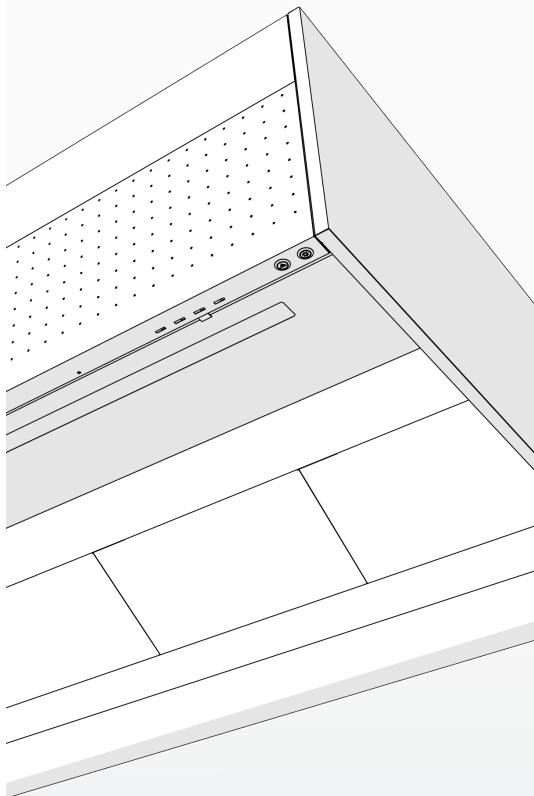
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*Let's move the air together!*