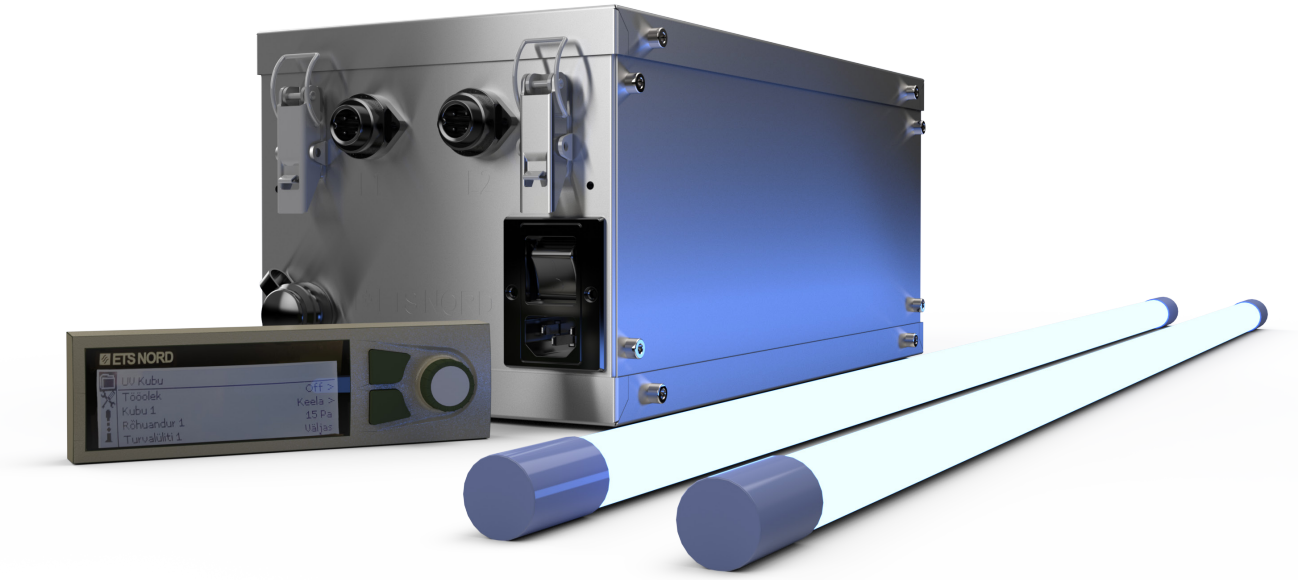


NORDcanopy

UV Cleaning System Installation Guide

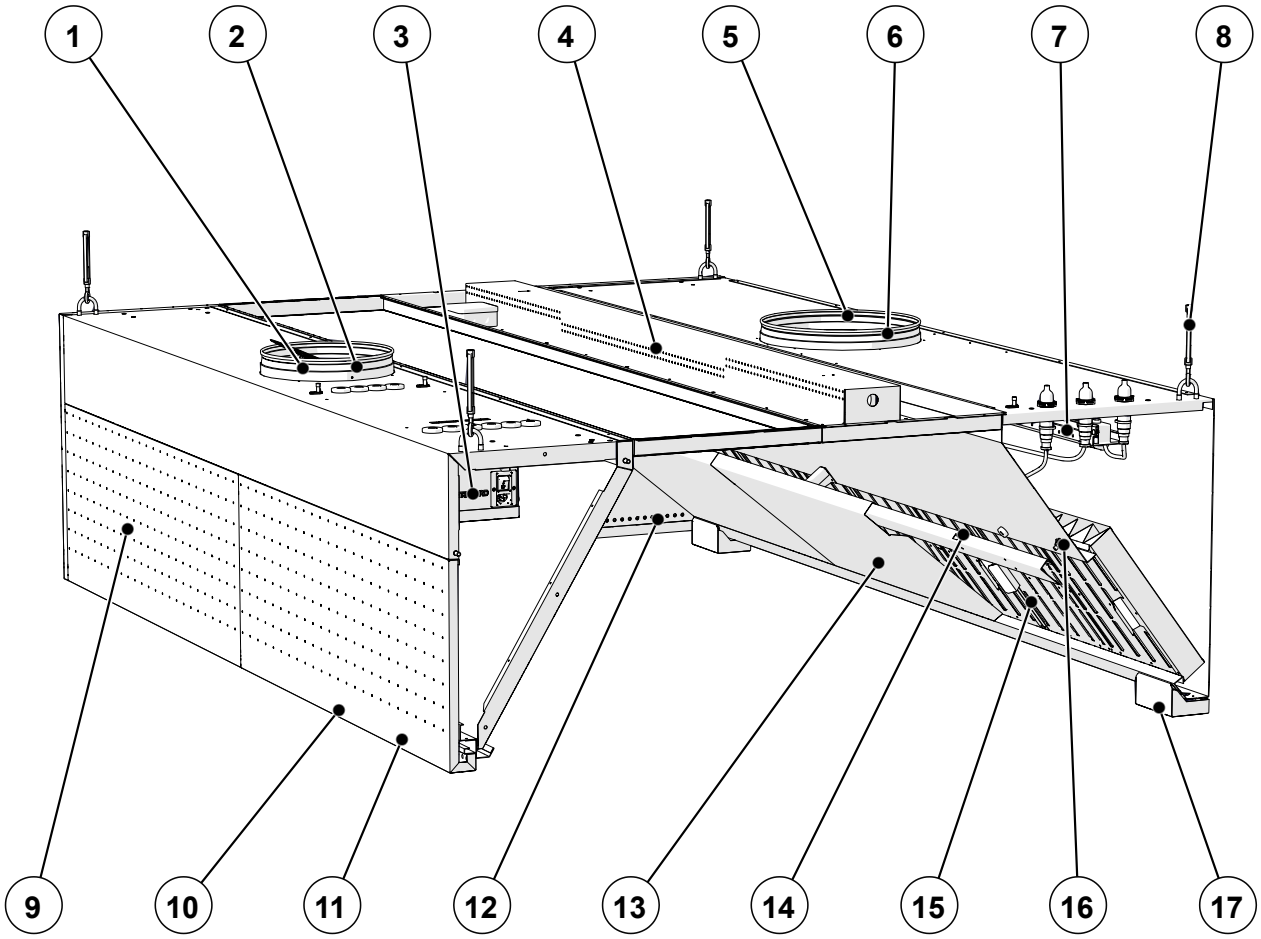
ETS NORD

Table of contents

General

This guide contains information for the safe installation of an integrated Control Unit into an ETS NORD kitchen canopy with UV cleaning. Read the guide carefully before installing, setting up or performing maintenance!

Check that the packaged products do not have visible damage. Immediately notify the supplier and manufacturer of the products of damage or missing components.

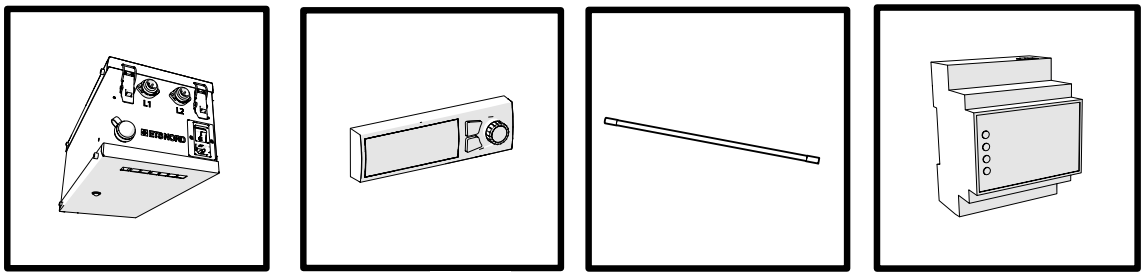


1 – Supply air adjustment plate
2 – Supply air connection
3 – UV control unit
4 – Lighting
5 – Exhaust air adjustment plate
6 – Exhaust air connection
7 – UV lamps
8 – Suspension points
9 – Front panel
10 – Front panel lock
11 – Auxilliary air supply
12 – “AirGrip” air nozzle system
13 – UV shield
14 – UV shield safety switch
15 – HFK grase filters
16 – Airflow measuring nozzle
17 – Grease collection containers

The UV cleaning system consists of three separate components:

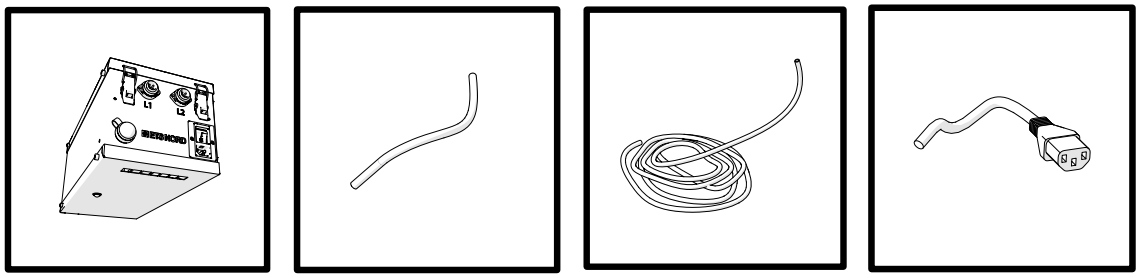
- One or more Control Unit(s)
- LCD Control Panel
- UV lamp(s) to support the exhaust airflow
- Remote Access Device*

* Allows the user to access and manage the UV cleaning system remotely, from the LAN or Internet.



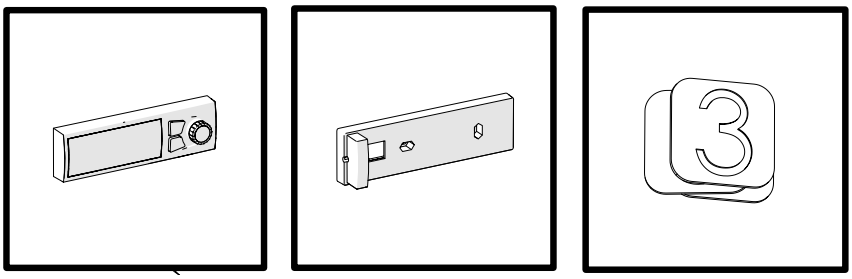
The Control Unit packaging includes:

- Control Unit
- Pressure measurement hose (2x30cm)
- Pressure measurement hose (1x1.5m)
- Power cable IEC C13 with plug (3m)



The LCD Control Panel packaging includes:

- Control Panel
- Wall mount for Control Panel
- Device address identification stickers



Each kitchen is equipped with one Control Panel, which can provide access to and oversight over up to ten UV cleaning systems.

Product safety instructions

Failure to comply with these instructions or incorrect use of this device may cause serious bodily injury.

The UV cleaning system is designed to treat kitchen exhaust air with UV light and ozone only as described in this manual.

Use of this UV technology reduces odors and reduces fat, mold and bacteria to water vapor and dry minerals. ETS NORD AS assumes no liability if the product is not used in accordance with the manufacturer's instructions in this guide.

The installation of the Control Unit may only be carried out by persons trained and authorized by ETS NORD in accordance with international standards and regulations.

It is forbidden to use replacement lamps or any other spare parts that are not supplied by ETS NORD Customer Service.

Ultraviolet radiation and ozone are harmful to health. Prolonged exposure can cause the following damage:

- Skin rashes and burns
- Eye irritation, retinal burn and loss of vision
- Respiratory irritation and breathing problems

When removing grease filters from a UV-canopy, ensure that the UV system is powered off at the main electrical closet or safety breaker.

When installing servicing or servicing the lamps, always wear goggles and protective gloves to protect against quartz fragments in case of UV lamp breakage.

Check your product

Make sure that all components are received, matching both the order and delivery confirmation letters. Incorrect delivery and transport damage must be immediately reported to both the cargo carrier and ETS NORD Customer Service.

The time for filing a complaint or shipment discrepancy is 5 days after delivery. ETS NORD is not responsible for defects that have occurred after goods have been handed over to the buyer.

If goods purchased from ETS NORD have defects for which ETS NORD is responsible, ETS NORD will repair or replace the defective goods. If the goods cannot be repaired or replaced, ETS NORD will refund to the buyer all fees for such items resulting from the sales contract.

If you have any problems, please contact ETS NORD Customer Service!

WARNINGS!

This device emits ultraviolet radiation and ozone!
Prolonged exposure to ozone and ultraviolet radiation can cause bodily injury.

When removing grease filters, always make sure that the UV system is powered off at the main electrical closet or safety breaker.

Risk of falling!
Make sure installation and service personnel have stable work platforms when installing the device.

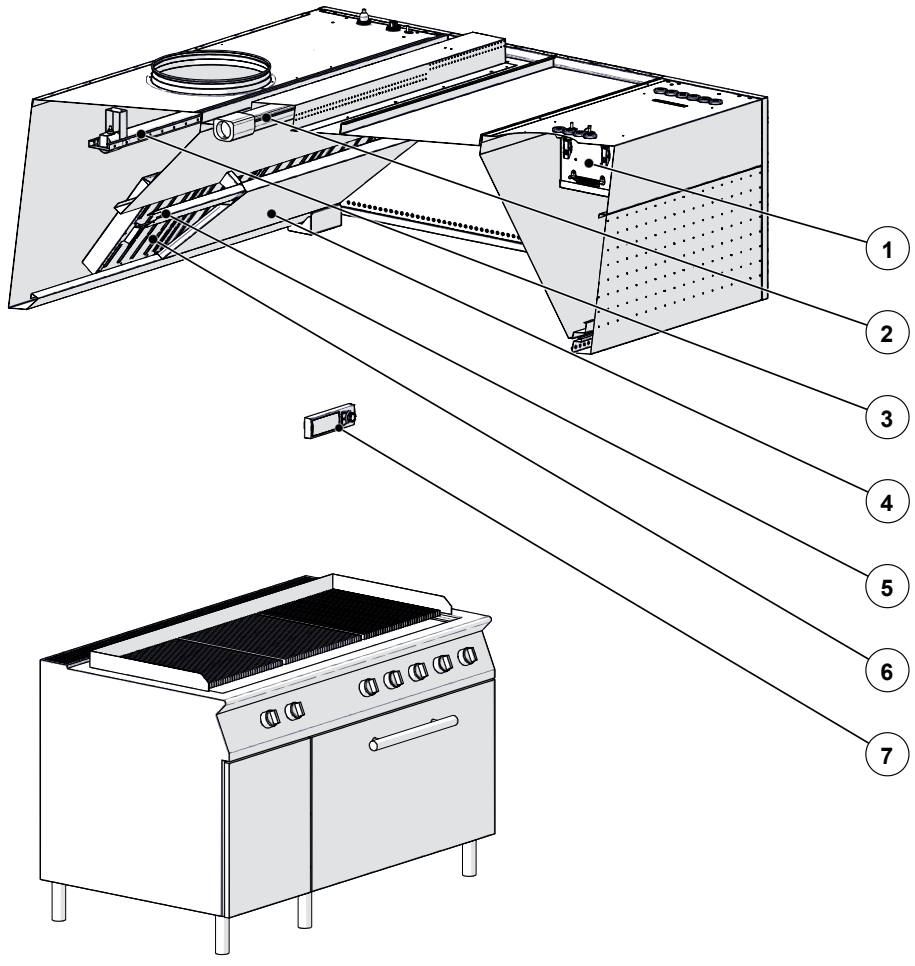
When removing grease filters, always make sure that the UV system is powered off at the main electrical closet or safety breaker.

Risk of electric shock!
Electrical connections to the system may only be made by an authorized electrician.

Always power off the system before any maintenance work!
Always make sure that the UV system is powered off at the main electrical closet or safety breaker.

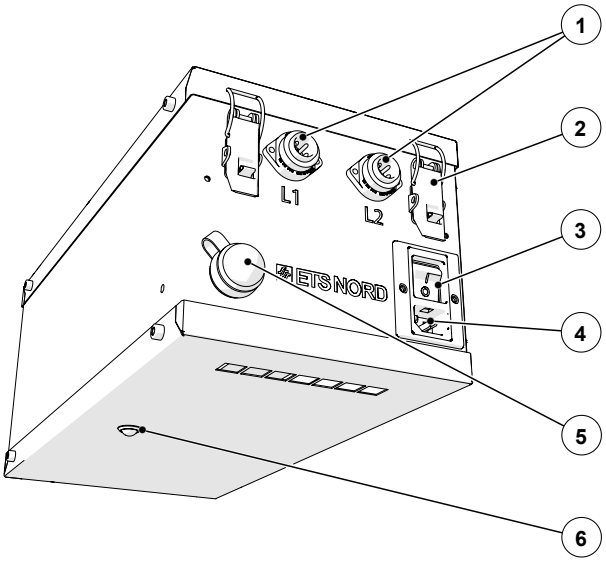
Only original spare parts and UV lamps purchased from ETS NORD may be used in the UV 1.0 Control Unit!
UV lamps can be ordered from ETS NORD Customer Service.

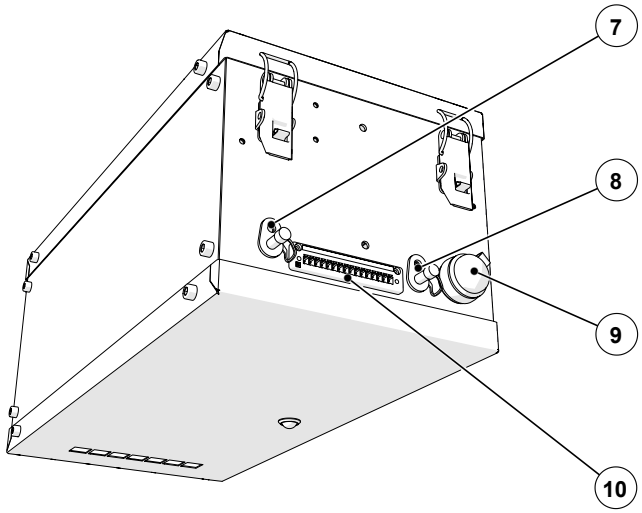
System overview



1 – Control Unit
2 – Light
3 – UV lamp
4 – UV shield
5 – UV shield switch
6 – HFK grease filters
7 – LCD Control Panel

1. Installation of the Control Unit



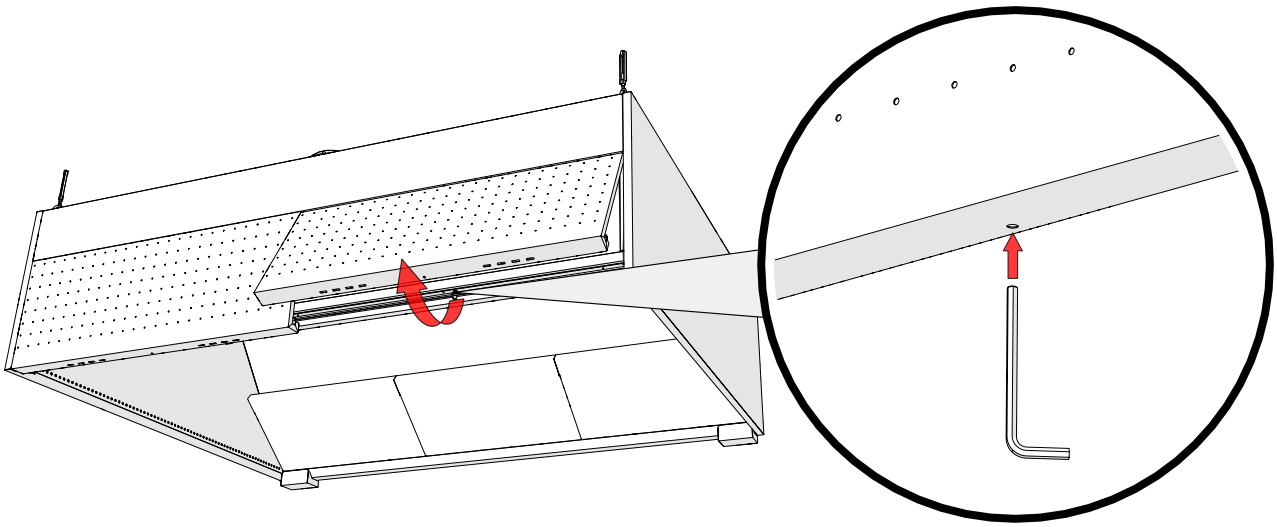


1 – UV lamp “L” power sockets*
2 – Control Unit fastening clamps
3 – On/Off switch
4 – Power socket with automatic circuit breaker for IEC C13 plug
5 – Control Panel RJ45 socket
6 – Indicator LED
7 – Exhaust pressure measurement nozzle
8 – Ambient pressure measurement nozzle
9 – Remote Access Device RJ45 socket
10 – Input socket (ModBus, building automation I/O)

*Depending on the size of the kitchen canopy, there may be 1-4 “L” lamp power sockets.

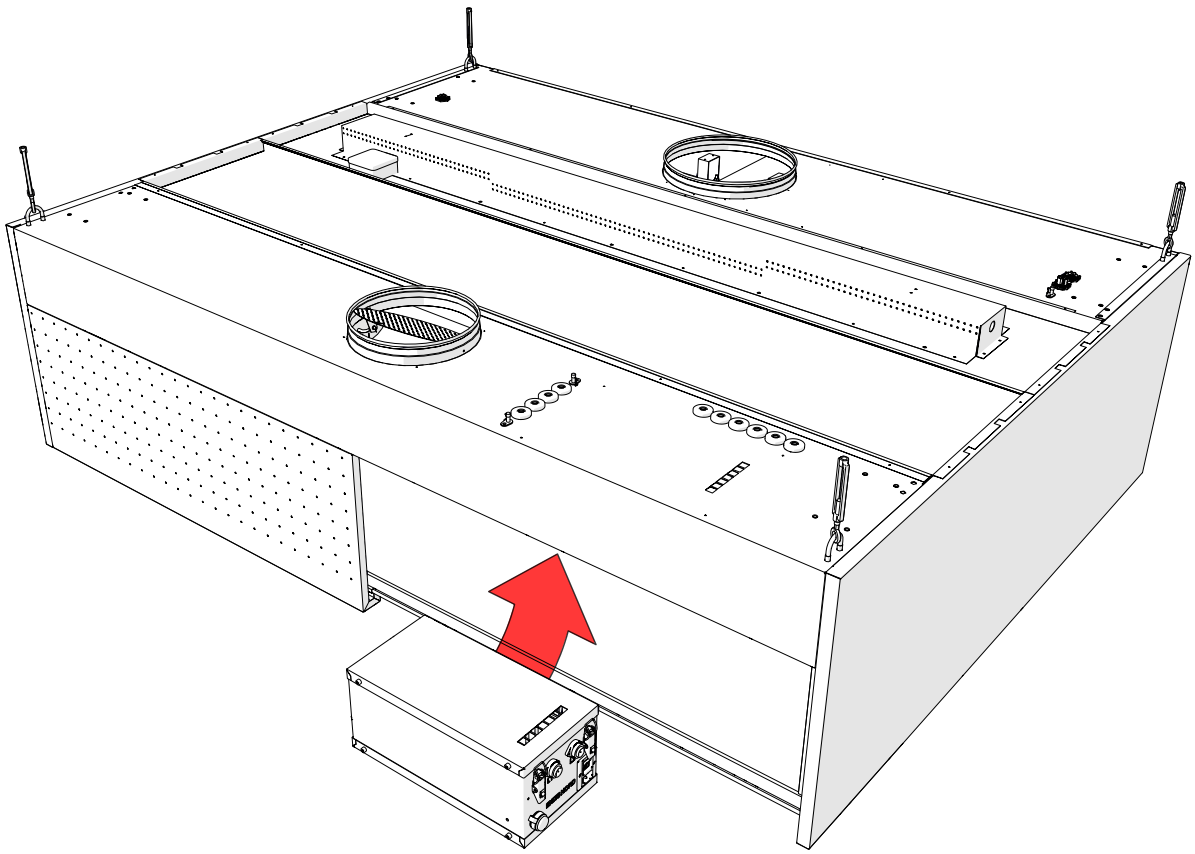
1.1 Opening the front panel

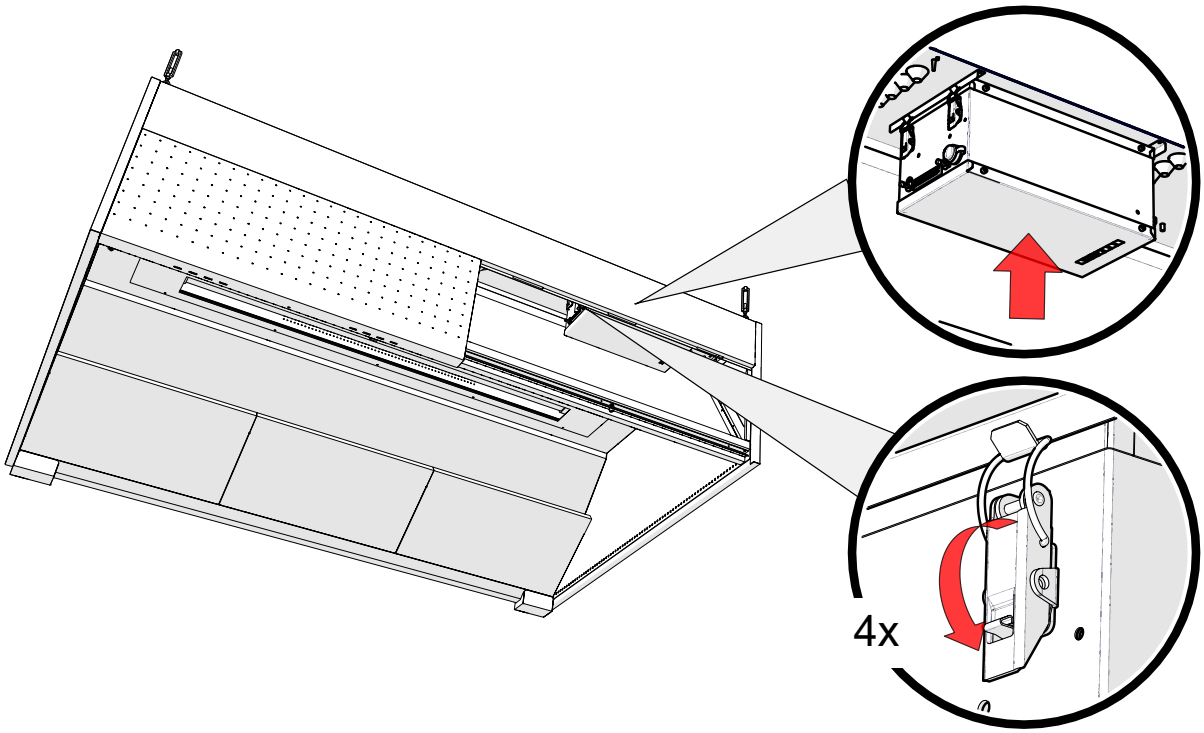
To install the Control Unit, the right supply air panel of the canopy must be removed using a small screwdriver or Allen wrench, as shown in the picture. Press upward to release the internal latch.



1.2 Mounting the Control Unit to the supply chamber

Next, fasten the Control Unit up against the ceiling of the supply chamber using its four fastening clamps.

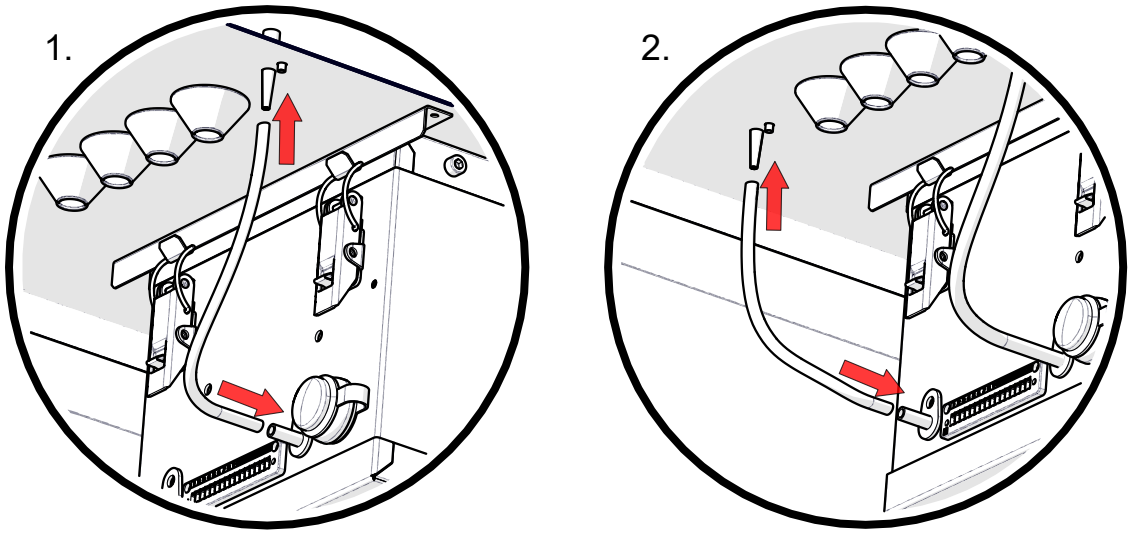




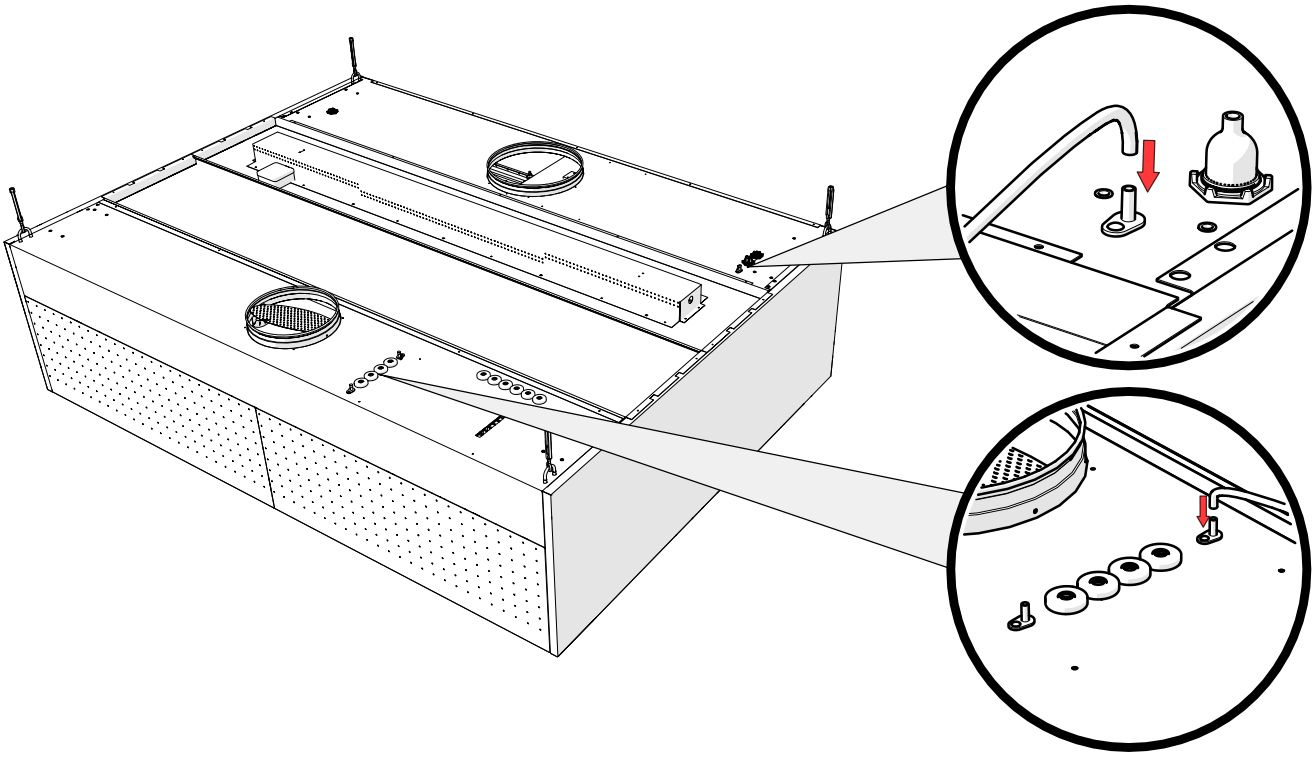
1.3 Installation of pressure measurement hoses

NOTE! To prevent dirt or debris from entering the Control Unit or pressure measurement hoses, cap them off until installation is ready to be performed.

Next, two pressure measurement hoses shall be connected between the nipples protruding from the Control Unit to their respective nipples on the ceiling of the supply chamber. Connect the rightmost hose to the rightmost nipple (picture 1). This hose provides the system with the static pressure of the surrounding environment. Attach the left hose to the left pressure nipple (picture 2). Ensure that these connections are made correctly and that the hoses are firmly attached to each nipple.



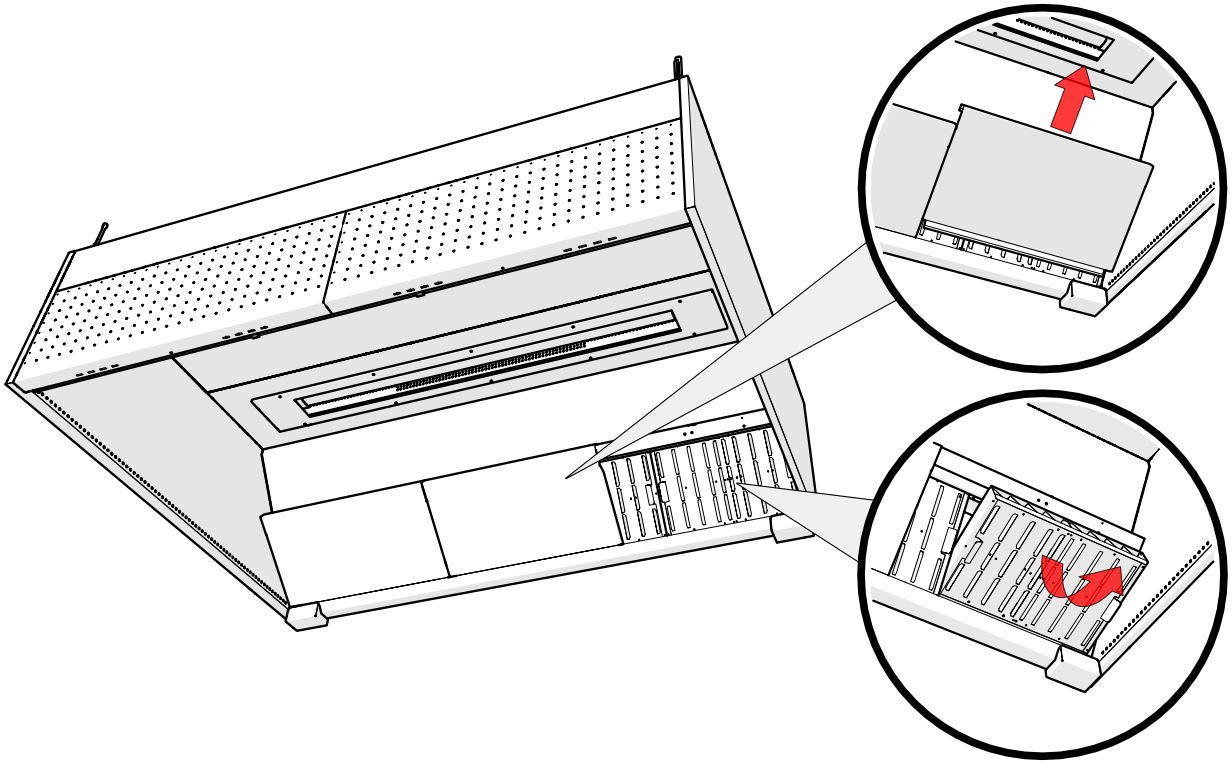
Next, the long exhaust pressure measurement hose must be connected above the canopy. Connect the hose from the nipple closest to the center of the canopy to the nipple above the exhaust chamber. Ensure that the hose is firmly attached to each nipple.



2. Installation of UV lamps

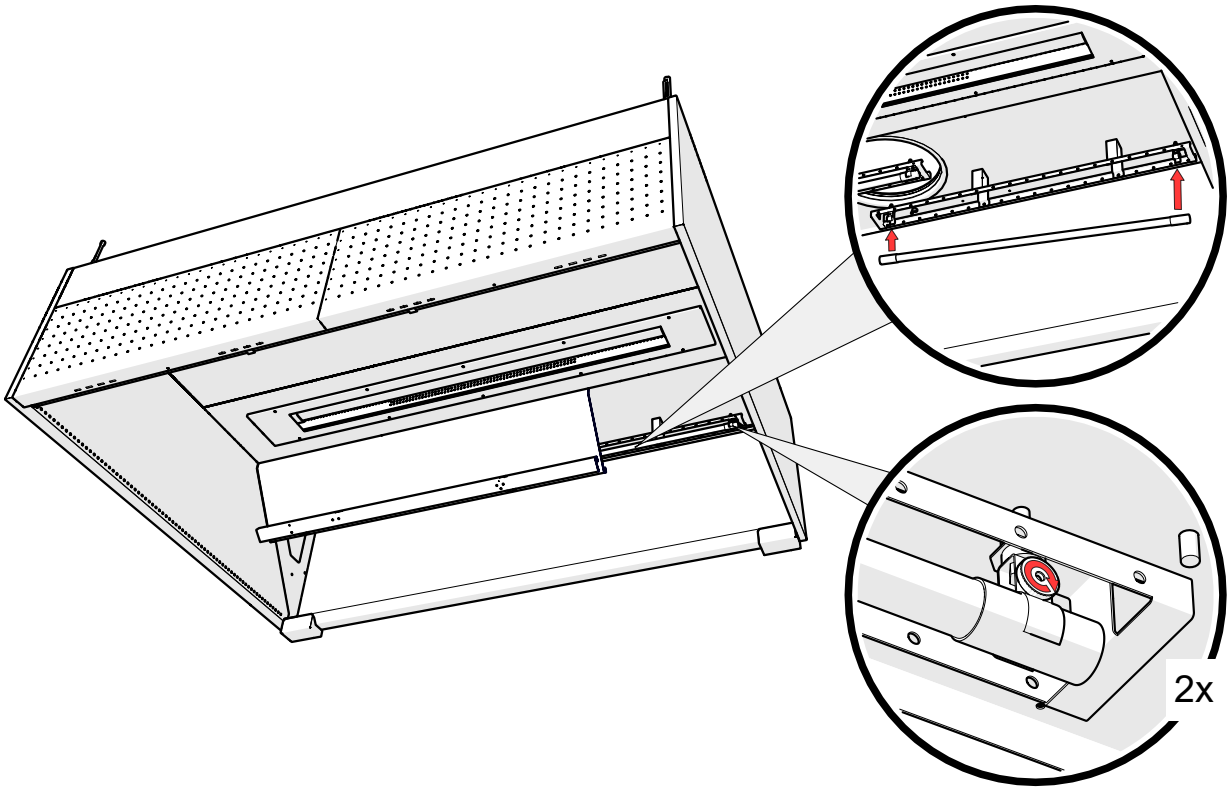
NOTE! Before installing UV lamps, make sure that the system is turned off.

2.1 Removing UV shield and grease filters

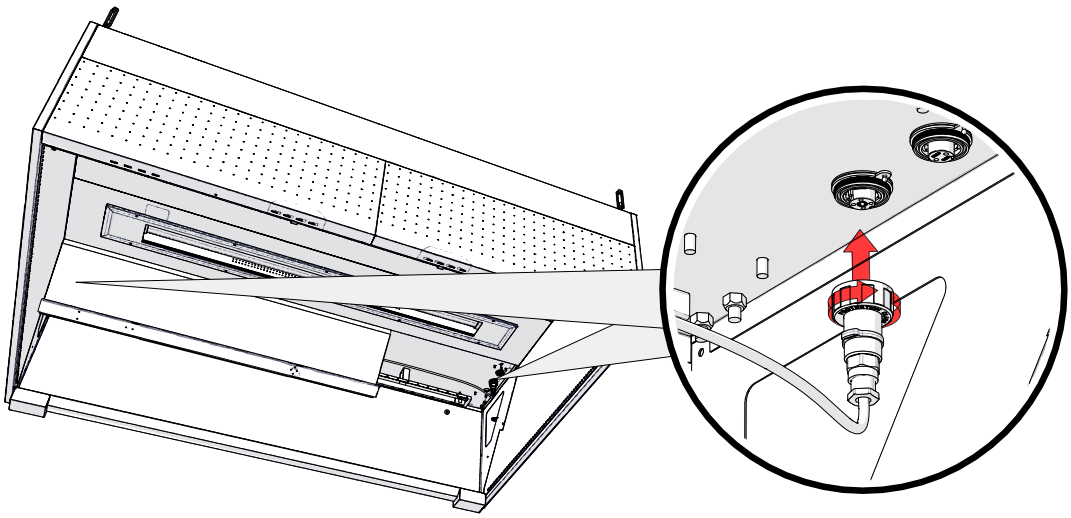


2.2 Mounting UV lamps to the exhaust chamber

Carefully attach each UV lamp to the ceiling of the exhaust chamber so that the blue plastic part at the ends of the lamp, not the glass portion, remains between the clamps. Tighten the clamp with its fixing screw.

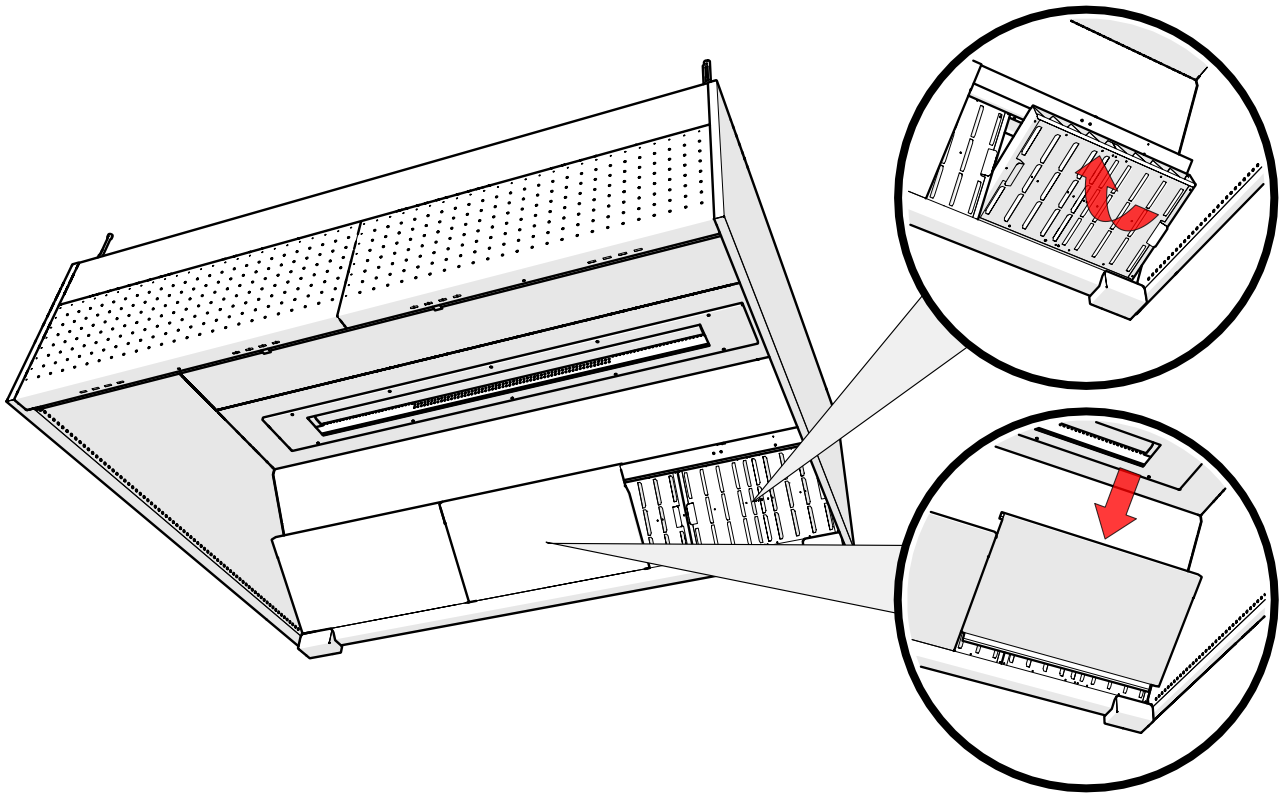


Connect each lamp power cord “quick plug” to a connector on the exhaust chamber ceiling and twist its locking ring clockwise.



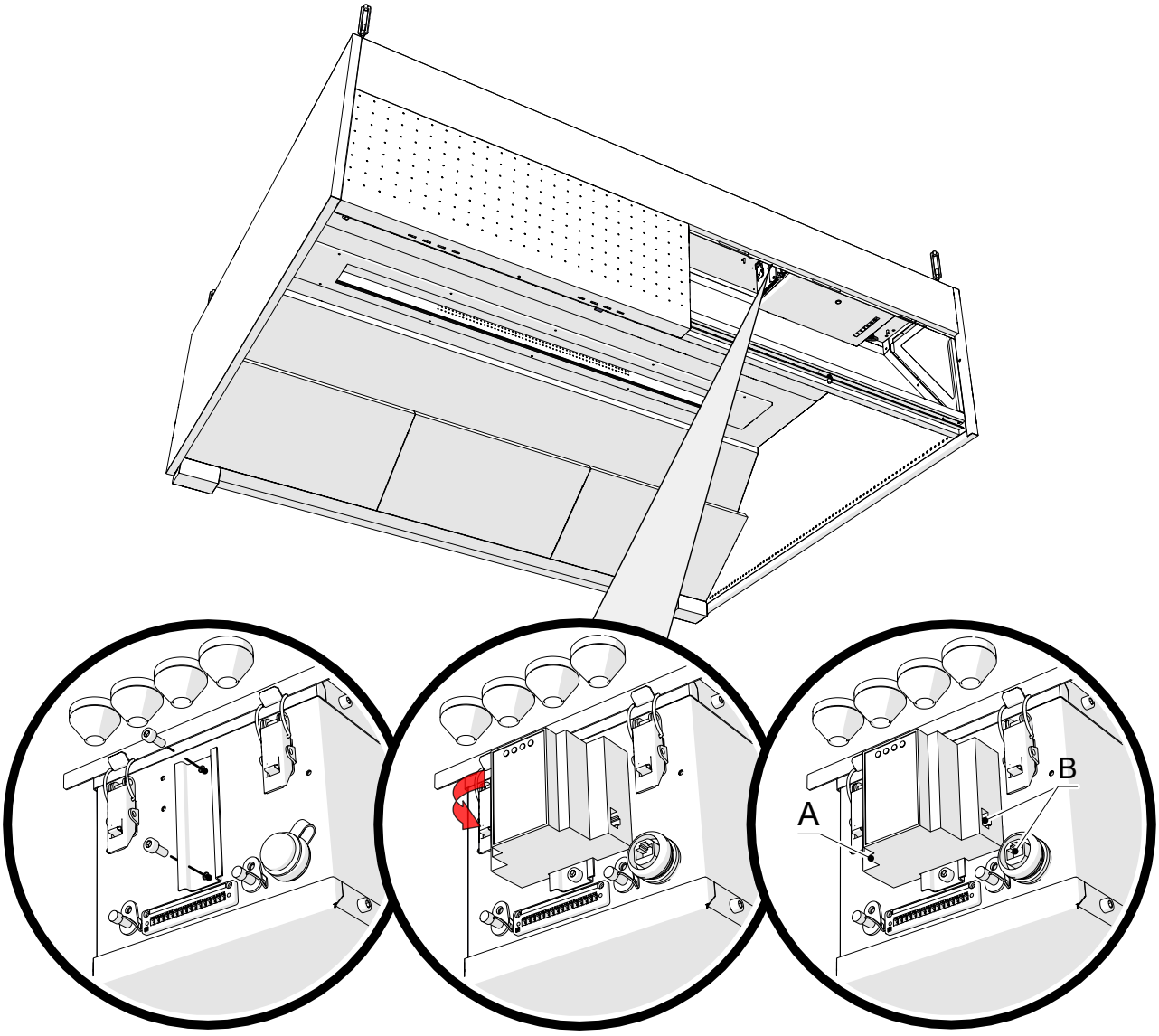
2.3 Mounting safety UV shield and grease filters

NB! When replacing the UV shield, make sure that it is in place correctly.



3. Remote Access Device connection

To install the Remote Access Device, attach the DIN rail to the control panel in the prescribed place. Next, mount the device securely to the Control Unit.



A – Ethernet port for network connection

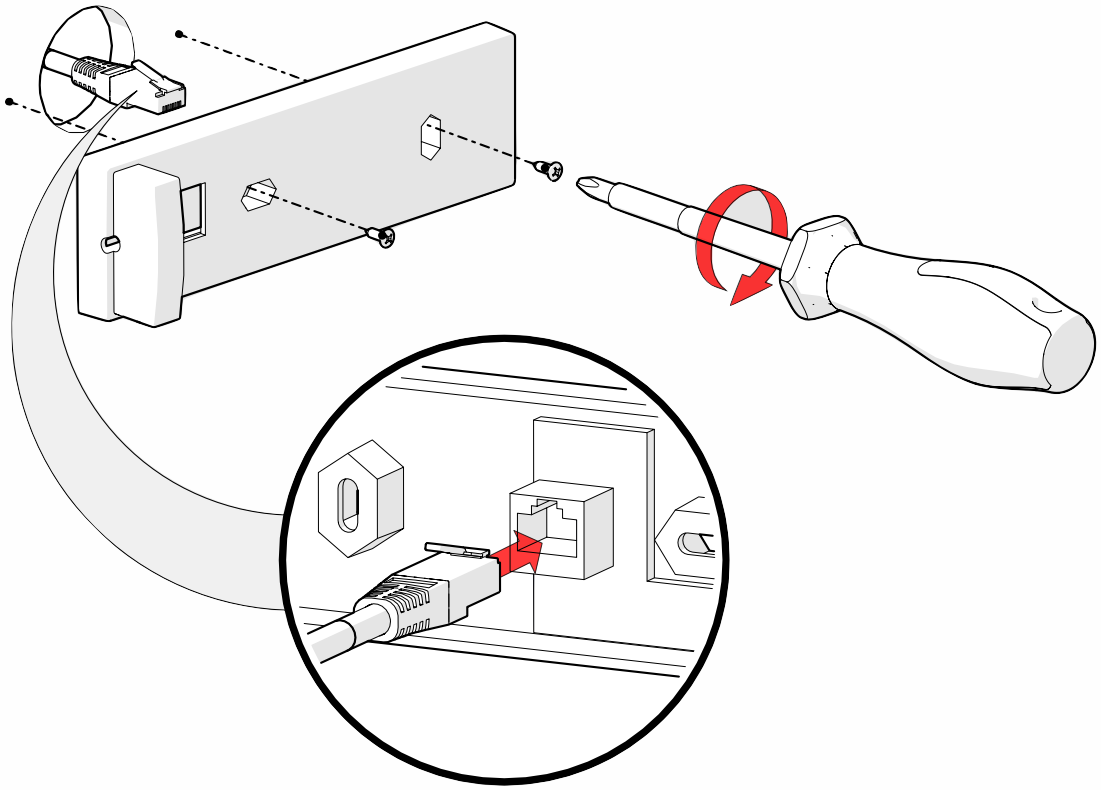
B – LAN cable connection between the device and the Control Unit

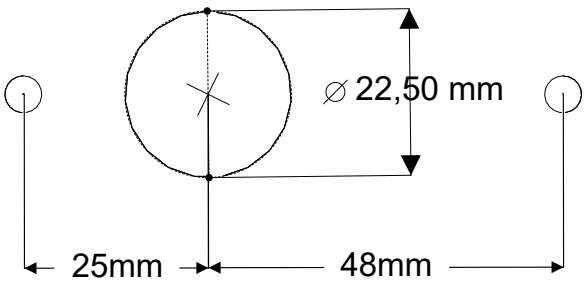
4. Installation of the Control Panel

NOTE! Always install the Control Panel in a visible location easily accessible to the staff, or in the immediate vicinity of it. Avoid placing it above kitchen appliances.

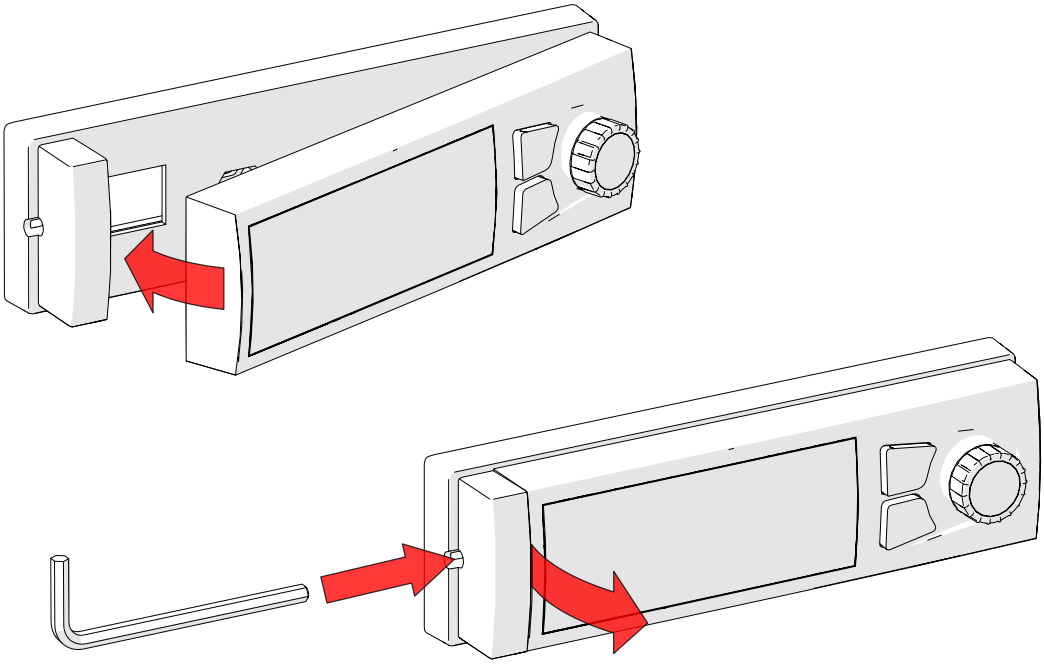
4.1 Mounting LCD frame and LAN cable connection

Remove the LCD frame from the screen and connect the LAN cable to the LCD frame. Then attach the frame with two screws to the wall as shown in the picture.



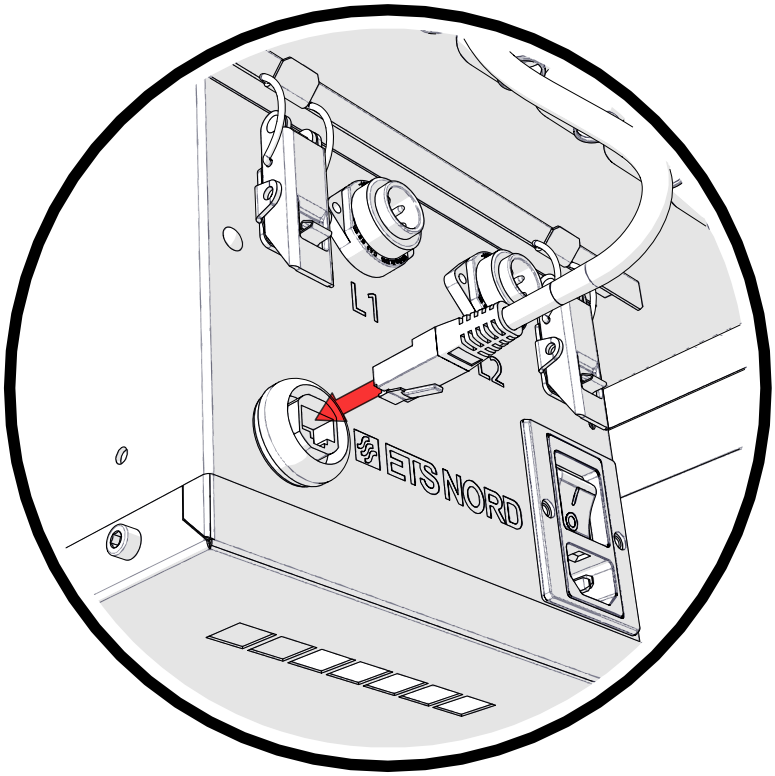


4.2 Attaching and removing the LCD screen



4.3 Connecting the LAN cable to the Control Unit

Next, route the cable into the canopy supply air chamber and insert the connector into the Control Unit RJ45 socket.

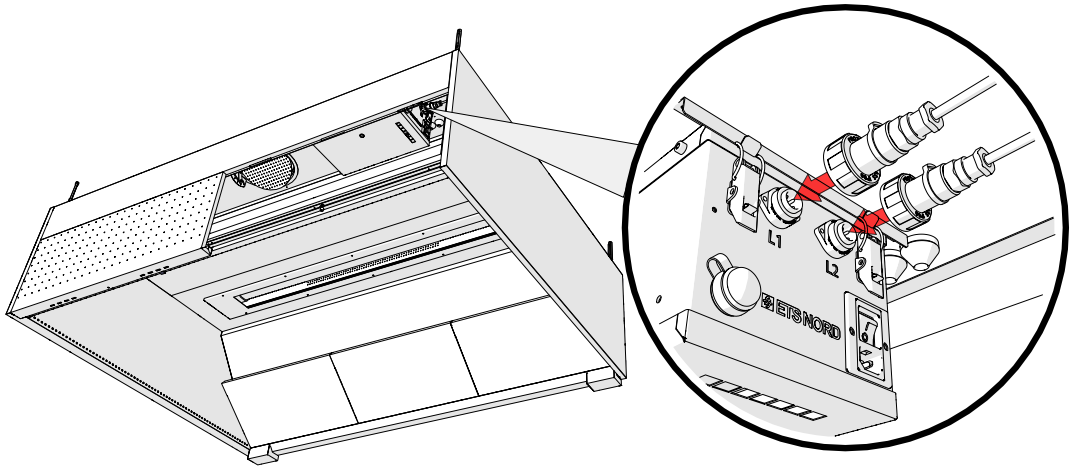


5. Electrical connections of Control Unit

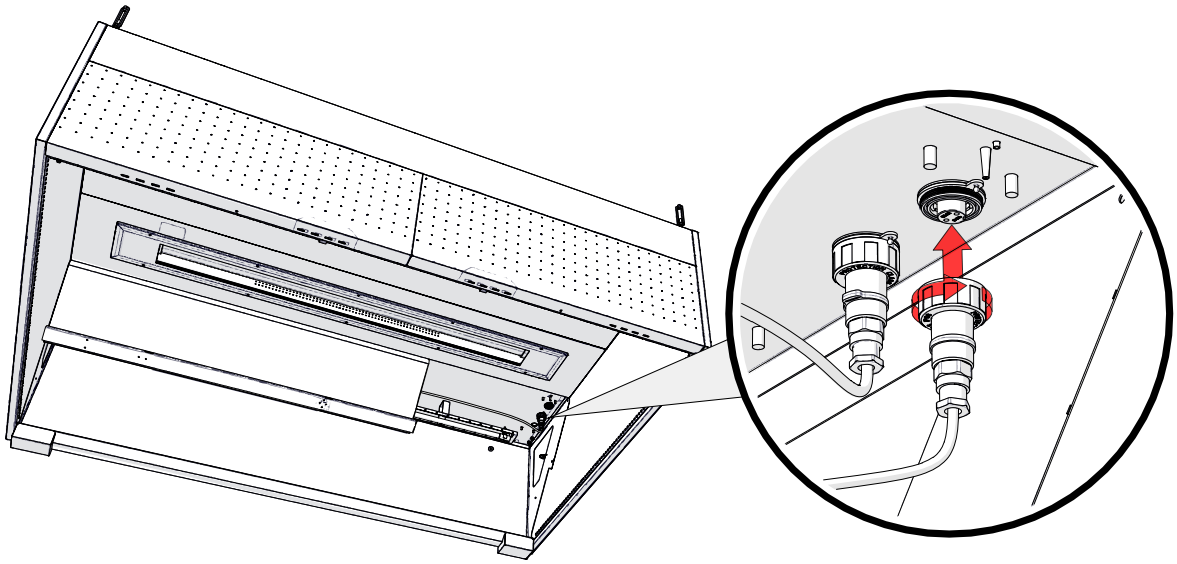
NOTE! The Control Unit shall be electrically interlocked with the exhaust ventilation system so that the entire system powers off when the ventilation is switched off.

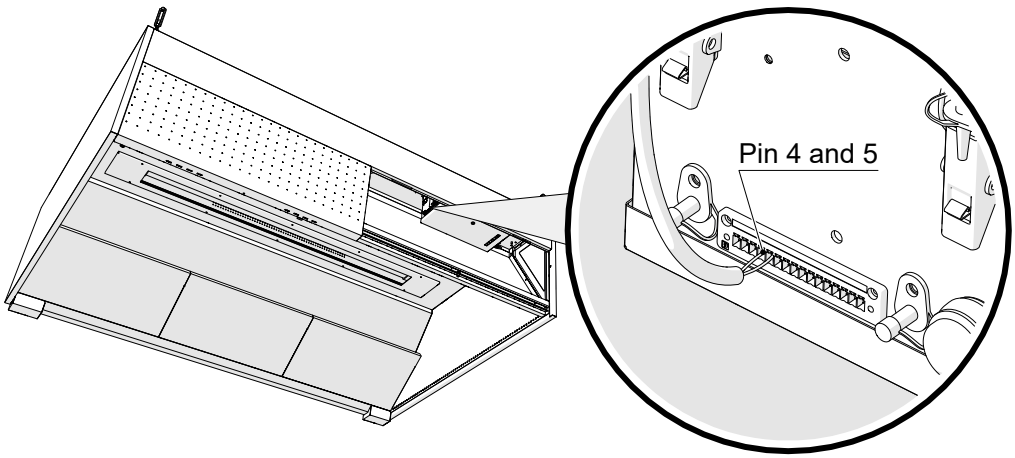
5.1 Power connection for UV lamps with Control Unit

Depending on the Control Unit installed, there could be 1-4 UV lamp power plugs that need to be connected. Connect each lamp according to their respective connector L1-L4 on the of the Control Unit.

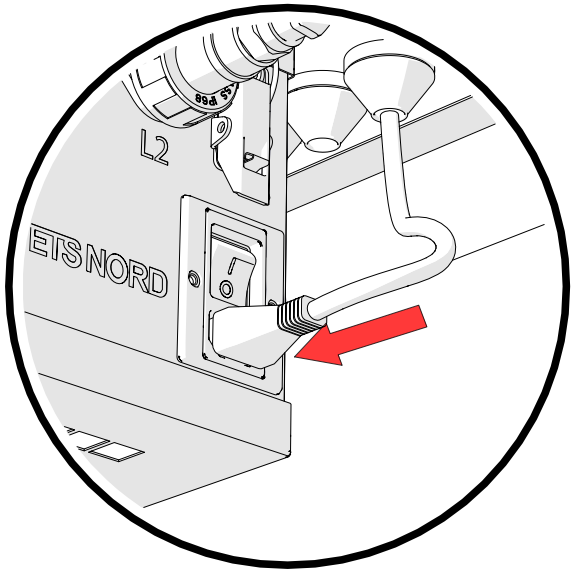


5.2 Connecting safety switch to the control panel

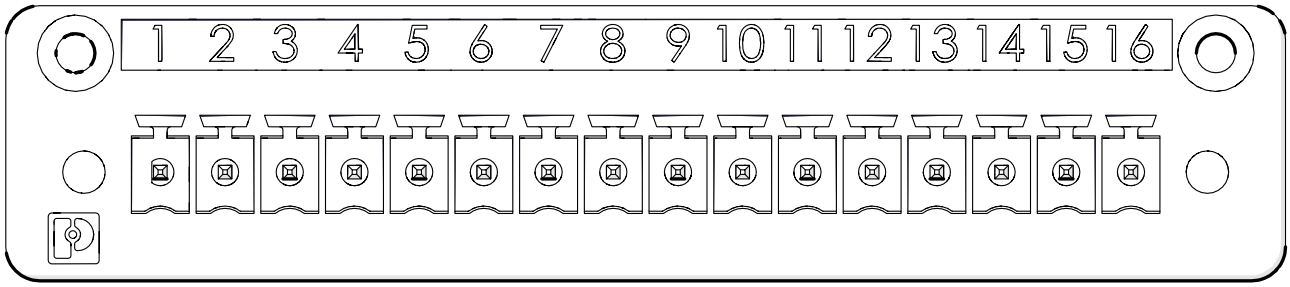




5.3 Connecting the power cable to the control panel



5.4 Data connector connections



1 - 3 – Modbus, interconnection of Control Units
4 - 5 – UV shield safety switch
6 - 10 – Empty canopy*
11 - 14 – Building automation

*Empty canopy – canopy that does not have Control Unit, but it has UV lamp(s), pressure sensor and UV shield safety switch.

5.5 Compatibility with building automation

UV cleaning system is compatible with building automation. The following table shows the functions of the data connector pins.

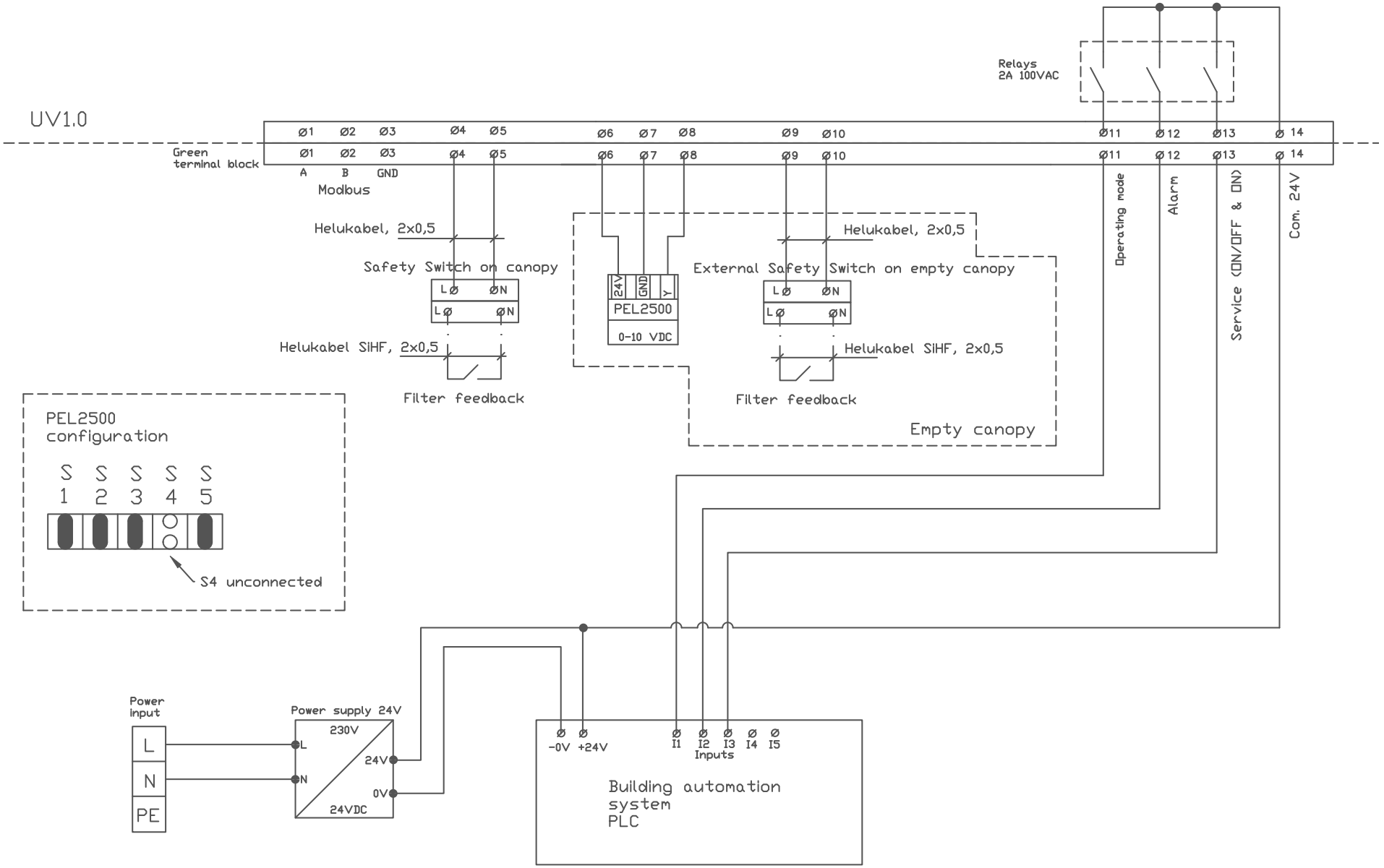
Data connection	IO name	Terminological name
1	A	Modbus data (A)-
2	B	Modbus data (B)+
3	GND	Modbus GND
4	Safety switch feedback	UV shield safety switch cable
5	GND	GND (safety switch)
6	24V	Empty canopy differential pressure sensor 24V
7	GND	Empty canopy differential presure sensor ground
8	Y	Empty canopy differential presure sensor 0...10V measured value
9	24V	Empty canopy UV shield safety switch cable
10	GND	Empty canopy UV shield safety switch ground

Output status signal for building automation

TC1 OUFLEX MBA outputs
RELAY 3: terminal 11 = bit 0
RELAY 4: terminal 12 = bit 1
RELAY 5: terminal 13 = bit 2

Status	Bit 0	Bit 1	Bit 2
System OFF	0	0	0
System ON – operation mode	1	0	0
Service – 10000 h	1	1	0
Service – 16000 h	1	0	1
Protection switch open	0	1	0
Pressure error < 20 Pa	0	0	1
UV lamp error	0	1	1

Electric scheme of terminal block



6. Maintenance

NOTE! After 10,000 working hours, the intensity of the lamps decreases by 20% at 185nm. It is recommended to replace all UV lamps in the system after this time.

NB! Before UV lamps are serviced, make sure that the system is turned off and, after switching off, wait 3 minutes until the lamps have cooled down for safe handling.

NB! Use safety goggles and gloves during maintenance!

NB! Risk of falling! Make sure that the device is installed with adequate support.

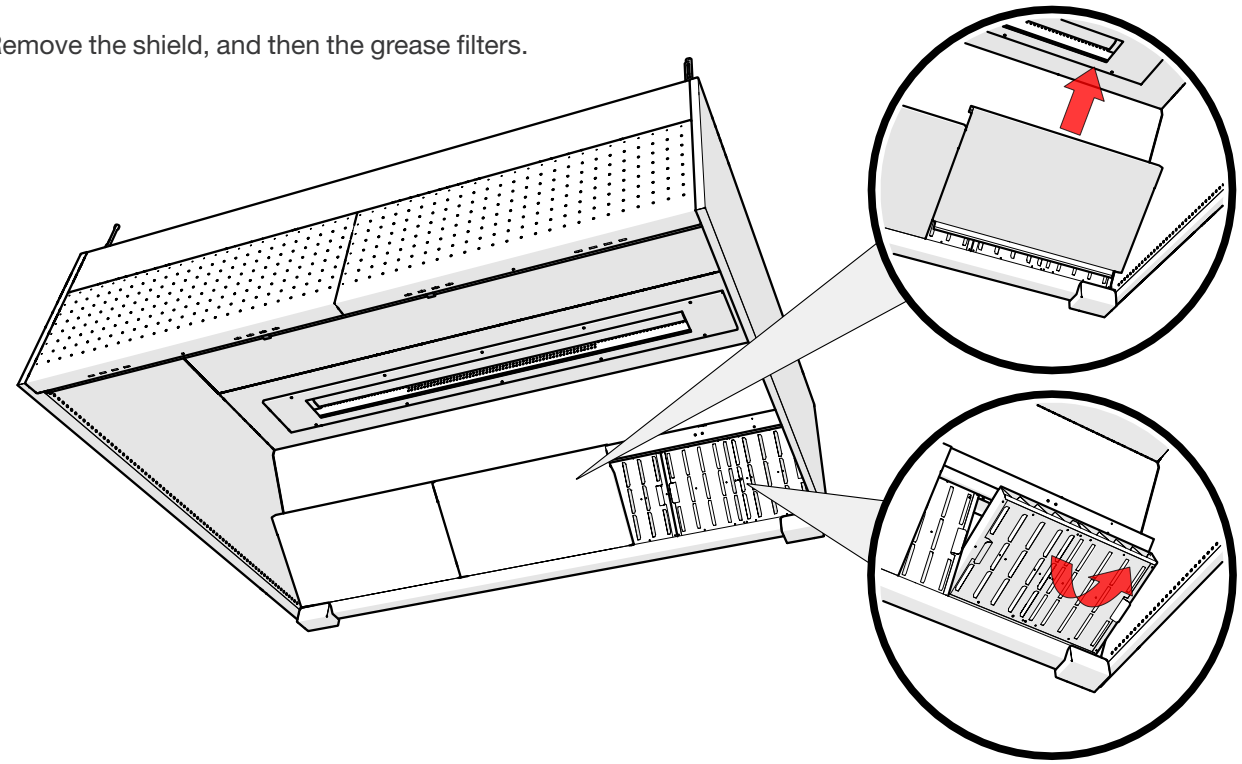
In the case of a soiled but functioning lamp, cleaning is required. In the case of a defective lamp, it must be replaced. Only replacement parts supplied by ETS NORD Customer Service may be used when servicing ETS NORD equipment. The defective lamp shall be delivered to the appropriate waste treatment site.

6.1 UV shield and grease filter removal

In the case of a running device, UV shields and filters must never be removed due to the risk of ultraviolet radiation!

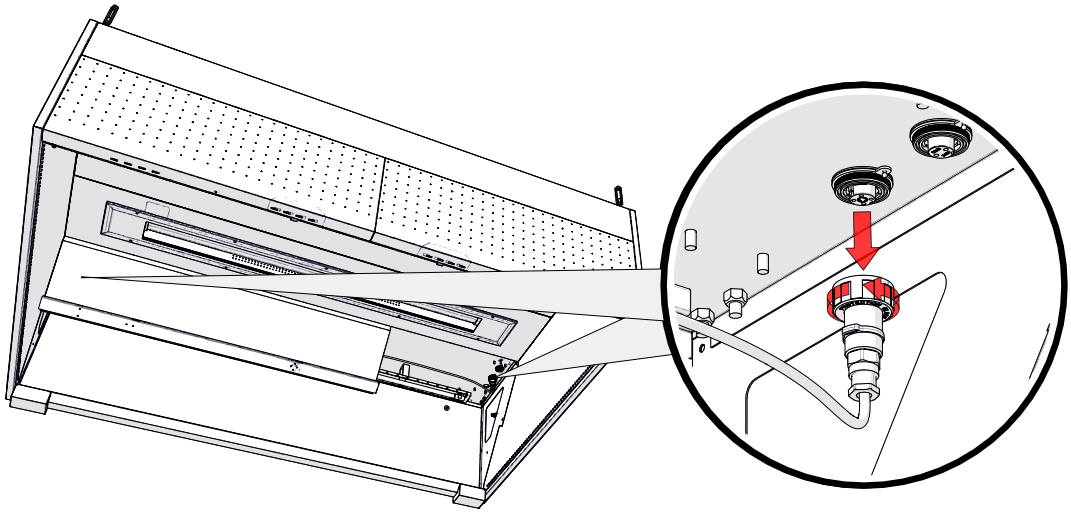
Power off the UV system and verify the device is off at the Control Panel before removing UV shield and grease filters. Use UV-protective glasses as a safety precaution. After the system and lamp have been powered off, wait 3 minutes until the lamp has cooled for safe handling.

Remove the shield, and then the grease filters.



6.2 UV lamp electrical disconnection

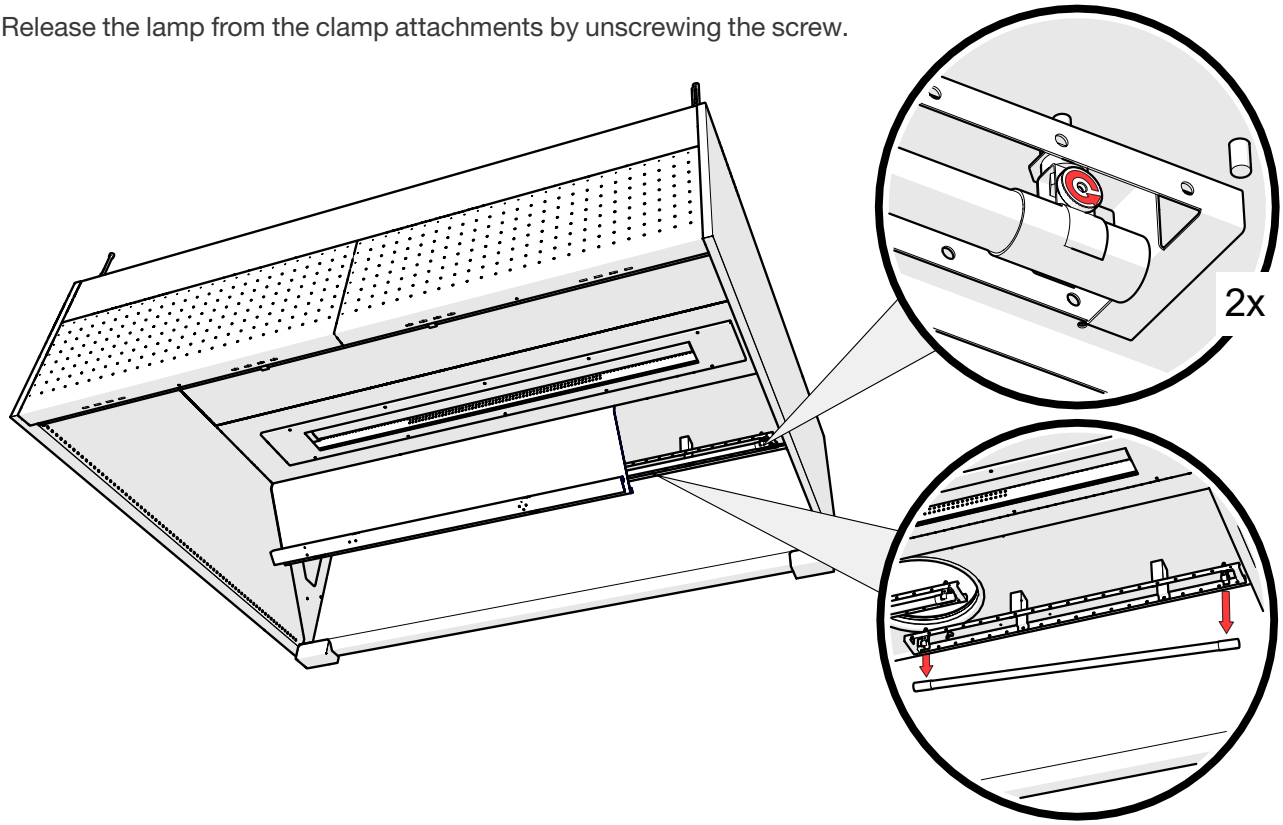
Disconnect the lamp from the power circuit by first twisting the locking rings counterclockwise, then pulling the connectors downward. Never pull on the cables themselves, only the connectors.



6.3 UV lamp removal from exhaust chamber

Lamps should only be handled with protective gloves and eyewear.

Release the lamp from the clamp attachments by unscrewing the screw.



To install a new UV lamp, see chapter 2 “Installation of UV lamps”. After installing new lamp start the system and ensure that it functions properly by observing the Control Panel.

Facts about UV and ozone

- UV radiation is a radiation invisible to the eye, consisting of several sub-rays divided by wavelength. The most dangerous of these are VUV and UVC, which are blocked by the Earth's ozone layer. Only UVB and UVA can escape the ozone layer, the dangerous effects of which are manifested by prolonged exposure.
- In the case of UV radiation, according to EN 16282-8:2017, the maximum effective radiation intensity is 0.5 mW/m2 measured at 10 cm from the separator. In Estonia, the limit of effective radiation intensity in the working environment is 30 J/m2 for 8 hours exposure or 1 mW/m2 in Annex 1 of VV Regulation No. 47.
- Prolonged exposure to UV radiation can cause the following injuries:
  - On the skin: irritation and burning sensation
  - In the eyes: severe irritation, burns and decreased vision
- Ozone is a colorless gas whose sharp smell can be recognized by a person at a concentration of 0.02 ppm (0.4 mg/m3)
- Ozone smells similar to chlorine used in swimming pools
- When using ozone, the current legislation must be observed. In Estonia, the following hygienic limits for ozone have been provided:
  - 0.05-0.2 ppm (during working hours, 8 hours)
  - 0.3 ppm (15 minutes)
- Acute exposure to ozone can cause the following injuries:
  - On the skin: irritation and burning sensation
  - In the eyes: severe irritation, burns and decreased vision
  - Lungs: irritation in the respiratory organs and breathing problems
- If ozone is detected indoors, precautions should be taken.

ETS NORD

ETS NORD AS

Address: Peterburi tee 53
11415 Tallinn
Estonia

Phone: +372 680 7360
info@etsnord.ee
www.etsnord.ee

ETS NORD Finland

Address: Pakkasraitti 4
04360 Tuusula
Finland

Phone: +358 40 18 42 842
info@etsnord.fi
www.etsnord.fi

ETS NORD Sweden

Address: Järsjögatan 7
69235 Kumla
Sweden

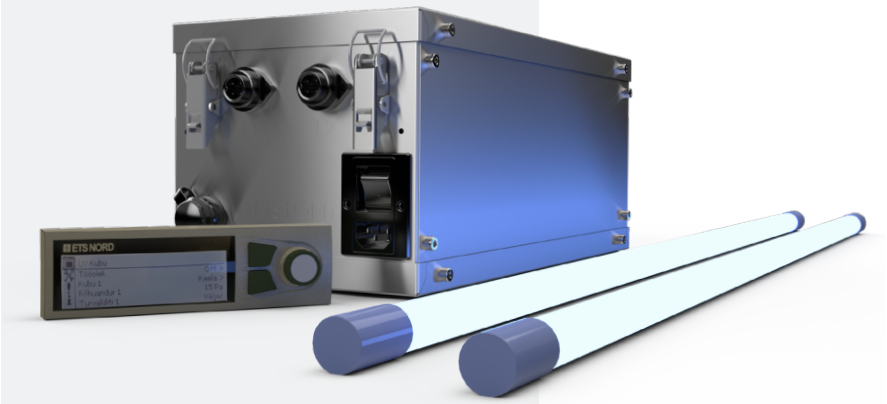
Phone: +46 19 554 20 50
info@etsnord.se
www.etsnord.se

Address: Pinjegatan 5
21363 Malmö
Sweden

Phone: +46 40-94 68 70
info@etsnord.se
www.etsnord.se

ETS NORD International

info@etsnord.com
www.etsnord.com



Let's move the air ***together!***