



## **ASSEMBLY INSTRUCTIONS DFLEX SERIES**

IMSX-EN-21-0

In compliance with the European Union regulations on the Safety of Machines,  
you must read these instructions carefully before installing the equipment.



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## 1. Introduction.

To ensure the correct operation of your **DFLEX** dehumidifier, please read this manual carefully and keep it for future reference.

If there is any part of this document that you do not understand, or if you have any questions about your dehumidifier, please contact us:

### **FISAIR, S.L.U.**

Tel.: (+34) 91 692 15 14 – Madrid – SPAIN

Fax: (+34) 91 691 64 56 – Madrid – SPAIN

Email address [www.info@fisair.com](mailto:www.info@fisair.com)

Or contact your local distributor.

### **IMPORTANT!**

The correct use of the dehumidifier includes following our instructions for installation, set-up, operation, and maintenance, as well as following the steps indicated in the instructions in the correct sequence as described.

This dehumidifier may only be used by persons who are fully qualified and authorized to do so.

Any person who transports and/or uses the unit or who works with it must read and understand the relevant section of this manual, in particular the section entitled "Safety Instructions".

You are advised to keep a copy of the user manual with the dehumidifier (or nearby).

Ignoring these instructions may invalidate all applicable guarantees and warranties.

## 2. Safety Instructions.

Please read these safety notes carefully and examine the equipment to become familiar with it before installing, commissioning or servicing.

The following symbols or messages may appear in this document or on the equipment. They warn of potential hazards or provide information that may help you clarify or simplify a procedure.



### **Attention, Live Current**

The presence of this symbol on a hazard or warning label indicates that there is a risk of electrocution, which can lead to personal injury or death if the instructions are not followed.



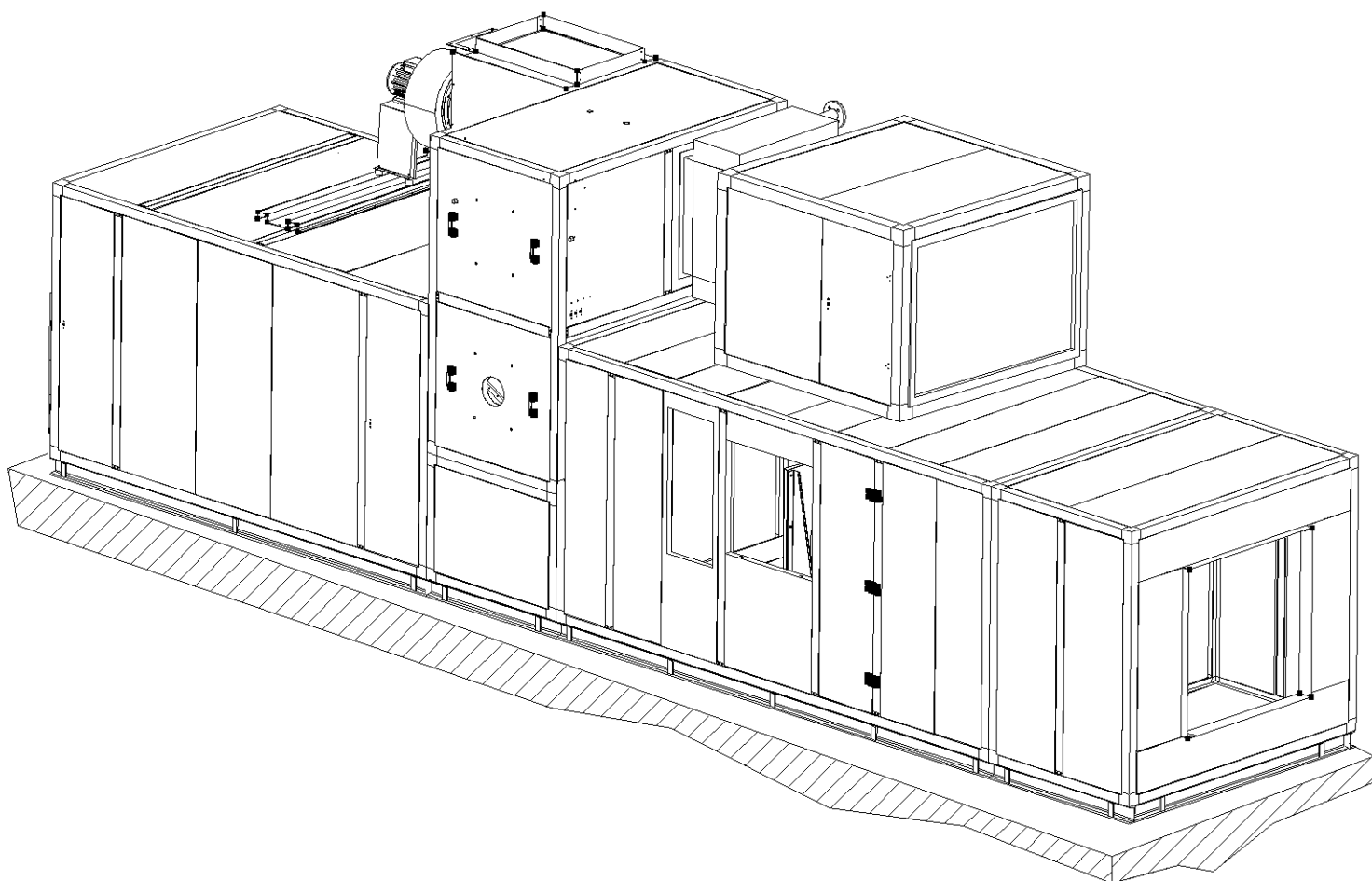
### **Attention**

This is a safety alert symbol. It warns of the potential of bodily injury. Observe all safety information with this symbol to avoid any situation that could lead to injuries and/or damage to the unit.

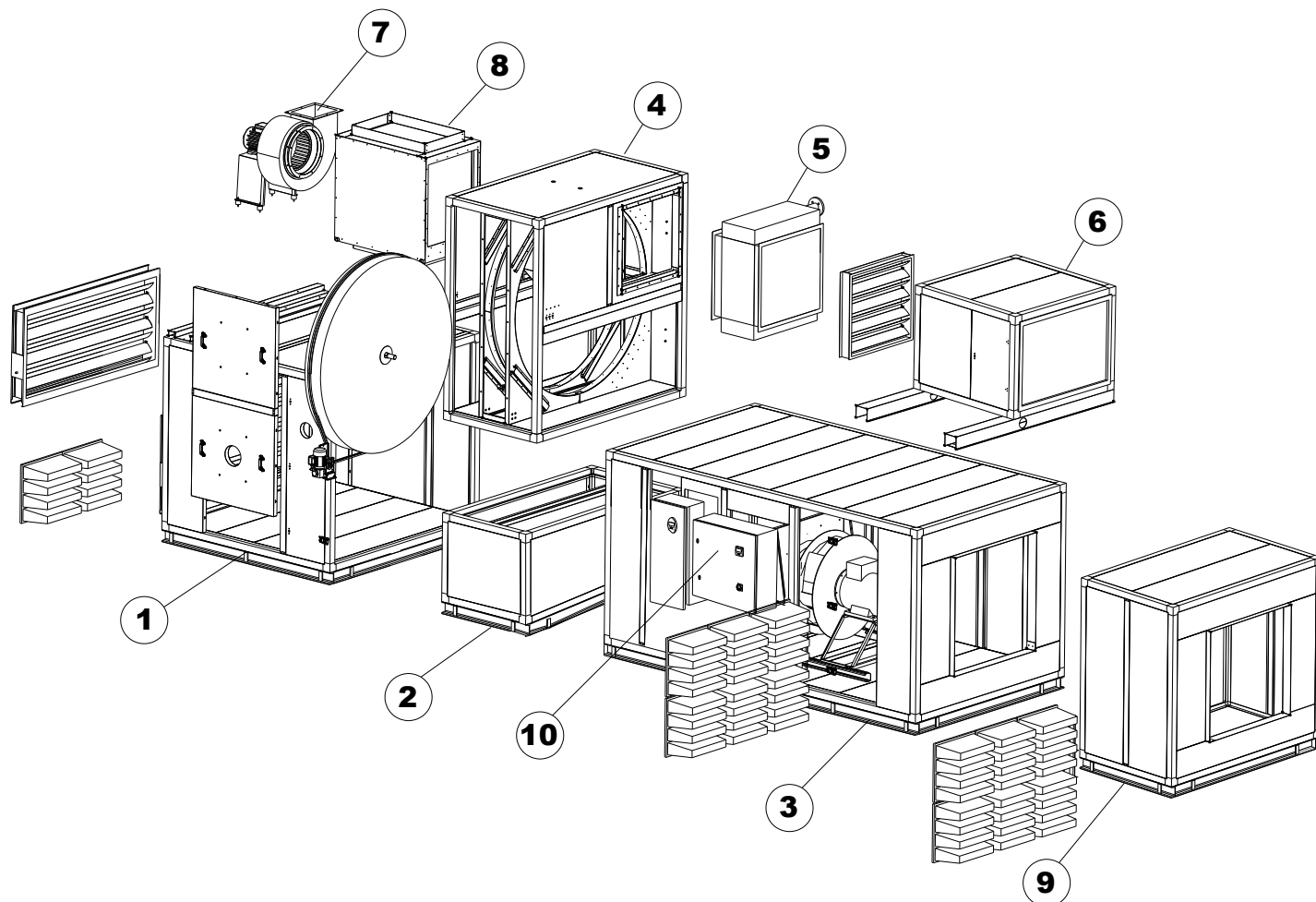
We recommend that the personnel responsible for the equipment should use these instructions to familiarize themselves with the goods they will receive and subsequently assemble.

All operations must be carried out by suitably qualified personnel.

Observe local regulations, especially those protecting personnel from any implicit hazards during the assembly process.



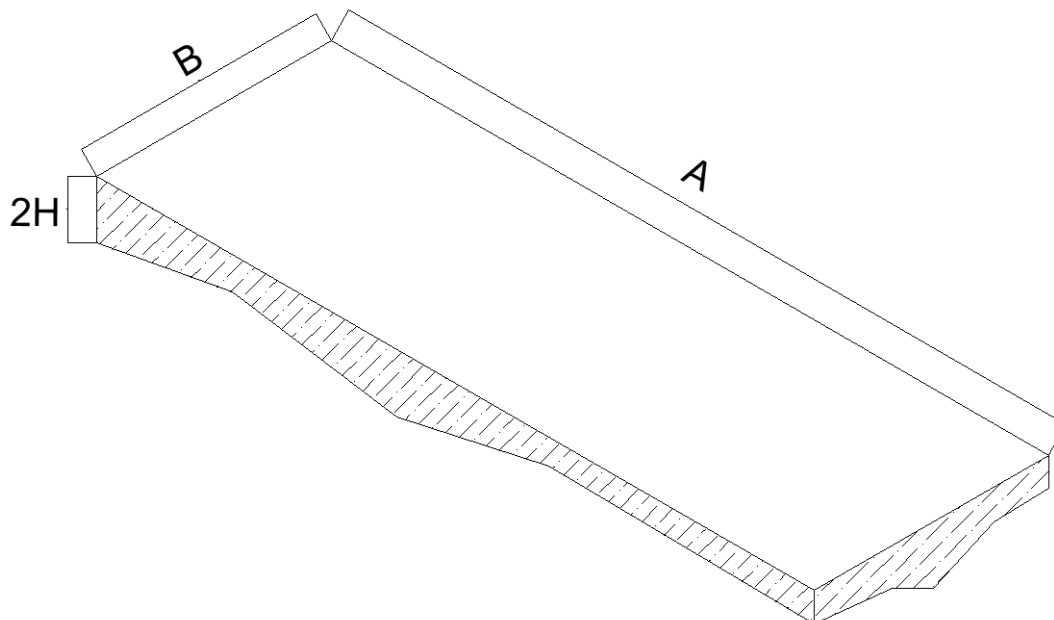
### 3. Identification of parts



- 1- Process Filtration module.
- 2- Base Unit module.
- 3- Process Fan module.
- 4- Basic module.
- 5- Reactivation battery module.
- 6- Reactivation Filtration module.
- 7- Reactivation Fan module.
- 8- Heat exchanger module (optional).
- 9- Absolute Filtration module (optional).
- 10- Control Panel.

#### 4. Location platform

Check that the DFLEX platform is properly planned and has the minimum dimensions indicated.

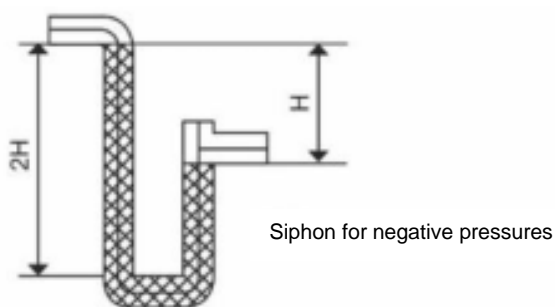


Refer to dimensions A and B in the DFLEX external dimensions diagram.

If the model incorporates extra batteries, space will be required for the condensate drain, in which case the height 2H is determined by the expression.:

$$H_{min}(mm) = \frac{P(Pa)}{10}$$

Where P is the total fan pressure



Provide metric and mechanical tools such as:

- Spanners and socket set 13/17/19/24/32 mm.
- Clamps. >300mm<
- Tape measure. >5m<
- Sealant applicator gun for 300mL cartridges.
- 3-6 mm Allen keys.



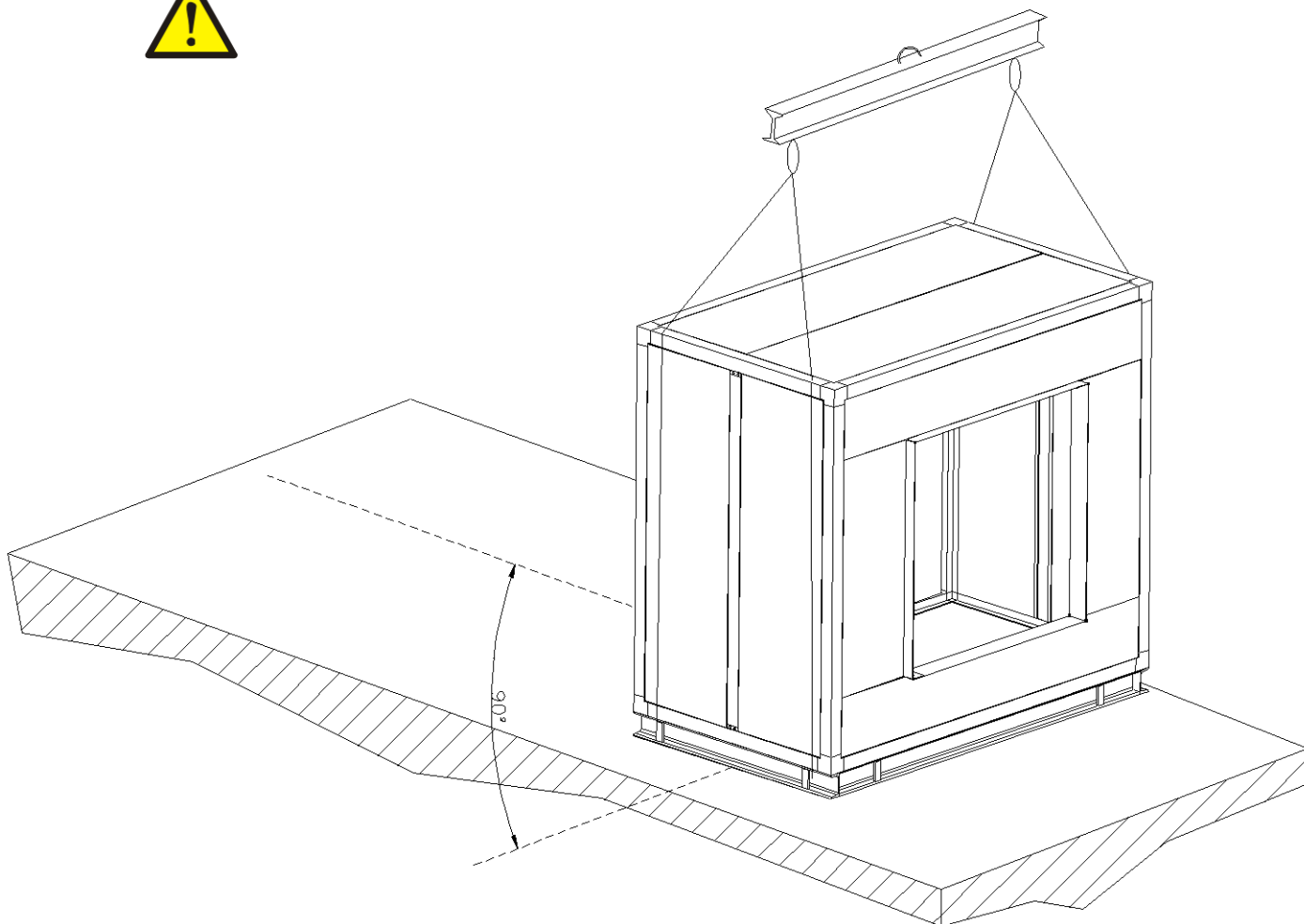
## 5. Arrangement of modules

### 5.1 Module 9 arrangement (optional)

If module 9 is not available, proceed directly to point 5.2, following the steps in this section (5.1).

Implementation steps:

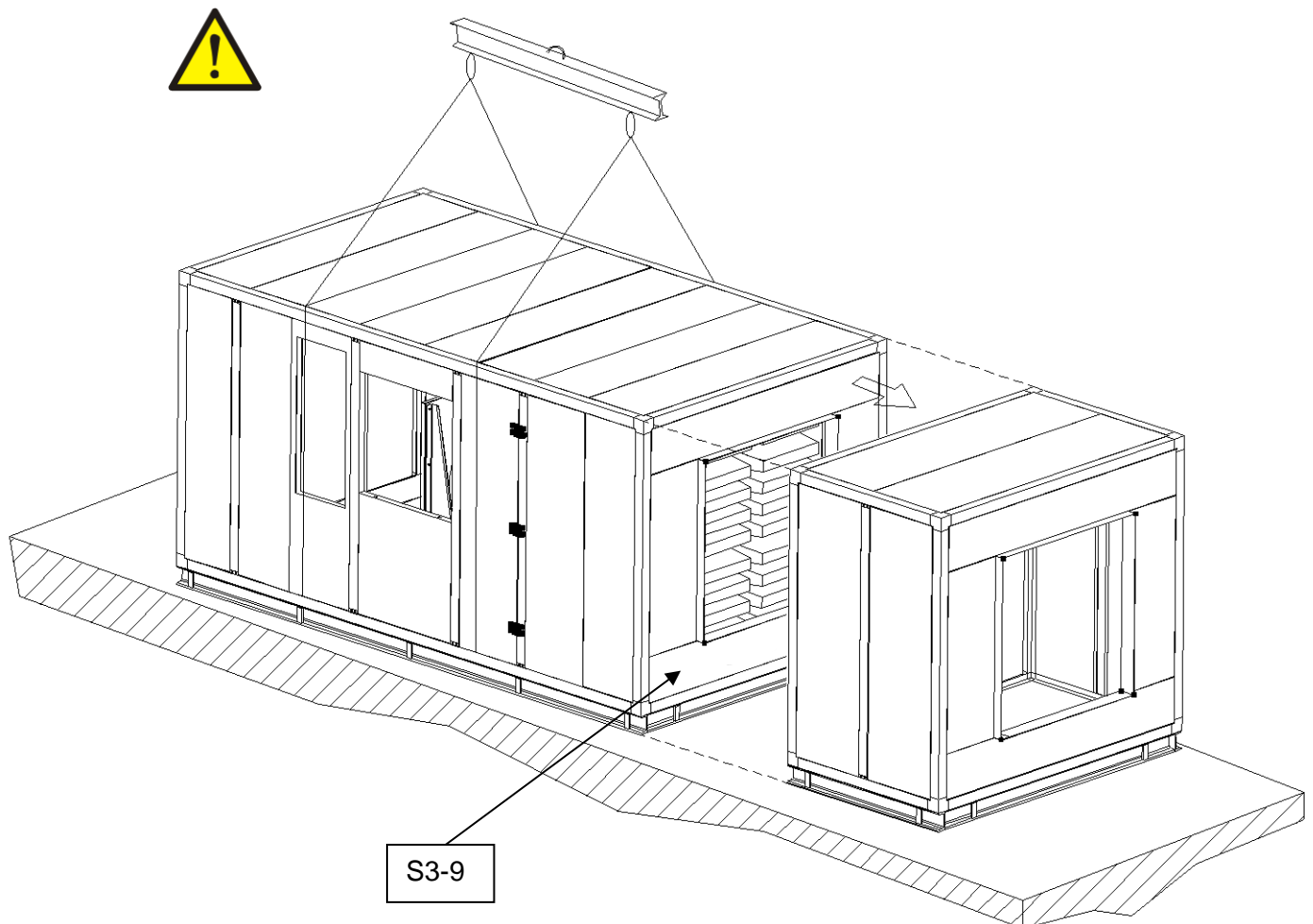
- Locate the module labelled -9- (or module -3- if -9- is not available).
- Position it 100mm from the right and front edge of the platform, aligned with the longitudinal axis of the platform.
- Remove the transport guards.



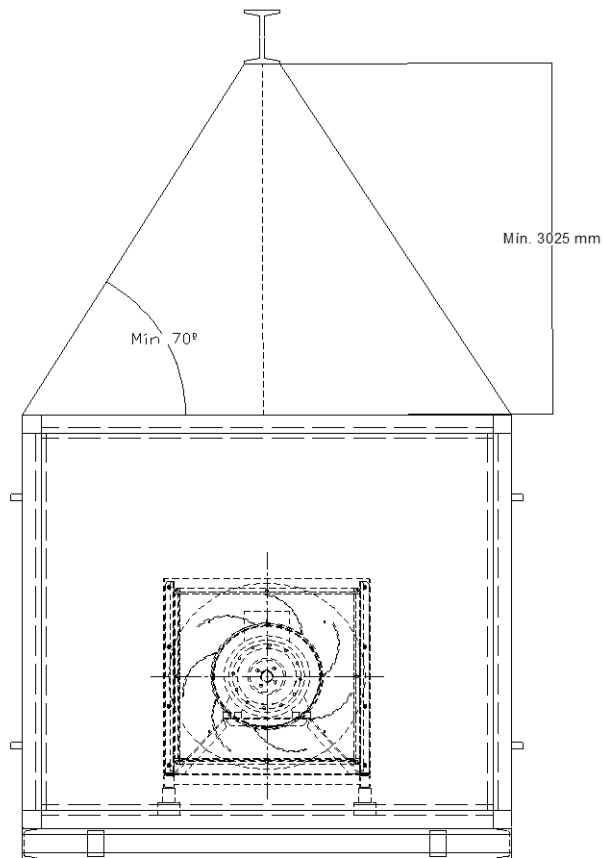
## 5.2 Module 3 arrangement

Implementation steps:

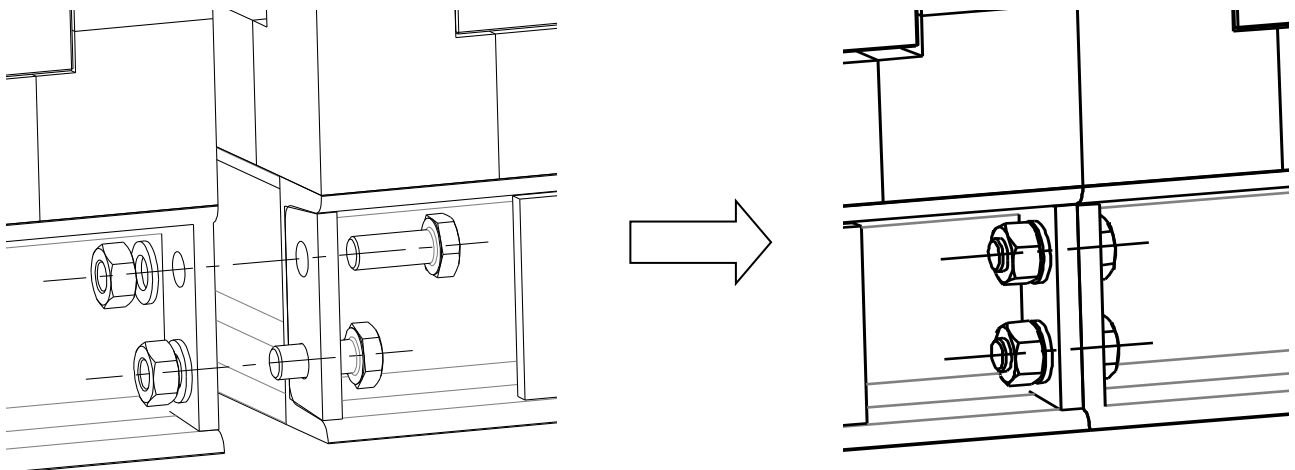
- Locate module -3-
- Remove the transport guards and unload it at > 600mm in line with module -3-, and match the section identified as S3-9.
- Inside is the box with gaskets and screws for later assembly according to instructions.
- Then apply the self-adhesive sealing gasket to the contact edge between sections, **on module -3- face only**.



- To avoid the lifting cables deforming the module, it is important to comply with the dimensions of the following figure:



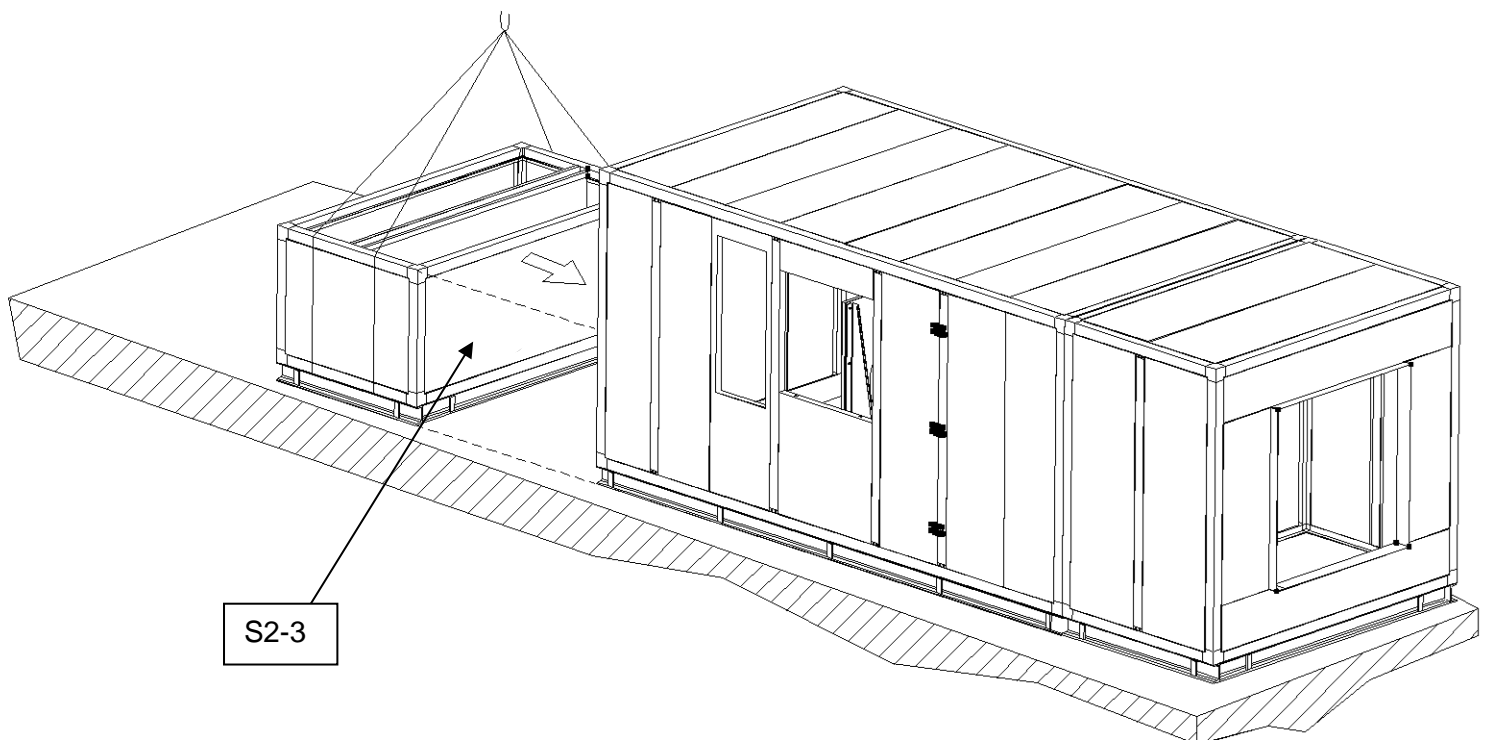
- In order for the minimum angle to be  $70^{\circ}$ , the height of the crane must be at least 3025mm. This applies to all lower modules (1, 2, 3 and 9).
- Once the module, -3-, has been placed on the platform, move it longitudinally until it contacts the adjacent section, module -9-.
- Fit connecting bolts into the base rail joint loosely, **without giving the final tightening.**



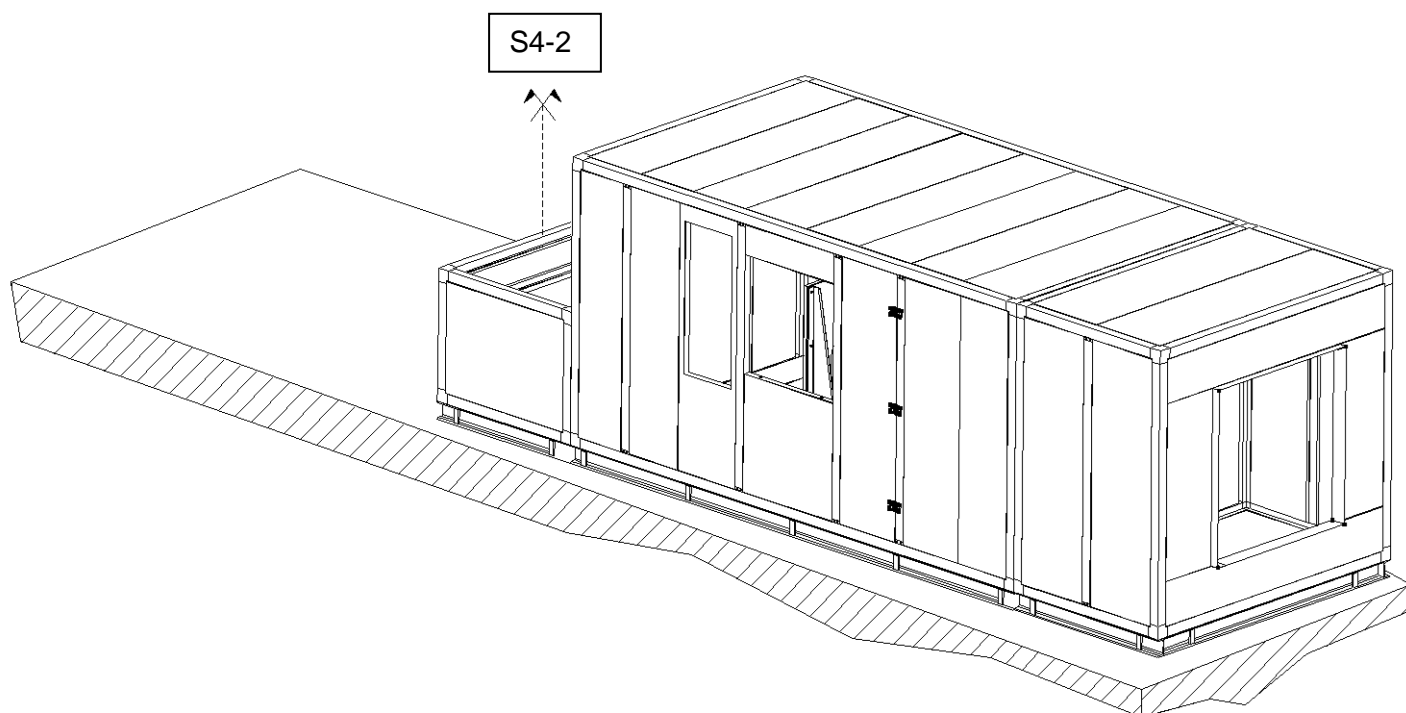
### 5.3 Module 2 arrangement

Implementation steps:

- Locate module -2-
- Remove the transport guards and unload it at > 600mm in line with module -3-, and match the section identified as S2-3.
- Then apply the self-adhesive sealing gasket to the contact edge between sections, **on module -3- face only**.



- Once module -2- is on the platform, move it longitudinally until it contacts the adjacent section, module -3-.
- When the sections are in place as shown below, apply the self-adhesive sealing gasket, in this case in section S4-2 (Vertical union between modules -2- and -4-).

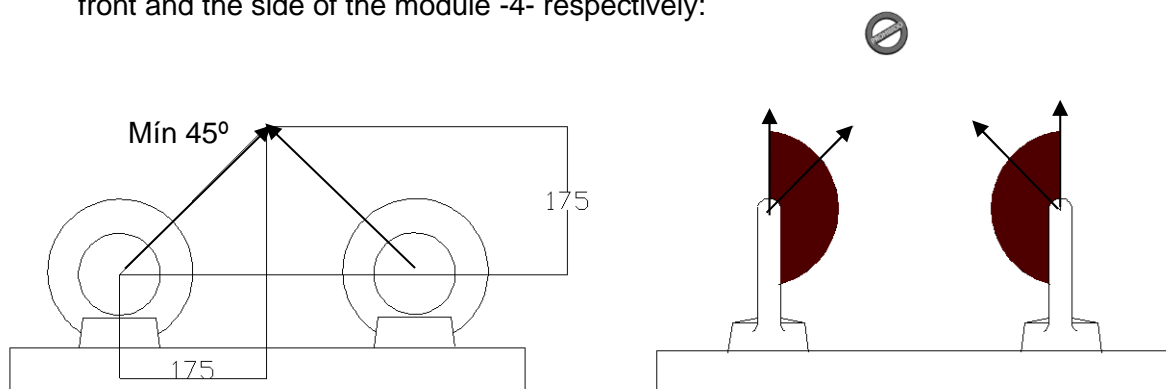


- Finally, fit connecting bolts into the base rail joint loosely, **without giving the final tightening.**

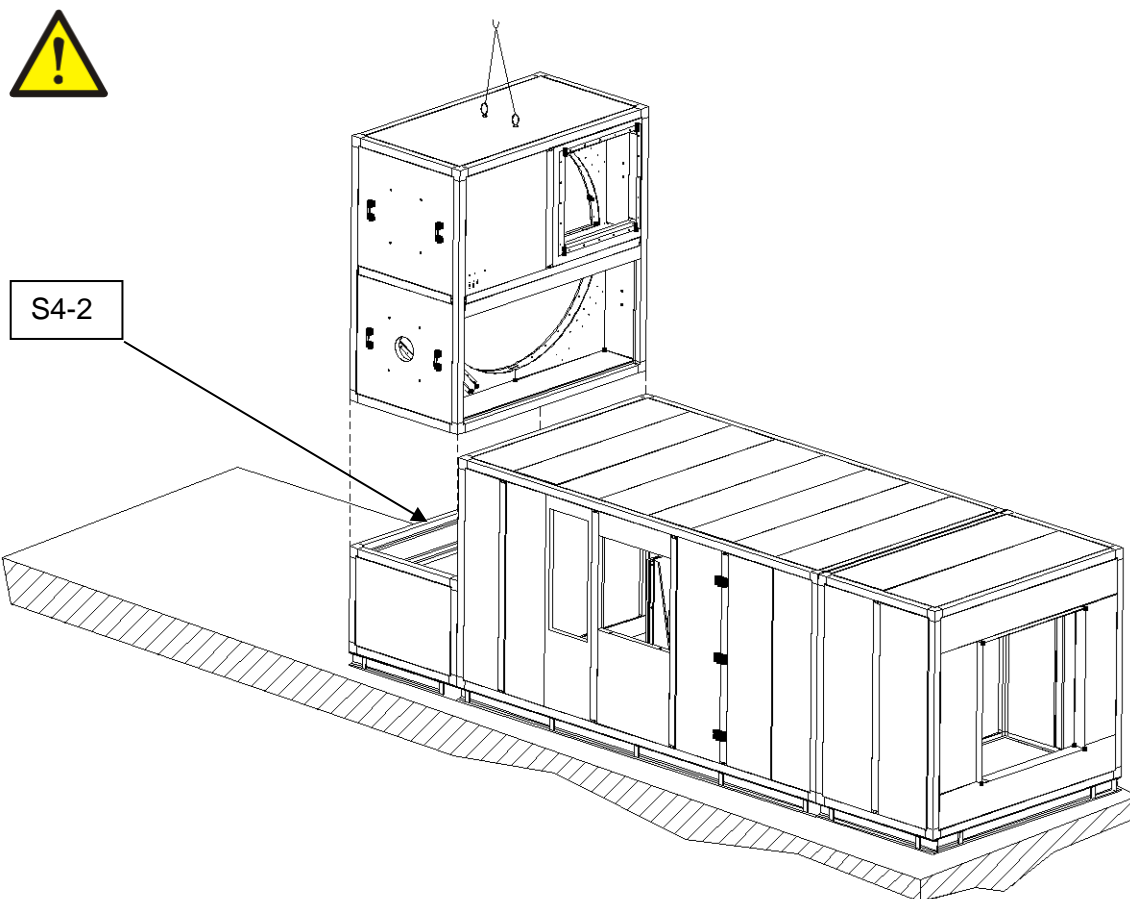
## 5.4 Module 4 arrangement

Implementation steps:

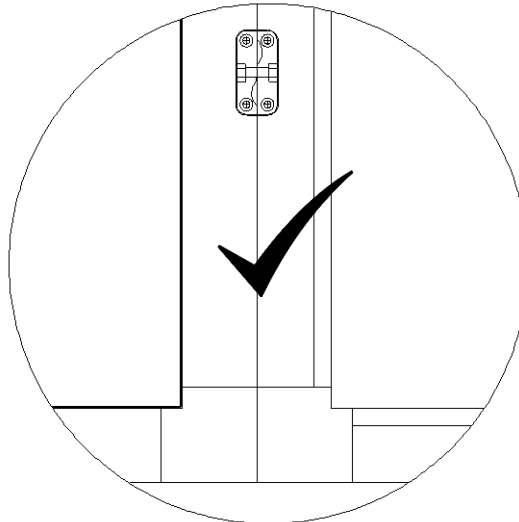
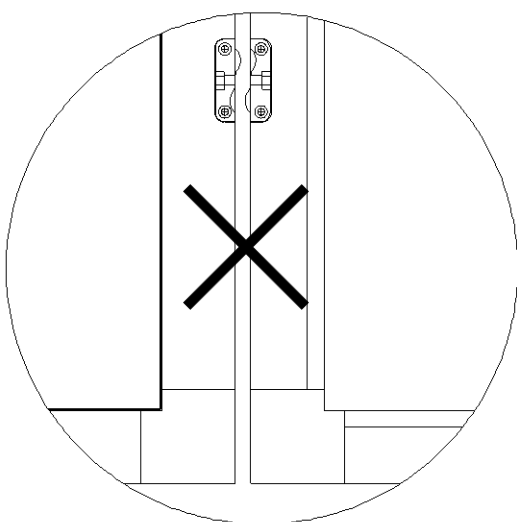
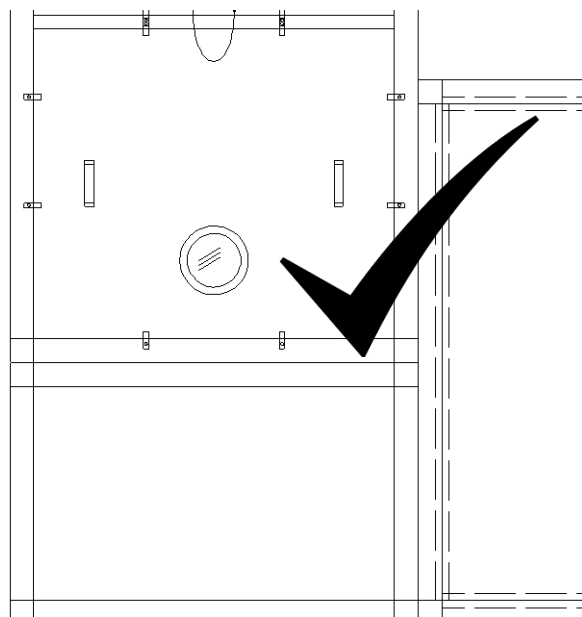
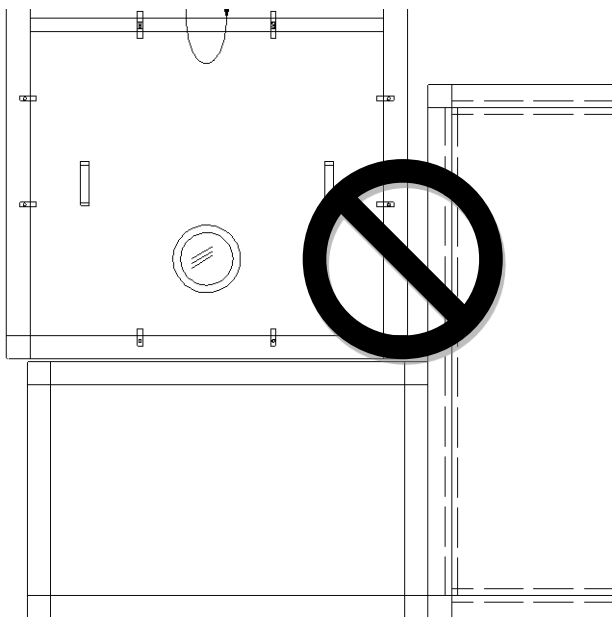
- Locate the module labelled -4-
- Remove the transport guards.
- Suspend it using the eyebolts at the top, installed for this purpose.
- Make sure that the eyebolts have the following orientation as viewed from the front and the side of the module -4- respectively:



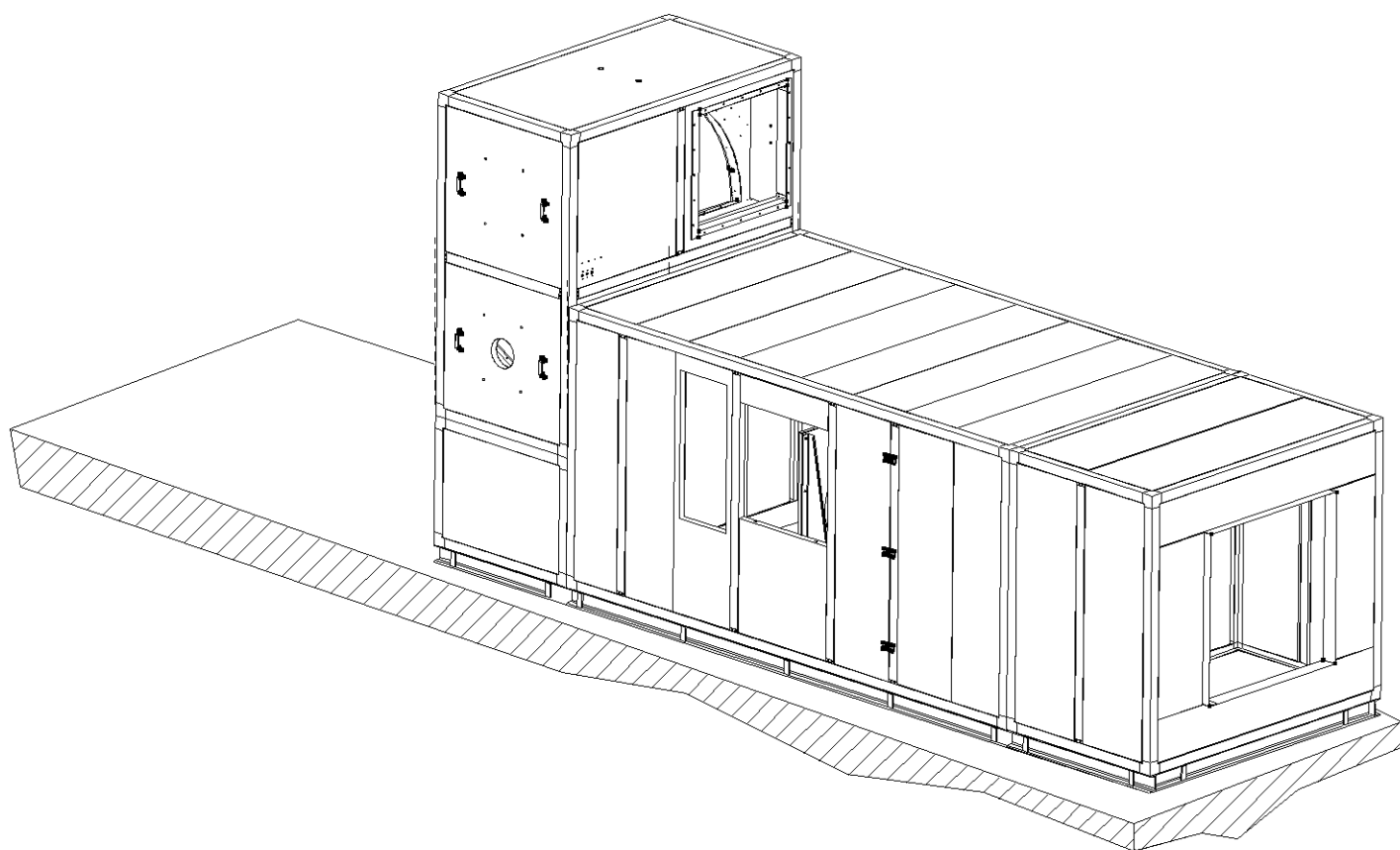
- The minimum angle of the ropes with the eyebolts must be 45 °, therefore the minimum height of the crane must be 175 mm.
- Place module -4- on module -2-, with section S4-2 perfectly aligned.



- Without removing the slings, place the fastening screws in section S4-2 to avoid unwanted movement. **IMPORTANT:** The bolts should not be used to pull the unit together, they are for fixing only. Make sure that the modules -2- and -4- are perfectly aligned and there is no gap between the two. **Do not apply final tightening yet.**



The following result is obtained:

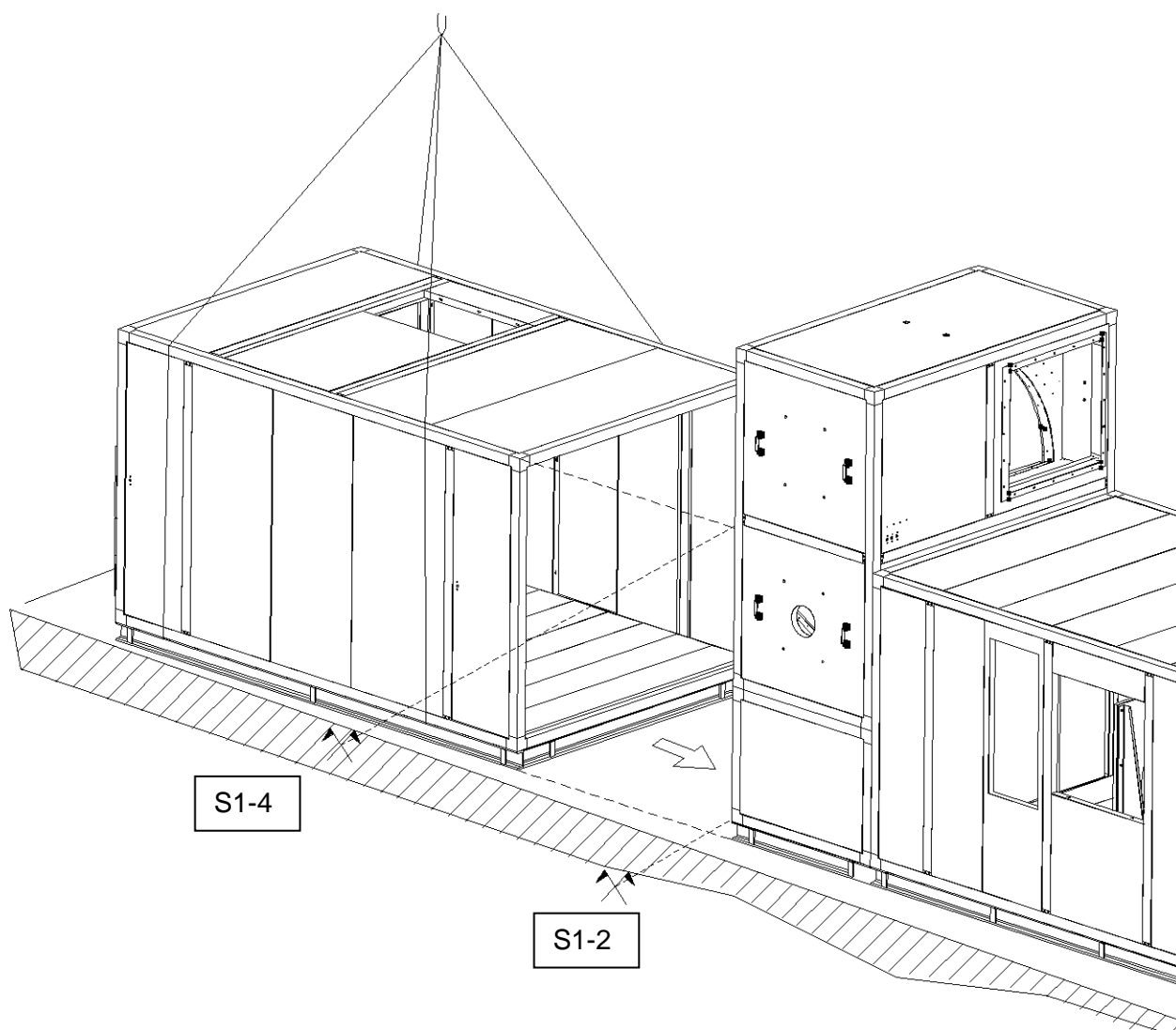




## 5.5 Module 1 arrangement

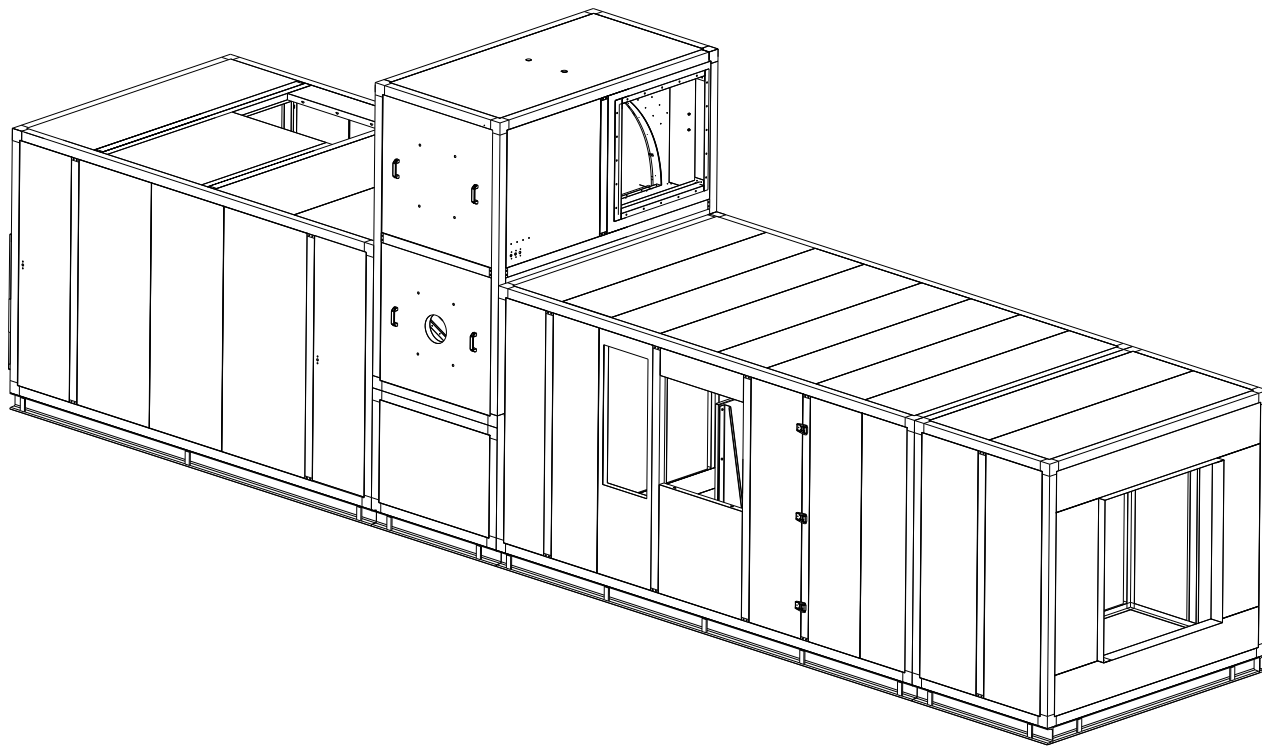
Implementation steps:

- Now locate and unpack module -1-. Apply the self-adhesive sealing gasket to the contact edge of sections S1-4 and S1-2 **on the face of the module only**.
- Unload the module at > 100 mm from the previous module, centered and aligned with the longitudinal axis by matching the section identified as S1-2.
- Once the module, -1-, has been placed on the platform, move it longitudinally until it makes contact with the adjacent section.



- When the module -1- is in position, place the screws of the connecting sections between the modules -1-, -2- and -4-. **REMEMBER:** The bolts should not exert traction. Make sure that the modules -1-, -2- and -4- are perfectly aligned and there is no gap between the two. **Do not apply final tightening yet.**

## 5.6 Module 5 arrangement

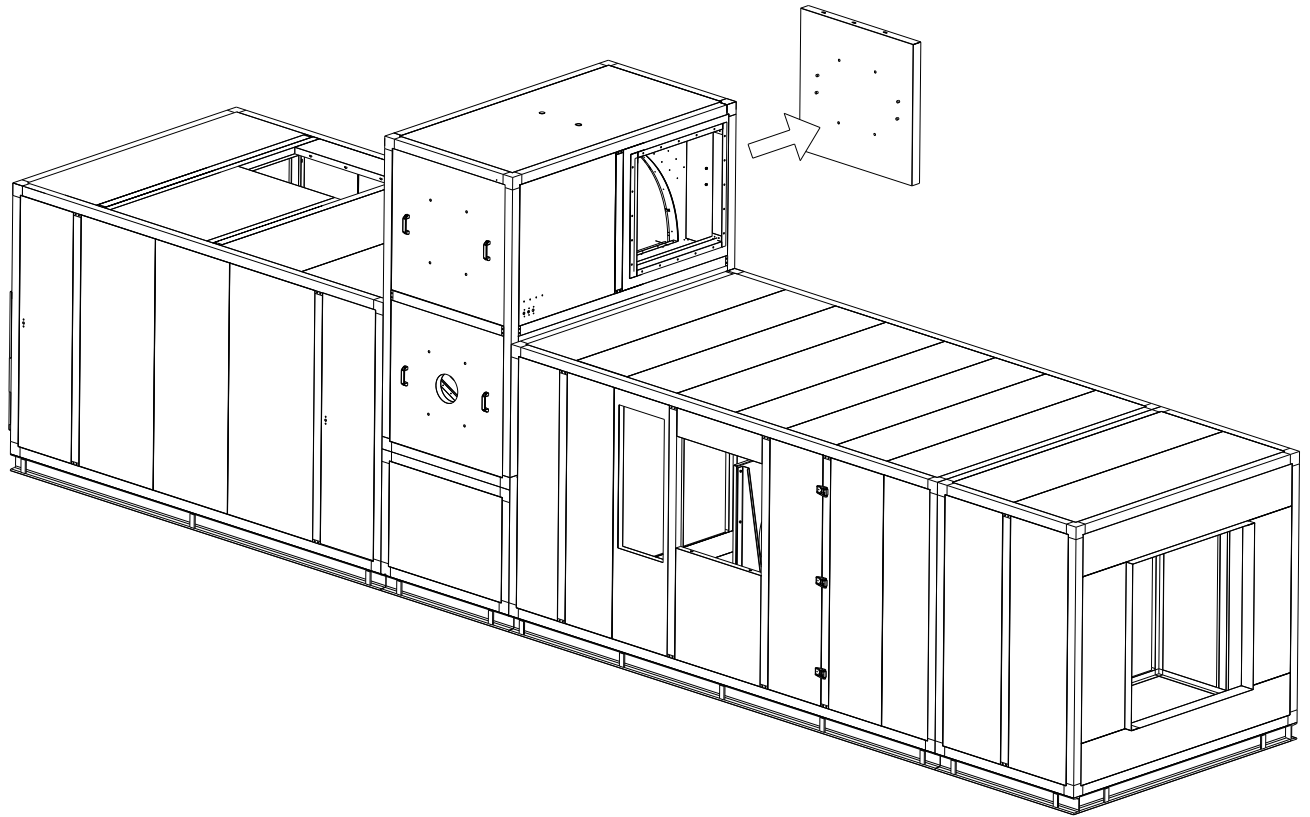


Once the previous sections are complete, as shown, find the MOD 5 (corresponding reactivation heater) and its assembly accessories, such as sealants and screws, included in a labelled blister pack.

Read the assembly instructions corresponding to the selected reactivation heater type:

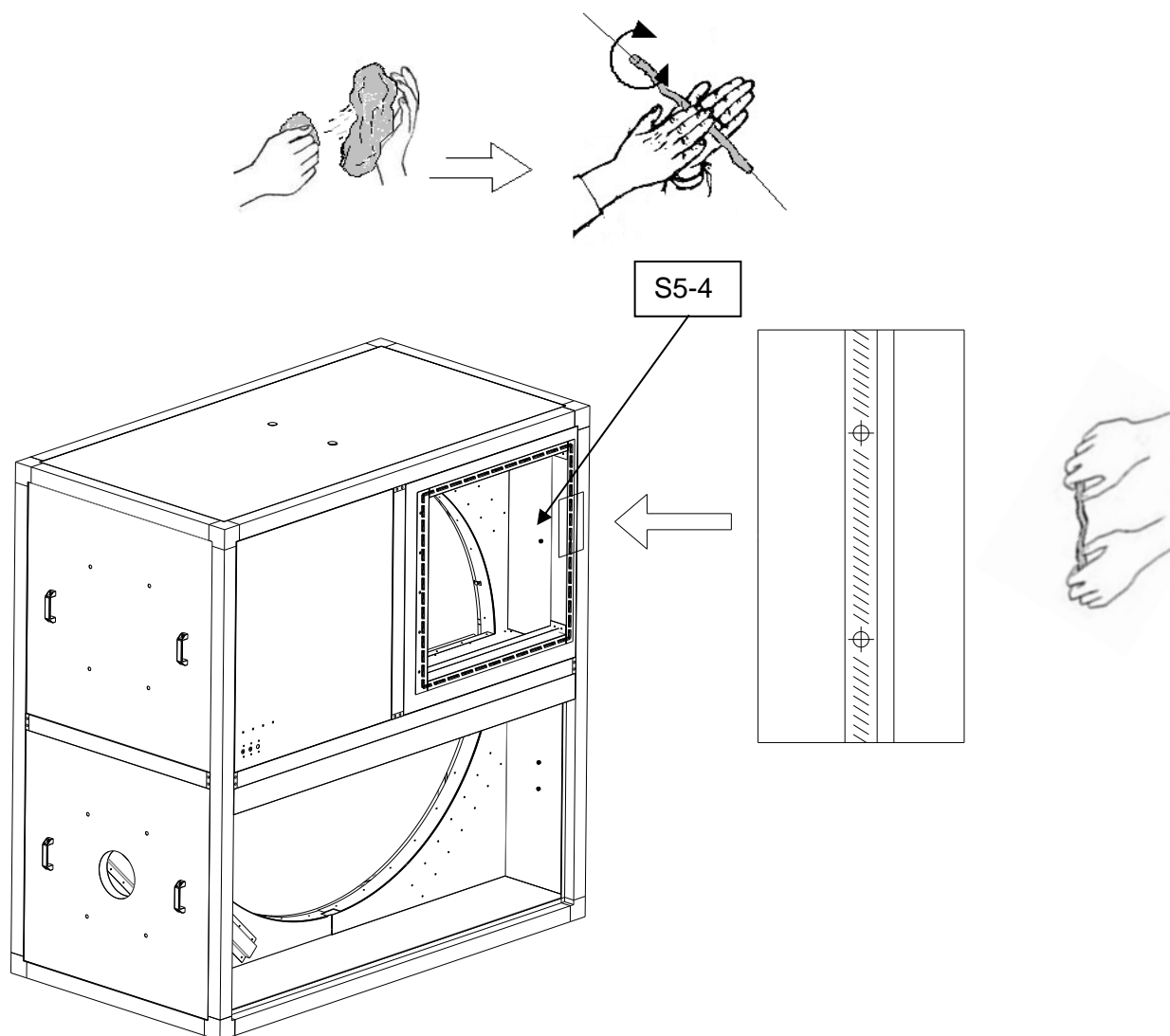
- Steam unit. See section 5.6.1
- Electric heater unit. See section 5.6.2
- Gas burner. See section 5.6.3

To begin, remove the cover of the MOD 4 (basic unit) that gives access to the reactivation plenum.



Find the putty for the joints in the accessories pack, shape and apply it as follows:

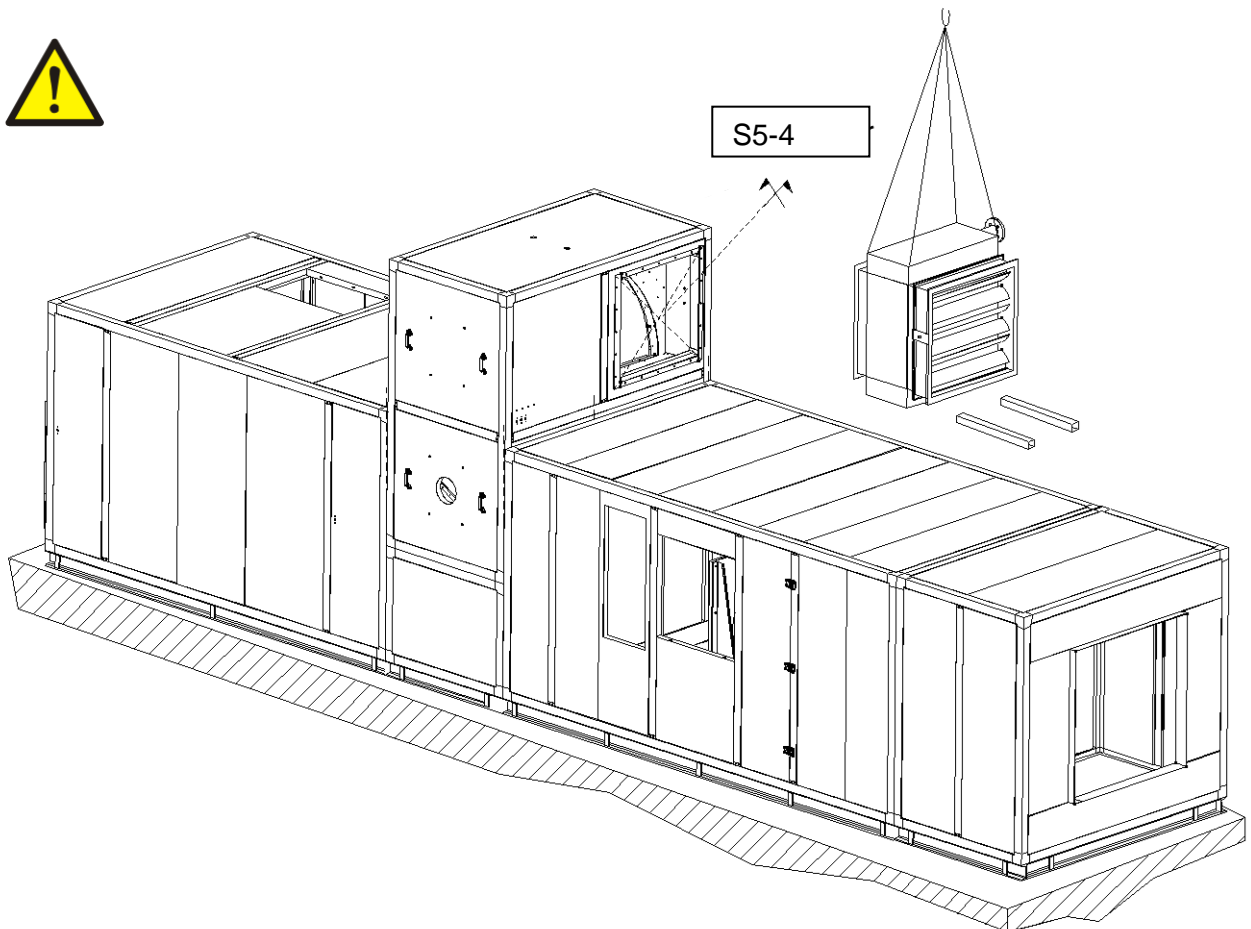
- Take a portion of about 4 cm<sup>3</sup> and knead it cylindrically into a string shape of 7-9 mm in diameter.



- Apply the 'string' in the rectangular flange connection of both modules, and specifically in section S5-4 corresponding to the MOD4 (basic unit).
- Repeat this operation until the flange around the entire outer perimeter is complete. **Be careful not to cover the screw holes.**
- This process is the same for all three types of reactivation heaters.

### 5.6.1 Steam reactivation heater

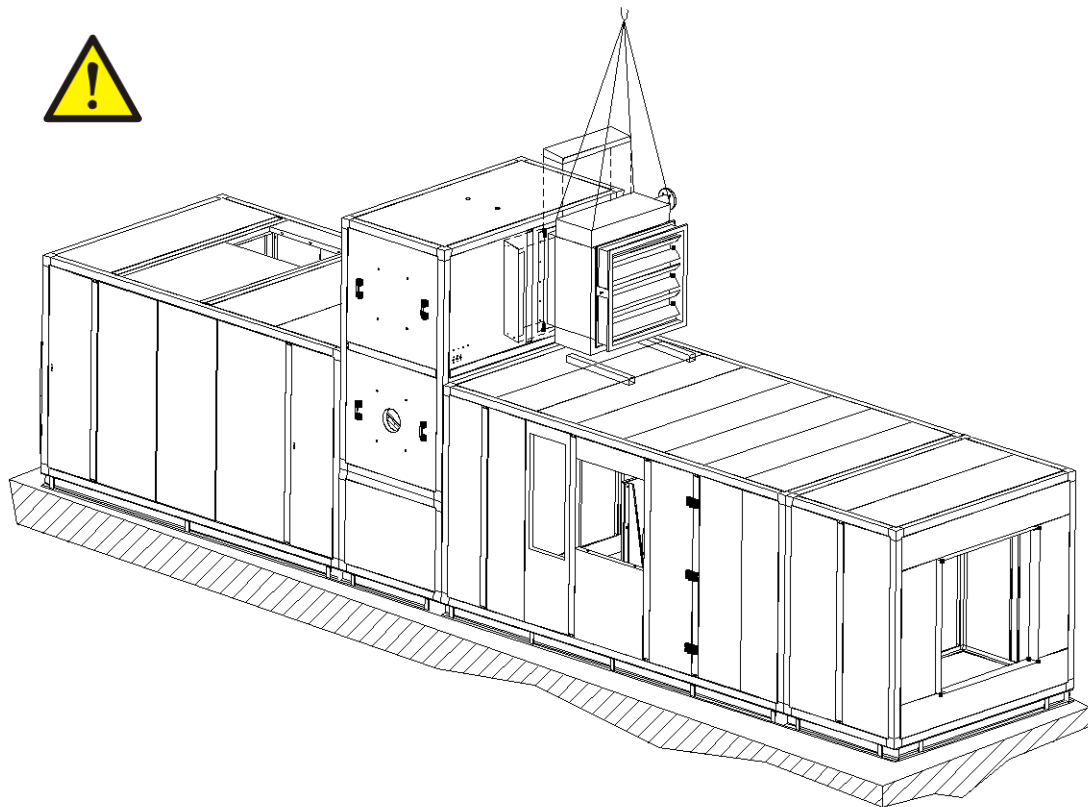
Find and unpack module -5-, the fibreglass insulation retaining packaging shell, and the insulation itself, that must be assembled around the indicated flange.



Implementation steps:

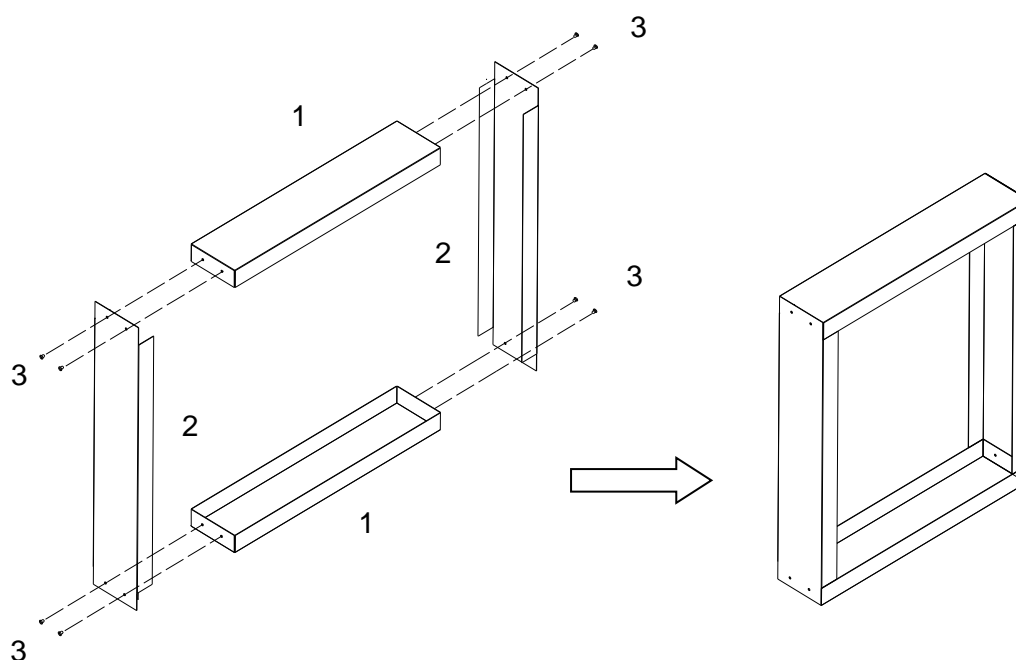
- Module -5- (steam battery) is marked up on one of its flanges to correspond with section S5-4.
- There are also two square metal tubes that will be used for later assembly.

- Insert the aforementioned tubes on module -3- about 80mm from the basic unit (module -4- ) and immediately below section S5-4.
- Place the steam battery (module -5- ) on the tubes slightly separated from the basic unit, so as not to damage the previously applied sealant.



- Move the steam battery (module -5-) towards the basic unit by matching the screw holes for the junction flanges of section S5-4.
- Find the correct screws in the bag marked S5-4 and secure them to attach the flanges of module -4- to module -5-. The next step is to place the fibre glass insulation around the junction between these two modules.

- After inserting the fibre glass insulation around the junction of modules -4- and -5-, it must be covered with the metal parts as shown below:
  - 1) First place the horizontal parts (1) on the insulation.
  - 2) Move the vertical parts (3) towards the screw holes until they match.
  - 3) Screw the plates together.

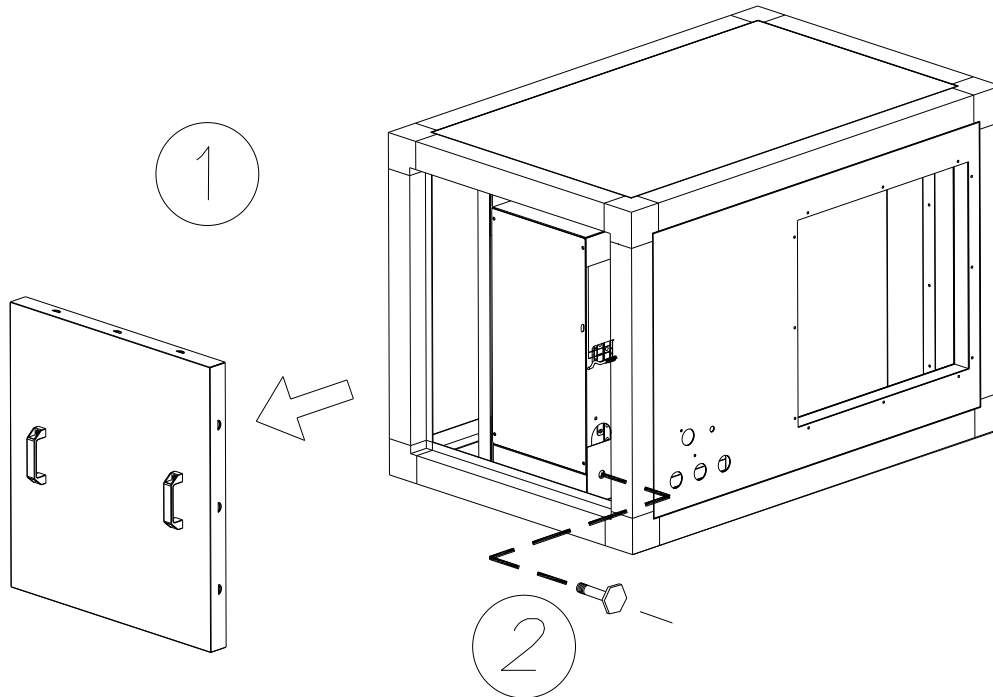


- Finally, remove the tubes the steam unit rests upon.

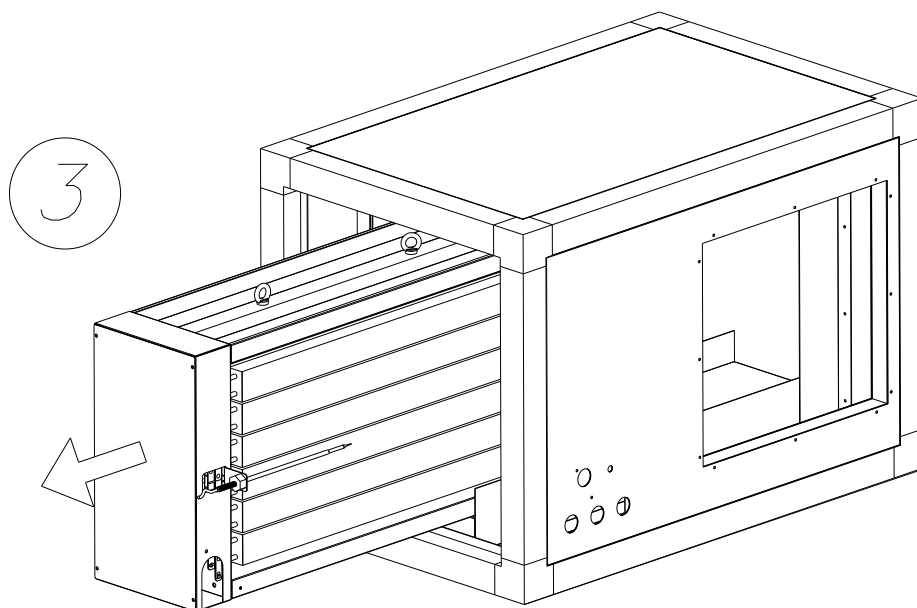
### 5.6.2 Electric reactivation heater

- Once the MOD5 (electrical unit) is located and the putty has been applied to the MOD4, the electric heater cartridge is removed from the interior. This gives easy access to the flange. The sequence below is now followed:

1. Remove the front cover of the MOD5 to access the interior.

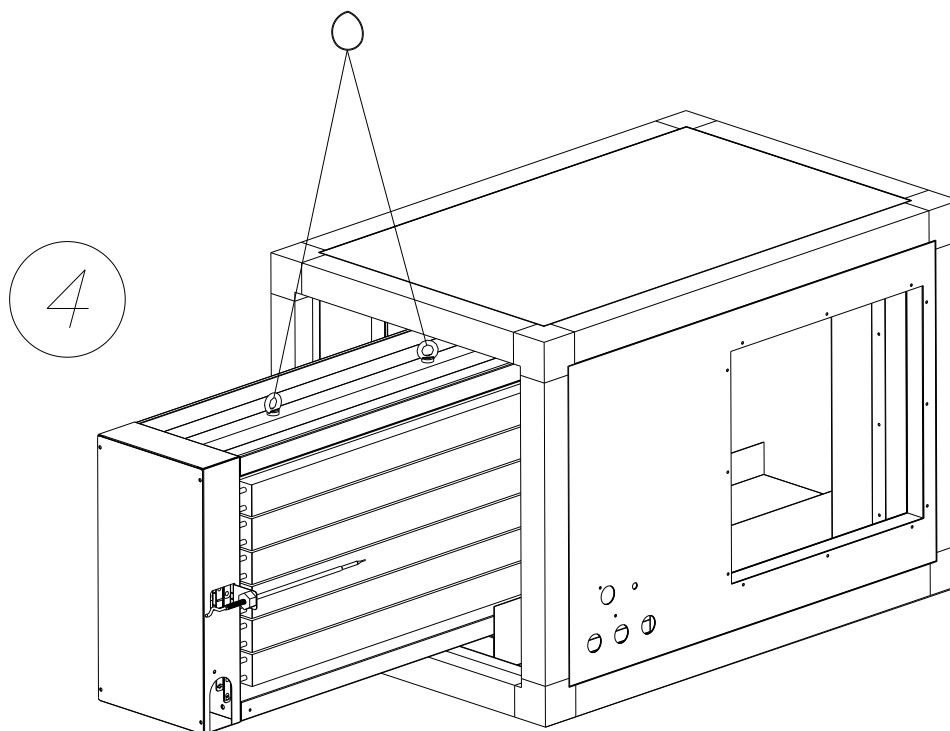


2. Release the screw fixing the electric heater cartridge to the support mouth and earth wire.
3. Slide the heater cartridge outwards until the two lifting eye bolts are visible.

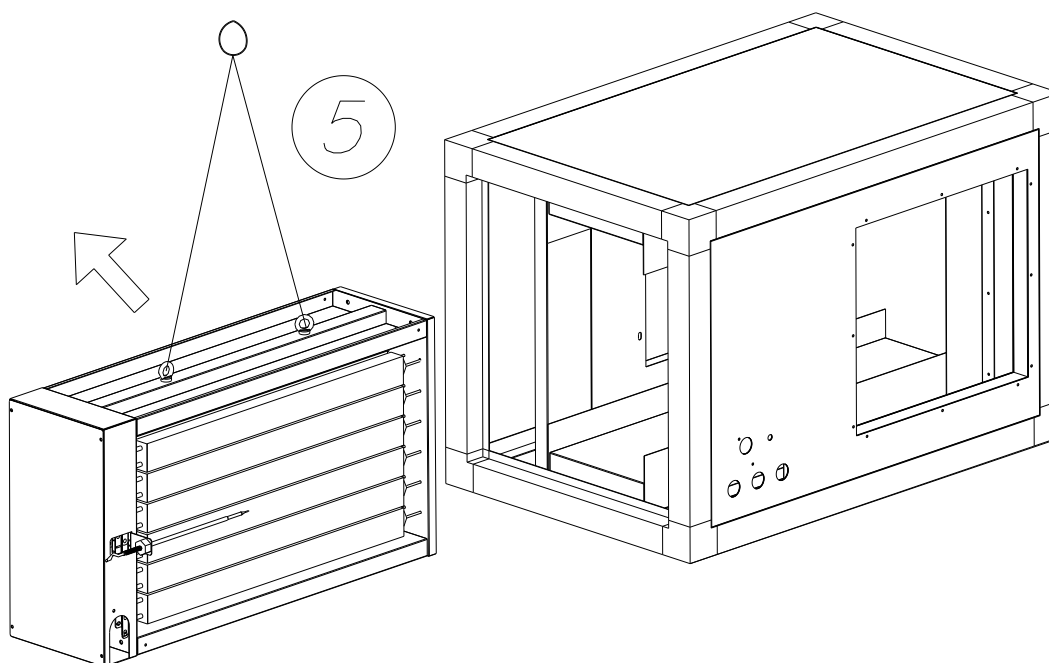




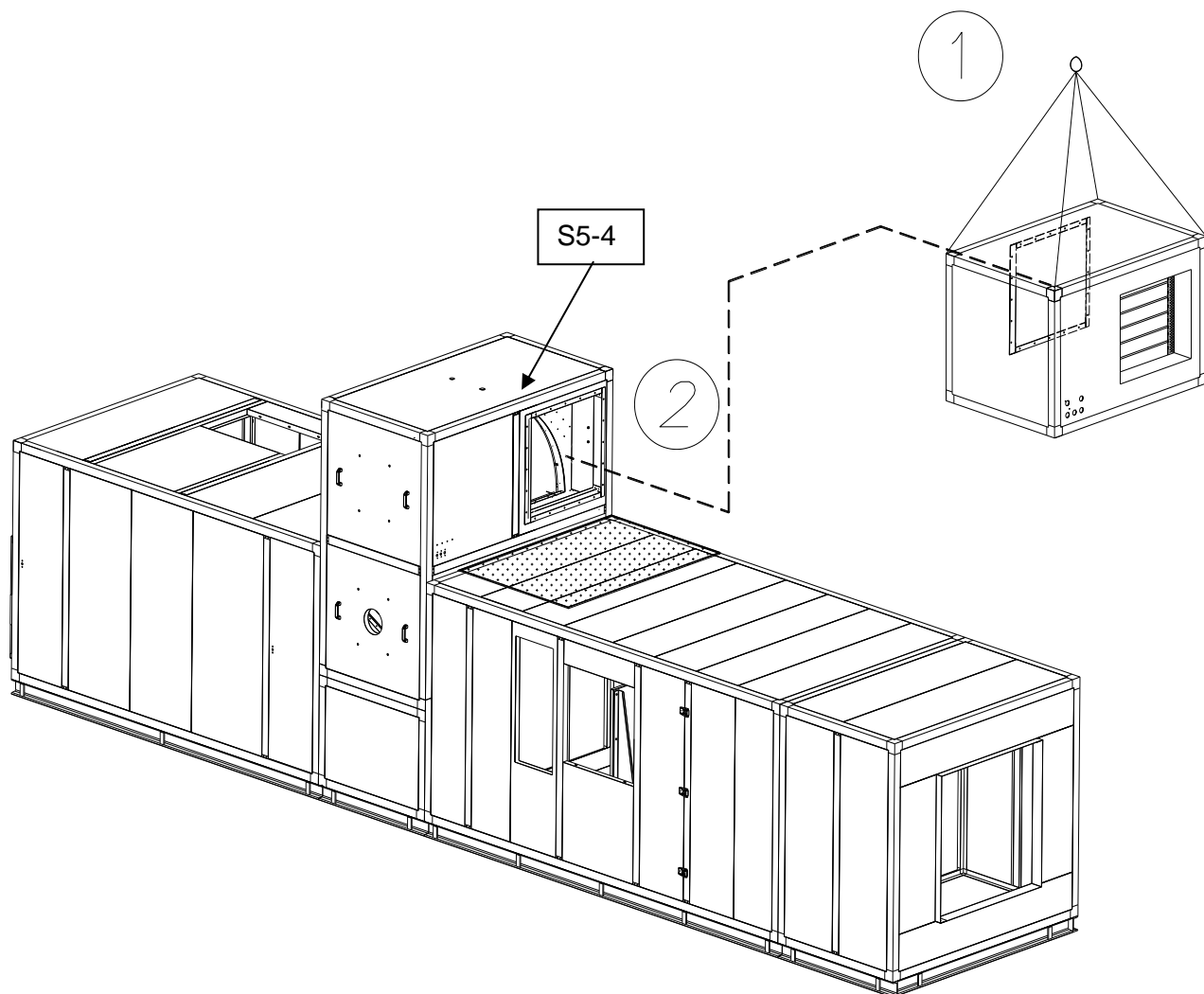
4. Attach the two lifting eyebolts to the hoist cables.



5. Remove the heater cartridge completely from the MOD5 and transfer it to a safe area.

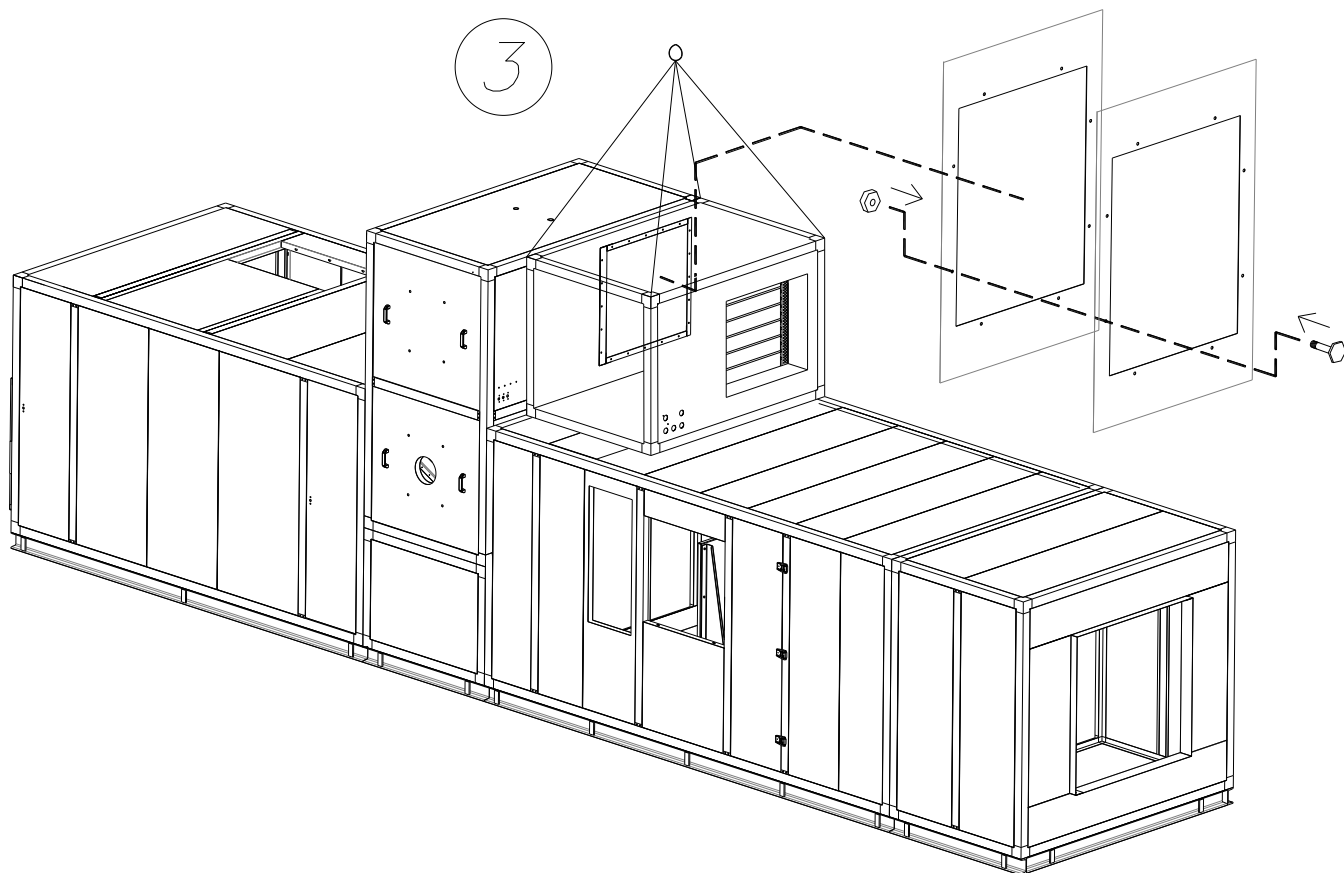


- After removing the heater cartridge, the MOD5 (electric unit) has to be lifted and placed on top of the MOD3 (process fan). It must be positioned in line with the MOD4 (basic unit) and centered with the S5-4 reactivation duct shaft:

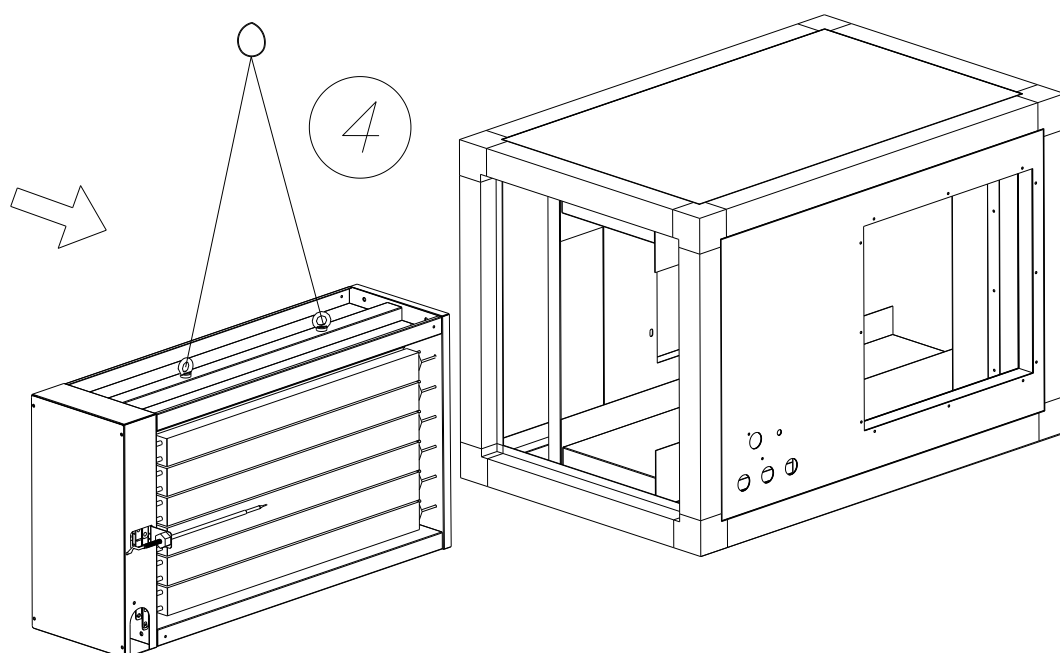


1. The MOD5 is lifted by suspending it from the 4 lugs located on the ends.
2. Move the MOD5 to the indicated position.

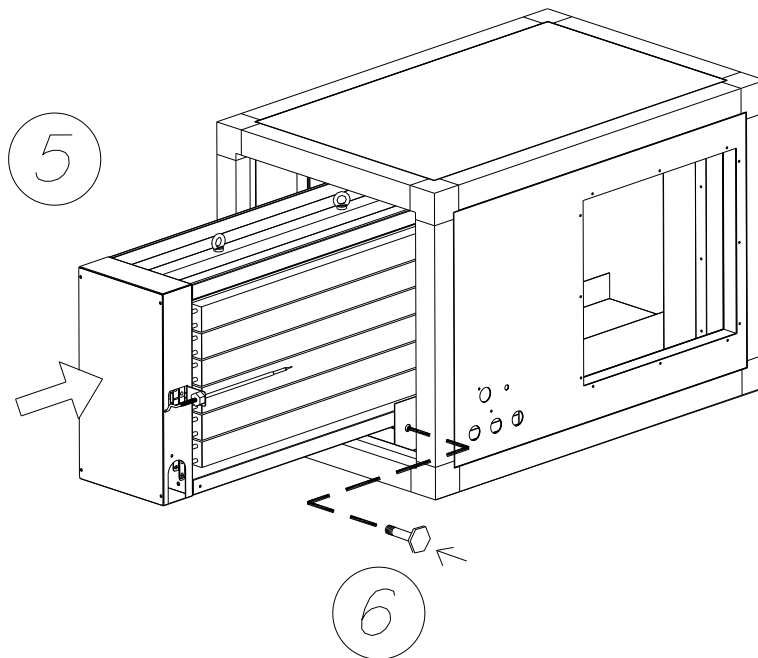
3. Screw the flange connecting the MOD5 to the MOD4 from the inside and release the 4 lifting system lugs (see image).



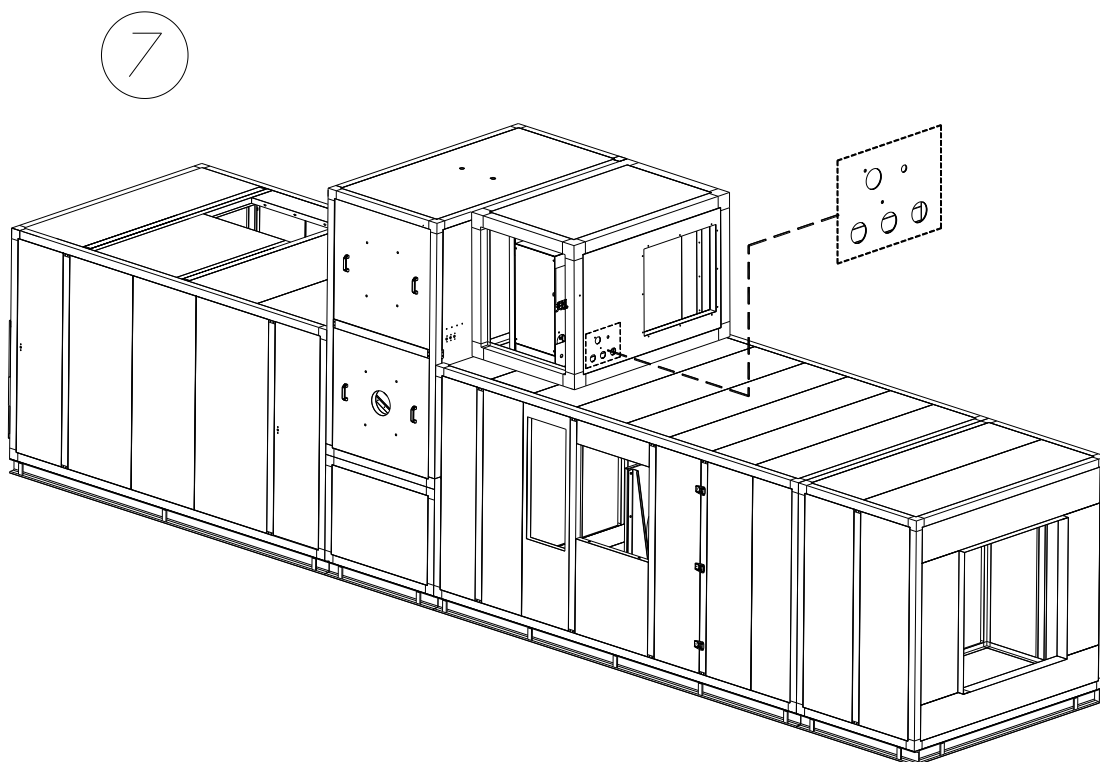
4. Re-attach the electrical heater unit via the two eyebolts and move it until it is slightly inserted in the MOD5.



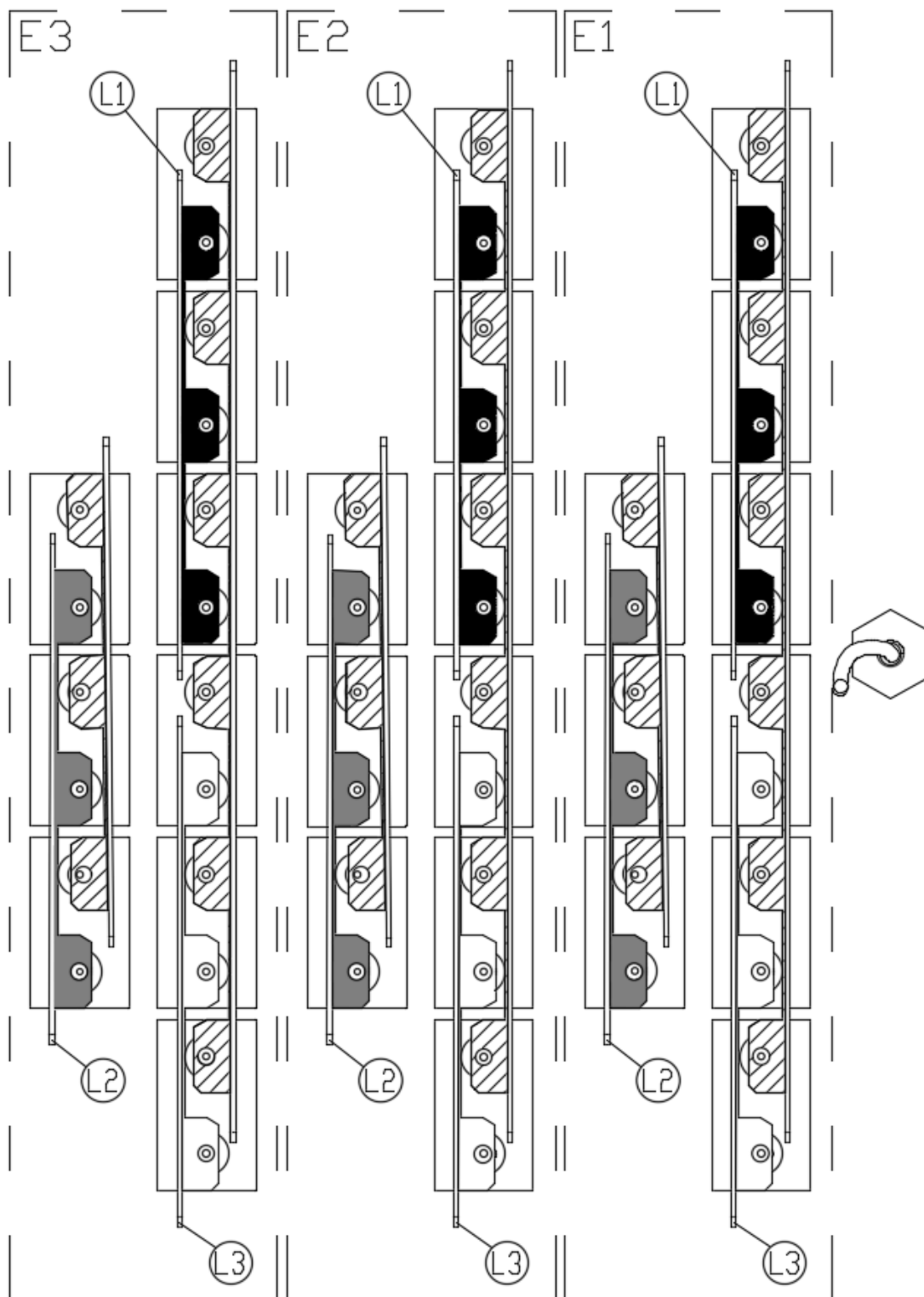
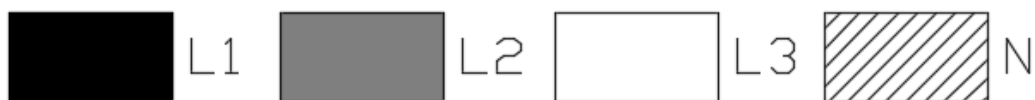
5. Release the eyebolts from the electrical heater and insert it completely inside by sliding until the fixing holes overlap.
6. Replace the screw fixing the electric heater cartridge to the support mouth.



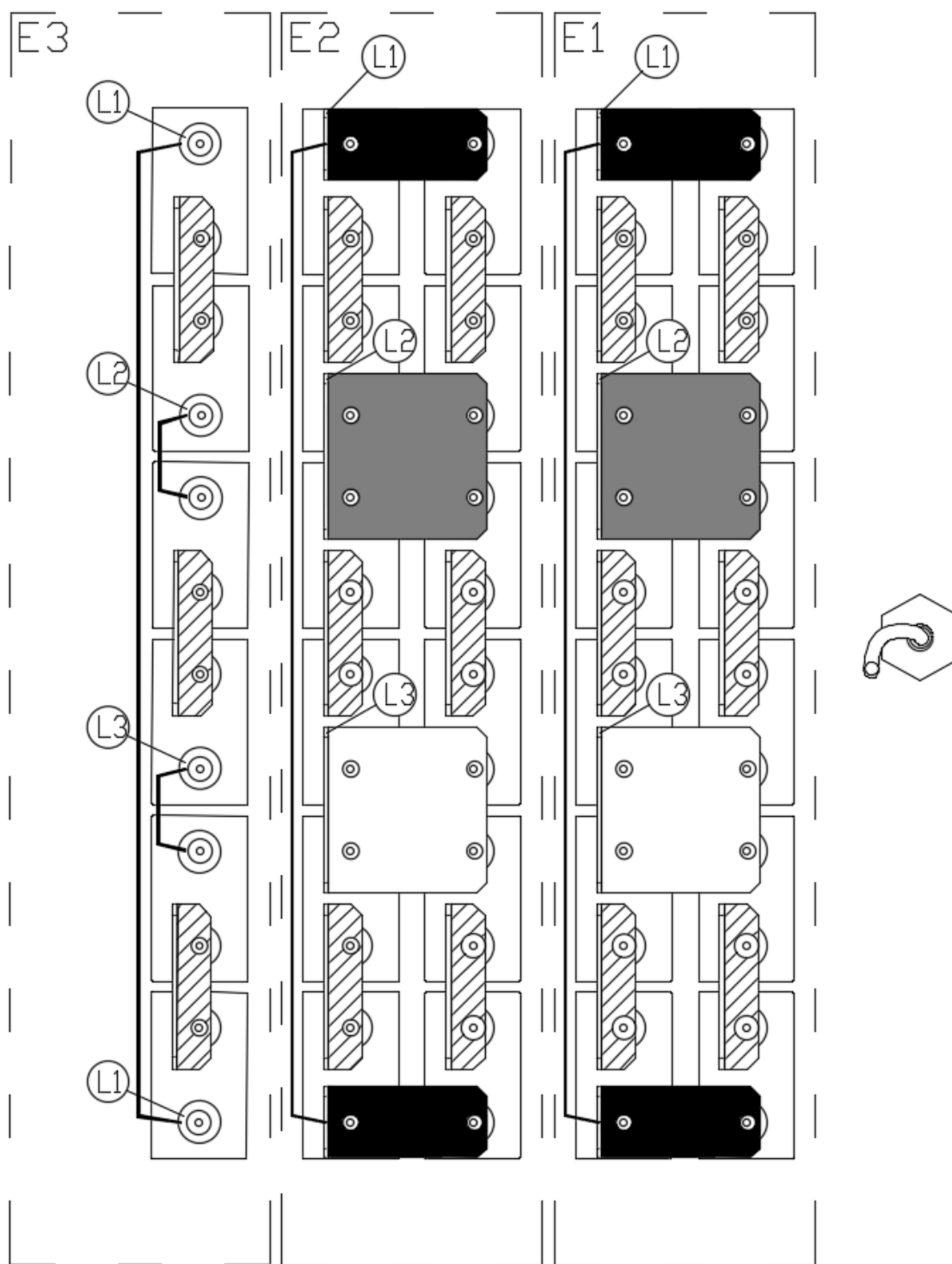
7. Once the electrical heater unit is inserted and attached, the electrical connection must be made. This is done by inserting the installed wiring in the MOD3 so that it passes through the wall bushings and the electrical unit hole into the heater unit connection box.



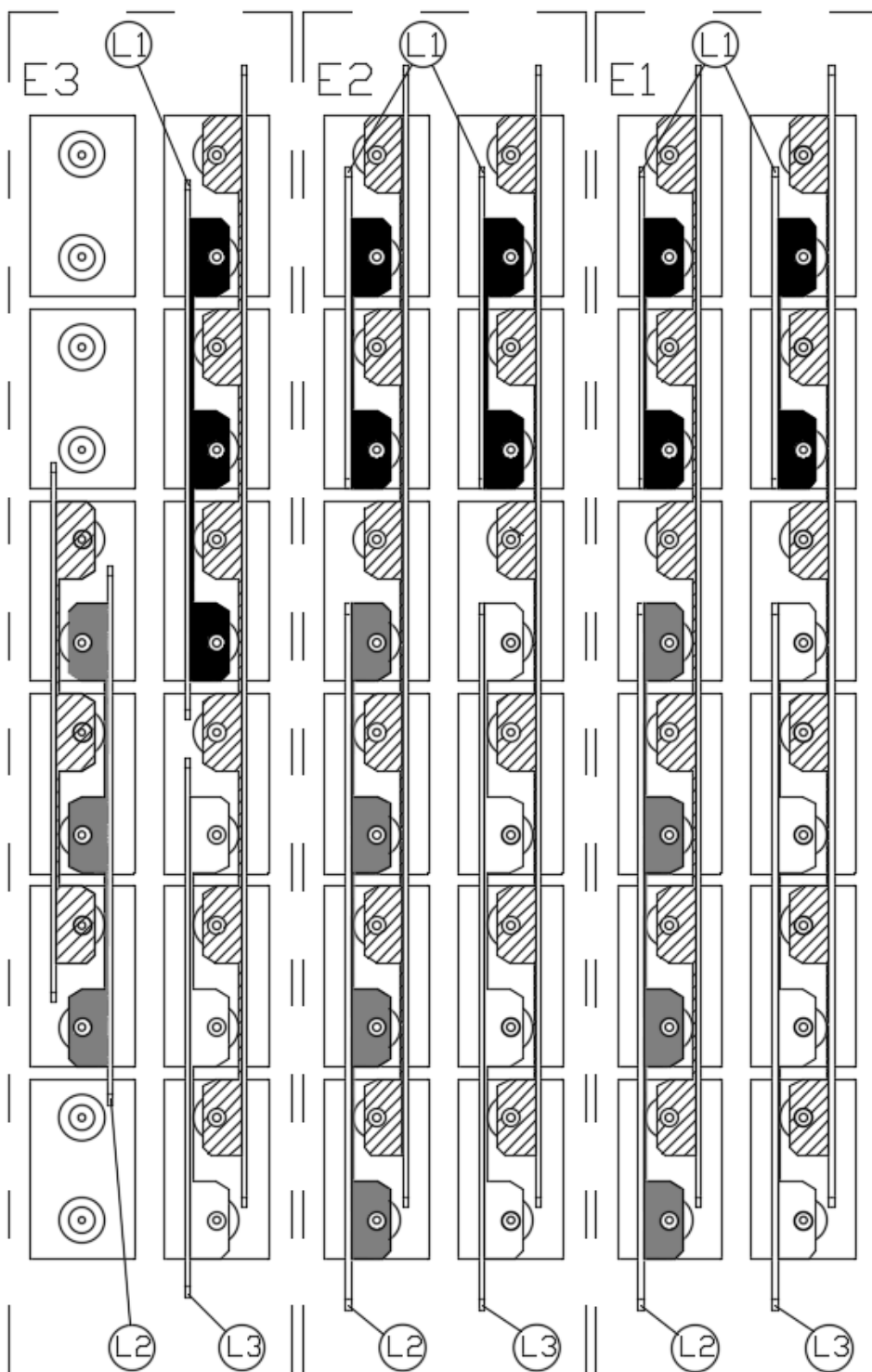
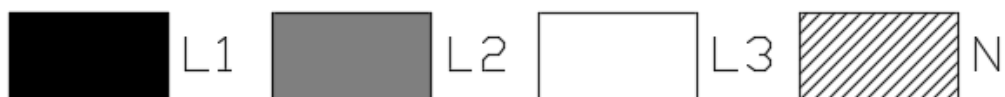
**DFLEX 1100: 400V ±5%**



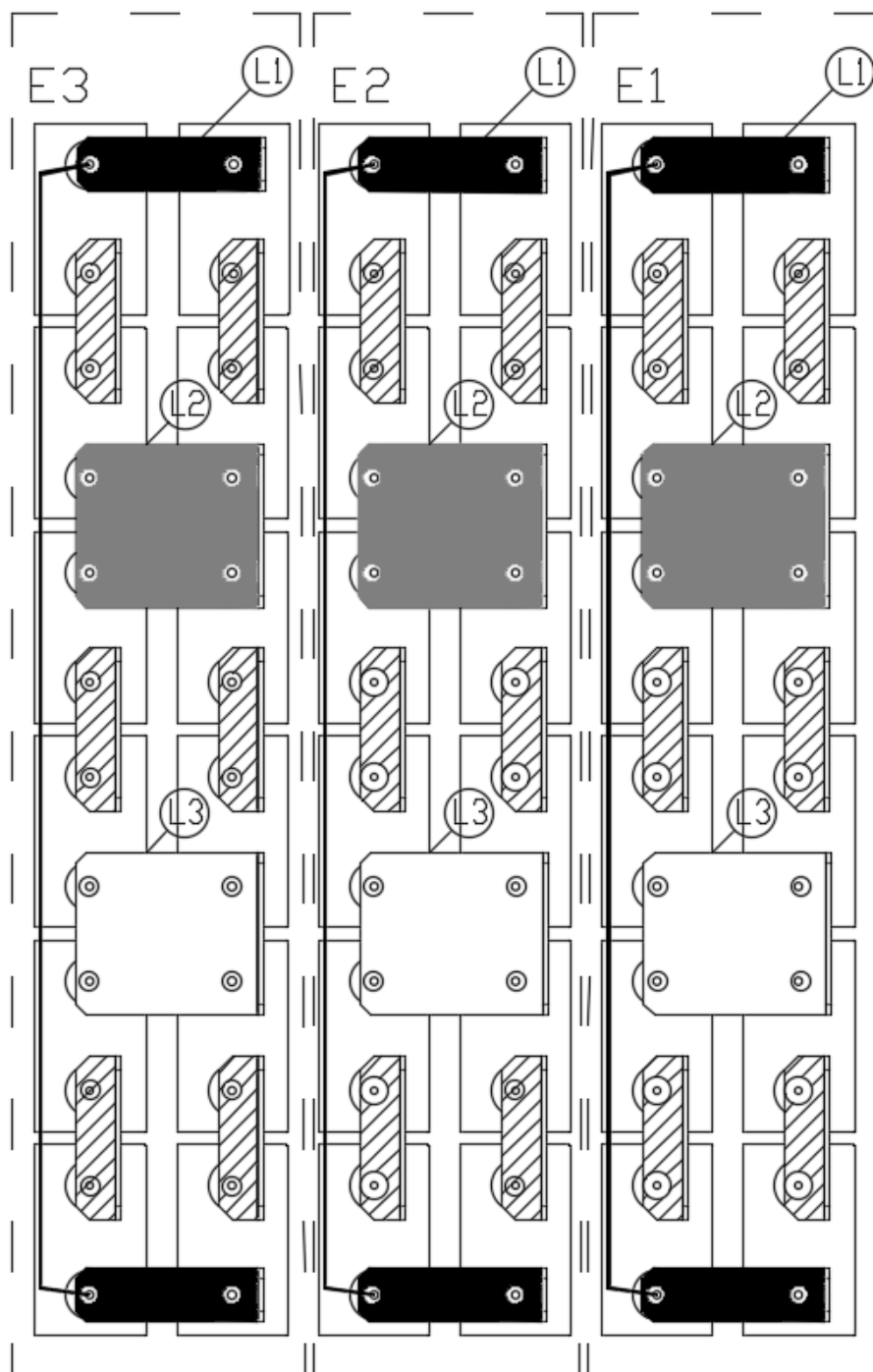
**DFLEX 1100: 440-480V**



**DFLEX 1300 400V ±5%**

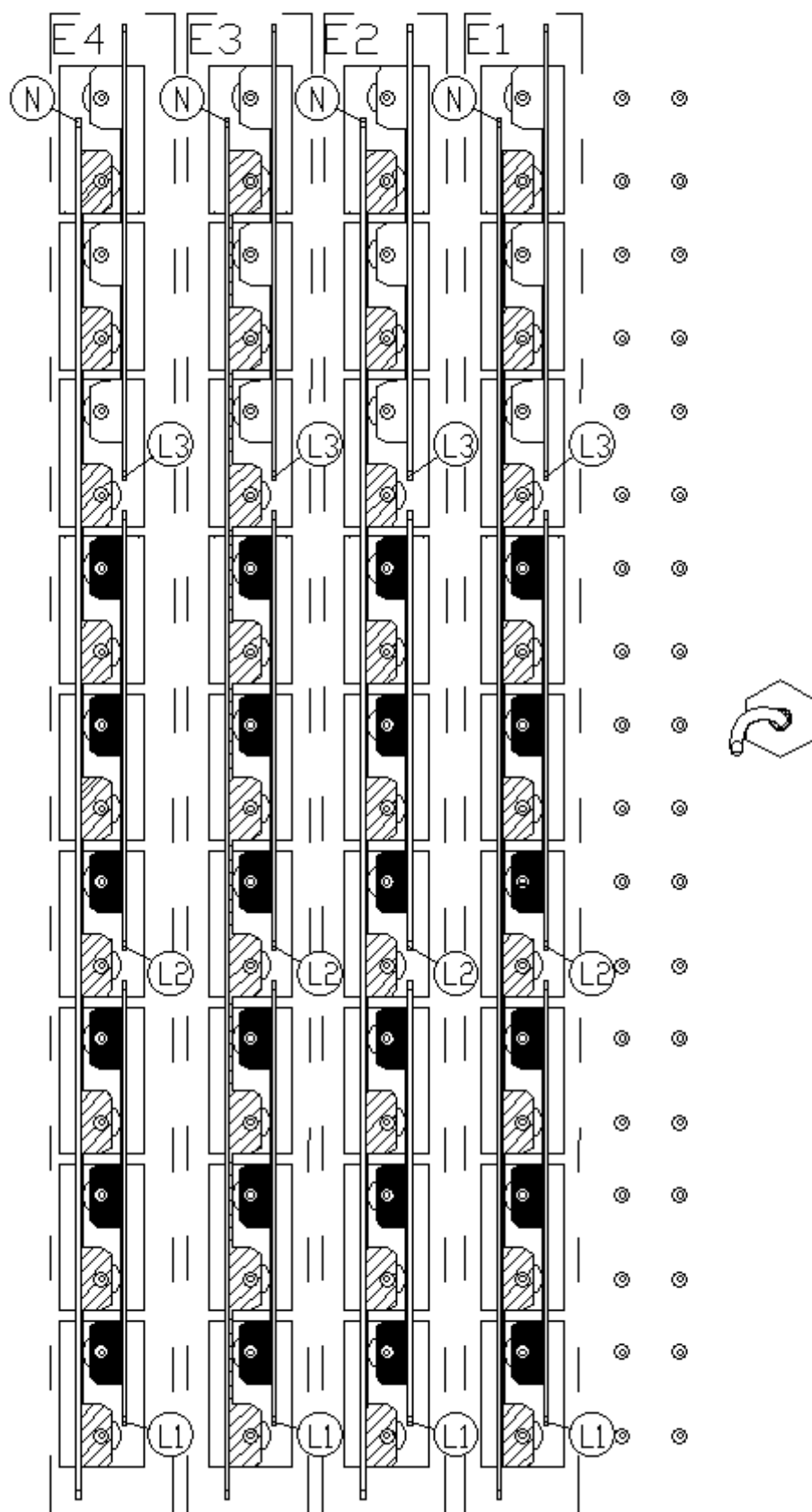
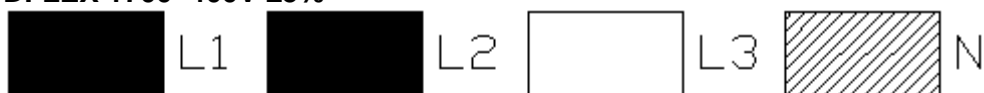


**DFLEX 1300 460V  $\pm 5\%$**

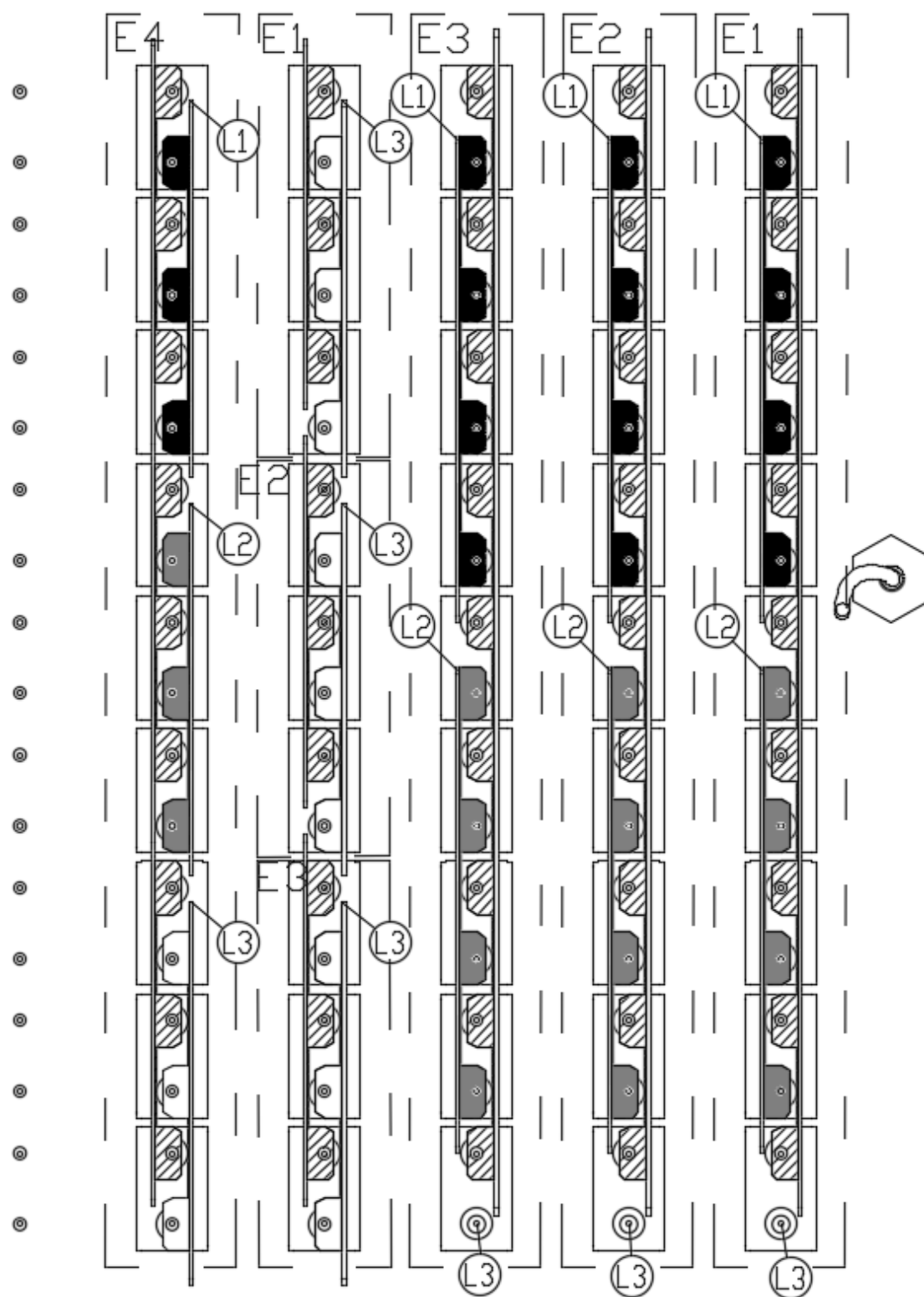
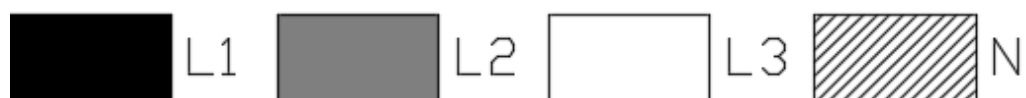




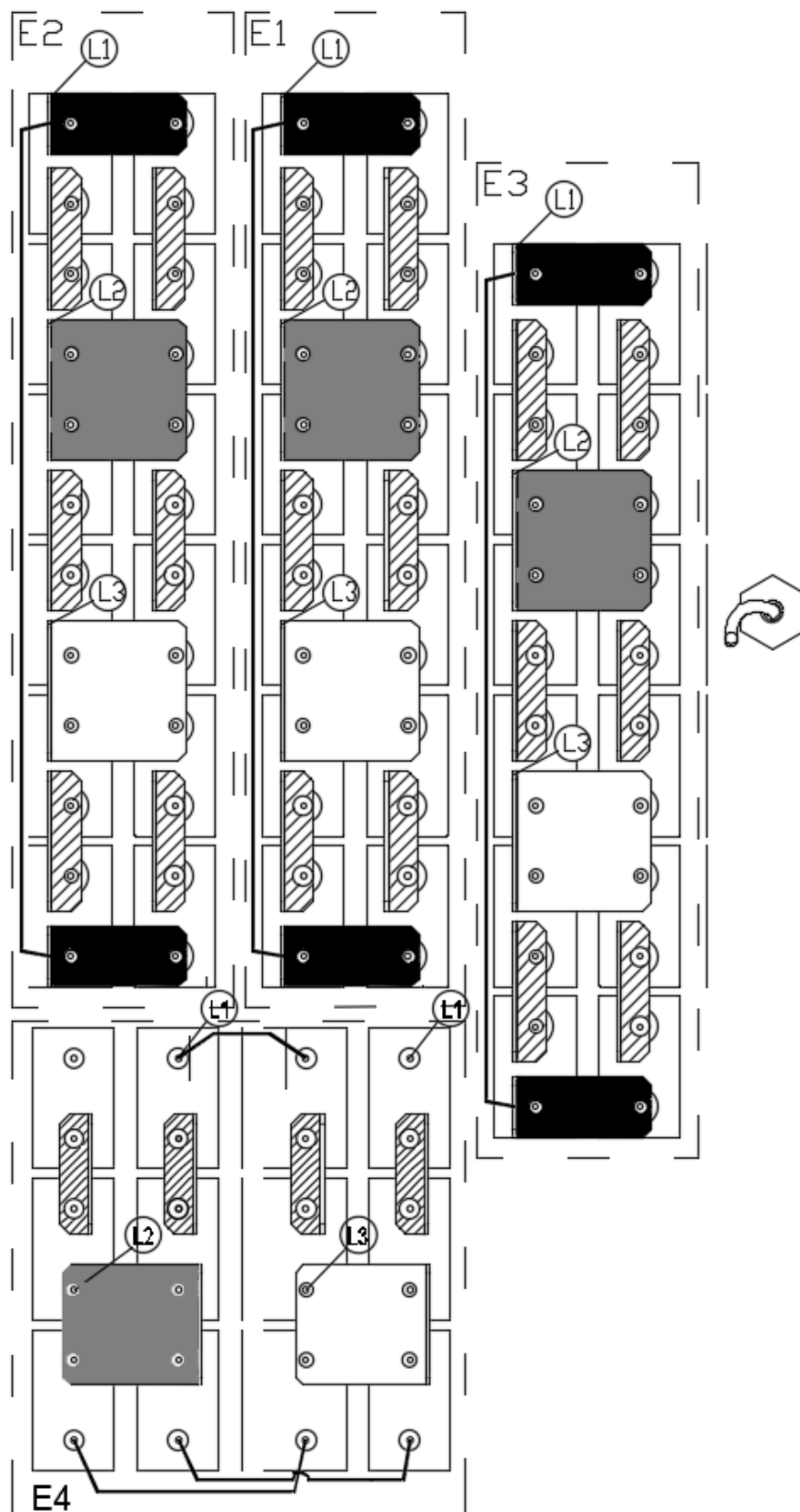
DFLEX 1700 400V  $\pm 5\%$



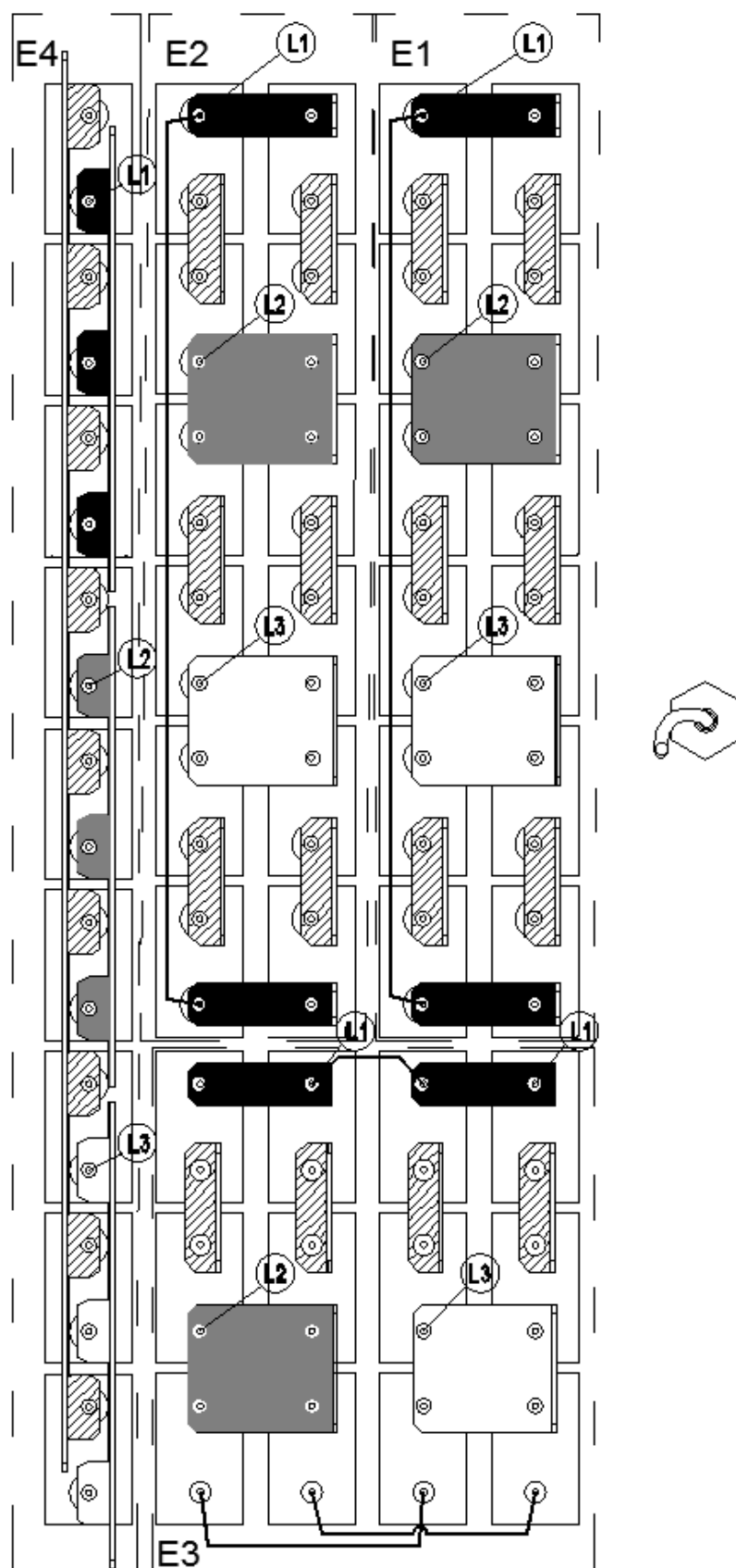
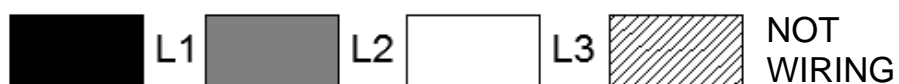
**DFLEX 2100 400V±5%**



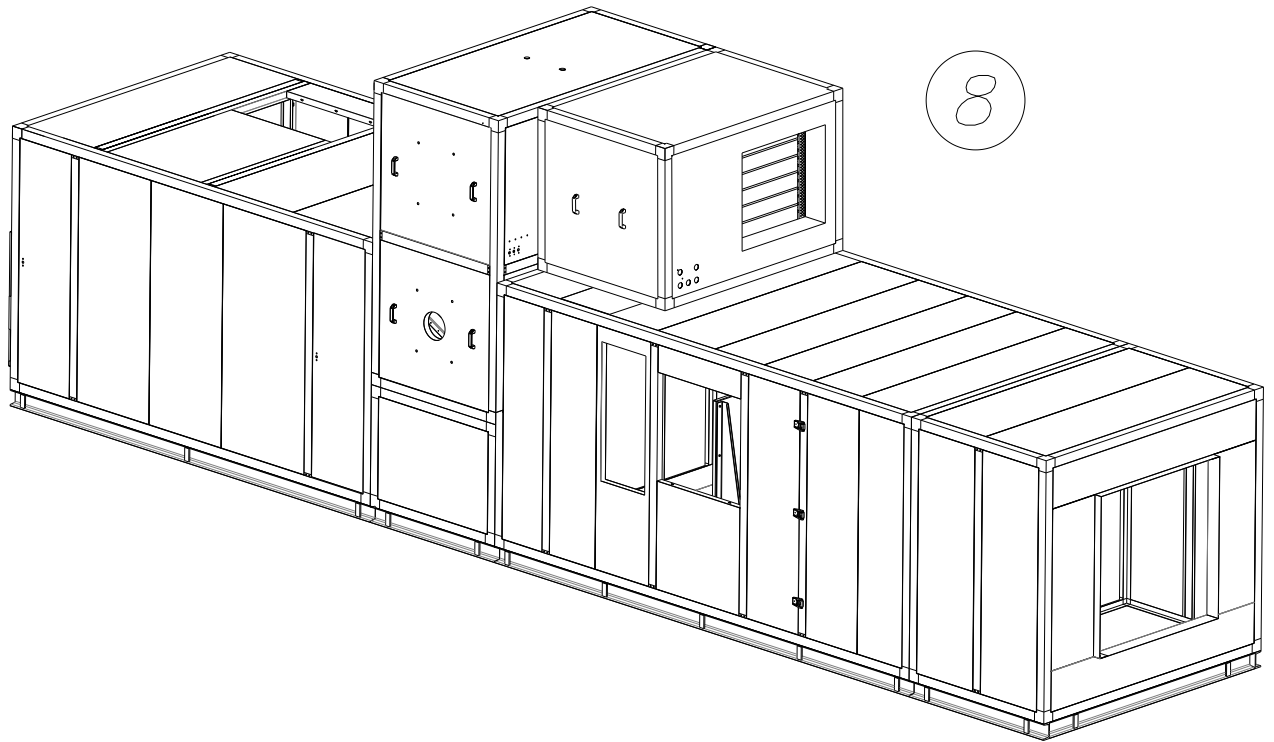
**DFLEX 2100 460V±5% 48 Elementos**



**DFLEX 2100 460V±5% 45 elements (Requires SSR in E4)**



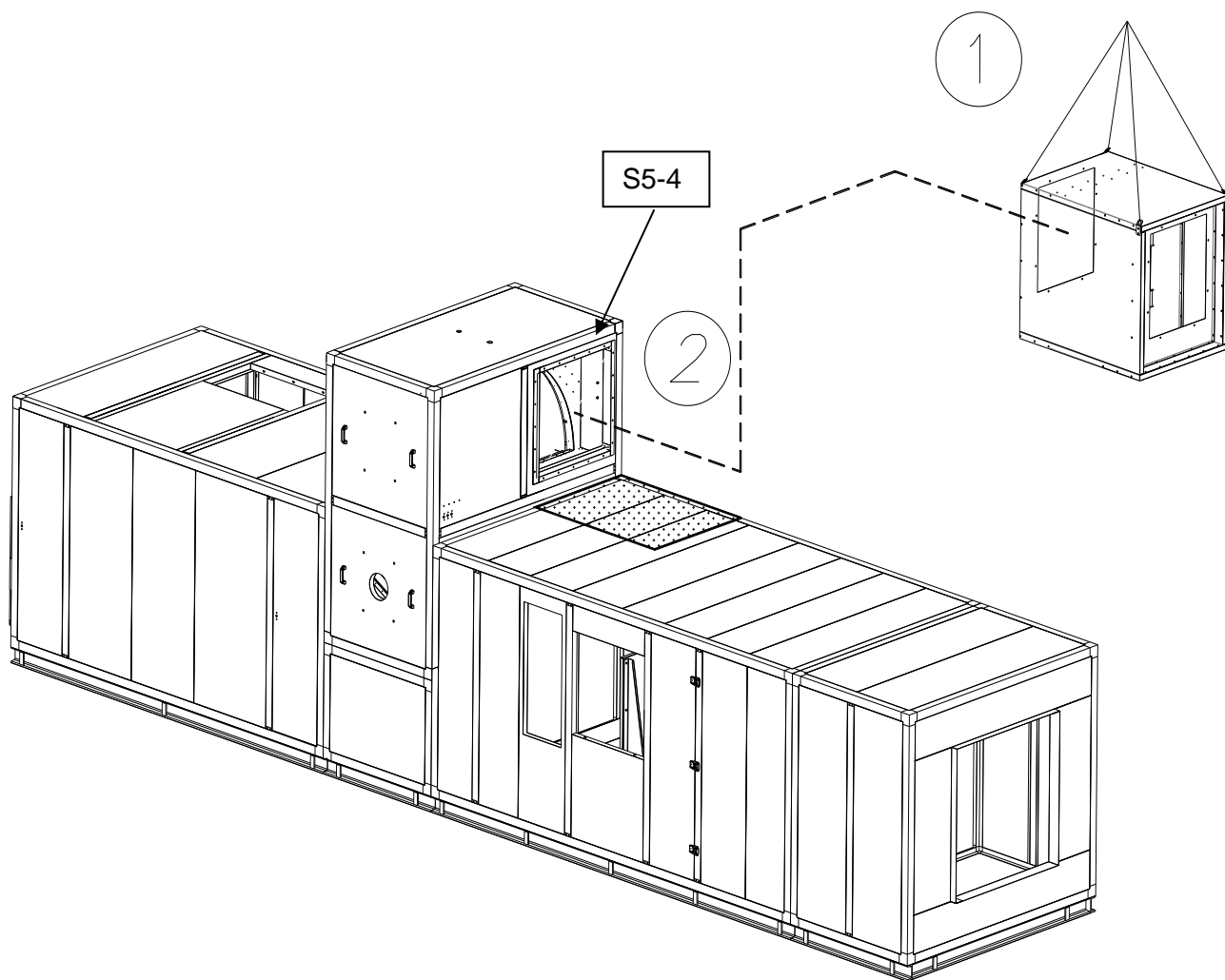
8. Finally, replace and close the front cover of the MOD5 (electrical unit).



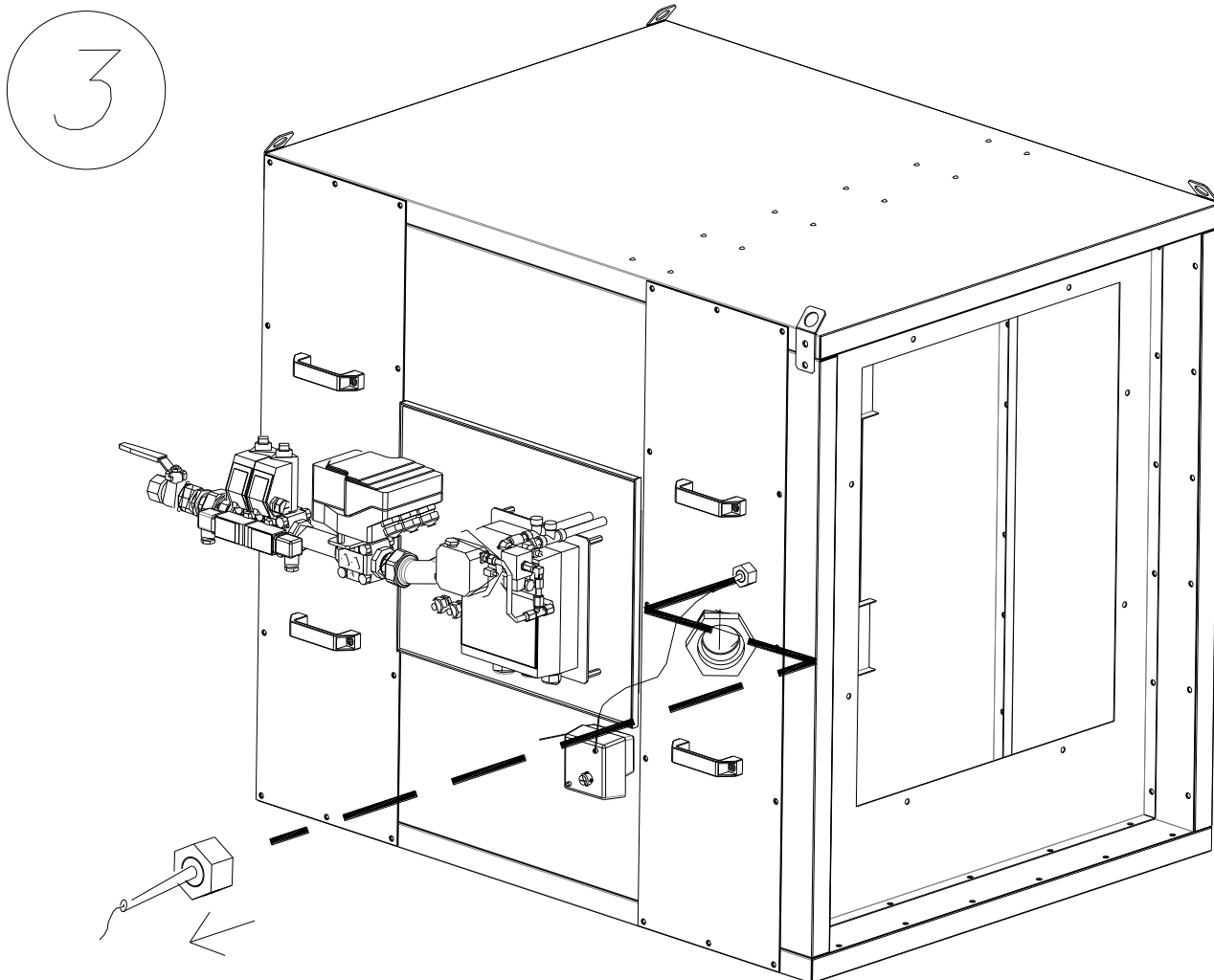
### 5.6.3 Gas reactivation heater

- Once the MOD5 (gas heater) is found and the putty applied to the MOD4, the MOD5 (gas heater) must be lifted and placed on top of the MOD3 (process fan). It must be positioned in line with the MOD4 (basic unit) and centred with the S5-4 reactivation duct shaft.

1. The MOD5 is lifted by suspending it from the 4 lugs located on the ends.
2. Move the MOD5 to the indicated position.

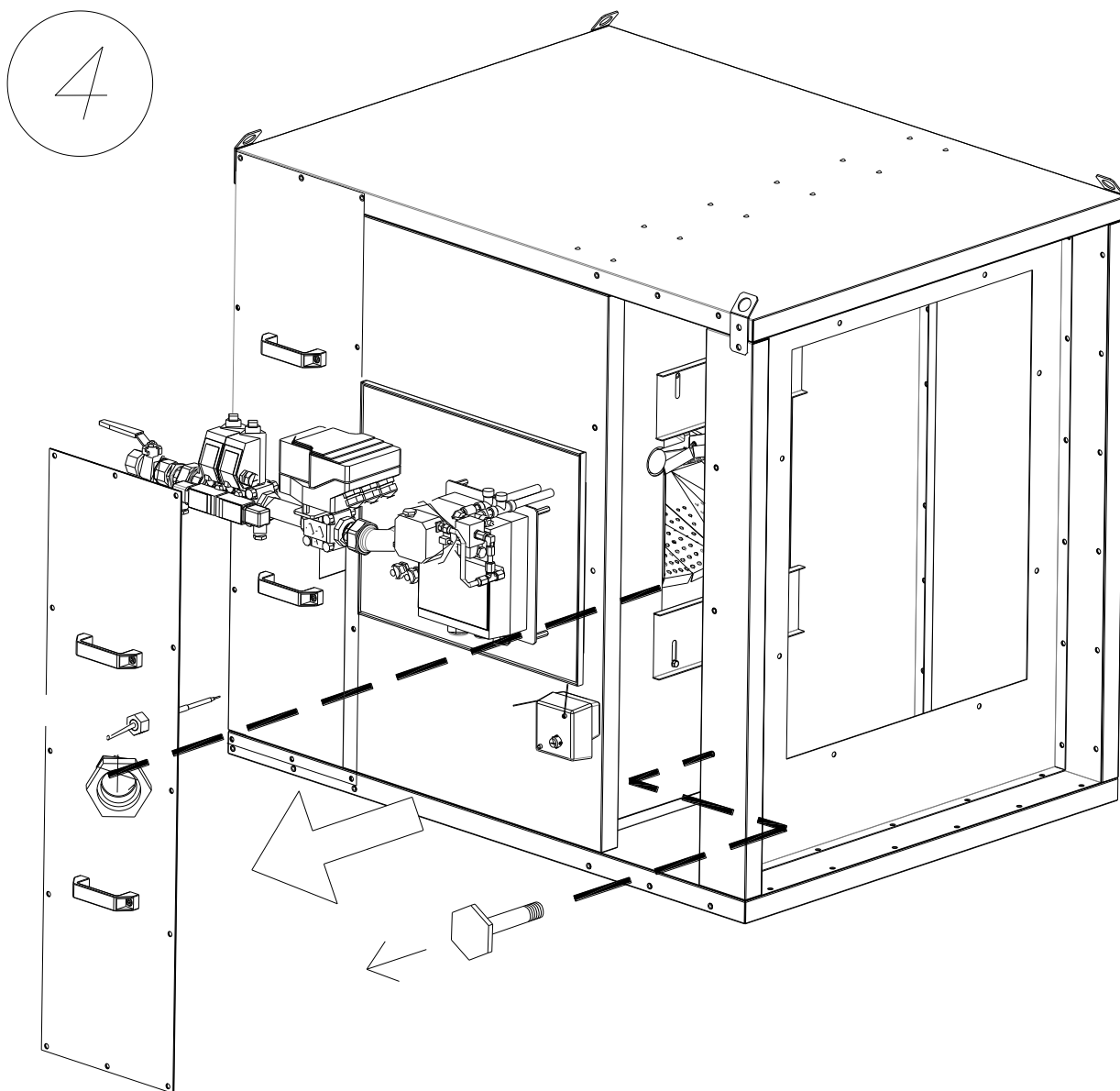


3. Release the bulb (connected to the thermostat by a cable) on the access cover to the combustion chamber and leave it suspended, taking care not to damage the capillary.



Note: The image is rotated 180° with respect to the reference position

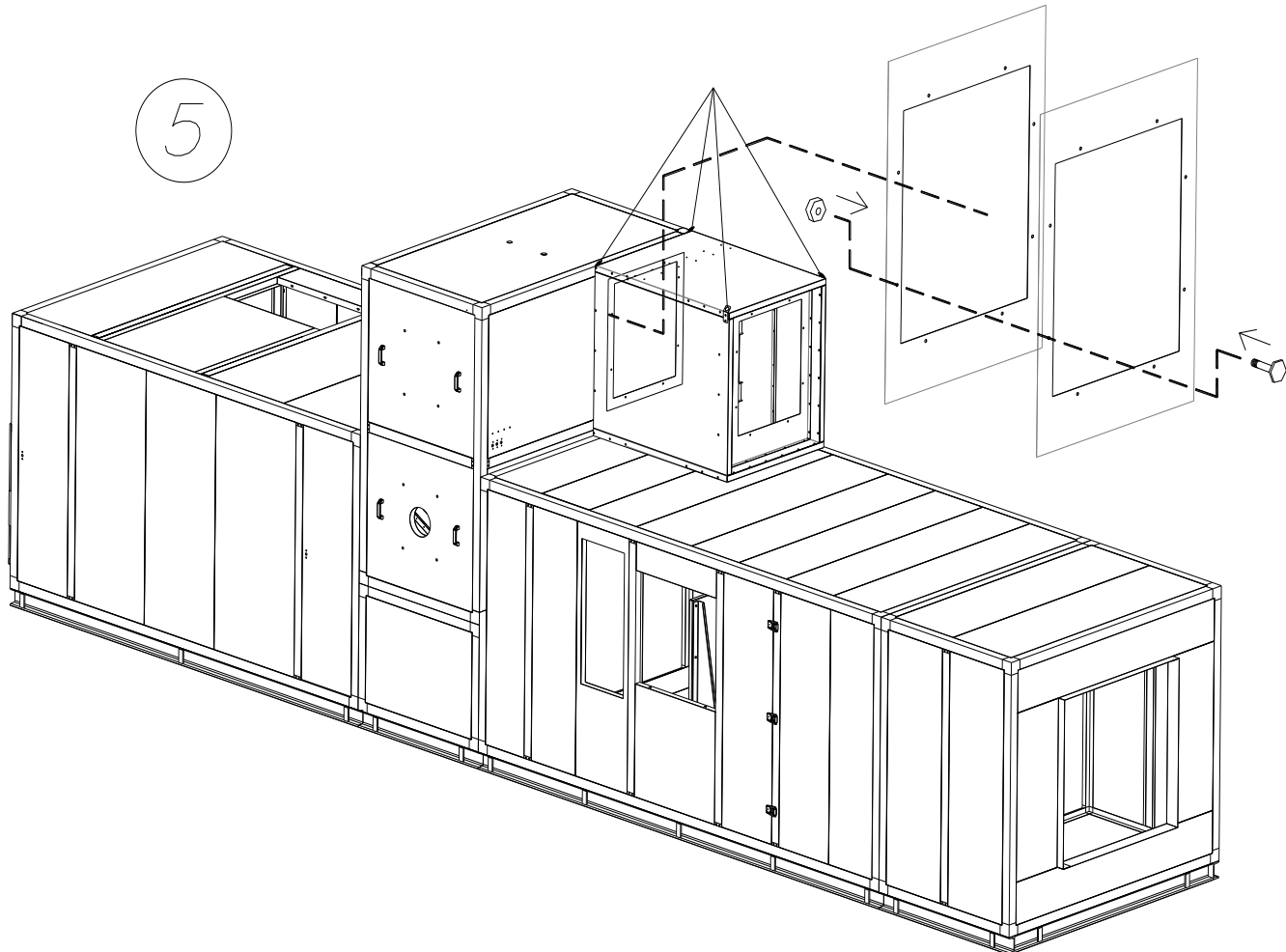
4. Remove the access cover to the combustion chamber interior by removing the screws on the cover.



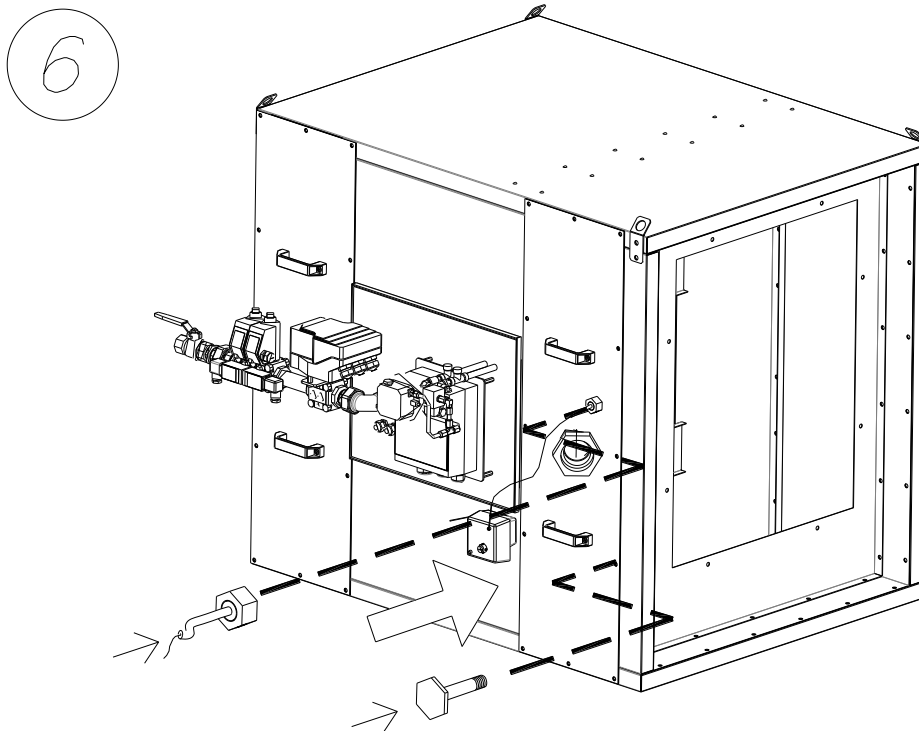
Note: The image is rotated 180° with respect to the reference position



5. Screw the flange connecting the MOD5 to the MOD4 from the inside and release the 4 lifting system lugs (see image).

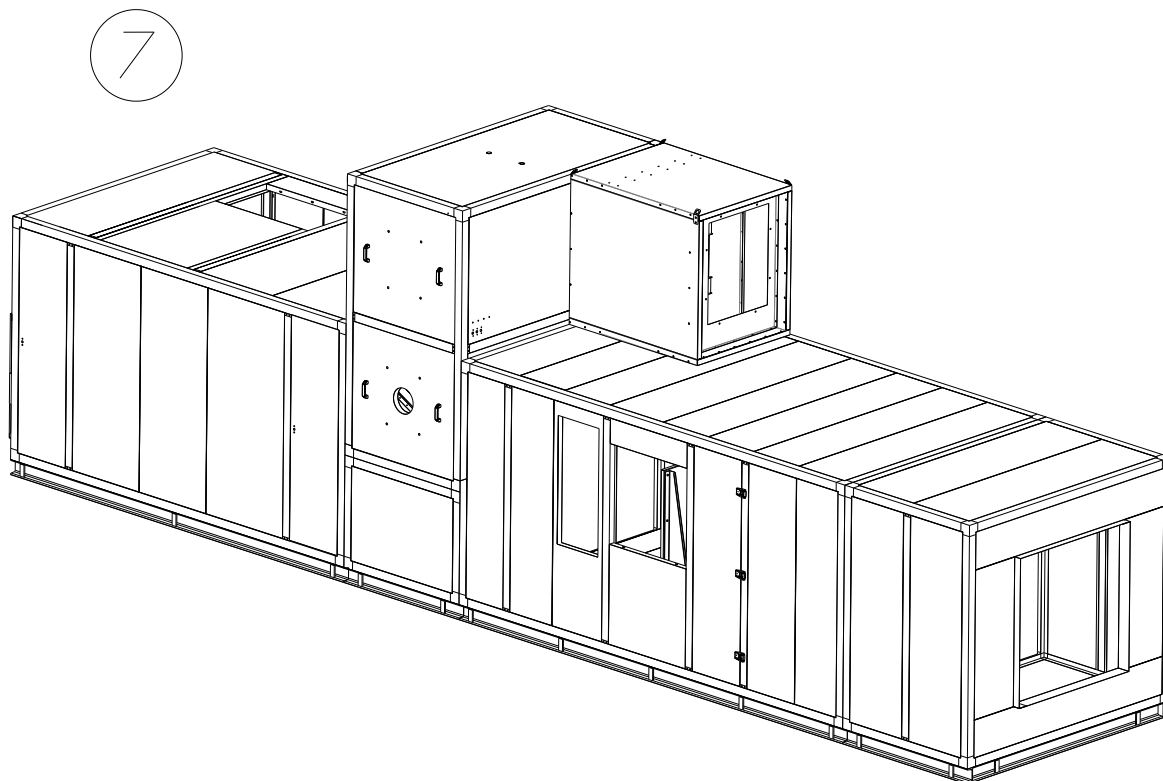


6. Replace the cover, secure it with the screws and re-connect the bulb.



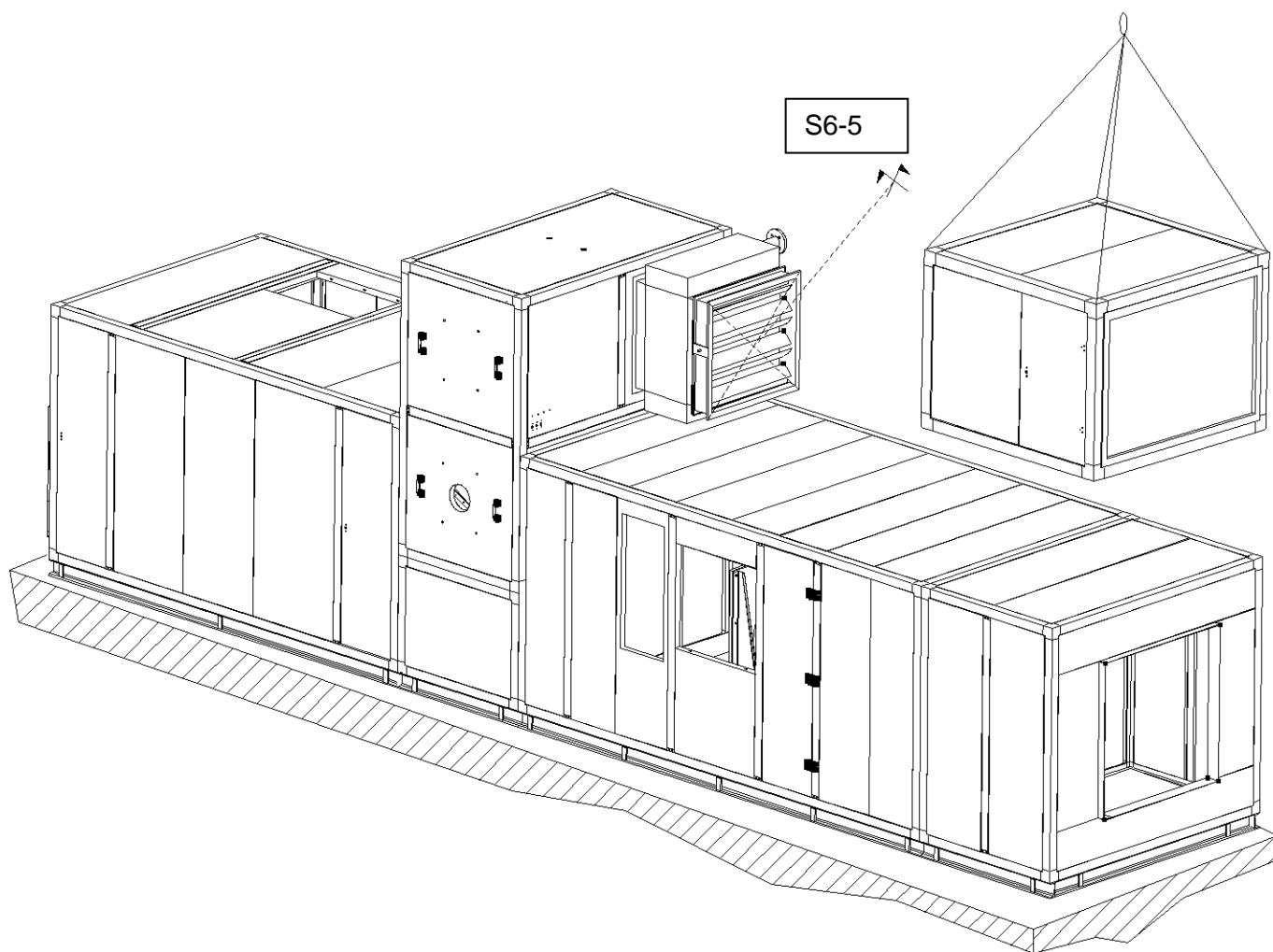
Note: The image is rotated 180° with respect to the reference position

7. Connect the gas supply pipe. This step must be done by an authorised installer.



## 5.7 Module 6 arrangement

- Locate the module identified as -6- (Reactivation Filter).
- Remove the protections for transport.
- Hang it by the locks installed for this purpose.
- Place it over module -3-, at a distance of about 100mm from module -5-, maintaining the alignment axis.
- Approach module -5-, matching the section marked S6-5, and screw the flanges of the gate of module -5- to module -6-.
- **IMPORTANT:** These screws are for fixing only, the module -6- must be supported by module -3-.

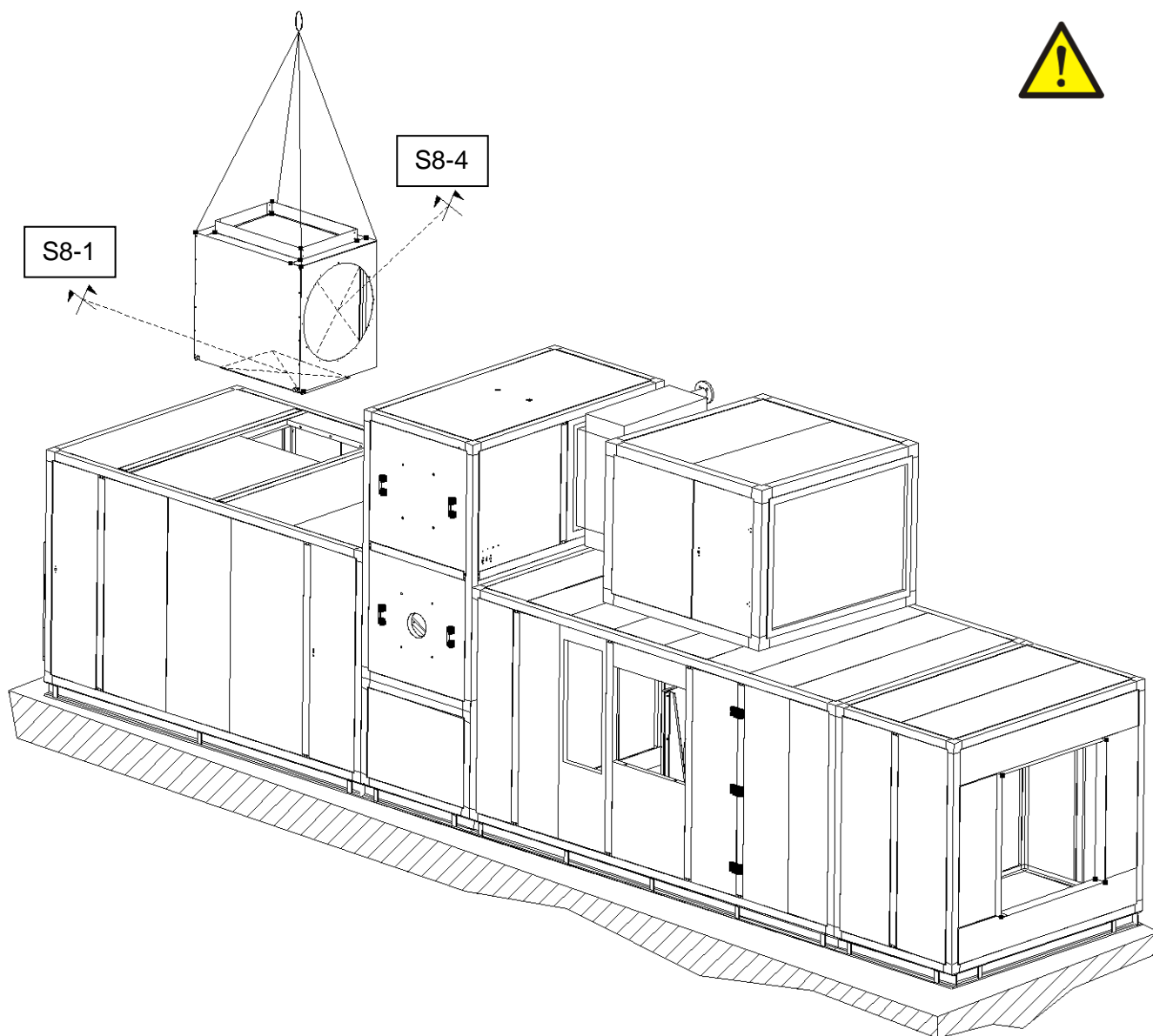


- Once secured, you can remove the tubes that supported the module -5-.

## 5.8 Module 8 arrangement (optional)

If you have module -8-, follow these steps to install it:

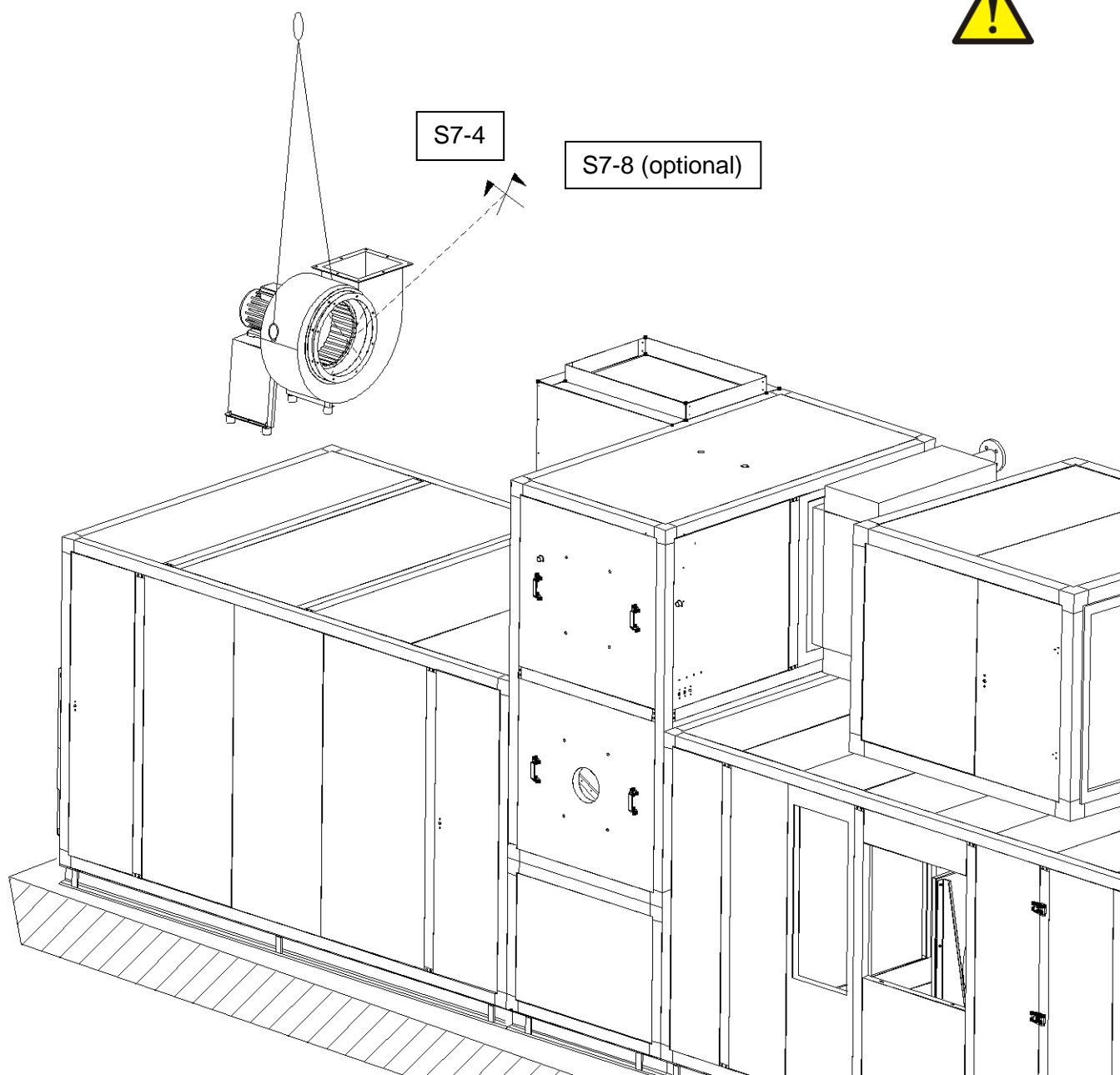
- Locate module -8- and proceed to unpack it.
- Hang it by the locks located in the corners of the module.
- Approach module -4-, matching the section S8-4, while placing module -8- on top of module -1- by fitting it on S8-1.
- Finally, screw the connecting flanges between modules (in sections S8-4 and S8-1).



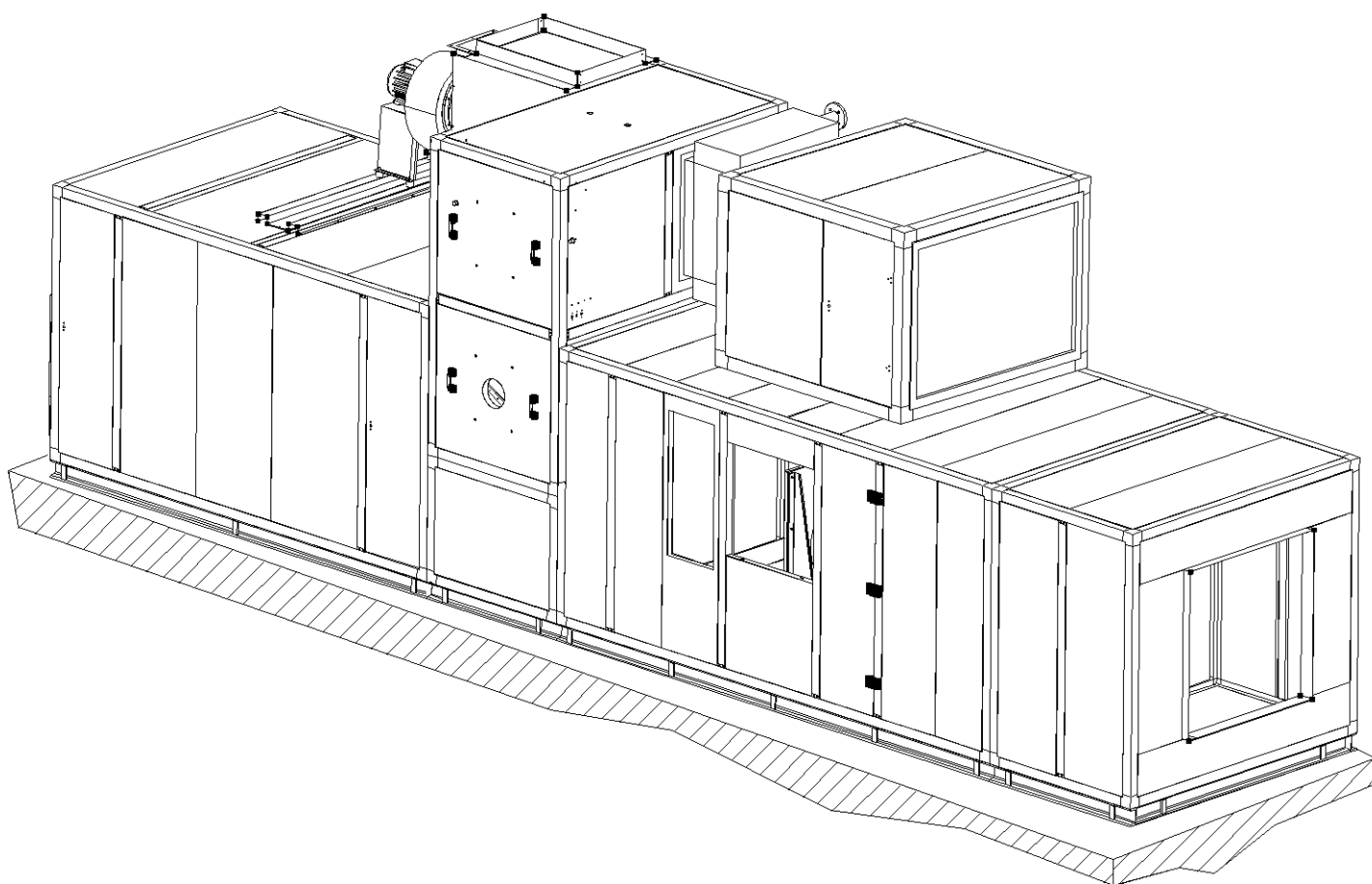
## 5.9 Module 7 arrangement

- Locate the module labelled -7- (Reactivation fan).
- Remove the transport guards and hang it from the frame eyebolts.

**ATTENTION: UNDER NO CIRCUMSTANCES SHOULD THE FAN ASSEMBLY BE LIFTED USING THE MOTOR EYEBOLTS.**



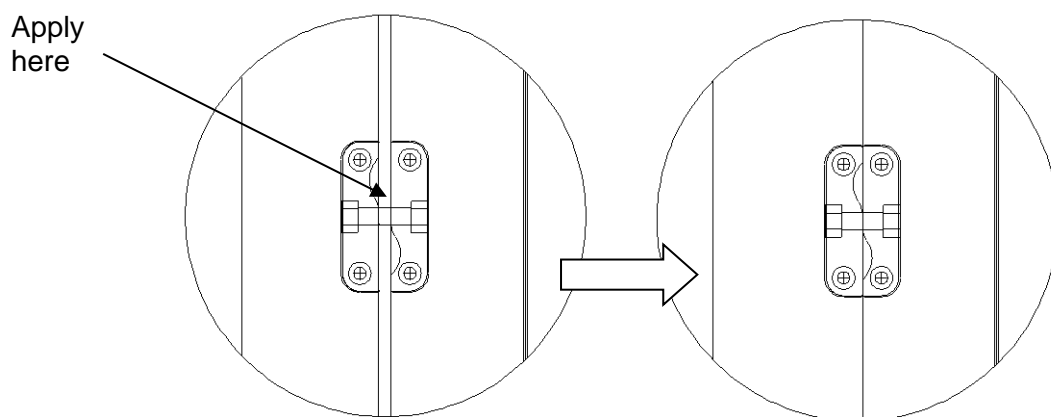
- Locate the self-adhesive neoprene gasket marked with the acronym in the corresponding section S7-4 (S7-8 optional).
- Apply it to the circular contour of the connecting flange.
- Place the fan (module -7-) over the anchors in module -1-.
- Locate the screws marked with the acronym of the corresponding section and tighten them.
- Once these are all in place, proceed with the corresponding tightening according to dimension and position.



Once assembly, according to the image, is complete, it is recommended to apply sealant to the joints of the modules either by profile or flange. If the dehumidifier has been supplied with the sealant in its reference (-K- Run IP54), you will find the 300ml sealant cartridges included (You will need an application tool not included in the delivery).



It must be applied between the joints of the modules, attempting to penetrate 3 to 5 mm between the adjacent faces of the profiles.



Once the sealant has been applied to all longitudinal edges of joints between modules, the screws must be tightened finally, starting with the joints between benches around the contour, and continuing towards the vertical, advancing by level and contour. See tightening torque by position and metric dimension.

THREAD	TIGHTENINGS (Nm)	
	Steel's quality	
	8.8 (8G)	10.9 (10K)
M6	10.5	15
M7	17.5	25
M8	26	36
M10	51	72
M12	89	125
M14	141	198

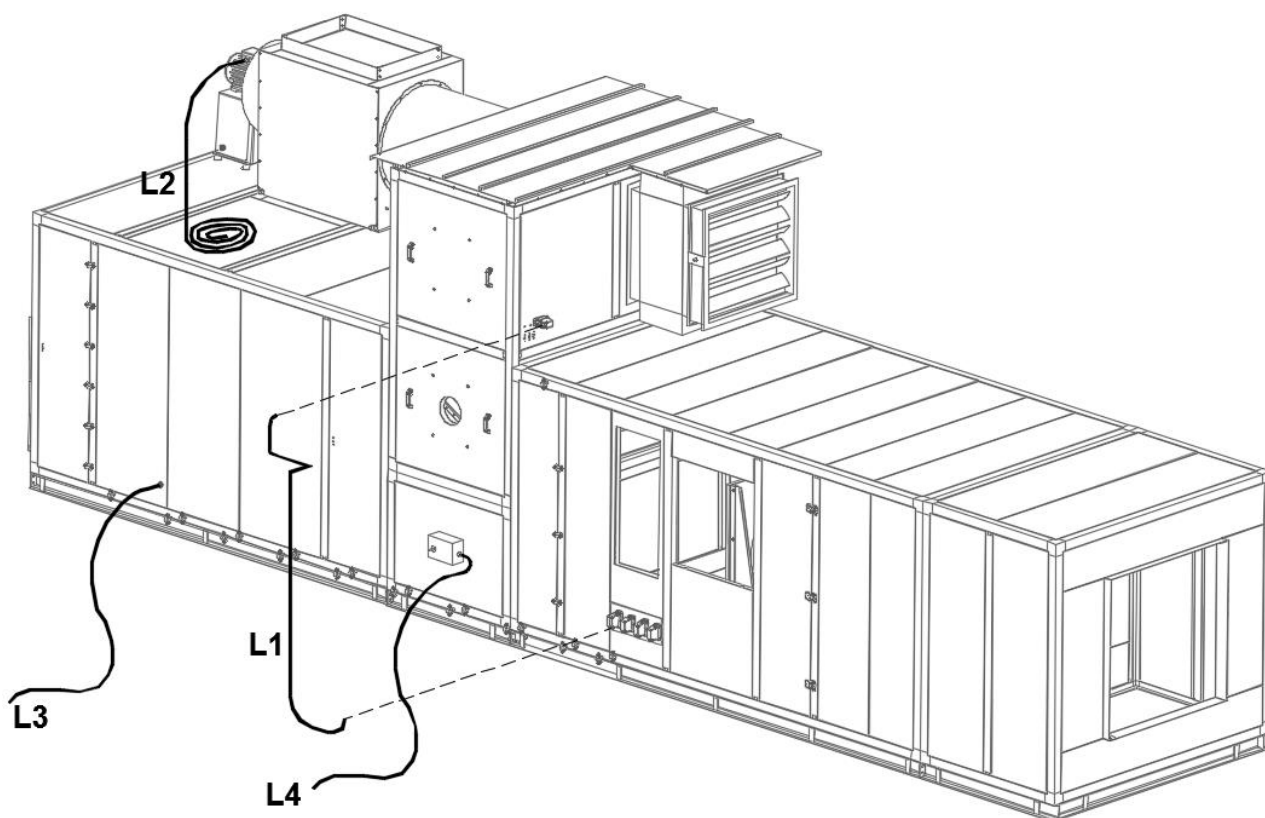
## 6. Electrical wiring.

Find the electrical cables and secure them using the attachments installed at the front of the modules according to the packing list:

Depending on the model and configuration, there will be two types of cables in the delivery:

- A pre-installed/connected cable at one end equipped at the other end with an industrial aerial quick connector.
- A cable provided with an industrial aerial quick connector at both ends.

Both must be connected later to their respective sockets on the connection plate located at the bottom of the control panel.



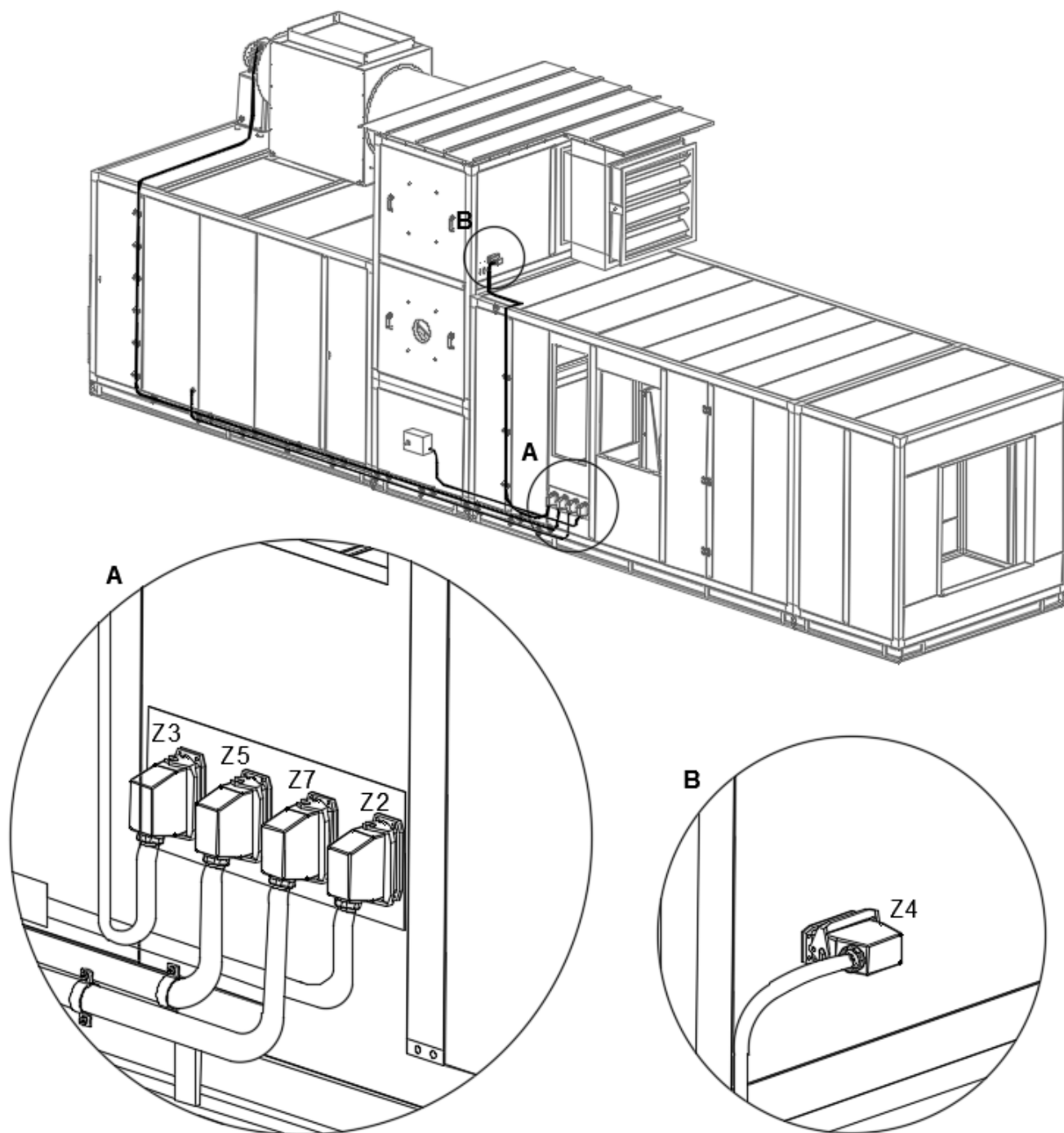
Identify and unwind all cables.

The following table lists the connectors and sockets to be assembled:

Cable	Powered module	Ends to connect	Corresponding connector	Standard/ Optional
L1	Basic unit	2	Z3 and Z4	Standard
L2	Reactivation fan	1	Z5	Standard
L3	Pressure switch/Process filter	1	Z7	Optional.
L4	By-pass gate	1	Z2	Optional



Finally, the different cable connections should be as shown below:



## 7. Connection of the drainage

The following optional elements have a condensate or spillage collection tank:

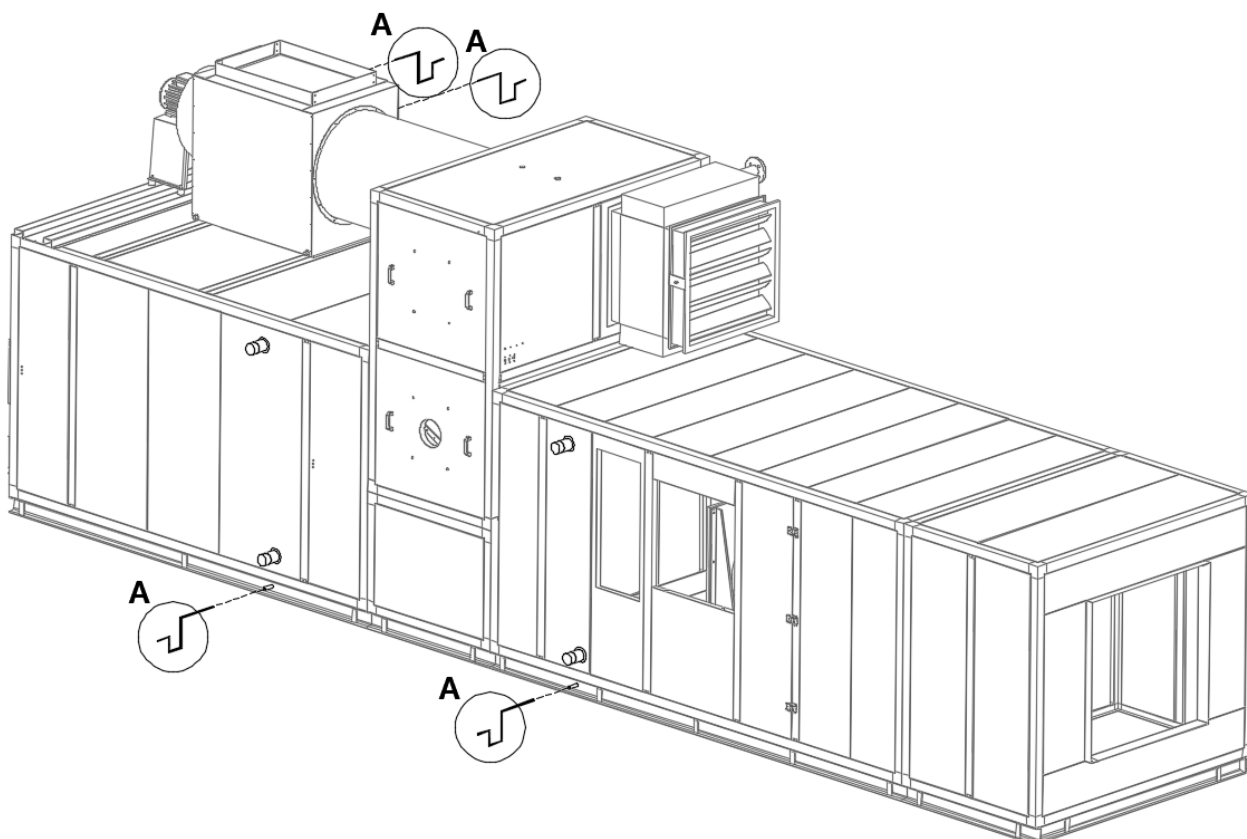
- Pre-cooling battery
- Pre-heating battery
- Post-cooling battery
- Post-heating battery
- Heat exchanger

The outlet pipe of the tank must be connected to the drainage network:

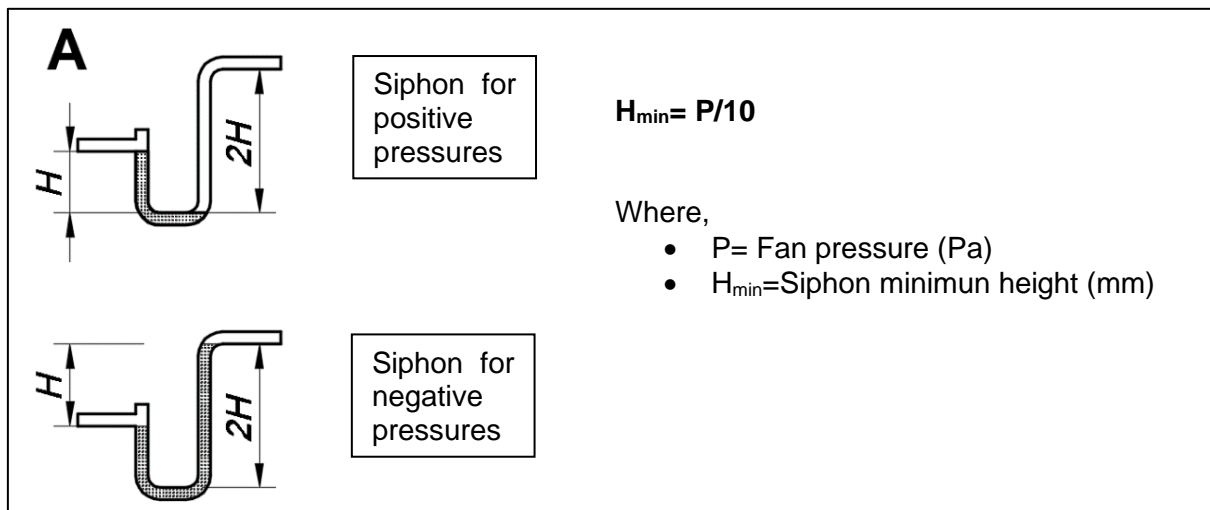
Connect the drainage network to the common outlet (optionally, a cut-valve can be installed before the siphon):



- The connection of the water outlet to the drain must have a siphon or water seal of sufficient height (2H) to exceed the system pressure and ensure the basin is emptied completely for hygiene reasons. The system will also have the normal inclination of any drain line. See detail "A" page 51.
- The siphon must be able to drain freely and must not have direct access to the sewer pipe.
- Recovering water from condensates or spills due to breakage in the drinking water network is totally prohibited.



Detail "A" shows the minimum dimensions that the siphon must have:

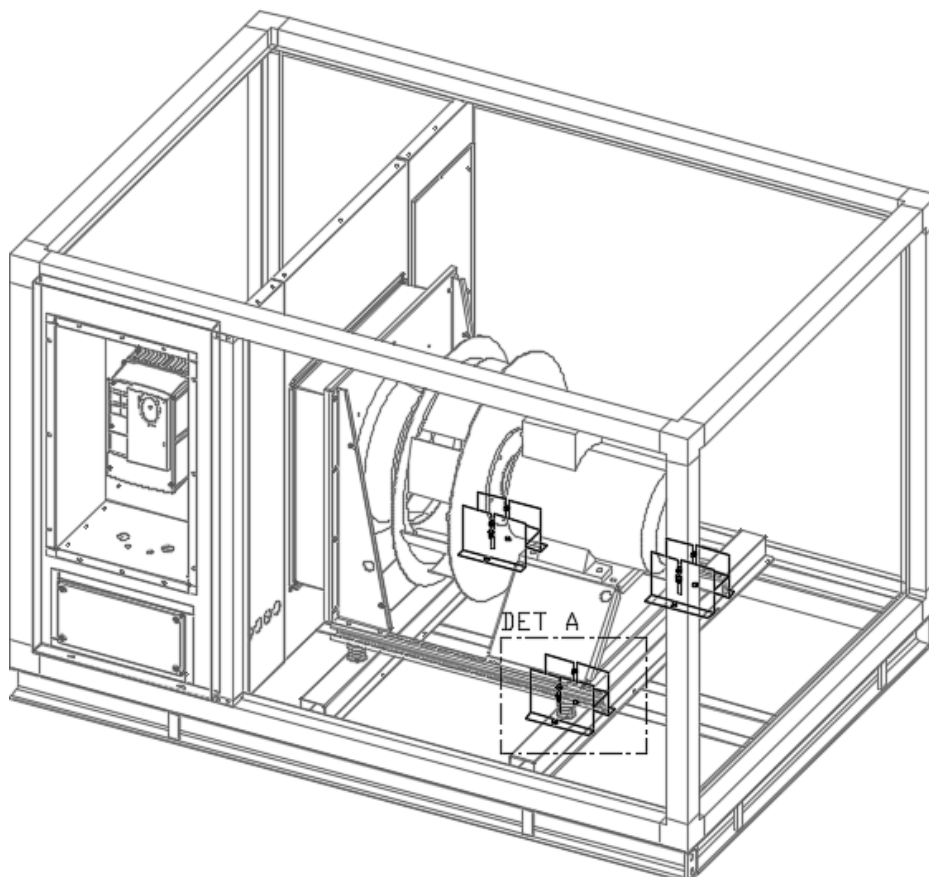


## 8. Removing the transport fixing plates from the process fan

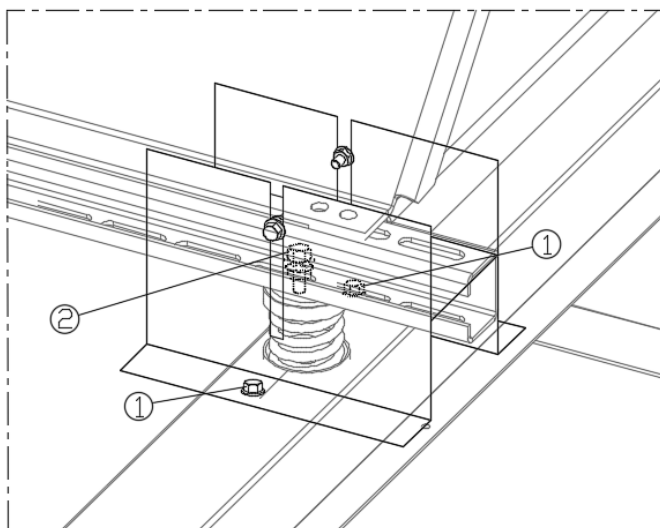
Before following the start-up steps according to the “MUSX-ES-XX” manual, the temporary fixings located on the process fan must be released. These fixings are used so that the fan does not move when the machine is transported.

Locate the 3 H-shaped fixing plates located on module 3.

These pieces are located on the different shock absorbers placed on the process fan support, as shown. Depending on the size of the fan, the number of fixing H plates may vary.

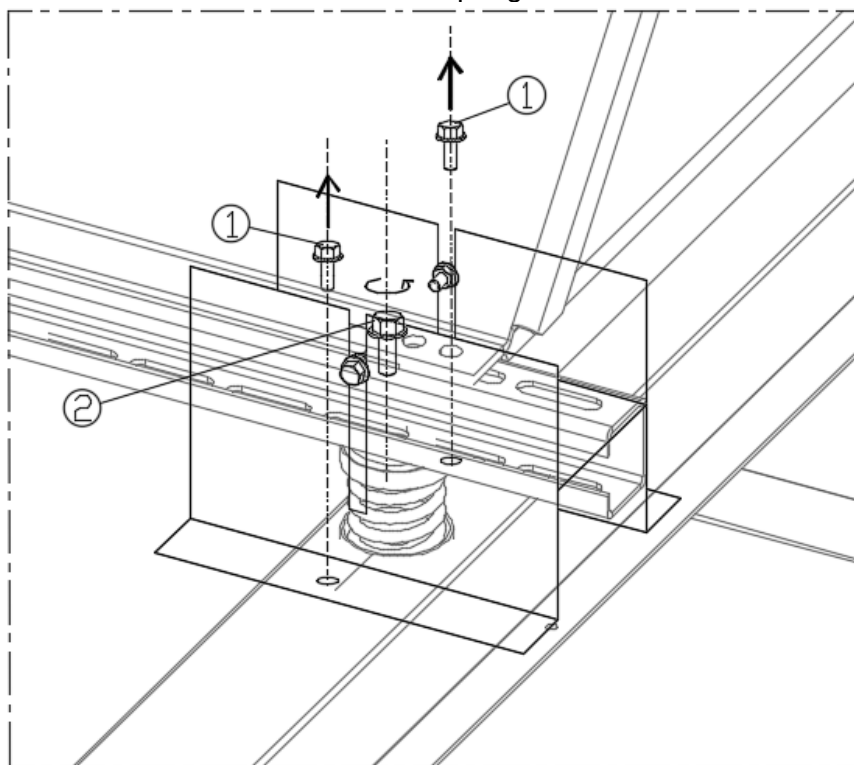


DET A

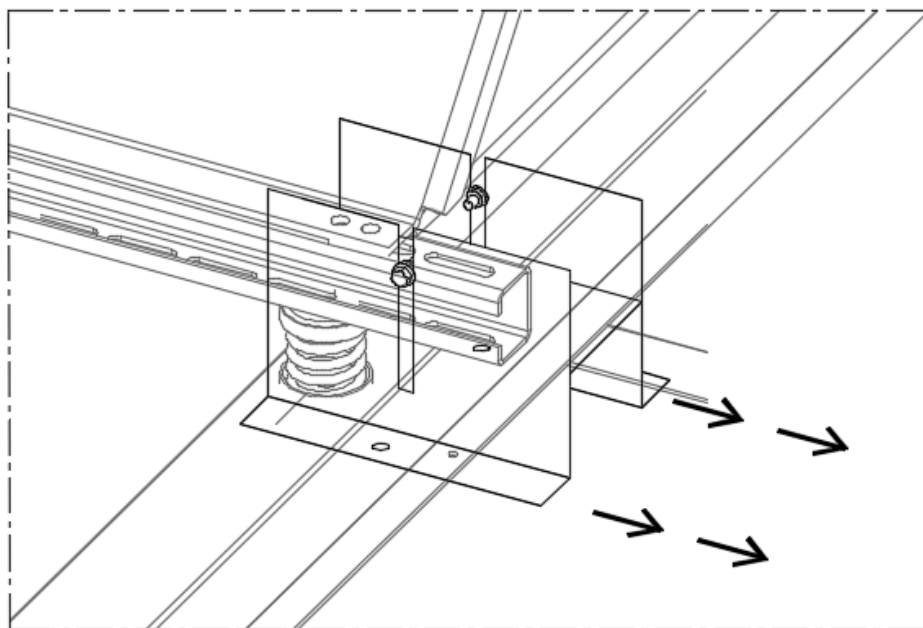


Remove the fixing plates in the following sequence:

1. Remove screws that fix the plate to the lower profile (1) and loose the screws that fixes the fan frame to the spring.



2. Once the lower profile plates are released, they are removed from the machine.



3. Finally, re-tighten the (2) screws.