



ASSEMBLY INSTRUCTIONS DFLEX SERIES

IMSX-EN-20-0

In compliance with the Rules and Standards of the European Union on Machine Safety,
it is essential to read this protocol carefully before installing any equipment.

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1. Introduction.

Dear Customer,

To ensure the DFLEX dehumidifier is properly assembled, please read these instructions and retain them 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

<http://www.fisair.com/contact>

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

A copy of these instructions should be in (or near) the place where the dehumidifier is to be installed.

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 life-threatening conditions if the instructions are not followed.



Attention

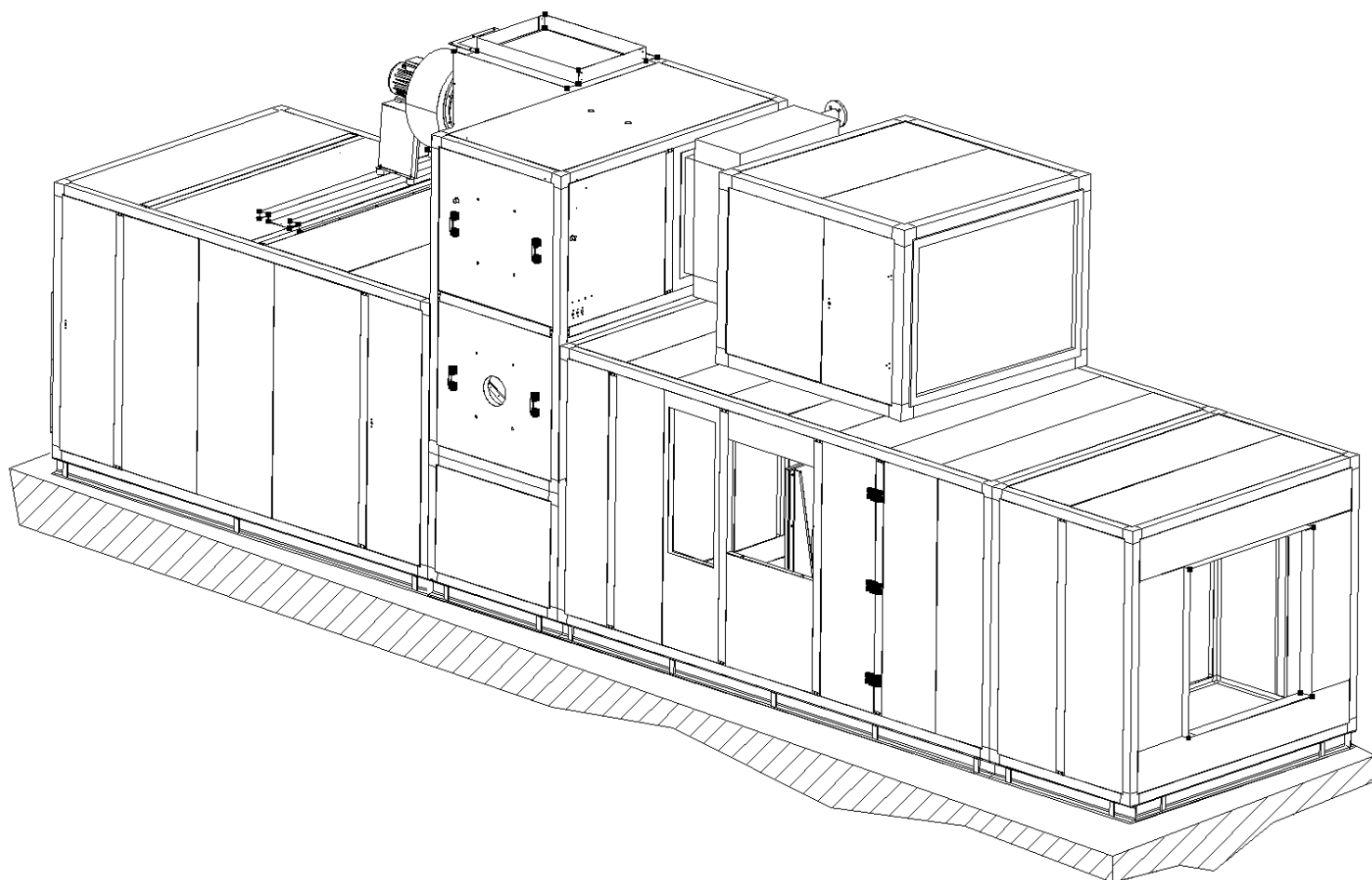
This is a safety alert symbol. It serves as a warning of the potential bodily injury when performing operations such as moving towards or lowering the modules.

Observe all safety information with this symbol to avoid any situation that could lead to injuries and/or damage to the unit.

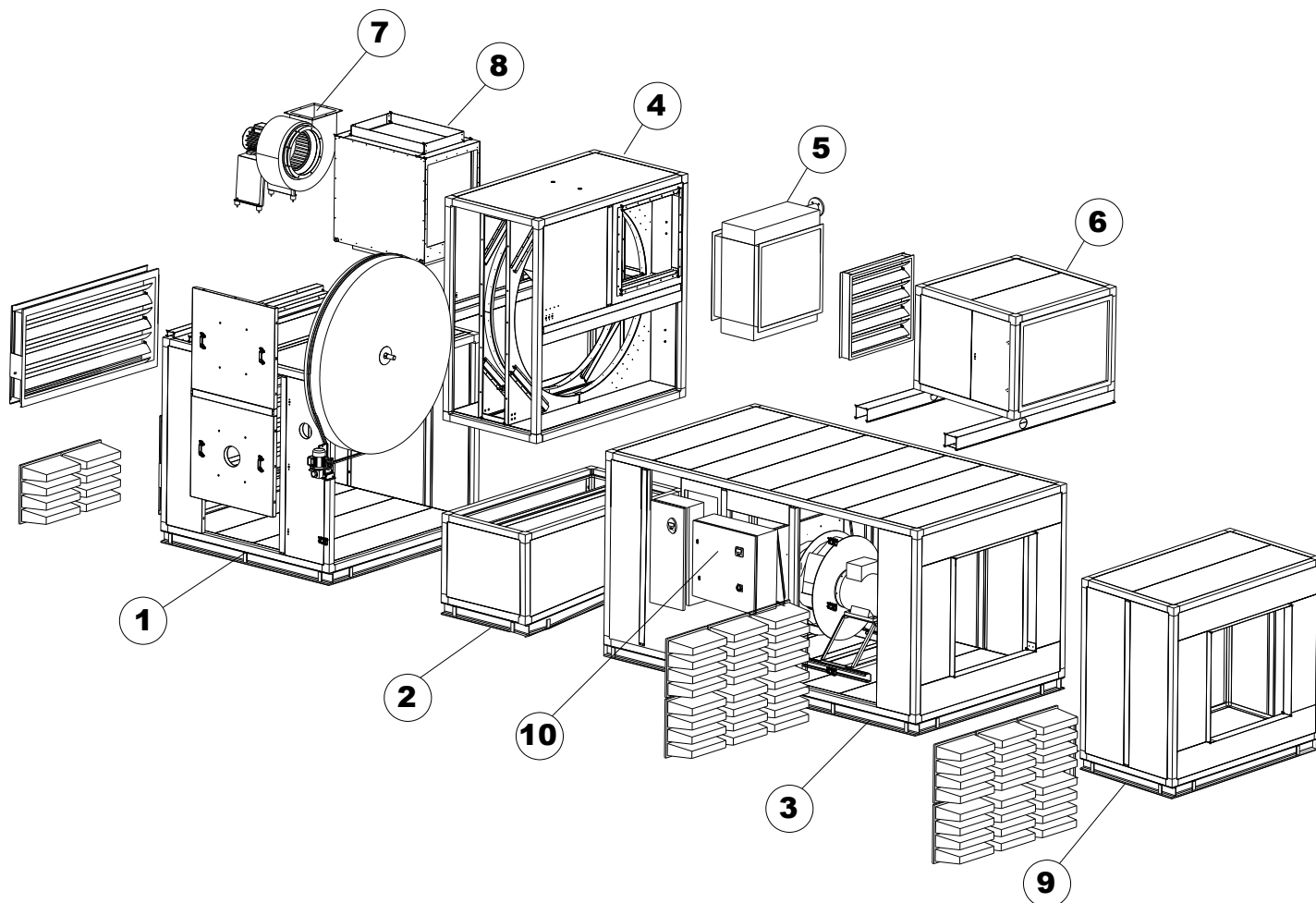
We recommend that the personnel responsible for the equipment should use these instructions to familiarise themselves with the goods they will receive and subsequently assemble.

Each operation must be performed by personnel qualified in the appropriate discipline.

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



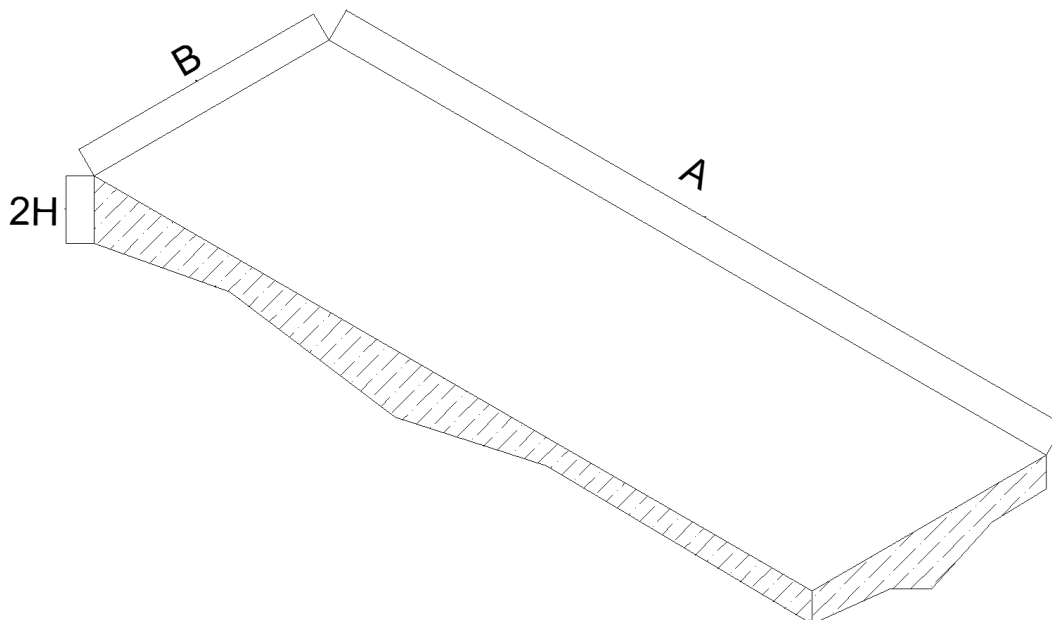
3. Identification of parts



- 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 (opcional).
- 9- Absolute Filtration module (opcional).
- 10- Control Panel.

4. Location platform

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

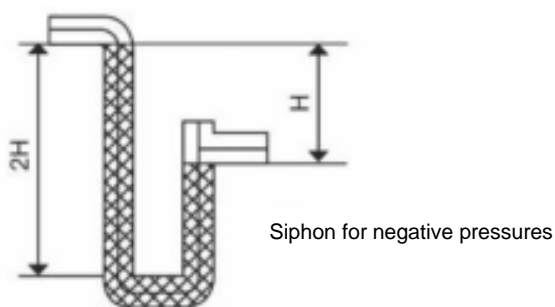


Refer to dimensions A and B in the DFLEX external dimensions diagram.

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.

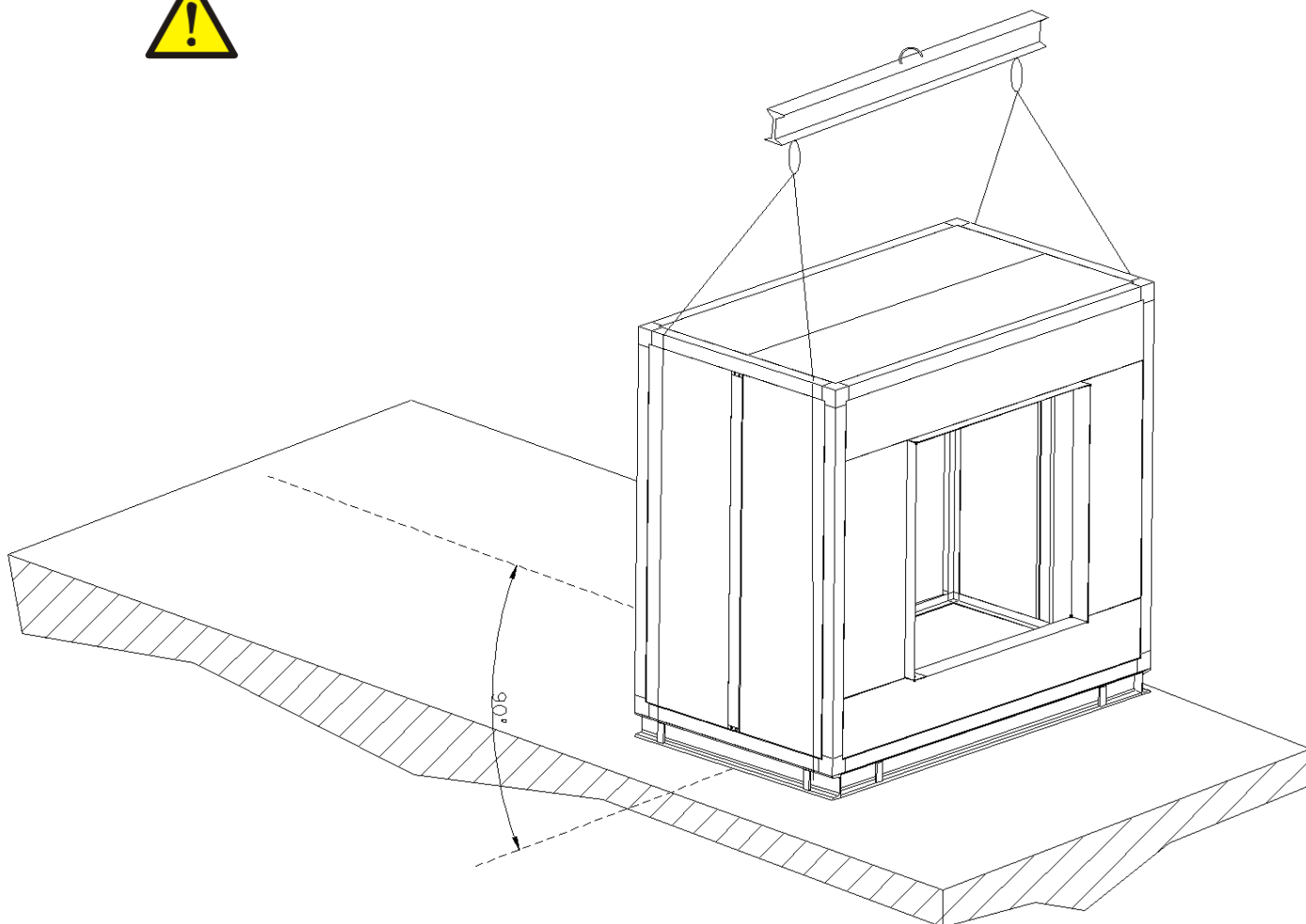
5. Arrangement of modules

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:

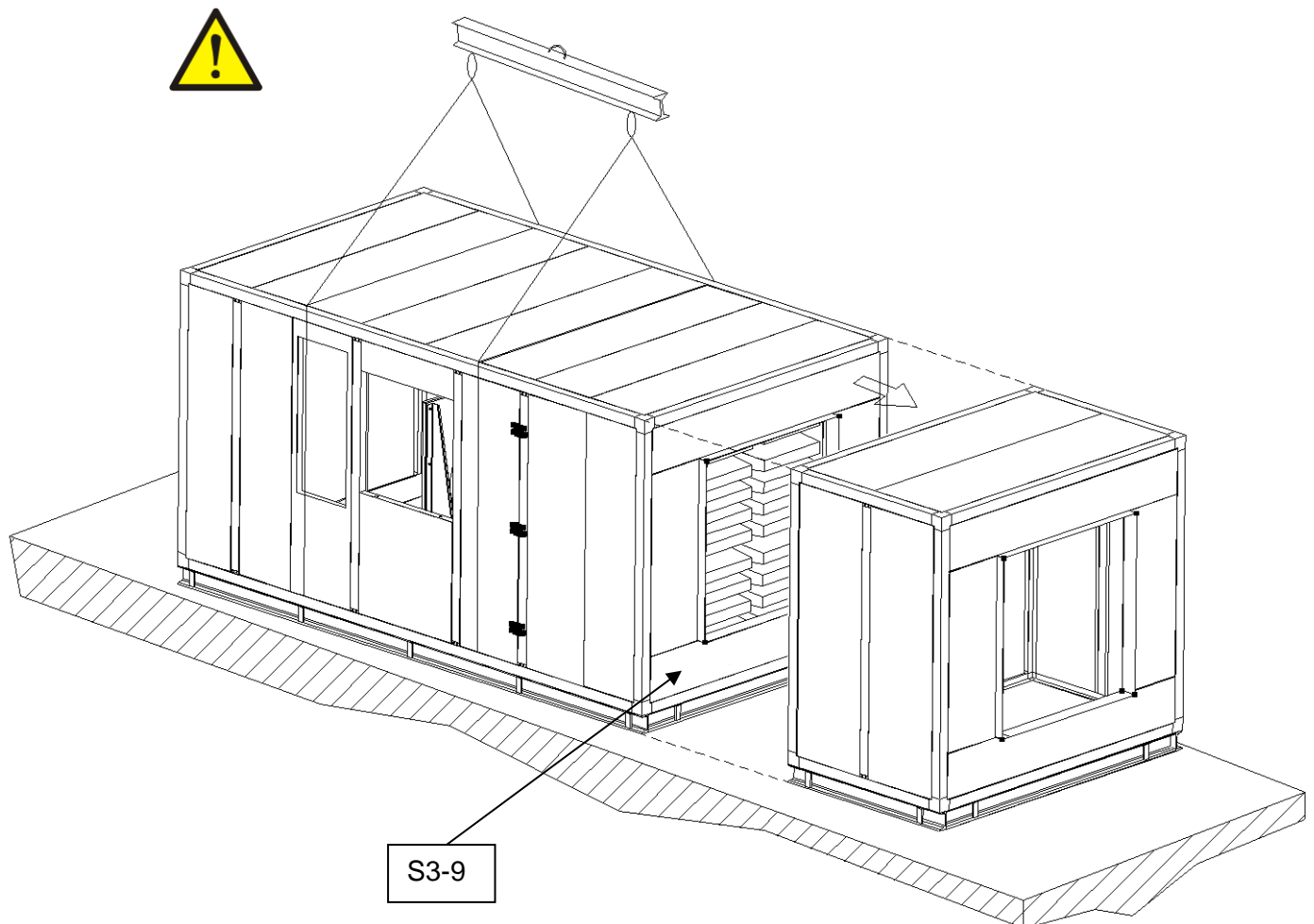
- Locate the module labelled -9- (or module -3- if -9- is not available).
- Position it 100mm from the right and front edge of the platform, aligned with the longitudinal axis of the platform.
- Remove the transport guards.



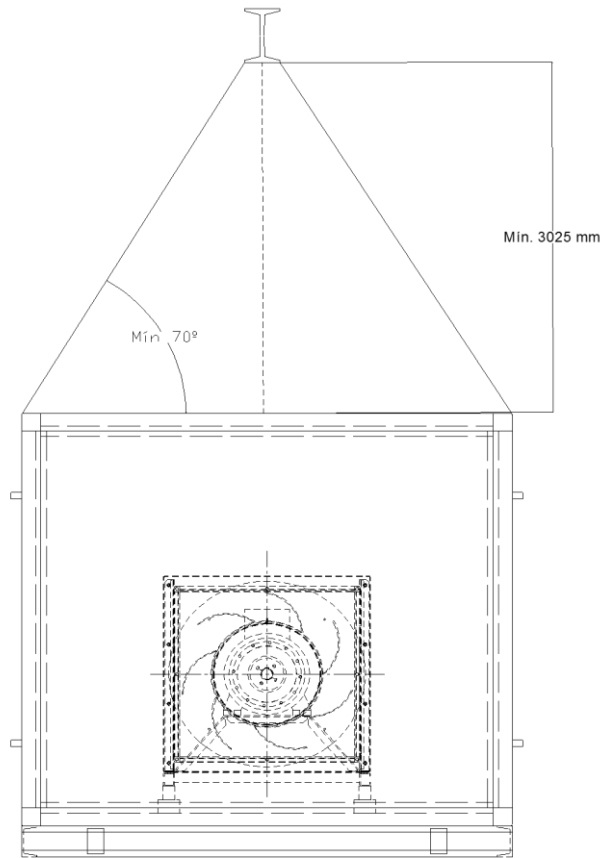
5.2 Module 3 arrangement

Implementation steps:

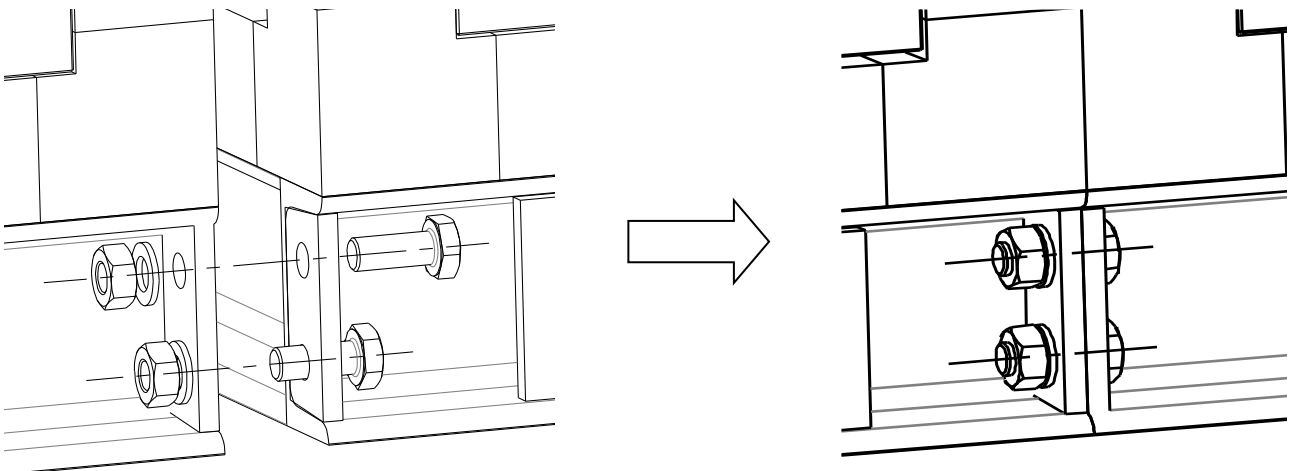
- Locate module -3-
- Remove the transport guards and unload it at $> 600\text{mm}$ in line with module -3-, and match the section identified as S3-9.
- Inside is the box with gaskets and screws for later assembly according to instructions.
- Then apply the self-adhesive sealing gasket to the contact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



- In order to avoid that the traction of the cables can deform the module, it is important to comply with the dimensions of the following figure:



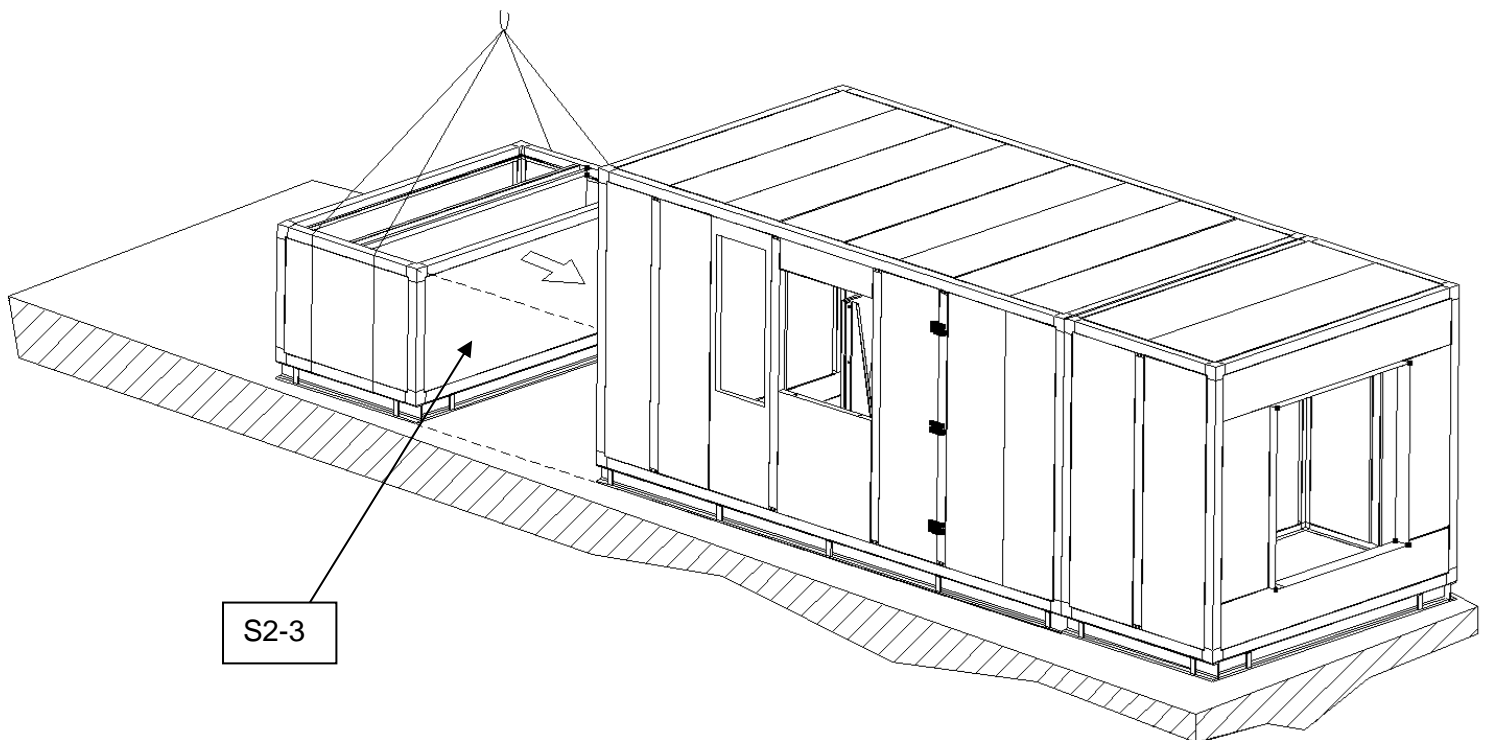
- In order for the minimum angle to be 70°, the height at which the crane should be placed must be at least 3025mm. This applies to all lower modules (1, 2, 3 and 9).
- Once the module -3- has been placed on the platform, move it longitudinally until it makes contact with the contiguous section, module -9-.
- Mount the bench joint bolts without giving the final tightening.



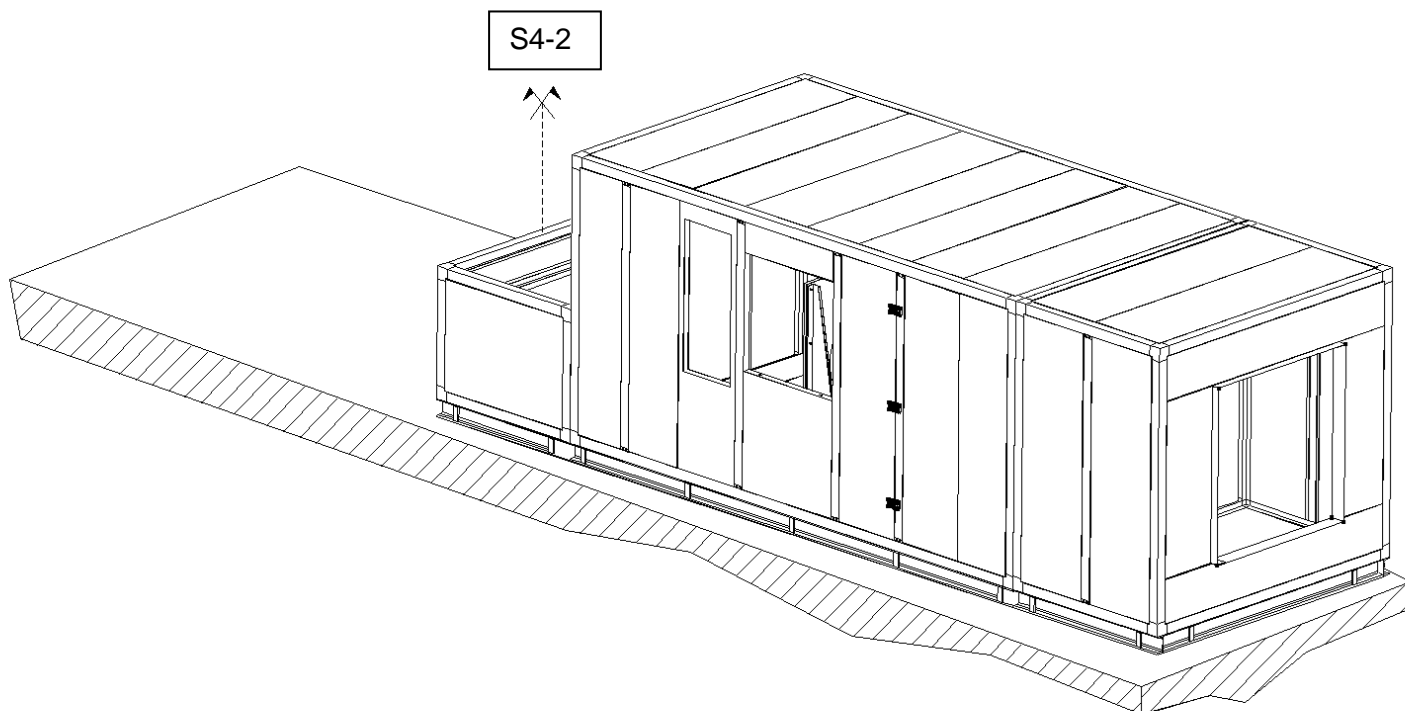
5.3 Module 2 arrangement

Implementation steps:

- Locate module -2-
- Remove the transport guards and unload it at $> 600\text{mm}$ 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 only on module -3- face.



- Once module -2- has been left on the platform, move it longitudinally until it makes contact with the contiguous section, module -3-.
- After obtaining the phase result as shown in the following figure, apply the self-adhesive sealing gasket in this case in section S4-2 (Vertical union between modules -2- and -4-).

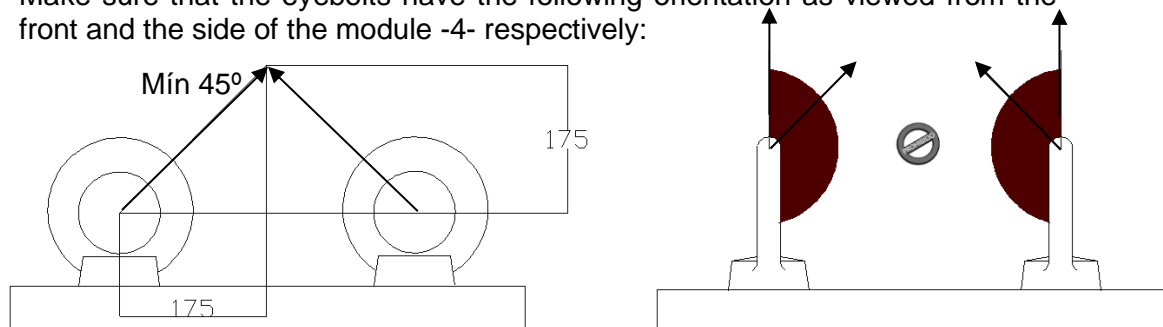


- Finally, install the bench joint bolts without giving the final tightening.

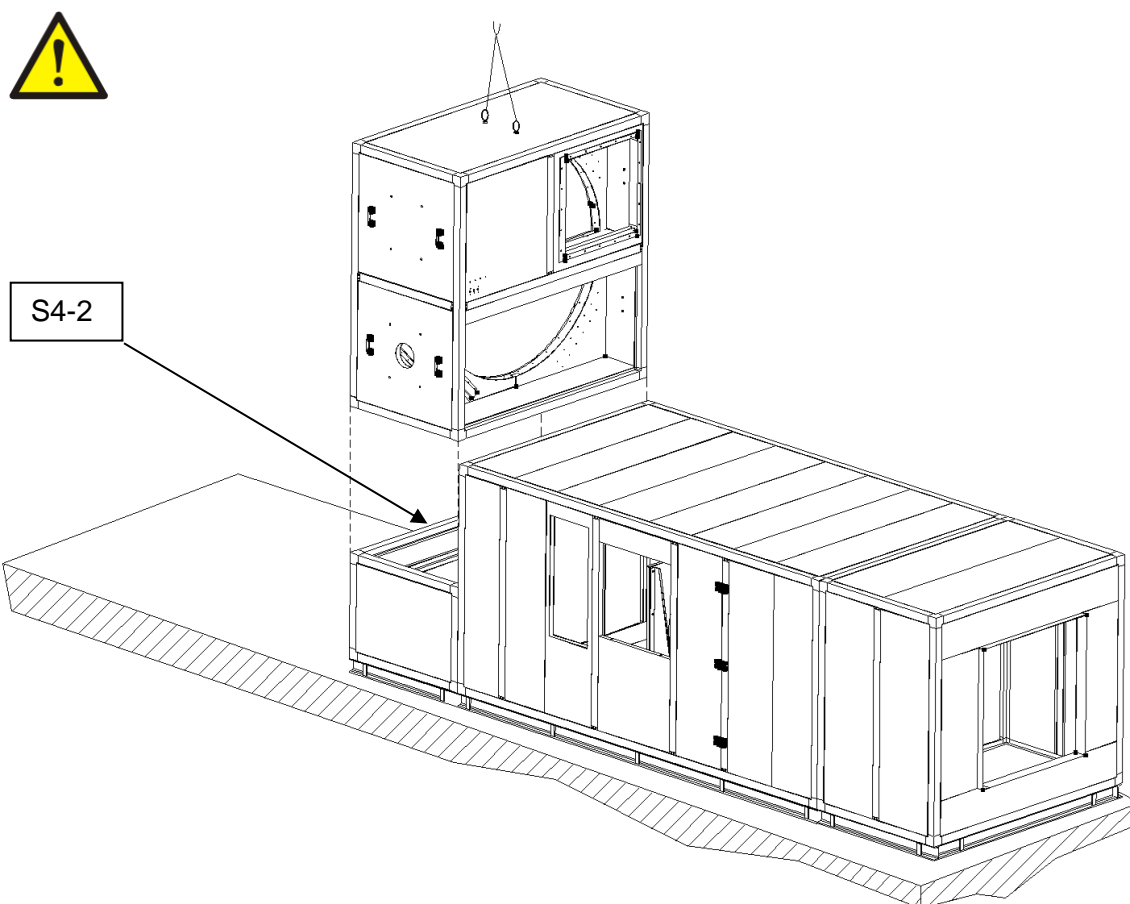
5.4 Module 4 arrangement

Implementation steps:

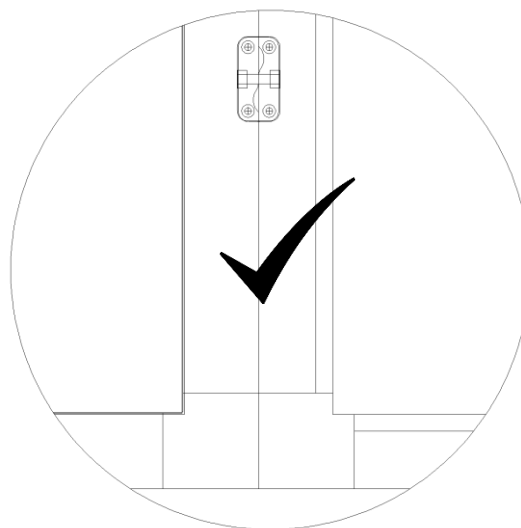
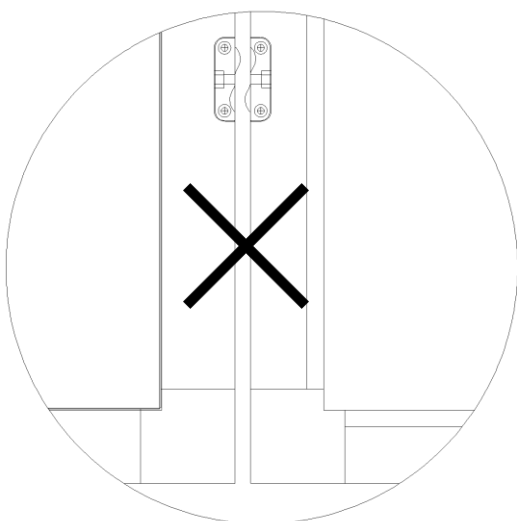
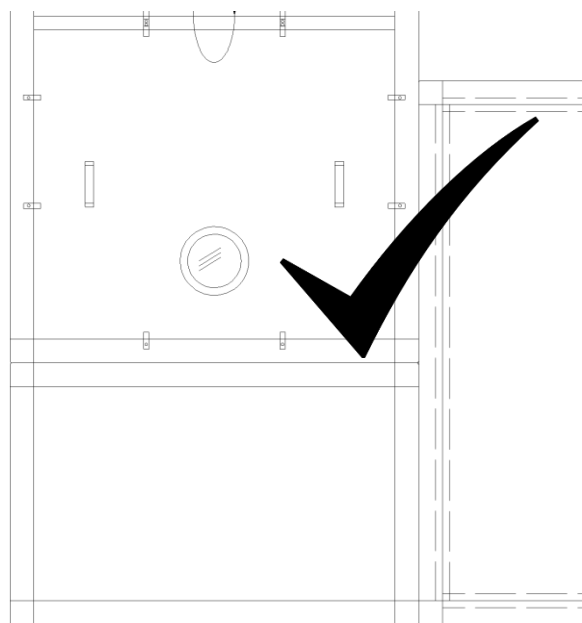
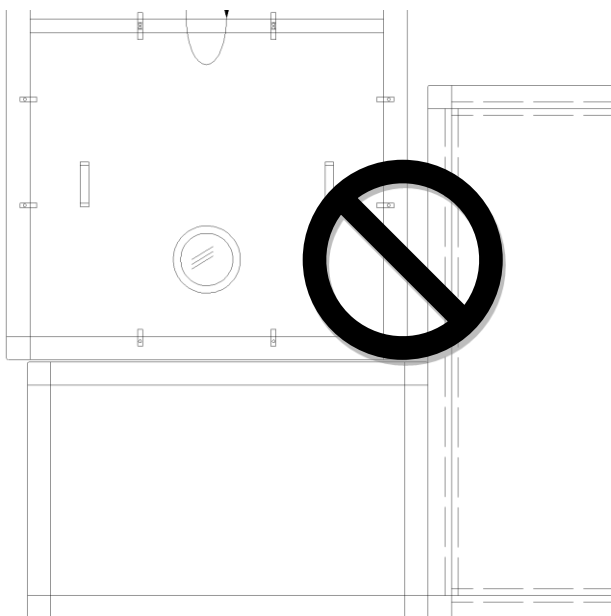
- Locate the module labelled -4-
- Remove the transport guards.
- Suspend it using the eyebolts at the top, installed for this purpose.
- Make sure that the eyebolts have the following orientation as viewed from the front and the side of the module -4- respectively:



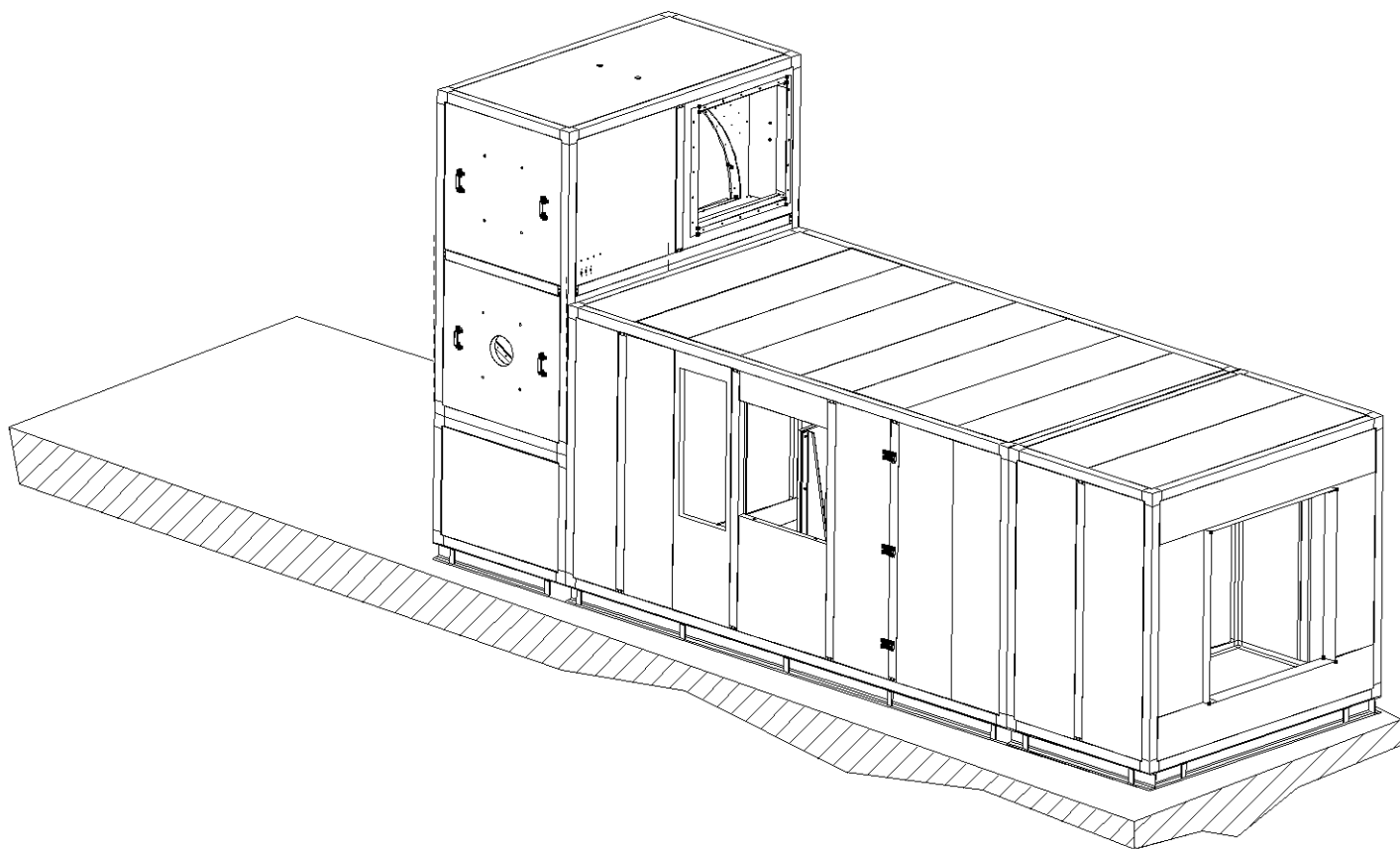
- The minimum angle of the ropes with the eyebolts must be 45 °, therefore the minimum height at which the crane can be placed is 175 mm.
- Place module -4- on module -2-, with section S4-2 perfectly aligned.



- Without removing the slings, place the fastening screws in section S4-2 to avoid unwanted movement. **IMPORTANT:** The bolts should not exert traction, they are only for fixing. To do this, 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.



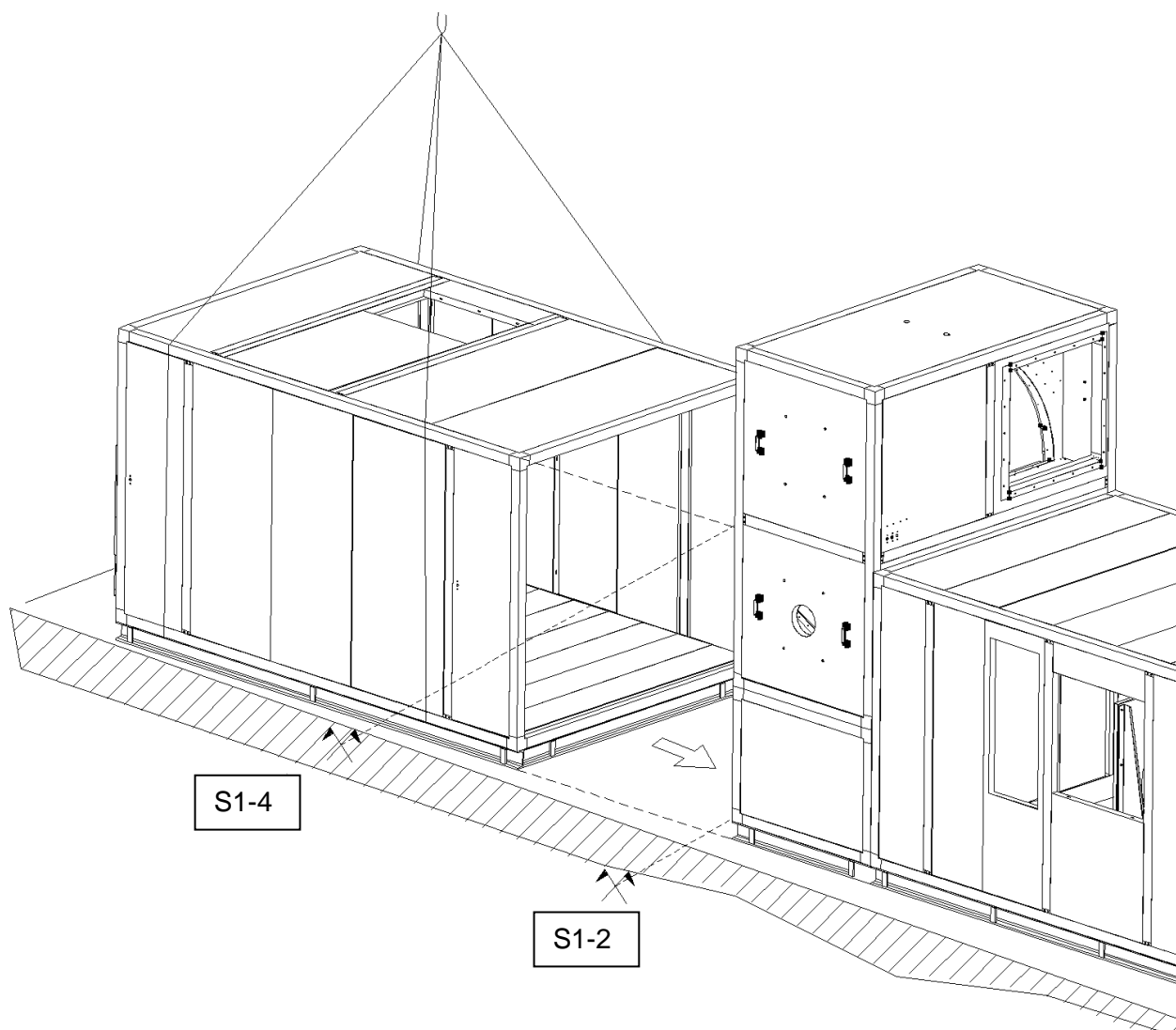
The following result is obtained:



5.5 Module 1 arrangement

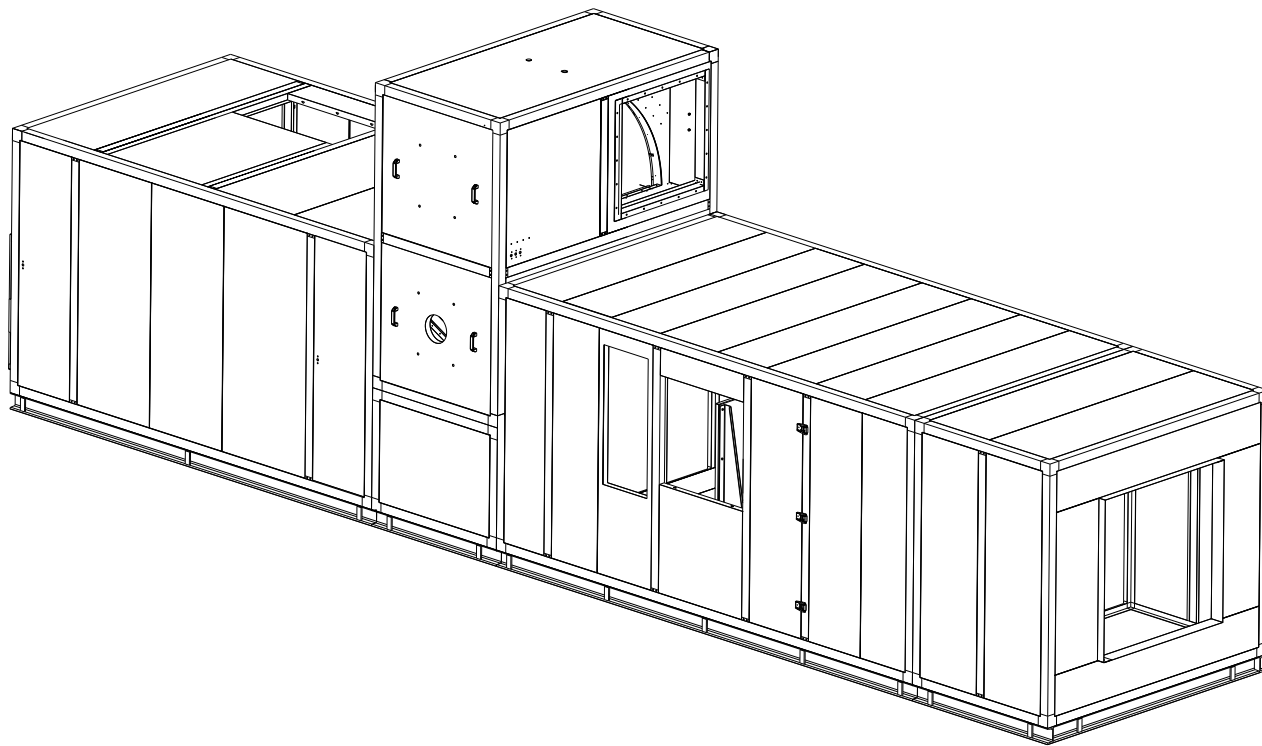
Implementation steps:

- Now locate and unpack module -1-. Apply the self-adhesive sealing gasket to the contact edge of sections S1-4 and S1-2 only on the face of the module.
- 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 deposited on the platform, move longitudinally until it makes contact with the contiguous section.



- When the module -1- is approached, place the screws of the connecting sections between the modules -1-, -2- and -4-. **REMEMBER:** The bolts should not exert traction. To do this, 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

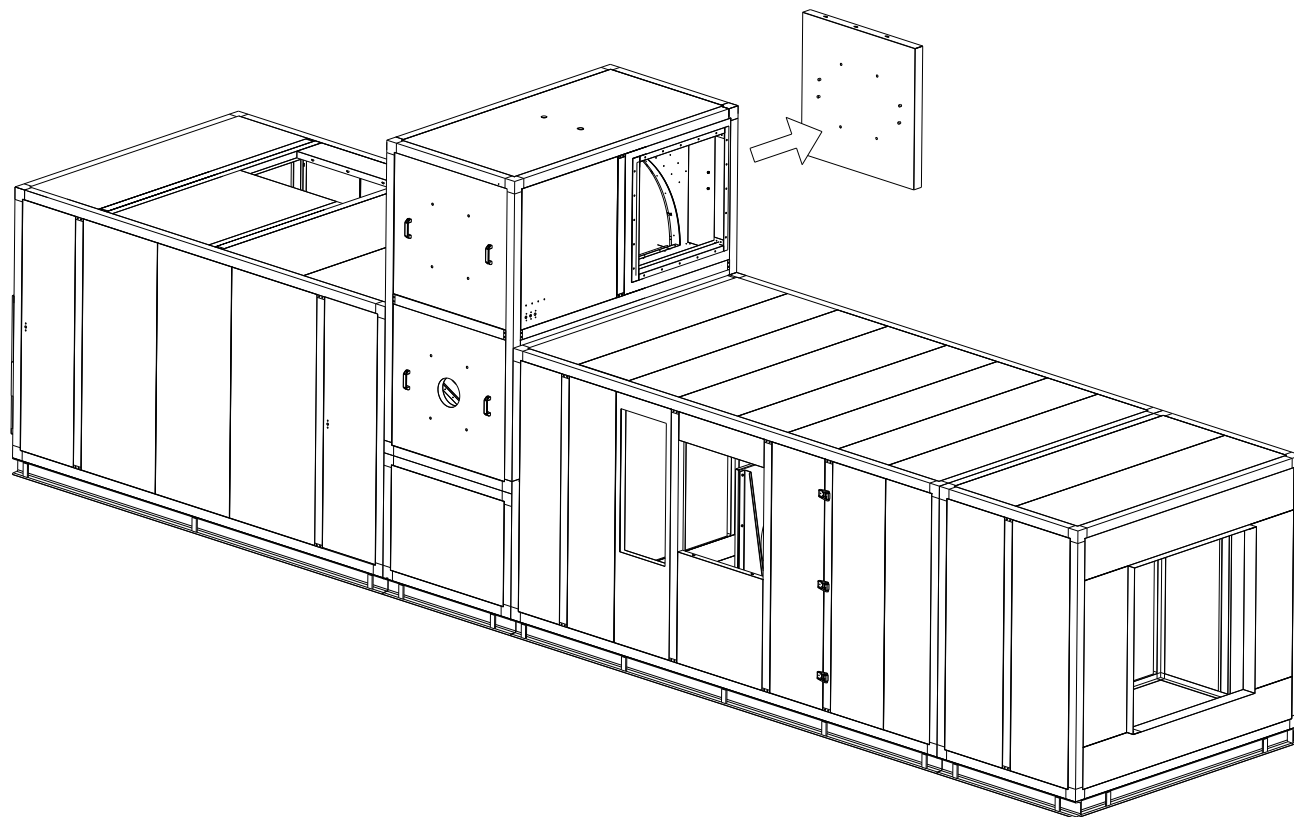


After obtaining the result of the previous phase, as shown, find the MOD 5 (reactivation heater) according to the type corresponding to the specified and received model. Similarly, find its assembly accessories, such as sealants and screws, included in a blister pack marked with the section identification.

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

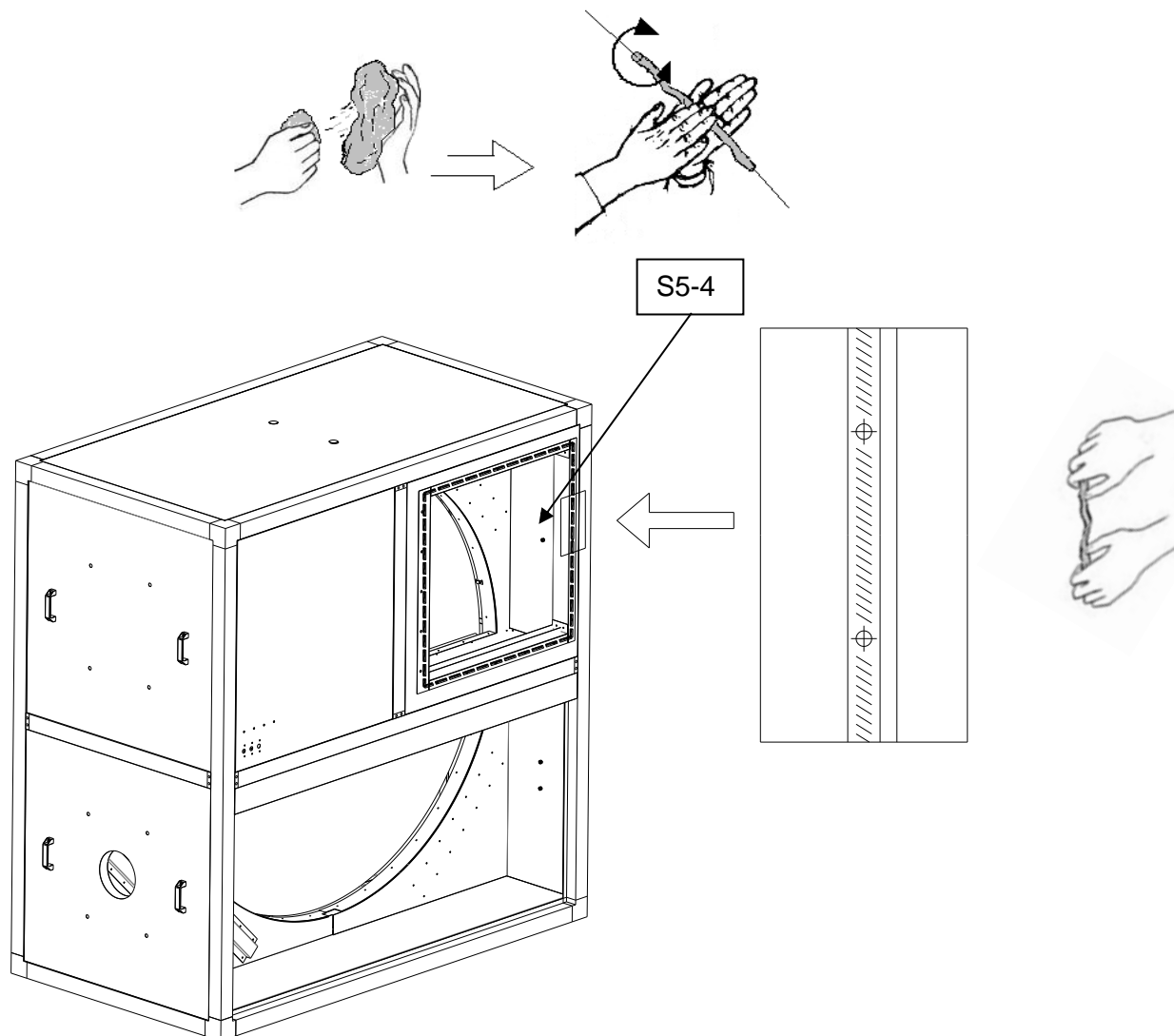
- Steam unit. See section 5.6.1
- Electric heater unit. See section 5.6.2
- Gas burner. See section 5.6.3

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



After finding the putty for the joints between the accessories, shape and apply it as follows:

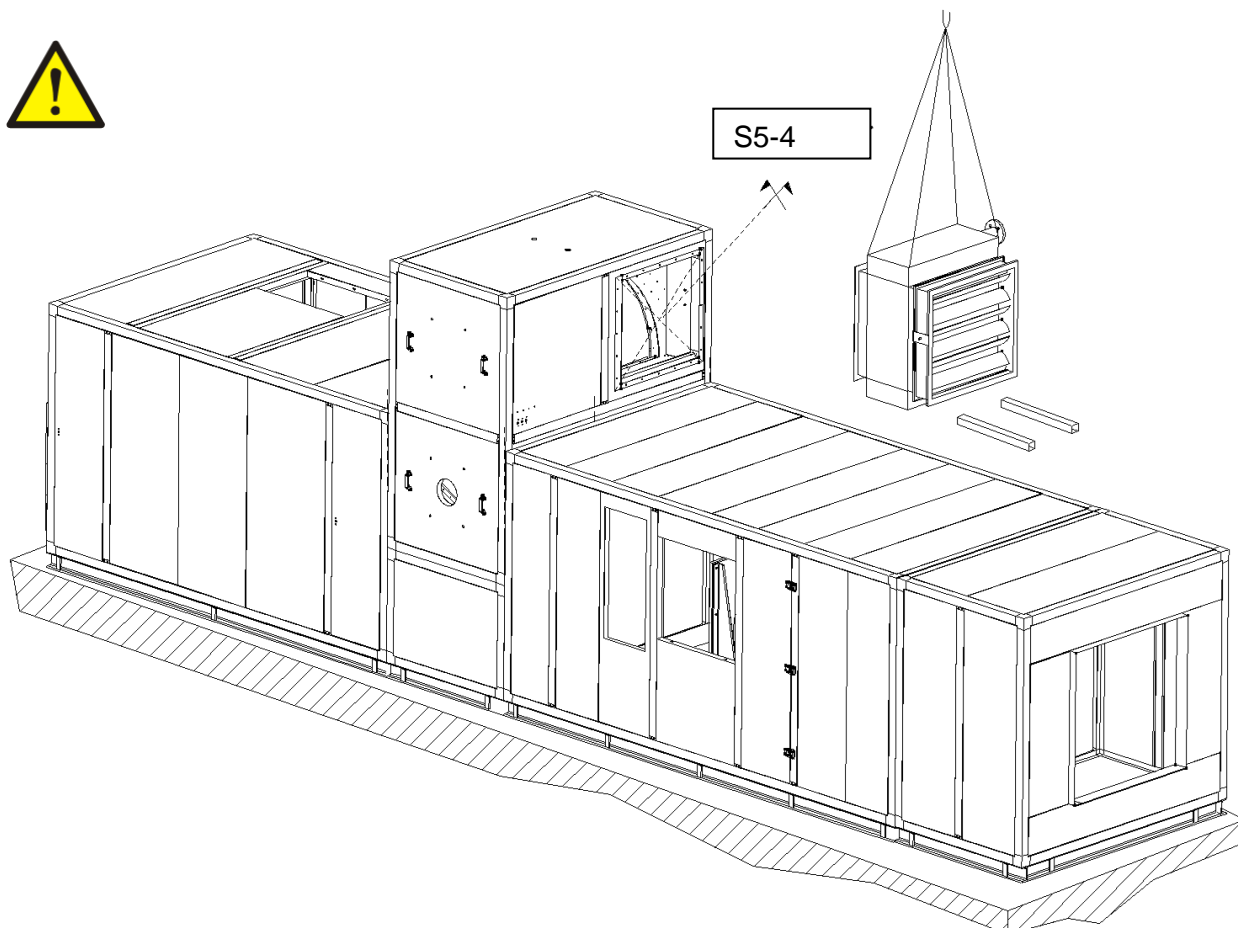
- Take a portion of about 4 cm³ and knead it cylindrically into a string shape of 7-9 mm in diameter.



- Apply the string obtained in the rectangular flange connection of both modules, and specifically in section S5-4 corresponding to the MOD4 (basic unit).
- Repeat this operation until completing the flange throughout the entire outer perimeter. 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

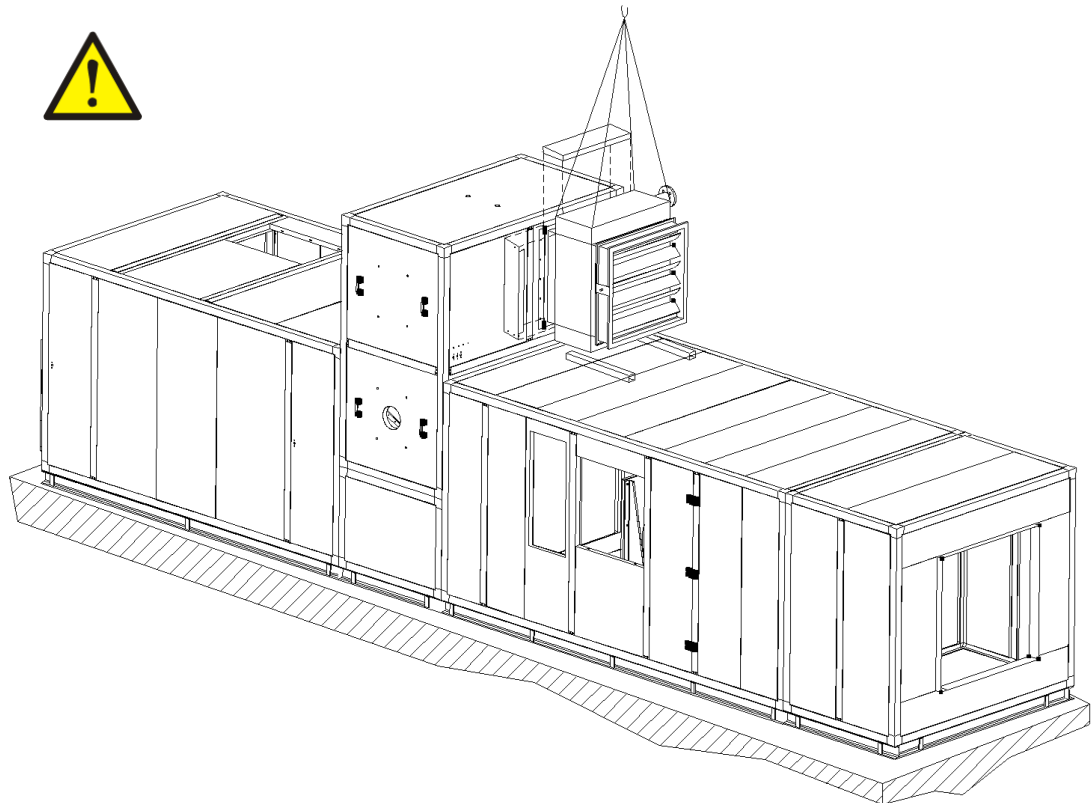
Find and unpack module -5-, the fibreglass insulation retaining packaging shell and the insulation itself that has to be assembled around the indicated flange.



Implementation steps:

- Module -5- (steam battery) has a mark coincident with the orientation and section S5-4 on one of its flanges.
- There are also two square metal tubes that will be used for later assembly.

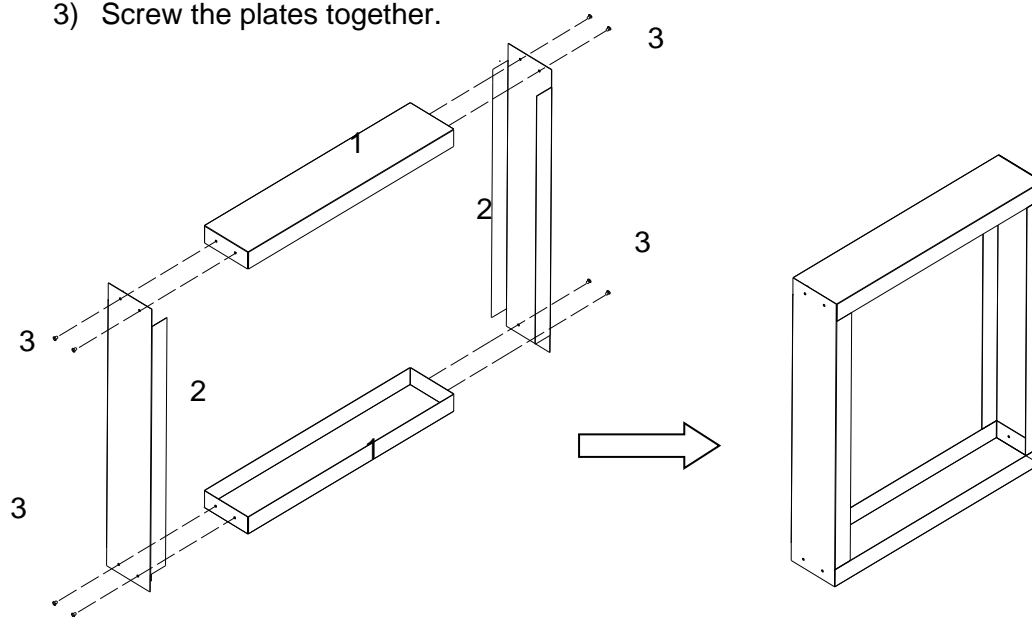
- Insert the aforementioned tubes on module -3- about 80mm from the basic unit (module -4-) and immediately below section S5-4.
- Place the steam battery (module -5-) on the tubes slightly separated from the basic unit, so as not to damage the previously applied sealant.



- Move the steam battery (module -5-) towards the basic unit by matching the screw holes for the junction flanges of section S5-4.
- Find these 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 modules.

- After inserting the fibre glass insulation around the junction of modules -4- and -5-, it must be lined 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.

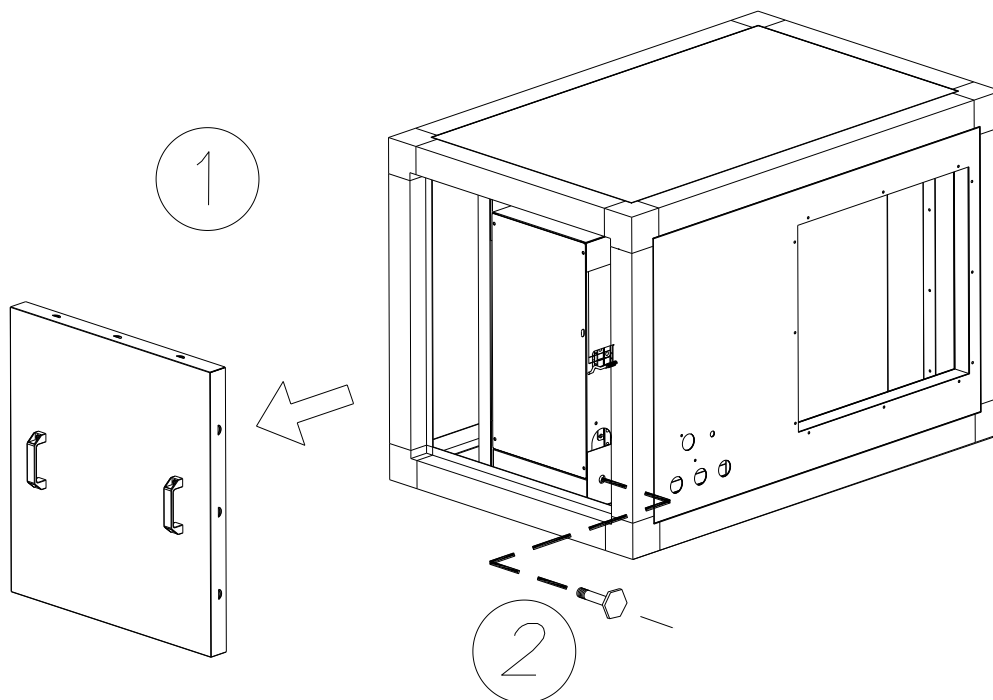


- Finally, remove the tubes the steam unit rests upon.

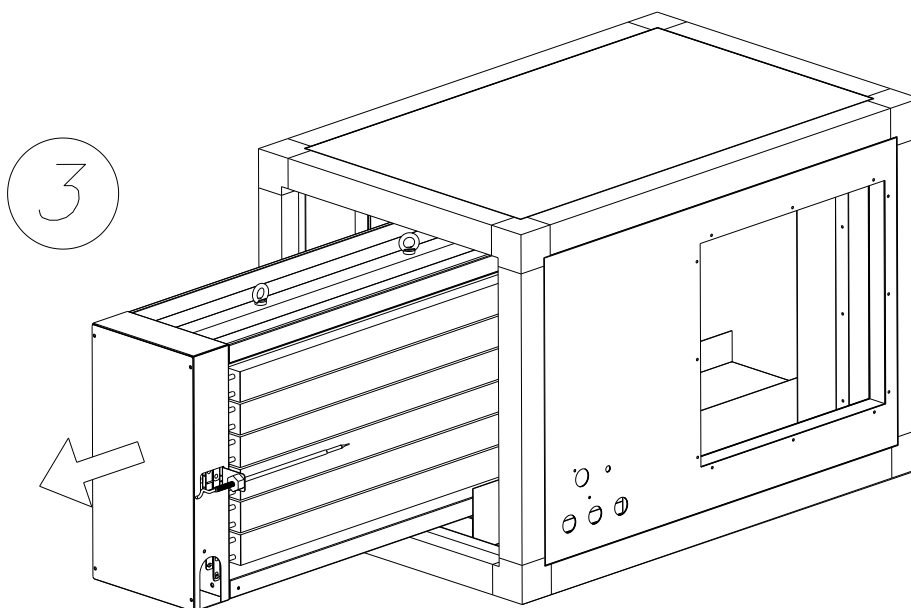
5.6.2 Electric reactivation heater

- 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 followed:

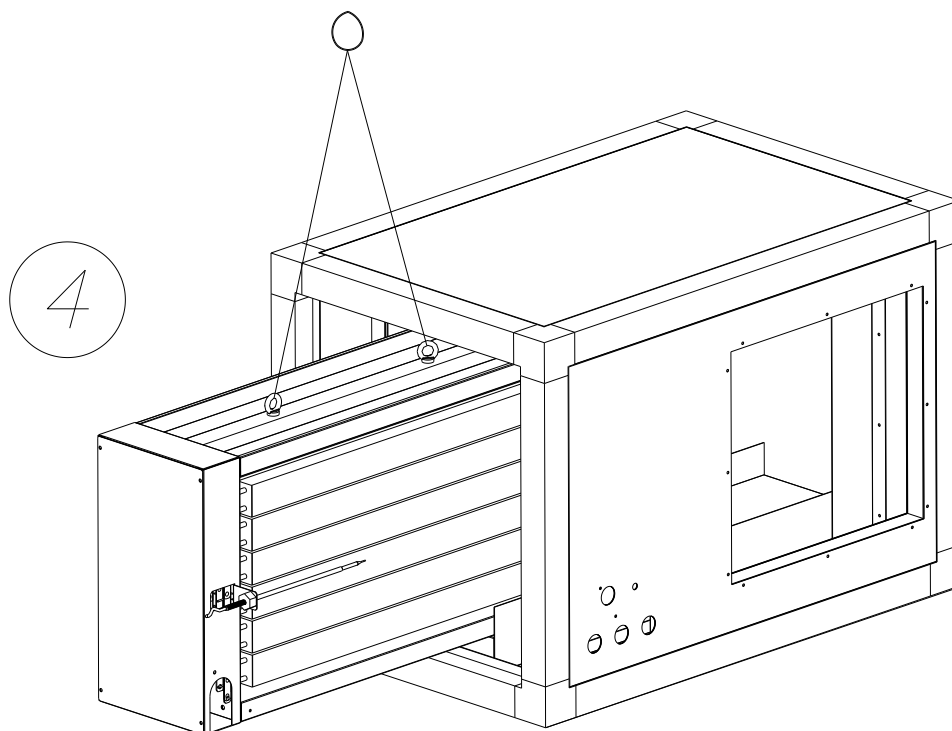
1. Remove the front cover of the MOD5 to access the interior.



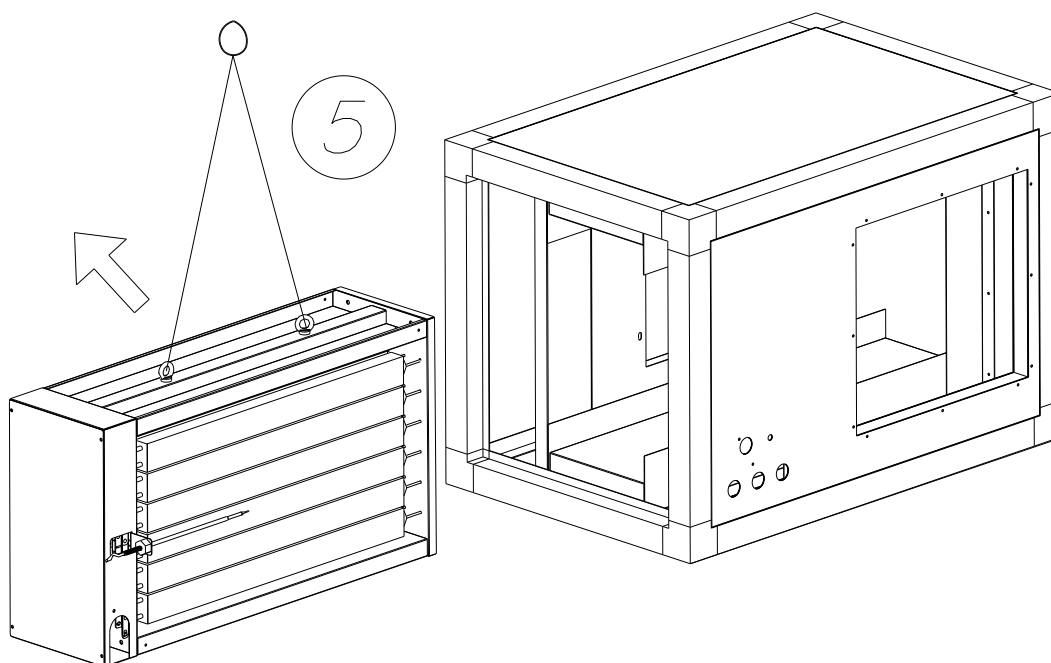
2. Release the screw fixing the electric heater cartridge to the support mouth and earth wire.
3. Slide the heater cartridge outwards until the two lifting eye bolts are visible.



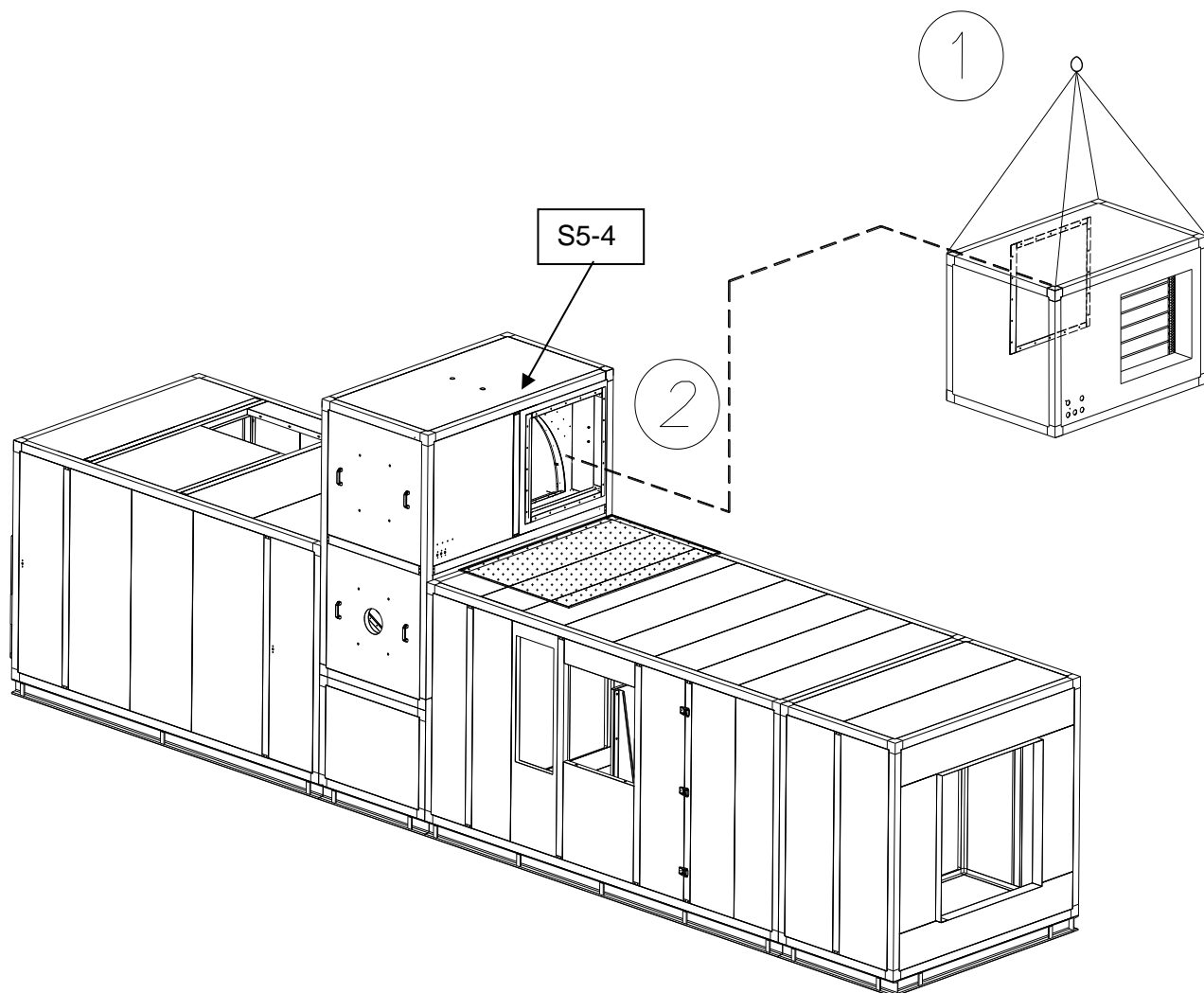
4. Attach the two lifting eyebolts to the hoist cables.



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

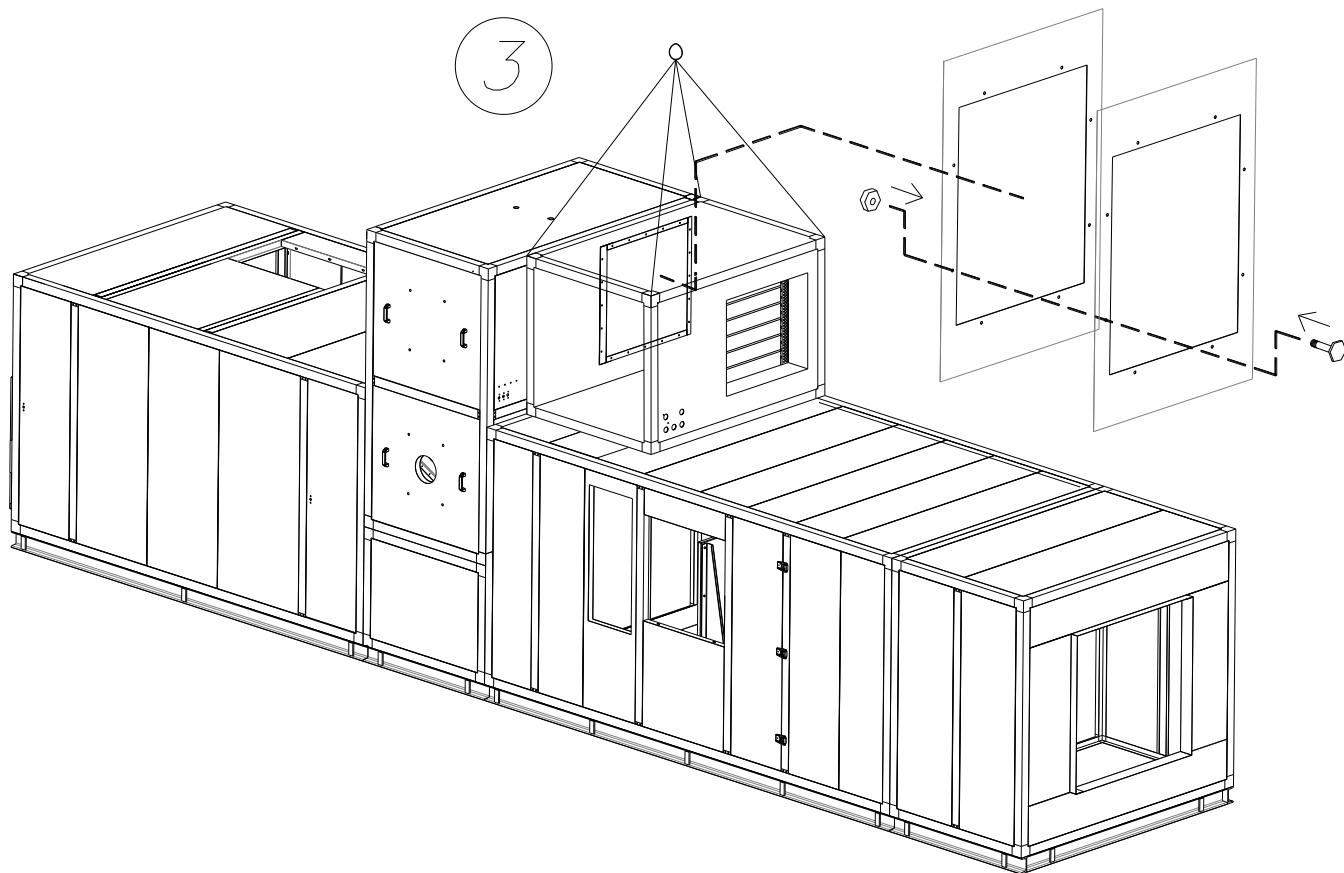


- After removing the heater cartridge, the MOD5 (electric unit) has to be lifted and placed on top of the MOD3 (process fan). It must be positioned in line with the MOD4 (basic unit) and centred with the S5-4 reactivation duct shaft:

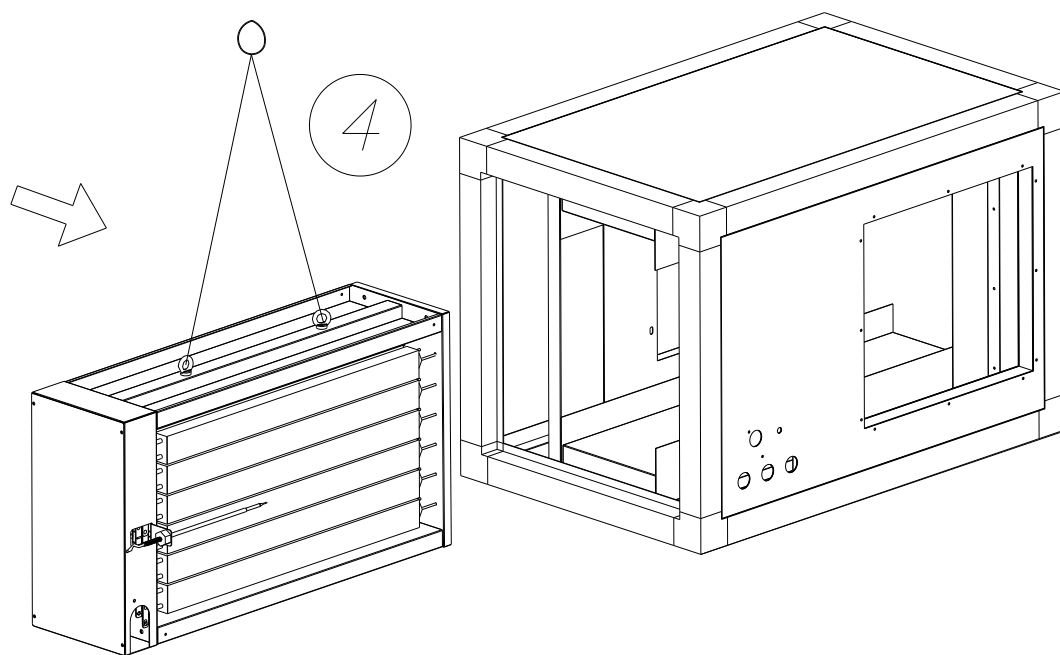


1. The MOD5 is lifted by suspending it from the 4 lugs located on the 4 ends.
2. Move the MOD5 to the indicated position.

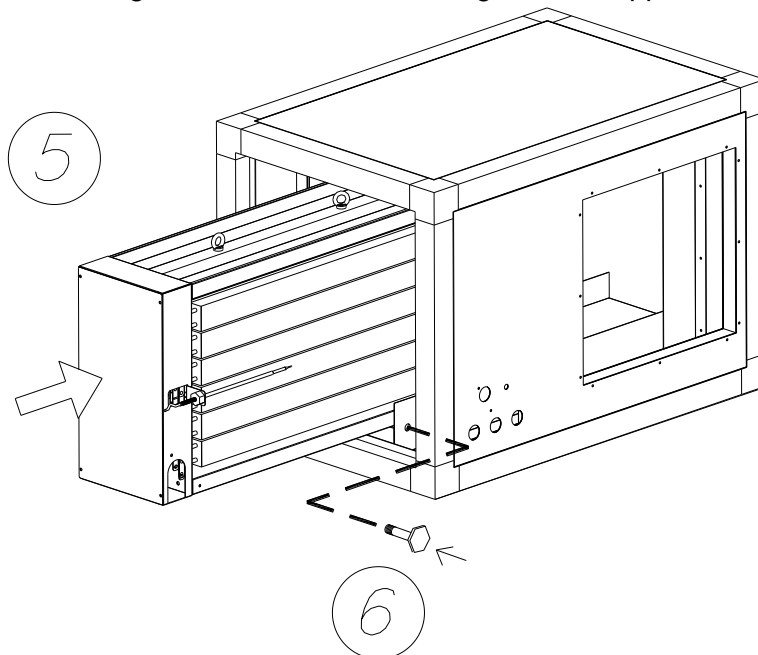
3. Screw the flange connecting the MOD5 to the MOD4 from the inside and release the 4 lifting system lugs (see image).



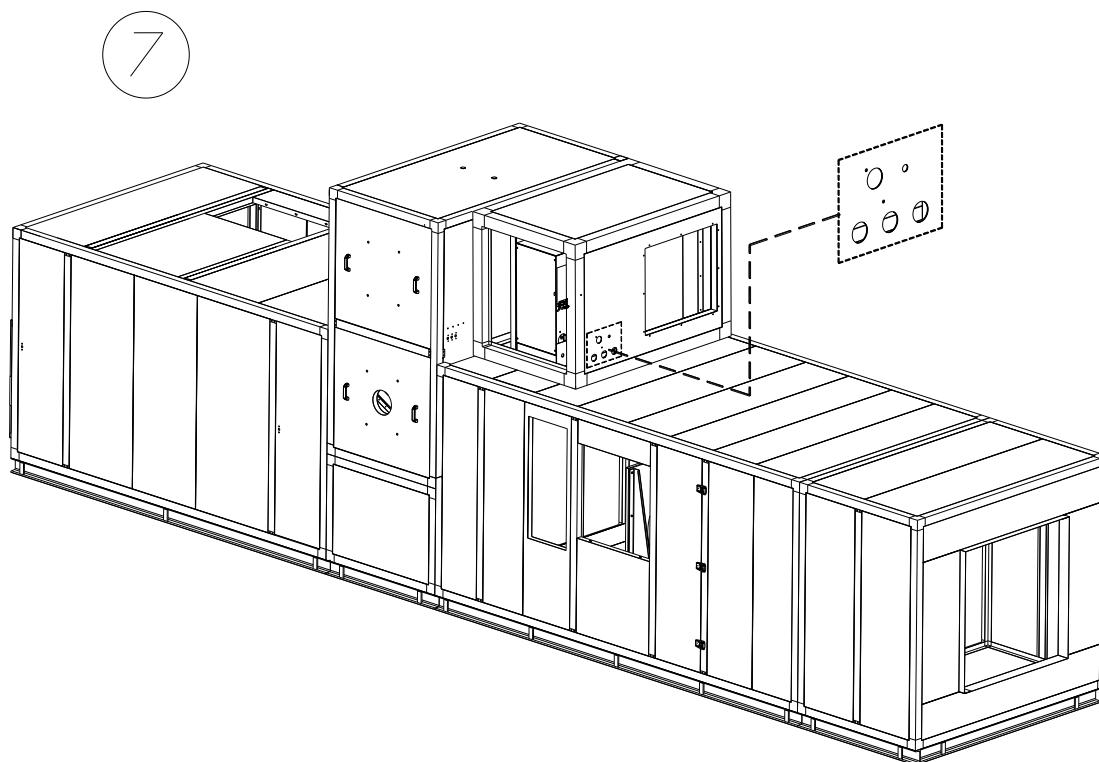
4. Re-attach the electrical heater unit via the two eyebolts and move it until it is slightly inserted in the MOD5.



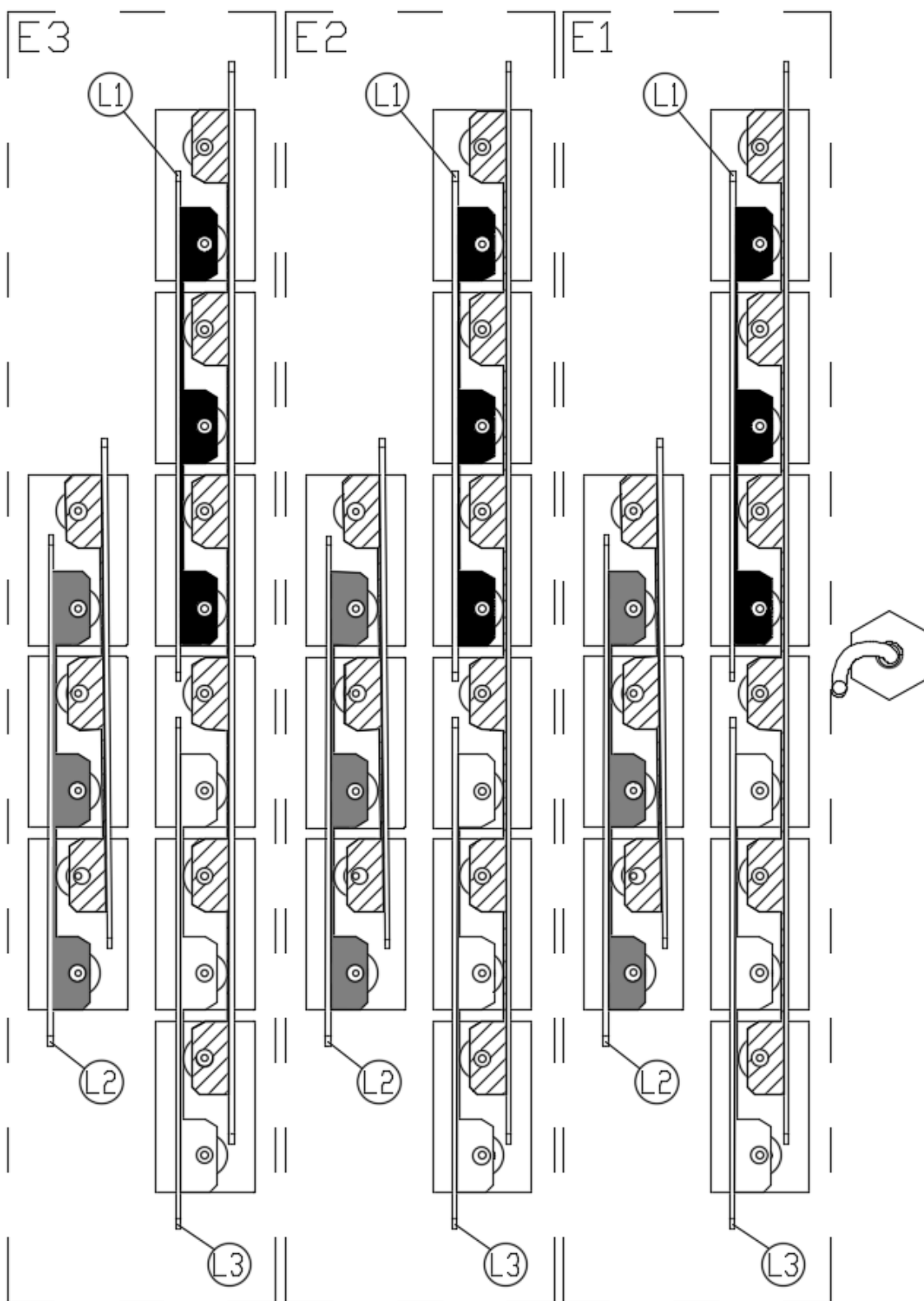
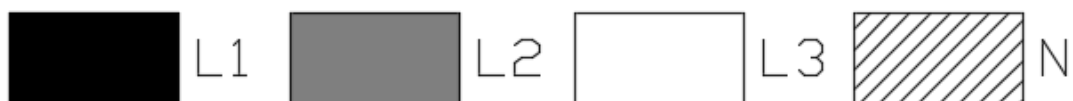
5. Release the eyebolts from the electrical heaters and insert them completely inside by sliding them until the fixing holes overlap.
6. Replace the screw fixing the electric heater cartridge to the support mouth.



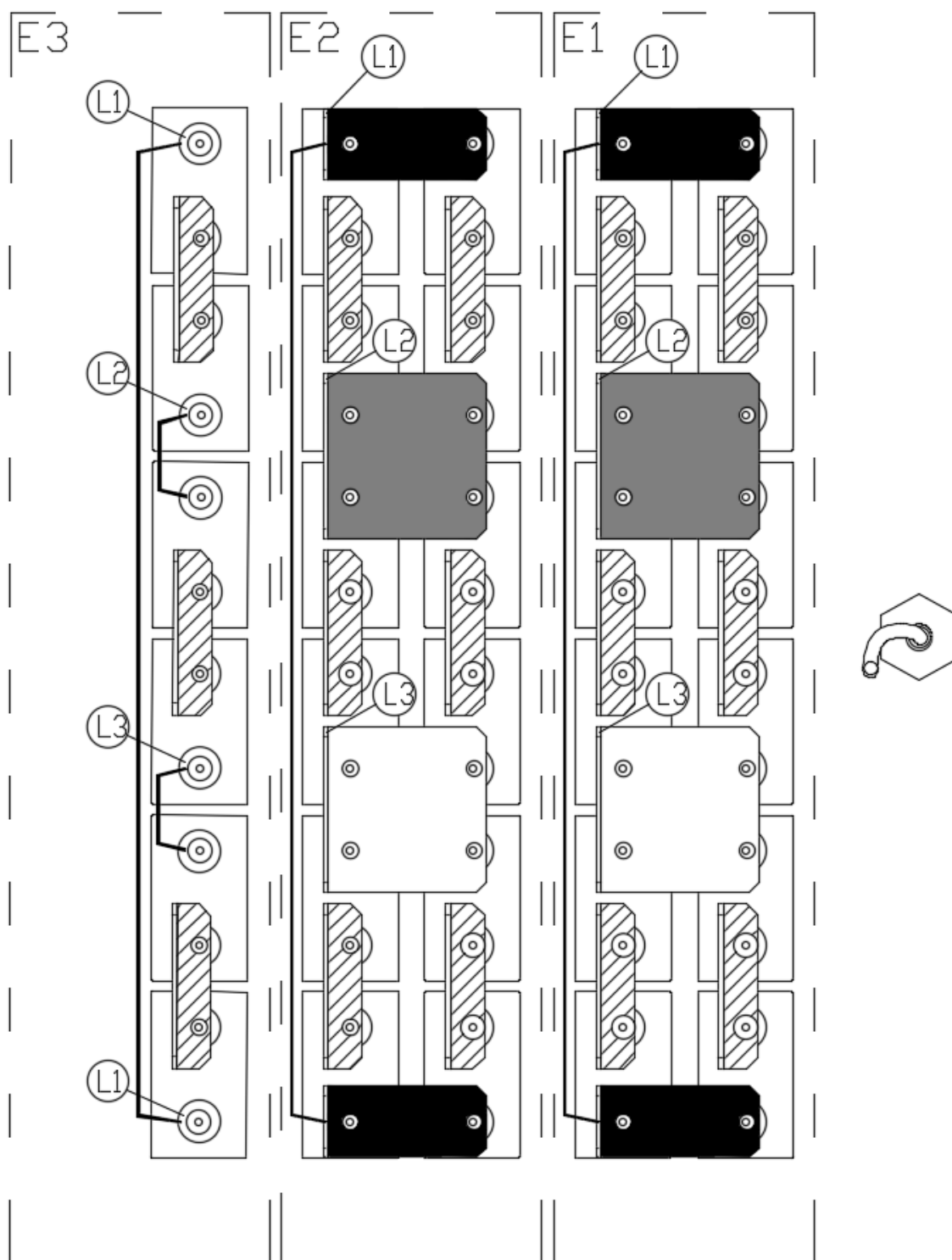
7. Once the electrical heater unit is inserted and attached, the electrical connection must be made. This is done by inserting the installed wiring in the MOD3 so that it passes through the wall bushings and the electrical unit hole into the heater unit connection box.



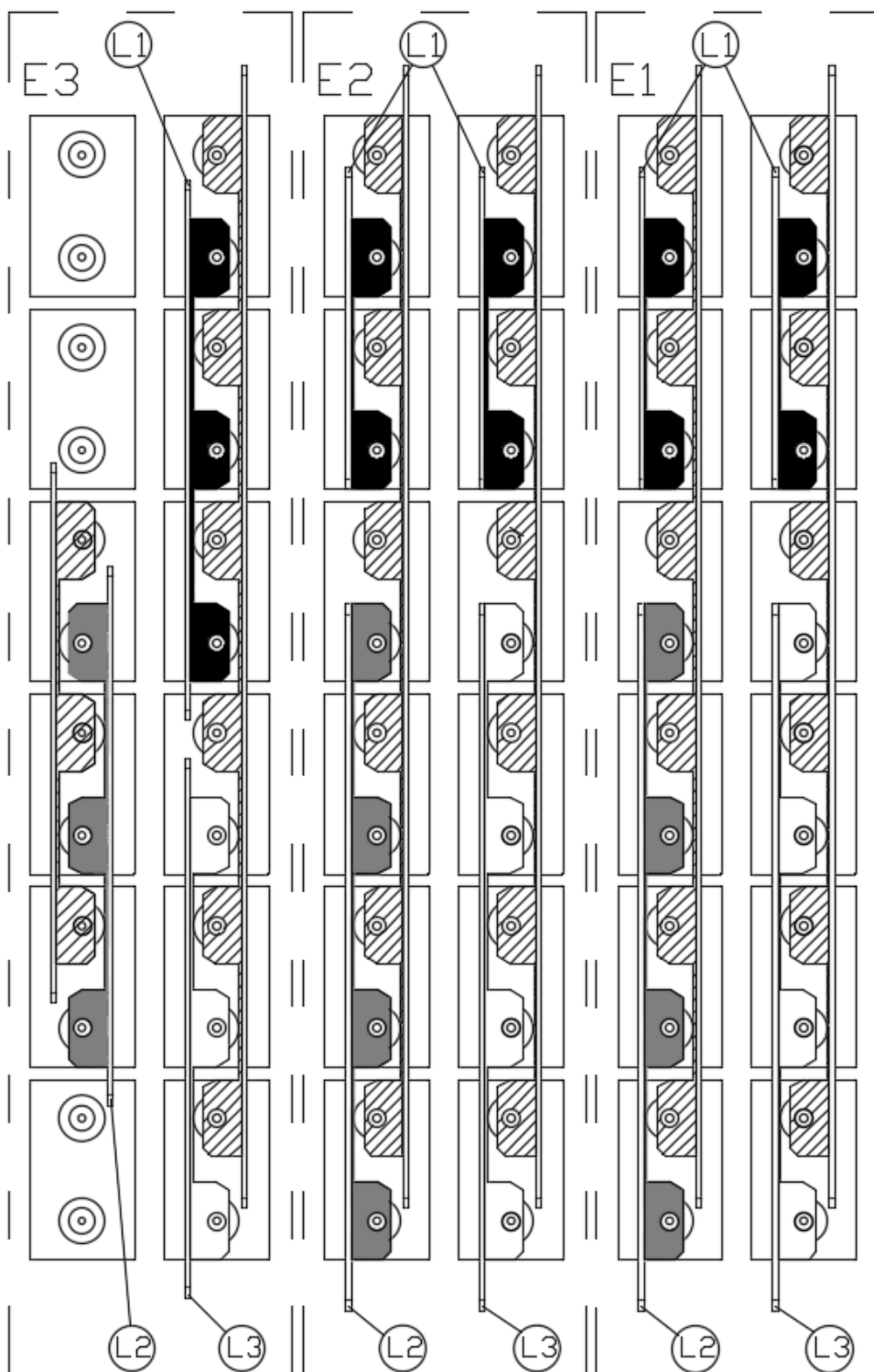
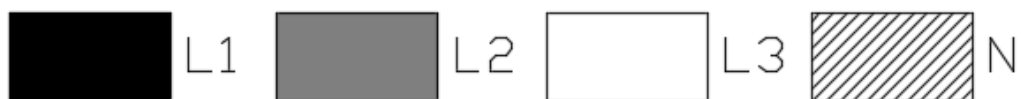
DFLEX 1100: 400V ±5%



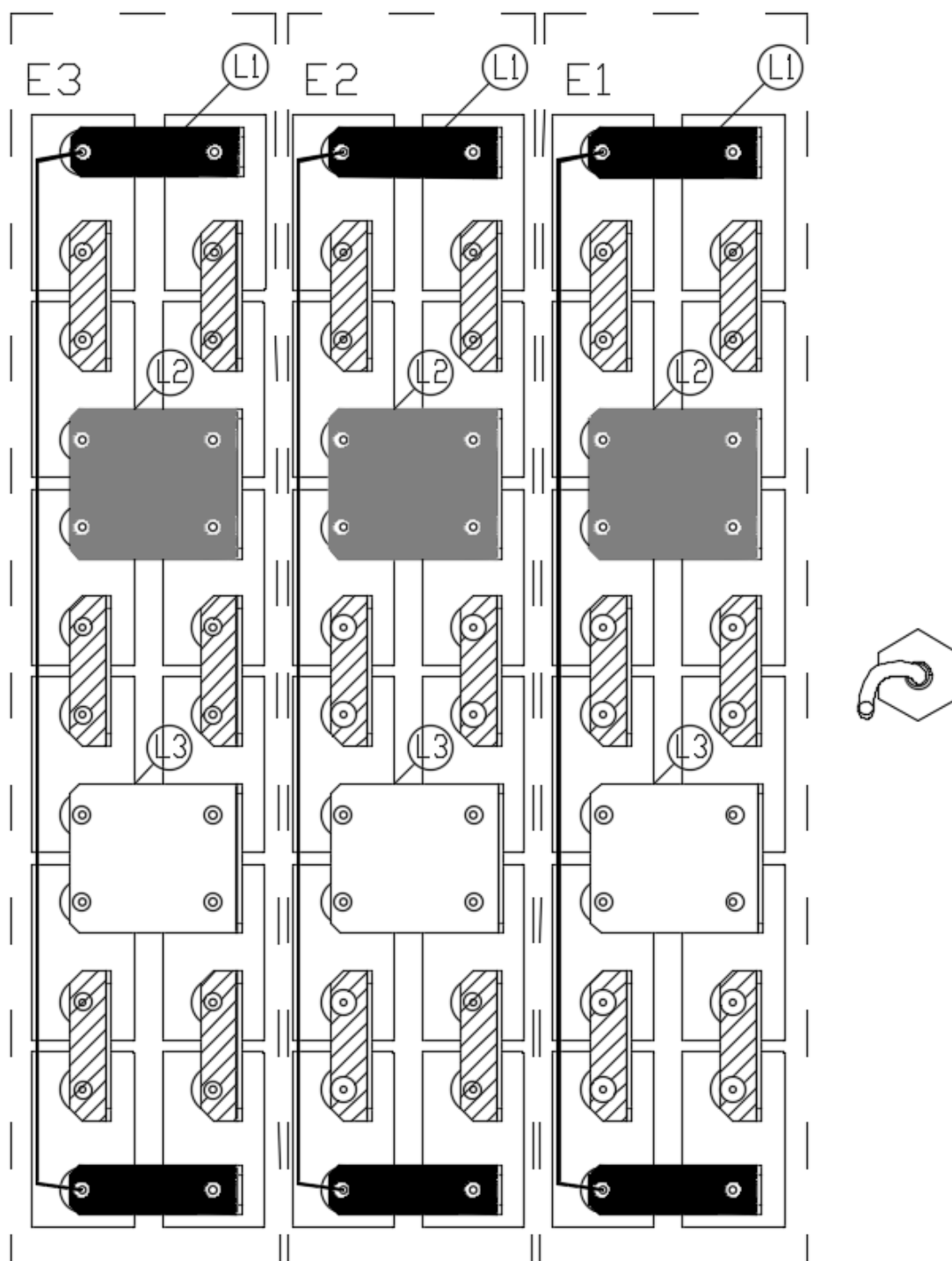
DFLEX 1100: 440-480V



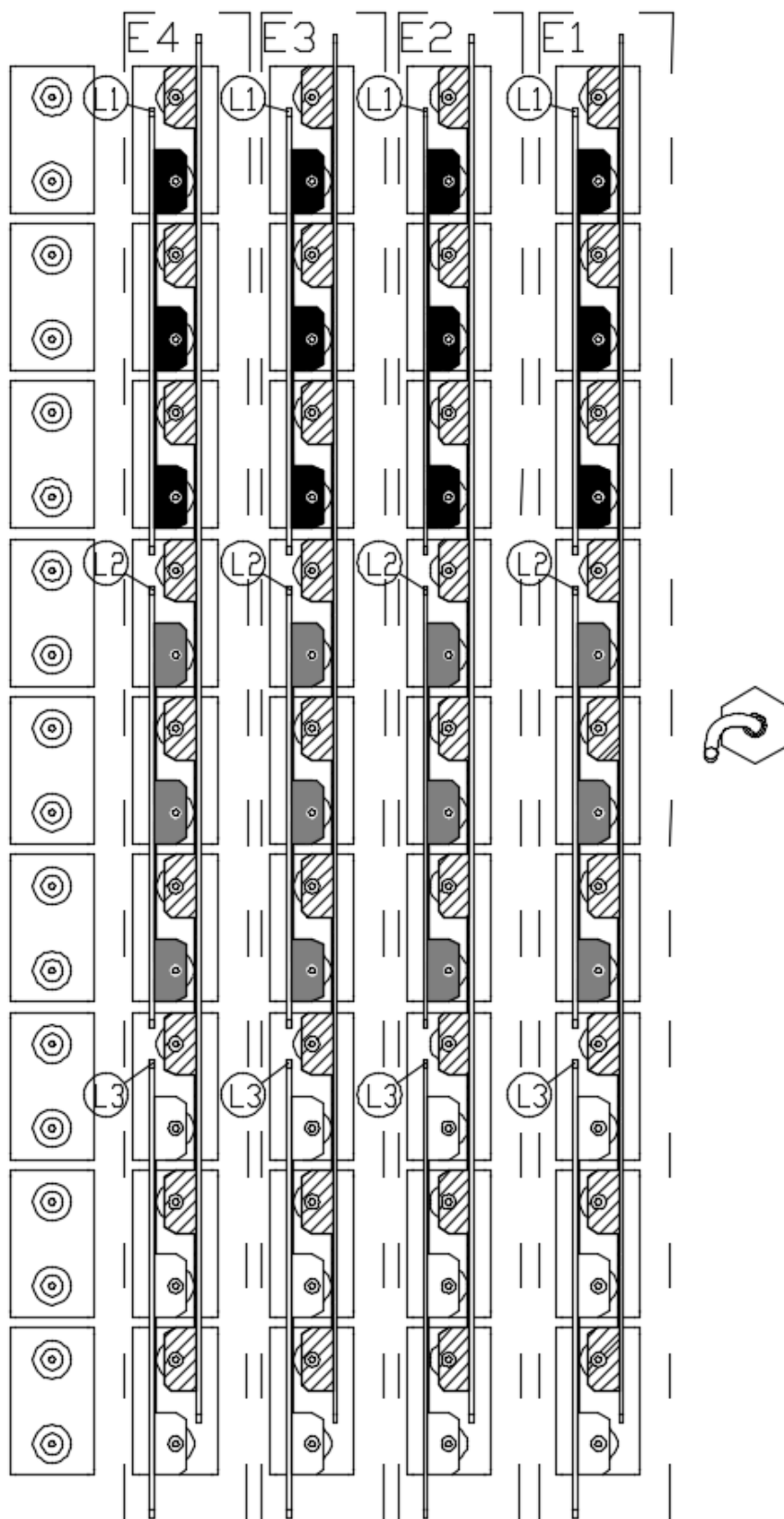
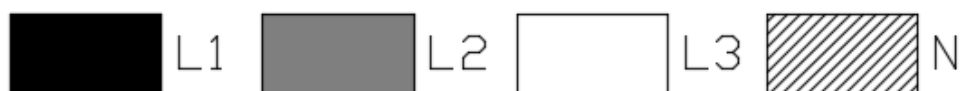
DFLEX 1300 400V ±5%



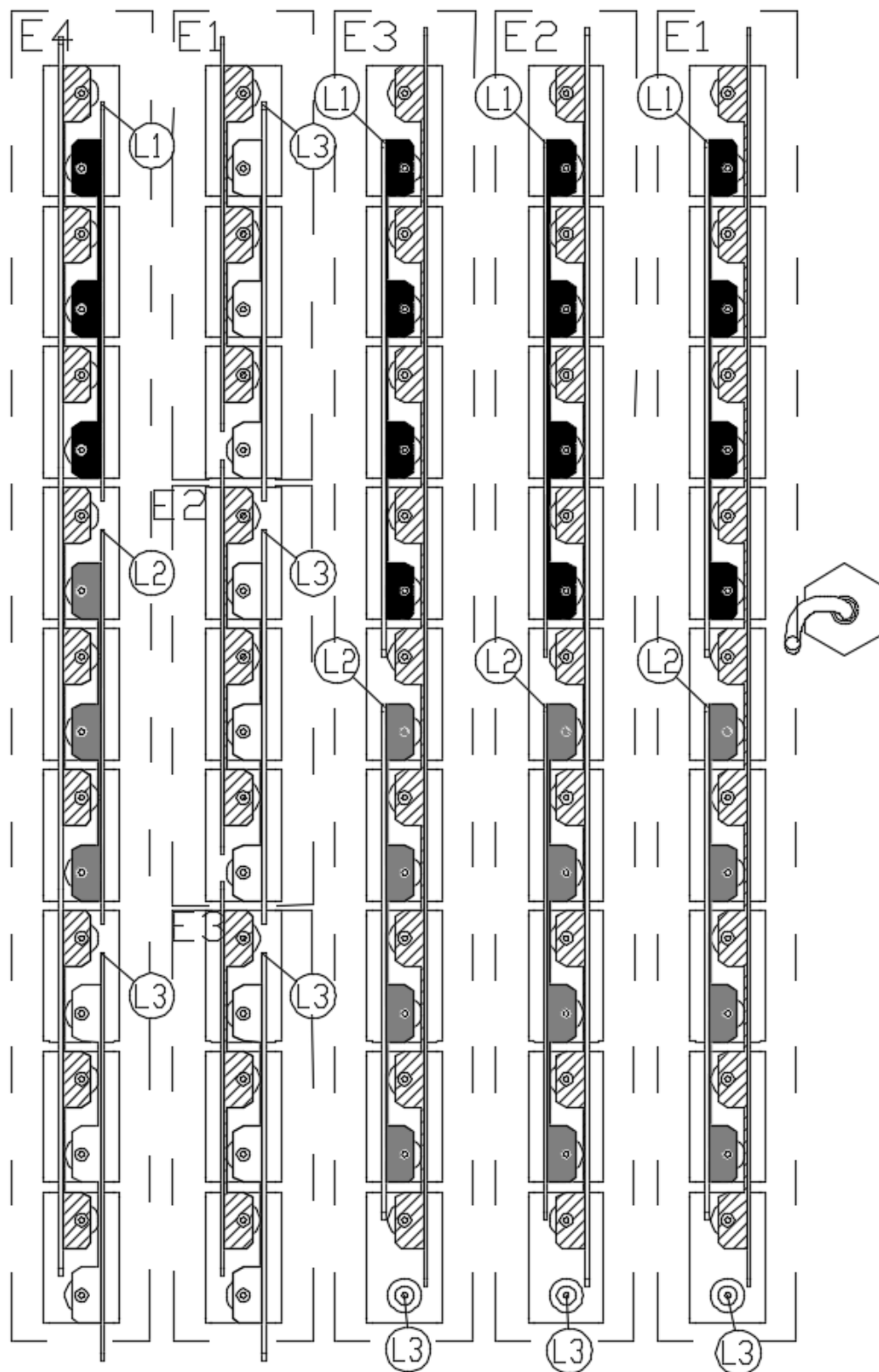
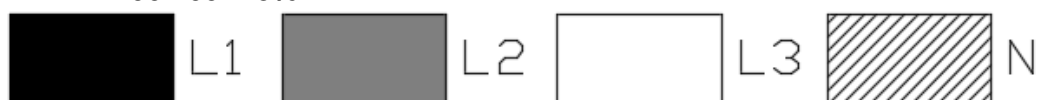
DFLEX 1300 440-480 V



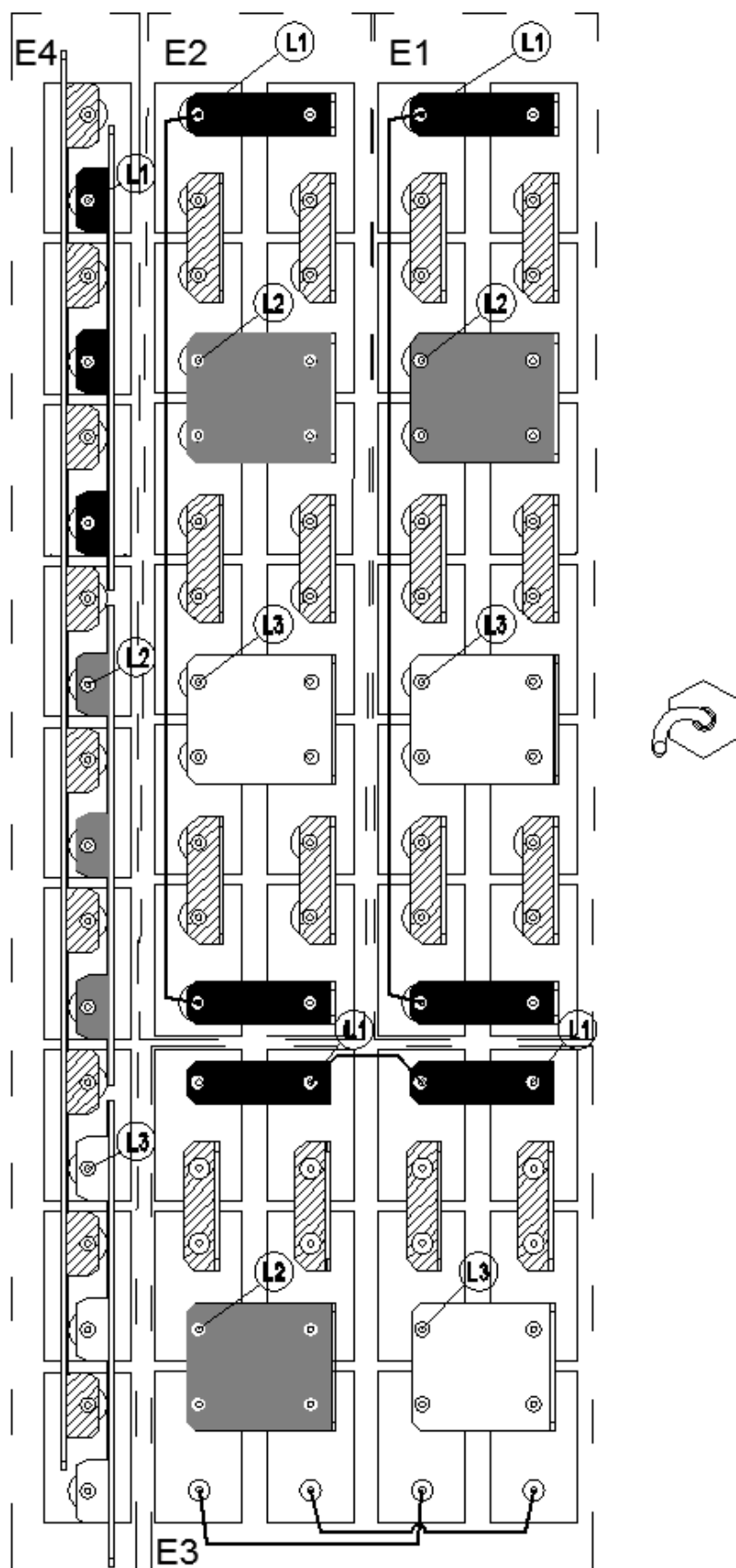
DFLEX 1700 400V ±5%



DFLEX 2100 400V±5%

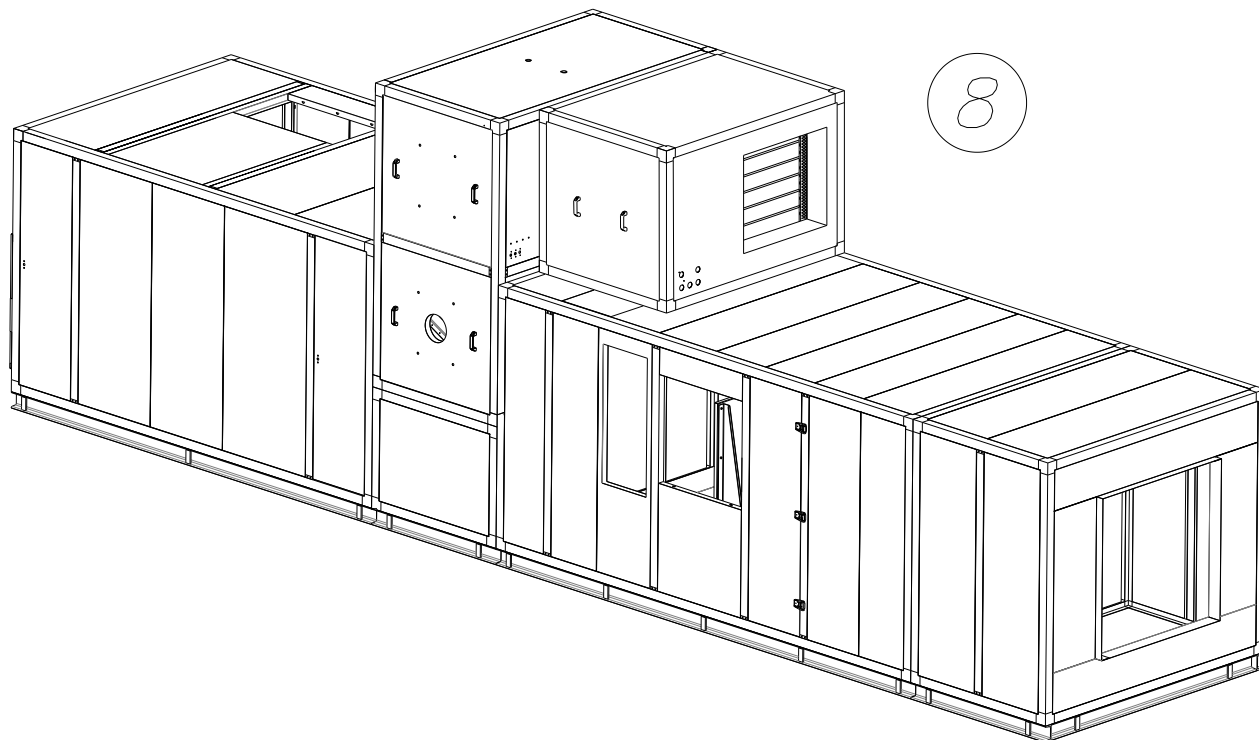


DFLEX 2100 460V±5%



8. Finally, replace and close the front cover

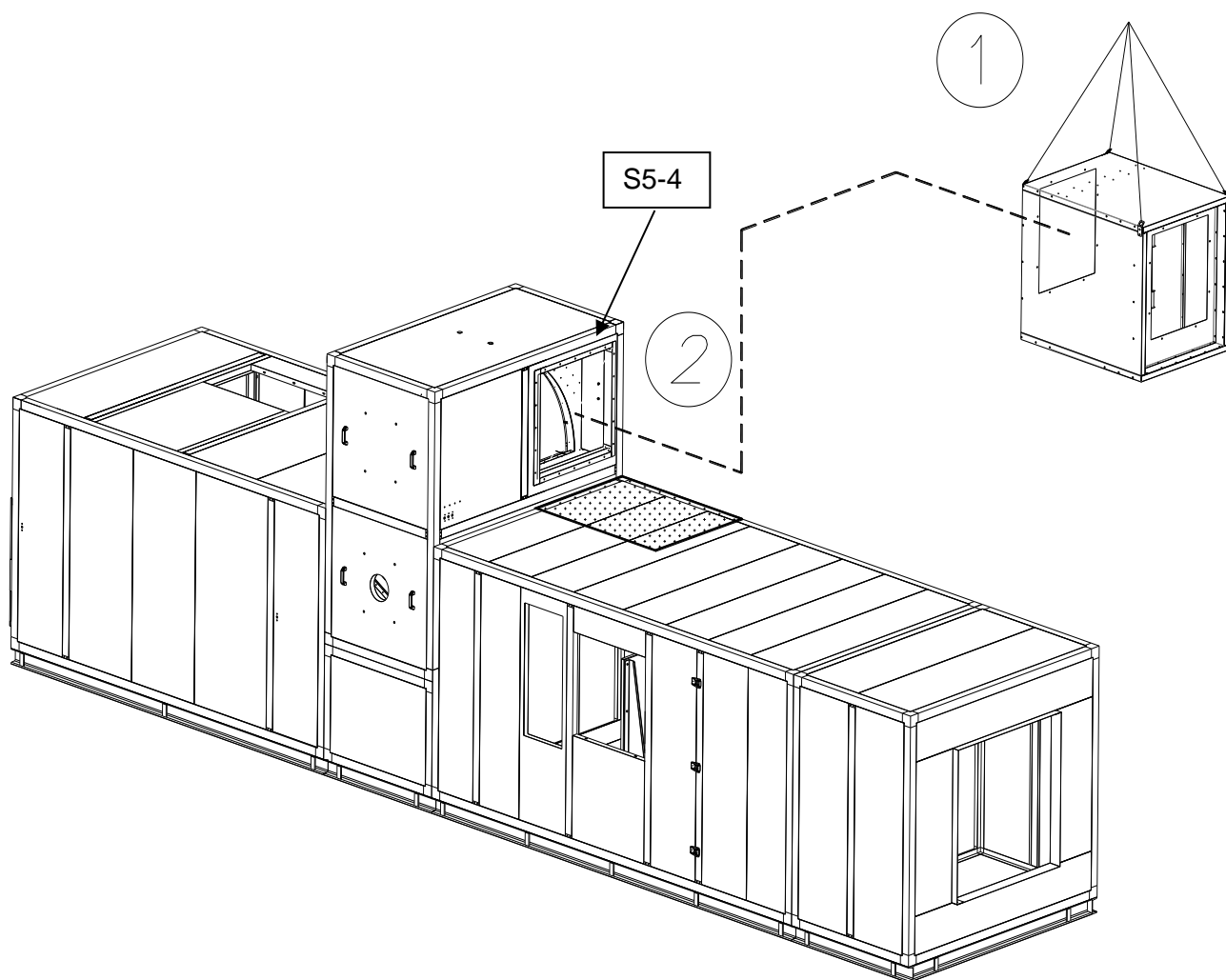
of the MOD5 (electrical unit).



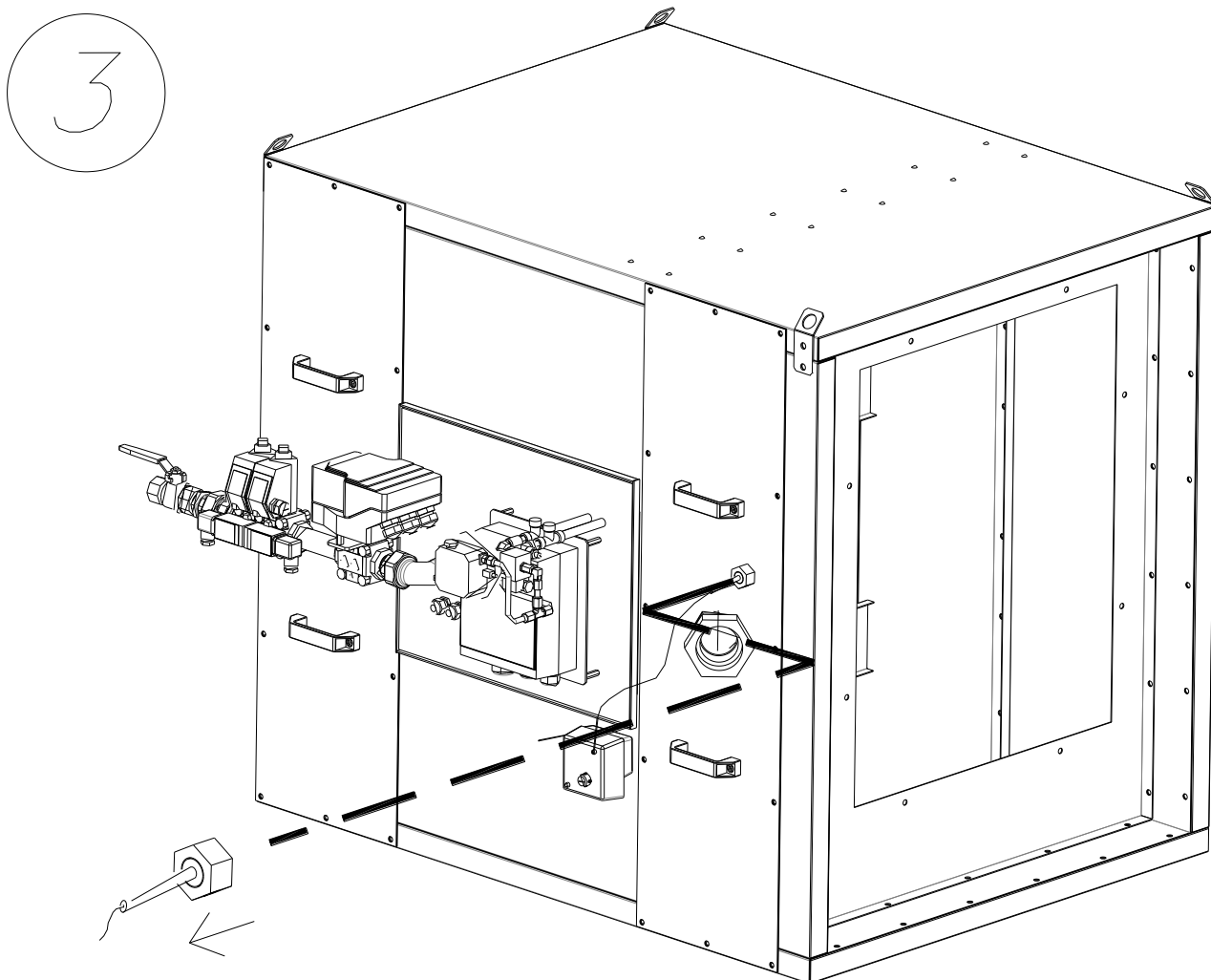
5.6.3 Gas reactivation heater

- 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 4 ends.
2. Move the MOD5 to the indicated position.

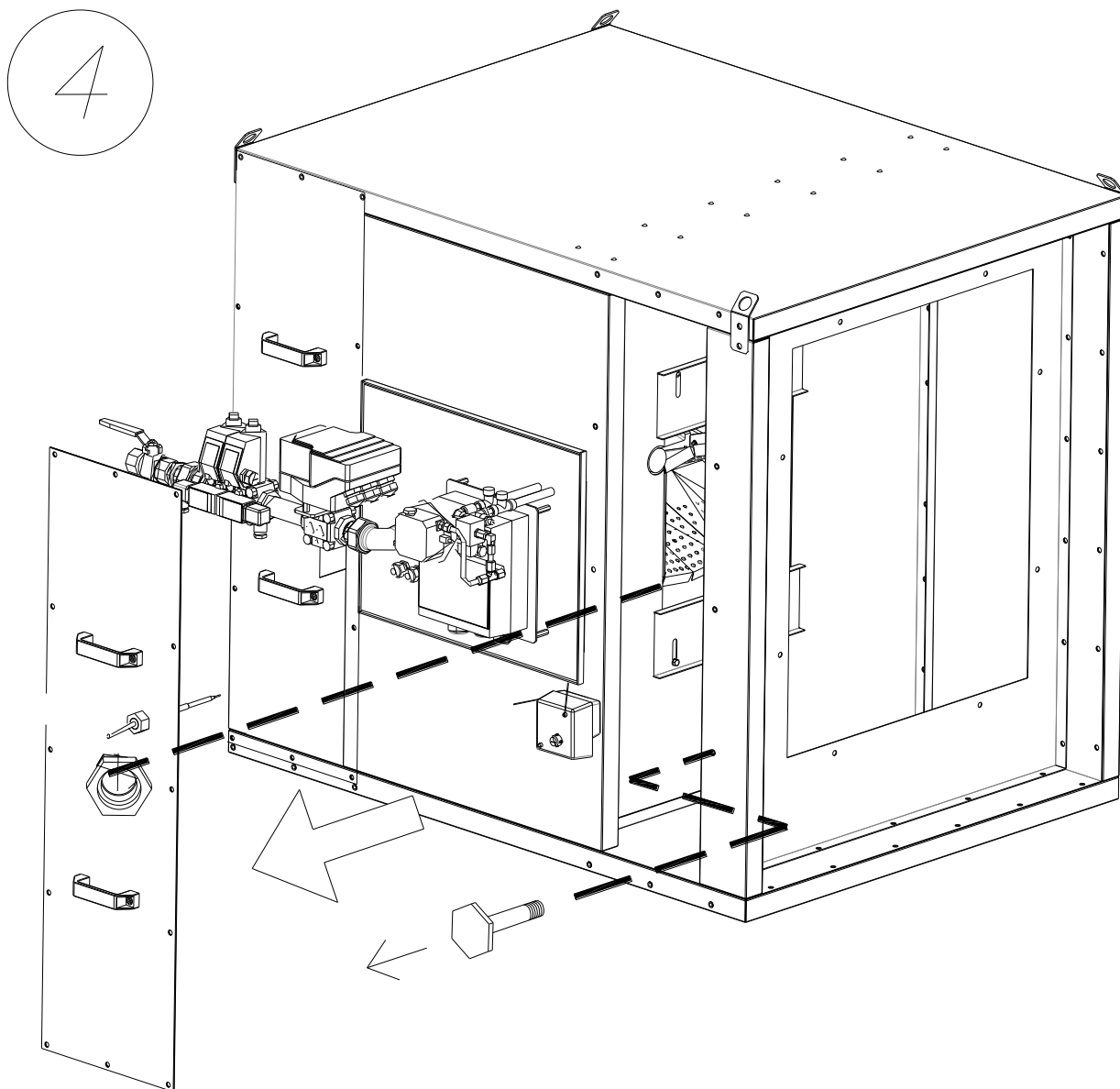


3. Release the bulb (connected to the thermostat by a cable) on the access cover to the combustion chamber and leave it suspended, taking care not to damage the capillary.



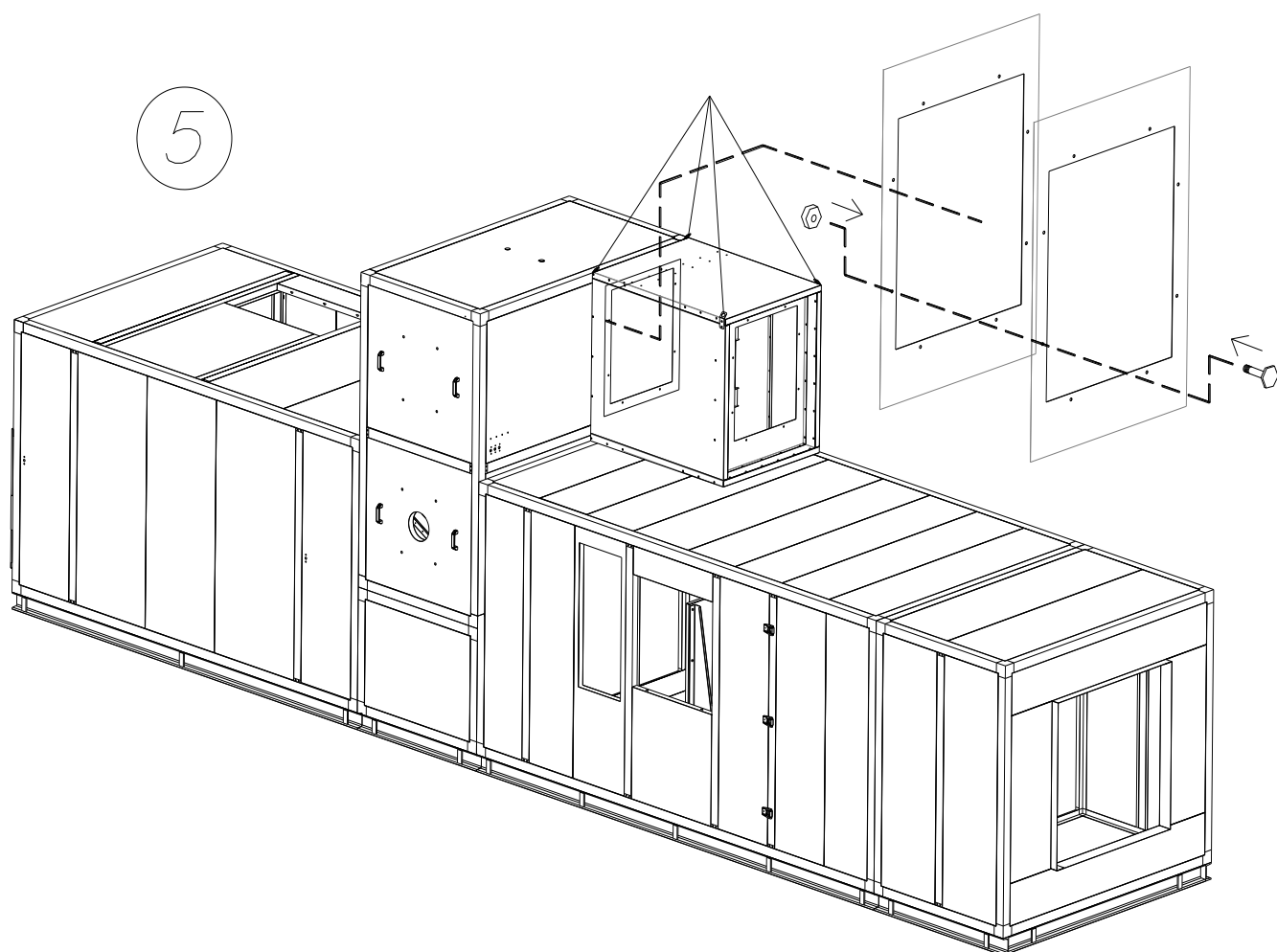
Note: The image is rotated 180° with respect to the reference position

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

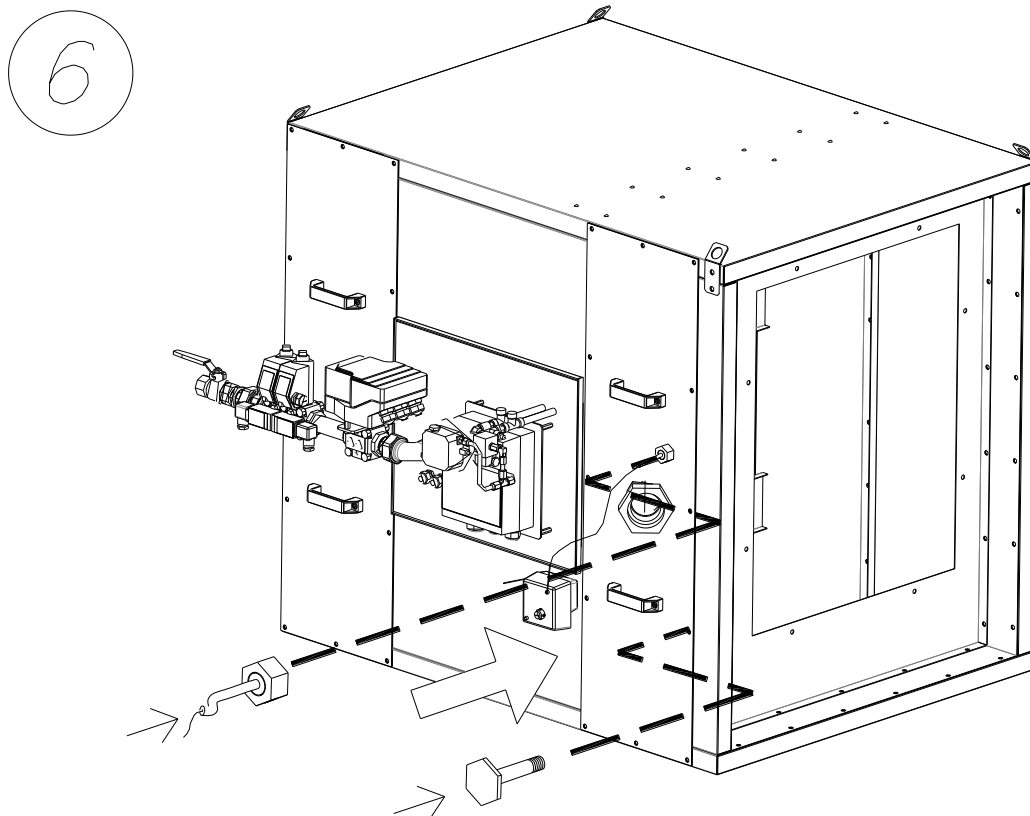


Note: The image is rotated 180° with respect to the reference position

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

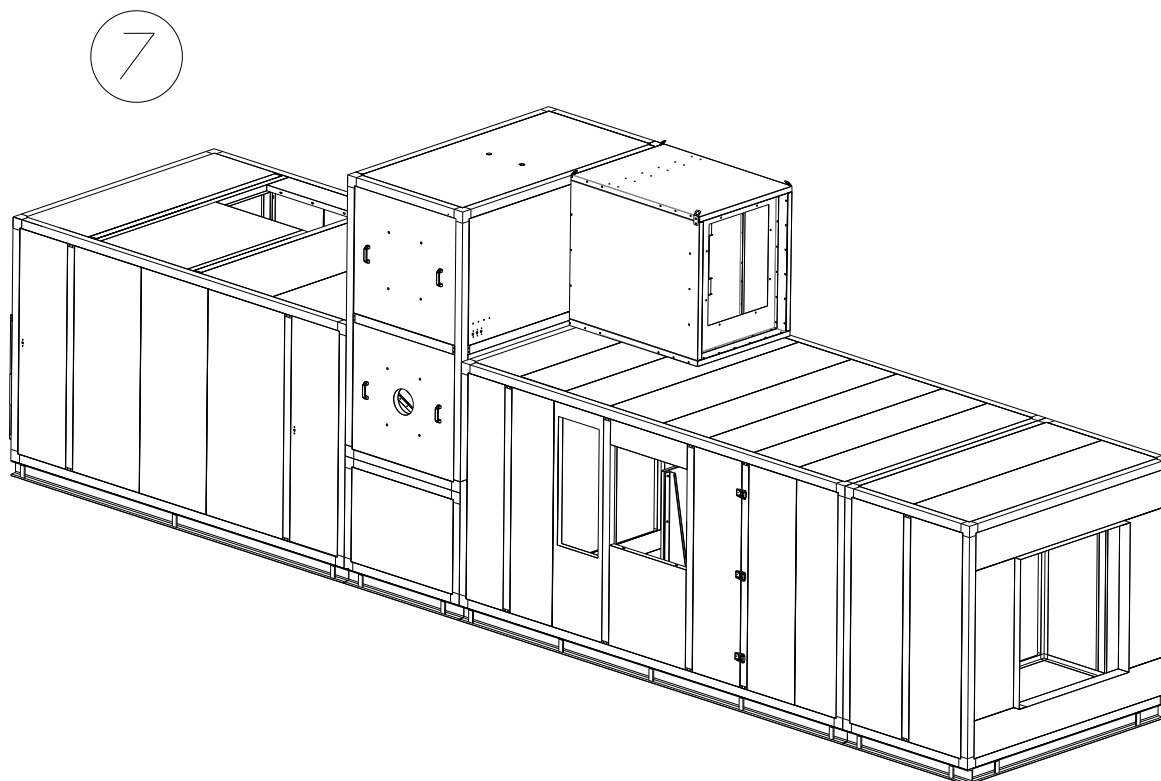


6. Replace the cover, attach it with the screws and re-connect the bulb.



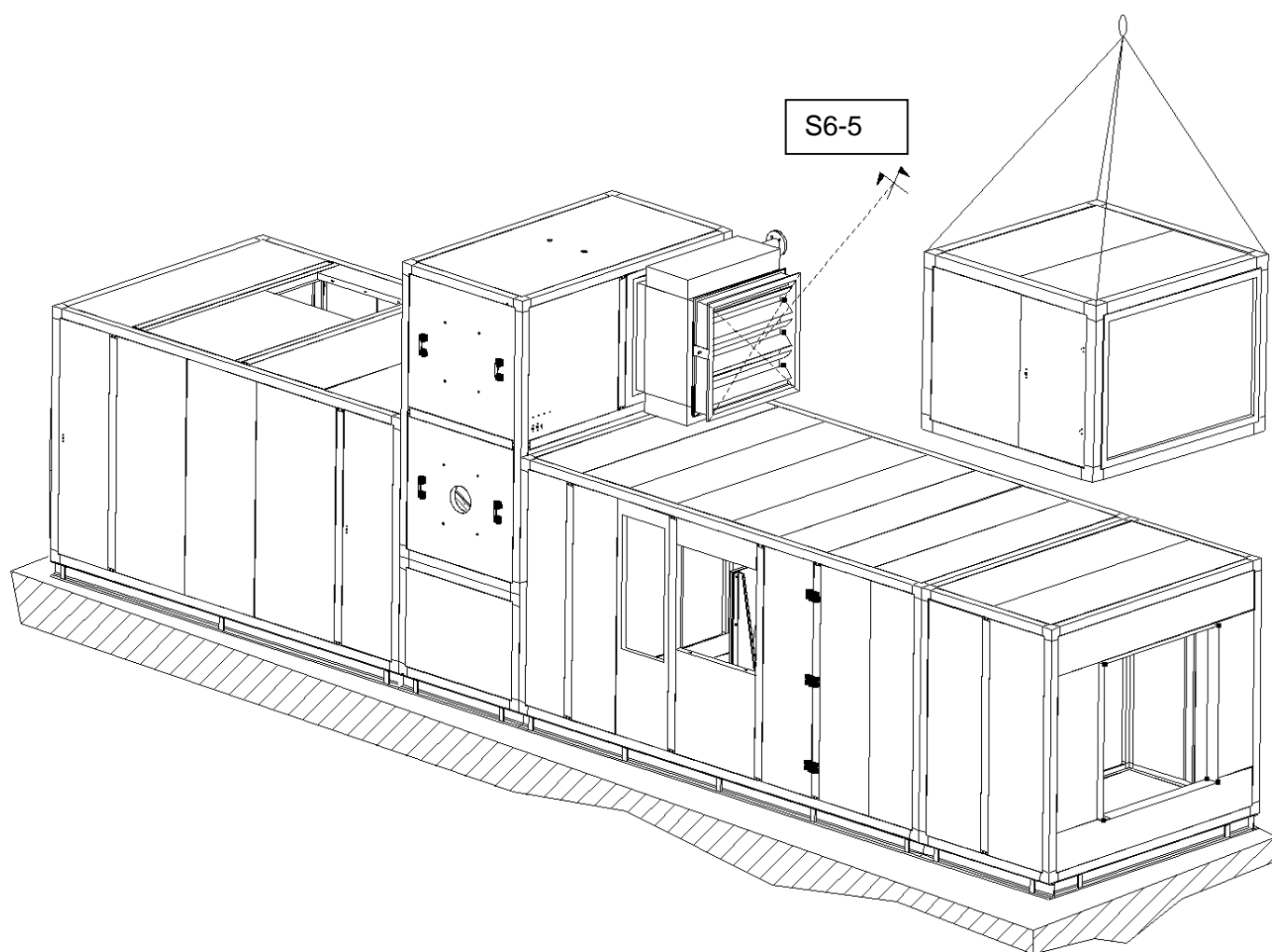
Note: The image is rotated 180° with respect to the reference position

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-, trying to maintain the alignment axis.
- Approach the module -5-, matching the section marked S6-5, and screw the flanges of the gate of that module to the module -6-.
- **IMPORTANT:** These screws are for fixing, the module -6- must be supported over module -3-.

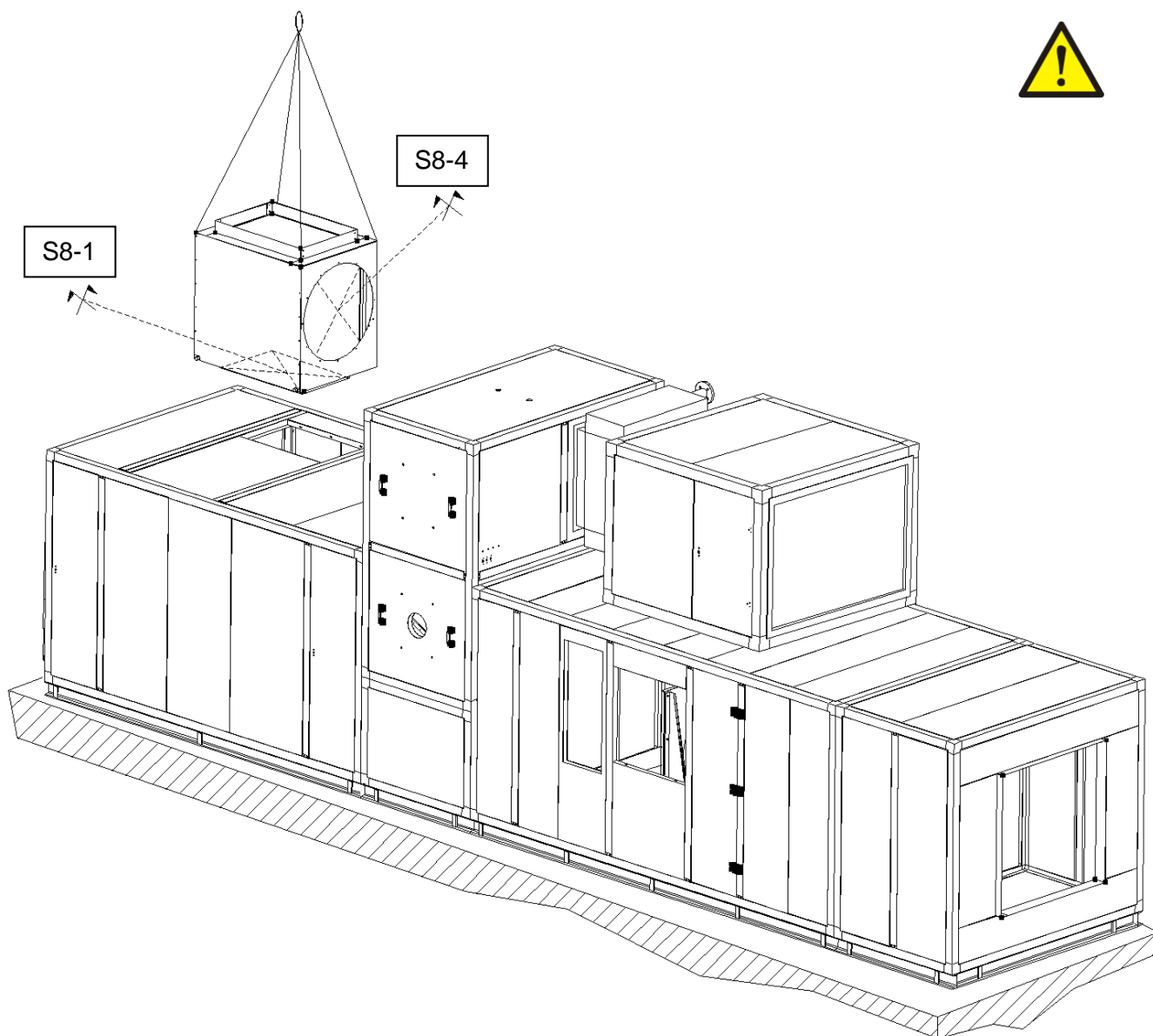


- Once screwed, you can remove the tubes that supported the module -5-.

5.8 Module 8 arrangement (optional)

In case of having module -8-, follow the following steps to install it:

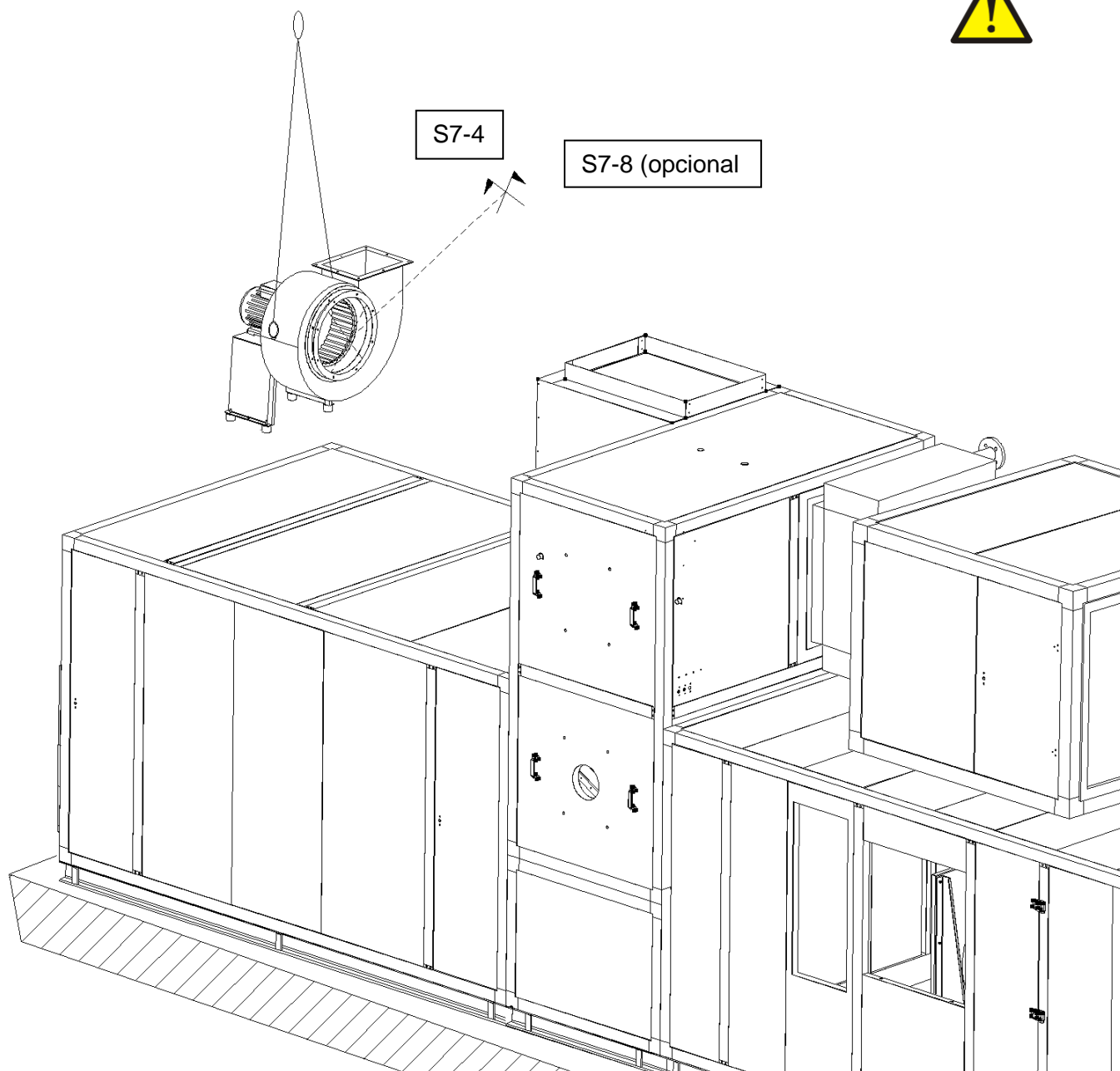
- Locate it and proceed to unpack it.
- Hang it by the locks located in the corners of the module.
- Approach module -4-, trying to match the section S8-4, while placing module -8- on top of module -1- by fitting it on it (S8-1).
- Finally, screw the connecting flanges between modules (in sections S8-4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



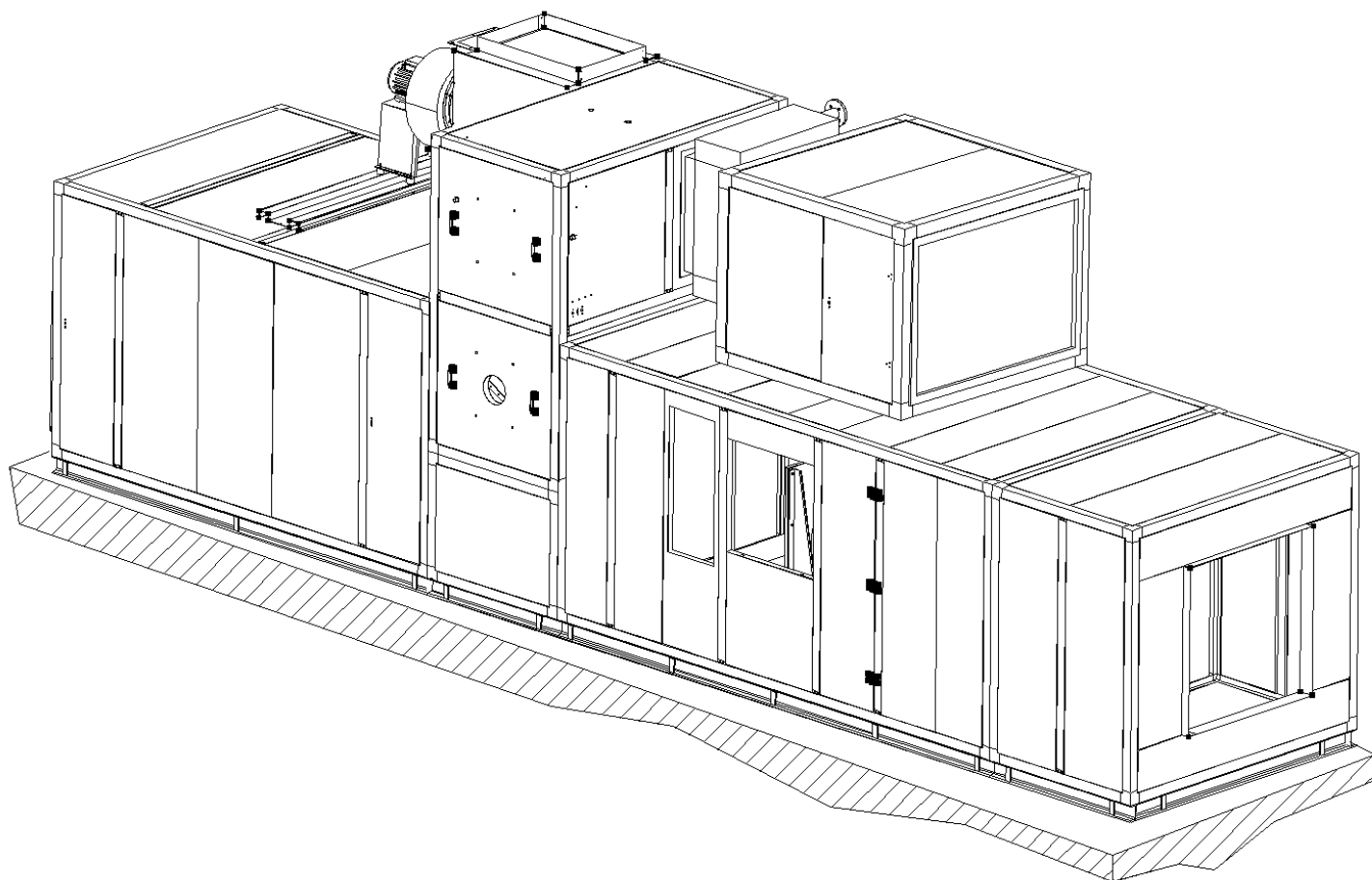
5.9 Module 7 arrangement

- 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.



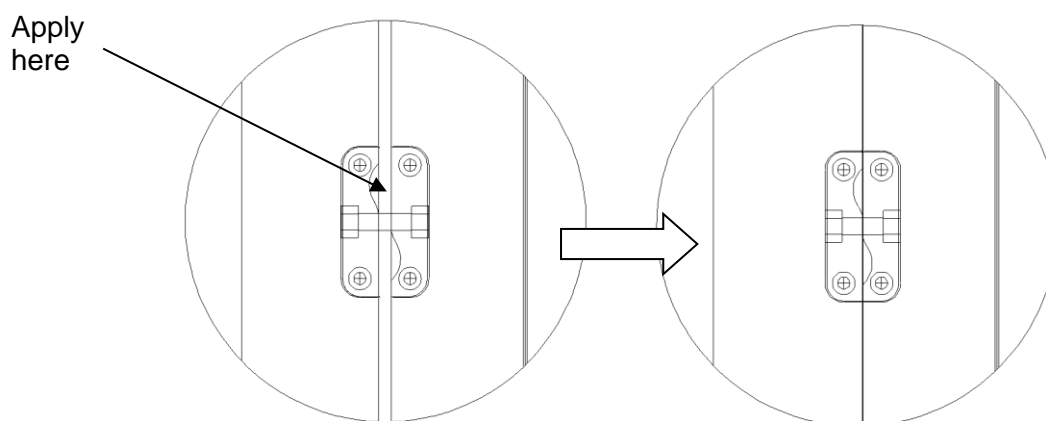
- Locate the self-adhesive neoprene gasket marked with the acronym in the corresponding section S7-4 (S7-8 optional).
- Apply it to the circular contour of the connecting flange.
- Place the fan (module -7-) over the anchors in module -1-.
- Locate the screws marked with the acronym of the corresponding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



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



It must be applied between the joints of the modules trying to penetrate 3 to 5 mm between the facing faces of the profiles.



Once the sealant has been applied to all longitudinal edges of joining 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

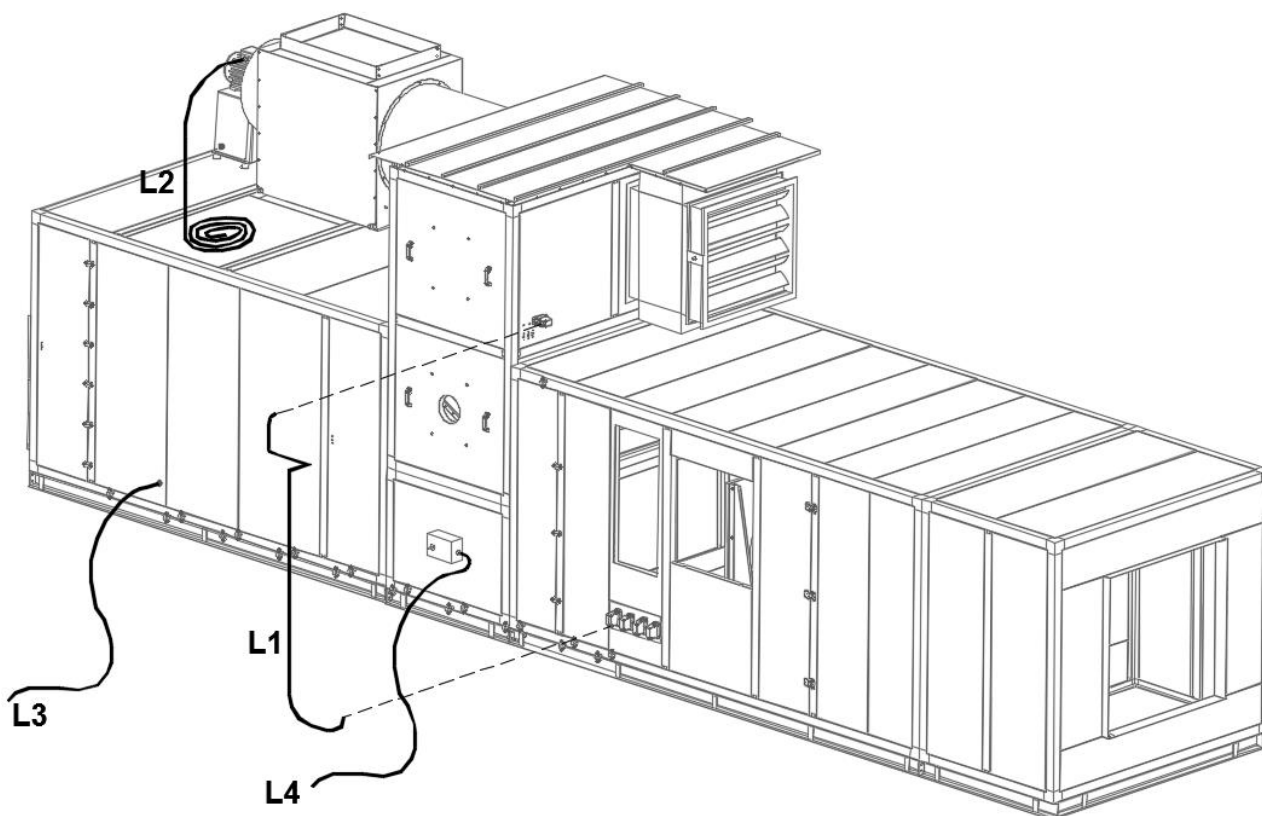
6. Electrical wiring.

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 modular configuration, there will be two types of hoses in the delivery:

- A pre-installed/connected hose at one end equipped at the other end with an industrial aerial quick connector.
- A hose 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.

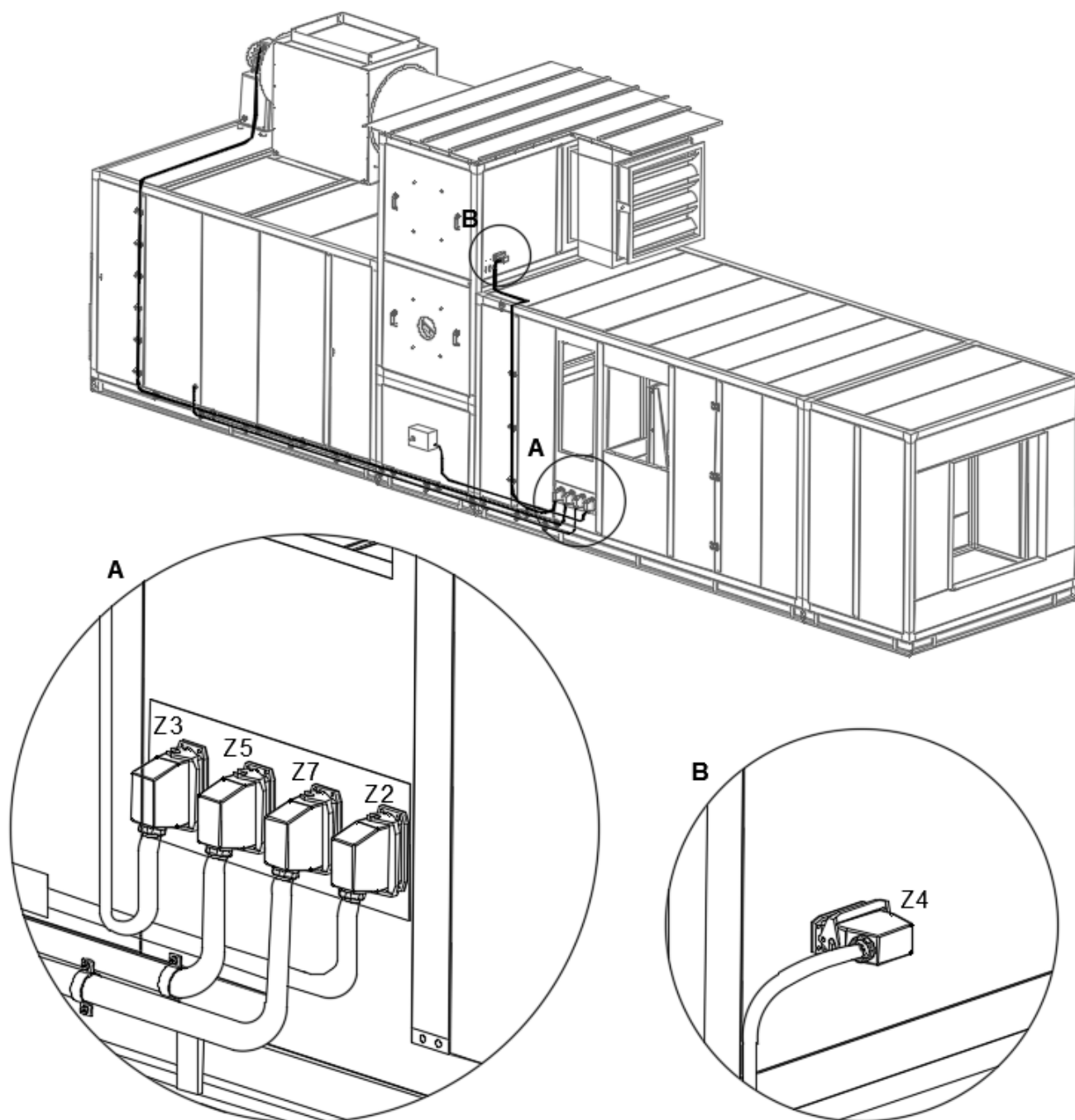


Identify and unwind all hoses.

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

Hose	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 hose 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
- Heatex

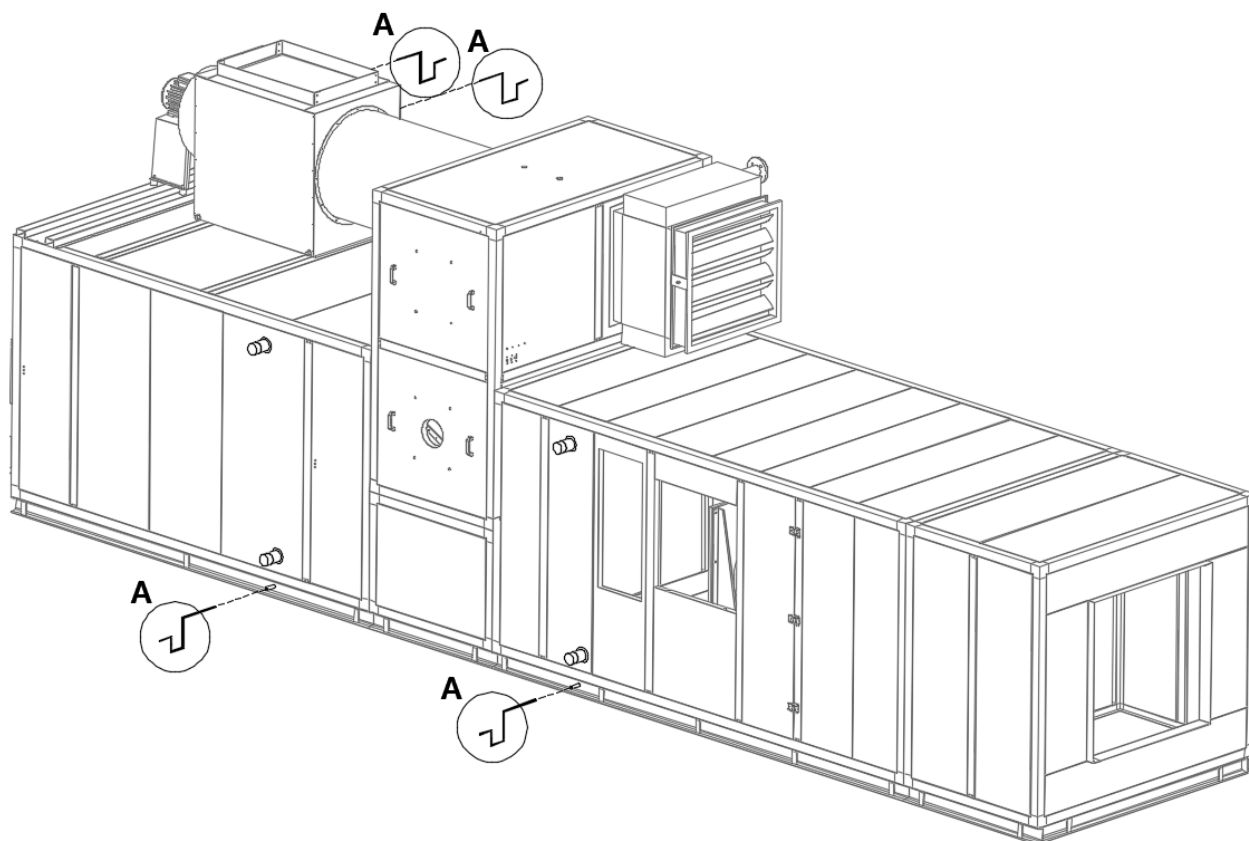
The outlet pipe of the tank must be connected to the drainage network:

Connect the drain 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 get the basin is emptied completely for hygienic reasons. The system will also have the normal inclination of any drain line. See detail "A" page 48.
- 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:

