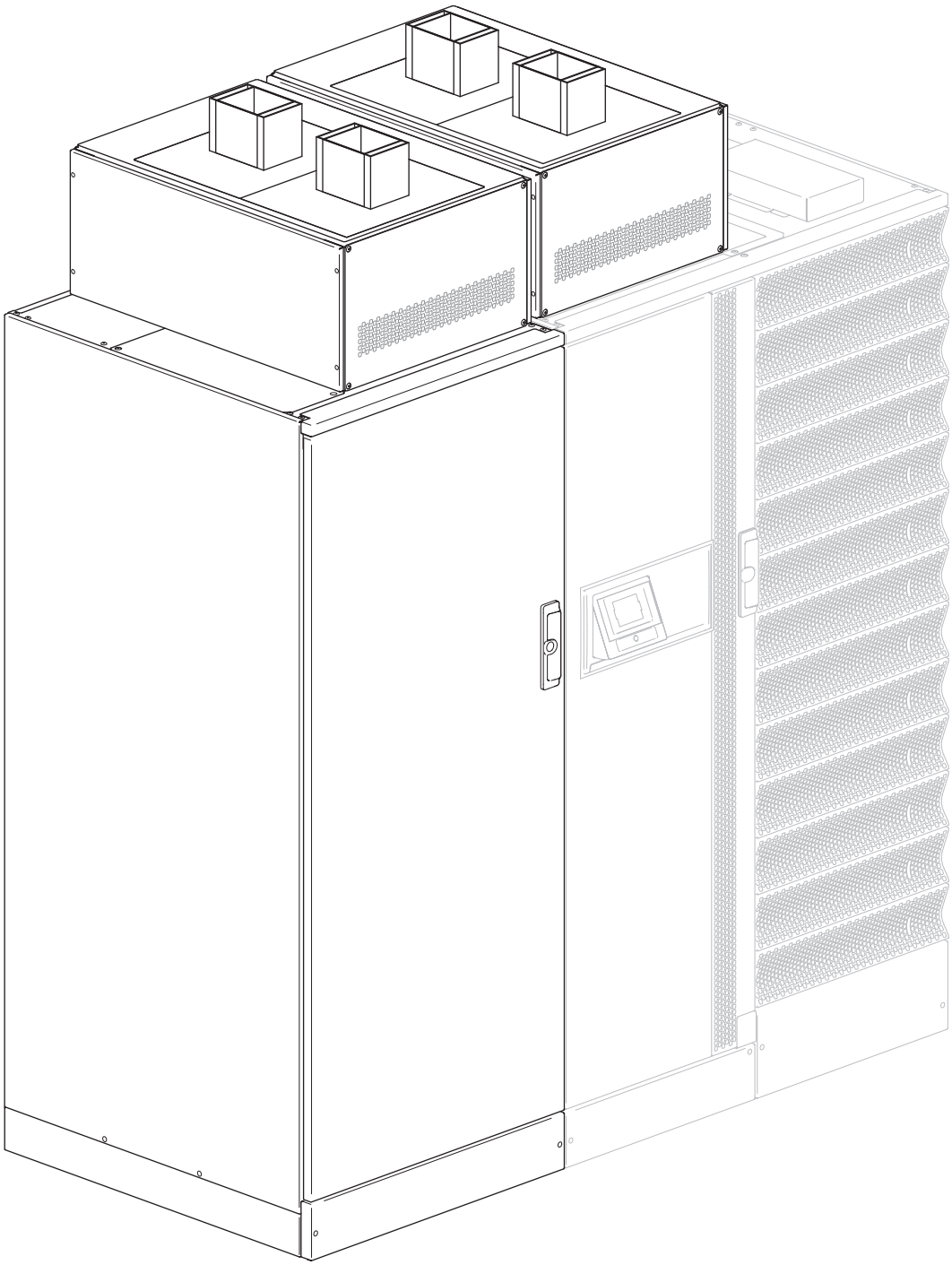
# *MODULYS XM 650*

## Flange box connections



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# 1. SCOPE

This document explains how to install the BTS FLANGE END TOP BOX & SIDE CABINET, on the MODULYS XM 650 UPS system.

Installation configurations may vary depending on specific cases.

The flanges are for AC voltage input and output, DC battery voltage can be connected either by cables or by flanges.

For further details on available UPS configurations, please refer to the MODULYS XM installation manual.

# 2. SAFETY AND WARRANTY

The MODULYS XM FLANGE TOP BOX is an extension of MODULYS XM and can only work with it.

For safety and warranty conditions, please refer to the MODULYS XM installation Manual.

NOTE! The product you have chosen is designed for commercial and industrial use only. Products may have to be adapted if used for particular critical applications such as life support systems, medical applications, commercial transportation, nuclear facilities or any other application or system where product failure is likely to cause substantial harm to people or property. For such uses we would advise you to contact SOCOMEC beforehand to confirm the ability of these products to meet the required level of safety, performance, reliability and compliance with applicable laws, regulations and specifications.

| Symbols | Description |
|---|---|
|  | Protective earth terminal (PE). |
|  | Authorised personnel only.<br>Only qualified personnel are permitted to work on the batteries. |
|  | Do not use naked flames or cause sparks in the vicinity of the accumulators. |
|  | No smoking. |
|  | Batteries charging!<br>Batteries and related parts contain lead, which is dangerous to health if ingested. Wash hands after handling! |
|  | Accumulators are heavy!<br>Use suitable transport and lifting equipment to work safely. |
|  | Risk of electric shock!<br>Connecting accumulators in series creates hazardous voltages. |
|  | Risk of explosion! Avoid short circuits!<br>Never place tools or metal objects on the accumulators. |
|  | Corrosive liquids (electrolyte). |
|  | Read the user instructions carefully.<br>Read the user manual before performing any operations. |
|  | Wear protective gloves |

# 3. UNPACKING SEQUENCE

The packaging guarantees the stability of the unit during shipping and physical transfer.

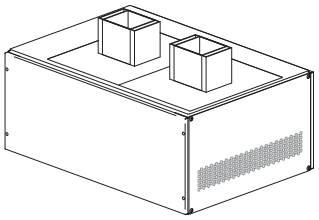
The unit must remain in a vertical position during all shipping and moving operations.

Ensure that the floor is strong enough to support the weight of the unit.

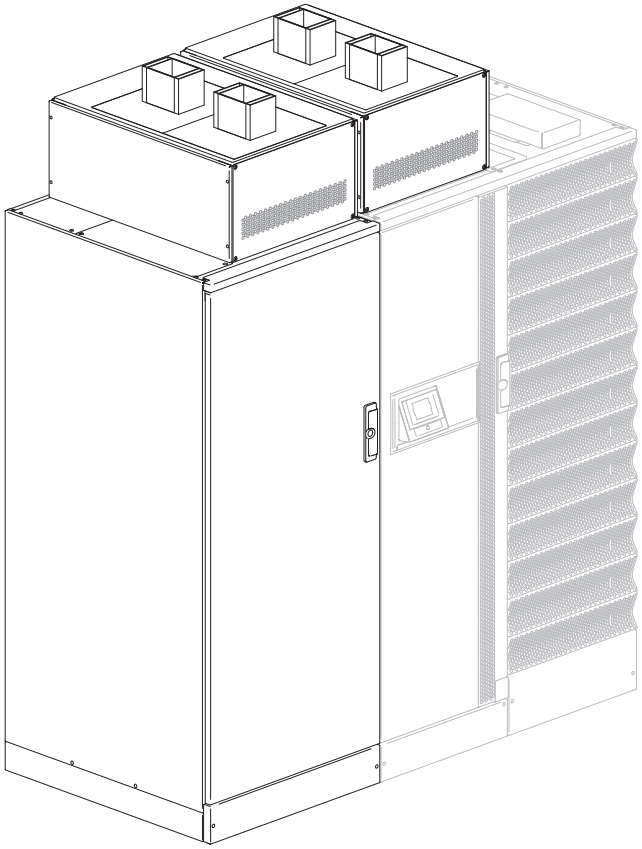
Carry the packaged unit as close as possible to the installation site.

| | |
|---|---|
| | **WARNING! HEAVY WEIGHT!**<br>**Move the unit using a fork lift truck taking the utmost caution at all times.** |
| | **WARNING!**<br>**The unit MUST be handled by at least two people. There MUST be one on each side of the UPS with respect to the direction of movement.** |
| | **WARNING!**<br>**Do not move the unit by putting pressure on the front door.** |
| | **WARNING!**<br>**When moving the unit on even slightly sloping surfaces, use the locking equipment and braking devices to ensure that the unit does not fall over.** |

- 2x flanges: Top Box unpacking



- 4x flanges: Top Box & Side cabinet unpacking



# 4. INSTALLATION SEQUENCE

We recommend taking care about the number of conductors in the Flange end, and the earthing system.

In TNS, the UPS must be connected to the earth of the building with the correct sizing of conductor to ensure that the protection device trips in the event of a short circuit between phase and earth (ground). For this, we recommend using a specific cable with the right sizing or use a conductor in the Flange end, in this case a 5-conductor Flange end (3 phases + N+PE).

The “external” earth connection is normally used to connect the metallic part of the Flange end to earth; it is not identified as an earthing conductor, but is used for equipotentiality between metallic structures. (It is not a copper or aluminium wire).

In TNC, a 4-wire conductor Flange end is enough (3 phases + PEN).

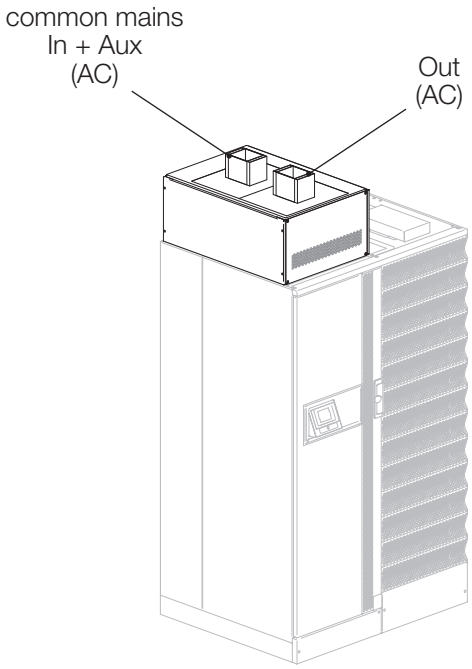
All UPS mains (rectifier input, bypass input, output, battery) can be connected through flanges. For up to two mains connections, it is it’s possible to manage the connection directly over the UPS by adding a specific top box as a mechanical interface to bear the flanges. In the case of more than two mains connections via busbar, it’s necessary to add phase and earth (ground). For this, use a side cabinet with its own top box, retaining the top box over the UPS. This side cabinet is internally connected to the UPS and can accept up to two flanges. A summary of the two solutions is given below.

**Possible configurations**

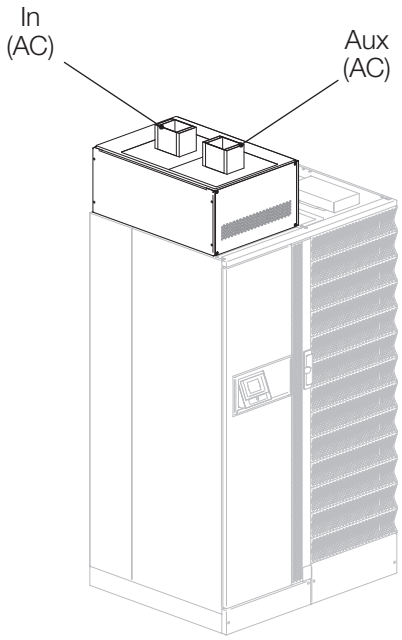
| | **Common mains In + Aux (AC)** | **In (AC)** | **Out (AC)** | **Aux (AC)** | **Battery (DC)** |
|---|---|---|---|---|---|
| **2 Flanges** | UPS | — | UPS | — | — |
| **2 Flanges** | — | UPS | — | UPS | — |
| **3 Flanges** | — | UPS | SIDE CABINET | SIDE CABINET | — |
| **4 Flanges** | — | UPS | SIDE CABINET | SIDE CABINET | UPS |

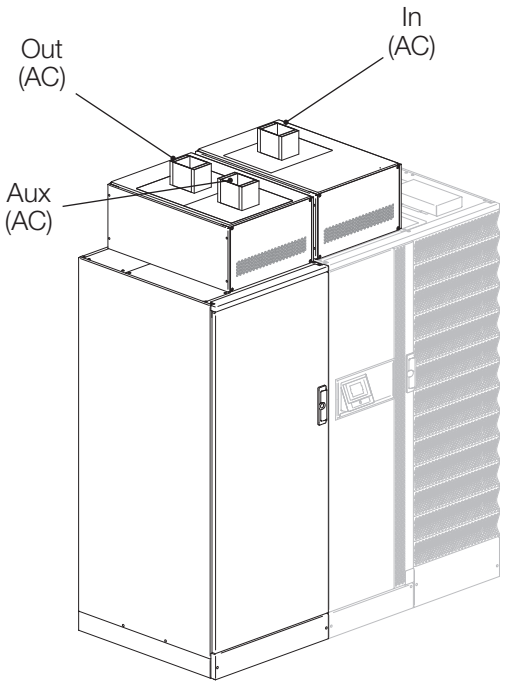
**Example configurations**

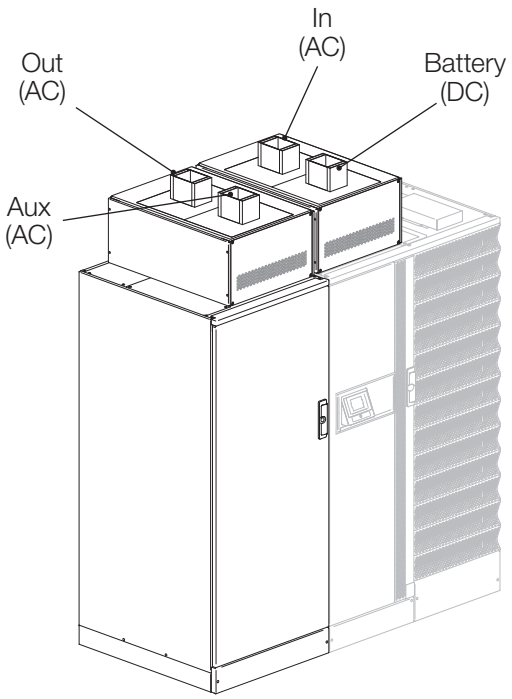
**2x Flanges**




**2x Flanges**





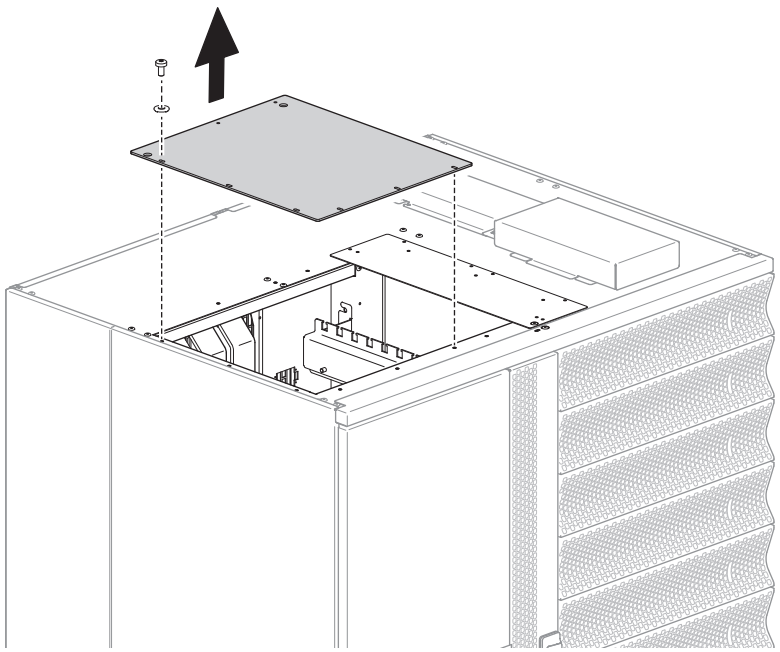

## 4.1. Connection 2x flanges: Top Box installation

The UPS can accept up to two flanges by means of a specific top box to be installed over the UPS as a mechanical interface to bear the flanges. Then connection is made internally between the flanges and the UPS terminal blocks. The installation sequence is shown below.

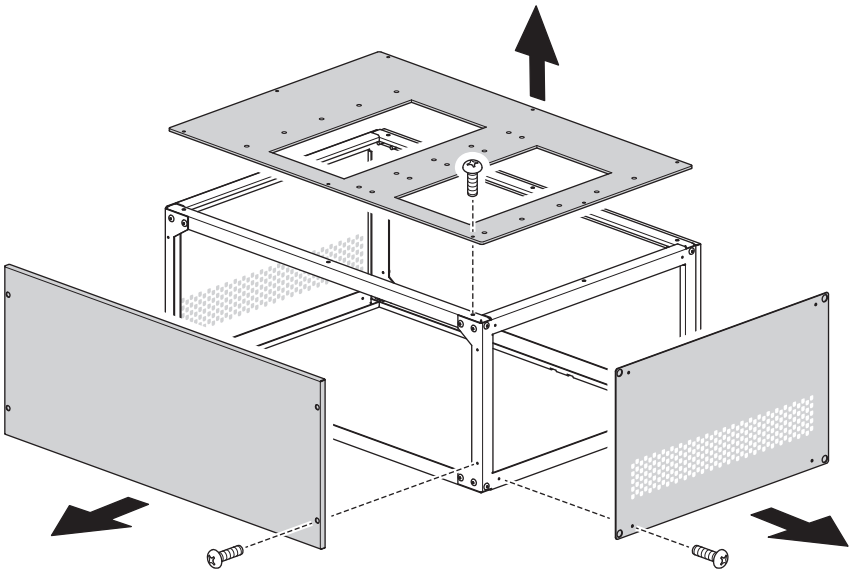
**Important:** ensure that the UPS is already positioned in the final connection position.

Installation sequence:

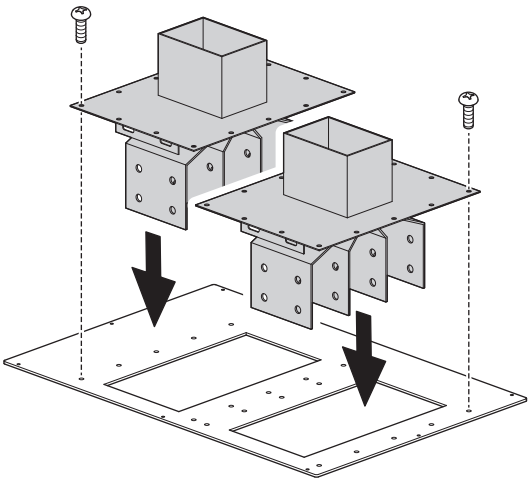
**1** UPS system: Remove upper protective cover



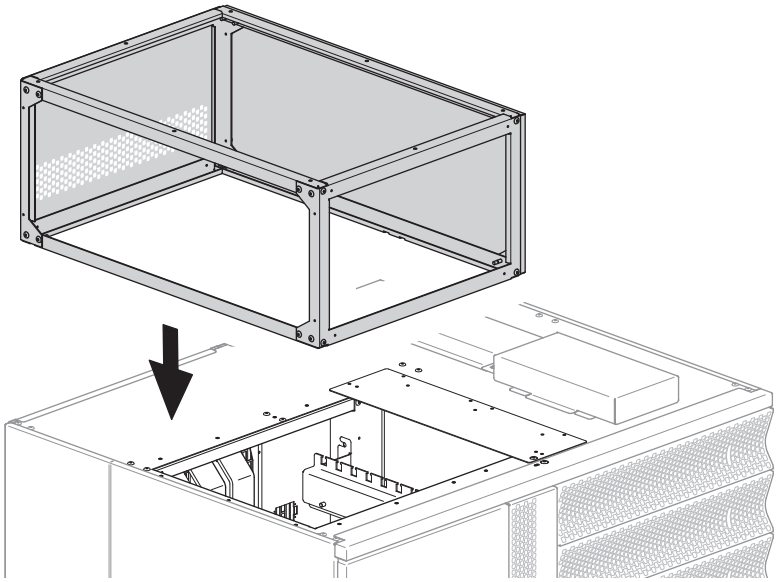
**2** Top box: put it on the ground and remove cover, front panel and left side panel



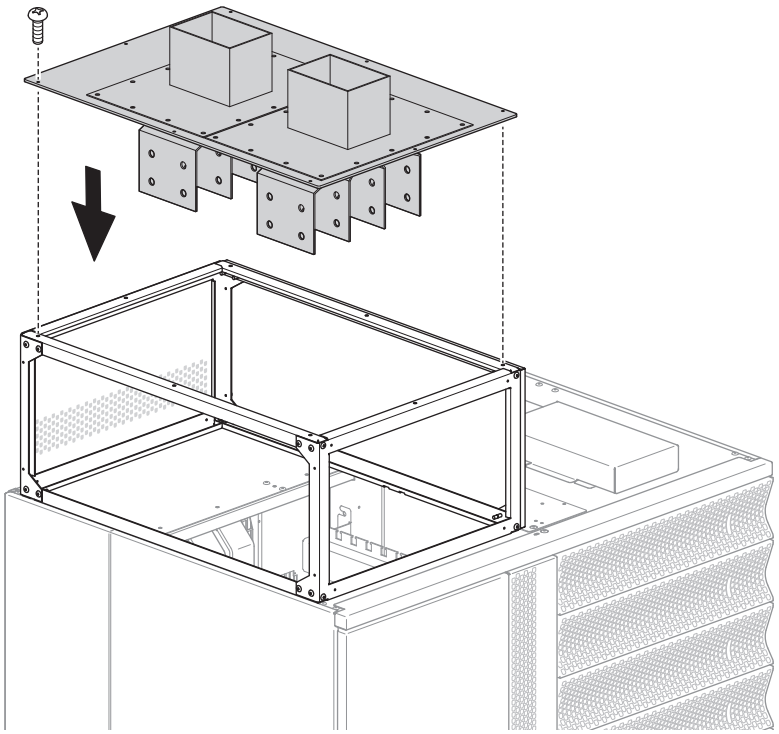
**3** Top box: put the upper cover on the ground and install the flanges (not supplied by Socomec)



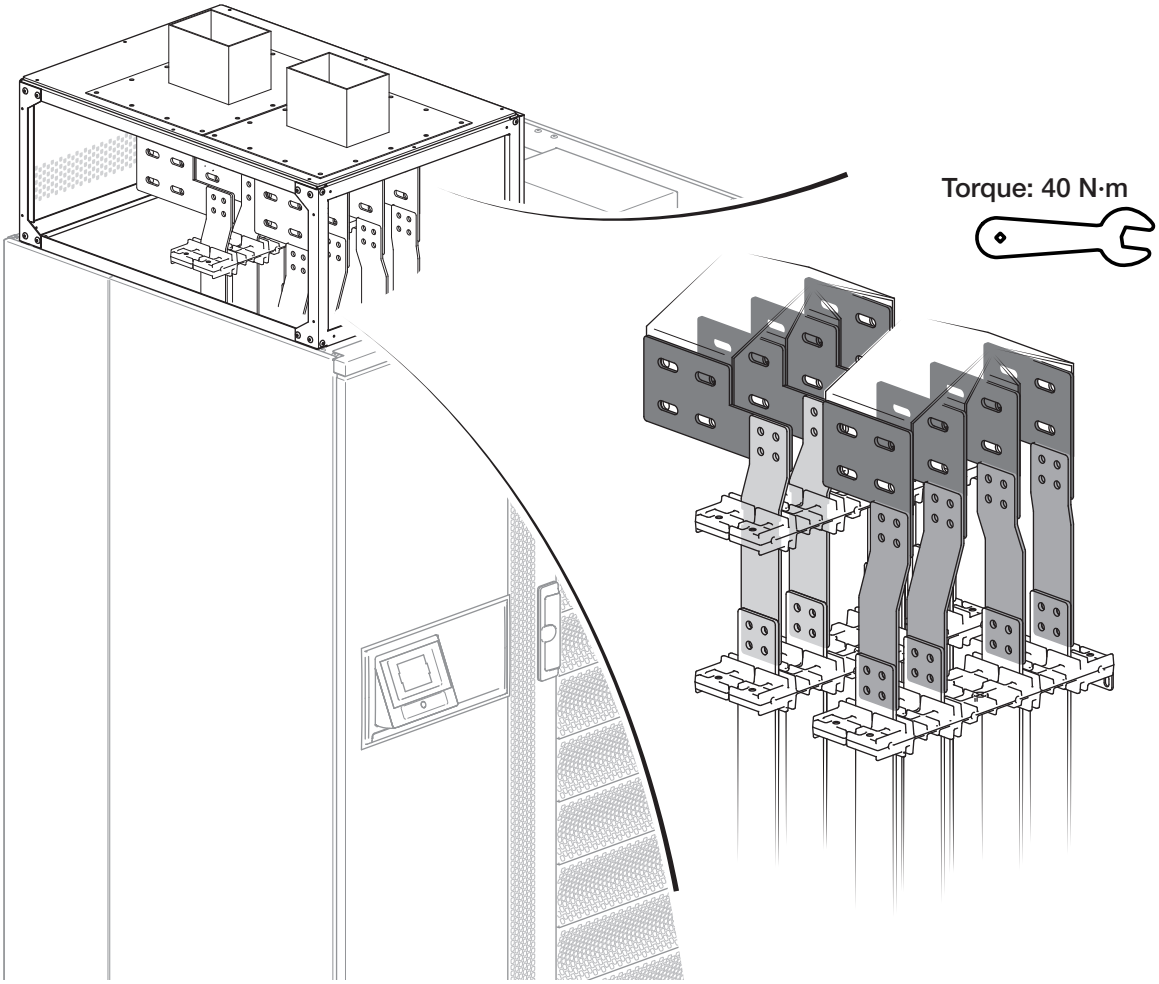
**4** Top box: install top box without its cover onto the upper part of the UPS



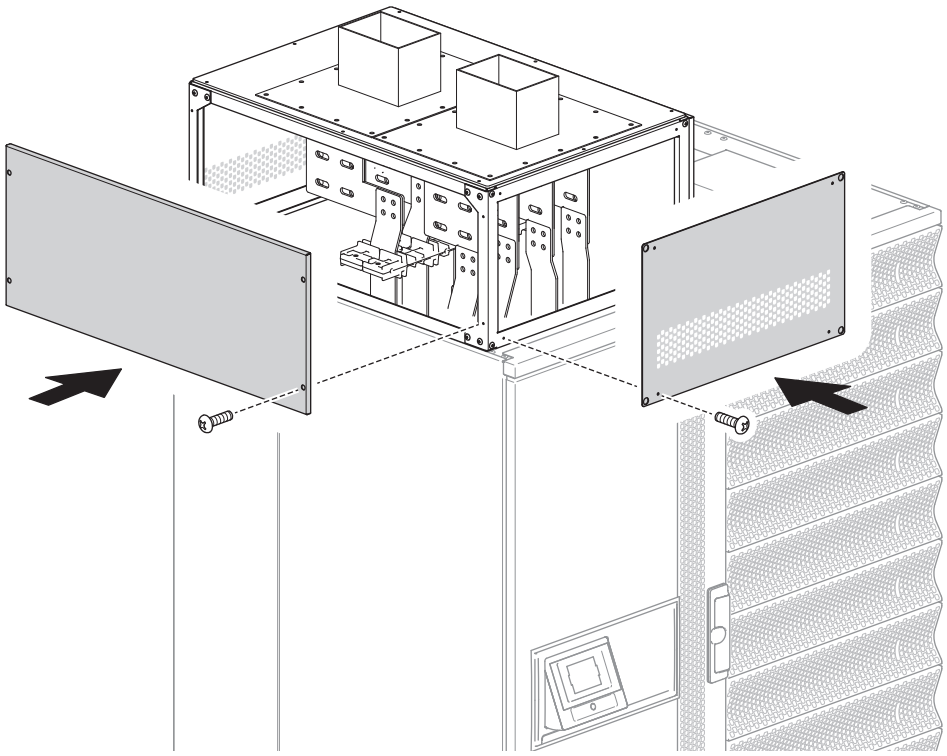
**5** Top box: install cover + flanges onto the top box on the UPS



**6** UPS system: internally connect the flanges to the UPS bus bars using the adapters supplied by Socomec



**7** Reinstall the front and side panels of the top box



**The UPS system with flanges is ready to be connected to the network.**

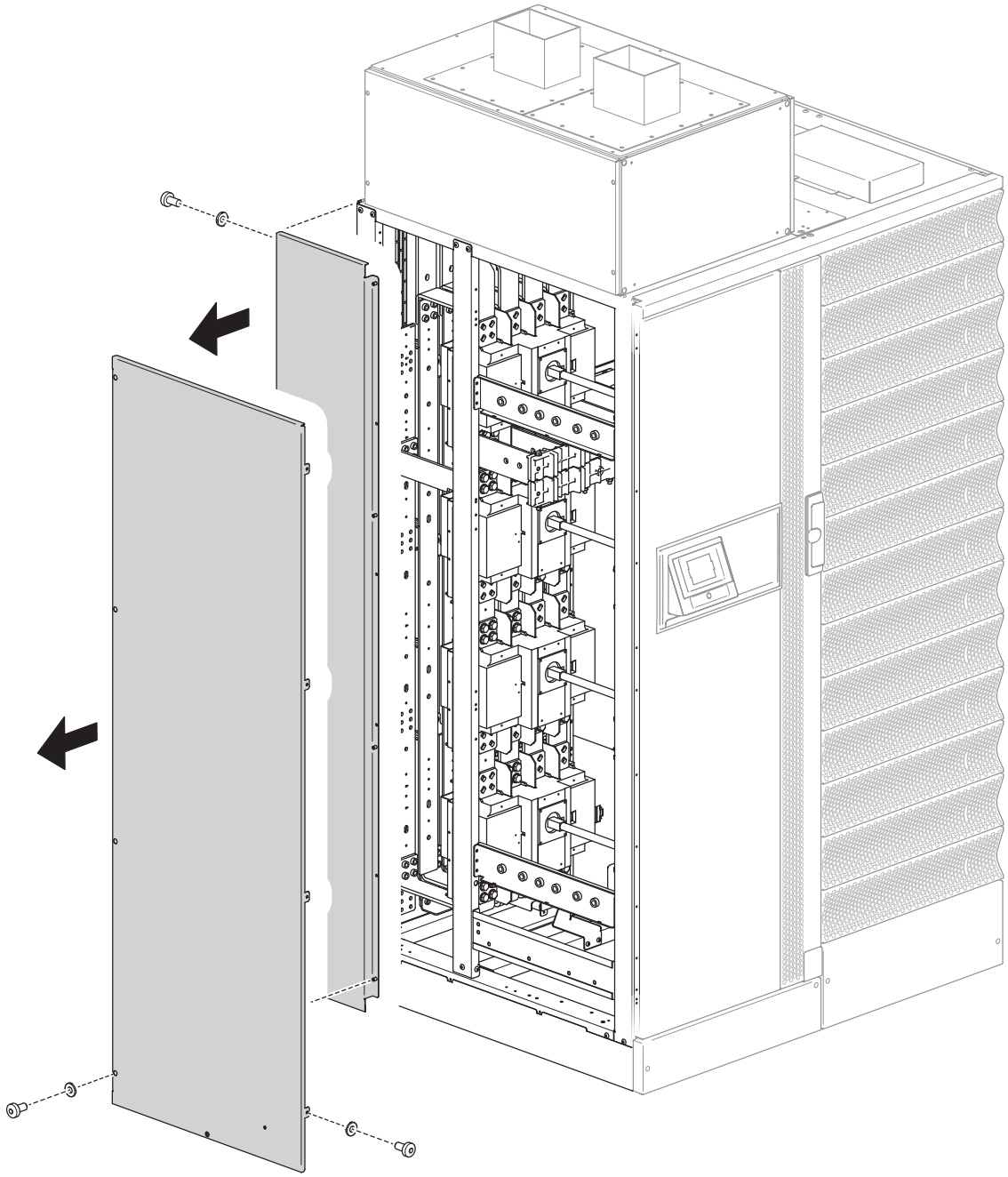
## 4.2. Connection 4x flanges: Top Box & Side cabinet installation

In the case of three or four flanges, in addition to the top box over the UPS described in the previous point, a side cabinet with its own top box must be installed to increase capacity. This side cabinet is internally connected to the UPS and can accept up to two flanges, giving a total of four flanges. The installation sequence is shown below.

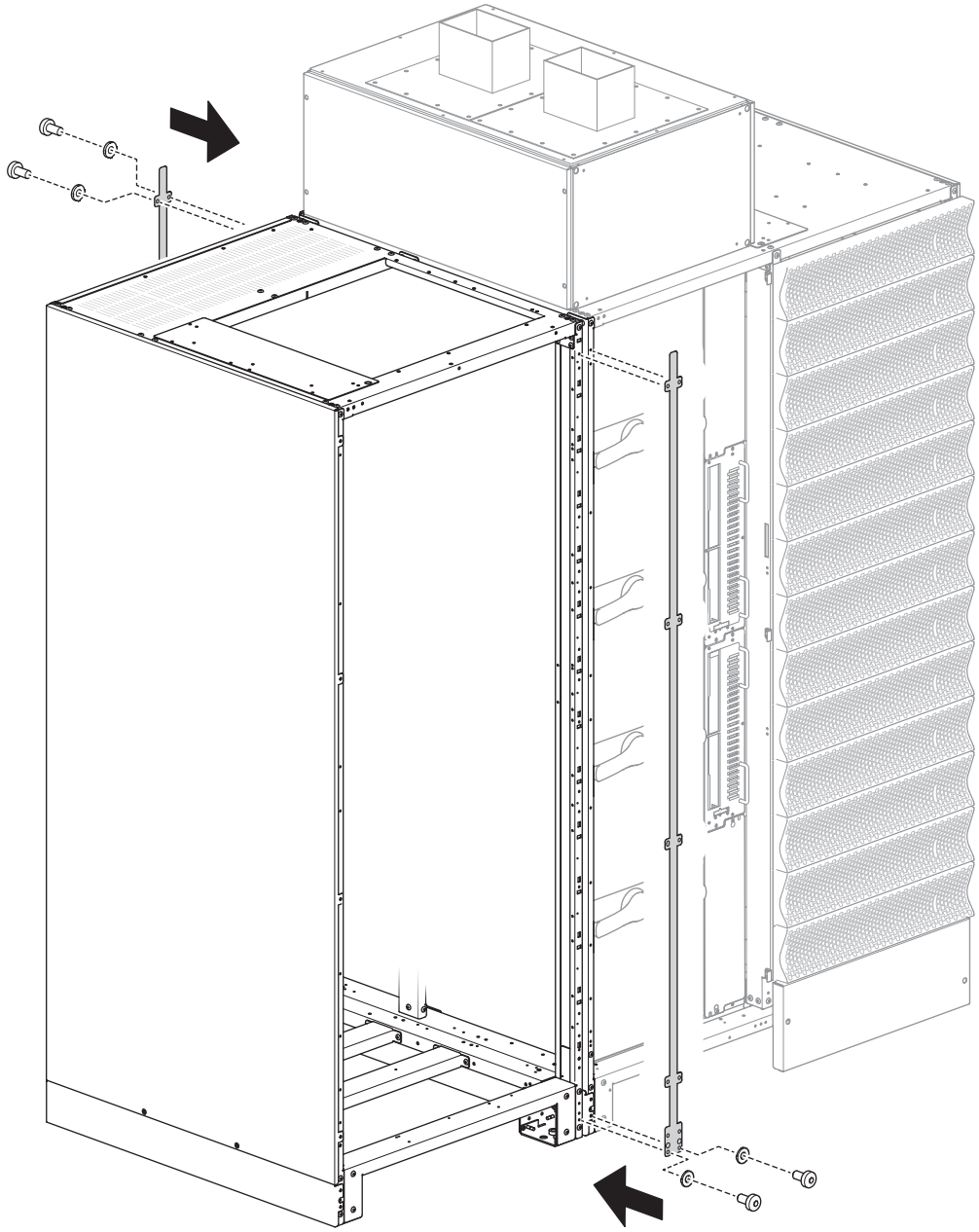
**Important:** perform steps 1 to 7 of the installation sequence for 2x flanges (previous section).

Installation sequence:

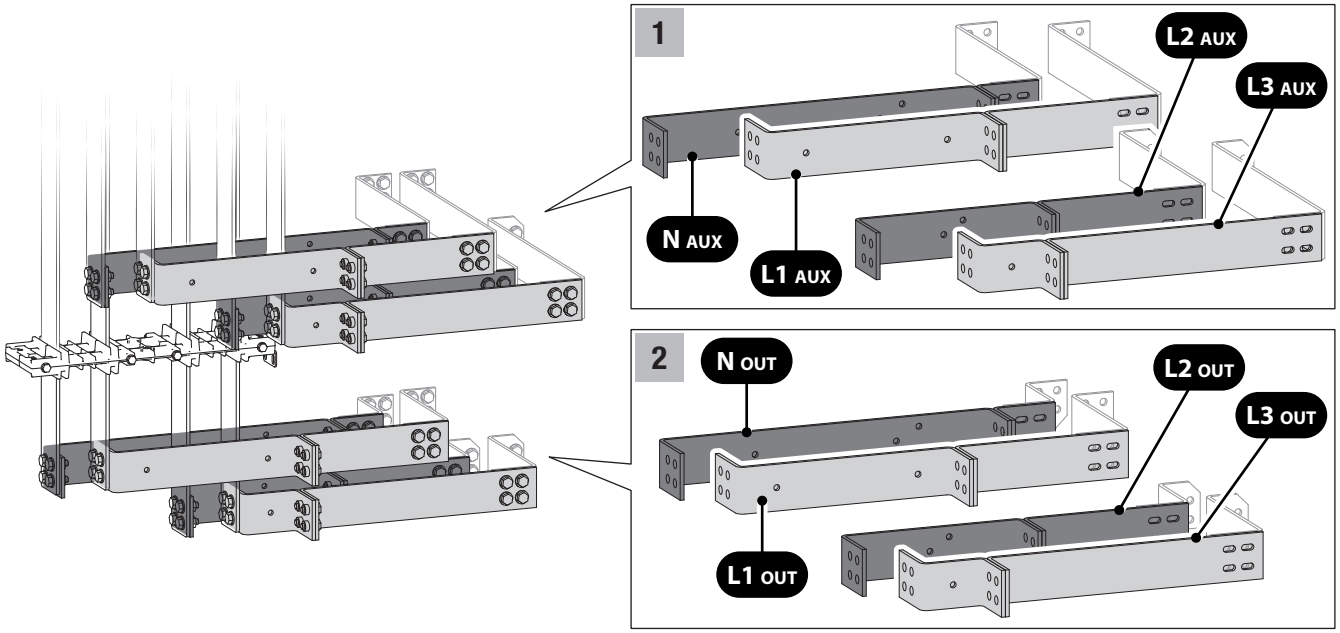
**8** UPS system: remove the left side panel of the UPS (no longer necessary, can be disposed of)

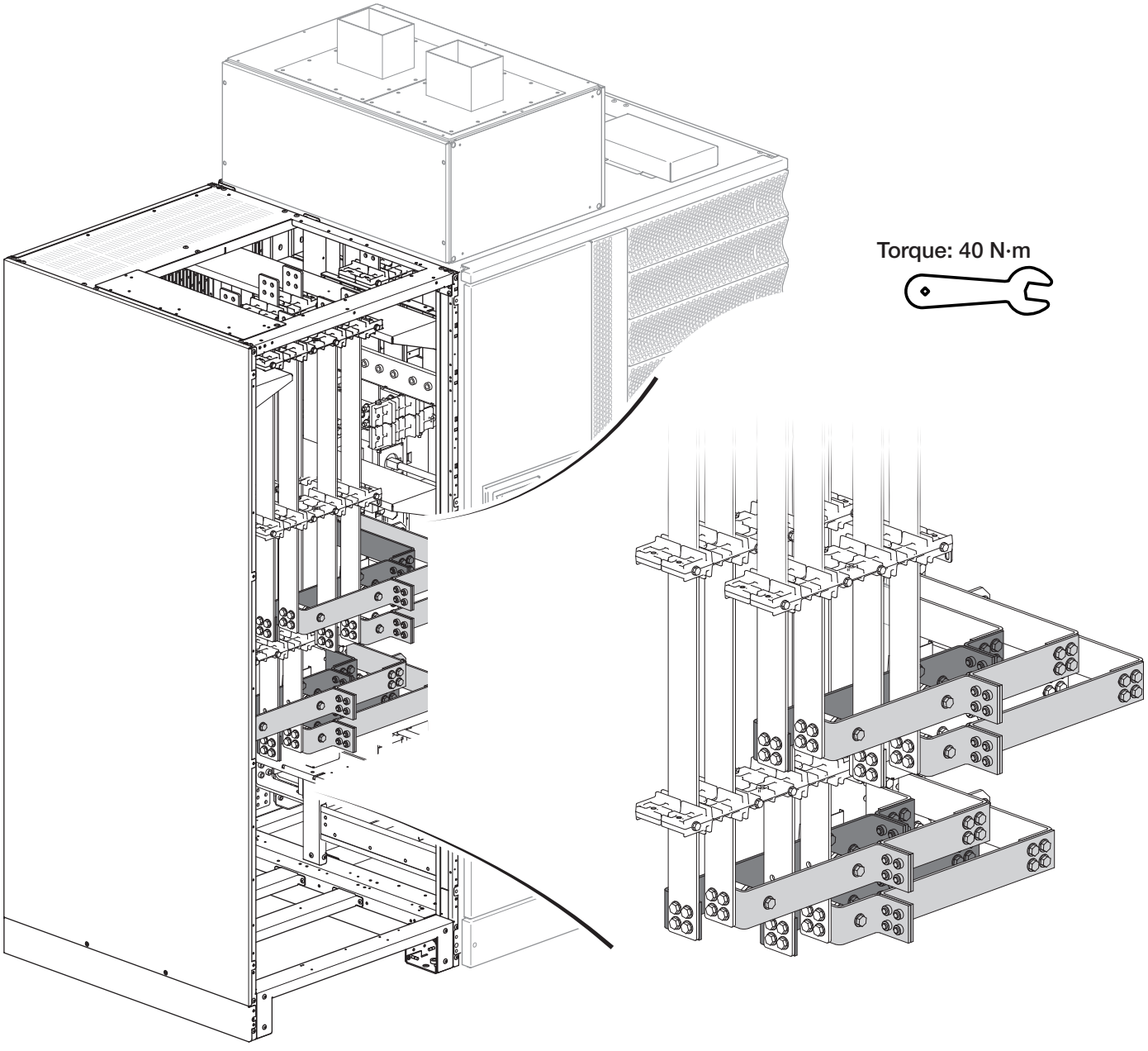


## 9 Side cabinet: connect the side cabinet to the UPS

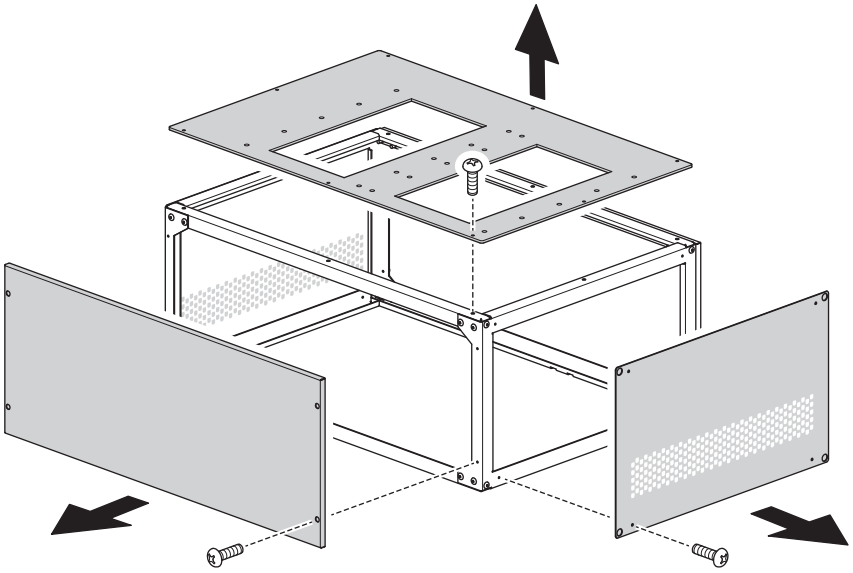


## 10 Side cabinet: connect the (AC) busbars together using the adapters supplied by Socomec

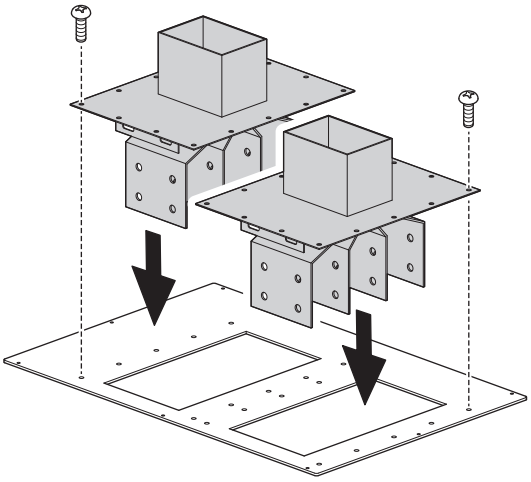


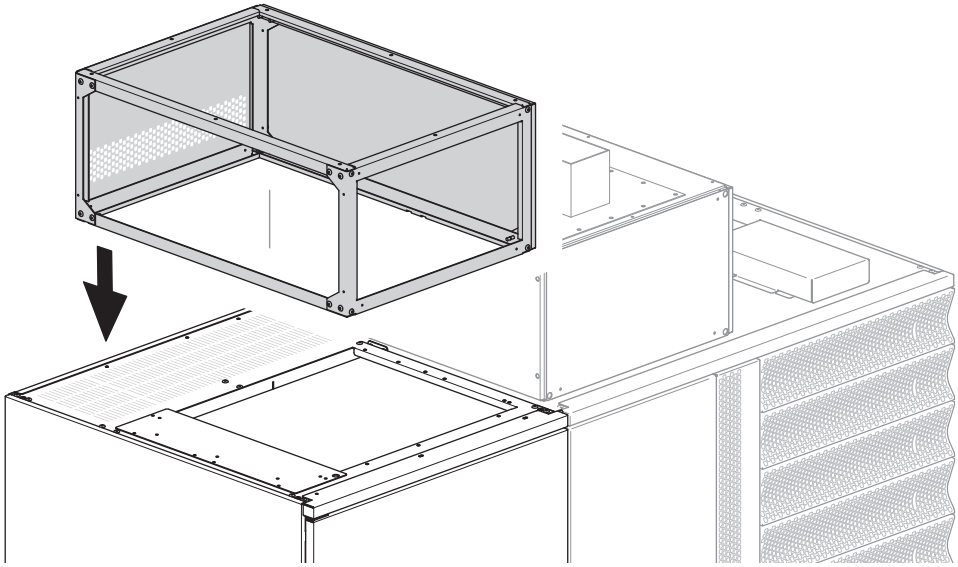
**11** Side cabinet top box: put it on the ground and remove the top cover that will bear the flanges, remove the front and left side panels



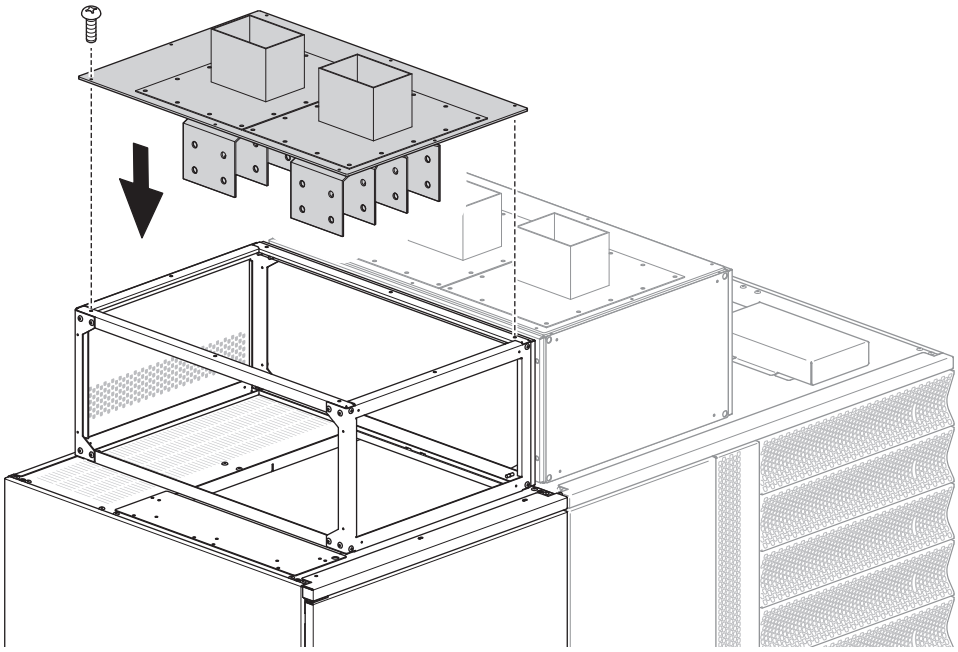
**12** Side cabinet top box: put the upper cover on the ground and install the flanges (not supplied by Socomec)



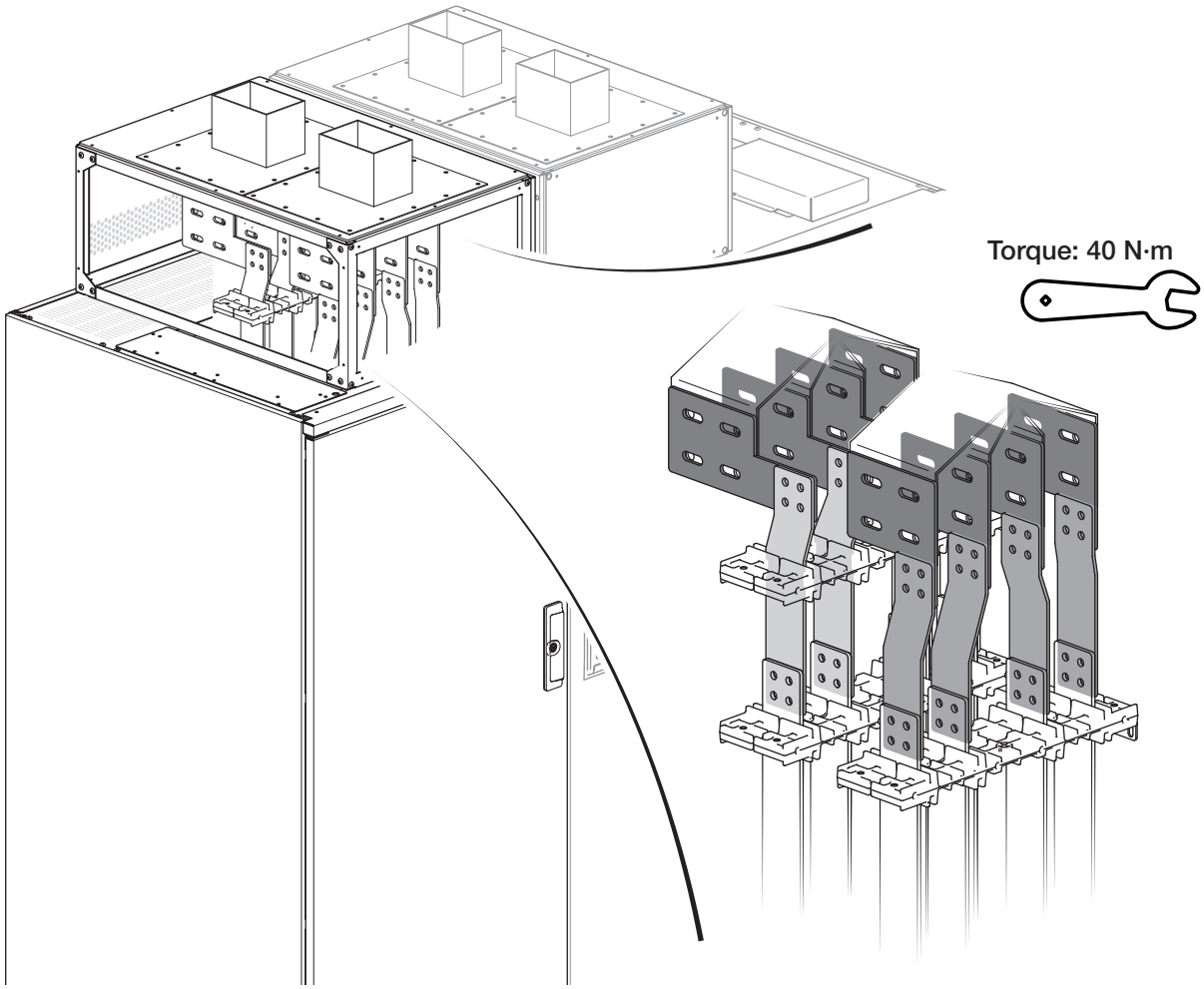
**13** Side cabinet top box: install the top box without its cover onto the side cabinet



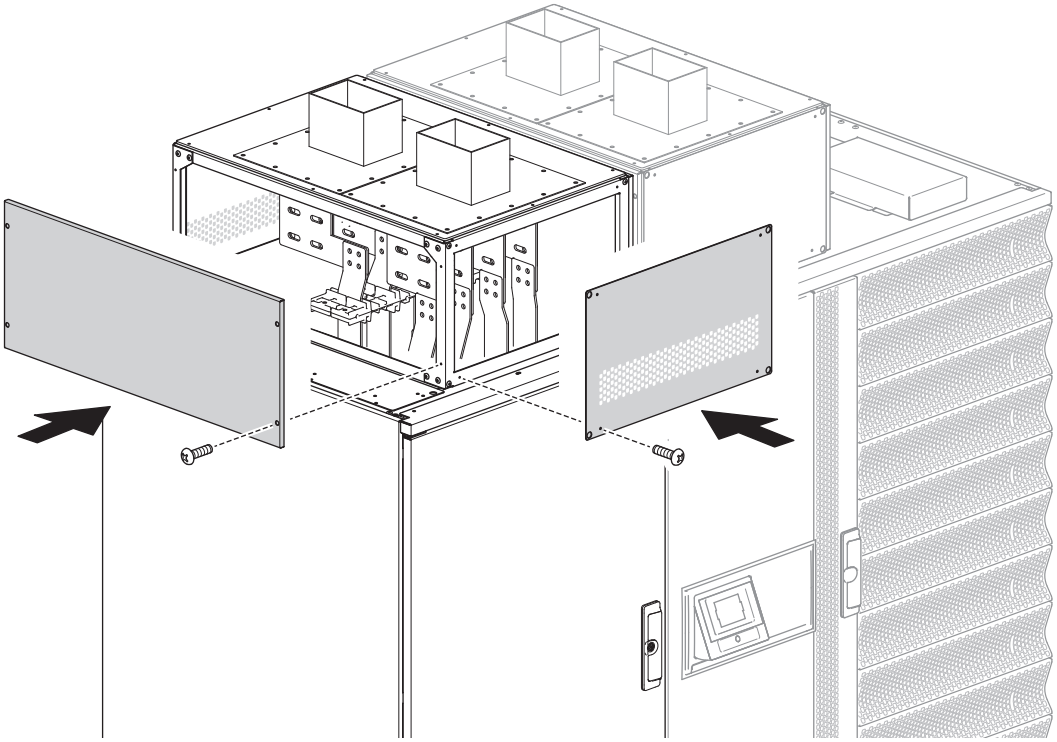
**14** Side cabinet top box: install the upper cover with flanges onto the top box on the side cabinet



**15** UPS system: internally connect the flanges to the UPS bus bars using the adapters supplied by Socomec



**16** Reinstall the front and side panels of the top box and install the front panel of the side cabinet



**The UPS system with flanges is ready to be connected to the network.**

# 5. EQUIPMENT TECHNICAL SPECIFICATIONS

| ELECTRICAL SPECIFICATION FOR AC VOLTAGE | |
|---|---|
| Short-term withstand current Icw | 35 kA |
| **Mechanical specifications** | |
| Dimensions (WxDxH) TOP BOX | 850 X 600 X 355 (mm) |
| Dimensions (WxDxH) SIDE CABINET without TOP BOX | 800 X 960 X 1990 (mm) |
| Weight TOP BOX | 20.5 kg |
| Weight SIDE CABINET without TOP BOX | 200 kg |

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