

Installation instructions for the AK120-1 gate

1. General guidelines

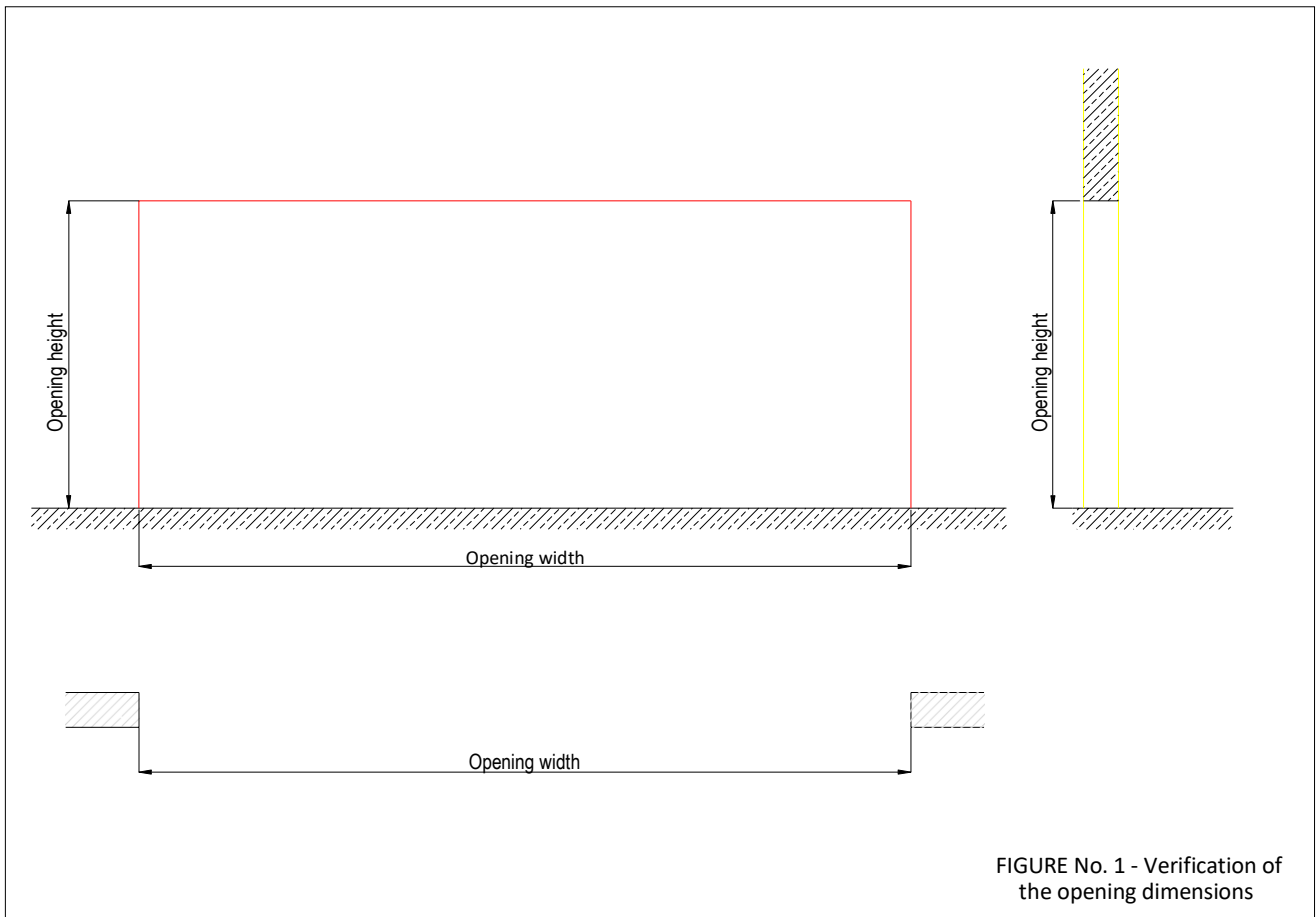
Keep this manual for future reference

Please read and follow the instructions carefully as they pertain to important details of gate installation. It is also advisable to follow a maintenance schedule for the product so that the gate will function properly for many years.

NOTE

Installation requirements:

- Level floor
- Plastered walls and ceilings
- Gate installation site and work area cleaned and free of unnecessary objects



2. Delivery of the gate for assembly

The gate is delivered on 2 separate pallets:

- Apron wound on the shaft, side guides, bottom strip, angle brackets
- Fire resistant panels, accessories

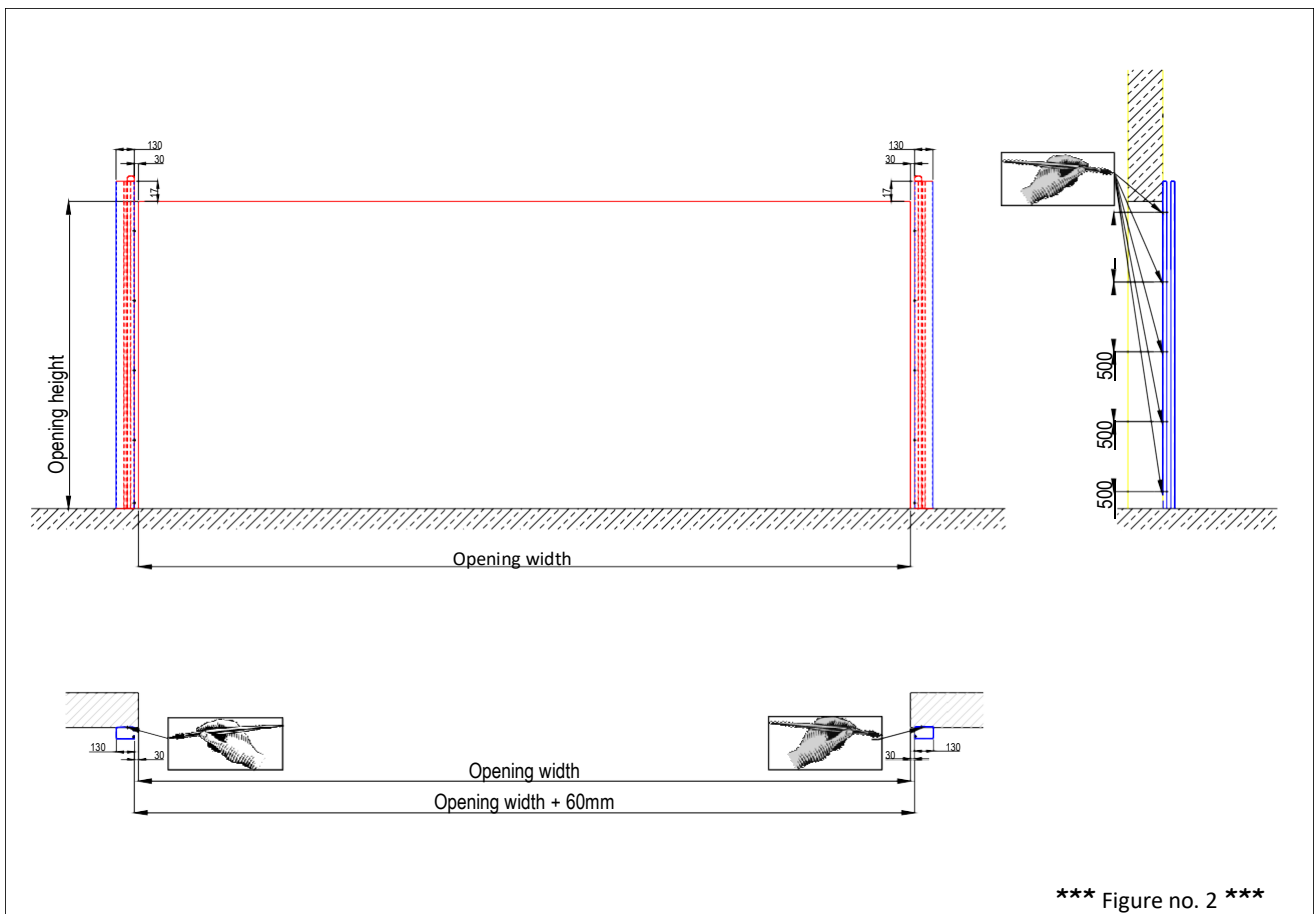
In some doors, due to size or weight, the number of pallets may vary

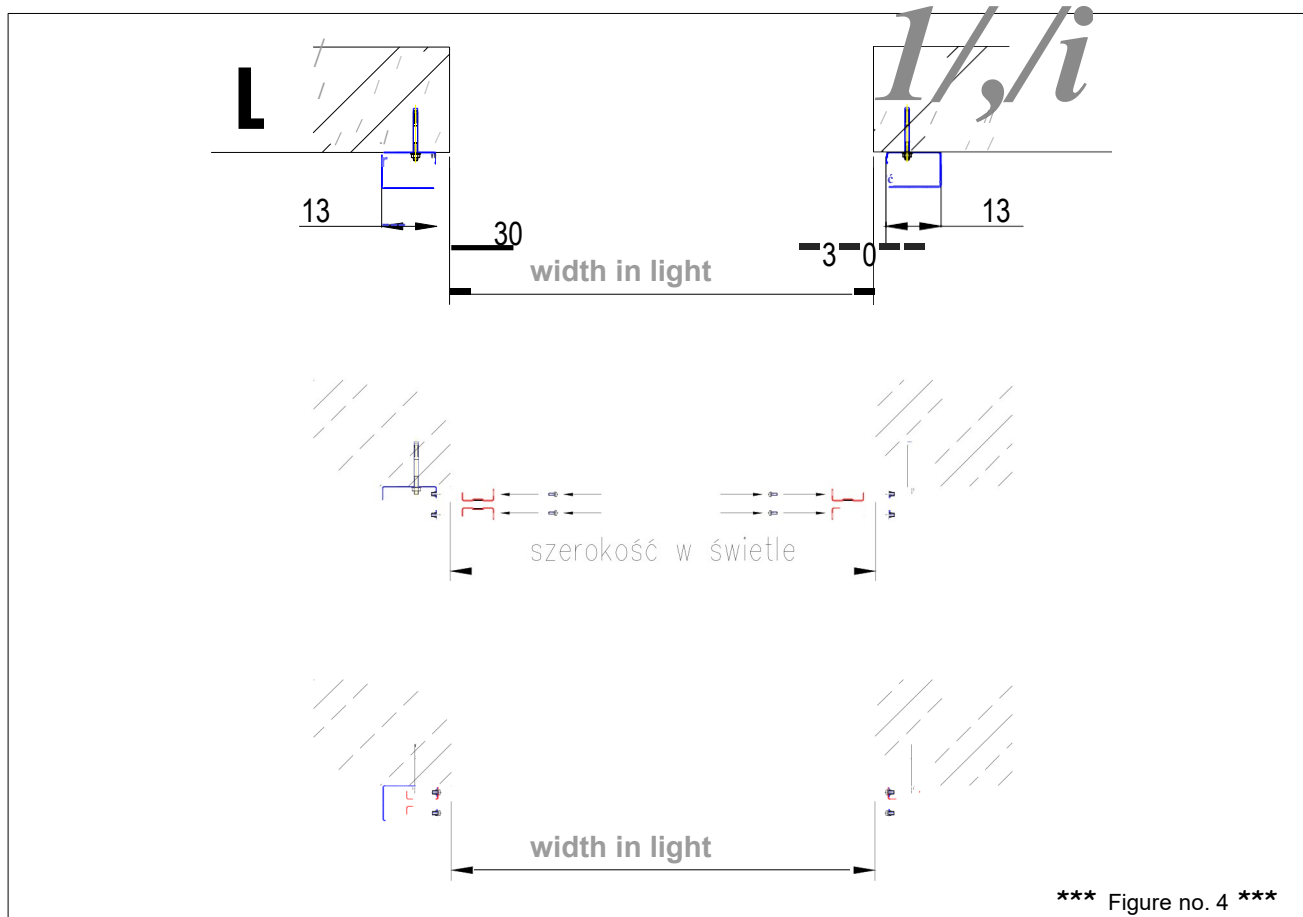
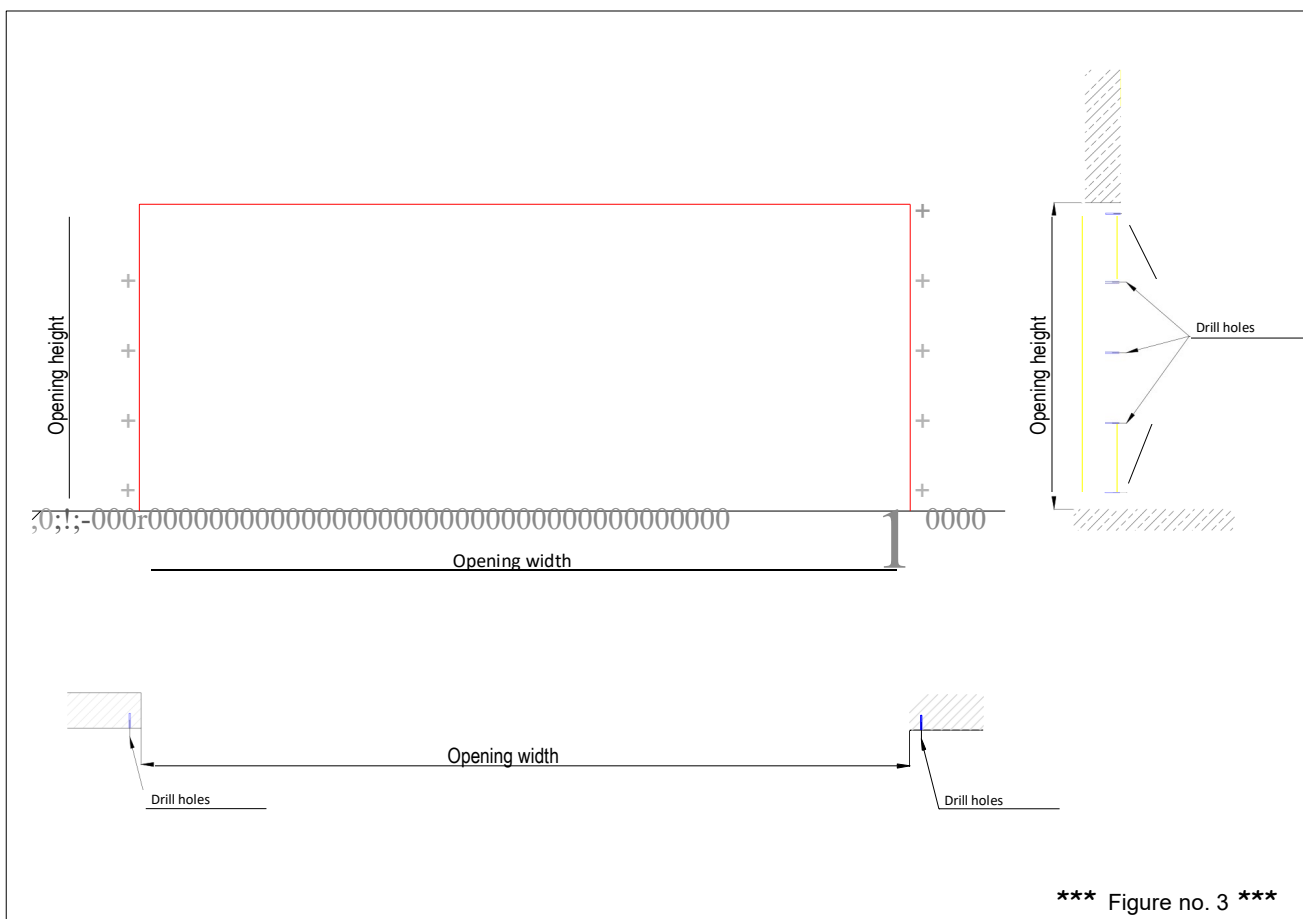
3. Dimensional inspection

Before starting installation, verify that the dimensions of the opening in which the gate will be installed match. Also check that the installation surfaces are smooth. Ensure that the guides and consoles are properly level. This point is very important for the proper functioning of the gate.

4. Installation of side guides

- Verify the height of the guides,
- The bottom part of the guides must be at ground level, the top part must extend 150mm above the opening light
- If necessary, the guides can be shortened by always cutting off from the bottom
- Fasten the guides with bolts to the wall, leaving them properly aligned - parallel and centered to each other and perpendicular to the ground

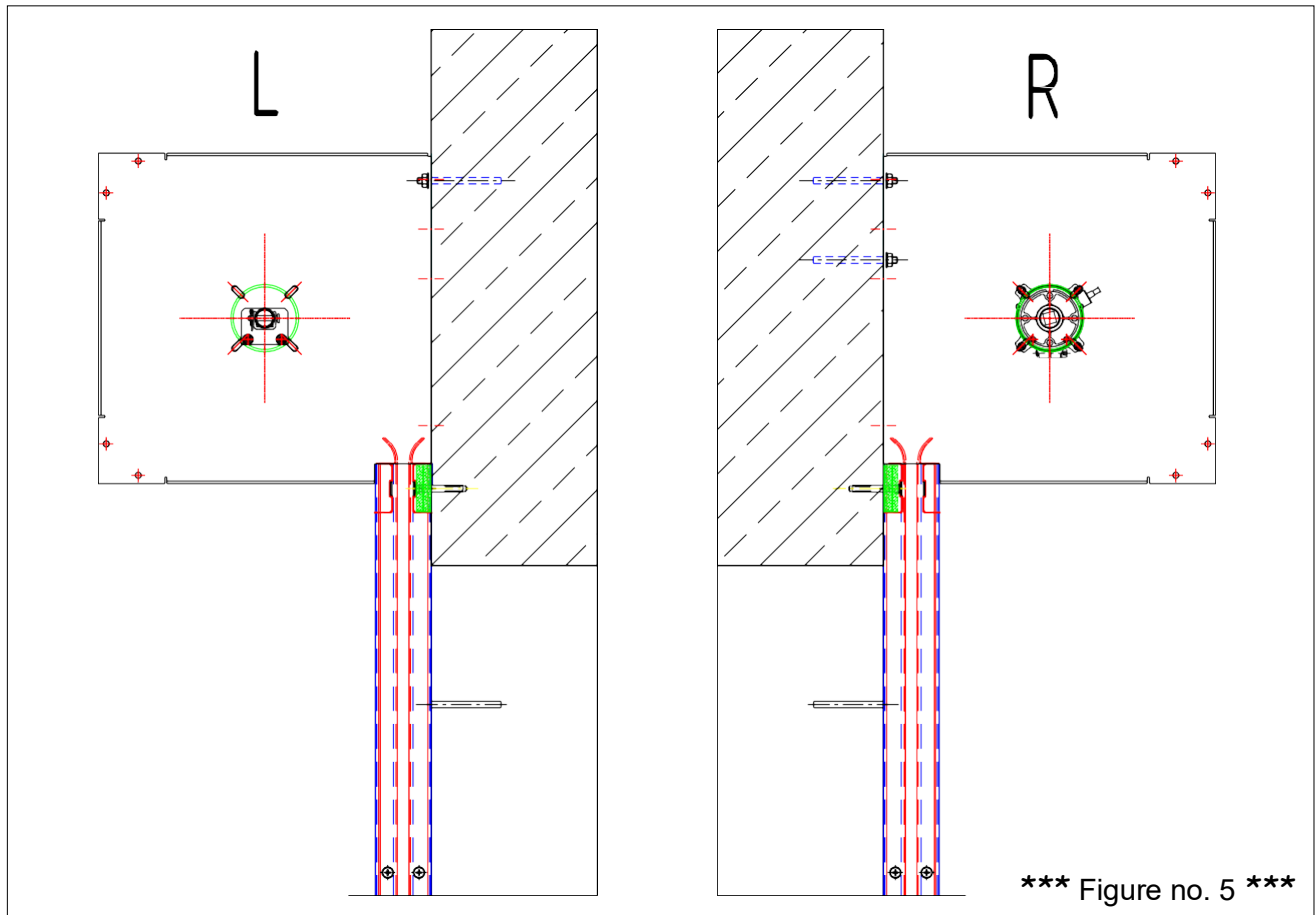




5. Installation of consoles

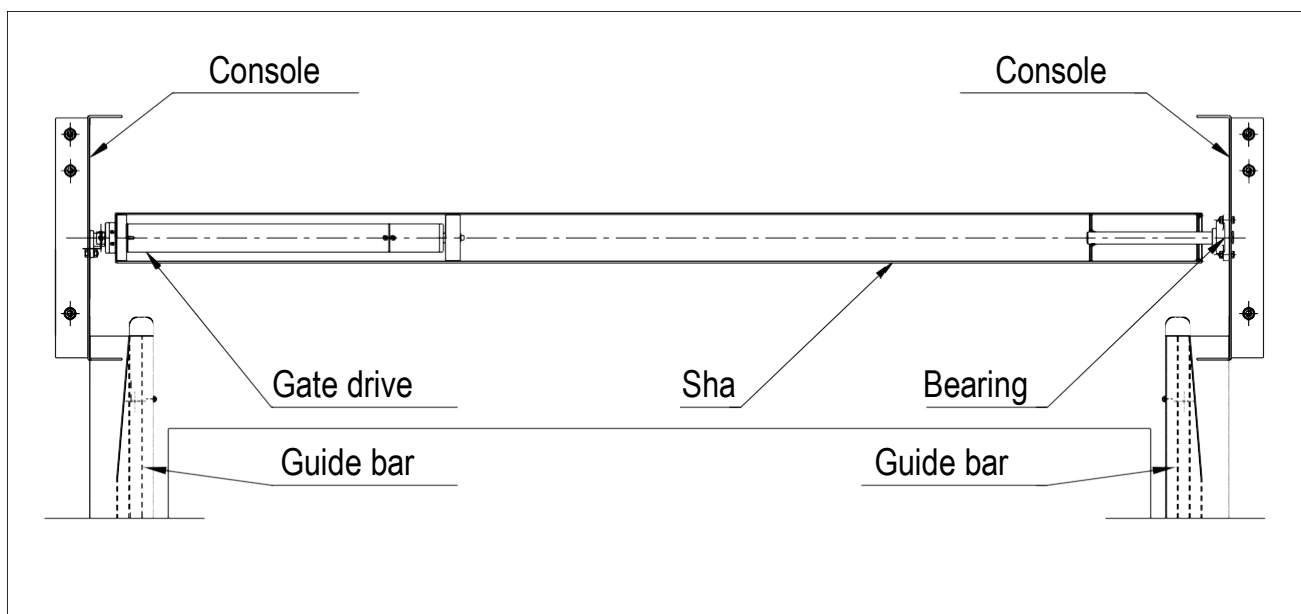
NOTE: when installing the side consoles, check the fastening of these pieces as they will support the entire weight of the gate with bolts attached to a surface made of concrete or steel.

Fasten the consoles to the wall with a set of bolts and studs to prevent movement and vibration.



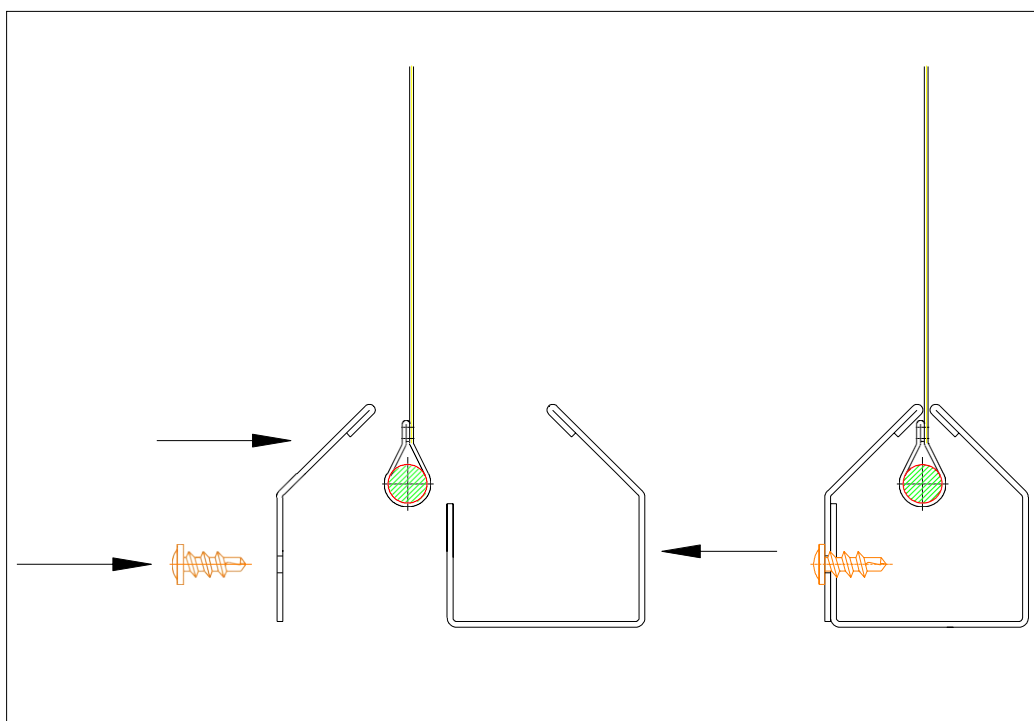
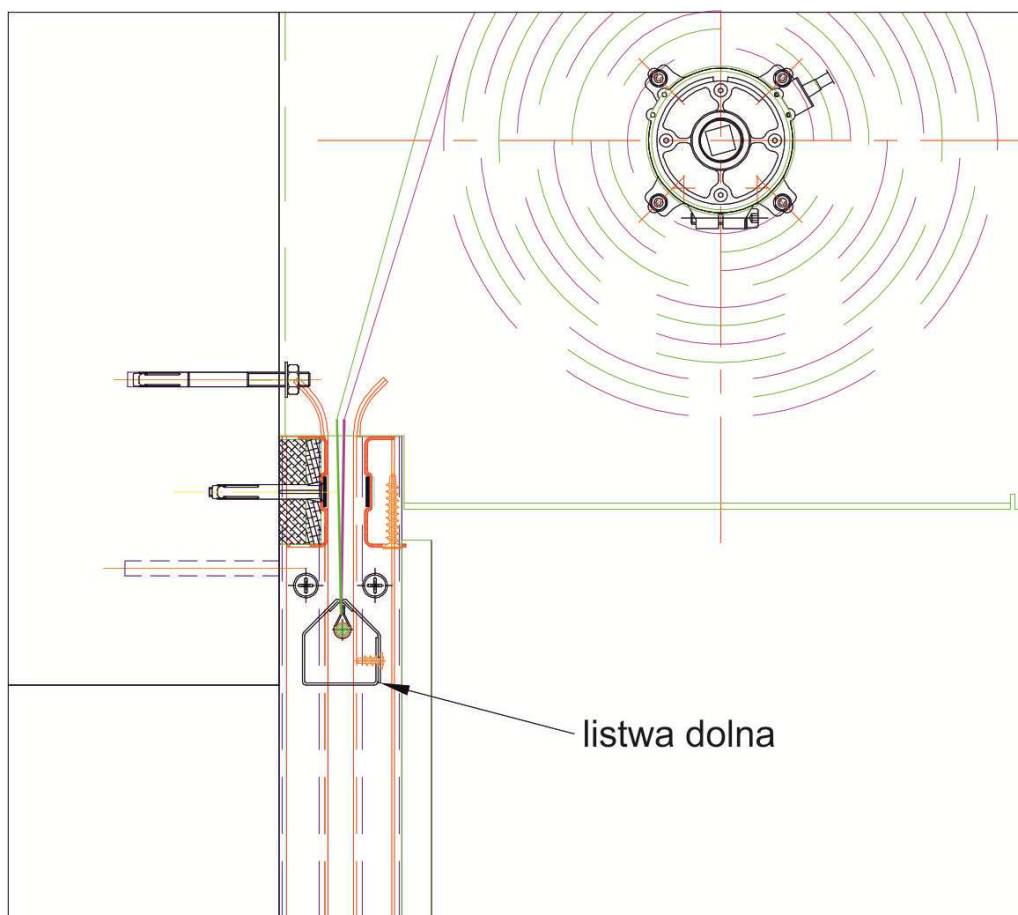
6. Installation of the shaft

Mount the shaft on the consoles, bearing in mind the motor side and electrical connections. On the other side, bearings at the end of the shaft. Check that the shaft is level and centered relative to the opening.



7. Installation of apron in guides

Once the shaft is installed, feed the door apron into the side guides and then install the bottom strip.



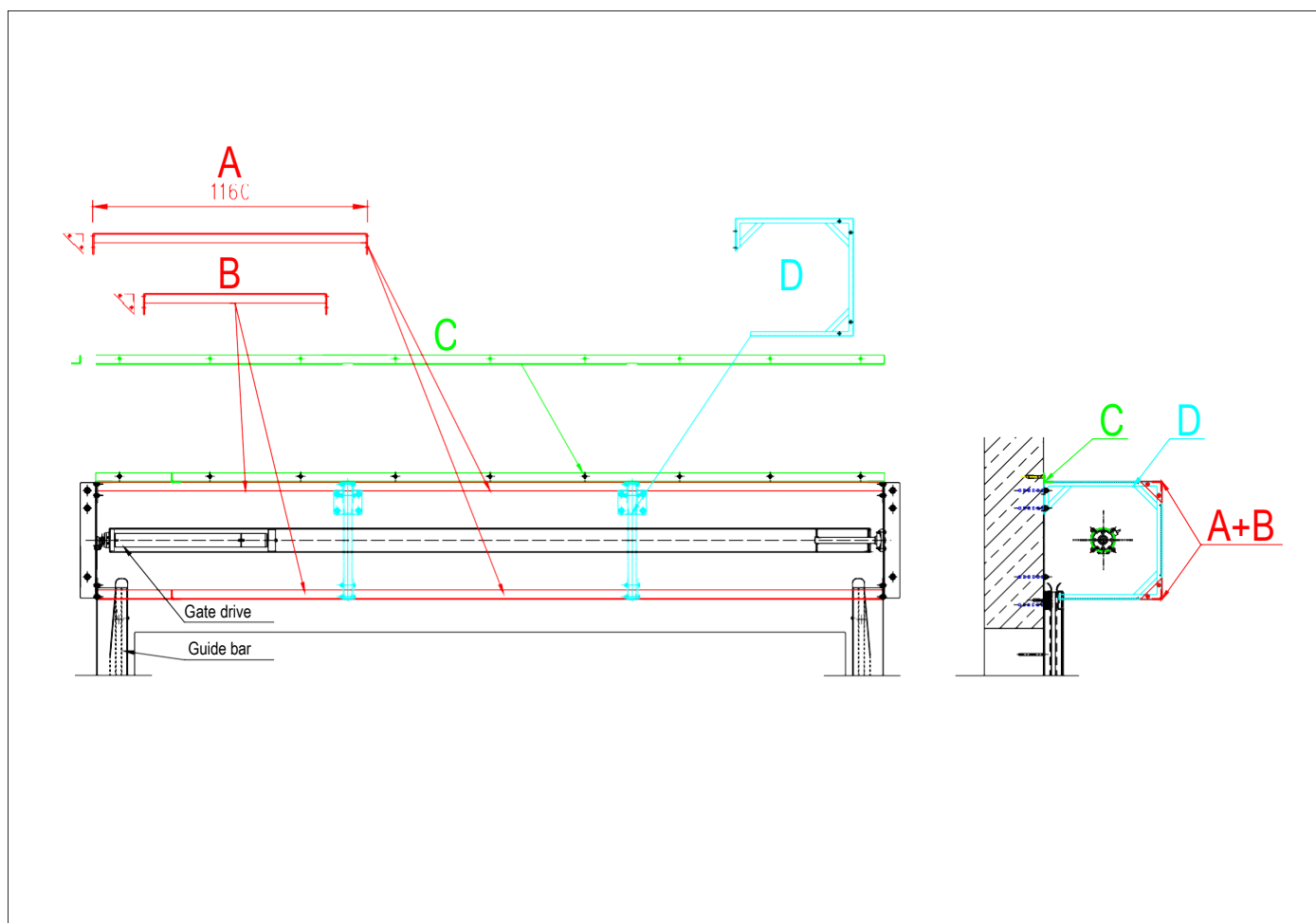
8. Installing the shaft cover frame.

WE RECOMMEND ASSEMBLY ON THE FLOOR

Bolt all parts of the steel structure together so that the longer sections fall in the middle and the shorter ones on the sides (as shown in the figure below)

Once the entire structure is assembled, it must be lifted, e.g. with a forklift, and tightened to the consoles to which the shaft is attached.

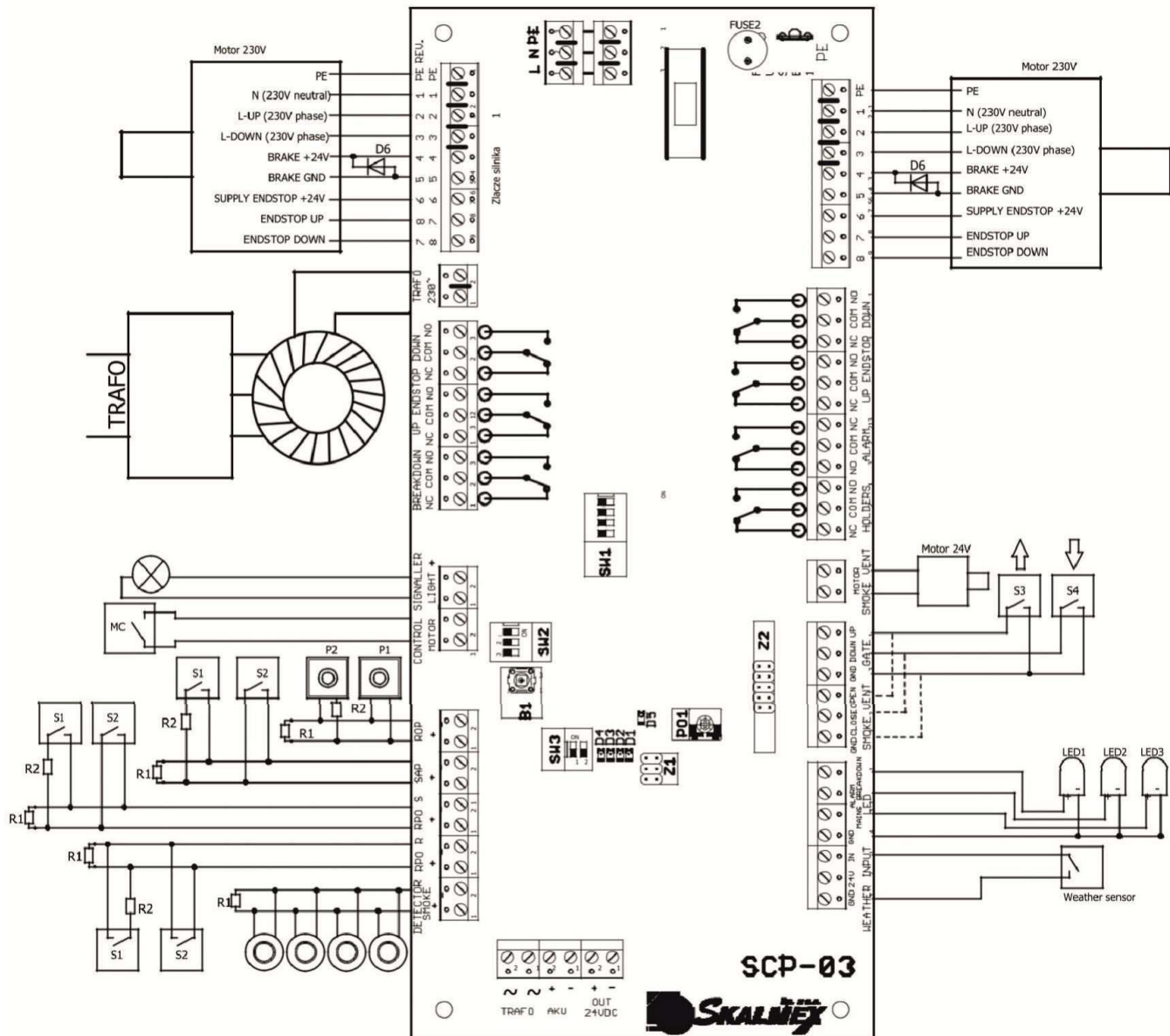
After attaching to the side consoles, attach the structure to the ceiling.

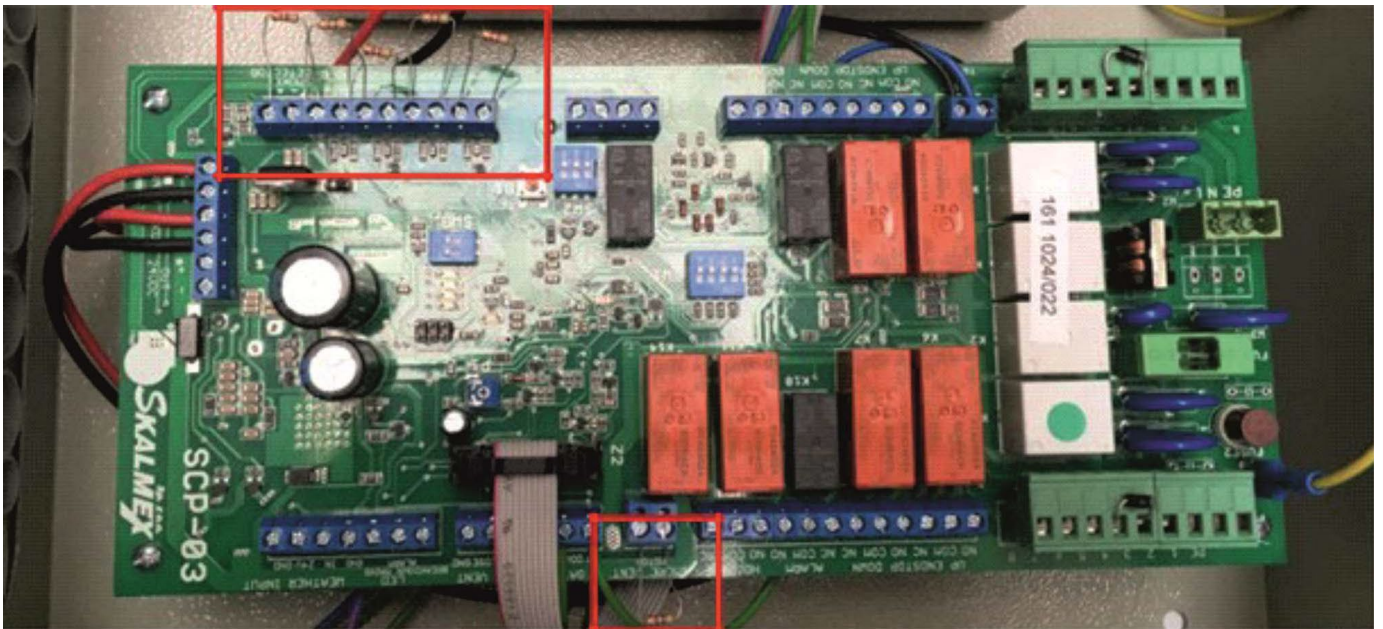


9. Electrical connection

STEP BY STEP CONNECTION INSTRUCTION - SCP-03 CONTROL PANEL WITH ACCESSORIES

- Open the front panel
- Batteries are disconnected and protected by a plastic cover
- The panel comes with 4.7k Ohm and 1k Ohm resistors in separate plastic bags
- Connect the 4.7k Ohm resistors as shown in the following figure
- Connect the engine

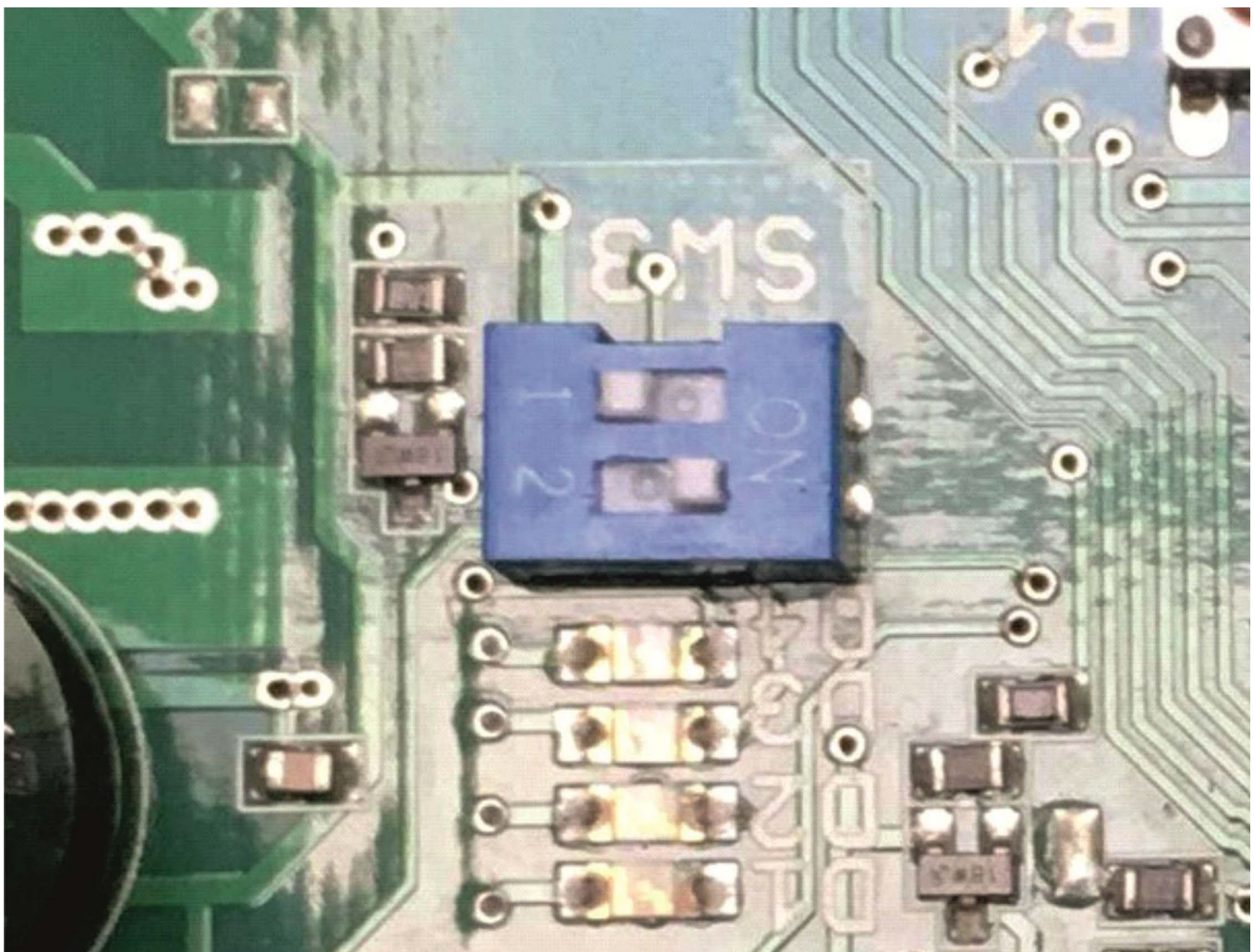




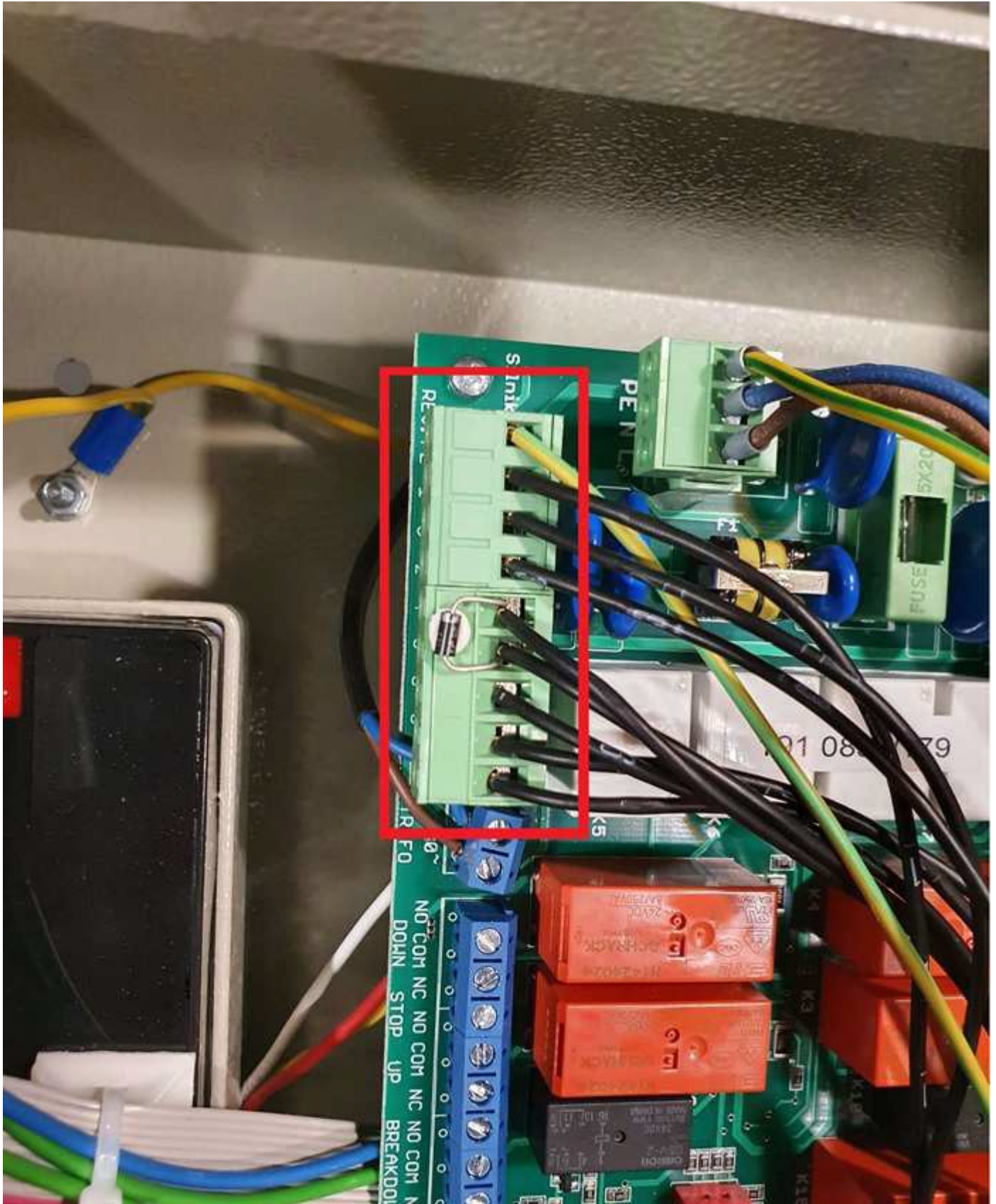
5 resistors to be connected: ROP, SAP, PRO, RPO, SMOKE SENSORS

1 resistor to be connected: SMOKE EXTRACTION (important!)

- Change SW3 switch positions (figure)



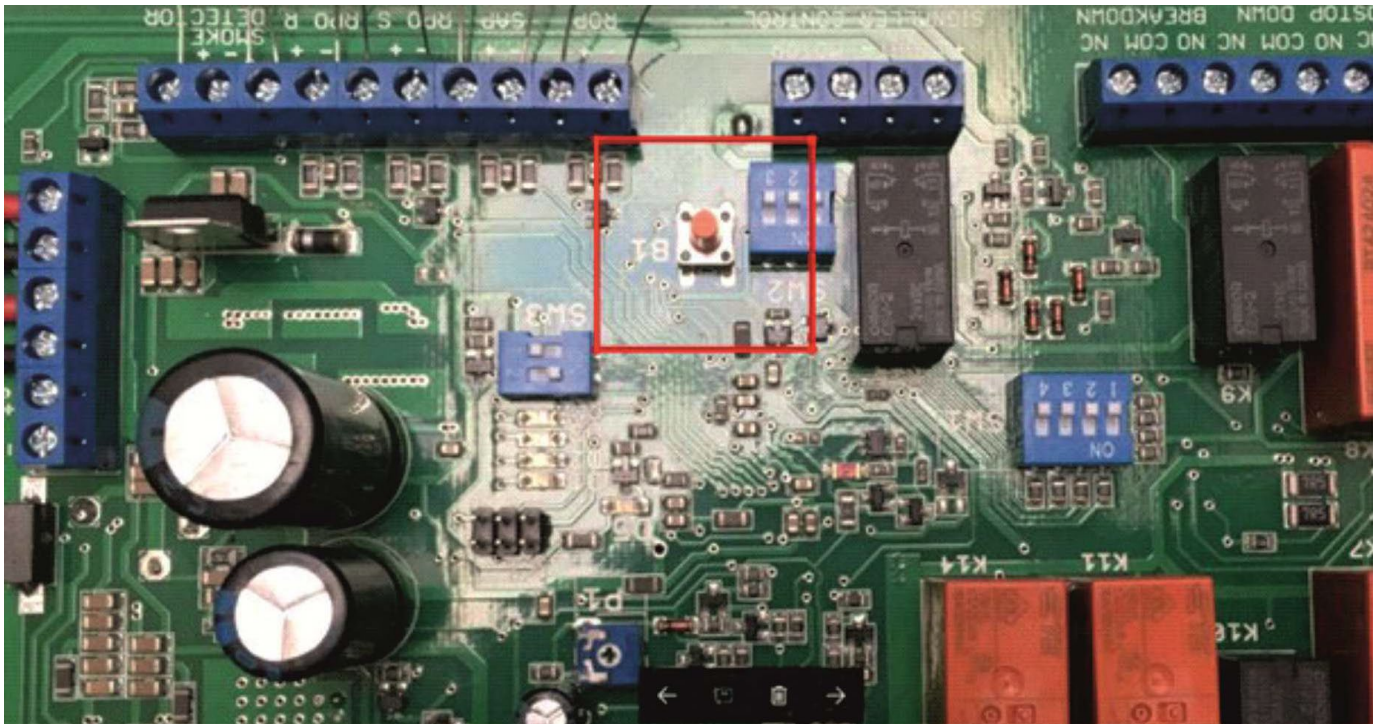
- Connect the multi-core motor control cable to the selected channel. Connect the wires according to the wire numbering of the cable and what is described on the board. If the motor does not work properly (the OPEN button closes the door), swap the following cables: "2" and "3" (motor winding directional cables) and "7" and "8" (return signal cables from motor limit switches).



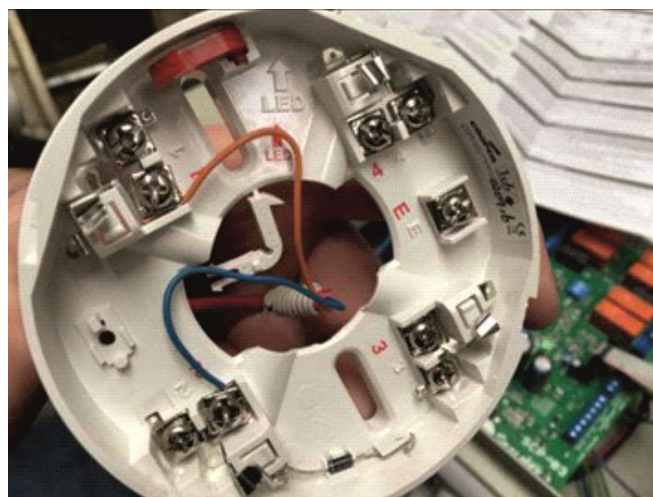
A close-up photograph of the wiring terminal block on the PLC module. The terminal block is green and has several terminals. A red box highlights the connection of the stop button (S1) and the emergency stop button (S2). The stop button (S1) is connected to terminal 1, and the emergency stop button (S2) is connected to terminal 2. The terminal block is labeled with 'STOP' and 'EMERGENCY STOP'.

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- This image shows a close-up of the terminal block on the power supply module. A red box highlights the terminal block where the power supply is connected. The terminal block is labeled 'PEN' and 'PE'. The power supply is connected to the 'PEN' terminal, and the ground is connected to the 'PE' terminal. The power supply is a 24VDC 5A module, and the ground is connected to the 'PE' terminal.

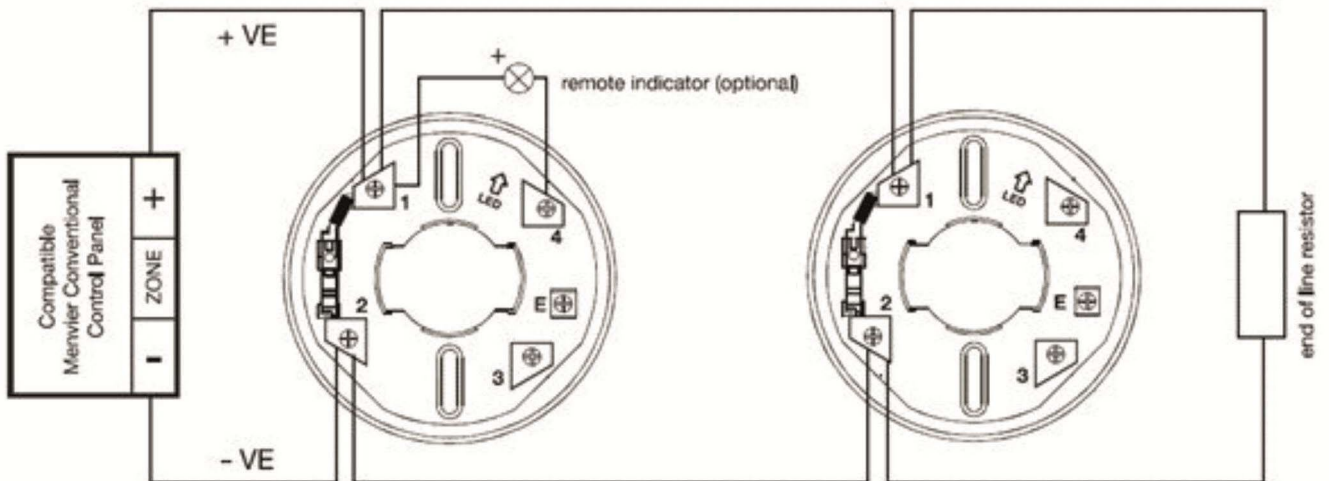
- Shortly after the mains power and batteries are connected, the panel may indicate errors. If only one motor is connected, the control panel will indicate that the other motor is missing, in which case it will be necessary to perform a reset according to the instructions below. The figure below shows the RESET button.



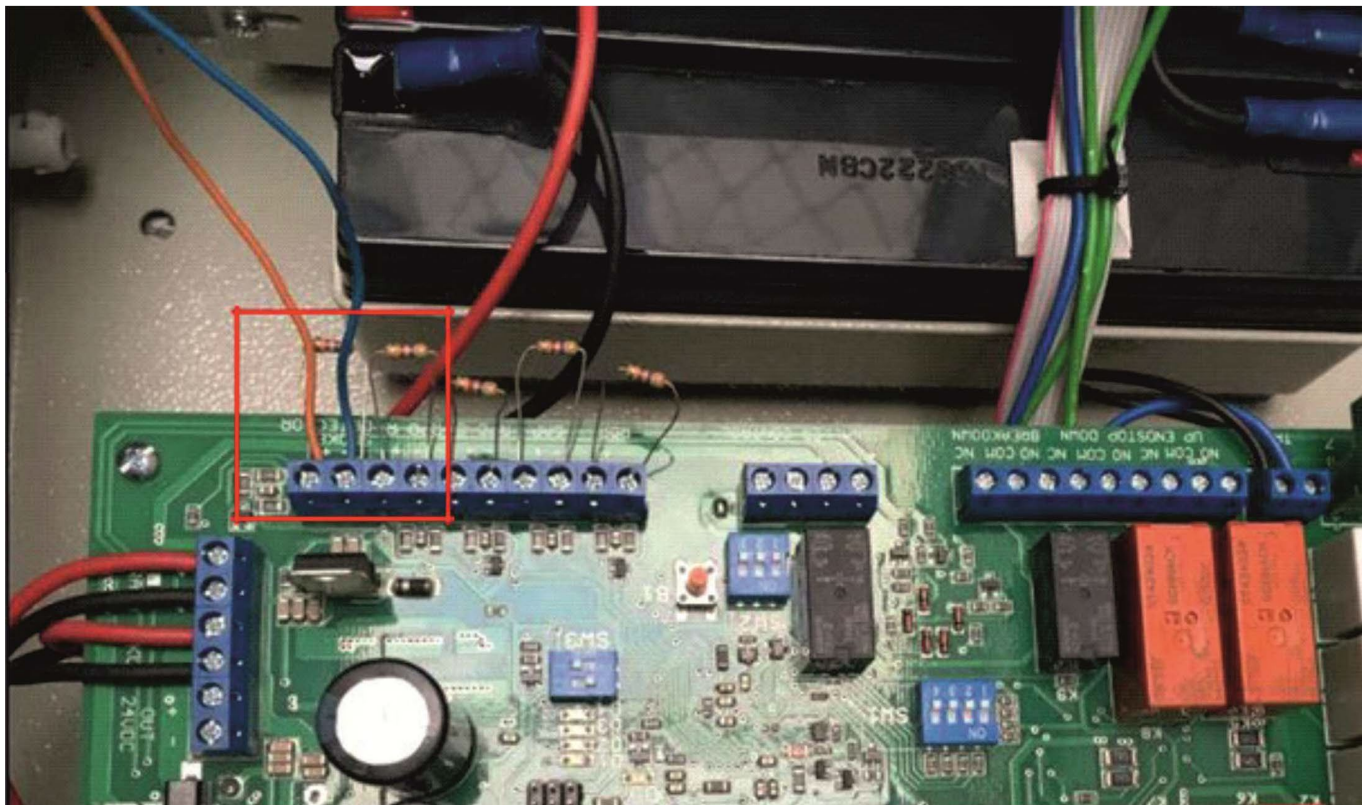
- Press and hold the B1 button during subsequent operations
 - Disconnect the batteries
 - Disconnect the main power supply
 - Reconnect the batteries
 - Reconnect the main power supply
 - Wait until LEDs D1, D2, D3, D4 flash simultaneously and go out
 - Release the B1 button
 - After a while the control unit should start to work (flashing green LED D5), D1-D4 are switched off
- Check that the front panel LEDs are off and do not indicate any errors. If errors occur, repeat the startup process again
 - Have smoke detectors ready



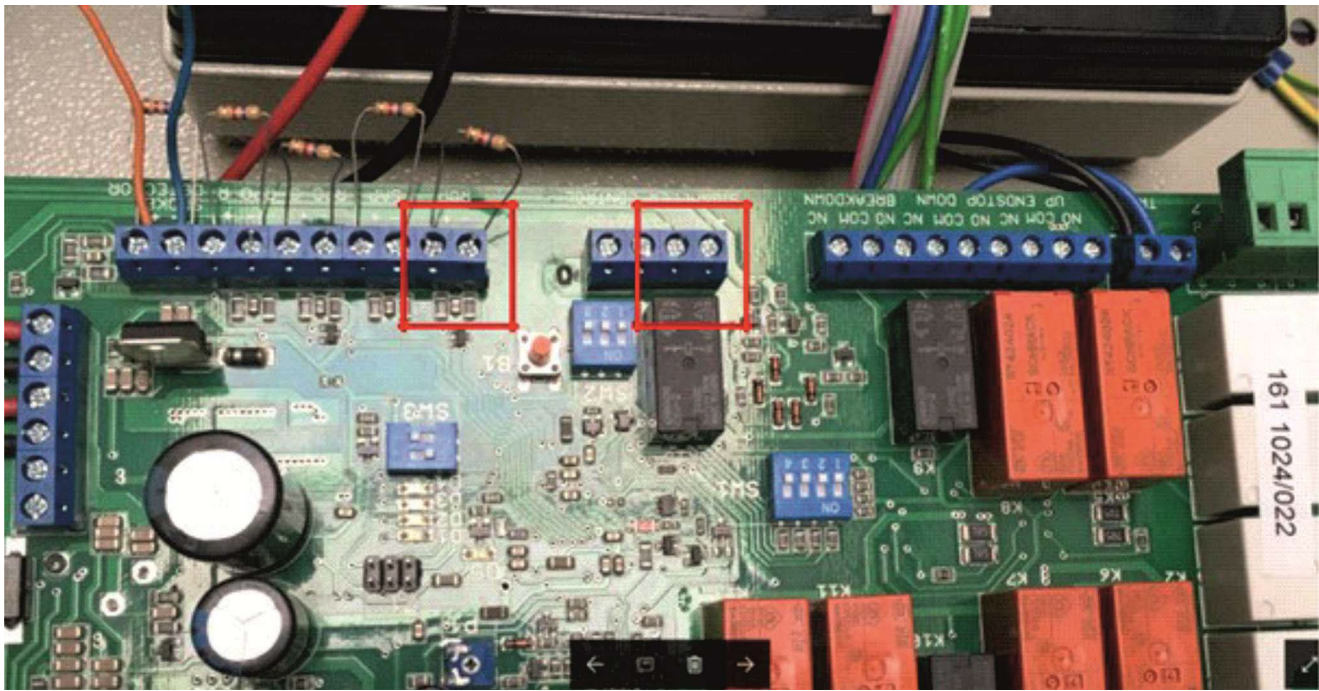
Smoke detectors must be wired in a row as shown in the figure included in the box with the unit.



- The first smoke detectors in a row must be connected to the “SMOKE DETECTOR” pins. The 4.7k Ohm resistor must remain connected. Keep in mind the correct polarity (+ with +, - with -).



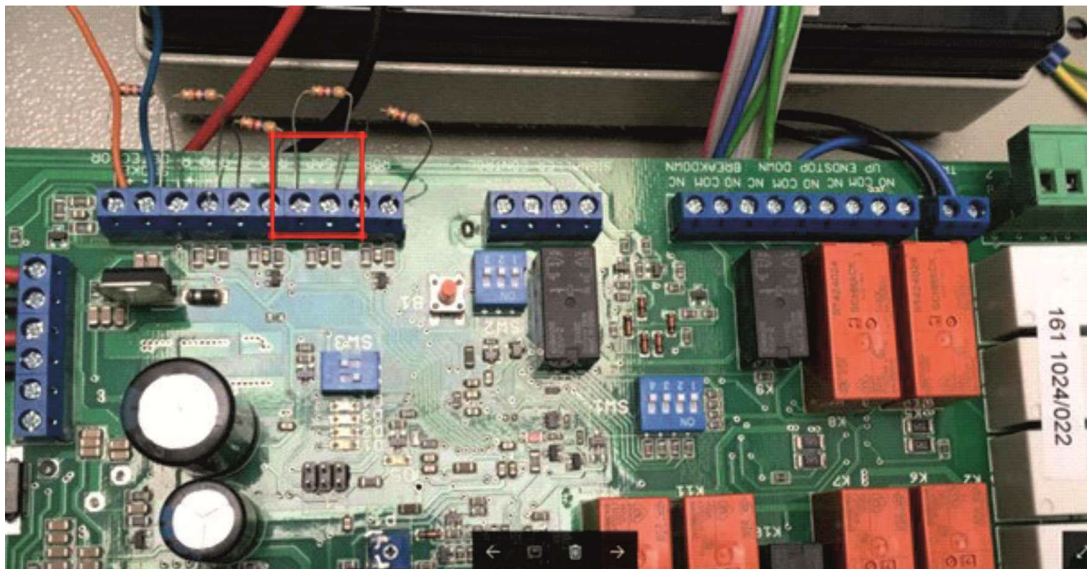
- Connect other devices
 - Siren/signal to “LIGHT SIGNALER”
 - Emergency release button for “ROP”



- Hold B1 button for 2 seconds to reset the software
- Correct connection: Green LED D5 should flash, LEDs D1-D4 are off

STEP BY STEP CONNECTION INSTRUCTION - SCP-03 CONTROL PANEL CONNECTED TO BMS (GENERAL BUILDING MANAGEMENT SYSTEM)

- follow steps 1-9 from the previous section
- BMS cable must be connected to the SAP contact
- perform steps 12-13 as in the previous section



10. Limit switch adjustment

Set the upper and lower limit switches at this stage. This is an absolute requirement for tubular drive gates because even when the shaft is partially installed, access to the limit switches will be difficult and sometimes even impossible.

For tubular motor gates, the best access to the ends is when the gate apron is extended. It is recommended to set the lower limit switch first, extending it a few cm from the unrolled apron, free hanging at ground level. When the guides are installed, due to the different angle of movement of the apron, the lower limit switch will be higher.

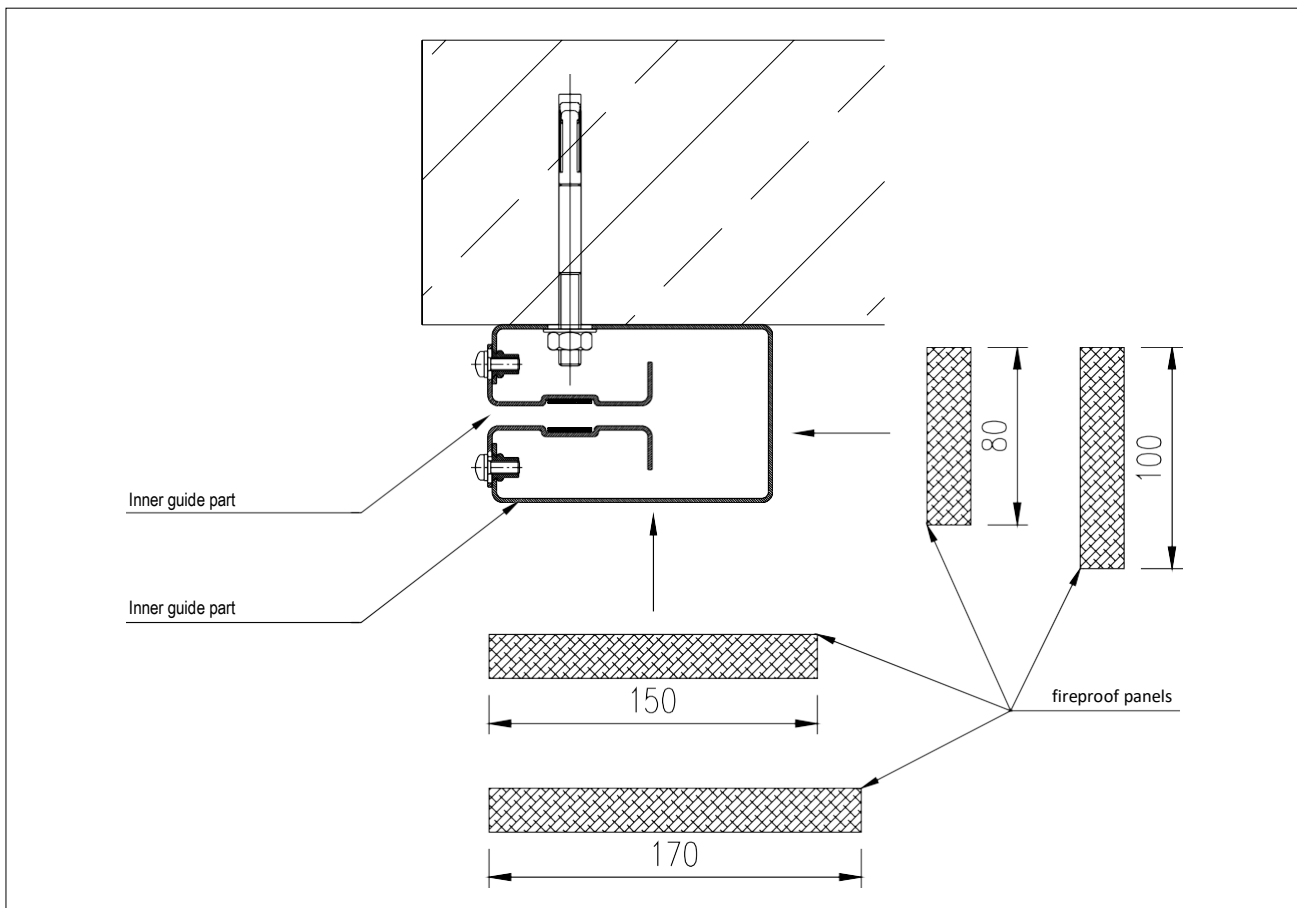
Once the lower position is established, it is recommended to establish the upper limit switch and raise the apron until it stops at the limit switch. When raising the gate, watch to see if the apron rises too high. If the upper limit switch is misaligned, lower the gate and reposition the switch, then raise the apron again. This operation should be repeated until the correct limit position is reached.

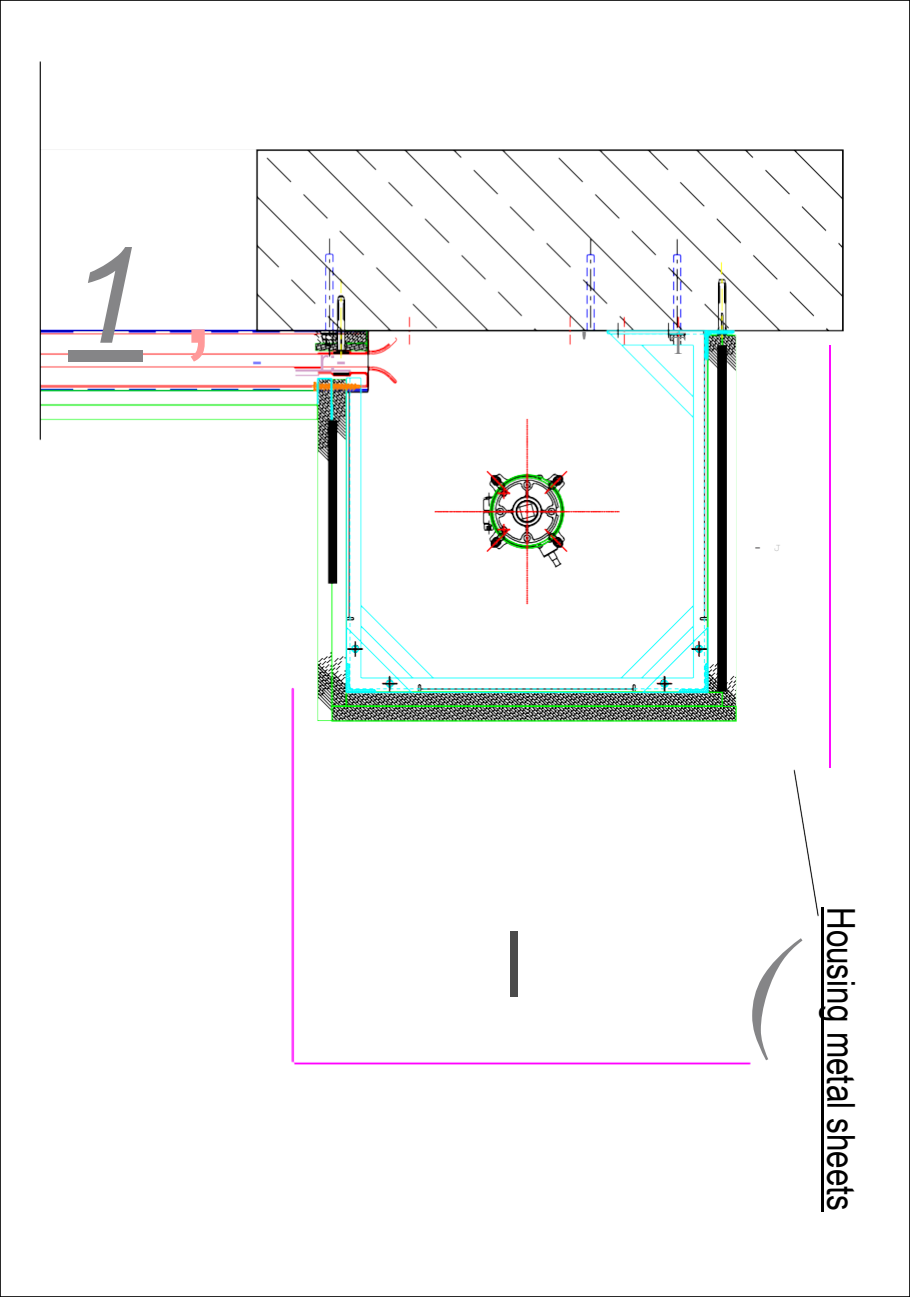
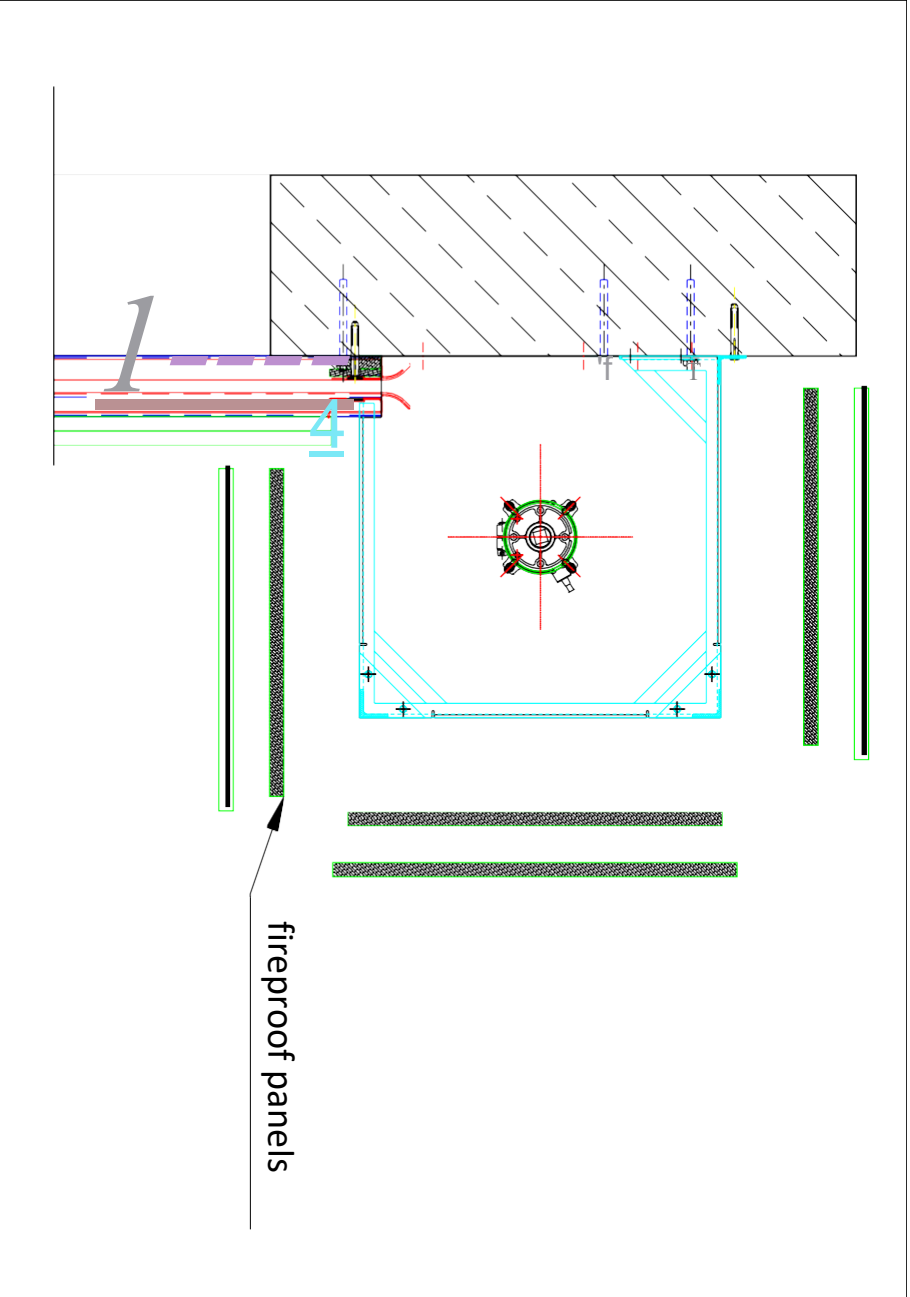
ATTENTION!

When setting the limit switches, but also during normal use of a gate equipped with a fire tubular motor, avoid excessive raising and lowering of the gate. If the gate is operated continuously for more than 4 minutes, the thermal switch may overheat, causing the brake to disengage and the gate to close. You will not be able to lift again until the brake has cooled down, which can take 20-30 minutes.

11. Installation of shaft cover + covering the guides with fireproof panels

After verifying the operation of the door, go ahead and bolt the sheet metal and fireproof panel housing to the steel shaft housing structure.





12. Additional internal schematics of the BECKER engine below

