Installation guide
Doorlift DL-4
Electrical drive system shutter doors

English

Need help?

For assistance with this product please visit www.actuall.eu
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Version 07-2017

Doorlift

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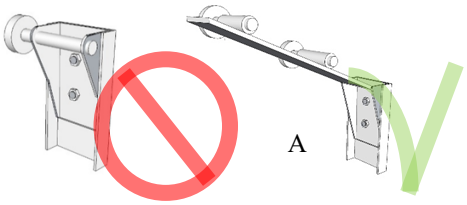
English

Pre-installation requirements

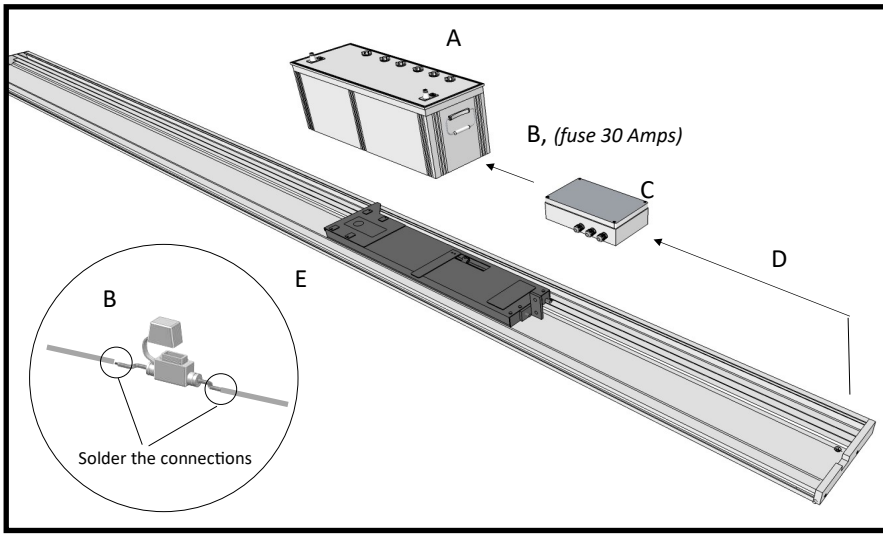
Roll up door:

Your roll-up door must be installed properly and in good operating condition, before you install the Doorlift system. Please check:

- if the roll-up door is installed according to the suppliers installation manual.
- That the force required to lift the door is the same force required to close the door (this can be tested by manual operation.
- That the force to open and close the door is equal up /down and doesn't exceed 35 kg.
- That the proper top roller brackets are installed. (A)
- That the spacers are installed on the roll-up door.
- for any loose parts and fix them.
- for any damaged parts and replace them.
- That there is a minimum of 55mm between door and roof, when the door is fully open.



Power requirements:
The Doorlift is supplied with 10 m1 of cable (D), that runs from the track to the Doorlift module (C). This module should be mounted as close to the power supply battery (A) as possible. The minium wire for the battery cable (B) (not supplied) is:



Battery	Fuse (B)	Length (B)	Cable (B)
12 V	30 Amp	< 5	4 mm2
	30 Amp	<10	4 mm2
	30 Amp	<15	6 mm2
24V	30 Amp	<10	4 mm2
	30 Amp	<15	6 mm2

A: Battery vehicle 12 or 24V (*not supplied)*
B: Battery cable *(not supplied)*
C: Doorlift control box
D: Track cable 10 meter
E: Doorlift track and motor

WARNING: The size of the supplied cable(s) is determined by the maximum possible length. **DO NOT** splice wires for extra length, this can cause voltage drop, resulting in poor/intermittent operation or damage to the system.

Power source:
For the proper operation of the CommandLIFT system a 12 or 24 Volt, 65 Amp battery is required. Be aware, when connecting to a refrigeration unit battery, that they are typically equipped with a sophisticated electronics and control systems. The integrated logic of these systems monitors the remaining power lever of the battery and desolates accessories when the battery drops below pre-determined levels.

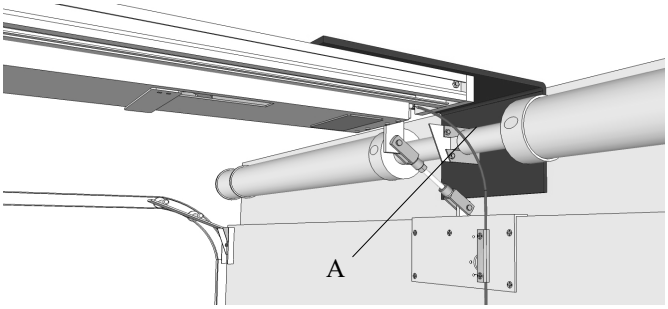
Connections:
Must be always done properly to the industries standards and protected against, cargo, wear, sharp edges and corrosion. Bad connections can result in voltage drop, which will damage your system. Solder connections, instead of just using standard crimp connectors.

Safety:
When working on the Doorlift or shutter door you should always disconnect the system from the power supply.

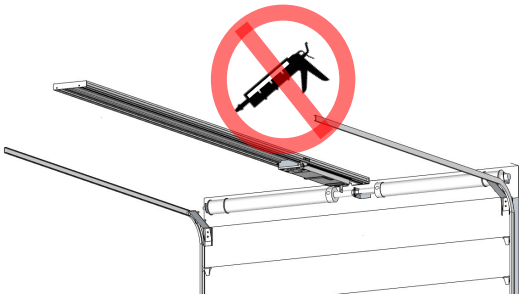
Pre-installation requirements

As every vehicles body is different, your Doorlift supplier can not be responsible for the body specific mechanical connections to roof and shutter door. Although we strongly suggest:

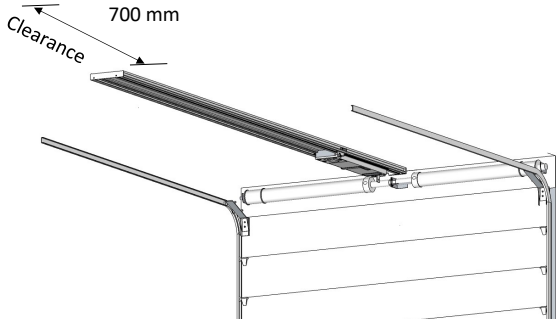
1.
In case the track will be **mounted to roof bows** a reinforcement (A) at the header (above the roller shutter) could be necessary, as forces applied upwards can go up to 1000N. In worse case, it can lift the roof.



2.
Never glue the complete track against the roof. In case of installation errors or future repairs, it should be possible to disconnect the track from the roof.

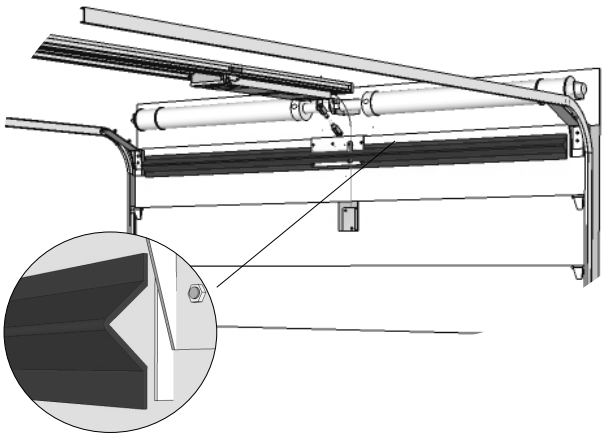


3.
Keep a minimum clearance of 700 mm behind the track!
This because for a proper service to the system the motor unit needs to be removed from the track.
This only can be done by removing the rear cover and slide the 700 mm long motor unit out of the track.



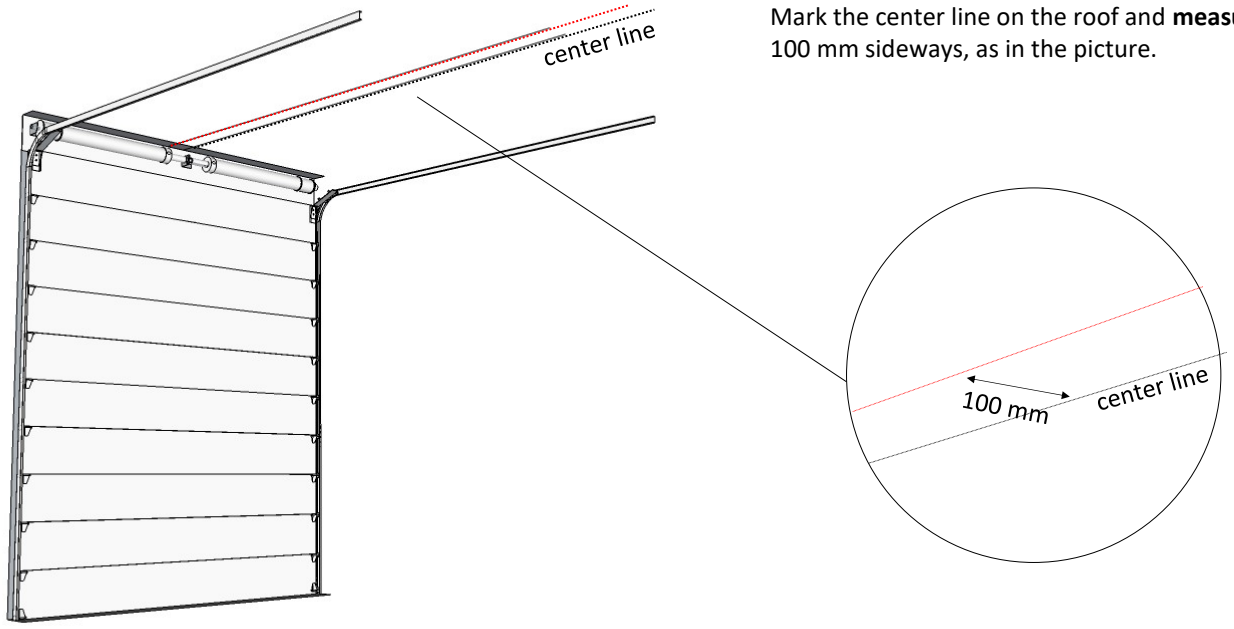
Note: If the length of the aluminium track needs to be reduced, the cut must be made at rear of the track (furthest from the door opening). The shortest length of track required, to operate properly is: door height + 92 cm.

4.
Shutter door reinforcement is needed in case of a plastic type door or a thin wooden door. Consult with your doorlift supplier if this is needed on your roll-up door.



1. TRACK INSTALLATION

STEP 1.01



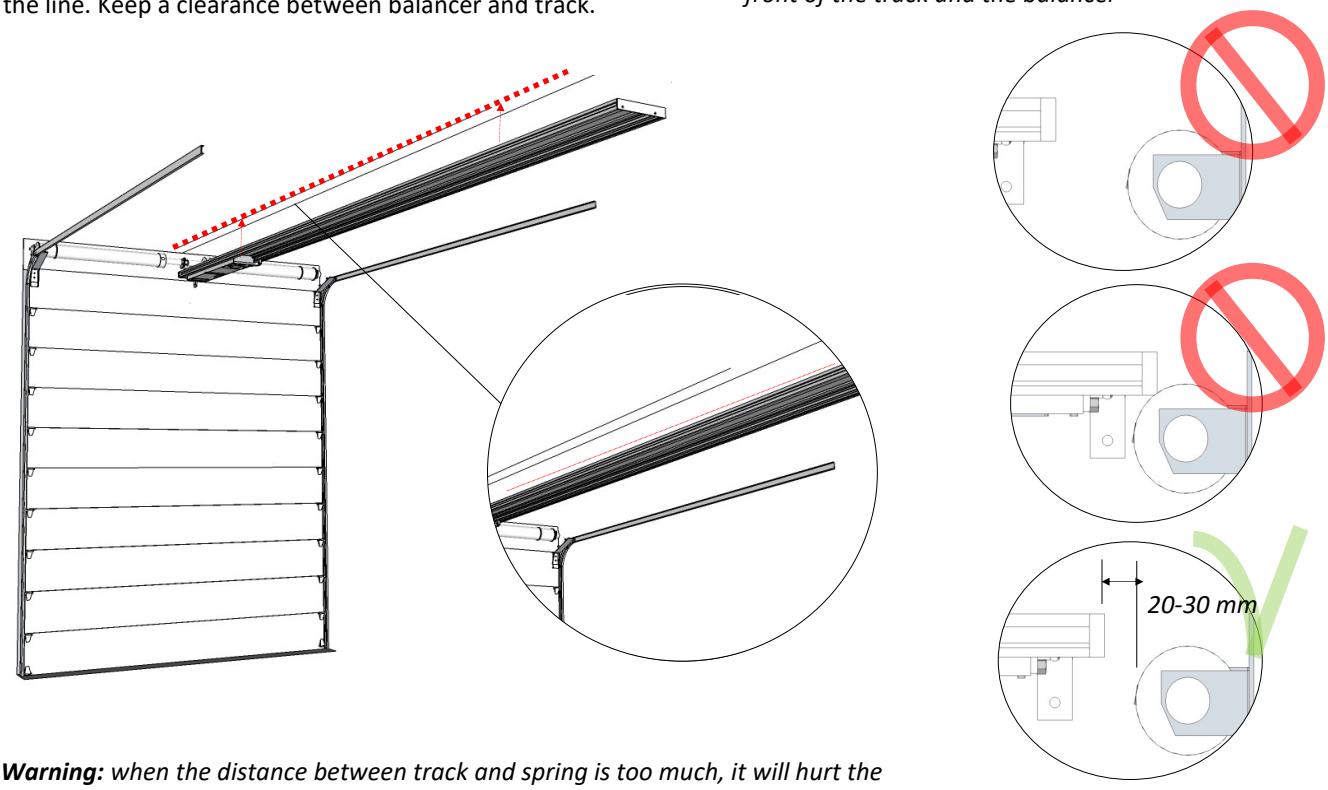
Mark the center line on the roof and **measure** 100 mm sideways, as in the picture.

BE AWARE: The pre-installation requirements (page 3), reinforcements might be needed.
NOTE: *Depending on the roof/body stucture the installer is required to decide on the type of fastners and amount of connecions.*

STEP1.02

Place the left side (facing the door) of the track allong the line. Keep a clearance between balancer and track.

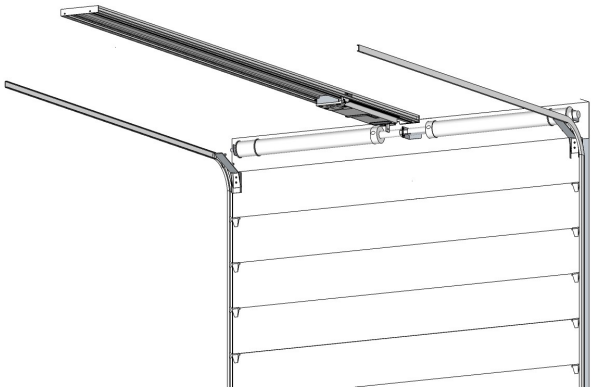
NOTE: Keep a space of 20-30 mm between the front of the track and the balancer

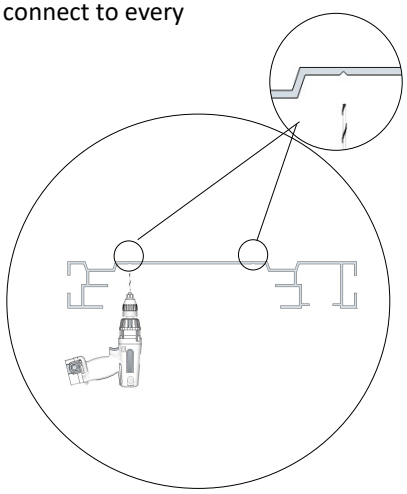


Warning: *when the distance between track and spring is too much, it will hurt the operation of the system*

STEP 1.03

Use the groves in the track to **DRILL** the required holes. The amount of holes are depending on the roof structure. Minimum requirements: front, back and middle of the track. In case of roofbows, always connect to every roof bow.



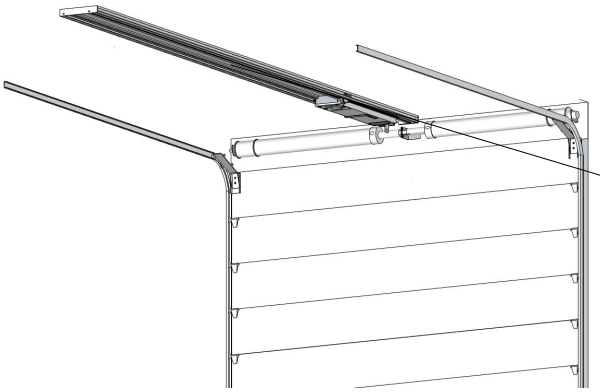


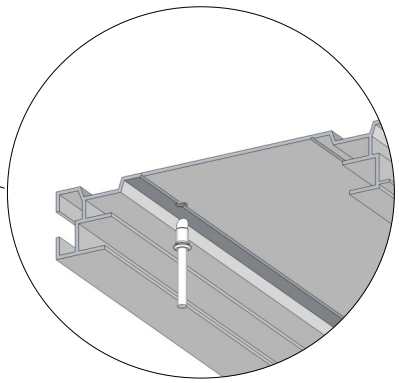
As every vehicles body is different your Doorlift supplier can not be responsible for the body specific mechanical connections to roof and shutter door.

TIP it is possible to set the motor-unit to manual, by changing the position of the leaver. In this way you are able to move the motor-unit by hand through the track or remove it from the track completely. See page 22

STEP 1.04

Use large diameter head screws or rivet with a depth of or less than 1.8 mm to secure the track to the roof. The amount of rivets is to be decided by the installer, as every body is different. The track does weigh approx. 21. Kg.

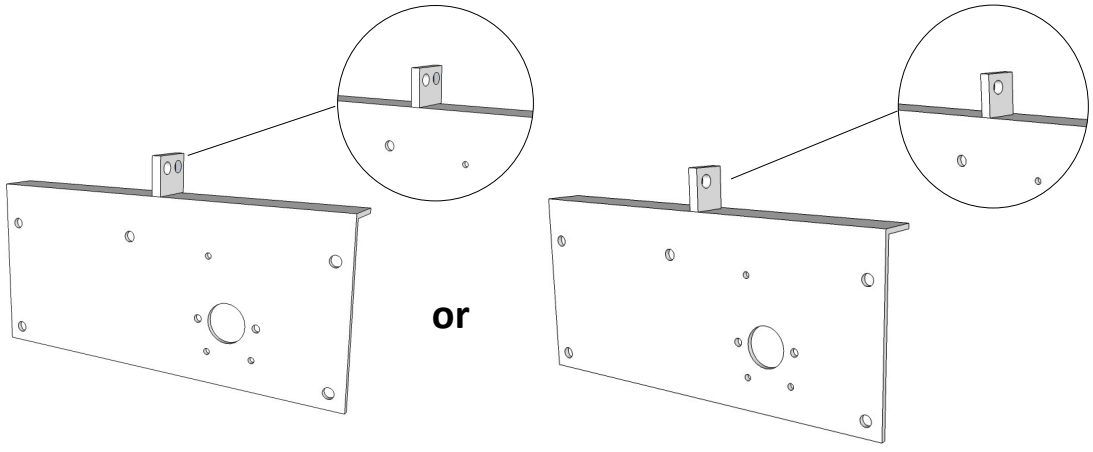




WARNING: If the head of the screws or rivet have a depth of more than 1.8mm, the motor unit will hit the protruding screw or rivet heads during its motion. This will damage your system.

4. DOOR CONNECTION PLATE INSTALLATION

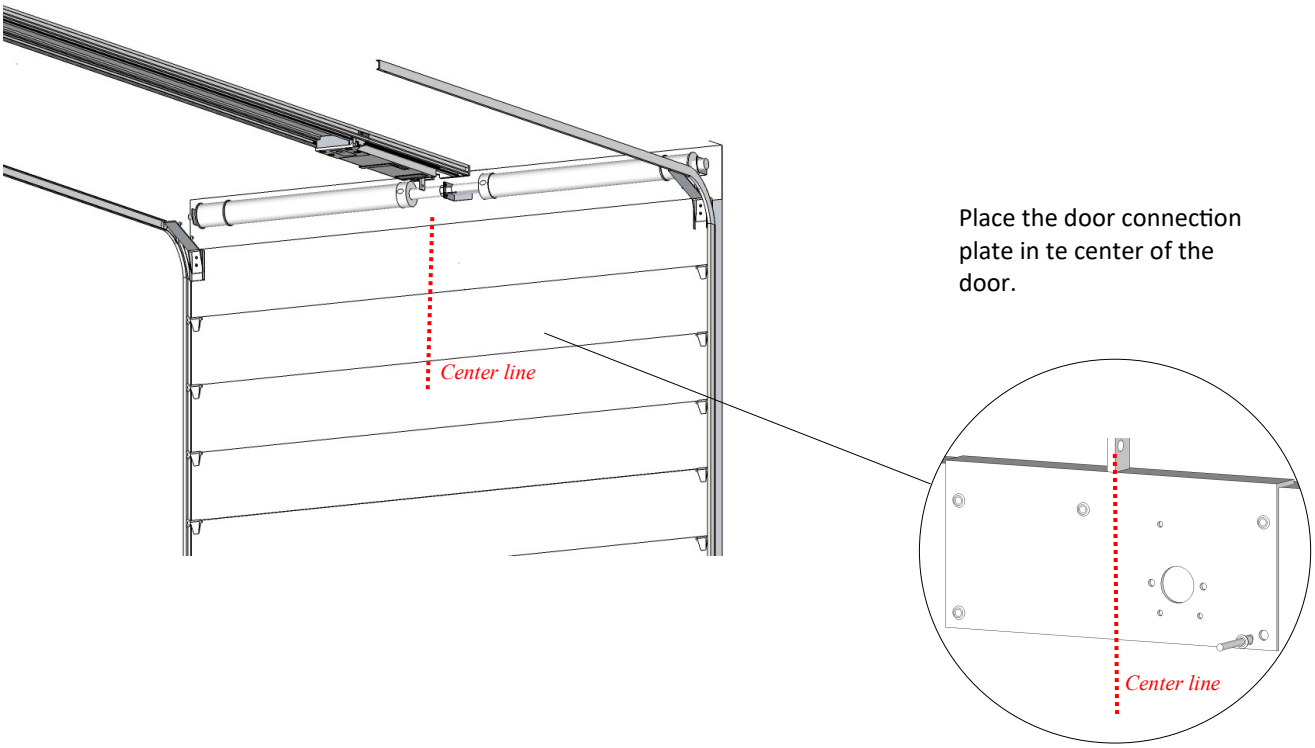
BE AWARE: The pre-installation requirements (page 3), reinforcements might be needed.
NOTE: Depending on the shutter structure the installer has to decide on the type of fasteners.



Insulated-freight door connection plate

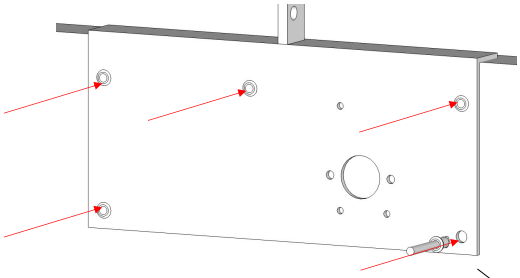
Dry-freight door connection plate

STEP 2.01

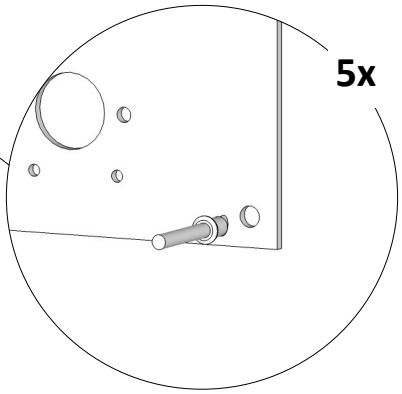


Place the door connection plate in te center of the door.

STEP 2.02

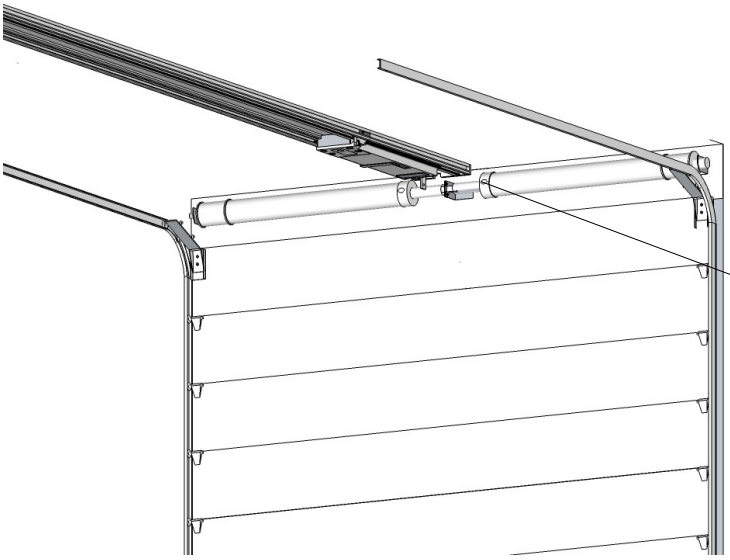


Connect the door plate to the door. The type of fasteners depends on the door type.

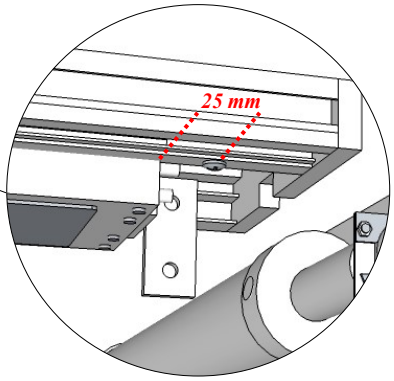


3. CONNECTION BAR

STEP 3.01



Position the front of the motor-unit 25 mm (+/- 10%) from the screw.



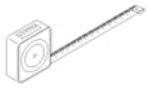
NOTE: This is very important! The motor unit should never touch the screw.

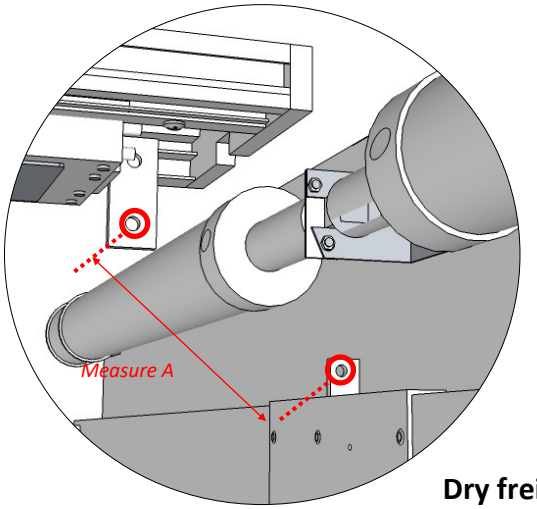
TIP

It is possible to set the motor-unit to manual, by changing the position of the leaver. In this way you are able to move the motor-unit by hand through the track or remove it from the track completely.

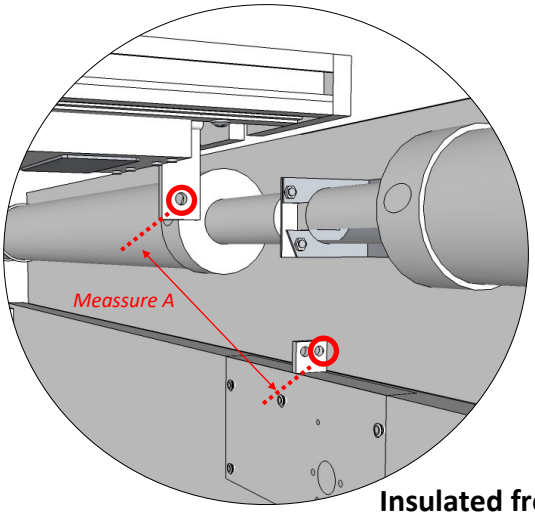
STEP 3.02

Select the right holes and measure the distance in between.





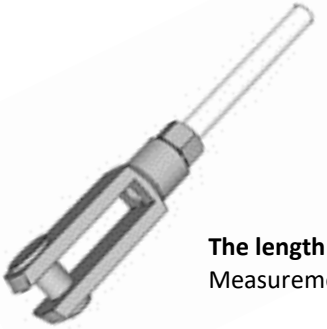
Dry freight



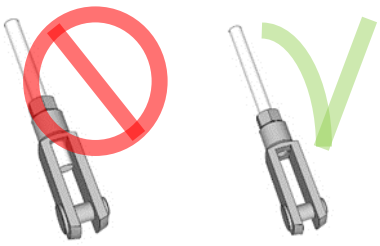
Insulated freight

STEP 3.03

Make the connection bar assembly the right length, by cutting the threated rod.



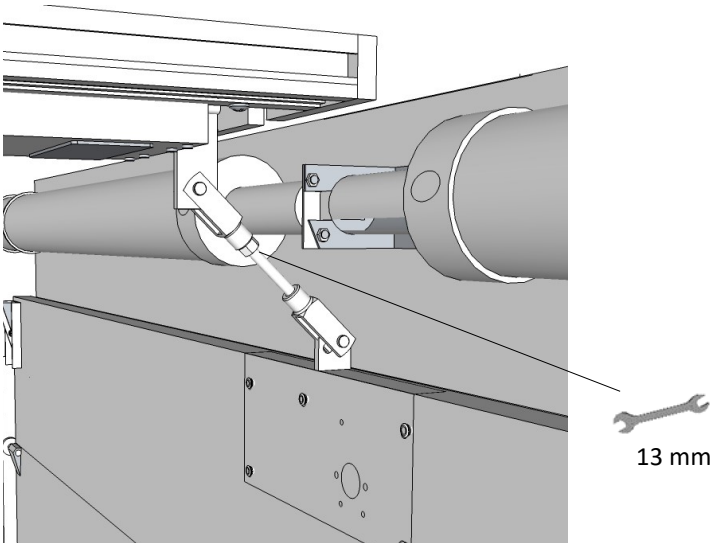
The length of the threaded rod is:
Measurement A (step 3.02) - 80 mm

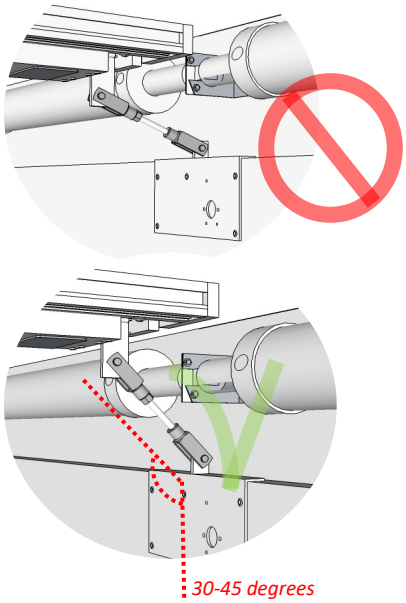


NOTE: *The opperation of the system will be interfeard when the rod does stick into the fork.*

STEP 3.04

Install the connection bar in the previous selected holes and secure the nut.

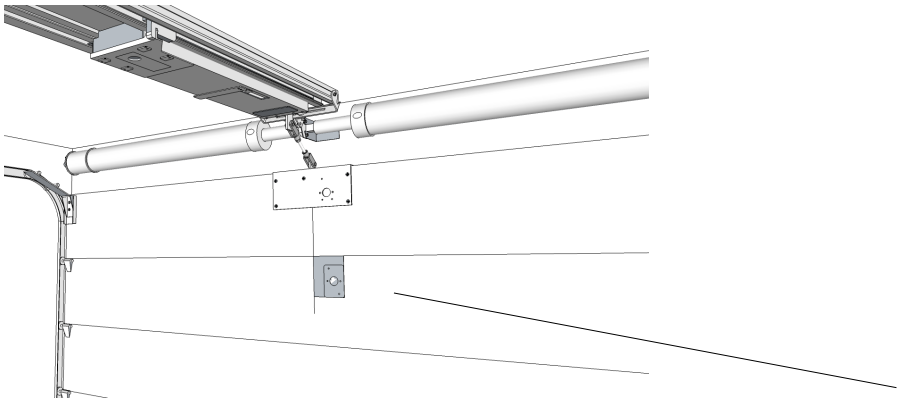




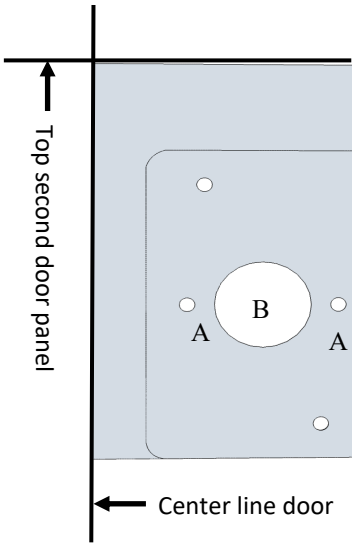
After installation the connection bar should be in a 30-45 degree angle, when the door is in closed position.

4. Emergency unlocking

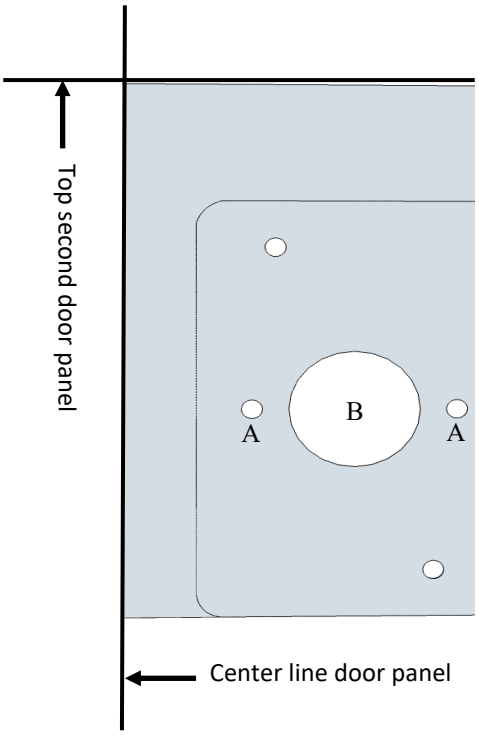
STEP 4.01



Place sticker



STEP 4.02

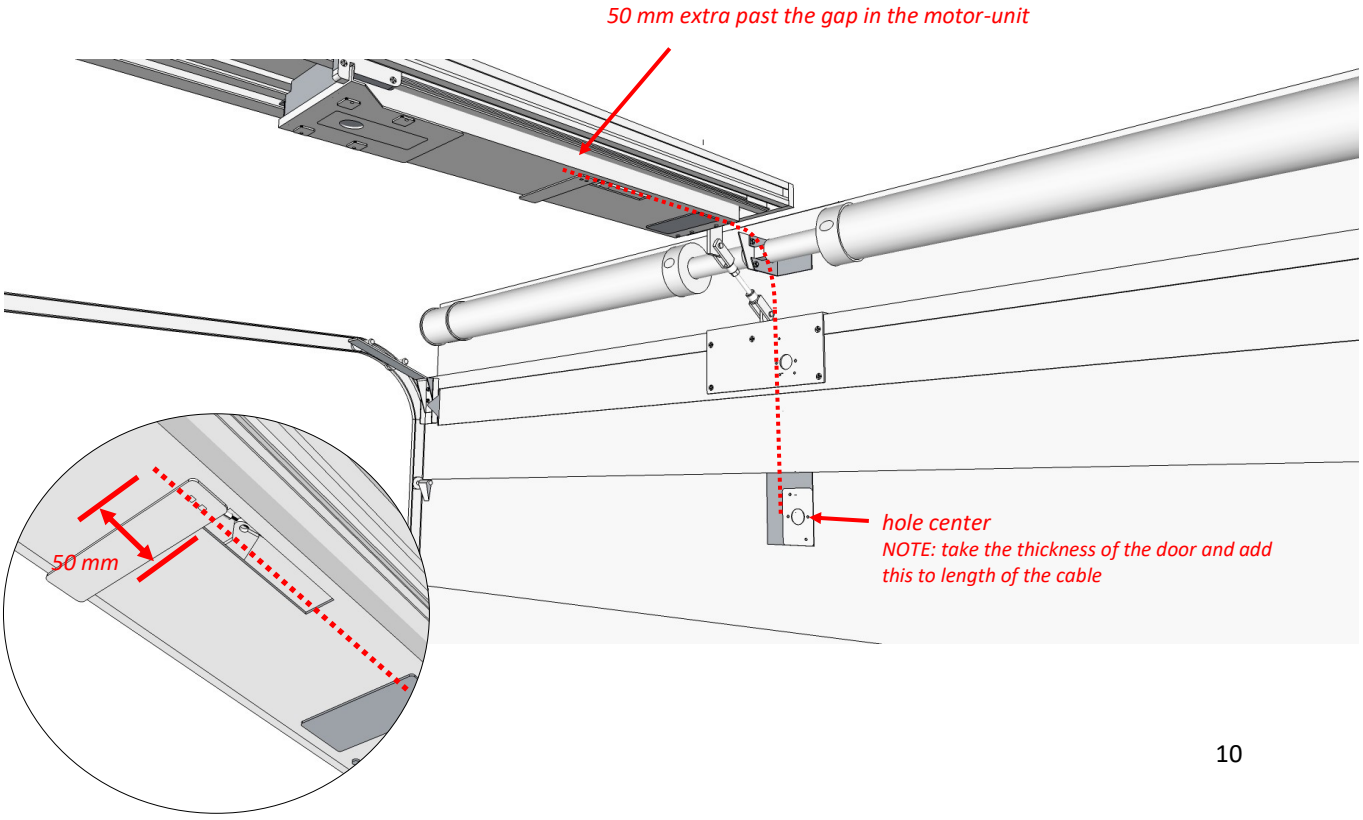


Drill holes

Hole	Drill	Notes
A	8.5/5mm	Drill 2 holes through the panel, first all the way through with 5mm and enlarge the hole on the outside with 8.5 mm, **not completely through!**
B	20 mm	Drill through panel

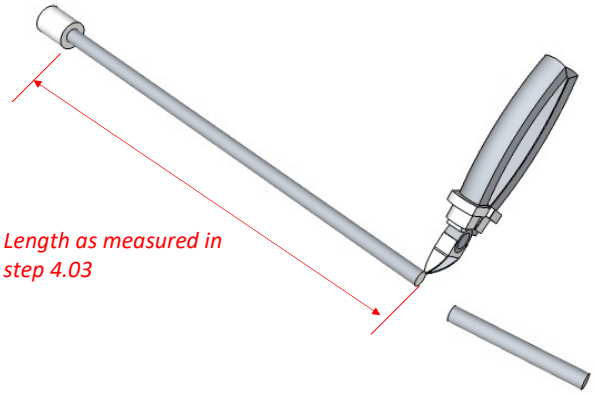
STEP 4.03

Measure the length of the cable, use a big curve as shown in the picture.



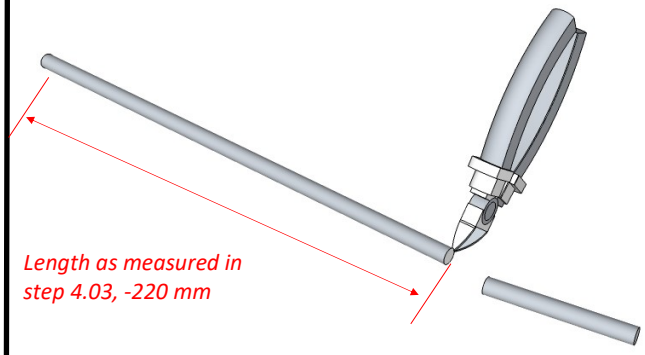
STEP 4.04

Cut the steel wire to measured length.



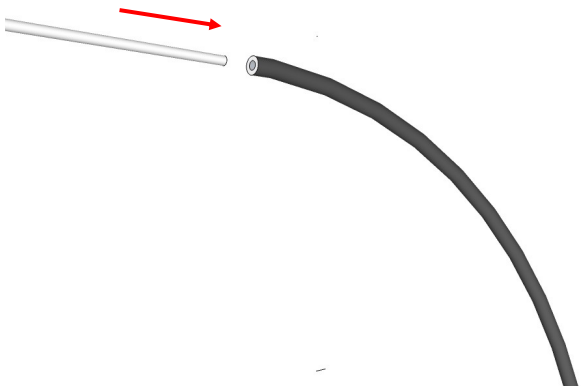
STEP 4.05

Cut black sleeve 220 mm less than the steel wire



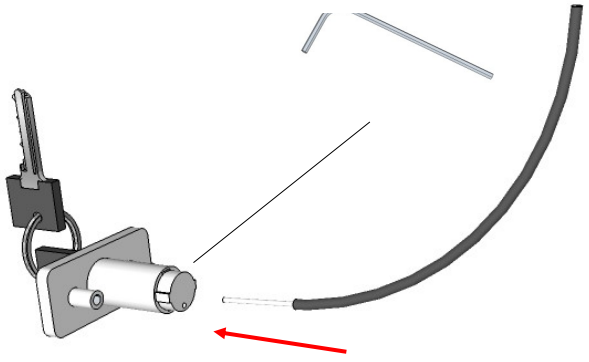
STEP 4.06

Insert the steel wire into the black sleeve.



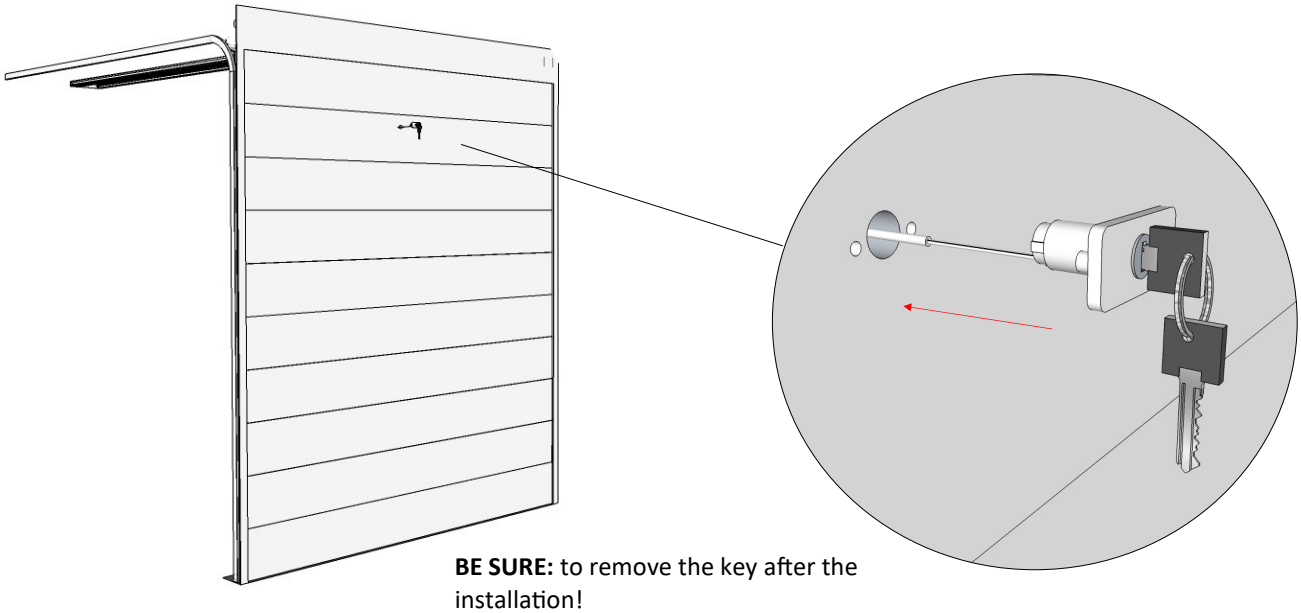
STEP 4.07

Insert the steel wire, with sleeve into the lock and secure it in place with a allen key.



STEP 4.08

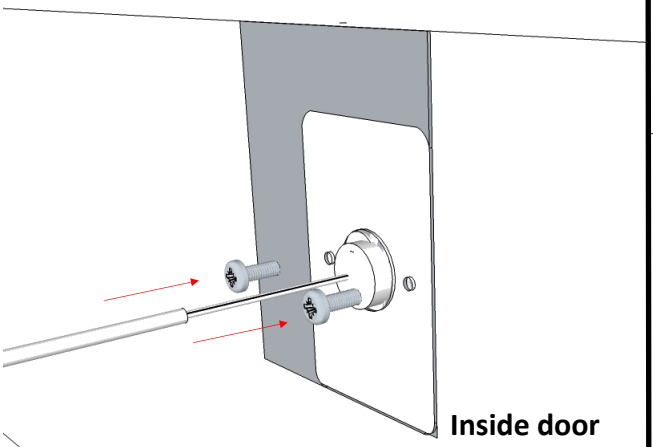
Insert the lock from the outside, with connected cable.



BE SURE: to remove the key after the installation!

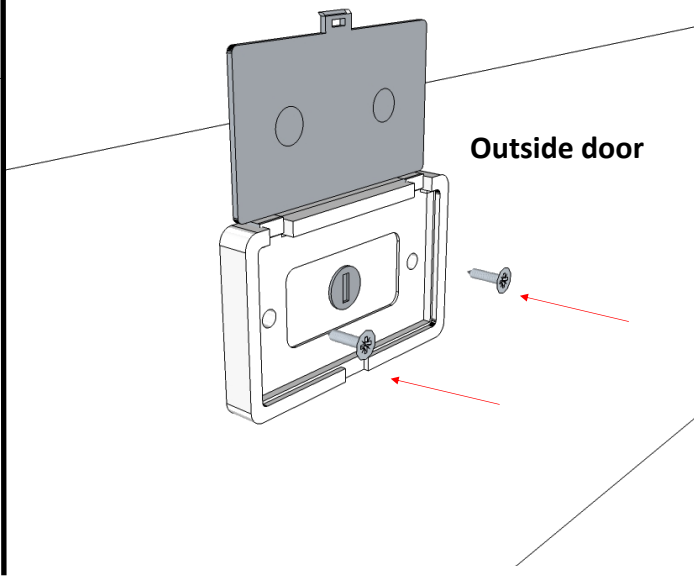
STEP 4.09

Mount the lock into the door.



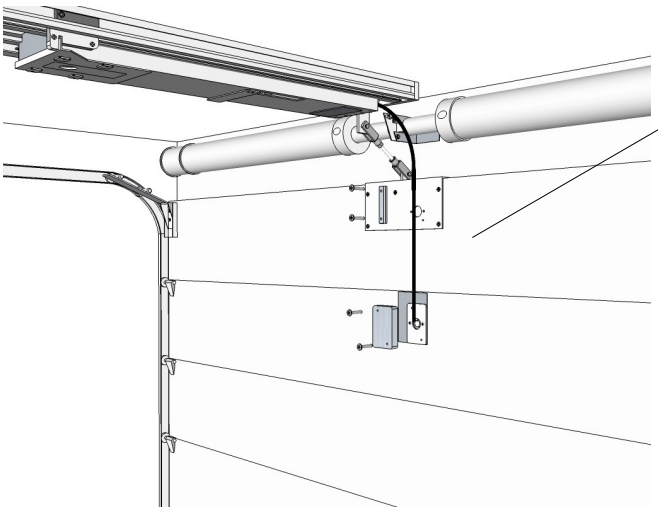
STEP 4.10

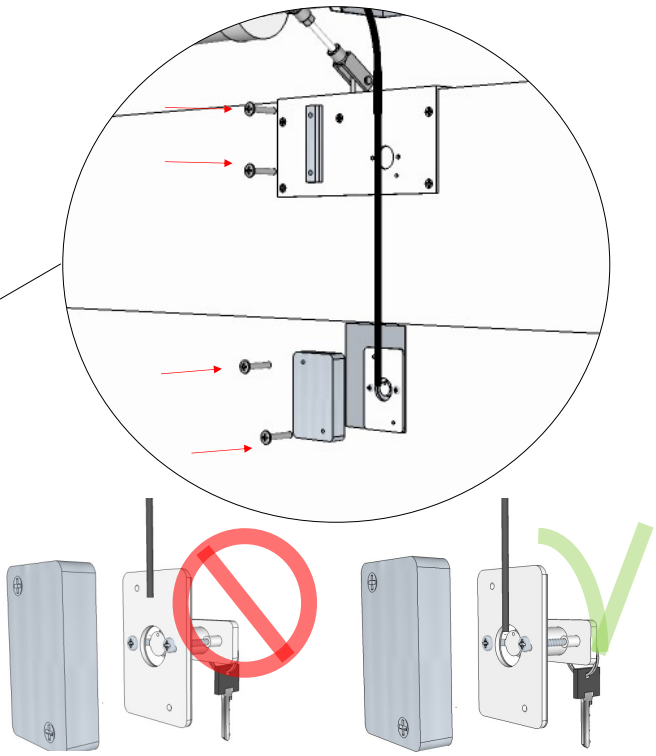
Mount the cover on the outside of the door.



STEP 4.11

Fix the cover and cable holder in place

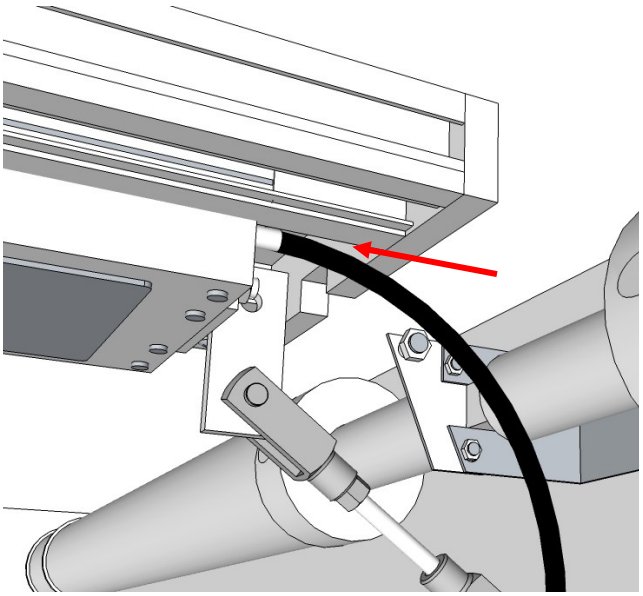




MAKE SURE: that the black sleeve runs into the center of the hole.

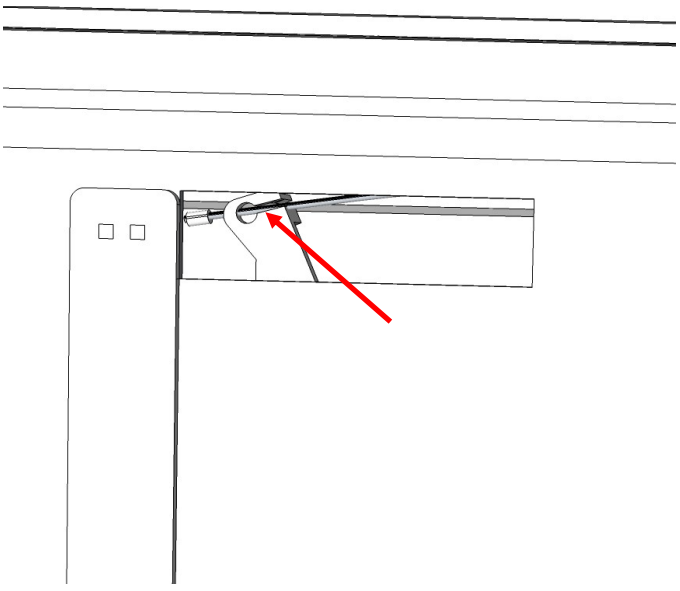
STEP 4.12

Insert the black sleve, with cable, into the tube of the motor unit

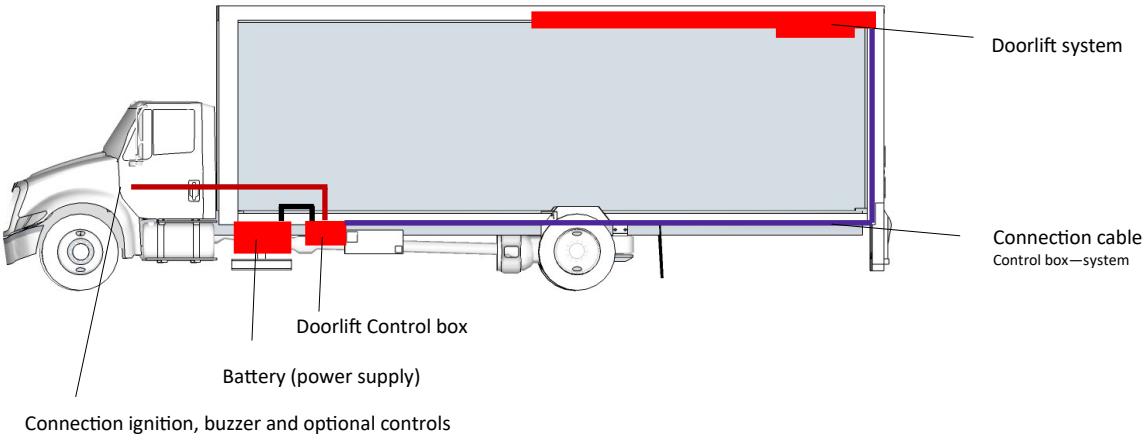


STEP 4.13

Insert the cable with end stop into the leaver of the motor unit



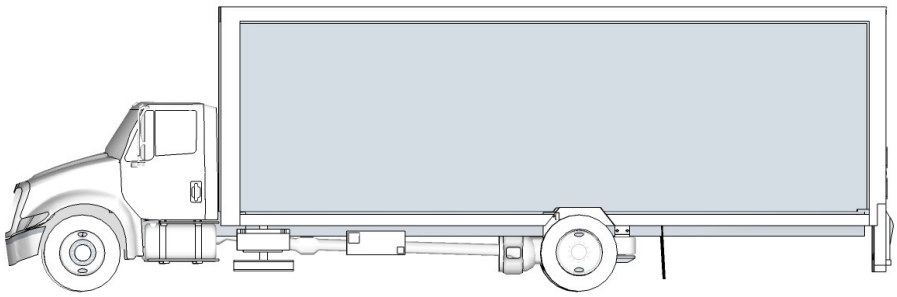
Electrical installation example

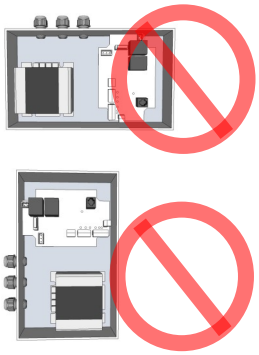


Electrical install

STEP 5.01

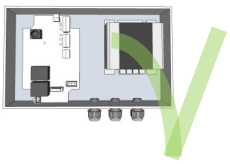
Determine the location of the control box.





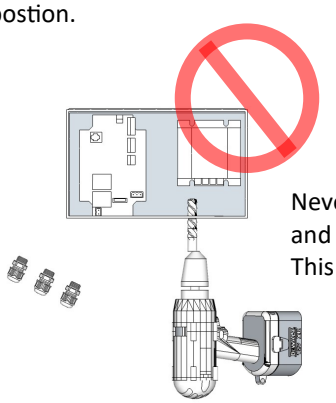
Be aware: *of how the conditions will be of your chosen location when the truck is in use! For example placing the box right behind the wheels could result in high pressure power wash of the box, including stones.*

Make sure the openings (cable glands) are down, this to prevent moisture coming into the box.

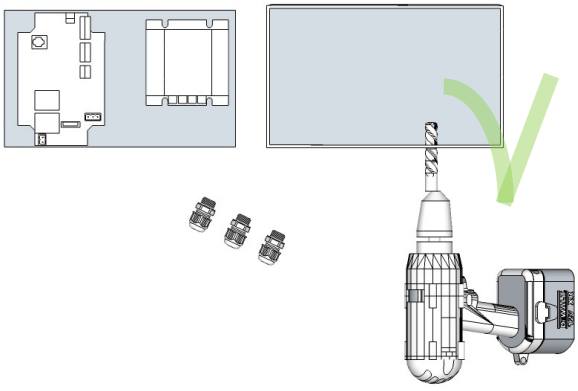


STEP 5.02

Drill and install the required cable gland holes in the box and install the box in the determind postion.



Never drill holes when the PCB and converter is still in the box. This can cause damage.



STEP 5.03

Run all wires to the control box.

Battery cable:

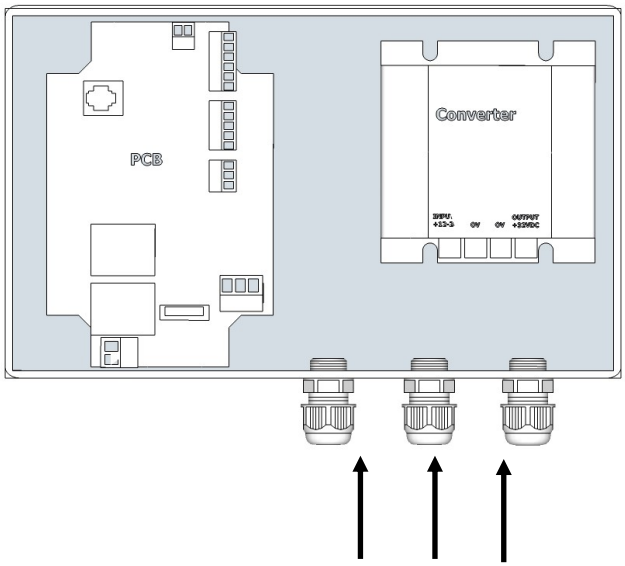
Use the following cable from battery towards the control box:

Battery	Length	Cable
12V/24V	<10 m	4 mm2
12V/24V	>10 m	6 mm2

Fuse a 30 Amp (slow) fuse near the battery. See below the Amp use of the system and possible spikes. (never go above a 30 Amp fuse)

	32 V battery	24 V battery	12 V battery
Amp	10	13	26
Amp spikes	20	26	53

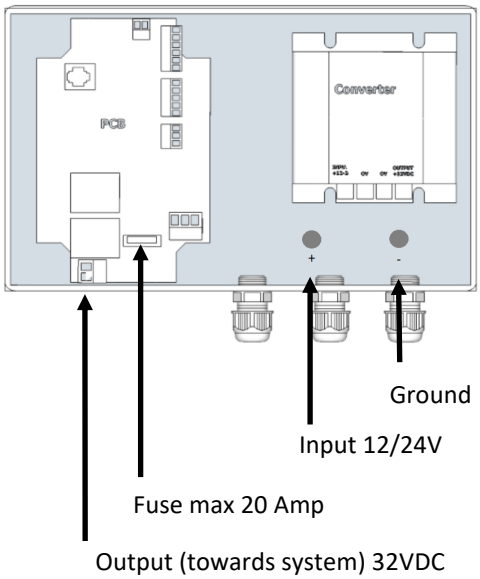
Be Aware: *Bad connections can result in voltage drop, which will damage the system.*

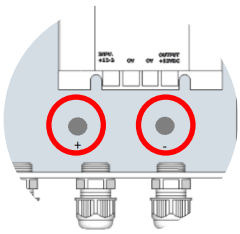


- Power cable from battery
- Cable to the track
- Optional: hard wired switches
- Other devices

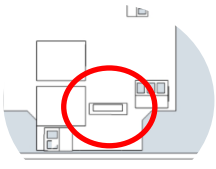
STEP 5.04

Connect the power source wire. (from the battery)





Place to measure your input voltage whenever necessary.
Voltage drop on the input of the converter should not be more than 5%.



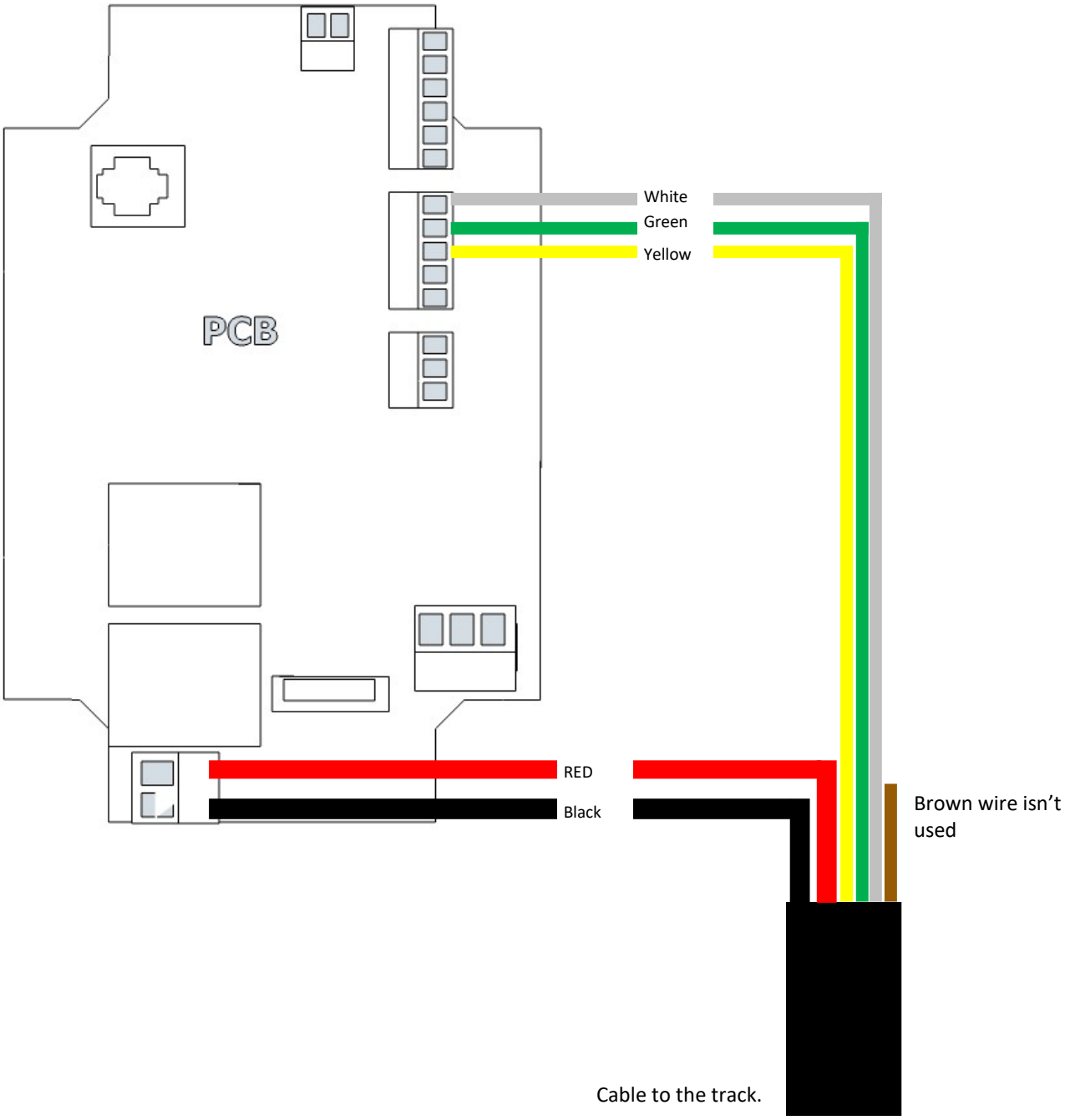
Place to measure the amperage of the system.
A typical system will run at 4-6A during normal operation. Peak during closing of the door possible of 20-25A.

BE AWARE: that there is no power on the battery cable, until you are completely finished and satisfied with the installation!

Electrical install

STEP 5.05

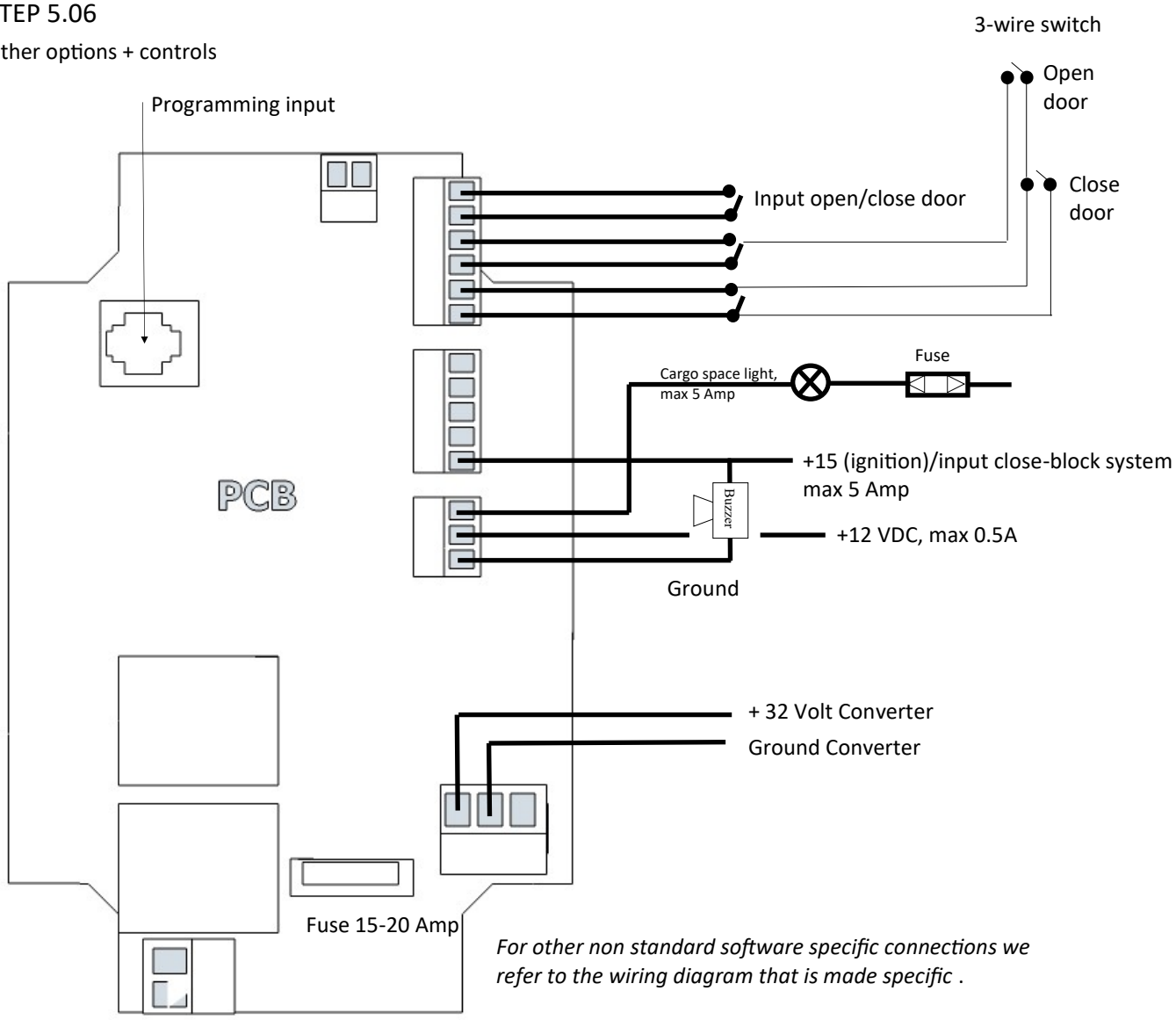
Connect the track cable to the PCB.



Electrical install

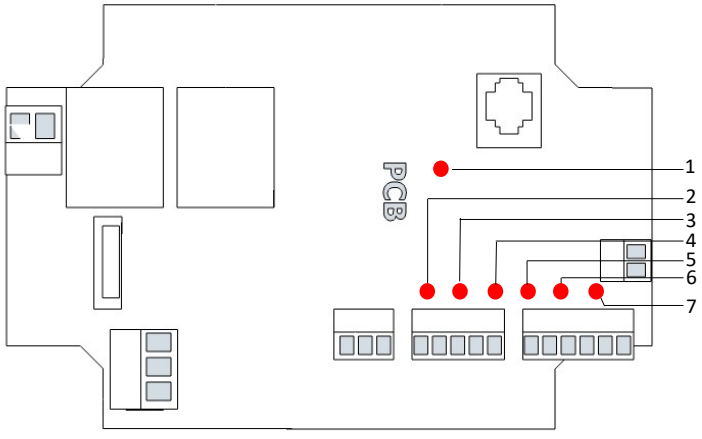
STEP 5.06

Other options + controls



For other non standard software specific connections we refer to the wiring diagram that is made specific .

LED explanation



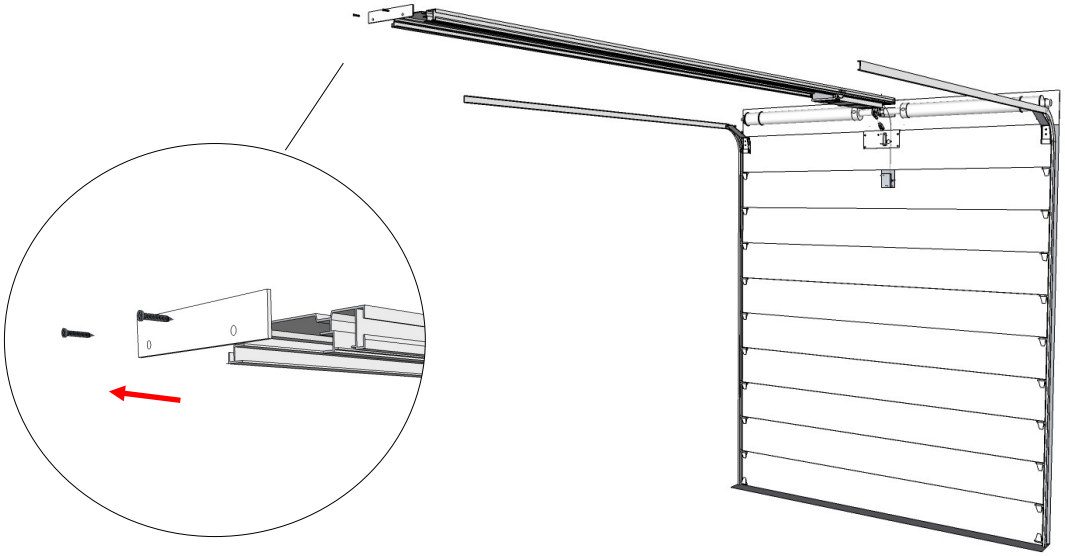
When the LED flashes, the function is working.

1. Processor
2. Signal +15
3. Sensor door closed
4. Sensor door open
5. Switch close door
6. Switch open door
7. Switch open/close door

Sensor settings

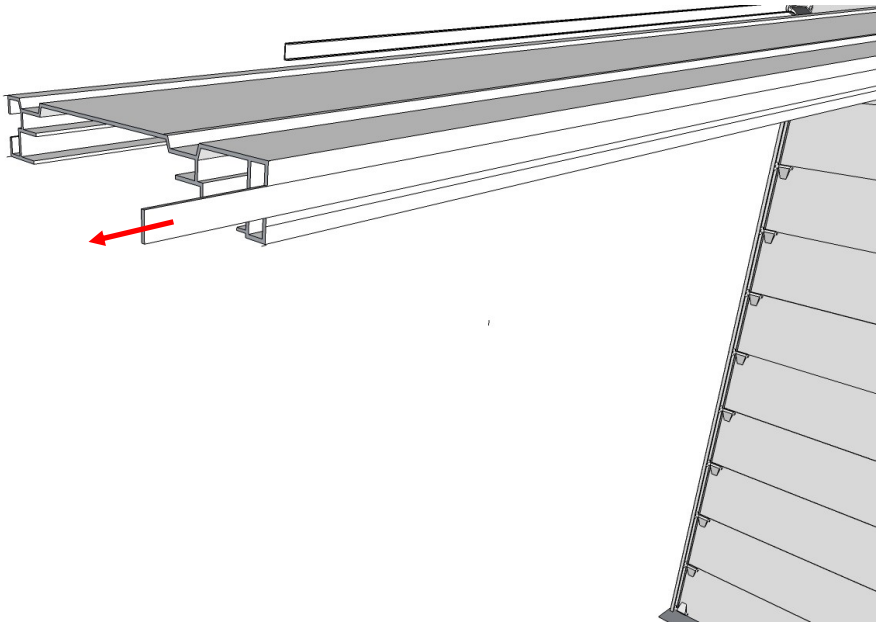
STEP 6.01

Remove the rear cover from the track.



STEP 6.02

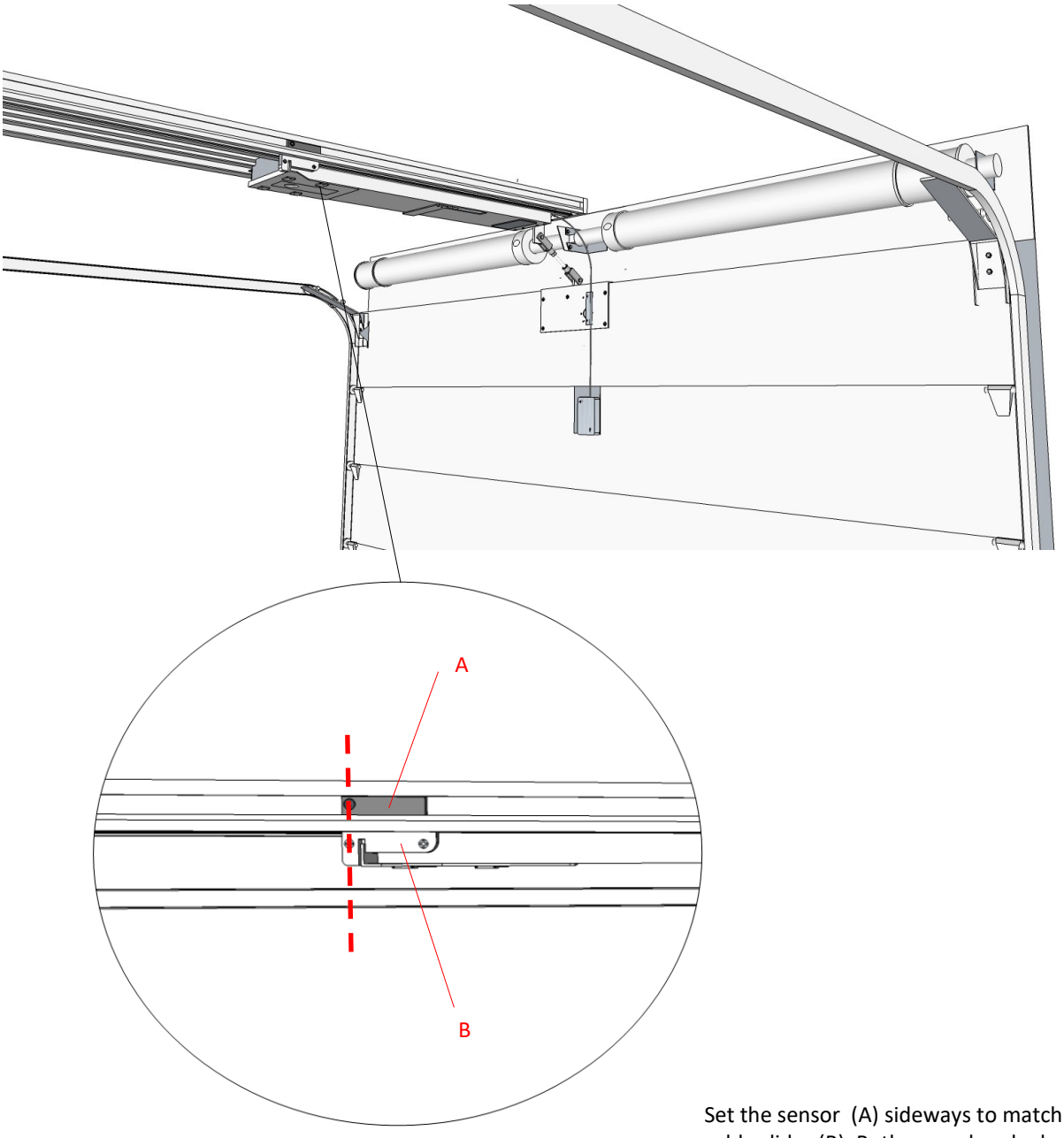
Remove the plastic cover on the side of the track



Sensor setting door closed

STEP 6.03

Check the door closed sensor and if necessary set it in the proper place, by closing the door with connected motor unit manually.

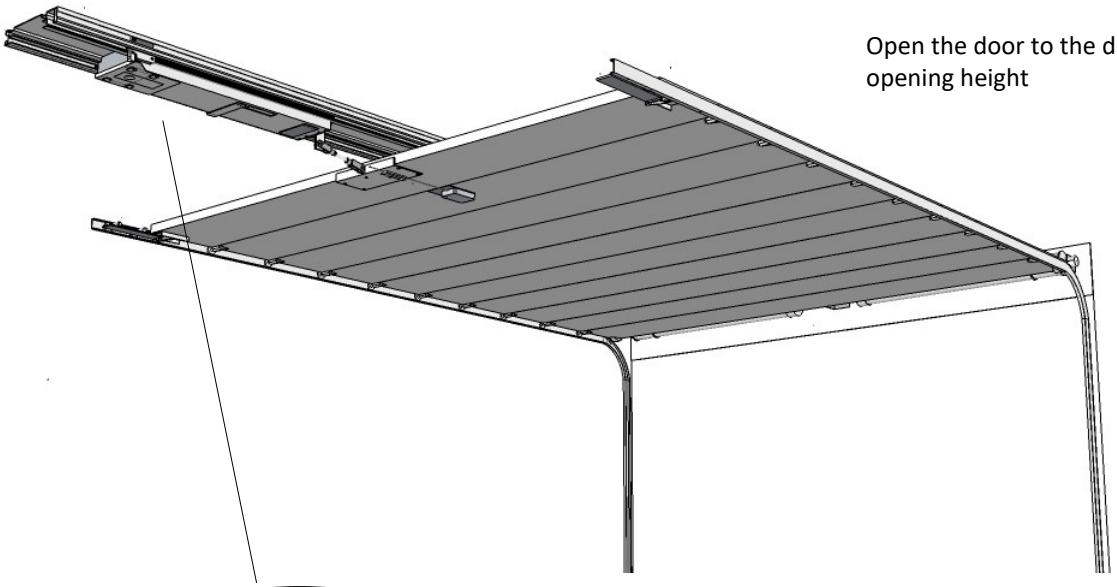


Set the sensor (A) sideways to match the cable slider (B). Both screw heads should be in line, see picture The cable slider holds a magnet.

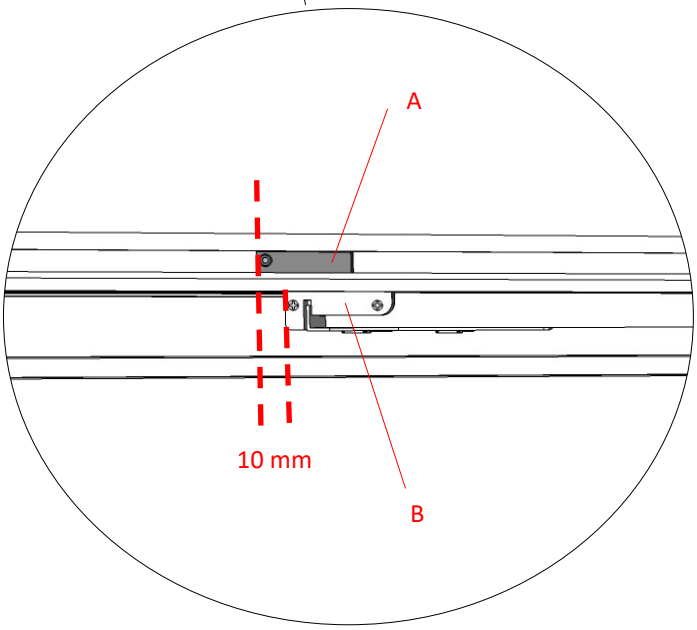
Door open setting

STEP 6.04

Remove the rear cover from the track



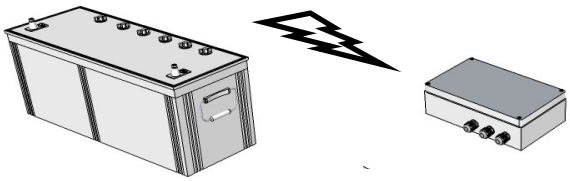
Open the door to the desired opening height



Set the sensor (A) sideways to 10 mm past the cable slider (B). see picture.
Readjust if you want the door to open more or less

Connect power

STEP 6.05 Connect power to the system

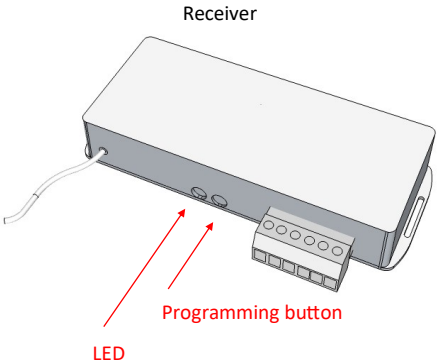


NEVER PUT POWER ON THE SYSTEM:

- When the emergency locking isn't installed and is tested.
- When you are not satificed with the installation. In case of any doubts, do contact your supplier.
- When you didn't install the system according to this manual

Programming remote control (Optional)

STEP 6.06



Find the receiver, typically located in the control box of the DoorLIFT system.

Programming new remote control

1. Push the programming button
2. The LED will flash green twice and stay green
3. Push the remote control the LED will flash twice
4. Wait for 10 seconds and the green LED will turn red
5. You can use now the remote control

Erase the all remote controls from the receiver

1. Push the programming button for 10 seconds
2. Led the button go
3. The LED will flash until the memory is erased.

Remote control

Be aware: when there is no power , programming and erasing the receiver will not work.

Test the system

STEP 6.07

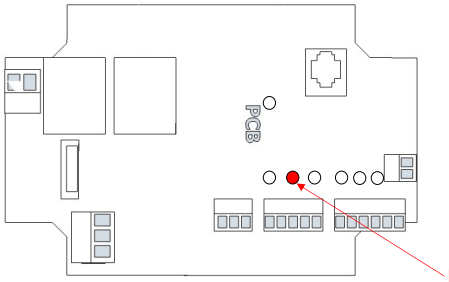
ALWAYS SET THE DOOR HALF WAY, INBETWEEN THE SENSORS!

1. Set the door half way and make sure the motor-unit is in between the sensors.
2. Lock the gears in place. (see page 23)
3. Give command door open

The first allowed operation is up, when the system is been connected to power.

BE AWARE: stay clear from the door.

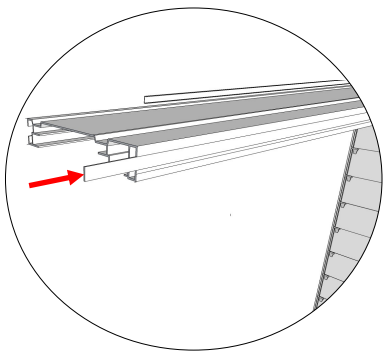
STEP 6.08



Check the LED sensor door closed on the PCB, when the door is fully closed, when it isn't illuminated, reset the door closed sensor until it does.

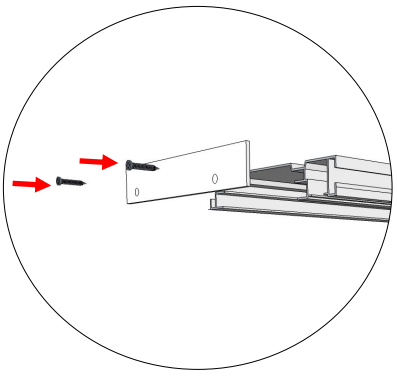
STEP 6.09

Re-install sensor wire cover

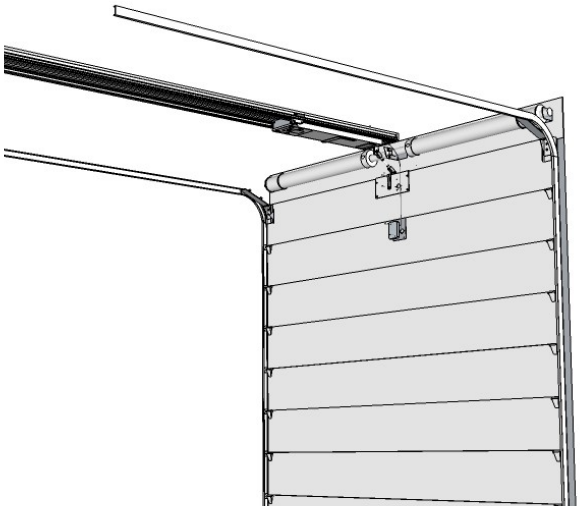


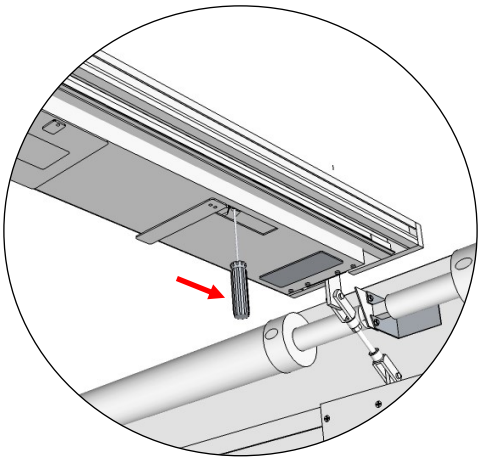
STEP 6.10

Re-install rear cover



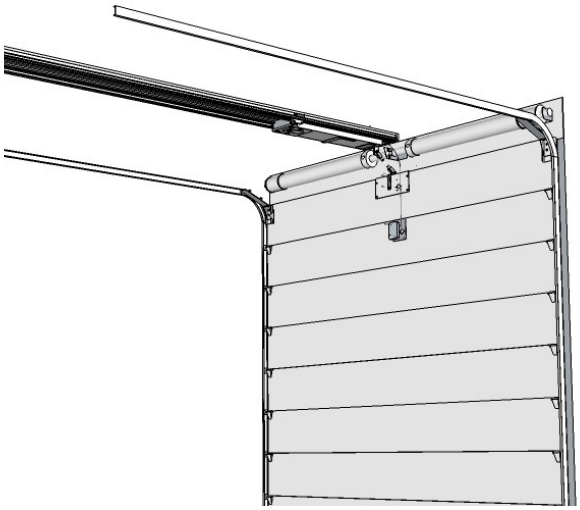
How to unlock the gears

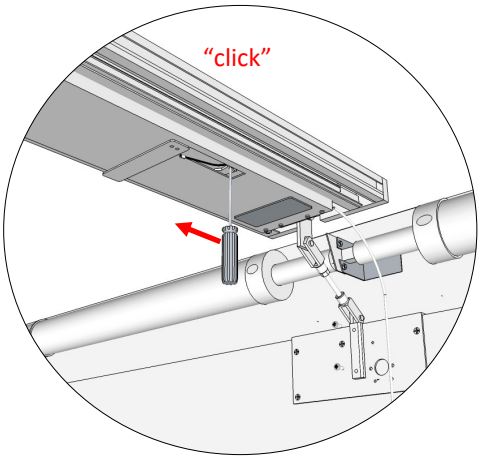




Use a screw driver and insert this in the leaver, located in the motor unit.
Move the leaver towards the roll-up door. Your are now able to open and close the door by hand.

How to lock the gears





Use a screw driver and insert this in the leaver, located in the motor unit.
Move the leaver away from the roll-up door, until you hear a firm “click”

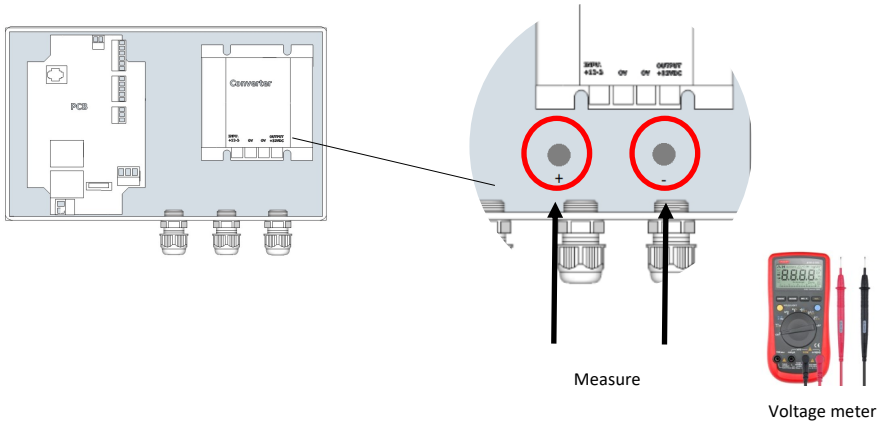
Installation check-list

When you are totally saticfided with the installation and is accoording to this installation manual, preform the following checks:

1	Distance between track and spring 20-30 mm?	☐
2	Are te fork joins (connection bar) free	☐
3	Are the motor gears in locked position (page 22)	☐
4	Open and close the door	☐
5	Check the sensor door open working	☐
6	Check the sensor door closed working	☐
7	Is the motor unit approx. 10-15 mm from the screw in the track, while the door is closed	☐
8	Is the angle of the connection bar between 30-45 ° when the door is closed	☐
9	Test all functions	☐
10	Check input voltage during opperation (see explanation below)	☐
11	Check Amperage (see explanation below)	☐

Place stickers on the door.

How and where to measure input voltage during operation



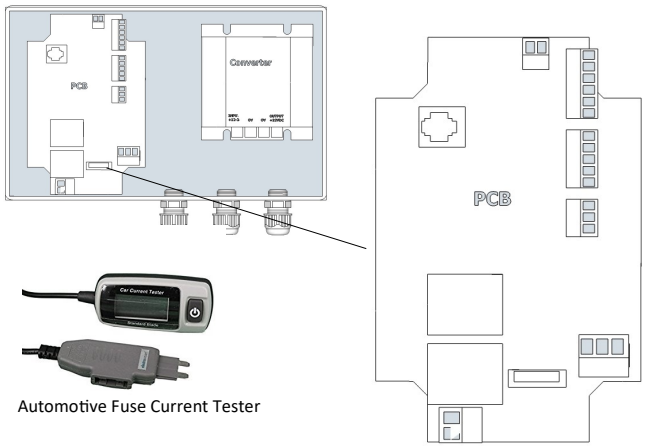
Measure

Voltage meter

BE AWARE: Poor voltage supply can will damage your system!

NOTE: Only measure while the door is operated by the system. When you measure when there is now amp draw, voltage will be always OK.

How to measure the amperage use during operation.



Automotive Fuse Current Tester

To do this measurement, you need an Automotive Fuse Current Tester.

- Remove the fuse from the Doorlift circuit board and insert the tester.
- Place the fuse into the tester and turn it on.
- Signal the Doorlift (with attached roll-up door) open and close the door.

Both ways, the measurement should never be more than 7 Amp. If the one way (up/down) much more than the opposite operation, you have to adjust the spring balanc-er, so the door will be in balance.