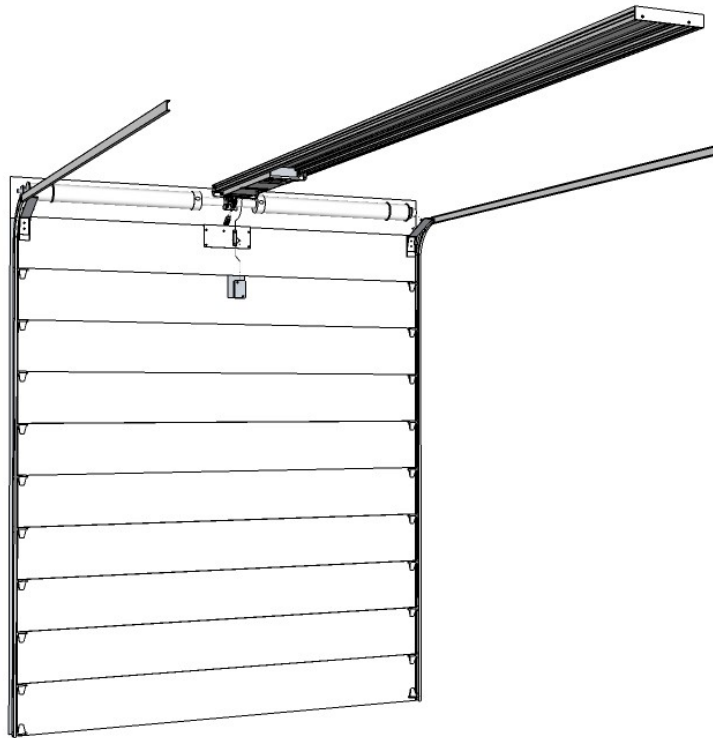




INSTALLATION GUIDE

DoorLIFT[®]



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2. Pre-installation requirements

2.1 General review

The DoorLIFT is intended as an auxiliary system for a manually operated shutter door. The DoorLIFT is a heavy duty cycle drive system which requires **consistent, reliable power**. To secure a good working operation, please follow the below questions before starting the installation.

As well as ensuring the body and vehicle can accept the DoorLIFT, it's important that the door is compatible. Use the following checklist to ensure the door is in good working condition.

1. Has the correct balancer been installed on your Roll-Up door?
2. Is the radius of the track suitable for DoorLIFT operation? The DoorLIFT might have difficulty with tight radius tracks during the closing cycle.
3. Is the Roll-Up door balanced properly? Does it work easily, UP or DOWN by hand?
4. Is the door in good working condition? Make sure there are no broken panels, hinges or rollers etc.
5. Is the top panel of the door strong enough, or will it require reinforcement to prevent it from "flexing" during the closing cycle?
6. Is the power supply adequate? The system requires a 12 or 24 volt, 65 amp source. Has the battery and charging system been well maintained? Batteries that are poorly maintained or highly discharged may not be able to operate the system. The "Low voltage" indicator will shut system down when the power supply is not sufficient.
7. Will a proper power supply always be available? In a trailer application a secondary power supply may be required when the tractor is absent.
8. The DoorLIFT is optionally supplied with two remote transmitters. Will that be adequate or will alternative activation devices be required? Additional remote transmitter, remote switches, etc. These items might be useful for dock workers or others who may need access to the cargo area of the truck or trailer.

If any of the above answers are "no", do not continue with the DoorLIFT installation and contact your dealer for installation support.

2.2 Ensure adequate clearance above door

Check to ensure you have enough clearance above the open door to allow the top edge of the door to go through the radius. Make sure there is a minimum of 45mm between the door and the ceiling.

Check if you are using the right type of top closure arm for you door (see section 2.3 below).

If there isn't enough clearance contact your shutter door supplier to enquire whether the track can be modified to allow installation of the DoorLIFT.

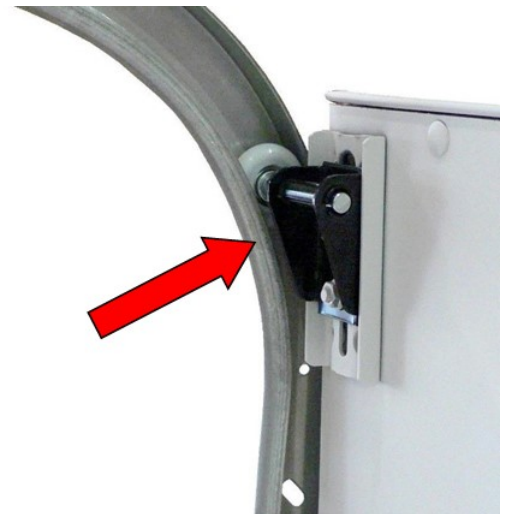


2.3 Checking the top roller brackets

Make sure that the right type of top closure arm is installed on your door to be sure that the door closes in the right way. You will need an adjustable type with two rollers to give the best result.

This also will give you a better clearance between the door and the ceiling.

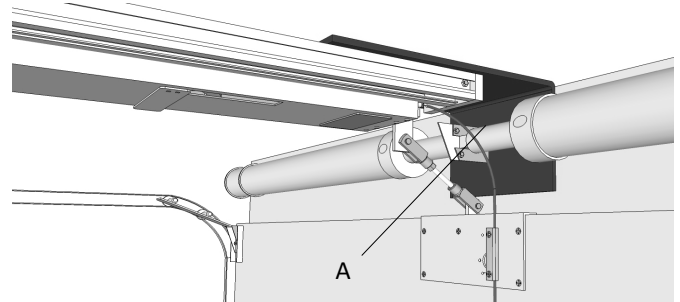
If you have any doubts, please contact your shutter door supplier for assistance.



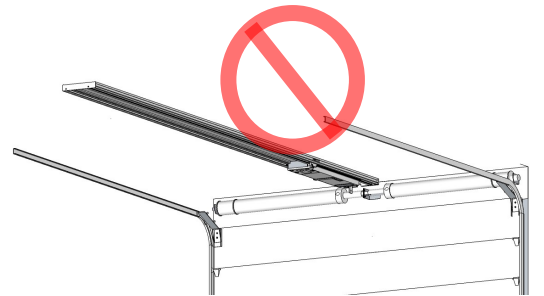
2.4 Body specific requirements

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:

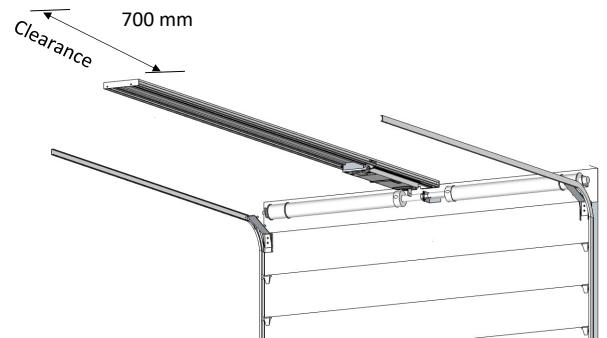
1. In case the track will be **mounted to roof bows** a reinforcement (A) at the header (above the roller shutter) could be necessary, as forces applied upwards can go up to 1000N. In worse case, it can lift the roof.



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.

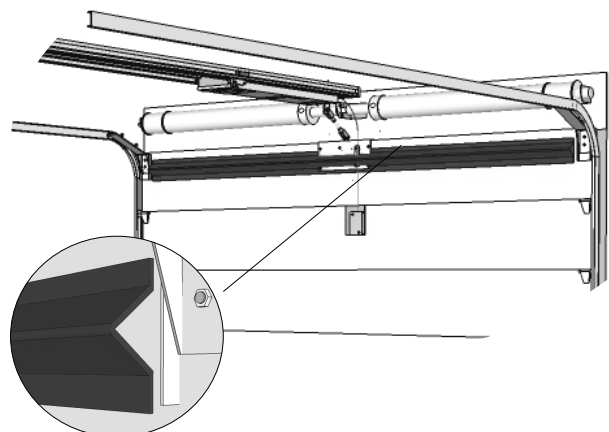


3. Keep a minimum clearance of 700 mm behind the track! This because for a proper service to the system the motor unit needs to be removed from the track. This only can be done by removing the rear cover and slide the 700 mm long motor unit out of the track.



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.

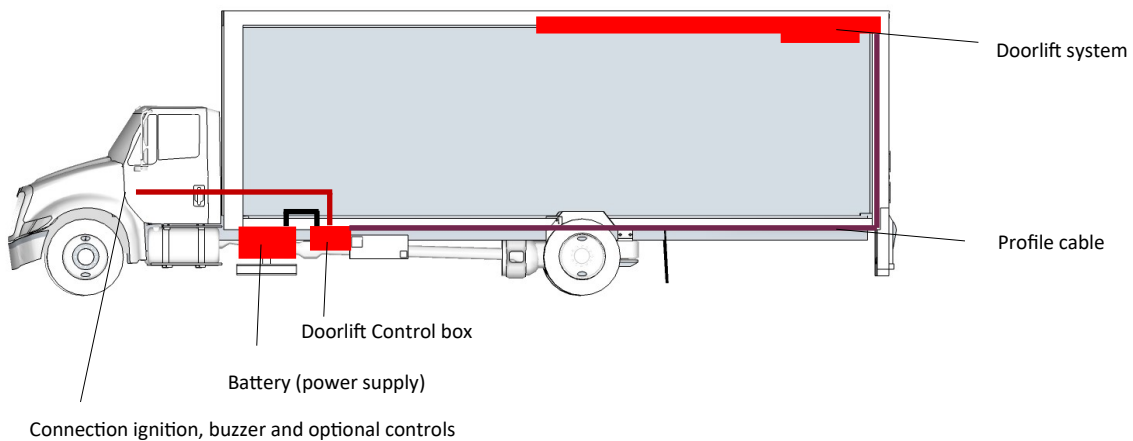
4. Shutter door reinforcement is needed in case of a plastic type door or a thin wooden door. Consult with your doorlift supplier if this is needed on your roll-up door.



3. Electrical planning

The first decision to make is where to install the control module. Ideally this is to be installed as close to the battery as possible keeping in mind the supplied battery cable is 2,5m long (or longer on request). Depending on which side of the vehicle the batteries are on will determine the route of the DoorLIFT profile cable. Battery cable has a diameter of 9mm while the profile cable has a diameter of 8,5mm. These will be relative if these cables are routed into conduits.

The diagram below depicts suggested positions of the control module for trucks.

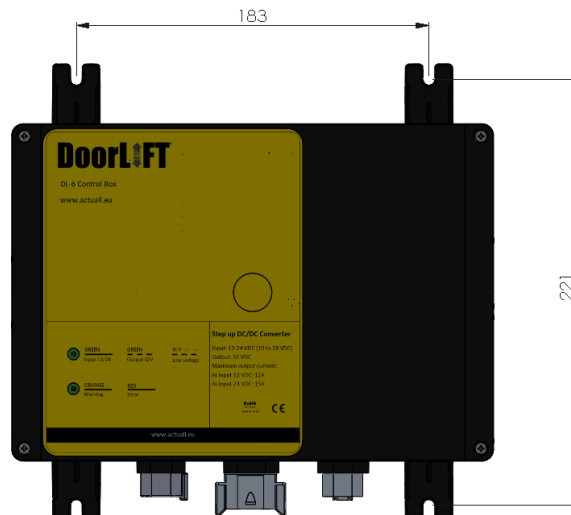


In small truck applications you could install the control module in the cab. This is only recommended if there is an alternative entry into the cargo area, side door or cab pass-through. If the door does not open for any reason, you will have no access to the control box without these alternative entry points.

Insulated trucks or trailers will require some additional support in the ceiling before installing the DoorLIFT rail. Do not attempt to install the DoorLIFT track to an unsupported substrate. Track mounting measures for insulated retro fits should of been accounted for already in the preliminary phase.

If installing auxiliary items such as switches, lights, etc, plan locations and wiring routes. Note: these auxiliary items are not included with the DoorLIFT and are supplied by the fitter or end-user.

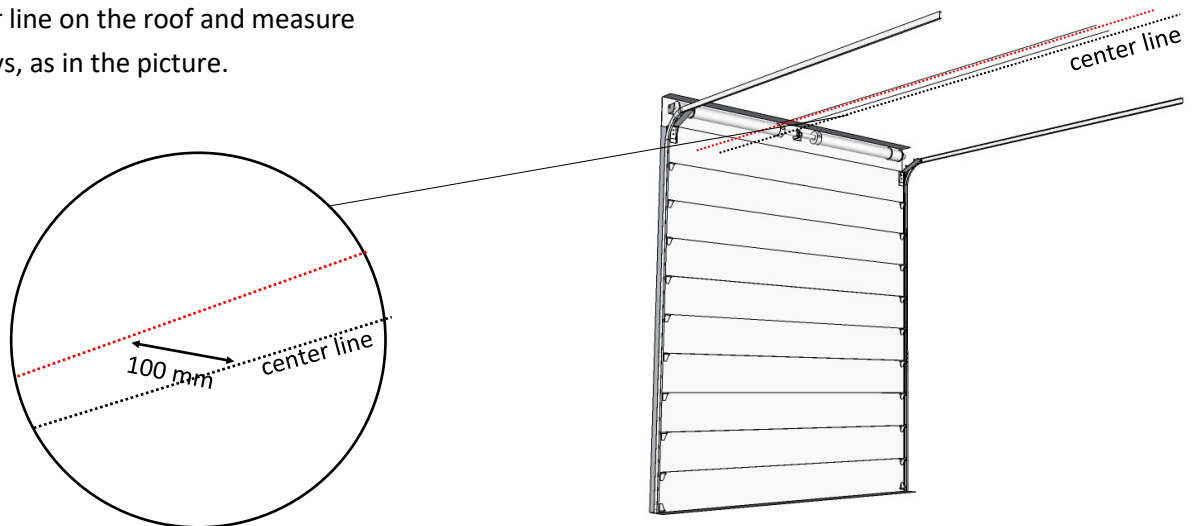
Mounting details of the housing:



4. Track installation

4.1 Positioning the rail on the roof

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

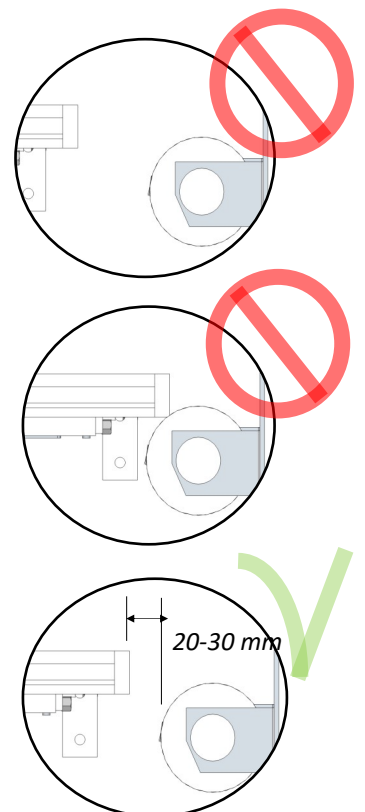
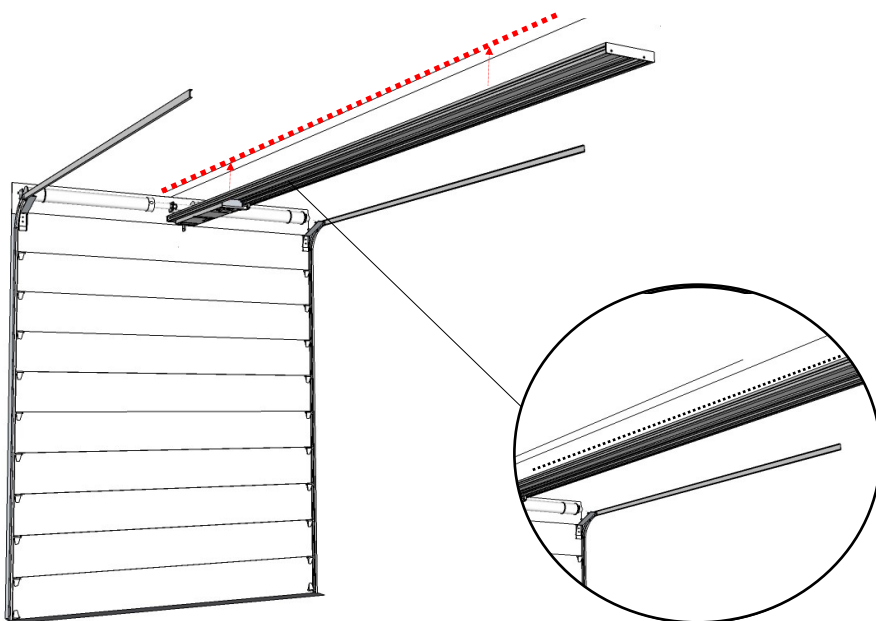


BE AWARE: Check pre-installation requirements (page 4) for any reinforcements needed.

NOTE: Depending on the roof/body structure the installer is required to decide on the type of fasteners and amount of connections.

Place the left side (facing the door) of the track along 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



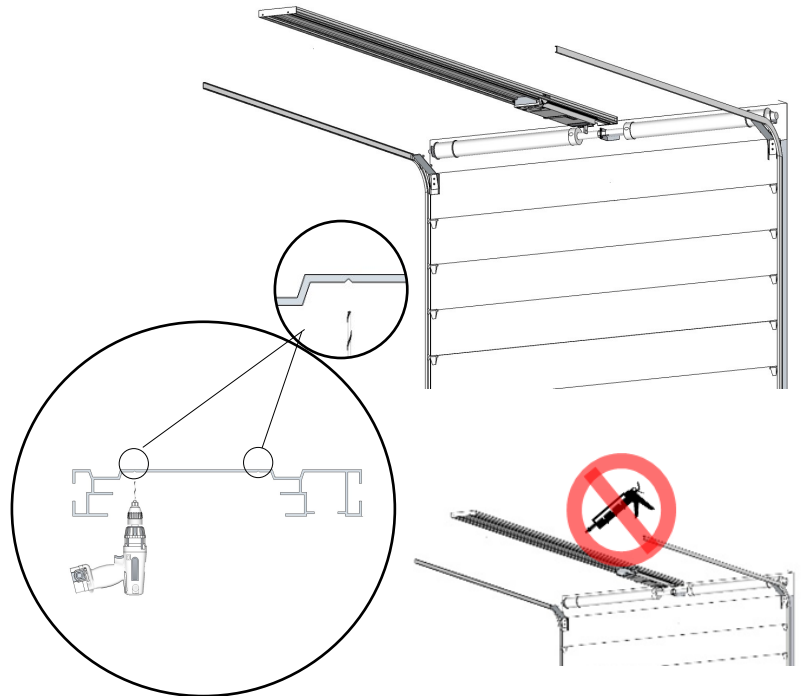
BE AWARE: when the distance between track and balancer is too much, it will hurt the operation of the system.

4.2 Fastening the rail to the roof

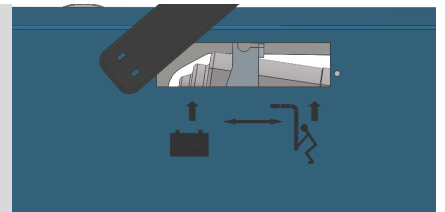
Use the groves in the track to DRILL the required holes. The number of holes depends on the roof structure. Minimum requirements: front, back and middle of the track. In case of dry freight applications, always connect to every roof bow.

Insulated ceilings require furring strips or some type of mounting brackets to secure the track to the ceiling liner and roof. These measures should of been accounted for in the Pre Install Inquiry. **DO NOT SECURE TRACK TO THE CEILING LINER ONLY WITH NO SUPPORT.**

Never glue the track to the ceiling

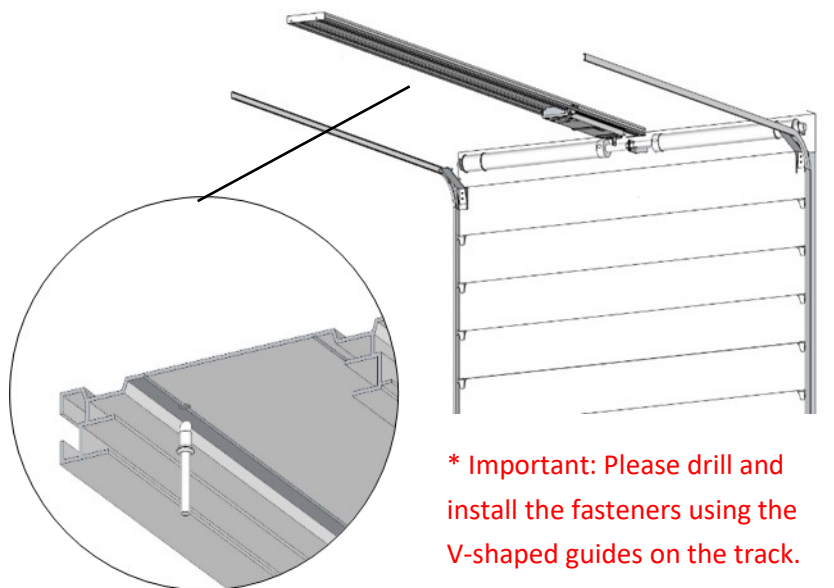


TIP: Moving the motor unit back and forth in the track in this step and the next makes lifting the track assembly easier. Move the lever, shown at the right, to the manual position. The motor unit can now be moved by hand. Moving the lever towards the battery icon will put the motor unit back in automatic mode.



Use large diameter head screws or rivets where the screw heads or rivet heads do not protrude more than **1.8mm** from their seated position. The motor unit will hit the protruding screw or rivet heads during its travel if the heads protrude more than **1.8mm** into its path of motion.

Secure the track to the roof. The number of rivets is to be decided by the installer, as every body is different. The aluminium profile weighs approximately 14Kg and the motor unit 7Kg.

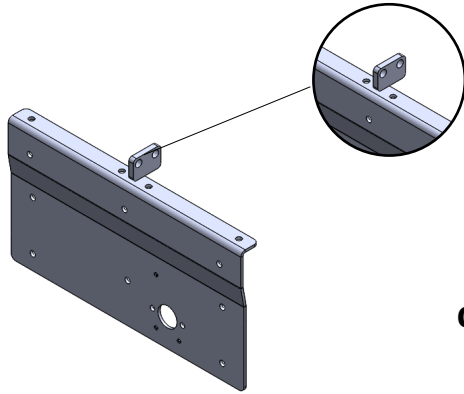


*** Important:** Please drill and install the fasteners using the V-shaped guides on the track. This will have motor clearance implications if not followed.

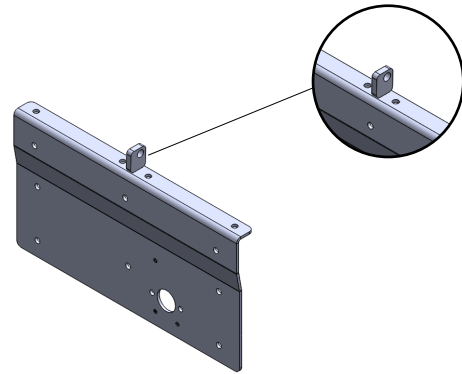
5. Installing the door connector plate

IMPORTANT: Page 6 indicated that top panel reinforcements may be required.

NOTE: Depending on the shutter structure the installer has to decide on the type of fasteners.

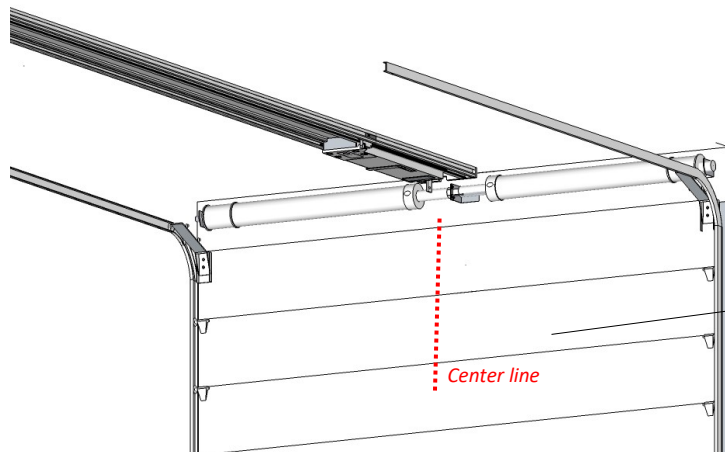


or

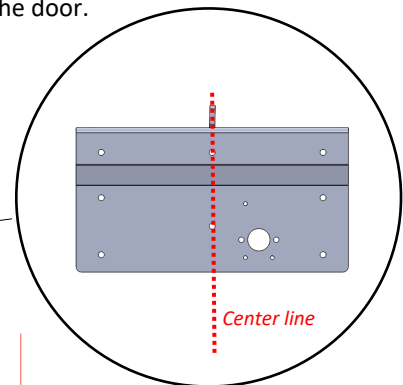


Insulated-freight door connection plate

Dry-freight door connection plate

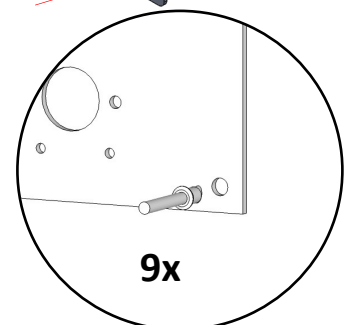
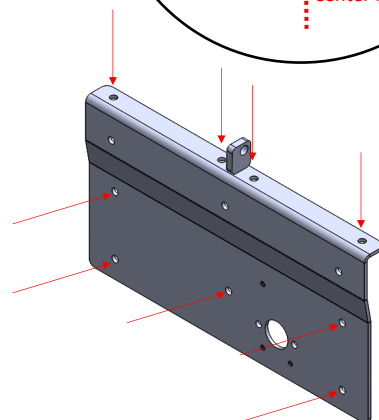


Place the door connection plate in the center of the door.



IMPORTANT: Confirm alignment with the motor unit before drilling holes

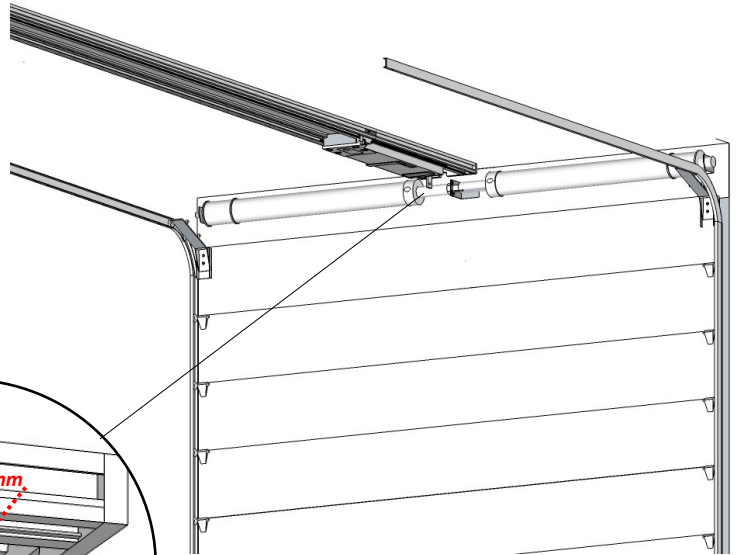
With the door in the closed position and the motor as close to the door as possible, raise the door slightly to ensure the tab on the connector plate is aligned with the tab on the motor unit. Once you are satisfied with the position of the connector plate, secure it to the top panel.



6. Installing turnbuckle connecting rod

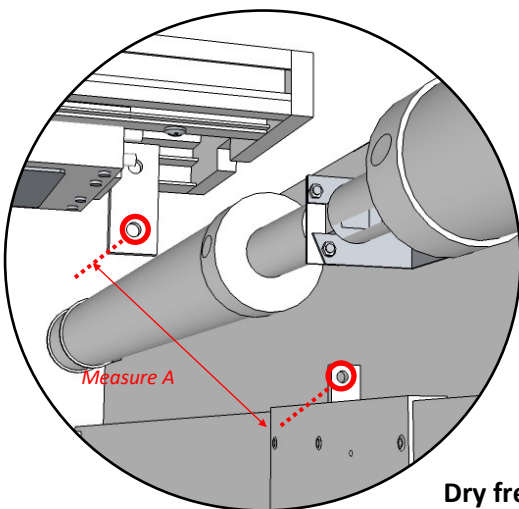
6.1 Installing the turnbuckle connecting rod

Make sure the roll-up door is in the fully closed position.
 Slide the DoorLIFT motor unit towards the door, as far as it will go, then slide it back from the stop screw approximately 50mm. See marker on the track. Lock the motor at this position.

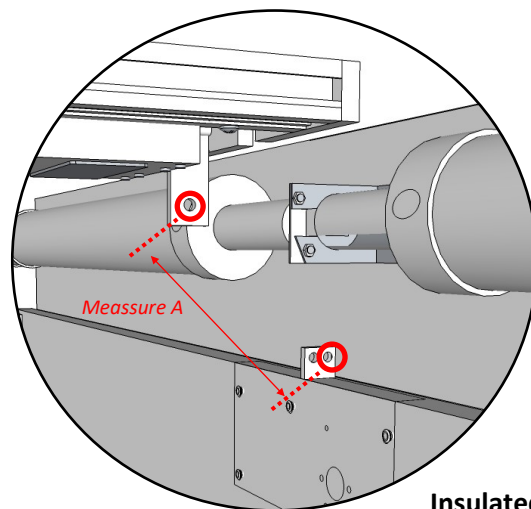


NOTE: This is very important! The motor unit should never touch the screw.

Select the right holes and measure the distance in between

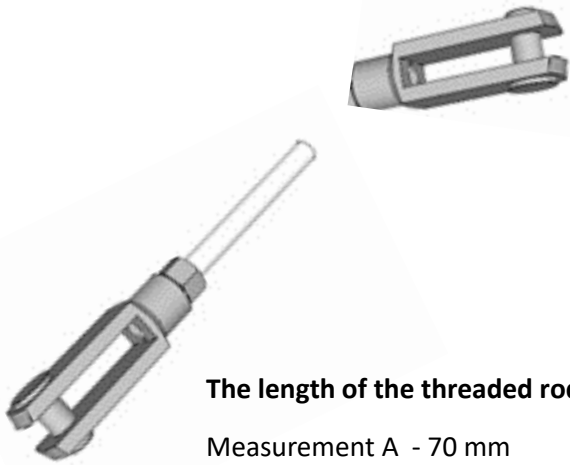


Dry freight

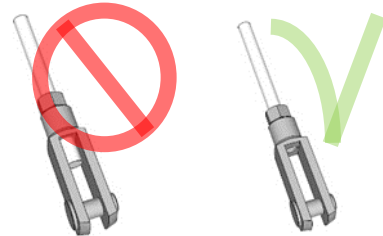


Insulated freight

Cut the threaded rod to length

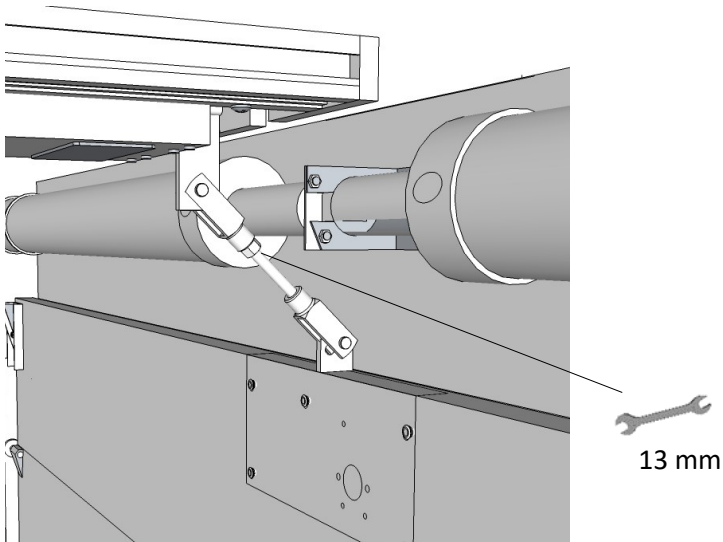


The length of the threaded rod is:
Measurement A - 70 mm



NOTE: The operation of the system will be interfered when the rod does protrude into the fork.

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

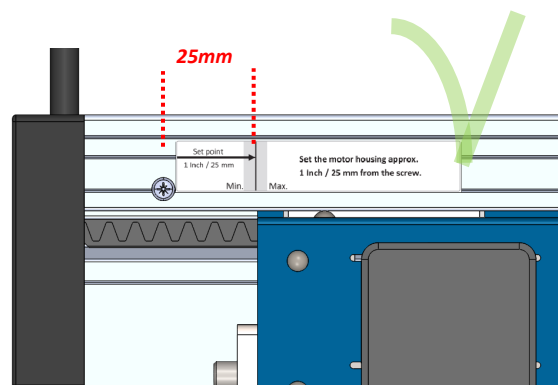
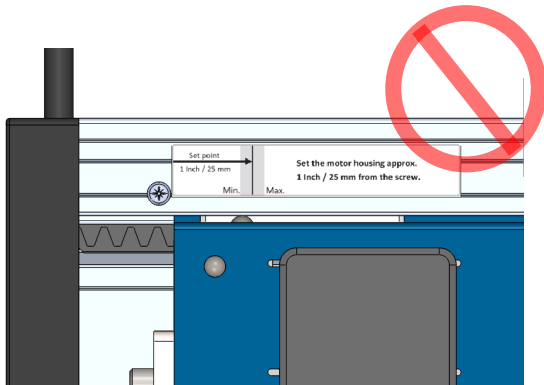
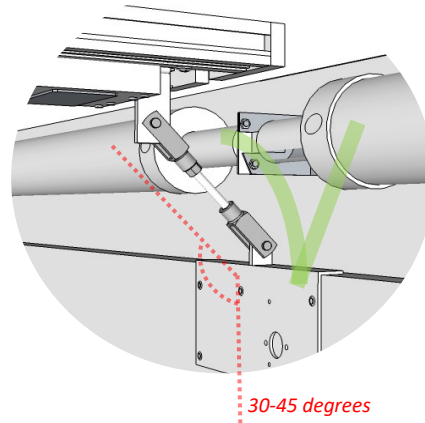
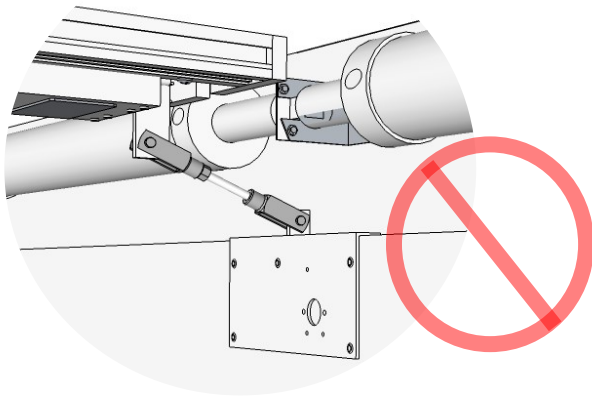


6.2 Checking the turnbuckle connecting rod



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

The motor-unit should always be 25mm away from the end screw.

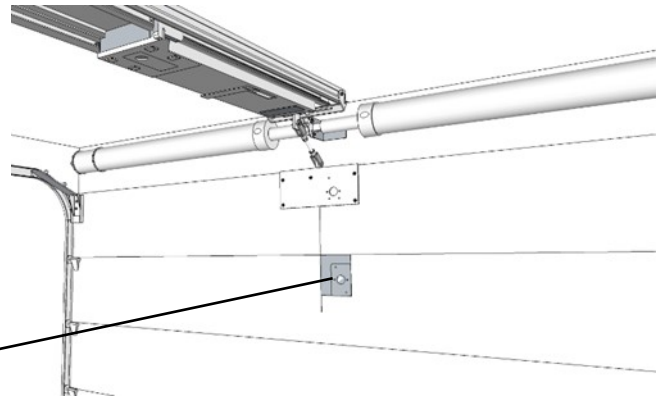
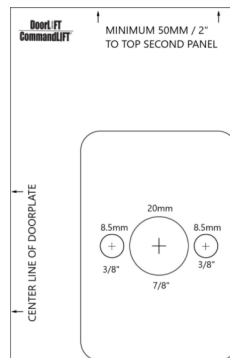


7. Installing the emergency release cable system

7.1 Drilling the holes

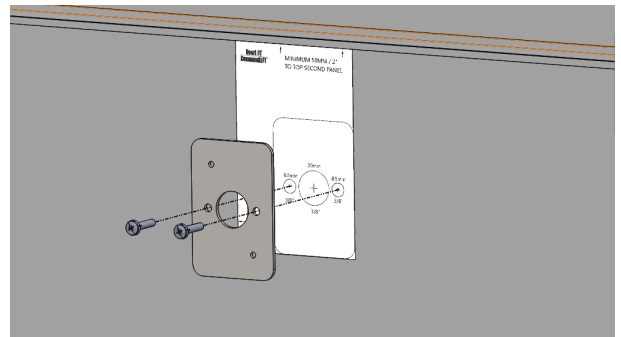
Apply the drill template decal and align the left edge of the template with the centerline of the connector plate.

Drill the holes completely through as per drill template.



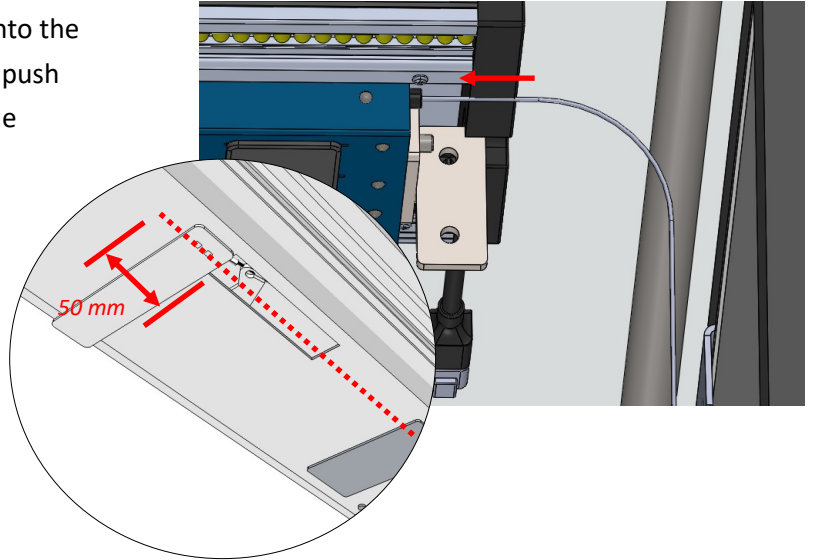
7.2 Installing the lock

1. Locate the lock assembly, turn the key 90 degrees and remove the core of the lock from the lock housing plate. Insert the housing plate into the holes on the face of the door. Use masking tape if necessary to hold the housing to the face of the door.
2. Select the appropriate length screw from the kit and secure the interior mounting plate to the housing.

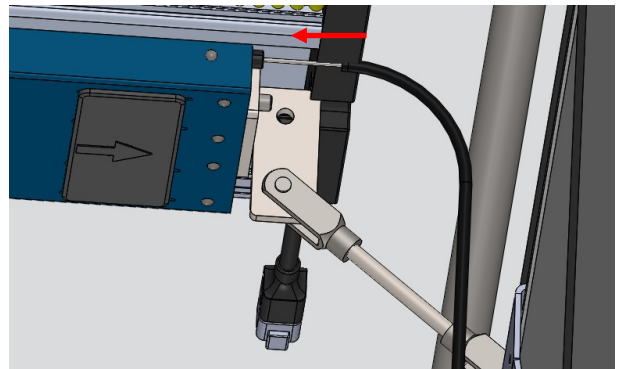


7.3 Installing the release cable

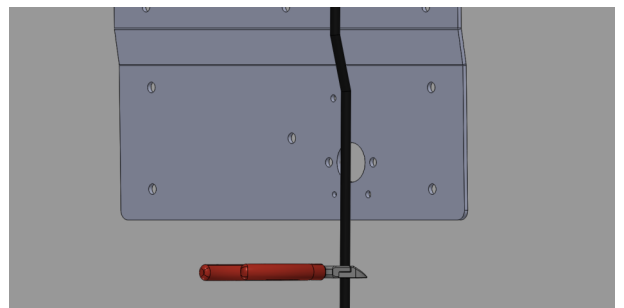
1. Insert the end of the cable with the stop into the guide tube at door-end of the motor unit, push the cable through until you can see it in the opening where the lever is. Insert the stop through the release lever and engage the lever (lock the DoorLIFT). With the lever engaged, push the cable **50mm** further into the motor. You can temporarily hold the cable **50mm** past the lever with masking tape to keep it from moving.



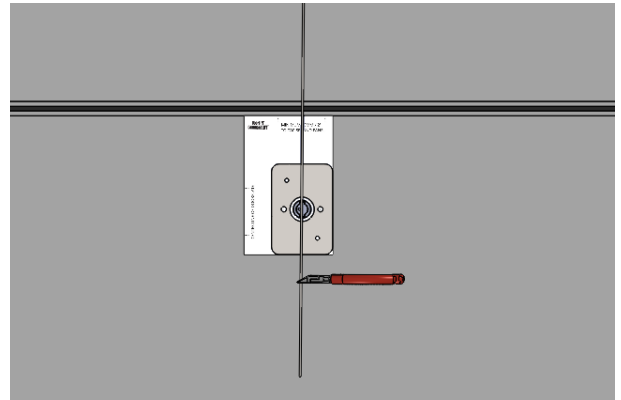
2. Slide the cable sleeve over the cable and 50mm into the guide tube in the motor housing.



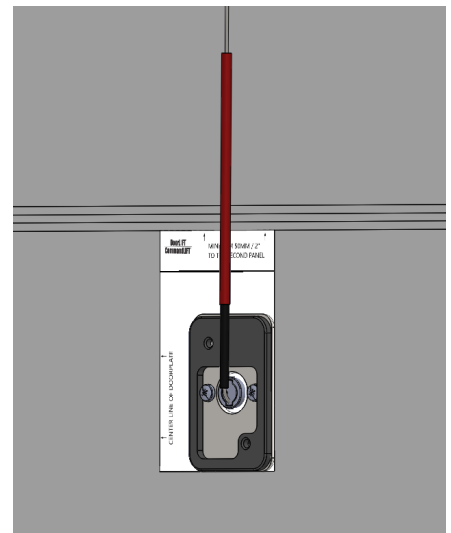
3. Mark the sleeve 25mm below the door connector plate. Remove the sleeve and cut it on the mark. **DO NOT CUT THE CABLE.** Slide the sleeve back over the cable and into the motor housing tube.



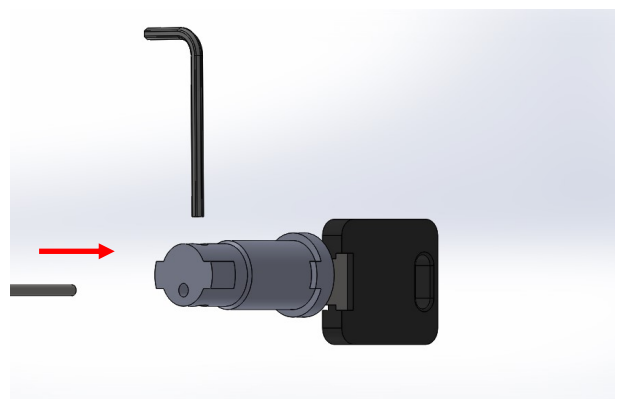
4. Ensure the cable is still 50mm past the release lever in the motor housing and the lever is still engaged. Using good quality cutters cut the cable 25mm below the lock mounting plate. Not using a proper tool to cut the stainless cable can cause the end of the cable to fray and become difficult to insert into the lock cylinder.



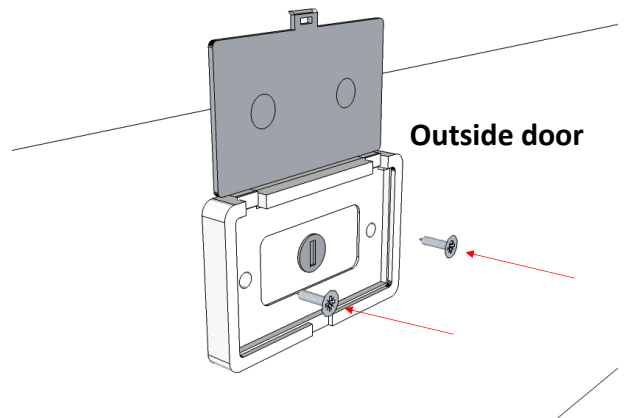
5. Slide the red tube, the 60mm piece of cable sleeve and the plastic cover base over the cable. Push the cable through the door and lock housing so it protrudes through the face



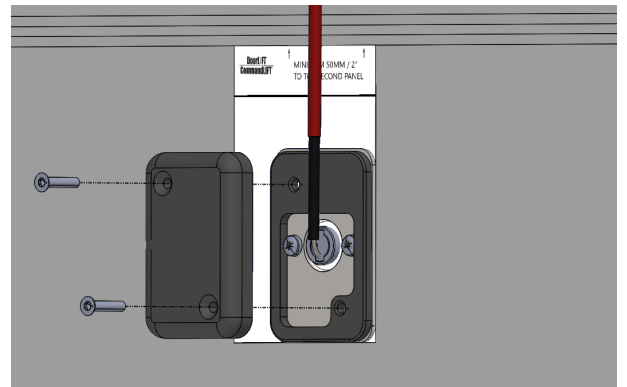
6. Insert the cut end of the cable into the hole on the back of the lock core. Secure the cable by tightening the set screw on the side of the core with a 2mm Allen key. Be sure it is as tight as possible. Insert the core into the housing, turn 90 degrees, and remove the key.



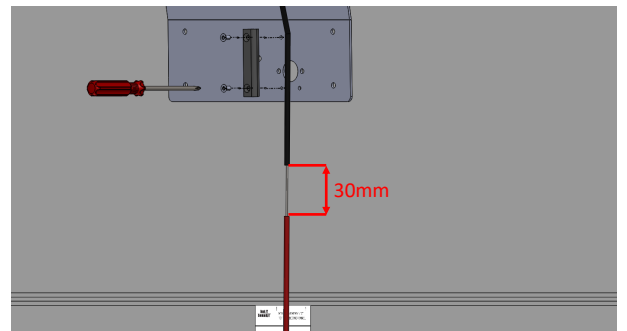
- Use the two screws provided to secure the exterior cover over the lock assembly.



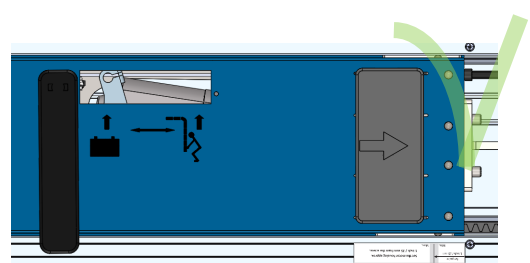
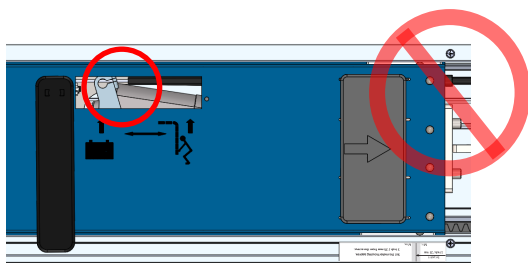
- Locate and secure the rear cable cover on the mounting plate using the two 4,8x32 screws provided. This cover also acts as a clamp for the 60mm section of cable sleeve. Make sure the cable sleeve ends in the middle of the lock. See picture



- Slide the cable sleeve up so there is a clearance of 30mm to the red sleeve. Use the two 4,8x19 screws and plastic clamp to secure the cable sleeve and clamp to the holes on the door connector plate.



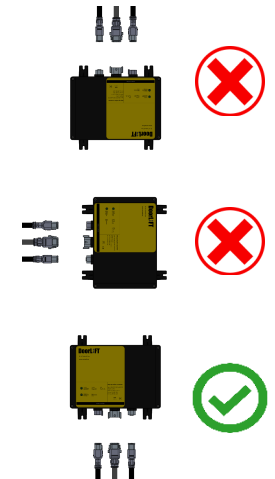
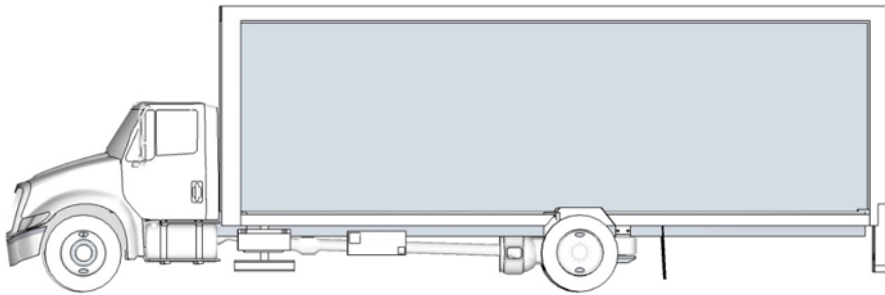
- Make sure that the sleeve is only 50mm into the guide tube and not protruding in the slot of the motor-unit. This will prevent the lever from moving and the door cannot be disengaged anymore.



8. Installing the control box

8.1 Mounting the control box

Mount the control box as determined earlier in the manual. Double check the points below to ensure the ideal location.



Cable directions

Make sure the cable connectors are down to prevent moisture entering the box

Reminder: the standard battery cable is 2,5m long so the distance from the box to the battery can't be more than that. (longer cable on request).

Be aware: of the environmental conditions of your chosen location when the truck is in use. For example, placing the box behind the wheels could result in high pressure water and road debris against the box.

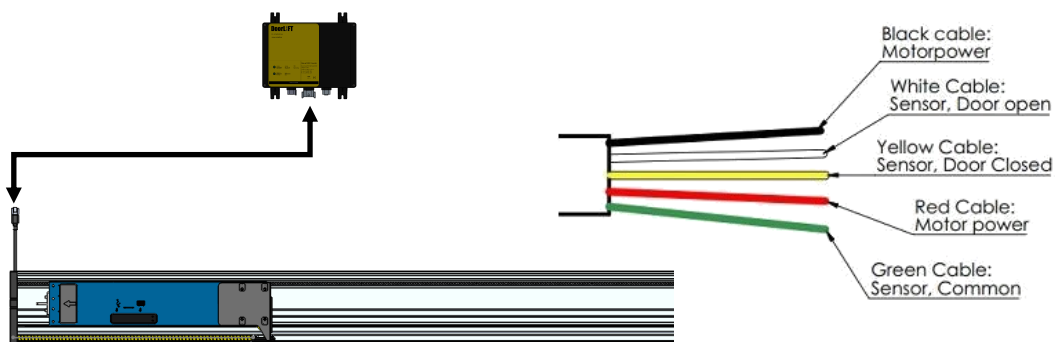
WARNING: The size of the supplied cable(s) is determined by the DoorLIFT power requirements. **DO NOT** splice wires for extra length, this can cause voltage drop, resulting in poor/intermittent operation or damage. Longer cable (till 5m) is available on request.

DO NOT CONNECT THE BOX TO THE BATTERY YET

8.2 Feeding the cable through the box

Run the profile cable from the track to the control box. This cable comes in two pieces and will have to be spliced with the solder/butt connector kit given in package. Match the color scheme below between the two cut cables.

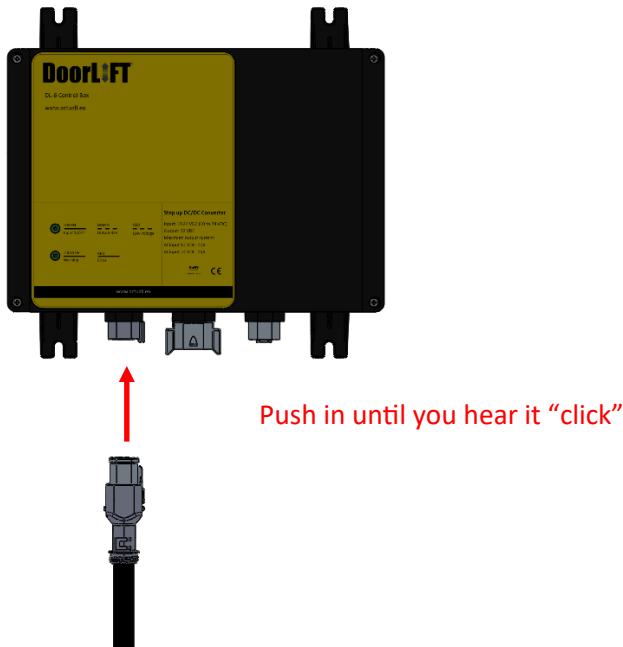
Note: If the cable is too long, it can be cut accordingly.



WARNING: Be sure to protect all cables from sharp edges by using loom and or grommets whilerouting cables through conduits and bulkheads.

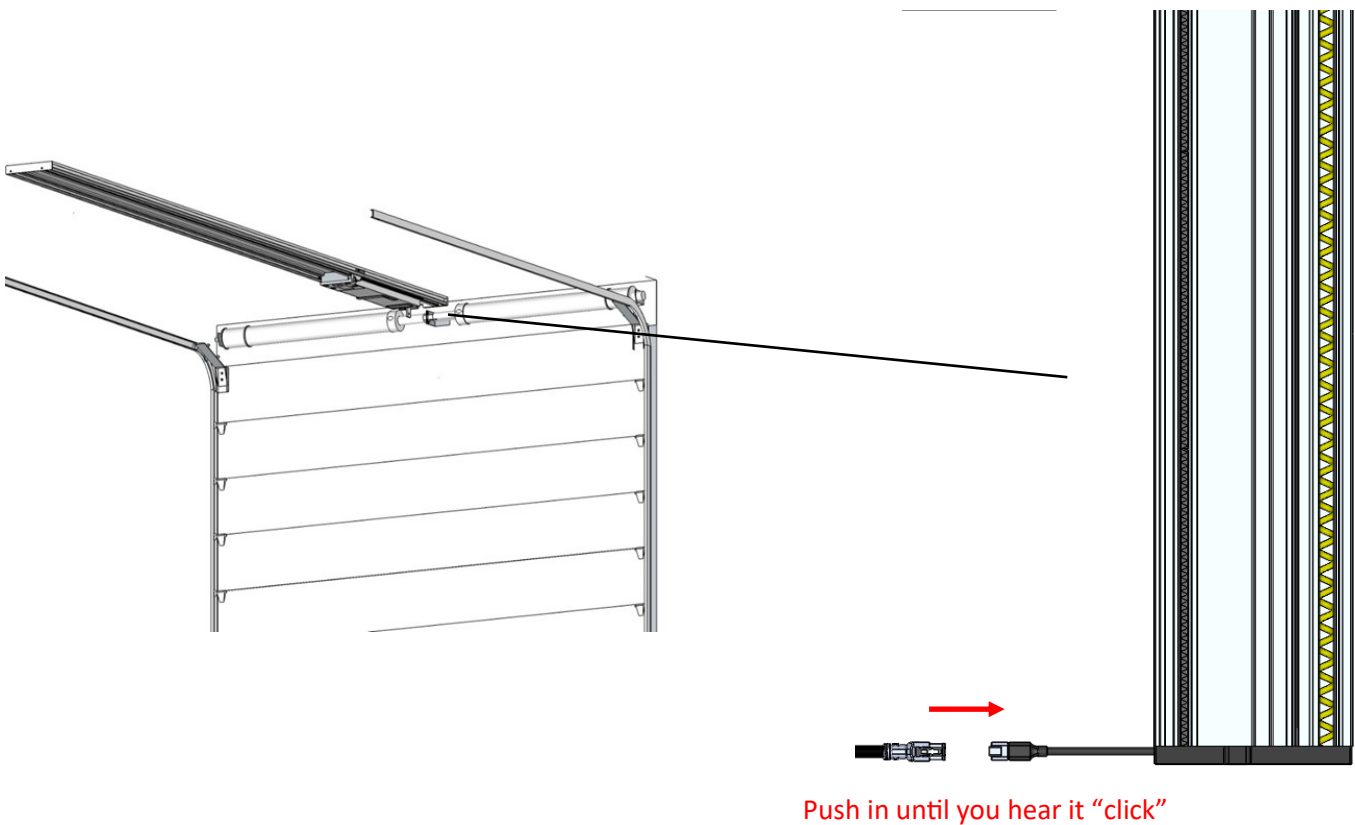
8.3 Connect the cable to the control box

Plug the one end of the profile cable to the box. While connecting, push until you hear a "click".



8.4 Connect the cable to the track

Plug the other end of the profile cable to the track plug. While connecting, push until you hear a "click".

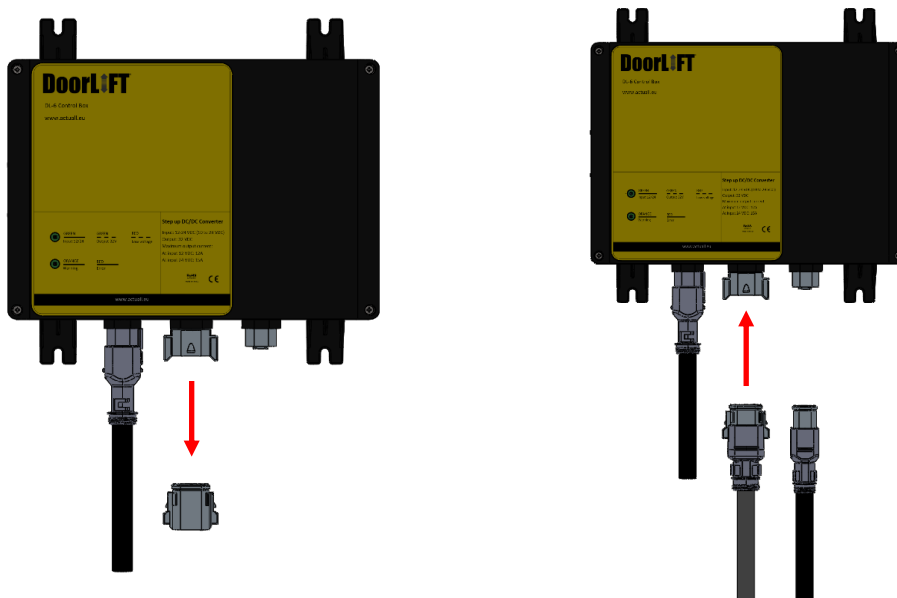


8.5 Optional functions

Connect auxiliary devices to the DoorLIFT control box through the 8-lead auxiliary harness using the wire chart below as a guide. The pig-tailed end of the harness has numbers.

Wire	Item
1	Up/down input
2	Up input
3	Down input
4	Signal block (ignition lockout)
5	+ 12V output (max 250 mA)
6	Door ajar output (ground)
7	Cargo light output (ground)
Yellow/green	Ground (max 250 mA)

The 8-pin male receptacle on the box comes equipped with a plug to protect the connector from water and dirt if the harness is not used. This plug is removed if the harness is utilized.



8-lead wire harness
 Push in until you hear it “click”

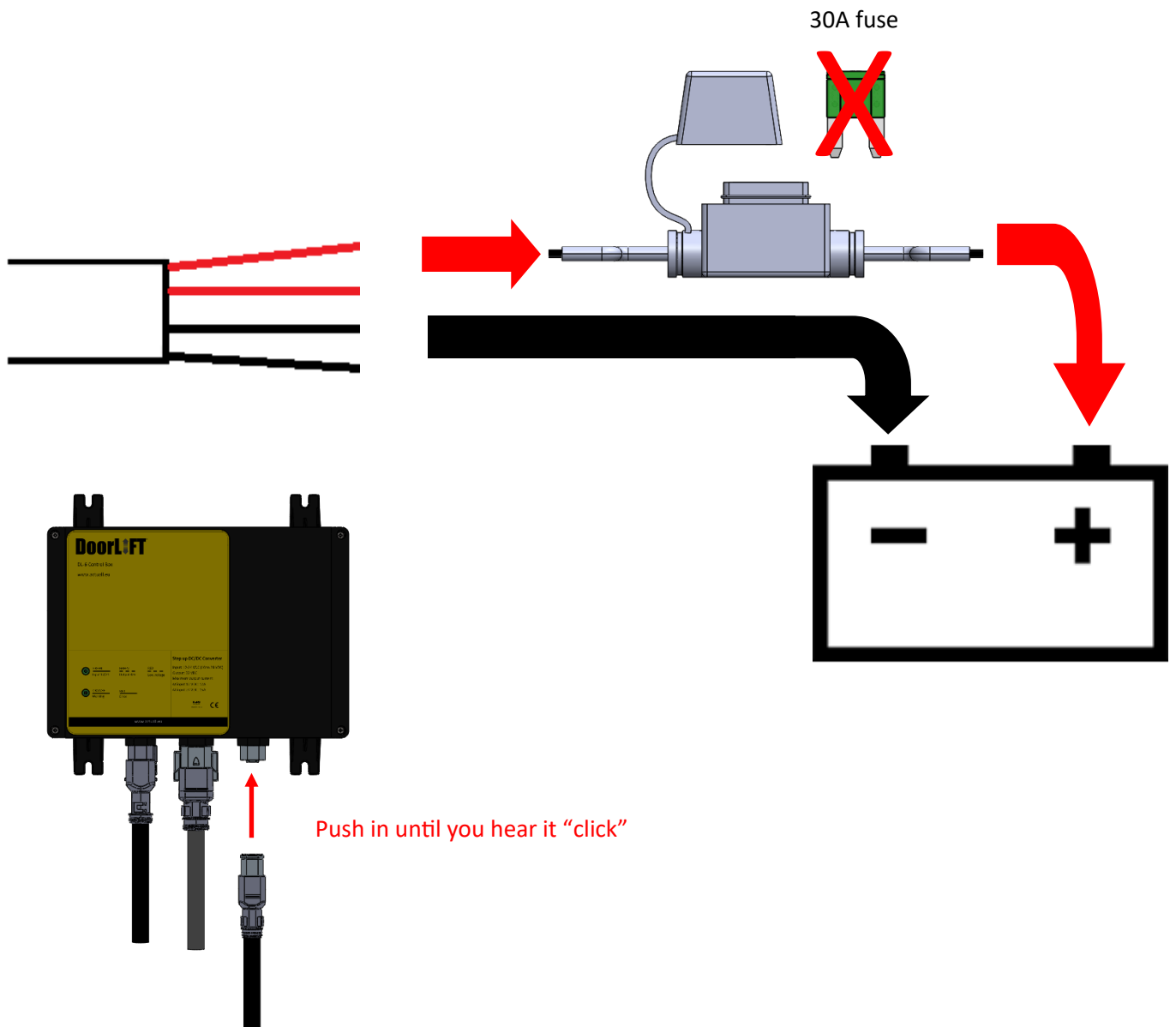
WARNING: Protect unused harness leads against water, debris, dust and possible short-circuits

8.6 Connecting to the battery

On the pig-tailed end of the DoorLIFT battery cable, splice red wires, and one end of the fuse wire together. A solder splice with heat shrink is recommended. Crimp a terminal to the other end of the fuse wire. This will be attached to the positive battery terminal. Splice the black wires with a terminal which will be attached to the negative terminal of the battery. Connect the connector end to the control box.



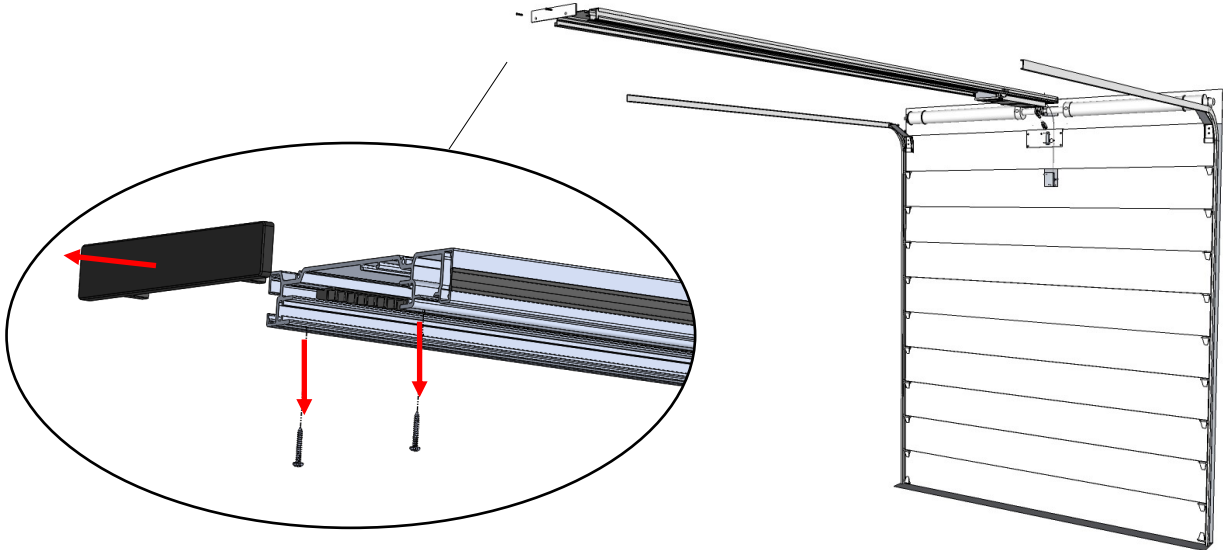
DO NOT PUT IN THE FUSE UNTIL FURTHER NOTICE (CHAPTER 12)



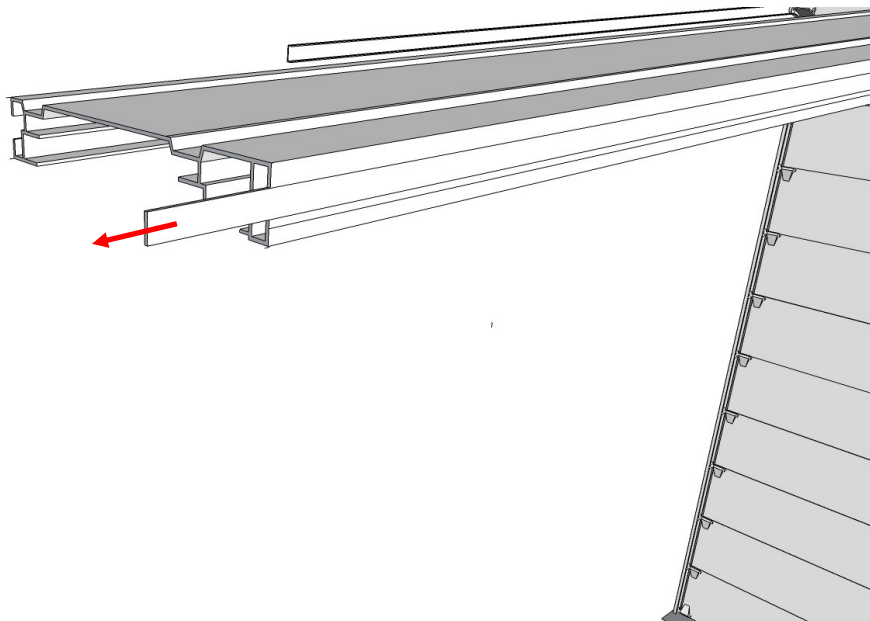
9. Adjusting the sensors

9.1 Adjusting the door closed sensor

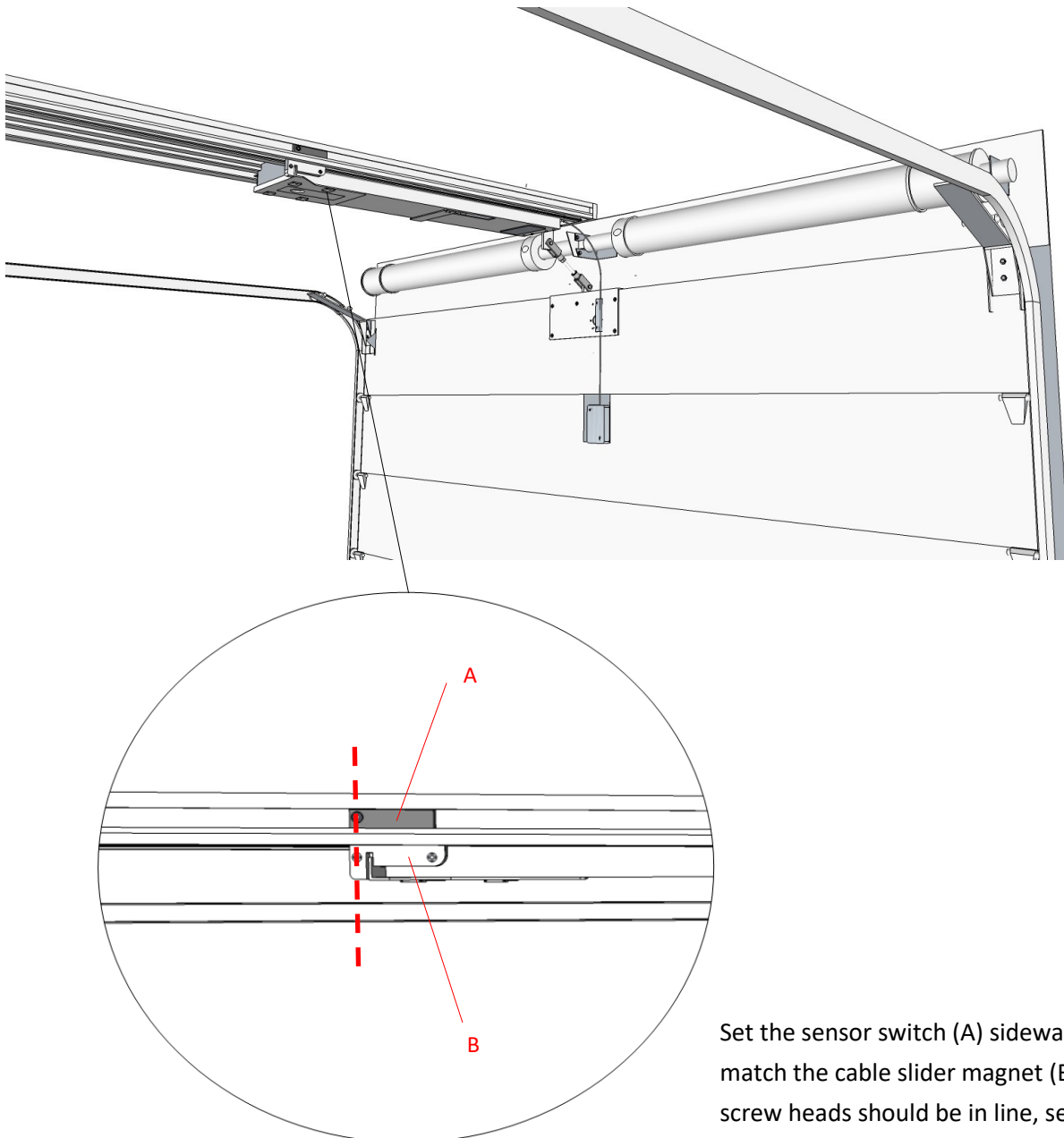
Remove the rear cover from the track.



Remove the plastic cover on the side of the track



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



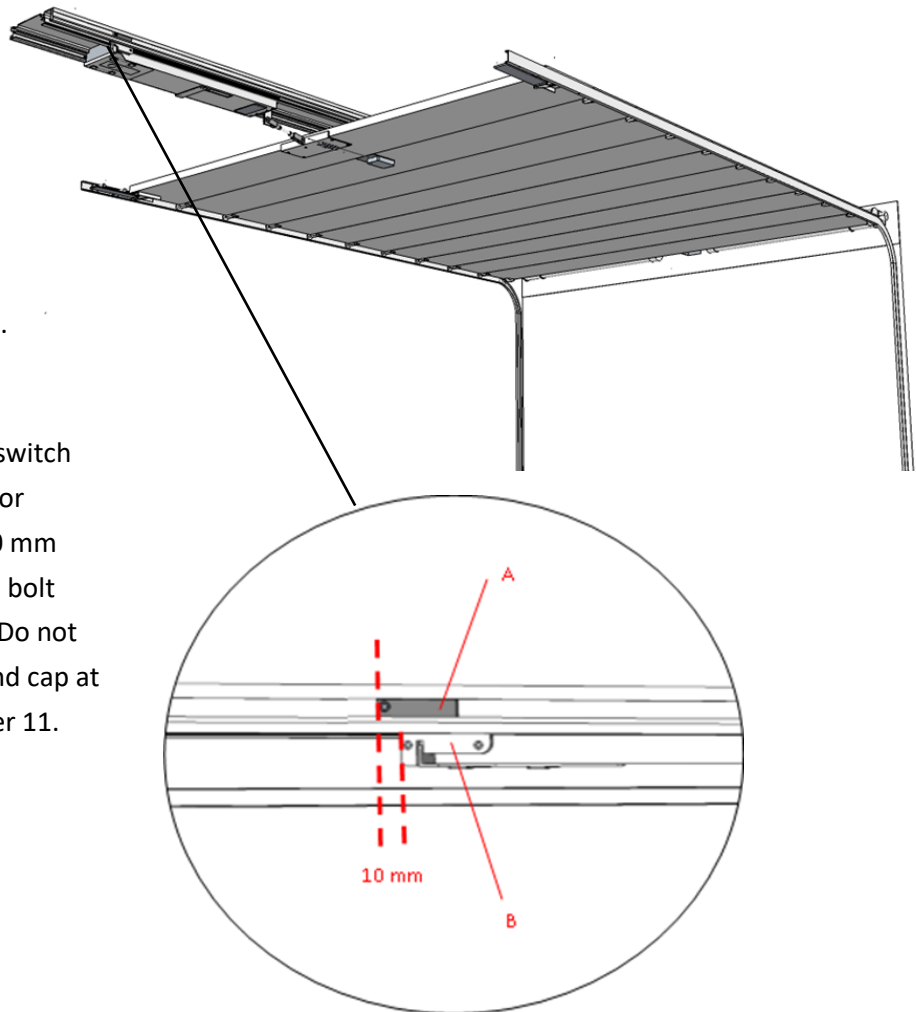
Set the sensor switch (A) sideways to match the cable slider magnet (B). Both screw heads should be in line, see picture. The cable slider contains the magnet that moves with the motor unit and trips the sensor switches to signal the control box that the door is either fully opened or fully closed.

9.2 Adjusting the door open sensor

The sensor switch for the OPEN position **WILL** need to be set. Follow the same process as the close sensor switch, mark the track and slide the sensor switch to the desired location.

Open the door to the desired height.

Using an Allen key, slide the sensor switch (A) to the desired location. The sensor switch adjustment bolt should be 10 mm ahead of the cable slider magnet (B) bolt relative to the cab end of the track. Do not install the track wire trim or track end cap at this time. This will be done in chapter 11.

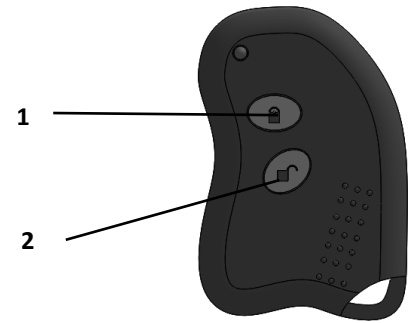


WARNING: Do not adjust the DoorLIFT to open the door too far. The lock on the face of the door can jam against the DoorLIFT track on the ceiling.

10. Programming remote controls

Note: If applicable

1. When the power is turned on by connecting the battery cable to the control box, within 5 seconds, press buttons 1 and 2 at the same time. The system will erase the memory and then enter the code learning mode. The UNLOCK OUTPUT will trigger to remind you that the system is in code learning mode.
2. Within 5 seconds of entering the learning mode, press any button on the transmitter. You will need to press the button on all the transmitter you want to program to the system, because the memory has been erased. The UNLOCK OUTPUT will trigger to tell you the transmitter has been recognized and is compatible with the system. A maximum of 12 transmitters can be coded per system.
3. During code learning, if there is no action after 5 seconds, the system will exit learning mode. The UNLOCK OUTPUT will sound indicating its leaving learning mode.
4. If old FOBs have to be erased from the receiver's memory for any reason, program the new FOBs with the above procedure and don't include the old FOBs in this procedure. This process will erase the old FOB data from the receiver's memory



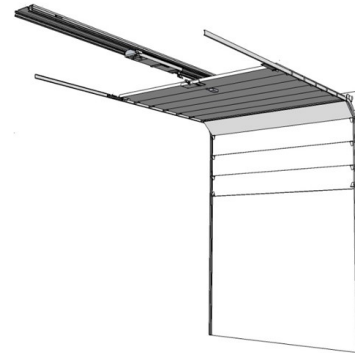
Note: If the FOB battery has to be replaced for any reason, the battery type is a dry cell A23 type 12 Volt.



11. First operation of the system

THE FIRST ACTIVATION AFTER POWER UP IS ALWAYS OPEN.

BEFORE TESTING THE SYSTEM FOR THE FIRST TIME, PARTIALLY OPEN THE DOOR SO THE MOTOR IS APPROXIMATELY IN THE MIDDLE OF THE TRACK.

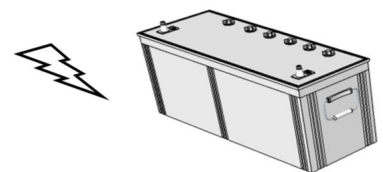


1. Open the door half way so the motor unit is between the OPEN and CLOSED sensor switches.
2. Engage the motor.
3. **Put the fuse in the holder to put the power on the system**
4. Press open on any device and the door should open to the sensor that was set earlier. If the door is open too far or not far enough adjust the sensor accordingly. (page 24)
5. Press the button to close the door. The door should close tightly against the floor. If the door closes and then raises approximately 15cm the closed switch needs to be adjusted. Loosen sensor switch on the side of the track and slide the sensor switch towards the front of the truck. Test the close function again, repeat the process as necessary. (page 22)
6. Once you are satisfied with door's open and close positions, install the sensor wire trim onto the sensor side of the DoorLIFT track and install the track cap to the cab-end of the track

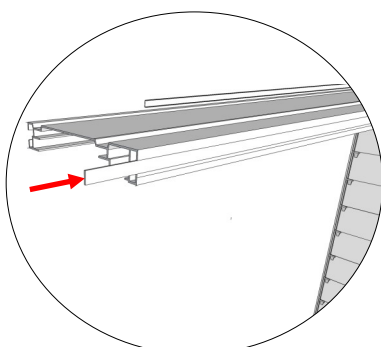


DO NOT CONNECT POWER:

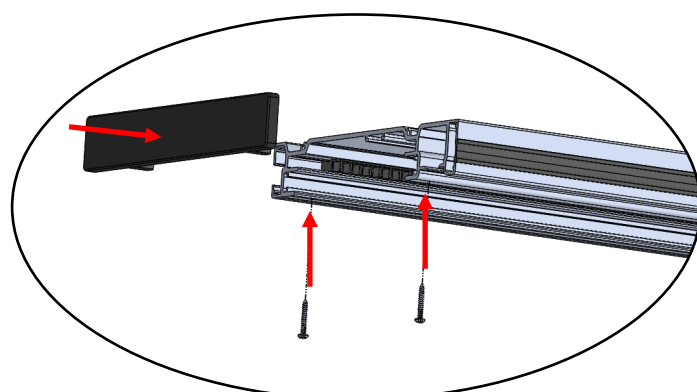
- Unless the emergency release is installed
- You know where the keys for the emergency release are
- If the battery is not fully charged
- If you are not satisfied with the installation or have questions contact your dealer



Re-install sensor wire cover

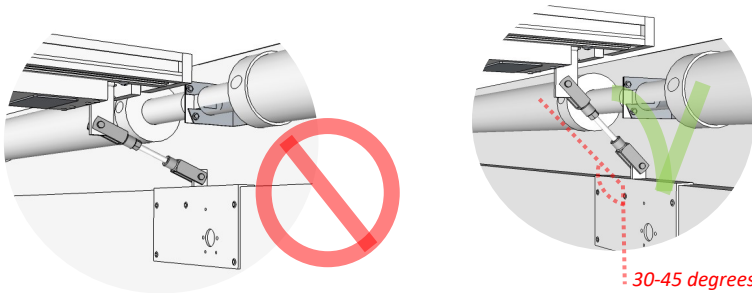


Re-install rear cover



When you are satisfied with the installation and the system has cycled a few times review the following points:

1. Do the turnbuckle clevises move freely when the door moves from the vertical to the horizontal position?
2. Is the lock nut on the turnbuckle rod tightened against the clevis joint?
3. Is the turnbuckle at an acceptable angle, 30 -45°, with the door fully closed?

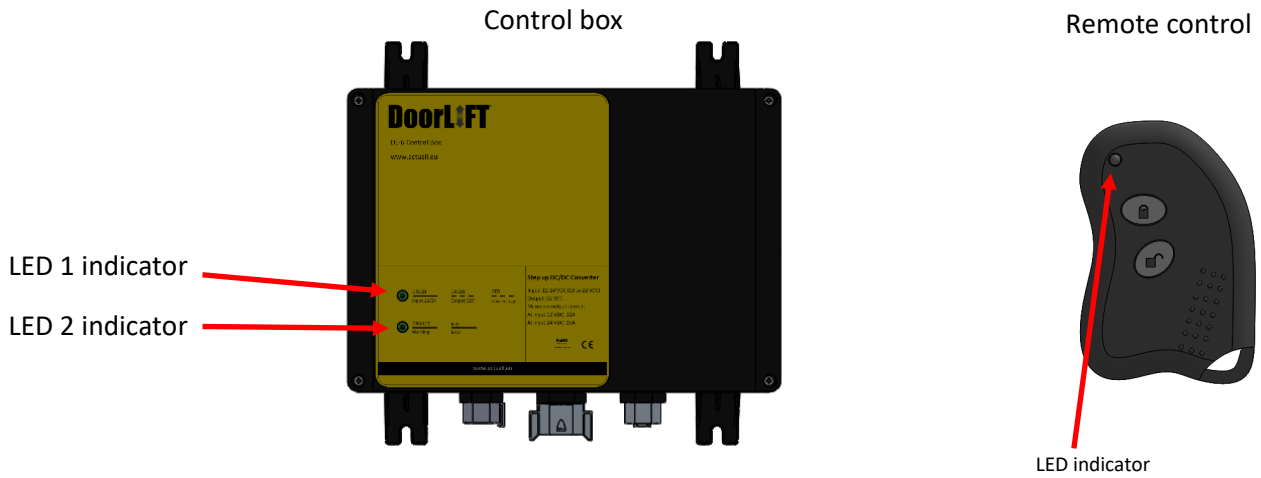


4. When the door is closed, the motor should not be touching the stop screw at the door end of the track, it should approximately be 25mm behind the stop screw.
5. Are you satisfied with the position of the door in the fully open position?
6. Is there still enough slack in the emergency cable with the door fully open?

Apply the DoorLIFT warning label above the lock on the outside of the door.

Apply the emergency release label beside the yellow cable sleeve on the inside of the door.

12. Overview of electronic indicators



After connecting the system to power:

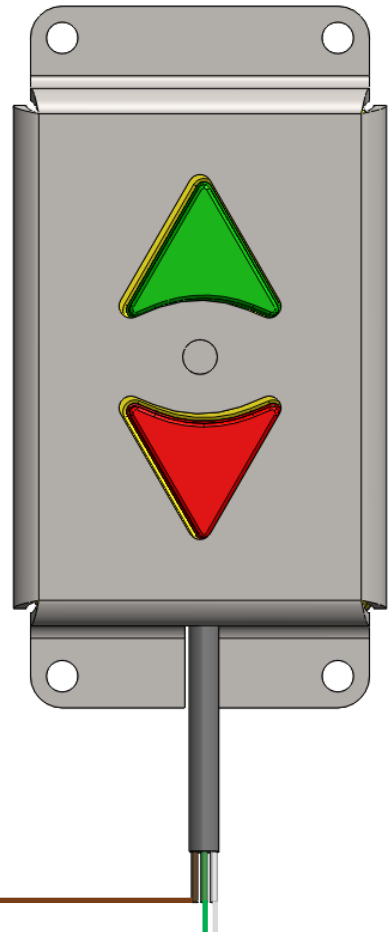
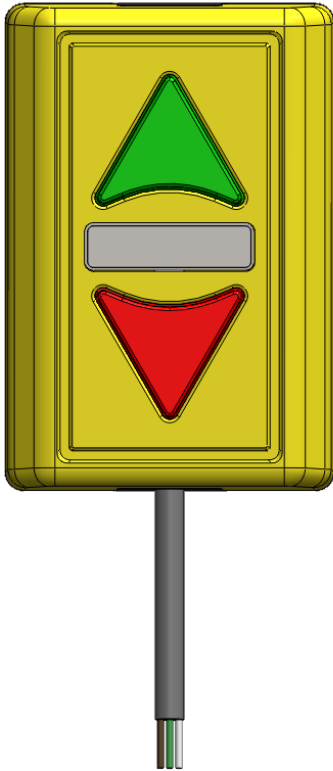
1. When a command is given with a remote control or hardwired, the LED's will indicate the signal was received.
 - LED 2 on the control box will flash orange, as the signal is received from a FOB or external devices like switches
 - LED 1 will start to flash green, as power is converted to 32 VDC
 - For the meaning of all other LED indications, see the chart below.

2. The following conditions must be met:
 - Sufficient input voltage
 - Sufficient output voltage
 - No obstruction in door path.
 - No block signal active (ignition lockout)
 - All FOB components are programmed to the receiver in the box. Upon initial power up, the first allowed function is the door 'UP' function.

How does the control box work? LED explanation

LED	Colour	Sequence	Issue/Function
LED 1	Red	Flash	Low voltage input (during operation)
LED 1	Green	Solid	Power in
LED 1	Green	Flash	In operation
LED 2	Orange	Flash	Signal received
LED 2	Orange	Solid	Warning, overload motor-unit / obstruction
LED 2	Red	Solid	Error, time out door travel

13. Appendix A - Push buttons (DL-8000810)



Colour	Wire	Function
Brown	2	Up
White	3	Down
Green	5	+12V

Use the 8-wire auxiliary cable to connect the push buttons to, using the numbered wires as shown in the table above



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