

Installation instruction

The logo for FRACO consists of the word "FRACO" in a bold, blue, sans-serif font. The text is centered between two horizontal orange bars of equal length, one above and one below the text.

FRACO

SEH series

Doc # 98030730-03

Safety

This installation instruction is a complement to the "Operation Manual".

The machine is built according to the current status of technology and is safe to operate. However, due to its work processes the machine has parts and areas that cannot be protected without impairing the function and operating capacity of the unit. For this reason, good personal safety practice is required to protect personnel and equipment. Risks can arise from this equipment if it is used incorrectly by untrained personnel or for non-intended purposes.

- Before transport, assembly, commissioning, dismantling and maintenance, read and observe the machine operating manuals and safety notes!
- **Read and understand the operating manual first during work is too late!**
- Keep the operating manual accessible in close proximity to the machine.
- The generally valid, legal and other binding provisions for accident prevention and environmental protection in the respective country in which the machine is being operated are considered a supplement to the operating manual (e.g. wearing personal protective gear such as hard hat, safety shoes, etc.) Observe the attached notices and warning signs.
- Only work while wearing close fitting clothing, safety shoes and hard hat. Do not wear jewellery such as necklaces and rings. There is a risk of injury from getting caught or being pulled in. Find a doctor immediately if there is any injuries or accidents.

Consequences of not complying with safety instructions

Non-compliance with safety instructions can result in danger both for personnel as well as for the environment and the machine. Non-compliance can lead to the forfeit of any compensation claims.

TABLE OF REVISIONS

| Rev | Description | Date | Comment |
|------------|-----------------------|-------------|---------------------------------------|
| 00 | Issued for production | 2013-09-23 | New product |
| 01 | General revision | 2014-03-06 | Update parts and numbers to Fraco std |
| 02 | General revision | 2014-07-09 | Added Installation instruction |
| | | | |



Installation instructions

The following steps are general instruction for a typical installation. Since all installations differs, some steps may not apply and some additional steps may be necessary. Always refer to the engineering package containing the plans and specifications for the installation details.

Step 1

- Install the foundation slab following the requirements.
- Install and anchor the base section into the foundation slab.
- Install the buffer.



Attention!! When installing the base section, make sure you respect the distance from the wall indicated in the engineering package.

Step 2

- Install the ground enclosure. Make sure the enclosure is installed in the right direction (Depend on which side of the mast the cabin is installed)

Step 3

- Install 2 mast sections on the base.
- Install the cable trolley by slipping it down the mast (optional)
- Prepare the cabin (installation of cable holder, centrifugal brake, drive motor and railing)
- Using a crane, lift the cabin by its lifting points and insert it into the mast sections.
- Verify the alignment of the cabin and adjust the cabin rollers if necessary.

Step 4

- Complete the electrical connections leaving the junction box, cable guide and support on the ground.

Step 5

- Assemble 6 mast sections together on the ground
- Using a crane, lift the assembled mast section.
- Using a boom lift or scaffold for access, bolt the mast sections together.

Step 6

- Using the boom lift or scaffold for access, install the anchors. Refer to the engineering package for the anchors levels.



Attention!! No more than 30' (9m) of mast section can be installed over the last anchor.

Step 7

- Repeat step 5 and 6 until you reach half the total height of the mast.
- Install the junction box.
- Complete the final electrical connections.

Step 8

- Repeat step 5 and 6 until the you reach to total height of the mast.



IMPORTANT!! The last mast section needs to have the **module 5 rail removed.**

- install a cable guide every 20'.

Step 9

- Install the limit switch cams.

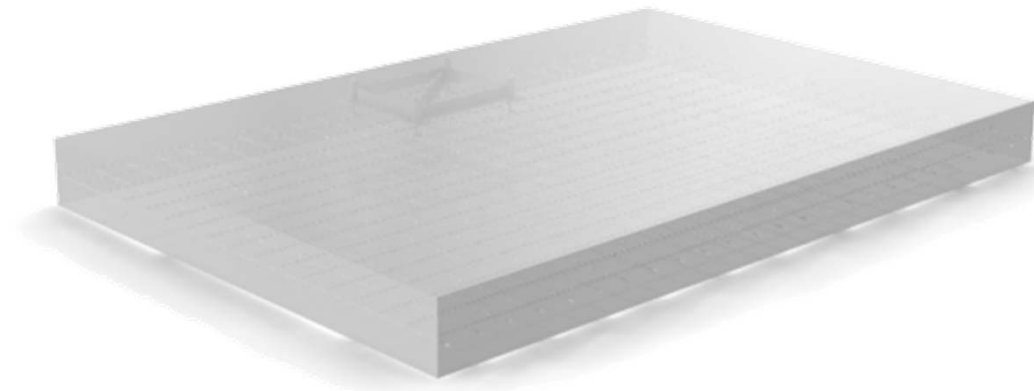


Attention!! Make sure the limit switches shut off the circuit.

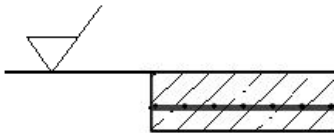
Step 10

- Install the landing gates.

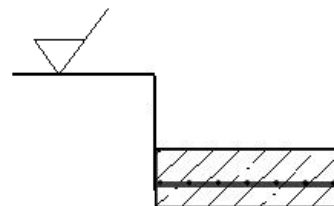
Foundation slab




Place the foundation slab on ground get high level to the enclosure door threshold. No drain is required



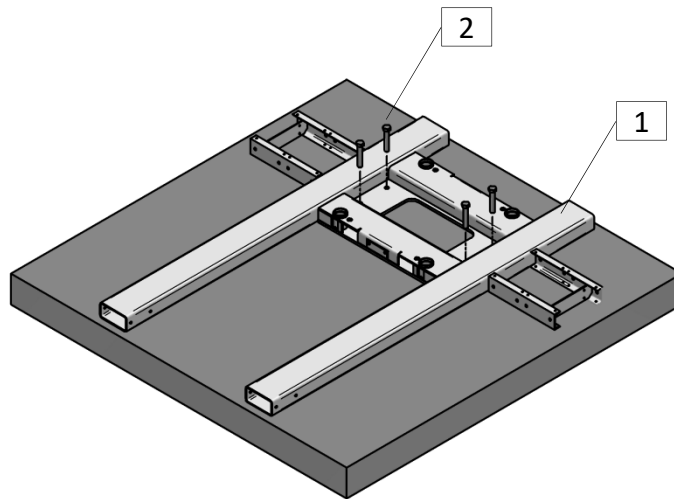
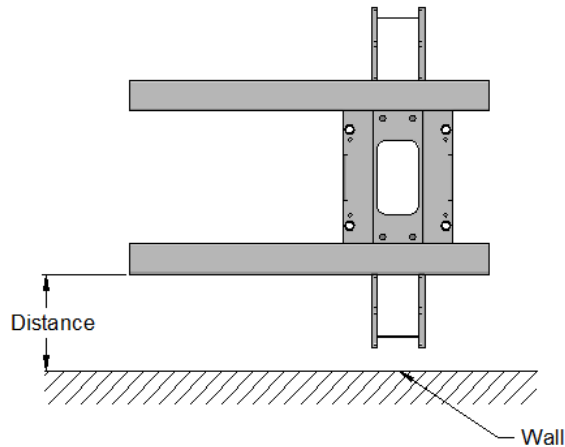
Place the foundation slab in level to ground get small level to the enclosure door threshold. No drain is required.



Place the foundation slab in level to ground get no/small level to the enclosure door threshold. **Drain is required!**

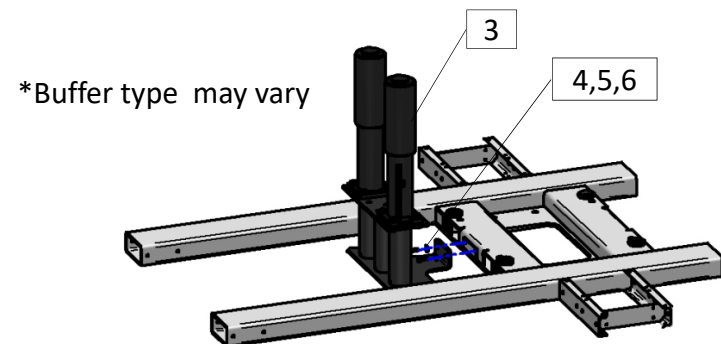
1. The foundation must be horizontal and have sufficient load bearing capacity.
2. Depending on the assembly height, concrete or thick steel sheeting (for example) can be used as load distributing base supports.
3. The size of the concrete pad depends on the installation (model, height number of car). Typically, a concrete pad should have a thickness of at least 12 in (300mm).
4. The size will vary from 13'9"x9'10" (4.2m x 3.0m) to 18'0"x10'0" (5.5m x 3.1m) for single unit and 13'9"x15'9" (4.2m x 4.8m) to 18'0"x16'1" (5.5m x 4.9m) for a double unit.
5. The foundation should be above ground or be drained.
-  **6. If there is a risk of frost heave, the foundation must be isolated.**
7. All foundation specifications should be detailed in the installation engineering package.
8. The total weight of the SEH and mast sections are transferred into the ground via the base unit support. (See operating manual for point load values)

Base section and buffers



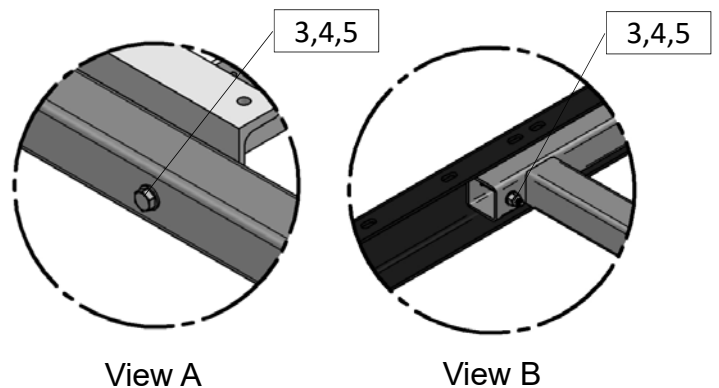
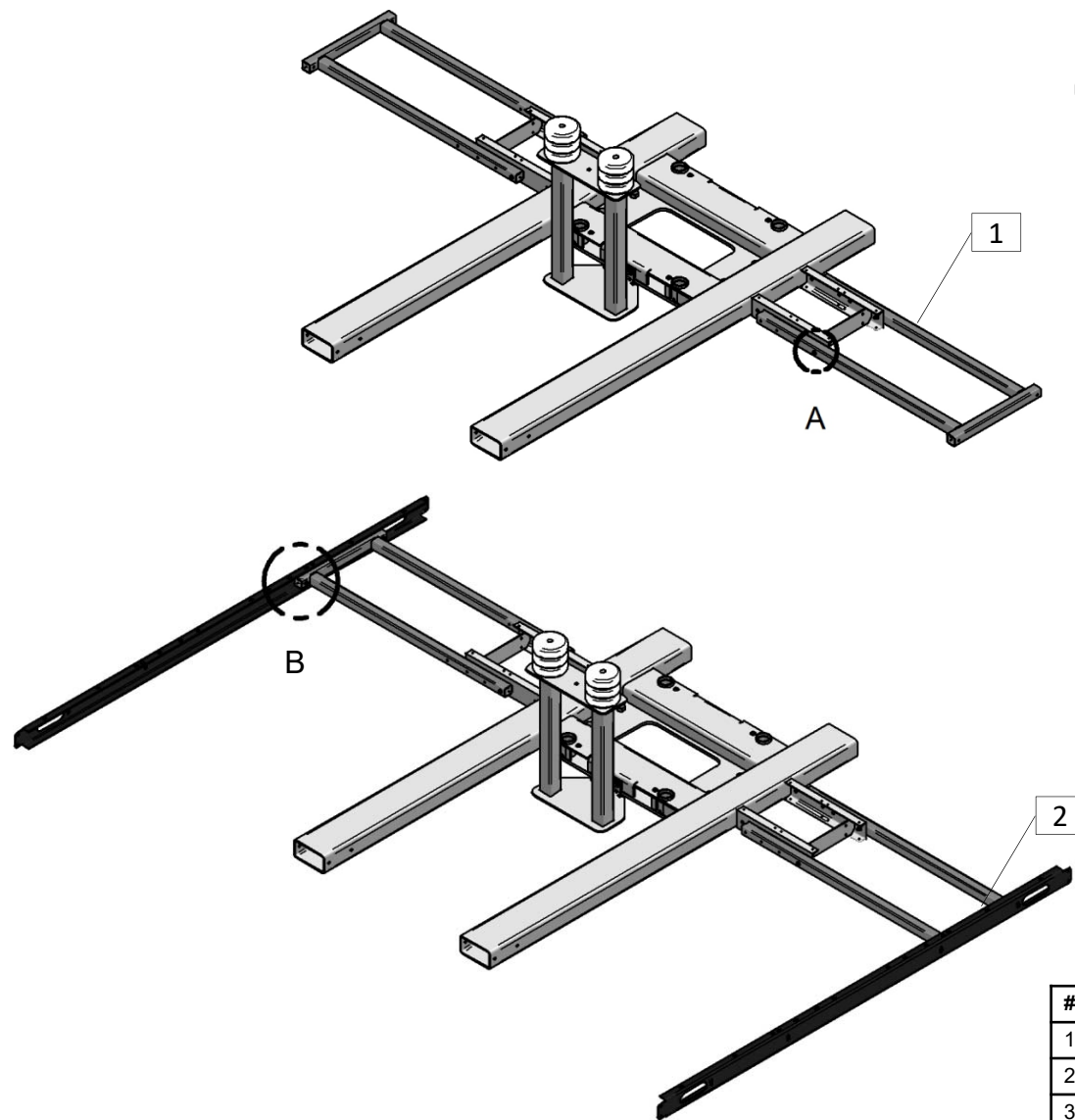
| Car length | Distance |
|---|----------------------|
| Standard external length : 154 in (3.91 m) | 58" (1473 mm) |
| 12" (305mm) extension on the front | 70" (1778 mm) |
| 24" (610mm) extension on the front | 82" (2083 mm) |
| x" (y mm) extension on the front | 56"+ x (1473 mm + y) |

1. Install the base (1) following the distance specified in the table. The distance between the hoist door and the wall should be 4" (100 mm).
2. Install the expansion bolts (2) into the foundation following the anchor manufacturer's recommendations. Refer to the job specific engineering package for more information.
3. Assemble the buffer (3) using bolts with nuts and washers.



| # | Qty | Code | Description |
|---|-----|----------|-----------------------------------|
| 1 | 1 | 40120018 | Base section |
| 2 | 4 | N/A | 1" expansion bolt |
| 3 | 1 | 40110040 | Buffer |
| 4 | 2 | BOZ-7155 | Bolt 1/2"-13unc x 1-1/2" gr5 zinc |
| 5 | 4 | WAZ-7031 | Washer 1/2" SAE zinc |
| 6 | 2 | NYL-2040 | Nylon lock nut 5/8"-11unc |

Extension beam and bottom beam

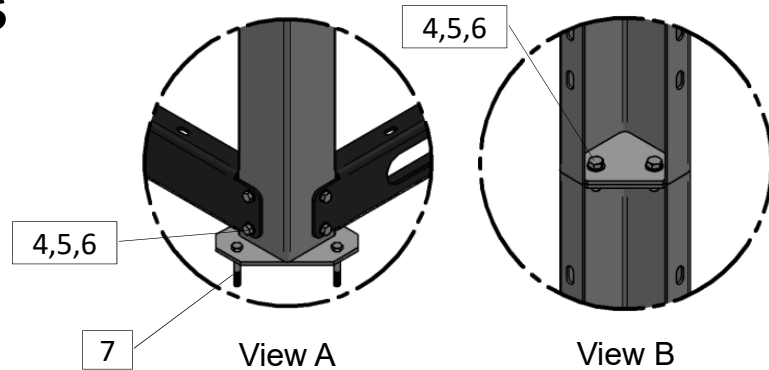
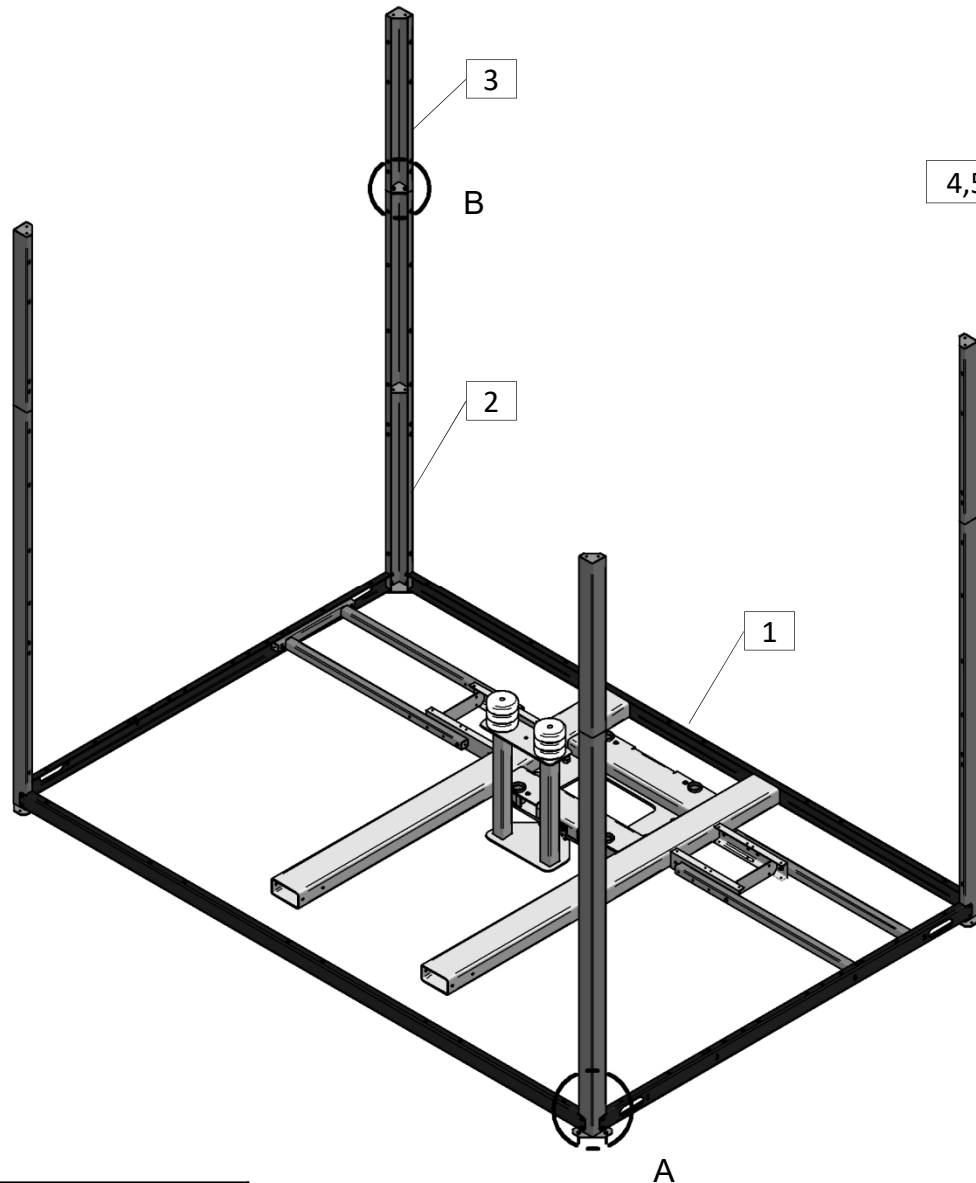


1. Place the extension beams (1).
2. Adjust to the desired length.
3. Assemble the extension beams (1) using bolts with nuts and washers. (View A)
4. Assemble the short bottom beams (2) to the extension beams using bolts with nuts and washers. (View B)

| # | Qty | Code | Description |
|---|-----|----------|-------------------------------|
| 1 | 2 | 35020088 | Extension beam |
| 2 | 2 | 35020145 | Short bottom beam |
| 3 | 8 | BOZ-7135 | Bolt 3/8"-16unc x 3" gr5 zinc |
| 4 | 16 | WAZ-7021 | Washer 3/8" SAE zinc |
| 5 | 8 | NYL-2020 | Nylon lock nut 3/8" - 16 unc |



Bottom beam (cont.) and poles

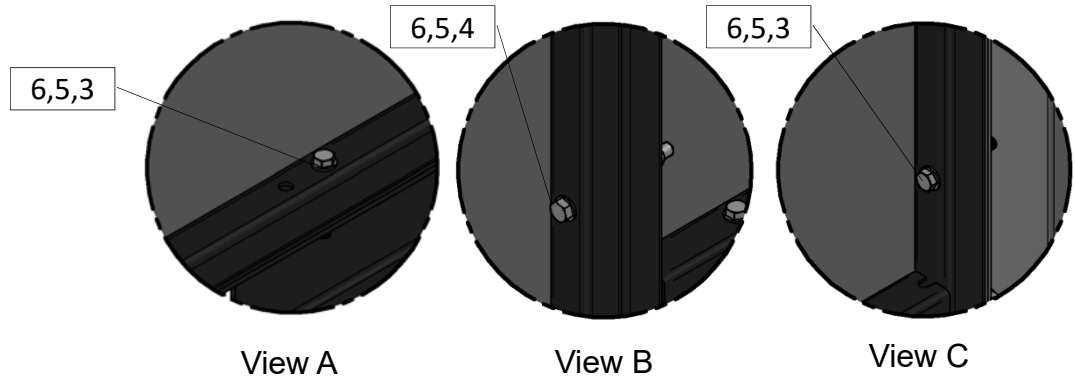
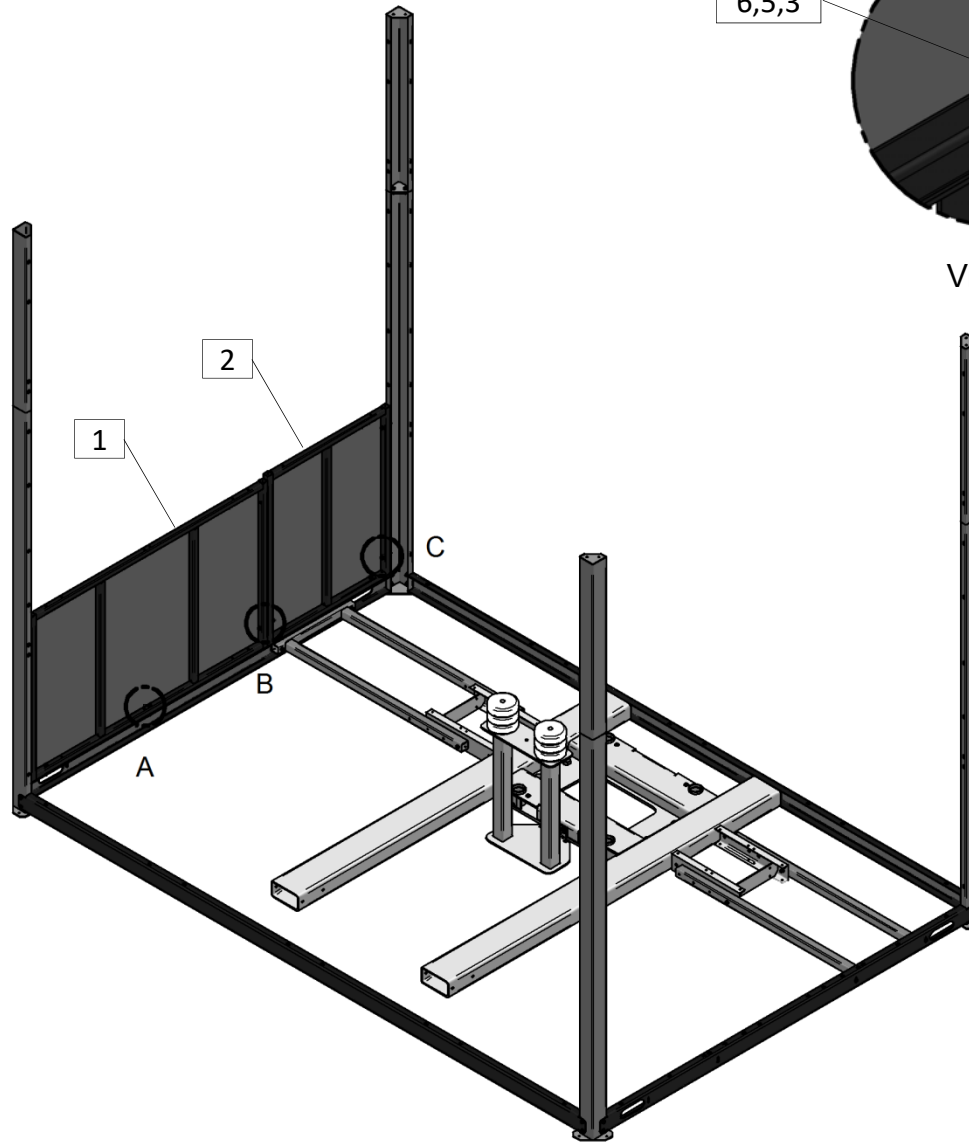


1. Place the long bottom beams (1).
2. Assemble the poles (2) to the bottom beams (1) using bolts with nuts and washers.(View A)
3. Assemble the poles extension (3) to the poles (2) using bolts with nuts and washers (View B)
4. Anchor the poles by installing expansion bolts (3) into the foundation following the anchor manufacturer's recommendations. Tighten to 20 lb-ft (27 Nm) (View A)

| # | Qty | Code | Description |
|---|-----|----------|-------------------------------|
| 1 | 2 | 35020134 | Long bottom beam |
| 2 | 4 | 35020022 | Pole |
| 3 | 4 | 35020099 | Pole extension |
| 4 | 32 | BOZ-7114 | Bolt 3/8"-16unc x 1" gr5 zinc |
| 5 | 54 | WAZ-7021 | Washer 3/8" SAE zinc |
| 6 | 32 | NYL-2020 | Nylon lock nut 3/8" - 16 unc |
| 7 | 8 | N/A | 3/8" expansion bolt |



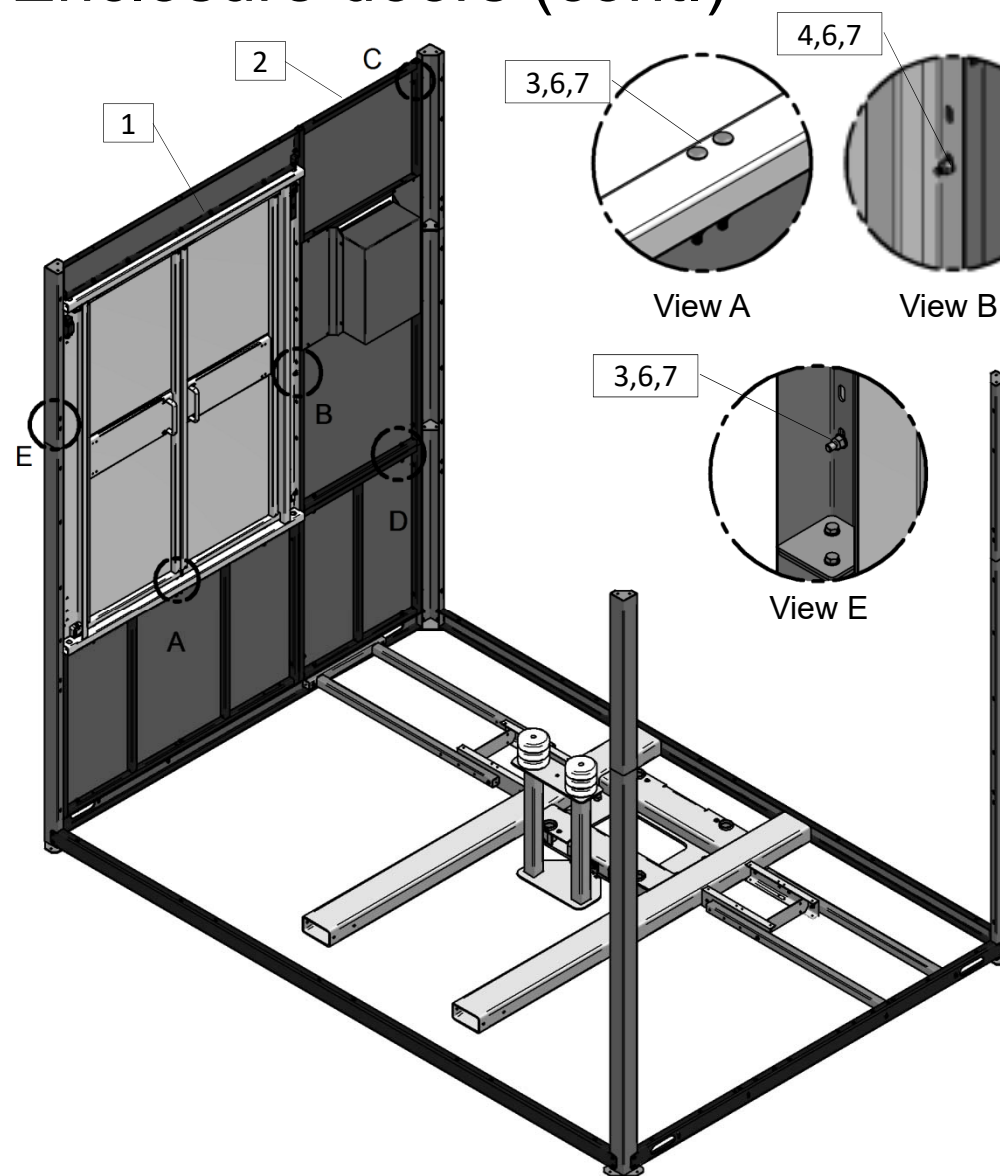
Enclosure doors



1. Assemble the bottom plates (1)(2) using bolts with nuts and washers. The bottom plates (1)(2) must be anchored to the bottom beams, poles and to each other. (View A, B and C)

| # | Qty | Code | Description |
|---|-----|----------|-----------------------------------|
| 1 | 1 | 35020055 | Bottom plate door |
| 2 | 1 | 35020033 | Bottom plate |
| 3 | 6 | BOZ-7125 | Bolt 3/8 |
| 4 | 2 | BOZ-7142 | Bolt 3/8"-16unc x 2-1/2" gr5 zinc |
| 5 | 16 | WAZ-7021 | Washer 3/8" SAE zinc |
| 6 | 8 | NYL-2020 | Nylon lock nut 3/8" - 16 unc |

Enclosure doors (cont.)

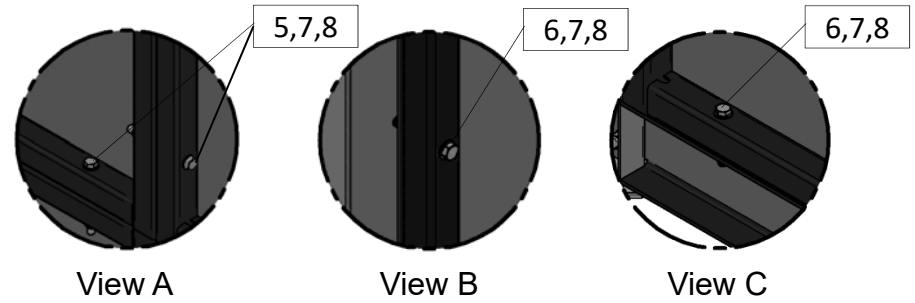
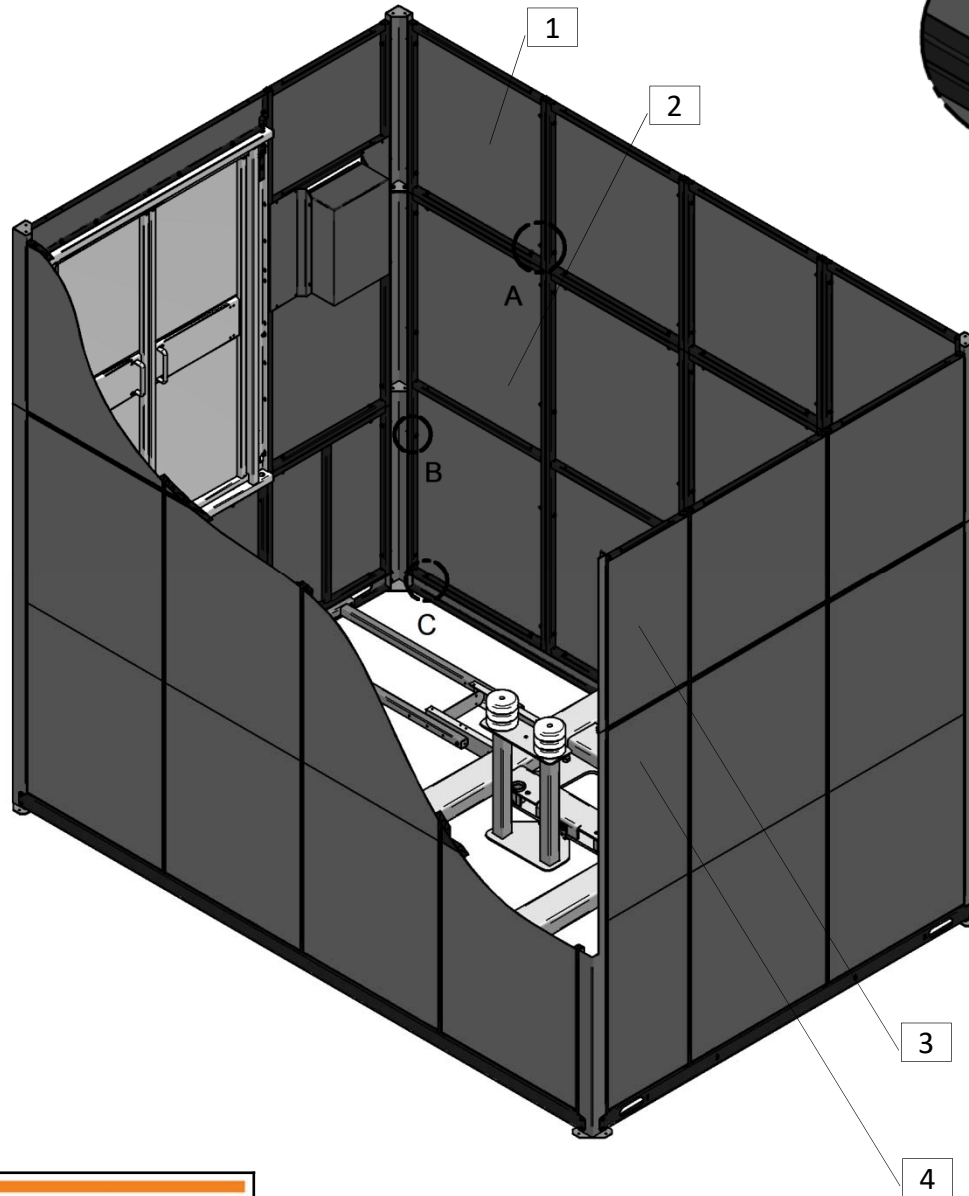


1. Place the enclosure door (1).
2. Fasten the enclosure door (1) to the pole and bottom plate door, using bolts with nuts and washers. (View A,B and E)
3. Place the control panel (2).
4. Fasten the control panel (2) to the pole bottom plate and enclosure door (1) using bolts with nuts and washers. (View C and D)

| # | Qty | Code | Description |
|---|-----|----------|---------------------------------------|
| 1 | 1 | 35020123 | Enclosure door |
| 2 | 1 | 35020044 | Control panel |
| 3 | 4 | BOZ-8508 | Carriage bolt 3/8"-16 unc x 4-1/2" Lg |
| 4 | 7 | BOZ-7125 | Bolt 3/8"-16unc x 2-1/4" gr5 zinc |
| 5 | 2 | BOZ-7142 | Bolt 3/8"-16unc x 4" gr5 zinc |
| 6 | 34 | WAZ-7021 | Washer 3/8" SAE zinc |
| 7 | 19 | NYL-2020 | Nylon lock nut 3/8" - 16 unc |
| 8 | 6 | BOZ-7114 | Bolt 3/8"-16unc x 1" gr5 zinc |



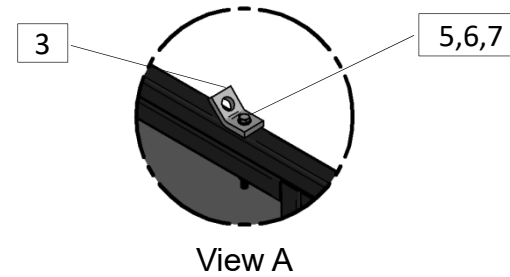
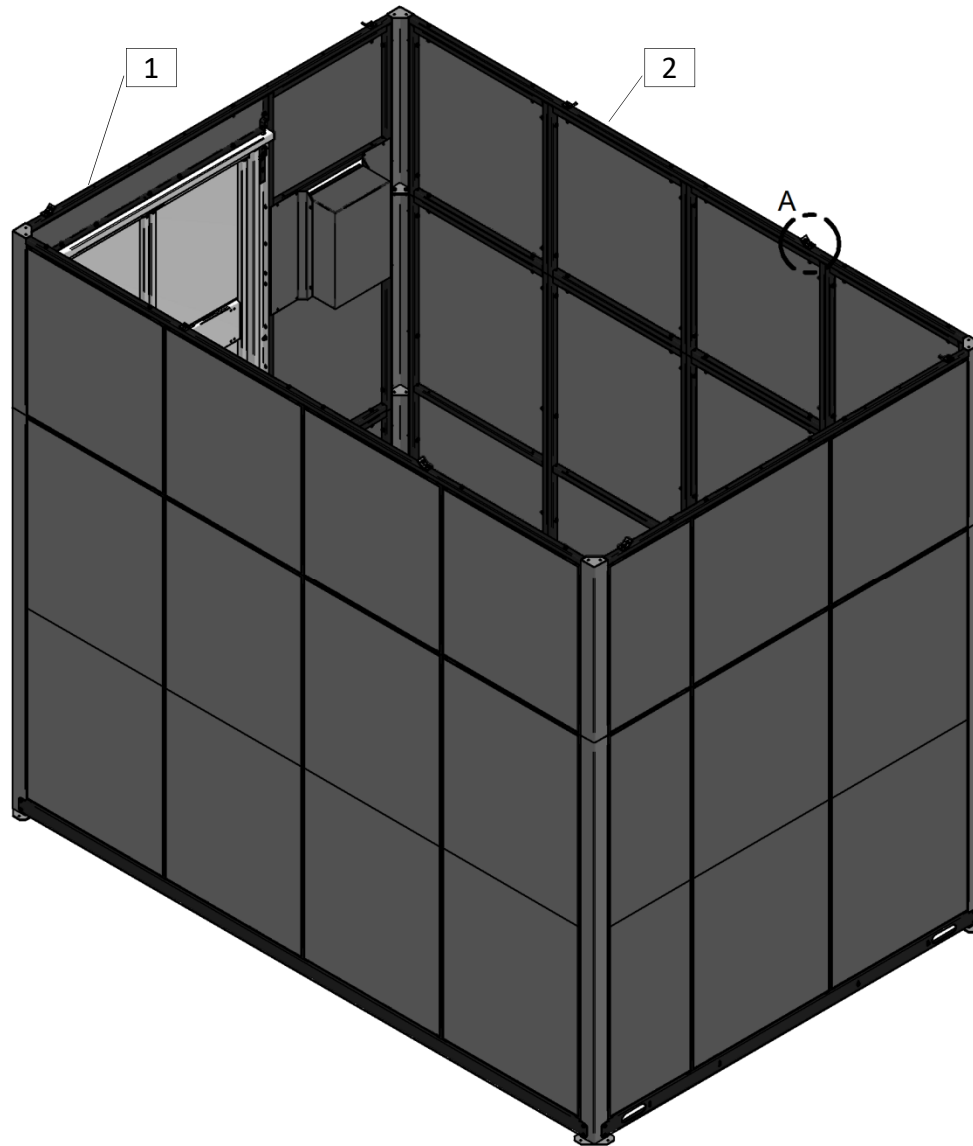
Enclosure walls



1. Place the ground enclosure sections (1) (2) (3) (4).
2. Fasten each sections using two bolts with nuts and washer on the bottom and two to four bolts with nuts and washer on each side. (View A, B and C)

| # | Qty | Code | Description |
|---|-----|----------|-----------------------------------|
| 1 | 1 | 35020112 | Ground enclosure 40" x 42.5" |
| 2 | 1 | 35020101 | Ground enclosure 40" x 96" |
| 3 | 4 | 35020077 | Ground enclosure 24" x 42.5" |
| 4 | 7 | 35020066 | Ground enclosure 24" x 96" |
| 5 | 22 | BOZ-7125 | Bolt 3/8"-16unc x 2-1/4" gr5 zinc |
| 6 | 106 | BOZ-7142 | Bolt 3/8"-16unc x 4" gr5 zinc |
| 7 | 256 | WAZ-7021 | Washer 3/8" SAE zinc |
| 8 | 128 | NYL-2020 | Nylon lock nut 3/8" - 16 unc |

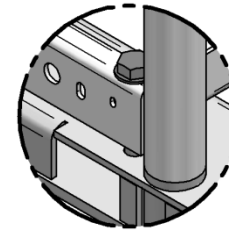
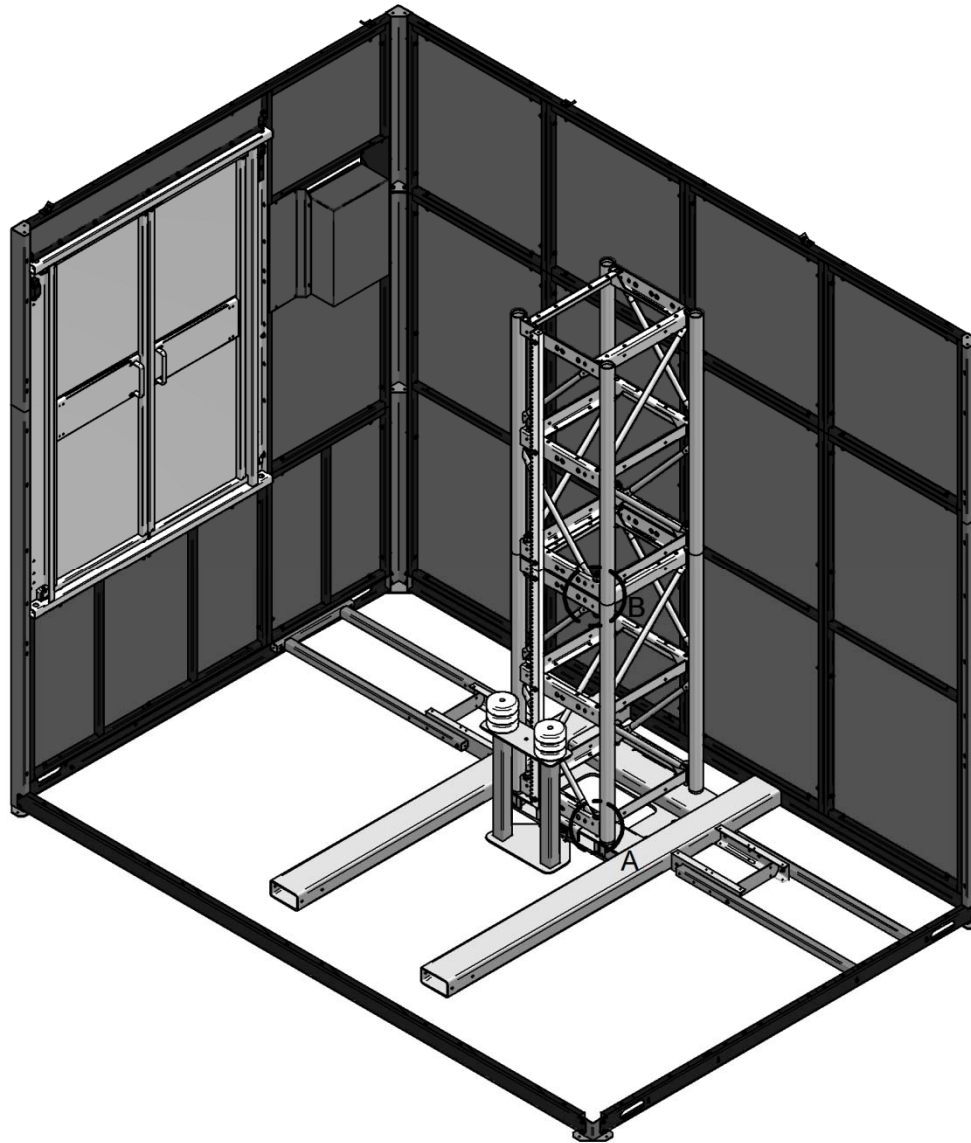
Enclosure walls (cont.)



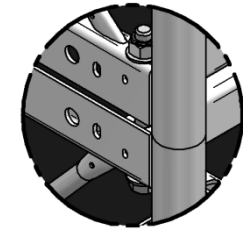
1. Place two short top beams (1) and two long top beams (2) over the enclosure.
2. Fasten the top beam (1) (2) to the pole, bottom plate and enclosure door (1) using bolts with nuts and washers. (View A)

| # | Qty | Code | Description |
|---|-----|----------|-------------------------------|
| 1 | 2 | 35020156 | Short top beam |
| 2 | 2 | 35020167 | Long top beam |
| 3 | 8 | 35020178 | Bolt plate |
| 4 | 26 | BOZ-7142 | Bolt 3/8"-16unc x 4" gr5 zinc |
| 5 | 52 | WAZ-7021 | Washer 3/8" SAE zinc |
| 6 | 26 | NYL-2020 | Nylon lock nut 3/8" - 16 unc |

Mast section



View A



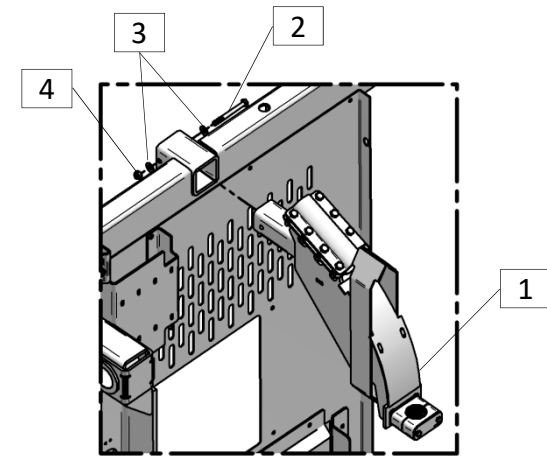
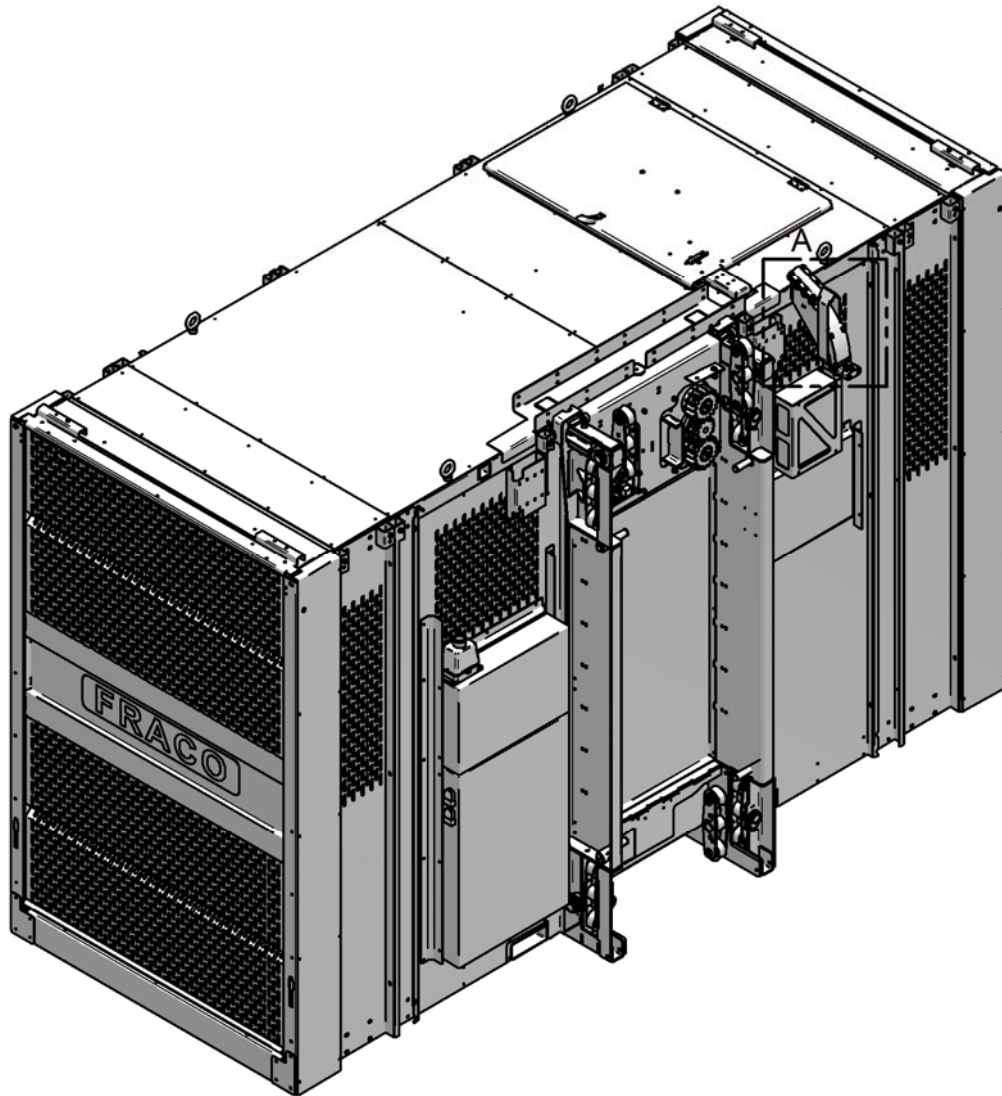
View B

1. Install the mast section (1) on the base. The male section must face downward.
2. Assemble the mast section (1) to the base with 4 bolts with nuts and washer (View A). Bolts on top and nuts underneath (**only for this mast section**).
3. Secure the bolts with a tightening torque of 350 Nm (258 lbs-pi)
4. Repeat the steps 1 to 3 to add another mast section (1). Bolt underneath and nut on top. (View B)

IMPORTANT: All following mast section must have bolts underneath and nuts on top.

| # | Qty | Code | Description |
|---|-----|----------|--|
| 1 | 2 | 35020156 | SEH 650x650 mast section w/ rack |
| 2 | 4 | BOZ-7305 | Bolt 1"-8unc x 6-1/2" gr8 yellow zinc assembly w/ nut and washer |
| 3 | 4 | BOZ-7289 | Bolt 1"-8unc x 10" gr8 zinc |
| 4 | 8 | WAZ-7073 | Washer 1" gr8 zinc F-436 |
| 5 | 4 | NYL-2061 | Nylon lock nut 1"-8unc gr8 zinc |

Cable holder



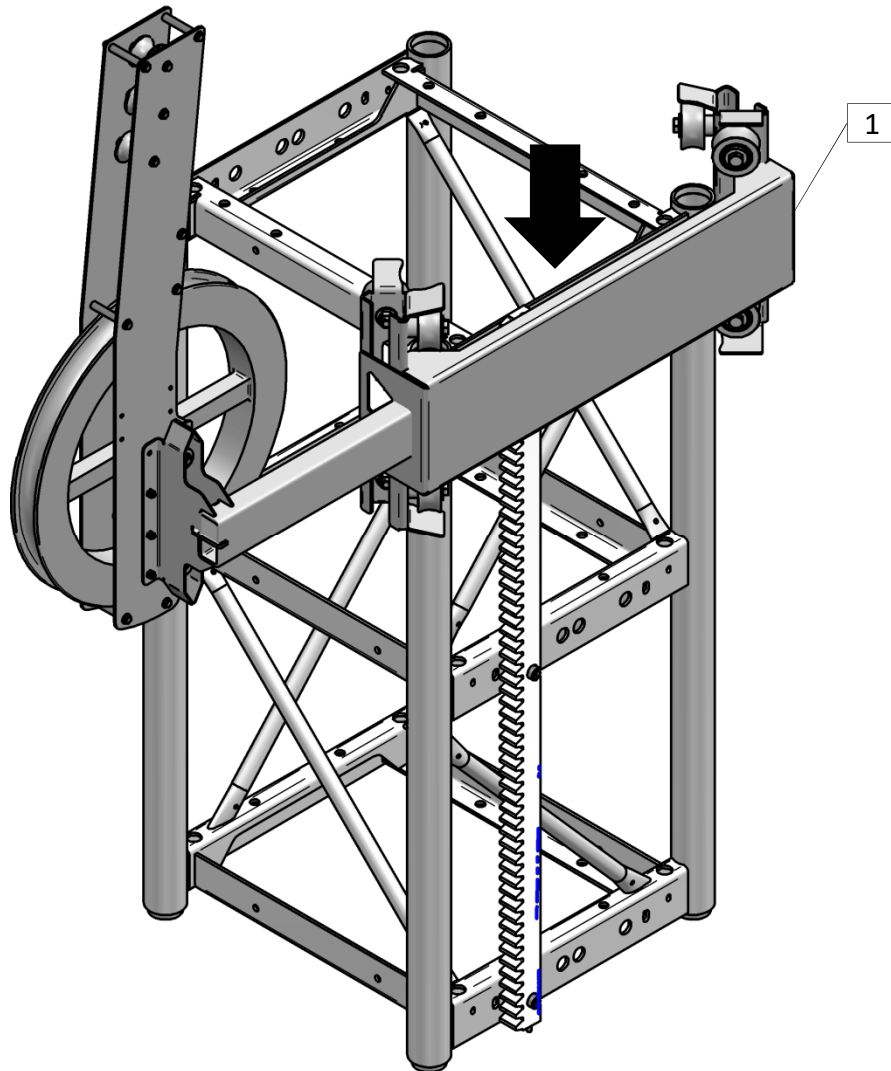
View A

1. Insert the cable holder (1) into the cage.
2. Secure it with a bolt with nut and washers.
(View A)

| # | Qty | Code | Description |
|---|-----|----------|--------------------------------|
| 1 | 1 | 2000165 | Cable holder |
| 2 | 2 | BOZ-7101 | Bolt 5/16"-18unc x 3" gr5 zinc |
| 3 | 4 | WAZ-7017 | Washer 5/16" SAE zinc |
| 4 | 2 | NYL-2015 | Nylon lock nut 5/16" - 18 unc |



Cable trolley



1. Insert the cable trolley (1) unto the mast from the top.

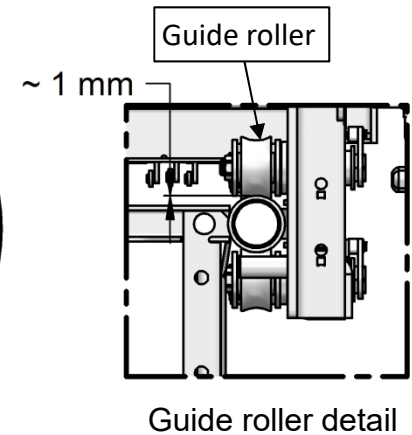
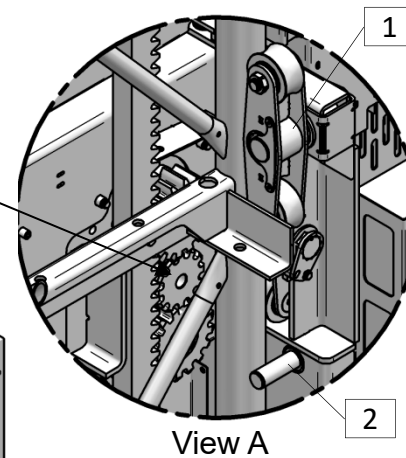
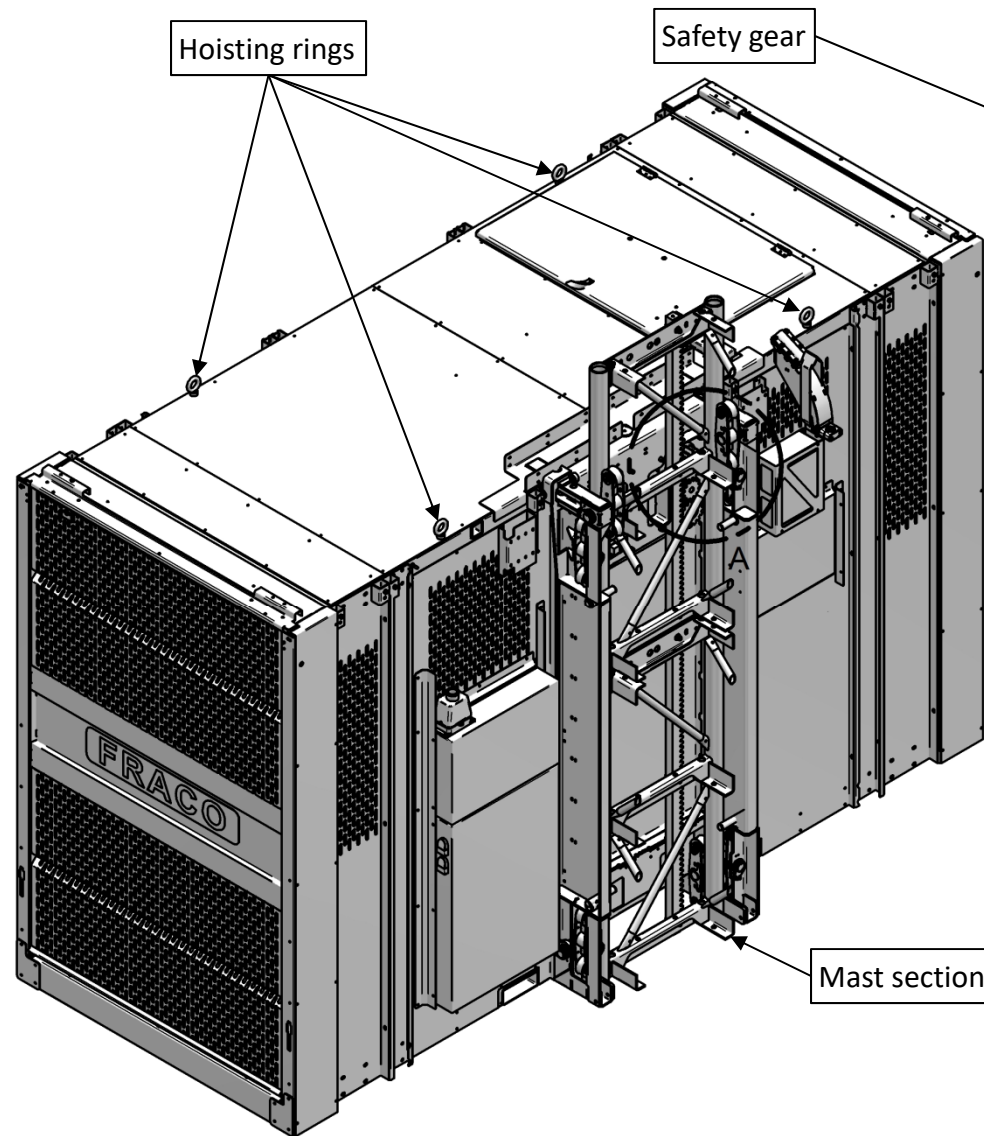
Note:

If there is an obstacle preventing the installation of the cable trolley (1) (i.e. if the cage is already in place), you must remove the tandem roller of the cable trolley, insert it unto the mast and install the tandem back.

Ensure that the cable trolley is not tight on the mast section. It needs to be able to ride the mast easily without left to right movement.

| # | Qty | Code | Description |
|---|-----|-------------------------|-------------------------------------|
| 1 | 1 | 40110017 or 40110028 | Cable guide trolley (right or left) |

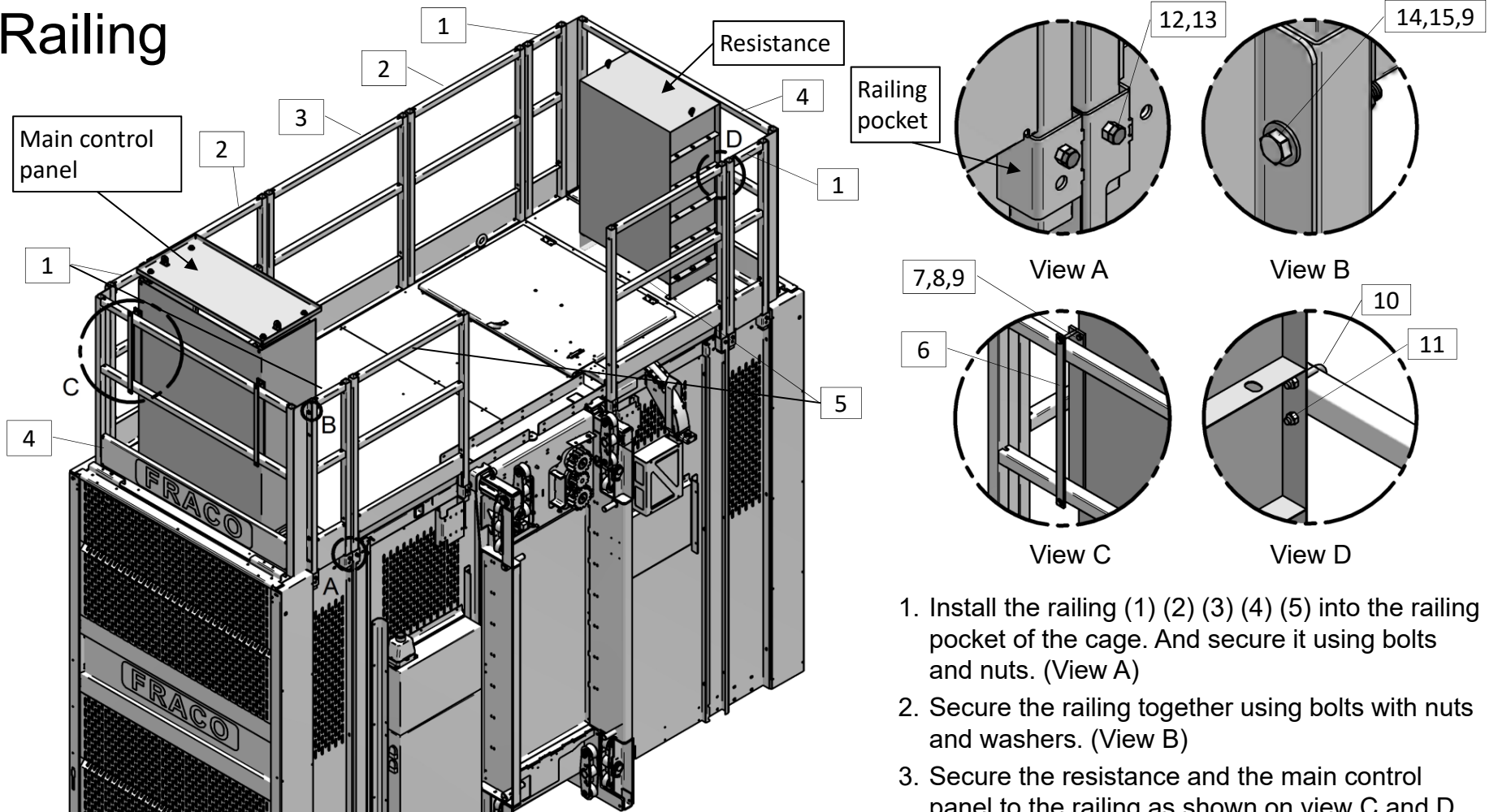
Installation of cage



1. Take off both upper load rollers (1) and the safety pins (2). (view A)
2. Lift the cage using the hoisting rings. Place the cage against the mast carefully. Attention at the safety device.
3. Reinstall the upper load rollers (1) and the safety pins (2).
4. Adjust the guide roller. The distance between the mast pipe and the guide roller must be less than 1 mm. (see guide roller detail)
5. Adjust the upper load rollers (1). The car must be parallel to the mast.

| # | Qty | Code | Description |
|---|-----|---------|--------------|
| 1 | 2 | 2000100 | Load rollers |
| 2 | 4 | 2000185 | Safety pins |

Railing

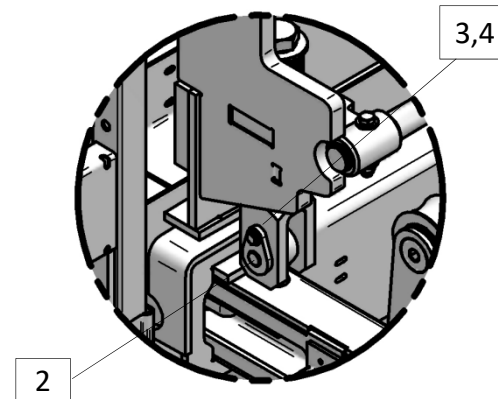
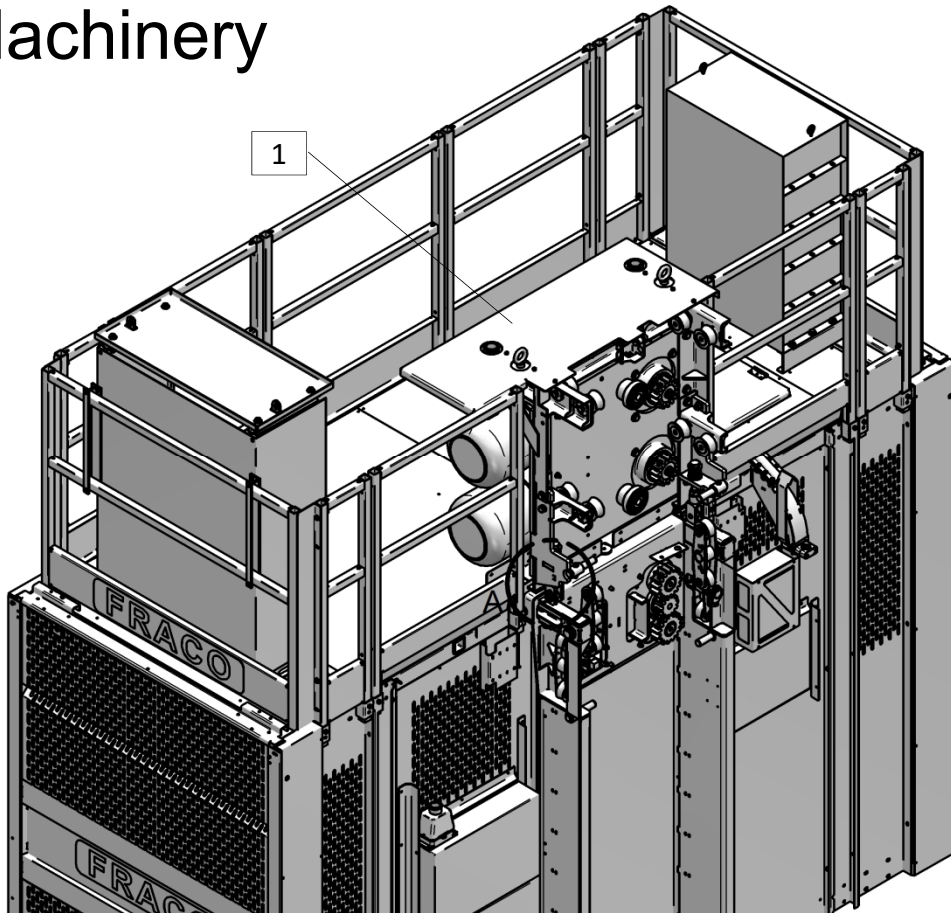


1. Install the railing (1) (2) (3) (4) (5) into the railing pocket of the cage. And secure it using bolts and nuts. (View A)
2. Secure the railing together using bolts with nuts and washers. (View B)
3. Secure the resistance and the main control panel to the railing as shown on view C and D.

| # | Qty | Code | Description | # | Qty | Code | Description |
|---|-----|----------|----------------------------------|----|-----|----------|------------------------------------|
| 1 | 4 | 17040046 | Railing 12" x 4'0" | 9 | 12 | NYL-2020 | Nylon lock nut 3/8"-16unc |
| 2 | 2 | 17040024 | Railing 2'10" x 4'0" | 10 | 2 | 40470117 | U-bolt 2.5" |
| 3 | 1 | 17040013 | Railing 3'5" x 4'0" | 11 | 4 | NYL-2015 | Nylon lock nut 5/16"-18unc |
| 4 | 2 | 17040057 | Railing 5'1" x 3'7" | 12 | 10 | BOZ-7105 | Bolt 3/8"-16unc x 3/4" gr 5 zinc |
| 5 | 2 | 17040035 | Railing 2'10" x 4'0" with rubber | 13 | 10 | FSQ-0021 | Weld nut 3/8-16unc |
| 6 | 2 | 40330910 | Clamping plate 20.5" | 14 | 8 | BOZ-7130 | Bolt 3/8"-16unc x 2-1/2" gr 5 zinc |
| 7 | 4 | BOZ-7095 | Bolt 5/16"-18unc x 2-1/2" | 15 | 8 | WAZ-7021 | Washer 3/8" SAE zinc |
| 8 | 8 | WAZ-7017 | Washer 5/16" SAE zinc | | | | |

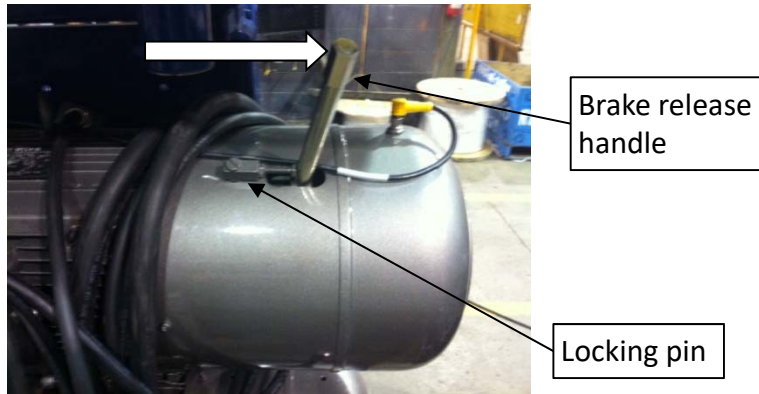


Machinery



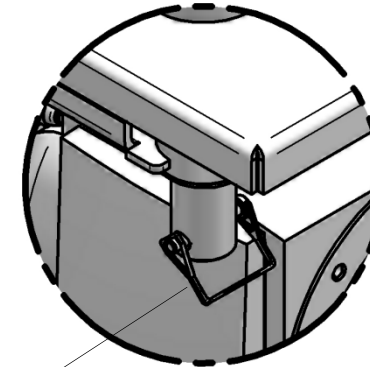
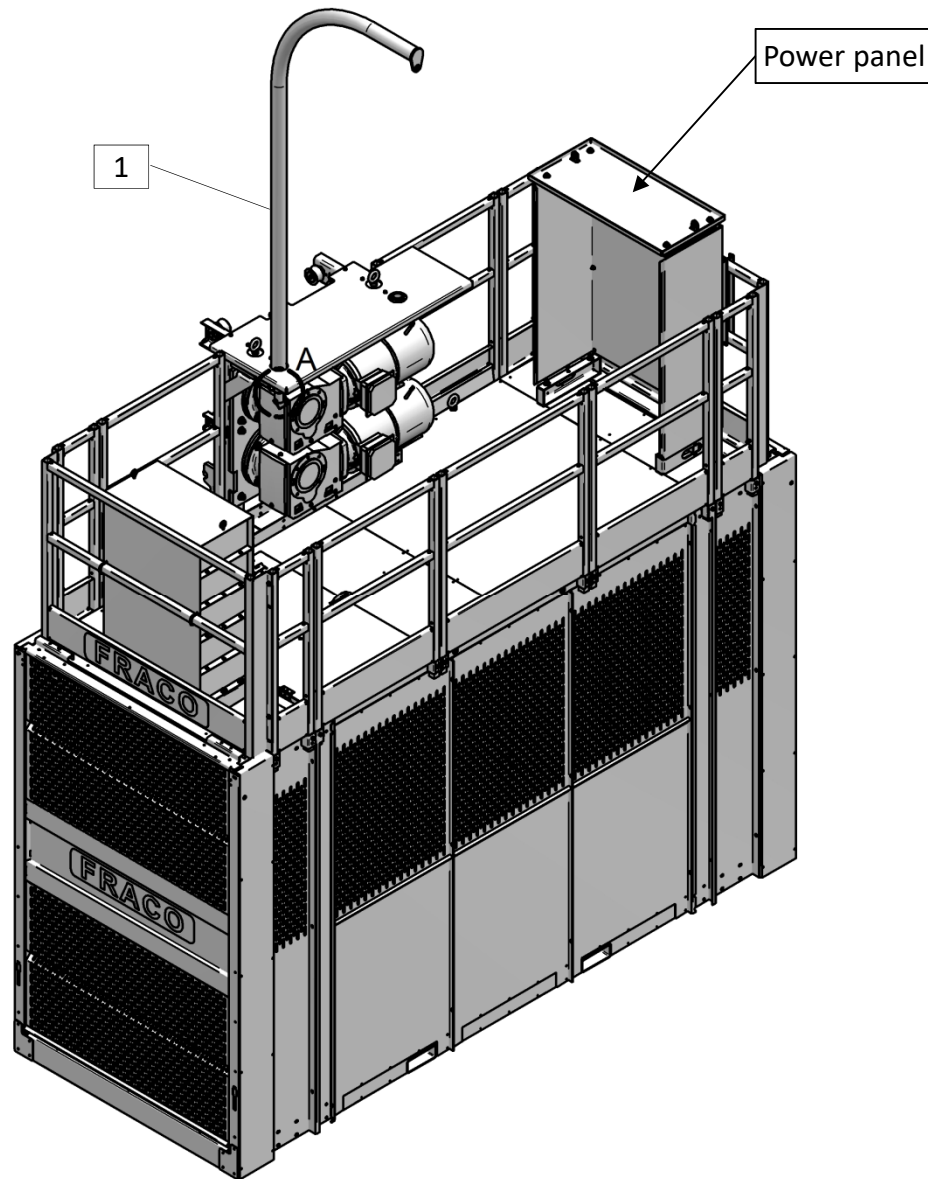
View A

1. Install the mast section and drive unit (1).
2. Release the locking pin and use the brake release handle to release the motor brake slowly until the drive unit (1) touch the cage.
3. Insert the pivot shaft (2) and lock it using bolt with nut and washer (view A).



| # | Qty | Code | Description |
|---|-----|----------|----------------------------------|
| 1 | 2 | 11050018 | Drive unit |
| 2 | 4 | 40420055 | Pivot shaft machinery attachment |
| 3 | 8 | WAZ-7017 | Washer 5/16" SAE zinc |
| 4 | 4 | NYL-2015 | Nylon lock nut 5/16" - 18 unc |

Self erecting device



2 View A

1. Insert the self erecting device (1) into the hole of the drive unit.
2. Lock it in place using the included locking pin (2). (View A)

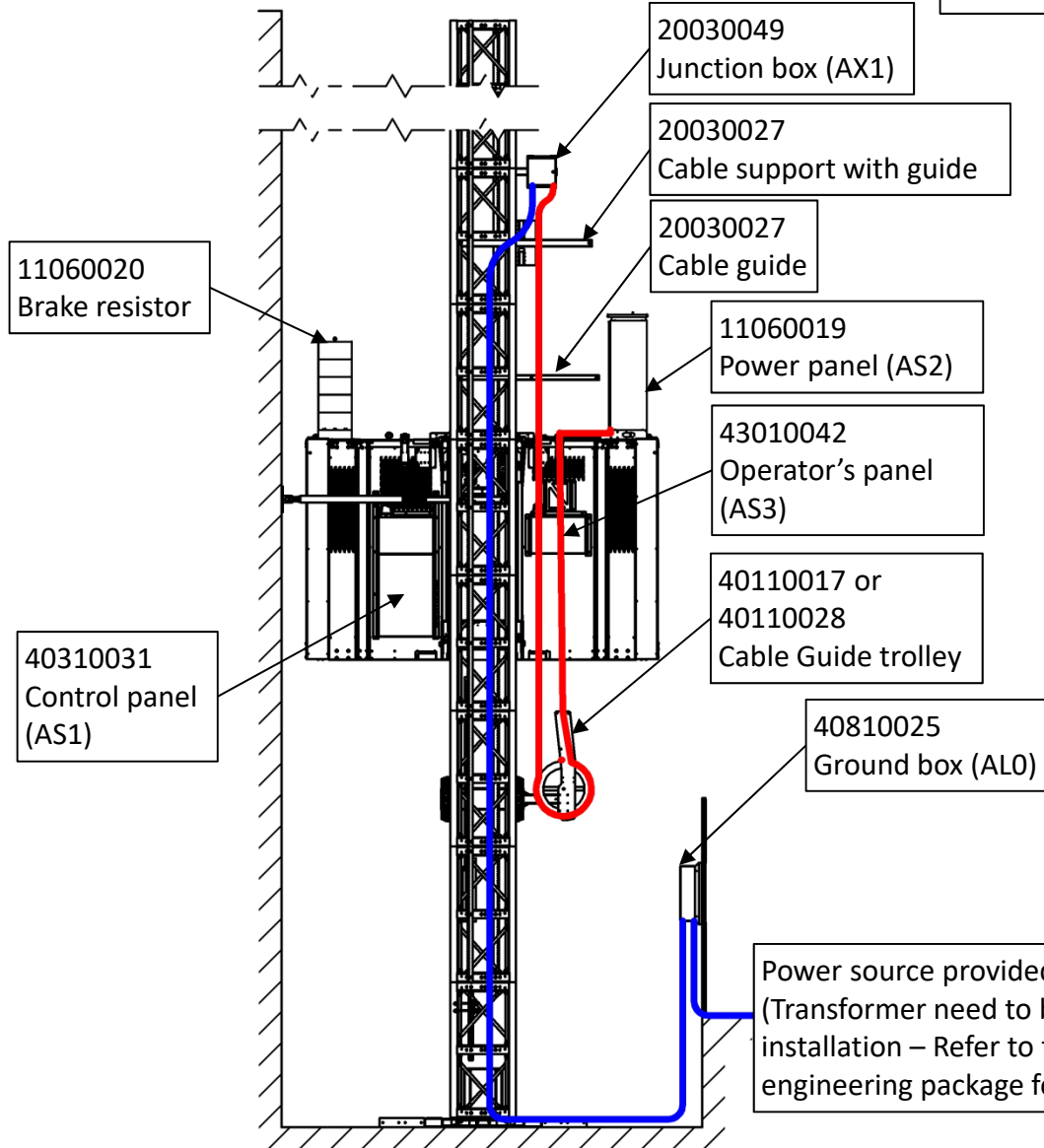
When using the self erecting device:

1. Fill the cage with erections parts (max 3300 lbs (1500 kg)).
2. Plug the controller into the outlet from the power panel
3. Operate the hoist from the roof with the controller.
4. Use the self erecting device (1) to place mast sections and other erection parts.

| # | Qty | Code | Description |
|---|-----|----------|----------------------|
| 1 | 1 | 20030083 | Self erecting device |
| 2 | 1 | GOU-5040 | Locking pin |

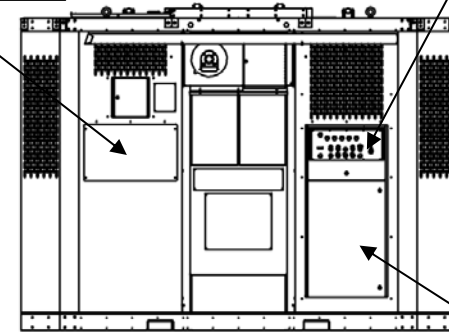


Electrical installation overview



Operator's panel alternative position

Operator's panel (AS3)



Inside car

Control panel (AS1)

NOTES:

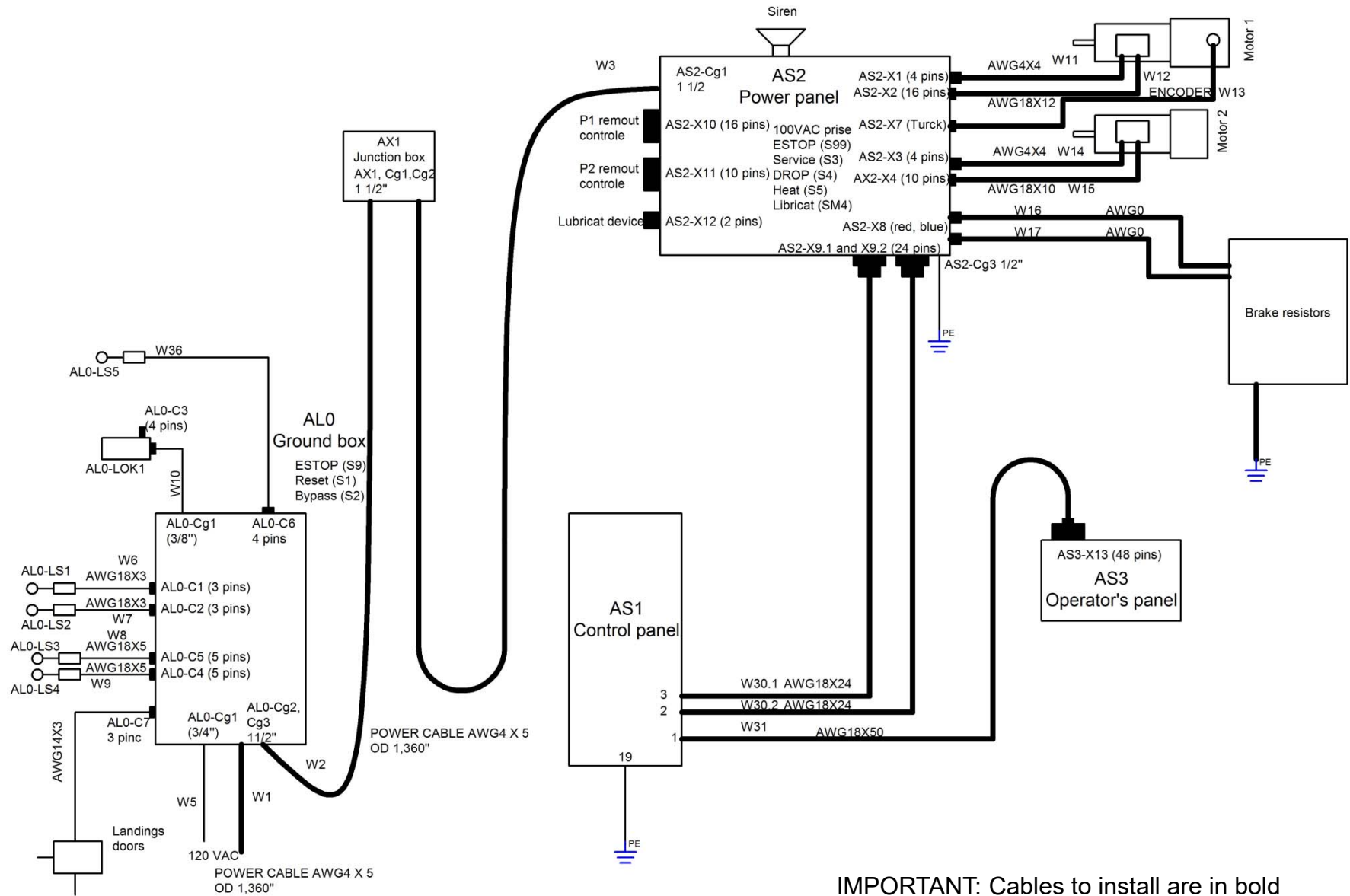
The machine must be set up and dismantled according to the "Operating manual" and under supervision by an authorized person specified by the contractor.

Connect the cable following the electrical layout (see next page)

The operator's panel (AS3) must always be installed on the building side of the car

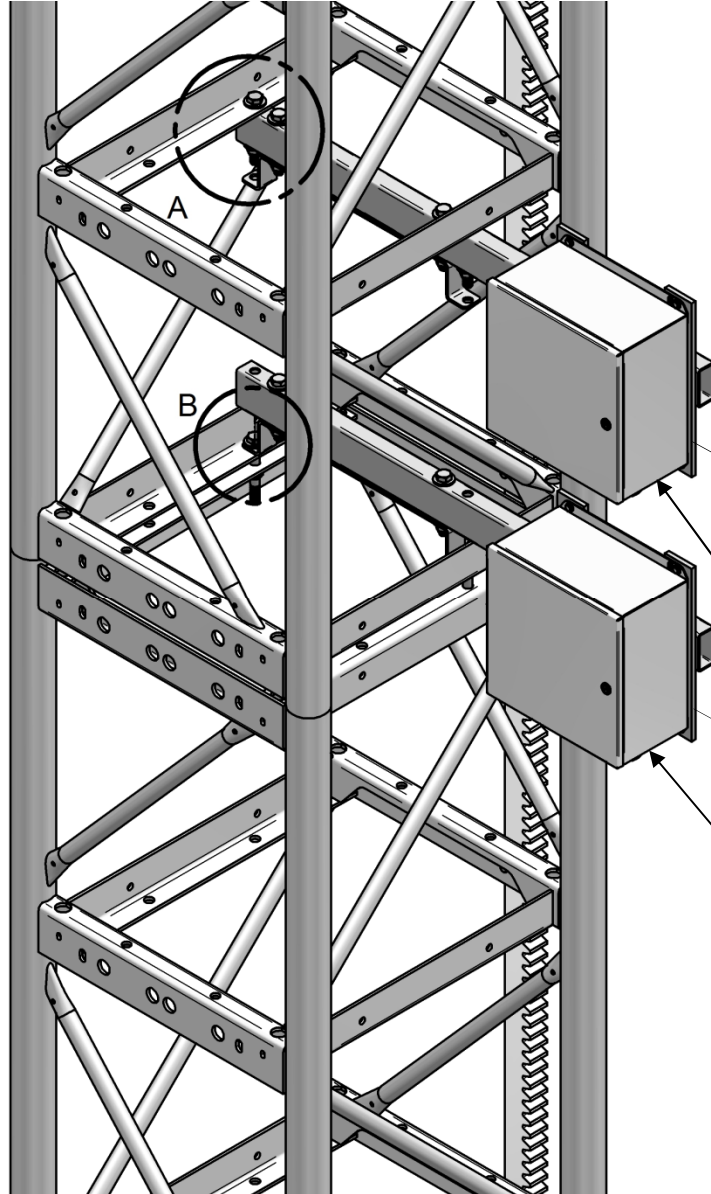
Power source provided by client (480V 60hz)
(Transformer need to be installed on 600V installation – Refer to the job site specific engineering package for more information)

Electrical connections

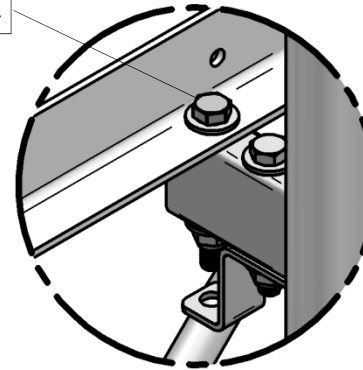


IMPORTANT: Cables to install are in bold

Junction box

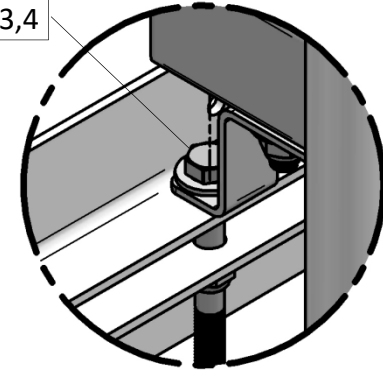


2,3,4



View A

2,3,4



View B

1

Option 2
(Middle of the mast)

1

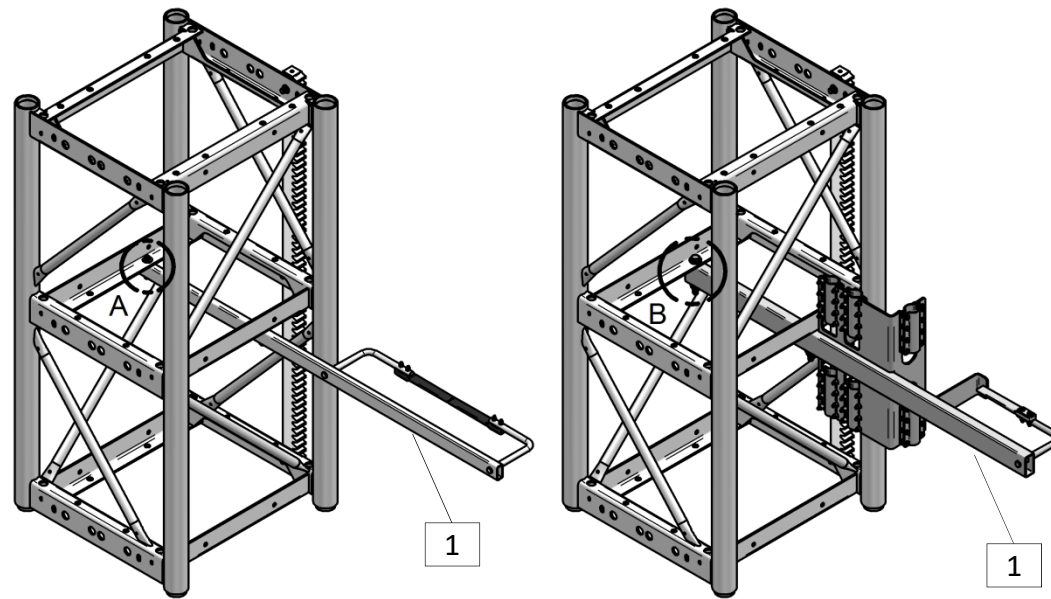
Option 1
(Mast intersection)

1. Install the junction box (1) to the mast section using bolts with nuts and washers. The junction box (1) can either be installed in the middle of a mast section (option 1), or at the junction of two mast section (option 2)

IMPORTANT: The junction box must be installed higher than the middle of the mast (overall height), to have enough cable for the cable guide trolley.

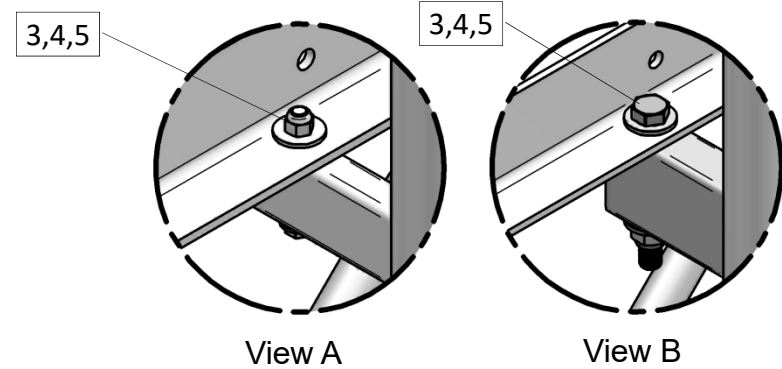
| # | Qty | Code | Description |
|---|-----|----------|-------------------------------|
| 1 | 2 | 20030049 | Junction box |
| 2 | 4 | BOZ-7220 | Bolt 5/8"-11unc x 5" gr5 zinc |
| 3 | 8 | WAZ-7041 | Washer 5/8" SAE zinc |
| 4 | 4 | NYL-2040 | Nylon lock nut 5/8" - 11 unc |

Cable guide and cable guide with support



Cable guide

Cable guide with support



View A

View B

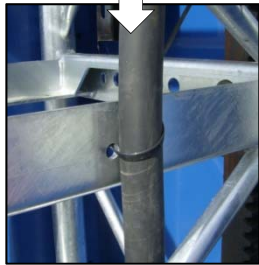
1. Attach the cable guide (1) or the cable guide with support (2) to the mast section using bolts with nuts and washers. The cable guide (1) (2) must be installed in the middle of a mast section, under the horizontal member.
2. Install a cable guide (1) every 15 ft (4.5 m) maximum. Install the cable guide with support (2) one mast section under the junction box.
3. Make sure the bracket are perpendicular with the mast and have a clearance with the cabin and the cable trolley.

| # | Qty | Code | Description |
|---|-----|----------|-------------------------------|
| 1 | 1 | 20030016 | Cable guide |
| 2 | 1 | 20030027 | Cable guide with support |
| 3 | 4 | BOZ-7220 | Bolt 5/8"-11unc x 5" gr5 zinc |
| 4 | 8 | WAZ-7041 | Washer 5/8" SAE zinc |
| 5 | 4 | NYL-2040 | Nylon lock nut 5/8" - 11 unc |

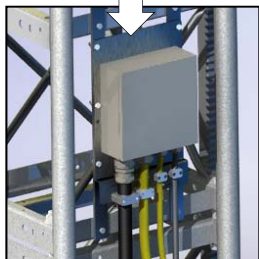
Electric cable installation



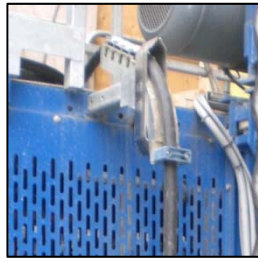
Ground box



Mast



Junction box



Cable holder



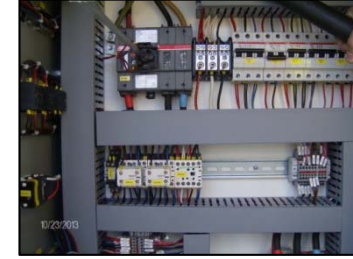
Cable guide trolley



Cable guide



Power panel

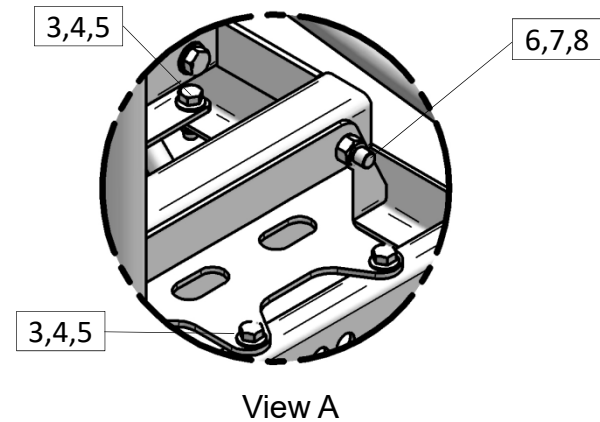
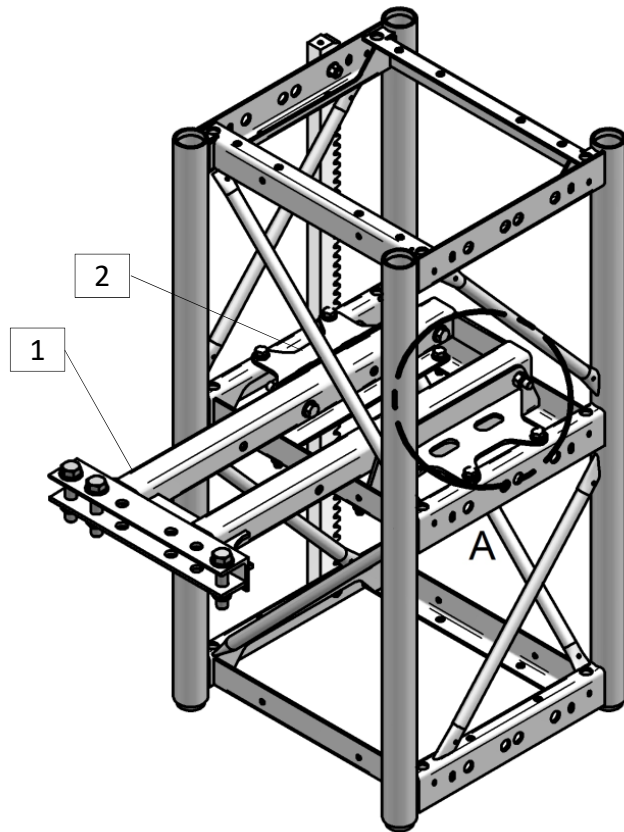


Inside power panel

1. Connect the power line to the ground box. Verify that the power input respect the specifications for the specific unit.
2. Connect the ground box to the junction box and attach the cable to the mast using cable ties.
3. Connect the junction box to the power panel. The cable must go down the cable guide, go through the cable guide trolley up to the unit, into the cable holder.
4. Connect grounds of ground box, power panel and resistance. Screw the grounds to the structure.

NOTE: During installation, there are not enough mast to install the junction box to. An installation cable without cable guide trolley should be used until half of the mast has been installed.

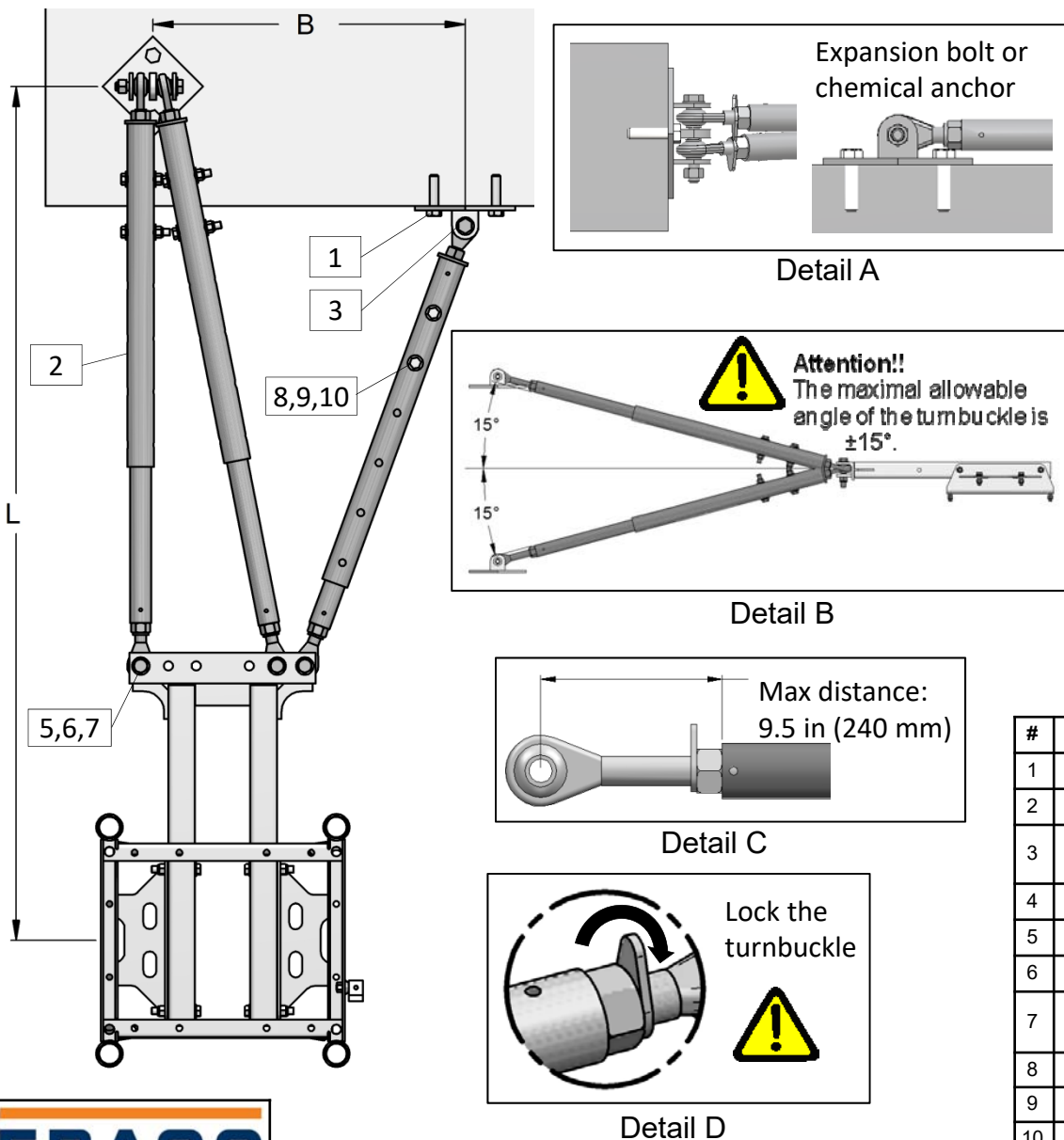
Mast tie installation



1. Place the wall tie fixations (2) and wall tie structure (1) in the mast section, fasten with screws. (view A)

| # | Qty | Code | Description |
|---|-----|----------|-------------------------------------|
| 1 | 1 | 21010015 | Wall tie structure for 650x650 mast |
| 2 | 2 | 21010037 | Wall tie fixation |
| 3 | 8 | BOZ-7200 | Bolt 5/8"-11unc x 2" gr 5 zinc |
| 4 | 8 | WAA-1015 | Washer 11/16" A325 galvanized |
| 5 | 8 | NYL-2040 | Nylon lock nut 5/8"-11unc |
| 6 | 4 | BOZ-7250 | Bolt 3/4"-10unc x 5" gr 5 zinc |
| 7 | 4 | WAZ-7051 | Washer 3/4" SAE zinc |
| 8 | 4 | NYL-2050 | Nylon lock nut 3/4"-10unc |

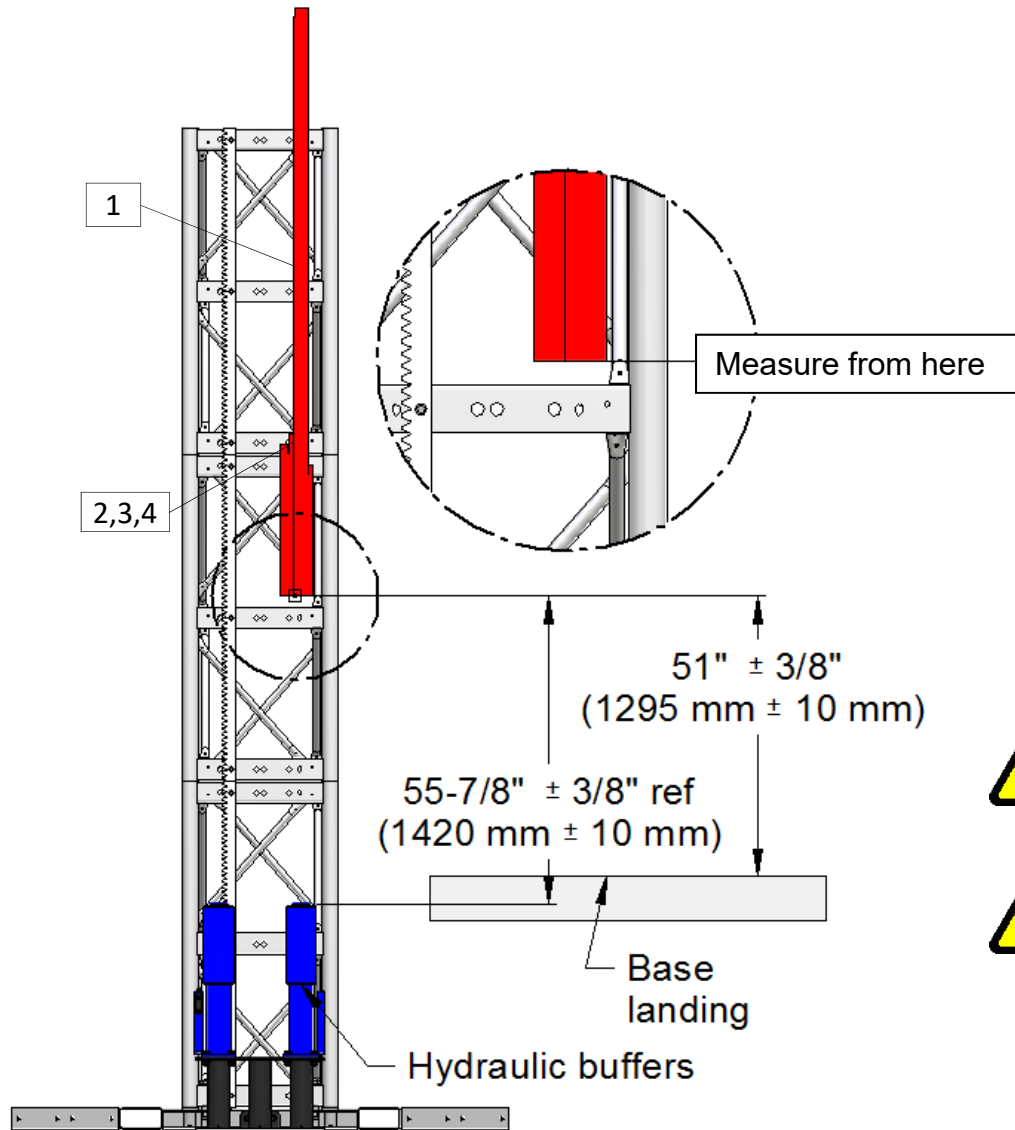
Mast tie installation (cont.)



- 1. Attention**, make sure that wall withstand the calculated wall forces, for more information see the operation manual and specific engineering package.
- Take off the turnbuckle screws and install the anchor plates (1) on the wall. Use expansion bolts or chemical anchor (Detail A). Make sure the angle of the turnbuckle will not be more than 15° (Detail B) and that you respect the distance L and opening B given in your specific engineering package
- Install and adjust the turnbuckles (2), fasten the screws. Attention, make sure that the distance according to picture do not exceed 9.5" (240 mm). (Detail C)
- Use the turnbuckle to adjust the mast. **Lock the turnbuckle!** (Detail D)
- 5. Attention**, for more detailed information concerning the maximal distance between ties, screws and overhang, see the operation manual and specific engineering package.

| # | Qty | Code | Description |
|----|-----|-----------|---|
| 1 | 2 | 240300100 | SHE concrete anchor plate |
| 2 | 3 | - | Turnbuckle |
| 3 | 2 | BOZ-7308 | Bolt 1"-8unc x 7" gr8 yellow zinc w/ nut and washer |
| 4 | 3 | BOZ-7261 | Bolt 1"-8unc x 5" gr5 zinc |
| 5 | 3 | WAZ-7071 | Washer 1" SAE zinc |
| 6 | 3 | NYL-2060 | Nylon lock nut 1"-8unc |
| 7 | 2 | BOZ-7308 | Bolt 1"-8unc x 7" gr8 yellow zinc w/ nut and washer |
| 8 | 6 | BOZ-7250 | Bolt 3/4"-10unc x 5" gr 5 zinc |
| 9 | 6 | WAZ-7040 | Washer 11/16" zinc |
| 10 | 6 | NYL-2050 | Nylon lock nut 3/4"-10unc |

Limit switch cams - Bottom



1. Place the cam (1) according to the pictures.
2. Adjust the cams and fasten with two screws on each (2,3,4).
3. Adjust the sensors on the car.

NOTE: If using a pit, the distance shall be readjusted so the cage stops in level with the bottom level floor.



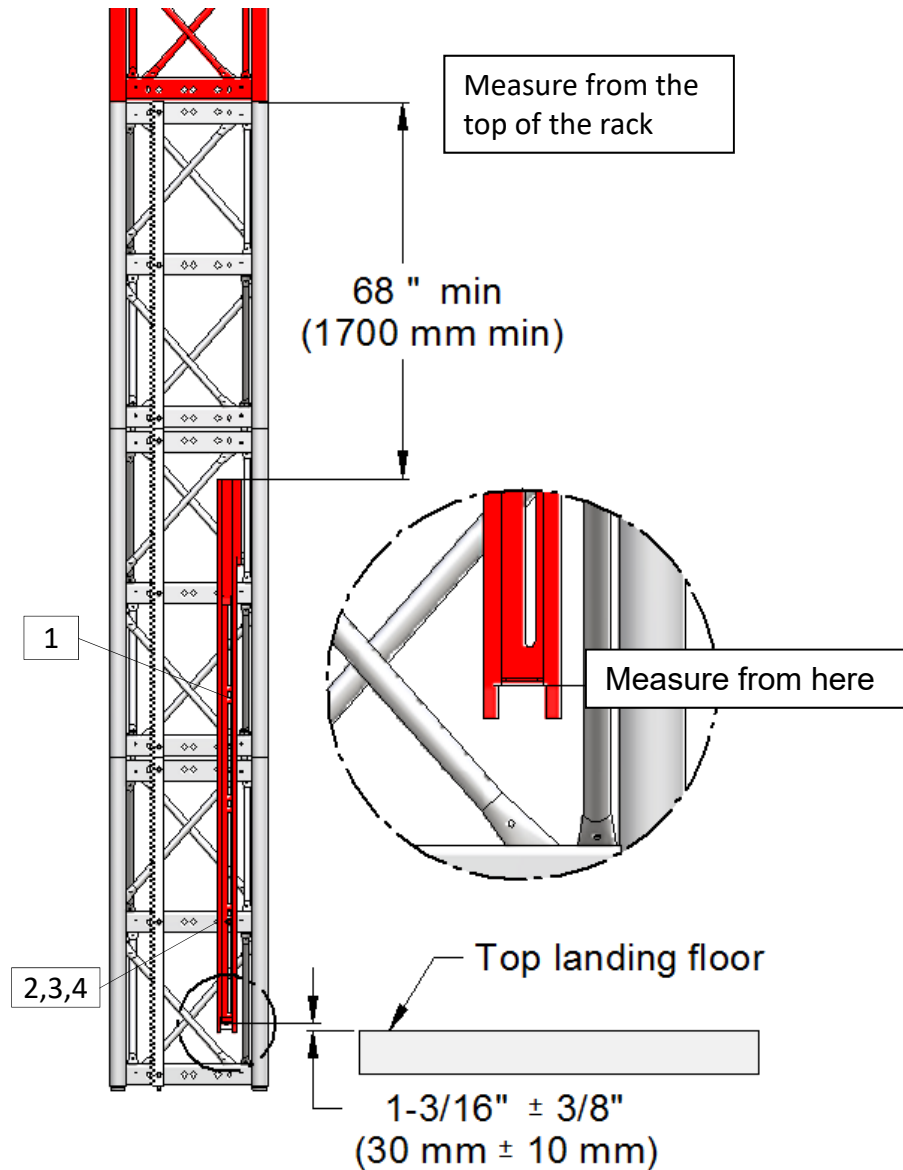
Attention!! Make sure that limit switches shut off the circuit.



Attention!! Make sure that the cage stop in level with the landing level. Otherwise adjust the curves in the mast.

| # | Qty | Code | Description |
|---|-----|----------|-----------------------------------|
| 1 | 1 | 20030061 | Bottom limit switch cam |
| 2 | 4 | BOZ-7155 | Bolt 1/2"-13unc x 1-1/2" gr5 zinc |
| 3 | 8 | WAZ-7031 | Washer 1/2" SAE zinc |
| 4 | 4 | NYL-2030 | Nylon lock nut 1/2"-13unc |

Limit switch cams - Top



1. Place the cam (1) according to the pictures.
2. Adjust the cams and fasten with two screws on each (2,3,4).
3. Adjust the sensors on the car.



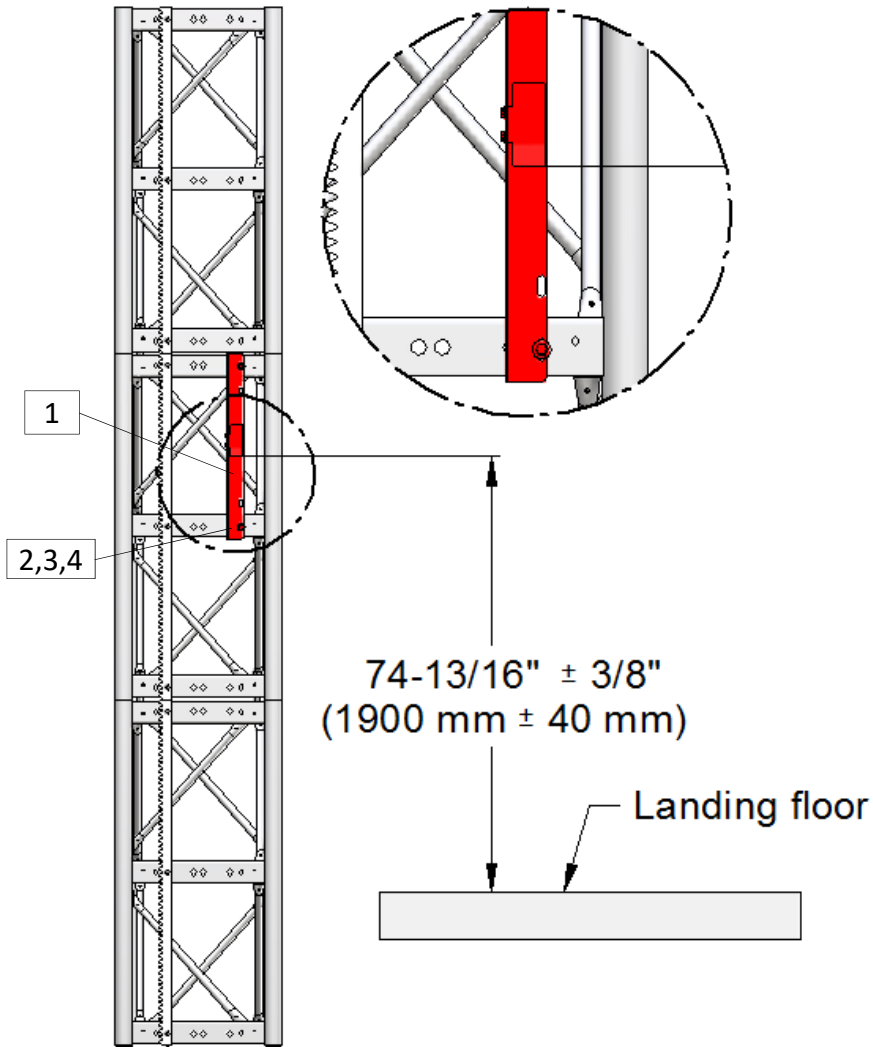
Attention!! Make sure that limit switches shut off the circuit.



Attention!! Make sure that the cage stop in level with the landing level. Otherwise adjust the curves in the mast.

| # | Qty | Code | Description |
|---|-----|----------|-----------------------------------|
| 1 | 1 | 20030072 | Top limit switch cam |
| 2 | 4 | BOZ-7155 | Bolt 1/2"-13unc x 1-1/2" gr5 zinc |
| 3 | 8 | WAZ-7031 | Washer 1/2" SAE zinc |
| 4 | 4 | NYL-2030 | Nylon lock nut 1/2"-13unc |

Limit switch cams - Landing



1. Place the cam (1) according to the pictures.
2. Adjust the cams and fasten with two screws on each (2,3,4).
3. Adjust the sensors on the car.
4. Install a limit switch cam at every landing desired (except the top and bottom landing)



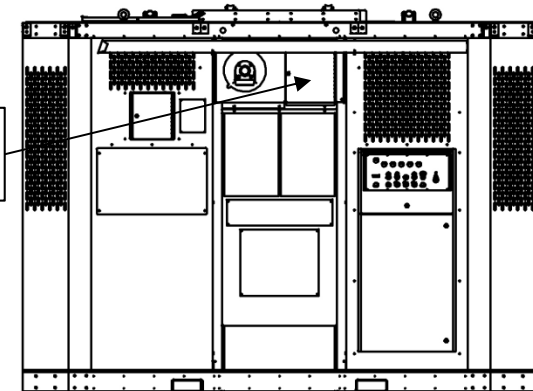
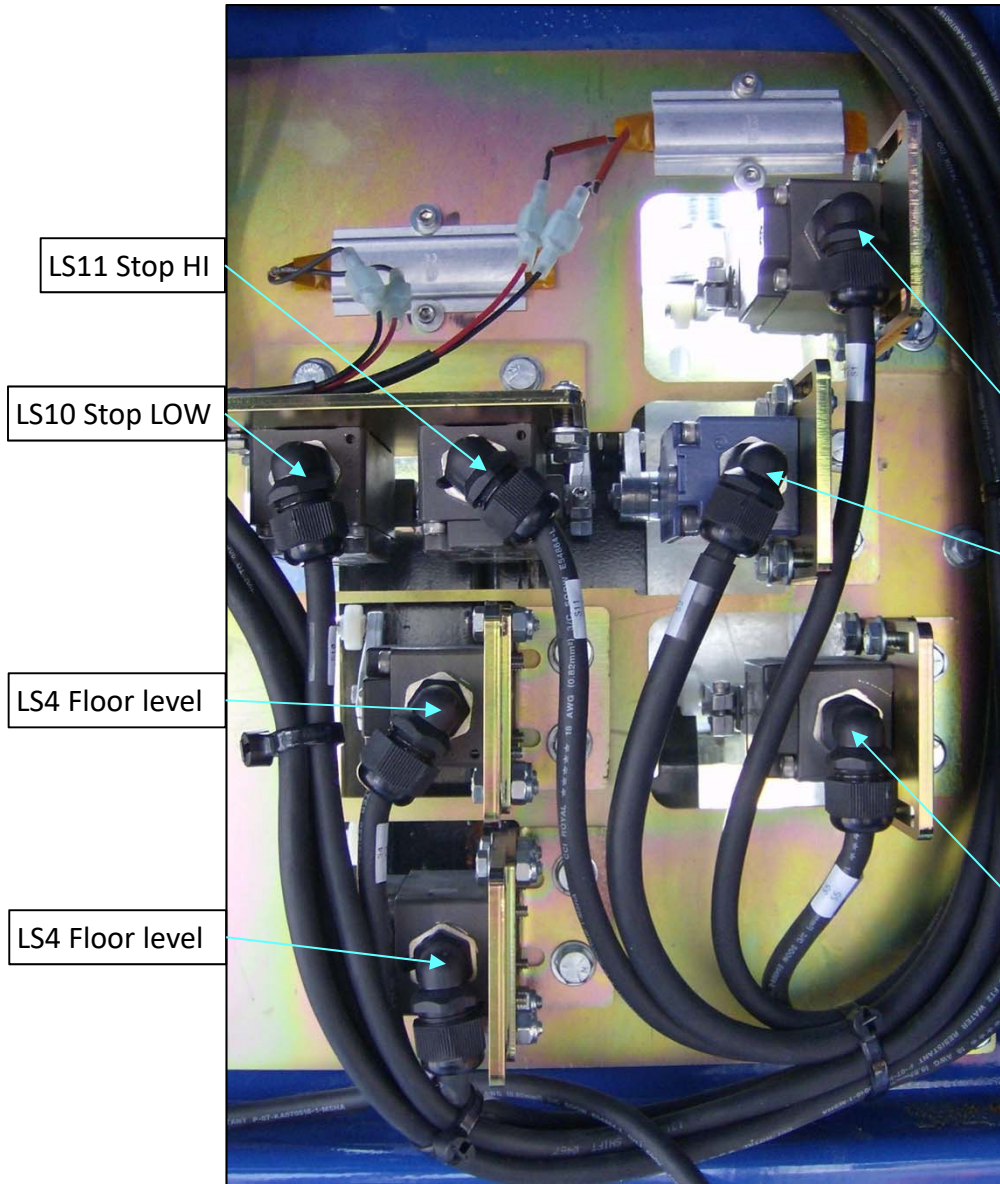
Attention!! Make sure that limit switches shut off the circuit.



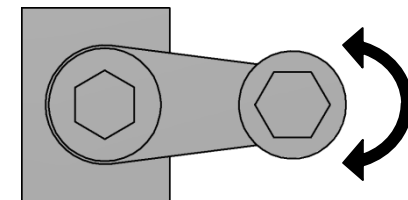
Attention!! Make sure that the cage stop in level with the landing level. Otherwise adjust the curves in the mast.

| # | Qty | Code | Description |
|---|-----|----------|-----------------------------------|
| 1 | 1 | 20030050 | Landing limit switch cam |
| 2 | 4 | BOZ-7155 | Bolt 1/2"-13unc x 1-1/2" gr5 zinc |
| 3 | 8 | WAZ-7031 | Washer 1/2" SAE zinc |
| 4 | 4 | NYL-2030 | Nylon lock nut 1/2"-13unc |

Limit switch panel



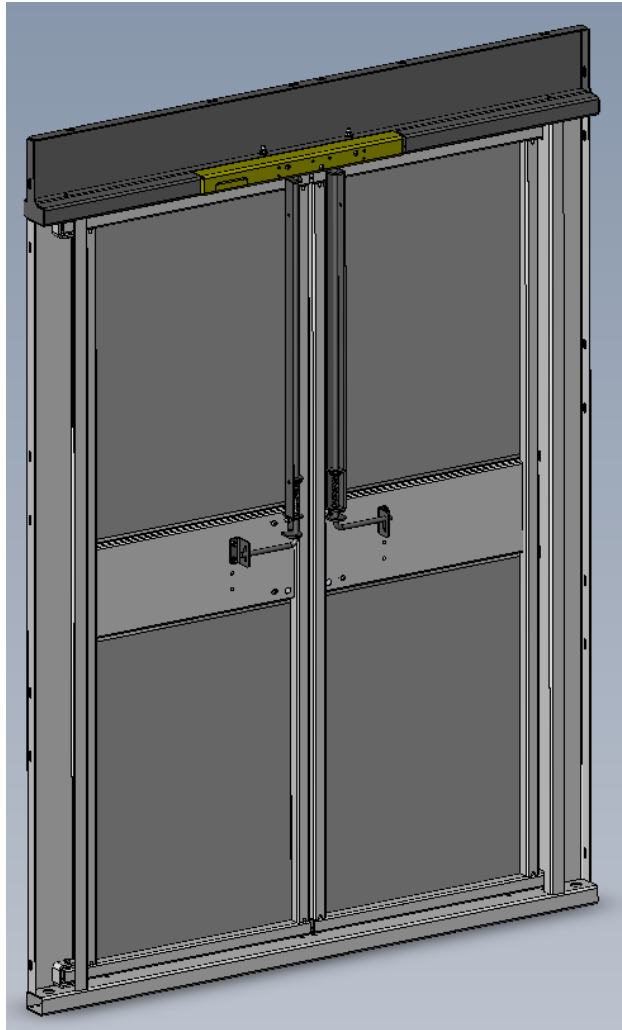
Inside car



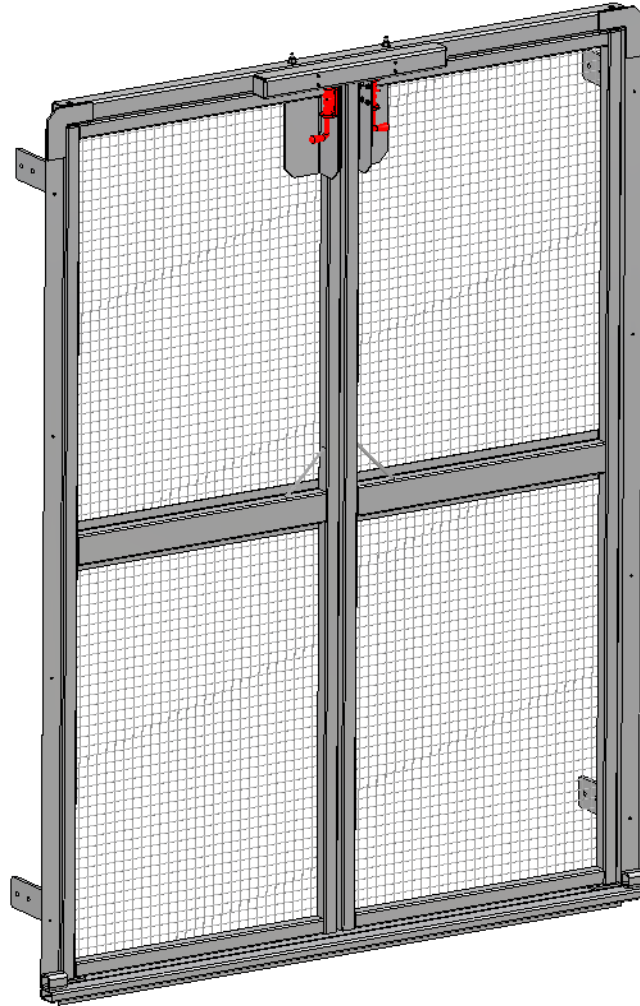
Attention!! The LS2 Auto stop limit switch is bi-directional. After installing the car or after maintenance, make sure it is oriented correctly (upward when on base landing, downward on top landing)

Door selector

Enclosure/Landing door release



Base enclosure door



Landing gates

1. Connect the enclosure and landing doors to the ground box



Attention!! Make sure that opening the gates shut off the circuit.