LIFTINGITALIA S.r.l.
Via Caduti del Lavoro, 16 - 43058 Bogolese, Sorbolo (PR) - Italy
Phone +39 0521.695311 - Fax +39 0521.695313

inDOMO HP

Hydraulic platform lift

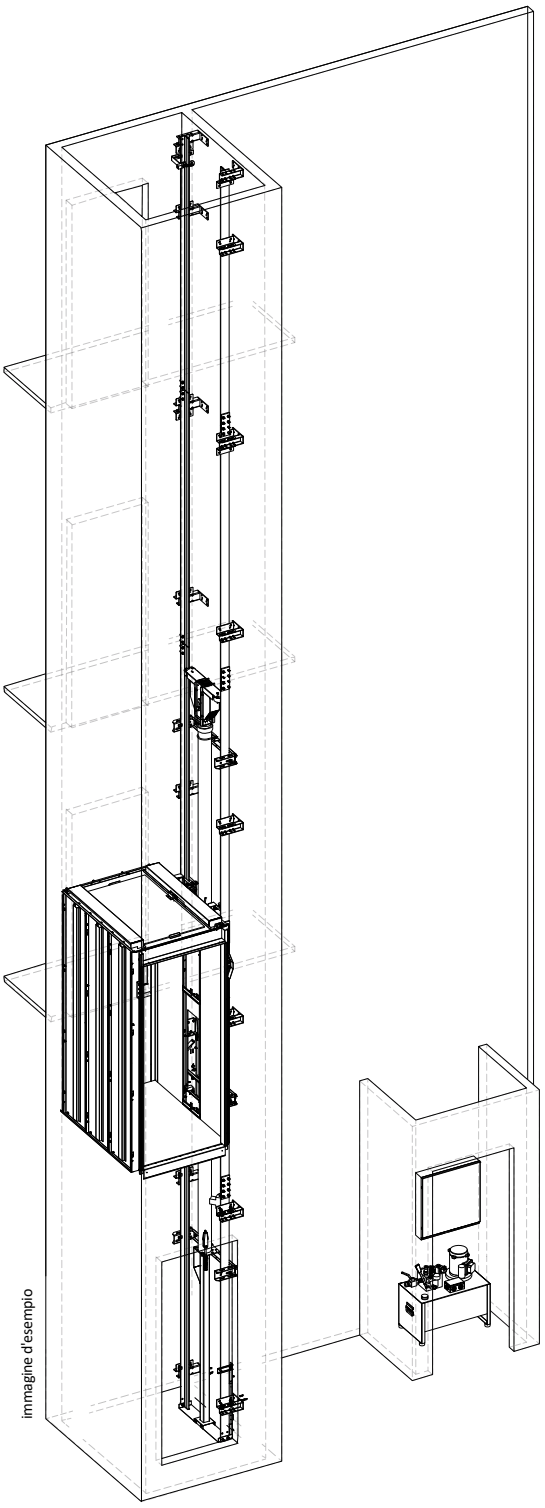


immagine d'esempio

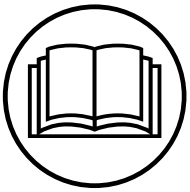
INSTALLATION AND COMMISSIONING INSTRUCTIONS

15.4	Update page 88.	28.06.2022
15.3	Inserting pages 52-55.	22.02.2022
15.2	Inserting pages 64,65.	08.07.2020
15.1	Update pages 50, 51, 54, 55	08.01.2020
15	General update	25.05.2019
14	General update	06.09.2018
13	Update pages 53, 67	05.08.2016
12	Update pages 23, 34, 47, 48, 49, 62, 66, 67, 70, 72, 73, 77	11.05.2016
11	Update pages 11, 21, 34, 40, 41, 43, 53-59, 68, Appendix	27.02.2014
10	General update and new layout	30.01.2013
9	Frame - car basement fixing - update	08.05.2012
8	General update	21.12.2011
Rev.	*Descrizione*	*Data*

INDICE

PURPOSE OF THE MANUAL

The purpose of this manual is to provide correct information on the installation of the product, in order to contribute to personal safety and to the proper functioning of the system. Keep the manual for the entire life of the product. In the event of a change of ownership, the manual must be provided to the new user as an integral part of the product.

NOTICE	
	**READ THIS MANUAL CAREFULLY** before installing and using the product. This product must be installed and put into operation according to the provisions and regulations in force. Improper installation or improper use of the product can cause damage to people and property, as well as cause the warranty to lapse.
	FOLLOW THE SUGGESTIONS AND RECOMMENDATIONS TO OPERATE IN SAFETY. Any unauthorized modification can compromise the safety of the system, as well as the correct operation and the life of the machine. If you have any doubts regarding the correct understanding of the information and contents contained in this manual, contact LIFTING ITALIA S.r.l. immediately.
	QUALIFIED PERSONNEL: The product covered by this documentation can only be installed by qualified personnel, in compliance with the attached technical documentation, above all in compliance with the safety warnings and the precautions contained therein.
	Keep the technical and safety documentation near the system.

PERSONAL SECURITY AND RISK RECOGNITION

This manual contains safety rules that must be observed to safeguard personal safety and to prevent damage to the property. The indications to be followed to guarantee personal safety are highlighted by a triangle symbol while those to avoid material damage are not preceded by the triangle. The hazard warnings are shown as follows and indicate the different levels of risk in descending order.

RISK SYMBOLOGY AND PHRASES

RISK CLASSIFICATION AND RELATIVE GRAVITY OF DAMAGE		
DANGER	The symbol indicates that the failure to comply with appropriate safety measures **causes** death or serious physical injury.	RISK LEVEL
WARNING	The symbol indicates that the failure to observe the corresponding safety measures **can cause** death or serious personal injury.	
CAUTION	The symbol indicates that failure to observe the relevant safety measures **can cause** minor or moderate personal injury or damage to the device.	
NOTICE	It is not a symbol of security. It indicates that the failure to comply with relevant safety measures **can result** in property damage.	
INFORMATION	It is not a symbol of security. It indicates important information.	

If there are multiple levels of risk, the danger warning always indicates the highest one. If a warning is drawn with a triangle to warn to the risk of injury to persons, the risk of possible property damage may also be caused at the same time.

NOTE: During installation / maintenance of the platform, the safety functions are temporarily suspended. Therefore all necessary precautions must be taken to avoid personal injury and / or damage to the product.

MANUAL READING GUIDE

WARNING SIGN					
	GENERAL DANGER		ELECTRICITY DANGER		DANGER FLAMMABLE MATERIAL
	DANGER OF FALL BY A LEVEL		DANGER SUSPENDED LOADS		DANGER OF CRUSHING

PROHIBITION SIGN					
	GENERIC PROHIBITION		FORBIDDEN TO STEP ON		PROHIBITED TO WALK ON OR STOP IN THIS AREA

MANDATORY SIGN					
	OBLIGATIORY TO WEAR THE PROTECTION HELMET		OBLIGATORY TO WEAR SAFETY SHOES		OBLIGATORY WEAR THE PROTECTIVE GLOVES
	OBLIGATORY TO WEAR EYE PROTECTION		OBLIGATION TO WEAR THE AUDIO PROTECTION		OBLIGATORY TO WEAR THE MASK
	OBLIGATORY TO WEAR PROTECTIVE CLOTHES		OBLIGATORY TO KEEP CLOSED		OBLIGATORY TO CHECK THE PROTECTIONS

EMERGENCY AND FIRST AID SIGNS		INDICATION SYMBOLS					
	FIRST AID		NOTA BENE		KEEP DRY		OBLIGATORY TO CHECK THE PROTECTIONS

LIABILITY AND WARRANTY CONDITIONS:

RESPONSIBILITY OF THE INSTALLER

The elevator / platform is produced and intended to be installed as described in the attached project drawing and in this manual; any divergence from the prescribed procedure may affect the operation and safety of the system and cause the immediate cancellation of the warranty.

Any modification or variation made to the project and the to the assembly Instructions must be documented in detail and referred to LIFTING ITALIA S.r.l., in order to allow the company an adequate assessment. Under no circumstances can a modified system be activated without the express authorization of LIFTING ITALIA S.r.l.

Installers are responsible for ensuring compliance with safety procedures at work and any health and safety regulations in force in the country and on the site where the assembly is carried out.

The elevator / platform must only be used in the way envisaged by the system and illustrated in the relative manuals (transportation of people and / or things, maximum loads, cycles of use, etc.). LIFTING ITALIA S.r.l. assumes no responsibility for damage to persons and property caused by improper use of the system.

NOTE: Pictures and images on this manual are for illustration purposes only.

1. GENERAL DISPOSITIONS AND INSTALLATION SITE MANAGEMENT

1.1. GENERAL DISPOSITIONS

IMPORTANT!

For more information on safety, liability and warranty conditions, receipt and storage of material on site, packaging, waste disposal, cleaning and storage of the product; refer to the "**SAFETY INSTRUCTIONS AND SITE MANAGEMENT**" manual.

NOTICE

PRELIMINARY CHECKS: Once the packaging has been opened, check that the product is intact and has not been damaged during transport. Should any anomalies or damage be found, please dispatch them in writing on the transport document to the transport company, giving written notice to LIFTINGITALIA S.r.l.

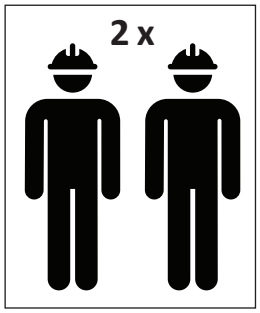
NOTE: In this manual, we will talk about "SHAFT" meaning for it the base slab, the slab of landing and the vertical wall that connects its slabs.

⚠ CAUTION

SAFETY AND SITE MANAGEMENT - OVERALL DISPOSITIONS:

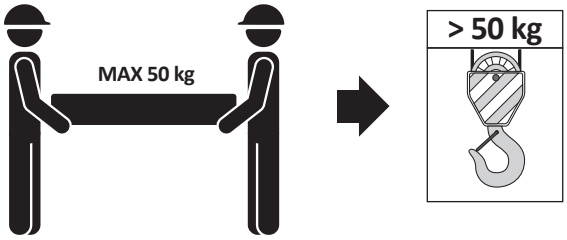
1. Always secure tools and any objects against falling;
2. Pay the utmost attention to all the steps described in this;
3. While assembling the parts making up the system or after installation, be careful of any sharp burrs (machining residues);

- Before proceeding with the installation, it is necessary to remove the rubble and the material deposited during the construction of the shaft.
- Only nuts and bolts included in the supply must be used.
- The bags containing the screws must be opened in correspondence with the respective operating phases indicated in this manual.
- The instructions described in this manual refer to a reinforced shaft, to a fastening with mechanical expansion plugs of the stud type. For the use of plugs in masonry other than the reinforced concrete see the attachment to this manual. For the shafts with metal framework, we proceed by replacing the plugs with normal screws.
- In these instructions and on the wiring diagram, the stops are indicated with 0, 1, 2, 3, meaning "0" the lowest stop: the numbers on the push-button panels may be different according to the user's needs (for example- 1, 0, etc.).



The assembly must be performed by a MINIMUM 2 people;

If the load is greater than 50kg, use the hoist for handling.



2. PRODUCT DESCRIPTION

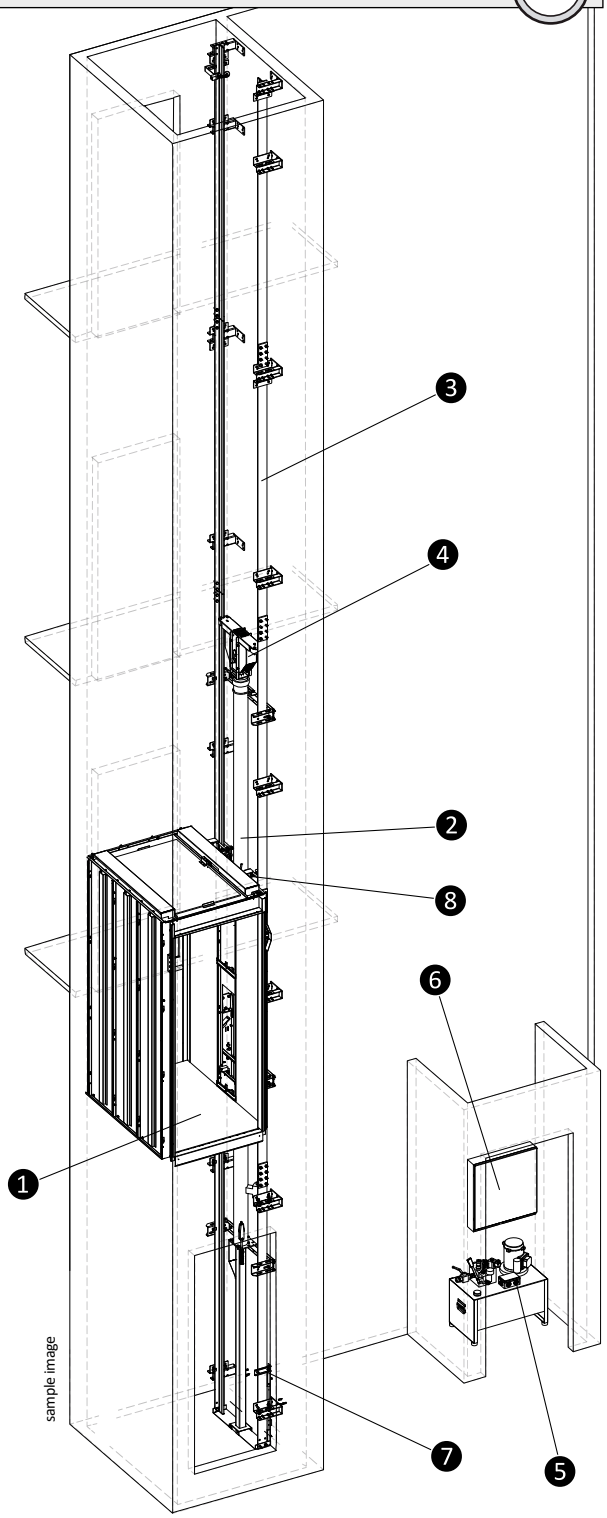
2.1. GENERAL DESCRIPTION AND TERMINOLOGY

2:1 PLATFORM LIFT

2:1

The indirect 2:1 platform lift is a lifting platform used for vertical moving of people and goods.
This type of lift, having an indirect 2:1 cylinder, is suitable for the maximum 20 m travel.
The frame-car combination ❶ is moved by means of an indirect hydraulic cylinder ❷, positioned above a prop mounted in the pit and aligned with metal guide rails ❸; the pulley is fixed on the stem ❹.
When moving inside the shaft, the frame-car combination is directed by two metal guide rails fixed to one of the walls of the shaft and suspended by means of metal ropes.
The lift can be installed into a masonry shaft or a metal structure, both inside and ouside the building.
The cylinder is moved by means of the hydraulic unit ❺, and controlled by the electrical control cabinet ❻.
The safe position of the car during maintenance operation is guaranteed by the SAFE-PIT ❼ and by the HEADROOM SPACER ❽.
The landing access points are closed by landing doors, that can be both manual and automatic. The car can be supplied both with and without doors.

The 2:1 platform lift ensures several installation possibilities, in conformity with the following regulations:
- 2006/42/CE Machine Directive;
- EN81-41:2010 Platform Lift (EC).



INFORMATION	
The images shown in this Manual are referred to the 2:1 Platform Lift. Any different sequences of steps will be clearly described.	
2:1	This symbol shows the specific sequence for the 2:1 platform lift.

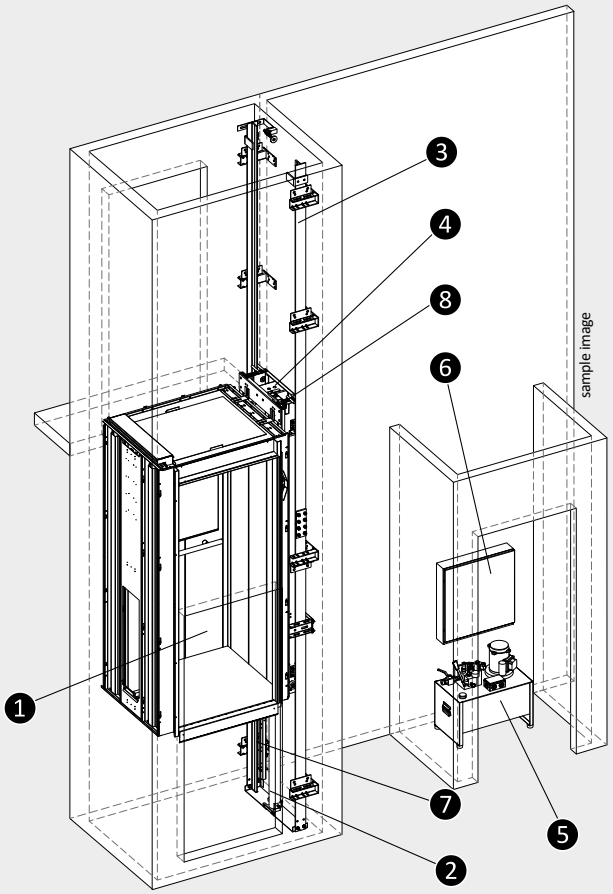
One of the main objectives of LIFTINGITALIA S.r.l. is continuous improvement of the product range. Thus, the technical specifications of the lift may be changed without notice.

1:1 PLATFORM LIFT

1:1

The direct telescopic 1:1 platform lift is a lifting platform used for vertical moving of people and goods.
This type of lift, having a direct telescopic1:1 cylinder, is suitable for the maximum 3,85 m travel.
The frame-car combination ❶ is moved by means of a hydraulic telescopic cylinder ❷, positioned in the pit and shifted by 10mm towards the car, in relation to the metal guide rails ❸, the stem pushes onto the upper crossbeam of the frame ❹.
When moving inside the shaft, the frame-car combination is directed by two metal guide rails fixed to one of the walls of the shaft.
The lift can be installed into a masonry shaft or a metal structure, both inside and ouside the building.
The cylinder is moved by means of the hydraulic unit ❺, and controlled by the electrical control cabinet ❻.
The safe position of the car during maintenance operation is guaranteed by the SAFE-PIT ❼ The safe position of the car during maintenance operation is guaranteed by the SAFE-PIT ❽ and by the HEADROOM SPACER.
The landing access points are closed by landing doors, that can be both manual and automatic. The car can be supplied both with and without doors.

The 1:1 platform lift ensures several installation possibilities, in conformity with the following regulations:
- 2006/42/CE Machine Directive;
- EN81-41:2010 Platform Lift (EC).



INFORMATION

The images shown in this Manual are referred to the 2:1 Platform Lift. Any different sequences of steps will be clearly described.

1:1

This symbol shows the specific sequence for the 1:1 platform lift.
The parts related to the 1:1 platform lift are put on a grey background.

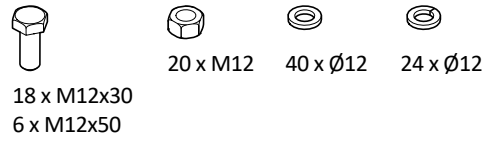
One of the main objectives of LIFTINGITALIA S.r.l. is continuous improvement of the product range. Thus, the technical specifications of the lift may be changed without notice.

LIFTINGITALIA S.r.l.
Via Caduti del Lavoro, 16 - 43058 Bogolese, Sorbolo (PR) - Italy
Phone +39 0521.695311 - Fax +39 0521.695313

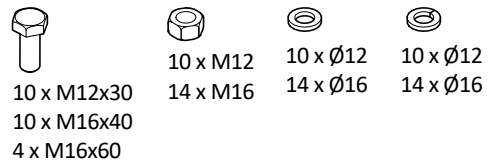
INFORMATION 3. BOX CONTENT - SCREWS KIT

NOTE: Each "KIT" box with its identification code represents the packaging unit, i.e. how many pieces per type are contained in each package.

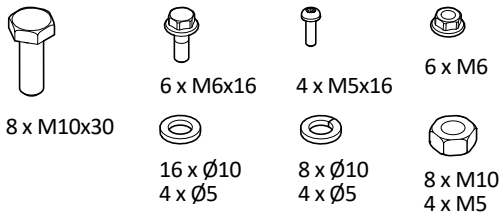
KIT F350.23.0001V01
TYPE 25 CAR SLING UPRIGHTS KIT



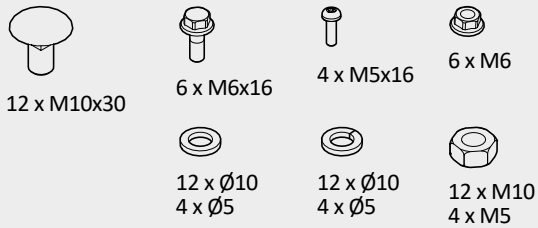
KIT F350.23.0001V02
TYPE 50 CAR SLING UPRIGHTS KIT



KIT F350.23.0002V01 (2:1)
INDIRECT DRIVE CAR SLING UPPER CROSSBEAM KIT

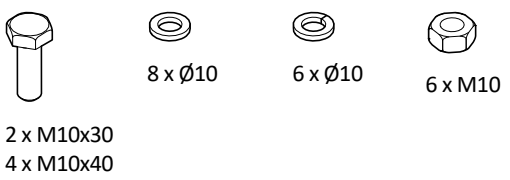


KIT F350.23.0002V02 (1:1)
KIT CHIUSURA SUPERIORE ARCATA DIRETTA

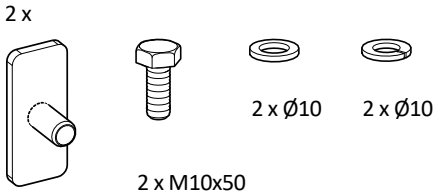


Optional

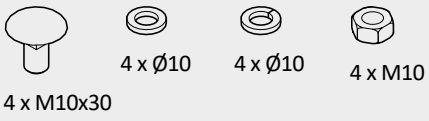
KIT F350.23.0003
CAR SLING EXTENSION KIT



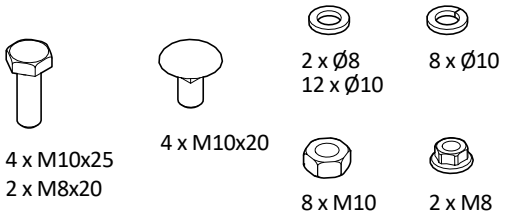
KIT F350.23.0005V01
TOP CAR HOLDING KIT



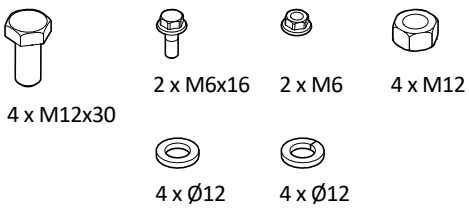
KIT F350.23.0005V02 (1:1)
TOP CAR HOLDING BRACKETS KIT



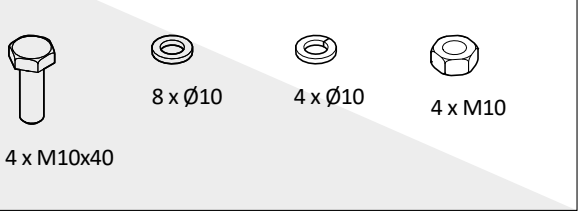
KIT F350.23.0006
CAR SLING BRACES KIT



KIT F350.23.0008
POSITIONING TEMPLATE KIT

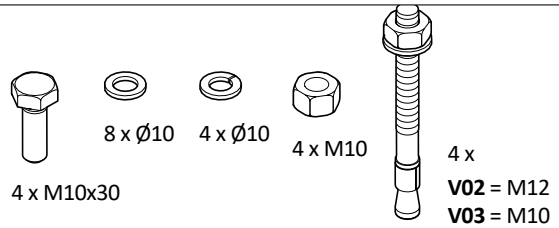


KIT F350.23.0009 (2:1) (1:1)
OVERTRAVEL STOP KIT



KIT F350.23.0010 (V02-V03)

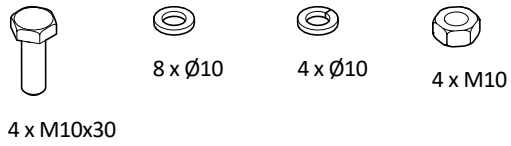
WALL FIXING KIT



Optional

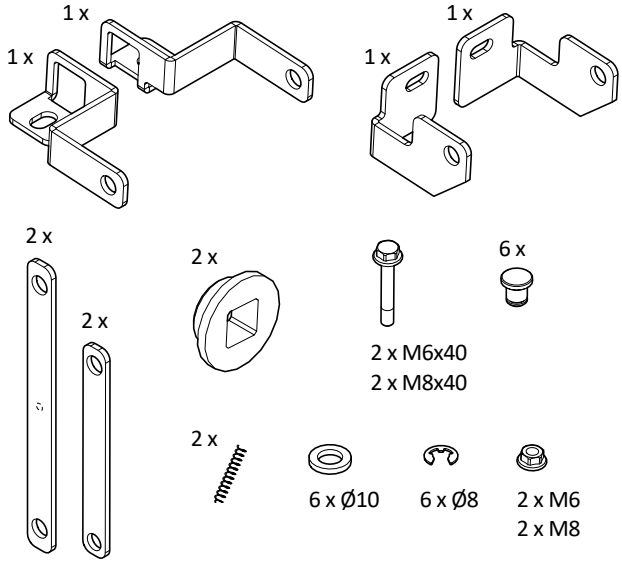
KIT F350.23.0016

BRACKET-FIXING TO STRUCTURE AND WALL KIT



KIT F350.23.0012 2:1

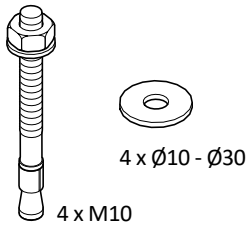
TYPE 25 SAFETY BRAKE LINKAGE KIT



Optional

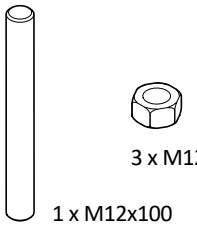
KIT F350.23.0027

FALSE PIT KIT



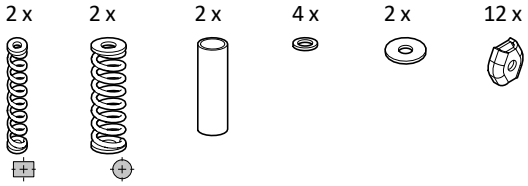
KIT F350.23.0028

PIT STOP THREADED ROD KIT



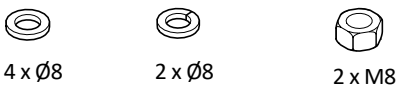
KIT F350.23.0029 2:1

TYPE "2" ROPES KIT



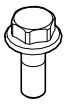
KIT F350.23.0014

U-CLAMP KIT



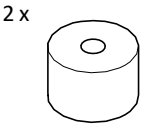
KIT F350.23.0031

CAR SLING SHEAVE COVER KIT



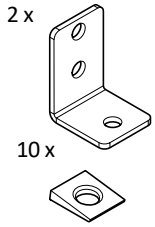
KIT F350.23.0033

PIT ANTI-VIBRATION MOUNTS KIT



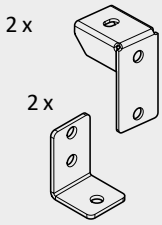
Optional

KIT F350.23.0035V01



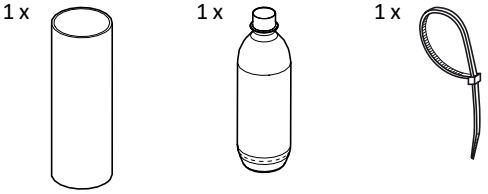
6 x M10x20
10 x M10
8 x Ø10
6 x Ø10

KIT F350.23.0035V03 1:1



6 x M10x20
4 x M10x30
4 x Ø10-Ø30
10 x
12 x Ø10
2 x Ø12
10 x Ø10
14 x M10
4 x M12

KIT F350.23.0037



Optional

KIT F350.23.0038

8 x M8x20
8 x Ø8
8 x Ø8
8 x M8

Optional

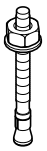
KIT F350.23.0039V02

2 x M10x30
2 x M5x10
1 x M4.8x13
2 x Ø5
2 x Ø14
2 x Ø10
2 x M10

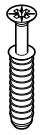
KIT F350.23.0039V01

2 x M10x30
2 x Ø10-Ø30
2 x Ø5
2 x Ø10
2 x Ø14
4 x Ø10
4 x M10
2 x M10x30
2 x M5x10
1 x M4.8x13

KIT F350.23.0040

2 x Ø7
2 x Ø6
2 x M6
1 x
1 x

4 x M5x50
2 x M6x28
1 x Ø2
1 x Ø3
4 x M4.8x13

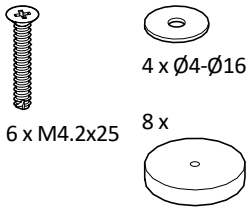
KIT F350.23.0041



25 x M4x30
10 x M5x50
6 x M4x20
6 x M6x20
2 x M8x20
20 x M3.9x13
20 x M3.9x19
6 x Ø4
12 x Ø6
4 x Ø8
6 x M6
2 x M8
10 x Ø6 - Ø18
6 x M4

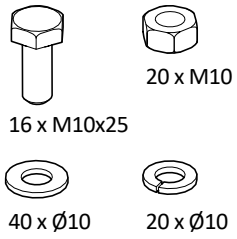
Optional

KIT F350.23.0043

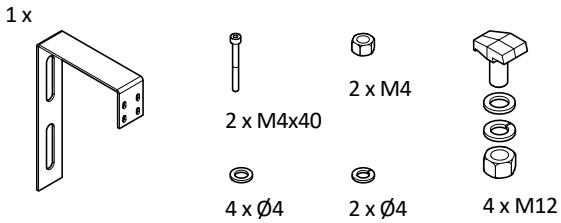


Optional

KIT F350.23.0044

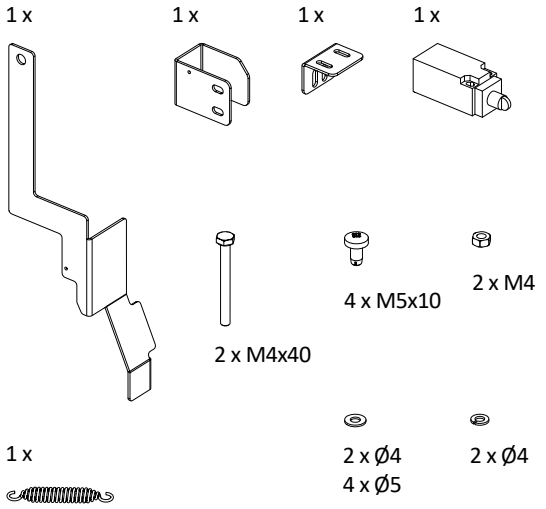


KIT F300.23.0010

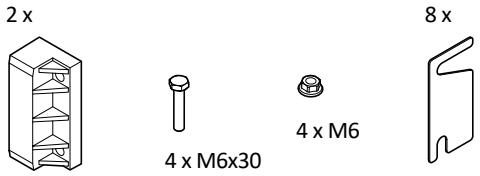


Optional

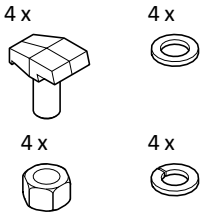
KIT F350.23.0045



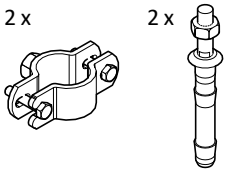
KIT F300.23.0013



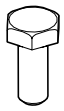
KIT V0301.04.0001



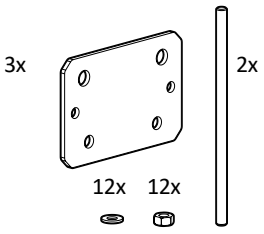
KIT Q401.05.9007



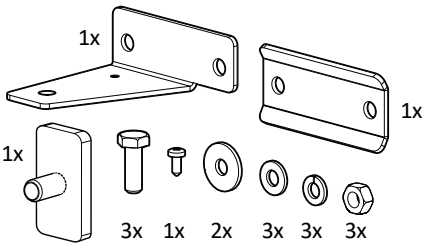
KIT F350.23.0046



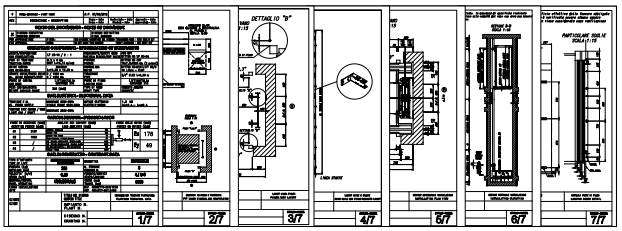
KIT F350.23.0048



KIT F350.23.0047



LAYOUTS

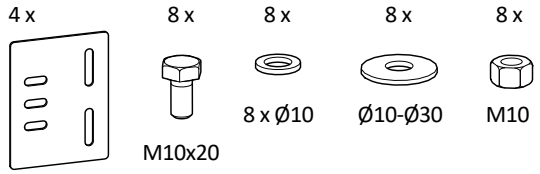


INSIDE THE CAR PACKAGE (as described in this manual)

Optional

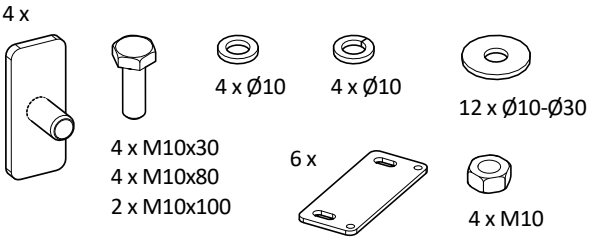
KIT C002.23.0009 - C002.23.0015

CAR FLOOR KIT

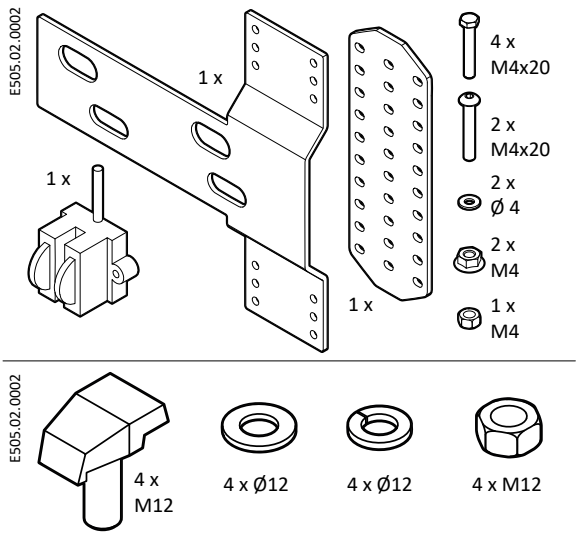


KIT F350.23.0004

CAR TO CAR SLING FIXING KIT

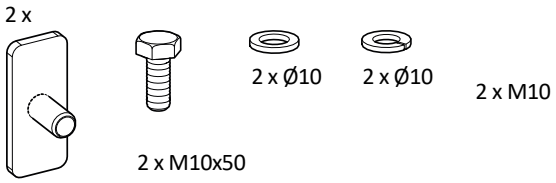


KIT F350.23.0050



KIT F350.23.0005V01

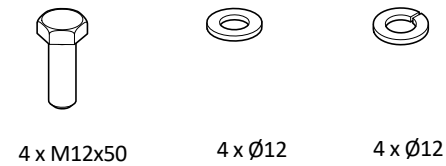
TOP CAR HOLDING KIT



INSIDE THE SHAFT PACKAGE (as described in this manual)

KIT S001.23.0003

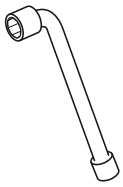
GUIDE BRACKETS KIT

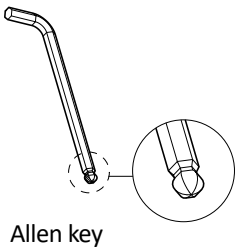


INFORMATION 4. EQUIPMENT AND MATERIALS REQUIRED FOR ASSEMBLY

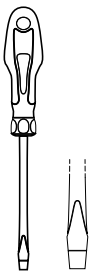

Adjustable pliers

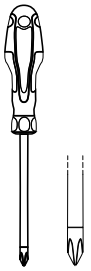

Spanner
CH 5 ÷ 27 mm
2 each size


Socket wrench
CH 5 ÷ 27 mm

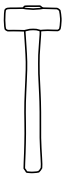

Allen key
with ball end
2,5 to 8 mm

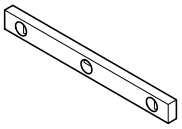

Ratcheting
ring spanner
13 to 19 mm

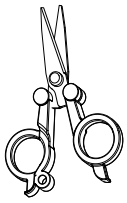

Flat-blade
screwdriver

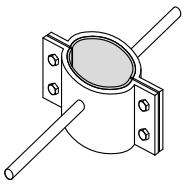

Phillips
screwdriver

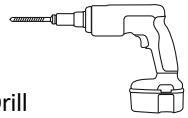

Hammer


Rubber
hammer


Spirit level

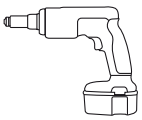

Scissors for
electricians

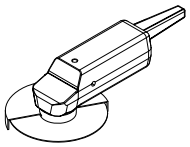

2 x
Lever wrench for 2 piece
cylinder joint
(supplied upon request)


Drill

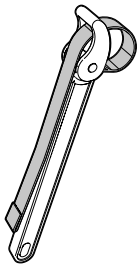
For Brickwork
Ø 6 ÷ 22 mm

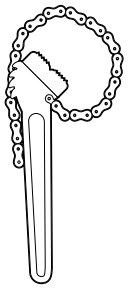
For metal
Ø 2 ÷ 13 mm


Battery-operated
screwdriver
CH 6 ÷ 13 mm


Corner grinder

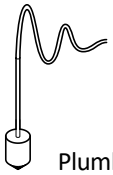
- cutting disks
- metal grinding disks


Strap Wrench

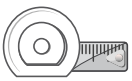

Chain Wrench

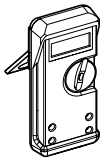

Insulating
tape


Double-sided
adhesive


Plumb
bob


Chronometer

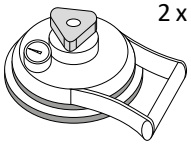

Tape measure


Digital
multimeter


Portable
lamp


"Manual hoist,
load ≥ 500 kg,
length ≥ 15 m"


Lifting belts,
load ≥ 500 kg,
length ≥ 2 m


2 x
Suction
cups 100
kg/each


5 steps collapsible or
platform safety ladder

5. PRELIMINARY CONTROLS

5.1. PRELIMINARY SAFETY CHECKS

⚠ WARNING

BEFORE STARTING THE INSTALLATION, YOU NEED:

- Check that the main electrical system is up to standard and provided with adequate grounding; **Otherwise, stop the installation until the Customer has made the system up-to-date.**
- Check the presence of an efficient lighting system at the place of installation;
- Check the cleanliness of the shaft and pit and that there are no liquids (water, oil, ...) on the bottom;
- Check that the entrances to the work areas are properly closed;
- Check that all the holes and the housings for the electric cables are free, inspectable, well finished and dry;
- Check that there is adequate ventilation for the smoke exhaust;

5.2. PRELIMINARY CHECKS OF THE INSTALLATION SITE

NOTICE

BEFORE STARTING THE INSTALLATION CHECK THE FOLLOWING MEASURES AND COMPARE THEM WITH THOSE ON THE PROJECT DRAWING:

- Width (distance between the side walls)
- Depth (distance between front and back wall)
- Pit depth
- Travel
- Headroom height
- Plumbing of the shaft and any plumb parts already installed
- Dimensions of any necessary arrangements (breaking down the landing doors, distance between the guides,
- Determine the finished floor level of each floor;

Measure the width and length of the shaft at all levels. Perform the dimensional checks independently of the measurements taken by the building manufacturers.

5.3. OBLIGATIONS OF THE INSTALLER

BEFORE STARTING THE INSTALLATION, YOU NEED:

- Arrange a material deposit area near the work area, easily accessible and protected from the bad weather;
- Prepare any lifting equipment to be used;
- Check the presence of all materials, using the list;
- Check the state of all materials at the time of receipt on site and in case of damage or missing contact the supplier immediately;
- Periodically check the materials destined for long storage before installation to avoid possible deterioration caused by incorrect storage;
- Check the completeness of the attached documentation

5.4. POSITIONING OF MATERIAL ON SITE

NOTICE

POSITIONING OF MATERIAL:

The correct material positioning on site is very important, because upon the completion of the scaffolding, some components may be difficult to handle.

DOORS

Each door must be positioned nearby the installation position, which means on the related landing.

HYDRAULIC OIL, HOSES, HYDRAULIC UNIT, CONTROL BOARD AND CABINET (IF FORESEEN)

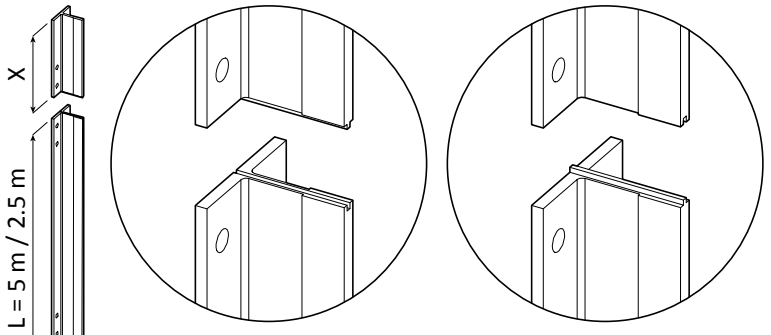
Machine room, or where the cabinet installation must be installed, in accordance with the project drawing.

HYDRAULIC CYLINDER

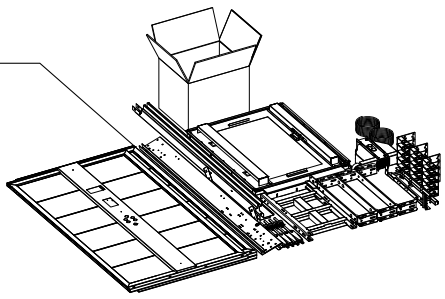
To be positioned inside the shaft, close to the installation point indicated on the project drawing, and in a way that the guide rail fixing brackets installation cab be carried out safely.
The cylinder must be temporarily fixed to the wall by means of adequate tools (ropes, chains, etc.) to avoid an accidental fall.

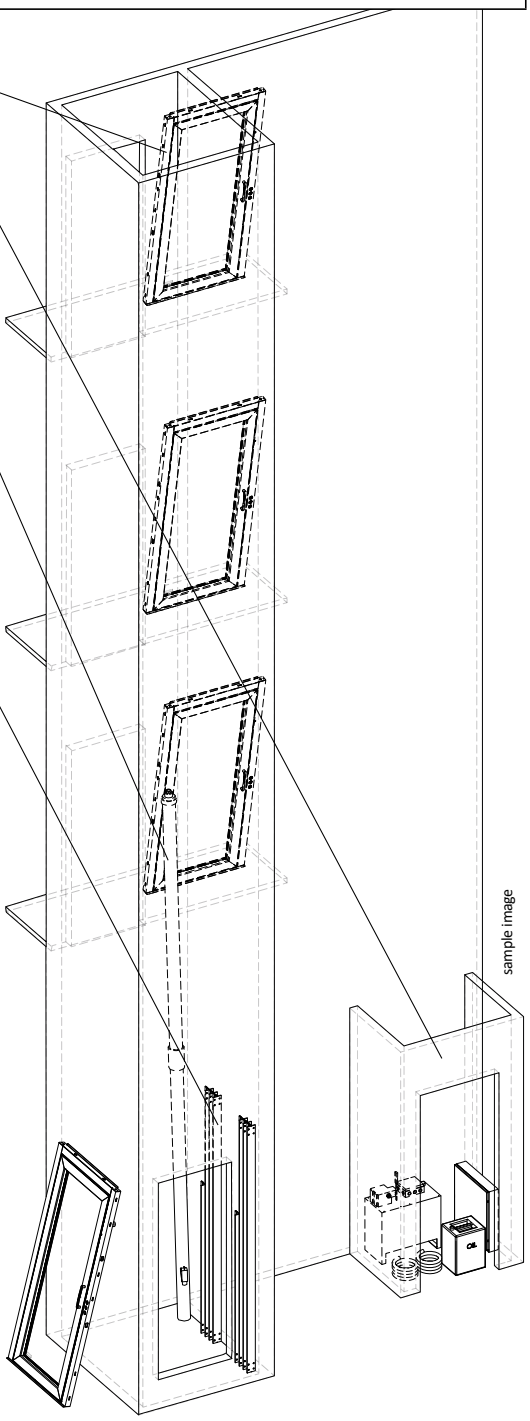
GUIDE RAILS

BEFORE positioning inside the shaft, the guide rails must be divided into two groups compounding the two columns, and place them in the correct position, together with the related joints. Check the positioning of the short piece on the project drawing.
Example: if the short piece with a tap joint is to be positioned above, all the guide rails must be positioned with the tap joint down.



REMAINING MATERIAL
(FRAME, CAR, MECHANIC COMPONENTS, ELECTRIC COMPONENTS)
Nearby the lowest stop.



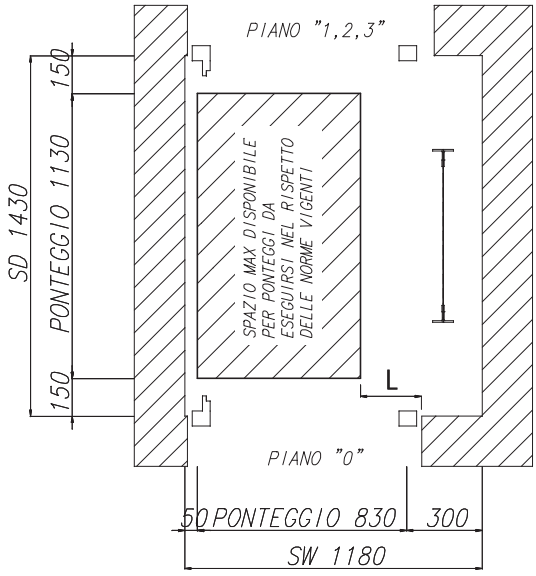


5.5. INSTALLING THE SCAFFOLD

⚠ WARNING

RISK OF FALLING DUE TO A DROP:
In order to minimize the risk of falling, the scaffold must **ALWAYS** be installed by qualified personnel, in compliance with the regulations in force.

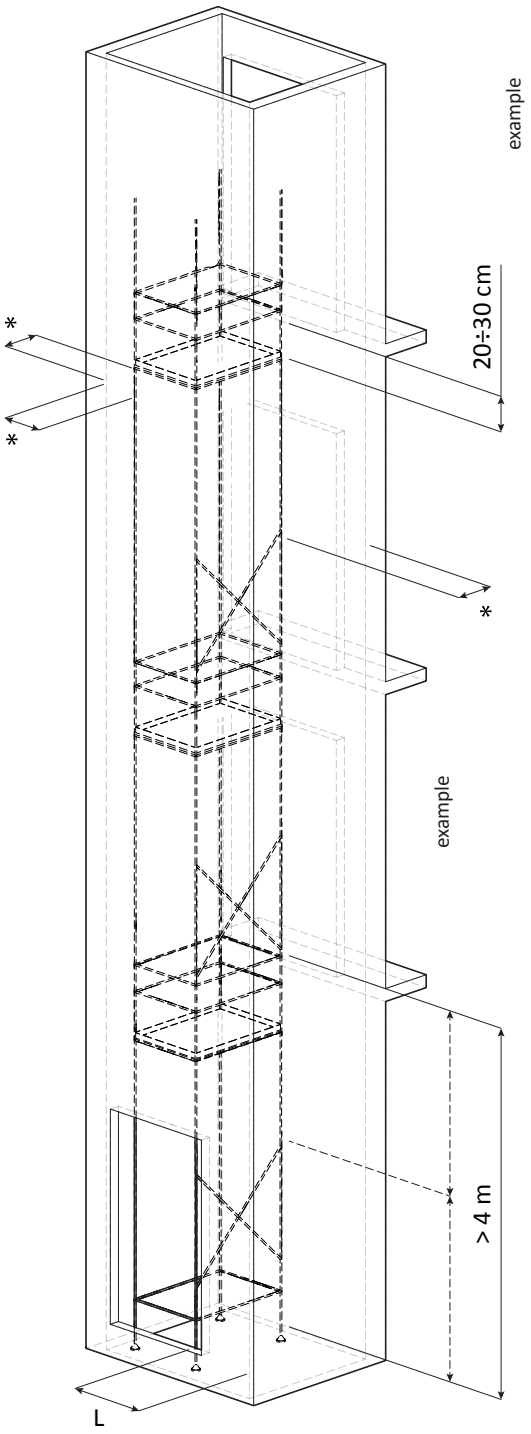
Assemble the scaffold INSIDE THE SHAFT where the system is to be installed (even in the case of a shaft in a metal frame). Install the scaffold in such a way that the guides can be moved inside the shaft.



The scaffold must be assembled according to the following characteristics:

- Use anti-slip panels with anti-tip stops;
- Keep the distance from the shaft walls as per the project drawing.
- If the distance between the scaffold and the shaft walls is > 20 cm, install the fall protection parapets;
- It is necessary to provide a support surface 20+30 cm below each stop;
- If the distance between one floor and another is > 4 m, an intermediate support surface must be provided in the scaffold.

NOTE: The images are purely indicative, check the design drawing for correct positioning of the scaffolding.



∗ = indicated on the project drawing
L = machine width

5.6. PREPARING THE ELECTRICAL SYSTEM BEFORE THE PLATFORM

⚠ WARNING

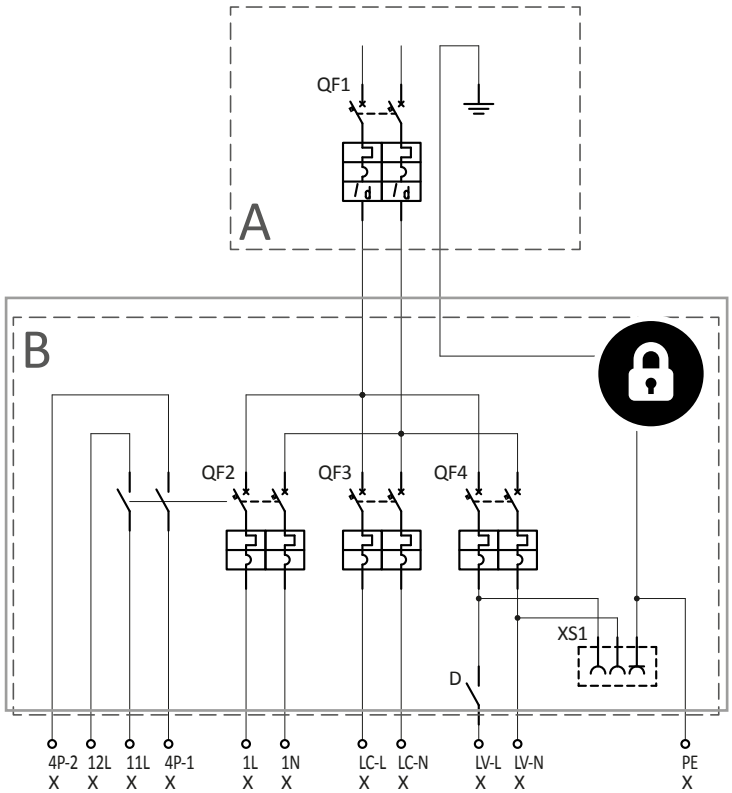
DANGER OF CRUSHING BY MOVING PARTS: The power supply board for platform **"B" MUST be** lockable, to prevent accidental starting of the system, in the presence of personnel inside the shaft.

The Power Supply Board (also known as Machine Room Electrical Board) must be installed in the machine room or close to the electrical cabinet: this can be supplied by LIFTINGITALIA (optional), or by the Customer.

Whenever the Power Supply Board is supplied by the Customer, it must match the following requirements:

- it must be realized in full compliance with the following electrical scheme and each component must be dimensioned in accordance with the electrical features of the lift;
- it must be equipped with protection devices in compliance with the mains supply on site and the related short circuit current, as per CEI 64-8 and subsequent rules (an adequately sized main magnetothermic switch and a 30mA safety differential);
- when calculating the wiring up to the control board and the safety devices, the installer must take into consideration that the minimum cable section must be 2,5mm^2.

Upon the installation of the power supply board, check the correct installation and register the procedure as per **chapter 2.1** of the manual "**Final Check Procedures**".



Legend:	
A	general power supply board
B	lift power supply board (lockable)
QF1	bipolar magnetothermic switch for power supply line
QF2	magnetothermic switch for motive power. Auxiliary contacts for battery exclusion (4P-1, 4P-2) and UPS exclusion (IF FORESEEN, 11L-12L)
QF3	bipolar magnetothermic switch for car lighting
QF4	bipolar magnetothermic switch for shaft lighting (IF FORESEEN) and XS1 socket
XS1	socket
D	shaft lighting deflector (IF FORESEEN)

⚠ WARNING

ELECTRICITY HAZARD: The lighting and power supply systems must correspond to the needs of the system and the regulations in force. Check that it is properly grounded. **If they do not meet all the requirements, interrupt the installation until the installation has been taken to compliance**.

5.7. INTERCOM DEVICE INSTALLATION

La fornitura standard prevede un dispositivo che permette la comunicazione bidirezionale citofonica tra cabina e locale macchine. In considerazione però dell'impiego principale di queste piattaforme (trasporto di persone disabili in edifici privati), la LIFTINGITALIA S.r.l. consiglia l'installazione di un dispositivo con comunicazione bidirezionale a contatto permanente con un servizio di soccorso (telesoccorso). Nel caso sul luogo d'installazione della piattaforma non sia presente una rete telefonica fissa, occorrerà prevedere un sistema GSM per il funzionamento del telesoccorso.

5.8. GENERAL CHECKS

a. SHAFT: GENERAL CHECK PROCEDURES

The shaft must be compliant with the national regulations and must be able to bear the forces deriving from : the lift, the guide rails during the safety devices intervention, the loading-unloading operations etc.
The shaft must have the following features.

- Walls must be plastered in full height;
- Plumb tolerance must be +2,5 cm for each side, in full height (unless differently stated in the project specification);
- Concrete pit bottom must be able to bear loads indicated in the project drawing;
- Water-proof pit bottom against water damage;
- Presence of wiring passages and hydraulic pipeways, plus smoke discharge openings (if foreseen);
- The shaft cannot be used differently: therefore no foreing objects, devices or cables can be stored therein.

b. SHAFT VERTICAL DIMENSION: CHECK PROCEDURES

The following dimensions must be checked:

- Travel
- Headroom
- Pit
- Landing door openings
- Plumbing

The dimensions must be compliant with the project drawings (shaft section).

c. PLAN SHAFT DIMENSION: CHECK PROCEDURES

The following dimensions must be checked

- Width
- Depth
- Square
- Landing doors position

The dimensions must be compliant with the project drawings (shaft plan).

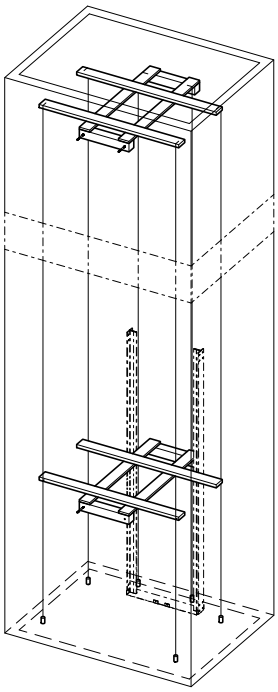
C. VERMACHINE ROOM: CHECK PROCEDURES

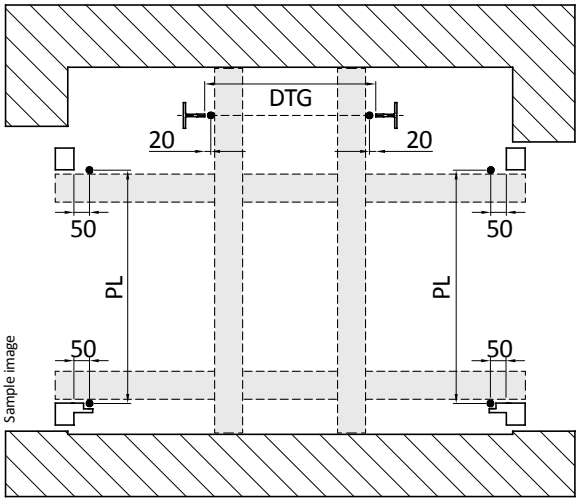
The machine room (where the control cabinet will be placed) must have the following features:

- Protection against bad weather and humidity;
- Temperature range between +5 and +40°C;
- The area in front of the entrance door must be clear and accessible as per the project drawings;
- Presence of wiring passages and hydraulic pipeways, plus smoke discharge openings (if foreseen);
- Sufficient height and light;
- The machine room cannot be used differently: therefore no foreing objects, devices or cables can be stored therein.This paragraph must be strictly applied to the electrical cabinet if it is used as machine room;
- The lighting and power supply equipment must comply with the features of the lift as well as with the current regulations. Check the grounding.

6. MECHANICS - ASSEMBLING

6.1. GUIDES POSITIONING - FINDING VERTICAL POINTS WITH A PLUMB BOB





INFORMATION

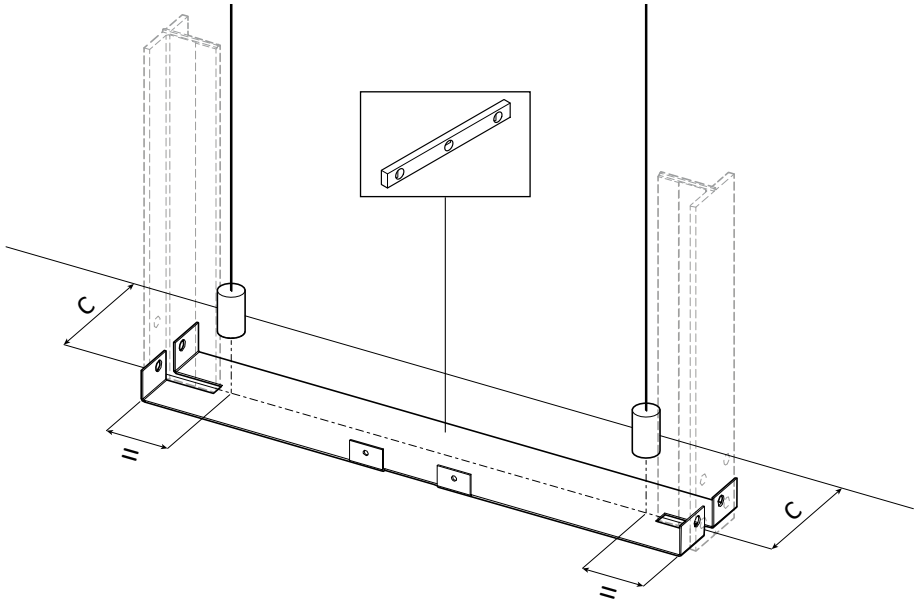
The images are indicative, so the plumb positioning must be checked using the project drawings, in order to estimate the plumbing axes position.

- Position and fix the wooden axes in the upper part of the shaft.
- Low down the guide rail plumbs.
- Low down the door plumbs.
- Check the exact position of the plumbs and fix them downwards.

6.2. BASE TEMPLATE - POSITIONING

INFORMATION

This operation must be carried out correctly, to avoid complication during the frame and car installation. The correct distance between the landing and car doorsteps.



- align the template with the plumbs;
- check the distance between the wall and the template, using the project drawing;
- check the distance from the door flush, using the project drawing;
- center the bubble with the template, add shims if needed.

C = check on the project drawing.

GUIDE RAILS ASSEMBLY

6.3. GUIDE RAILS - ASSEMBLY

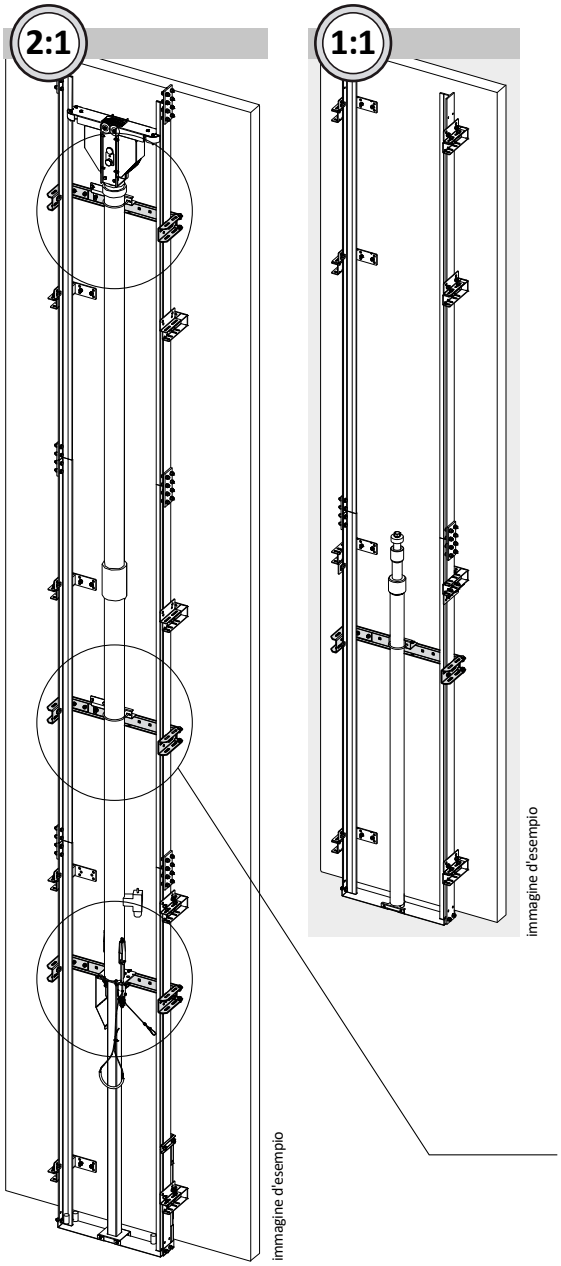
NOTICE

Guide rails assembly and adjustment must be carried out carefully.
For a correct and plumbed guide rails positioning, pay attention to the steps described in this Manual.

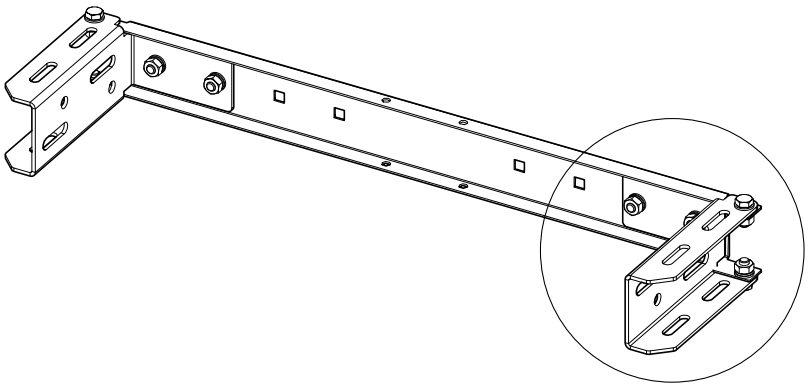
INFORMATION

This Manual mainly describes the guide rail brackets assembly in a concrete shaft by means of screw anchors. The installation by means of other systems (chemical anchors, in-built brackets and wire passages, welded blackets etc.) can be done following the below figures.

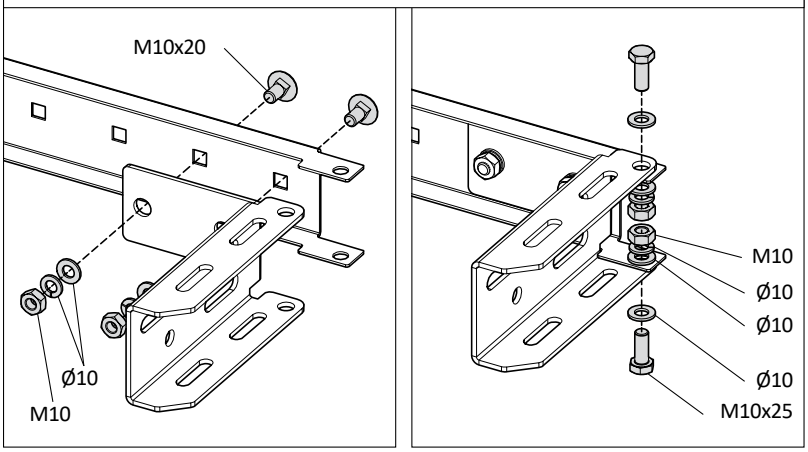
CYLINDER FIXING BRACKETS - PRE-ASSEMBLY



- Pre-assemble the brackets.



KIT F350.23.0006



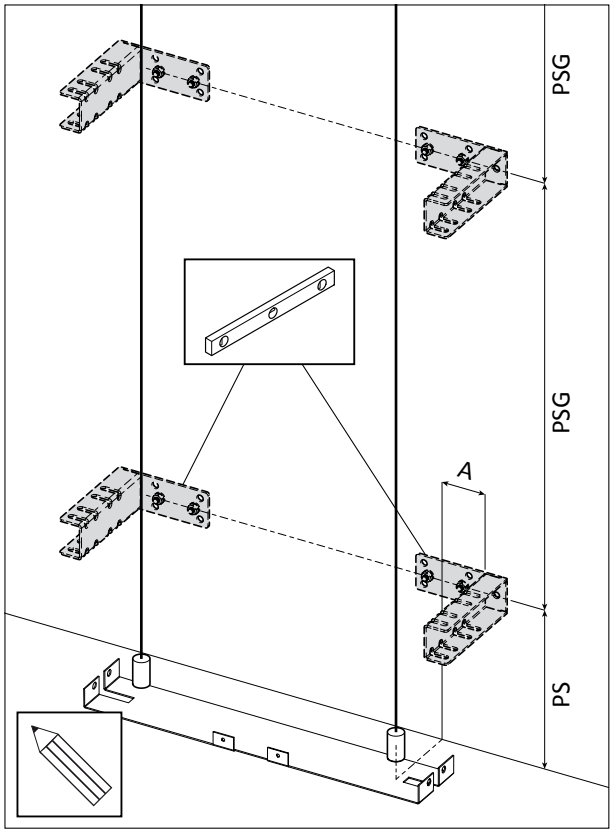
INFORMATION

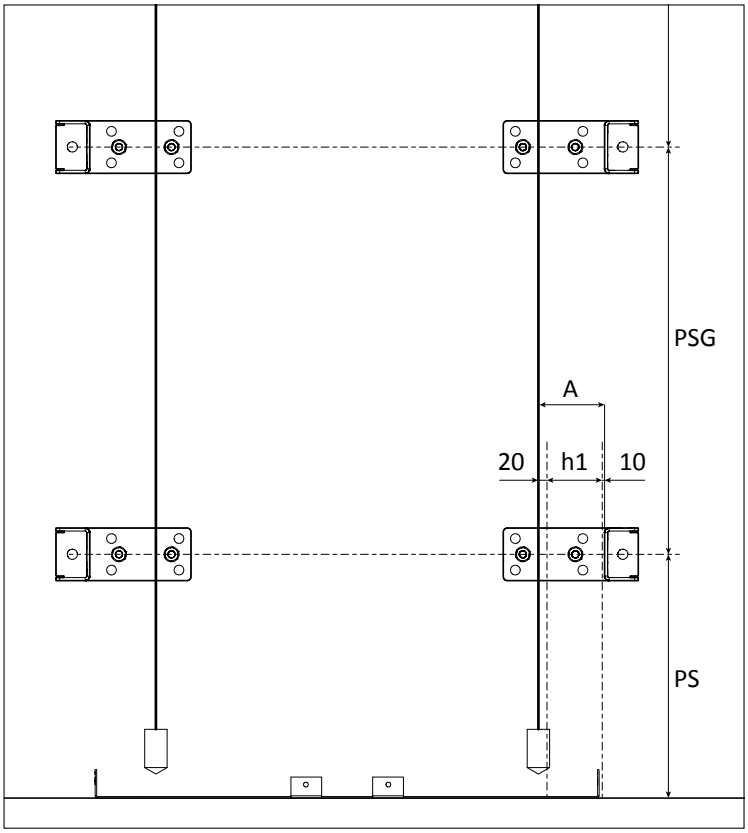
The third bracked is foreseen for travel > 9 m only.

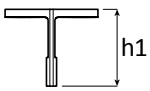
LIFTINGITALIA S.r.l.
Via Caduti del Lavoro, 16 - 43058 Bogolese, Sorbolo (PR) - Italy
Phone +39 0521.695311 - Fax +39 0521.695313

GUIDE RAIL FIXING BRACKETS - POSITIONING AND ANCHORING

- Check the position of the guide rail fixing brackets, using the project drawing.
- Mark the positioning points.



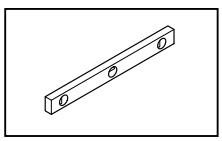


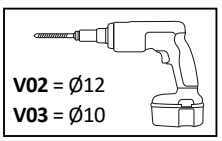
Legend:				
PS	Distance btw pit/ first guide rail fixing bracket		A	Guide rail height + 30 mm
PSG	Distance between guide rail fixing brackets		h1	Guide rail height 

- Drill the walls and fix the blackets.

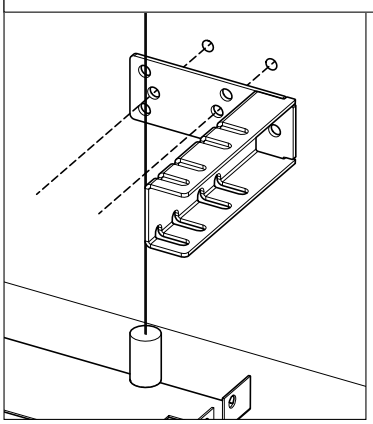
INFORMATION

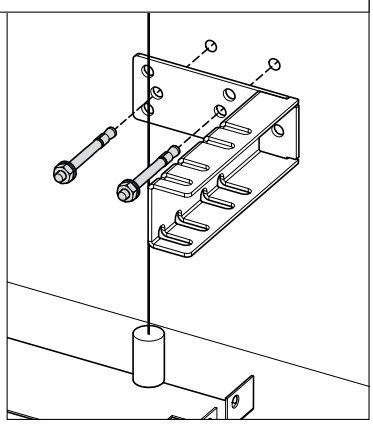
For chemical anchors use
KIT F350.23.0025 o 0026.





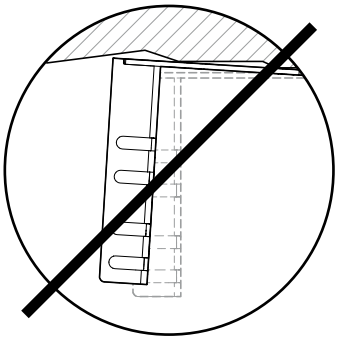
KIT F350.23.0010

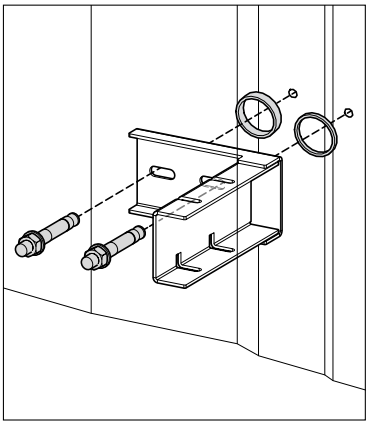


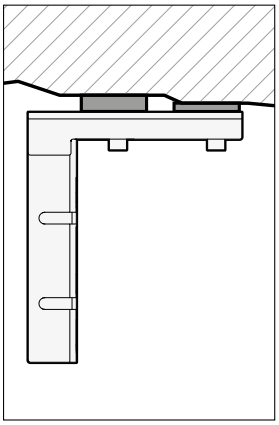


INFORMATION

IMPORTANT:
Check the PERPENDICULARITY of the brackets.
If necessary provide shims between walls and brackets.



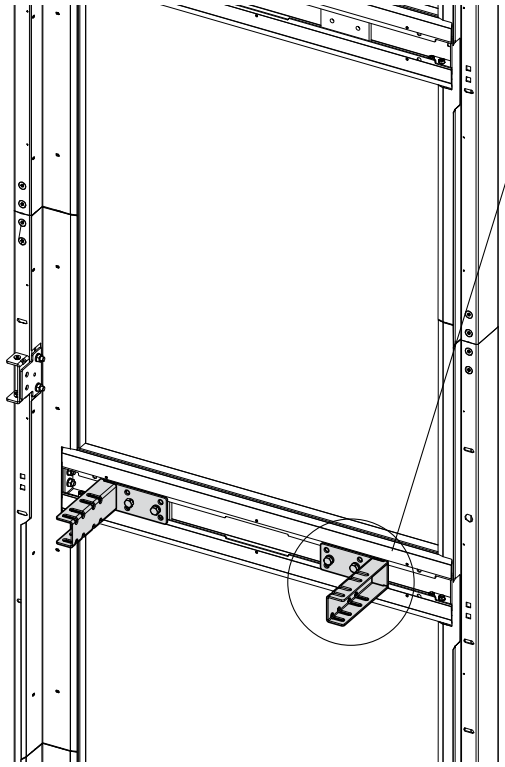




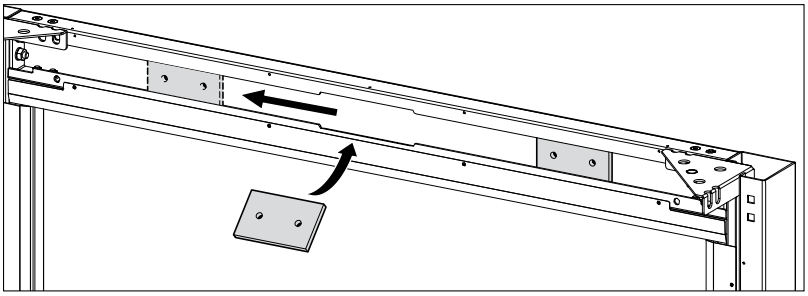
INFORMATION

In case of metal structure, the machine side cladding must be mounted before starting to assemble the guide rails.

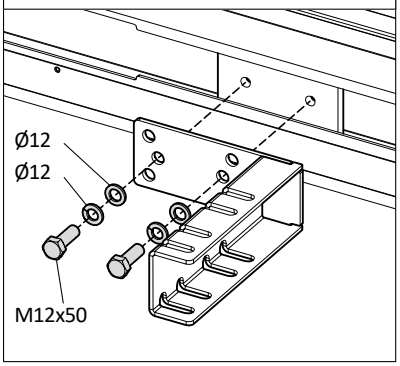
- Check the position of the guide rail fixing brackets on the project drawings, the proceed with assembly.

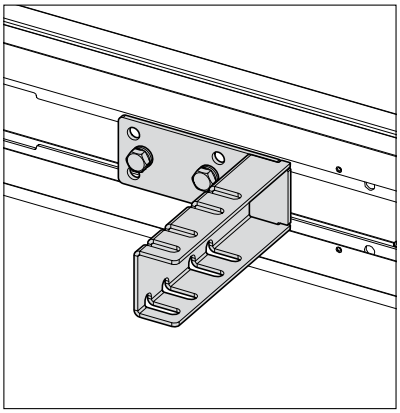


GUIDE RAIL FIXING BRACKETS ASSEMBLY

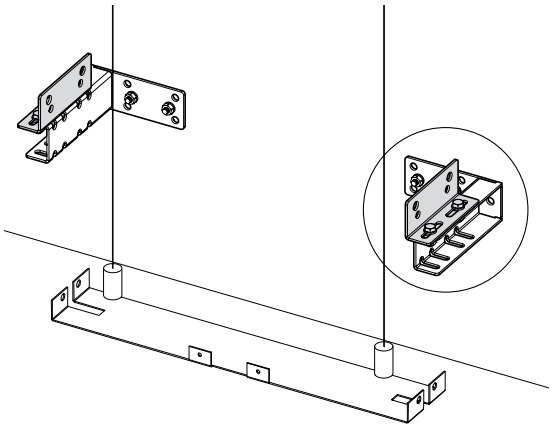


KIT S001.23.0003

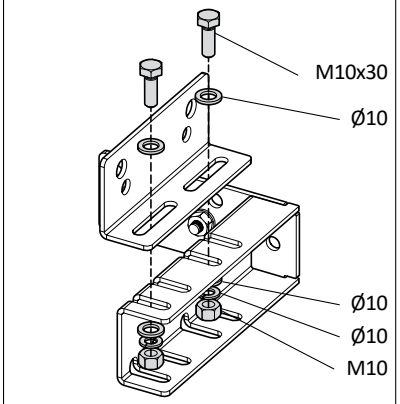


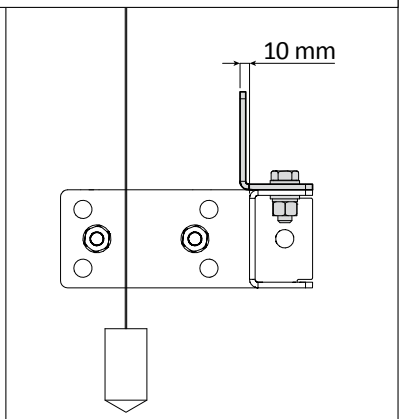


GUIDE RAIL BRACKETS - ASSEMBLY



KIT F350.23.0010



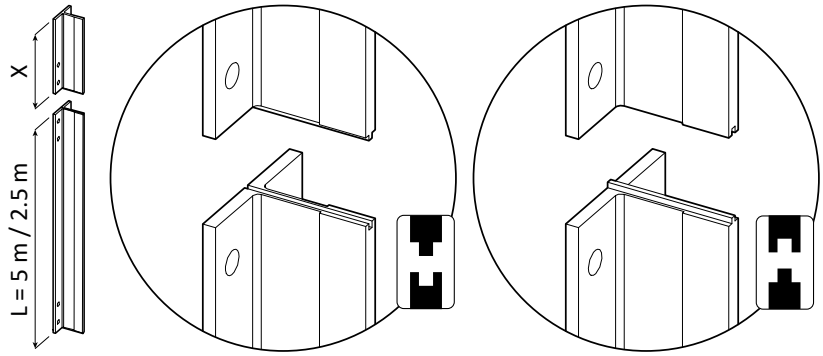


INFORMATION
For chemical anchors fixing use nuts and bolts of **KIT F350.23.0016**
Do not fasten the screws to end, since guide rail fixing bracket adjustment will be necessary.

GUIDE RAILS - ASSEMBLY

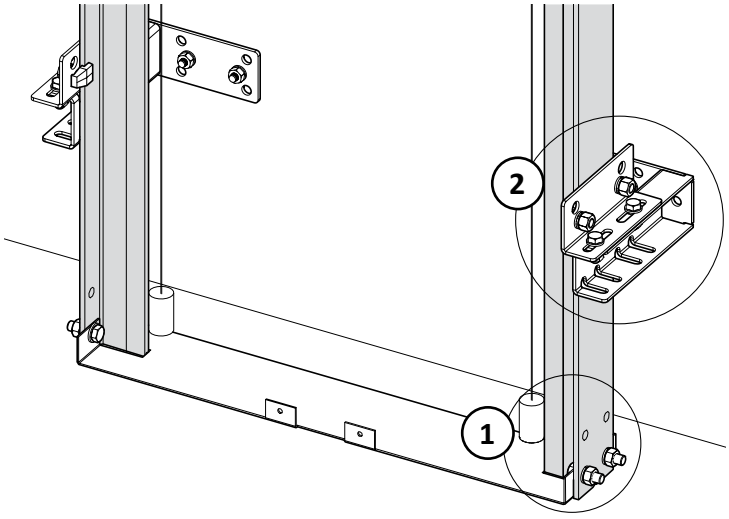
INFORMATION

Example: if the short piece with a tap joint is to be positioned above, all the guide rails must be positioned with the tap joint down.



INFORMATION

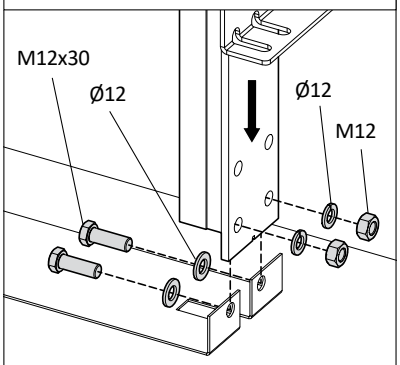
La sequenza di montaggio delle guide (intere o spezzoni) deve essere rilevato dal disegno di progetto.



- Fix the first two guide rails in the pit, onto the brackets previously mounted.

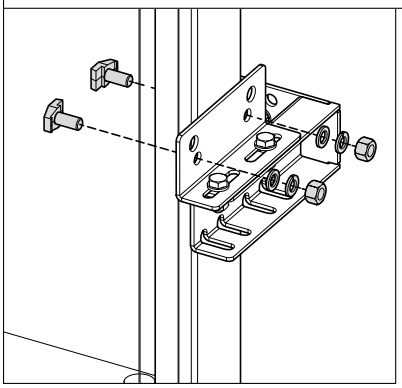
1

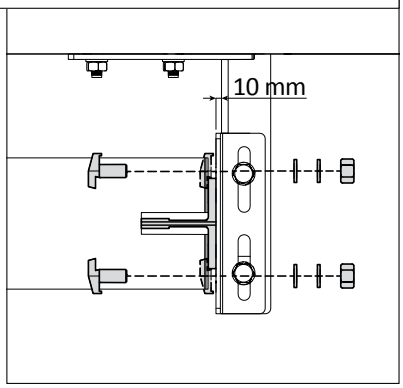
KIT F350.23.0008



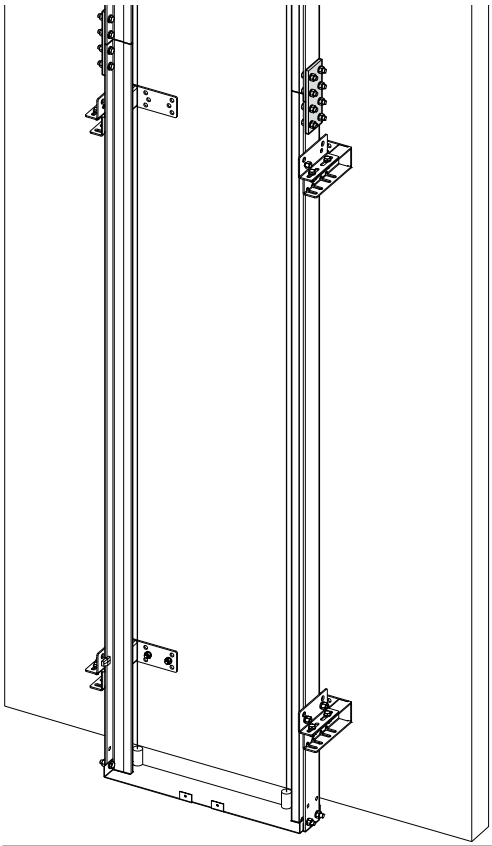
2

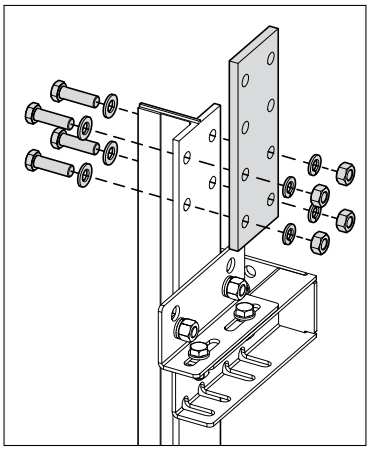
KIT V0301.04.0001

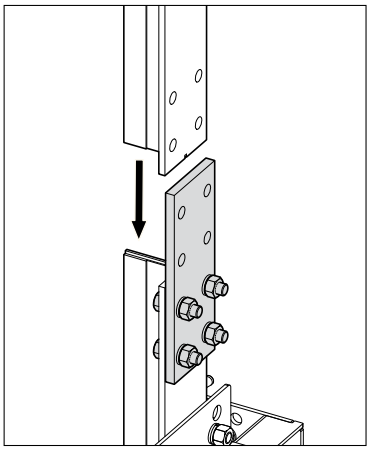


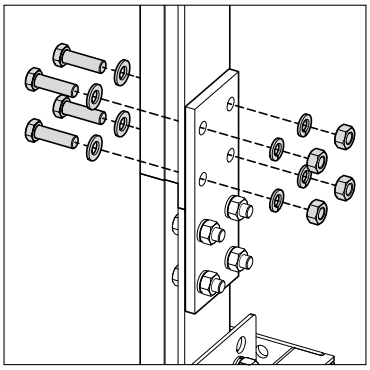


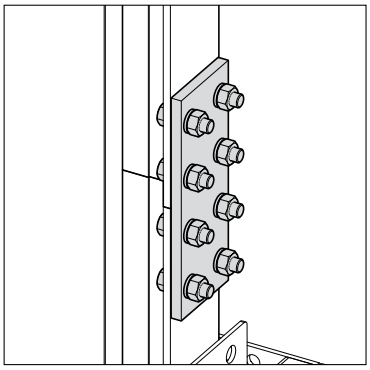
- Joint the guide rails using the plates and nuts and bolts supplied with the lift.







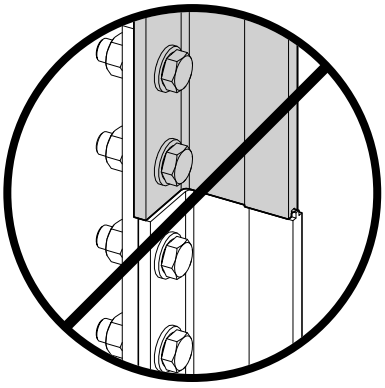


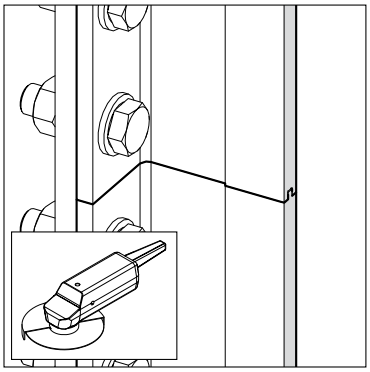


INFORMATION

Check that the sliding surfaces of the guides are perfectly coplanar and aligned and do not have any bumps or burrs.

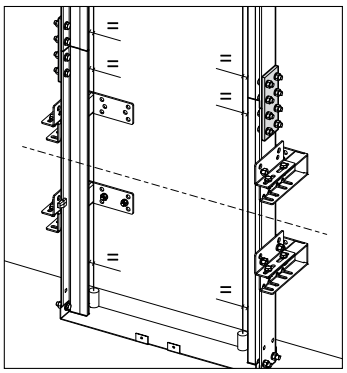
In case of imperfections that cannot be corrected by repositioning, smooth the surfaces until they are perfectly coplanar.

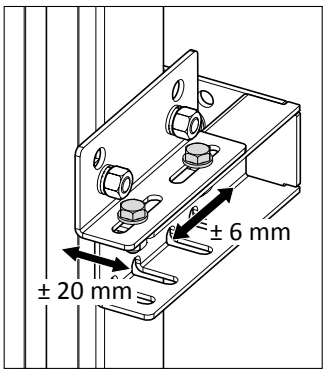




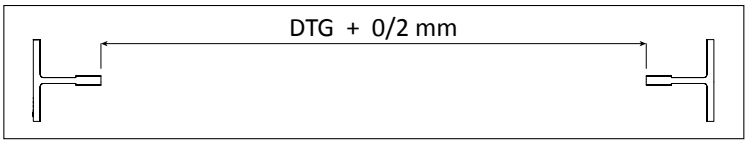
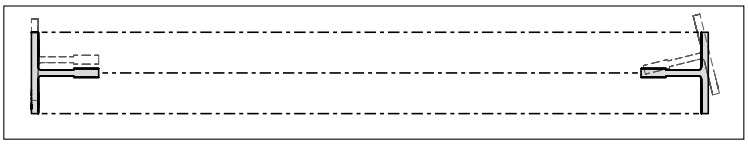
INFORMATION

Check the guide rails alignment using the plumb.





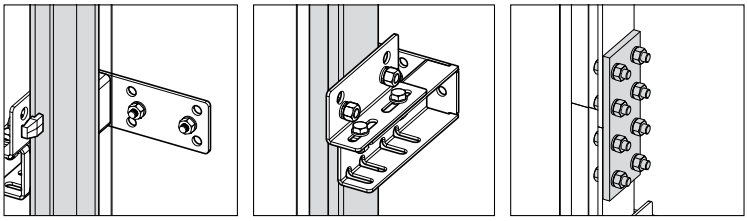
GUIDE RAILS - ALIGNMENT CHECK

INFORMATION	
Check if the distance between the guide rails (DTG) matches the value stated in the project drawing.	
Check the collinearity and parallelism between the guide rails.	

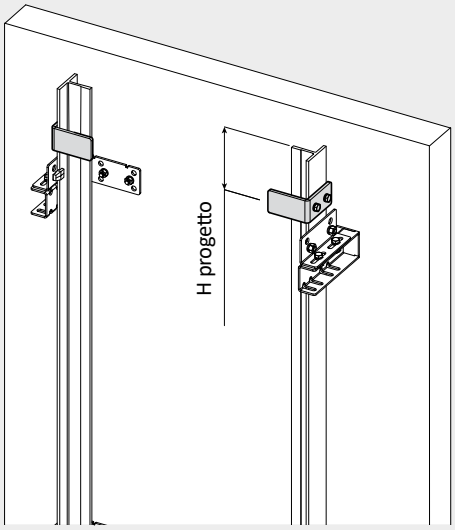
- Proceed with the assembly up to the last upper guide rail pieces.

FASTEN THE SCREWS

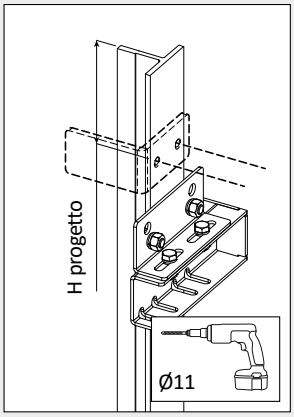
- Fasten the screws to end.

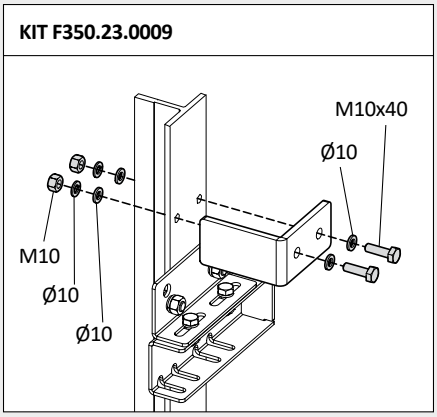


1:1



- Assembly the mechanic blocks to the far ends of the guide rails, following the instructions stated in the project drawings. Use the blocks as templates.

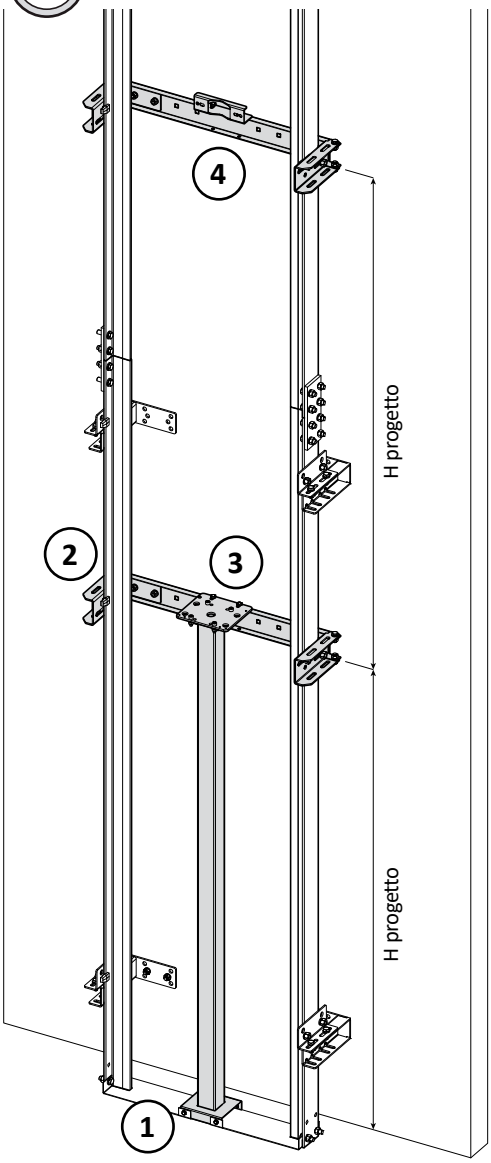




7. CYLINDER AND ROPES - INSTALLATION

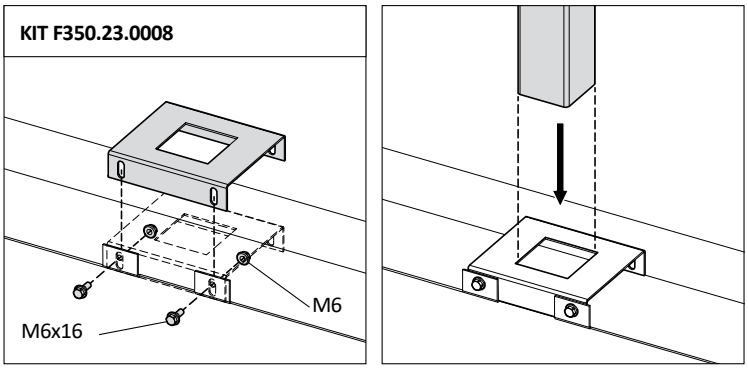
7.1. CYLINDER - PRE-ARRANGEMENT FOR POSITIONING

2:1

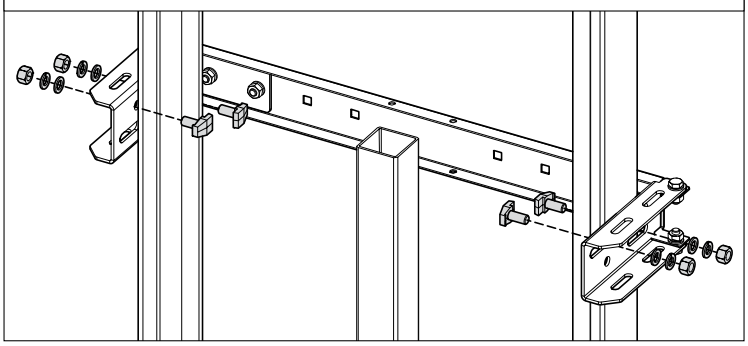


- Place the prop centering on the template.
- Position the prop inside the centering plate.
- Fix TEMPORARILY the cylinder fixing brackets to the guide rails at the height stated in the project drawing.
- Mount the cylinder centering onto the top of the prop.
- Mount the cylinder fixing bracket.

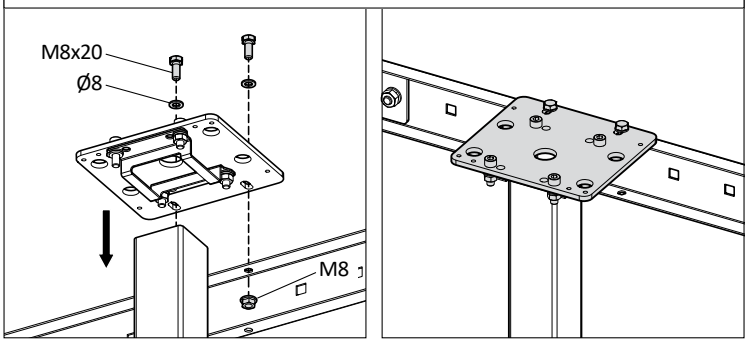
1 **KIT F350.23.0008**



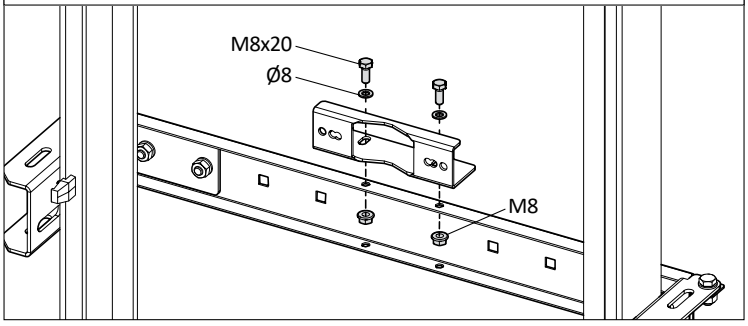
2 **V0301.04.0001**



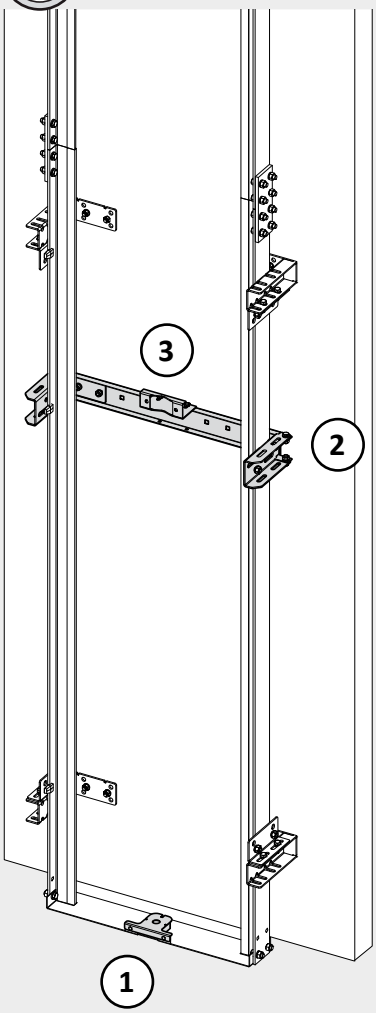
3 **KIT F350.23.0006**



4 **KIT F350.23.0006 + KIT F350.23.0014**

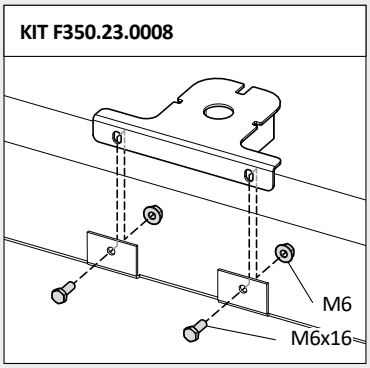


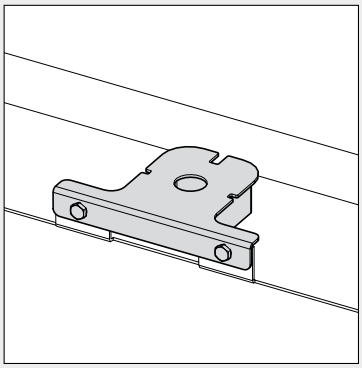
1:1



- Place the cylinder centering on the template.

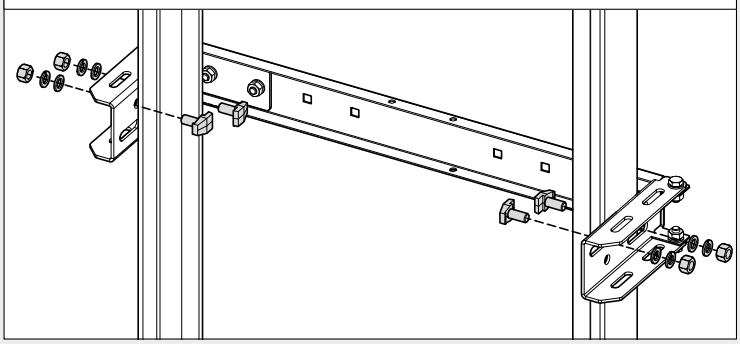
1 **KIT F350.23.0008**





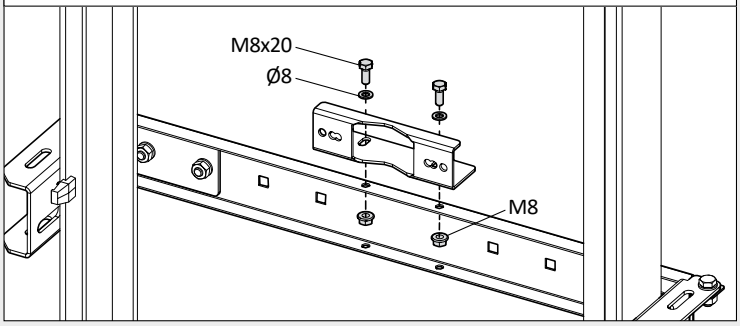
- Fix TEMPORARILY the cylinder fixing brackets to the guide rails at the height stated in the project drawing.

2 **V0301.04.0001**

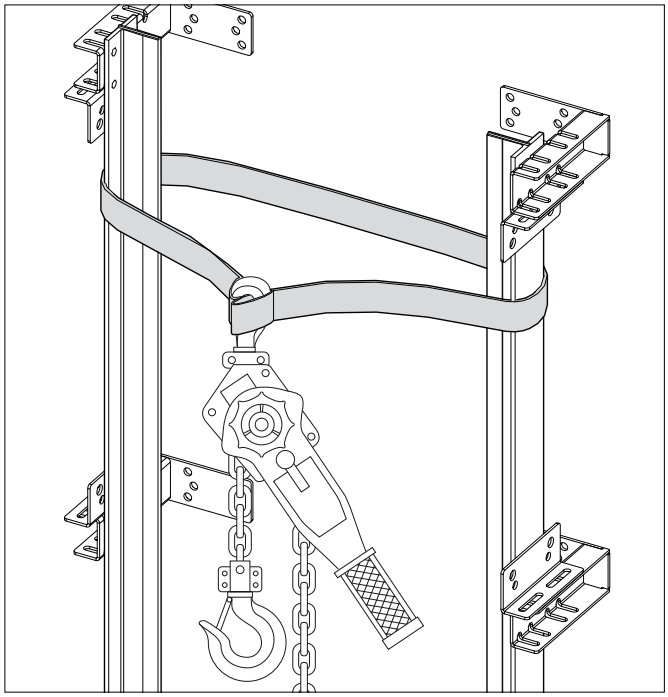


- Mount the cylinder fixing bracket.

3 **KIT F350.23.0006 + KIT F350.23.0014**



7.2. CYLINDER - POSITIONING

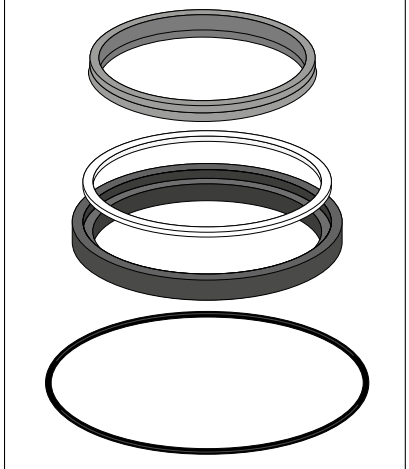


INFORMATION

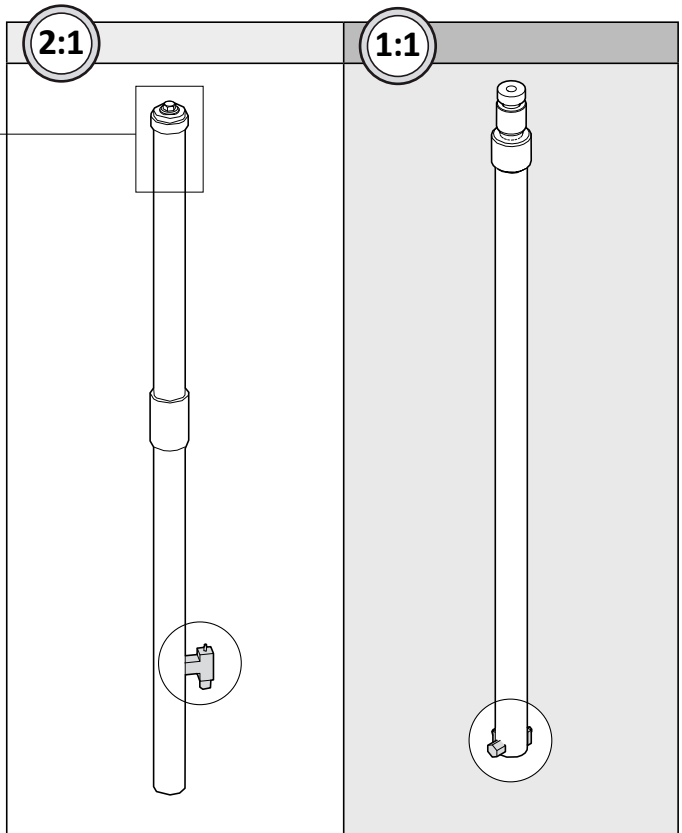
Provide a hook system for moving heavy loads.
Hook a lifting belt aroung the guide rails, above one of the upper bracket layers, and fix the hoist thereto.

INFORMATION

KIT Q301.23.0001



RISK OF OIL LEAKAGE:
At this stage it is recommended to replace the gasket pack of the cylinder head, which may have been deformed due to storage in a horizontal position. The additional kit is included in the supply.

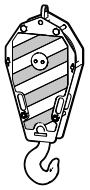


Check if the safety valve has been assembled on the cylinder. Otherwise assemble the valve, following the instructions available inside the hydraulic unit package.

2:1

⚠ CAUTION

DANGER OF CRUSHING:
Lift the cylinder using suitable lifting gear and always wear safety shoes and clothing.



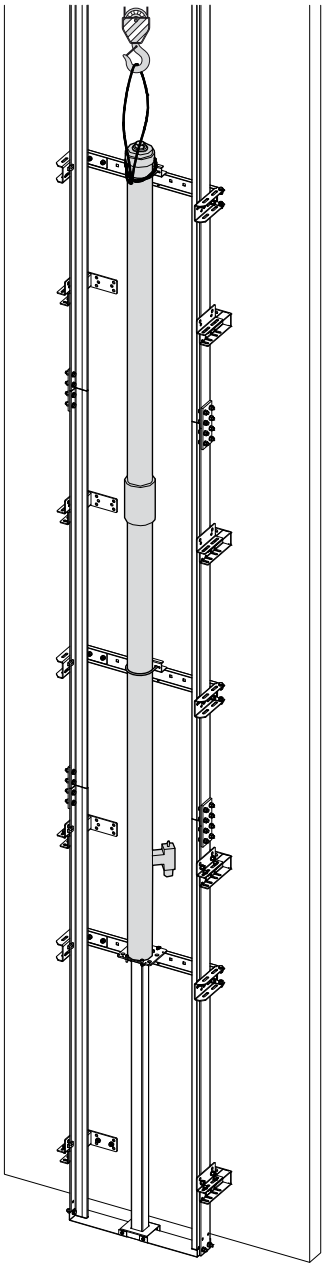
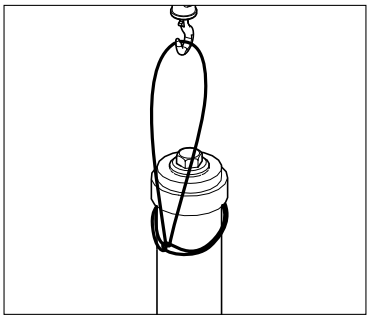
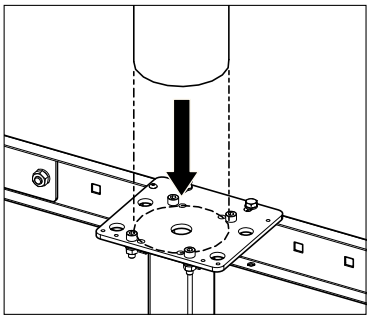


immagine d'esempio

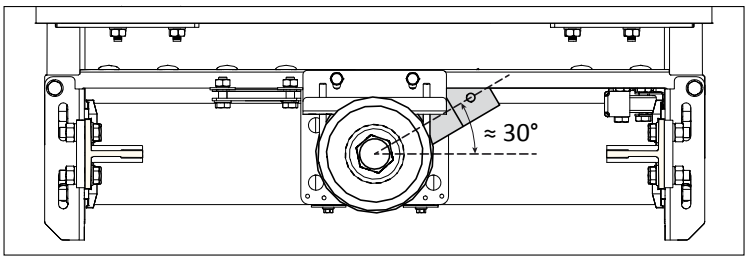
- Lift the cylinder and sling it by the top.
- Position the cylinder in the centering plate.

NOTE: For 2-piece cylinders: joint the pieces, following the instructions available inside the hydraulic unit package.



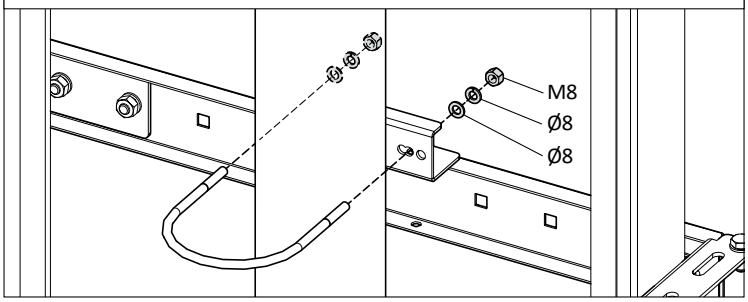


NOTE: Position the cylinder in a way that the valve is at a 30° angle to the guide rail axis, towards the guide rail fixing side.



- Fix the U-bolt without fastening the screws.

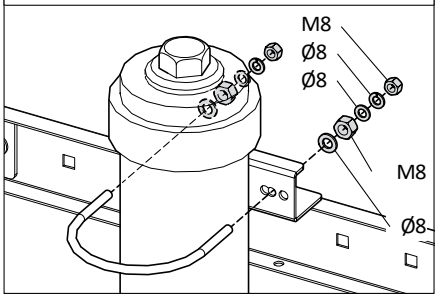
KIT F350.23.0014



INFORMATION

If the screw of the U-bolt is not sufficiently long, add another screw as shown, in order to fasten it.

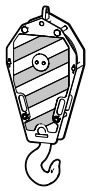
KIT F350.23.0014



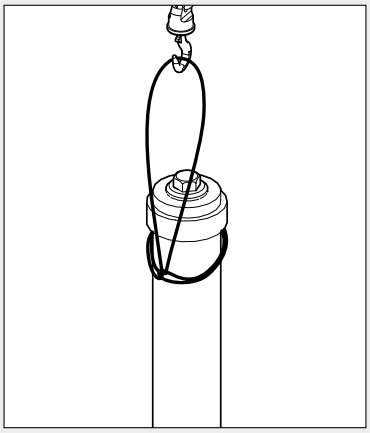
1:1

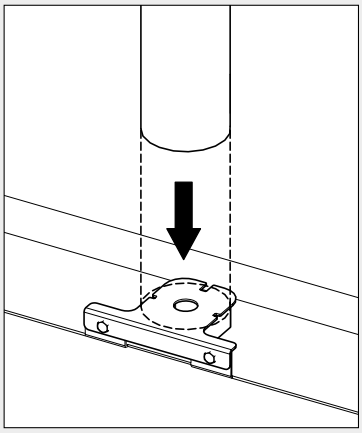
⚠ CAUTION

DANGER OF CRUSHING:
Lift the cylinder using suitable lifting gear and always wear safety shoes and clothing.

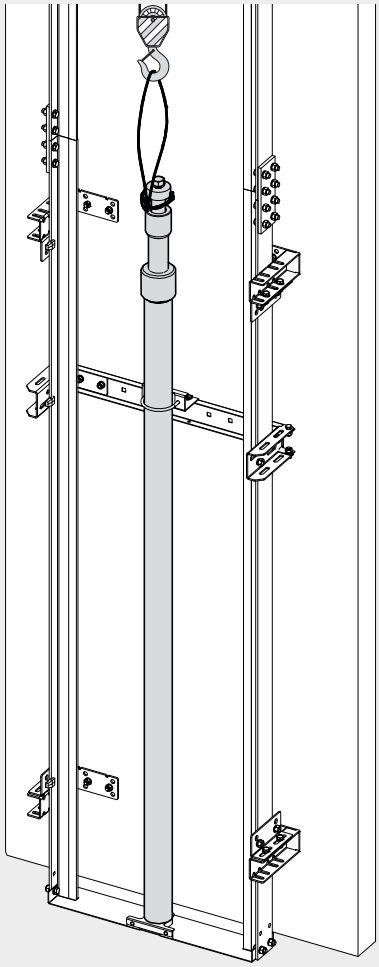


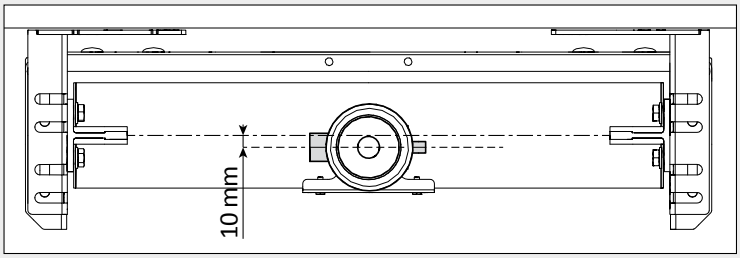
- Lift the cylinder and sling it by the top.
- Position the cylinder in the centering plate.





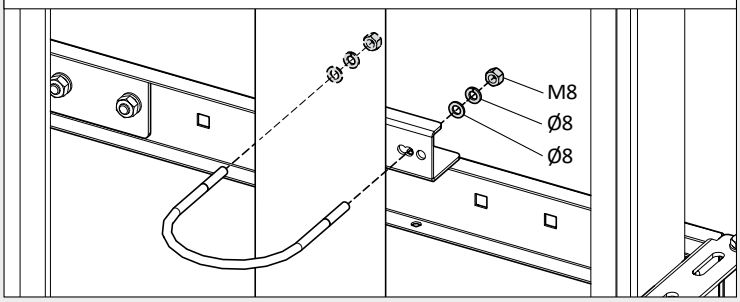
NOTE: Position the cylinder in a way that the valve is parallel to the guide rail axis, the axis being shifted by 10 mm towards the car.





- Fix the U-Bolt without fastening the screws.

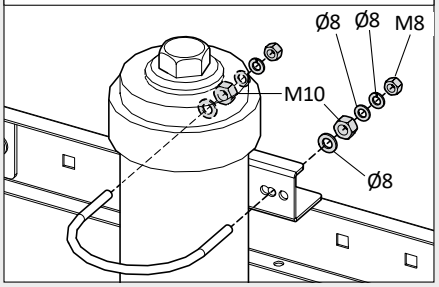
KIT F350.23.0014



INFORMATION

If the screw of the U-bolt is not sufficiently long, add another screw as shown, in order to fasten it.

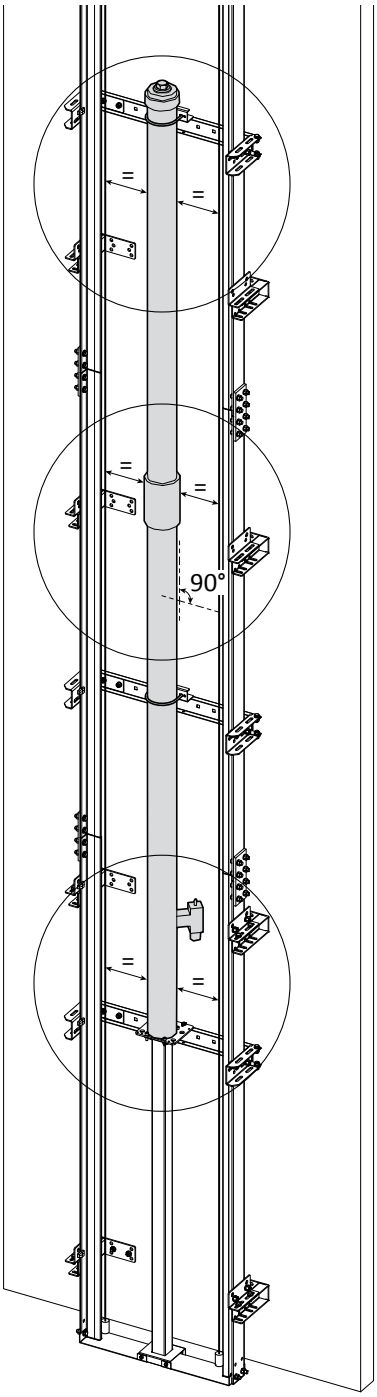
KIT F350.23.0014



CYLINDER - ALIGNMENT CHECK

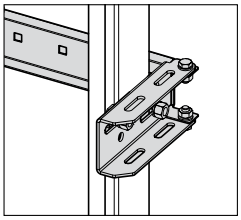
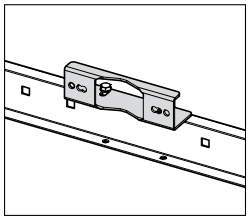
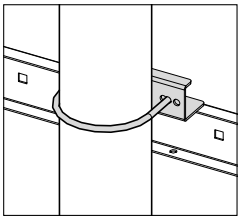
INFORMATION

Check if the cylinder is aligned with the plumb line.



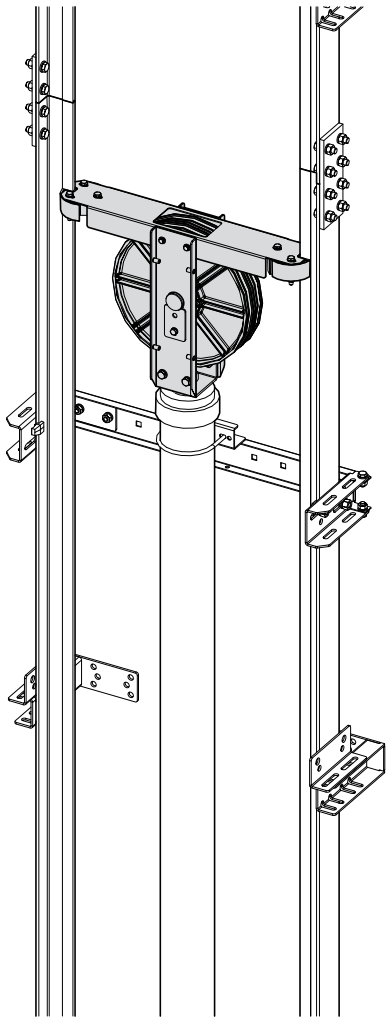
SCREWS TIGHTENING

- Serrare a fondo la viteria montata.

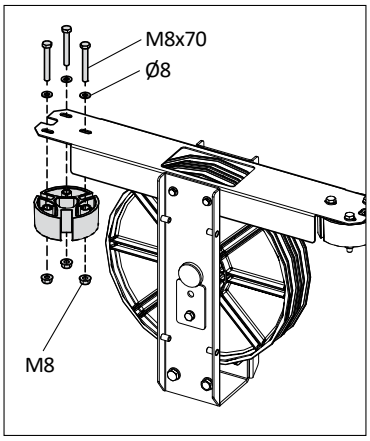




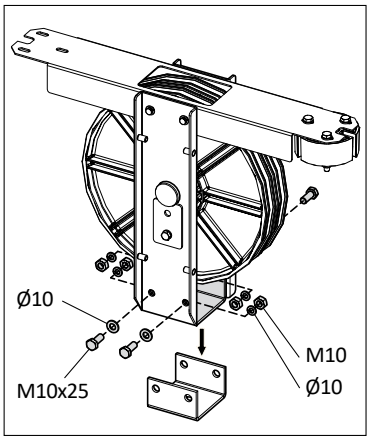
7.3. YOKE - POSITIONING

2:1

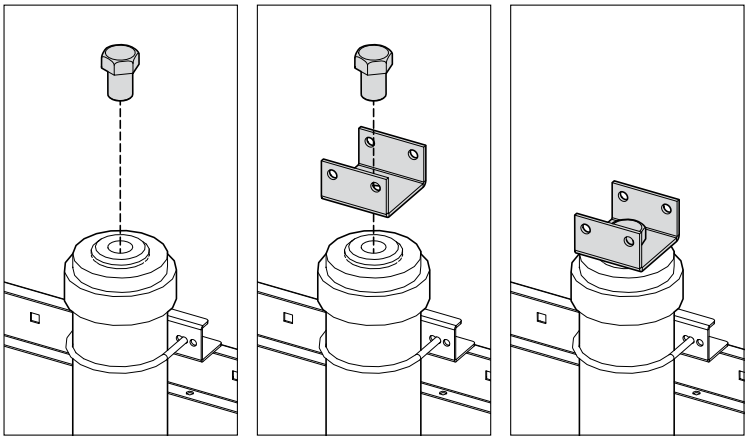


- Remove a siding shoe and the bottom plate from the yoke.

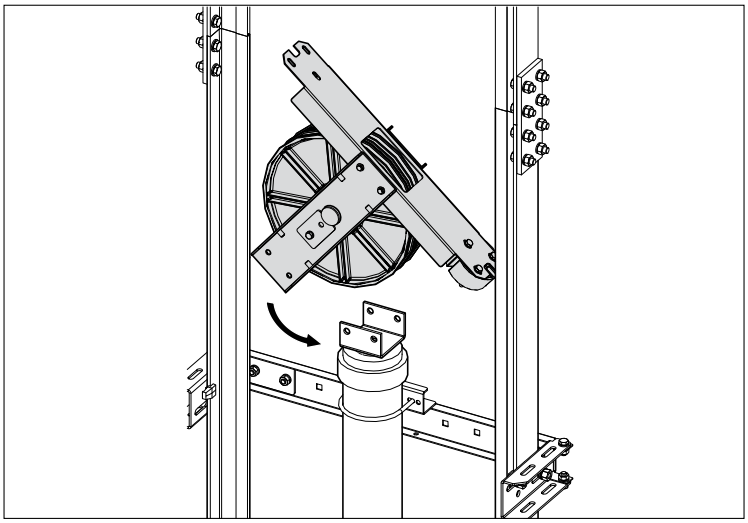




- Assembly the bottom plate onto the cylinder, using the screw.

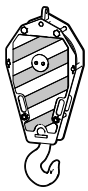


- Position the yoke.



⚠ CAUTION

DANGER OF CRUSHING:
Lift the yoke using suitable lifting gear and always wear safety shoes and clothing.

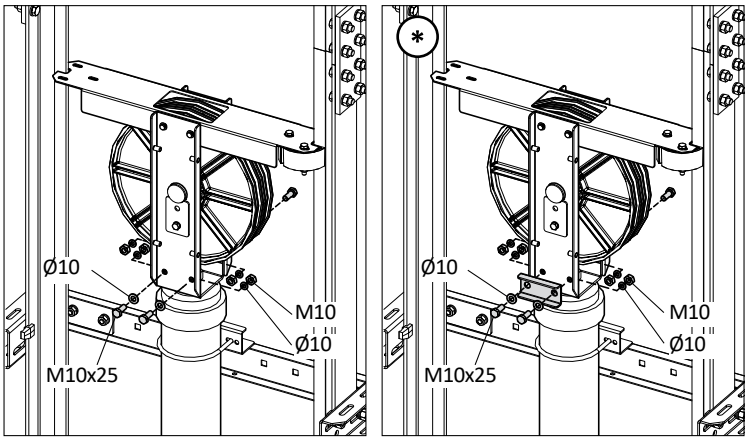


2:1

INFORMATION

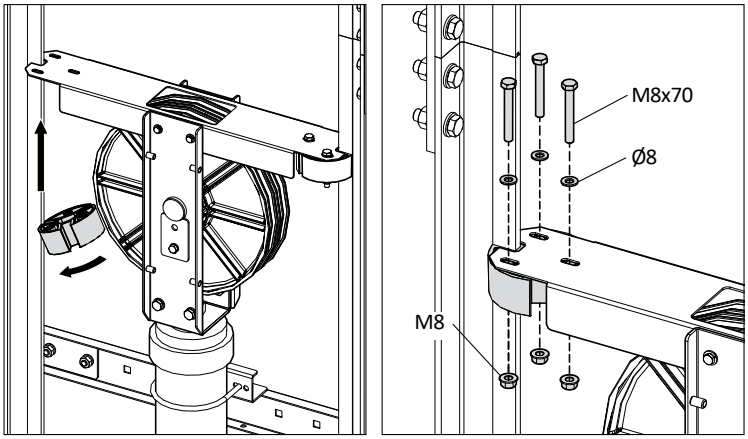
In case of reduced headroom installation, the headroom spacer bracket is required on the car side.

- Fix the yoke to the bottom plate, using the removed screws.

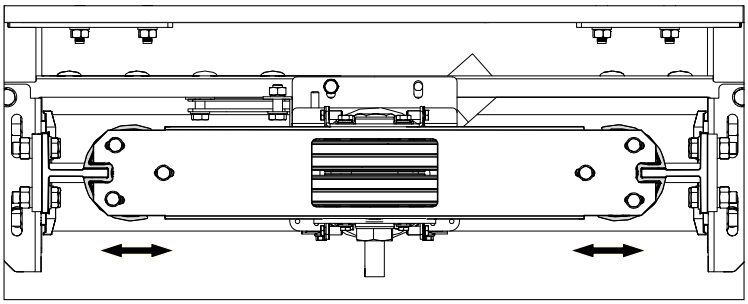


(*)

- Re-assembly the shoe, using the removed screws.

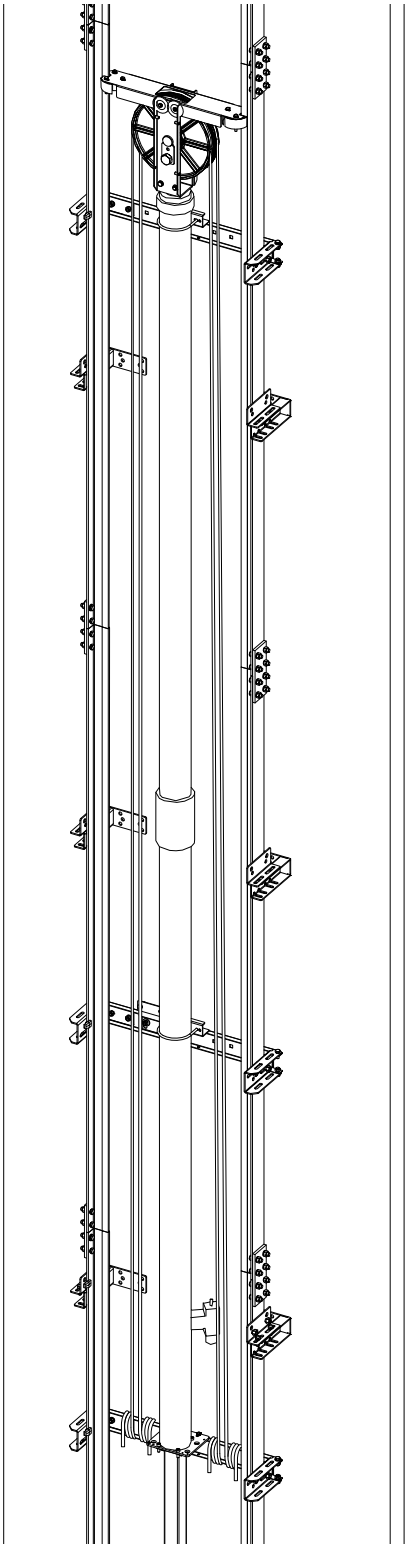


- Position the shoes at equal distance from the guide rails.The total play between shoes and rails must be 0.5÷1 mm.



7.4. ROPES - POSITIONING

2:1

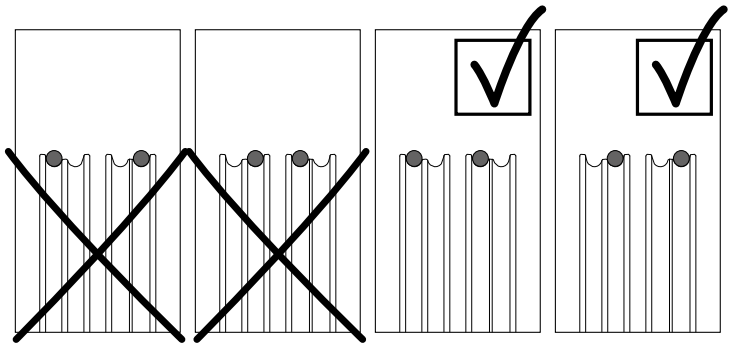


- Insert the ropes inside the pulley sheaves and lower them down to the lowest end of the cylinder.

INFORMATION

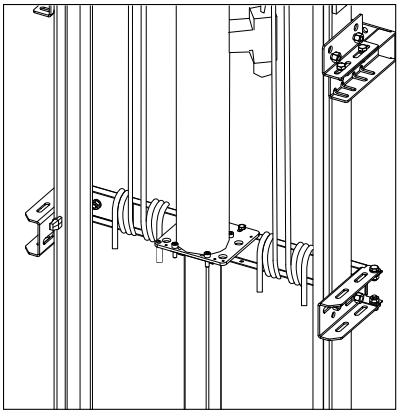
The pulleys are counter-rotating.

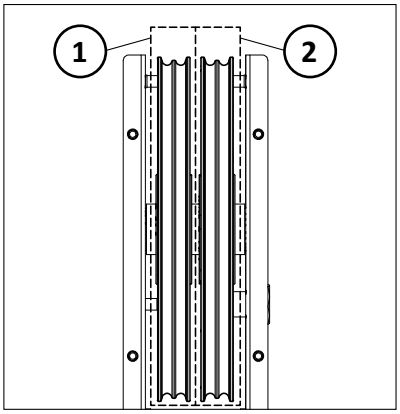
With 2 ropes: each of them is to be positioned onto a pulley leaving sheaves empty.



With 4 ropes: with the yoke head on, the ropes at the same side of the cylinder will be positioned onto the same pulley.

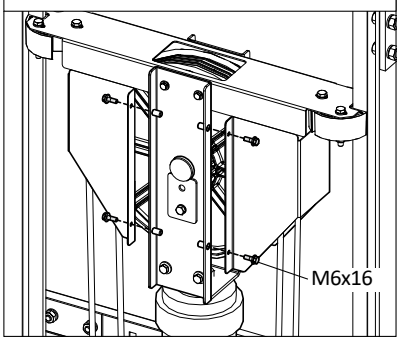
- The far endrs are to be temporarily fixed to the cylinder starting bracket.





- Assembly the protection guards.

KIT F350.23.0031



8. HYDRAULIC UNIT & CONTROL BOARD

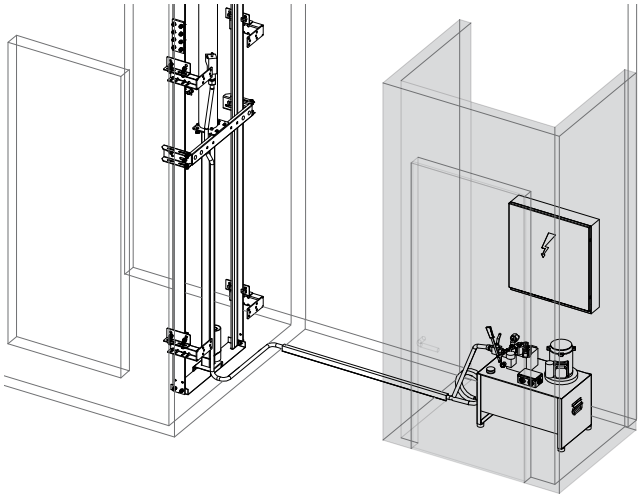
8.1. MACHINE ROOM PRE-ARRANGEMENT

WARNING

The related regulation requires that the Hydraulic Unit and the Control Board be positioned in a separate room (the so-called MACHINE ROOM) with a limited access. This measure is to prevent unauthorized personnel from accessing the equipment.

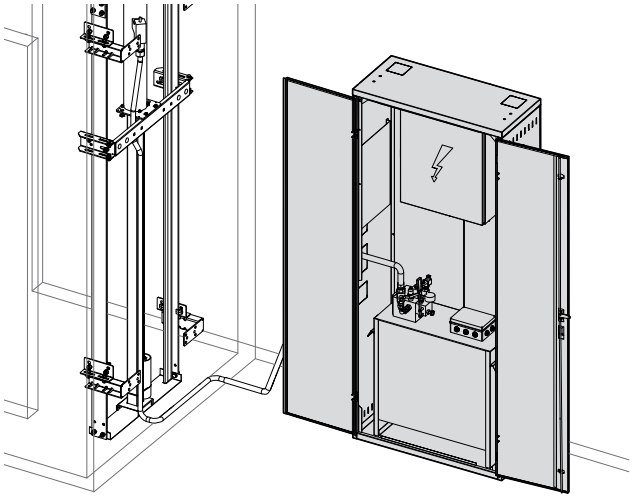
CASE 1 - MACHINE ROOM = ROOM LOCKED WITH KEY

The hydraulic unit and the control board (protected by a special box) are positioned inside the room.



CASE 2 - MACHINE ROOM = METAL CABINET

The cabinet accommodates both the hydraulic unit and the control board (without a special box).



INFORMATION

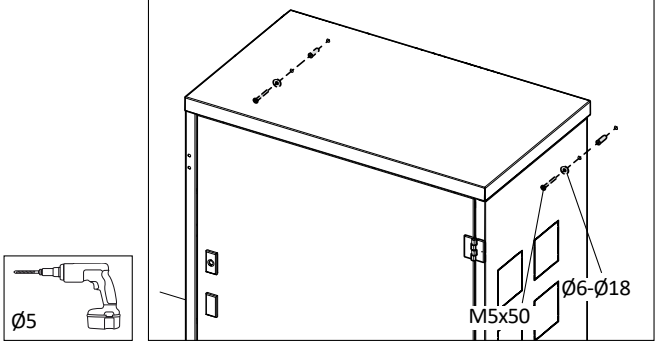
For cabinet assembly please refer to App. A2 and A3.

The area in front of the cabinet must be left clear, to guarantee an easy access to the authorized staff.

8.2. HYDRAULIC UNIT BOX POSITIONING

- Install the metal box as per attached instructions.
- Position and fix the box, in accordance with the project drawing.

KIT F350.23.0041

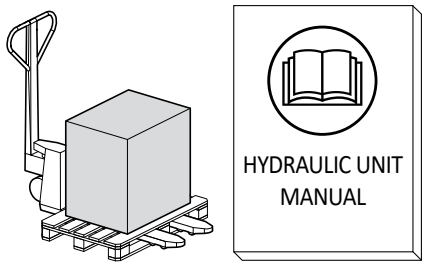


8.3. HYDRAULIC UNIT - POSITIONING

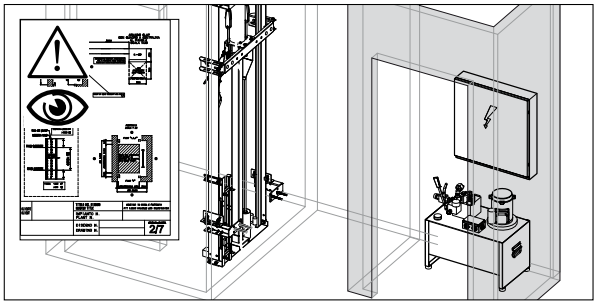
NOTA: The manuals related to the hydraulic unit and piston can be found in the hydraulic unit package (inside a plastic bag).

NOTICE

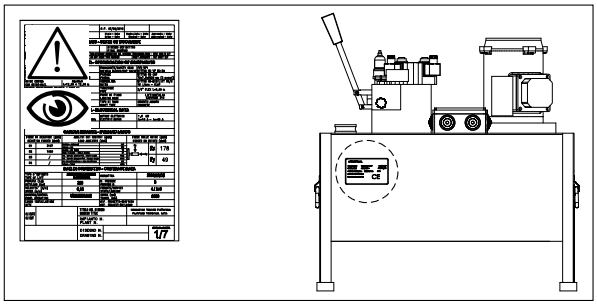
HYDRAULIC UNIT HANDLING:
To avoid damaging the tank and/or external tank components, always consult the specific instructions, when handling the hydraulic unit.



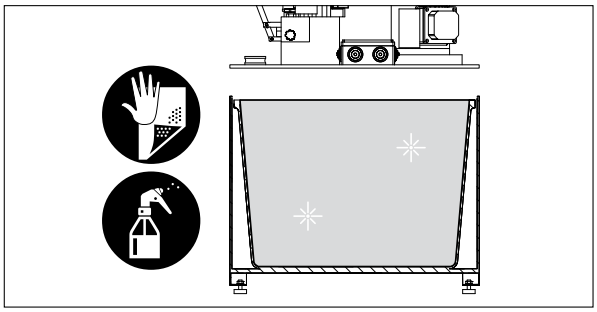
- Position the hydraulic unit as foreseen by the project drawing, checking for the pre-arranged machine room or a special cabinet.



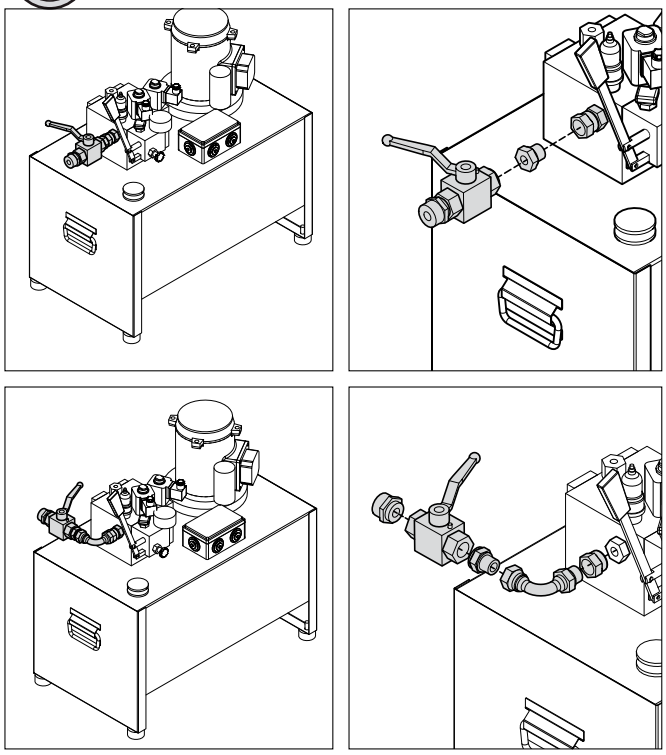
- Check if the data stated on the plate match the project drawing.



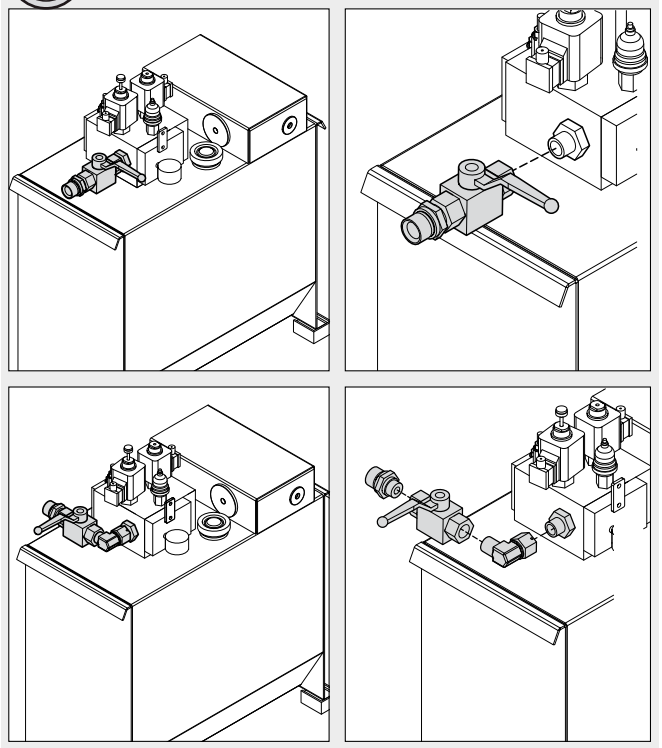
- Make sure the tank is perfectly clean, otherwise remove any traces of dirt using a cloth.



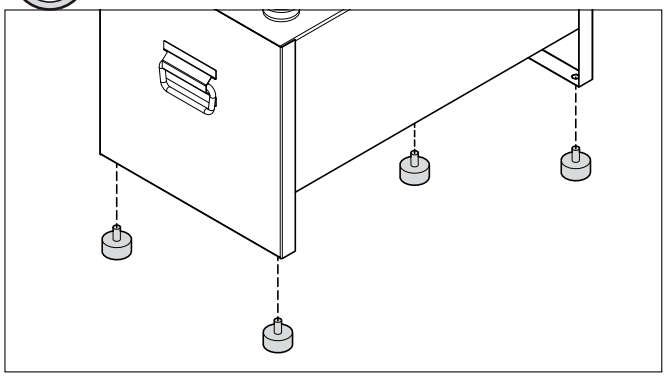
2:1



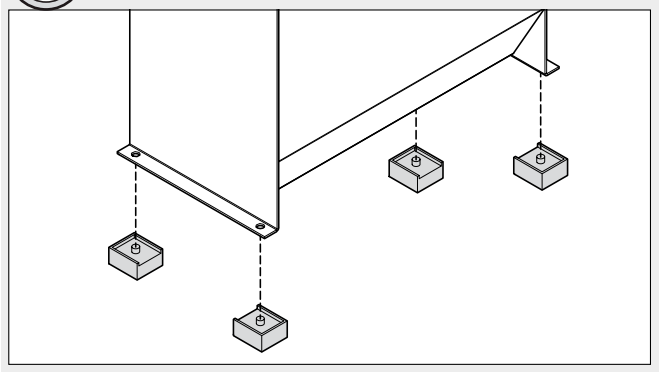
1:1



2:1

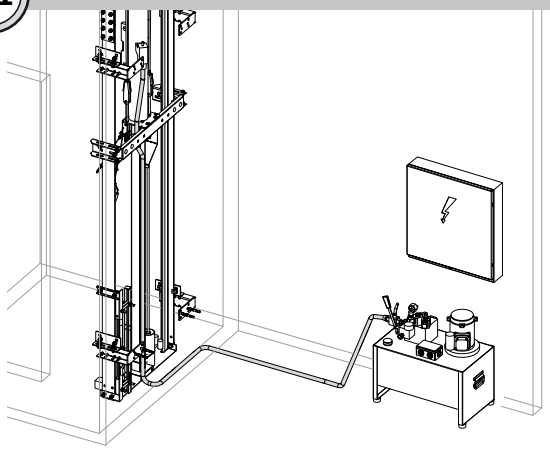


1:1

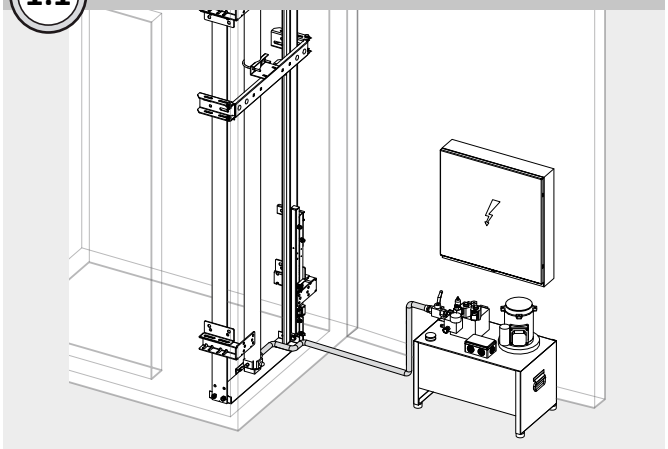


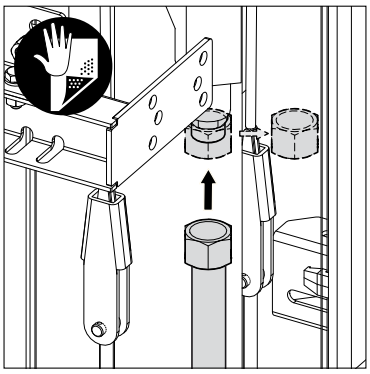
8.4. TUBAZIONI OLEODINAMICHE - COLLEGAMENTO

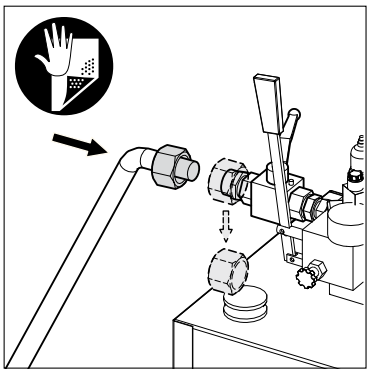
2:1

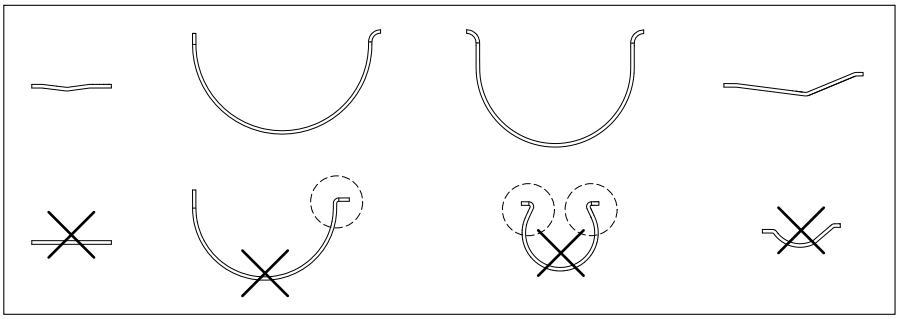


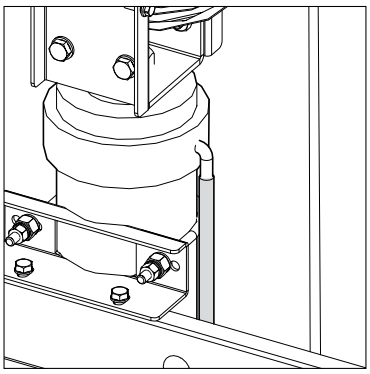
1:1



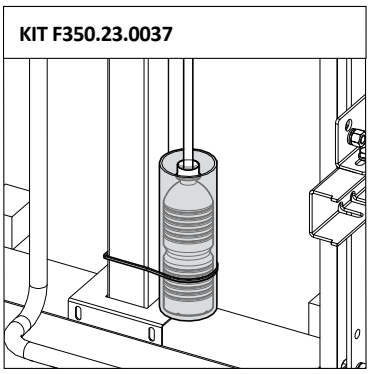








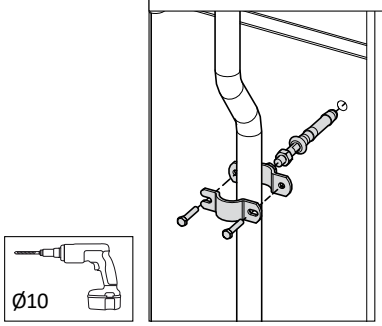
KIT F350.23.0037



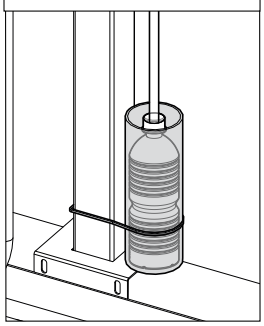
- Fix the hoses and oil recovery tank, trying to avoid overlapping.

3/4" hose

KIT Q401.05.9007

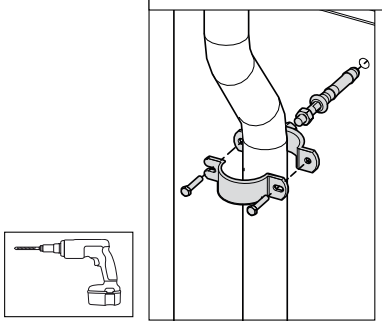


KIT F350.23.0037

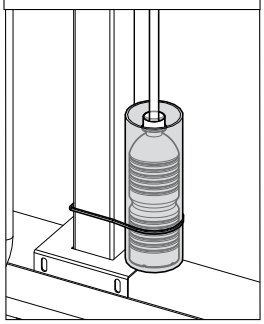


1 1/4" hose

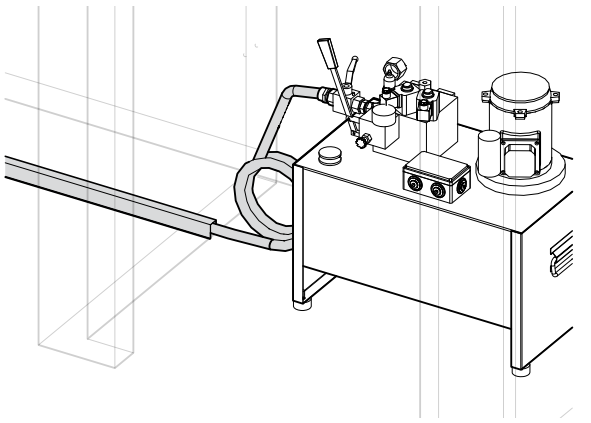
KIT Q401.05.9008



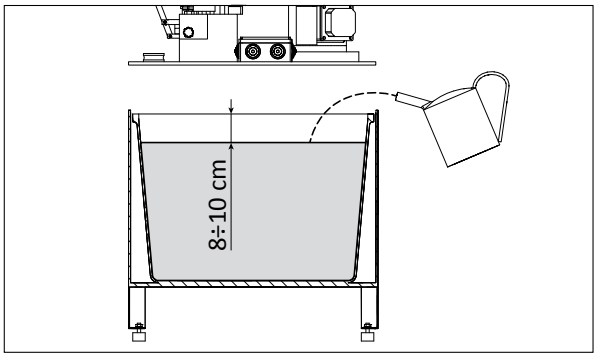
KIT F350.23.0037



- Collect the exceeding hose close to the hydraulic unit, paying attention to the correct flexure of the hose.
- Protect the exposed and through wall sections of the hose.

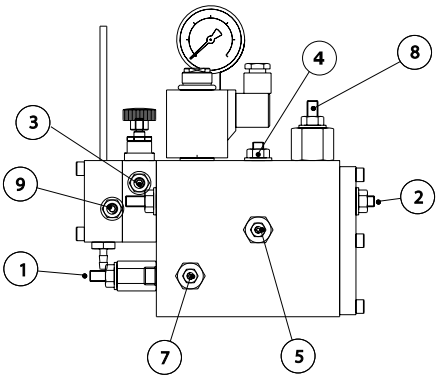


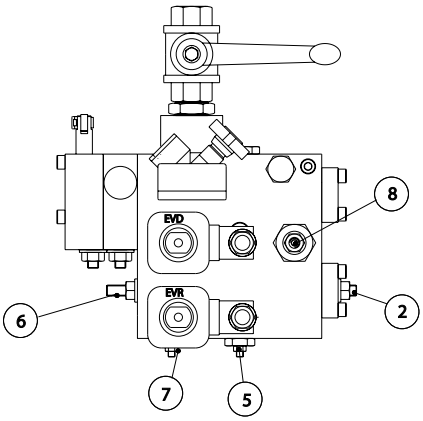
- Fill the tank up to 8÷10 cm from the rim, using the hydraulic oil supplied with the unit.



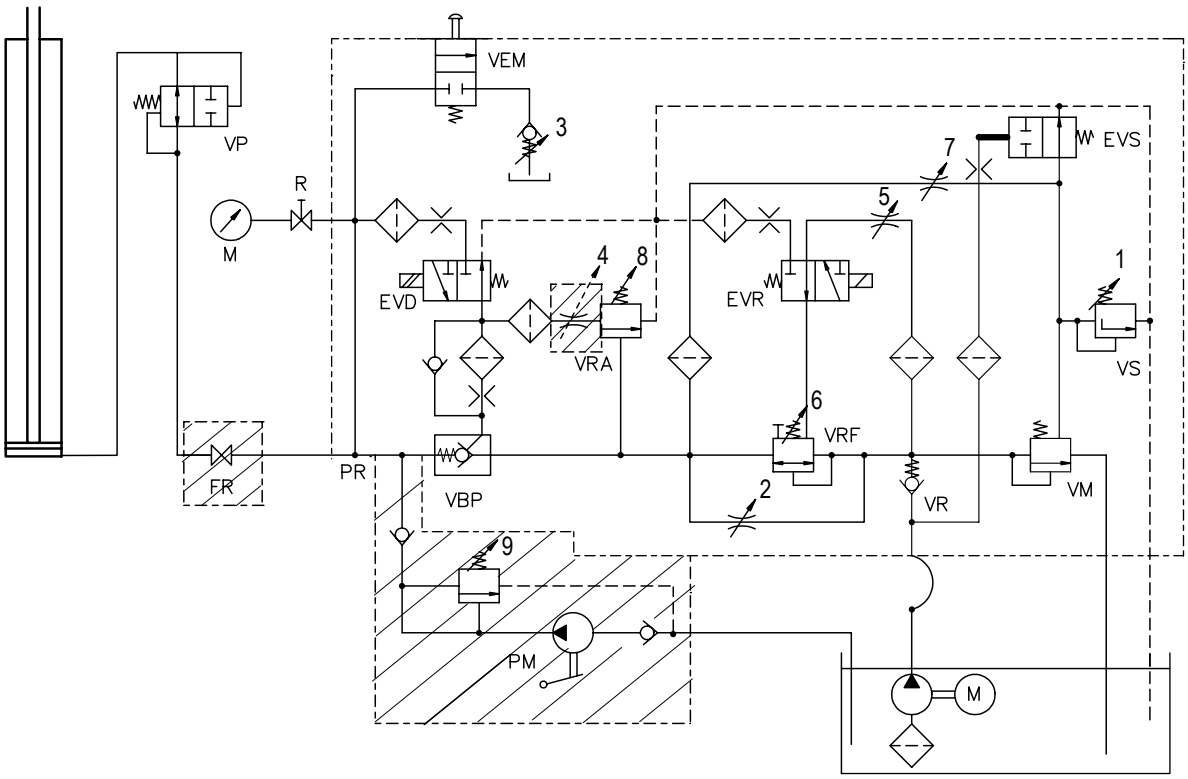
8.5. 2 SPEED HYDRAULIC UNIT : TECHNICAL SPECIFICATION

2:1



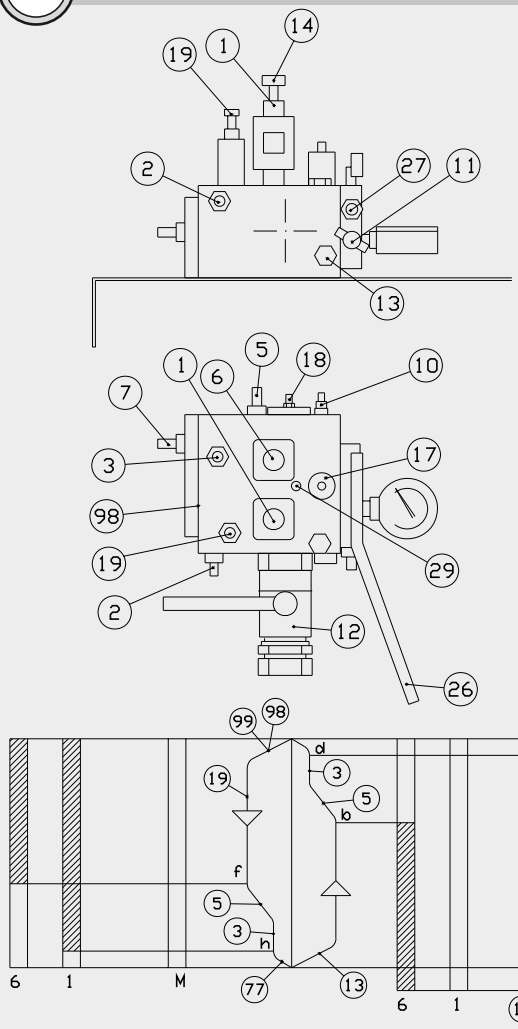


LEGEND	
1	Maximum pressure valve settings
2	Low speed adjustment (UP and DOWN)
3	Rope guard and counter pressure settings
4	Pressure valve reaction test
5	Narrowing device for speed reduction (UP and DOWN)
6	Ascent speed limit control
7	Narrowing device for pressure control and ascent start
8	Descent speed limit control
9	Manual pump pressure settings
EVD	Descent electro valve
EVR	Flow adjustment electro valve
EVS	Ascent valve
FR	Tap filter
M	Manometer
PM	Manual pump
PR	Pressure switch connection
R	Tap and Rubinetto 1/2" gas connection for control manometer
VBP	Controlled block valve
VEM	Manual Emergency
VM	Maximum pressure valve
VP	Safety valve
VR	Check valve
VRA	Descent balancing valve
VRF	Flow adjustment valve
VS	Safety valve



8.6. 2 SPEED HYDRAULIC UNIT : TECHNICAL SPECIFICATION

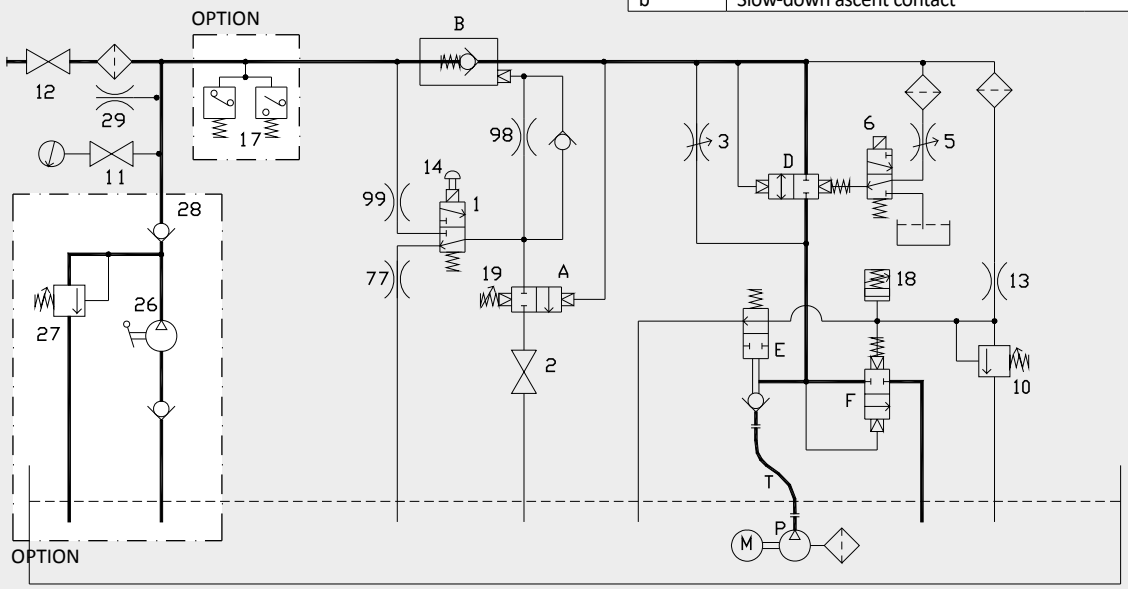
1:1



1	Descent electro valve	
2	Safety valve test tap	
3	Low speed adjustment during ascent and descent	- screw to decrease (-) - unscrew to increase (+)
5	Speed change time adjustment	- screw to increase (+) - unscrew to decrease (-)
6	Elettrovalvola di alta velocità	
7	Maximum speed adjustment (*)	
10	Safety valve pressure adjustment	- screw to increase (+) - unscrew to decrease (-)
11	Pressure gauge exclusion tap	
12	Valve group exclusion tap	
13	Narrowing device for ascent start	
14	Manual descent button	
(17)	Pressure switch ***(option)***	
18	Starting speed time adjustment	- screw to decrease (-) - unscrew to increase (+)
19	Descent speed time adjustment	- screw to increase (+) - unscrew to decrease (-)
(26)	Manual pump ***(option)***	
(27)	Manual pump safety valve ***(option)***	- screw to increase (+) - unscrew to decrease (-)
(28)	Manual pump check valve ***(option)***	
29	Manual pump escape screw	
77-98-99	Adjustment narrowing devices (*)	
A	Pressure adjustment	
B	Controlled check valve	
D	Speed passage valve	
E	One-way distribution valve	
F	Safety and ascent starting valve	
M	Drive	
P	Pump	
T	Hose	

(*) ADJUSTMENT DURING FACTORY TEST RUN, TO CHANGE THE PARAMETERS REFER TO THE HYDRAULIC UNIT MANUAL

h	Descent stop contact
f	Slow-down descent contact
d	Ascent stop contact
b	Slow-down ascent contact



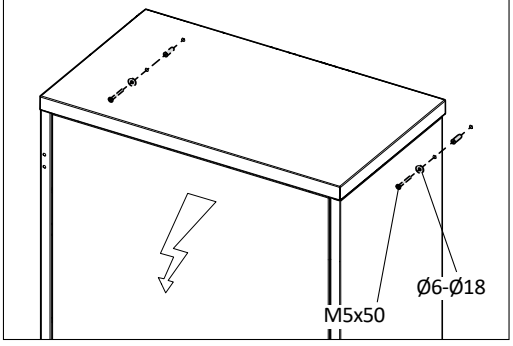
8.7. CONTROL BOARD - POSITIONING

- Position the control board according to the project drawing.

CASE 1 - CONTROL BOARD IN MACHINE ROOM

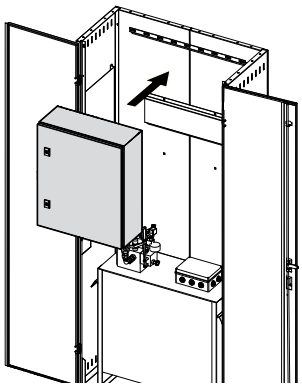
- Fix the cabinet inside the room.

KIT F350.23.0041



CASE 2 - CONTROL BOARD INSIDE HYDRAULIC UNIT CABINET

- If foreseen, fix the control box to the bracket inside the hydraulic unit cabinet, then hang it onto the bracket situated on the hydraulic unit box.



INFORMATION

For cabinet assembly please refer to App. A2 and A3.

To effect al the connections correctly, the project drawing and installation instructions must be strictly followed.
The first connections to be effected in the control board are:

- with the grounding connector;
- with the power supply board installed in the machine room;
- with the electrical drive, termistors and thermostat of the hydraulic unit.

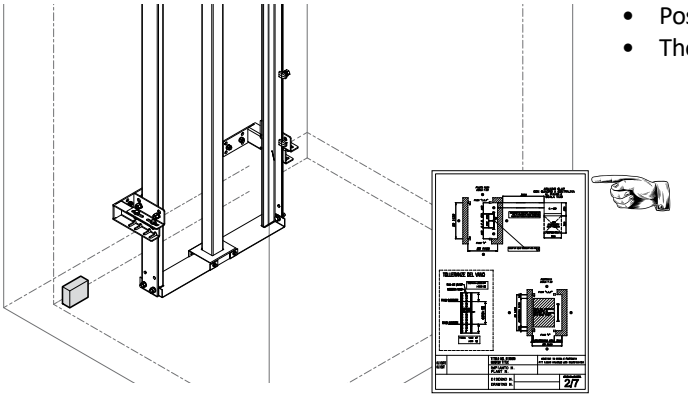
9. ELECTRICAL CONTROL DEVICES

9.1. MACHINE ROOM PRE-ARRANGEMENT

INFORMATION

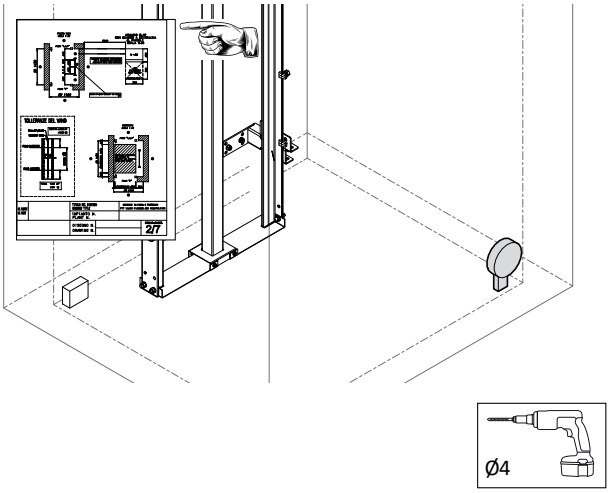
The manual explains how to install (mechanically) the electronic control devices, for electrical connections refer to the electrical schemes of single components, to be found in the related packages.

9.2. JUNCTION BOX IN PIT

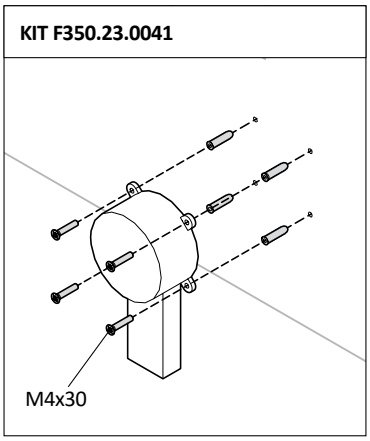


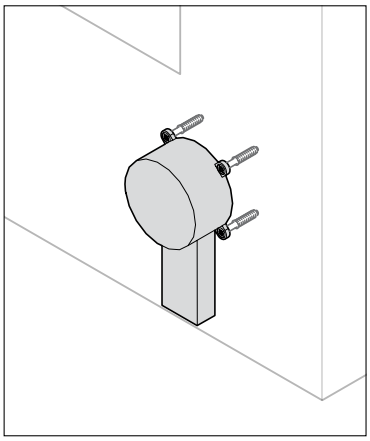
- Position the box in the pit as shown on the project drawing.
- The box is to be put on the floor, without wall fixing.

9.3. STOP IN PIT

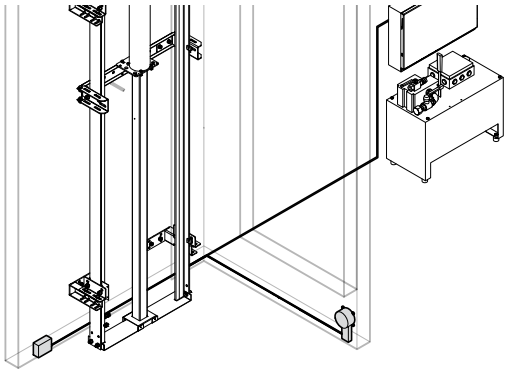


- Position the STOP in the pit as shown on the project drawing.





9.4. JUNCTION BOX CABLE IN PIT and STOP IN PIT

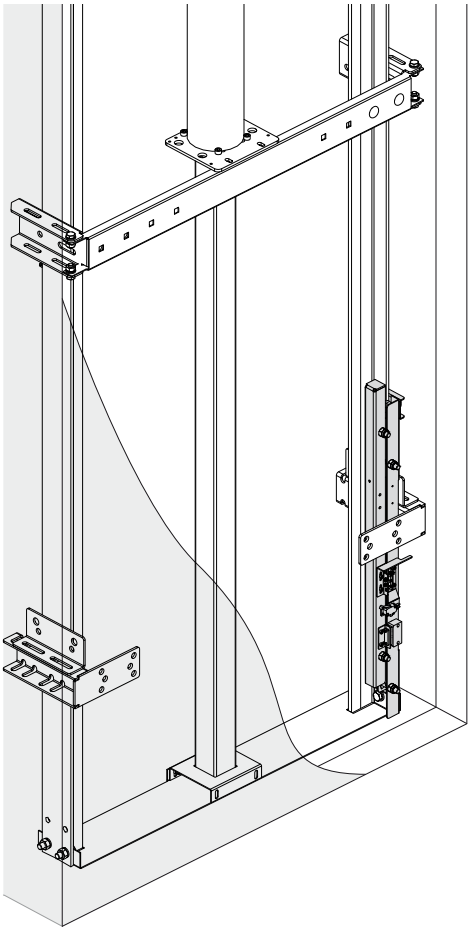


- Connect the junction box to the "stop" using the supplied cable.

9.5. PILLAR SAFE-PIT DEVICE (artificial pit)

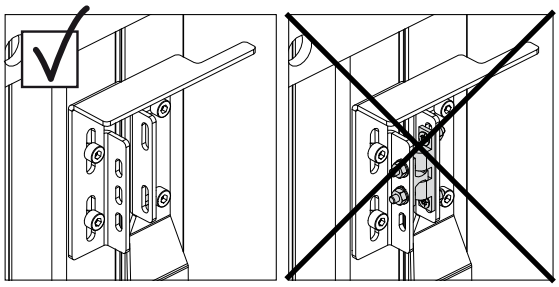
CAUTION

FOR PIT ACCESS
strictly follow the istructions stated in paragraph 1.4.2 of "Maintenance Instructions" manual.



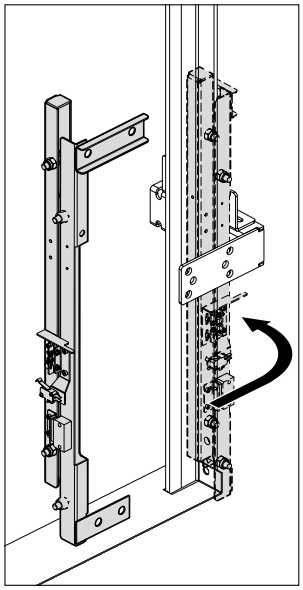
INFORMATION

In case of frontal pit access, remove blocking latch.

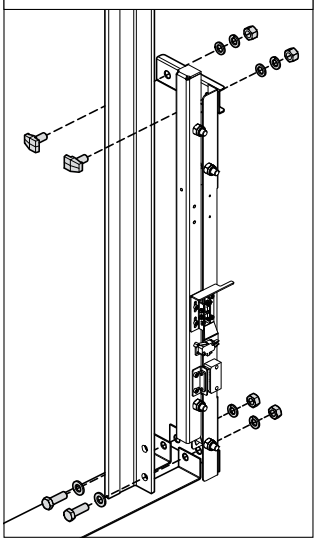


- Fix the Safe-Pit device to the guide rail.
- Position it as shown on the project drawing.

For a further fixing, unscrew the fixing screws of the template, position the Safe-Pit and then re-assembly the screws.

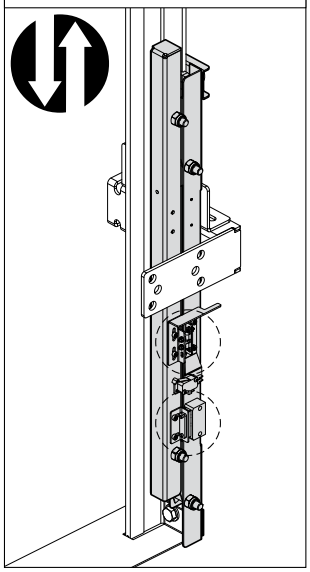


V0301.04.0001

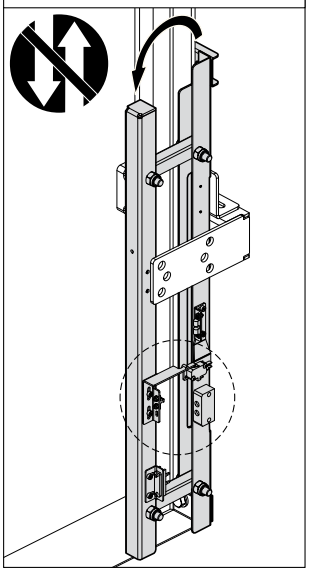


- Make sure the micro switches move and function correctly.

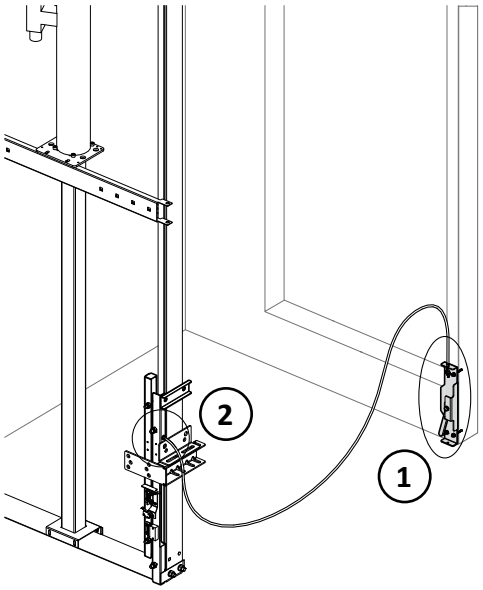
SAFE-PIT CHIUSO



SAFE-PIT APERTO



IN CASE OF FRONTAL PIT ACCESS

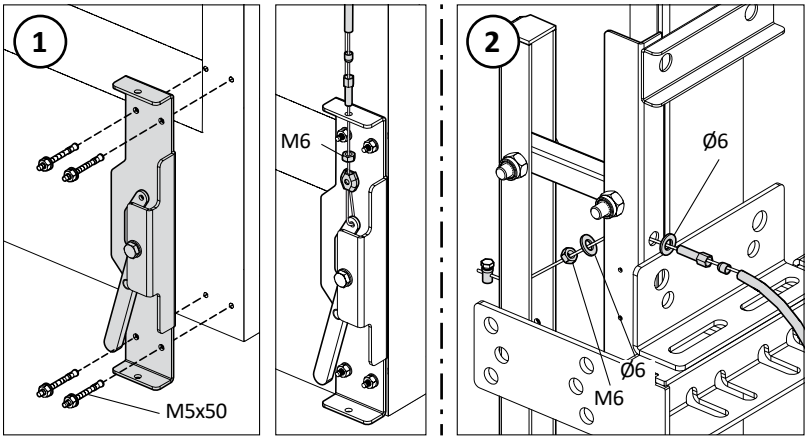


CAUTION

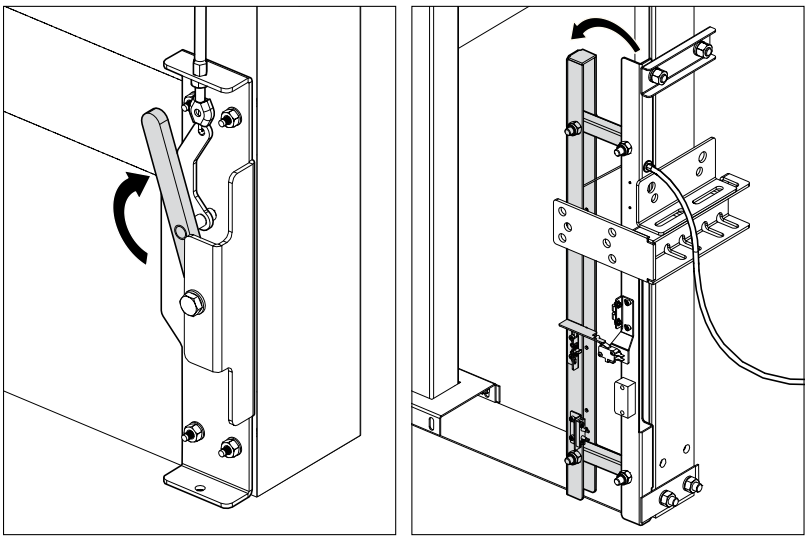
In case of frontal pit access it is necessary to provide a lever close to the entrance, in order to enable the Safe-Pit.

KIT F350.23.0040

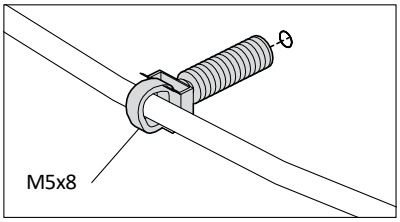
- Fix and connect the lever, as shown on the project drawing.
- In absence of precise indications, position the lever so that it may be easily reached from outside the shaft, and make sure that the cable does not hamper with maintenance or normal operations.



- Fix the cable inside the casing, so as to enable the Safe-Pit upon lifting the lever.

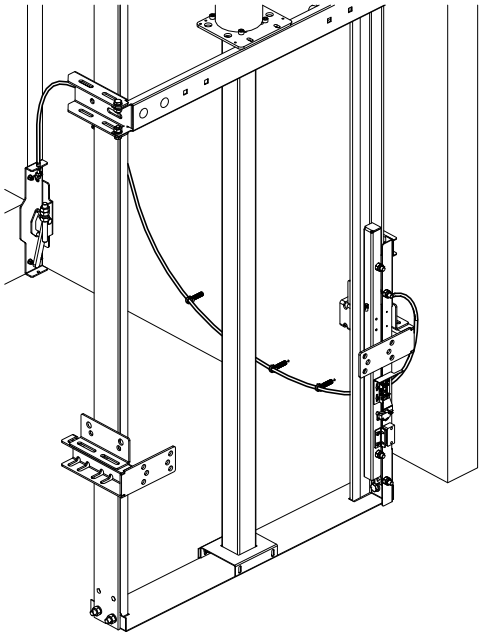


- Fix the casing by means of supplied clamps.

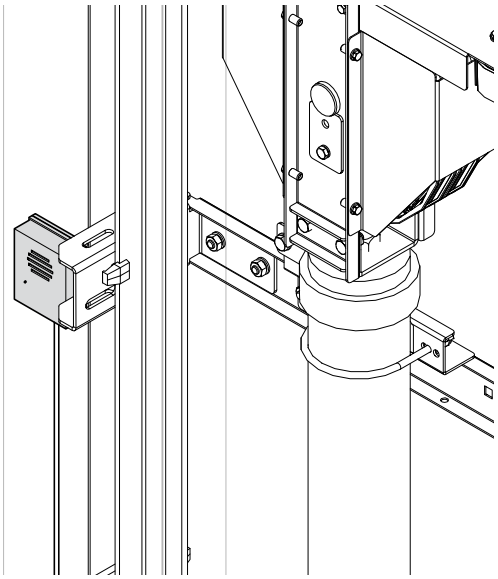


INFORMATION

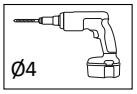
In case of a lift with a metal shaft, the lever must be fixed by means of auto-perforating screws instead of wall plugs.



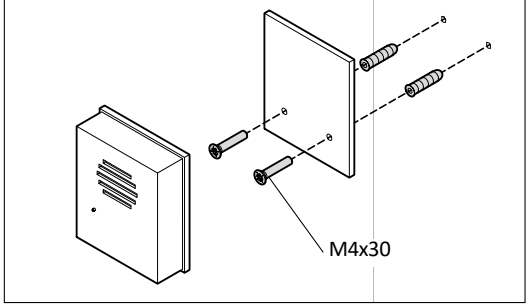
9.6. ALARM SIREN



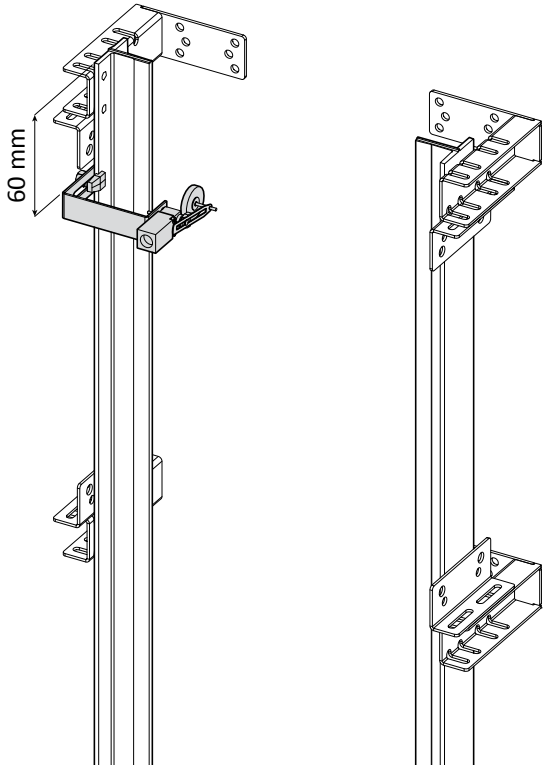
- Fix the alarm in the shaft, so as to make it audible when enabled.



KIT F350.23.0041

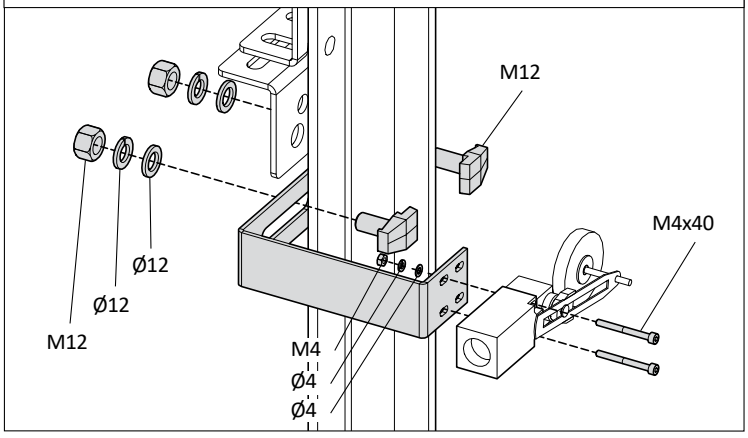


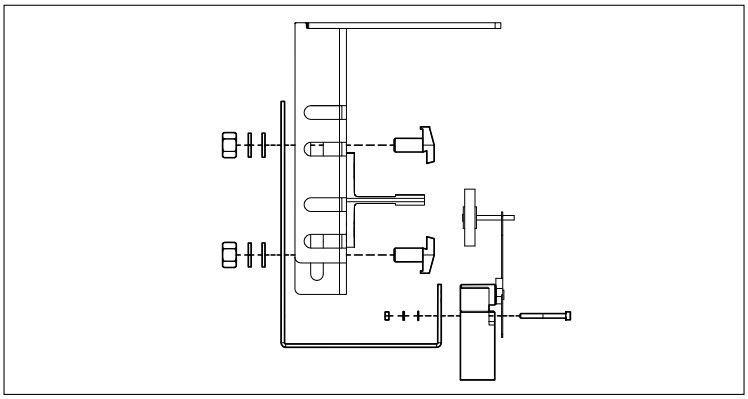
9.7. UPPER OVERRUN CONTACT



- Fix the contact at 60 mm distance from the top of the guide rail.
- Check the reference guide rail on the project drawing.

KIT F300.23.0010





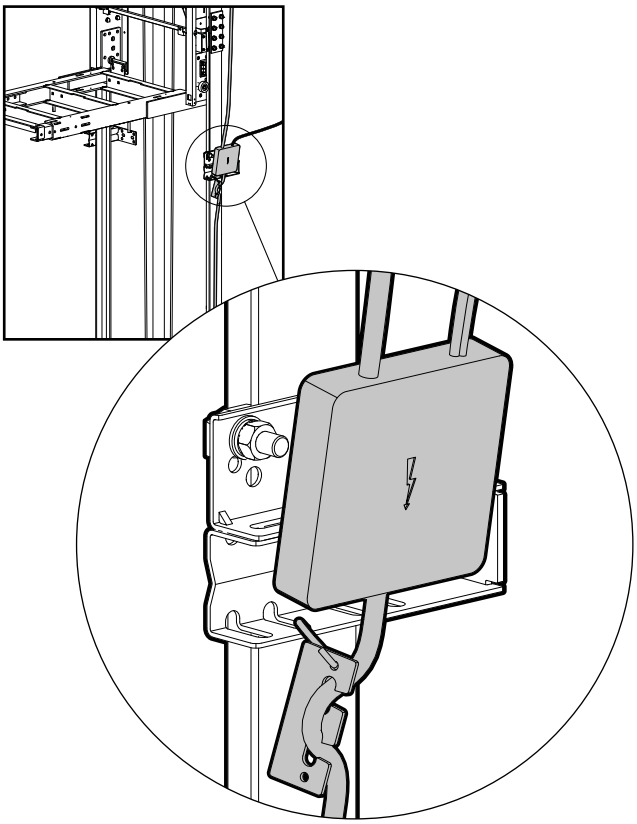
INFORMATION

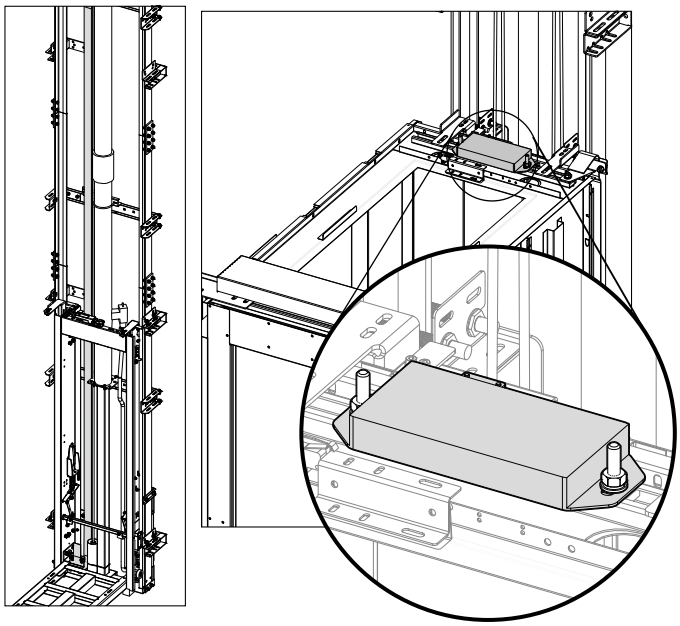
The final adjustment is carried out during the first trial runs.

9.8. PRE-WIRED ELECTRICAL CABLES

a. pre-wired electrical cables for the shaft: made with double-sheathed cable and junction boxes, quick to install, no need to be located in a duct;

b. pre-wired car electrical lines: composed of flexible flat cables and junction terminal board located on the car roof.

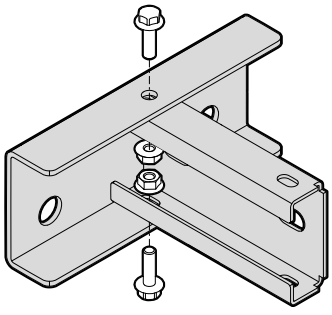




INFORMATION

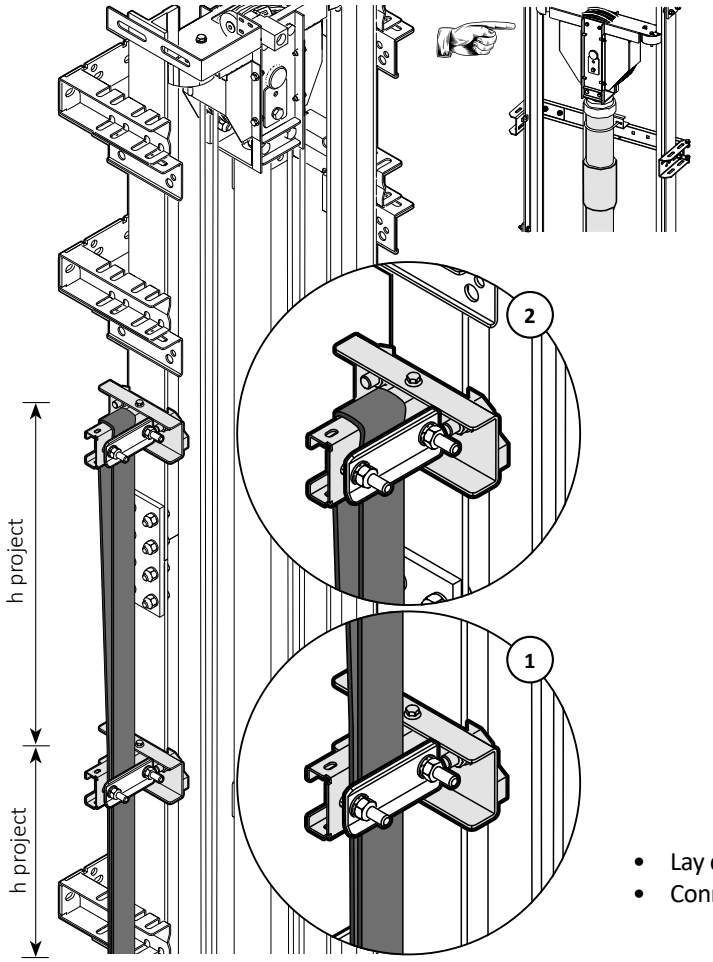
For the connections to the terminal board follow the instructions in the "IM.TEC.032.IT" manual.

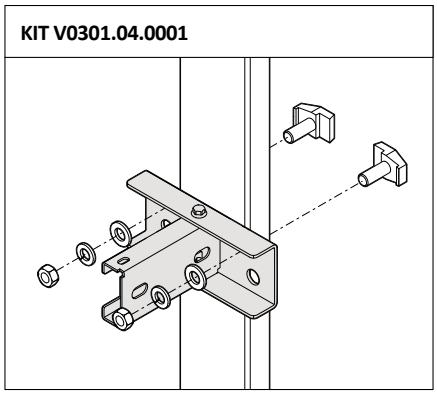
INFORMATION

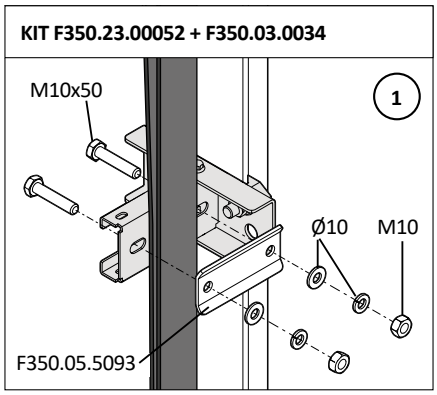


F350.03.0034

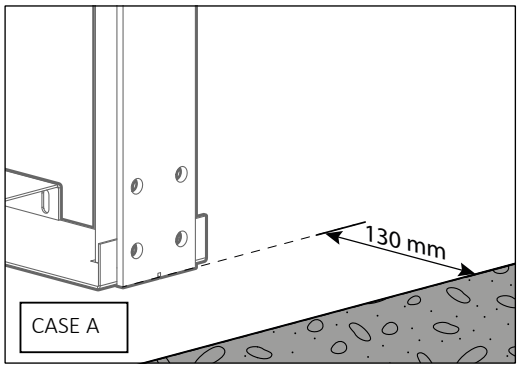
Pre-assemble the bracket with the appropriate screws included in the KIT.

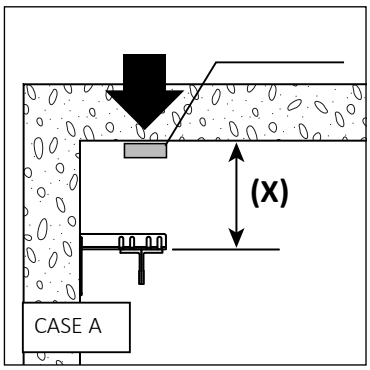


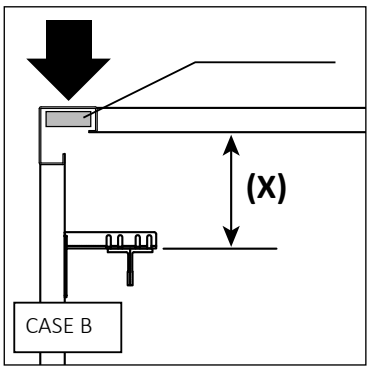




- Lay down the remaining flat cable up to the control panel.
- Connect the connectors to the control panel.







INFORMATION
The cable holders must always be installed according to the project instructions. If the distance between shaft and and external guide is less than 130 mm (CASE B), the brackets will be fixed on the internal part of the masonry shaft or inside the internal upright of the structure (fixed with the vertical glass-stopper).
Protect the exposed sections of cable and where it is passing through walls.
In case of > 900 kg load with distance between guides = 550 mm, refer to the fixing procedure of CASE 2.

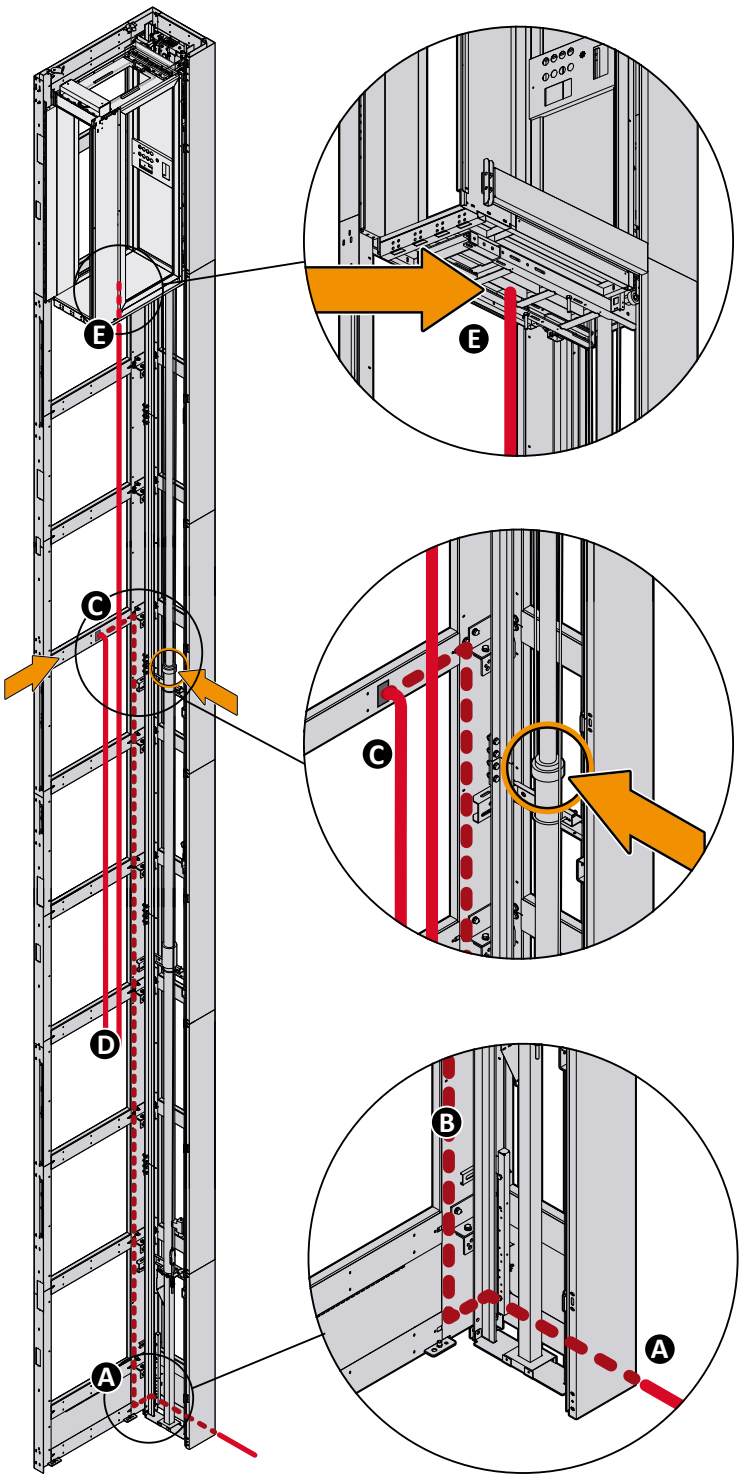
9.9. FLAT-CABLE INSTALLATION IN NARROW PLATFORM (STAIRFIT)

INFORMATION

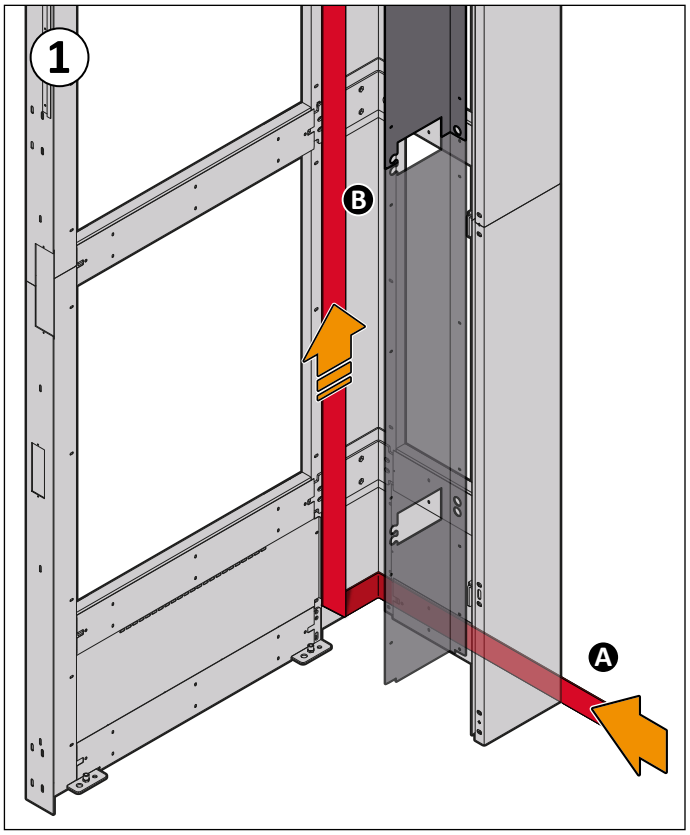
In the case of a platform with a narrow width (StairFit), the flat cables must be installed as indicated below, as there is not enough space on the side.

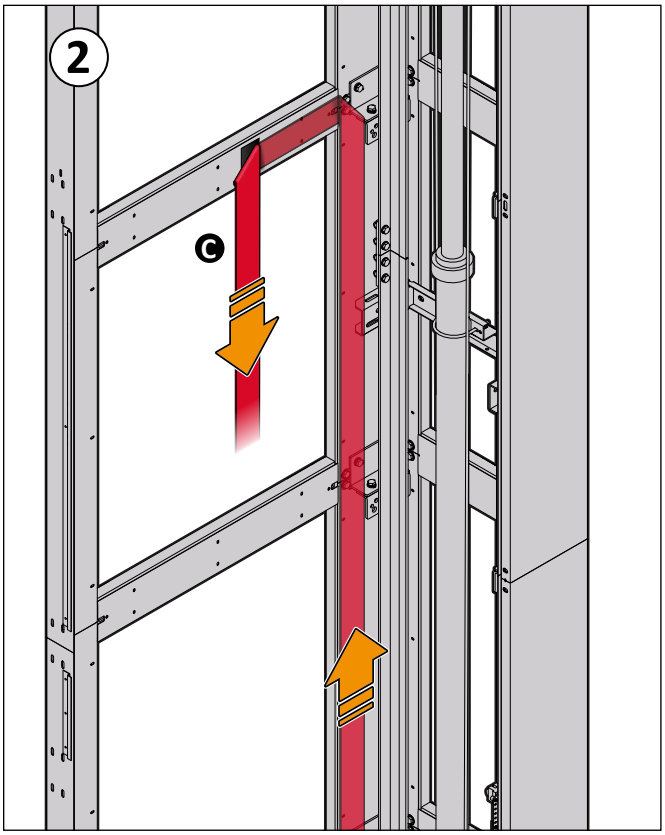
FLAT CABLE - MECHANIC SIDE INSTALLATION

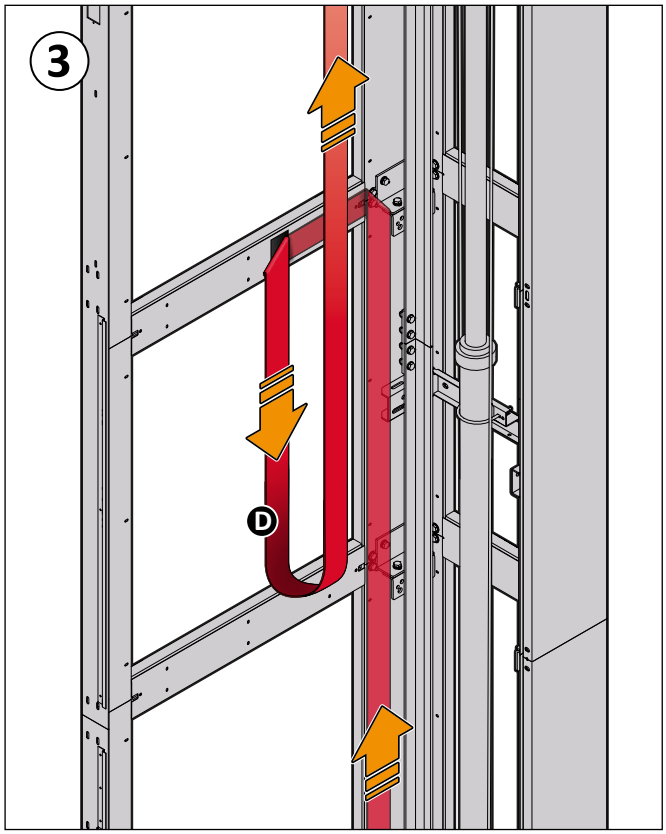
- Insert the flat cable into the base transom in the pit **A**;
- bring up the flat cable up along the upright under the vertical glazing bead **B**;
- extract the flat cable from the outlet transom, using the piston head **C**, as a level reference;
- leave an adequate abundance of cable **D**;
- connect the flat cable under the cabin with the special brackets **E**.

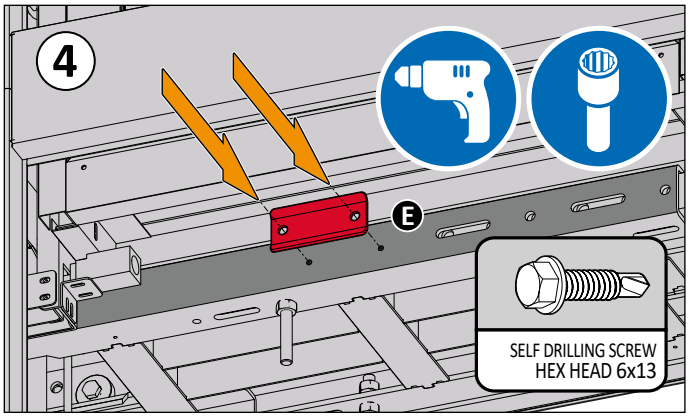


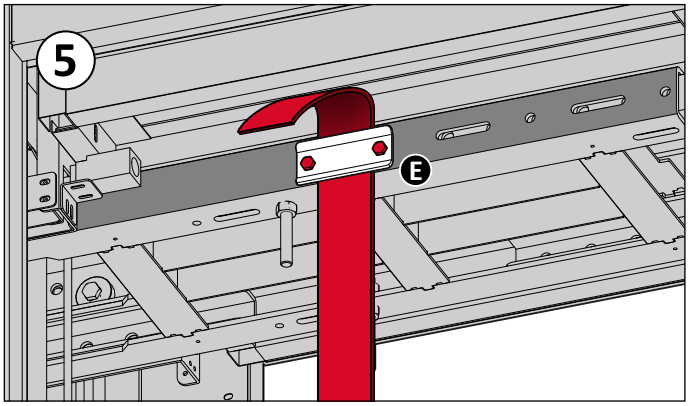
INSTALLATION DETAILS





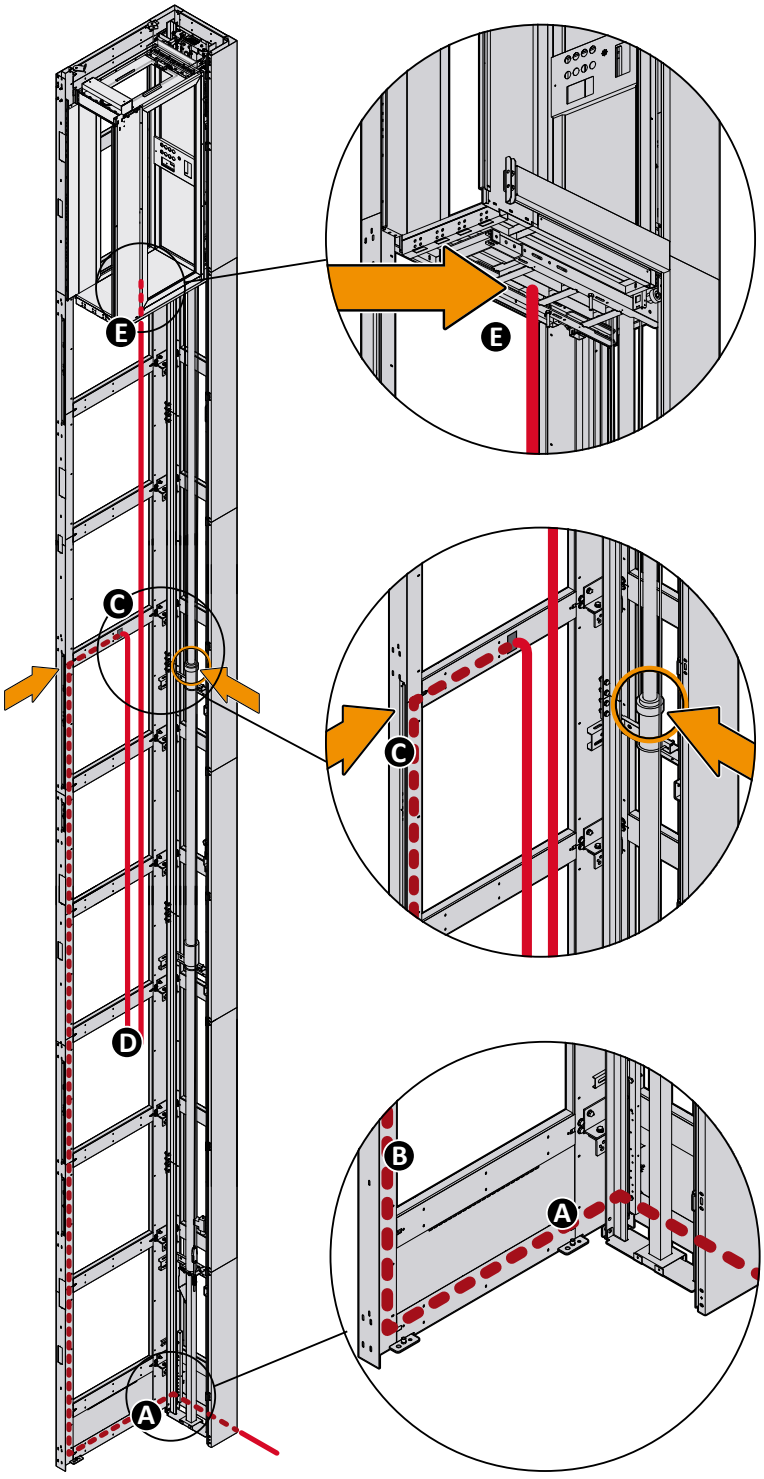




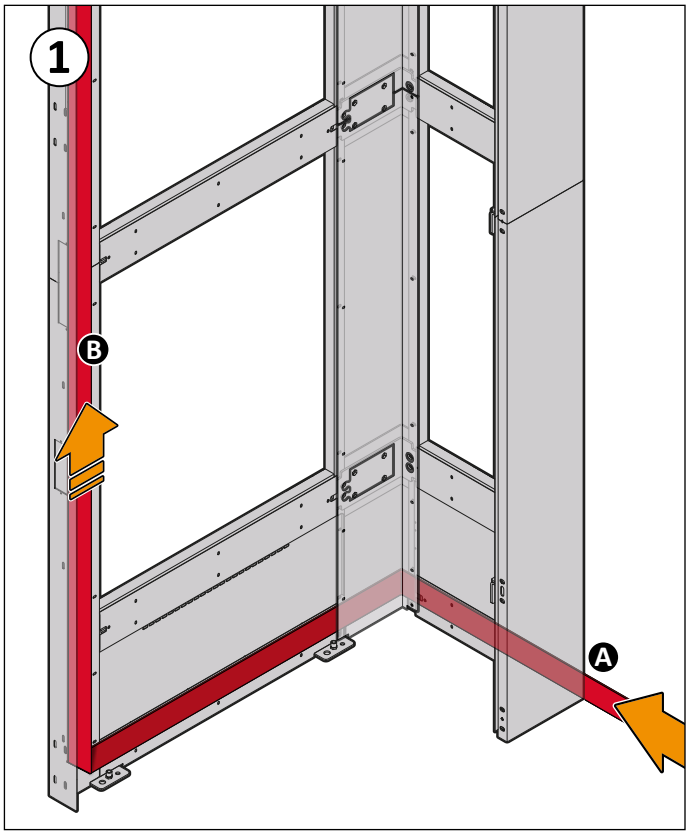


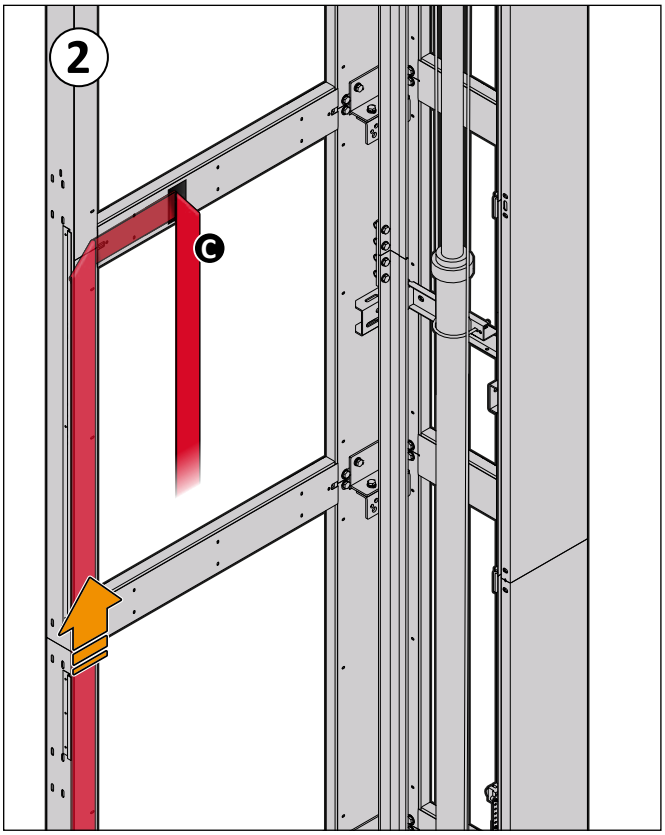
FLAT CABLE - DOOR SIDE INSTALLATION

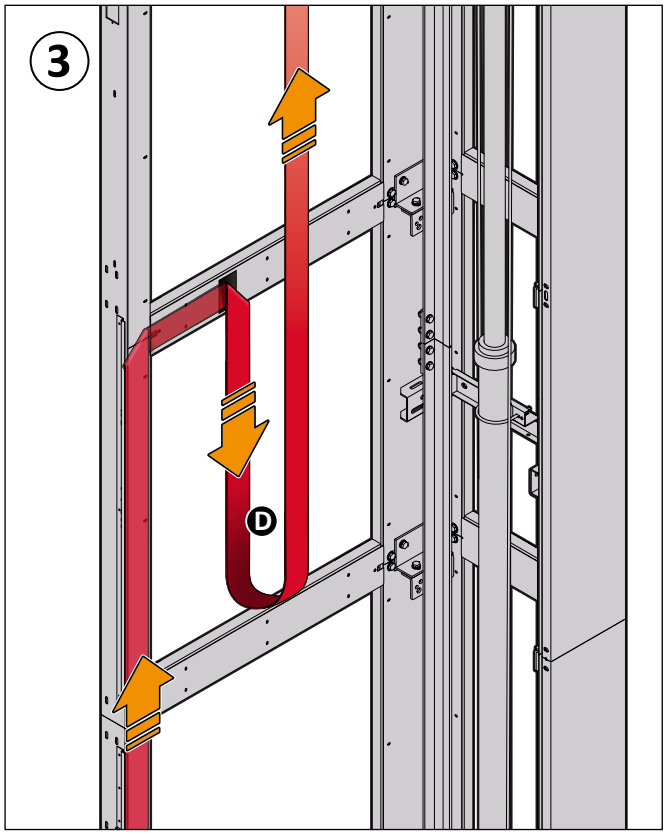
- Insert the flat cable into the base transom **A** in the pit until it reaches the door side.
- Route the flat cable up along the upright, under the vertical glazing bead **B**,
- Extract the flat cable from the outlet transon **C**, using the cylinder head as a level reference.
- Connect the flat cable under the cabin with the special brackets **E**, leaving the adequate abundance **D**.

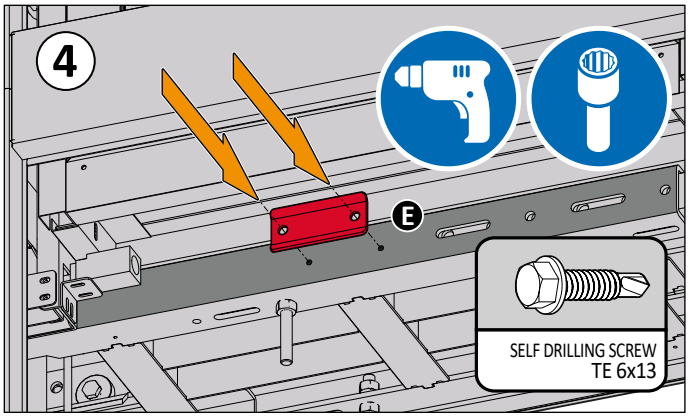


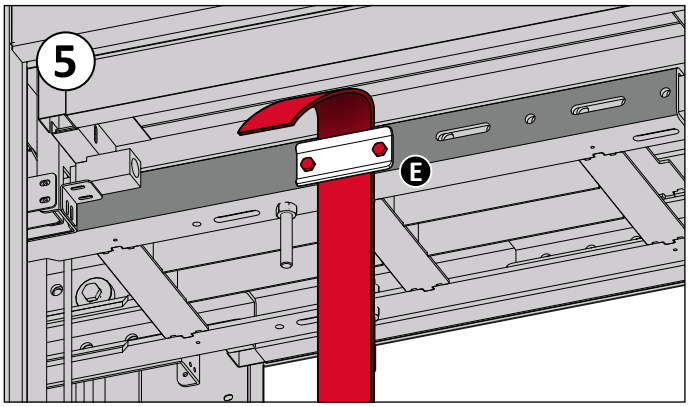
INSTALLATION DETAILS











10. COMPLEMENTARY ASSEMBLY

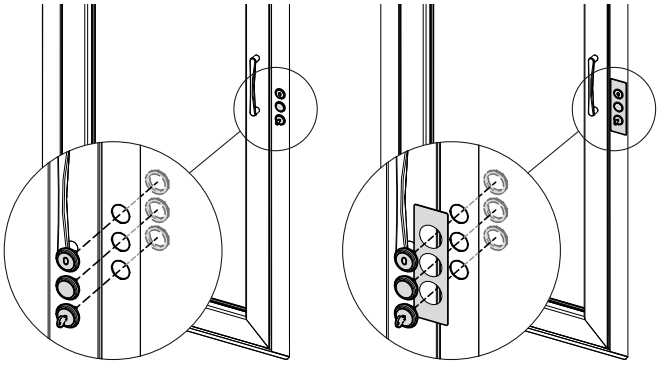
10.1. LANDING DOORS

NOTE: For the landing doors installation, strictly follow the related installation manuals (supplied in the door package).

10.2. LANDING OPERATION PANELS

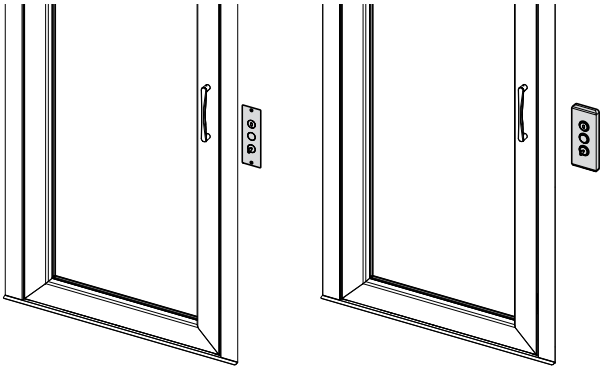
CASE 1 - ON-JAMB BUTTONS

- Fix the button to the jamb and proceed with wiring.
- The plates (if foreseen) are supplied with the buttons.



CASE 2 - ON-WALL BUTTONS

- Fix the LOP as advised by the supplier.
- The instructions are supplied in the package.



11. FRAME ASSEMBLY

11.1. UPRIGHTS - PRE-ARRANGEMENT

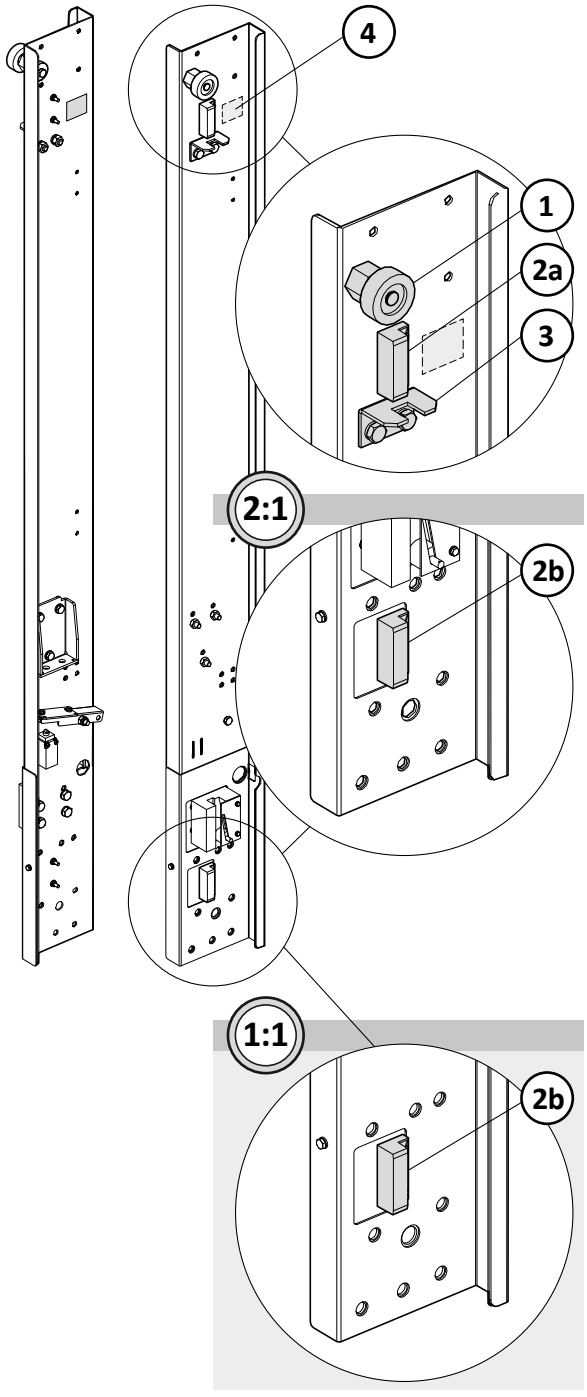
NOTICE

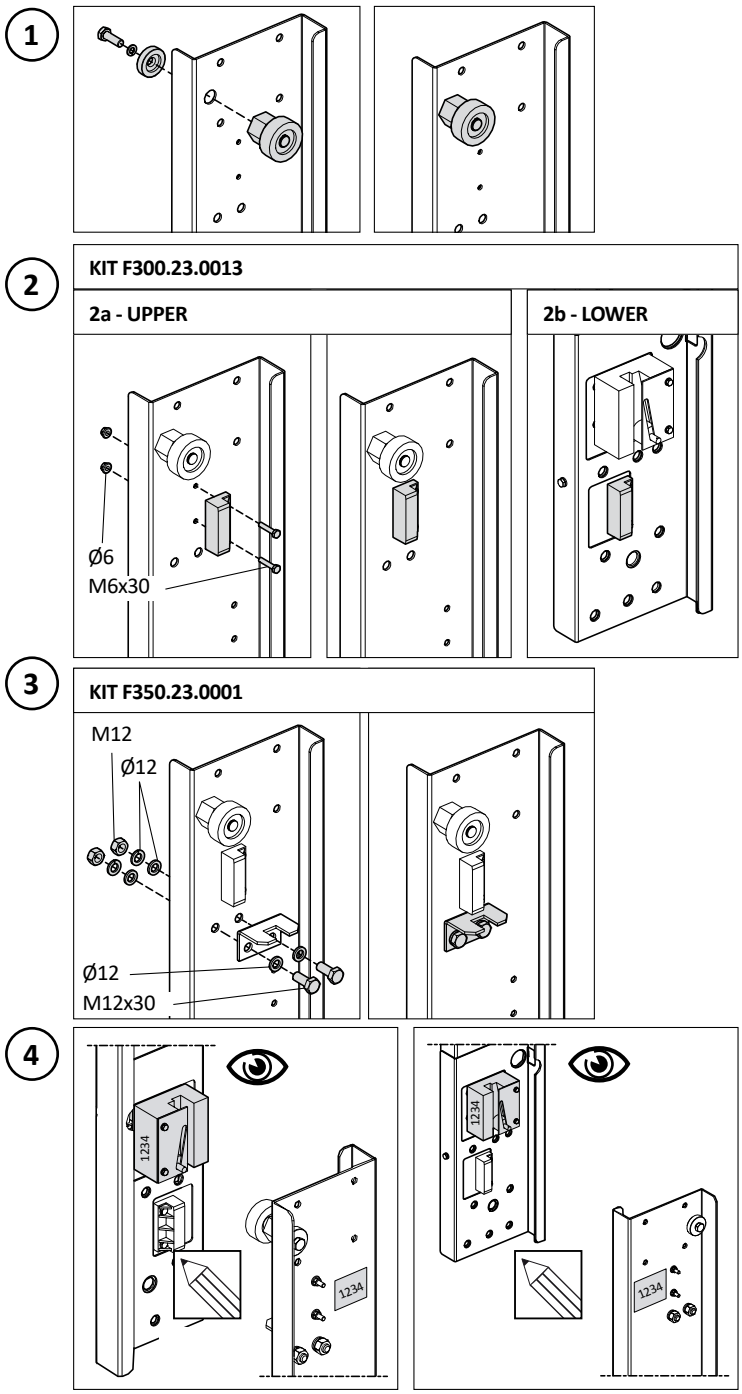
THOROUGHLY CLEAN the GUIDE RAILS with a cloth (or some clean paper) to remove dust and metal leftovers.

DISASSEMBLE THE SCAFFOLDING INSIDE THE SHAFT.

INFORMATION

Keep the shims that will be useful during the final adjustment.



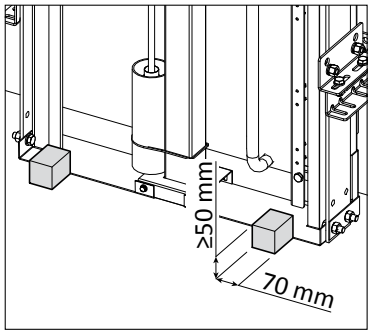


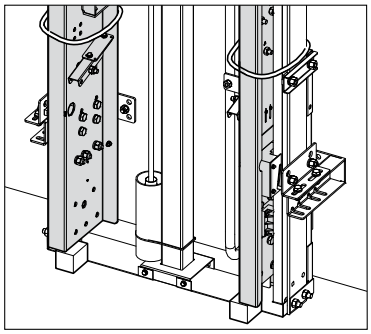
11.2. UPRIGHTS AND FRAME BASE - INSTALLATION

INFORMATION

Place yourself in the PIT.

- Position small wooden blocks (H ≥ 50 mm, foreseen for uprights positioning), at a distance of approximately 70 mm from the guide rails.
- Lean the uprights against the guide rails and put the wooden blocks onto them.
- Temporarily tie the uprights to the guide rails.

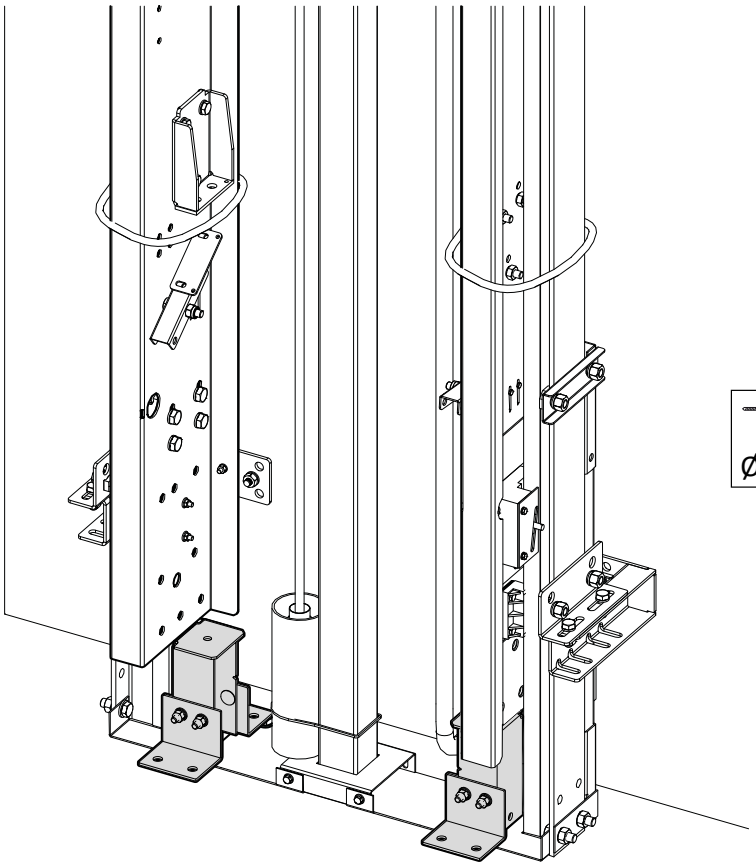


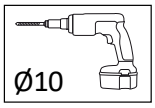


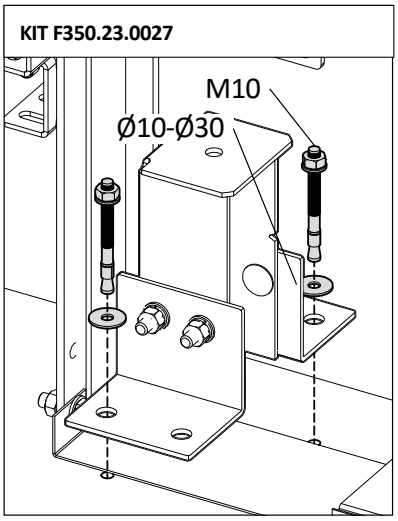
Follow the assembly direction of the uprights.

IN CASE OF PILLARS OF PIT SAFETY DEVICE

- Install the two pit props on the bottom.
- Position the uprights upon the props.
- Temporarily tie the uprights to the guide rails.

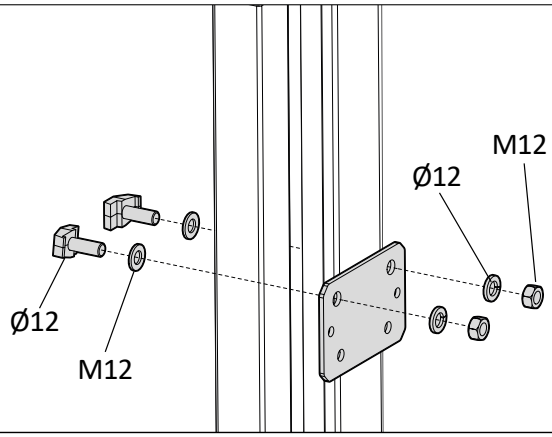




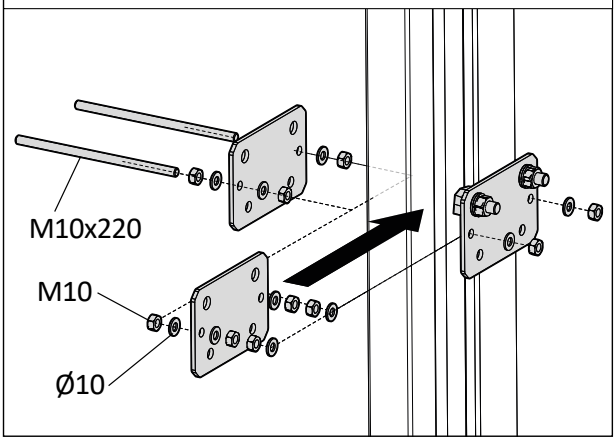


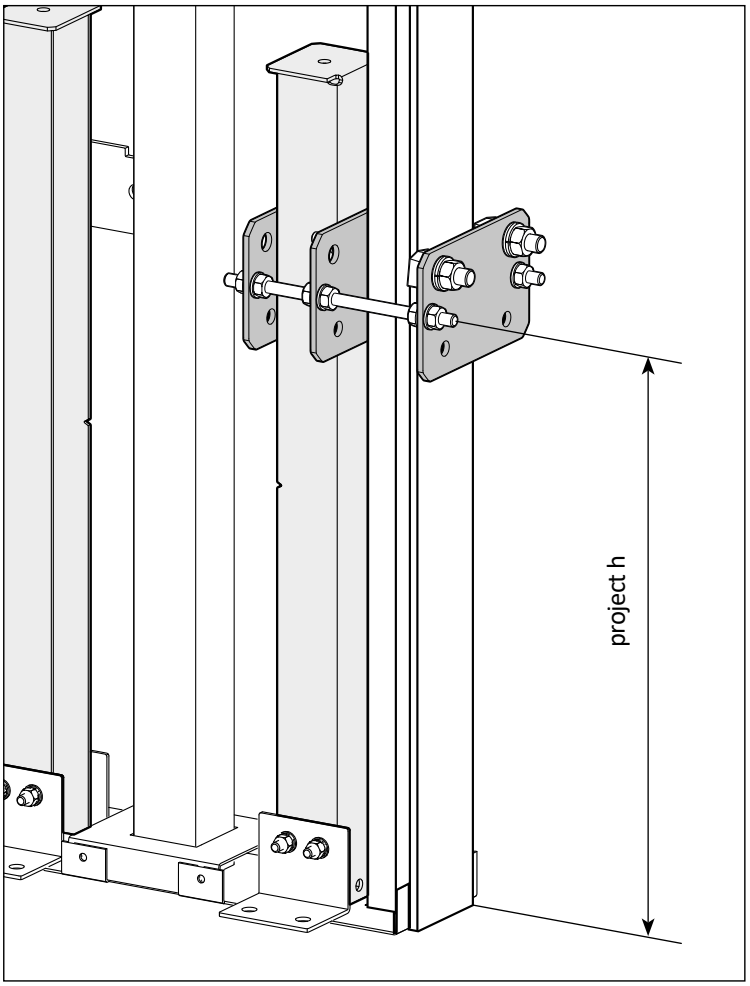
- If the pit is ≥700 mm high, fix the 2 pit devices to the guides with the special kit.

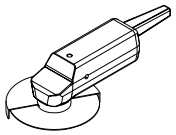
KIT V0301.04.0001



KIT F350.23.0048



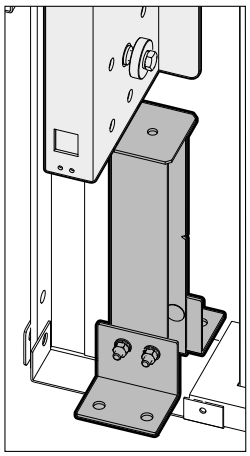


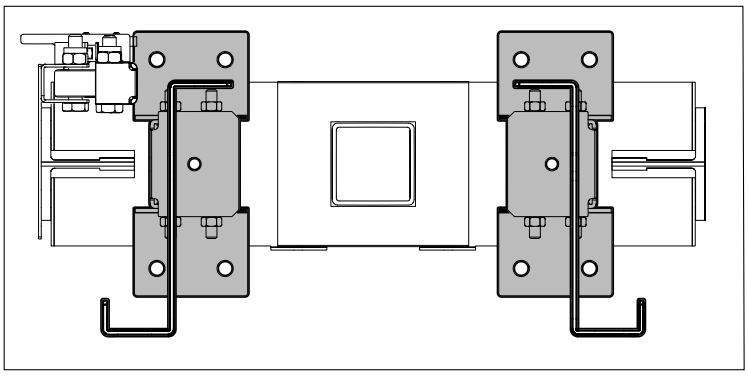


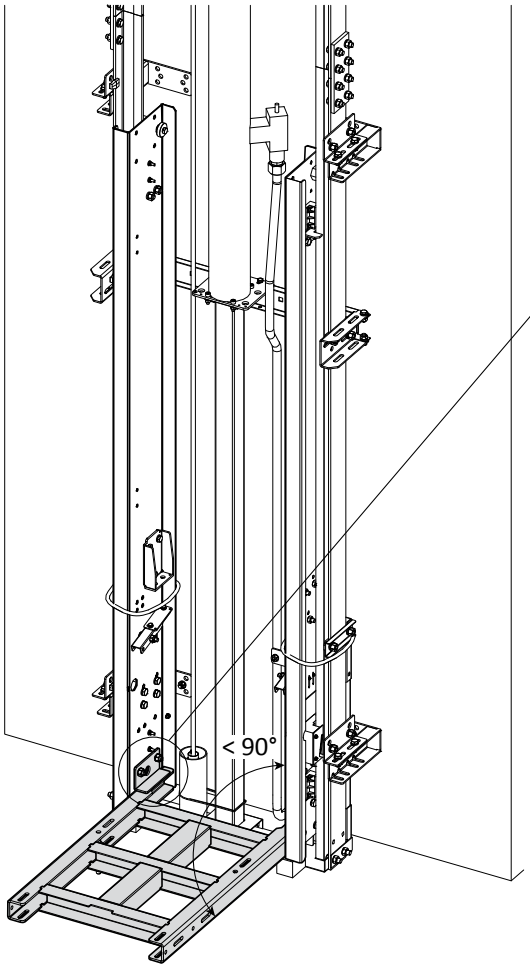
INFORMATION

Remove any protrusions from the threaded bar

- Place the uprights over the installed devices





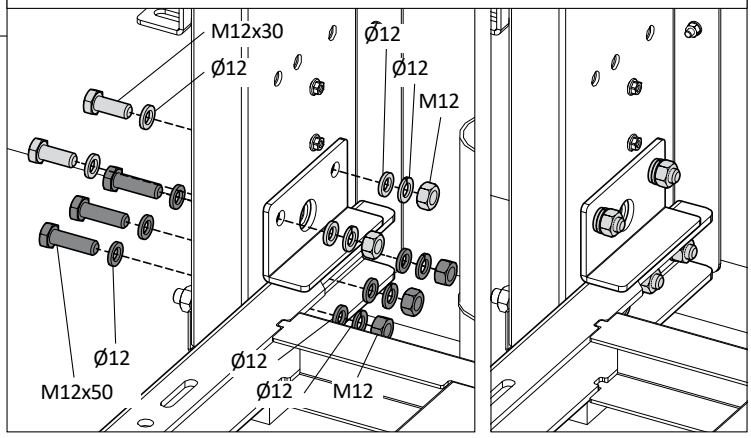


- Insert the frame base inside the uprights.
- Temporarily fix the lower part of the uprights to the frame base, on both the uprights.

mod. FRAME B1

KIT F350.23.0001

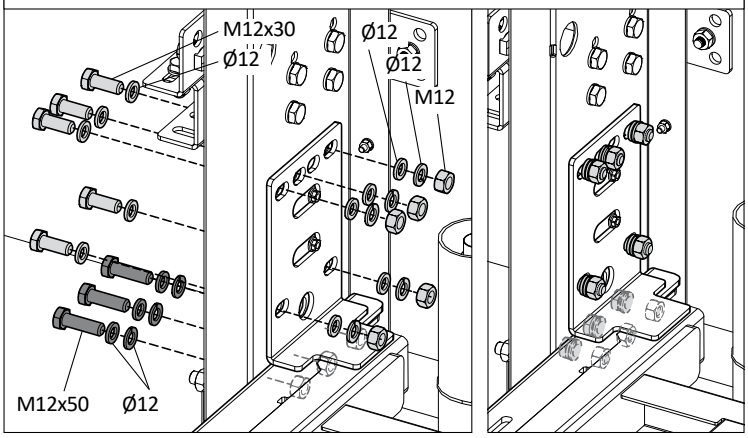
2 x



mod. FRAME B2 and B3

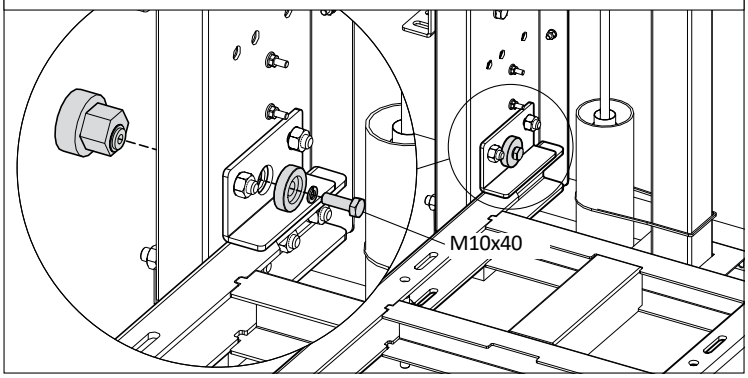
KIT F350.23.0001

2 x



- Install the two lower roller shoes.

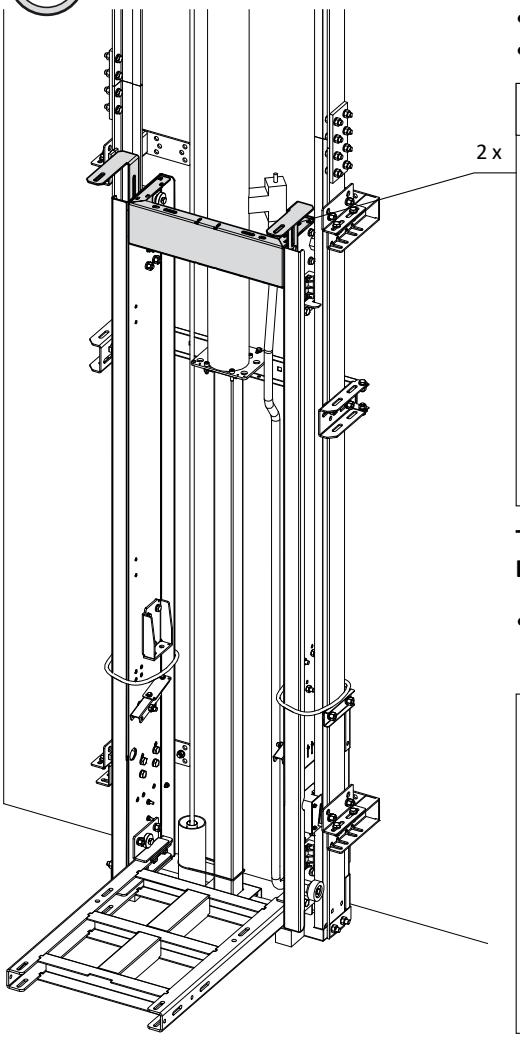
KIT F350.23.0046



INFORMATION
The frame base will be slightly inclined. It will become plain after the installation.
Don't use the fixing screws supplied with the shoe, but refer to the KIT.

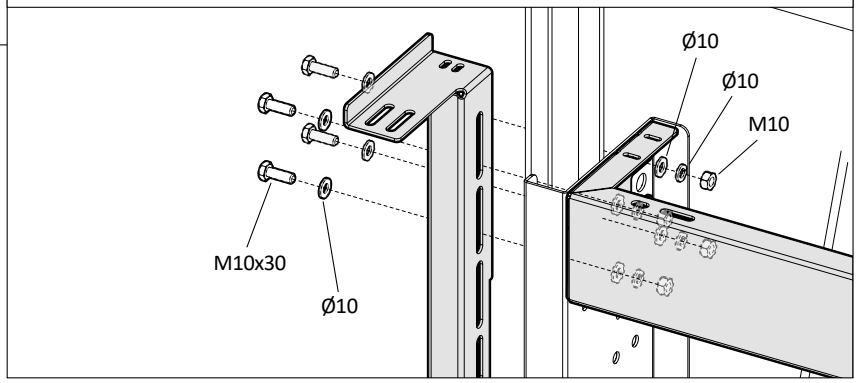
11.3. FRAME CROSS BEAM - INSTALLATION

2:1



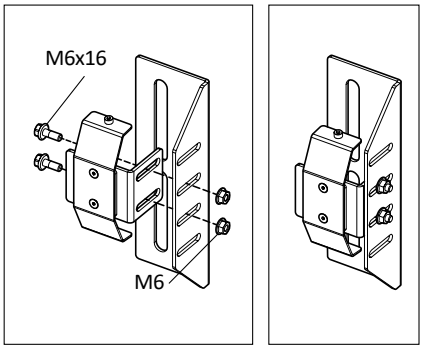
- Fix the upper frame crossbeam onto the uprights using the car pressing brackets.
- The brackets will be adjusted upon the car installation.

KIT F350.23.0002V01

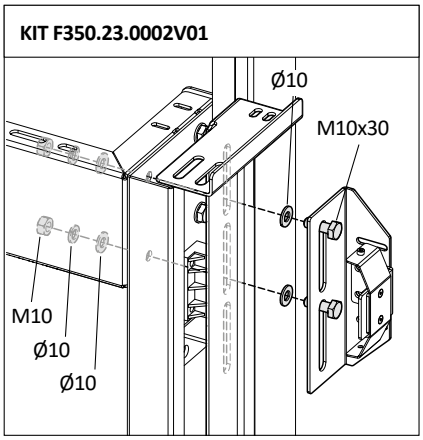


LOCK CONTACT (if foreseen)

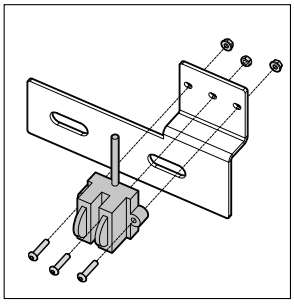
- Pre-assemble the fixing brackets and contacts.



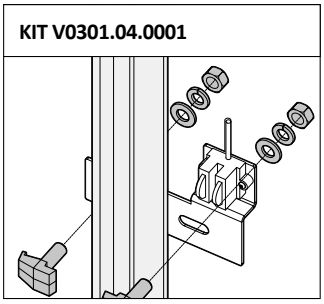
KIT F350.23.0002V01

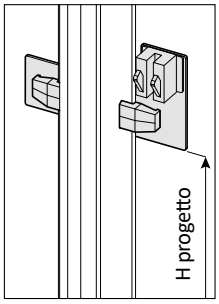


- Fix the brackets to the guide rail adjacent to the shaft grid



KIT V0301.04.0001



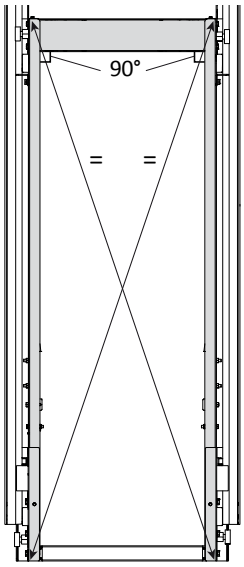


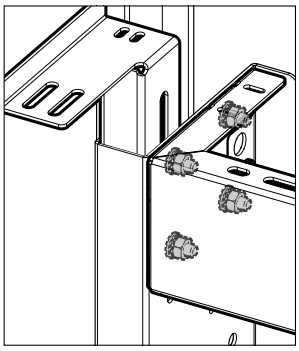
The quantity must match the number of stops.

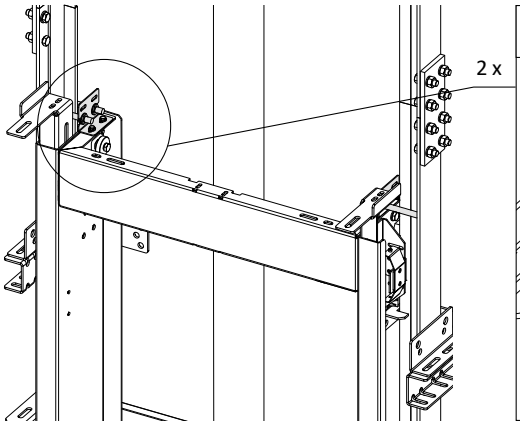
INFORMATION

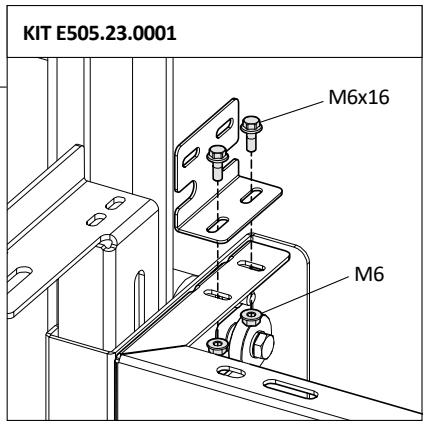
Position the contacts along the guide rails, one contact each guide rail.
The adjustment will be made durig the first trial run.

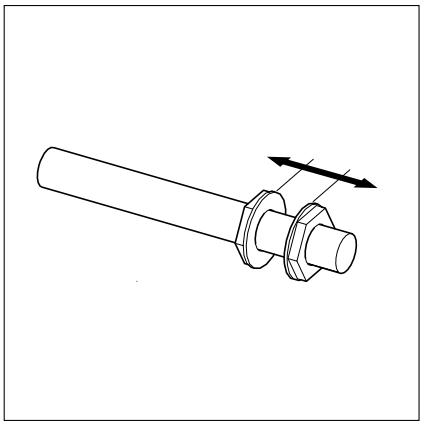
2:1

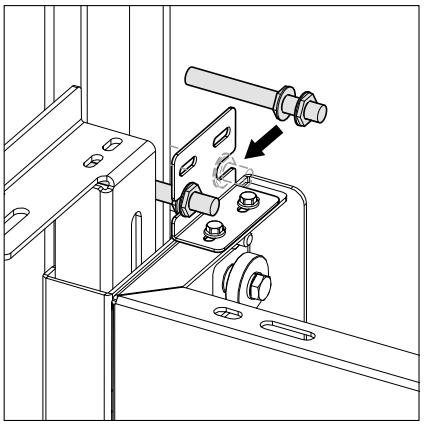


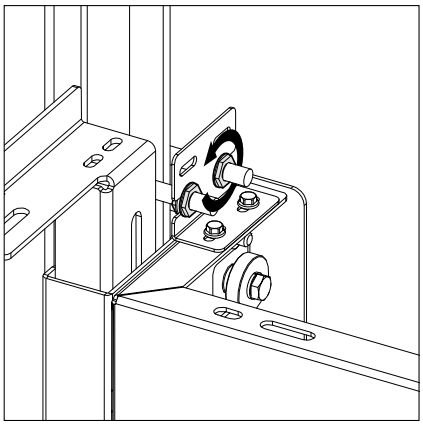




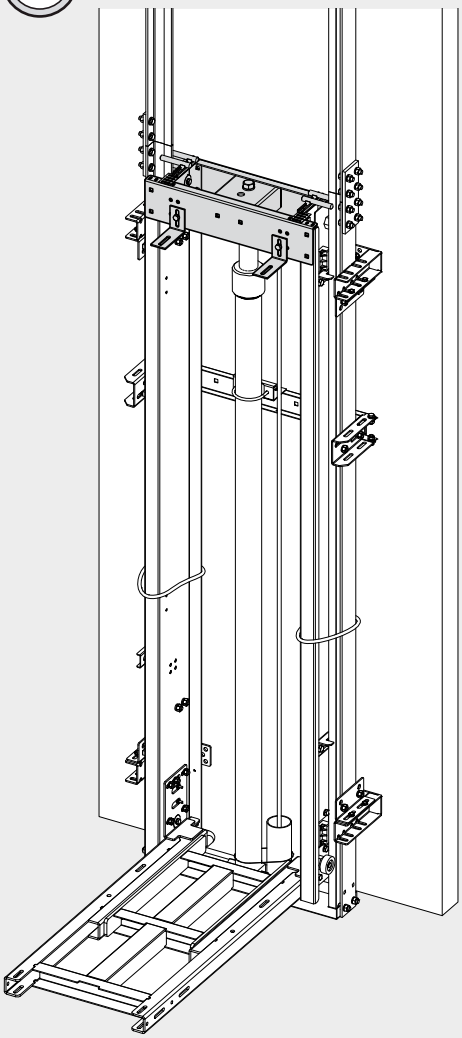




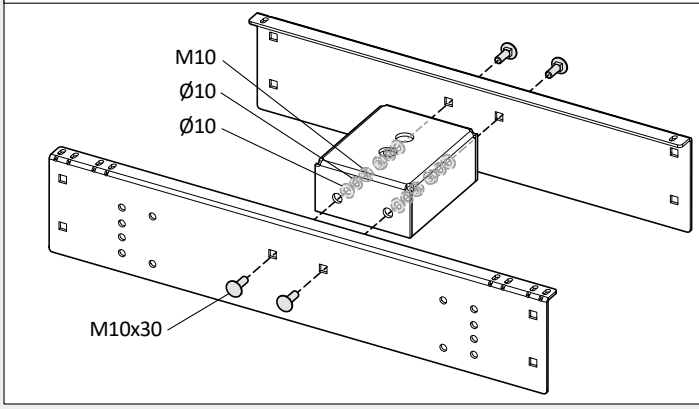


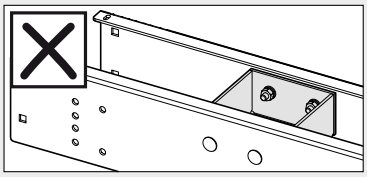


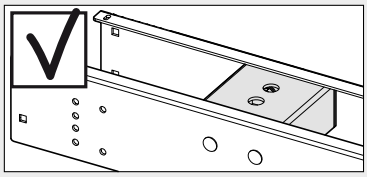
1:1

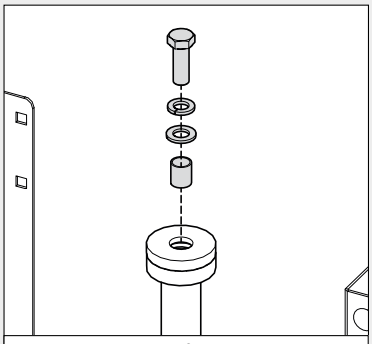


KIT F350.23.0002V02

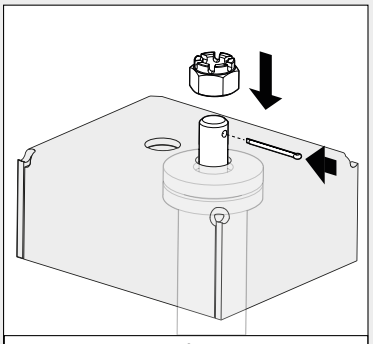






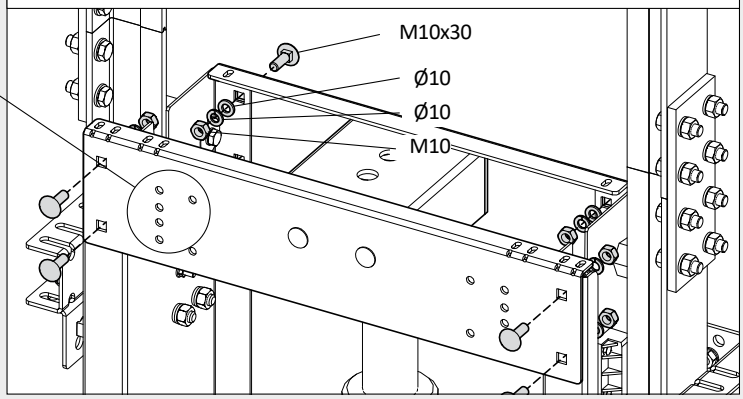


PISTONE TIPO 50/2



PISTONE TIPO 60/2

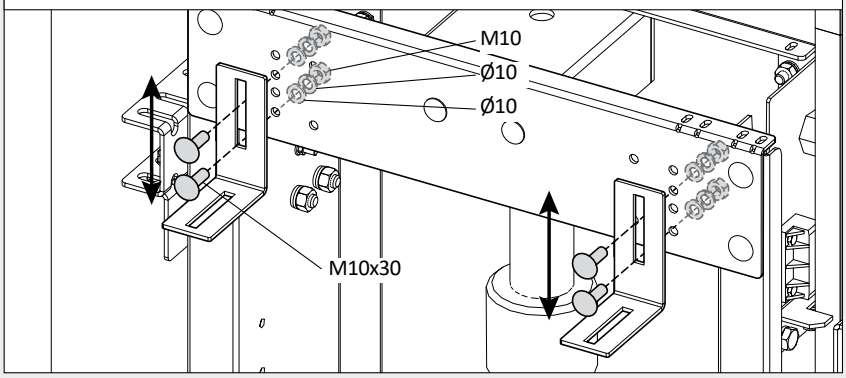
KIT F350.23.0002V02



1:1

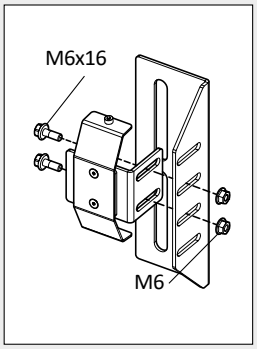
- Pre-assemble the car pressing brackets.

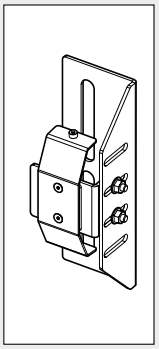
KIT F350.23.0005V02



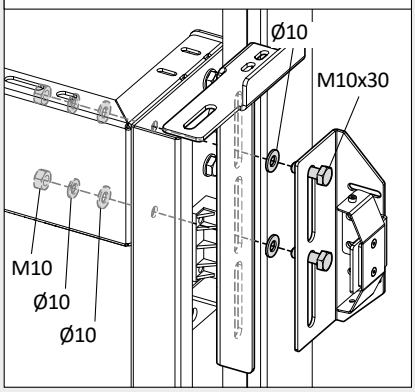
LOCK CONTACT (if foreseen)

- Pre-assemble the fixing brackets and contacts.

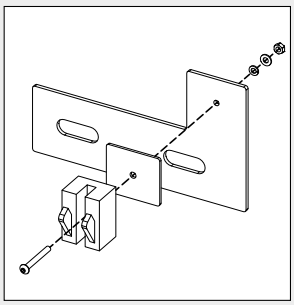




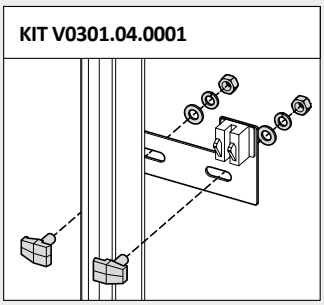
KIT F350.23.0002V01

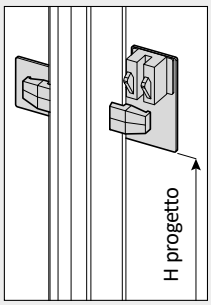


- Fix the brackets to the guide rail adjacent to the shaft grid



KIT V0301.04.0001

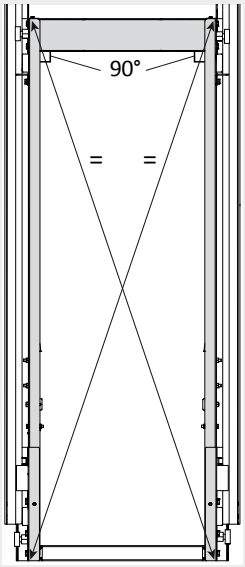




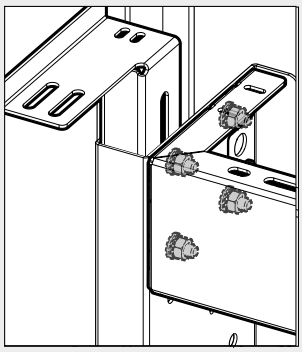
The quantity must match the number of stops.

INFORMATION
Position the contacts along the guide rails, one contact each guide rail. The adjustment will be made durig the first trial run.

1:1

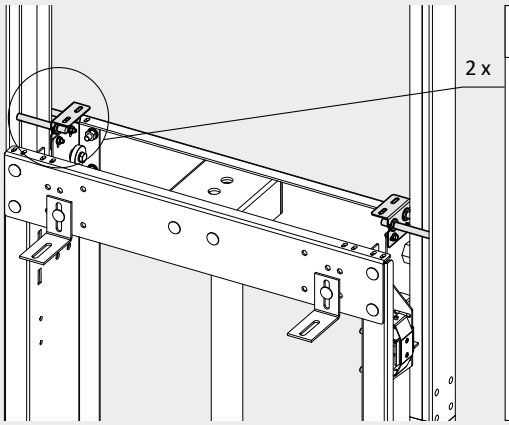


- Make sure that the frame crossbeam and uprighs have been assembled squarely.
- Fasten the screws between the cross beam and uprights.

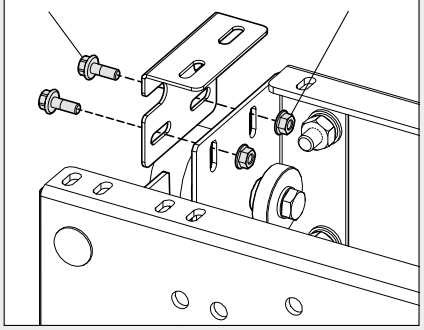


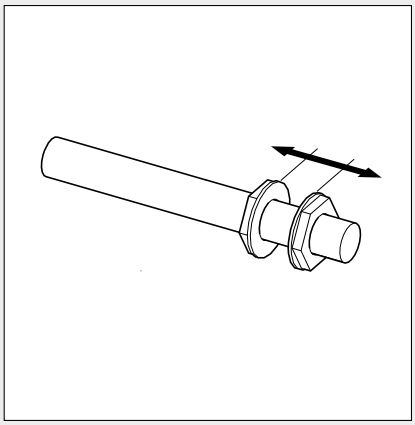
- Assembly the magnetic sensors onto the upper crossbeam.

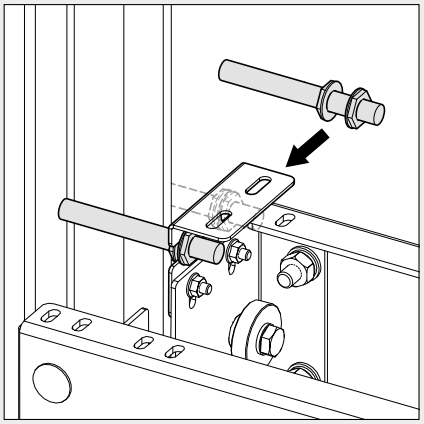
CASE 1 - 4 MONOSTABLE SENSORS

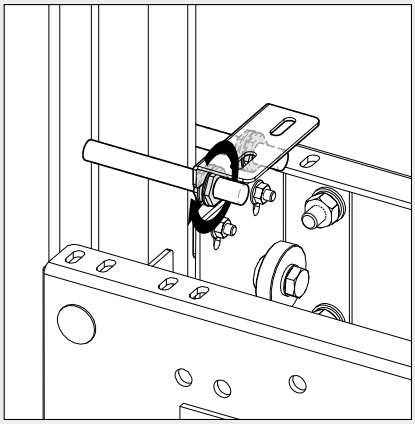


KIT E505.23.0001





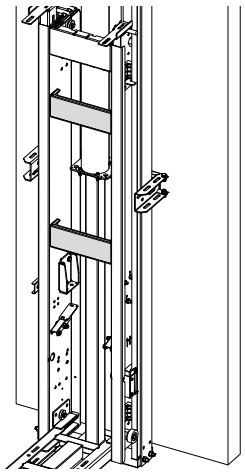




INFORMATION

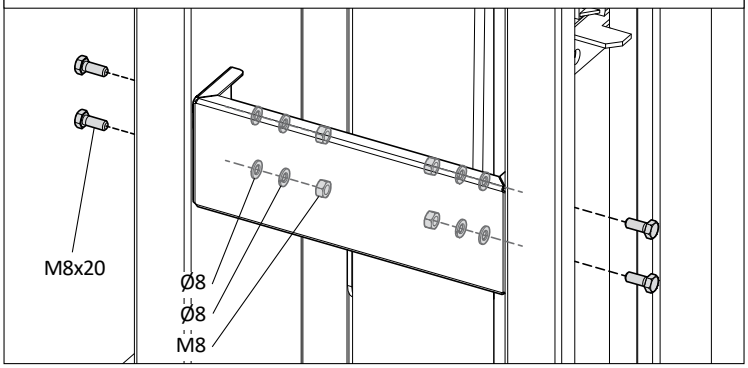
In case of LOAD ≥ 500 kg, refer to CASE 2 for monostable sensor fixing instructions.

DISTANCE BETWEEN GUIDES (DTG) = 350 mm

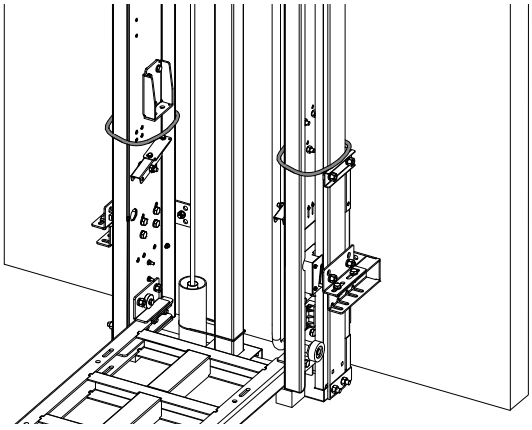


- Assemble the upright supports onto the frame.

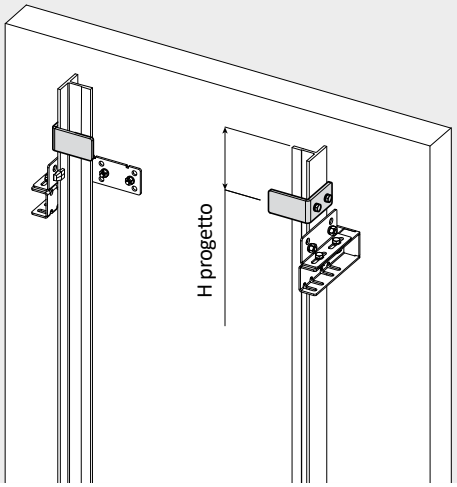
2 x **KIT F350.23.0038**



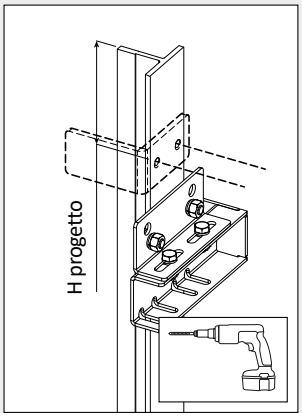
- Remove the tiers that temporaly tied the uprights guide rails together.



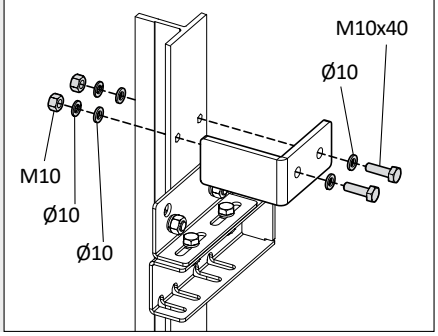
1:1



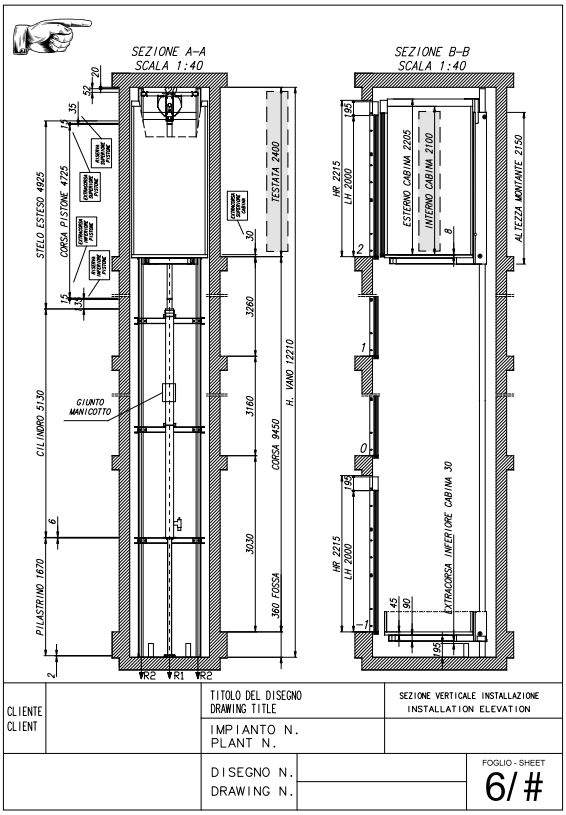
- Assembly the mechanic blocks to the guide rails, following the instructions stated in the project drawings. Use the blocks as templates.



KIT F350.23.0009



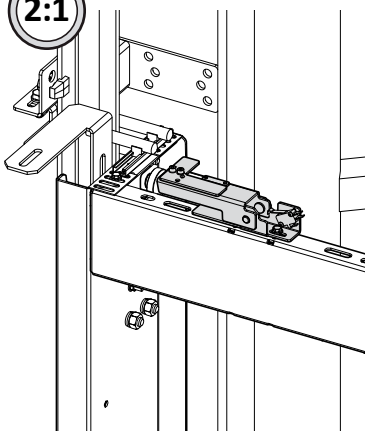
IN CASE OF HEADROOM SPACE < 350 mm



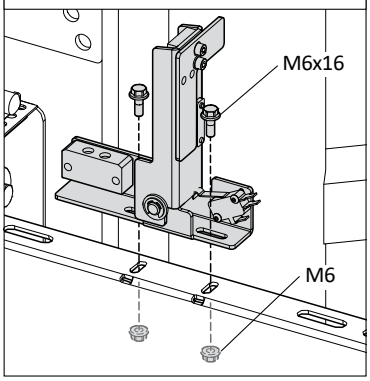
In case of headroom safety space ("HEADROOM" - "CAR INT. HEIGHT") < 350 mm a SAFE-HEAD DEVICE is required.

CASO 1 - STANDARD ("HEADROOM" - "CAR INT. HEIGHT"=350mm)

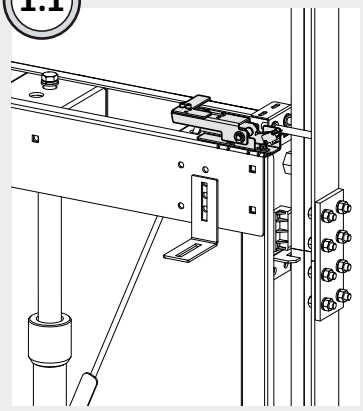
2:1



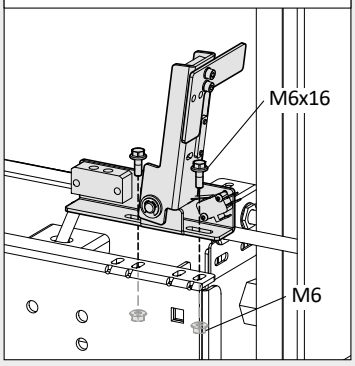
KIT F350.23.0002

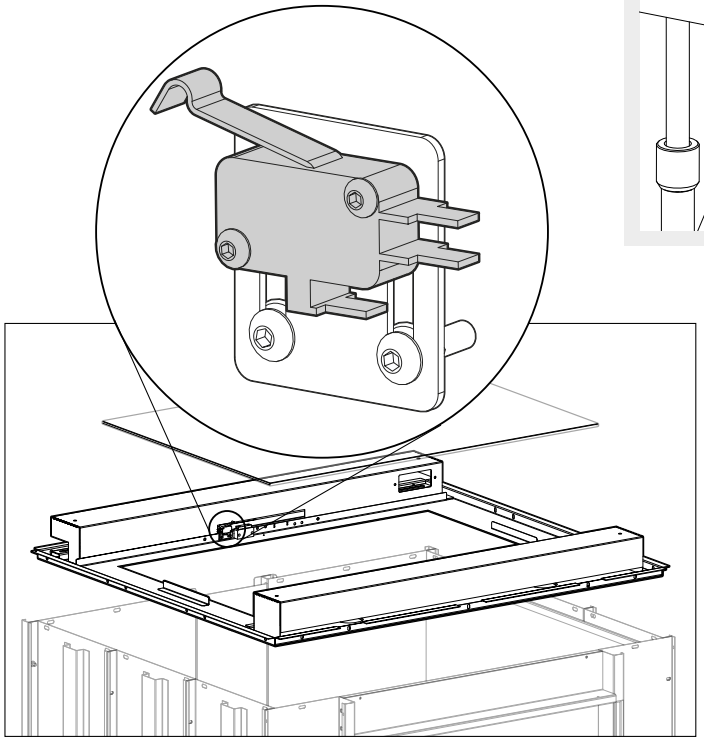


1:1



KIT F350.23.0002

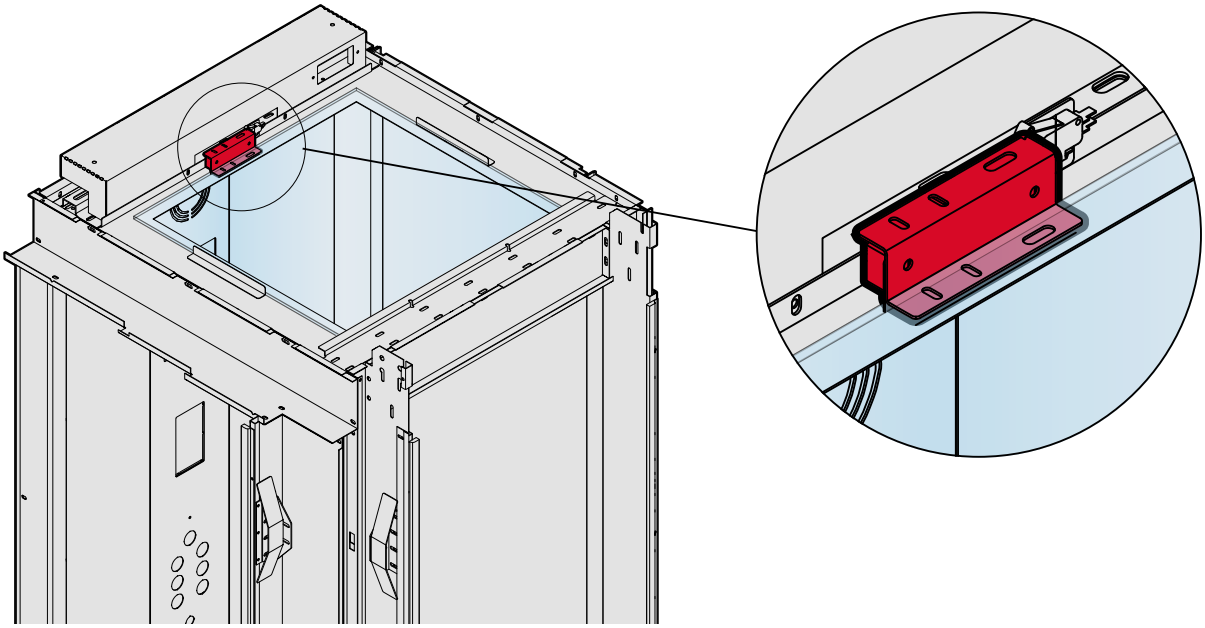


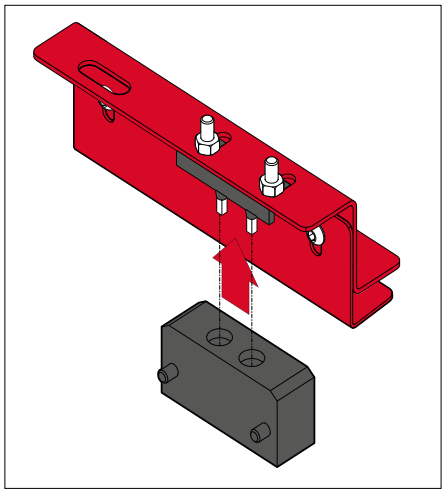


INFORMATION

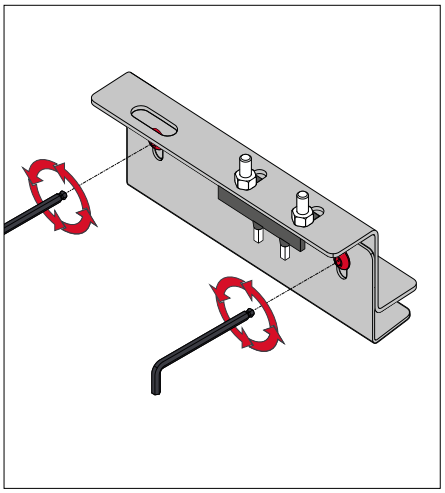
You must install the safety micro-contact on the car roof (connected to the roof opening alarm) at the same time as the "HEADROOM PROTECTION DEVICE".

11.4. INSTALLATION / REPLACEMENT OF THE CEILING OPENING SAFETY KIT

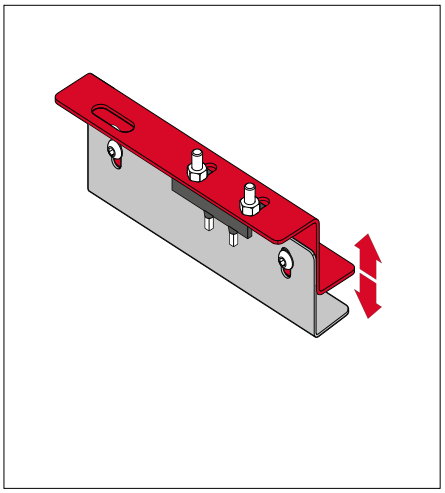




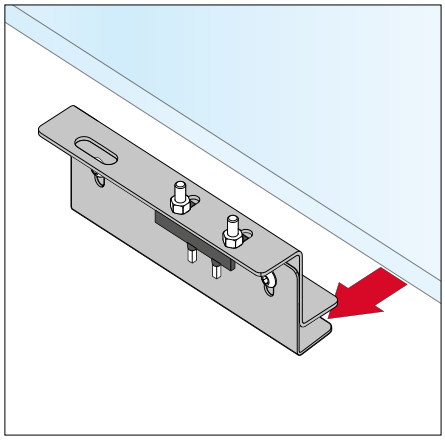
- Raise up the bracket assembly containing the removable bridge;



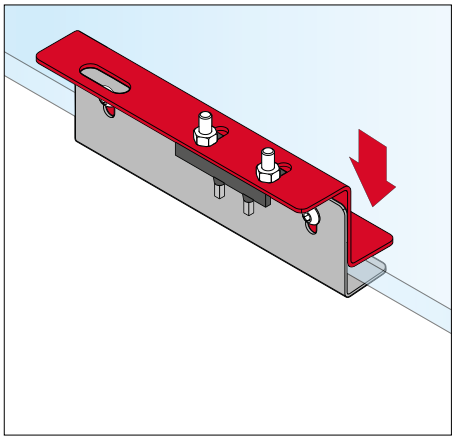
- loosen the fastening screws without removing them;



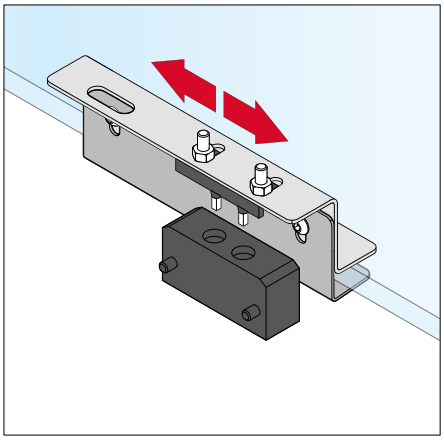
- raise up the removable bridge bracket;



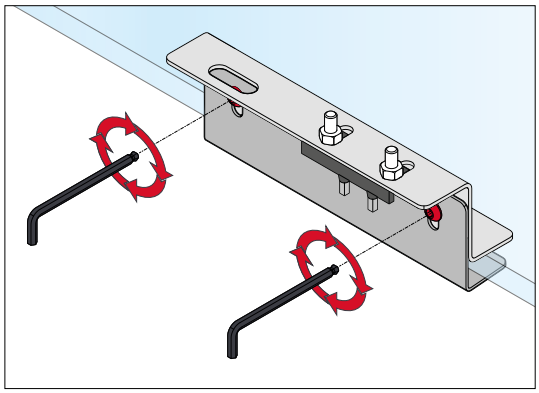
- insert the filling panel (or plexiglass);



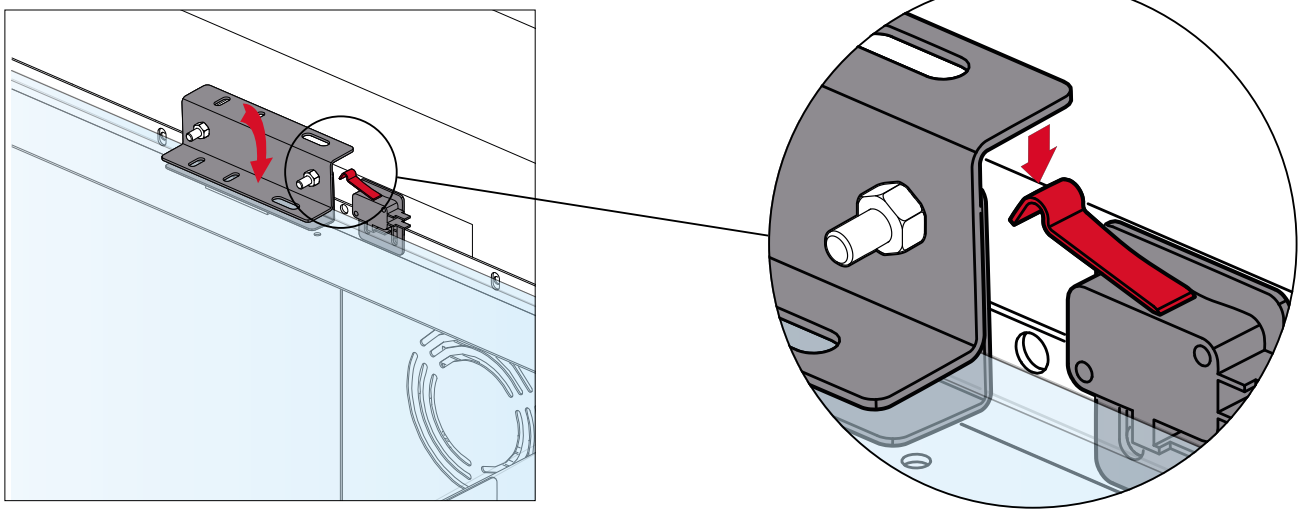
- tighten the removable bridge bracket on the filling panel;



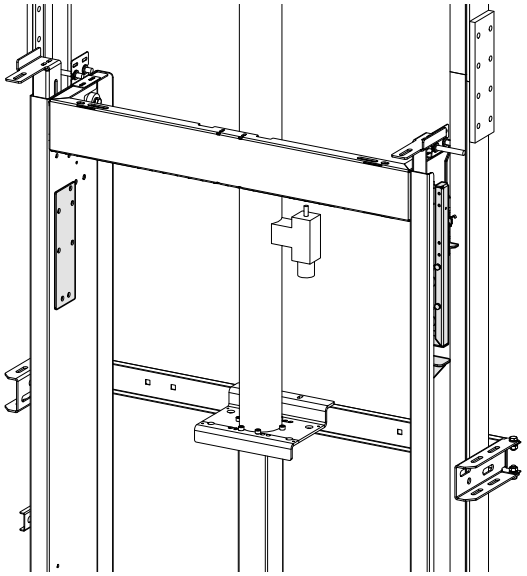
- adjust the position of the bracket assembly in order to insert the bridge into the electrical contact;



- tighten the fixing screws;

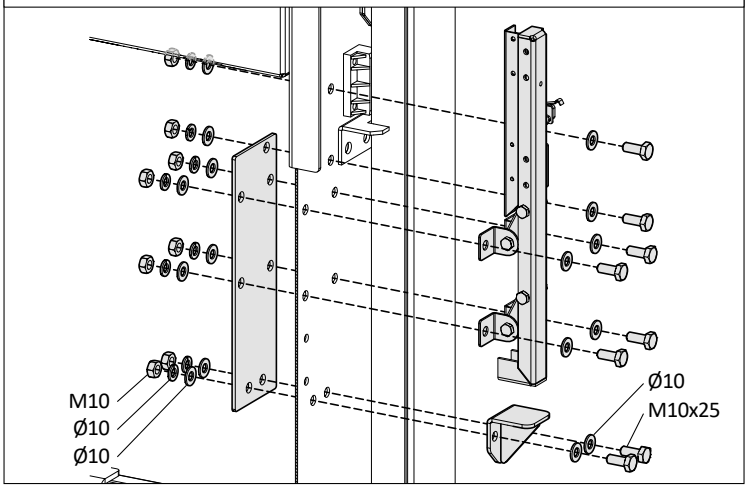


- Make sure that the bracket holds the safety micro-contact lever on the cabin roof.

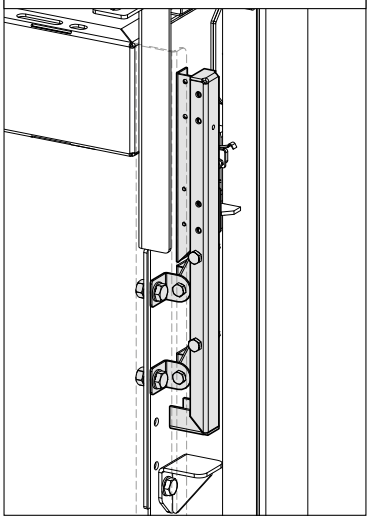


CASE 2 - OPTIONAL ("HEADROOM" - "CAR INT. HEIGHT"=1000mm)

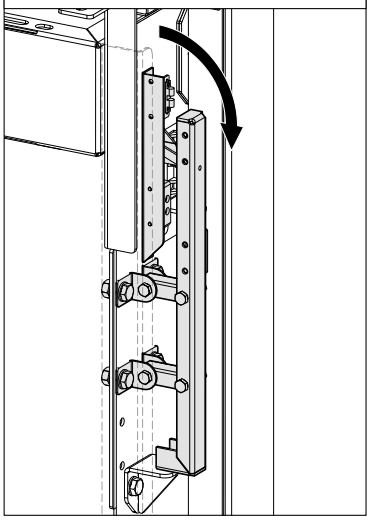
KIT F350.23.0044

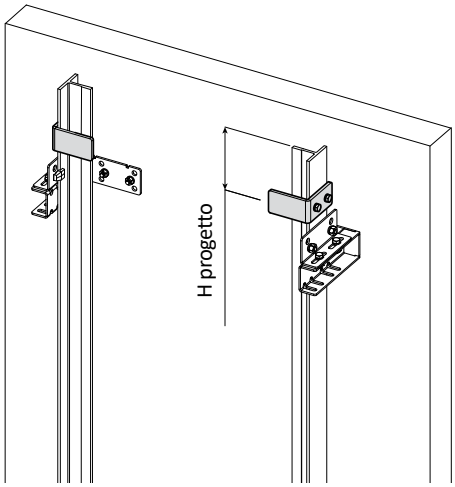


SAFE-HEAD CLOSED

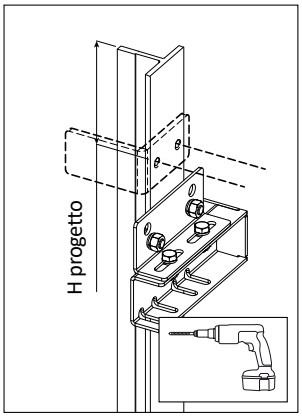


SAFE-HEAD OPEN

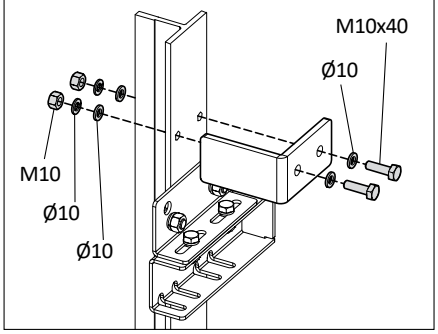




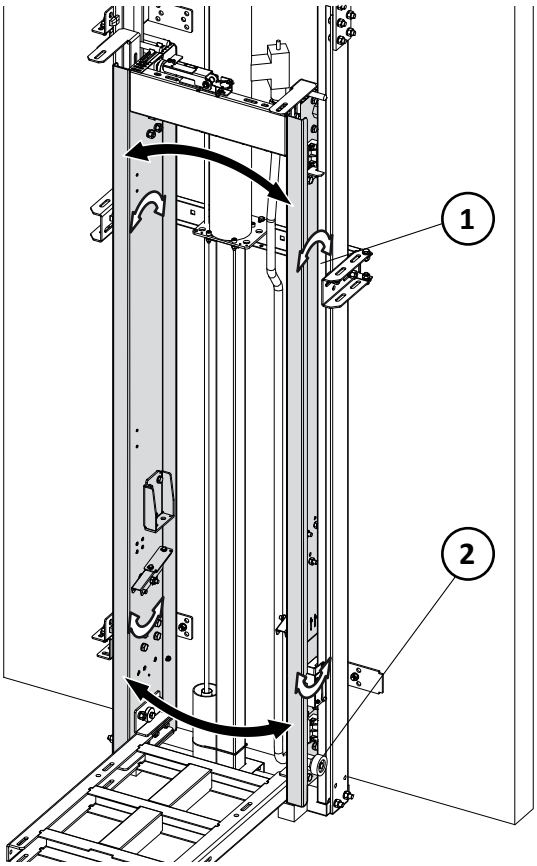
- Assembly the mechanic blocks to the guide rails, following the instructions stated in the project drawings. Use the blocks as templates.



KIT F350.23.0009



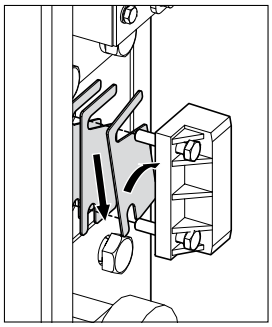
11.5. ADJUSTMENT



- Use the upper/lower shoes to square and level the uprights.

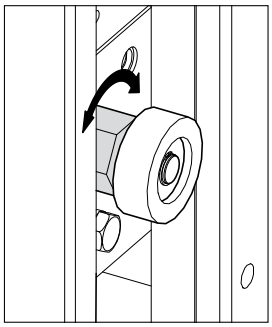
1 Guide rail axis parallel rotation

- If necessary, inserirt the shims between the shoes and the uprights.

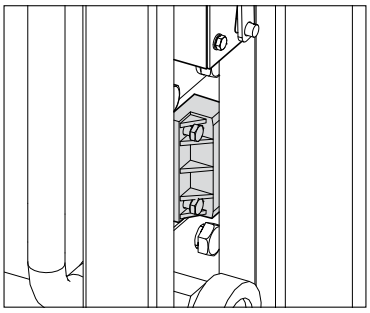


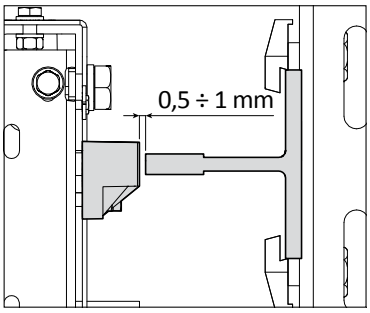
2 Guide rail axis perpendicular rotation

- If necessary, rotate the roller shoes.



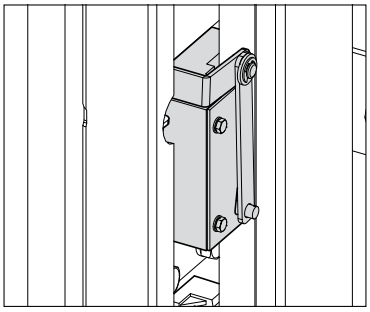
- Make sure that the strike shoes are placed at the same distance from the guide rails (total play 0,5÷1 mm).

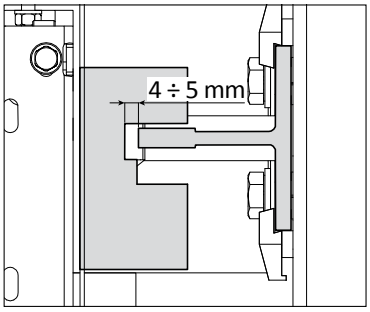




2:1

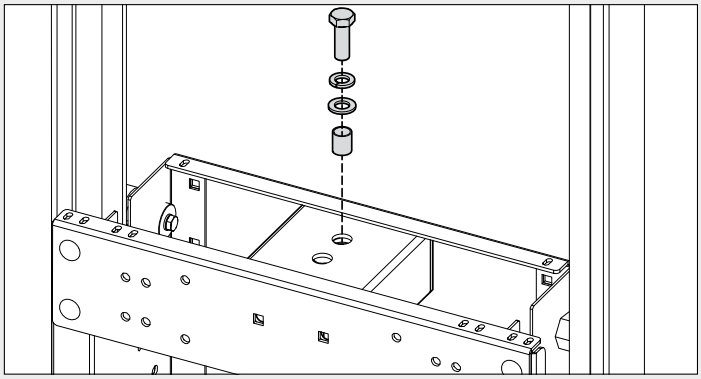
- Make sure the distance between the groove of the safety valve and the top of the rail is 4÷5 mm per side.

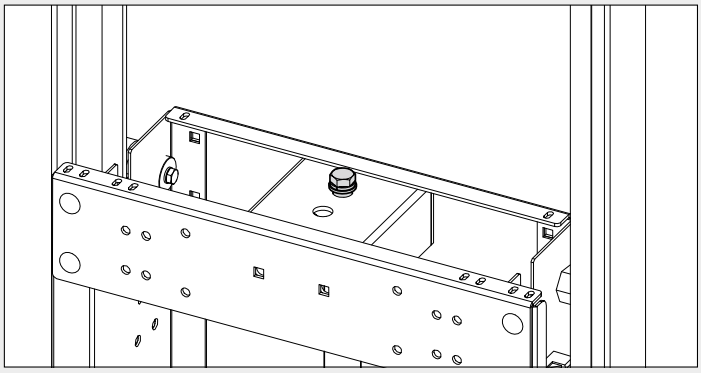




1:1

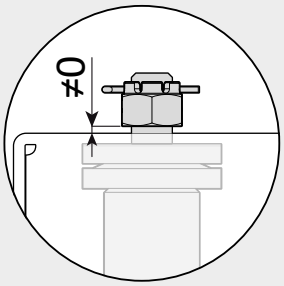
- Fix the cylinder stem to the crossbar attachment by repositioning the screws previously removed. For the 60/2 type piston see assembly on page. 59



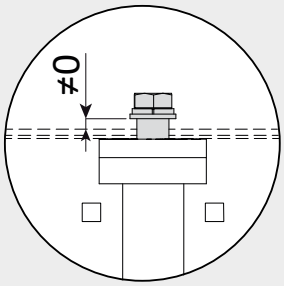


INFORMATION

When tightening the bolts / nuts it is always necessary to leave a clearance of about 1 mm.

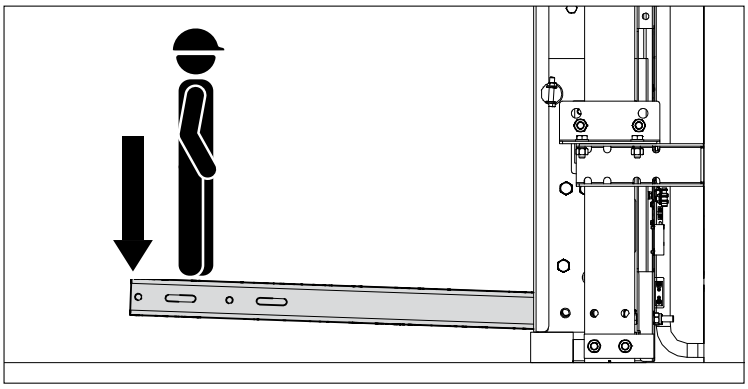


60/2 PISTON TYPE

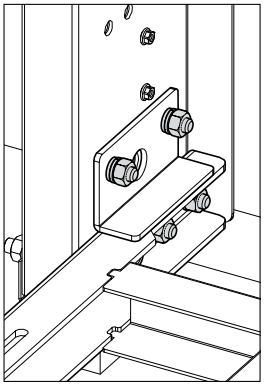


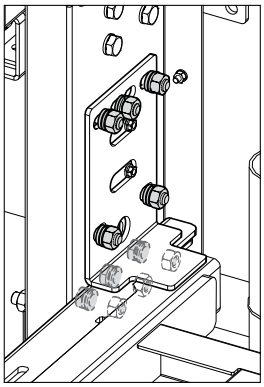
50/2 PISTON TYPE

- Stand on the cantilevered end of the frame base to regain the play of the threaded joints.



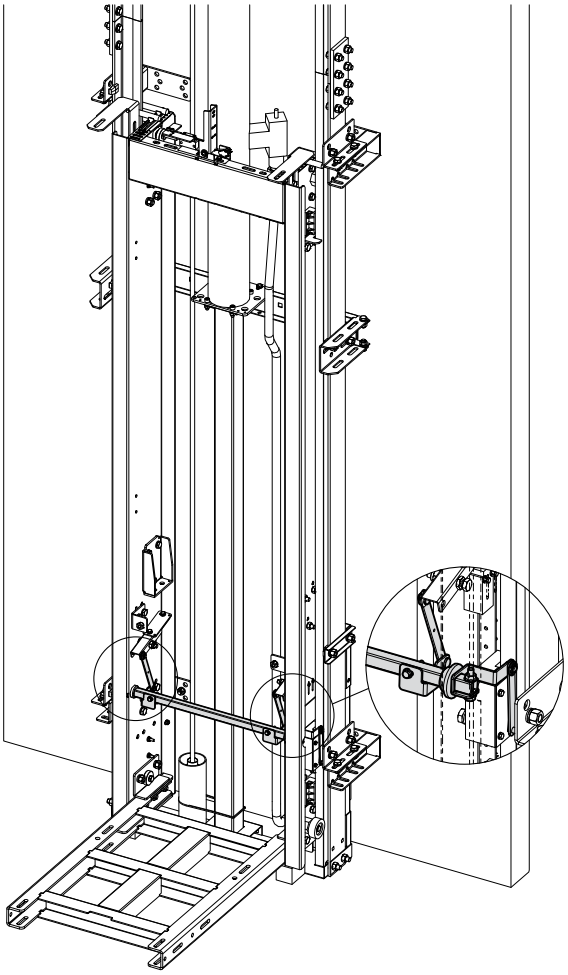
- Fasten to end the frame base fixing screws.





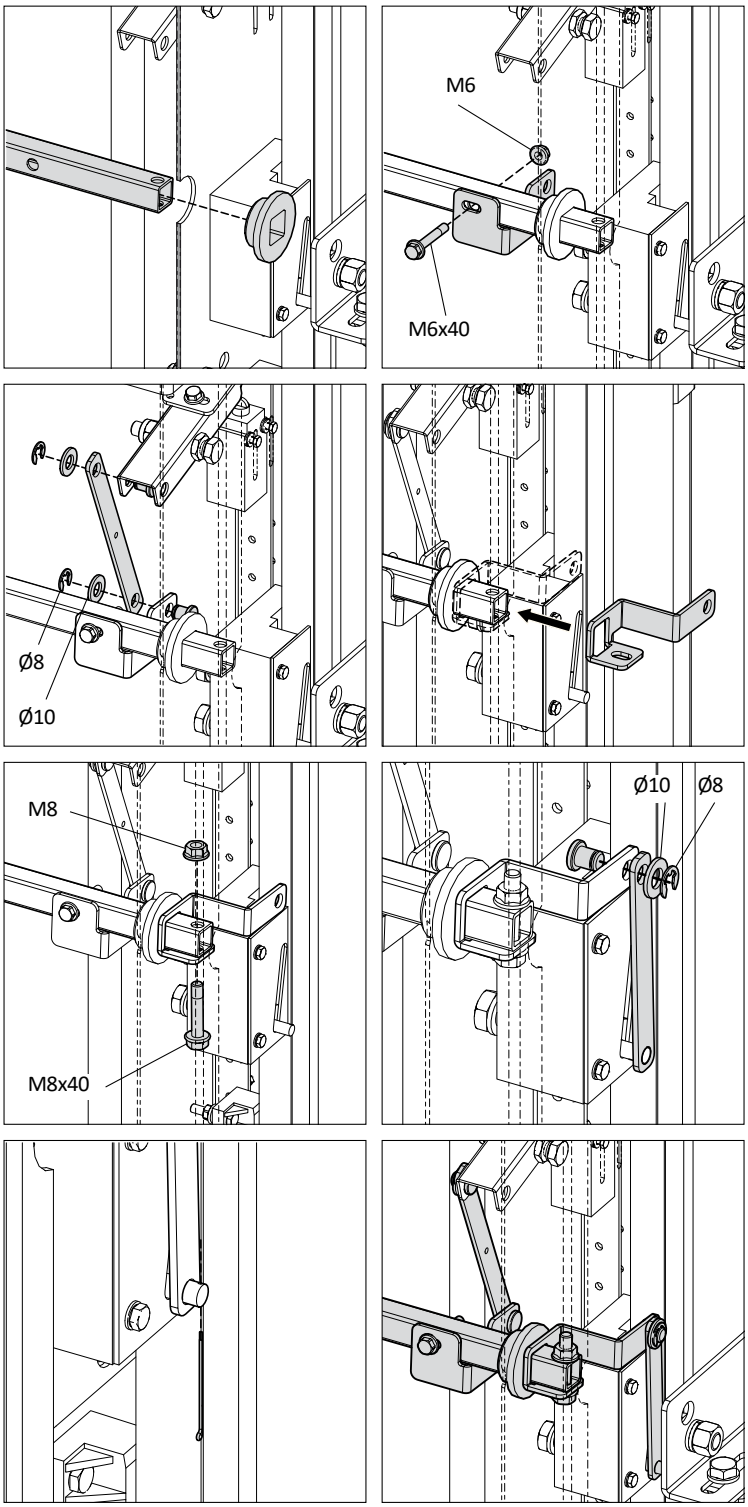
11.6. SAFETY VALVE LEVERAGE - INSTALLATION

2:1



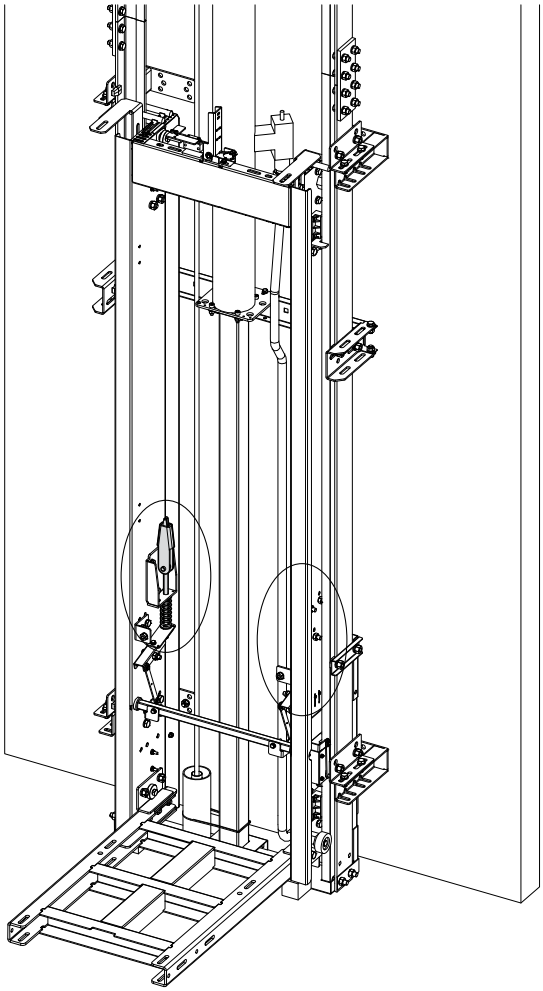
- Assembly the bushes onto the uprights by means of the synchronyzing hose;
- Insert the brackets in the synchronyzing hose;
- Install the levers between the brackets in the synchronyzing hose, then mount the pre- assembled components onto the uprights;
- Insert the bracket onto the far end of the synchronyzing hose;
- Fix the bracket;
- Install the lever between the lastly assembled bracket and the safety valve roller.

KIT F350.23.0012



11.7. ROPE - POSITIONING

2:1

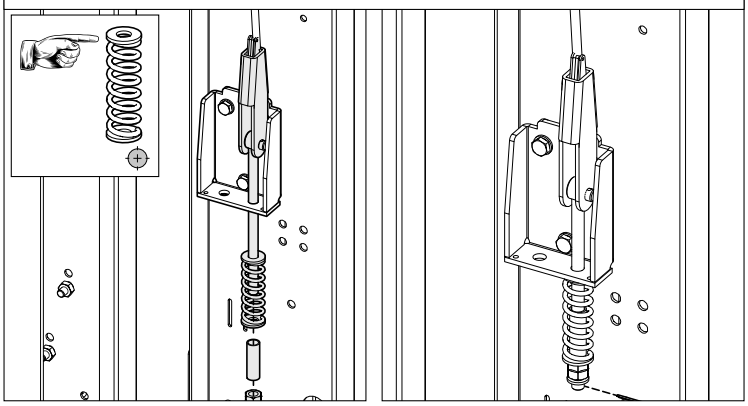


- Untie the ropes at the frame side.
- Assembly the rope terminal to the free end.
- Install the rope terminals on frame ends according to the "exit" side of the rope.

INFORMATION

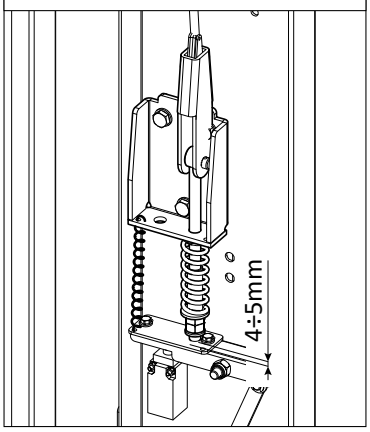
With 2 ropes: use the nearest hole to the fulcrum of the lifting system.
With 4 ropes: make sure the ropes do not cross.

KIT F350.23.0029

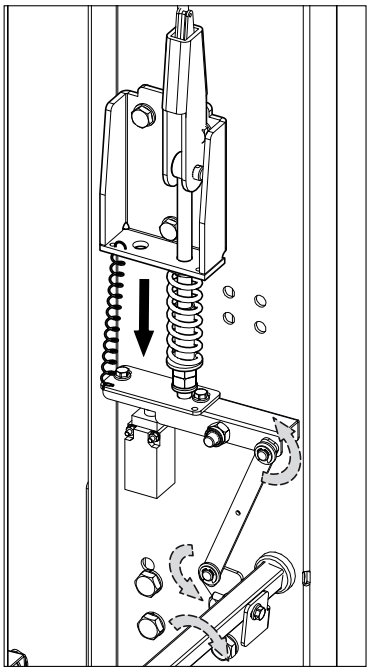


- Fix the slack robe little dishes to tensioning springs.
- Adjust dado and locknut so that the stem ends of the headrope is 4/5 mm far from the little dishes.

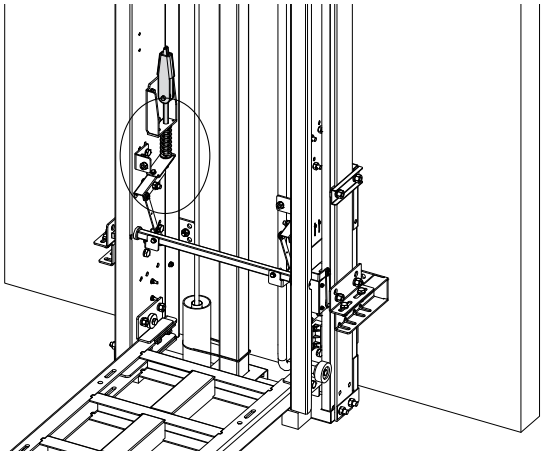
KIT F350.23.0012

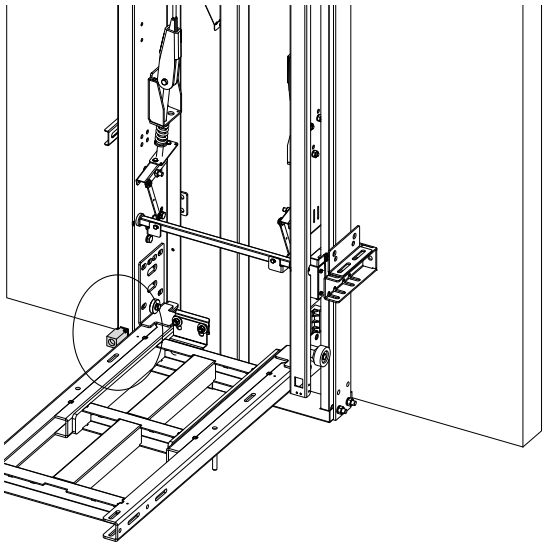


- Check the mobility of the rope slackening system, by making pressure on the leverage.



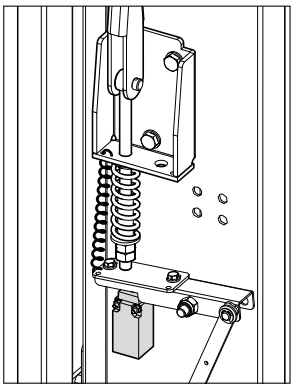
11.8. SAFETY VALVE LEVERAGE - INSTALLATION





CASE 1 - STANDARD

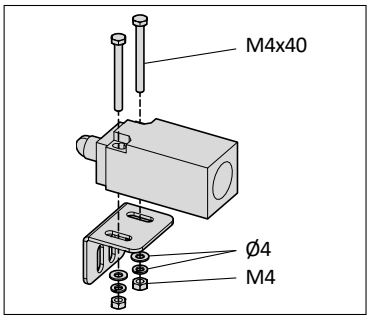
- Switch preinstalled onto the car frame upright.

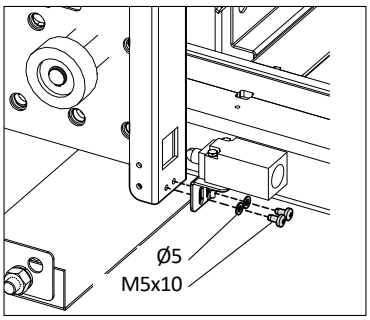


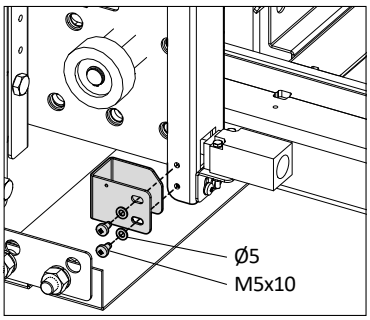
CASE 2 - OPTIONAL

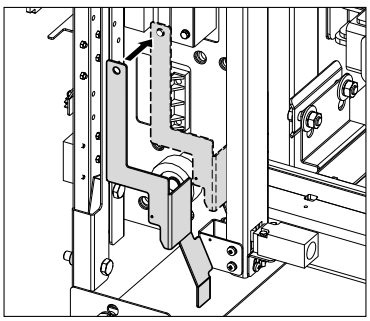
KIT F350.23.0045

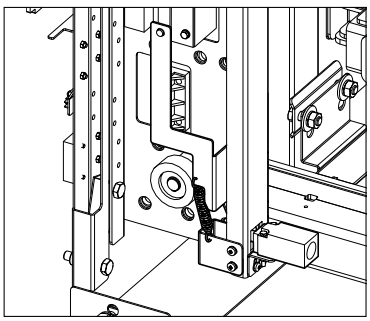
- Switch to be fixed to the car frame upright.



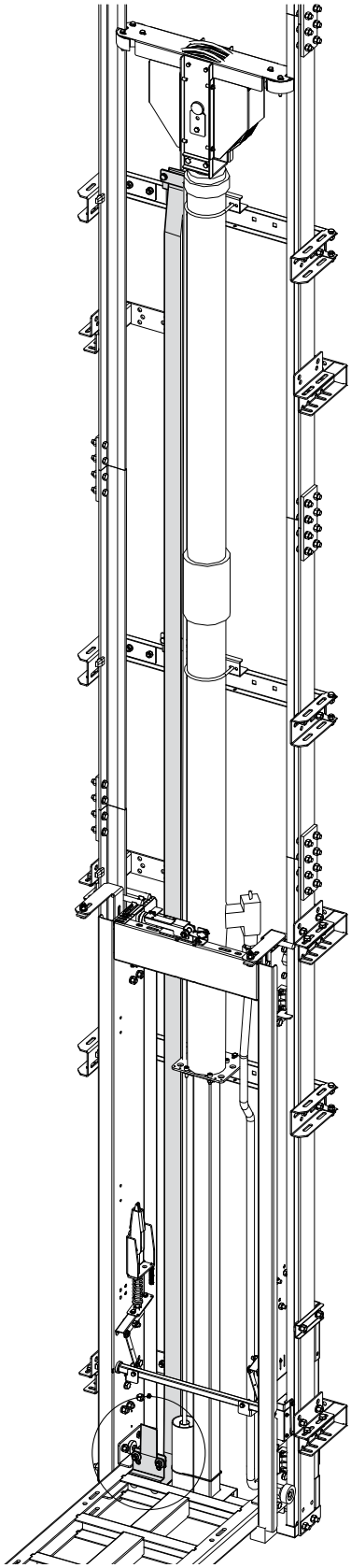




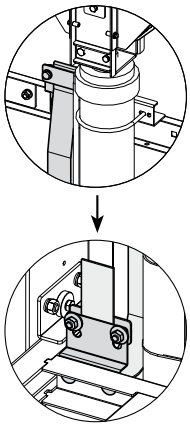




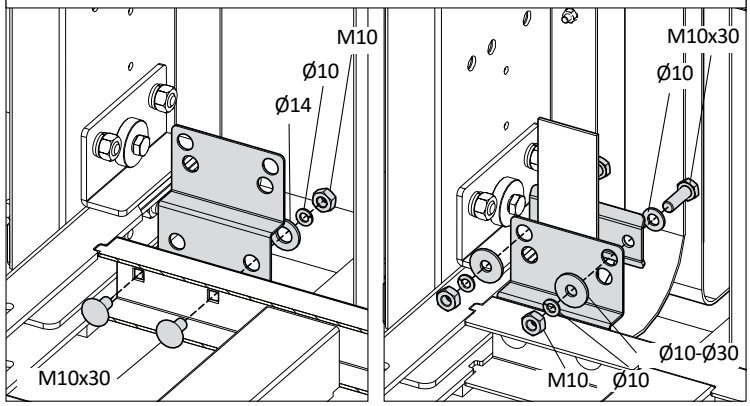
11.9. FLAT CABLE - FIXING TO FRAME BASE - DBG (distance between guides) ≥ 550



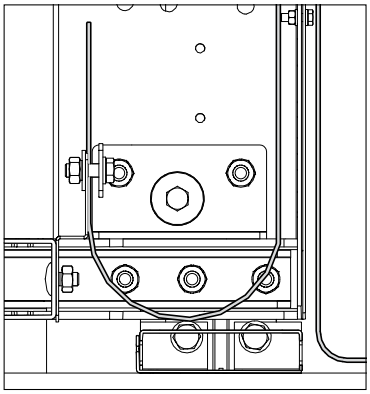
- Fix the flat cable end (car side) to the frame shelf.



KIT F350.23.0039V01



- Make sure that the cable is not crushed, when the frame base is in lower overrun. The cable must touch the pit bottom lightly.

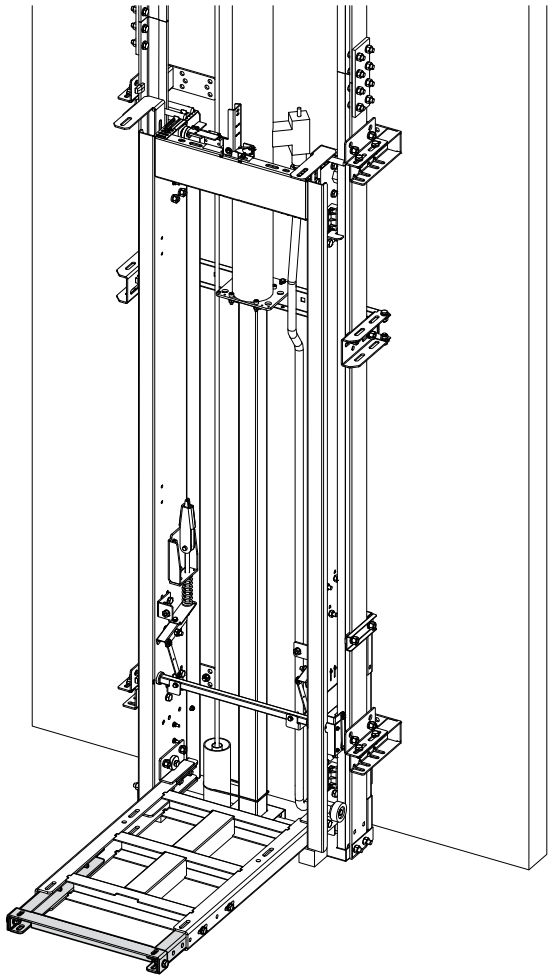


INFORMATION

In case of travel > 9 m, an additional flat cable fixing kit will be provided (to be anchored to the cylinder bracket).

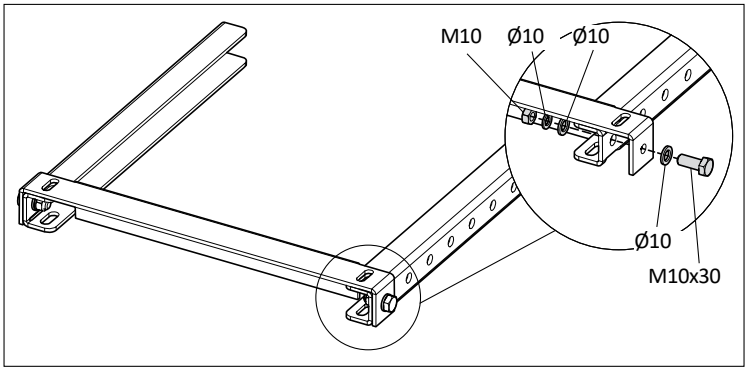
11.10 ULTIMATE ON-FRAME INSTALLATION (if foreseen)

FRAME BASE EXTENSION

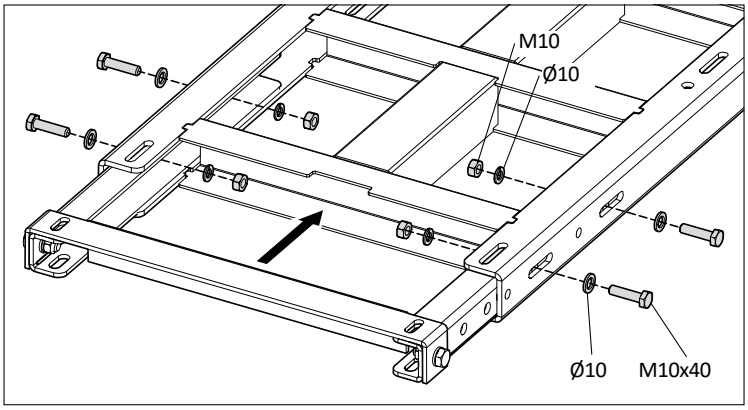


- Assemblare la prolunga della base arcata.

KIT F350.23.0003



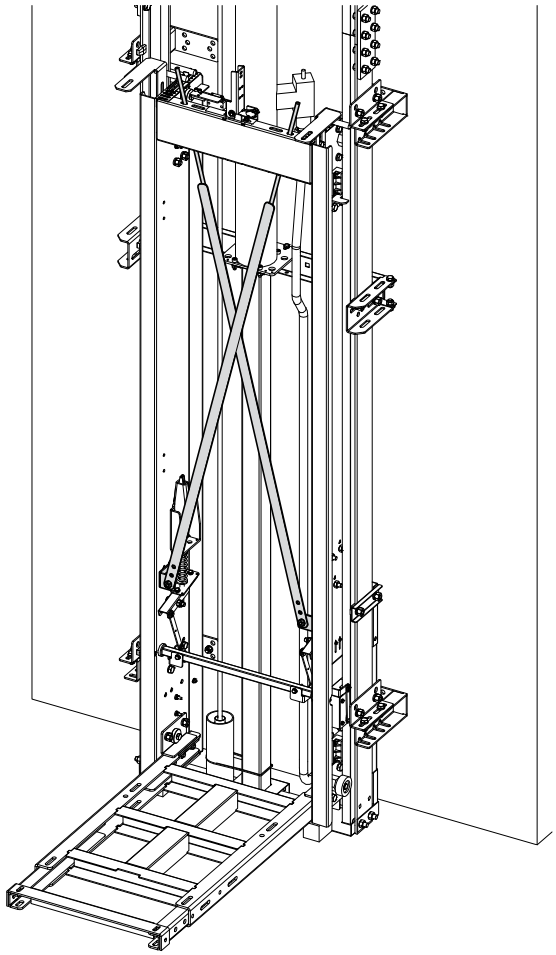
- Installare la prolunga sulla base.



INFORMAZIONI

La regolazione della lunghezza della prolunga base arcata viene fatta con il montaggio del basamento di cabina.

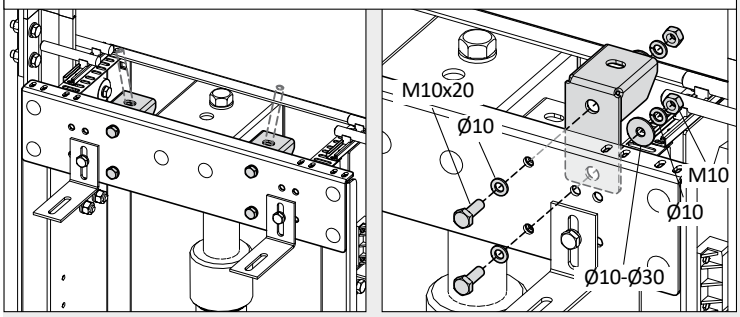
TRANSVERSE TIE-RODS



1:1

- Fix the upper bracket to the frame crossbeam.

KIT F350.23.0035V03

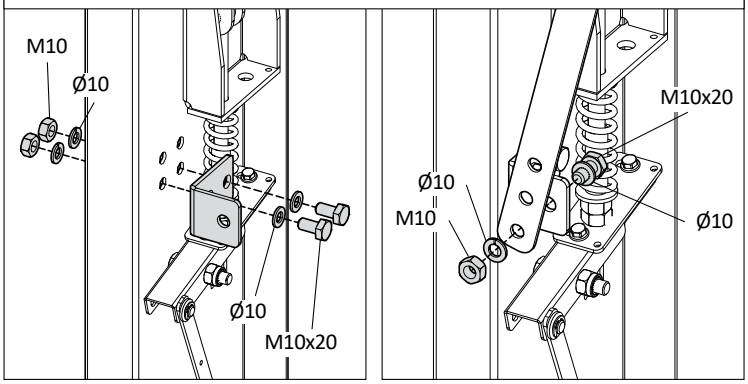


- Fix the tie-rod below using the supplied bracket and screws.

INFORMATION

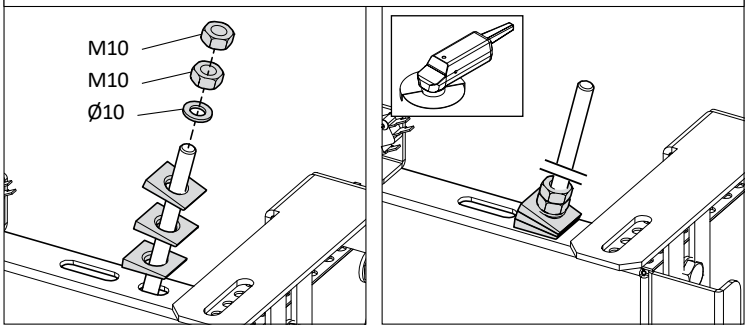
Before fixing the tie-rod, insert the upper part in the pre-arranged hole (frame crossbeam).

KIT F350.23.0035



- Fix the tie-rod above, using the supplied spacers.

KIT F350.23.0035V01



The threaded part of the tension-rod can be longer. If so, shorten it by means of a radar.

11.11. PLATFORM MOVEMENT- PRELIMINARY OPERATIONS

NOTICE

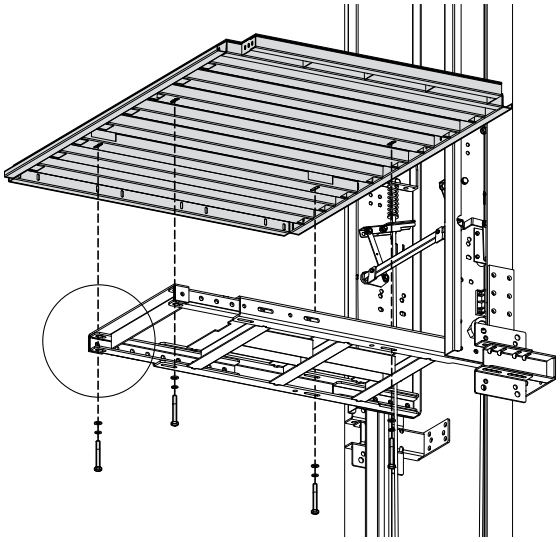
RISK OF PLATFORM DAMAGE:
Before moving the platform,
it is necessary to
carefully clean the guides with a dry cloth
(or clean paper to remove any metal chips).

DISASSEMBLE THE SCAFFOLD INSIDE THE SHAFT.

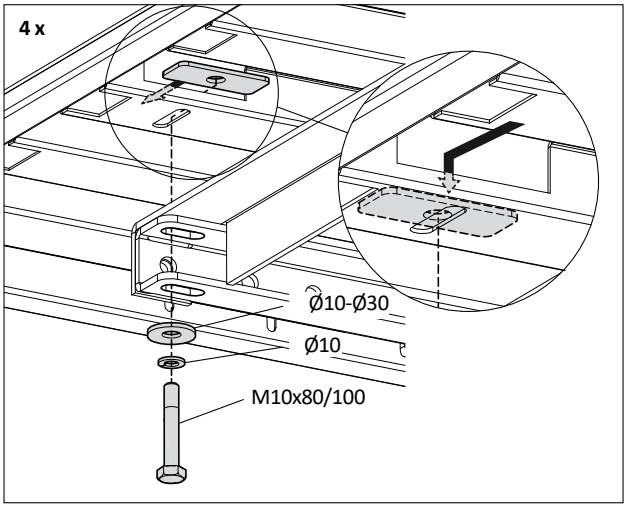
12. CAR BASEMENT ASSEMBLY

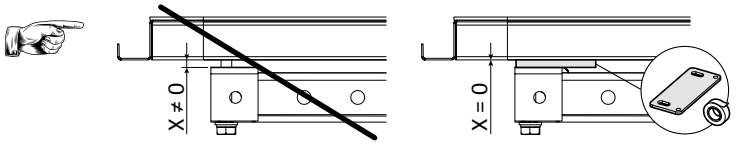
CAR BASEMENT ASSEMBLY, PIT ≥ 140 mm

- Install the basement using the pre-arranged holes.



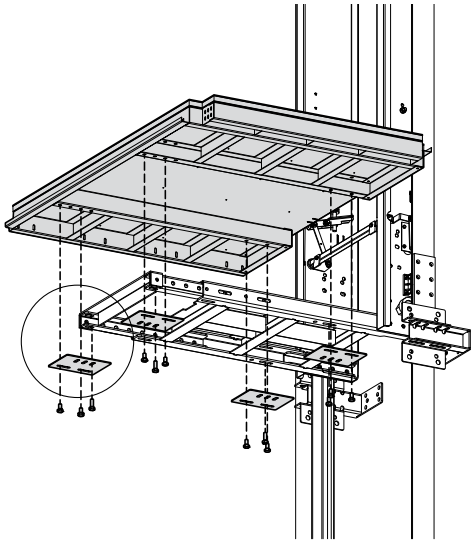
KIT F350.23.0004



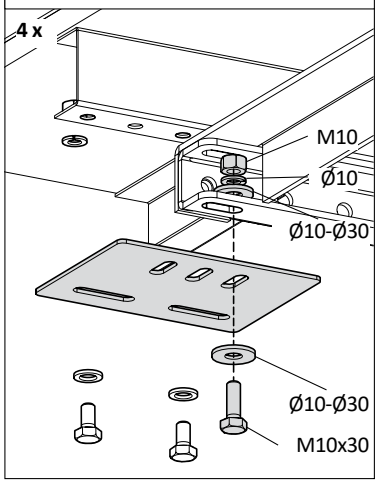


CAR BASEMENT ASSEMBLY, 100 mm ≤ PIT < 140 mm

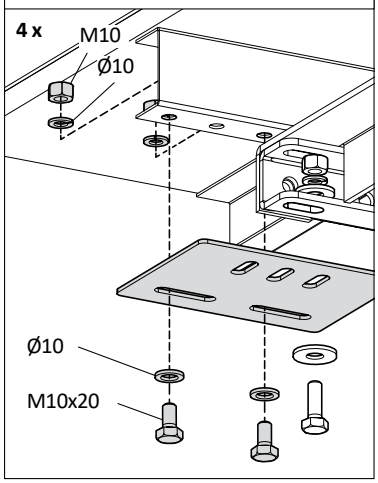
- Install the basement using the pre-arranged holes.

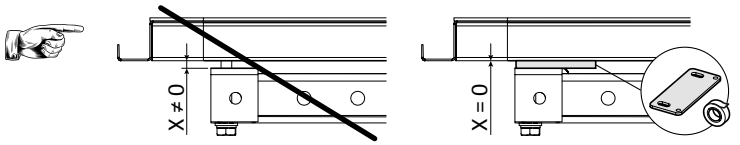


KIT F350.23.0004



KIT C002.23.0009 / 0015



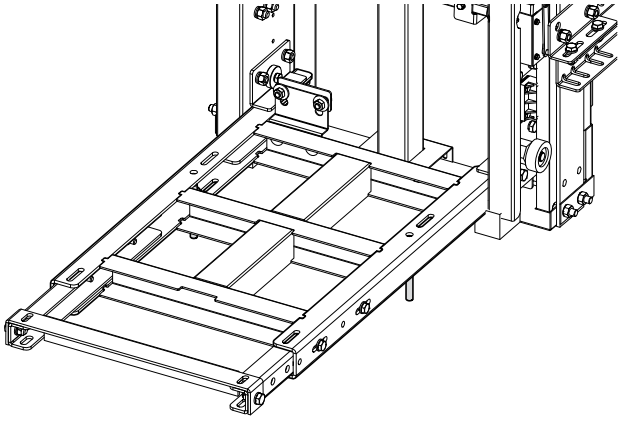


13. TAKING IN THE SLACK

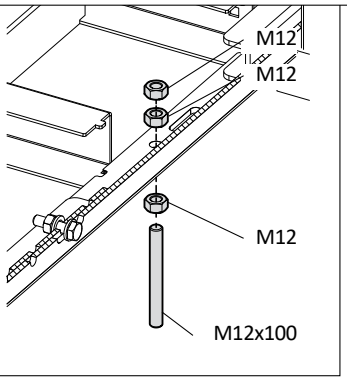
Upon completion of the above described operations, the lift is ready to be taken in the slack.
The following sequence of steps is to be followed:

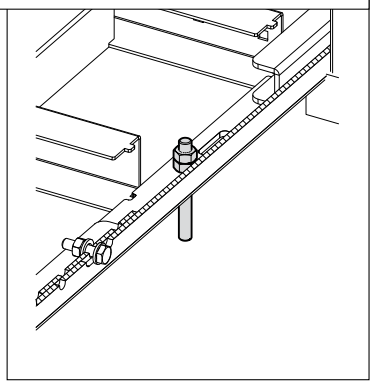
a. Check the correct electrical connection of the hydraulic unit (in accordance with the the electrical scheme and the instructions stated on the lid of the clamp box;
b. Check if the oil tank has been filled (paragraph **9.4**);
c. Unscrew the escape valve on the top of the cylinder;
d. Close the main tap and open the tap of the pressure gauge;
e. Switch the power of the control cabinet on;
f. Start the drive and check the pressure increase on the pressure gauge. In case of 3 phase power supply, if the pump rotation is wrong, the pressure will not increase and the pump will make a strong sharp noise. ln such cases switch the drive off immediately, cut the power and change the electrical drive connection, inverting two of the three phases. Repeat the test to check the correct functioning of the pump (pressure increase and absence of sharp noise).
g. Switch the drive off.
h. Open the main tap and close the tap of the pressure gauge;
i. Switch the drive on for 5÷8s and then switch it off for 15÷20s. This allows the air to escape rom the outlet hose and from the cylinder, through the escape valve.
j. Repeat the procedure from the previous point for several times, until clear oil starts coming out of the escape valve (without bubbles). Then, close the escape valve again;
k. Switch the hydraulic unit drive on until the frame will be lifted by 10÷15 cm;
l. Remove the two wooden blocks positioned previously (paragraph **13.2**) under the frame uprights;

m. Assembly the supporting screws under the two shelves;



KIT F350.23.0028

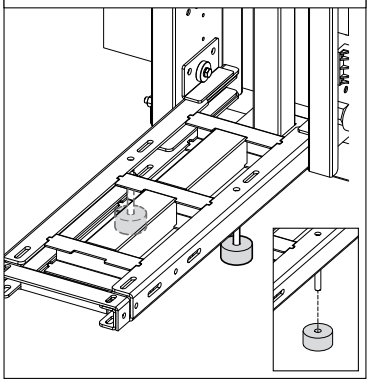




- Assembly anti-vibration pads, if foreseen;

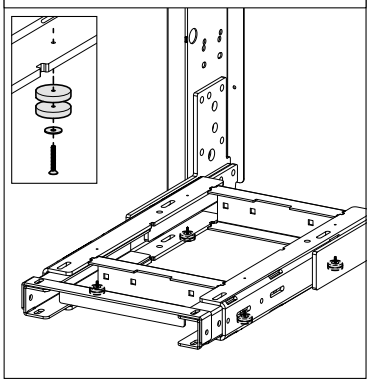
CASE 1

KIT F350.23.0033



CASE 2 - OPTIONAL

KIT F350.23.0043



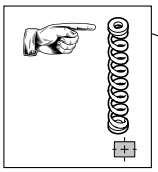
- Bring the piston to the lower end;
- Remove the piston from the cylinder up to the point indicated on the project drawings (use the manual pump (2:1) or control board (1:1));

2:1

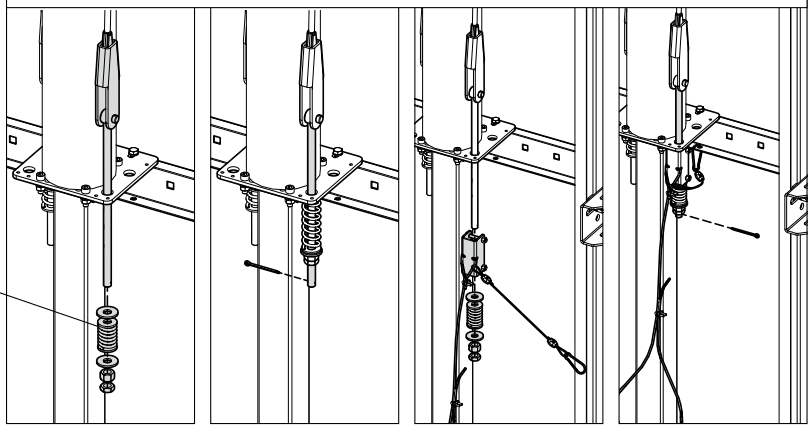
- With the piston in the same position, fix the rope terminal (cylinder side) and adjust the tension;
- Check the equal compression of the compensation springs;

INFORMATION

Install the safety test device in the rope terminal (lowest landing door side) and fix it to the large bracket by means of a snap-hook.

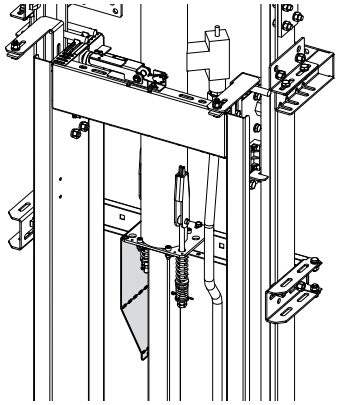


KIT F350.23.0029

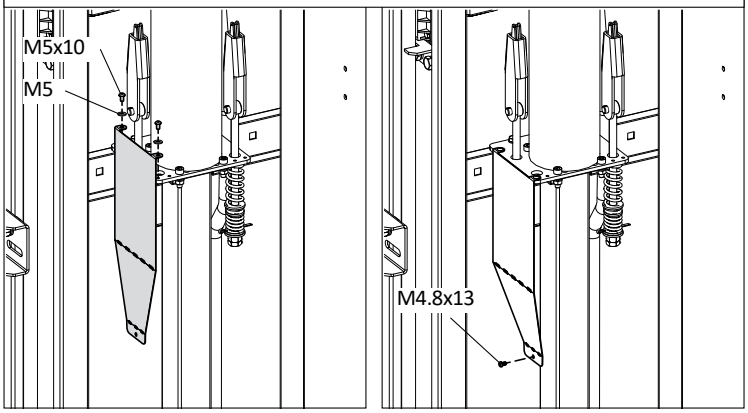


- Check the manual pump. To prime the manual pump (see schemes in paragraph **9.5** or **9.6** and Hydraulic Unit manual) close the main tap, unscrew the counterpressure screw of the cylinder, release the pressure pushing the manual (red) emergency button and e activate the manual pump lever very quickly. As soon as the pump has been primed, fasten the counterpressure screws of the cylinder, then open the main tap;

- Assembly the rope anchorage slide.



KIT F350.23.0039



14. CAR - ASSEMBLY

14.1. FLAT CABLE - FIXING TO THE CAR ROOF

INFORMATION

Please refer to the car installation manual, available in the car package.

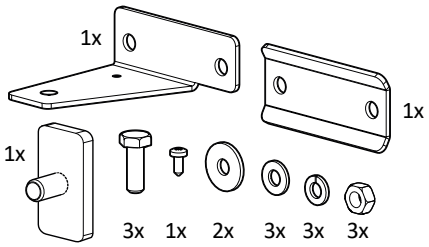
CASE 1 - distance between guides = 350 mm

- After installing the bracket supplied with the fixing kit, fix the end of the flat cable on the car roof.

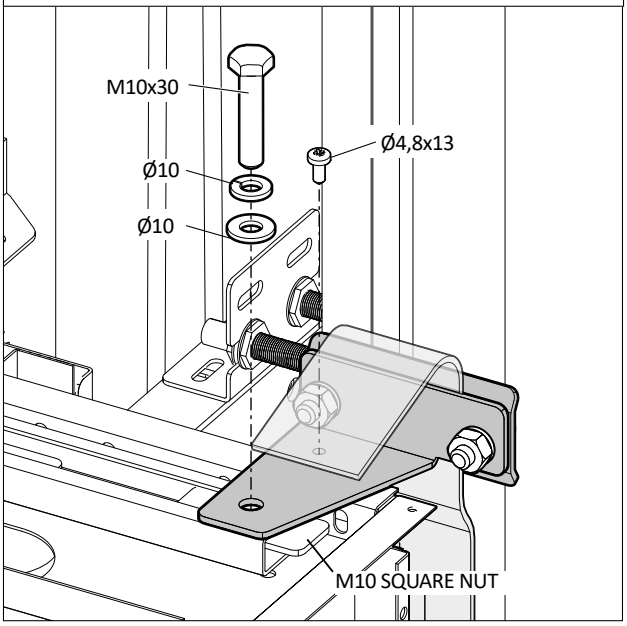
INFORMATION

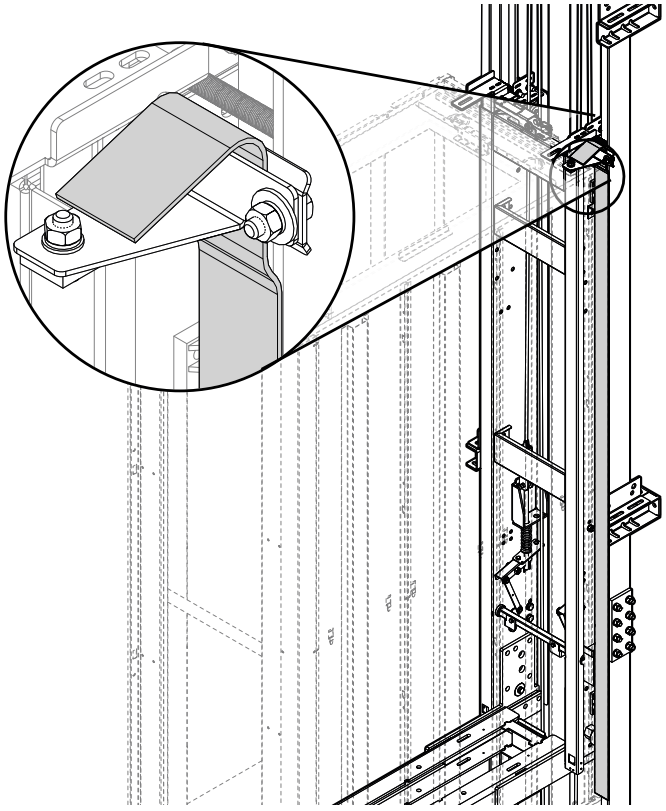
The flat cable must run between the car sling and the car to avoid excessive movements.

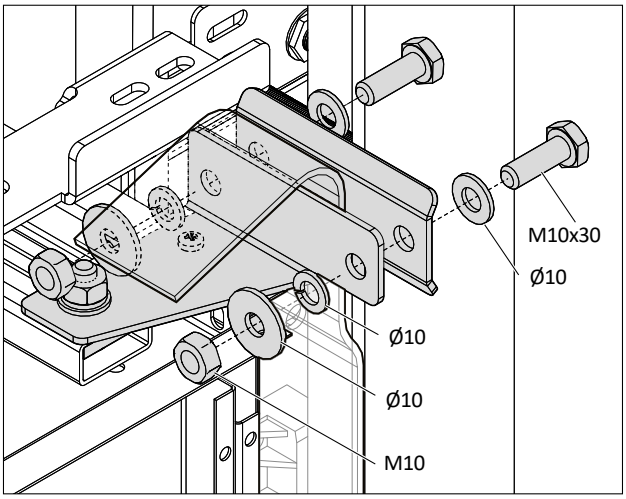
KIT F350.23.0047



KIT F350.23.0047



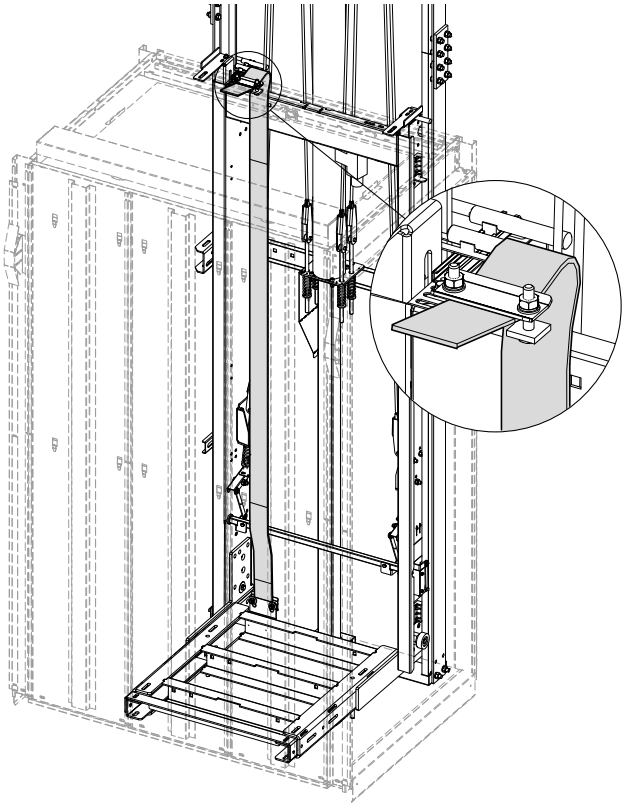




INFORMATION

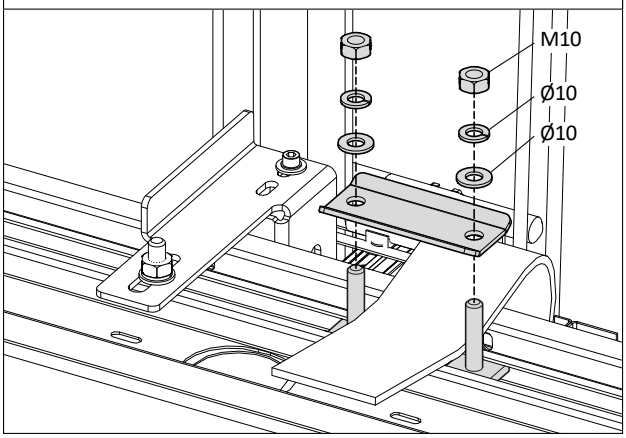
In case of > 900 kg load with distance between guides = 550 mm refer to the fixing mode indicated as CASE 2.

CASE 2 - distance between guides = ≥ 550 mm



- After installing the bracket supplied with the fixing kit, fix the end of the flat cable on the car roof.

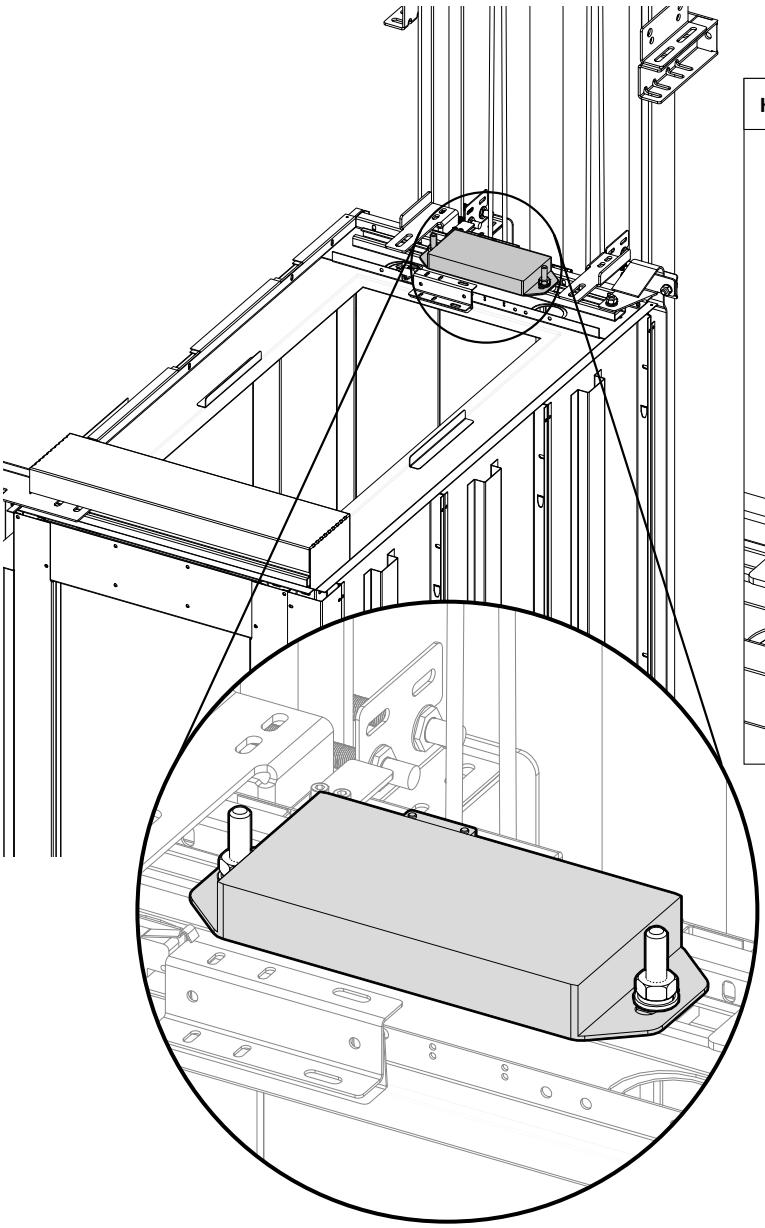
KIT F350.23.0047



INFORMATION

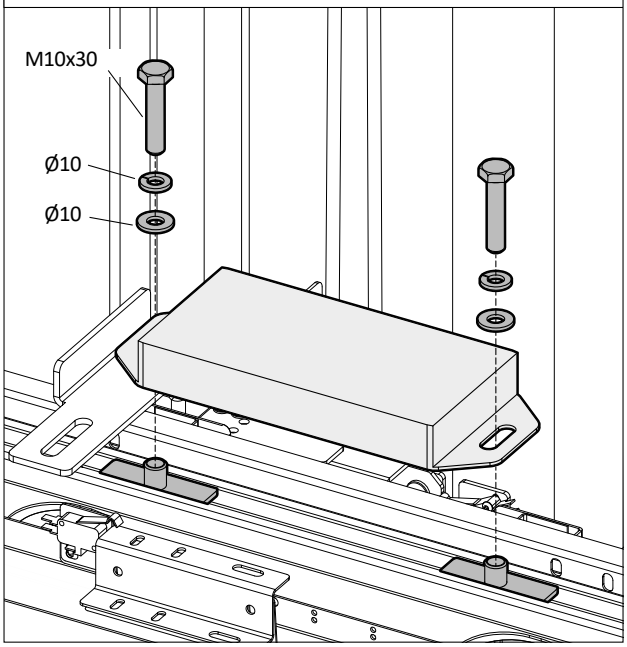
The flat cable must run between the car sling and the car to avoid excessive movements.

14.2. TERMINAL - FIXING TO THE CAR ROOF



- Fix the terminal board on the car roof using the screws previously inserted in the roof trunking.

KIT F350.23.0005V01



15. FIRST TEST RUN

Before the first run please follow this sequence of steps:

- thoroughly clean the guide rails and lubricate them with a suitable oil (for example ISO VG-320, without EP additives for high pressure environment);
- load the car basement to arrive to the minimum 6 bar pressure, to be checked on the gauge. The frame might fail descent with a lower pressure. This is also to avoid frame bouncing which might lead to the safety brake enabling;
- Check the absence of evident obstacles or protruding material which might interfere with the frame and/or the basement;
- Make sure all the STOP commands are disabled;
- Check if the Safe-Pit device has been disabled;
- Switch the power on and choose the MAINTENANCE mode for the control board;
- Lift the frame pushing the upper floor button;
- Pay attention to the flat cable length during the run;
- With frame standing at the upper floor:
  a. check the upper frame margin on the guide rails, it must match the value advised on the project drawings;
  b. Register the position of the ovverrun contact to be enabled after 30 mm overrun.
  c. Bring the frame to uper ovverrun and check the oil level in the hydraulic unit: in similar conditions it must above (2÷3mm) the reference notch inside the tank or on the measurement stick. Upon the filling completed, some refill might be required.

2:1

- Using the manual pump, lift the all the way up (meanwhile check if the yoke does not overcome the guide rails).

1:1

- Using the control board, lift the piston all the way up until it reaches the metal blocks.

- Using the emergency descent valve, lower the piston to release the upper ovverrun contact.
- Effect several complete travels, to check::
  a. Flat cable movement;
  b. Any abnormal rumour;
  c. Any obstacle for the contacts.
- Register the procedure as per paragraph 2.1 of the "Final Test" manual.

16. FINAL ELECTRICAL CONNECTION

INFORMATION

For : general information, safety instructions, responsibility and warranty conditions, material handling; please consult the manual "**SAFETY RULES AND BUILDING SITE RUNNING INSTRUCTIONS**".

16.1. CAR LIGHTING

- Connect the lighting devices foreseen for the car.

16.2. MAGNETIC SENSORS FOR SHAFT DATA COLLECTION

Position the magnets on the guide rails, according to the distances indicated on the electrical schemes.
Switch the electrical scheme off and install the following sensors on the guide rails:

- landing stops magnetic sensors;
- landing slow-down and speed-up magnetic sensors;
- relevelling magnetic sensors;
- rephasing magnetic sensors.

16.3. ELECTRICAL CONNECTION IN CAR

The principal car connections are: C.O.P., photocells or light barriers. The project electrical scheme is to be strictly followed.
The most common devices to be electrically connected in car are as follows:

- car operation buttons (retroilluminated to show the car position);
- STOP button;
- alarm button;
- emergency lighting;
- light and/or acustic overload signal;
- command enabling key (optional);
- phone dialler or emergency call system (recommended option).

Ceiling safety contact and COP safety contact are also to be connected.

16.4. UNDER FRAME CONNECTION

In the lower part of the frame, provide connection of the safety contact related to the rope slackening device and adjust the position of the rope slackening microcontact on the right frame upright.

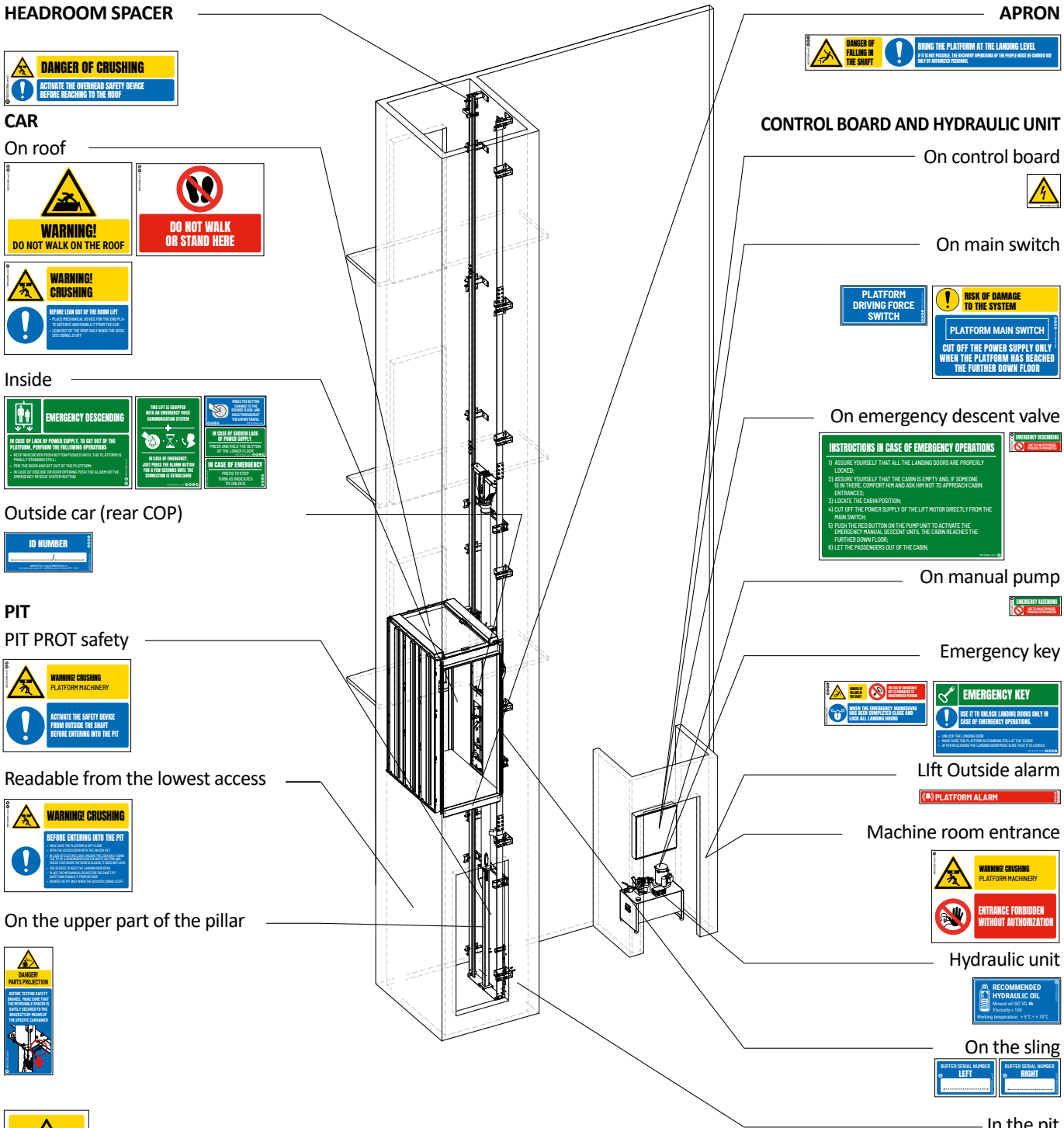
16.5. CHECKING THE CONNECTION IN THE CONTROL BOARD AND INSULATION TEST

Check the completion of all the electrical connections, using the supplied electrical scheme.
Effect circuit insulation tests in terms of the grounding, with the help of the following steps:

- bring the car out of the floor, in order to close the safety chain;
- switch off the driving force circuit and the car lighting;
- disconnect the operation circuit from the grounding and any batteries;
- connect one of the tips of the ohmmeter (usually the black one) to an outer unit (for example, the drive frame or the center of a socket, if grounded.)
- Test all the circuits, using the other tip (driving force, operation circuit, light signal circuit, car lighting, pump drive power supply, alarm circuit);
- Remove the black tip from the outer unit and connect it to a clamp of the operation circuit, to be tested with all the other circuits;
- Repeat the operation, in order to test the insulation between all the circuits.

INSULATION RESISTANCE		
Nominal tension V	Test tension (c.c.) V	Insulation resistance MΩ
SELV	250	> 0.25
< 500	500	> 0.50
> 500	1000	> 1.00

17. SAFETY SIGNS TO BE ATTACHED TO THE LIFT



To be attached to landing doors, when the lift is out of service.

To be attached to landing doors, in public buildings.

To be applied on the inside of the manual landing doors, lock side.

18. SAFETY VALVE TEST

2:1

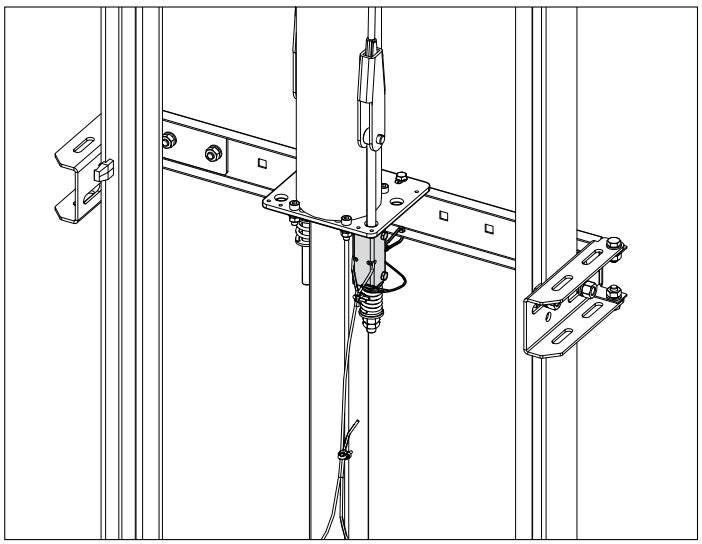
This test is meant to check the correct installation of the safety device as well as the related leverage.
The first testing is to be effected with the empty car and the second one with the nonimal load.

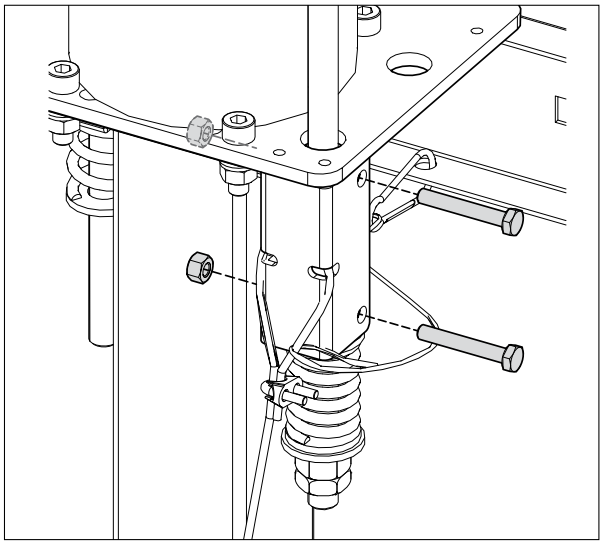
⚠ CAUTION

The safe-pit device must always be actuated before accessing the pit.

INFORMATION

During the safety test, the person in charge must remain outside the shaft.





TWO PEOPLE ARE REQUIRED TO EFFECT THE TEST PROCEDURE: ONE IN FRONT OF THE CONTROL BOARD AND THE OTHER IN FRONT OF THE LOWEST LANDING DOOR.

a. check the leverage moving (the synchronyzing leverage of the two safety blocks);
b. prepare the rope slackening device, by removing the two screws, temporarily snap-hook it to the bracket;

c. FUNCTION TEST:
- c2. bring the car to the approx 2 meters' height from the pit bottom, open the lowest landing door, stand on the landing and and grab the action rope;
- c3. activate the car descent from the control board;
- c4. pull the rope of the rope slackening device, so to activate the safety device;
- c5. continue commanding the descent, so that the ropes slacken together with the springs and the car remains suspended on the safety brakes;
- c6. activate the ascent: the command will not have any effect;
- c7. using the manual pump, pull the ropes and proceed with the acsent, in order to unblock the safety device;
- c8. check the correct return of the ropes and mobile parts to the original position, then reset the safety valve contact from the control board;
- c9. activate the ascent: the car will start ascending correctly; bring the car to the approx 3 meters' height from the pit bottom;
- c10. enter the pit (**the SafePit device must be enabled beforehand**) and activate the rope slackening device;
- c11. check the two imprints left by the safety device on the guide rails, the imprints must have the same length (±5mm) and be located at the same height (±10mm);
- c12. restore the lift.

d. register the test effected, as per paragraph 2.1 of the "**FINAL TEST**" manual.

19. FINAL TEST AND ADJUSTMENT

Now, it is possible to proceed with the final general test of the lift and the final adjustment of the hydraulic unit, in order to ensure a high level of comfort during the operation. Eventually the commissioning test must be effected, as foreseen by the technical regulations (see paragraph 2 of the "**FINAL TEST**" manual).

INFORMATION

The operations as described in this paragraph are to bene carried out by the qualified and authorized personnel.

19.1. GENERAL STEPS

Make sure the lift features match the contract details, the project drawings and the electrical scheme.
In particular:

- tension values in general and for each electrical device;
- duty load;
- speed;
- hydraulic unit features (load, tension, electric drive absorption, etc.);
- safety devices activation for hydraulic unit drive;
- landing door levelling;
- difference in height between emtpy car and full car when at stops;
- type and function of landing doors;
- safety chain;
- safety distances;
- electrical insulation towards grounding, between operation circuit and driving force and between operation circuit and lighting.

19.2. HYDRAULIC UNIT ADJUSTMENT

The adjustment to be effected on the hydraulic unit, are fully described on the related manual and briefly reported here below.
First of all, should excessive car elevation or lowering take place with the load variation, the lift must be stopped for several hours, the cylinder being closed, then air escape must be allowed.

The valves to be adjusted are the following:

- maximum pressure;
- stem counter pressure;
- slowdown;
- descent speed limit;
- pressure activation and hill start;
- manual pump pressure.

2:1

Ascent speed is not variable, since it is determined by the capacity of the hydraulic volume pump.
The features of the pump - cylinder combination allow the maximum speed of 0,15 m/s. This value it to be checked and confirmed at the final commissioning (see paragraph 2.9 of the "Final Test" manual).
To adjust the a.m. valves it is necessary to fasten or unscrew the related adjustment screw, as stated in the manual. Usually the adjustment is made by rotating these screws 1/4 of a round (90°) or 1/8 of a round (45°) . It is recommended that the screws direction be registered before proceeding with adjustment, in order to bring the screws back to the original position.

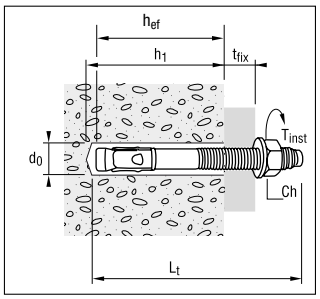
20. NOISE EMISSION

The main source of the noise emission is the hydraulic unit, especially during the ascent with the maximum load (max overload included).
The hydraulic unit is located in a pre-arranged machine room or in a special metal box.
The operator's position is inside the car, so the operator is not exposed to direct noise emission deriving from the hydraulic unit.
Despite this assumption, another measurement has been effected at 1 m distance from the hydraulic unit, in an industrial environment, without other machinery in function.
In different contexts analysed, the results were under 70dB(A).

A1. ANCHORAGE TO THE SHAFT WITH MECHANICAL OR CHEMICAL ANCHOR

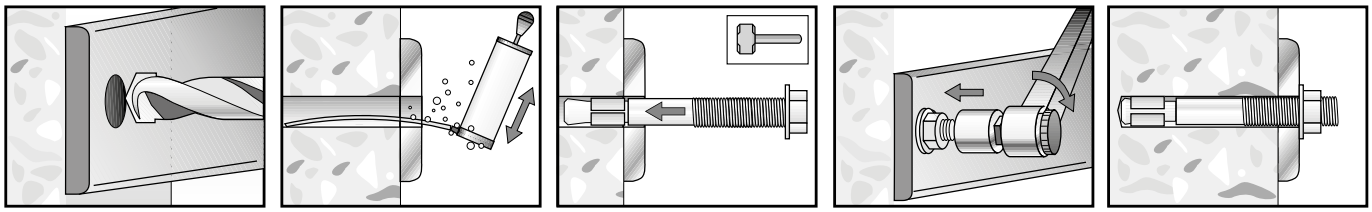
A1.1 CONCRETE SHAFT

Unless otherwise specified, all anchoring plugs are M10 in size and require a hole made in the wall with a 10 mm bit



h_1	=	Minimum hole depth
L_t	=	Dowel length
d_0	=	Hole diameter
t_{fix}	=	Fixable thickness
t_{inst}	=	Tightening torque
Ch	=	Wrench
h_{ef}	=	Depth of anchorage

ASSEMBLY SEQUENCE



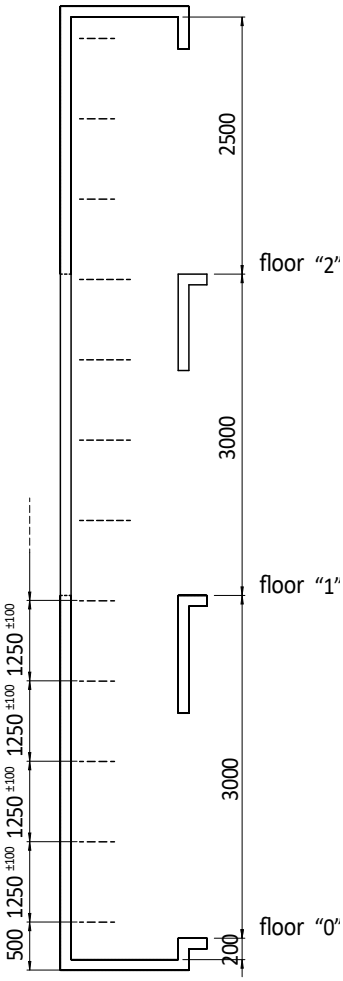
A1.2 LOAD-BEARING MASONRY SHAFT

INFORMATION

In order to anchor the uprights in the masonry shaft (**made with materials suitable for construction of load-bearing/structural***), the distance between clamps must be reduced to cope with the lower mechanical resistance of the shaft wall.

*** Construction materials suitable for the realization of load-bearing walls even in seismic areas, calculated and built in compliance with the relevant legislation in the places of installation (IT - Technical Regulations for Construction: D.M. 14.01.0, NTC2018 etc.).**

The fixing brackets gap is 1250 mm, starting from the pit bottom = 500 mm.



INFORMATION

Always refer to the **project drawing** for installation.

NOTICE

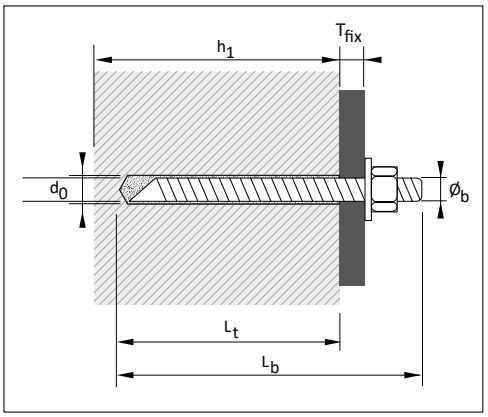
For all cases not covered by the described types, an inspection and a project by a qualified technician are requested.

A1.2.1 ANCHORAGE in a LOAD-BEARING MASONRY SHAFT WITH SOLID AND COMPACT ELEMENTS

The special kit F350.23.0026V01 for chemical bolts application is composed of:

- n° 16 zinc plated THREADED RODS 45° cut (anti rotation) (M10x130 GALVANISHED CHEMSET STUD);
- n° 2 pcs 300 ml CARTRIDGES of ANCHORING ADHESIVE*, to be used with standard caulking guns (skeleton gun);
- n° 2 multipurpose MIXERS ø9 mm, additionally to the 4 mixers foreseen for the cartridges.

Each kit is sufficient for 8 brackets, required for approx. 1 stop.
For instance, 3 F350.23.0026V01 kits are required for a 3 stops' lift, the brackets being positioned as per the sample drawing.

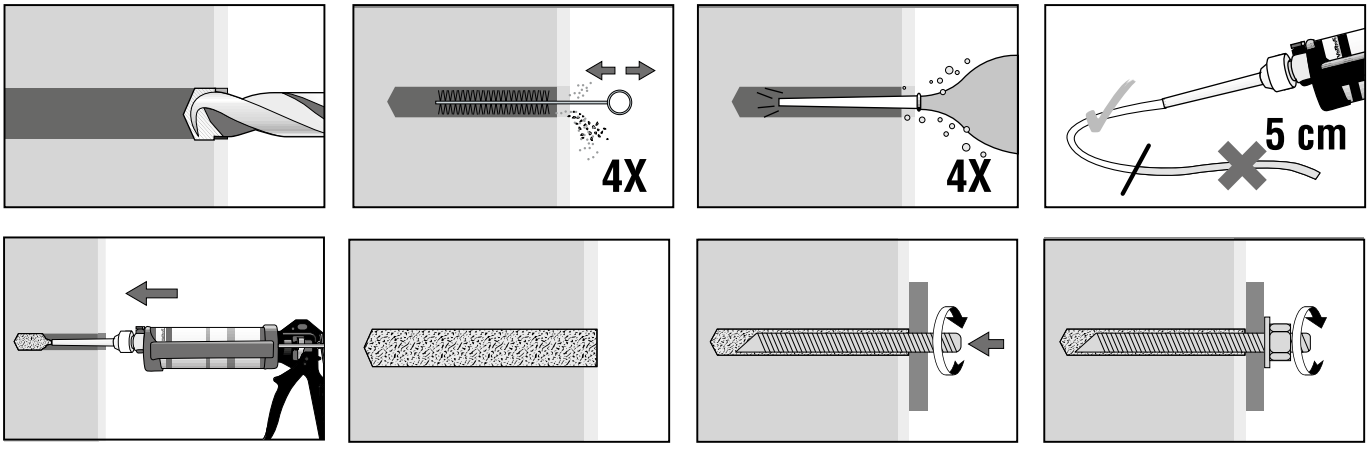


h_1	=	Minimum hole depth
L_b	=	Rods length
L_t	=	Dowel length
d_0	=	Hole diameter
$Ø_b$	=	Rods diameter
T_{fix}	=	Fixable thickness

Threaded rods length calculation:

$L_b = L_t + T_{fix}$

ASSEMBLY SEQUENCE



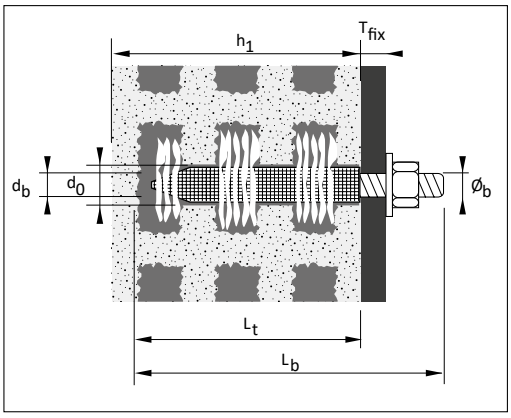
Carefully clean the hole before installation.

A1.2.2 ANCHORAGE in a LOAD-BEARING MASONRY SHAFT WITH HOLLOW ELEMENTS

The special kit F350.23.0025V01 for chemical bolts application is composed of:

- n° 16 zinc plated THREADED RODS 45° cut (anti rotation) (M10x130 GALVANISHED CHEMSET STUD);
- n° 2 pcs 300 ml CARTRIDGES of ANCHORING ADHESIVE*, to be used with standard caulking guns (skeleton gun);
- n° 2 multipurpose MIXERS ø9 mm, additionally to the 4 mixers foreseen for the cartridges;
- n° 2 FINE METAL MESH SLEEVE ø16 mm, length 1 mt each.

Each kit is sufficient for 8 brackets, required for approx. 1 stop.
For instance, 3 F350.23.0025V01 kitskits are required for a 3 stops' lift, the brackets being positioned as per the sample drawing.

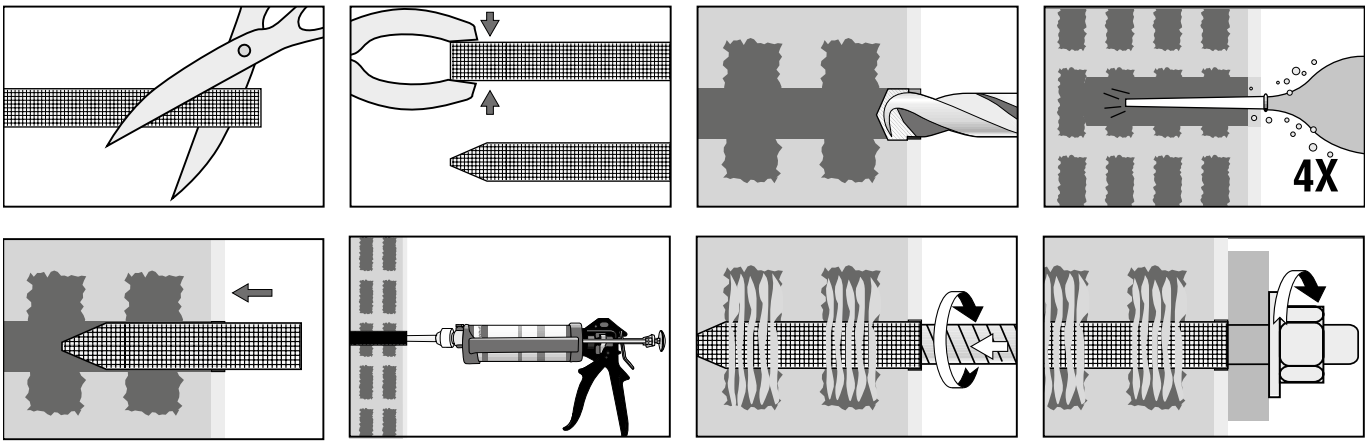


h_1	=	Minimum hole depth
L_b	=	Rods length
L_t	=	Dowel length
d_0	=	Hole diameter
d_b	=	Metal Mesh Sleeve diameter
$Ø_b$	=	Rods diameter
T_{fix}	=	Fixable thickness

Threaded rods length calculation:

$L_b = L_t + T_{fix}$

ASSEMBLY SEQUENCE

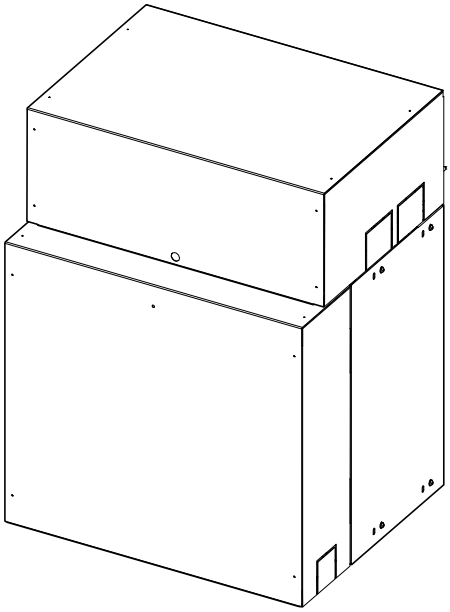


Carefully clean the hole before installation.

NOTE:

* Valid for elements in: concrete, natural stone, solid and hollow brick.

A2. CLAP2 CABINET - ASSEMBLY

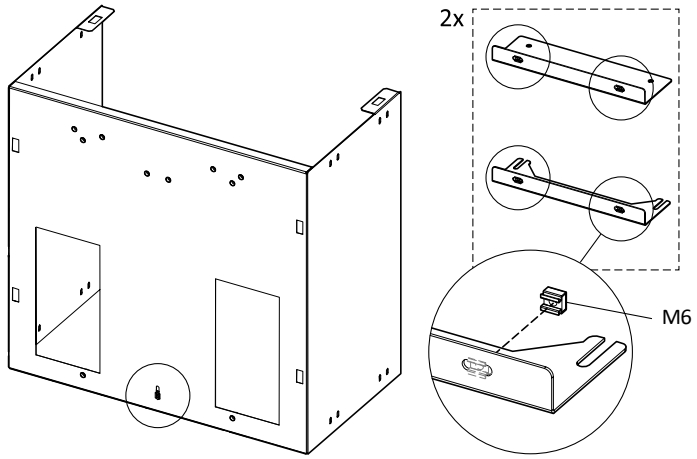


- Pre-mount the cage nuts;
- Pre-mount the brackets with anti-vibration base;
- Assembly the (upper and lower) brackets to the hydraulic unit;

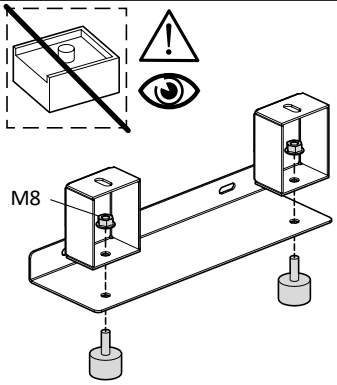
- Assembly the front cover of the hydraulic unit;
- Assembly the fixing brackets to the wall;

KIT I0021.23.0001

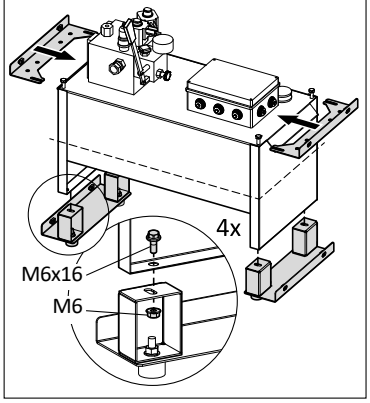
KIT I0021.23.0002



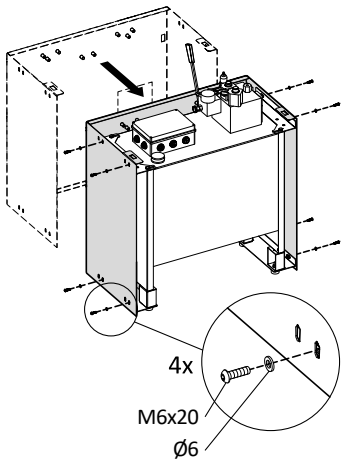
KIT I0021.23.0003



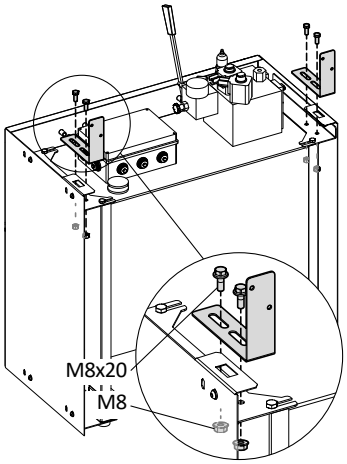
KIT I0021.23.0002



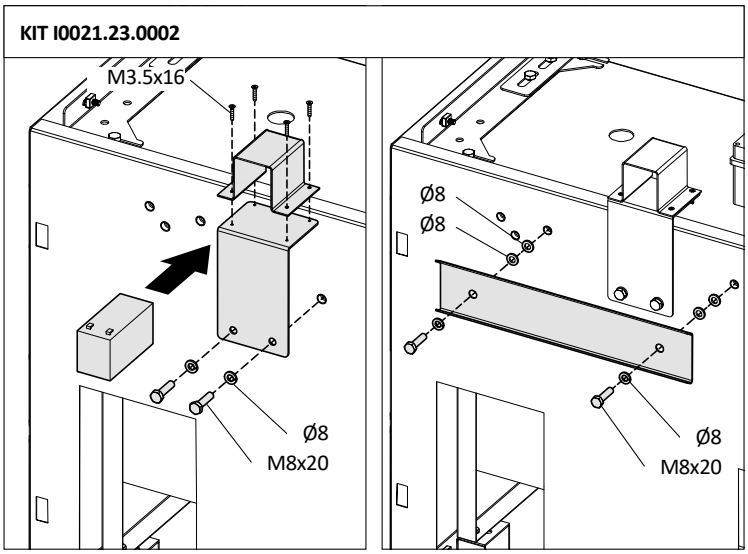
KIT I0021.23.0002



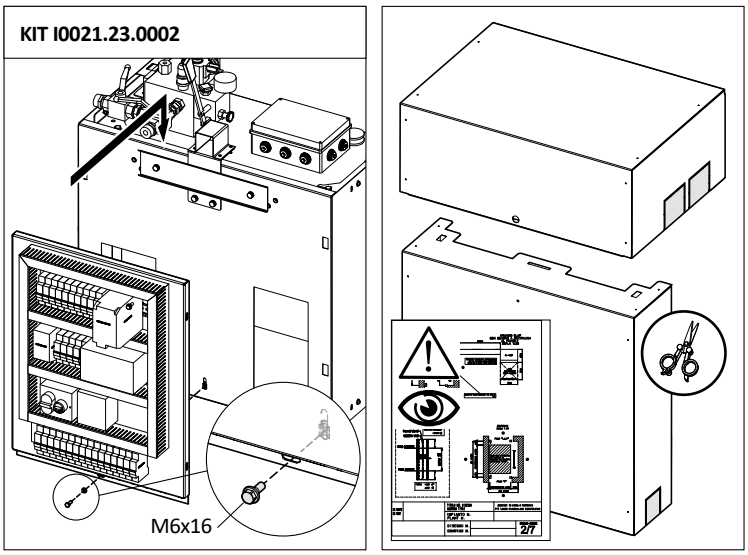
KIT I0021.23.0004



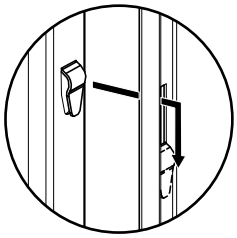
- Assembly the battery supporting brackets;
- Assembly the control board fixing bracket;

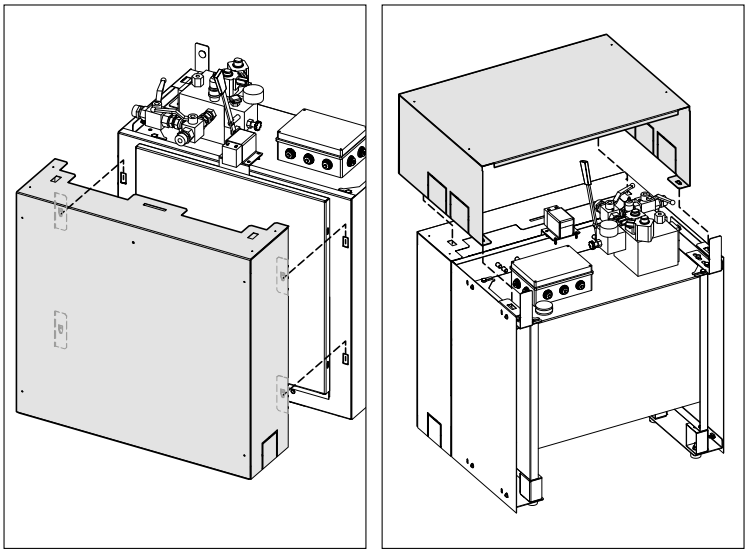


- Fix the control board;
- Open the side panels according to the hydraulic unit type, to lay the wiring and hoses;

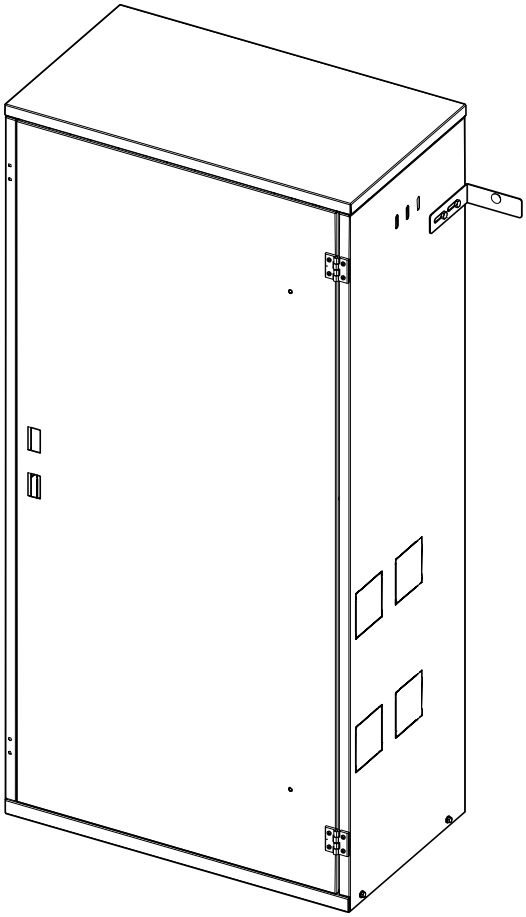


- Mount the front closing panel;
- Mount the upper closing panel.



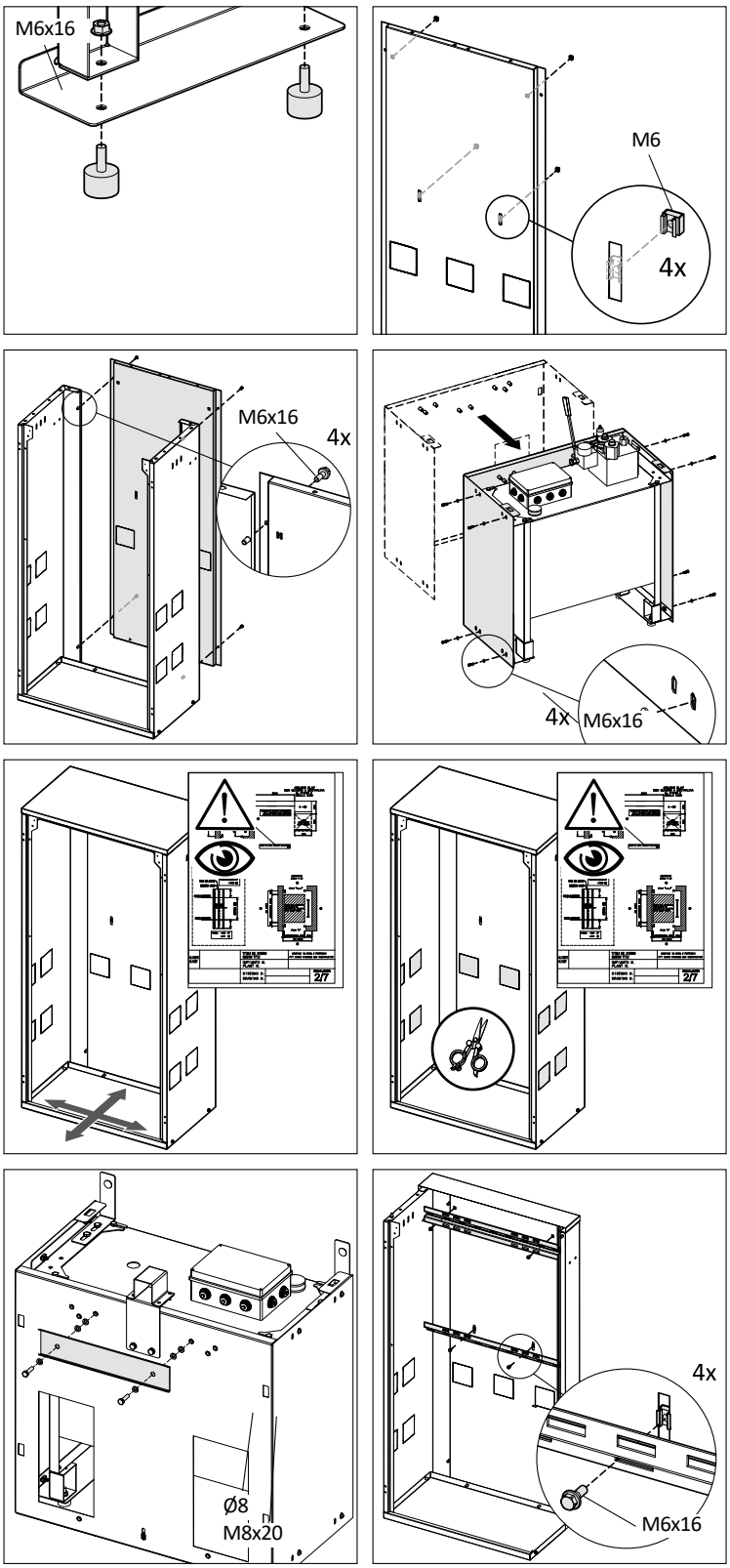


A3. MRC2 CABINET - ASSEMBLY



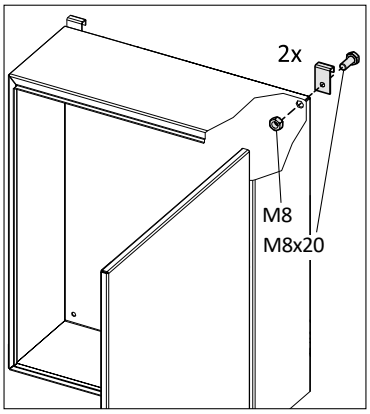
- Position the base onto a flat surface;
- Fix the two side panels to the base;
- Pre-mount the cage nuts on the bottom panel;
- Fix the bottom panel;
- Fix the lid;
- Position the cabinet according to the project drawing;
- Open the side panels according to the hydraulic unit type, to lay wiring and hoses;
- Fix the wall fixing side brackets for (if necessary);
- Fix the crossbeams to the bottom;

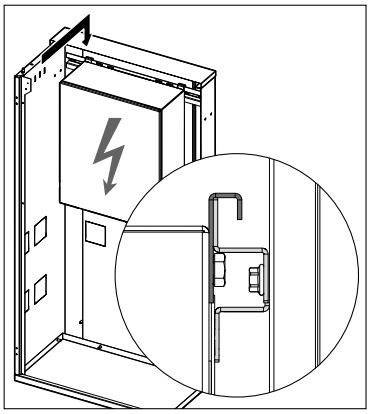
KIT I0021.23.0005



CASE 1 – CONTROL BOARD INSIDE A METAL BOX

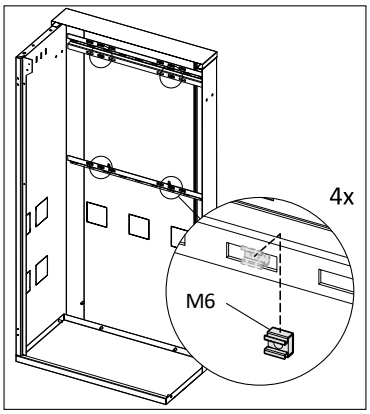
- Pre-assembly the brackets on the rear side of the cabinet;
- Hang the cabinet onto the crossbeams.

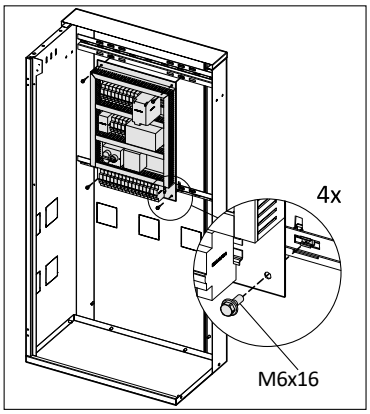




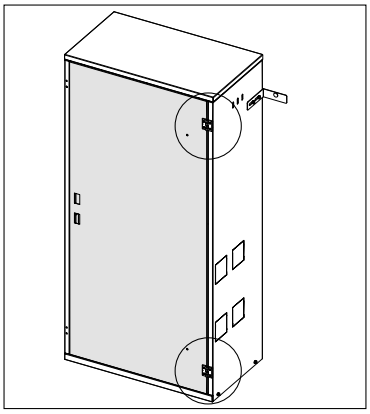
CASE 2 – CONTROL BOARD ON A PLATE

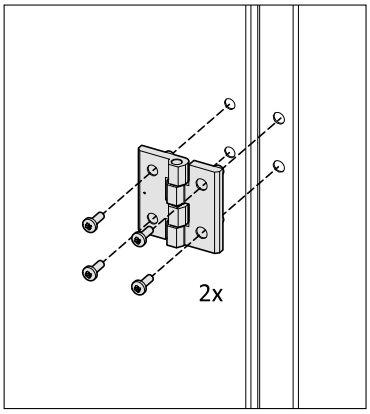
- Insert the cage nuts inside the prearranged holes in the crossbeams;
- Fix the plate to the crossbeams.





- Assembly the door.

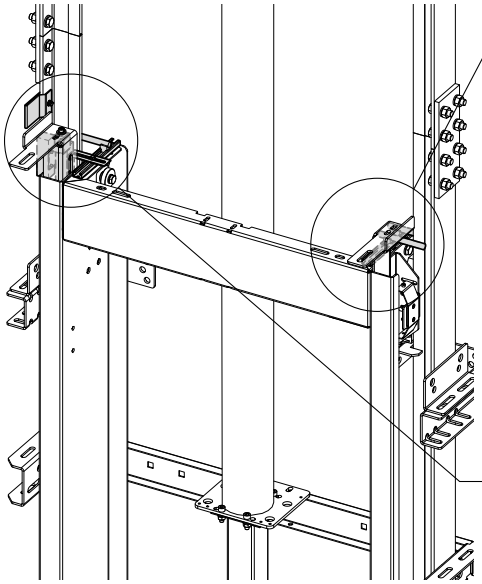


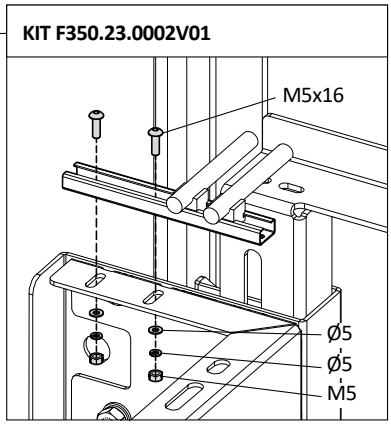


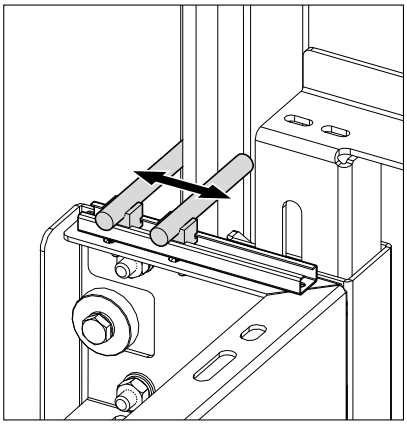
A4. INSTALLATION OF SENSORS IN CASE OF VEGA CONTROLLER

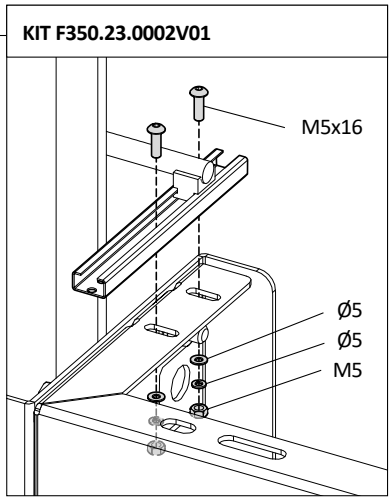
CASE 2 - 3 MONOSTABLE SENSORS + 2 BISTABLE SENSORS

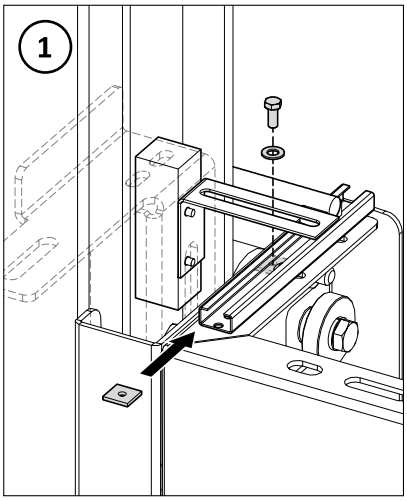
2:1

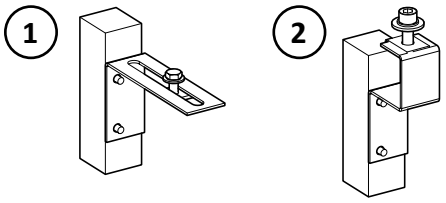






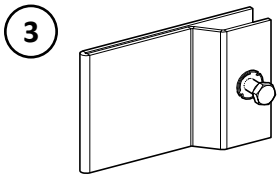


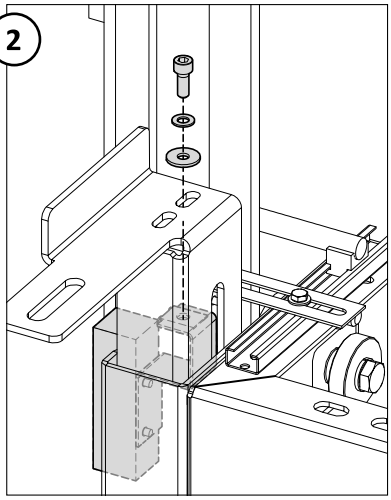


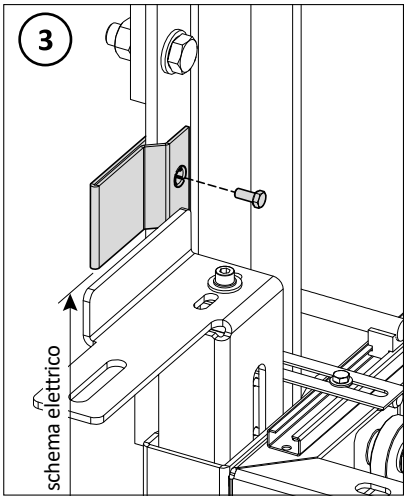


INFORMATION

Both the sensors and the magnets are supplied with the electrical equipment (in the same package).

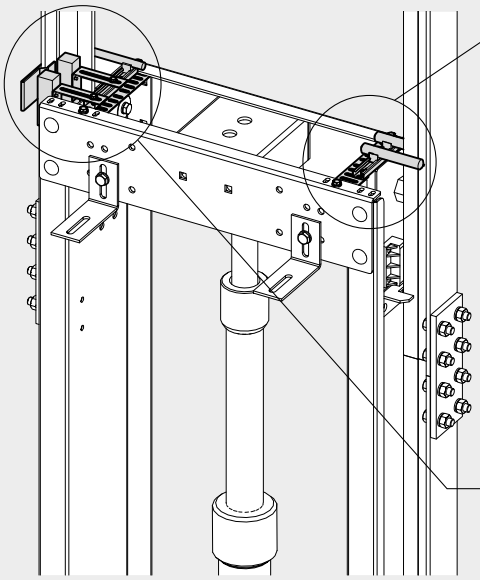




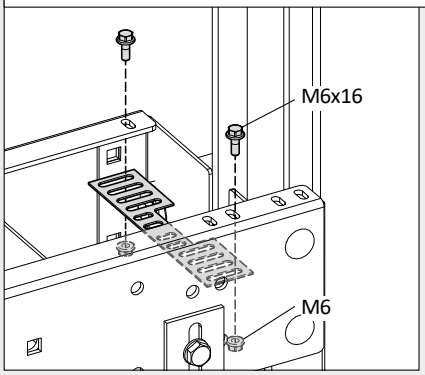


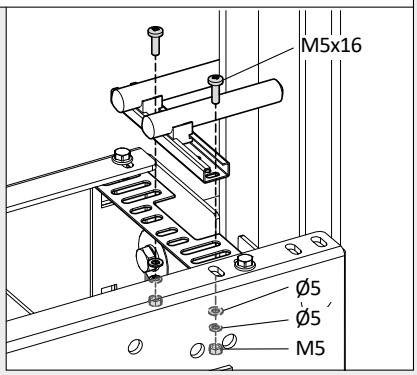
CASE 2 - 3 MONOSTABLE SENSORS + 2 BISTABLE SENSORS

2:1

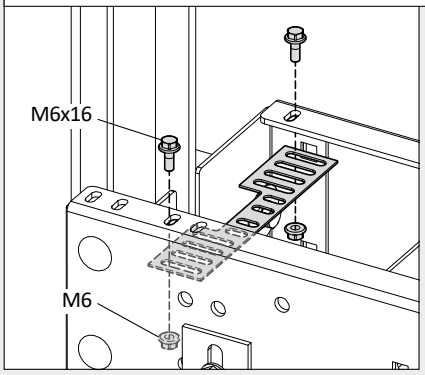


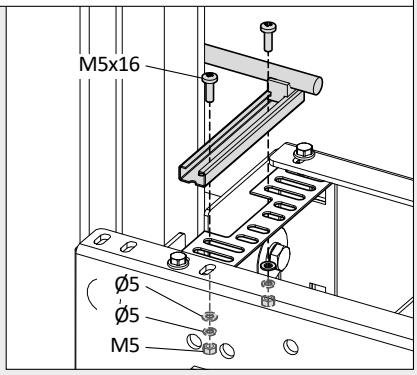
KIT F350.23.0002V01

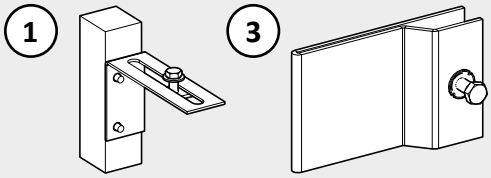


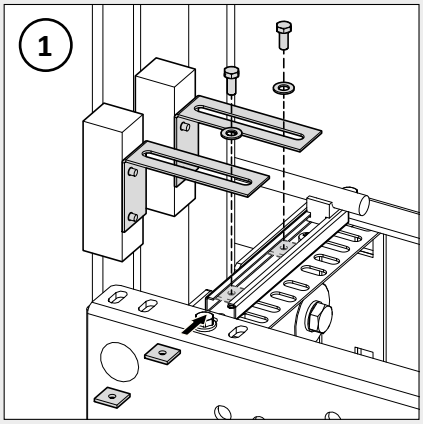


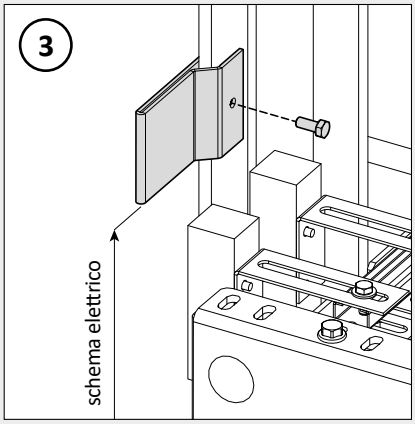
KIT F350.23.0002V01











INFORMATION

Both the sensors and the magnets are supplied with the electrical equipment (in the same package).

LIFTINGITALIA®

COMFORTABLE
HOMELIFTS