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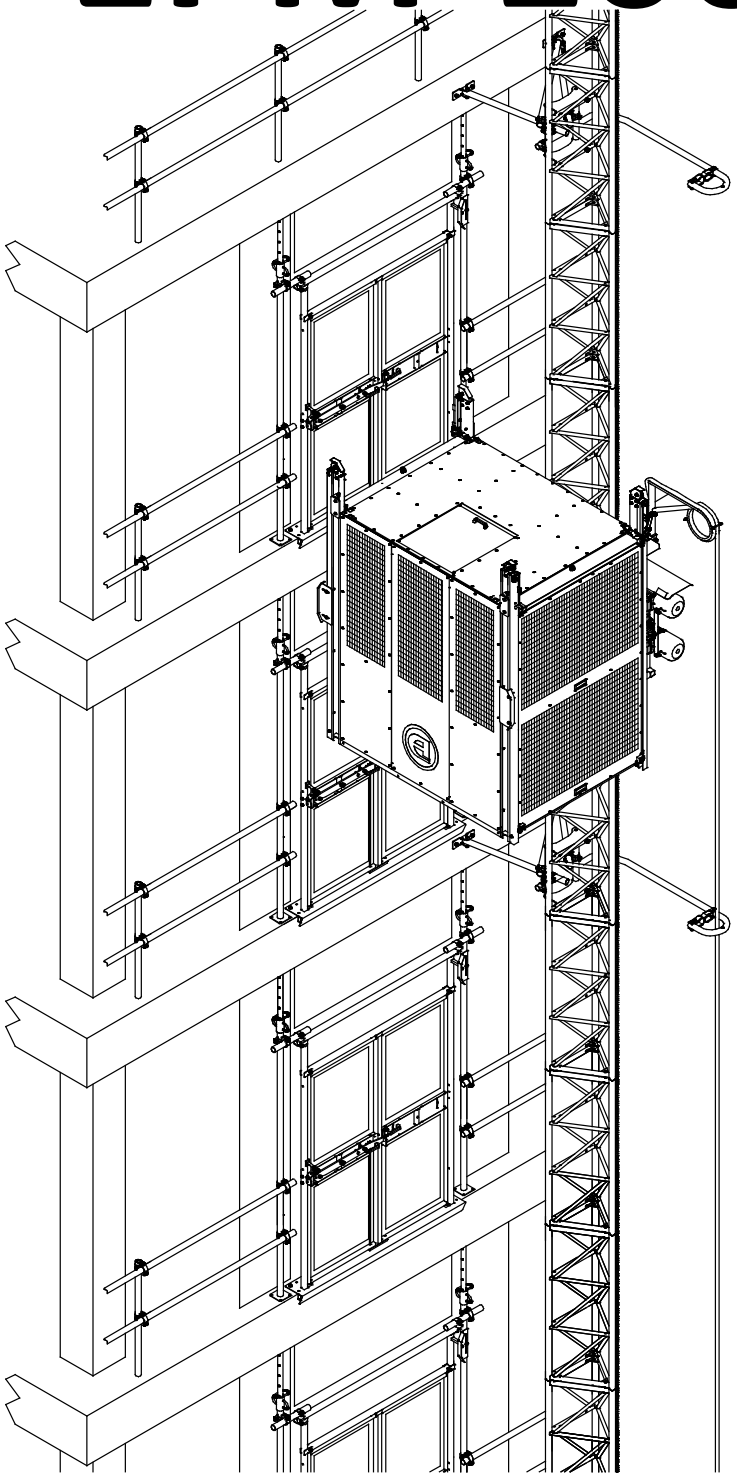
ELEVADOR DE PERSONAS Y MATERIALES POR CREMALLERA

Builders hoist for passengers and loads

EPM-1000/800F



U.S.A. Model

MANUAL DEL OPERADOR

/USER´S MANUAL

- **INSTRUCCIONES DE MONTAJE, USO Y MANTENIMIENTO**
  / Installation, use and maintenance instructions
- **LISTAS DE REPUESTOS**
  / Spare parts list

ANSI American National Standards Institute · AGMA · State of California CAL OSHA Department of Industrial Relations

Nº máquina */Nb*: _ _ _ _ _ _ _ _ _

Modelo */Model*: _ _ _ _ _ _ _ _ _ _

Año de fab. */ Year*: _ _ _ _ _ _ _ _

Conexión eléctrica:
/Electric connection: ☐ 220 V. 60 Hz.
☐ _ _ _V. 60 Hz.

CONSERVE ESTE MANUAL PARA FUTURAS CONSULTAS

KEEP THIS GUIDE FOR FUTURE REFERENCE

INDEX

This is the USA version of User´s manual.This manual must be kept in good condition. This document contains 52 pages.
ALBA MACREL GROUP, S.L. reserves the right of incorporating contents or modifications at any time with the purpose of improving both the machine and the information available on the same.

ALBA MACREL Group, S.L.

Rev. 1.0: Apr. 2020

1. DESCRIPTION OF THE MACHINE

1.1. Introduction

Prior to erection and use, all users must read this manual. A thorough reading is recommended for full compliance with safety regulations.

This manual is delivered with the hoist and its purpose is to give instructions for proper handling during transportation, erection and maintenance, in compliance with the provisions of ANSI A10.4 and Cal. OSHA. This instructions manual deals with proper use of the machine as well as proper erection and maintenance.

The manufacturer reserves the right to modify the machine for improvements, so that differences may be found in some manual details. In any case, AMG commits to immediately adapt the manual to the improvements.

Responsibility:

AMG declines any responsibility for damages caused by improper use of the machine as a consequence of non-compliance with the provisions of the present Manual. AMG declines any responsibility for damages derived from:

- Non-compliance with the provisions of this manual.
- Improper use of the machine.
- The use of non-original spare parts mentioned in the applicable section of this manual.
- Modifications introduced without express authorisation from the manufacturer.
- Handling by personnel not trained for this purpose.

Only appointed trained personnel may use the machine and only qualified technical personnel acquainted with the machine may operate on any part of the same.

This manual must be available to the user at any time for any type of immediate consultation. In order to maintain it in perfect conditions, keeping always a copy close to the machine is recommended.

In any case, the manual is aimed at knowledge strengthening and as a reminder for the personnel, who must previously be well trained by engineers or supervisors, who at the same time must be very experienced in this machine operation.

1.2. General information

Is based on the principle of geared motor transmission to a rack and pinion mechanism. Components are modular and easy to install. It is simple to use and safe for facade work or rehabilitation, significantly reducing the erection time and man-hours.

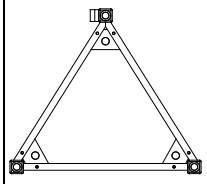
This machine has been designed for temporary installation on site, and must be used by skilled authorised personnel. Its main advantage is the ability to connect different building stories for lifting or lowering materials and persons in a fast and safe way. Below, please find the main points to bear in mind prior to erection and use of the machine.

- The hoist is designed **for transsporting persons and loads**
- The machine runs vertically, geared to the mast rack and guided with support rollers.
- Loading and unloading operations must be performed by **instruded people.**
- Machine operation must be carried out by **appointed personnel** trained in builders hoist operation, and the instructions to operate the machine safely.
- For erection, dismantling, maintenance and inspection tasks, only **competent and authorised technical personnel,** trained and qualified with practical experience on said operations, are allowed to travel on the hoist.
- The machine is designed to be fixed to intervals adapted to a structure, f.e. concrete structure of in construction building, a metallic structure, or similar. AMG includes in the manual of the machine all the information relative to the loads transmitted to the structure of vertical support and to the ground. It is a responsibility of the responsible of contractor technical personnel to assure that, both the structure of support and the ground, support the loads indicated by the manufacturer.

WARNING MESSAGES:

MAIN SAFETY INSTRUCTION DURING INSTALLATION OR OPERATION IS TO BE ENTERED IN TEXT BOXES LIKE THIS, INCLUDING WARNING SYMBOL ON THE LEFT.

1.3. Technical data

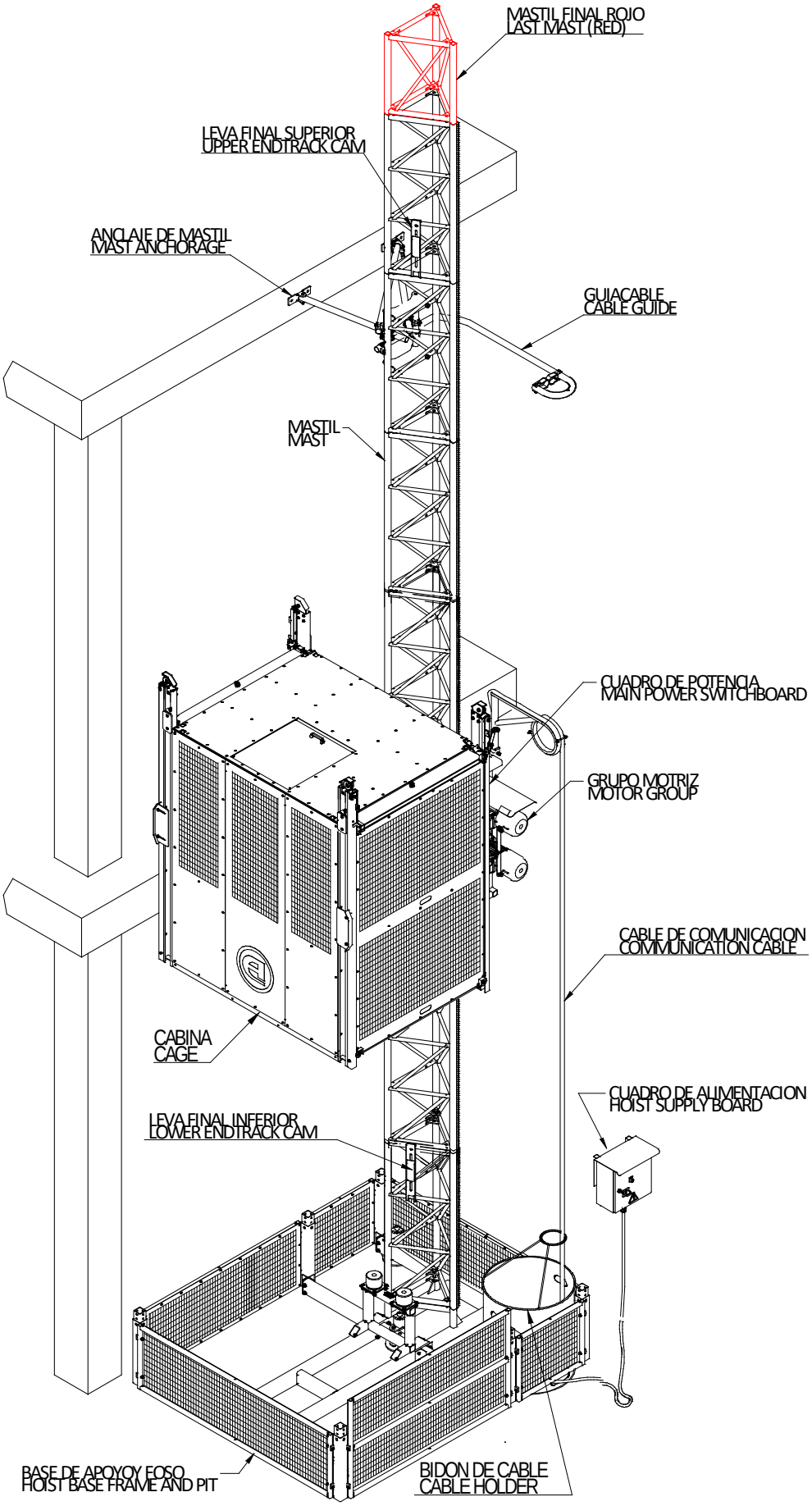
Carga nominal: *Maximum load*	lb.	**EPM-1000: 10 🧍 / 2.200 lb** **EPM-800F: 10 🧍 / 1.750 lb**
Velocidad vertical: *Vertical speed*	ft./min.	**108 ft/min**
Dimensionescabina: Cage dimension	inch.	**EPM-1000: 79 x 55 x 82 inch.** **EPM-800F: 99 x 55 x 82 inch.**
Mástil: *Mast* 		Tipo: Mástil triangular con cremallera soldada *Triangle mast with welded rack* Peso / *weight*: 106 lb. ; Longitud / *lenght*: 59.37 inch. Dimensiones / *dimension*: 22.24 x 19.29 inch. Union atornillada / *screwed joint* (3x): M20x90 DIN 931 8.8 A21 DIN 125 M20 DIN 985
Altura máxima: *Maximum heigth*	ft.	**400 ft.**
Anclajes cada (máx.): *Anchorage each (max.)*	ft.	**20 ft.**

CARACTERISTICAS ELECTRICAS MOTORREDUCTOR / *Electrical features (Gearmotor)*	
Tipo / *Type*:	Coaxial
Velocidad de salida: *Output speed:*	110 r.p.m.
Eje de salida / *Output shaft*:	∅48 X 80 mm
Potencia motor / *Electrical power*:	2 X 3,6 KW. 220 / 440 V. - 60 Hz
Relación de transm. / *gear rate*:	24
Tensión - Frecuencia / *Voltage - Frequency*:	220 V-60 Hz.
DATOS ELÉCTRICOS / *Electrical data*	
Cable de alimentación / *Crossection feed wire:*	4 x AWG 8
Tensión de control / *control voltage:*	48 V.
Potencia alimentación / *Main power supply:*	30 KVA.
Intensidad nominal / *Nominal Current:*	28 A.
Intensidad de arranque/ *Start Current:*	150 A.
Thermal protection (*):	4 x 40 A.
Characteristics of diferential protection(*):	
CAL:	40 A.
SENSIBILITY:	4 x 300 mA.
Poder de corte / *Cut power*	6000 A.

DATOS ADICIONALES DE INSTALACION/ *Additional installation data*	
Peso de la máquina base / *Base weight:*	3.300 lb.
Velocidad max. viento (EN SERVICIO) /*Max. wind speed (SERVICE):*	34 mil./h
Velocidad max. viento (EN MONTAJE) /*Max. wind speed (ERECTION):*	27 mil./h
Velocidad max. viento (FUERA DE SERVICIO) /*Max. wind speed (OUT OF SERVICE):*	75 mil./h

(*)Elementos requeridos en el cuadro electrico al que se conecte la máquina */ required on main feed switchboard*

1.4. Main components



- MAST BASE SUPPORT:
  Main structure that is used as a support for the hoist and for the column of masts. It transmits the efforts generated to the ground and it´s surrounded with a safety enclosure that avoids the risk of damage. The base incorporates absorbers to avoid blows of the cabin with the base. In the base of the machine it´s also installed the electrical switchboard for electrical supply.

- MAST:
  Modular structure for the ascent of the machine. It consists of a modular triangle structure of 59 inch. The mast has a welded rack for the movement of the platform over it. They are designed for his union by means of screws and for the anchorage to a vertical structure of support to suitable intervals.

- MOTOR GROUP:
  Structure that incorporates and the system of motorgear system and that provides the movement to the elevator. It incorporates both the motorgears and the safety systems to control the movements of the machine, the overload system, and the floor selector. It fits to the cabin by means of bolts.

- CAGE:
  Fully closed metalllic struture for the transport of persons and loads. It includes doors for the loading and unloading of the machine, and auxiliary catwalk for assembly operations, all of them equipped with safety microswitches.
  The cage roof is accessible, but the access is only allowed for assembly and maintenance purposes, taking in to consideration all safety instructions listed in this manual.

- ANCHORAGE:
  System of mast anchorage to a external support structure. It consists in a bracket screwed to and a pair of telescopic pipes for adjusting to external support structure.

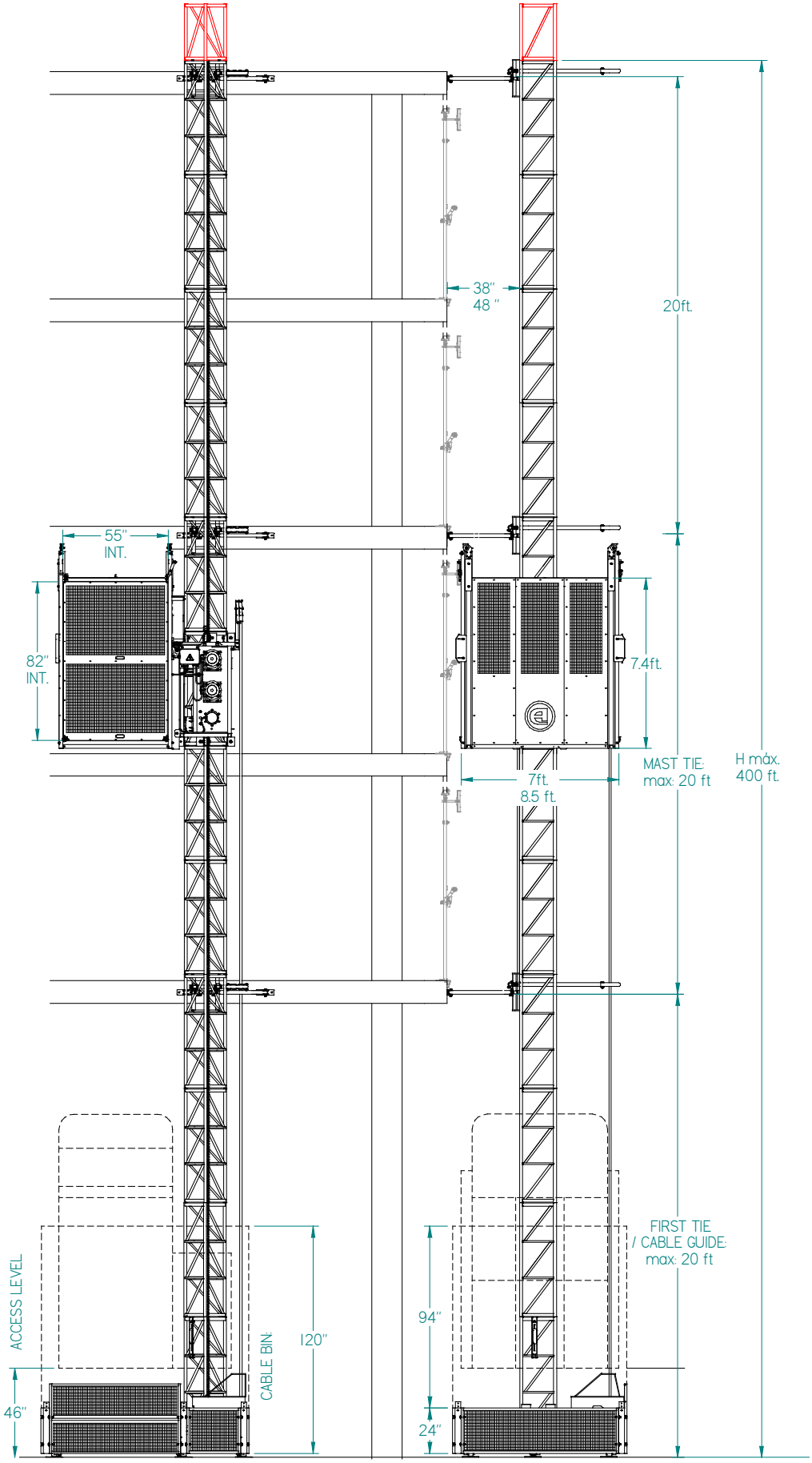
- POWER SWITCHBOARD:
  It contains the principal components of the electrical equipment of the machine, and communicates both the cage control panel, and the control and power supply board on the ground, with proper connectors.

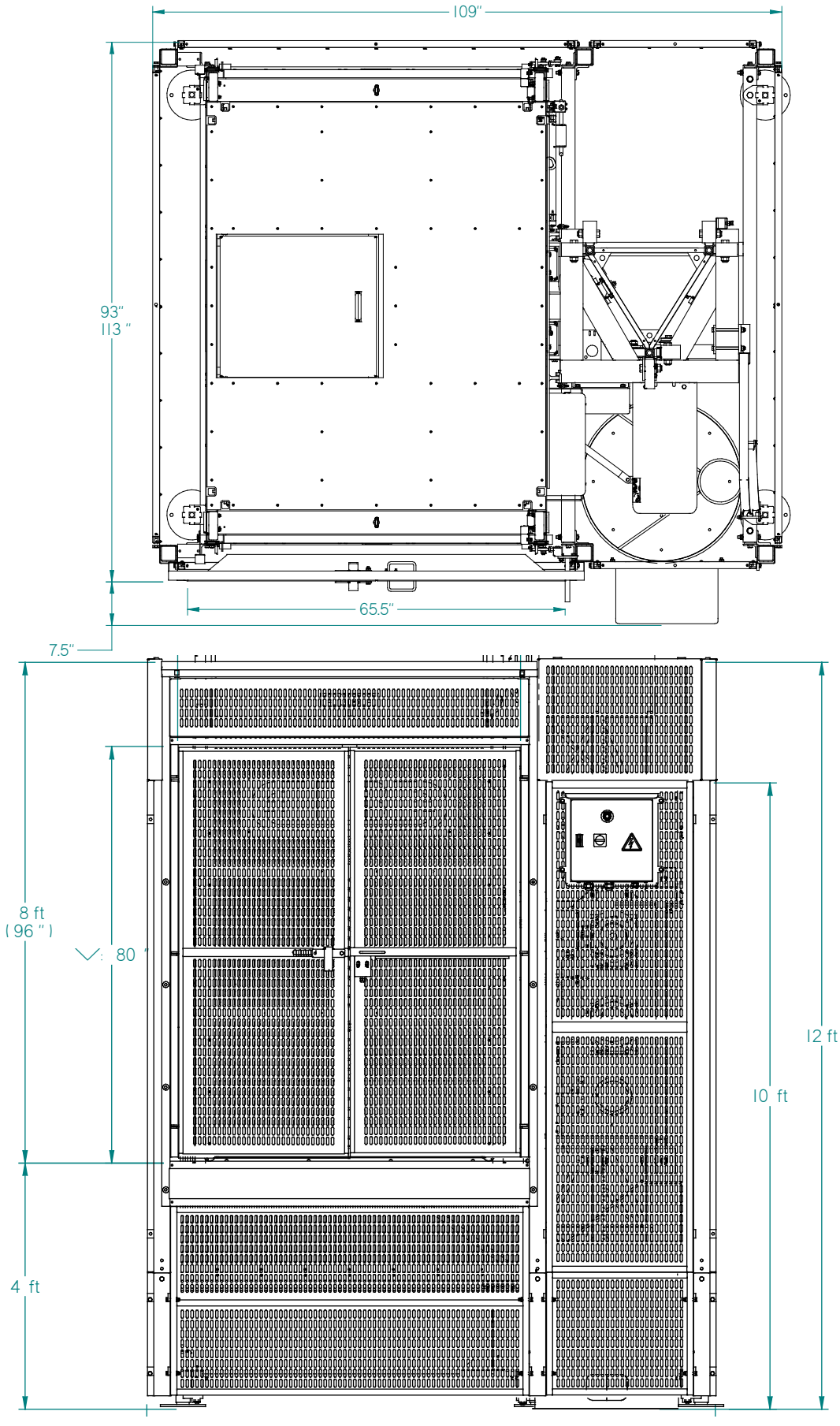
- CABLE BIN:
  Keep the cable of the machine during the movement. The cable bin stores the communication cable coiling it.

- CABLE GUIDES:
  They are used to keep the communication cable vertical and prevent that it may interfere with the movement of the elevator.

- FINAL MAST MODULE:
  Mast module without rack that is installed in the top limit of the column of masts. It prevents that the machine exceeds the top limit of the mast and its red color allows immediate identification.

1.5. Main dimensions




109"
93"
113 "
65.5"
7.5"
8 ft
(96 ")
80 "
4 ft
12 ft
10 ft

1.6. Hoist safety devices.

a) Gearmotors with **electromagnetic brakes** (friction type) capable to brake speeds of 66ft/min. (and even 25% overspeed) with a delay of 0.1 up to 0.2 g. with maximum load.
b) Rubber buffers to damp eventual frame impacts against the base.
c) Upper and lower limit switches. Stop the lowering and lifting movements of the cage when reaching the lower and upper stops located at the first and next to last masts.
d) Safety limit switch. Operate in case of failure of upper or lower limit switches.
e) Mast presence detector, to be used mainly during mast erection.
f) Microswitches for opening the cage doors, and for landing gates with electrical interlocking device, to avoid hoist movement if any door is open.
g) Electromechanical interlocking on cage doors and landing doors, to avoid to avoid hazardous opening.
h) **Manual Emergency lowering** in case of power failure (operated from the cage).
i) **Safety device (Overspeed emergency brake -PARACHUTE-,** to control the lowering speed.
j) Base enclosure of 10ft height.
k) Platform floor of non-slipping galvanized steel.
l) End mast (in red), without rack, to prevent the cage from running off in case of failure of other systems.

VALORES DE EMISIÓN SONORA DECLARADOS COMBINADOS */ Noise emission declaration*
Conforme a la norma */according to* EN ISO 4871:2010

	Condicion / *Condition*	
	En cabina */ Inside cage*	Fuera de cabina */ Outside cage*
Nivel de presión acustica de emisión ponderado A, L_{pAd}: *A-weighted emission sound pressure level, L_{pAd}*	70 dB	74 dB

Valores determinados de acuerdo con el ensayo acústico dado en norma EN 12159 con empleo de normas básicas internacionales EN ISO 3744 y EN ISO 4871.
Values determined according to the acoustic test given in EN 12159 with use of basic international standards
Nota: Los valores de emisión sonora "declarados combinados" son la suma de los valores medidos y de la incertidumbre.
Representan un límite superior del intervalo en el cual los valores medidos son susceptibles de encontrarse.
/Noise emission values "declared combined" are the sum of the measured values and uncertainty.
Represent an upper limit of the range in which the measured values are susceptible to be present.

Rango de temperatura de utilización */Temperature renge for use:*	5°F – 113°F
Humedad relativa */Relative hudidity:*	30 % – 90 %
Altitud máxima de instalación */Max. Altitude for installation:*	3.300 ft.(**)
Velocidad max. viento (EN SERVICIO) */Max. wind speed (SERVICE):*	34 mil./h
Velocidad max. viento (EN MONTAJE) */Max. wind speed (ERECTION):*	27 mil./h
Velocidad max. viento (FUERA DE SERVICIO*) */Max. wind speed (OUT OF SERVICE):*	75 mil./h

(*)Position OUT OF SERVICE corresponds with hoist al the lowest point and power supply disconnected.
(**) For installation in locations above 3300 ft of height., and if the temperature exceeds 113° F, ask to manufacturer for limitations.

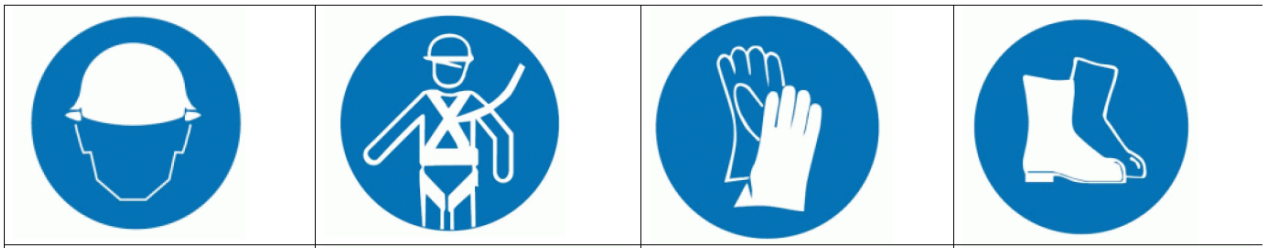
IN CASE OF NEED A SPECIAL CONFIGURATION OF MACHINE, OR MODIFICATION OF STANDARD FEATURES, ASK THE MANUFACTURER FOR DRAWINGS WITH SPECIFIC DIMENSIONS AND CHARACTERISTICS.

2. MACHINE ASSEMBLY

2.1. Introduction

The following section is dedicated to the safely assembly of the machine. The installation of the hoist can only be performed by qualified personnel authorized to travel on it.

WARNING:
To mount the elevator shall be used protective equipment against falls from height (according to EN 358:1993, EN 361:1993, EN 364:1993) and in any case a protective helmet for the head (according to EN 397:1995), plus additional means of protection.



It is important to follow the instructions in detai, to avoid risks in the assembly and disassembly process. The user is obliged to observe, by himself, and for those working in the vicinity, all sources of additional risk, and to comply with all applicable safety standards for the type of equipment used.

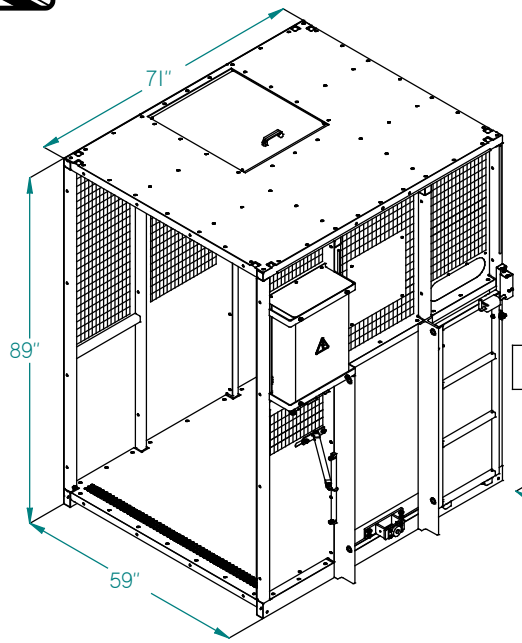
2.2. Hoist transport.

The elevator is supplied disassembled, unless specifically indicated otherwise. For assembly of the components and safe handling of the base assembly and a correct positioning on the ground using a crane is needed.

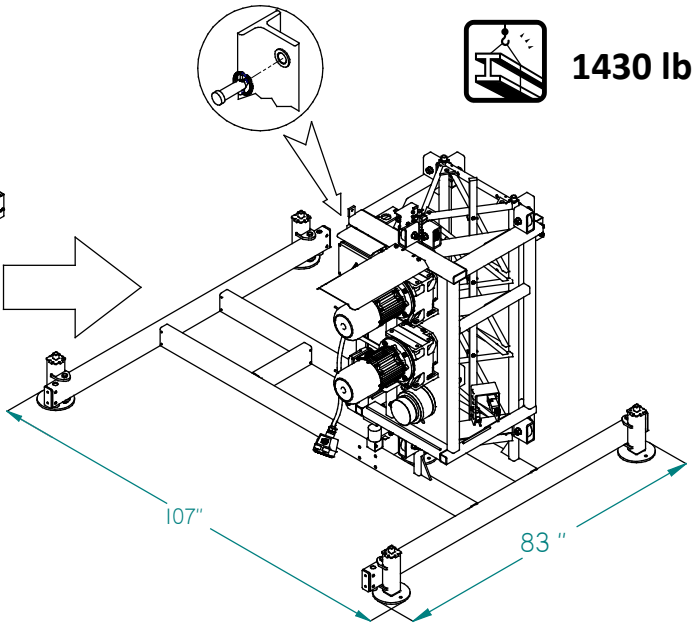
IMPORTANT:
For Assembly of the components and mounting the platform it will be used a crane-truck, or if available, you can use building crane-tower.

990 lb

1



1430 lb.



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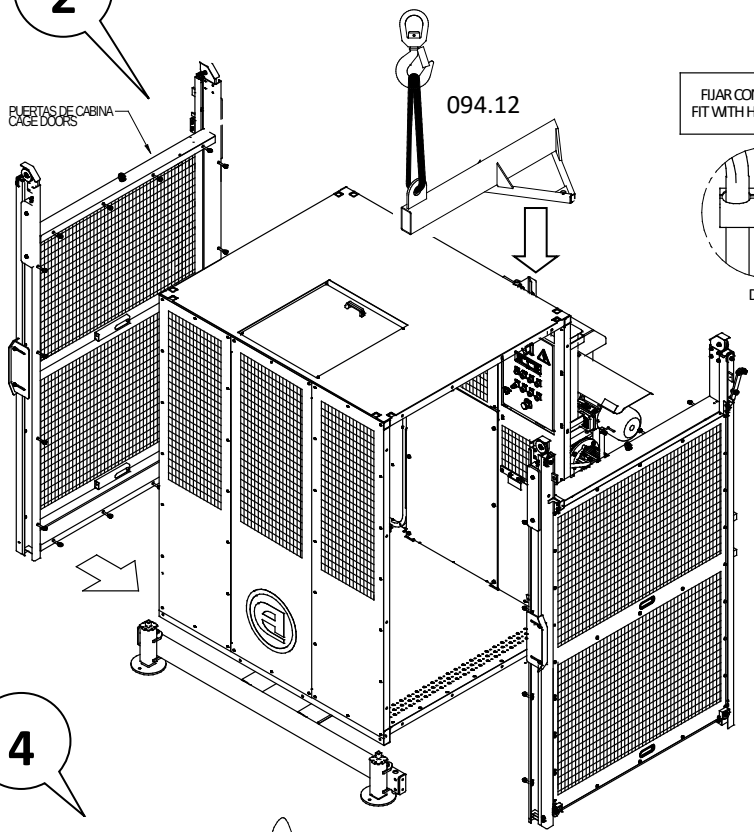
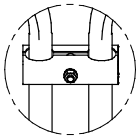


FIJAR CON ABRAZADERAS
FIT WITH HANDRAIL CLAMPS



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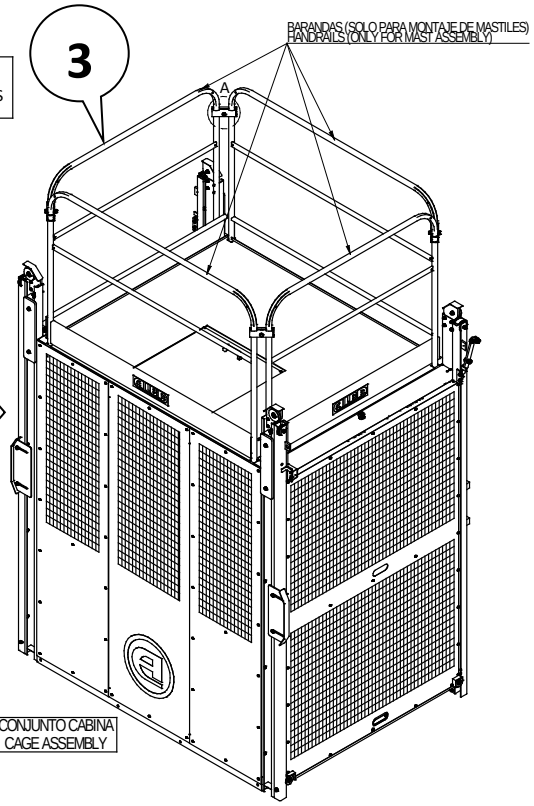

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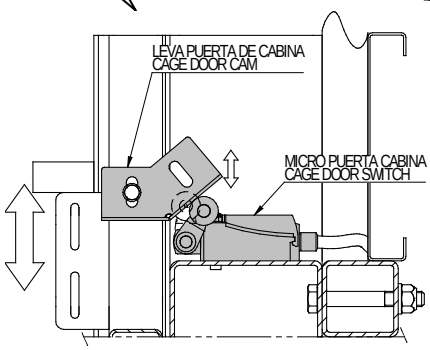


WARNING:
Set and regulate cage door switches before proceeding with hoist complete erection.

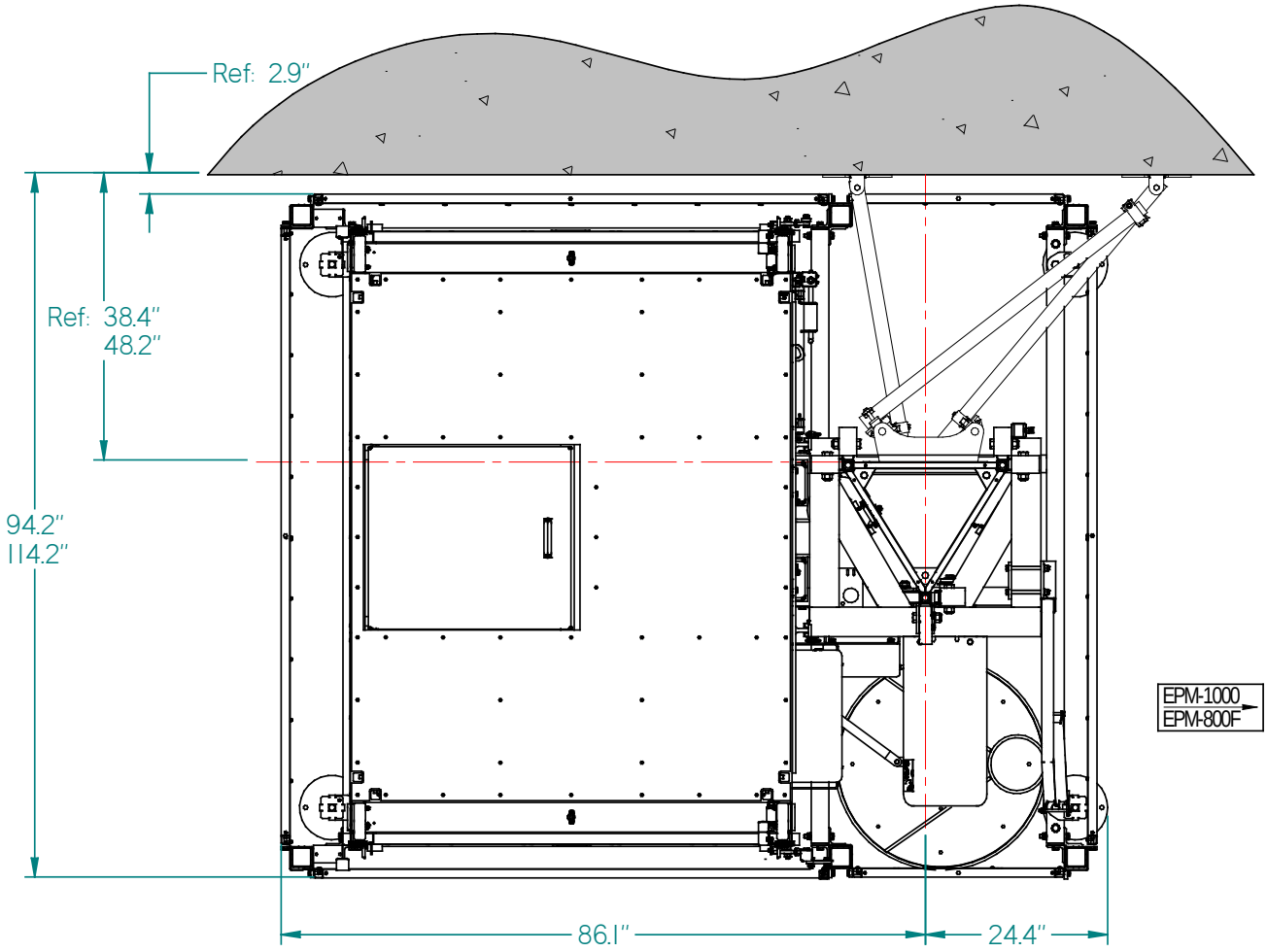
2.3. Machine erection procedure:

• Step 1. Site preparation and foundation

TRANSMISION DE CARGAS AL TERRENO ELEVADOR / *Loads to ground* EPM-1000					
Altura (ft) *Height*	Peso máquina *Hoist weight*	Peso base + mástil *Base & mast weight*	Carga *Load*	TOTAL WEIGHT (ESTATIC)	**TOTAL WEIGHT (DINAMIC Cd: 1,7)**
66 ft.	2200 lb.	1930 lb.	2200 lb.	6340 lb.	9425 lb.
132 ft.		3300 lb.		7716 lb.	10800 lb.
197 ft.		4685 lb.		9090 lb.	12180 lb.
262 ft.		6060 lb.		10470 lb.	13560 lb.
328 ft.		7440 lb.		11850 lb.	14940 lb.

(*) *Case of greater height, ask to manufacturer. For intermediates, add 24 lb/ft to present weight.*

• Step 2. Base to ground positioning and fastening.

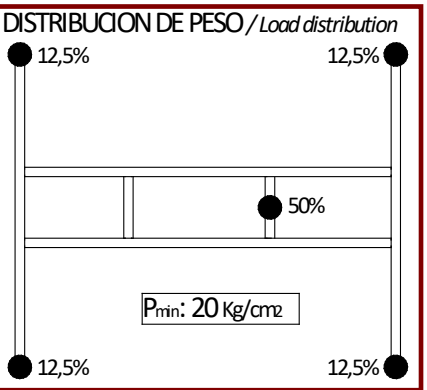


ATTENTION:
IT´S RECOMMENDED TO FASTEN BASE FRAME TO GROUND, WITH M10 ANCHORS, TO AVOID DANGEROUS MOVEMENTS.

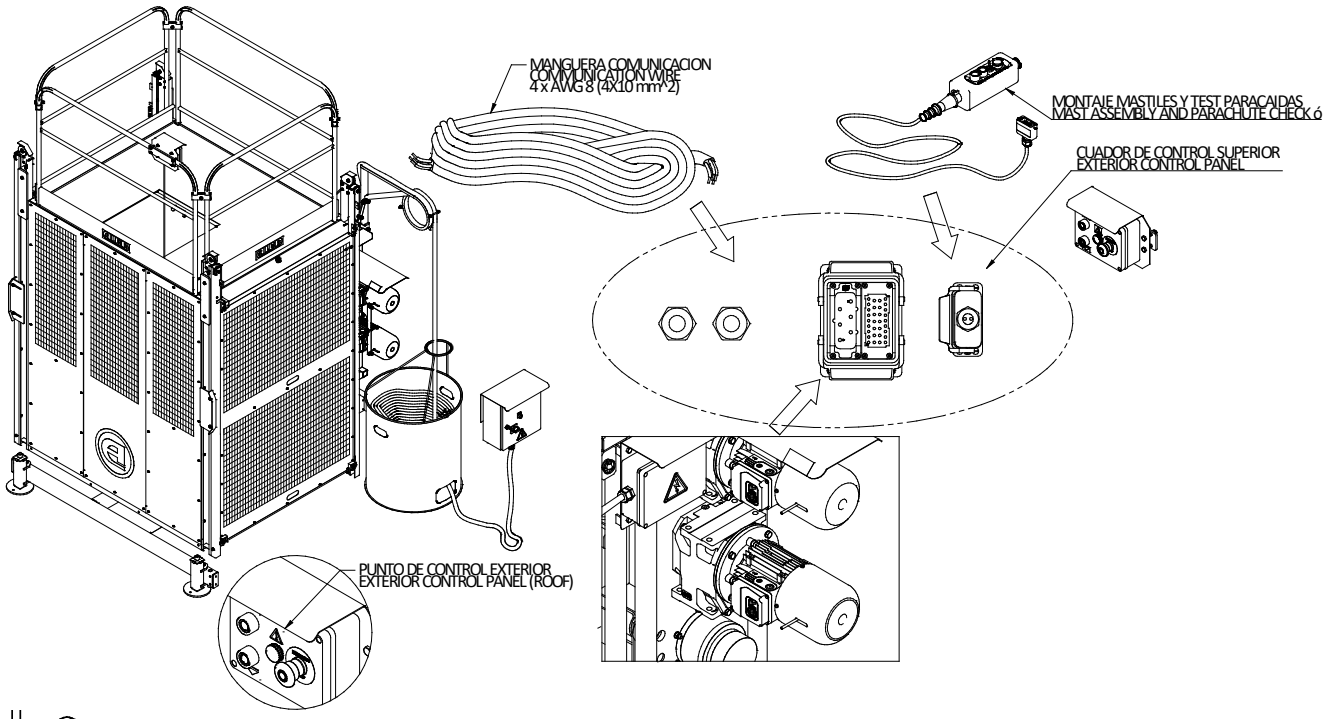
ATTENTION:

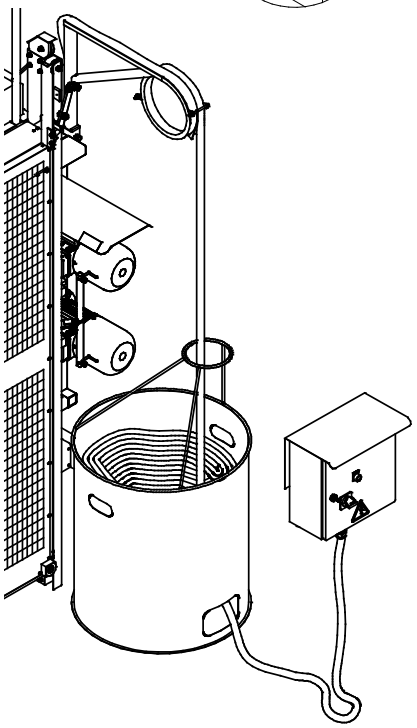
FOR HOIST POSITIONING IT´S REQUIRED A MINIMUM SUPPORT AREA WITH DIMENSIONS 95 x 110 inch, INCLUDING CABLE BIN.

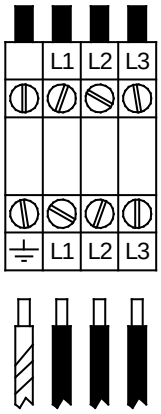
MAKE SURE THE RESISTANCE OF THE GROUND TO WITHSTAND THE MAXIMUM LOADS TRANSMITTED BY THE PLATFORM.



- **Step 3. Assembly and connection of electrical equipment.**

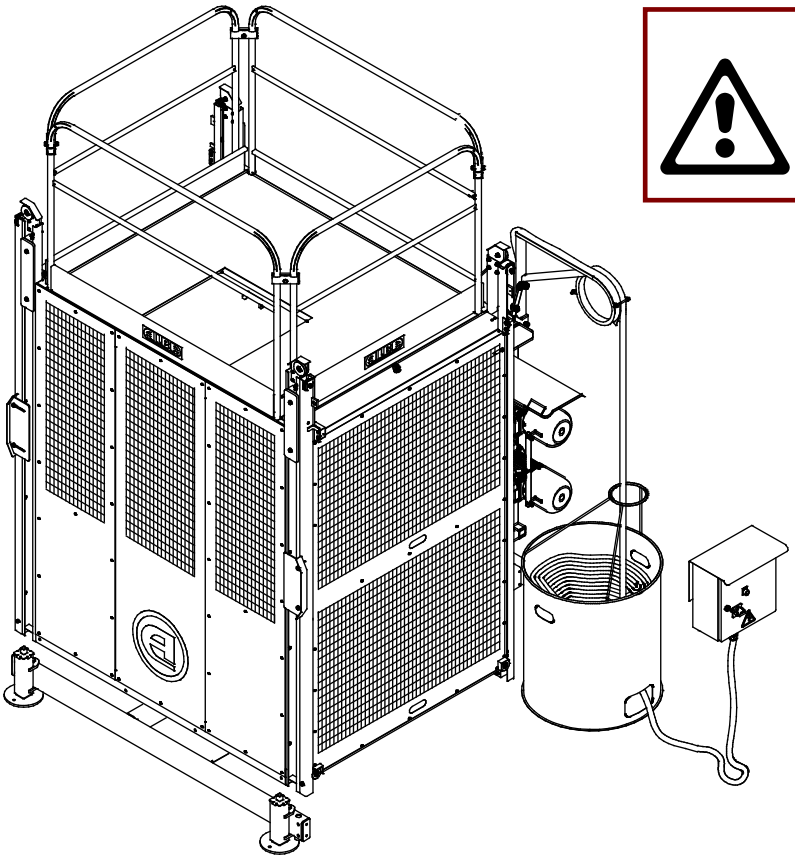




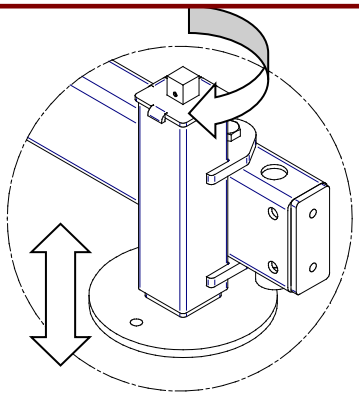


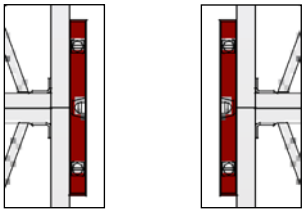
3Ph-220V-60Hz + GR

• **Step 4. Base leveling.**



CAUTION:
DON´T PERFORM TASKS FROM THE UPPER ROOF WITHOUT HAVING PREVIOUSLY INSTALLED RAILS





ATTENTION:
IT IS IMPORTANT THAT THE BASE IS PERFECTLY LEVEL AND FIRST MAST VERTICAL. ENSURE LEVELING TO AVOID FURTHER PROBLEM.

ATTENTION:
ONCE THE BASE HOIST IS POSITIONED, FOLLOWING STEPS, THE HOIST CAN START TO MOVE TO ASSEMBLY THE MAST COLUMN.

Step 5. Erection of the mast.

ATTENTION:
FOR THE ERECTION OF THE MAST 2 PERSON ARE NEEDED.
THE WEIGHT OF EACH MAST MODULE IS 106 lb.
USE BOLTS TYPE 8.8 : (TORQUE: 300 lb·ft)
3 X SCREW M20X90 DIN 931, WHASER A21 DIN 125 y NUT M20 DIN 985

THERE´S AN AUXILIARY MINI CRANE (OPTIONAL) FOR MAST ASSEMBLY, WICH INCLUDE A SAFETY MICROSWITCH.
IF THE MINICRANE IS OUT OF THE SAFETY ZONE, HOIST DOESN´T WORK.

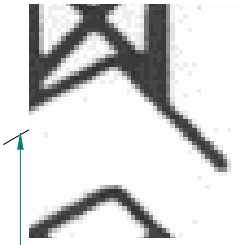
ATTENTION:
USE THE HOIST CONTROL IN "INSPECTION" MODE, WITHOUT LOADS.
CONSULT CHAPTER 3. USING THE MACHINE, BEFORE START USING THE HOIST.
¡DON´T USE "AUTO" MODE WHEN PERFORMING ASSEMBLY TASK !

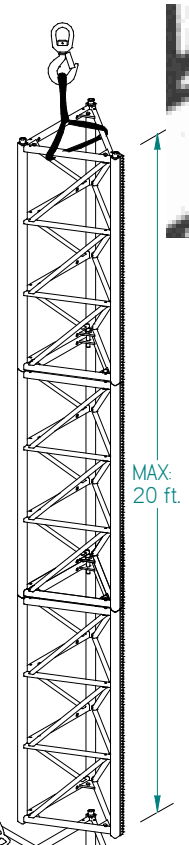
IMPORTANT:

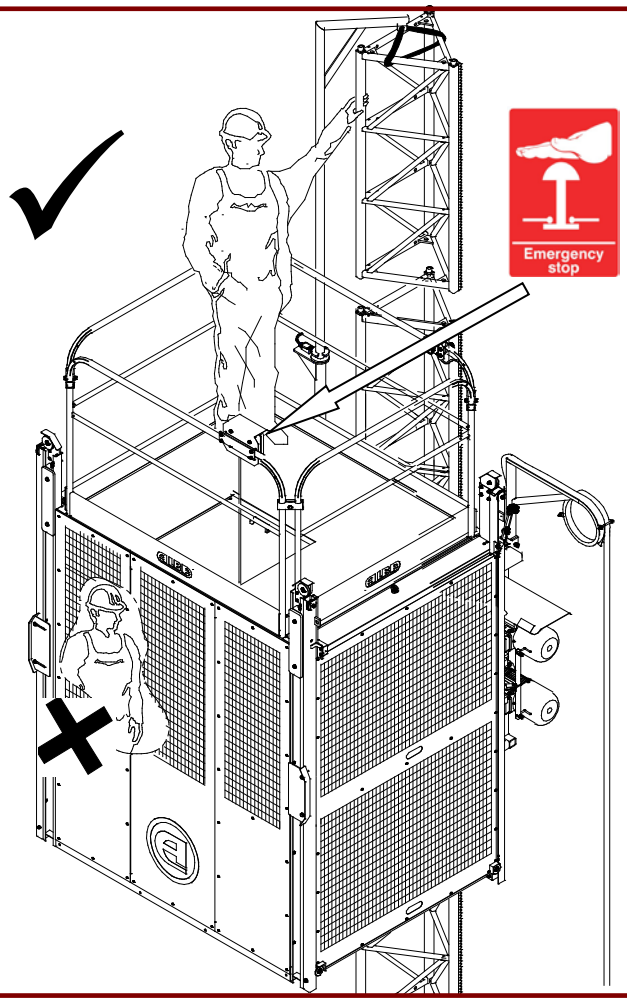
FOR SAFETY AND QUICKNESS, ITS RECOMMENDED TO ASSEMBLY THE MAST MODULES WITH A CRANE CASE OF USING AUXILARY MINICRANE, POSITION IN THE INTERIOR OF THE CAGE, MAXIMUM, 4 MODULES OF MAST.

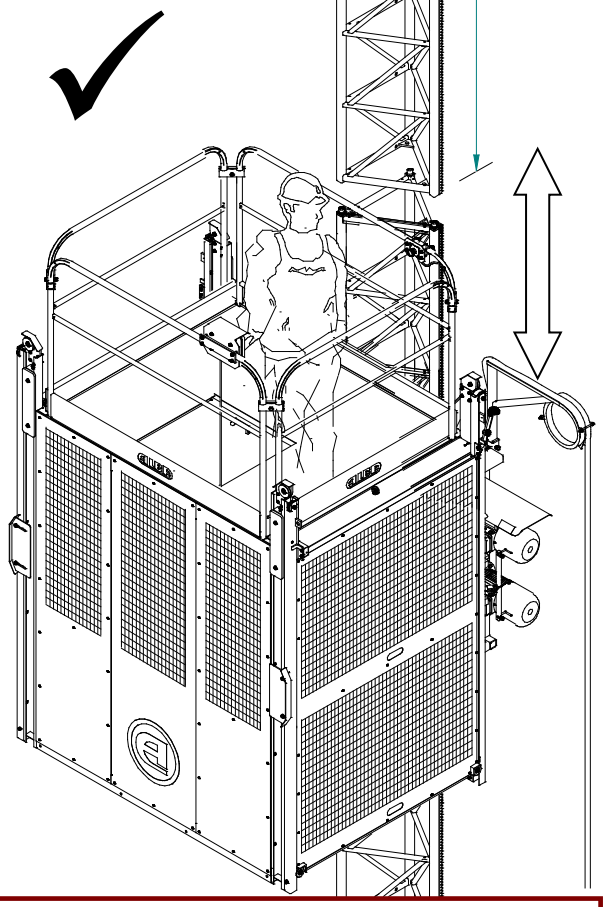
AUTO - MAN

INSTALL FIRST ANCHORAGE ON FIRST FLOOR OF BUILDING, OR MAX. 20 ft FROM GROUND.
CASE OF INSTALLING ALBA LANDING DOORS, FOR A CORRECT OPERATION, IT´S ADVISABLE TO INSTALL ANCHORAGE EACH 14 ft, or MAX. EACH 20 ft.







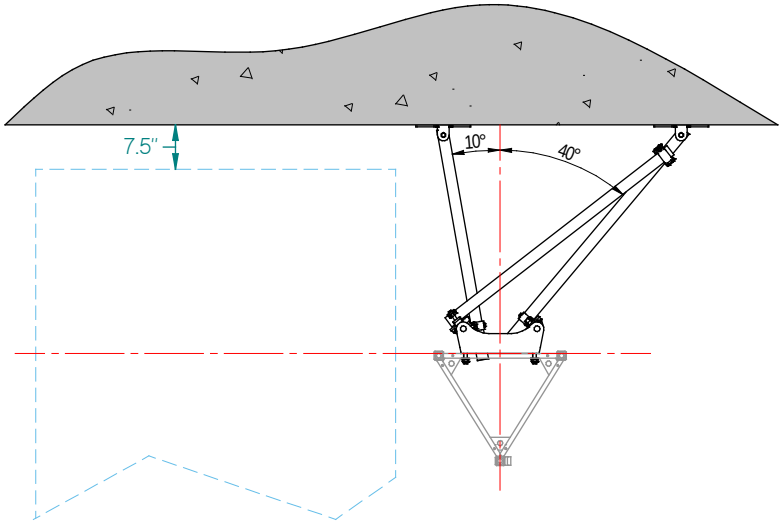


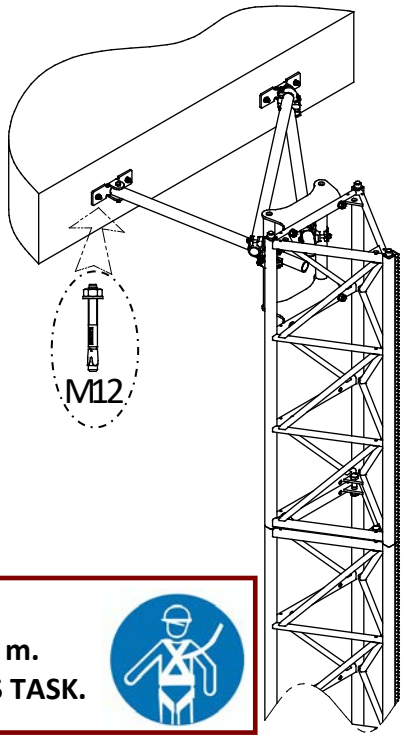
CAUTION:
FIT / REMOVE MAST AND SCREWS ALWAYS AT THE SAME TIME!
NEVER RAISE THE HOIST OVER A NON-SCREWED MAST MODULE!
THEN THERE IS HIGH HAZARD OF COLLAPSE AND SERIOUS INJURY!

CAUTION:
USING THE HOIST WITH INTERIOR CONTROL FOR MAST ERECTION IS FORBIDDEN.
USE EXTERIOR CONTROL FROM CAGE ROOF, <u>WHITOUT LOADS</u>

Step 6. Installation of mast anchorage

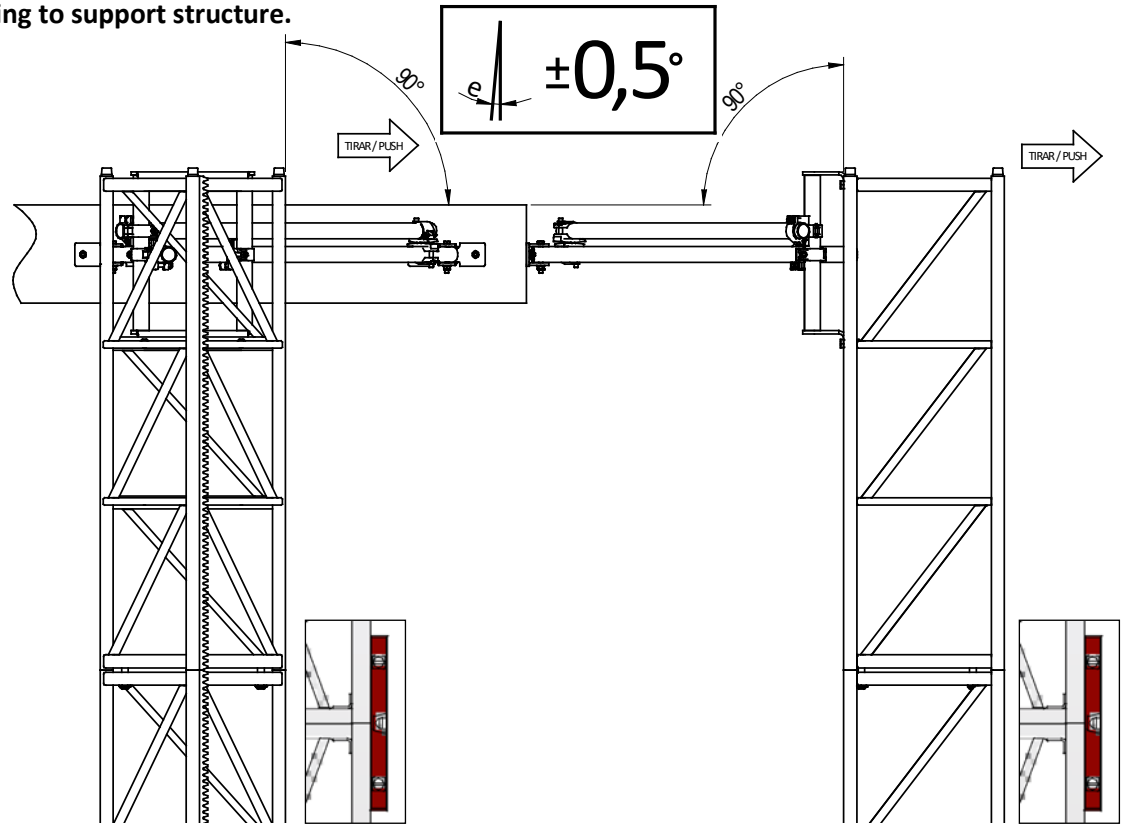
1) Mounting anchorage.





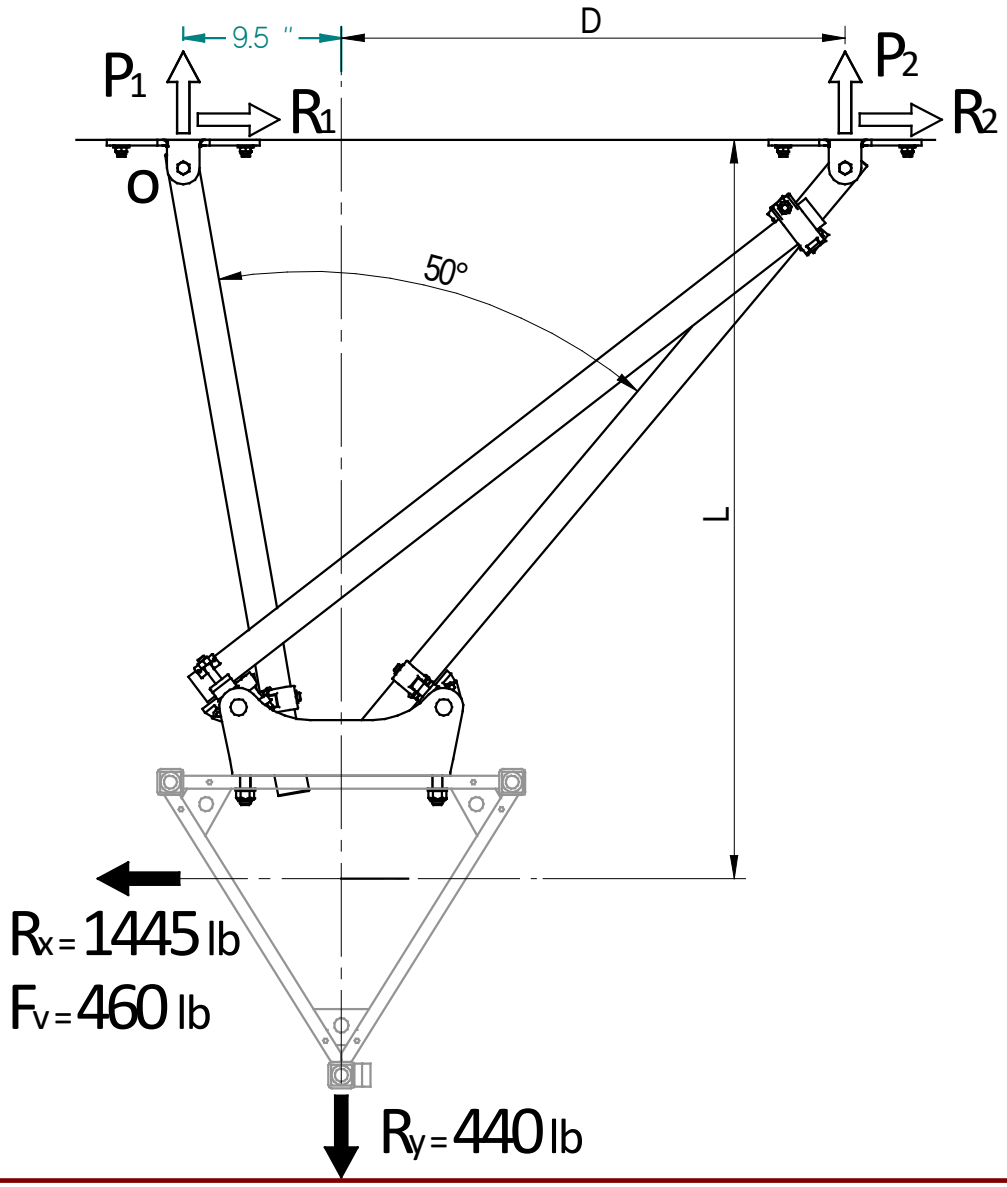
ATTENTION:
ANCHOR TO THE STRUCTURE, MAXIMUM, EACH 6 m.
USE THE AUXILIARY PLATFORM TO PERFORM THIS TASK.

2) Fixing to support structure.



CAUTION:
BOTH SIDES OF THE MAST MUST BE VERTICALY 90º LEVELED AND ALSO MAST TWISTING , BEFORE CLAMPS ARE FITTED TO THE SUPPORT STRUCTURE. CORRECT ADJUSTMENT IF REQUIRED. USE AUX. CATWALK FOR ANCHORAGE ASSEMBLY.

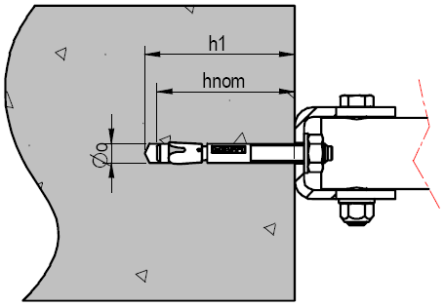
3) Transmitted forces to the structure.



IMPORTANT:
TO CONSIDER WIND EFFECT ON THE CALCULATION OF MAX. ANCHORAGE REACTIONS, A FORCE OF 460 lb MUST BE ADDED TO R_x , R_y , APPLIED IN THE MOST UNFAVORABLE POSITION. (X)

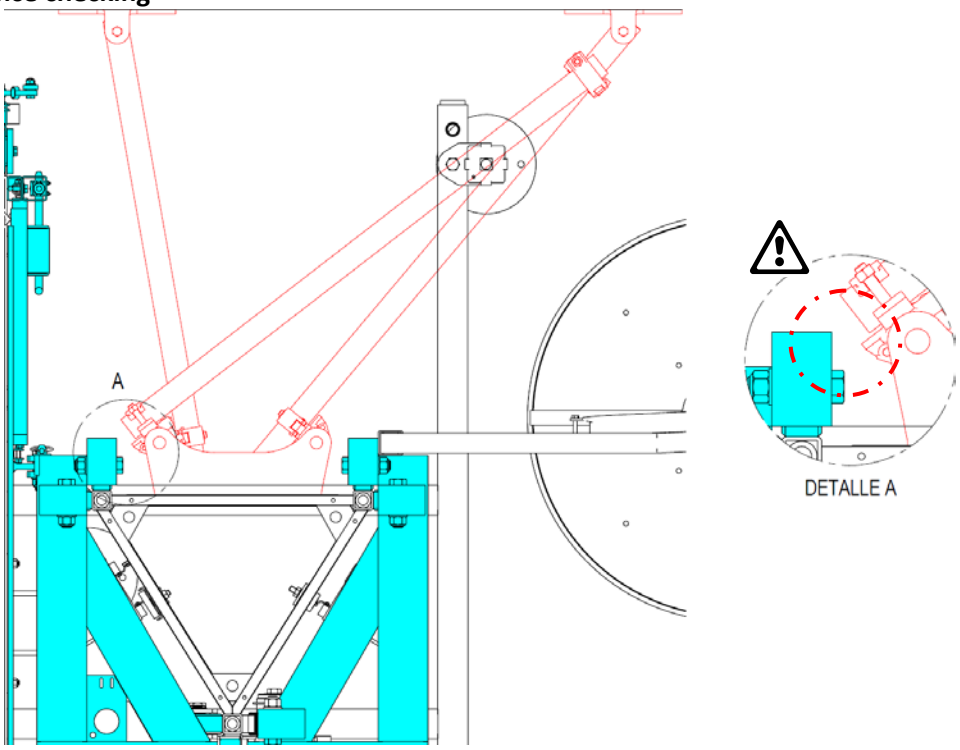
CALCULATION OF REACTIONS						
Case of:	L (inch)	D (inch)	R_1 (lb)	R_2 (lb)	P_1 (lb)	P_2 (lb)
D mín. (50º)	44.7	30.5	265	1636	-1508	1.950

4) Recommended anchorage systems.



Modelo recomendado: HSA-K M12 X 120	
DATOS DE COLOCACION:	
d_o (Diametro de la broca)	12 mm.
h_1 (Profundidad de taladro)	95 mm.
h_{nom} (Profundidad min. empotramiento)	80 mm.
l (Longitud del anclaje)	120 mm.
l_g (Longitud de rosca)	65 mm.
T_{ins} (Par de apriete)	5 Kp x m.

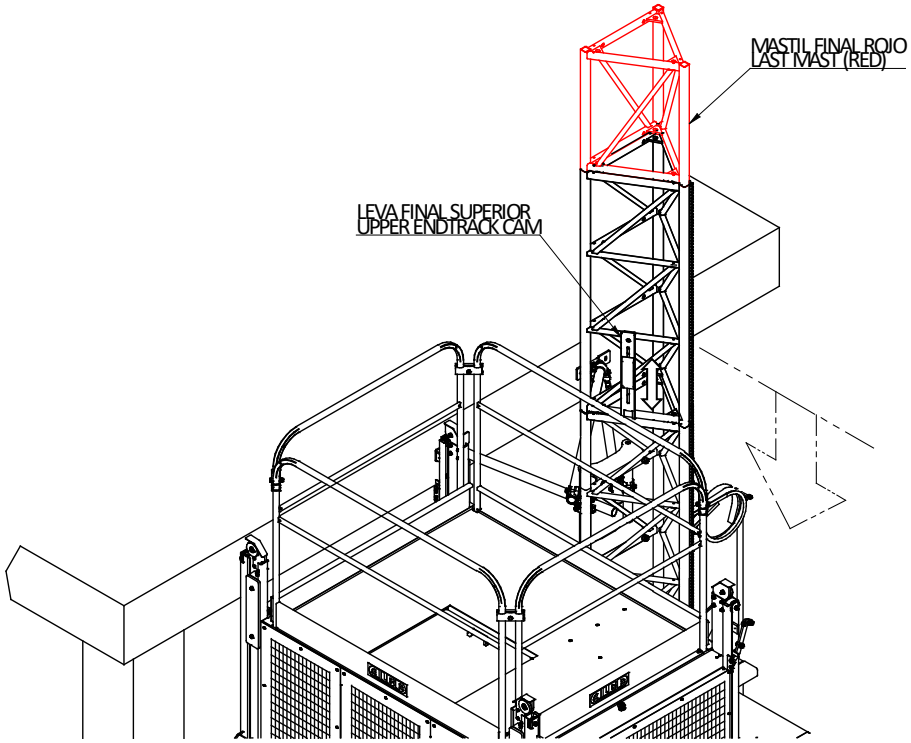
5) Interference checking

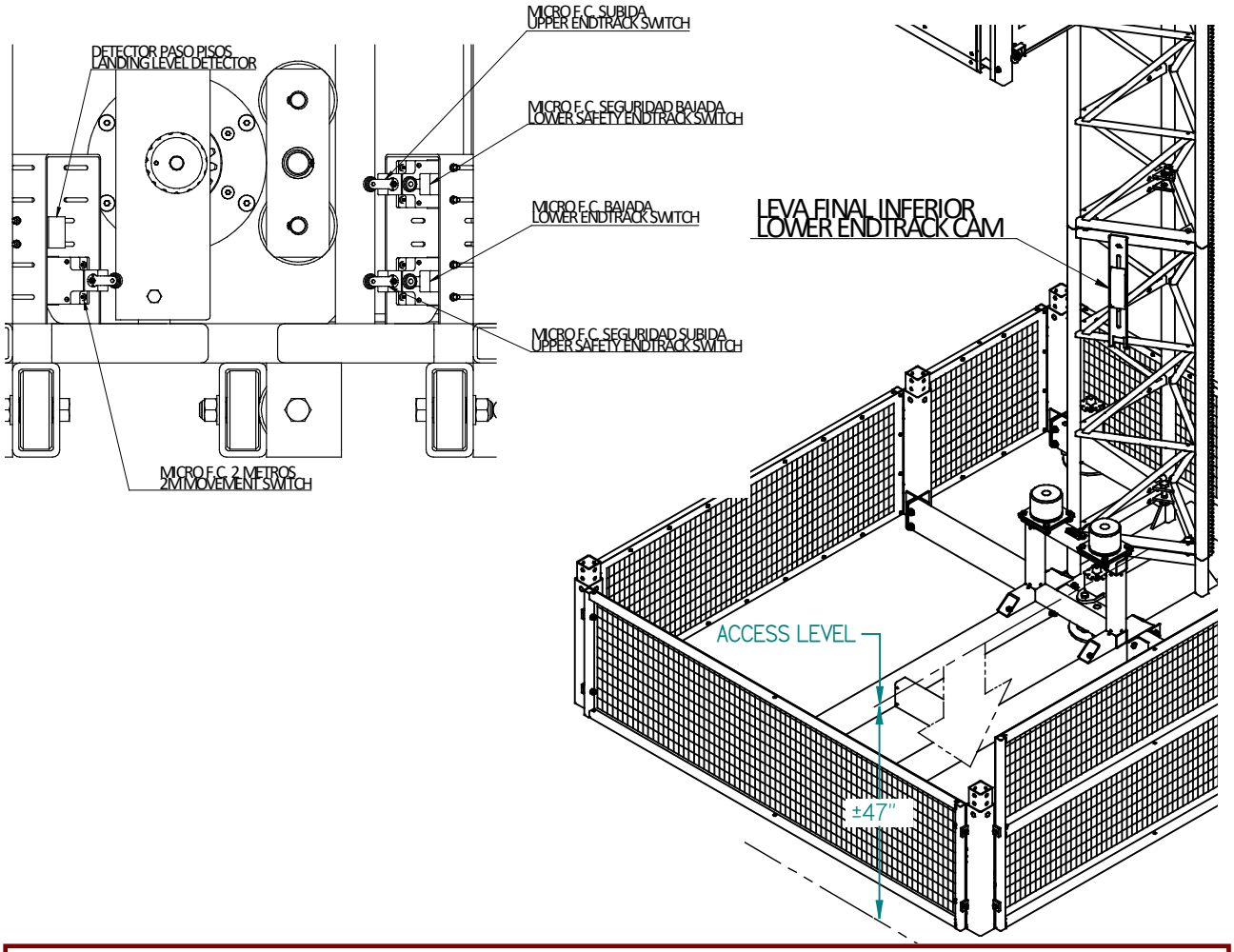


ATTENTION:
REVIEW OF POSSIBLE INTERFERENCE POINT SHOWN BEFORE SCREWING TO THE STRUCTURE. MOVE THE POSITION OF ANCHOR TUBES IF NECESSARY.

IMPORTANT NOTE:
THE ANCHORS ARE INSTALLED, MÁXIMUM, EACH 20 ft.
DO NOT ELEVATE THE PLATFORM ABOVE THE TOP FLOOR WHICH IS ANCHORED.

Step 7. Endtrack cams and last mast module installation





IMPORTANT:
INSTALL SUPERIOR ENDTRACK CAM ON THE LAST MAST AND THEN RED MAST WITHOUT RACK. USE VERTICAL REGULATION TO ACHIEVE BETTER STOP POINT.

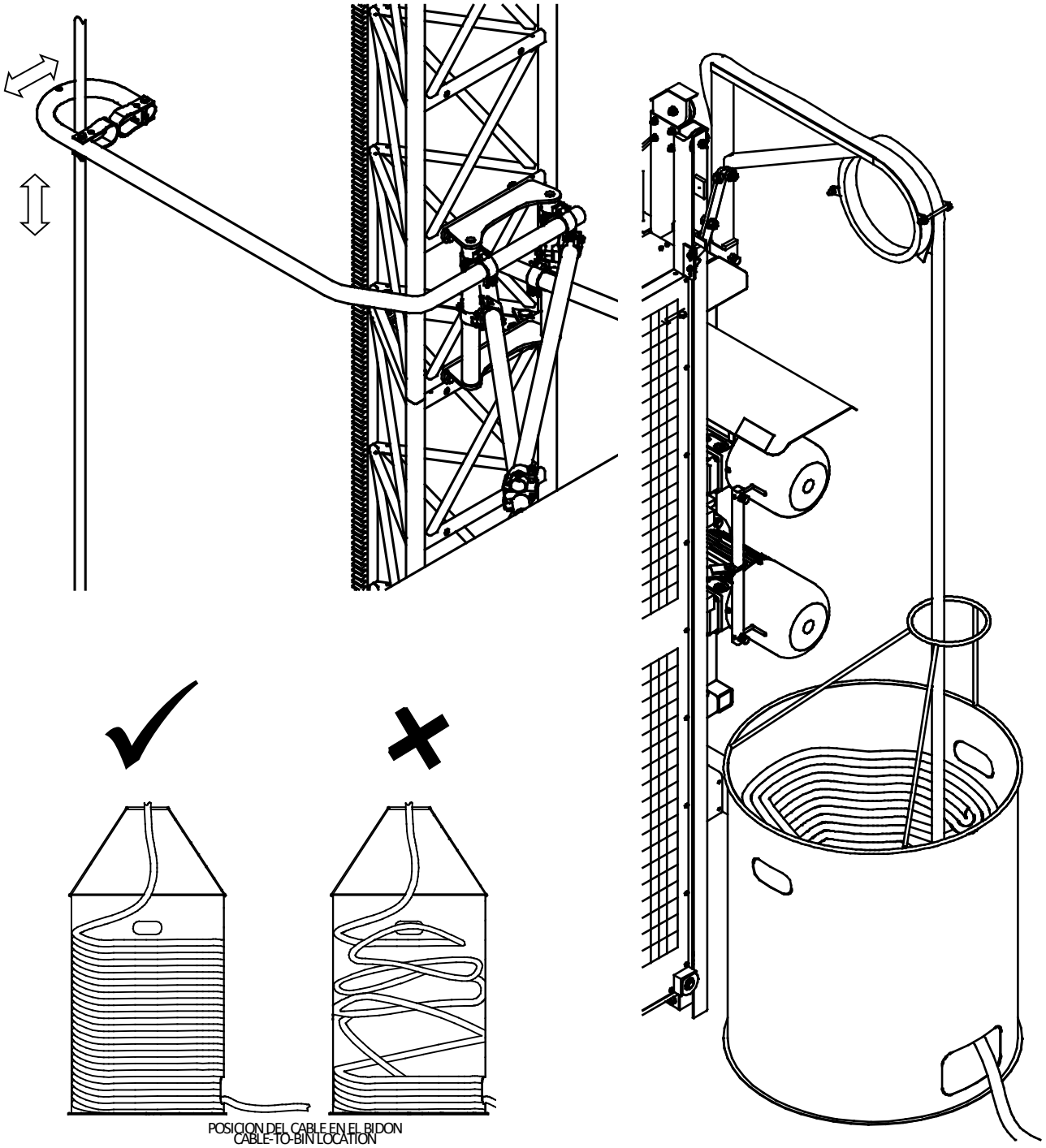
CHECK IF HOIST STOP IS PROPERLY PERFORMED:

1. **RAISE IN ("INSPECTION" MODE) UNTIL HOIST STOPS. CHECK THAT THE MACHINE STOPS WHEN F.C.S SWITCH TOUCHES SUPERIOR CAM, AND ALSO THAT RED MAST´S NOT REACHED.**

2. **DESCEND IN ("INSPECTION" MODE) UNTIL HOIST STOPS AND CHECK IF THE MACHINE STOPS WHEN F.C.B SWITCH TOUCHES INFERIOR CAM. (Ref. Point)**

¡¡THESE TESTS ARE VERY IMPORTANT BEFORE FURTHER ASSEMBLY !!

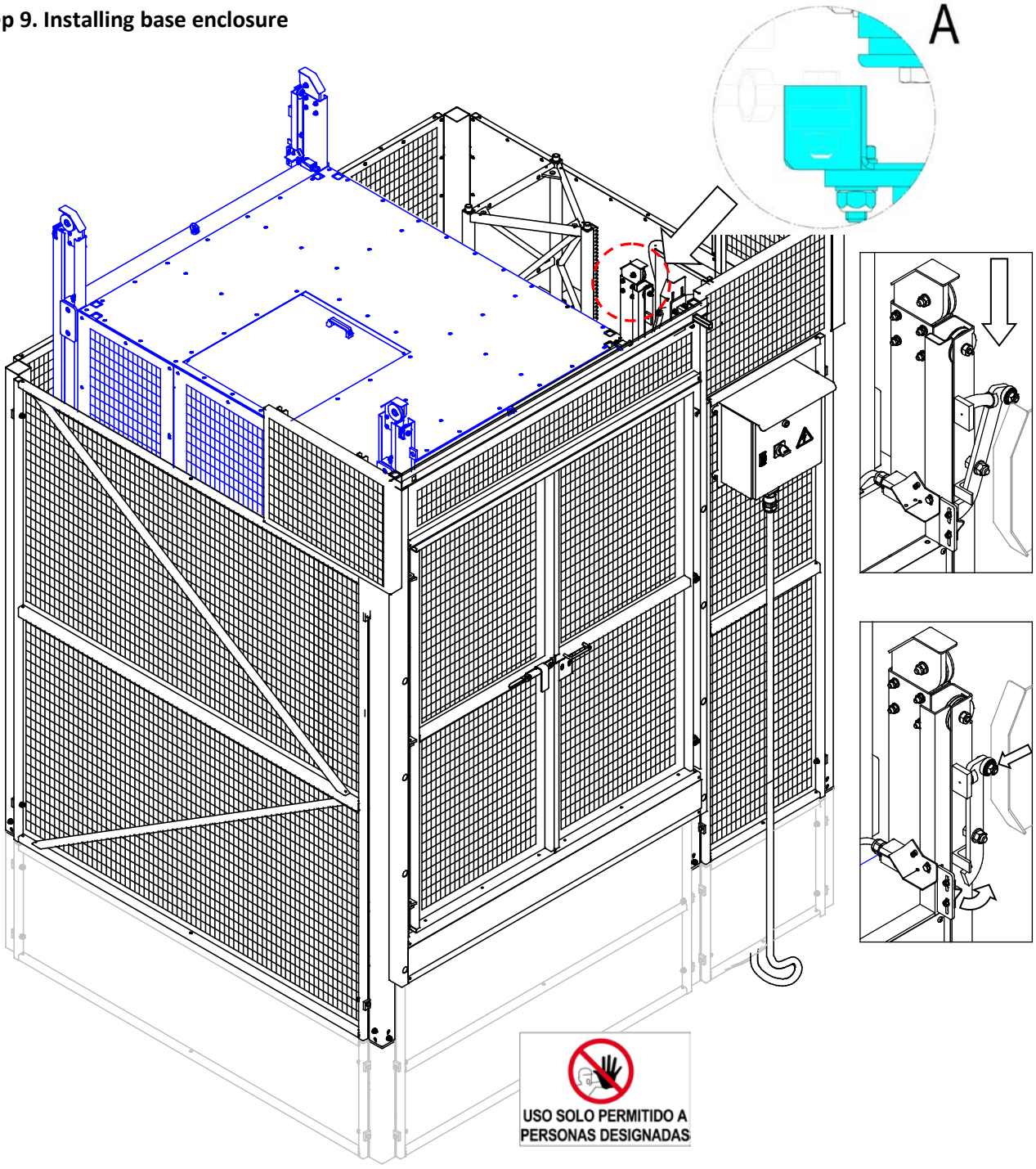
Step 8. Installing cable guides and adjusting cable bin.



ATTENTION:
INSTALL CABLE GUIDES, MAXIMUM, EACH 20 ft, BY ADJUSTING THE POSITION SO THAT THE CABLE TRAVEL THROUGH THE CENTER OF THE GUIDE.

PICK UP THE CABLE IN THE BIN AVOIDING APPEARING KNOTS OR LOOPS.

Step 9. Installing base enclosure

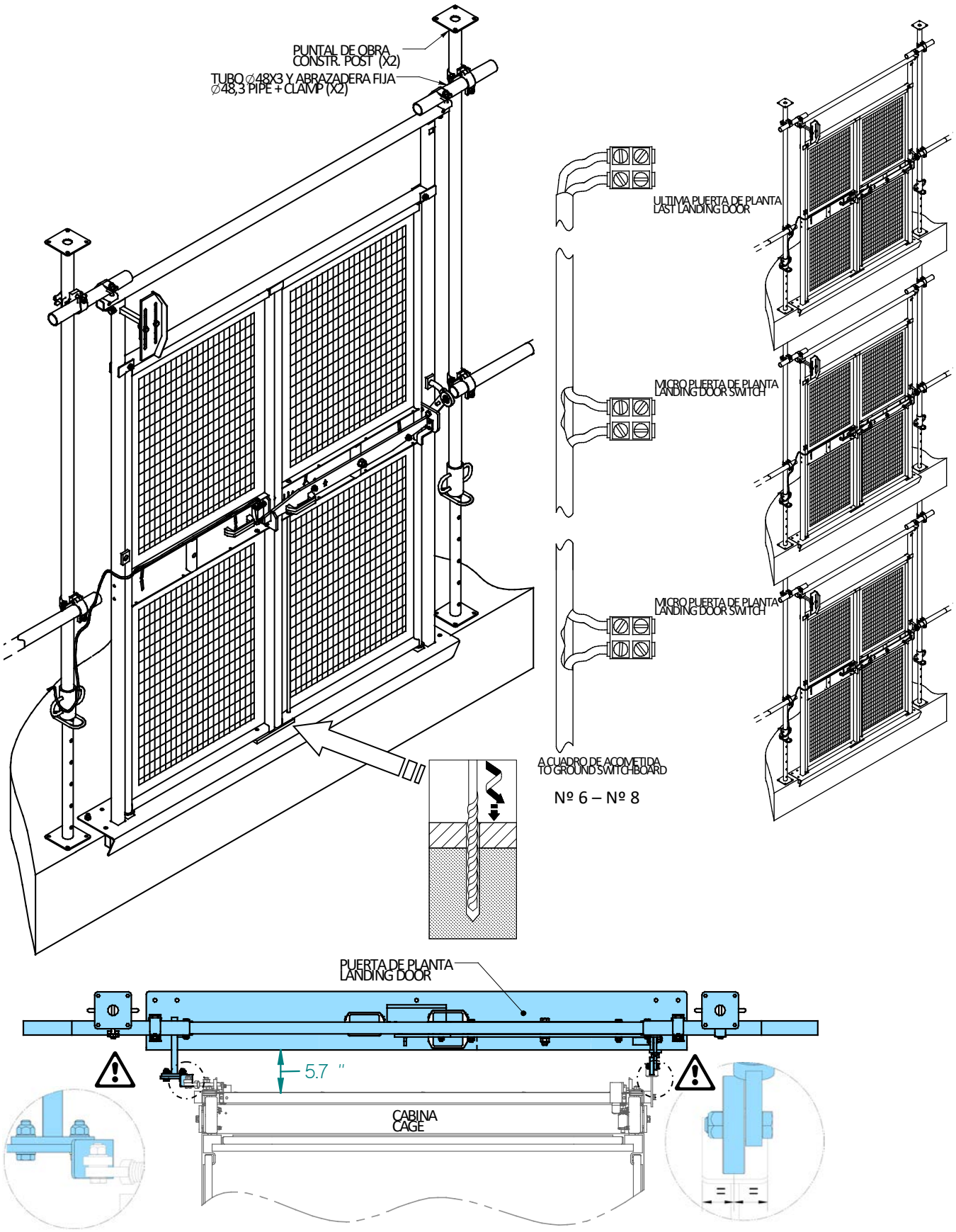


IMPORTANT:
ADJUST DOOR RELEASE CAM OF ENCLOSURE DOOR SO IT ALLOWS OPEN THE CAGE DOOR ON INFERIOR ENDTRACK, AVOIDING INTERFERENCE WITH HOIST STRUCTURE.

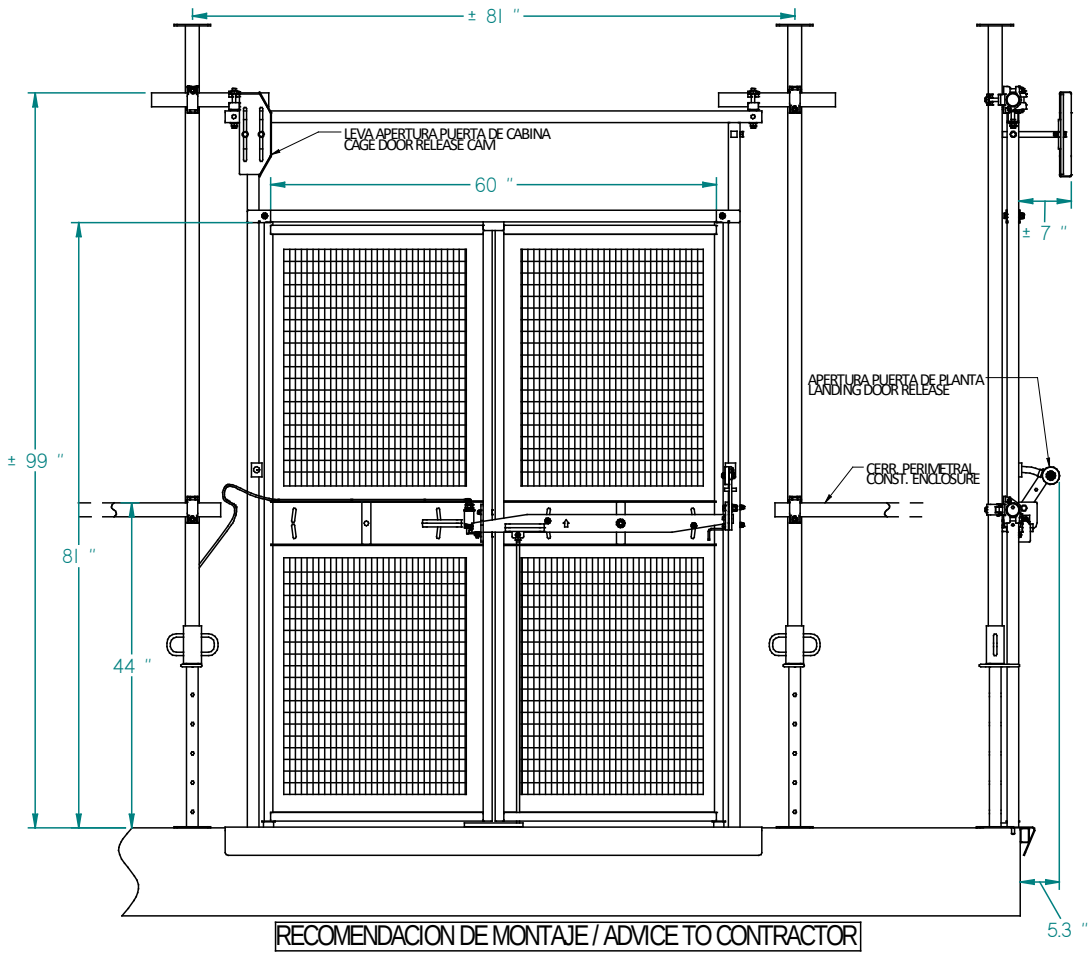
IF EXTERIOR RAMP TO ACCESS TO THE HOIST IS INSTALLED, INFERIOR PART OF ENCLOSURE DOORS CAN BE REMOVED.

FENCE DOOR HAS A MICROSWITCH CONNECTED TO CONTROL BOARD, TO STOP OR AVOID MOVEMENT OF THE PLATFORM IF ANY DOOR IS OPEN .
CONSULT ELECTRICAL DIAGRAM. PIN Nº 7 – Nº 8 (GROUND BOARD)

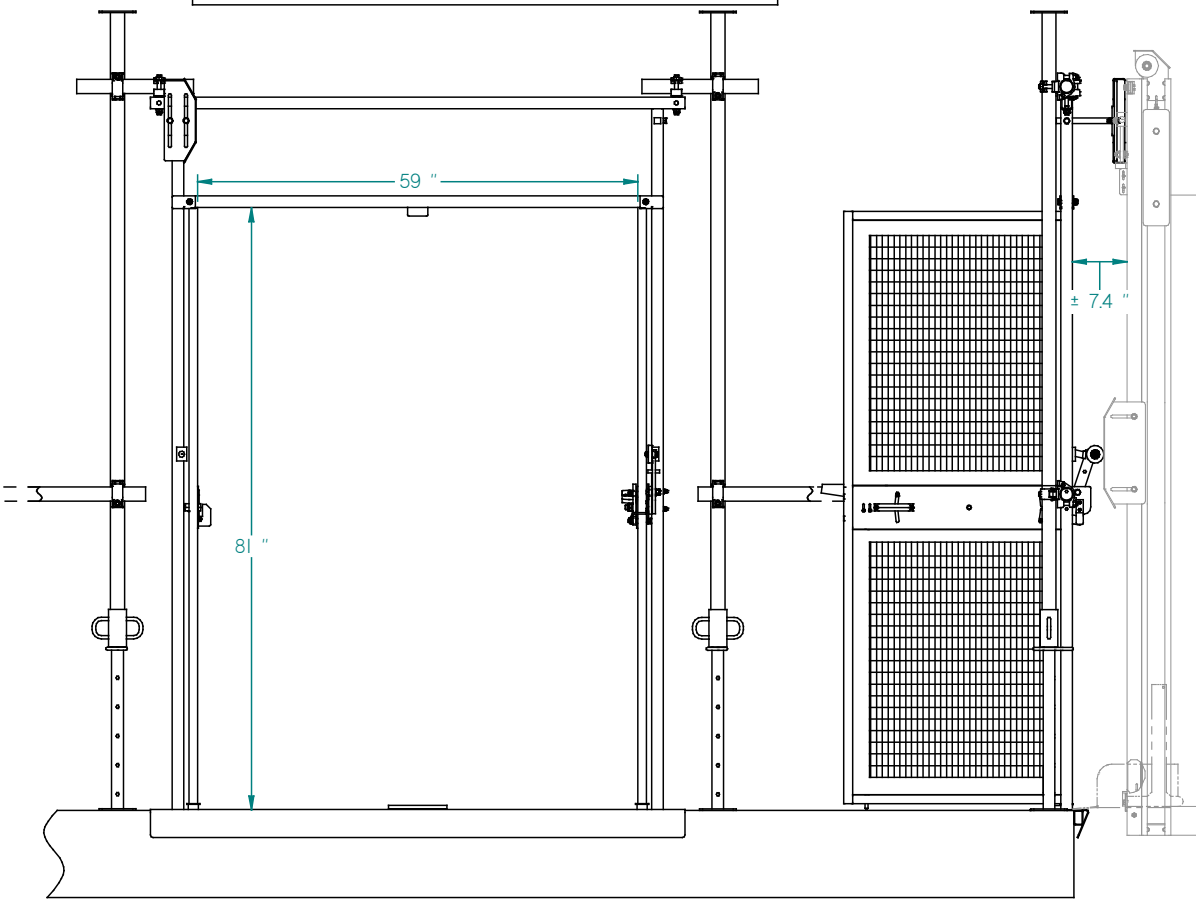
Step 10. Installing landing doors.



IMPORTANT:
ADJUST DOOR-LOCK RELEASE CAM ON BOTH CAGE DOOR AND LANDING DOOR, AVOIDING ANY INTERFERENCE AS SHOWN.

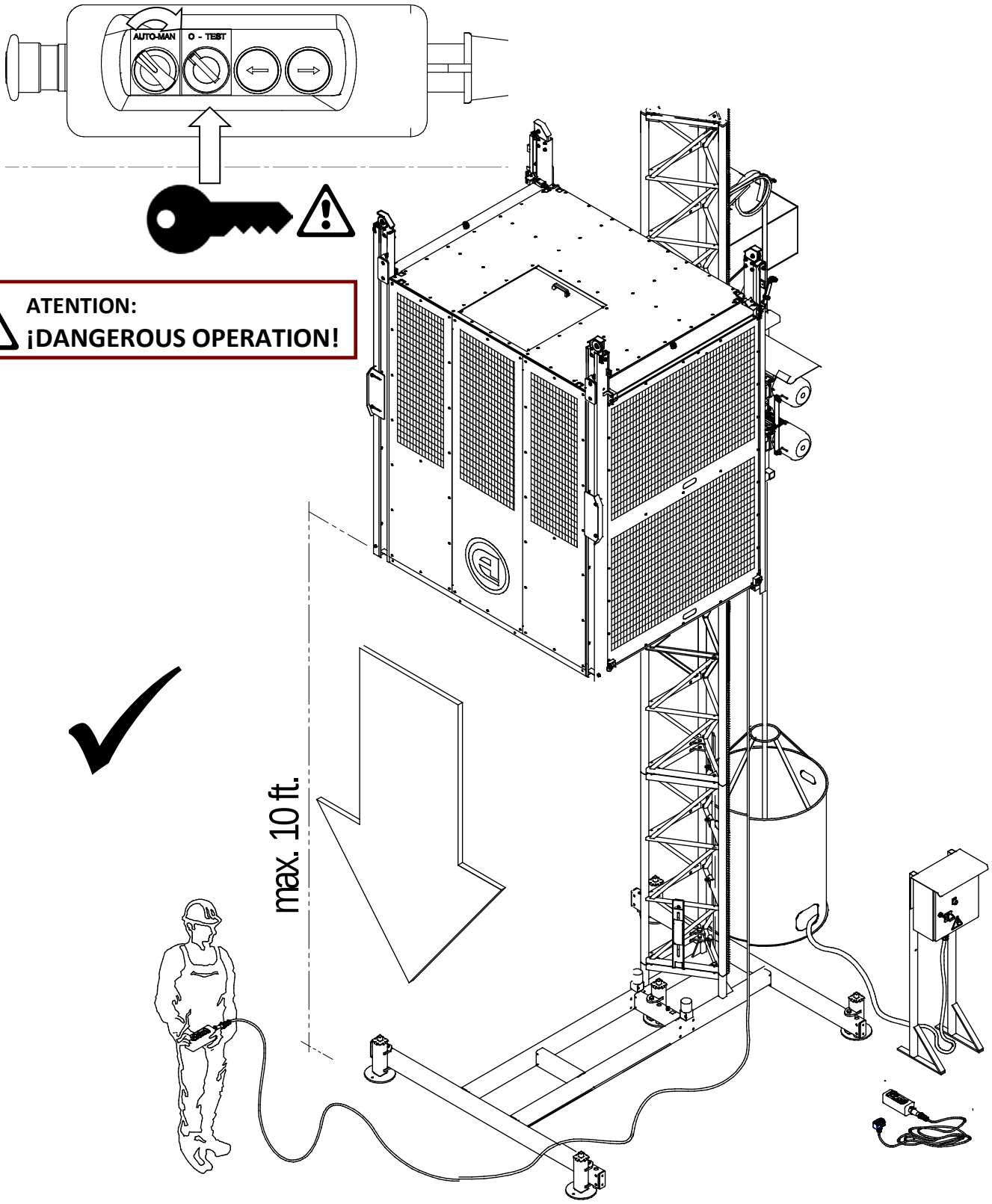


RECOMENDACION DE MONTAJE / ADVICE TO CONTRACTOR



Step 11. Parachute test

IMPORTANT:
AT THE END OF THE ASSEMBLY OF THE MACHINE, PRIOR TO USE, IT WILL BE MADE A TEST ON THE PARACHUTE

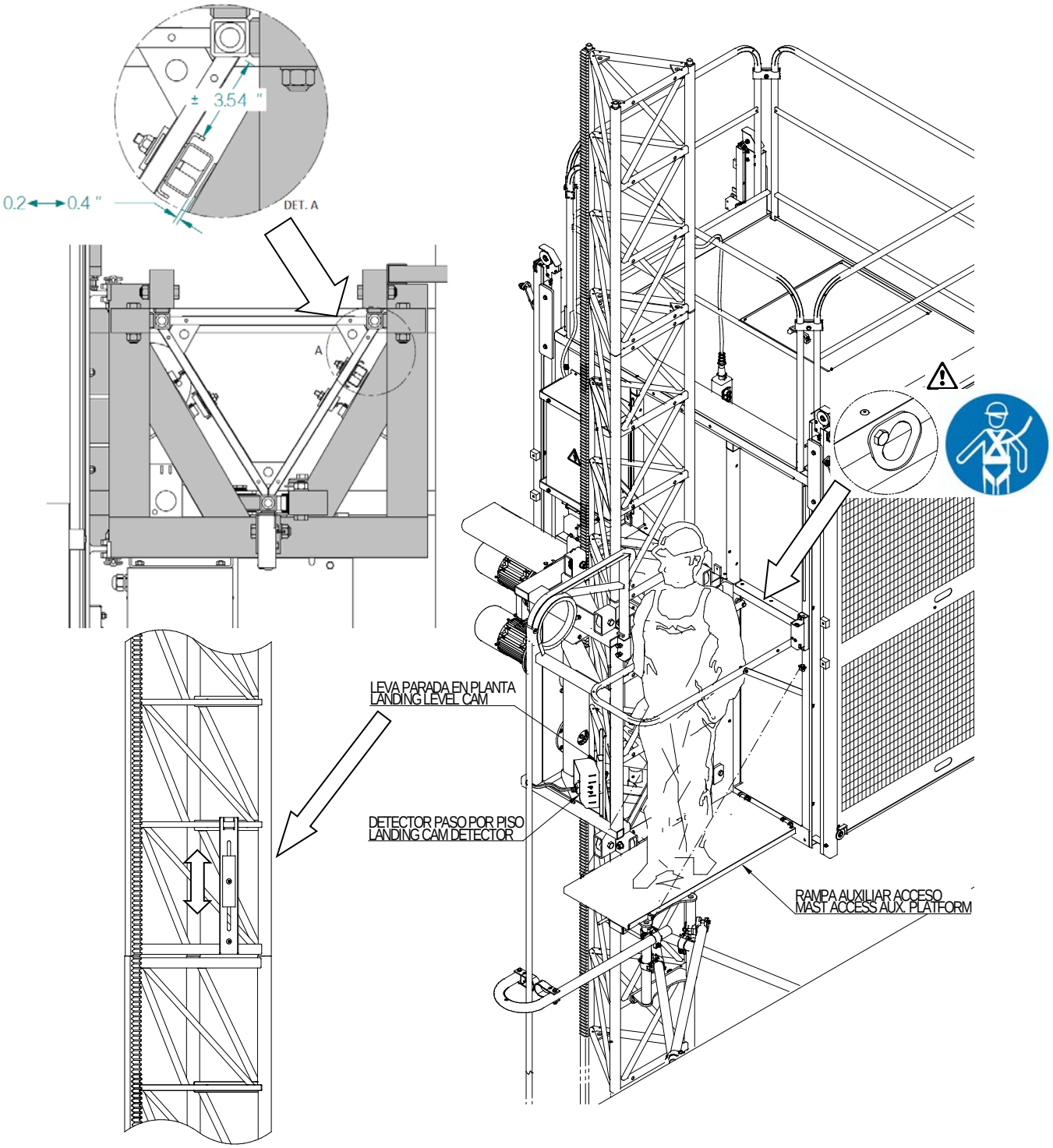


ATENTION:
¡DANGEROUS OPERATION!

PARACHUTE TEST PROCEDURE (See Chap.4)

Step 12. Installing landing cams.

ATTENTION:
BEFORE USING THE HOIST, IT IS NECESSARY TO INSTALL THE LANDING CAMS IN THE MAST AT DESIRED LANDING LEVELS.



IMPORTANT:
ONCE THE FLOOR CAMS ARE INSTALLED, THE HOIST CAN BE STOPPED AT DESIRED LEVEL BY PUSHING "STOP-NEXT-FLOOR" BUTTON WHEN IT´S NEAR TO REACH THIS POINT.

2.4. Dismantling the hoist.

For the dismantling of elevator perform the reverse process to that described in this manual, with particular attention to the tasks that present a risk of falling.

ATTENTION:
FOR MACHINE DISMANTLING "MANUAL" MODE IS TO BE USED, WITHOUT LOADS, AND HANDLING THE LIFT FROM ROOF CONTROL WITH PORTABLE MANUAL CONTROL.

Step 1. Dismantling mast column and anchorages

ATTENCION:
INSTALL CAGE ROOF PROTECTION RAILINGS BEFORE PERFORM ANY TASK ON THE CAGE ROOF.

Remove first the red mast and upper stop cam and then the column of masts and anchors. Use portable cage control to use hoist from the roof cage.

CAUTION:
REMOVE MAST AND SCREWS ALWAYS AT THE SAME TIME!
NEVER RAISE THE HOIST OVER A NON-SCREWED MAST MODULE!
THEN THERE IS HIGH CHANCE OF COLLAPSE AND SERIOUS INJURY!

INSTALL CAGE ROOF PROTECTION RAILINGS BEFORE PERFORM ANY TASK OVER CAGE ROOF.

Step 2. Electrical disconnection and dismantling of the base set.

Once you reach the lower limit, disconnect power supply and remove electrical equipment. It is suitable to support the cage on a wooden block interleaved with the base frame for better support during transport.

Step 3. Removing the base set for transport.

Remove the cable bin and the base enclosure. If necessary for the transport of the hoist, remove the cage of the motor group, following the procedure contrary to that described for mounting procedure.

3. USING THE MACHINE.

3.1. Introduction

WARNING:
HOIST CAN ONLY BE USED BY THE DESIGNATED PERSONS, WHO HAVE BEEN INSTRUDED ON THE SAFELY HOIST OPERATION.
FOR EXTERNAL COMMUNICATION IN CASE OF TROUBLE, THERE MUST BE A CELULAR PHONE INSIDE THE CAGE.

IMPORTANT:
TWO OPERATION MODE ARE POSSIBLE FOR THE HOIST:

- **"SERVICE" MODE: HOIST MOVEMENTS ARE PERFORMED WITH HOLD-TO-RUN BUTTONS. (▲ ▼) . ONLY CONTROL FROM INSIDE CAGE IS POSSIBLE.**
- **"INSPECTION" MODE: HOIST IS OPERATED WITH HOLD-TO-RUN BUTTONS. (▲ ▼) ONLY WITH THE EXTERIOR CONTROL.**

THERE´S A SELECTOR WITH KEY ON MAIN PANEL INSIDE THE CAGE TO CHANGE "SERVICE" TO "INSPECTION" MODE.

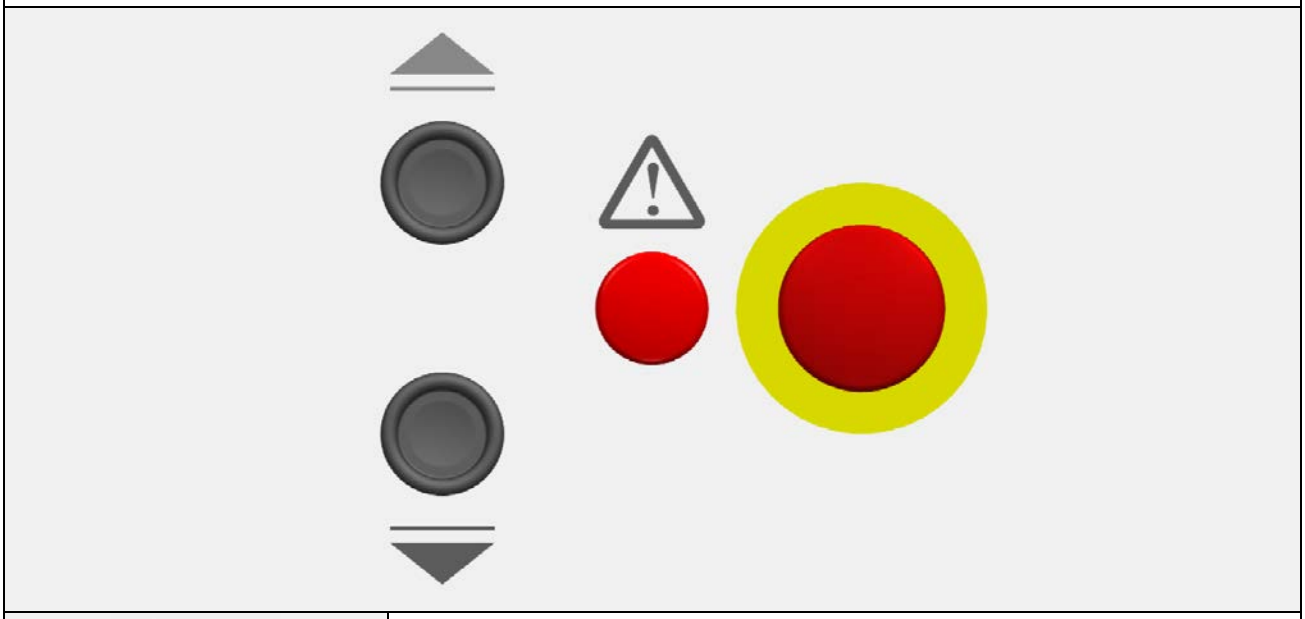
IMPORTANT:
"INSPECTION" MODE IS ONLY ALLOWED FOR AUTHORIZED TECHNICAL PERSONNEL, WHO WILL KEEP THE KEY TO PREVENT USE THIS MODE TO UNAUTHORIZED PERSONS.

3.2. Using “INSPECTION” mode.

WARNING:
“INSP” MODE IS USED FOR ASSEMBLY AND DISASSEMBLY TASK, AND FOR INSPECTION AND MAINTENANCE PROCEDURES.

USE OF “INSP” MODE BY UNAUTHORIZED PERSONS IS FORBIDDEN.

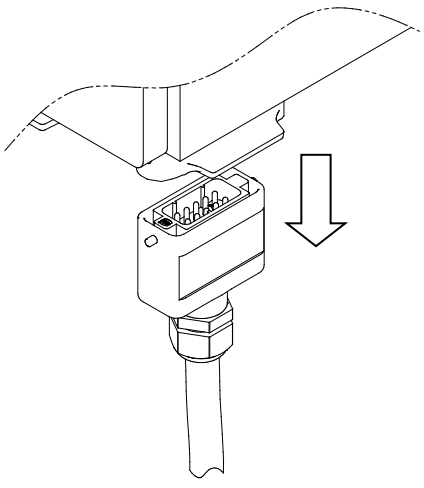
USE “INSP” MODE WITH THE HOIST WITHOUT LOADS

DESCRIPTION OF CONTROLS – INSPECTION MODE	
	
	RAISE AND DESCENT MOVEMENT IN “INSPECTION” MODE (HOLD-TO-RUN)
	LIGTH “OUT OF SERVICE”
EMERGENCY STOP	PRESS ONLY IN CASE OF EMERGENCY

IMPORTANT:
“INSPECTION” MODE ALSO ALLOWS TO PERFORM “DROP TEST” OF SAFETY DEVICE (PARACHUTE), USING THE REMOTE PARACHUTE TEST CONTROL.

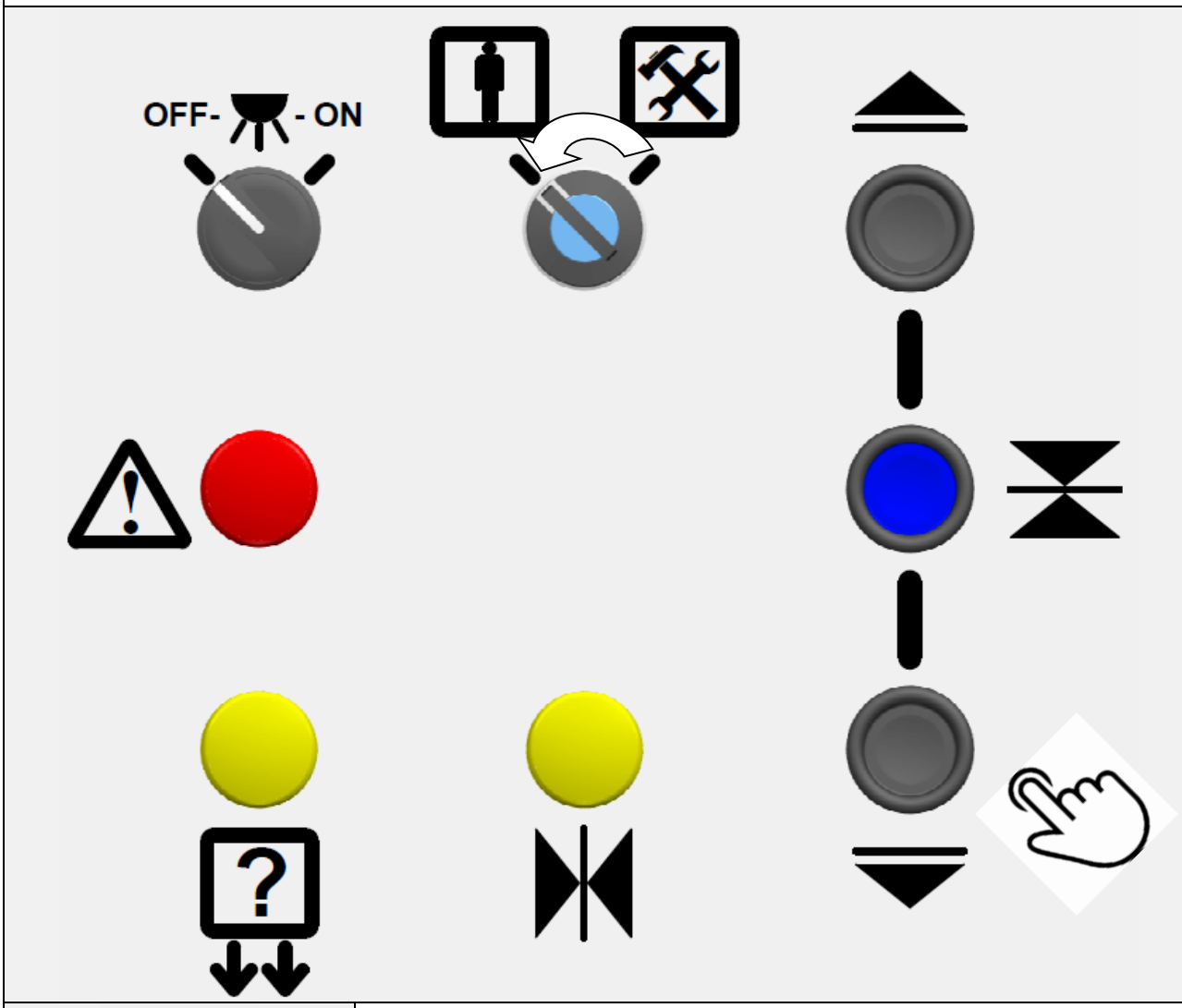
SWITCH OFF EXTERIOR CONTROL AND CONNECT REMOTE TEST CONTROL TO PERFORM PARACHUTE TEST.

SEE CHAPTER 4 OF THIS USER´S MANUAL.



3.3. Using “SERVICE” mode.

IMPORTANT:
“SERVICE” MODE IS DEFINED FOR USING THE HOIST WITH THE CONTROL PANEL INSIDE CAGE AND AMONG SELECTED FLOOR POSITIONS (WITH CAMS)

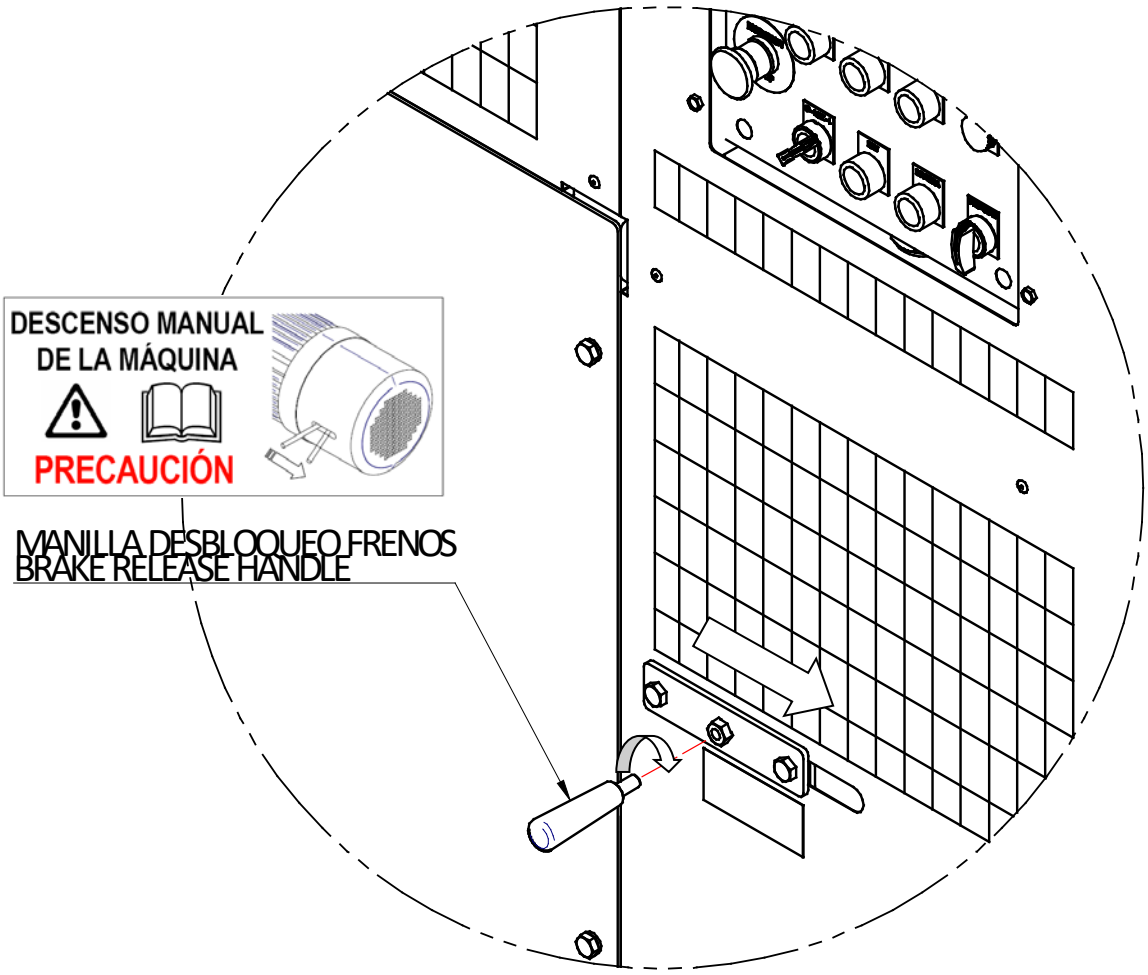
DESCRIPTION OF CONTROLS – “SERVICE” MODE	
	
	“HOLD-TO-RUN” PUSH-BUTTONS TO RAISE AND DESCENT
	STOP HOIST ON NEXT FLOOR (PRESSED AT THE TIME THAT RAISE OR DESCENT)
	LIGTH “OUT OF SERVICE”
EMERGENCY STOP	EMERGENCY STOP PUSH-BUTTON
KEY SELECTOR	SELECTOR OF CONTROL MODE
	CAGE DOOR OPEN, FENCE DOOR OPEN, OR LANDING DOOR OPEN
	PARACHUTE LOCKED UP

3.4. Emergency lowering.

In case of power failure without the possibility of restoration, you can download the cage handpicked , acting with extreme caution on the release levers of the motor brakes on the cage roof. This must be done in small intervals to avoid machine acceleration

ATENTION:
THE DEVICE FOR MANUAL UNLOCK OF MOTORBRAKE IN BRAKE RELEASE HANDLE. TO AVOID ACCIDENTALLY UNLOCKING THE BRAKES, THE HANDLE IS LOCATED IN A HOUSING ON THE ROOF, NEXT TO THE LAMP.

AFTER THE RELEASE OF THE BRAKES, REMOVE THE HANDLE AND PUT IT IN ITS ORIGINAL POSITION.



CAUTION: DANGEROUS TASK
IF SAFETY GEAR SPEED IS EXCEEDED, PARACHUTE IS AUTOMATICALY LOCKED UP, BLOCKING ANY FURTHER MOVEMENT UNTIL TECHNICAL ASSISTANCE.

WARNING:
CASE OF PARACHUTE ACTIVATION HOIST SERVICE WILL BE SUSPENDED AND TECHNICAL SERVICE WILL BE NOTIFIED FOR INSPECTION AND HOIST RELEASING.

3.5. Checking hoist operation before commissioning.

IMPORTANT:
BEFORE HOIST COMMISSIONING, HOIST SERVICE RESPONIBLE WILL CHECK IF HOIST IS IN COMPLIANCE WITH FOLLOWING POINTS:

- Hoist ´s installed with all operational safety systems:
    - Landing level cams are properly instaled.
    - FCS microswith stops hoist before reaching red mast.
    - FCB microswitch stops hoist on Ref. Point before reaching buffers.
    - Mast detector (Inductive sensor) works properly
    - LEDS shows safety activations and correctly
    - Interior and exterior cage control works properly
- There´s no interferente of hoist and external items, mast, ties, supporting structure,..
- Landing doors are installed and there´s no interferente with hoist mobile elements.
- Base fence is installed and there´s no interferente with hoist mobile elements.
- Door releasing system for cage door / landing door / fence door are operative.
- Control microswitch for cage door / landing door / fence door work correctly

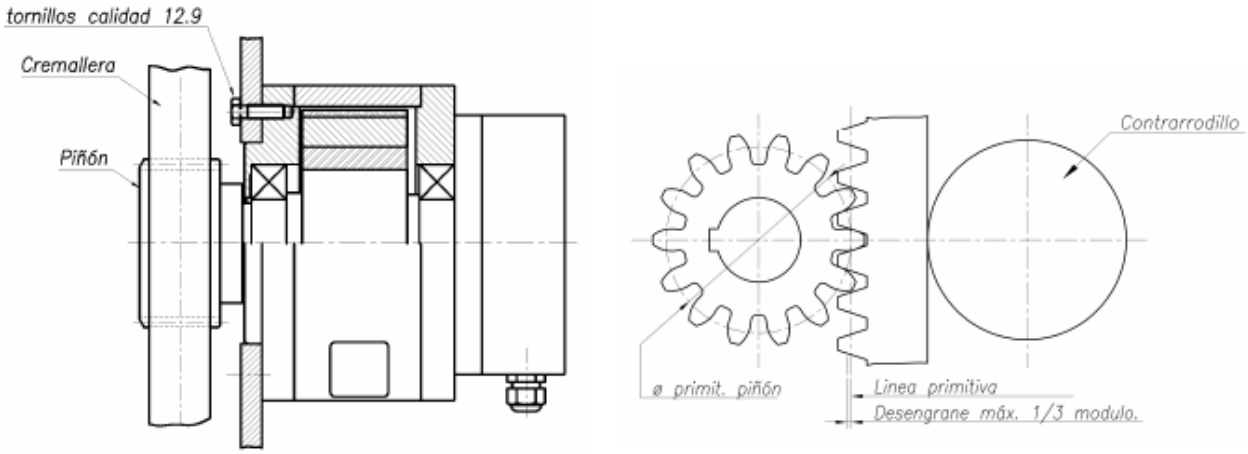
3.6. Applications and uses forbidden

- DON´T use the hoist on explosive atmospheres.
- DON´T use the hoist with higher load than shown in the plate
- Load CAN´T be piled up at the cage floor bounds. It must be located as near from mast as possible
- DON´T transport loads on the cage roof.
- DON´T use the hoist in adverse weather conditions, rain, ice, snow,….
- DON´T use the hoist in unacceptable physical condition, treatment of serious illness, under alcoholic drinks effects, or under stress or mental overload condition.
- DON´T use the machina with other parts than those originals from the manufacturer.
- DON´T work without the necessary personal protection gear. These safety devices will vary uppon diferent conditions, therefore, a qualified person in the requirement of safety and health must evaluate the working conditions and mode of use before starting works.
- DON´t put raised brackets on the cage floor. User´s feets must be on the cage floor
- DON´T use the hoist if the key switch has been forgotten in the lock and can be manipulated
- DON´T dismantle integrated equipment whose maintenance is only allowed authorized personnel (ej.: electrical motor, brake, gear-reductor).
- DON´T manipulate electrical system without express permission of the manufacturer.
- DON´T use the hoist without a differential switch on the main power supply connection line.
- DON´T use the hoist with people travelling on the cage roof.
- DON´T use the machine under insufficient lighting conditions. If necessary, local lighting will be installed at access points, illuminating the hoistway

4. SAFETY DEVICE. PARACHUTE FPC-1000

4.1. Introduction.

According to the specifications of Directive 2006/42/EC, the hoist must have a safety device for mechanical locking to act if the speed exceeds a set value. Parachute safety system is a mechanical unit designed to prevent accidental loss of the machine. The system only operates during the fall, when the speed exceeds a predetermined value, acting as a hoist speed traker, not making any effort on to lift device, during normal operation of the machine.



ASSEMBLY OF PARACHUTE. GENERAL DESIGN

4.2. Features

A parachute works by blocking the drop in the case of there is a speed rising over the nominal value. The overspeed detection system is based on the principle of action of the centrifugal force to engage driven pinion into the elevator structure. Its main components are as follows:

· Cover:

The parachute has a waterproof housing that allows confining the security unit, preventing it from dust and corrosive atmosphere inside. It must also prevent unauthorized adjustment, so that should not be screws handling by unauthorized persons.

· Buffer:

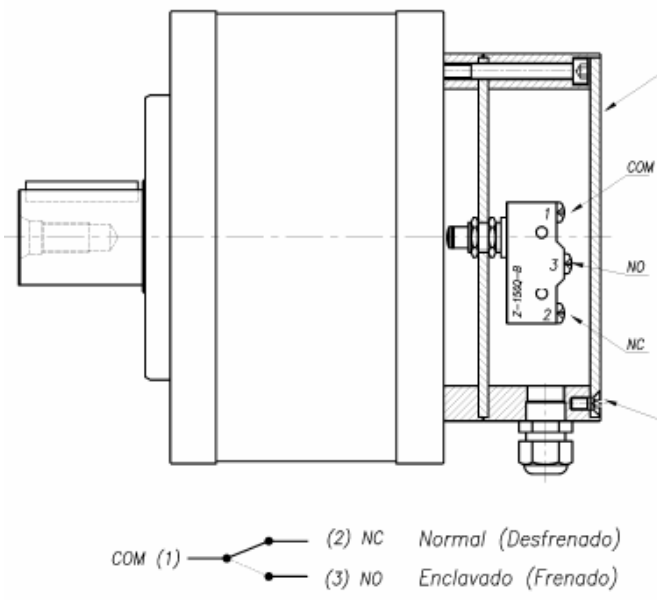
The parachute has a progressive braking system so that locking is produced in a buffered way, so that after a controlled braking, the cage is stopped, according to deceleration specifications of reference standards to avoid accidents resulting from major efforts generated by moving mass inertia.

· Locking:

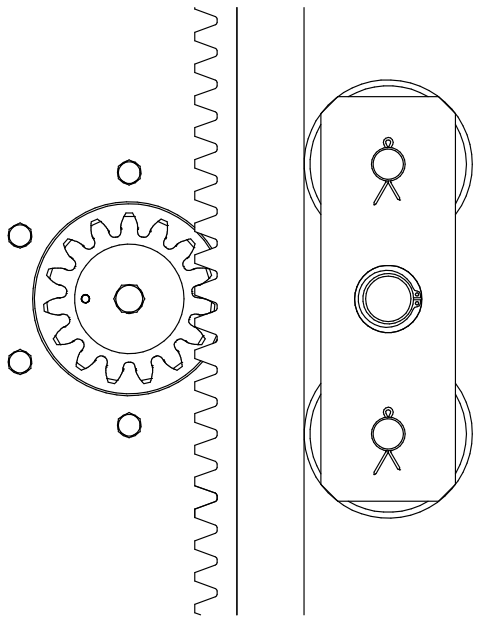
The device features a brake consisting of four sectors, which are charged up to torque referred to the elevator, so that deceleration is controlled accurately, even in case of free drop of the machine, according to the specifications of harmonized standards reference.

· Integrated microswitch:

The parachute includes a microswitch that is activated in case of brake locking, allowing the signal to cut the movement of hoist and preventing further operations of the machine, until the action of a person designated to release the hoist.



SAFETY SWITCH AND INTERNAL CONNECTION



DRIVER PINION AND COUNTERROLLERS

ID plate and features of the device:

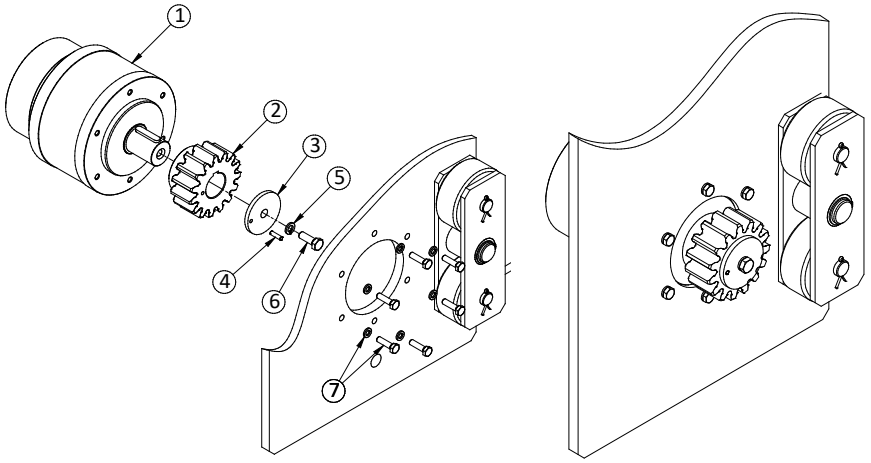
The parachute is equipped with an identification plate, with CE logo stamped and brake characteristics:

- Brake type, mounting position and lock sense.
- Locking speed (r.p.m.) and brake torque (N·m)
- Number, date and reference of manufacture.

ID PLATE ON THE PARACHUTE

4.3. Installing the parachute.

The unit shall be firmly fixed to the chassis of the cage, so that the pinion is centered with the fitting hole, to rotate at the speed of normal movement of the elevator. The unit mast be fitted to the hoist with all screws and safety washers



1: PARACHUTE
2: PARACHUTE PINION
3: SAFETY WASHER
4: SAFETY PIN
5: SPRING WASER
6: SAFETY SCREW
7: FITTING SCREWS

INSTALLING SAFETY UNIT IN TO THE HOIST

WARNING:
A PARACHUTE SHOULD NEVER BE MOUNTED ON A HOIST OF DIFFERENT CHARACTERISTICS THAN THOSE INDICATED ON THE PLATE.

WARNING:
HANDLING AND TESTING OF THE PARACHUTE ONLY IS ONLY ALLOWED TO THE MANUFACTURER OR AUTHORIZED SERVICE PERSSONEL.

Finally, install the safety switch wire on its correct position, according to the scheme, in order to avoid further movement of the hoist if the safety device locks, until the actuation of technical personnel.

Once the assembly of the unit is finished, install back cover, so the device remains watertight and mechanical characteristics of the parachute are preserved along the time. Nobody but the manufacturer is allowed to manipulate screws of the unit itself..

4.4. Parachute testing.

In accordance with the reference harmonized standard, tests on the parachute have to be performed, in order to verify its functioning properly.

A) MANUFACTURER TEST

ALBA MACREL GROUP, SL perform a test on each lift during the machine assembly to ensure the safety and proper functioning of the device. The test result is reflected in the TEST CERTIFICATE, which accompanies this manual of the machine.

B) USER TEST

Periodically, **every 4 months**, or **after each assembly machine on site** a functional test of the parachute shall be performed, in accordance with the instructions set out below. The test of the parachute must be further supplemented with a brake inspection, checking the correct appearance of all the elements and the sealing of the outer cover. This process is repeated more often if the machine operates in extreme environmental conditions.

PARACHUTE TEST PROCEDURE

WARNING: (ONLY FOR PT-1V)
FOR SAFETY PURPOSE, RELAY HEAD "RDP" IS NOT MOUNTED. INSTALL IT BEFORE TEST, THAT WAY TEST BOARD WORKS. AFTER TEST, REMOVE "RDP"

1.- The area under the machine must be free of people and obstacles.

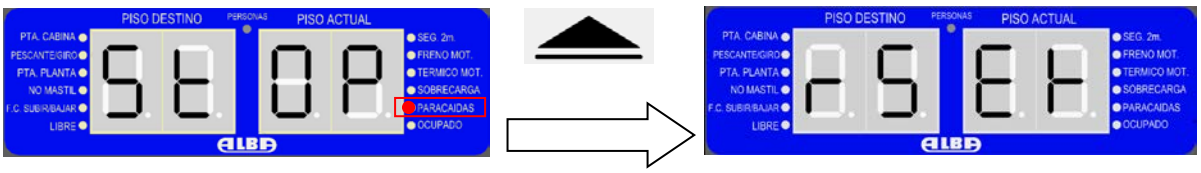
2.- The hoist shall be securely fastened to the facade or structure.

3.- Remove parachute bridge of the mainboard and connect insted the parachute test board.

4.- Leave the hoist and load the cage with ½·Qn (±500 kg.) and take a position at a safe distance.

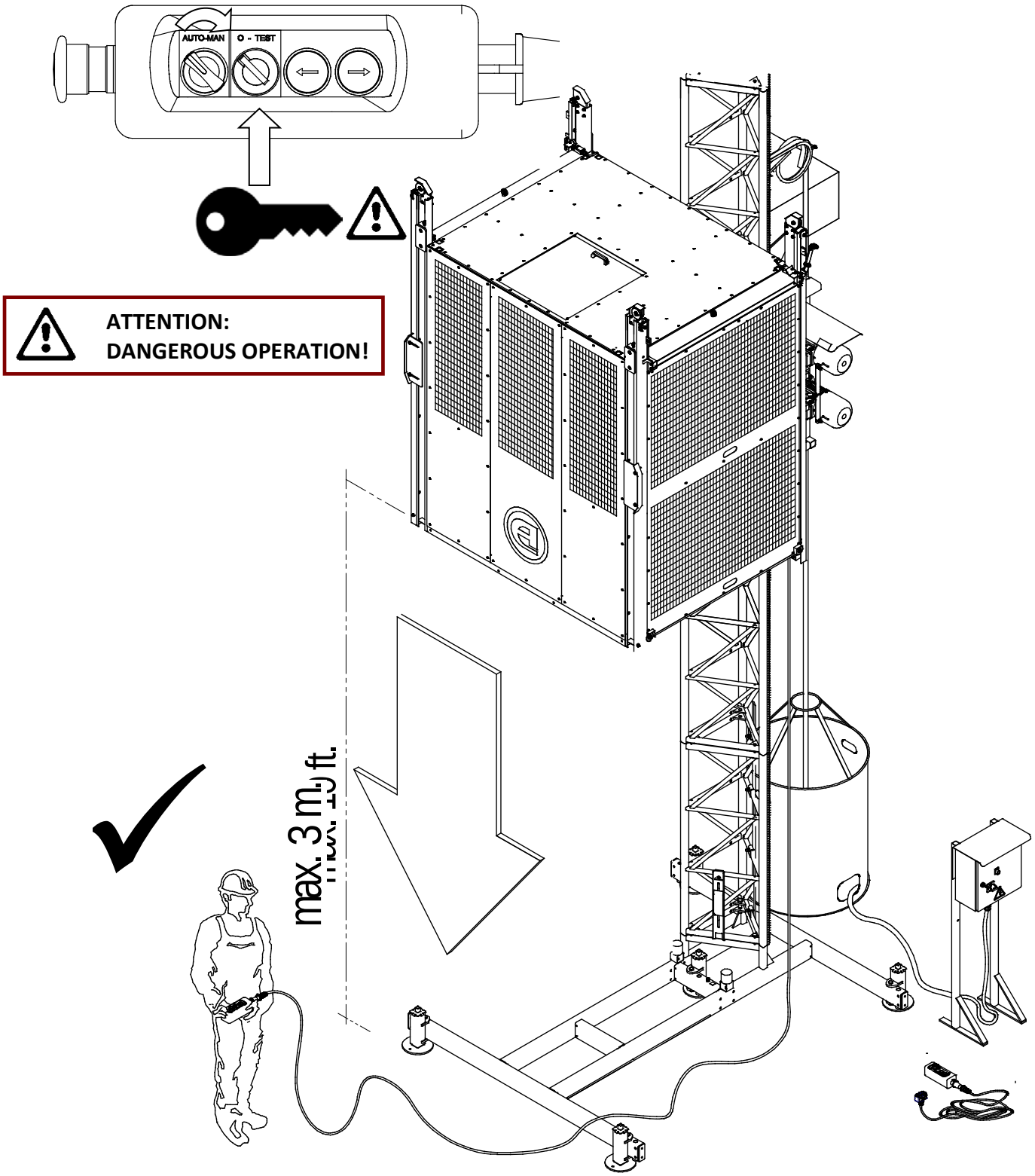
5.- Raise the hoist with test board and stop it at approx. 3 m. above the ground.

6.- Turn on the left "TEST" key and let the hoist drop until parachute activates and cage stop. Check if elevator stops after a litle slip , and then it´s blocked for further descent movements.



7.- To release the parachute, it´s necessary to press "UP" for a while, until display shows RESET. Then hoist can be recovered and must be descended to reference point. After pressing "KEY" button to reset, the hoist is released and can be commissioning again.

IMPORTANT:
CHECK THE PARACHUTE PERIODICALLY AND WRITE THE RESULT IN THE OPERATOR'S MANUAL REGISTRATION.


AUTO-MAN
O - TEST
ATTENTION:
DANGEROUS OPERATION!
max. 3 m, 10 ft.

4.5. Actions to take if safety device is activated.

The parachute is activated in case that the emergency lowering speed exceeds normal download speed of the hoist. This can only happen in the following cases:

A) Case of power failure or electrical malfunction, and it is necessary to descent the hoist manually, using the manual lever to release the brake of motor, and this procedure is performed without taking into account the information in this manual operator, exceeding the speed of the parachute jump

B) Case of accident or structural failure that causes gear pinion disengage or gearmotor shaft breaking or any of its elements.

C) Case of parachute testing.

Case of scenario A or C, the person who performs emergency descent will be a qualified technician who is trained to release device and reset the **hoist**. This requires connecting the keypad to test and reset parachute.

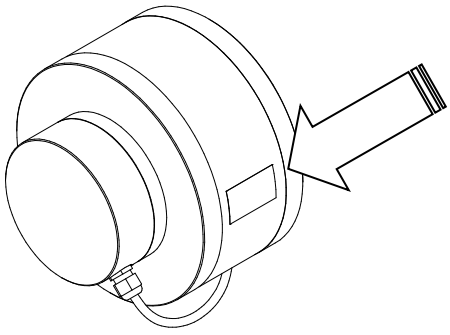
ATTENTION:
MOTOR BRAKE MANUAL RELEASE ONLY IS ALLOWED TO TECHNICAL PERSONNEL AUTHORIZED TO TRAVEL ON THE ROOF OF THE CAGE.

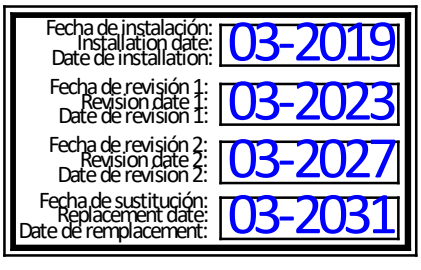
In the case of occurrence of case (B) shall cease machine operation until the action of an authorized technician which choose the best option depending on the severity of problem. If there is no clear solution, perform the disassembly of the machinery with auxiliary means.

4.6. Revision and replacement of the parachute.

Following the instructions of the safety device manufacturer, in order to ensure integrity of the device, along the time, the responsible of the hoist must proceed as follows:

0. Installation of the device on the hoist. Drop test to check.
1. After **4 YEARS**: The parachute has to be shipped to manufacturer for revision and recalibration.
2. After **8 YEARS**: The parachute has to be shipped to manufacturer for revision and recalibration.
3. After **12 YEARS**: Replace the parachute of the hoist.





INSTALLATION, REVISION AND REPLACEMENT PLATE

· Additional information of device: https://www.eide.net/en/productos/fpc-overspeed-safety-brake/

IMPORTANT:
AFTER REPLACEMENT OF THE PARACHUTE, DROP TEST OF THE NEW DEVICE MUST BE PERFORMED. WRITE THE RESULT IN THE USER'S MANUAL LOG.

5. MAINTENANCE OF THE HOIST.

WARNING:
BEFORE PERFORMING ANY MAINTENANCE ACTION, TURN THE POWER OFF AND IF REQUIRED, BLOCK VERTICAL MOVEMENT AT LEAST 6ft. HEIGHT UNDER THE CAGE. MAINTENANCE TASKS MUST BE PERFORMED WITHOUT LOADS.

5.1. DAILY Maintenance.

Daily maintenance includes basic operations of visual inspection in the hoist, performed by the person responsible of the hoist on the building. Every day, prior to use, visual inspection of the elevator should be done, according to the following service points:

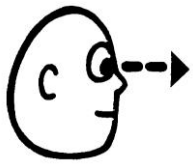
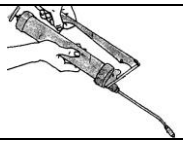
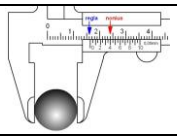
- □ There´s no accumulation of ice, snow or bedris inside the cage, or near the hoist.
- □ There´s no excesive wear in the rack, or in the vertical pipes of the mast.
- □ All the cage roof handrails are installed, and there´s no dangerous holes or gaps.
- □ Characteristics plate is installed incide the hoist.
- □ Zone below hoist is bounded and base frame fence is installed.
- □ There isn´t any warped or cracked part (Case of, change it).
- □ Electrical wires are correctly installed and tightly guided on the hoist.
- □ Guide rollers are in touch with mast tubes and without excesive wear.
- □ There are no power lines near the hoist that endanger people or machine.
- □ There are no outgoing elements in the facade that may interfere with the machine.
- □ Electrical safety devices are operational (doors, Entrack switch, mast sensor).
- □ Emergency stop works properly.
- □ Facade anchorages are correctly installed.
- □ Cage door, fence door and landing door auto-lock system work properly.
- □ Cage floor and walls are in good condition.
- □ Rack-pinion transmisión is correctly engaged.
- □ Control and power boards are in good condition
- □ Cage lamp lights properly.
- □ All the controls, panels and indicators work properly.
- □ Cable travels and slides over the cable trolley or cable holder properly.

Alter reviewing all the checkpoints listed, and solved any problem, the machine can be used safely.

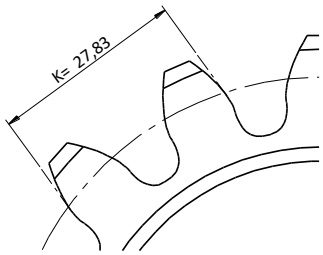
5.2. Periodic maintenance schedule

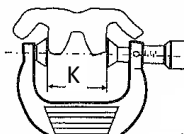
WARNING:
IN CASE OF ELECTRICAL MALFUNCION IN THE HOIST, DO NOT HANDLE ELECTRICAL EQUIPMENT. MAINTENANCE AND INSPECTION OF THE HOIST ONLY MUST BE PERFORMED BY AUTHORIZED PERSONNEL.

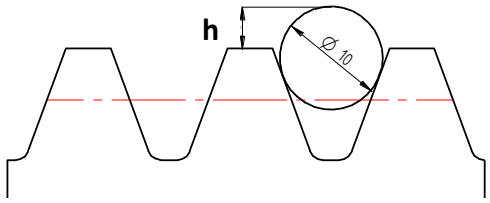
El mantenimiento del elevador debe ser realizado por el personal técnico responsable de la máquina y el resultado debe anotarse en el REGISTRO DE MANTENIMIENTO.

MAINTENANCE TASKS SCHEDULE				
	OPERATION	ELEMENT	TOOL	PERIODICITY
1		• CAGE TO CHASSIS FIXING BOLTS (INSPECTION). • ENDTRACK CAMS (SUPERIOR AND INFERIOR). • MAST SENSOR (CHECK GAP: ± 0.2 inch.). • MOTORGEAR OIL LEVEL. • CAGEDOOR AND TRAPDOOR SWITCHES. • SWITCHBOARD LIGHTS ANS BUTTONS. • MAST PIPES (WEAR OR WELDING FAILURE). • GUIDE ROLLERS RETAINING RINGS. • MOTOR BRAKE RECTIFIER (CHECK) • COMMUNICATION CABLE (INSPECTION) • GUIDE ROLLERS (INSPECTION). • ANCHORAGE (CHECK INTERFERENCE OR LOOSENING) • BASE BUFFERS (INSPECTION)	-	40 h.WORK (ONCE A MONTH)
2		• MAST RACK. • DOOR COUNTERWEIGTH GUIDES. • DOOR COUNTERWEIGTH PULLEY AND CABLE. • CAGE DOOR GUIDE RAIL. • GEARMOTOR PINION. • PARACHUTE PINION	LITHIC GREASE	40 h.WORK (ONCE A MONTH)
3		• CAGE GUIDE ROLLER ROCKER	LITHIC GREASE	40 h.WORK (ONCE A MONTH)
4		• MAST SCREWS. • GUIDE ROLLERS SCREWS. • CAGE DOOR RELEASE SCREWS. • CAGE DOOR AND LANDING DOOR CAM SCREWS. • ANCHORAGE TO SUPPORTING STRUCTURE SCREWS	WRENCH	QUARTERLY (4 TIMES/YEAR)
5		• CAGE ROOF HANDRAILS SCREWS.	ALLEN WRENCH	SEMESTRE (2 TIMES/YEAR)
6		• GUIDE ROLLER DIMENSION. • RACK DIMENSIONS • GEARMOTOR PINION STRING • MOTORBRAKE	CALIBER CALIBER MICROMETER GAUGES	ANNUAL (OR AFTER DISMANTLIING)
7	GENERAL REV. (AFTER DISMANTLING OR PROLONGED NON USE PERIOD)	1. DEFORMATION OR DAMAGE ON MASTS, ANCHOR, DOORS, HANDRAILS, FLOOR,… 2. GEARMOTOR AND BRAKE INSPECTION (Rectifier, Voltage & Coil resistance)		

ESQUEMA DE COMPROBACIONES MECANICAS
MECHANICAL CHECKING DIAGRAM

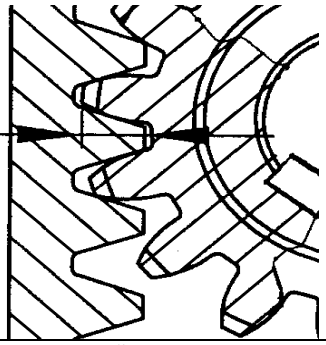






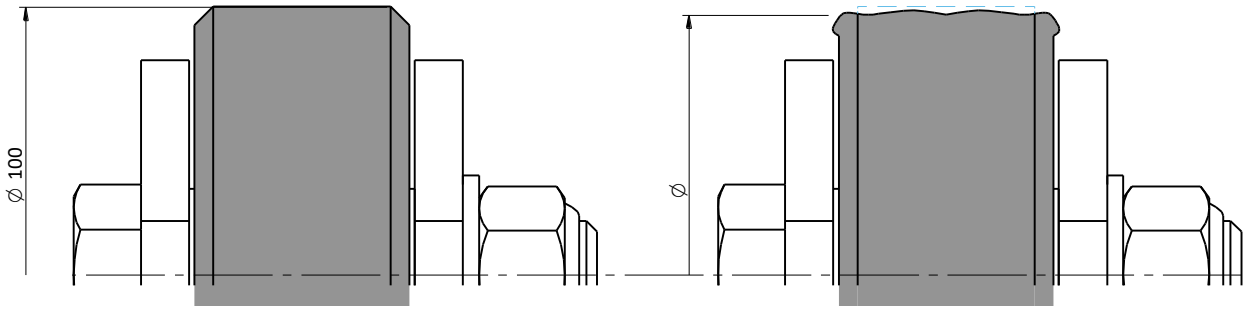
$K_{2\ DIENTES/TOOTH}$ < 0.95 inch ➔ SUSTITUIR PIÑON *REPLACE PINION*

h < 0.13 inch ; ➔ (ø10mm = 0,4 inch) SUSTITUIR MASTIL *REPLACE MAST MODULE*

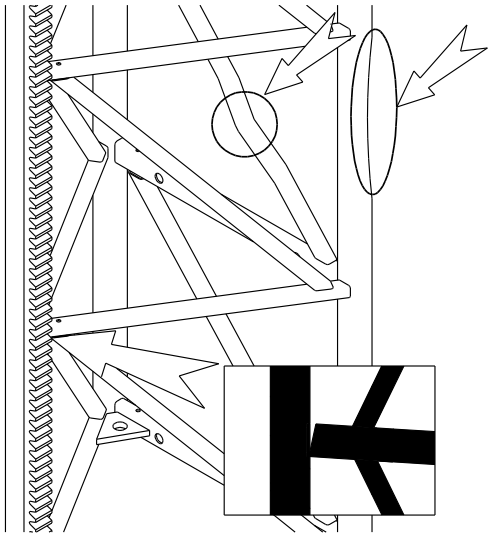


D> 0.31 inch.

COMPROBAR PIÑON / *CHECK GEAR PINION*



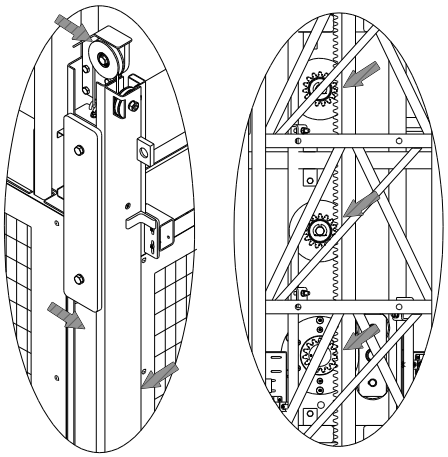
CAMBIO DE RODILLOS */ GUIDE ROLLER REPLACEMENT*
$Ø_0$< 97 mm (3,82 inch) ➔SUSTITUIR RODILLO */REPLACE GUIDE ROLLER*



REVISION DEL MASTIL */MAST DAMAGE CHECKING*

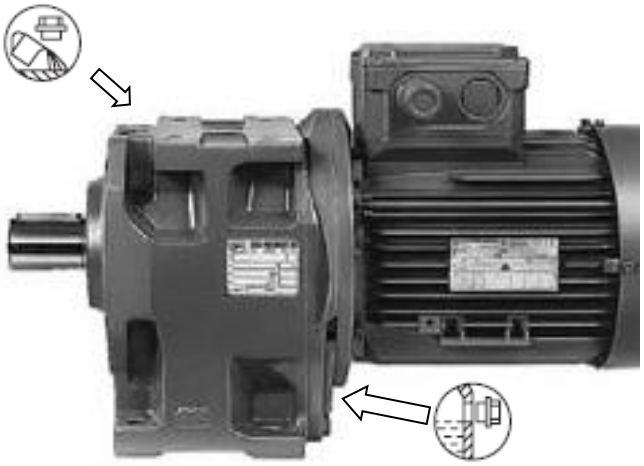
ESQUEMA DE COMPROBACIONES ELECTRICAS Y ENGRASE

ELECTRICAL AND GREASING CHECKING DIAGRAM



PUNTOS DE ENGRASE

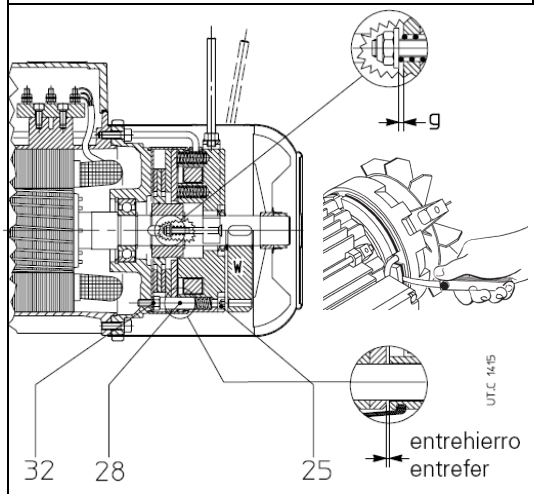
/LUBRICATION & GREASING POINTS



NIVEL DE ACEITE MOTORREDUCTORES / *GEARMOTOR OIL LEVEL*

Tipo: Sintético / *Synthetic*; Cantidad / *Quantity*:3,1 l.

- PGLP ISO VG 220: -31°F< Tª < 212°F.
- PGLP ISO VG 460: 5°F.< Tª < 212°F.



COMPROBACIÓN DEL FRENO*/ Brake checking:*

- Entrehierro */ Air gap* (GAP):……: 0,30 ÷0,45 mm. (0.012 ÷0.018 inch)
- Juego de palanca */ Hand lever gap* (g):…….. 0,6 mm. (0.024 inch)
- Espesor mín. disco de freno */ min. brake disk thicknes* …….. 7 mm. (0.27 inch)

CHEQUEO DE FUNCIONAMIENTO */ Function checking*:

- Comprobar tensión salida del rectificador : 103 V. DC (±5 V)
  /Check rectifier output voltage
- Comprobar resistencia de la bobina: 200 Ohm.
  /Check brake coil resistance

PROCEDIMIENTO DE REGULACION ENTREHIERRO */ Air gap adjustment*

1. Desbloquear tuercas Nº 32 */ Loosen Nb.32 nuts*
2. Atornillar tornillos Nº 25 */ Tight screws Nb. 25*
3. Medir con galgas en 3 posiciones 120° junto a los casquillos guía Nº 28.
   /Measure with gauge on three positions 120° next to guiding bushes Nb. 28
4. Reapretar tuercas Nº 32 manteniendo en su posición los tornillos Nº 28.
   /Retighten nuts Nb. 32 keeping Nb. 28 screws position.

MANTENIMIENTO PERIODICO DEL MOTORREDUCTOR */ GEARMOTOR PERIODICALLY MAITENANCE*:

1. CON LA MAQUINA PARADA */ WITH MACHINE OUT OF SERVICE* :

- Limpieza de superficies externas, aceite, suciedad, etc. */ Check absence of oil, dirt and machining residuals*
- Zonas de paso de aire al ventilador */ Check cooling air zone*
- Nivel y calidad de aceite */ Check oil level and quality*
- Par de apriete de tornillos de fijación */ Check Fitting bolts torque*
- Fijación correcta de los cables de conexión */ Check correct tightening of electrical connections*

2. CON LA MAQUINA EN FUNCIONAMIENTO*/ WITH MACHINE WORKING* :

- Nivel de ruido o vibración anormal/ *Check abnormal noise emision or vibration.*
- Estanqueidad en retenes y fugas de aceite */ Check oil gaskets and oil leak.*
- Funcionamiento correcto del freno */ Correct work of electrical brake*

ATENTION:
REPLACE THE WHOLE GEARMOTOR OIL, AT LEAST, EVERY 4 YEARS.
USE SYNTETIC OIL WITH RELATED CHARACTERISTICS.

5.3. Instructions for troubleshooting

Problem	Probable cause	Solution
Hoist doesn´t run (OUT OF SERVICE RED LIGHT ON)	•Safety device activated	• Check safety systems: - Emergency stop (SE) - Safety microswitch FCSeg.
	•Phase error /unbalanced phase	• Change supply phase connection
	•Overload	• Remove exceded weight and run
Hoist moves doing abnormal noise or it doesn´t smoothly	•Guide roller damaged •Lack of grease in mast rack	• Check guide rollers and bearings. Change if required. • Apply grease to the rack
Hoist slides when charging loads	•Trouble, brake wear	• Replace /adjust motor brake
	•Overload	• Remove overload
Electrical motors starts very slowly	•Brake doesn´t work •Overload •Innadequate electrical voltage	• Check / Replace electrical brake • Check load on the cage • Check electrical voltage
Hoist doesn´t stop in upper /lower limits, or on landing doors	•Trouble with landing programming •Trouble with motorbrakes	• Check landing programming • Check motorbrakes
Hoist doesn´t stops on 2 m switch / cam	•2 m. microswitch problems	• Check 2 m. microswitch and cam
E1 or E2 activation	•Transformer or maneuver trouble	• Check / Repace transformer and wiring
E3 activation	•Problem with brake rectifier	• Check / Replace rectifier
Hoist stops suddenly	•Overload •Power supply failure •Door open	• Check load on the cage • Check electrical connection • Check landing doors and cage doors
Hoist cage vibrates abnormally	•Non tightened screws. •Rack-pinion gear problem •Lack of lubrication •Mast tube pipes wear	• Check guide rollers adjustment • Check rack-pinion gear • Lubricate rack and pinion • Check mast for tube wear
Hoist slides down	•Excessive brake wear •Wrong brake adjustemt	• Check brake adjustment • Check rectifier fuction
Gearmotor sounds / vibrates abnormally	•Lack of oil in the motorbox •Gearbox bearing failure	• Check oil level • Check for oil leaks • Alert motor technical service
Hoist suffer stops when moving	•Communication cable damaged •Endtrack or door switches unadjusted	• Check communication cable • Check microswitch adjustment
Hois can´t raise rated load	•Crossection wire inadequate •Motor brake damaged •Supply voltaje inadequate	• Check communication cable • Check / replace motor brake • Check voltaje supply
Hoist doesn´t move	•LED panel indication •Cage / landing door not closed properly •Microswitches damaged	• Check LED indications • Check / adjust cage / landing doors • Check microswitch position
Hoist doesn´t stops at defined levels	•Landing level cams not properly fiited.	• Check landing level cams position

ATENTION:
CHECK IF HOIST IS CONNECTED TO A POWER SUPPLY EQUIPED WITH DIFFERENTIAL PROTECTION 300mA.

INFORMATION:
IF YOU REQUIRE TECHNICAL ASSISTANCE FOR GEARMOTOR, YOU CAN CONTACT THE MANUFACTURER, OR THE SERVICE MOTOR MANUFACTURER IN EACH COUNTRY. SEE CONTACT POINTS: http://www.rossi-group.com

5.4. Maintenance record.

According to the procedure specified in the user´s manual, the responsible for maintenance of the hoist should fill this table according to the frequency indicated, for the record of scheduled tasks.

Nb.	DATE	MAINTENANCE TASK	NAME	SIGNATURE
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5.5 Trouble record

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Nb.	Code	Denomination	Nb.

ALBA authoriced technical person User

....

Place ..... Date .....

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Nb.	Code	Denomination	Nb.

ALBA authoriced technical person User

....

Place ..... Date .....

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Nb.	Code	Denomination	Nb.

ALBA authoriced technical person User

....

Place ..... Date.....

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Nb.	Code	Denomination	Nb.

ALBA authoriced technical person User

....

Place ..... Date.....

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Nb.	Code	Denomination	Nb.

ALBA authoriced technical person User

....

Place ..... Date .....

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Nb.	Code	Denomination	Nb.

ALBA authoriced technical person User

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Place ..... Date .....