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BUILDING HOIST FOR MATERIALS

MC 2000F

USER GUIDE

- INSTALLATION, USE & MAINTENANCE INSTRUCTIONS
- SPARE PARTS LIST

CE UKCA

ENGLISH COPY

Machine No.:

Model:

Year of manufacture:

Electric connection:

KEEP THIS GUIDE FOR FUTURE REFERENCE

CONTENTS

The user´s manual must be kept in good condition. This document contains 76 pages.
Canopy brands Europe S.L.U. 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.

Rev. 1.5: Jan. 2025

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 EU Directive 2006/42/CE on safe machinery. This instruction 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, the manufacturer commits to immediately adapt the manual to the improvements.

Responsibility:

CANOPY BRANDS EUROPE, S.L.U., declines any responsibility for damage caused by improper use of the machine as consequence of non-compliance with the provisions of the present Manual. Specifically 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.

It´s 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 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 **only loads**.
- The machine runs vertically, geared to the mast rack and guided with support rollers.
- Loading and unloading operations must be carried out by **trained personnel.**
- Machine operation must be carried out by **appointed personnel** trained in hoist operation.
- For erection, dismantling, maintenance and repair tasks, only **competent and authorised technical personnel,** trained and qualified with practical experience on said operations, are allowed to travel on the hoist.

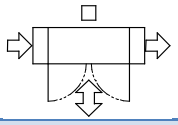
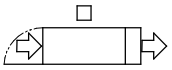
The machine is designed to be fixed to intervals adapted to a structure, f.e. concrete structure of in construction building, a metallic structure, or similar. AMG includes in the manual of the machine all the information relative to the loads transmitted to the structure of vertical support and to the 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 SYMBOLS:

IMPORTANT SAFETY INSTRUCTIONS DURING INSTALLATION OR OPERATION IS TO BE ENTERED IN TEXT BOXES LIKE THIS, INCLUDING THE WARNING SIGN.

1.3. Technical data.

TECHNICAL CHARACTERISTICS:

	MC-2000FA	MC-2000FB
		
Cage dimensions (LxW):	3.300 x 1.400 mm	
Maximum load capacity:	2.000 Kg	
Vertical speed:	20 m/min	
Motor control:	DIRECT - ONLINE	
Maximum height (*):	250 m	
Anchorage each (max.):	9 m	
Height over last anchorage:	3 m	
First anchorage height:	6 m	
Loading height-to-ground		
with cable bin:	500 mm	
with cable trolley:	800 mm	
Mast section	M550	
Length:	1,5 m	
Weight – 1Rack:	98 Kg	
Weight – 2Rack:	118 Kg	
Maximum load (erection mode)	500 Kg	
Normative reference:	2006/42/CE; EN 12158-1	

(*) Case of h > 150 m, ask manufacturer for limitations.

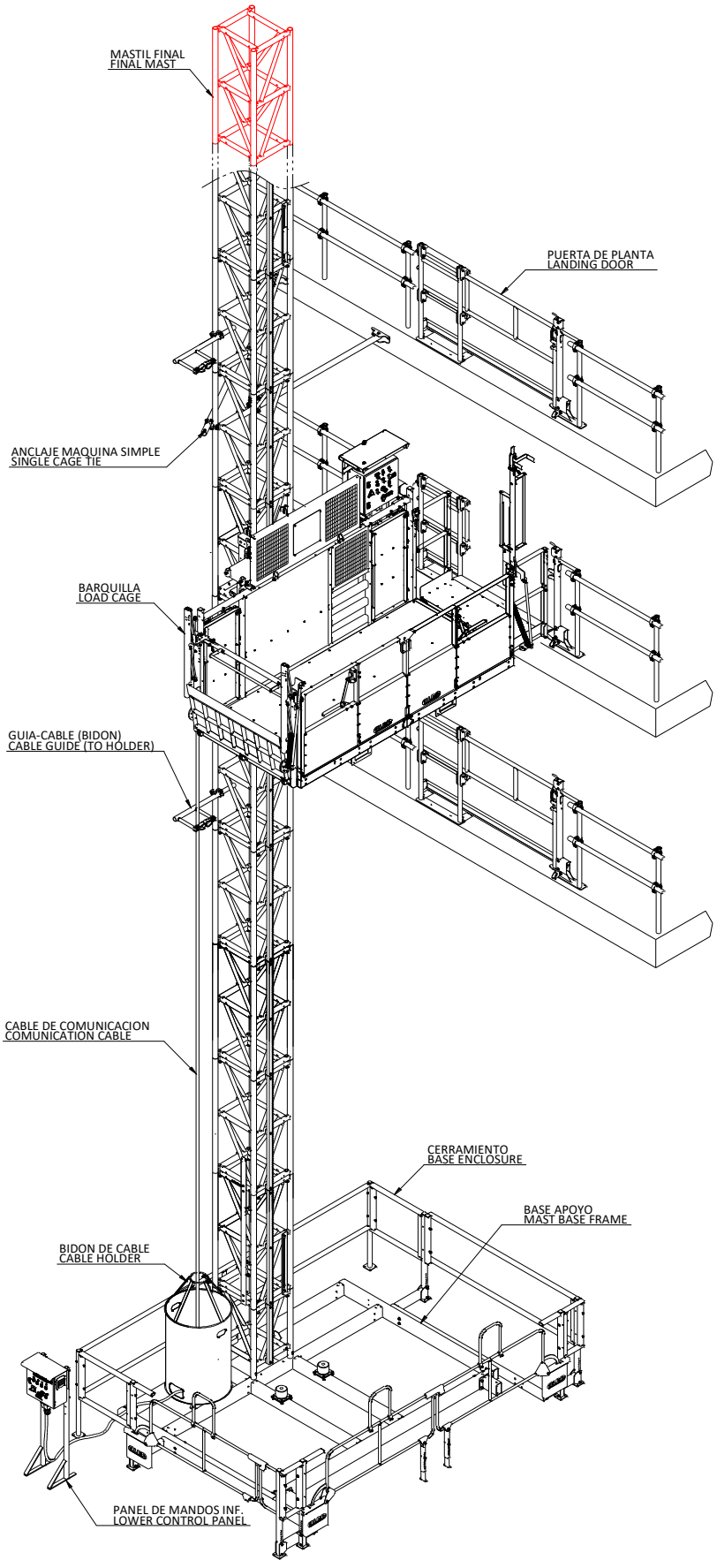
ELECTRICAL CHARACTERISTICS

	50 Hz	60 Hz
Motor power:	2 x 5,5 KW	2 x 6,6 KW
Input power connection:	400 V – 50Hz	440 V – 60Hz
Power consumption:	11 KW	14 KW
Nominal current (400V):	25 A	
Supply power :	30 KVA	
Overload protection: (*)	3 x 40 A	
Differential protection(*)		
Caliber:	40 A	
Sensitivity:	300 mA	
Control voltage:	48 V	
Auxiliar hand tools socket:	230 V – 50/60 Hz 1200 W	
Cable section:	4 x 10 mm^2	

(*) Required on main electrical feed switchboard.

NOISE EMISISON	
A-weighted emission sound pressure level, L_{pAd}	**<70dB**
Place: Work position	

1.4. Main components.



ASSEMBLY SCHEEME MC 2000F

- 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 feed.

- MAST:
  Modular structure for the ascent of the machine. It consists of a modular square structure of 1,5 m. it has one or two screwed racks for the trip of one or two elevators over his two faces. 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 gearmotor and that provides the movement to the elevator. It incorporates both the gearmotors 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 two bolts in the lower part of the chassis.

- CAGE:
  Metallic open structure for the transport of loads. it includes doors for the loading and unloading of the machine and an auxiliary catwalk for the access at motor group and for erection and maintenance of the mast.

- ANCHORAGE:
  Systems of mast anchorage to an external support structure. There are several types, depending on single or double cage is installed, as well as of the type of external structure of support of the machine.

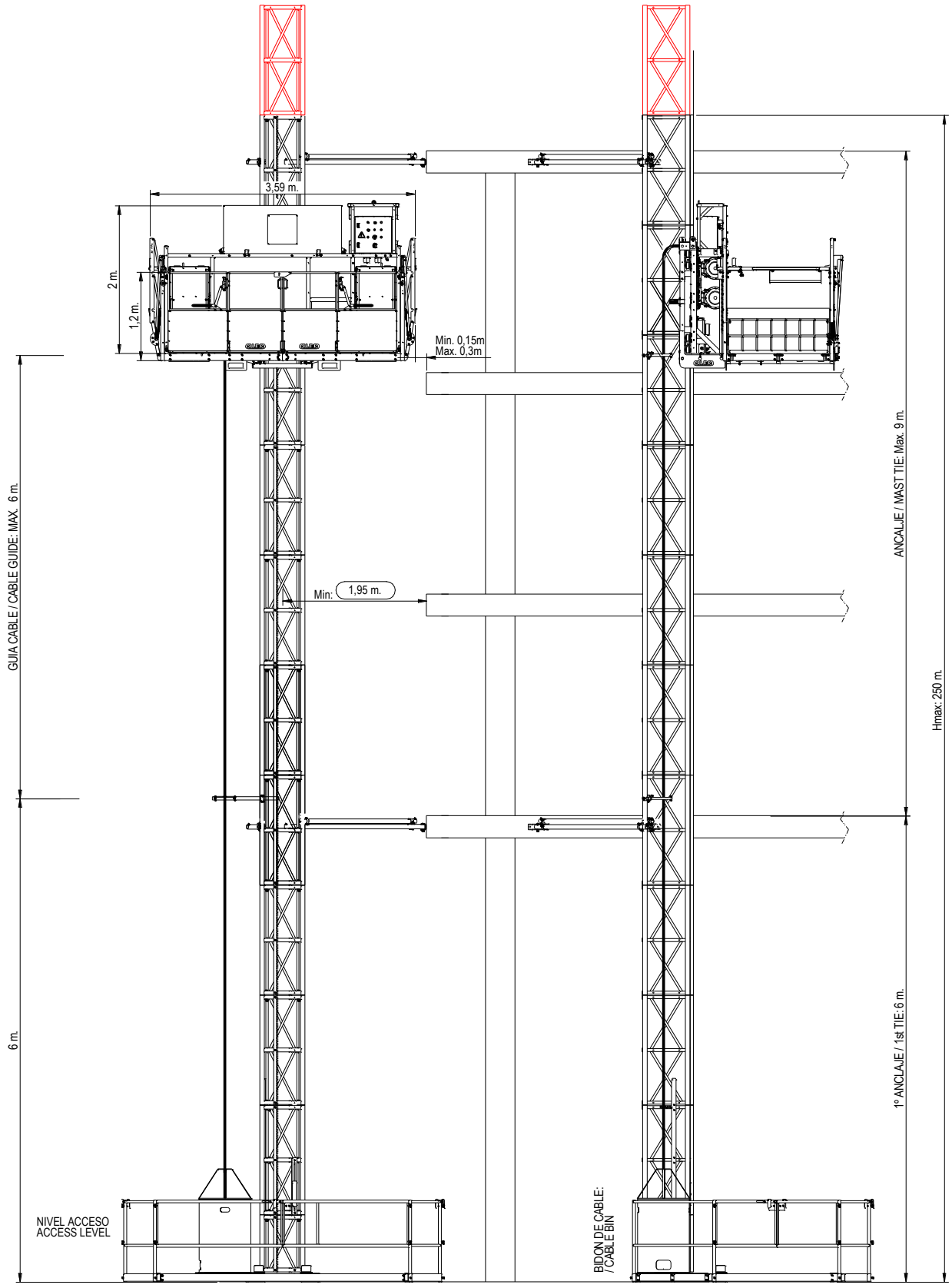
- POWER AND CONTROL PANEL:
  It contains the principal components of the electrical equipment of the machine, and communicates both the cage control panel, and the main power board on the ground, with proper connectors.

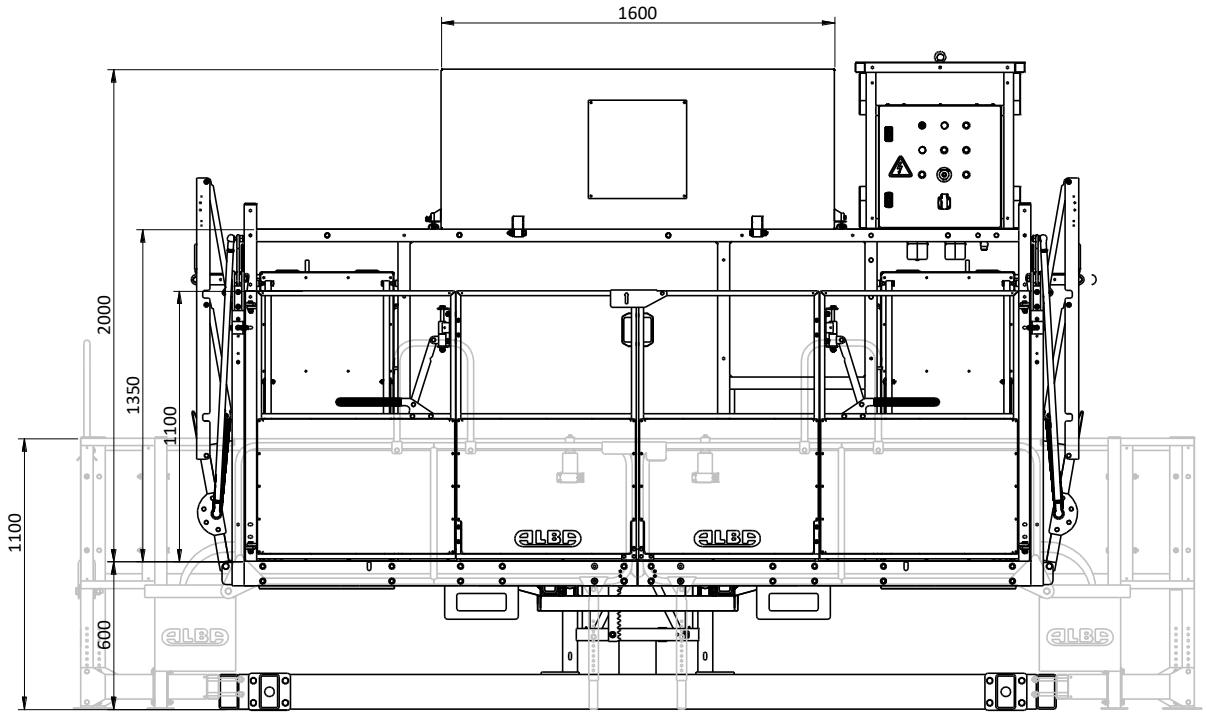
- CABLE BIN / CABLE TROLLEY:
  Both keep the cable of the machine during the movement. The cable trolley keeps the hose tense and always aligned during the trip of the machine. The cable bin stores the communication cable coiling it. The cable bin is only suitable for mast height until 70 m.

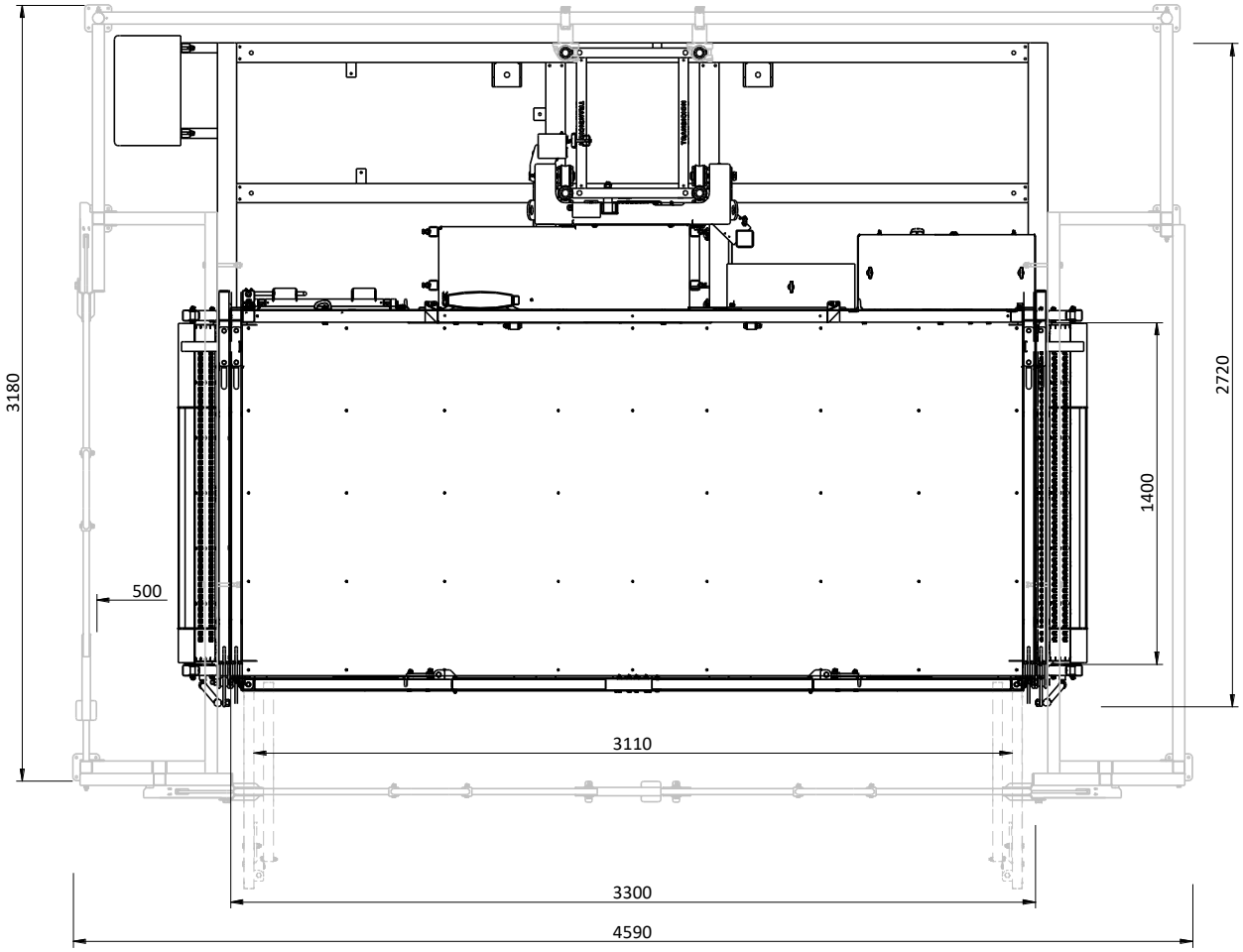
- CABLE GUIDE:
  They are used to keep the cable vertical and to avoid cable interference into the hoist traveling hollow.

- 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 colour allows immediate identification.

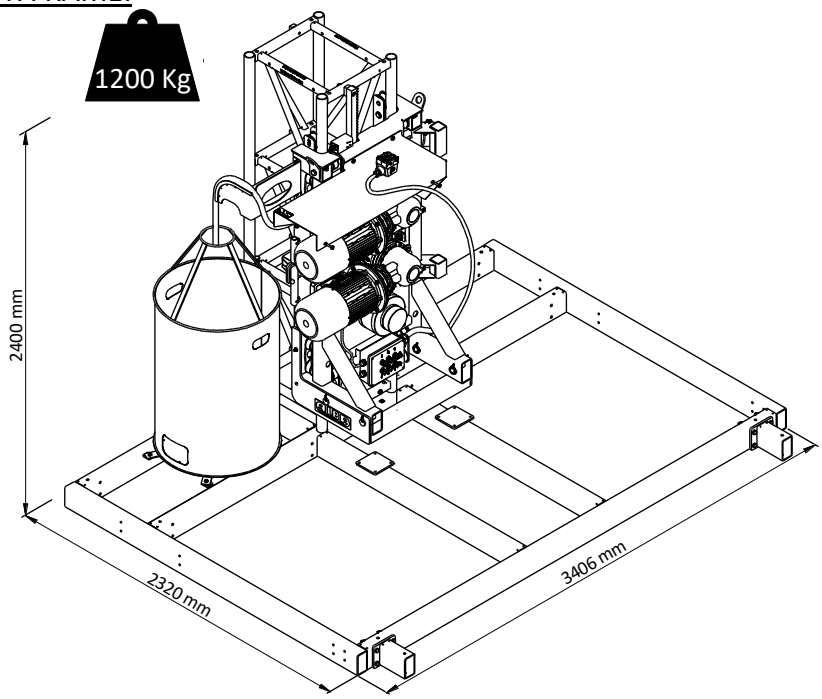
1.5. Main dimensions.



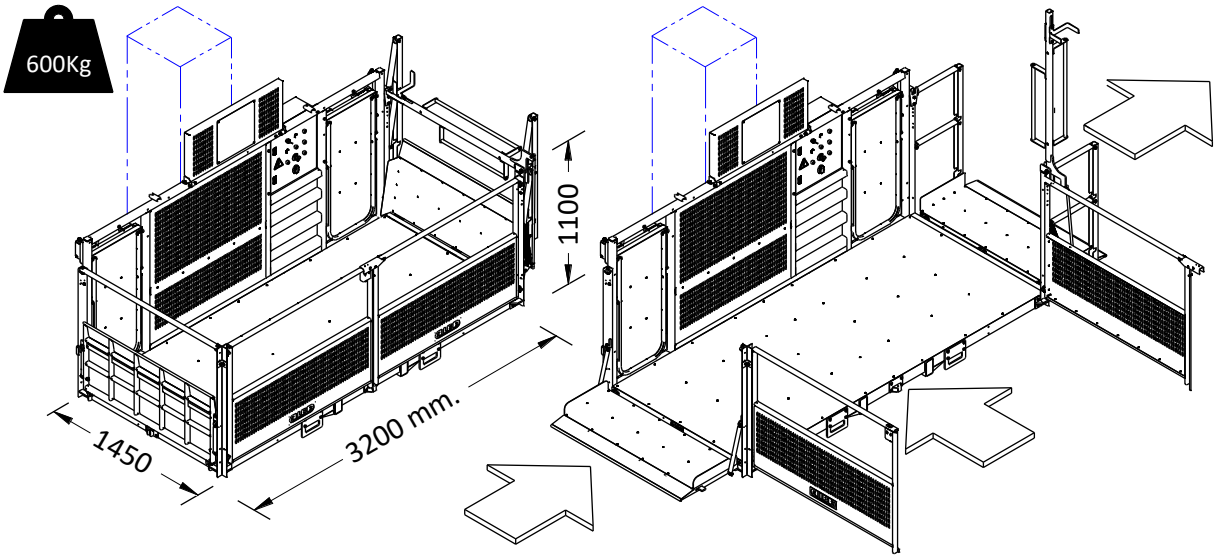

1600
2000
1350
1100
1100
600


3180
2720
1400
500
3110
3300
4590

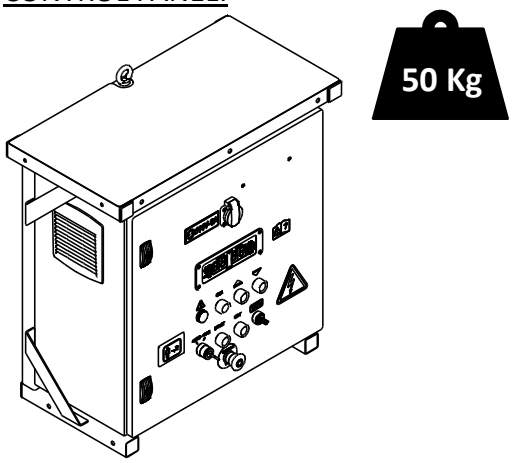
BASE-MOTOR FRAME:



CAGE MC-2000F



CONTROL PANEL:



1.6. Hoist safety devices.

a) Geared motors with **electromagnetic brakes** (friction type) capable to brake speeds of 20/40/60 m/min. (and even 25% overspeed) with a delay 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) Cabin doors with mechanical lock. They prevent their opening except in the loading plants.
g) Micro switches for open cage and landing gates with mechanical door blocking.
h) Limit switch to stop at 2 m elevation. Movement under-2m with "hold-to-run"
i) **Manual emergency lowering** in case of power failure (controls on the roof).
j) **Safety device (parachute)** controls the speed in downward movements.
k) Base enclosure in ground floor with safety microswitch.
l) Nonslip steel grating on cage floor.
m) End mast (in red), without rack, to prevent the cage from running off in case of failure of other systems.

1.7. Other data of the hoist.

VALORES DE EMISIÓN SONORA DECLARADOS COMBINADOS	
	Condition Outside cage
A-weighted emission sound pressure level, LpA:	71 dB
Uncertainty K_{pA}	3 dB
Values determined according to the acoustic test given in EN 12158-1 with use of basic international standards EN ISO 3744 y EN ISO 4871. **Note:** **Noise emission values and uncertainty represent un upper limit of the range in which the measured values are susceptible to be present.**	
Temperature range for use:	-15°C – 45°C
Relative humidity:	30 % – 90 %
Max. height for installation:	1000 m (**)
Max. wind speed (SERVICE):	72 Km/h
Max. wind speed (ERECTION):	45 Km/h
Max. wind speed (OUT OF SERVICE *):	130 Km/h

(*) Position OUT OF SERVICE corresponds with hoist al the lowest point and power supply disconnected.
(**) For installation in locations above 1000 m of height., and if the temperature exceeds 45° C, ask to manufacturer for limitations.

2. ASSEMBLY OF THE MACHINE

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, EN 361, EN 364) AND IN ANY CASE A PROTECTIVE HELMET FOR THE HEAD (ACCORDING TO EN 397), PLUS ADDITIONAL MEANS OF PROTECTION.



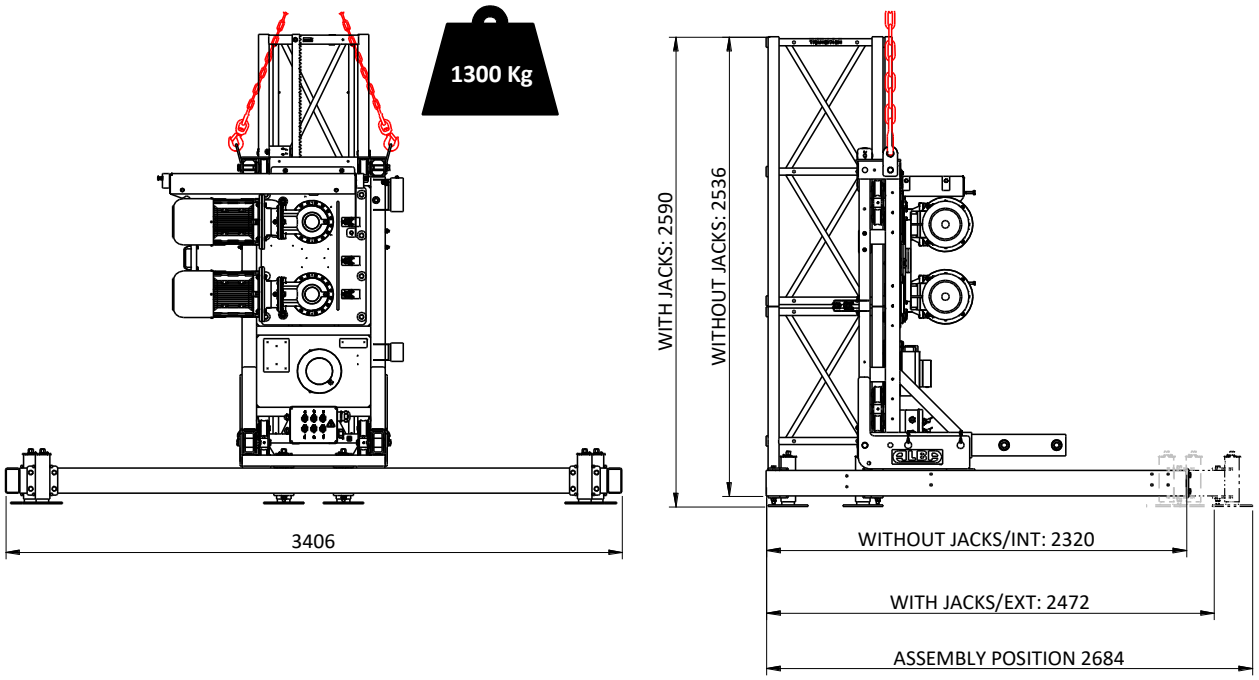

It is important to follow the instructions in detail, to avoid risks in the assembly and disassembly process. The user is obliged to observe, by himself, and for those working in the vicinity, all sources of additional risk, and to comply with all applicable safety standards for the type of equipment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

2. Hoist transport and coupling.

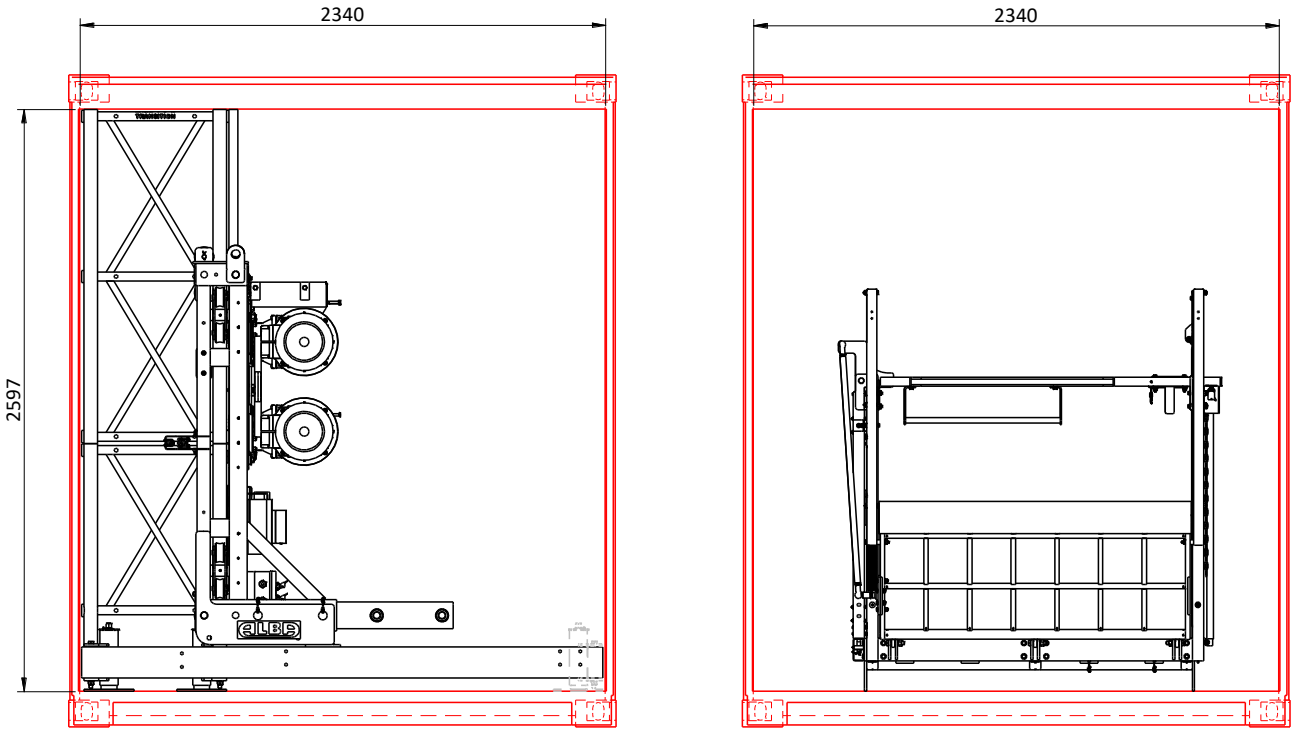
The hoist is supplied unmounted, unless specifically indicated otherwise. For the coupling of main components of the hoist it´s necessary to use a crane.

IMPORTANT:

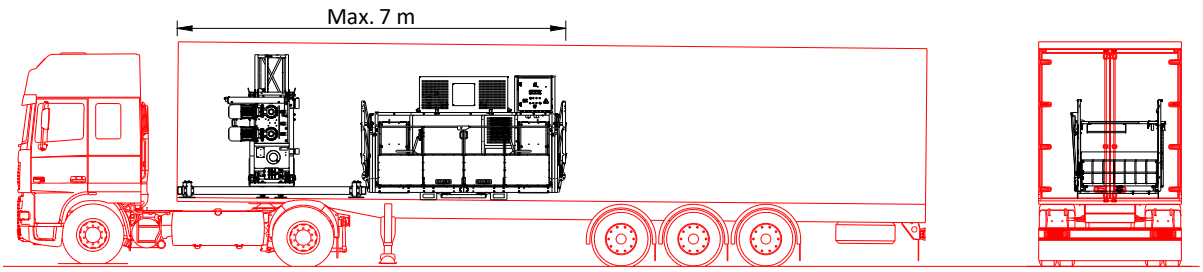
TO ASSEMBLE THE COMPONENTS AND THE ASSEMBLY WILL USE A TRUCK LIFT CRANE, OR IF AVAILABLE, ALSO A TOWER CRANE CAN BE USED FOR IT.



BASE GROUP MANIPULATION



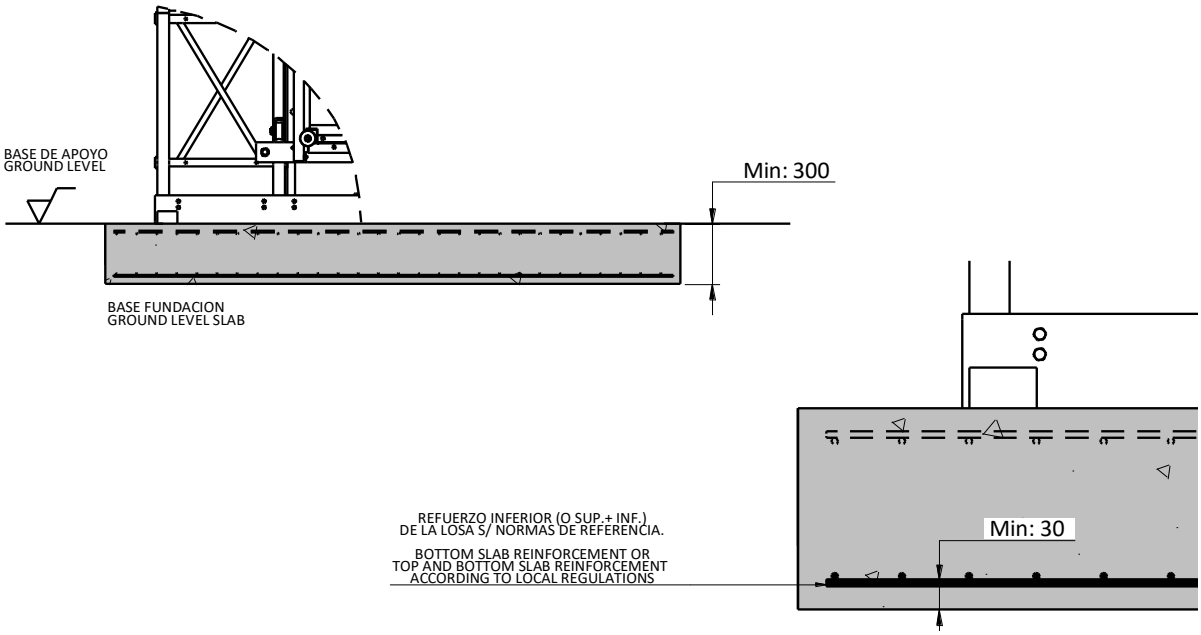
40' STANDARD HIGH CUBE LOAD



TRUCK LOADING REQUIRED LENGHT

2.3.Machine erection procedure:

- **Step 1. Site preparation and foundation**

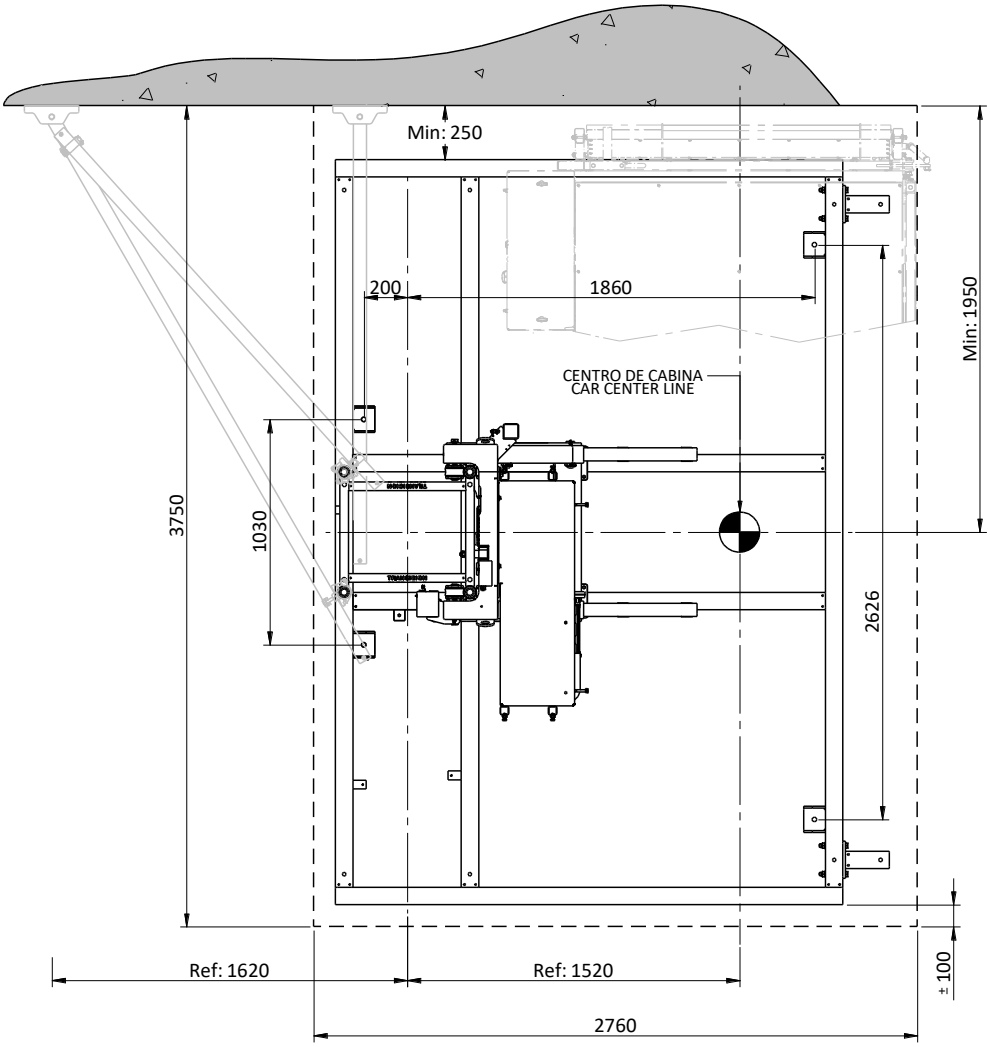


GROUND SUPPORT SLAB

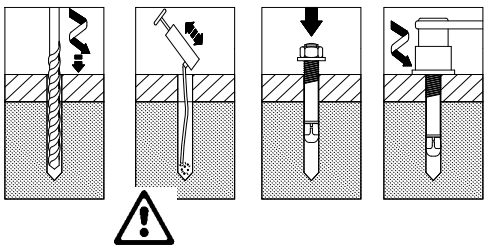
MC.1 LOADS TO GROUND TRANSMISSION		
Height [m]	TOTAL LOAD (EST.) [KN]	**TOTAL LOAD (DIN.) [KN]**
10	42,43	65,09
20	49,00	71,66
30	55,57	78,23
40	62,15	84,81
50	68,72	91,38
60	75,29	97,95
70	81,86	104,53
80	88,44	111,10
90	95,01	117,67
100	101,58	124,24
110	108,16	130,82
120	114,73	137,39
130	121,30	143,96
140	127,87	150,53
150	134,45	157,11
160	141,02	163,68
170	147,59	170,25
180	154,16	176,83
190	160,74	183,40
200	167,31	189,97
210	173,88	196,54
220	180,45	203,12
230	187,03	209,69
240	193,60	216,26
250	200,17	222,83
		(x225) = [lbf]

MC.2 LOADS TO GROUND TRANSMISSION		
Height [m]	TOTAL LOAD (EST.) [KN]	**TOTAL LOAD (DIN.) [KN]**
10	78,09	123,41
20	85,97	131,30
30	93,86	139,18
40	101,75	147,07
50	109,64	154,96
60	117,52	162,85
70	125,41	170,73
80	133,30	178,62
90	141,19	186,51
100	149,07	194,39
110	156,96	202,28
120	164,85	210,17
130	172,73	218,06
140	180,62	225,94
150	188,51	233,83
160	196,40	241,72
170	204,28	249,61
180	212,17	257,49
190	220,06	265,38
200	227,95	273,27
210	235,83	281,15
220	243,72	289,04
230	251,61	296,93
240	259,49	304,82
250	267,38	312,70
		(x225) = [lbf]

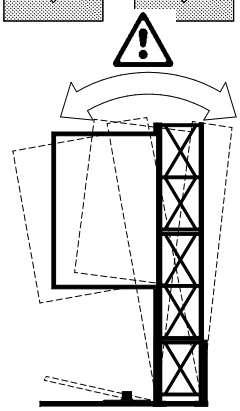
- **Step 2. Base to ground positioning and fastening**

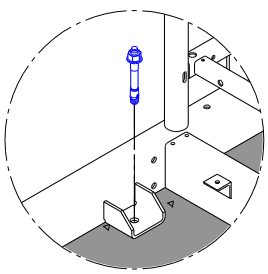


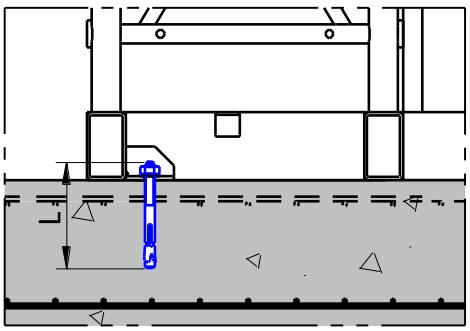
MINIMUM SLAB INSTALLATION DIMENSIONS AND BASE POSITION



RECOMENDED MODEL: HST M20X170		
D_o	Drill diameter	20 mm
H_1	Minimum drill depth	130 mm
H_{nom}	Minimum mounting depht	90 mm
L_r	Screw length	170 mm
T_{ins}	Torque	200 N·m

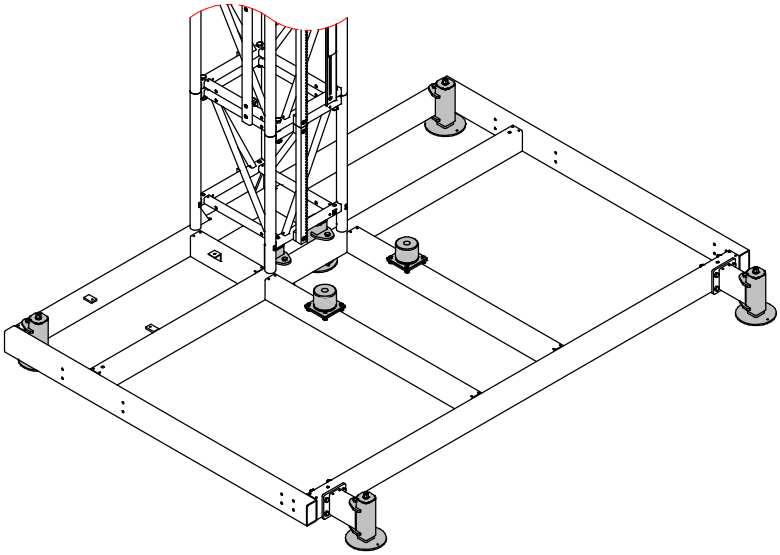




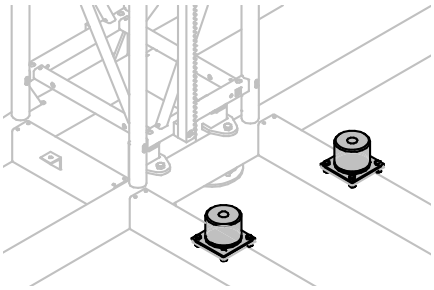


FITTING BASE TO GROUND

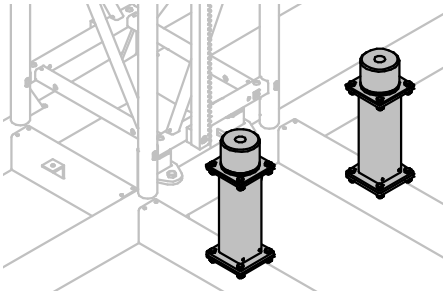
IMPORTANT:
CASE OF USING BASE JACKS, MAXIMUM INSTALLATION HEIGHT SHALL BE 150 M.
DON'T OVERCOME MAXIMUM HEIGHT IN THAT CASE.



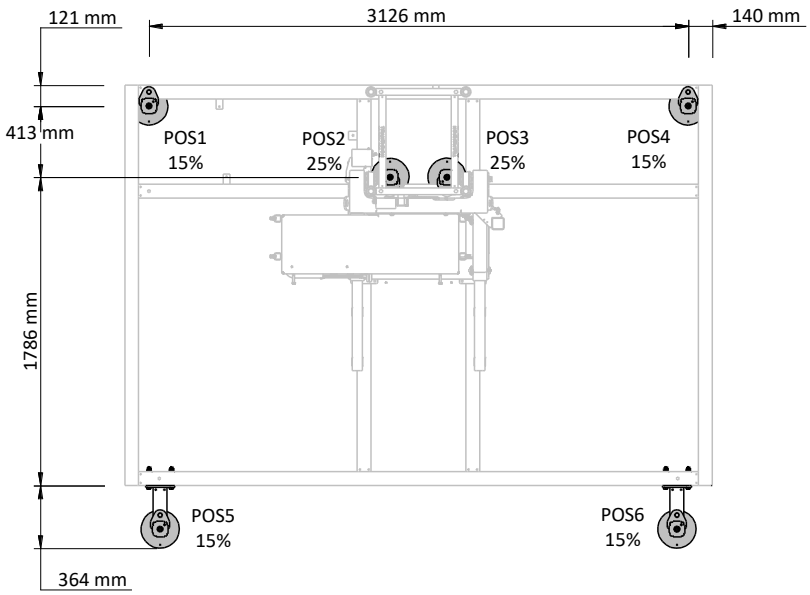
BASE BUFFERS FOR CABLE BIN:

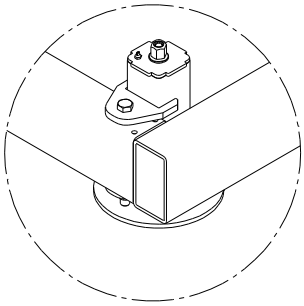


BASE BUFFERS FOR CABLE TROLLEY:

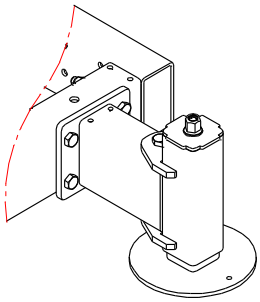


ASSEMBLY OF BASE WITH JACKS



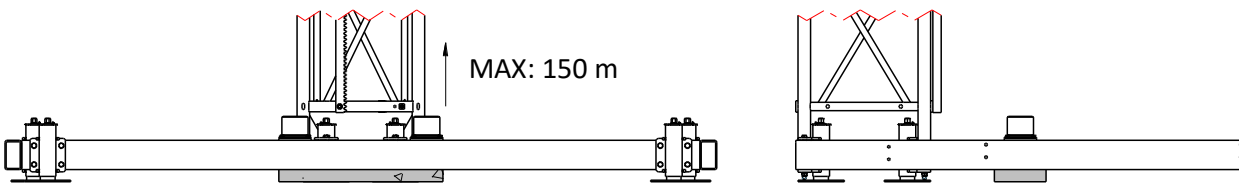


POS1...4

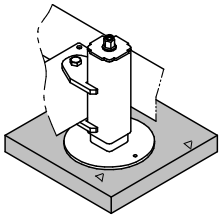


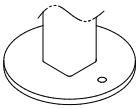
POS5, POS6

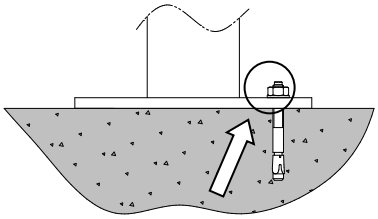
LOADS TO GROUND DISTRIBUTION (SEE PAGE 15)



WEDGE UNDER THE BASE BELOW BUFFERS RECOMMENDED



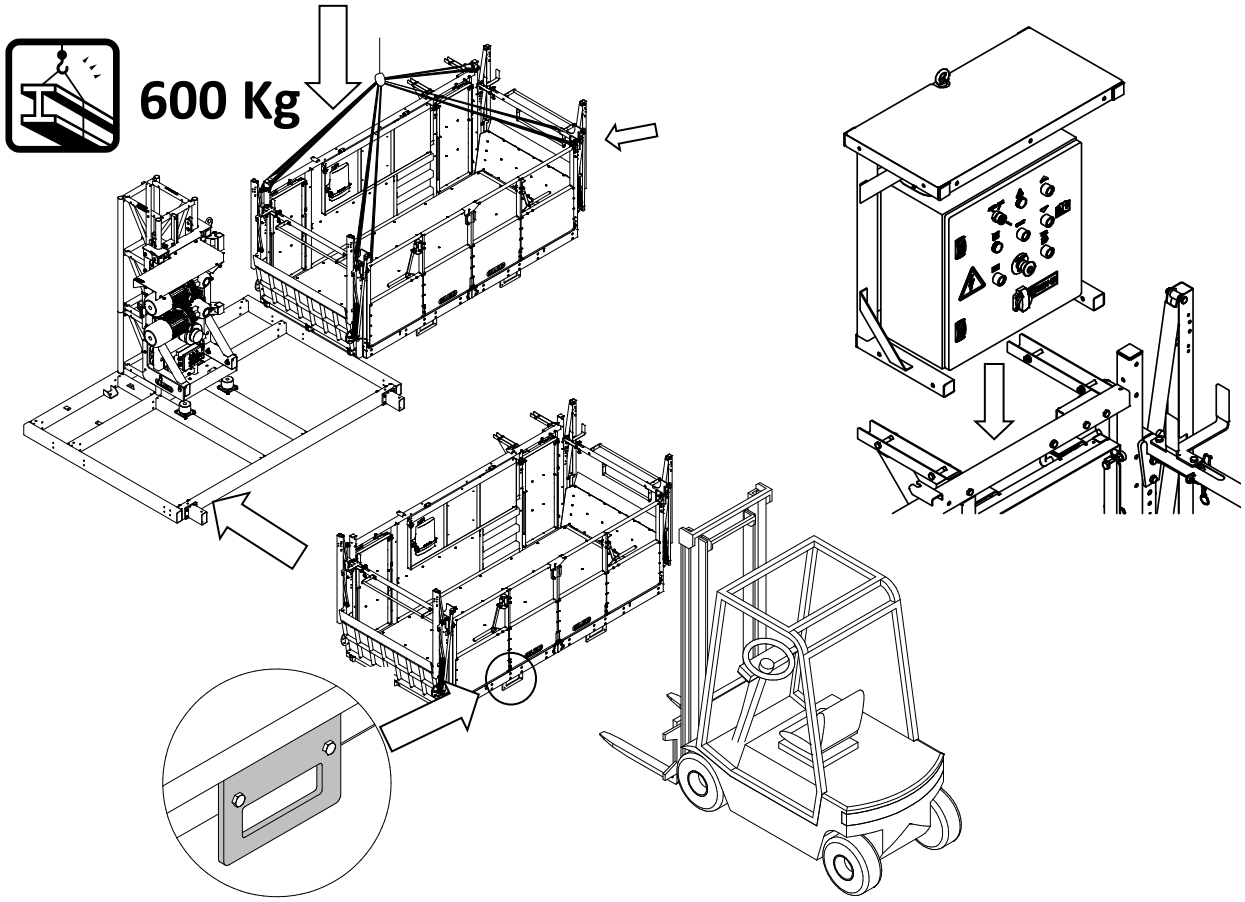




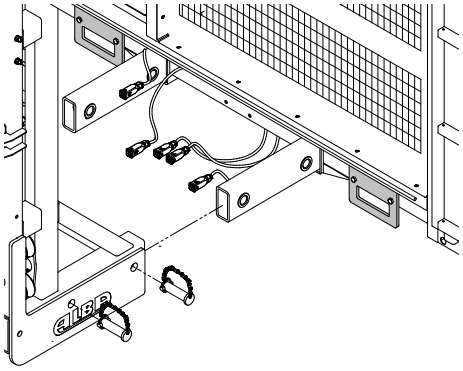
INSTALLATION DATA		
D_o	Drill diameter	10 mm
H_1	Minimum drill depth	70 mm
H_{nom}	Minimum mounting depth	42 mm
L	Anchor length	50 mm
L_r	Screw length	30 N·m

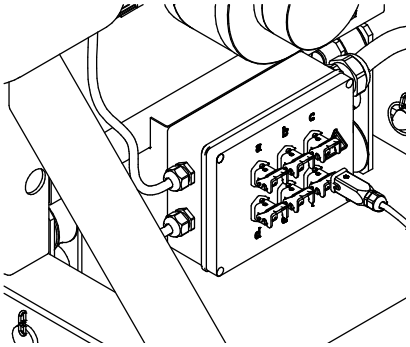
WOODEN BOARD RECOM. **RECOMMENDED FITTING TO GROUND**

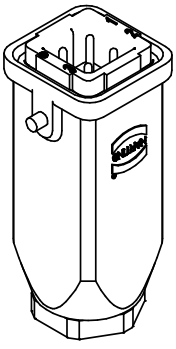
- **Step 3. Assembly of cage and electrical connection.**



ASSEMBLY OF THE LOAD, USING FORKLIF OR CRANE

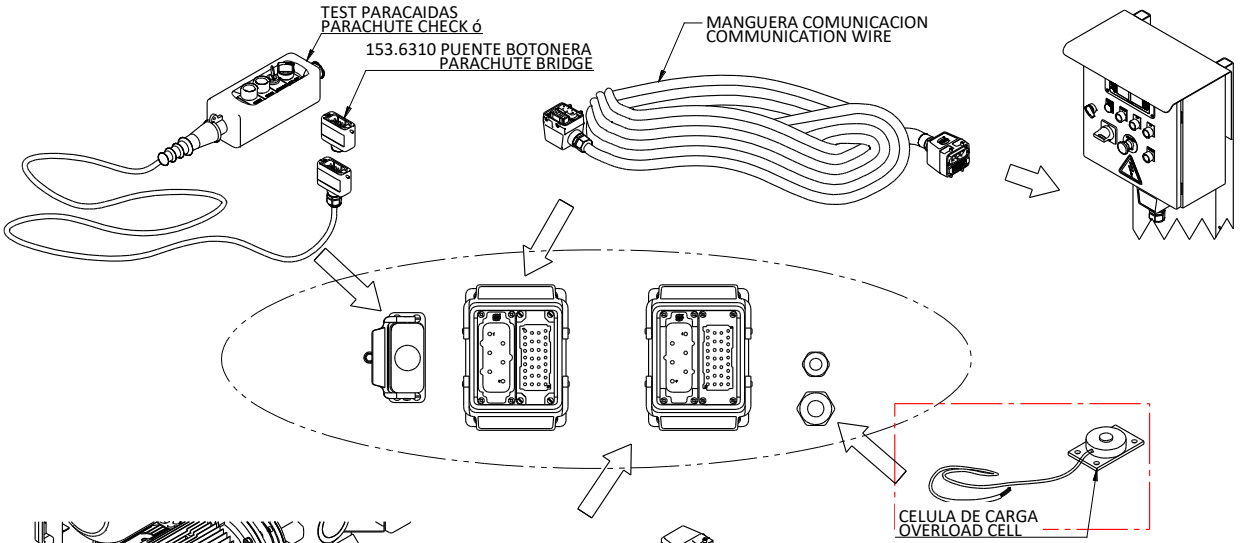


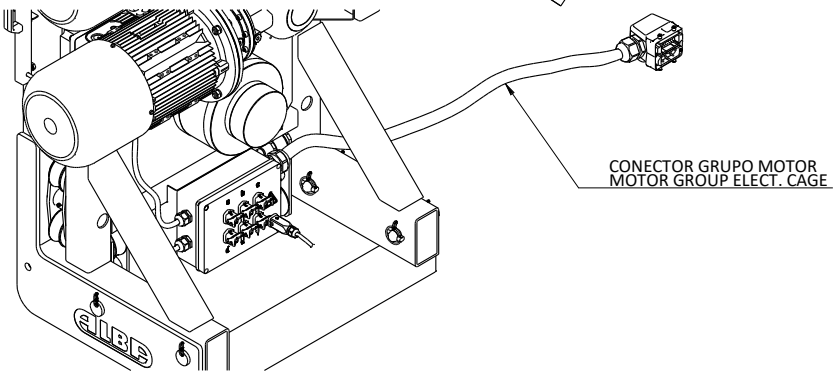


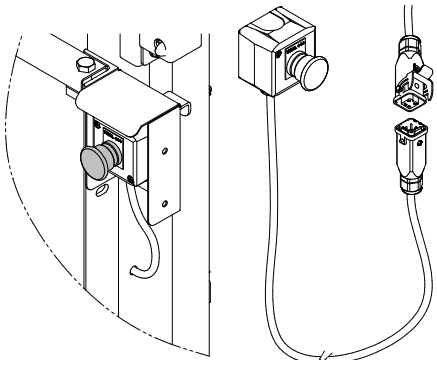


LOAD CAGE COUPLING **CONNECTION OF THE DOORS** **BRIDGE CONNECTOR 155.6030**

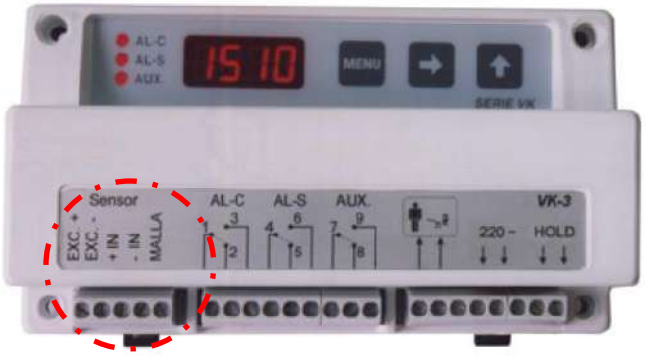
WARNING:
TO FINISH ASSEMBLY, CONNECT DOOR MICROSWITCH CABLES TO NUMBER CONNECTORS Nº 1 A Nº 6. COMPLETE NON-USED DOOR INPUTS WITH BRIDGE CONNECTORS REF: 155.6030.

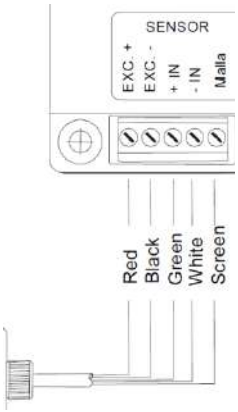


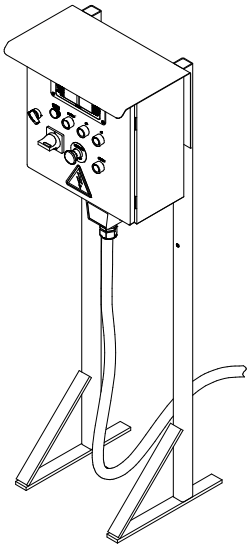


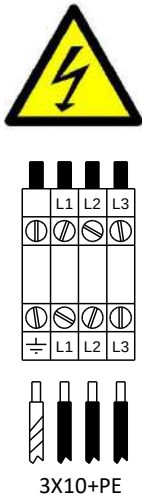


ELECTRIC CONNECTIONS









CONNECTING LOAD CELL TO LOAD LIMITOR ON MAIN SWITCHBOARD

ELECTRIC SUPPLY

ATTENTION:

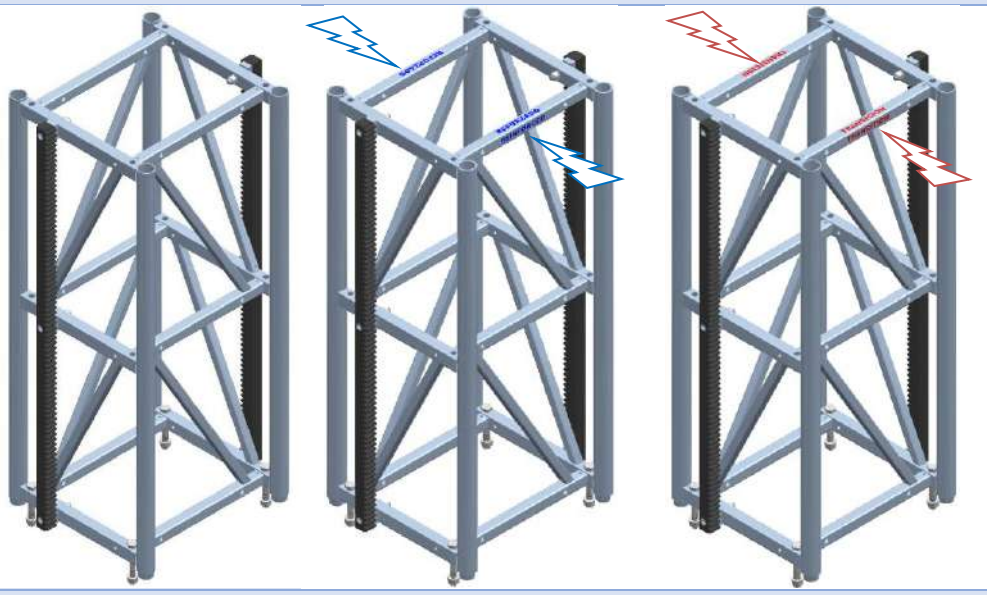
CONNECT ELECTRICAL EQUIPMENT TO MAIN SWITCHBOARD, WITH SPECIAL ATTENCTION TO LOAD CELL CONNECTION TO THE PROGRAMER.

PLEASE, CONSULT THE SPECIFIC INSTRUCTIONS FOR ADJUSTING THE LOAD DETECTOR PARAMETERS ON ANEX AT THE END OF THIS MANUAL.

ONCE THE BASE GROUP IS INSTALLED, ACCORDING WITH PREVIOUS INSTRUCTION HOIST CAN BE RUN UP FOR MAST COLUMN ERECTION.

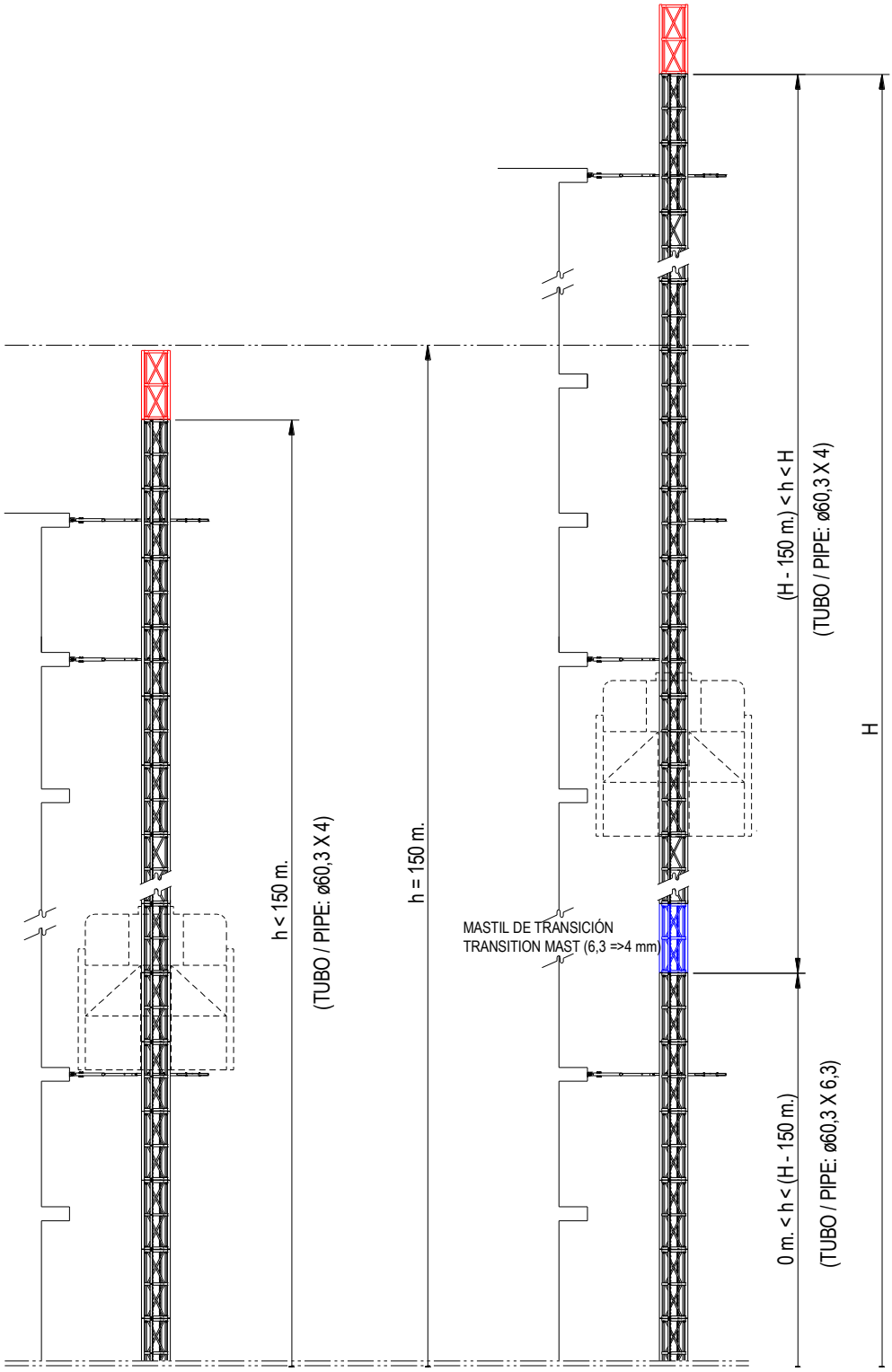
- **Step 4. Erection of the mast.**

ATTENTION:
TO ASSEMBLE THE MASTS USE, PREFERABLY A CRANE, OR A DAVIT AUXILIARY MACHINE (OPTIONAL). DO NOT MANIPULATE THE MASTS BY HAND. IT´S RECOMMEND INSTALLING SECTIONS OF 9 M. (6 MODULES) ON THE GROUND AND FASTEN THE WHOLE GROUP TO THE MACHINE WITH THE HELP OF A CRANE.
FIRST MAST IS TRANSITION MAST, AND IT´S FITTED TO HOIST BASE FRAME.
DON´T REMOVE FROM THAT POSITION, EXCEPT FOR ASSEMBLY OVER 150 M.

MAST TECHNICAL DATA			
Type:	STANDARD MAST	REINFORCED MAST	TRANSITION MAST
MAST			
Vertical tube:	Ø60,3x4	Ø60,3x6,3	Ø60,3x(6,3➔4)
Code:			
· 1 Rack:	150.2-1	150.3-1	150.4-1
· 2 Racks:	150.2-2	150.3-2	150.4-2
Weight:			
· 1 Rack:	98 Kg	114 Kg	98 Kg
· 2 Racks:	118 Kg	134 Kg	118Kg
Mast screws:	(4x) Bolt M20x140 DIN 931 8.8		
	Washer A21 DIN 125		
	Safety nut M20 DIN 985		
Torque:	200 N·m		
Rack screws:	(3x) Bolt M16x110 DIN 912 10.9		
	Washer A17 DIN 125		
	Safety Nut M16 DIN 985		
Torque:	100 N·m		

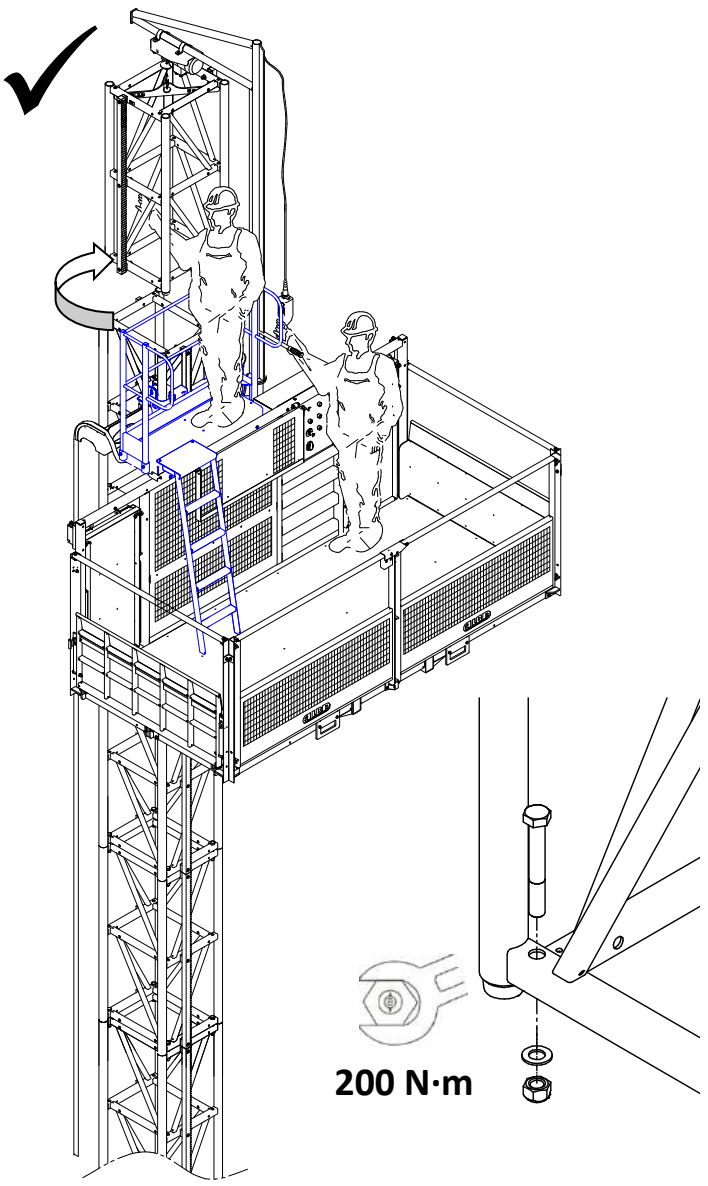
ATTENTION:
TO INSTALL THE MACHINE, AND FOR INSPECTION AND MAINTENANCE TASKS, ALWAYS USE THE MANUAL MODE OF OPERATION (ROOF OR CAGE CONTROL).
SEE CHAPTER 3 BEFORE STARTING HOIST ERECTION.
HOIST NEVER´LL BE ERECTED IN AUTO MODE!

IMPORTANT (H>150 m):
WHEN ASSEMBLING THE HOIST MAST, REINFORCED MASTS MUST BE USED IN THE LOWER ZONE, THEN INSTALL TRANSITION MAST SUPPIED WITH THE HOIST, AND AT THE END, NORMAL MAST MODULES.
IF TWIN CAGE HOIST IS NOT INSTALLED, THE COMPLETE MAST COLUMN CAN BE ASSEMBLED USING STANDARD (60,3x4) MAST MODULES.

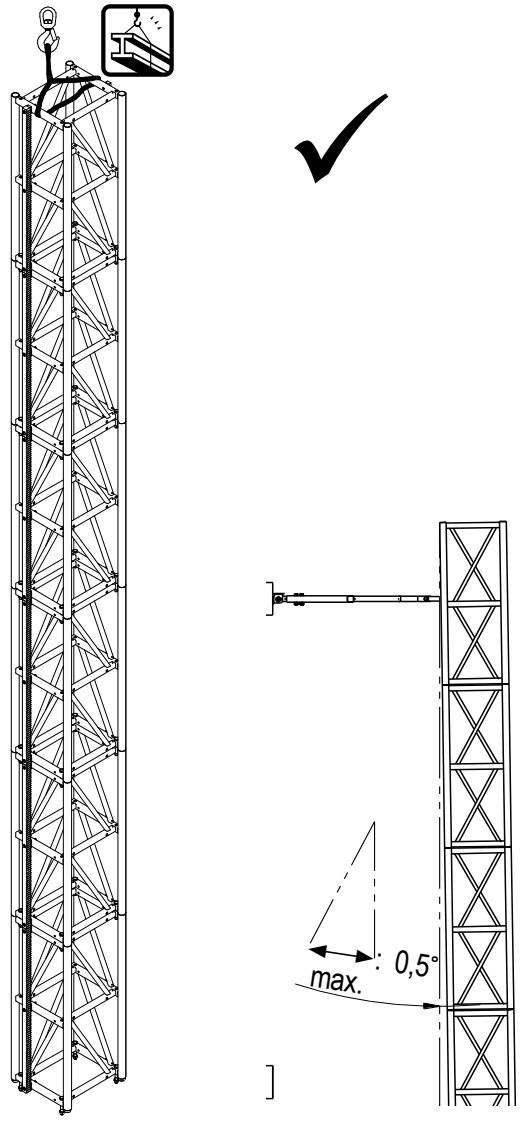


DISTRIBUTION OF MASTS ALONG THE COLUMN H>150 m

ATTENTION:
FOR MAST ASSEMBLY TASK, FOLDING THE MAST PROTECTION AND DISMANTLE FALLING OBJETS PROTECTION CEILING IS ALLOWED.
CHECK LIMITATIONS TO THE USE OF THE PLATFORM WITH NO CEILING.IN ADDITION, THE AUXILIARY CRANE CAN BE USED TO MANIPULATE THE MASTS.

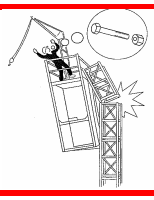


MANUAL ASSEMBLY OF THE MASTS COLUMN

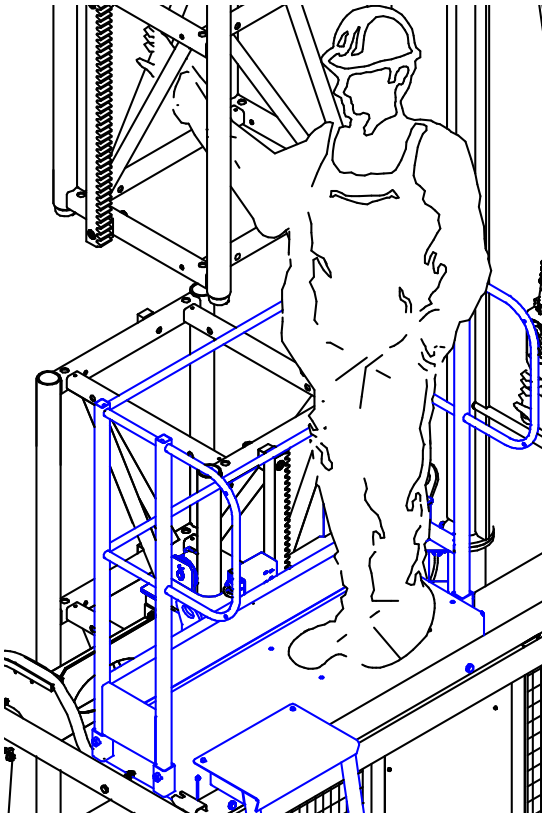


RECOMMENDATION OF ASSEMBLY WITH CRANE

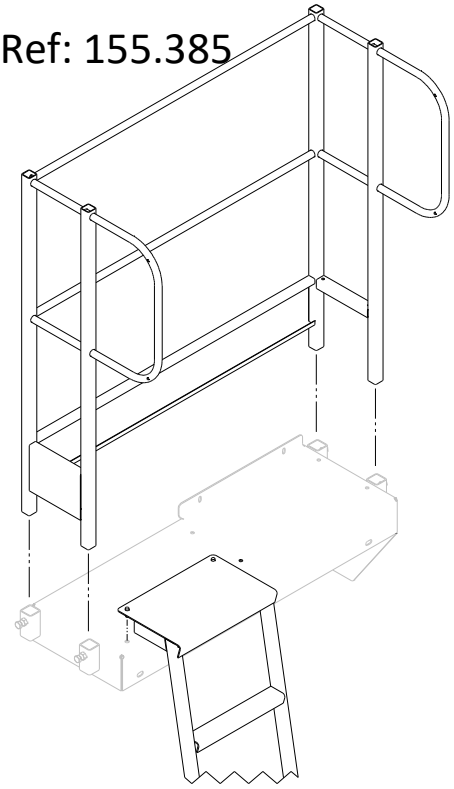
ATTENTION:
FIT / REMOVE MAST AND SCREWS ALWAYS AT THE SAME TIME!
NEVER RAISE THE HOIST OVER A NON-SCREWED MAST MODULE!
THEN THERE IS HAZARD OF COLLAPSE AND SERIOUS INJURY!



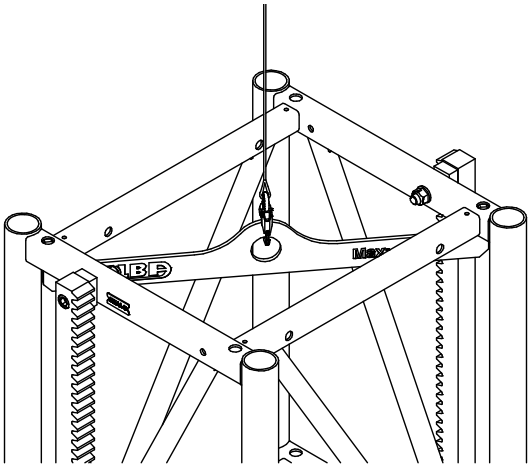
ATTENTION:
OPERATE THE HOIST IN AUTO MODE FROM GROUND CONTROL TO ASSEMBLY TASK IS NOT ALLOWED. USE MANUAL MODE, WITHOUT LOADS.

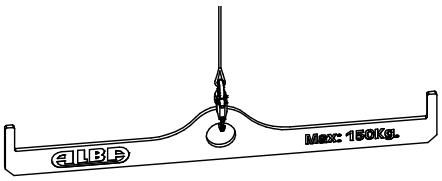


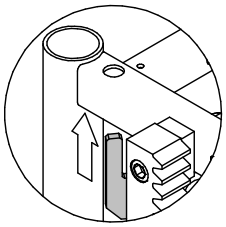
Ref: 155.385



MAST ACCESS KIT FOR ASSEMBLY AND MAINTENANCE TASKS







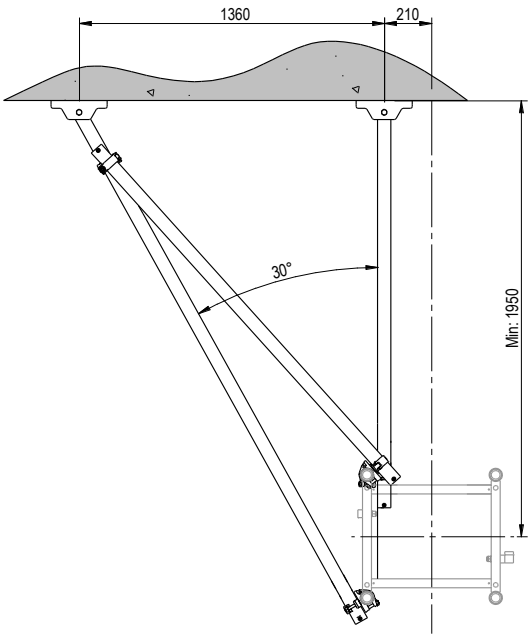
150 Kg

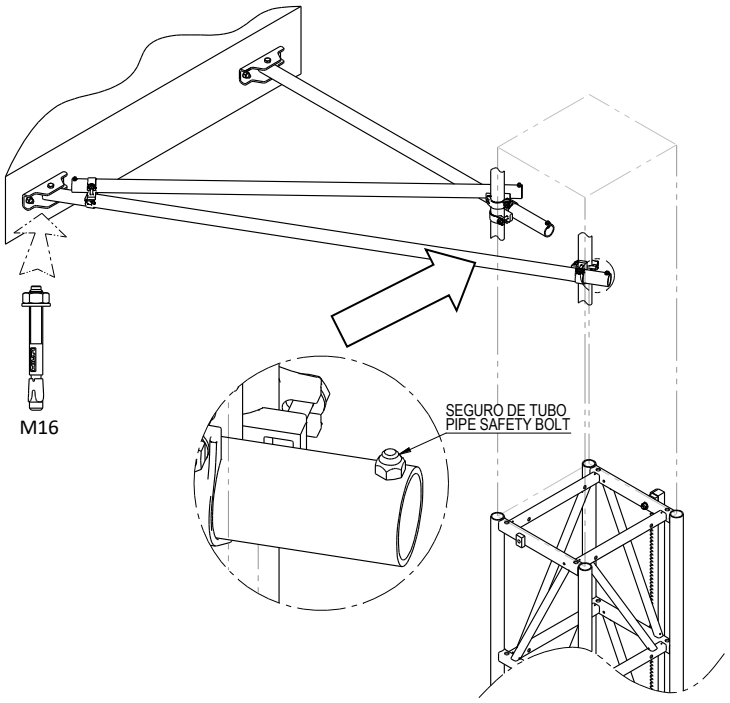
SPECIAL TOOLING FOR MASTS ASSEMBLY (CONSULT Step 13. Assembling the auxiliary crane)

- **Step 5. Installation of mast anchorage.**

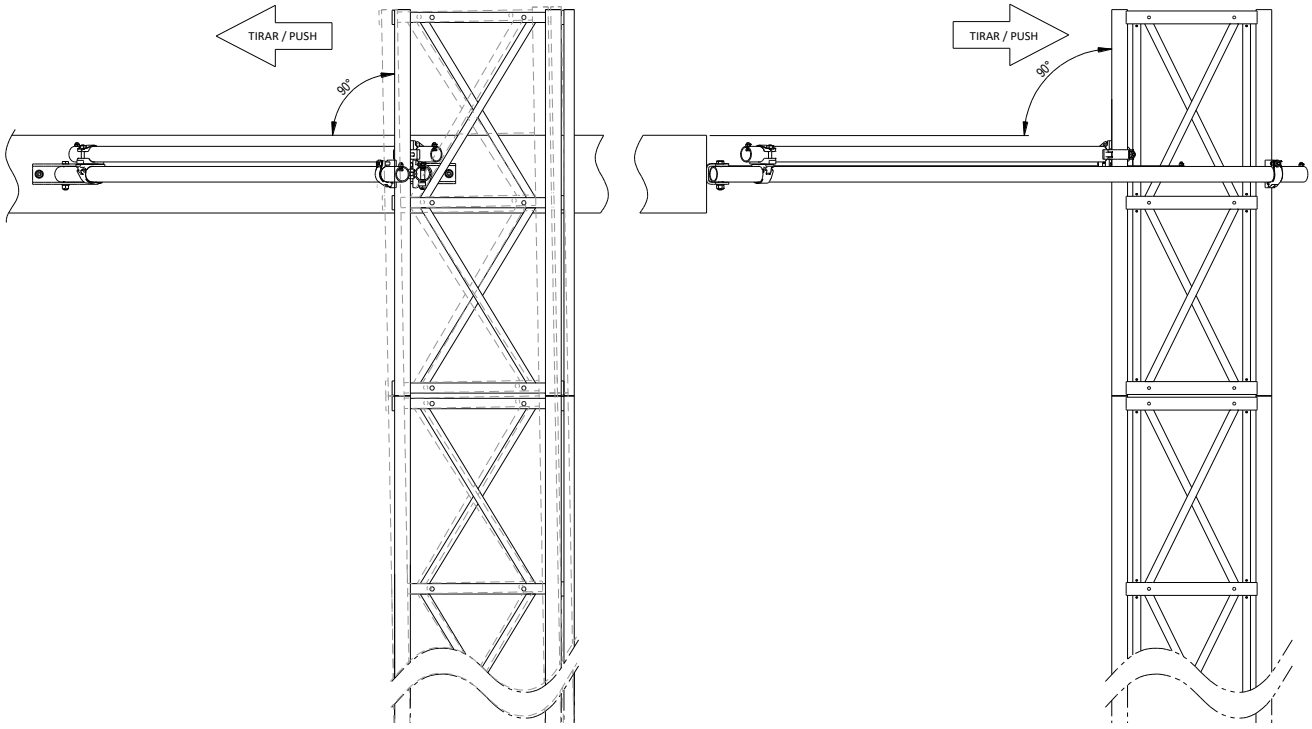
IMPORTANT NOTE FOR THE INSTALLATION OF ANCHORS:
ANCHOR TO INSTALL, MÁX, EACH 9 M. IN CASE OF INSTALLATION OVER 120 M. IT´S ADVISABLE TO REDUCE INSTALLATION DISTANCE TO 6 M.
DUE TO THE DEFLECTION OF THE MAST, RESPECT TIE DISTANCE ESPECIALLY INSTALLING LANDING DOORS, EVEN INSTALLING EXTRA TIES IF REQUIRED.

SINGLE CAGE ANCHORAGE:

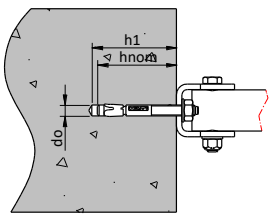




ANCHORAGE ASSEMBLY

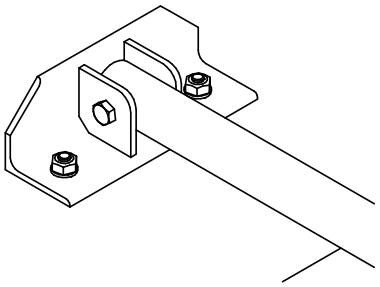


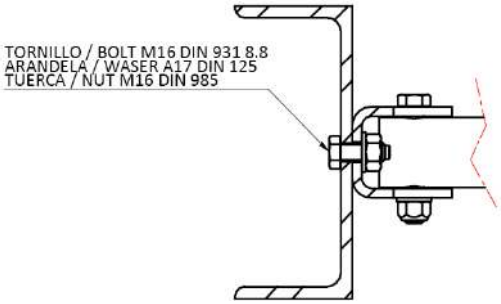
FIXING THE BEARING STRUCTURE



INSTALLATION DATA		
D_o	Drill diameter	16 mm
H_1	Minimum drill depth	115 mm
H_{nom}	Minimum mounting depth	95 mm
L	Anchor length	140 mm
L_r	Screw length	70 mm
T_{ins}	Torque	100 N·m

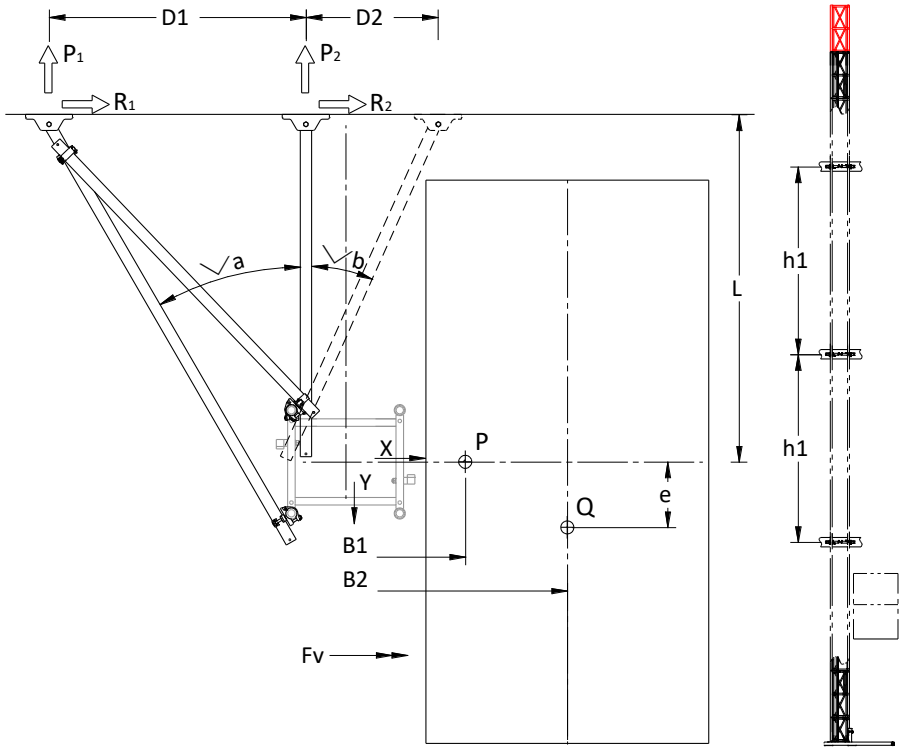
RECOMMENDED ANCHORAGE SYSTEM





ABOVE/BELOW FLOOR SLAB CLAMP Ref: 153.84 **SCREWED CLAM TO METALLIC STRUCTURE**

ALTERNATIVE ANCHORING SYSTEMS



INSTALLATION DATA:

DISTANCE TO ANCHOR POINT 1 (D1):	**1.380**	mm.
DISTANCE TO ANCHOR POINT 2 (D2):	**0**	mm.
HOIST TO FACADE DISTANCE (L):	**1.950**	mm.
MAIN ANCHORAGE ANGLE (Va): +-	29	°
SECONDARY ANCHORAGE ANGLE (Vb): +-	0	°

REACTION FORCES CALCULATION:

P1:	**10,42**	KN.
P2:	**-8,30**	KN.
R1:	**7,37**	KN.
R2:	**0,00**	KN.

(x225) = [lbf]

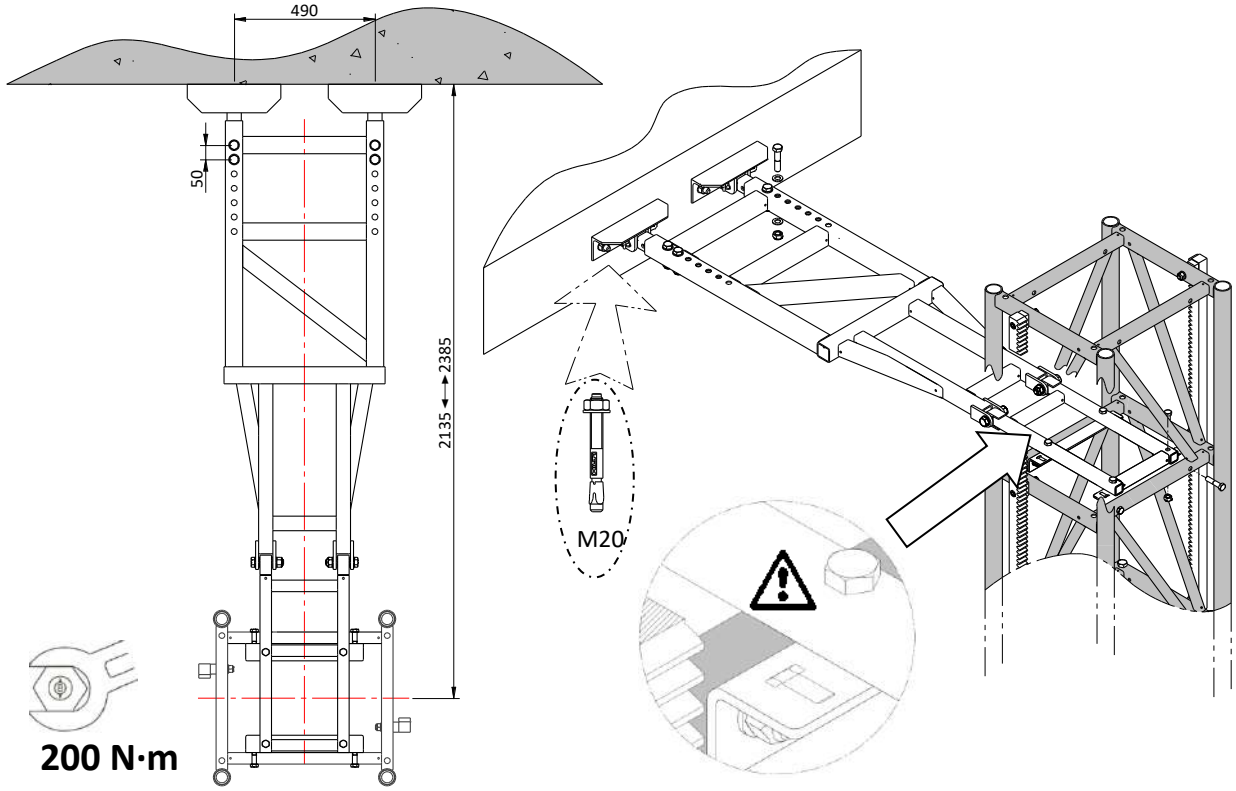
REACTIONS TRANSMITTED TO THE SUPPORT STRUCTURE

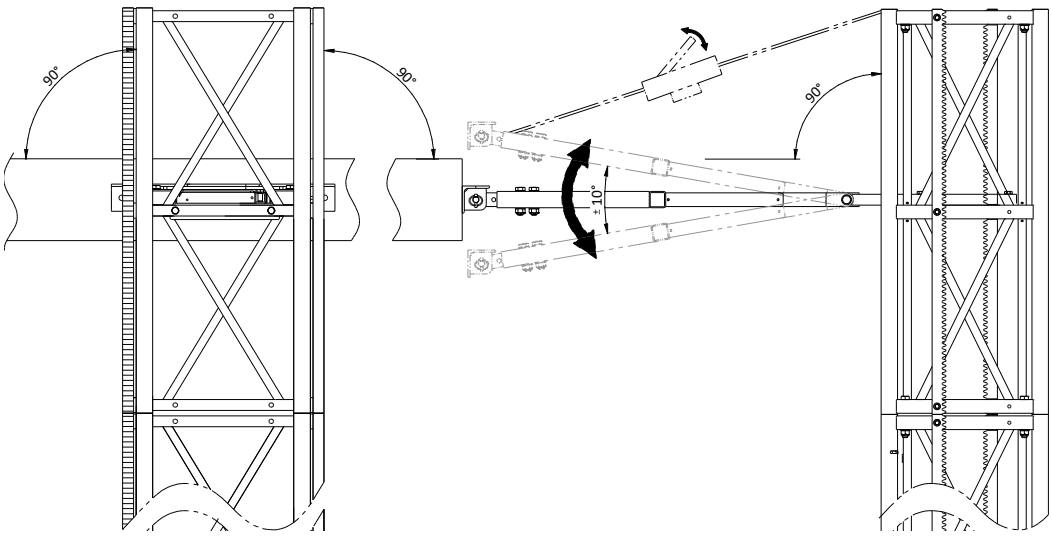
IMPORTANT:
TRANSMITED FORCES TO THE STRUCTURE DECREASE WHEN INSTALLATION ANGLE AND DISTANDE "D" ARE INCREASED.
SEPARATE ANCHORAGE PLATES FROM EACH OTHER TO REDUCE TRASNMITTED LOADS TO STRUCTURE IF NECESSARY. CONSULT THE MANUFACTURER THE VALUES OF REACTIONS TO THE STRUCTURE RESULTING.

ATTENTION:
BOTH SIDES OF THE MAST MUST BE VERTICALY 90° LEVELED AND ALSO MAST TWISTING, BEFORE CLAMPS ARE FITTED TO THE SUPPORT STRUCTURE. MAKE ANY ADJUSTMENT CORRECTION IF REQUIRED. IF NO CRANE AVAILABLE, USE A TEMPORARY INTERMEDIATE ANCHOR POINT FOR EASIER ALIGNEMENT.

TWIN CAGE HOIST – TYPE B ANCHORAGE (MC-2000F LOAD CAGE OR COMBINED WITH EDC CAGE).

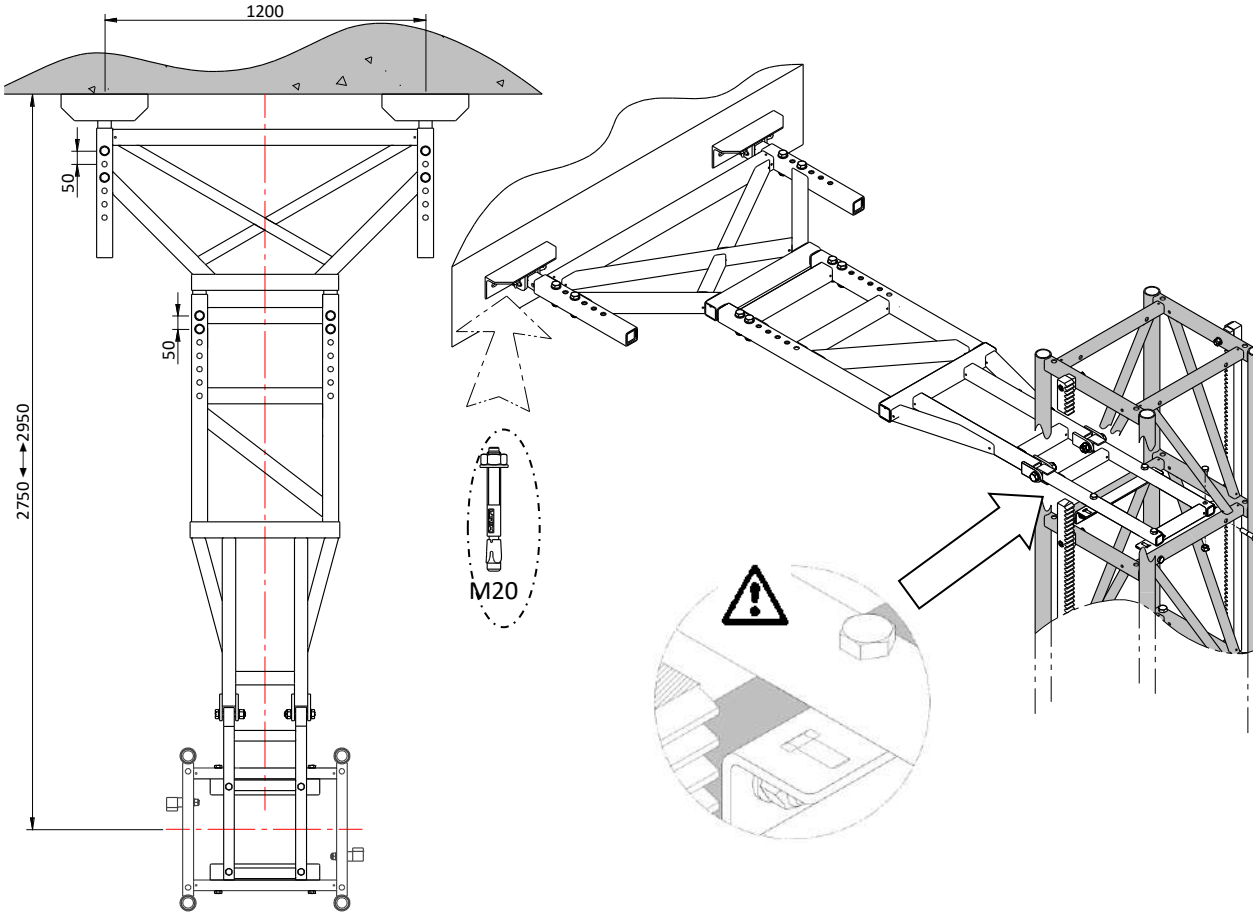
ATTENTION:
WHEN INSTALLING LOAD CAGE (MC) COMBINED WITH PASSENGERS HOIST (EDC), PLEASE REFER TO EDC USER´S MANUAL TO ACHIEVE SPECIFIC INSTRUCTIONS OF PASSENGERS HOIST INSTALLATION.



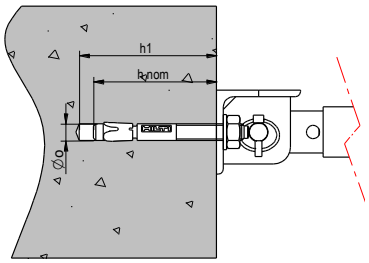


ANCHORAGE ASSEMBLY

ATTENTION:
INSTALL FIXING ANGLES WITH TIE BOLT AS INDICATED IN THE DRAW. OTHERWISE THERE´S IMPORTANT RISK OF COLLISION WITH MOBILE CAGE STRUCTURE.

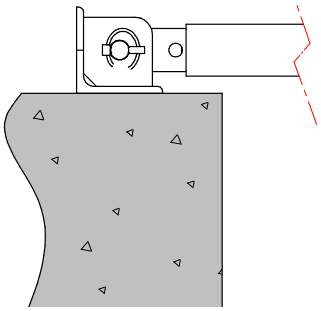


EXTENDED ANCHORAGE

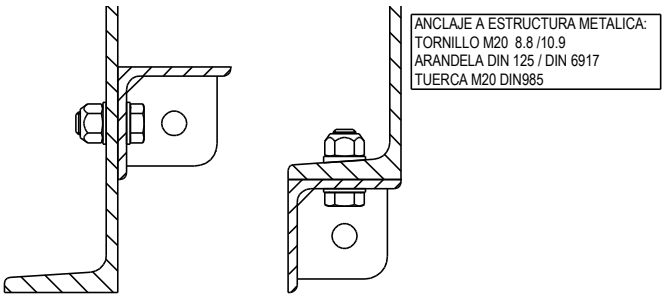


INSTALLATION DATA		
D_o	Drill diameter	20 mm
H_1	Min. drill depth	130 mm
H_{nom}	Min. hole depth	115 mm
L	Anchor length	170 mm
L_r	Screwed length	85 mm
T_{ins}	Torque	200 N·m

RECOMMENDED ANCHORAGE SYSTEM

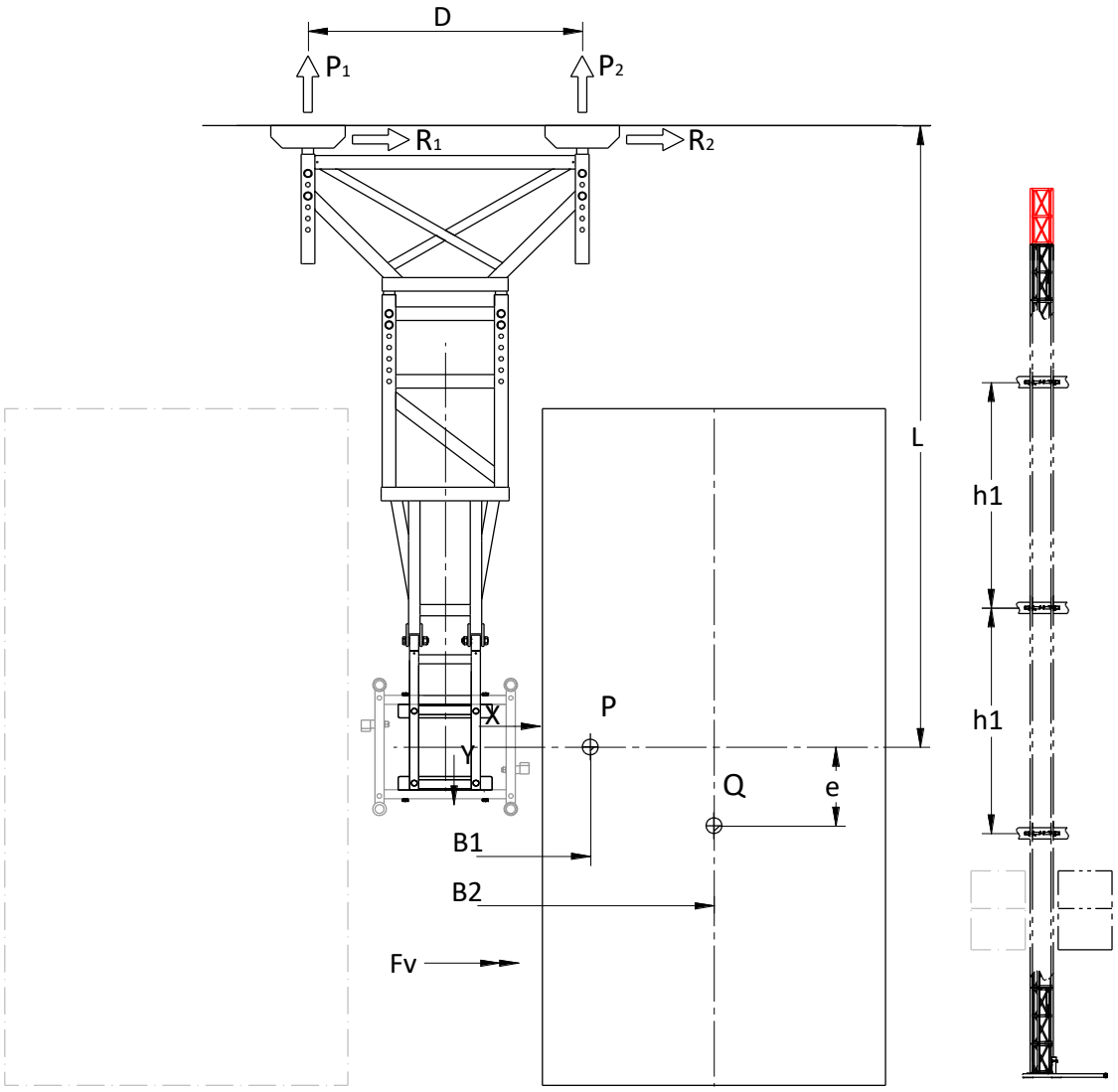


INSTALLING ABOVE / BELOW SLAB



SCREWED ANCHOR TO METALLIC STRUCTURE

ALTERNATIVE ANCHORING SYSTEMS



INSTALLATION DATA:

DISTANCE OF ANCHOR POINTS (D):	**490**	mm.
HOSIT TO FACADE DISTANCE (L):	**2.135**	mm.

REACTION FORCES CALCULATION:

P1:	**25,42**	KN.
P2:	**-23,70**	KN.
R1:	**4,96**	KN.
R2:	**4,41**	KN.

(x225) = [lbf]

INSTALLATION DATA:

DISTANCE OF ANCHOR POINTS (D):	**1.200**	mm.
HOSIT TO FACADE DISTANCE (L):	**2.985**	mm.

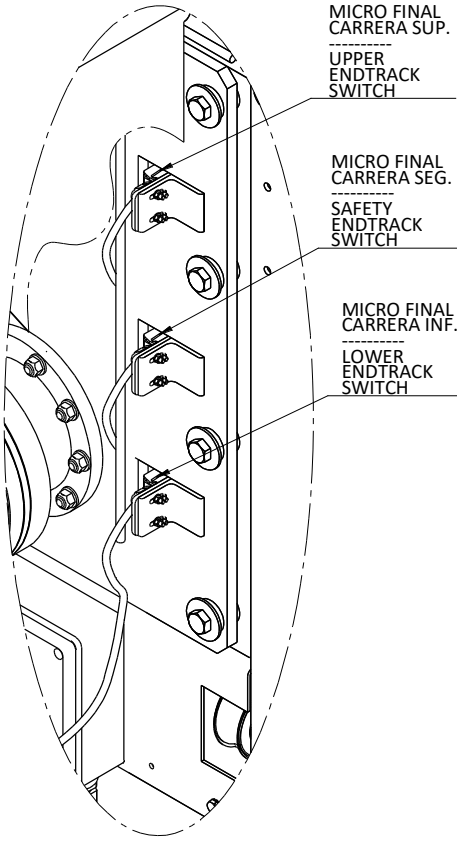
REACTION FORCES CALCULATION:

P1:	**19,48**	KN.
P2:	**-17,22**	KN.
R1:	**5,05**	KN.
R2:	**4,32**	KN.

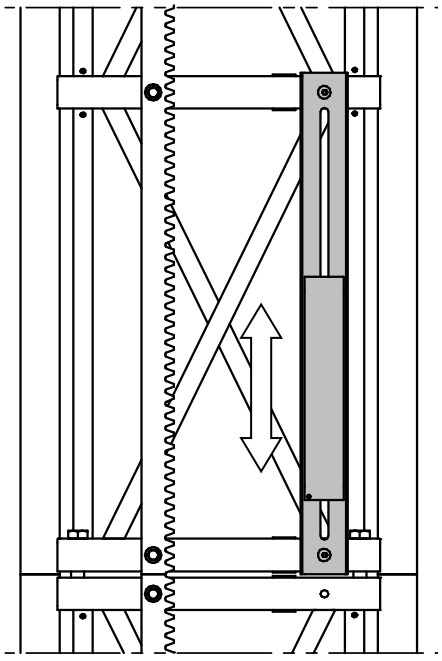
(x225) = [lbf]

REACTION FORCES TO STRUCTURE. ANCHOR TYPE B – STANDARD/EXTENDED ANCHOR

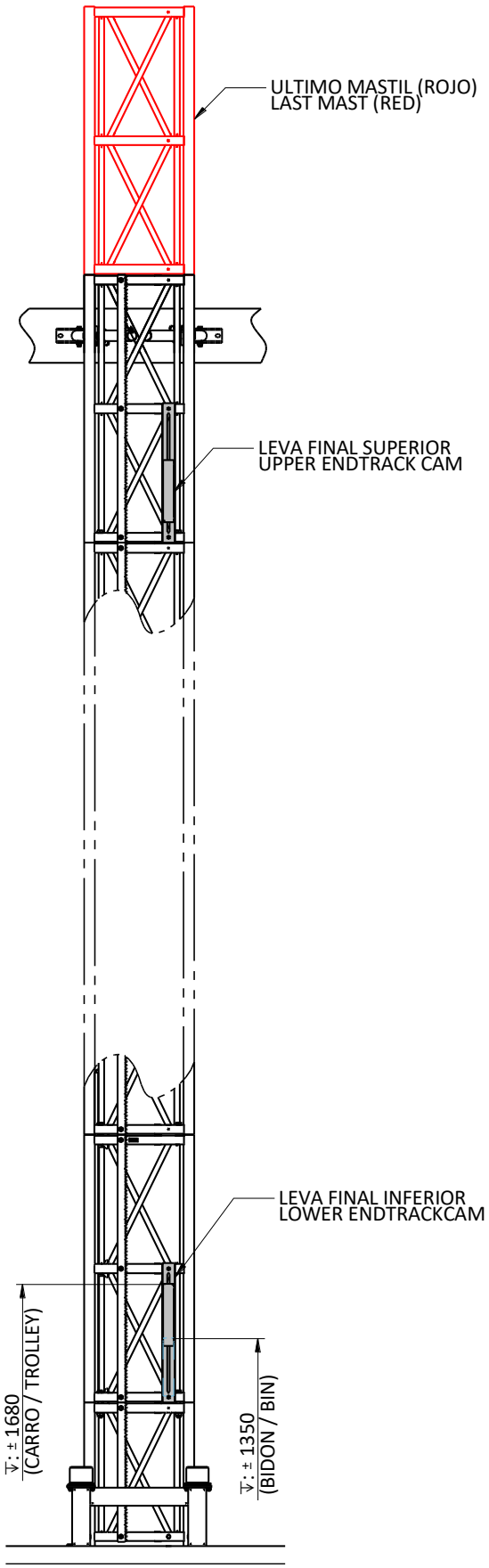
- **Step 6. Installing end track cams and last mast.**



ENDTRACK LIMIT SWITCHES IN CHASSIS



FINAL SWITCH OF CAREER IN THE CHASSIS



UPPER END TRACK AND FINAL MAST POSITION

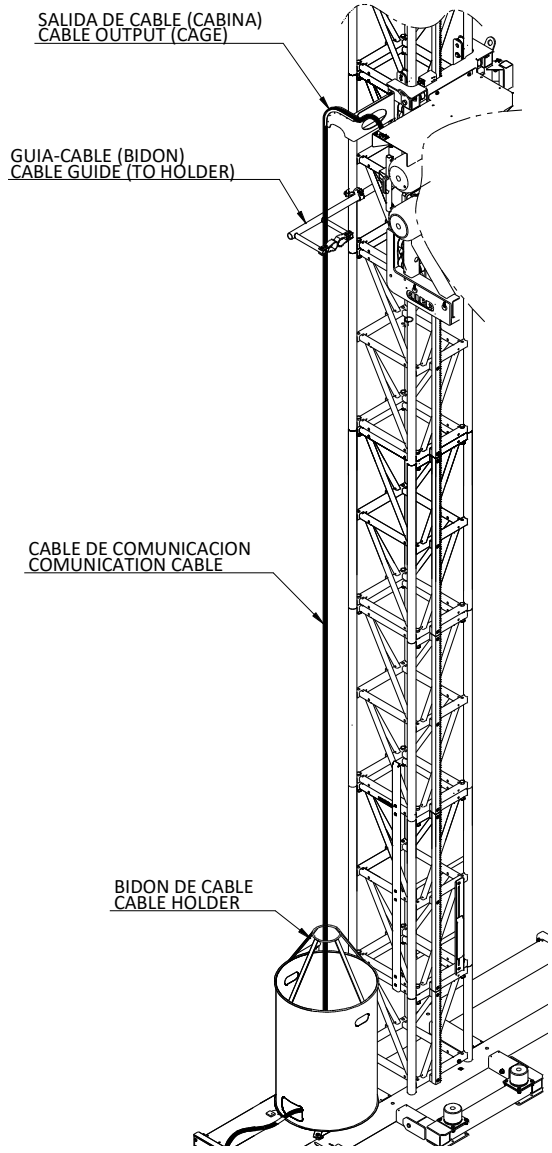
IMPORTANT:

INSTALL SUPERIOR ENDTRACK CAM ON THE LAST MAST AND THEN INSTALL FINAL MAST WITHOUT RACK. USE VERTICAL REGULATION TO ACHIEVE BETTER STOP POINT. CHECK IF HOIST STOP IS PROPERLY PERFORMED:

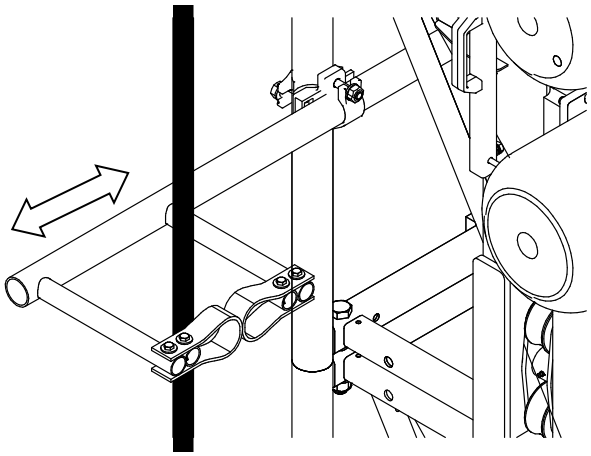
1. **RAISE ("MANUAL" MODE) UNTIL HOIST STOPS. CHECK THAT THE HOIST STOPS WHEN UPPER LIMIT SWITCH TOUCHES SUPERIOR CAM, AND ALSO THAT RED MAST´S NOT REACHED. REPEAT OPERATION WHENEVER THE INSTALLATION HEIGHT IS CHANGED.**
2. **DESCEND ("MANUAL" MODE) UNTIL HOIST STOPS AND CHECK IF 2M. SWITCH HAS REACHED INFERIOR CAM. CHECK THAT LAST TRAVEL PATH UNTIL REF. POINT (LOWER ENDTRACK LIMIT) ONLY CAN BE COMPLETED WITH "HOLD-TO-RUN" ON "RUN" BUTTON OF CAGE CONTROL. CHECK IF THE MACHINE STOPS WHEN LOWER ENDTRACK SWITCH TOUCHES LOWER ENDTRACK CAM. (REFERENCE POINT)**

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

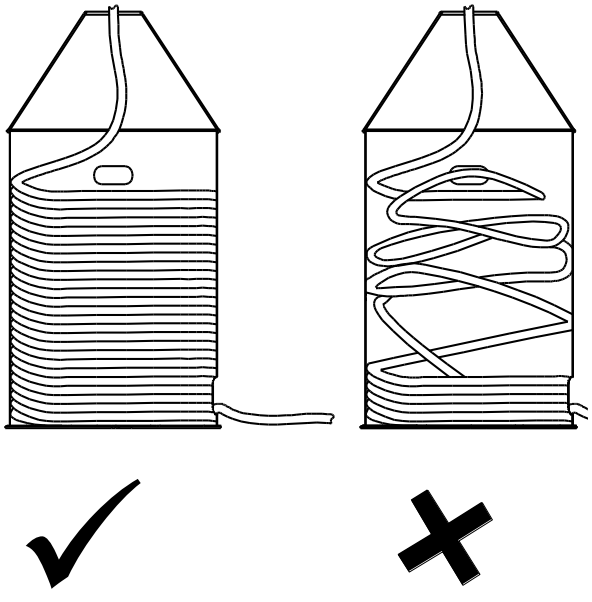
Step 7. Installing cable trolley / cable holder.



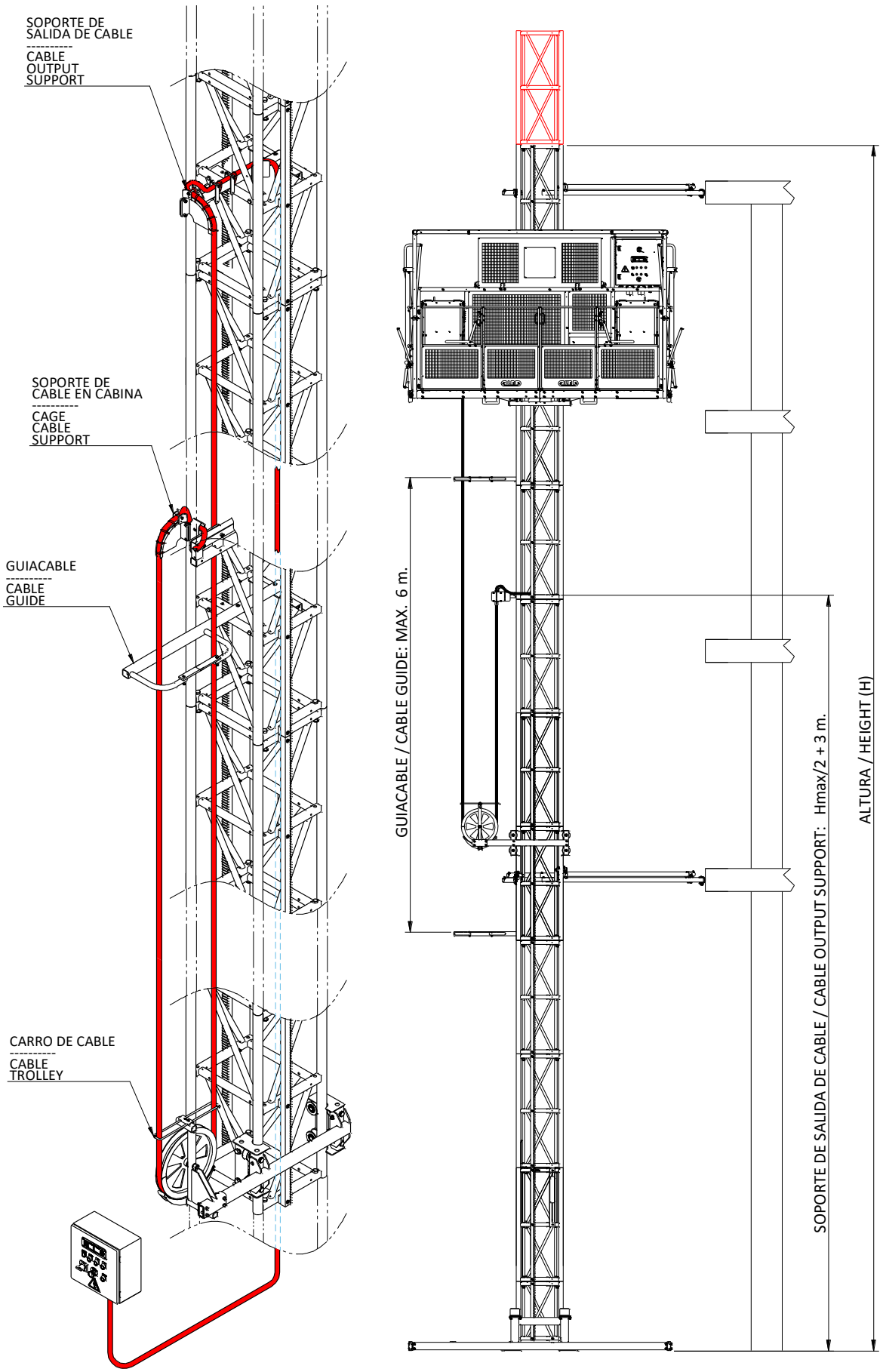
INSTALLING CABLE HOLDER



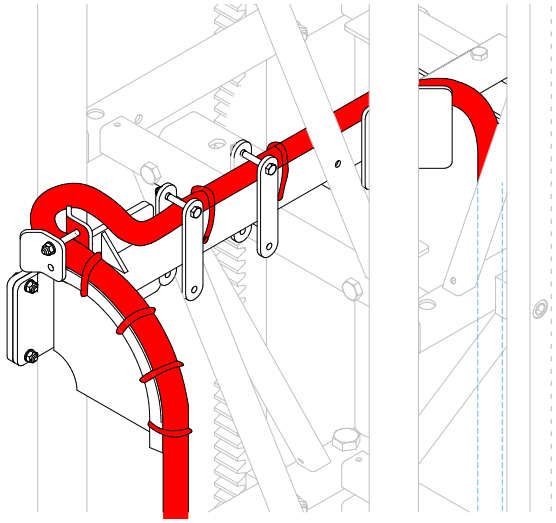
INSTALLING CABLE GUIDES



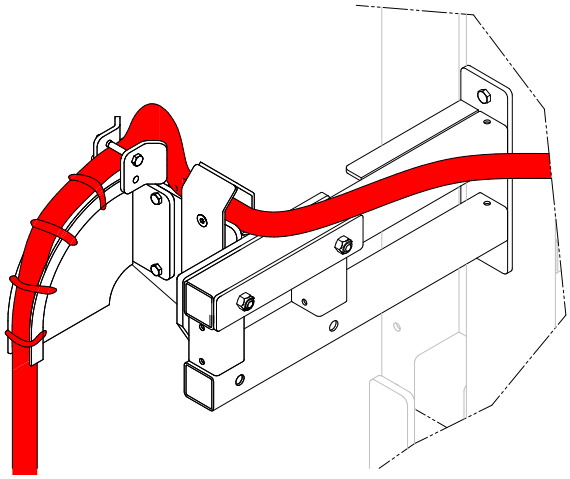
STORING CABLE IN THE HOLDER



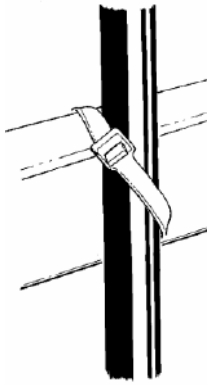
CABLE HOLDER INSTALLATION SCHEME



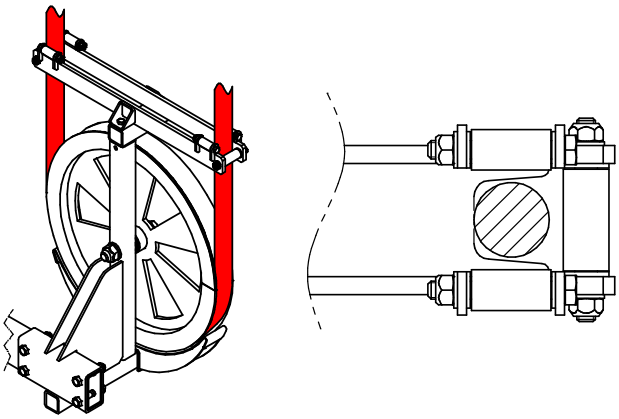
CABLE OUTPUT SUPPORT



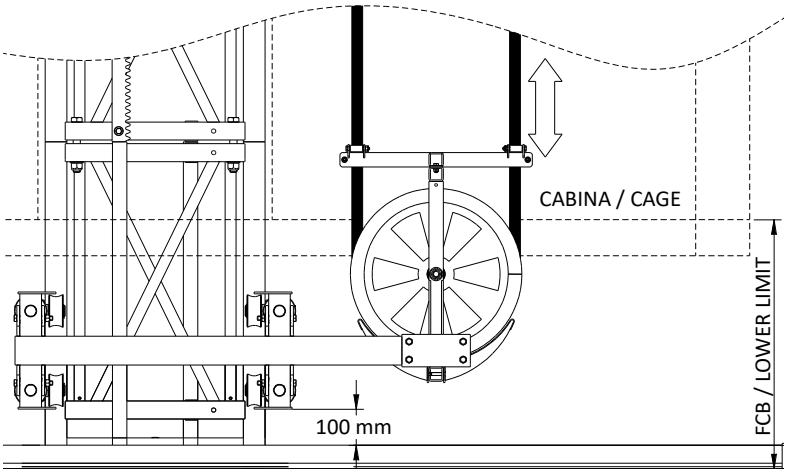
CAGE CABLE SUPPORT



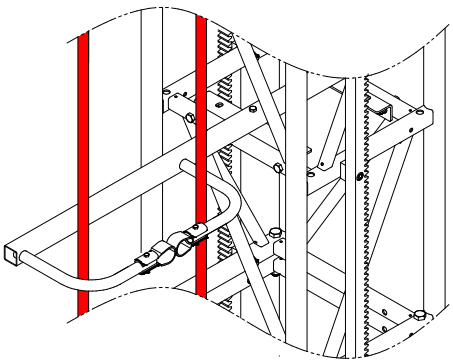
FIXING CABLE INSIDE THE MAST



CABLE POSITION IN THE CABLE TROLEY



ADJUSTING THE CABLE TROLEY



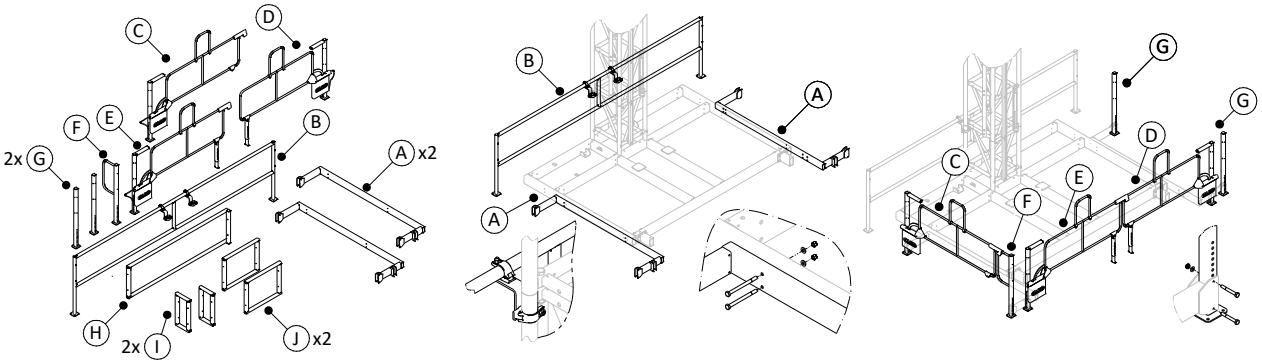
INSTALLATION OF CABLE GUIDES

ATTENTION:
MAX. INSTALLATION HEIGHT USING CABLE HOLDER: 70 m. CASE OF HIGHTER INSTALLATION, CABLE TROLLEY MUST BE INSTALLED. ONLY FOR SINGLE CAGE.

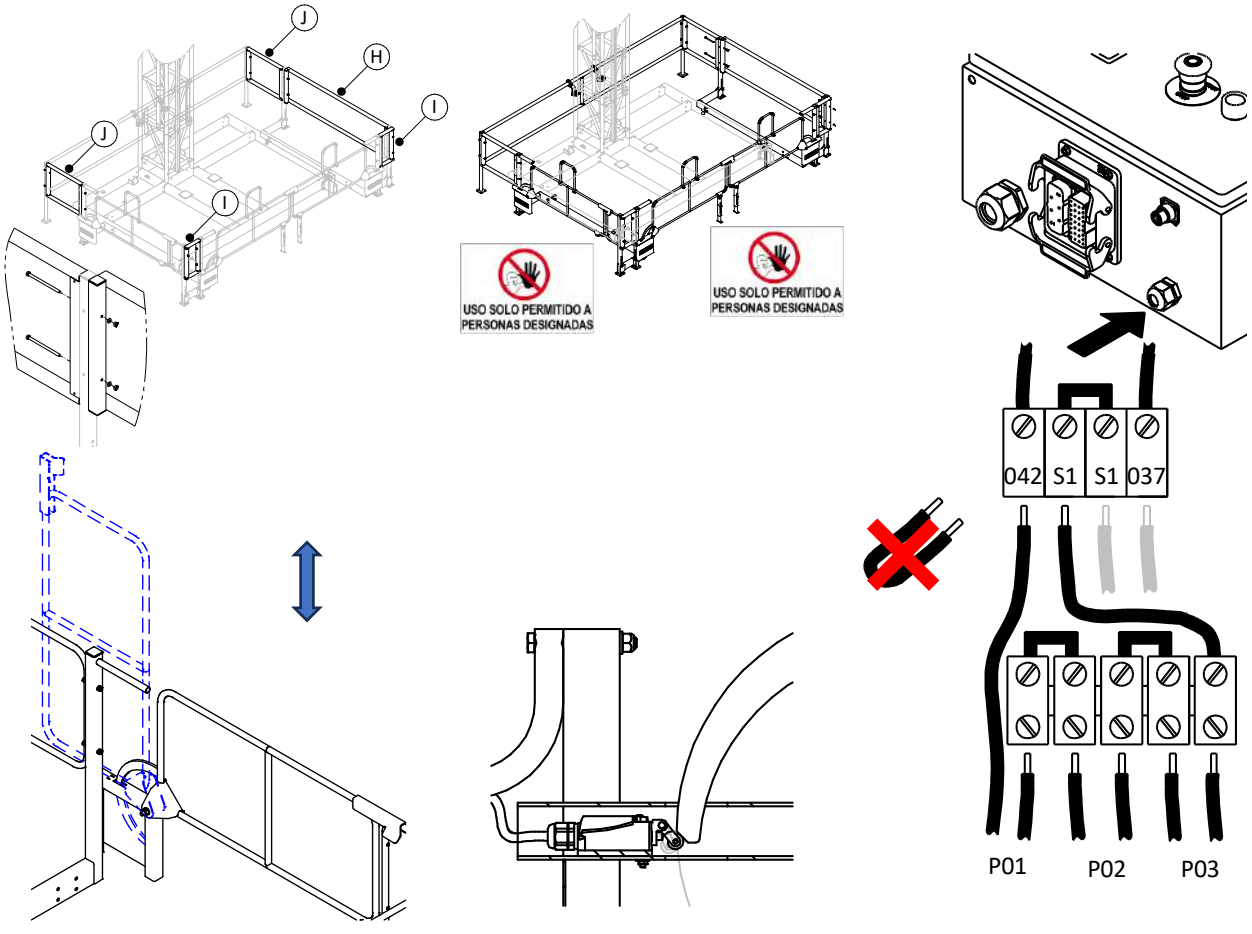
IMPORTANT:
FIX THE LOWER POSITION OF THE CABLE CART BY MAINTAINING A 100 mm CLEARANCE WITH THE ELEVATOR AT THE LOWER POINT OF THE ROUTE

- **Paso 8. Installing base enclosure.**

ATTENTION:
INSTALLATION OF A BASE ENCLOUSE IS REQUIRED IN ACCORDANCE WITH HEREIN ESPECIFICATION OF EUROPEAN STANDARD EN 12158-1:2021



ASSEMBLY OF BASE ENCLOSURE



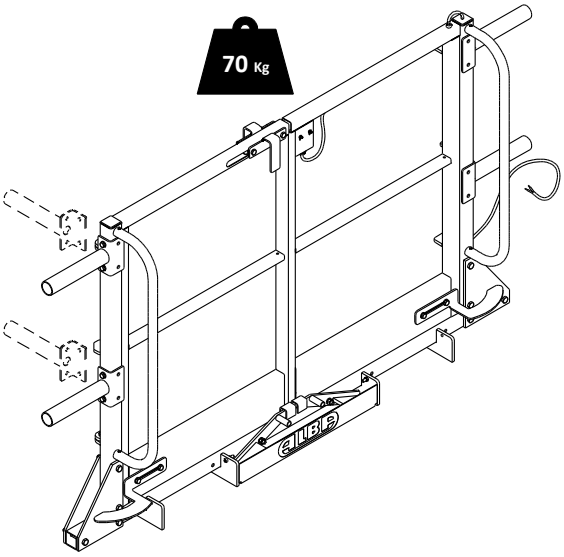
DOOR SWITCH FITTING

DOOR SWITCH CONNECION

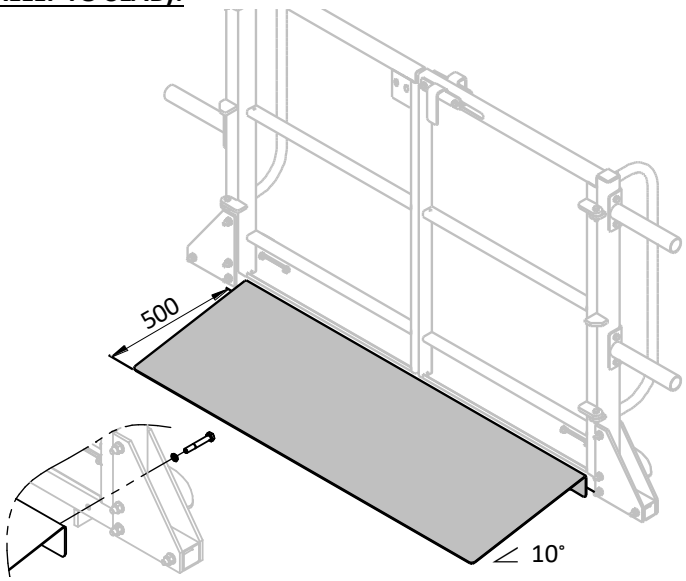
ATTENTION:
THE ENCLOSURE OF THE BASE ALLOWS A PERIMETER PROTECTION OF 500 MM AROUND THE BASE OF THE MACHINE, TO PREVENT HAZARD OF SHEARING OR CUTTING WHEN HOIST IS MOVING
IN NORMAL USE, DOWNWARDS MOVEMENT WILL BE STOPPED AT A HEIGHT OF 2 M ABOVE BASE. FURTHER DOWNWARDS MOVEMENT IS ONLY POSSIBLE BY NEW PERMANENT RESELECTION OFF "RUN" BUTTON

• **Step 9. Installing landing doors.**

· SWINGING DOOR LANDING GATES (USUALLLY TO SLAB):

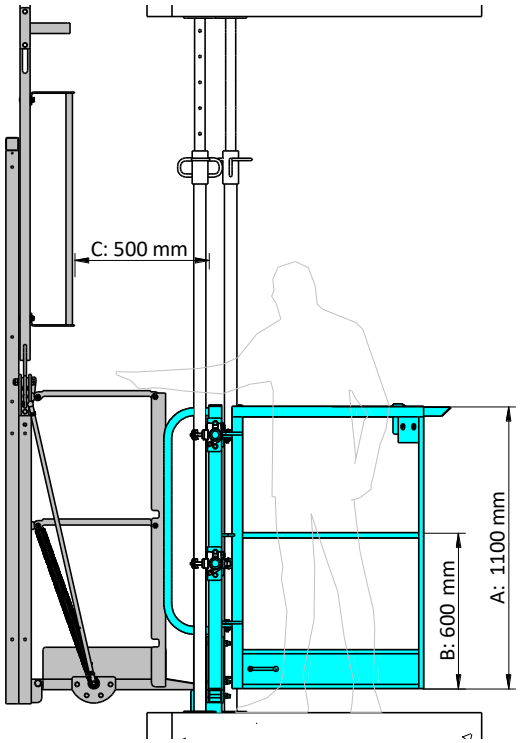


SWINGING LANDING DOOR 140

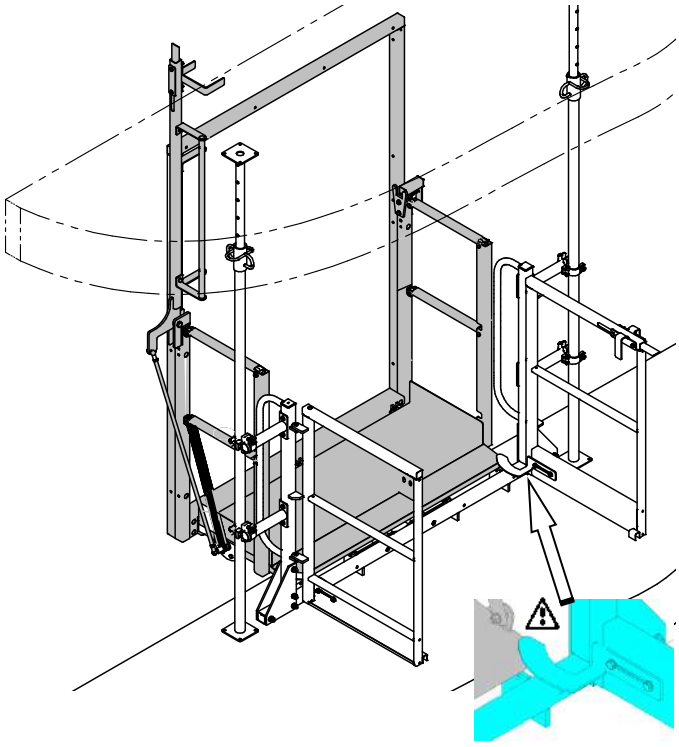


OPTION –ACCESS RAMP

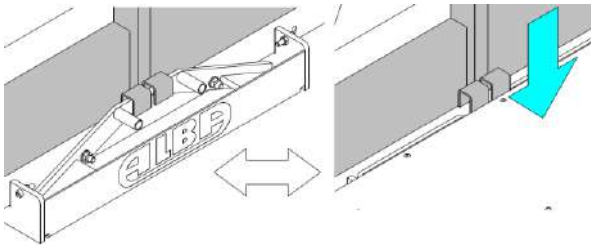
INSTALLATION IN CONCRETRE SLAB OR STRUCTURE



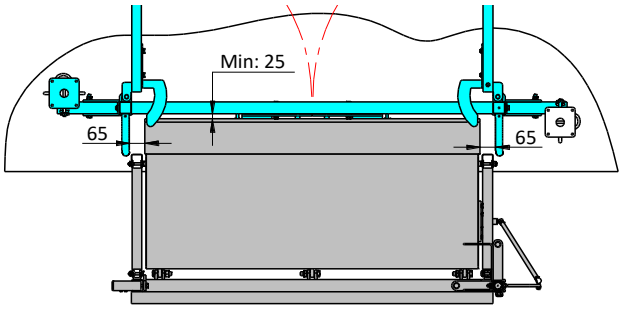
INSTALLATION DISTANCES



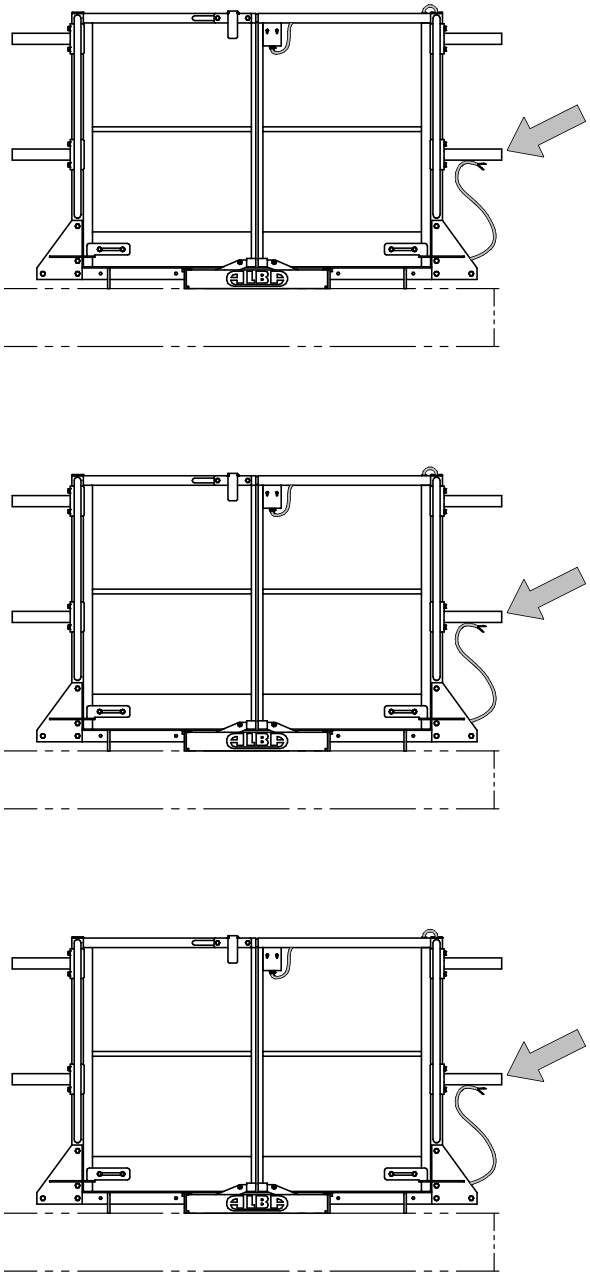
ASSEMBLY DETAIL

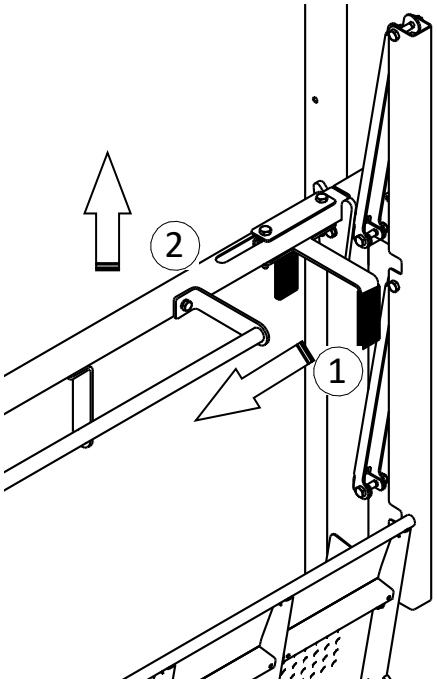


UNLOCKING – OPENING LANDING DOOR



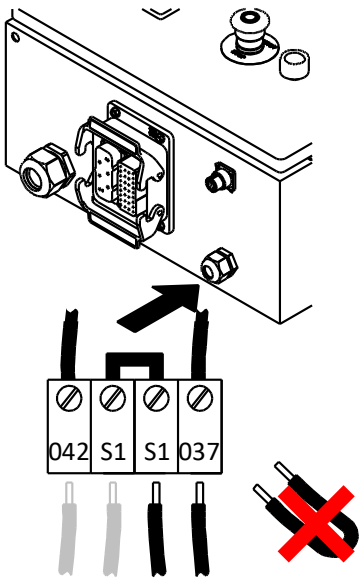
DOOR ASSEMBLY ADJUSMENT



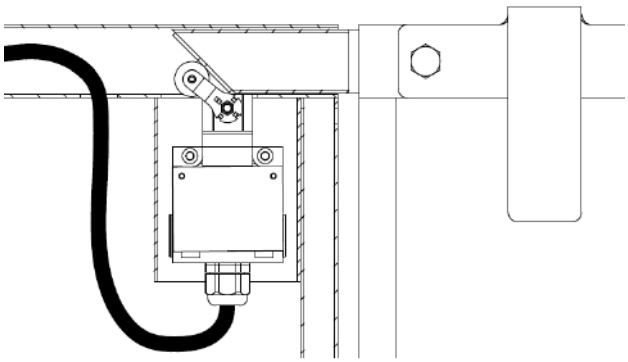


OPENING LANDING DOOR

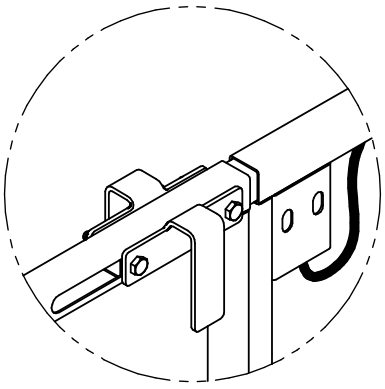
CONNECTION OF LANDING DOOR ELECTRICAL SWITCHES (S1-037)



CONNECTION TO BASE PANEL



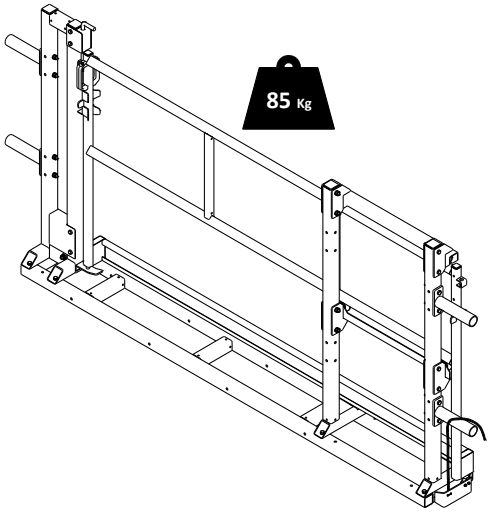
ADJUSTMENT OF LANDING DOOR SWITCH



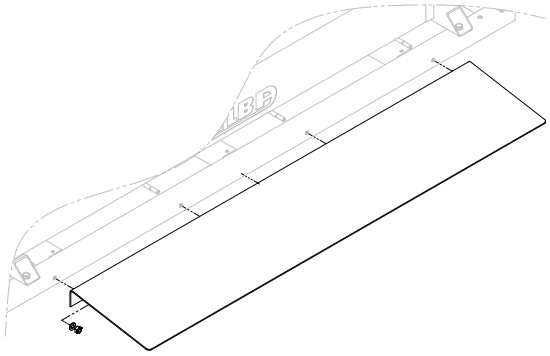
LANDING DOOR LATCHING

· SLIDING DOOR LANDING GATES (USUALLY TO SCAFFOLD):

ATTENTION:
ADJUST DOOR POSITION SO THAT, WHEN CAGE RAMP IS DROPPED, LANDING DOOR INTERLOCK IS RELEASED AND DOOR CON CAN SLIDE TO OPEN.

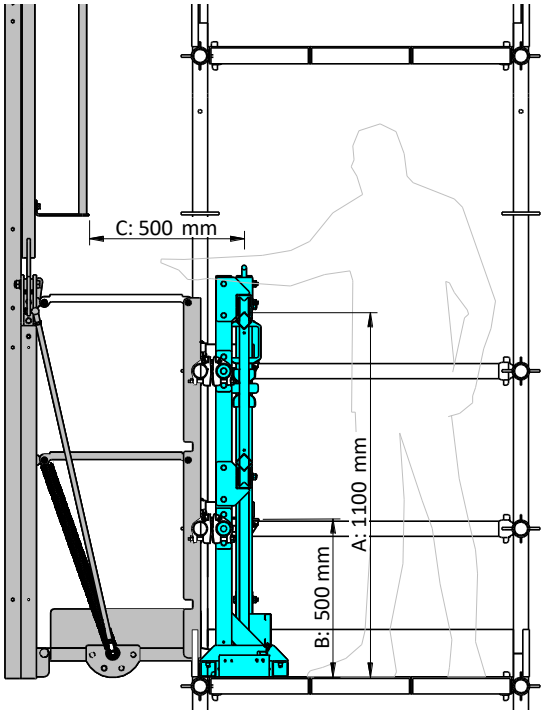


SLIDING DOOR LANDING GATE 1400/1750

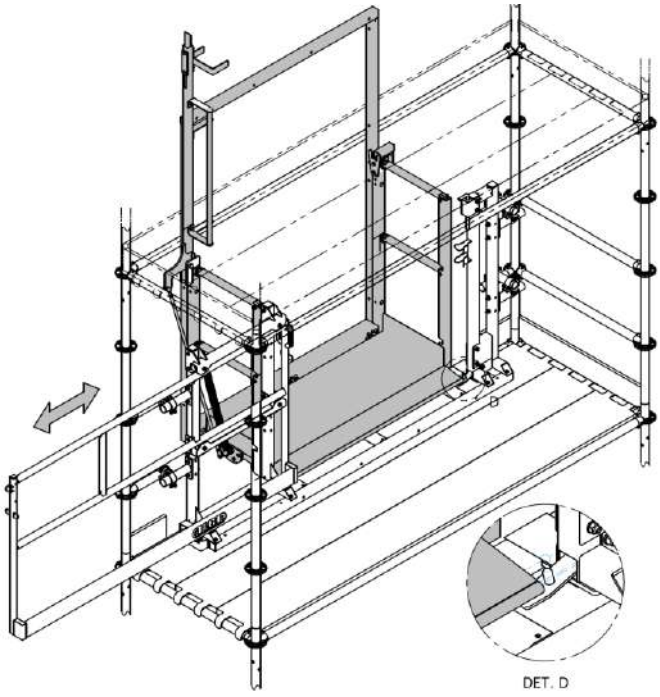


OPTION –ACCESS RAMP (∠ 10°)

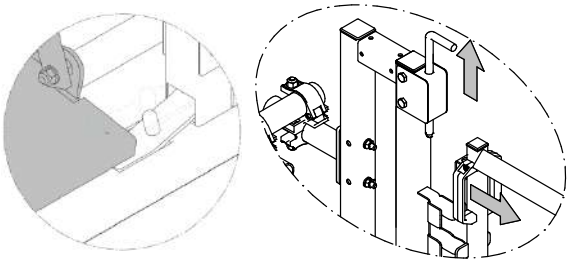
INSTALLATION IN TO SCAFFOLD STRUCTURE



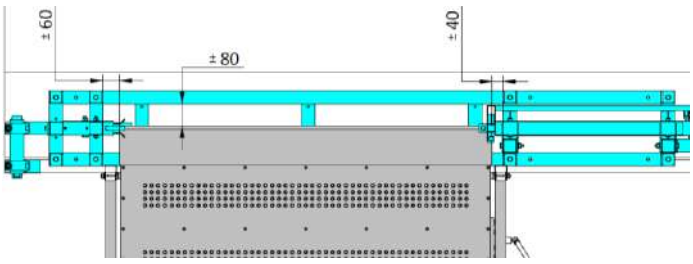
INSTALLATION DISTANCE



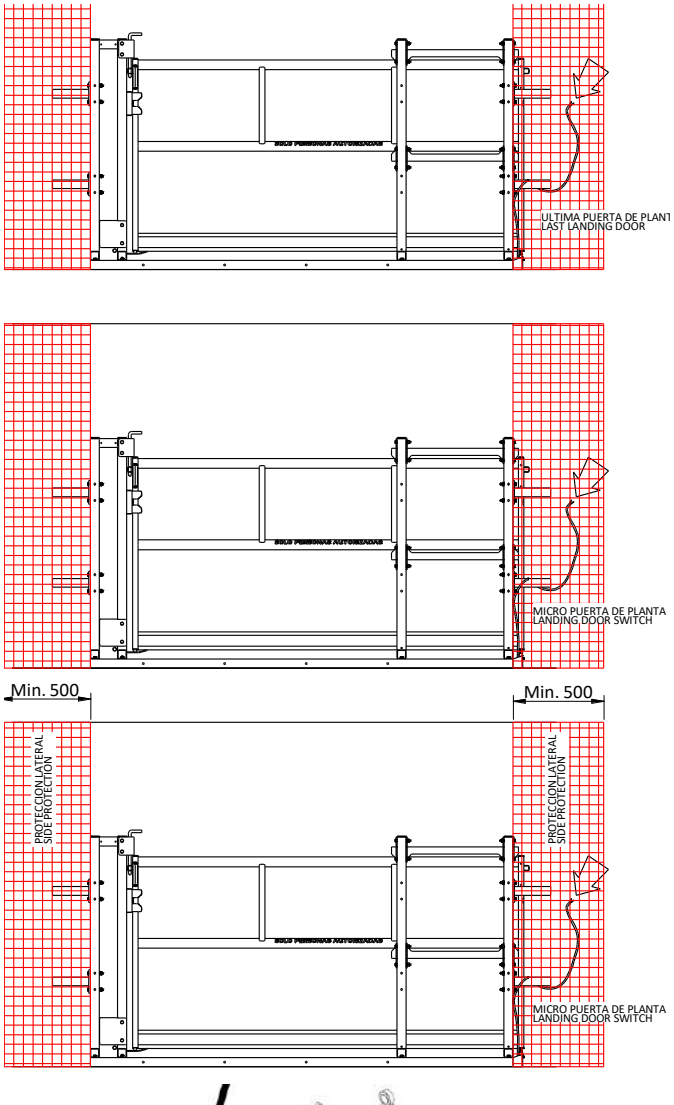
ASSEMBLY DETAIL

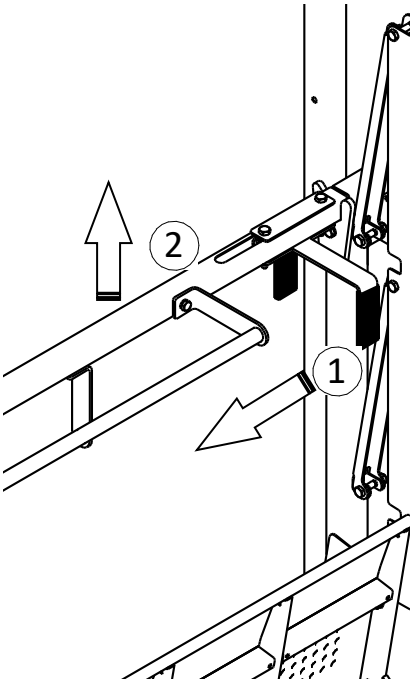


UNLOCKING – OPENING LANDING DOOR

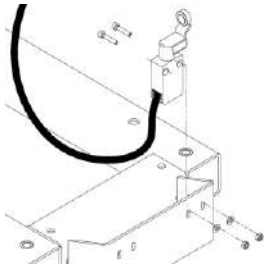


UNLOCKING – OPENING LANDING DOOR

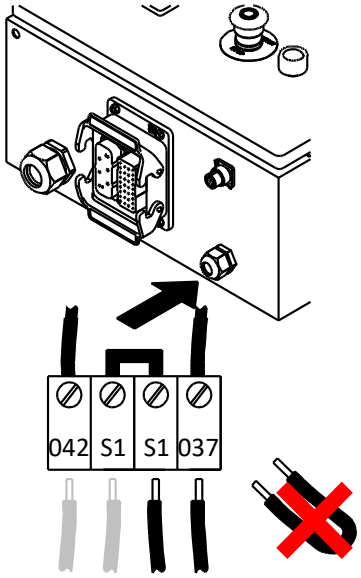




APERTURA PUERTA BARQUILLA



CONNECTION OF LANDING DOOR ELECTRICAL SWITCH (S1-037)



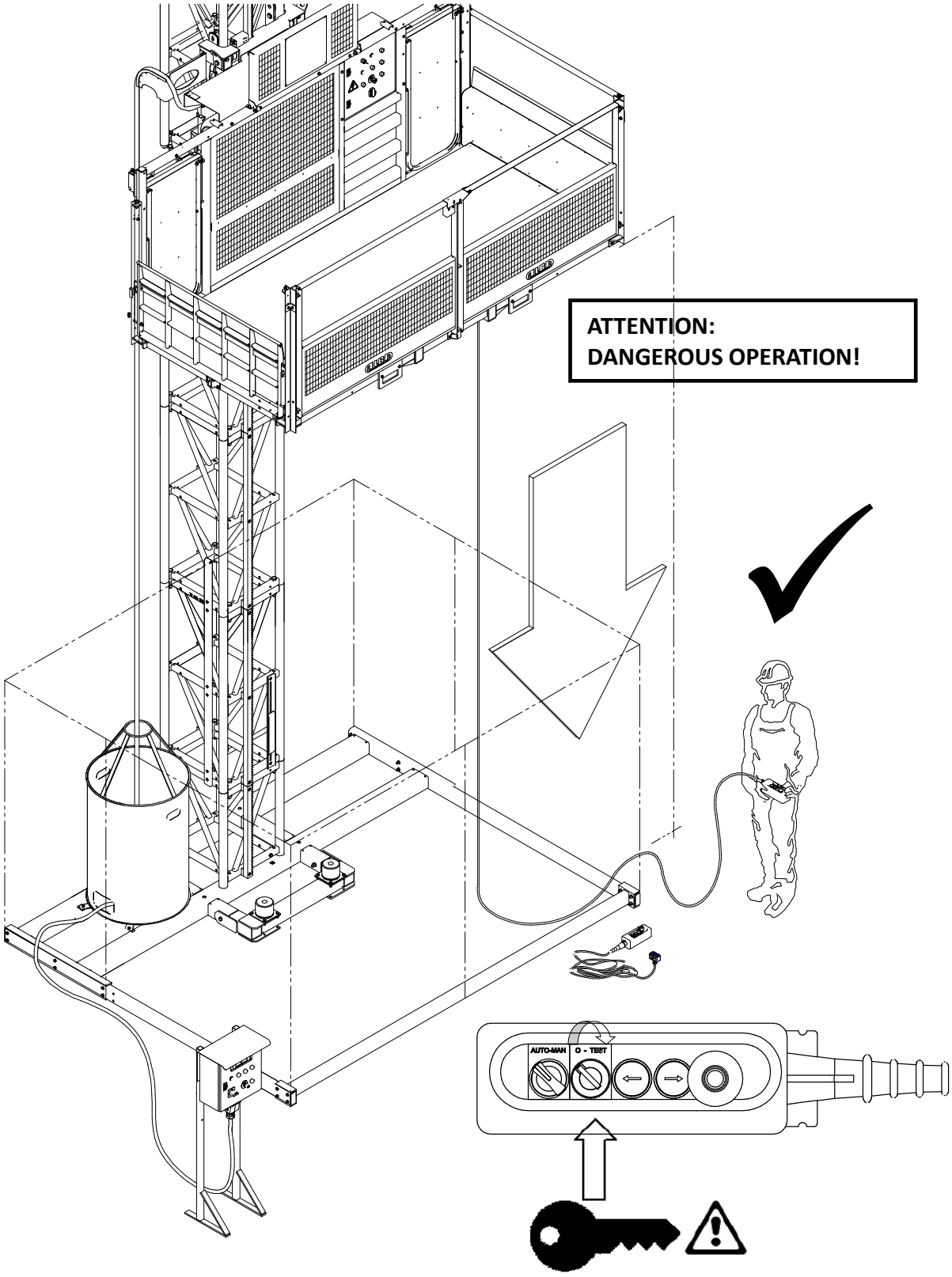
CONNECTION TO BASE PANEL

IMPORTANT:
ONCE THE DOOR MICROSWITCHES ARE INTER-CONNECTED, AND CONNECTED TO BASE CONTROL PANEL, IT´S NECESSARY THAT ALL DOOR ARE CLOSED TO MOVE THE PLATFORM.
MAKE SURE THAT THE CAGE DOORS ARE PROPERLY CLOSED AND LOCKED BEFORE MOVING THE HOIST.

IMPORTANT:
ONCE LANDING DOORS INSTALLED, ADJACENT ZONE ACCESSIBLE WITHIN 0.5 M OF THE HOIST MUST BE PROTECTED WITH SAFETY NETTING OR SIMILAR (H>2 M) TO PREVENT ACCESS TO HAZARDOUS AREAS.

•**Step 10. Parachute testing.**

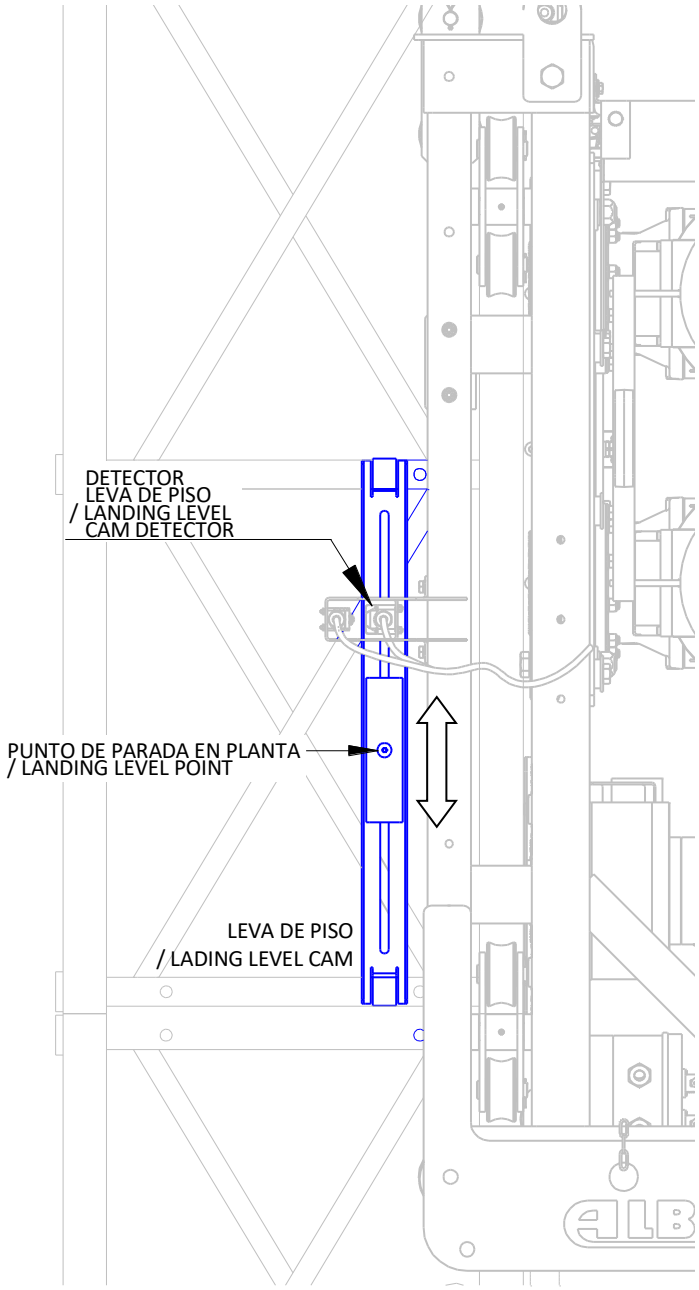
IMPORTANT:
AT THE END OF THE ASSEMBLY OF THE MACHINE, PRIOR TO USE, IT WILL BE MADE A TEST ON THE PARACHUTE



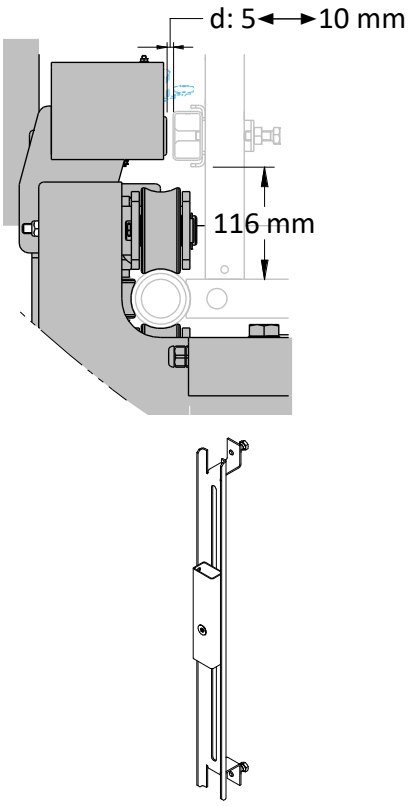
PARACHUTE TEST PROCEDURE (See Chap.4)

- **Step 11. Installing landing level cams.**

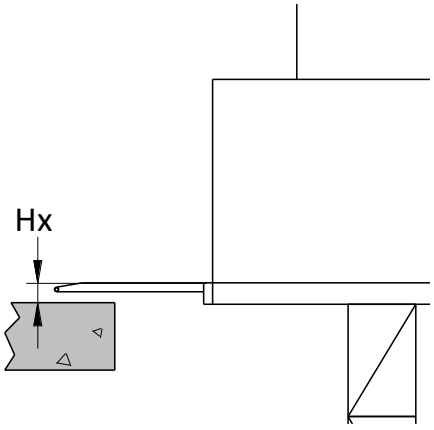
ATTENTION:
BEFORE USING THE PLATFORM, IT IS NECESSARY TO INSTALL THE LANDING CAMS IN THE MAST AT DESIRED LANDING LEVELS.



INSTALLING LANDING LEVELS CAM IN THE MAST



LANDING CAM Ref. 155.13



Hx = 90 mm ↔ SLIDING DOOR
Hx = 130 mm ↔ SWINGING DOOR

REFERENCE HEIGHT TO STOP

IMPORTANT:
ONCE THE FLOOR CAMS ARE INSTALLED, MAX. NUMBER OF FLOOR IS TO BE PROGRAMMED IN THE CPU SYSTEM, SO THAT WAY, OPERATOR OF THE PLATFORM ONLY CAN SELECT ONE OF THE LANDIN LEVELS PROGRAMMED.

• **Step 12. Programming landing levels.**

PROGRAMMING OPERATIONS ARE CARRIED OUT FROM THE CABIN SWITCHBOARD.
IN EVERY NEW ASSEMBLY, OR IF THE ER E2 MESSAGE APPEARS, YOU MUST PROCEED REBOOT THE MEMORY OF THE CPU.

DELETE MEMORY / INITIALIZATION

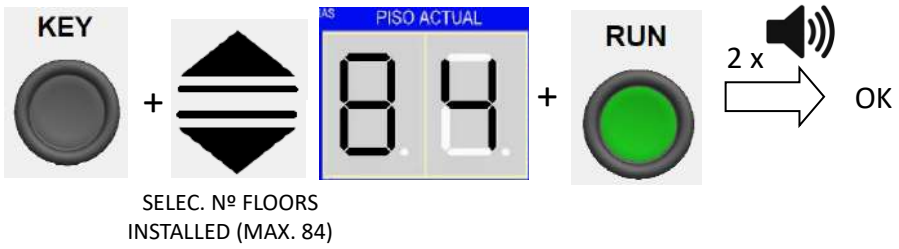
• Step 1. Select MANUAL mode.
• Step 2. Place the elevator in the Reference Point (INFERIOR ENDTRACK LIMIT) (FCB).
• Step 3. Process:

• Step 4. Release KEY: 1 x → INITIALIZATION. OK

MAXIMUM FLOOR PROGRAMMING

ATTENTION:
THE CONTROL ALLOWS TO MEMORIZE THE NUMBER OF FLOORS THAT HAVE BEEN INSTALLED, TO PREVENT THAT A FLOOR BE SELECTED IN OPERATION ABOVE THE LAST INSTALLED CAM.

• Step 1. Select MANUAL mode.
• Step 2. Press up from the cabin control until you leave the Reference point FCB (a few cm.)
• Step 3. Process:



• Step 4. Release KEY. 1 x → MEMO Nº MAX. FLOORS OK

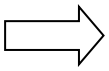
IMPORTANT:
AFTER SAVING MAXIMUM NUMBER OF FLOORS, THE HOIST MUST BE DOWN TO FCB IN "MANUAL" MODE. AFTER CHANGING TO "AUTO" MODE YOU WILL BE ABLE TO START WORKING.

NEGATIVE FLOORS

IMPORTANT:
THE HOIST ALLOWS TO DISPLAY NEGATIVE FLOORS. DEFINING NEGATIVE FLOORS DISPLACES. REF. POINT TO THE LOWEST POINT OF THE ROUTE. NEGATIVE FLOORS ONLY AFFECT THE DATA SHOWN ON THE DISPLAY.

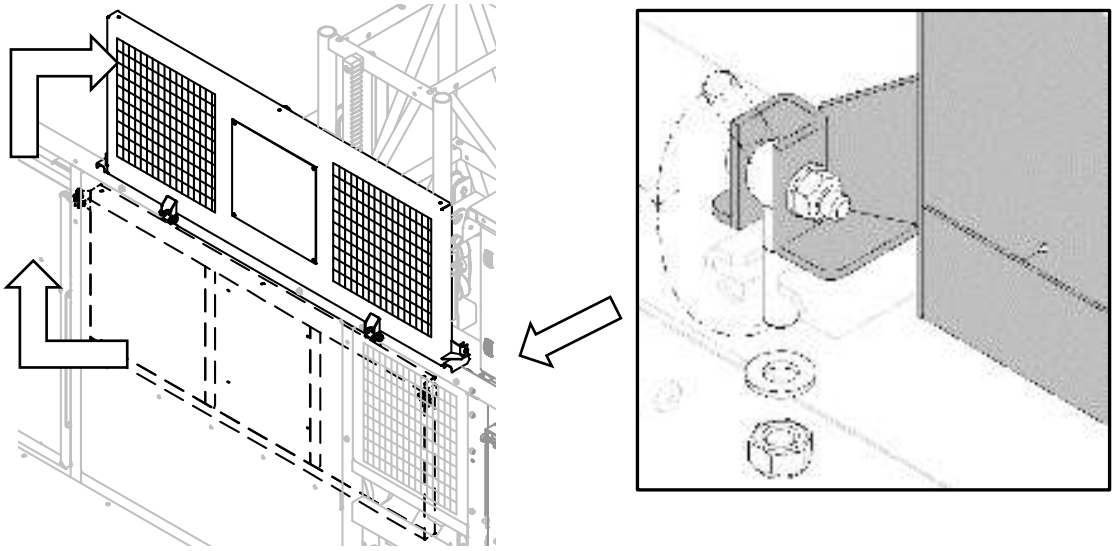
- Step 1. Select MANUAL mode.
- Step 2. Place the hoist in reference point FCB
- Step 3. Process:

SELEC. FLOOR
NEGATIVE (MAX. -9)

- Step 4. Release KEY 1 x   MEMO NEW REFERENCE POINT IN NEGATIVE FLOOR

IMPORTANT:
WHEN DEFINING NEGATIVE FLOORS, REFERENCE POINT IS DEFINED ON THE LOWER FLOOR. WHEN PROGRAMMING MAX. NUMBER OF FLOORS MUST BE TAKEN INTO ACCOUNT OF NEGATIVE FLOORS.
EXAMPLE: PTO. REF .: -5, P.MAX: 15. THE DISPLAY SHOWS ONLY: -5 ÷ 10

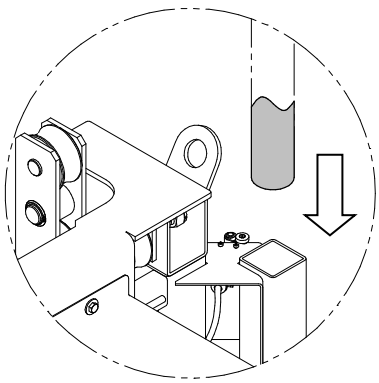
- **Step 13. Assembling mast protector**



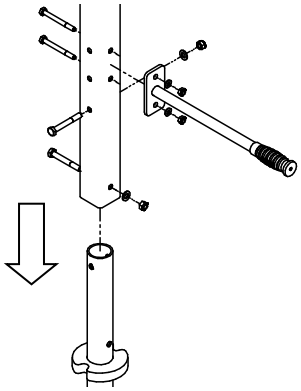
ASSEMBLING MAST PROTECTOR

WARNING:
AT THE END OF ASSEMBLY PROCEDURE, THE MAST PROTECTION MUST BE FIXED IN POSITION BEFORE HOIST COMMISSIONING.

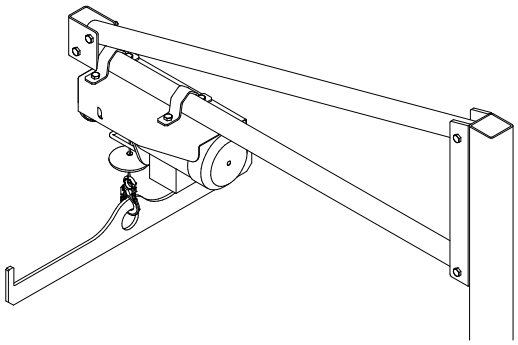
• **Step 14. Assembly of crane for mast erection.**



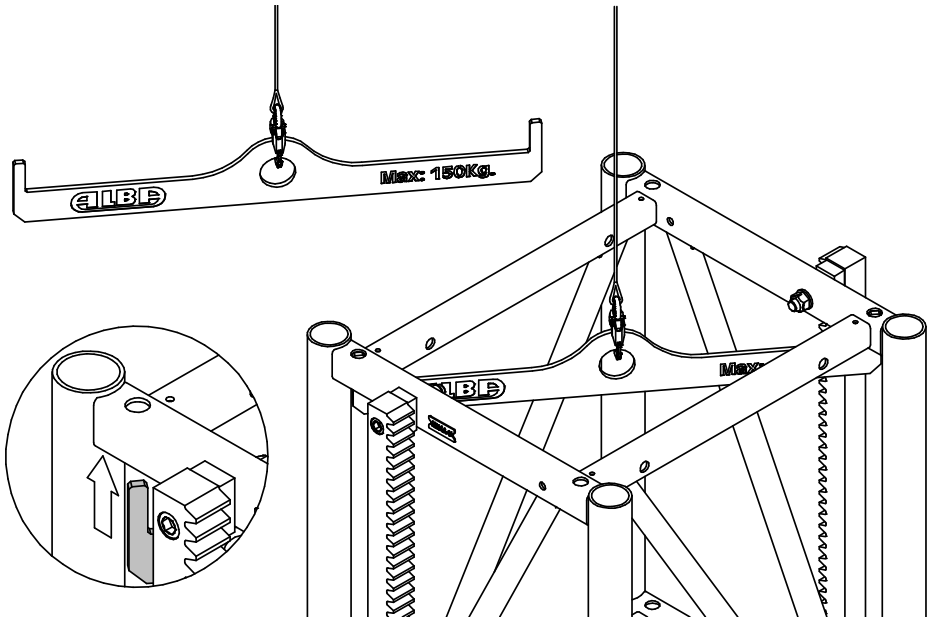
FIT PIPE INTO HOLE



MAST ASSEMBLY

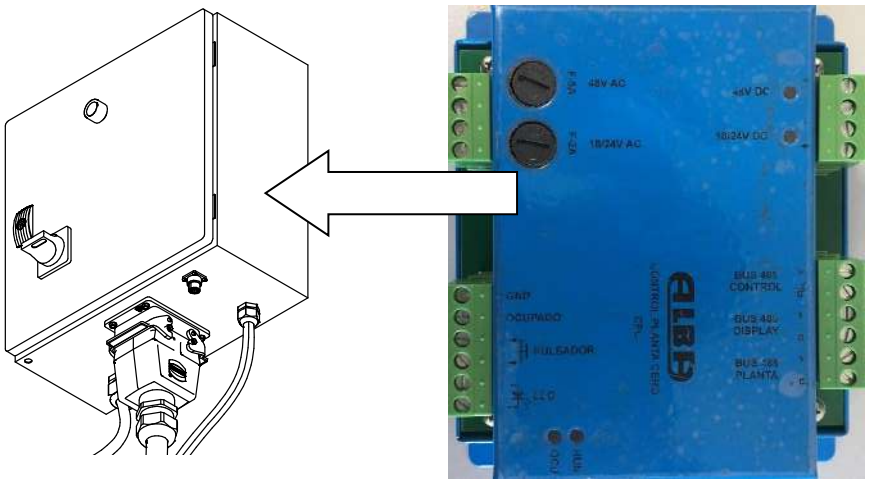


ASSEMBLY AUX. CRANE AND SUPPORT

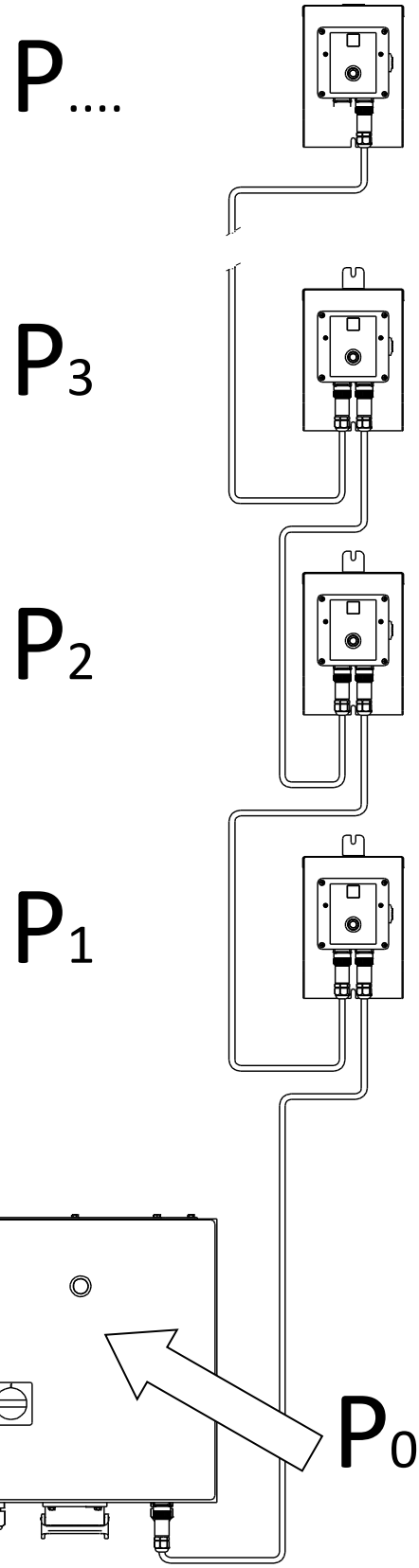


AUXILIARY SUPPORT FOR MAST MANIPULATION

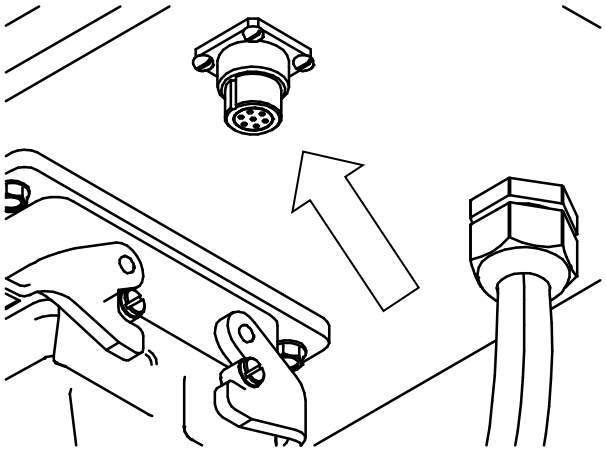
•**Step 15. Installing landing levels call system (optional)**



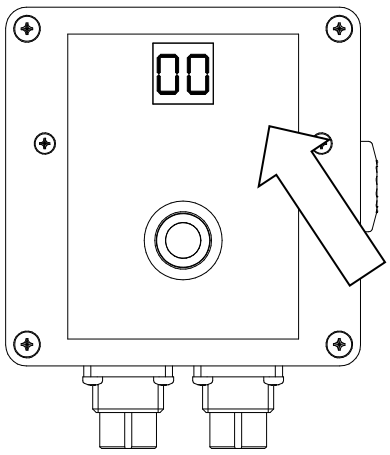
E-CPC-A CARD FOR CALL ORDER MANAGEMENT IN INFERIOR CONTROL BOARD

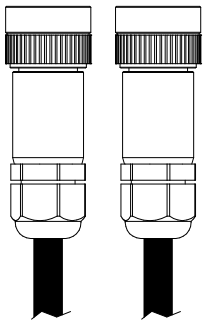


INSTALLATION OF CALL BUTTONS BOXES

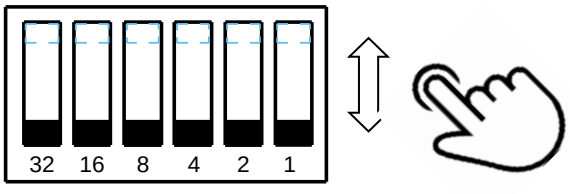


CALL CONNECTOR IN INFERIOR CONTROL BOARD





CALL FLOOR SELECTION DISPLAY



SELECTING THE CALL FLOOR (BINARY CODE)

ATTENTION:
THE CALL FROM THE FLOOR WILL ONLY BE POSSIBLE WHEN THE HOIST IS IN A FREE SITUATION (GREEN PILOT OFF).

2.1. Dismantling the hoist.

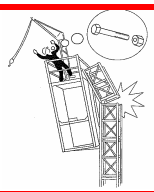
For the dismantling of elevator perform the reverse process to that described in this manual, with particular attention to the tasks that present a risk of falling.

ATTENTION:
FOR MACHINE DISMANTLING "MANUAL" MODE IS TO BE USED, WITHOUT LOADS, AND OPERATING THE HOIST FROM CAGE CONTROL.

Step 1. Dismantling mast column and anchorages

Remove first the red Mast and upper stop cam and then the column of masts and anchors. For that, you can remove the platform falling objets protector ceiling and folding the mast protector.

ATTENTION:
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!



Step 2. Dismantling cable system and guides

If it has been used the cable trolley system, remove the cable bracket from the column and remove the cable trolley, continuing the dismantling of the mast column to the lower limit

Step 3. Electrical devices disconnecting

Once you reach the lower limit, disconnect power supply and remove electrical equipment.

Step 4. Dismantling the cage

Remove the cage by releasing union bolts, by the same procedures described for mounting.

Step 5. Dismantling base frame

Release buffers, remove anchorage to ground. The hoist is ready for transport.

ATTENTION:
IMPORTANT NOTE ON COMPLIANCE WITH EUROPEAN DIRECTIVE 2006/42/CE.

CE DECLARATION OF CONFORMITY IS VALID ONLY FOR MACHINES PURCHASED AND INSTALLED WITH ALL ORIGINAL COMPONENTS SUPPLIED BY ALBA-MACREL GROUP, SL AND FOLLOWING ALL THE INSTRUCTIONS PROVIDED IN THIS USER´S MANUAL, ENSURING COMPLIANCE WITH ALL SSER ANNEX I OF DIRECTIVE 2006/42/EC.
OTHERWISE, THE MACHINE CAN´T BE PUT INTO SERVICE UNTIL FINAL ASSEMBLY IS DECLARED IN ACCORDANCE WITH THE ESPECIFICATIONS OF ANNEX II OF THE DIRECTIVE.

3. USING THE MACHINE

3.1. Introduction

WARNING:
HOIST CAN ONLY BE USED BY THE DESIGNATED PERSONS, WHO HAVE BEEN INSTRUCTED IN THE SAFELY HOIST OPERATION

ACCESS TO THE PLATFORM FOR LOAD AND UNLOAD ONLY IS ALLOWED FOR TRAINED PERSONS

IMPORTANT:
TWO OPERATION MODE ARE POSSIBLE WITH THE HOIST:

- **"MANUAL" MODE (ONLY FOR ASSEMBLY): HOIST MOVEMENTS ARE PERFORMED WITH HOLD-TO-RUN BUTTONS. CONTROL IS ALLOWED ONLY FROM THE CAGE CONTROL ( ).**
  KEEP THE KEY FOR "MANUAL" MODE SWITCH OUT OF THE REACH OF ELEVATOR USERS.

- **"AUTO" MODE: THE MACHINE IS USED BOTH FROM THE CONTROL ON THE FLOOR (ONLY LOADS).**
  MACHINE IS MOVING ON PROGRAMED LANDING LEVELS. (SEE LANDING LEVELS PROGRAMMING)

- **HOIST ALLOWS (AS AN OPTION) A LANDING LEVELS CALLING CONTROL SYSTEM).**

ATTENTION:
DUE TO SAFETY PURPOSES, WHEN DESCENDING, HOIST STOPS WHEN IT REACH 2 M. REMAINING TRACK UNTILL F.C.B. (INFERIOR ENDTRACK SWITCH) IS ONLY TO BE POSSIBLE BY HOLDING "RUN" BUTTON.

WARNING:
"MANUAL" MODE ONLY IS ALLOWED FOR AUTHORIZED AND COMPETENT TECHNICAL PERSONS, WHO WILL KEEP THE KEY TO PREVENT USE BY UNAUTHORIZED PERSONNEL.

3.2.Using “MANUAL” mode.

WARNING:
“MANUAL” MODE IS USED FOR HOIST ASSEMBLY / DISMANTLING TASKS, AND FOR INSPECTION AND MAINTENANCE.

HOIST HANDLING IS PERFORMED ONLY FROM THE CAGE CONTROL.
OPERATE THE PLATFORM IN “MANUAL” MODE IS FORBIDDEN BY UNAUTHORIZED USERS.

DESCRIPTION OF THE CONTROLS - MANUAL MODE

MANUAL MODE ACTIVE (DISPLAY ON GROUND PANEL)

LIGHT - OUT OF SERVICE

START
EQUIPMENT RESET BUTTON

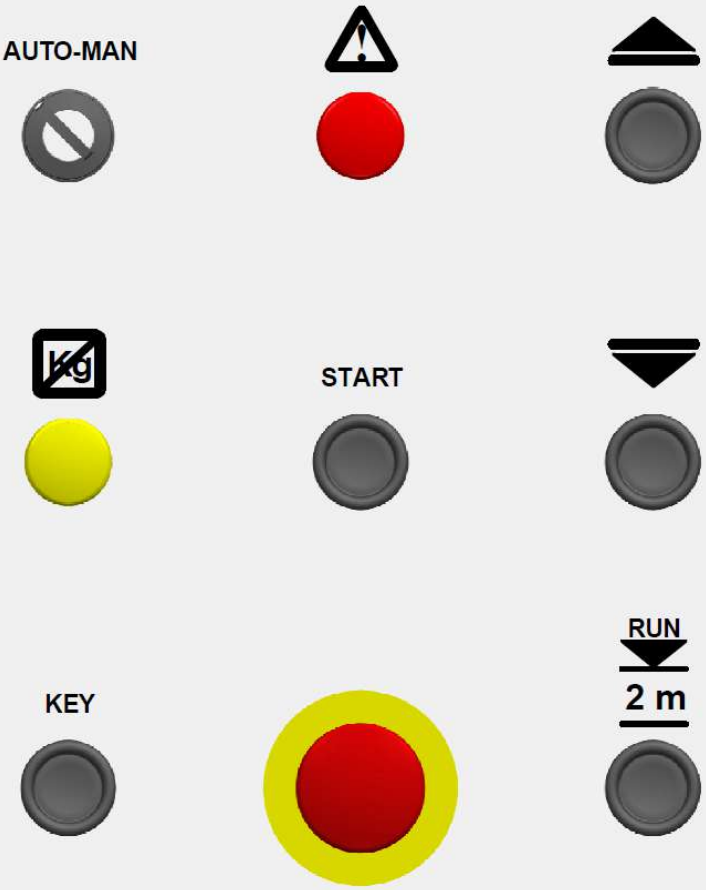
AUTO-MAN
MANUAL MODE SELECTOR

LIGHT – OVERLOAD (IF INSTALLED)

UP - DOWNLOAD MANUAL

KEY
PROGRAMMING BUTTON

RUN
2 m
LOWERING MANUAL - ZONE 2 m.



ATTENTION:

ALL MOVEMENTS IN CASE OF USE OF THE MANUAL MODE WILL BE WITH THE CONTROL UP - DOWN PUSHING CONTINUOUSLY.

WARNING:
IF THE HOIST IS IN "MANUAL" MODE, THE CONTROL FROM THE BOTTOM PANEL IS DISABLED, PREVENTING THE HANDLING OF THE HOIST BY USERS.

3.3.Using “AUTO” mode.

IMPORTANT:
“AUTO” MODE IS USED FOR NORMAL HANDLING OF THE HOIST BETWEEN PROGRAMMED LEVELS, WITH GROUND CONTROL (“LOADS”)

IMPORTANT:
“AUTO” MODE IS USED FOR NORMAL HANDLING OF THE HOIST BETWEEN PROGRAMMED LEVELS, WITH GROUND CONTROL (“LOADS”)

DESCRIPTION OF CONTROLS – AUTO MODE (GROUND PANEL)

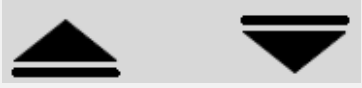
MANUAL MODE ACTIVE
HOIST ON REFERENCE POINT

MODO AUTO WITH HOIST OUT OF REFERENCE POINT. (TOTAL DESCENT TO -P0-)

LIGHT - OUT OF SERVICE

START

EQUIPMENT RESET BUTTON



SELECT DESTINATION

RUN

SEND TO DESTINATION FLOOR LAST 2M MOVEMENT (DESCEN.)

ATENCION:

HOIST MOVEMENT TO DESTINATION FLOOR WILL BE AUTOMATIC AFTER PRESSING “RUN”, TRAVELLING AT RATED SPEED.

3.4.Security messages on the display.

IMPORTANT:
DURING THE OPERATION OF THE HOIST, TWO TYPES OF SAFETY MESSAGES CAN BE RECEIVED IN THE DISPLAY:
· MESSAGES "SECU": THE HOIST REMAINS OPERATIONAL IF IT WILL BE SAID FROM THE CAUSE OF THE SAFETY MESSAGE.
· MESSAGES "STOP": REQUIRES THE ACTION OF AN AUTHORIZED TECHNICIAN TO RESOLVE THE PROBLEM AND REACT THE CONTROL.

"SECU" MESSAGES (ACTION OF AN HOIST USER)

LED		PROCEDURE	
	OVERLOAD		
	AUXILIARY CRANE	MAN	Resolve warning - Resume operation
P INT	CAGE DOORS	AUTO	Resolve notice - Press RUN
EXT	LANDING DOORS		

"STOP" MESSAGES (ACTION BY AN AUTHORIZED AND COMPETENT TECHNICIAN)

LED		PROCEDURE	
?	PARACHUTE	MAN	1) Press UPWARDS until display shows REST 2) Press DOWNWARDS until Ref. point (FCB)➔ Press KEY
		AUTO	Turn key to MAN
	NO MAST	MAN	1) Press DOWNWARDS until display shows REST 2) Press DOWNWARDS until Ref. point (FCB)➔ Press KEY
		AUTO	Turn key to MAN
STOP	ENDTRACK UP	MAN	1) Press DOWNWARDS until display shows REST 2 Press DOWNWARDS until Ref. point (FCB)➔ Press KEY
		AUTO	Turn key to MAN
	TEMP MOTOR	MAN	1) Resume relay (RT1,RT2), display shows REST 2) Press DOWNWARDS until Ref. point (FCB)➔ Press KEY
		AUTO	Turn key to MAN
	FAULT BRAKE	AUTO/MAN	DESCEND to lower endtrack limit ➔ Call Tech. service.
		SAT	1) Check rectifier and rearm E5➔ display shows RESET 2) Press KEY.

NORMAL MENSSAGES

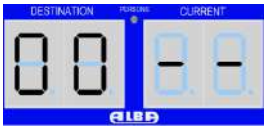
STOP	ENDTRACK DOWN	Ref. point platform (FCB)
2 m	2 m. ZONE	2 m. safety zone platform
OK	HOIST FREE	Platform stopped and prepared
	HOIST BUSY	Platform moving or busy
	PERSONS	Control inside cage activated

(FCB): Inferior Endtrack. Reference point for hoist movements.

IMPORTANT:
IN CASE OF SHOWING "STOP" MESSAGE, YOU MUST GO TO "MANUAL" MODE, AND FOLLOW THE INDICATIONS OF THE TABLE, UNTIL THE DISPLAY MARK "RSET" (RESET), TURN OFF THE ELEVATOR TO THE REFERENCE POINT (FCB) AND PRESS THE RESET BUTTON (KEY).

OTHER MESSAGES IN THE DISPLAY

MANUAL Mode selected



Total descent to FCB (Ref. point) and RESET

Total descent to FCB (Negative Ref. point)

Memory error (ERASE MEMORY)

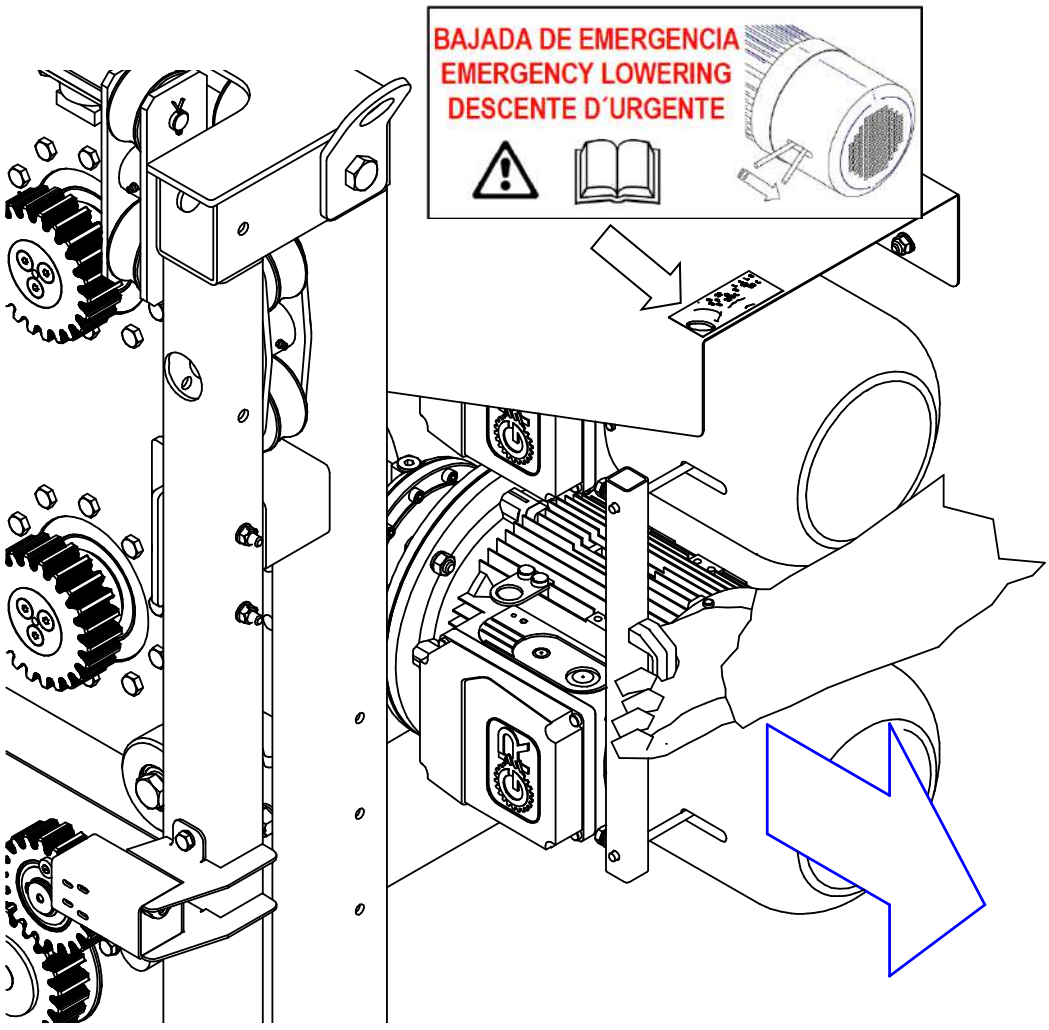
Reset control (PRESS KEY en FCB)

Hoist in AUTO mode and in FCB

3.5. Emergency lowering

In case of power failure without the possibility of restoration, you can descent 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.

CAUTION: DANGEROUS TASK
IF SAFETY GEAR SPEED IS EXCEEDED, PARACHUTE IS AUTOMATICALLY ENGAGED, BLOCKING ANY FURTHER CAGE MOVEMENT UNTIL TECHNICAL ASSISTANCE.



BRAKES UNLOCKING. EMERGENCY LOWERING

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

3.6.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 floor are properly programmed
    - No destination can be chosen over last floor programmed.
    - FCS microswith stops hoist before reaching red mast.
    - Overload detector (inductive sensor) works properly
    - Brakes support the maximum load correctly.
    - FCB microswitch stops hoist on Ref. Point before reaching buffers.
    - The mast presence detector works correctly.
    - Display shows safety activations and operational leds correctly.
    - Landing levels hoist calling system works OK (if installed.
    - Hoist control inside cage works properly
- There´s no interference of hoist and external items, mast, ties, supporting structure,..
- Landing doors are installed and there´s no interference with hoist mobile elements.
- Base fence is installed and there´s no interference 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
- The points of access to the platform and hoistway have adequate lighting.

IMPORTANT:
KEEP ORDER AND CLEANING IN THE ELEVATOR AND SURROUNDINGS

3.6. Applications and uses forbidden.

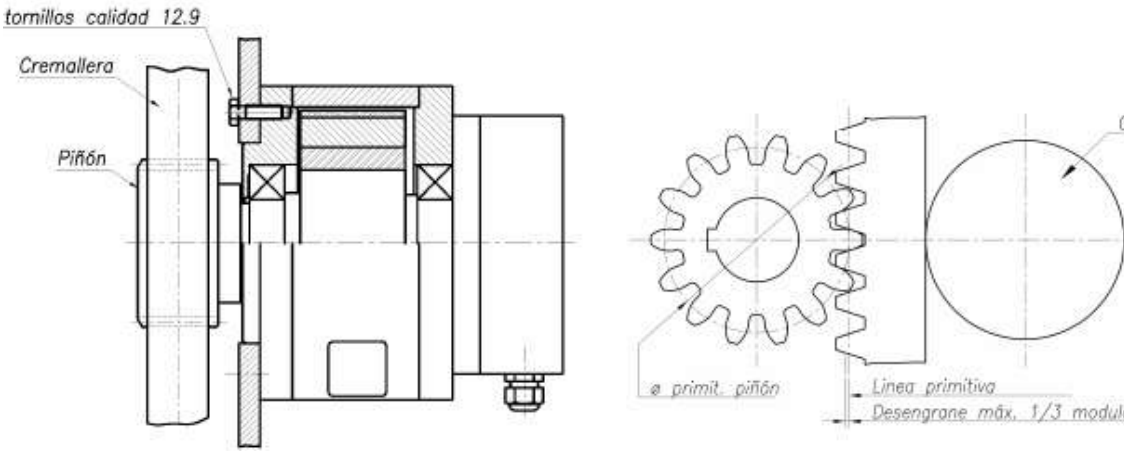
- DON´T use the hoist on explosive atmospheres.
- DON´T use the hoist with higher load than shown in the plate
- Load CAN´T be piled up at the cage floor bounds, **it must be located as near from mast as possible**.
- DON´T transport loads out of cage floor.
- DON´T use the hoist in adverse weather conditions, rain, ice, snow, (See Ap. 1.3) ...
- 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 machine with other parts than those originals from the manufacturer.
- DON´T work without the necessary personal protection gear. These safety devices will vary upon different 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 access the elevator with inappropriate clothing, hanging chains, rings or loose long hairs.
- DON´t put raised brackets on the cage floor. If travelling, 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 machine with personnel traveling in the cage in MANUAL mode, except in the case of maintenance tasks and by authorized personnel.
- Do not 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-3500

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. The 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 tracker, not making any effort on lifting 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. On the elevators there are two intermediate crowns as parachute pinion and rack transmission. Its main components are as follows:

· Cover:

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

· Buffer:

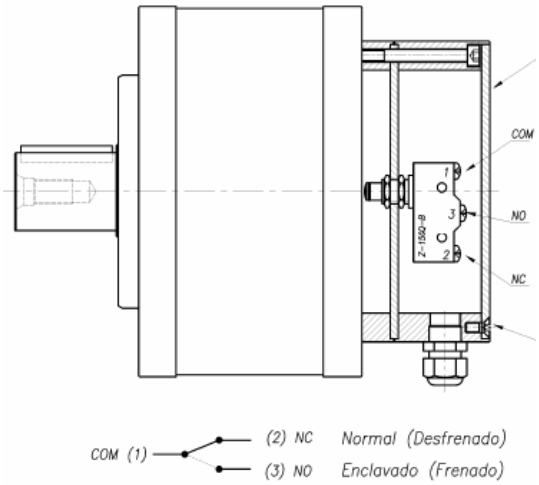
The parachute has a progressive braking system so that locking is produced in a buffered way, so that after a controlled braking, the cage is stopped, according to deceleration specifications of reference standards to avoid accidents resulting from major efforts generated by moving mass inertia.

· Locking:

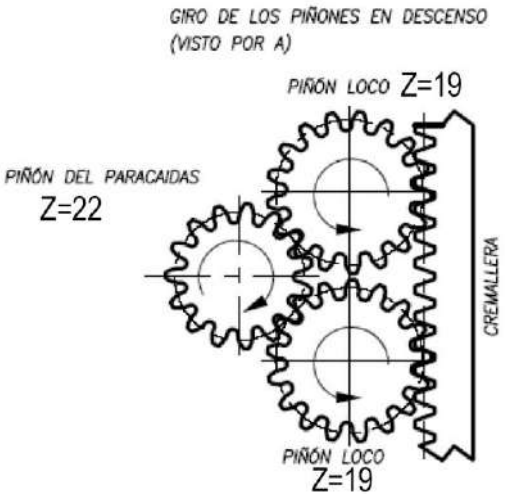
The device features a brake consisting of four sectors, which are charged up to torque referred to the elevator, so that deceleration is controlled accurately, even in case of free drop of the machine, according to the specifications of harmonized standards reference.

· 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



SAFETY PINION AND DRIVEN WHEELS

· ID plate and features of the device:

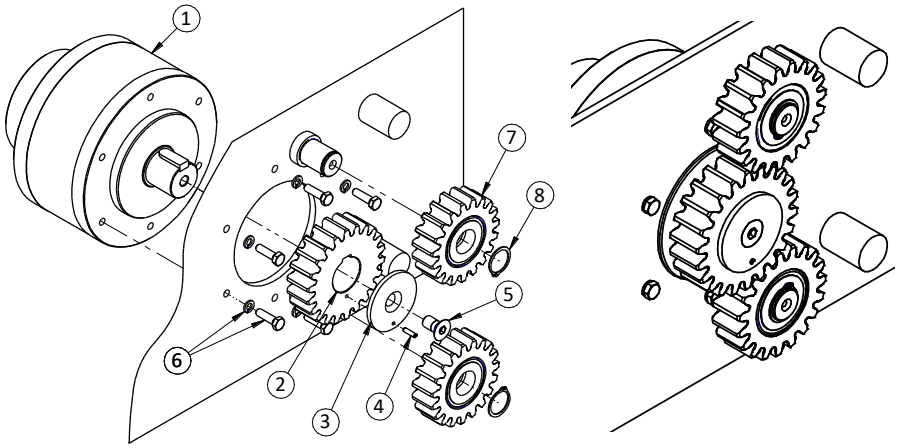
The parachute is equipped with an identification plate, with CE logo stamped and brake characteristics:

- 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 EXAMPLE 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 centred with the mast rack crowns, 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: SAFETY SCREW
6: FITTING SCREWS
7: DRIVEN WHEELS
8: SAFETY RING

INSTALLING SAFETY UNIT IN TO THE HOIST

WARNING:
DON´T INSTALL A PARACUTE IN A HOIST WITH OTHER FEATURES THAN THOSE MARKED IN 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, 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 must be performed, to verify its functioning properly.

A) MANUFACTURER TEST

ALBA performs 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:
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.

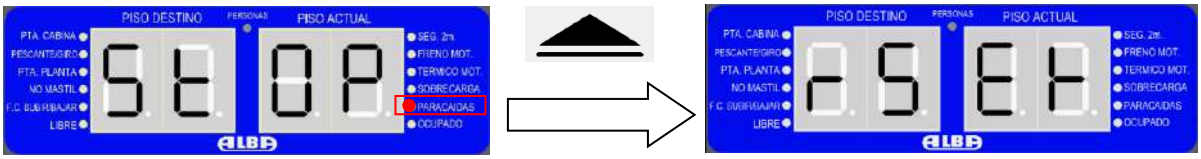
2.- The hoist shall be securely fastened to the facade or structure.

3.- Remove the parachute bridge on the mainboard and connect the pendant control.

4.- Leave the hoist and put into the cage the **RATED** load and take a position at safe distance.

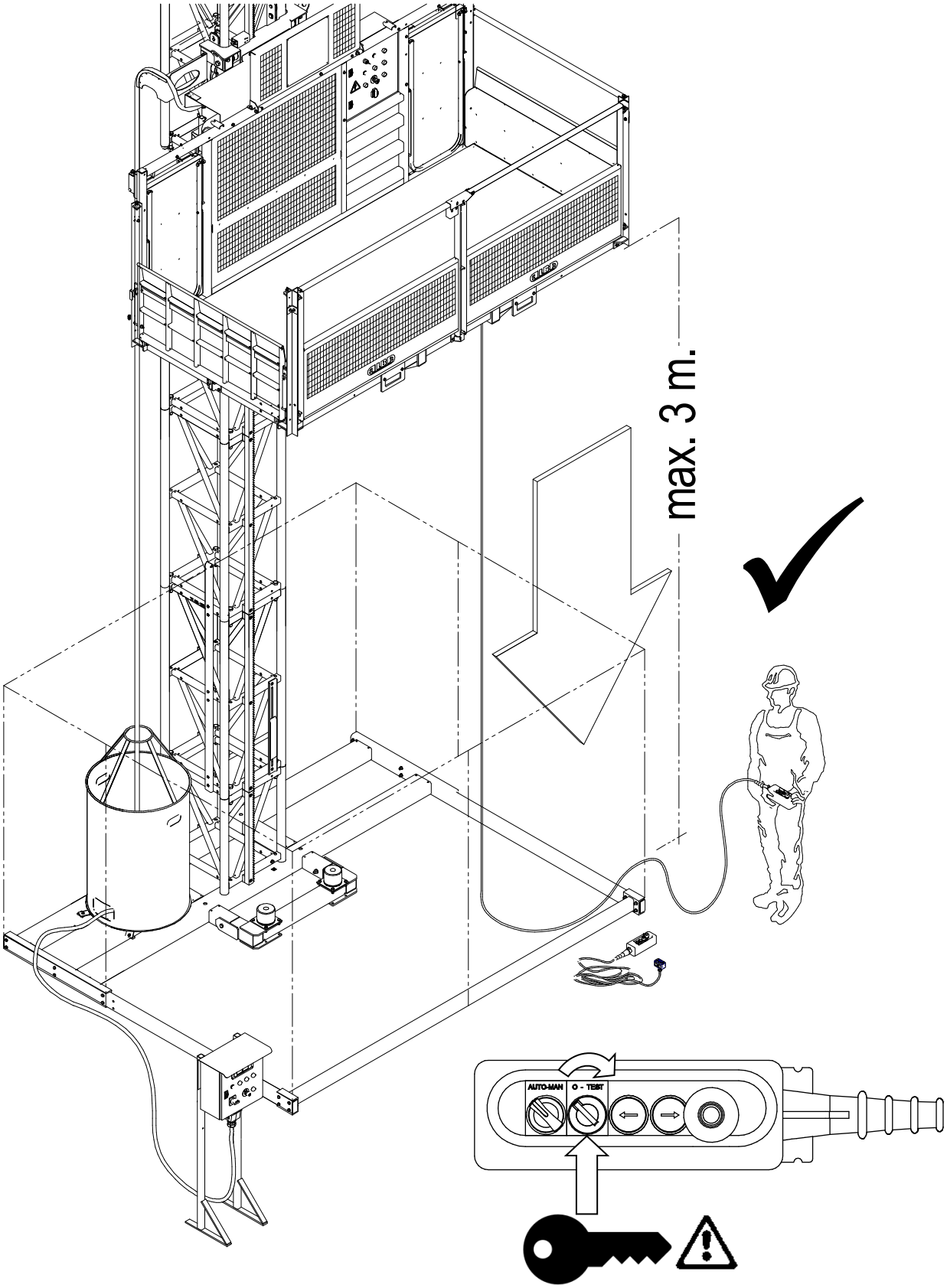
5.- Raise the hoist with pendant control and stop it at approx. 3 m above the ground.

6.- Turn on the left "TEST" key and let the hoist drop until parachute activates and cage stop. Check if elevator stops after a little 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:
TEST THE PARACHUTE PERIODICALLY AND WRITE THE RESULT IN THE OPERATOR'S MANUAL REGISTRATION.



PARACHUTE TEST PROCEDURE

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 considering 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.

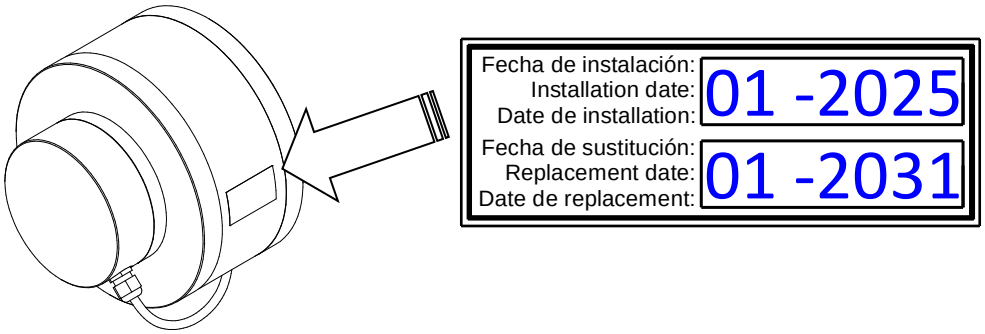
Case of scenario A or C, the person who performs emergency descent will be a qualified technician who is trained to release device and reset the hoist. This requires connecting the keypad to test and reset parachute.

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

In case of occurrence of case (B) shall cease machine operation until the action of an authorized technician which chooses 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. Replacement of parachute

Following the instructions of the safety device manufacturer, to ensure integrity of the device, along the time, parachute shall be replaced after **6 YEARS** from the date of installation on the hoist. See installation plate**.**



INSTALLATION AND REPLACEMENT PLATE

· For more information: 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 MACHINE.

WARNING:
BEFORE PERFORMING ANY MAINTENANCE ACTION, TURN THE POWER OFF AND IF REQUIRED, BLOCK VERTICAL MOVEMENT AT LEAST 1.8 m. HEIGHT UNDER THE CAGE. MAINTENANCE TASKS MUST BE PERFORMED WITHOUT LOADS.

5.3.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 debris inside the cage, or near the hoist.
- ☐ There´s no excessive wear in the rack, or in the vertical pipe of the mast.
- ☐ All the cage protections are installed, and there´s no dangerous holes or gaps.
- ☐ Identification and characteristics plate is installed inside the cage.
- ☐ Zone below hoist is bounded and base 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 tube and without excessive 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, Endtrack 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 transmission 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 holder properly.

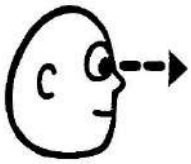
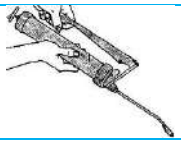
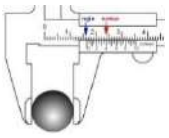
After reviewing all the checkpoints listed, and solved any problem, the machine can be used safely.

5.2. Periodic maintenance schedule.

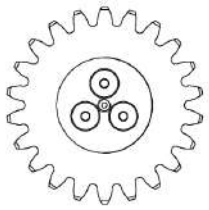
WARNING:
IN CASE OF ELECTRICAL MALFUNCTION IN THE HOIST, DO NOT HANDLE ELECTRICAL EQUIPMENT. MAINTENANCE AND INSPECTION OF THE HOIST ONLY MUST BE PERFORMED BY AUTHORIZED PERSONNEL.

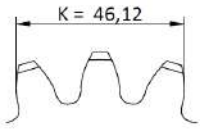
Maintenance of the lift must be performed by the staff responsible for the machine and the results have to be recorded on the MAINTENANCE RECORD.

MAINTENANCE TASKS SCHEDULE

	OPERATION	ELEMENT	TOOL	PERIODICITY
1		• FIXING BOLTS CAGE-CHASSIS (CHECKING). • ENDTRACK CAMS. • MAST SENSOR (CHECK GAP: ±5 mm.). • MOTORGEAR OIL LEVEL. • DOOR MICROSWITCH. • LOAD CELL (CHECK FUNTION) • SLIDING MOTOR PLATE BOLTS AND NUTS (INSPECTION) • SWITCHBOARD LIGHTS ANS BUTTONS. • MAST PIPES (WEAR OR WELDING FAILURE). • GUIDE ROLLERS RETAINING RINGS. • MOTOR BRAKE RECTIFIER (CHECK FUNCTION) • COMMUNICATION CABLE (INSPECTION) • GUIDE ROLLERS (INSPECTION). • ANCHORAGE (CHECK INTERFERENCE OR LOOSENING) • BASE BUFFERS (INSPECTION) • GREASE LEVEL OF THE TANK (OPT.)	-	40 h.WORK (ONCE A MONTH)
2		• MAST RACK • GEARMOTOR PINION. • PARACHUTE PINION / CROWN WHEEL.	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. • BASEFRAME TO GROUND SCREWS. • LANDING DOOR AND ENCLOSURE CAM SCREWS. • ANCHORAGE TO SUPPORTING STRUCTURE SCREWS	SWRENCH	QUARTERLY 4 TIMES/YEAR)
5		• TORNILLOS DE FIJACION DE CREMALLERA A MASTIL.	ALLEN WRENCH	SEMESTER (2 TIMES/YEAR)
6		• DIMENSION DE LOS RODILLOS DE GUIA. • DIMENSION DE LA CREMALLERA • CUERDA DEL PIÑON DE LOS MOTORREDUCTORES • COMPROBACION DEL FRENO DE LOS MOTORES	CALIBER CALIBER MICROMETER GUGES	ANNUAL (OR AFTER DISMANTLIING)
7	GENERAL REV. (AFTER DISMANTLING OR PROLONGED NON USE PERIOD)	1. DEFORMATION OR DAMAGE ON MASTS, ANCHOR, DOORS, HANDRAILS, FLOOR,… 1. GEARMOTOR AND BRAKE INSPECTION (Rectifier, Voltage & Coil resistance)		

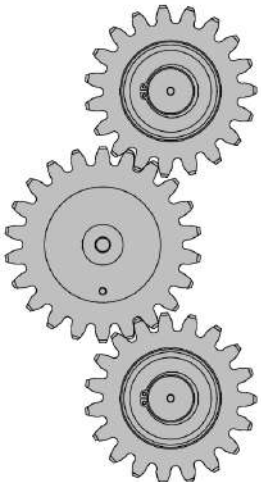
MECHANICAL CHECKING DIAGRAM

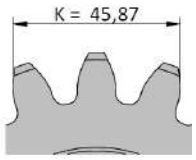


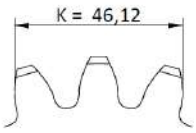


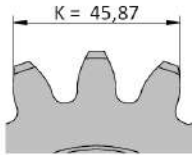
CONTROL MEASURES K [mm]		
	Nom.	Min.
PINION Z22	46,12	44

WHEEL Z19	45,87	43
PINION Z22	46,12	44
WHEEL Z19	45,87	43

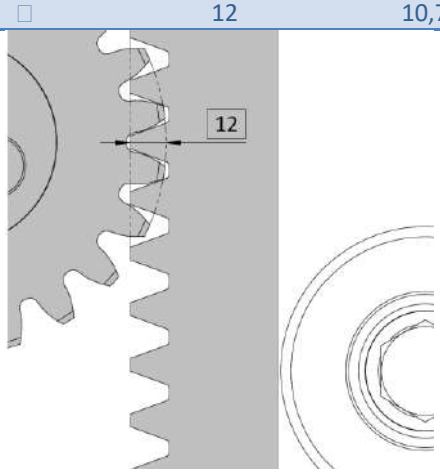


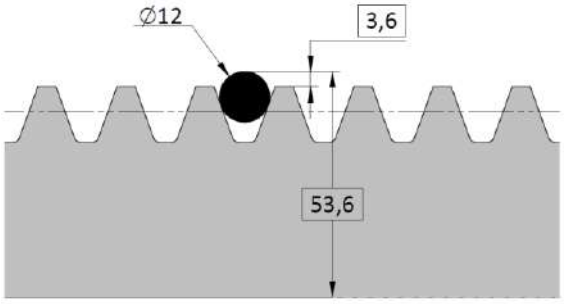






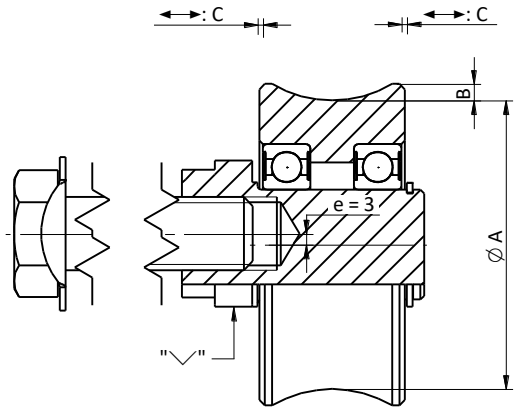
OVERLAP □ [mm]		
	Nom.	Min.
□	12	10,7





CONTROL MEASURES □ [mm]		
	Nom.	Min.
□ A	3,6	2,5
□ B	53,6	52,5

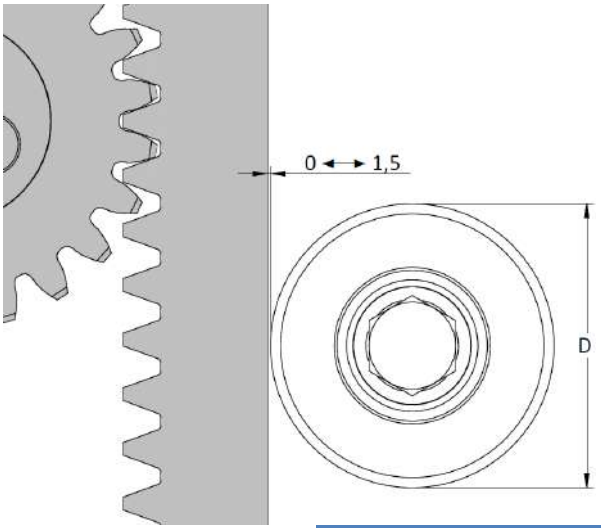
CHECKING RACK AND PINION WEAR



CONTROL MEASURES [mm]		
	Nom.	Min.
A	Ø79	Ø77
B		3
C		1,5

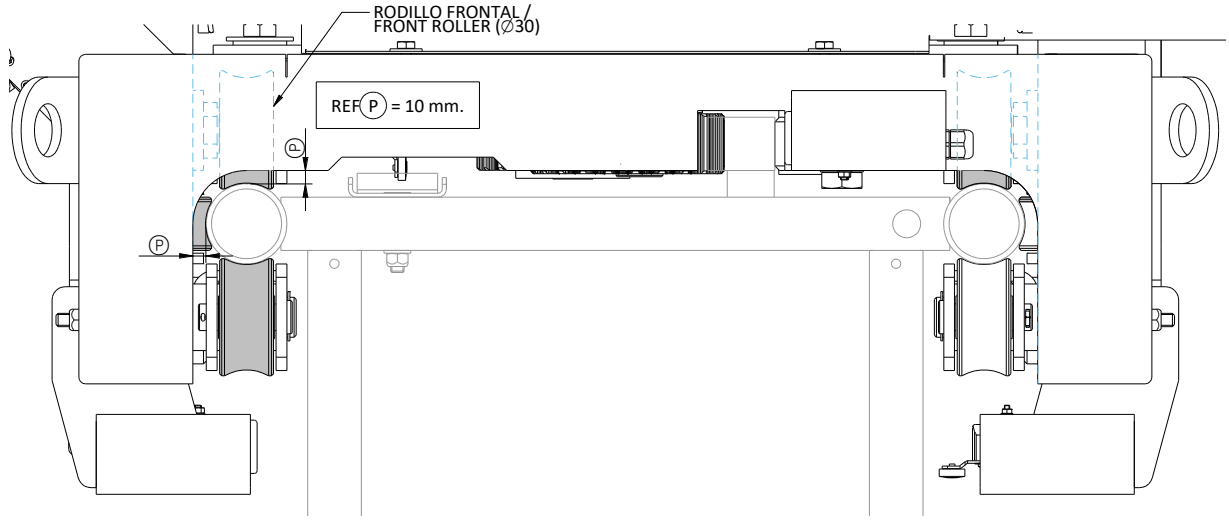
CHECKING MAST GUIDE ROLLERS

IMPORTANT:
CHECK IF ROLLER WEAR IS THE SAME THROUGHOUT THE ENTIRE CIRCUMFERENCE OF CONTACT.

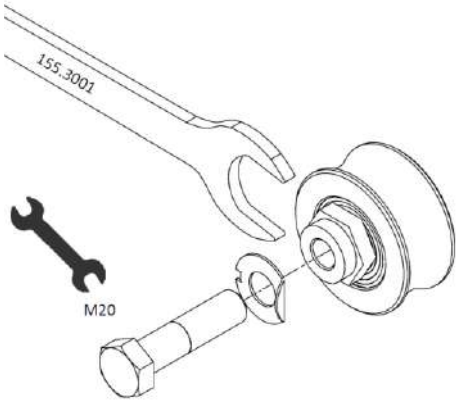


CONTROL MEASURES [mm]		
	Nom.	Min.
D	Ø98	Ø96

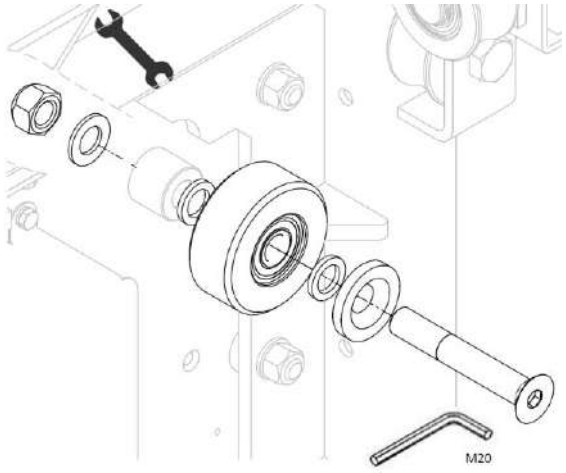
CHECKING RACK COUNTEROLLERS



ROLLER REPLACEMENT DIAGRAM



ASSEMBLY OF ø30 ECCENTRIC ROLLER

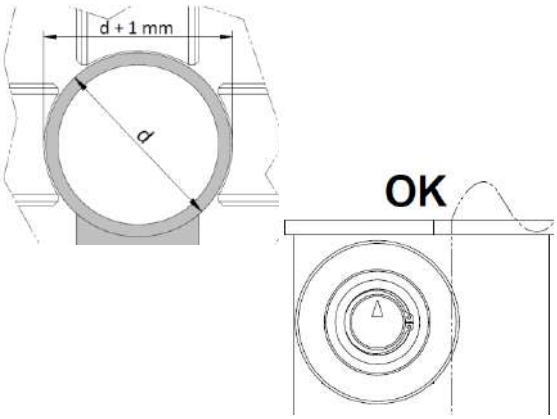


COUNTEROLLER ASSEMBLY

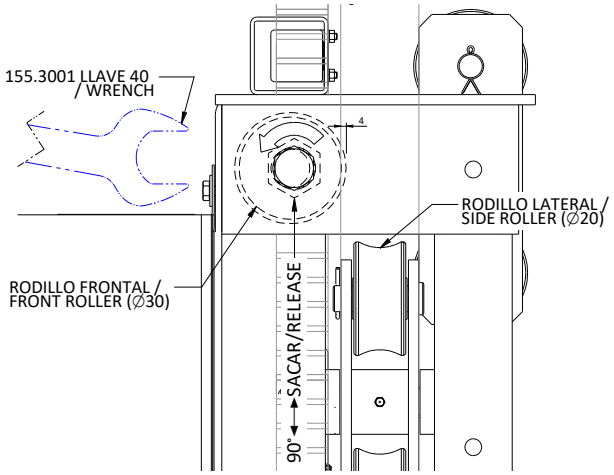
M06 - 10 N·m
M08 - 24 N·m
M10 - 50 N·m
M12 - 85 N·m
M16 - 210 N·m

MAX. TIGHT. TORQ. (s/ manufacturer)

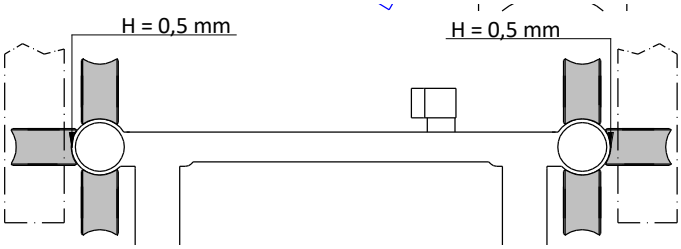
120 N·m
= ALBA SPECIFIC TORQ



ASSEMBLY POSITION AND TUBE - ROLLER GAP

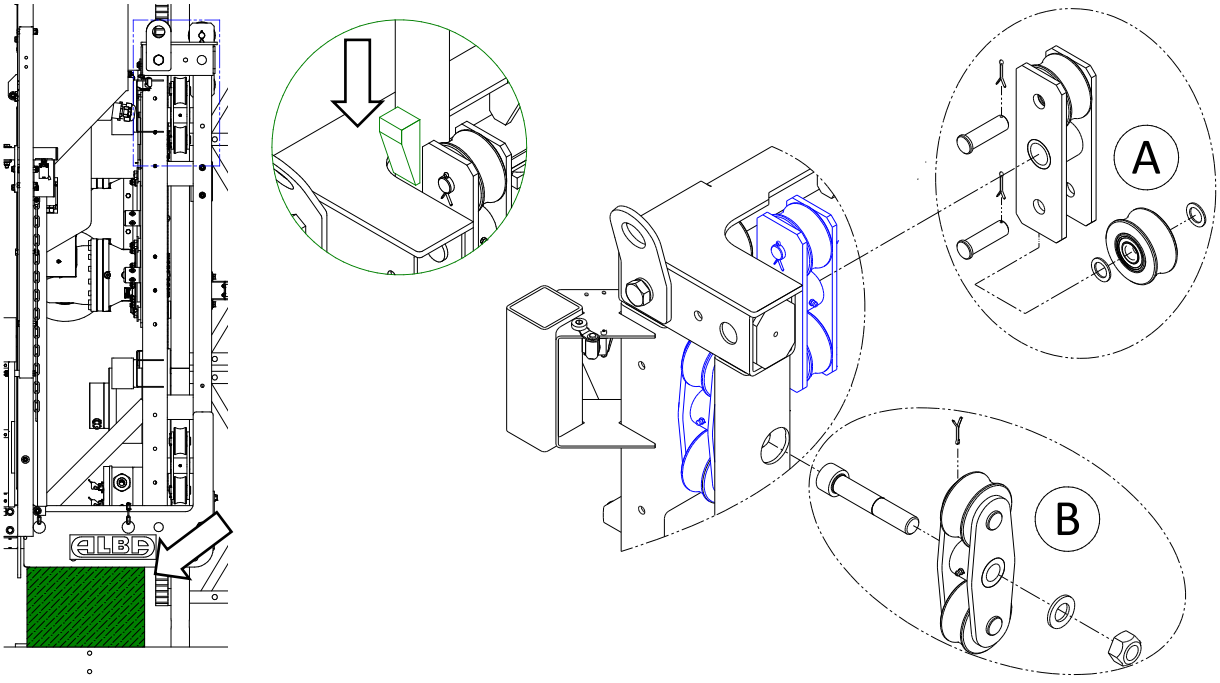


ECCENTRIC ROLLER ASSEMBLY



ROLLER TO MAST TUBE ADJUSTMENT

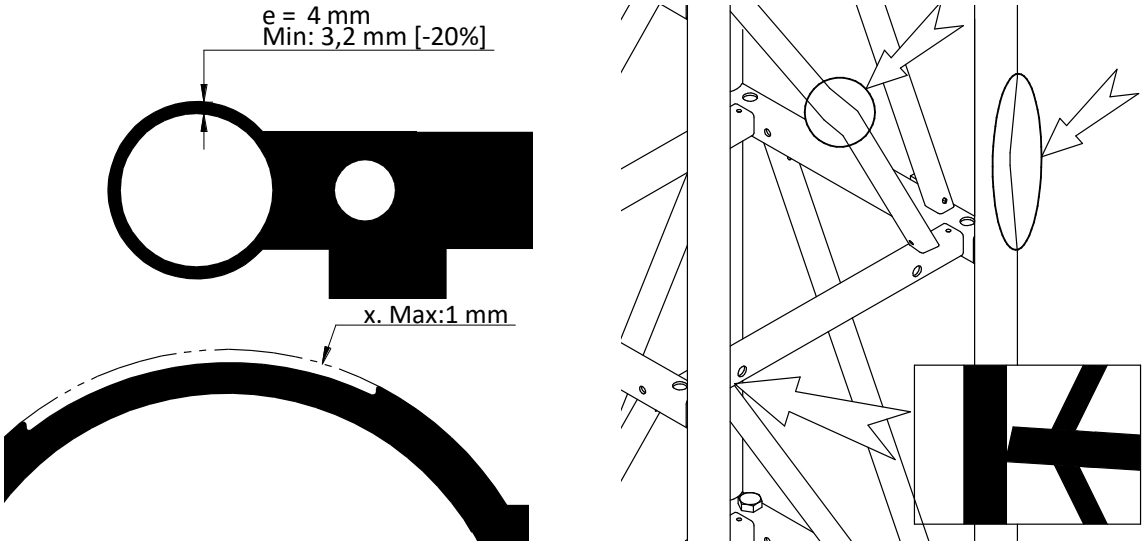
IMPORTANT:
TO ADJUST ROLLER POSITION, LOSSEN ROLLER GUIDE SCREW AND ROTATE ECCENTRIC AXEL WITH SPECIAL TOOL 155.3001. TIGHTEN ROLLER SCREW WHILE MAINTAINING AXEL POSITION WITH THE TOOL.
ADJUST ROLLERS POSTIONT WHITOUT LOADS IN THE HOIST.



REPLACING ø20 CAGE ROLLERS.
A: LATERAL ROLLER. B: ROCKER ROLLERS

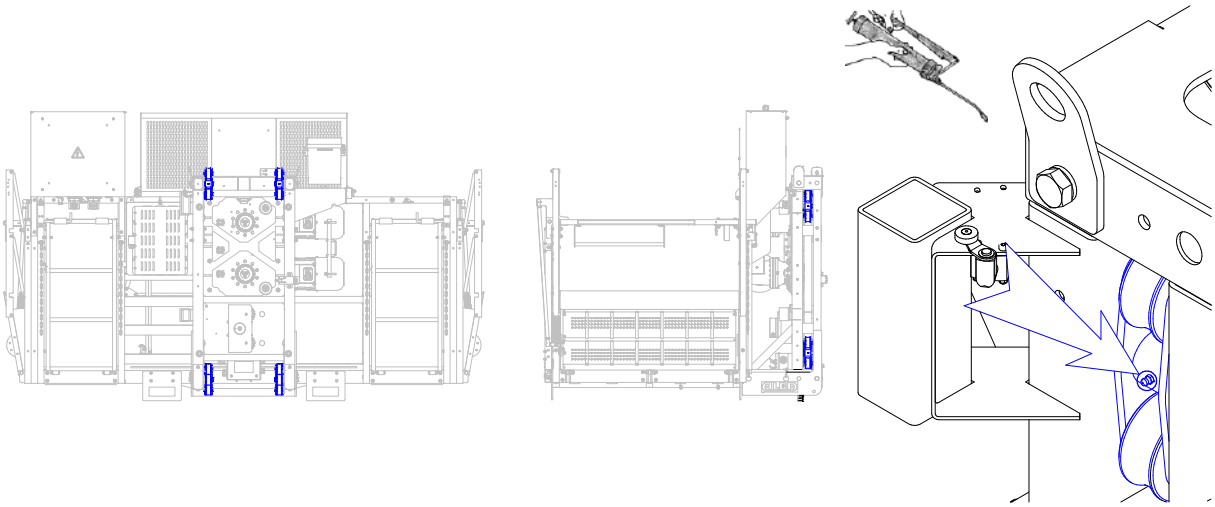
IMPORTANT:
ADJUST GUIDE ROLLERS POSITION SO THAT THE CABIN STRUCTURE IS PARALLEL TO THE MAST VERTICAL AXIS AND MOTOR AND PARACHUTE PINIONS CENTERED WITH THE RACK.

IMPORTANT:
CHECK GUIDE ROLLERS LATERAL GAP, WHICH SHOULD BE APPROX 0.5mm ON EACH SIDE.
PLEASE NOTE THAT IT IS POSSIBLE THAT OCCASIONALLY, DUE TO THE ARRANGEMENT OF THE LOAD, THE SIDE ROLLERS DO NOT CONTACT THE MAST CONTINUOUSLY ON BOTH SIDES.
THIS DOES NOT INDICATE A MALFUNCTIONING OF THE HOIST.



CHECKING MAST FRAME AND VERTICAL TUBES WEAR

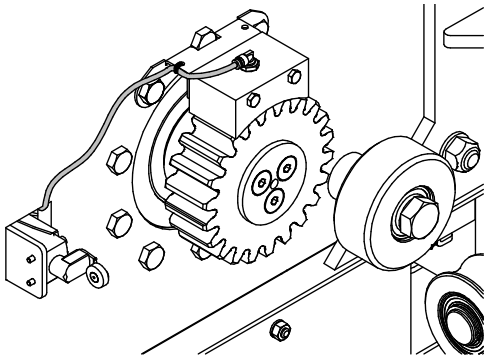
ATTENTION:
CHECK FOR POSSIBLE DAMAGE AND EXCESSIVE WEAR OF THE MAST TUBES BEFORE ASSEMBLY AND LATER, WITH THE PERIODICITY INDICATED.



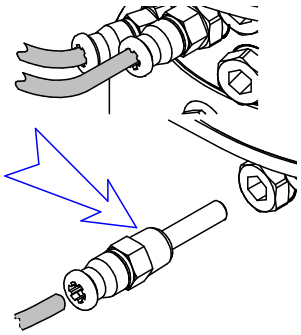
CABIN GREASING POINTS

AUTOMATIC GREASING SYSTEM (OPT)

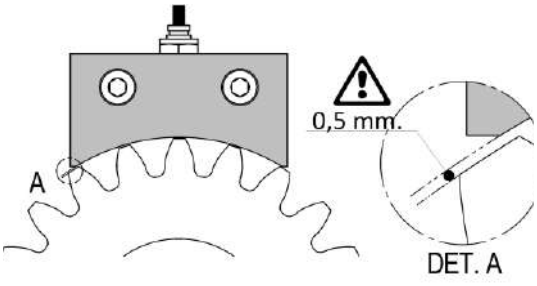
AUTOMATIC GREASING CENTER



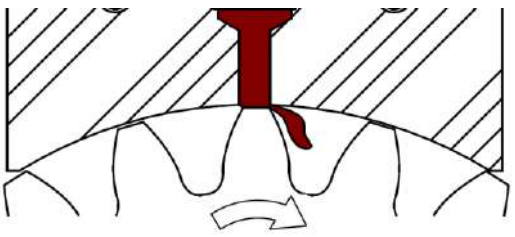
PINION GREASING POINTS POSITION



GREASING FLOW DISTRIBUTOR



CHECKING PINION GREASING SYSTEM



GREASING SYSTEM TECHNICAL FEATURES		
Grease TYPE	Lithium grease	
Types of grease allowed:	NLGI	ASTM
Very soft	0	355 – 385
Medium soft	1	310 – 340
Medium (Recomended)	**2**	**265 - 295**
Tank capacity:	0,5 l.	
Lubrication speed:	2x12 gr/h.	
Tank life:	~ 30 h. (Hoist working)	

CONTROL LOCKED (PRESS ⇑⇓ TO UNLOCK)

YELLOW – GREASING PUMP WORKING

RED – GREASING MOTOR BLOCKED

RED – MIN. GREASE TANK LEVEL

RED – VOLTAGE UNDER MIN. LEVEL

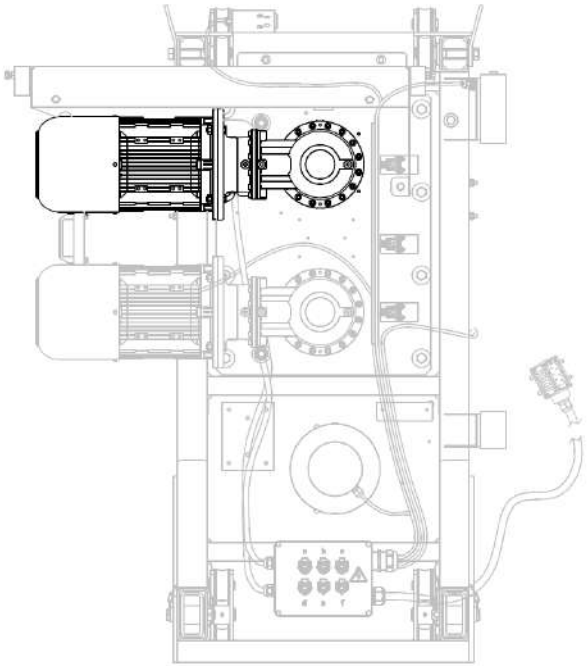
CANCEL ALARM / GREASING EXTRA CYCLE

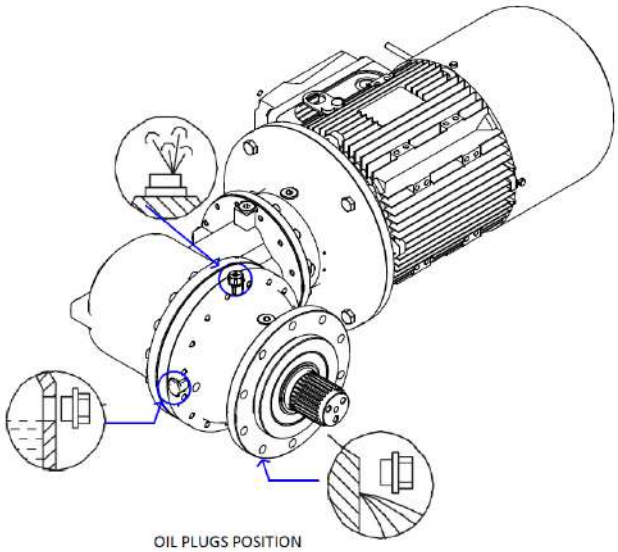
INCREASE OR REDUCE GREASING FREQ. /CYCLE. SIMULTANEUNS PRESS. – LOCK CONTROL

GREASING UNIT CONTROL CONSOLE

IMPORTANT:
DO NOT MANIUPULATE GREASING CYCLES. CHECK PERIODICALLY AVAILABLE GREASE LEVEL. CASE OF MALFUNCTIONING OF THE PUMP, PLEASE CONSULT THE MANUFACTURER.

GEARBOX MAINTENANCE





OIL PLUGS POSITION

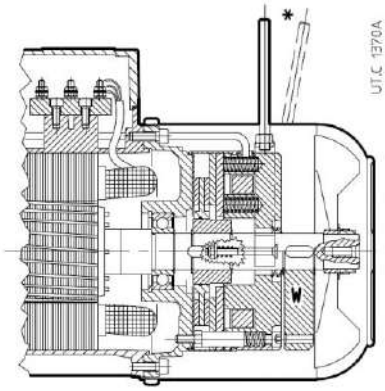
Properties			Method	Shell Omala S4 GXV 220
Viscosidad Cinemática	@40°C	mm²/s	ASTM D445	220
Viscosidad Cinemática	@100°C	mm²/s	ASTM D445	30
Índice de Viscosidad			ASTM D2270	171
Punto de Inflamación (COC)		°C minimo	ASTM D92	240
Punto de Congelación		°C	ASTM D97	-42
Densidad	@15°C	kg/m³	ASTM D4052	864
Ensayo EP Cuatro Bolas - Carga de Soldadura		kg minimo	ASTM D2783	250
Ensayo FZG		Etapa de fallo - Minimo	A/8,3/90	14

GEARBOX OIL CHARACTERISTICS

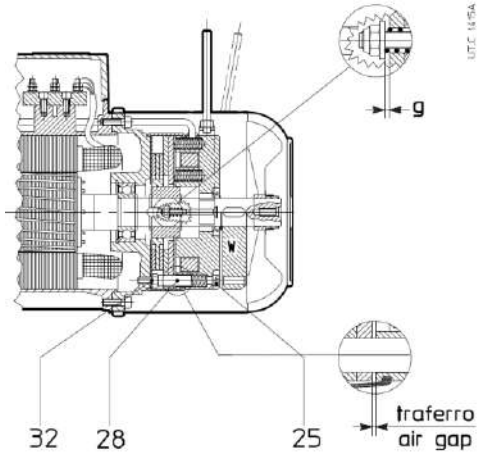
IMPORTANT:
GEARBOXES ARE INSTALLED COMPLETE WITH SYNTHETIC 220 OIL FOR "LIFE LUBRICATION", IN THE ABSENCE OF EXTERNAL CONTAMINATION.
IF IT IS NECESSARY TO REPLACE THE OIL, REPLACE IT WITH OIL WITH THE VISCOSITY GRADE INDICATED IN THE TABLE.

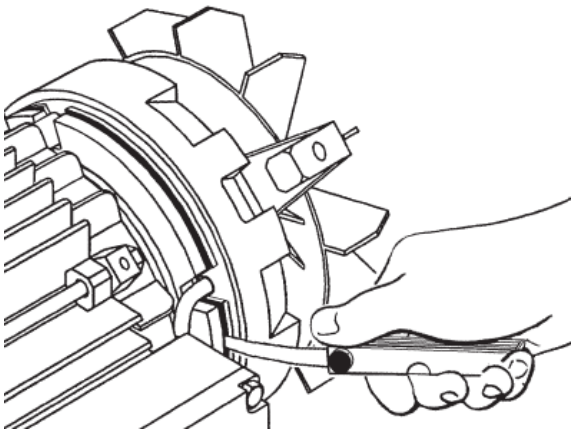
IMPORTANT:
GEARBOX LUBRICATION OIL IS PREPARED TO USE WITH AMBIENT TEMPERATURE RANGE 0□C < T < 40 □C, WITH PEAKS TILL -20□C < T < 50 □C.
REPLACE THE OIL COMPLETELY. DO NOT MIX DIFFERENT OILS.

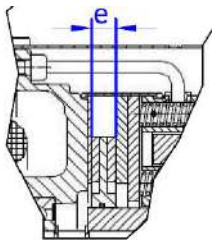
INSTRUCTION FOR MAINTENANCE OF ELECTRIC MOTOR-BRAKE



MOTOR-BRAKE WITH D.C. BRAKE AND MANUAL RELEASING LEVER







CONTROL MEASURES [mm.]			
	Nom.	Max.	Min.
Traferro (air gap)	-	0,55	0,3
Brake disk thickness (e)	-	-	7
Lever backlash (g)	0,7	-	-

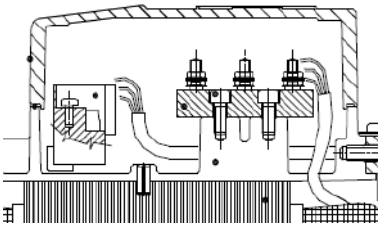
BRAKE PERIODICAL MAINTENANCE

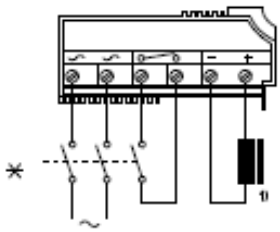
IMPORTANT:
EXCESSIVE AIR-GAP, SUPERIOR TO MAX. VALUE, COULD PRODUCE BRAKE TORQUE DECREASING. CHECK PERIODICALLY AIR-GAP AND ALSO BRAKE DISK THICKNESS, ACCORDING TO TABLE ABOVE.

BRAKE ADJUSTMENT PROCEDURE:

1. Unlock nuts **No.32**, located on 3 positions spaced 120°
2. Tight fixation bolts **No.25** [in case of flywheel, act through the available holes] up to reach the minimun airgap measured in 3 positions spaced 120° with feeler gauges, as close as possible to guides **No.28**.
3. Tight nuts **No.32** keeping same position of fixation bolts **No.25**.
4. Check final airgap and compare with values indicated on table.

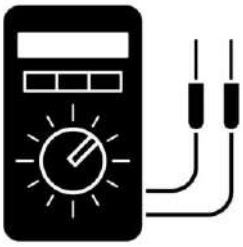
IMPORTANT:
AFTER SEVERAL AIR GAP ADJUSTMENTS, VERIFY THE BRAKE THICKNESS (e) IS NOT LOWER THAN MINIMUN INDICATED ON TABLE. REPLACE IF NECESSARY.

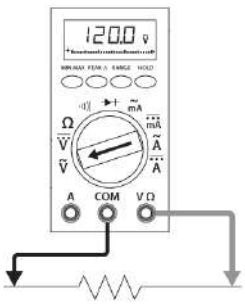




AC / DC VOLTAGE RECTIFIER TO SUPPLY BRAKE.

BRAKE RECTIFIER CHECKING TABLE		
a) Input voltage Vac	(~ . ~)	380 – 415 Vac
b) Output voltage Vdc	(- . +)	75 – 105 Vdc
c) Coil resistance value (*)	(- . +)	150 Ω





a) ~.~ ; b) - . + **c) Ω**

BRAKE RECTIFIER COMPROBATION TABLE

IMPORTANT:
CHECK INPUT VOLTAGE Vac AND OUTPUT VOLTAGE Vdc WITH HOIST WORKING, IN ORDER TO VERIFY RECTIFIER PERFORMANCE.
¡¡ ATENTION: ELECTRICAL CONTACT HAZARD!!

IMPORTANT (*):
IN ORDER TO CHECK BRAKE COIL, RELEASE RECTIFIER VOLTAGE OUTPUT WIRES (+, -) AND VERIFY COIL RESISTANCE VALUES IN TABLE ABOVE, ACCORDING TO POINT c) INSTRUCTION. REPLACE BRAKE COIL IF NECESSARY.

IMPORTANT:
AFTER BRAKE ADJUSTMENT, CHECK RELEASE IF LEVER BAKCLASH (g) ALLOWS MANUAL BRAKE RELEASING PROPERLY. IF NECESARY, AMEND (g) VALUE ACCORDING TO TABLE ABOVE.

Rossi — a company of the Rabasit group — www.rossi-group.com — IEC 60034-1 IE1 — made in Italy

MOT. 3~ N. 06202/11 01/11 — IP 55 — kg 9.2 — AMB. 40°C IC 411 — I.CL. F S 1 CONT.
HBZ 80B4 B5

Freno Brake	Nm	V~ / Hz	A	V ⎓
BZ04	15	110÷480/50÷60	0,11	RM1 103

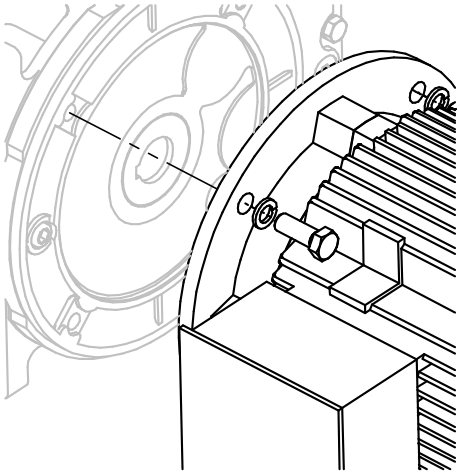
Esecuzione / Execution

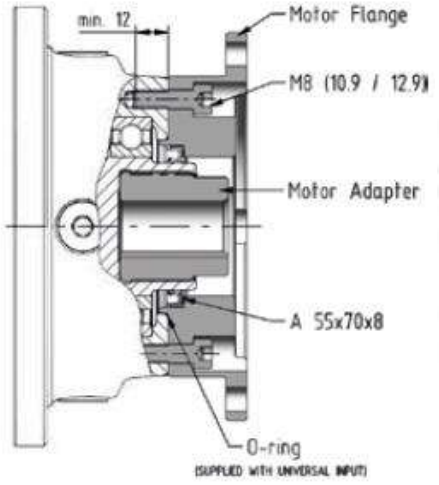
Δ V Y	Hz	A	kW	min⁻¹	cosφ
230 / 400	50	3.3 / 1.9	0.75	1400	0,72
265 / 460	60	3.3 / 1.9	0.75 SF1.15	1690	0,68

50Hz IE1 74,7(100%) 74,2(75%) 70,5(50%)
60Hz NEMA NOM.EFF. 78,5% 1HP DES.C CODE K

MOTOR PLATE EXAMPLE TO SPARE PART REQUESTING

GEARMOTOR – ELECTRIC MOTOR SUBSTITUTION





1. Clean motor and gearbox surfaces to be fitting, thooroughly.
2. Mount the parallel key on the motor axel and perform coupling to gearbox hole carefully.
3. Fit motor flange to gearbox flange with screws and nuts.

PREVENTIVE MAINTENANCE OF MOTOR AND ELECTRIC BRAKE:

- Keep external surfaces free from oil, dust and machining residuals.
- Keep free all air cooliong circuits (housing, air input).
- Checl that electric connections are fitted properly.
- Check the correct tightness of the motor and that there are no leaks in the seals.
- Check that motor run is free from vibrations and anomalous noises.

ATTENTION:
TO ORDER SPARE PARTS FOR THE MOTOR OR ELECTRIC BRAKE, IT IS NECESSARY TO REFER TO THE MOTOR PLATE INFORMATION.
THAT WAY, SPARE PART SUPPLY ERRORS ARE AVOIDED.

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

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

5.1. Instructions for troubleshooting.

GEARMOTOR		
Problem	**Probable cause**	**Solution**
Motor doesn´t work	Supply line fault	Check 3-phase electric supply
	Motor box connection fault	Check motor connection
	Brake doesn´t work	Check brake s/section. 5.2
	Motor internal fault	Ask to the manufacturer
Motor can´t raise rated load	Motor connection problem	Check motor connection
	Insufficient voltaje supply	Check supply line
	Supply voltage drop	Check supply crossection wire
Motor overheats	Motor connection error	Check motor connection
	Motor locked	Check brake s/section. 5.2
	Voltage supply error	Check supply line
	Fan cover obstructed	Release air passage to the fan
	Insufficient ventilation air flow	Check for obstacles to ventilation
	Brake doesn´t work	Check brake s/section. 5.2
Excessive current consuption	Brake locked	Check brake s/section. 5.2
	Motor coil damage	Ask to the manufacturer
Motor brake doesn´t release	Brake connection fault	Check motor connections
	Rectifier damaged	Check rectifier s/section. 5.2
	Excessive brake air-gap	Check air-gap s/section. 5.2
	Brake coil damaged	Check brake coil s/section. 5.2
Brake doesn´t hold the load	Excessive brake air-gap	Check brake coil s/section. 5.2
	Brake coil damaged	Ask to the manufacturer
	Excessive brake disk wear	Replace brake disk
Excessive brake noise	Excessive air-gap	Check air-gap s/section. 5.2
GENERAL		
Hoist doesn´t run (OUT OF SERVICE RED LIGHT ON)	There´s safety device activated	Check emergency stop buttons (SE), or safety endtrack microswitches FCSG.
	E1 fault	Check electric driagram. Rearm E1
	Phase error	Change supply phase connection
Hoist moves doing abnormal noise or it doesn´t smoothly.	Guide roller damaged.	Check and change guide rollers.
	Lack of grease in pinion.	Check bearings and change if required.
	Lack of grease in rack	Apply grease in pinion and rack.
Hoist slides down when charging loads	Problem or brake wear.	Check brake coil s/section. 5.2
	Overload on the cage	Remove overload
Hoist doesn´t stop in upper/lower limits, or at landing doors	Problem with magnetic sensor	Check encoder and magnetic ring
	Problem with endtrack limit switches	Check endtrack limit swithes
Hoist doesn´t stops on 2 m point	Problem with 2 m. switch or cam.	Check 2 m. endtrack switch and cam.
E2 or E4 fault	Problem in control transformer	Check / Replace transformer.
	Hand tool socket excessive consumption	Check handtools socket connection
E5 fault	Brake supply rectifier fault	Check rectifier s/section. 5.2
Hoist stops suddenly	Overload	Check load on the cage.
	Power supply failure	Check electrical connection.
	Door open	Check landing doors and cage doors.
Cage of the hoist vibrates abnorm.	Non tightened screws.	Check guide roller s/section. 5.2
	Rack or pinion wear problem.	Check rack and pinion gear.
	Lack of lubrication.	Lubricate rack and pinion.
	Mast tube tubes wear problem.	Check mast for tube wear.
Gearmotor sounds abnormally	Lack of oil on the motorbox.	Check oil level and oil leaks
	Gearbox bearing failure	Ask to the manufacturer
Hoist suffer stops when moving	Communication cable damaged.	Check communication cable.
	Endtrack or door switches unadjusted.	Check endtrack limit switches position.
Hoist can´t raise rated load.	Crossection wire inadequate.	Check supply wire
	Motor brake damaged.	Check brake s/section. 5.2
	Supply voltage inadequate.	Check voltage supply
Hoist doesn´t move up or down.	LED panel indication	Check indications
	Cage or landing door uncorrectly closed	Check cage / landing doors.

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.

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5.5 Trouble record

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Quantity	Code	Denomination	Quantity

ALBA authoriced technical person User

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

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Quantity	Code	Denomination	Quantity

ALBA authoriced technical person User

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

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Quantity	Code	Denomination	Quantity

ALBA authoriced technical person User

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

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Quantity	Code	Denomination	Quantity

ALBA authoriced technical person User

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

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Quantity	Code	Denomination	Quantity

ALBA authoriced technical person User

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

TYPE OF FAILURE: .....

Cause: .....

Reparations performed: .....

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PARTS TO CHANGE					
Code	Denomination	Quantity	Code	Denomination	Quantity

ALBA authoriced technical person User

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