



USER'S MANUAL
Personnel Hoist
SEH-6000 MS

SEH
SERIES



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1. PREFACE

1.1 REVISIONS TABLE

Revision N°	Description	Approved by:	Date (yyyy-mm-dd)
05	Rebranding	D.Bastien	2020-10-10
06	Previously 98030718 up to rev.05. New layout and updated information	D.Bastien	2024-02-02

1.2 DOCUMENTS AND STANDARDS

- USA – ANSI/ASSP A10.4 Safety Requirements for Personnel Hoists and Employee Elevators on Construction and Demolition Sites
- Canada – CAN/CSA – Z185 Safety code for personnel hoists

OTHER DOCUMENTATION:

- Installation & maintenance manual (English)..... [98040203-EN](#)
- Parts Book (English / French)..... [98030864-EN/FR](#)
- Maintenance LOGBOOK (English)..... [98031146-EN](#)
- Electrical schematic..... [FSUAXXX15-0021-2 MOTORS](#)

Referenced manuals shall be provided with your unit as part of the documentation package at time of purchase. Additional copies of manuals are available by request.

North America

Manufactured and distributed by:

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NOTE: The term « FRACO » in this document refers to the company « FRACO products Ltd. » and its subsidiaries. All drawings and illustrations in this document are for information purposes only. The actual product may differ. Specifications and technical data are subject to change without notice. Be sure to always have the latest version of this document.

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1.3 MANUAL CONTENT






This **USER'S MANUAL** communicates important and necessary information to work efficiently and economically with the machine. It includes important **safety and operation instructions**. This manual assumes that the machine is equipped with all available options. As soon as the machine is delivered and before any normal operation with the machine, this manual must be read carefully and fully understood. This is also true before proceeding with any installation and commissioning of the machine. The reader must comprehend every note and safety label.

1.3.1 WHAT IS INCLUDED IN THIS MANUAL?

In this manual you will find information, advice, and instructions regarding;

- Intended use and application
- Inherent and residual risks
- Warranty program
- User's definition and level of training
- Safety
- Technical data
- Regular operation
- Basic transport and installation awareness
- Basic troubleshooting and fault guide
- Daily visual inspection and reference to the Maintenance Control Program (M.C.P)
- Customer service

This manual contains the following warning labels that will draw the reader's attention to a procedure or function. The table below describes the meaning of each type of safety label.

	DANGER indicates a hazardous situation which, if not avoided, <u>will most likely result in death or serious injuries</u> .
	WARNING indicates a hazardous situation which, if not avoided, <u>could result in death or serious injuries</u> .
	CAUTION indicates a hazardous situation which, if not avoided, <u>could result in minor or moderate injuries</u> .
	NOTICE is used to address practices not related to physical injury
	Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures

⚠ WARNING

Prior to any activity being performed with the personnel hoist, the individuals involved must have read and have a full understanding of the information and procedures provided in the User's Manual.

NOTICE

This user's manual presents all the standardized options available for a SEH Personnel Hoist. Refer to the engineering package and project statement specific to your project to learn which options are applicable.

1.3.2 WHO MUST READ THIS MANUAL?

- Owners
- Operators
- Installers
- Maintenance personnel

1.3.3 EXCLUSION FROM THIS MANUAL

- This manual **is not an installation manual**. The installation and maintenance manual is a separate document referred to as (98040203-EN) and delivered with the machine.
- This manual **is not a maintenance manual**. The installation and maintenance manual is a separate document referred to as (98040203-EN) and delivered with the machine.
- This manual **is not a repair manual**. You will not find any information regarding repair instructions in this manual. In case of need, contact your Fraco representative for additional support.

1.3.4 THINGS TO CONSIDER UPON RESALE OF THE MACHINE

If you consider selling the machine, it is most important that you forward every original document to the buyer. Such as the items listed below.

- User's manual
- Installation and maintenance manual
- Parts Book
- Inspection sheets and maintenance records

(Note: These inspection records must be kept on file by the OWNER of the machine for a minimum of the last five (5) years after commissioning the unit).

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2. WARRANTY

Please refer to the warranty conditions outlined in the sale's contract terms and conditions. Damages that occur due to noncompliance with the user and/or installation & maintenance manuals are not covered under warranty. Other examples of items not covered under warranty are to include but not limited to faulty electrical wiring, connections, and power cables, as well as components considered as normal wear items. Fraco reserves the right in determining the course of action that is to be followed in the correction of affected parts in accordance to Fraco's warranty procedures.

NOTICE

FRACO Product Ltd. reserves the right in determining the course of action that is to be followed in the correction of affected parts in accordance to Fraco's warranty procedures.

2.1 FRACO standard warranty:

- **The warranty period:**

- A) The warranty period begins on the initial date of purchase. FRACO Product Ltd. warrants that the products distributed by FRACO Product Ltd., that have defaults occur during normal usage and were installed and managed in accordance with the instructions of the user and/or installation & maintenance manuals, these components contributing to the failure will be resolved following Fraco's warranty procedure. Parts supplied under this warranty may be new or refurbished as selected by FRACO Product Ltd.
- B) For customers purchasing product from an authorized FRACO dealer, the warranty period may begin:
 1. On the date the product is first commissioned during a lease period;
 2. At the date of retail sale.

- **The product:**

- FRACO Unit (new)..... 1 year, parts and labor.
 - FRACO Unit (used)..... 3 months, parts, and labor
- Note:** The warranty on used units is only applicable to used products sold directly by FRACO.

Product warranty shall be applicable during its entire duration in accordance with Fraco's warranty procedures.

- **Parts:**

FRACO Product Ltd. must be notified in writing of any parts failure within the warranty period. For repaired/replacement parts or for service requests, refer to the Fraco warranty procedures.

- **Requesting warranty service and parts:**

FRACO Product Ltd. has several retailers in North America to assist you with repairs. To qualify for warranty coverage, you must complete a warranty claim form.

- Date of commissioning: _____
- Serial number: _____

- **What is not covered under warranty:**

- If the FRACO security seal is damaged, destroyed, or missing.
- Modifications not authorized in writing by FRACO Product Ltd.
- Parts that are not FRACO factory parts or authorized parts in writing by FRACO Product Ltd.
- If any identification plates are damaged, destroyed, or missing. Although, warranty may be enacted once plates have been replaced, as well as all other conditions listed are met.

2.2 FRACO retailer warranty program:

- **Parts:**

Retailers who have the ability to honor warranties on behalf of FRACO Product Ltd. will be required to identify and retain all replaced parts as described within Fraco's warranty procedures.

- **Labor:**

The work performed by an authorized FRACO dealer will be in accordance with the Fraco warranty procedures.

3. INTENDED USE AND APPLICATION

The Fraco SEH-6000 MS is a personal hoist intended for temporary use on buildings or structures. The machine is intended for the transport of a certain number of persons or materials to exit the car at designated and secured landings.

- This machine has a **MAXIMUM TRAVELING SPEED OF 200 fpm (60 m/min)**. Multiple travel speeds are available upon purchase. Refer to your engineering package and the data plate inside the car to learn your machine's traveling speed (**RATED SPEED**).
- This machine has a **MAXIMUM RATED LOAD OF 6000 lbs. (2720 kg)**. Refer to your engineering package and the data plate inside the car to learn your machine's maximum load capacity (**RATED LOAD**). The **MAXIMUM NUMBER OF PERSONS** allowed to ride inside the car is **LIMITED BY ITS CAPACITY** as stated in regulations of local authorities having jurisdiction. When carrying peoples and materials, the weight of persons and material shall be **SUBTRACTED FROM THE RATED LOAD**. See **SECTION 5.1. GENERAL DATA, ON PAGE 20** to learn the maximum number of persons associated to your model.
- A ground enclosure is **REQUIRED** to protect persons and the machine from unauthorized access at the ground level. A surrounding existing structure may act as the ground enclosure or portion of the ground enclosure if it conforms to the regulations of local authorities having jurisdiction.
- Landing level gates are **REQUIRED**. The personnel hoist may only be operated under normal conditions once landing level gates have been installed and are closed and locked.
- **OPERATION** and **INSTALLATION** are only permitted at designated wind speeds. See **SECTION 5.1 GENERAL DATA, ON PAGE 20** to learn the maximum wind speed permitted for these two functions.

3.1 CONSEQUENCES OF NON-INTENDED USE OF THE EQUIPMENT

- Danger for life and limb of the user or a third party.
- Damage to machine and other tangible assets.
- Cancellation of warranty.

3.2 USER DEFINITIONS AND TRAINING REQUIREMENT

NOTICE

This manual is meant for all **USERS (OPERATORS, INSTALLER and MAINTENANCE PERSONEL)** trained and authorized to use and operate Fraco SEH personal hoist.

USERS (DEFINITIONS):

- An **OPERATOR** (operation personnel) must be a person who can guarantee safe use and appropriate handling of the machine based on their training, knowledge, and practical experience. Also, this person must;
 - Be appointed by the owner/user or renter to operate the machine.
 - Be correspondingly instructed and informed about any existing risks.
 - Read and fully understands the User's manual.
 - Follow the local rules and regulations of authorities having jurisdiction.
- An **INSTALLER** (installation personnel) must be a person who can guarantee to handle the machine appropriately based on their training, knowledge, and practical experience. The machine may only be installed and operated for installation by trained and authorized persons designated as **an installer**. Also, this person must;
 - Be appointed by the local contractor for assembly, disassembly, and operation of the machine.
 - Meet the requirements of regulations of local authorities having jurisdiction. For example, it may be required that the INSTALLER own a competency card issued by local authorities, unions, or by Fraco.
 - Have a full understanding of the user and the installation manual of the unit being installed.
- **MAINTENANCE PERSONNEL** must be a person who can guarantee to handle the machine appropriately based on their training, knowledge, and practical experience. The machine may only be operated for maintenance by trained and authorized persons designated as **maintenance personnel**. Also, this person must;
 - Be appointed by the local contractor for assembly, disassembly, and maintenance operation of the machine.
 - Meet the requirements of regulations of local authorities having jurisdiction. For example, it may be required that the INSTALLER own a competency card issued by local authorities, unions, or by Fraco.
 - Have a full understanding of the user and the installation manual of the unit being installed.
- **RIDER(s)**, are people who are untrained and unfamiliar with the functions and rules of the unit. They are allowed to ride the unit under the direct supervision of a trained and authorized operator, installer or mechanic.

4. SAFETY

4.1 GENERAL SAFETY

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

▲ WARNING

Before installation, operation, maintenance, or any other activity with the personnel hoist, all individuals must be aware of the machine's assembly and must have read and understands the user's manuals and safety instructions!

4.2 OPERATING SAFETY AWARENESS

▲ WARNING

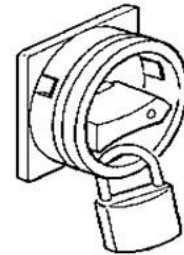
Within the scope of normal operation, no persons shall be under the hoist car at any time!

▲ CAUTION

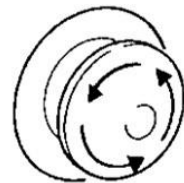
Never place objects under the car, or within the base enclosure, or safety perimeter. Store material(s) at a safety distance of MIN 30" (76 cm) from any moving parts of the machine.

- Be aware of and understand the **CAPACITY PLATE**, **DATA PLATE**, and **ALL THE STICKERS AND WARNING SIGNS** on the machine and surrounding area.
- Observe the **MAXIMUM RATED LOAD** of the equipment and load the car evenly.
- Any accompanying persons must comply with the instructions given by the operator; in particular, they must not step over material that is being carried in the car.
- Position the load securely on the car floor. Material must be loaded evenly and any material that could shift, slip, or fall must be secured.

- **Immediately remedy** faults that could impact safety.
- Only use the machine in a technically fault-free condition; use in a safety and risk-conscious manner while observing this User's manual.
- **Immediately shutdown** the machine if there are safety-relevant changes to the unit or its operating behavior. And report the fault to the owner of the machine or the owner's representative.
- Do not make any changes, replace parts on, or modify the machine. This also applies to installing and adjusting safety features, such as e.g. limit switches.
- **Never** change, remove, override, or bypass safety devices without the proper tools, trainings, and permission.
- Immediately replace damaged, unreadable, and/or missing documents, notices, and warning signs as well as safety labels.
- If work is interrupted, switch off the machine at the main power switch and secure it against unauthorized use.
- In case of emergency or maintenance shut down, **ALWAYS TURN OFF THE ROOF CONTROL PANEL BREAKER FIRST** and then ground control panel breaker. After, if necessary, cut the power to the main breaker, but **be aware** that some electrical components must always be kept energized.
- While in operation, in situations that present a risk for the operating personnel, surrounding personnel, or the machine itself, shut down the machine by pressing the red **EMERGENCY STOP BUTTON** available on many of the control panels.



(Image for reference only)



(Image for reference only)

4.3 INSTALLATION AND TRANSPORT SAFETY AWARENESS

- Before starting work at the job site, familiarize yourself with the machine and its working environment, e.g. obstacles in the work and transfer area, ground load-bearing capacity and necessary safeguarding of the construction site from pedestrian and public transport.
- **NEVER STAND OR WORK BENEATH THE CAR**, without using an official **FRACO** safety locking device. Access under the hoist is permitted for installation purposes and only with the condition that the hoist is unloaded and is completely locked from moving, sitting at MAX 2" (51 mm) over the safety locking device installed on the mast rack.

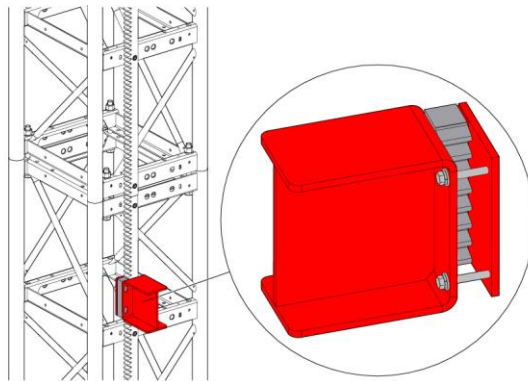


Figure 4.3A

⚠ WARNING

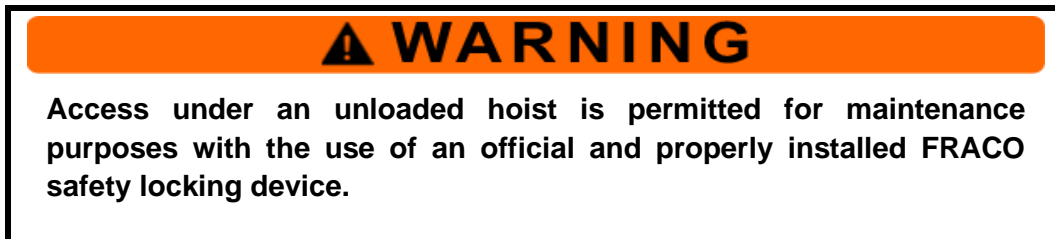
Access under an unloaded hoist is permitted for installation purposes with the use of an official and properly installed FRACO safety locking device.

- Only transport the hoist and hoist component by means of their designated hoisting point, such as hoisting ring, rigging points, and forklift pockets.
- **NEVER** place or store objects under the car, or inside the ground protection enclosure, or safety perimeter.
- Always secure the machine against unauthorized access and use.
- Only load and transport equipment that has been carefully packed and secured inside the car.
- Position the load securely and evenly on the car floor. Any material that could shift, slip, or fall must be secured.

- The machine must be assembled and dismantled according to the Installation & maintenance manual ([98040203-EN](#)) and under supervision of a trained and authorized **installer** designated by the owner/user.
- The Fraco hoist and mast structure must be installed so that it is leveled, stable, and anchored to the building/structure. The User must perform a daily inspection. Refer to the **DAILY INSPECTION FORM** in the **APPENDIX** section of this manual.

4.4 MAINTENANCE SAFETY AWARENESS

- Switch off the power (e.g. disconnect main plug or lock the main breaker) for maintenance work that does not require power operation.
- **NEVER STAND OR WORK BENEATH THE CAR**, without using an official **FRACO** safety locking device. Access under the hoist is only permitted for installation & maintenance purposes and only at the condition that the hoist is unloaded and is completely locked from moving, sitting **MAXIMUM 2" (51 mm)** over the safety locking device installed on the mast rack. Reference **FIGURE 4.3A – FRACO SAFETY LOCKING DEVICE**.



- Properly reinstall removed safety devices once maintenance work is complete.
- Only allow servicing and repair work to be carried out by trained and authorized personnel. In case of maintenance, pay attention for example to the risks present during work on electrical systems. You must respect local rules and regulations concerning electrical work.
- Only authorized maintenance and installation personnel should access the ground enclosure.

4.5 INSPECTION SCHEDULE

- The machine is subject to multiple inspections and tests as part of the M.C.P and as per local authority's requirement. The daily visual inspection form is available within the **APPENDIX** section of this manual as well as the **SEH MAINTENANCE LOGBOOK**. For other inspections, maintenance personnel must reference the Installation & maintenance manual ([98040203-EN](#)). Any acceptance inspections and recurring inspections must be carried out in accordance with the manufacturer instruction as well as the regulations of the local authorities having jurisdiction. Use the appropriate **APPENDIX FORM** and retain the completed and signed document in proximity of the machine for future review.

4.6 REQUIREMENTS

This manual is for all individuals assigned to work with this hoist as listed below.

4.6.1 SAFETY REQUIREMENTS:

- **BEFORE OPERATION OR ANY OTHER ACTIVITY** with the car, you should read and comprehend every instruction included in this manual. Not complying with these safety instructions may result in material damages, injuries or even death. FRACO and/or its representative cannot be held responsible in any case. Any standard and local regulation that concerns safety, accident prevention, environmental protection and any other activities that are linked to the use of this type of equipment is considered as supplementary to this manual and must be respected, for example; wearing personal protection equipment (harness, helmet, boots, etc.).
- At all times, the machine must be protected by hoistway protection. Hoistway protection may be a surrounding structure without openings or be made of a ground enclosure compliant with code specified in [SECTION 1.2. DOCUMENTS AND STANDARDS, ON PAGE 4](#) with mesh, panel and doors of matching dimensions as provided by FRACO. If the machine is installed in a location accessible to the public, access to the working zone by unauthorized persons must be restrained. The operator is responsible to verify the integrity and stability of the ground enclosure and all other hoistway protections.
- **SAFETY IS OUR MAIN PRIORITY!** Never remove, replace, or modify a part with the goal of adapting the car to a certain condition. Contact your retailer, or Fraco, or a Fraco representative for any assistance.
- **ONLY USE FACTORY PARTS FROM THE FRACO PARTS BOOK.**
Reference Parts Book ([98030864-EN/FR](#))
- **KEEP THIS MANUAL IN PROXIMITY OF THE MACHINE AT ALL TIMES.** This manual is considered as part of the machine and is obligatory to communicate the information regarding safety necessary for operators and users. A copy of this manual must be stored at all times in the documentation compartment inside the machine. See [SECTION 5.11. DOCUMENT COMPARTMENT, ON PAGE 42](#).
- **DATA AND MARKINGS.** Make sure you have read and understood every sticker, data plates, advertising, and instructions, or that you have received clear explanations from a qualified person. All plates and stickers must be available, legible, and in good condition or they need to be replaced immediately. See [SECTION 5.10. DATA PLATES AND STICKERS, ON PAGE 39](#).

REMEMBER:

- **(Customer duty)** Local rules and regulations may always require that the car be equipped with a fire extinguisher. Its location must be displayed in the car so that it is readily available when needed.
- **In case of FIRE:** Remain calm and notify all persons in the hoist and surrounding area of the situation. The hoist is not to be used, unless in the case of emergency, it has been predetermined and approved as a means of evacuation. If there is one, use the fire extinguisher by following provided instruction only if it is safe to do so. If the fire is out of control, evacuate the car by the nearest exit.
- Local rules and regulations may require that the hoistway be equipped with proper storm protection (grounding). Follow the regulations of local authorities having jurisdiction.
- The generally valid, legal and other binding provisions for accident prevention and environmental protection in the respective country in which the machine is being operated are considered a supplement to the User's and Installation & maintenance manuals (e.g. wearing personal protective equipment such as a hard hat, safety shoes, safety harness, etc.).

**⚠ WARNING**

If there are still any questions or concerns after reading this manual of the proper use of this machine, contact your retailer or the manufacturer for assistance before attempting any activities discussed in this manual.

- **Consequences of non-respect of safety instructions;** non-compliance of safety instructions may result in risks and danger in the vicinity of the machine for personnel and the machine itself. Non-respect of safety instructions can lead to the forfeit of any compensation claims.

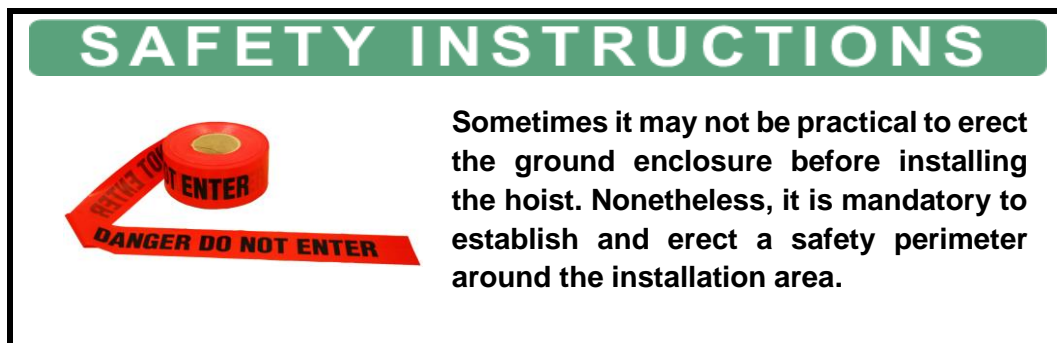
4.7 RESIDUAL RISKS

Promoting use of user's manuals:

The **User manual** is used as part of an owner's/user's method and risk assessment to ensure safe operational procedures. This refers to instructions that the owner/user delivers within the context of his management rights. The employees are required to follow these instructions. The owner/user must establish the instructions for preventing work-related accidents and must instruct the authorized personnel about risks occurring during their work and the measures for averting these risks. These requirements can be fulfilled with the aid of the user's manual.

Despite all precautions, there is always potential hazards such as:

- Injuries from uncoordinated work.
- Hazards from a malfunction in the control system.
- Hazards when working on the electrical system.
- Hazards from damage to the load-carrying device.
- Hazards from an incorrectly secured load falling.
- Hazards from high wind speeds. Refer to the wind speed table in [SECTION 5](#). Under specific wind speeds, the hoist car must be lowered at ground level, it may be needed to be additionally secured, and it needs to be inspected prior to being placed back into normal service.
- Hazards from entering and leaving the car.
- Hazards from high sound levels.



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5. TECHNICAL DATA

5.1 GENERAL DATA

Table 1 - GENERAL

	USCS	SI
Maximum rated load (NORMAL OPERATION)	6000 lbs	2720 kg
Maximum installation load (ASSEMBLY/DISASSEMBLY)	3000 lbs	1360 kg
Maximum number of persons (NORMAL OPERATION)	30	
Maximum rated speed	200 fpm	60 m/min
Safety device tripping speed	277 fpm	1,41 m/s
Governor tripping speed	280 rpm	
(*) Maximum mast height	650 ft	198 m
	(*) 1300 ft	(*) 397 m
Maximum 1 st Anchor Height	30 ft	9 m
(**) Anchor vertical spacing	(**) Typ. 30 ft [min 15 ft / max 40 ft]	(**) Typ. 9 m [min 4.5 m / max 12 m]
Maximum mast above last anchor (NORMAL OPERATION)	25 ft	7.5 m
Maximum mast above last anchor (DURING INSTALLATION)	45 ft	13.7 m
Maximum cable guide vertical spacing	20 ft	6 m
Trailing Cable Hanger Height	(Mast Height / 2) + 10 feet (3.0 m)	
Self erection jib rated load	440 lbs	200 kg
Ambient Operating Temperature	max 104 °F min -4 °F	max 40 °C min -20 °C
LEGEND:		
(*) Due to special requirements, the Fraco engineering department <u>must</u> be contacted for mast installation heights above 650 ft (198 m). With the appropriate Fraco engineering approval, the installation may go up to 1300 ft (397 m).		
(**) RULE: in addition to the distances listed, subsequent anchors sets must have a vertical distance with a maximum difference of 10 ft (3.0 m). For example, if 2 subsequent anchors have a vertical distance of 15 ft (4.5 m), this means that the sets above and below may be distanced a maximum of 15 ft (4.5 m) +10 ft (3.0 m) = 25 ft (7.62 m).		

Table 2 – WIND SPEEDS

	USCS	SI
DYNAMIC WIND SPEED MAXIMUM(s) AND OPERATING CONDITION (3 seconds gust wind)		
(*) MAX Installation wind speed (ASSEMBLY/DISASSEMBLY)	(*) 28 mph	(*) 45 km/h
(*) MAX Operational wind speed (NORMAL OPERATION)	(*) 45 mph	(*) 72 km/h
(**) MAX Storm wind speed	(**) 171 mph or greater	(**) 274 km/h or greater
LEGEND:		
DEFINITION: Out Of Service (O.O.S) – The car must be emptied of any load, and either positioned to the ground level, or stationed between two wall ties at equal vertical distances of one another.		
(*) The car must be put in Out Of Service position when the wind speed is exceeded for the given application (installation or operation).		
(**) The Out Of Service condition during a storm with wind speed exceeding the value from the table, must be at ground level and in addition to this condition the unit should be additionally secured. The hoist shall be thoroughly inspected before being put back into service. Notes regarding this inspection shall be written onto the Daily Inspection Form.		

Table 3 - ELECTRICAL

ELECTRICAL	
Number of motors	2
Motor load	22 kW / 30 Hp
Supply voltage	480 Vac
Amperage	125 A
Maximum inrush current	125 A
Power frequency	60 Hz
Voltage of controls	120Vac - 24Vdc
Generator Minimum Size (Recommended)	100 kW / 125 kVA

Table 4 - DIMENSIONS AND WEIGHTS

		USCS	SI
DIMENSIONS AND WEIGHT			
W _Car Width (Internal)		57 in	1448 mm
L (*)	Car Length-1 - (10'-6") (Internal)	(*) 138 in	(*) 3505 mm
	Car Length-2 - (11'-6") (Internal)	(*) 150 in	(*) 3810 mm
	Car Length-3 - (12'-6") (Internal)	(*) 162 in	(*) 4115 mm
	Car Length-4 - (13'-6") (Internal)	(*) 174 in	(*) 4420 mm
	Car Length-5 - (14'-6") (Internal)	(*) 186 in	(*) 4724 mm
	Car Length-6 - (15'-0") (Internal)	(*) 192 in	(*) 4877 mm
H _Car Height (Internal)		86 in	2184 mm
A & B Door Opening Width		56 in	1422 mm
A & B Door Opening Height		80 in	2032 mm
C _C Door Opening Width (Option)		94 in	2388 mm
C Door Opening Height (Option)		79 in	2007 mm
(**) Total Car weight		(**) 8710 lbs	(**) 3954 kg
Car weight – (of car length-6) (without C-door or accessories)		5051 lbs	2288 kg
C-Door weight		480 lbs	217 kg
Weight of mast section		394 lbs	178,48 kg
LEGEND:			
(*) Car Length – A few lengths options are available upon purchase. For the SEH-6000 MS the main (most common) car length is car length-3 (162 in (4115 mm)). Car lengths-3 and above require that the car be equipped with an overload sensor. Car length-6 is not permitted with C-Door.			
(**) Total car weight includes the mass of; Fully assembled hoist car, with power unit on top, guardrails, electrical equipment, electric cable trolley, and a length of electric trailing cable. The weight listed in the table account for the biggest SEH-6000 standard configuration available (Car length – 6).			

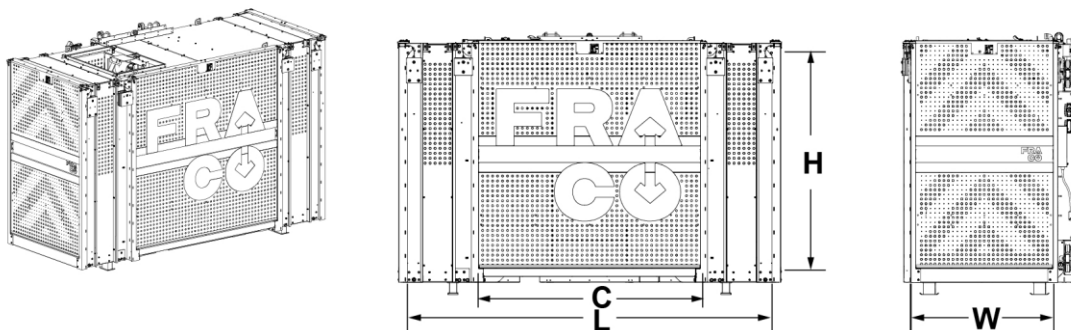


Figure 5.1A

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5.2 TECHNICAL CONFIGURATION

5.2.1 GENERAL VIEW

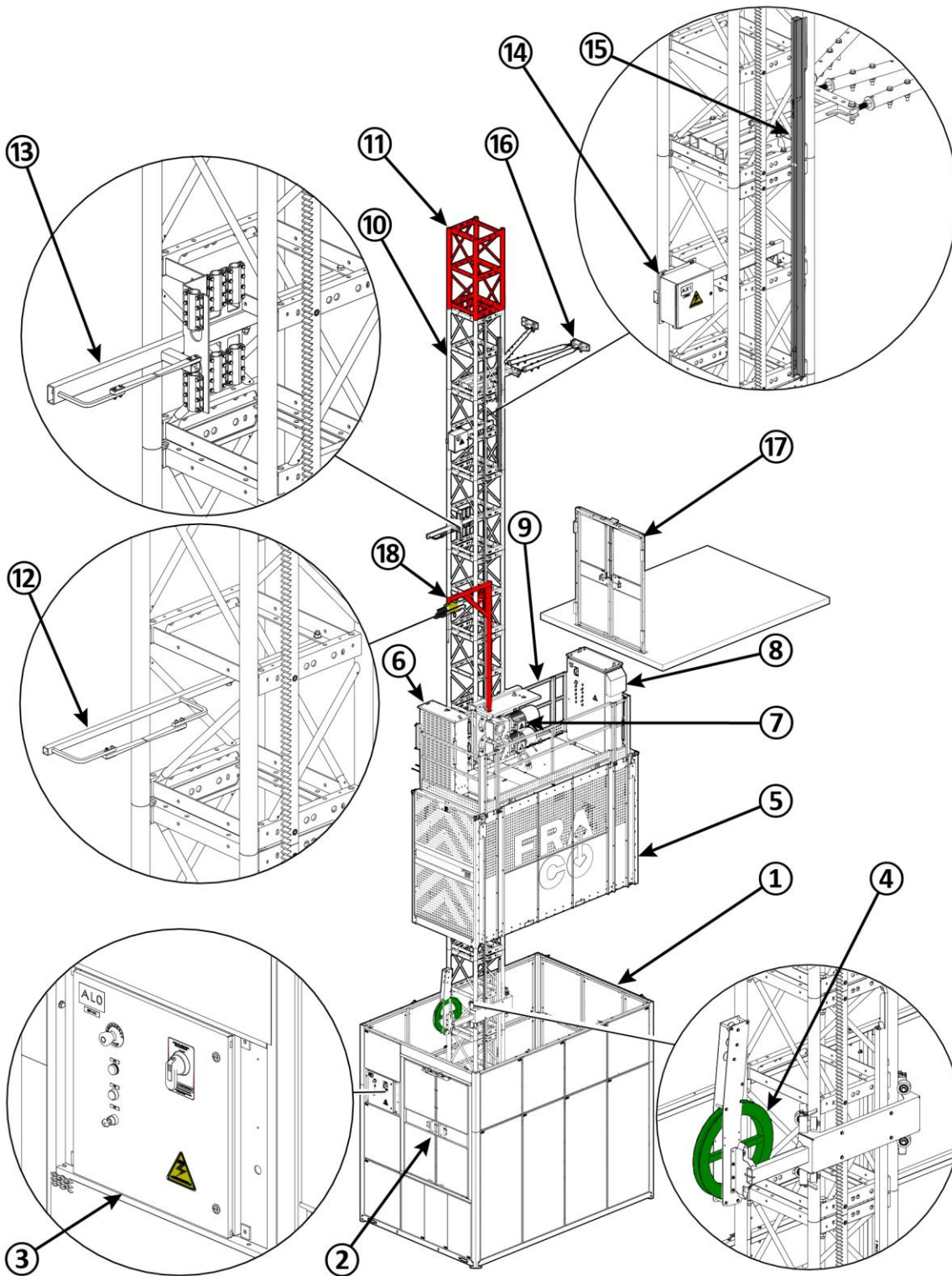


Figure 5.2.1A

#	DESCRIPTION
①	Ground protection enclosure
②	Ground enclosure landing door
③	Ground service panel (AL0)
④	Cable trolley
⑤	Hoist car
⑥	Electric brake resistor bank
⑦	Motor pack
⑧	Rooftop service panel (AS2)
⑨	Rooftop area guardrails
⑩	SEH mast section 26" x 26" x 5'-0"
⑪	SEH end mast section 26" x 26" x 5'-0" (painted red)
⑫	Cable guide
⑬	Cable support
⑭	Cable mid mast junction box
⑮	Level travel limit activation pad
⑯	Mast tie and anchor assembly
⑰	Level landing door
⑱	Mast erecting jib and winch

5.3 GENERAL DIMENSIONS

5.3.1 SINGLE CAR (SINGLE UNIT)

NOTICE

These dimensions are based on the main standard dimension option for this model (Refer to length-3 listed within [TABLE 4 - DIMENSIONS AND WEIGHTS, ON PAGE 22](#)). Other standard dimensions are available as selectable options upon purchase. Customized dimensions may even be available as a special project application. Refer to the engineering package provided with your special project. This package should always be available onsite to be reviewed.

Table 5 – SINGLE CAR DIMENSIONS

SINGLE-CAR HOIST DIMENSIONS			
Item	Description	USCS	SI
①	Ground Enclosure Width	112 in	2845 mm
(*) ②	Ground Enclosure Length	(*) 168 in	(*) 4267 mm
③	Center of Mast to Car Edge Dimension	17 in	432 mm
④	Car Width (External)	61.5 in	1562 mm
(*) ⑤	Car Length (External)	(*) 154 in	(*) 3912 mm
⑥	Car Height without Drive Unit (External)	96 in	2438 mm
⑦	Car Height with Drive Unit (External)	140 in	3556 mm
⑧	Ground Enclosure Door Base Height	49 in	1245 mm
⑨	Ground Enclosure Door Height	84.5 in.	2146 mm
⑩	Ground Enclosure Height	144 in	3658 mm
⑪	Maximum distance from the car door to the landing door	MAX 8 in	MAX 203 mm
⑫	MIN & MAX Distances from the car door to the landing sill	MIN 0.5 in MAX 2.5 in	MIN 13 mm MAX 64 mm
LEGEND:			
(*) Car Length – This is the length associated for the most common car length. Smaller and longer car options are available upon purchase. The same applies to enclosure lengths.			

SINGLE-CAR HOIST DIMENSIONS

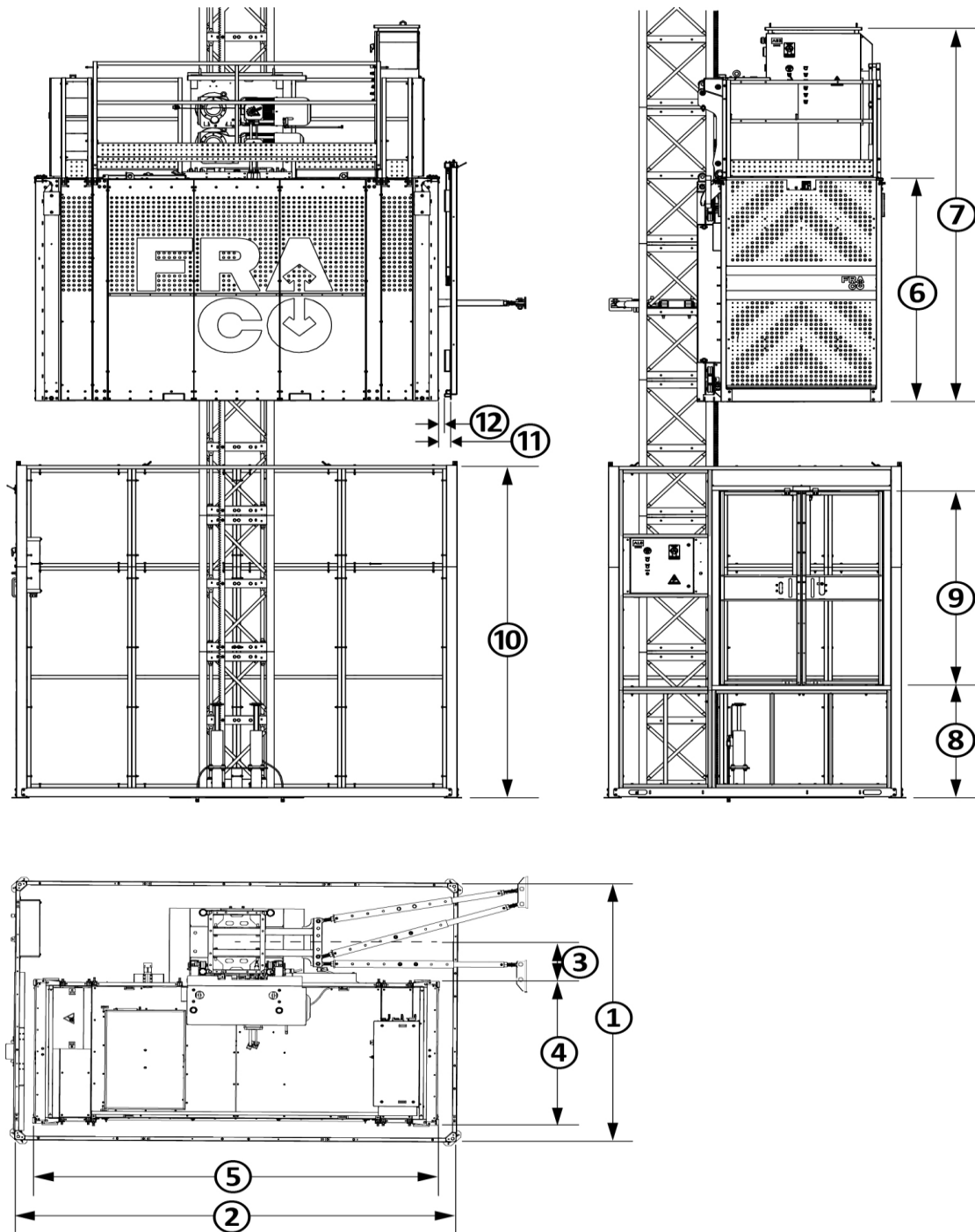


Figure 5.3.1A

5.3.2 TWIN-CAR (DUAL UNIT)

NOTICE

These dimensions are based on the main standard dimension option for this model (Refer to length-3 listed within [TABLE 4 - DIMENSIONS AND WEIGHTS, ON PAGE 22](#)). Other standard dimensions are available as selectable options upon purchase. Customized dimensions may even be available as a special project application. Refer to the engineering package provided with your special project. This package should always be available onsite to be reviewed.

Table 6 - TWIN CAR DIMENSIONS

TWIN-CAR HOIST DIMENSIONS			
Item	Description	USCS	SI
①	Ground Enclosure Width	173 in	4394 mm
(*) ②	Ground Enclosure Length	(*) 168 in	(*) 4267 mm
③	Center of Mast to Car Edge Dimension	17 in	432 mm
④	Car Width (External)	61.5 in	1562 mm
(*) ⑤	Car Length (External)	(*) 154 in	(*) 3912 mm
⑥	Car Height without Drive Unit (External)	96 in	2438 mm
⑦	Car Height with Drive Unit (External)	140 in	3556 mm
⑧	Ground Enclosure Door Base Height	49 in	1245 mm
⑨	Ground Enclosure Door Height	84.5 in	2146 mm
⑩	Ground Enclosure Height	144 in	3658 mm
⑪	Maximum distance from the car door to the landing door	MAX 8 in	MAX 203 mm
⑫	MIN & MAX Distances from the car door to the landing sill	MIN 0.5 in MAX 2.5 in	MIN 13 mm MAX 64 mm
LEGEND:			
(*) Car Length – This is the enclosure length associated to the most common car length. Smaller and longer car options are available upon purchase. The same applies to enclosure lengths.			

TWIN-CAR HOIST DIMENSIONS

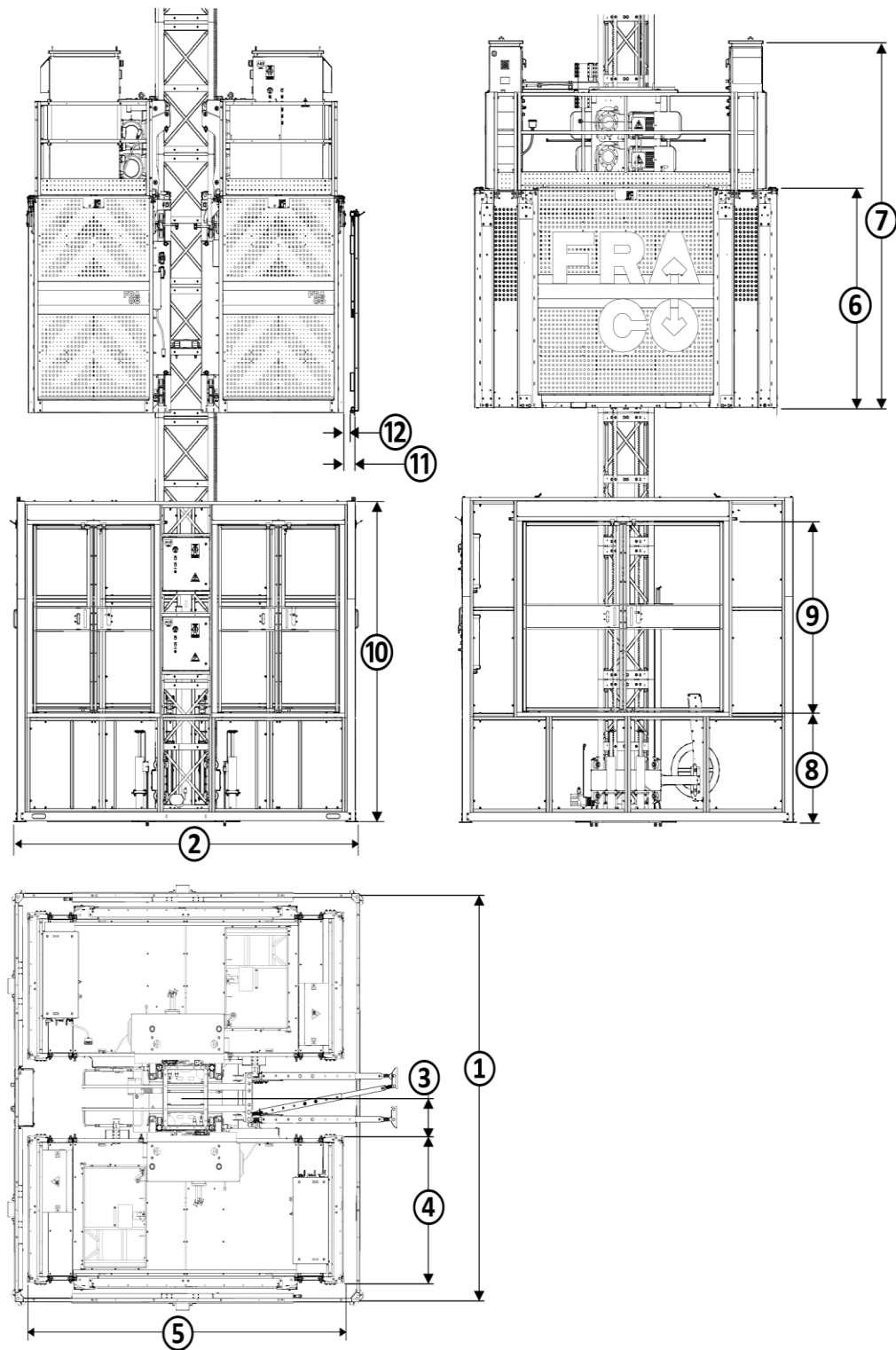


Figure 5.3.2A

5.4 DOORS AND ACCESS POINTS

STANDARD APPLICATION:

DOOR SIDES: The car, ground enclosure, and landing doors come in many configurations selected upon purchase. Below are general rules, but these may be different depending on your specific project. In any cases, always refer to your engineering package and project layout. Sides of the hoist shall always be named as per the **reference** below:

GENERAL REFERENCE RULES:

Regarding your project layout drawing when standing in the hoist car and facing toward the mast:

- Side "A" is to the left of the mast;
- Side "B" is to the right of the mast;
- Side "C" is the side opposite to the mast;
- Side "D" is the side of the mast.

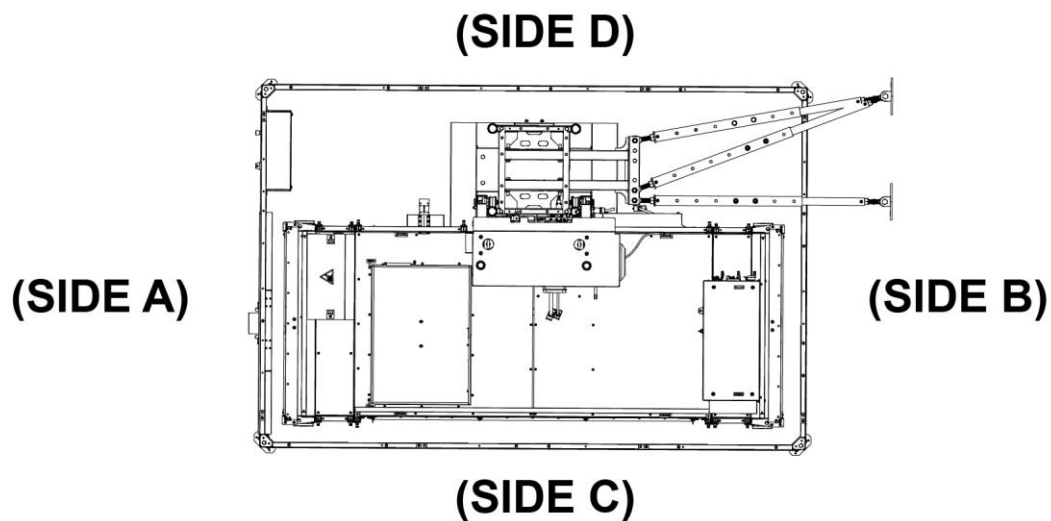


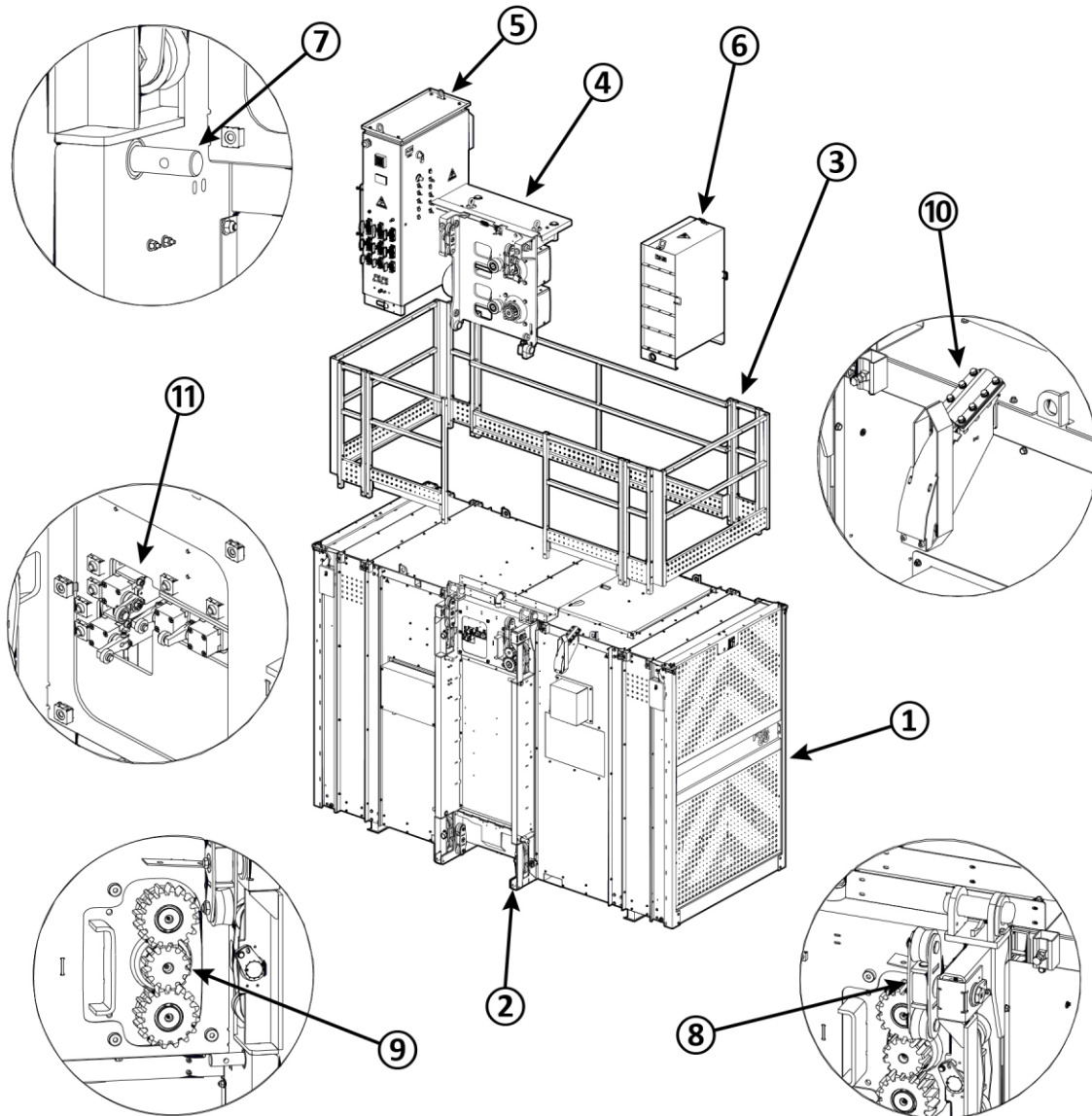
Figure 5.4A

- **FRACO SEH personnel hoists** are provided with a ground/pit enclosure.
- Each landing(s) serviced by the personnel hoist, must be equipped with a **HOISTWAY DOOR (LANDING DOOR)**.

Note: Multiple door options (size and design) are available upon purchase.

5.5 HOIST EXTERNAL COMPONENTS

This section displays the main components from the car assembly.

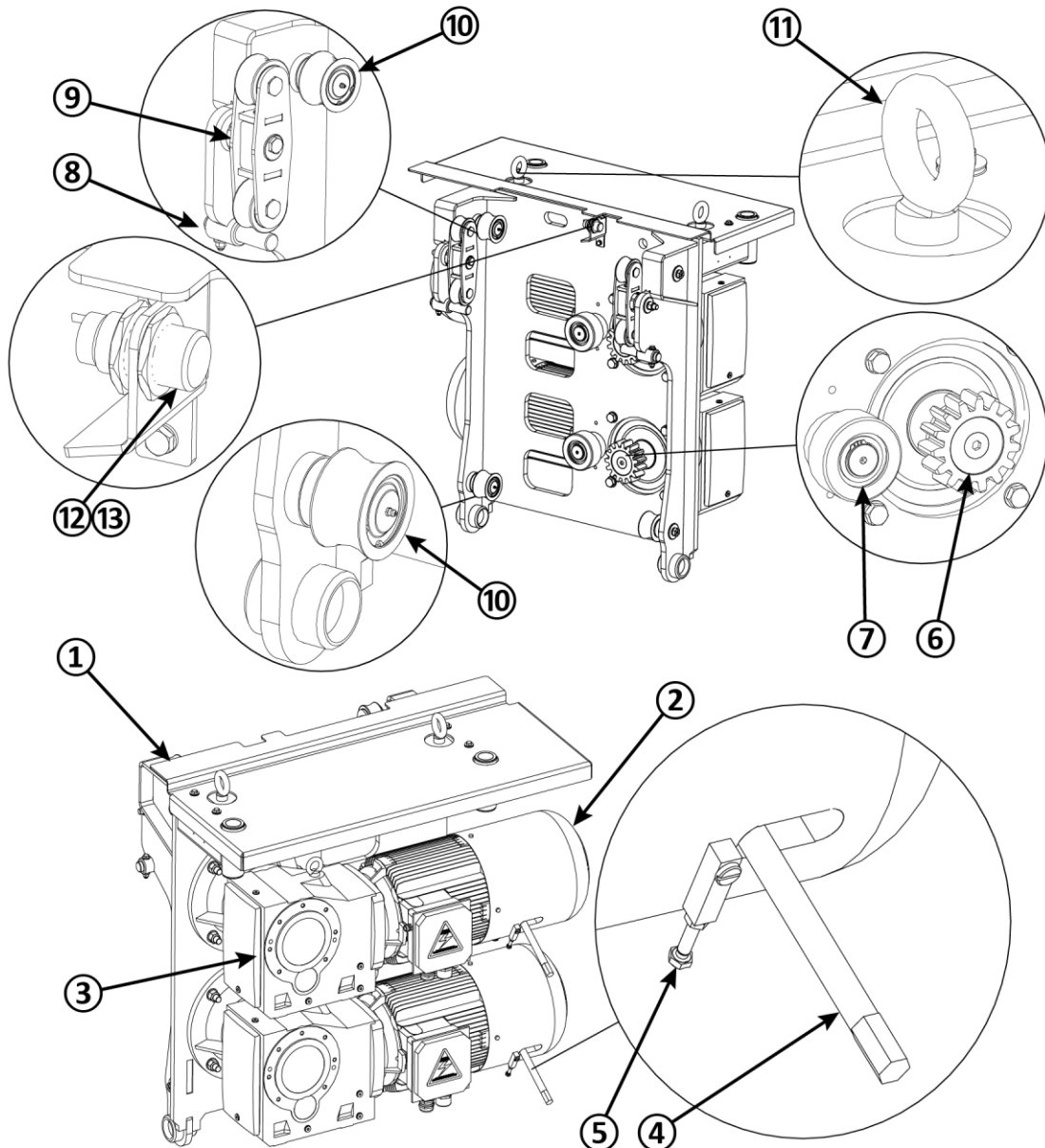


N°	DESCRIPTION	N°	DESCRIPTION
①	Car enclosure	⑦	Safety pins
②	Car back frame	⑧	Tandem roller assembly
③	Rooftop gaurdrail	⑨	Safety device pinion
④	Power unit (assembled motor unit)	⑩	Electric cable gooseneck
⑤	Car electrical panel	⑪	Travel dectector limit swiches
⑥	Resistor bank		

Figure 5.5A

5.6 POWER UNIT

This section displays the main components of the power unit.



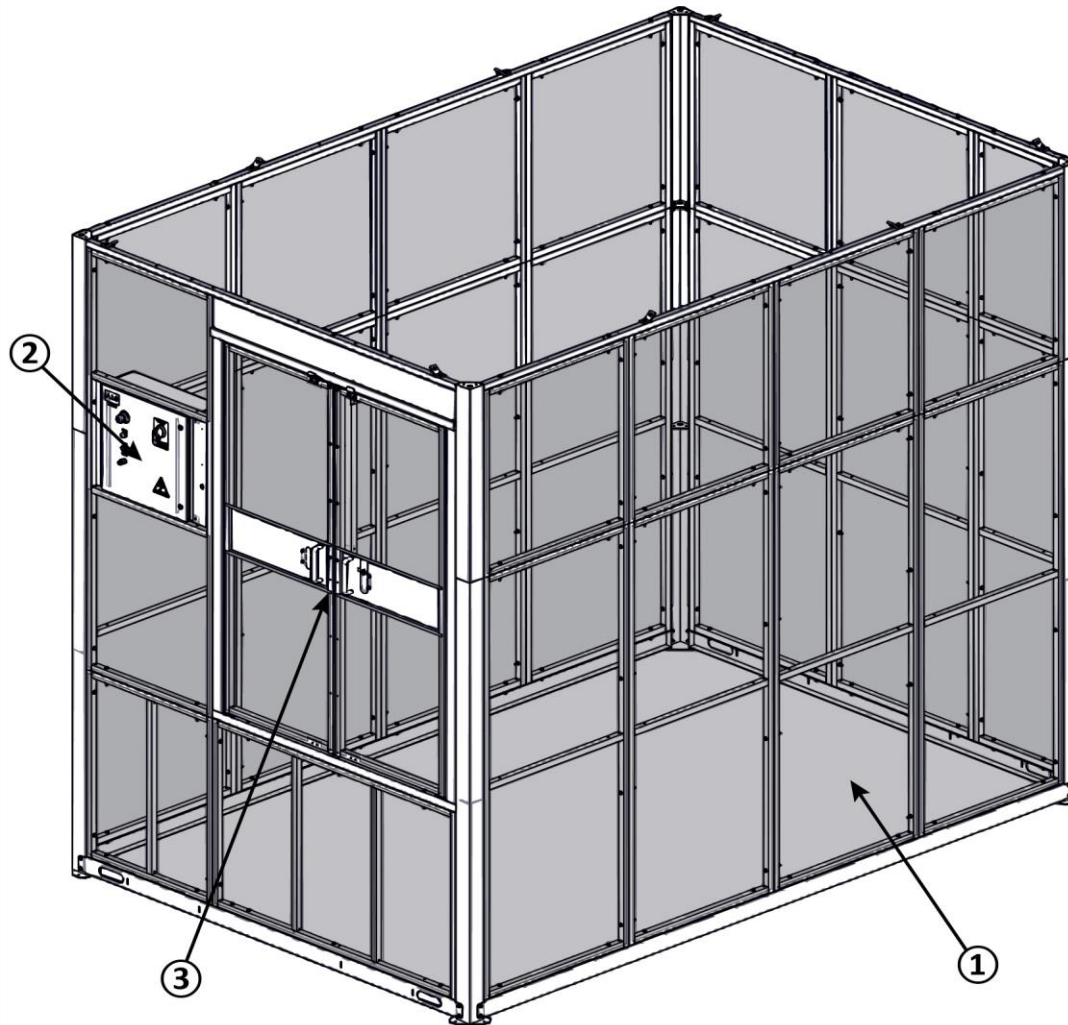
N°	DESCRIPTION	N°	DESCRIPTION
①	Power unit frame	⑧	Safety pin
②	Electric motor	⑨	Tandem rollers
③	Gearbox	⑩	Single guide roller
④	Brake manual release lever	⑪	Hoisting rigging (Tie off and lifting point)
⑤	Brake release stopper	⑫	Proximity rack detector
⑥	Pinion gear	⑬	(Option) Auto-lubrication grease dispenser adaptor
⑦	Rack back roller		

Figure 5.6A

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5.7 GROUND ENCLOSURE

This section displays the main components of the ground enclosure.



N°	DESCRIPTION
①	Ground enclosure panels
②	Ground electrical panel (AL0)
③	Ground enclosure access door

Figure 5.7A

GROUND ENCLOSURE DOOR WITH LIMIT SWITCH

A ground enclosure door is installed to secure the access to the pit area of the ground enclosure from unauthorized access at the ground level.

The ground enclosure door shall be equipped with an electrical limit switch (ITEM ①), that monitors the position of the door (OPEN or CLOSED). With the door in the closed position, the limit switch plunger enters the limit switch head and activates it to signal that the door is closed.

This door shall only be opened when the hoist car is stopped and resting at the ground level. Opening the door while the car is stopped disables all controls and shall also stop a car current travel operation. To open the ground enclosure door, with the hoist car resting at the designated level pull down both door handles and push/pull the doors.

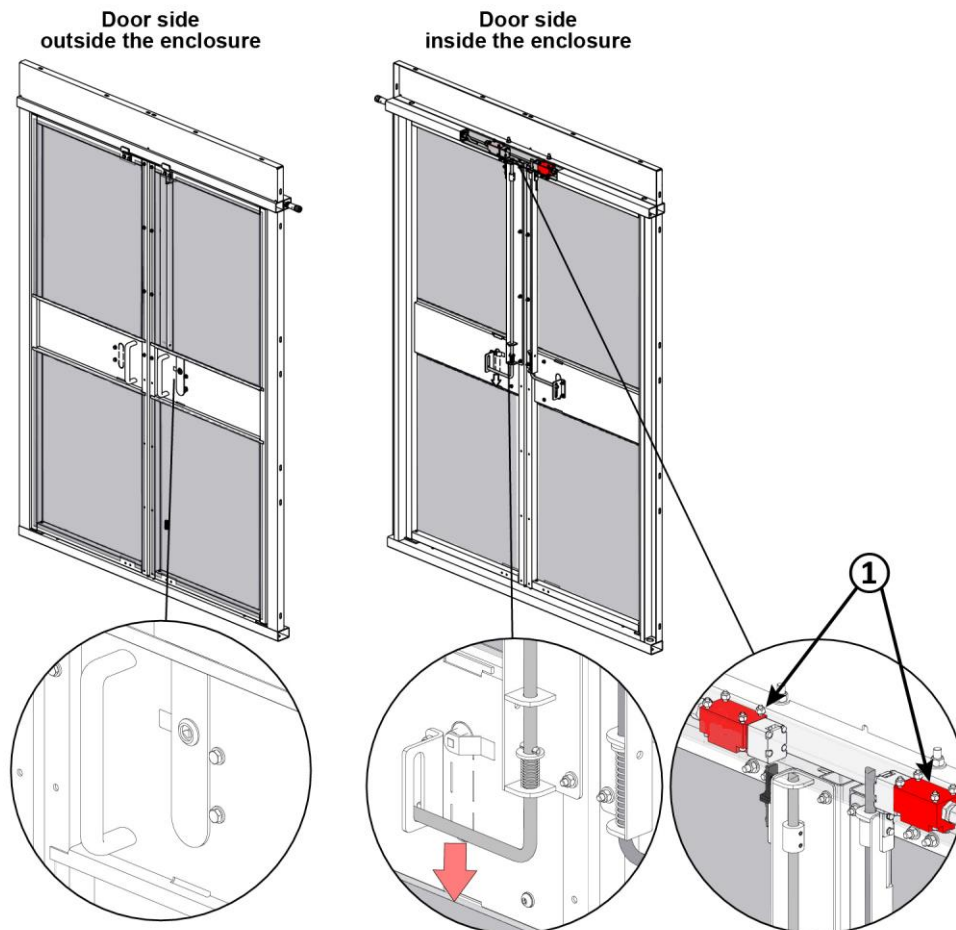


Figure 5.7B

5.8 HOISTWAY DOOR (LANDING DOOR)

Hoistway doors, located at every landing serviced by the hoist, may be opened either from the hoistway or landing side in compliance with the regulations of the local authorities having jurisdiction.

These doors are equipped with a spring-loaded mechanical lock and a limit switch (ITEM ①) that prevents the normal operation of the hoist unless all the hoistway doors are in the closed and locked position. With the door in the closed position, the limit switch plunger enters the limit switch and activates it to signal that the door is closed and lock. An option without limit switch may be permitted under some local jurisdiction. Additionally, keep in mind that some local jurisdictions having authority may require an interlocking system, which has the extra feature of electrically locking the limit switch plunger, the unlocking of which is submitted to programming conditions.

HOISTWAY DOOR WITH LIMIT SWITCH

This door shall only be opened when the hoist car is stopped and resting at the ground level. Opening the door while the car is stopped disables all controls and shall also stop a car current travel operation. To open the landing door, with the hoist car resting at the designated level pull down both door handles and push/pull the doors.

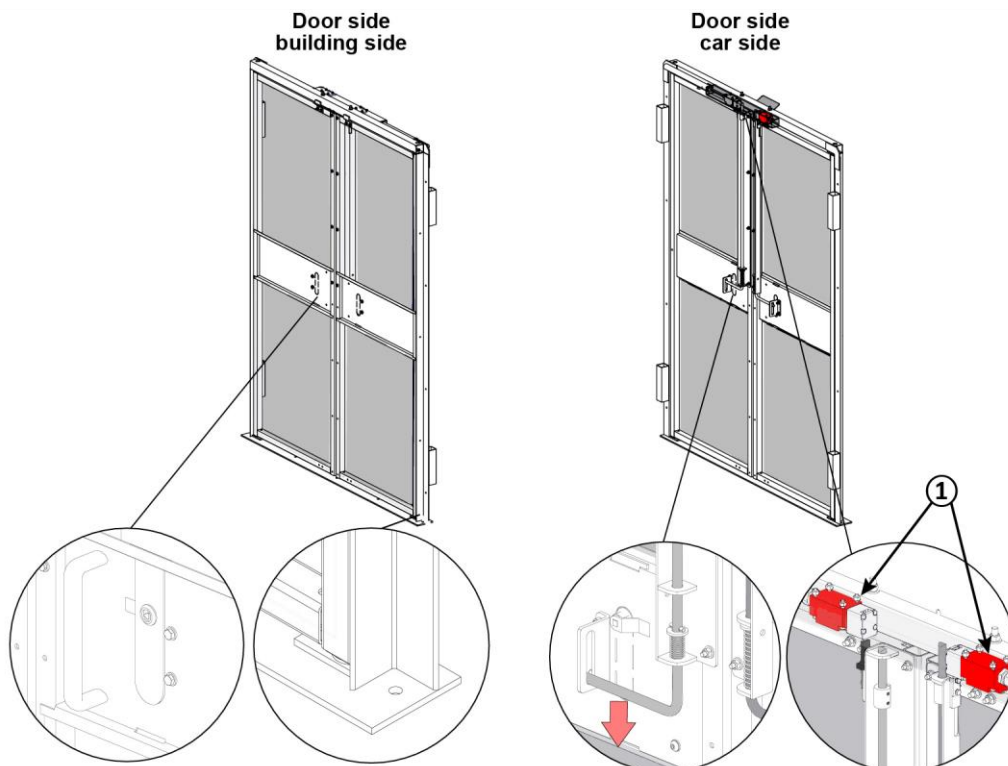


Figure 5.8A

HOISTWAY DOOR WITH MECHANICAL LOCK (WITHOUT LIMIT SWITCH)

The use of landing door with no limit switch door closure detection may be allowed under specific condition. Always refer to the local authorities having jurisdiction to learn if mechanical lock landing doors are permitted. To unlock the door, slide down the door spring latches to unlock and open the door.

⚠ WARNING

It is prohibited to open the hoistway doors unless the hoist is positioned at the designated landing level where the door is located.

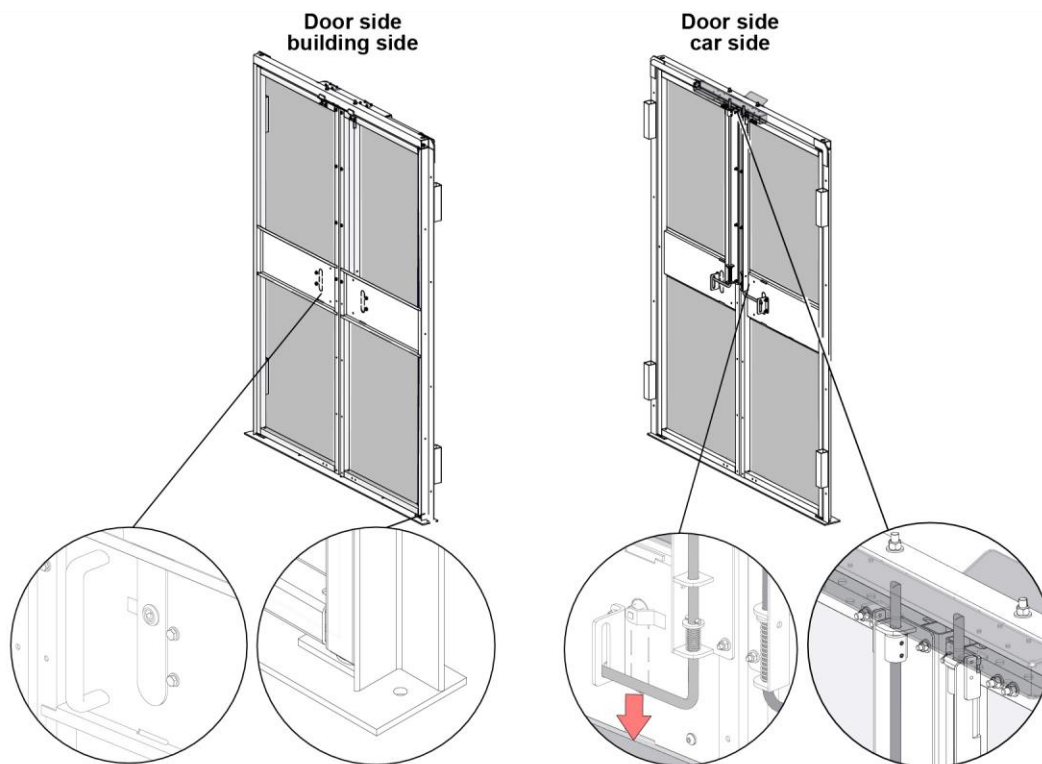


Figure 5.8B

5.9 REGULATORY INDIVIDUAL TIE-OFF POINTS

Workers exposed to fall hazards must wear a safety harness certified according to local standards and regulations in effect. Tie-off points (ITEM ①) shown in the figure are designed by Fraco and are the only locations approved to attach a fall arrest safety harness to the hoist. Please remember that improper use of the fall arrest device can increase risks of injury. Consequently, it is recommended to have proper training in the use of fall arrest devices before proceeding with work at height. A visual inspection of the tie-off point must be made prior to attaching a fall arrest safety harness and should not be used if defects are found.

⚠ DANGER



Always wear a fall arrest safety harness when standing on the roof of the hoist when guardrail sections are not completely assembled.

Tie-off locations are individual and limited to the attachment of one (1) worker each.

⚠ WARNING

Tie-off points designed by Fraco are the only locations approved to attach a fall arrest safety harness to the personnel hoist.

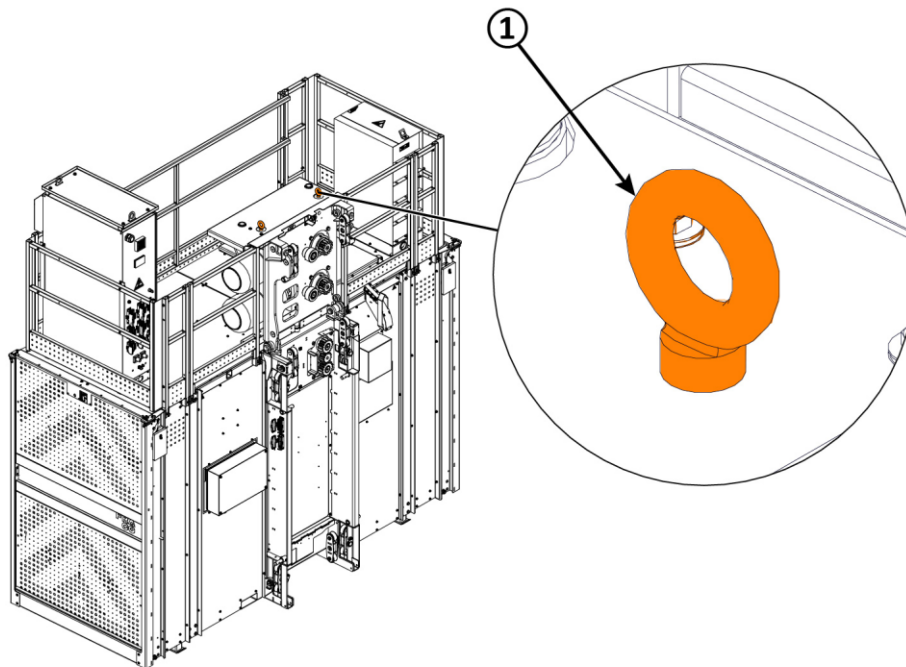


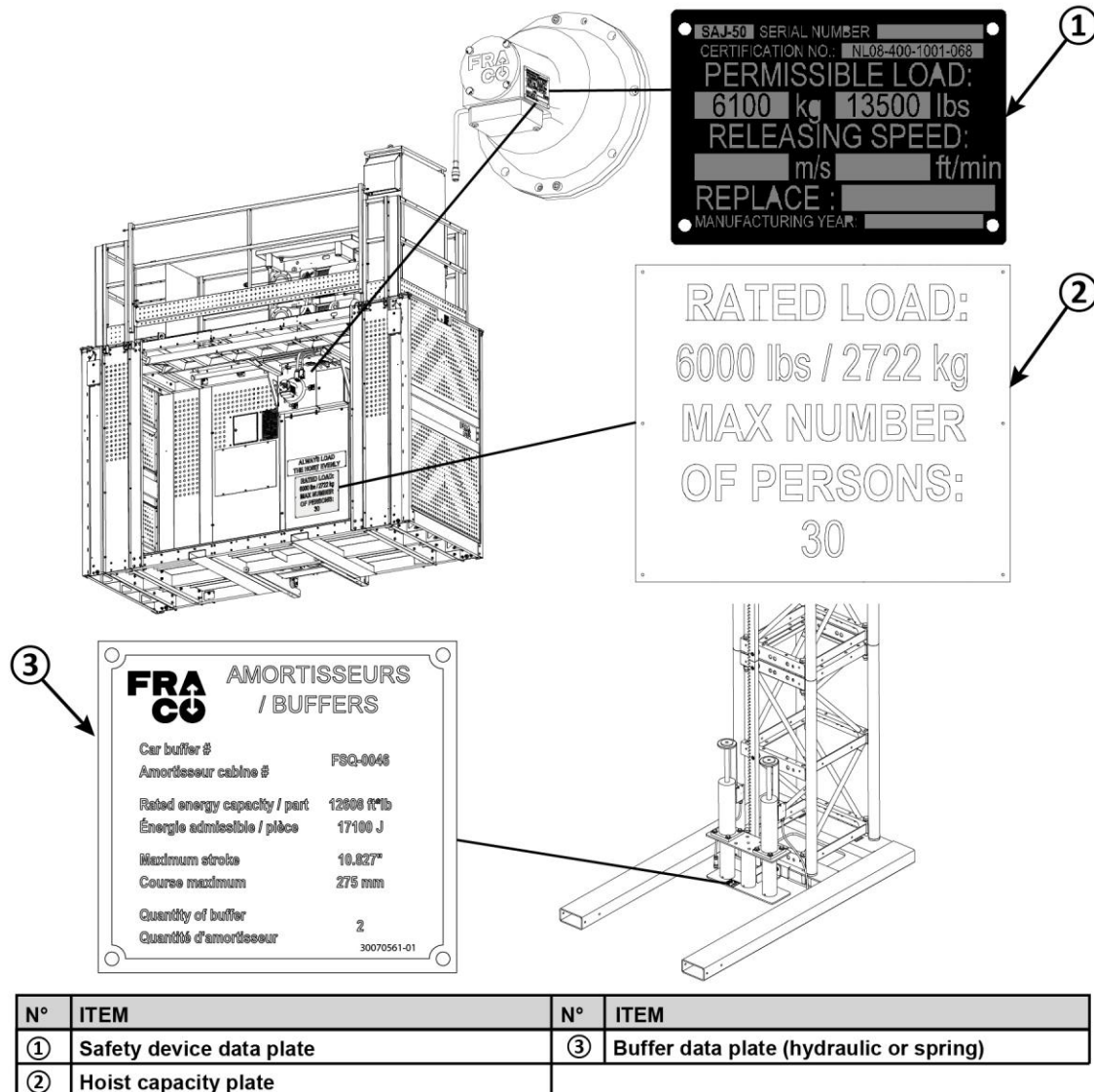
Figure 5.9A

5.10 DATA PLATES AND STICKERS

Always make sure that all data plates and stickers are clean, legible, and in good condition. If the plates and/or stickers are missing, damaged or illegible, they **must** be replaced. Contact your Fraco representative to get replacements.

5.10.1 DATA PLATES AND CAPACITY PLATE

Informative plates are located inside the unit and display all necessary and required data.



N°	ITEM	N°	ITEM
①	Safety device data plate	③	Buffer data plate (hydraulic or spring)
②	Hoist capacity plate		

Figure 5.10.1A

DATA PLATE LOCATED INSIDE THE CAR

		MANUFACTURER: Fraco Products Ltd 91 Chemin des Patriotes St-Mathias-sur-Richelieu, Québec J3L 6B6 Canada	
		MODEL: <input type="text"/>	
SERIAL #: <input type="text"/>	YEAR: <input type="text"/>		
CAPACITY: <input type="text"/> kg <input type="text"/> lb	# OF PERSON: <input type="text"/>	AMPS: <input type="text"/> A	
SPEED: <input type="text"/> m/min <input type="text"/> fpm	VOLTAGE: <input type="text"/> V	FREQUENCY: <input type="text"/> Hz	
ELECTRICAL DIAGRAM: <input type="text"/>			
MACHINERY DETAILS		BUFFERS	
POWER: <input type="text"/> kW <input type="text"/> hp	PARTS #: <input type="text"/>		
GEARBOX TYPE: <input type="text"/>	# OF BUFFERS: <input type="text"/>		
MODEL: <input type="text"/>	STROKE: <input type="text"/> mm <input type="text"/> inch		
# OF GEARBOX: <input type="text"/>	MAX LOAD: <input type="text"/> lbs-ft		
RATIO: <input type="text"/>			
SAFETY DEVICE		WEIGHTS	
PART #: <input type="text"/>	CAGE: <input type="text"/> kg <input type="text"/> lb		
MODEL: <input type="text"/>	MOTOR PACK: <input type="text"/> kg <input type="text"/> lb		
CAPACITY: <input type="text"/> kg <input type="text"/> lb	ELECTRIC PANEL: <input type="text"/> kg <input type="text"/> lb		
TRIP SPEED: <input type="text"/> m/s <input type="text"/> fpm	COUNTER WEIGHT: <input type="text"/> kg <input type="text"/> lb		
WARNING Only use original parts. Do not modify equipment. Failure to comply may lead to serious damage and personal injury as well as death.			

Figure 5.10.1B

5.10.2 STICKERS AND WARNING SIGNS

NOTICE

The following content may be slightly different. Additional sign(s) and decal(s) may be provided in compliance with regulations of local authorities having jurisdiction. You must treat these additional decals and plates with the same regard as the ones mentioned in this manual. It is important to have them replaced without delay if any are missing, damaged, or illegible.



Figure 5.10.2A

5.11 DOCUMENTATION COMPARTMENT

Documentation (manuals and inspection sheets) must be stored in the weatherproof box located inside the car. This box may be located on one of the interior car panels.

SAFETY INSTRUCTIONS

Make sure all the necessary documentation, such as this user manual is stored inside the document holder and readily available. If a document is missing, damaged, or illegible; it is important that it is replaced.

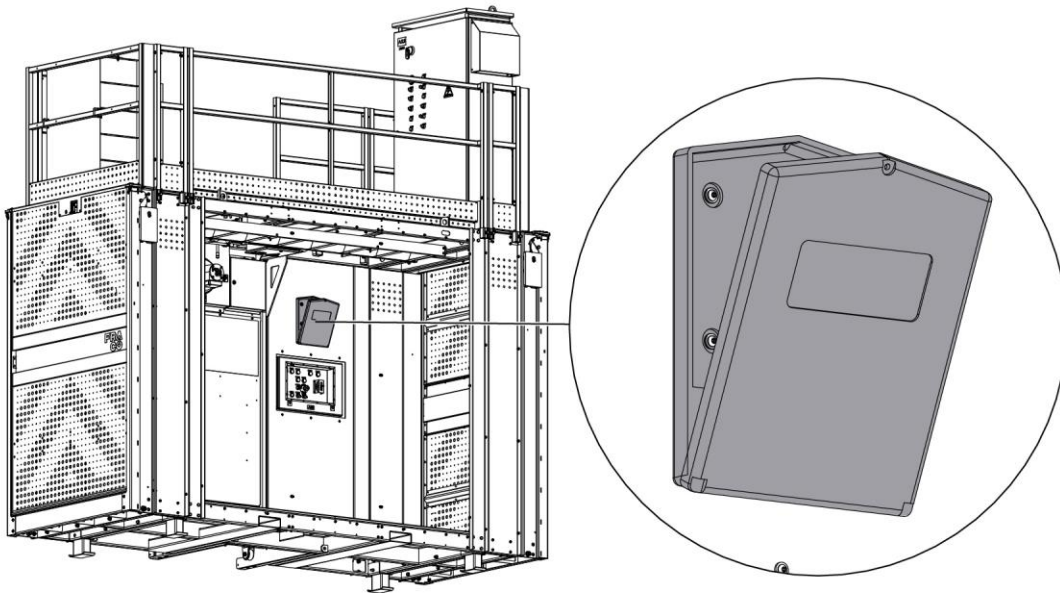


Figure 5.11.A

5.12 CAR LIGHTS

The car is always equipped with a set of one (1) or two (2) lights, controlled from the car operator control panel AS3. The amount of light fixtures depends on the space available inside the car.

- **CAR LIGHTS:**

To turn ON and OFF the car light(s) (ITEM ①), use the two (2) positions selector switch (ITEM ②) on the **CAR OPERATOR CONTROL PANEL (AS3)**.

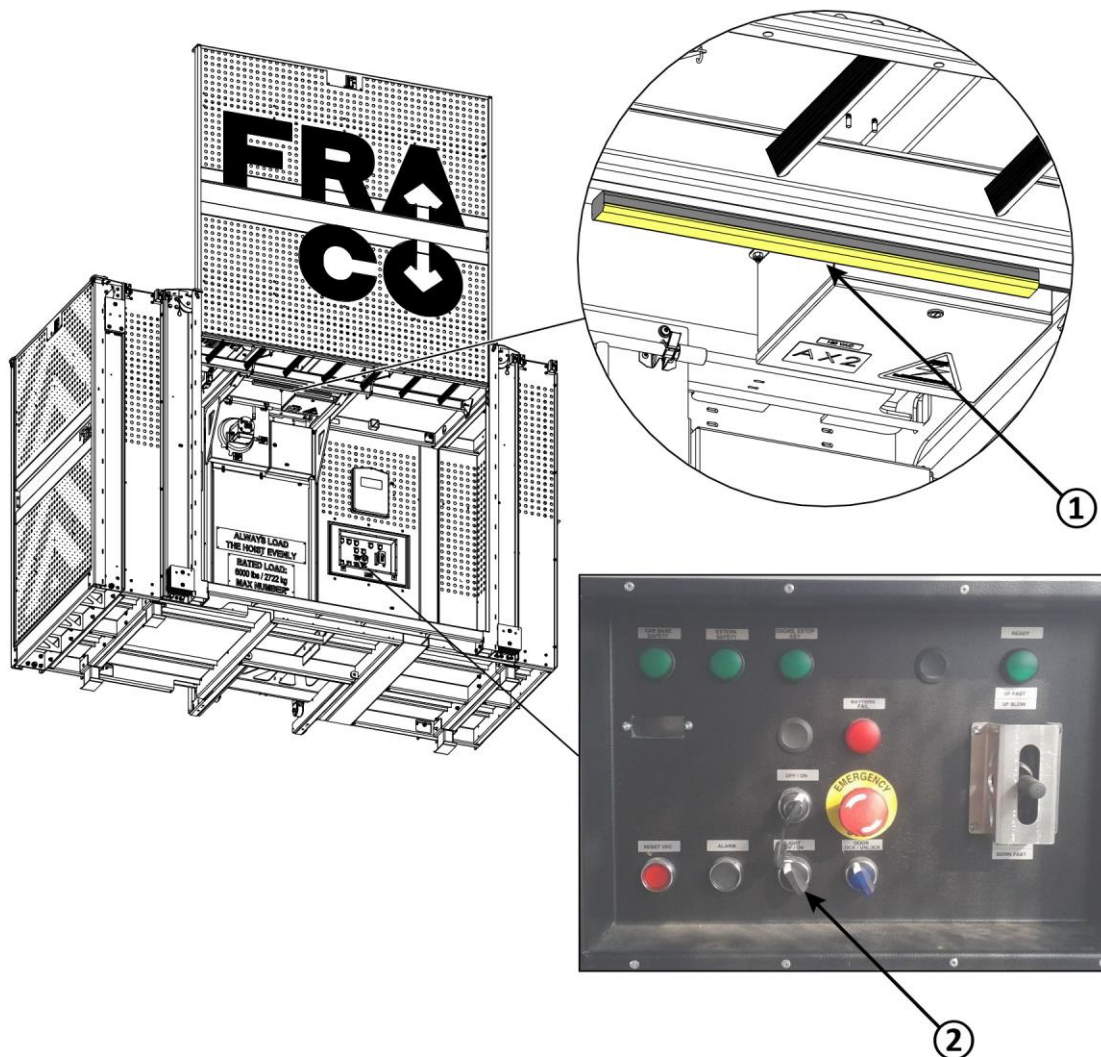


Figure 5.12A

5.13 ROOFTOP ACCESS HATCH AND LADDER

Authorized personnel, including installation and maintenance personnel, may require access to the rooftop of the car. This is possible through the roof hatch and ladder.

⚠ WARNING

Only access the rooftop if all guardrails are installed. If not, then a safety harness is required to be worn and attached to one individual valid tie-off point. Refer to [SECTION 5.9. REGULATORY INDIVIDUAL TIE-OFF POINTS, ON PAGE 38](#).

To access the rooftop:

- Remove the ladder (**ITEM ①**) from its stowed position support brackets (**ITEM ②**). Ladder must be fixed in place using the provided binders (**ITEM ③**) or an equivalent replacement.

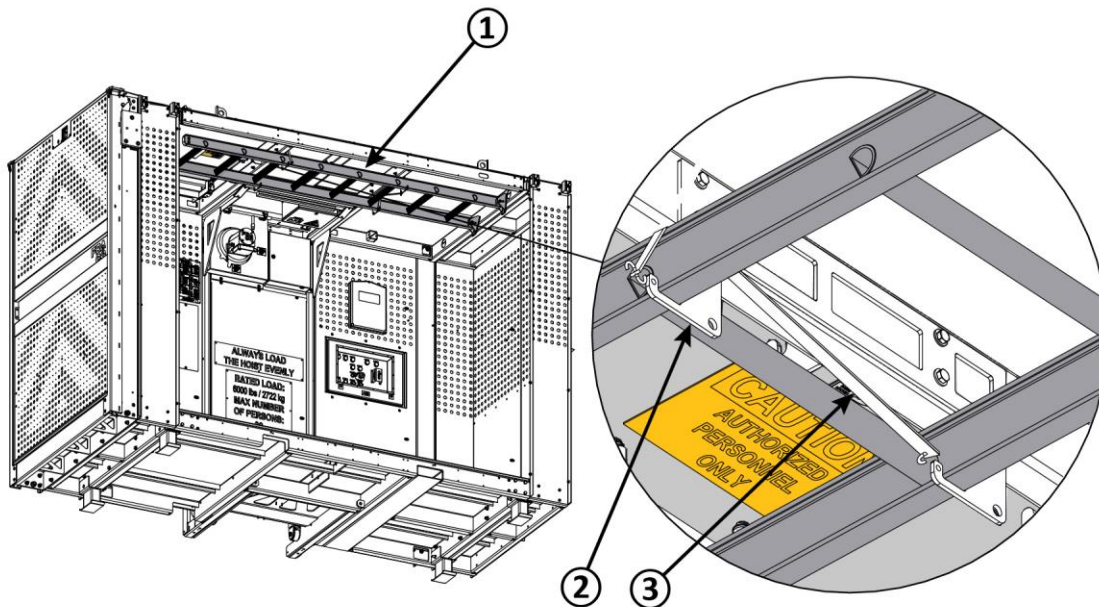


Figure 5.13A

- Attach the ladder into position at the location of the roof hatch.

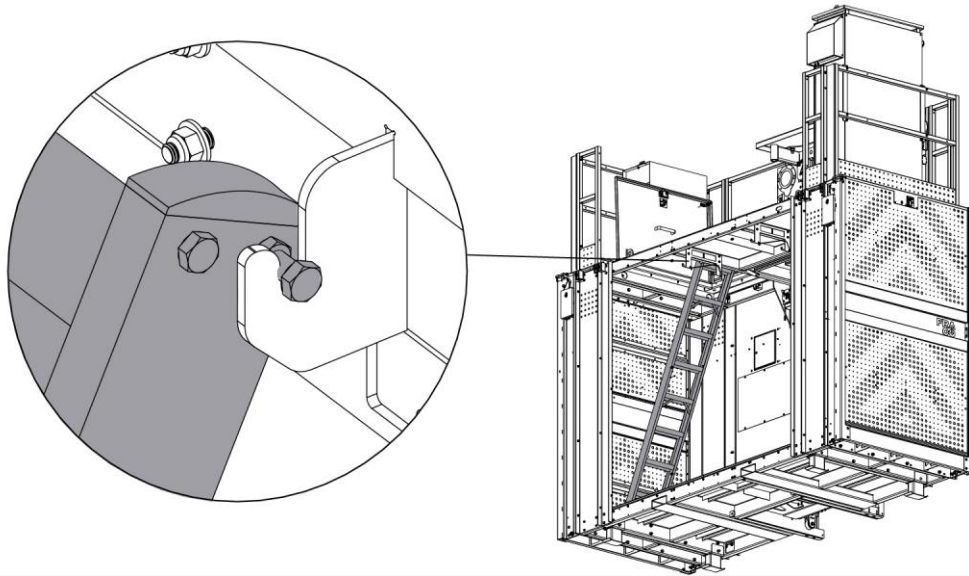


Figure 5.13B

- From inside the car, open the roof hatch using the triangular security key (ITEM ①) on the hatch lock (ITEM ②). Push the roof hatch upward on its hinge and ascend the ladder to access the rooftop. Once on the top of the car, close the roof hatch to use as footing. You do not need the use of a key to unlock the roof hatch lock from the rooftop location.

NOTICE

The roof hatch is equipped with a limit switch (ITEM ③) engaging a contact key (ITEM ④) that prevents the operation of the hoist unless the hatch is closed and locked.

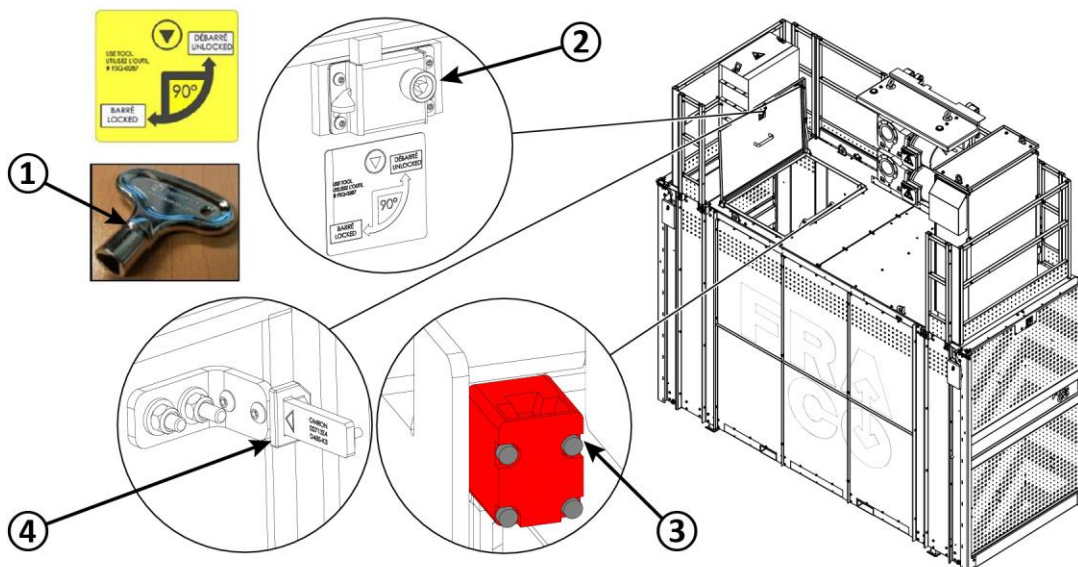


Figure 5.13C

6. TRANSPORT

The car must be transported by competent and experienced persons, able to operate the lifting equipment having the required lifting capacity. Reference the Parts Book ([98030864-EN/FR](#)) to learn more about the weight and dimensions of the components.

6.1 INSPECTION UPON DELIVERY

- Inspect the shipment for any transport-related damages and to validate that all necessary parts were shipped with your order.
- Immediately advise the transport company and the seller in case of damages or missing part(s).

6.2 UPON DELIVERY OR COLLECTION OF THE MACHINE

- The machine may be moved/transported with the help of a **FORKLIFT** or a **CRANE**.

Reference [SECTION 5.1. GENERAL DATA, ON PAGE 20](#) to learn the weight of the hoist car in the configuration associated with your model.

6.2.1 LIFTING WITH A FORKLIFT

- The car by itself, with no guardrail or power unit installed may be lifted with a forklift.
- **Warning!** Forklift forks must be of the appropriate length, size, and capacity.

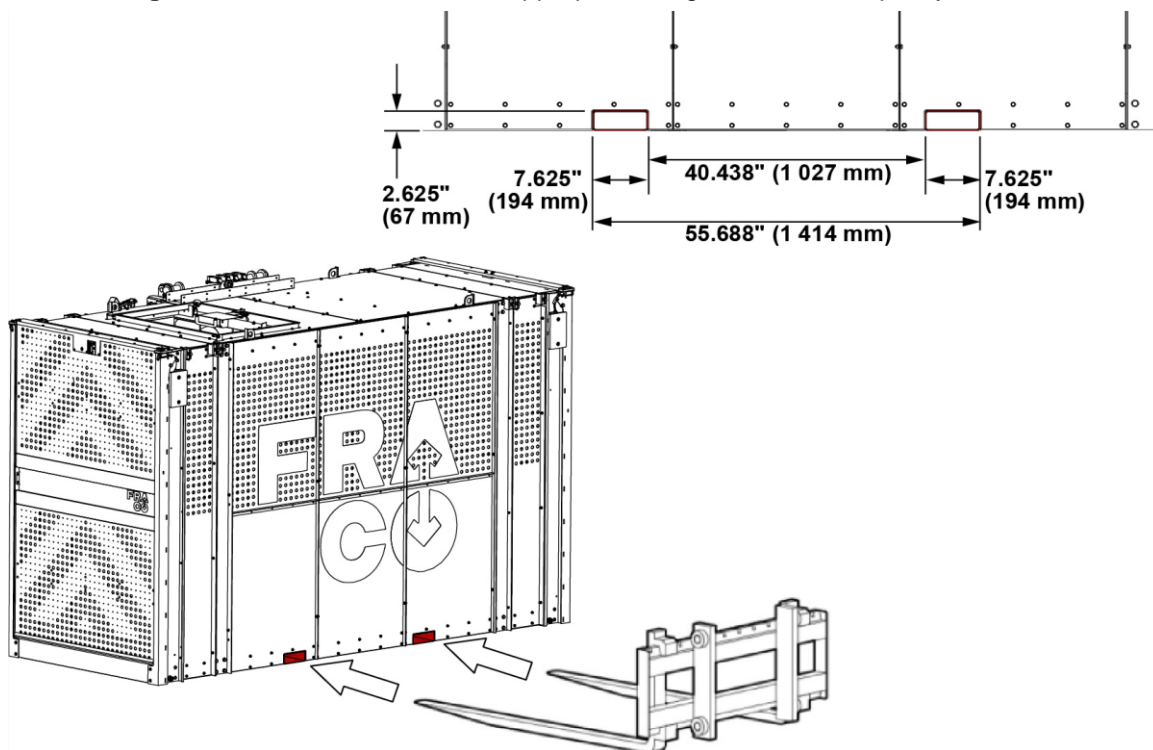


Figure 6.2.1A

6.2.2 LIFTING WITH A CRANE

- The car by itself, empty with no guardrail or power unit installed may be lifted with a crane.

NOTICE

Individuals need to receive proper rigging training. Fraco is not a provider of certified rigging training. The instructions and advice on this page do not replace an official rigging training but must still be followed to ensure safe rigging operation.

When lifting with chains/sling always make sure that there is enough length to respect the **MAXIMUM inclination of 30°**. Any more inclination and the hoist ring resistance will significantly decrease. As well, all lifting equipment used in an application must be certified safe to use.

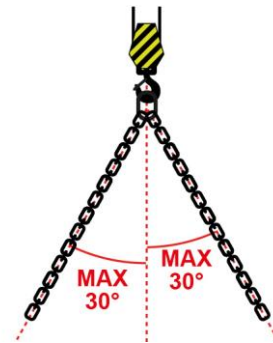


Figure 6.2.2A

Connect the crane hooks to the 4 crane lugs located at the four corners of the roof at the car's base assembly.

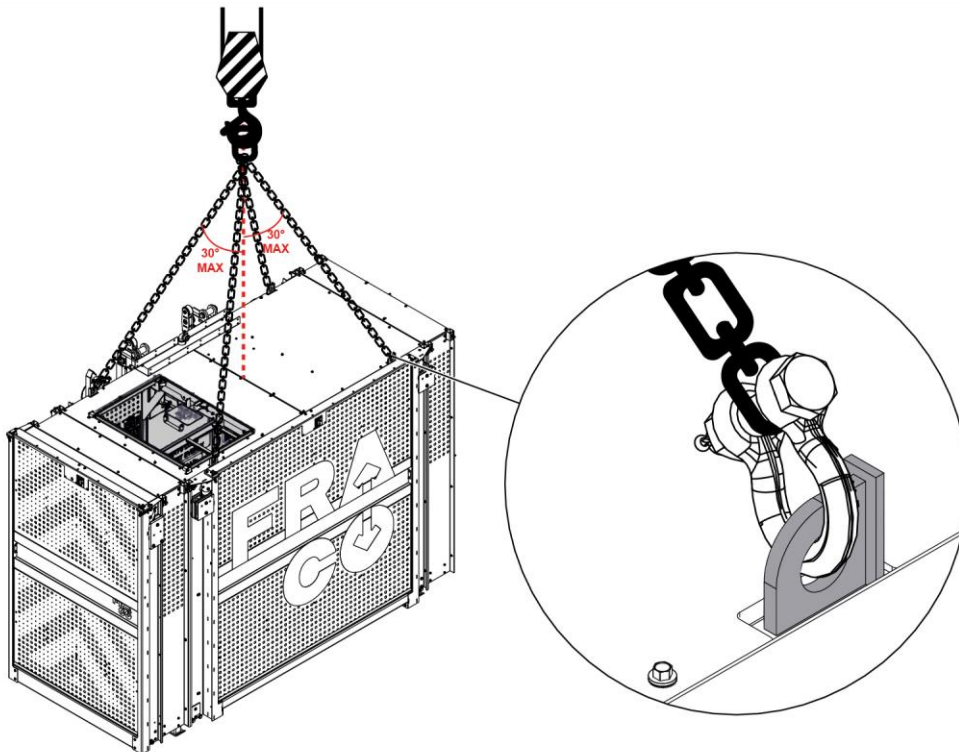


Figure 6.2.2B

7. INSTALLATION DATA

⚠ WARNING

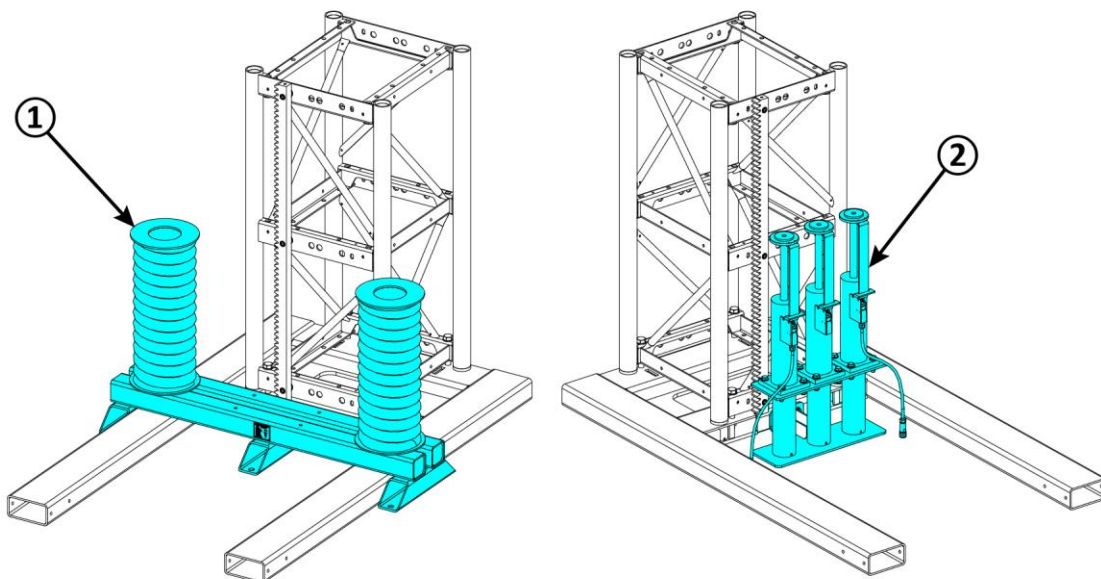
This section of the manual IS NOT AN INSTALLATION GUIDE but a simple list of reminders, recommendations, and requirements to respect, relative to the assembly/disassembly of the machine. Detailed instructions about assembly/disassembly are available in the Installation & maintenance manual (98040203-EN).

7.1 BASE AND BUFFER TYPES

The information regarding the use and installation of the ground base are available in the Installation & maintenance manual (98040203-EN).

The base is made of a steel frame bolted to the ground over a concrete slab foundation and is equipped with either spring buffers or hydraulic buffers.

Note: buffer types (spring or oil) are interchangeable, but specific buffer configurations are given depending on the car **RATED LOAD** and **RATED SPEED** configuration. The figure below is for reference only, the product may differ depending on the model configuration.



N°	DESCRIPTION
①	Spring buffer support - 2 Buffers configuration (for reference)
②	Hydraulic buffer support - 3 Buffers configuration (for reference)

Figure 7.1A

7.2 GROUND REQUIREMENTS

SAFETY INSTRUCTIONS

Always refer to the **ENGINEERING PACKAGE** specific to the project for instructions and requirements regarding the use of a ground base and its foundation.

- The base must always be resting on top of a concrete slab foundation.
- The foundation shall have enough load-bearing capacity, where some situations may require shoring to be placed under the foundation.
- Dimensions of the foundation depend on the installation (personnel hoist model, height, capacity, etc.). Typically, a concrete slab must be at least 12" (300 mm) thick. Also, it must always be designed, reviewed, and approved by a competent person or an engineer.
- Foundation must be leveled.
- The foundation either above ground or below ground level needs proper water drainage provided as displayed in the Installation & maintenance Manual ([98040203-EN](#)).
- Ensure that there is no excavating of the ground or washout of material near the base.
- If there is a risk of frost damage, the foundation must be insulated.
- The user must always make sure there is no snow and/or ice accumulation on the base.
- Total weight of the SEH and mast sections are transferred to the ground through the base and its foundation. To learn about weight and dimension of the component, you may:
 - Reference the Parts Book ([98030864-EN/FR](#))
 - Reference your projects Engineering package

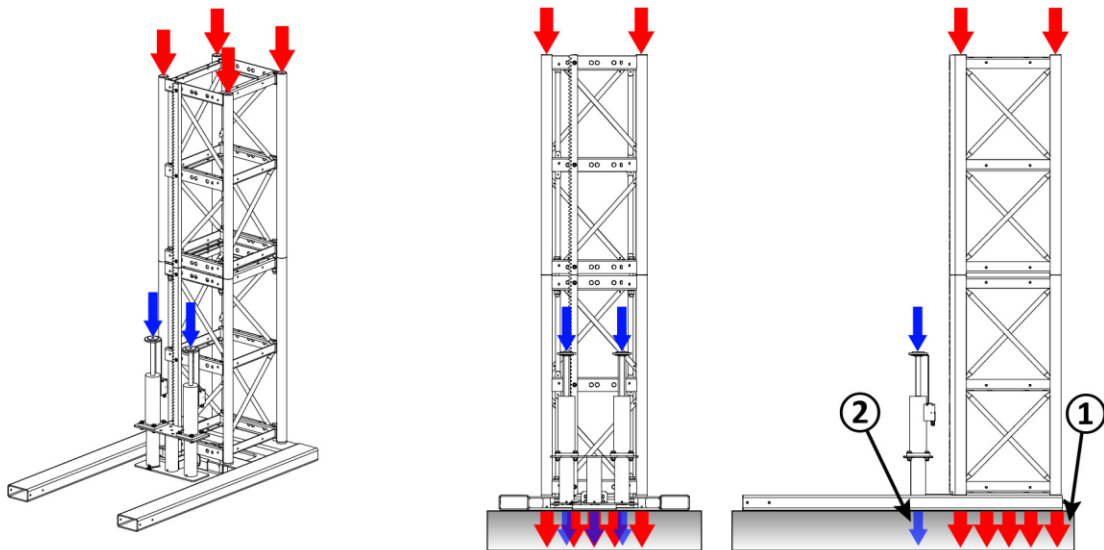
7.3 LOCAL LOAD TRANSFERRED TO THE GROUND

7.3.1 LOCAL LOAD UNDER MAST

SAFETY INSTRUCTIONS

To learn about the forces transferred to the ground by personnel hoist and its mast, refer to the **ENGINEERING PACKAGE** and project layout specific to your project.

(Oil buffer configuration shown for reference only. Other options and buffer configurations are available)



POINT LOAD (Unfactored, SF=1.0)

- CASE 1 : NORMAL OPERATION**
- ① Directly under the mast
(Refer to the Engineering package for configuration specific data)
 - ② Directly under the buffers support
(0 lbs (0 kg))

- CASE 2 : CAR STRIKING THE BUFFERS**
- ① Directly under the mast
(Refer to the Engineering package for configuration specific data)
 - ② Directly under the buffers support
(Refer to the Engineering package for configuration specific data)

N°	DESCRIPTION
①	POINT LOAD directly applied under the mast
②	BUFFER STRIKE IMPACT LOAD directly applied under the buffers support

Figure 7.3.1A

7.4 MAST TIE AND ANCHOR FORCES DISTRIBUTIONS

⚠ DANGER

The mast tie and anchor plates are one of the most important structural components of the hoist support structure. The integrity and efficiency of the ties must be checked frequently while a hoist is installed. Refer to the Installation & maintenance manual for details.

NOTICE

The SEH unit is customizable so the design of the mast ties and anchors are dependent to the project and its requirements but the overall characteristics of these items are the same and are guided by certain rules detailed in the Installation & maintenance manual.

The mast tie and anchor plates are the structural components that maintain the stability of the vertical mast. The mast ties must be visually inspected periodically to ensure that the structure integrity of the hoist is still intact.

RULE 1: Turnbuckle mast ties shall be installed so that the larger tube is installed toward the mast and the smaller one is oriented toward the building anchors.

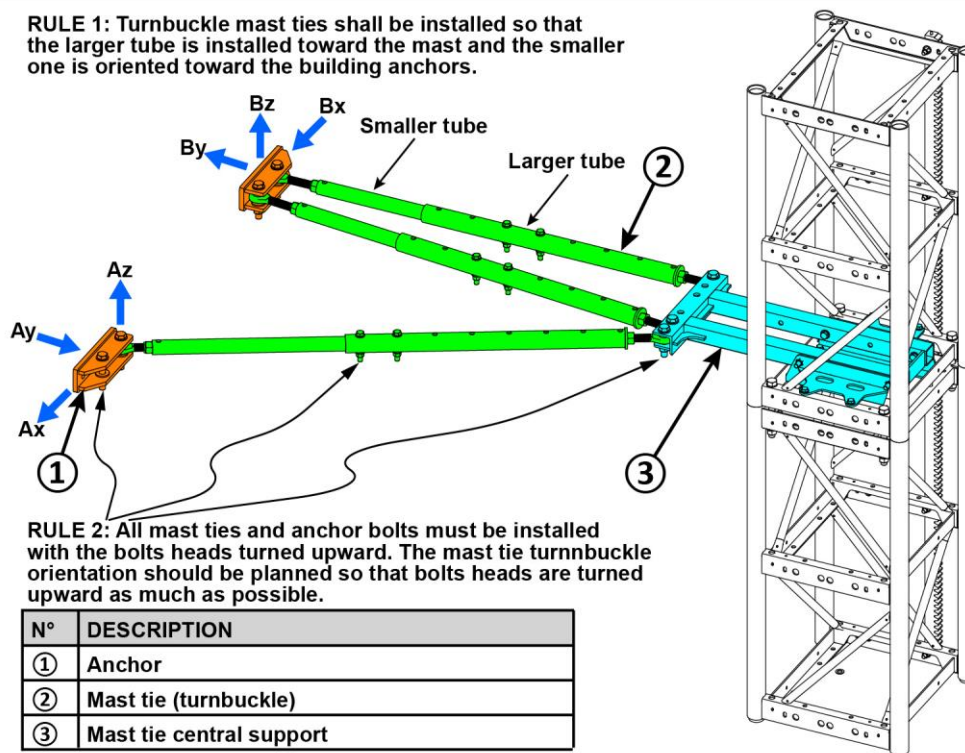


Figure 7.4A

7.5 ELECTRICAL SYSTEM

NOTICE

The SEH unit is highly customizable, so the electrical wiring may vary from project to project depending on the drive configuration and multiple factors.

- General wiring is supported by the Electrical schematic ([FSUAXXX15-0021-2 MOTORS](#)).
- Drive type **DOL** (Direct Online) or **VFC** (Variable Frequency Converter) influence the wiring instructions. Make sure you learn what type is provided with your machine.
- General and limited wiring instructions are provided within the Installation & maintenance manual ([98040203-EN](#)).
- Electrical changes where the use of the unit is intended to be, is the responsibility of local site electricians. Site electricians must adhere to all local regulations when supplying power and electrical protections for the unit, additional assemblies and components may be needed.

NOTICE

Some units may be equipped with a heating system. These heating systems are necessary for when the car is used in areas with temperatures of **41°F (5°C)** and below. Always keep the power boxes (main) and main control panel energized when heating

NEVER TURN OFF the power box disconnect switches when using heating systems.

For the complete list of **power**, **control**, and **junction box**, etc.... reference [SECTION 8.6.1 CONTROLS AVAILABLE, ON PAGE 59](#).

7.6 SELF-ERECTING DEVICE (OPTIONAL)

The Self-erecting device is an optional accessory available upon purchase. It is used to hoist mast sections from inside the car, through the roof hatch during installation. Only a Fraco factory supplied self-erecting jib shall be used during installation or dismantle applications to hoist one mast section at a time through the rooftop hatch opening. The self-erecting device must be removed and shall not remain on the hoist during normal operation.

⚠ WARNING

This device is only to be used during the installation or dismantle operations of the hoist and should never be assembled during normal operation.

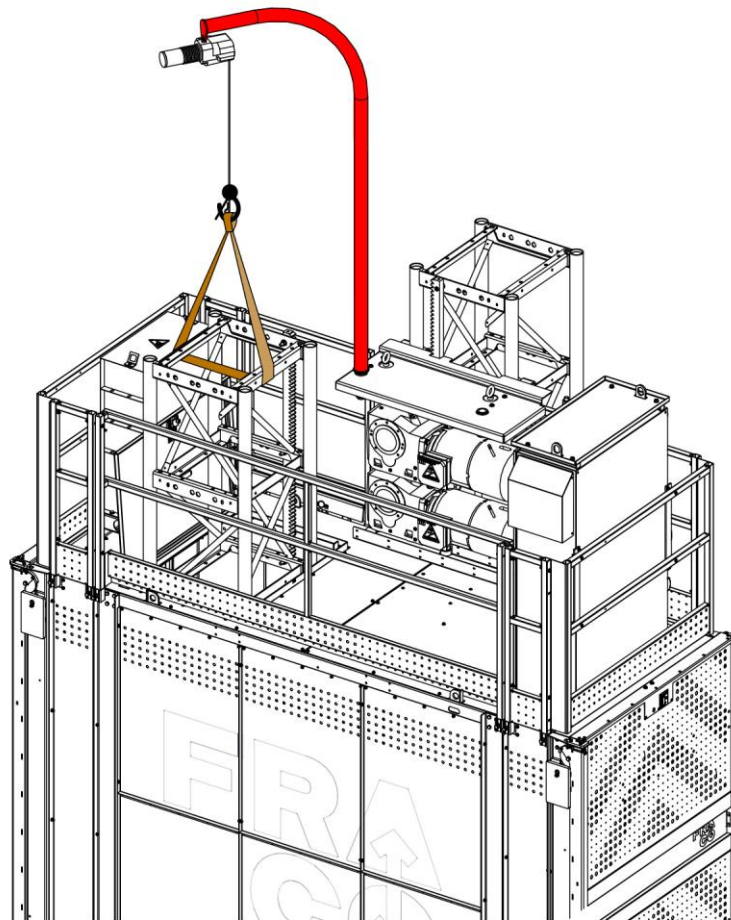


Figure 7.6A

8. OPERATION

8.1 SAFETY NOTES

- **IMPORTANT!** Reference [SECTION 4.1. GENERAL SAFETY, ON PAGE 12](#) for general safety instructions and safety-related information.
- The operator is responsible for the safe operation of the unit, safety of riders, safety of transported materials and ensuring rules compliance. The operator also has the duty of performing a daily/shift visual inspection before operating the unit.

⚠ WARNING

Ensure no unauthorized person has access to the inside of the car or within the safety perimeter. Always be observant for the presence of unauthorized persons.

SAFETY INSTRUCTIONS

Before use, at the beginning of each work shift, review all points of the daily inspection checklist available in the [APPENDIX](#) section of this manual.

- Depending on the site, sufficient lighting must be available at all landings.
- Always consider the weight of personnel, their equipment and transported material combined. Subtract it from the maximum permitted load (**RATED LOAD**). The operator has the responsibility of respecting the load distribution (distributing the loads evenly inside the car) and to ensure that the maximum number of persons in/on the car is respected at all times. Refer to the capacity plate in the car. See [SECTION 5.1. GENERAL DATA, ON PAGE 20](#) and [SECTION 5.10. DATA PLATES AND STICKERS, ON PAGE 39](#).
- The operator of the unit must be aware of weather conditions and monitor it to make sure that the wind speed does not exceed the permitted wind speed limits. The personnel hoist must not be used during a lightning storm. To learn about the permitted wind speed for OPERATION, reference [SECTION 5.1. GENERAL DATA, ON PAGE 20](#).
- Always use a safety harness attached to an individual regulatory tie-off point during installation operation or as soon as one (1) section of guardrail is missing/removed. Reference [SECTION 5.9. REGULATORY TIE-OFF POINTS, ON PAGE 38](#).
- All loads that may move, slide, or fall inside and from the car must be secured. Keep the car clear of any debris, trash, snow, etc. Make sure no tools or other objects stick out of the exterior perimeter limited by the enclosing sides of the car.
- Operation may be stopped at any time by pressing an **EMERGENCY STOP BUTTON** on any control panel. In case of breakage or malfunction, **STOP THE CAR IMMEDIATELY AND CEASE ALL OPERATION**.

- At the end of each work shift or end of day, the car must be left in an **OUT OF SERVICE POSITION**, at the ground level or any other predetermined parking location and secured against unauthorized access to the car.
- If available, take notice of the **SITE EVACUATION PLAN** and its location before using the hoist.

8.2 OPERATION SAFETY INSTRUCTIONS

⚠ WARNING

The personnel hoist may only be used by a competent person designated by the owner/user. This person must be familiar with the instructions, have enough experience, and be informed of inherent risks related to the use of the personnel hoist.

- During normal operation, persons are prohibited to be under the car.
- **No objects** should be stored in the area limited by the ground protection mesh or under the personnel hoist.
- Prevent all unauthorized access to the personnel hoist. At the end of each shift, or during breaks, turn and remove the operation key from the car operator control panel. If necessary, lock the car with a padlock (refer to local regulation).

NOTICE

Do not turn off the main power switches (480V) in a cold environment unless necessary! Some models have heating elements present to warm some of the electric components. If the components need to be heated again, you might have to wait up to 8 hours.

- If the loaded car stops during operation due to a failure, unload the unit if it is safe to do so and do not leave the car unsupervised. If unable to unload the car, it must be isolated to prevent access from any unauthorized persons. Personnel trained and authorized to do so, may use the emergency descent procedure to lower the car to the next safe evacuation point.

- Always subtract the load of the persons present on the car from the maximum load:
 - Average weight per person is **200 lbs (90.7 kg)**.
 - Weight of personnel equipment must also be taken into consideration.
- Always respect the capacity plate indicating the **MAXIMUM NUMBER OF PASSENGERS** and the **MAXIMUM RATED LOAD**. See [SECTION 5.1. GENERAL DATA, ON PAGE 20](#) and [SECTION 5.10. DATA PLATES AND STICKERS, ON PAGE 39](#).
- **OPERATION OF THE CAR MUST BE STOPPED IMMEDIATELY IF:**
 - Wind speed exceeds 45 mph (72 km/h) during normal operation. [REFER TO THE WIND SPEED TABLE ON PAGE 20](#).
 - There are damages or other malfunctions.
 - Mandatory periodic or test maintenance was missed.

8.3 RULES FOR OCCUPANTS (RIDERS)

- Comply with the instructions given by the operator.
- Do not step over any material being transported.

8.4 RULES FOR LOADING AND UNLOADING THE CAR

- A protection against fall hazards must be provided at loading/unloading locations and must follow regulations of local authorities having jurisdiction.
- The car must always be loaded in a way that the loading zone, the unloading zone, and machine control panel access are kept clear.
- The loads must be evenly distributed on the car floor.
- Securely fasten the load. Any material that may move, slide, or fall inside and from the car must be secured.

8.5 SAFETY INSPECTION

8.5.1 BEFORE BEGINNING WORK:

- Fill out the **DAILY INSPECTION FORM** (copy available in the **APPENDIX** section of this manual). **Multiple copies should always be stored in the documentation compartment and are available within the SEH maintenance logbook.**
- Perform an operation test of the hoist with an empty car.
- Inspect for the presence of obstacles in the hoistway for the entire length of the mast.
- In cold weather, it may be necessary to turn on the heating system of the machine by the selector switch located on the car electrical panel (**AS2**).
- Remove any excess of ice or snow from the personnel hoist installation. This includes the pit enclosure, the hoist rooftop area, limit switches available from inside the car and landing platform. Inspect all areas for damage due to ice or snow accumulation (winter and cold climate).

NOTICE

During the winter months after over two hours of inactivity, two trips without load the full length of the mast should be made to warm up the gearboxes and electrical equipment.

8.5.2 THE CAR WILL STOP IMMEDIATELY IF:

- An **EMERGENCY STOP BUTTON** is activated.
- A car door is unlocked (opened).
- A landing door (with limit switch-optional) is unlocked (opened)
- The roof hatch is open.
- Activation of the emergency safety device (overspeed brake).
- One of the "**FINAL**" end travel limit switches is activated, at the top or bottom of the mast.
- The car has reached the end of the mast. The proximity rack detector (upper mast end) is activated.
- There is any problem with the safety line (safety circuit).

8.5.3 THE CAR WILL NOT MOVE IF:

- An **EMERGENCY STOP BUTTON** is activated.
- A car door is unlocked (opened).
- A landing door (with limit switch-optional) is unlocked (opened)
- (Optional) If the ground enclosure is provided with a secondary maintenance access door. The maintenance door with limit switch is open.
- The roof hatch is open (unlocked).
- Activation of the emergency safety device (overspeed brake).
- One of the "**FINAL**" end travel limit switches is activated, at the top or bottom of the mast.
- The car has reached the end of the mast. The proximity rack detector (end mast section) is activated.
- The ON/OFF selector inside the car is in OFF position.
- The machine is set to SERVICE MODE or DROP TEST MODE.
- The "Ready" light is not turned ON.
- A power supply malfunction is detected.
- There is any problem with the safety line (safety circuit). A limit switch safety device is turned ON.
- Any drive faults are detected
- A motor overload relay is tripped (OFF position).
- A limit switch buffer is turned ON (Car has reached the buffers).

8.6 CONTROLS

8.6.1 CONTROLS AVAILABLE

Control boxes, panels, and remotes are listed below and are located as stated:

<u>NAME</u>	<u>LOCATION</u>
• Ground service panel (AL0).....	At ground level outside the enclosure
• Car operator control panel (AS3).....	Inside the car
• Top of car service panel (AS2).....	On top of or inside the car
• Universal remote controller (DRC2).....	To be plugged into the top of car service panel (AS2)

8.6.2 GROUND SERVICE PANEL (AL0)

⚠ DANGER

Due to risk of electrical shock, this panel shall only be opened by trained, competent, and authorized personnel.

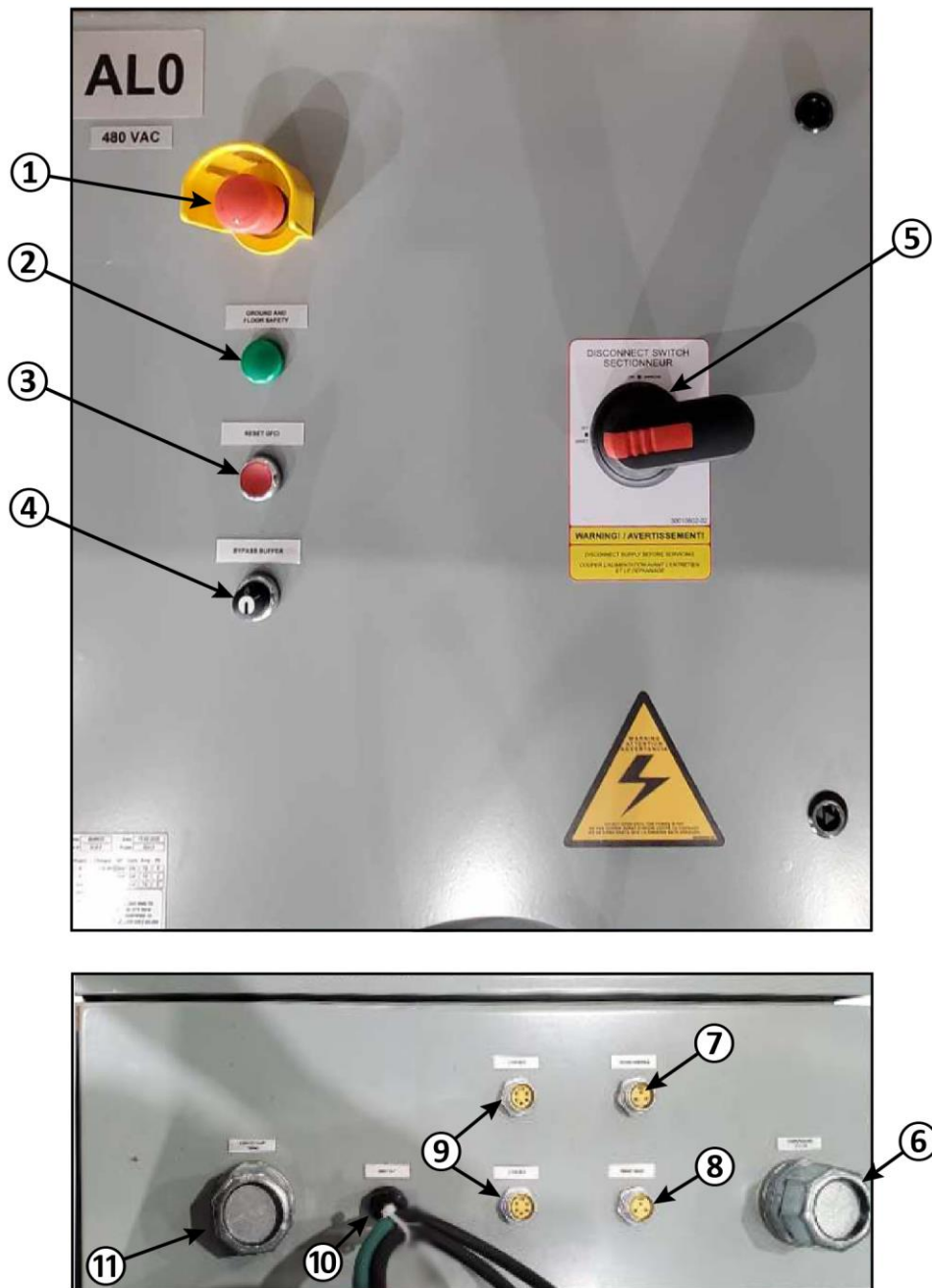


Figure 8.6.2A

GROUND SERVICE PANEL (AL0)	
Refer to figure 8.6.2A	
Item	Description
①	Emergency Stop push button, (push and turn release action knob)
②	Ground Safety status light (green indicator light)
③	Reset GFCI push button (red indicator light)
④	Bypass Buffers key switch – 2 position key latch selector
⑤	Power breaker switch
⑥	Outgoing main power supply (480v)
⑦	Landing door connector (3 pins)
⑧	Car door connector (3 pins)
⑨	Buffer limit switch(es) connector(s) (6 pins)
⑩	Ground cable
⑪	Incoming main power supply (480v)

8.6.3 CAR OPERATOR CONTROL PANEL (AS3)

⚠ DANGER

Due to risk of electrical shock, this panel shall only be opened by trained, competent, and authorized personnel.

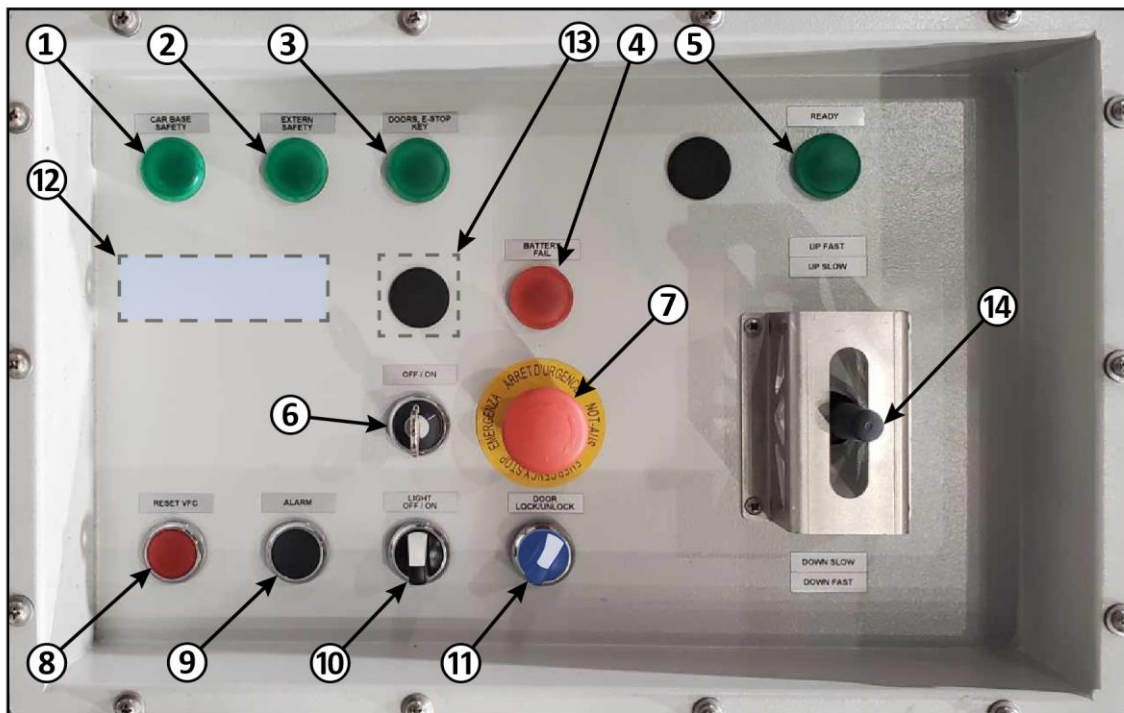
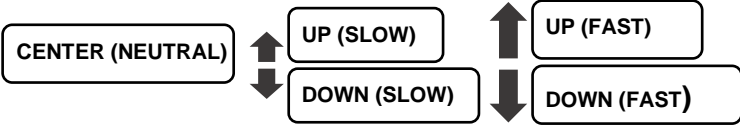


Figure 8.6.3A

CAR OPERATOR PANEL (AS3)	
Refer to figure 8.6.3A	
Item	Description
①	Car Base Safety (green indicator light)
②	External Safety (green indicator light)
③	Door Safety (green indicator light)
④	Battery failure (red indicator light)
⑤	Ready (green indicator light)
⑥	Operation key switch – 2 position key latch selector, ON / OFF
⑦	Emergency Stop push button, (push and turn release action knob)
⑧	VFC Reset push button (red indicator light)
⑨	Alarm push button
⑩	Car Light switch – 2 position latch selector
⑪	Car Door Lock/Unlock switch – 2 position latch selector (blue indicator light)
(*) ⑫	(Optional) Overload sensor weight display
(*) ⑬	(Optional) Overload sensor (red indicator light)
⑭	Joystick – 2 directional 2 positions with guard
	
LEGEND:	
(*) Upon purchase, clients may select the optional overload sensor kit. The kit includes a weight LCD display and a red overload indicator light. Additionally, if these features were not chosen upon purchase, the panel already has some provisions in order to install these components afterward. These may be retrofitted on the panel by a technician using the OVERLOAD SENSOR MODIFICATION PROTOCOL provided by Fraco.	

8.6.4 ROOFTOP CAR SERVICE PANEL (AS2)

⚠ DANGER

Due to risk of electrical shock, this panel shall only be opened by trained, competent, and authorized personnel.

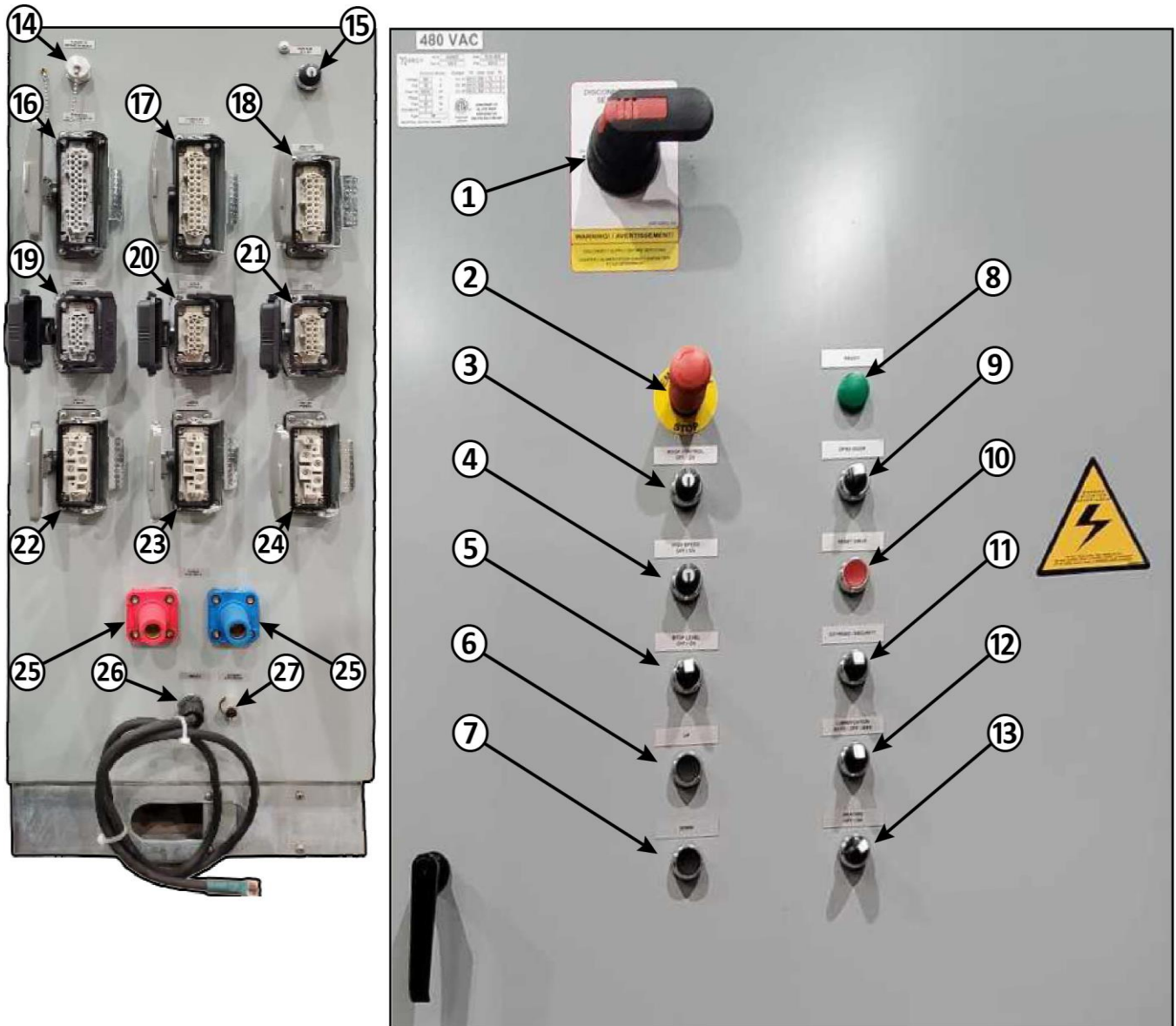


Figure 8.6.4A

CAR ROOFTOP SERVICE PANEL (AS2)	
Refer to figure 8.6.4A	
Item	Description
①	Main Switch handle – “ON/OFF” latch selector
②	Emergency Stop push button, (push and turn release action knob)
③	Roof Control Selector switch – 2 positions latch selector
④	High-Speed key switch – 2 positions key latch selector
⑤	Stop -Level Selector switch – 2 positions latch selector
⑥	UP push button
⑦	DOWN push button
⑧	Ready indicator (green indicator light)
⑨	Car Door Lock/Unlock switch – 3 positions latch selector
⑩	VFC Reset push button (red indicator light)
⑪	Extreme Bypass spring-selector switch – 3 position central neutral spring return selector
⑫	Lubrication selector switch – 3 positions latch & one sided spring loaded selector
⑬	Heating selector switch – 2 positions latch selector
⑭	Automatic grease dispenser – plug in
⑮	Drop test – 2 positions key latch selector, ON / OFF
⑯	Operator panel (AS3) – 24 pins plug in
⑰	Junction box connector – 24 pins plug in
⑱	Drop test connector – 16 pins plug in
⑲	Motor control-1 connector – 10 pins plug in
⑳	Motor control-2 connector – 10 pins plug in
㉑	Motor control-3 connector – 10 pins plug in
㉒	Motor power-1 connector – 4 pins plug in
㉓	Motor power-2 connector – 4 pins plug in
㉔	Motor power-3 connector – 4 pins plug in
㉕	Dynamic resistor connector – red and blue plug in
㉖	Grounding connector – plug in
㉗	Encoder connector – plug in

8.6.5 UNIVERSAL REMOTE CONTROLLER (DRC2)

A test must be performed on the safety device after each new installation and during quarterly inspections, known commonly as the DROP TEST. A remote control is required to perform a DROP TEST.

NOTICE

The drop test remote controller is used only by INSTALLATION and MAINTENANCE PERSONNEL.



Figure 8.6.5A

UNIVERSAL REMOTE CONTROLLER DRC2	
Refer to figure 8.6.5A	
Item	Description
①	Drop, two (2) positions spring-return selector switch (or button) (yellow indicator light)
②	Emergency stop press button, (push and turn release action knob)
③	Enable, black press button
④	Open door, three (3) positions selector switch (A / OFF / B)
⑤	DOWN, black push button
⑥	UP, black push button
⑦	Reset VFC push button, (red indicator light)
(*) ⑧	Universal remote control / bypass connector port
LEGEND:	
(*) When the remote is not in use, a physical bypass plug must be plugged in the connector port.	

8.6.6 EMERGENCY STOP BUTTONS

Operator control panels are equipped with an emergency stop button.

The emergency stop button (**ITEM 1**) may be pressed at any time when a situation requires the **IMMEDIATE STOP** of the personnel hoist movement.

Once the source of the problem has been resolved, turn the red knob following the direction of the markings on its face to reset the emergency stop button. After reset, resume normal operation.

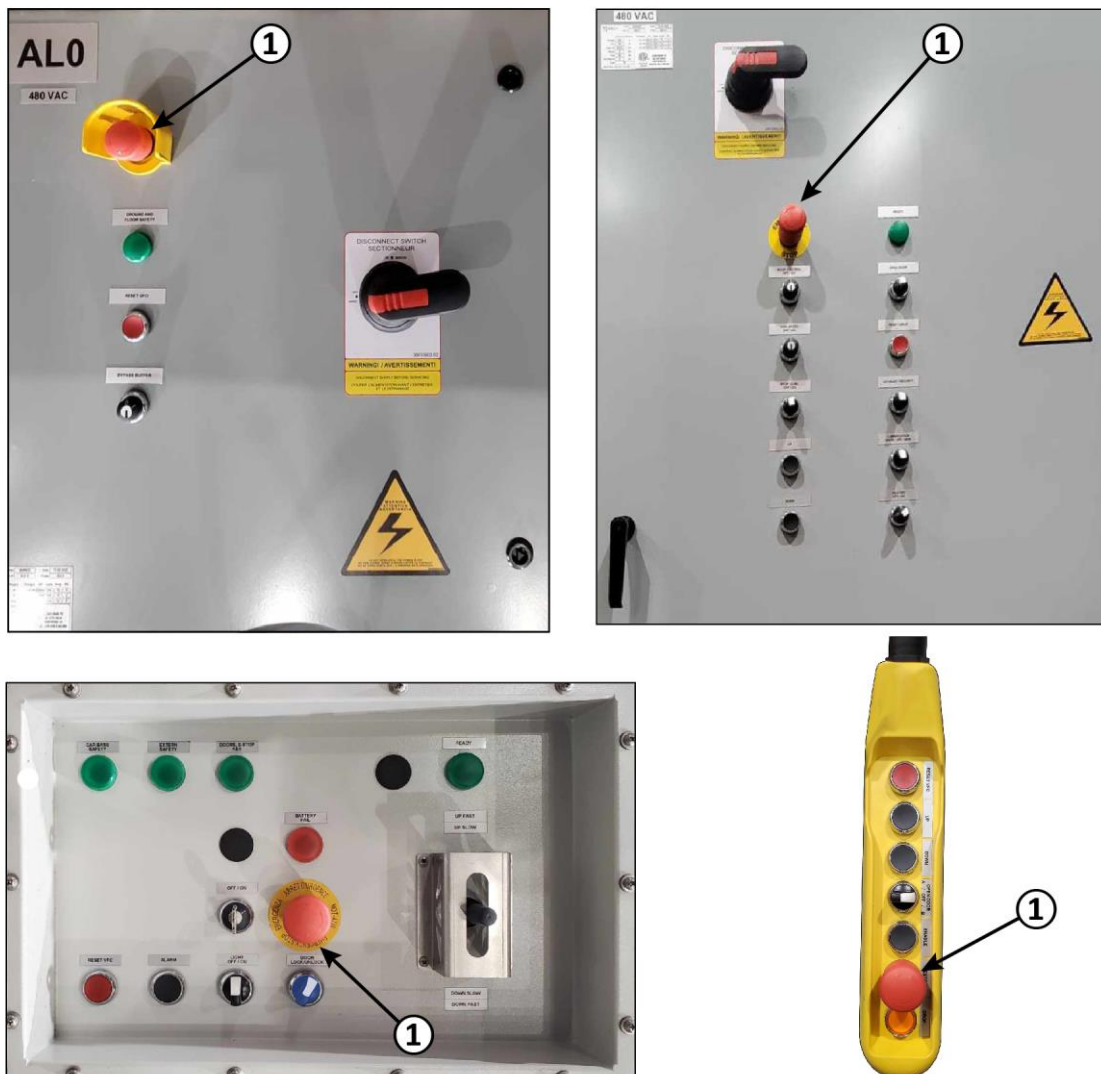


Figure 8.6.6A

8.6.7 CAR DOOR INTERLOCK AND LOCK SYSTEMS

The car is equipped with an interlock system (**ITEM ①**), controlling the locking and unlocking of doors depending on the car position along the hoistway.

To enable car operation **2 conditions** must be fulfilled regarding the doors.

1. CAR DOOR(S) must be CLOSED and LOCKED before vertical movement of the car is allowed.
2. All LANDING DOORS must be CLOSED and LOCKED before vertical movement of the car is allowed.

If any car door or landing door (if electrically interlinked with unit) is open or not closed correctly, the car will not move.

The car must be aligned with a landing level for the unlocking of the car door.

In case of power failure, it is possible to activate the **MANUAL RELEASE** of the car door interlock. Authorized personnel having access to the **EMERGENCY KEY** must follow the steps below.

- **Car door:**

To activate the manual release of the car door interlock device from the exterior of the car (**ITEM ①**), with the personnel hoist level to a landing, first insert the key tool (**ITEM ②**) in the car door keyway located at the top of the door. To unlock the system, turn the key clockwise. Maintain the key in position and raise the door slightly. The device will be completely disengaged. You may then withdraw the key and fully open the door. This process can only be performed from the landing side of the hoistway.

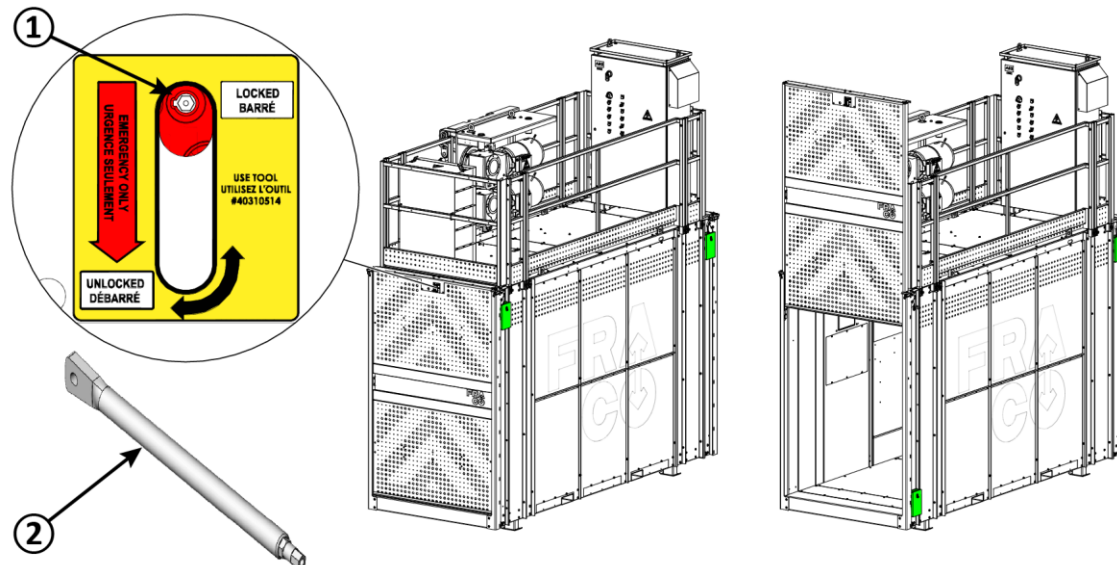
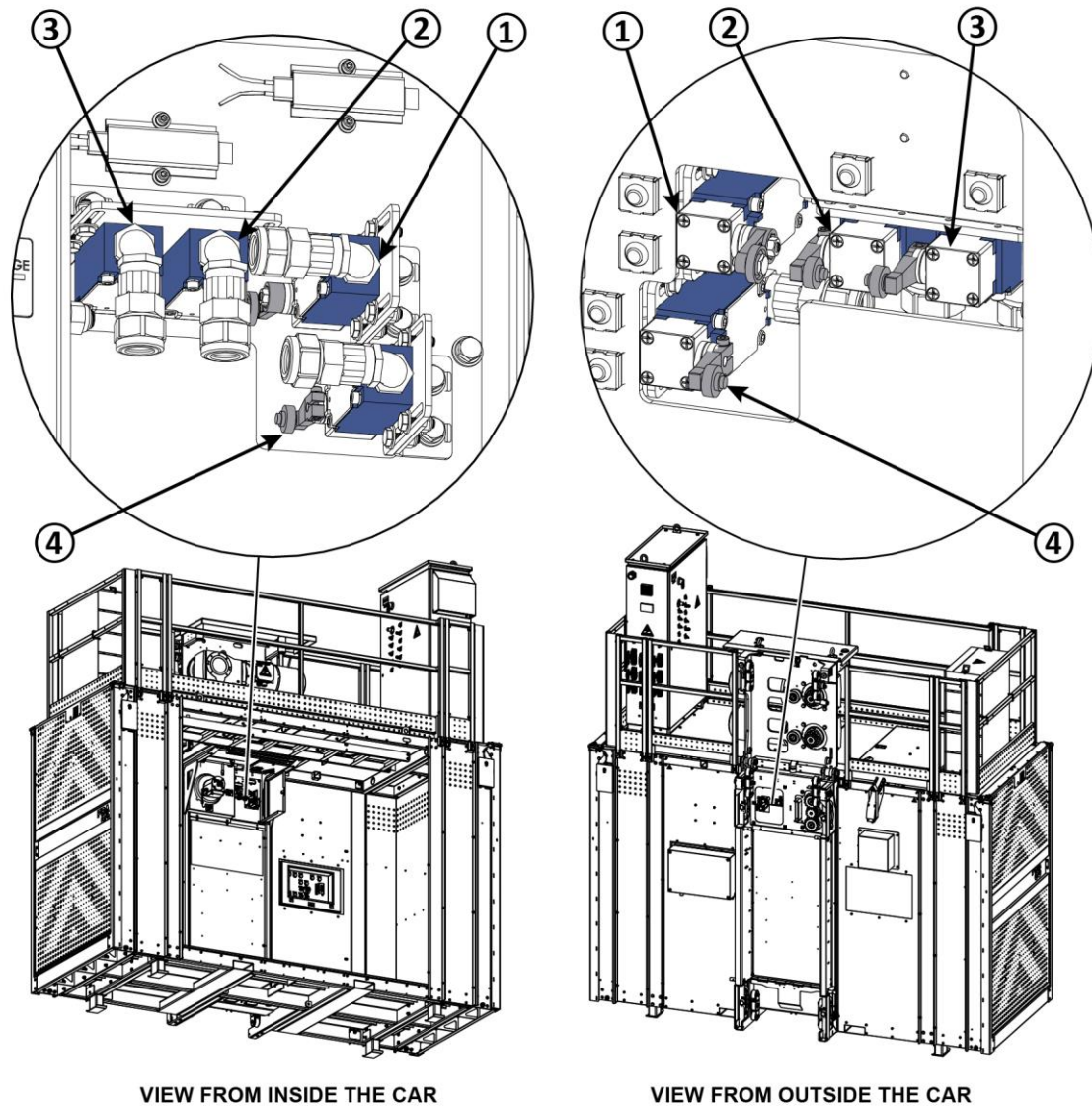


Figure 8.6.7A

8.6.8 LEVEL DETECTION LIMIT SWITCH



The personnel hoist is equipped with level detection limit switches. These switches are activated by **LEVEL DETECTOR PADS** installed along the mast.

Figure 8.6.8A

Item	Description
①	LS2 AUTO STOP
②	LS11 STOP HIGH
③	LS10 STOP LOW
④	LS1 EXTREME LOW STOP

8.6.9 SPRING BUFFER DETECTION LIMIT SWITCH (OPTIONAL)

The personnel hoist may be provided with **OIL BUFFER** or **SPRING BUFFER**. Oil buffers come equipped with an activation detection mean by default, while the spring buffers require the addition of a buffer activation sensor. This additional spring buffer activation detector consists of a limit switch installed on the mast.

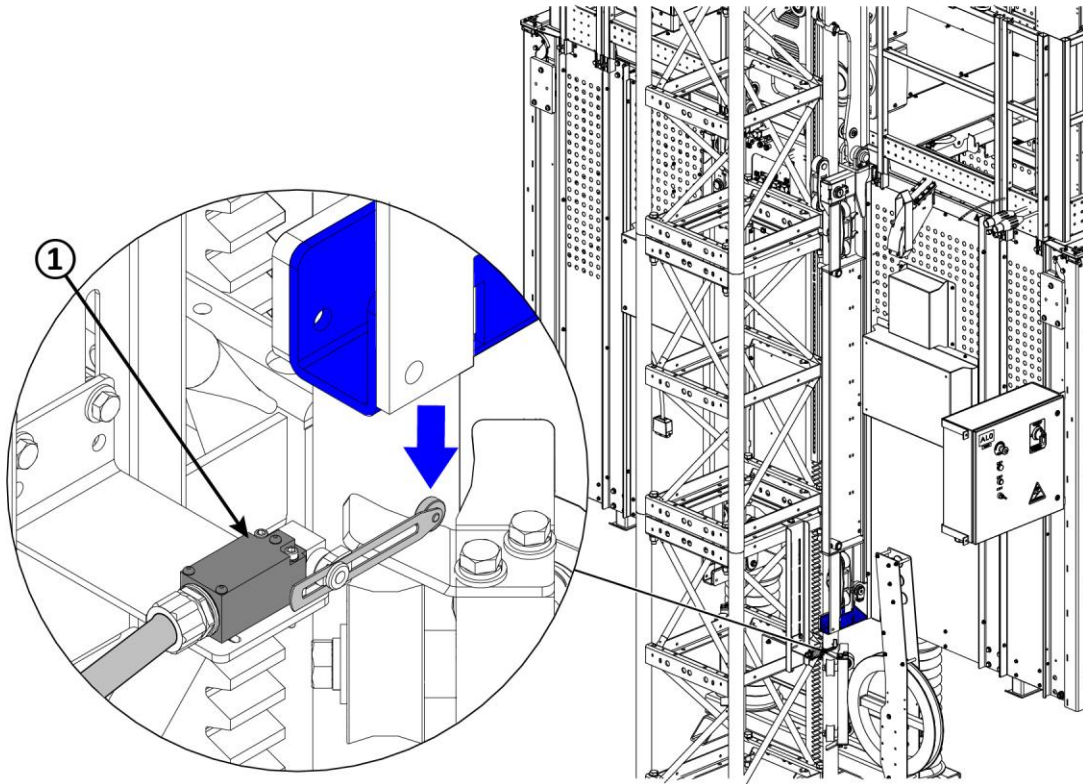


Figure 8.6.9A

Item	Description
①	LS SPRING BUFFER DETECTOR

8.7 OPERATING THE PERSONNEL HOIST

8.7.1 BEFORE OPERATING THE PERSONNEL HOIST

⚠ WARNING

The travel detector pads must be installed properly to ensure that the car travel path and landing locations are correct according to the installation layout.

- All car door(s) must be closed and locked (by means of the blue car door unlock/lock selector on the AS3 panel).
- All landing doors must be closed.
- The roof hatch must be closed.
- Check that the hoist travel path throughout the full length of the hoistway mast is clear.
- Check that the jobsite main disconnect switch is set to the "ON" position.
- Check that the main disconnect switches and breakers (480V) are set to the "ON" position on the **CAR OPERATOR CONTROL PANEL (AS3)** & **GROUND ELECTRICAL PANEL (AL0)**.
- Check that the **DROP TEST key** switch on the side of the **TOP OF CAR ELECTRICAL PANEL (AS2)** is in the "OFF" position.
- Make sure that all **EMERGENCY STOP buttons** are released.
- On the **CAR ELECTRICAL PANEL (AS2)** the **BYPASS** three (3) position spring return switches must be set to the "OFF" position.
- Check that all quick connectors on the **CAR ELECTRICAL PANEL (AS2)** are plugged in, except for connector plug **AS2-X11** for the **DROP TEST REMOTE CONTROLLER (DRC2)**.
- Position the **OPERATION key** switch to the "ON" position and position the **Car Door Lock/Unlock** switch to the "LOCK" position on the **CAR OPERATOR CONTROL PANEL (AS3)**.

All "READY" green indicator lights (**ITEM ①**) must be turned ON on every control panels shown below. If not, check the items listed above.



Figure 8.7.1A

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8.7.2 OPERATING THE PERSONNEL HOIST

In **NORMAL** operation mode:

NOTICE

The **READY** green light at the car operator control panel must be lit to enable operation of the unit.

- **TO DRIVE THE CAR UP**

- On the **CAR OPERATOR CONTROL PANEL (AS3)**, move the joystick in the **UPWARD** direction for the car to begin traveling **UP**
- Moving the joystick in the **UPWARD** direction to the **SECOND POSITION (UP FAST)** allows the car to travel at **FULL SPEED** and to automatically bypass floor landing levels.
- Moving the joystick in the **UPWARD** direction to the **FIRST POSITION (UP SLOW)** will allow the car to travel at a **REDUCED SPEED** and stop automatically at the next landing location (only if INTERMEDIATE LEVEL DETECTOR PADS are installed).
- In either **FULL SPEED** or **REDUCED SPEED** modes, the car will automatically slowdown and stop at the top landing when the up-stop limit switch strikes the TOP-LEVEL DETECTOR PAD.
- The car will come to a stop when the joystick is released and returned to a **CENTERED NEUTRAL POSITION**.

- **TO DRIVE THE CAR DOWN**

- On the **CAR OPERATOR CONTROL PANEL (AS3)**, move the joystick in the **DOWNWARD** direction for the car to begin traveling **DOWN**
- Moving the joystick in the **DOWNWARD** direction to the **SECOND POSITION (DOWN FAST)** allows the car to travel at **FULL SPEED** and to automatically bypass floor landing levels.
- Moving the joystick in the **DOWNWARD** direction to the **FIRST POSITION (DOWN SLOW)** will allow the car to travel at a **REDUCED SPEED** and stop at the next landing location (only if INTERMEDIATE LEVEL DETECTOR PADS are installed).
- In either **FULL SPEED** or **REDUCED SPEED** modes, the car will automatically slowdown and stop at the bottom landing when the down-stop limit switch strikes the LOW-LEVEL DETECTOR PAD.
- The car will come to a stop when the joystick is released and returned to a **CENTERED NEUTRAL POSITION**.

(SEE FIGURE ON NEXT PAGE FOR REFERENCE)

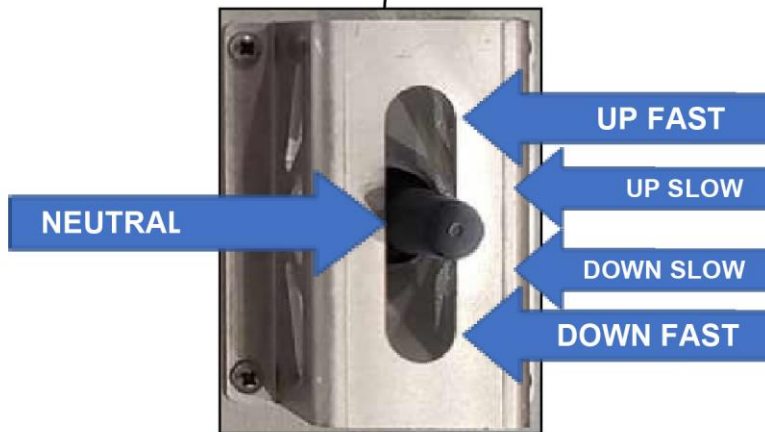


Figure 8.7.2A

8.7.3 OPERATION FROM THE TOP OF CAR (SERVICE MODE)

In **SERVICE** operation mode:

NOTICE

Authorized personnel are allowed to control the personnel hoist from the roof top. **FOR INSTALLATION, MAINTENANCE, and TEST PURPOSES ONLY.**

NOTICE

To enable any operation from the roof top, ensure that the **READY** indicator light is turned **ON**. If not, check that all doors, including the roof hatch, are closed and locked. Also ensure that no safety limit switch is activated.

- Authorized personnel need to have access to the **CAR ELECTRICAL PANEL KEY**. On the **TOP OF CAR ELECTRICAL PANEL (AS2)**, insert the key in the two (2) positions **ROOF CONTROL** key selector port (**ITEM ①**) and select the **SERVICE MODE**. In this mode, the personnel hoist speed is reduced, and controls are limited to those on the roof top. The joystick inside the hoist car will be deactivated.
- To drive the car up, press **UP** push-button (**ITEM ②**). The car will travel upwards at a reduced speed.
- To drive the car down, press **DOWN** push button (**ITEM ③**). The car will travel downwards at a reduced speed.

NOTICE

When returning to **NORMAL** operations from the Car Operator Control Panel, do not forget to switch the Roof Control key switch (item ①) back to its original position.

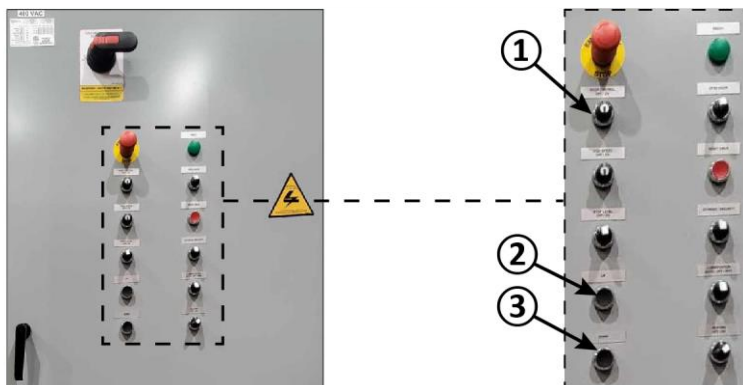


Figure 8.7.3A

8.7.4 SHUTTING DOWN THE UNIT AT THE END OF A WORK SHIFT

Once a work shift is over, proceed as described below to shut down the unit:

Lower the personnel hoist to ground level and unload any remaining material from the car.

Position the **OPERATION** key switch (**ITEM ①**) to the “OFF” position on the **CAR OPERATOR CONTROL PANEL (AS3)**.

NOTICE

Do not turn off the main power switches (480V) in a cold environment unless necessary! Some models have heating elements present to warm some of the electric components. If the components need to be heated again, you might have to wait up to 8 hours.

Ensure that the personnel hoist is protected from unauthorized users by closing and locking doors after exiting the hoist.

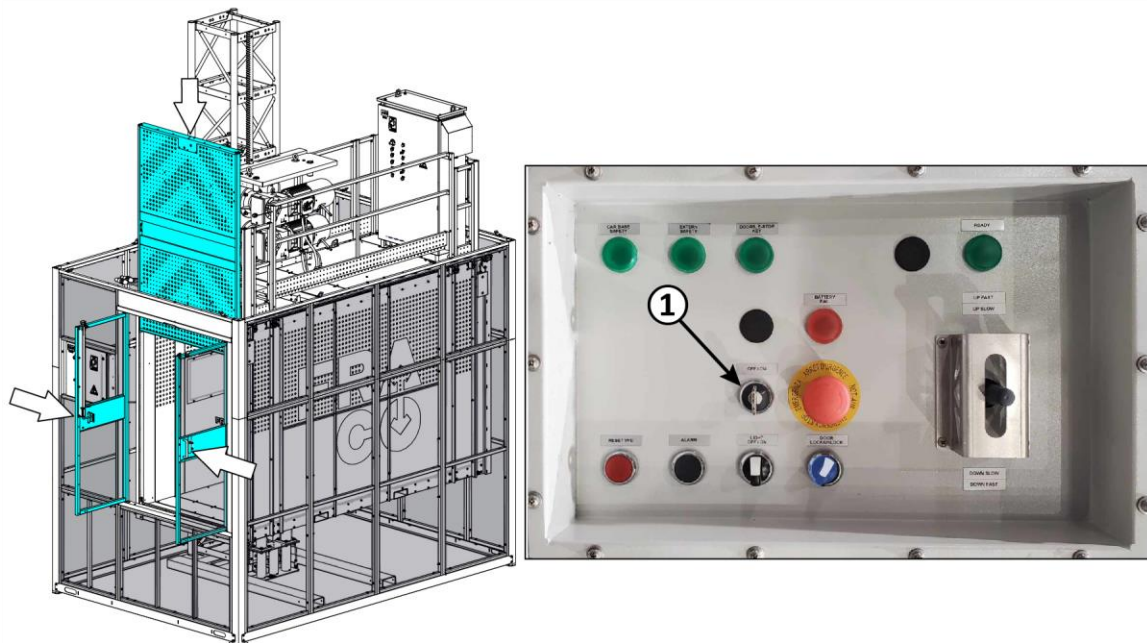


Figure 8.7.4A

8.7.5 INTERRUPTION, POWER FAILURE

In the event of a power failure, on the **GROUND ELECTRICAL PANEL (AL0)**, the **RESET red push button (ITEM ①)** will **light up**. Make all required repairs to restore the power. Once the power failure has been corrected, press the **RESET** button and the light will turn **OFF**.

The **GROUND SAFETY green light indicator (ITEM ②)** must also **light up**. If not, then the source of the failure will need to be troubleshoot. Example: A door might simply not be closed.

If the **RESET GF red push button lights up** often and for any reasons other than a power failure, call your Fraco service provider for additional support.

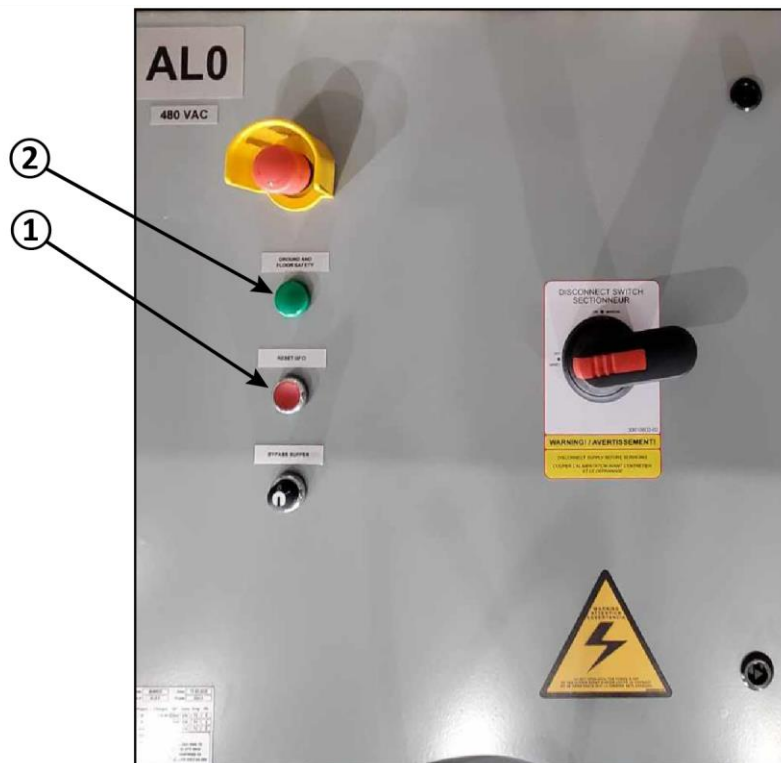


Figure 8.7.5A

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8.8 EMERGENCY DESCENT PROCEDURE (E.D.P)

SAFETY INSTRUCTIONS

In case of malfunction of the machine preventing a safe travel, or in case of a motor failure of the personnel hoist, trained and authorized personnel may proceed to an emergency descent. This procedure allows the users to lower the personnel hoist manually permitting a safe exit. Again, only trained and authorized personnel may proceed to an emergency descent.

8.8.1 (E.D.P) FROM THE TOP OF CAR LOCATION

⚠ CAUTION

Careful! If the lowering speed exceeds the **SAFETY DEVICE TRIPPING SPEED**, it will trigger the activation of the emergency safety device, which will completely stop the car. Emergency descent will no longer be possible and a secondary means to escape the car will be needed.

Trained and authorized personnel shall access the top of car and may proceed to an emergency descent from the top of the car manually. An instruction sticker with the following steps should be available near the motor brake release lever.

1. Pass through the roof hatch and close the hatch.
2. The emergency descent levers are always connected to the motor brakes and should not be removed.
3. Pull the first lever (**ITEM ①**) completely and hold it in a fully pulled position. You may use the lever stopper (**ITEM ②**).

Note: For a 3-motor setup, pull 2 of the 3 levers completely.

4. Pull the remaining brake lever (**ITEM ①**) slowly to release the remaining brake and lower the machine by gravity. Lower the machine a distance equal to two (2) mast sections, equal to 10 ft (3.0 m), then stop.
5. Confirm that the machine is descending properly and that it stops automatically when releasing any lever.
6. Confirm that all the levers completely return to their neutral position when released.
7. Switch the order of the levers and lower the machine an additional two (2) mast sections, equal to an additional 10 ft (3.0 m), then stop.

Note: For a 3-motor setup, then switch to the third lever and lower the machine an additional two (2) mast sections, equal to a third 10 ft (3.0 m), then stop.

8. For every four (4) mast sections, 20 ft (6.0 m) traveled, stop and wait 1 minute for cooldown. In case of a 3-motor setup, wait 1 minute for cooldown every six (6) mast sections, 30 ft (9.0 m) instead.

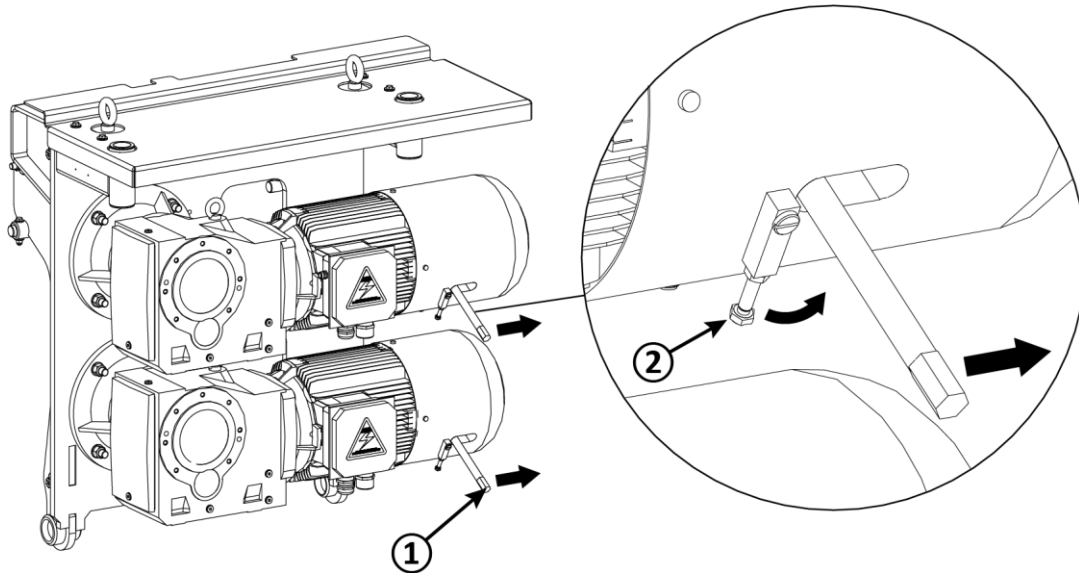


Figure 8.8.1A

9. Once the car has been lowered to the next safe exit level, place levers back into their original position, evacuate the personnel hoist.
10. Contact maintenance personnel or your local Fraco representative to have the unit repaired.

⚠ WARNING

The emergency descent procedure is a feature required for an emergency only. It is prohibited to use this feature on a unit that is fault free.

8.9 SAFETY DEVICE ACTIVATION

In case of a free fall or the downward travel speed reaches the **safety device (overspeed device) tripping speed**, the personnel hoist is brought to a complete stop by its **EMERGENCY SAFETY DEVICE**.

The emergency safety device (**ITEM ①**) is a centrifugal brake equipped with a speed governor capable of detecting a predetermined tripping speed and triggering a smooth braking of the machine. The speed governor also sends a signal to the safety line, shutting off the motors and triggering the motor brakes for additional support.

In the case of the safety device (overspeed device) activating, only trained maintenance personnel can diagnose the situation and reset the safety device (overspeed device). If the safety device is activated between floor landing levels, the emergency descent procedure (E.D.P. – see previous section) will be inoperable. Other means to evacuate the personnel in the hoist will need to be implemented. It is highly recommended that the site has emergency evacuation plans.

Upon every activation of the safety device, be it accidental or intentional (as part of the periodic maintenance test), a trained and authorized person shall proceed to a thorough visual inspection of the device as well as the gears (**ITEM ②**) and pinion (**ITEM ③**).

NOTICE

Once the safety device (overspeed device) has been activated, the personnel hoist will not be able to be moved and manual descent will be inoperable. Maintenance personnel will need to address the reason for the activation and reset the device before the unit is able to be placed back into normal operation.

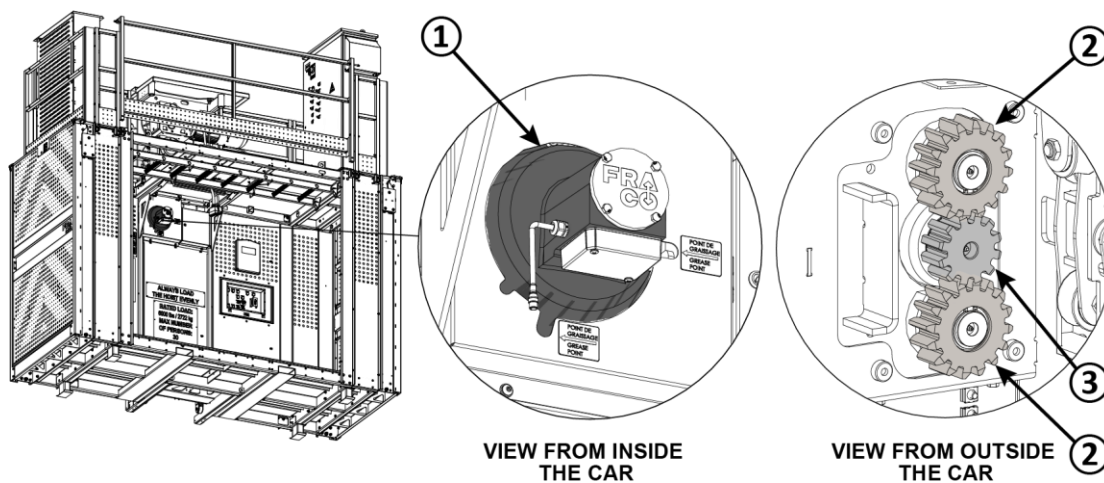


Figure 8.9A

9. FAULTS, CAUSES & CORRECTIONS

NOTICE

Breakdowns can only be repaired and corrected by trained maintenance personnel.

Before any corrective actions, lower the car to the ground and unload if possible. Turn off the main disconnect switch to remove power from the electrical system of the personnel hoist.

For more specific faults, causes, correction instructions, refer to your Fraco representative and verify if a troubleshooting guide may be provided to support your unit specification.

In case of breakdowns or defects, check the following points first:

- Is the main power supply connected? Check all power boxes.
- Is the main switch of the ground control panel switched ON?
- Is the key switch on the car control panel switched ON?
- Status of the disconnects selectors.
- Check that the traveling extension cable is in good working condition.
- Check that the emergency stop buttons are not activated.
- Is the extreme travel detector switch triggered?
- Car moved too high or too low along the mast.
- Is the emergency centrifugal brake activated?
- Are the motor quick connector cables plugged in?
- Is the top of car quick connector cable plugged into the car operator panel?
- Is the selector key switch in the car or on the roof control system positioned for the desired operation mode NORMAL / SERVICE?

10. MAINTENANCE CONTROL PROGRAM (M.C.P)

Maintenance and periodic tests are mandatory to keep your machine in safe operating conditions. The maintenance frequency is split in the following categories:

- Daily/Shift
- Weekly
- Monthly
- Quarterly
- Annually
- 3-Year Maintenance

Some of the scheduled maintenance are required by local personnel hoist regulations at designated periods, although Fraco reserves the right to suggest more frequent maintenance of specific components.

Also keep in mind that there could be additional local regulations requiring that maintenance and tests be carried out more frequently by the authorities having jurisdiction. Ensure that you are aware of all your local rules and regulations.

RESPONSIBILITY:

- The **User (Operator)** is responsible to make daily visual inspections. Unless trained and authorized, the user (operator) does not perform other periodic tests or maintenance.
- The **Installer** is responsible to make the initial daily visual inspections, as well as the **INITIAL TEST AND INSPECTION** listed in the Installation & maintenance manual ([98040203-EN](#)).
- The **Maintenance Personnel** is responsible, trained, and authorized to make all other periodic tests and maintenance.

MAINTENANCE RECORDS: Maintenance that is performed onsite must have a recorded copy onsite of the maintenance performed. Onsite maintenance documents, such as the Daily inspection report ([98031269](#)) shall be kept recorded for a minimum of the entire period of the installation on site. This is to include from the initial date of installation to at a minimum, the date of dismantle or a date based on local regulations of authorities having jurisdiction.

▲ WARNING

Access under an unloaded hoist is permitted for maintenance purposes with the use of an official and properly installed Fraco SAFETY LOCKING DEVICE, as shown at [SECTION 4.3. INSTALLATION AND TRANSPORT SAFETY AWARENESS, ON PAGE 14.](#)

10.1. GENERAL MAINTENANCE WARNINGS

⚠ DANGER

Driving the car onto a mast that has a component (such as a mast bolt) that is either partially tightened, not tightened at all, or missing could cause the car to become unconnected from the secured mast and fall down. This type of accident would cause the death of operators onboard the unit.

⚠ DANGER

If manual lubricating of the rack is required, be very careful not to place hands or other items near the motor transmission when the car is moved. There is a risk of pinch or shear hazard.

⚠ WARNING

Always wear a fall arrest safety harness when standing on the roof of the hoist when guardrail sections are not completely assembled.

- Tie-off locations are limited to the attachment of one (1) worker each.
- Tie-off points designed by Fraco are the only locations approved to attach a fall arrest safety harness to the personnel hoist.

NOTICE

The rack may need to be lubricated more often if the work shifts exceed 40 hours per week, or if extreme environmental conditions are present, or when using the automatic lubrication device.

NOTICE

DAILY and WEEKLY maintenance, visual inspections, and tests may be performed by a trained and authorized operators and the inspection forms are available within this **USER'S MANUAL** and the **INSTALLATION & MAINTENANCE MANUAL**.

OTHER PERIODIC MAINTENANCE (MONTHLY, QUARTERLY, ANNUAL, AND THREE YEARS) shall be performed by a trained and authorized mechanic, that is not the primary operator of the unit, a supervisor of the operator that has been trained, or maintenance personnel. A copy of these inspection checklists is available within the **INSTALLATION & MAINTENANCE MANUAL APPENDIX SECTION** and within the **MAINTENANCE LOGBOOK**.

10.2. DAILY/SHIFT MAINTENANCE

NOTICE

DAILY/SHIFT maintenance, visual inspections, and tests shall be performed by trained operators or maintenance personnel and should be performed at the beginning of each workday or the beginning of each change of work shift from the date of installation on the job site. A copy of the Daily/Shift Inspection Form is available in the **APPENDIX** of this manual and within the **MAINTENANCE LOGBOOK**.

10.3. WEEKLY (40 HOURS) MAINTENANCE

NOTICE

WEEKLY maintenance, visual inspections, and tests shall be performed by a trained operator, a supervisor of the operator that has been trained, or maintenance personnel. This maintenance shall be performed on the last workday of each week as a supplement to the morning daily inspection. Both daily and weekly report forms shall be stapled together or saved under the same registry. A copy of the Weekly inspection checklist is available in the **APPENDIX** of this manual and within the **MAINTENANCE LOGBOOK**.

10.4. MONTHLY (120 HOURS) MAINTENANCE

NOTICE

Important! The monthly (120 h) maintenance shall be performed by trained and authorized mechanics only. Such maintenance personnel shall use the Installation & maintenance manual for guidelines and fill the according maintenance report form. Copies of the report form are available within the [INSTALLATION & MAINTENANCE MANUAL APPENDIX SECTION](#) and within the [MAINTENANCE LOGBOOK](#).

10.5. QUARTERLY (360 HOURS) MAINTENANCE

NOTICE

Important! The quarterly (360 h) maintenance shall be performed by trained and authorized mechanics. Such maintenance personnel shall use the Installation & maintenance manual for guidelines and fill the according maintenance report form. Copies of the report form is available within the [INSTALLATION & MAINTENANCE MANUAL APPENDIX SECTION](#) and within the [MAINTENANCE LOGBOOK](#).

10.6. ANNUAL MAINTENANCE

NOTICE

Important! The Annual maintenance shall be performed by trained and authorized mechanics. Such maintenance personnel shall use the Installation & maintenance manual for guidelines and fill the according maintenance report form. Copies of the report form is available within the [INSTALLATION & MAINTENANCE MANUAL APPENDIX SECTION](#) and within the [MAINTENANCE LOGBOOK](#).

10.7. THREE (3) YEAR MAINTENANCE

NOTICE

Important! The 3 years maintenance shall be performed by trained and authorized mechanics. Such maintenance personnel shall use the Installation & maintenance manual for guidelines and fill the according maintenance report forms.

- 3 years safety device replacement form
- 3 years gearbox oil change form

Copies of the report forms are available within the **INSTALLATION & MAINTENANCE MANUAL APPENDIX SECTION** and within the **MAINTENANCE LOGBOOK**.

11. MACHINE DISPOSAL

Correctly dismantle the equipment and dispose of it according to the effective local regulations.

Respect the following guidelines when disposing of equipment parts/elements:

- Drain oil/grease and dispose in an eco-friendly manner.
- Recycle metallic parts.
- Recycle plastic parts.
- Recycle electrical or hazardous components at recycling waste sites.

Contact the manufacturer or a specialized disposal company according to effective local regulations.

APPENDIX

Personnel Hoist (SEH) Daily/Shift Inspection Report

Perform prior to all work shifts



Date: (YYYY / MM / DD) Time: (hour : min) Hourmeter: (h)	Owner (Company):	Site location (name and address):
Installation No.:		Contractor (installation / maintenance):
Hoist Type: Rated load: _____ lbs Rated speed: _____ feet/min		Unit Serial No.: _____ Manufacturing year: _____

✓ = in good order/compliant X = defect/not compliant N/A = not applicable

REFERENCES (Also list which code article is applicable):

- ① ANSI A10.4 Safety Requirements for Personnel hoists and Employee Elevators on Construction and Demolition sites
- ② CSA Z185-M87 Safety code for personnel Hoists, ③ TSSA DR 256/12 Guideline for Maintenance Logs – Construction Hoist
- ④ BY MANUFACTURER (Fraco)

#	Location	DAILY Items to inspect	Reference	✓	X	N/A
1.	Worksite - General	<p>WIND (Exterior installation only) Make sure that the wind speeds do not exceed Maximums listed below. The speed must be measured by <u>average wind gust of 3 seconds</u>. Instruction: refer to your local weather application to validate each of the following criteria. The local weather shall take into account <u>average wind gust of 3 seconds</u>.</p> <ul style="list-style-type: none"> MAX 28 mph (45 km/h) <u>ave. wind gust 3 sec.</u> during the installation. MAX 45 mph (72 km/h) <u>ave. wind gust 3 sec.</u> in operation once the installation has been completed. Take note of the wind current direction and today's forecast. <div style="text-align: right; border: 1px solid black; padding: 2px; display: inline-block;"> _____ mph, (_____ km/h) </div>	① 30.2 ② A3			
2.	Worksite - General	<p>TEMPERATURE (Exterior installation only) Make sure that the ambient temperature doesn't exceed the minimum and maximum values specified by the manufacturer. Instruction: refer to your local weather application or an exterior thermometer to validate the ambient temperature, with no consideration for the wind factor and humidex.</p> <ul style="list-style-type: none"> MIN -4°F (-20°C). MAX 104°F (40°C). Take note of the current outside temperature and today's forecast. <div style="text-align: right; border: 1px solid black; padding: 2px; display: inline-block;"> _____ °F, (_____ °C) </div>	④			
3.	Ground level	CLEAN THE PIT AREA Clear and clean the space in the ground/pit enclosure/safety perimeter/under the hoist, of any excess of dirt, debris, snow and ice. Note: excess of any contaminant may prevent proper visual inspection and accumulation of snow or ice may induce damage to structural components. Also, there shall be no material stored underneath the machine.	④			
4.	Ground level	FOUNDATION Visually inspect the foundation. Confirm it is not compromised due to erosion or excavation within the vicinity.	① 5.2 ② 5.2, ④			
5.	Ground level	BASE & MAST FASTENING Visually inspect the ground base structure and the mast connection to the base. Also inspect the mast structure and fasteners from the ground up to the top of the car power unit.	④			
6.	Ground level	FALLEN MATERIAL IN PIT AREA Visually inspect the ground for fallen hardware in the pit area (ex. mast bolts, fasteners, etc...).	④			
7.	Ground level	BUFFER Visually inspect the ground buffers and the buffer's limit switch (if available). Confirm that the buffers are not compressed. If the buffers are equipped with a hoist presence detector switch, test that it works (the ready green light shall turn off with the switch is triggered).	① 23.3 ② 18.3			
8.	Ground level	CABLE TROLLEY AND TRAVELING CABLE Visually inspect the condition of the power cable and cable trolley. Inspect that there are no debris, snow and ice in the trolley rollers and wheel.	④			
9.	Ground level	VERTICAL TRAVEL CLEARANCE Visually inspect the complete hoistway vertical travel path along the mast and confirm that there is no obstruction to the passage of the elevator car. Also verify that the trolley power cable is straight and isn't caught in the cable guides.	③ 3.1.8 ④			
10.	Ground level	GROUND ENCLOSURE (If applicable) Note: ground enclosure may be mandatory under local regulation. Visually inspect that the ground protection enclosure is firmly installed and in good condition. Confirm that the protection enclosure has no opening allowing the passage to the inside of the pit (other than the access door).	① 5.3 ② 6 ③ 3.3.1 a)			
11.	Ground level	ALO SERVICE PANEL On the ground service panel (ALO) , visually inspect the buttons, switches, key switches, and indicator lights for any breakage. Additionally, test the proper function of the E-STOP button . Once activated, the READY green indicator light shall turn off or flash to acknowledge the activation of the safety line. Reset the button afterward and confirm proper normal operation is restored.	④			
12.	Inside the hoist cabin	CLEAN THE CABIN Clear and clean the hoist of excess dirt, debris, and snow/ice. Note: excess of any contaminant may prevent proper visual inspection and accumulation of snow or ice may induce damage to structural components.	④			
13.	Inside the hoist cabin	DATA PLATE AND SIGNAGE IN THE CABIN Visually inspect all signs and plates from the cabin. Confirm all are present, legible and in good condition. (Replace as soon as possible if needed). <ul style="list-style-type: none"> (Data plate – Inside the car) (Capacity plate – Inside the car) 	① 21.2 ③ 3.1.13 b)			
14.	Inside the hoist cabin	CABIN INTERIOR INSPECTION Visually inspect the condition of the interior of the car (jamming, deformation, breakage) of the hoist door(s), hoist floor, walls, ceiling and rooftop access trapdoor.	③ 3.1.5 c)			
15.	Inside the hoist cabin	LIMIT SWITCH PANEL Open the limit switches hatch (next to the safety device inside the car) and inspect the switches. Visually inspect every limit switch (jamming, deformation, breakage and presence of ice). Press on the EXTREME limit switch roller arm and confirm that the READY green light on the AS3 panel turns off. Also, while in cold weather, confirm that the heating pads near the switches works properly.	① 23.2, 23.3 ② 18.2, 18.3 ③ 3.3.9			

DAILY / SHIFT

Name :	Signature :	Company :
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Personnel Hoist (SEH) Daily/Shift Inspection Report

Perform prior to all work shifts

DAILY / SHIFT

✓ = in good order/compliant X = defect/not compliant N/A = not applicable

REFERENCES:

- ① ANSI A10.4 Safety Requirements for Personnel hoists and Employee Elevators on Construction and Demolition sites
- ② CSA Z185-M87 Safety code for personnel Hoists, ③ TSSA DR 256/12 Guideline for Maintenance Logs – Construction Hoist
- ④ BY MANUFACTURER (Fraco)

#	Location	DAILY Items to inspect	Reference	✓	X	N/A
16.	Inside the hoist cabin	USER'S MANUAL Confirm that there is a copy of the SEH User's manual in the documentation compartment inside the hoist. It must be in good condition and legible. Have it replaced if needed. <ul style="list-style-type: none"> • Optionally – If you have an easy access to the user's manual online, you may skip this daily inspection. • Optionally – If the User's manual is stored inside the AS2 service panel on the roof, you may select N/A and check WEEKLY item 32 instead. 	④			
17.	Inside the hoist cabin	CABIN LIGHT Visually inspect the condition (jamming, deformation, breakage) of hoist ceiling light fixtures. Also, test that light work, using the (light ON/OFF selector) on the AS3 operator panel .	① 17.10 ② 8.5, ④			
18.	Inside the hoist cabin	AS3 CAR OPERATOR PANEL On the operator panel (AS3) , visually inspect the buttons, switches, key switches, and indicator lights for any breakage. Additionally, test the proper function of the E-STOP button . Once activated, the READY green indicator light shall turn off or flash to acknowledge the activation of the safety line. Reset the button afterward and confirm proper normal operation is restored.	① 24 ② 8.5, ④			
19.	Inside the hoist cabin	CAR DOOR Test – Enter the car and close all doors including the rooftop access trapdoor. Test (door lock/unlock selector with blue light) turn ON on the operator panel (AS3) . <ul style="list-style-type: none"> • UNLOCKING TEST – The selector should already be turned to the unlock position and be illuminated (blue). Under this condition, confirm that the READY green indicator light is turned off and that no controls (raising & lowering) work. • LOCKING TEST – Turn the selector to the lock position. Under this condition, the blue light shall be turned ON while the car is within a door zone. Also, confirm that the READY green indicator light is turned on and that each individual car doors are locked. Note: it is always possible to unlock the rooftop access trapdoor. Although, when this trapdoor is open the READY green indicator light shall turn off.	① 18 ② 8.6 ③ 3.1.5 a)			
20.	Inside the hoist cabin	ROOF ACCESS LADDER Visually inspect the condition (jamming, deformation, breakage) of the rooftop access ladder and its storing support inside the cabin. While positioning the ladder to access the roof, open the roof hatch and confirm that the READY green light turns off.	① 17.6 ② 8.4			
21.	Hoist roof	CLEAN THE ROOF Clear and clean the roof of excess dirt, debris, and snow/ice. Note: excess of any contaminant may prevent proper visual inspection and accumulation of snow or ice may induce damage to structural components.	④			
22.	Hoist roof	OIL SPILL ON THE ROOF Visually inspect for any signs of oil leaks around the power pack gearboxes and motors	④			
23.	Hoist roof	METAL FLAKES ON THE ROOF Visually inspect for the presence of chipped metal flakes on the rooftop area. It may reveal advanced premature wear of the mast rack, motor pinions and tandem rollers.	④			
24.	Hoist roof	GUARDRAILS ON THE ROOF Visually inspect condition (jamming, deformation, breakage) of the top of car railings.	① 17.8 ② 8.4.2, ④			
25.	Hoist roof	AS2 ROOF SERVICE PANEL <ul style="list-style-type: none"> • On the top of car service panel (AS2), visually inspect the buttons, switches, key switches, and indicator lights for any breakage. • Additionally, test the proper function of the E-STOP button. Once activated, the READY green indicator light shall turn off or flash to acknowledge the activation of the safety line. Reset the button afterward and confirm proper normal operation is restored. • Inspect the connections on the AS2, ensuring they are securely fastened, and the seals are in good condition, compressed to prevent any water infiltration. Confirm that the door of the AS2 is properly closed and perform a visual inspection of the electrical cables to verify they are in good condition. • Confirm that the AS2 panel door is closed properly. <ul style="list-style-type: none"> • Also, visually inspect the condition of the electric resistance cabinet (jamming, deformation, breakage). Inspect the condition of immediately accessible electric cable and connection. 	① 24.1.3 ④			
26.	Hoist roof	STATIC HOLDING TEST Test – Proceed to a STATIC HOLDING TEST of the motor brakes. <ul style="list-style-type: none"> • SEH-2 motors: Pull completely on one of the motor brake release lever. Confirm the remaining brake is able to hold the car locked in position, free from slipping. Test each brake individually. • SEH-3 motors: Pull completely on two of the motor brakes release levers. Confirm the remaining brake is able to hold the car locked in position, free from slipping. Test each brake individually. EMERGENCY LOWERING TEST Test – Proceed to a TEST of the emergency lowering procedure. <ul style="list-style-type: none"> • SEH-2 motors: While being stopped slightly above the buffer, pull completely on one of the motor brake release levers, then pull on the remaining brake to manually lower the car. Release after a few inches before reaching the EXTREME limit switch activation location. Confirm that the car emergency lowering procedure work as intended and that all levers go back to neutral position. • SEH-3 motors: While being stopped slightly above the buffer, pull completely on two of the motor brake release levers, then pull on the remaining brake to manually lower the car. Release after a few inches before reaching the EXTREME limit switch activation location. Confirm that the car emergency lowering procedure work as intended and that all levers go back to neutral position. 	④			

Name :	Signature :	Company :
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Personnel Hoist (SEH)

Daily/Shift Inspection Report

Perform prior to all work shifts

✓ = in good order/compliant X = defect/not compliant N/A = not applicable							
#	Location	WEEKLY items to inspect, that may be done as part of the daily	✓	X	N/A	DAILY / SHIFT	
27.	Hoist roof	TRIAL RUN Test – Perform a FULL TRIAL RUN from the rooftop location. <ul style="list-style-type: none"> • While in INSPECTION mode, using the rooftop controls (AS2), move the elevator up to the full height of the installation, until you've reached the STOP HIGH limit and confirm that the SLOWDOWN and STOP HIGH limit detectors work properly. • Then, lower the hoist down to the STOP LOW limit and confirm that the SLOWDOWN and STOP LOW limit detectors work properly. During this travel, proceed to the listed inspection (Day 1, day 2, etc...). <p>➤ Rule: Proceed with one different individual daily inspection each day. At the end of the work week, all five (5) inspections must have been accomplished, even in the event of a work week of less than 5 days. On the fifth (5) day, fill a WEEKLY inspection form instead. The weekly form must be stapled or saved with the daily forms associated week.</p> <p>➤ Instruction: While performing the visual inspection for the presence/loosening of fasteners, look out for spaces between the washers and structural components that would indicate loose fasteners.</p>					
		Each day	OBSTACLES Confirm that there is no obstacle in conflict with a moving element (cabin, cable guide trolley, cable). Also, confirm that the cable guide carriage and the cable do not jam by passing through the cable guides, debris or ice along the mast.				
		Day 1	1. MAST INSPECTION Visually inspect the mast sections and look out for the visible presence/loosening of hardware. <i>During this inspection, there should be sufficient grease along the rack.</i>				
		Day 2	2. LIMIT SWITCH ACTUATOR PADS INSPECTION Visually inspect the actuator pads of all limit switches along the mast. Also, visually inspect the mast ties. For the assembly, confirm the visible presence/loosening of the bolts.				
		Day 3	3. LANDING DOOR INSPECTION FROM OUTSIDE Visually inspect landing doors visible from the roof area. Observe, among other things, the condition of the fixation and fixing bolts which are visible from <u>outside the building</u> . <i>Note: If the landing doors are installed in the building, at such a distance that the inspection can only be carried out from inside the building, you can write N/A and complete this inspection on each landing as part of the 5th day inspection.</i>				
		Day 4	4. LANDING DOOR PARTITION AND WALL TIE ANCHORS INSPECTION On each floor serviced by the elevator, check the integrity and solidity of the partitions around the landing doors. Also, on floors where it is visually accessible, visually inspect the condition of the anchors (breakage, deformation and the visible presence/loosening of bolts).				
Day 5	5. LANDING DOOR INSPECTION FROM INSIDE AND DOOR LOCK On each floor serviced by the elevator, visually inspect the landing doors. Observe, among other things, the condition of the fixation and fixing bolts which are visible from <u>inside the building</u> . Also, inspect the condition of each landing door lock and test that they prevent the doors from opening to the outside of the building.						
ADDITIONAL NOTES, INSTRUCTION AND ADVICE: <ul style="list-style-type: none"> • Each non-compliant inspection must be declared and detailed within the NOTE AND DETAILS OF DEFECTS AND CORRECTIONS section below. Each non-compliance must be repaired / settled before putting the unit in NORMAL OPERATION. • The masts rack must be greased WEEKLY, although if the general visual inspection from the trial run (insp. point 27 – Day 1.) reveals a lack of grease along the rack, report it at the bottom of this inspection form, in the NOTE, DETAIL OF DEFAULT AND CORRECTIONS and proceed to an immediate greasing of the masts rack. <i>Note: while in the break-in period (during the first week of using a new hoist or using brand new mast sections) it is highly recommended to grease the rack every day for the whole break-in period.</i> • It is highly recommended to clear and clean the space at each landing(s) of <u>excess</u> dirt, debris, and snow/ice. • Plan the removal of excessive snow and ice the day after a snowstorm. • Important! In the event of a storm with winds exceeding 171 mph (274 km/h), position the cabin at ground level in out-of-service mode. Also, refer to any requirements issued by local authorities having jurisdiction for any other instructions related to storm wind safety. • Important! In the event of an electrical storm, when lightning is spotted near the site, 10 miles (16 km) and less, it is strongly recommended to position the cabin at ground level in out-of-service mode and evacuate to a valid shelter nearby. The activity can be resumed 30 minutes after the last sound of thunder is heard. It is the responsibility of the competent site manager to determine the details and conditions of the lightning safety procedure. Also, refer to any requirements issued by local authorities having jurisdiction for any other instructions related to lightning safety. • Be vigilant and stay on the lookout for any unusual/abnormal behavior or noises. Inform a competent person if in doubt. 							
NOTE AND DETAILS OF DEFECTS AND CORRECTIONS: <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>							

Name :	Signature :	Company :
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Personnel Hoist (SEH) Weekly (40 h) Inspection Report

Perform once a week, or each 40 hours,
whichever comes first



Date: (YYYY / MM / DD) Time: (hour : min) Hourmeter : (h)	Owner (Company):	Site (name and address):
Installation No.:		Contractor (installation / maintenance)
Hoist Type: Rated load: _____ lbs Rated speed: _____ ft/min		Unit Serial No.: _____ Manufacturing year: _____

✓ = in good order/compliant x = defect/not compliant N/A = not applicable

#	Location	Items to inspect	✓	X	N/A
28.	Worksite - General	DAILY INSPECTION ITEM 27. WEEKLY RECORD Observe the daily/shift inspection sheets of the current week and confirm that all of them have been filled and signed. Also, confirm that all WEEKLY inspection points 27. (day 1 to 5) of the inspection sheets have been checked along the week.			
29.	Ground level	SHORING INSPECTION If shoring is needed and was installed, visually inspect for the presence of shoring. Also, confirm it is in good state.			
30.	Inside the hoist cabin	EMERGENCY SAFETY DEVICE LUBRICATION Lubricate the emergency safety device from the two grease points. One is accessible from inside the hoist and the second one is accessible from the pinion side.			
31.	Hoist roof	HOURLY METER Open the AS2 service panel to assess the current operating time. Current hourmeter time: h min			
32.	Hoist roof	USER'S MANUAL Optionally – If the User's manual is stored inside the AS2 service panel on the roof, take this opportunity to confirm that there is a copy of the SEH User's manual stored inside the electrical panel. It must be in good condition and legible. Have it replaced if needed. Otherwise – If the User's manual is stored in the documentation compartment inside the cabin, you may select N/A, but you will need to have it checked daily and report to the DAILY inspection point 16 every day.			
33.	Hoist roof	RUN AND DYNAMIC BRAKE Test – From the rooftop, proceed to an operation test by moving the hoist car up to the upmost limit (last floor) and confirm that the motor brakes work efficiently. (The hoist car must stop in level with the top floor landing).			
34.	Hoist roof	MAST RACK LUBRICATION Lubricate the mast rack along the full length of the mast.			
35.	Hoist roof	AUTOMATIC GREASE DISPENSER (If provided-optional) Verify the grease level of the automatic grease dispenser canister. Refill with the proper grease, referring to the SEH Installation & maintenance manual.			

ADDITIONAL NOTES, INSTRUCTION AND ADVICE:

- Each non-compliant inspection must be declared and detailed within the NOTE AND DETAILS OF DEFECTS AND CORRECTIONS section below. Each non-compliance must be repaired / settled before putting the unit in NORMAL OPERATION.

- The masts rack must be greased **WEEKLY**, although if the general visual inspection from the trial run (**insp. point 27 – Day 1.**) reveals a lack of grease along the rack, report it at the bottom of this inspection form, in the NOTE, DETAIL OF DEFAULT AND CORRECTIONS and proceed to an immediate greasing of the masts rack.
Note: while in the break-in period (during the first week of using a new hoist or using brand new mast sections) it is highly recommended to grease the rack every day for the whole break-in period.

- It is highly recommended to clear and clean the space at each landing(s) of excess dirt, debris, and snow/ice.

- Plan the removal of excessive snow and ice the day after a snowstorm.

- Important! In the event of a storm with winds exceeding 171 mph (274 km/h), position the cabin at ground level in out-of-service mode. Also, refer to any requirements issued by local authorities having jurisdiction for any other instructions related to storm wind safety.

- Important! In the event of an electrical storm, when lightning is spotted near the site, 10 miles (16 km) and less, it is strongly recommended to position the cabin at ground level in out-of-service mode and evacuate to a valid shelter nearby. The activity can be resumed 30 minutes after the last sound of thunder is heard. It is the responsibility of the competent site manager to determine the details and conditions of the lightning safety procedure. Also, refer to any requirements issued by local authorities having jurisdiction for any other instructions related to lightning safety.

- Be vigilant and stay on the lookout for any unusual/abnormal behavior or noises. Inform a competent person if in doubt.

NOTE AND DETAIL OF DEFECTS AND CORRECTIONS:

WEEKLY / 40h

Name :	Signature :	Company :
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