

# IMPORTANT: READ THIS MANUAL COMPLETELY BEFORE INSTALLING OR OPERATING LIFT

PRINTING CHARACTERS AND SYMBOLS

Throughout this manual, the following symbols and printing characters are used to facilitate reading:

	Indicates the operations which need proper care	
$\otimes$	Indicates prohibition	
	Indicates a possibility of danger for the operators	
BOLD TYPE	Important information	



WARNING: Before operating the lift and carrying out any adjustments, carefully read chapter 7 "Installation" where all proper operations for a better functioning lift are shown.

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### **CHAPTER 1 - GENERAL INFORMATION**

This chapter contains warning instructions to operate the lift properly and prevent injury to operators or objects.

This manual has been written to be used by shop technicians in charge of the lift (operator) and routine maintenance technicians (maintenance operator).

The operating instructions are an integral part of the machine and must remain with it for the entirety of its useful life.

Read every section of this manual carefully before operating and unpacking the lift since it gives helpful information about:

- SAFETY OF PEOPLE
- SAFETY OF THE LIFT
- SAFETY OF LIFTED VEHICLES

The company is not liable for possible problems, damage, accidents, etc. resulting from failure to follow the instructions contained in this manual.

THE MANUFACTURER IS NOT RESPONSIBLE FOR POSSIBLE DAMAGE TO PEOPLE, VEHICLES, OR OBJECTS IF SAID OPERATIONS ARE CARRIED OUT BY UNAUTHORIZED PERSONNEL OR THE LIFT IS IMPROPERLY USED.

Any use of the machine made by operators who are not familiar with the instructions and procedures contained herein shall be forbidden.

#### **1.1 MANUAL STORAGE**

For proper use of this manual, the following is recommended:

- Keep the manual near the lift, in an easily accessible place.
- Keep the manual in an area protected from moisture.
- This manual is an integral part of the lift: it shall be given to the new owner if and when the lift is resold.

#### **1.2** OBLIGATION IN CASE OF MALFUNCTION

In case of machine malfunction, follow the instructions contained in the following chapters.

#### **1.3** CAUTIONS FOR THE SAFETY OF THE OPERATOR

Operators must not be under the influence of drugs or alcohol when operating the machine.



Before operating the lift, operators must be familiar with the position and function of all controls, as well as with the machine features shown in the chapter "Operation and Use"

#### 1.4 WARNINGS



Unauthorized changes and/or modifications to the machine relieve the manufacturer of any liability for possible damages to objects or people. Do

not remove or make inoperative the safety devices, this would cause a violation of safety at work laws and regulations.



Any other use which differs from that provided for by the manufacturer of the machine is strictly forbidden.



The use of non-genuine parts may cause damage to people or objects.

#### DECLARATION OF WARRANTY AND LIMITATION OF LIABILITY

The manufacturer has paid proper attention to the preparation of this manual. However, nothing contained herein modifies or alters, in any way, the terms and conditions of the manufacturer agreement by which this lift was acquired, nor increases, in any way, the manufacturer's liability to the customer.

#### TO THE READER

Every effort has been made to ensure that the information contained in this manual is correct, complete, and up to date. The manufacturer is not liable for any mistakes made when drawing up this manual and reserves the right to make any changes due to the development of the product, at any time.

#### WARRANTY CERTIFICATE

The structural component warranty (i.e. arms, columns, carriages, runways, crossbars, overhead bars, top caps) is valid for a period of 5 years starting from the date of the purchase invoice. The functional component warranty (i.e. cables, chains, pulleys, and power unit components) is valid for a period of 2 years from the date of the purchase invoice. The warranty will come immediately to an end when unauthorized modifications to the machine or parts of it are carried out.

The presence of defects in workmanship must be verified by a Manufacturer's Representative.

#### **TECHNICAL SERVICING**

For all servicing and maintenance operations not specified or shown in these instructions, contact your Dealer where the machine was purchased or the Manufacturer's Sales Department.

#### **CHAPTER 2 – PRODUCT IDENTIFICATION**

The identification data of the machine are denoted on the Manufacture Serial Plate located on the power side column.



Use the above data both to order spare parts and when getting in touch with the manufacturer (inquiry). The removal of this label is strictly forbidden.

Machines may be updated or slightly modified from an aesthetic point of view and, as a consequence, they may present different features from those shown, without prejudicing what has been described herein.

#### **CHAPTER 3 - PACKING, TRANSPORT, AND STORAGE**

Only skilled personnel who are familiar with the lift and this manual shall be allowed to carry out packing, lifting, handling, transport, and unpacking operations.

#### 3.1 PACKING

The packing of the lift is delivered in the following components:

- 1 base unit packed in a steel frame, wrapped up in non-scratch material, including all accessories.
- > 1 power unit packed in a cardboard box.
- 1 hardware box

Figure 1 - PACKAGES



#### 3.2 LIFTING AND HANDLING

When loading/unloading or transporting the equipment to the site, be sure to use suitable loading (i.e. cranes, trucks) and hoisting means. Be sure also to hoist and transport the components securely so that they cannot drop, taking into consideration the package's size, weight, center of gravity, and fragile parts.

#### 3.3 STORAGE AND STACKING OF PACKAGES

Packages must be stored in a covered place, out of direct sunlight, low humidity, and at an ambient temperature.

#### 3.4 DELIVERY AND CHECK OF PACKAGES

When the lift is delivered, check for possible damages due to transport and storage. Verify that what is specified in the manufacturer's confirmation of order is included. In case of damage in transit, the customer must immediately inform the carrier of the problem. Packages must be opened paying attention not to cause physical harm (keep a safe distance when opening straps) and parts of the lift (be careful the objects do not drop from the package when opening).

#### CHAPTER 4 - LIFT DESCRIPTION

#### LIFT DESCRIPTION (Ref. Figure 2)

This Chapter describes the lift's principal elements, allowing the user to be familiar with the machine.

The lift is suitable for lifting motor vehicles having maximum weight as described in the nameplate on the power side column of the lift.

The electro-hydraulic operation is described in detail in Chapter 8.

As shown in figure 2, the lift is composed of two columns (1), each equipped with a carriage (2) and a pair of lifting arms (3), anchored to the ground by means of a base plate (4). The floor-plate model contains a floorplate used to protect the lines routed between columns. The clear-floor model contains a crossbeam connected to the top of the posts, which also protects and routes the hydraulic lines and cables.

Raising motion is carried out by pushing the power unit button on the front panel of the power unit, which carries hydraulic fluid to the cylinders from inside the columns. The synchronization is controlled by the equalizer cable system built in each column. The arm lock engaging gear can be engaged automatically when the lift is raised.



Fig. 2





### **CHAPTER 5 - TECHNICAL SPECIFICATION**

#### 5.1 SIZE AND MAIN FEATURES (Ref. Figure 3)

	AL-SC10	AL-SF10		
	Overhead	Floor plate		
Capacity	120001	12000LBS		
Maximum lifting height	73"	73"		
Minimum pad height	4"	4"		
Overall height	144"	120"		
Overall width	157"	157"		
Width between columns130"				
Maximum vehicle width 12				
Lifting time		40s		
Lowering time		60s		
Average weight of package 2,335lbs		2,185lbs		



#### 5.5 OIL

Use wear-proof oil for hydraulic drive, in conformity with *ISO 6743/4* rules (HM class). The oil with features similar to AW 36 or AW 46.

TEST STANDARDS	FEATURES	VALUE
ASTM D 1298	Density 68°F	0.8 kg/l
ASTM D 445	Viscosity 104°F	32 cSt
ASTM D 445	Viscosity 212°F	5.43 cSt
ASTM D 2270	Viscosity index	104 N°
ASTM D 97	Pour point	~ 86 °F
ASTM D 92	Flash point	419 °F
ASTM D 644	Neutralization number	0.5 mg KOH/g



#### CHANGE HYDRAULIC OIL ANNUALLY

#### Figure 5 – ELECTRICAL DIAGRAM

Μ	Motor
KM	AC Contactor
SQ	Max lifting height limit switch
SB	Lifting push button



### CHAPTER 6 – SAFETY

Read this chapter carefully and completely because it contains important information for the safety of the operator and the person in charge of maintenance.



For operator and people safety, a square space for a safety area at least 3' free away from the lift must be vacated during lifting and lowering. The lift must be operated only from the operator's control site in this safety area.

The operator's presence under the vehicle, during working, is only admitted when the vehicle is lifted and the safety lock is engaged.



Never use the lift when safety devices are off-line. People, the lift, and the lifted vehicles can be seriously damaged if these instructions are not followed.

#### 6.1 GENERAL WARNINGS

The operator and the person in charge of maintenance must follow accident-prevention laws and rules enforced in the country where the lift is installed.

They also must carry out the following:

- Neither remove nor disconnect hydraulic, electric, or other safety devices
- Carefully follow the safety indications applied on the machine and included in the manual
- Observe the safety area during lifting
- Be sure the motor of the vehicle is off, the gear engaged, and the parking brake put on
- Be sure vehicles are lifted without exceeding the maximum lifting capacity
- Verify that no one is on the arms during lifting or standing.

#### 6.2 SAFETY DEVICE

To avoid overloading and possible damage, the following safety devices have been used:

A maximum pressure valve placed inside the hydraulic pump to prevent excessive weight.



The maximum pressure valve has been preset by the manufacturer to proper pressure. DO NOT try to adjust it to over run the rated lifting capacity.



It is strictly forbidden to modify any safety device. Always ensure the safety device for proper operation during the service.

#### 6.3 SAFETY SIGNS

All safety warning signs (figure 8) displayed on the machine are with the purpose to draw the operator's attention to dangerous or unsafe situations. The labels must be kept clean and they have to be replaced if detached or damaged. Read the meaning of the labels carefully and memorize it.

Figure 8 – Warning sticker on master column



#### CHAPTER 7 – INSTALLATION



Only skilled technicians, appointed by the manufacturer, or by authorized dealers, must be allowed to carry out installation. Serious damage to people and to the lift can be caused if installations are made by unskilled personnel.

#### 7.1 TOOLS REQUIRED

- Rotary Hammer Drill
- Masonry Bit (3/4")
- Hammer
- Level
- Open-End Wrench Set
- Medium Crescent Wrench
- 12' Step Ladder
- Anti-Seize Lubricant

- Hex-Key/Allen Wrench Set
- Crow Bar For Shim Installation
- Chalk Line
- Medium Flat and Phillips
   Screwdriver
- Tape Measure
- Torque Wrench (100 FT/LBS Minimum)

#### 7.2 CHECKING FOR ROOM SUITABILITY

The lift has been designed to be used in covered and sheltered places free of overhead obstructions.

The place of installation must not be next to washing areas, painting workbenches, solvent, or varnish deposits. The installation near rooms, where a dangerous situation of explosion can occur, is strictly forbidden. The relevant standards of the local Health and Safety at Work Regulations, for instance, with respect to minimum distance to the wall or other equipment, escapes and the like, must be observed.

#### 7.3 LIGHTING

Lighting must be carried out according to the effective regulations of the place of installation. All areas next to the lift must be well and uniformly lit.

#### 7.4 FLOOR REQUIREMENT

The machine should be fixed on concrete with less than a .2-inch level error. The concrete should be 4.5" thick (minimum) and a 3500 PSI mix. Do not install the lift on cracked or defective concrete. Anchor bolts must be more than 6" from cracks and expansion joints in the concrete or from the wall.

Check your floor for the possibility of it being a post-tension slab. In this case, contact the building architect **before** drilling. Using ground-penetrating radar may help you find tensioned steel.



Specifications of concrete must be adhered to. Failure to do so could cause lift failure resulting in personal injury or death.



A level floor is suggested for proper installation. Small differences in floor slope may be compensated for by proper shimming. Any major slope change will affect the level of lifting performance. If a floor is of questionable slope consider pouring a new concrete slab.

#### 7.5 SITE LAYOUT

- Position the lift according to the floor plan in figure 9. Use a chalk line to lay out a grid for the column locations
- Double check all dimensions and make sure that the bases of each column are square and aligned with the chalk line.

Figure 9 – FLOOR PLAN

#### FLOOR PLATE TWO-POST LIFT



#### Expansible bolt fixation chart



#### 7.6 OVERHEAD BAR ATTACHMENT

After the posts are erected, you will need to attach the overhead bar to the top of the post. Do this before drilling holes into the floor. Attach the overhead bar, but do not tighten the bolts or nuts down fully, allowing for slight movement when leveling the post. Fully tighten after the post is leveled and anchored.

The overhead bar is attached by putting the post cap onto the top of the post then bolting the post cap to the post by means of the lined-up holes in the cap and post. Then mount the overhead bar to the post cap by lining up the holes and bolting the overhead bar to the caps.

#### 7.7 INSTALLATION OF TOP BAR

• Fix the crossbeam according to the drawing. That side with the limit switch should be installed on the post with the hydraulic unit, then fasten with a screw.



• Fasten the expansion bolt

#### 7.8 ANCHORING COLUMNS

- Using the base plate on the column as a guide, drill each hole in the concrete approximately 5" deep, if possible, using a concrete hammer drill with a <sup>3</sup>/<sub>4</sub>" masonry bit. To assure full holding power, do not ream the hole or allow the drill to wobble.
- After drilling, remove dust thoroughly from each hole using compressed air. Make certain that the column remains aligned with the chalk line during this process.
- Assemble the washers and nuts on the anchors then tap into each hole with a hammer until the washer rests against the base plate. Be sure that if shimming is required that enough threads are left exposed.
- If shimming is required, insert the shims as necessary under the base plate so that when the anchor bolts are tightened, the columns will be plumb.
- With the shims and anchor bolts in place, tighten by securing the nut to the base. DO NOT use an impact wrench for this procedure.
- Anchor another column as outlined in the above steps.
- Check the columns for squareness and plumb.

After posts are level, torque the anchor bolts to 100FT/LBS. Torque anchor bolts to 75FT/LBS annually after the first year.



The requirements for the column's squareness and plumb must be adhered to. Failure to do so could cause lift failure resulting in personal injury or death.

#### 7.9 ROUTING THE EQUALIZER CABLES

- Raise and lock each carriage approximately 3' above the ground.
- Make sure that the mechanical safety on each column is fully engaged before attempting to route the equalizer cables. Carriages must be of equal height from the floor before proceeding.
- With the carriages of equal height, route the equalizer cables as shown in figure 11. Make sure the cables are in place on the pulleys. Make sure the cables are routed properly.
- After the equalizer cables have been routed, adjust the nut to make each cable in equal tension by using an adjusting wrench.



The equalizer cables should be checked weekly for equal tension. Failure to do this will cause uneven lifting. The cables should always be adjusted so that they are of equal tension when resting on the safety locks.

#### Figure 11 – ROUTING THE EQUALIZER CABLES



#### 7.10 HYDRAULIC LINE CONNECTION

- Attach the power unit onto the motor plate on the power side column and secure it with bolts and washers.
- Route the hydraulic hoses referring to figure 12.
- Tighten the fittings thoroughly.





#### **CLEAR FLOOR LOCK RELEASE CABLE ROUTE**









#### 7.11 MAKE THE ELECTRICAL HOOKUP TO POWER UNIT

The hookup work must be carried out by a qualified electrician.

Make sure that the power supply is right.

Improper electrical hook-up can damage the motor and will not be covered under warranty.

The power unit must be kept dry.

- Make the electric hookup to the hydraulic power unit referring to the attached wiring diagram
- Make sure the connection is grounded.

#### 7.12 INSTALLATION OF LIFTING ARMS

- Grease the carriage column and all pivot pins prior to installation.
- Install the lifting arms on the carriages using the included pins as shown in figure 13.
- Check for proper engagement of the arm restraint gear



#### 7.13 START-UP AND CHECK



DO NOT run the power unit without oil. Damage to the pump can occur. DO NOT attempt to raise vehicles until a thorough operation check has been completed.

#### 7.13.1 CHECK BEFORE START-UP

- Make sure that the columns are plumb and the lifting arms are level.
- Make sure the lift is anchored to the ground and all anchor bolts tightened.
- Make sure the electrical system feeding voltage is equal to that specified in the nameplate on the motor.
- Make sure the electric system connection is in conformity with the electric plan shown in the electric diagram in figure 6 and the lift for proper grounding.
- Make sure the hydraulic line is properly connected.
- Make sure the working area is free from people and objects.

#### 7.13.2 START-UP

- Pour oil into the tank (about 2.75 gallons initially).
- Test the power unit by pushing the power unit button. IF THE MOTOR GETS HOT OR SOUNDS UNUSUAL, STOP IMMEDIATELY AND RECHECK THE ELECTRICAL CONNECTIONS
- Press the power unit button until cylinders bottom out and the lift stops. DO NOT continue pressing the button after the lift reaches full height. Damage to the motor can occur if continued.
- Lower the lift completely by releasing the safety locks and pressing the pressure release handle.
- Repeat raising and lowering the lift completely at least 3 times to bleed the air trapped inside the hydraulic cylinder and to equalize the oil pressure in each cylinder.

#### 7.13.3 CHECK DURING START-UP

During the START-UP procedure, carefully check:

- The lift rising synchronization, readjust the equalizer cables for equal tension (the synchronization can be checked audibly when the safety in each carriage is engaged during the lifting).
- The safety lock for proper operation.
- The arm restraint gear for proper operation.
- Proper oil level in the tank, top off to proper level.
- Cylinder operation
- No leakage in the hydraulic line
- The lift for reaching its maximum height.

#### 7.14 CHECK WITH LOAD



WARNING: Please follow the instructions carefully in the coming paragraph to avoid damage to the lift.

Carry out two or three complete cycles of lowering and lifting with the vehicle loaded and:

- Repeat the checks provided by 7.13.3.
- Check to ensure no strange noises during lifting and lowering

#### **CHAPTER 8 - OPERATION AND USE**

Never operate the lift with any person or equipment below.

Never exceed the rated lifting capacity.

Always ensure that the mechanical safeties are engaged before any attempt is made to work on or near the vehicle.

Always lift a vehicle on the lifting pads.

Never leave the lift in an elevated position unless the safeties are engaged.

If an anchor bolt becomes loose or any component of the lift is found to be defective, DO NOT USE THE LIFT until repairs are made.

Do not permit the control panel to get wet!

#### LIFTING BUTTON

> When pressed, the motor and hydraulic circuit are operated and the lift will be raised

#### PRESSURE RELEASE HANDLE

- > When pressed, the lift begins to lower under its weight and the weight of the load.
- > If safety locks are engaged, the lift will lower to the nearest locking position.

#### 8.2 TO RAISE THE LIFT

- Position the vehicle between columns.
- Adjust lift arms so that the vehicle is positioned with the center of gravity between the pads.
- Raise the lift by pressing the lifting button until the lifting adaptors contact the underside of the vehicle.
- Make sure the vehicle is secured.
- Raise the lift by pushing the lifting button until reaching the desired height.
- Lower lift until safety locks are engaged. NOTE: A LOADED LIFT SHOULD ALWAYS REST ON THE SAFETY LOCK.

#### 8.3 TO LOWER THE LIFT

- Push the power unit button to raise the lift until the safety locks can be manually opened.
- Manually release the lock, and press the pressure release handle.
- Before removing the vehicle from the lift area, position the lift arms to provide a nonobstructed exit.
- Never drive over the lift arms.

#### 8.4 TO LUBRICATE THE LIFT

To ensure that your lift works as smoothly and efficiently as possible, follow these steps:

- Add lubricant (we recommend Mobile SCH 1500) to the white nylon sliders 8 to 10 inches from top to bottom. Make sure to lubricate the corners.
- Run the lift through the cycle, and make sure it works properly.
- Once it's working properly, add lubricant to the bottom sliders 8 to 10 inches from top to bottom and lubricate the corners. As your lift runs through the cycle, the sliders will spread the lubricant where it needs to be.
- When finished, adjust the cable and make sure the sliders are on the same lock.

- Once everything is working properly, put lubricant on all the pins. Lubricate inside the columns to ensure that it picks up on the sliders. Spray any pivot points that are metal against metal, especially the ones that work with the locks.
- Ensure everything is installed properly by doing the following:
  - Push down on the lock handle. This operation should be easily achieved if everything is properly lubricated.
  - When raising the lift, ensure that the left and right locks are clicking in unison.
  - Re-torque all anchors.
  - Ensure that there are no loose nuts and bolts.

#### CHAPTER 9 – MAINTENANCE

#### Only trained personnel who know how the lift works will be allowed to service the lift.

To properly service the lift, the following has to be carried out.

- Use only genuine spare parts as well as equipment suitable for the work required.
- Follow the scheduled maintenance and check periods shown in the manual.
- Discover the reason for possible failures such as too much noise, overheating, oil blowby, etc.
- Refer to documents supplied by the manufacturer or dealer to carry out maintenance.

Before carrying out any maintenance or repair on the lift, disconnect the power supply, padlock the general switch and keep the key in a safe place to prevent unauthorized persons from switching on or operating the lift.

#### 9.1 **ORDINARY MAINTENANCE**

The lift has to be properly cleaned at least once a month using self-cleaning clothes.

The use of water or inflammable liquid is strictly forbidden

Be sure the rod of the hydraulic cylinders is always clean and not damaged since this may result in leakage from seals and, as a consequence, possible malfunctions.

#### PERIODIC MAINTENANCE 9.2

Daily pre- operation	<ul> <li>Check hydraulic connections and hoses for leaks</li> <li>Check safety locks audibly and visually while in operation</li> <li>Check arm locks</li> <li>Check that the bolts, nuts, and screws are tight</li> </ul>
Every 1 month	<ul> <li>Check all chain/cable connections, pins, and bolts to ensure proper mounting</li> <li>Inspect all anchor bolts and retighten if necessary</li> <li>Check columns for squareness and plumb</li> <li>Check equalizer cable tension, adjust if necessary</li> <li>Check all arm pivot pins. Make sure they are properly secured</li> <li>Check all lifting pads, replace them if necessary</li> <li>Lubricate columns with grease</li> <li>Check the hydraulic oil, fill or replace if necessary</li> <li>Check hydraulic systems for proper operation</li> </ul>
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	<ul> <li>Verify that all components and mechanisms are not damaged</li> <li>Verify the equalizer cables are not worn up to 5%, change if</li> </ul>
Every 12 months	<ul> <li>necessary</li> <li>Check the electrical system to verify that the motor, limit switch, and control panel operate properly (this work must be carried out by skilled electricians)</li> <li>Empty the oil tank and change the hydraulic oil</li> <li>Check for frays on cables by taking a rag with penetrating oil on it and running it along the cables up and down. Frayed cables require replacement</li> </ul>

#### CHAPTER 10 - TROUBLESHOOTING

A list of possible troubles and solutions is given below:

TROUBLE:	POSSIBLE CAUSE:	SOLUTION:
	The main switch is not turned on	Turn the switch on
The lift does not work	There is no power	Check that the power is on, restore it if necessary
The lift does not work	The electrical wires are disconnected	Reconnect
	The circuit breaker has tripped	Replace if non-functional
	The lift is overloaded	Check the vehicle weight
	The oil in the power unit is not sufficient	Add some hydraulic oil
The lift does not raise	The power unit button is faulty	Check button and connection for proper operation. Replace if faulty
	The lowering valve does not close	Check and clean if dirty or replace if faulty
	The suction tube or pump filter is dirty	Check and clean if needed
	Presence of air in the hydraulic system	Bleed the hydraulic system
The lifting capacity is not	The pump is faulty	Check the pump and replace it if needed
sufficient	Oil leakages in the hydraulic circuit	Check the circuit for any leakage
The lift does not lower when the lowering handle is pressed	The lowering valve does not work properly	Check the valve and replace it if needed
The lift does not lower	Presence of air in the hydraulic system	Bleed the hydraulic system
smoothly	Lubrication of sliders is not enough	Grease
	Sliders are damaged	Replace
The motor does not stop when the lift reaches its maximum height	The maximum height limit switch does not work	Check the limit switch and replace it if needed

If the problems remain unsolved, call or email for technical support.

# **A** WARNING

## WIRE ROPE INSPECTION AND MAINTENANCE

- Lifting cables should be replaced every three years or when visible signs of damage are apparent. DO NOT USE LIFT WITH DEFECTIVE / WORN CABLES.
- Wire ropes should be lubricated at all times. Wire ropes is only fully protected when each wire strand is thoroughly lubricated. Excessive wear will shorten the life of the wire ropes. The factory recommends a suitable wire rope dressing that penetrates to the core of the rope and provides long term lubrication between each strand. In order to make sure that the inner layers of the rope remain well lubricated, lubrication should be carried out at intervals not exceeding three months during operation.
- All sheaves and guide rollers in contact with the moving rope should be given regular visual checks for surface wear and lubricated to make sure that they run freely. This operation should be carried out at appropriate intervals generally not exceeding three months during operation.

Failure to read, understand and follow these instructions may cause death or serous injury. Read and understand these instructions before using the lift.