

VRC INSTALLATION, OPERATION AND SERVICE MANUAL

Model – PKG



Autoquip

Innovative Lift Solutions

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Item# 830PKG

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I. INTRODUCTION

WARNING



Please read and understand this manual prior to installation or operation of this lift. Failure to do so could lead to property damage and/or serious personal injury.

NOTICE

The control panel instructions are in the controller manual sent with the order. These are required for installation.

I.1 Contact Information

If you have any questions, contact a local representative, or use the Autoquip contact information below.



Autoquip Corporation
1058 West Industrial Road
Guthrie, OK 73044-1058



aqservices@autoquip.com
sales@autoquip.com



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[\(PKG documentation\)](#)



I.2 Code Requirements/Compliance

Vertical Reciprocating Conveyors (VRCs) are ***NOT*** elevators. This conveyor (lift) is designed for the transfer of material only from one level to another. Absolutely NO RIDERS! VRCs have their own national safety code (ANSI/ASME B20.1) and are specifically exempt from the National Elevator Code.

Some states require special components and have specific guidelines regarding how the equipment must be installed, inspected, and tested. The owner is ultimately responsible for understanding these requirements for the specific job location, and Autoquip will incorporate any special requirements into the order as requested and approved by the customer.

Note: Contact Autoquip ([see 1.1 Contact Information](#)) with any questions you may have concerning VRC code requirements.

I.3 Important

Autoquip Corporation has designed and manufactured the VRC to move materials safely and efficiently between multiple floors or levels. It has been built to provide many years of dependable service.

OPERATORS - Please read and understand this manual prior to operation of this VRC. Failure to do so could lead to property damage and/or serious personal injury.

Situations may arise which are not covered in this manual. If you have questions, please contact Autoquip Customer Service ([see 1.1 Contact Information](#)).

NOTE: Unless otherwise stated, mechanical installation does not include unloading, permits, seismic calculations, or extensive acceptance testing. The requirements of each contract should be carefully reviewed for possible conflicts of interpretation.

I.4 Identification

When ordering parts or requesting information or service on this lift, PLEASE REFER TO THE SERIAL NUMBER. This information is on a nameplate attached to the controller. Replacement parts are available from a local representative or Autoquip ([see 1.1 Contact Information](#)).

Please record the following information and refer to it when contacting your representative or Autoquip.

Model Number: _____ Serial Number: _____

Installation Date: ____/____/____

I.5 Inspection

NOTICE

The “Bill of Lading” will state the number of pieces shipped. TWO ITEMS MAY BE BANDED TOGETHER AND COUNT AS ONE PIECE.

Upon receipt of the shipment, check for exposed damage or shortages and make note of it on the trucking company Bill of Lading or the Shipping Papers. Reports of concealed damage to items contained in crates must be reported within 48 hours. DO NOT destroy the crating while opening it to inspect the contents. If damage is suspected or found, report it directly to the carrier. DO NOT contact Autoquip Corporation!! **All shipments are FOB from the Autoquip plant. Any claims for damage must be filed with the carrier. Any parts shipped from Autoquip that are intended to replace damaged or lost items will be invoiced to the ordering party.**

Assuming no damage has occurred to the crate(s), check the components against the packing list. This will provide assurance that every item shipped has been received, report any shortages to Autoquip Corporation within 10 days. (Autoquip is not responsible for parts lost, stolen or damaged during transportation, storage, installation, or during any other circumstances that are beyond corporate control.)

I.6 Modifications

⚠ WARNING

Do not modify lift. Autoquip cannot foresee and is not responsible for injury or damage which results from unauthorized modifications or misuse of lift.

2. RESPONSIBILITY OF OWNERS/USERS

2.1 Inspection & Maintenance

The lift shall be inspected and maintained in accordance with this manual and with other applicable safe operating practices.

2.2 Removal from Service

Any lift not in safe operating condition such as, but not limited to, excessive leakage, missing safety labels or parts or fasteners, any bent or cracked structural members, cut or frayed electric, hydraulic, or pneumatic lines, damaged or malfunctioning controls or safety devices, etc. shall be removed from service until it is repaired to the original manufacturer's standards.

2.3 Repairs

All repairs must be made by a qualified technician in conformance with Autoquip's instructions. ASME B20.1 defines a qualified person:

Qualified person - *a person who, by possession of a recognized degree or certificate of professional standing or by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve problems relating to the subject matter and work.*

2.4 Operators

Only authorized personnel shall be permitted to operate lift.

Authorized personnel - *a trained or qualified person approved or assigned to perform a specific duty or duties.*

Trained personnel - *personnel who have been trained by a qualified person and have demonstrated the ability to perform a particular function on or around a VRC.*

2.5 Before Operation

Before using lift, operator shall:

- Read and/or had explained, and understood, manufacturer's operating instructions and safety rules.
- Inspect lift for proper operation and condition. Any suspect item must be carefully examined, and a determination made by a qualified person as to whether it constitutes a hazard. All items not in conformance with Autoquip's specification must be corrected before operating lift.
- Verify all safety labels are in place and legible ([see 3.3 Safety Labels](#)).

2.6 During Operation

Use lift in accordance with this manual.

- Do not overload lift.
- Do not allow any portion of the load to overhang the perimeter of the carriage.
- Verify all safety devices are operational and in place.


2.7 Modifications or Alterations

Modifications or alterations to this equipment may be made only with written permission of Autoquip. Unauthorized modification or alteration will void warranty.

3. SAFETY

3.1 Safety Signal Words

Before installing, operating, or servicing lift; you must read, understand, and follow the instructions and safety warnings in this manual. Your lift may not be equipped with some optional equipment shown in this manual.

The safety information in this manual is denoted by the safety alert symbol: 

The level of risk is indicated by the following signal words.

DANGER

DANGER – Indicates a hazardous situation, which, if not avoided, will result in death or serious injury.

WARNING

WARNING – Indicates a hazardous situation, which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION – Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE – Indicates a situation that could result in damage to the lift or other property.

The following alerts will be identified in this manual.

DANGER



- All maintenance procedures described in this section should only be performed by qualified service personnel.
- Extreme caution must be taken anytime the hoist is disassembled. All holding forces are on the lifting chain/cable. DO NOT remove or disconnect the hoist assembly unless the carriage has been blocked with maintenance devices ([see 6.2 Maintenance Blocking Instructions](#)).
- DO NOT or attempt to physically free the jam until load is removed and mechanism is securely blocked with maintenance devices ([see 6.2 Maintenance Blocking Instructions](#)).
- Never operate unit when parts are broken or damaged! Do not operate this equipment when non-factory approved or damaged parts are in use! Contact local representative to rectify all such situations or contact Autoquip ([see 1.1 Contact Information](#)).





- Failure to properly adhere to lift blocking procedures is to risk the sudden and uncontrolled descent of the lift during maintenance or inspection. A falling lift can cause severe injury or death.
- Never go under lift carriage until load is removed and mechanism is securely blocked in lowered position with maintenance devices ([see 6.2 Maintenance Blocking Instructions](#)).



- Turn off the power and lock out the power at the primary power disconnect switch before service or maintenance per OSHA Lock-Out, Tag-Out procedures.

⚠ WARNING



- Please read and understand this manual prior to installation or operation of this lift. Failure to do so could lead to property damage and/or serious personal injury.
 - Do not modify lift. Autoquip cannot foresee and is not responsible for injury or damage which results from unauthorized modifications or misuse of lift.
 - Slack chain/cable require factory help! Do not attempt to repair slack chain/cable conditions alone! Always contact the local representative or Autoquip ([see 1.1 Contact Information](#)).
 - Never run the unit with the gates or doors open! Do not operate unit with doors open or with the interlocks “defeated” (bypassed)!
 - To protect against death or serious injury, all labels must be on lift and must be legible.
 - If any of these labels are missing or cannot be read, contact Autoquip for replacement labels ([see 1.1 Contact Information](#)).
 - Never operate the lift by “manual-ing” the electrical controls (using the contactors located inside the control panel). All safety devices are by-passed in this mode of operation and lift damage or severe personal injury could occur.
 - Ensure one “WARNING – Do Not Tamper” label is adjacent to (within 6”-12”) each sensing device (limit switches, door status switches, door interlocks, etc.) in a location that is visible to the operator.
- 
- Be ready to hit the emergency stop if the motor doesn’t stop.
 - GUARDS, INTERLOCKS, SAFETY DEVICES and ELECTRICAL CIRCUIT must be restored to correct operation when installing parts or making adjustments or repairs.
- 
- No riders! The VRC is provided for the sole purpose of transporting goods between floor elevations. At no time should it be used to transport personnel.
 - Before operating VRC, all personnel interacting with lift must read, understand, and follow instructions and safety warnings in this manual.
 - Close all gates when not in use. Never leave the VRC unattended with gates left open.

⚠ CAUTION

- Never use concrete anchor bolts on a cinderblock or brick wall! The wall will not withstand the pull force developed by the lift. Use only recommended anchoring and bracing methods illustrated in this manual. Equipment damage or personal injury could result.
- Do not operate the VRC until all sensing switches have been confirmed to be installed and adjusted correctly.

NOTICE

- The control panel instructions are in the controller manual sent with the order. These are required for installation.
- The “Bill of Lading” will state the number of pieces shipped. TWO ITEMS MAY BE BANDED TOGETHER AND COUNT AS ONE PIECE.
- They must be located in the same corners as the guide angles in the lower frame section. There are (2) on top and (2) on bottom of the carriage.
- The guide angles can be installed before or after the carriage is placed in the frame.
- You will have to temporarily jumper out the upper-level switch to be able to reach and test the over-travel switch. Jumper from +24A to the terminal of the switch. An example is below. Remove jumper when done.
- Once maintenance is complete, you must remove jumper.
- You will have to temporarily jumper out the slack chain/cable switch to be able to operate lift before installing the switch. Jumper from +24A to the terminal of the switch. Remove jumper when done.
- You will have to temporarily jumper out the lower-level gate to be able to reach and test the slack chain/cable switch. Jumper from +24A to the terminal of the switch. Remove jumper when done.
- You will have to temporarily jumper out the lower-level switch to be able to reach the maintenance legs. Jumper from +24A to the terminal of the switch. An example is below. Remove jumper when done.
- In order for the lift to operate:
 - All gates/doors guarding the lift must be closed.
 - Loads cannot hang over the edge or sides of the carriage.
 - The load must be within the specified load capacity of the lift.
 - All electrical safeties, sensors, and switches must be in their “normal” condition.
- Per ASME B20.1, operator pushbutton stations must be located such that they cannot be activated while standing on the carriage.
- Always find out why the slack chain/cable sensing switch has tripped, and be sure to correct the problem (malfunction, interference, etc.) before making the lift operational again.
- Always find out why the E-Stop button may have been pressed, and be sure to correct the problem (malfunction, interference, etc.) before making the lift operational again.

3.2 Safety Features

There are several active safety features and devices to help protect personnel, property, and the equipment.

Mechanical Locking Safety Cams

Each chain/cable is terminated at the carriage in a clevis, which is attached to a tension spring loaded steel safety cam. This safety cam pivots on a high strength steel pin which is chrome plated. The safety cam has serrated teeth cut into one of its faces that are adjacent to the guideway flange.

Should the chain/cable become slack for any reason, the spring tension would cause the serrated teeth of the safety cam to engage the guideway. The teeth bite into the guideway and a wedging effect takes place between the safety cam and the guideway. The result is a positive halt to downward movement.

The only way to release the safety cam is to correct the malfunction that caused the slack chain/cable and exert upward tension on the chain/cable through the chain/cable drive. The cams will support the loaded carriage at any point in the vertical travel.

⚠ WARNING

Slack chain/cables require factory help! Do not attempt to repair slack chain/cable conditions alone! Always contact the local representative or Autoquip ([see 1.1 Contact Information](#)).

Slack Chain/cable Sensor

The slack chain/cable sensor is located on the cam lock above the carriage. The carriage holds the chain/cable in constant tension. Should a chain/cable become slack or broken, the cam lock would rotate and activate the sensing switch arm to open its normally closed electrical contacts. This would break electrical power to the drive motor and cease movement of the carriage. The lift will not operate until the slack chain sensor is restored to its correct operating condition.

Carriage Over-Travel Limit Switch

A redundant, over-travel limit switch is provided to be field located and installed just above the uppermost level limit switch to stop the motor should the carriage not stop at the upper-level limit switch location. Breaking of this switch would break the electrical circuits, shut off the motor, and cease movement of the carriage. The carriage will not move until the over-travel limit device is restored to its correct operating condition.

Power Supply Secondary Circuit Breaker

This circuit breaker is down stream of the power supply and protects the 24 volt DC control circuit from damage should a fault occur which would result in excessive electric current flow. Should the circuit breaker trip it will prevent operation and the interlock circuit will not operate. These circuit breakers are in the control enclosure.

Safety Interlocks/Latches-Gates or Doors (where applicable)

These are electro/mechanical devices that prevent operation of the VRC when the gates or doors are left open on any level. They also prevent the gates or doors from being opened at any level unless the carriage is in place at that floor level.

⚠ WARNING

Never run the unit with the gates or doors open! Do not operate unit with doors open or with the interlocks “defeated” (bypassed)!

Personnel Guards

Depending on the application, one or more of the following personnel protection features is included in the design of this equipment (different states may vary on the exact design and orientation of these features – IT IS IMPORTANT TO BECOME FAMILIAR WITH THE SPECIFIC CODE REQUIREMENTS OF YOUR STATE):

- **GATES & ENCLOSURES:** Required per ASME B20.1 to protect personnel from inadvertent physical contact with a moving lift & moving load at all lift landings.
- **CARRIAGE RAILINGS & SNAP CHAINS:** Required per ASME B20.1 to protect personnel whenever personnel walk onto the lift carriage when in the raised position. Railings or side guards protect non-operating sides, snap chains protect operating sides.

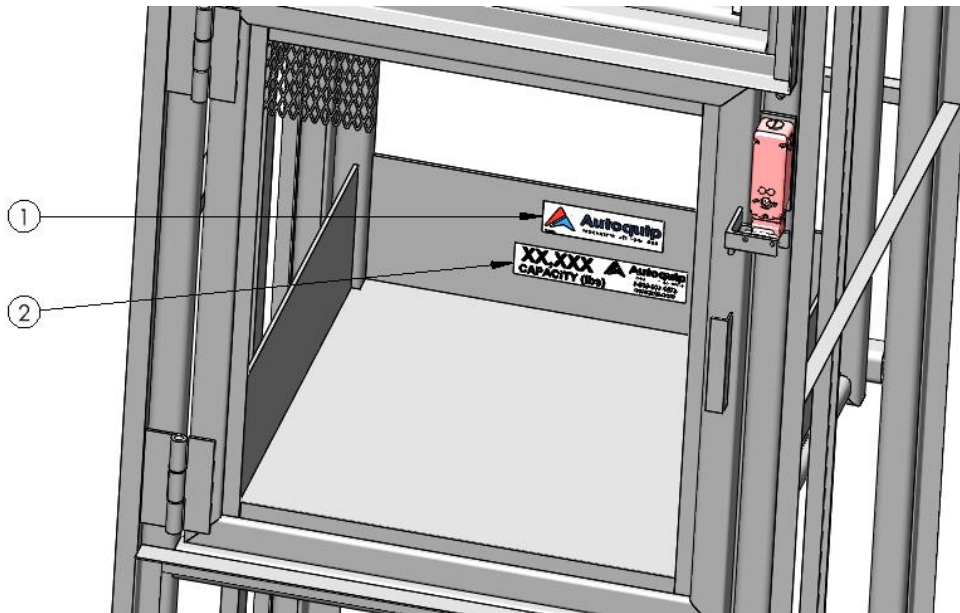
3.3 Safety Labels

⚠ WARNING

To protect against death or serious injury, all labels must be on lift and must be legible.

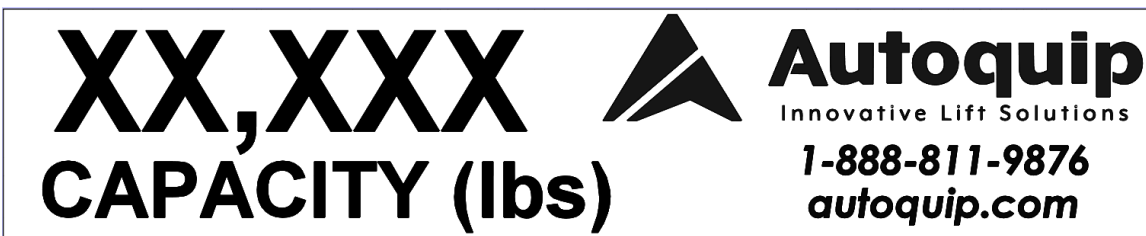
If any of these labels are missing or cannot be read, contact Autoquip for replacement labels ([see 1.1 Contact Information](#)).

PKG labels (carriage)			
Item #	Qty.	Description	Part No.
1	1	Autoquip Logo Label	36403220
2	1	Capacity	DECAL_CAPACITY

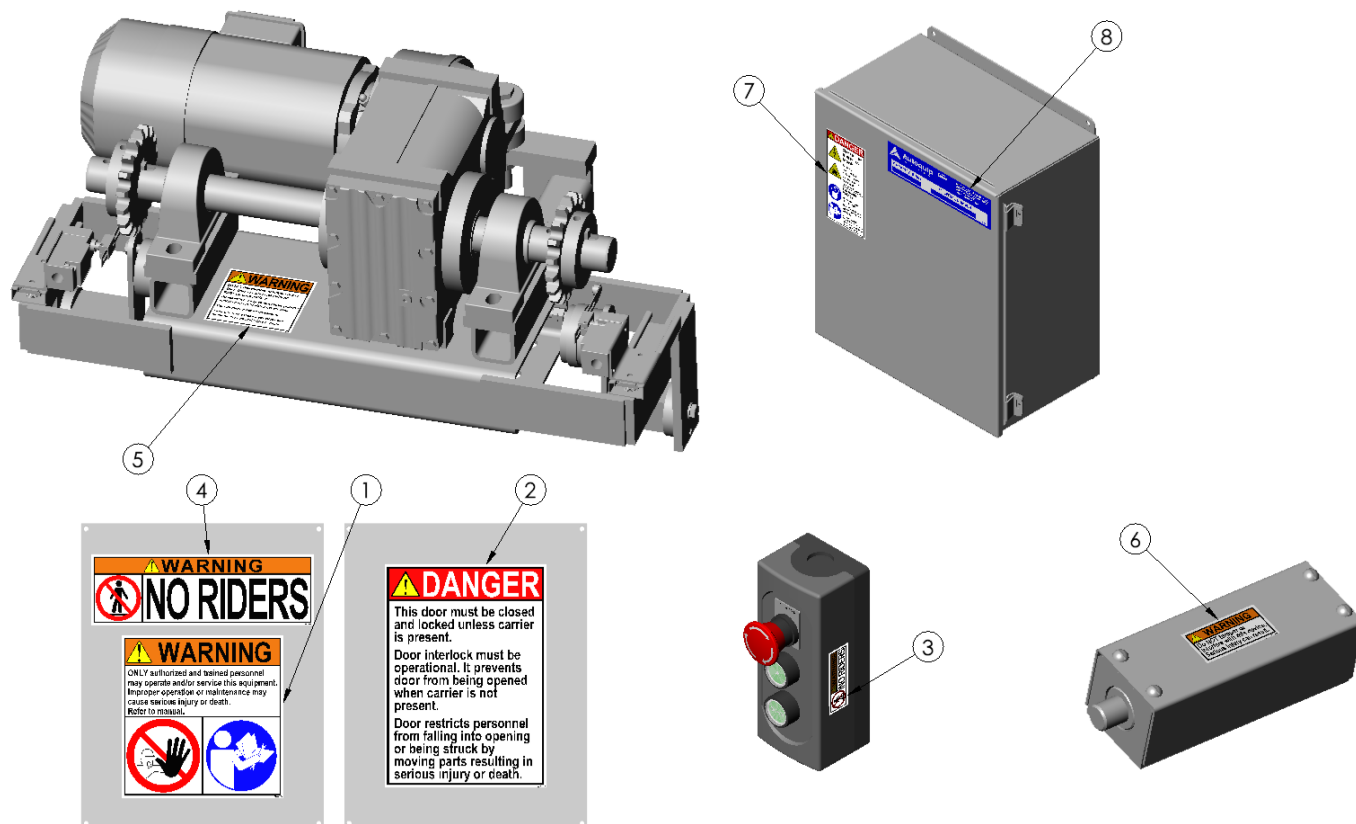


36403220

1 – 36403220



2 – DECAL_CAPACITY



PKG labels (other locations)

Item #	Qty	Description	Part #
1	1	WARNING, ONLY AUTHORIZED AND TRAINED....	36405670
2	1	DANGER, THIS DOOR MUST BE CLOSED....	36405680
3	1	WARNING, NO RIDERS	36405705
4	1	WARNING, NO RIDERS	36404093
5	1	WARNING, DO NOT DISASSEMBLE MOTOR/GEAR...	36405110
6	1	WARNING, DO NOT TAMPER w/ THIS SAFETY DEVICE	36405695
7	1	DANGER, ARC FLASH, SHOCK	36430303
8	1	AUTOQUIP SERIAL NUMBER NAME PLATE	36401570

WARNING

ONLY authorized and trained personnel may operate and/or service this equipment. Improper operation or maintenance may cause serious injury or death. Refer to manual.




1 - 36405670

DANGER

This door must be closed and locked unless carrier is present.

Door interlock must be operational. It prevents door from being opened when carrier is not present.

Door restricts personnel from falling into opening or being struck by moving parts resulting in serious injury or death.

2 - 36405680

WARNING

NO RIDERS



3 - 36405705

WARNING

DO NOT disassemble motor/gear box or drive chain, or adjust brake without FIRST securing platform.

Disassembly or adjustment allows platform and/or chains to freefall if not secured.

Consult manual before proceeding.

Failure to follow these instructions can cause severe personal injury or death.

5 - 36405110

WARNING

NO RIDERS



4 - 36404093

WARNING

Do NOT tamper or interfere with this device. Serious injury can result.

6 - 36405695

DANGER

Shock and arc flash explosion hazards.





Follow ALL requirements in NFPA 70E for safe work practices and for Personal Protective Equipment.

Hazardous Voltage.

Will cause severe injury or death.

Turn off and lock out system power before servicing.

DO NOT operate machine with electrical panel doors opened or covers removed.

7 - 36430303

Autoquip Innovative Lift Solutions

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CAPACITY (LBS)

LIFT SERIAL NUMBER

8 - 36401570

4. INSTALLATION

NOTICE

The control panel instructions are in the controller manual sent with the order. These are required for installation.

Proper installation of Vertical Reciprocating Conveyors (VRCs) is vital to the safety of the operators, the efficiency of the unit, and the ultimate satisfaction of the end user. These guidelines have been prepared by member companies of the Material Handling Industry's VRC Subcommittee to assist the VRC installers in understanding their role and responsibility in providing customers with a safe and reliable VRC.

4.1 Pre-installation Activity

1. Whenever possible, make a pre-installation visit or contact someone at the site. Installers must be familiar with everything relative to proper installation of this equipment. It is the installer's responsibility to check the site for problems and work out solutions with the appropriate people – preferably before installation begins.
2. Check floor-to-floor dimensions on the general arrangement drawings to make sure that they match on-site conditions. VRC's are designed and built to individual applications and specific customer requirements. It is difficult and expensive to modify the lift after it arrives for installation.
3. Installation may or may not include unloading, permits, seismic calculations, or extensive acceptance testing. The requirements of each contract should be carefully reviewed for possible conflicts of interpretation.
4. Each state, county, or municipality may have unique codes governing the installation and acceptance of VRC's. Acquaint yourself with the permitting and/or licensing requirements (and expenses) of the local regulatory agencies.

Note: some agencies may require inspection or testing before and/or after lift start-up. Contact Autoquip ([see 1.1 Contact Information](#)) with any questions you may have concerning VRC code requirements.

5. Make sure there is adequate ingress/egress to the installation site. Verify that the equipment can get through the existing doorways, halls, and shaft openings. Think through how the lift will be unloaded, carted/moved, raised into position, and accessed for installation, operation & maintenance.
6. Verify the construction and integrity of building columns, joists, walls, or mezzanines that will be used to help support the VRC.

4.2 Shipment and Initial Inspection

1. Upon receipt of the shipment, check for exposed damage or shortages and make note of it on receiving paperwork from the trucking company, any claims for damage must be filed with the carrier. Unless otherwise stated, the VRC Manufacturer is not responsible for parts lost, stolen or damaged during transportation, storage, or installation.
2. Assuming no damage has occurred to the crate, check the components against the packing list. This will help ensure that every item shipped has been received.

3. Make sure you have a copy of the latest version of the general arrangement and electrical drawings before beginning installation, changes could have been made since original purchase order submittal and order entry.
4. Read and understand this manual thoroughly prior to starting the installation.

4.3 Equipment Layout

1. Make sure pit and/or lift are properly squared and vertically aligned with upper landings to ensure that the carriage will clear the upper landings by the required distance.
2. Be sure to take into consideration any other obstructions (pipes, ductwork, ceiling joists/beams, etc.) that may be located around the lift.
3. Inspect the installation for any overhanging floor landing or other obstruction (pipes, ductwork, ceiling joists/beams, etc.) which could potentially jam a load that is slightly overhanging the carriage deck as it raises to the next floor level. Any potential jam point should have some type of slanted or beveled guarding placed beneath the obstruction to push the overhanging load back onto the carriage.

4.4 Structural Installation

1. Follow the bracing recommendations shown on the general arrangement drawings and in the installation & Service manual. Site conditions may also require customization to standard anchoring and bracing. The installers are ultimately responsible for the proper and safe anchoring and bracing of the equipment and should consult the manufacturer if there is any doubt as to the structural integrity of the installation.
2. When anchoring to walls, you must be sure that the walls can support the reaction loads imparted on them.
3. Do not modify any component of the lift without expressed written consent from the Manufacturer.

4.5 Personnel & Equipment Safeties

1. ASME B20.1 requires that all VRC installations be completely guarded to prevent injury from inadvertent contact with the lift or its load. ASME also requires that doors or gates at all unloading stations be interlocked so that these doors can only be opened when the lift carriage is stopped at that level & that the carriage is incapable of being operated or moved so long as these doors or gates remain open. It is the responsibility of the installer to ensure that the installation meet these requirements, regardless of who (manufacturer, customer, architect, general contractor, etc.) provides the doors/gates and means of enclosure. Consult Autoquip whenever there is a question as to whether the gate & enclosure installation meets ASME B20.1.
2. Travel limit switches must be installed and working properly.

4.6 Testing

1. Test up and down speeds.
2. Test all electrical switches and sensors, gate interlocks, gate status switches, and any other safety features or devices as described in the Installation section of this manual. Also consult any manuals which may have been shipped separately for the gate installation & operation.
3. Some states or municipalities may require testing of the carriage free-fall arrest system (locking cams) – consult the local regulatory agency or the manufacturer.

4.7 Clean-up & Hand-off

1. Conduct a final inspection of the lift installation. Correct any deficiencies before clean-up & hand-off.
2. **Apply proper signage to the installation per the guidelines ([see 3.3 Safety Labels](#)), and per any instructions shipped separately with the gate interlock kits.**
Contact Autoquip ([see 1.1 Contact Information](#)) if labels appear to be missing or damaged.
3. Train key personnel on the operation of the system and all safety features and procedures by referencing the corresponding sections in this manual.

4.8 Tools Required

Listed below are some of the tools needed to install the VRC in a professional and prompt manner. Individual site situations and a basic variation in the types of units may dictate the need for additional items.

Welding Machine and Equipment	Disk Grinder
Cutting Torch with full Tanks	Drill and Drill Bits
Fire Extinguisher	Extension Cords
Forklift	Sledgehammer
Chain Fall	Open or box end wrench
Come-A-Long	Drift Punch
Cables or Hook Chains with 1,000# Cap.	Carpenter's Square
Hack Saw, Reciprocating Saw, or portable band saw	Chalk Line
"C" Clamps (12" opening)	Plumb Bobs
Socket Set (1/2" drive, sockets to 1-1/8")	4' Level
Pinch Bar	25' Measuring Tape
Hammer Drill & Bits for 1/4", 3/8" and 1/2" anchors	Broom

The following supplies will also be needed:

- Concrete anchors (4 minimum). Refer to the approval drawing since the size of the anchors can vary for each installation.
- Paint (standard colors available in spray can, 1, or 5 gallons)
- Steel angle iron or channel for additional bracing

ALSO - BEFORE YOU BEGIN:

- Sections are too heavy to lift manually and require lifting equipment. Check for availability of overhead attachment of chain fall or of fork truck before you start.
- Before you will be able to complete the installation, the unit must be operated. Power to the motor is required. Arrange for power before starting installation.

NOTE: All illustrations contained in this manual are for reference purposes only. Specific applications and site conditions may require different anchoring and bracing procedures. The ultimate responsibility for the anchoring and bracing rests with the installation crew.

See [9.1 General Assembly](#) for part identification and nomenclature.

4.9 Laying Out Lift Position & Marking Floors for Alignment

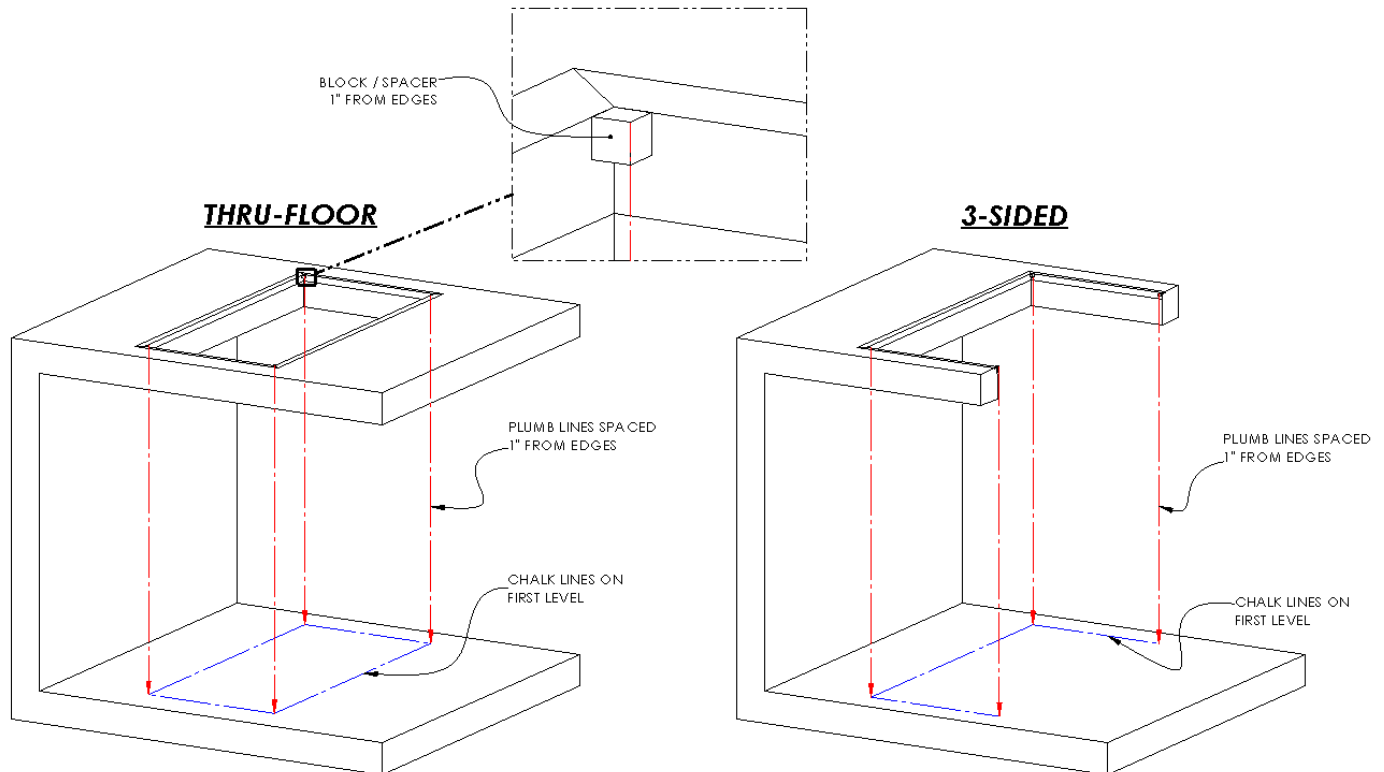
The following illustrates how to lay out and mark the reference lines so that the lift will clear the upper landing(s) and any obstructions that may be located around the lift. The General Arrangement (GA) Record Drawings should indicate the necessary clearance needed for the specific application.

1. Layout the position of the lift at the second level landing/opening, marking the edges of the carriage.

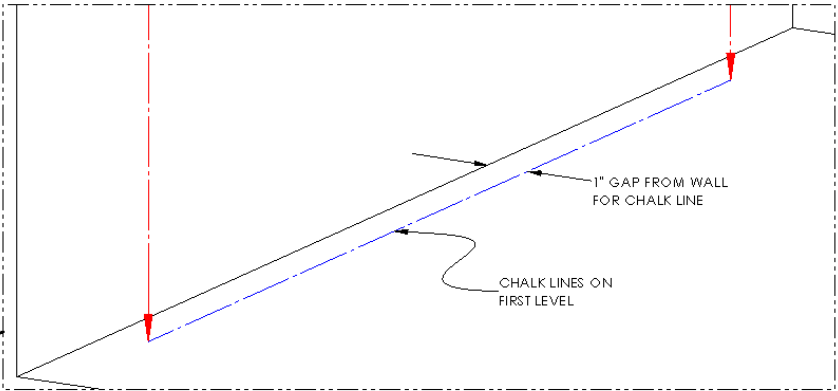
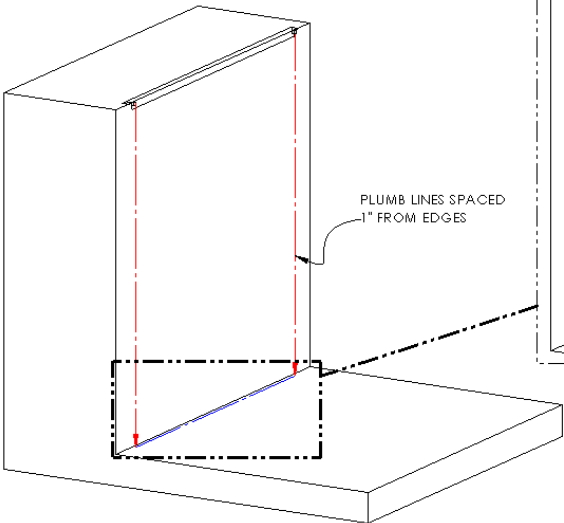
NOTE: Depending on your load pattern, the carriage may not be centered on the opening.

2. Drop a plumb line from each corner of every edge at the second floor **holding the plumb line 1 inch out from the edge of the landing** (this is a standard distance for clearance - deviations may occur).
3. Using a chalk line, snap a line between the plumb lines at the lower level.
4. Check the clearance from the first level all the way up ensuring there is one inch (1 inch) of clearance for the entire travel.

NOTE: To ensure lift clearance between floors, remove any protrusions from the floor, wall, etc., or move the plumb lines out beyond the protrusions.



EDGE OF MEZZANINE



4.10 Mechanical Installation Details

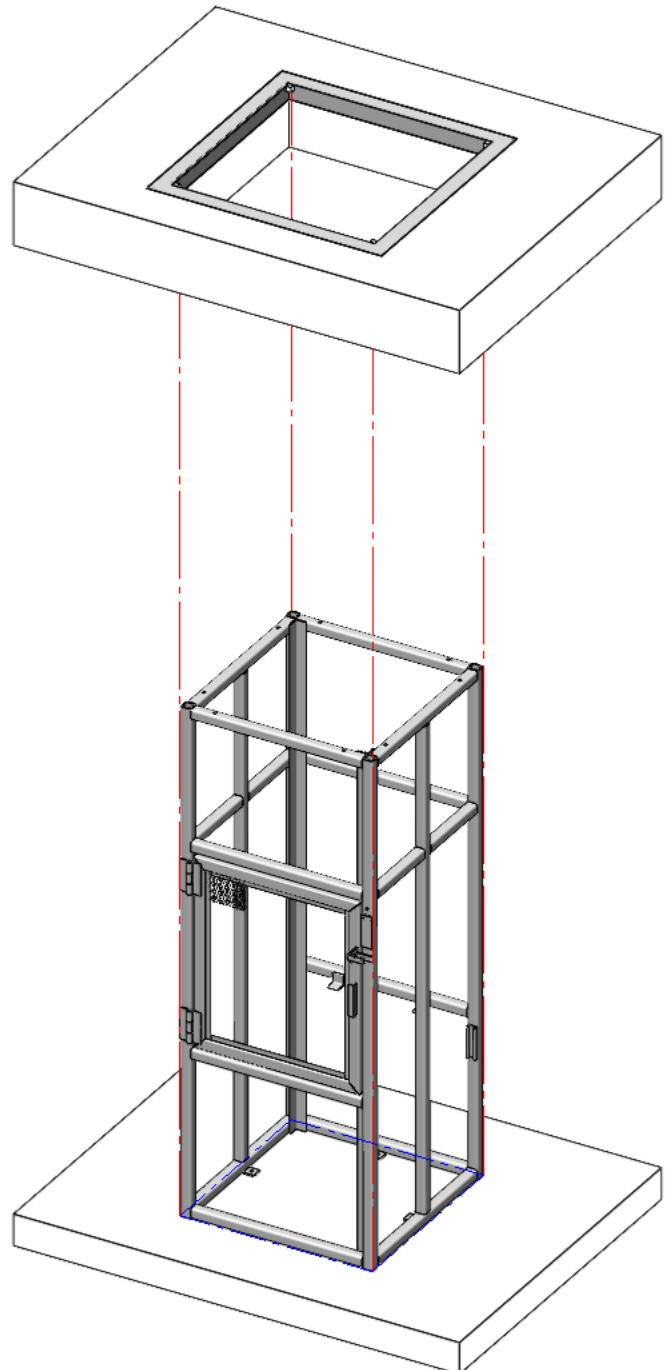
1. Use only the hardware supplied by the Manufacturer to assemble the lift. This hardware is often high grade, some hardware is metric.
2. Use only the carriage lifting equipment and attachment hardware supplied by the Manufacturer.
3. Ensure the bottom section is level and plumb before stacking. If floor is unlevel shims/grout are required.

4.10.1 Lift Assembly

Items needed:

<u>Qty</u>	<u>Description</u>
1	Lower Frame
1	Top Frame
varies	Intermediate Frames
4	Guide angle brackets
8	UHMW plastic wear pads
8	¼-20 x ¾ long hex head bolts
16	¼-20 x ½ long flat head bolts
varies	½-13 x 5-½ long hex head bolts

1. Align the lower frame section with the lines marked on the floor.

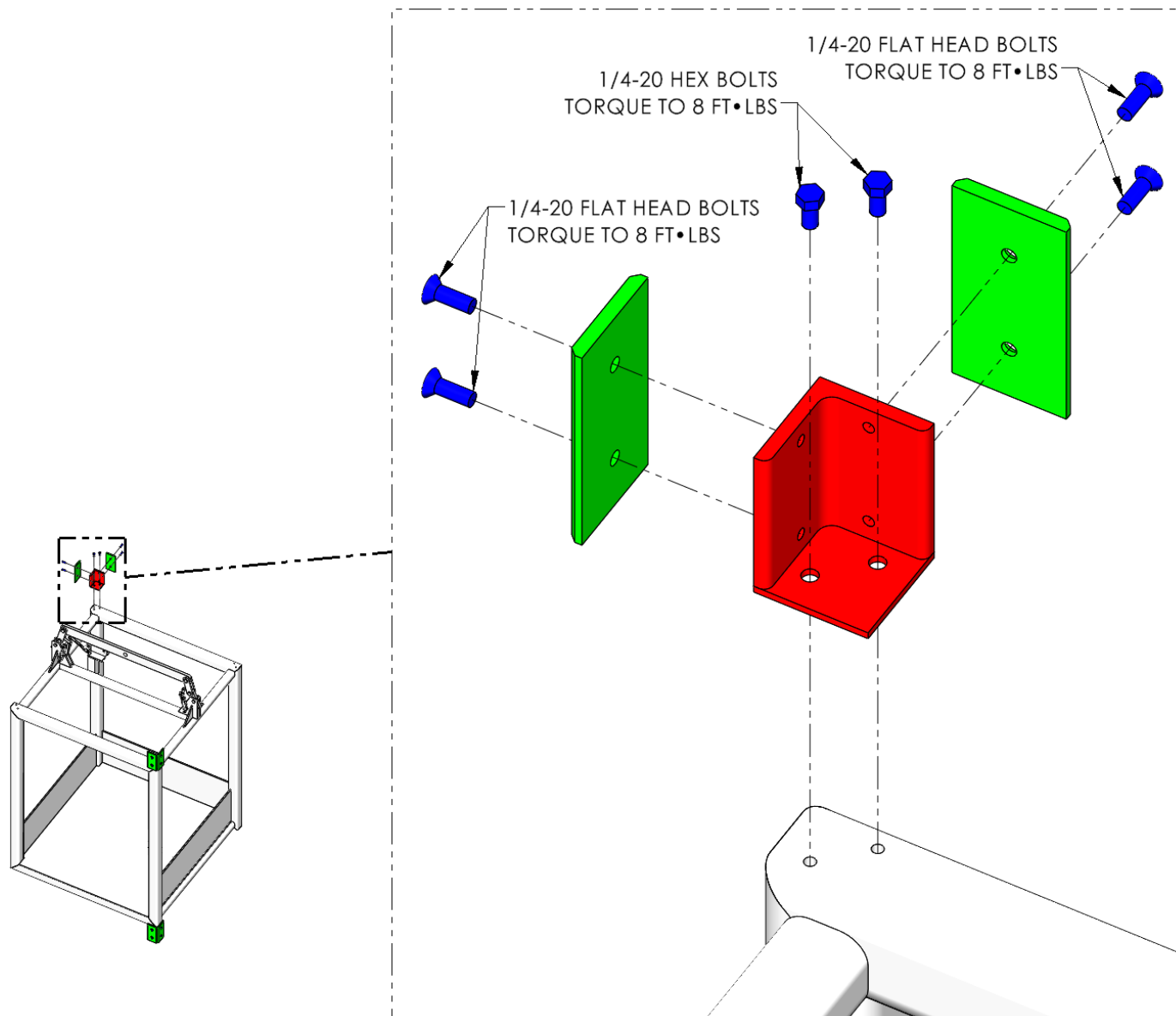


2. Install the (4) guide angle brackets onto the carriage.

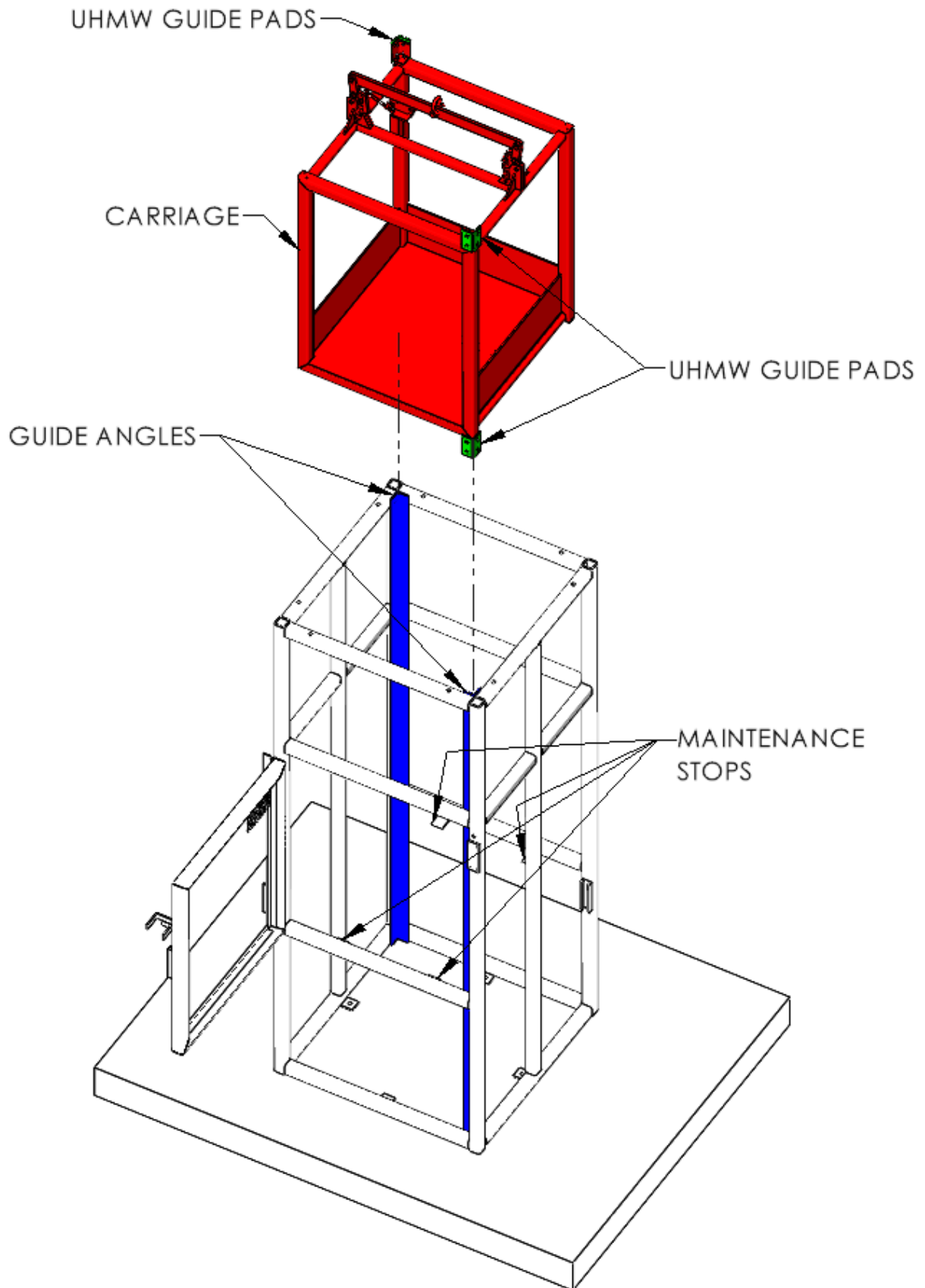
NOTICE

They must be located in the same corners as the guide angles in the lower frame section. There are (2) on top and (2) on bottom of the carriage.

The guide angles can be installed before or after the carriage is placed in the frame.



3. Install the carriage into the lower frame, making sure the carriage is aligned with the door and guide angles. It will rest on the maintenance stops.

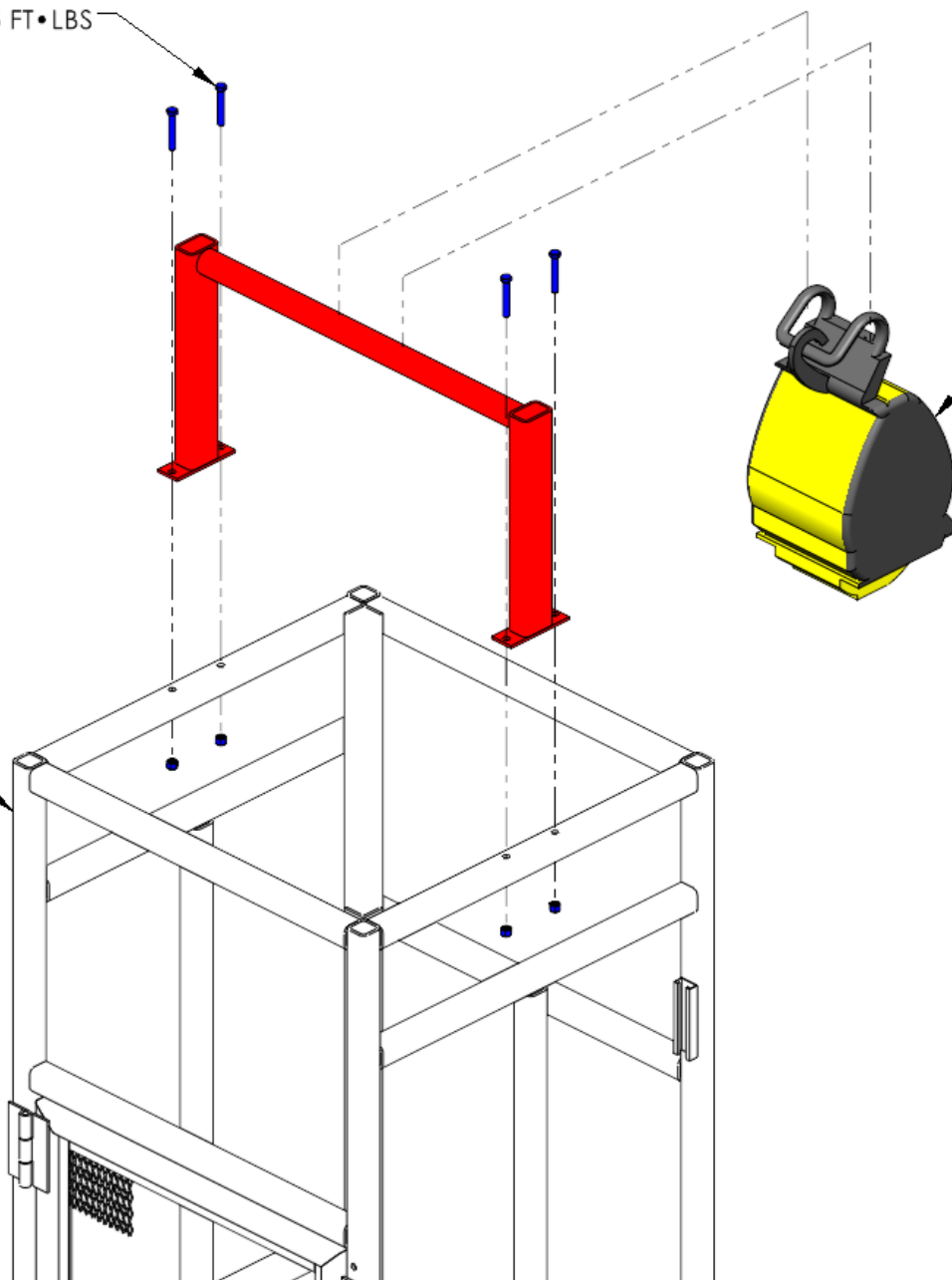


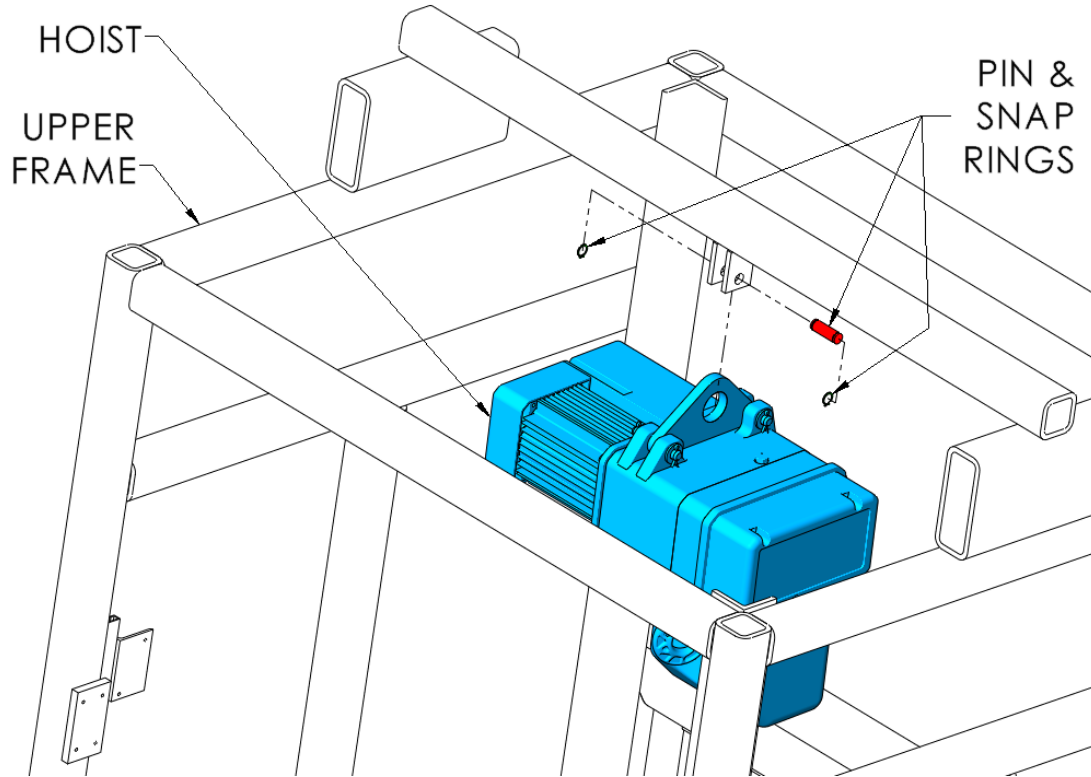
4. Install the hoist into the upper frame.

1/2-13 HEX BOLTS
TORQUE TO 75 FT•LBS

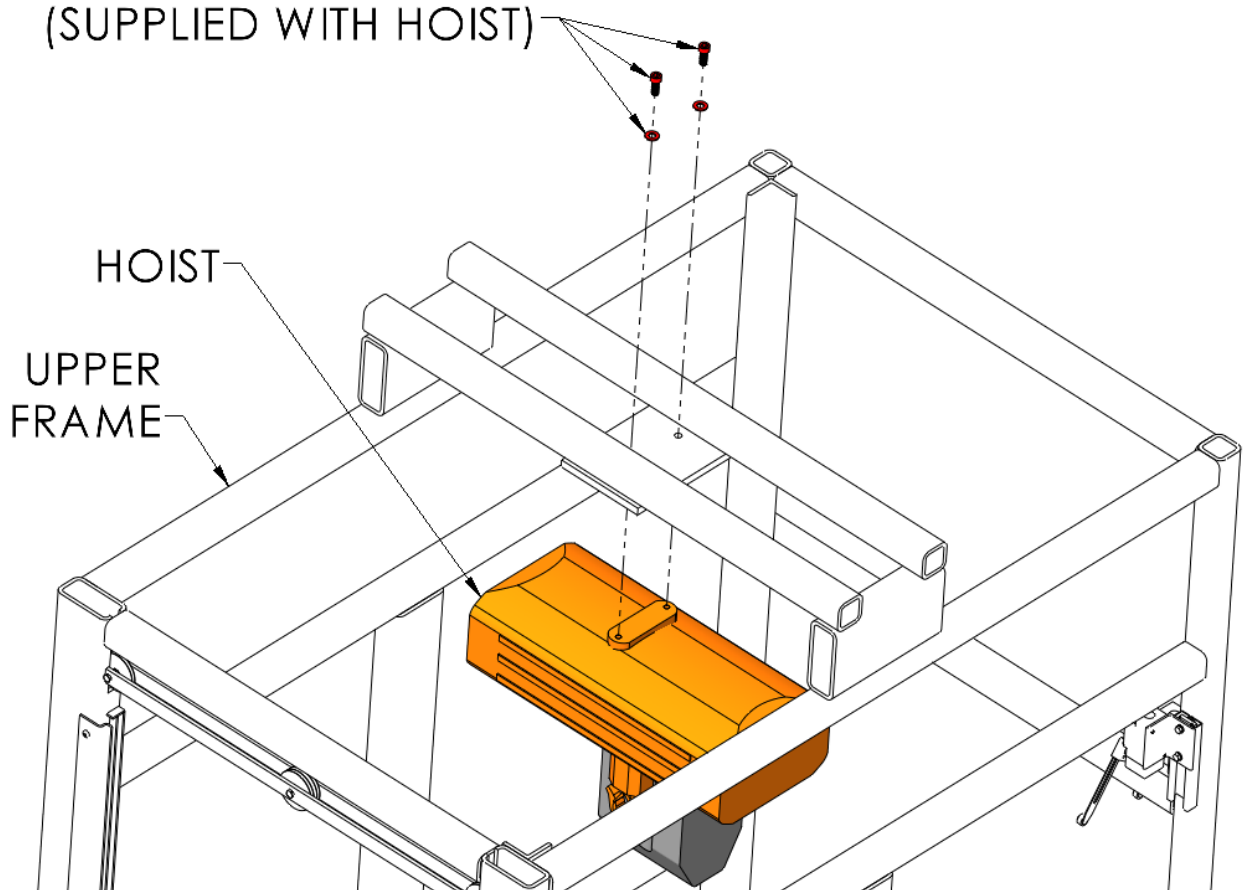
UPPER
FRAME

HOIST

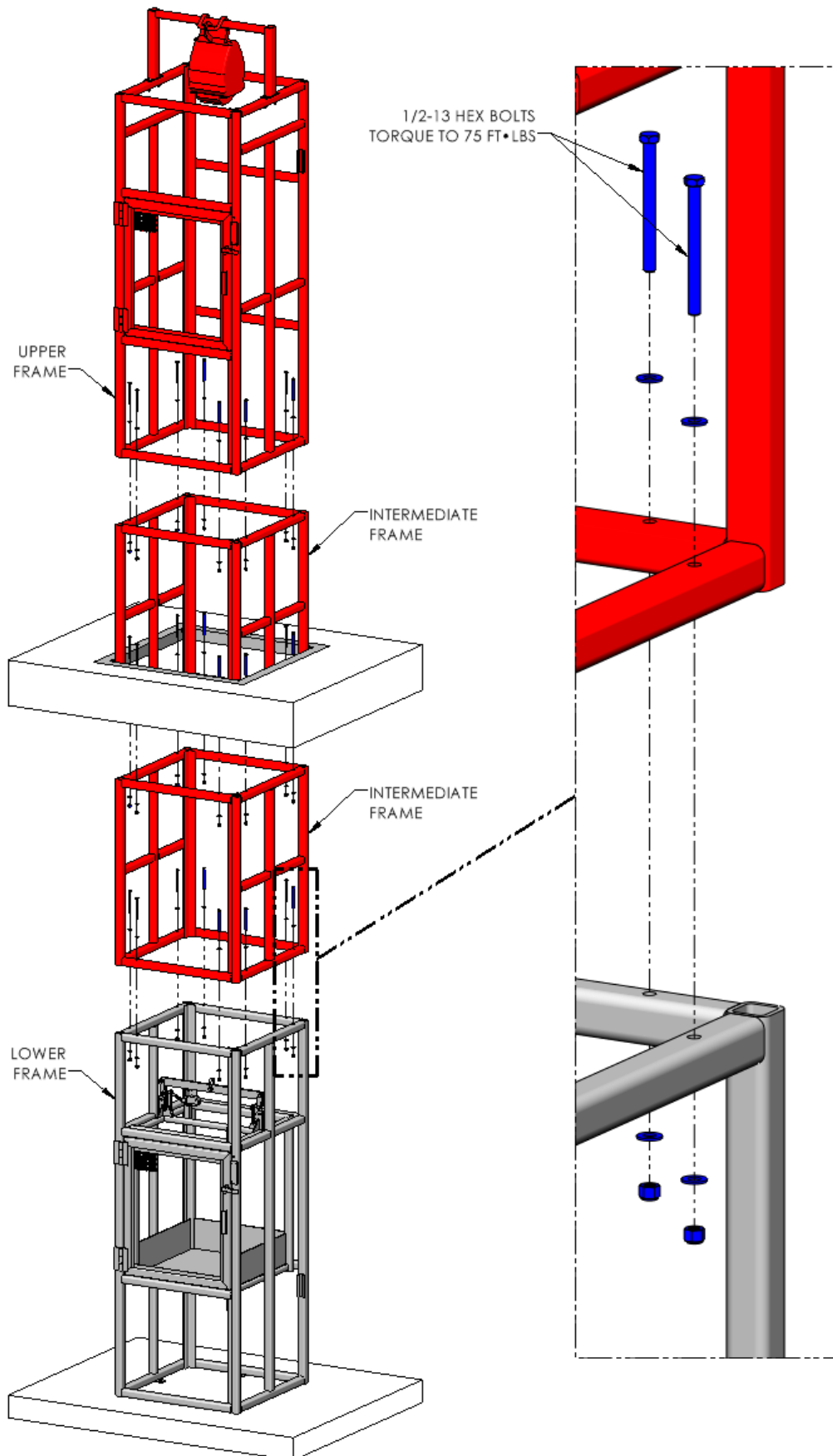




MOUNTING HARDWARE
(SUPPLIED WITH HOIST)



5. Install any intermediate frames and the top frame. Verify that the vertical guide angles are aligned and a surface transition of 1/16" or less exists for the carriage to run smoothly between sections.



4.11 Bracing the Frame

All illustrations on the GA drawing for bracing preferences are for reference only. Site conditions may require different anchoring and bracing. The installers are ultimately responsible for the proper and safe anchoring and bracing of the equipment. Autoquip Corporation supplies material for bracing on standard applications, but special bracing may be required by the installer on non-standard models. The special materials for anchoring and bracing of the lift and gates are not the responsibility of Autoquip.

NOTE: For all field welding of braces, use ¼ inch fillet – all around.



Items needed:

Qty Description

varies Horizontal Brace Channels

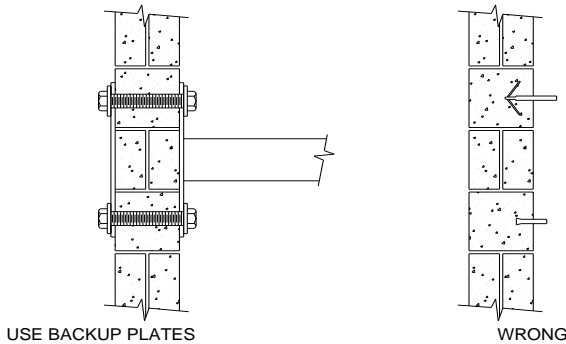
varies Brace Plates – with (4) 9/16" dia. holes each.

1. Attach the horizontal channel brace to the upper floor landings with either lags or by welding (it has been assumed that you will have a solid floor face to attach to for your installation). When attaching the floor to beam brace, use bolts which have been properly sized to withstand the horizontal pull-out force shown on the GA drawing.

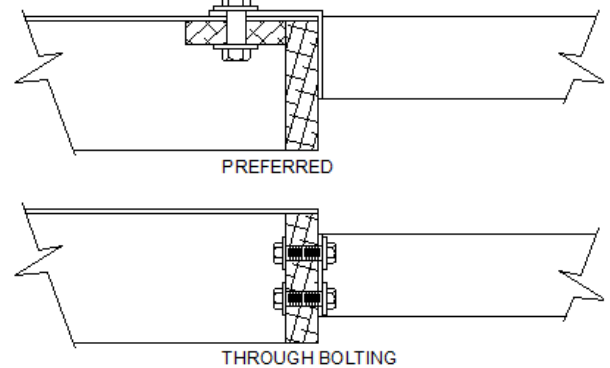
CAUTION

Never use concrete anchor bolts on a cinderblock or brick wall! The wall will not withstand the pull force developed by the lift. Use only recommended anchoring and bracing methods illustrated in this manual. Equipment damage or personal injury could result.

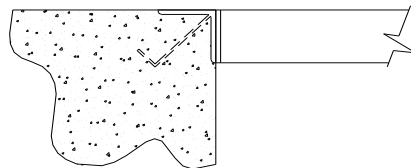
ANCHORING TO BLOCK WALLS



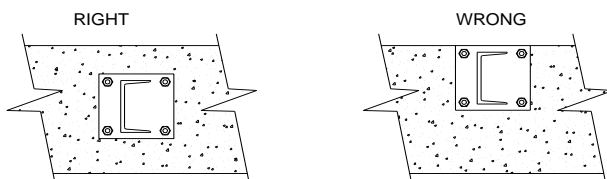
WOODEN FLOORS



WELD TO CURB ANGLE

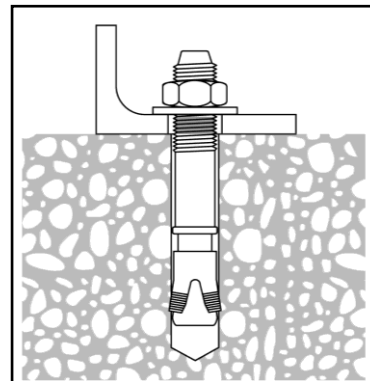


ANCHORING TO FACE OF FLOOR



2. Lag the lower frames to the floor using four (4), 1/2-13 bolts – sized to withstand the pull-out force specified on the GA drawing (when applicable).

NOTE: Recommended concrete anchor bolts are: HILTI “Kwik-Bolt”, Molly Parabolt or similar.



4.12 Electrical Installation Details

DANGER



All maintenance procedures described in this section should only be performed by qualified service personnel.

WARNING

Never operate the lift by “manual-ing” the electrical controls (using the contactors located inside the control panel). All safety devices are by-passed in this mode of operation and lift damage or severe personal injury could occur.

NOTICE

The control panel instructions are in the controller manual sent with the order. These are required for installation.

1. Ensure that the supplied voltage matches the motor supplied.
2. For customer-supplied electrical disconnect, see schematic. It should be installed within direct line of sight of the associated lift.
3. All electrical work must meet the requirements of ASME B20.1 as well as all state and local codes.
4. Make sure that only qualified electricians perform all wiring and that they are familiar with the electrical drawings shipped with the equipment.
5. Operator pushbutton stations must not be operable from the carriage with the gate(s) or door(s) closed, typically located at least 6 feet away from the carriage.
6. Per OSHA requirements, the motor control panel must be mounted in a location that is visible from the lift.
7. Always follow OSHA lock-out, tag-out procedures when the lift being maintained, serviced, or inspected.

A job-specific schematic has been shipped separately in a packet of information which includes this installation manual for reference by the electrical contractor or service provider. Refer to this schematic and follow all applicable NEC requirements throughout the electrical installation process.

Autoquip typically provides all the electrical control and signal devices. All required wire, conduit, and main disconnect for field wiring is supplied by others. Unless specifically included in the contract, the mounting and wiring of control and signal devices is the user's responsibility.

MAIN DISCONNECT: This should be a time delay fuse or inverse time circuit breaker type disconnect which is to be located within ten (10) feet of the lift. See schematic for max fuse or circuit breaker size. THIS ITEM IS NOT SUPPLIED BY AUTOQUIP AND IS REQUIRED BY THE NEC (National Electrical Code.)

MAIN CONTROL PANEL: This panel is supplied and shipped loose by Autoquip, then mounted & wired by others. All electrical components will be tied into this panel.

MECHANICAL DRIVE UNIT: Autoquip supplies the power unit shipped loose on a drive base.

PUSH BUTTON STATIONS: Autoquip supplies one (1) P/B station for each level (under normal conditions). Stations are to be mounted by an electrician. The Safety Code (ANSI/ASME B20.1) dictates the position of these units to be, "remotely located so they cannot be activated while standing on the lift carriage."

LEVEL SWITCH: Typically (1) per level, these switches have been shipped loose to be field mounted, wired, and adjusted to sense the status/position of the lift carriage.

OVER-TRAVEL SWITCH: This switch has been shipped loose to be field mounted, wired, and adjusted to sense over-travel of the lift carriage.

4.13 Installing Sensing Switches

⚠ DANGER



Never go under lift carriage until load is removed and mechanism is securely blocked in raised position with maintenance devices ([see 6.2 Maintenance Blocking Instructions](#)).

⚠ WARNING

Ensure one “WARNING – Do Not Tamper” label is adjacent to (within 6-12 inches) each sensing device (limit switches, door status switches, door interlocks, etc.) in a location that is visible to the operator.

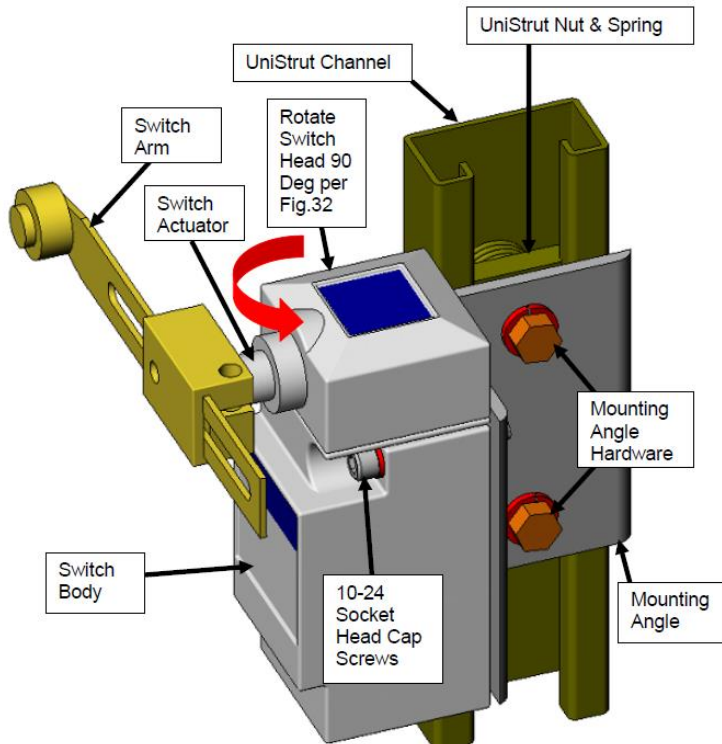
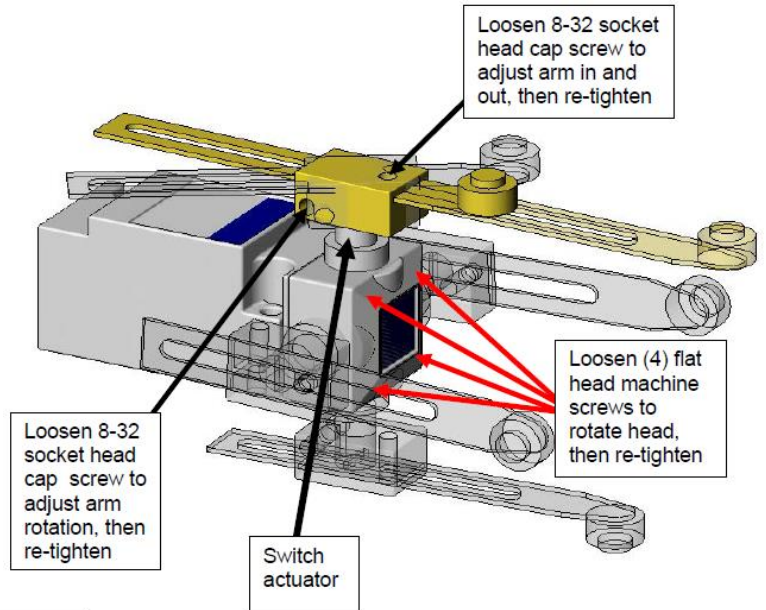


Items needed:

Qty	Description
-	Level limit switch kits (Qty. varies)
1	Over-travel proximity switch kit.
1	Slack chain/cable sensing switch kits

4.13.1 Limit Switches

- To change the location direction of the switch, remove the switch head. Change the actuating control knob/mechanism to the desired actuation direction.



4.13.2 Slack Chain/cable Sensing Switch Kit and Locking Cams

This kit has been shipped loose to be field mounted, wired, and adjusted per the procedure below. The switch is intended to turn off the motor when chain/cable tension is lost and an engaged locking cam is sensed.

1. To install the slack chain/cable sensing switch, first gain safe access to the top of the top frame.
2. Follow OSHA electrical lock-out/tag-out procedures. Disconnect and tag all electrical and/or other power sources to prevent an unplanned or unexpected actuation of the lift.

⚠ DANGER



Turn off the power and lock out the power at the primary power disconnect switch before service or maintenance per OSHA Lock-Out, Tag-Out procedures.

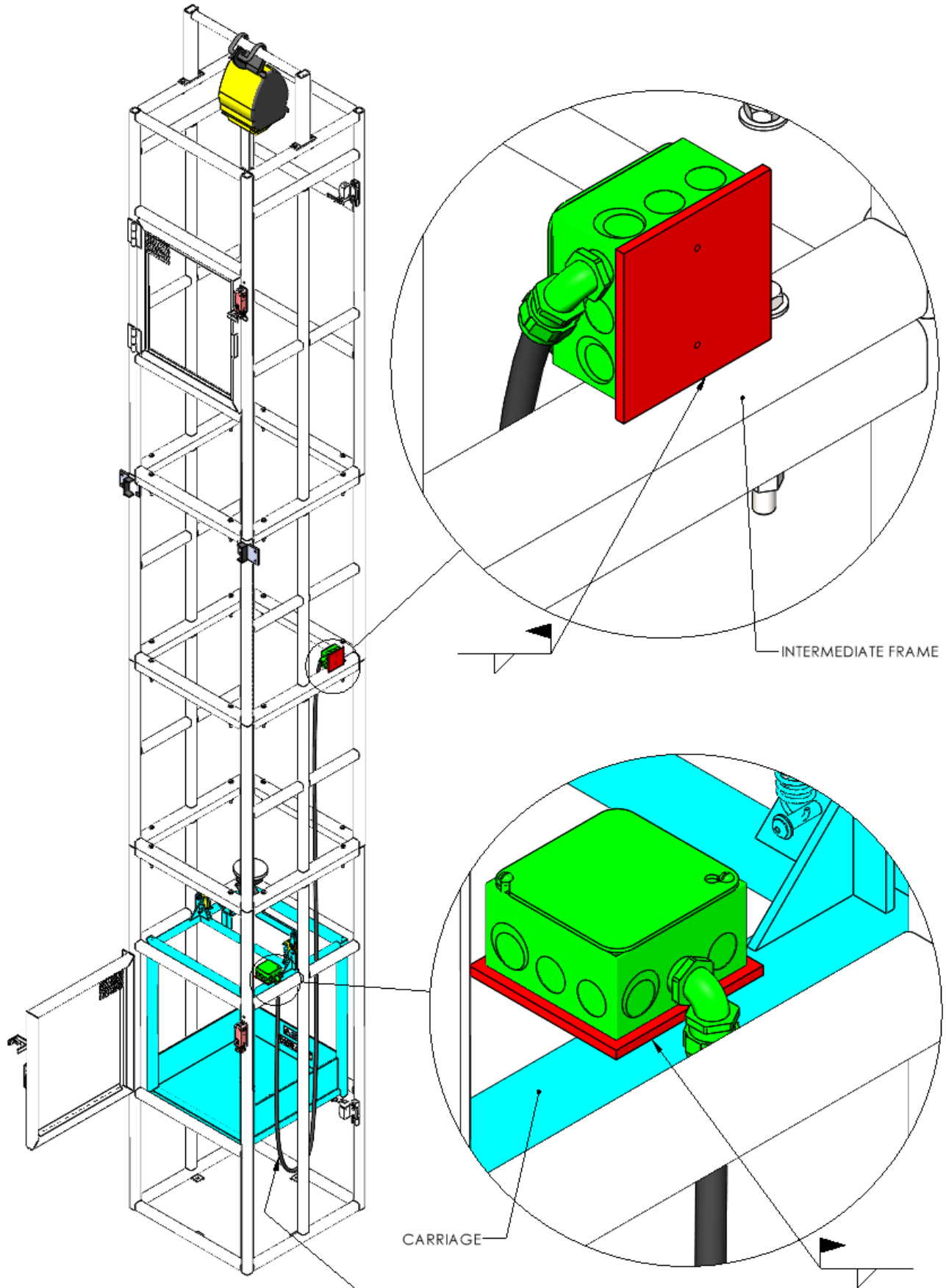
NOTICE

You will have to temporarily jumper out the slack chain/cable switch to be able to operate lift before installing the switch. Jumper from +24A to the terminal of the switch. Remove jumper when done.

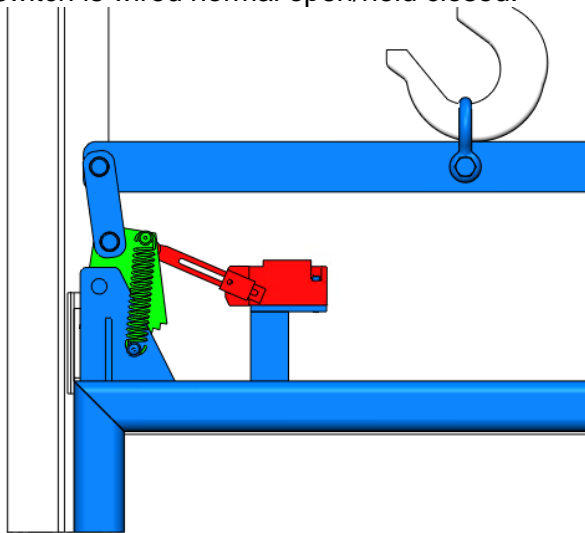


Never attempt maintenance until load is removed and mechanism is securely blocked in lowered position with maintenance devices ([see 6.2 Maintenance Blocking Instructions](#)).

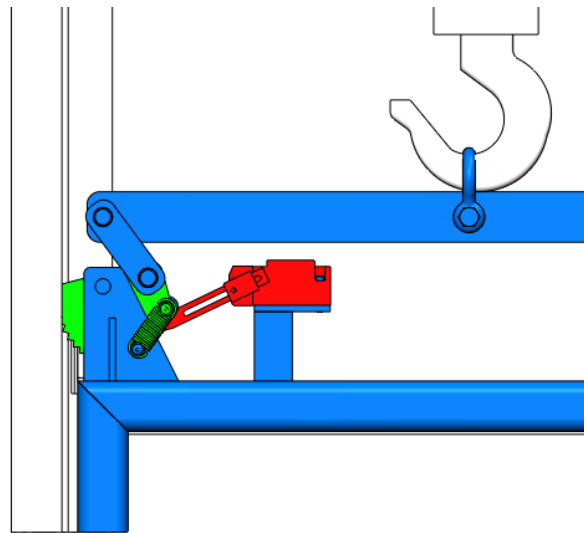
3. Wire the switch to the j-box on the carriage and run a cord back to the j-box at approximately mid travel on an intermediate frame as shown.



4. Once the limit switch is installed, raise the carriage just off the maintenance legs so the carriage is hanging from the chain/cable, adjust the limit switch arm position so that the limit switch contacts are just held closed when the lifting chain/cable is in tension and the locking cam is in the running position. Check that the contacts remain closed when the carriage is in the running position. The switch is wired normal open/held closed.



LOCKING CAM IN NORMAL USE



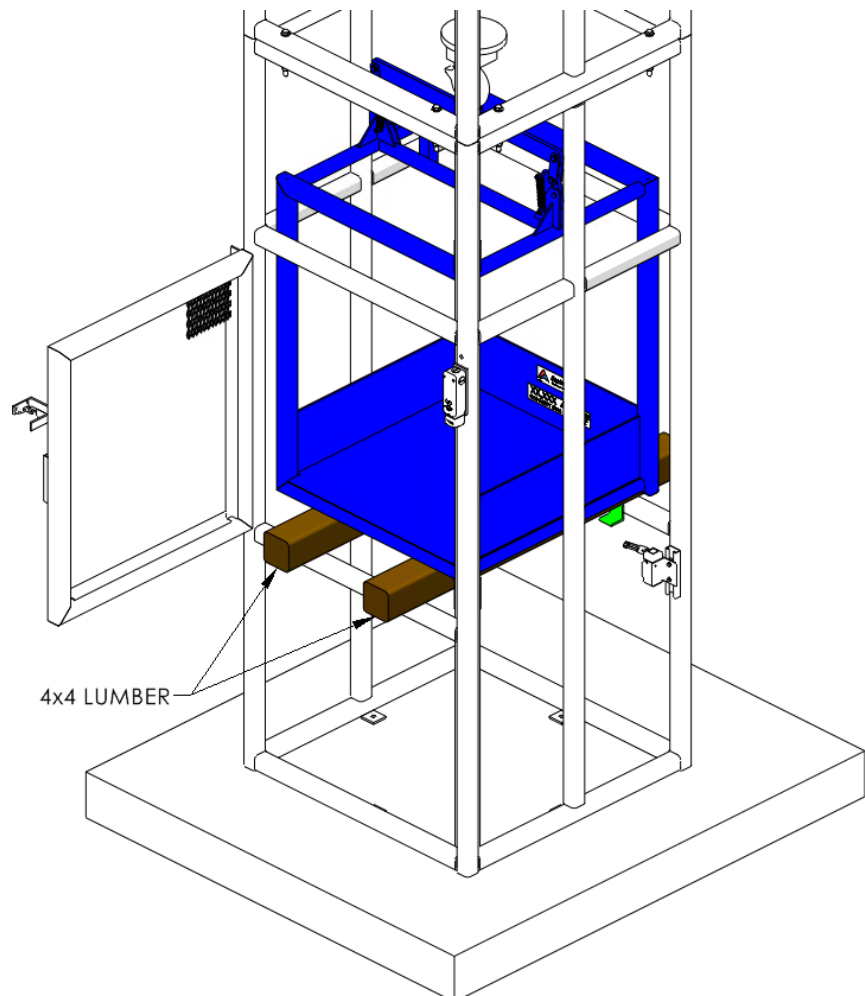
LOCKING CAM ENGAGED

5. After setting the switch, test it to make sure it is set correctly. This can be done by blocking the carriage above the lower-level switch. Set a couple of 4x4 lumber across the frame at the lower level, and then lower the carriage onto the lumber.

NOTICE

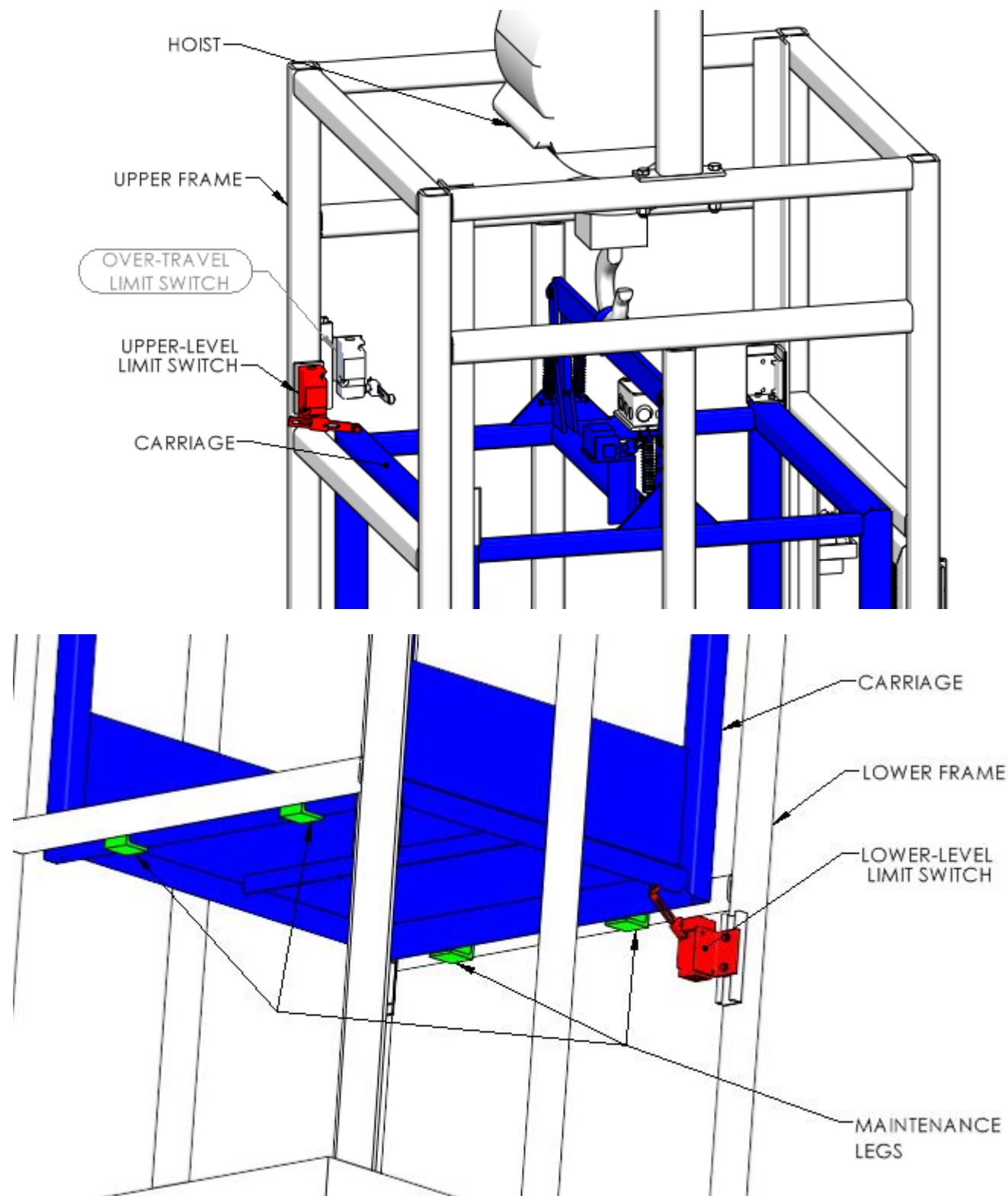
You will have to temporarily jumper out the lower-level gate to be able to reach and test the slack chain/cable switch. Jumper from +24A to the terminal of the switch. Remove jumper when done.

6. As soon as the chain/cable goes slack, the switch should trip and the motor stop. Be ready to hit the emergency stop if the motor doesn't stop. If the motor stops, the switch is set correctly. If the motor doesn't shut off, check the adjustments again. If the slack chain/cable sensor does shut off the motor as designed, reset the system by raising the hoist to tension the carriage again.



4.13.3 Level Limit Switch Kits

2. Secure the limit switch assembly to the provided mounting plate in a manner that allows the limit switch to strike the carriage as shown below.



3. The lower limit switch should prevent the carriage from resting on the maintenance legs. This ensures the hoist maintains tension on the carriage.

4.13.4 Over-Travel Limit Switch Kit

1. Locate and mount the switch in the strut channel approximately 2 inches above the upper-level limit switch kit.
2. Follow OSHA electrical lock-out/tag-out procedures. Disconnect and tag all electrical and/or other power sources to prevent an unplanned or unexpected actuation of the lift.

⚠ DANGER



Turn off the power and lock out the power at the primary power disconnect switch before service or maintenance per OSHA Lock-Out, Tag-Out procedures.

NOTICE

You will have to temporarily jumper out the upper-level switch to be able to reach and test the over-travel switch. Jumper from +24A to the terminal of the switch. Remove jumper when done.

3. Once the switch is jumpered, raise the carriage past the upper-level switch. The over-travel switch should trip at that point.

⚠ WARNING

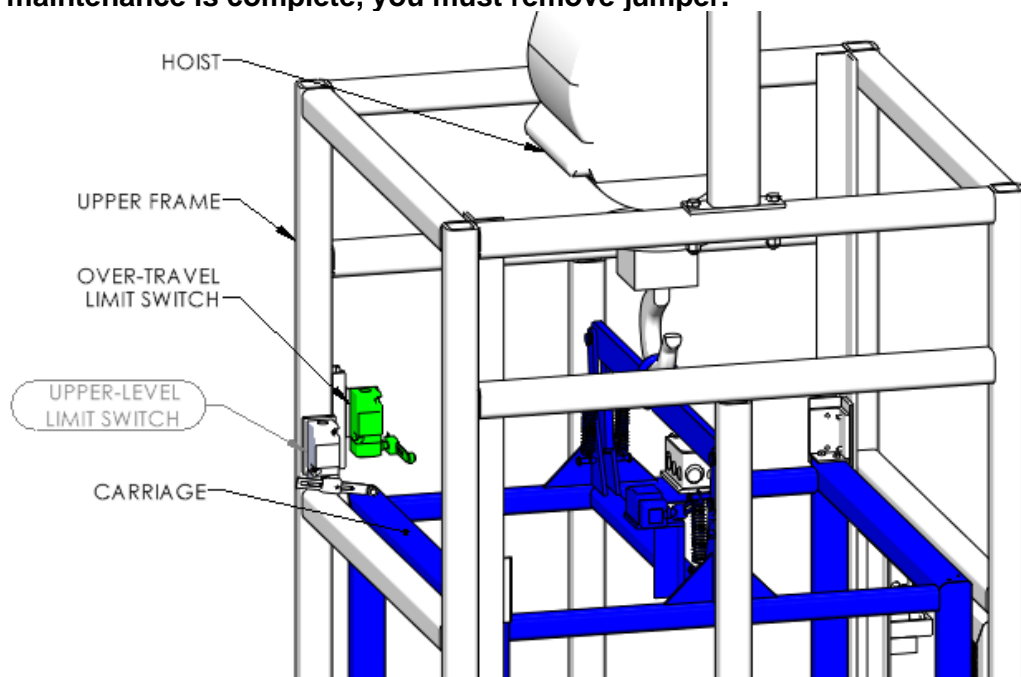


Be ready to hit the emergency stop if the motor doesn't stop.

4. Once inspection or work is complete, reverse the performance of the steps above to return the lift to normal operation.

NOTICE

Once maintenance is complete, you must remove jumper.



4.14 Test Run (Empty)

DANGER



Never go under lift carriage until load is removed and mechanism is securely blocked in lowered position with maintenance devices. ([see 6.2 Maintenance Blocking Instructions](#)).

1. Check that hoist and chain/cable are properly connected to the top frame and to the carriage.
2. Turn on power and press the UP button to raise the carriage 6-12 inches (you must press E-Stop button to stop the lift) and check for:
 - a. Correct rotation/direction of the motor
 - b. Running clearance of the carriage in the guides
 - c. Any unexpected noise, vibration, rubbing, interferences, etc.
3. Re-set the E-Stop and activate the down push button and lower the lift. Is the platform stopping at the bottom level?
4. Raise the platform 3-6 feet above the floor. Is everything okay? Any unusual noises? Is the lift structure stable or does it need additional bracing?
5. If you are satisfied with the alignment and structural integrity of the unit, run the carriage higher, continuing to check the clearance and smoothness of operation.
6. Run the carriage to the top floor and check the alignment with the door. Re-adjust the level limit switch as necessary to achieve alignment.
7. Adjust the remaining level limit switches (when applicable) to contact the carriage.
8. Lower the platform a few feet and raise it back to its full travel, and check carriage alignment again.

4.15 Final Adjustments

DANGER



All maintenance procedures described in this section should only be performed by qualified service personnel.

1. Run the system through its paces if you have a complete electrical system.
2. To change the actuation direction of the limit switch, remove the switch head. Change the actuating control knob/mechanism to the desired actuation direction.

WARNING

GUARDS, INTERLOCKS, SAFETY DEVICES and ELECTRICAL CIRCUIT must be restored to correct operation when installing parts, making adjustments or repairs.

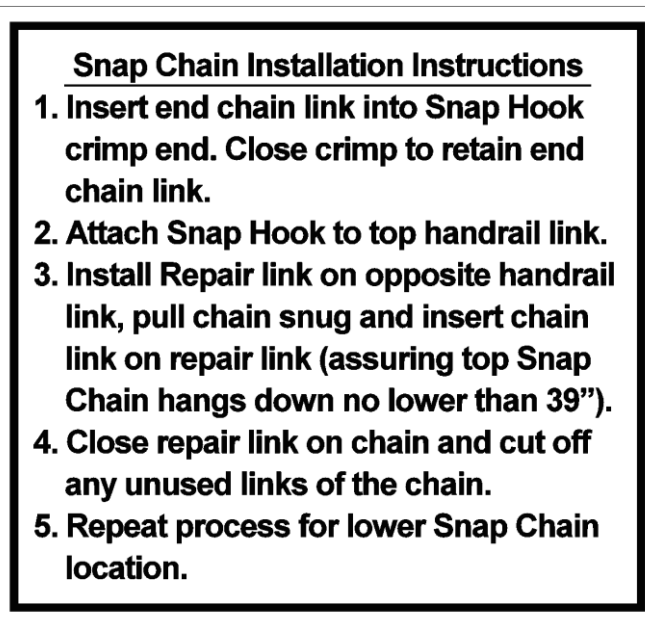
4.16 Gate & Enclosure (Guarding) Installation

1. Install the gate and enclosures following the layout on the GA drawing provided with the enclosure package.
2. All gates or doors accessing the lift must have electrical contacts and mechanical locks to prevent the lift from operating if a gate is left open. The gate should lock until the carriage is at the landing. There are many variables that can affect your installation: the type of gate; the type of door; conditions unique to a specific site. One (1) to Two (2) electrical sensing or signaling devices are supplied with each gate that incorporates the standard interlock design.

NOTE: If the guarding is not purchased from Autoquip it is the responsibility of the Owner to make sure it is in compliance with the requirements set forth in ASME B20.1.

4.17 Snap Chain Installation

These instructions are also included in the snap chain kit. Each kit satisfies one open side with two chains.



4.18 Installation Wrap-Up

1. After the unit is completely wired, make all necessary adjustments to the interlocks, gate status switches, and upper & lower lift status limit switches to ensure proper operation of the lift and its safeties as required by the schematic.
2. **Ensure that all WARNING SIGNS AND DECALS provided with the unit which may have been shipped loose for field installation (gate panel, etc.) are in place ([see 3.3 Safety Labels](#)).**
3. Clean the area, paint and touch up as needed.
4. Conduct Operator training before handing off the lift to the customer. Use this manual as reference for this training & familiarization process.

5. OPERATION

⚠ DANGER

Never operate unit when parts are broken or damaged! Do not operate this equipment when non-factory approved or damaged parts are in use! Contact local representative to rectify all such situations or contact Autoquip ([see 1.1 Contact Information](#))

⚠ WARNING



No riders! The VRC is provided for the sole purpose of transporting goods between floor elevations. At no time should it be used to transport personnel.

Before operating VRC, all personnel interacting with lift must read, understand, and follow instructions and safety warnings in this manual.

Close all gates when not in use. Never leave the VRC unattended with gates left open.

Never run the unit with the gates or doors open. Do not operate unit with doors open or with the interlocks “defeated” (bypassed).

⚠ CAUTION

Do not operate the VRC until all sensing switches have been confirmed to be installed and adjusted correctly.

NOTICE

In order for the lift to operate:

- All gates/doors guarding the lift must be closed.
- Loads cannot hang over the edge or sides of the carriage.
- The load must be within the specified load capacity of the lift.
- All electrical safeties, sensors, and switches must be in their “normal” condition.

Per ASME B20.1, operator pushbutton stations must be located such that they cannot be activated while standing on the carriage.



5.1 Moving Up



1. Verify all personnel are clear of VRC.
2. Press and release the “UP” button to raise lift.
3. When the carriage reaches the level to which it has been called, the level limit switch will halt travel.

5.2 Moving Down




1. Verify all personnel are clear of VRC.
2. Press and release the "DOWN" button to lower lift.
3. When the carriage reaches the level to which it has been called, the level limit switch will halt travel.
4. For any obstruction in the path, the slack chain/cable sensing switch should trip and halt travel.

NOTICE

Always find out why the slack chain/cable sensing switch has tripped, and be sure to correct the problem (malfunction, interference, etc.) before making the lift operational again.

5.3 Emergency Stop



1. Press the red emergency stop button to stop all travel of the VRC at any time.
2. The emergency stop button will interrupt all electrical control functions when it is activated. Movement of the carriage will cease, regardless of its direction.
3. The emergency stop button is typically reset by one of two methods:
 - a. Turning clockwise until it pops back out. This is usually indicated by the  symbol.
 - b. Another style just pulls straight back out.
4. After the emergency stop button has been reset, any level button may be pressed to continue travel.

NOTICE

Always find out why the E-Stop button may have been pressed, and be sure to correct the problem (malfunction, interference, etc.) before making the lift operational again.

6. MAINTENANCE

DANGER



All maintenance procedures described in this section should only be performed by qualified service personnel.



Turn off the power and lock out the power at the primary power disconnect switch before service or maintenance per OSHA Lock-Out, Tag-Out procedures.



6.1 Planned Maintenance Program

A local Autoquip representative provides a Planned Maintenance Program (PMP) for this equipment using qualified and experienced personnel. Contact a local representative or Autoquip ([see 1.1 Contact Information](#)).

6.2 Maintenance Blocking Instructions

DANGER



Failure to properly adhere to lift blocking procedures is to risk the sudden and uncontrolled descent of the lift during maintenance or inspection. A falling lift can cause severe injury or death.



Never go under lift carriage until load is removed and mechanism is securely blocked in lowered position with maintenance devices.

This procedure describes the only factory-approved method of working under a lift. Follow these instructions EVERY time you plan to reach or crawl beneath the lift to perform service or maintenance – no matter how momentary that might be.

6.2.1 Lower the Carriage

The safest way to inspect or maintain a VRC unit is with the load removed and the carriage in the fully lowered maintenance position. When the carriage is fully lowered it has no potential to suddenly or unexpectedly shift or drop.

If the carriage cannot be lowered by gravity, [see 6.6 If a Carriage Hangs Up or Jams](#).

1. Lower the carriage to the bottom level.
2. Follow OSHA electrical lock-out/tag-out procedures. Disconnect and tag all electrical and/or other power sources to prevent an unplanned or unexpected actuation of the lift.

⚠ DANGER



Turn off the power and lock out the power at the primary power disconnect switch before service or maintenance per OSHA Lock-Out, Tag-Out procedures.

NOTICE

You will have to temporarily jumper out the lower-level switch to be able to reach the maintenance legs. Jumper from +24A to the terminal of the switch. Remove jumper when done.

3. Once the switch is jumpered, lower the carriage until it rests on the maintenance legs. The slack chain/cable switch should trip at that point.

⚠ WARNING



Be ready to hit the emergency stop if the motor doesn't stop.

4. Once inspection or work is complete, reverse the performance of the steps above to raise the carriage off the maintenance devices and return the lift to normal operation.

NOTICE

Once maintenance is complete, you must remove jumper.

6.3 Routine Maintenance

Recommended maintenance interval –

Every week or 8 hours of operation.

- Inspect all gates/doors for wear or damage.
- **Ensure that all SAFETY LABELS are in place and legible ([see 3.3 Safety Labels](#)).**
Contact Autoquip ([see 1.1 Contact Information](#)) if labels appear to be missing or damaged.
- Check that lift chain/cable is secure.
- While running, listen for unusual noises. Isolate and check for the cause. Repair if required.

 **DANGER**



Never go under lift carriage until load is removed and mechanism is securely blocked in lowered position with maintenance devices ([see 6.2 Maintenance Blocking Instructions](#)).

Recommended maintenance interval –

Every 6 months or 175 hours of operation, whichever comes first.

- Inspect hoist assembly for excessive wear and/or damage.
- Make sure the carriage is lined up at each floor. Adjust the level limit switch, if required.
- Look for any unusual rub marks on the guides, etc., which might indicate misalignment of the components due to overloading, misuse, or something out of tolerance.
- Inspect all gate/door interlocks and status switches for proper operation.
- Inspect all gates/doors for wear or damage.
- Check that all bolts and nuts are secure.

Recommended maintenance interval –

Every 12 months or 350 hours of operation, whichever comes first.

- Check the gear oil level in the hoist. Consult manufacturer's manual for recommended oil level.
- Check for broken/cracked welds in all structural members.

6.4 General Maintenance

6.4.1 Oil/Grease Recommendations

Consult hoist manufacturer's manual for recommended oil/grease levels and requirements.

6.5 Hoist Maintenance

DANGER



Extreme caution must be taken anytime the hoist is disassembled. All holding forces are on the lifting chain/cable. DO NOT remove or disconnect the hoist assembly unless the carriage has been blocked with maintenance devices ([see 6.2 Maintenance Blocking Instructions](#)).

Consult the hoist manufacturer's manual that has been shipped with the lift prior to conducting any maintenance activities.

6.6 If a Carriage Hangs Up or Jams

DANGER



DO NOT or attempt to physically free the jam until load is removed and mechanism is securely blocked with maintenance devices ([see 6.2 Maintenance Blocking Instructions](#)).

All maintenance procedures described in this section should only be performed by qualified service personnel.

Never operate unit when parts are broken or damaged! Do not operate this equipment when non-factory approved or damaged parts are in use! Contact local representative to rectify all such situations or contact Autoquip ([see 1.1 Contact Information](#))



Never go under lift carriage until load is removed and mechanism is securely blocked in lowered position with maintenance devices ([see 6.2 Maintenance Blocking Instructions](#)).

One common issue would be an obstruction in the path of the carriage or guide angles. The following steps should be followed:

1. Remove load from lift. Inspect chain/cable, carriage, guides, and other mechanical components for obstructions or damage.
2. Ensuring the carriage is blocked, remove the obstruction and/or replace the damaged part.

If above steps do not correct problem, contact Autoquip ([see 1.1 Contact Information](#)) to assist in discovering the source & acceptable remedy for the carriage jam.

Contact an authorized Autoquip dealer or representative to conduct a comprehensive inspection of the lift for structural and component damage before placing it back in service.

6.7 Schematics and Field Wiring Details

PLEASE REFER TO THE JOB SPECIFIC ELECTRICAL SCHEMATIC SUPPLIED WITH ORDER.

7. TROUBLESHOOTING

⚠ DANGER



Never go under lift carriage until load is removed and mechanism is securely blocked in lowered position with maintenance devices ([see 6.2 Maintenance Blocking Instructions](#)).



All maintenance procedures described in this section should only be performed by qualified service personnel.



Turn off the power and lock out the power at the primary power disconnect switch before service or maintenance per OSHA Lock-Out, Tag-Out procedures.

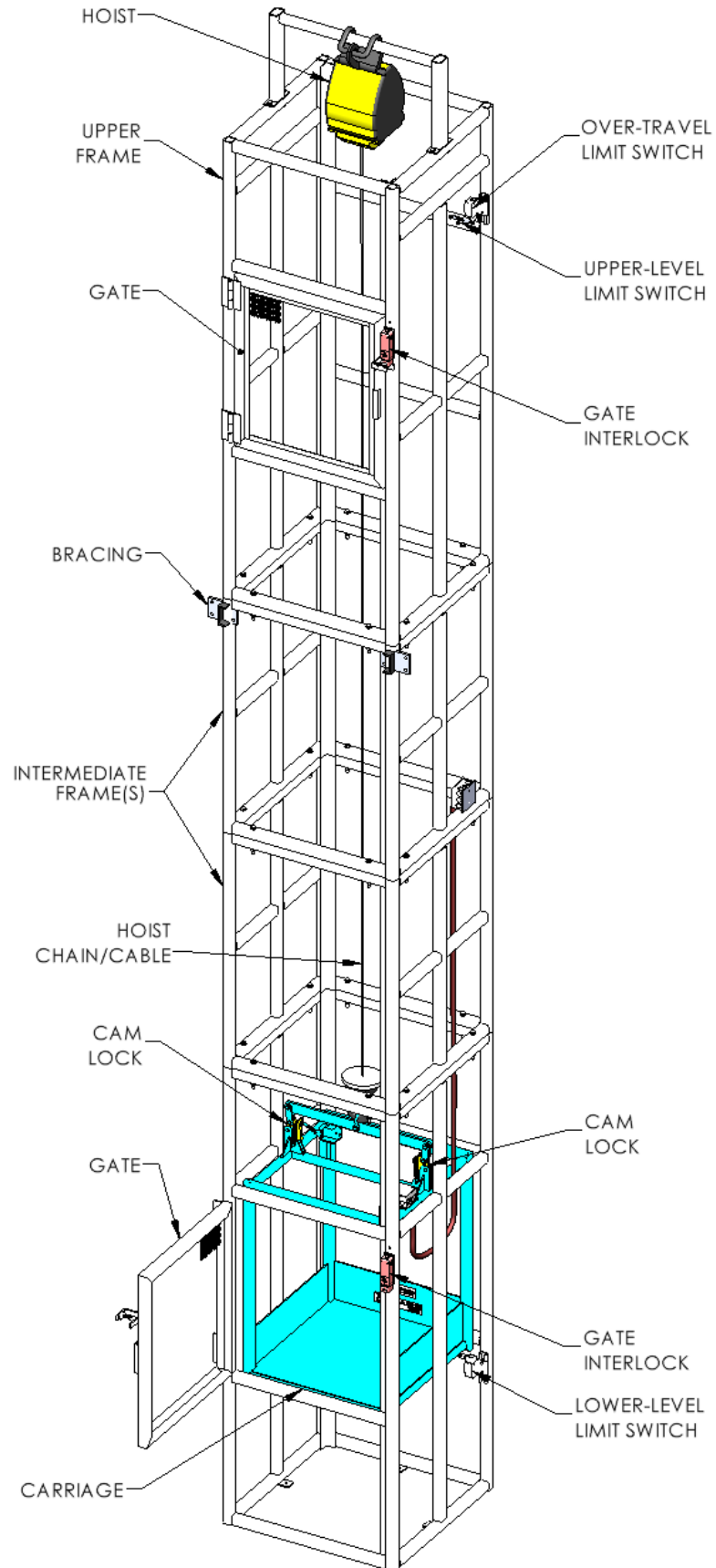


Issue	Possible Cause	Solution
Unit will not raise (motor <i>not</i> running or “humming”).	A slack chain/cable sensing switch is activated due to a slack or broken chain/cable condition, or the sensing switch is malfunctioning or is out of tolerance.	Check and/or re-establish chain/cable tension, or check/repair/adjust sensing switch(es). (See 4.13.4 Slack Chain/cable Sensing Kit).
	The main line disconnect switch is open (off).	Check and close (on).
	The emergency stop button may be depressed or jammed.	Check all push-button stations. Repair as necessary.
	The gate or door is not closed.	Check and close.
	The gate status switch or door interlock is malfunctioning or is out of tolerance.	Check and repair or adjust as required.
	The main line fuse disconnect fuse is blown.	Check and replace.
	The “Up” push button or circuit is malfunctioning.	Check at the other push button station for “Up” function. Check components and circuit. Repair or replace.
	A circuit breaker on the secondary voltage has tripped.	Check and reset CB1 or CB2.
Unit will not raise (motor <i>is</i> running or “humming”).	The load may exceed the rating.	Reduce the excess load.
	Rotation on the 3-phase motor may be reversed.	Reverse any two motor electrical leads.
	3-Phase motor may be single-phasing (humming).	Check wiring, fuses, etc.
	The voltage at the motor terminals may be too low to run the motor with the existing load.	Check before measuring the voltage at the motor terminals (or as near as possible) while the motor is running under load. Reading the source voltage is meaningless. Inadequate or incorrect wiring can starve the motor when the source voltage is ample. Correct as necessary.
Unit operates in a “spongy” or jerky fashion.	The chain/cable feeding system may be malfunctioning.	Check and repair.
	The carriage may be binding in the guide ways.	

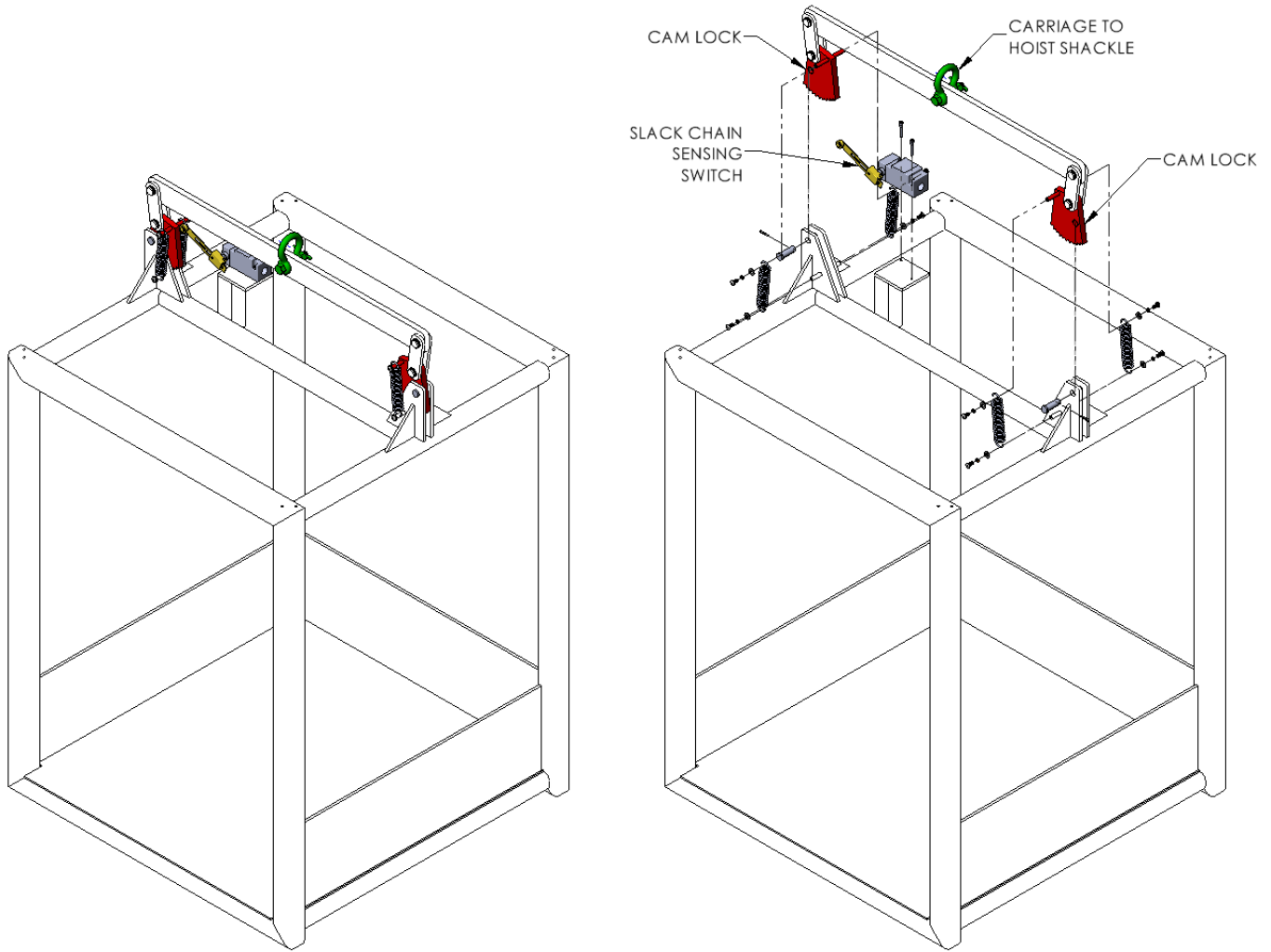
Issue	Possible Cause	Solution
Motor labors or heats excessively.	The voltage at the motor terminals may be too low to run the motor with the existing load.	Check before measuring the voltage at the motor terminals (or as near as possible) while the motor is running under load. Reading the source voltage is meaningless. Inadequate or incorrect wiring can starve the motor when the source voltage is ample. Correct as necessary.
	The wiring may be incorrect.	Be sure one leg of the motor line is not connected to the ground prong. This can happen particularly on 3-phase units using twist-lock plugs.
	The hoist gear reducer may be binding from oil starvation.	This can cause high internal heat. The gear reducer can be irreparably damaged by oil starvation and may have to be replaced!
Unit won't lower - Electrical Circuit	The slack chain/cable sensing switch is activated due to a slack or broken chain/cable condition, or the sensing switch is malfunctioning or is out of tolerance.	Check and/or re-establish chain/cable tension, or check/repair/adjust sensing switch(es). (See 4.13.4 Slack Chain/cable Sensing Kit).
	The main line disconnect switch is open (off).	Check and close (on).
	The emergency stop button may be depressed or jammed.	Check all push-button stations. Repair as necessary.
	A gate or door is not closed.	Check and close.
	A gate status switch or door interlock is malfunctioning or is out of tolerance.	Check and repair or adjust as required.
	The main line fuse disconnect fuse is blown.	Check and replace.
	The "Down" push button or circuit is malfunctioning.	Check at the other push button station for "Down" function. Check components and circuit. Repair or replace.
	A circuit breaker on the secondary voltage has tripped.	Check and reset CB1 or CB2.
Unit does not raise completely to the upper level.	Upper limit switch is not triggering.	Check the upper limit switch setting to see if the setting is correct.
	There is an interference with the carriage.	Check and correct (see 6.2 Maintenance Blocking Instructions).

8. PARTS LISTS

8.1 General Assembly



8.2 Typical Carriage



9. WARRANTY

The user is solely responsible for using this equipment in a safe manner and observing all of the safety guidelines provided in the Owner's Manual and on the warning labels provided with the lift. If you are unable to locate either the manual or the warning labels, please contact Autoquip ([see 1.1 Contact Information](#)) for replacement downloads or information.

Autoquip expressly warrants that this product will be free from defects in material and workmanship under normal, intended use for a period of One (1) Year for all electrical, mechanical, and hydraulic components, parts or devices. Ninety (90) days labor warranty extended to One (1) year with a Planned Maintenance Contract in place. Autoquip also warrants the structure of the lift against breakage or failure for a period of Five (5) years. The warranty period begins from the date of shipment. When making a claim, immediately send your dealer or Autoquip notice of your claim. All claims must be received by Autoquip within the warranty time period. The maximum liability of Autoquip, under this Limited Warranty, is limited to the replacement of the equipment.

This warranty shall not apply to any Autoquip lift or parts of Autoquip lift that have been damaged or broken in transit/shipping, or due directly or indirectly to misuse, abuse, vehicle impact, negligence, faulty installation, fire, floods, acts of God, accidents, or that have been used in a manner contrary to the manufacturer's limitations or recommendations as stated in the manual, or that have been repaired, altered or modified in any manner outside of Autoquip's manufacturing facility or which have not been expressly authorized by Autoquip.

Autoquip makes no warranty or representation with respect to the compliance of any equipment with state or local safety or product standard codes, and any failure to comply with such codes shall not be considered a defect of material or workmanship under this warranty. Autoquip shall not be liable for any direct or consequential damages resulting from such noncompliance.

Autoquip's obligation under this warranty is limited to the replacement or repair of defective components at its factory or another location at Autoquip's discretion at no cost to the owner. This is owner's sole remedy. Replacement parts (with exception of electrical components) will be warranted for a period of ninety (90) days. Except as stated herein, Autoquip will not be liable for any loss, injury, or damage to persons or property, nor for direct, indirect, or consequential damage of any kind, resulting from failure or defective operation of said equipment. All parts used to replace defective material must be genuine Autoquip parts in order to be covered by this Limited Warranty.



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