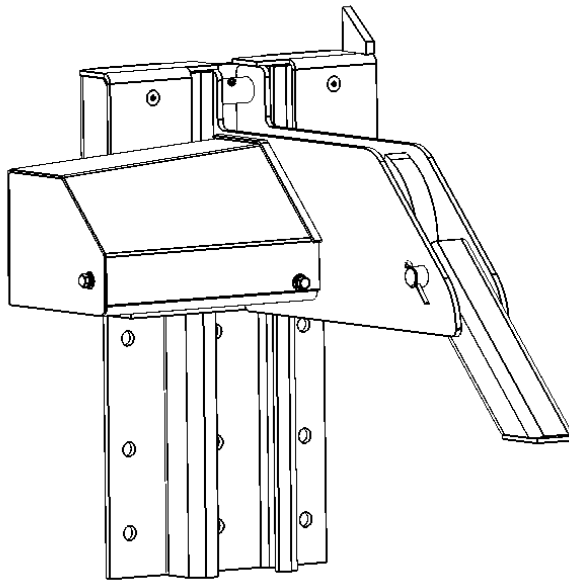


Truck Restraint Owner's Manual



IMPORTANT

Read and fully understand entire contents of this manual before installing, operating, or servicing this equipment. Failure to do so may result in property damage, bodily injury, or death.

Warranty

THE MANUFACTURER STANDARD WARRANTY

The manufacturer warrants that its products will be free from defects in design, materials, and workmanship for **one year (365 days)** from the date of shipment. Install, maintain, and operate products within their rated capacities and/or specified design parameters.

LIMITATION OF LIABILITY

The manufacturer, in any event, shall not be liable for any loss of any equipment or incidental or consequential damages of any kind, whether for breach of warranty, negligence, or strict liability.

Table of Contents

Warranty	2
Table of Contents.....	3
Owner Responsibility	5
Introduction	6
About.....	6
Safety Information and Warnings	7
Safety Warnings.....	7
Operational Safety Warnings.....	8
Level 4	8
Level 3	8
Level 2	9
Level 1	9
Lockout/Tagout Procedures	10
Start UP Instructions	11
Operating Instructions	12
Securing Vehicle	13
Releasing Vehicle.....	14
Control Panel Operation	14
ENGAGE	14
RELEASE	14
BYPASS	14
Maintenance	15
Adjusting the Chain	17
Lubrication and Cleaning	18
Figure 5: Lubrication and cleaning points (Top View)	18
Replacing the chain.....	20
Troubleshooting	21

Owner Responsibility

1. By owning the Truck Restraint, you should recognize the inherent dangers of the interface between the dock and transport vehicle. You should train and instruct operators to use the dock equipment according to the information provided below.

- Installation instructions
- Operating instructions
- Maintenance procedures
- Descriptions and specifications of parts

Verify that personnel installing, operating, and maintaining this equipment receives the materials listed above for instruction.

2. Make sure the vehicle parked at the loading dock is relatively perpendicular to the dock face and in close contact with at least one of the dock bumpers.
3. Manufacturer can provide you with nameplates, caution/instruction labels, and operating/maintenance manuals upon request.
4. Personnel operating and maintaining the equipment should see nameplates, cautions, instructions, and posted warnings clearly, free of obscured view.
5. Follow the manufacturer's recommended periodic maintenance and inspection procedures at the effective date of shipment. In addition, you should keep written records of these procedures.
6. Remove any structurally damaged equipment from operations. Inspect and repair damaged equipment as required.
7. Modify dock equipment only with the written permission of the manufacturer. These changes should also satisfy the manufacturer's safety recommendations.
8. Install, maintain, and operate the equipment within its capacity and design parameters to benefit from the standard product warranty.

Introduction




About

As one of the manufacturer's premium dock products, the Truck Restraint is designed for safety and reducing the risk of dock accidents. With a high-visibility hook-style restraint arm, it is the ideal solution for keeping workers, equipment, and cargo safer during loading and unloading. In addition, a cost-effective alternative to hydraulic truck restraints, its rugged design makes it virtually maintenance-free with the ability to function in the toughest environments. The unique rotating hook wraps over the Rear Impact Guard (RIG) using a restraining force of 35,000 lbs (15,876 kg). You can rely on the dependability of this truck restraint and worry less about the direct and indirect costs of an industrial accident.

Safety Information and Warnings

This manual contains safety warnings specifying areas where potential hazards exist. You must follow these safety warnings to prevent the possibility of property damage, serious injury, or death.

Safety Warnings

Level	Warning Sign
4 Indicates a hazardous situation, which, if not avoided will result in serious injury or death.	<div> DANGER</div> <hr/> <div>Follow these instructions to prevent serious injury or death.</div>
3 Indicates a hazardous situation, which, if not avoided, could result in serious injury or death.	<div> WARNING</div> <hr/> <div>Follow these instructions to prevent the risk of serious injury or death.</div>
2 Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.	<div> CAUTION</div> <hr/> <div>Follow these instructions concerning safe operating procedures to prevent personal injury.</div>
1 Addresses best practices related to machinery.	<div>IMPORTANT</div> <hr/> <div>Follow these procedures marked as IMPORTANT to prevent damage to machinery.</div>

Operational Safety Warnings

DANGER

Read these safety instructions before installing, operating, or servicing the dock leveler. Failure to follow these safety instructions may result in property damage, serious injury, or death.

Level 4

DANGER

- **Do not** use the restraint if it is not working properly. If the restraint does not operate properly using the procedures in this manual, be certain to chock the vehicle wheels before loading or unloading.
- **Do not** operate restraint with anyone standing in the driveway.
- **Before beginning any service procedures:**
 - Disconnect the power and follow all lockout/tagout procedures on **pg. 6** of this manual.
 - Position the leveler in the vertical/stored position.

Level 3

WARNING

- **Do not** install the restraint anchor bolts into aged or unsound concrete.
- **Do not** remove the wheel chocks until:
 - Unloading/loading is finished and the truck driver has been given permission to depart, OR
 - The vehicle restraint has been released and the lights have changed to RED inside and GREEN outside.
- Keep hands and feet clear of guide tracks and moving parts at all times.

Level 2

CAUTION

- **Do not** use the Vehicle Restraint as a step.
- **Do not** operate leveler until transport vehicle is:
 - Parked against the dock bumpers
 - Secured by a vehicle restraint and/or chocks
- **Always** conduct routine inspections and maintenance to prevent personal injury or damage to equipment.

Level 1

IMPORTANT

- **Do not** ground welding equipment to any hydraulic cylinder or electrical components.
- **Do not** drill too deeply when drilling holes in the control box — **damage to the control systems may occur.**
- **Do not** use air to remove debris from the control box — **always** use a vacuum.
- **Do not** connect green ground lead into the control box or junction box until welding is completed.

Lockout/Tagout Procedures

WARNING

Always lockout and tagout the power source before working with electrical devices or controls according to OSHA regulations and approved local electrical codes.

The Occupational Safety and Health Administration (OSHA) require that:

1. You turn off and disconnect the power supply.
 - i. Utilize **only** OSHA approved lockout devices.
 - ii. **Only** the person who is responsible for repairs has the authority to remove the lockout device.
 - iii. **Notify** all affected employees when machines or equipment will be shut down and locked out for repair or maintenance.
 - iv. Make sure all employees **clear** the repair or maintenance area.
2. The power control **must be** tagged to indicate:
 - i. The equipment is under repair
 - ii. The name of the authorized employee responsible for the lockout
3. Make sure tagout notices will endure extreme weather conditions or exposure to chemicals and moisture.

Start UP Instructions

WARNING

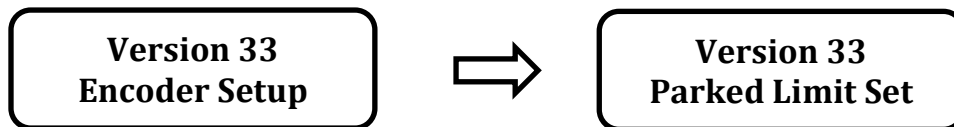
- **Do not TEST** the restraint unless the area is clear and safe.

To perform the Start Up sequence

*Turn power to control panel “OFF”.

* Turn or press and hold “BYPASS” while turning power back “ON”.

* Hold until screen display reads: “Parked Limit Set”

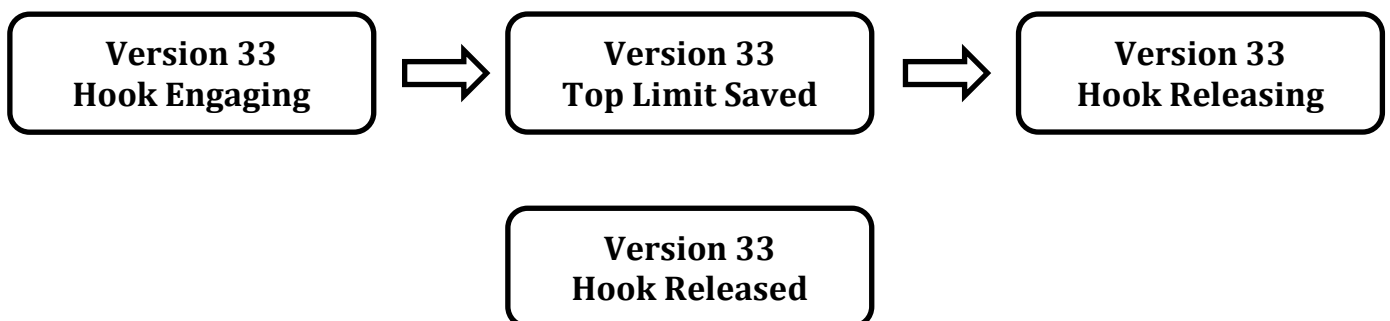


*Release the button.



*Turn or press “BYPASS” and release to set top limit.

* Hook will go all the way up, stop and go back down



*Hook is ready to use!

Operating Instructions

WARNING

- **Do not** operate the restraint until the transport vehicle is parked squarely against the dock bumpers.
- **Do not** enter the truck/trailer unless:
 - The dock leveler lip is resting securely on the truck/trailer bed.
 - The outside signal light is red, and inside signal light is green
 - If Inside light is flashing red and the emergency horn is sounding, the ICC bar is not engaged or not present. Manually secure the transport vehicle by any safe means and push the BYPASS button.
- If truck restraint does not engage ICC bar, Turn or Press the BYPASS button and securely chock truck/trailer wheels. Failure to follow these instructions could result in serious personal injury or death.
- In BYPASS operation, failure to securely chock truck/ trailer wheels while loading or unloading could result in serious personal injury or death.

Designed to work in conjunction with other dock equipment, the Truck Restraint creates a safer work environment. Before operating the equipment, be sure to park the transport vehicle tight against the face of both dock bumpers.



Figure 1: Control Panel

Securing Vehicle

1. When vehicle is in position, push button to “*ENGAGE*”.
2. Inspect the truck restraint to ensure proper engagement. The notch on top of the hook must wrap over the vehicle’s RIG. See **Figure 2**. If you secure the vehicle properly, the inside control box light will turn green and outside traffic light will turn red.

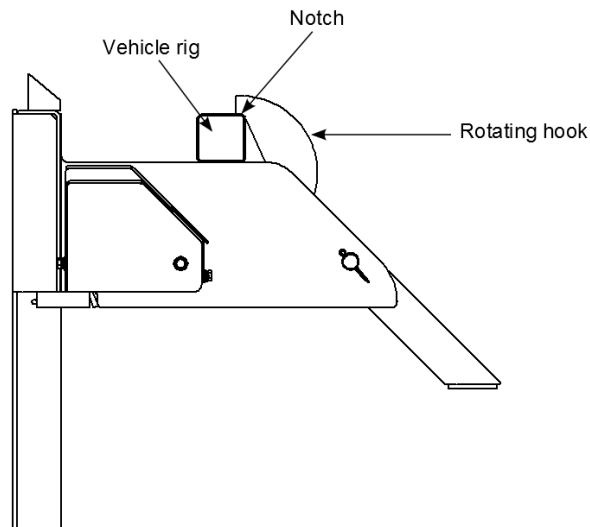


Figure 2: Properly secured

If you cannot secure the vehicle, both the control box and traffic lights will turn red and the alarm will sound. See **Figure 3**. You will need to go in to “*BYPASS*” Mode.

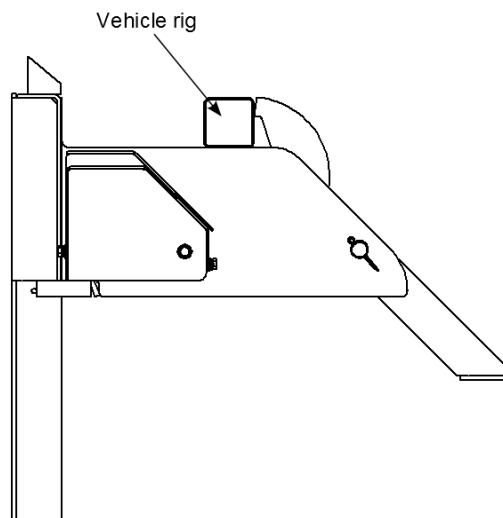


Figure 3: Improperly secured

Releasing Vehicle

1. Store the dock leveler.
2. Push button to "RELEASE". The inside control box light will turn red and outside traffic light will turn green.
3. Vehicle may now pull out.

Control Panel Operation

ENGAGE

- When vehicle is in position, push button to "ENGAGE" to wrap the rotating hook around the RIG.

RELEASE

- Push button to "RELEASE" to disengage the rotating hook from the RIG.

BYPASS

- Turn or Press the "BYPASS" to override the audible alarm. (Only after the ENGAGED button is pressed and the restrained failed to grasp the RIG)

Maintenance

WARNING

- **Read, understand, and obey** all safety information and operating instructions before servicing the truck restraint.
- **Use only** a lifting device when lifting the restraint during service or assembly. Failure to do so may result in back injury.
- **Barricade** all work areas and post appropriate safety warnings to prevent unauthorized use of the dock leveler.
- **Follow** all electrical lockout/tagout procedures as stated in this manual.
- **Make sure** the lights return to the proper display. If there is no vehicle present or secured at the dock, the red inside light and green outside light will turn on. If there is a vehicle present or secured at the dock the green inside light and red outside light will turn on.

	Daily	180 Days	360 Days
Cleaning	As required to remove debris around the vehicle restraint.	Perform all daily cleaning.	<ol style="list-style-type: none"> 1. Perform all daily and 180-day cleaning. 2. Clean the drive chain with solvent.
Lubrication	Not required	<ol style="list-style-type: none"> 1. Lubricate the drive chain thoroughly with the chain tube. 2. Lubricate the four roller bearings using the grease fittings located on the top and bottom roller shafts. Use a lithium and synthetic oil-based moly grease. 	<ol style="list-style-type: none"> 1. Perform 180-day lubrication.
Inspection & Adjustments	Inspect all operating, warning, and caution labels and signs to make sure they are visible. Replace labels and signs as required. See the PARTS LIST for part numbers.	<ol style="list-style-type: none"> 1. Perform all daily inspection and adjustments. 2. Inspect dock bumpers. 4 inches of protection is required. Replace worn, torn, loose or missing bumpers. 3. Inspect the Vehicle 	<ol style="list-style-type: none"> 1. Perform all daily and 180-day inspection and adjustments. 2. Inspect the motor drive chain, and tighten if necessary. See "CHAIN ADJUSTMENT PROCEDURE". 3. Tighten all set

		<p>Restraint for damage, which may weaken the anchoring strength. Retighten the concrete anchor bolts to 60 ft-lbs if necessary.</p> <p>4. Inspect the outside electrical connections (junction box, conduit, power harness) and outside communication light. Repair loose or damaged components.</p>	<p>screw on sprockets, bearings, hook and sensor bracket.</p>
Operation	<ol style="list-style-type: none"> 1. Check to ensure the truck restraint operates smoothly and the carriage moves up and down. 2. Check that the horn works properly. 3. Check the lights on the control box. The RED or GREEN should be working at all times. Push the buttons on the control box to be certain both lights are working. Replace LED modules as required. See the PARTS LIST for part numbers. 4. Check the outside communication light. The RED or GREEN light should be working at all times. Push the buttons on the control box to be certain both lights are working. Replace LED modules as required. See the PARTS LIST for part numbers. 	<ol style="list-style-type: none"> 1. Perform all daily operational checks. 2. Perform operational test after servicing the Vehicle Restraint. 	<ol style="list-style-type: none"> 1. Perform all daily and 180-day operational checks. 2. Perform operational test after servicing the Vehicle Restraint.

Adjusting the Chain

1. Remove the motor cover.
2. Check the drive chain slack. Ensure it is not more than 1/4" slack.
3. Loosen the tension screw and four bolts holding the motor.
4. Use the tension screw to adjust the tension of the chain.
5. Recheck the slack in the chain.
6. Reinstall the motor cover.

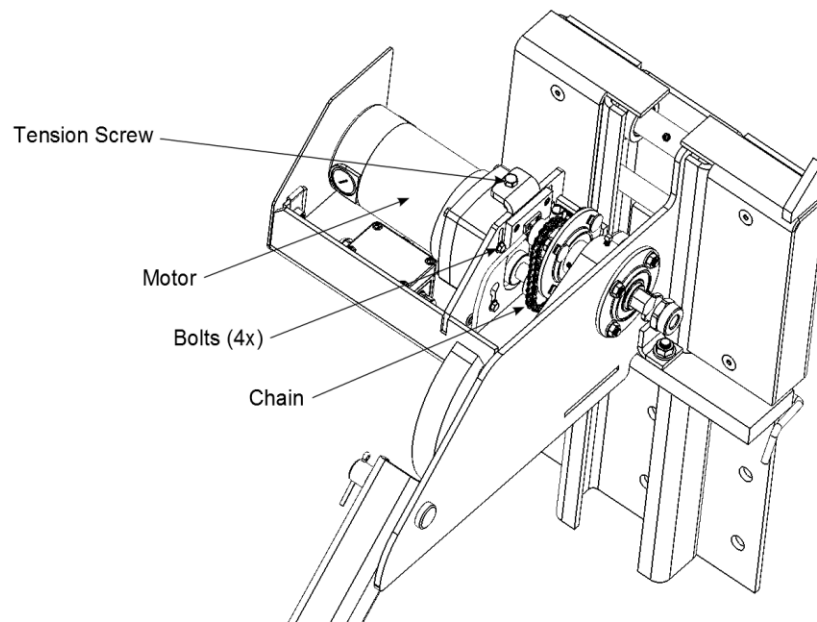


Figure 4: Chain adjustment

Lubrication and Cleaning

Notice

Use only lubricants as indicated. Failure to do so may cause operational problems.

- Lubricate the drive chain thoroughly with the chain tube.
- Lubricate the four roller bearings using the grease fittings located on the top and bottom roller shafts. Use a lithium and synthetic oil-based moly grease.
- Clean the drive chain every 360 days. Clean around the truck restraint daily.

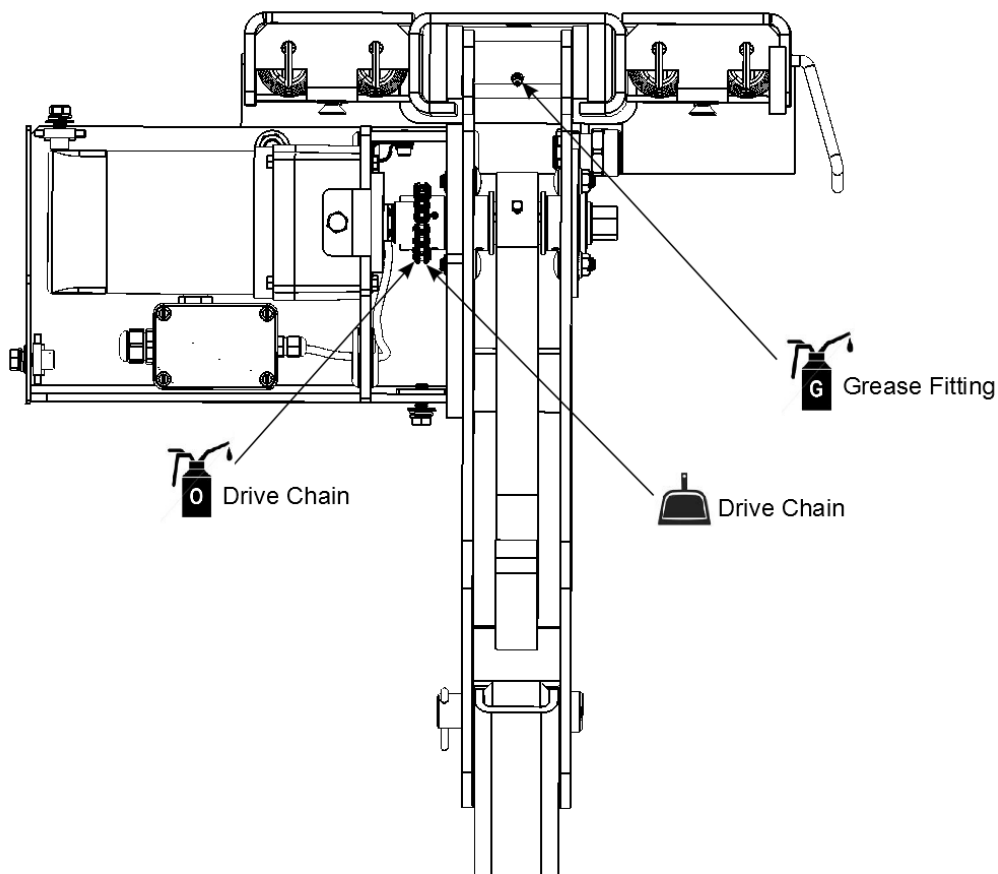


Figure 5: Lubrication and cleaning points (Top View)

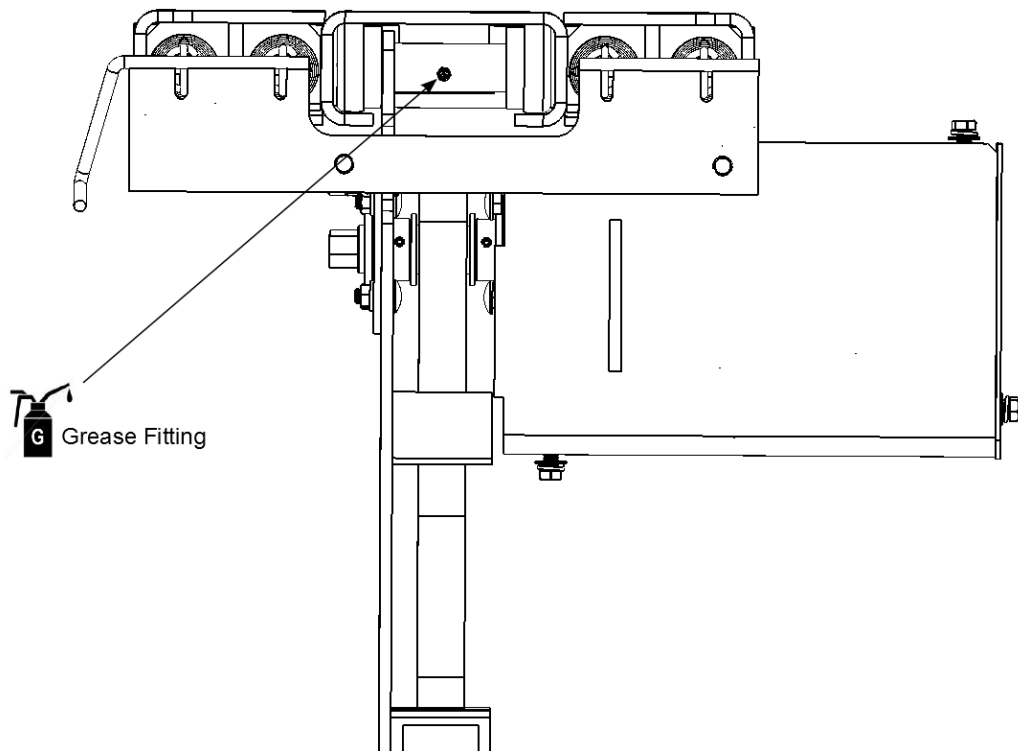


Figure 6: Lubrication point (Bottom View)

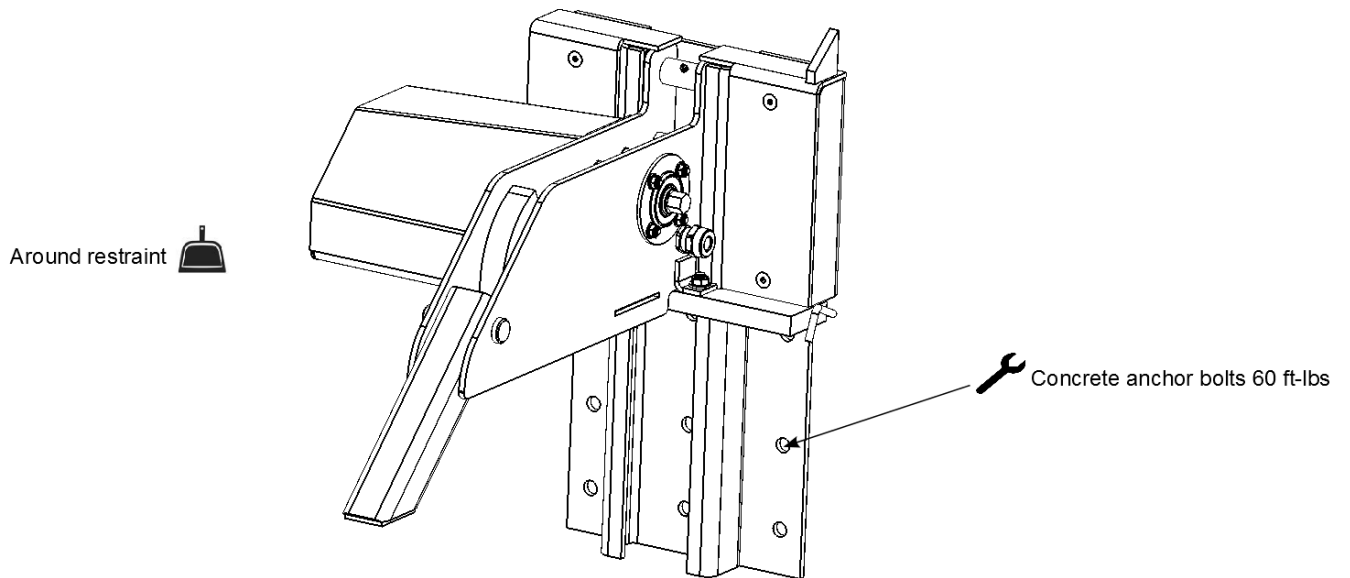


Figure 7: Anchoring and cleaning points

Replacing the chain

1. Turn power off
2. Remove motor cover
3. Loosen tension bolt
4. Loosen motor bolts and lift/ raise motor up approximately ½" semi-tighten motor bolt to hold the motor in position
5. Remove broken chain
6. Install new chain: ensure chain is engaged through sprocket teeth
7. Loosen motor bolt to lower motor to remove slack in chain
8. Tighten motor bolts
9. Snug the tension bolt down + secure
 - Do not over tension the chain
 - Also, ensure the chain is not too loose with slack. A properly installed chain should be snug
10. Run encoder set up (see install instructions, electrical drawing or label inside panel for set up instructions).

Troubleshooting

WARNING

Do not service this product unless you have read and followed the Safety Practices, Warnings, and Operation instructions contained in this manual. Failure to follow these safety practices could result in death or serious injury.

Problem	Cause	Solution
Lights and hook do not work	a. No power in control box. b. Not wired properly.	a. Check the fused disconnect switches fuse block, and the circuit breaker for incoming power into the control box. b. Refer to the wiring diagram inside the control box. Check all wiring and connections.
Lights are working but the hook does not work. Note: motor wires may need to be reversed. To check if motor works, disconnect the motor and use a battery to Test motor function.	a. Drive chain or sprocket is either loose or broken. b. No power source connected to motor. c. Motor is damaged. d. "ENGAGE" or "RELEASE" push-button switch not working.	a. Adjust or replace as needed. b. Check all wiring connections from the control box to the motor. c. Replace as required. d. Replace as required. e. Check contact behind buttons on the door panel are not loose or broken.
Lights are working but the hook does not move completely up or down.	a. Run Limit Set-up. b. Sprocket loose or broken. Gearbox broken.	a. Check for loose Tilt Sensor. b. Check the sprockets and retighten bolts. c. Inspect Gearbox for broken Gears.
Hook moves but lights do not work.	a. Dead LED unit or circuit board. b. Incorrect wiring. Make sure lights are 24vdc compatible.	a. Check LED units and replace as required. b. Check all wiring connections. A good ground is required.
Hook and lights work but the alarm horn does not work.	a. Incorrect wiring. b. Alarm horn not working.	a. Check all wiring connections. b. Replace as required.
Hook and lights work but the alarm horn continuously sounds.	a. Press or turn Bypass Switch.	a. Check wiring. b. Check contact behind buttons on the door panel are not loose or broken
Carriage assembly does not return to the proper stored position.	a. Weak or broken springs. b. Bent roller track plate.	a. Replace. b. Check for proper installation and replace if necessary.
Hook will not Release	a. Lip Sensor	c. Check Lip is close to sensor under dock d. Jumper i2 with +24 to release.