

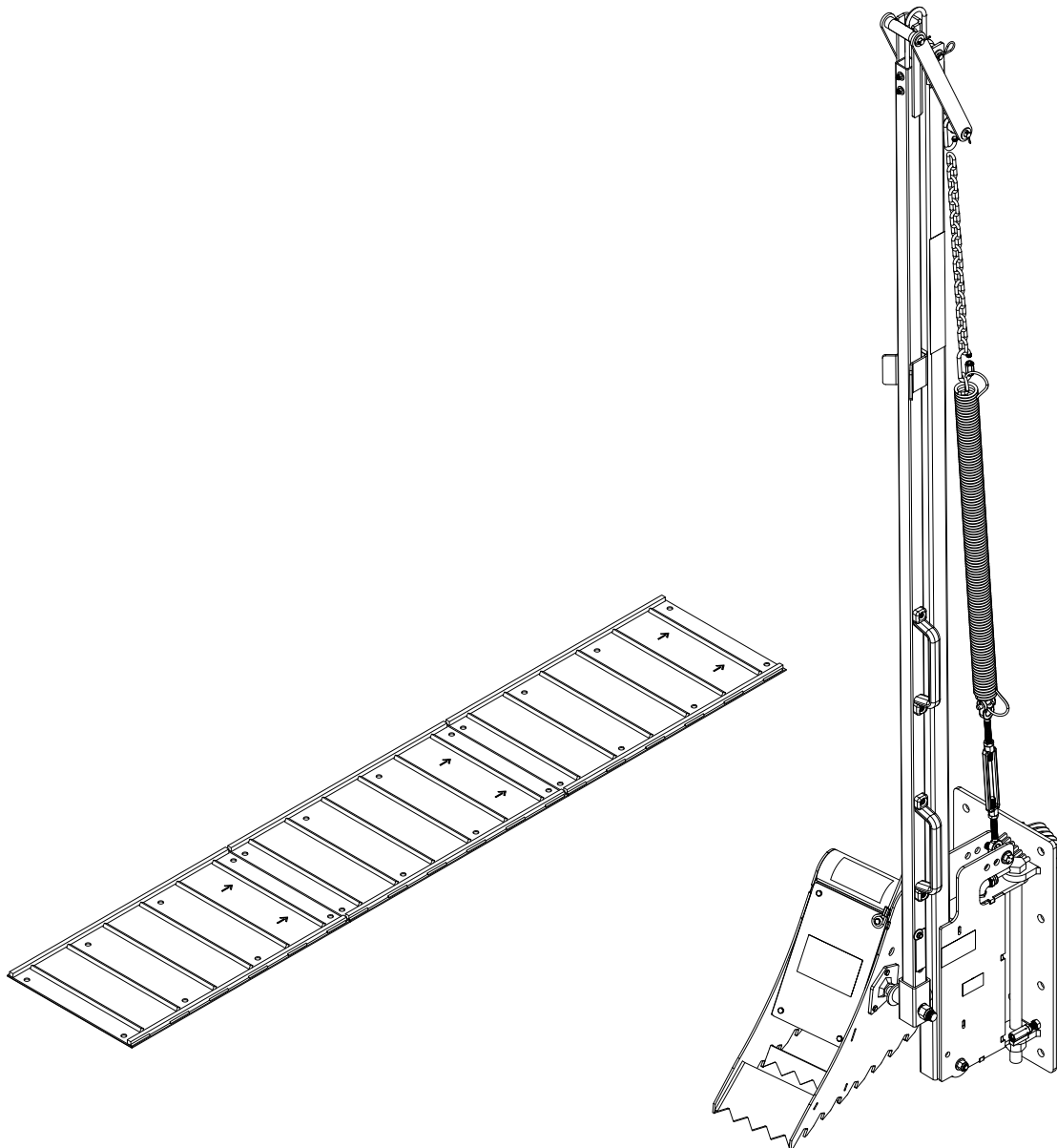


*A Division of Systems, LLC*

# Unichock XL®

## Vehicle Restraint

### Owner's/User's Manual



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# PRECAUTIONS

## Recognize Precautionary Information

### Safety-Alert Symbol



The Safety-Alert Symbol is a graphic representation intended to convey a safety message without the use of words. When you see this symbol, be alert to the possibility of death or serious injury. Follow the instructions in the safety message panel.

### **DANGER**

The use of the word DANGER signifies the presence of an extreme hazard or unsafe practice which will most likely result in death or severe injury.

### **WARNING**

The use of the word WARNING signifies the presence of a serious hazard or unsafe practice which could result in death or serious injury.

### **CAUTION**

The use of the word CAUTION signifies possible hazard or unsafe practice which could result in minor or moderate injury.

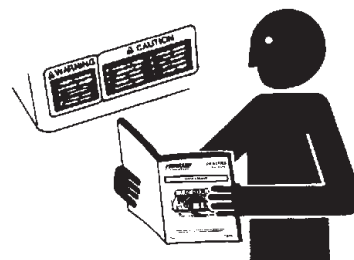
### **NOTICE**

The use of the word NOTICE indicates information considered important, but not hazard-related, to prevent machine or property damage.

### **SAFETY INSTRUCTIONS**

Indicates a type of safety sign, or separate panel on a safety sign, where safety-related instructions or procedures are described.

## General Operational Precautions



Read and understand the Owner's/User's Manual and become thoroughly familiar with the equipment and its controls before operating the equipment.

Never operate equipment while a safety device or guard is removed or disconnected.

Never remove DANGER, WARNING, or CAUTION signs, Placards or Decals on the equipment unless replacing them.

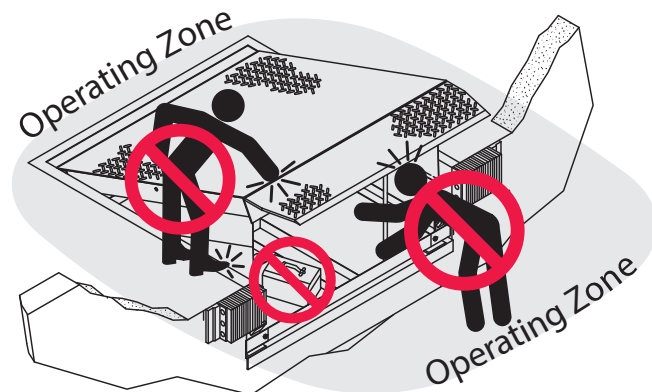


Figure 1

Do not start the equipment until all unauthorized personnel in the area have been warned and have moved outside the operating zone (Figure 1).

Remove any tools or foreign objects from the operating zone before starting.

Keep the operating zone free of obstacles that could cause a person to trip or fall.



**WARNING:** This product can expose you to chemicals including lead, which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

# PRECAUTIONS

## Operational Precautions



Learn the safe way to operate this equipment. Read and understand the manufacturer's instructions. If you have any questions, ask your supervisor.

### **DANGER**



Stay clear of dock leveling device when transport vehicle is entering or leaving area.



Do not move or use the dock leveling device if anyone is under or in front of it.



Keep hands and feet clear of pinch points. Avoid putting any part of your body near moving parts.

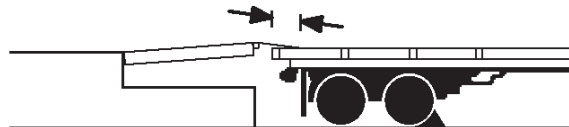
### **WARNING**



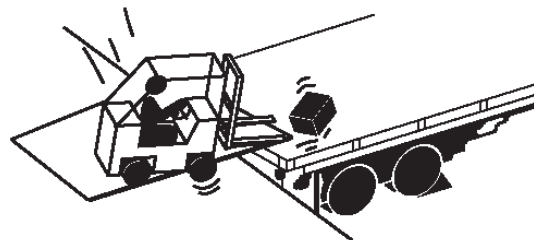
Chock/restrain all transport vehicles. Never remove the wheel chocks or release the restraining device until loading or unloading is finished, and transport driver has been given permission to drive away.



Do not use a broken or damaged dock leveling device or restraining device. Make sure proper service and maintenance procedures have been performed before using.




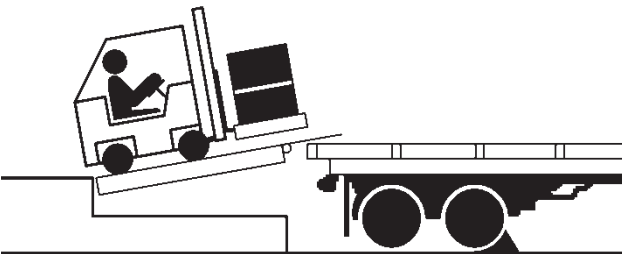
Make sure lip overlaps onto transport vehicle bed at least 4 in. (102 mm).



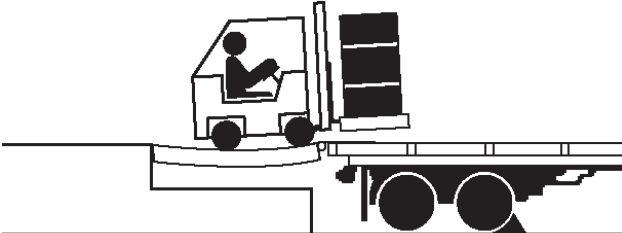
Keep a safe distance from both side edges.

## Operational Precautions

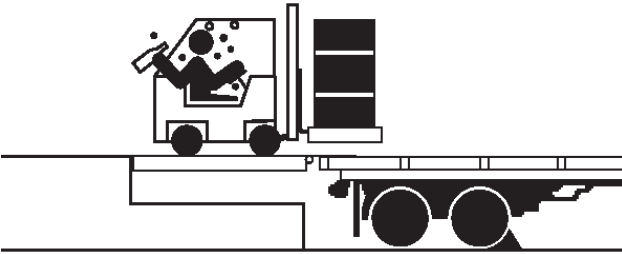
 **WARNING**



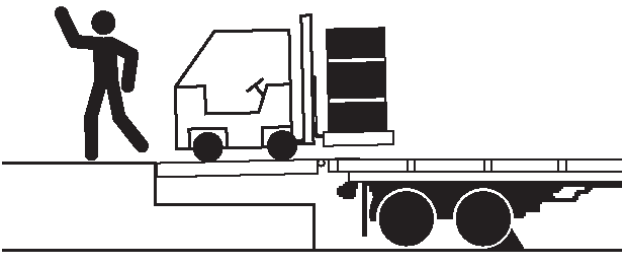
Do not use dock leveling device if transport vehicle is too high or too low. Ensure air is bled from suspension system according to manufacturer's instructions.



Do not overload the dock leveling device.



Do not operate any equipment while under the influence of alcohol or drugs.



Do not leave equipment or material unattended on dock leveling device.

# PRECAUTIONS

## Safety Decals

\*Control box appearance may vary depending on options.

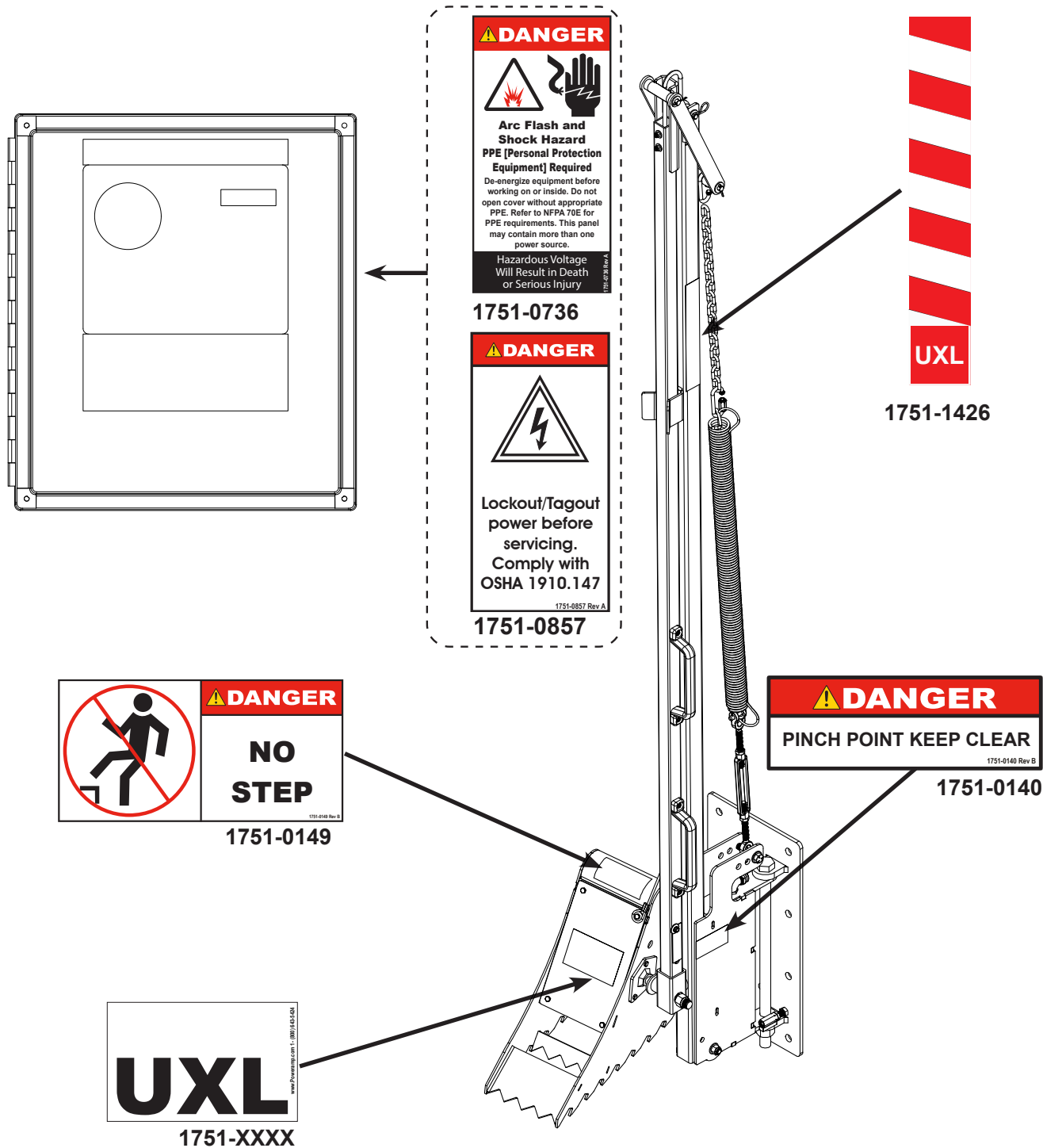



Figure 2

Placard




# DANGER


- Read and follow all instructions, warnings, and maintenance schedules in the manual and on placards.
- Wheel chock restraint operation and servicing is restricted to authorized personnel.

1. Before using the vehicle restraint:
  - Remove any debris, snow, or ice that may obstruct the operation of the wheel chock to restrain the transport vehicle.
  - Alert personnel in the area of potential operation of the wheel chocking system.
  - Operate the wheel chocking system through one complete cycle, inspecting it for proper operation and light sequence. Advise maintenance personnel of any damage or improper operation immediately. Remove all malfunctioning or damaged wheel chocking systems from service using approved lockout/tagout procedures.
2. Before attempting to restrain a transport vehicle:
  - Verify that transport vehicle is positioned squarely against dock bumpers.
  - Inspect the transport vehicle's wheel area. Fenders or shrouds near the wheel may obstruct and not allow the wheel chocking system to securely capture the transport vehicle wheel.
3. After activating vehicle restraint:
  - Verify that the wheel chock is fully engaged and centered with vehicle tire.
  - If equipped with a light communication system, load and unload on GREEN light only.
4. Maintenance or service must be performed by authorized personnel only. Follow approved lockout/tagout procedures.


**FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN DEATH OR OTHER SERIOUS INJURY.**



Scan to view our owner's/user's manuals online.  
[www.LoadingDockSystems.com](http://www.LoadingDockSystems.com)  
**1.800.643.5424**  
Call for additional placards, or manuals, or with questions regarding proper use, maintenance, and repair of dock leveler.



**POWERAMP  
MCGUIRE  
DLM  
SYSTEMS**  
*Loading Dock Equipment*

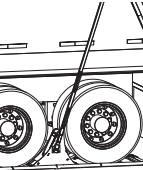
 **WARNING: CANCER AND REPRODUCTIVE HARM**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

1751-1427

## OPERATING INSTRUCTIONS

### VEHICLE RESTRAINTS

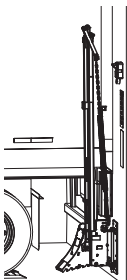
Only for UXL



#### ENGAGE WHEEL CHOCK

1. Place chock in front of wheel.
2. Solid AMBER with flashing RED will indicate proper engagement with the wheel.
3. Open overhead door and/or operate leveler.
4. GREEN inside light will indicate door opened and/or leveler deployed while chock is properly engaged.

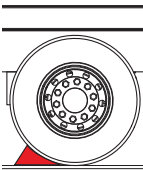
**Note:** Alarm will sound if chock is not properly engaged with wheel.



#### RELEASE RESTRAINT

1. When loading/unloading is complete store leveler and close overhead door.
2. Outside light will start to alternate RED & GREEN to indicate it is safe to remove the chock. Inside light will be solid AMBER with flashing RED until the chock is removed.
3. Once chock is removed inside light flashes RED outside light alternates RED and GREEN.
4. When the wheel chock is returned to the stored position inside light turns RED outside light GREEN.

**Note:** Alarm will sound if chock is not properly stored.



#### BY-PASS

1. If the UXL is not able to chock the wheel or provide proper light communication, it is still required use a wheel chock to restrain transport vehicle.
2. Chock must be stored on bracket.
3. Press the DOCK ALERT STATUS button.
4. Inside light is GREEN/AMBER and outside light is RED.
5. Place chock in front of wheel.
6. Loading/unloading may proceed with caution.

#### BY-PASS RESET (RETURN TO NORMAL OPERATION)

1. When loading/unloading is complete remove wheel chock and store it on wall bracket.
2. Press the DOCK ALERT STATUS button.
3. Lights change to RED inside and GREEN outside.

# OWNER'S/USER'S RESPONSIBILITIES

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- 1) The manufacturer shall provide to the initial purchaser and make the following information readily available to the owners/users and their agents, all necessary information regarding Safety Information, Operation, Installation and Safety Precautions, Recommended Initial and Periodic Inspections Procedures, Planned Maintenance Schedule, Product Specifications, Troubleshooting Guide, Parts Break Down, Warranty Information, and Manufacturer's Contact Information.
- 2) The owner/user should recognize the inherent dangers of the interface between the loading dock and the transport vehicle. The owner/user should, therefore, train and instruct all operators in the safe operation and use of the restraining device in accordance with manufacturer's recommendations and industry standards. Effective operator training should also focus on the owner's/user's company policies, operating conditions and the manufacturer's specific instructions provided with the restraining device. Maintaining, updating and retraining all operators on safe working habits and operation of the equipment, regardless of previous experience, should be done on a regular basis and should include an understanding and familiarity with all functions of the equipment. Owners/users shall actively maintain, update and retrain all operators on safe working habits and operations of the equipment.
- 3) When selecting a restraining device, it is important to consider not only present requirements but also future plans and any possible adverse conditions, environmental factors or usage. The owners/users shall provide application information to the manufacturer to receive recommendations on appropriate equipment specifications.
- 4) The owner/user must see all nameplates, placards, decals, instructions and posted warnings are in place and legible and shall not be obscured from the view of the operator or maintenance personnel for whom such warnings are intended. Contact manufacturer for any replacements.
- 5) Modifications or alterations of restraining devices shall be made only with prior written approval from the original manufacturer. These changes shall be in conformance with all applicable provisions of the MH30.3 standard and shall also satisfy all safety recommendations of the original equipment manufacturer of the particular application.
- 6) An operator training program should consist of, but not necessarily be limited to, the following:
  - a) Select the operator carefully. Consider the physical qualifications, job attitude and aptitude.
  - b) Ensure that the operator reads and fully understands the complete manufacturer's owner's/user's manual.
  - c) Emphasize the impact of proper operation upon the operator, other personnel, material being handled, and equipment. Cite all rules and why they are formulated.
  - d) Describe the basic fundamentals of the restraining device and component's design as related to safety, e.g., mechanical limitation, stability, functionality, etc.
  - e) Introduce the equipment. Show the control locations and demonstrate functions. Explain how they work when used properly and maintained as well problems when they are used improperly.
  - f) Ensure that the operator understands nameplate data, placards and all precautionary information appearing on the restraining device.
  - g) Supervise operator practice of equipment.
  - h) Develop and administer written and practical performance tests. Evaluate progress during and at completion of the course.
  - i) Administer periodic refresher courses. These may be condensed versions of the primary course and include on-the-job operator evaluation.
- 7) It is recommended that the transport vehicle is positioned as close as practical to the dock leveling device and in contact with both bumpers. When an industrial vehicle is driven on or off a transport vehicle during loading and unloading operations, the transport vehicle parking brakes shall be applied and wheel chocks or a restraining device that provides equal or better protection of wheel chocks shall be engaged.
- 8) Air-ride suspension systems must have the air exhausted prior to performing loading and unloading operations. Follow the trailer manufacturer's instructions on safely exhausting the air.



# OWNER'S/USER'S RESPONSIBILITIES

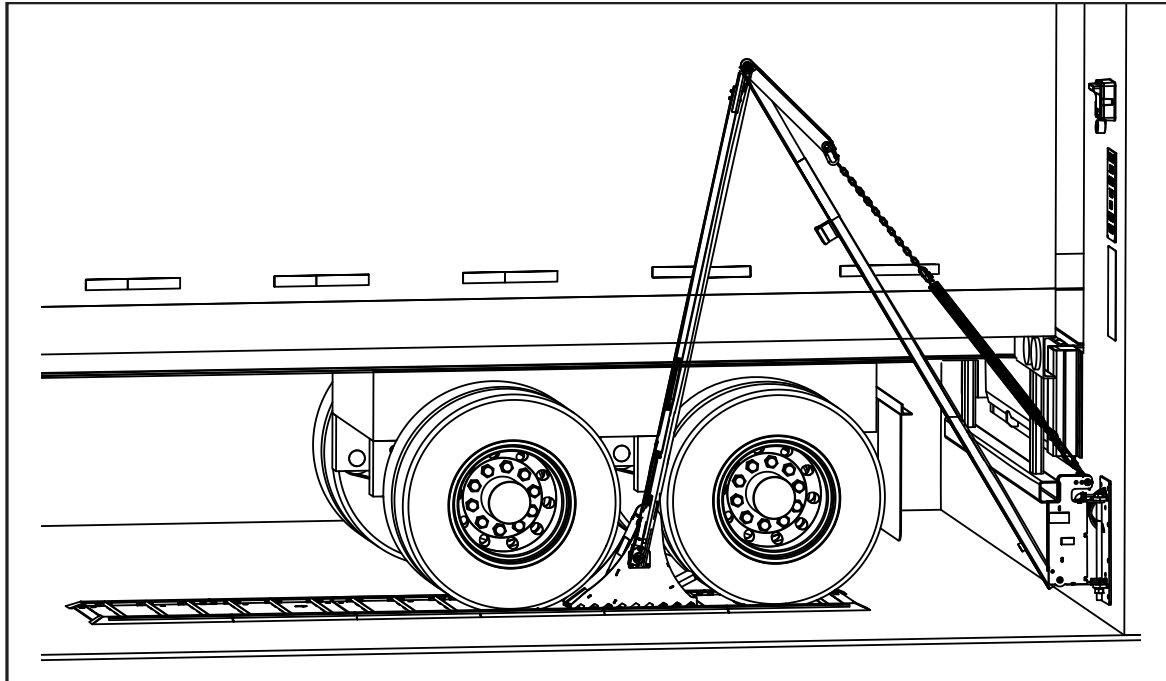
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- 9) When goods are transferred between the loading dock and a trailer resting on its support legs/ landing gear instead of a tractor fifth wheel or converter dolly, it is recommended that an adequate stabilizing device or devices shall be utilized at the front of the trailer.
- 10) In order to be entitled to the benefits of the standard product warranty, the dock safety equipment must have been properly installed, maintained and operated in accordance with all manufacturer's recommendations and/ or specified design parameters and not otherwise have been subject to abuse, misuse, misapplication, acts of nature, overloading, unauthorized repair or modification, application in a corrosive environment or lack of maintenance. Periodic lubrication, adjustment and inspection in accordance with all manufacturer's recommendations are the sole responsibility of the owner/user.
- 11) Manufacturer's recommended maintenance and inspection of all restraining devices shall be performed in conformance with the following practices: A planned maintenance schedule program must be followed, only trained and authorized personnel shall be permitted to maintain, repair, adjust and inspect restraining devices, and only original equipment manufacturer parts, manuals, maintenance instructions, labels, decals and placards or their equivalent shall be used. Written documentation of maintenance, replacement parts or damage should be kept. In the event of damage, notification to the manufacturer is required.
- 12) Restraining devices that are structurally damaged shall be removed from service, inspected by a manufacturer's authorized representative, and repaired or replaced as needed or recommended by the manufacturer before being placed back in service.

# INTRODUCTION

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## General Information



**Figure 3**

This manual provides current information on the UniChock XL (UXL) vehicle restraint. Due to ongoing product improvement, some parts may have changed, along with operation and troubleshooting methods. This manual describes these changes where applicable.

The UXL uses a steel chock and ground plate to create a rigid barrier against transport vehicle wheels. The chock is attached to an articulating arm for ease of placement into the engaged and stored positions.

The durable, powder coated, steel housing is designed to withstand impact from trailers and provide weather resistance for all internal components.

The UXL vehicle restraint is engaged manually, by removing the unit from its stored position and locking the chock on the ground plate in front of a transport vehicle's rear wheel. The unit incorporates a sensor which detects a vehicle tire.

**Technical Service at 800-643-5424 or [techservices@loadingdocksystems.com](mailto:techservices@loadingdocksystems.com)**

## Component Identification

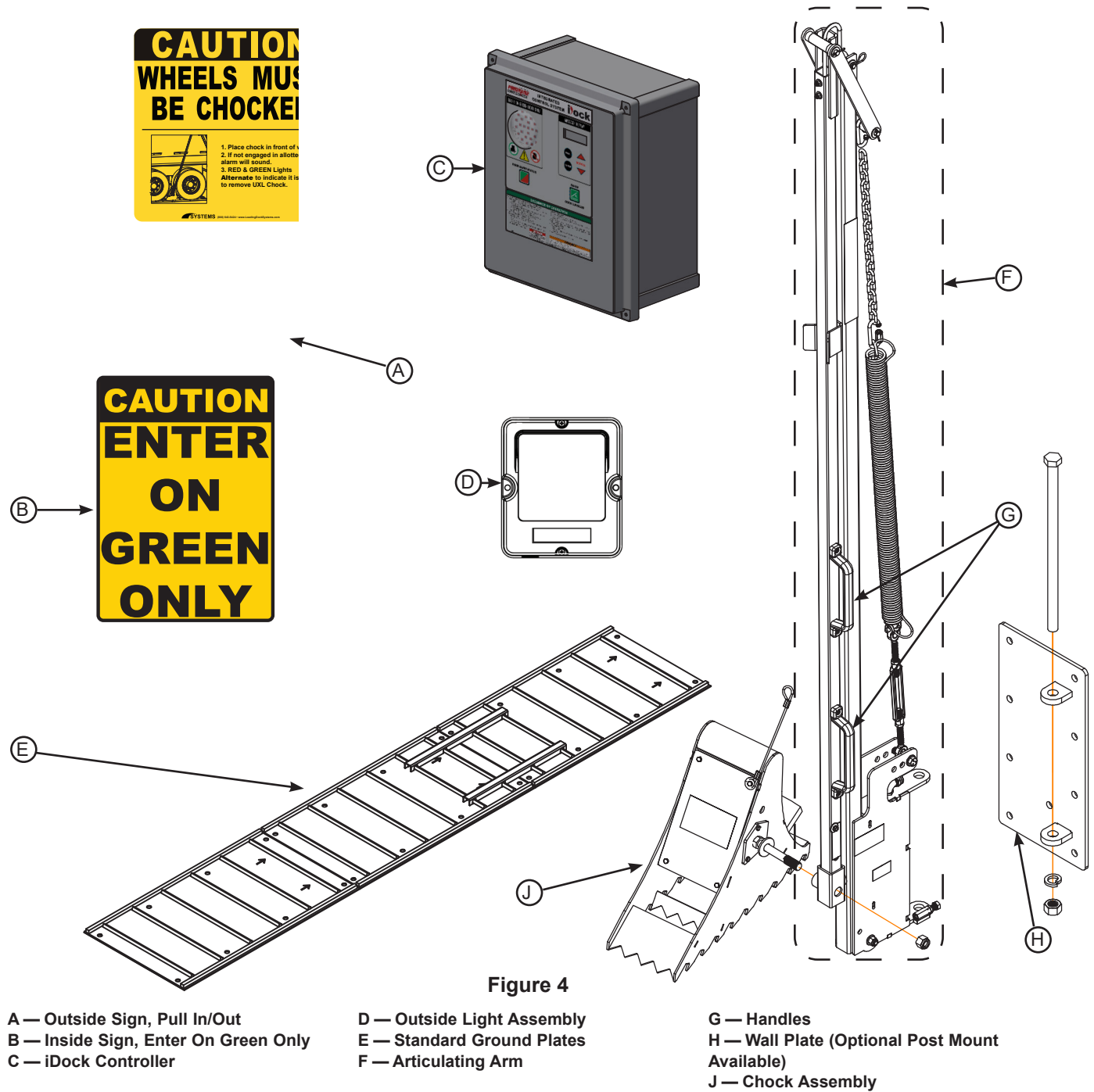


Figure 4

A — Outside Sign, Pull In/Out  
B — Inside Sign, Enter On Green Only  
C — iDock Controller

D — Outside Light Assembly  
E — Standard Ground Plates  
F — Articulating Arm

G — Handles  
H — Wall Plate (Optional Post Mount Available)  
J — Chock Assembly

# INSTALLATION

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## Installation Precautions



### **WARNING**

Post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before installation has been completed.



### **WARNING**

DO NOT grind or weld if hydraulic fluid or other flammable liquid is present on the surface to be ground or welded.

DO NOT grind or weld if uncontained hydraulic fluid or other flammable liquid is present. Stray sparks can ignite spills or leaks near the work area. Always clean up the oil leaks and spills before proceeding with grinding or welding.

Always keep a fire extinguisher of the proper type nearby when grinding or welding.



### **CAUTION**

Only trained installation professionals with the proper equipment should install this product.



### **CAUTION**

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

### ***NOTICE***

DO NOT connect the vehicle restraint electrical wiring and ground connections until all welding has been completed.

DO NOT ground welding equipment to any electrical components of the vehicle restraint. Always ground welding equipment to the vehicle restraint base, NEVER to the moving components.

Failure to follow these instructions may damage the motor, wiring, and/or control panel.

## Standard Installation Overview

### Tools:

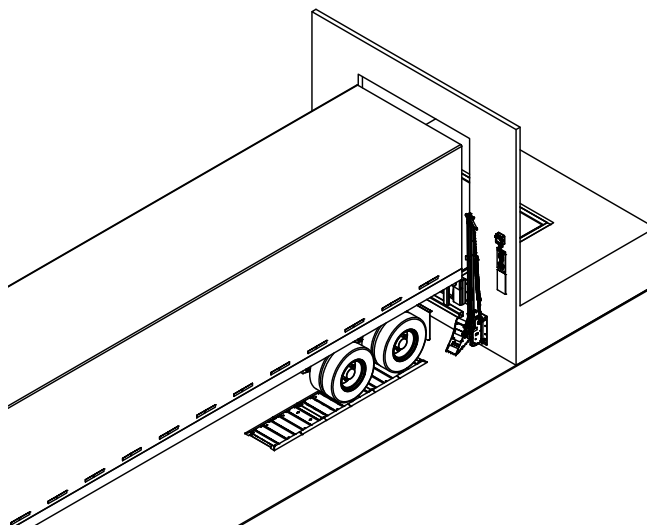
Before you begin, ensure that all the tools listed below are available to install the UXL Restraint system.

Tools	Notes/Size
Measuring Tape	20 ft. or longer
Combination Wrenches	Full Set 3/16" to 1-1/2"
Screwdriver Set	Flat, Square, and Phillips Drive
Knockout Punch	7/8" and 1-1/8"
Hammer Drill with Masonry Bit & Scaling Chisel	5/8" Masonry Bit, 1/2" to 1" Chisel
Ground Rod Driver	Used to drive rebars into ground
Level	2 ft.
Ladder/Step Ladder	8 ft.
Sledgehammer	6 to 10 lbs. Double Sided
Impact Wrench with Socket	5/8" & 3/4"
Stick Welding Machine	For Welding Sections of Restraining Plates
Angle Grinder	For Cutting Asphalt & Concrete
Hammer	General Purpose
Spray Paint	To Make Cutting Patterns
Restraining Plate Alignment Tool (Provided by Systems)	To Position Restraining Plates for Welding
Snow Plate Template (Provided by Systems)	Used With Spray Paint to Mark Cutting Patterns

### Safety practices:

Post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before installation has been completed

### Installation Preview:



## WARNING

Qualified technicians must perform welding. The welding of galvanized steel parts produce toxic gases. Do not inhale. A 30-minute fire watch is required unless otherwise requested. Hot work permits will be required on some sites.

**Note:** When installing electrical controls in a temperature-controlled environment, the installer must determine an appropriate means to isolate/prevent thermal and vapor transfer through electrical conduit, where conduit routing crosses temperature zones. Systems, LLC is not responsible for any damage due to moisture collecting inside the control panel caused by improper isolation/prevention of thermal and vapor transfer through the conduit. Refer to Tech Service Bulletin 19-053 for more information. In case of light signals or alarm, the operator must immediately notify his superior or the person in charge. Maintenance or servicing operations may be performed only by authorized personnel. Follow the authorized locking and tagging instructions.

Service and maintenance of the wheel restraint system are reserved for authorized personnel only.

Installers and/ or Owner's/ User's are responsible for the installation and placement of product placards. Placard must be in plain view of dock leveler and/ or vehicle restraint operations. Suggested placement of placard is near control box, attached to the wall or electrical conduit using a cable tie. If the equipment does not have a control panel, mount the placard on the wall to the immediate left of leveler at eye level.

# INSTALLATION

## Wall Plate

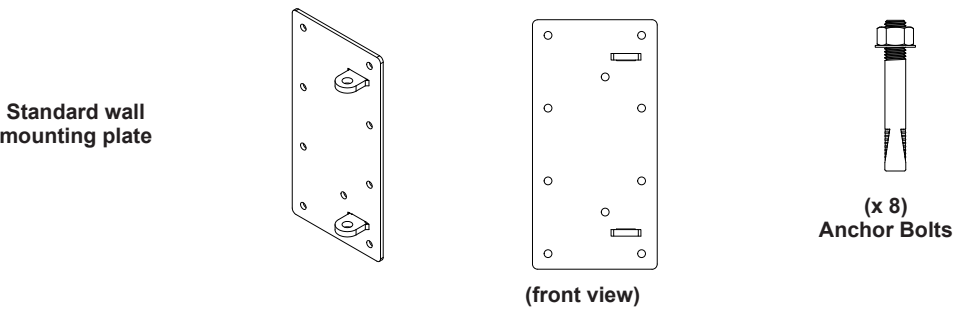


Figure 5

Make sure that all parts and tools listed below are available prior to installation.

Parts (Supplied by Systems)	Required Tools
Wall Mount Plate	• Measuring Tape • Hammer Drill With 5/8" Masonry Bit • Level • Combination Wrench Set • Hammer
5/8" x 4" Anchor Bolts	
Junction Box	
Cable Protection Conduit	

**Position wall mounting plate:**

1. Position the wall mounting plate eyelets (**A**) at the distance referenced on the site survey, measured from the center line of the dock leveler. See **figure 6**.
2. Position the wall mounting plate so that the bottom edge of the plate matches the site survey (typically, this distance is 3").
3. Distance from centerline of dock to wall plate pivot is typically 72". Reference Site Survey to confirm details, or contact Technical Service with questions. Spacing can deviate +4" or -1".
4. Mark the position of the wall plate for reference.
5. Mark the position of the junction box (**B**) at the distance required.

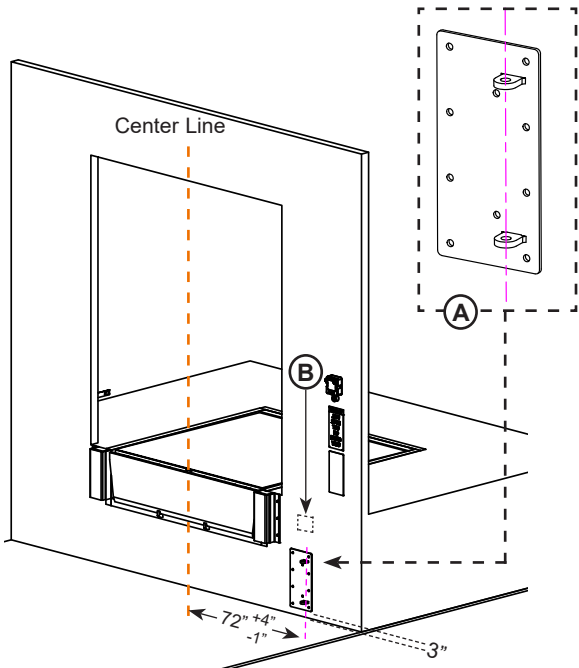


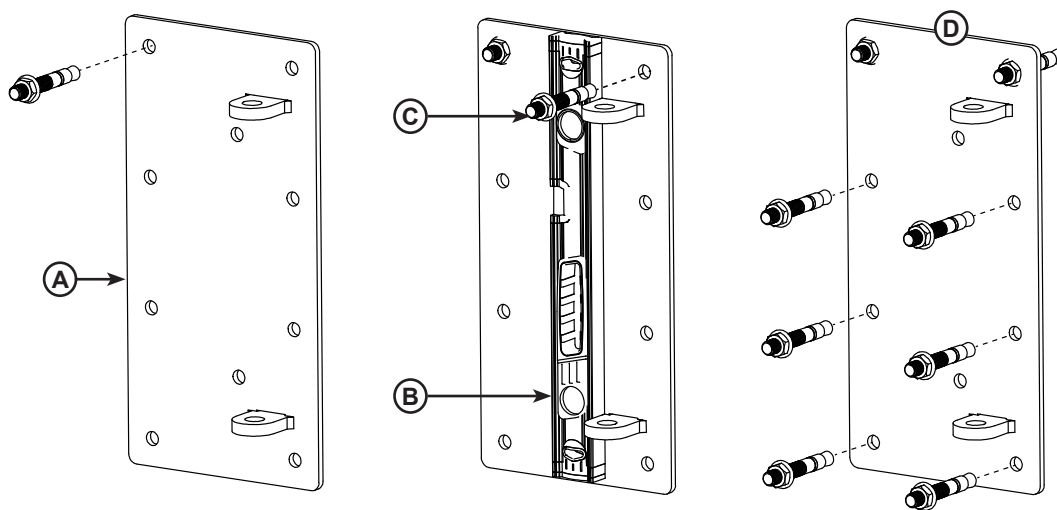
Figure 6

**! WARNING**

Two installers are required for this step.

## **Mount the wall mounting plate:**

1. Starting with an upper mounting hole, use a hammer drill and a 5/8" masonry bit to drill the first anchor hole. Install an anchor bolt in the first hole **(A)** without overtightening. See **figure 7**
2. Verify the plate eyelets are level **(B)**, check the vertical positioning of these eyelets (not the edges of the plate) and mark a hole in the opposite corner. Drill and install a second anchor bolt **(C)**.
3. Drill the remaining holes and install remaining anchor bolts **(D)**. Snug the anchors with a socket wrench. Do not fully torque.
4. Verify eyelets remain level, then tighten all the anchors.



**Figure 7**

**Note:** A minimum of four (4) anchor bolts must be installed to ensure proper mounting of the wall mounting plate at all times. The wall mounting plate has 10 holes to provide alternative anchor locations when an obstruction is encountered in the building wall.

# INSTALLATION

## Articulating Arm Assembly

Tools listed below will be required.

Parts (Supplied by Systems)	Required Tools
Articulated Arm	• 1-1/2" Wrench

1. Position articulated arm between the wall mounting plate's eyelets.
2. Insert 1" x 20" bolt through eyelets on arm and wall mount. Insert the lock washer, and secure the bolt with nut. Ensure arm pivots freely.
3. Route pre-wired communication cable from the articulated arm to the iDock controller through the junction box.

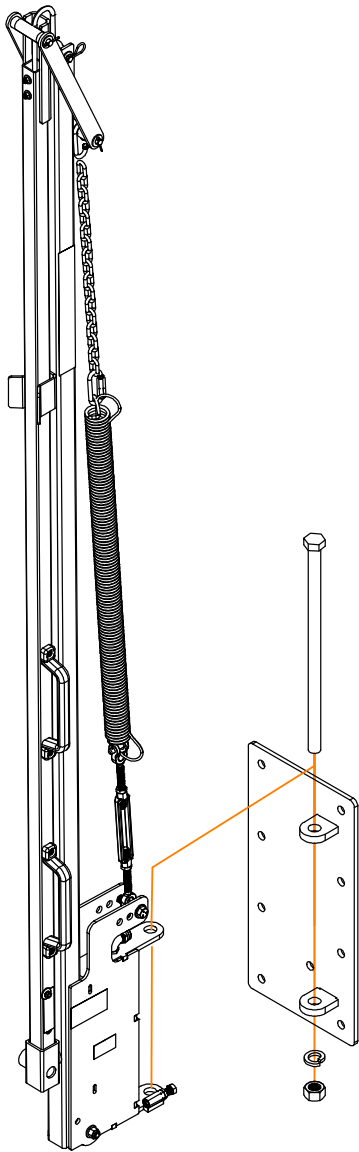


Figure 8

## Mounting the Chock

Tools listed below will be required

Parts (Supplied by Systems)	Required Tools
Wheel Chock	• 1-1/16" Wrench/Socket • 7/16" Wrench/Socket

### Mount the chock on articulated arm:

1. Install chock by sliding chock axle into the tube on the lower front-arm.
2. Secure it with the locknut.

**IMPORTANT:** Do not overtighten the locknut. Operation of the UXL may be affected. The chock may not align properly with the ground plates if the nut is over tightened.

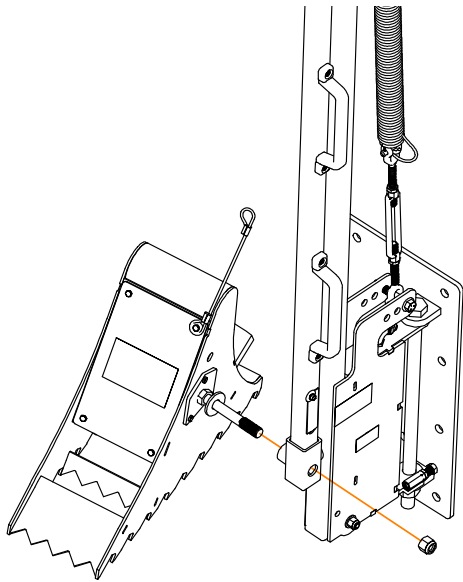
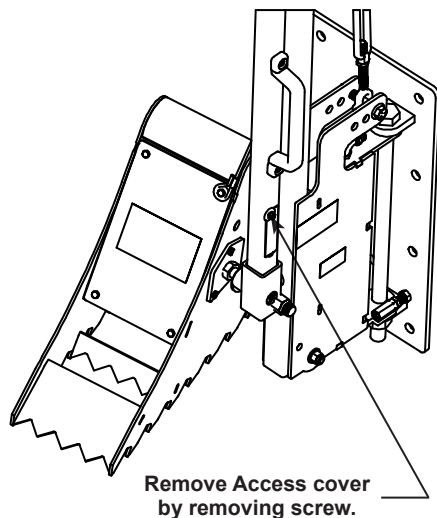


Figure 9



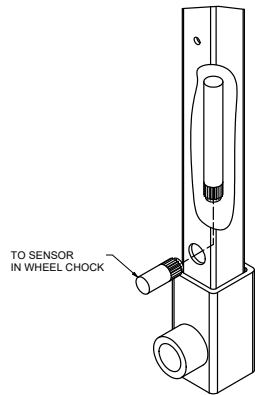
## Connect the sensor cable:

1. Remove access cover on front-arm by unscrewing the screw and flat washer.



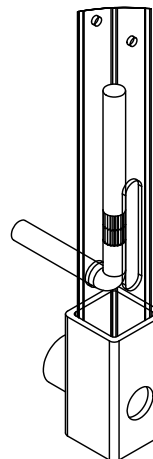
**Figure 10**

2. Connect the wheel chock sensor cable to the articulated arm cable.
  - a. Align the connectors from both the chock and the front-arm then connect them together.



**Figure 11**

- b. As the resistance develops, screw them together (at least two full turns are required to ensure a tight connection).



**Figure 12**

3. Push the connectors back into the front-arm.

**IMPORTANT:** Leave enough cable length between the arm and the chock to prevent the cable from limiting the rotation and movement of the chock.
4. Reinstall the electrical cable access cover by aligning the end of the safety cable with the hole in the access cover. See Figure 10. Secure cover with the screw and washer removed earlier.

Continued on page 16.

# INSTALLATION

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## Articulating Arm Adjustment Notes:

Loading/unloading operations can create vibrations, causing the chock to move away from the vehicle wheel and off the ground plate.

To mitigate this movement, the pivot weldment is equipped with an adjustment bolt to hold the chock in position once the articulated arm is extended.

Note that this adjustment is factory-set. However, adjustments can be made if necessary. Loosen jam nut and turn the adjusting bolt clockwise or counterclockwise to achieve correct operation.

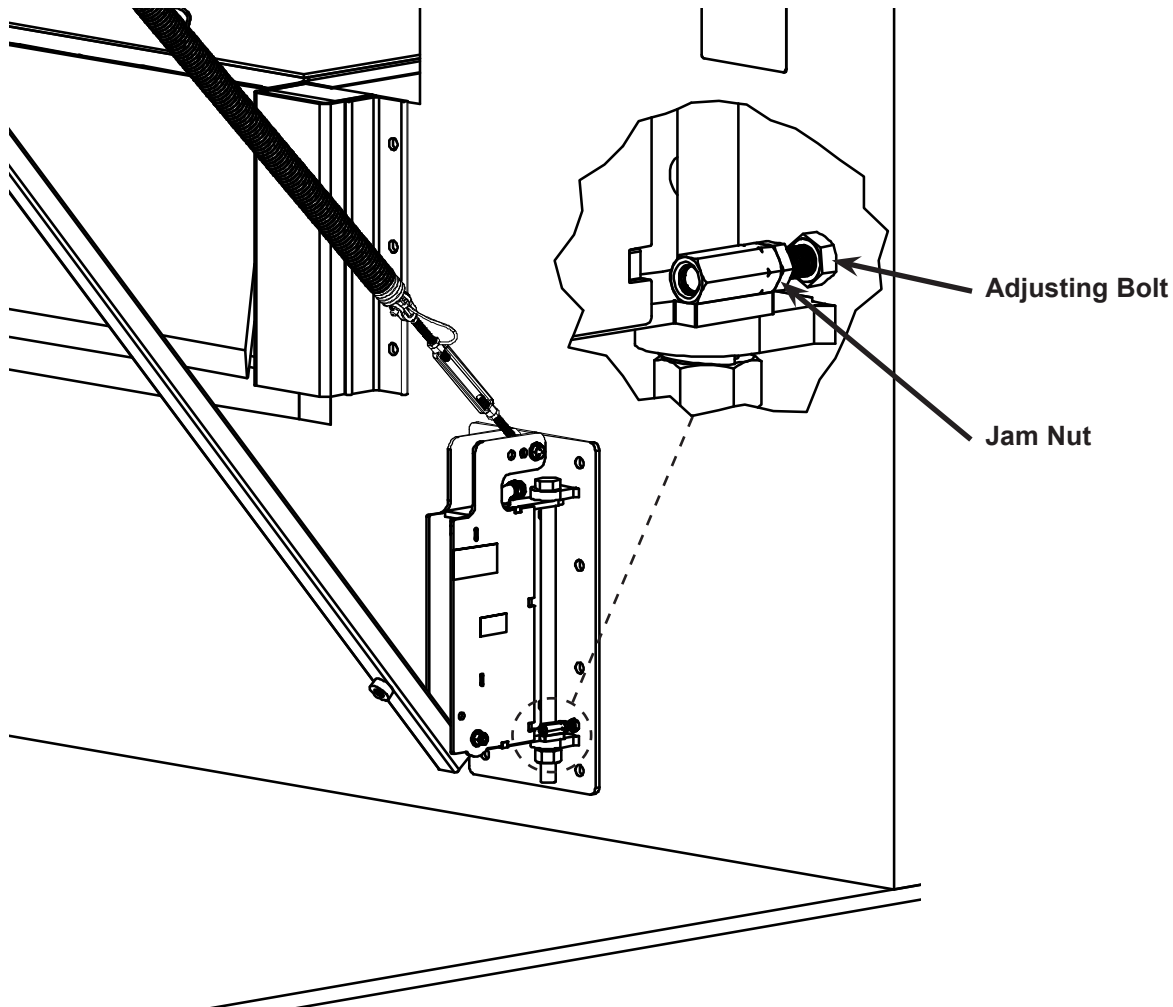


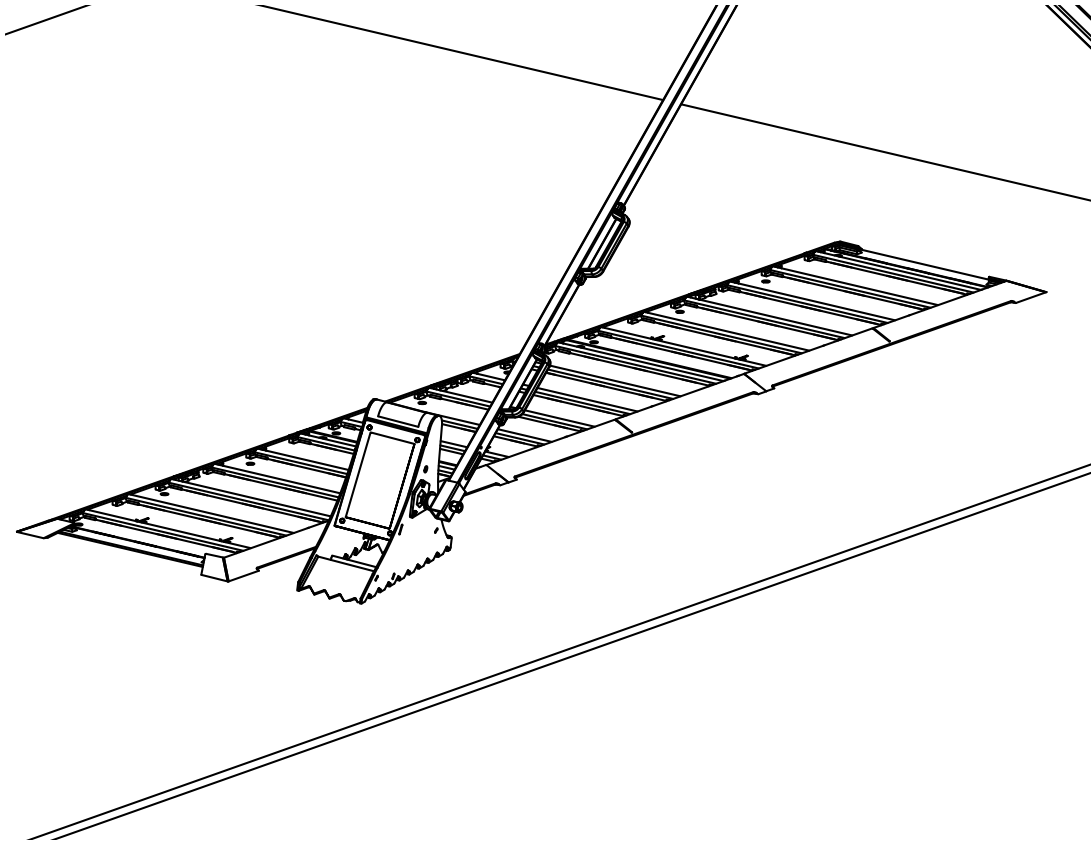
Figure 13

## Adjust Spring Tension

Spring tension on the articulated arm is important for proper operation. If the spring tension is too loose, chock operation will be difficult and the arm will not retract. If the spring is too tight, the arm will be difficult to position and the chock may not stay in position on the ground plate.

For proper spring tension adjustment, follow these steps:

1. Position the chock on the furthest ground plate. See **figure 14**.



**Figure 14**

2. Adjust the spring tension with the turnbuckle, shown in **figure 15** on page 21. Loosen the jam nuts then adjust the turnbuckle to the desired tension. The arm should retract towards the wall within 5 seconds or less.

# INSTALLATION

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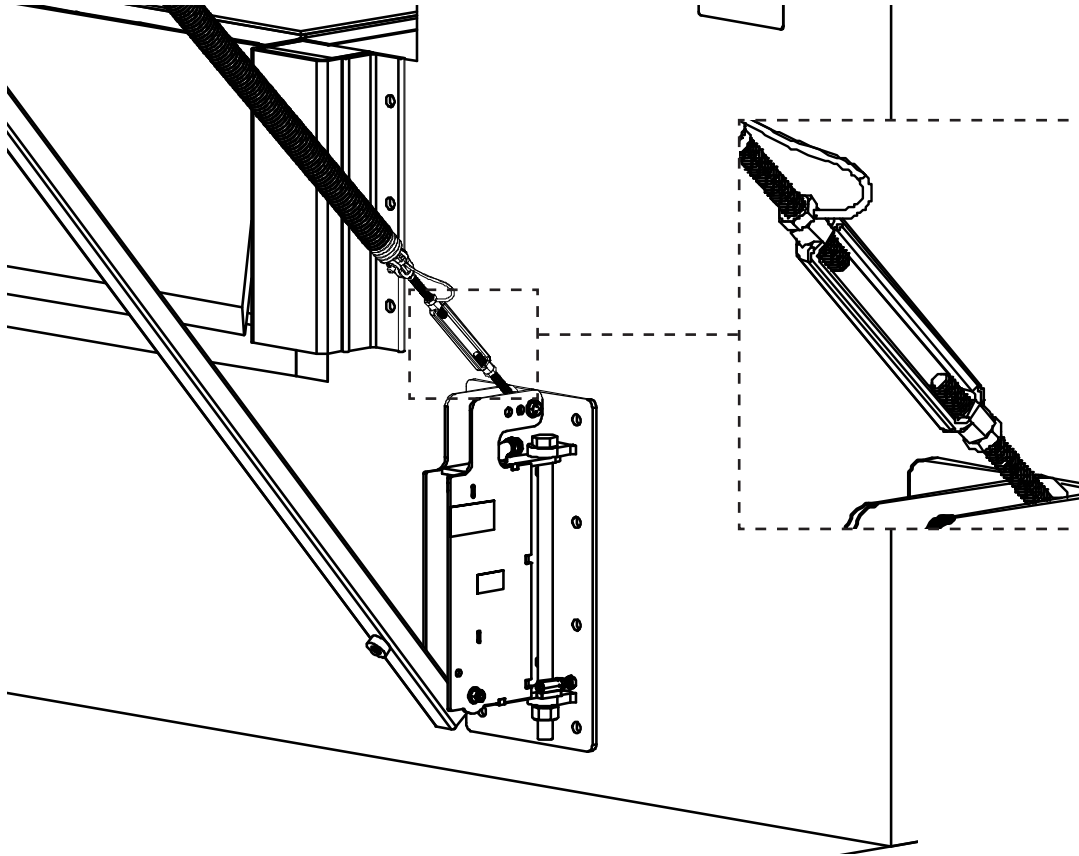
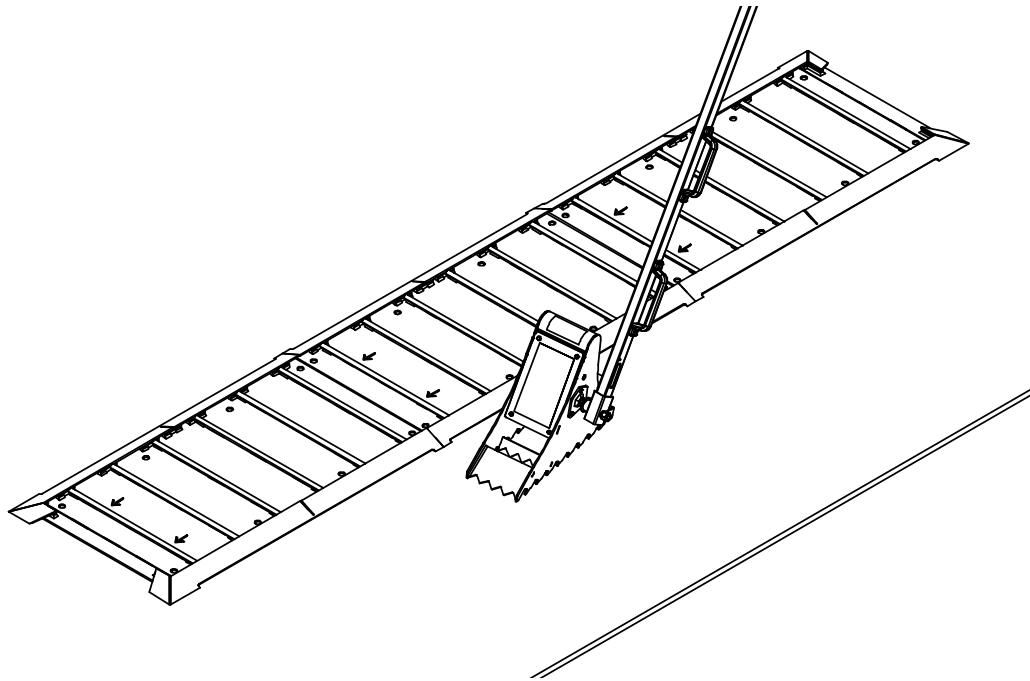


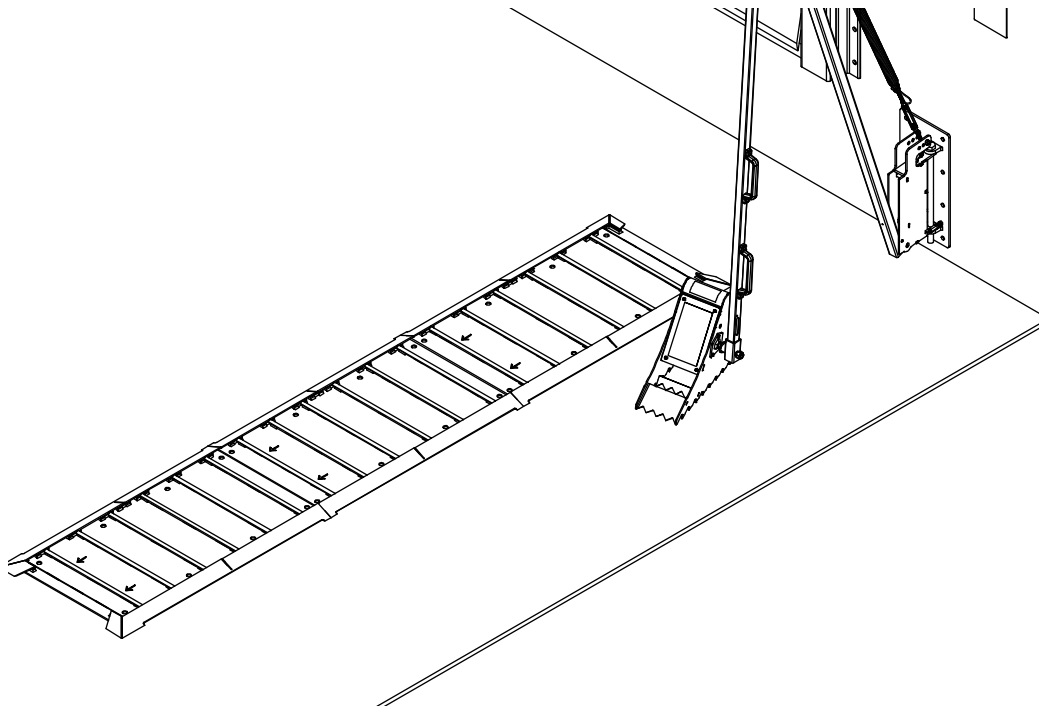
Figure 15

3. Test retraction with the chock on the second restraining plate. Check that the arm retracts towards the wall in 5 seconds or less. Continue to adjust the spring tension with the turnbuckle if necessary. See **figure 16** on page 20.



**Figure 16**

4. Verify retraction from the closest ground plate. See Figure 16. Ensure the arm retracts towards the wall in 5 seconds or less, if not, adjust spring tension with the turnbuckle.



**Figure 17**

5. When correct operation is achieved, retighten the jam nuts on the turnbuckle.
6. Perform a final check next to all ground plates and confirm that the chock retracts correctly. The UXL should be easy to use in both directions (extended and retracted.)

# INSTALLATION

## Post Mount Installation Overview

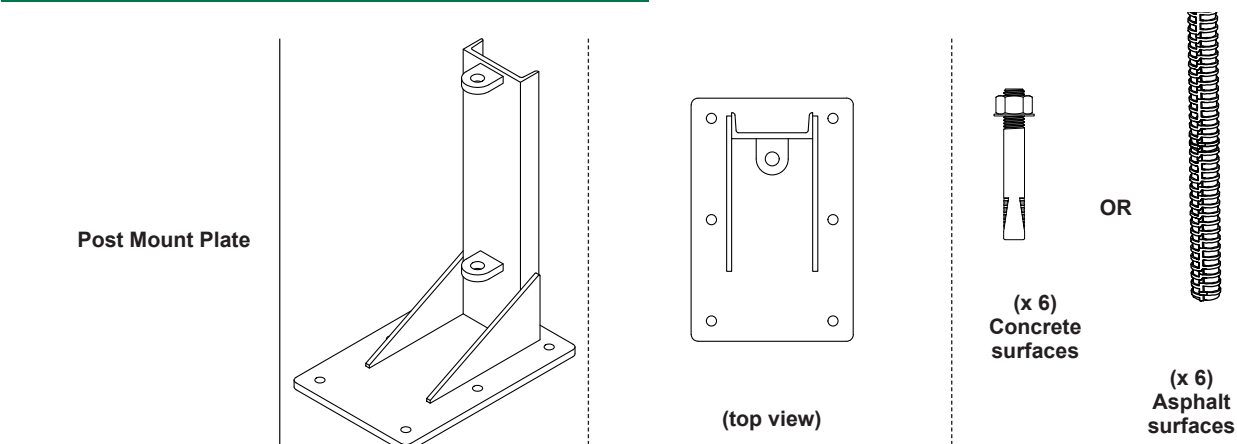


Figure 18

Tools listed below are required for installation. **If rebar is needed for an asphalt installation, it must be sourced by installer.**

Parts (Supplied by Systems)	Required Tools
Post Mount Plate	<ul style="list-style-type: none"><li>• Measuring Tape</li><li>• Hammer Drill With 5/8" Masonry Bit</li><li>• Impact Wrench (3/4" Socket)</li><li>• Level</li><li>• Welding Equipment</li><li>• Anti Rust Paint</li><li>• Sledge Hammer</li><li>• Combination Wrench Set</li><li>• Hammer</li></ul>
5/8" x 4" Anchor Bolts (for concrete installations)	
5/8" x 15" Rebar Stock (not included)	
Junction Box	
Cable Protection Conduit	

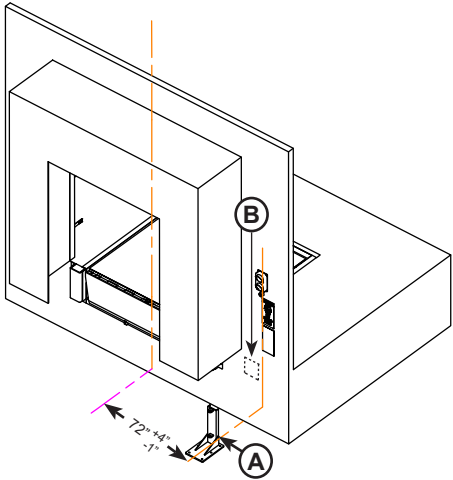


Figure 19

### Pre-Installation Notes:

Refer to site survey for prescribed mounting location. This location will vary based on features of the dock layout and spacing between components. Consult with Technical Services if you have questions.

### Position the post:

1. Position center of mounting post **(A)** at the distance shown on the site survey, which is measured from the center of the dock leveler and also from the building face. See **figure 19**. This dimension is typically 72". Reference Site Survey to confirm details, or contact Technical Service with questions. Spacing can deviate +4" or -1".
2. Mark the position of the post on the ground.
3. Mark the position of the junction box **(B)** at the distance specified on the specific layout plan.

### Anchor the post (concrete):

1. Using the holes in the post **(A)** base as a drilling guide, drill holes 4-1/4" deep minimum using a hammer drill and 5/8" masonry bit.
2. Place anchor bolts in the post base plate and hammer them into the drilled holes. Tighten using 3/4" impact wrench.

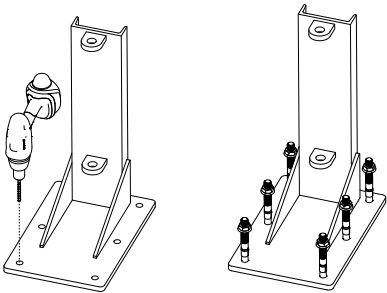
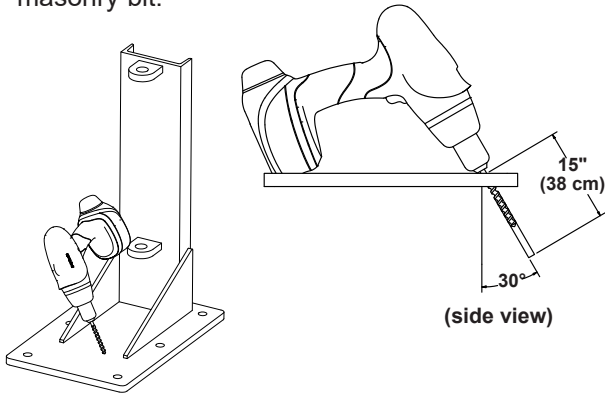


Figure 20

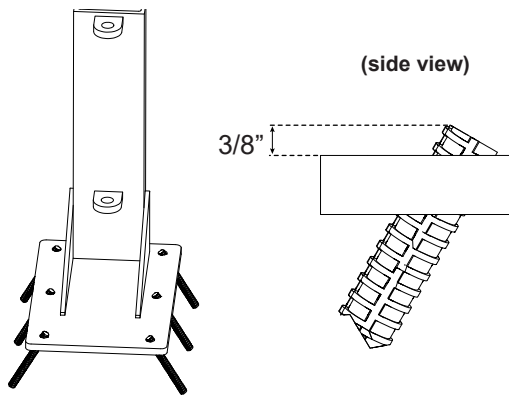
## Anchor the post (asphalt):

1. Using the holes in the post (A) base as a drilling guide, drill holes 15" deep minimum at a 30° angle from vertical axis using a hammer drill and 5/8" masonry bit.



**Figure 21**

2. Place the steel reinforcing bars into the base plate of the post. Hammer them into the drilled holes to within 3/8" of the plate. Fillet weld all reinforcing bars to the base plate and then apply a coat of rustproof paint of the cold galvanizing type onto the welds.



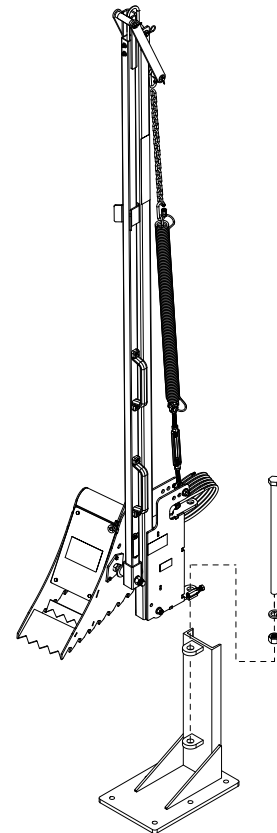
**Figure 22**

## Articulating Arm Installation:

Tools listed below will be required.

Parts (Supplied by Systems)	Required Tools
Articulated Arm	• 1-1/2" Wrench

1. Position articulated arm between the ground mounting plate's eyelets.
2. Insert 1" x 20" bolt through eyelets on arm and ground mount. Insert the lock washer, and secure the bolt with nut. Ensure arm pivots freely.
3. Route pre-wired communication cable from the articulated arm to the iDock controller through the junction box. See **figure below**:



## Mounting the chock:

[See page 15]

## Articulating arm adjustment:

[See pages 17-19]

## Adjust spring tension:

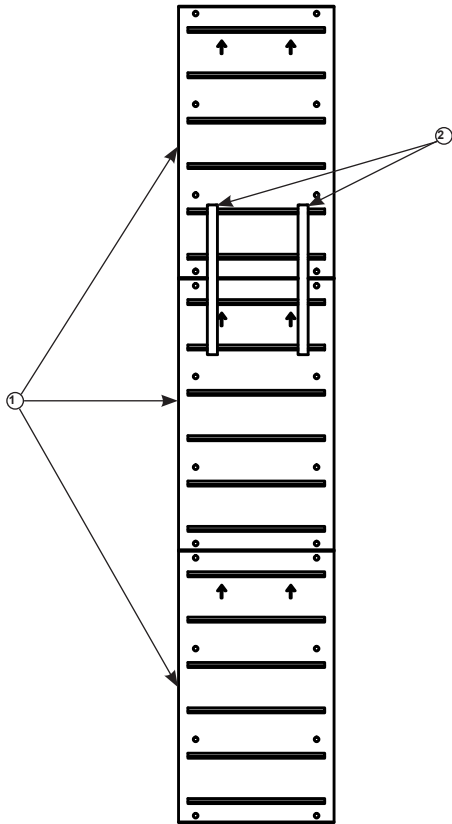
[See pages 20-22]

# INSTALLATION

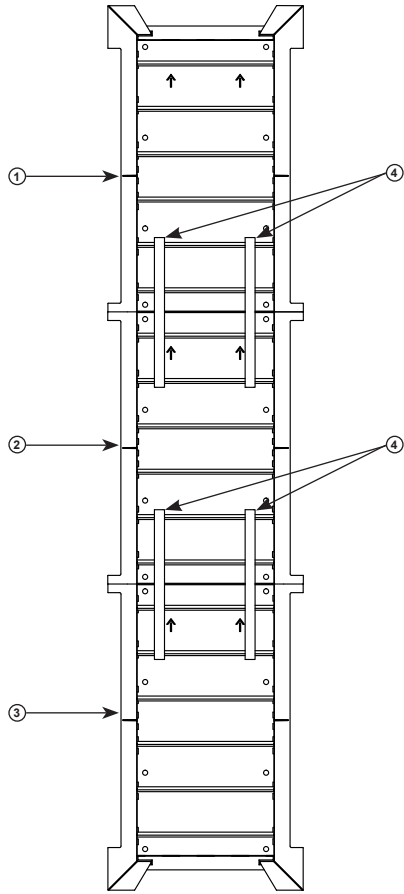
## Standard Ground Plate Installation

The standard ground plate can be installed using the instructions found on pages 27-28. The instructions related to cutting/notching the concrete on pages 24-26 are only for the Winter Plates. These have specially formed edges to aid in snow removal and require more prep before anchoring.

Standard Ground Plate	
Item	Description
1	Wldt, Std Ground Plt, UXL
2	Alignment Bracket, Grnd Plt, UXL (Install Only)



Winter Ground Plate	
Item	Description
1	Wldt,Winter Gnd Plt,End A,UXL
2	Wldt,Winter Gnd Plt,Mid,UXL
3	Wldt,Winter Gnd Plt,End B,UXL
4	Alignment Bracket, Grnd Plt, UXL (Install Only)





## Winter Plate Installation

### **WARNING**

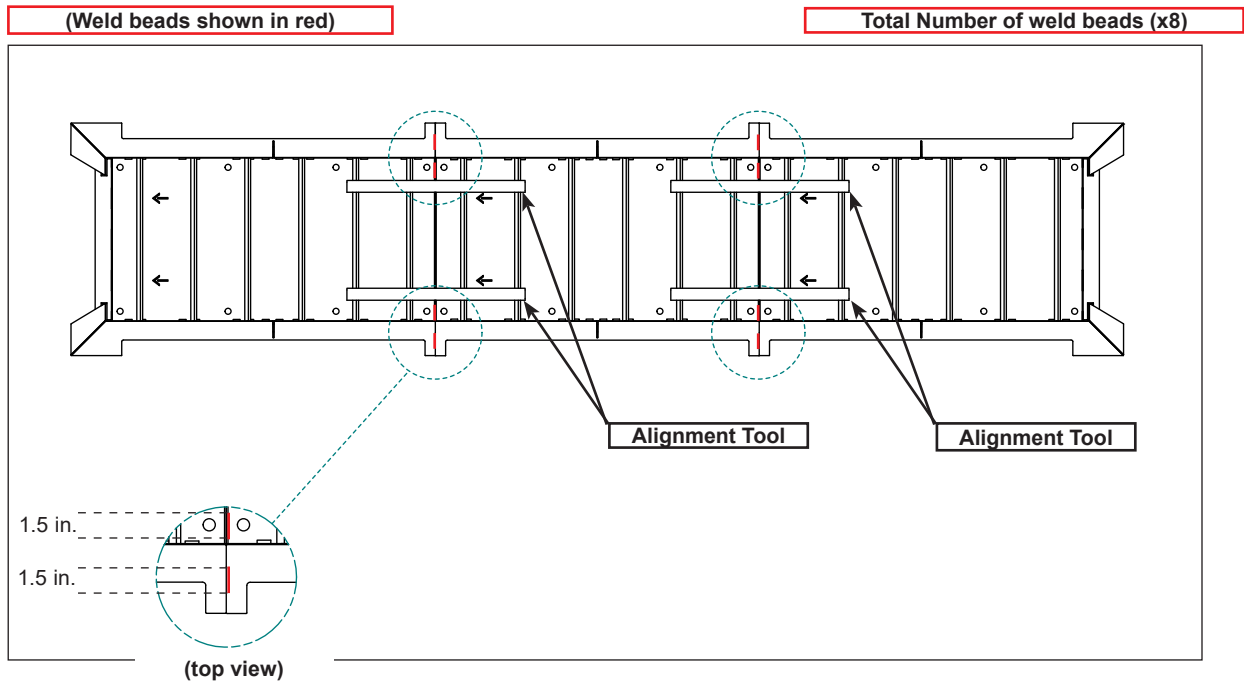
Qualified technicians must perform welding. The welding of galvanized steel parts produce toxic gases. Do not inhale. A 30-minute fire watch is required unless otherwise requested. Hot work permits will be required on some sites.

Tools listed below are required for installation.

Parts (Supplied by Systems)	Required Tools
Winter Plates (Qty 3)	<ul style="list-style-type: none"> <li>• Hammer Drill</li> <li>• Masonry Drill Bit (5/8")</li> <li>• Scaling Chisel</li> <li>• Angle Grinder</li> <li>• Impact Wrench</li> <li>• Welding Equipment for Galv. Steel</li> <li>• Anti-Rust Paint – Cold Galvanizing</li> <li>• Sledgehammer</li> <li>• Level (24")</li> <li>• Hammer</li> <li>• Spray Paint</li> <li>• Restraining Plate Alignment Tool (Supplied by Systems)</li> <li>• Snow Restraining Plate Template (Supplied by Systems)</li> </ul>
5/8" x 4" Anchor Bolts (for concrete installations)	
5/8" x 15" Reinforcing Bars (for asphalt installations)	

### Install the winter ground plates:

1. Mock up the ground plates and the distance between each section, using the alignment tools provided. See **figure 23**.
2. Make sure the ground plates are level and resting properly on the concrete or asphalt and will not get snagged by any equipment passing over them.
3. If the ground plates are not level with the approach, use a hammer drill with a chisel bit to eliminate high spots on concrete or asphalt.
4. Move the plates aside and continue with the steps on page 25.



**Figure 23**

# INSTALLATION

## Position the Winter Plate Template:

1. Position the center of the winter template or standard plate at the specified distance from the center line of the dock "A". For most applications, this dimension is 44." If your application requires a different location, please speak with Technical Services.
  2. Position the winter template at the specified distance from the dock bumper face to the leading edge of the template. For most applications, this dimension is 30". If your application requires a different location, please speak with Technical Services. For the standard plate, this dimension is 44" from the bumper to the first notch in the plate.
  3. Ensure winter plate templates are square with dock face.
  4. Check alignment of template before marking cutting patterns.
  5. Weld the restraining plate sections together using a stick welding machine. See **figure 23** on page 24.
- IMPORTANT:**
- Requires four (4) weld beads between each restraining plate: Two (2) between the body of the plates and two (2) between the countersunk tabs of the plates.
  - Typical weld bead is 3/16" x 1-1/2" long.

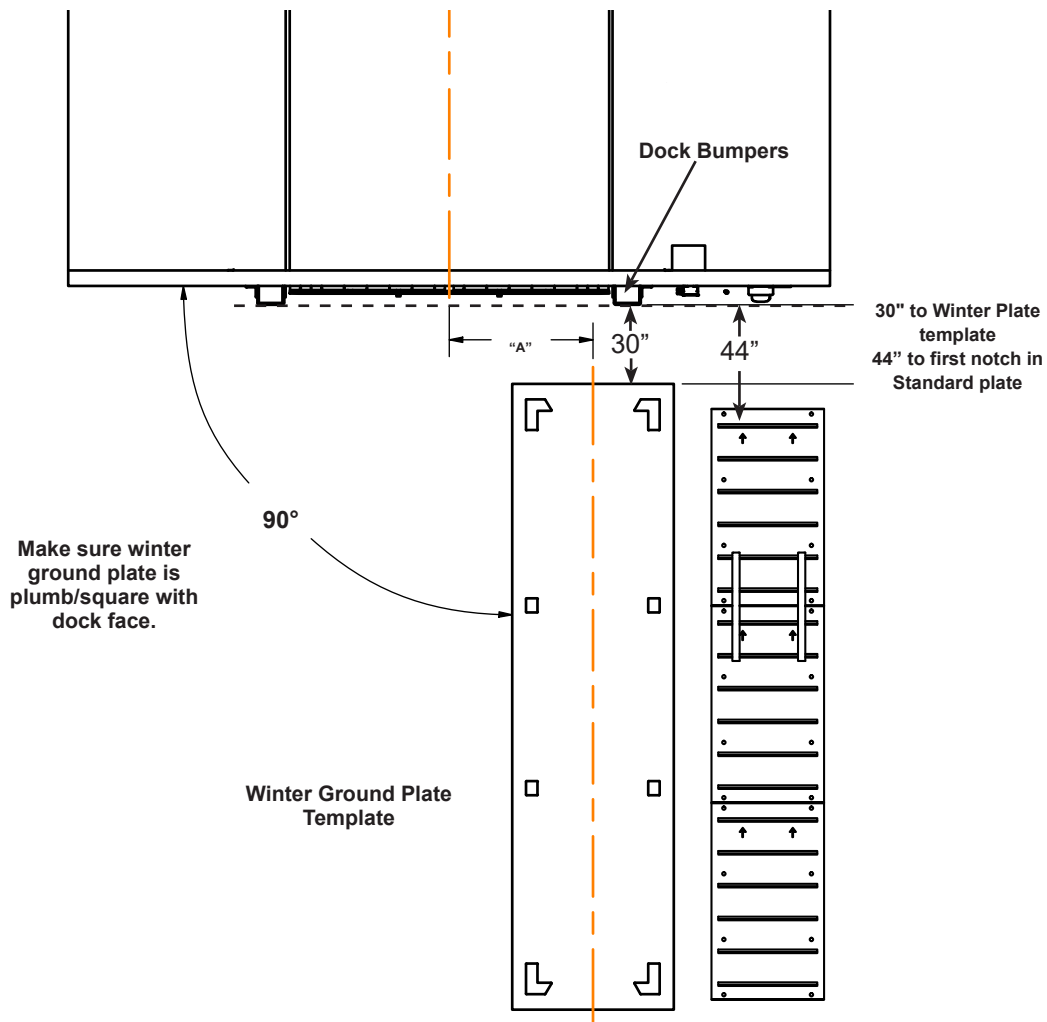


Figure 24

## **Surface Preparation - Winter Plates:**

1. Once the template is positioned on the ground, use spray paint (or wax pencil if the ground is wet) to mark the cutting pattern around the template cut-outs.
2. Remove the template.
3. Use a diamond cutting disc to cut 1-1/2" deep along the lines. Cuts should not extend beyond the outline.
4. Use a hammer drill with chisel bit to chip the concrete/asphalt from the inside out to a depth of 1-1/2".  
Make sure installation area is cleaned of all debris on the ground after concrete/asphalt has been chipped.
5. Position the winter plates on the ground and make sure the legs are properly positioned in the cut-out sections. Adjust cuts if necessary for accurate fitment.

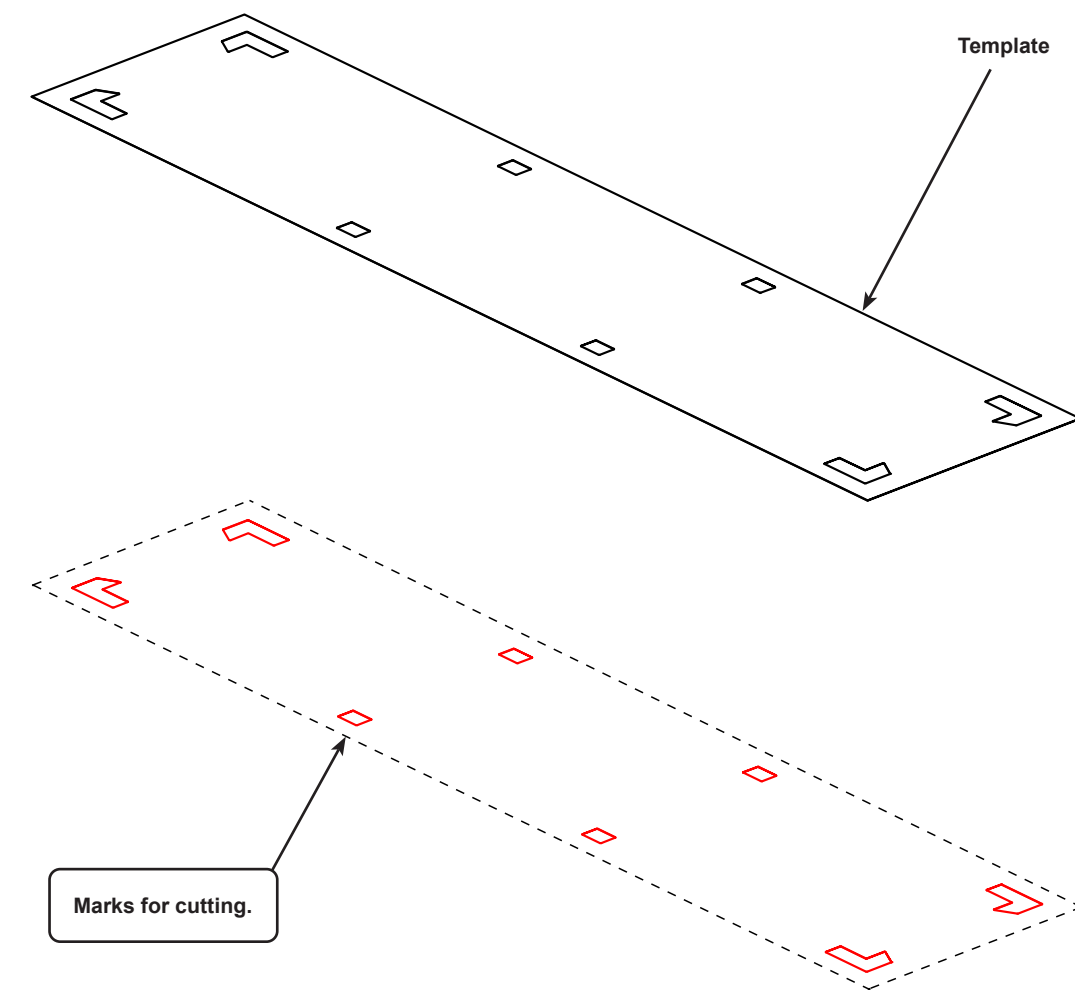


Figure 25

# INSTALLATION

---

## Anchor the ground plates:

### Install on concrete:

1. Drill two (2) holes in adjacent corners of ground plate, then install (2) anchor bolts in the same drilled holes to hold the plates in place. See **figures 26 and 27**.

**Note:** Use a vacuum or blower to clear the holes before installing anchors.

2. Using the holes on each plate as a guide, drill holes a minimum of 4-1/4" deep, using a hammer drill and a 5/8" masonry drill bit.
3. Install the 5/8" x 4" anchor bolts and hammer them into the drilled holes.
4. Now that the restraining plates are fastened in place, drill the remaining holes, and place the remaining anchors repeating steps 2 and 3.
5. Tighten all restraining plate bolts using an impact wrench.

**IMPORTANT:** Torque bolts to 81 N-m (60 ft-lbs.)

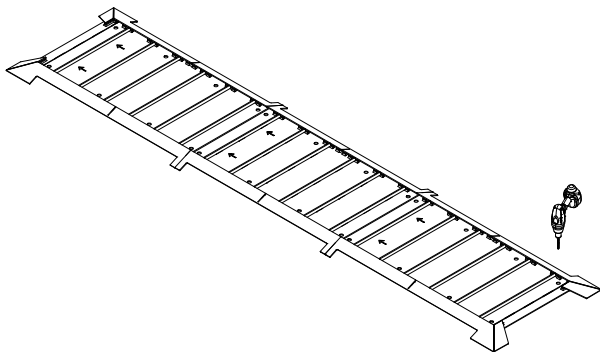


Figure 26

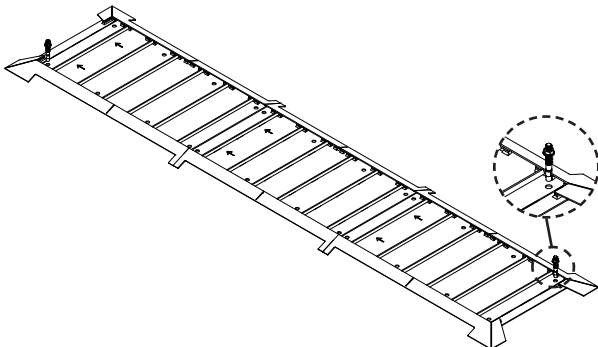


Figure 27

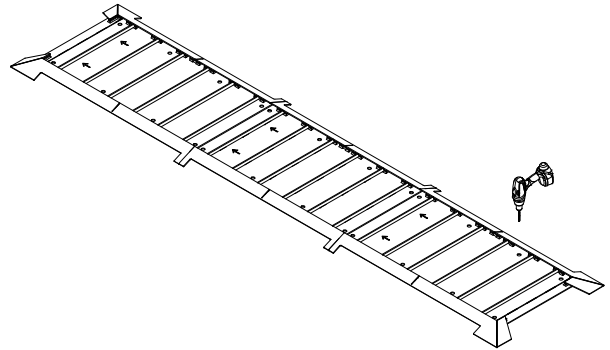


Figure 28

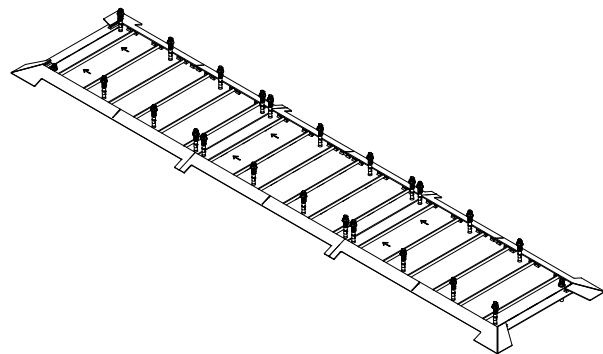


Figure 29

# INSTALLATION

## Install on Asphalt:

1. Drill two (2) holes in adjacent corners of ground plate, then install (2) anchor bolts in the same drilled holes to hold the plates in place. See **figures 32-34**.
2. Using the holes on each plate as a guide, drill holes a minimum of 15" deep at a 30-degree angle. Use a hammer drill and a 5/8" masonry drill bit.

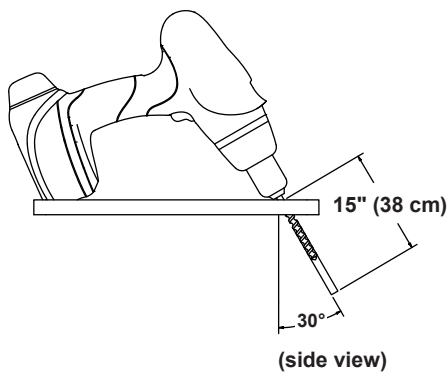


Figure 30

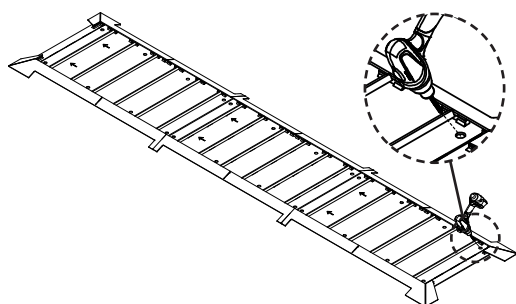


Figure 31

3. Position 5/8" x 15" steel rebar, and hammer them through the drilled holes. Leave 3/8" above the ground plates. See **figure 35**.

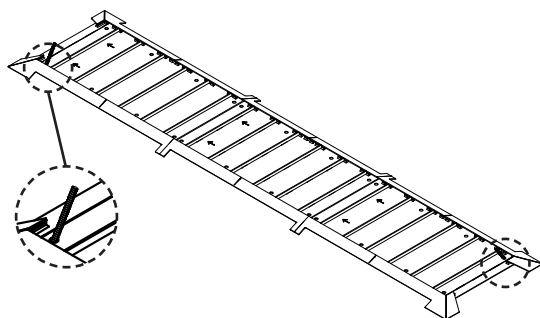


Figure 32

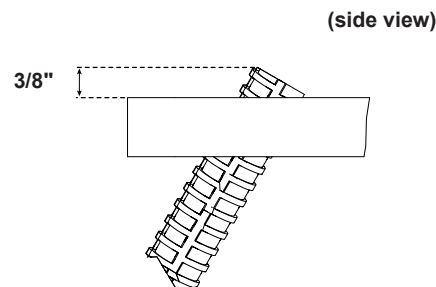


Figure 33

4. With ground plates secure, drill remaining holes, and position rebar by following the same steps described above.

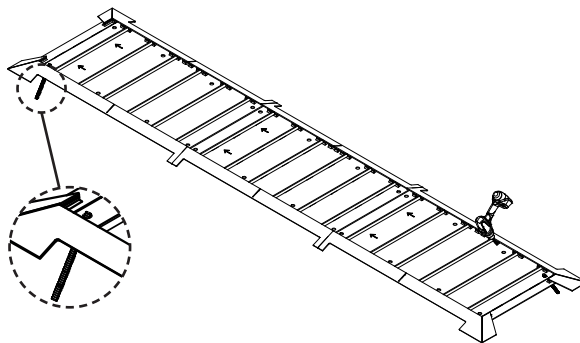


Figure 34

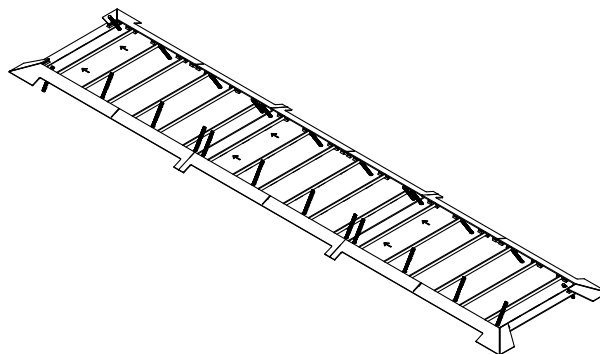


Figure 35

5. Fillet weld all rebar to the ground plates.  
**IMPORTANT:** Apply a coat of rustproof, cold galvanizing paint on the welds.

# INSTALLATION

## Electrical Installation

### Install Control Panel

#### Installing of the control box:

Make sure that all parts and tools listed below are available prior to installation. Refer to the electrical schematic when making connections.

Parts (Supplied by Systems)	Required Tools
Control Box	• Ladder (6.5 ft.) • Knockout Punch Tool (7/8" & 1-1/8") • Drill • Phillips Drive Screwdriver
Junction Box	
Cable Protection Conduit	

The control box must be installed inside the loading dock, on an inside wall near the dock door. It can be installed on either side of the dock door, based on the specific layout plan.

In addition, the control box must be clearly visible and easily accessible by authorized personnel only.

## WARNING

Qualified electricians must do electrical installation and connections (120V or higher). Accidents can result in injury or death.

1. Position the control box according to your site survey. An example is shown below.

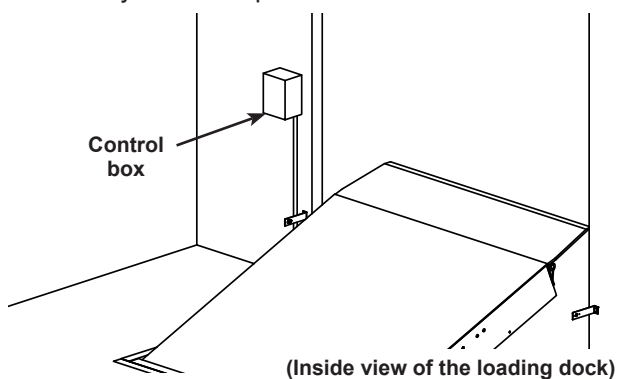


Figure 36

2. Secure the control box and junction boxes to the wall using mounting hardware.
3. Connect all sensor wires (chock, signal lights, door, etc.) from the junction boxes to the terminals inside the control box.

4. Perform a complete verification sequence of the system.

## CAUTION

All electrical work — including the installation of the disconnect panel, control panel, and final connections to the pit junction box — must be performed by a certified electrician and conform to all local and applicable national codes.

#### IMPORTANT:

- The wiring diagrams indicating electrical connections are included with the order. Contact Technical Services if needed.

### Install Outside Light Assembly and Signs

Make sure that all parts and tools listed below are available prior to installation.

Parts (Supplied by Systems)	Required Tools
Signal Light with Alarm	• Ladder (6.5 ft.) • Hammer Drill • Masonry Drill Bit (7/8") depending on wall material. • Phillips Drive Screwdriver • Drill
Wall Signboard	
Cable Protection Conduit	

#### Outside light assembly:

1. Position the set of signal lights against the outside wall of the loading dock.
2. Drill a hole through the exterior wall behind the marked location. Use a hammer drill with a hole saw or masonry drill bit, depending on wall material.
3. Place the signal lights on the outside wall to cover the drilled hole.
4. Use the four (4) pre-drilled holes, located in the corners on the signal lights housing, as a drilling guide. Then mark their center and drill four (4) holes.
5. Run the pre-assembled cable through the drilled hole and to the control box.
6. Secure the traffic lights with alarm to the wall using the supplied hardware.
7. From inside the loading dock, connect the cable wires to the main circuit board located inside the control box.

## Signs:

Install the exterior signs, below the signal lights, at a height visible to the driver of the vehicle (this must be determined on site). See **figure 19** for example.

## Install Outside Junction Box

1. Position J-Box against the outside wall, ideally close to the center of the articulated arm or in a more suitable location. Mark the location on the wall.
2. Drill a hole through the outside wall behind the marked location. Use a drill with a hole saw or a 7/8" masonry drill bit, depending on wall material.
3. Secure the junction box to the wall.
4. Run the communication cable from the articulated arm through the drilled hole and to the iDock controller.

**Note:** Seal all holes through exterior wall when wiring is complete, to maintain a vapor barrier.

5. Reference wiring diagrams provided for this application. Contact Technical Services if drawings are needed.

## DANGER

Unless the dock leveler is equipped with a tethered remote, two people are required to engage the maintenance prop: one person to operate the unit, the other person to engage the maintenance prop.

In addition, it is recommended and good safety practice to use an additional means to support the dock platform and lip anytime when physically working in front of or under the dock leveler. This additional means may include, but is not limited to a boom truck, fork truck, stabilizing bar or equivalent.

## WARNING



Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the unit before maintenance is complete.

## Install Optional Sensors

### Install the dock leveler sensor:

Tools listed below are required for installation.

Parts (Supplied by Systems)	Required Tools
Dock Leveler Sensor with Mounting Bracket & Cable	<ul style="list-style-type: none"> <li>• Ladder (6.5 ft.)</li> <li>• Measuring Tape</li> </ul>
Cable Protection Conduit	<ul style="list-style-type: none"> <li>• Drill</li> <li>• Socket Set</li> <li>• Phillips Drive Screwdriver</li> </ul>

1. Make sure the dock leveler is raised and maintenance prop is positioned behind header plate. See **figure 39**.
2. Use of an additional means to support the dock leveler is recommended.

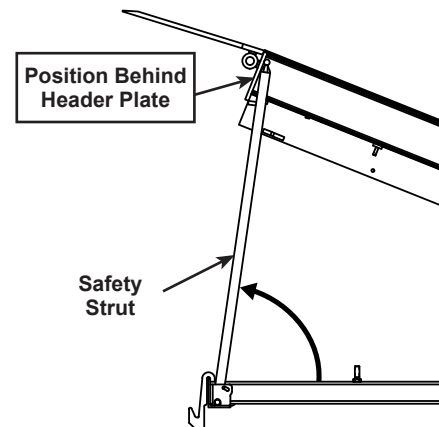


Figure 37

## WARNING

A hard hat or other applicable head protection should always be worn when working under or around a dock leveler.

Always stand clear of platform lip when working in front of the dock leveler.

3. Choose a mounting location before starting the installation where the sensor can be activated when the dock leveler is in the raised position.

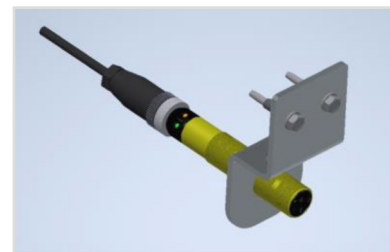
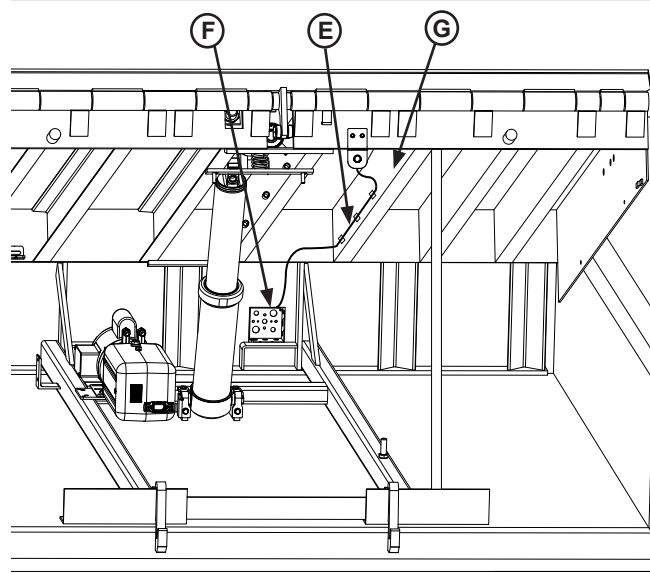
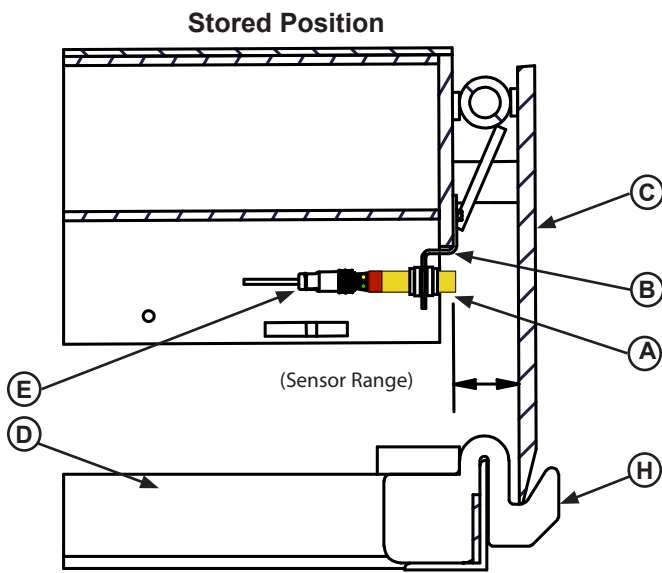


Figure 38 - Leveler Stored Sensor

# INSTALLATION



A— Photosensor  
B — Mounting Bracket

C — Lip Plate  
D— Frame

E— Cable  
F—Pit J-Box

G—Beam  
H—Lip Keeper

**Figure 39**

**Note:** Position the sensor near the center of the leveler header plate, away from any hydraulic/mechanical equipment.

1. Install the photosensor (A) into the mounting bracket (B) using the plastic sensor nuts. Make sure that the sensor will not interfere with the lip plate (C) or frame (D), or the sensor could be damaged.
2. Connect the cable (E) to the sensor. See **Figure 5**.
3. Verify the cable's path to the junction box (F) at the rear of the pit. See **Figure 6**. Evenly distribute the included cable tie mounting bases on the platform beam (G) next to the cable's path.

**Note:** Clean the beam before attaching mounting bases to ensure proper adhesion.

4. Secure the cable to the mounting bases using the included cable ties.



## Placard Installation Instructions

1. Equipment Placards provide concise equipment operation information and should be available near the equipment for operators to reference.
2. Installers and/or owners/users are responsible for the installation and placement of product placards.
3. Placard must be in plain view of dock leveler and/or vehicle restraint operations.
4. Suggested placement of placard is near control box, attached to the wall or electrical conduit using a cable tie. If the equipment does not have a control panel, mount the placard on the wall to the immediate left of leveler at eye level.

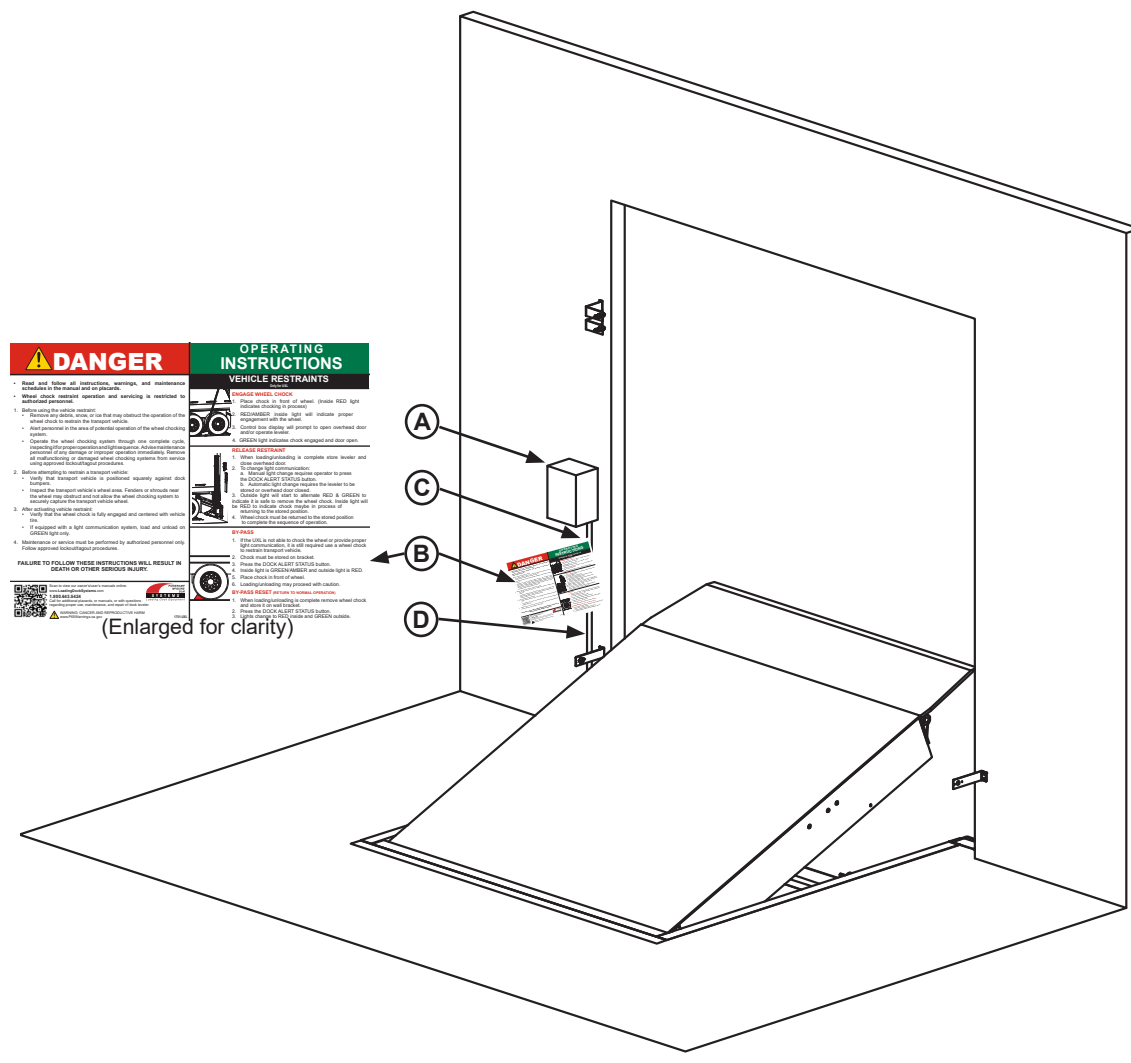


Figure 40

A—Control Box

B—Placard

C—Nylon Cable Tie

D—Conduit

# OPERATION

## Operational Precautions

### **DANGER**

Stay clear of dock leveler and vehicle restraint when transport vehicle is entering or leaving dock area.

DO NOT move or use the dock leveler or restraint if anyone is under or in front of leveler.

Keep hands and feet clear of pinch points. Avoid putting any part of your body near moving parts.

### **WARNING**

Only trained personnel should operate the dock leveler and vehicle restraint.

DO NOT use a broken or damaged dock leveler or vehicle restraint. Make sure proper service and maintenance procedures have been performed on the equipment before using.

Transport vehicle wheels must be chocked. Do not remove the restraint until loading/unloading is finished and transport vehicle driver has been given permission to leave.

Make sure platform lip rests on the transport vehicle bed with at least 4 in. (102 mm) of overlap.

Maintain a safe distance from side edges of leveler during the loading/unloading process.

### **WARNING**

Once the vehicle restraint has been positioned, the dock attendant must visually inspect to assure that the restraint has properly engaged the vehicle wheels.

## iDock Controller User Interface:

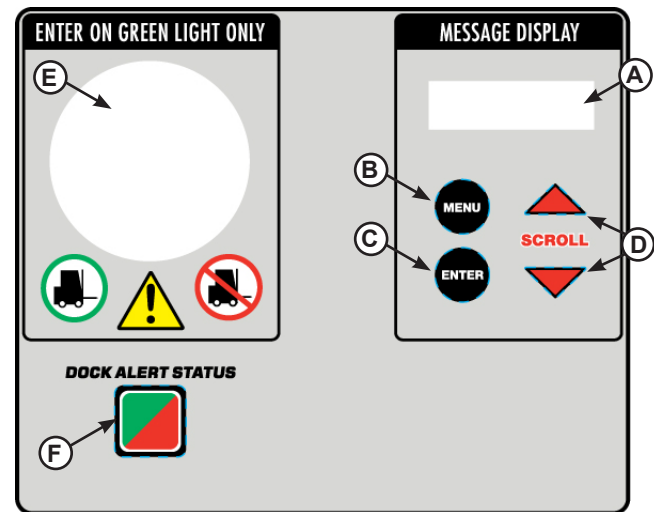


Figure 41

#### System Control Buttons/ Displays

- A — Message Display
- B — MENU button
- C — ENTER button
- D — SCROLL UP/DOWN buttons
- E — Multi-Colored LED Light

#### Equipment Control Buttons

- F — DOCK ALERT STATUS button
- (Optional controls for integrated solutions not shown)

## Operation - Normal

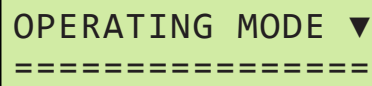
1. Check that the transport vehicle is positioned squarely against both dock bumpers. See Figure 42 and Figure 43. Lights will display:
  - Inside light - RED
  - Outside light - GREEN
2. Using the handles on the articulating arm (see Figure 42) position the UXL chock in front of transport vehicle wheel and engage the ground plate. While positioning the chock, the lights will display:
  - Inside light - RED
  - Outside light - RED
3. After chock is positioned and confirms presence of the transport vehicle wheel, the communication lights will display:
  - Inside light - RED & AMBER
  - Outside light - RED
4. Visually inspect restraint for proper engagement. Chock should be locked into ground plate and in front of a tire as shown.
5. Ensure overhead door is open and clear of dock leveler and material handlers. Then, position dock leveler onto transport vehicle.
6. When loading or unloading is complete, return dock leveler to the stored position and close door.
  - Inside light - RED
  - Outside light - ALTERNATING RED/GREEN
7. Remove UXL chock from ground plate and return to stored position. Light will display:
  - Inside light - RED
  - Outside light - RED
8. Close overhead door.
9. Transport vehicle can now depart.
  - Inside light - RED
  - Outside light - GREEN

## Operation - Bypass

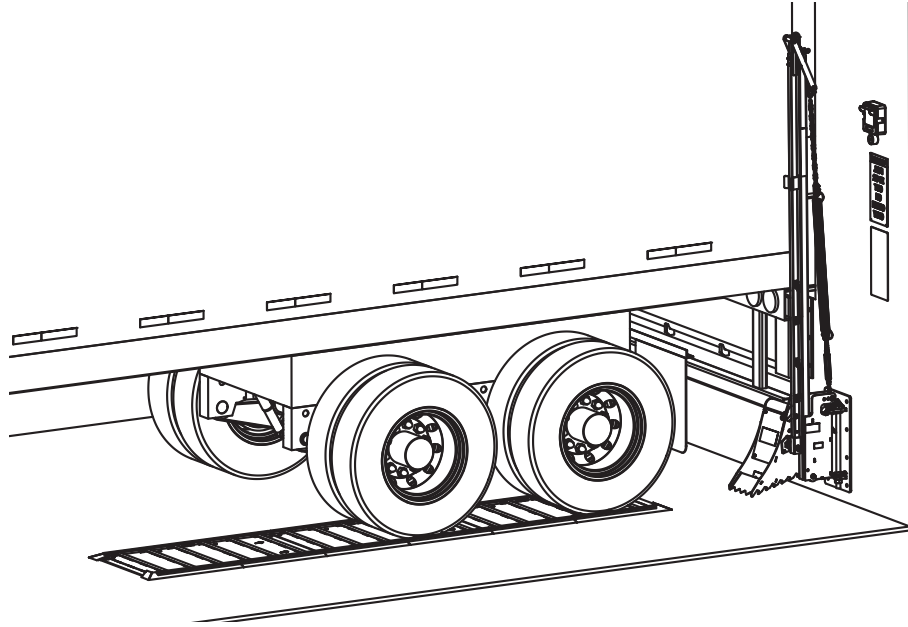
If the trailer UXL restraint is damaged or not functioning correctly, the system can be used in BYPASS mode.

(See Figure 44)

1. Secure transport vehicle wheels by other means.
  - Use a standard wheel chock on the tires not positioned over the ground plate. (Opposite side)
2. Activate BYPASS mode through menu screens under OPERATION MODE. (Shown below)

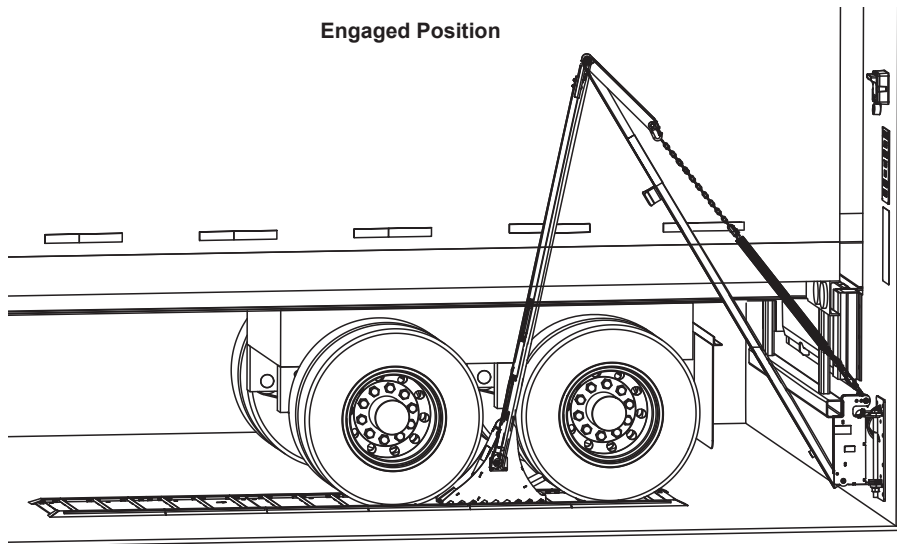


- **Restraint Only and Leveler/Restraint models:**  
Allows user to select the following operating modes:
  - **Normal**
  - **Bypass**
- Lights will display:
  - Inside light - GREEN & AMBER
  - Outside light - RED
- 1. Make sure overhead door is open and clear of the dock leveler and material handlers.
- 2. Position dock leveler onto transport vehicle trailer.
- 3. When loading or unloading is complete, return dock leveler to the stored position.
- 4. Reset BYPASS mode to NORMAL mode by pressing the RELEASE button once, or through menu screens under OPERATION MODE.
  - Inside light - RED
  - Outside light - GREEN
- 5. Close the overhead door.
- 6. Release the transport vehicle wheels when transport vehicle is ready to depart.



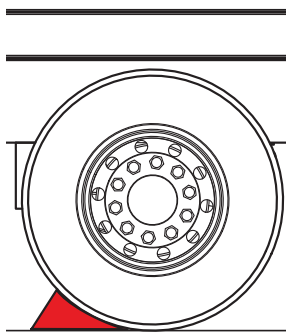
**Figure 42**

**Engaged Position**



**Figure 43**

**Bypass Mode - Alternate Chock**



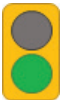

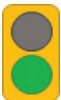






















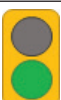

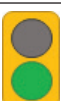

**Figure 44**

## Inside & Outside Light Sequence Charts




















### Factory Configuration

- Door operated lights
- Interlock (RELO) Restraint Engaged before Leveler Operate
- Sequence of Operation Truck → Restraint → Door → Leveler → Door → Restraint → Truck

### System Operating Procedure & Light Sequence

Step	Outside Light Assembly	Outside Alarm	Inside Light Red/Green	Inside Light Amber	Inside Alarm	Description
1						<ul style="list-style-type: none"> <li>• Vehicle Not Present</li> <li>• Restraint Stored (Chock in storage bracket)</li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
2						<ul style="list-style-type: none"> <li>• <b>Vehicle Present</b></li> <li>• Restraint Stored (Chock in storage bracket)</li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
3						<ul style="list-style-type: none"> <li>• <b>Restraint Removed from Stored Position</b></li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
4						<ul style="list-style-type: none"> <li>• <b>Restraint Engaged (Chock in front of wheel)</b></li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
5						<ul style="list-style-type: none"> <li>• Restraint Engaged</li> <li>• <b>Door Open</b></li> <li>• Leveler Stored</li> </ul>
		 Continuous			 Continuous	<p>If the restraint is pulled from the engaged position, the lights will change, and audible alarms will sound to get the attention of the operator. Fault #11 will occur after a delay (see Fault #11 details below)</p> <p>Fault condition in the controls will clear once chock is reengaged with the wheel.</p>
6						<ul style="list-style-type: none"> <li>• Restraint Engaged</li> <li>• Door Open</li> <li>• <b>Leveler Deployed</b></li> </ul>
7						<ul style="list-style-type: none"> <li>• Restraint Engaged</li> <li>• Door Open</li> <li>• <b>Leveler Stored</b></li> </ul>
8						<ul style="list-style-type: none"> <li>• <b>Door Closing</b></li> <li>• Leveler Stored</li> </ul>
9						<ul style="list-style-type: none"> <li>• <b>Restraint Removed from the Engaged Position</b></li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
10						<ul style="list-style-type: none"> <li>• <b>Restraint Stored</b></li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
11						<ul style="list-style-type: none"> <li>• <b>Vehicle Not Present</b></li> <li>• Restraint Stored</li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
































# OPERATION

FAULT CONDITIONS					
Fault #9					 <b>Sensor Error</b> <ul style="list-style-type: none"> <li>If the sensors indicate that the chock is stored and engaged at the same time.</li> <li>Must fix fault condition before it will clear on the control box.</li> <li><b>Press ENTER</b> on the control box to clear fault.</li> </ul>
Fault #10		 Continuous			 <b>Improper Chock Position (Restraint not Engaged)</b> <ul style="list-style-type: none"> <li>Occurs in 2 scenarios               <ul style="list-style-type: none"> <li>After chock is removed from the stored position and not engaged with the wheel within 30 seconds.</li> <li>After chock is engaged, but before door is open and chock/wheel has moved where the chock is not detecting the wheel.</li> </ul> </li> <li>Return chock to the stored position, engage wheel or open door to clear fault condition.</li> </ul>
Fault #11		 Continuous			 <b>Improper Chock Position (Reengage Failure)</b> <ul style="list-style-type: none"> <li>Occurs after chock is engaged with the wheel and the door has been opened, and chock no longer senses the wheel.</li> <li>Must return chock to the engage position with wheel to clear fault condition.</li> </ul>
Fault #13		 Continuous			 <b>Improper Chock Position (Not Returned to Stored Position)</b> <ul style="list-style-type: none"> <li>Occurs after chock is removed from the wheel and is not returned to the stored position with 6 seconds after permission is given.</li> <li>Must return chock to the stored position to clear fault condition.</li> </ul>

## Factory Configuration

- Leveler operated lights
- Interlock (RELO) Restraint Engaged before Leveler Operate
- Sequence of Operation Truck → Restraint → Door → Leveler → Door → Restraint → Truck

## System Operating Procedure & Light Sequence

Step	Systems UniChock					Description
	Outside Light Assembly	Outside Alarm	Inside Light Red/Green	Inside Light Amber	Inside Alarm	
1 Vehicle Not Present						<ul style="list-style-type: none"> <li>• Vehicle Not Present</li> <li>• Restraint Stored (Chock in storage bracket)</li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
2 Vehicle Present						<ul style="list-style-type: none"> <li>• <b>Vehicle Present</b></li> <li>• Restraint Stored (Chock in storage bracket)</li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
3 Chock Removed from Stored Position						<ul style="list-style-type: none"> <li>• <b>Restraint Removed from Stored Position</b></li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
4 Chock Engaged with Wheel						<ul style="list-style-type: none"> <li>• <b>Restraint Engaged (Chock in front of wheel)</b></li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
5 Open Door						<ul style="list-style-type: none"> <li>• Restraint Engaged</li> <li>• <b>Door Open</b></li> <li>• Leveler Stored</li> </ul>
						If the restraint is pulled from the engaged position, the lights will change, and the outside alarm will sound to get the attention of the operator.
6 Leveler Deployed						<ul style="list-style-type: none"> <li>• Restraint Engaged</li> <li>• Door Open</li> <li>• <b>Leveler Deployed</b></li> </ul>
7 Leveler Stored						<ul style="list-style-type: none"> <li>• Restraint Engaged</li> <li>• Door Open</li> <li>• <b>Leveler Stored</b></li> </ul>
8 Door Partially Closed						<ul style="list-style-type: none"> <li>• Restraint Engaged</li> <li>• <b>Door Partially Closed</b></li> <li>• Leveler Stored</li> </ul>
9 Close Door						<ul style="list-style-type: none"> <li>• <b>Close Door</b></li> <li>• Leveler Stored</li> </ul>
10 Chock Removed from the Wheel						<ul style="list-style-type: none"> <li>• <b>Restraint Removed from the Engaged Position</b></li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>
11 Chock Stored						<ul style="list-style-type: none"> <li>• <b>Restraint Stored</b></li> <li>• Door Closed</li> <li>• Leveler Stored</li> </ul>

# MAINTENANCE

## Maintenance Precautions



Figure 46

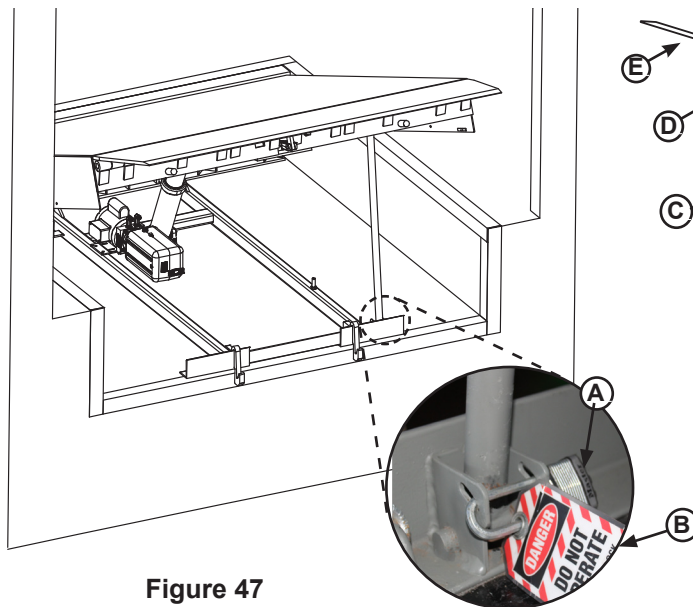


Figure 47

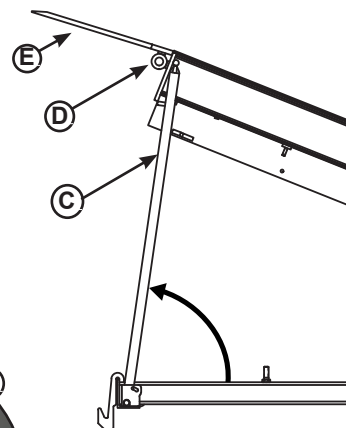


Figure 45

A — Lock Out Device  
B — Tag Out

C — Maintenance Prop  
D — Header plate

E — Lip plate

### **DANGER**

Unless the dock leveler is equipped with a tethered remote, two people are required to engage the maintenance prop: one person to operate the unit, the other person to engage the maintenance prop.

In addition, it is recommended and good safety practice to use an additional means to support the dock platform and lip anytime when physically working in front of or under the dock leveler. This additional means may include, but is not limited to a boom truck, fork truck, stabilizing bar or equivalent.

### **WARNING**



Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the unit before maintenance is complete.

When working with electrical or electronic controls, make sure that the power source has been tagged (B) and locked out (A) according to OSHA regulations\* and approved local electrical codes (see Figure 43).

Whenever maintenance is to be performed under the dock leveler platform, support the platform with maintenance prop (C). Position the maintenance prop behind front header plate (D) while staying clear of the lip. The lip will fold down after the platform has rested on the maintenance prop. Lock the maintenance prop in the service (upright) position using an OSHA approved lockout device\* (A) and tag out device\* (B). See Figure 51 and Figure 52.

Only the person servicing the equipment should have the capability to remove the lockout devices. The tag out devices\* must inform that repairs are in process and clearly state who is responsible for the lockout condition.

### **WARNING**

A hard hat or other applicable head protection should always be worn when working under or around a dock leveler.

Always stand clear of platform lip when working in front of the dock leveler.

\* Refer to OSHA regulations 1910.146. Confined Space and 1910.147. Lockout/Tagout



## Periodic Maintenance Schedule

### Daily Maintenance

- Verify that all inside and outside signal lights and alarm (if equipped) work correctly.

### Weekly Maintenance

- Operate the vehicle restraint through the complete operating cycle to verify correct operation. Reference normal operation on page 33 of this manual.
- Remove debris around vehicle restraint and in articulating arm, chock and ground plate.
- Verify articulating arm is able to move freely with no binding or obstruction.
- Inspect warning decals and placards inside and outside the loading dock. Replace if damaged or missing.

### Quarterly Maintenance

- Complete Weekly Maintenance.
- Inspect the following for damage/abnormal wear:
  - Check welds for cracks.
  - Check for loose mounting hardware.
  - Check J-box for water damage.
  - Check control box and conduit for damage.
  - Check bumpers for more than 1" of wear. Replace worn, loose, damaged or missing bumpers.
  - Inspect rubber chock spacer.
  - Inspect chock assembly and axle.
  - Inspect articulating arm assembly.
  - Inspect all cables and sensors.

# ADJUSTMENT

---

## Articulating Arm Adjustment Notes:

Loading/unloading operations can create vibrations, causing the chock to move away from the vehicle wheel and off the ground plate.

To mitigate this movement, the pivot weldment is equipped with an adjustment bolt to hold the chock in position once the articulated arm is extended.

Note that this adjustment is factory-set. However, adjustments can be made if necessary. Loosen jam nut and turn the adjusting bolt clockwise or counterclockwise to achieve correct operation.

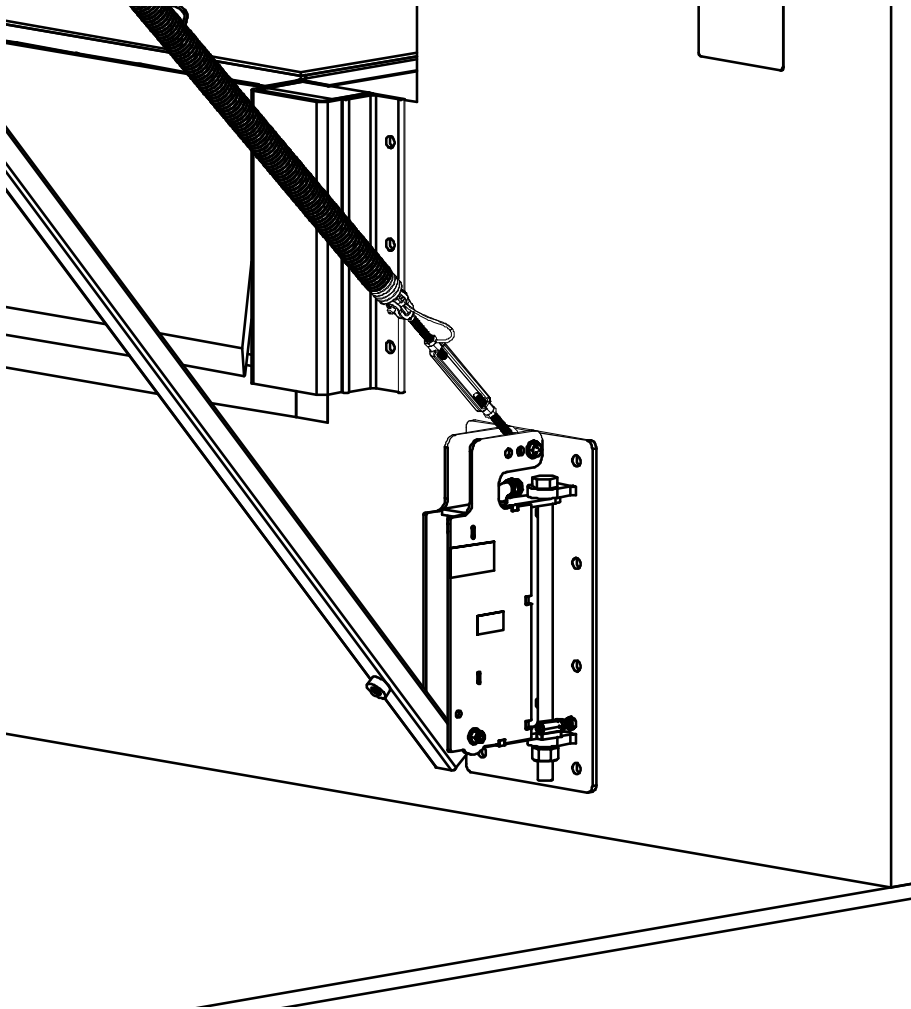


Figure 48

## Adjust Spring Tension

Spring tension on the articulated arm is important for proper operation. If the spring tension is too loose, chock operation will be difficult and the arm will not retract. If the spring is too tight, the arm will be difficult to position and the chock may not stay in position on the ground plate.

For proper spring tension adjustment, follow these steps:

1. Position the chock on the ground next to the furthest ground plate. See image below:

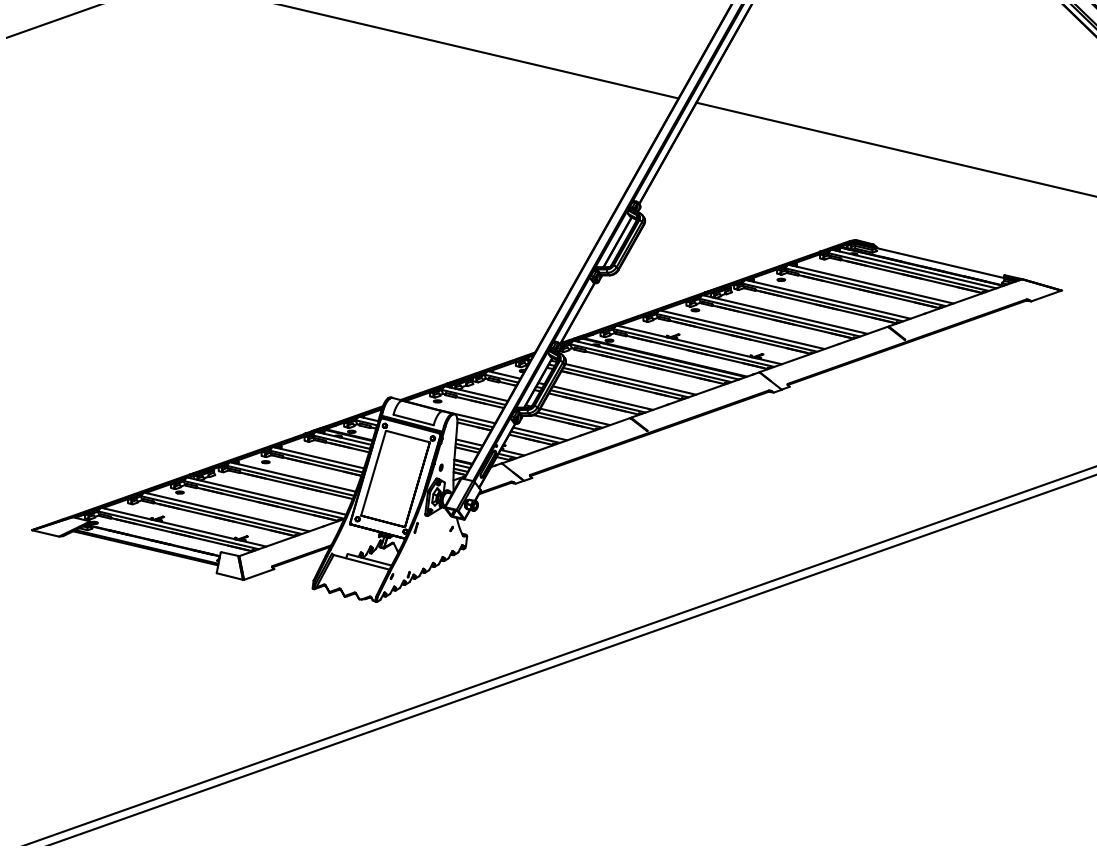


Figure 49

2. Adjust the spring tension with the turnbuckle, shown in **figure 53** on page 46. Loosen the jam nuts then adjust the turnbuckle to the desired tension. The arm should retract towards the wall within 5 seconds or less.

# ADJUSTMENT

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## Adjust Spring Tension (Continued)

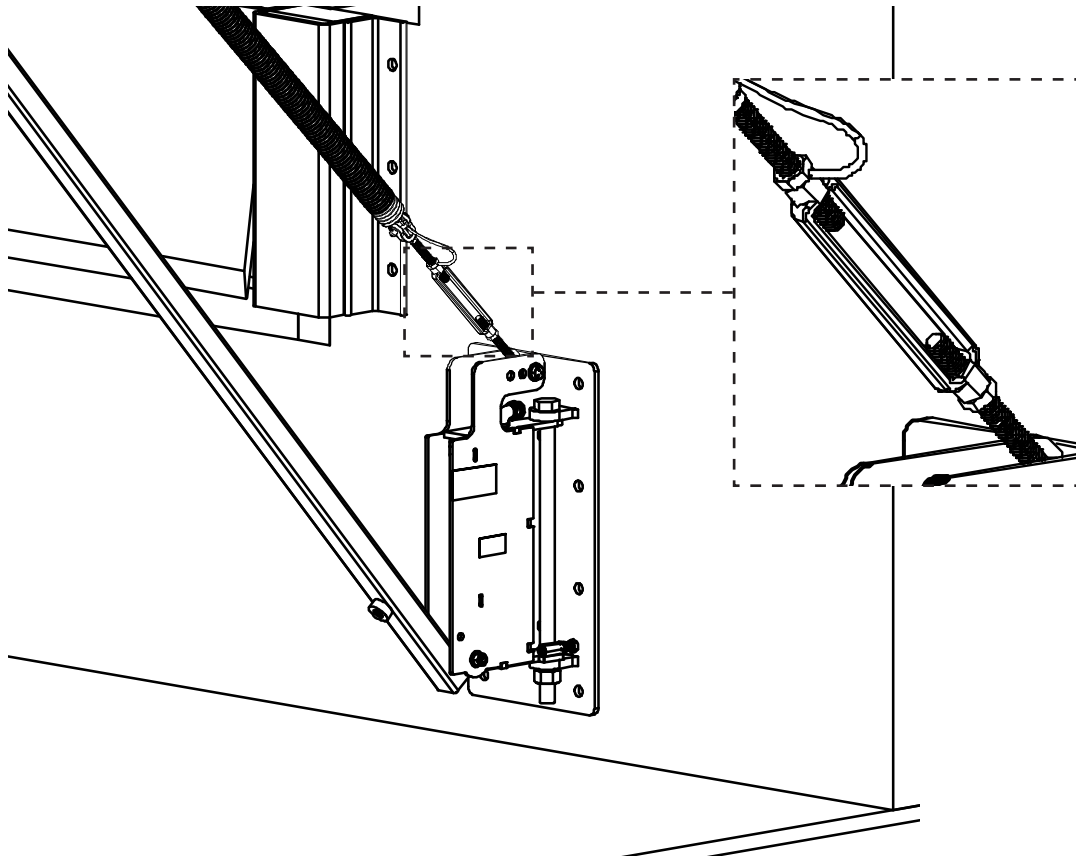
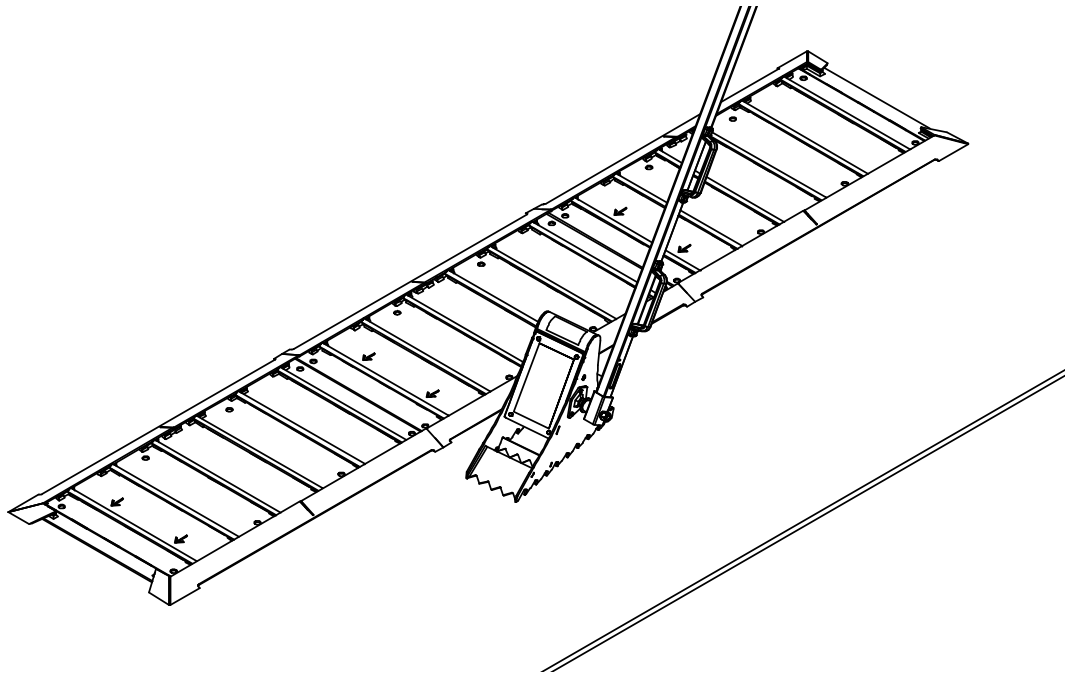


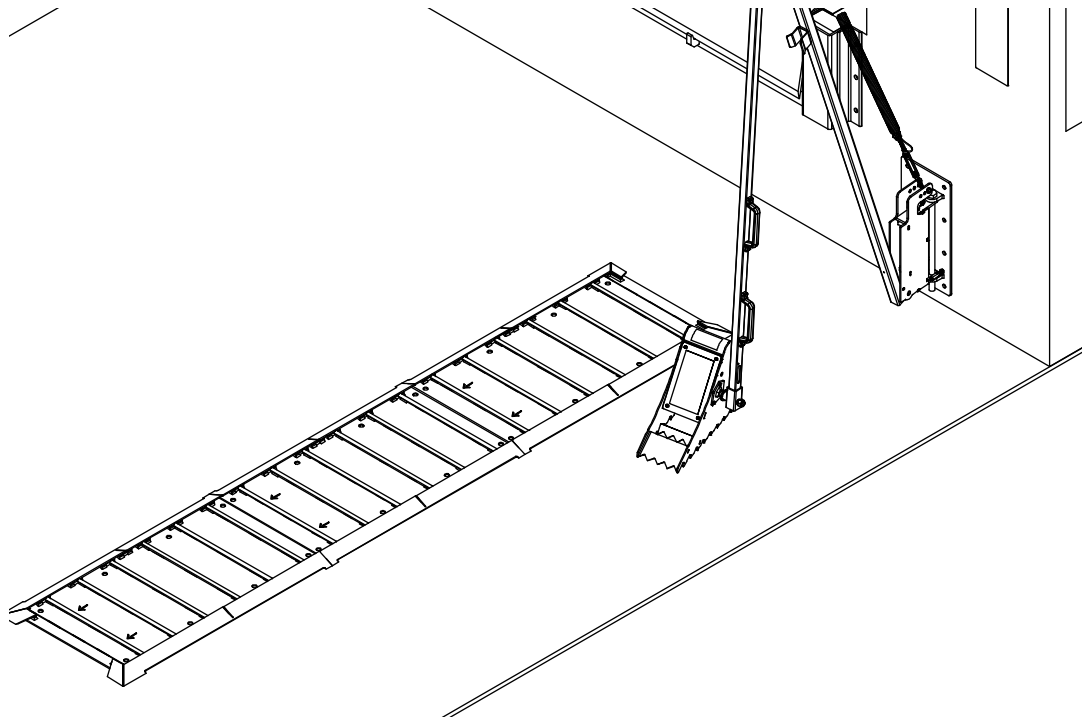
Figure 50

3. Test retraction with the chock on the ground next to the second restraining plate. Check that the arm retracts towards the wall in 5 seconds or less. Continue to adjust the spring tension with the turnbuckle if necessary. See **figure 54** on page 47.



**Figure 51**

4. Verify retraction from the closest ground plate. Ensure the arm retracts towards the wall in 5 seconds or less, if not, adjust spring tension with the turnbuckle.

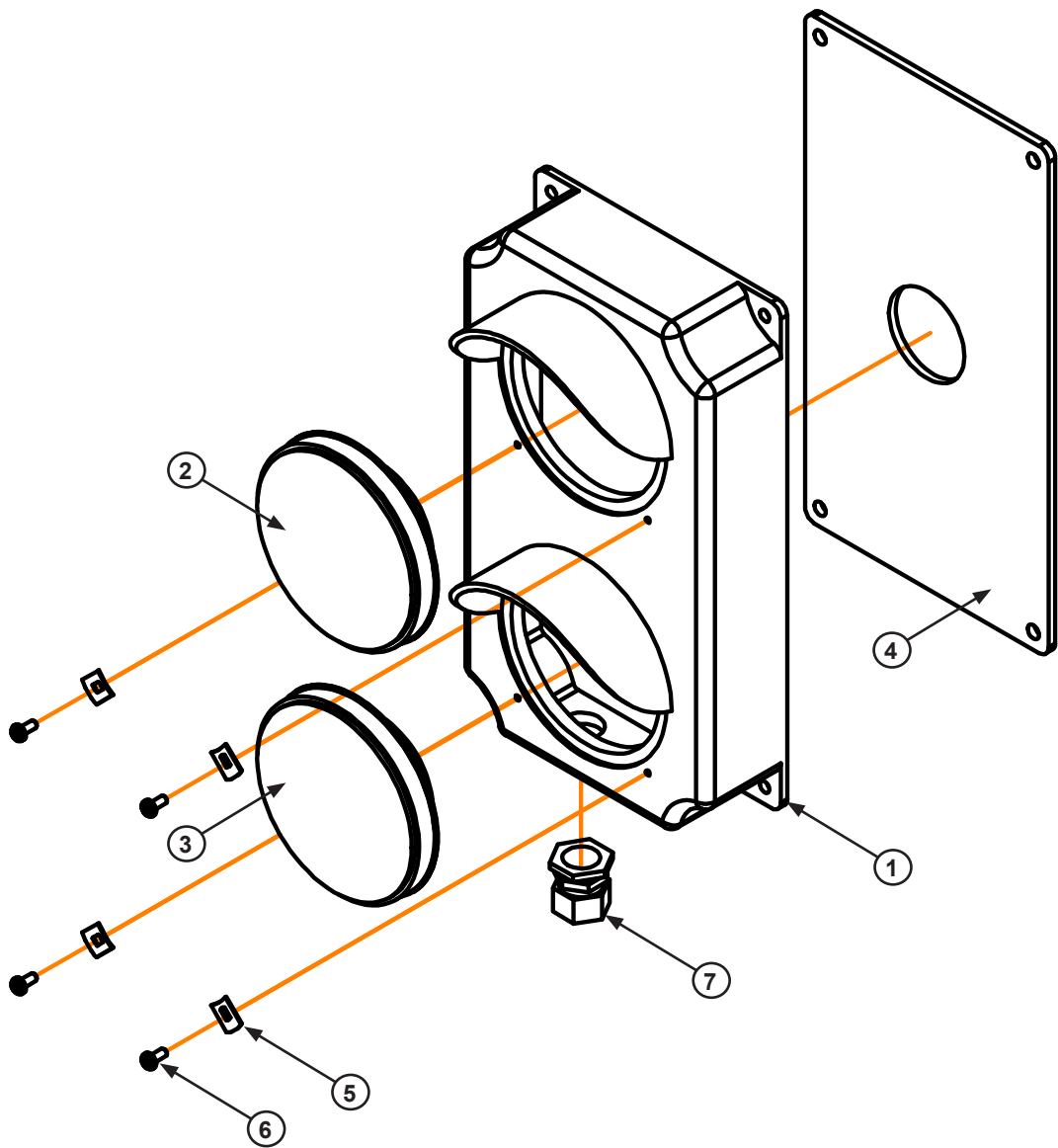


**Figure 52**

5. When correct operation is achieved, retighten the jam nuts on the turnbuckle.
6. Perform a final check next to all ground plates and confirm that the chock retracts correctly. The UXL should be easy to use in both directions (extended and retracted.)

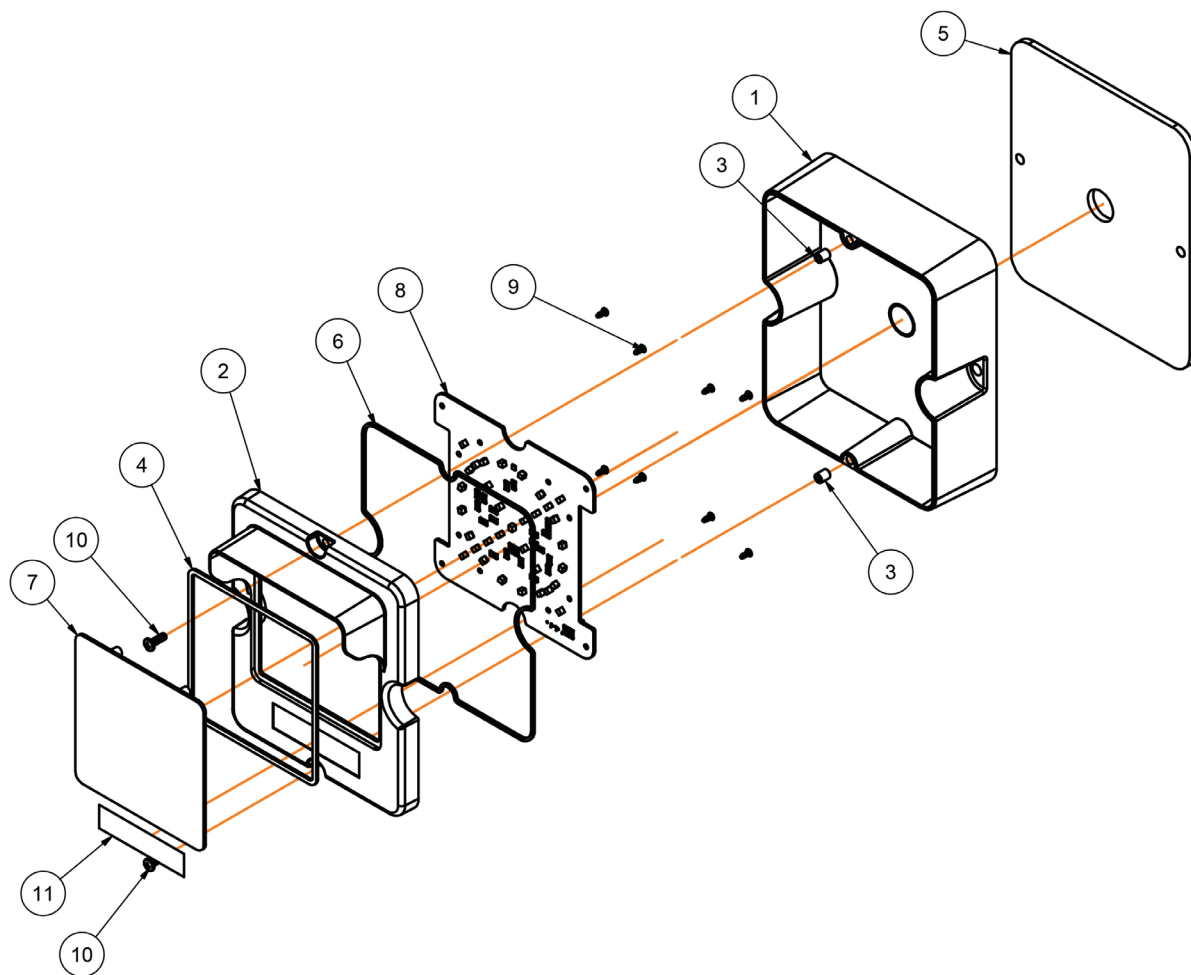
# PARTS

OSLA (Outside Light Assembly) Units Shipped Prior to 10/2024



Item	Quantity	Part Number	Description
1-7	1	3055-0011	Complete Light Housing, Yellow Plastic, With LED Lights
1	1	3051-0063	Housing, Main, Yellow
2	1	3051-0147	Red LED Lens/Housing/Circuit Assembly, 12V
3	1	3051-0149	Green LED Lens/Housing/Circuit Assembly, 12V
4	1	3051-0068	Mounting Gasket
5	4	3051-0105	Clip, Lens Holding
6	4	3051-0104	Screw, Lens Holding
7	1	*	Conduit Fastener, 3/4" x 3/8"

## OSLA (Outside Light Assembly) Units Shipped After 10/2024



Item	Qty	Part No.	Description
1	1	3051-0432	Housing, Polycarbonate, OSLA
2	1	3051-0426	Cover, Polycarbonate, OSLA
3	2	3051-0427	Thru-Insert, 8-32 Unc, 5/16
4	1	3051-0428	Gasket, Lens, OSLA
5	1	3051-0429	Gasket, Foam, OSLA
6	1	3051-0430	Gasket, Cover, OSLA
7	1	3051-0431	Lens Cover, Polycarbonate, OSLA
8	1	7141-0398	Pcb, Led, OSLA
9	8	2101-0346	Screw, Phths, #4-24 X 0.25
10	2	2101-0022	#8-32 Unc X 0.50
11	1	1751-1421	Decal, Systems, OSLA

# PARTS

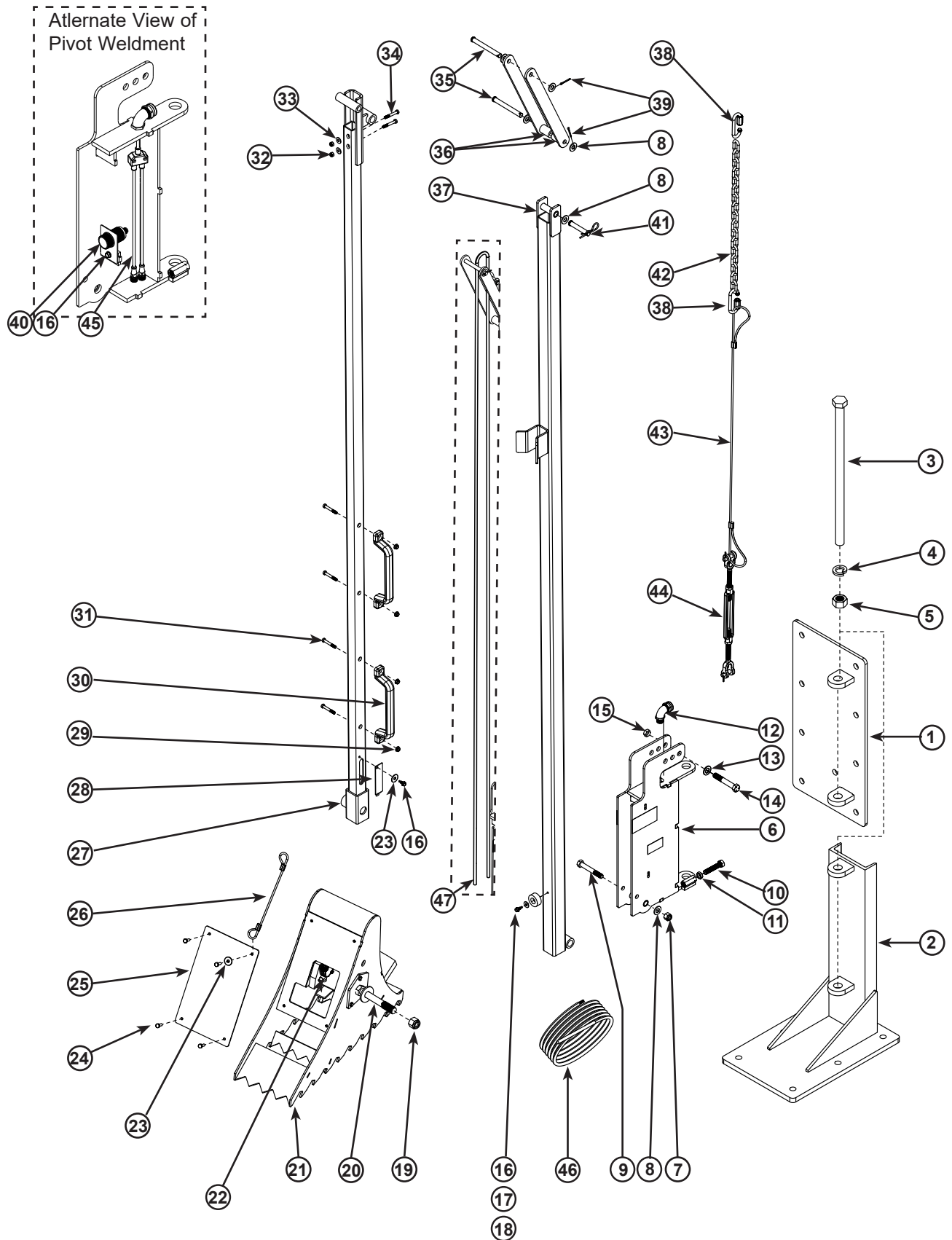
## Signs



Item	Part Number	Description
A	1751-1432	Outside Sign, Pull In/Out
B	1751-0033	Outside Sign, Pull In/Out
C	1751-0036	Inside Sign, Enter On Green Only

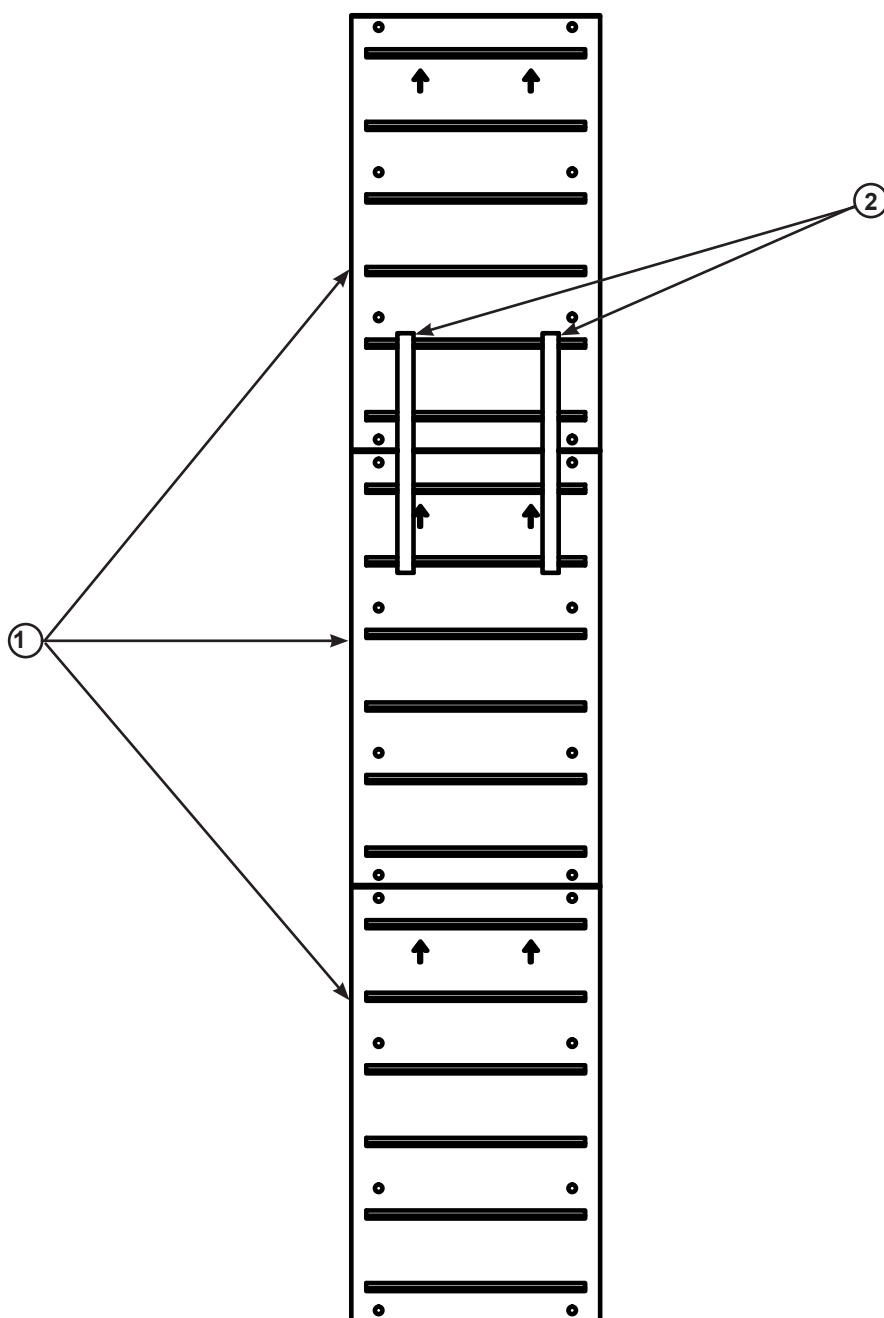


## Arm and Chock - Part Diagram



# PARTS

Item	Quantity	Part Number	Description
1	1	9973-0001	Wall Mount Weldment, UXL
2	1	9973-0002	Post Mount Weldment, UXL
3	1	2101-0411	Bolt, 1"-8 x 20", Hot Dipped Galv.
4	1	2101-0442	Washer, Split Lock, 1.024"ID X 1.656" OD
5	1	2101-0443	Nut, 1"-8, Galvanized
6	1	9973-100003	Pivot Weldment, UXL
7	1	2101-0103	Nut, Nylon Lock, 1/2-13 UNC, Zinc Plated
8	7	2101-0079	Washer, Flat, 1/2"SAE, ZP
9	1	2101-0299	Hex Bolt, 1/2-13 UNC X 3.50 Grade 5, ZP
10	1	2101-0440	Hex Bolt, GRD5, 1/2-20X 2-1/2" LG, FT, ZP
11	1	9301-0015	Nut, Jam, 1/2-20 UNF ZP
12	1	1431-0372	Cord Grip, MTL, 90 Deg, 1/2 X 0.25-0.312, Elbow
13	1	2101-0424	Washer, 9/16 ID X 1-1/16 OD
14	1	2101-0423	Screw, Hex Head, 9/16-12 3-1/2 Long, ZP
15	1	2101-0425	Locknut, 9/16-12, GR. 5, ZP
16	3	2101-0312	Hex, Self-Tap, 1/4-20 X 0.75, TEK#3
17	1	2101-0059	Washer, Flat, 1/4",ZP
18	1	2101-0428	Recess Bumper, 5/16" ID X 1-1/2" OD
19	1	2101-0323	Nut,Nylon Lock, 3/4-10 UNC, ZP
20	1	9974-0007	Weldment, Chock Mount Plate, UXL
21	1	9974-0006	Weldment, Chock, Uxl
22	1	0961-0702	Sensor, Chock, UXL
23	5	2101-0439	Washer, .281"ID X 1" OD
24	4	2101-0084	Screw, HHCS, 1/4-20 UNC X 0.88, G5, ZP
25	1	9971-0101	Plate, UXL
26	1	2101-0438	Lanyard, Lckg, Loop-Loop, .125" DIA X 12" LG
27	1	9973-0015	Front Arm Assembly, UXL
28	1	9971-0098	Cover Plate, Arm Assy, UXL
29	4	2101-0213	Nut, Flange Top, L/N, 1/4-20
30	2	5451-0002	Handle, 2-5/16X1-1/4X8-19/32
31	4	2101-0008	Screw, HHCS, 1/4-20 UNC X 2 GRADE 2, ZP
32	2	2101-0143	Nut, Nylon Lock, 1/4-20 UNC
33	2	2101-0059	Washer, Flat, 1/4",ZP
34	2	2101-0419	Hex Screw, 1/4-20 X 2-1/4" GR.5
35	2	2101-100010	Clevis Pin 1/2" X 4.5" Long, ZP
36	2	9971-100001	TBG, RND, ARM ASSY, UXL, 1 OD X 9/16 ID X 1.5
37	1	9973-100001	Rear Arm Weldment, UXL
38	2	5401-100000	Quick Link,Threaded, UXL 5/16X.72X2.9 ID
39	2	2101-0245	Pin, Cotter, 1/8 DIA X 1.25, ZP
40	1	0961-0701	Stored Sensor, 10-30VDC, UXL
41	1	2101-100009	Clevis Pin, 1/2" X 3.0" Long, ZP
42	1	9971-100003	Chain, Arm Linkage, UXL, .21.5" Long
43	1	2101-0437	Lanyard, Lckg, Loop-Loop .125"DIA X 60" LG
44	1	2101-0421	Turnbuckle, Clevis, 1/2-13,6" Max Adj.
45	1	4301-0041	Splitter, 5C, M12, UXL
46	1	4301-0036	Cable, 5C, M12, UXL, for Pivot Weldment to J Box.
47	1	4301-0039	Cable, 5C, M12, UXL, Chock Sensor

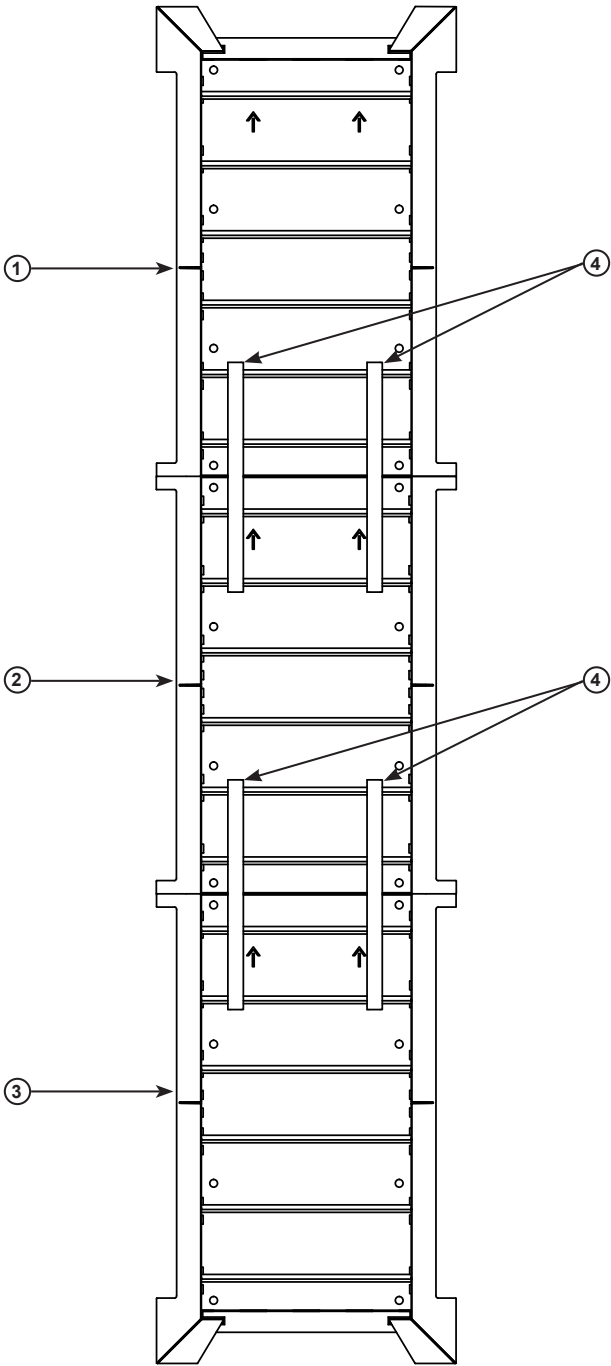


Item	Quantity	Part Number	Description
1	3	9973-0008	Wldt, Std Ground Plt, UXL
2	2	9971-0104	Alignment Bracket, Grnd Plt, UXL (Install Only)

# PARTS

## Winter Ground Plate

Item	Quantity	Part Number	Description
1	1	9973-0009	Wldt,Winter Gnd Plt,End A,UXL
2	1	9973-0010	Wldt,Winter Gnd Plt,Mid,UXL
3	1	9973-0011	Wldt,Winter Gnd Plt,End B,UXL
4	2	9971-0104	Alignment Bracket, Grnd Plt, UXL (Install Only)



## Customer Information



Figure 53



Serial Tag

Figure 54

**NOTE:** Refer to Figure 536 for orientation of vehicle restraint and Figure 547 for example of decals.

*The model/serial number decal is located on the right side panel of the restraint.*

When you receive your new equipment, write down the model and serial number in the form provided. This will help ensure safe keeping of the numbers in the event the model/serial number decal (A, B) becomes lost or damaged.

Also, write down Systems, LLC's order number, the company that installed the equipment, and the original owner's name. This will all help to identify the specific equipment if more information is required.

When ordering, use part numbers and description to help identify the item ordered. Do not use "item" numbers. These are only for locating the position of the parts. Always give MODEL NUMBER and/or SERIAL NUMBER.

For service, call or contact:

Systems, LLC  
P.O. Box 309  
Germantown, WI 53022

Phone: (800) 643-5424  
Fax: (262) 255-5917

[www.loadingdocksystems.com](http://www.loadingdocksystems.com)

### Dock Leveler Information

Model \_\_\_\_\_

Serial No. \_\_\_\_\_

Systems, LLC Order No. \_\_\_\_\_

### Vehicle Restraint Information

Model \_\_\_\_\_

Serial No. \_\_\_\_\_

Systems, LLC Order No. \_\_\_\_\_

### Original Owner Information

Name \_\_\_\_\_

Address \_\_\_\_\_

### Installer Information

Name \_\_\_\_\_

Address \_\_\_\_\_

Date of Installation \_\_\_\_\_

## **STANDARD PRODUCT WARRANTY**

SYSTEMS, LLC warrants that its products will be free from defects in design, materials and workmanship for a period of one (1) year from the date of shipment. All claims for breach of this warranty must be made within 30 days after the defect is or can with reasonable care, be detected. In no event shall any claim be made more than 30 days after this warranty has expired. In order to be entitled to the benefits of this warranty, the product must have been properly installed, maintained and operated in accordance with all manufacturer's recommendations and/or specified design parameters and not otherwise have been subject to abuse, misuse, misapplication, acts of nature, overloading, unauthorized repair or modification, application in a corrosive environment or lack of maintenance. Periodic lubrication, adjustment and inspection in accordance with all manufacturers' recommendations are the sole responsibility of the Owner/User.

In the event of a defect, as determined by SYSTEMS LLC, covered by this warranty, SYSTEMS LLC shall remedy such defect by repairing or replacing any defective equipment or parts, bearing the cost for the parts, labor and transportation. This shall be exclusive remedy for all claims whether based on contract, negligence or strict liability.

## **WARRANTY LIMITATIONS**

THE ABOVE WARRANTIES ARE IN LIEU OF ANY OTHER WARRANTIES, WHETHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SYSTEMS LLC AND ITS SUBSIDIARIES SHALL NOT IN ANY EVENT BE LIABLE TO ANYONE, INCLUDING THIRD PARTIES, FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND INCLUDING BUT NOT LIMITED TO, BREACH OF WARRANTY, LOSS OF USE, LOSS OF PROFIT, INTERRUPTION OF BUSINESS OR LOSS OF GOODWILL.