



RAIL RAMP INSTALLATION & OPERATION MANUAL

MEETS OR EXCEEDS American National Standard Institute ANSI MH14.1 - 1987 "Loading Dock Levelers and Dockboards" standards dated November 15, 1987; US. Dept. of Commerce Standard CS-202-56 and OSHA standard requirements for dockboards (levelers) dated May 29, 1971.

Job Number _____
Job Name _____
Serial Numbers _____

SYSTEMS, INC.
P.O. BOX 309
Germantown, WI 53022
Phone 414-255-1510
Fax 414-255-4199

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Safety

Safety Alert Symbols



This Safety Alert Symbol Means ATTENTION is Involved!

The Safety Alert Symbol identifies important safety messages on equipment, safety signs, in manuals, or elsewhere. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.



WARNING

The use of the word "Warning" signifies the presence of hazards or unsafe practices which could result in severe personal injury or death if instructions, including recommended precautions, are not followed.

CAUTION

The use of the word "Caution" signifies possible hazards or unsafe practices which could result in minor injury, product or property damage if instructions, including recommended precautions, are not followed.

General Safety Precautions

1. Do not operate this equipment until you read and understand the operating instructions and become thoroughly familiar with the equipment and its controls.
2. Never operate a machine while a safety device or guard is removed or disconnected.
3. Never remove Warning or Caution signs or decals on the equipment unless they are to be replaced.
4. Do not start the equipment until all other personnel in the area have been warned and have moved outside the operating zone.
5. Remove any tools or other foreign objects from the operating zone before starting.
6. Keep operating zone free of obstacles that could cause a person to trip or fall.
7. If so equipped, know EMERGENCY STOP procedures before operating.
8. Hydraulic and electrical power must be off when servicing equipment.

Note: For maximum protection, all power sources should be locked out using a lock for which only you have the key. This prevents anyone from accidentally turning on the power while you are servicing the machine.

9. Keep alert and observe indicator lights and audible alarms.
10. Do not operate faulty equipment. Make certain proper service and maintenance procedures have been performed.
11. Avoid placing fingers, hands, or any part of your body near moving parts.

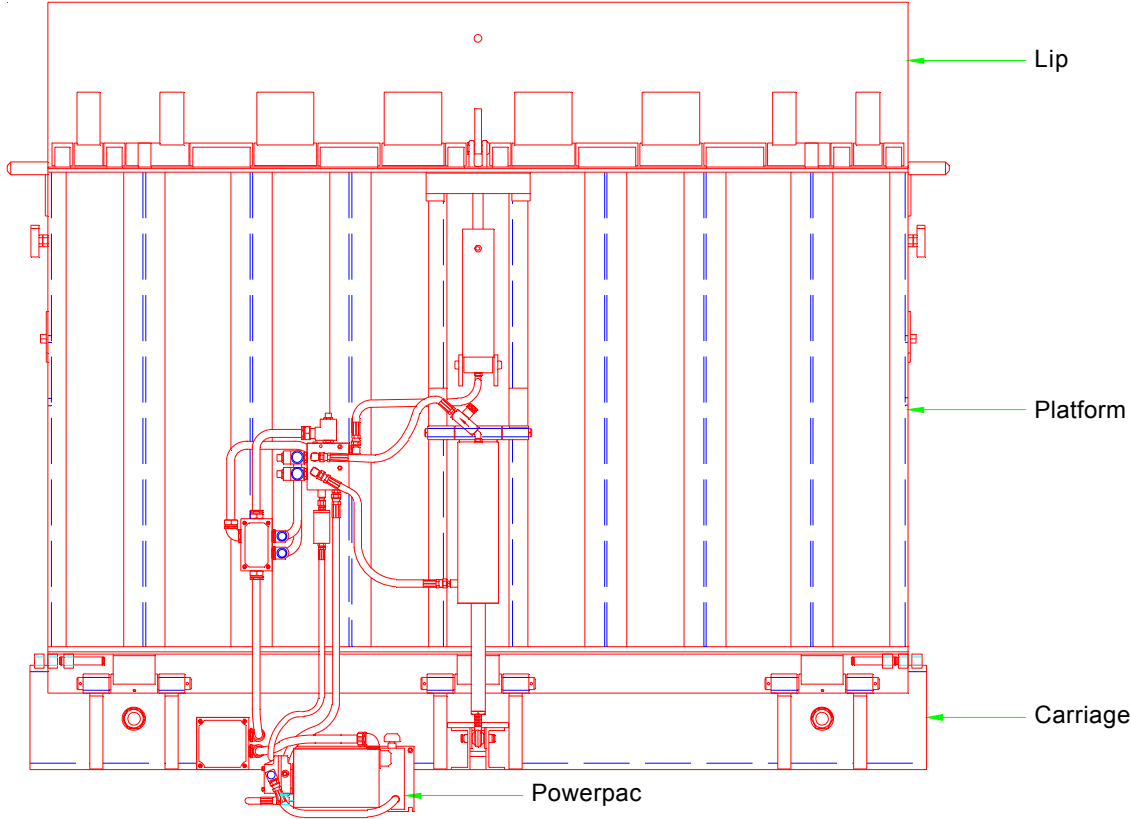


Figure 1

Introduction

This manual covers the hydraulic railramp manufactured by Poweramp. It has been equipped with a double acting hydraulic hoist cylinder to control the raising and lowering of the platform. Operation of the unit is via constant pressure pushbuttons located in a control enclosure. It is the intent of Poweramp that the control enclosure be located above the loading dock floor and on the loading dock side of the railramp. This will assure operator safety, no one should ever be in the operating zone of the railramp (See Fig.2). Whenever maintenance personnel must work beneath the railramp, the railramp should be tightly secured to reliable support at all times.

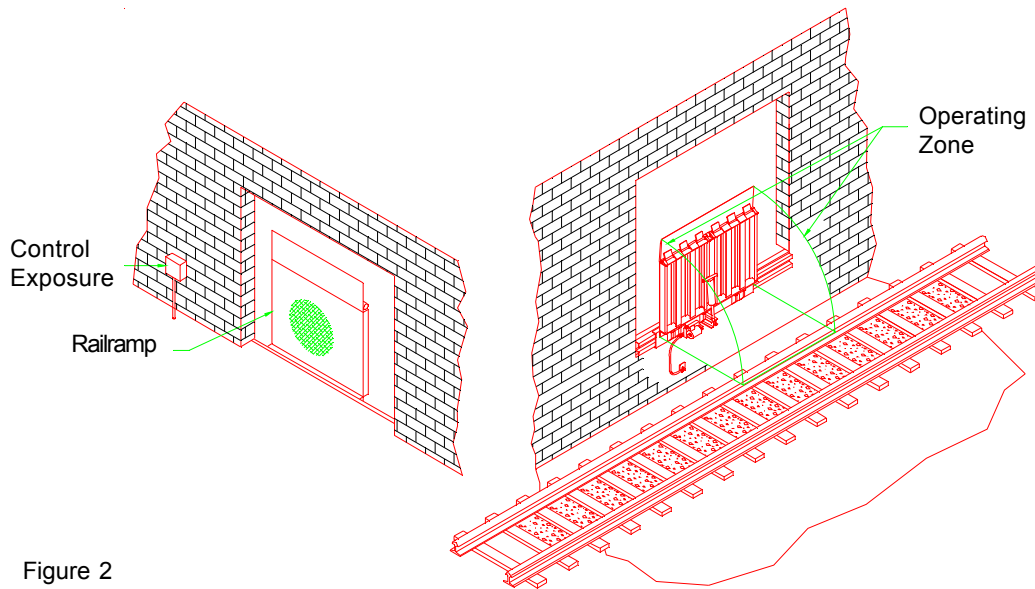


Figure 2

Poweramp has no control over the operational condition of the railramp after it leaves the factory. If, for any reason, damage, neglect or intentional the hydraulic hoist cylinder is drained of fluid or the speed control is misadjusted, the railramp can free fall from its vertical position. Should this occur, serious injury and/or damage is possible to personnel and/or property.



Warning

Always operate the equipment from atop the loading dock. Never stand or work under the railramp unless it is securely supported. Use safe work habits.



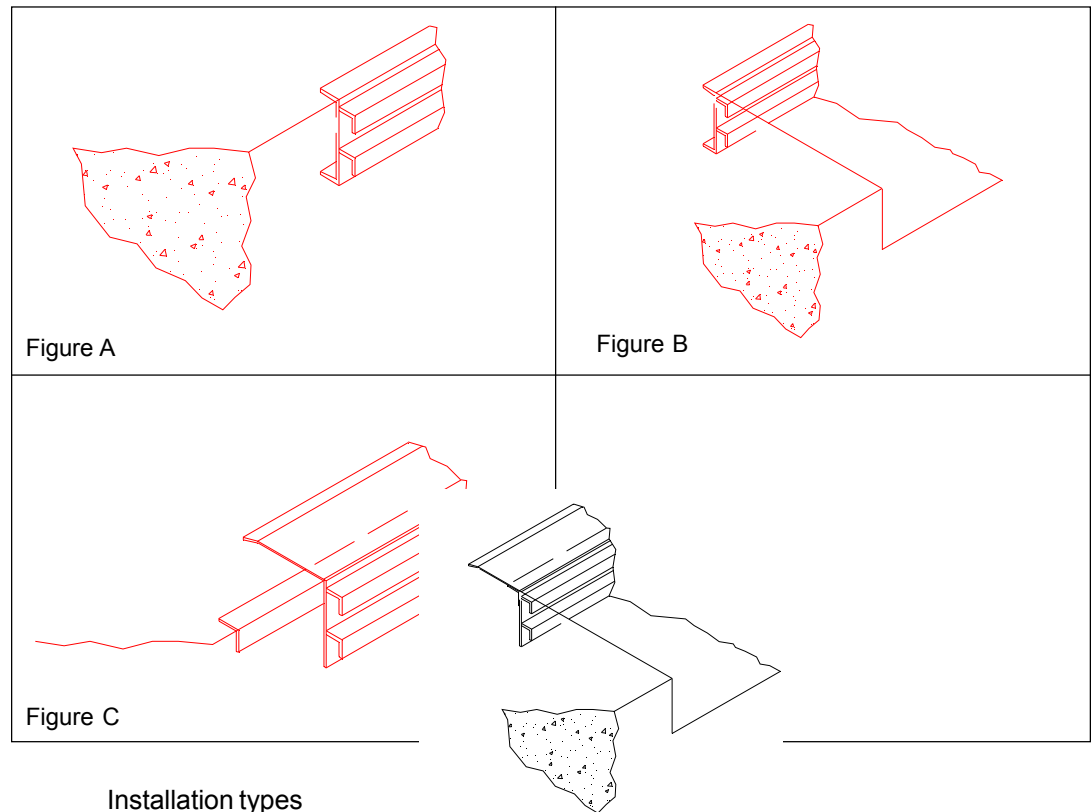
Warning

For the railramp to operate properly, it is necessary to have hydraulic fluid in the hoist cylinder and system. Without hydraulic fluid, the railramp can free fall endangering persons or property.

Railramp Installation

The following installation procedure has been developed to guide you. Unauthorized modifications or alterations made to any of the parts or assemblies on this product may affect its warranty and overall performance.

Hydraulic Railramps are shipped completely assembled. No additional field assembly is required (See Fig. 1 and 2). This manual has been developed to cover a wide variety of installations. Please select the installation below that best suits your installation.



Installation types

- A. Poweramp supplied imbeds
(railramp flush with exterior building wall)
- B. Poweramp supplied imbeds
(railramp recessed in from exterior building wall)
- C. Existing imbeds or retrofit
(railramp flush with exterior building wall)
- D. Existing imbeds or retrofit
(railramp recessed in from exterior building wall)

Type A proceed to page 10

Type B proceed to page 9

Type C proceed to page 5

Type D proceed to page 9

Installation

Installation Railramp Track

Flush to outside building wall and plumb.

You have determined that your installation has existing curb steel. Prior to installing the railramp, the railramp track must be installed. The following steps will explain this procedure.

1. Check transition plate and railramp track for damage (See Fig. 4) that may have occurred during shipment. All dimensions should be checked against a certified installation drawing. It is the contractor's responsibility to properly install the transition plate and railramp track.
2. Verify that existing imbeds have sufficient anchoring. Minimum 6" long anchors on 12" centers are recommended. Remember the railramp operation is relying on sturdy anchoring. If anchoring of existing imbeds falls short of recommendations, do not plug weld railramp channel to imbedded steel. Instead, drill through imbeds and utilize all the anchor holes.
3. Clean and remove all existing protrusions from the dock face. Railramp track must fit flush with the outside building wall.
4. Center rail in doorway, mark end points allowing an additional 1/2" on each end.
5. Measure down on face of dock from edge of dock 10-3/4". Draw or snap a line parallel to dock floor the length of the railramp track (See Fig. 5).
6. Measure in 3-1/2" from end chalk marks and down 9-1/2" from dock floor. This will locate the extreme lower end anchor points.
7. Drill ten holes, per 10' section, for 5/8" x 6" anchors.

NOTE: If existing curb steel has a vertical face of 10" or greater and is securely anchored, railramp track can be plug welded to curb steel through ten holes provided; thus eliminating step 5 and anchors required.

8. Measure back 12" from the dock edge and chalk a line along the dock floor parallel to the edge of dock the length of the rail (See Fig. 6).
9. Cut a groove 2" wide by 3/8" deep the length of the chalk line. The outside edge of the groove should be on the chalk line with the groove opening towards the edge of the dock (See Fig 6).
10. Position the railramp track on the dock face. The top edge of the railramp track should extend above the dock floor by 1/4".
11. Position the transition plate in place and using it as a template, drill anchor holes.
12. Secure transition plate with 5/8" x 5" anchors.
13. Weld and/or burn off anchor heads. This procedure should be done one anchor at a time to assure a secure mounting. Remove head, weld stud to plate, grind weld flat to assure smooth surface (See Fig. 6).
14. Proceed with railramp installation page 10.



Warning

Secure anchoring of the Railramp track is essential for safe operation. Inspect all existing curb steel prior to installation.

Installation

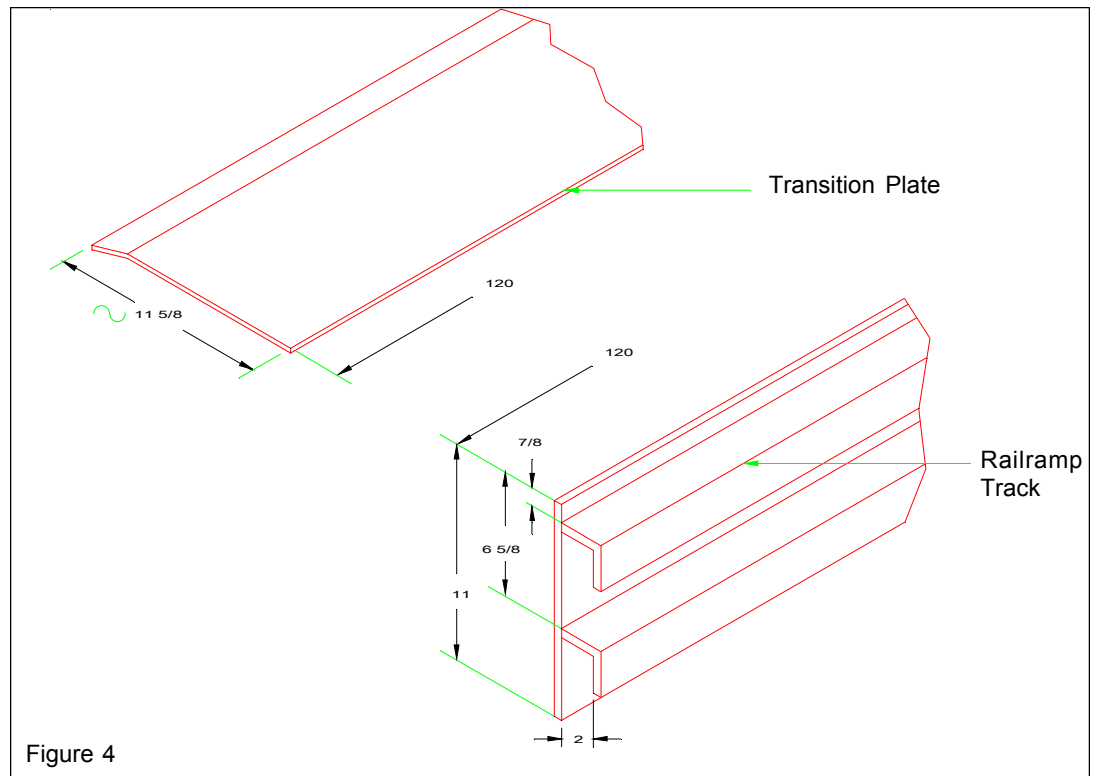


Figure 4

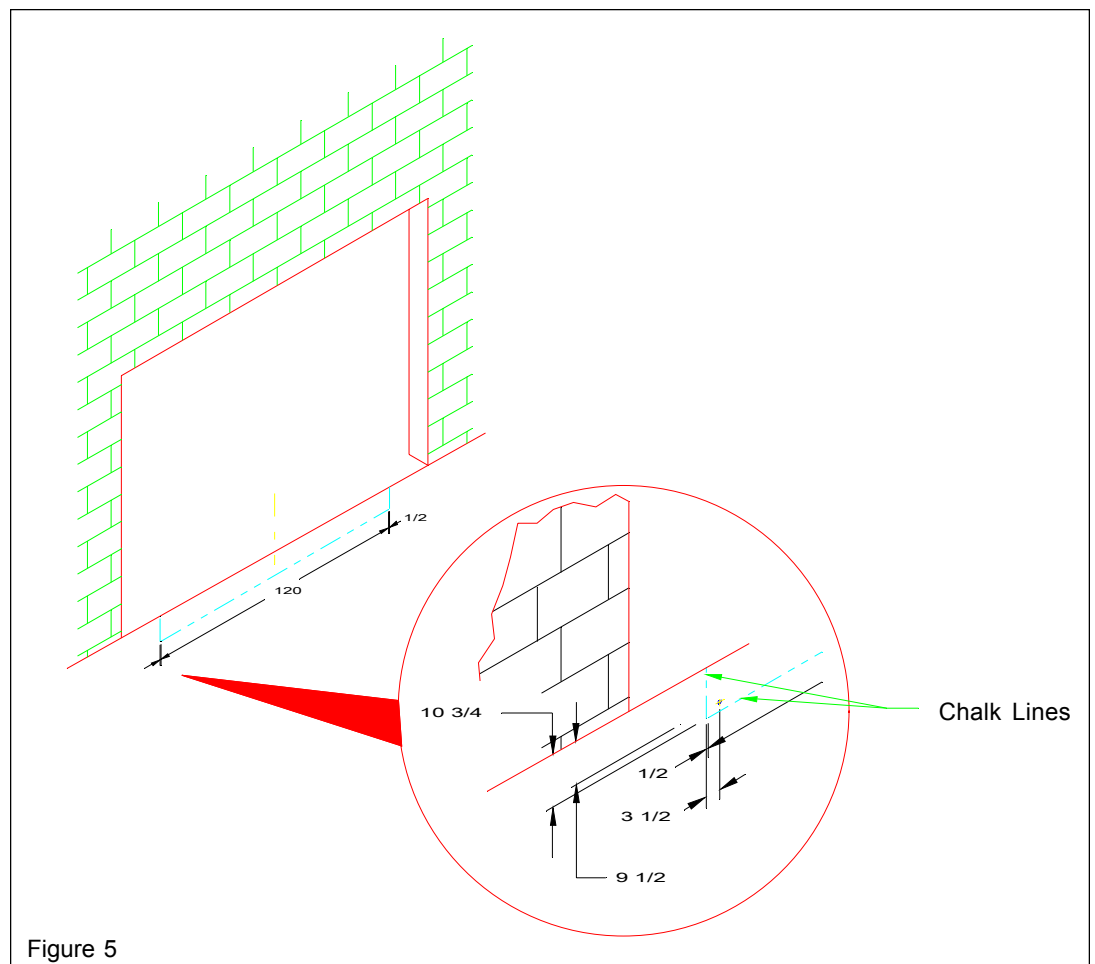


Figure 5

Installation

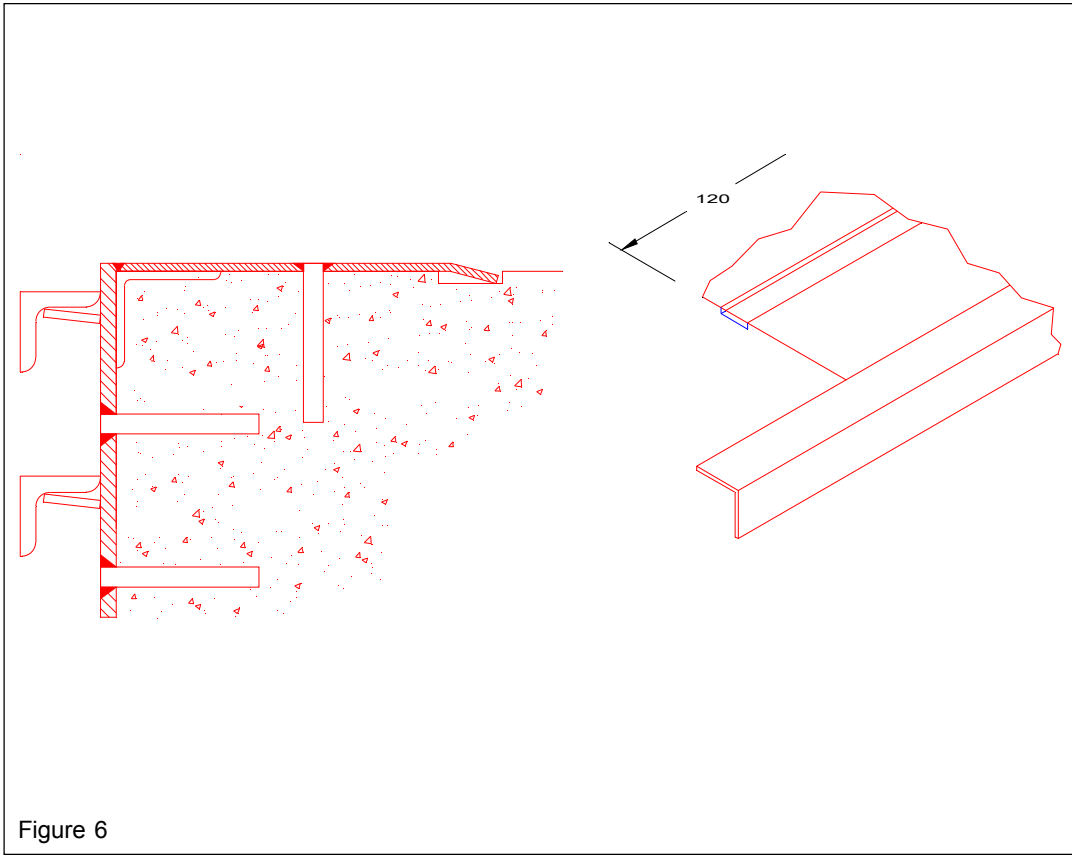


Figure 6

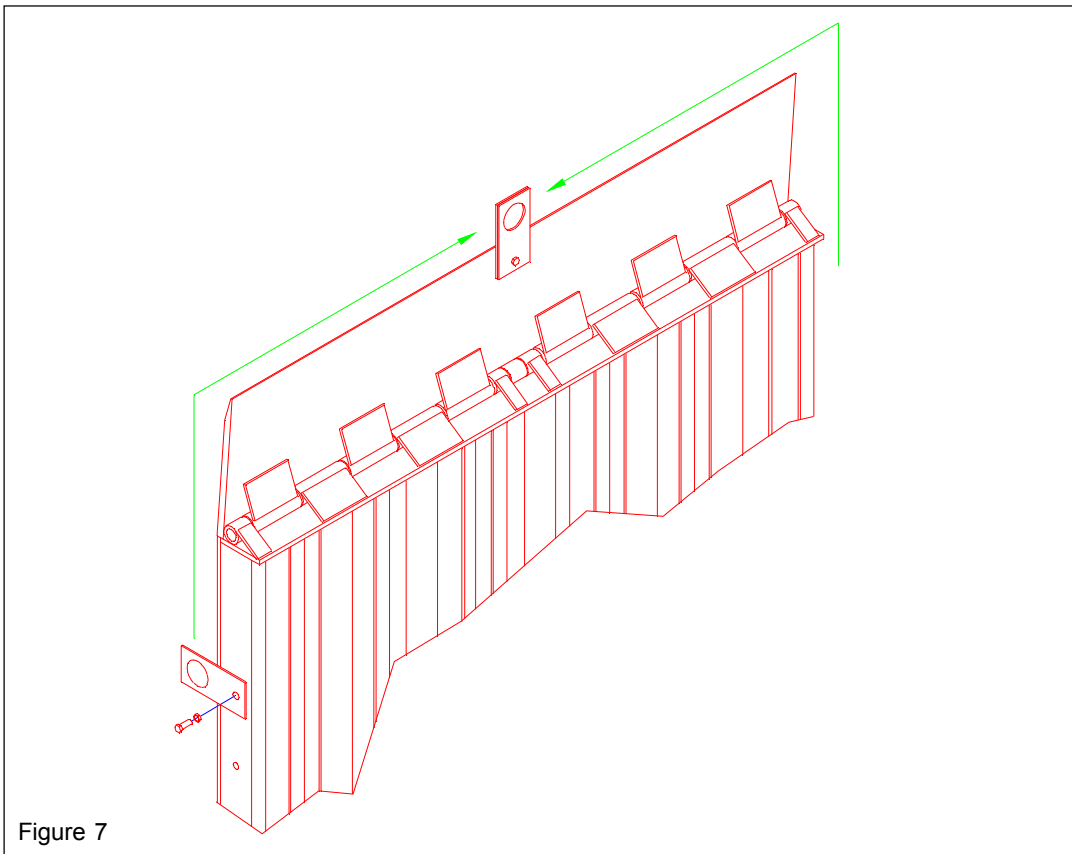


Figure 7

CAUTION

Guide Railramp onto track to minimize binding of rollers. Always lift unit from track side of Railramp.

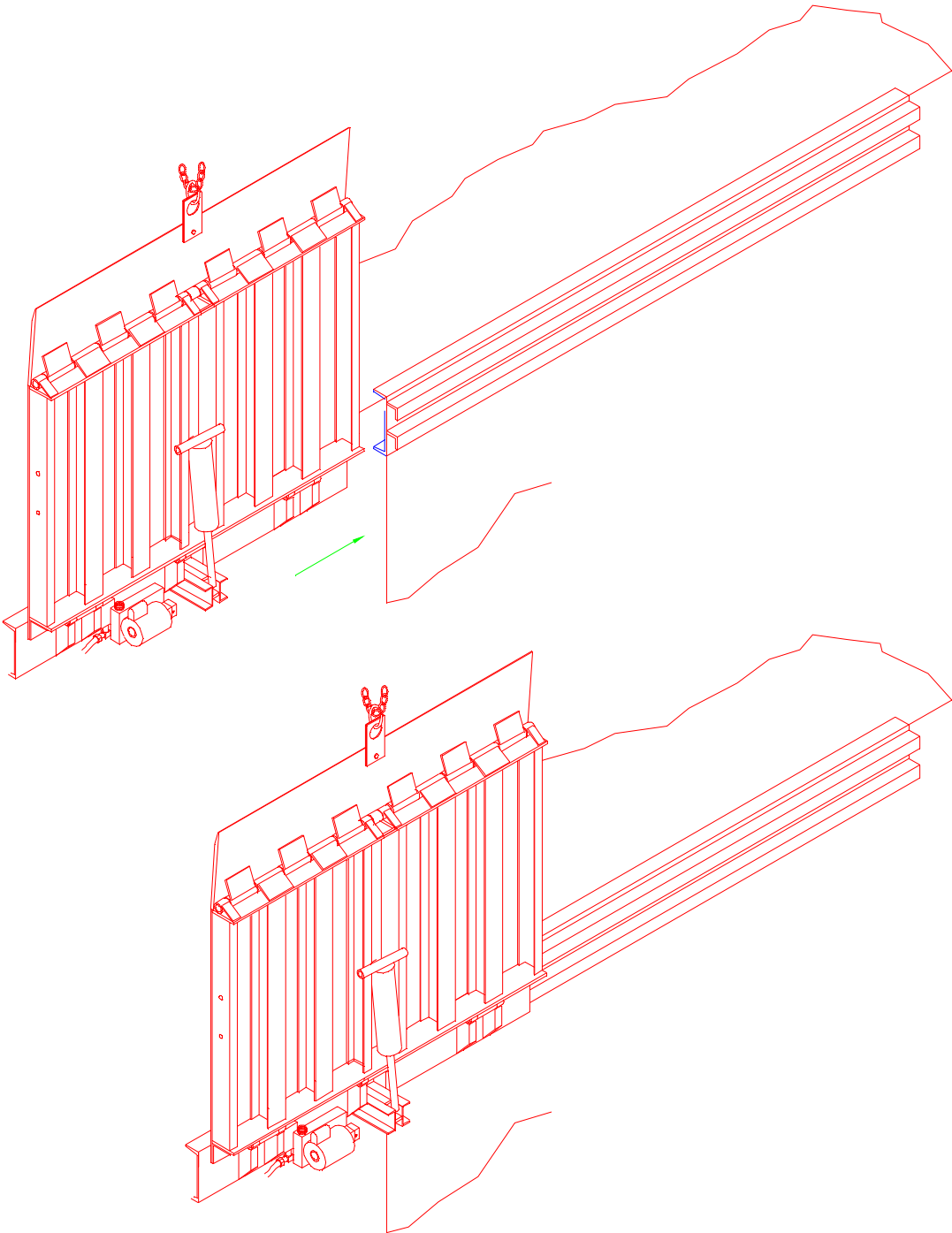


Figure 8

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Warning

Railramp must be held in place by a vertical hoist until installation is complete and unit is ready for operation.

Railramp Installation (flush type)

With the railramp track properly installed, the railramp can now be positioned on the track.

1. Poweramp railramps are shipped with lifting lugs attached to the outboard joists. If necessary, these lugs can be moved to the 3/4" hole provided in the lip for alternate installation (See Fig. 7).
2. Move the railramp and carriage assembly from the rail side to the end of the railramp track.
3. Position/align the railramp carriage with the railramp track. Slide the railramp rollers onto the railramp track.
4. Slowly move the railramp along the track until the second set of rollers engage railramp track. Railramp alignment must be maintained to eliminate binding (See Fig. 8).
5. When the second set of rollers have engaged track, lifting device can be lowered until slack is created. Check railramp for ease of motion on track.
6. Place a 1/4" x 2" x 8" or (2) 1/4" x 2" x 2" end stops along the ends of the 1/2" x 2-1/2" x 2-1/2" track angles. This will cap off tracks assuring railramp can not be accidentally pushed off track (See Fig. 9).
7. Electrically connect field wire. Wire power unit to junction box on building wall. **NOTE:** Conduit must be able to flex as railramp moves. Make necessary electrical connection in control enclosure.
8. Remove 3/8" NPT pipe plug from top of reservoir and replace with breather cap (See Fig. 10).
9. Before operating the railramp, the maintenance locks must be moved to the unlock position (See Fig. 14) on page 14.
10. Although every effort has been made to purge all air from the hydraulic system, it is possible that air may have been introduced during shipping and/or installation. The first several operating cycles of the railramp should be done with the lifting mechanism attached. Caution must be used to maintain slack in the lifting mechanism to assure proper railramp operation.
11. Operate railramp several times to purge any air that may have entered system during shipment.
12. Unhook lifting mechanism and repeat procedure until all units are installed.

Installation

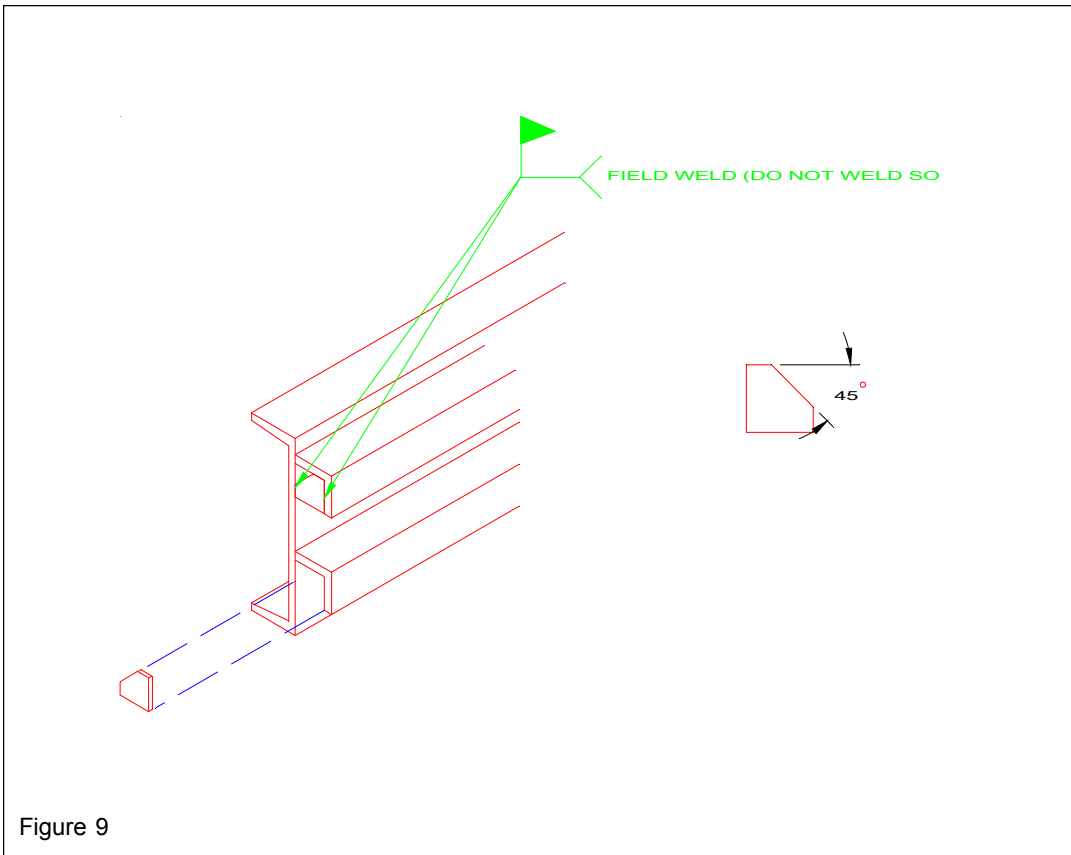


Figure 9



Warning

Ends of Railramp track must be capped off to prevent Railramp from rolling off.

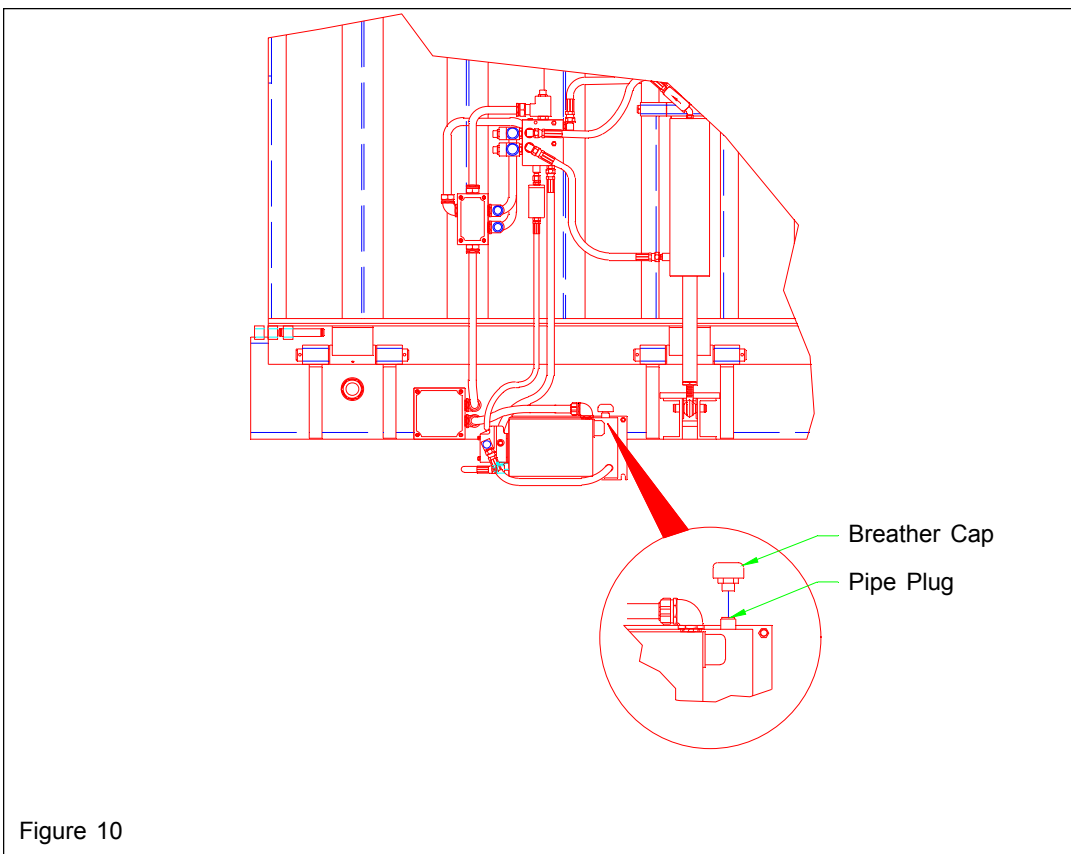


Figure 10



Warning

Pipe plug atop reservoir must be replaced with breather prior to operation of unit.

CAUTION

Positioning a Railramp with a fork truck can result in mechanical damage and create an unsafe piece of equipment.



Warning

Always operate the railramp from atop the loading dock.



Warning

Improper use of this equipment may cause personal injury or property damage.

CAUTION

Never leave the Railramp in a horizontal position unless loading or unloading.

Positioning the Railramp

To position a Railramp, it must be in the vertical position. When it is down, (loading/unloading), it should not be moved. Railramp can be moved easily by walking on the top of the dock and pushing on the side. Never move a Railramp when standing on the ground in front of it.

Controls

Poweramp Railramps are operated via a remote control enclosure. This enclosure has a Nema 12 rating. Included is a toggle switch to turn 115 volt control voltage on and off. Also included are three pushbuttons which require constant pressure to operate the Railramp (See Fig. 11).

To lower the Railramp, depress and hold the lower button.

To raise the Railramp, depress and hold the raise button.

To fold the lip down, depress and hold the lower button and lip button simultaneously.

To extend the lip, depress and hold the raise and lip button simultaneously.

Operation

Lowering the Railramp:

Before lowering the Railramp, be sure the operating zone is free and clear of obstructions.

The railramp is designed to be supported by the rail car during use. The railramp must never be lowered and used without a rail car ready to support the railramp lip and/or railramp support arms.

When operating a Railramp, the operator must determine whether the rail car is completely full or not.

Partially Full:

If the rail car is not completely full, the operator should extend the support arms sufficiently to reach into the rail car before lowering the unit into the rail car (See Fig. 12).

Completely Full:

If the rail car is completely full, the operator should extend the support arms so they reach onto the door threshold but not into the cargo. Then as the Railramp is lowering if the lip is not folded, the operator should fold the lip so as to not damage the cargo.

Once the Railramp is in position, the operator should check to assure that the support arms are locked in position. They should also be resting firmly against the rail car floor.

Float Range:

You may notice that as you lower the Railramp into position, the last twelve or so inches of vertical travel do not require pressure on the lower button. This feature is designed into the operation to allow for the roll motion of the rail car during loading/unloading (See Fig. 13).

Raising the Railramps:

Before raising the Railramp, be sure the operating zone is free and clear of obstructions.

Depress and hold the raise pushbutton switch until the Railramp is fully raised.

After the Railramp is in the vertically stored position, turn the toggle switch to off to avoid any accidental operation.

Operating Instructions

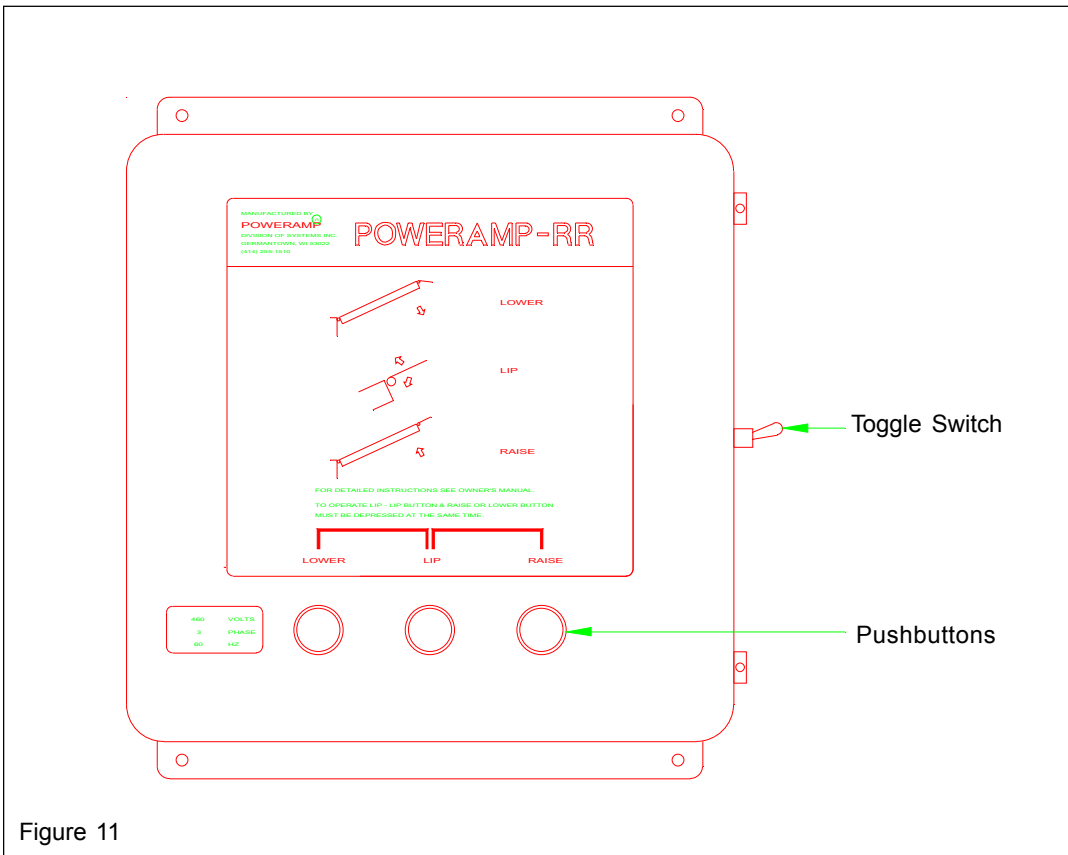


Figure 11

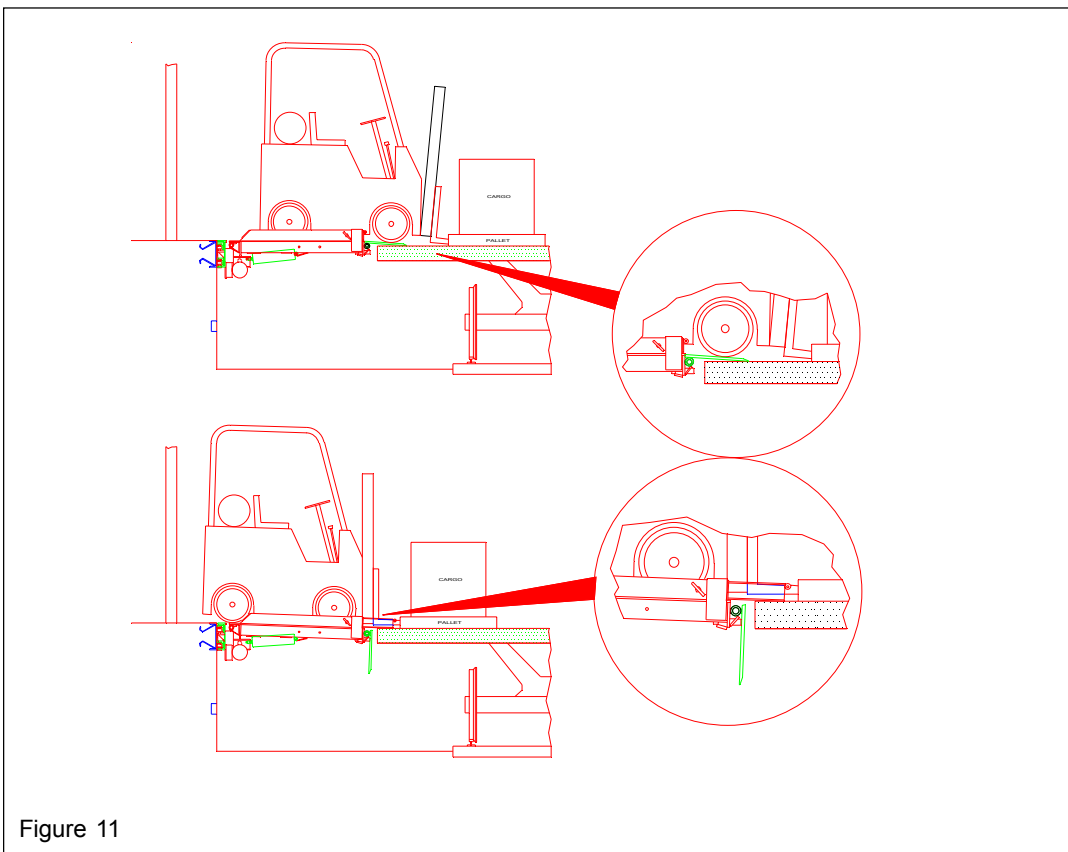


Figure 11



Warning

End of Railramp must always be supported by rail car. Severe damage and/or injury can result if Railramp is used with end unsupported.

Operating Instructions

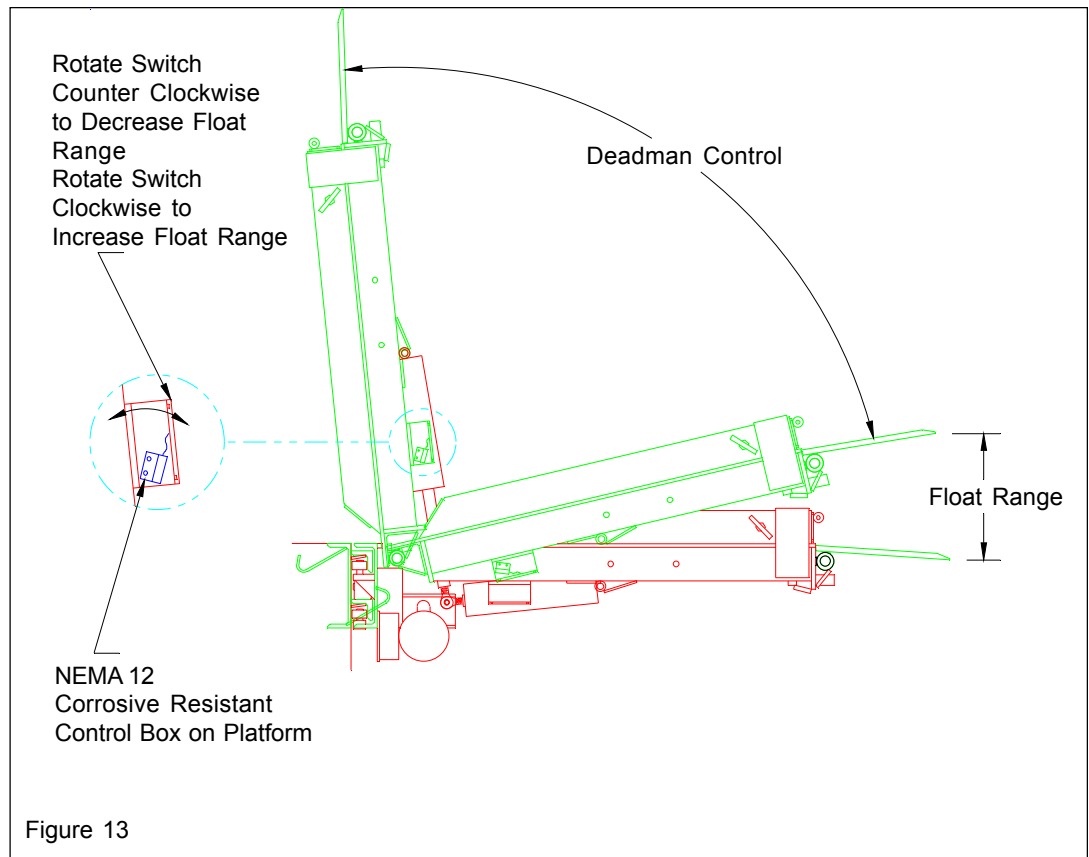


Figure 13

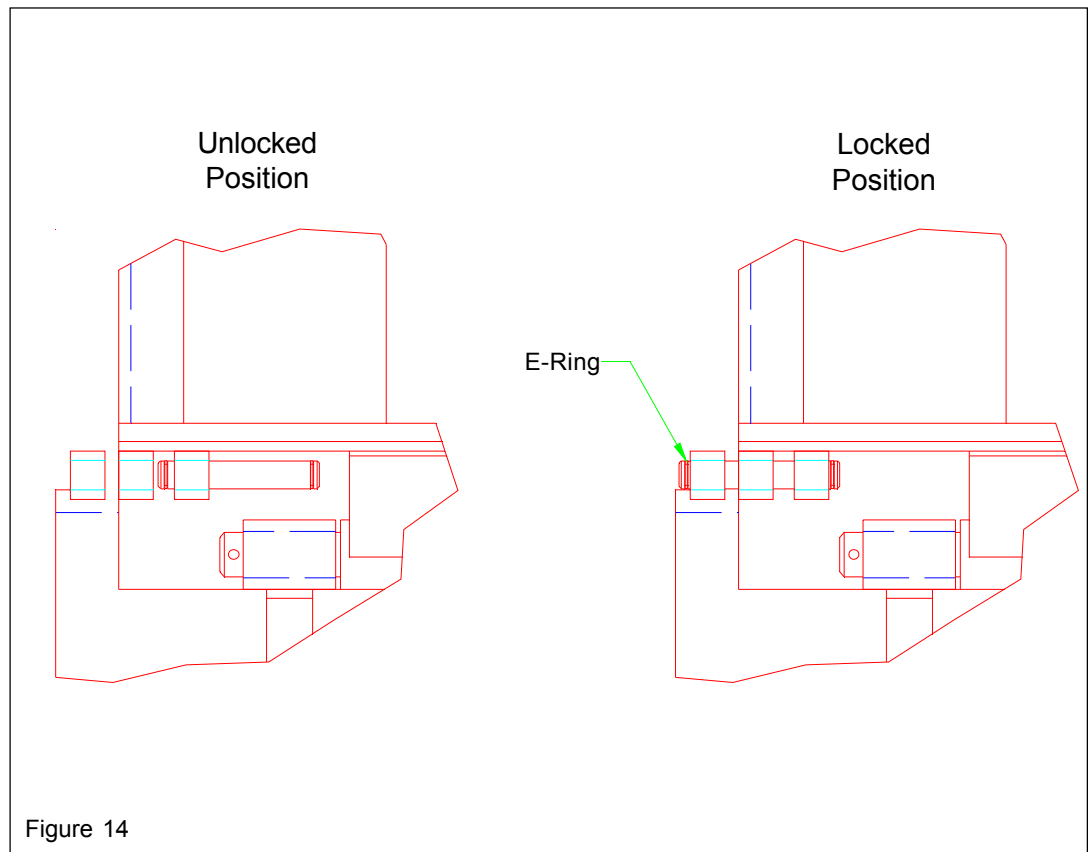


Figure 14



Warning

Always utilize safe work habits whenever working on a Railramp. Whenever parts are to be removed, use additional lifting device to support Railramp.

Preventive Maintenance

Servicing the Railramp

With proper care and adjustment, your Poweramp Railramp will provide many years of satisfactory service.

Recommended Hydraulic Fluids

To assure normal operation of the unit, the following hydraulic fluids are recommended:

- Aero Shell fluid #4 Code #60421 by Shell Oil Co.
- Mobil Aero HFA Mil-H5606A by Mobil Oil Co.
- Texaco Type BB
- Filmite No. 530
- Exxon "Univis J13"

Use of hydraulic fluids with equivalent specifications to those listed above are acceptable. Use of fluids that do not have equivalent specifications will result in abnormal operation of the unit and possible voiding of warranty.

Maintenance Lock

Poweramp Railramps incorporate an integral locking device that must be used whenever working in front of or under a Railramp. This device is intended to avoid accidental lowering of the ramp while maintenance work is being performed.

To utilize the locking device, simply remove the "E" ring from the pin and slide the pin from position A to position B as shown in figure 14. Replace "E" ring to assure that pin does not slide out. Although this device offers additional protection from the railramps falling, it is not intended to support the Railramp should large forces be exerted to push the railramp down. For any maintenance that involves the removal of components, the railramp must be supported by some auxiliary lifting device.

Weekly Maintenance

1. At least once each week, operate the unit through all of its operating cycles to maintain lubrication.
2. Inspect the Railramp hinge area and lip hinge area. The hinge areas should be kept free of debris and dirt. Build-up of foreign material in the hinge areas will cause abnormal operation of the unit.
3. Inspect the carriage/track roller mechanism for free and easy lateral positioning of Railramp lubricant as required.

Monthly Maintenance

1. Lubricate as shown on lube chart figure 15, page 16.
2. Check hydraulic fluid level at breather cap atop reservoir. If oil level is more than 1" below full level, add appropriate hydraulic fluid, see recommended hydraulic fluids (See Fig. 16).



Warning

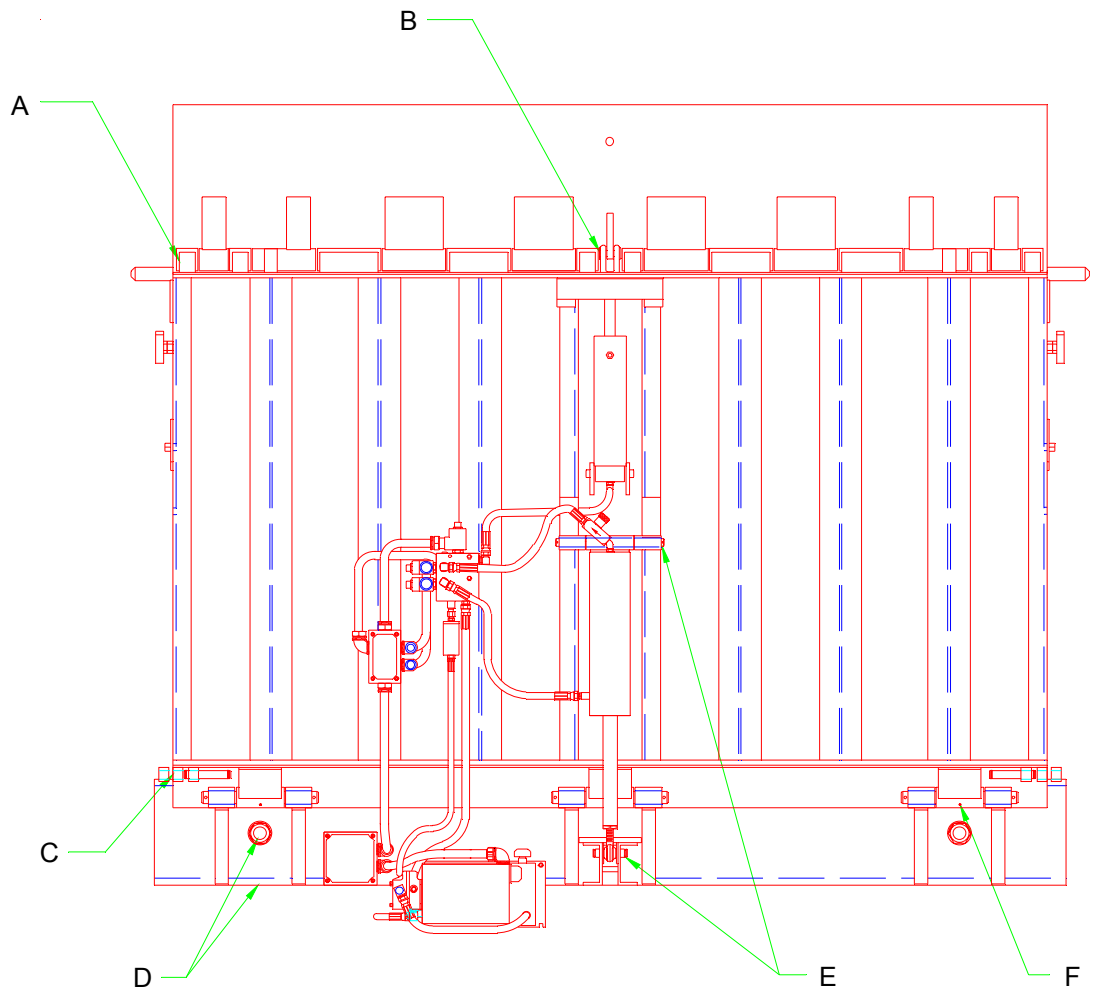
To insure proper operation, use only approved hydraulic fluids.

Preventive Maintenance



Warning

Arrow on flow control valve must point away from hoist cylinder. Improper installation will allow Railramp to free fall which could result in serious injury and/or property damage.



- A Lip Hinge
- B Lip Cylinder Pin
- C Maintenance Locks (2)
- D Rollers
- E Hoist Cylinder Pins (2)
- F Rear Hinge Pins (3)

Figure 15

Preventive Maintenance

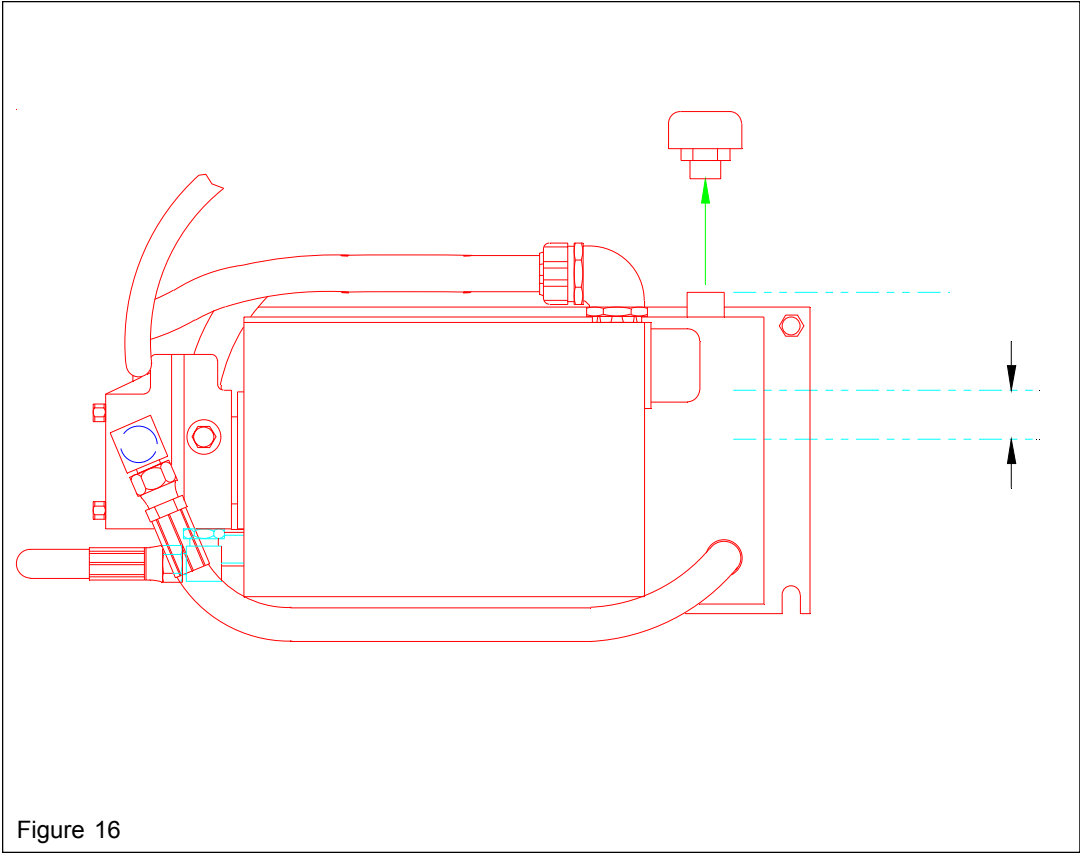


Figure 16

Troubleshooting Guide



Warning

Always barricade the work area to prevent unauthorized use of the unit during repair or maintenance procedures.

Always lock off all electrical disconnects after raising platform and setting maintenance lock when service under the unit is required. More than one electrical disconnect switch may be required to de-energize the equipment.

Always stand clear of the Railramp when operating the unit.

Perform the following procedures prior to beginning detailed troubleshooting:

- A. Check all fuses inside the control assembly(s). Replace any bad fuse with one of equivalent specifications.
- B. Confirm presence of all necessary voltages inside the control assembly. Check branch circuit fuses and/or circuit breakers if all voltages are not present.

Railramp		
Problem	Cause(s)	Solution(s)
Railramp does not operate. Motor does not energize.	<ul style="list-style-type: none"> 1. Motor overload device tripped. 2. Motor starter (3 phase) or motor relay (1 phase) not energizing. 	<ul style="list-style-type: none"> 1. Reset overload relay (3 phase) or replace fuse (1 phase). Determine cause of device tripping. NOTE: If replacing fuse, replace with device of equal specifications. 2. Check device that sends signal to starter or relay. Device may have failed OPEN. Use meter to check for contact closure when device is ON.

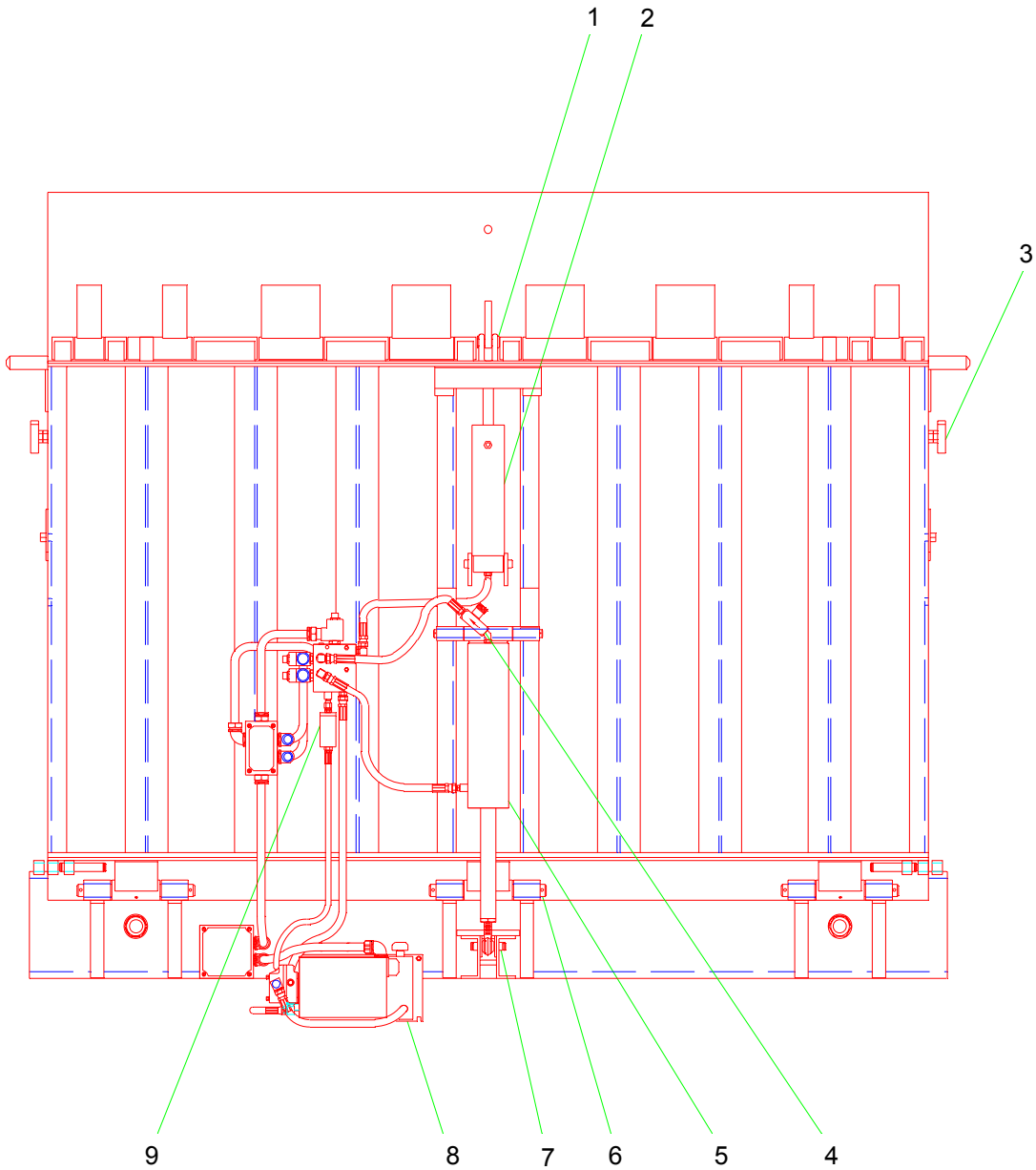
Troubleshooting Guide

Problem	Cause(s)	Solution(s)
Railramp does not operate. Motor energizes but does not run (motor hums, overload device should trip).	<ol style="list-style-type: none"> 1. 3 phase units only--voltage at one line is absent (motor being single phased). 2. 1 phase units only--motor centrifugal switch faulty. 	<ol style="list-style-type: none"> 1A. Fuses at motor branch circuit overcurrent device only--check for tripped fuse. Replace fuse. Determine cause of fuse tripping. 1B. Check motor starter for component failure. Disconnect wires at load side of starter. Use voltmeter to read line-to-line voltages at line side and load side of starter. Line side and load side voltage values should be nearly identical. Replace starter if values are not identical. 1C. Check all wiring to motor for high resistance (loose) or no connection. 2. Replace motor.
Railramp operates slowly.	<ol style="list-style-type: none"> 1. Low hydraulic fluid. 2. Pressure relief valve set too low. 3. Damaged or blocked hydraulic hose(s). 	<ol style="list-style-type: none"> 1. Add fluid, see Preventative Maintenance section, page 15. 2. Locate pressure relief valve. Turn valve 3/4 turn (CW). Increase the valve set point until the Railramp operates properly. NOTE: The valve set point should NOT be set at a level that will cause the motor operating current to exceed its full load amp value at any time, including when the unit is operated in pressure relief. 3. Replace damaged hose(s). Remove blockage from hose(s).
Railramp does not fully raise or motor overcurrent device and/or overload device continuously tripping.	<ol style="list-style-type: none"> 1. Low hydraulic fluid. 	<ol style="list-style-type: none"> 1. Add fluid. See Preventative Maintenance section, page 15.

Troubleshooting Guide

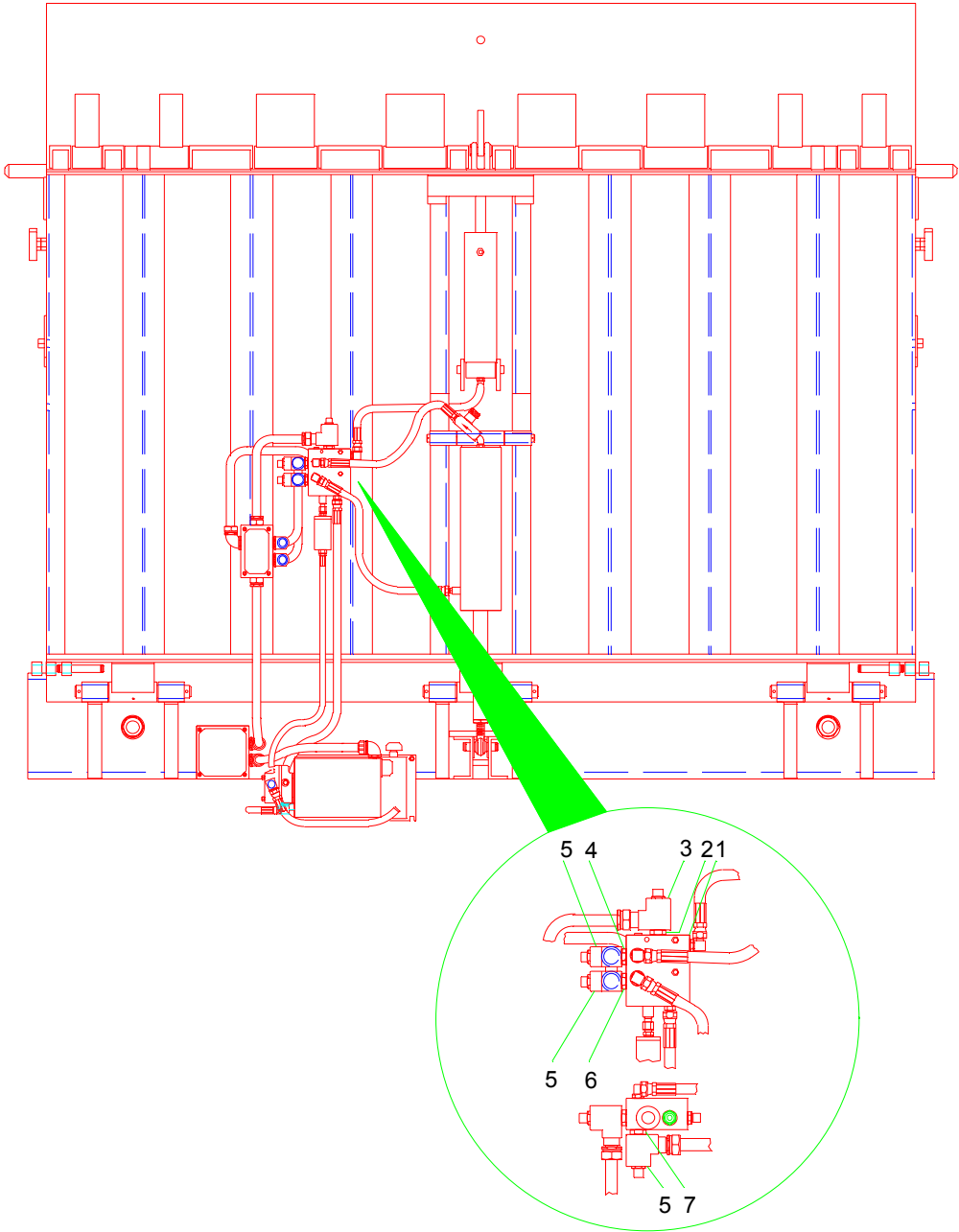
Problem	Cause(s)	Solution(s)
Railramp motor runs continuously.	1. 1 phase unit only--contactor stuck on.	1. Locate and replace.
Railramp will not lower.	1. Locking device in place. 2. Lowering speed control shut off.	1. Reposition pin in unlock position (See fig. 14). 2. Locate valve, open slightly. Adjust accordingly.
Railramp lowers too fast.	1. Down speed adjustment improper.	1. Setting can be decreased by turning knuckled knob (CW), adjust to suit.
Railramp lowers without depressing button.	1. Float switch misadjusted.	1. Adjust so switch is active only when Railramp is approximately 6" above horizontal position.
Lip will not fold.	1. Debris in hinge line. 2. Solenoid valve stuck.	1. Clean hinge, remove debris. 2. Remove and check valve and coil for proper operation. Clean, replace if necessary.
Lip will not extend.	1. Debris in hinge line. 2. Solenoid valve stuck.	1. Clean hinge, remove debris. 2. Remove and check valve and coil for proper operation. Clean, replace if necessary.
Railramp does not move on track.	1. Debris in track. 2. Rollers bound.	1. Clean track, remove debris, grease rollers. 2. Remove cartridge and replace rollers.

Railramp Parts List



ITEM	DESCRIPTION	PART NUMBER
1	Lip Cylinder Pin	0522-0005
2	Lip Cylinder	0525-0054
3	Support Arm Lock	9513-0017
4	Down Speed Valve	8581-0012
5	Hoist Cylinder	0525-0066
6	Pin	9202-0037
7	Hoist Cylinder Pin	9202-0031
8	Powerpac	9395-0056
9	Hydraulic Filter	9301-0121

Valve Parts List



ITEM	DESCRIPTION	PART NUMBER
1	Complete Valve Assembly	8585-0078
2	3 way valve	8581-0005
3	Coil Assembly	8593-6012
4	2 way valve NC	8581-0010
5	Coil Assembly	8593-7012
6	4 way valve	8581-0011
7	2 way valve NC-B1	8581-0102

Visual Inspection

Poweramp's hydraulic railramp has been designed to make loading or unloading rail cars easier. Sections of this manual have been devoted to installation, operation, maintenance, etc. To assure that your railramp stays in top working order, visual inspections should be made monthly. These inspections should include the railramp assembly and the railramp track.

The railramp track acts as the support anchor for the pivoting end of the railramp. Any loose, chipped or missing concrete or anchors must be corrected before operating the railramp. Use of the railramp with any of the above conditions can result in serious personal injury and/or property damage. If any of the above conditions exist, the railramp must be taken out of service until repairs are made.

SYSTEMS, INC. WARRANTY

RAILRAMP

Systems, Inc. guarantees the materials, components, and workmanship in your Poweramp RailRamp to be of the highest quality and to be free of defects in material and workmanship for a period of one (1) year from date of shipment specifically the deck section, lip section, rear hinge, front hinge.

Systems, Inc. further guarantees the hydraulic components on all Poweramp dock levelers for a period of one (1) year from date of shipment. Specifically this guarantee applies to 1) fluid logic control assembly, 2) all hydraulic cylinders, 3) hydraulic pressure lines, and 4) hydraulic pump and motor. The electrical components carry a one year warranty.

In the event of any defect covered by this guarantee, Systems, Inc. will remedy said defect by repairing or replacing all defective parts, bearing all of the costs for parts, labor and transportation.

All guarantee claims will be settled on a timely basis when defects are found to be from other than improper installation, operating contrary to instructions or beyond rated load capacities, abuse, careless or negligent use, or failure to maintain the unit as recommended by the owner's manual.

There are no guarantees, either expressed or implied, including any implied guarantees of merchantability or fitness for a particular purpose which shall extend beyond the guarantee periods indicated above. This guarantee is valid only if the unit(s) is unaltered from original condition as delivered from the factory and a survey is completed by a Poweramp representative.



W194 N11481McCormick Drive – PO Box 309 - Germantown, WI 53022
Phone 800-643-5424
Fax: 262-255-4199
www.docksystemsinc.com