

A Division of Systems, LLC

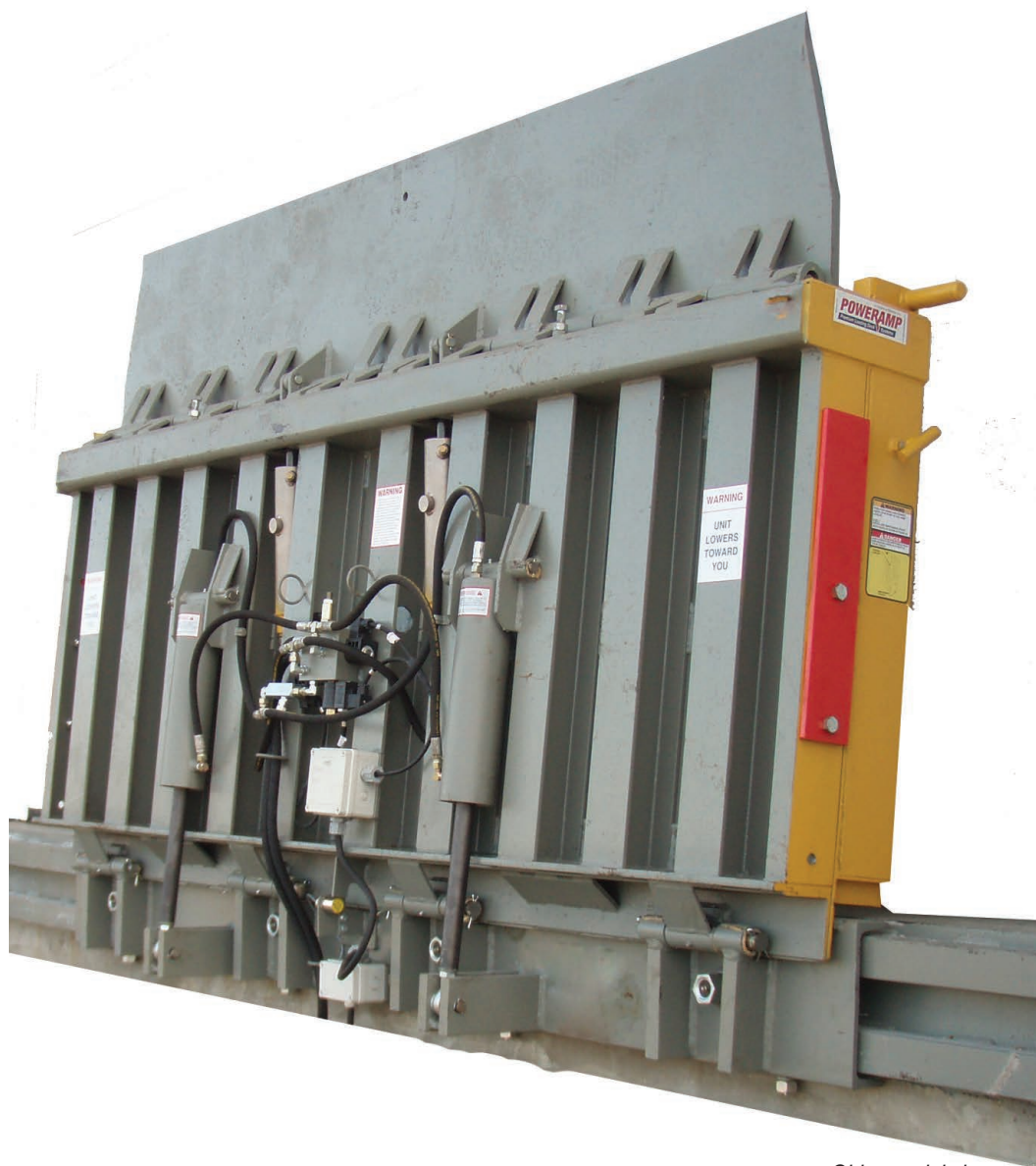
POWERAMP[®]

Premium Loading Dock Systems

RCR Series

Dock Leveler

Owner's/User's Manual



Older model shown.

Poweramp • Division of Systems, LLC • W194 N11481 McCormick Drive • Germantown, WI 53022
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Manual No. 4111-0044
June 2021

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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.

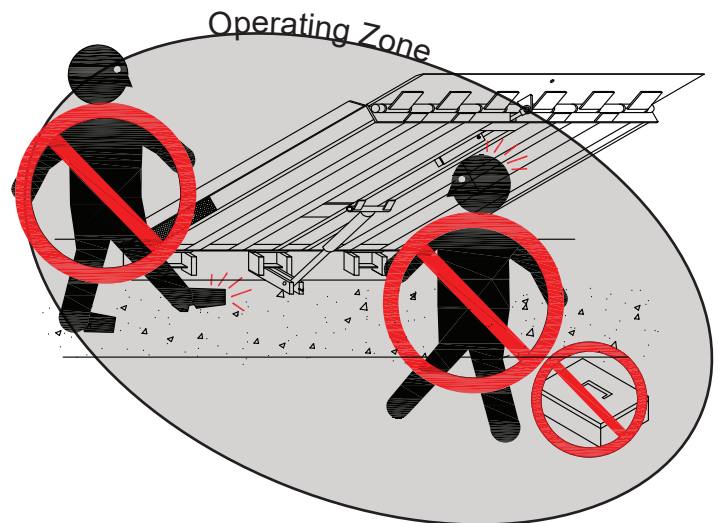


Figure 1

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

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



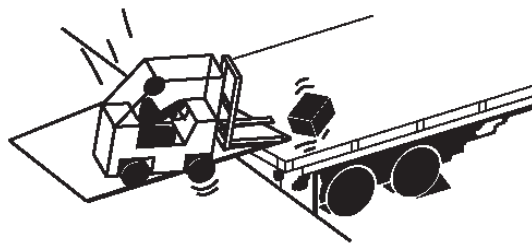
Chock/restrain all transport vehicles. Never remove the wheel chocks or release the restraining device until loading or unloading is finished, and transport driver has been given permission to drive away.



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.



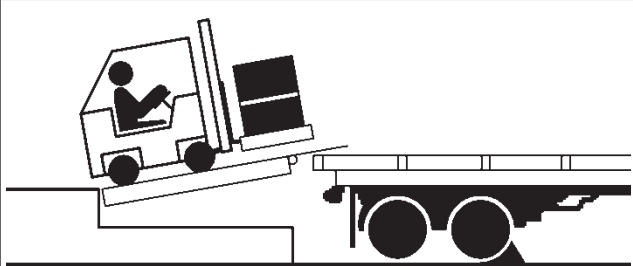
Make sure lip overlaps onto transport vehicle bed at least 4 in. (102 mm).



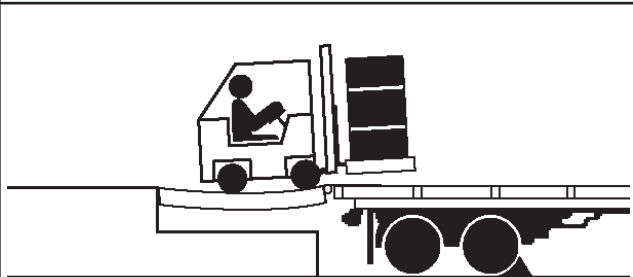
Keep a safe distance from both side edges.

Operational Precautions

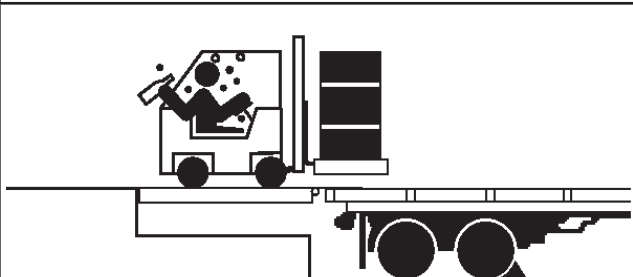
! WARNING



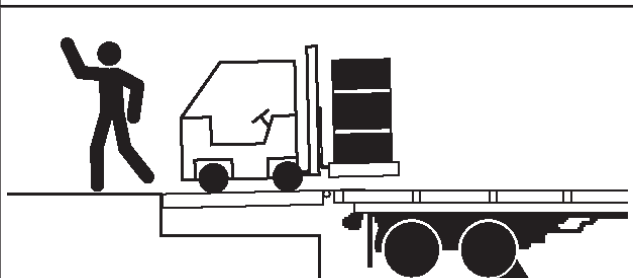
Do not use dock leveling device if transport vehicle is too high or too low.



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

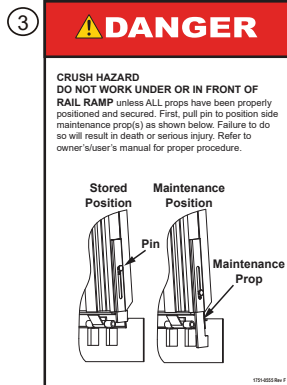
Safety Decals



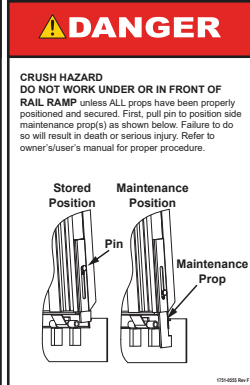
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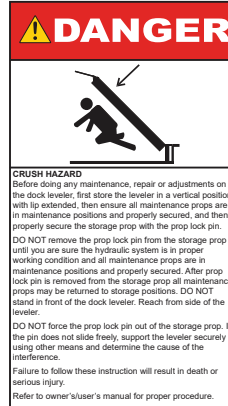
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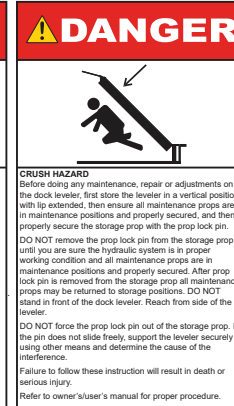
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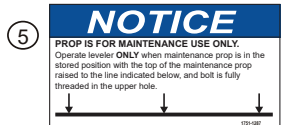
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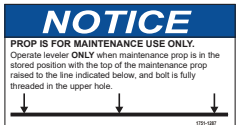
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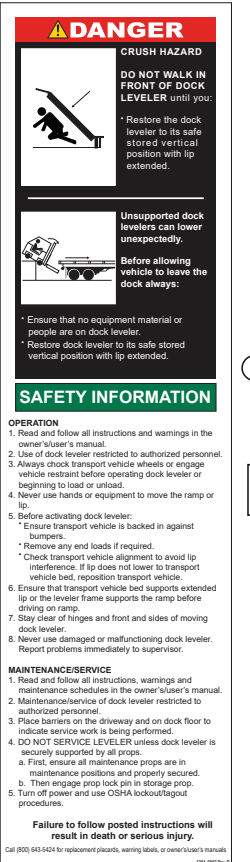
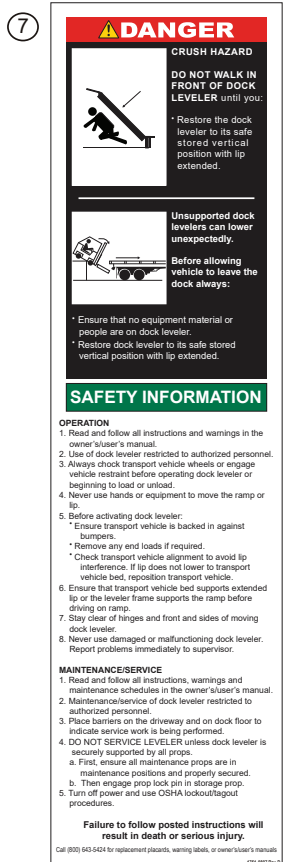
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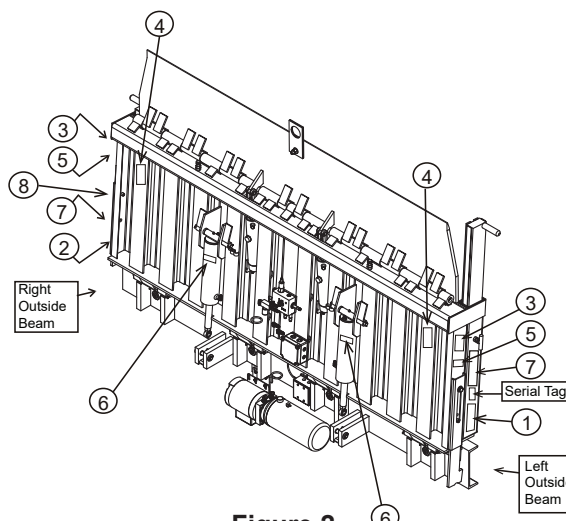


Figure 2

Decal 3 will have two positions, one on the left outside beam as shown and one on the right outside beam in the same position. Decal 7 will have two positions, one on the left outside beam as shown and one on the right outside beam in the same position. Decal 5 will have two positions, one on the left outside beam as shown and one on the right outside beam in the same position. Decal 2 will be positioned on the upper most corner of the right outside beam (mirror position of decal 1)

Placard



DANGER

- Read and follow all instructions, warnings, and maintenance schedules in the manual and on placards.
- Operation and servicing of dock leveler is restricted to authorized personnel.
- Before activating rail ramp, ensure lip avoids contact with rail car sides and cargo. If lip does not lower to rail car bed, reposition rail ramp or rail car.
- Ensure that the rail car floor supports extended lip or the endload arms are supported by the rail car floor before driving out onto rail ramp.
- Stay clear of hinges and front and sides of moving rail ramp.
- Never use hands or equipment to raise or lower rail ramp platform or lip.
- Never use damaged or malfunctioning rail ramp. Report problems immediately to supervisor.
- Always store rail ramp upon completion of loading or unloading product from rail car.
- DO NOT STAND in front of rail ramp unless ramp is securely supported by maintenance props.
- Disconnect power and follow proper lockout/tagout procedures for the rail ramp before doing any repair or inspection under the rail ramp.

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
1.800.643.5424
 Call for additional placards, or manuals, or with questions regarding proper use, maintenance, and repair of dock leveler.

WARNING: CANCER AND REPRODUCTIVE HARM
www.P65Warnings.ca.gov

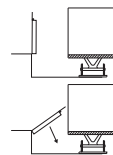


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OPERATING INSTRUCTIONS

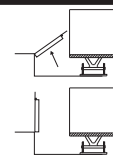
RAIL RAMP LEVELERS



NORMAL OPERATION

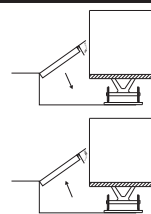
1. To lower the rail ramp, Press and hold the LOWER button until lip is supported by the rail car.

NOTE: At about 12" to 15" above dock height the rail ramp will enter the float range.



STORING LEVELER

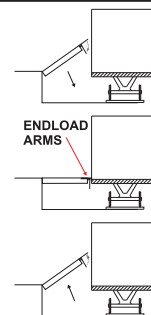
1. To store the rail ramp, Press and hold the RAISE button until the rail ramp is slightly past the full vertical position. Once ramp reaches slightly past the full vertical position, release the RAISE button.



LIP OPERATION

1. To fold the lip the rail ramp must be in the lower mode. With the LOWER button Pressed simultaneously Press the LIP button. With both buttons Pressed, the lip will fold.
2. To extend the lip the rail ramp must be in the raise mode. With the RAISE button Pressed simultaneously Press the LIP button. With both buttons Pressed the lip will extend.

NOTE: The lip will only operate while the rail ramp is being operated outside the float range.



BELOW DOCK ENDLOADING

1. Extend the endload arms. The endload arms must contact the rail car floor to provide support for the ramp. Press and hold the LOWER button. Before the leveler reaches the float range, simultaneously Press the LIP button to fold the lip completely. Once the lip is completely folded (pendant) the LIP button can be released. Continue Pressing the LOWER button until the leveler reaches the float range. The rail ramp will lower until the endload arms are supported by the rail car floor. Endloads can now be removed from or placed on the rail car.
2. Once endloads have been removed the rail ramp can be placed into the rail car by Pressing the RAISE button. Once the rail ramp is outside the float range, the lip can be extended by simultaneously Pressing the LIP button and the RAISE button. With the lip fully extended, both buttons can be released. The rail ramp can now be lowered or stored.

OWNER'S/USER'S RESPONSIBILITIES

- 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 Manufacturers Contact Information, as well as tables to identify the grade(slope) for all variations of length or configuration of the dock leveling device and information identifying the maximum uncontrolled drop encountered when sudden removal of support while in the working range of the equipment.
- 2) When selecting loading dock safety equipment, 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 and capacity.
- 3) 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 for. Contact manufacturer for any replacements.
- 4) Dock leveling devices may become hazardous if the manufacturer's instructions regarding modifications or adjustments are not followed. Modifications or alterations of dock leveling devices shall only be made with prior written approval from the original manufacturer. These changes shall be in conformance with all applicable provisions of the MH30.1 standard and shall also satisfy all safety recommendations of the original equipment manufacturer of the particular application.
- 5) 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 loading dock equipment 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 dock leveling 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.
- 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) Assure that the operator reads and fully understands the complete manufacturer's owners/users 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 dock leveling device and components design as related to safety, e.g., mechanical limitation, stability, functionality, etc.
 - e) Introduce the equipment. Show the control locations and demonstrate its functions. Explain how they work when used properly and maintained as well as problems when they are used improperly.
 - f) Assure that the operator understands the capacity rating, nameplate data, placards and all precautionary information appearing on the dock leveling 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.

OWNER'S/USER'S RESPONSIBILITIES

- 7) Loading dock safety equipment should never be used outside of its vertical working range, or outside the manufacturer's rated capacity. It shall also be compatible with the loading equipment and other conditions related to dock activity. Please consult the manufacturer if you have any questions as to the use, vertical working range or capacity of the equipment. Only properly trained and authorized personnel should operate the equipment.
- 8) It is recommended that the transport vehicle is positioned as close as practical to the dock leveling device and the dock leveling device is centered in the door opening as much as possible. 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. Also, whenever possible, air-ride suspension systems should have the air exhausted prior to performing said loading and unloading operations.
- 9) 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 manufacturers' recommendations are the sole responsibility of the owner/user.
- 10) Manufacturer's recommended maintenance and inspection of all dock leveling 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 dock leveling devices, and only the use of original equipment manufacturer parts, manuals, maintenance instructions, labels, decals and placards or their equivalent. Written documentation of maintenance, replacement parts or damage should be kept. In the event of damage, notification to the manufacturer is required.
- 11) Loading dock devices that are structurally damaged or have experienced a sudden loss of support while under load, such as might occur when a transport vehicle is pulled out from under the dock leveling device, 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

General Information



Figure 3 Older model shown.

This manual provides current information on the RCR-series dock leveler (Figure 3). Due to ongoing product improvement, some parts may have changed, along with operation and troubleshooting methods. This manual describes these changes where applicable.

The RCR series dock leveler comes equipped with an electrical control panel, which allows push button operation of the dock leveler functions. Each RCR dock leveler unit and control panel has been factory prewired and tested to ensure satisfactory operation.

To illustrate which connections are to be made in the field at installation, electrical drawings are included with each order or by contacting Systems, LLC Technical Services.

RCR dock levelers are available in the following sizes, weight capacities, and options:

Width

- 6 ft (1829 mm)
- 6-1/2 ft (1981 mm)
- 7 ft (2134 mm)
- 7-1/2 ft (2286 mm)
- 8 ft (2438.4 mm)
- 8-1/2 ft (2590 mm)
- 9 ft (2743 mm)

Length

Varies (based on track center line dimensions)

Capacity (CIR*)

- 40,000 lb (18 144 kg)
- 50,000 lb (20 412 kg)
- 60,000 lb (22 680 kg)
- 80,000 lb (36,288 kg)
- 100,000 lb (45,360 kg)
- 120,000 lb (54,432 kg)

* CIR (Comparative Industry Rating)

Call Poweramp to discuss available Powerpack mounting configurations, voltages, phases and options to meet your specific needs.

Technical Service at 800-643-5424 or techservices@loadingdocksystems.com

Component Identification (Fixed RCR)

Inspect package and all components. Report any missing or damaged items immediately and note on the shipping Bill Of Lading (BOL).

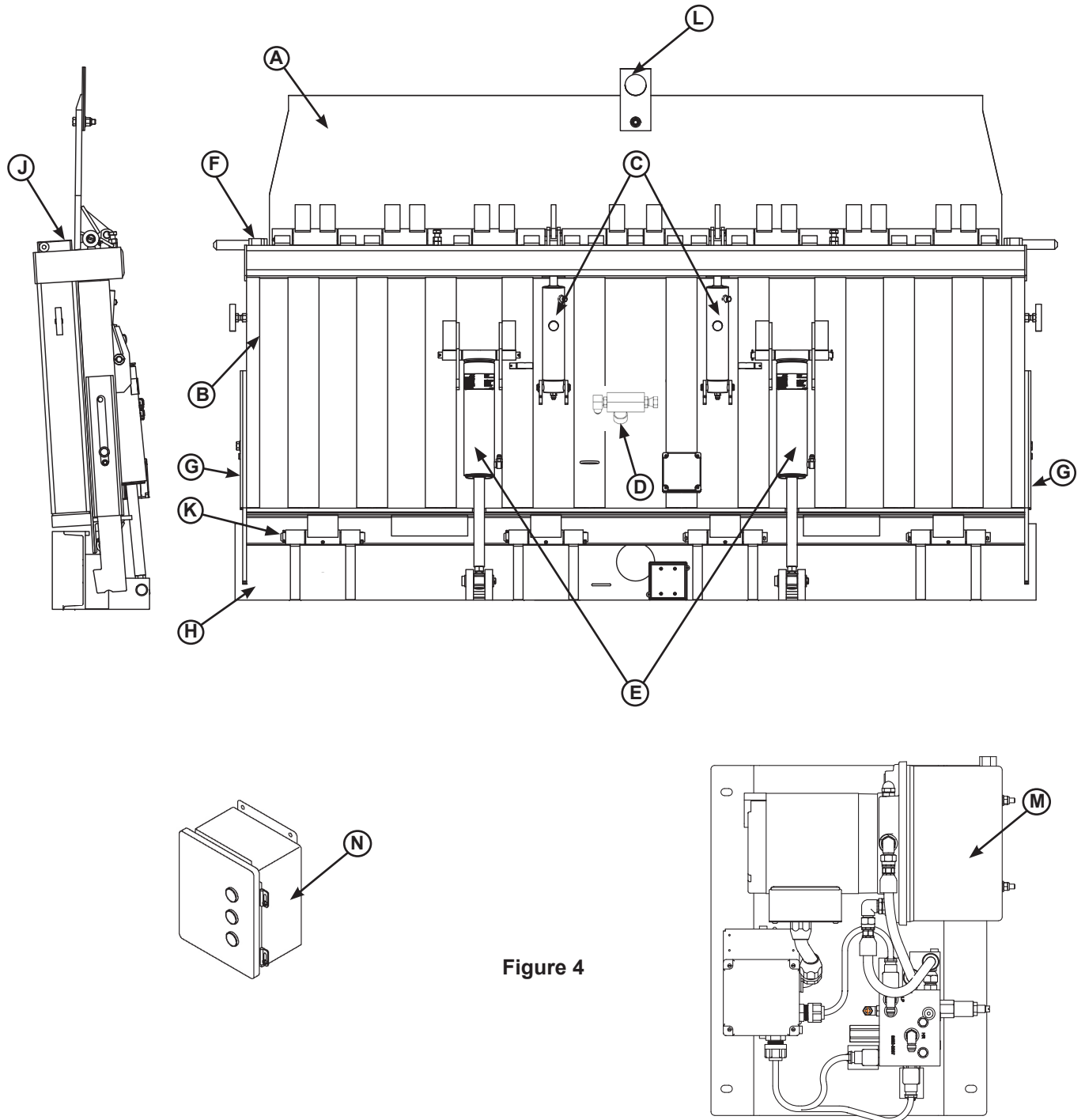


Figure 4

A — Lip
 B — Platform
 C — Lip Cylinder(s)*
 D — Flow Control Valve

E — Platform Cylinder(s)*
 F — Lip Hinge Pin
 G — Maintenance Props

H — Embed
 J — Side End Load Support
 K — Platform Hinge Pin
 L — Lifting Bracket

M — Powerpack**
 N — Control Box

* Models may be equipped with 1 or 2 cylinders.

**Powerpack may be mounted on underside of leveler or remotely. Remote unit shown, see pages 50-52 for Powerpack options.

INTRODUCTION

Component Identification (RCR w/Manual Side Shift)

Inspect package and all components. Report any missing or damaged items immediately and note on the shipping Bill Of Lading (BOL).

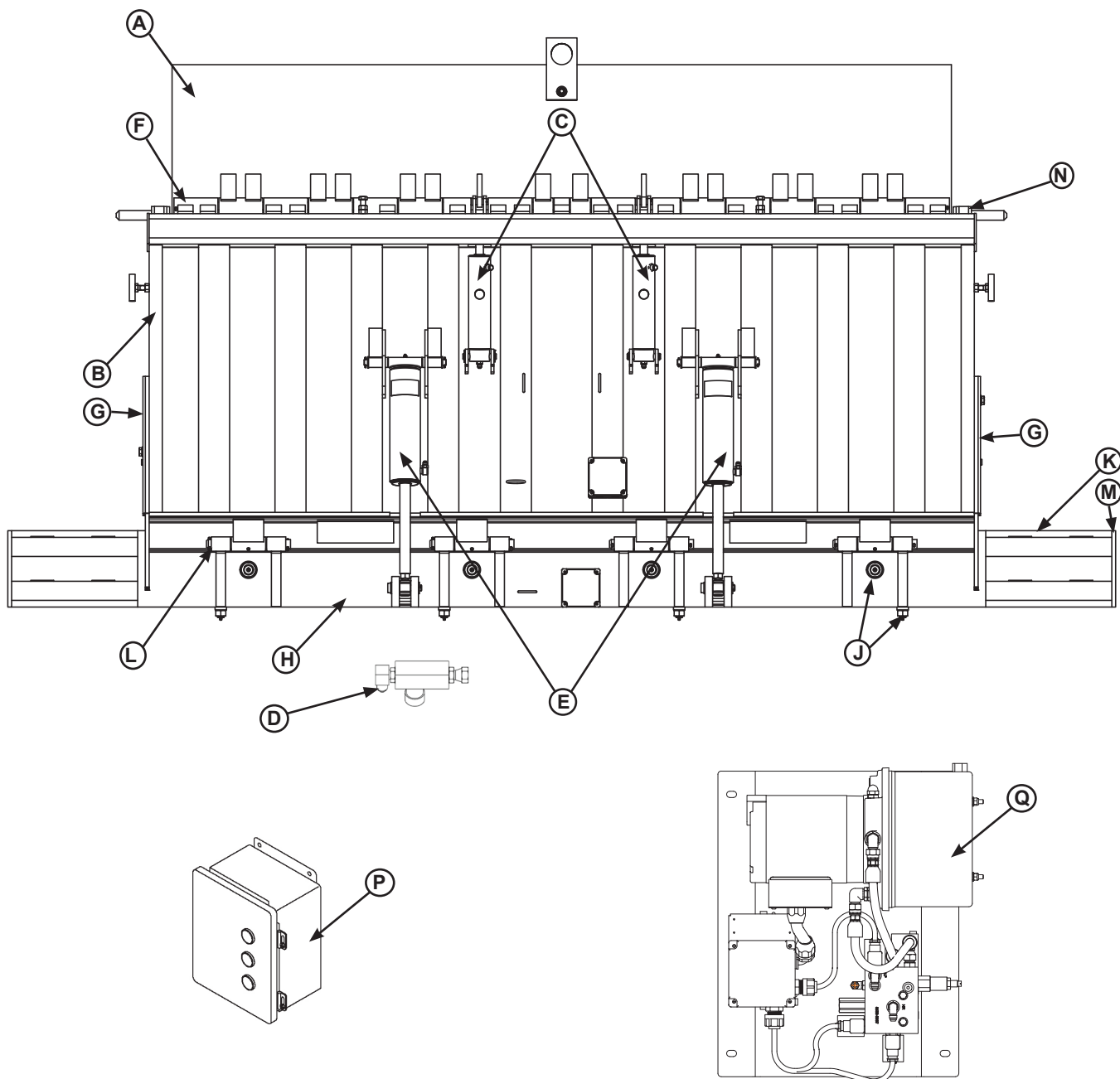


Figure 5

- | | | | |
|------------------------|---------------------------|------------------------------|---------------------------|
| A — Lip | E — Platform Cylinder(s)* | J — Cam Followers (bearings) | N — Side End Load Support |
| B — Platform | F — Lip Hinge Pin | K — Roller Track | P — Control Box |
| C — Lip Cylinder(s)* | G — Maintenance Props | L — Platform Hinge Pin | Q — Powerpack** |
| D — Flow Control Valve | H — Carriage | M — Roller Track Stops | |

* Models may be equipped with 1 or 2 cylinders.

**Powerpack may be mounted on underside of leveler or remotely. Remote unit shown, see pages 46-48 for Powerpack options.

Component Identification (RCR w/Hydraulic Side Shift)

Inspect package and all components. Report any missing or damaged items immediately and note on the shipping Bill Of Lading (BOL).

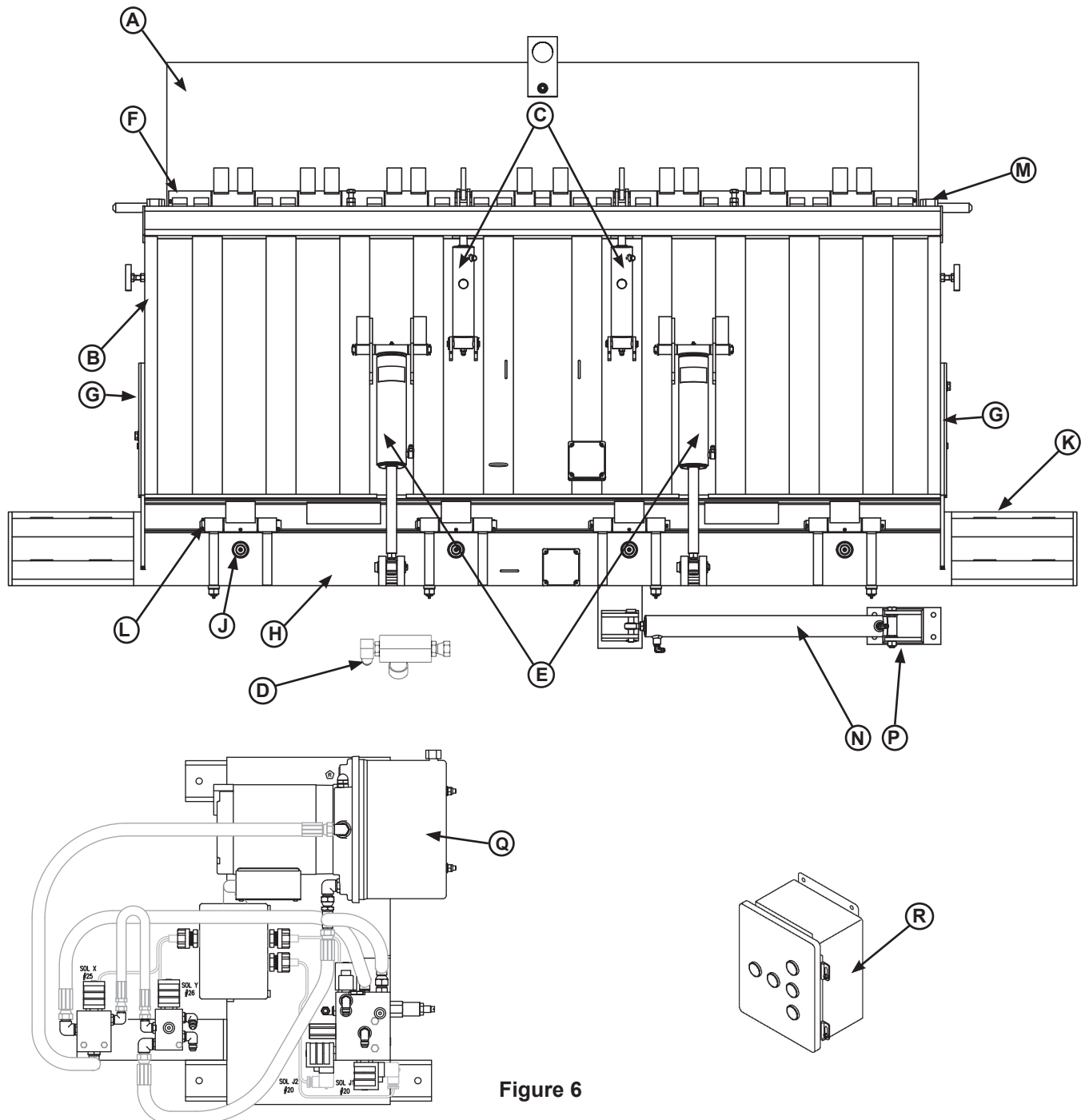


Figure 6

- | | | | |
|---------------------------|------------------------------|---------------------------|-------------------------------|
| A — Lip | F — Lip Hinge Pin | K — Roller Track | P — Side Shift Cylinder Mount |
| B — Platform | G — Maintenance Props | L — Platform Hinge Pin | Q — Powerpack** |
| C — Lip Cylinder(s)* | H — Carriage | M — Side End Load Support | R — Control Box |
| D — Flow Control Valve | J — Cam Followers (bearings) | N — Side Shift Cylinder | |
| E — Platform Cylinder(s)* | | | |

* Models may be equipped with 1 or 2 cylinders.

**Powerpack may be mounted on underside of leveler or remotely. Remote unit shown, see pages 46-48 for Powerpack options.

INSTALLATION

Installation Precautions

! DANGER

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 dock leveler before installation is complete.

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.

! 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.

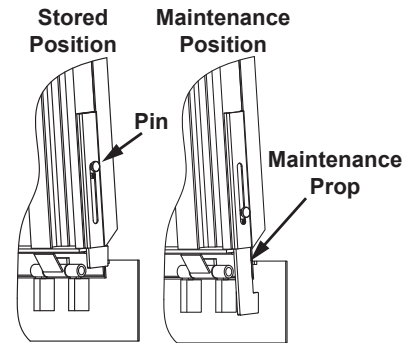
Always keep a fire extinguisher of the proper type nearby when grinding or welding.

! CAUTION

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

! DANGER

CRUSH HAZARD
DO NOT WORK UNDER OR IN FRONT OF RAIL RAMP unless ALL props have been properly positioned and secured. First, pull pin to position side maintenance prop(s) as shown below. Failure to do so will result in death or serious injury. Refer to owner's/user's manual for proper procedure.



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! DANGER

CRUSH HAZARD
DO NOT REMOVE hydraulic cylinder until leveler is safely supported by maintenance prop. Refer to owner's/user's manual for proper maintenance procedure. Failure to comply will result in death or serious injury.

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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 hydraulic or 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, hydraulics, wiring, and/or control panel.

NOTICE

Installation of RCR dock levelers from inside is recommended, as combined height of leveler and proper lifting equipment may be greater than outside door height.

Fixed RCR Installation

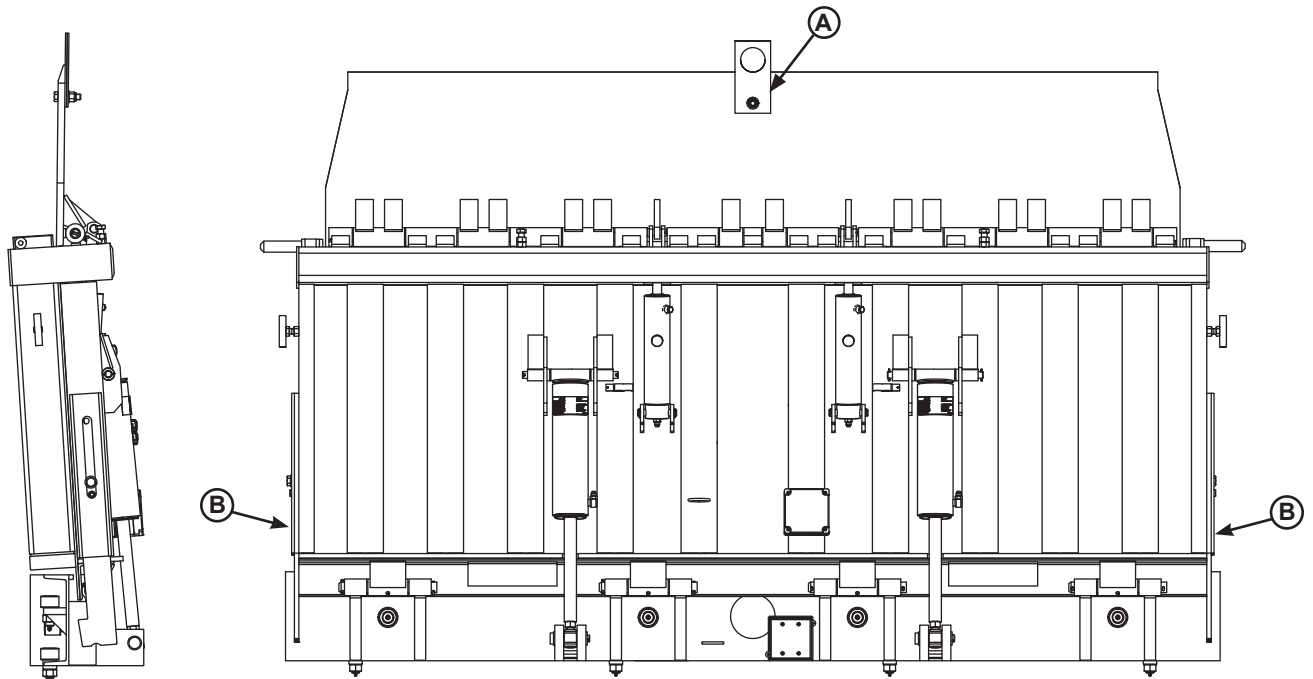


Figure 7

Installation of Platform to Embed

1. Check the embed for proper construction according to approved/certified pit drawings. Make sure embed is level, plumb and square.
2. Remove any control panel, bumpers or palletizing that may be banded to the dock leveler. Do not remove banding on hoist cylinder.
3. Make sure the mounting hardware of lifting brackets (A) is snug. The brackets should pivot without binding on the mounting cap screw.
4. Attach lifting chains to lifting brackets (A) and to a lifting device (i.e., hoist or fork truck) having the appropriate lifting capacity and reach.
5. Lube the rear hinge pins using grease. Install the hinge pins in one side of the rear embed hinge tubes, leaving room for the platform hinge tubes.
6. Ensure maintenance props (B) are in the lowered position and tightly secured.
7. Lower the RCR leveler down, centering the leveler's hinge tubes with the embed's.
8. Insert the hinge pins, working from the outside to the inside. Install and secure cotter pins in hinge pins.
9. Complete all hydraulic connections.
10. Proceed to "Install Control Panel and Wiring" on Page 18.

WARNING

The dock leveler is heavy. Use a lifting device and chains with the appropriate lifting capacity and reach.

Always use the lifting brackets provided with the unit whenever lowering or lifting a dock leveler.

Note: Do not connect hoist cylinder(s) at this time. System must be purged of air before connecting.

INSTALLATION

RCR w/Side Shift Installation

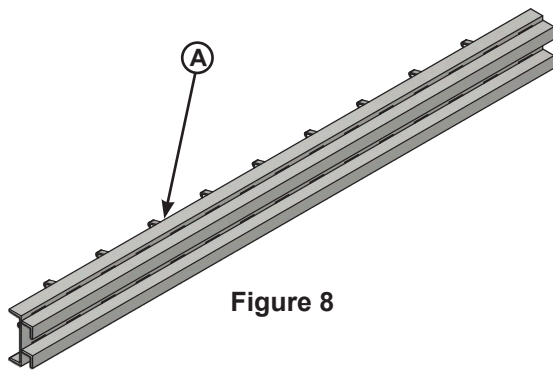


Figure 8

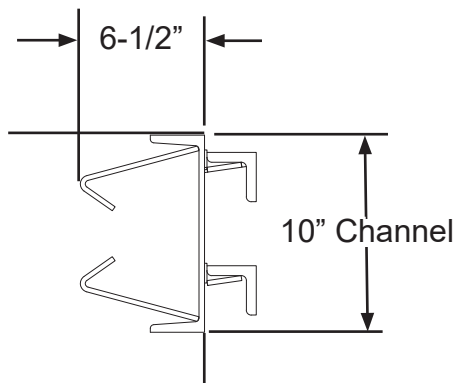


Figure 9

Installation of Carriage and Platform

1. Check the roller track (A, Figure 8) for proper installation by concrete contractor according to approved/certified pit drawings. Make sure roller track is level, free from damage and clear of foreign material. See Figure 9.

2. Remove any control panel, bumpers or palletizing that may be banded to the dock leveler.

3. To separate RCR platform from the carriage, support the platform on its back side (diamond plate) and support the carriage, then:

- Remove and cap any hydraulic hoses.
- Remove (B) hoist cylinder pins at carriage.
- Remove rear hinge pins (C, platform to carriage). See Figure 12.

4. Make sure the mounting hardware of lifting brackets (D) is snug. The brackets should pivot without binding on the mounting cap screw.

5. With the carriage separated from the RCR platform, the carriage must be oriented so that the rollers will slide into the roller track when lifted.

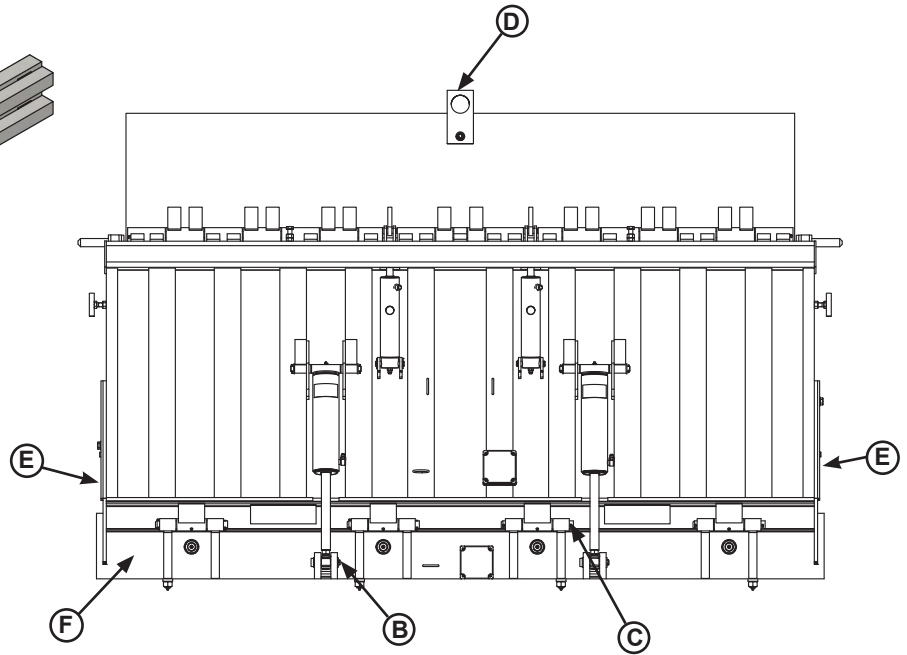


Figure 10

- | | |
|------------------------|-----------------------|
| A — Roller Track | D — Lifting Brackets |
| B — Hoist Cylinder Pin | E — Maintenance Props |
| C — Rear Hinge Pin | F — Carriage |

6. Position the the carriage (F) so that it can slide into the roller track (A) from the side. The carriage must be installed slowly and as level as possible to prevent damage to the rollers. See Figure 12 for view of carriage installed into roller track.

! WARNING

The dock leveler is heavy. Use a lifting device and chains with the appropriate lifting capacity and reach.

Always use the lifting brackets provided with the unit whenever lowering or lifting a dock leveler.

7. Step 7 differs depending on RCR model:

Manual Side Shift models:

- Weld on roller track stops (K, Figure 13) and proceed to step 8.

Hydraulic Side Shift models:

- Install side shift cylinder mount (G, see supplied engineering drawings for exact mounting location). Anchor to dock face or weld to embed.
- Install side shift cylinder (H).

RCR w/Side Shift Installation (continued)

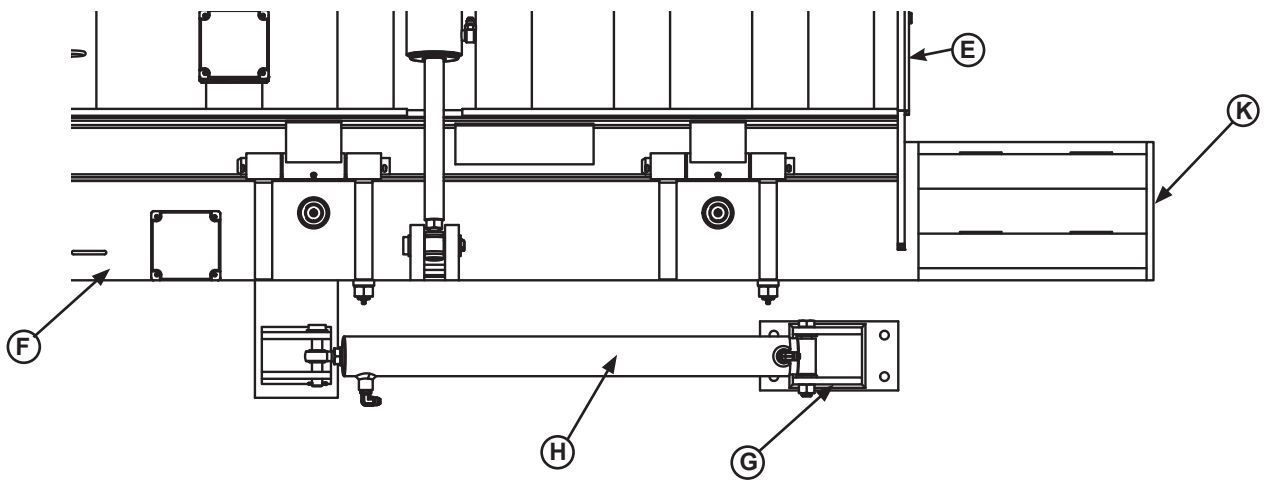


Figure 11

- | | | | |
|------------------------|----------------------|-----------------------|-------------------------------|
| A — Roller Track | C — Rear Hinge Pin | E — Maintenance Props | G — Side Shift Cylinder Mount |
| B — Hoist Cylinder Pin | D — Lifting Brackets | F — Carriage | H — Side Shift Cylinder |
| | | | K — Roller Track Stop |

c. Weld on roller track stops (**K**, Figure 11) and proceed to step 8.

8. Lube the rear hinge pins using grease. Install the hinge pins (**C**) in one side of the rear embed hinge tubes, leaving room for the platform hinge tubes.

9. Ensure maintenance props (**E**) are in the lowered position and tightly secured.

10. Lower the dock leveler down, centering the leveler's hinge tubes with the carriage's. While lowering, take care to avoid damaging the hoist cylinder rod ends.

11. Insert the hinge pins, working from the outside to the inside. Install and secure cotter pins in hinge pins.

12. Complete all hydraulic connections.

Note: Do not connect hoist cylinder(s) at this time. System must be purged of air before connecting.

13. Proceed to "Install Control Panel and Wiring" on Page 18.

Additional views of RCR w/Side Shift installation are shown on pages 15-16.

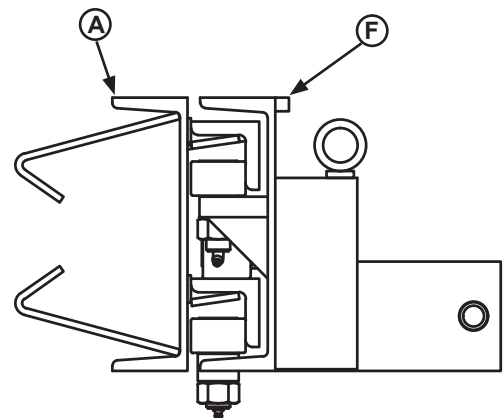


Figure 12

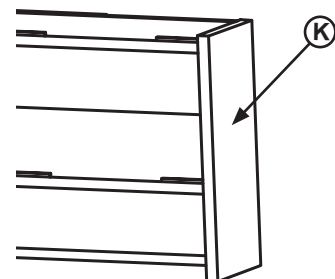


Figure 13

INSTALLATION

RCR w/Side Shift Installation Pictures



Figure 14

Figure 14 shows the carriage being installed into the roller track; Figure 15 provides a side view of this process.

The crane is positioned inside the building as the combined height of the leveler and lifting equipment is greater than the outside door height. The maintenance props are lowered and the platform is awaiting install.

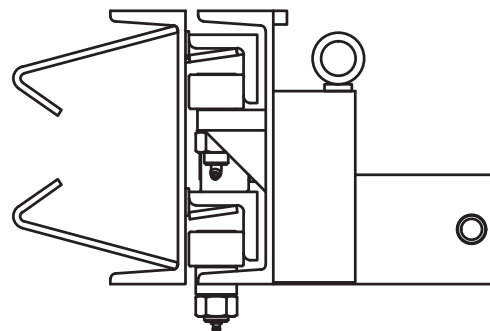


Figure 15

RCR w/Side Shift Installation Pictures



Older model shown.

Figure 16

Figure 16 shows the leveler platform being installed onto the carriage.

The forklift is positioned inside the building to allow clearance for installation of the hinge pins. The maintenance props remain lowered to keep the platform upright.

NOTICE

Installation of RCR levelers from inside is recommended, as combined height of leveler and proper lifting equipment may be greater than outside door height.

NOTICE

Overall length of lifting chain and bracket must be kept to a minimum to prevent interference between the lifting equipment and the building ceiling or door as the dock leveler is lowered into the pit.

INSTALLATION

Install Control Panel and Wiring

DANGER

Make sure that the power source has been locked out and tagged according to OSHA regulations and approved local electrical codes.

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.

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 any dock equipment electrical wiring or ground connections until all welding has been completed.

DO NOT ground welding equipment to any electrical components of the dock equipment. Always ground welding equipment to the dock leveler frame, NEVER to the platform.

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

NOTICE

Where indicated, all components must be connected to a SAFETY EARTH GROUND that conforms to the 1999 National Electrical Code Section 250-50 section (a) or section (c) for a grounding electrode system.

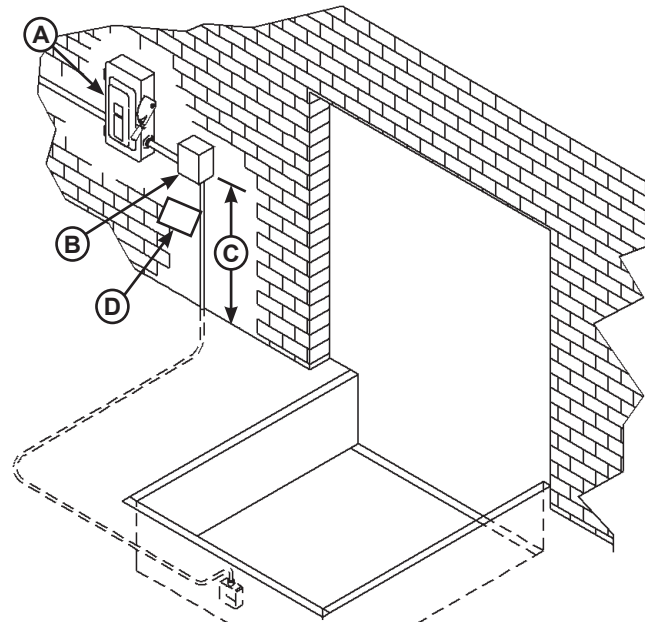


Figure 17

A— Disconnect Panel (provided by others) C— Distance, 48 in. (1219 mm)
B— Control Panel D— Placard

1. Mount the control panel (B) so bottom of control panel-to-dock floor distance is 48 in. (1219 mm, C).
2. Install electrical disconnect panel (A) if not already installed (provided by others). It is recommended to locate disconnect panel adjacent to control panel (B).
3. Install and connect the control wiring as shown in installation drawings.
4. Connect the control wiring to the field wires in the dock equipment junction boxes. Refer to the electrical diagrams supplied with the dock equipment.

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.

5. Install placard (D). Make sure placard is in plain view of dock leveler and/or vehicle restraint operations. Suggested placement of placard is near control box attached to electrical conduit by using nylon cable tie. See page 19.

Placard Installation Instructions

1. Installers and/ or Owner's/ User's are responsible for the installation and placement of product placards.
2. Placard must be in plain view of dock leveler and/ or vehicle restraint operations.
3. 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.

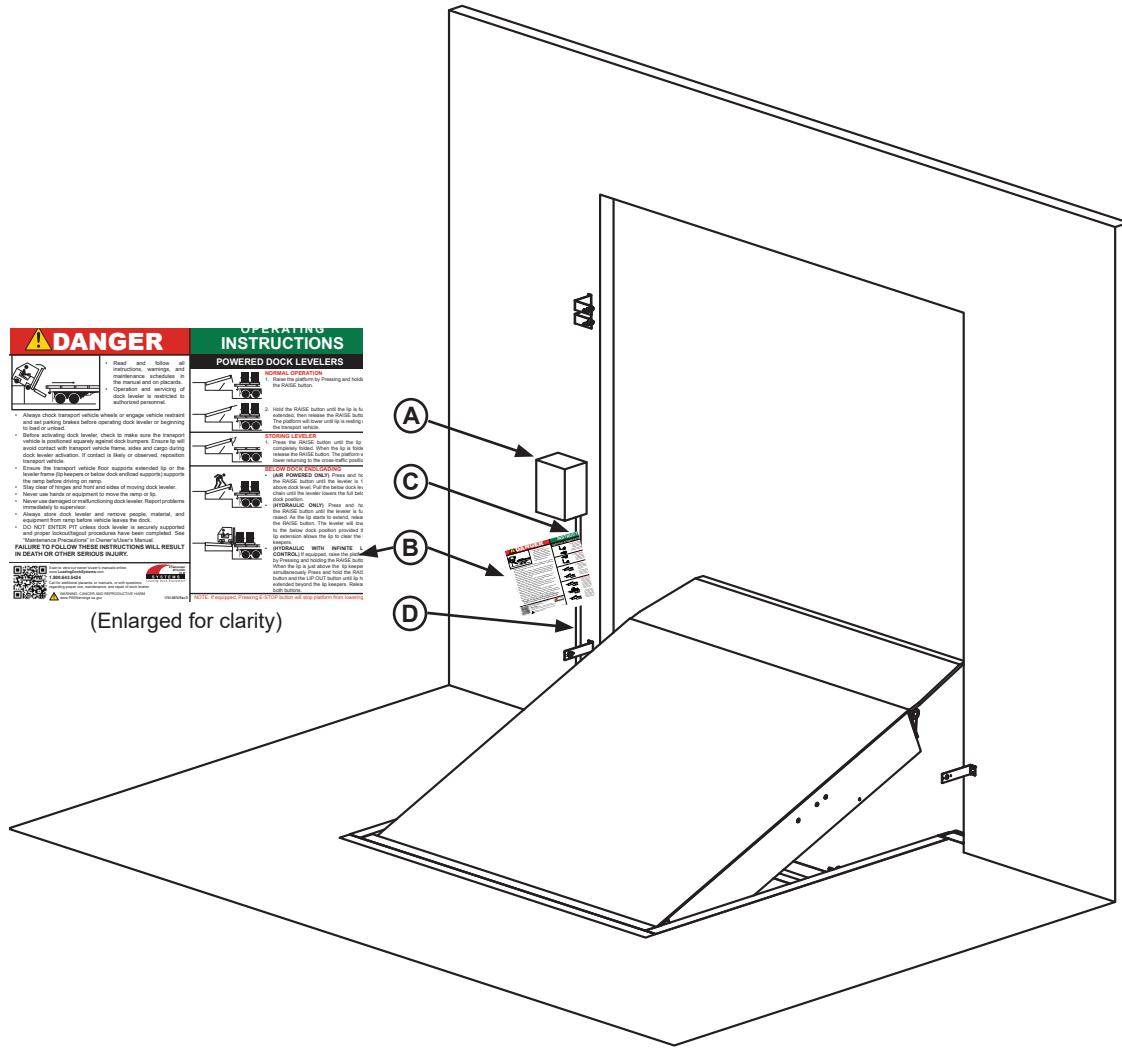


Figure 18

A—Control Box

B—Placard

C—Nylon Cable Tie

D—Conduit

INSTALLATION

Purging Air From RCR Hydraulic System & Adjusting Yoke

DANGER

If the equipment being serviced is a new start-up, opened to atmosphere, or lifted manually, air will enter into the hydraulic system. Whenever this happens, air must be fully purged from the hydraulic system. Failure to do so will result in death or serious injury.

1. Using an external lifting device, support the RCR leveler in the stored position, with the maintenance props lowered in the maintenance position and all hardware tightened by wrench.

2. Lock-out and tag-out the leveler.

3. New equipment only: Remove shipping bands from hoist cylinder(s).

4. New equipment only: Fill powerpack fluid reservoir with hydraulic fluid. See page 28 for acceptable fluid specifications.

5. Fully open the down speed flow control valve (A) by turning knob (B) counter-clockwise (see Figure 19). Loosen set screw (C) to turn knob. Flow control valve location varies depending on options; see Component Identification on pages 9-11 for location or contact Technical Services.

6. With the cylinder pin(s) (F) removed from the embed/carriage, restore power to the dock leveler. Then cycle the hoist cylinder(s) up and down at least six times using the leveler's own hydraulic power. Ensure the cylinder rod(s) smoothly extend/retract.

7. Reconnect the hoist cylinder yoke(s) to the base of the embed or carriage by completing the following steps (see Figure 20):

a. Fully extend the hoist cylinder by pressing and holding the RAISE button until the rod stops extending and the powerpack goes into pressure relief.

b. Using the external lifting device, position the leveler platform so that it is leaning 4 degrees towards the inside of the building/dock.

c. With the platform leaning 4 degrees towards inside, loosen the jam nut (D) and adjust the yoke (E) so that the cylinder pin (F) easily slides through both the trunnion and yoke.

d. Install and lock rue clip (G) into place.

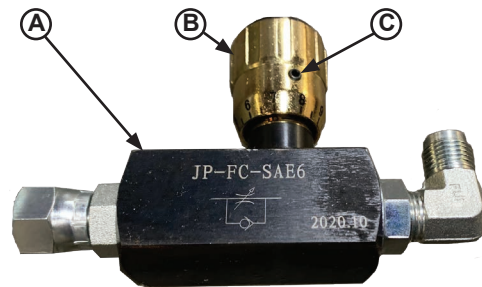


Figure 19

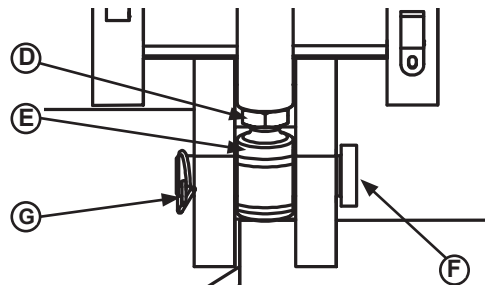


Figure 20

- | | |
|-----------------------|-----------------------|
| A— Flow Control Valve | D— Jam Nut |
| B— Adjusting Knob | E— Yoke |
| C— Set Screw | F— Hoist Cylinder Pin |
| | G— Rue Clip |

8. Fully close the down speed flow control valve by turning clockwise. Then, set the down speed flow control valve by incrementally opening the valve until the leveler takes 15-20 seconds to descend from stored to full below dock position.

9. Once ideal down speed flow control setting is achieved, lock the adjustment in place by tightening the set screw (C) on the adjustment knob.

10. Raise the maintenance props to the stored position and tighten all hardware with wrench.

11. Lower the leveler to a 45 degree angle.

12. Cycle lip by pressing the LOWER and LIP buttons together to lower the lip, then press the RAISE and LIP buttons together to raise the lip. Lip cylinder is now purged.

13. Raise leveler to stored position and top off hydraulic fluid as required.

Put New Dock Leveler Into Service

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.

1. Purge air from hydraulic system, adjust yoke and install cylinder pin(s) as instructed on page 20.
2. Check and top off hydraulic fluid as required. See page 28 for acceptable fluid specifications and correct fluid level.
3. Test leveler for operation:
 - a. Follow the dock equipment's sequence of operation to allow the leveler to operate. Then press and hold the lower button until the platform is a few inches above the rail car. See **Figure 21**.

Note: The hydraulic circuit uses a pressure relief valve that allows the hoist cylinder to retract under a preset load. Slowly driving a forklift's front wheels only onto the platform, will cause the platform to lower.

b. Make sure the platform lowers to the rail car, while slowly driving a forklift's front wheels onto it. See **Figure 21**. If the platform does not reach rail car, check the adjustment of the yoke(s) to allow proper travel. See pages 18-19.

c. (Remove forklift if used in previous step.) Press and hold the RAISE button until the leveler is fully raised.

d. Lower dock leveler to approximately 45 degrees, then press the LOWER and LIP buttons simultaneously; the lip will fold. Press and hold the RAISE and the LIP buttons and the lip will extend. Then, press and hold the RAISE button until the leveler is fully raised.

Note: If the dock leveler encounters issues during testing and must be raised with an external lifting device, the hydraulic system must be purged again. See page 20.

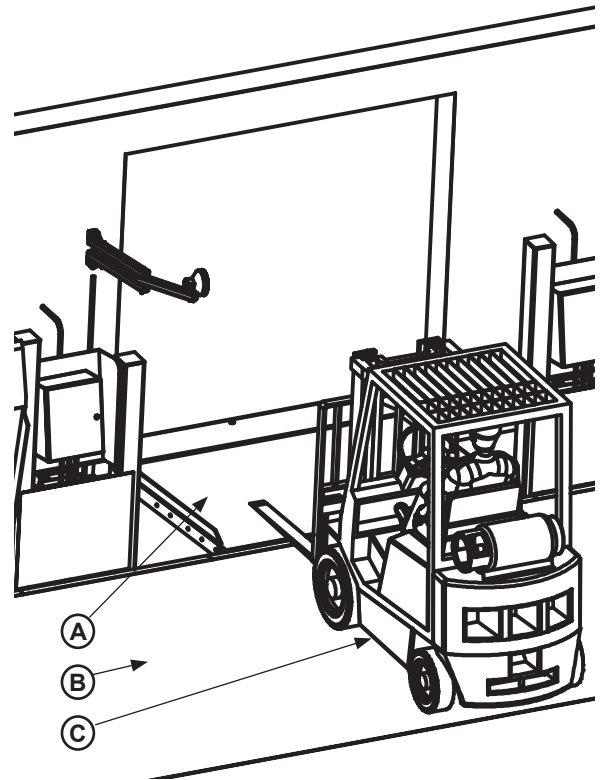


Figure 21

A— Leveler Platform C— Fork Lift
B— Dock Floor

OPERATION

Operational Precautions

DANGER

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

DO NOT move or use the dock leveler 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.

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

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

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

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OPERATION

Operating Instructions

Ramp Loading/Unloading

1. Before activating dock leveler, ensure lip will avoid contact with transport vehicle frame, sides and cargo during dock leveler activation. If contact is likely or observed, reposition transport vehicle.

2. Instruct driver to remain at the dock until the loading or unloading process has been completed.

3. Lower the dock leveler onto the transport vehicle as follows:

a. Press and hold the LOWER button (A) until leveler reaches transport vehicle, then allow leveler to descend into transport vehicle.

b. Make sure that the lip is fully extended and supported on the transport vehicle along the entire width of the platform, with at least 4 in. (102 mm) of lip contacting the transport vehicle bed. See Figure 23.

4. Proceed with loading or unloading the transport vehicle.

5. When loading or unloading is finished, raise the platform by Pressing and holding RAISE (B) button until the leveler is fully raised.

6. Indicate to transport operator that transport vehicle may leave the dock.



Figure 22
A—LOWER Button
B—RAISE Button

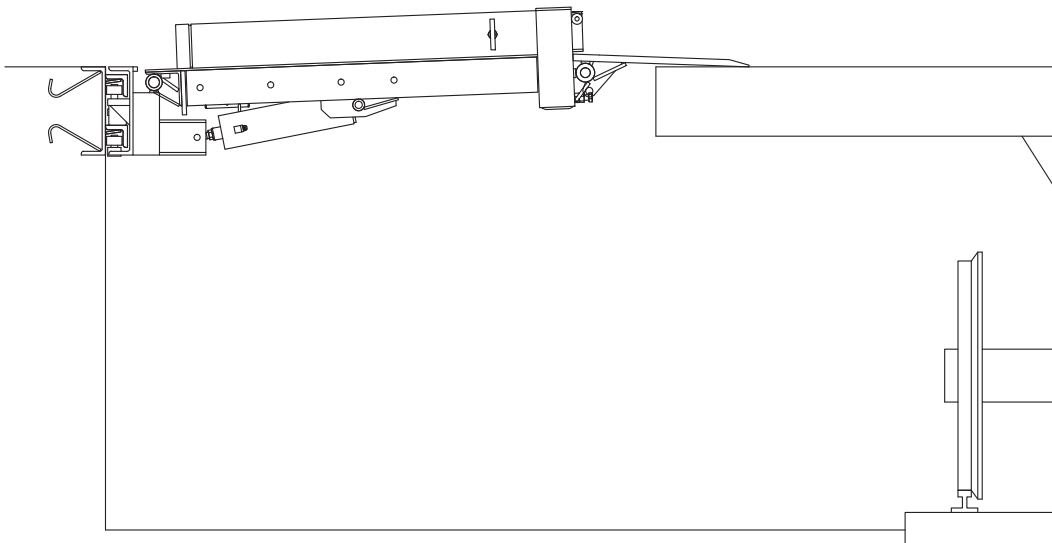


Figure 23

Operating Instructions (continued)

Below Dock End Loading/Unloading

1. Before activating dock leveler, ensure lip will avoid contact with transport vehicle frame, sides and cargo during dock leveler activation. If contact is likely or observed, reposition transport vehicle.

2. Instruct driver to remain at the dock until the loading or unloading process has been completed.

3. Slide out Side End Load Supports on each side of the dock leveler platform.

4. Lower the dock leveler onto the transport vehicle as follows:

a. Press and hold the LOWER button (A) until unit is about 45 degrees forward, then press the LIP button (C) simultaneously and the lip will fold pendant. Once the lip is pendant, continue to press (B) until the Side End Load Supports make contact with transport vehicle.

b. Make sure that the Side End Load Supports are fully extended and supported on the transport vehicle with at least 4 in. (102 mm) contacting the transport vehicle bed. See Figure 25.

5. Proceed with loading or unloading the transport vehicle.

6. When loading or unloading is finished, raise the platform by Pressing and holding RAISE (B) button until unit is about 45 degrees forward, then press the LIP button (C) simultaneously and the lip will fold upright. Once the lip is upright, continue to press (B) until the leveler is fully raised.

7. Store the Side End Load Supports on each side of the dock leveler platform.

8. Indicate to transport operator that transport vehicle may leave the dock.



Figure 24

A—LOWER Button
B—RAISE Button
C—LIP Button

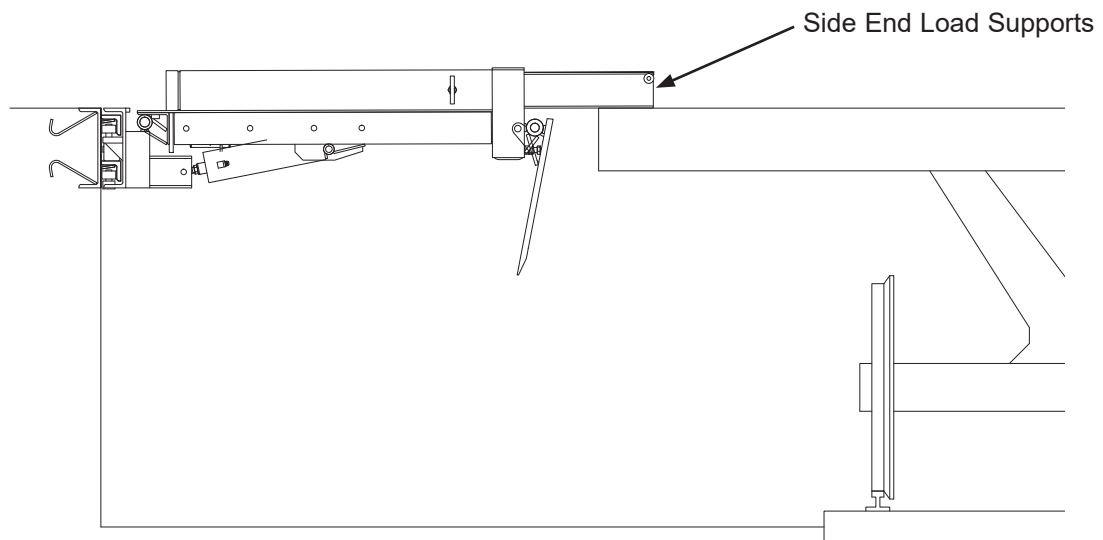


Figure 25

OPERATION

Operating Instructions (continued)

Optional Side Shift

Note: Levelers with optional Side Shift function identically to regular levelers, except that the leveler can be hydraulically shifted from side to side for optional positioning.

1. Before activating dock leveler, ensure lip will avoid contact with transport vehicle frame, sides and cargo during dock leveler activation. If contact is likely or observed, reposition transport vehicle.

2. Instruct driver to remain at the dock until the loading or unloading process has been completed.

3. If leveler is not centered with transport vehicle opening, press the LEFT or RIGHT button (see Figure 26).

3. When the dock leveler is centered, the leveler can be operated as normal.

4. Proceed with loading or unloading instructions on pages 24-25.

Note: Side Shift function can be operated with the dock leveler either fully raised or lowered in the transport vehicle.

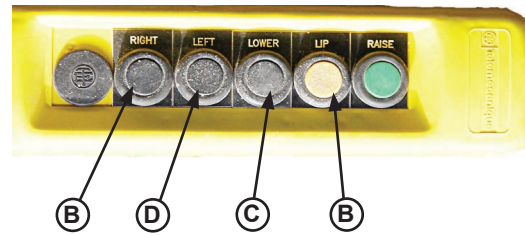


Figure 26

A—RAISE Button
B—LIP Button
B—LOWER Button

D—LEFT Button
E—RIGHT Button

Maintenance Precautions

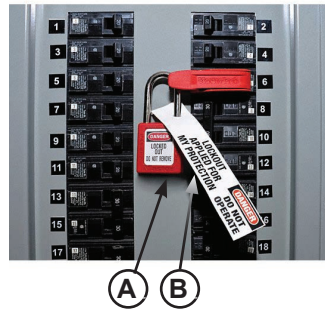


Figure 27

A— Lock Out Device

B —Tag Out Device

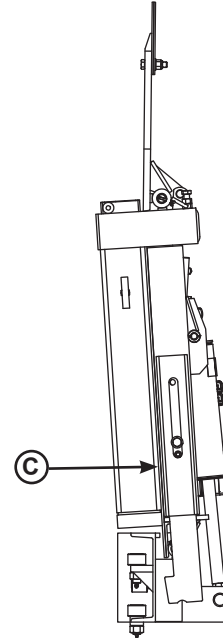


Figure 28

C — Maintenance Props

! DANGER

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.

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 27).

! 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 maintenance is to be performed on the dock leveler, place the maintenance props (C) in their service/down position with hardware fully secured. See Figure 28. The lip may fold down if the platform has rested on the maintenance props.

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

MAINTENANCE

Periodic Maintenance

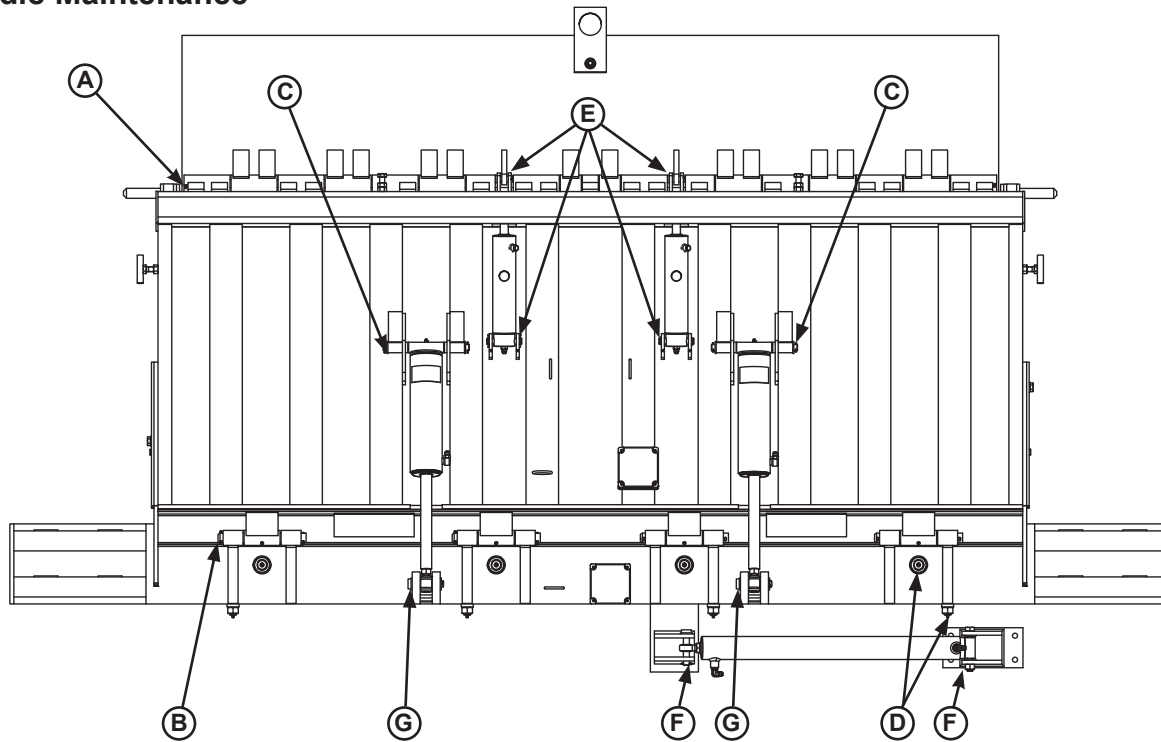


Figure 29

A— Lip Hinge Area
B— Platform Hinge Area

C— Upper Hoist Cylinder Pin
D— Cam Rollers (Bearings)

E— Lip Cylinder Pins
F— Side Shift Cylinder Pins

G— Lower Hoist Cylinder Pin

To ensure normal operation of the dock leveler, use only aircraft hydraulic fluid designed to meet or exceed military specification MIL-H-5606-G. It is recommended that the following hydraulic fluids be used:

- ULTRA-VIS-HVI-15
- Aero Shell Fluid 4 or Fluid 41
- Mobil Aero HFA Mil-H5606A or Aero HF
- Texaco Aircraft Hydraulic Oil 15 or 5606
- Exxon Univis J13
- Castrol Brayco Micronic 756

These fluid brands can be mixed together. Use of hydraulic fluids with equivalent specifications to those listed here are acceptable.

NOTICE

Use of fluids that do not have equivalent specifications to those in the preceding list will result in abnormal operation of the dock leveler and voiding of warranty.

Weekly Maintenance

- Operate the dock leveler through the complete operating cycle to maintain lubrication. Verify lip operates up and down.
- Lock out and tag out the dock leveler, then place the maintenance props in their service/down position with hardware tightened by wrench.
- Remove any debris or foreign objects from the lip hinge and rear hinge areas.
- Inspect warning decals and placards. Replace if damaged or missing. Reference page 4 for decal placement.

Quarterly Maintenance

- Complete Weekly Maintenance.
- Lubricate the following areas with light weight machine oil (see Figure 29):
 - (A) — Lip hinge area unless equipped with grease fittings (apply oil to the top of the entire length of lip hinge when platform is in the stored position and lip is folded)
 - (B) — Platform hinge area (apply oil to top of all platform hinges when platform is in the stored position.)
 - (E) — Lip Cylinder pins.
 - (F) — Side Shift Cylinder pins.
- Lubricate the following areas with white lithium grease (see Figure 29):
 - (C)(G) — Hoist cylinder grease fittings and pins.
 - (D) — Cam roller bearing grease fittings.

NOTICE

Failure to properly lubricate the dock leveler will cause abnormal operation of the leveler.

- Inspect the following for damage/abnormal wear:
 - Check welds for cracks.
 - Coils for cracks and/or bent valves.
 - Lower pin and mounting holes.
 - Rear hinge pins and cotter pins.
 - Verify ruc clip in manual lock position.
 - J-box for water damage.
 - Inspect hoses, cylinders, fittings and powerpack.
 - Control box and conduit for damage.

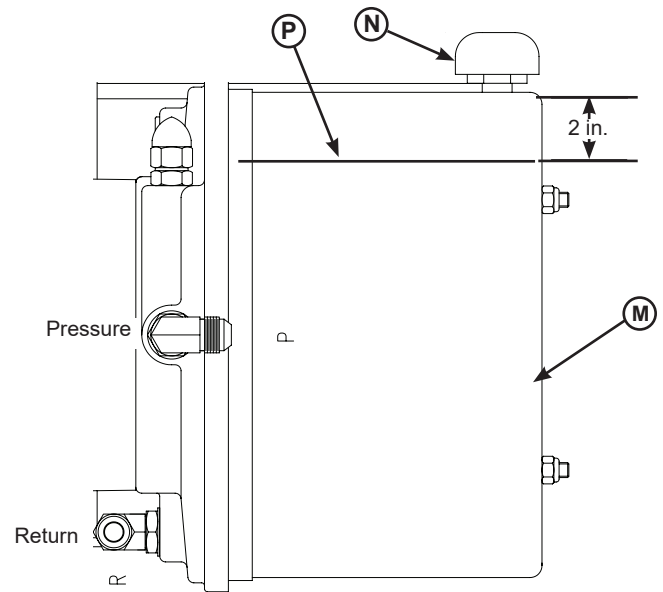


Figure 30

M — Reservoir
N — Breather Cap
P — Fluid Level

- Check reservoir fluid level (P, see Figure 30):
 1. The dock leveler must be in the stored position with the lip folded.
 2. Turn OFF all electrical power to the leveler.
 3. Remove breather cap (N).
 4. Measure fluid level. The fluid level should be approximately 2 in. (51 mm) from top of reservoir (M) with platform stored and the lip in the folded position.
 5. Add hydraulic fluid if necessary. Use only recommended fluid (see page 28).
 6. Install breather cap.
 7. Turn ON electrical power to the leveler.
 8. Return the lip to the raised position.

Yearly Maintenance

- Complete Quarterly Maintenance.
- Change hydraulic oil (may be required more often depending upon conditions).

ADJUSTMENTS

Adjust Flow Control

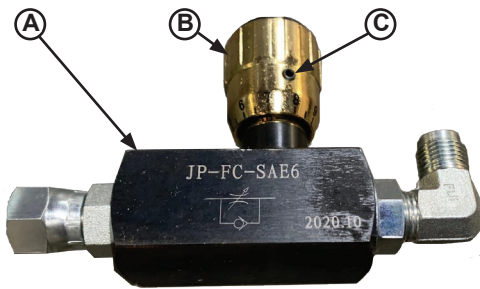


Figure 31

- A— Flow Control Valve
- B— Adjusting Knob
- C— Hex Screw

Flow Control Adjustment

If the dock leveler lowers too rapidly or too slowly, the flow control valve (A) requires adjustment. When properly adjusted, the leveler takes 15-20 seconds to descend from stored to full below dock position.

Depending on equipment, the flow control valve (Figure 31) may be located on the hoist cylinder, on the hoist cylinder tee on hydraulic lines, or on the main valve block.

1. Raise the platform fully, engage the maintenance props in the service position and secure all hardware.
 2. Turn OFF all electrical power to the dock leveler
 3. Attach lock out/tag out devices.
 4. Loosen the allen head set screw (C).
 5. Set adjusting knob (B) as follows:
 - To decrease the lowering speed, adjust knob (B) clockwise.
 - To increase the lowering speed, adjust knob (B) counterclockwise.
 6. Once ideal down speed flow control setting is achieved, lock the adjustment in place by tightening the hex screw on the adjustment knob.
- Note:** Do not overtighten the set screw.
7. Turn ON electrical power to the dock leveler.
 8. Store maintenance props, and check leveler operation.
 9. Repeat steps 1–9 as necessary.

! DANGER

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

When service under the dock leveler is required, always lock all electrical disconnects in the OFF position after raising the platform and engaging the maintenance prop.

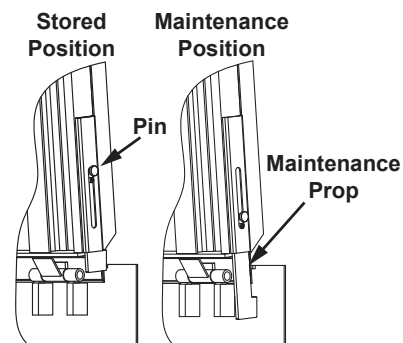
Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete.

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.

! DANGER

CRUSH HAZARD
DO NOT WORK UNDER OR IN FRONT OF RAIL RAMP unless ALL props have been properly positioned and secured. First, pull pin to position side maintenance prop(s) as shown below. Failure to do so will result in death or serious injury. Refer to owner's/user's manual for proper procedure.



1751-0555 Rev F

Adjust Main Pressure Relief

Main Pressure Relief Adjustment

Note: The main pressure relief valve (A, Figure 32) may need to be *increased* if the platform does not rise or rises slowly and the system operates in pressure relief mode.

The main pressure relief may need to be *decreased* if the pump motor loads down when platform reaches the full raised position.

Depending on equipment, the pressure relief valve (A, Figure 32) may be located on the dock leveler platform or on the remote mount valve block. Platform-mounted valve block is shown; see pages 50-52 for Powerpack options and Troubleshooting section on pages 36-39 for more information.

1. Raise the platform fully, engage the maintenance props in the service position and tighten all hardware with wrench.
2. Turn OFF all electrical power to the dock leveler.
3. Attach lock out/tag out devices.
4. Loosen jam nut (B).
5. Adjust slotted head adjusting screw (C) as follows:
 - To increase pressure relief, turn hex screw clockwise one full turn.
 - To decrease pressure relief, turn hex screw counterclockwise one full turn.
6. While holding the adjusting screw, tighten jam nut.
7. Turn ON electrical power to the dock leveler.
8. Store maintenance props, and check leveler operation.
9. Repeat steps 1–8 as necessary.

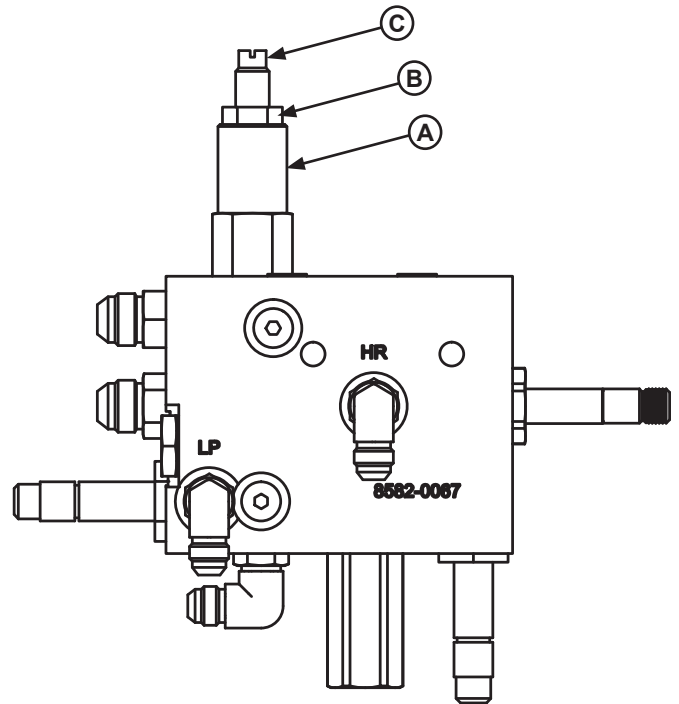


Figure 32

- A— Pressure Relief Valve
- B— Jam Nut
- C— Adjusting Screw

NOTICE

Pressure relief on remote-mount units is set at the factory. Contact Systems, LLC Technical Services for instructions.

TROUBLESHOOTING

! DANGER

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

When service under the dock leveler is required, always lock all electrical disconnects in the OFF position after raising the platform and engaging the maintenance prop.

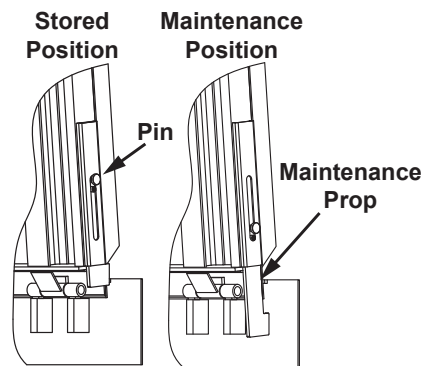
Always post safety warnings and barricade the work area at dock level and ground level to prevent unauthorized use of the dock leveler before maintenance is complete.

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.

! DANGER

CRUSH HAZARD
DO NOT WORK UNDER OR IN FRONT OF RAIL RAMP unless ALL props have been properly positioned and secured. First, pull pin to position side maintenance prop(s) as shown below. Failure to do so will result in death or serious injury. Refer to owner's/user's manual for proper procedure.



1751-0555 Rev F

Before performing the detailed troubleshooting procedures, check the following items first:

- Check all fuses inside the control panel(s). Replace any blown fuse(s) with a fuse of equal specification.
- Make sure the correct voltages are present at the proper locations inside the control panel(s).

Symptom	Possible Cause	Solution
Platform does not rise or lower. Motor does not energize.	Motor overload device tripped.	Reset overload relay or breaker. Determine cause of device tripping.
	Motor starter (three-phase) or motor relay (single-phase) not energizing.	<p>Check voltage at starter or relay coil.</p> <ul style="list-style-type: none"> • If voltage is present and starter or relay does not energize, replace starter or relay. • If voltage is not present, check all components in series with the starter or relay coil.

TROUBLESHOOTING

Symptom	Possible Cause	Solution
<p><u>Three-phase units only:</u> Platform does not rise or lower. Motor hums, but does not run.</p>	<p>No voltage is present on one line.</p> <p>Note: A motor that is missing voltage on one line is said to be single-phased.</p>	<p>Check for blown fuses at branch circuit disconnect. Replace fuse. Determine cause of blown fuse.</p>
		<p>Check motor starter as follows:</p> <ol style="list-style-type: none"> 1. Disconnect wires at load side of starter. 2. Energize the starter. 3. Measure line-to-line voltage at line side of starter. 4. Measure line-to-line voltage at load side of starter. 5. Line-side and load-side voltages should be approximately the same. Replace starter if voltage values are considerably different from one another.
		<p>Check all wiring to motor for high resistance or no connection.</p>
<p><u>Three-phase units only:</u> Platform does not rise or lower. Motor runs in reverse.</p>	<p>Phase reversed.</p>	<p>Reverse any two legs at the branch circuit disconnect.</p>
<p><u>Single-phase units only:</u> Platform does not rise or lower. Motor energizes, but does not run.</p>	<p>Line voltage too low.</p>	<p>Check wiring to motor for high resistance. Check for loose or corroded connections. Check if gauge of wires to motor are of correct size and specification for load requirement. Replace if necessary.</p>
	<p>Faulty motor centrifugal switch.</p>	<p>Replace motor.</p>
	<p>Faulty motor capacitor.</p>	<p>Replace motor.</p>

TROUBLESHOOTING

Symptom	Possible Cause	Solution
Platform does not rise. Pump operates in pressure relief mode.	Heavy object(s) on platform.	Remove object(s) from platform. Note: For safety reasons, the dock leveler is designed to lift only the platform's own weight.
	Dock leveler binds.	Check for visible obstructions that could cause binding. Remove obstructions. If no obstructions found, contact Systems, LLC Technical Services.
	Pressure relief set too low.	Increase pressure relief. See page 30 for instruction. Note: The pressure relief valve must not be set at a level that causes the motor operating current to exceed the full load amp value* at any time, including when operating in pressure relief. <i>* The full load amp value can be found on the inside cover of the control panel.</i>
Platform rises slowly.	Low hydraulic fluid.	Add hydraulic fluid, see pages 28-29 for proper fluid level and type.
	Contaminated hydraulic system.	Clean and inspect valves. Flush contaminated oil from hydraulic system. Fill system with new oil; see pages 28-29 for proper fluid level and type.
	Damage or blocked hydraulic hose(s) and/or valve(s).	Replace damaged hose(s). Check and remove blockage from hose(s) and/or valve(s).
	Pressure relief set too low.	Increase pressure relief. See page 30 for instruction. Note: The pressure relief valve must not be set at a level that causes the motor operating current to exceed the full load amp value* at any time, including when operating in pressure relief. <i>* The full load amp value can be found on the inside cover of the control panel.</i>
Pump motor loads down when platform starts to raise from the lowered position.	Pressure relief set too high.	Decrease pressure relief. See page 30 for instruction. Note: The pressure relief valve must not be set at a level that causes the motor operating current to exceed the full load amp value* at any time, including when operating in pressure relief. <i>* The full load amp value can be found on the inside cover of the control panel.</i>

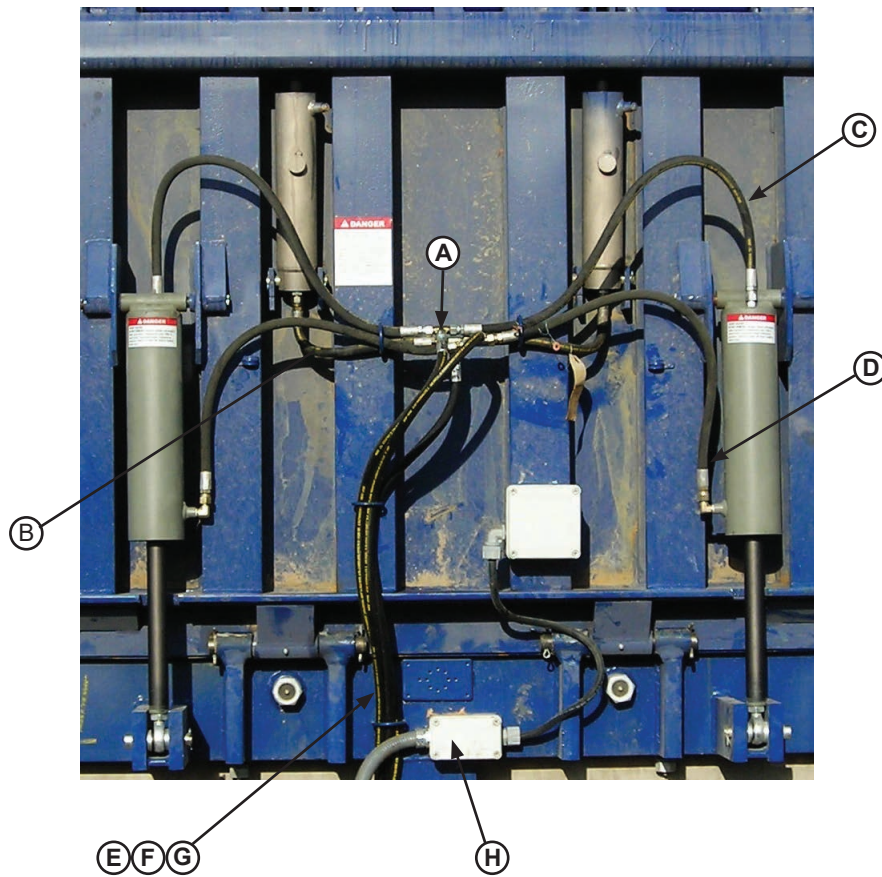
TROUBLESHOOTING

Symptom	Possible Cause	Solution
Platform does not rise to full height.	Low hydraulic fluid.	Add hydraulic fluid, see pages 28-29 for proper fluid level and type.
Platform does not rise.	Faulty spool valve.	Remove and clean spool valve, or replace with new valve.
Lip does not extend.	“C” coil not energized.	Check power to the solenoid coil; coil should have a magnetic pull when energized.
	Faulty spool valve.	Remove and clean spool valve, or replace with new valve.
Lip does not lower.	“C”, “D” and “E” coils not energized.	Check power to the solenoid coils; coil should have a magnetic pull when energized.
	Faulty spool valve.	Remove and clean spool valve, or replace with new valve.
Platform does not lower. Pump operates in pressure relief mode.	“D” and “E” coils not energized.	Check power to the solenoid coil; coil should have a magnetic pull when energized.
	Faulty spool valve.	Remove and clean spool valve, or replace with new valve.
Leveler does not side shift, or is difficult to move.	Debris in roller track.	Remove debris from the track.
		Grease cam rollers.
Leveler does not side shift hydraulically.	Diverter coil not energized.	Check power to the solenoid coil; coil should have a magnetic pull when energized.
	Faulty spool valve.	Remove and clean spool valve, or replace with new valve.
	Side Shift coil not energized.	Check power to the solenoid coil; coil should have a magnetic pull when energized.
	Faulty spool valve.	Remove and clean spool valve, or replace with new valve.

If additional troubleshooting assistance is required, contact Systems, LLC
 Technical Services with equipment serial number or customer order number (CO#).
Technical Service at 800-643-5424 or techservices@loadingdocksystems.com

PARTS

Platform Hydraulic Hoses



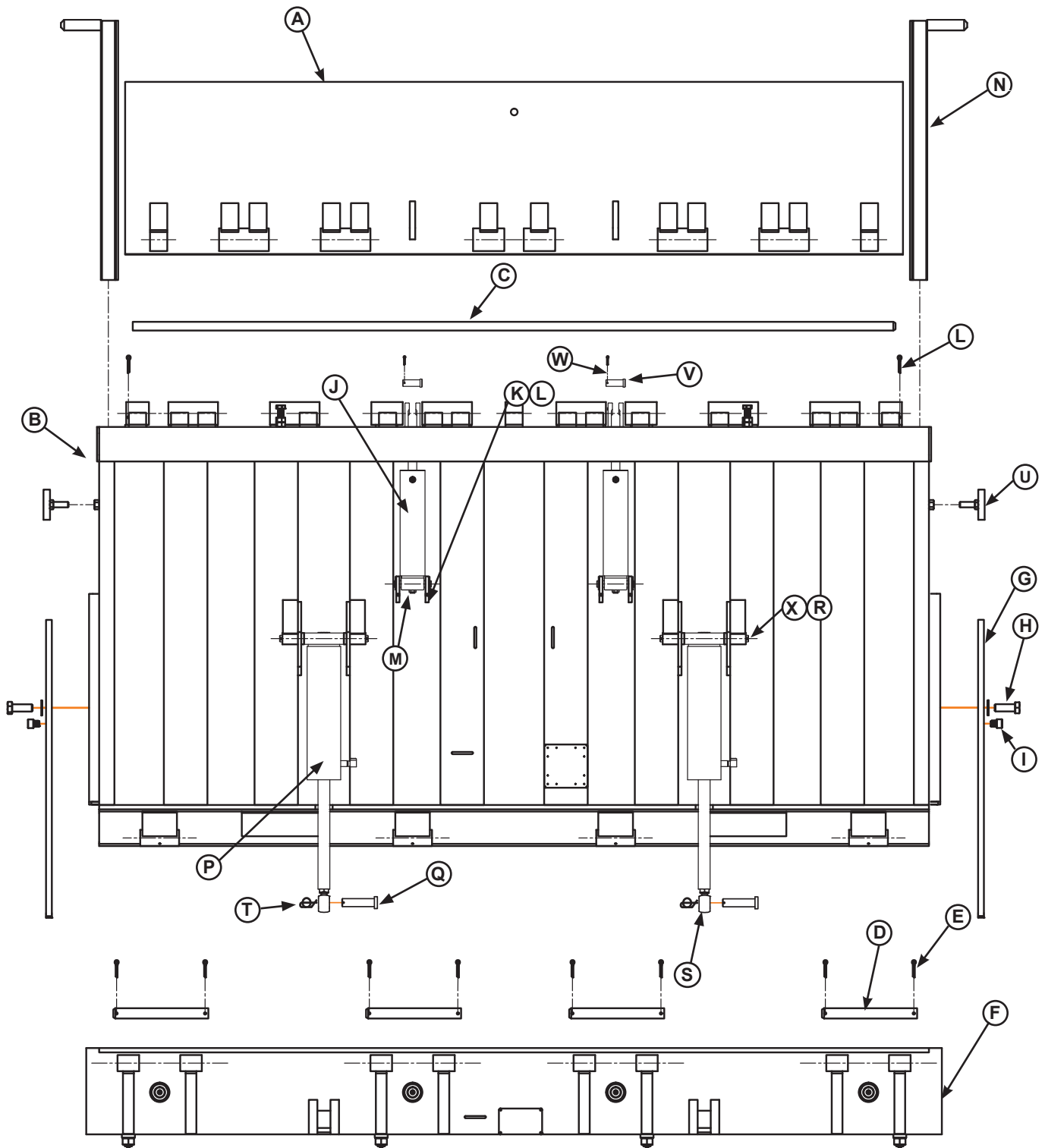
Platform Hydraulic Hoses

Item	Quantity	Part Number	Description
A	3	0521-0162	Fitting, Tee #6 JIC
B	As Req.	9904-____ ¹	Hose, Lip Cylinder
C	As Req.	9904-____ ¹	Hose, Hoist Cylinder Blind End
D	As Req.	9904-____ ¹	Hose, Hoist Cylinder Rod End
E	1	9904-____ ¹	Hose, Hoist Cylinder Blind End Tee to Valve Block
F	1	9904-____ ¹	Hose, Hoist Cylinder Rod End Tee to Valve Block
G	1	9904-____ ¹	Hose, Lip Cylinder Tee to Valve Block
H	1	2751-0035	J-Box, Fiber Glass 3" x 5" (Includes Cover)

¹ Provide dock leveler serial number, platform size, and lip size when e-mailing, calling or faxing orders.

PARTS

Carriage, Lip and Platform



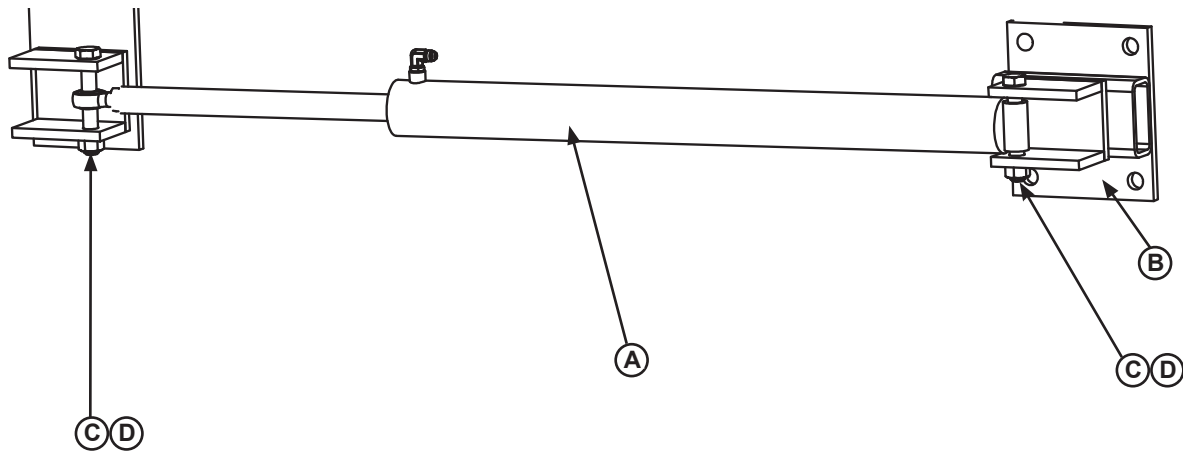
Carriage, Lip and Platform

Item	Quantity	Part Number	Description
A	1	0595-____ ¹	Lip, Weldment
B	1	9516-____ ¹	Platform, Welded Assembly
C	1	9202-____ ¹	Pin, Lip Hinge
D	As Req.	9202-0040	Rear Hinge Pin
		9202-0041	Rear Hinge Pin Stainless Steel
E	As Req.	2101-0047	Cotter Pin, 1/4 x 2.00"
F	1	8436-____ ¹	Carriage Assembly (Not required with fixed applications)
G	2	9511-0042	Maintenance Prop
H	4	2101-0262	Screw, SHCS, 5/8-11 UNC X 1.75 Grade 8
I	2	2101-0139*	Screw, SHCS, 1/2-13 UNC x 1/2
J	As Req.	0526-0016	Lip Cylinder
K	As Req.	9202-0004	Pin - Lip Cyl. 3/4 Dia. x 4-3/8 Lg. (1 per cylinder)
L	As Req.	2101-0049	Hairpin Clip, 5/8" (2 per cylinder)
M	As Req.	9301-0209	Fitting, Straight Thread, #6 ORBM, #6 JICM (1 per cylinder)
N	2	0000-____ ¹	Side End Load Supports
P	As Req.	0525-____ ¹	Hoist Cylinder
Q	As Req.	9202-0073	Hoist Cyl Pin Rod End (1 per cylinder)
R	As Req.	2101-0357	Cotter Pin, 3/16 (2 per cylinder)
S	As Req.	0523-0028	Yoke (includes jam nut, 1 per cylinder)
T	As Req.	2101-0386	Ring Clip, Rue (1 per hoist cylinder)
U	2	9513-0017	Support Arm lock
V	As Req.	0522-0005	Clevis Pin (1 per cylinder)
W	As Req.	2101-0046	Cotter Pin, 1/8 x 1 (1 per lip cylinder)
X	As Req.	9202-0072	Pin, Platform, Hoist, VS3/RR/CA

¹ Provide dock leveler serial number, platform size, and lip size when e-mailing, calling or faxing orders.

PARTS

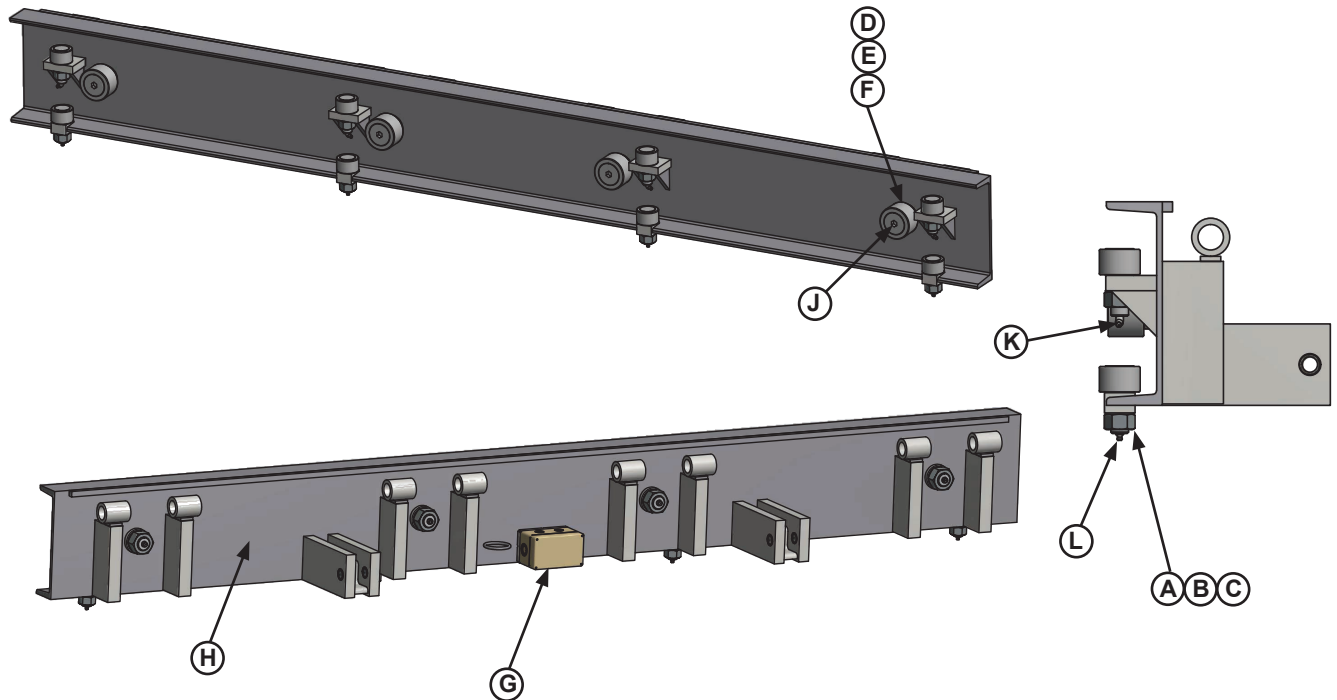
Hydraulic Side Shift



Item	Quantity	Part Number	Description
A	1	0525-0071	Cylinder
B	1	0000-____ ¹	Cylinder Mount
C	2	2101-0237	Cap Screw 3/4-10 x 5-1/2 Lg. Grade 8
D	2	2101-0148	Nut 3/4-10

¹ Provide dock leveler serial number, platform size, and lip size when e-mailing, calling or faxing orders.

Carriage



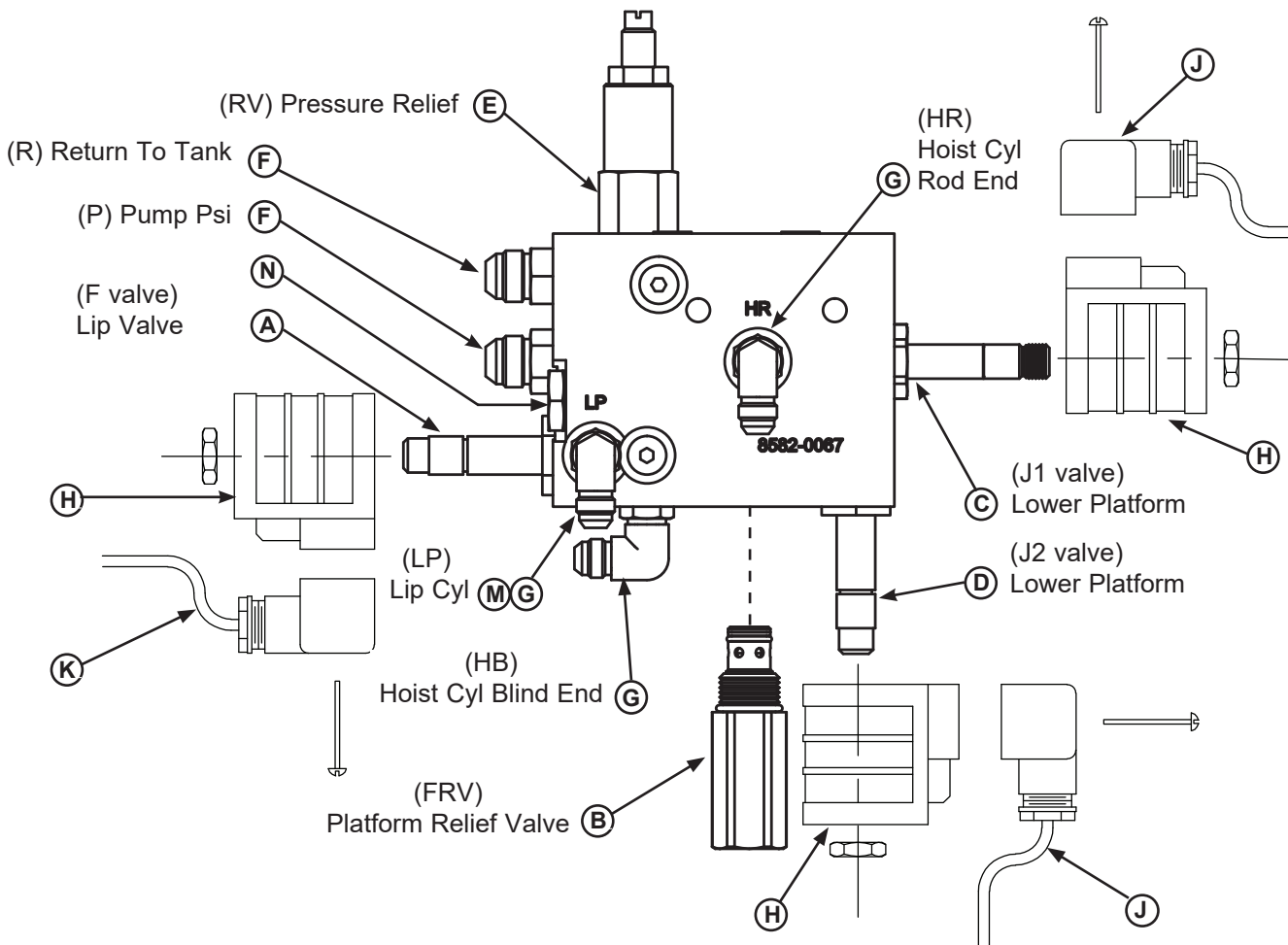
Torque Specifications:
 1-7/8" or 2" Roller: 65-75 ft/lbs.
 3" Roller: 170 ft/lbs.

Item	Quantity	Part Number	Description
A	8	9461-0004	Cam Roller 1-7/8" Dia. (before 2004)
		9461-0007	Cam Roller 2" Dia. (after 2004)
B	8	2101-0199	Nut, Hex 7/8"-14 (One Per 9461-0007 Cam Roller)
C	8	2101-0200	Washer, Lock 7/8" (One Per 9461-0007 Cam Roller)
D	4	9461-0003	Cam Roller 3" Dia.
E	4	2101-0160	Nut, Hex 1-1/4"-12 (One Per 9461-0003 Cam Roller)
F	4	2101-0161	Washer, Lock -1-1/4" (One Per 9461-0003 Cam Roller)
G	1	2751-0035	J-Box, Fiber Glass 3" x 5" (Includes Cover)
H	1	9516-____ ¹	Carriage Assembly
J	4	0521-0128	Fitting, Grease Zerk, 1/4", Straight
K	4	0521-0129	Fitting, Grease Zerk, 3/16", 65*
L	4	0521-0073	Fitting, Grease Zerk, 3/16", Straight

¹ Provide dock leveler serial number, platform size, and lip size when e-mailing, calling or faxing orders.

PARTS

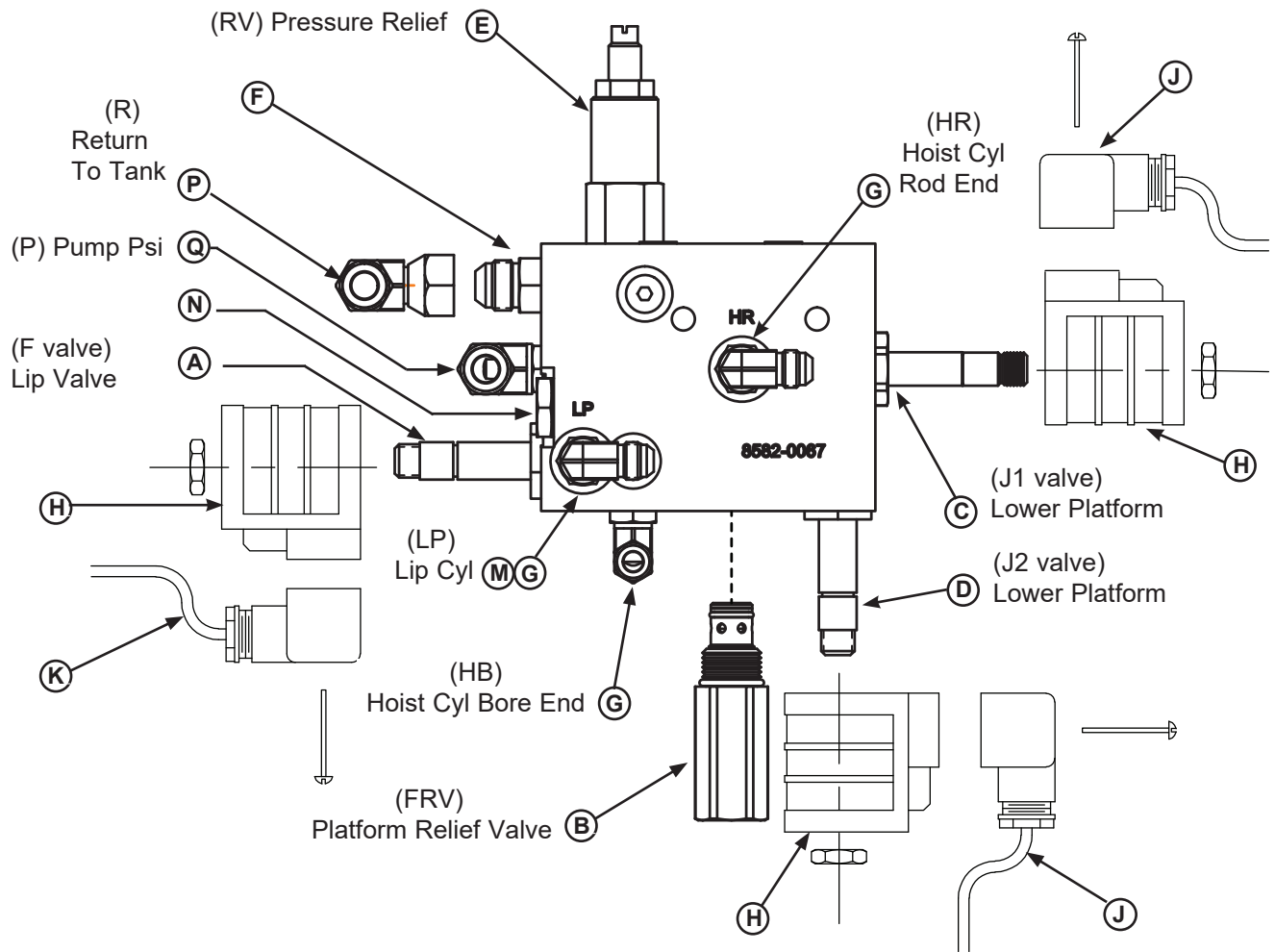
Vertical Valve Block Assembly—Platform Mounted Pump/ Motor



Item	Quantity	Part Number	Description
*	1	8585-0104	Vertical Valve Assembly, Platform Mounted Pump/ Motor (Includes A-G and M-N)
A	1	8581-0005	Valve, Cartridge 3-Way Delta
B	1	8581-0183	Valve, Cartridge, Relief, Diff (Float Valve)
C	1	8581-0011	Valve, Cartridge 4-Way 2 Pos Delta
D	1	8581-0010	Valve, Cartridge 2-Way N.C. Poppet Delta
E	1	8581-0105	Valve, Cartridge Relief
F	2	9301-0111	Fitting #6 ORB X #8 JIC
G	3	9301-0113	Fitting 90 Deg #6 ORB X #6 JIC
H	3	8581-0004	Coil 115V (Includes 1/2 UNF Jam Nut)
J	1	4301-0003	Cable Assy, 24" Lg, Two Coil
K	1	4305-0306	Cable Assy, 24" Lg, One Coil
M	1	8581-0139	Valve, Orifice Check (Lip Flow Control)
N	1	8581-0188	Valve, Cartridge, Check, Poppet

*Provide dock leveler serial number, platform size, lip size and type of installation when e-mailing, calling or faxing orders. Contact Technical Services for 2002 and earlier parts.

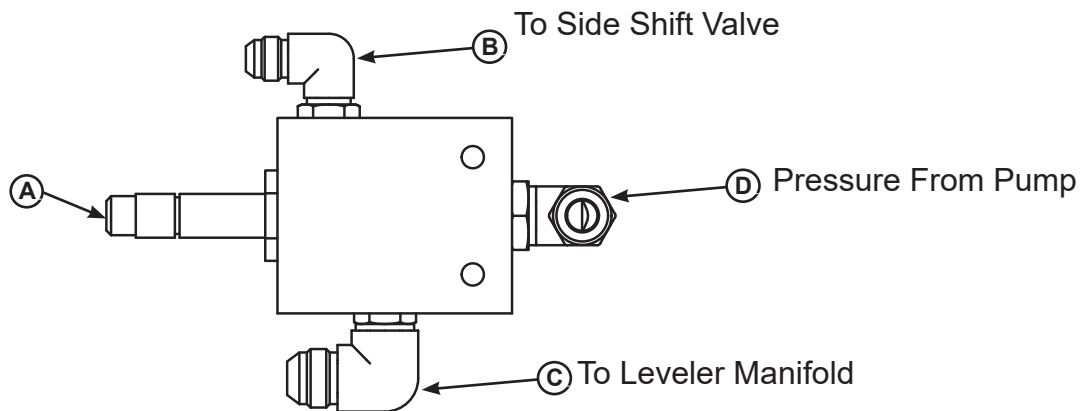
Vertical Valve Block Assembly—Remote Mounted Pump/ Motor



Item	Quantity	Part Number	Description
*	1	8585-0103	Vertical Valve Assembly, VS/ RR, Remote Mounted Pump/ Motor (Includes A-G and K-Q)
A	1	8581-0005	Valve, Cartridge 3-Way Delta
B	1	8581-0183	Valve, Cartridge, Relief, Diff (Float Valve)
C	1	8581-0011	Valve, Cartridge 4-Way 2 Pos Delta
D	1	8581-0010	Valve, Cartridge 2-Way N.C. Poppet Delta
E	1	8581-0105	Valve, Cartridge Relief
F	1	9301-0111	Fitting, #6 ORB X #8 JIC
G	3	9301-0113	Fitting, 90 Deg #6 ORB X #6 JIC
H	3	8581-0004	Coil, 115V (Includes 1/2 UNF Jam Nut)
J	1	4301-0003	Cable Assy, 24" Lg, Two Coil
K	1	4305-0306	Cable Assy, 24" Lg, One Coil
M	1	8581-0139	Orifice Check (Lip Flow Control)
N	1	8581-0188	Valve, Cartridge, Check, Poppet
P	1	9301-0145	Fitting, Elbow - 90 Deg, #8 JIC x #8 JIC
Q	1	9301-0115	Fitting, Elbow - 90 Deg, #6 ORB x #8 JIC

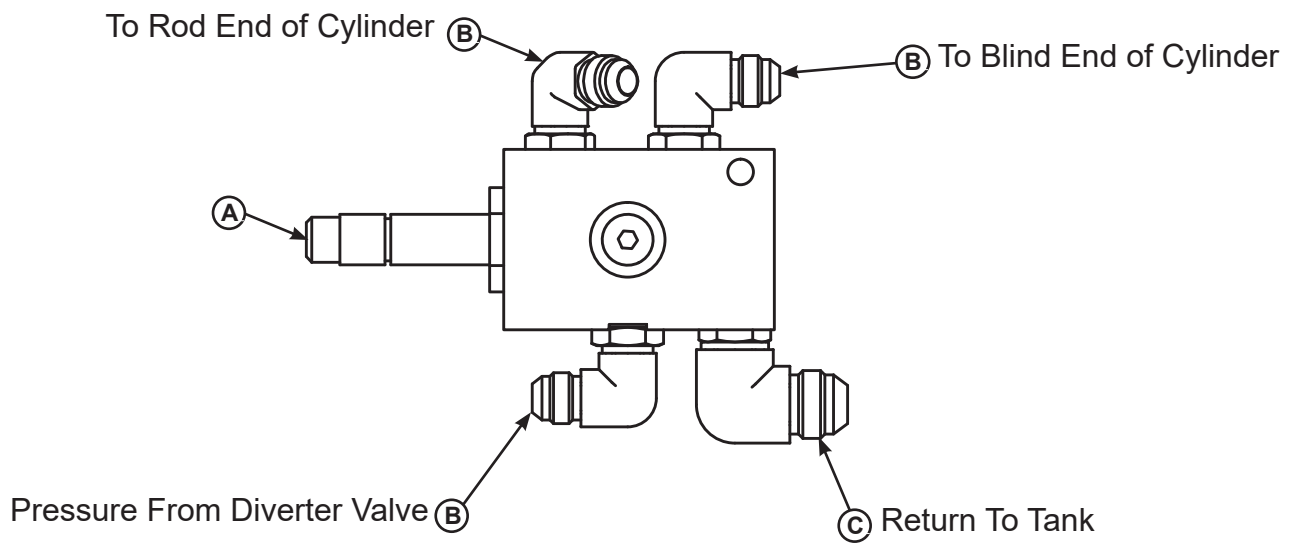
PARTS

Side Shift Diverter Valve Block



Item	Quantity	Part Number	Description
	1	8583-0013	Valve, RCR, Leveler/Side-Shift Diverter - Complete
A	1	8581-0005	Valve Cartridge 3-Way
B	1	9301-0113	Fitting 90 Deg #6 ORB X #6 JIC
C	1	9301-0115	Fitting 90 Deg #6 ORB X #8 JIC
D	1	9301-0116	Fitting 90 Deg #8 ORB X #8 JIC

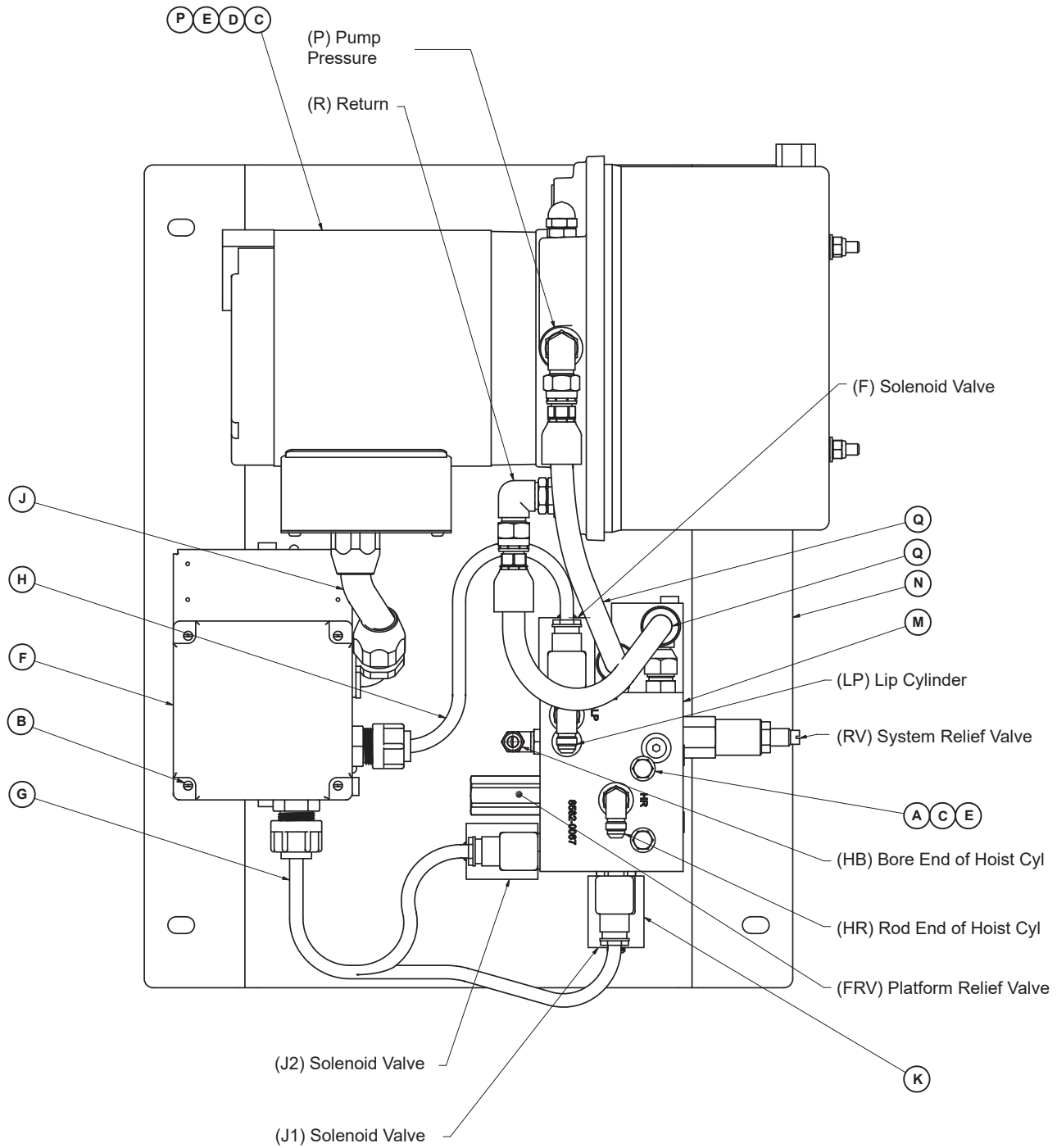
Side Shift Directional Valve Block



Item	Quantity	Part Number	Description
	1	8583-0014	Valve, RCR, Side-Shift - Complete
A	1	8581-0011	Valve Cartridge 4-Way
B	3	9301-0113	Fitting 90 Deg #6 ORB X #6 JIC
C	1	9301-0115	Fitting 90 Deg #6 ORB X #8 JIC

PARTS

Remote Mounted PPAC VS Hydraulic Components

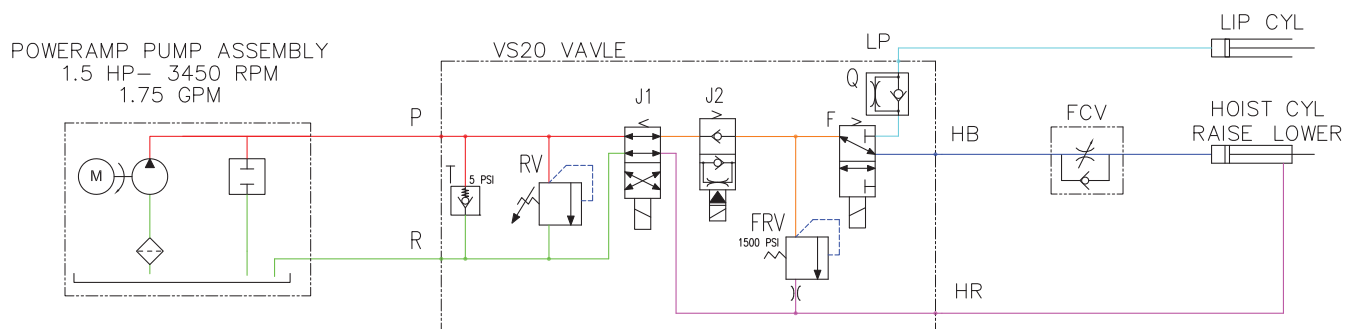


Remote Mounted PPAC VS Hydraulic Components

Item	Quantity	Part Number	Description
*	1	9396-0051	PPAC ASSY, VS, REM Mount, RV Float
A	2	2101-0077	Screw, HHCS, 5/16-18 UNC X 3
B	4	2101-0102	Screw, RHMS, 8-32 UNC X 3/4
C	6	2101-0163	Washer - Flat - Zinc Plated, 5/16" DIA
D	4	2101-0187	Screw, HHCS - Grade 5, 5/16-18 UNC X 1
E	6	2101-0214	Nut, Fling Top L/N, 5/16-18
F	1	2751-0042	J-Box - Fiberglass, 5 X 5 X 3
G	1	4305-0264	Cable Assy,24"OAL,2 Coil,
H	1	4305-0306	Cable Assy,24"OAL,1 Coil
J	1	4305-0601	Conduit Assy,4.5"OAL,3,90-90 (115V - 1PH)
		4305-0602	Conduit Assy,4.5"OAL,4,90-90 (208V, 230V, 460V - 3PH)
		4305-0603	Conduit Assy,4.5"OAL,3,90-90 (208V, 230V - 1PH)
K	3	8581-0004	Delta Coil, 115VAC,DHC-11 (includes jam nut)
M	1	8585-0103	Valve Assy,VS/RR,RV Float (See Page 53)
N	1	9394-0049	PPAC MTG WLDT, VS Remote W/ Valve
P	1	9395-0351	PPAC,REM,WALL,2GPM,2.1 GAL, 1PH,115/230V,1.5HP
		9395-0352	PPAC,REM,WALL,2GPM,2.1 GAL, 1PH,115/230V,1.5HP,WASHDOWN
		9395-0353	PPAC,REM,WALL,2GPM,2.1 GAL, 1PH,208V,1.5HP
		9395-0354	PPAC,REM,WALL,2GPM,2.1 GAL, 1PH,208V,1.5HP,WASHDOWN
		9395-0355	PPAC,REM,WALL,2GPM,2.1 GAL, 3PH,460V,1.5HP
		9395-0356	PPAC,REM,WALL,2GPM,2.1 GAL, 3PH,460V,1.5HP,WASHDOWN
		9395-0357	PPAC,REM,WALL,2GPM,2.1 GAL, 3PH,575V,1.5HP
Q	2	9395-0358	PPAC,REM,WALL,2GPM,2.1 GAL, 3PH,575V,1.5HP,WASHDOWN
		9904-0090	Hyd Hose,3/8",17.50 LG, #8 JICF Swivel Both Ends

SCHEMATIC COLOR LEGEND

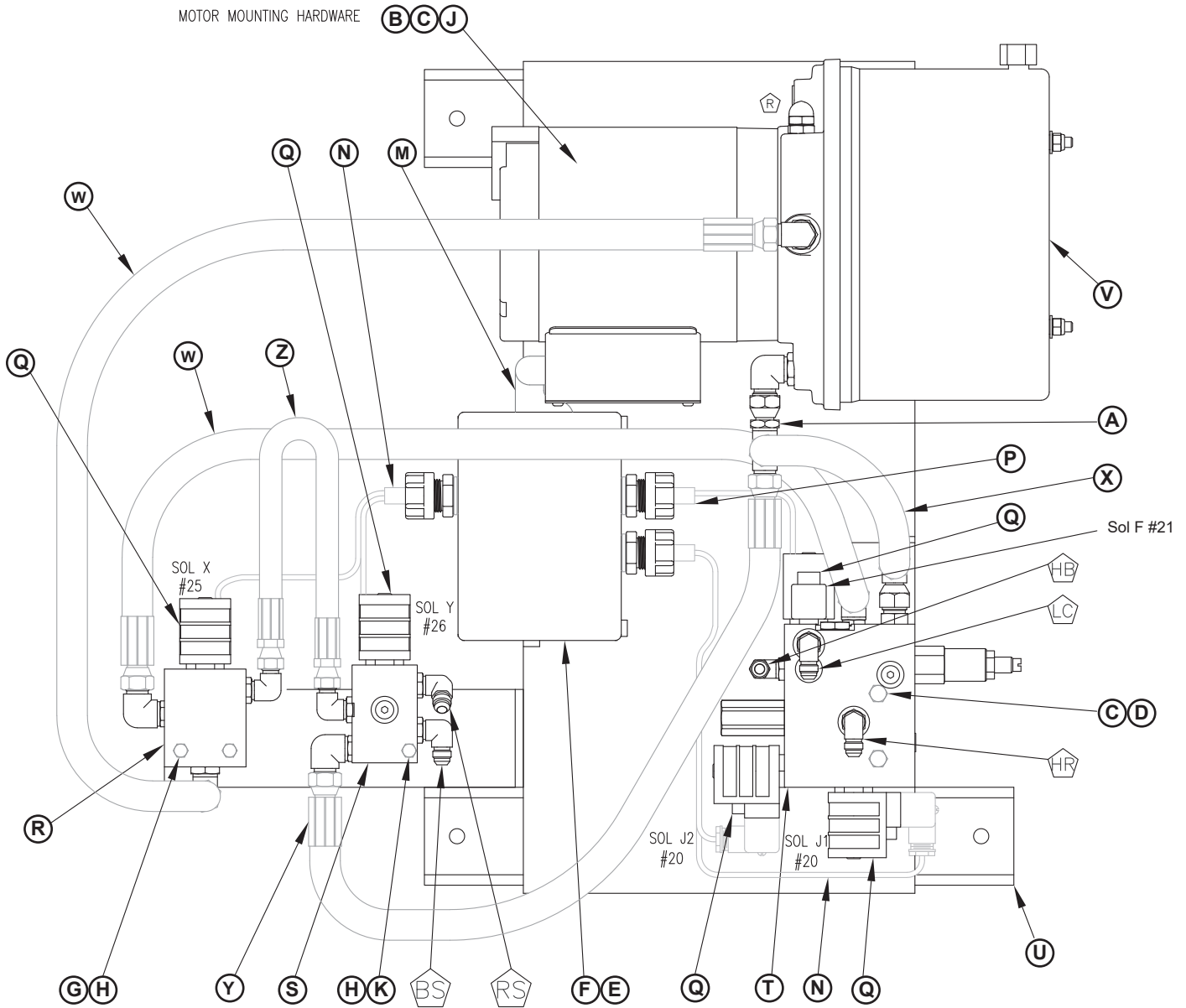
RED	PRESSURE
GREEN	RETURN (TANK)
ORANGE	PRESSURE OR RETURN
BLUE	BORE END OF CYLINDER
MAGENTA	ROD END OF CYLINDER
CYAN	LIP CYLINDER



*Provide dock leveler serial number, platform size, lip size and type of installation when e-mailing, calling or faxing orders. Contact Technical Services for 2002 and earlier parts.

PARTS

Remote Mount Valve Block w/Side Shift Assembly

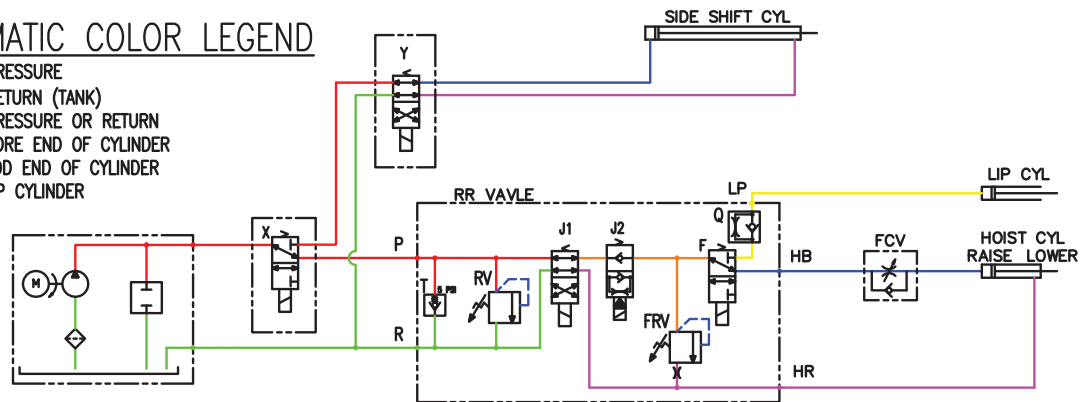


NOTE	DESCRIPTION
BS	TO BASE END OF POSITION CYLINDER (#6 JIC)
RS	TO ROD END OF POSITION CYLINDER (#6 JIC)
HB	TO BASE END OF HOIST CYLINDER (#6 JIC)
HR	TO ROD END OF HOIST CYLINDER (#6 JIC)
LC	TO LIP CYLINDER (#6 JIC)
R	TURN RELIEF ADJUSTMENT CW TO MAXIMUM SETTING ON PPAC DRIVE PLATE (RELIEF PRESSURE SET ON VALVE BLOCK)

Remote Mount Valve Block w/Side Shift Assembly

SCHEMATIC COLOR LEGEND

RED	PRESSURE
GREEN	RETURN (TANK)
ORANGE	PRESSURE OR RETURN
BLUE	BORE END OF CYLINDER
MAGENTA	ROD END OF CYLINDER
YELLOW	LIP CYLINDER



Hydraulic Schematic

Item	Quantity	Part Number	Description
A	1	0521-0022	Fitting, Tee, Run Swivel #8 JICF #8 JICM
B	4	2101-0011	Hex Head Cap Screw 5/16-18 x 1", Grade 2
C	6	2101-0039	Nylon Lock Nut 5/16-18
D	2	2101-0077	Screw, HHCS, 5/16-18 x 3
E	1	2751-0080	J-Box, Fiber Glass 5" x 7" (Includes Cover)
F	2	2101-0102	RHMS -Slotted #8-32 x 3/4
G	2	2101-0116	Screw, HHCS, 1/4-20 x 2-3/4
H	3	2101-0143	Nylon Lock Nut 1/4-20
J	4	2101-0163	Washer, Flat 5/16
K	1	2101-0269	Screw, HHCS, 1/4-20 x 3, Grade 5
M	1	4305-_____ ¹	Conduit Assembly
N	2	4305-0264	Cable Assy 2 Coils 24" long
P	1	4305-0306	Cable Assy 1 Coil 24" long
Q	5	8581-0004	Coil, 115VAC
R	1	8583-0013	Valve, Leveler/Side-Shift Diverter
S	1	8585-0014	Valve, Side-Shift
T	1	8585-0103	Valve Assy, VS/RR, RV Float, Remote
U	1	9394-0020	Powerpack Mounting Weldment, Side-Shift
V	1	9395-_____ ¹	Powerpack, Complete
W	2	9904-0078	3/8" Hose, 35" Lg, #8 JICF Swivel Both Ends
X	1	9904-0090	3/8" Hose, 17-1/2" Lg, #8 JICF Swivel Both Ends
Y	1	9904-0106	3/8" Hose, 28" Lg, #8 JICF Swivel Both Ends
Z	1	9904-0155	3/8" Hose, 21" Lg, #6 JICF Swivel Both Ends

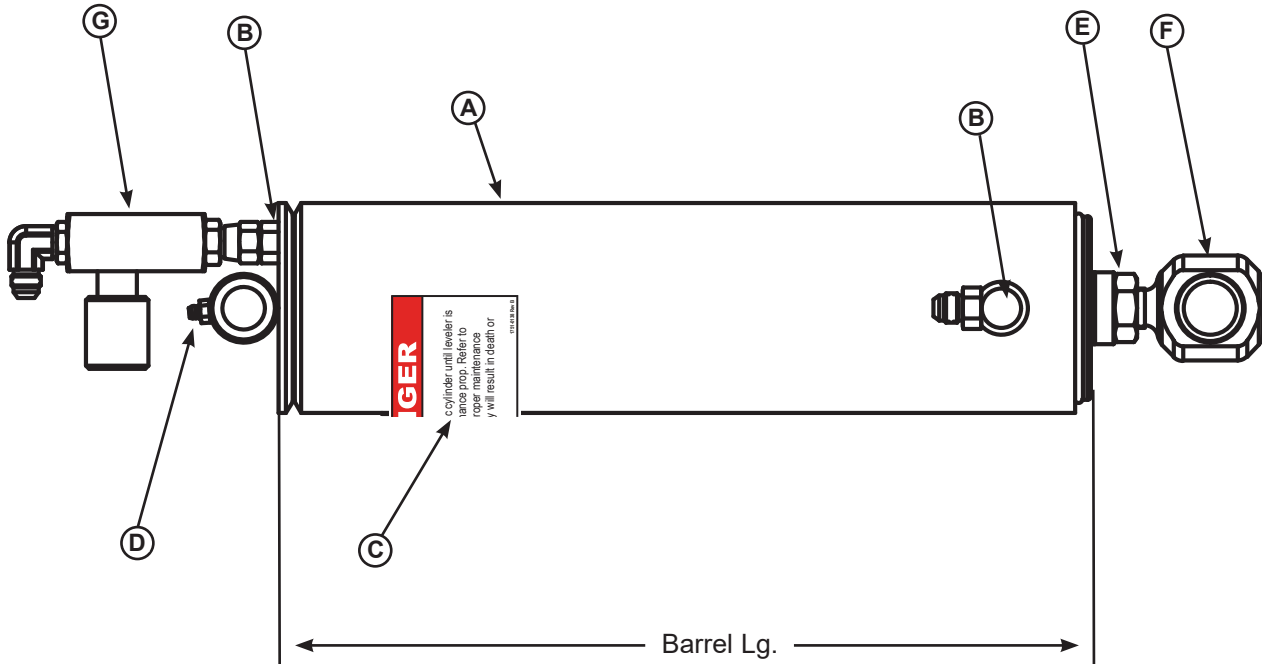
¹ Provide dock leveler serial number and type of installation when e-mailing, calling or faxing orders.

PARTS

Hoist Cylinder Parts

NOTICE

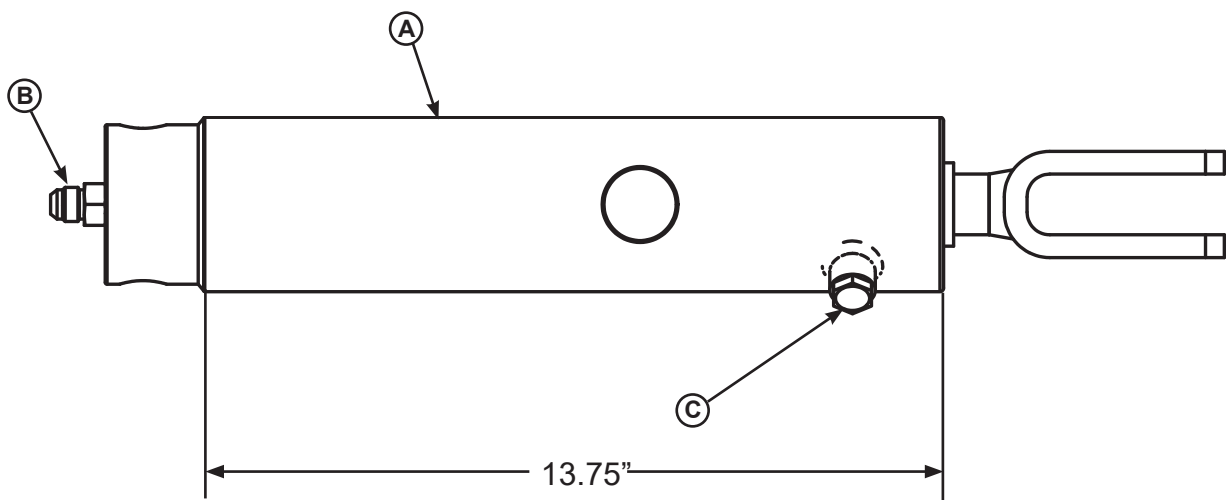
Seal kits are not available for vertical hoist cylinders.



Item	Quantity	Part Number	Description
A	1	0525-0132*	Hoist Cylinder, Complete Assy*
		0525-0133*	Hoist Cylinder, Complete Assy*
		0525-0134*	Hoist Cylinder, Complete Assy*
B	2	9301-0109	Fitting, #6 ORBM x #6 JICM
C	1	1751-0138	Decal, Cylinder Fluid
D	1	0521-0073	Grease Zerk, 3/16" Straight
E	1	2101-0159	Nut, Hex, 3/4-16 UNF
F	1	0523-0028	Yoke
G	1	9303-0025	Valve Assy, Down Speed Flow Control

*Provide dock leveler serial number, platform size, lip size and type of installation when e-mailing, calling or faxing orders. Contact Technical Services for 2002 and earlier parts.

Lip Cylinder Parts

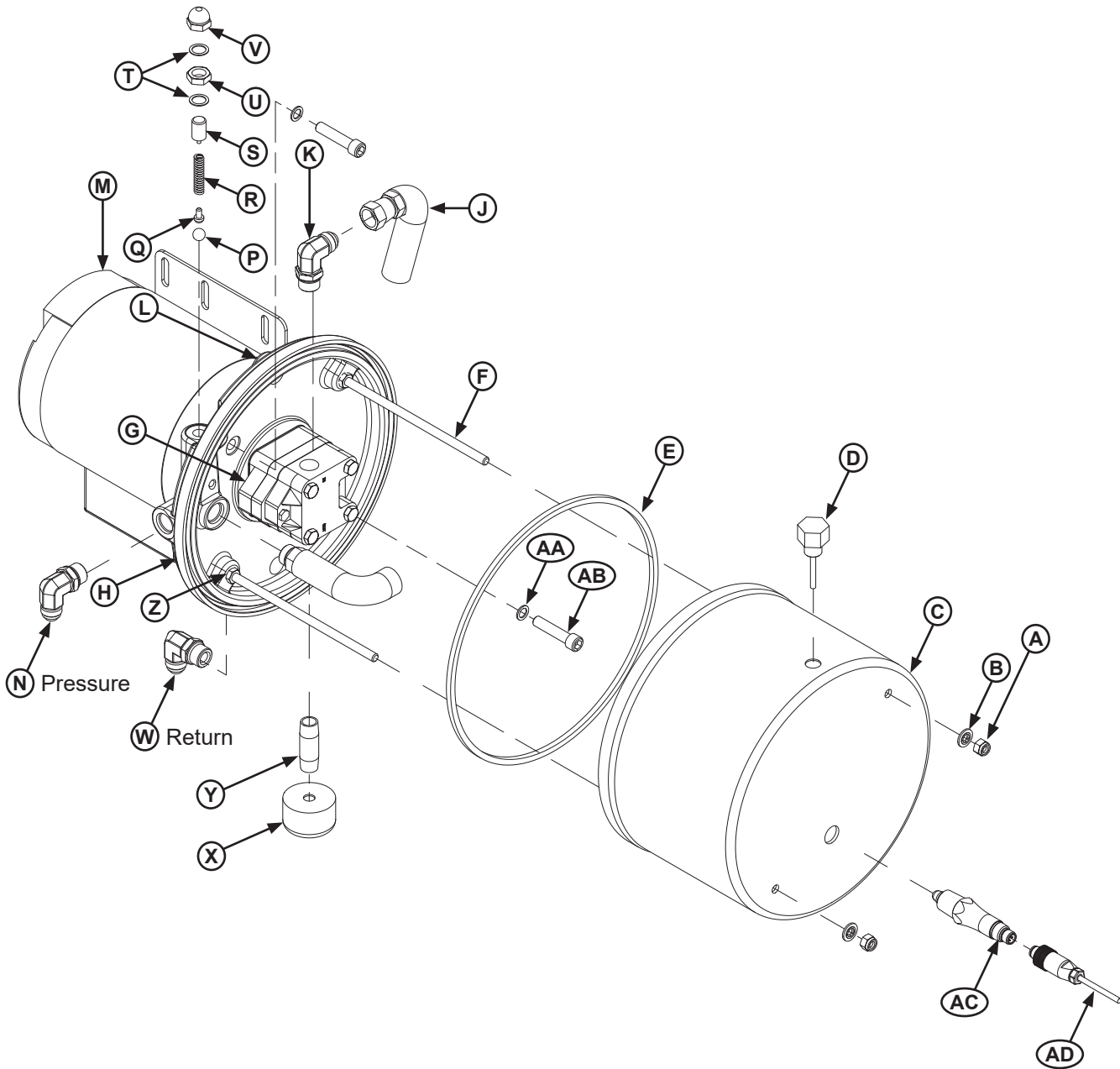


Item	Quantity	Part Number	Description
A	1	0526-0016	Lip Cylinder, VS (w/fittings C-D)
B	1	9301-0109	Fitting, #6 ORB x #6 JIC
C	1	0521-0028	Fitting, Breather, Brass
D	1	0521-0241	Seal Kit, Lip Cyl (Not Shown)

*Provide dock leveler serial number, platform size, lip size and type of installation when e-mailing, calling or faxing orders.
Contact Technical Services for 2002 and earlier parts.

PARTS

Remote Mount Powerpack Assembly



NOTICE

Leveler pressure is set by relief valve on valve block.
Remote mount powerpack pressure is factory set.

Typical cookpot-style remote mount Powerpack shown for reference purposes only.
Contact Systems, LLC Technical Services with serial number for exact breakdown.

Technical Service at 800-643-5424 or techservices@loadingdocksystems.com

Remote Mount Powerpack Assembly (continued)

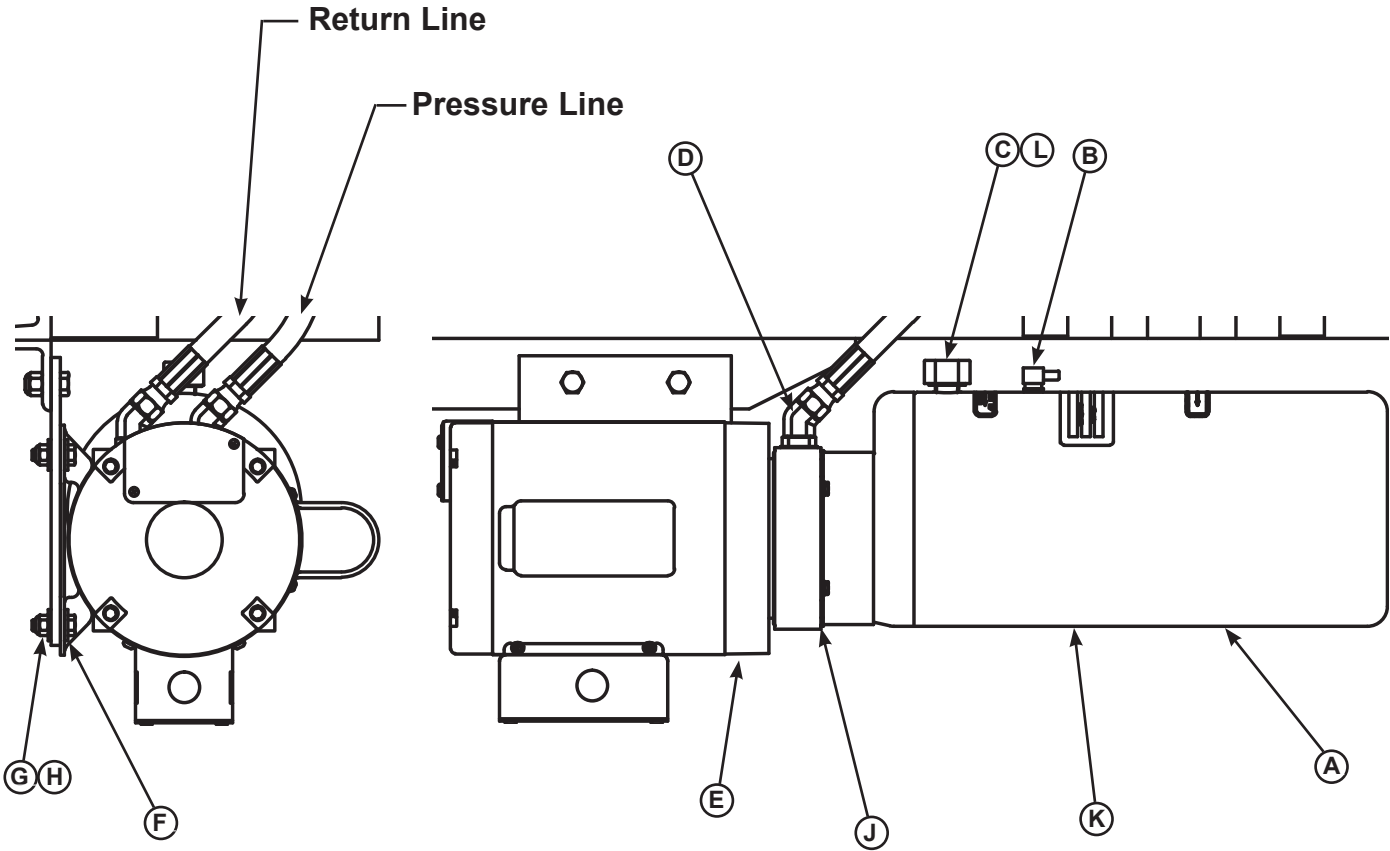
Item	Quantity	Part Number	Description
	1	9395-____ ¹	Powerpack, Complete (Includes All Items Except L, N, and W)
A	2	2101-0039	Nut, Nylon Lock, 5/16-18 UNC
B	2	9301-0029	Seal, Thread
C	1	9302-0014	Reservoir
D	1	9301-0199	Breather Cap, 3/8 NPT Male
E	1	9301-0027	O-Ring (Reservoir)
F	2	9302-0012	Tie Rod (Reservoir)
G	1	9301-____ ¹	Pump (Only)
	4	2101-0016	Screw, HHCS, 5/16-18 UNC x 3-1/2 in., Grade 5
	1	9301-0028	Gasket, Pump
	1	9303-0002	Coupling Assembly
H	1	9302-____ ¹	Plate, Drive
J	1	9904-0071	Hyd Hose, 1/2"x 17", #8 ORB x #8 JICF Swivel
K	1	9301-0116	Fitting Elbow, 90° #8-ORB x #8-JIC
L	1	9301-0106	Plug, #8-ORB
M	1	3411-____ ²	Motor Only
N	1	9301-0116	Fitting Elbow, 90° #8-ORB x #8-JIC
P	1	0521-0014	Ball, Check
Q	1	9301-0024	Guide, Check Ball
R	1	9302-0009	Spring, Relief Valve
S	1	9303-0003	Screw, Adjusting
T	2	9301-0014	Washer, Nylon, 11/16 in. OD x 1/2 in. ID
U	1	9301-0015	Nut, Jam, 1/2-20 UNF
V	1	9301-0016	Nut, Acorn, 1/2-20 UNF
W	1	9301-0175	Fitting Elbow, 90° #8-ORB x #10-JIC
X	1	9301-0009	Strainer, Suction
Y	1	9301-0008	Pipe Nipple, 3/8 NPT x 3 in.
Z	2	2101-0063	Nut, Jam 5/16-18 UNC
AA	2	9301-0003	Washer, Aluminum, 9/16 in. OD x 3/8 in. ID x 1/16 in.
AB	2	9301-0004	Screw, SHCS, 3/8-16 UNC x 1-3/4 in.
AC	1	0961-0642	Sensor, Fluid, Cookpot (Optional)
AD	1	0961-0648	Cable, 5M Lg, M12 Plug (Optional)

¹ Provide dock leveler serial number and type of installation when e-mailing, calling or faxing orders.

² Provide dock leveler serial number, voltage, and phase when e-mailing, calling or faxing orders.

PARTS

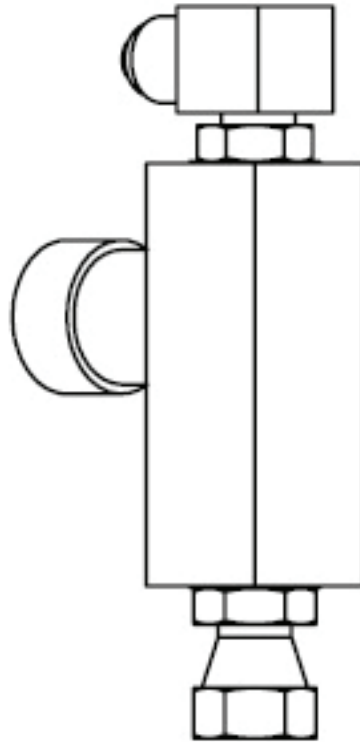
Powerpack Assembly (Carriage Mounted w/Single Hoist/Single Lip Cylinder)



Item	Quantity	Part Number	Description
A	1	9395-____ ¹	Powerpack, Complete
B	1	0521-0007	Elbow, 1/4 NPT Male x 1/4 Tube
C	1	9301-0218	Breather Cap, Push In
D	2	9301-0120	Fitting 45 Degree, #8 ORB x #8-JIC Male
E	1	3411-____ ¹	Motor Only
F	4	2101-0225	Cap Screw, 5/16 x 1.25
G	4	2101-0039	Nylon Lock Nut, 5/16-18 UNC
H	8	2101-0163	Washer, Flat, 5/16
J	1	9301-0226	O-Ring (Not Shown, Seal Between Reservoir and Manifold)
K	1	9301-0224	Plastic Reservoir
L	1	2401-0001	Grommet, Reservoir (plastic)

¹ Provide dock leveler serial number, voltage, phase and type of installation when e-mailing, calling or faxing orders.

Flow Control Valve



Quantity	Part Number	Description
1	9303-0025	Flow Control Valve (Down Speed)

**Provide dock leveler serial number when e-mailing, calling or faxing orders.*

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Customer Information

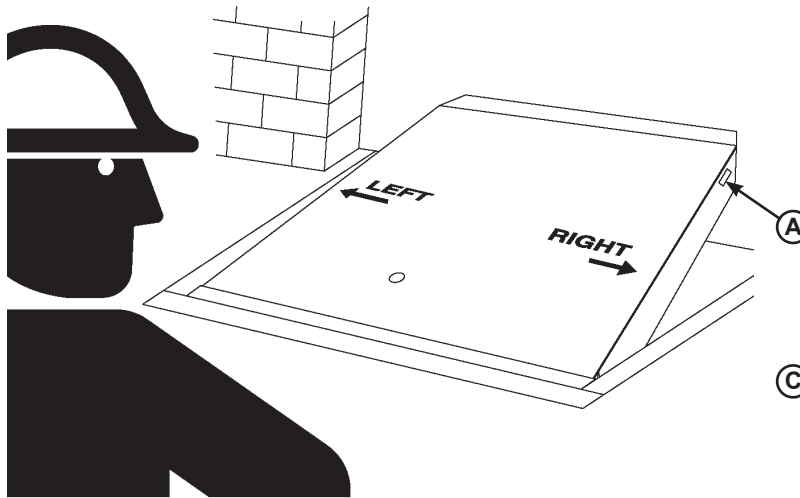


Figure 33

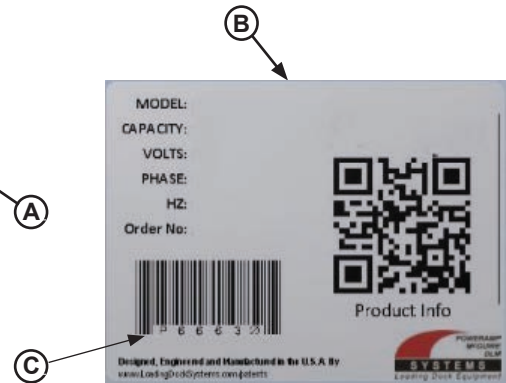


Figure 34

NOTE: Refer to Figure 33 for left/right orientation of dock leveler and Figure 34 for example of decal.

The LEVELER model/serial number decal is located on the left platform joist near the front (lip) of dock leveler (A).

When you receive your new equipment, write down the model and serial number (C) 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 dock leveler, and the original owner's name. This will all help to identify the specific dock leveler 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 dock leveler 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

Dock Leveler Information

Model _____

Serial No. _____

Systems, LLC, Job 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.