

A Division of Systems, LLC

DLM
DOCK LEVELER
MANUFACTURING

CentraAir®
PATENT # 8,627,529

Dock Leveler

Owner's/User's Manual



DLM • Division of Systems, LLC • W194 N11481 McCormick Drive • Germantown, WI 53022

800.643.5424 • fax: 262.255.5917 • www.dlmdocks.com • techservices@loadingdocksystems.com

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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 dock leveling device or transport vehicle restraint..

Never operate a dock leveler or transport vehicle restraint 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.

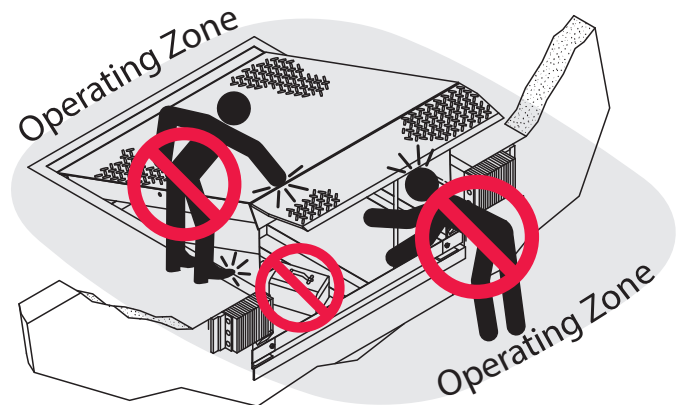


Figure 1

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.



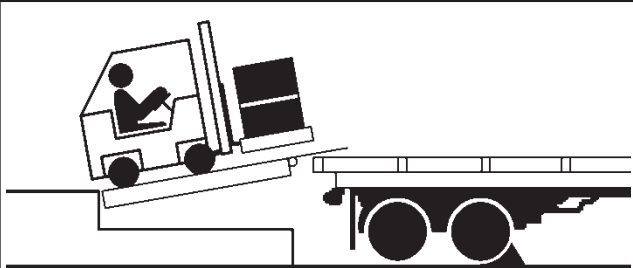
Make sure lip overlaps onto transport vehicle bed at least 4 in. (102 mm).



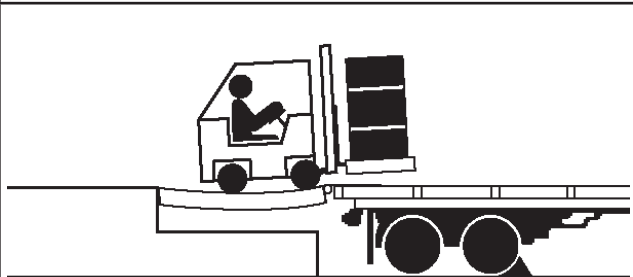
Keep a safe distance from both side edges.

Operational Precautions

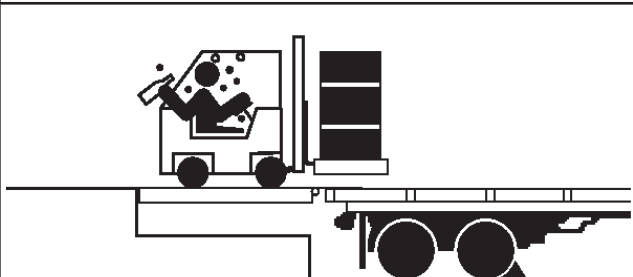
! WARNING



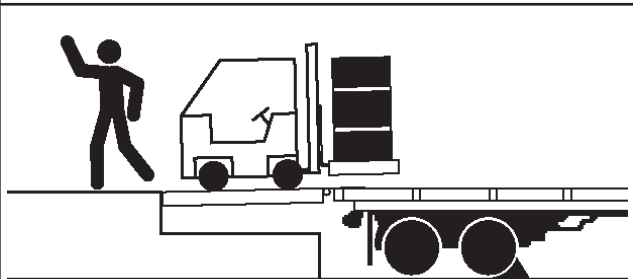
Do not use dock leveling device if transport vehicle is too high or too low.



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

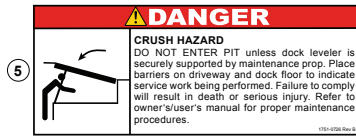
Safety Decals



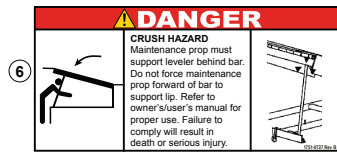
1751-0329



1751-0330 Two positions one on top of each fork pocket.



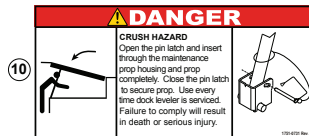
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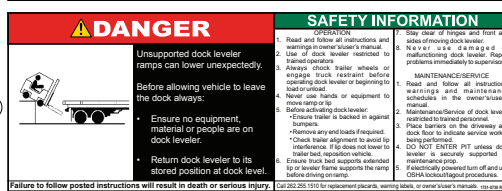
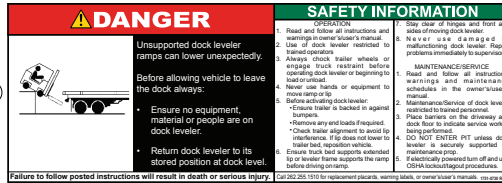
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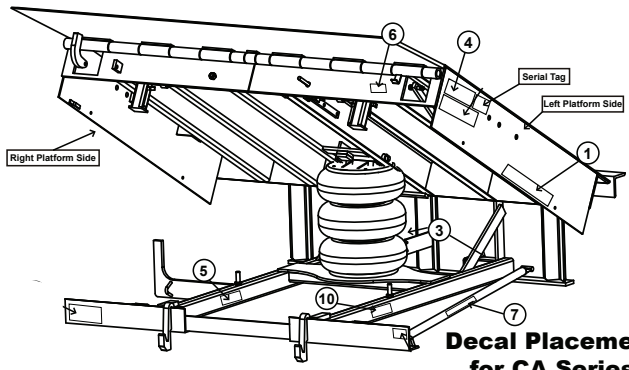
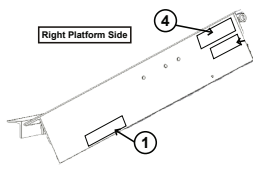



Figure 2

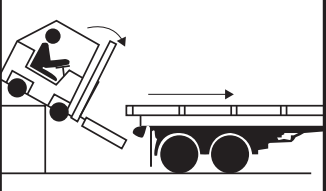
Decal Placement for CA Series

Placard



DANGER


OPERATING INSTRUCTIONS




- 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.

- Always chock transport vehicle wheels or engage vehicle restraint and set parking brakes before operating dock leveler or beginning to load or unload.
- Before activating dock leveler, check to make sure the transport vehicle is positioned squarely against dock bumpers. 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.
- Ensure the transport vehicle floor supports extended lip or the leveler frame (lip keepers or below dock endload supports) supports the ramp before driving on ramp.
- Stay clear of hinges and front and sides of moving dock leveler.
- Never use hands or equipment to move the ramp or lip.
- Never use damaged or malfunctioning dock leveler. Report problems immediately to supervisor.
- Always store dock leveler and remove people, material, and equipment from ramp before vehicle leaves the dock.
- DO NOT ENTER PIT unless dock leveler is securely supported and proper lockout/tagout procedures have been completed. See "Maintenance Precautions" in Owner's/User's Manual.


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



1751-0874 Rev D

POWERED DOCK LEVELERS

NORMAL OPERATION

1. Raise the platform by Pressing and holding the RAISE button.
2. Hold the RAISE button until the lip is fully extended, then release the RAISE button. The platform will lower until lip is resting on the transport vehicle.

STORING LEVELER

1. Press the RAISE button until the lip is completely folded. When the lip is folded, release the RAISE button. The platform will lower returning to the cross-traffic position.

BELOW DOCK ENDLOADING

- **(AIR POWERED ONLY)** Press and hold the RAISE button until the leveler is 12" above dock level. Pull the below dock level chain until the leveler lowers the full below dock position.
- **(HYDRAULIC ONLY)** Press and hold the RAISE button until the leveler is fully raised. As the lip starts to extend, release the RAISE button. The leveler will lower to the below dock position provided the lip extension allows the lip to clear the lip keepers.
- **(HYDRAULIC WITH INFINITE LIP CONTROL)** If equipped, raise the platform by Pressing and holding the RAISE button. When the lip is just above the lip keepers, simultaneously Press and hold the RAISE button and the LIP OUT button until lip has extended beyond the lip keepers. Release both buttons.

NOTE: If equipped, Pressing E-STOP button will stop platform from lowering.

1751-0874

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 in contact with both bumpers. When an industrial vehicle is driven on or off a transport vehicle during loading and unloading operations, the transport vehicle parking brakes shall be applied and wheel chocks or a restraining device that provides equal or better protection of wheel chocks shall be engaged. Also, whenever possible, air-ride suspension systems should have the air exhausted prior to performing said loading and unloading operations.
- 9) When goods are transferred between the loading dock and a trailer resting on its support legs/ landing gear instead of a tractor fifth wheel or converter dolly, it is recommended that an adequate stabilizing device or devices shall be utilized at the front of the trailer.
- 10) In order to be entitled to the benefits of the standard product warranty, the dock safety equipment must have been properly installed, maintained and operated in accordance with all manufacturer's recommendations and/ or specified design parameters and not otherwise have been subject to abuse, misuse, misapplication, acts of nature, overloading, unauthorized repair or modification, application in a corrosive environment or lack of maintenance. Periodic lubrication, adjustment and inspection in accordance with all manufacturers' recommendations are the sole responsibility of the owner/user.
- 11) 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.
- 12) 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

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

The CA air-powered dock leveler incorporates the use of existing plant air or dedicated compressor and an industrial automotive-grade air bellows system to raise and lower the platform. It's operated with "push button" activation and requires no electricity in the pit, making the unit perfect for wash down applications or wet environments.

The CA-series dock leveler is an environmentally friendly addition to any material handling operation and will have minimal effect on the building's electrical footprint. This leveler is available in a wide range of sizes and capacities and can be modified for special applications.

Each CA-series dock leveler unit has been factory tested to ensure satisfactory operation.

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

Width:

- 6 ft (1828.8 mm)
- 6-1/2 ft (1981.2 mm)
- 7 ft (2133.6 mm)

Length

- 6 ft (1828.8 mm)
- 8 ft (2438 mm)
- 10 ft (3048 mm)

Capacity (CIR*)

- 25,000 lb (11 340 kg)
- 30,000 lb (13 608 kg)
- 35,000 lb (15 876 kg)
- 40,000 lb (18 144 kg)
- 45,000 lb (20 412 kg)
- 50,000 lb (22 680 kg)

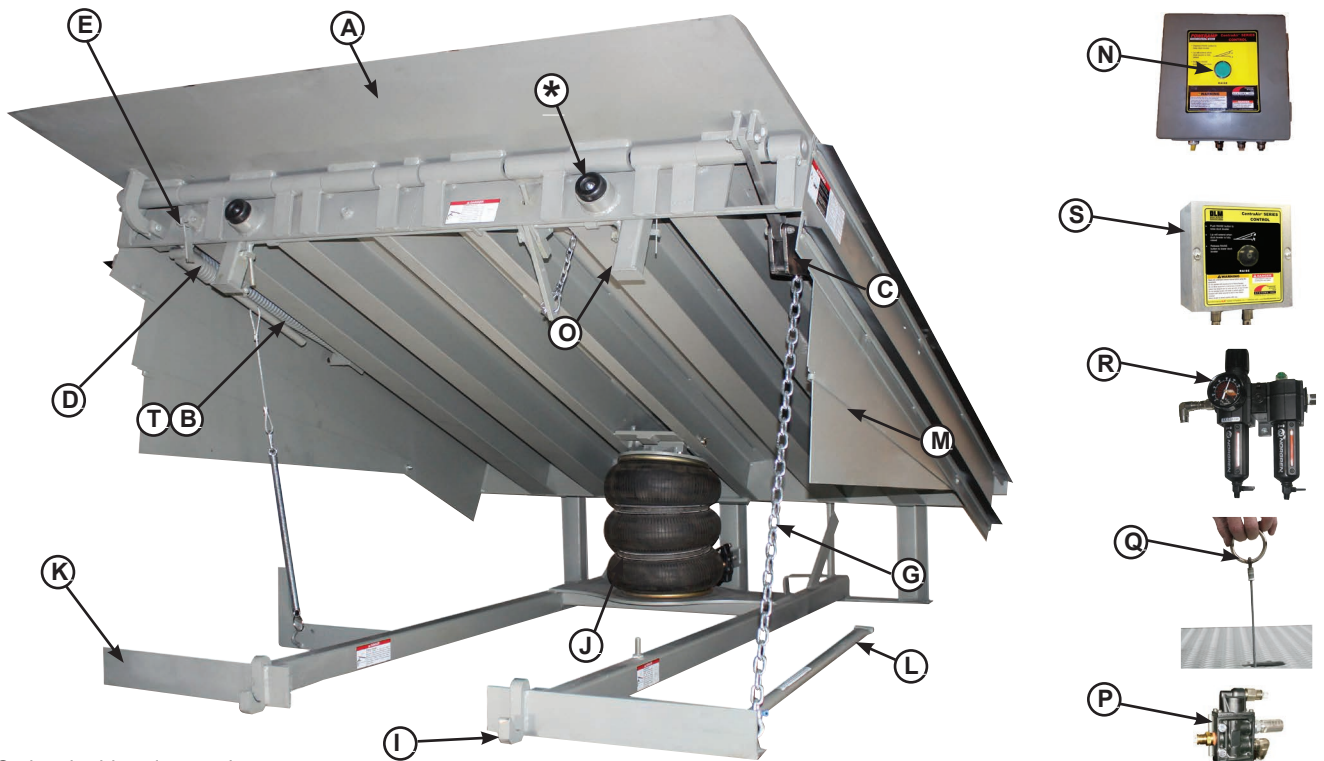
* CIR (Comparative Industry Rating)

Call DLM to discuss available options to meet your specific needs.

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

Component Identification

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



* Optional rubber donuts shown

- | | | | |
|--------------------------------|---|-----------------------------|--------------------------------------|
| A — Lip | G — Lip Actuator Chain | J — Air Bellows | P — Air Control Valve |
| B — Lip Assist Rod | H — Lip Actuator Chain Adjustment Link
(not shown) | K — Main Frame | Q — Lanyard |
| C — Lip Linkage Assembly | I — Lip Keepers (2 used) | L — Maintenance Prop | R — Filter/Regulator -
Lubricator |
| D — Lip Latch Assembly | | M — Toe Guard (2 used) | S — Raise Button (Air) |
| E — Lip Maintenance Prop Pivot | | N — Raise Button (Electric) | T — Lip Assist Spring |
| | | O — Safety Legs | |

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.

NOTICE

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

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

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

NOTICE

DO NOT remove the shipping bands around the dock leveler lip until instructed to do so.

Air Supply Requirements

# of Levelers	Recommended Compressor
1-4	1.5HP, 20GAL, 5.2CFM @ 90PSI
5 or more	5HP, 60GAL, 14.2CFM @ 125 PSI

Note: Systems, LLC is not responsible for incorrect or unsatisfactory operation of the CA dock leveler when powered by a compressor that does not meet the above recommended specifications.

NOTICE

Compressor pump must be filled with appropriate oil prior to initial start up. Refer to the compressor manufacturer's manual for proper startup and maintenance procedures.



The CA dock leveler will not function correctly with less than 80 psi available at the regulator. **For ideal operation, 95 psi is recommended.**

Installation Kits

Overhead air supply New construction	Kit #	Underground air supply New construction	Kit #	Overhead air supply Retrofit	Kit #
lever operated valve	6106-0013	lever operated valve	6106-0017 & 6106-0027	lever operated valve	6106-0014
electric push button	6106-0015	electric push button	6106-0018 & 6106-0028	electric push button	6106-0016
pneumatic push button	6106-0015	pneumatic push button	6106-0018 & 6106-0028	pneumatic push button	6106-0016

KIT NUMBER	3/8" tubing R995-0001	1/2" tubing R994-0001	Fig 1/2" NPT to 3/8" tbg 9201-0245	union elbow 9301-0241	Fig 3/8" union tee 9301-0244	Fig 1/2" union tee 9301-0260	Shut off - 1/2" tee fig & 3/8" str fig - 6106-0026	Shut off - 1/2" & 3/8" str figs - 6106-0012	Shut off - 1/2" str fig & tee figs - 6106-0023	Shut off - 1/2" str fig & tee figs - 6106-0029	1/2" Tube Clamp rubber cushioned - 114-0250
6106-0013	30'		1							1	2
6106-0014	30'		1	5						1	6
6106-0015	60'		1		1					1	4
6106-0016	60'		1	10	1					1	12
6106-0017	3'	TBD				1					
(See note 1) 6106-0027	3'	TBD					1				
6106-0018	60'	TBD						1			4
(See note 1) 6106-0028	60'	TBD							1		4
(See note 2) 6106-0030						2					

NOTES:

- All applications should be reviewed with engineering to ensure standard kits listed above will work.
 - The amount of 1/2" tubing varies by job. It's based on the door centerline and the distance to the compressor feed line fitting.
 - Slit tubing R801-0001 can be used to slide over 3/8" tubing if requested for additional UV protection. Not included in kits.
1. Kits 6106-0027 & 6106-0028 are to be used at the end of a row of loading docks for single 1/2" air supply line.
For air supply systems using (2) 1/2" air supply lines (loop system), use 6106-0017 or 6106-0018 on the end loading docks as well.
 2. Kit to be used with loop system air supply - (using (2) 1/2" air supply lines). One kit to be used for every three loading docks.

INSTALLATION

Prepare Pit

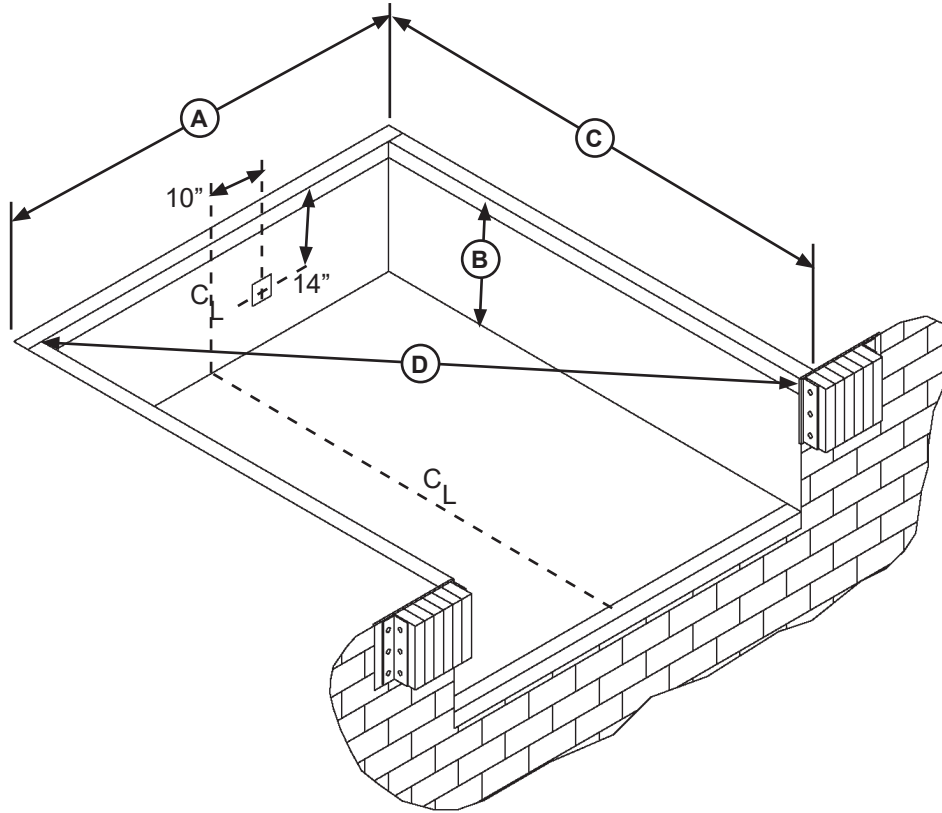


Figure 5

A—Pit Width
(Front and Rear)

B— Dock Floor-to-Pit Floor
(All Four Corners)

C— Pit Length
(Both Sides of Pit)

D— Pit Corner-to-Corner
(Top, Bottom, and Both Sides)

Before lowering the dock leveler into the pit, the following must be performed:

1. Remove all debris from the pit and sweep the pit clean.
2. Check the entire dock leveler pit for proper construction according to approved/certified pit drawings. Make sure pit is square by making the following measurements (see Figure 5):
 - Measure pit width distance (**A**) at both front and rear of pit.
 - Measure dock floor-to-pit floor distance (**B**) at all four corners.
 - Measure pit length distance (**C**) at both sides.
 - Measure corner-to-corner (diagonal) distance (**D**) at both sides. Take measurements at dock floor level and at pit floor level.

If any measurement is off by more than 1/8 in. (3.18 mm), contact Systems, LLC Technical Services before proceeding.

3. Make sure the field junction box for the dock leveler is at the correct location per pit diagrams.

Prepare Dock Leveler

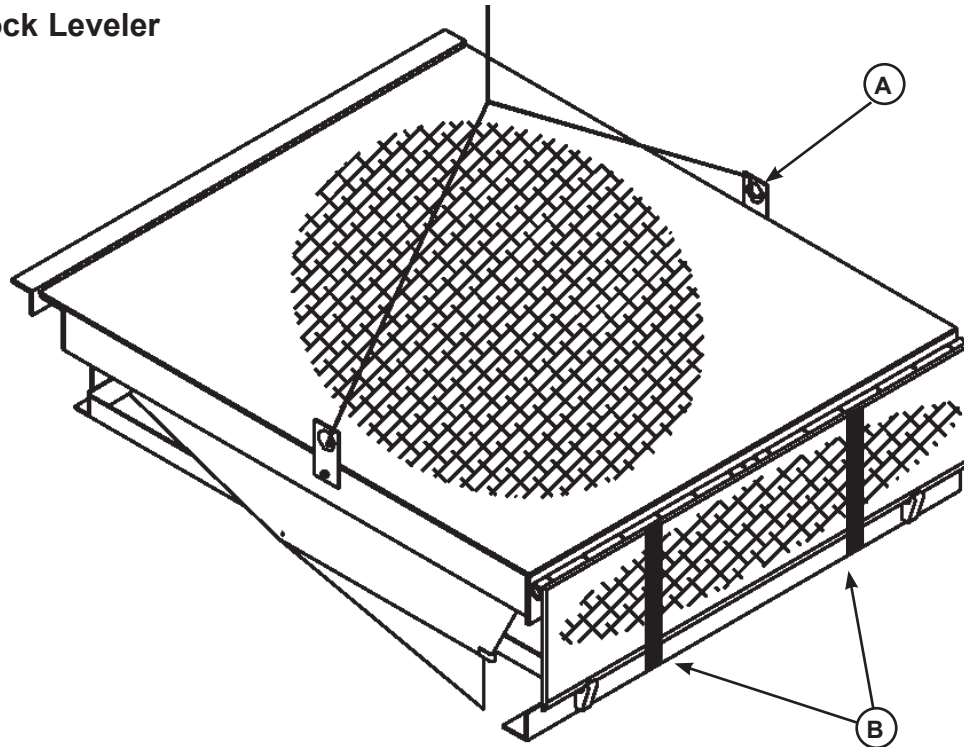


Figure 6

A— Lifting Bracket (2 used)

B — Shipping Bands

DLM dock levelers are shipped with lifting brackets (A) fastened to the platform side joists, and shipping bands (B) around the platform lip and leveler frame (see Figure 6).

1. Remove any bumpers and/or control panels that may be banded to the frame of the dock leveler.

3. 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.

4. Remove wood blocks that are attached to the leveler frame before putting the dock leveler into the pit.

5. Proceed to “Install Dock Leveler” on Page 14.

NOTICE

DO NOT remove the shipping bands (B) around the platform lip and leveler frame at this time. The shipping bands are needed to hold the leveler together during the installation process.

Note: Overall width of platform and lifting brackets (A) must be kept to a minimum to prevent interference between the lifting brackets and the pit walls as the dock leveler is lowered into the pit.

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

NOTICE

DO NOT over-tighten the lifting bracket hardware. Over-tightening can damage the weather seal, if equipped.

INSTALLATION

Install Dock Leveler

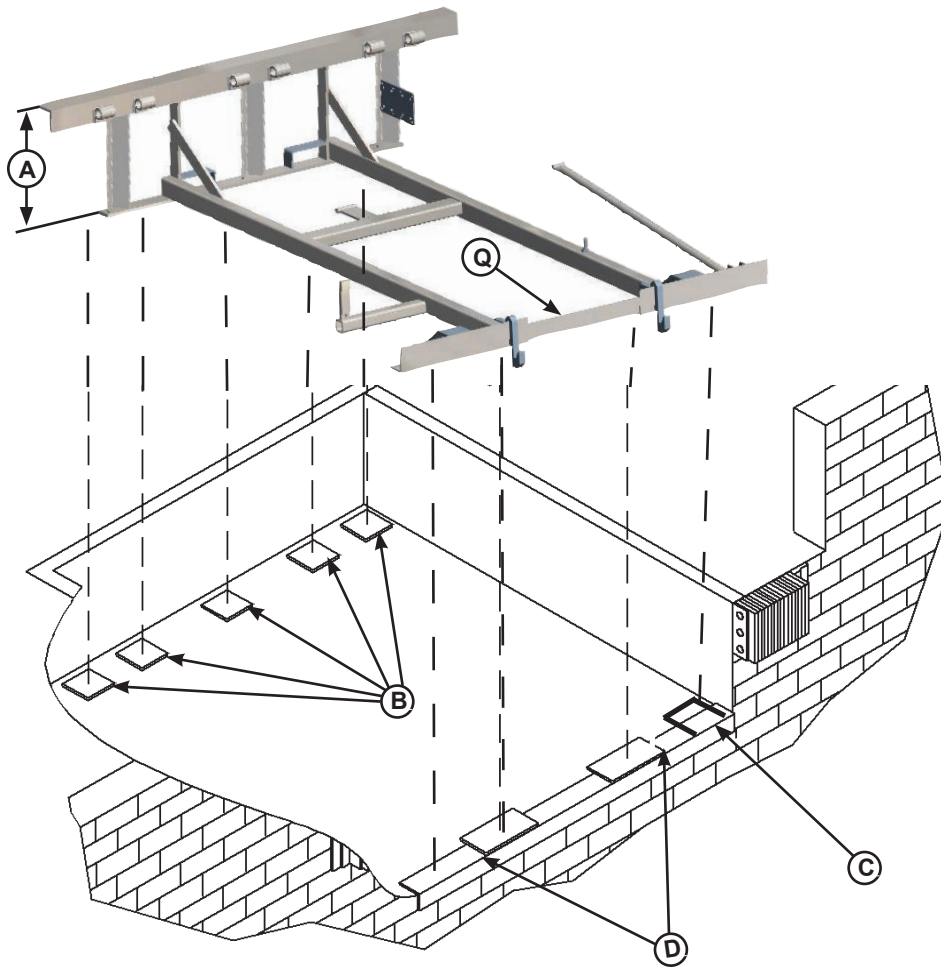


Figure 7

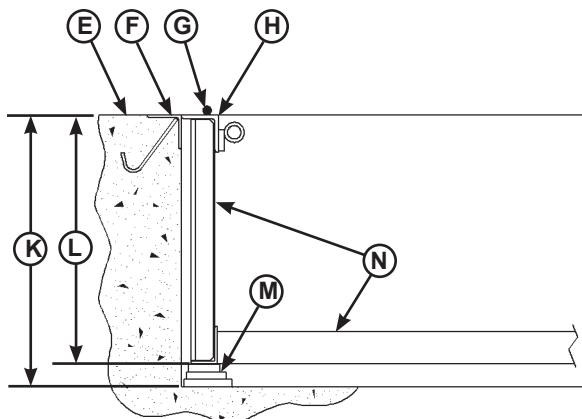


Figure 8

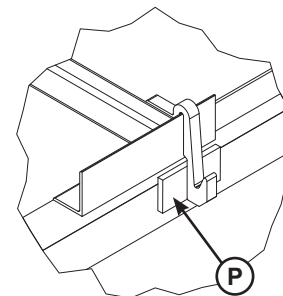


Figure 9

A— Distance (Leveler Frame Height)
 B— Shim Locations (Under Rear Vertical Supports)
 C— Shim Location (Under Maintenance Prop)

D— Shim Locations (Under Lip Keepers)
 E— Dock Floor
 F— Rear Pit Curb Angle
 G— String
 H— Rear Hinge Frame Angle

K— Distance (Dock Floor-to-Pit Floor)
 L— Distance (Top of Shim Stack-to-Dock Floor)

M— Shim Stack
 N— Dock Leveler Frame
 P— Lip Keeper Shim (as required)
 Q— Shipping Bar

Install Dock Leveler (continued)

Note: Systems, LLC dock levelers are designed with a nominal 1/2" (12.7 mm) shimming distance to allow for pit inconsistencies.

1. Determine height of shim stack (**M**) for each shim location (**B**) by performing the following:

- a. Measure leveler frame height distance (**A**).
- b. Measure dock floor-to-pit floor distance (**K**) at each shim location (**B**). Write down the dimensions obtained at each location.
- c. Subtract distance (**A**) from distance (**K**) to obtain the shim height. Repeat for each shim location.

2. Using the results obtained in step 1, create the individual shim stacks on the pit floor at location (**B**). Build each shim stack (**M**) with the top shim having a minimum size of 4" x 4" (101.6 mm x 101.6 mm) and each successive lower shim being larger so the shims can be welded together using a fillet weld. If using offset method, make sure load is over center of shim stack, NOT over the edge. DO NOT use straight method. See Figure 10.

NOTICE

The minimum size of the shim that contacts the leveler frame (i.e. the top shim of each shim stack) must be at least 4" x 4" (101.6 mm x 101.6 mm) to support the full width of the frame rail and to provide a shelf for a fillet weld.

Use the thickest shim stock possible for stability and weld penetration purposes. DO NOT use multiple layers of 1/8 in. (3.18 mm) or thinner shim stock.

Note: To assist in obtaining an accurate measurement of distance (**L**), use a string (**G**) pulled tight across the pit opening, directly over the shim locations.

3. Verify that each shim stack is at the correct height by measuring distance (**L**) [top of shim stack (**M**) to dock floor]. Distance (**L**) must equal the dock leveler height (**A**).

4. Put a 1/4 in. (6.6 mm) thick shim at locations (**C** and **D**).

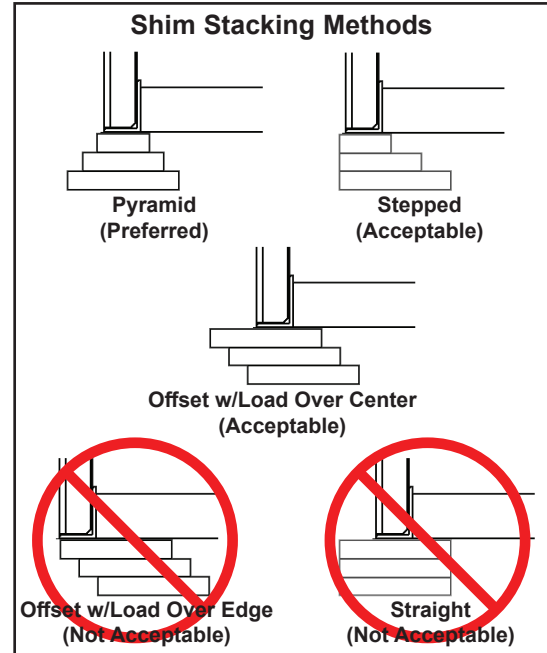


Figure 10

Note: A 1/4" (6.6 mm) thick shim at locations (**C** and **D**) are used only as a starting point. The final shim stack height will be determined after dock leveler is lowered into the pit.

5. Using an appropriate lifting device connected to the lifting brackets, lower dock leveler into the pit so rear hinge frame angle (**H**) is tight against rear pit curb angle (**F**) across full width of the leveler frame.

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 into or out of a pit.

6. Allow rear of dock leveler to rest on the rear shims while keeping the front of the dock leveler level with the dock floor.

7. Add shims at front shim locations (**C** and **D**) so front of dock leveler will stay level with dock floor when leveler is resting fully on shims.

Note: Maintenance prop will be shimmed later in the install process.

INSTALLATION

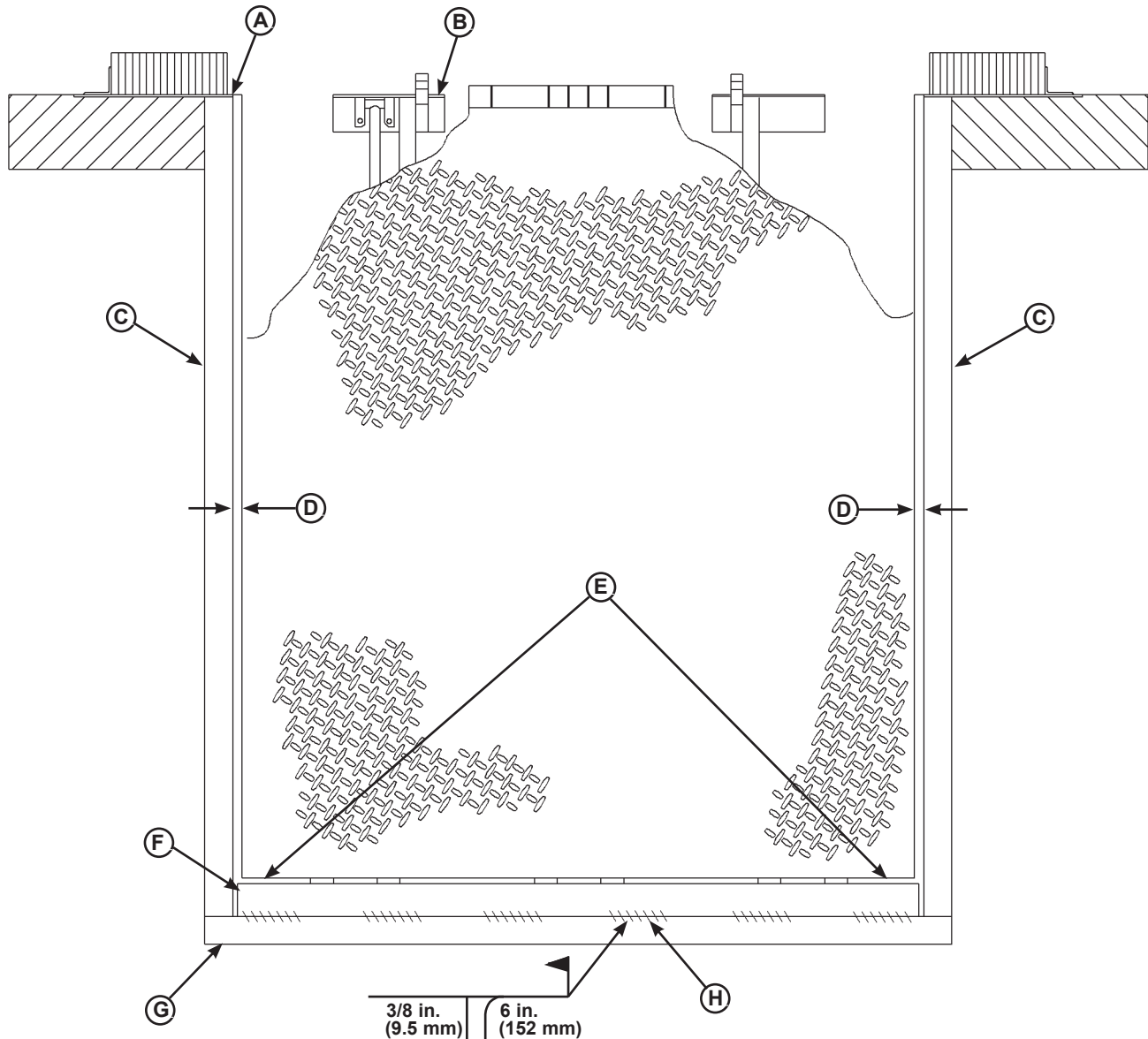


Figure 11

- | | | | |
|-----------------------|----------------------------------|---------------------------|---|
| A— Front of Dock Pit | C— Side Pit Curb Angle | E— Pry Locations | G— Rear Pit Curb Angle |
| B— Dock Leveler Frame | D— Gap [3/4 in. (19 mm) Minimum] | F— Rear Hinge Frame Angle | H— Flare Bevel Weld, Typical (To Fit Spacing) |

8. With rear hinge frame angle (F) tight against rear pit curb angle (G), perform/check the following:

- Pry between the platform and rear hinge frame angle at locations (E) to make sure rear edge of platform is parallel to the rear hinge frame angle (F).
- Gap (D) must exist equally along both sides of leveler so weather seal (if equipped) will not bind during dock leveler operation.

9. If gap (D) cannot be obtained equally at both sides of leveler, grind or add material at the rear edge of rear hinge frame angle (F) as needed.

10. Allow the dock leveler to rest fully on the shim stacks. Check that a smooth and level transition exists between the dock floor and the dock leveler platform. Add or remove shims as necessary until a smooth transition is obtained.

11. If leveler cannot be squared and/or made level as instructed in steps 8-10, contact Systems, LLC Technical Services.

Install Dock Leveler (continued)

WARNING

DO NOT use the maintenance prop to support the raised platform until the maintenance prop has been properly shimmed and welded. The shims must be welded to each other, and also to the leveler frame.

NOTICE

DO NOT weld continuously along the full length of the rear hinge frame angle. This can put unnecessary stress on the leveler components, causing the leveler to malfunction and shorten the lifespan of the affected components.

12. With the leveler square in the pit and flush with the surrounding dock floor, remove the banding on the lip of the leveler.

13. Using an external lifting device (i.e. crane or fork truck) attached to the platform lifting brackets, slowly raise the platform. Check for binding as platform is being raised.

14. If binding occurs, lower the platform. Reposition leveler and/or add or remove shims as necessary. Slowly raise platform again. If platform still binds, contact Systems, LLC Technical Services for further instructions.

15. Once leveler is flush, square and does not bind:

a. Install shims under maintenance prop (**D**) where prop attaches to leveler frame. Make sure prop is solidly shimmed.

b. Raise maintenance prop (**D**) to the service (upright) position and lock prop in this position using an OSHA approved locking device.

16. Remove air bellows from the leveler by unbolting the bellows from the frame and the deck, or wrap the bellows and air valve with a fireproof blanket to protect from weld sparks and splatter.

17. With the rear hinge frame angle (**F**) tight against the rear pit curb angle (**G**), weld the rear hinge frame angle (**F**) to the rear pit curb angle (**G**) using a 3/8 in. (9.5 mm) flare bevel skip weld — each weld being 6 in. (152 mm) long.

- Start at each end with a 6 in. (152 mm) long weld. Space all the other welds out evenly, leaving approximately 6 in. (152 mm) space between each weld.

Note: Figure 11 shows a typical weld pattern. The weld pattern will vary slightly depending on size of dock leveler.

18. Weld front of dock leveler frame (**B**) to shims located under the keepers, then weld the shims to the front pit curb steel.

INSTALLATION

Install Dock Leveler (continued)

WARNING

Make sure the platform is properly supported in the raised position before entering the pit to finish weld the shims.

19. Finish weld all shims using a fillet weld.

- Weld all shims within each shim stack to each other, then weld the shim stack to the leveler frame.
- Weld the front leveler frame shim stacks to the front pit curb steel.

20. If present, weld the lip keeper shims (**P**, page 14) to the front pit curb steel.

NOTICE

CA models are shipped with a front frame section (**C**) installed. This temporary frame holds the leveler frame at the correct dimensions until the leveler is permanently anchored into place. Only then should it be removed.

There are four cap screws and nuts that fasten the T-frame to the rest of the leveler frame. Tack welds may also be used.

21. Remove the Shipping Bar (**Q**, page 14) by grinding the tack welds that hold it in place during transport.

22. Install the dock bumpers as required.

23. When all welding has been completed, paint all the welds and shims.

24. Reinstall the air bellows if removed in step 16.

25. Proceed to “Install Control Panel” on Page 20.

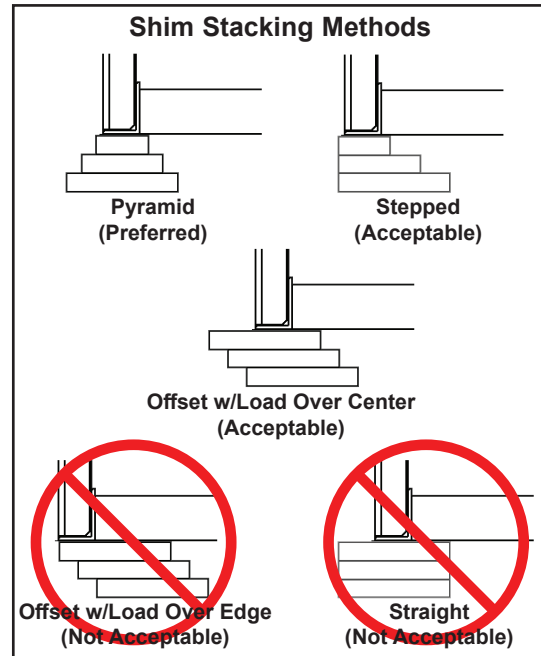


Figure 15

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INSTALLATION

Install Control Panel - Electric

DANGER

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

NOTICE

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



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

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

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.

DANGER



Arc Flash and Shock Hazard
PPE [Personal Protection Equipment] Required

De-energize equipment before working on or inside. Do not open cover without appropriate PPE. Refer to NFPA 70E for PPE requirements. This panel may contain more than one power source.

Hazardous Voltage Will Result in Death or Serious Injury

1751-0736 Rev. A

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.

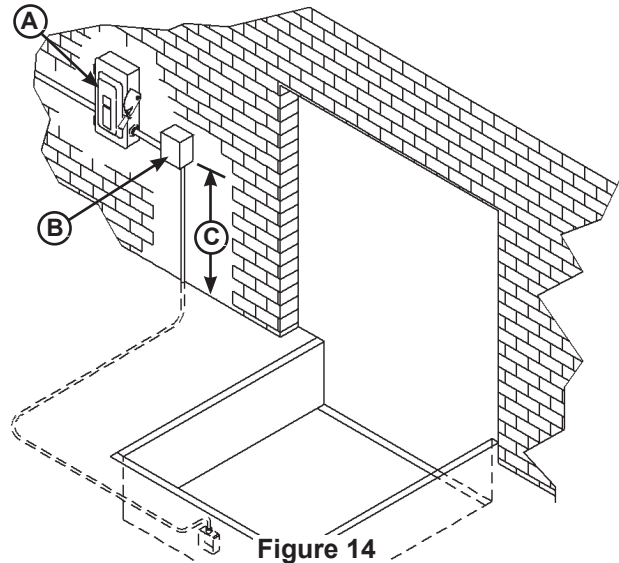


Figure 14
A— Disconnect Panel (provided by others)
B— Control Panel C— Distance, 48 in. (1219 mm)

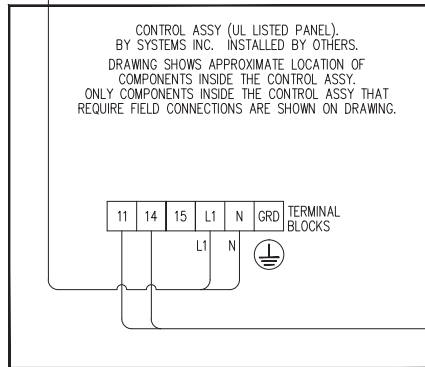
1. Mount the push-button control panel (B) so bottom of control panel-to-dock floor distance (C) is approximately 48 in. (1219 mm). See Figure 14.
2. Install electrical disconnect panel (A) if not already installed. Disconnect panel supplied by others.
3. Install and connect the control wiring (see page 21 for standard control boxes, or drawings supplied with equipment for combo boxes).
4. Seal the conduit in any location where the conduit crosses over temperature zones that could produce condensation.

Optional: Install spacers between the wall and enclosure to provide temperature insulation and air flow. If the conduit could fill with water, a drip leg may be needed.
5. Install pneumatic air lines to control panel, valve and air bellows under dock leveler as shown on pages 22-23.
6. Install placard (see page 25).

Install Control Panel - Electric (continued)

CUSTOMER SUPPLIED
115 V, 1 PHASE, 60 HZ
FROM BRANCH CIRCUIT DISCONNECT SWITCH
& OVERCURRENT DEVICE BY OTHERS.
SELECT DISCONNECT SWITCH &
OVERCURRENT DEVICE PER THE NEC.
TOTAL FLA = 0.07 A.

FIELD WIRES:
L1, N - 115 VAC POWER
GRD - SEE NOTE A



FIELD WIRES:
11, 14 - 115 VAC CONTROL
GRD - SEE NOTE A

THE OVERHEAD DOOR CONTACT IS REMOTE & IS NOT PART OF THE UL LISTED PANEL

OVERHEAD DOOR CONTACT. BY OTHERS.
DOOR CONTACT MAY BE PROVIDED BY SYSTEMS INC IF SPECIFIED.
DOOR CONTACT TO PREVENT OPERATION OF LEVELER UNTIL DOOR FULLY
RAISED. DOOR CONTACT TO BE OPEN WHEN DOOR NOT FULLY RAISED.
DOOR CONTACT TO BE CLOSED WHEN DOOR FULLY RAISED. IF DOOR
CONTACT USED REPLACE JUMPER AT TERMINAL BLOCKS 11 & 14 WITH
DOOR CONTACT WIRES. JUMPER NOT SHOWN ON DRAWING. MINIMUM
CONTACT RATING FOR DOOR CONTACT: E150 OR 1 A GEN USE @ 120 VAC.

Install Control Panel - Pneumatic

1. Mount the push button control panel (B) so bottom of control panel-to-dock floor distance (C) is 48 in. (1219 mm). See Figure 15.
2. Install pneumatic air lines to control panel, valve and air bellows under dock leveler as shown on pages 22-23.
3. After all pneumatic connections in the pit have been made, raise the leveler, disengage the maintenance prop and allow the platform to lower.
4. Install placard (see page 25).

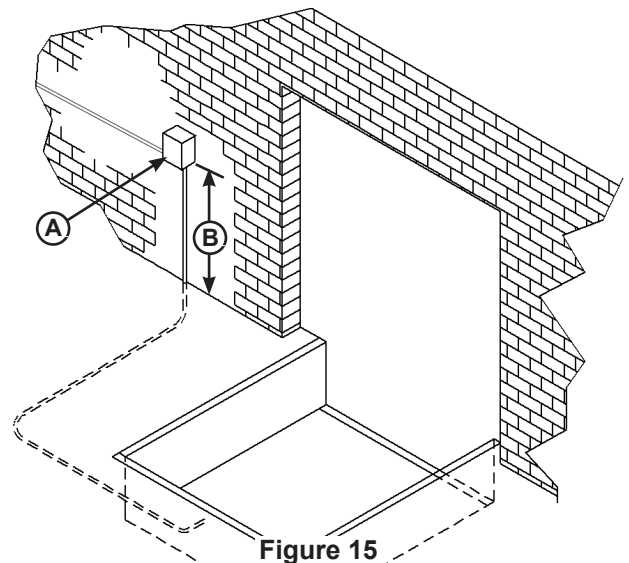
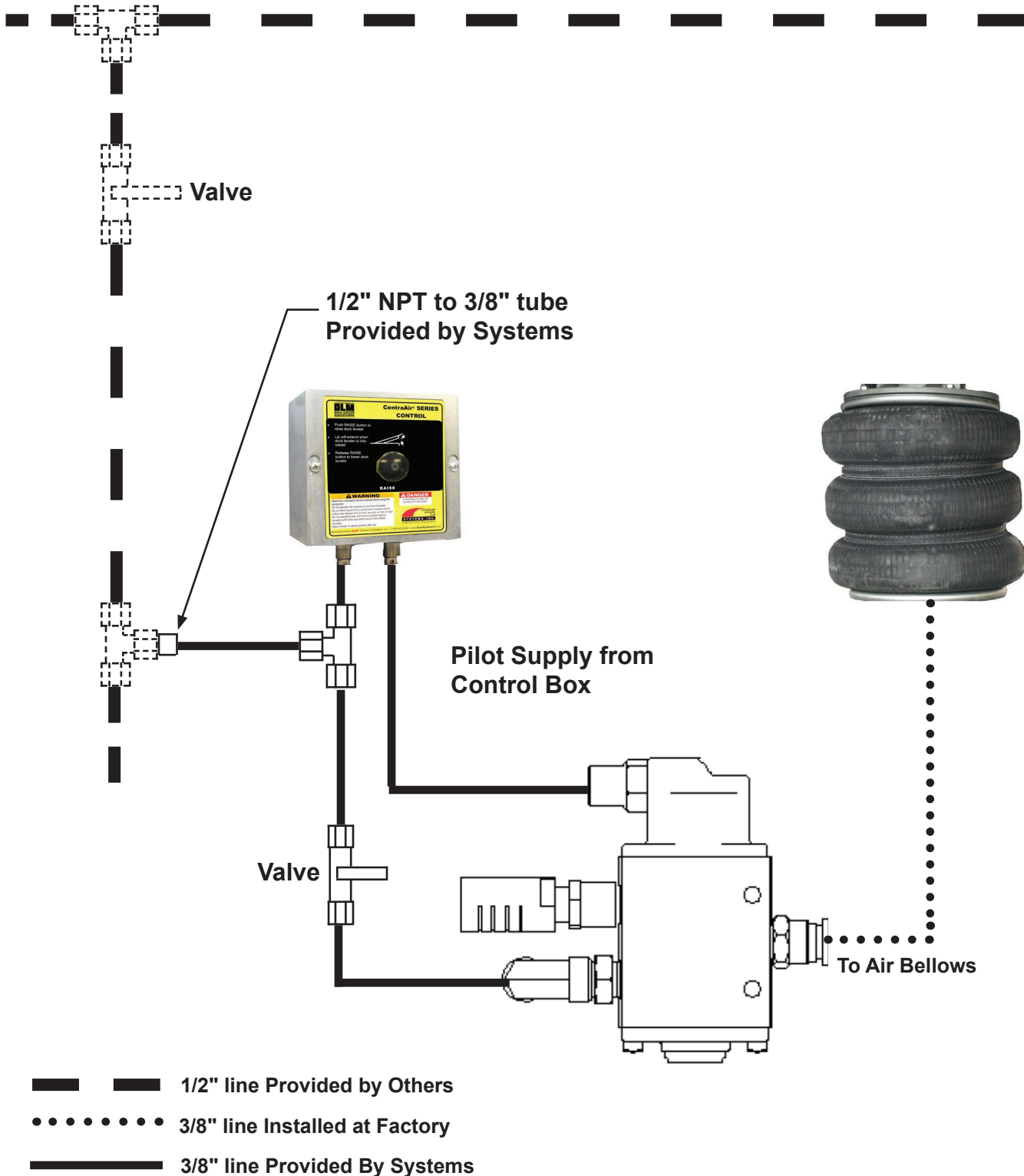


Figure 15
A— Control Panel
B— Distance, 48 in. (1219 mm)

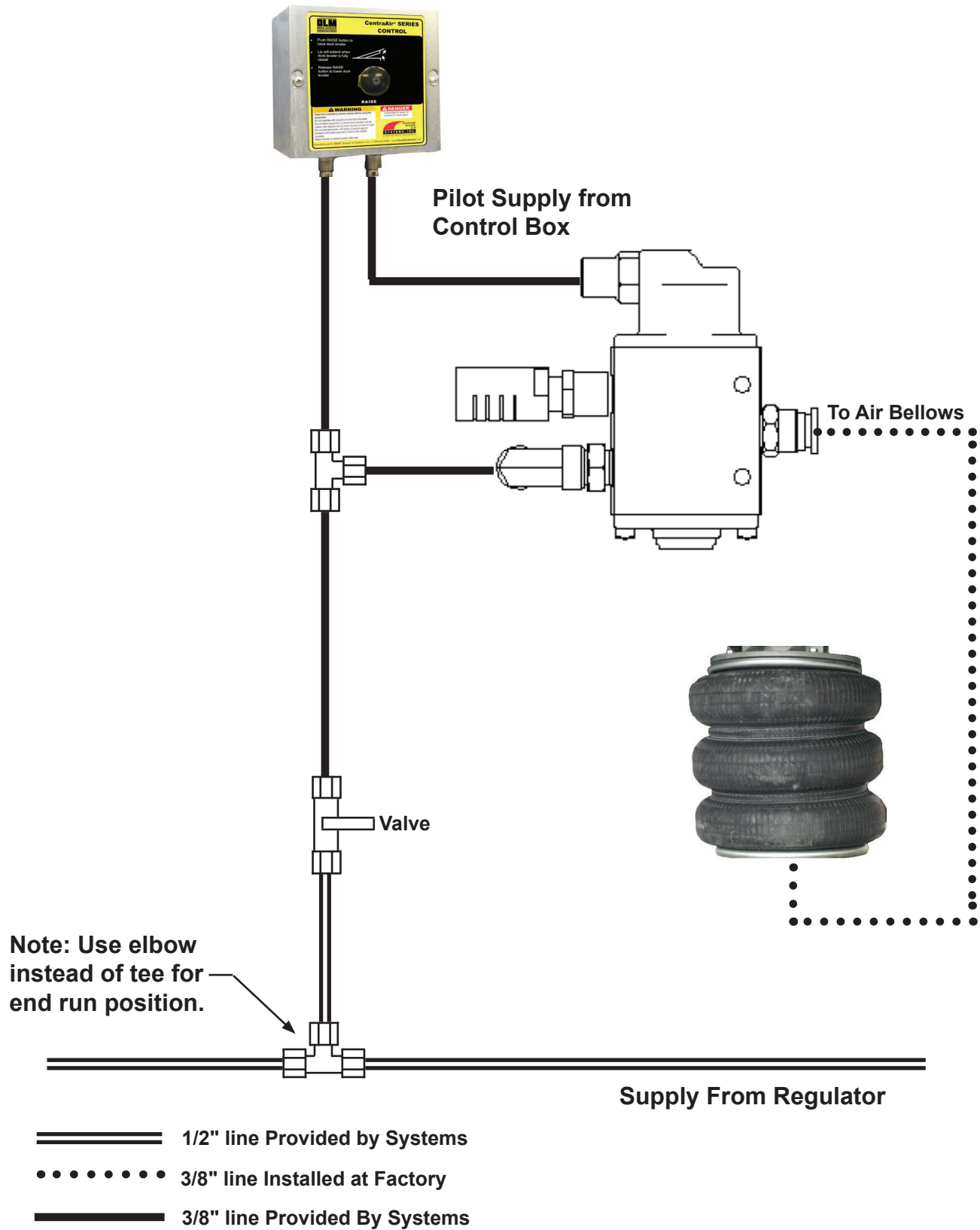
INSTALLATION

Overhead Air Supply

Note: Standard kits accommodate 1/2" NPT fittings for equipment connection. If air supply requires alternate fittings, contact Systems, LLC.

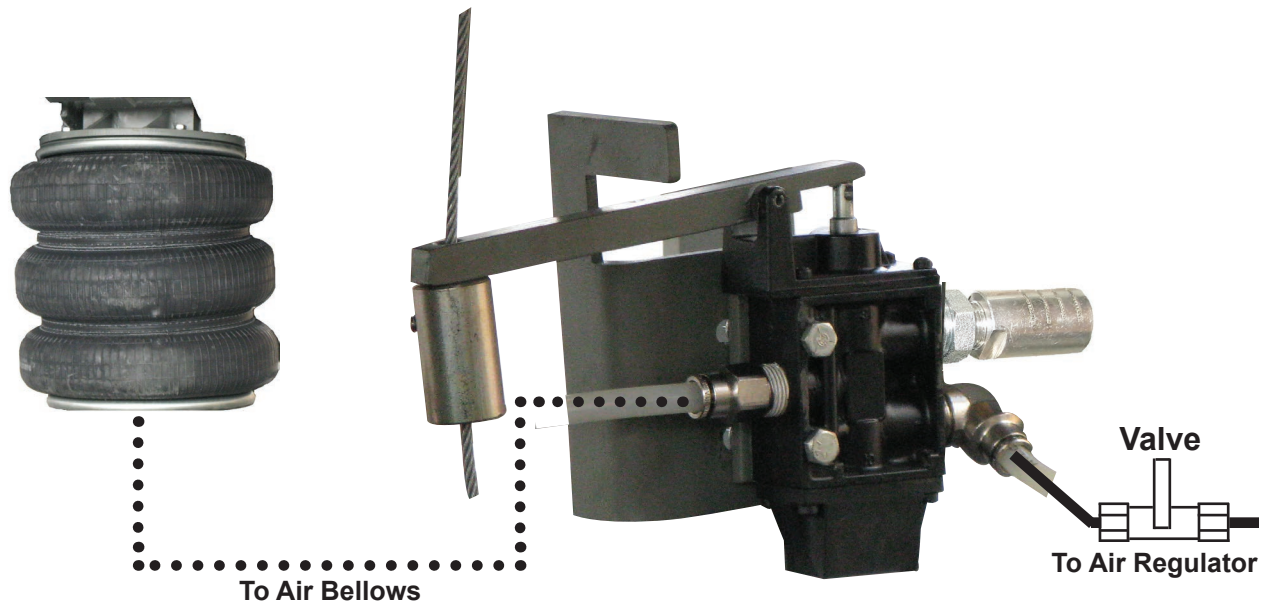


Underground Air Supply

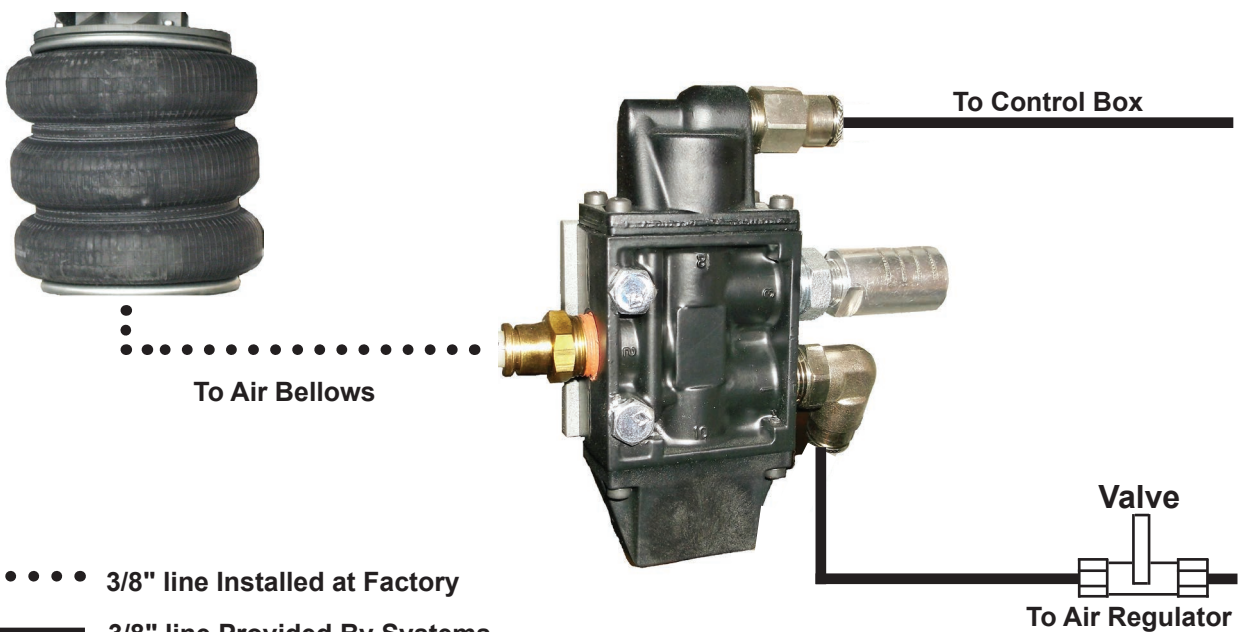


INSTALLATION

Lanyard Air Supply



Electric Operator Air Supply



- 3/8" line Installed at Factory
- 3/8" line Provided By Systems

Placard Installation Instructions

- Owner/Users are responsible for the installation and placement of product placards.
- 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. If there is no control box present, mount placard on wall to the immediate left of leveler at eye level.

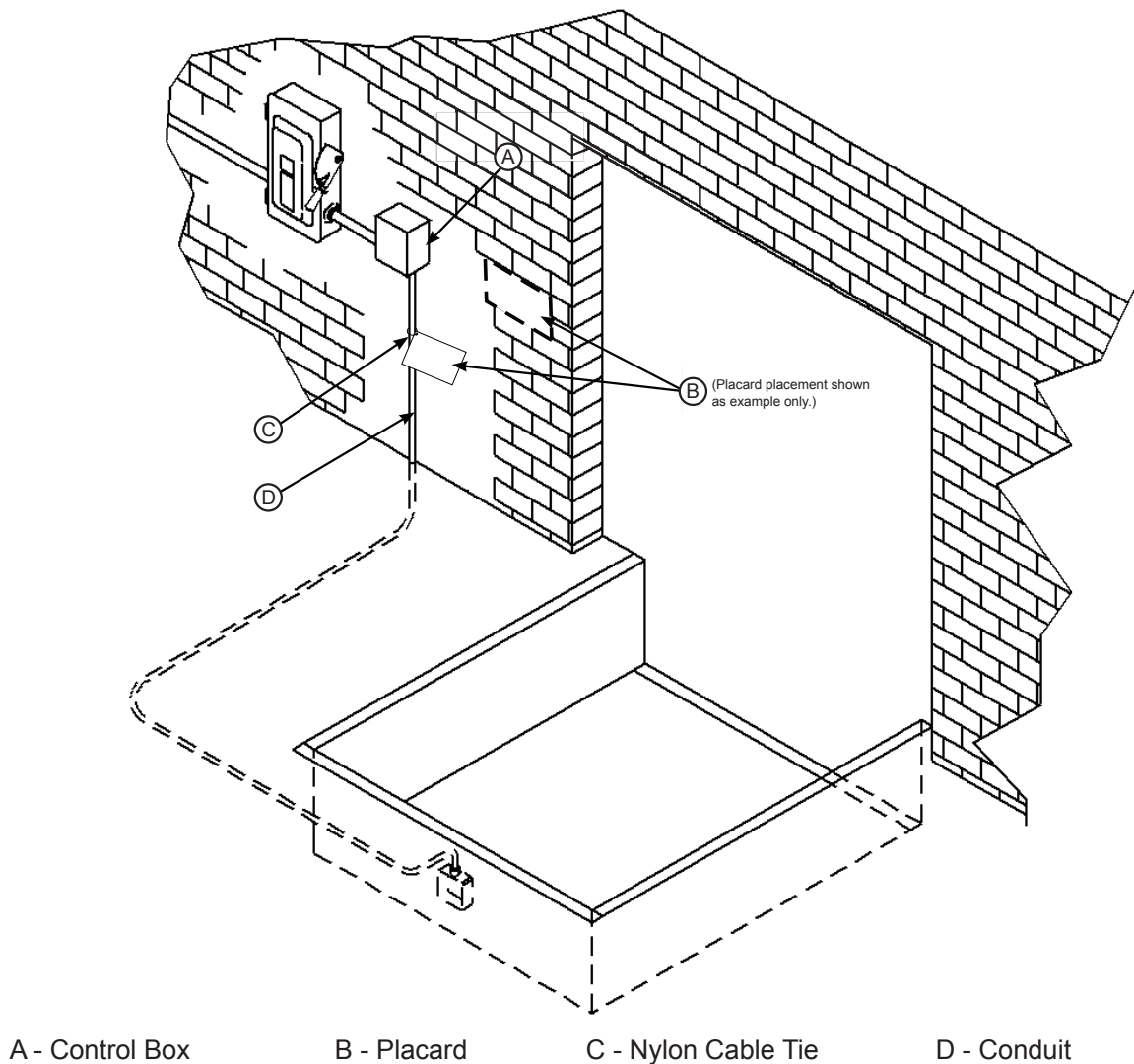


Figure 16

INSTALLATION

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. Disconnect the external lifting device and chains from the lifting brackets.

2. Check that the leveler is flush with the dock floor and that the platform lip contacts both lip keepers evenly.

Note: If an excessive transition exists between the dock floor and leveler and/or lip does not contact both lip keepers evenly, contact Systems, LLC Technical Services for further instructions.

3. Turn the main electrical power ON.

4. Pull lanyard ring (or press the RAISE button) and hold until leveler platform is fully raised and the lip extends.

5. Release lanyard ring (or the RAISE button). If no transport vehicle present at the dock, the platform will lower to the below-dock safety legs and the will lip fold.

Note: If a transport vehicle is present, the platform will lower until the lip rests on the transport vehicle's bed.

6. When the platform lowers to the below-dock safety legs, the lip will fold. Pull lanyard ring (or press and hold the RAISE button) until the lip rises just enough to clear the lip keepers, then release the lanyard ring (or RAISE button) to allow the platform to lower to the cross-traffic (stored) position (lip engages lip keepers).

7. Perform steps 4-6 at least four times to ensure proper operation with no binding.

8. Raise the platform fully. Hold the platform at this position by pulling the lanyard ring (or pressing the RAISE button) and move the maintenance prop to the service (upright) position. Release the lanyard ring (or RAISE button) to allow the platform to lower until it is resting on the maintenance prop.

DANGER

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

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

9. Secure the maintenance prop with the maintenance prop lock-out.

10. With the maintenance prop supporting the platform, remove the lifting brackets.

11. Support the toe guards on each side of the platform, then remove the cotter pin used in shipping and carefully release the toe guards.

12. Release the maintenance prop by unlocking the lock-out.

13. Pull lanyard ring (or press the RAISE button) and hold until the maintenance prop drops to its stored position. Release the lanyard ring (or RAISE button) and allow the platform to lower fully.

Operational Precautions

DANGER

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

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

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

WARNING

Only trained personnel should operate the dock leveler.

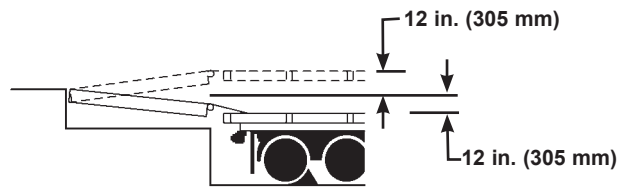
DO NOT use a broken or damaged dock leveler. Make sure proper service and maintenance procedures have been performed on leveler before using.

Transport vehicle wheels must be chocked unless a vehicle restraint is used. Never remove the wheel chocks until loading/unloading is finished and transport driver has been given permission to leave.

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.

WARNING



The CA pneumatic dock leveler is designed to compensate for a maximum ± 12 in.* (305 mm) of height difference between the loading dock and the transport vehicle's bed. DO NOT use the dock leveler if the transport vehicle's bed is more than 12 in. (305 mm) higher or lower than the dock floor.

*Service height may vary with design specifications

DO NOT overload the dock leveler.

DO NOT operate any equipment while under the influence of alcohol or drugs.

DO NOT leave equipment or material unattended on the dock leveler.

OPERATION

Operating Instructions

Ramp Loading/Unloading

1. Before activating dock leveler, check to make sure the transport vehicle is positioned squarely against dock bumpers. 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. Chock the transport vehicle wheels, or use a vehicle restraint if available.

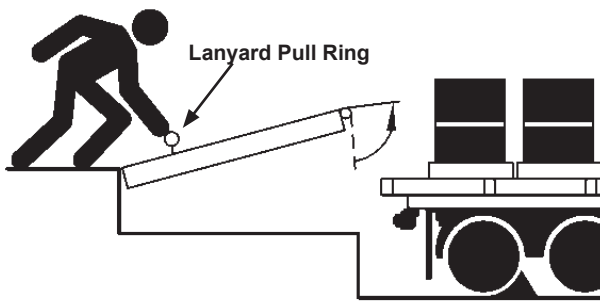


Figure 17

4. Extend the dock leveler onto the transport vehicle as follows:
 - a. Raise the platform by pressing and holding the RAISE button or lightly pulling and holding lanyard pull ring (see Figure 17).
 - b. Hold the RAISE button or hold the pull ring until the lip is fully extended, then release the RAISE button or pull ring. The platform will lower until the lip is resting on the transport vehicle bed.
 - c. 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.
5. Proceed with loading or unloading the transport vehicle.
6. When loading or unloading is finished, raise the platform by pressing and holding the RAISE button or holding the pull ring until the lip folds enough to land in the lip keepers, then release the RAISE button or pull ring. The platform will return to the cross-traffic position.

7. Remove chocks from transport vehicle wheels, or release the vehicle restraint if used.
8. Indicate to driver that the transport vehicle may leave the dock.

Below Dock Loading/Unloading

Note: Below Dock Loading/Unloading follows the same process as Ramp Loading/Unloading, but requires use of the below dock control ring.

1. Follow steps 1-3 in "Ramp Loading/Unloading."
2. Extend the dock leveler onto the transport vehicle as follows:
 - a. Raise the platform by pressing and holding the RAISE button or lightly pulling and holding lanyard pull ring (see Figure 17).
 - b. Hold the RAISE button or hold the pull ring until the lip is fully extended, then release the RAISE button or pull ring.

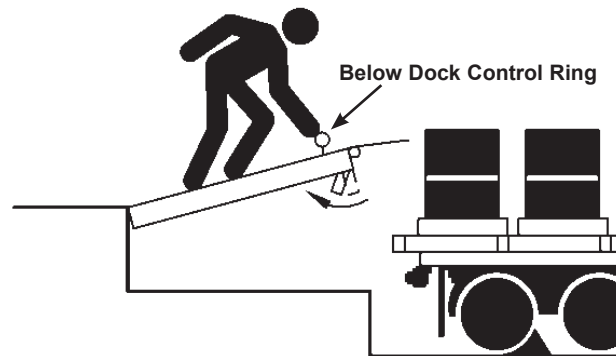


Figure 18

- c. Walk out on the leveler, pull and hold the below dock control ring (located in the recess at the front of the platform). This will cause the safety legs to fold allowing the leveler to lower to the full below dock position. See Figure 18.
 - d. Allow the platform to drift down to the full below-dock position.
 - e. 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.
3. Continue with steps 5-8 in "Ramp Loading/Unloading."

Operating Instructions (continued)

End Loading/Unloading

1. Before activating dock leveler, check to make sure the transport vehicle is positioned squarely against dock bumpers. 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. Chock the transport vehicle wheels, or use a vehicle restraint if available.

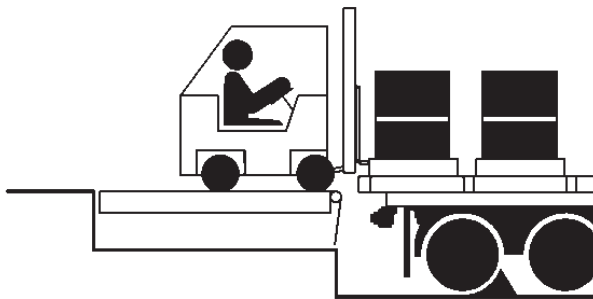


Figure 19

4. If transport vehicle bed is at or above dock floor level, leave leveler at the cross-traffic position and proceed with loading or unloading (see Figure 19). If transport vehicle bed is below the dock floor level, continue with Step 5.
5. Pull lanyard ring or Press RAISE button to position the platform high enough to clear the lip keepers, but not high enough to extend the lip.
6. Walk out on the leveler, pull and hold the below dock control ring (located in the recess at the front of the platform). This will cause the lip to extend away from the lip keepers and the safety legs to fold allowing the leveler to lower to the full below dock position. See Figure 18.
7. When the platform lip clears the lip keepers, continue to hold the pull chain as the leveler lowers to the below-dock position. The platform will drift down to the full below-dock position.
8. Allow the platform to drift down to the full below-dock position.



Figure 20

9. Proceed with loading or unloading (see Figure 20).

Note: When end unloading is finished and access to the rest of the transport vehicle is still required, the platform lip will need to be extended. See Ramp Loading/Unloading Instructions on page 28 for further instructions.

10. When end loading or unloading is finished, raise the platform by pressing and holding the RAISE button or holding the pull ring until the lip folds enough to land in the lip keepers, then release the RAISE button or pull ring. The platform will return to the cross-traffic position.
11. Remove chocks from transport vehicle wheels, or release the vehicle restraint if used.
12. Indicate to driver that the transport vehicle may leave the dock.

MAINTENANCE

Maintenance Precautions

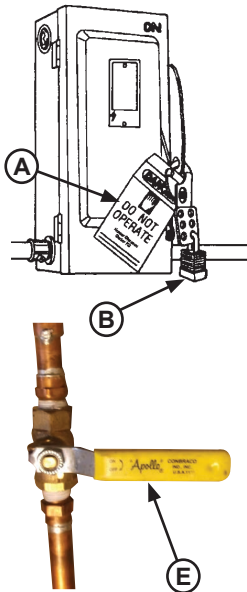


Figure 21

A - Tag Out Device

B - Lock Out Device

C - Maintenance Prop

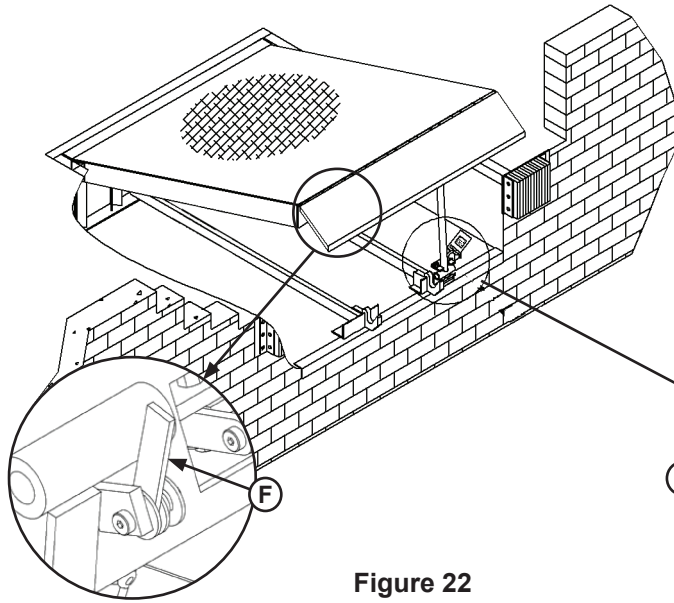


Figure 22

D - Header

E - Lip Prop

F - Air Shutoff

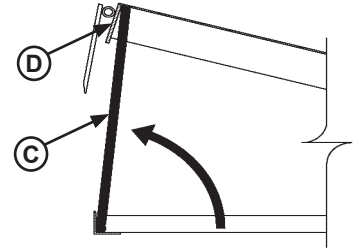


Figure 23



! DANGER

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

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

! WARNING



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

! DANGER



Arc Flash and Shock Hazard
PPE [Personal Protection Equipment] Required

De-energize equipment before working on or inside. Do not open cover without appropriate PPE. Refer to NFPA 70E for PPE requirements. This panel may contain more than one power source.

Hazardous Voltage Will Result in Death or Serious Injury

1754-6738 Rev. A

! WARNING

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

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

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

Maintenance Precautions

When working with electrical or electronic controls, make sure that the power source has been tagged **(A)** and locked out **(B)** according to OSHA regulations* and approved local electrical codes (see Figure 21).

Whenever maintenance is to be performed under the dock leveler platform, support the platform with maintenance prop **(C)**. Position the maintenance prop behind front header plate **(D)** while staying clear of the lip. The lip prop **(F)** should be used to keep the lip extended. See Figures 22 and 23.

Lock the maintenance prop in the service (upright) position using an OSHA approved lockout device* **(B)** and tag out device* **(A)**, then turn off air supply to the leveler **(F)**. See Figures 21 and 22.

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.

MAINTENANCE

Periodic Maintenance

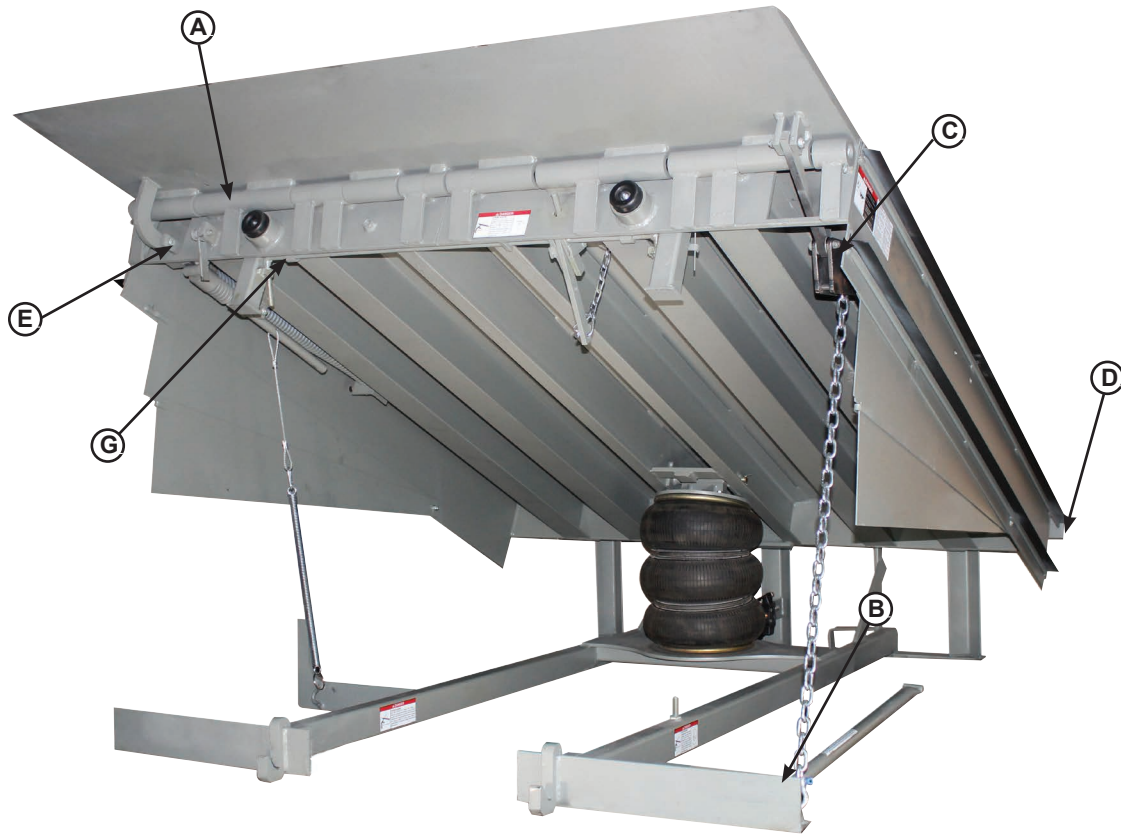


Figure 24

A— Lip Hinge Area
B— Lip Maintenance Prop Pivot

C— Lip Link Pivots
D— Platform Hinge Area

E— Lip Assist Pin
G— Safety leg linkage pivots

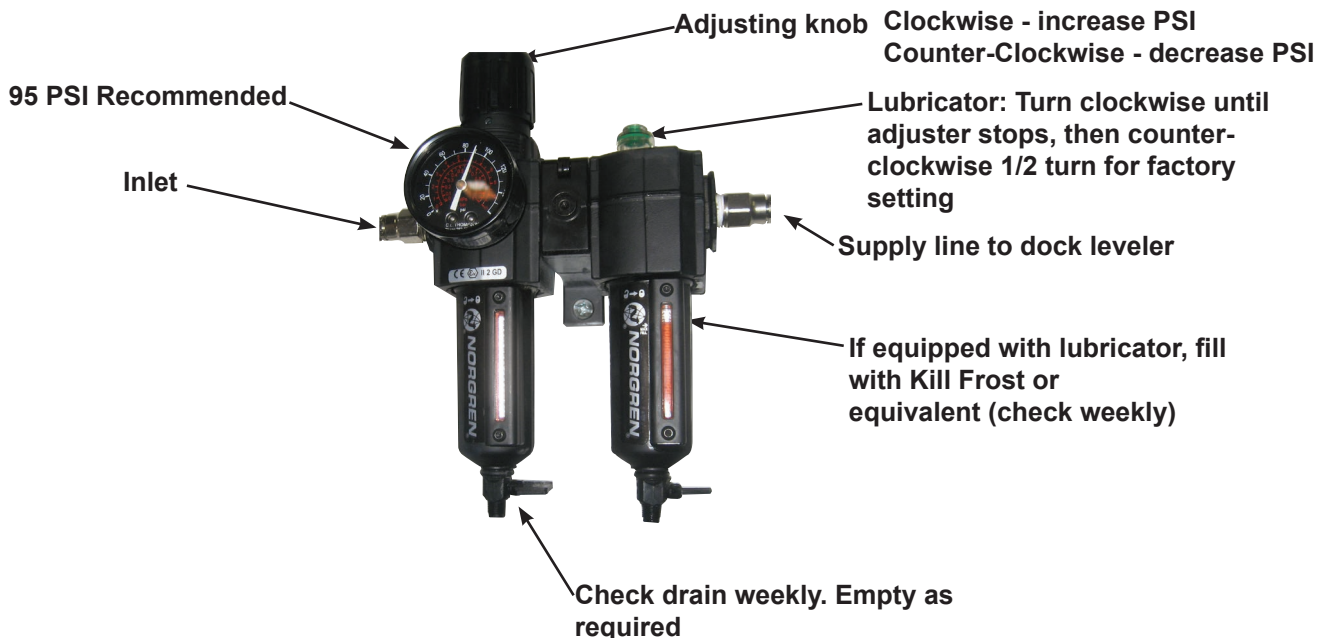


Figure 25

*General orientation, actual configuration may be different based on application

Weekly Maintenance

- Operate the dock leveler through the complete operating cycle to maintain lubrication.

Note: To thoroughly inspect the platform hinge area, put the platform in the full below-dock position.

- Inspect the platform hinge and the lip hinge areas. The hinge areas must be kept free of dirt and debris. Build-up of foreign material in the hinge areas will cause abnormal operation.
- Inspect the area under the platform, around and under the air bellows. Look for cracks in the welds or damage. Build-up of foreign material in this area may damage air bellows components, causing abnormal operation.
- Inspect warning decals and placards. Replace if damaged or missing.
- Check Kill Frost level and refill if required.
- Drain water from the regulator and the compressor.
- Verify line pressure is at 95 PSI.

NOTICE

The CA dock leveler will not function correctly with less than 80 psi available at the regulator. **For ideal operation, 95 psi is recommended.**

Quarterly Maintenance

- Complete Weekly Maintenance.
- Inspect the following for damage/abnormal wear:
 - Check welds for cracks.
 - Lip hinge pins and rear hinge pins.
 - Check full range toe guards (if equipped) for free movement.
 - Inspect air lines.
 - Control box and conduit for damage.
 - Bumpers for more than 1" of wear. Replace worn, loose, damaged or missing bumpers.
 - Side and rear weather seals (if equipped).
- Lubricate the following areas with light weight machine oil (see Figure 23):
 - (A)— Lip hinge area unless equipped with grease fittings (apply oil to the top of the entire length of lip hinge when platform is at the full below-dock position and lip is folded).
 - (D)— Platform hinge area (apply oil to top of all platform hinges when platform is at the full below-dock position).
 - (C)— Lip link pivots.
 - (B)— Lip maintenance prop pivot.
 - (F)— Safety leg linkage pivots.
- Lubricate the following areas with white lithium grease:
 - (E)— Lip assist pin.

Note: Apply grease to lip hinge grease fittings if equipped.

NOTICE

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

ADJUSTMENTS

Adjust Lip Latch & Lip Actuator Spring Tension

DANGER

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

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

WARNING

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.

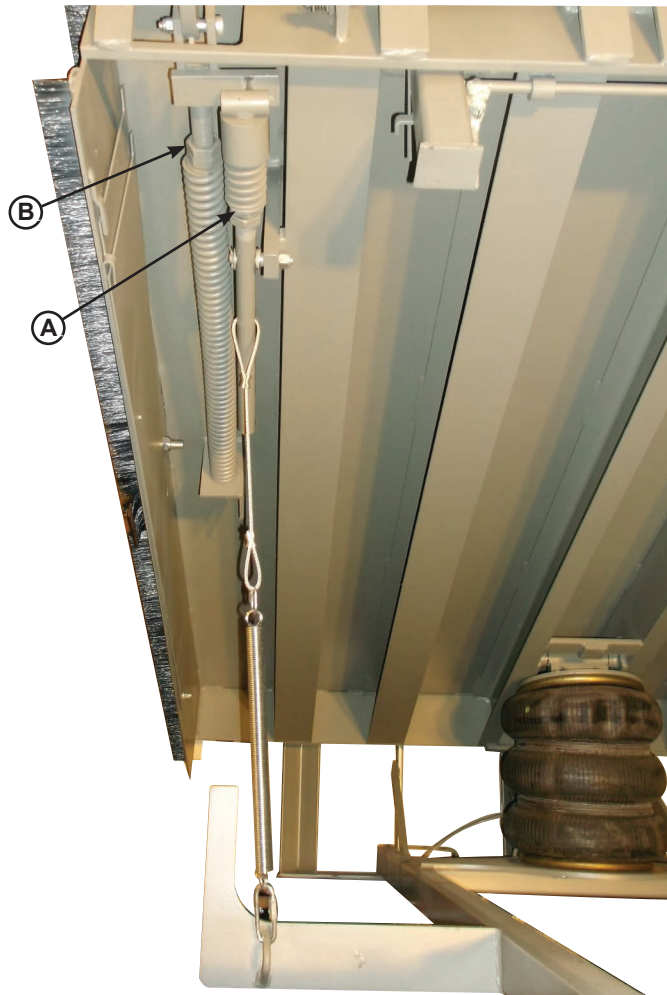


Figure 26

**A— Lip Latch Spring
Adjustment**

**B— Lip Actuator Spring
Adjustment**

Adjust Lip Latch & Lip Actuator Spring Tension (continued)

The lip latch and lip actuator spring tension are set at the factory and should not require additional adjustment unless parts have been replaced.

Unlike mechanical levelers, the lip will not immediately begin to fold as the platform returns to the stored position.

After the platform is fully raised, and the lip extends, the lip latch is designed to hold the lip in the extended position until the platform drifts down to the below dock position.

The lip will automatically fold when the platform is resting on the safety legs in the below dock position.

If the lip extends fully, but does not remain extended, check proper engagement of the lip latch before adjusting the lip latch spring.

If the lip does not extend fully, check air bellows and lines for possible leaks before adjusting the lip actuator spring.

Lip Latch Spring Tension

Note: Use two-turn increments when adjusting lip assist spring. Check lip operation after each adjustment. Repeat until proper operation is obtained.

Adjust lip latch spring tension as follows:

1. Loosen jam nut on **(A)**.
2. To increase spring tension, turn adjustment nut on **(A)** clockwise.
3. To decrease spring tension, turn adjustment nut on **(A)** counterclockwise.
4. Tighten jam nut **(A)**.
5. Recheck operation of platform and lip. Readjust lip latch spring tension as needed.

Lip Actuator Spring Tension

Note: Use two-turn increments when adjusting lip assist spring. Check lip operation after each adjustment. Repeat until proper operation is obtained.

Adjust lip actuator spring tension as follows:

1. Loosen jam nut **(B)**.
2. To increase spring tension, turn nut **(B)** clockwise.
3. To decrease spring tension, turn nut **(B)** counterclockwise.
4. Tighten jam nut **(B)**.
5. Recheck operation of platform and lip. Readjust lip actuator spring tension as needed.

ADJUSTMENTS

Adjust Lip Stop Bolt

When at rest, lip (E) should be fully resting on the lip keepers (D) and at the lowest part of the lip keepers. If lip is not resting properly in the lip keepers, perform the following adjustment:

1. Fully raise the platform and engage the maintenance prop in the service position. Manually raise the lip and engage lip maintenance prop (not shown).
2. Loosen jam nut (B).
3. Adjust stop bolt (C) as necessary.
 - Turn stop bolt “in” (clockwise) to allow lip to fold closer to platform (A).
 - Turn stop bolt “out” (counterclockwise) to hold lip further away from platform (A).
4. Tighten jam nut (B).
5. Disengage lip maintenance prop.
6. Walk platform down to cross-traffic (stored) position.
7. Check lip position in both keepers. Repeat procedure if necessary.

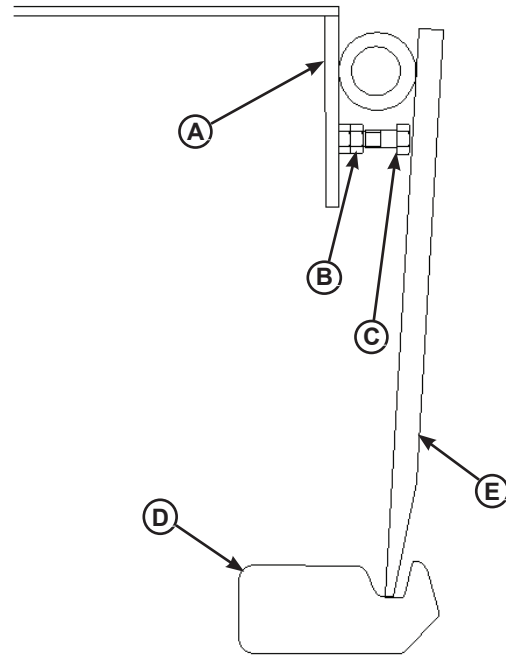


Figure 27

A— Platform
B— Jam Nut
C— Stop Bolt
D — Lip Keeper
E — Lip

Adjust Lip Assist Chain and Shackle

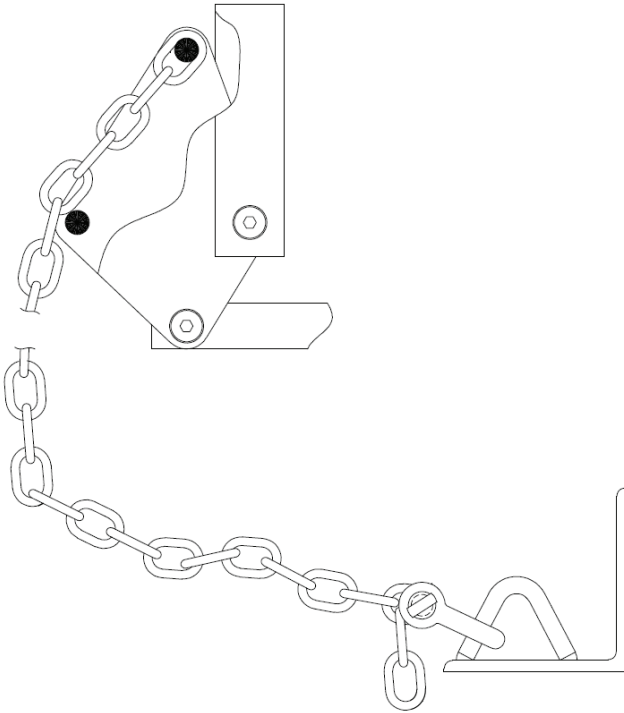


Figure 28

The lip assist chain and shackle are set at the factory and should not require additional adjustment unless parts have been replaced.

The above dock service range of the leveler is determined by the overall length of the lip assist chain and shackle assembly.

Above dock service range is adjusted by changing the link quantity between the lip assist assembly and the shackle. The final number of links may vary depending on application:

- **6' levelers: 31-33 links**
- **8' levelers: 32-34 links**
- **10' levelers: 33-35 links**

If the maintenance prop cannot be raised to the backside of the platform header with the dock leveler in the raised position, the dock leveler must be supported by external means and the number of links from the lip assist assembly to the shackle must be increased.

If the maintenance prop can rotate out past the platform header with the dock leveler in the raised position, the number of links from the lip assist assembly to the shackle must be decreased.

TROUBLESHOOTING

DANGER

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

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

WARNING

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.

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

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

Symptom	Possible Cause	Solution
Platform does not raise.	Insufficient air supply	Minimum 80 PSI required at regulator, if lower check air supply. 95 PSI recommended. See page 11 for recommended compressor specifications.
	No voltage to poppet solenoid	Check breakers; if okay check voltage at control box and solenoid
	Lanyard Cable Adjustment	Check Cable adjustment
	Incorrect Air Line Connections	Verify Pilot and Main supply air line connections are correct at control box.

TROUBLESHOOTING

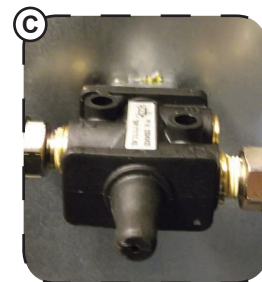
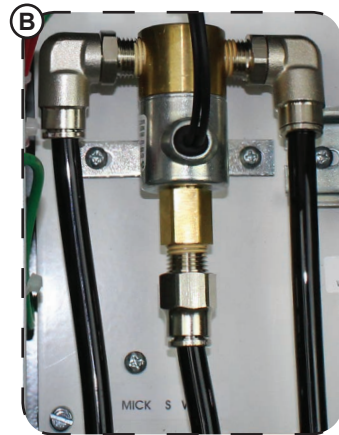
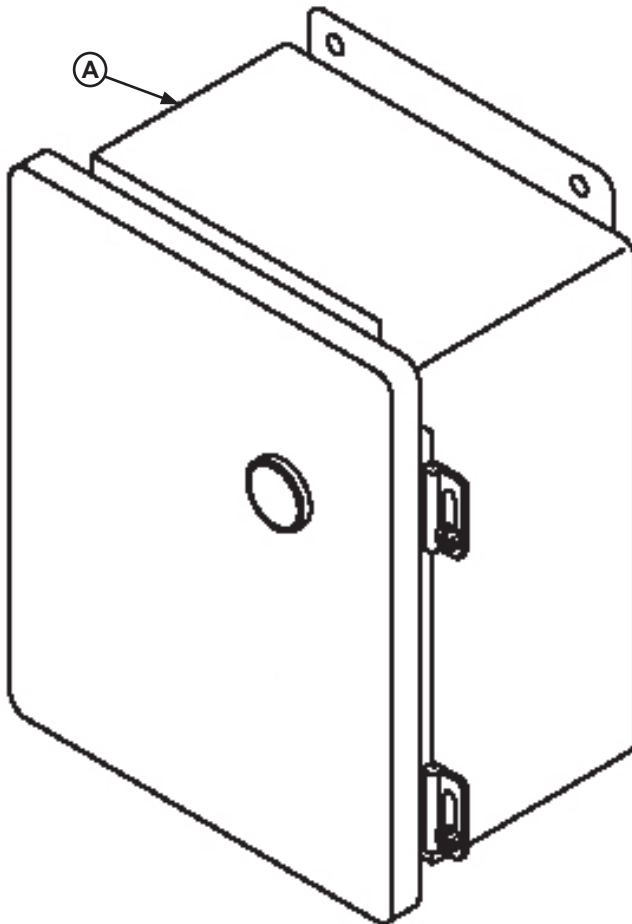
Symptom	Possible Cause	Solution
Platform rises slowly.	Air bladder or connecting air lines punctured	Check air bladder and air line; repair or replace as needed
	Damaged or restricted air lines	Replace damaged air line or remove restriction
	Insufficient air supply	Minimum 80 PSI required at regulator, if lower check air supply. 95 PSI recommended. See page 11 for recommended compressor specifications.
	Dock leveler binding	Check for visible obstructions that could cause binding. Remove obstructions. If no obstructions found, call Technical Services.
	Air supply hoses kinked or installed back wards	Check all hoses and verify correct hook ups for Main and Pilot lines
Platform does not rise to full height.	Dock leveler binding	Check for visible obstructions that could cause binding. Remove obstructions. If no obstructions found, call Technical Services.
	Insufficient air supply	Minimum 80 PSI required at regulator, if lower check air supply. 95 PSI recommended. See page 11 for recommended compressor specifications.
Platform DOES rise to full height, but lip DOES NOT extend or extend fully.	Lip actuator spring needs additional tension.	Inspect lip actuator spring, repair or replace as needed.
Lip extends but does not remain extended as leveler drops.	Lip latch spring needs additional tension	See Adjustment Section: Lip Latch Spring. <ul style="list-style-type: none"> • Increase tension as needed to keep latch engaged. • Clean any debris from lip latch area. • Lubricate as instructed in maintenance section.
Unit is stuck in the up position, does not lower.	Air Valve Stuck	Clean out the valve, remove water or debris.

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

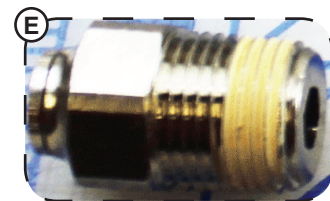
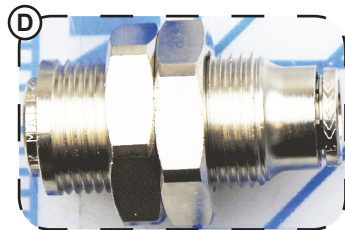
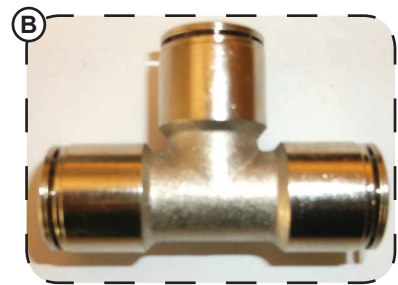
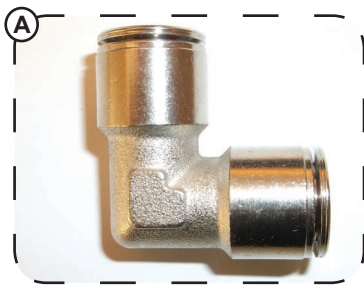
Control Box & Control Box Parts



Item	Part Number	Description
A	*	Control Box
B	8583-0075*	Valve Assy, CA Poppet, Includes 3/8 Hose Fittings (Electric Push Button)
C	8581-0163*	Valve, 2 Position 3 Way, Includes Knob (Pneumatic Push Button)

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

Pneumatic Fittings, Hardware & Tubing

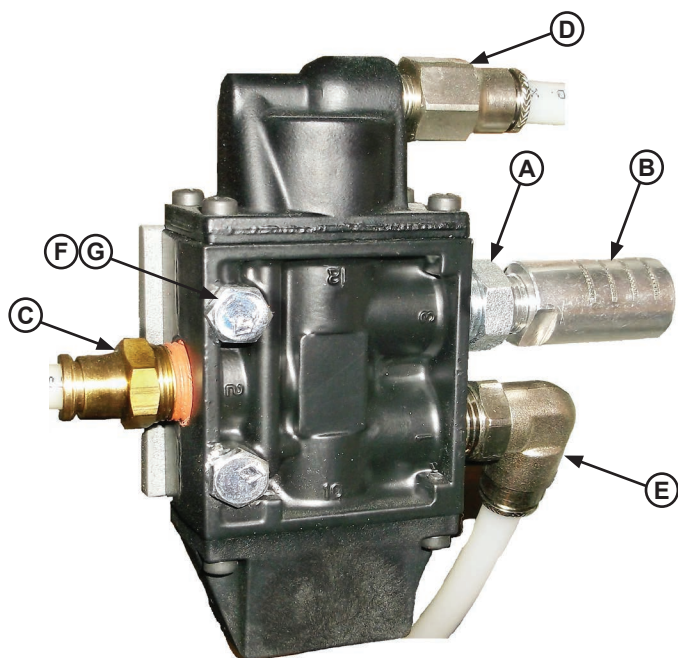


Item	Part Number	Description
A	9301-0241	Elbow, 3/8" Tube
	9301-0259	Elbow, 1/2" Tube
B	9301-0244	Tee, 3/8" Tube
	9301-0260	Tee, 1/2" Tube
C	6106-0008	Valve, Inline Shut Off, 3/8" Tube Straight
	6106-0012	Valve, Inline Shut Off, 3/8" Tube Straight - 1/2" Tube Straight
	6106-0023	Valve, Inline Shut Off, 3/8" Tube Tee - 1/2" Tube Tee
	6106-0026	Valve, Inline Shut Off, 3/8" Tube Straight - 1/2" Tube Tee
	6106-0029	Valve, Inline Shut Off, 3/8" Tube Tee - 1/2" Tube Straight
D	9301-0249	Fitting, Bulkhead, 3/8" Tube
E	9301-0236	Fitting, Adapter, 3/8" Tube - 3/8" NPT Male
	9301-0242	Fitting, Adapter, 3/8" Tube - 1/2" NPT Male
	9301-0258	Fitting, Adapter, 1/2" Tube - 3/8" NPT Male
NS*	2101-0260	Clamp, Loop, Cushion, 1/2"
NS*	R984-0001	Tubing, 1/2", Polyurethane (Per Inch)
NS*	R985-0001	Tubing, 3/8", Polyurethane (Per Inch)

* NS = Not Shown

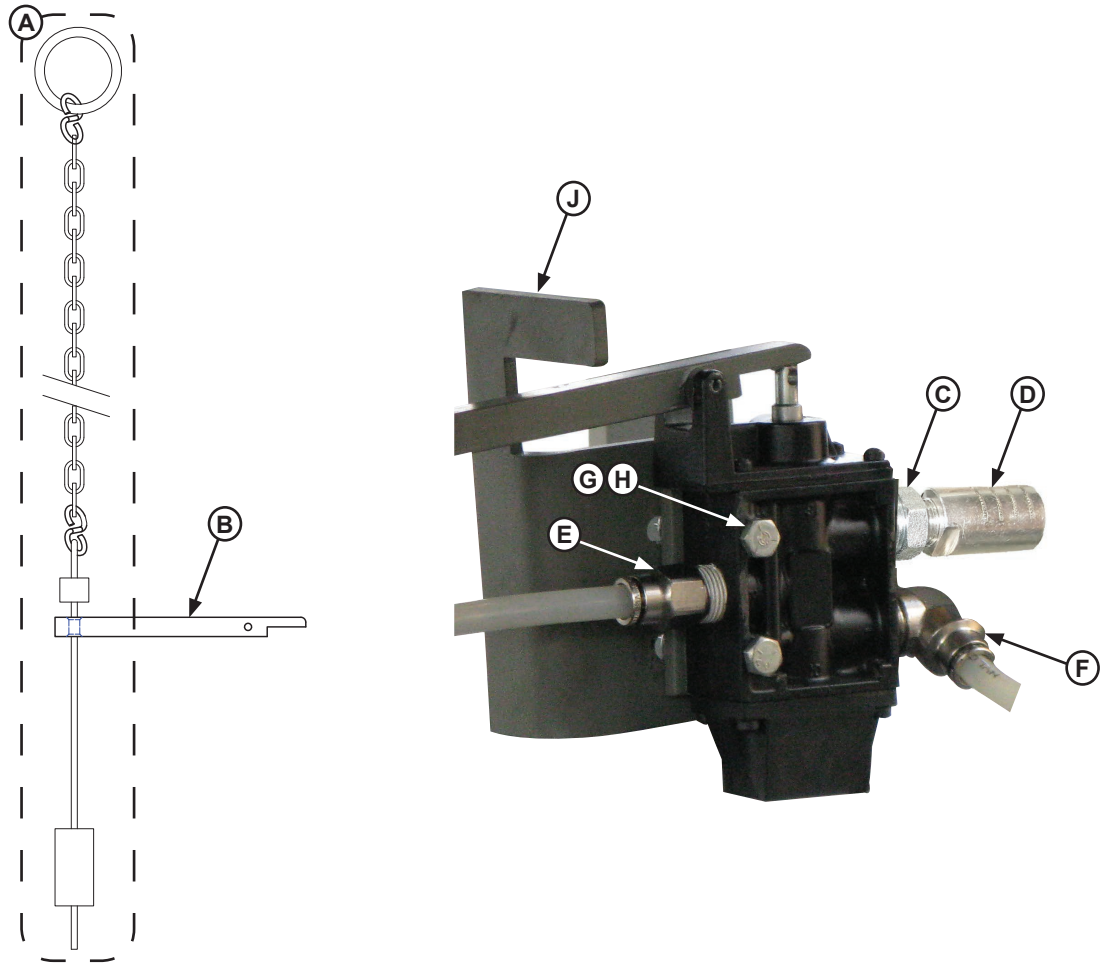
PARTS

Electric/Pneumatic Operator Valve



Item	Quantity	Part Number	Description
*	1	8583-0071	Valve Assembly, For Electric & Pneumatic Push Buttons
A	1	0521-0048	Fitting, Reducer, 3/8" NPT Male - 1/4" NPT Female
B	1	0521-0178	Fitting, Speed Control Breather / Muffler
C	1	9301-0236	Fitting, Adapter, 3/8" Tube - 3/8" NPT Male
D	1	9301-0250	Fitting, Adapter, 3/8" Tube - 1/8" NPT Male
E	1	9301-0237	Elbow, Adapter, 3/8" Tube - 3/8" NPT Male
F	2	2101-0116	Screw, HHCS, 1/4-20 x 2.75
G	2	2101-0143	Nut, Nylon Lock, 1/4-20 UNC

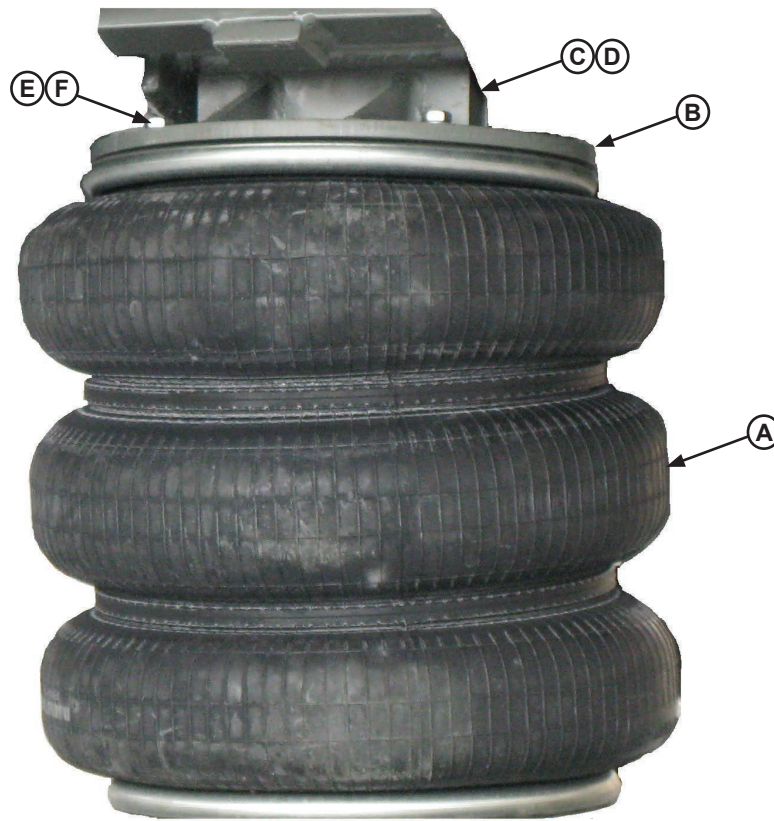
Lanyard Operator Valve



Item	Quantity	Part Number	Description
*	1	8583-0069	Valve Assembly, For Mechanical Lanyard Operation
A	1	7953-0188	Pull Chain/Cable Weight Assembly
B	1	5402-0009	Lanyard Bar, Valve Operator, CA
C	1	0521-0048	Fitting, Reducer, 3/8" NPT Male - 1/4" NPT Female
D	1	0521-0178	Fitting, Speed Control Breather / Muffler
E	1	9301-0236	Fitting, Adapter, 3/8" Tube - 3/8" NPT Male
F	1	9301-0237	Elbow, Adapter, 3/8" Tube - 3/8" NPT Male
G	2	2101-0116	Screw, HHCS, 1/4-20 x 2.75
H	2	2101-0143	Nut, Nylon Lock, 1/4-20 UNC
J	2	9512-2061	Guard, Valve Arm, CA

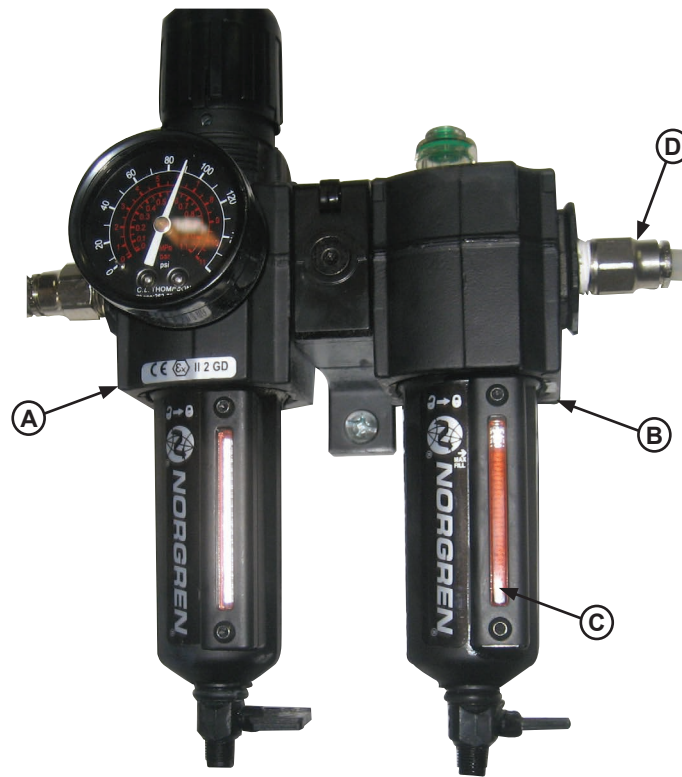
PARTS

Air Bellows



Item	Quantity	Part Number	Description
A	1	5811-0002	Air Bellows, CA
B	1	9514-0160	Platform Trunnion Weldment, CA
C	1	9202-0072	Pin, Platform, Hoist, VS3/RR/CA, 49/64 Dia. x 10.75, SW85
D	2	2101-0357	Cotter Pin, 3/16 x 1.25
E	8	2101-0273	Screw, HHCS, 3/8-16 UNC x 1.00
F	8	2101-0163	Washer, Flat, 5/16"

Air Regulator



NOTICE

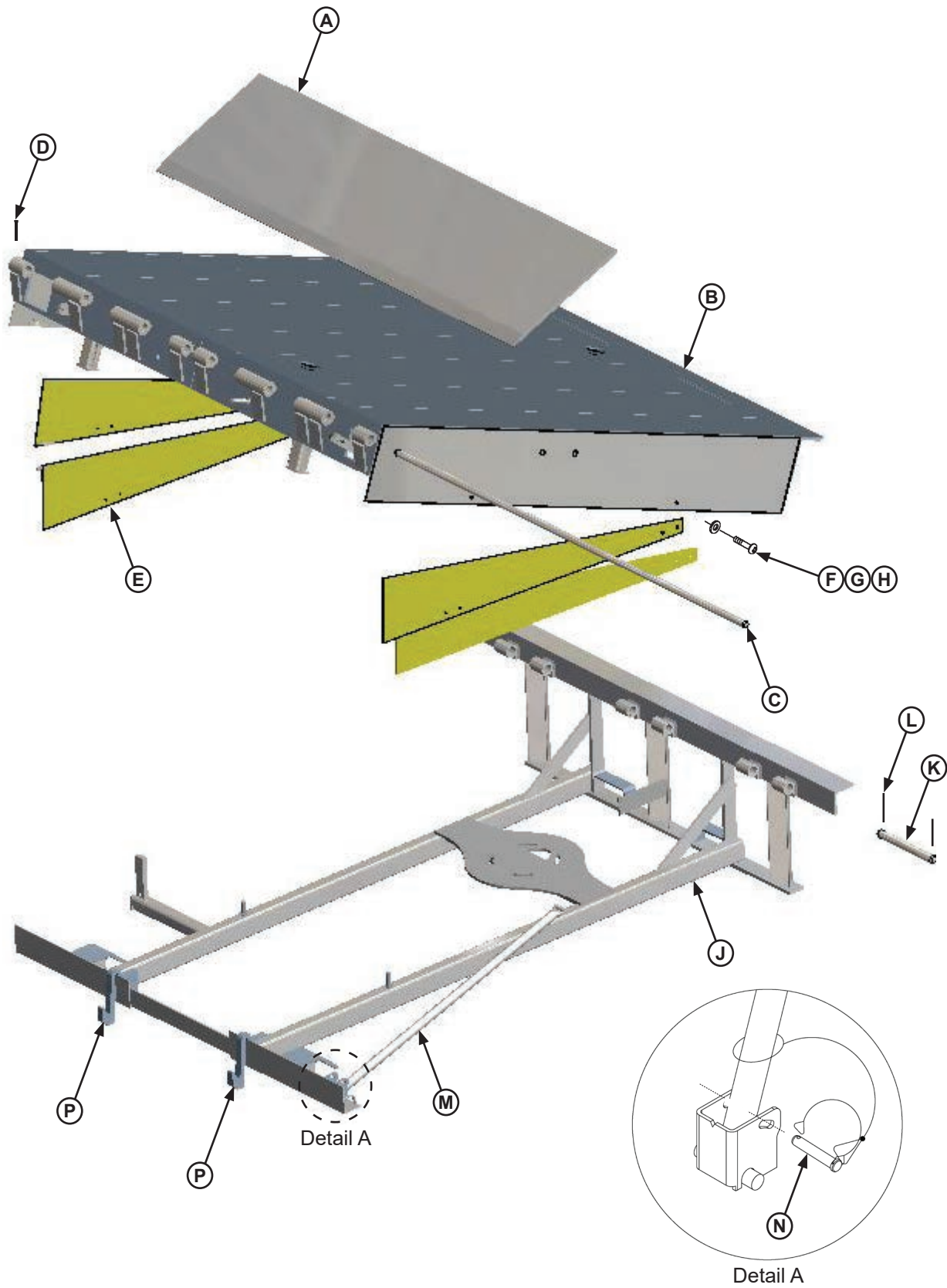
The CA dock leveler will not function correctly with less than 80 psi available at the regulator. For ideal operation, 95 psi is recommended.

Item	Quantity	Part Number	Description
*	1	8586-0008	Regulator & Lubricator Assy, CA, Left to Right Flow (shown)
		8586-0009	Regulator & Lubricator Assy, CA, Right to Left Flow
A	1	8581-0154	Filter/Regulator
B	1	8581-0170	Lubricator (Pint Reservoir)
		8581-0172	Lubricator (Quart Reservoir, optional)
C	A/R*	R981-0001	Killfrost Lubricant, 1 Pint Container
Parts below not included in Regulator & Lubricator Assy			
D	A/R*	9301-0236	Fitting, Adapter, 3/8" Tube - 3/8" NPT Male
		9301-0258	Fitting, Adapter, 1/2" Tube - 3/8" NPT Male

* A/R = As Required

PARTS

Frame and Platform



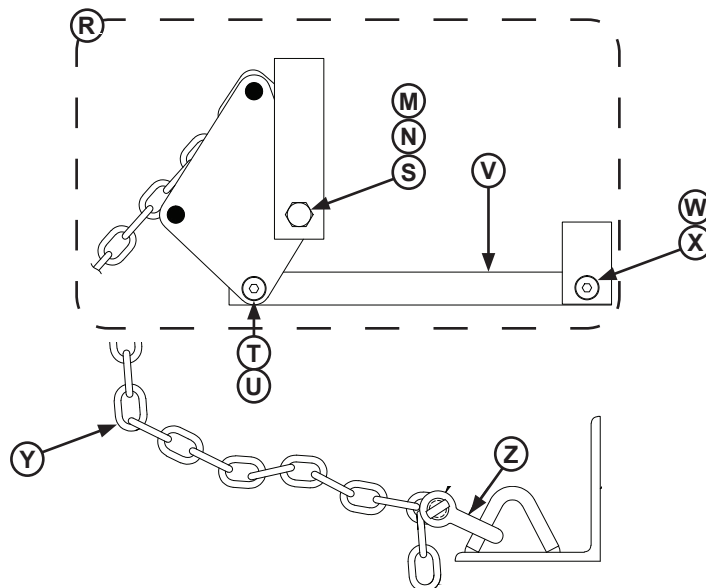
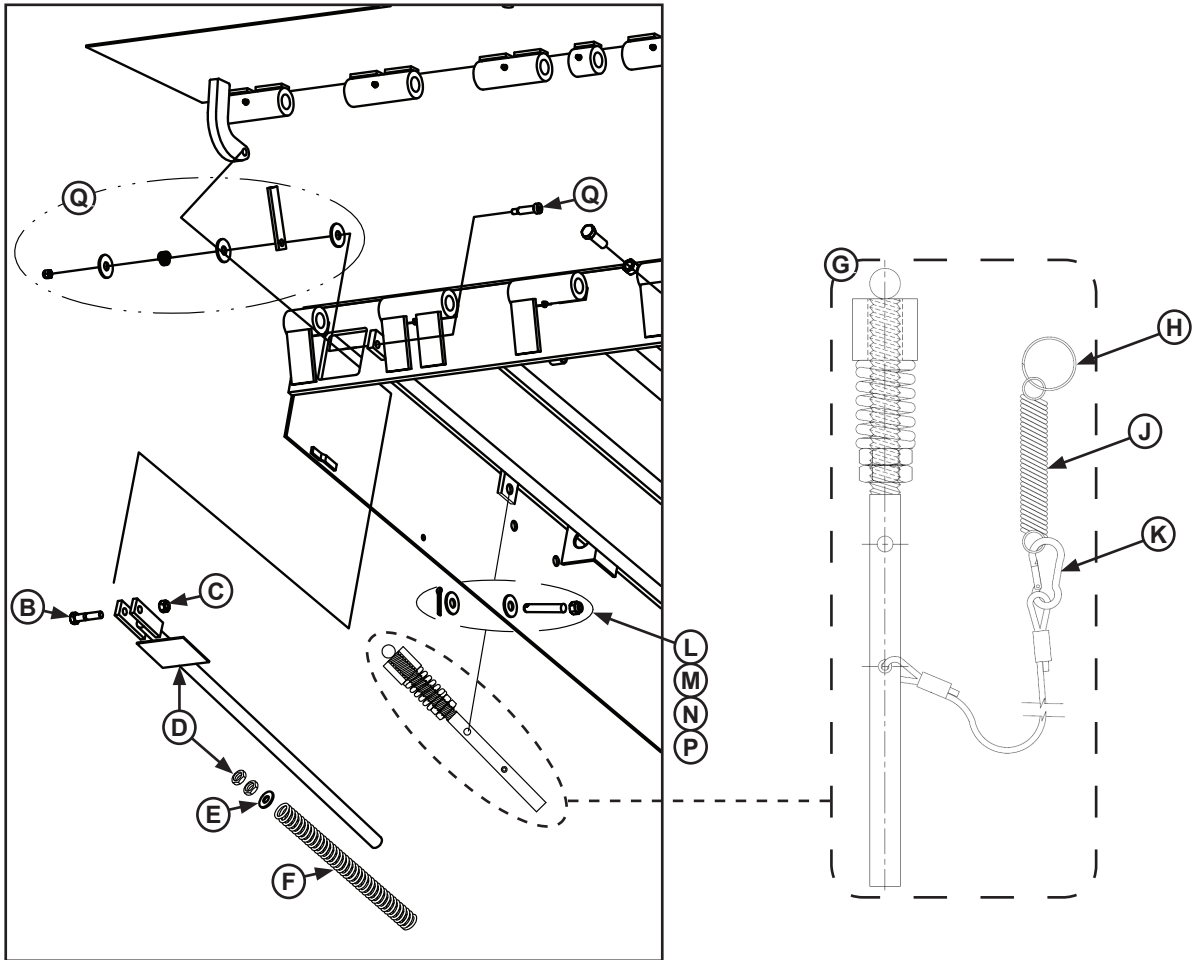
Frame and Platform

Item	Quantity	Part Number	Description
A	1	0595-____*	Lip, Welded Assembly
B	1	9515-____*	Platform, Welded Assembly
C	2	DPLA-2101*	Pin, Lip Hinge, 1" OD x 35.25
		DPLA-2102*	Pin, Lip Hinge, 1" OD x 38.25
		DPLA-2103*	Pin, Lip Hinge, 1" OD x 40.5
D	2	2101-0046	Cotter Pin, 1/4 x 1-1/4 in.
E	1	DKIT-9179	Toe Guard Kit, Sliding 6' (Includes Both Sides)
		DKIT-9180	Toe Guard Kit, Sliding 8' (Includes Both Sides)
		DKIT-9181	Toe Guard Kit, Sliding 10' (Includes Both Sides)
F	2	2101-0039	Nylon Lock Nut, 5/16-18 UNC
G	4	2101-0163	Washer, 5/16 in., Flat
H	2	2101-0011	Cap Screw, 5/16-18 UNC x 1 in.
J	1	8435-____*	Frame, Welded Assembly
K	3	9202-0002	Pin, Hinge, Rear
		9202-0009	Pin, Hinge, Rear, Stainless Steel (Optional)
L	6	2101-0047	Cotter Pin, 1/4 x 2 in.
M	1	9225-____*	Maintenance Prop
N	1	9201-0006	Prop Pin & Clip
P	2	8432-____*	Lip Keeper

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

PARTS

Lip Activation



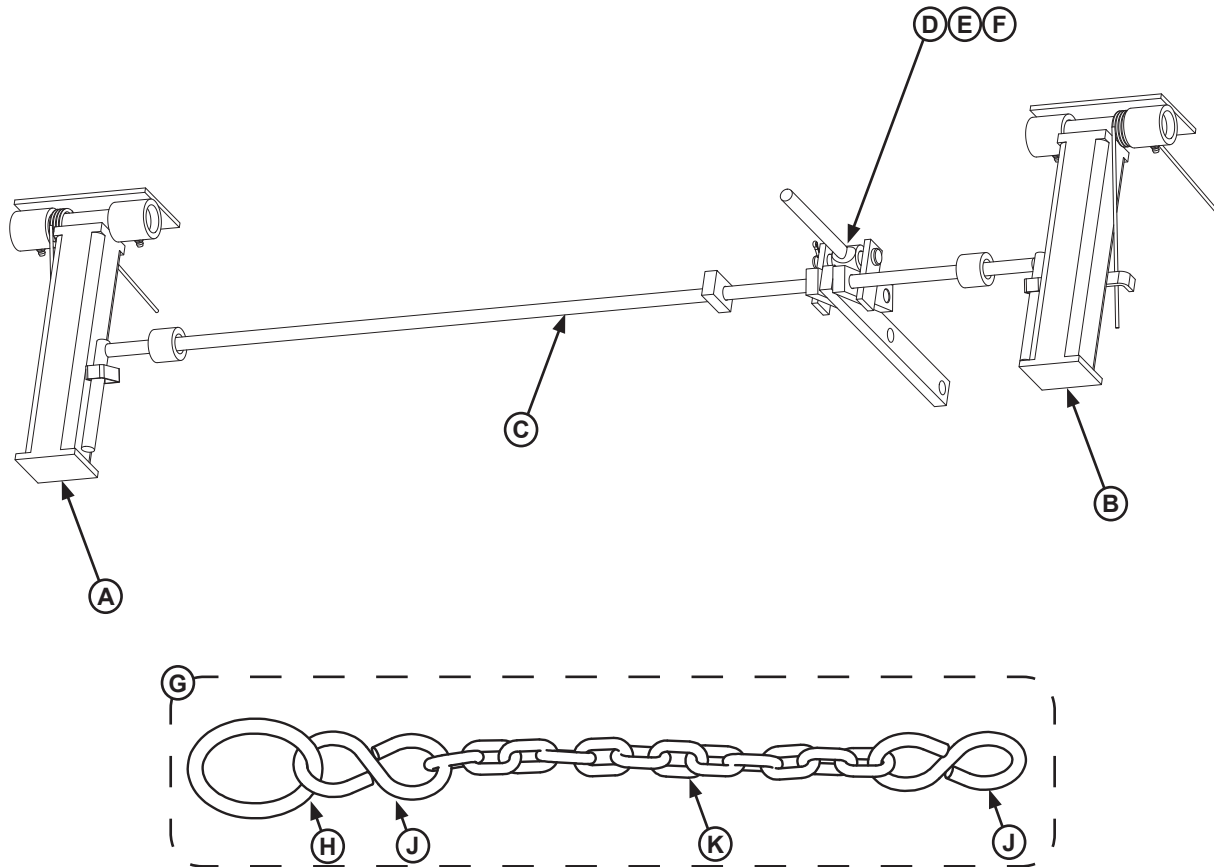
Lip Activation

Item	Quantity	Part Number	Description
B	1	DOTH-2061	Bolt, Shoulder, 1/2" x 1-1/2"
C	1	2101-0223	Nut, Flange Top, 3/8-16 UNC
D	1	9513-0138	Lip Assist Fork Rod (Includes E)
E	1	2101-0221	Washer, 1-3/4"
F	1	DOTH-2546*	Spring, Lip Assist, Green, 30" Lg. Heavy Duty
		DOTH-2550*	Spring, Lip Assist, Orange, 30" Lg. Light Duty
G	1	5775-0004	Lip Latch Assembly, 16", Pre-4/2014
		5775-0005	Lip Latch Assembly, 21", 4/2014-Present
H	1	2101-0230	Split Ring, 1-3/4 OD
J	1	0941-0013	Lip Latch Rod Spring
K	1	2101-0239	Chain Snap, 1/4"
L	1	DOTH-2351	Bolt, Clevis, 1/2-13 x 3-5/32
M	2	DOTH-2163	Locknut, Nylon Insert, 1/2-13
N	6	DOTH-2210	Washer, 1/2"
P	1	DOTH-2374	Cotter Pin, 1/8 x 1
Q	1	9513-0091	Assembly, Lip Prop
R	1	DPLA-0338	Lip Banger Assembly (Includes M, N, S-X)
S	1	DOTH-2065	Bolt, Hex 1/2-13 X 3-3/4 LG
T	1	DOTH-2061	Bolt, Shoulder, 1/2 x 1-1/2, 3/8-16
U	1	DOTH-2137	Lock Nut, Nylon, 3/8-16
V	1	DPLA-0341	Linkage Bar
W	1	2101-0308	Screw, Shoulder, 1/2 x 1.75 - 3/8-16 UNC BLK Oxide
X	1	DOTH-2131	Lock Nut, Nylon, 3/8-16
Y	1	2102-0002	Chain, 1/4", Grade 40/43, 35 links, 42"
Z	1	2101-0334	Shackle, 3/8"

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

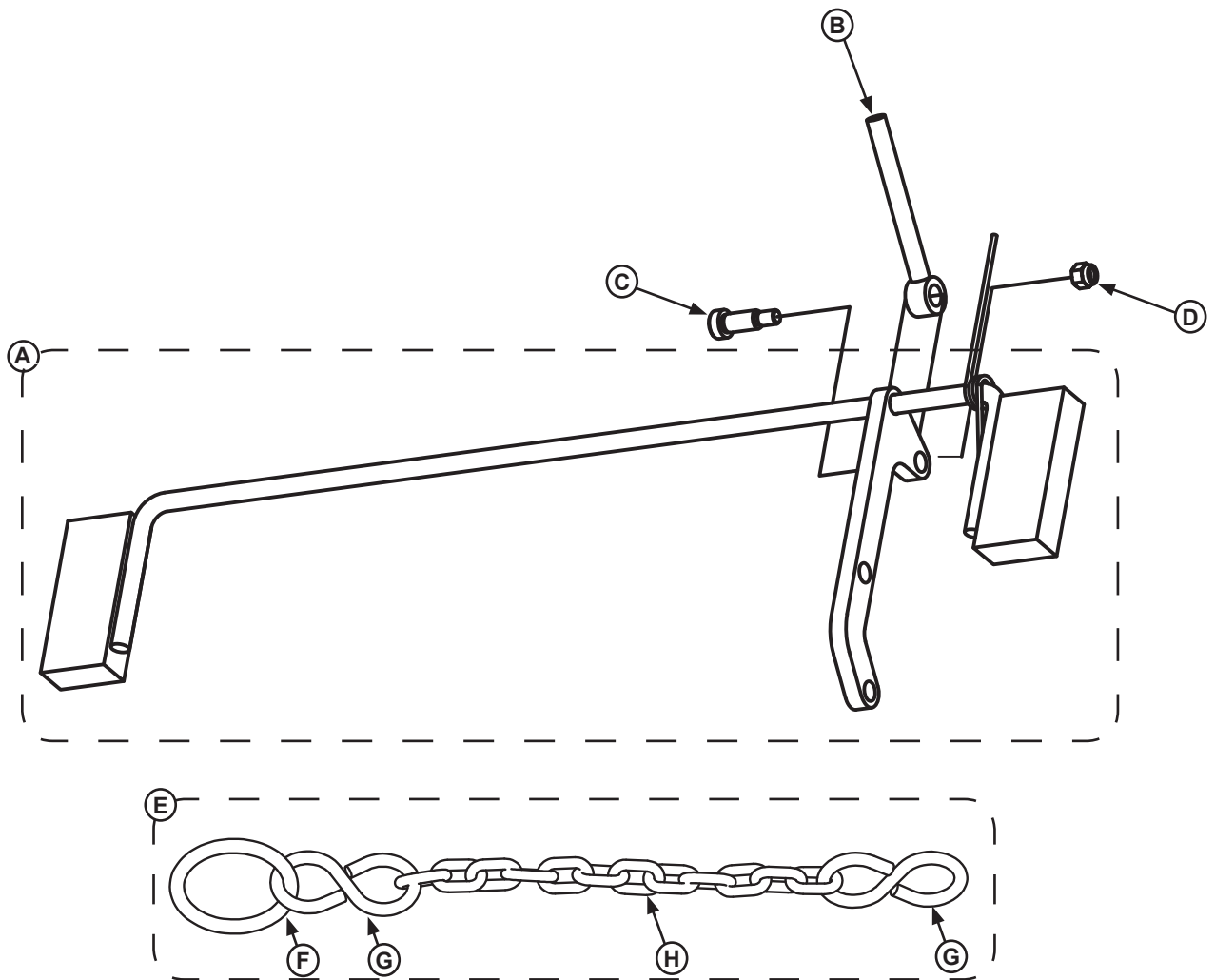
PARTS

Below Dock Control (pre-8/2019)



Item	Quantity	Part Number	Description
A	1	DOTH-6232	Safety Leg Weldment, RH, CA
B	1	DOTH-6321	Safety Leg Weldment, LH, CA
C	1	DPLA-2122	Safety Leg Pull Bar Assembly
D	1	DPLA-0360	Push Rod, AP, 5-1/2"
E	1	DOTH-2060	Pin, Clevis, 1/2 x 2.50
F	1	DOTH-2131	Cotter Pin, 1/8 x 1
G	1	DPLA-1215	Pull Chain Assembly (Includes K-N)
H	1	DOTH-2423	Pull Ring, Zinc Finish
J	1	DOTH-2440	Quick Link, 3/16"
K	1	DOTH-2412	Chain, 10"

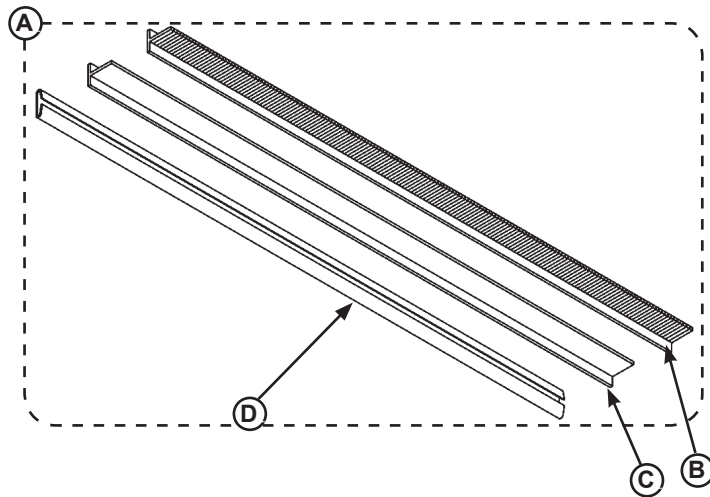
Below Dock Control (8/2019-present)



Item	Quantity	Part Number	Description
A	1	DPLA-0343	Below Dock Control Assembly
		DPLA-0401	Below Dock Control Assembly (6' Long Units Only)
B	1	DPLA-0360	Below Dock Control Push Rod Assembly
C	1	DOTH-2060	Bolt, Shoulder, 1/2 x 1, 3/8"-16 UNC
D	1	DOTH-2131	Lock Nut, Nylon, 3/8-16
E	1	DPLA-0353	Pull Chain Assembly (Includes K-N)
F	1	DOTH-2423	Pull Ring, Welded
G	1	DOTH-2440	S-Hook, Zinc Plated
H	16	DOTH-2412	Chain, Twist Link

PARTS

Weather Seals

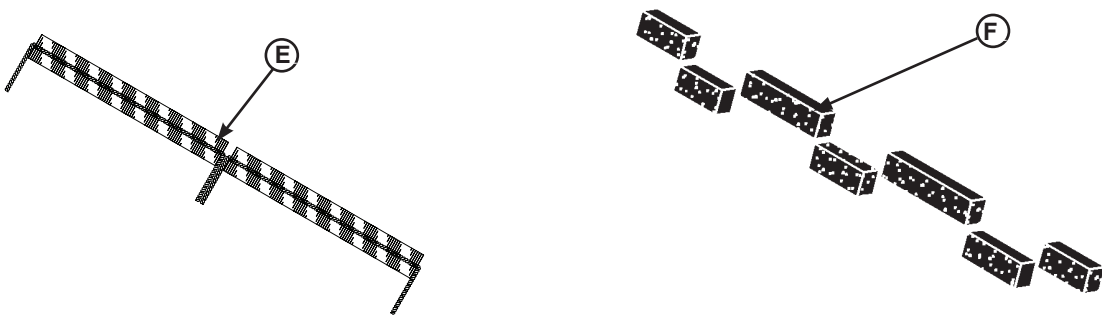


Weather Seal Kits

Item	Quantity	Part Number	Description
A	1	DKIT-9293	Brush Kit (Includes Seal and Track), 1-1/2 in. 84" Lg. (Both Sides)
	1	DKIT-9292	Rubber Kit (Includes Seal and Track), 1-1/2 in. 84" Lg. (Both Sides)

Individual Replacement Seals

Item	Quantity	Part Number	Description
B	1	DOTH-2822	Brush Refill, 1-1/2 in. 84" Lg.
C	1	DOTH-2824	Rubber Refill, 1-1/2 in. 84" Lg.
D	1	DOTH-2840	Replacement Channel



Rear Seals

Item	Quantity	Part Number	Description
E	1	0195-0045	Rear Brush Weather Seal, Universal
F	1	0195-0046	Rear Foam Seal, Self-Adhesive, Pre-Cut, 6' Wide Levelers
		0195-0047	Rear Foam Seal, Self-Adhesive, Pre-Cut, 6.5' Wide Levelers
		0195-0048	Rear Foam Seal, Self-Adhesive, Pre-Cut, 7' Wide Levelers

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

Customer Information

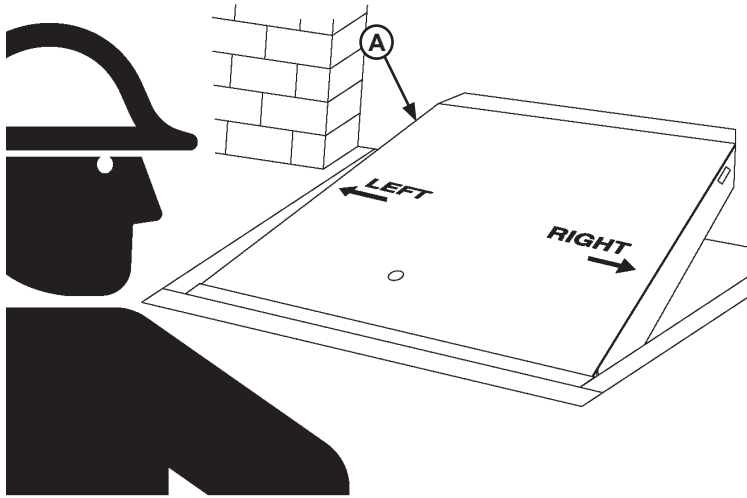


Figure 29

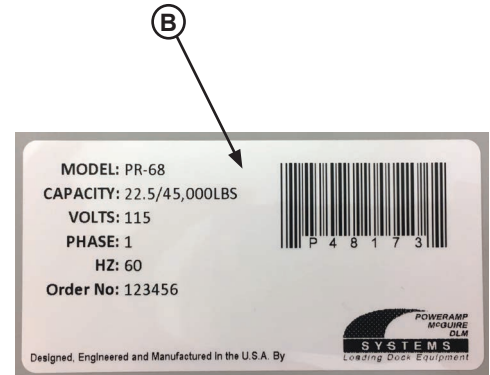


Figure 30

NOTE: Refer to Figure 29 for left/right orientation of dock leveler and Figure 30 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 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.

PRODUCT SPECIFIC WARRANTY "CentraAir®" SERIES LEVELER

In addition to the "Standard Product Warranty" provided with all DLM® products, Systems LLC, guarantees materials, components and workmanship to be free of defects for the following extended periods:

- Structural Warranty – Structural Warranty – For an additional period of nine (9) years, product will carry a **prorated** structural warranty. This warranty specifically applies to; the deck section, lip section, frame, rear hinge assembly and front hinge assembly only. This warranty covers structural repairs to or replacement of dock leveler in Systems LLC sole discretion and expense including reasonable labor, materials, freight and travel. If Systems LLC determines replacement is necessary, it will provide the original purchaser with a credit toward the purchase of the new replacement Systems LLC product in the amount equal to the original purchase price of the warranted product F.O.B. point of manufacture, discounted on a ten year straight line basis by the number of years of use prior to replacement.
- Pneumatic Warranty – For an additional period of four (4) years, for parts and freight only, this warranty specifically applies to; the bellows, hoses and valves.