

A Division of Systems, LLC

DLM
DOCK LEVELER
MANUFACTURING

HNL Series

Dock Leveler

Owner's/User's Manual



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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.

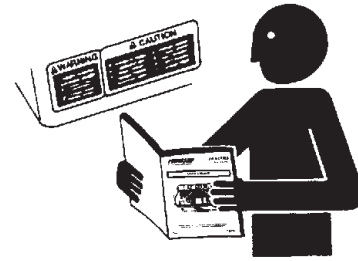
NOTICE

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.

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.

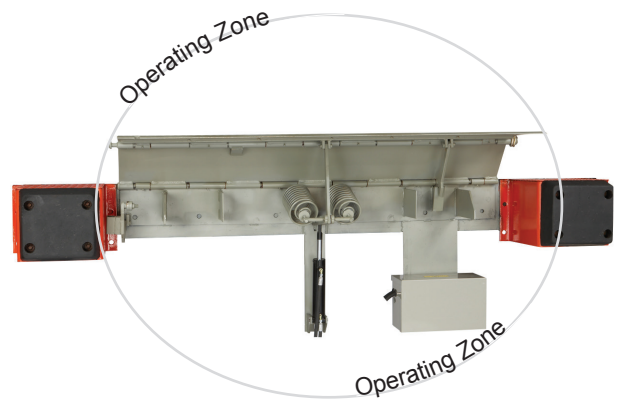


Figure 1

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



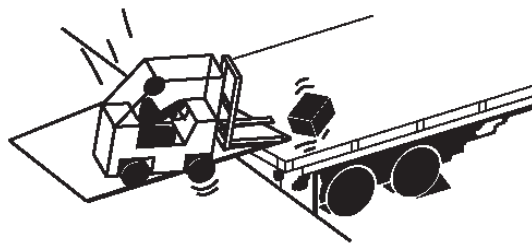
Chock/restrain all transport vehicles. Never remove the wheel chocks or release the restraining device until loading or unloading is finished, and transport driver has been given permission to drive away.



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.



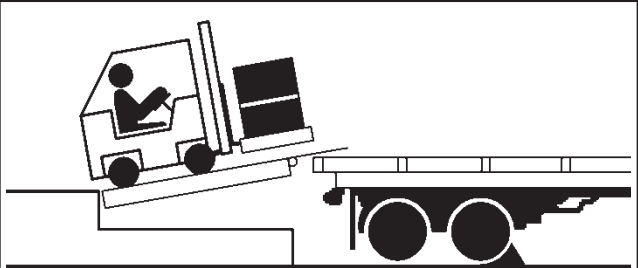
Make sure lip overlaps onto transport vehicle bed at least 4 in. (102 mm).



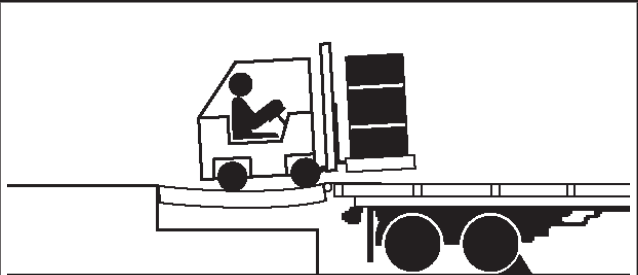
Keep a safe distance from both side edges.

Operational Precautions

! WARNING



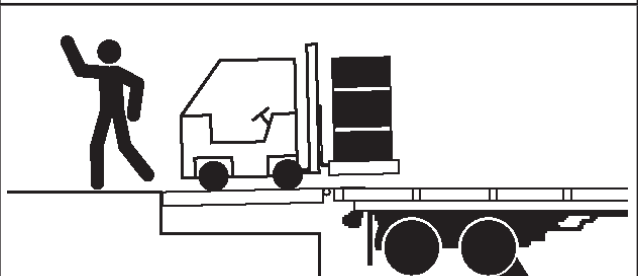
Do not use dock leveling device if transport vehicle is too high or too low.



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

1

⚠ DANGER

Unsupported dock leveler ramps can lower unexpectedly.

Before allowing vehicle to leave the dock always:

- Ensure no equipment, material or people are on dock leveler.
- Return dock leveler to its stored position at dock level.

Failure to follow posted instructions will result in death or serious injury.

SAFETY INFORMATION

OPERATION

1. Read and follow all instructions and warnings in owner's user's manual.
2. Use of dock leveler restricted to trained operators.
3. Always chock trailer wheels or engage truck restraint before operating dock leveler or beginning to load or unload.
4. Never use hands or equipment to move ramp or lip.
5. Before activating dock leveler:
 - Ensure trailer is backed in against bumpers.
 - Remove any end loads if required.
 - Check trailer alignment to avoid lip interference. If lip does not lower to trailer bed, reposition vehicle.
6. Ensure truck bed supports extended lip or leveler frame supports the ramp before driving on ramp.
7. Stay clear of hinges and front and sides of moving dock leveler.
8. Never use damaged or malfunctioning dock leveler. Report problems immediately to supervisor.

MAINTENANCE/SERVICE

1. Read and follow all instructions, warnings and maintenance schedules in the owner's/user's manual.
2. Maintenance/Service of dock leveler restricted to trained personnel.
3. Place barriers on the driveway and dock floor to indicate service work is being performed.
4. **DO NOT ENTER PIT** unless dock leveler is securely supported by maintenance prop.
5. If electrically powered turn off and use OSHA lockout/tagout procedures.

Call 262.255.1510 for replacement placards, warning labels, or owner's user's manuals. 1751-0730 Rev. 4

1

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- Return dock leveler to its stored position at dock level.

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5. If electrically powered turn off and use OSHA lockout/tagout procedures.

Call 262.255.1510 for replacement placards, warning labels, or owner's user's manuals. 1751-0730 Rev. 4

1751-0730

5

⚠ 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.

1751-0138 Rev B

1751-0138

3

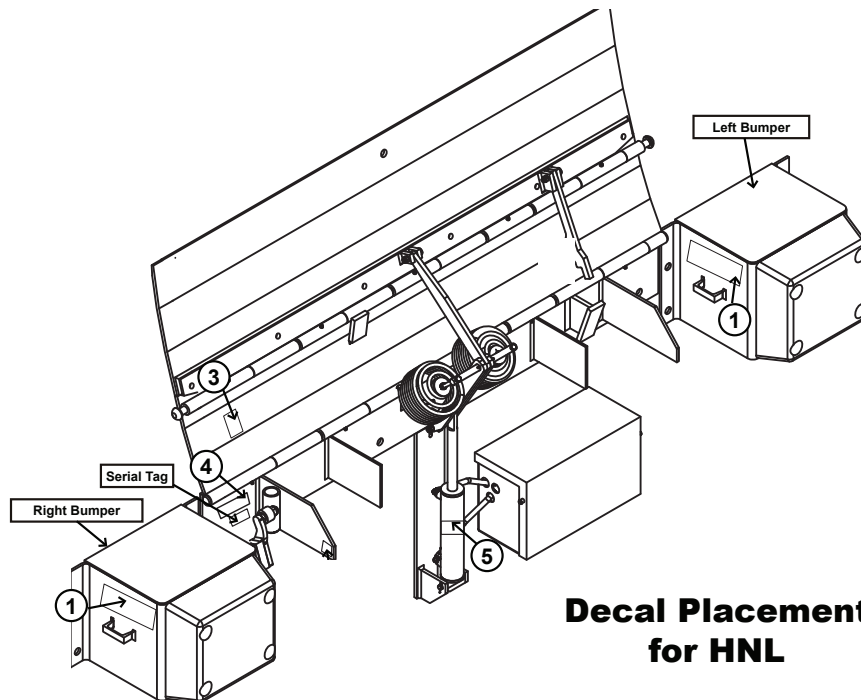
⚠ DANGER



Ramp swings toward you.
Stand Clear.
Use maintenance strut while servicing.
Failure to do so will result in death or serious injury.

Refer to owner's/user's manual for proper procedure. 1751-0763 Rev. 4


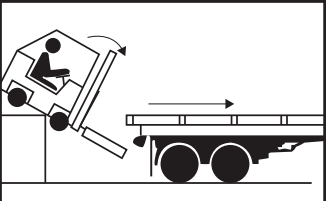
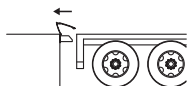
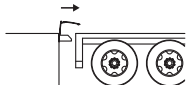
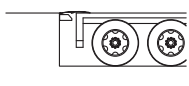
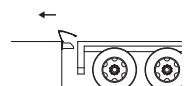




1751-0763



Decal Placement for HNL

Figure 2

Placard

 <h1 style="margin: 0;">DANGER</h1>	
<h2 style="margin: 0;">OPERATING INSTRUCTIONS</h2>	<h3 style="margin: 0;">HNL EDGE-OF-DOCK LEVELERS</h3>
 <ul style="list-style-type: none"> 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. 	<p style="color: red; text-align: center;">NORMAL OPERATION</p>  <ol style="list-style-type: none"> 1. Raise the platform by pressing and holding the RAISE button.  <ol style="list-style-type: none"> 2. Hold the RAISE button until center plate rotates past vertical. 3. Lower the platform by pressing and holding the LOWER button.  <ol style="list-style-type: none"> 4. Hold the LOWER button until the lip is resting on the transport vehicle.
<ul style="list-style-type: none"> 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. <p style="text-align: center;">FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN DEATH OR OTHER SERIOUS INJURY.</p>	<p style="color: red; text-align: center;">STORING LEVELER</p>  <ol style="list-style-type: none"> 1. Press the RAISE button until the lip folds enough to clear the transport vehicle, then release the RAISE button. The lip will fold and the platform will lower returning to the stored position. <p style="color: red; text-align: center;">NOTE: If transport vehicle departs before leveler is stored, leveler will automatically return to stored position.</p>
<div style="display: flex; align-items: center;">  <p style="font-size: small;">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.</p> </div> <p style="font-size: x-small; margin-top: 5px;">  WARNING: CANCER AND REPRODUCTIVE HARM www.P65Warnings.ca.gov </p>	<p style="color: red; text-align: center;">BELOW DOCK ENDLOADING</p> <ul style="list-style-type: none"> Remove any endloads while leveler is in the stored position.  <p style="color: red; text-align: center; font-size: small;">For operating instructions during power outages refer to owner's/user's manual.</p>
	1751-0877 Rev D

1751-0877

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

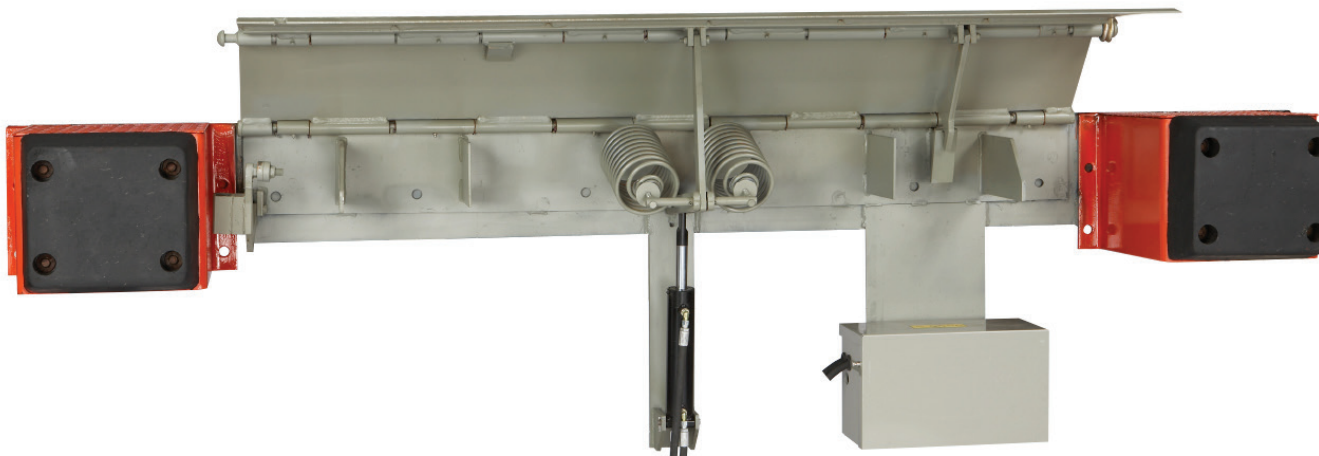


Figure 3

This manual provides current information on the HNL Series Hydraulic Edge-of-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 HNL Series Edge-of-Dock leveler comes equipped with an electrical control panel, which allows push-button operation of the dock leveler functions. Each HNL dock leveler unit and control panel has been factory pre-wired 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.

HNL Series Hydraulic Edge-of-Dock levelers are available in the following sizes, weight capacities, and options:

Dimensions and Capacities			
Model # -	Deck - Width	Total Unit Width	Comparative Industry Rating
HNL-66	66"	104"	20,000
HNL-72	72"	110"	25,000
HNL-78	78"	116"	30,000
HNL-84	84"	122"	35,000 (N/A for HNL-84)

Call Systems, LLC to discuss available voltages, phases and options to meet your specific needs.

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

Component Identification

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

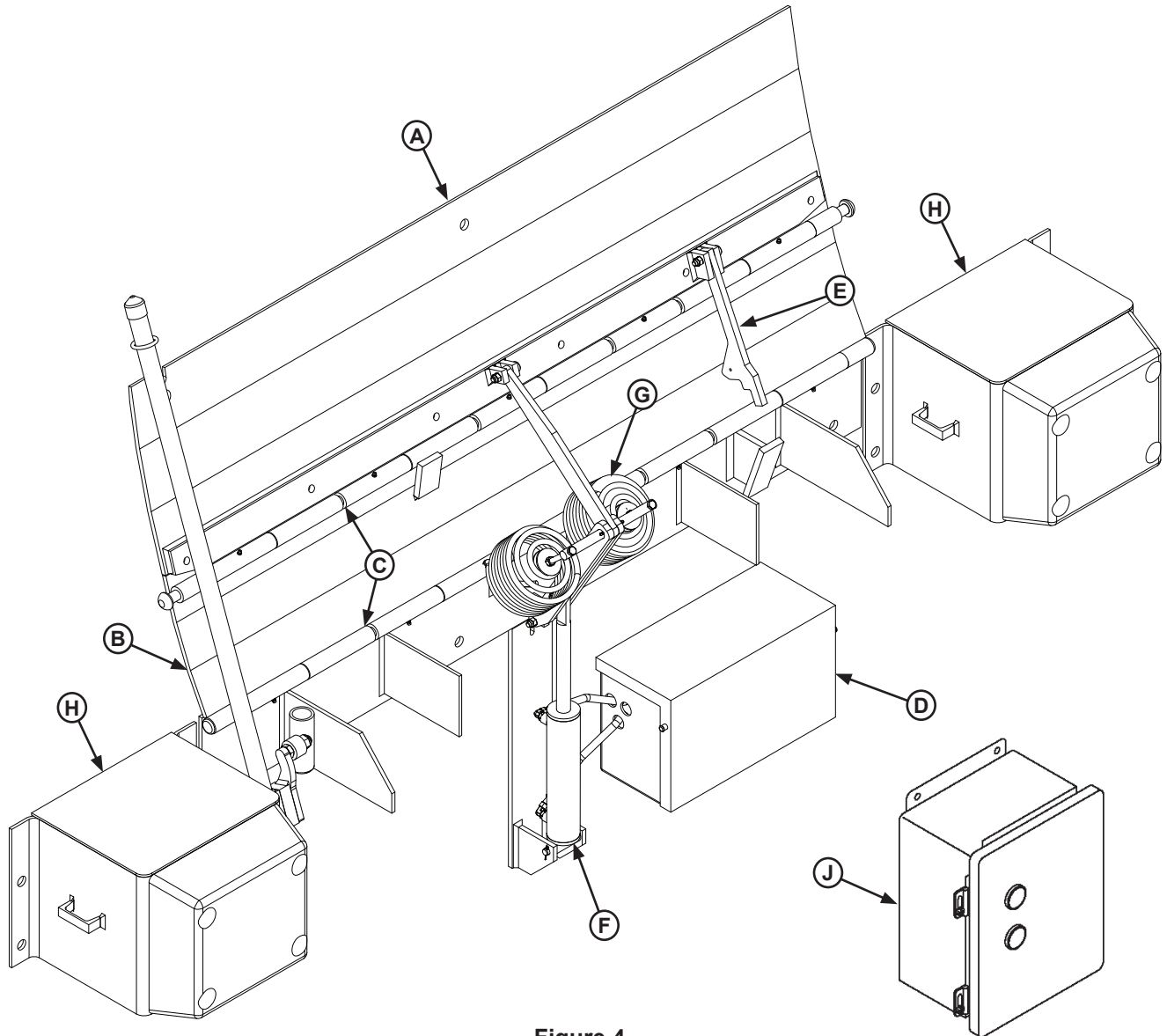


Figure 4

A — Lip Plate
B — Center Plate
C — Hinge Area

D — Powerpack (Motor/Pump/Reservoir)
E — Extend Link Arm
F — Platform Cylinder

G — Spring Assembly
H — Bumper Blocks (2 used)
J — Control Box*

*Control box appearance may vary depending on 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.

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.

Installation Overview

WARNING

Securely block or support ramp and lip when in vertical positions. Lack of proper bracing can result in ramp dropping during adjustment or installation.

NOTICE

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

Note: This is a generic overview of the installation steps required. See full installation instructions on pages 12-27 for different installation types and all steps.

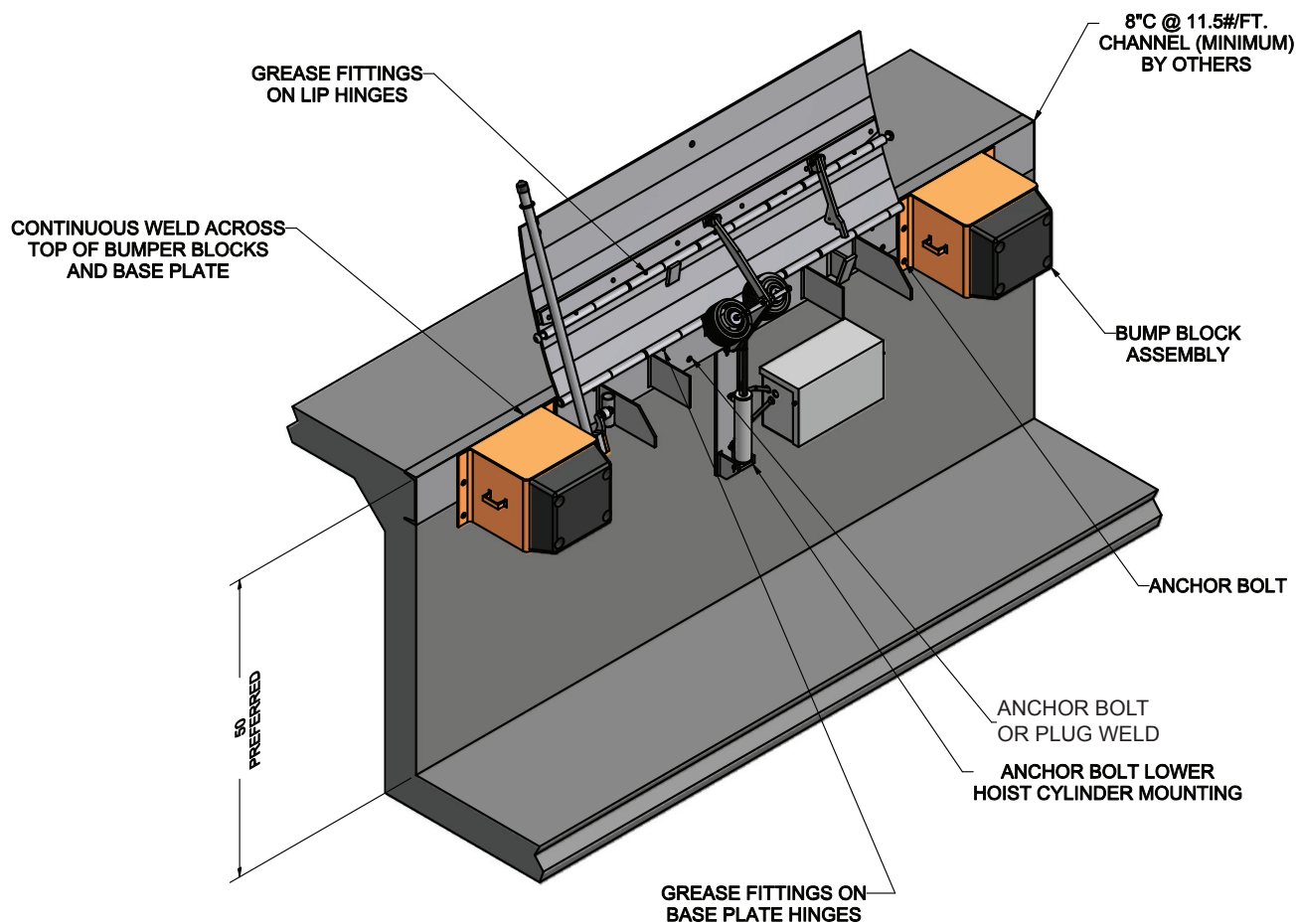


Figure 5

INSTALLATION

Flush Mount - Weld On

A flush mount weld on application is used when an 8" wide (minimum) embed channel is securely anchored into the concrete at the dock edge, and the dock height is adequate.

Installation Steps: See Figure 6.

1. Remove all existing bumper material and protruding objects from dock edge. Clean and sweep dock edge free of debris and flammable chemicals before installing unit.
2. At chosen location for Edge-of-Dock leveler, locate the center of space and mark a point half of the base plate width to the left and right.
3. Using a proper lifting device, raise and position leveler on dock face with the top of the base plate being 1/4" below the top of the embedded channel. Position ends of base plate to match up with marks made previously.
4. Tack weld base plate to dock steel on left hand end of the leveler. Check right hand end of base plate, ensure that end is against dock steel and that the top of the base plate is still flush with the top of the embedded channel. Tack right hand end to dock steel.
5. Position bumper blocks out approximately 5/8" from the edge of the inside flange of the bump block to the end of the base plate. This will allow for vertical welding of both the base plate and the bump block flange back to the dock steel. Top of the bump block cover plate should be flush with the top of the embed channel. Tack weld bumper blocks to dock steel.
6. Check the positioning of the base plate and the bumper blocks.
7. Complete bumper install:
 - A. Apply a continuous weld across top of each bumper. Skip welding is acceptable to prevent warping, but complete weld must be completed.
 - B. Fully plug weld mounting holes to imbed.
8. Complete base plate weld:
 - A. Weld the top of end base plate and first hinge to imbed.
 - B. Weld top of each hinge tube to imbed.
 - C. Weld vertically along each end of base plate.
 - D. Plug weld all holes in base plate.
9. Install hoist cylinder mount. Drill two 2-5/8" holes and anchor to wall. Weld cylinder mount to base plate.
10. Install power pack. Remove cover and mark wall for two wedge anchors.
11. Drill two 2-3/8" holes 3" deep. Install wedge anchors. Mount power pack to wall.
12. Installer must remove all welding slag, and repaint welded areas.
13. Installer must adjust springs on all mechanical Edge of Dock levelers to provide desired tension for smooth operation (see page 34).
14. Proceed to page 24 for control panel and wiring installation instructions.

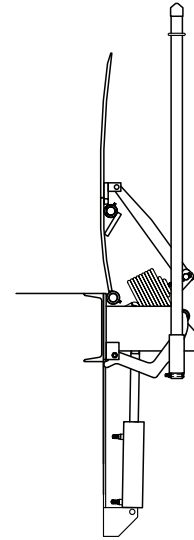
Flush Mount - Weld On (continued)

WARNING

Securely block or support ramp and lip when in vertical positions. Lack of proper bracing can result in ramp dropping during adjustment or installation.

NOTICE

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



END VIEW
(BUMPERS NOT SHOWN FOR CLARITY)

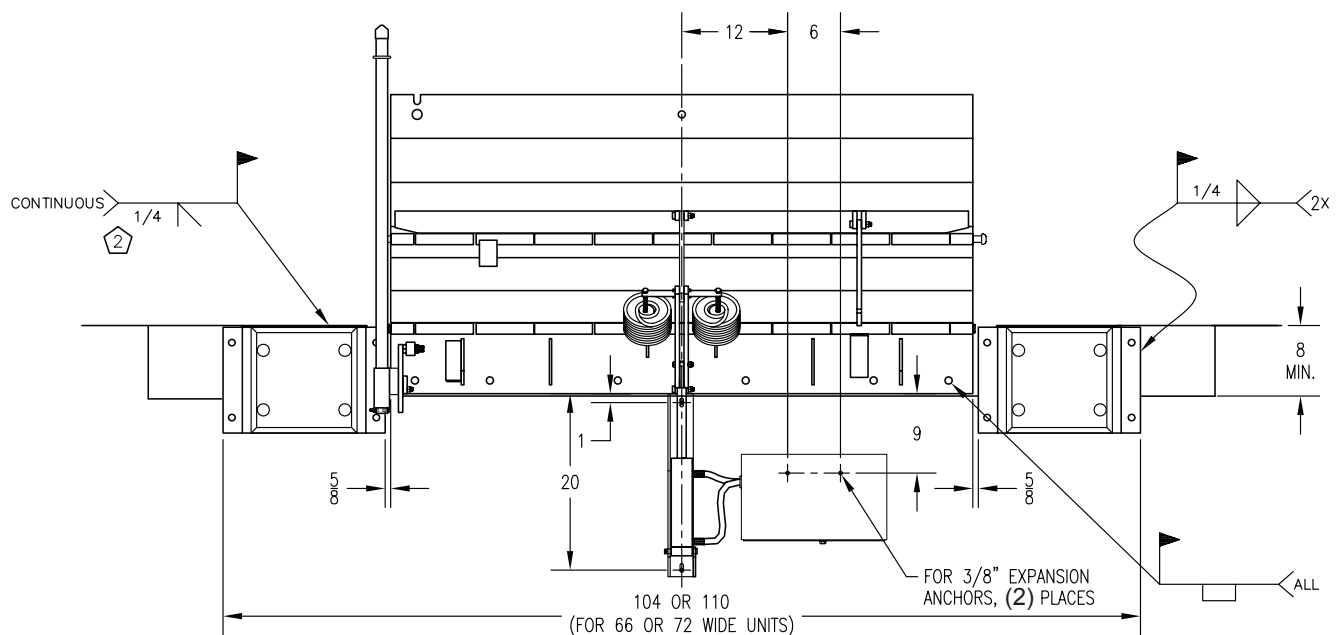


Figure 6

Note:

1. Top of base plate to be 1/4" below top of dock floor and embedded channel to create level transition when installation is complete.
2. Apply continuous bevel weld across both bumpers and length of base plate.

INSTALLATION

Ramp Mount - Weld/Bolt On

A ramp mount weld on application is used when adequate dock steel is securely anchored in the concrete at the dock edge, but the existing dock height is too low and the dock leveler must be installed above this height to correct this situation.

Installation Steps: See Figure 7.

1. Remove all existing bumper material and protruding objects from dock edge. Clean and sweep dock edge free of debris and flammable chemicals before installing unit.
2. At chosen location for Edge of Dock leveler, locate the center of space and mark a point half of the base plate width to the left and right.
3. At the points marked to each side of center, measure and mark points 7-3/4" below dock level less height the unit is to be raised to locate bottom of base plate. This will locate the top of the base plate appropriately for the ramp plate.
4. Using a proper lifting device, raise and position the leveler base plate to marked position. While holding base plate tight against dock face, tack weld securely to dock steel on left hand end of leveler. Check right hand end of base plate, ensure that end is against dock steel and that the bottom of the base plate is even with the marks made previously. Tack right hand end to dock steel. Support unit until final welding is ready to complete.
5. Position bumper blocks out approximately 5/8" out from the edge of the inside flange of the bump block to the end of the base plate. Position the top of the tread cover plate on the bumper blocks to be flush with the top of the base plate. Tack weld bumper blocks to dock steel.
6. Place steel ramp plate in position, flush with top backside of base plate. Mark along full length of back edge of ramp plate. Slide ramp plate forward over dock leveler the width of bushing tool, approximately 2".
7. Place bushing tool on marked line at each end of ramp to ensure proper alignment at both ends. A Skil Roto Hammer #736 or similar tool is recommended.
8. Using the back edge of the ramp plate as a guide, groove concrete approximately 3/4" deep by 2" wide, and should be the entire length of ramp plate.
9. Break tack welds holding ramp in place, slide ramp plate back into position with the top of the ramp plate flush with the top of the base plate. Tack weld each end and center of ramp plate to base plate.
10. Drill 5/8" dia. by 5" deep holes through ramp plate at back edge. Install anchor bolts per manufacturers specifications, and tighten securely. Weld anchor bolt nuts to ramp plate using a 1/4" fillet weld all the way around the nut. Cut off any portion of the anchor bolt exposed through the nut, and plug weld around the top of the nut to the anchor bolt. Ensure the top of the nuts are well rounded for smooth rollover.
11. Complete bumper install:
 - A. Apply a continuous weld across top of each bumper. Skip welding is acceptable to prevent warping, but complete weld must be completed.
 - B. Fully plug weld mounting holes to imbed.
12. Complete base plate weld:
 - A. Weld the top of end base plate and first hinge to imbed.
 - B. Weld top of each hinge tube to imbed.
 - C. Weld vertically along each end of base plate.
 - D. Plug weld all holes in base plate.
13. Install hoist cylinder mount. Drill two 2-5/8" holes and anchor to wall. Weld cylinder mount to base plate.
14. Install power pack. Remove cover and mark wall for two wedge anchors.
15. Drill two 2-3/8" holes 3" deep. Install wedge anchors. Mount power pack to wall.
16. Installer must remove all welding slag, and repaint welded areas.
17. Installer must adjust springs on all mechanical Edge of Dock levelers to provide desired tension for smooth operation (see page 34).
18. Proceed to page 24 for control panel and wiring installation instructions.

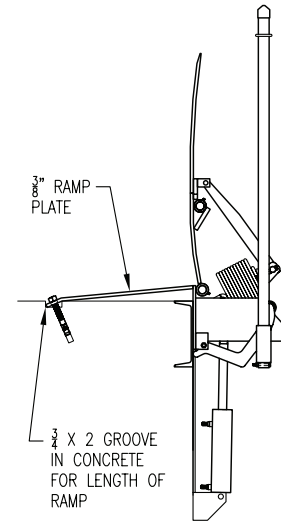
Ramp Mount - Weld/Bolt On (continued)

WARNING

Securely block or support ramp and lip when in vertical positions. Lack of proper bracing can result in ramp dropping during adjustment or installation.

NOTICE

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



SECTION "A-A"
(BUMPER NOT SHOWN FOR CLARITY)

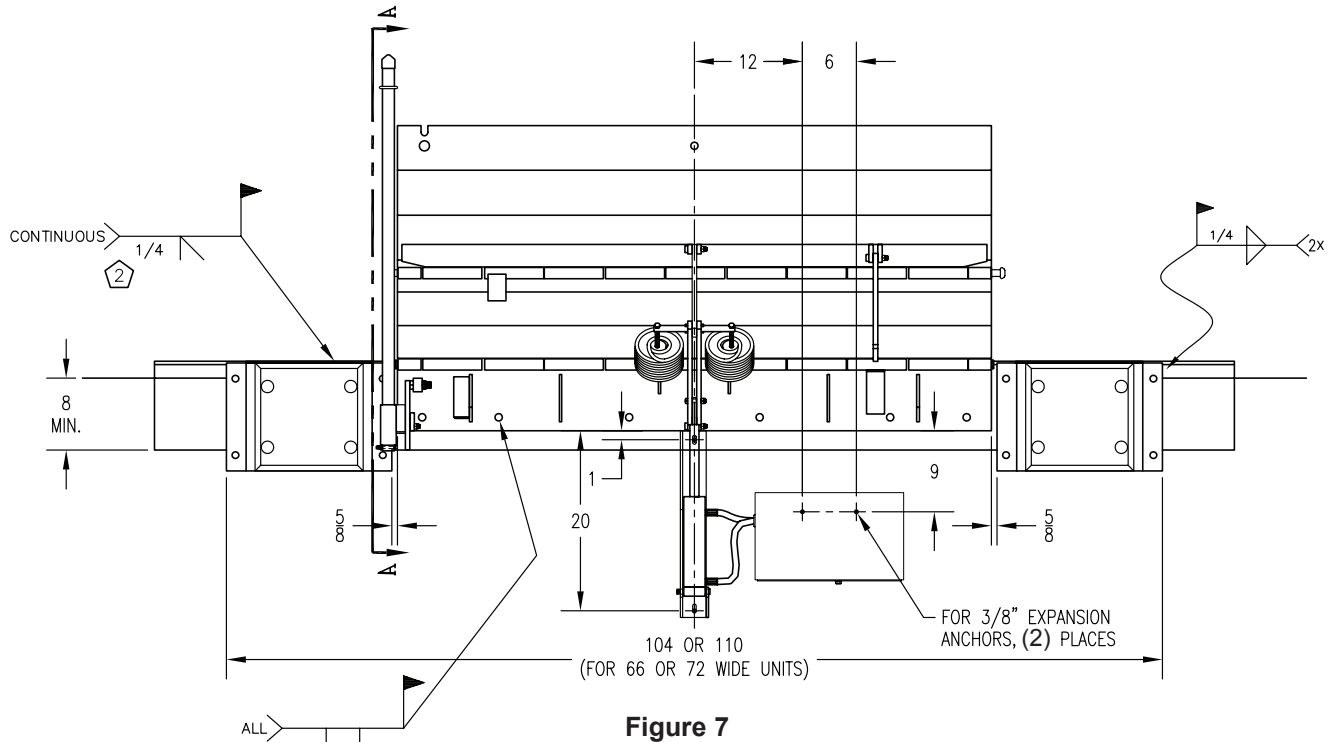


Figure 7

Note:

1. Top of base plate and bumper cover plate to be flush with top of ramp plate.
2. Apply continuous bevel weld across both bumpers and length of base plate.
3. To figure ramp plate length, need 12" ramp for every 1-1/2" of rise to ramp.

INSTALLATION

Flush Mount - Bolt On

A flush mount bolt on application is used when there is no steel on dock edge, and the dock height is adequate. Additional steel ramp plate and bolting is required with this type of installation.

Installation Steps: See Figure 8.

1. Remove all existing bumper material and protruding objects from dock edge. Clean and sweep dock edge free of debris and flammable chemicals before installing unit.
2. At chosen location for Edge of Dock leveler, locate the center of space and mark a point half of the base plate width to the left and right.
3. At the points marked to each side of center, measure and mark points 7-1/2" below dock level (for 1/4" ramp plate) to locate position for bottom of base plate. This position will place the top of the base plate 1/4" above the dock floor. This position will vary with ramp plate thickness.
4. Mark line connecting these points and position support angles. Position angles as shown in installation drawing provided. Mark center of holes in each of the support angles.
5. At center marks, drill holes 5/8" dia. by 5" deep in concrete. Install anchor bolts with washers through support angles into holes in concrete. Tighten bolts until support angles are secure. Follow anchor manufacturers installation instructions for proper installation.
6. Using a proper lifting device, raise and position the leveler base plate to marked position, while resting on the support angles. While holding base plate tight against dock face, tack weld securely to support angles.
7. Drill 5/8" dia. by 5" deep holes in concrete through holes in base plate, and install anchor bolts with washers and tighten securely.
8. Position bumper blocks out approximately 5/8" out from the edge of the inside flange of the bump block to the end of the base plate. Position the top of the tread cover plate on the bumper blocks to be 1/4" above dock level. Note that this placement will vary with ramp plate thickness. Mark centers of holes in bump block flanges.
9. Drill 5/8" dia. by 5" deep holes at center marks. Reposition bumper blocks, insert anchor bolts with washers and tighten securely to dock face.
10. Place steel ramp plate in position, flush with top backside of base plate. Mark along full length of base edge of ramp plate. Slide ramp plate forward over dock leveler the width of bushing tool, approximately 2".
11. Place bushing tool on marked line at each end of ramp to ensure proper alignment at both ends. A Skil Roto Hammer #736 or similar tool is recommended.
12. Using the back edge of the ramp plate as a guide, groove concrete approximately 5/8" deep by 2" wide, and should be the entire length of ramp plate.
13. Break tack welds holding ramp in place, slide ramp plate back into position with the top of the ramp plate flush with the top of the base plate. Tack weld each end and center of ramp plate to base plate.
14. Drill 5/8" dia. by 5" deep holes through ramp plate at back edge. Install anchor bolts per manufacturers specifications, and tighten securely. Weld anchor bolt nuts to ramp plate using a 1/4" fillet weld all the way around the nut. Cut off any portion of the anchor bolt exposed through the nut, and plug weld around the top of the nut to the anchor bolt. Ensure the top of the nuts are well rounded for smooth rollover.
15. Complete welding of tacked parts as follows:
 - A. Apply continuous weld across top of each bumper and base plate to ramp plate. Skip welding is acceptable to prevent warping, but complete weld must be completed.
 - B. Weld bottom of base plate support angles using a 1/4" fillet weld.
16. Install hoist cylinder mount. Drill two 2-5/8" holes and anchor to wall. Weld cylinder mount to base plate.
17. Install power pack. Remove cover and mark wall for two wedge anchors.
18. Drill two 2-3/8" holes 3" deep. Install wedge anchors. Mount power pack to wall.
19. Installer must remove all welding slag, and repaint welded areas.
20. Installer must adjust springs on all mechanical Edge of Dock levelers to provide desired tension for smooth operation (see page 34).
21. Proceed to page 24 for control panel and wiring installation instructions.

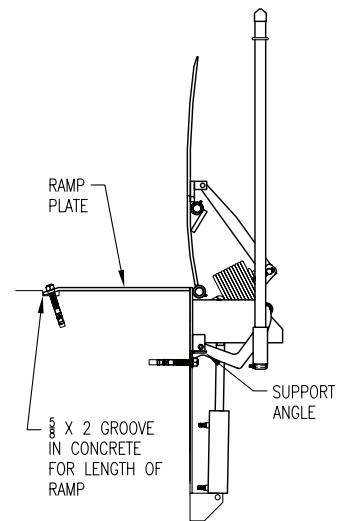
Flush Mount - Bolt On (continued)

WARNING

Securely block or support ramp and lip when in vertical positions. Lack of proper bracing can result in ramp dropping during adjustment or installation.

NOTICE

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



SECTION "A-A"
(BUMBERS NOT SHOWN FOR CLARITY)

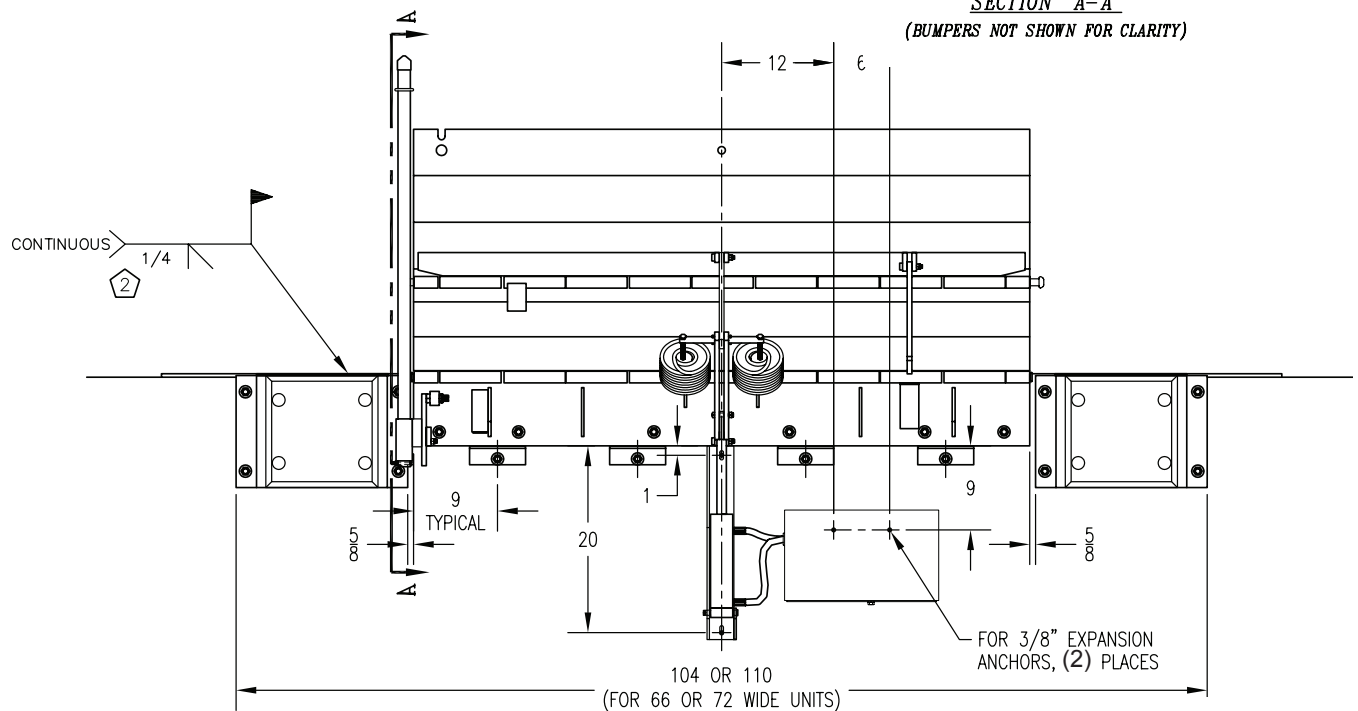


Figure 8

Note:

1. Top of base plate and bumper cover plate to be flush with top of ramp plate.
2. Apply continuous bevel weld across both bumpers and length of base plate.

INSTALLATION

Ramp Mount - Weld On w/Formed Angle

A ramp mount-weld on used with a formed angle application is used when dock edge is damaged, there is no dock steel securely anchored into the concrete, and the dock height is too low and leveler must be installed above this height to correct this situation.

Installation Steps: See Figure 9.

1. Remove all existing bumper material and protruding objects from dock edge. Clean and sweep dock edge free of debris and flammable chemicals before installing unit.
2. Review and follow formed angle installation instructions prior to leveler installation. Reference page 18
3. At chosen location for Edge of Dock leveler, locate the center of space and mark a point half of the base plate width to the left and right.
4. At the points marked to each side of center, measure and mark points 7-3/4" below dock level less height the unit is to be raised to locate bottom of base plate. This will locate the top of the base plate appropriately for the ramp plate.
5. Using a proper lifting device, raise and position the leveler base plate to marked position. While holding base plate tight against dock face, tack weld securely to dock steel on left hand end of leveler. Check right hand end of base plate, ensure that end is against dock steel and that the bottom of the base plate is even with the marks made previously. Tack right hand end to dock steel. Support unit until final welding is ready to complete.
6. Position bumper blocks out approximately 5/8" out from the edge of the inside flange of the bump block to the end of the base plate. Position the top of the tread cover plate on the bumper blocks to be flush with the top of the base plate. Tack weld bumper blocks to dock steel.
7. Place steel ramp plate in position, flush with top backside of base plate. Mark along full length of back edge of ramp plate. Slide ramp plate forward over dock leveler the width of bushing tool, approximately, 2".
8. Place bushing tool on marked line at each end of ramp to ensure proper alignment at both ends. A Skil Roto Hammer #736 or similar tool is recommended.
9. Using the back edge of the ramp plate as a guide, groove concrete approximately 3/4" deep by 2" wide, and should be the entire length of ramp plate.
10. Break tack welds holding ramp in place, slide ramp plate back into position with the top of the ramp plate flush with the top of the base plate. Tack weld each end and center of ramp plate to base plate.
11. Drill 5/8" dia. by 5" deep holes through ramp plate at back edge. Install anchor bolts per manufacturers specifications, and tighten securely. Weld anchor bolt nuts to ramp plate using a 1/4" fillet weld all the way around the nut. Cut off any portion of the anchor bolt exposed through the nut, and plug weld around the top of the nut to the anchor bolt. Ensure the top of the nuts are well rounded for smooth rollover.
12. Complete bumper install:
 - A. Apply a continuous weld across top of each bumper. Skip welding is acceptable to prevent warping, but complete weld must be completed.
 - B. Fully plug weld mounting holes to imbed.
13. Complete base plate weld:
 - A. Weld the top of end base plate and first hinge to imbed.
 - B. Weld top of each hinge tube to imbed.
 - C. Weld vertically along each end of base plate.
 - D. Plug weld all holes in base plate.
14. Install hoist cylinder mount. Drill two 2-5/8" holes and anchor to wall. Weld cylinder mount to base plate.
15. Install power pack. Remove cover and mark wall for two wedge anchors.
16. Drill two 2-3/8" holes 3" deep. Install wedge anchors. Mount power pack to wall.
17. Installer must remove all welding slag, and repaint welded areas.
18. Installer must adjust springs on all mechanical Edge of Dock levelers to provide desired tension for smooth operation (see page 34).
19. Proceed to page 24 for control panel and wiring installation instructions.

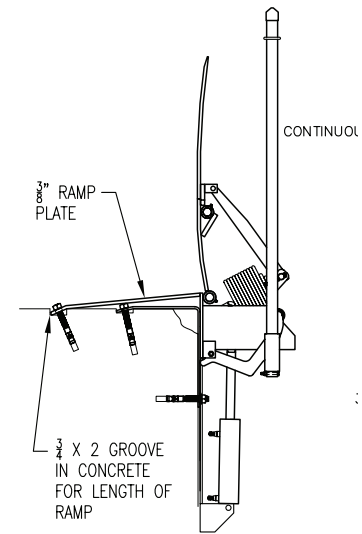
Ramp Mount - Weld On w/Formed Angle (continued)

WARNING

Securely block or support ramp and lip when in vertical positions. Lack of proper bracing can result in ramp dropping during adjustment or installation.

NOTICE

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



SECTION "A-A"
(BUMPERS NOT SHOWN FOR CLARITY)

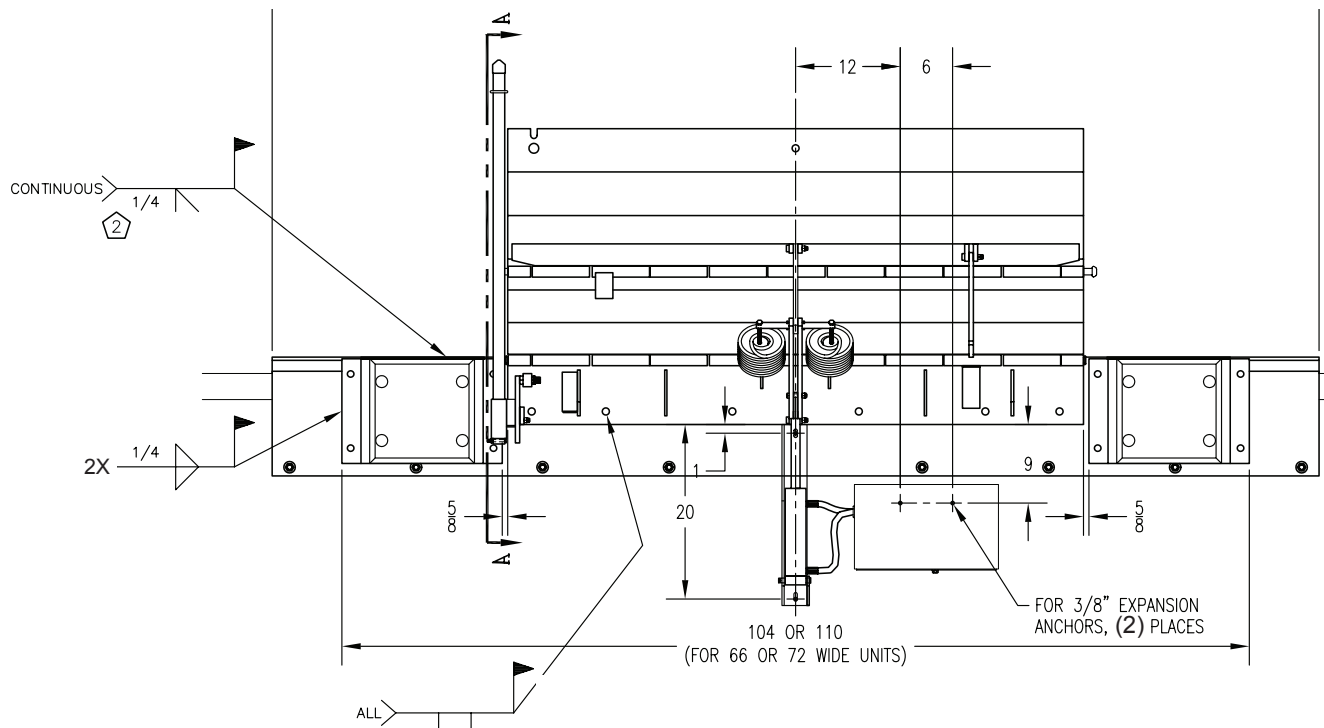


Figure 9

Note:

1. Top of base plate and bumper cover plate to be flush with top of ramp plate.
2. Apply continuous bevel weld across both bumpers and length of base plate.
3. To figure ramp plate length, need 12" ramp for every 1-1/2" of rise to ramp.
4. To install formed angle, see formed angle installation instructions on page 21.

INSTALLATION

Formed Angle

A formed angle is used when there is no existing dock steel and concrete at the dock edge has been damaged. The formed angle is required to rebuild the damaged concrete edge for a proper installation if the dock height is adequate.

1. Remove all existing bumper material and protruding objects from dock edge. Clean and sweep dock edge free of debris and flammable chemicals before installing unit.
2. At chosen location for the formed angle, locate the center of space and mark a point half of the angle width to the left and right.
3. Using a proper lifting device, raise and position the formed angle to marked position, slide formed angle against dock face.
4. Mark along full length of back edge of formed angle. Slide angle forward the width of brushing tool, approximately 2".
5. Place brushing tool on marked line at each end of formed angle to ensure proper alignment at both ends. A Skil Roto Hammer #736 or similar tool is recommended.
6. Using the back edge of the formed angle as a guide, groove concrete approximately 5/8" deep by 2" wide, and should be the entire length of the formed angle.
7. Slide formed angle back until tight against dock face. drill 5/8" dia. by 5" deep holes through formed angle at back edge. Install anchor bolts per manufacturers specifications, and tighten securely. Weld anchor bolt nuts to formed angle using a 1/4" fillet weld all the way around the nut. Cut off any portion of the anchor bolt exposed through the nut, and plug weld around the top of the nut to the anchor bolt. Ensure the top of the nuts are well rounded for smooth rollover.
8. Drill 5/8" dia. by 5" deep holes in dock face through holes in formed angle. Install anchor bolts with washers and tighten securely per manufacturers specifications.

Formed Angle (continued)

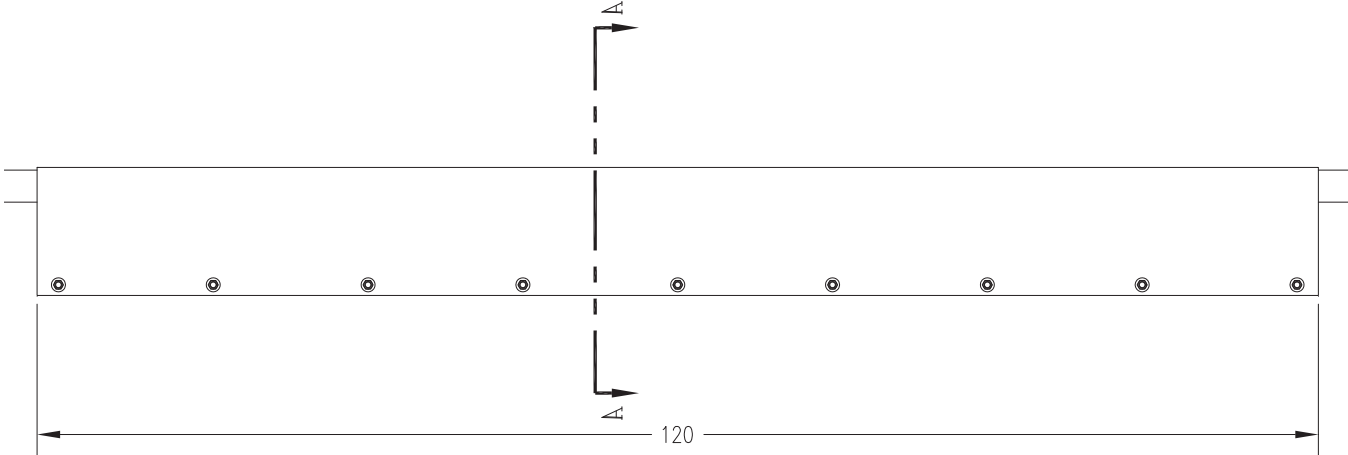
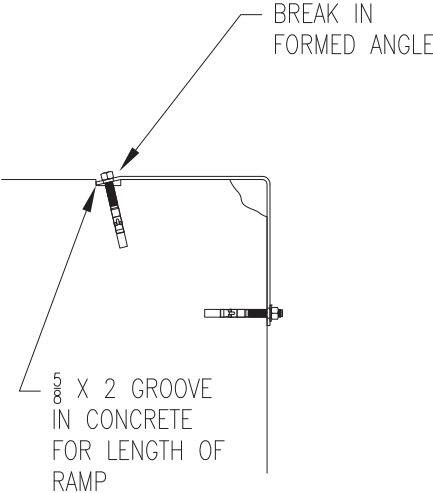


Figure 10

Note:

- 1. Secure formed angle with (18) anchor bolts, (9) each side.

INSTALLATION

Ramp and Face Plate

A ramp mount requiring a face plate application is used when there is no existing dock steel and the concrete at the dock edge has been damaged. The dock height can be low, high, or adequate for this application, however, the face plate and ramp plate are required to rebuild the damaged concrete edge.

1. Remove all existing bumper material and protruding objects from dock edge. Clean and sweep dock edge free of debris and flammable chemicals before installing unit.
2. At chosen location for the face plate, locate the center of space and mark a point half of the face plate width to the left and right.
3. Using a proper lifting device, raise and position the face plate to marked position, and push face plate against dock face.
4. Top of face plate should be flush with the top of dock floor. Mark center of holes in face plate into dock face. Drill 5/8" dia. by 5" holes into dock face. Install anchor bolts with washers per manufacturers specifications and tighten securely.
5. Place ramp plate to match each end of the face plate. Leading (forward) edge of ramp plate should be flush with dock face.
6. Mark along full length of back edge of ramp plate. Slide ramp forward the width of bushing tool, approximately 2".
7. Place bushing tool on marked line at each end of ramp to ensure proper alignment at both ends. A Skil Roto Hammer #736 or similar tool is recommended.
8. Tack weld ramp to face plate on each end to secure in place.
9. Using the back edge of the ramp plate as a guide, groove concrete approximately 5/8" deep by 2" wide, and should be the entire length of the ramp plate.
10. Break tack welds and slide ramp back until forward edge is flush with dock face. Tack weld ramp on each end and center to face plate. Drill 5/8" dia. by 5" deep holes through ramp plate at back edge. Install anchor bolts per manufacturers specifications, and tighten securely. Weld anchor bolt nuts to ramp plate using a 1/4" fillet weld all the way around the nut. Cut off any portion of the anchor bolt exposed through the nut, and plug weld around the top of the nut to the anchor bolt. Ensure the top of the nuts are well rounded for smooth rollover.
11. Apply a continuous fillet weld at the created joint between the face plate and ramp. Skip welding should be the proper method used to avoid warping.

Ramp and Face Plate (continued)

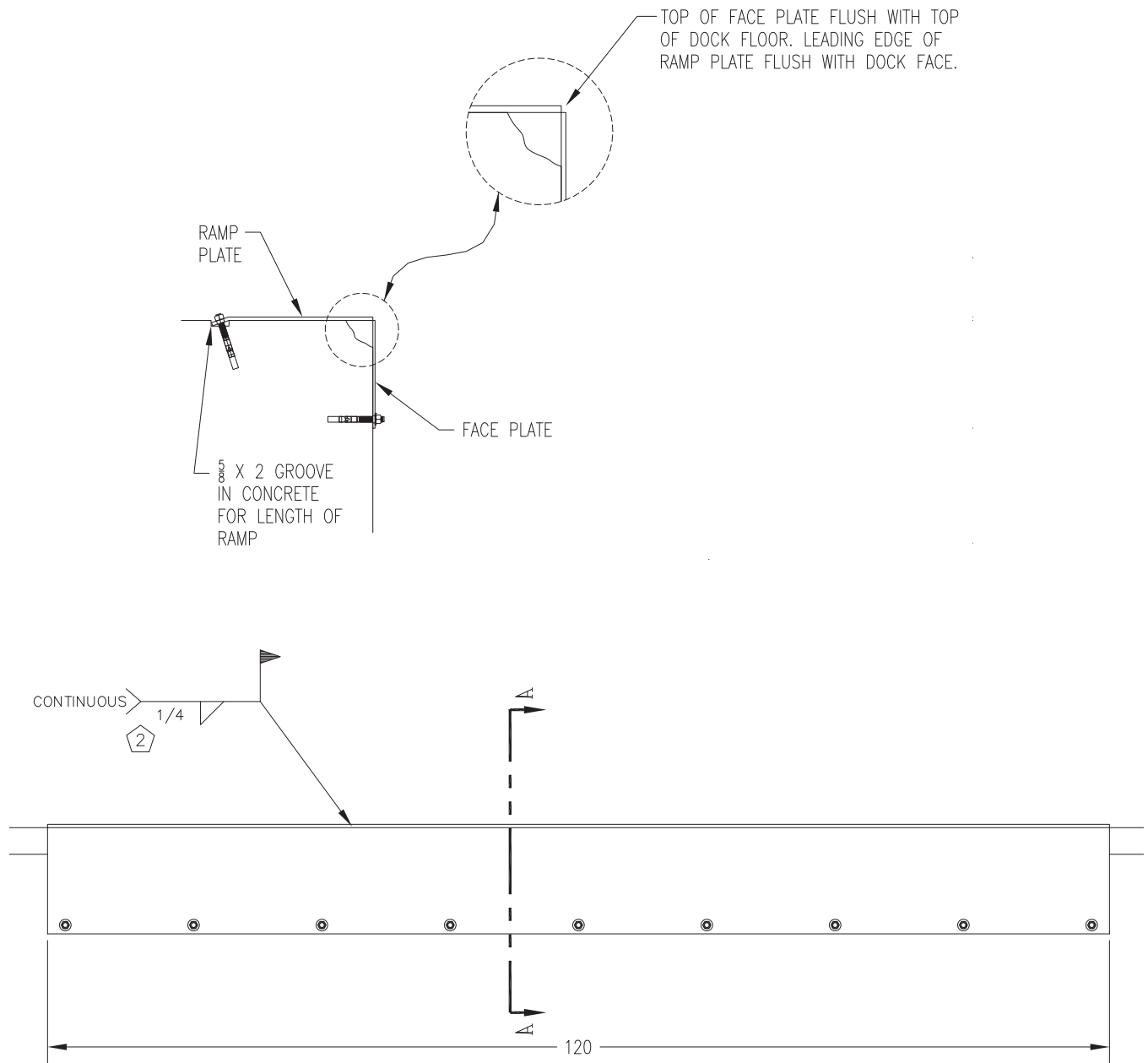


Figure 11

Note:

1. Secure formed angle with (18) anchor bolts, (9) each side.
2. Apply continuous fillet weld across entire length of face plate and ramp.

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.

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.

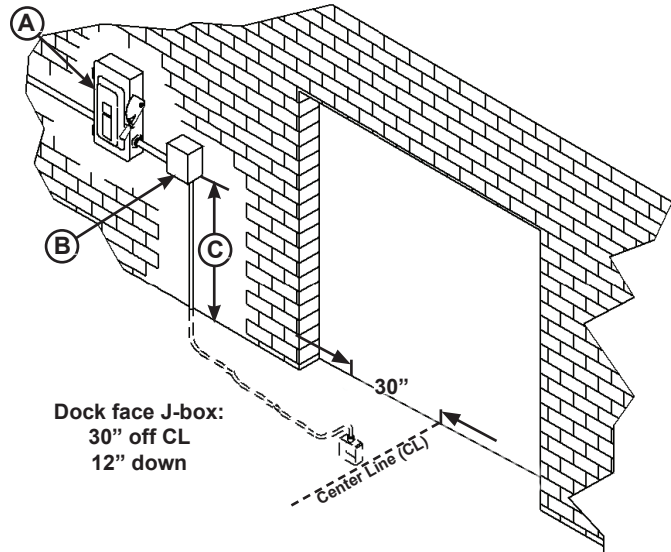


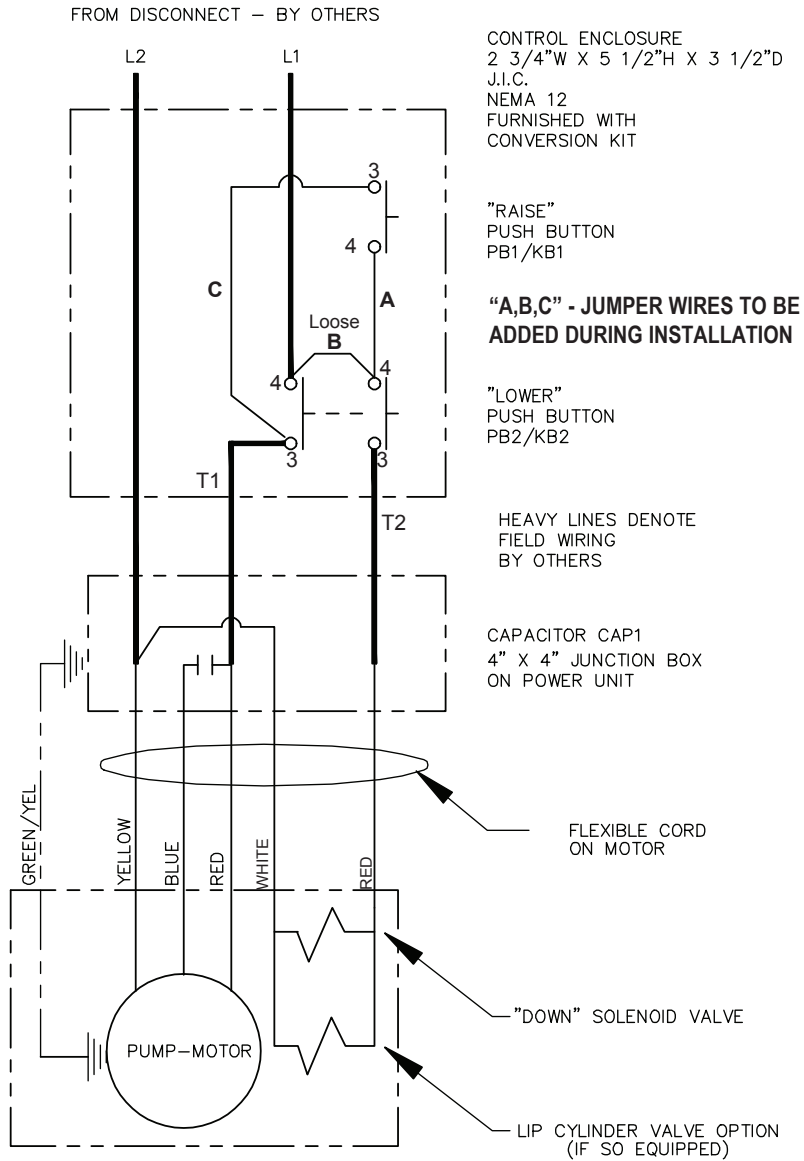
Figure 12

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 48 in. (1219 mm). See Figure 12.
2. Install electrical disconnect panel (A) if not already installed. Disconnect panel supplied by others.
3. Install and connect the control wiring as shown on page 25.
4. Connect the dock leveler power cable to the field wires on the dock face junction box.
5. 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.
6. Install placard (see page 26).

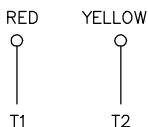
Wiring Diagram



115 VOLT MOTOR DATA

1/4 HP
3350 RPM
115 VOLTS
1 PHASE
60 HZ
2.5 F/L AMPS

MOTOR CONNECTIONS

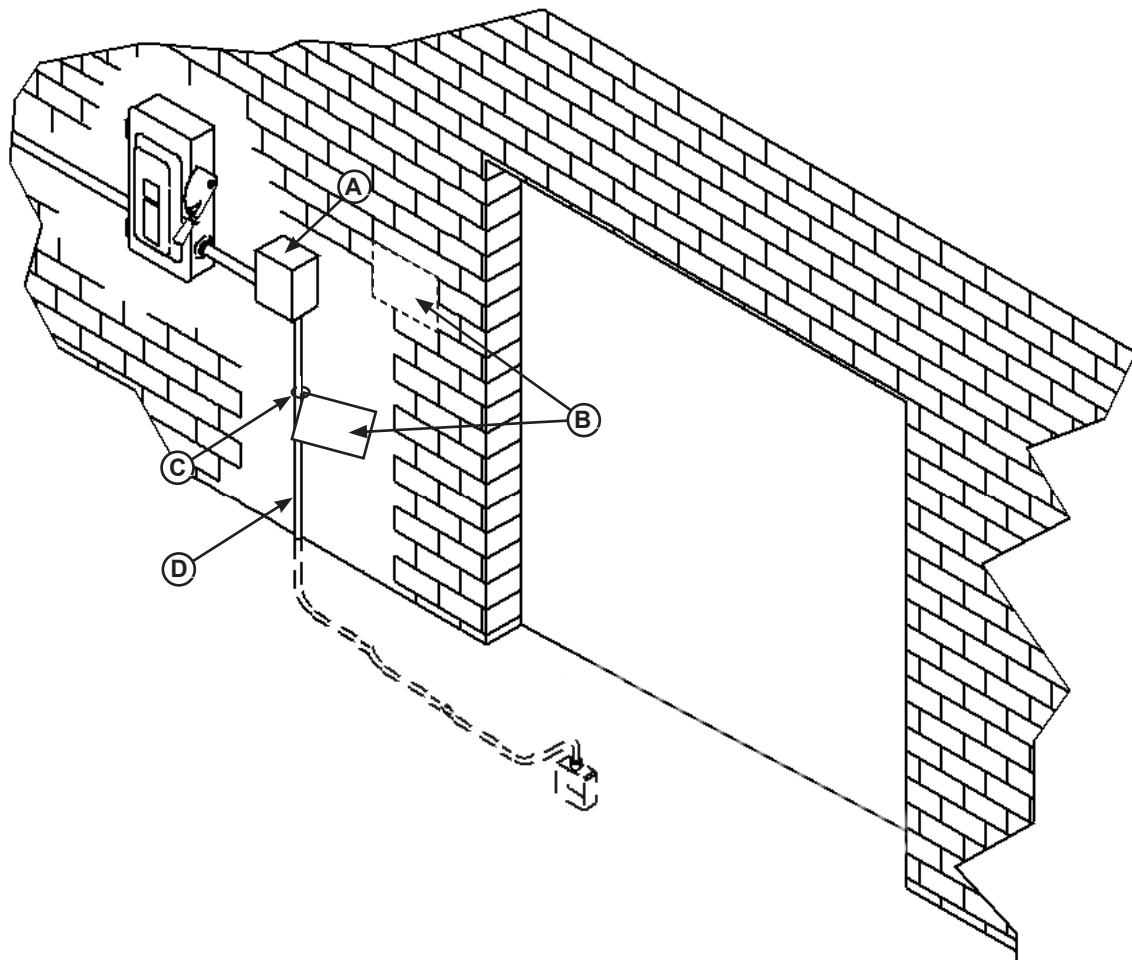


ITEM NO	QTY	PART NUMBER	DESCRIPTION
ENC1	1	2751-0128	ENCLOSURE
PB1	1	0961-0285	GREEN PUSH BUTTON
PB2	1	0961-0286	BLACK PUSH BUTTON
KB1	1	0961-0293	CONTACT BLOCK - 1 N.O.
KB2	1	0961-0295	CONTACT BLOCK - 2 N.O.
----	1	1751-0331	DECAL - DLM
----	1	1751-0332	DECAL - DLM
----	1	1751-0658	DECAL - MCG
----	1	1751-0659	DECAL - MCG

INSTALLATION

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.



A - Control Box

B - Placard

C - Nylon Cable Tie

D - Conduit

Figure 13

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.
2. Turn the main electrical power ON.
3. Raise the leveler platform fully by Pressing and holding the RAISE button.

Note: The platform of a properly operating dock leveler will automatically stop rising when it reaches its maximum full raised height, at which point, the lip extends. When the lip is fully extended, the powerpack will go into pressure relief. (If the lip does not extend correctly, see Troubleshooting section.)

4. Press the LOWER button to lower the platform. As long as there is no vehicle present at the dock, the platform will lower to the full below-dock position as the lip folds.

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

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.

5. Perform steps 3-4 at least four times to purge any air that may be in the hydraulic system and to ensure proper operation.

OPERATION

Operational Precautions

DANGER

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

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

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

WARNING

Only trained personnel should operate the dock leveler.

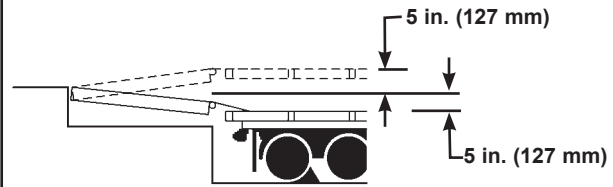
DO NOT use a broken or damaged dock leveler. Make sure proper service and maintenance procedures have been performed on leveler before using.

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 HNL hydraulic dock leveler is designed to compensate for a maximum ± 5 in.* (127 mm) of height difference between the loading dock and the transport vehicles bed. DO NOT use the dock leveler if the transport vehicles bed is more than 5 in. (127 mm) higher or lower than the dock floor.

*Service height may vary with design specifications

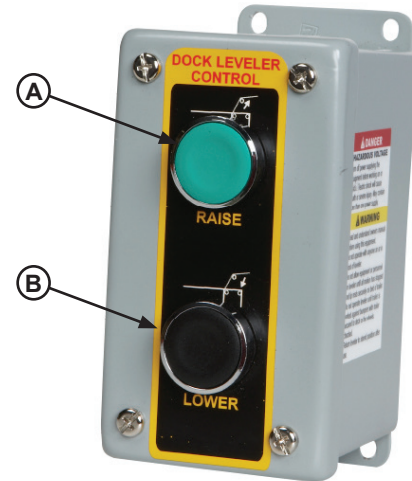
DO NOT overload the dock leveler.

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

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

Ramp Loading/Unloading Instructions

1. Before activating dock leveler, ensure lip avoids contact with transport vehicle sides and cargo. If lip does not lower to transport vehicle bed, 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 the vehicle restraint if available.
4. Before activating dock leveler, ensure lip avoids contact with transport vehicle sides and cargo. If lip does not lower to transport vehicle bed, reposition transport vehicle.
5. Instruct driver to remain at the dock until the loading or unloading process has been completed.
6. Chock the transport vehicle wheels or use the vehicle restraint if available.
7. Extend the platform lip onto transport vehicle as follows:
 - A. Raise the platform by pushing and holding RAISE button (Figure 14).
 - B. Hold the RAISE button until the lip is fully extended, then release the RAISE button and push and hold the LOWER button, to lower unit 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 vehicle bed.
8. Proceed with loading or unloading the transport vehicle.
9. When loading or unloading is finished, raise the platform by pushing and holding RAISE button (A). Hold the RAISE button until the lip folds enough to clear the transport vehicle bed, then release the RAISE button. The lip will fold and the platform will return to the stored position.
10. Remove chocks from transport vehicle wheels or release the vehicle restraint if used.
11. Indicate to driver that truck may leave the dock.



A—RAISE Button

B—LOWER Button

Figure 14

OPERATION

Manual Ramp Loading/Unloading Instructions

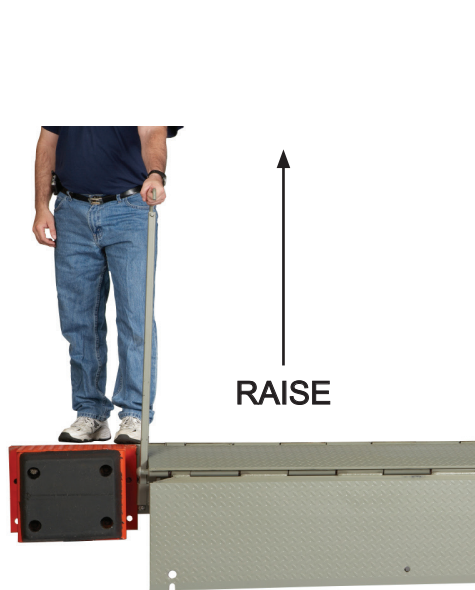


Figure 15

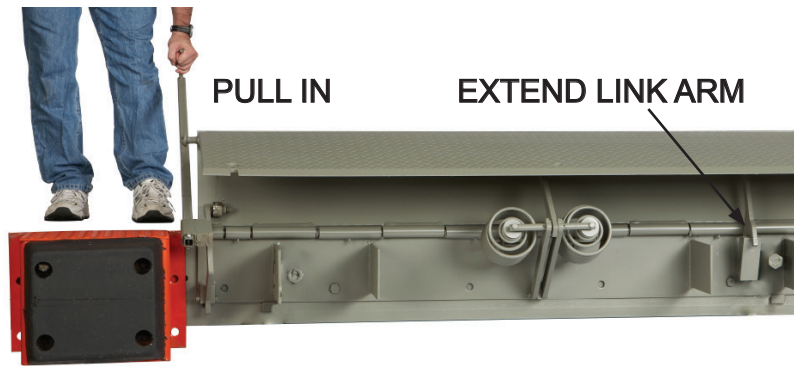


Figure 16



Figure 17

1. Before activating dock leveler, ensure lip avoids contact with transport vehicle sides and cargo. If lip does not lower to transport vehicle bed, 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.
4. If necessary, remove any end loads with the leveler in the stored position.
5. Extend the dock leveler onto the transport vehicle as follows:
 - a. Grasp the captured operating handle and raise to its full extended length. See Figure 15.
 - b. Pull handle toward you, rotating center plate back past vertical. Lip plate extend link arm will engage at this time. See Figure 16.
 - c. Push forward on operating handle against the rivet, rotating leveler out onto transport vehicle bed. See Figure 17.
 - d. Return handle to stored position.
6. Proceed with loading or unloading.
7. When loading or unloading is finished, remove leveler from transport vehicle:
 - a. Grasp the captured operating handle and raise to its full extended length. See Figure 15.
 - b. Pull handle toward you, rotating center plate back past vertical. Lip plate extend link arm will engage at this time. See Figure 16.
 - d. Return handle and leveler to stored position.
8. Remove chocks from transport vehicle wheels, or release the vehicle restraint if used.
9. Indicate to driver that the transport vehicle may leave the dock.

Note: Leveler will automatically return to the stored position if not stored manually as instructed in step 7..

Maintenance Precautions

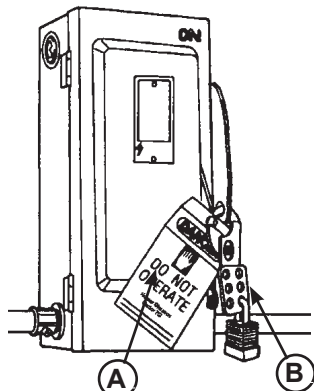


Figure 18

A— Tag Out Device
B —Lock Out Device

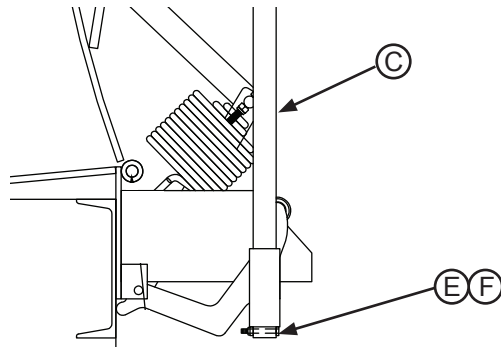


Figure 19

C— Handle
D — Maintenance Prop

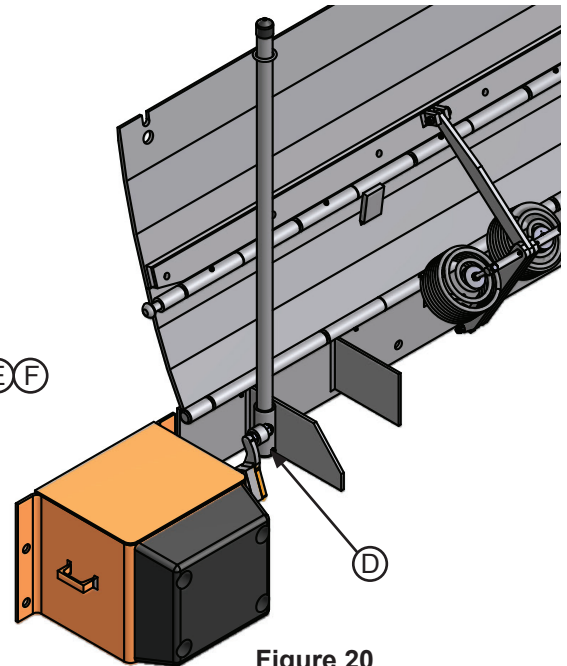


Figure 20

E — Bolt
F— Lock Nut

! 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 (A) and locked out (B) according to OSHA regulations and approved local electrical codes (see Figure 18).

Whenever maintenance is to be performed under the dock leveler, support the dock leveler with the maintenance prop (C). Position the maintenance prop in its support gussets (D). See Figures 19 and 20.

! 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.

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

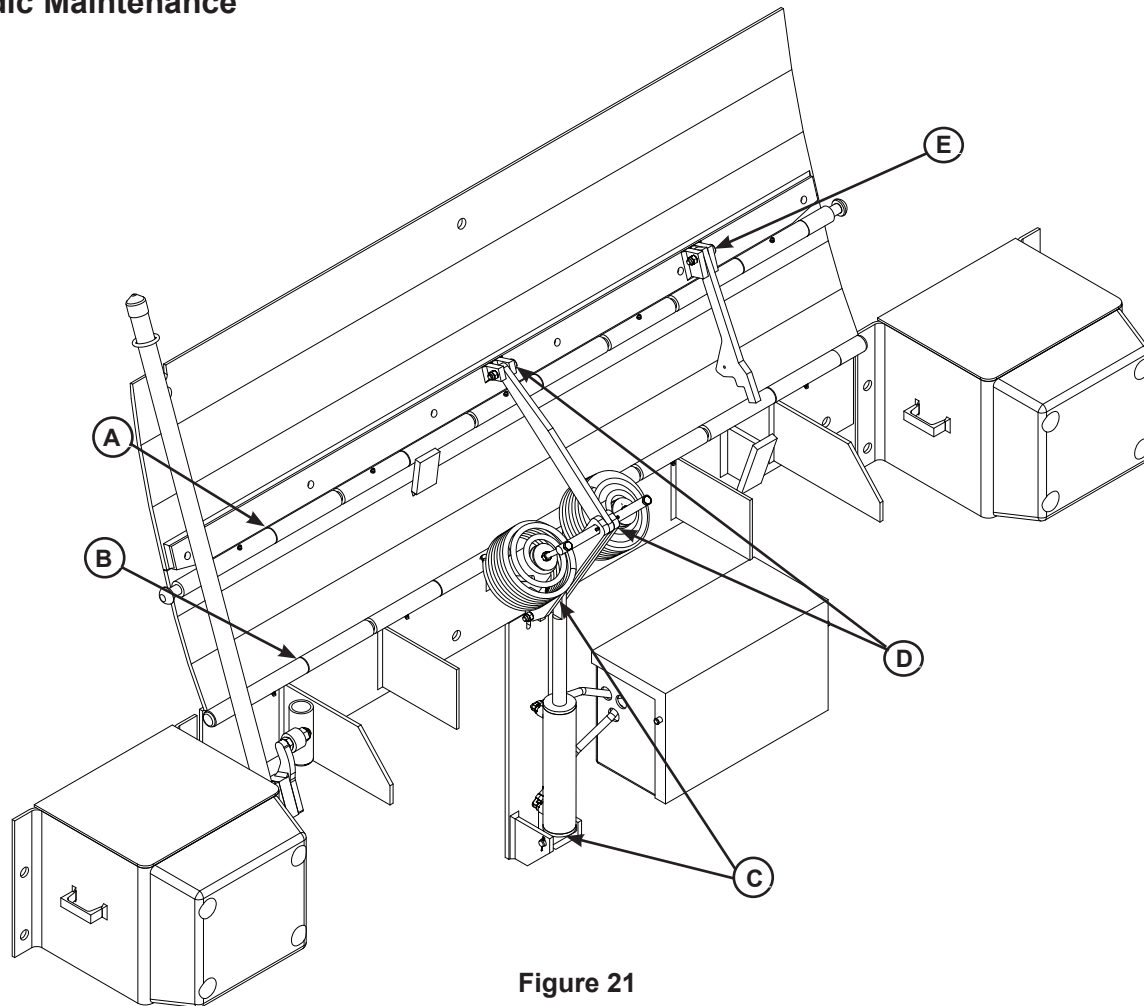


Figure 21

A— Lip Hinge B— Platform Hinge C— Cylinder Trunnions D— Linkage Arm Pivots E— Extend Link Pivot

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
- Mobile 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.
- 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 warning decals and placards. Replace if damaged or missing.

Quarterly Maintenance

- Complete Weekly Maintenance.
- Inspect the following for damage/abnormal wear:
 - Check welds for cracks.
 - Cylinder pins and mounting holes.
 - Lip hinge pins and rear hinge pins.
 - Check J-box for water damage.
 - Inspect hoses, cylinders, fittings and powerpack.
 - Control box and conduit for damage.
 - Bumpers for more than 1" of wear. Replace worn, loose, damaged or missing bumpers.
- Lubricate the following areas with light-weight machine oil (see Figure 21):
 -
 - Cylinder trunnions (**C**)
 - Linkage Arm Pivots (**D**)
 - Extend Link Pivot (**E**)
- Lubricate the following areas with white lithium grease (see Figure 21):
 - Lip hinge grease fittings (**A**)
 - Base hinge grease fittings (**B**)

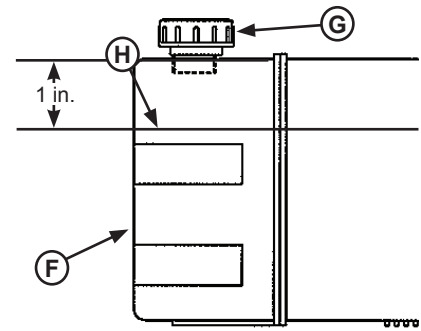


Figure 22

F - Reservoir

H - Fluid Level

G - Breather Cap

- Check reservoir fluid level (**H**, see Figure 22):
 1. Raise the platform fully and engage the maintenance prop in the service position.
 2. Turn OFF all electrical power to the leveler.
 3. Remove cover and breather cap (**G**).
 4. Measure fluid level. The fluid level should be approximately 1 in. (25.5 mm) from top of reservoir (**E**) with platform at the below-dock position.
 5. Add hydraulic fluid if necessary. Use only recommended fluid (see page 32).
 6. Install breather cap and cover.
 7. Turn ON electrical power to the leveler.
 8. Return the platform to the stored position.

Yearly Maintenance

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

NOTICE

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

MAINTENANCE

Extension Spring Adjustment

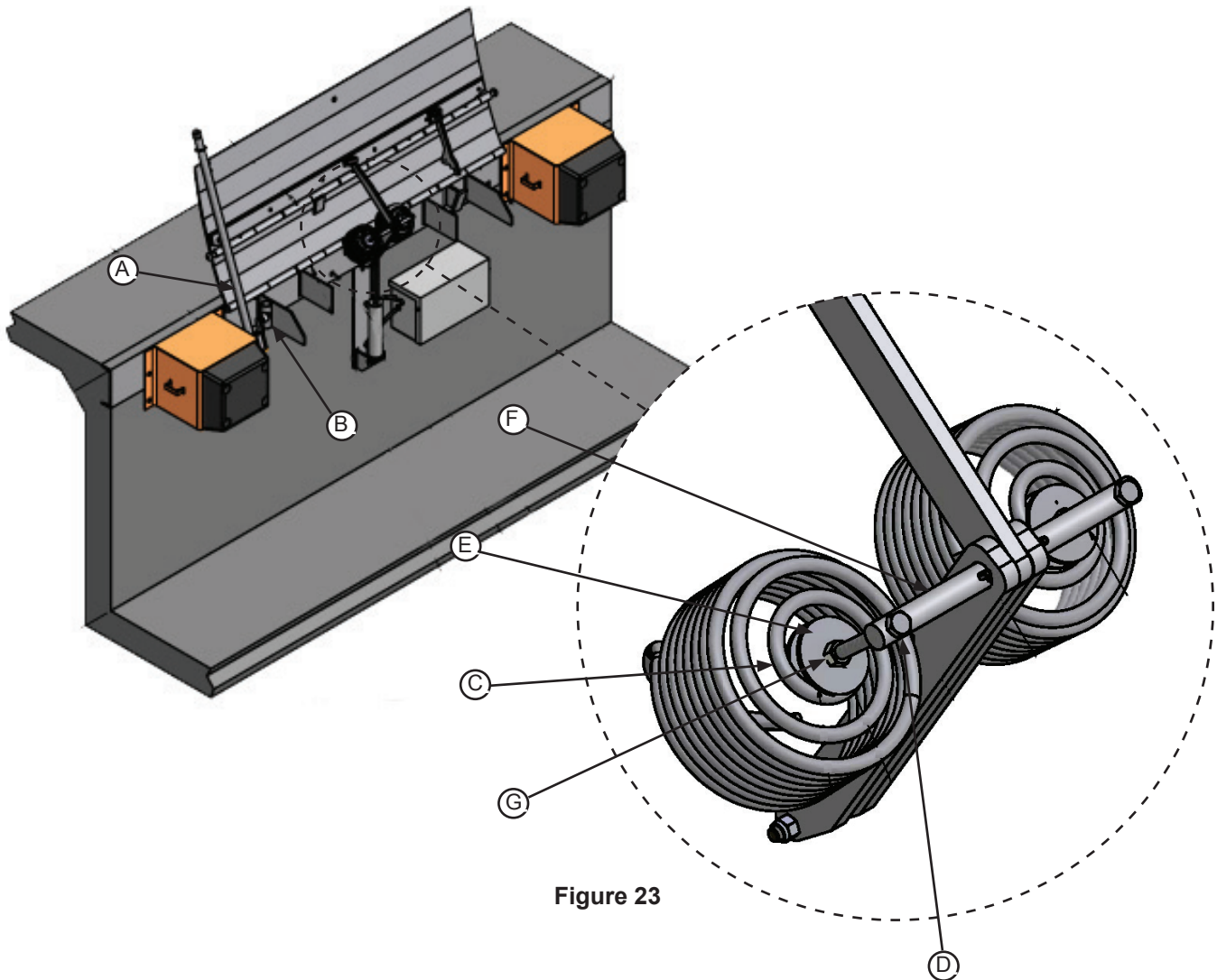


Figure 23

Extension Spring Adjustment Instructions

1. Lift and secure leveler in full upright position and install handle (A) in maintenance prop receiver (B) as shown on page 31.
2. Initial start up tension, the top fender washer (E) should be tightened until the washer is about 1-1/2 inches from the underside of the linkage pin (F).
3. Tighten the jam but (G) by turning the nut clockwise until the jam nut is tight against the top fender washer.
4. Tighten locknut (C) located inside the spring body.
5. Store maintenance handle (A) lower leveler to stored position.
6. Test leveler operation. If spring tension is not sufficient, see step 7.
7. Increase spring tension, repeat step 1. Loosen jam nut (G) by turning the nut clockwise. Once jam nut is loosened, use an open faced wrench to hold the locknut (C) inside the spring body. Tighten the hex bolt (D) by turning clockwise.
8. Store maintenance handle (A) lower leveler to stored position.
9. Test leveler operation. If spring tension is not sufficient, repeat step 7.

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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.

Symptom	Possible Cause	Solution
Unit does not operate properly, or is very difficult to operate.	Debris impacted in the hinge line.	Clean out debris.
	Insufficient lubrication.	Lubricate leveler; see pages 32-33.
	Main springs need more tension or less tension.	Adjust main springs; see page 34.
	Damaged or missing parts.	Repair or replace as needed.
Extend link arm does not latch out lip or unlatch.	Worn or damaged linkage.	Replace worn or damaged parts.
	Extend link arm needs lubrication.	Lubricate extend link arm.

TROUBLESHOOTING

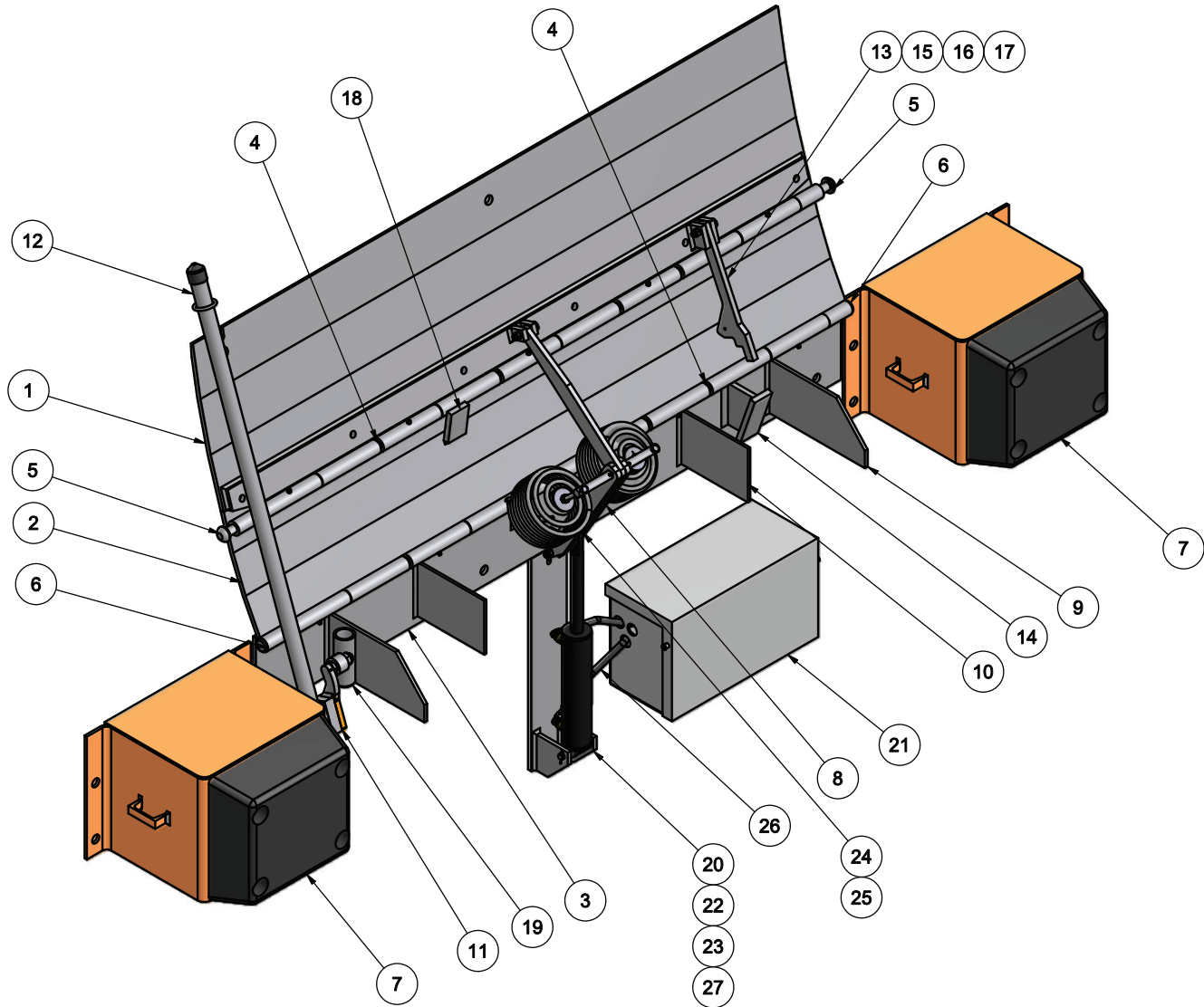
Symptom	Cause	Solution
The unit raises slowly, the motor is extremely noisy, and the hydraulic hoses are vibrating.	Fluid level low. Fluid level should be three inches below the top of the reservoir with all cylinders fully extended.	Check the fluid level in power unit reservoir. If low, add fluid and operate leveler several times to remove any air from the system.
The motor runs but the unit will not raise.	Incorrect wiring to capacitor or faulty capacitor.	Check capacitor wiring (page 25).
	Incorrect wiring to solenoid coil or faulty solenoid coil.	Check coil wiring (page 25) and operation. Coil should be energized to lower leveler and de-energized to raise leveler.
	Incorrect wiring to motor.	Check motor wiring (page 25).
The unit raises very slowly.	Voltage drop due to incorrect wiring size.	Contact Systems, LLC Technical Services with information on distance to electrical subpanel to determine correct wire size.
	Fluid level low. Fluid level should be three inches below the top of the reservoir with all cylinders fully extended.	Check the fluid level in power unit reservoir. If low, add fluid and operate leveler several times to remove any air from the system.
	Debris or corrosion in hinge line.	Remove debris and lubricate hinge line.
The unit will not raise to full dock height.	Fluid level low. Fluid level should be three inches below the top of the reservoir with all cylinders fully extended.	Check the fluid level in power unit reservoir. If low, add fluid and operate leveler several times to remove any air from the system.
	Main springs out of adjustment or beyond service life.	Adjust main springs (page 34) or replace.
Control box does not function, or LOWER button works but RAISE button does not.	Jumper wires, A, B and/or C not installed in control box.	Install jumper wires (page 25).
RAISE button works but LOWER does not.	Incorrect wiring to solenoid coil or faulty solenoid coil.	Check coil wiring (page 25) and operation. Coil should be energized to lower leveler and de-energized to raise leveler.

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

Leveler Components



ITEM	QTY	SIZE/CAPACITY	DESCRIPTION	PART NUMBER (15" LIP)	PART NUMBER (17" LIP)
1	1	6620/25	Lip Plate & Hinge Assembly	7303-0015	7303-0016
	1	6630	Lip Plate & Hinge Assembly	7303-0017	7303-0018
	1	6635	Lip Plate & Hinge Assembly	7303-0019	7303-0020
	1	7220/25	Lip Plate & Hinge Assembly	7303-0021	7303-0022
	1	7230	Lip Plate & Hinge Assembly	7303-0023	7303-0024
	1	7235	Lip Plate & Hinge Assembly	7303-0025	7303-0026
	1	7820/25	Lip Plate & Hinge Assembly	7303-0027	7303-0028
	1	7830	Lip Plate & Hinge Assembly	7303-0029	7303-0030
	1	7835	Lip Plate & Hinge Assembly	7303-0031	7303-0032
	1	8420/25	Lip Plate & Hinge Assembly	7303-0033	7303-0034
	1	8430	Lip Plate & Hinge Assembly	7303-0035	7303-0036

PARTS

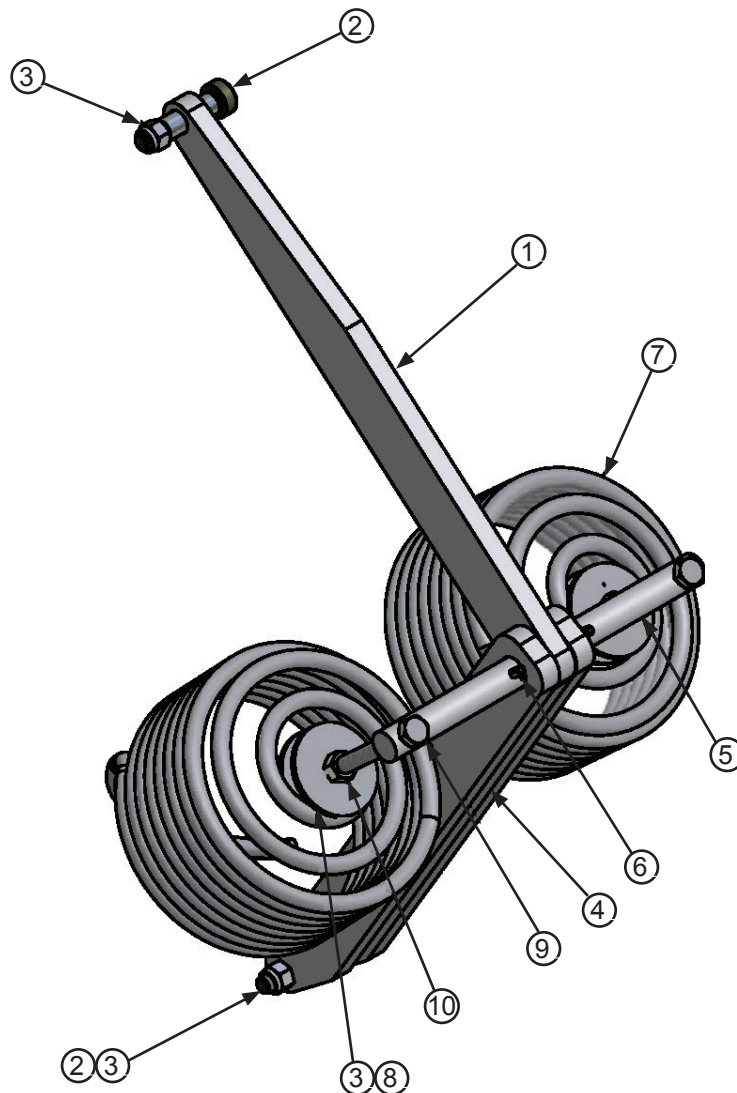
ITEM	QTY	SIZE/CAPACITY	DESCRIPTION	PART NUMBER
2	1	6620/25	Center Plate & Hinge Assembly	7303-0094
	1	6630	Center Plate & Hinge Assembly	7303-0095
	1	6635	Center Plate & Hinge Assembly	7303-0096
	1	7220/25	Center Plate & Hinge Assembly	7303-0165
	1	7230	Center Plate & Hinge Assembly	7303-0097
	1	7235	Center Plate & Hinge Assembly	7303-0098
	1	7820/25	Center Plate & Hinge Assembly	7303-0099
	1	7830	Center Plate & Hinge Assembly	7303-0100
		7835	Center Plate & Hinge Assembly	7303-0101
	1	8420/25	Center Plate & Hinge Assembly	7303-0102
1	8430	Center Plate & Hinge Assembly	7303-0103	
3	1	ALL	Base Plate & Hinge Assembly	Consult Factory
4	2	6620/25/30	Hinge Pin	DOTH-3104
	2	6635	Hinge Pin	DOTH-4312
	2	7220/25/30	Hinge Pin	DOTH-3122
	2	7235	Hinge Pin	DOTH-4313
	2	7820/25/30	Hinge Pin	DOTH-3946
	2	8420/25/30	Hinge Pin	DOTH-3920
5	2	All	Rivet - Button	DOTH-2400
6	2	All	Rivet - Flat	DOTH-2398
7	2	All	4" x 12" x 13" Bumper Block Assembly, Complete	DBBS-3500
8	1	6620/25/30, 7220/25	Spring Linkage Assy - X-Regular	DOTH-3618
	1	6635,7230,7820/25,8420/25	Spring Linkage Assy - X-Hvy Duty	DOTH-3630
	1	7235, 7830/35, 8430	Spring Linkage Assy - 3 Spring	DOTH-3626
9	2	All	X-Gusset	DOTH-3589
10	-	All	Secondary Gussets	DOTH-3319
11	1	66/7220-30	NLIII Operating Link Assembly- Open	DOTH-3834
	1	78/84	NLIII Operating Link Assembly - Closed	DOTH-3696
	1	35K Only	NLIII Operating Link Assembly	DOTH-3697
12	1	66/7220-30	43" Pipe Handle, Self Storing	DOTH-3833
	1	66/7235 - 78/84	60" Pipe Handle	DOTH-3694
13	1	All	HNL Extend Link Arm	DOTH-3874
14	1	All	Extend Link Arm Stop	DOTH-3586
15	2	All	Pivot Block	DOTH-3316
16	1	All	Shoulder Bolt	DOTH-2061
17	1	All	Locknut	DOTH-2137
18	1	All	Lip Stop	DOTH-3734
19	1	All	NLIII Handle Holder	DOTH-3695
20	1	All	Trunnion - Cylinder Mtg.	9391-0011
21	1	All	Powerpack, Complete	9395-0414
22	1	All	Clevis Pin	2101-0341
23	1	All	Cotter Pin	2101-0045
24	1	All	Hex Bolt	DOTH-2044
25	1	All	Locknut	2101-0040
26	1	All	Hydraulic Hose	9904-0097
27	1	All	Hoist Cylinder	0521-0133

PARTS

Extension Spring Assembly - Standard

Model Reference:

- HNL 6620/25
- NNL 6620/25
- HNL 7220/25
- HNL 7220/25

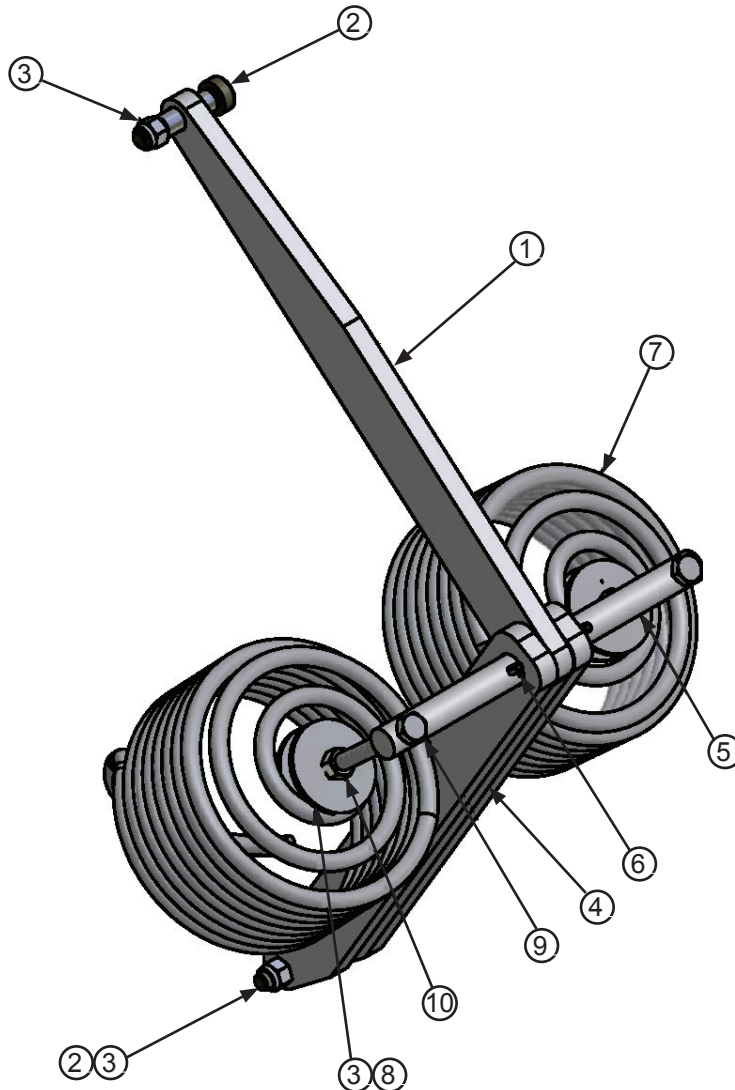


Item	Quantity	Part Number	Description
*	*	DKIT-3618	Extension Spring Kit (Standard Springs) Includes 1-10
1	1	DOTH-3620	Bar - Lip linkage
2	2	DOTH-2061	1-1/2" Shoulder Bolt
3	4	DOTH-2137	Nylon Lock Nut
4	2	DOTH-3621	Bar - Base Linkage
5	1	DOTH-2347	Pin - Linkage
6	2	DOTH-2390	Roll Pin
7	2	DOTH-2520	Spring, Extension, Reg., Painted
8	4	DOTH-2209	Washer - Fender - Zinc Plated
9	2	DOTH-2045	HHCS - Grade 5 - Zinc Plated
10	2	DOTH-2130	Hex Nut - Zinc Plated - Grade 5

Extension Spring Assembly - Heavy Duty

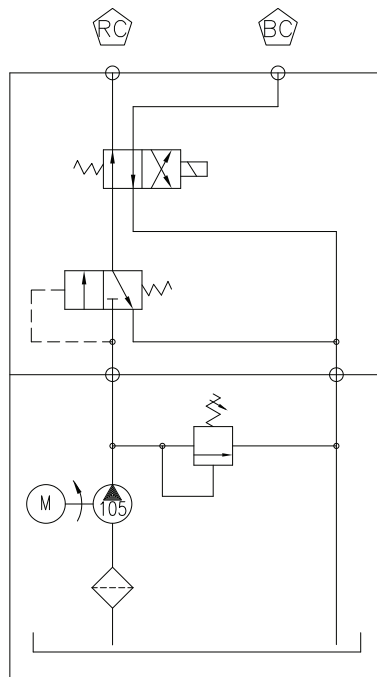
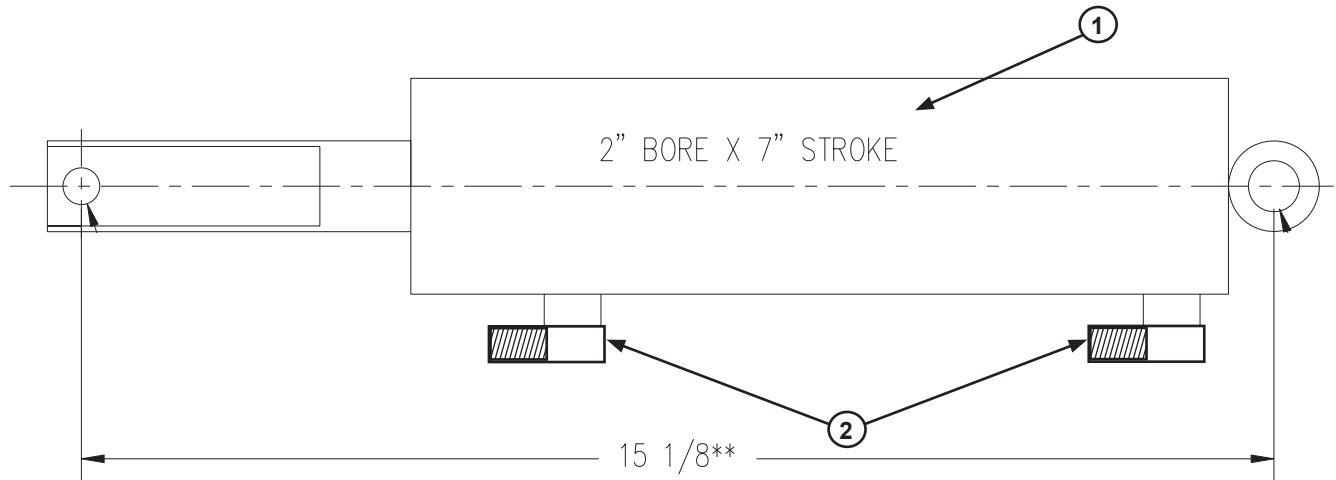
Model Reference:

- HNL 6630
- HNL 6635
- HNL 7230
- HNL 7235
- HNL 7820/25
- HNL 8420/25



Item	Quantity	Part Number	Description
*	*	DOTH-3630	Extension Spring Kit (Heavy Duty Springs) Includes 1-10
1	1	DOTH-3620	Bar - Lip linkage
2	2	DOTH-2061	1-1/2" Shoulder Bolt
3	4	DOTH-2137	Nylon Lock Nut
4	2	DOTH-3621	Bar - Base Linkage
5	1	DOTH-2347	Pin - Linkage
6	2	DOTH-2390	Roll Pin
7	2	DOTH-2521	Spring, Extension, Reg., Painted
8	4	DOTH-2209	Washer - Fender - Zinc Plated
9	2	DOTH-2045	HHCS - Grade 5 - Zinc Plated
10	2	DOTH-2130	Hex Nut - Zinc Plated - Grade 5

Main Cylinder

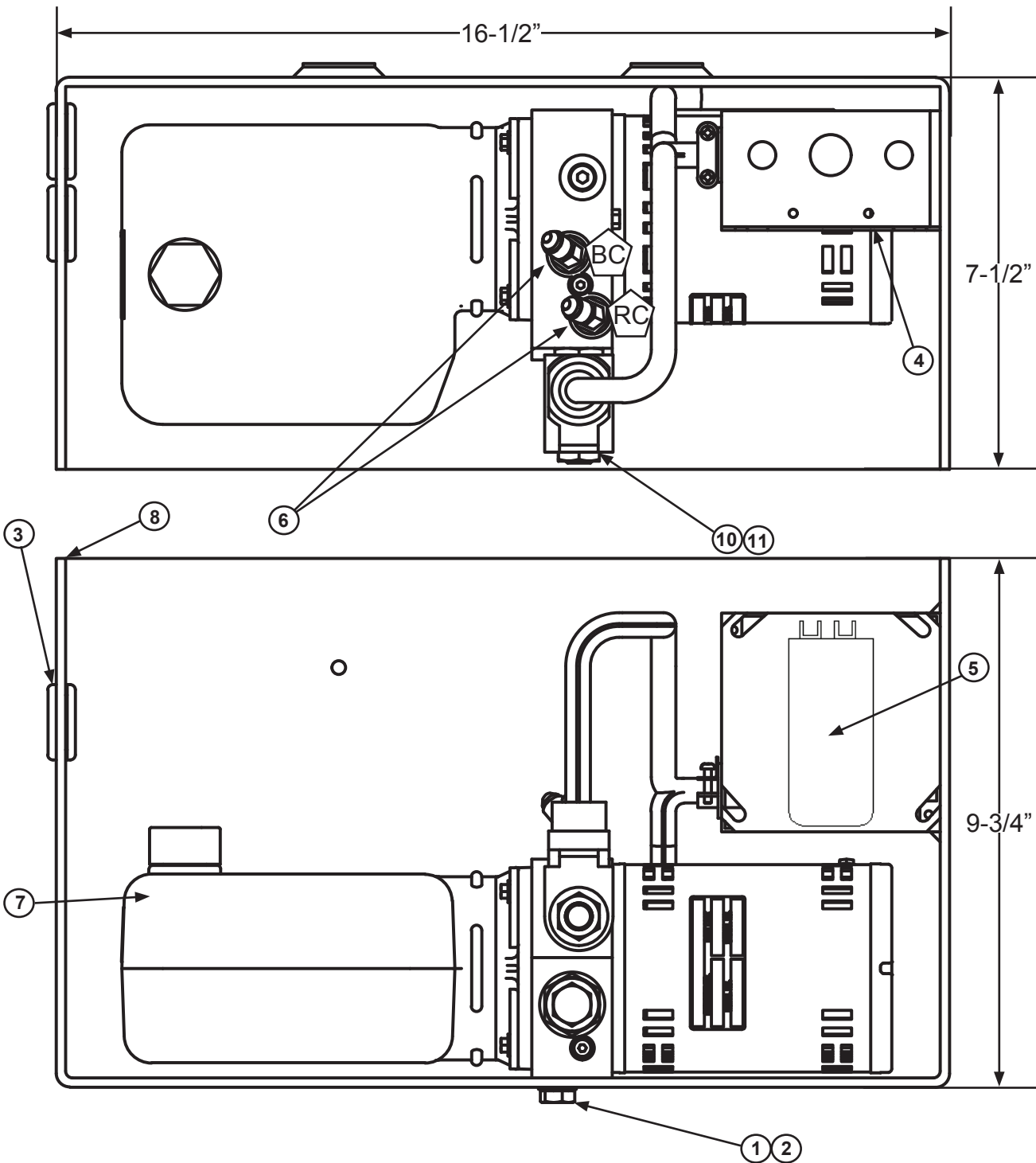


NOTE	DESCRIPTION
BC	Connect to base end of release cylinder
RC	Connect to rod end of release cylinder

Item	Quantity	Part Number	Description
1	1	0521-0133	Hoist Cylinder Assembly
2	2	9301-0200	Fitting, 90 Degree, #4 ORBM to #4 JICM

PARTS

Powerpack Assembly



Note:

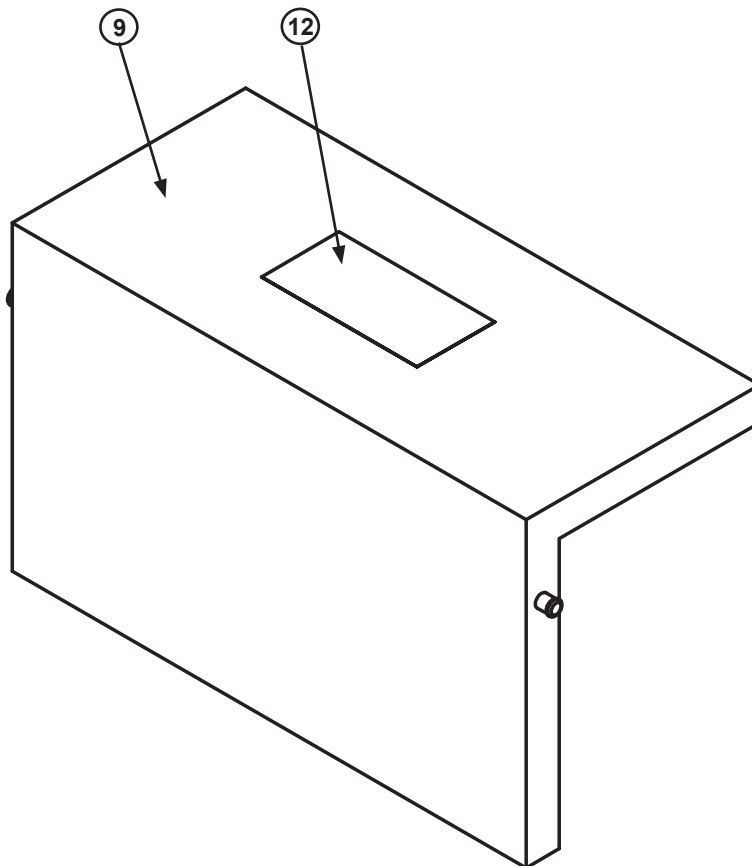
4.8-5.2 FLA (Full Load Amperage)

BC: Blind End of Cylinder

RC: Rod End of Cylinder

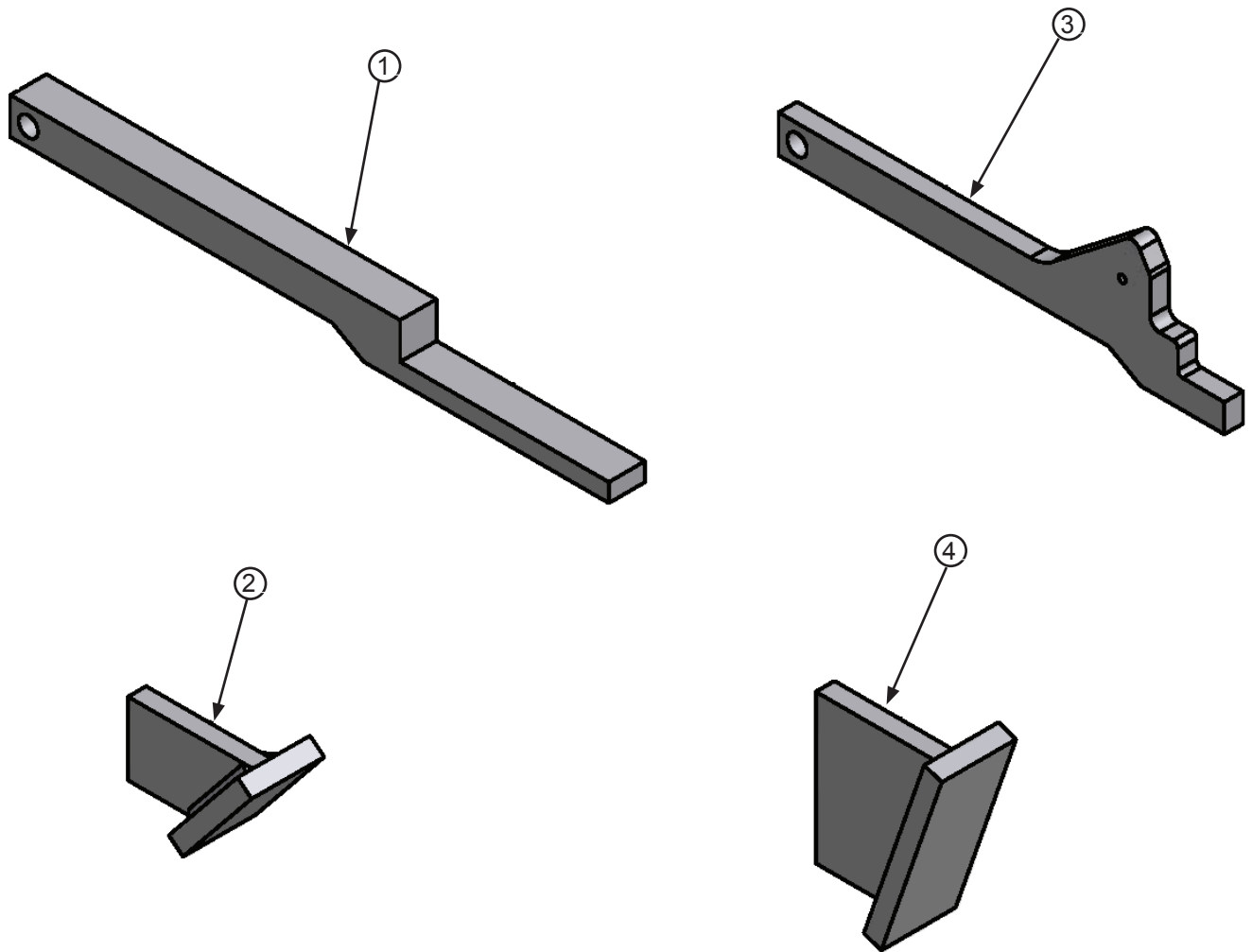
Powerpack Assembly

Item	Quantity	Part Number	Description
	1	9395-0414	Powerpack, Complete (Includes Valve Body and Cover)
1	2	2101-0017	Screw, 3/8-16 UNC x 1, Grade 2, Zinc Plated
2	2	2101-0140	Lock Washer, 3/8
3	2	2401-0001	Grommet, 1-3/8 OD x 3/4 ID
4	1	2751-0016	J-Box Cover, 4 x 4
5	1	3051-0058	Capacitor - Motor Start, 66-77mf - 330V
6	2	9301-0221	Fitting, 45 Degree, #4 ORBM to #4 JICM
7	1	9391-0087	Powerpack, 1/4HP, 0.94GPM, 1-phase, 115v, 725 RV
8	1	9391-0012	Powerpack Mounting Weldment
9	1	9391-0013	Powerpack Cover
10	1	8581-0117	Valve, 4-Way
11	1	8581-0118	Coil, 115v
12	1	1751-0149	Decal, "No Step"
	2	9904-0097	Hydraulic Hose, 1/4", 24". #4 JICF Swivel Ends (not shown)



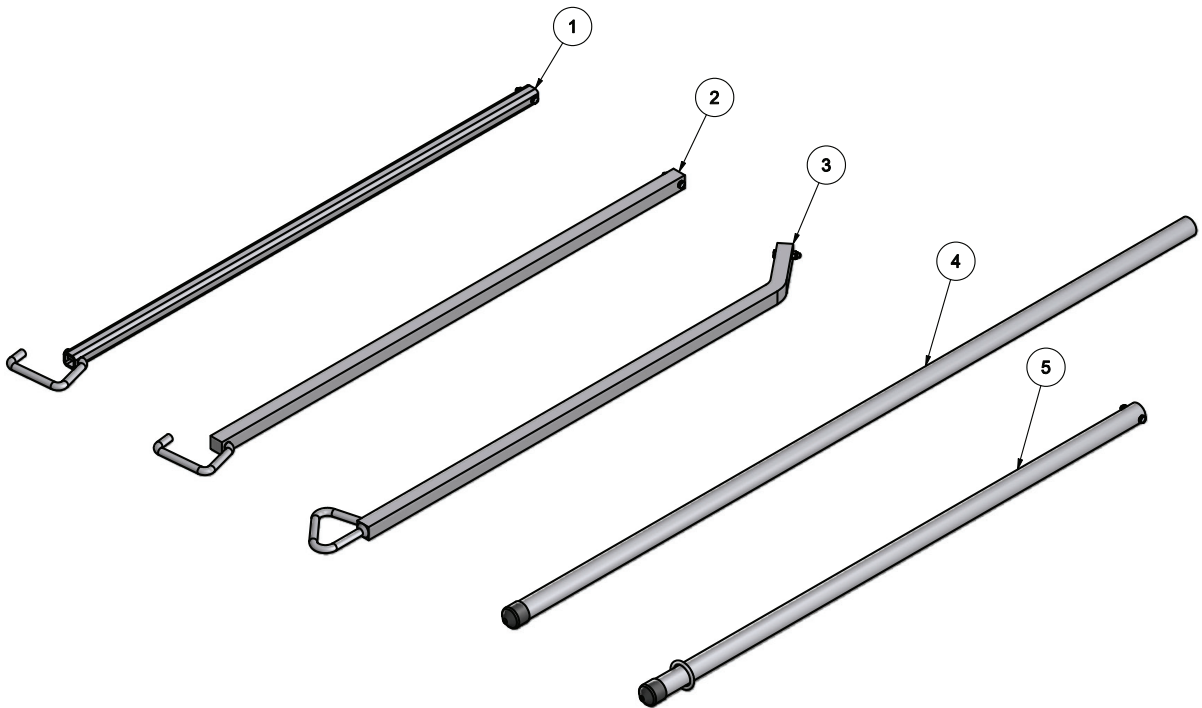
PARTS

NL Extend Link Arms



Item	Quantity	Part Number	Description
1	1	DOTH-3730	Bar - NL Extend Link Arm (pre 09/2005)
2	1	DOTH-3744	NL SB Catch Assembly (pre 09/2005)
3	1	DOTH-3585	Bar - NL Extend Link Arm (09/2005 - present)
4	1	DOTH-3586	NL SB Catch Assembly (09/2005 - present)

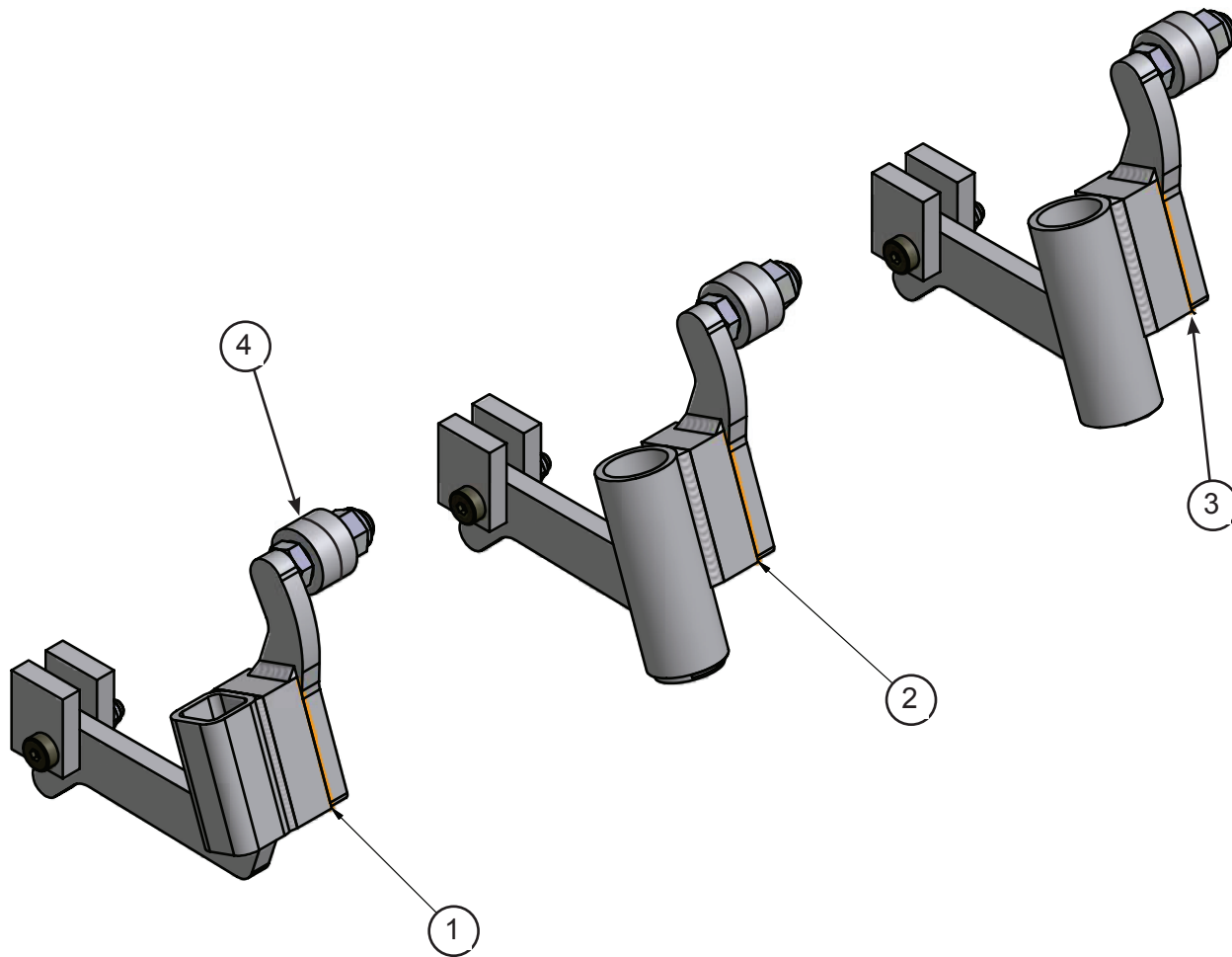
Handles



Item	Quantity	Part Number	Description
1	1	DOTH-3752	NL Handle Assembly (Square Tube, pre-1/12/2015 units)
2	1	DOTH-3769	NL Handle Assembly (Square Solid, pre-1/12/2015 units)
3	1	DOTH-3691	NLII Handle Assembly (Square Solid w/bend, pre-1/12/2015 units)
4	1	DOTH-3694	Pipe Handle 60" (30K+ units, post-1/12/2015)
5	1	DOTH-3833	Pipe Handle 43" Self-Storing (20K & 25K 66" & 72" units, post-1/12/2015)

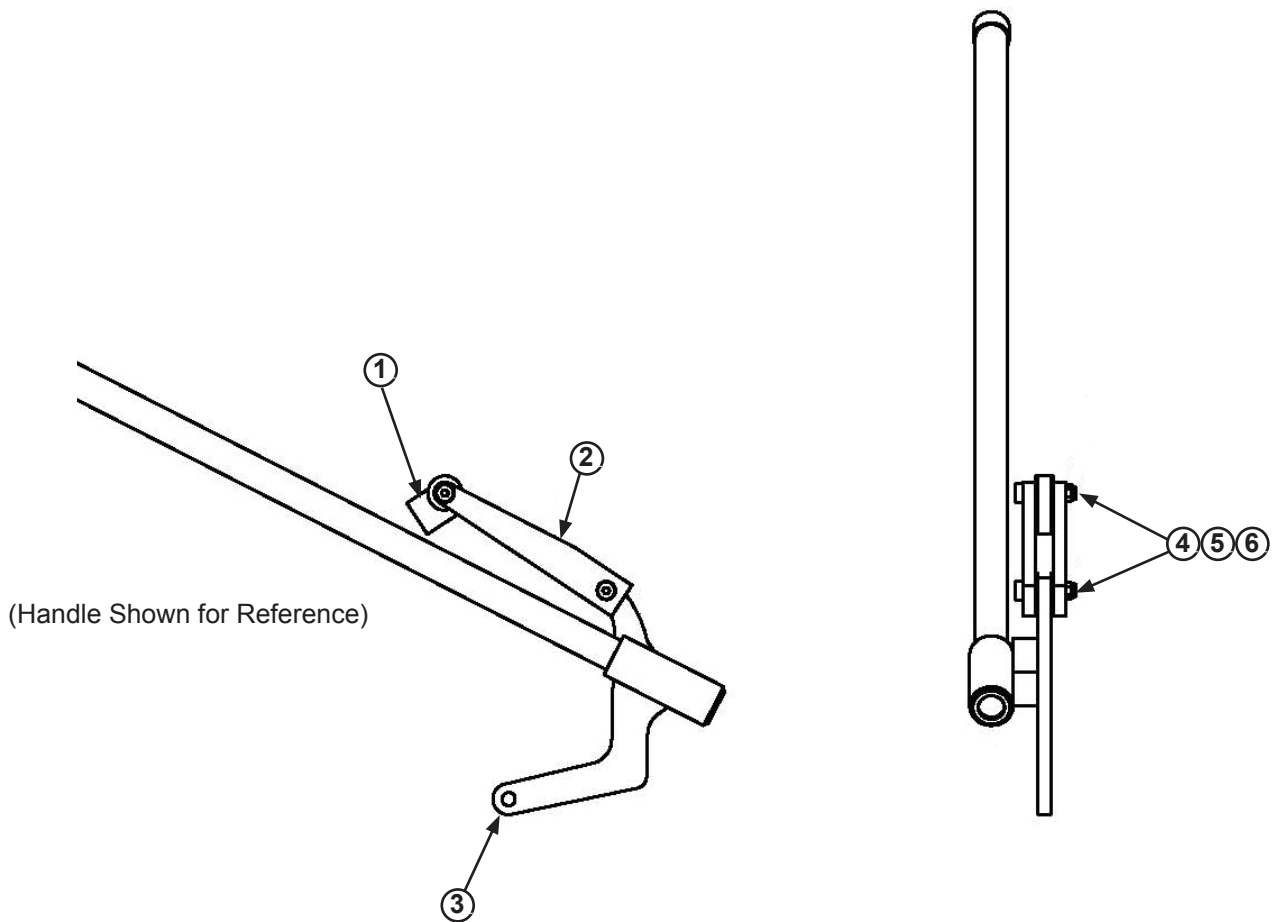
PARTS

NL Operating Links



Item	Quantity	Part Number	Description
1	1	DOTH-3726	NL Operating Link Assembly
2	1	DOTH-3696	NLIII Operating Link Assembly (closed bottom)
		DOTH-3697	NLIII Operating Link Assembly (closed bottom, 35K units up to 78" wide)
3	1	DOTH-3834	NLIII Operating Link Assembly (open bottom for self-storing handle)
4	2	DOTH-2449	Roller Bearing (Included in 1,2 and 3)

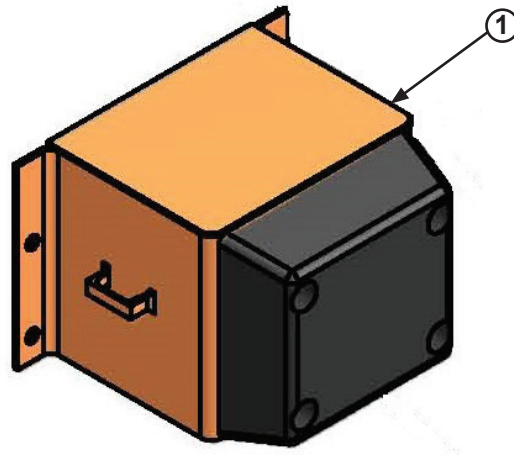
NLIII Operating Link (8435)



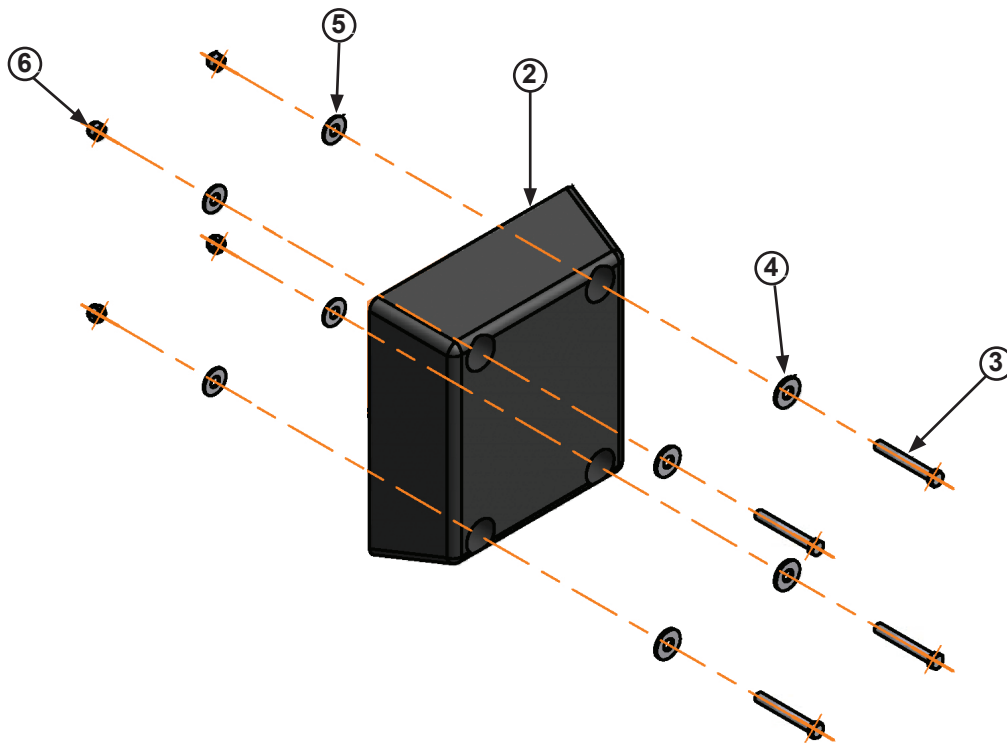
Item	Quantity	Part Number	Description
*	1	DOTH-3871	NLIII Operating Linkage (35K 84" wide units)
1	1	DOTH-3316	Pivot, Base Plate
2	2	DOTH-3317	Bar, Base Plate
3	1	DOTH-3870	NL Operating Link Arm, 35 K
4	2	DOTH-2061	Shoulder Bolt 3/8"-16 UNC 1-1/2" lg
5	2	DOTH-2137	Nut, Lock 3/8"-16
6	4	DOTH-2210	Washer, Flat 1/2"

PARTS

Bumpers - 4" x 12" x 13"

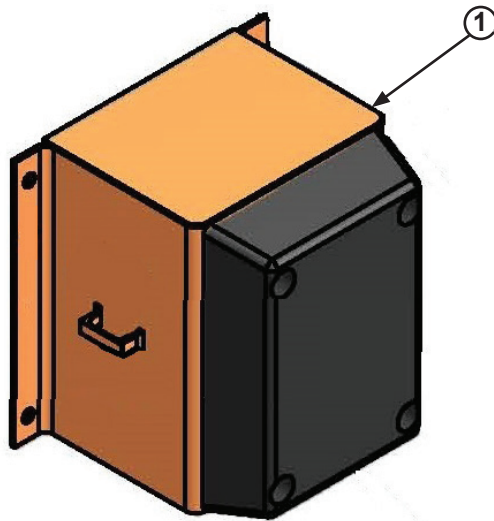


Item	Quantity	Part Number	Description
*	*	DBBS-3500	4" x 12" x 13" Bumper Block Assembly, Complete
1	1	DOTH-3537	12" Bumper Block Weldment

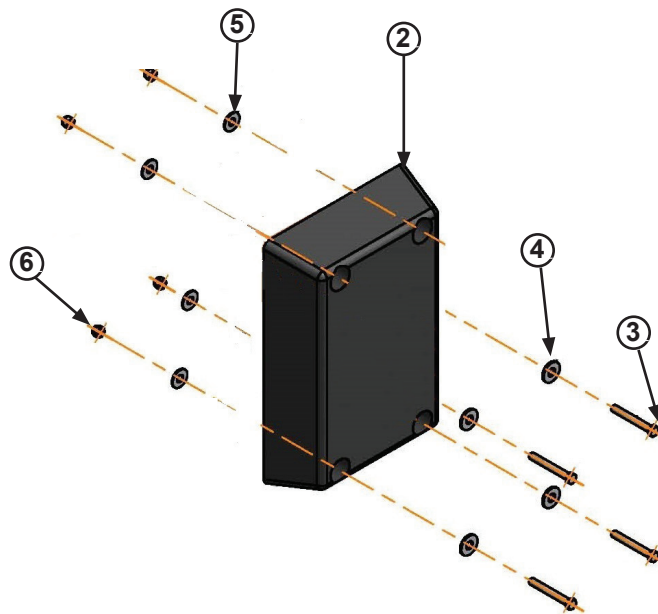


Item	Quantity	Part Number	Description
*	*	DKIT-3540	Rubber Bumper and Hardware Kit
2	1	DOTH-3505	Molded Rubber Bumper 4" x 12" x 13"
3	4	DOTH-2056	Hex Head Cap Screw
4	4	DOTH-2208	Washer - Flat - Zinc Plated
5	4	DOTH-2259	Washer - Spilt Lock
6	4	DOTH-2140	Nut - Nylon Lock

Bumpers - 4" x 10" x 18" (optional)



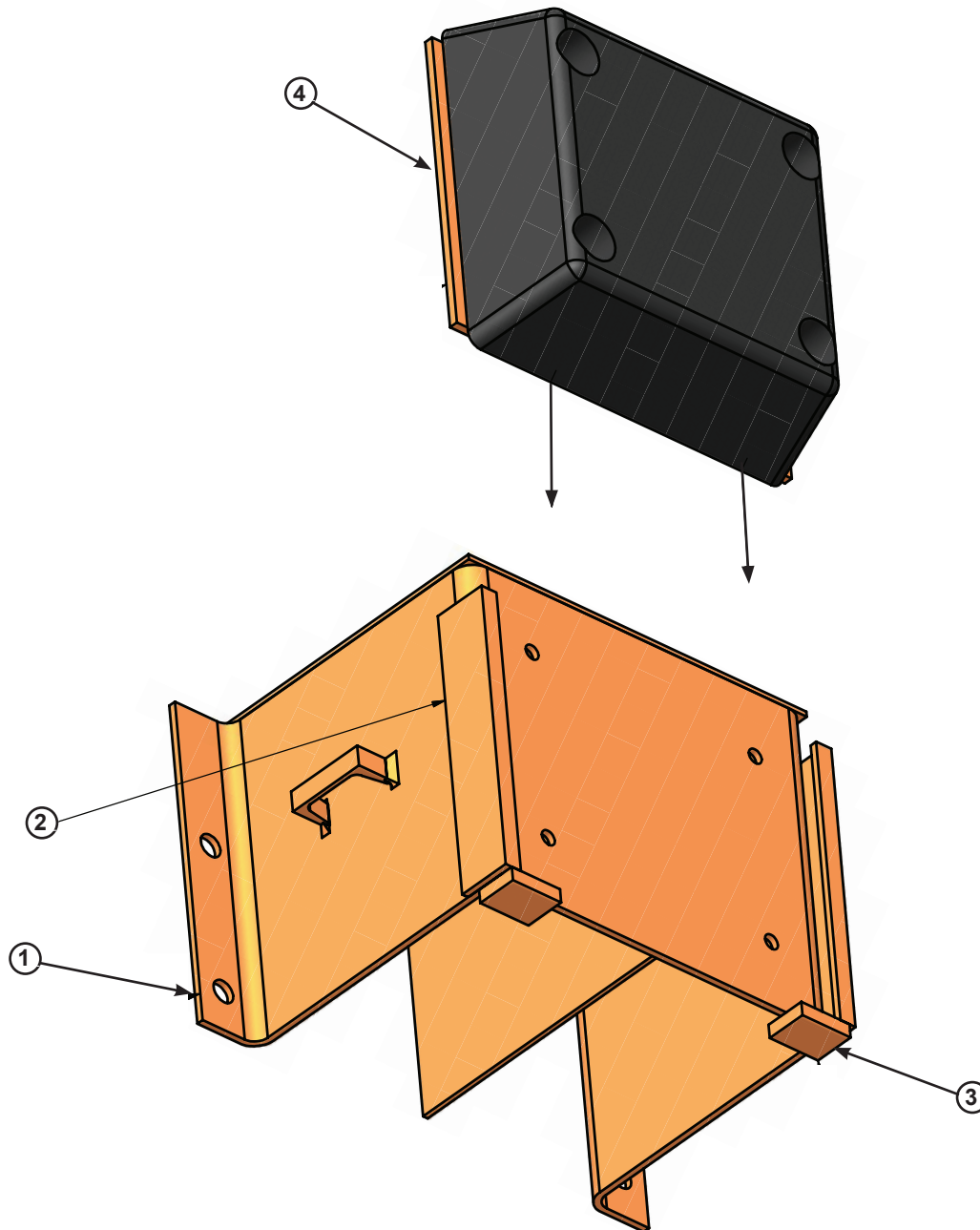
Item	Quantity	Part Number	Description
*	*	DBBS-3506	4" x 10" x 18" Bumper Block Assembly, Complete
1	1	DOTH-3509	18" Bumper Block Weldment



Item	Quantity	Part Number	Description
*	*	DKIT-3541	Rubber Bumper and Hardware Kit
2	1	DOTH-3559	Molded Rubber Bumper 4" x 10" x 18"
3	4	DOTH-2056	Hex Head Cap Screw
4	4	DOTH-2208	Washer - Flat - Zinc Plated
5	4	DOTH-2259	Washer - Spilt Lock
6	4	DOTH-2140	Nut - Nylon Lock

PARTS

Bumpers - 12" Sliding (optional)



Item	Quantity	Part Number	Description
*	*	DBBS-3512	12" Sliding Bumper Block Assembly, Complete
1	1	DOTH-3537	12" BB Weldment
2	2	DOTH-3514	Angle - 12" BB Slide
3	2	DOTH-3515	Bar - BB Sliding Stop
4	1	DOTH-3517	12" Sliding BB Plate w/Rubber

Customer Information

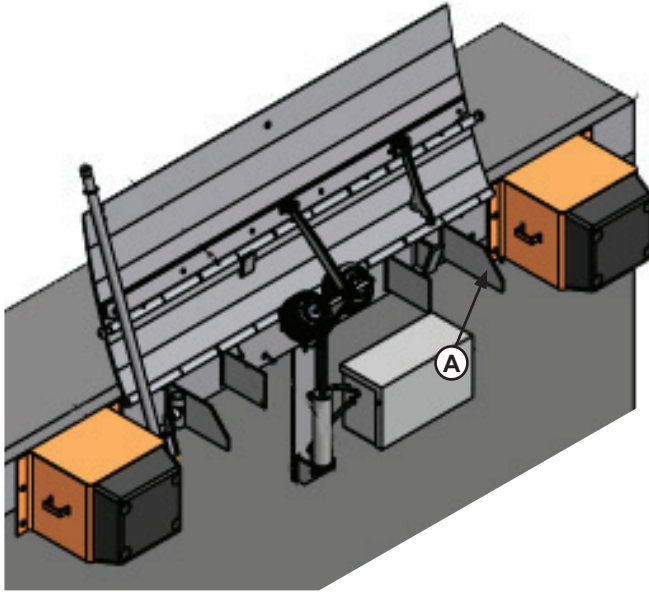


Figure 24

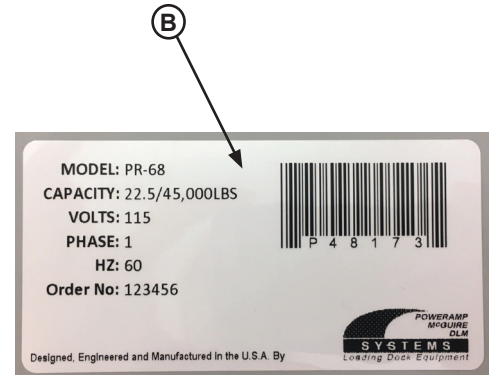


Figure 25

NOTE: Refer to Figure 24 for orientation of dock leveler and Figure 25 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.