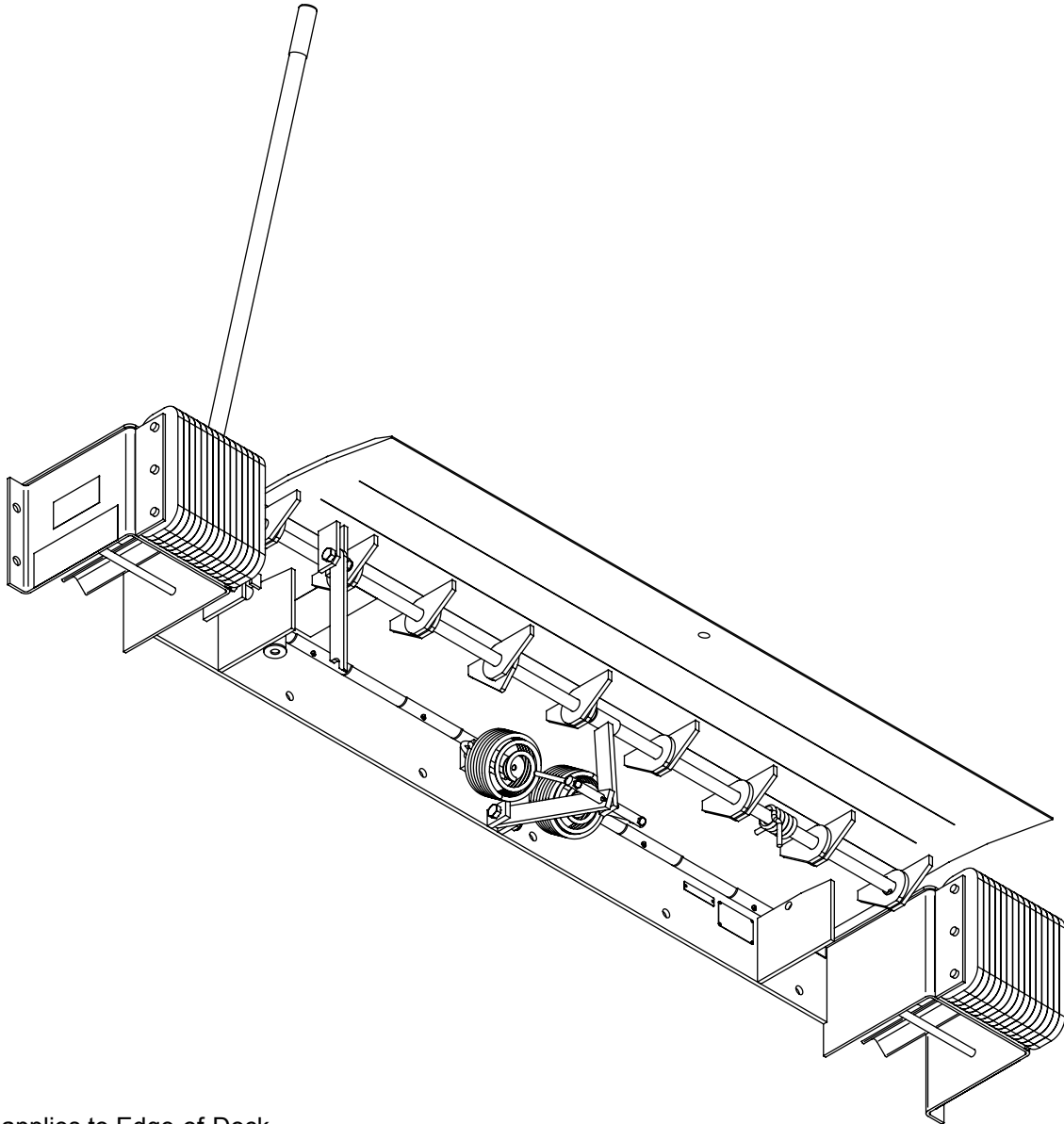


# Edge-of-Dock Mechanical Dock Levelers



This manual applies to Edge-of-Dock levelers manufactured beginning December 2010 with the serial numbers 61000001 and higher.

## **▲ WARNING**

*Do not install, operate or service this product unless you have read and understand the Safety Practices, Warnings, Installation and Operating Instructions contained in this User's Manual. Failure to do so could result in death or serious injury.*

## **User's Manual** Installation, Operations, Maintenance and Parts

Part No. 6007631H

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## INTRODUCTION

Welcome and thank you for choosing this dock leveler.

This User's Manual contains information that you need to safely install, operate and maintain the dock leveler. It also contains a complete parts list and information about ordering replacement parts. Please keep and read this User's Manual before using your new dock leveler.

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## SAFETY SIGNAL WORDS

You may find safety signal words such as DANGER, WARNING, or CAUTION throughout this User's Manual. Their use is explained below:



*This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.*

### **▲ DANGER**

*Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.*

### **▲ WARNING**

*Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.*

### **▲ CAUTION**

*Indicates a potentially hazardous situation which, if not avoided may result in minor or moderate injury.*

### **NOTICE**

*Notice is used to address practices not related to personal injury.*

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# SAFETY PRACTICES

## **▲ WARNING**

***Read these safety practices before installing, operating or servicing the dock leveler. Failure to follow the safety practices could result in death or serious injury.***

If you do not understand the instructions, ask your supervisor to explain them to you or contact your local distributor.

Before doing any maintenance or repair on the dock leveler **SECURE WITH THE MAINTENANCE STRUT**. See Fig. 20.

## **OPERATION**

Operating range is 5" above to 5" below dock. Effective working range is 3" above to 3" below dock. Verify with the manufacturers of all equipment to be used on your specific edge-of-dock leveler, to ensure that operating equipment at all specified grades are within safe operation. Do not operate any equipment that will not safely operate at any of the grades shown on page 5 at either ramp or lip.

Use of dock leveler is restricted to trained operators. Follow procedures on placards posted near dock leveler. Call 972-466-0707 or 800-525-2010 for replacement placards, warning labels or owner's manual.

Never exceed the rated capacity of the dock leveler.

Do not operate the dock leveler with equipment, material or people on the ramp or lip.

Do not operate the dock leveler when anyone is in front of it unless they are securing the **MAINTENANCE STRUT**.

Stay clear of the dock leveler when it is moving.

Never exceed 5 mph when driving on leveler.

Never travel on leveler unless lip is securely on vehicle floor. Never travel on leveler while in rest position.

Never travel on the bumper blocks or over the edges of the leveler.

Keep both hands firmly on the hand lever while raising or lowering the dock leveler. Keep other body parts clear of hand lever travel path while raising or lowering the dock leveler. Do not use legs or feet to move or hold hand lever.

Do not use the dock leveler if it looks broken or does not seem to work right. Tell your supervisor it needs repair right away.

Visually check that lip is supported by the vehicle bed before driving on ramp.

Chock vehicle wheels or lock vehicle in place with a vehicle restraining device, and set brakes before loading or unloading.

Do not stand in the driveway between the dock leveler and a backing vehicle.

Move all equipment, material or people off dock leveler, and store dock leveler at dock level before allowing the vehicle to move away from the dock.

Do not use a fork truck or other material handling equipment to lift or lower the ramp.

Do not attempt to lift the dock leveler ramp or lip by any means other than that described in the operating procedures contained in this manual. If the dock leveler does not operate correctly when using the operating procedures contained in this manual, **DO NOT USE THE DOCK LEVELER**. Contact your local distributor for maintenance and service repair.

Before chocking wheels or engaging vehicle restraint, dump air from air ride suspensions and set parking brakes.

Keep feet clear of the underside of ramp and lip when raising and lowering dock leveler.

## **INSTALLATION, MAINTENANCE AND SERVICE**

Place barricades on the dock floor around the dock leveler final location and in the driveway in front of the dock leveler final location while installing, maintaining or repairing the dock leveler.

Do not operate the dock leveler when anyone is in front of it unless they are positioning the **MAINTENANCE STRUT**.

**PUT THE MAINTENANCE STRUT IN PLACE** before doing any maintenance or repair under the dock leveler. See Fig. 20.

---

# OWNER'S RESPONSIBILITIES

The owner's responsibilities include the following:

The owner should recognize the inherent danger of the interface between dock and transport vehicle. The owner should, therefore, train and instruct operators in the safe use of dock leveling devices.

When a transport vehicle is positioned as closely as practical to a dock leveling device, there shall be at least 4" of overlap between the front edge of the lip and the edge of the floor or sill of the transport vehicle.

Nameplates, cautions, instructions and posted warnings shall not be obscured from the view of operating or maintenance personnel for whom such warnings are intended. Warnings which are worn or non-legible should be replaced.

Manufacturer's recommended periodic maintenance and inspection procedures in effect at date of shipment shall be followed, and written records of the performance of these procedures should be kept.

Dock leveling 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 the manufacturer's authorized representative, and repaired as needed before being placed back in service.

The owner shall see that all nameplates and caution and instruction markings or labels are in place and that the appropriate operating and maintenance manuals are provided to users.

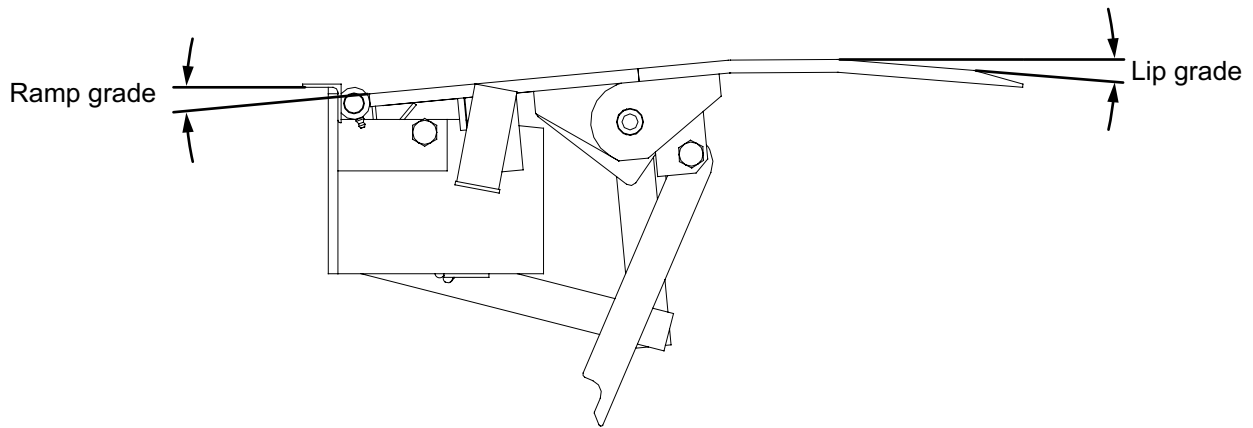
Modifications or alterations of dock leveling devices shall be made only with written permission of the original manufacturer.

When industrial vehicles are driven on and off transport vehicles during the loading and unloading operation, the brakes on the transport vehicle shall be applied and wheel chocks or positive restraints that provide the equivalent protection of wheel chocks engaged.

The dock leveler should never be used outside its vertical working range or vertical lifting range or outside the manufacturer's labeled rated capacity. It must also be compatible with the loading equipment and other conditions relating to the dock.

# RAMP LIP GRADES

Fig. 1



| VEHICLE BED POSITION (in)                 |     | EOD GRADE (%) |       |
|---|-----|---------------|-------|
|   |     | RAMP          | LIP   |
| A<br>O<br>V<br>E<br>D<br>O<br>C<br>K      | 5.0 | 27.9          | -1.5  |
|   | 4.5 | 25.2          | -1.6  |
|   | 4.0 | 22.5          | -1.6  |
|   |     |               |       |
|   | 3.5 | 19.8          | -1.7  |
|   | 3.0 | 17.2          | -1.7  |
|   | 2.5 | 14.5          | -1.7  |
|   |     |               |       |
|   | 2.0 | 11.8          | -1.7  |
|   | 1.5 | 9.2           | -1.7  |
| B<br>E<br>L<br>O<br>W<br>D<br>O<br>C<br>K | 1.0 | 7.6           | -2.4  |
|   | 0.5 | 6.5           | -3.5  |
|   | 0.0 | 5.4           | -4.6  |
|   | 0.5 | 4.3           | -5.7  |
|   | 1.0 | 3.2           | -6.8  |
|   | 1.5 | 2.1           | -7.9  |
|   | 2.0 | 0.9           | -9.1  |
|   |     |               |       |
|   | 2.5 | -0.2          | -10.2 |
|   | 3.0 | -1.3          | -11.3 |
| D<br>O<br>C<br>K                          | 3.5 | -2.4          | -12.4 |
|   |     |               |       |
|   | 4.0 | -3.5          | -13.5 |
|   | 4.5 | -4.6          | -14.6 |
|   | 5.0 | -5.7          | -15.7 |

**▲ WARNING**

Verify with the manufacturers of all equipment to be used on your specific edge-of-dock leveler, to ensure that operating equipment at all specified grades are within safe operation. Do not operate any equipment that will not safely operate at any of the above stated grades at either ramp or lip. Failure to follow this warning could result in death or serious injury.

# INSTALLATION

## DOCK MOUNTING STEEL REQUIREMENTS

### **▲ WARNING**

*Before installing the dock leveler, read and follow Safety Practices on page 3. Place barricades around pit on dock floor and drive while installing, maintaining or repairing dock leveler.*

*All anchor bolts used must be installed in accordance with the manufacturer's instructions. Do not install anchor bolts in cracks or expansion joints in concrete. Installation in cracks or expansion joints may cause the anchors to come loose and pull out. All anchor bolt lengths must suit local codes and conditions. Type and depth of concrete will determine type and length of anchor bolts required. Use of improperly installed anchor bolts could result in death or serious injury.*

1. The face of the dock must be equipped with a minimum of 8" channel with anchor straps on 10" centers. **MOUNTING ON CURB ANGLE ALONE IS NOT RECOMMENDED.**
2. There are four main mounting methods: installation with curb channel, transition plate, face plate and **with** transition plate, and formed angle. Follow the section that addresses your installation and then continue to the GENERAL INSTALLATION section on page 11 of this manual.

## INSTALLATION WITH CURB CHANNEL

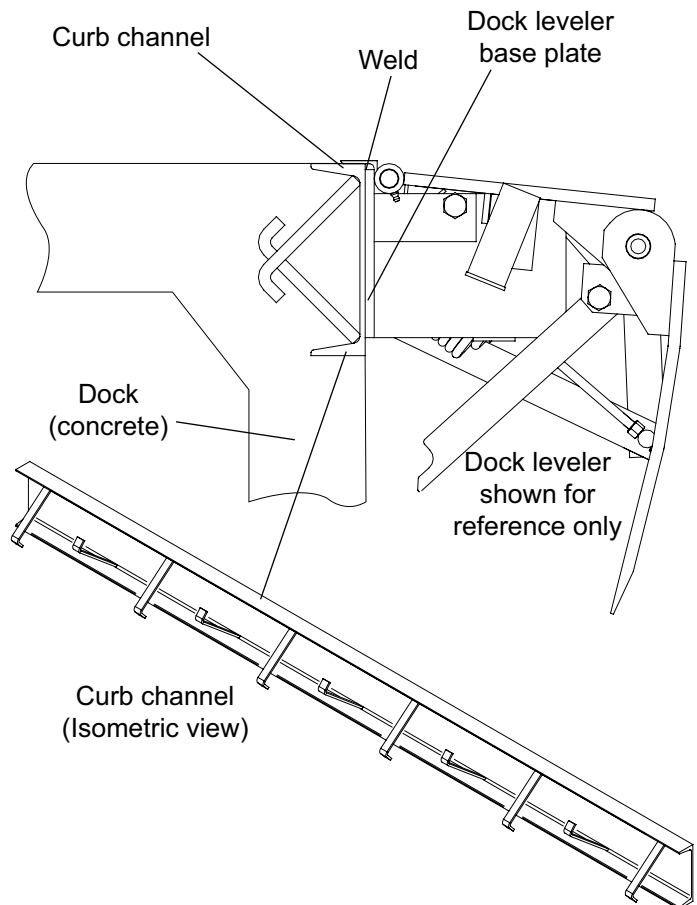
1. If curb channel is not already present, position it as shown in Fig. 2. Pour concrete.

### **NOTE:**

Concrete preparation should provide adequate depth and width to accommodate the channel with sound concrete foundation. Tie in rebar with anchor straps. Check local building codes for further information.

2. Ensure all concrete is thoroughly cured before installation and use of dock leveler.
3. Proceed to GENERAL INSTALLATION section on page 10 of this manual.

Fig. 2



## INSTALLATION WITH TRANSITION PLATE

### NOTE:

A transition plate is required whenever the curb channel is less than the 8" recommended by 4Front Engineered Solutions, Inc., or whenever the edge of dock is to be mounted above dock level.

1. Lay the transition plate on top of dock.
2. If using a **beveled transition plate**, position transition plate flush with the front of dock edge and skip to step 6. See Fig. 3.
3. If using a **kinked transition plate**, position transition plate flush with the front of dock edge and mark the location of the back of the transition plate on floor of dock. See Fig. 4.
4. Slide transition plate forward 2" and mark location of the back of the transition plate on floor of dock.
5. Remove transition plate and cut a groove in the concrete 1/2" deep between lines marked in steps 3 and 4. Position plate flush with the front of the dock edge.
6. Tack weld transition plate to curb angle nosing in at least four places.
7. Install 5/8" dia x 5" long (supplied by others) wedge anchor bolts in the transition plate. When bolts are tight in the concrete. Torque to manufacturer's specification. Tack in place. Remove nuts, cut bolts flush with top of transition plate and plug weld bolts to plate. See page 12 for wedge anchor installation instructions.

### ⚠ WARNING

**All anchor bolts must be installed in accordance with the manufacturer's instructions. Improper installation could result in death or serious injury.**

**Do not install anchor bolts in cracks or expansion joints in concrete. Installation in cracks or expansion joints may cause the anchors to come loose and pull out. Use of improperly installed anchor bolts could result in death or serious injury.**

### NOTE:

All anchor bolt lengths must meet local codes and conditions. Type and depth of concrete will determine type and length of anchor bolts required.

Fig. 3

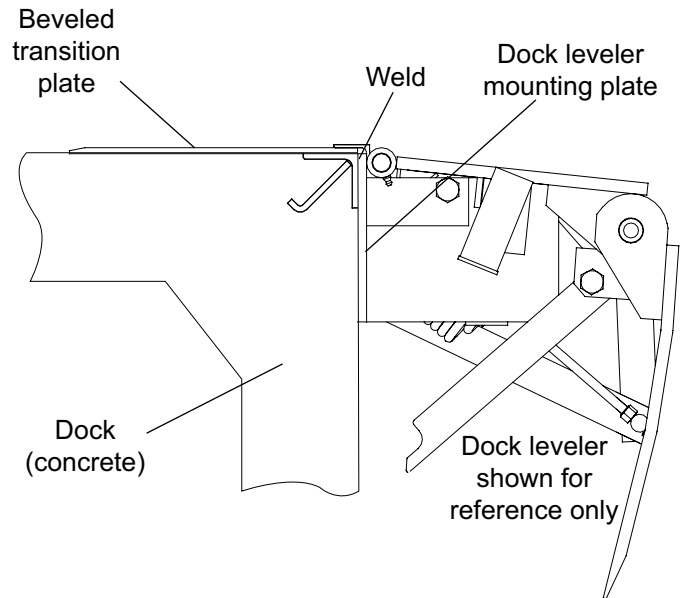
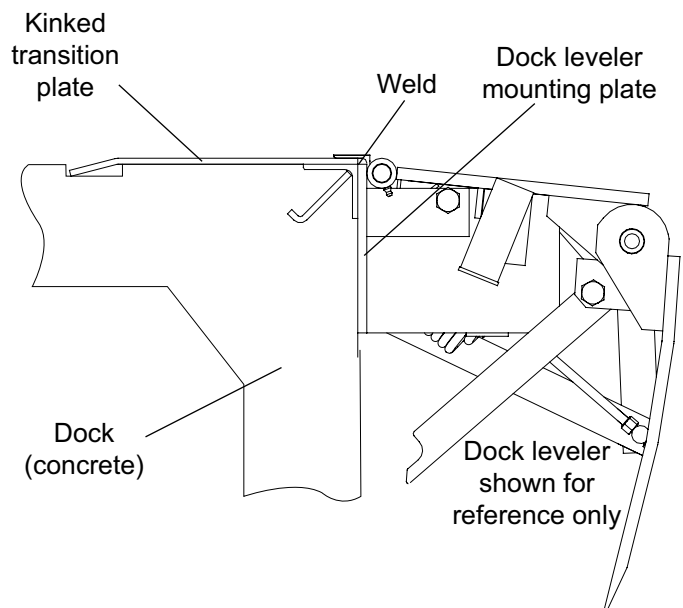


Fig. 4



8. Proceed to GENERAL INSTALLATION section on page 10 of this manual.

# INSTALLATION, continued

## INSTALLATION WITH FACE PLATE WITH TRANSITION PLATE

### NOTICE

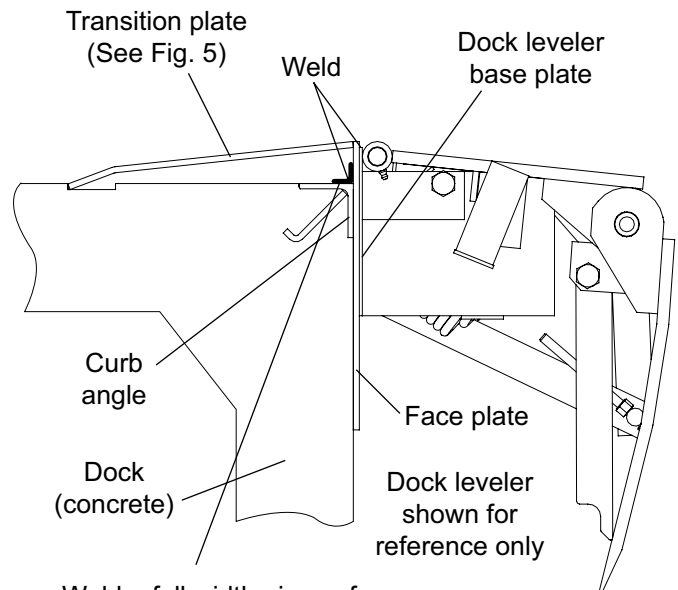
**For installations above dock floor height (up to 3" max) the transition plates listed in Fig. 5 must be used.**

1. Position the face plate at desired height above dock level (0" minimum to 3" maximum). See Fig. 6.
2. Continuously weld the face plate to the mounting surface with a 1/4" fillet in accordance with AWS Standards. See Fig. 6.
3. Position transition plate flush with the top edge of the face plate. Mark along back edge of transition plate on top of dock.
4. Move the transition plate 2" forward. Mark another line along the back edge of transition plate on top of dock.
5. Remove the transition plate and cut a groove in the concrete 2" wide x 1/2" deep between the lines marked in steps 3 and 4.
6. While supporting the transition plate against the top back edge of the face plate. Measure and place full length structural angle (supplied by others) as shown. Weld to back of face plate.
7. Locate and weld full length schedule 40 pipe (supplied by others) to bottom of transition plate as required.
8. Install 5/8" x 5" anchor bolts (supplied by others) with the transition plate. See part numbers and transition plate sizes listed in Fig. 5 above. Torque to manufacturer's specification. Remove nuts, cut bolts flush with top of transition plate and plug weld bolts to plate. See page 12 for wedge anchor installation instructions.
9. Continuously weld the transition plate to the face plate with a 1/4" fillet in accordance with AWS Standards. See Fig. 6.
10. Proceed to GENERAL INSTALLATION section on page 10 of this manual.

Fig. 5

| Plate Length | Application                   | Part Number |
|--------------|-------------------------------|-------------|
| 12"          | (1-1/2" or less above dock)   | 6007621     |
| 18"          | (1-1/2" to 2-1/4" above dock) | 6007623     |
| 24"          | (1-1/2" to 3" above dock)     | 6007625     |

Fig. 6



Weld a full width piece of structural angle here (weld to leveler first) to align leveler and provide a purchase for edge of transition plate.



## INSTALLATION, continued

### INSTALLATION WITH FORMED ANGLE

1. Lay formed angle on top of dock.
2. If there is no curb angle, some concrete on edge-of-dock may need to be removed to allow angle to lie flush against wall. See Fig. 7.
3. If there is curb angle present, the lower portion of formed angle will need to be spaced out to allow angle to lie flush against wall. See Fig. 8.
4. Position formed angle in desired position on dock edge and mark location of back of angle on floor of dock.
5. Slide formed angle forward 2" and mark location of back of angle on floor of dock.
6. Remove angle and cut a 2" wide x 1/2" deep groove in the concrete between two lines marked in steps 4 and 5.
7. Place formed angle on dock, making sure back edge of leg on top of dock is recessed in groove and both legs are tight against top and face of dock. Increase depth or width of groove as required.
8. Install 5/8" x 5" anchor bolts (supplied by others) on top and front faces on 10" centers. All anchor positions must be used. . Torque to manufacturer's specification. Remove nuts from bolts on top of dock. Cut bolts flush with top of angle and plug weld bolts to formed angle. Weld nuts to bolts and angle on face of dock. See page 12 for wedge anchor installation instructions.
9. Position the dock leveler base plate 1/4" below top of formed angle.
10. Proceed to GENERAL INSTALLATION section on page 10 of this manual.

Fig. 7

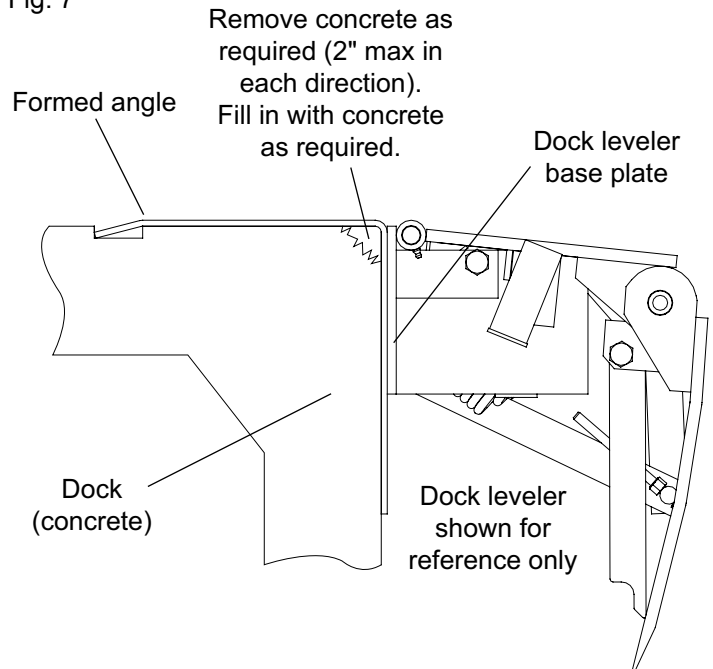
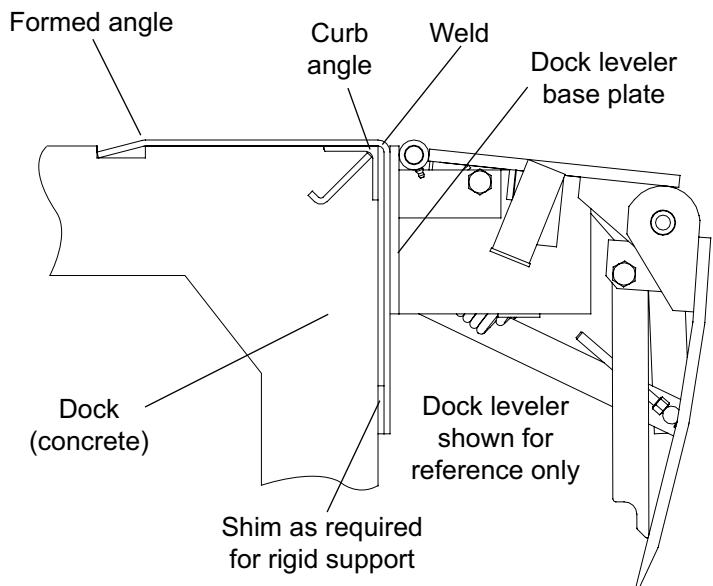


Fig. 8



# INSTALLATION, continued

## GENERAL INSTALLATION

### ▲ WARNING

**Read and follow Safety Practices on page 3. Failure to follow these safety practices could result in death or serious injury.**

**Installation should not be attempted by persons not familiar with equipment and techniques required for proper installation. Improper installation could result in death or serious injury.**

1. Using a 1,000 lbs. minimum capacity load centering eye bolt, secure the lip plate using the lifting hole. at the center of the width. See Fig. 9.

### ▲ WARNING

**Inadequate lifting equipment or practices can cause a load to fall unexpectedly. Make sure the lifting chain or other lifting devices are in good condition and have a rated capacity of at least 1000 lbs. for the lifting angle used. Never allow anyone to stand on or near the dock leveler when it is lifted or placed onto the dock. Stand clear of the dock leveler when it is being placed onto the dock. Failure to follow this warning can allow the dock leveler to fall, tip, or swing into people, resulting in death or serious injury.**

### ▲ DANGER

**The maintenance strut must always be installed into the maintenance strut cup mounted to the back plate whenever the lip plate is in the up position and the lip plate is not supported by the lifting chain. Failure to follow this warning can allow the dock leveler to fall resulting in death or serious injury.**

2. Position dock leveler mounting plate centered on face of dock and 1/4" below top of curb channel, transition plate or formed angle plate. See Fig. 6.

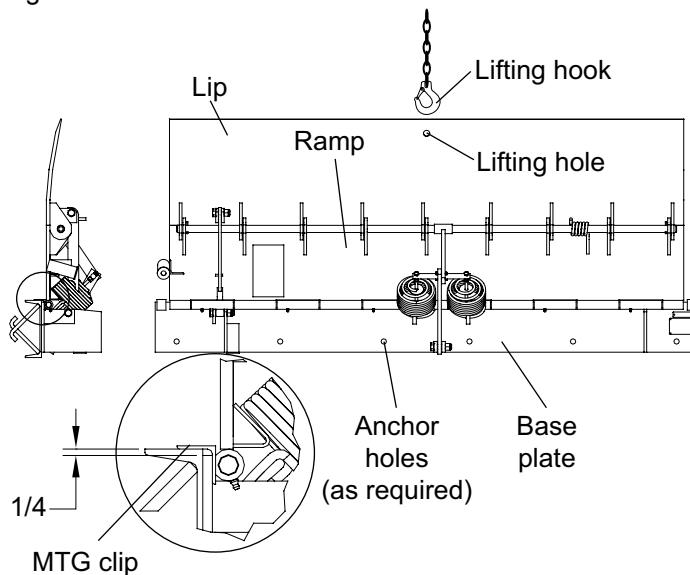
### NOTICE

**The dock leveler must be plumb to dock face to operate properly. Use shims or remove concrete as necessary to make the mounting plate plumb.**

3. Weld two 1/4" x 2" welds at the upper outside edges of the mounting plate and plug weld the two outer holes in the mounting plate (if curb channel is not used, install two 5/8" x 5" anchors. Torque to manufacturer's specification).

4. Support dock leveler by inserting hand lever into lever socket located on right side of ramp plate. See Fig. 20.
5. While one person holds the hand lever down as shown in Fig. 15, with use of the lifting chain, carefully lower lip to its stop position as shown in Fig. 15. Remove lifting chain.
6. Using the hand lever, carefully lower the dock leveler to the stored position as shown in Fig. 19.
7. Ensure the base plate is plumb and flush with the dock wall. Tack weld behind each base plate tube. Weld out as shown in Fig. 11 using minimum 1/4" welds. Weld typical on face plate tubes.

Fig. 9



## INSTALLATION, continued

### ▲ WARNING

*Do not allow lip and ramp to fall free. Allowing the dock leveler to fall free could result in the dock leveler coming free from the dock or damaging linkage, resulting in death or serious injury.*

*Do not allow lip to extend out away from the dock before all welding and anchor installation is complete. Operating the dock leveler before all installation is complete could result in death or serious injury.*

### NOTICE

*Failure to keep lip extender link disengaged while lowering dock leveler could result in damage to the link.*

8. With the hand lever, raise the ramp to the upright position and lower back to the rest position, checking for binding of the ramp and mounting plate hinge.

### ▲ WARNING

*Do not allow lip and ramp to fall free. Allowing the dock leveler to free fall could result in the dock leveler coming free from the dock or damaging linkage, resulting in death or serious injury.*

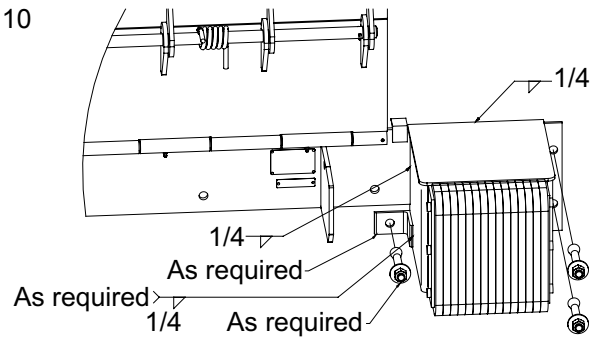
*Do not allow lip to extend out away from the dock before all welding and anchor installation is complete. Operating the dock leveler before all installation is complete could result in death or serious injury.*

*Use care when welding. Do not allow weld or weld splatter on the hinge tubes. Weld on the hinge tubes may interfere with normal operation of the dock leveler.*

9. Plug weld remaining anchor holes in mounting plate (if curb channel is not used, install remaining 5/8" x 5" anchors. Torque to manufacturer's specification). See page 12 for wedge anchor installation instructions.
10. Position the bumper blocks aligned with the top edge of the dock (or top edge of transition plate if used) with the flange facing away from the leveler but the flat side along the edge of the base plate. Tack in place.
11. Check for square alignment. Correct any misalignment.
12. Weld bumper with a continuous 1/4" minimum bead across the top and adjacent to the leveler in accordance with AWS standards.
13. Anchor bumpers with 5/8" x 5" deep anchors in holes provided. Torque to manufacturer's specification. See page 12 for wedge anchor installation instructions.

14. Add 3" x 3" x 1/4" angle clips and anchors as required to stabilize bumper. See Fig. 10.

Fig. 10



### ▲ WARNING

*All anchor bolts must be installed in accordance with the manufacturer's instructions. Improper installation could result in death or serious injury.*

*Do not install anchor bolts in cracks or expansion joints in concrete. Installation in cracks or expansion joints may cause the anchors to come loose and pull out. Use of improperly installed anchor bolts could result in death or serious injury.*

### NOTICE

*All anchor bolt lengths must suit local codes and conditions. Type and depth of concrete will determine type and length of anchor bolts required.*

15. Clean away all debris and paint all welded joints.
16. Raise the dock leveler and SECURE WITH THE MAINTENANCE STRUT. See instructions for use on page 16.
17. Adjust two extension springs to assist in lifting dock leveler from rest position. Check the amount of bolt exposed beyond the spring face. If the amount is the same, the springs are adjusted evenly. Adjust as required. See counterbalance adjustment on page 19.

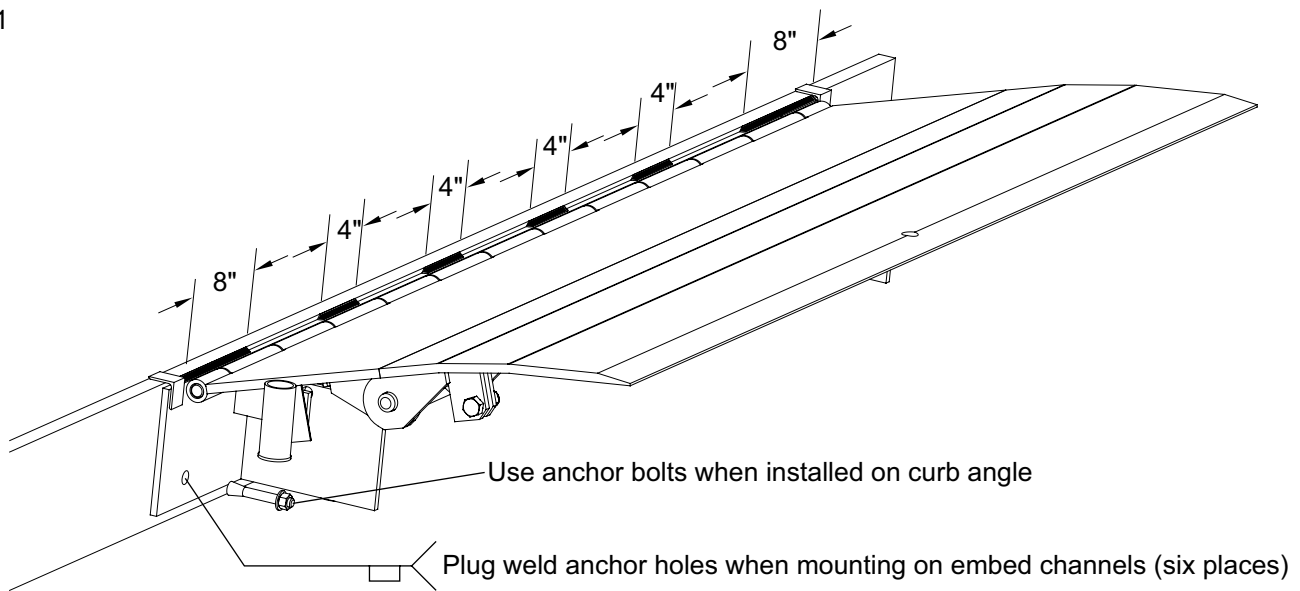
### ▲ WARNING

*Do not over-adjust the extension springs. Over-adjusting extension springs may cause the dock leveler to bounce or float during use. Use of an over-adjusted dock leveler could result in death or serious injury.*

18. Mount warning and operation placards on wall next to dock leveler.
19. Test operation of dock leveler. Adjust if necessary.

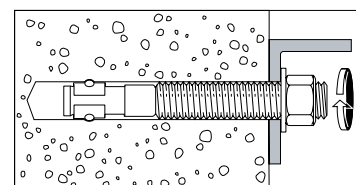
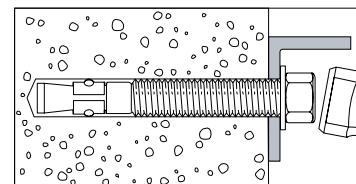
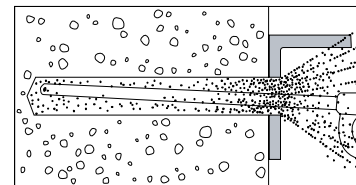
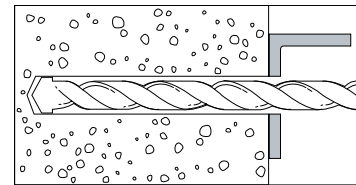
# INSTALLATION, continued

Fig. 11



## WEDGE ANCHOR INSTALLATION (USE WITH CURB ANGLE AND TRANSITION PLATE ONLY)

Fig. 12



### ⚠ WARNING

*When anchors are used with curb channel for mounting, a transition plate must also be used. See page 7.*

*Do not install the vehicle restraint anchor bolts into aged or unsound concrete.*

*Use 5/8" x 5" long wedge anchors on smooth 4,000 PSI concrete walls only. For aggregate, cinder block or tilt walls - consult factory.*

*Oversized holes in the base material will make it difficult to set the anchor and will reduce the anchor's load capacity.*

*Do not use an impact wrench to set or tighten the wedge anchors.*

Drill a hole in the concrete using a carbide drill bit the same diameter as the nominal diameter of the anchor to be installed. Drill the hole to the specified embedment depth and blow it clean using compressed air. Alternatively, drill the hole deep enough to accommodate embedment depth and dust from drilling. Assemble the anchor with nut and washer so the top of the nut is flush with the top of the anchor. Place the anchor in the fixture and drive into the hole until washer and nut are tight against fixture. Torque to manufacturer's specification. See Fig. 12.

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# OPERATION INSTRUCTIONS

## **⚠ WARNING**

***Before operating the dock leveler, read and follow Safety Practices on page 3.***

***Use by untrained people could result in death or serious injury. Read and follow complete Operation Instructions. DO NOT USE THE DOCK LEVELER IF IT LOOKS BROKEN OR DOES NOT SEEM TO WORK RIGHT. Tell your supervisor it needs repair.***

***Always be certain that the truck wheels are chocked or that the truck is locked in place by a truck restraining device and the brakes are set before loading or unloading. Trucks pulling away from the dock unexpectedly could result in death or serious injury.***

***Keep both hands firmly on the hand lever while raising or lowering the dock leveler. Keep other body parts clear of hand lever travel path while raising or lowering the dock leveler. Do not use legs or feet to move or hold hand lever. Failure to follow these and other provided warnings could result in death or serious injury.***

***Do not operate the dock leveler if operation causes undue physical strain or if physical impairments could lead to undue strain in back, muscles, limbs or joints.***

***Visually check that the lip is supported by the vehicle bed before driving or walking on the ramp.***

***Always return the dock leveler to dock level (stored) position before allowing the vehicle to leave the dock.***

***Read and follow all of the operating instructions for the Mechanical Edge-of-Dock shown on pages 14 through 15.***

***Do not leave the dock leveler unattended in the upright position. Always store the dock leveler with the ramp plate down, level with the dock floor. See Fig. 13.***

***Never travel on bumper blocks or over the edges of the leveler.***

## **NOTICE**

***To avoid damage to load and dock leveler, do not activate unit if loads will be in the way of extended lip. If lip touches loads before resting on carrier floor, move vehicle to allow unit to return to stored position. Remove end load without placing lip on carrier floor. Do not use power equipment to force lip into vehicle or lip or linkage will be damaged.***

## INTRODUCTION

The Edge-of-Dock dock leveler is designed to span and compensate for space and height differences between a loading dock and freight carrier to allow safe, efficient freight transfers.

The mechanical EOD leveler is spring counterbalanced. A hand lever is used to position the ramp and lip onto the vehicle bed, and to return the dock leveler to the stored position.

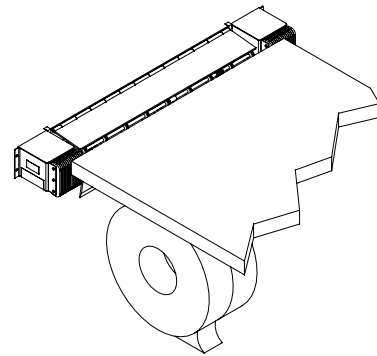
Pulling the hand lever back moves the ramp to the full raised position. Moving the lever forward extends the dock leveler lip onto the vehicle.

After loading, pulling the hand lever back moves the lip off the vehicle. The hand lever is then moved forward to place the dock leveler back into stored position.

When not in use, the hand lever is to be stored on the wall in its holder.

## OPERATION INSTRUCTIONS, continued

1. Wait until a vehicle is in position against the dock bumpers. Fig. 13
2. Tell vehicle driver "Your vehicle must stay at the dock."
3. Chock or hitch vehicle.
4. If necessary, remove end loads with the ramp in the dock level (stored) position. See Fig. 13. Do not drive on ramp without lip supported by vehicle bed.
5. To extend the dock leveler lip into the vehicle:
  - 5.1 Locate the hand lever and position it into the ramp cup, located on the right side of ramp. See Fig. 14.



### **▲ WARNING**

**Keep both hands firmly on the hand lever while raising or lowering the dock leveler. Keep other body parts clear of hand lever travel path while raising or lowering the dock leveler. Do not use legs or feet to move or hold hand lever.**

- 5.2 Pull back on the hand lever until the assembly is fully raised. See Fig. 15. When the handle is horizontal to the floor the lip extender link will engage.
- 5.3 Raise hand lever. Lip will extend automatically as the ramp is lowered onto the truck bed. See Fig. 16.
- 5.4 Once the dock leveler is resting securely on the vehicle bed, remove the hand lever. See Fig. 17.

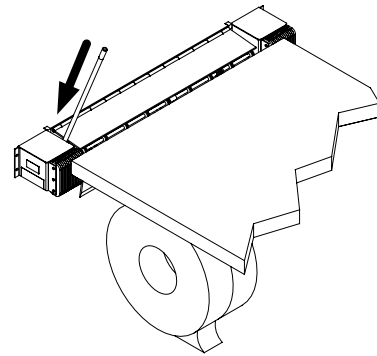


Fig. 14

### **▲ WARNING**

**Do not operate the dock leveler when anyone is on or in front of it.**

**Stay clear of the dock leveler when it is moving.**

**Do not walk or drive on the dock leveler or lip until it is fully extended and supported by the vehicle bed.**

**Never use a fork truck or other material handling equipment to lower the ramp and lip sections.**

**Never travel on bumper blocks or over the edges of the leveler.**

Fig. 15

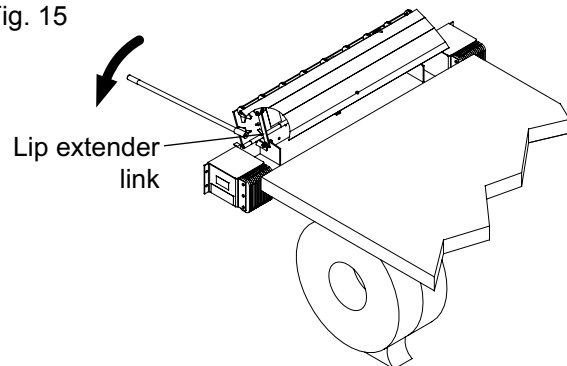
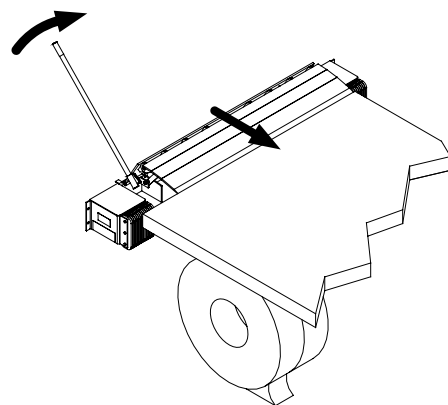


Fig. 16



## OPERATION INSTRUCTIONS, continued

6. Proceed with loading or unloading.
7. Return the dock leveler to the stored position when entry to the vehicle is no longer required.
  - 7.1 Locate the hand lever and position it into the ramp cup located on the right side of the ramp. See Fig. 14.

### **▲ WARNING**

**Keep both hands firmly on the hand lever while raising or lowering the dock leveler. Keep other body parts clear of hand lever travel path while raising or lowering the dock leveler. Do not use legs or feet to move or hold hand lever.**

- 7.2 Pull back on hand lever until the lip clears the vehicle bed. See Fig. 18.
  - 7.3 Raise the hand lever and allow the ramp and lip to lower to their stored position. See Fig. 19.
  - 7.4 Return hand lever back into its storage location.
8. Unchock or release vehicle.

### **▲ WARNING**

**If vehicle leaves with lip resting on vehicle bed, lip will drop suddenly. Before vehicle leaves, store lip and ensure no equipment, material or people are on the dock leveler. Failure to do so could result in death or serious injury from people, equipment or cargo falling from unsupported dock leveler.**

9. Tell vehicle driver, "Your vehicle may now leave the dock."

Fig. 17

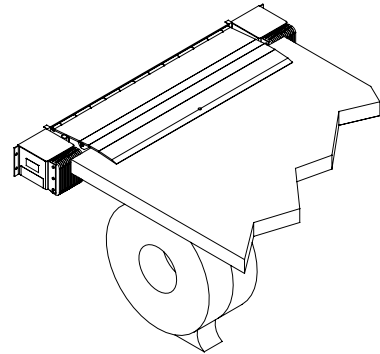


Fig. 18

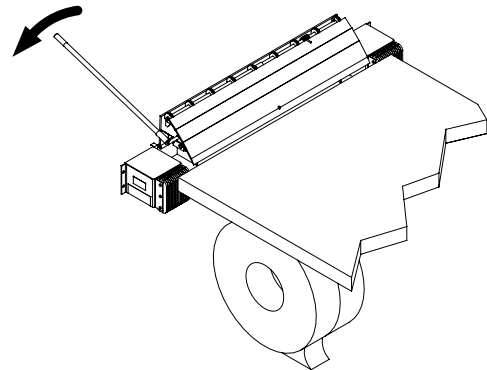
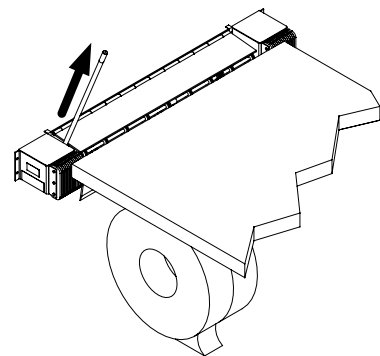


Fig. 19



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# PLANNED MAINTENANCE

## **▲ DANGER**

**STAND CLEAR!** The dock leveler moves toward you. Always be certain the ramp is in the raised position, SECURED WITH THE MAINTENANCE STRUT (See Fig. 19) before doing any lubrication or repair under the dock leveler. Failure to do so could result in death or serious injury.

Always return the dock leveler to stored position after service. Failure to do so could result in death or serious injury.

## **▲ WARNING**

Before servicing the dock leveler, read and follow Safety Practices on page 3.

### TO INSTALL THE MAINTENANCE STRUT (2 PEOPLE REQUIRED)

1. Using the hand lever, position the dock leveler in the full back position. See Fig. 15.
2. While one person holds the hand lever down as shown in Fig. 15, another person standing on the drive surface must position the lip plate to its full upright position as shown in Fig. 20.
3. With the ramp and lip in the full upright position move the hand lever/maintenance strut into the maintenance socket position as shown in Fig. 20.

### TO REMOVE THE MAINTENANCE STRUT (2 PEOPLE REQUIRED)

1. With the ramp plate and lip plate in the full back position, move the hand lever back to the lever socket as shown in Fig. 15.
2. While one person holds the hand lever down, as shown in Fig. 15, another person standing on the drive surface must carefully lower lip plate to its stop position as shown in Fig. 15.
3. Using the hand lever, lower the dock leveler to the rest position as shown in Fig. 13. While lowering the dock leveler to the rest position, it is necessary to use a pipe or similar device to hold the lip extender link from engaging the extender pivot bushing. (While doing this the person needs to remain clear of the dock leveler as it comes down). See Fig. 21. The lip should not be allowed to extend out during this step.

## **▲ WARNING**

Do not use hands or feet to hold lip extender link disengaged. Use of hands or feet could cause a pinch point resulting in death or serious injury.

### MAINTENANCE - EVERY 90 DAYS

1. With the leveler in the maintenance position, inspect all moving parts for wear or damage. Repair or replace, as necessary.
2. Both extension springs should be checked for the same amount of tension for balanced operation. Check the amount of bolt exposed beyond the spring face - if the amount is the same the springs are adjusted evenly - adjust as required. Check for deformation to washers.
3. To increase spring tension, turn bolts evenly. To decrease spring tension, turn bolts out evenly. See counterbalance adjustment on page 19.

## **▲ WARNING**

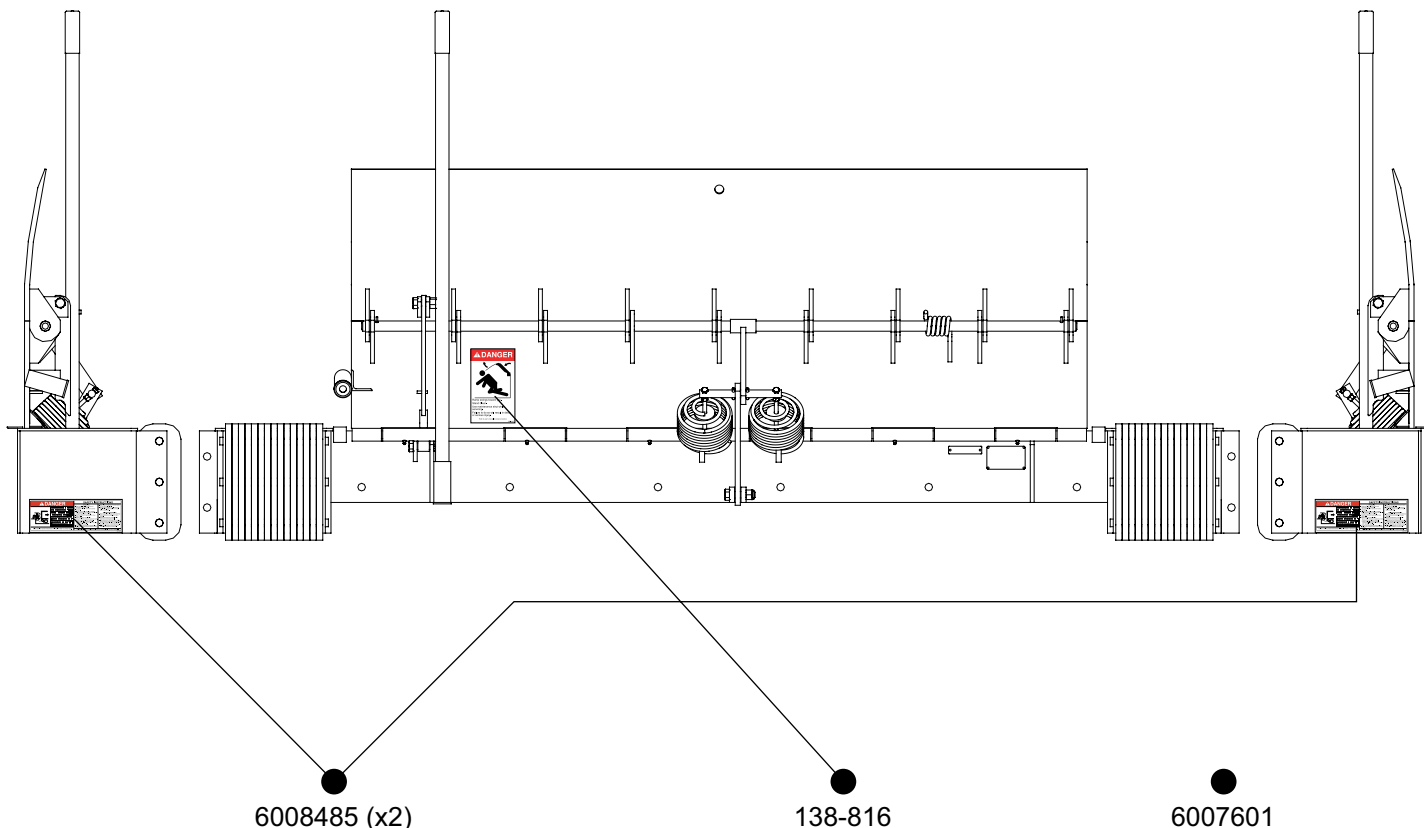
Do not over adjust the extension springs. Over-adjusting extension springs may cause the dock leveler to bounce or float during use. Use of an over-adjusted dock leveler could result in death or serious injury.

4. Visually inspect for cracks at all weld interfaces.
5. Check all labels and placards. See page 17 for location and part numbers. Replace missing or damaged as required.
6. Clean area at hinge joints and sweep away all debris. With leveler in the maintenance position, inspect all moving parts for wear or damage. Lubricate all grease fittings and oil pivot points as necessary. If linkage parts must be replaced, due to wear or damage, raise leveler to its full rear position and install the maintenance bar. See Fig. 21.
7. Inspect dock bumpers. Four inches (4") of protection is required. Worn, torn or missing bumpers must be replaced.



# PLANNED MAINTENANCE, continued

Fig. 20



|  |  |
|--|--|
| <b>▲ DANGER</b>  | <b>SAFETY INSTRUCTIONS</b>   |
| <p>Unsupported dock leveler ramps can lower unexpectedly.</p> <p>Before allowing vehicles to leave the dock, always:</p> <ul style="list-style-type: none"> <li>• Ensure no equipment, materials or people are on dock leveler.</li> <li>• Return dock leveler to its stored position at dock level.</li> </ul> <p>Failure to follow posted instructions will result in death or serious injury.</p> | <p><b>OPERATION</b></p> <ol style="list-style-type: none"> <li>1. Read and follow all instructions and warnings in user's manual.</li> <li>2. Use of dock leveler restricted to trained operators.</li> <li>3. Always check trailer wheels or engage trailer restraint before opening dock leveler or beginning to load or unload.</li> <li>4. Never use hands or equipment to move ramp or lip.</li> <li>5. Before entering dock leveler:             <ul style="list-style-type: none"> <li>• Ensure trailer is locked in against bumpers.</li> <li>• Remove any and load if required.</li> </ul> </li> <li>6. Check trailer alignment to avoid lip interference. If it does not, lower to trailer bed, reposition vehicle, minimize lip interference.</li> <li>7. Ensure lock bolt supports extended lip or bumper frame supports ramp before driving on ramp.</li> <li>8. Stay clear of hinges and front and sides of moving dock leveler.</li> </ol> <p><b>MAINTENANCE SERVICE</b></p> <ol style="list-style-type: none"> <li>1. Read and follow all instructions, warnings and maintenance schedules in user's manual.</li> <li>2. Maintenance service of dock leveler restricted to trained personnel.</li> <li>3. Keep vehicles on driveway and dock floor to show service work is being performed.</li> <li>4. <b>DO NOT ENTER PRT</b> unless dock leveler is securely supported by maintenance strut.</li> <li>5. If electrically powered turn off and use OSHA lockout/tagout procedure.</li> <li>6. Never use damaged or malfunctioning dock leveler. Report problems immediately to supervisor.</li> </ol> <p>Call 262-618-1000 for replacement placards, warning labels, or user's manual.</p> |

(both sides)

**▲ 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 user's manual for proper procedure




138-816C

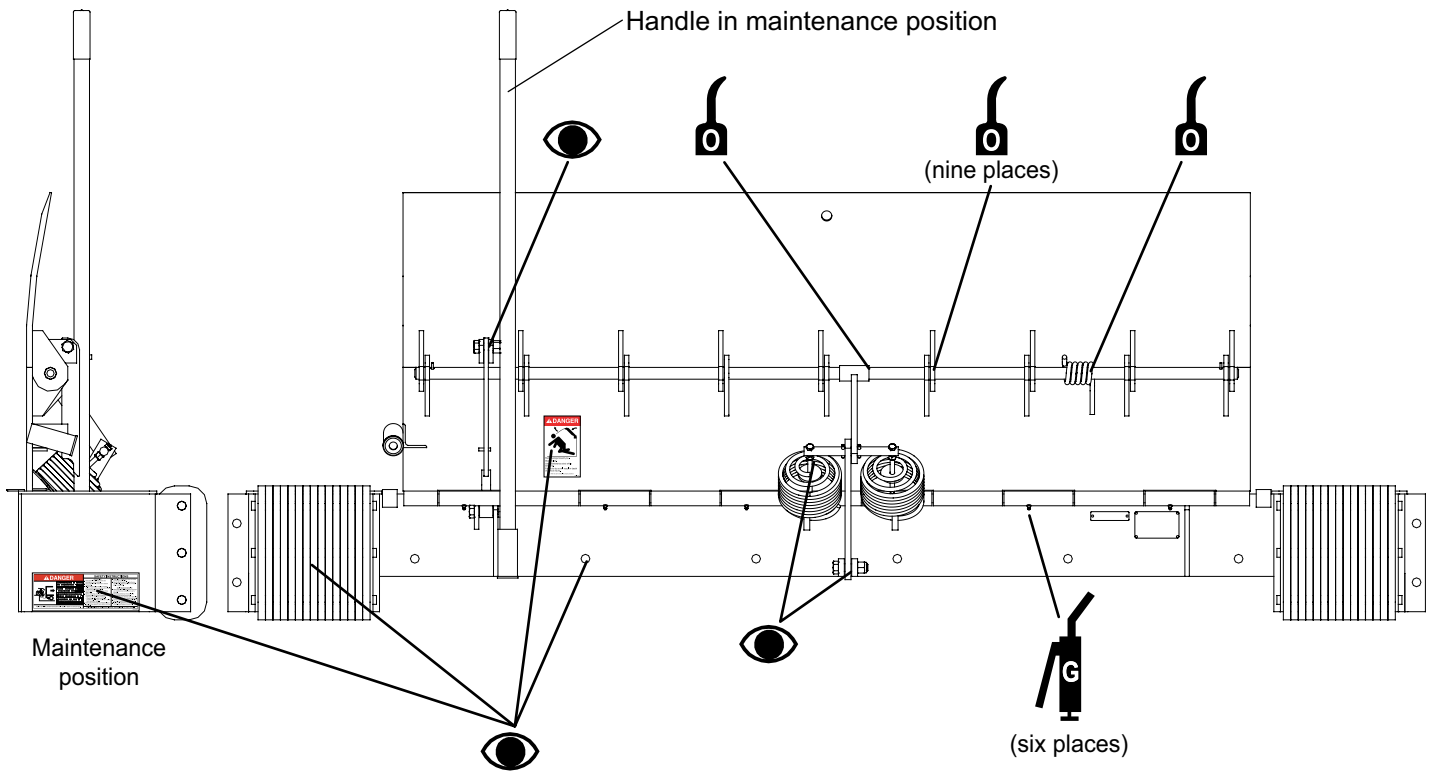
|   |  |
|---|--|
| <b>▲ DANGER</b>   | <b>OPERATING INSTRUCTIONS</b>  |
| <p>Read and follow all instructions, warnings and maintenance schedules in the manual and on placards.</p> <ul style="list-style-type: none"> <li>• Use or service of dock leveler restricted to trained personnel.</li> <li>• Always check vehicle wheels or engage vehicle restraint and set parking brakes before operating dock leveler or beginning to load or unload.</li> <li>• Before activating dock leveler, ensure lip avoids contact with trailer nose and ends if it does not lower to trailer bed.</li> <li>• Always ensure that the vehicle floor supports extended lip before driving on the ramp.</li> <li>• Stay clear of hinges and front and sides of moving dock leveler.</li> <li>• Never use hands or equipment to move the ramp or lip.</li> <li>• Never use damaged or malfunctioning dock leveler. Report problems immediately to supervisor.</li> <li>• Always store dock leveler and remove people, material and equipment from area before vehicle leaves the dock.</li> <li>• <b>DO NOT ENTER PRT or WORK UNDER LEVELER</b> unless dock leveler is securely supported by maintenance strut.</li> </ul> <p><b>Failure to follow these instructions will result in death or serious injury.</b></p> <p style="font-size: x-small;">(PRT) OPERATOR OR SERVICER<br/>Call customer support for additional details, brochures, or parts of dock leveler.<br/>www.4front.com</p> | <p><b>For Mechanical ESD Only</b></p> <p><b>WARNING</b></p> <p>When the dock leveler is in the raised position, it is not safe to stand on the lip or the ramp. The lip and the ramp are not designed to support a person's weight. If you must stand on the lip or the ramp, use the maintenance strut to support the lip or the ramp.</p> <p><b>Entering the Leveler</b></p> <ol style="list-style-type: none"> <li>1. To board the dock leveler for this vehicle:             <ul style="list-style-type: none"> <li>• Lower the lip and/or extend lip to the appropriate location on the side of the lip.</li> <li>• Push lip up to the level of the lip.</li> <li>• Push lip down to the level of the lip.</li> <li>• Push lip down to the level of the lip.</li> <li>• Push lip down to the level of the lip.</li> </ul> </li> <li>2. Proceed with loading or unloading.</li> </ol> <p><b>Leaving the Leveler</b></p> <ol style="list-style-type: none"> <li>1. Return the dock leveler to the stored position. Release the lip and/or extend lip to the appropriate location on the side of the lip.</li> <li>2. Lower the lip and/or extend lip to the appropriate location on the side of the lip.</li> <li>3. Push lip down to the level of the lip.</li> <li>4. Push lip down to the level of the lip.</li> <li>5. Push lip down to the level of the lip.</li> <li>6. Push lip down to the level of the lip.</li> </ol> |

Warning and operation placard (mounted on dock wall near leveler)

# PLANNED MAINTENANCE, continued

Fig. 21

| Legend  |  |
|---|--|
| Symbol  | Description  |
|  | <b>Lubricate - oil</b><br>Light oil - SAE 30                 |
|  | <b>Lubricate - grease</b><br>Molybdenum disulfide<br>NLGI #2 |
|  | <b>Visually inspect</b><br>(Replace damaged or worn)         |



### COUNTERBALANCE ADJUSTMENT

#### **▲ WARNING**

***Never adjust the counterbalance spring tension when the deck is in the stored position. Doing so could result in death or serious injury. Adjust counterbalance springs only with the leveler in the maintenance position with the maintenance strut in place.***

The deck should fully rest on the stops when the EOD is stored with no spring back. The lip hinge should fully close under its own weight when the deck and lip are at dock level. make all spring adjustments to the EOD with the maintenance handle in the maintenance position. See Fig. 21.

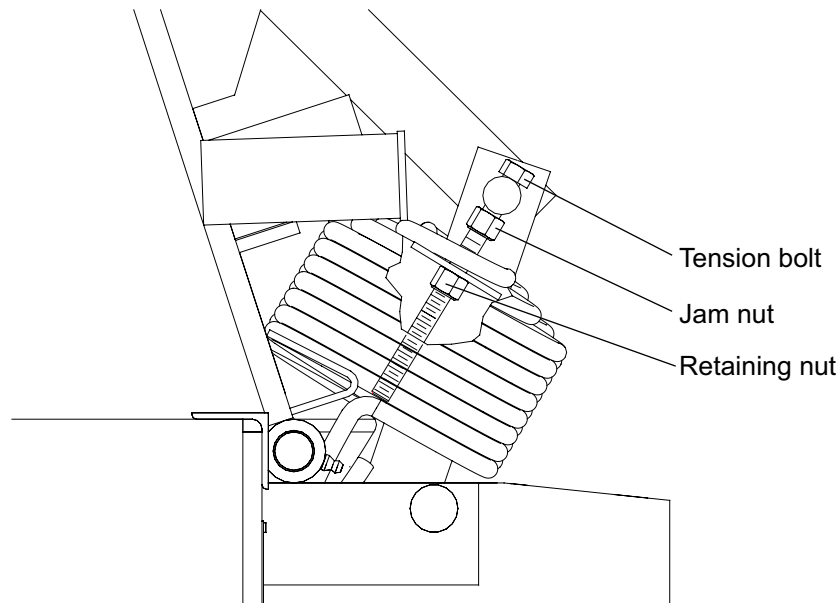
### INCREASE COUNTERBALANCE FORCE

Loosen jam nut. Hold the retaining nut and rotate the tension bolt clockwise expanding the spring. Load both springs evenly. Tighten jam nut. See Fig. 22.

### DECREASE THE COUNTERBALANCE FORCE

Loosen jam nut. Hold the retaining nut and rotate the tension bolt counter-clockwise contracting the spring. Load both springs evenly. Tighten jam nut. See Fig. 22.

Fig. 22

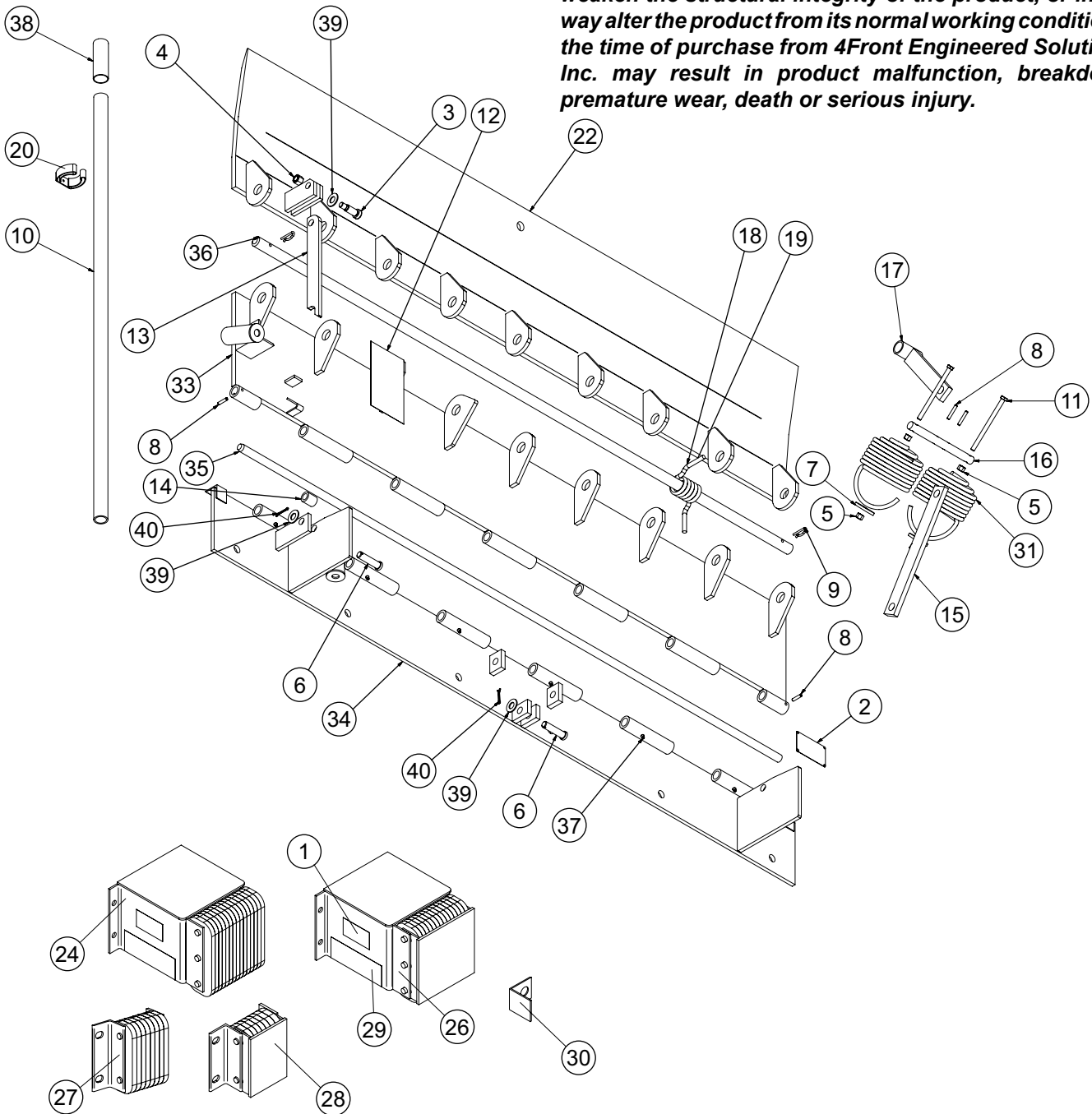


# PARTS LIST

Fig. 23

**▲ WARNING**

To ensure proper function, durability and safety of the product, only replacement parts that do not interfere with the safe, normal operation of the product must be used. Incorporation of replacement parts or modifications that weaken the structural integrity of the product, or in any way alter the product from its normal working condition at the time of purchase from 4Front Engineered Solutions, Inc. may result in product malfunction, breakdown, premature wear, death or serious injury.



## PARTS LIST, continued

| Item | Quantity | Description                                  | Part Number |   |         |
|------|----------|--|-------------|---|---------|
| 1    | 2        | Serco Label                                  | 824002      |   |         |
|      | 2        | Kelley Label                                 | 921140      |   |         |
| 2    | 1        | Serial number tag                            | 6009761     |   |         |
| 3    | 1        | HSH SS 5/8 X 1-1/4 X 1/2-13                  | 6007843     |   |         |
| 4    | 1        | NLN - 1/2-13 UNC                             | 214505      |   |         |
| 5    | 4        | 3/8-16 Nut Nylock Nut                        | 214538      |   |         |
| 6    | 2        | Clevis Pin 5/8 x 2-1/2                       | 035055      |   |         |
| 7    | 2        | Washer, Fender, 3/8 Bolt, 2" OD, 1/8 THK, ZP | 6007804     |   |         |
| 8    | 4        | RP - 1/4 x 1-1/4                             | 6007817     |   |         |
| 9    | 2        | Retainer, Shaft-hinge Pin                    | 035451      |   |         |
| 10   | 1        | Handle                                       | 6007536     |   |         |
| 11   | 2        | Hex Bolt - 3/8-16 x 5                        | 6007803     |   |         |
| 12   | 1        | Danger Label                                 | 138816      |   |         |
| 13   | 1        | Lip Lifter                                   | 6010553     |   |         |
| 14   | 1        | Lip Lifter Roller                            | 6007533     |   |         |
| 15   | 1        | Lower spring linkage                         | 6007540     |   |         |
|      | 1        | Lower spring linkage, Pit Mount              | 6008042     |   |         |
| 16   | 1        | Spring Rod                                   | 6007542     |   |         |
| 17   | 1        | Upper Spring Linkage                         | 6007543     |   |         |
|      | 1        | Upper Spring Linkage, Pit Mount              | 6008044     |   |         |
| 18   | 1        | Lip Spring                                   | 6007664     |   |         |
| 19   | 2        | Push on cap, 3/8 x 1                         | 6010486     |   |         |
| 20   | 1        | Handle Mount                                 | 6007389     |   |         |
| 21   | 1        | Manual (not shown)                           | 6007631     |   |         |
| 22   | 1        | WDMT, Lip, EOD66, 20K, 15" Low               | 6007461     |   |         |
|      |          | WDMT, Lip, EOD66, 30K, 15" Low               | 6007462     |   |         |
|      |          | WDMT, Lip, EOD72, 20K, 15" Low               | 6007463     |   |         |
|      |          | WDMT, Lip, EOD72, 30K, 15" Low               | 6007464     |   |         |
|      |          | WDMT, Lip, EOD78, 30K, 15" Low               | 6007465     |   |         |
|      |          | WDMT, Lip, EOD84, 30K, 15" Low               | 6007466     |   |         |
|      |          | WDMT, Lip, EOD66, 20K, 17" Low               | 6007473     |   |         |
|      |          | WDMT, Lip, EOD66, 30K, 17" Low               | 6007474     |   |         |
|      |          | WDMT, Lip, EOD72, 20K, 17" Low               | 6007475     |   |         |
|      |          | WDMT, Lip, EOD72, 30K, 17" Low               | 6007476     |   |         |
|      |          | WDMT, Lip, EOD78, 30K, 17" Low               | 6007477     |   |         |
|      |          | WDMT, Lip, EOD84, 30K, 17" Low               | 6007478     |   |         |
|      |          | WDMT, Lip, EOD66, 20K, cart guard, 15" Low   | 6007875     |   |         |
|      |          | 23   | 1           | Bumper and box, LH, 16" projection, not shown | 6007653 |
|      |          |  |             | Bumper and box, LH, 17" projection, not shown | 6008705 |
| 24   | 1        | Bumper and box, rh, 16" projection           | 6007654     |   |         |
|      |          | Bumper and box, RH, 17" projection           | 6008706     |   |         |

## PARTS LIST, continued

| Item | Quantity | Description  | Part Number   |
|------|----------|--|---|
| 25   | 1        | Bumper and box, LH, steel face, 16-3/8" projection, not shown<br>Bumper and box, LH, steel face, 17-3/8" projection, not shown   | 6007678<br>6008721  |
| 26   | 1        | Bumper and box, RH, steel face, 16-3/8" projection<br>Bumper and box, RH, steel face, 17-3/8" projection   | 6007679<br>6008722  |
| 27   | 2        | Bumper only, 4" projection<br>Bumper only, 5-5/8" projection   | 34551<br>34556  |
| 28   | 2        | Bumper only, steel face, 4-3/4" projection<br>Bumper only, steel face, 6" projection   | 34553<br>34558  |
| 29   | 2        | Danger label   | 6008485   |
| 30   | 2        | BUMPER MOUNT (OPTIONAL)  | 6008187   |
| 31   | 1<br>1*  | Spring, Small DIA<br>Spring, Large DIA   | 6007345<br>6007553  |
| 32   | 1        | Placard, EOD, MECH (not shown)   | 6007601   |
| 33   | 1        | WDMT, Deck, EOD66, 20K<br>WDMT, Deck, EOD66, 30K<br>WDMT, Deck, EOD72, 20K<br>WDMT, Deck, EOD72, 30K<br>WDMT, Deck, EOD78, 30K<br>WDMT, Deck, EOD84, 30K<br>WDMT, Deck, EOD66, 20K, cart guard                             | 6008461<br>6008462<br>6008463<br>6008464<br>6008465<br>6008466<br>6007876 |
| 34   | 1        | WDMT, Base, EOD66, MECH<br>WDMT, Base, EOD72, MECH<br>WDMT, Base, EOD78, MECH<br>WDMT, Base, EOD84, MECH<br>WDMT, Base, EOD66, MECH, Pit Mount<br>WDMT, Base, EOD72, MECH, Pit Mount<br>WDMT, Base, EOD78, MECH, Pit Mount | 6008527<br>6008528<br>6008529<br>6008530<br>6007824<br>6007825<br>6007826 |
| 35   | 1        | Rear Hinge Rod, EOD66<br>Rear Hinge Rod, EOD72<br>Rear Hinge Rod, EOD78<br>Rear Hinge Rod, EOD84   | 6007519<br>6007520<br>6007521<br>6007522                                  |
| 36   | 1        | Lip Hinge Rod, EOD66<br>Lip Hinge Rod, EOD72<br>Lip Hinge Rod, EOD78<br>Lip Hinge Rod, EOD84   | 6007523<br>6007524<br>6007525<br>6007526                                  |
| 37   | 6**      | Grease Fitting, Drive Fit  | 417113  |
| 38   | 1        | EOD Grip   | 6007550   |
| 39   | 3        | Plain washer, 5/8  | 000063  |
| 40   | 2        | Cotter pin   | 035036  |
| 41   | 2        | Steel, angle, 3 x 3 x 1/4, A36   | 6008187   |

\*66"W and 72"W 20K models qty. is 2.

\*\*78" and 84" models qty. is 8.

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## LIMITED WARRANTY INFORMATION

THIS LIMITED WARRANTY IS 4FRONT'S SOLE AND EXCLUSIVE WARRANTY WITH RESPECT TO THE DOCK LEVELER AND IS IN LIEU OF ANY OTHER GUARANTEES OR WARRANTIES, EXPRESS OR IMPLIED

4FRONT warrants that this DOCK LEVELER will be free from flaws in material and workmanship under normal use for a period of one (1) year from the earlier of 1) 60 days after the date of initial shipment by 4FRONT, or 2) the date of installation of the DOCK LEVELER by the original purchaser, provided that the owner maintains and operates the DOCK LEVELER in accordance with this Owner's Manual.

In the event that this DOCK LEVELER proves deficient in material or workmanship within the applicable Limited Warranty period, owner shall so notify 4FRONT, and 4 Front will, at its option:

1. Replace the DOCK LEVELER, or the deficient portion(s) thereof, without charge to the owner; or
2. Alter or repair the DOCK LEVELER, on site or elsewhere, without charge to the owner.

This Limited Warranty does not cover any failure caused by improper installation, abuse, improper operation, negligence, or failure to maintain and adjust the DOCK LEVELER properly. Parts requiring replacement due to damage resulting from vehicle impact, abuse, or improper operation are not covered by this warranty. 4FRONT DISCLAIMS ANY RESPONSIBILITY OR LIABILITY FOR ANY LOSS OR DAMAGE OF ANY KIND (INCLUDING WITHOUT LIMITATION, DIRECT, INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES, OR LOST PROFITS OR LOST PRODUCTION) arising out of or related to the use, installation or maintenance of the DOCK LEVELER (including premature product wear, product failure, property damage or bodily injury resulting from use of unauthorized replacement parts or modification of the DOCK LEVELER). 4FRONT's sole obligation with regard to a DOCK LEVELER that is claimed to be deficient in material or workmanship shall be as set forth in this Limited Warranty. This Limited Warranty will be null and void if the original purchaser does not notify 4FRONT's warranty department within ninety (90) days after the product deficiency is discovered. .

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, INCLUDING, BUT NOT LIMITED TO, A WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH 4FRONT HEREBY DISCLAIMS.

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Please direct questions about your vehicle restraint to your local distributor.

Your local distributor is:

Corporate Head Office:

1612 Hutton Dr. Suite 140

Carrollton, TX. 75006

Tel. (972) 466-0707

Fax (972) 323-2661