



**IDEAL WAREHOUSE**  
INNOVATIONS INC  
Protecting Your People

## Dock Leveler Hydraulic Conversion Kit Installation Manual

### ***This Conversion Kit contains one (1) each of the following items:***

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- Hydraulic Power Unit (includes necessary fittings)
- Motor Starter
- Mounting Bracket for Hydraulic Power Unit
- Main Deck cylinder (plus all necessary brackets, pins and fittings for installation)
- Lip Cylinder (plus all necessary brackets, pins and fittings for installation)
- 5 GPM Velocity Fuse
- 60" length of Hydraulic Hose to connect the Power Unit to the Main Deck Cylinder
- 60" length of Hydraulic Hose to connect the Power Unit to the Lip Cylinder

### ***Important notes:***

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- Only trained and authorized individuals should use this product.
- Use only original Ideal Warehouse Innovations parts to service this product.
- **115V needs a dedicated 30 AMP breaker**



#### ***Critical safety tip:***

**Do NOT attempt to perform any work under a dock without ensuring the dock is supported by a safety strut or held securely by other means.**

### ***Before you begin:***

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- Use appropriate personal protective equipment such as gloves, safety glasses, safety vest, hearing protection and protective shoes.
- Ensure the dock is properly and securely supported.

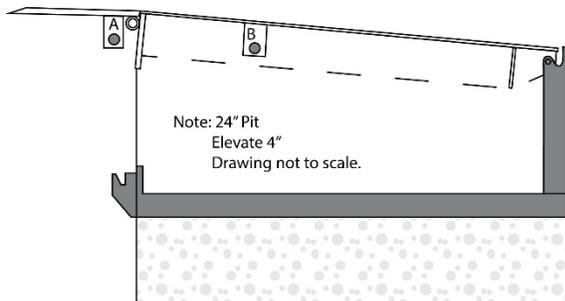
#### ***Step 1:***

On loading docks 22" – 23" deep, locate both the lip and main cylinder brackets.

NOTE: Main Cylinder brackets should be located in the center of the dock. Lip Cylinder brackets should be located approximately halfway between the center and edge of dock.

#### ***Step 2:***

For the lip cylinder, cut a hole approx. 2.5" x 2.5" square and ensure that a minimum of 1.25" of the original headboard material remains (the hole only needs to be large enough to accommodate cylinder movement and placement).



### **Step 3:**

Tack weld lip bracket as close to the hinge tubes as possible, as shown "A". Fully extend lip cylinder, then close the cylinder ½". Tack weld the other lip cylinder bracket in place Bracket "B".

NOTE: Ensure lip is able to touch lip stop prior to welding lip in place.

NOTE: Always ensure the brackets are square and the cylinder does not bind.

### **Step 4:**

With the lip extended, pull out the main cylinder 1" and allow the dock to come below traffic and rest on the below traffic legs (this ensures the cylinder will never bottom out.)

### **Step 5:**

Measure the location of rear bracket, raise and weld in location.

### **Step 6:**

Locate power unit close to rear of dock to ensure adequate clearance when dock is below traffic.

### **Step 7:**

Locate motor starter approximately 18" – 60" from ground level and wire as per local codes.

## **Power Unit Setup Procedures**

All Power Units are factory-tested and are preset to a main pressure relief valve setting of 1750 PSI. The sequence valve setting is set at 1300-1400 PSI. The flow control is set so the deck lowering speed is approximately the same as the lifting speed.

These values may be achieved in the field with the use of:

- 7/8" wrench
- 1" wrench
- Large flat screwdriver
- 2000-3000 PSI pressure gauge

### **Step 1:**

Using the 7/8" and 1" wrenches and turning counterclockwise, remove four hexagonal locking nuts, located on the sides of the power unit. Install the pressure gauge directly into the port stamped GA. If a gauge port is not present, tie directly into the main pressure.



### **Critical safety tip:**

Do not operate power unit without replacing seal and cap on the crossover lip relief.

**Step 2:**

Locate the main pressure relief valve directly below the stamping RV. Using the large flat screwdriver, turn the adjusting screw counter-clockwise until no spring pressure can be felt. Turn the relief valve adjusting screw clockwise until it comes into contact with a spring, then turn it clockwise an additional 1-3/4 turns. The screw should be sticking out 7/16". The main pressure relief valve is now set to an approximate value. With the use of the gauge, turn the adjusting screw in 1/16" increments until 1750 PSI can be seen on the pressure gauge. Turn the screw clockwise to increase pressure, or counterclockwise to decrease pressure. Main relief valve pressure can only be seen when both lift and lip cylinders are fully extended.

**Step 3:**

To adjust the sequence valve (the large screw located directly below the main pressure relief valve) turn it clockwise until it bottoms out then back it off 2 complete turns. The screw should be sticking out 9/16". With the use of the gauge take note of the pressure on the gauge when the lip is extending. The gauge should read between 1300-1400 psi. Turn the adjusting screw in 1/4 turn increments until the desired pressure is achieved. Turn the screw clockwise to increase pressure/counterclockwise to decrease pressure.

**Step 4:**

To set the lowering speed turn the flow control adjusting screw (the screw directly above the stamping FC) clockwise until it bottoms out then back it off 2 turns.

**Step 5:**

To set the crossover lip relief valve the screw should be sticking out 3/8". Replace locking caps ensuring all compression seals are in place. Tighten the all caps to a minimum of 200 lb. in. This will ensure the proper sealing.

The power unit has now been set to approximate values and should perform properly.

**Troubleshooting Procedures**

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**Deck will not raise:** Increase the main pressure relief valve setting stamped RV by turning the screw clockwise in 1/16" increments.

**Deck will not raise:** Turn the relief valve adjusting screw counterclockwise until no spring pressure can be felt. Take note as to the adjusting screw's original location. Backing the screw off can, at times, allow contamination to become dislodged from the relief valve seat and allow the pressure to start building again.

**Motor stalls when the power unit is fully extended:** Lower the main pressure relief valve setting stamped RV by turning the screw counterclockwise in 1/16" increments.

**Lip is slow to extend or will not extend at all:** Turn the sequence valve adjusting screw (large screw) counterclockwise in ¼ turn increments until the desired action is achieved.

**Lip extends before the deck or will not fully retract:** Turn the sequence valve adjusting screw (large screw) clockwise in ¼ turn increments until the desired action is achieved.

**Lip does not fall on truck once deck is lowered:** Turn lip relief valve counter clockwise in ¼ turn increments until the desired action is achieved.

**Lowering speed is too fast:** Turn the flow control adjusting screw (located directly above the stamping FC) clockwise in 1/8 turn increments until the desired action is achieved.

**Lowering speed is too slow:** Turn the flow control adjusting screw (located directly above the stamping FC) counterclockwise in 1/8 turn increments until the desired action is achieved.

**Lip does not return with a smooth motion:** Turn the sequence valve adjusting screw (large screw) clockwise in ¼ turn increments until the desired action is achieved.

**Main Cylinder locked in UP position:** Turn the flow control adjusting screw (located directly above the stamping FC) clockwise in 1/8 increments, then jog motor starter until velocity fuse is released.

**Relief Valve is noisy:** Increase the main pressure relief valve setting stamped RV by turning the screw clockwise in 1/16" increments.

**Lip falls before the main deck comes to rest:** It may be necessary to adjust or change the spring in the lip relief valve.

### ***Changing and Adjusting the spring in the Lip Relief Valve***

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***Step 1:***

Remove the cap and seal labeled CV.

***Step 2:***

If there is a slight drop when the deck is falling, the problem can be fixed by turning the adjusting screw clockwise. Ensure there is a minimum of 1/8" of adjusting screw sticking out so the cap and seal have enough threads to hold on to.

***Step 3:***

If the lip still falls, remove the adjusting screw. You will see a spring and 3/8" ball bearing. Ensure the ball bearing remains in place. Replace the spring with the heavier supplied spring.

***Step 4:***

Replace the adjusting screw and turn clockwise until it comes in contact with the new spring. Turn screw ½ turn clockwise.

***Step 5:***

Replace the cap and torque to 200 lbs.



***Critical safety tip:***

**Do not operate unit without the lip relief valve cap in place.**

## **Warranty Statement**

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*Ideal Warehouse Innovations, Inc. warrants for a period of three hundred and sixty-five (365) days from date of installation, or three hundred and seventy-five (375) days from date of shipment, whichever shall occur first, that all products and service parts shall be free from defects in workmanship and material. If the equipment or any part thereof, is returned, transportation charges pre-paid, within the periods specified above, and if examination by Ideal Warehouse Innovations, Inc. discloses to its satisfaction that the said equipment or part thereof has been defective in workmanship or material, it will deliver to the purchaser, without charge, parts of the first class workmanship and material in exchange for any parts so found to be defective, and Ideal Warehouse Innovations, Inc. is limited to said exchange.*

*This warranty shall not apply: (1) to maintenance service or adjustment; and (2) to any equipment which shall have been repaired or altered outside of Ideal Warehouse Innovations, Inc. or its authorized service representatives.*

*These warranties are in lieu of all other warranties, expressed or implied, including, without limitation, warranties of merchantability and fitness for purpose, all other representations to the first user purchaser, and all other obligations or liabilities, including liability or incidental and consequential damages, on the part of Ideal Warehouse Innovations, Inc. No person is authorized to give any other warranties or to assume any other liability on behalf of Ideal Warehouse Innovations, Inc. unless made or assumed in writing by Ideal Warehouse Innovations, Inc.*