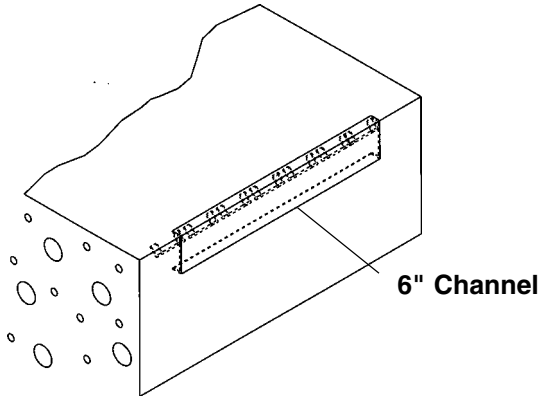


# INSTALLATION INSTRUCTIONS (READ ALL INSTRUCTIONS BEFORE PROCEEDING!)

## Dock Edge Construction

The procedure for the installation of the Edge-O-Dock dockleveler varies with the dock edge construction and the height differential. The recommended dock edge for installing an Edge-O-Dock unit is a well anchored six inch channel. With a six inch channel embedded in to the dock edge, the installer can weld the ramp and bumper blocks securely into position. The ramp and blocks cannot be welded into position if the dock edge steel is less than six inches. For installations with less than six inches of steel edging a combination of anchor bolts and welding is required. If the dock has no steel edging, a steel plate must be anchored to the floor to provide a surface to weld the ramp to in order to maintain the capacity of the leveler. **Failure to follow the proper installation procedure will decrease capacity of dockleveler.**

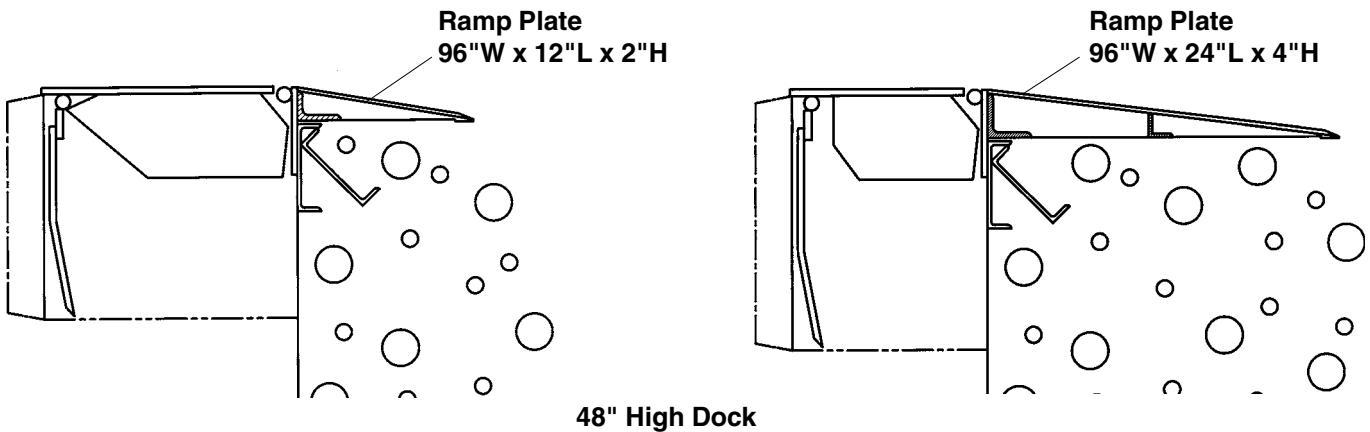


### Recommended dock edge for new construction

The recommended dock edge for new construction is a well anchored 6 inch channel (8.2 lb. minimum). Concrete "J" anchors shall be 1½ inches wide with a length of 6 inches plus 1½ inches bent at 90 degrees on the end. Minimum material thickness shall be ¼ inch. One anchor shall be installed every 12 inches.

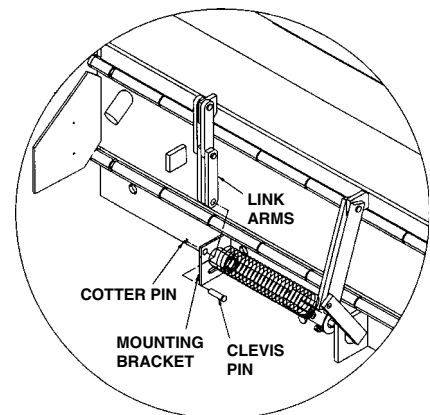
## Height Differential

The optimum dock height in most cases is 50". On dock heights significantly different than 50", ramps and ramp support angles as shown below must be employed.



## Linkage Installation Instructions FOR MECHANICAL EDGE-O-DOCK

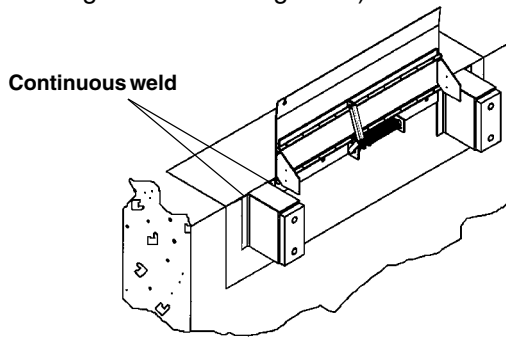
- 1.) Remove the cotter pin from the clevis pin.
- 2.) Remove the clevis pin from the linkage arms.
- 3.) Move the lip plate down until the hole in the mounting bracket is aligned with the holes in the link arms.
- 4.) Insert the clevis pin through the aligned holes and fasten with the cotter pin.



## INSTALLATION OF EDGE-O-DOCK • FM SERIES

### Weld On Installation

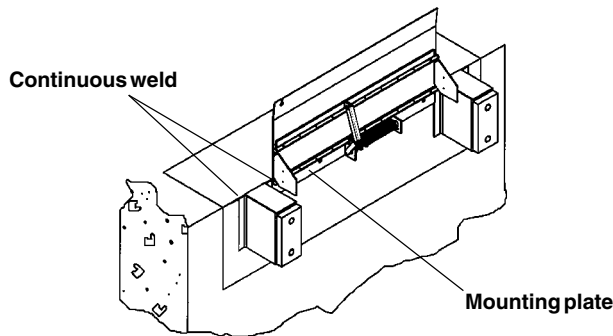
(dock edge steel is 6" or greater)



1. Remove all material and protrusions from the face of the dock.
2. Center the ramp in the doorway and tack weld at each end. Be certain the mounting plate does not extend above the edge of dock.
3. Continuously weld the mounting plate to the steel dock edge.
4. Weld bumper blocks on each side of ramp. Weld continuously across tops and down both sides.

### Bolt And Weld On Installation

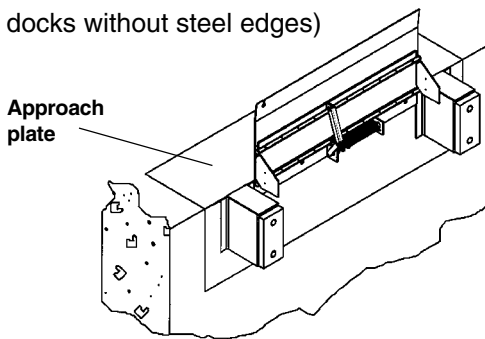
(dock edge steel is less than 6")



1. Remove all material and protrusions from the face of the dock.
2. Center the ramp in the doorway and tack weld at the end. Be certain the mounting plate does not extend above the edge of the dock.
3. Continuously weld the mounting plate to the steel dock edge.
4. Weld bumper blocks on each side of ramp. Weld continuously across top and down both sides.
5. Install one lag bolt 5/8" x 5" on the outside and inside flanges of each bumper block.
6. Install at least two lag screws 3/4" x 5" along the bottom of the mounting plate. Install four if the concrete is flaky or steel is not rigid.

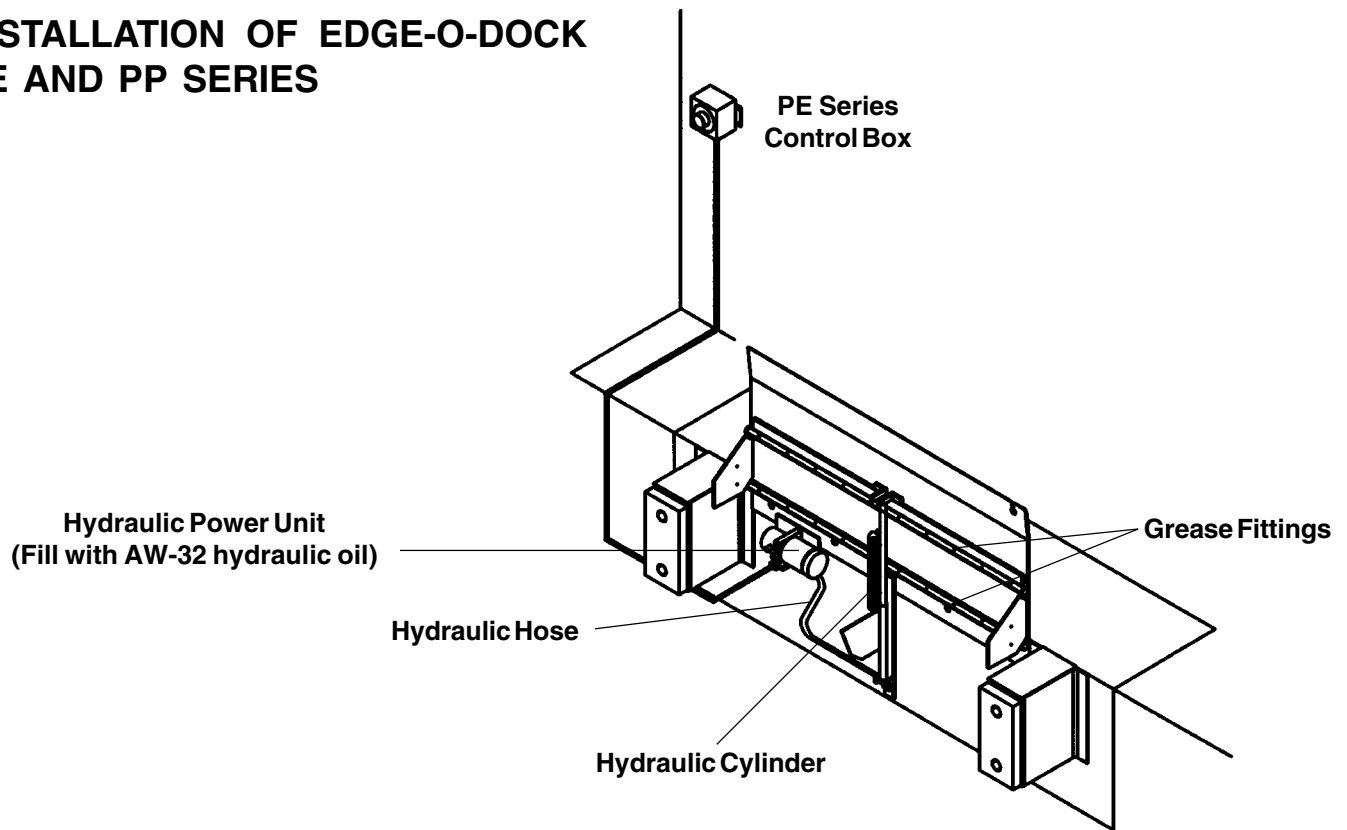
### Bolt On Installation

(for docks without steel edges)



1. Remove all material and protrusions from the face of dock.
2. In installations where cartons or pallets are slid along the building floor into the truck, the approach plate must be recessed into a groove in the floor.
3. To install the groove, locate and mark the center of the dock where ramp is to be mounted. Make a centered chalk line 1/2 inch longer than ramp plate, 12 inches back from the face of the dock.
4. Using a SKIL ROTO Hammer No. 736, or similar tool, cut a groove 3/8" deep x 2" wide x ramp length plus 1/2 inch on the outside of the line. (The groove will start 10" from the dock face and end 12" from dock face.)
5. Position the beveled and turned-down edge of approach plate in the groove with opposite edge flush with the dock edge.
6. Anchor the plate to floor with four 5/8" x 5" lag bolts. Do not tighten yet.
7. Center the mounting plate of leveler against the approach plate anchored to floor. Tack weld the mounting plate in place.
8. Continuously weld across the top. Chip and grind as required.
9. Drill holes into the dock through the holes in the mounting plate. Depending on the cement condition, up to 8 may be required.
10. Install anchors and bolts. Do not tighten.
11. Install bumper blocks on each side of ramp mounting plate. Weld the top of the bumper blocks to the ramp plate, and the side of the bumper blocks to the ramp mounting plate. Install two anchors on each side of bumper blocks.
12. Tighten the anchor bolts on the face of the dock, then on top of dock.
13. Weld and round-off (with grinder) the lag bolts on the ramp plate.

## INSTALLATION OF EDGE-O-DOCK PE AND PP SERIES



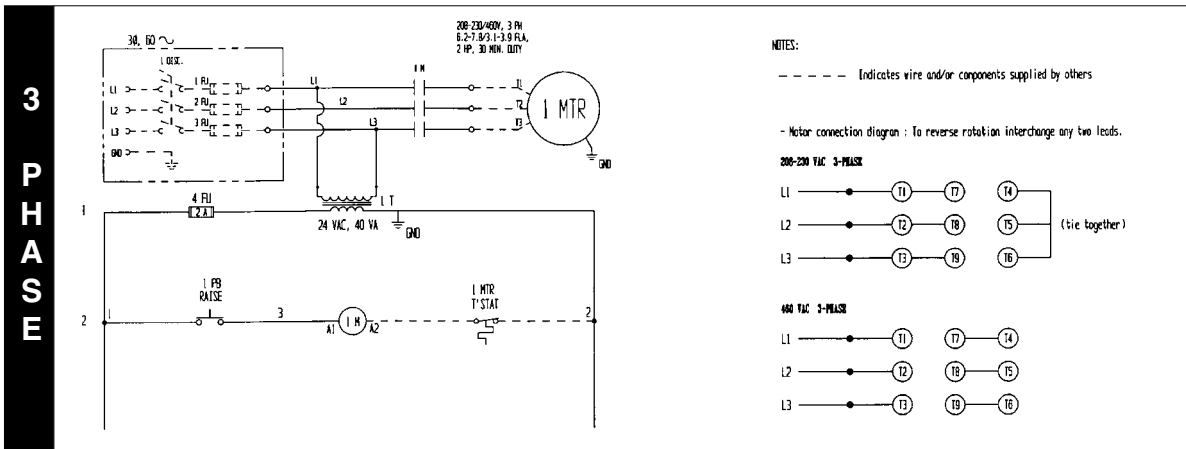
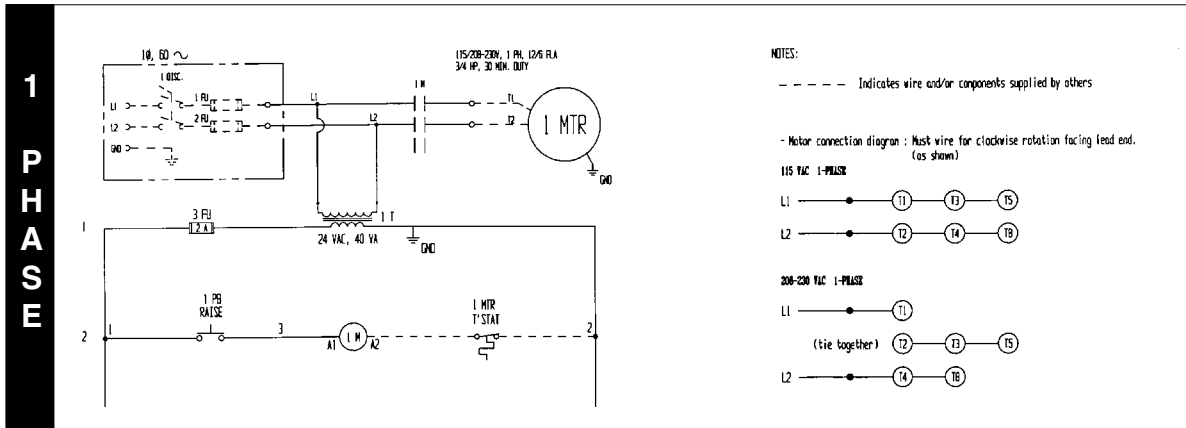
### Installation of PP Series

1. Install the PP leveler and bumpers per the preceding instructions.
2. Install the cylinder with the supplied parts (rod end up) at bottom only. Keep the cylinder closed (piston retracted).
3. Mount the hand pump adjacent to the leveler on a post or wall. Drill a hole thru the wall for hydraulic hose.
4. Attach the hydraulic line to the pump, run to the cylinder and loosely attach to the cylinder.
5. Fill the pump reservoir with the oil. Pump oil into line. Continue pumping slowly until air ceases to escape from cylinder.
6. Tighten fitting on cylinder and continue pumping until cylinder extends enough to attach to top bracket. Attach cylinder.

### Installation of PE Series

1. Install the PE leveler and bumpers per preceding instructions.
2. Install the cylinder with the supplied parts (rod end up).
3. Remove the shipping plug in the reservoir and install the breather vent.
4. Mount the control box on the inside wall of the building at a convenient height. Drill a hole through the wall for 1/2" conduit. Run the conduit from the hydraulic pump motor, below the bumper, and up through the hole previously drilled.
5. Follow standard electrical procedures and all applicable codes when installing the control box to the hydraulic unit (See electrical the schematic on page 6).
6. Check the operation of the leveler. Push the **RAISE** button and hold it in until the cylinder is fully extended. Release the button and the leveler should descend to a work position. If the leveler fails to operate, check the electrical connections to verify proper connections, power source on, and fuses installed and functioning. Operate at least 6 full cycles.
7. Grease all hinge fittings at the time of installation and every 3 months thereafter.

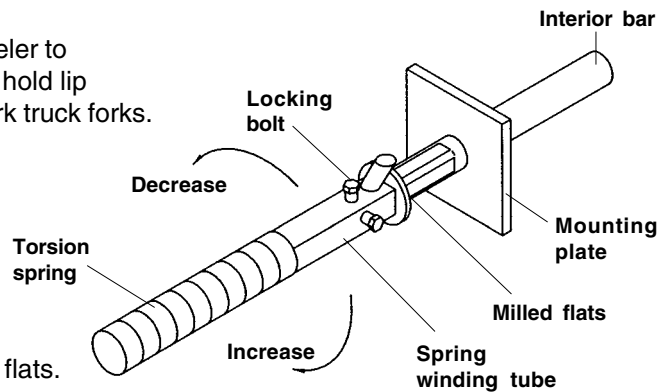
# ELECTRICAL SCHEMATIC



**BE SURE ALL POWER IS OFF BEFORE ATTEMPTING TO WORK ON THIS EQUIPMENT!**  
**CAUTION: SERVICE WORK SHOULD BE PERFORMED ONLY BY TRAINED & QUALIFIED PERSONNEL**

## MECHANICAL EDGE-O-DOCK ADJUSTING INSTRUCTIONS

- 1.) Stand on the ground in front of the leveler. Raise the leveler to its vertical position. Place fork truck forks under lip to hold lip out at nearly level position. Never work directly under fork truck forks.
- 2.) To adjust the counterbalancing force use the pipe lever supplied with the dockleveler and a 3/4" open end wrench or socket. Place the open end of the pipe over the protrusion on the casting and rotate down. We recommend one person to rotate the spring with the pipe handle to the desired strength and a second person to tighten the 3/4" bolts onto the milled flats.
- 3.) When the required lifting torsion is reached, return to leveler to normal operating position. Check the adjustments made, and, if not lifting properly, repeat the previous steps to either increase or decrease spring lifting torsion. If the leveler is bouncing or floating when the lip is extended, there is too much lifting torsion. Repeat the previous steps in reverse to reduce lifting torsion.



**NOTE:** This is an excellent time to lubricate the grease zerks on the hinges. A standard grease gun will service these. This must be done regularly for ease of operation and maintenance, as we recommend monthly.

# THE POWER UNIT'S OPERATION - PE

The electric / hydraulic edge-o-dock leveler utilizes an electric motor directly coupled to a gear-type hydraulic pump to produce the needed fluid pressure and flow to allow the cylinder(s) to perform the work of lifting the dockplate. A hydraulic manifold houses the hydraulic control components, and is bolted directly onto the gear pump. The power unit's hydraulic components are all rated for 3,000 psi working pressure.

Important parts of power unit included:

- The electric motor. Motors are available for operation on single- or three-phase AC supplies (all are dual-voltage capable.)
- The gear pump. Its shaft is coupled directly to the shaft of the electric motor.
- The check valve. Its purpose is to prevent the backflow of fluid through the pump.
- The pressure relief valve. Its job is to open a path for fluid to flow back to the reservoir in the event that the fluid pressure built up by the pump exceeds 1,500 psi. Thus the system cannot see more than 1,500 psi.
- The pilot-operated check valve. This is a hydraulically-operated cartridge valve. It closes to allow oil flow to the cylinder(s) when the system is under pressure, then opens to allow the levelers lip to fall when the system pressure drops after the motor turns off.
- The pressure-compensated flow control. This regulates the fluid flow from the cylinder(s) back to the reservoir when the pilot-operated valve opens. It allows for the adjustment of the lip fall rate.
- The hydraulic lift cylinders(s).
- The hydraulic fluid. The system uses HO150 hydraulic fluid. Any anti-wear hydraulic fluid with an SUS viscosity of 150 - 200 at 100°F (SAE viscosity grade of 32) such as AW-32 or Dextron transmission fluid are acceptable.

When the leveler is to be extended, the operator presses the "RAISE" pushbutton. The motor turns, and in turning it spins the hydraulic gear pump. Oil is drawn from the reservoir and into the pump. System pressure builds and causes the pilot-operated check valve to close.

Once the lip extends out, the operator releases the pushbutton. The check valve prevents oil from returning to the reservoir through the pump. When the pressure in the hydraulic system drops sufficiently, the pilot-operated check valve opens to allow the oil in the cylinder(s) to return back to the reservoir through the pressure-compensated flow control valve, which will regulate the rate at which the lip lowers.

In the event that the lip won't raise, it will be necessary to remove the pilot-operated check valve for inspection and cleaning, as follows:

- Secure the lip plate in the extended position to allow access to the power unit.
- Disconnect and lock out the leveler's power supply
- Remove the cartridge valve from the cavity marked POCV.
- Inspect for contaminants in the valve or the valve cavity.
- Wash the valve in mineral spirits or kerosene if possible. Blow off the valve with a compressed-air gun.
- Replace the valve and cycle the leveler several times.

## Troubleshooting Guide for "PE" Series

*Only qualified individuals trained to understand mechanical devices and their associated electrical and hydraulic circuits should attempt troubleshooting and repair of this equipment.*

*Care should be taken to identify all potential hazards and comply with applicable safety procedures before beginning work.*

*Consult the factory for problems at time of installation, or for any problems not addressed below.*

Before working on the power unit, always secure the lip plate outward and disconnect the power supply.

### **PROBLEM**

Lever doesn't cycle when the "RAISE" button is pressed.

### **POSSIBLE CAUSE**

Motor doesn't run

Motor runs properly, but the deck doesn't move or the lip doesn't extend. Motor and pump not noisy.

Leveler raises but won't lower, or lowers only slowly.

### **CORRECTIVE ACTION**

- Use a multimeter to check: for proper supply (all legs) and control voltage; for an "open anywhere" in the control circuit.
- Visually check for loose wiring or pushbutton components.

- Verify the motor shaft rotates CCW.
- Ensure that the reservoir is full and that its fill hole plug has been replaced by a breather plug.
- Check for items resting on the leveler.
- Install a pressure gauge to check hydraulic system pressure. If it doesn't build to 1,500 psi, consult the factory for a replacement pump.

- Remove, check and clean the pilot-operated check valve.
- Remove, check and clean the pilot-operated check valve and the flow control valve.
- Check for any binding of the mechanical parts; hinge, etc.