PENTALIFT™

PENTALIFT EQUIPMENT CORPORATION

HYDRAULIC DOCK LEVELER
OWNERS MANUAL

MODEL NUMBER : _____ **SERIAL NUMBER :** _____

CAPACITY : _____

Individual Model Number(s) and Serial Number(s) must be filled out by the user for future reference.

⚠ DANGER

DO NOT INSTALL, OPERATE OR SERVICE THIS PRODUCT UNLESS YOU HAVE READ AND FULLY UNDERSTAND THE ENTIRE CONTENTS OF THIS MANUAL. FAILURE TO DO SO MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY OR DEATH. KEEP THIS MANUAL IN A SAFE PLACE FOR FUTURE REFERENCE.

SAFETY INFORMATION AND WARNINGS

⚠ DANGER

READ THESE SAFETY PRACTICES BEFORE INSTALLING, OPERATING OR SERVICING THE DOCK LEVELER. FAILURE TO FOLLOW THESE SAFETY PRACTICES MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY OR DEATH.

THE OPERATION OF THIS EQUIPMENT IS SUBJECT TO CERTAIN HAZARDS THAT CAN BE PROTECTED AGAINST ONLY BY THE EXERCISE OF CARE AND COMMON SENSE AND NOT BY MECHANICAL MEANS. IT IS, THEREFORE, ESSENTIAL TO HAVE COMPETENT, QUALIFIED OPERATORS TRAINED IN THE SAFE OPERATION AND CARE OF THIS TYPE OF EQUIPMENT. ALL PERSONNEL MUST COMPLETELY UNDERSTAND THIS SAFETY INFORMATION BEFORE WORKING ON OR NEAR THIS EQUIPMENT.

1. ⚠ DANGER BEFORE DOING ANY INSTALLATION, MAINTENANCE, INSPECTION OR TROUBLE SHOOTING, BARRICADE ALL AREAS FROM TRAFFIC AROUND THE WORK AREA INSIDE (AND OUTSIDE IF APPLICABLE) FOR SAFETY AND POST APPROPRIATE WARNING SIGNS.

2. ⚠ DANGER BEFORE DOING ANY ELECTRICAL WORK, BE CERTAIN THAT THE POWER IS DISCONNECTED WITH A FUSED DISCONNECT, PROPERLY TAGGED AND LOCKED OUT. FUSED DISCONNECT AND LOCKOUT DEVICE (SUPPLIED AND INSTALLED BY OTHERS) MUST MEET WITH ALL APPLICABLE CODES AND REGULATIONS. ALL ELECTRICAL WORK MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.

3. ⚠ DANGER NEVER GO BENEATH THE DOCK LEVELER FOR ANY REASON UNLESS THE DECK AND LIP ARE PROPERLY SUPPORTED (SEE SUPPORTING THE LEVELER FOR MAINTENANCE, PAGE 21) AND THE POWER IS DISCONNECTED WITH A FUSED DISCONNECT, PROPERLY TAGGED AND LOCKED OUT. IT IS THE RESPONSIBILITY OF THE OWNER TO ENSURE THAT NO LOAD OR TRAFFIC IS PLACED ON THE DECK WHILE THE MAINTENANCE STAND IS ENGAGED. THE CONSTRUCTION OF THE MAINTENANCE STAND IS INTENDED TO SUPPORT THE WEIGHT OF THE UNLOADED DOCK LEVELER ONLY.

4. ⚠ DANGER NEVER USE THE "DECK STOP" BUTTON (If equipped) AS A MEANS OF HOLDING THE DECK UP WHILE PERFORMING MAINTENANCE OR INSPECTION.

5. ⚠ DANGER DOCK LEVELER CAPACITY: *THE RATED CAPACITY OF THE DOCK LEVELER AS STATED ON THE SERIAL NUMBER PLATE IS A STATIC RATING. NUMEROUS DYNAMIC LOADING FACTORS RESULT IN THE GROSS LOAD CAPACITY (ROLLOVER CAPACITY) BEING SIGNIFICANTLY LESS THAN THE RATED STATIC CAPACITY OF THE DOCK LEVELER. FACTORS WHICH EFFECT THE ROLL OVER CAPACITY ARE: WEIGHT OF THE LOAD; WEIGHT OF THE FORK TRUCK; SPEED OF THE FORK TRUCK AS IT ROLLS OVER THE DOCK LEVELER; INCLINE OR DECLINE SLOPE OF THE DOCK LEVELER DECK AND LIP WHEN IN USE; FREQUENCY OF USE AND DESIRED LIFE OF THE DOCK LEVELER. PRIOR TO USING THE DOCK LEVELER, OR IF THE APPLICATION CONDITIONS FOR THE DOCK LEVELER CHANGE IN ANY RESPECT, CONTACT YOUR AUTHORIZED PENTALIFT REPRESENTATIVE TO CONFIRM THE SPECIFIC DOCK LEVELER□S SUITABILITY FOR THE APPLICATION.*

6. ⚠ DANGER ALWAYS ASSURE NO ONE IS WITHIN 6 FEET OF THE FRONT (LIP END) OF THE DOCK LEVELER PRIOR TO ACTIVATION. STAY CLEAR OF DOCK LEVELER WHEN IT IS MOVING.

7. ⚠ DANGER NEVER WALK ON THE DOCK LEVELER LIP UNLESS IT IS FULLY EXTENDED AND SUPPORTED BY THE TRUCK BED.

8. ⚠ DANGER TO AVOID POSSIBLE PERSONNEL INFURY AS WELL AS, TO AVOID DAMAGE TO THE DOCK LEVELER AND/OR THE PRODUCT, DO NOT DRAG OR SLIDE ANYTHING ACROSS THE SURFACE OF THE DOCK LEVELER. ALWAYS ENSURE THE FORKLIFT FORKS ARE RAISED TO CLEAR THE DOCK LEVELER SURFACE AND THE DOCK LEVELER COMPONENTS.

9. ⚠WARNING IT IS THE RESPONSIBILITY OF OTHERS TO ENSURE THE PROPER MOUNTING OF ANY WALL MOUNTED EQUIPMENT SUCH AS REMOTE POWER UNITS, CONTROL PANELS AND LIGHT PACKAGES AND TO ENSURE THAT THE MOUNTING SURFACE IS CAPABLE OF FULLY SUPPORTING THE LOADS GENERATED BY THE EQUIPMENT.

10. **HYDRAULIC FALLSAFE:** The basic purpose of the fallsafe feature is to arrest the deck's downward movement in the event of premature truck departure creating a loss of support for the dock leveler lip. If a fallsafe situation should occur, the dock leveler must be inspected by an authorized Pentalift representative before operation continues. The owner must receive written authorization from Pentalift Equipment Corporation through the authorized Pentalift representative before continuing to use the dock leveler.
11. When not in use, the deck must be in the stored (cross traffic) position, with the lip inside the front angle. (See Figure 23, page 18)
12. Before loading/unloading the truck, assure the trailer is in position firmly against both of the dock bumpers and **ENGAGE A VEHICLE RESTRAINT or CHOCK THE TRUCK WHEELS** to eliminate the possibility of the truck rolling or inching forward.
13. Unless the dock leveler is equipped with the auto return option, return the dock leveler to the stored position before allowing the truck to depart.
14. Be certain no equipment, material or personnel are on the dock leveler before allowing truck to depart.
15. Regular inspection and maintenance must be performed to keep the equipment in proper operating condition in accordance with the detailed instructions in this manual.
16. The deck surface must be kept clean and free from oil, debris, etc. Keep debris, etc. from underneath the unit.
17. Never use a fork truck to lower the deck from its raised position.
18. Do not use the dock leveler while under the influence of drugs or alcohol.
19. Never stand between the dock and a truck.
20. Stay clear of operating path at all times.
21. Assure that the equipment is not used by anyone if you believe that any part of it might be in disrepair (e.g. loose wires, leaking hoses, bent structural members, broken welds, etc.). See Warranty Section.
22. If you have any questions contact your immediate supervisor or your authorized Pentalift representative for assistance.

⚠ DANGER — This is the highest level statement. Failure to follow the listed instructions will most likely result in severe injury or death.

⚠WARNING — This is a statement of serious hazard. Failure to follow the listed instructions could place the individual at risk of serious injury or death.

⚠ CAUTION — The statements used with this level of warning deal with a safe operating procedure. If the procedure is ignored, the possibility of personal injury may exist.

IMPORTANT This statement draws attention to a procedure that needs to be followed to prevent machine or property damage.

OWNER RESPONSIBILITY

The Owner's Responsibilities include the following:

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

2. When a transport vehicle is positioned as closely as practicable to a dock leveling device, there shall be at least 4" (100 mm) of overlap between the front edge of the lip and the edge of the floor or sill of the transport vehicle.

3. Nameplates, cautions, instructions and posted warnings shall not be obscured from the view of operating or maintenance personnel for whom such warnings are intended.

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

*5. 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 **Pentalift Equipment Corporation's** authorized representative and repaired as needed before being placed back in service. The owner shall receive written authorization from **Pentalift Equipment Corporation** through the authorized Pentalift representative that they can continue to use the dock leveler.*

*6. **Pentalift Equipment Corporation** shall supply replacement nameplates, caution or instruction labels and operating and maintenance manuals upon request of the owner. The owner shall see that all nameplates and caution and instruction markings or labels are in place and legible and that the appropriate operating and maintenance manuals are provided to users.*

*7. Modifications or alterations of dock leveling devices shall be made only with written permission of **Pentalift Equipment Corporation**. Alteration permission must be signed by both the Pentalift Post Sale Customer Service Manager and the President to be valid.*

8. When industrial trucks 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.

NOTE: It is recognized that these devices are intended to secure a transport vehicle to a loading dock by mechanical means. However, no standards currently exist for the strength, construction or attachment of the underride guard on a transport vehicle. It is therefore recommended that users of such positive restraint devices review:

- *The means of attachment to the transport vehicle*
- *The strength of the overall connection*
- *The proper coordination of the actuation of devices with any signalling system used*
- *The need to use wheel chocks*

9. In selecting dock leveling devices, it is important to consider not only present requirements, but also future plans or adverse environments.

Unless specifically agreed to in writing by Pentalift Equipment Corporation at the time the equipment is ordered and prior to the equipment's manufacture, this equipment is sold as a complete package. It is not to be altered, changed or added to in any way or form, in its configuration and function, without the written permission of Pentalift Equipment Corporation.

⚠ DANGER

If requested by a customer, Pentalift Equipment Corporation is not supplying all or some of the power unit and / or control components for the equipment's application. The power unit and controls constitute important safety and functional aspects of the equipment. It is the customer's responsibility to address the operational and safety issues associated with providing the required controls and power units to satisfy the operational and safety requirements of the equipment.

The customer's decision to supply all or some of these components indicates that the customer is taking full responsibility for any and all possible operational, safety and liability issues associated to the product and its configuration. The customer also agrees to absolve Pentalift Equipment Corporation from any and all possible operation, safety and liability issues.

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SAFETY LABELING

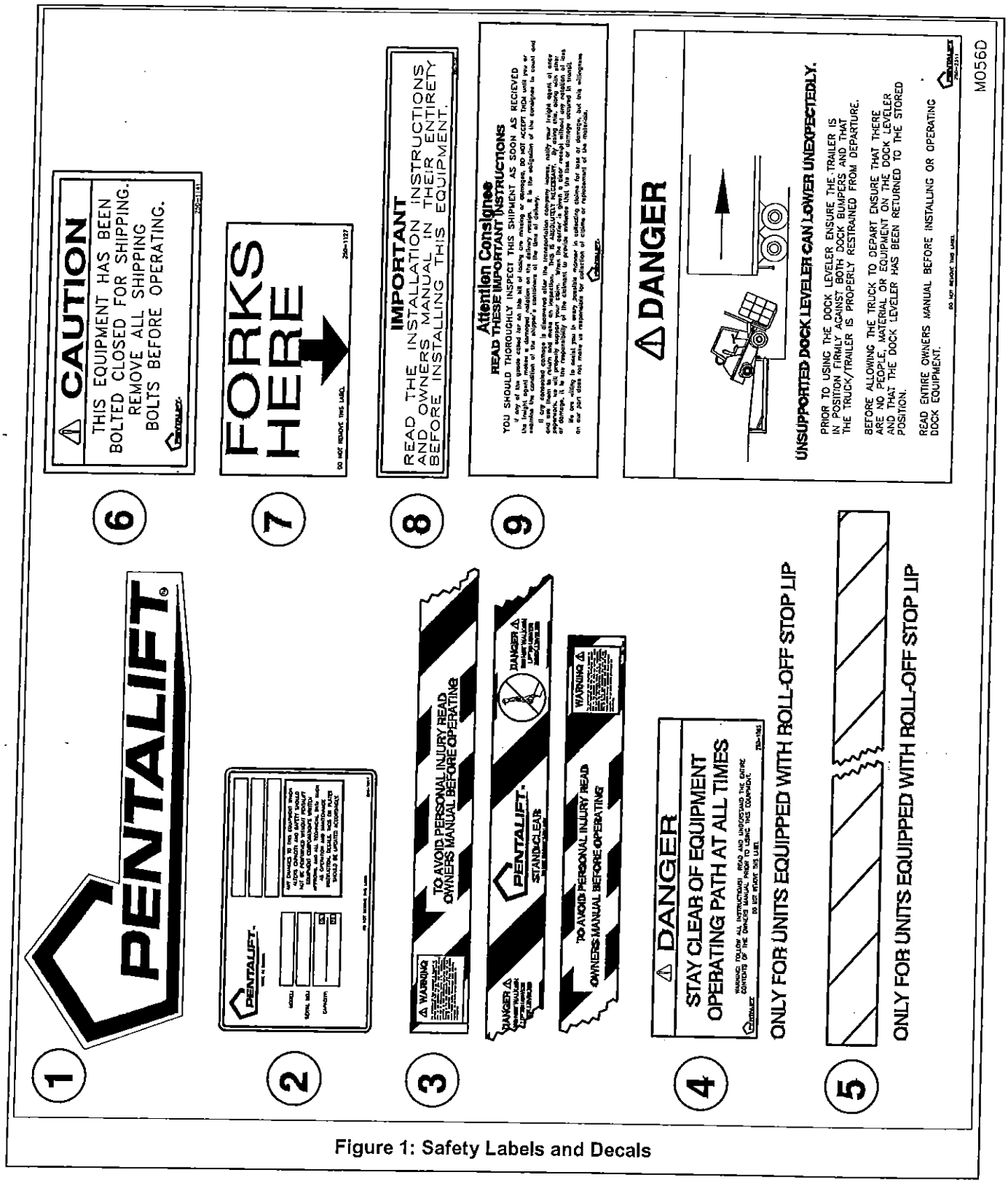

Figure 1: Safety Labels and Decals

SAFETY LABELING (CONT.)

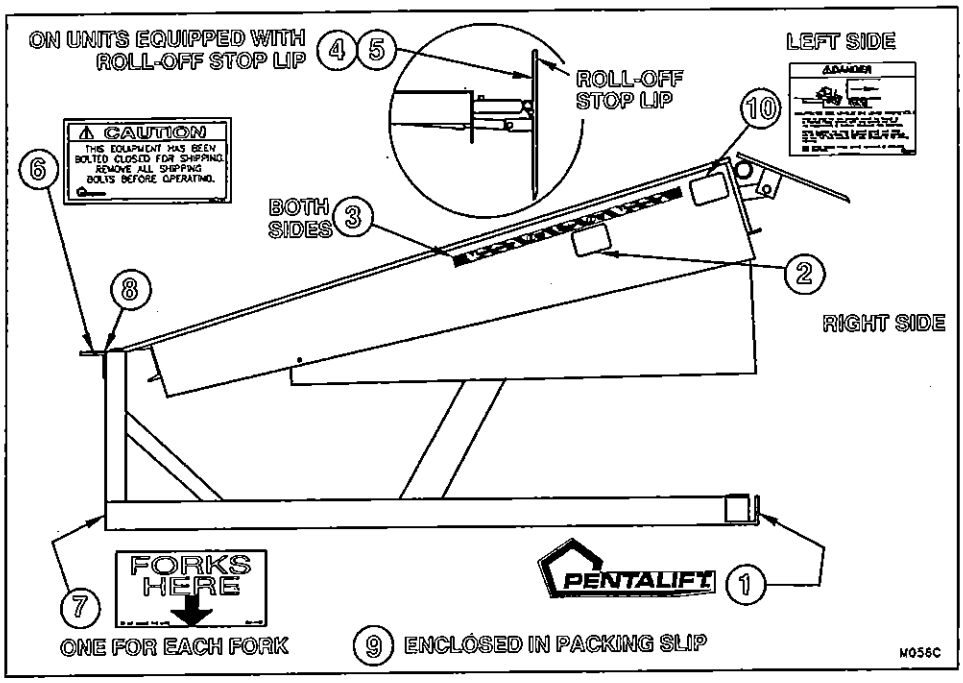

Figure 2: Safety Label and Decal Locations

Be sure that all labeling is in place and intact when the unit is received. If any of the safety labels or decals are missing or illegible, contact your Pentalift representative for immediate replacement.

NOTE: It is the owner's responsibility to assure that all safety labeling remains legible and in its original position throughout the life of the product. If any of the safety labels or decals are missing or illegible, contact your Pentalift representative for immediate replacement. Inspection shall be done during regular maintenance and lubrication (see MAINTENANCE AND LUBRICATION, page 24).

To re-order labels and decals, use the following part numbers:

	ITEM NO.	PART NO.	QTY/UNIT	DESCRIPTION
Safety Labels	1	250-2307	1	"PENTALIFT"
	2	250-1817	2 *	Specification Plate
	3	250-1882	2	Safety Stripe
	4	250-1085	1	"DANGER STAY CLEAR..." Note: For units equipped with Roll-Off Stop only
	5	250-2080	1	Safety Tape Note: For units equipped with Roll-Off Stop only
	10	250-2320	1	"DANGER Unsupported dock..."
Installation	6	250-1141	1	"CAUTION..."
	7	250-1127	2	"FORKS HERE"
	8	250-2058	2	"IMPORTANT.."
	9	250-1185	1	"ATTENTION CONSIGNEE..."

NOTE: For control panel labels, see "Control Panel Replacement Parts" section of this manual.
For units equipped with Jog Start*, the serial number specification plate is on the right skirt only. All other units have a second specification plate on the control panel.

NOTE: State Model # and Serial # when ordering replacement parts.

INSTALLATION INSTRUCTIONS

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IMPORTANT
PREPARATION PRIOR TO INSTALLATION

Perform installation instructions in the same sequence as they are listed below.

1. **⚠ DANGER** BEFORE DOING ANY INSTALLATION, MAINTENANCE, INSPECTION OR TROUBLE SHOOTING, BARRICADE ALL AREAS FROM TRAFFIC AROUND THE WORK AREA INSIDE (AND OUTSIDE IF APPLICABLE) FOR SAFETY AND POST APPROPRIATE WARNING SIGNS.

2. **⚠ DANGER** BEFORE DOING ANY ELECTRICAL WORK, BE CERTAIN THE POWER IS DISCONNECTED WITH A FUSED DISCONNECT, PROPERLY TAGGED AND LOCKED OUT. FUSED DISCONNECT AND LOCKOUT DEVICE (SUPPLIED AND INSTALLED BY OTHERS) MUST MEET WITH ALL APPLICABLE CODES AND REGULATIONS. ALL ELECTRICAL WORK MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH ALL APPLICABLE CODES AND REGULATIONS.

3. **⚠ DANGER** NEVER GO BENEATH THE DOCK LEVELER FOR ANY REASON UNLESS THE DECK AND LIP ARE PROPERLY SUPPORTED (See SUPPORTING THE LEVELER FOR MAINTENANCE, PAGE 21) AND THE POWER IS DISCONNECTED WITH A FUSED DISCONNECT, PROPERLY TAGGED AND LOCKED OUT. IT IS THE RESPONSIBILITY OF THE OWNER TO ENSURE THAT NO LOAD OR TRAFFIC IS PLACED ON THE DECK WHILE THE MAINTENANCE STAND IS ENGAGED. THE CONSTRUCTION OF THE MAINTENANCE STAND IS INTENDED TO SUPPORT THE WEIGHT OF THE UNLOADED DOCK LEVELER ONLY.

4. **⚠ WARNING** IT IS THE RESPONSIBILITY OF OTHERS TO ENSURE THE PROPER MOUNTING OF ANY WALL MOUNTED EQUIPMENT SUCH AS REMOTE POWER UNITS, CONTROL PANELS AND LIGHT PACKAGES AND TO ENSURE THAT THE MOUNTING SURFACE IS CAPABLE OF FULLY SUPPORTING THE LOADS GENERATED BY THE EQUIPMENT.

5. Assure pit conforms to appropriate Pentalift pit drawing.

6. Confirm pit curb angle is properly installed and meets the force requirements as shown in Figure 19, Page 14.

7. Clean pit of all debris.

8. **⚠ DANGER** MAKE SURE LIFTING AND SLINGING DEVICES ARE OF SUFFICIENT CAPACITY, USED IN THE CORRECT MANNER AND ARE IN GOOD WORKING ORDER. ALL LIFTING, POSITIONING AND INSTALLATION, AS WELL AS THE BREAK-IN AND PERFORMANCE CHECK MUST BE DONE BY QUALIFIED PERSONNEL TRAINED AND EXPERIENCED IN NECESSARY SAFETY PROCEDURES.

9. The leveler is shipped with both lifting brackets bolted to one side of the platform. (See Figure 3, page 4) Before attempting to lift the leveler, remove the bolt holding the lifting brackets on and remove one of the brackets. Using the bolt supplied, bolt the bracket that was removed to the opposite side of the leveler platform. (See Figure 4, page 5).

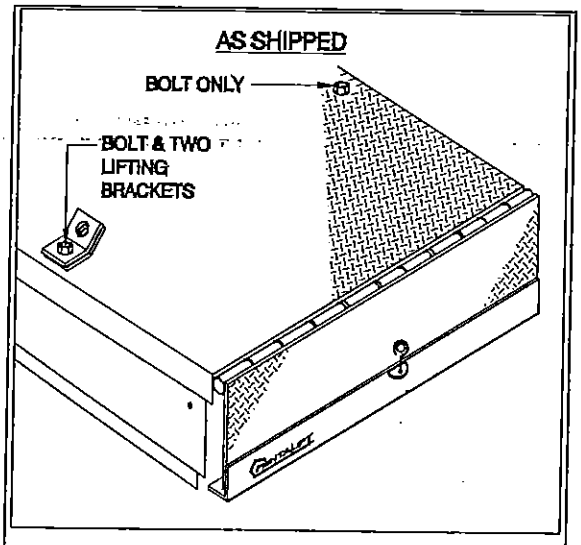


Figure 3: Remove Double Lifting Bracket

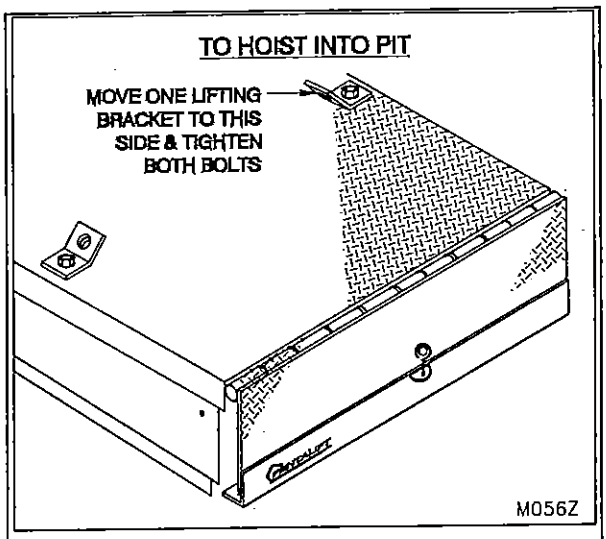


Figure 4: Move One Bracket to Other Side

10. For units with a nominal depth of 20" being installed into a deeper pit, proceed to the INSTALLATION USING SHIM KIT instructions on page 8.

SELF-CONTAINED POWER UNIT

1. Hoist leveler into pit with chain using only the lifting brackets provided on the leveler as points of attachment (See Figure 5, page 5) and position the leveler into the pit opening.

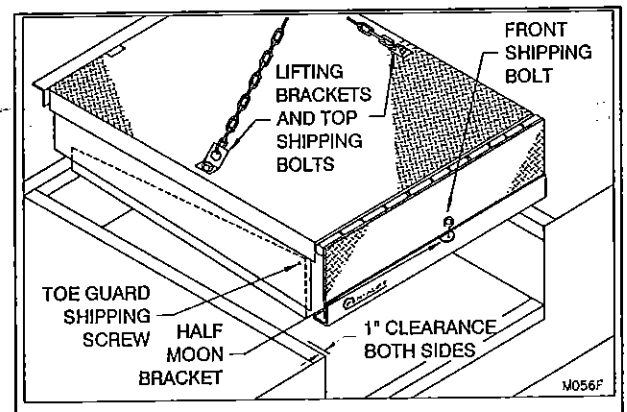


Figure 5: Hoist Leveler with Chain

Note: Assure temporary wire is accessible through front of dock leveler. (See Figure 6, page 5)

2. Assure 1" clearance is maintained between the side of leveler platform and the side pit wall and that rear angle of dock is tight with rear curb angle.

3. Remove top and front shipping bolts and lifting brackets. Finally, bend down the half moon bracket. (See Figure 5, page 5)

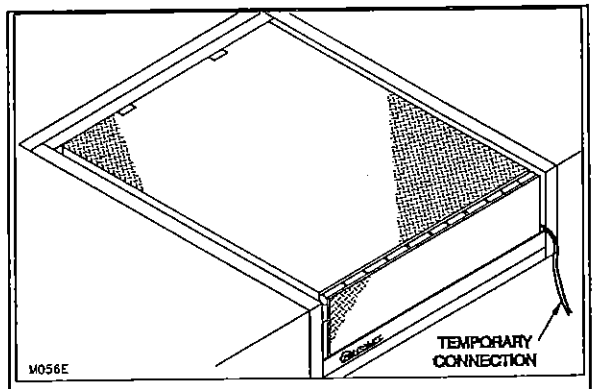


Figure 6: Accessible Temporary Wire

4. Raise dock leveler by connecting the temporary wire from power supply to temporary wire supplied with dock leveler.(See Figure 6, Page 5)

- **WIRING MUST BE DONE BY A QUALIFIED ELECTRICIAN.**
- **ALWAYS USE APPROPRIATE LOCK-OUT PROCEDURES DURING ANY ELECTRICAL INSTALLATIONS.**

⚠ DANGER

- **ASSURE SUPPLY VOLTAGE IS CORRECT.**
- **ON 3 PHASE UNITS ASSURE PHASE POLARITY IS CORRECT.**
- **ALWAYS OBSERVE ALL APPLICABLE ELECTRICAL CODES.**

NOTE: The temporary wires supplied are intended to be used for lifting the deck for the initial installation only. Once the maintenance stand is in position, the temporary wires are to be removed from both the power supply and the dock leveler. Permanent wiring must be installed immediately.

NOTE: The temporary wires should be connected only if they meet the requirements of the applicable local electrical codes. If they do not, the electrician should rewire to meet all applicable codes prior to applying any electrical power.

NOTE: The temporary wires must be wired to a push-button control in order to raise the deck. Never wire the temporary wires directly to a power supply.

5. Once the deck reaches its maximum raised height with the lip fully extended, support the dock leveler as instructed in the "SUPPORTING THE LEVELER FOR MAINTENANCE" section on page 21)

6. Support the lower half of the toe guard and remove the self tapping screw which holds it in the shipping position. Carefully lower the toe guard and avoid pinch points. (See Figure 5, page 5)

⚠ DANGER **DO NOT DISCONNECT THE TEMPORARY POWER SUPPLY UNTIL MAINTENANCE STAND IS IN POSITION. DECK WILL AUTOMATICALLY LOWER WHEN POWER IS DISCONNECTED OR PUSH BUTTON IS RELEASED. ONCE MAINTENANCE STAND IS SECURELY IN PLACE, DISCONNECT TEMPORARY POWER SUPPLY.**

STAY CLEAR OF THE EQUIPMENT'S OPERATING PATH AT ALL TIMES.

7. Mount the push button in an appropriate location. (See Figure 7, page 6)

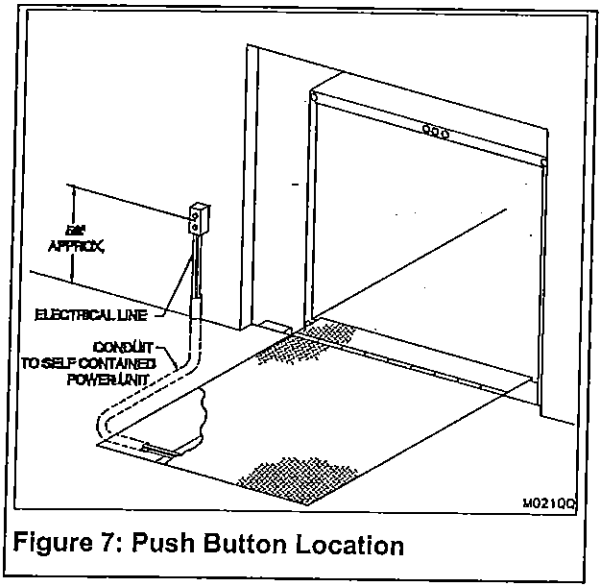


Figure 7: Push Button Location

8. Remove temporary wire from motor.

9. Feed electrical line through conduit from push button to power unit and connect as per wiring diagram supplied.

10. Connect main power supply to push button.

NOTE: Power unit requires full voltage at motor. Wire size should be sufficiently sized to prevent line voltage drop when motor is under load. (See ELECTRICAL REFERENCE CHART, page 13.)

REMOTE POWER UNIT

1. Mount push button and power unit on wall. (See Figure 8, page 6) Mount the power unit horizontally with reservoir breather facing up.

2. Hoist the leveler into the pit with chain using only the lifting brackets provided on the leveler as points of attachment (See Figure 5, page 5) while feeding the hydraulic hose through the 3"

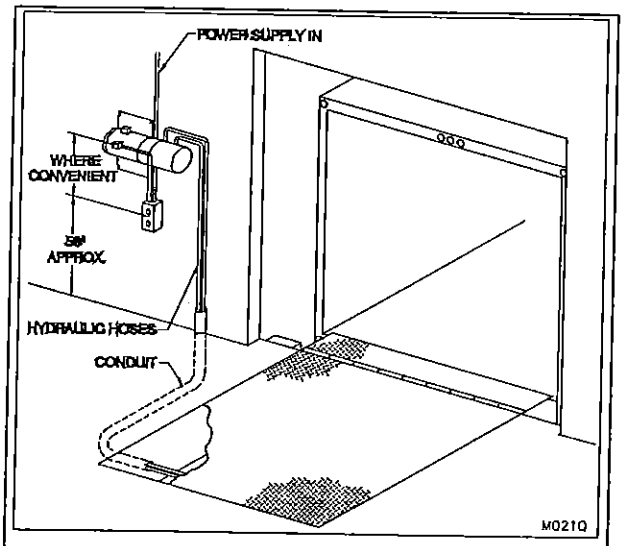


Figure 8: Power Unit & Push Button Location

O.D. conduit from inside of the pit to the power unit.

NOTE: The hydraulic hose is located under the dock leveler. Hoses must stay connected to the cylinders.

3. Connect two hydraulic lines to the Pentalogic

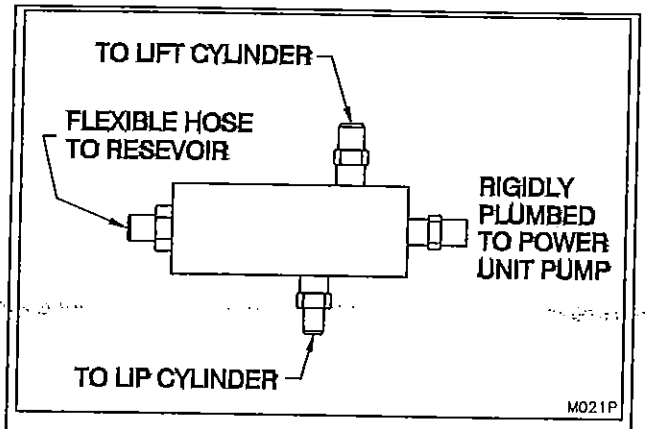


Figure 9: Pentalogic Hydraulic Manifold

hydraulic manifold on the power unit (one hydraulic hose from lip cylinder and one hydraulic hose from lift cylinder.) See, Figure 9, Page 6.

⚠ DANGER

- **WIRING MUST BE DONE BY A QUALIFIED ELECTRICIAN.**
- **ALWAYS USE APPROPRIATE LOCK-OUT PROCEDURES DURING ANY ELECTRICAL INSTALLATIONS.**
- **ASSURE SUPPLY VOLTAGE IS CORRECT.**
- **ON 3 PHASE UNITS ASSURE PHASE POLARITY IS CORRECT. INCORRECT POLARITY WILL CAUSE THE MOTOR TO RUN BACKWARDS RESULTING IN CAVITATION AND POSSIBLE DAMAGE TO THE PUMP.**
- **ALWAYS OBSERVE ALL APPLICABLE ELECTRICAL CODES.**

4. Install permanent electrical lines as per applicable electrical diagram provided in control panel.

NOTE: Power unit requires full voltage at motor. Wire size should be sufficiently sized to prevent voltage drop when motor is under load. (See Electrical Reference Chart on page 13)

Remove top and front shipping bolts. (Items 1 and 2 on Figure 5, page 5)

Raise dock leveler to its maximum height and support according to the Supporting the Leveler for Maintenance section on page 21)

5. Proceed to leveling instructions on page 7.

UNITS EQUIPPED WITH AUTO RETURN:

Run auto return limit switch wire through conduit as shown on applicable pit drawing and hook up in accordance with electrical schematic supplied.

See page 16 for auto return operation and adjustments.

LEVELING INSTRUCTIONS

1. Place shims (3" x 4" x 3/16") under rear frame until top rear of dock leveler is flush with rear curb angle. (See Figure 10, page 7 for shims placement.) Tack weld into position.

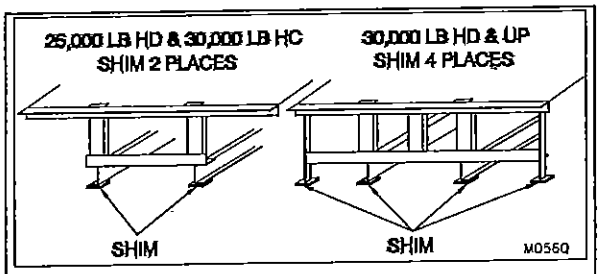


Figure 10: Rear Shims

2. Lower dock leveler to the stored position and shim front frame under the two deck stops and in center of dock leveler until the deck is flush with the top of the front curb angle and the floor. (See Figure 11, page 7 for shims placement) Tack weld into position.

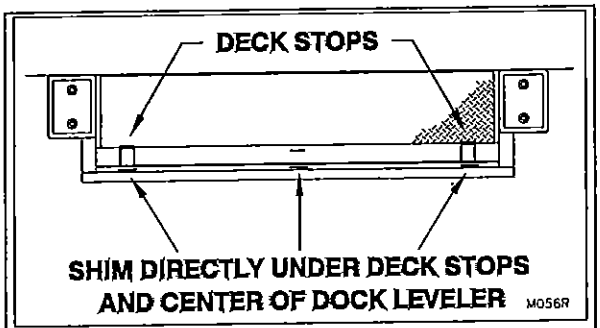


Figure 11: Front Shims

3. **Confirm that the back angle of dock leveler is firmly against and flush with the top of the rear curb angle and that the dock leveler remains square in the pit before continuing.**

4. Weld back angle of dock leveler to rear curb angle as shown in Figure 12, page 7 using the welding reference and notes on page 13 as a guide.

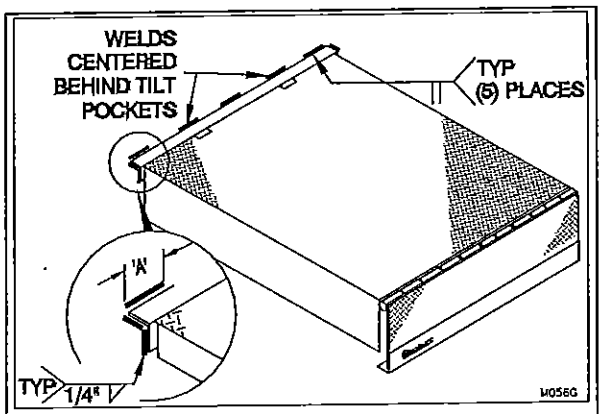


Figure 12: Weld Back Angle of Dock Leveler

5. Raise the dock leveler to its maximum height and support in accordance with the Supporting the Leveler for Maintenance section on page 21.

6. Finish welding the front (3" long welds) and rear shim-stacks to the frame of the dock leveler.

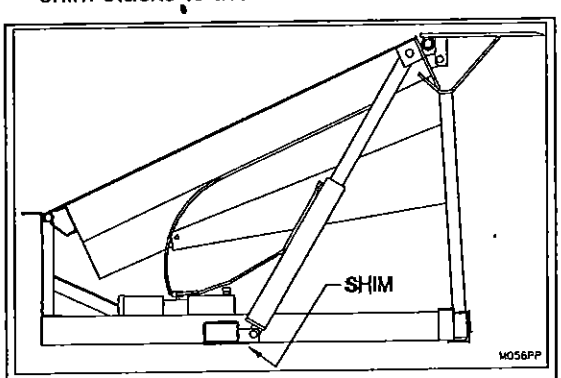


Figure 13: Lift Cylinder Shim

7. Shim under hydraulic lift cylinder lower clevis plate and weld securely in place. (See Figure 13, page 7)

⚠ DANGER It is imperative that the lift cylinder clevis is properly supported. If unable to shim beneath the cylinder lower clevis plate due to insufficient pit dimensions, consult your authorized Pentalift representative for alternative support recommendations.

NOTE: All shim stacks must be welded together.

8. Weld or bolt bumpers in place.
9. Clean and paint welds.
10. Lubricate and test in accordance with the Break-in and Performance Check on page 17.

INSTALLATION USING SHIM KIT

For units with a nominal depth of 20" being installed into a deeper pit, it will be necessary to install a shim kit. Shim kits are available in standard heights of 1", 2" , 3" and 4".

SELF CONTAINED POWER UNIT

1. For 3" or 4" shim kits, weld two rear shims (see Table A) to a single shim plate each (3" x 5" x minimum ASTM A-36 or CSA G40.21 supplied by others) as shown in Figure 14, page 8. This step adds stability to the shims while installing the dock. This step is not required for 1" or 2" shim kits as the blocks are sufficiently stable as supplied.

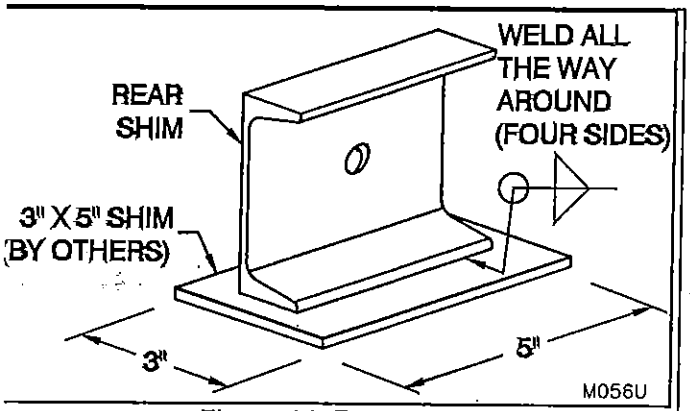


Figure 14: Rear Shim (4" Shim Kit Shown)

Table A - Rear Shims	
4" Shim Kit	C4 Channel x 4" Long
3" Shim Kit	C3 Channel x 4" Long
2" Shim Kit	2" x 3" x 3/16" Rect. Tube x 4" Long
1" Shim Kit	1" x 3" Flat Bar x 4" Long

Note: On 25,000 lb and 30,000 lb HC models, there will be two rear shims; on 30,000 lb HD models and higher capacities, there will be four. Do not weld the outer rear shims (30,000 lb HD models and higher capacities) at this time.

2. Place the front-angle shim assembly into the pit at the front edge, centered across the dock leveler and pit width. When the front-angle shim is constructed of C-channel (3" & 4" shim kits) ensure the short pieces (12" long) on each end are installed toward the inside of the pit. See Figure 18, page 10.

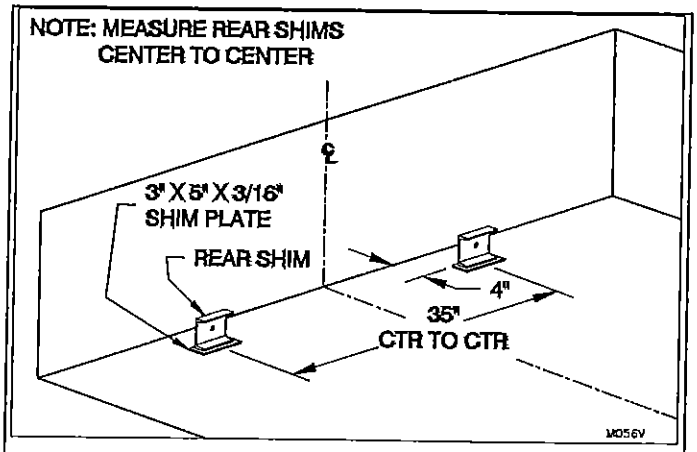


Figure 15: Rear Shim Location (4" High Rear Shim Shown)

3. Place the two rear shims with welded-on shim plate at the rear of the pit, 35" center to center and 4" from the rear pit wall. (See Figure 15, page 8)

⚠ DANGER **NEVER GO BENEATH THE DOCK LEVELER UNLESS IT IS PROPERLY SUPPORTED ON THE FRONT SHIMS, THE REAR ANGLE IS SECURELY WELDED AND THE MAINTENANCE STAND IS ENGAGED.**

4. Hoist leveler into pit with chain using only the lifting brackets provided on the leveler as points of attachment (See Figure 16, page 9) and position the leveler into the pit opening. Note: Assure temporary wire is accessible through front of dock leveler. (See Figure 16, page 9)
5. Assure 1" clearance is maintained between the side of leveler platform and the side pit wall and that the rear angle of the dock is firmly against the rear curb angle. (See Figure 16, page 9)

6. **Confirm that the back angle of the dock leveler is firmly against and flush with the top of the rear curb angle and that the dock leveler has remained square in the pit before continuing.**

7. Weld the rear angle of the dock leveler to the rear curb angle, 1" wide butt weld, at the location of each tilt bar pocket (2 places). See Figure 16, page 9.

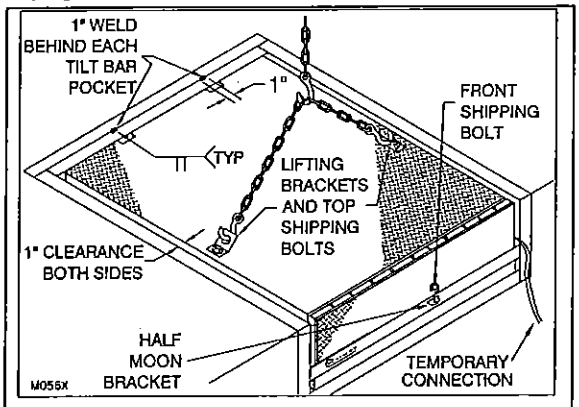


Figure 16: Hoist Leveler with Chain

8. Lower the dock leveler until the front angle of the dock leveler rests on the front-angle shim. Ensure the front-angle shim assembly is flush with the front angle of the dock leveler frame. Figure 18, page 10.

9. Weld the front-angle shim to the dock leveler frame.

10. Remove the lifting chain, top and front shipping bolts, and lifting brackets. Finally, bend down the half moon bracket. (See Figure 16, page 9)

11. Connect the temporary wire from the power supply to the temporary wire supplied with the dock leveler. (See Figure 16, page 9)

⚠ DANGER

- **WIRING MUST BE DONE BY A QUALIFIED ELECTRICIAN.**
- **ALWAYS USE APPROPRIATE LOCK-OUT PROCEDURES DURING ANY ELECTRICAL INSTALLATIONS.**
- **ASSURE SUPPLY VOLTAGE IS CORRECT.**
- **ON 3 PHASE UNITS ASSURE PHASE POLARITY IS CORRECT.**
- **ALWAYS OBSERVE ALL APPLICABLE ELECTRICAL CODES.**

NOTE: The temporary wires supplied are intended to be used for lifting the deck for the initial installation only. Once the maintenance stand is in position, the temporary wires are to be removed from both the power supply and the dock leveler. Permanent wiring must be installed immediately.

NOTE: The temporary wires should be connected only if they meet the requirements of the applicable local electrical codes. If they do not, the electrician should rewire to meet all applicable codes prior to applying any electrical power.

NOTE: The temporary wires must be wired to a push-button control in order to raise the deck. Never wire the temporary wires directly to a power supply.

12. Cycle the dock leveler through the raise and lower functions several times to re-align after shipping.

13. Return the dock to the stored position.

14. Add shims (3" x 5" x required thickness) to increase the front height of the dock until the deck plate is flush with the dock height (or at desired final level). Ensure shims are located beneath the front-angle shim at the location of the two deck stops as well as at the center of the front angle. (See Figure 18, page 10 for shim locations.) All shims are to be minimum ASTM A-36 or CSA G40.21 material.

15. Weld all shims in the stack to the front-angle shim, the front pit curb angle, and each other (3" long weld).

16. Complete welding the back angle of the dock leveler to the rear pit curb angle as shown in Figure 12, page 7.

17. Raise the deck to its maximum raised height with the lip fully extended and support the dock leveler as instructed in the "SUPPORTING THE LEVELER FOR MAINTENANCE" section on page 21.

⚠ DANGER **NEVER GO BENEATH THE DOCK LEVELER UNLESS IT IS PROPERLY SUPPORTED ON THE FRONT SHIMS, THE REAR ANGLE IS SECURELY WELDED, AND THE MAINTENANCE STAND IS ENGAGED.**

18. Add shims (3" x 5" x required thickness) between the pit floor and the rear shim to close any gap and fully support the rear of the dock. Fully weld the two rear shims to the frame of the dock leveler and all shim plates in the stack to each other as well as to the rear shim.

19. For 30,000 HD models and higher capacities, weld the additional two rear shims to the outside support bar of the frame as shown in Figure 17, page 10 and shim until they are fully supported. Weld all of the shims to each other as well as to the dock leveler frame.

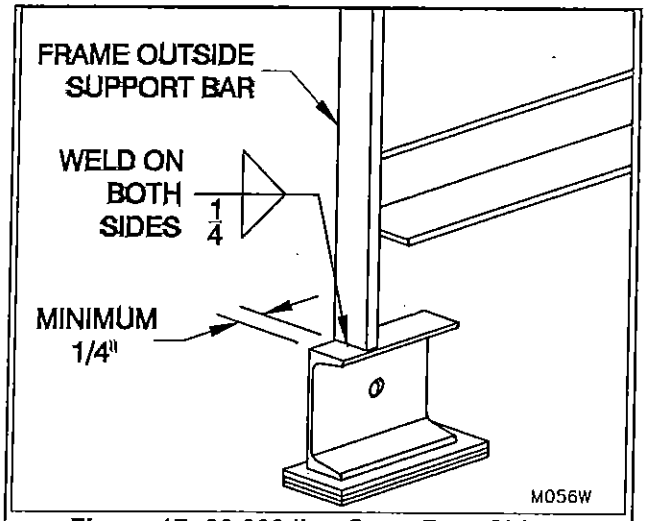


Figure 17: 30,000 lb + Outer Rear Shims (4" Shim Kit Channel Shim Shown)

NOTE: All shim stacks must be welded together.

20. Weld the 4" long cylinder shim assembly(s) to the underside of the cylinder thrust beam with the front of the cylinder shim assembly flush with the front edge of the clevis support plate. (See Figure 18, page 10.)

21. Place additional 3" x 5" x desired thickness shims (as necessary) under the cylinder shim at the cylinder clevis location(s).

22. Weld the cylinder shim and shim plates to the thrust beam as well as to each other.

23. Support the lower half of the toe guard and remove the self tapping screw which holds it in the shipping position. Carefully lower the toe guard and avoid pinch points. (See Figure 5, page 5)

24. Mount the push button in an appropriate location. (See Figure 7, page 6)

⚠ DANGER

DO NOT DISCONNECT THE TEMPORARY POWER SUPPLY UNTIL MAINTENANCE STAND IS IN POSITION. DECK WILL AUTOMATICALLY LOWER WHEN POWER IS DISCONNECTED OR PUSH BUTTON IS RELEASED. ONCE MAINTENANCE STAND IS SECURELY IN PLACE, DISCONNECT TEMPORARY POWER SUPPLY.

STAY CLEAR OF THE EQUIPMENT'S OPERATING PATH AT ALL TIMES.

25. Remove temporary wire from motor.

26. Feed electrical line through conduit from push button to power unit and connect as per wiring diagram supplied.

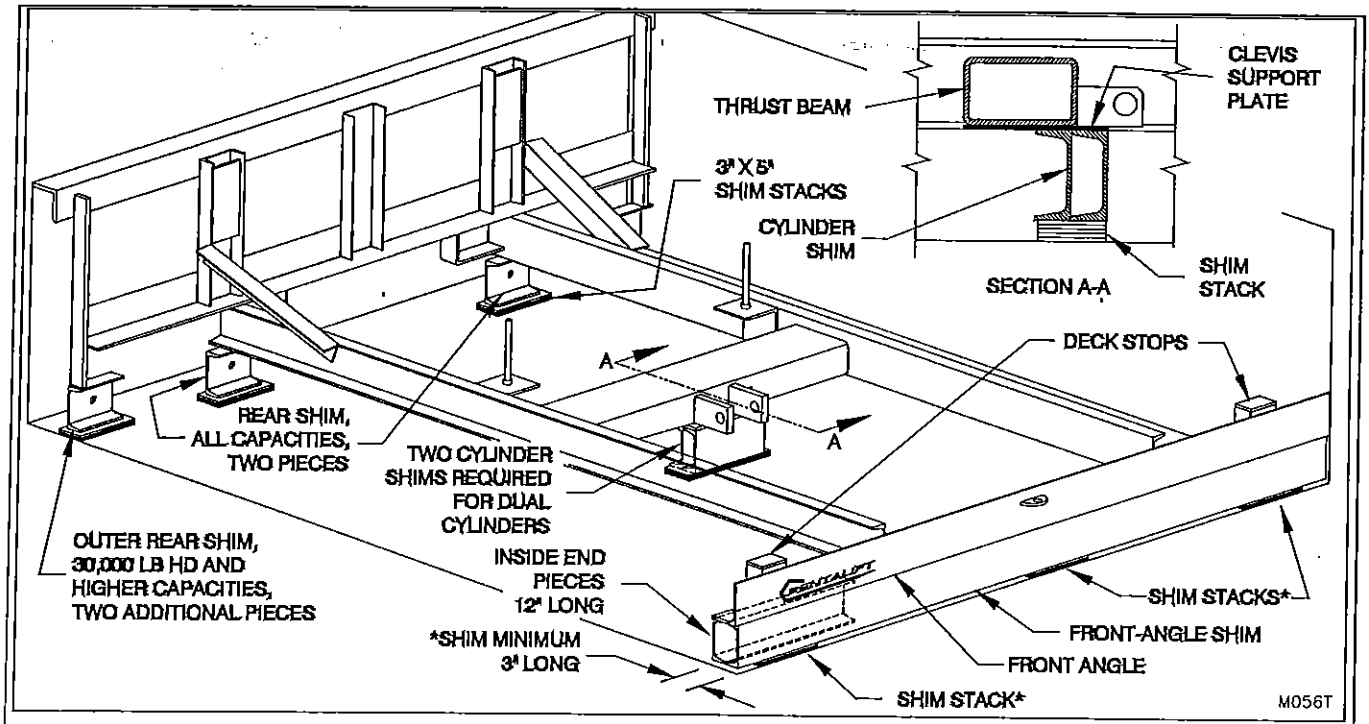


Figure 18: Installation Shims (4" Shim Kit Channel Shims Shown)

27. Connect main power supply to push button.

NOTE: Power unit requires full voltage at motor. Wire size should be sufficiently sized to prevent line voltage drop when motor is under load. (See ELECTRICAL REFERENCE CHART, page 13.)

28. Weld or bolt bumpers in place.

29. Clean and paint the welds.

30. Lubricate and test in accordance with the Break-in and Performance Check on page 17.

REMOTE POWER UNIT

1. For 3" or 4" shim kits, weld two rear shims (see Table A) to a single shim plate each (3" x 5" x minimum ASTM A-36 or CSA G40.21 supplied by others) as shown in Figure 14, page 8. This step adds stability to the shims while installing the dock. This step is not required for 1" or 2" shim kits as the blocks are sufficiently stable as supplied.

Table A - Rear Shims	
4" Shim Kit	C4 Channel x 4" Long
3" Shim Kit	C3 Channel x 4" Long
2" Shim Kit	2" x 3" x 3/16" Rect. Tube x 4" Long
1" Shim Kit	1" x 3" Flat Bar x 4" Long

Note: On 25,000 lb and 30,000 lb HC models, there will be two rear shims; on 30,000 lb HD models and higher capacities, there will be four. Do not weld the outer rear shims (30,000 lb HD models and higher capacities) at this time.

2. Place the front-angle shim assembly into the pit at the front edge, centered across the dock leveler and pit width. When the front-angle shim is constructed of C-channel (3" & 4" shim kits) ensure the short pieces (12" long) on each end are installed toward the inside of the pit. See Figure 18, page 10.

3. Place the two rear shims with welded-on shim plate at the rear of the pit, 35" center to center and 4" from the rear pit wall. (See Figure 15, page 8)

4. Mount push button and power unit on wall. (See Figure 7, page 6) Mount the power unit horizontally with reservoir breather facing up.

5. Hoist the leveler into the pit with chain using only the lifting brackets provided on the leveler as points of attachment (See Figure 5, page 5) while feeding the hydraulic hose through the 3" O.D. conduit from inside of the pit to the power unit.

NOTE: The hydraulic hose is located under the dock leveler. Hoses must stay connected to the cylinders.

6. Connect the two hydraulic lines to the Pentalogic hydraulic manifold on the power unit (one hydraulic hose from lip cylinder and one hydraulic hose from lift cylinder.) See, Figure 9, Page 6.

7. Assure 1" clearance is maintained between the side of the leveler platform and the side pit wall (See Figure 5, page 5) and that the rear angle of the dock is firmly against the rear curb angle.

8. **Confirm that the back angle of the dock leveler is firmly against and flush with the top of the rear curb angle and that the dock leveler has remained square in the pit before continuing.**

9. Weld the rear angle of the dock leveler to the rear curb angle, 1" wide butt weld, at the location of each tilt bar pocket (2 places). See Figure 16, page 9.

10. Lower the dock leveler until the front angle of the dock leveler rests on the front-angle shim. Ensure the front-angle shim assembly is flush with the front angle of the dock leveler frame. Figure 18, page 10.

11. Weld the front-angle shim to the dock leveler frame.

12. Install permanent electrical lines as per applicable electrical diagram provided in control panel.

NOTE: Power unit requires full voltage at motor. Wire size should be sufficiently sized to prevent voltage drop when motor is under load. (See Electrical Reference Chart on page 13)

⚠ DANGER

- WIRING MUST BE DONE BY A QUALIFIED ELECTRICIAN.
- ALWAYS USE APPROPRIATE LOCK-OUT PROCEDURES DURING ANY ELECTRICAL INSTALLATIONS.
- ASSURE SUPPLY VOLTAGE IS CORRECT.
- ON 3 PHASE UNITS ASSURE PHASE POLARITY IS CORRECT.
- ALWAYS OBSERVE ALL APPLICABLE ELECTRICAL CODES.

13. Remove the lifting chain, top and front shipping bolts and lifting brackets. (See Figure 5, page 5.)

14. Cycle the dock leveler through the raise and lower functions several times to re-align after shipping.

15. Return the dock to the stored position.

16. Add shims (3" x 5" x required thickness) to increase the front height of the dock until the deck plate is flush with the dock height (or at desired final level). Ensure shims are located beneath the front-angle shim at the location of the two deck stops as well as at the center of the front angle. (See Figure 18, page 10 for shim locations.) All shims are to be minimum ASTM A-36 or CSA G40.21 material.

17. Weld all shims in the stack to the front-angle shim, the front pit curb angle, and each other (3" long weld).

18. Complete welding the back angle of the dock leveler to the rear pit curb angle as shown in Figure 12, page 7.

19. Raise the dock leveler and support the deck and lip as instructed in the "SUPPORTING THE LEVELER FOR MAINTENANCE" section on page 21.

⚠ DANGER **NEVER GO BENEATH THE DOCK LEVELER UNLESS IT IS PROPERLY SUPPORTED ON THE FRONT SHIMS, THE REAR ANGLE IS SECURELY WELDED, AND THE MAINTENANCE STAND IS ENGAGED.**

20. Add shims (3" x 5" x required thickness) between the pit floor and the rear shim to close any gap and fully support the rear of the dock. Fully weld the two rear shims to the frame of the dock leveler and all shim plates in the stack to each other as well as to the rear shim.

21. For 30,000 HD models and higher capacities, weld the additional two rear shims to the outside support bar of the frame as shown in Figure 17, page 10 and shim until they are fully supported. Weld all of the shims to each other as well as to the dock leveler frame.

NOTE: All shim stacks must be welded together.

22. Weld the 4" long cylinder shim assembly(s) to the underside of the cylinder thrust beam with the front of the cylinder shim assembly flush with the front edge of the clevis support plate. (See Figure 18, page 10.)

23. Place additional 3" x 5" x desired thickness shims (as necessary) under the cylinder shim at the cylinder clevis location(s).

24. Weld the cylinder shim and shim plates to the thrust beam as well as to each other.

25. Support the lower half of the toe guard and remove the self tapping screw which holds it in the shipping position. Carefully lower the toe guard and avoid pinch points. (See Figure 5, page 5)

26. Weld or bolt bumpers in place.

27. Clean and paint the welds.

28. Lubricate and test in accordance with the Break-in and Performance Check on page 17.

WELDING REFERENCE INFORMATION

- Observe and obey all welding safety requirements per AWS D1.1-92. (W117.2-74 in Canada.)
- Welding electrodes are to be clean and free from moisture.
- Material to be welded must be clean and free of oils, excessive millscale/rust etc.
- All craters are to be filled to a minimum of 85% of the cross sectional area of the weld.
- All under cutting is to be removed by either welding, grinding or a combination of both.
- Maximum reinforcement on butt welds is 1/8".
- Use highest current possible per chart below to obtain satisfactory weld.

Electrode	E7018	
Diameter	1/8"	5/32"
Amperage	130-150	140-180

Rated Capacity	*"A" Dimension,* Figure 12, *page 7*
25,000 lb 30,000 lb HC 30,000 lb HD 35,000 lb 40,000 lb	3"
45,000 lb 50,000 lb 60,000 lb	6"

ELECTRICAL REFERENCE CHART

Ensure that the thermal overload relay is set to match the full load current as shown on the motor name plate. Consult all applicable electrical codes.

ELECTRICAL REFERENCE - 1.5 HP

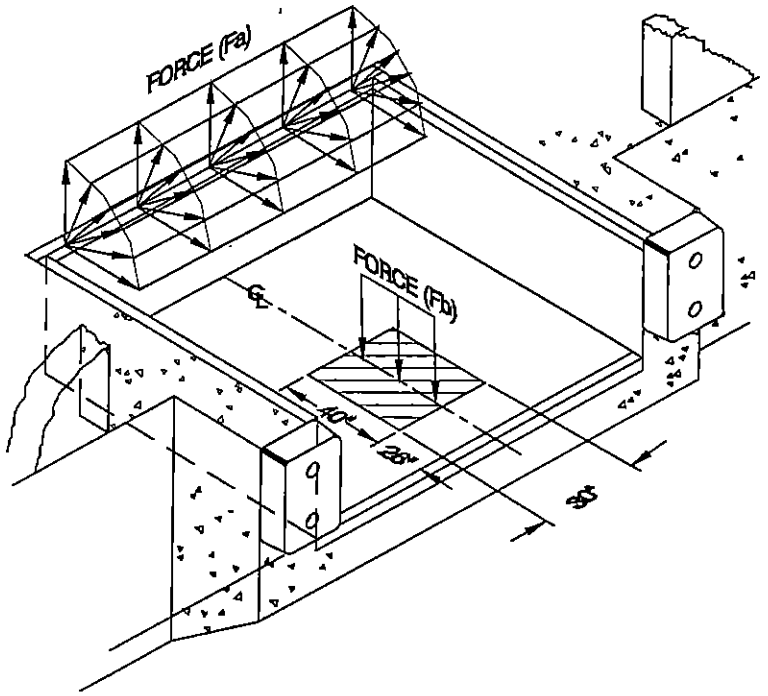
	AWG	115/1/60	230/1/60	230/3/60	380/3/50	480/3/60	575/3/60
Length of branch circuit which will have a 2% voltage drop at full load current (copper wire) ft/m. NOTE: Calculations are based on 30 C Ambient	14		60.3 ft/ 18.4m	168.7 ft/ 51.4m	406.7 ft/ 124m	704 ft/ 214m	1035.1 ft/ 315.5m
	12	38.1ft/ 11.6m	152.5 ft/ 46.5m	268.2 ft/ 81.8m	646.7 ft/ 197.1m		
	10	60.6 ft/ 18.5m	242.6 ft/ 73.9m	426.8 ft/ 130.1m			
	8	96.4 ft/ 29.4m	385 ft/ 117.5m	678.2 ft/ 206.7m	The values given are intended to be a rough wiring guide only.		
	6	153.2 ft/ 46.7m	612.9 ft/ 186.8m		Be sure to check all applicable electrical codes before wiring.		
Approximate Motor Current (full load) TENV Unit		19 amps	9.5 amps	5.4 amps	3.7 amps	2.7 amps	2.2 amps

⚠ DANGER **FAILURE TO PROPERLY INSTALL ANY PENTALIFT DOCK LEVELER MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY OR DEATH AND WILL VOID ALL WARRANTIES.**

	CAPACITY (lbs)	RECOMMENDED CURB ANGLE SIZE	FORCE (Fa) (lbf)	FORCE (Fb) (lbf)
6 FT LONG	25000	2"X2"X3/16"	9000	13000
	30000 HC		10000	14000
	30000 HD		11000	15500
	35000		12500	18500
	40000		14000	20000
	45000		16000	22500
	50000		17500	25000
	60000	3"X3"X1/4"	20000	30000
	80000	4"X4"X1/4"	27000	38000
	100000		33500	47500
8 FT LONG	25000	2"X2"X3/16"	8500	13500
	30000 HC		9500	15000
	30000 HD		10500	16000
	35000		12000	18500
	40000		13500	21000
	45000		15500	24000
	50000		17000	26500
	60000	3"X3"X1/4"	19500	31500
	80000	4"X4"X1/4"	27000	41000
	100000		34000	51500
10 FT LONG	25000	3"X3"X3/16"	10500	15500
	30000 HC		11500	17000
	30000 HD		12500	18500
	35000		15000	21500
	40000		17000	25000
	45000		19000	27500
	50000		20000	30500
	60000	3"X3"X1/4"	24000	36500
	80000	4"X4"X1/4"	30000	51500
	100000		37500	64000

HD AND HC SERIES HYDRAULIC DOCK LEVELERS

FALLSAFE FORCE REQUIREMENTS



NOTE: CURB ANGLE WITH ANCHORS MUST BE OF SUFFICIENT STRENGTH TO HOLD APPLIED FORCE Fa IN ANY DIRECTION.

M056S

Figure 19: HD & HC Model Curb Angle Force Chart

ULTIMA SERIES HYDRAULIC DOCK LEVELER

FALLSAFE FORCE REQUIREMENTS

	CAPACITY (lbs)	RECOMMENDED CURB ANGLE SIZE	FORCE (Fa) (lbf)	FORCE (Fb) (lbf)
6 FT LONG	25000	2"X2"X3/16" SIDE ANGLES 3"X3"X3/16" REAR ANGLE	11000	16000
	30000		13000	19000
	35000		15000	22000
	45000		19500	28500
8 FT LONG	25000	2"X2"X3/16" SIDE ANGLES 3"X3"X3/16" REAR ANGLE	11000	17000
	30000		13000	20000
	35000		15000	23000
	45000		19000	30000
10 FT LONG	25000	3"X3"X3/16" SIDE ANGLES 3"X3"X3/16" REAR ANGLE	13000	19500
	30000		16000	23500
	35000		18000	27000
	45000		23500	34500

NOTE:
CURB ANGLE AND CONCRETE WITH ANCHORS MUST BE OF SUFFICIENT STRENGTH TO HOLD APPLIED FORCE Fa IN ANY DIRECTION.

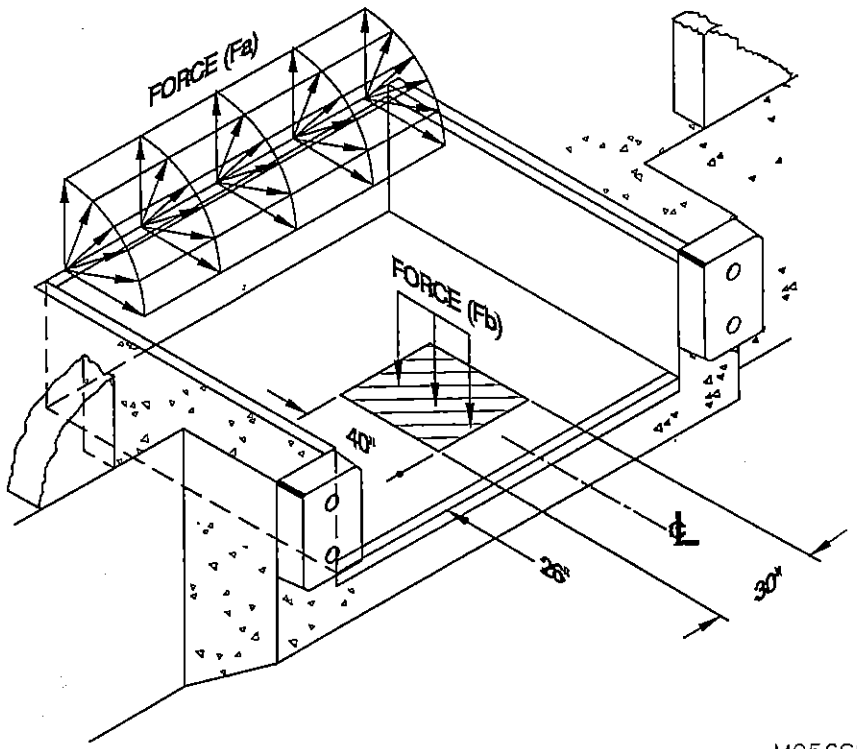


Figure 20: HU Model (Ultima Series) Curb Angle Force Chart

OPTIONAL AUTO RETURN

Auto Return Activation

⚠ WARNING **OPERATION OCCURS ONLY WHEN THE AUTO RETURN SWITCH AT THE CONTROL PANEL IS SET TO THE 'ON' POSITION.**

1. The truck departs, causing the deck to descend to the below level stops.
2. As the lip begins to retract, the actuator sleeve attached to the rod on the lip cylinder trips the limit switch. This, in turn, causes the motor to start and the deck to rise, while the lip retracts quickly.
3. This will progress until the lip is fully retracted. At this point the actuator sleeve will no longer trip the limit switch.
4. The limit switch then de-activates the motor and the deck lowers to the stored position.

Auto Return Adjustment

The auto return requires adjustment if either of the following two conditions occur:

CONDITION #1: The lip does not retract enough for the dock leveler to park itself with the lip behind the front angle (Figure 23 page 18) at the stored position.
ADJUSTMENT #1: In order to allow the lip to retract further before the motor shuts off, the actuator sleeve must be positioned closer to the rod end of the lip cylinder. Loosen the set screw retaining the actuator sleeve and slide it along the collar assembly rod.

CONDITION #2: The dock leveler lip retracts completely but the motor does not shut off.
ADJUSTMENT #2: In order to prevent the motor from running when the lip is fully retracted, the actuator sleeve must be positioned further from the rod end of the lip cylinder. Loosen the set screw retaining the sleeve and slide it along the collar assembly rod.

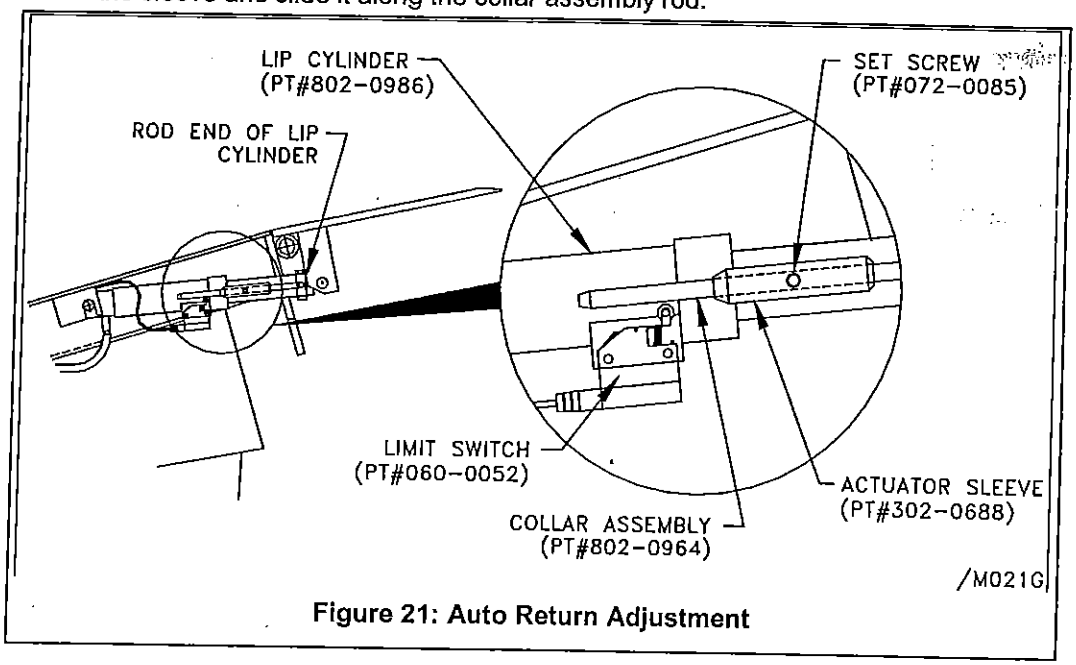


Figure 21: Auto Return Adjustment

Fallsafe Feature

Hydraulic Fallsafe is an emergency support system (incorporating a non-adjustable velocity fuse) that locks the oil in the cylinder, thus preventing the downward movement of the deck. If a fallsafe situation should occur, the dock leveler must be inspected by an authorized Pentalift representative before operation continues. The owner must receive written authorization from Pentalift Equipment Corporation through the authorized Pentalift representative before continuing to use the dock leveler.

BREAK-IN AND PERFORMANCE CHECK

⚠ DANGER **BEFORE DOING ANY INSTALLATION, MAINTENANCE INSPECTION OR TROUBLE SHOOTING, BARRICADE ALL AREAS FROM TRAFFIC AROUND THE WORK AREA INSIDE (AND OUTSIDE IF APPLICABLE) FOR SAFETY AND POST APPROPRIATE WARNING SIGNS.**

NOTE: IN SOME CASES THERE IS A CONSIDERABLE AMOUNT OF TIME BETWEEN THE SHIPMENT DATE AND USE OF YOUR DOCK LEVELER. THIS INITIAL BREAK-IN AND PERFORMANCE CHECK SHOULD BE PERFORMED BEFORE YOU BEGIN REGULAR USE OF YOUR DOCK LEVELER TO ENSURE THAT IT IS OPERATING PROPERLY.

1. Ensure that any specified interlocks (e.g. overhead doors, restraints) are fully functional.

⚠ DANGER **ALWAYS ASSURE NO ONE IS WITHIN 6 FEET OF THE FRONT (LIP END) OF THE DOCK LEVELER PRIOR TO ACTIVATION. STAY CLEAR OF THE DOCK LEVELER WHEN IT IS MOVING.**

2. Operate the dock leveler several times as described in Operating Instructions.

3. Cycle the dock leveler through all its functions a minimum of ten times. This will remove unwanted air in the hydraulic system.

4. Raise leveler and install maintenance stand as outlined on page 21.

5. Inspect hydraulic system for leaks, especially at fittings and hose connections.

6. Lubricate all pivot points with Dexron III Automatic Transmission Fluid. (See Maintenance and Lubrication Section on page 24.)

7. **IMPORTANT: As the performance test is being conducted, watch closely for any signs that the dock leveler might not be operating properly. If you are in doubt, refer to Operating Instructions on page 18 and Trouble Shooting Guide on page 22 or contact your Pentalift representative.**

   NOTE: Visually inspect to ensure lip is <u>not</u> resting on ½ moon shaped shipping tab. If it interferes, bend shipping tab until lip clears.

OPERATING INSTRUCTIONS

⚠ DANGER USE BY UNTRAINED PEOPLE CAN RESULT IN PROPERTY DAMAGE, BODILY INJURY OR DEATH. READ, KNOW, AND OBEY ALL OPERATING INSTRUCTIONS AND SAFETY INFORMATION. FOLLOW ALL OSHA REGULATIONS REGARDING THE USE OF THIS EQUIPMENT. DO NOT USE THE DOCK LEVELER IF ANY PART OF IT LOOKS BROKEN OR IF IT DOES NOT SEEM TO OPERATE PROPERLY. IF REPAIRS ARE NEEDED, CONTACT YOUR PENTALIFT REPRESENTATIVE.

NOTE: FOR UNITS EQUIPPED WITH A ROLL OFF STOP, STAND CLEAR OF ROLL OFF STOP OPERATING PATH AT ALL TIMES.

⚠ DANGER TO AVOID POSSIBLE PERSONNEL INJURY AS WELL AS, TO AVOID DAMAGE TO THE DOCK LEVELER AND /OR THE PRODUCT, DO NOT DRAG OR SLIDE ANYTHING ACROSS THE SURFACE OF THE DOCK LEVELER. ALWAYS ENSURE THE FORKLIFT FORKS ARE RAISED TO CLEAR THE DOCK LEVELER SURFACE AND THE DOCK LEVELER COMPONENTS.

Standard Models:

NOTE: Always be certain that the truck/trailer is parked tight against the face of both dock bumpers and the truck wheels are chocked and/or that the truck is locked in place by a vehicle restraint (See Figure 22, page 18) before loading or unloading. All 'air ride' trailers must release the air from the suspension mechanism prior to activating the dock leveler for use.

1. Load or unload End Loads with the deck and lip in the stored position as shown in Figure 23 Page 18 (See "End Loading/Unloading and "Below Level End Loading" on page 20).

2. Depress and hold the **RAISE** button to raise the deck. The lip will automatically extend at the top of the cycle.

3. Release the **RAISE** button to allow the deck to lower until firm contact is made with the truck bed. **Note:** The lip must extend a minimum of 4" onto the truck bed. (See Figure 22, page 18)

4. Proceed to load/unload the vehicle. When completed, return the dock to its stored position by depressing the RAISE button. When the lip is fully retracted and clear of the truck, release the button and the dock will lower into the stored position. Visually inspect the dock leveler to ensure that it is properly stored with the lip inside the front angle. (See Figure 23, page 18)

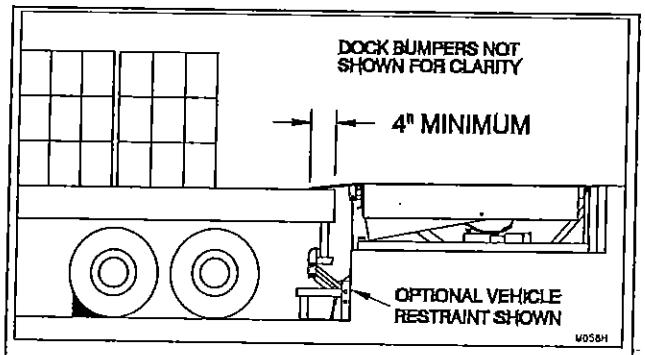


Figure 22: Minimum 4" Penetration

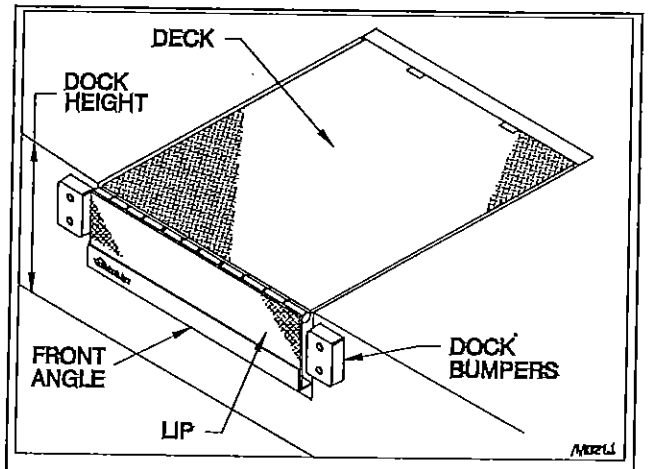


Figure 23: Deck in (Cross Traffic) Stored Position

For Models Equipped with Auto Return:

NOTE: Auto Return is a safety feature which will cause the dock leveler to automatically return to the stored position in the event that a truck departs prior to the dock leveler being stored manually.

It is a good safety practice for the dock attendant to manually return the dock leveler to the stored position. Auto Return should be considered as a BACK-UP system only, as the Auto Return selector switch may be turned to the "OFF" position thus preventing the dock leveler from automatically storing.

It is the responsibility of the dock attendant to ensure that the dock leveler has been returned to the stored position immediately after loading and/or unloading is complete.

1. Turn Auto Return selector switch to "ON."
2. Follow operating instructions as per standard units (See page 18).

For Models Equipped with Deck Stop/ Independent Lip:

Operating Deck Stop

Note: Units equipped with Deck Stop automatically acquire the Independent Lip feature.

If at any time during the operation of the dock a situation arises requiring the immediate halting of the deck travel (up or down), use the "Deck Stop".

To use Deck Stop:
RELEASE the RAISE button and PRESS AND HOLD the DECK STOP button. When the "Deck Stop" button is released, the deck will be free to lower.

⚠ DANGER

NEVER USE THE "DECK STOP" BUTTON (if equipped) AS A MEANS OF HOLDING THE DECK UP WHILE PERFORMING MAINTENANCE OR INSPECTION.

Operating Independent Lip

Independent Lip Control allows the dock attendant to stop the deck movement and extend the lip prior to the deck reaching the top of it's travel.

This function is commonly used to:

a. Expedite placement of the deck onto the truck bed.
b. Expedite below level operation.

To use Independent Lip control:

PRESS AND HOLD the **RAISE** button until the deck raises sufficiently to allow the lip to fully clear the truck bed. While continuing to depress the RAISE button, press and hold the **DECK STOP** button. This will halt deck movement and cause the lip to extend. Once the lip is fully extended, release both buttons simultaneously and the extended lip will lower onto the truck.

END LOADING/UNLOADING

⚠ DANGER **WHEN THE CARGO AT THE REAR OF THE TRUCK DOES NOT ALLOW THE LIP TO FULLY EXTEND AND REST FIRMLY ON THE TRUCK BED AS OUTLINED UNDER THE OPERATING INSTRUCTIONS (SEE PAGE 18), THEN THE END LOADING/UNLOADING PROCEDURES MUST BE USED AS OUTLINED UNDER THE OPERATING INSTRUCTIONS.**
DURING END LOADING/UNLOADING THERE WILL BE A GAP PRESENT BETWEEN THE DOCK LEVELER AND THE TRUCK BED. ENSURE THAT THE FRONT WHEELS OF THE FORK TRUCK NEVER FALL INTO THE GAP BETWEEN THE STORED DOCK LEVELER AND THE TRUCK. IMMEDIATELY AFTER THE END LOADS ARE REMOVED, THE DOCK LEVELER IS TO BE USED WITH THE LIP EXTENDED AS INDICATED UNDER OPERATING INSTRUCTIONS.

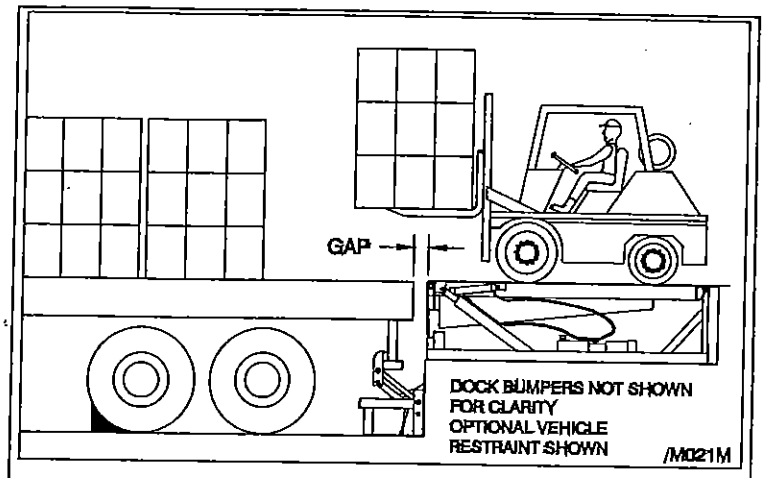


Figure 24: End Loading

Below Level End Loading

Below level end loading is required when the truck bed is below dock height and the cargo at the rear of the truck does not allow the lip to fully extend. In this instance, end loading/unloading cannot be completed with the leveler in its stored position. To position the leveler for end loading/unloading, follow the procedures outlined below.

Standard Models

1. Push and hold the RAISE button briefly until the lip begins to extend. The amount of extension is dependent on the cargo and/or truck positioning relative to the leveler.

⚠ CAUTION **ENSURE LIP DOES NOT OVER EXTEND AND DAMAGE FRAGILE CARGO.**

2. Release the raise button and allow the deck to lower onto the deck stops with the lip in the pendant position; outside the front angle (see Figure 25, page 20).

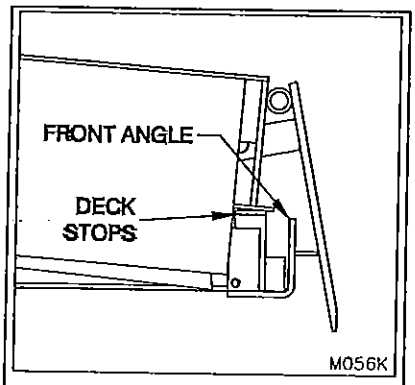


Figure 25: Pendant Position

Models with Auto Return

1. Turn Auto Return selector switch to "OFF".
2. Follow procedure for standard units.

Models with Deck Stop/Independent Lip Control

The Deck Stop/Independent Lip function reduces cycle times by allowing the dock attendant to halt deck movement and extend the lip past the front angle without fully cycling the leveler to its top most position.

1. Turn Auto Return (if equipped) selector switch to "OFF".
2. Press and hold the **RAISE** button until the lip (in its pendent position) clears the front angle.
3. While holding the **RAISE** button, jog the **DECK STOP** button until the lip extends slightly beyond the front angle.
4. Release both buttons and allow the deck to lower onto the deck stops with the lip in its pendant position outside of the front angle (see Figure 25, page 20).

SUPPORTING THE LEVELER FOR MAINTENANCE

⚠ DANGER **BEFORE DOING ANY INSTALLATION, MAINTENANCE, INSPECTION OR TROUBLE SHOOTING, BARRICADE ALL AREAS FROM TRAFFIC AROUND THE WORK AREA INSIDE (AND OUTSIDE IF APPLICABLE) FOR SAFETY AND POST APPROPRIATE WARNING SIGNS.**

⚠ DANGER **NEVER GO BENEATH THE DOCK LEVELER FOR ANY REASON UNLESS THE DECK AND LIP ARE PROPERLY SUPPORTED (SEE SUPPORTING THE LEVELER FOR MAINTENANCE, PAGE 21) AND THE POWER IS DISCONNECTED WITH A FUSED DISCONNECT, PROPERLY TAGGED AND LOCKED OUT. IT IS THE RESPONSIBILITY OF THE OWNER TO ENSURE THAT NO LOAD OR TRAFFIC IS PLACED ON THE DECK WHILE THE MAINTENANCE STAND IS ENGAGED. THE CONSTRUCTION OF THE MAINTENANCE STAND IS INTENDED TO SUPPORT THE WEIGHT OF THE UNLOADED DOCK LEVELER ONLY.**

When performing any maintenance, adjustments, or trouble shooting on the dock leveler, always use the maintenance stand to support the leveler before going beneath the deck.

Raise the deck to its maximum raised height and fully extend the lip. Lift the maintenance stand out of the cradles and place on the front angle in a position so that it will not interfere with a deck beam. Lower the deck until both the deck and lip are supported by the maintenance stand as shown in the illustration below. If the deck and lip did not properly position, push the raise button to raise the dock leveler and reposition the maintenance stand.

If there are two maintenance stands provided on your leveler, always use both stands simultaneously.

Also follow all safe working procedures and the Safety Instructions as stated in this manual.

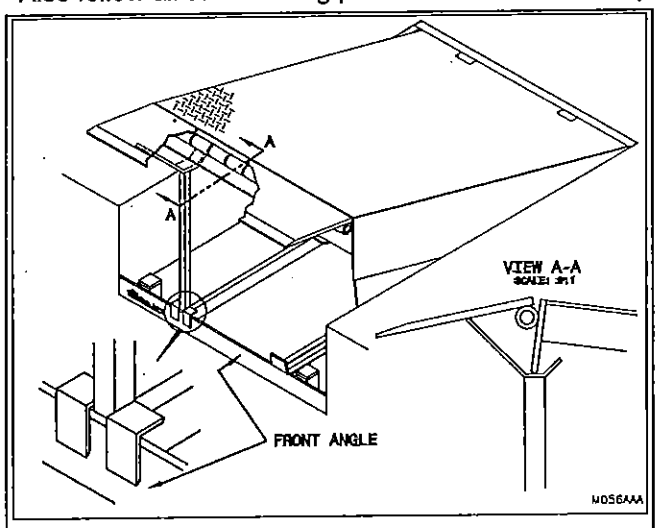


Figure 27 : Drop in Maintenance Stand

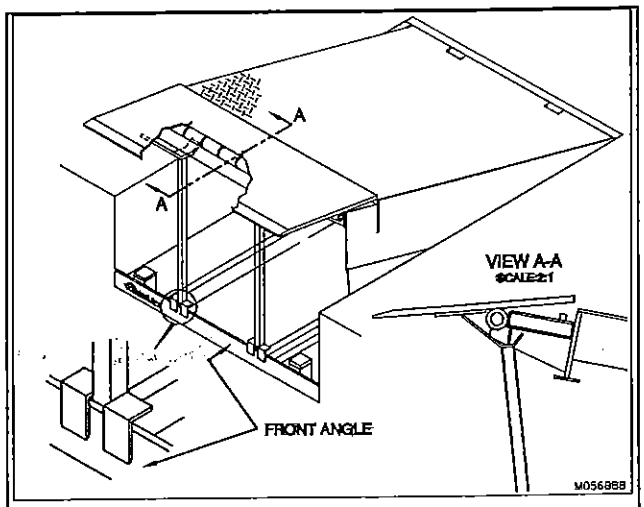


Figure 26 : Drop in Maintenance Stand for Roll Off Stop Models

See Figure 28 on page 21 for the proper placement of the drop in maintenance stand.

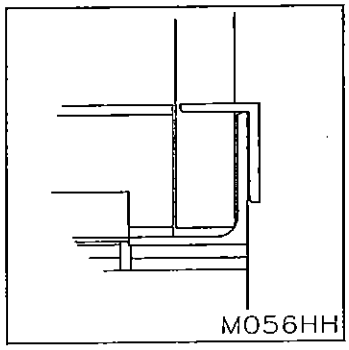


Figure 28 : Proper Placement of The Drop in Maintenance Stand

TROUBLE SHOOTING GUIDE

NOTE: This equipment has been fully tested and confirmed to be operational at the factory. Historically, the majority of operating problems are caused by unnecessary tampering by unqualified personnel. To conform to the terms of the Warranty, contact your authorized Pentalift representative if you are having any difficulty with the leveler during the warranty period. Do not risk voiding the warranty by tampering with the equipment.

⚠ DANGER

BEFORE DOING ANY INSTALLATION, MAINTENANCE, INSPECTION OR TROUBLE SHOOTING, BARRICADE ALL AREAS FROM TRAFFIC AROUND THE WORK AREA INSIDE (AND OUTSIDE IF APPLICABLE) FOR SAFETY AND POST APPROPRIATE WARNING SIGNS. FOLLOW ALL WARNINGS IN THE SAFETY INFORMATION AND WARNINGS SECTION OF THIS MANUAL.

⚠ DANGER

BEFORE DOING ANY ELECTRICAL WORK, BE CERTAIN THAT THE POWER IS DISCONNECTED WITH A FUSED DISCONNECT, PROPERLY TAGGED AND LOCKED OUT. FUSED DISCONNECT AND LOCKOUT DEVICE (SUPPLIED AND INSTALLED BY OTHERS) MUST MEET WITH ALL APPLICABLE CODES AND REGULATIONS. ALL ELECTRICAL WORK MUST BE PERFORMED BY A QUALIFIED ELECTRICIAN IN ACCORDANCE WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS. ALL OTHER REPAIRS SHOULD BE DONE BY A TRAINED AUTHORIZED PENTALIFT REPRESENTATIVE.

⚠ DANGER

NEVER GO BENEATH THE DOCK LEVELER FOR ANY REASON UNLESS THE DECK AND LIP ARE PROPERLY SUPPORTED (SEE SUPPORTING THE LEVELER FOR MAINTENANCE, PAGE 21) AND THE POWER IS DISCONNECTED WITH A FUSED DISCONNECT, PROPERLY TAGGED AND LOCKED OUT. IT IS THE RESPONSIBILITY OF THE OWNER TO ENSURE THAT NO LOAD OR TRAFFIC IS PLACED ON THE DECK WHILE THE MAINTENANCE STAND IS ENGAGED. THE CONSTRUCTION OF THE MAINTENANCE STAND IS INTENDED TO SUPPORT THE WEIGHT OF THE UNLOADED DOCK LEVELER ONLY.

⚠ DANGER

THE RELIEF VALVE ON THE POWER UNIT IS PRESET AT THE FACTORY. IT IS AN IMPORTANT SAFETY DEVICE. DO NOT ADJUST OR REMOVE THE RELIEF VALVE.

IMPORTANT: See page 24 for recommended hydraulic oil.

1. <u>Motor does not run when push button is engaged.</u>
   a) Check circuit breaker or fuses at the main power supply and at the disconnect.
   b) Check reset button inside main control panel on the motor starter.
   c) On some models, a transformer is supplied with the control panel. If your unit has a transformer, check the two (2) primary fuses and one (1) secondary fuse. Replace if required.
   d) Check for loose wires in the control panel.
   e) Check to ensure all connections made match the wiring diagram (supplied with the control panel).
   f) If the problem cannot be solved, consult your authorized Pentalift representative.

2. <u>Motor runs but deck does not rise.</u>
   a) Check for debris or obstruction that may interfere with the operation of any moving part.
   b) If the problem cannot be solved, consult your authorized Pentalift representative.

3. <u>Deck rises but will not lower.</u>
   a) If unit is supplied with auto return and the motor is running, turn auto return selector switch to the "OFF" position. If the unit lowers, see 'Auto Return Adjustments' on page.
   b) If the problem can not be solved, a fallsafe situation may have occurred. <u>DO NOT ATTEMPT</u> to force the deck down. If a fallsafe situation should occur, the dock leveler must be inspected by an authorized Pentalift representative before operation continues. The owner must receive written authorization from Pentalift Equipment Corporation through the authorized Pentalift representative before continuing to use the dock leveler.

4. <u>Main breaker or overload relay is tripping.</u>
   a) Check for a short circuit in the wiring.
   b) Check all wire connections and assure the unit is wired according to the wire diagram supplied with the control panel.
   c) If the problem cannot be solved, consult your authorized Pentalift representative.

5. **Dock leveler will rise but has a bouncing movement.**
   a) Check the hydraulic fluid level. (See page 24.)

   ⚠ DANGER **NEVER GO BENEATH THE DOCK LEVELER FOR ANY REASON UNLESS IT IS PROPERLY SUPPORTED. SEE 'SUPPORTING THE LEVELER FOR MAINTENANCE' ON PAGE 21.**

   b) Check the deck assembly for debris or obstruction.
   c) Check to assure the lift cylinder has been supported (see page 7, item 7, Figure 13).
   d) If the problem cannot be solved, consult your authorized Pentalift representative.

6. **Deck raises but lip will not extend or lip extends too slowly.**
   a) Check hydraulic fluid level. (See page 24.)

   ⚠ DANGER **NEVER GO BENEATH THE DOCK LEVELER FOR ANY REASON UNLESS IT IS PROPERLY SUPPORTED. SEE 'SUPPORTING THE LEVELER FOR MAINTENANCE' ON PAGE 21.**

   b) Check for damage to the lip cylinder and/or pivot pins and brackets.
   c) Check for leakage in the lip cylinder or hydraulic hose feeding the cylinder.
   d) Inspect the lip spools for debris or obstruction and ensure the lip is moving freely.
   e) If the problem cannot be solved, consult your authorized Pentalift representative.

7. **The lip extends before the deck raises.**
   a) Assure the hydraulic hose from the lip and lift cylinders are connected to the Pentalogic Hydraulic Manifold properly (see Figure 9 on page 6).
   b) If the problem cannot be solved, consult your authorized Pentalift representative.

8. **The lip does not retract.**
   a) Check for damage to the lip cylinder and/or pivot pins and brackets.
   b) Inspect the lip spools for debris or obstructions and ensure the lip is moving freely. Lubricate if required.
   c) If the problem cannot be solved, consult your authorized Pentalift representative.

9. **Optional auto return - dock leveler will not recycle to stored position, but leveler is operational.**
   a) Assure auto selector switch is "ON".
   b) Check wire connections and verify wiring.
   c) Check for defective limit switch with volt ohm meter.
   d) Assure auto return is adjusted properly (see Auto Return Adjustment on page 16).
   e) If the problem cannot be solved, consult your authorized Pentalift representative.

If damaged or worn parts are detected upon inspection, replacement must be undertaken **immediately**. **The Dock leveler must not be used until replacement is completed.** Parts are readily available from your Pentalift representative.

MAINTENANCE AND LUBRICATION

UNLESS OTHERWISE NOTED, THE FOLLOWING MAINTENANCE AND INSPECTION PROCEDURES SHOULD BE CONDUCTED AT A MINIMUM OF EVERY 30 DAYS. INCREASE FREQUENCY FOR MORE SEVERE ENVIRONMENTS.

⚠ DANGER BEFORE DOING ANY INSTALLATION, MAINTENANCE, INSPECTION OR TROUBLE SHOOTING, BARRICADE ALL AREAS FROM TRAFFIC AROUND THE WORK AREA INSIDE (AND OUTSIDE IF APPLICABLE) FOR SAFETY AND POST APPROPRIATE WARNING SIGNS. NEVER GO BENEATH THE DOCK LEVELER FOR ANY REASON UNLESS THE DECK AND LIP ARE PROPERLY SUPPORTED (See SUPPORTING THE LEVELER FOR MAINTENANCE, PAGE 21) AND THE POWER IS DISCONNECTED WITH A FUSED DISCONNECT, PROPERLY TAGGED AND LOCKED OUT. IT IS THE RESPONSIBILITY OF THE OWNER TO ENSURE THAT NO LOAD OR TRAFFIC IS PLACED ON THE DECK WHILE THE MAINTENANCE STAND IS ENGAGED. THE CONSTRUCTION OF THE MAINTENANCE STAND IS INTENDED TO SUPPORT THE WEIGHT OF THE UNLOADED DOCK LEVELER ONLY.

⚠ DANGER THE RELIEF VALVE ON THE POWER UNIT IS PRESET AT THE FACTORY. IT IS AN IMPORTANT SAFETY DEVICE. DO NOT ADJUST OR REMOVE THE RELIEF VALVE.

NOTE: Read the SAFETY INFORMATION AND WARNINGS before servicing the dock leveler. (See page Error! Bookmark not defined..)

NOTE: It is the owner's responsibility to assure that all labeling remains legible and in its original position throughout the life of the product. (See Safety Labeling Section, page 2)

NOTE: Inspect equipment for protective coatings (i.e. paint) that have deteriorated or been removed. Prepare affected area and reapply protective coating as required.

NOTE: At every maintenance interval, inspect the Dock Leveler for any damage or worn parts. If any damaged or worn parts are found, discontinue use of the dock leveler and/or repair immediately.

As shown by Figure 29, Page 24, all pivot points of the hydraulic dock leveler must be lubricated regularly to help maintain the unit in proper working condition. The recommended lubrication **service interval is every 30 days** or at a greater frequency as required in severe environments. **Dexron III Automatic Transmission Fluid** is recommended.

Hydraulic Oil: Required Hydraulic Oil is DEXTRON III Automatic Transmission Fluid. The oil should be changed once a year under normal operating conditions. The oil level, however, should be checked weekly. When the deck is fully lowered, the oil level in the reservoir should be approximately 2 - 3 inches from the top.

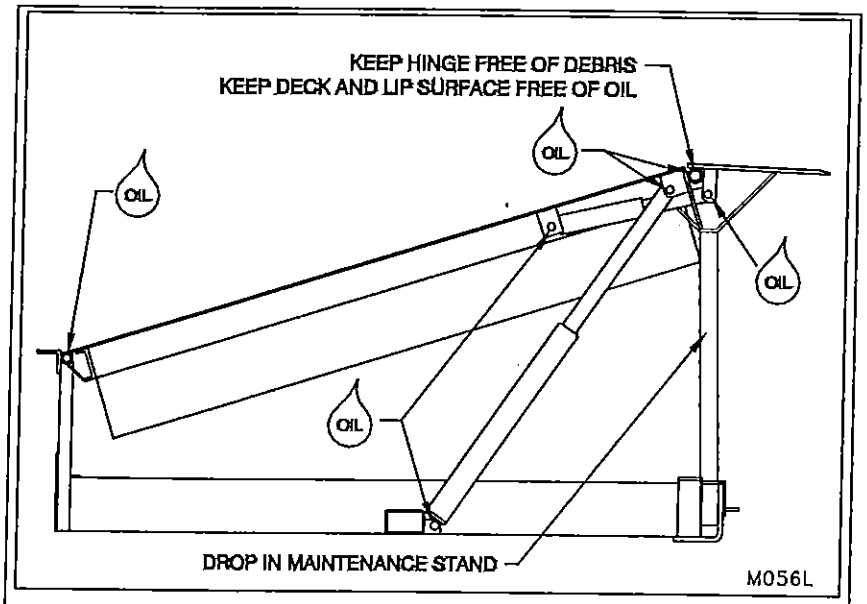


Figure 29: Lubrication Points

REPLACEMENT PARTS

USE ONLY GENUINE PENTALIFT REPLACEMENT PARTS

⚠ DANGER **TO ENSURE PROPER FUNCTIONING, DURABILITY AND SAFETY OF THE PRODUCT, ONLY GENUINE PENTALIFT REPLACEMENT PARTS MUST BE USED. ALTERING THE PRODUCT FROM ITS ORIGINAL MANUFACTURED CONFIGURATION MUST NOT BE DONE. PENTALIFT EQUIPMENT CORPORATION DISCLAIMS ALL LIABILITY FOR FAILURE TO COMPLY WITH THIS WARNING. WARRANTIES ARE SPECIFICALLY DISCLAIMED IN THE EVENT THE PURCHASER FAILS TO COMPLY WITH THIS WARNING.**

To expedite order processing when ordering parts, provide the following information to your Pentalift representative:

1. Model and Serial Number of equipment.
2. Part Number, Description and Quantity.
3. Shipping Instructions.

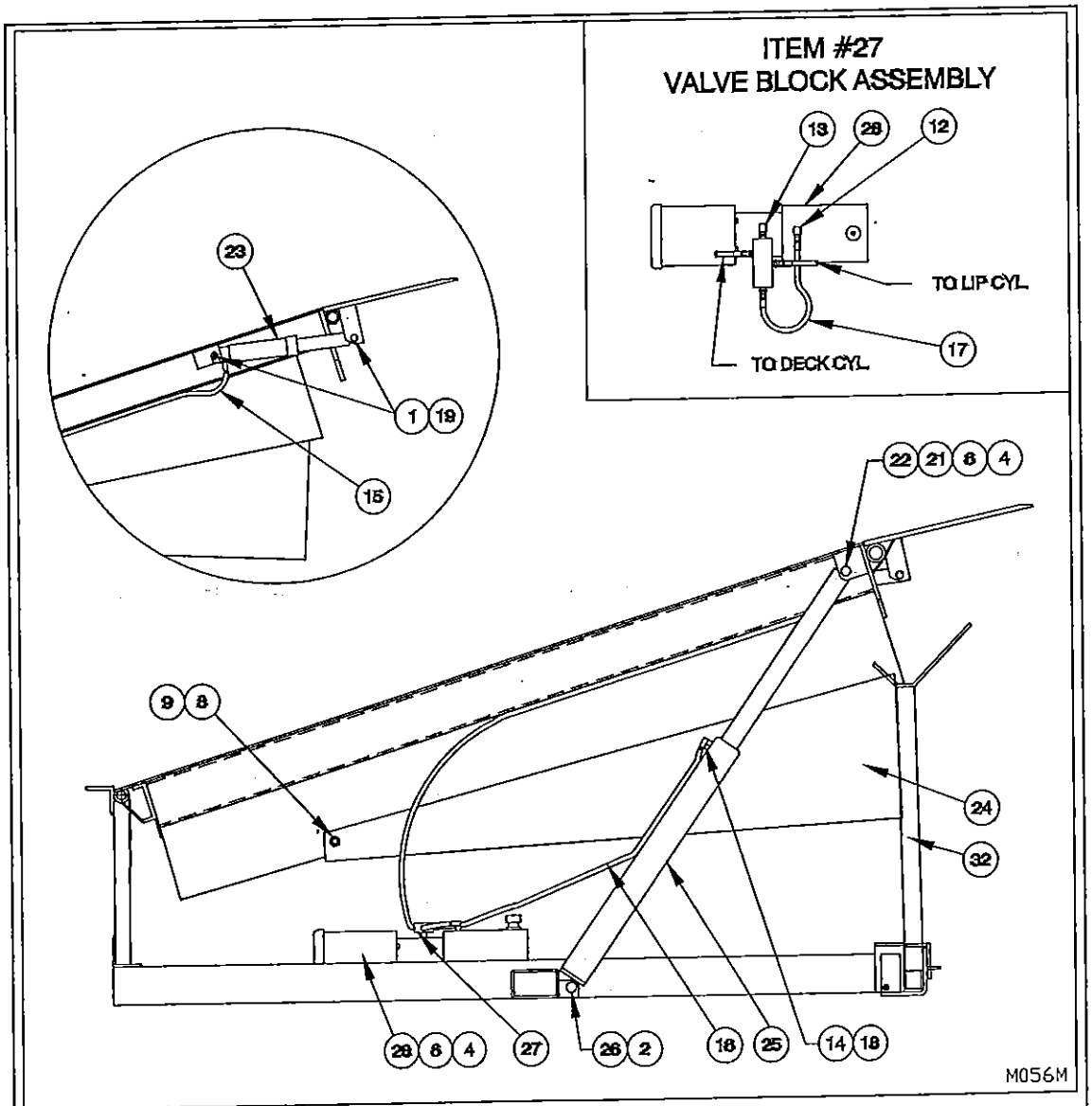


Figure 30: Replacement Parts

REPLACEMENT PARTS (CONT.)

USE ONLY GENUINE PENTALIFT REPLACEMENT PARTS

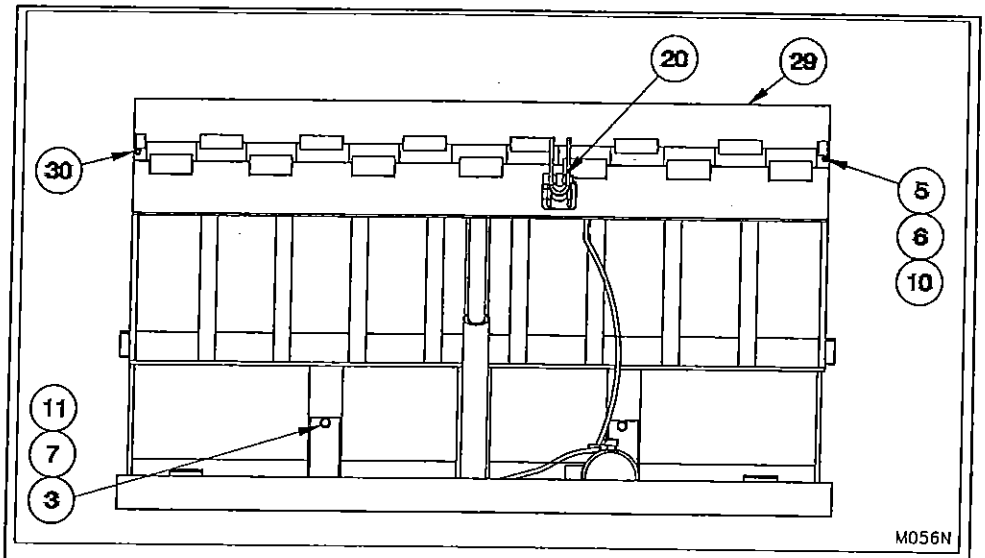


Figure 31: Replacement Parts (Cont.)

Item #	Part No.	Description
1	080-0001	Spring Pin
2	080-0004	Spring Pin
3	074-0080	Lock Washer
4	076-0010	Lock Washer
5	072-0018	Lock Washer
6	072-0016	Hex Head Bolt
7	072-0103	Hex Head Bolt
8	072-0095	Slotted Round Head Bolt
9	070-0060	Nylock Nut
10	070-0010	Hex Nut
11	070-0020	Hex Nut
12	052-0007	90° Street Elbow
13	052-0028	Bushing
14	052-0052	90° Elbow
15	NOTE	Lip Cylinder Hose
16	NOTE	Lift Cylinder Hose
17	NOTE	Return Hose
18	NOTE	Velocity Fuse
19	302-0392	Lip Cylinder Clevis Pin
20	302-0440	Lip Cylinder Spacer
21	302-0551	Cylinder Locking Plate
22	302-0550	Lift Cylinder Upper Clevis Pin
23	802-0786	Lip Cylinder
	802-0986	Lip Cylinder (for models with Auto Return)
24	NOTE	Side Skirt
25	NOTE	Lift Cylinder
26	302-0392	Lift Cylinder Lower Clevis Pin
27	802-0544	Valve Block Assembly
28	NOTE	Power Unit
29	NOTE	Lip
30	NOTE	Lip Hinge Pin
31	NOTE	Weather Seal
32	802-2716	Maintenance Stand

NOTE: State Model # and Serial # when ordering replacement parts.

NOTE 2: FOR REPLACEMENT PARTS FOR OPTIONAL AUTO RETURN SEE PAGE 16.

CONTROL PANEL REPLACEMENT PARTS

USE ONLY GENUINE PENTALIFT REPLACEMENT PARTS

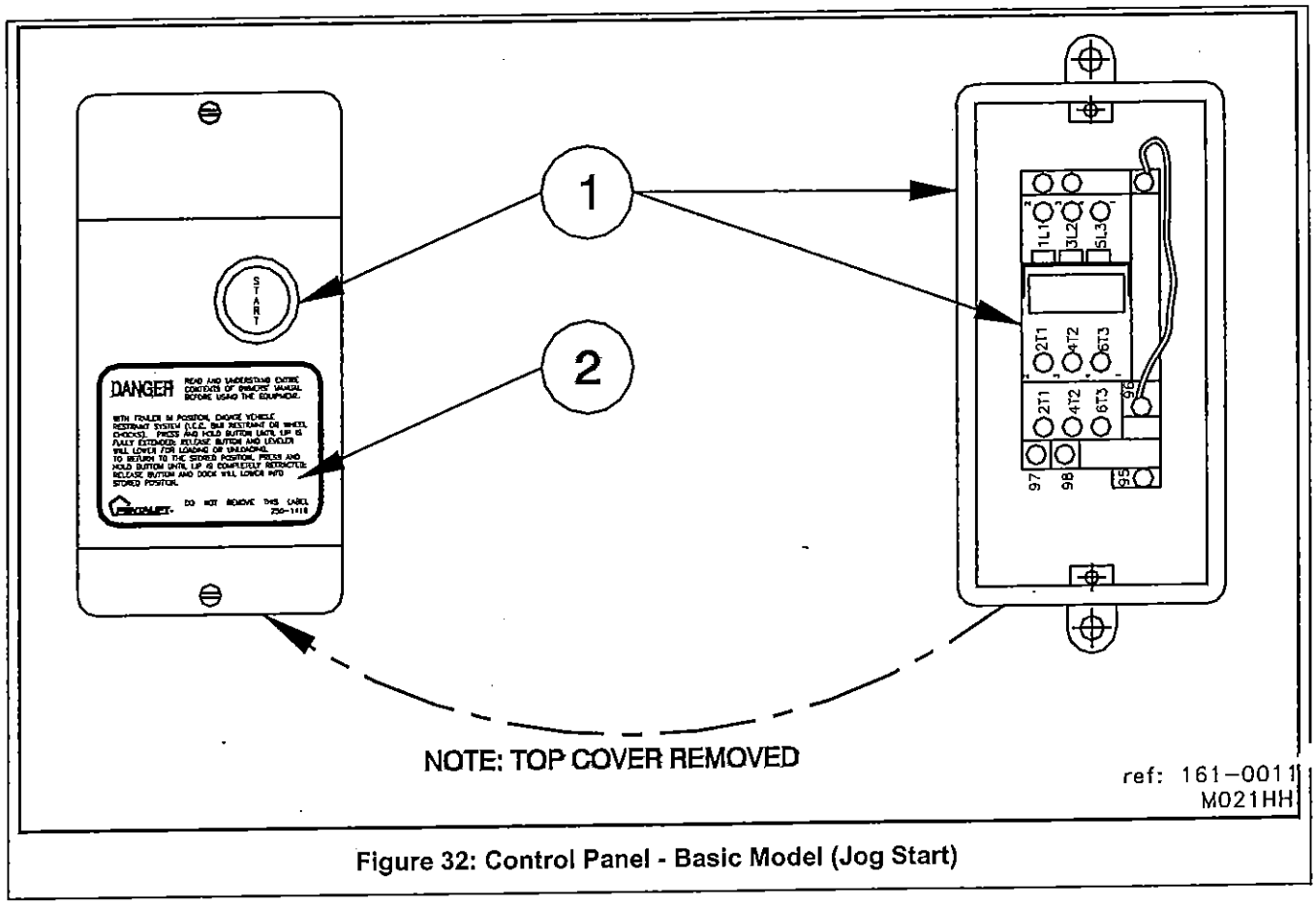


Figure 32: Control Panel - Basic Model (Jog Start)

Item	Part No.	Description
1	060-0319	Pre-assembled Control Panel for 110V 1 Phase
	060-0320	Pre-assembled Control Panel for 220V 1 Phase
	060-0321	Pre-assembled Control Panel for 208V 3 Phase
	060-0322	Pre-assembled Control Panel for 460V 3 Phase
	060-0323	Pre-assembled Control Panel for 600V 3 Phase
2	250-1416	Decal only

NOTE: State Model # and Serial # when ordering replacement parts.

CONTROL PANEL REPLACEMENT PARTS (CONT.)

USE ONLY GENUINE PENTALIFT REPLACEMENT PARTS

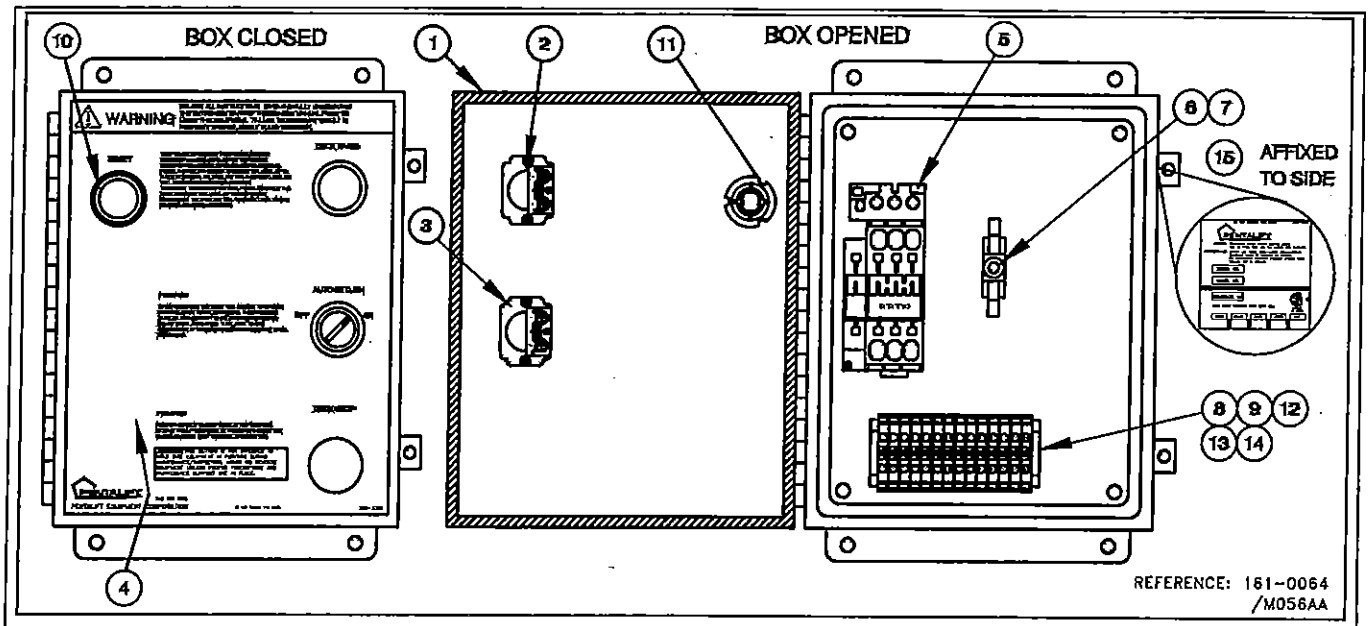


Figure 33: Control Panel - Single Phase Model with Auto Return

Item	Part No.	Description
1	060-0292	10" x 8" x 4" Electrical Enclosure
2	060-0706	Push Button Flush Black
3	060-0709	2 Position Selector Switch
4	250-2397	Panel Decal
5	SEE NOTE	Motor Starter With Overload
6	060-0380	Fuse Holder
7	060-0541	0.5 Amp Fuse
8	060-0548	Terminal - Beige
9	060-0590	Terminal - Green
10	060-0717	1/2" Sealing Ring
11	060-0731	Push Button Flush Blue
12	060-0293	DIN Rail
13	060-0464	Terminal End Clamp
14	060-0463	Terminal Cap
15	250-1313	Electrical Information Decal

NOTE: State Model # and Serial # when ordering replacement parts.

CONTROL PANEL REPLACEMENT PARTS (CONT.)

USE ONLY GENUINE PENTALIFT REPLACEMENT PARTS

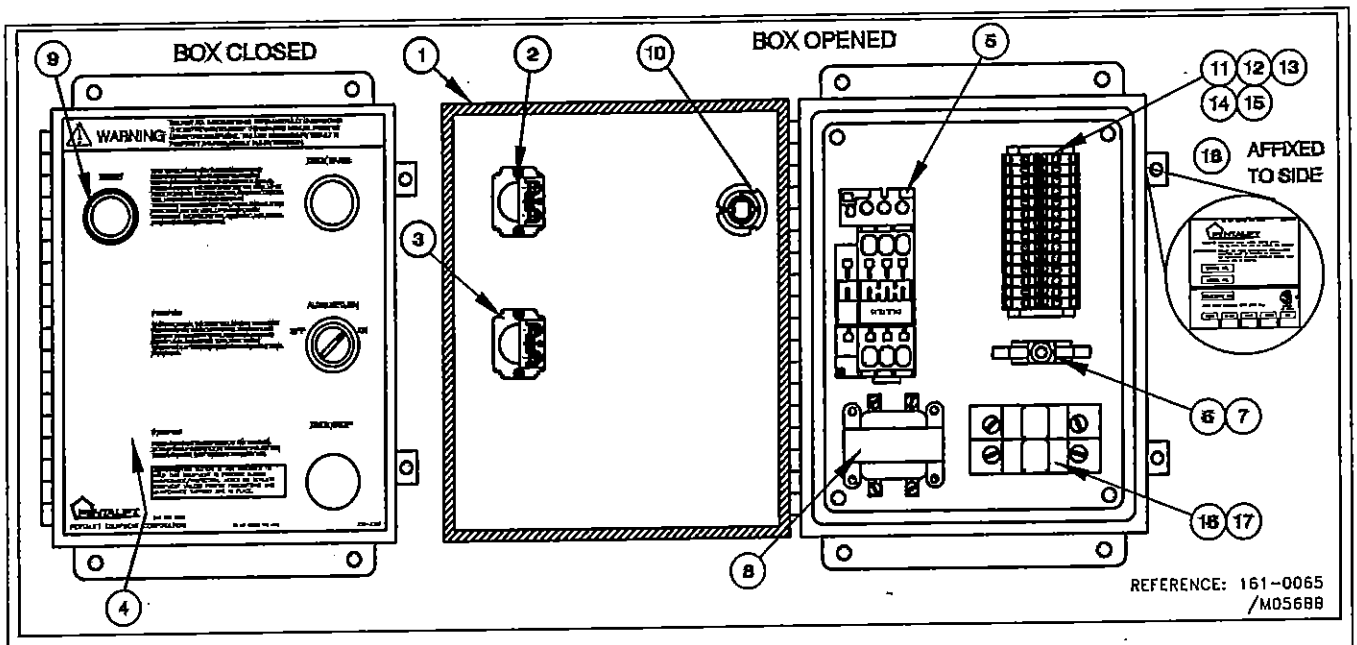


Figure 34: Control Panel - 3 Phase Model with Auto Return

Item	Part No.	Description
1	060-0292	10" x 8" x 4" Electrical Enclosure
2	060-0706	Push Button Flush Black
3	060-0709	2 Position Selector Switch
4	250-2397	Panel Decal
5	SEE NOTE	Motor Starter With Overload
6	060-0380	Fuse Holder
7	060-0541	0.5 Amp Fuse
8	SEE NOTE	Transformer
9	060-0717	½" Sealing Ring
10	060-0731	Push Button Flush Blue
11	060-0548	Terminal - Beige
12	060-0590	Terminal – Green
13	060-0293	DIN Rail
14	060-0464	Terminal End Clamp
15	060-0463	Terminal Cap
16	060-0230	Fuse Block
17	SEE NOTE	Fuse
18	250-1313	Electrical Information Decal

NOTE: State Model # and Serial # when ordering replacement parts.

CONTROL PANEL REPLACEMENT PARTS (CONT.)

USE ONLY GENUINE PENTALIFT REPLACEMENT PARTS

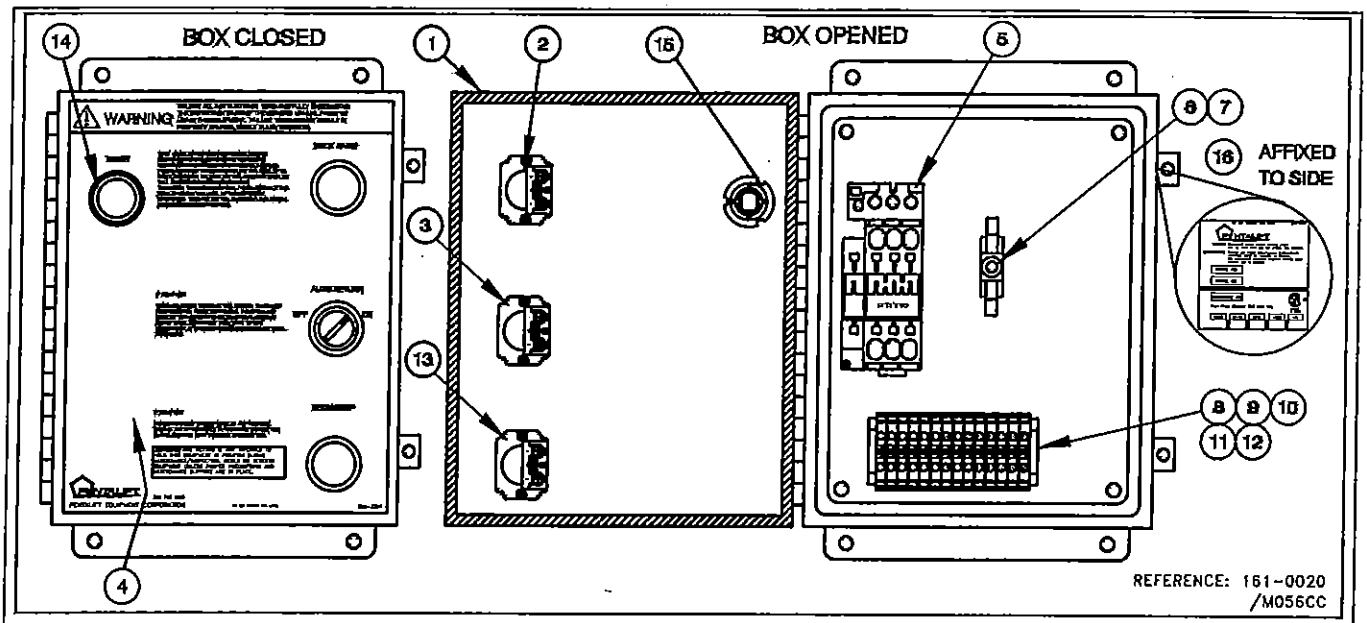


Figure 35: Control Panel - 1 Phase c/w Auto Return & Deck Stop/Independent Lip Control

Item	Part No.	Description
1	060-0292	10" x 8" x 4" Electrical Enclosure
2	060-0706	Push Button Flush Black
3	060-0709	2 Position Selector Switch
4	250-2397	Panel Decal
5	SEE NOTE	Motor Starter With Overload
6	060-0380	Fuse Holder
7	060-0541	0.5 Amp Fuse
8	060-0548	Terminal – Beige
9	060-0590	Terminal – Green
10	060-0293	DIN Rail
11	060-0464	Terminal End Clamp
12	060-0463	Terminal Cap
13	060-0707	Push Button Flush Red
14	060-0717	½" Sealing Ring
15	060-0731	Push Button Flush Blue
16	250-1313	Electrical Information Decal

NOTE: State Model # and Serial # when ordering replacement parts.

CONTROL PANEL REPLACEMENT PARTS (CONT.)

USE ONLY GENUINE PENTALIFT REPLACEMENT PARTS

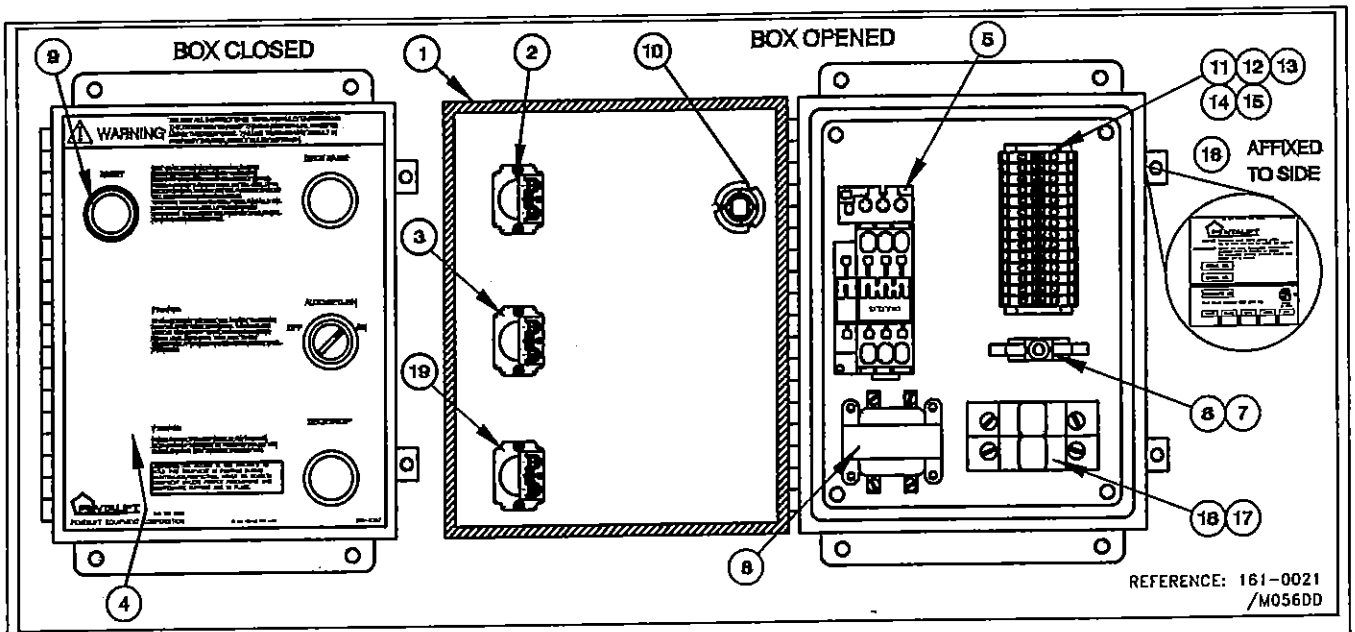


Figure 36: Control Panel - 3 Phase c/w Auto Return & Deck Stop/Independent Lip Control

Item	Part No.	Description
1	060-0292	10" x 8" x 4" Electrical Enclosure
2	060-0706	Push Button Flush Black
3	060-0709	2 Position Selector Switch
4	250-2397	Panel Decal
5	SEE NOTE	Motor Starter With Overload
6	060-0380	Fuse Holder
7	060-0541	0.5 Amp Fuse
8	SEE NOTE	Transformer
9	060-0717	½" Sealing Ring
10	060-0713	Push Button Flush Blue
11	060-0548	Terminal – Beige
12	060-0590	Terminal – Green
13	060-0293	DIN Rail
14	060-0464	Terminal End Clamp
15	060-0463	Terminal Cap
16	060-0230	Fuse Block
17	SEE NOTE	Fuse
18	250-1313	Electrical Information Decal
19	060-0707	Push Button Flush Red

NOTE: State Model # and Serial # when ordering replacement parts.

CONTROL PANEL REPLACEMENT PARTS (CONT.)

USE ONLY GENUINE PENTALIFT REPLACEMENT PARTS

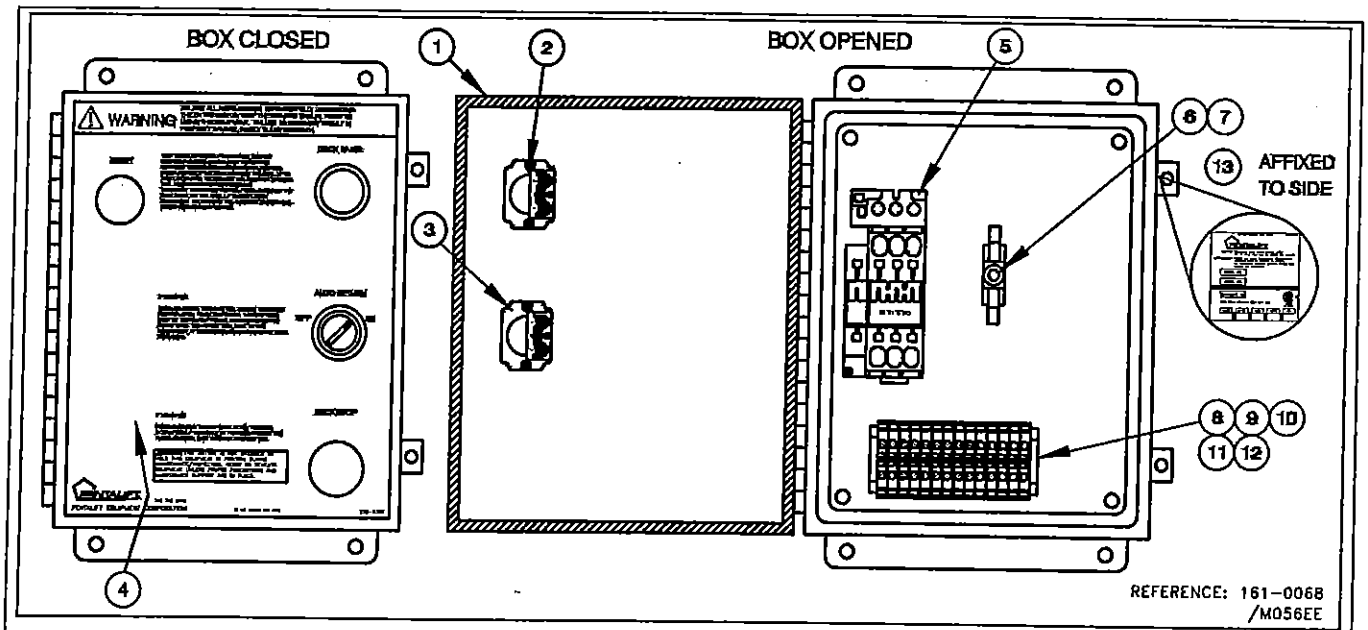


Figure 37: Control Panel - 1 Phase Model c/w Deck Stop/Independent Lip Control

Item	Part No.	Description
1	060-0292	10" x 8" x 4" Electrical Enclosure
2	060-0706	Push Button Flush Black
3	060-0709	2 Position Selector Switch
4	250-2397	Panel Decal
5	SEE NOTE	Motor Starter With Overload
6	060-0380	Fuse Holder
7	060-0541	0.5 Amp Fuse
8	060-0548	Terminal – Beige
9	060-0590	Terminal – Green
10	060-0293	DIN Rail
11	060-0464	Terminal End Clamp
12	060-0463	Terminal Cap
13	250-1313	Electrical Information Decal

NOTE: State Model # and Serial # when ordering replacement parts.

CONTROL PANEL REPLACEMENT PARTS (CONT.)

USE ONLY GENUINE PENTALIFT REPLACEMENT PARTS

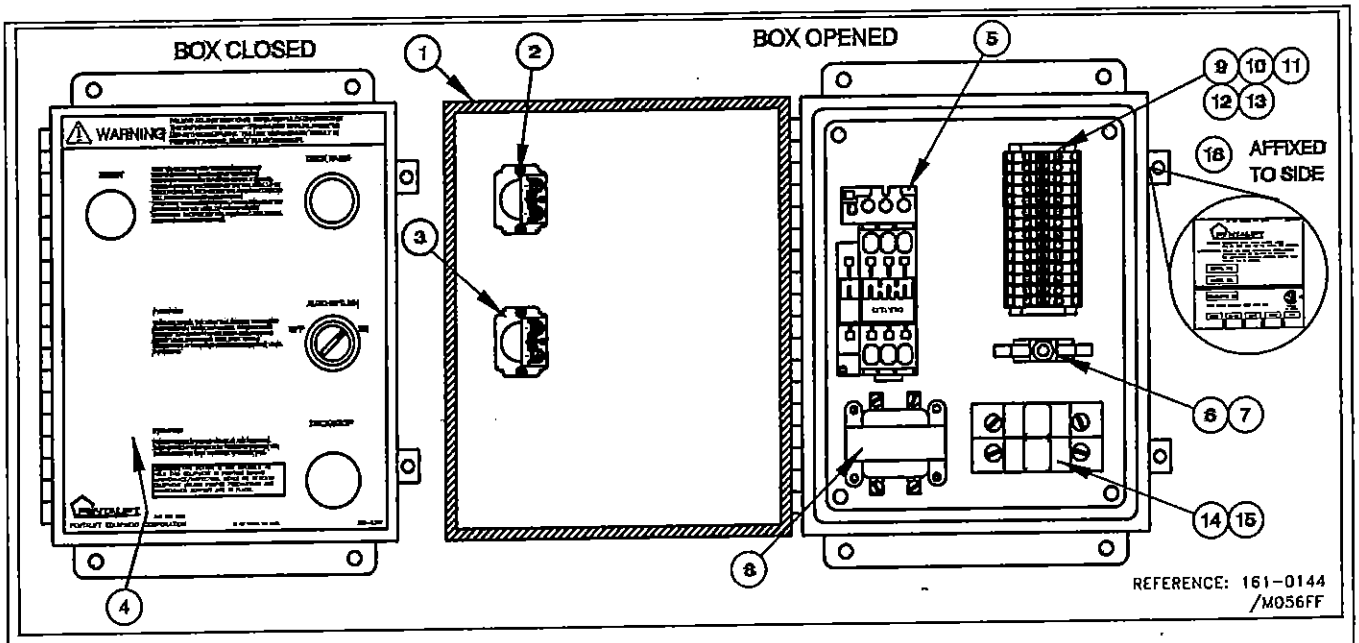


Figure 38: Control Panel - 3 Phase Model c/w Deck Stop/Independent Lip Control

Item	Part No.	Description
1	060-0292	10" x 8" x 4" Electrical Enclosure
2	060-0706	Push Button Flush Black
3	060-0709	2 Position Selector Switch
4	250-2397	Panel Decal
5	SEE NOTE	Motor Starter With Overload
6	060-0380	Fuse Holder
7	060-0541	0.5 Amp Fuse
8	SEE NOTE	Transformer
9	060-0548	Terminal – Beige
10	060-0590	Terminal – Green
11	060-0293	DIN Rail
12	060-0464	Terminal End Clamp
13	060-0463	Terminal Cap
14	060-0230	Fuse Block
15	SEE NOTE	Fuse
16	250-1313	Electrical Information Decal

NOTE: State Model # and Serial # when ordering replacement parts.

TABLES OF ELECTRICAL PART NUMBERS

TRANSFORMERS

PRIMARY VOLTAGE	SECONDARY VOLTAGE	PART NUMBER
600	120	060-0022
480	120	060-0120
240	120	060-0021
208	120	060-0119

FUSES

PRIMARY VOLTAGE	FUSE SIZE	PART NUMBER
480 & 600	0.2 Amps	060-0148
208 & 230	0.5 Amps	060-0150
SECONDARY VOLTAGE	FUSE SIZE	PART NUMBER
110	0.5 Amps	060-0150

MOTOR STARTER/OVERLOAD ASSEMBLIES

	115V / 1 PH	208,230V / 3 PH	480 V / 3 PH	600 V / 3PH
DANFOSS	060-0165	060-0159	060-0167	060-0167
ALLEN BRADLEY	060-0194	060-0193	060-0192	060-0191

LIST OF ILLUSTRATIONS

PENTALIFT EQUIPMENT CORPORATION WARRANTY

WARRANTY

Pentalift Equipment Corporation expressly warrants that any product manufactured by **Pentalift Equipment Corporation** will be free from defects in material and workmanship under normal use for a period of one (1) year from the date of shipment of the equipment, provided the original purchaser maintains and operates the product in accordance with proper procedures. In the event the product proves defective in material or workmanship, **Pentalift Equipment Corporation** will at its option:

1. Replace the product or the defective portion thereof without change to the purchaser; or
2. Alter or repair the product; on site or elsewhere, as **Pentalift Equipment Corporation** may deem advisable, without charge to the purchaser.

The warranty stated in the previous paragraph is that expressed by **PENTALIFT EQUIPMENT CORPORATION** AND IS IN LIEU OF ALL GUARANTEES AND WARRANTIES, EXPRESSED OR IMPLIED BY ANYONE OTHER THAN **PENTALIFT EQUIPMENT CORPORATION.** This warranty does not cover any failure caused by improper installation, misapplication, overloading, abuse, negligence, or failure to lubricate and adjust or maintain the equipment properly and regularly. Parts requiring replacement due to damage resulting from abuse, improper operations, improper or insufficient lubrication, lack of proper protection or vehicle impact are not covered by this warranty. **Pentalift Equipment Corporation** assumes no responsibility or liability for:

1. Consequential damages of any kind which result from use or misuse of the equipment.
2. Damage or failure resulting from the use of unauthorized replacement parts.
3. Damage or failure resulting from modification of the equipment.
4. Damage resulting from the misuse of the equipment.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, AND THERE IS NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE.

Pentalift Equipment Corporation warranties extend only to the original product itself. In no event shall **Pentalift Equipment Corporation** be responsible for or liable to anyone, including third parties, for special, indirect, collateral, punitive, incidental or consequential damages, even if **Pentalift Equipment Corporation** has been advised of the possibility of such damages. Such excluded damages include, but are not limited to, loss of good will, loss of profits, loss of use, interruption of business or other similar indirect financial loss.

Pentalift Equipment Corporation DISCLAIMS all liability arising out of the workmanship, methods and materials used by the installer.

Pentalift Equipment Corporation DISCLAIMS all liability for premature product wear, product failure, property damage or bodily injury arising from improper installation and application.

Pentalift Equipment Corporation will not accept any warranty for which the original purchaser does not notify **Pentalift Equipment Corporation's** Warranty Department of the defect within ninety (90) days after the product defect is discovered. A fully completed Product Registration Card is required prior to the review or processing of any warranty requests or claims.

WARRANTIES, whether expressed or implied, relating to workmanship and materials used in connection with the installation of **Pentalift Equipment Corporation** products are specifically DISCLAIMED.

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PENTALIFT™

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NOTE: All Pentalift Equipment Corporation products are subject to design improvement through modification without notice.