

INSTALLATION & OWNER'S MANUAL



⚠ WARNING

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.

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1. ABOUT the U-SERIES DOCK LEVELER with SINGLE PUSH BUTTON CONTROLS

The Blue Giant **U-Series Hydraulic Dock Leveler** is a high performance system. U-beams welded at dynamic impact points guarantee sturdy deck support. It has a fixed rear hinge, but flexes up to 4" (101mm) when under load to maintain full-width contact between the lip and the truck bed. Hydraulic components increase operating efficiency and reduce maintenance requirements.

The **Single Push Button Control Station** controls an independent hydraulic dock leveler via a constant pressure "I" (UP) button.

1. 1

OWNER'S PURCHASE RECORD

OWNER'S PURCHASE RECORD Please record information for future inquiries	
Dealer:	Date in Service:
Serial Number(s):	Number of Units:
	Door # :

The manufacturer offers a full line of dock levelers, dock safety equipment, accessories, ergonomic and scissor lift equipment, and industrial trucks. Concurrent with a continuing product improvement program, specifications are subject to change without notice. Please contact the manufacturer for latest information. Some features illustrated may be optional in certain market areas.

2.

INTRODUCTION

The following is a quick reference to important procedures that must be followed while using the Dock Leveler System. It is not intended to cover, or suggest that it does cover, all procedures necessary to ensure safe operation. All operators should be aware of and abide by all workplace safety regulations applicable to the operation of the Dock Leveler System. These laws and regulations include but are not limited to:

- The Occupational Safety and Health Act (USA)
- Occupational Safety and Health Acts for Individual States (USA)
- Canadian Material Handling Regulations

For additional information on these regulations as well as industry standards that may apply to this product, please contact:



American National Standards Institute (ANSI)
1430 Broadway
New York, NY 10018
(212) 642-4900



ALSO MEMBERS OF :
Loading Dock Equipment Manufacturers
A Product Section of Material Handling Industry of America,
A Division of Material Handling Industry
8720 Red Oak Blvd., Suite 201, Charlotte, NC, 28217-3992
Telephone: (704) 676-1190 Fax: (704) 676-1199

2.1

WARRANTY INFORMATION

Thank you for purchasing Blue Giant products. We appreciate your business, and are confident that our product will serve you for many years to come. In the event that you experience a problem with our product, our Warranty Center is here to support the Blue Giant Product(s) that you have purchased.

To validate warranty on recently purchased equipment, please complete and submit your information with our on-line Warranty Registration at www.BlueGiant.com.

For more information about Blue Giant's Warranty Support, please contact your local Blue Giant Equipment dealer, representative or authorized partner near you. You may also visit www.BlueGiant.com or phone 1-905-457-3900.

* Note that failure to validate warranty at the time of receipt can seriously affect the outcome of any claim.

2.2

EXCLUSION OF LIABILITY

The manufacturer assumes no liability for damage or injury to persons or property which occur as a result of defects or faults in or incorrect use of Dock Leveler System. The manufacturer also assumes no liability for lost profits, operating downtimes, or similar indirect losses incurred by the purchaser. Injury to third parties, irrespective of its nature, is not subject to compensation.

The manufacturer reserves the right to make changes at any time to the modules, components, and accessories, concurrent with its continuing product development program. Specifications, operating instructions, and illustrations included in this manual are subject to change without notice. Please contact manufacturer for the latest information.

2.3

MANUFACTURER'S NOTE

The Dock Leveler has been carefully inspected and tested at the manufacturer's plant prior to shipment, but should be checked upon receipt for transport damage. Any observed transport damage is to be listed on the signed copy of the freight document. Notify the freight forwarder of any damage **WITHIN 48 HOURS**.

3. OPERATOR'S MANUAL SAFETY MESSAGE COLOR IDENTIFICATION

This manual includes color-coded safety messages that clarify instructions and specify areas where potential hazard exists. To prevent the possibility of equipment damage and serious injury or death, please observe strictly the instructions and warnings contained in the messages. If warning decals become damaged or missing, replace them immediately. Avoid accidents by recognizing dangerous procedures or situations before they occur.

⚠ DANGER	IMPORTANT
Serious injury or death will likely occur if the instructions are not followed.	Procedures marked IMPORTANT must be followed in order to prevent damage to machinery.
⚠ WARNING	⚠ CAUTION
Serious injury or death may occur if the instructions are not followed.	Instructions marked CAUTION concern safe operating procedure. Failure to comply may result in personal injury.

3.1 OPERATIONAL SAFETY WARNINGS

⚠ DANGER

- **DO NOT** operate leveler with anyone standing in the path of operation.
- **BEFORE BEGINNING ANY SERVICE PROCEDURES:**
 - Disconnect the power and follow all LOCKOUT / TAGOUT procedures.
- **DO NOT** operate leveler without filling the cylinder if the unit has not been in service for an extended period of time.
- **Procedure for filling cylinder:**
 - Press and hold the 'UP' button (Run Pump). Operate for **(25) seconds**.

⚠ WARNING	IMPORTANT
<ul style="list-style-type: none"> • Keep away from hinge when operating leveler. • Post safety warnings and barricade working area at dock level and at ground level to prevent unauthorized use of the leveler during maintenance/service. • During installation, anchors must be properly torqued to obtain the necessary anchoring strength. DO NOT USE IMPACT DRIVERS. • DO NOT drive or walk onto the transport vehicle until it is parked against the dock bumpers and the wheels are chocked. • NEVER attempt to lift or hold the lip out by hand. Serious personal injury could occur. • ALWAYS check the rigging to make sure that it is secure before proceeding to lift the unit. Never stand under any unit being lifted. • NEVER remove the wheel chocks until loading/ unloading is finished and the truck driver has been given permission to depart. 	<ul style="list-style-type: none"> • DO NOT ground welding equipment to any hydraulic cylinder or electrical components. • DO NOT attach welder as ground to leveler platform when welding on base frame assembly. Attach welder ground to base frame assembly only. Otherwise damage to bearings or hydraulic equipment will occur. • DO NOT allow the drill to go too deeply when drilling holes in the control box. Damage to the control systems may occur. • NEVER use air to blow debris from control box. Use a vacuum to remove debris from control box. • DO NOT connect green ground lead into control box or junction box until all welding has been completed. • CHECK HYDRAULIC FLUID LEVEL. Deck mounted power unit has been filled with fluid but cylinders, hoses and manifold are shipped dry. • NOTE - check motor rotation. Jog the motor until rotation has been determined. DO NOT allow the motor to run in reverse for more than a couple of seconds, otherwise the power unit may become damaged. • DO NOT force valve adjustment screws against internal stops. Damage will occur to the valve/seat. • If a procedure is not clearly defined in this manual, contact your authorized Service Representative.

⚠ CAUTION

- **ONLY TRAINED PERSONNEL** should operate or service this equipment.
- **DO NOT** operate leveler until freight carrier is parked against the dock bumpers and has been secured by a vehicle restraint and/or chocks.
- **ALWAYS** return the leveler platform to the proper stored position.
- **ALWAYS** conduct routine inspections and maintenance. Failure to conduct could cause personal injury or damage to equipment.

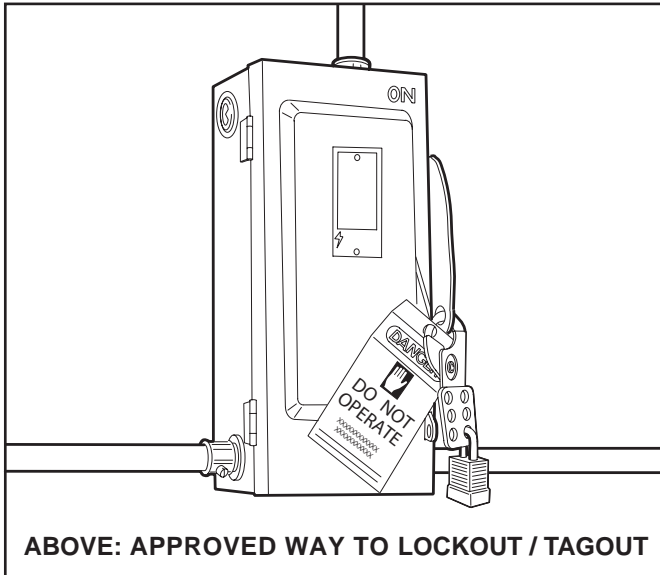
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LOCKOUT / TAGOUT PROCEDURE and RULES

⚠ WARNING

Always lockout and tagout any power source before performing any work on any electrical devices or electrical controls according to OSHA regulations and approved local electrical codes.

In accordance with the rules and regulations of the Occupational Safety and Health Administration (OSHA), all affected employees must be notified that the machine or equipment will be shut down and locked out to perform repair or maintenance work. The work area must be checked to ensure that all personnel have been removed or safely repositioned. The machine or equipment power supply shall be locked in the OFF position or disconnected from the energy source. Blue Giant® strongly recommends that only OSHA-approved lockout devices be utilized.



The energy isolating device must bear a prominent warning tag indicating that work is being done on the equipment and the name of the authorized employee responsible for the lockout. It is mandatory that tagout devices not be susceptible to deterioration or illegibility due to weather conditions or exposure to chemicals and moisture.

ABOVE: APPROVED WAY TO LOCKOUT / TAGOUT

6. STANDALONE SINGLE BUTTON DOCK ARRANGEMENT

NEW CONSTRUCTION (FHE DOCK):

1. RUN ONE 1/2" I.D. CONDUIT FROM THE CONTROL STATION TO THE DOCKS POWER PACK MOTOR JUNCTION BOX.

MINIMUM CONCRETE STRENGTH 3,000 P.S.I.

POWER WIRING
 HYDRAULIC HOSE LINES

SINGLE PUSH BUTTON CONTROL STATION (MOUNTED & WIRED BY OTHERS)

NOTE: FUSED DISCONNECT BY OTHERS

MAIN POWER (TO CONTROL STATION)

- ONE CONDUIT REQUIRED:
- INSTALL SECOND CONDUIT FOR FUTURE EXPANSION (INTERLOCKS, COMBOS, ETC.)

50"

UNDER DOCK

DOCK HYDRAULICS

MOTOR WIRING (to single push button control station)

WARNING

DO NOT WIRE HIGH AND LOW VOLTAGES IN THE SAME CONDUIT. High voltage range is 115V and up. Lower voltages include the communication and solenoid wiring as well as the I/O.

ELECTRICAL REQUIREMENTS-

- MOUNT CONTROL BOX STATION TO WALL, SIGNAL LIGHTS AND DRIVER WARNING SIGNS
- FUSED DISCONNECT PROVIDED BY OTHERS AND WIRING BY OTHERS
- INSTALL WIRING FROM CONTROL BOX STATION TO POWER PACK
- INSTALL WIRING FROM CONTROL BOX STATION TO POWER SUPPLY

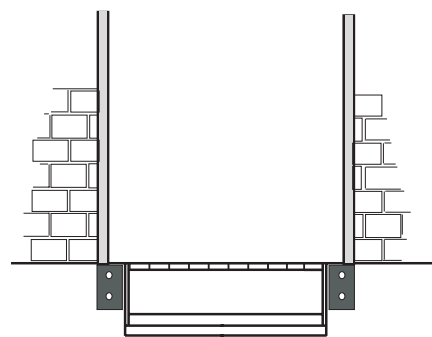
SINGLE PUSH BUTTON CONTROL STATION (MOUNTED ON DRIVERS SIDE)

MAIN POWER (from fused disconnect)

50"

MOTOR WIRING (to hyd. Power Pack)

INSIDE BUILDING VIEW*



GROUND LEVEL

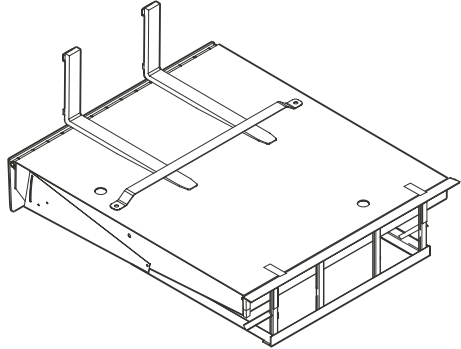
FRONT ELEVATION VIEW*

NOTE: *DRAWINGS NOT TO SCALE

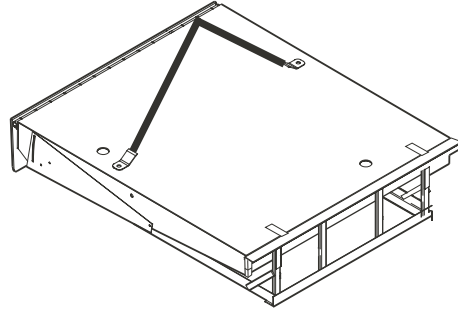
6.

DOCK LEVELER INSTALLATION INSTRUCTIONS

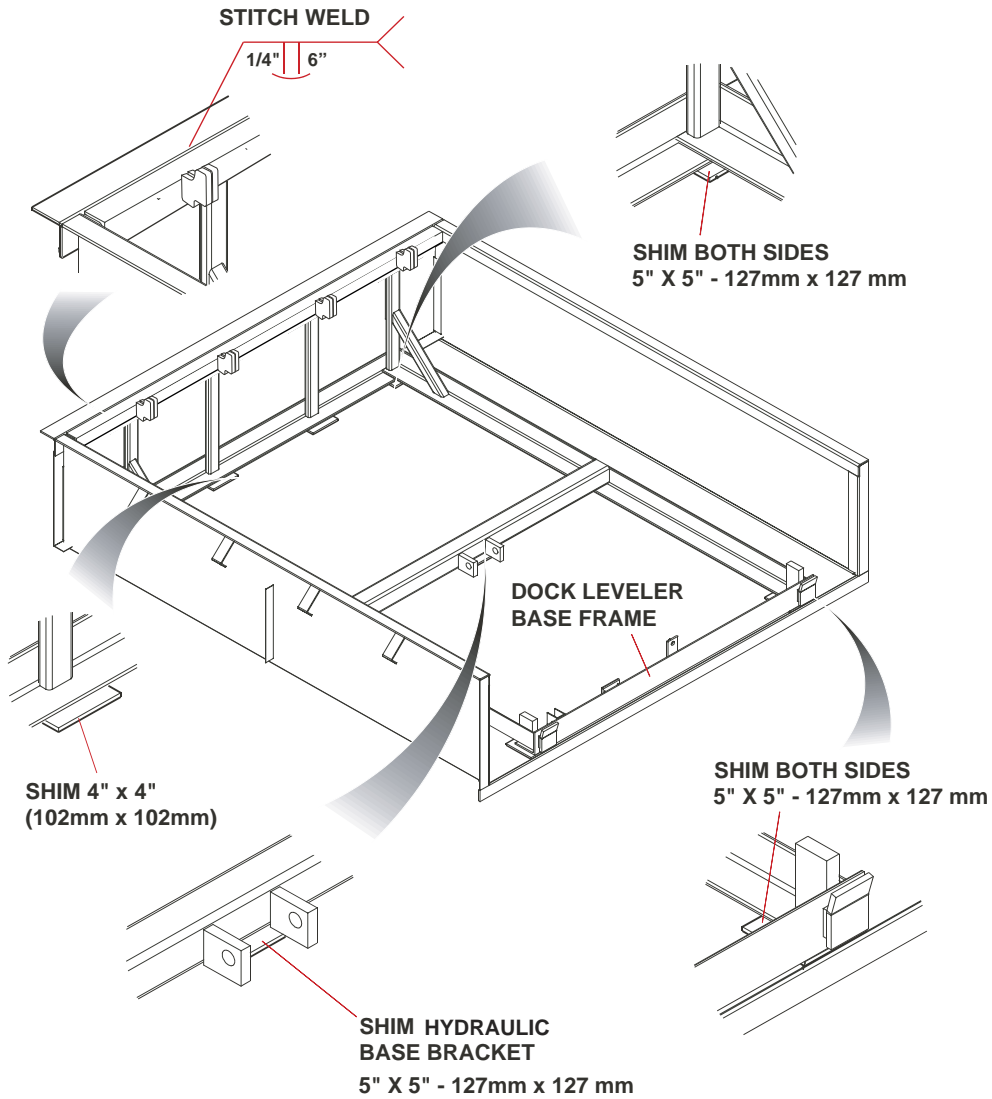
WELD INSTALLATION PICTORIAL



FORK LIFT TRUCK HANDLING



SLING HANDLING



7. DOCK LEVELER INSTALLATION INSTRUCTIONS

WARNING

Do not install, operate and/or service this leveler until you have read and understood all of the safety information and instructions contained herein and on the leveler.

Do not work under or around leveler being installed without first placing adequate barriers to positively prevent vehicle traffic from entering the work area.

Keep hands and feet clear of dock leveler pinch points.

IMPORTANT

The information below is crucial to proper installation:

Pit Curb Angles

- A. Must be level side-to-side and front-to-back.
- B. Must be square at both rear corners.
- C. Side curb angles must be parallel to each other.
- D. Finished floor to be flush with top surface of curb angle.

The leveler must be welded to a firmly embedded steel or other dock steel as described in the installation instructions. Do not attempt to use only bolts or anchors, to attach the dock leveler to the concrete.

1. Prior to installation, clean pit thoroughly and verify that all dimensions are in accordance with manufacturer specifications.
2. Measure height of rear corners of dock leveler, bottom of frame to top of deck plate, typically 19" or 23"(485 or 585mm). Measure depth of pit at both rear corners where rear bottom corners of frame will be positioned. Locate and place suitable shims (not supplied) in pit corners to produce a depth to match frame height.
3. Measure height of dock leveler front corners, bottom of frame to top of deck plate, typically 19-1/2" or 23-1/2" (495 or 595mm). Measure depth of pit at both front corners where front bottom corners of frame will be positioned. Locate and place suitable shims (not supplied) at both front corners to produce a depth to match frame height. See Figure 1.

WARNING

All electrical work must be performed by trained and authorized personnel.

4. Prepare to hook up electrical wires and hydraulic hoses if required. Identify hose ends as "Lip" and "Deck". For units with self-contained (mounted under deck) power pack, establish a temporary electrical hook-up to enable deck to be raised and lowered during installation. For units with a wall mounted (remote) power pack, prepare hydraulic hoses for "pulling" through conduit and electrical wires for temporary hook up.

WARNING

Use caution when lifting or moving the leveler. Do not attempt to lift without suitable hoisting equipment capable of lifting as much as 3500 lbs. Do not work beneath a raised object. Follow all hoisting safety requirements.

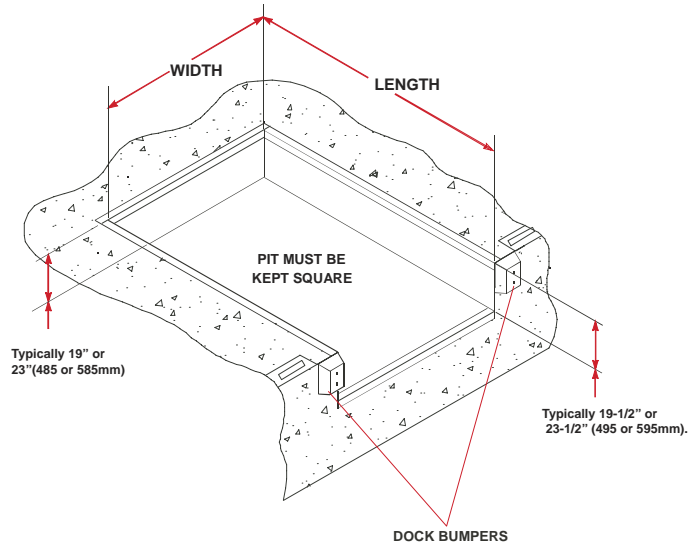


Figure 1 : Pit Layout - Typical (Four piece curb angle shown)

5. Using extreme caution, sling dock leveler into place squarely above pit and lower gently onto pre-located shims. Locate and square dock leveler to best suit pit and dock face. Space between sides of deck and sides of pit should be equal. Line up the bottom clevis holes to the pivot edges of the rear frame.

IMPORTANT

It is important that the shims fill the space between the bottom edge of the back beam and face of the curb angle, as well as behind each hinge lug on the top edge. Confirm that the top of the back beam is flush with the top surface of the rear curb angle, and then finish weld back beam to curb angle.

6. If the rear beam does not line up squarely with the rear curb angle, use 3" x 6" (75mm x 150mm) shims of suitable thickness to fully support top rear and bottom rear of rear beam at weld areas. Weld rear beam to curb steel with 1/4" x 6" (6mm x 150mm) welds, on 9-5/8" (250mm) centers.
7. Remove sling brackets, chains, etc. from the deck. Remove and discard the shipping bolts from the front of the dock leveler lip plate and the rear tilt bar.
8. Check the deck height to confirm that it is flush with the top of the side curb angles and tack-weld all front shims to the front curb angle and front frame.
9. Adjust the lip proximity sensor by loosening the holding nuts and setting the gap. Once the desired adjustment has been achieved, re-tighten the holding nuts.

7. DOCK LEVELER INSTALLATION INSTRUCTIONS

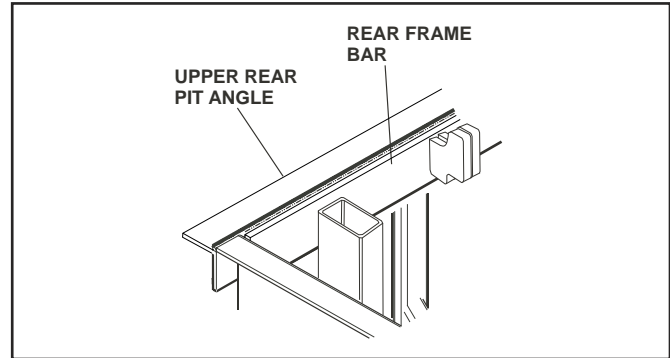
10. Mount control station assembly in a suitable location. Mount power unit in a suitable location if applicable (remote power pack).
11. If power unit is mounted remote from pit (wall mounted) permanently attach hydraulic hoses. "Lip" hose is attached to the top fitting on the power unit manifold block and the "Deck" hose is attached to the side fitting.
12. Perform a temporary electrical hook-up to allow use of power unit to raise dock leveler. Confirm correct motor rotation on start-up of 3 phase units – if motor runs but deck will not raise, qualified personnel to interchange any two motor leads.
13. Touch and hold "Deck" button to raise deck and extend lip. Raise and position maintenance strut. Release "Up" button and allow dock leveler to lower onto maintenance strut. Install additional blocking to assure deck can not lower unexpectedly and place traffic barriers as required.
14. Remove the pin from telescopic maintenance strut, and extend the maintenance strut to the desired height. Then reinsert pin to engage the strut to the head board.

WARNING

Do not work beneath the dock leveler without engaging the maintenance strut.

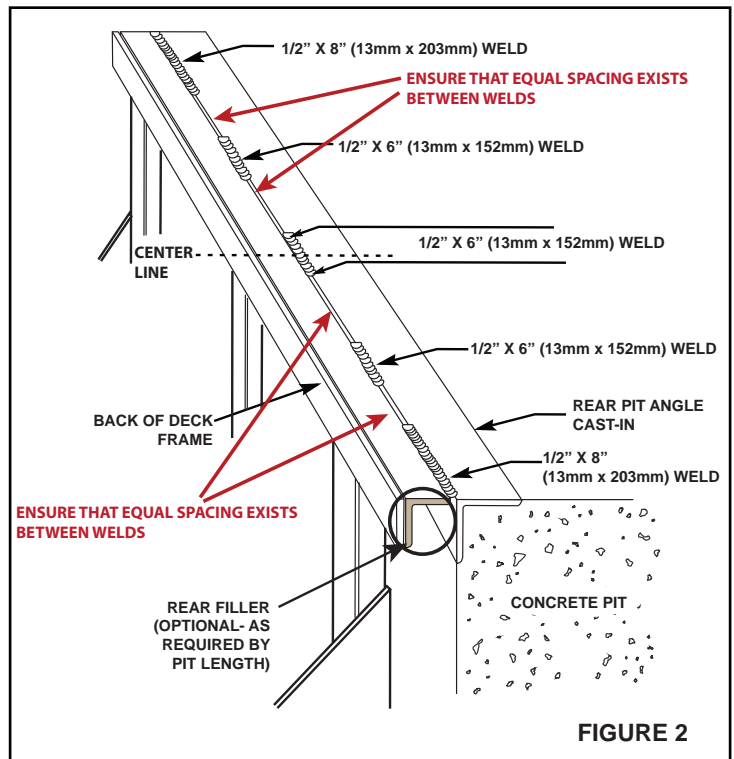
Do not work beneath the dock leveler without following proper lockout procedures. Disconnect and lockout the electrical power supply, and confirm that there is no power to the dock leveler control panel. Also confirm that it cannot be turned on again accidentally.

15. Rear frame on most models has one or more vertical frame members in addition to rear corner vertical members. Place adequate shims directly under each vertical member to fill space between bottom frame and floor of pit. Finish weld all rear shims. **Reminder:** the rear frame **MUST** be flush with the floor.
16. Measure thickness of shims that were installed under middle of front frame and place same thickness of 6" x 6" (150mm x 150mm) shims under base of deck cylinder. Finish weld to cylinder mounting plate.
17. Finish weld all shims securely to the front curb angle and front frame, under the lip keeper supports.
18. Weld the rear frame to the pit's rear curb angle. (See Figure 2).
19. Install specified dock bumpers as required. Do not use the dock leveler to be used without bumpers, as damage to both building and leveler may result.
20. Release bottom safety skirts by removing and discarding shipping bolts, one bolt from each side.
21. Make permanent electrical and hydraulic connections as required.
21. Mount the operations placard on the wall in plain view of dock leveler operations.



7.1 Installation Inspection

1. Clean up the entire work area and apply touch-up paint to all welds, scratches and burns.
2. Test operate the unit through several full cycles of operation. Refer to the Operating Procedures section. If problems are noted, consult the TROUBLESHOOTING section of this manual.
3. Leave these Instructions with the dock leveler for use by owner.



8.

ELECTRICAL AND HYDRAULIC INSTALLATION



WARNING

DO NOT WIRE HIGH AND LOW VOLTAGES IN THE SAME CONDUIT. High voltage range is 115V and up. Lower voltages include the communication and solenoid wiring as well as the I/O.

During installation, place adequate barriers to prevent vehicle traffic from entering the work area, and follow proper lockout / tagout procedures.

8.1 Electrical and Hydraulic Dock Installation

1. Run conduit from main power disconnect to control station.
2. Run conduit from the control station to hydraulic power pack motor junction box.
3. Run conduit from the control station to pit for auto-return control cable (optional).
4. Run conduit from the control station to the overhead door sensor (optional).
4. Complete the electrical hookup between components.

For a pictorial of this installation procedure, see Section 5.

8.2 Final Inspection

1. Check all hydraulic connections for leaks and tighten as required.
2. Check that all electrical and hydraulic conduits, hoses, and wires are mechanically protected against damage and are adequately secured.
3. Return all wiring diagrams to the Single Push Button Controls.
4. Mount warning placard next to the Single Push Button Controls.
5. Leave these instructions near the dock leveler for easy future access.

9. OPERATING INSTRUCTIONS

⚠ WARNING

Do not operate this leveler unless you have been trained and authorized to do so, and have read and understood all of the safety information and instructions contained herein and on the leveler.

Do not operate the dock leveler beyond its rated capacity.

Do not operate this leveler until you have checked its condition. Report the need for repairs to your supervisor immediately and do not operate the unit until repairs are made. Neglect may cause a minor repair to become a major service problem and cause the leveler to become unsafe.

Never try to lift or move any part of the dock leveler manually.

Do not drive on the leveler unless the lip is securely on the truck bed and has a minimum of 4" (100mm) overlap on its surface.

Do not exceed 4 mph when driving over the dock leveler.

Do not drive over edges of the leveler and / or dock bumper blocks (bumpers blocks are not structural).

9.1 Functional Description

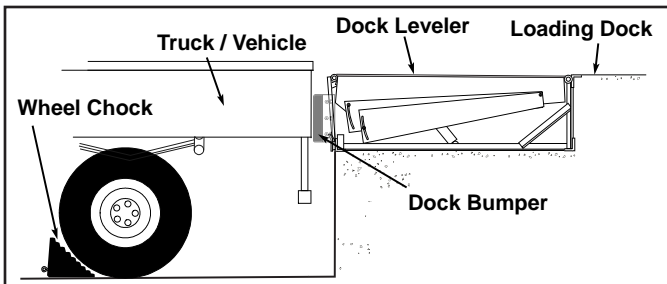
The U-Series hydraulic dock leveler serves as a bridge between a loading dock floor and the load bed of a transport vehicle. The leveler's upper deck plate, complete with a hinged, vertically hanging lip, is in a shallow pit at the edge of the dock, flush with the dock's edge and the floor surface.

The rear of a transport vehicle is parked and restrained in place against the outer wall of the loading dock, in working alignment with the dock leveler. The dock attendant maintains pressure on a touch button to raise the front of the deck. The hinged lip plate raises at the same time, its leading edge swinging out horizontally over the rear of the transport vehicle once the deck reaches its fully raised position. The dock attendant releases the push button, causing the deck and extended lip to lower together until the lip's underside comes to rest on the load bed. A solid bridge is now formed between the dock and the truck.

Once all work is completed, the dock attendant returns the leveler to its original stored position.

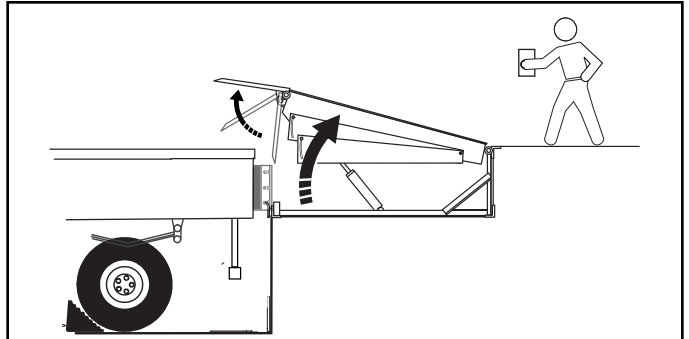
⚠ WARNING

Secure the transport vehicle with a vehicle restraint, wheel chocks or other method before commencing traffic across the dock leveler.

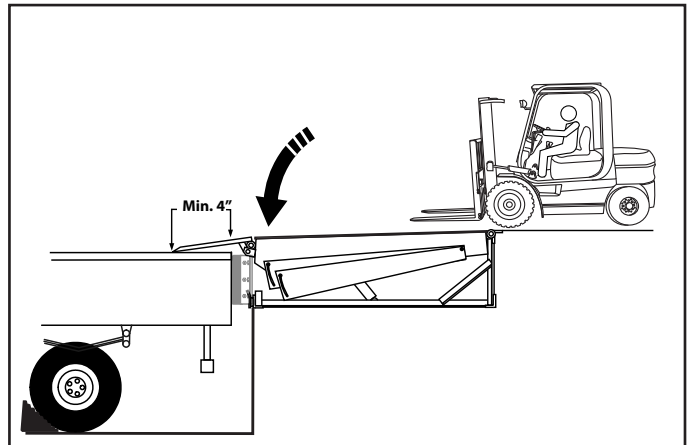


9.2 Deploying the Dock Leveler

1. Raise the dock leveler by pushing the 'UP' button. If the button is still being pressed while the dock is in its fully raised position, the lip will then deploy.

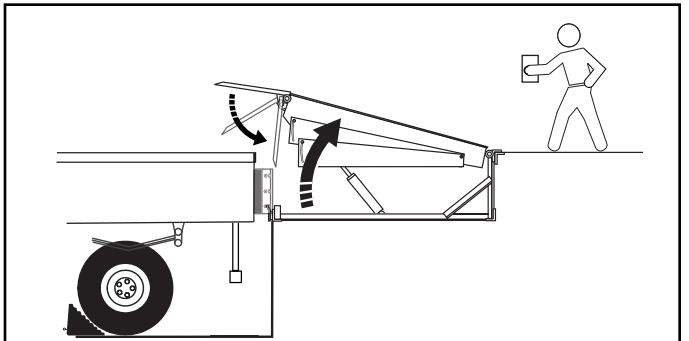


2. The dock leveler will then descend with the deployed lip on the vehicle load bed. When the dock has fully deployed on the load bed, loading and unloading may commence.



9.3 Storing the Dock Leveler

1. To return the dock leveler to the stored position, touch and hold the 'UP' button. The dock will raise and the lip will retract.



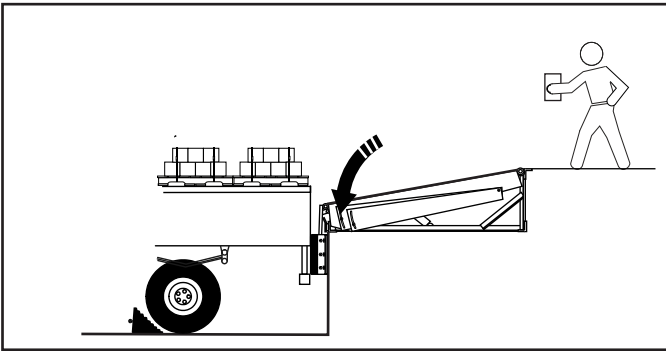
2. When the lip has fully retracted, release the 'UP' button. The dock will fall back to the stored position with the lip resting in the lip keepers.

9. OPERATING INSTRUCTIONS

9.4 Below Level / End Loading

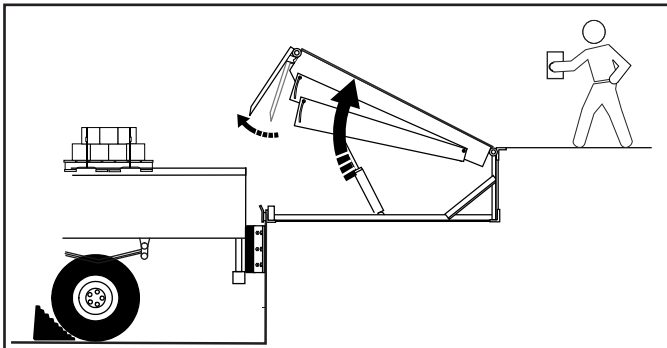
This section outlines operation of the dock leveler in situations where the lip plate cannot make contact with the transport vehicle load bed. (e.g. loading/unloading the first skid or pallet from the vehicle load bed when there is insufficient surface area to extend the dock leveler lip plate.)

1. Hold the "UP" button to raise the deck. When the dock is fully raised, the lip will extend.
2. With the lip partially extended (approximately 2" [50mm]) release the button to undeploy the dock back into the stored position. Since the lip is out and clear of the lip keepers, the dock will descend past the leveled floor outside the lip keepers so that below level / end loading can be achieved.



9.4.1 Returning to Normal Operation

1. When Below Level / End Loading has been completed, return the dock leveler to the normal operation mode by touching the 'UP' button until the dock is high enough for the lip to deploy safely on the vehicle load bed.



10. MAINTENANCE

⚠ WARNING

Do not operate and/or service this dock leveler until you have read and understood all of the safety information and instructions contained herein and on the dock leveler.

Do not work under or around dock leveler without first placing adequate barriers to positively prevent vehicle traffic from entering the work area.

Follow proper lock-out/tag-out procedures.

Keep hands and feet clear of dock leveler pinch points and wear appropriate safety attire - glasses, gloves and work boots.

⚠ WARNING

The Maintenance strut must be in place before commencing maintenance procedures.

10.1 Planned Maintenance

In addition to the daily operator inspection, the manufacturer recommends (and local government regulations may require) that a planned maintenance (PM) and safety inspection program be performed by a trained and authorized service technician on a regular basis to maintain the equipment in safe operating condition. The PM will provide an opportunity to make a thorough inspection of the safety and operating condition of the dock leveler. Necessary adjustments and repairs can be done during the PM, which will increase the life of components and reduce unscheduled downtime.

Recommended procedures for a periodic planned maintenance program that covers inspections, operational checks, cleaning, lubrication, and minor adjustments are outlined in this manual. An authorized dealer or distributor is prepared to assist with a planned maintenance program by offering trained service personnel with expertise in dock leveler maintenance requirements.

10.2 Operator Daily Inspection

The dock leveler should always be examined by the operator PRIOR TO ANY USE to verify that it is safe to operate.

The manufacturer recommends making multiple photocopies of the Operator's Daily Checklist. The operator should fill out this form to keep a daily record of operation and maintenance issues.

10.3 Routine Servicing and Maintenance

Regular maintenance and care of the dock leveler is very important for cost and operation efficiency and more importantly; operator safety. A faulty dock leveler is a potential source of danger to the operator, and to other personnel working near it. As with all quality equipment, keep the dock leveler in good operating condition by following the recommended schedule of maintenance.

Failure to properly maintain or operate the dock leveler within its rated capacity can void the manufacturer warranty.

10.4 Planned Maintenance Intervals

Arrange for a qualified dock leveler repair technician to perform regularly scheduled planned maintenance on your dock leveler every 3 months for single shift operations or monthly for multi-shift operations.

Call your authorized manufacturer/ dealer for further details.

10.5 Maintenance Sequence

1. Cleaning, including pit area.
2. Visual inspection of all components.
3. Lubrication, as required. (by a trained service technician only)
4. Test operate all functions.
5. Adjustments, if required. (by a trained service technician only)
6. Check for missing or damaged dock bumpers.
7. Record inspection details and findings for owners' files.

10.6 Recommended Hydraulic Fluids

Normal, All Season Weather Conditions:

- Valvoline All Weather 36 or equivalent.

Note: Dextron II Automatic Transmission Fluid may be used if other suitable oils are not available.

Extreme Low Temperature Conditions:

- Esso Univas N15 or Gulf Harmony Arctic 15 or suitable equivalent.

MAINTENANCE & SERVICE TIME INTERVALS FOR SPECIFIC DOCK COMPONENTS CHART

	DECK CYLINDER	DECK ASSEMBLY	MAINTENANCE STAND	LIP HINGE ASSEMBLY	LIP CYLINDER	HYDRAULIC OIL RESERVOIR
INSPECT	ALL THE ABOVE EVERY 90 DAYS (for multi-shift operations every 30 days is required)					
CLEAN	ALL THE ABOVE EVERY 90 DAYS Clean Lip As Required (for multi-shift operations every 30 days is required)					
LUBRICATE	As Needed	Every 90 Days Pivot Points (Light Oil)	Not Required	Every 90 Days (Grease)	Every 90 Days (Light Oil)	Drain, Flush & Change Once Per Year
ADJUST	As Needed	Not Required	Not Required	Not Required	As Needed	Fill As Needed

Note : In many localities, all lifting devices must be inspected a minimum once per year.

10.7 PM CHECK LIST - DOCK EQUIPMENT


Customer		Tel		SWO#	
Location		Cust. Contact			
Date		Inspected By			

Barricade Work Area

CLEAN	Repairs?	OK	CHECK / ADJUST / LUBE	Repairs?	OK
			Check Main Lift Cylinder		
Pit Area			Check Lip Lift Cylinder		
Deck Hinge			Check Clevis Pins & Lubricate		
Lip Hinge			Check Push-Button Station		
CHECK	Repairs?	OK	Check Wiring Harness		
Check Full Operating Cycle			Check Oil Level (Top off as needed)		
Check Instruction, Caution, Danger Labels			Check Automatic Return To Dock		
Check Welds On Dock Leveler			Check Dock Bumpers		
Check Maintenance Strut / Lip Latch			Check Weather Seals		
Check Ramp Rear Hinges			Check Dock Seal/Dock Shelter		
Check Dock Leveler Structure, Sub Frame, Shim					
Lubricate Rear Hinges & Pins					
Lubricate Dock Leveler Lip Hinge					
Structural Damage					
Check Lip Crown			Check For Proper Operation		
Dock Bumpers / Extensions					
Overhead Door					
Curb Angle			Place Updated Service Sticker On Equipment		
Safety Skirts			Clean Up Of Dock Leveler Area		

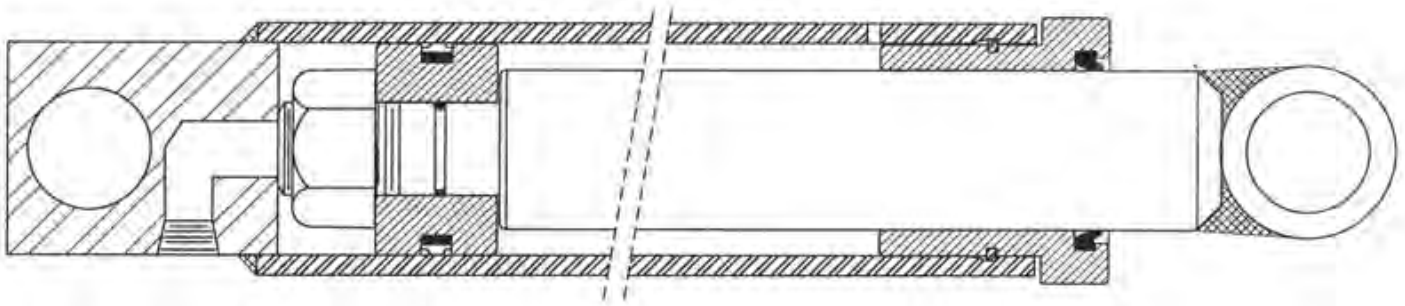
COMMENTS

REPAIRS RECOMMENDED

 WARNING
<p><i>Do not install this leveler, operate and/or service unless you have been trained and authorized to do so.</i></p>

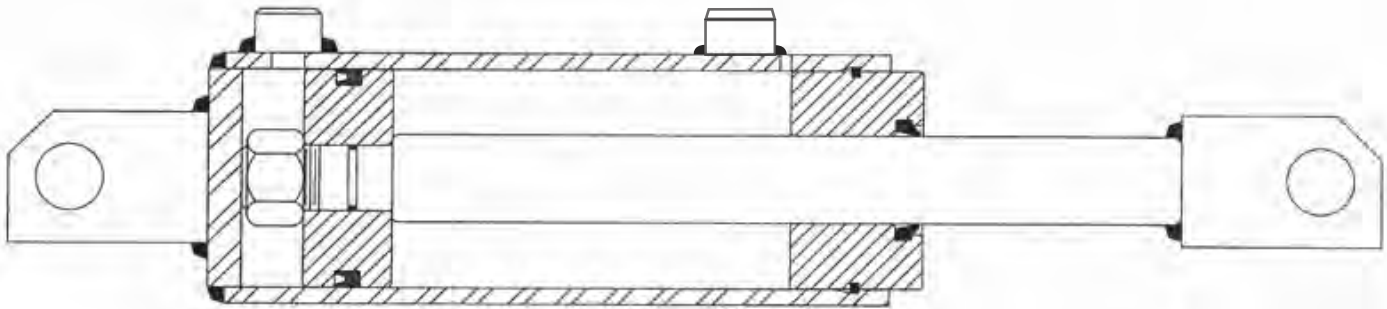
12.

HYDRAULIC CYLINDERS



12.1 HYDRAULIC DECK LIFTING CYLINDER

ITEM	QTY	PART NUMBER	GENERAL DESCRIPTION
-----	-----	788-635-1	Deck Lifting Cylinder – (6' & 8' Long Docks)
-----	-----	788-636-1	Deck Lifting Cylinder – (10' & 12' Long Docks)
-----	-----	036-205	Seal Kit for all Deck Lifting Cylinders



12.2 HYDRAULIC LIP EXTENSION CYLINDER

ITEM	QTY	PART NUMBER	GENERAL DESCRIPTION
-----	1	788-599-1	Lip Extension Cylinder - 30,000 - 40,000 lb capacity docks
-----	1	036-204	Seal Kit for Lip Cylinder - 30,000 - 40,000 lb capacity docks
-----	1	211-7002	Lip Extension Cylinder - (Double Acting- Extreme Temperature) (Optional)
-----	1	211-7002-1	Seal Kit for Lip Extension Cylinder (Double-Acting)



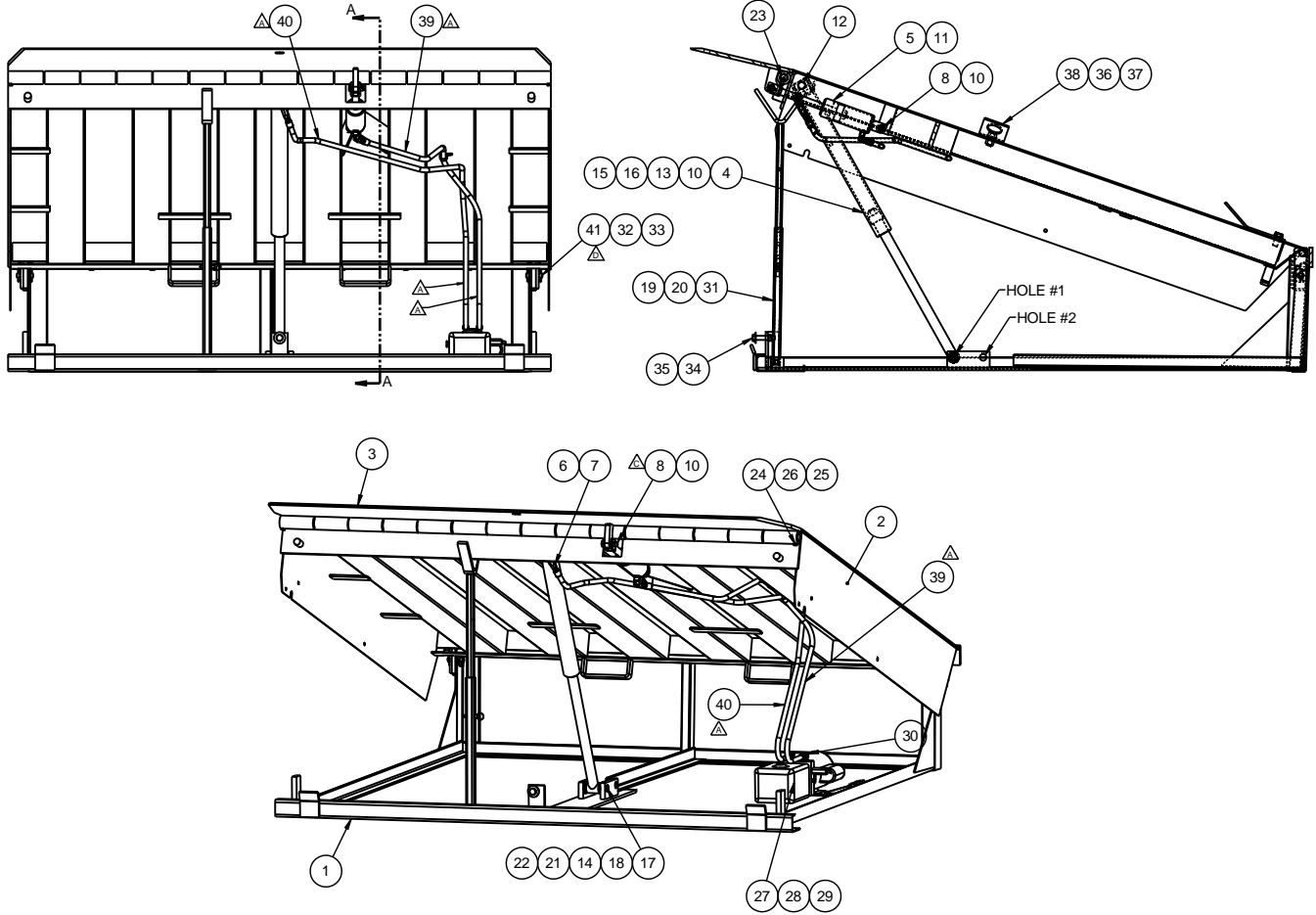
13.

VELOCITY FUSE – FALL SAFE

ITEM	QTY	PART NUMBER	GENERAL DESCRIPTION
1	1	033-661	Velocity Fuse – All Models

13.

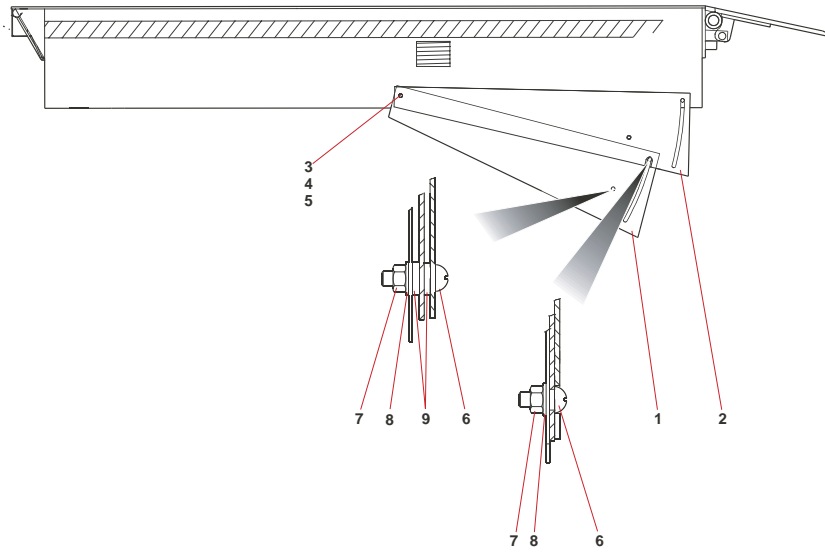
DOCK GENERAL ASSEMBLY COMPONENTS



41	2	26-005610	PIN (REAR FIXED HINGE)	26-005610
40	1	788-332-37	#6 HOSE ASSEMBLY 60" LG	788-332-37
39	1	788-332-38	#6 HOSE ASSEMBLY 78" LG	788-332-38
38	3	103-761	LIFTING BRACKET	103-761
37	3	012-266	Washer Flat SAE 3/4" ZP	012-266
36	3	010-067	HHCS 3/4-10 UNC X 1-1/2 GR.5 ZN	010-067
35	1	012-213-2	Washer Flat USS 5/8	012-213
34	1	010-184	HHCS 5/8-11 UNC X 3 GR.8 ZN	010-184
33	4	012-214	Washer Flat USS 3/4"	012-214
32	4	013-029	HAIRPIN COTTER	013-029
31	1	200-5001	SAFETY STRUT ASSY.	200-5001X
30	2	034-585	FITTING 90 DEG. E.BLOW	034-585
29	2	012-220	Regular Spring Lock Washers (U.S.)	012-220
28	2	010-021	HHCS 1/2-13 UNC X 3/4	010-021
27	1	033-403-1	POWER PACK	033-403-U
26	2	012-200	Regular Spring Lock Washers 5/16" (U.S.)	012-200
25	2	011-502	Hex Nuts (U.S.)	011-502
24	2	010-006	HHCS 5/16-18 UNC X 1 GR.5 ZN	010-006
23	1	SEE CHART	SHAFT	109-687
22	2	012-255	SPACER 1.06 ID. X 1 5/8 OD.	1.06X1.63 X.2
21	2	106-389	WASHER 1 X 1 3/4 X 1/16	106-389
20	1	011-554	Nylon Insert Locknuts 1/2"-13(U.S.)	011-554
19	1	010-027	HHCS 1/2-13 UNC X 2-1/2	010-027
18	1	013-622	5/16 dia. Spring pin 1.0 lg.	013-622
17	1	25-002125	ROD END PIN	25-002125
16	4	012-201	Lock Washers 3/8" HELICAL	012-201
15	4	010-077	HHCS 3/8-16 UNC X 1-1/4 GR.2 ZN, F/T	010-077
14	4	018-017	BUSHING	018-017
13	2	113-096	PIVOT BLOCK TOP PLATE	113-096
12	1	23-003569	PIN	23-003569
11	1	034-601	FITTING	034-601
10	2	013-010	1/4 dia. Spring pin 1.25 lg.	013-010
9	1	018-001	BUSHING 3/4"ID X 7/8"OD X 3/4"L	018-001
8	2	107-196	CLEVIS PIN	107-196
7	1	033-661	VELOCITY FUSE	033-661
6	1	034-515	FITTING	034-515
5	1	788-599-1	LIP CYLINDER	OPEN
4	1	788-635-1	LIFT CYLINDER	OPEN
3	1	SEE CHART	LIP WELDMENT	25-002141
2	1	SEE CHART	DECK WELD	25-002194
1	1	SEE CHART	FRAME WLDMT	25-002195
ITEM NO.	QTY.	PART NO.	DESCRIPTION	DWG. NO.

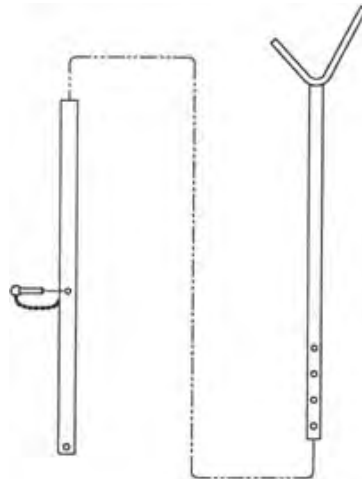
14.

SAFETY SIDE SKIRTS



SIDE SAFETY SKIRTS

ITEM	QTY	PART NO.	DESCRIPTION	ITEM	QTY	PART NO.	DESCRIPTION
-----	-----	202-5024	Safety Skirt Package - 6' & 8' Long	4	2	012-252	Washer, Flat -3/8"ID BS Washer
-----	-----	202-5024-1	Safety Skirt Package - 10' & 12' Long	5	2	011-552	Nut, Hex 3/8"-16 Nylon Insertt
1	2	202-0036	Safety Skirt, Lower - 6' & 8' Long	6	4	011-135	Capscrew, Sckt Butn/Hd 5/16"-18x3/4
1	2	202-5036-1	Safety Skirt, Lower - 10' & 12' Long	7	4	011-543	Nut, Hex - 5/16"-18 Nylon Insert
2	2	202-5037	Middle Safety Skirt - 6' & 8' Long	8	4	012-211	Washer, Zinc 5/16" Bs Flat
2	2	202-5037-1	Middle Safety Skirt - 10' & 12' Long	9	4	012-312	Washer Nylon Fender 5/16"IDx 7/8"ODx1/16"TH
3	2	010-039	Cap Screw, Hex Hd. - 3/8"-16x1"	10	2GA	039-059	Paint, Safety Yellow

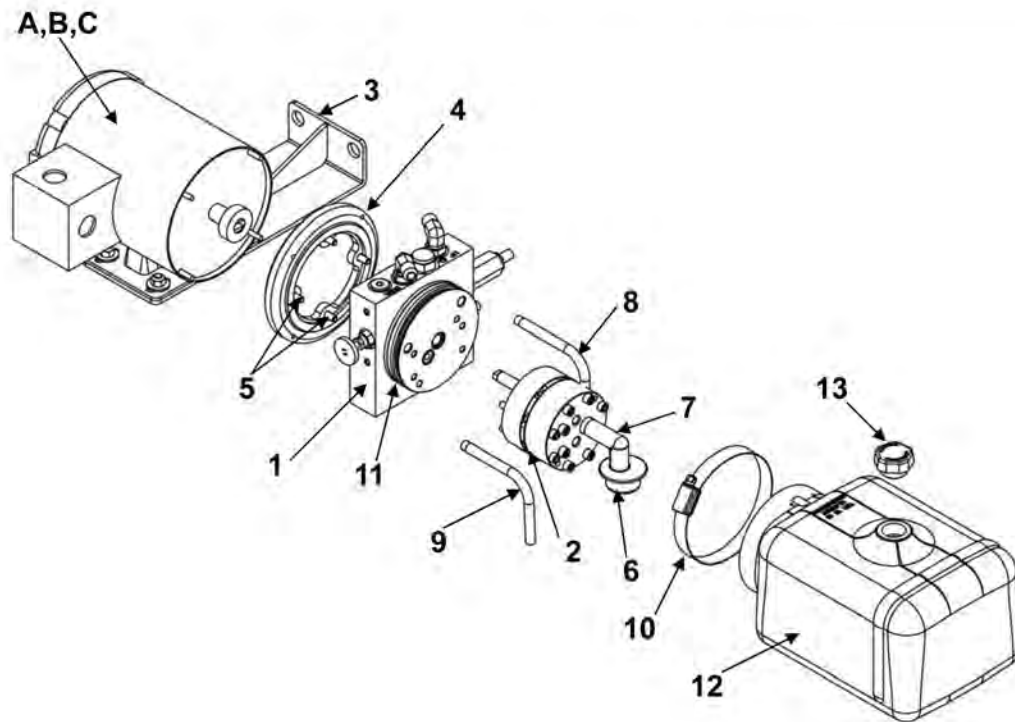


15. SAFETY STRUT ASSEMBLY

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	200-5001	Safety Strut Assembly

16.

POWER PACK ASSEMBLY



Parts Identification

- A. Motor, 115/208/230VAC., 50/60Hz., 1Ph.
- B. Motor, 208/230/460VAC., 50/60Hz., 3Ph.
- C. Motor, 575VAC., 60Hz., 3Ph.
- 1. Manifold Base Assy. M-4560 w/o valves.
- 2. Pump, modular assembly.
- 3. Bracket, motor mounted.
- 4. Adaptor for close coupled AC motors.
- 5. Screws, socket head, 1/4-20x0.75" (x4)
- 6. Filter, suction strainer.
- 7. Tube, suction.
- 8. Tube, return
- 9. Tube, return
- 10. Clamp.
- 11. O-Ring, reservoir seal.
- 12. Reservoir, poly.
- 13. Breather.

17.

RECOMMENDED SPARE PARTS

6' & 8' HYD D/L Models

Part #	Description	Qty Req'd
788-635-1	2" DIA CYLINDER ASS'Y, DECK	1
036-205	SEAL, KIT FOR 788-635-1 CYLINDER	1

10' & 12' HYD D/L Models

Part #	Description	Qty Req'd
788-636-1	2"DIA CYLINDER ASS'Y, DECK	1
036-205	SEAL, KIT FOR 788-636-1 CYLINDER	1

All Models

Part #	Description	Qty Req'd
033-661	VELOCITY FUSE	1

* Complements for Hydraulics (Lip Cylinder) *

6' & 8', 10' & 12' HYD D/L Models

Standard
Optional: Extreme Temperature

Part #	Description	Qty Req'd
788-599-1	CYLINDER ASS'Y, LIP	1
036-204	SEAL, KIT FOR 788-599-1 CYLINDER	1
211-7002	CYLINDER ASS'Y (DOUBLE ACTING)	1
211-7002-1	SEAL KIT FOR 211-7002 Cylinder	1

Optional Replaceable Power Pack

VOLTAGE:
115-208-230/1/60
208-230-415-460/3/60
575/3/60

Part #	Description	Qty Req'd
033-403-1	POWER PACK, 1 HP	1
033-404-1	POWER PACK, 1 HP	1
033-405-1	POWER PACK, 1 HP	1

*Optional Replaceable (Standard) Motor Starter

VOLTAGE:
460/3/60
115/1/50/60
208/230/240/1/50-60
208-230/3/60
575/3/60

Part #	Description	Qty Req'd
027-005-L	* CONTROL BOX - PUSH BUTTON	1
027-006-L	* CONTROL BOX - PUSH BUTTON	1
027-007-L	* CONTROL BOX - PUSH BUTTON	1
027-008-L	* CONTROL BOX - PUSH BUTTON	1
027-009-L	* CONTROL BOX - PUSH BUTTON	1

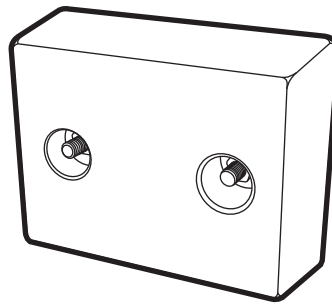
Complements for the Motor Starters are not replaceable

18. GENERAL PARTS

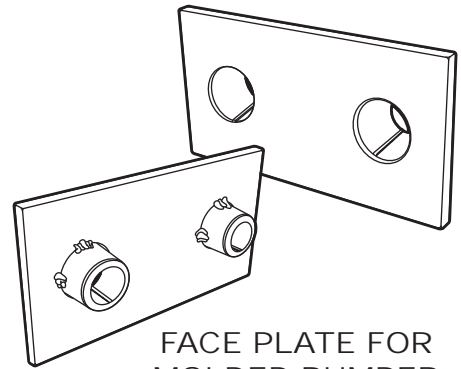
18.1 MOLDED RUBBER BUMPERS

MOLDED RUBBER BUMPERS

PART ID	DESCRIPTION
DB13	4" x 10" x 13"
DB18	4" x 10" x 18"
DB30	4" x 10" x 30"
DBL18	4" x 18" x 18"



MOLDED RUBBER BUMPER



FACE PLATE FOR MOLDED BUMPER

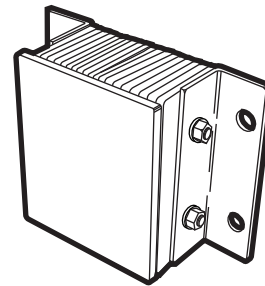
18.2 FACE PLATES FOR MOLDED RUBBER BUMPERS

PART ID	DESCRIPTION
DB13FP	4" x 10" x 13"
DB18FP	4" x 10" x 18"

18.3 LAMINATED BUMPERS

LAMINATED BUMPERS

PART ID	DESCRIPTION
DB411	4.5" x 14" x 10"
DB511	5.5" x 14" x 10"
DB412	4.5" x 14" x 20"
DB512	5.5" x 14" x 20"
DB421	4.5" x 24" x 10"
DB521	5.5" x 24" x 10"
DB431	4.5" x 36" x 10"
DB531	5.5" x 36" x 10"



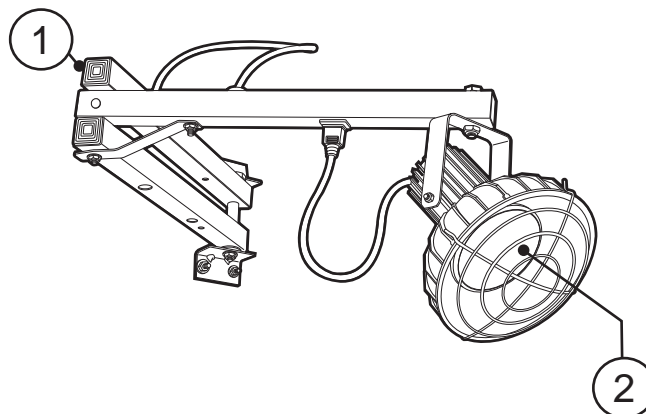
LAMINATED BUMPER WITH FACE PLATE

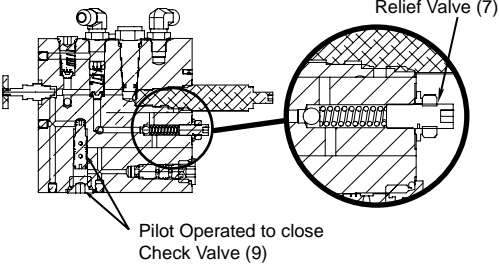
18.4 FACE PLATES FOR LAMINATED BUMPERS

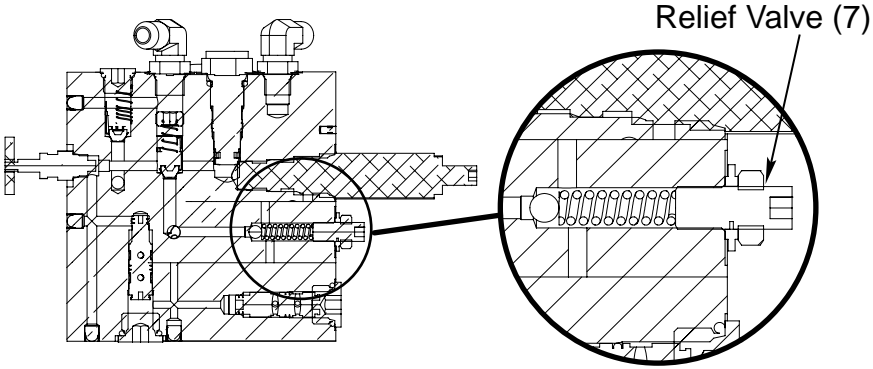
PART ID	DESCRIPTION
DB411FP	4.5" x 14" x 10"
DB511FP	5.5" x 14" x 10"
DB412FP	4.5" x 14" x 20"
DB512FP	5.5" x 14" x 20"

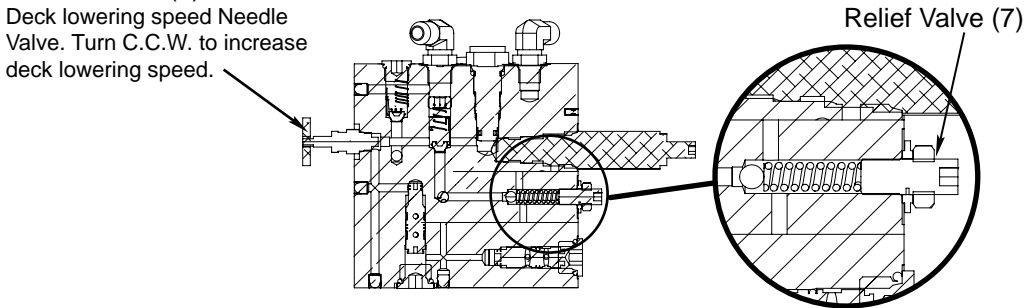
18.5 FLOOD LIGHT

ITEM	QTY	PART ID	DESCRIPTION
1	1	LDL-150	LOADING DOCK LIGHT - 150W MAX
2	1	026-725	90W HALOFLOOD BULB - 130V



19. DOCK LEVELER TROUBLESHOOTING	
⚠ WARNING	Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.
PROBLEM	PROBLEM CAUSE
<p>Deck will not raise when touch button is operated. Motor does start and run.</p>	<ol style="list-style-type: none"> 1. Foreign material lodged between side of deck and pit wall. Remove and discard foreign material as required. 2. Damaged or missing bumpers allowing truck to contact and hold lip. Move truck as required and replace bumpers 3. Equipment or goods parked on dock leveler deck. Remove. 4. Low hydraulic oil fluid in power unit. Damaged hose or other oil leak, repair and refill with approved hydraulic oil as required. 5. Incorrect motor rotation: three phase power supply only. Contact qualified personnel to correct. 6. Relief valve is bypassing. Reset relief valve (7) adjustment. Turn adjusting screw clockwise until deck lifts then continue 1/2 turn and relock. Another possibility is that contamination exists between relief ball and seat, holding valve open. Remove, disassemble, clean thoroughly, reassemble, replace, reset adjustment, test operate. 7. Pilot operated to close Check Valve (9) will not close.- Foreign material in hydraulic fluid causing check valve seat to be held open. Remove SAE plug, remove zero profile valve assembly from cavity. Clean all parts thoroughly, clean bore thoroughly, change oil, replace all components. Adjust to original settings, test operate. <div style="text-align: center; margin-top: 20px;">  </div>
<p>Deck will not begin to raise immediately when motor begins to run. Usually occurs only after the deck cylinder hose has been replaced with a new hose that was not pre-filled with oil.</p>	<p>Air is trapped in the deck lifting cylinder. Bleed as follows:</p> <p>Operate dock leveler and place in fully below level position. Allow to rest in place for 60 – 90 seconds, and repeat as required until deck begins to raise immediately and the motor starts to run.</p>

19. DOCK LEVELER TROUBLESHOOTING	
⚠ WARNING	Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.
PROBLEM	PROBLEM CAUSE
<p>Deck will not raise when touch button is operated. Motor does not attempt to run, no sound is heard from motor / power pack and control box.</p>	<p>1. No power supply to control station.</p> <ul style="list-style-type: none"> - Breaker tripped. - Fuse blown. - (Disconnect) switch open. <p>2. Thermal overload tripped open.</p> <ul style="list-style-type: none"> - Shut off main power from fused disconnect and turn back on. - If trip-off recurs, check / repair motor circuit as required. <p>3. Faulty control box component i.e. fuse, touch button, contactor, transformer.</p> <ul style="list-style-type: none"> - Repairs by qualified personnel as required. - Single phase condition on a three phase system.
<p>Deck will not raise when touch button is operated. Motor attempts to run, but power supply breaker switch trips to the off position, turning the power off before the motor reaches full running speed.</p>	<p>1. Power supply circuit is overloaded by other equipment or components being used on a branch circuit controlled by the same breaker switch. The power supply line circuit must be upgraded to meet the requirements of the power unit.</p> <p>A temporary corrective measure is to purposely misadjust the pressure relief valve to allow a minimal bypass of oil at motor startup and cause a reduction of amperage draw during startup. Turn relief valve adjusting screw counter-clockwise 1/4 turn and test operate. Repeat as required to a setting that will allow motor to start and deck and lip to raise and extend fully. Readjust to normal settings after line voltage problem has been corrected. Failure to readjust to normal setting will result in unnecessary, frequent, service callbacks.</p> <div style="text-align: center;">  </div>
<p>Lip does not extend fully. Oil level in reservoir is not low.</p>	<p>1. Lip plate bent causing hinge to bind.</p> <ul style="list-style-type: none"> - Repair and lubricate as required. <p>2. Foreign material lodged in the lip hinge area.</p> <ul style="list-style-type: none"> - Clean thoroughly as required. <p>3. Relief valve is by-passing.</p> <ul style="list-style-type: none"> - In some instances slight mechanical imperfections can be overcome by increasing the hydraulic pressure. - Turn relief valve adjusting screw clockwise until it bottoms out and then back off 1/8 turn. <p>Note: Repair is not completed until mechanical damage is corrected.</p>

19. DOCK LEVELER TROUBLESHOOTING	
⚠ WARNING	Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.
PROBLEM	PROBLEM CAUSE
<p>Lip lowers slowly in normal temperatures and very slowly in extremely cold weather. Deck lowering speed is correct.</p>	<p>1. A valve adjustment will not correct this problem. Opening the needle valve will cause the deck to lower too quickly, which will in turn cause the fall-safe velocity fuse to lock.</p> <p>2. The lip lowers by gravity and must pivot freely on its full length hinge.</p> <ul style="list-style-type: none"> - Thoroughly clean and lubricate the lip hinge. - Inspect cylinder hose to assure it is not pinched, causing a restriction. - Hose should not be over 22 feet long. Shorten hose and increase hose diameter to reduce restrictions if possible. - Change to special low temperature hydraulic fluid and change seasonally. See the maintenance section 7.6 for recommended low temperature oil. - If problem is extreme, modify to the power-down hydraulic lip system. - A double acting cylinder forces the lip to lower as the deck raises.
<p>Deck lowering speed is too slow or too fast. Refer to manifold cross section drawing on previous page. See NEEDLE VALVE illustration below.</p>	<p>Lowering speed adjustment required.</p> <p>1. To increase lowering speed.</p> <ul style="list-style-type: none"> - Turn lowering speed adjusting needle valve counterclockwise in 1/8 turn increments to a setting that causes the deck to lower from fully raised with lip extended to fully lowered below level with lip extended in 7 seconds maximum. Note: Fall-safe velocity fuse will lock closed if lowering speed is too fast, and deck will not lower. <p>2. To decrease lowering speed.</p> <ul style="list-style-type: none"> - Turn lowering speed adjusting needle valve clockwise in 1/8 turn increments until desired lowering speed is reached. Note: Slower than normal lowering speed will not adversely affect the dock leveler systems. <p>Needle Valve (1) Deck lowering speed Needle Valve. Turn C.C.W. to increase deck lowering speed.</p>  <p style="text-align: right;">Relief Valve (7)</p>
<p>Deck raises partially and stops. Motor continues to run and power unit makes more noise than normal.</p>	<p>1. Oil level in reservoir is low.</p> <ul style="list-style-type: none"> - Add appropriate hydraulic oil to the reservoir. - Locate oil leak and repair as required. Top-up oil reservoir with dock leveler in parked position. - Correct oil level is 1" below top of reservoir when dock leveler is in parked position.

19.

DOCK LEVELER TROUBLESHOOTING

⚠ WARNING

Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.

PROBLEM

PROBLEM CAUSE

Deck raises more slowly than normal, and fluid level in reservoir is normal.

1. Deck or damaged skirts dragging on side of pit.

Repair as required.

Note: (1) Hydraulic oil must be replaced if contaminated by foreign material.

(2) For valves, count and record turns when removing or replacing adjustable parts.

2. Pressure relief bypassing.

- Foreign material lodged between ball and seat. Change oil. Flush by raising deck and lip to maximum height and continue to run motor for 30 seconds maximum.

- Remove relief valve (7), disassemble clean thoroughly, change oil, replace valve, adjust to original setting, test operate.

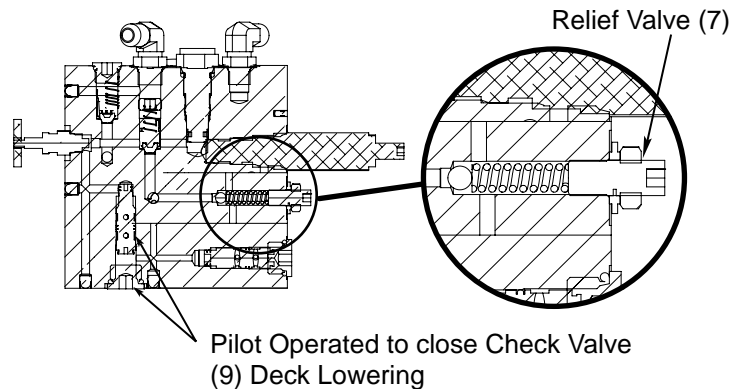
- Ball seat is damaged and must be re seated. Remove relief valve, disassemble, clean thoroughly, using a brass punch firmly hit the ball onto its seat, re-clean, change oil, replace valve, adjust to original setting, test operate.

3. Pilot Operated to close Check Valve (9) will not close.

- Foreign material in hydraulic fluid causing check valve seat to be held open. Remove SAE plug, remove zero profile valve assembly from cavity. Clean all parts thoroughly, clean bore thoroughly, change oil, replace all components. Adjust to original settings, test operate.

4. Faulty Power Pack

- Replace Power Pack



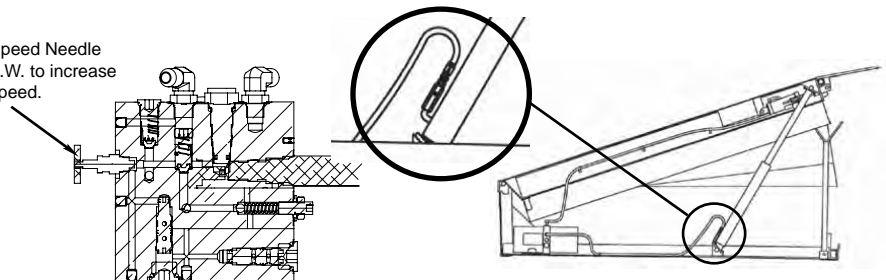
Deck will not lower from fully raised, lip extended position. Lip does lower.

1. The fall-safe velocity fuse located at the bottom of the deck cylinder is in the locked-closed position.

- Deck lowering speed is set too fast. Turn lowering speed adjustment NEEDLE VALVE clockwise in 1/8 turn increments until travel time is 7 seconds maximum from fully raised to fully lowered positions.

- Air is trapped in the deck cylinder and hose. Bleed system by operating deck to fully below level and allow to sit for 60 – 90 second intervals. Repeat as required. **Note:** To open a locked velocity fuse, remove deck weight from cylinder by lifting with a fork truck or other means if cylinder is fully extended. Jog the 'Up' touch button if cylinder is not extended. Repairs are needed before 'Up' jog is performed i.e. a leaking hydraulic hose.

Needle Valve
Deck lowering speed Needle Valve. Turn C.C.W. to increase deck lowering speed.



19. DOCK LEVELER TROUBLESHOOTING

⚠ WARNING Do not attempt to install, make repairs or adjustments. Only a trained and authorized service technician should perform the installation process. Contact your local dealer or distributor for assistance.

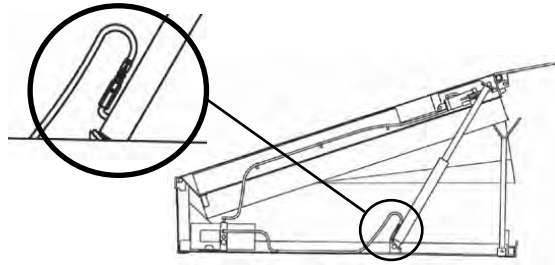
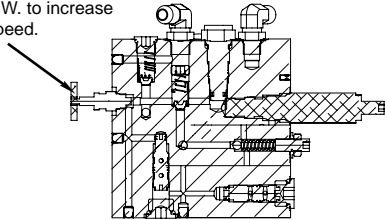
PROBLEM PROBLEM CAUSE

Deck will not lower from fully raised, lip extended position. Lip does lower.

1. The fall-safe velocity fuse located at the bottom of the deck cylinder is in the locked-closed position.

- Deck lowering speed is set too fast. Turn lowering speed adjustment NEEDLE VALVE clockwise in 1/8 turn increments until travel time is 7 seconds maximum from fully raised to fully lowered positions.
- Air is trapped in the deck cylinder and hose. Bleed system by operating deck to fully below level and allow to sit for 60 – 90 second intervals. Repeat as required. **Note:** To open a locked velocity fuse, remove deck weight from cylinder by lifting with a fork truck or other means if cylinder is fully extended. Jog the 'Up' touch button if cylinder is not extended. Repairs are needed before 'Up' jog is performed i.e. a leaking hydraulic hose.

Needle Valve
Deck lowering speed Needle Valve. Turn C.C.W. to increase deck lowering speed.



NOTES

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