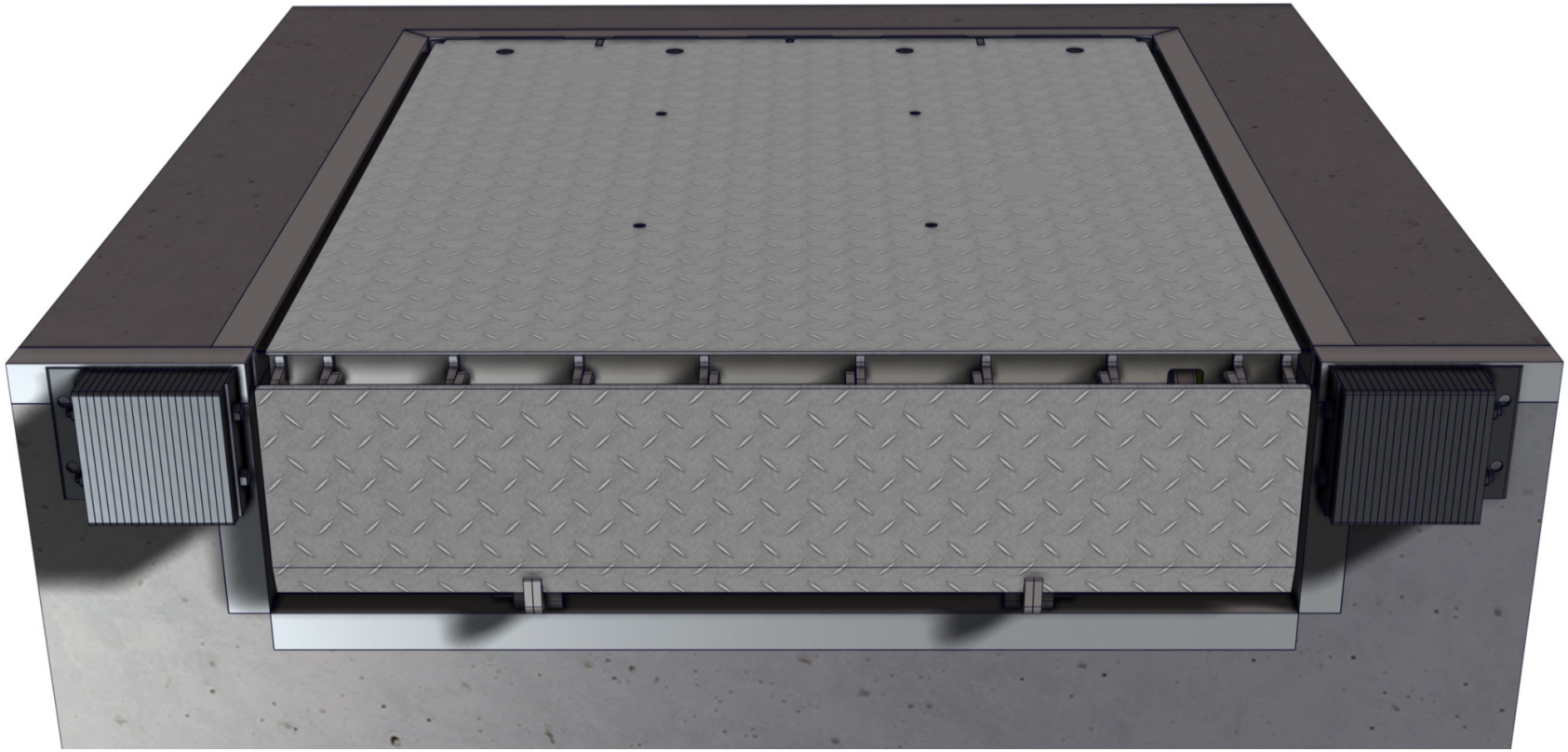
Wayne Dalton™

Dalton Dock ™



OPERATION MANUAL AND INSTALLATION INSTRUCTIONS
HYDRAULIC PIT LEVELER MODEL H68WD AND H78WD

READ COMPLETE INSTRUCTIONS BEFORE INSTALLING DOCK LEVELERS

Product may be covered by one or more patents.
See **www.wayne-dalton.com/patents** for details.

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TERMINOLOGY AND DEFINITIONS

Important Safety Instructions

DEFINITION OF KEY WORDS USED IN THIS MANUAL:

DANGER

INDICATES A HAZARDOUS SITUATION THAT, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.

WARNING

INDICATES A HAZARDOUS SITUATION THAT, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.

CAUTION

INDICATES A HAZARDOUS SITUATION THAT, IF NOT AVOIDED, COULD RESULT IN MINOR OR MODERATE INJURY.

NOTICE

INDICATES INFORMATION CONSIDERED IMPORTANT, THAT IT IS NOT RELATED TO INJURY, BUT MAY RESULT IN PROPERTY DAMAGE.

IMPORTANT: Required key step for proper dock operation.

NOTE: Information only.

PRECAUTIONS

Operational Precautions

Read and understand these instructions to ensure safe installation and operation of the equipment.

⚠ DANGER

DO NOT STAND BETWEEN TRANSPORT VEHICLE AND DOCK LEVELING DEVICE WHEN TRANSPORT VEHICLE IS ENTERING OR LEAVING THE AREA. GETTING PINNED BETWEEN THE TRANSPORT VEHICLE AND THE LEVELER WILL CAUSE DEATH OR SERIOUS INJURY.

⚠ DANGER

DOCK LEVELER SWINGS WITH CONSIDERABLE FORCE. ACTUATING THE DOCK LEVELING DEVICE WITH ANYONE UNDER OR IN FRONT OF IT WILL CAUSE DEATH OR SERIOUS INJURY.

⚠ DANGER

KEEP HANDS, FEET AND OTHER APPENDAGES CLEAR OF HINGES AND OTHER PINCH POINTS WHEN MOVING, INSTALLING, OPERATING, SERVICING, OR OTHERWISE MANIPULATING THE DOCK LEVELING DEVICE. THIS DEVICE IS HEAVY AND MOVES WITH CONSIDERABLE FORCE, CAPABLE OF SEVERING APPENDAGES AND CAUSING SERIOUS INJURY OR DEATH.

⚠ DANGER

TOTAL WEIGHT OF LOADING VEHICLE AND LOAD SHOULD NEVER EXCEED THE DYNAMIC LOAD CAPACITY LISTED ON THE SERIAL # & MODEL TAG. OVERLOADING A DOCK LEVELING DEVICE BEYOND ITS MANUFACTURER RATED DYNAMIC CAPACITY WILL DAMAGE IT OR CAUSE IT TO COLLAPSE, WHICH MAY RESULT IN DEATH, SERIOUS INJURY AND/OR DAMAGE TO EQUIPMENT.

⚠ WARNING

CHOCK/RESTRAIN ALL TRANSPORT VEHICLES. NEVER REMOVE THE WHEEL CHOCKS OR RELEASE THE RESTRAINING DEVICE UNTIL LOADING OR UNLOADING IS FINISHED, AND THE TRANSPORT VEHICLE DRIVER HAS BEEN ALERTED. DEATH OR SERIOUS INJURY MAY OCCUR IF THE TRANSPORT VEHICLE INADVERTENTLY SLIPS AWAY FROM THE DOCK DURING LOADING/ UNLOADING.

⚠ WARNING

DO NOT USE A BROKEN OR DAMAGED DOCK LEVELING DEVICE OR RESTRAINING DEVICE. ENSURE ATTACHMENT WELDS ARE NOT CRACKED AND PROPER SERVICE AND MAINTENANCE PROCEDURES HAVE BEEN PERFORMED BEFORE USING. A DAMAGED OR DETACHED DOCK LEVELING DEVICE MAY COLLAPSE, CAUSING DEATH OR SERIOUS INJURY.

⚠ WARNING

ENSURE THE LIP HORIZONTALLY OVERLAPS THE TRANSPORT VEHICLE BY AT LEAST 4 INCHES (102 MM) BEFORE DRIVING ONTO THE DOCK LEVELING DEVICE. USING A LEVELER WITHOUT SUFFICIENT OVERLAP MAY RESULT IN THE LIP SLIPPING OFF OF THE TRANSPORT VEHICLE AND COLLAPSING, WHICH MAY CAUSE DEATH OR SERIOUS INJURY.

⚠ WARNING

MAINTAIN A SAFE DISTANCE FROM BOTH SIDE EDGES WHEN DRIVING ONTO A DOCK LEVELING DEVICE. FALLING OFF THE DOCK LEVELING DEVICE MAY RESULT IN DEATH OR SERIOUS INJURY.

⚠ WARNING

USING A DOCK LEVELING DEVICE ABOVE OR BELOW THE ALLOWABLE VERTICAL WORKING RANGE MAY CAUSE IT TO COLLAPSE, CREATE PINCH POINTS, OR CAUSE DANGEROUS LIP RISE, WHICH MAY CAUSE DEATH OR OTHER SERIOUS INJURY.

⚠ WARNING

OPERATING MATERIAL HANDLING OR DOCK EQUIPMENT WHILE UNDER THE INFLUENCE OF DRUGS OR ALCOHOL MAY RESULT IN DEATH OR SERIOUS INJURY.

⚠ WARNING

DO NOT EXCEED 5 MPH WHEN DRIVING ON OR ACROSS A DOCK LEVELING DEVICE. DO NOT STOP OR ACCELERATE ABRUPTLY WHEN LOADING VEHICLE WHEELS ARE ON THE LIP OR PLATFORM. DRIVE SLOW AND STEADY ACROSS THE DOCK LEVELING DEVICE. FAILURE TO COMPLY COULD CAUSE THE DOCK LEVELING DEVICE TO COLLAPSE, RESULTING IN DEATH OR SERIOUS INJURY.

⚠ CAUTION

NEVER LEAVE UNATTENDED EQUIPMENT, VEHICLES, OR MATERIALS ON DOCK LEVELING DEVICE.

PRECAUTIONS CONTINUED...

Operational Precautions Continued...

DANGER

KEEP HANDS, FEET AND OTHER APPENDAGES CLEAR OF HINGES AND OTHER PINCH POINTS WHEN MOVING, INSTALLING, OPERATING, SERVICING, OR OTHERWISE MANIPULATING THE DOCK LEVELING DEVICE. THIS DEVICE IS HEAVY AND MOVES WITH CONSIDERABLE FORCE, CAPABLE OF SEVERING APPENDAGES AND CAUSING SERIOUS INJURY OR DEATH.

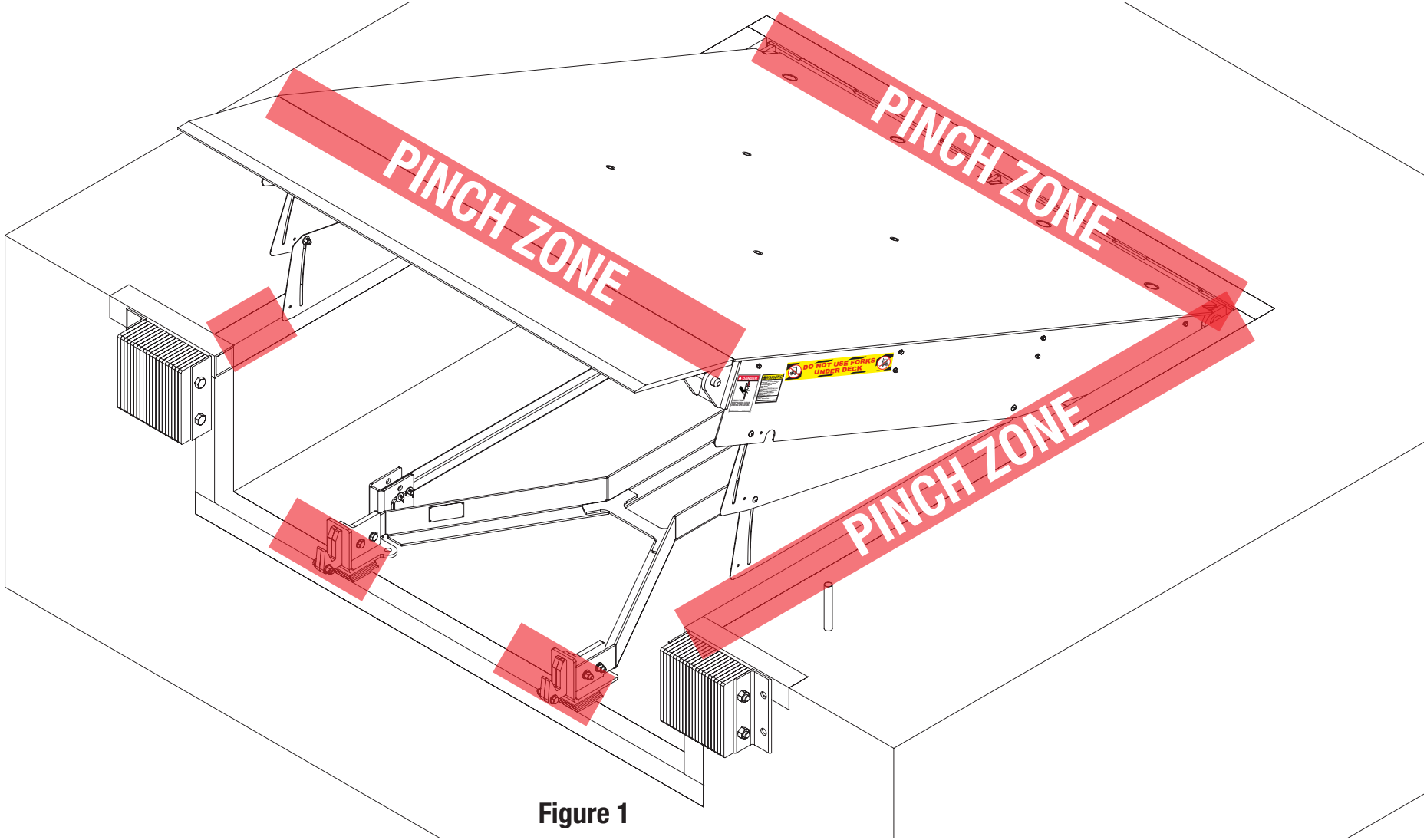


Figure 1

PREREQUISITES

COMPONENT IDENTIFICATION

NOTE: Model H68R 35K shown in all figures for reference

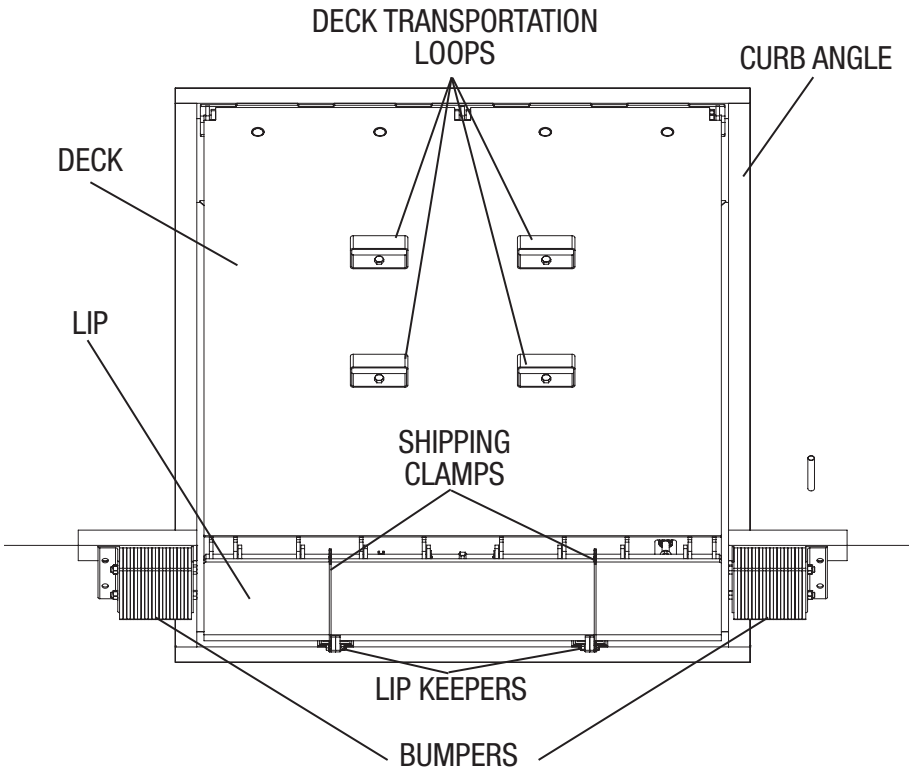


Figure 2

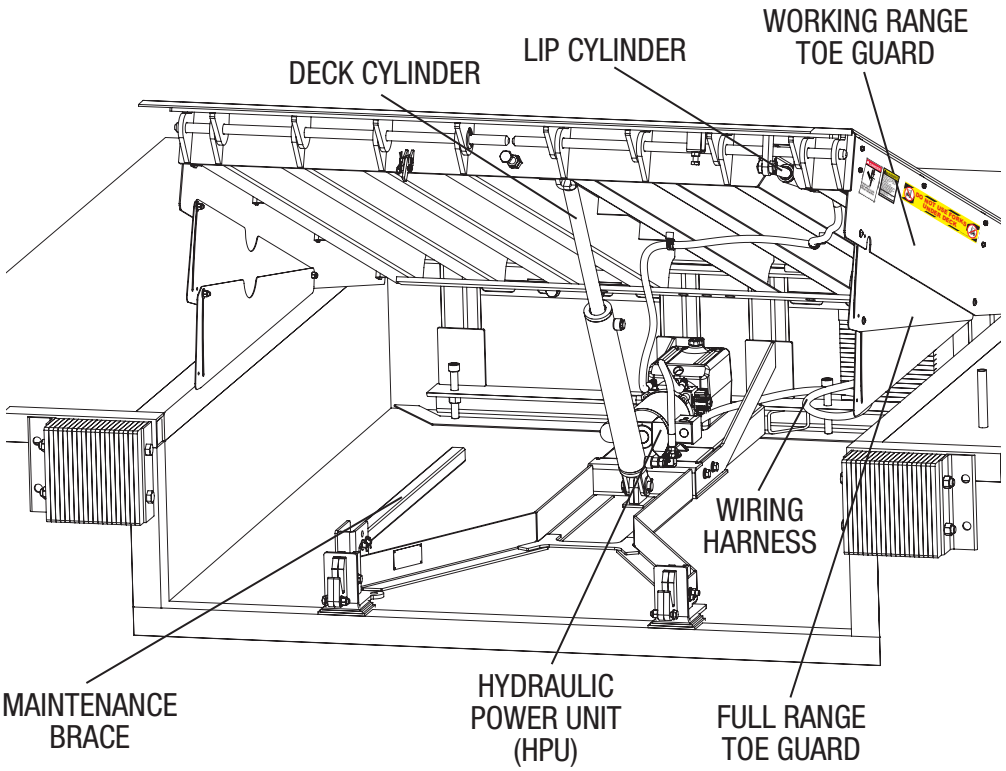


Figure 3

PREREQUISITES CONTINUED...

DANGER

Read and follow all instructions, warnings and maintenance schedules in the manual.

- **Never use hands or equipment to move ramp or lip. Using material handling equipment to lower ramp will cause premature wear or damage to the dock leveling device.**
- **Ensure truck bed supports extended lip or leveler frame supports the ramp before driving on ramp.**
- **Stay clear of hinges and front and sides of moving dock leveler.**
- **DO NOT ENTER THE PIT unless dock leveler is securely supported by maintenance brace and a second means of bracing.**

FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN DEATH OR SERIOUS INJURY.

WARNING

- **Operation and servicing of dock leveler is restricted to authorized personnel.**
- **Never use damaged or malfunctioning dock leveler. Report problems immediately to supervisor.**
- **Before activating dock leveler:**
  - **Always chock trailer wheels or engage trailer restraint before operating dock leveler or beginning to load or unload.**
  - **Ensure trailer is backed up against bumpers.**
  - **Remove any end load, if required.**
  - **Check trailer alignment to avoid lip interference. If lip does not lower to trailer bed, reposition vehicle.**
- **Before allowing vehicle to leave the dock always:**
  - **Ensure no equipment, material or people are on dock leveler.**
  - **Return dock leveler to its stored position at dock level.**

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN DEATH OR SERIOUS INJURY.

OWNER / USER RESPONSIBILITIES

GENERAL

Like other industrial devices, misuse and improper maintenance of dock leveling devices can result in injury or death.

APPLICATION CONSTRAINTS

Use of a dock leveling device shall take application constraints into consideration; including, but not limited to:

a) Site Considerations:
   1. Driveway grades.
   2. Pit and bumper projections.
   3. Loading dock height.

b) Transport Vehicle Considerations.
   1. Tractor operations.
   2. Shunt truck or yard jockey operations.

c) Material Handling Equipment Considerations:
   1. The heaviest material handling equipment and load.
   2. The distribution of weight between the material handling equipment's front and rear axles.
   3. Gross vehicle weight (GVW) being driven across the dock leveler.
   4. The number of cycles driven across the dock leveler.
   5. The speed of material handling equipment moving across the dock leveler.
   6. The use of three-wheel vs. four-wheel fork trucks.
   7. Attachments on the front end of the material handling equipment.
   8. The direction of material handling equipment travel.

d) Dock Leveler Considerations:
   1. The life expectancy of the dock leveler.
   2. The loading slope above or below dock leveler.
   3. The lip length.

In selecting dock leveling devices, it is important to consider present requirements, future plans and adverse environmental conditions.

The owner/user shall provide application information to the manufacturer to receive recommendations on appropriate equipment specifications and capacity.

INSTALLATION

PLACARDS AND WARNINGS

The owner/user shall ensure that the following are in place, legible, and available to operators:

- Nameplates
- Instruction Placards
- Safety Signs Or Labels
- Operating And Maintenance Manuals

The owner/user shall obtain replacement nameplates, instruction placards, safety signs or labels, and manuals from the manufacturer, if needed. Placards, markings, and labels should not be obscured from the view of operating or maintenance personnel for whom Such information are intended.

FIXED LEVELING DEVICES

If the dock leveling device is recessed in a concrete pit, the top three sides of the recess and driveway end of pit floor shall have steel angles or channels anchored into the concrete as recommended by the dock leveling device manufacturer.

FIXED TYPE

A fixed type is a structure designed for stationary mounting to the dock, located at either the dock face or recessed into a pit. Placement of the bridging structure into a working or stored position will usually be aided by a mechanism incorporated into the design.

MODIFICATIONS TO DOCK LEVELING DEVICES

Dock leveling devices can become hazardous if the manufacturer's instructions regarding modifications or adjustments are not followed.

Modifications or alterations of dock leveling devices shall be made only with written permission of the original manufacturer. These changes shall be in conformance with all applicable provisions of the latest ANSI MH30.1 standard and shall also satisfy all safety recommendations of the original equipment manufacturer for the particular application.

Modifications or additions that affect capacity and appropriate dock leveling device operation shall not be performed without manufacturer's prior written approval.

OWNER / USER RESPONSIBILITIES CONTINUED...

INFORMATION FOR USE

The owner/user shall verify that the material listed in this manual have been received, and that the information contained herein is made available for the instruction and training of personnel entrusted with the installation, operation or maintenance of the dock leveling device.

LOADING DOCK OPERATING PERSONNEL TRAINING

The owner/user should recognize the inherent danger of the interface between dock and transport vehicle. The owner should, therefore, train and instruct loading dock operating personnel in the proper use of dock leveling devices in accordance with information provided by the manufacturer.

An effective loading dock operating personnel training program should focus on the user company's policies, operating conditions, and the manufacturer's specific instructions that were provided with the dock leveling device. The complete training program should be presented to all new operators and not condensed or eliminated for those claiming previous experience.

The loading dock operating personnel training program should consist of, but not necessarily be limited to, the following:

a) Select the operator carefully. Consider physical qualifications, job attitude and aptitude.

b) Assure that the operator reads and fully understand the complete manufacturer's instruction manual.

c) Emphasize the impact of proper operation upon the operator, other personnel, material being handled, and equipment. Cite all rules and why they are formulated.

d) Describe the basic fundamentals of dock leveling device and component design as related to safety, e.g., mechanical limitations, stability, etc.

e) Introduce the equipment. Show control locations and demonstrate functions. Explain how they work when used properly and problems when they are used improperly.

f) Assure that the operator understands the capacity rating and other nameplate data, including the operator instructions and all precautionary information appearing on the dock leveling device.

g) Supervise operator practice of equipment operation.

h) Develop and administer written and practical performance tests. Evaluate progress during and at completion of the course.

i) Administer periodic refresher courses. These may be condensed versions of the primary course and include on-the-job operator evaluation.

OPERATIONS

This clause contains broad operation standards applicable to dock leveling devices. Only operators trained to strictly adhere to the operating instructions stated in this clause shall be permitted to operate dock leveling devices. Unusual operating conditions may require additional precautions and special instructions.

The dock leveling device shall not be used outside its vertical working range or outside the manufacturer's labeled rated capacity. It shall also be compatible with the loading equipment and other conditions relating to dock activities.

The owner/user should recognize the inherent danger of the interface between the dock and the transport vehicle. The owner/user shall ensure that operators fully understand that proper operation is the operator's responsibility. The owner/user shall also ensure that operators are fully knowledgeable of, and observe, the operation rules and practices in this clause.

Proper operation of dock leveling devices is the responsibility of the operator. The operator shall have an ability to assess the working conditions and environment around the loading dock and an aptitude for identifying possible issues related to the process and use of the equipment.

Only authorized personnel shall be permitted to operate a dock leveling device. Operators shall be qualified as to visual, auditory, physical, and mental ability to operate the device safely in accordance with the manufacturer's instructions.

The operator shall know, understand, and follow the manufacturer's operating instructions and all precautionary labeling on the dock leveling device. The operator shall develop working habits and the awareness of hazardous conditions that help to protect the operator, other personnel, the dock leveling device and other material associated with the task. The operator shall also know, understand, and follow the operation and function of all controls before undertaking operation of the dock leveling device.

OWNER / USER RESPONSIBILITIES CONTINUED...

TRANSPORT VEHICLE REQUIREMENTS

TRANSPORT VEHICLE POSITION

A dock leveling device shall be designed and installed so that when a transport vehicle is positioned as close as practicable to the loading dock, there shall be an overlap of at least 4 in. (102 mm) between the front edge of the lip of the dock leveler and the edge of the door or sill of the transport vehicle.

The loading dock area shall be designed so that the transport vehicle can be parked in a position relatively perpendicular to the dock face, centered with, and as close as practical to, the dock leveling device.

USE OF POSITIVE RESTRAINTS

When goods are transferred between the loading dock and the transport vehicle, the brakes on the transport vehicle shall be applied and wheel chocks or positive restraints that provide the equivalent protection of wheel chocks shall be engaged. Also, whenever possible, air-ride suspension systems should have the air exhausted prior to performing loading or unloading operations.

Refer to the latest ANSI MH30.3, Vehicle Restraining Devices: Performance and Testing for additional information on restraining the vehicle.

INSPECTION

Dock leveling devices may become hazardous if the manufacturer's instructions regarding maintenance, repairs, or adjustments are not followed.

All dock levelers shall be regularly inspected and maintained in conformance with good practice and the manufacturer instructions.

Dock leveling devices shall be kept in a clean condition to minimize fire hazards and facilitate detection of loose, worn, damaged or defective parts.

At the beginning of each shift and before operation of the dock leveling device, the operator shall inspect the condition of the dock leveling device, giving special attention to the following:

a) Free of debris or obstruction
b) Precautionary labeling intact and legible
c) Guards or safety devices present and functional
d) Controls fully operational
e) Free of structural defect or damage
f) All other items specified by the manufacturer.

Actuators (including springs, hydraulic cylinders, pneumatic cylinders, and air bags), valves, hoses, fittings, safety devices and other components shall be checked to ensure that nothing has developed to the extent that it would create a hazard or interfere with safe operation.

Special care should be taken on the inspection of pressure containing systems, including hoses.

Control mechanisms, fastening and warning devices, dock leveling device overload devices, guards and safety devices, deck, lip, and frame members shall be carefully and regularly inspected and maintained in accordance with the manufacturer's recommendations.

All electrical components including motors, switches, limit switches, indicator lights, protective devices, conductors, and connections shall be regularly inspected and maintained in conformance with good practices and the manufacturer's instructions. Special attention shall be paid to the condition of electrical insulation.

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

MAINTENANCE

Maintenance and inspection of all dock leveling devices shall be performed in conformance with the following practices. In addition, maintenance and inspection shall be performed in accordance with the manufacturer's recommendations.

a) A scheduled planned maintenance program shall be followed.
b) Only trained and authorized personnel shall be permitted to maintain, repair, adjust, and inspect dock leveling devices.
c) Use only original equipment manufacturer parts, manuals, maintenance instructions and labels; or their equivalent.

DAMAGE

Dock leveling devices that are structurally damaged or have experienced a sudden loss of support while under load, such as might occur when a transport vehicle is pulled out from under the dock leveling device, shall be removed from service, inspected by the manufacturer's authorized representative, and repaired as recommended by the manufacturer before being placed back in service.

OWNER / USER RESPONSIBILITIES CONTINUED...

REPAIR

If the dock leveling device is found to require repair or cannot be used in its intended operating condition, the matter shall be reported immediately to the owner/user's designated authority. The dock leveler shall be taken out of service until it has been restored to an acceptable operating condition.

The operator shall not make repairs or adjustments unless specifically authorized and qualified to do so.

Before starting repair or inspection of a dock leveler device:

a) Secure and restrict access in and around the dock position (dock and driveway)
b) Read, understand, and follow all maintenance instructions provided by the dock leveling device manufacturer
c) Follow all dock leveling device maintenance safety instructions
d) Remove the load from the platform
e) Disconnect power and follow established lockout/tag-out policies as required.

Avoid fire hazards and have fire protection equipment present in the work area. Do not use an open flame to check the level or to check for leakage of any fluid. Do not use open pans of fuel or flammable cleaning fluids for cleaning parts. Properly ventilate work area and keep it clean and dry. Care shall be taken to ensure that all replacement parts meet or exceed original equipment manufacturer's specifications.

CONFINED SPACE

If a confined space entry associated with operations or maintenance of a dock leveling device is required, the confined space procedures shall comply with ANSI/ASSP Z117.1.

PIT LEVELER DIMENSIONS

NOTE: Standard bumpers shown.

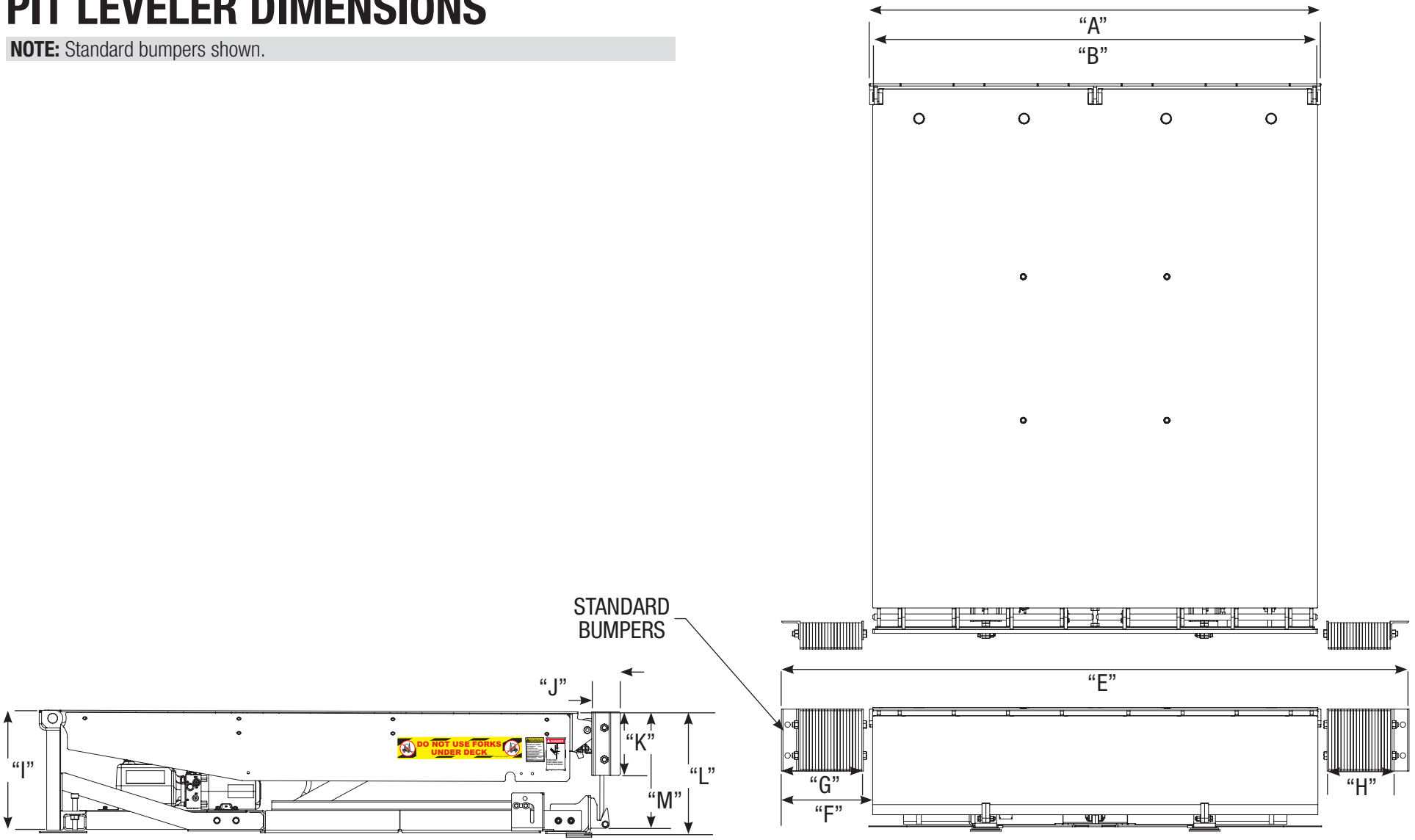


Figure 4

DOCK LEVELER DIMENSIONS												
MODEL #	**"A"**	**"B"**	**"C"**	**"D"**	**"E"**	**"F"**	**"G"**	**"H"**	**"I"**	**"J"**	**"K"**	**"L"**
H68WD	73.0"	72.0"	89.7"	89.1"	101.5"	14.8"	13.3"	10.0"	19.0"	4.5"	10.0"	19.3"
H78WD	84.0"	83.0"	89.7"	89.1"	112.5"	14.8"	13.3"	10.0"	19.0"	4.5"	10.0"	19.3"

MODELS H68WD AND H78WD	
LIP SIZE (IN.)	**"M"**
16"	18.5"
18"	20.5"
20"	22.5"

PIT LEVELER DIMENSIONS CONTINUED...

NOTE: 16" lip shown. Information for other lip sizes available upon request.

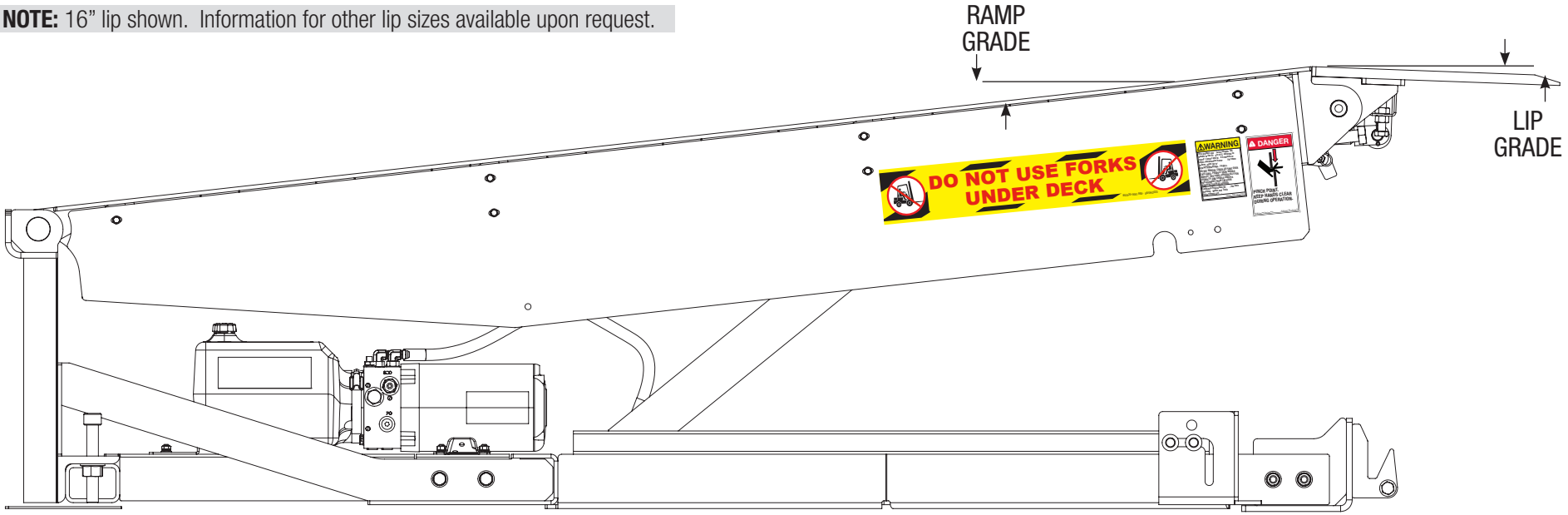


Figure 5

RAMP AND LIP GRADES			
LOADING VEHICLE HEIGHT FROM DOCK (IN)		RAMP AND LIP GRADE (%)	
		RAMP	LIP
ABOVE DOCK	12	15.37	0.42
	10	13.25	-1.66
	8	11.18	-3.70
	6	9.14	-5.73
	4	7.08	-7.78
	2	5.05	-9.82
LEVEL	0	3.00	-11.89
BELOW DOCK	-2	0.98	-13.95
	-4	-1.05	-16.02
	-6	-3.09	-18.12
	-8	-5.12	-20.22
	-10	-7.17	-22.35
	-12	-9.22	-24.51

INSTALLATION INSTRUCTIONS

Installation Precautions

DANGER

READ THESE INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING INSTALLATION. IF YOU ARE IN QUESTION ABOUT ANY OF THE PROCEDURES, DO NOT PERFORM THE WORK. INSTALLATION OR REPAIRS SHOULD ONLY BE PERFORMED BY A TRAINED DOCK LEVELER SYSTEMS TECHNICIAN. FAILURE TO FOLLOW SAFETY INSTRUCTIONS WILL RESULT IN DEATH OR SERIOUS INJURY.

DANGER

KEEP HANDS, FEET AND OTHER APPENDAGES CLEAR OF HINGES AND OTHER PINCH POINTS WHEN MOVING, INSTALLING, OPERATING, SERVICING, OR OTHERWISE MANIPULATING THE DOCK LEVELING DEVICE. THIS DEVICE IS HEAVY AND MOVES WITH CONSIDERABLE FORCE, CAPABLE OF SEVERING APPENDAGES AND CAUSING SERIOUS INJURY OR DEATH.

WARNING

PROPER INSTALLATION OF THIS DEVICE REQUIRES THE USE OF SPECIAL TOOLS AND TECHNIQUES. ALWAYS USE THE CORRECT TOOLS OR TECHNIQUES WHEN PERFORMING INSTALLATION. FAILURE TO USE PROPER TOOLS OR TECHNIQUES OR ADHERE TO SAFETY MESSAGES, COULD RESULT IN DEATH OR SERIOUS INJURY.

WARNING

APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) SHOULD ALWAYS BE USED. THIS INCLUDES BUT IS NOT LIMITED TO A HARD HAT WHEN WORKING BELOW LEVELER DECK, APPROPRIATE EYE PROTECTION, GLOVES, AND HARD-CAPPED SLIP-RESISTANT FOOTWEAR WHEN WORKING ON OR NEAR THE DOCK AREA. APPROPRIATE PPE MAY PROTECT YOU FROM DEATH OR SERIOUS INJURY.

NOTICE

INSTALLATION OF THIS DOCK LEVELING DEVICE REQUIRES A MINIMUM OF TWO PEOPLE.

Required Tools And Materials List

- Lifting equipment (rated to at least 4000 lbs.)
- Fire extinguishers
- Tape measure
- Welder with welding electrode or filler metal (minimum 70,000 PSI tensile strength), E7018 electrode is recommended.
- Wire brush (for cleaning weld slag and concrete splatter)
- Grinder (for removing powder coat before welding)
- Hammer drill with drill bit suitable for concrete. (Be sure to follow anchor manufacturer recommendation for hole diameter)
- Vacuum or compressed air (for concrete anchor hole clean out)
- Carbon Steel Shims (For Leveling)
- Prybar (minimum 3 ft long)
- Hammer or mallet (for driving concrete anchors)
- Drill driver with socket adapters (for installing anchors)
- 15” socket extension and a 5/8” hex bit socket (for leveling bolts)
- Calcium sulfonate complex grease
- Touch up paint (please see Replacement Parts.)
- 3/4” Wrench and 3/4” Socket for lip keeper bolts.
- Standard (SAE) Hex Key Set
- Adjustable Cresent Wrench, Small
- Flat Head Screw Driver
- Fast-setting adhesive (Loctite PL Premium)

INSTALLATION INSTRUCTIONS CONTINUED...

PRE-INSTALLATION TASKS

1. Ensure a site survey was completed prior to installation.
2. Verify embedded curb angles are present.
3. Check quality and condition of concrete and steel angles.
4. Check size, squareness, and plumbness of the pit. Be sure the pit conforms to the dimensions shown in **Figure 6**.
5. Prepare curb angle so it is smooth and clean of all slag and concrete.
6. Carefully clean out the pit of all dust and debris.

ATTACH LEVELING PLATES

1. Locate the two leveling plates in your package.
2. Place the leveling plates in the back of the pit, as shown in **Figure 7**.

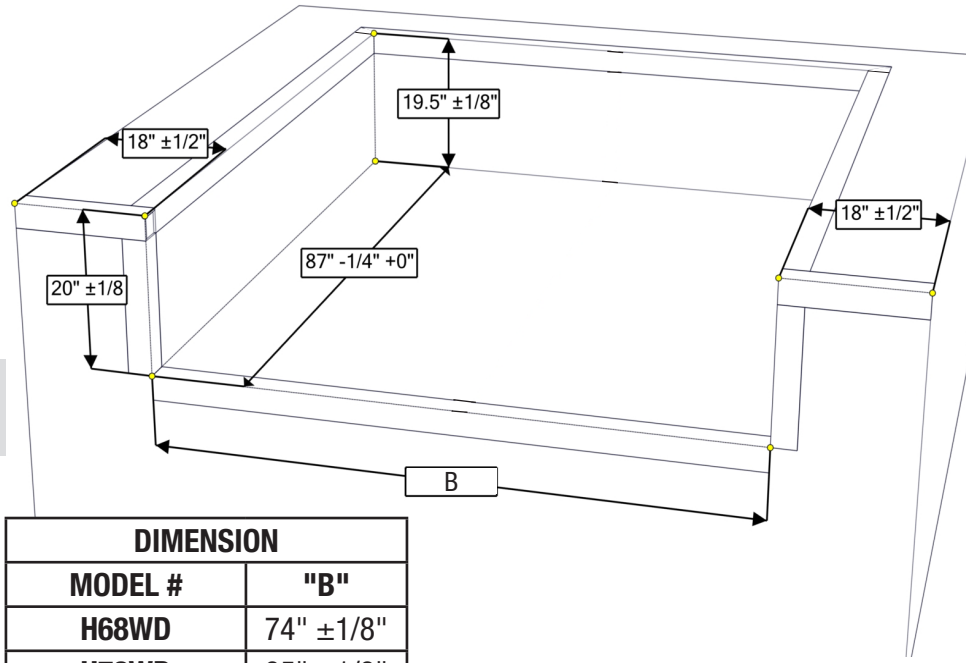
NOTE: To prevent the leveling plates from shifting during installation of the leveler, the leveling plates are to be fastened to the pit floor with an appropriate fast-setting adhesive (recommend Loctite PL Premium).

NOTICE

INSTALLATION OF THIS DOCK LEVELING DEVICE REQUIRES A MINIMUM OF TWO PEOPLE.

WARNING

PLACE WARNING BARRICADES AROUND THE OUTSIDE OF THE EMPTY PIT, INSIDE AND OUTSIDE THE BUILDING, TO PREVENT INTRUSION DURING INSTALLATION.



DIMENSION	
MODEL #	**"B"**
H68WD	74" ±1/8"
H78WD	85" ±1/8"

Figure 6

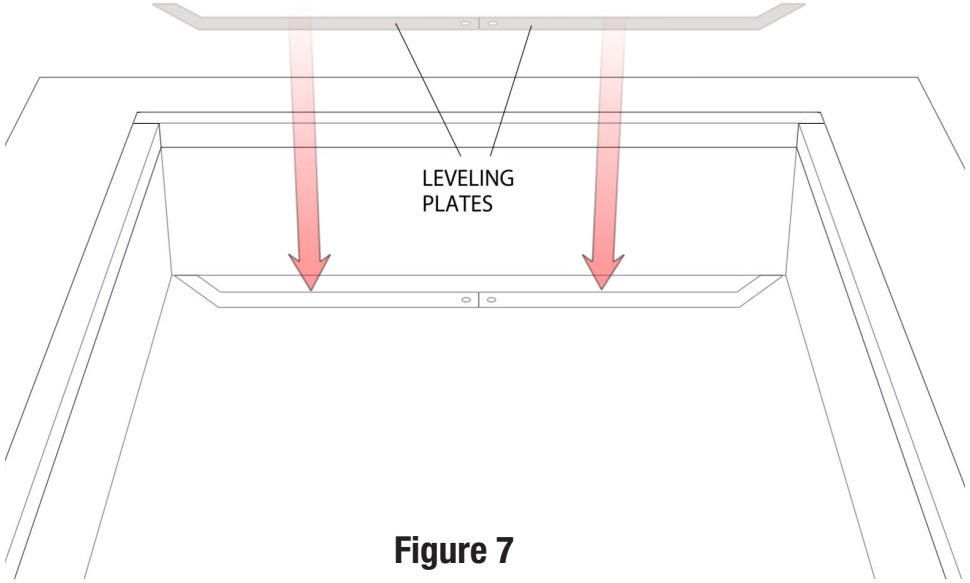


Figure 7

INSTALLATION INSTRUCTIONS CONTINUED...

Before proceeding to the next installation steps, an alternative method of preparing the pit floor before lowering the leveler, as shown in **Figure 8**. Measure the pit depth at the front entry to the pit and subtract from it leveler height “L” from **Figure 4**. Use this value to prepare shim stacks in the approximate areas shown, following the guidance of **Figure 18** for shim stacking methods.

Otherwise, continue without this optional step to follow the standard installation guide which will demonstrate shimming the leveler at a later step.

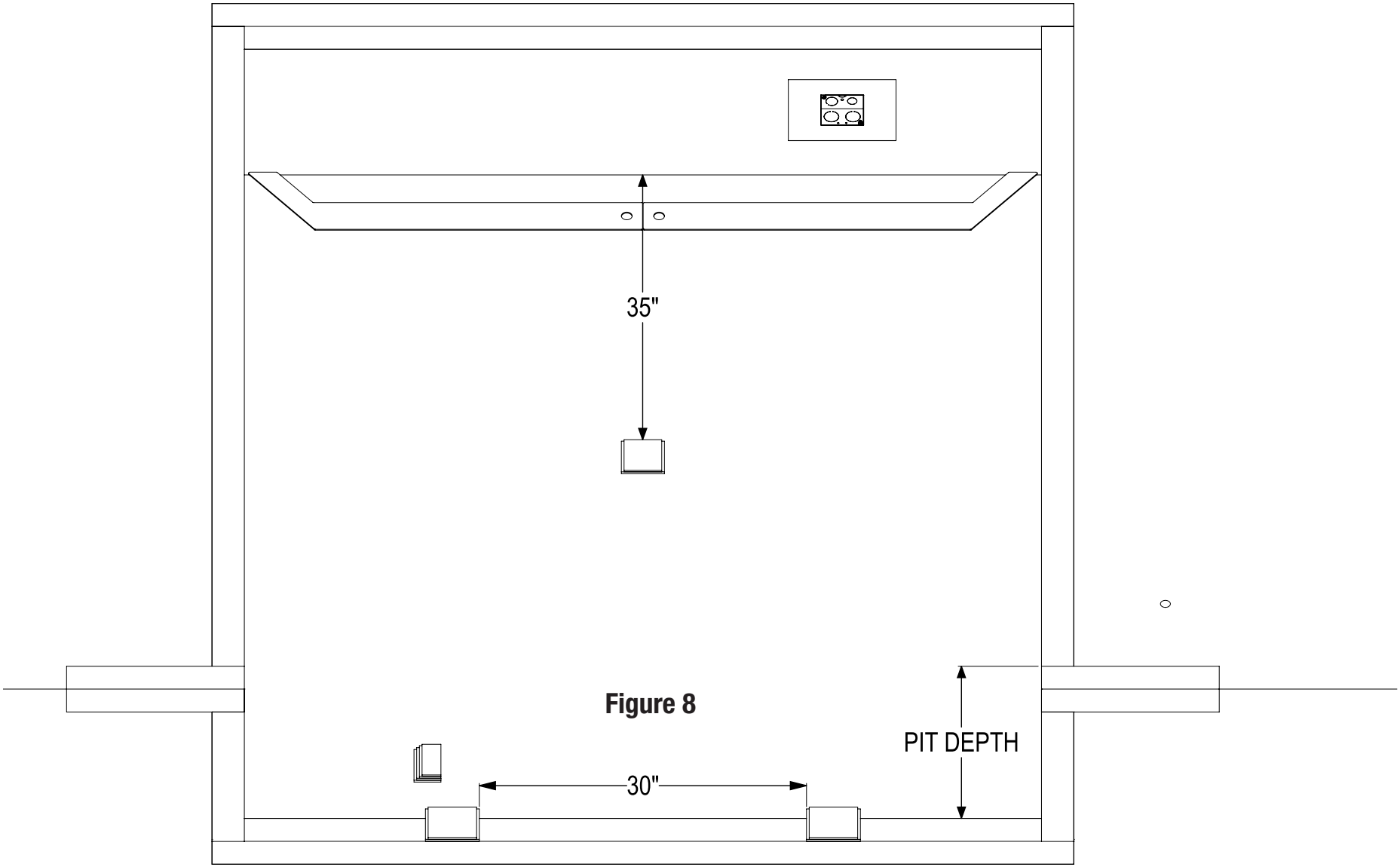


Figure 8

INSTALLATION INSTRUCTIONS CONTINUED...

LEVELER INSPECTION AND PREPARATION

1. Inspect leveler for damage before unloading.

IMPORTANT: Do not remove shipping clamps until instructed to do so.

2. Ensure the four deck transportation loops are installed and secure before lifting the leveler from the truck. See **Figure 9**.
3. Unbolt the bumpers from the rear of the leveler, as shown in **Figure 9**.
4. Remove the packaging which is underneath the leveler.
5. Remove the paint from the rear of the leveler at the factory cut slots and from the curb angle with an angle grinder or equivalent.

NOTICE

DO NOT OVER-TIGHTEN DECK LOOPS, AS THIS WILL SCRAPE THE POWDER COAT OFF OF THE DOCK LEVELER AND RESTRICT THEIR MOVEMENT WHILE TRANSPORTING THE DOCK.

NOTICE

LIFTING THE LEVELER FROM UNDER THE DECK CAN RESULT IN SERIOUS DAMAGE TO THE LEVELER. ONLY LIFT THE LEVELER USING THE PROVIDED DECK TRANSPORTATION LOOPS. PROPERLY RATED CHAINS OR STRAPS MAY BE USED IN CONJUNCTION WITH THE TRANSPORATION LOOPS.

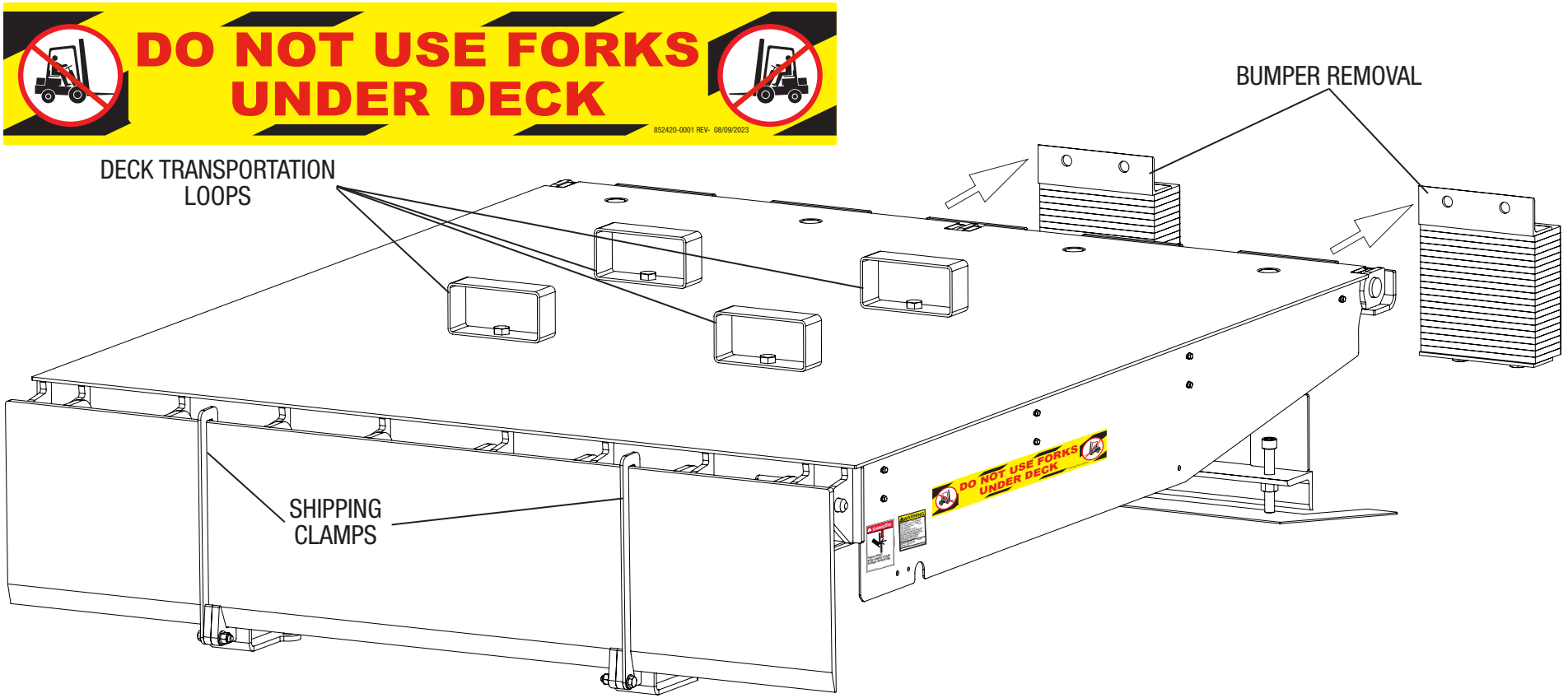


Figure 9

INSTALLATION INSTRUCTIONS CONTINUED...

⚠ DANGER

DO NOT ATTEMPT TO MOVE THE LEVELER BY HAND. USE CAUTION WHEN MOVING THE LEVELER INTO PLACE. NEVER WORK UNDER A LIFTED LEVELER. BE SURE ALL PERSONNEL ARE CLEAR OF THE INSTALLATION PATH BEFORE YOU BEGIN. ENSURE YOUR LIFTING EQUIPMENT IS RATED TO HANDLE AT LEAST 4000 POUND LOAD WEIGHT AND COMPLIES WITH ALL LIFTING REGULATIONS. FAILURE IN THESE POINTS WILL RESULT IN DEATH OR SERIOUS INJURY.

LEVELER INSTALLATION

1. Remove the hydraulic controller secured to the underside of the leveler. Verify the controller voltage and phase requirements are correct for the incoming service power available at the site before mounting the controller to the wall, as shown **Figure 12**. Do not wire the controller to service power at this time. Follow instructions for mounting the enclosure to the wall included with the controller electrical diagram.
2. Using properly rated lifting equipment, lift the leveler using the deck transportation loops and lower it into the pit. Guide the leveler towards towards the rear of the pit, leaving about a 3ft gap to prepare the motor wiring harness as shown in **Figure 10**.
3. Unsecure the 7ft motor wiring harness coiled beneath the rear of the leveler and verify the labeled voltage and phase requirements are correct for the incoming service power available at the site before installing wires per the electrical wiring diagram. Wire the harness to the pit receptacle, as shown in **Figure 12**.
4. Coil the slacked harness length out of the way before resume pushing the leveler to the rear of the pit.
5. Prepare weld surface on the aft angle of the leveler.
6. Square the leveler in the pit and ensure the gap on each side is equal.

LEVELING THE REAR

1. Leveling bolts have been provided in the rear to help adjust the vertical position without shimming. Adjust the leveling bolts until the rear deck of the leveler is even with the warehouse floor. See **Figure 11**.

NOTE: Use a rotary power tool with at least a 15” socket extension and a 5/8” hex bit socket for the leveling bolts. It may be helpful to use tape to attach the socket to the end of the extension to prevent losing the socket under the deck.

NOTE: To close any gap observed between the rear embedded curb angle and the top of the leveler frame, slide the leveler fully rearward in the pit by pressing on the front surfaces of the lip keepers with a forklift.

2. Check to ensure the leveler is square in the pit front-to-rear. Adjust as needed.
3. Tack weld the rear of the leveler to the rear curb angle to hold it in place.
4. Remove the shipping clamps and discard.
5. Recheck the gap on each side and ensure it is equal. The deck may have shifted to one side when the shipping clamps were removed. Adjust as needed.
6. If the pit is not square it may be necessary to add shims between the rear of the leveler and the rear pit curb angle. If this is needed, fill all gaps with weld.

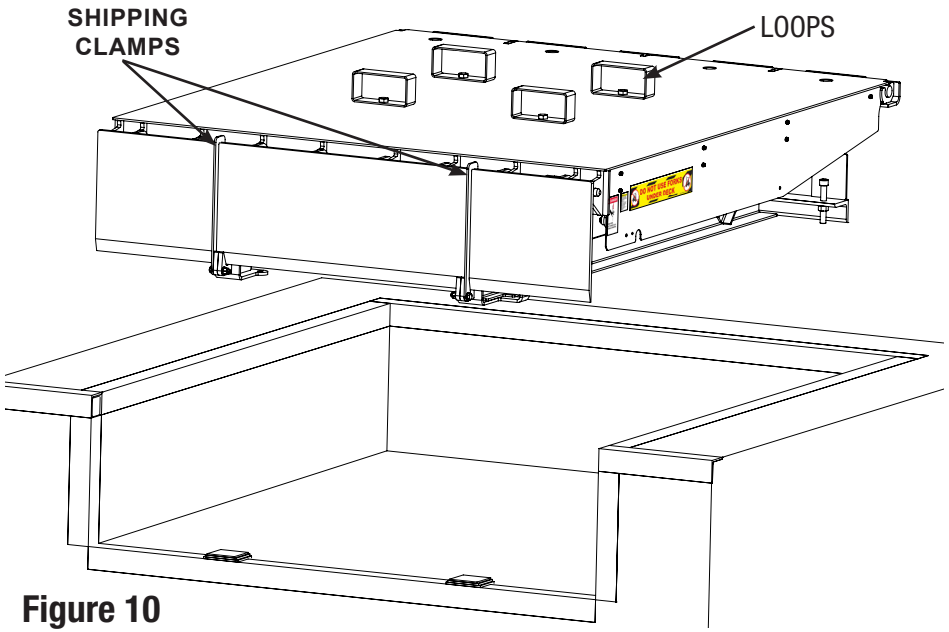


Figure 10

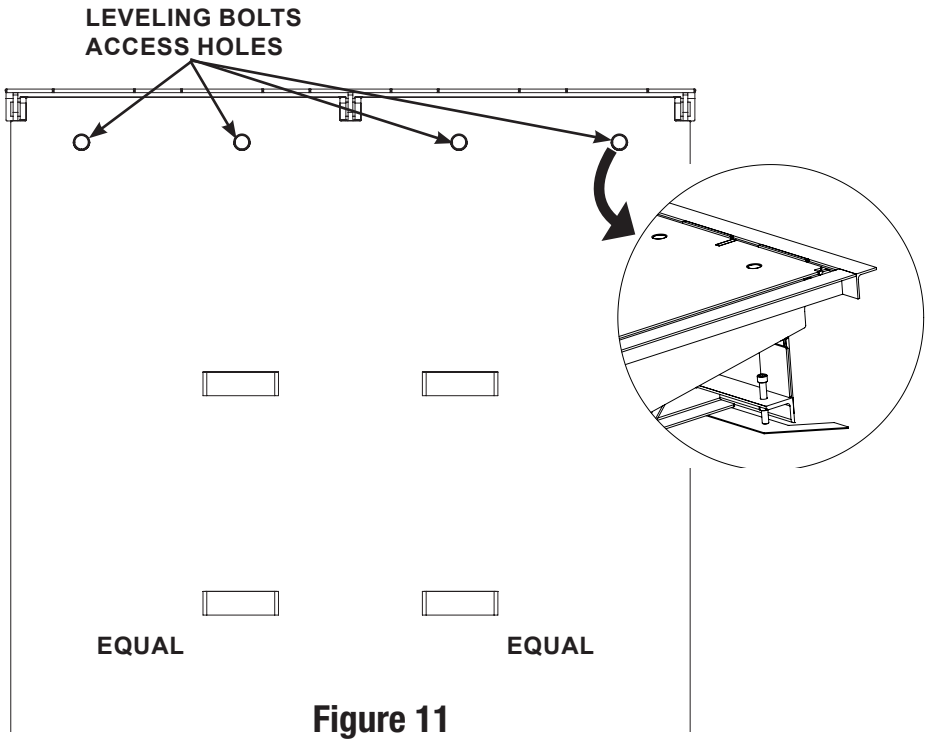
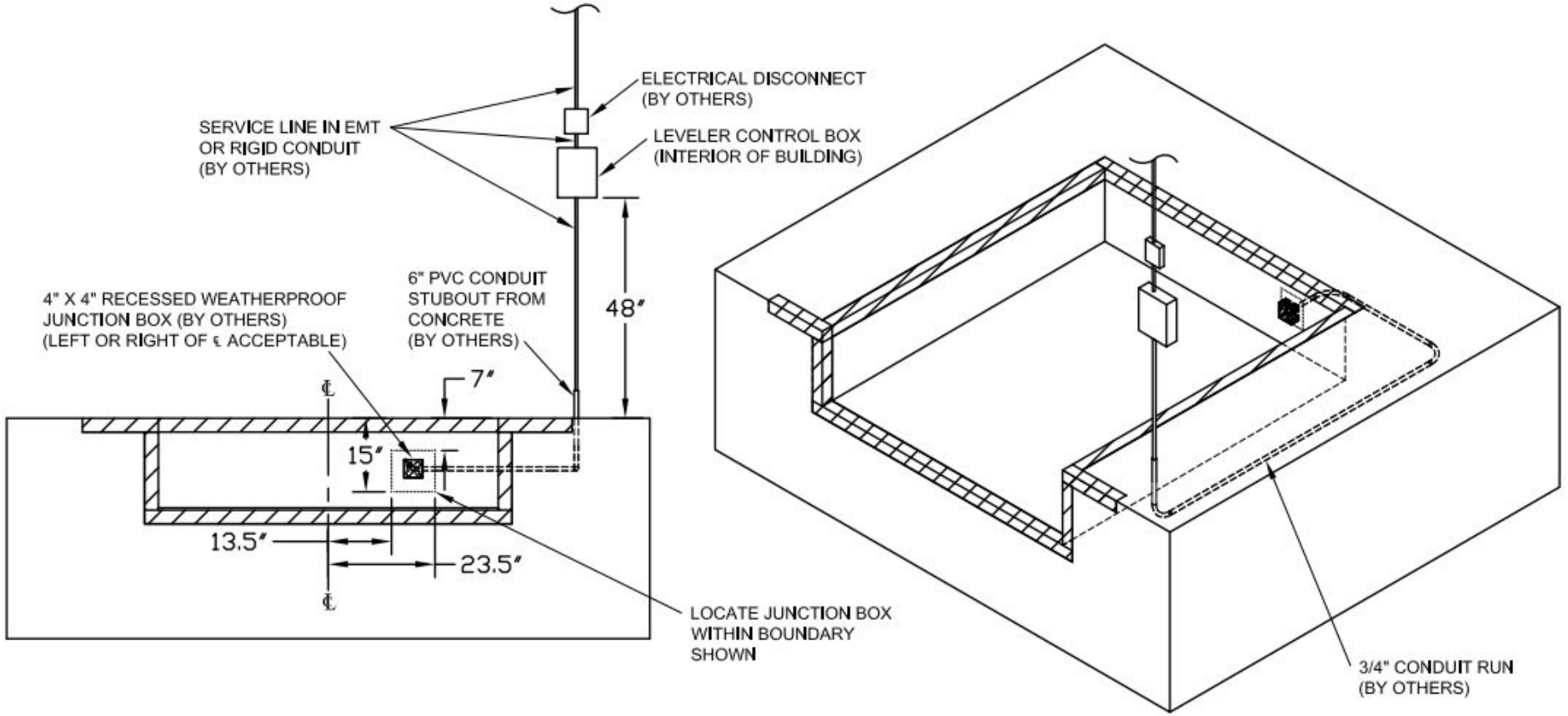


Figure 11

INSTALLATION INSTRUCTIONS CONTINUED...



ELECTRICAL WIRING DETAIL				
CONTROL	VOLTAGE AND PHASE	SERVICE FEEDER		TOTAL QUANTITY OF WIRES
		WIRE GAUGE	OVERCURRENT DEVICE	
HYDRAULIC LEVELER STANDARD CONTROL BOX	115 VOLT / 1 PHASE	12AWG MIN	20A MAX	3
	208-230 VOLT / 1 PHASE	12AWG MIN	20A MAX	3
	208-230 VOLT / 3 PHASE	14AWG MIN	15A MAX	4
	460 VOLT / 3 PHASE	14AWG MIN	15A MAX	4

Figure 12

INSTALLATION INSTRUCTIONS CONTINUED...

WELD REAR OF LEVELER IN PLACE

IMPORTANT: If applicable, ensure that the Rear Seal (Brush) is removed from leveler prior to welding. Re-install the Rear Seal (Brush) after the welds have cooled.

1. Before starting any weld work, ensure electrical power to the leveler is off. If the controller wiring has been previously completed, ensure the disconnect is shut off and locked out. Connect the leveler frame to earth ground to reduce the risk of electric shock and damage to electronic components in the hydraulic leveler.
2. Weld leveler to the rear curb angle using the factory cut welding slots, as shown in **Figure 13** and **Figure 14**.
3. Set the leveling bolts by turning them clockwise and torque to 40-60 ft. lbs.

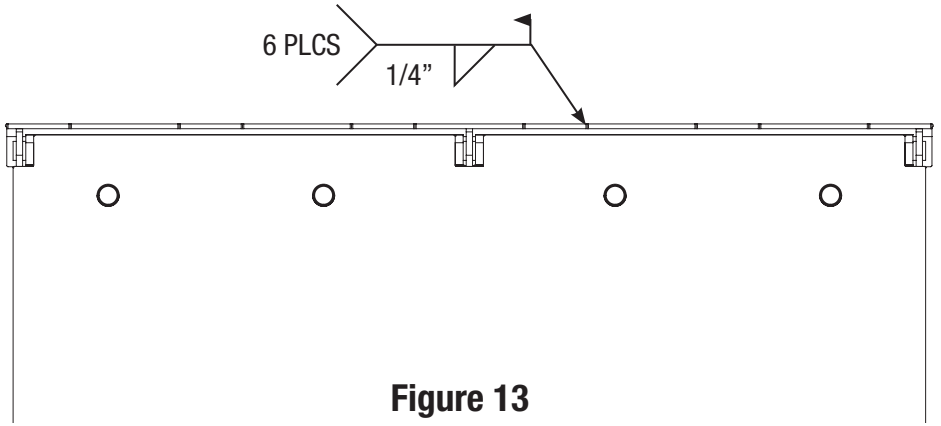


Figure 13

⚠ CAUTION

ENSURE ALL LEVELING BOLTS ARE CONTACTING THE LEVELING PLATES AND EQUALLY TORQUED DOWN.

4. Once weld work on the rear of the leveler has been completed, finish wiring the controller to incoming service per the electrical wiring diagrams, as shown in **Figure 16** and **Figure 17**. All electrical wiring should be performed by a qualified electrician. Lockout/tagout the service line disconnect before performing any electrical work.

OPEN THE LEVELER

NOTE: These next steps require two qualified installers to perform.

1. Prepare one installer to operate the hydraulic controller while the other sets the maintenance brace and lip brace for service.
2. The controller operator will press the RAISE button to lift the deck and extend the lip to its highest position. Continue holding the RAISE button. For controllers equipped with independent lip control, the lip extend button can alternatively be held after the deck and lip have fully raised.

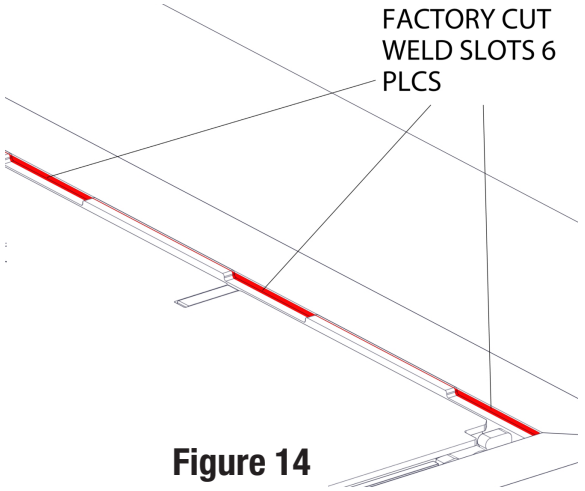


Figure 14

⚠ WARNING

RELEASING THE RAISE OR LIP BUTTON WILL CAUSE THE LIP TO FALL WITH EXTREME FORCE AND THE DECK TO BEGIN A CONTROLLED DESCENT. ENSURE THE CONTROLLER OPERATOR IS GIVEN PROFICIENT SKILL AND EXERCISE OF THE RAISE BUTTONS TO HOLD THE BUTTONS CONTINUOUSLY.

INSTALLATION INSTRUCTIONS CONTINUED...

DANGER

DOCK LEVELER SWINGS WITH CONSIDERABLE FORCE. ACTUATING THE DOCK LEVELING DEVICE WITH ANYONE UNDER OR IN FRONT OF IT WILL CAUSE DEATH OR SERIOUS INJURY.

DANGER

KEEP HANDS, FEET AND OTHER APPENDAGES CLEAR OF HINGES AND OTHER PINCH POINTS WHEN MOVING, INSTALLING, OPERATING, SERVICING, OR OTHERWISE MANIPULATING THE DOCK LEVELING DEVICE. THIS DEVICE IS HEAVY AND MOVES WITH CONSIDERABLE FORCE, CAPABLE OF SEVERING APPENDAGES AND CAUSING SERIOUS INJURY OR DEATH.

3. Raise the deck maintenance brace to its vertical and locked position following the action as shown in **Figure 15**. Secure it with an 5/8-inch diameter OSHA approved locking device. A secondary means of supporting the deck should be used.
4. Deploy the lip brace by first removing the thumb screw holding it in the stored position. Pull out the hairpin and clevis pin. Slide the lip brace forward and upward until it makes front contact. Reinstall the hairpin and clevis pin at the new available hole positions. Thread the thumbscrew back into its original position for storage.
5. When all installers are clear of the leveler underside, release the controller raise button to allow the deck and lip to rest on the braces.

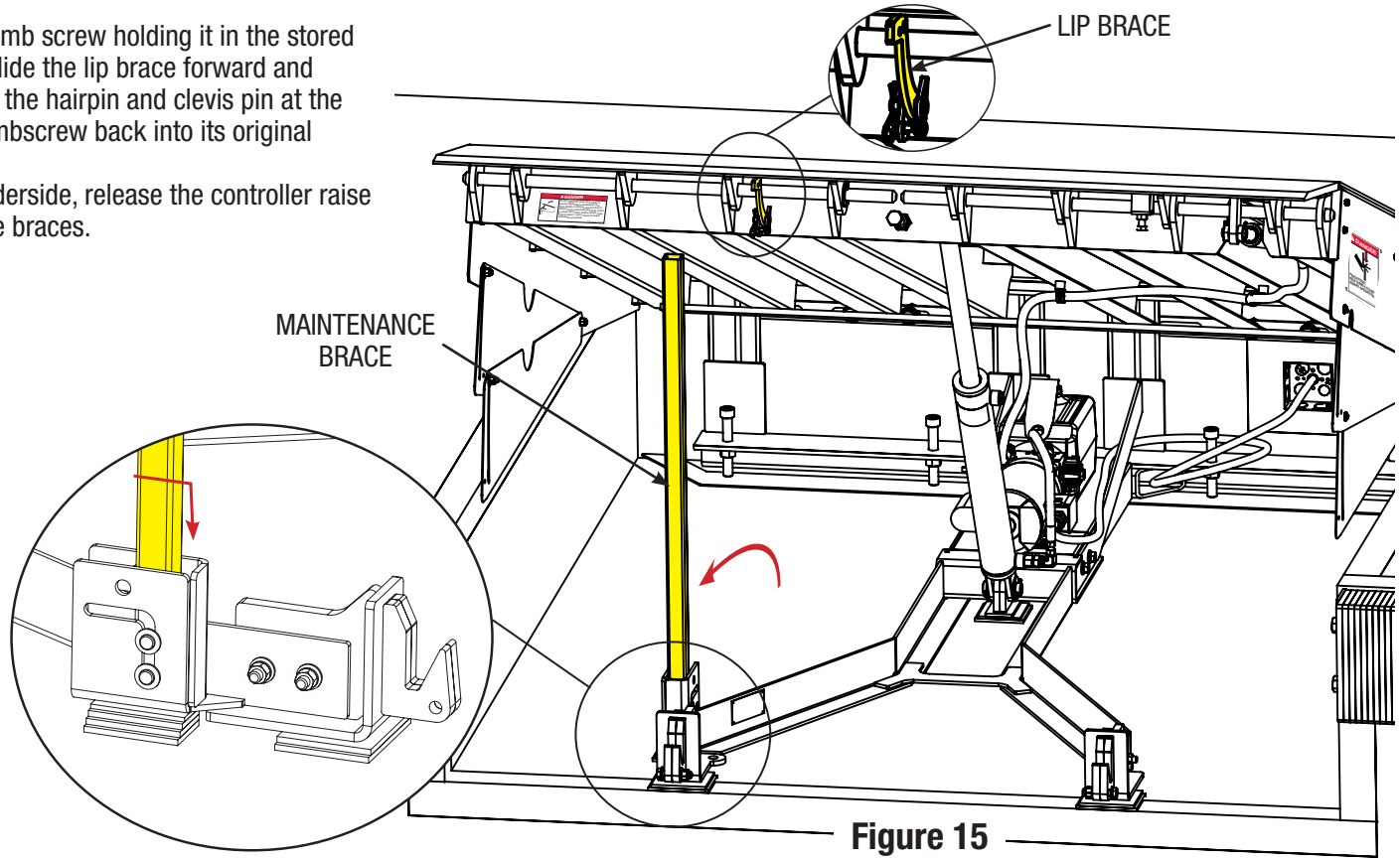


Figure 15

INSTALLATION INSTRUCTIONS CONTINUED...

NOTE: YOUR LOCAL CODES MAY REQUIRE THAT THE INCOMING POWER TO YOUR LEVELER HAVE A LOCK-OUT / TAG-OUT EQUIPPED FUSED DISCONNECT SWITCH (TO BE FURNISHED BY OTHERS) WITHIN EYESIGHT OF THE LEVELER'S CONTROLLER. Incoming power wiring must meet all NEC and local building codes, plus be properly sized for the motor's amperage rating on the nameplate. To reduce the risk of electric shock, the controller must be properly grounded.

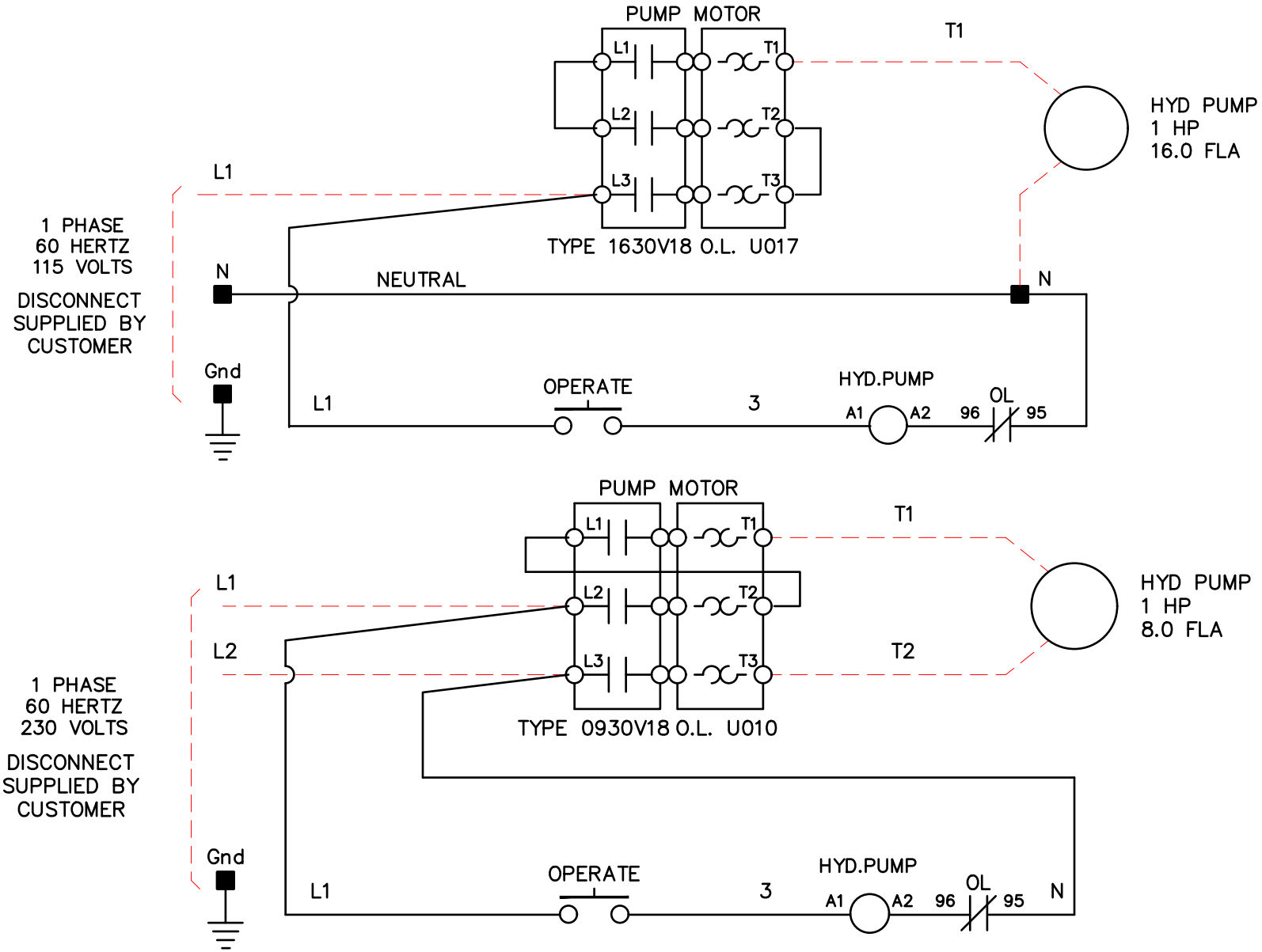


Figure 16

INSTALLATION INSTRUCTIONS CONTINUED...

NOTE: YOUR LOCAL CODES MAY REQUIRE THAT THE INCOMING POWER TO YOUR LEVELER HAVE A LOCK-OUT / TAG-OUT EQUIPPED FUSED DISCONNECT SWITCH (TO BE FURNISHED BY OTHERS) WITHIN EYESIGHT OF THE LEVELER'S CONTROLLER. Incoming power wiring must meet all NEC and local building codes, plus be properly sized for the motor's amperage rating on the nameplate. To reduce the risk of electric shock, the controller must be properly grounded.

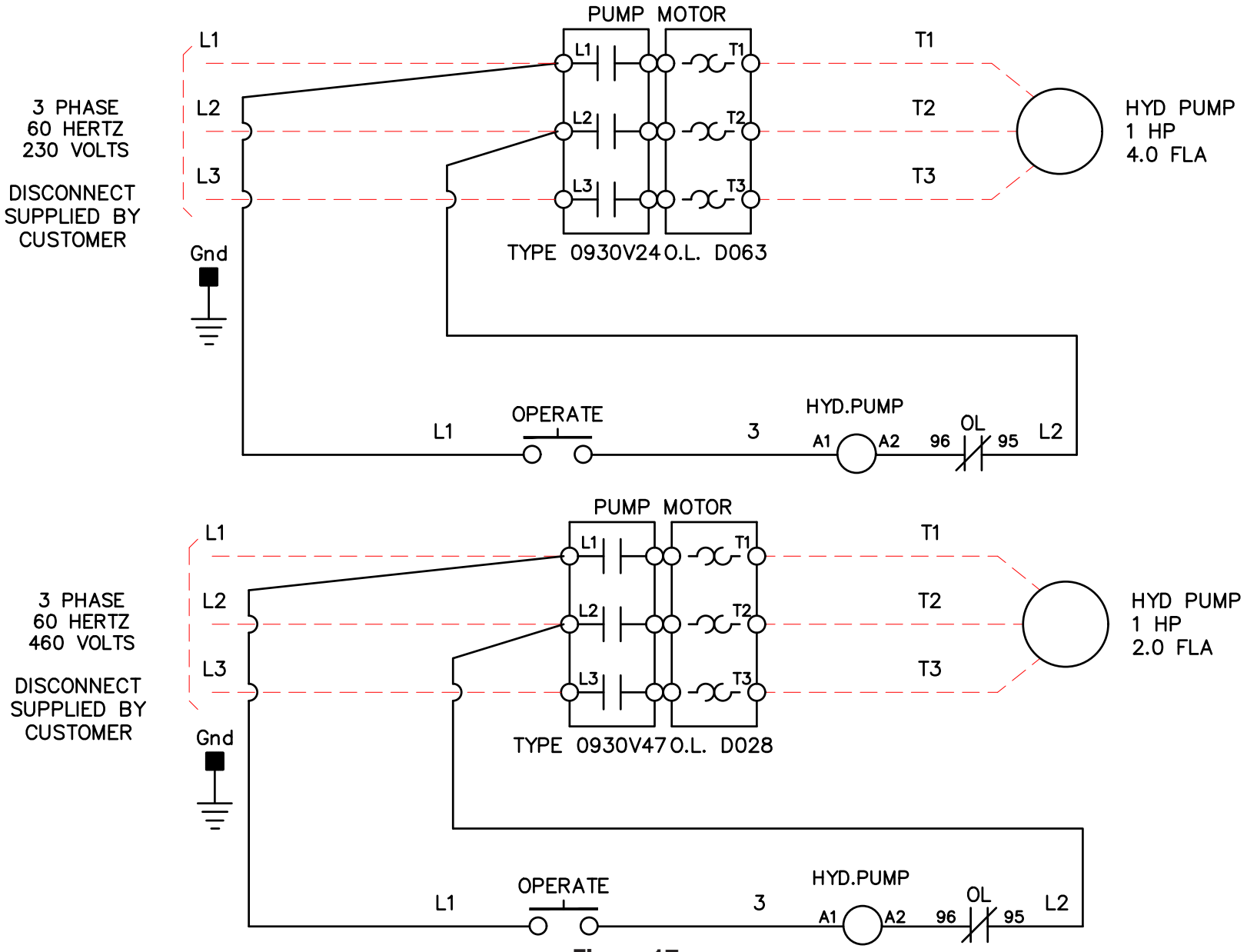


Figure 17

INSTALLATION INSTRUCTIONS CONTINUED...

⚠ DANGER

TO AVOID GETTING IMPACTED BY OR CRUSHED BELOW A FALLING DOCK LEVELER DEVICE, DO NOT WORK UNDERNEATH THE DECK OR LIP UNLESS MAINTENANCE BRACE HAS BEEN SECURED IN THE UPRIGHT POSITION. A SECONDARY MEANS OF SUPPORTING THE DECK SHOULD BE USED. FAILURE TO COMPLY WILL RESULT IN DEATH OR SERIOUS INJURY.

WELD FRONT OF LEVELER

1. Shim below lip keepers and maintenance brace, using a prybar to lift the front of the leveler up to insert the shims, as shown in **Figure 17.** The leveler must be shimmed until the front of the deck is level with or just below dock height when the leveler is stowed.

NOTE: With standard length lips, the shims beneath the lip keepers may be inserted with the leveler in the stowed position. With extended lips, the leveler must be raised to insert the shims.

Shim Stacking Methods	Lip Keepers	Maintenance Brace
Straight	Not Acceptable	Not Acceptable
Stepped	Not Acceptable	Acceptable
Pyramid	Acceptable	Acceptable
Offset	Not Acceptable	Acceptable*

* Acceptable only when load is supported by shims directly beneath it. Do not use overhanging shims to support a load.

⚠ WARNING

DO NOT ATTEMPT TO LIFT THE FRONT OF THE LEVELER BY HAND WHEN INSERTING SHIMS BELOW THE LIP KEEPERS AND MAINTENANCE BRACE. LEVELER WEIGHT IS CONSIDERABLE, AND THE LEVELER COULD SHIFT UNEXPECTEDLY. USE A SUFFICIENTLY LONG PRYBAR TO AVOID SEVERING FINGERS. DO NOT ATTEMPT TO LIFT THE LEVELER UPWARD BY THE LIP, COULD RESULT IN DEATH OR SERIOUS INJURY.

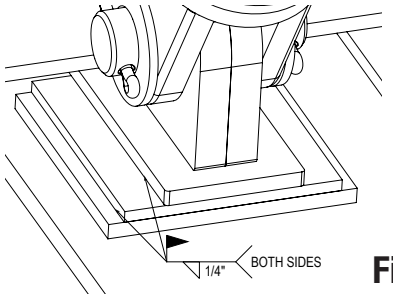
2. Ensure lip keeper bolts are fully torqued down.

NOTE: For levelers with lip keepers that protrude below the pit floor, slide the lip keepers rearward lip keeper hook is flush with the curb steel at the bottom edge of the pit. Weld the back of the hook to the curb steel on both sides.

3. Weld front frame angle, curb angle, and shims together, as shown in **Figure 18**.
4. Shim and weld underneath the deck cylinder hinge to make sturdy contact against the pit floor, as shown in **Figure 18**.
5. Use the hydraulic controller to again raise the deck and lip to its highest position. Return the maintenance brace and lip brace to their stowed positions. When all installers are clear of the leveler underside, release the controller raise button to allow the deck and lip to return to stow.

NOTICE

TO PROMOTE WELD PENETRATION, USE AS FEW AND AS THICK OF SHIMS AS POSSIBLE TO ACHIEVE DESIRED HEIGHT. DO NOT STACK MULTIPLE LAYERS OF THIN GAUGE SHIM. THE TOP SHIM IN THE STACK MUST BE AT LEAST 4" X 4" TO FULLY SUPPORT THE FRAME RAIL.



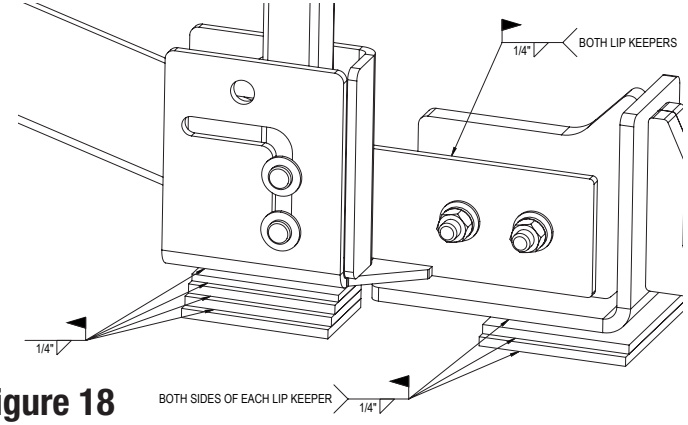
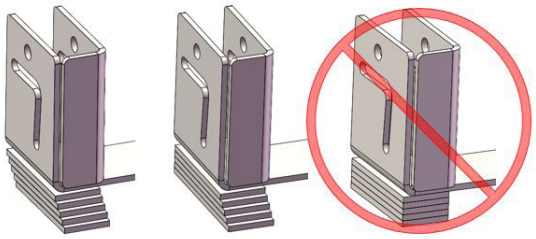
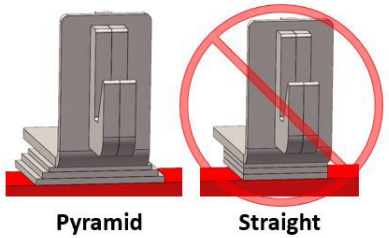


Figure 18





INSTALLATION INSTRUCTIONS CONTINUED...

INSTALL LAMINATED BUMPERS

1. Bumpers should be installed 46” - 52” from the top of the bumper to the ground.
2. Installation will be accomplished by a combination of welding and concrete anchors, as shown in **Figure 19** and **Figure 20**.
3. Follow concrete anchor manufacturer’s instructions for proper use.

NOTICE

DO NOT USE A DOCK LEVELER WITHOUT BUMPERS INSTALLED. TO DO SO COULD RESULT IN DAMAGE TO THE LEVELER OR THE BUILDING.

FINISHING

1. Clean up welds and the surrounding area.
2. Apply rust inhibiting touch up paint to all welds and shims as necessary.

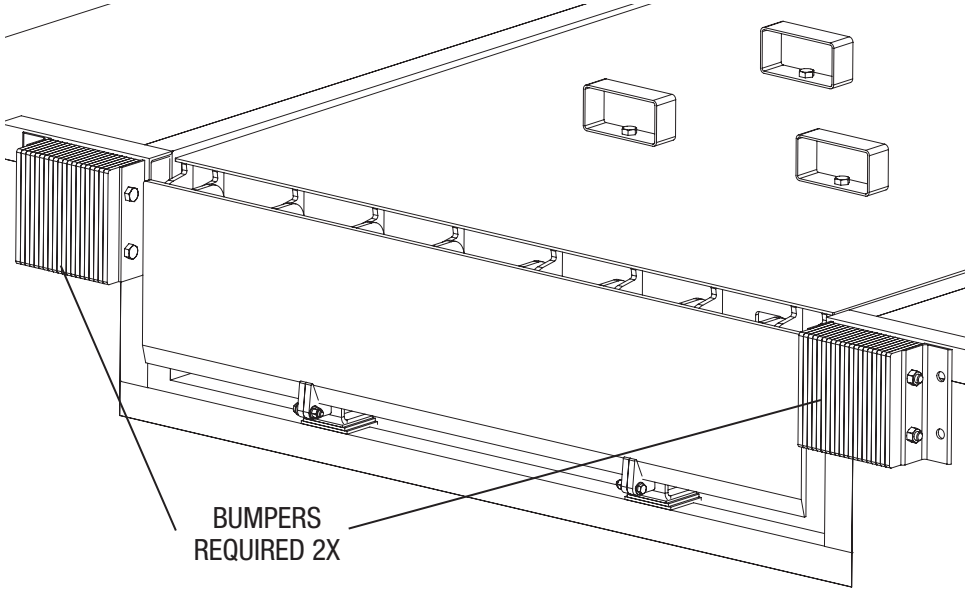


Figure 19

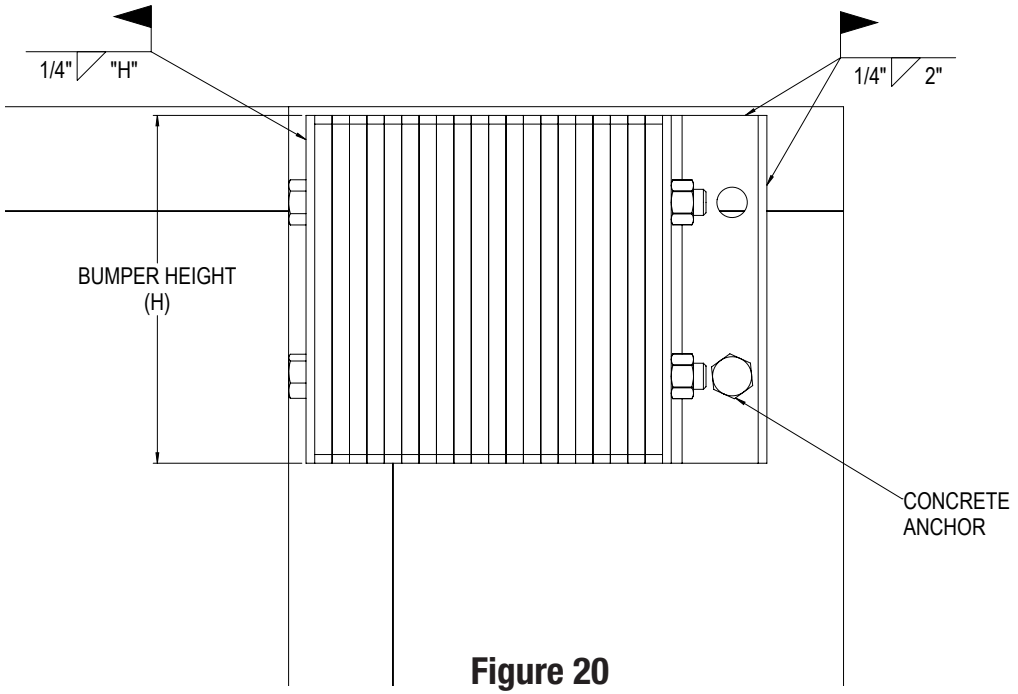


Figure 20

INSTALLATION INSTRUCTIONS CONTINUED...

3. Remove the four deck transportation loops, as shown in **Figure 21**.
4. Locate the eight deck plugs in the hardware bag. Insert them in the four holes where the deck transportation loops were bolted and the four holes for accessing the rear leveling bolts, as shown in **Figure 22**. Ensure they are pushed all the way down below the top surface of the deck in order to prevent damage.
5. Be sure all tools and debris are removed from the leveler and the surrounding area.
6. Release the toe guards secured by the flat head screws and nuts.

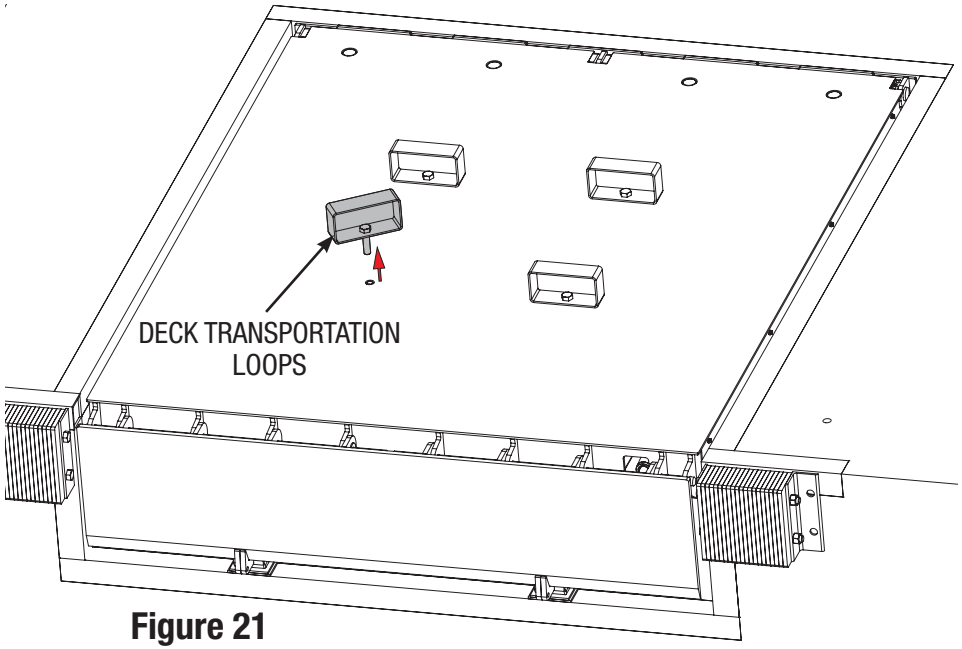


Figure 21

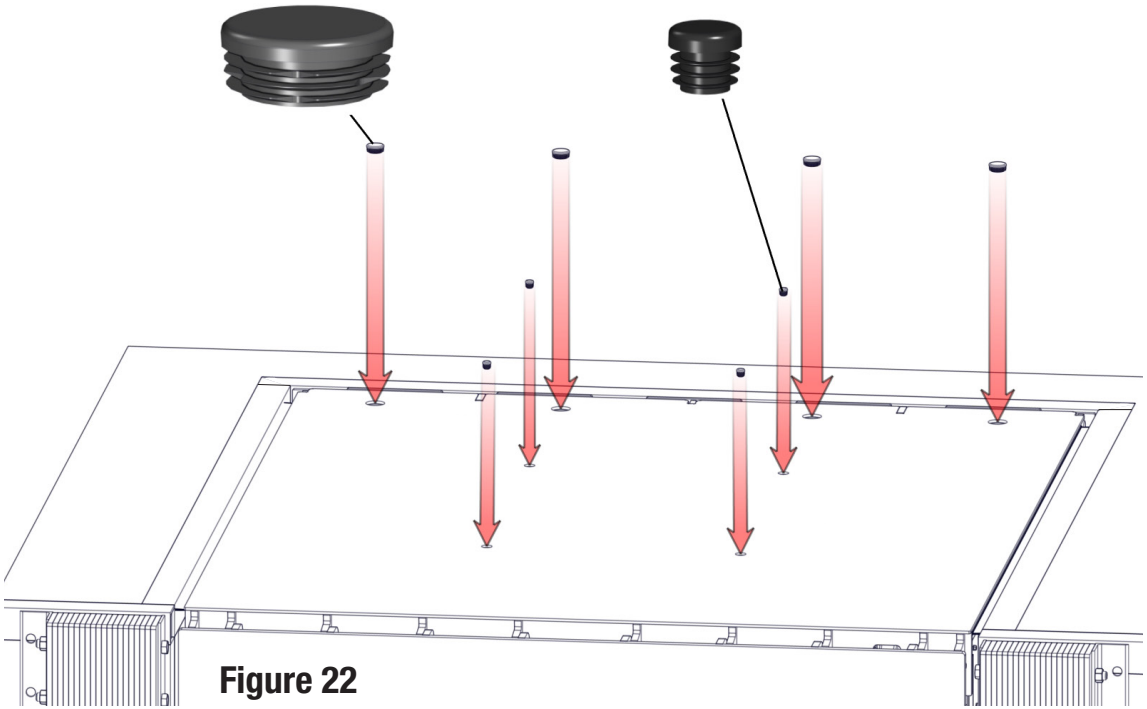


Figure 22

INSTALLATION INSTRUCTIONS CONTINUED...

INSTALL OPERATION PLACARD

1. Install operation placard on the wall near the opening in plain view of the dock leveler with an appropriate adhesive or fasteners. See **Figure 23**. Recommended placement on wall directly adjacent the hydraulic controller box.

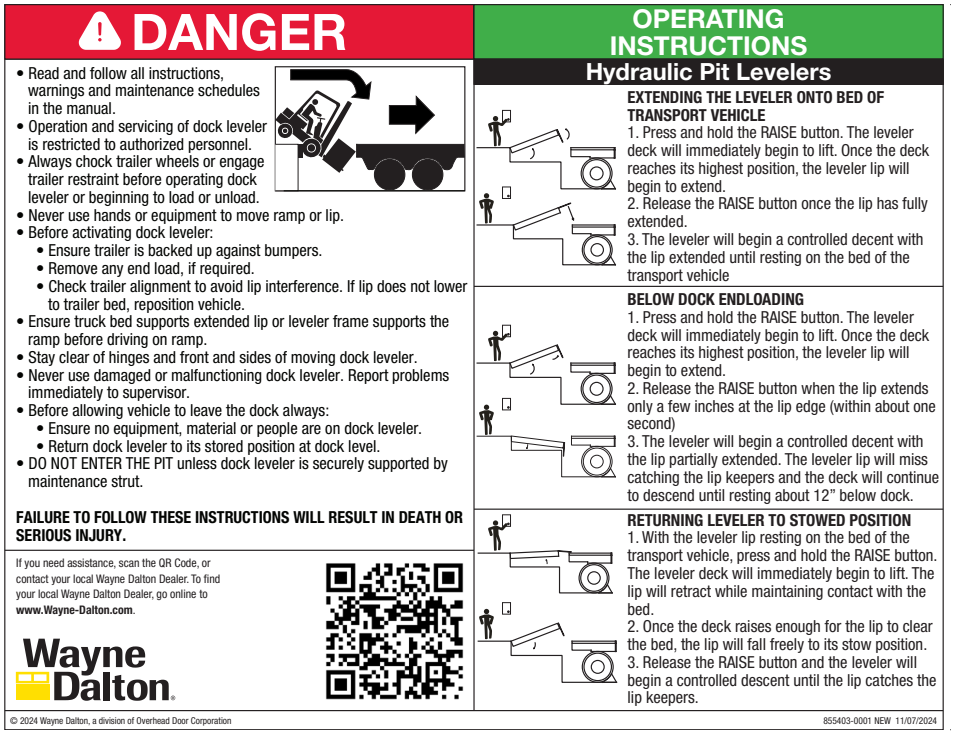


Figure 23

FUNCTION TESTING AND HPU ADJUSTMENTS

DANGER

DOCK LEVELER SWINGS WITH CONSIDERABLE FORCE. ACTUATING THE DOCK LEVELING DEVICE WITH ANYONE UNDER OR IN FRONT OF IT WILL CAUSE DEATH OR SERIOUS INJURY.

DANGER

KEEP HANDS, FEET AND OTHER APPENDAGES CLEAR OF HINGES AND OTHER PINCH POINTS WHEN MOVING, INSTALLING, OPERATING, SERVICING, OR OTHERWISE MANIPULATING THE DOCK LEVELING DEVICE. THIS DEVICE IS HEAVY AND MOVES WITH CONSIDERABLE FORCE, CAPABLE OF SEVERING APPENDAGES AND CAUSING SERIOUS INJURY OR DEATH.

DANGER

DO NOT WORK UNDER DOCK LEVELER UNLESS MAINTENANCE BRACE HAS BEEN SECURED IN THE UPRIGHT POSITION. FAILURE TO COMPLY WILL RESULT IN DEATH OR SERIOUS INJURY.

DANGER

SECURELY SUPPORT RAMP AND LIP WHILE WORKING BELOW THE LEVELER PLATFORM. FAILURE TO USE PROPER BRACING WILL RESULT IN DEATH OR SERIOUS INJURY DUE TO RAMP DROPPING.

WARNING

A SECONDARY MEANS OF SUPPORTING THE RAMP AND LIP SHOULD BE USED. FAILURE TO FOLLOW THESE PRECAUTIONS MAY RESULT IN DEATH OR SERIOUS INJURY.

WARNING

PRIOR TO SERVICING, ALWAYS BARRICADE OR PLACE TRAFFIC CONES ON ALL SIDES OF THE LEVELER TO ALERT FORK VEHICLE OPERATORS AND PEDESTRIANS THAT A SERVICE TECHNICIAN MAY BE WORKING BELOW THE DOCK. NOTIFY A SUPERVISOR/FOREMAN PRIOR TO BEGINNING WORK. COMPLY WITH ALL OSHA STANDARDS AND REGULATIONS.

WARNING

APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) SHOULD ALWAYS BE USED. THIS INCLUDES BUT IS NOT LIMITED TO A HARD HAT WHEN WORKING BELOW LEVELER DECK, APPROPRIATE EYE PROTECTION, GLOVES, AND HARD-CAPPED SLIP-RESISTANT FOOTWEAR WHEN WORKING ON OR NEAR THE DOCK AREA.

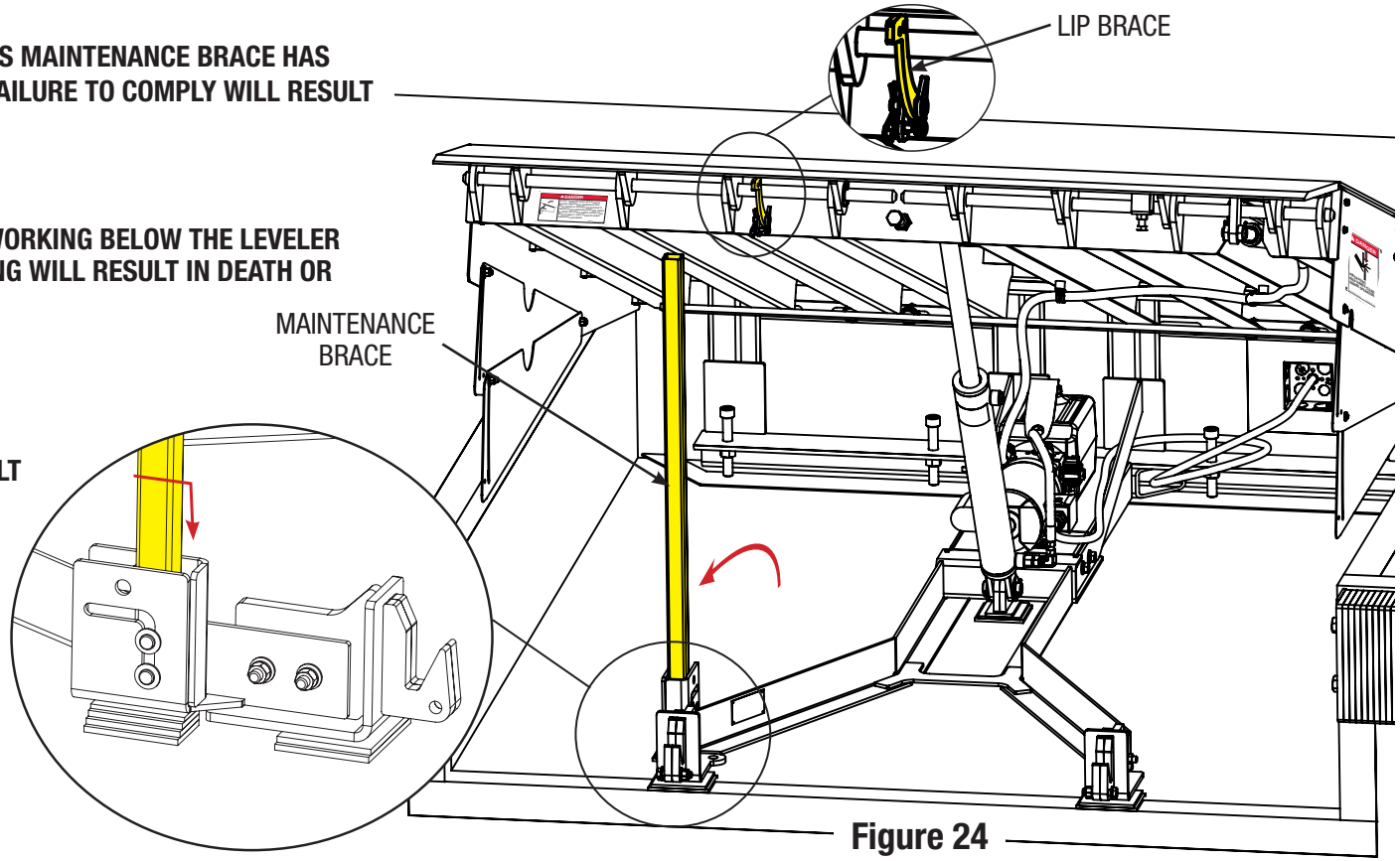


Figure 24

HYDRAULIC CIRCUIT

Item	Description
1	System Pressure Valve (SPV)
2	Flow Control Valve (FCV)
3	Lip Sequencing Valve (LSV)
4	SAE #6 Deck Cylinder Port
5	SAE #6 Lip Cylinder Port
6	Pilot-to-close Valve
7	Pilot-to-open Valve
8	Two-way Valve
9	N.O. Independent Lip Control Valve (ILC) optional on controllers equipped with Lip Out button

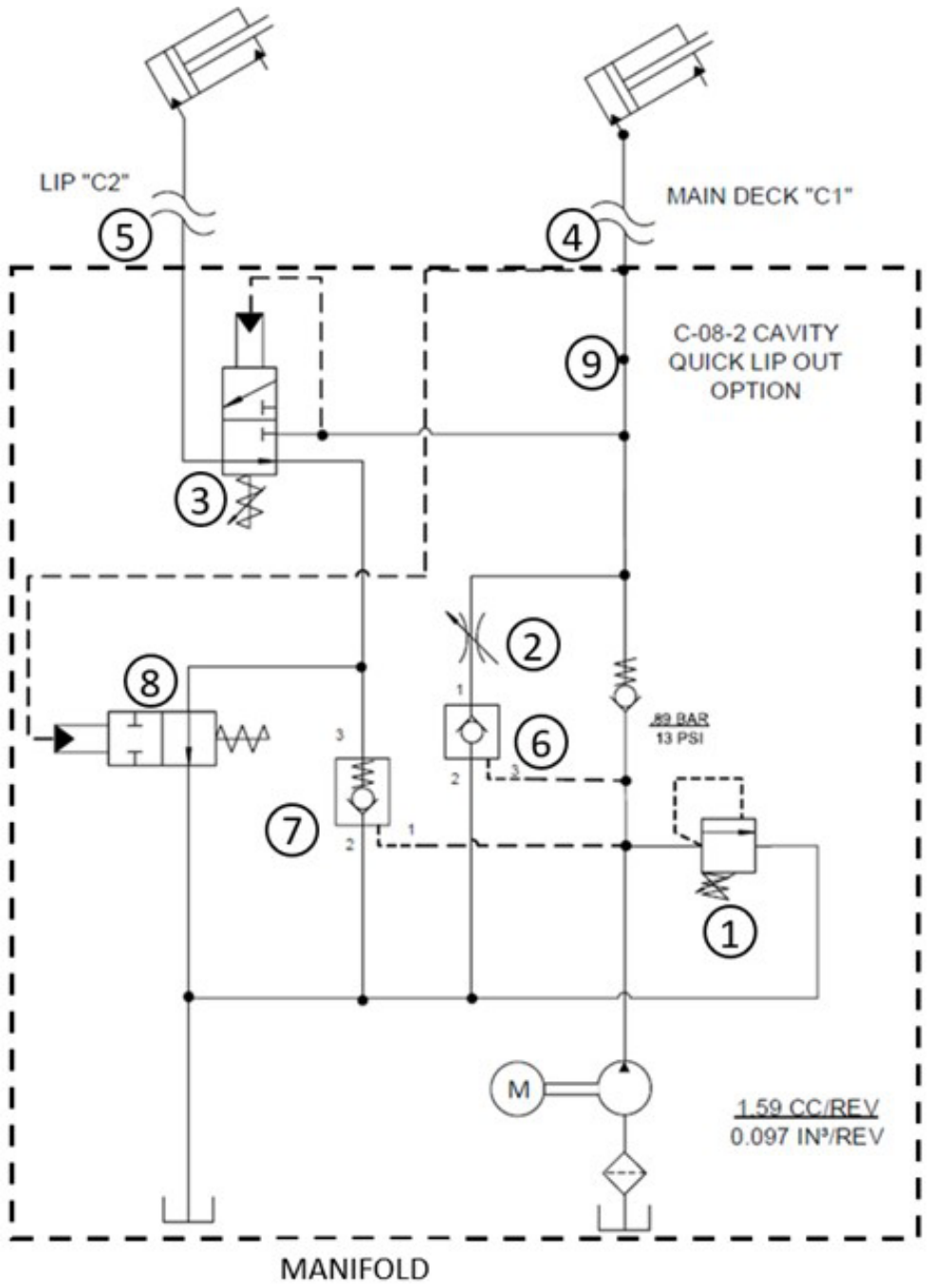


Figure 25

HYDRAULIC TUNING INSTRUCTIONS

ADJUSTING DECK RAISE SPEED

The deck raise speed is hydraulically-controlled by the System Pressure Valve (1). The location of the SPV on the power unit manifold is shown in **Figure 26**. Pump pressure exceeding the setting of SPV is bypassed back to tank. This valve is factory set to 2 turns out (counter-clockwise) from the fully in position.

NOTE: This valve does not require adjustment. Do not make adjustments to this valve without first consulting with the manufacturer.

1. Fully raise the deck to the top position and extend the lip.
2. Allow the deck and lip to fall to the below dock position.
3. Measure the time required to raise ONLY the deck from the full below dock position to the full raised position. This time should be:
   - 8' Leveler: 12s ± 2s
4. If an adjustment is required, first loosen the nut securing position setting of the SPV.
5. Using a 3/16" hex key, make 1/8th turn adjustments to the SPV screw. Turning clockwise will increase system pressure and raise the deck faster. Turning counter-clockwise will decrease system pressure and raise the deck slower.

NOTE: Adjusting the deck raise speed may alter lip raise performance. See the section on ADJUSTING LIP RAISE SPEED after making any adjustments to the SPV.

After finishing deck speed adjustments, hold the position of the setting with the hex key while using a wrench to retighten the nut. Failure to resecure the nut will result in hydraulic oil leakage from the valve.

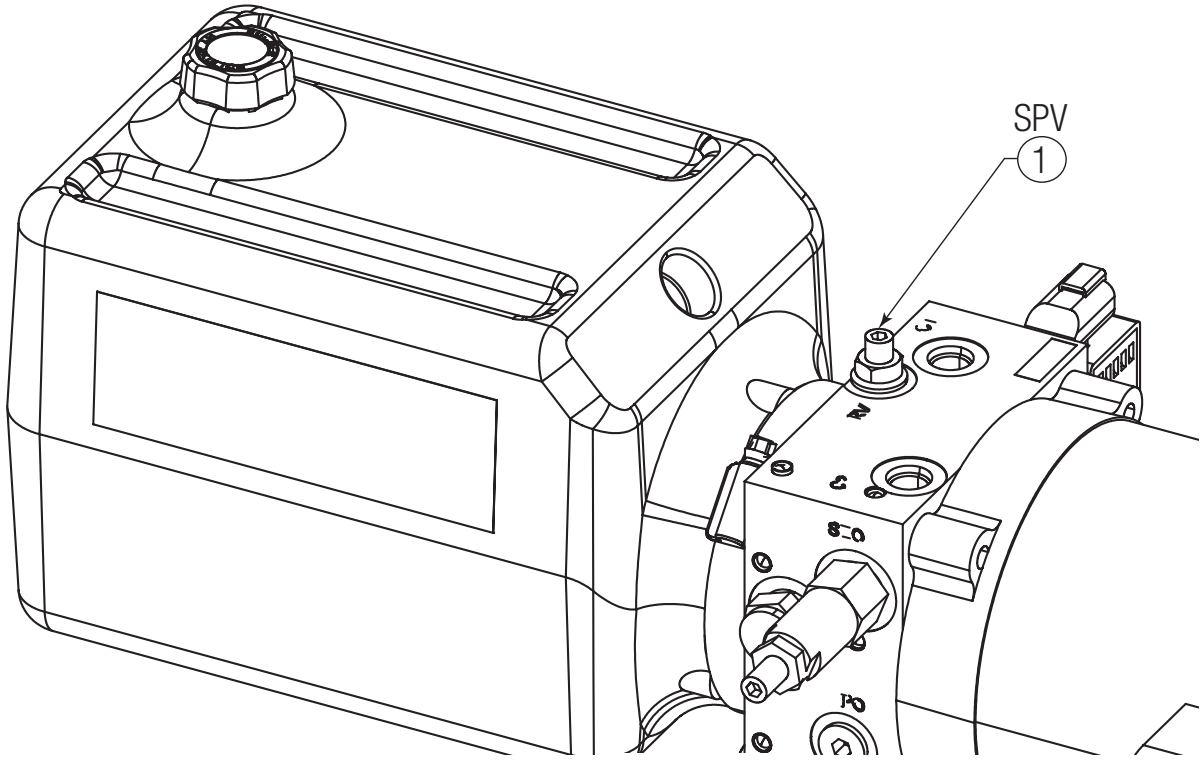


Figure 26

HYDRAULIC TUNING INSTRUCTIONS CONTINUED...

ADJUSTING LIP RAISE SPEED

The lip raise speed is hydraulically-controlled by the Lip Sequencing Valve (3). The location of the LSV on the power unit manifold is shown in **Figure 27**. The valve opens to the lip cylinder when system pressure exceeds the LSV setting. This valve is factory set to 5-1/4 turns out (counter-clockwise) from the fully in position.

1. Fully raise the deck to the top position and extend the lip.
2. Measure the time required to raise ONLY the lip from the full pendant position to the full extended position. This time should be 4s ± 1s.
3. If an adjustment is required, first loosen the nut securing position setting of the LSV.
4. Using a 3/16" hex key, make 1/8th turn adjustments to the LSV screw. Turning clockwise will increase the cracking pressure and raise the lip slower. Turning counter-clockwise will decrease the cracking pressure and raise the lip faster.

NOTE: Be mindful, turning the LSV screw too far out will potentially cause the lip to extend before the deck raises.

5. After finishing lip speed adjustments, hold the position of the setting with the hex key while using a wrench to retighten the nut. Failure to resecure the nut will result in hydraulic oil leakage from the valve.

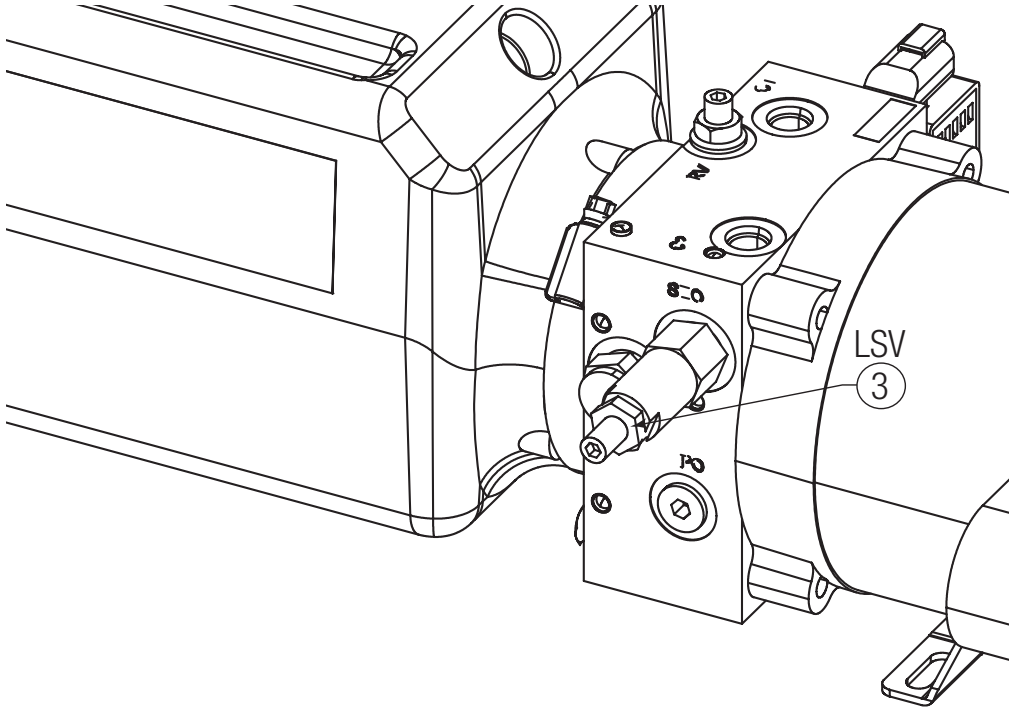


Figure 27

HYDRAULIC TUNING INSTRUCTIONS CONTINUED...

ADJUSTING DECK LOWER SPEED

The deck lower speed is hydraulically-controlled by the Flow Control Valve (2). The location of the FCV on the power unit manifold is shown in **Figure 28**. The valve allows flow into the deck cylinder to move unrestricted then throttles flow out of the deck cylinder according to the valve setting. This valve is factory set to N turns out (counter-clockwise) from the fully in position.

N-turns by deck length:

- 8’ Leveler: 3 turns

2. Fully raise the deck to the top position and extend the lip.
3. Measure the time required to lower the deck from the fully raised position to the full below dock position. This time should be:
   - 8’ Leveler: 12s ± 2s
4. If an adjustment is required, first loosen the nut securing position setting of the FCV.
5. Make 1/8th turn adjustments to the FCV knob. Turning clockwise will increase the restriction and lower the deck slower. Turning counter-clockwise will decrease the restriction and lower the deck faster.

NOTE: Increasing the deck lower speed will potentially trip the velocity fuse and cause deck movement to lock up. Do not attempt to increase the speed below the guidance given in step 3. The fuse can be reset by pressing the RAISE button for a short pulse.

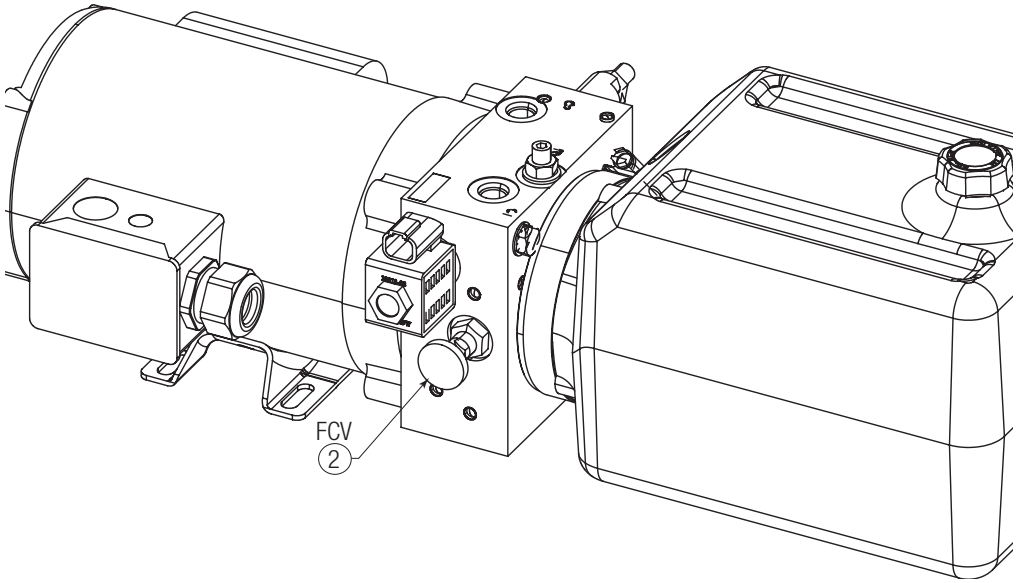


Figure 28

HYDRAULIC TUNING INSTRUCTIONS CONTINUED...

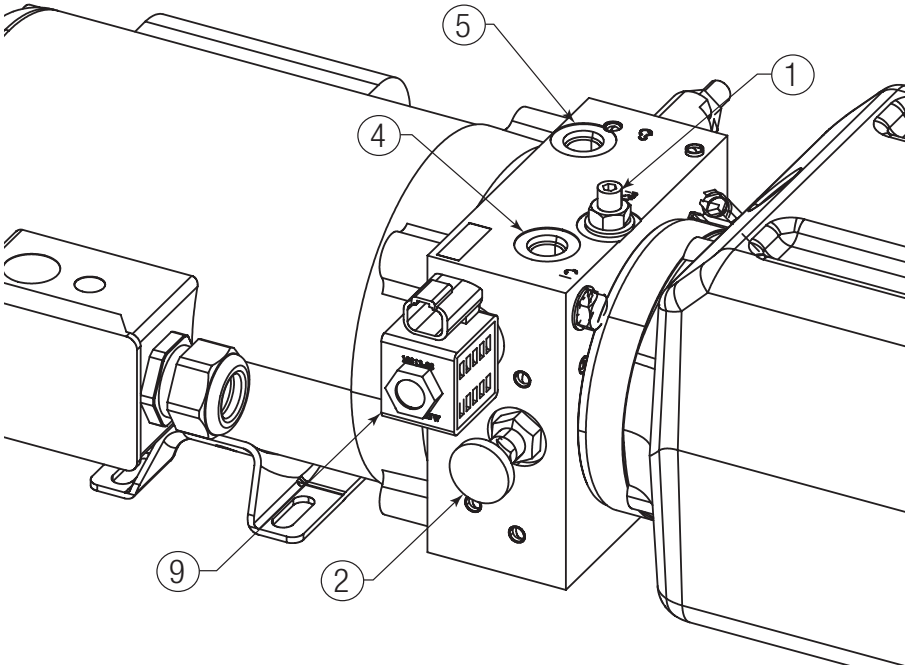


Figure 29 - Overhead view RIGHT

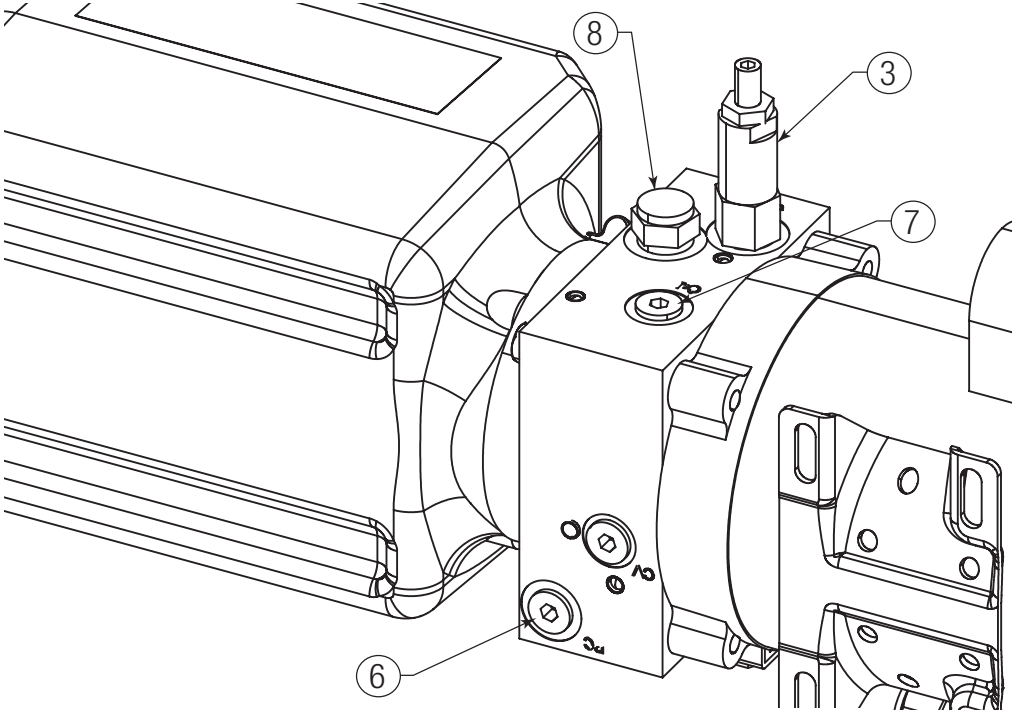


Figure 30 - Underside view LEFT

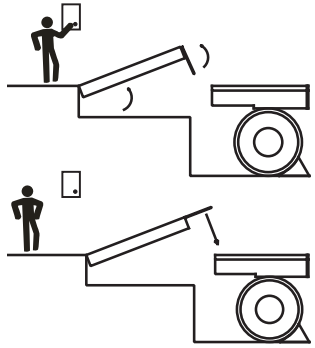
Item	Description
1	System Pressure Valve (SPV)
2	Flow Control Valve (FCV)
3	Lip Sequencing Valve (LSV)
4	SAE #6 Deck Cylinder Port
5	SAE #6 Lip Cylinder Port

Item	Description
6	Pilot-to-close Valve
7	Pilot-to-open Valve
8	Two-way Valve
9	N.O. Independent Lip Control Valve (ILC) optional on controllers equipped with Lip Out button

OPERATING INSTRUCTIONS

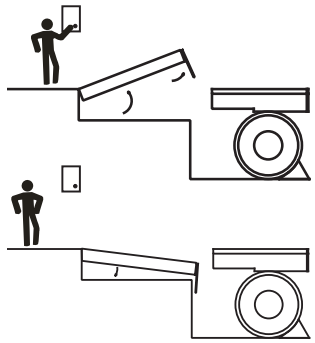
EXTENDING THE LEVELER ONTO BED OF TRANSPORT VEHICLE

1. Press and hold the RAISE button. The leveler deck will immediately begin to lift. Once the deck reaches its highest position, the leveler lip will begin to extend.
2. Release the RAISE button once the lip has fully extended.
3. The leveler will begin a controlled decent with the lip extended until resting on the bed of the transport vehicle.



BELOW DOCK ENDLOADING

1. Press and hold the RAISE button. The leveler deck will immediately begin to lift. Once the deck reaches its highest position, the leveler lip will begin to extend.
2. Release the RAISE button when the lip extends only a few inches at the lip edge (within about one second)
3. The leveler will begin a controlled decent with the lip partially extended. The leveler lip will miss catching the lip keepers and the deck will continue to descend until resting about 12” below dock.



RETURNING LEVELER TO STOWED POSITION

1. With the leveler lip resting on the bed of the transport vehicle, press and hold the RAISE button. The leveler deck will immediately begin to lift. The lip will retract while maintaining contact with the bed.
2. Once the deck raises enough for the lip to clear the bed, the lip will fall freely to its pendant position.
3. Release the RAISE button and the leveler will begin a controlled descent until the lip catches the lip keepers.

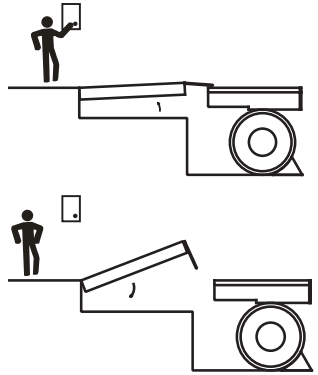


Figure 31

TROUBLESHOOTING

DANGER **PIT LEVELER INSPECTION AND TROUBLESHOOTING SHALL BE PERFORMED BY TRAINED DOCK SYSTEM TECHNICIANS ONLY.**

TROUBLESHOOTING: SYMPTOMS, CAUSES AND SOLUTIONS		
SYMPTOM	**POTENTIAL CAUSE**	**SOLUTION**
Deck does not stow properly	Debris in rear hinge	Clean out rear hinge using broom and/or compressed air
	Maintenance brace is deployed	Stow maintenance brace
	Obstruction under deck	Remove all foreign obstructions from below deck
	Lip keepers are out of place, missing, or damaged	Verify lip keepers are and welded in the correctly position
Dock leveler rubs vertical pit walls	Pit is not square	Use vertical shims along the rear curb angle to square off the rear pit wall
	Leveler not welded flush to rear curb angle	Remove leveler, clean rear curb angle from slag/ debris, verify squareness of pit, then reinstall leveler
	Toe guard loose	Fasten toe guards securely
	Pit too small for leveler	Contact factory
Deck raises too slowly/irregularly	Fluid level too low	Check fluid level. Add MIL 5606 hydraulic oil according to Section HYDRAULIC TUNING
	Rear hinge friction	Refer to lubrication maintenance schedule
	Deck hydraulic cylinder	Inspect for signs of leakage at seals or obstructions Breather plug clogged - remove and clean
	Hydraulic power unit manifold settings - system pressure valve	Follow hydraulic tuning instructions by qualified technician
Deck lowers too fast or too slow	Hydraulic power unit manifold settings - flow control valve	Follow hydraulic tuning instructions by qualified technician

TROUBLESHOOTING CONTINUED...

TROUBLESHOOTING: SYMPTOMS, CAUSES AND SOLUTIONS		
SYMPTOM	**POTENTIAL CAUSE**	**SOLUTION**
Deck will not raise	Shipping clamps not removed	Remove shipping clamps
	Weight on deck surface	Remove weight from deck. Do not stand on deck while raising platform
	Debris in rear hinge	Clean out rear hinge using broom and/or compressed air
	Dock leveler obstructed by pit walls	Refer to symptom, "Dock leveler rubs vertical pit walls"
	Transport vehicle obstructs pit leveler	Move transport vehicle. Check bumpers for excessive wear. If bumpers are not worn, consult factory
	Fluid level too low	Check fluid level with deck and lip in raised position. Add MIL 5606 hydraulic oil according to Section HYDRAULIC TUNING
	Pump motor operating in reverse direction	3 phase motor - switch wires to change motor direction
	Rear hinge friction	Refer to lubrication maintenance schedule
	Deck hydraulic cylinder	Inspect for signs of leakage at seals or obstructions
	Hydraulic power unit manifold settings - system pressure valve	Follow hydraulic tuning instructions by qualified technician
Deck will not lower	Obstruction under deck	Remove all foreign obstructions from below deck
	Maintenance brace is deployed	Stow maintenance brace
	Hydraulic power unit manifold settings - flow control valve	Follow hydraulic tuning instructions by qualified technician
	Velocity fuse locked	Remove load from leveler. Reset hydraulic velocity fuse by briefly pressing raise button on controller

TROUBLESHOOTING CONTINUED...

TROUBLESHOOTING: SYMPTOMS, CAUSES AND SOLUTIONS		
SYMPTOM	**POTENTIAL CAUSE**	**SOLUTION**
Lip does not deploy or drop properly	Transport vehicle obstructs pit leveler lip	Move transport vehicle. Check bumpers for excessive wear. If bumpers are not worn, consult factory
	Lip is damaged/bowed	Consult factory
	Lip hinge shafts are worn through or seized	Replace shafts, as needed
	Lip maintenance brace is deployed	Stow lip maintenance brace
Lip extends but falls when raise button is released	Hydraulic power unit manifold two-way valve stuck open	Clean or replace valve by a qualified technician
	Hydraulic power unit manifold pilot-to-open valve stuck open	Clean or replace valve by a qualified technician
	Lip hydraulic cylinder	Breather plug clogged - remove and clean
Lip will not raise or raises slowly/irregularly	Fluid level too low	Check fluid level. Add MIL 5606 hydraulic oil according to Section MAINTENANCE
	Lip hinge friction	Refer to lubrication maintenance schedule
	Lip hinge shafts are worn through or seized	Replace shafts, as needed
	Lip hydraulic cylinder	Inspect for signs of leakage at seals or obstructions Breather plug clogged - remove and clean
	Hydraulic power unit manifold settings - lip sequence valve	Follow hydraulic tuning instructions by qualified technician
Lip cannot return to stow	Lip keepers are out of place, missing, or damaged	Verify lip keepers are in good condition and welded in the correct position
	Lip is damaged/bowed	Consult factory
	Lip maintenance brace is deployed	Stow lip maintenance brace
	Lip stop bolt obstructing position	Adjust the bolt to set the lip retract position
	Hydraulic power unit manifold two-way valve stuck closed	Clean or replace valve by a qualified technician
	Hydraulic power unit manifold pilot-to-open valve stuck closed	Clean or replace valve by a qualified technician

TROUBLESHOOTING CONTINUED...

TROUBLESHOOTING: SYMPTOMS, CAUSES AND SOLUTIONS		
SYMPTOM	**POTENTIAL CAUSE**	**SOLUTION**
HPU motor does not run	Controller contactor stuck open	Replace contactor by a qualfied technician
	Controller overload tripped	Press overload reset button
	Electrical power wiring	Inspect service line is correct for motor wiring (harness label) Inspect service wiring to controller matches electrical schematic Inspect wiring from controller to junction box matches electrical schematic Inspect wiring from HPU harness to junction box
Weld to rear curb angle is broken/cracked	Leveling bolts are not contacting the pit floor	Extend all leveling bolts per installation instructions. Repair weld
Leveler is broken/cracked	Load exceeded manufacturer factored load limit	Document with installer and repair/replace per manufacturer instruction
	Driving too fast over leveler	
Painted areas flaking/wearing	Harsh chemicals used	Clean surface and reapply touchup paint
	Too thin of a touchup paint coat applied	
	Dirty surface prior to field paint	
Chipped or cracked powder coating	Bent or broken equipment	Inspect and replace/touch up, as needed
Lip does not clear transport vehicle	Bumpers are worn	Replace worn bumpers
	Drive grade is incompatible with bumper projection and lip length	Replace with compatible bumper projection
Pallet jack or loading vehicle scrapes against leveler platform	Pallet jack is too low	Raise pallet jack to max height
	Transport vehicle is too high or dock is too low	Consult factory

MAINTENANCE

DANGER

READ THESE INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING MAINTENANCE. IF YOU ARE IN QUESTION ABOUT ANY OF THE PROCEDURES, DO NOT PERFORM THE WORK. REPAIRS SHOULD ONLY BE PERFORMED BY A TRAINED DOCK LEVELER SYSTEMS TECHNICIAN. FAILURE TO FOLLOW SAFETY INSTRUCTIONS WILL RESULT IN DEATH OR SERIOUS INJURY.

DANGER

DO NOT WORK UNDER DOCK LEVELER UNLESS MAINTENANCE BRACE HAS BEEN SECURED IN THE RAISED SERVICE POSITION. SECURELY SUPPORT RAMP AND LIP WITH MAINTENANCE BRACES WHEN RAMP IS IN RAISED SERVICE POSITION. A SECONDARY MEANS OF SUPPORTING THE RAMP AND LIP SHOULD BE USED. FAILURE TO USE PROPER BRACING WILL RESULT IN DEATH OR SERIOUS INJURY.

DANGER

PRIOR TO SERVICING, ALWAYS BARRICADE OR PLACE TRAFFIC CONES ON ALL SIDES OF THE LEVELER TO ALERT FORK VEHICLE OPERATORS AND PEDESTRIANS THAT A SERVICE TECHNICIAN MAY BE WORKING BELOW THE DOCK. NOTIFY A SUPERVISOR/FOREMAN PRIOR TO BEGINNING WORK. COMPLY WITH ALL OSHA STANDARDS AND REGULATIONS.

WARNING

APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) SHOULD ALWAYS BE USED. THIS INCLUDES BUT IS NOT LIMITED TO: A HARD HAT WHEN WORKING BELOW LEVELER DECK, EYE PROTECTION, GLOVES, AND HARD-CAPPED SLIP-RESISTANT FOOTWEAR WHEN WORKING ON OR NEAR THE DOCK AREA. FAILURE TO USE APPROPRIATE PPE COULD RESULT IN SEVERE OR FATAL INJURY.

Before starting repair or inspection of a dock leveler device:

a) Secure and restrict access in and around the dock position (dock and driveway) with physical barriers and visible signage.

b) Read, understand, and follow all maintenance instructions and precautions provided.

c) Remove all loads from the platform; and

d) Disconnect power and follow established OSHA-approved lockout / tag-out policies as required.

Maintenance and inspection of all dock leveling devices shall be performed in conformance with the following practices:

a) Scheduled, planned maintenance program shall be followed and logged.

b) Only trained and authorized personnel shall be permitted to maintain, repair, adjust, and inspect dock leveling devices.

c) Use only original equipment manufacturer parts, manuals, maintenance instructions and labels.

MAINTENANCE CONTINUED...

Daily Maintenance

At the beginning of each shift and before operation of the dock leveling device, the operator shall inspect the condition of the dock leveling device, giving special attention to the following:

1. Ensure hinges and surfaces are free of debris, ice, dirt, or obstruction.
2. Verify all precautionary labeling and operation placards are intact, visible, and legible.
3. If leveler has guards or safety devices, ensure they are present and functional.
4. Perform a function check to ensure controls are fully operational.
5. Inspect that unit is free of visible structural defect or damage.

Weekly Maintenance

1. Cycle the dock leveler through at least one complete operating cycle to maintain lubrication.
2. Check bumpers for wear. If the leveler begins to interfere with the transport vehicle during deployment or stowing, it is time to replace the bumpers.
3. Clean dock leveler with warm soapy water.

NOTE: Sodium hydroxide cleaning solution may be used if it is diluted to <5% and completely rinsed clean within 3 minutes. Ensure lubrication is not washed off.

Quarterly Maintenance

1. Lubricate the following areas with calcium sulfonate complex grease or other long-lasting, weather & pressure resistant, anti-seize, penetrating, lubricating oil/grease:
   a) Lug hinge contact surfaces. b) Rear hinge shaft. c) Lip and deck cylinder pins.
2. With the deck fully raised and the lip extended, visually check hydraulic fluid level in tank with deck raised and lip extended. Fluid level should be above half full. Add only MIL-5606 oil as needed.
3. Clean out rear hinge with broom or compressed air.
4. Inspect welds and structure for cracks, separation or other damage. Repair field welds and replace damaged components, as appropriate.
   a) Inspect welds between the leveler and the rear pit curb angle.
   b) Inspect structural welds below leveler lip.
   c) Inspect welds of bumpers to dock structure.
   d) Inspect hinge and pivot pins for wear.
5. Perform Weekly Maintenance
6. Check wall anchors/anchor nuts for tightness.

MAINTENANCE CONTINUED...

LOCKOUT/TAGOUT

Occupational Safety and Health Administration (OSHA) rules and regulations require all affected employees be notified when equipment is shut down/locked out for repair and/or maintenance work.

a) Utilize OSHA-approved lockout devices.

b) The tagout tags indicating that work is being done on equipment should be prominently visible and clearly bear the name of the authorized person responsible for the lockout.

c) Tagout notices shall not be susceptible to deterioration or become illegible due to environmental conditions or chemical exposure.

d) Always follow local, state, and federal codes.

e) Always lockout and tagout power sources prior to beginning work on electrical devices/controls.

CONFINED SPACE

If a confined space entry associated with operations or maintenance of a dock leveling device is required, the confined space procedures shall comply with ANSI/ASSP Z117.1.

REPLACEMENT PARTS

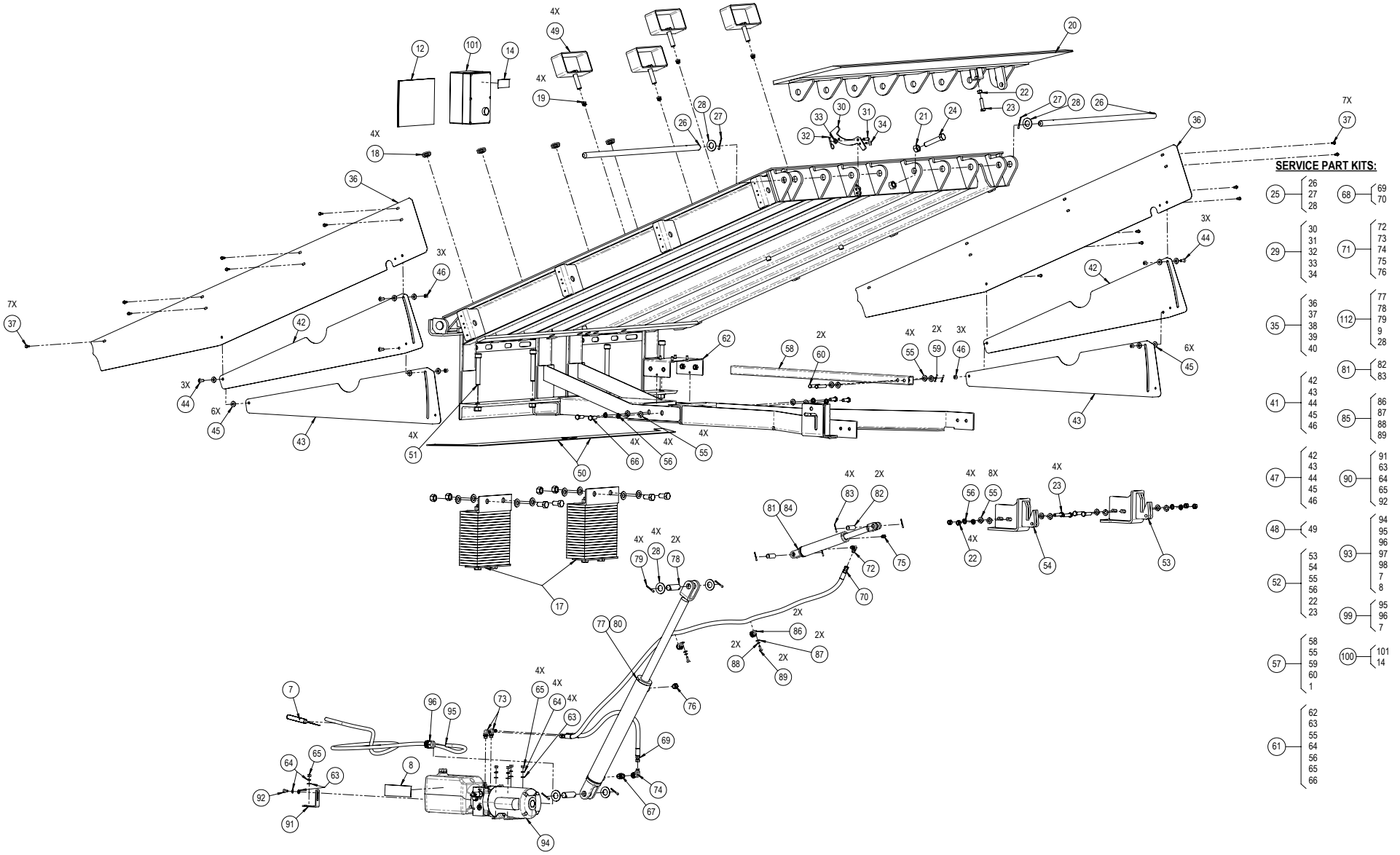


Figure 32

REPLACEMENT PARTS CONTINUED...

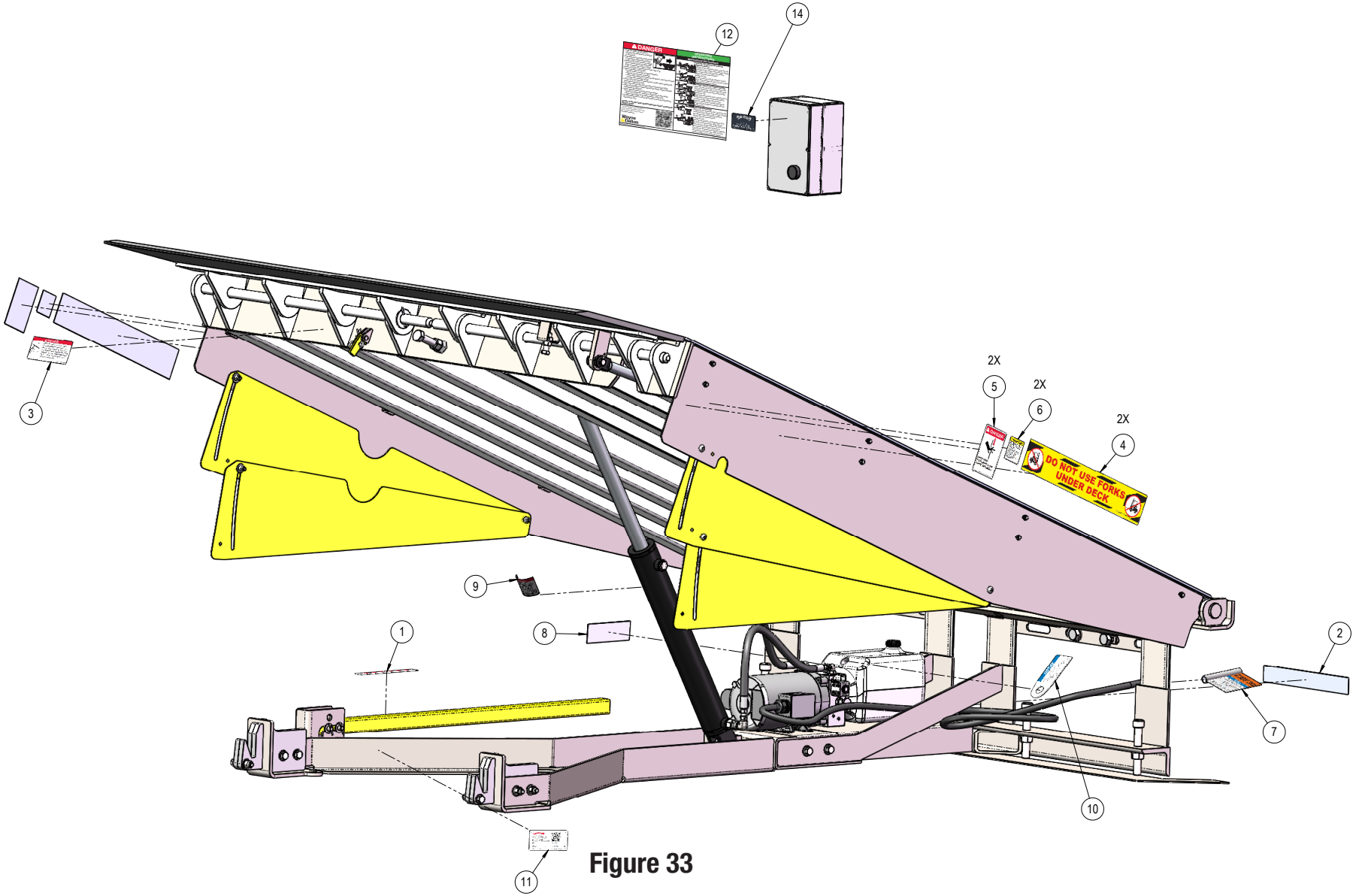


Figure 33

NOTE: * When PART # is ordered, quantity of 1 is shipped (not the QTY PER LEVELER).

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
1	ALL	ALL	ALL	ALL	852402-XXXX	LABEL,CRUSH HAZARD,STRUT,MPL	1
2					852404-XXXX	LABEL,CAUTION,FORKS,DO NOT USE,MPL	1
3					852405-XXXX	LABEL,CRUSH HAZARD,PIT,MPL	1
4					852420-XXXX*	LABEL,CAUTION,FORKS,DO NOT USE,LG,MPL	2
5					852421-XXXX*	LABEL,DANGER,PINCH POINT,MPL	2
6					361553*	LABEL, PROP65	2
7	ALL	120V - 1P	ALL	ALL	855404-XXXX	LABEL,VOLTAGE,HPL,115V - SINGLE PHASE	1
		230V - 1P			855405-XXXX	LABEL,VOLTAGE,HPL,230V - SINGLE PHASE	
		230V - 3P			855406-XXXX	LABEL,VOLTAGE,HPL,230V - THREE PHASE	
		460V - 3P			855407-XXXX	LABEL,VOLTAGE,HPL,460V - THREE PHASE	
8	ALL	ALL	ALL	ALL	855408-XXXX	LABEL,OIL TYPE,HPL	1
9					855413-XXXX	LABEL,DANGER,HYD CYLINDER	1
10					855414-XXXX	TAG,PAPER,VENT CAP,HPL	1
11	H68WD H78WD	ALL	ALL	ALL	CALL SERVICE	SERIAL# & MODEL TAG	1
12	H68WD H78WD	ALL	ALL	ALL	855403-XXXX	PLACARD,OPERATION INSTRUCTIONS,HPL,WD	1
13	H68WD H78WD	ALL	ALL	ALL	855410-XXXX	MANUAL,OPERATION AND INSTALLATION,WD	1
14	H68WD H78WD	ALL	ALL	ALL	855412-XXXX	LABEL,CONTROLLER,HPL,WD	1
15	ALL	ALL	ALL	ALL	606699-0400	PAINT,SPRAY,12OZ,DOCK GRAY	N/A
16	ALL	ALL	ALL	ALL	606699-0401	PAINT,BOTTLE,.5OZ w/BR,DOCK GRAY	N/A
117	ALL	ALL	ALL	ALL	855209-0002	OIL,HYDRAULIC,MIL-5606,GALLON	N/A

REPLACEMENT PARTS CONTINUED...

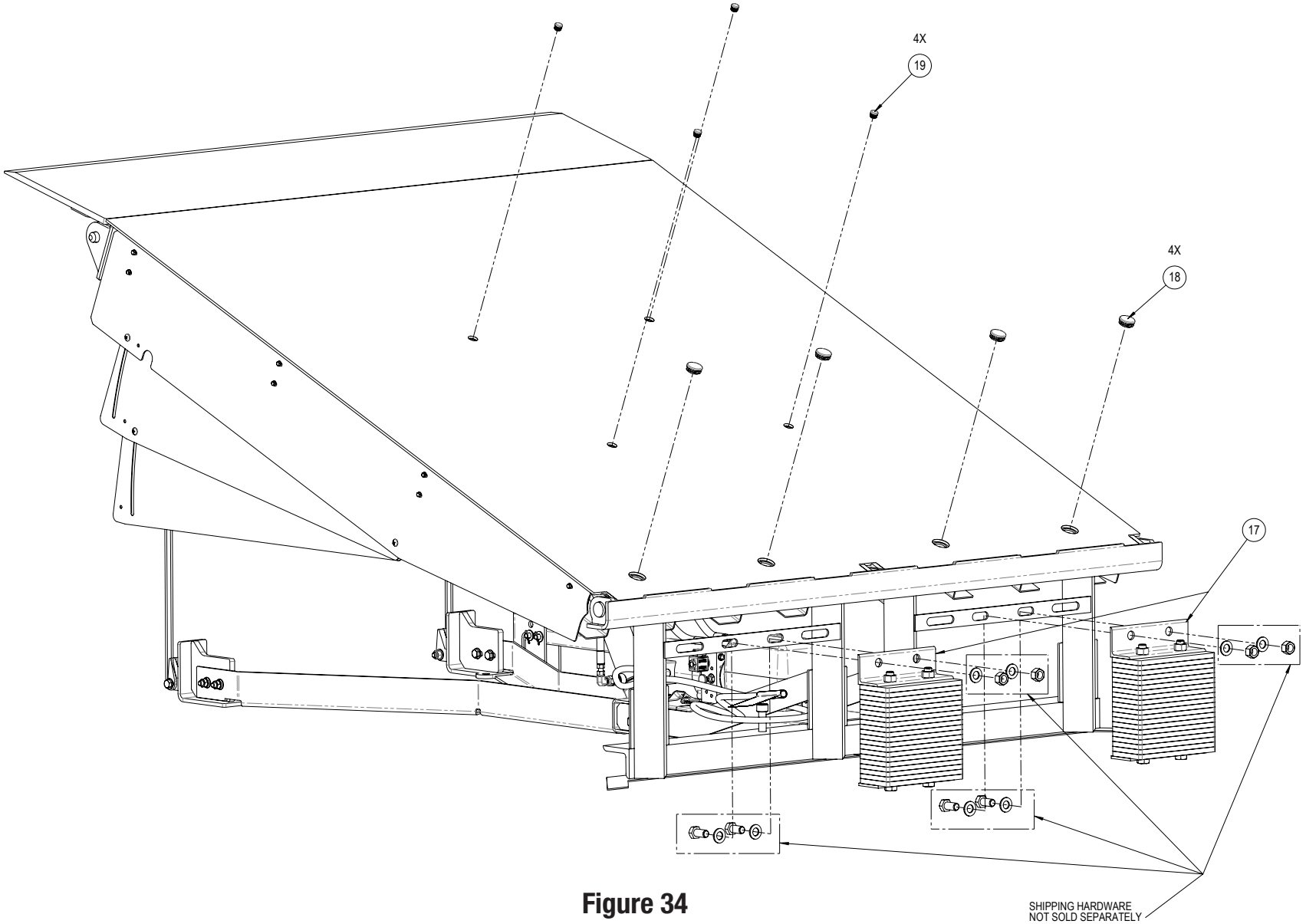


Figure 34

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
17	ALL	ALL	ALL	ALL	850302-0002*	BUMPER,LAMINATED,4X10HX14W,W1	2
					850302-0001*	BUMPER,LAMINATED,4X10HX14W,W2	2
					850302-0003*	BUMPER,LAMINATED,4X12HX14W,W2	2
					850302-0004*	BUMPER,LAMINATED,4X12HX14W,W1	2
	ALL	ALL	ALL	18 OR 20	850302-0005*	BUMPER,LAMINATED,6X10HX14W,W2	2
					850302-0006*	BUMPER,LAMINATED,6X10HX14W,W1	2
				ALL	850302-0007*	BUMPER,LAMINATED,VERTICAL,4X20HX11W,W2	2
					850302-0008*	BUMPER,LAMINATED,VERTICAL,4X20HX11W,W1	2
	ALL	ALL	ALL	18 OR 20	850302-0009*	BUMPER,LAMINATED,VERTICAL,6X20HX11W,W2	2
					850302-0010*	BUMPER,LAMINATED,VERTICAL,6X20HX11W,W1	2
					850302-0011*	BUMPER,LAMINATED,VERTICAL,6X24HX11W,W2	2
					850302-0012*	BUMPER,LAMINATED,VERTICAL,6X24HX11W,W1	2
	ALL	ALL	ALL	ALL	850303-0001*	BUMPER,STEELFACE,4X10HX14W,W2	2
					850303-0002*	BUMPER,STEELFACE,4X10HX14W,W1	2
					850303-0003*	BUMPER,STEELFACE,VERTICAL,4X20HX11W,W2	2
					850303-0004*	BUMPER,STEELFACE,VERTICAL,4X20HX11W,W1	2
18	ALL	ALL	ALL	ALL	852334-0001*	PLUGS,DECK LARGE	4
19	ALL	ALL	ALL	ALL	852334-0002*	PLUGS,DECK SMALL	4

REPLACEMENT PARTS CONTINUED...

SERVICE PART KITS:

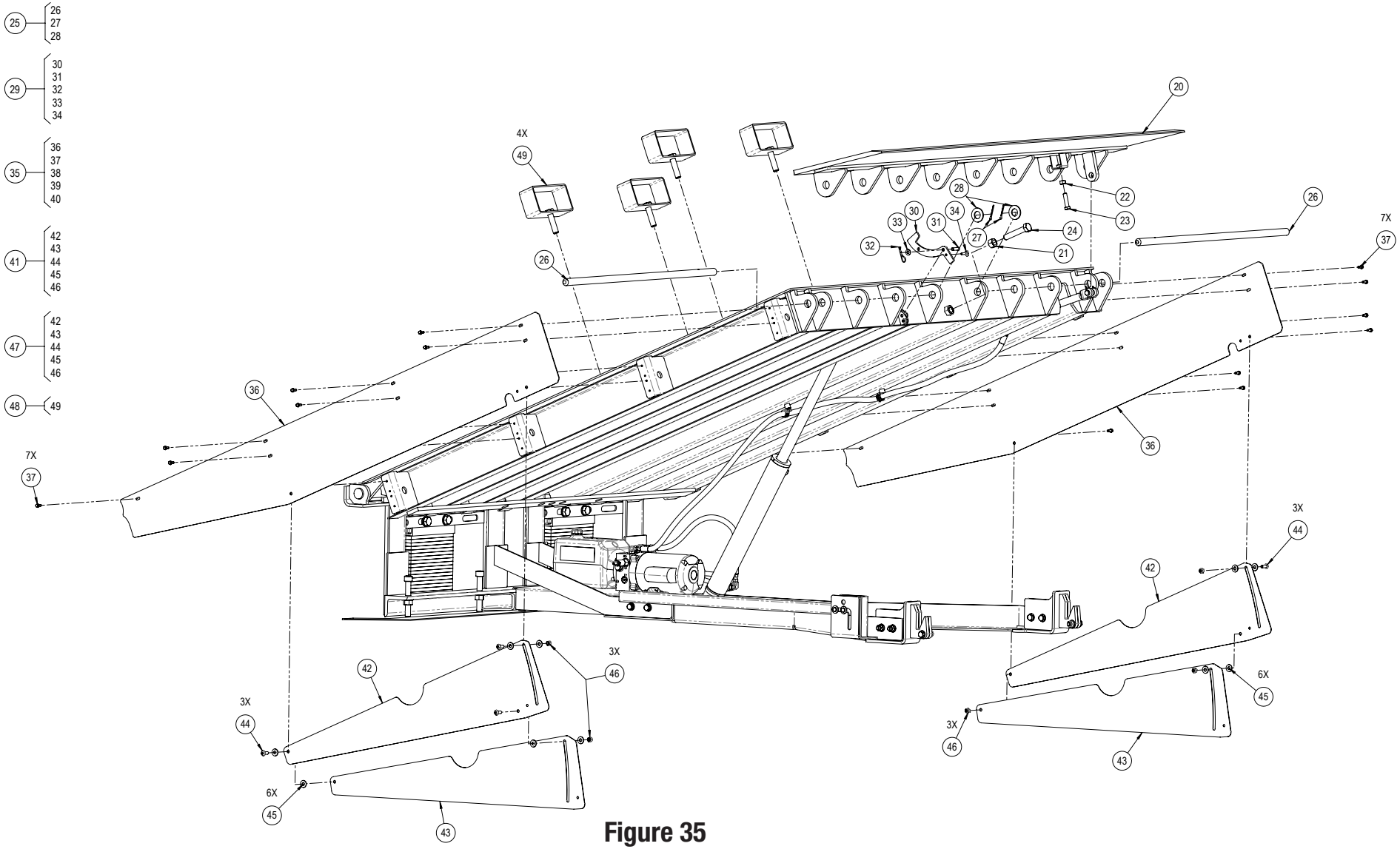


Figure 35

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
20	H68WD	ALL	30K	16	855050-10721601	LIP,16"L,72"W,30K,NO TAPER	1
				18	855050-10721801	LIP,18"L,72"W,30K,NO TAPER	
				20	855050-10722001	LIP,20"L,72"W,30K,NO TAPER	
		ALL	35K	16	855050-1072160	LIP,16"L,72"W,35K,NO TAPER	
				18	855050-1072180	LIP,18"L,72"W,35K,NO TAPER	
				20	855050-1072200	LIP,20"L,72"W,35K,NO TAPER	
		ALL	40K 45K	16	855050-1272160	LIP,16"L,72"W,45K,NO TAPER	
				18	855050-1272180	LIP,18"L,72"W,45K,NO TAPER	
				20	855050-1272200	LIP,20"L,72"W,45K,NO TAPER	
	H78WD	ALL	30K	16	855050-10831601	LIP,16"L,83"W,30K,NO TAPER	1
					855050-10831611	LIP,16"L,83"W,30K,TAPER 1	
				18	855050-10831801	LIP,18"L,83"W,30K,NO TAPER	
					855050-10831811	LIP,18"L,83"W,30K,TAPER 1	
				20	855050-10832001	LIP,20"L,83"W,30K,NO TAPER	
					855050-10832011	LIP,20"L,83"W,30K,TAPER 1	
		ALL	35K	16	855050-1083160	LIP,16"L,83"W,35K,NO TAPER	
					855050-1083161	LIP,16"L,83"W,35K,TAPER 1	
				18	855050-1083180	LIP,18"L,83"W,35K,NO TAPER	
					855050-1083181	LIP,18"L,83"W,35K,TAPER 1	
				20	855050-1083200	LIP,20"L,83"W,35K,NO TAPER	
					855050-1083201	LIP,20"L,83"W,35K,TAPER 1	
		ALL	40K 45K	16	855050-1283160	LIP,16"L,83"W,45K,NO TAPER	
					855050-1283161	LIP,16"L,83"W,45K,TAPER 1	
				18	855050-1283180	LIP,18"L,83"W,45K,NO TAPER	
					855050-1283181	LIP,18"L,83"W,45K,TAPER 1	
				20	855050-1283200	LIP,20"L,83"W,45K,NO TAPER	
					855050-1283201	LIP,20"L,83"W,45K,TAPER 1	

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
21	ALL	ALL	ALL	ALL	080356-1210	NUT, HEX, PLATED	1
22	ALL	ALL	ALL	ALL	080356-0813	NUT, HEX, PLATED	1
23	ALL	ALL	ALL	ALL	604701-0816	BOLT, HEX, PLATED	1
24	ALL	ALL	ALL	ALL	604701-1232	BOLT, HEX, PLATED	1
25	H68WD	ALL	ALL	ALL	**852500-0001**	**REPLACEMENT LIP HINGE SHAFTS W/ HARDWARE KIT**	
26						SHAFT, LIP HINGE,35.75IN	2
27						PIN, COTTER, PLATED	2
28						FLAT WASHER, PLATED	2
25	H78WD	ALL	ALL	ALL	**852500-0023**	**REPLACEMENT LIP HINGE SHAFTS W/ HARDWARE KIT,41.25IN**	
26						SHAFT, LIP HINGE,41.25IN	2
27						PIN, COTTER, PLATED	2
28						FLAT WASHER, PLATED	2
29	ALL	ALL	ALL	ALL	**852500-0003**	**REPLACEMENT LIP MAINTENANCE BRACE W/HARDWARE KIT**	
30						LIP MAINTENANCE BRACE	1
31						PIN, CLEVIS, PLATED	1
32						PIN, COTTER, PLATED	1
33						FLAT WASHER, PLATED	1
34						SCREW, THUMB	1

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
35	ALL	ALL	ALL	ALL	**852500-0006**	**REPLACEMENT MAIN TOE GUARD W/ HARDWARE KIT**	
36						TOE GUARD, MAIN PLATE	2
37						SCREW, HEX, THREAD CUTTING	14
38						LABEL, CAUTION, FORKS, DO NOT USE, LG, MPL	2
39						LABEL, DANGER, PINCH POINT, MPL	2
40						LABEL, PROP65	2
41	ALL	ALL	ALL	ALL	**852310-0001**	**FULL RANGE TOE GUARD, LH, W/ HARDWARE KIT**	1
42						TOE GUARD, MID PLATE	1
43						TOE GUARD, LOWER PLATE	1
44						SCREW, MACHINE, PLATED	3
45						FLAT WASHER, PLATED	6
46						NUT, NYLON, PLATED	3
47	ALL	ALL	ALL	ALL	**852310-0002**	**FULL RANGE TOE GUARD, RH, W/ HARDWARE KIT**	1
42						TOE GUARD, MID PLATE	1
43						TOE GUARD, LOWER PLATE	1
44						SCREW, MACHINE, PLATED	3
45						FLAT WASHER, PLATED	6
46						NUT, NYLON, PLATED	3
48	ALL	ALL	ALL	ALL	**852500-0021**	**DECK TRANSPORTATION LOOP KIT**	
49						DECK TRANSPORTATION LOOP	4

REPLACEMENT PARTS CONTINUED...

SERVICE PART KITS:

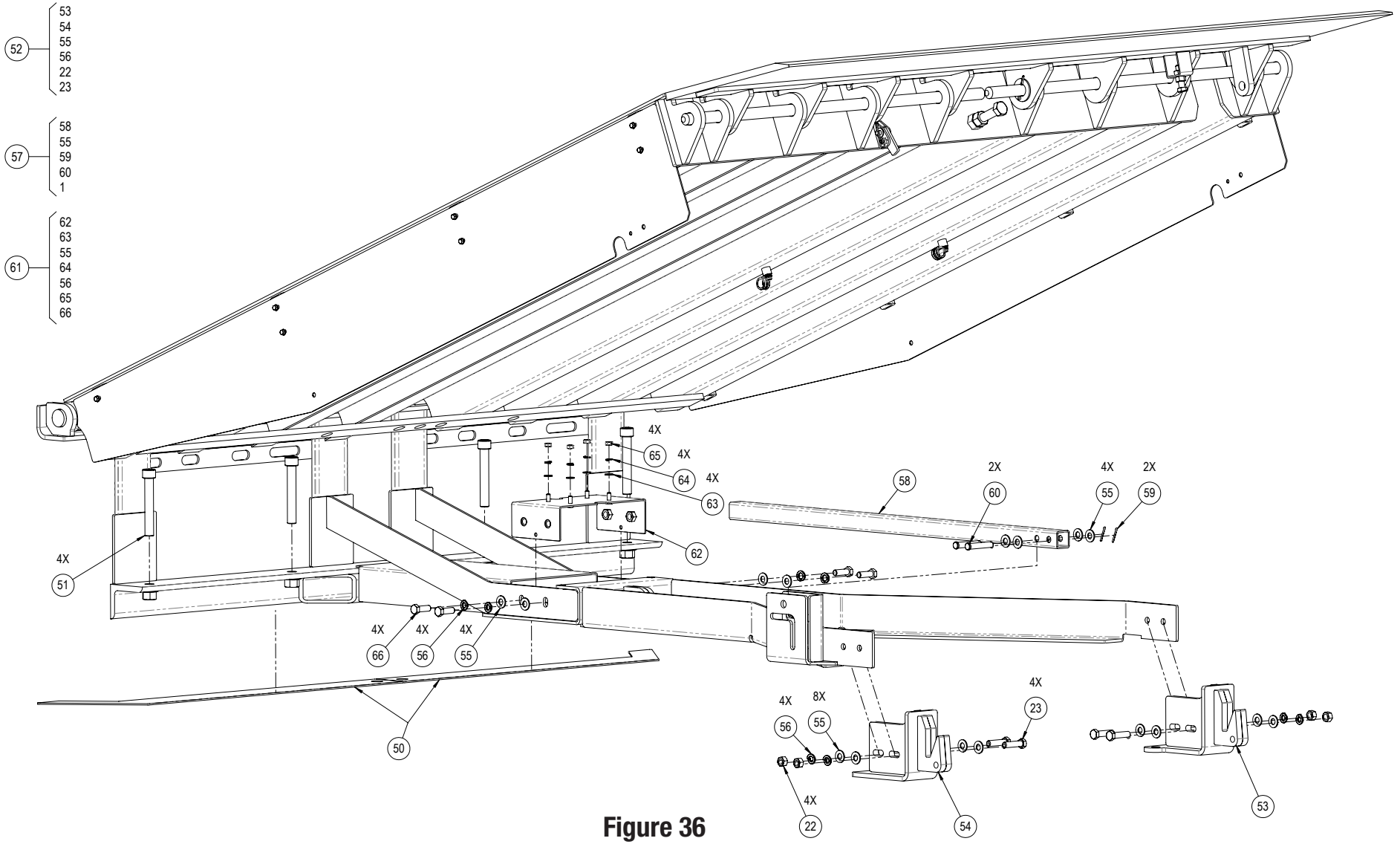


Figure 36

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
50	H68WD	ALL	ALL	ALL	852282-0001*	PLATE,LEVELING,6FT	2
	H78WD				852282-0003*	PLATE,LEVELING,7FT	2
51	ALL	ALL	ALL	ALL	609431-12401*	SCREW, SOCKET HEAD CAP	4
52	ALL	ALL	ALL	16	**855500-0001**	**REPLACEMENT LIP KEEPERS, 16IN LIP W/ HARDWARE KIT**	
53						LIP KEEPER, 16IN LIP, RH	1
54						LIP KEEPER, 16IN LIP, LH	1
55						FLAT WASHER, PLATED	8
56						SPLIT WASHER, PLATED	4
22						NUT, HEX, PLATED	4
23						BOLT, HEX, PLATED	4
52	ALL	ALL	ALL	18	**855500-0002**	**REPLACEMENT LIP KEEPERS, 18IN LIP W/ HARDWARE KIT**	
53						LIP KEEPER, 18IN LIP, RH	1
54						LIP KEEPER, 18IN LIP, LH	1
55						FLAT WASHER, PLATED	8
56						SPLIT WASHER, PLATED	4
22						NUT, HEX, PLATED	4
23						BOLT, HEX, PLATED	4
52	ALL	ALL	ALL	20	**855500-0003**	**REPLACEMENT LIP KEEPERS, 20IN LIP W/ HARDWARE KIT**	
53						LIP KEEPER, 20IN LIP, RH	1
54						LIP KEEPER, 20IN LIP, LH	1
55						FLAT WASHER, PLATED	8
56						SPLIT WASHER, PLATED	4
22						NUT, HEX, PLATED	4
23						BOLT, HEX, PLATED	4

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
57	ALL	ALL	ALL	ALL	**852500-0005**	**REPLACEMENT MAINTENANCE BRACE W/ HARDWARE KIT**	
58						MAINTENANCE BRACE	1
55						FLAT WASHER, PLATED	4
59						PIN, COTTER, PLATED	2
60						PIN, CLEVIS, PLATED	2
1						LABEL, CRUSH HAZARD, STRUT, MPL	1
61	ALL	ALL	ALL	ALL	**852500-0004**	**REPLACEMENT HPU MOUNT W/ HARDWARE KIT**	
62						HPU MOUNT BRACKET	1
63						FLAT WASHER, PLATED	4
55						FLAT WASHER, PLATED	4
64						SPLIT WASHER, PLATED	4
56						SPLIT WASHER, PLATED	4
65						NUT, HEX, PLATED	4
66						BOLT, HEX, PLATED	4

REPLACEMENT PARTS CONTINUED...

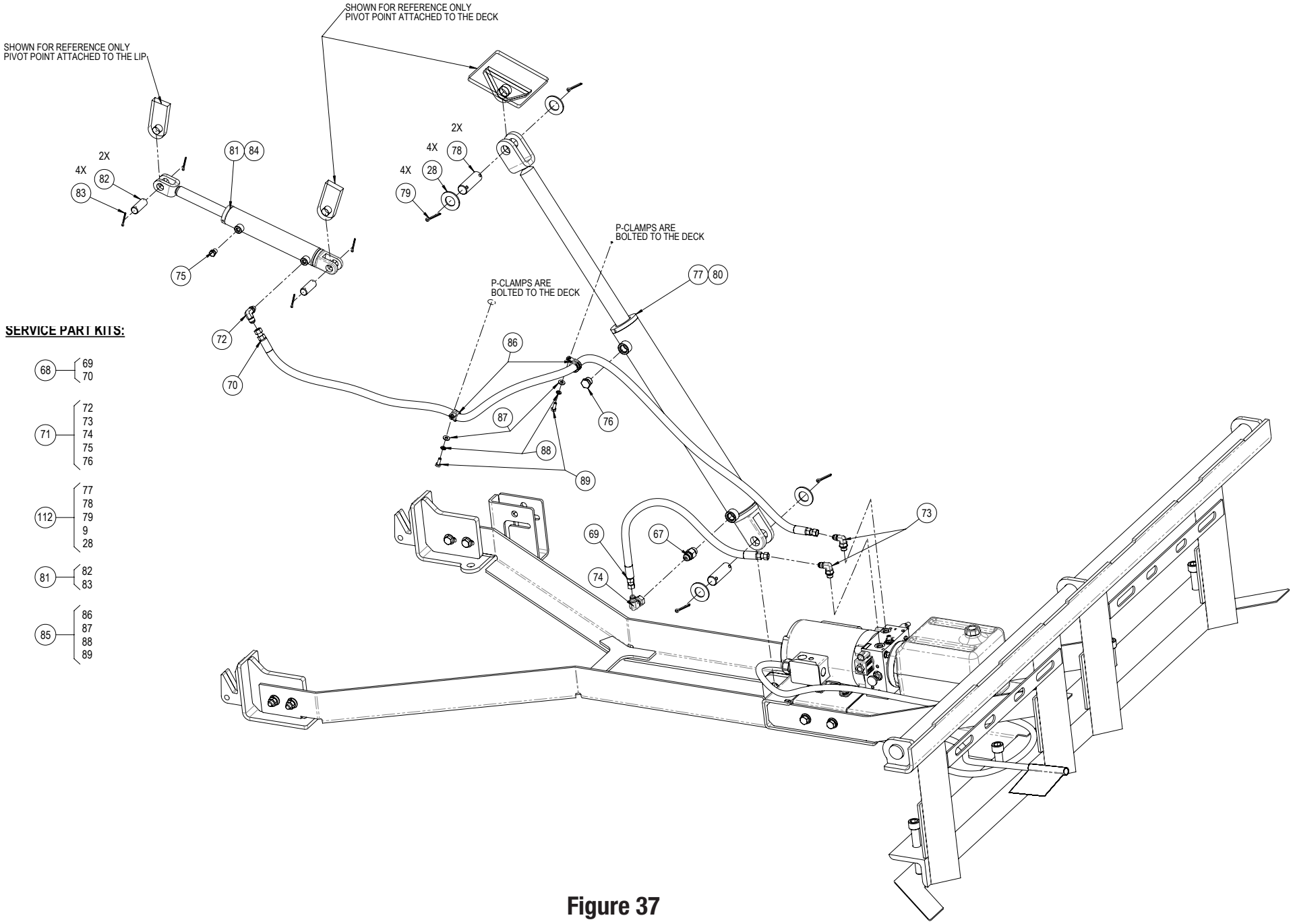


Figure 37

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
67	ALL	ALL	ALL	ALL	855208-08030	HYD,VELOCITY FUSE	1
68	ALL	ALL	ALL	ALL	**855400-0002**	**COMPLETE HOSE KIT, HYD PIT LEVELER, 8FT**	
69					855204-06024	HYD,HOSE,MAIN CYLINDER,8FT LEVELER	1
70					855204-06072	HYD,HOSE,LIP CYLINDER,8FT LEVELER	1
71	ALL	ALL	ALL	ALL	**855401-0002**	**COMPLETE FITTINGS KIT, HYD PIT LEVELER, 8FT**	
72					855205-0604	90DEG FITTING,JIC-M TO SAE-M	1
73					855205-0606*	90DEG FITTING,JIC-M TO SAE-M	2
74					855206-0608	90DEG FITTING,JIC-M TO JIC-F	1
75					855207-0004	BREATHER PLUG, LIP CYLINDER	1
76					855207-0008	BREATHER PLUG, MAIN CYLINDER	1
112	ALL	ALL	ALL	ALL	**855500-0029**	**COMPLETE HYDRAULIC CYLINDER, MAIN, KIT W/ PINS**	
77						HYDRAULIC CYLINDER, MAIN, 8FT LEVELER W/ PINS	1
78					855250-0001*	PIN,HEADLESS,PLATED	2
79					080401-0624*	PIN, COTTER, PLATED	2
9					855413-XXXX	LABEL,DANGER,HYD CYLINDER	1
28					080302-6864*	FLAT WASHER, PLATED	2
80	ALL	ALL	ALL	ALL	855201-0002	SEAL KIT, REPLACEMENT, MAIN CYLINDER	1
81	ALL	ALL	ALL	ALL	**855201-0001**	**HYDRAULIC CYLINDER, LIP, 8FT LEVELER W/ PINS**	
82					855251-0001*	PIN,HEADLESS,PLATED	2
83					080401-0424*	PIN, COTTER, PLATED	2
84	ALL	ALL	ALL	ALL	855203-0002	SEAL KIT, REPLACEMENT, LIP CYLINDER	1

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
85	ALL	ALL	ALL	ALL	**855500-0005**	**REPLACEMENT HOSE CLAMPS W/ HARDWARE KIT**	
86						P-CLAMP, RUBBER	2
87						FLAT WASHER, PLATED	2
88						SPLIT WASHER, PLATED	2
89						BOLT, HEX, PLATED	2

REPLACEMENT PARTS CONTINUED...

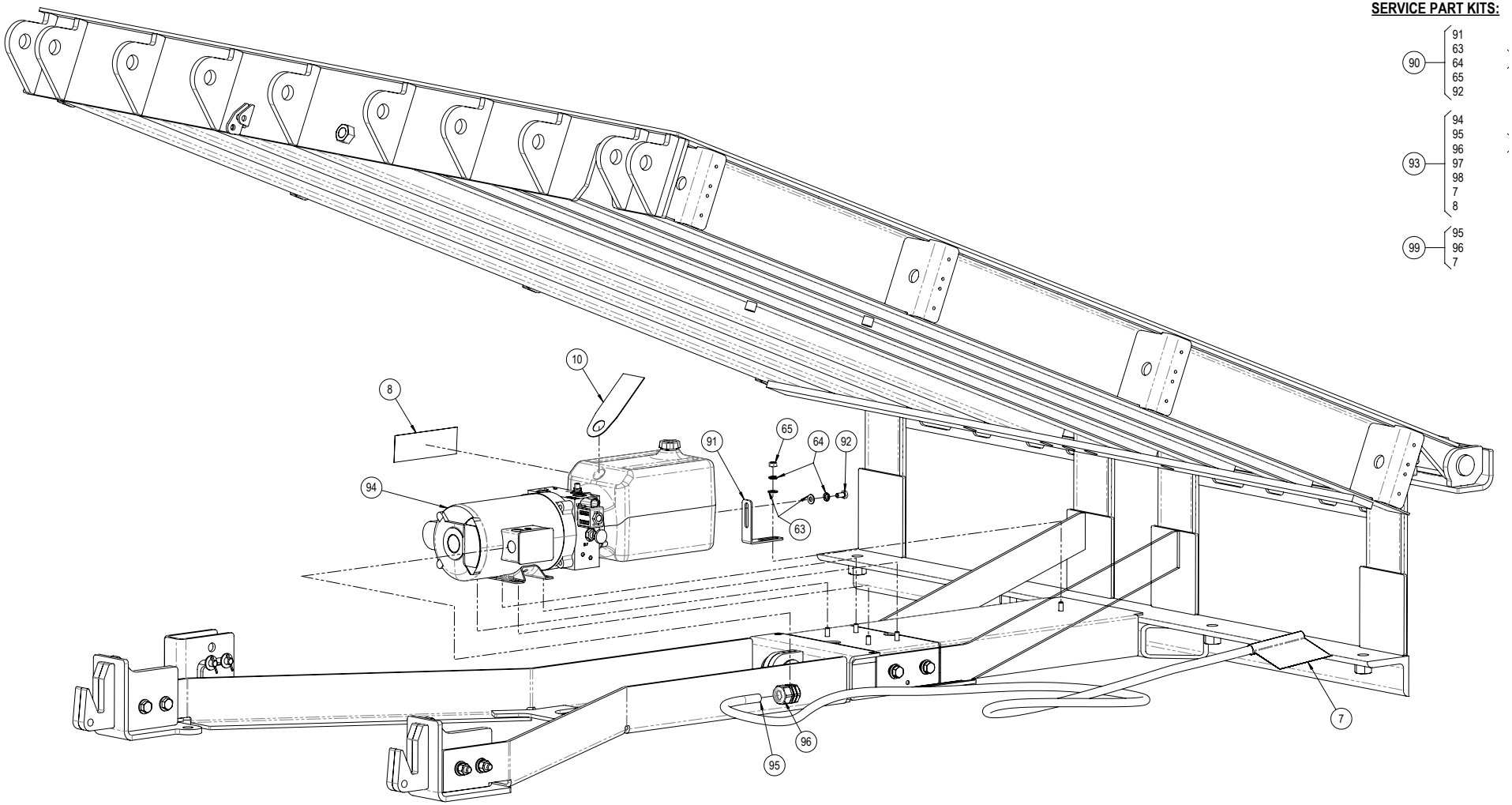


Figure 38

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
90	ALL	ALL	ALL	ALL	**855500-0006**	**HPU SUPPORT BRACKET W/ HARDWARE KIT**	
91						BRACKET,TANK SUPPORT,HPL	1
63						FLAT WASHER, PLATED	2
64						SPLIT WASHER, PLATED	2
65						NUT, HEX, PLATED	1
92						BOLT, HEX, PLATED	1
93	All	115V - 1P	All	All	**855230-0001**	**HPU AND HARNESS ASSEMBLY, 115V SINGLE PHASE**	
94						HYDRAULIC POWER UNIT, SINGLE PHASE	1
95						ELECTRICAL HARNESS	1
96						CABLE GLAND	1
97						WIRE NUT (NOT SHOWN)	2
98						SPADE TERMINAL (NOT SHOWN)	1
7						LABEL,VOLTAGE,HPL,115V-SINGLE PHASE	1
8						LABEL,OIL TYPE,HPL	1
93	ALL	230V - 1P	ALL	ALL	**855230-0002**	**HPU AND HARNESS ASSEMBLY, 230V SINGLE PHASE**	
94						HYDRAULIC POWER UNIT, SINGLE PHASE	1
95						ELECTRICAL HARNESS	1
96						CABLE GLAND	1
97						WIRE NUT (NOT SHOWN)	3
98						SPADE TERMINAL (NOT SHOWN)	1
7						LABEL,VOLTAGE,HPL,230V-SINGLE PHASE	1
8						LABEL,OIL TYPE,HPL	1

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
93	ALL	230V - 3P	ALL	ALL	**855230-0003**	**HPU AND HARNESS ASSEMBLY, 230V THREE PHASE**	
94						HYDRAULIC POWER UNIT, THREE PHASE	1
95						ELECTRICAL HARNESS	1
96						CABLE GLAND	1
97						WIRE NUT (NOT SHOWN)	4
98						SPADE TERMINAL (NOT SHOWN)	1
7						LABEL,VOLTAGE,HPL,230V-THREE PHASE	1
8						LABEL,OIL TYPE,HPL	1
93	ALL	460V - 3P	ALL	ALL	**855230-0004**	**HPU AND HARNESS ASSEMBLY, 460V THREE PHASE**	
94						HYDRAULIC POWER UNIT, SINGLE PHASE	1
95						ELECTRICAL HARNESS	1
96						CABLE GLAND	1
97						WIRE NUT (NOT SHOWN)	6
98						SPADE TERMINAL (NOT SHOWN)	1
7						LABEL,VOLTAGE,HPL,460V-THREE PHASE	1
8						LABEL,OIL TYPE,HPL	1
99	ALL	115V - 1P	ALL	ALL	**855500-0007**	**ELECTRICAL HARNESS W/ GLAND, 115V SINGLE PHASE**	
95						ELECTRICAL HARNESS	1
96						CABLE GLAND	1
7						LABEL,VOLTAGE,HPL,115V-SINGLE PHASE	1
99	ALL	230V - 1P	ALL	ALL	**855500-0008**	**ELECTRICAL HARNESS W/ GLAND, 230V SINGLE PHASE**	
95						ELECTRICAL HARNESS	1
96						CABLE GLAND	1
7						LABEL,VOLTAGE,HPL,230V-SINGLE PHASE	1

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
99	ALL	230V - 3P	ALL	ALL	**855500-0009**	**ELECTRICAL HARNESS W/ GLAND, 230V THREE PHASE**	
95						ELECTRICAL HARNESS	1
96						CABLE GLAND	1
7						LABEL,VOLTAGE,HPL,230V-THREE PHASE	1
99	ALL	460V - 3P	ALL	ALL	**855500-0010**	**ELECTRICAL HARNESS W/ GLAND, 460V THREE PHASE**	
95						ELECTRICAL HARNESS	1
96						CABLE GLAND	1
7						LABEL,VOLTAGE,HPL,460V-THREE PHASE	1
100	ALL	115V - 1P	ALL	ALL	**855500-0015**	**WD,CONTROLLER,SINGLE BUTTON,115V SINGLE PHASE**	
101						CONTROLLER,SINGLE BUTTON,HPL,115V-1P	1
14						LABEL,CONTROLLER,HPL,WD	1
100	ALL	230V - 1P	ALL	ALL	**855500-0016**	**WD,CONTROLLER,SINGLE BUTTON,230V SINGLE PHASE**	
101						CONTROLLER,SINGLE BUTTON,HPL,230V-1P	1
14						LABEL,CONTROLLER,HPL,WD	1
100	ALL	230V - 3P	ALL	ALL	**855500-0017**	**WD,CONTROLLER,SINGLE BUTTON,230V THREE PHASE**	
101						CONTROLLER,SINGLE BUTTON,HPL,230V-3P	1
14						LABEL,CONTROLLER,HPL,WD	1
100	ALL	460V - 3P	ALL	ALL	**855500-0018**	**WD,CONTROLLER,SINGLE BUTTON,460V THREE PHASE**	
101						CONTROLLER,SINGLE BUTTON,HPL,460V-3P	1
14						LABEL,CONTROLLER,HPL,WD	1

REPLACEMENT PARTS CONTINUED...

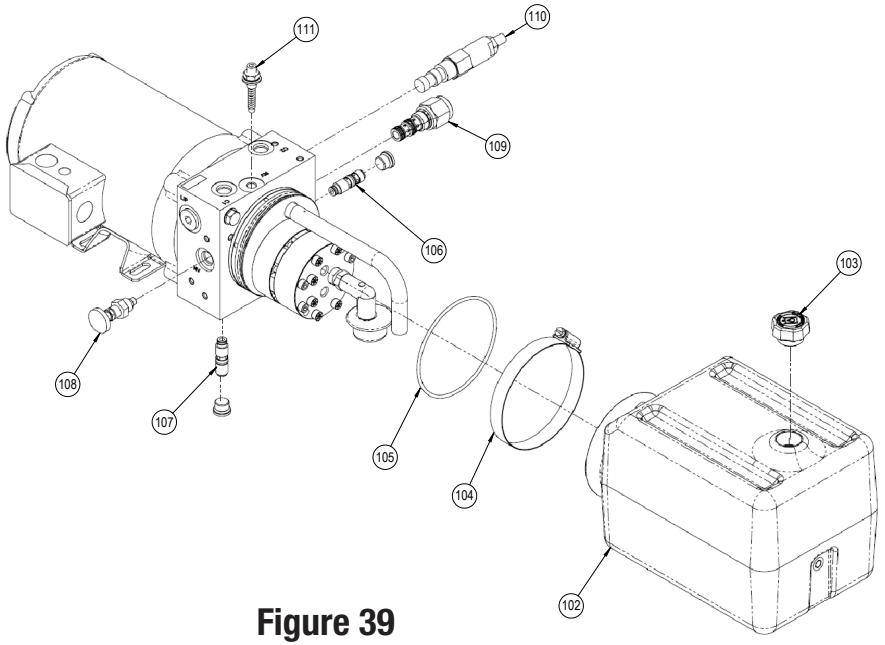


Figure 39

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
102	ALL	ALL	ALL	ALL	855202-2001	RESERVOIR,PLASTIC	1
103	ALL	ALL	ALL	ALL	855202-2002	CAP, RESERVOIR, VENTED	1
104	ALL	ALL	ALL	ALL	855202-2003	CLAMP, HOSE, RESERVOIR	1
105	ALL	ALL	ALL	ALL	855202-2004	O-RING, RESERVOIR	1
106	ALL	ALL	ALL	ALL	855202-2005	VALVE, CHECK	1
107	ALL	ALL	ALL	ALL	855202-2006	VALVE, CHECK	1
108	ALL	ALL	ALL	ALL	855202-2007	VALVE, NEEDLE	1
109	ALL	ALL	ALL	ALL	855202-2008	VALVE, 2-WAY, 2-POSITION	1
110	ALL	ALL	ALL	ALL	855202-2009	VALVE, SEQUENCE	1
111	ALL	ALL	ALL	ALL	855202-2010	VALVE, RELIEF	1

REPLACEMENT PARTS CONTINUED...

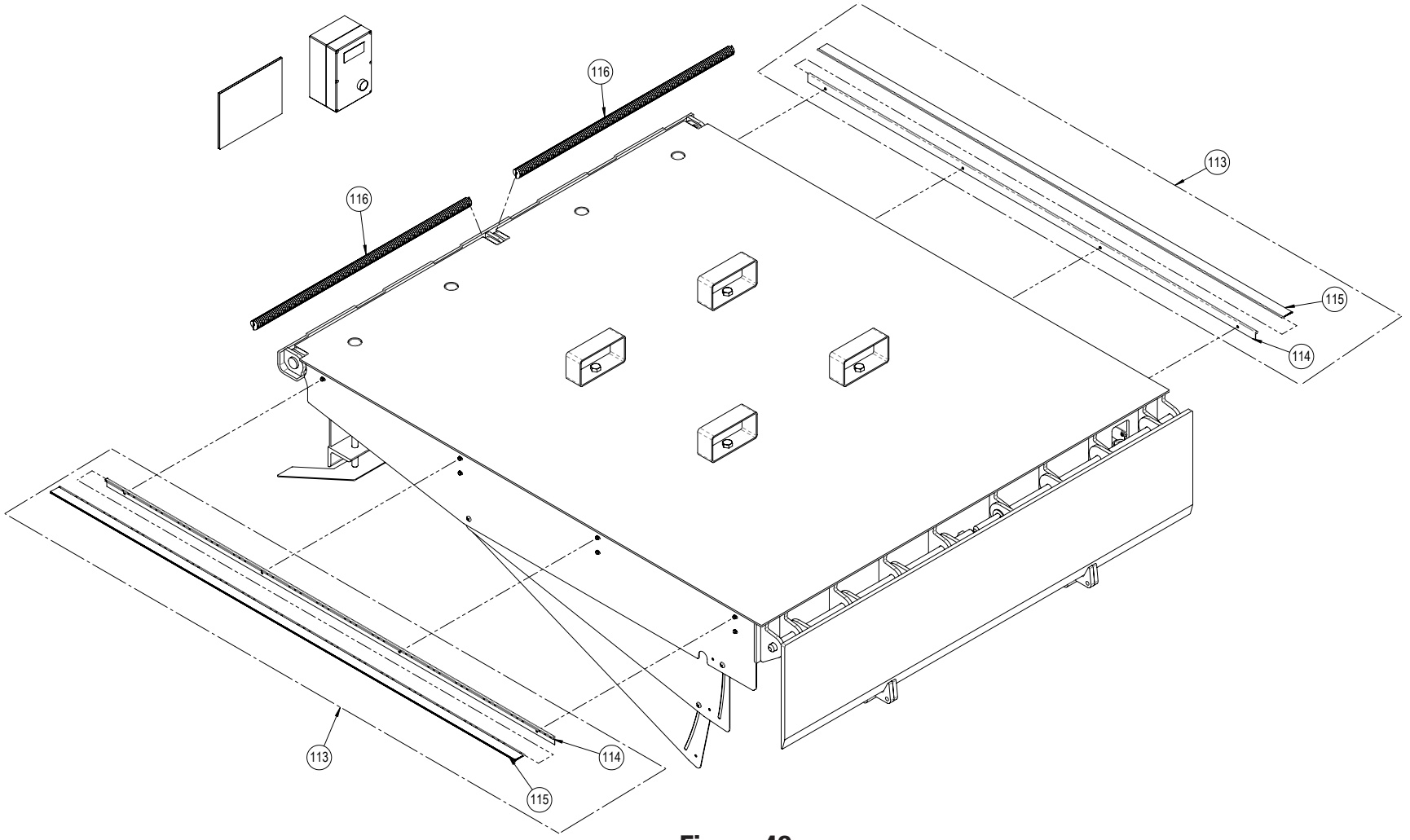


Figure 40

REPLACEMENT PARTS CONTINUED...

SERVICE PARTS LISTS							
ITEM #	**MODEL #**	**INCOMING SERVICE POWER**	**CAPACITY (CIR) (POUNDS)**	**LIP SIZE (INCHES)**	**PART #**	**PART DESCRIPTION**	**QTY PER LEVELER**
113	ALL	ALL	ALL	ALL	**852319-0001**	**SIDE SEAL ASSEMBLY (BRUSH)**	OPTION 2 PER LEVELER
114						RETAINER,BRUSH SEAL,EXTRUSION,PIT LEVELER	2
115						BRUSH SEAL	2
113	ALL	ALL	ALL	ALL	**852319-0002**	**SIDE SEAL ASSEMBLY (RUBBER)**	OPTION 2 PER LEVELER
114						RETAINER,BRUSH SEAL,EXTRUSION,PIT LEVELER	2
115						RUBBER SEAL	2
116	H68WD	ALL	ALL	ALL	852332-0001	SEAL,BRUSH,REAR,6X8,PIT LEVELER	OPTION 2 PER LEVELER
	H78WD				852332-0003	SEAL,BRUSH,REAR,7X8,PIT LEVELER	

Limited Warranty

Wayne Dalton

Hydraulic Pit Leveler Limited Warranty

Models H68WD, H78WD

Wayne Dalton®, Overhead Door Corporation ("Seller") warrants to the original purchaser of Hydraulic Pit Leveler ("Product"), subject to all of the terms and conditions hereof, that the Product and all components thereof will be free from defects in materials and workmanship under normal use for the following period, measured from the earlier of the date of installation by original purchaser or 60 days after shipping by Seller, provided that the owner maintains and operates the Product in accordance with the Owner's Manual.

- For the Product, Seller's warranty covers the repair or replacement of the Product or its components for a period of 12 months.
- Hydraulic Warranty for the following parts: hydraulic power unit, cylinders, pressure lines and fittings for this leveler have a warranty for an additional 4 years following the 12-month warranty, for a total of 60 months.
- Structural Warranty for the following parts: deck, lip, rear hinge, and front hinge for this leveler have a warranty for an additional 4 years following the 12-month warranty, for a total of 60 months.

Seller's obligation under this warranty is specifically limited to repairing or replacing, at its option, any part which is determined by Seller to be defective during the applicable warranty period. Repair or replacement labor for any defective Product part or component is included for a period of one (1) year from the date of installation. After that, any labor charges are excluded and will be the responsibility of the purchaser.

This warranty is made to the original purchaser of the Product only, and it is not transferable or assignable. Product must be operated and maintained per the User/Maintenance Manual. This warranty does not apply to any unauthorized alteration or repair of the Product, or to any Product or component which has been damaged or deteriorated due to improper installation, improper operation, operation beyond capacity, misuse, neglect, accident, failure to provide necessary maintenance, normal wear and tear, or acts of God or any other cause beyond the reasonable control of Seller.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT SHALL SELLER BE RESPONSIBLE FOR, OR LIABLE TO ANYONE FOR, SPECIAL, INDIRECT, COLLATERAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES, even if Seller has been advised of the possibility of such damages.

Such excluded damages include, but are not limited to, loss of goodwill, loss of profits, loss of use, cost of any substitute product, interruption of business, other similar indirect financial loss or arising out of or related to the use, installation or maintenance of the Product (including premature product wear, product failure, property damage or bodily injury resulting from use of unauthorized replacement parts or modification of the Product). Seller's sole obligation with regard to a Product that is claimed to be deficient in material or workmanship shall be as set forth in this Limited Warranty.

Claims under this warranty must be made promptly after discovery, within the applicable warranty period, and in writing to the Seller or to the authorized distributor or installer whose name and address appear below. The purchaser must allow Seller a reasonable opportunity to inspect any Product claimed to be defective prior to removal or any alteration of its condition. Proof of the purchase and/or installation date, and identification as the original purchaser, may be required.

SELLER: _____

SELLER ADDRESS: _____