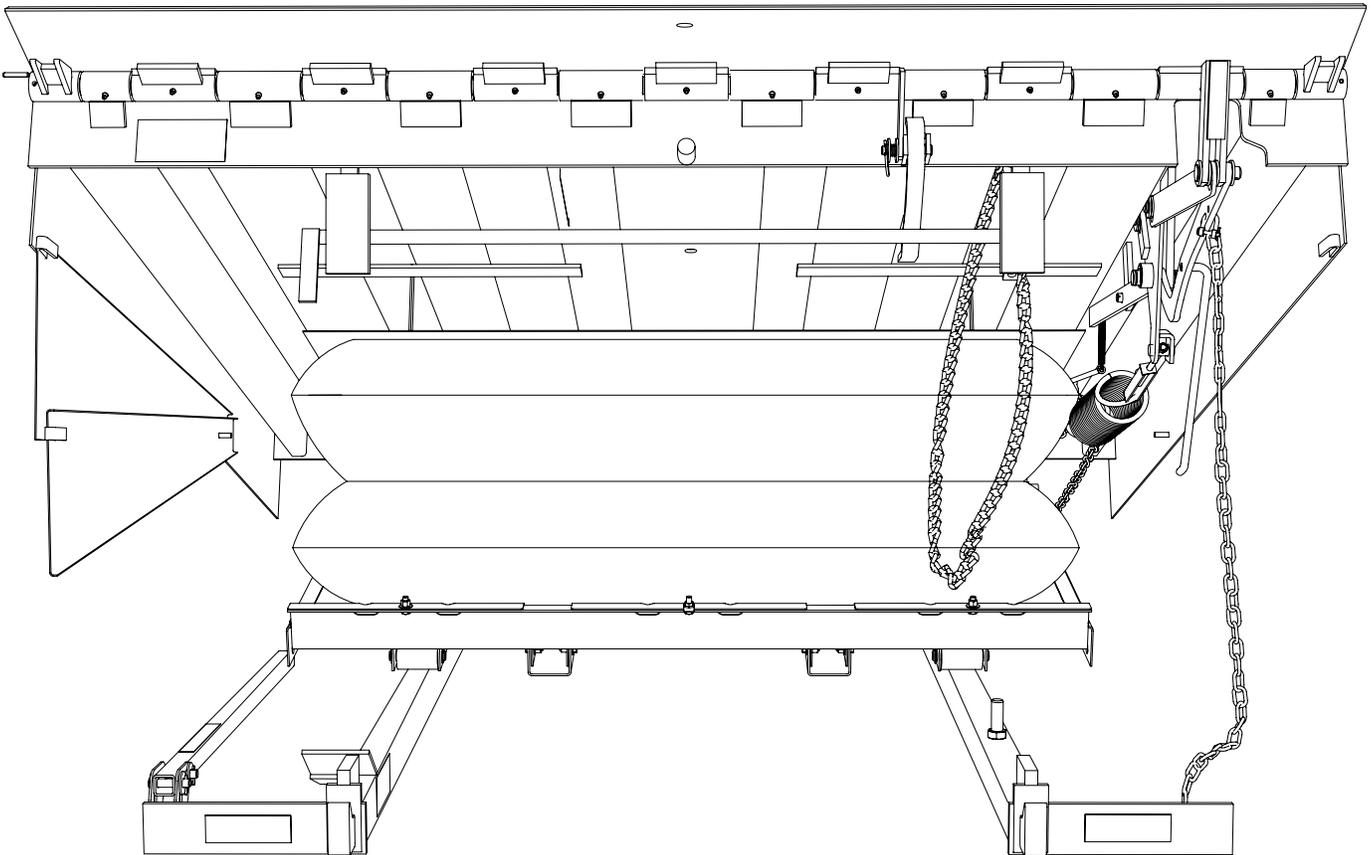




Air Powered Dock Levelers

AB Series



This User's Manual applies to dock levelers manufactured beginning March 2016 with the serial numbers 61194080 and higher.

▲ WARNING

Do not install, operate or service this product unless you have read and understand the Safety Practices, Warnings, Installation and Operating Instructions contained in this User's Manual. Failure to do so could result in death or serious injury.

User's Manual

Installation, Operations, Maintenance and Parts

Part No. 6004756G

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INTRODUCTION

Welcome and thank you for choosing this dock leveler from Serco®. This dock leveler may be equipped with the optional ENERGY GUARD® dock leveler sealing system.

This User's Manual contains information that you need to safely install, operate and maintain the dock leveler. It also contains a complete parts list and information about ordering replacement parts. Please keep and read this User's Manual before using your new dock leveler.

SAFETY SIGNAL WORDS

You may find safety signal words such as DANGER, WARNING, or CAUTION throughout this User's Manual. Their use is explained below:



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

▲ DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

▲ WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

▲ CAUTION

Indicates a potentially hazardous situation which, if not avoided may result in minor or moderate injury.

NOTICE

Notice is used to address practices not related to personal injury.

SAFETY PRACTICES

⚠ WARNING

Read these Safety Practices before installing, operating or servicing the dock leveler. Failure to follow the Safety Practices could result in death or serious injury.

If you do not understand the instructions, ask your supervisor to explain them to you or contact your local authorized distributor.

OPERATION

Use restricted to trained operators.

Follow procedures on placard posted near dock leveler.

Do not use this unit to service vehicles outside its intended working range which is 12" above (18" above for 10' long dock leveler only) and 12" below dock.

Do not operate the dock leveler with equipment, material or people on the ramp or lip.

Do not operate the dock leveler when anyone is in front of it unless they are securing the maintenance strut.

Stay clear of the dock leveler when it is moving.

KEEP HANDS CLEAR OF HINGES AT ALL TIMES. Do not use hands to position dock leveler ramp or lip in vehicle or to store dock leveler.

Stay clear of leveler unless lip supported by the vehicle floor or the ramp is supported by both lip keepers; unsupported leveler can lower unexpectedly.

Inspect leveler prior to use. Do not use if operating instructions placard or other parts are missing, leveler looks broken or damaged or does not seem to work right, and tell your supervisor leveler needs repair right away.

Do not stand in the driveway between the dock leveler and a backing vehicle.

Before chocking wheels or engaging vehicle restraint, dump air from air ride suspensions and set parking brakes.

Chock vehicle wheels or lock vehicle in place with a vehicle restraining device and set brakes before loading or unloading.

Ensure lip avoids contact with vehicle sides and cargo. If lip does not lower to vehicle floor, reposition vehicle.

OPERATION (continued)

Do not use a fork truck or other material handling equipment to lower the ramp.

Move all equipment, material or people off dock leveler and store dock leveler at dock level before allowing the vehicle to pull out.

Store dock leveler at dock level after below dock end loading.

INSTALLATION, MAINTENANCE AND SERVICE

If the dock leveler does not operate properly using the procedures in this manual, call your local distributor for service.

Prior to placing in pit, 8' and longer levelers require 6' long forks if handling with a fork lift. Place barricades on the dock floor around the dock leveler pit and in the driveway in front of the pit while installing, maintaining or repairing the dock leveler.

Do not operate the dock leveler when anyone is in front of it unless they are securing the maintenance strut.

Do not enter pit or do any maintenance or repair under dock leveler unless leveler is securely supported by maintenance strut.

Disconnect the power and properly tag or lock out before climbing into the dock leveler pit or doing any maintenance or repair under the dock leveler.

All electrical troubleshooting or repair must be done by a qualified technician and must meet applicable codes.

Disconnect the power and properly tag or lock out before doing any electrical work.

If it is necessary to make troubleshooting checks inside the control box with the power on, **USE EXTREME CAUTION!** Do not place fingers or un-insulated tools inside the control box. Touching wires or other parts inside the control box could result in electrical shock, death or serious injury.

OWNER'S RESPONSIBILITIES

The owner's responsibilities include the following:

The owner should recognize the inherent danger of the interface between dock and transport vehicle. The owner should, therefore, train and instruct operators in the safe use of dock leveling devices, and take appropriate steps to prevent their use by untrained individuals. Further information regarding selecting and training operators can be found in ANSI MH30.1 available at www.mhi.org/lodem. The owner shall verify the manual(s) containing the manufacturer's installation, operation, and maintenance, is made available for instruction and training personnel entrusted with such responsibilities.

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

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 kept. Only trained and authorized personnel shall be permitted to maintain, repair, inspect and adjust the dock leveler. Use only original equipment manufacturer parts, manuals, maintenance instructions and labels; or their equivalent.

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 needed or recommended by the manufacturer before being placed back into service.

The owner shall see that all nameplates, cautions, instructions, and posted warnings are in place and legible and shall not be obscured from the view of operating or maintenance personnel for whom such warnings are intended.

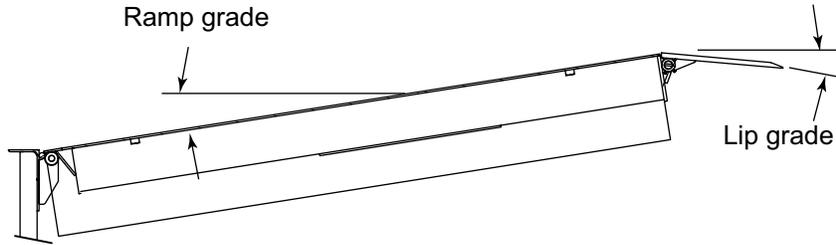
Modifications or alterations of dock leveling devices shall be made only with written permission of the original manufacturer.

When industrial vehicles are driven on and off transport vehicles during the loading and unloading operation, the brakes on the transport vehicle shall be applied, and whenever possible, air-ride suspension systems should have the air exhausted and wheel chocks or positive restraints that meet the requirements of ANSI MH30.3 shall be engaged. For more detailed information regarding vehicle restraints see "ANSI MH30.3 Vehicle restraining devices: Performance and Testing" available at www.mhi.org/lodem.

The dock leveler should never be used outside its vertical working range or vertical lifting range or outside the manufacturer's labelled rated capacity. It must also be compatible with the loading equipment and other conditions relating to the dock.

RAMP AND LIP GRADES

Fig. 1



Vehicle bed position from dock, (in.)		Ramp and lip grades, % for each dock leveler length					
		6' Leveler		8' Leveler		10' Leveler	
		Ramp	Lip	Ramp	Lip	Ramp	Lip
ABOVE DOCK	15.0	---	---	---	---	13.4	6.3
	12.0	18.1	11.0	13.6	6.5	10.9	3.8
	10.0	15.3	8.2	11.5	4.4	9.2	2.2
	8.0	12.5	5.4	9.4	2.4	7.5	0.5
	6.0	9.7	2.7	7.3	0.3	5.9	-1.1
	4.0	7.0	0.0	5.3	-1.7	4.2	-2.8
	2.0	4.2	-2.7	3.2	-3.8	2.6	-4.4
	0.0	1.5	-5.5	1.1	-5.8	0.9	-6.1
BELOW DOCK	-2.0	-1.2	-8.2	-0.9	-7.9	-0.7	-7.7
	-4.0	-3.9	-10.9	-3.0	-10.0	-2.4	-9.4
	-6.0	-6.7	-13.7	-5.0	-12.1	-4.0	-11.0
	-8.0	-9.4	-16.5	-7.1	-14.1	-5.7	-12.7
	-10.0	-12.2	-19.3	-9.2	-16.2	-7.3	-14.4
	-12.0	-15.0	-22.2	-11.2	-18.4	-9.0	-16.1

Ramp and lip grade, 4° lip bend, 16" lip.

Vehicle bed position from dock, (in.)		Ramp and lip grades, % for each dock leveler length					
		6' Leveler		8' Leveler		10' Leveler	
		Ramp	Lip	Ramp	Lip	Ramp	Lip
ABOVE DOCK	15.0	---	---	---	---	14.1	1.8
	12.0	19.3	6.9	14.4	2.1	11.6	-0.7
	10.0	16.5	4.1	12.3	0.1	9.9	-2.4
	8.0	13.6	1.3	10.3	-2.0	8.2	-4.0
	6.0	10.9	-1.4	8.2	-4.1	6.6	-5.7
	4.0	8.1	-4.1	6.1	-6.1	4.9	-7.3
	2.0	5.4	-6.9	4.1	-8.2	3.3	-9.0
	0.0	2.7	-9.6	2.0	-10.3	1.6	-10.7
BELOW DOCK	-2.0	-0.1	-12.3	-0.1	-12.3	0.0	-12.3
	-4.0	-2.8	-15.1	-2.1	-14.4	-1.7	-14.0
	-6.0	-5.5	-17.9	-4.2	-16.5	-3.3	-15.7
	-8.0	-8.3	-20.8	-6.2	-18.6	-5.0	-17.4
	-10.0	-11.0	-23.6	-8.3	-20.8	-6.6	-19.1
	-12.0	-13.8	-26.6	-10.4	-23.0	-8.3	-20.8

Ramp and lip grade, 7° lip bend, 16" lip.

INSTALLATION

PIT CHECK

1. Check entire dock leveler pit for proper construction according to certified pit drawings (publication 826-010). Check to be sure that the pit walls are square and plumb. Check electrical service running to the pit to assure it agrees with the correct location and voltage for the junction box. Verify the pit matches pit details for your leveler. See the installation troubleshooting on page 14 if the pit varies from the specification. Inspect the pit and remove all loose trash and construction debris. Prepare the rear of the pit for the leveler mounting feet. Using a chisel, remove any high spots visible within 6" of the rear wall below the rear curb angle.

LEVELER CHECK PRIOR TO INSTALLATION

1. Visually check that all rear hinge pins, cotter pins, and kliprings are in place.
2. Visually check that the lip pin retainers are in place on both ends of the lip rod.
3. Visually check that lip latch chain is in place and free to move. Check that the lip assist bell crank and spring are in place and undamaged.
4. Visually check that both the lip maintenance bar and maintenance strut are undamaged and pins securely attached.
5. Visually check that the foot assemblies at the rear of the leveler are in place and undamaged.

PREPARE SITE

▲ WARNING

Place barricades around pit on dock floor and drive while installing, maintaining or repairing dock leveler.

7. The control station and hardware are attached to the rear frame of the dock leveler. Remove these items before placing the leveler into the pit.
8. Mount and wire push-button control station. See Fig. 2. See wiring diagram on page 19 of this User's Manual for wiring information. Wires shown in dashed lines are field connections.
9. In accordance with local code, wire a grounded NEMA 5-15R receptacle on the pit wall as shown in Fig. 3. Wire receptacle per diagram on page 19.

10. If conduit must be installed (replacing an existing mechanical dock leveler) do so at this time. Refer to the conduit requirements on the pit detail publication 826-010 and powered dock leveler wiring diagrams and typical installation drawings, and powered dock leveler wiring diagram on page 19 for electrical requirements. Follow all applicable electrical codes and standards.

▲ WARNING

Before installing the dock leveler, read and follow the Safety Practices on page 3. Failure to follow the Safety Practices could result in death or serious injury.

Fig. 2

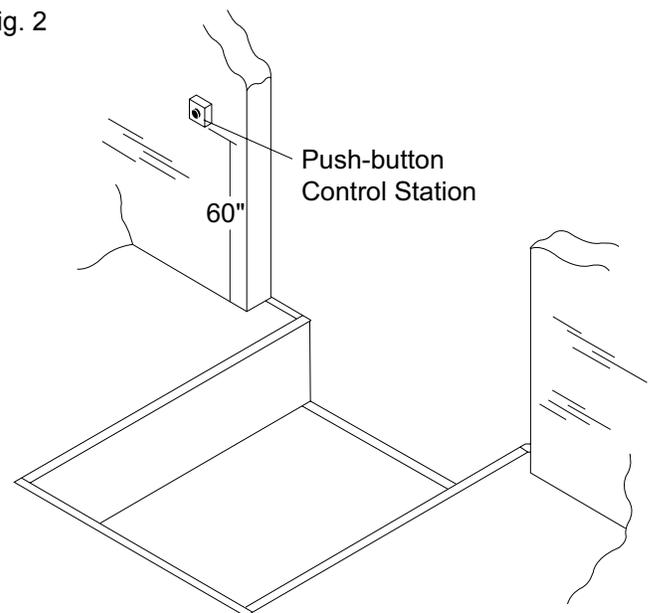
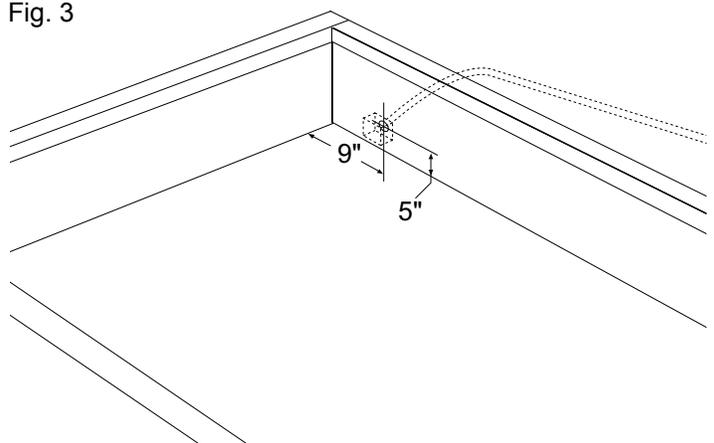


Fig. 3



INSTALLATION OF DOCK LEVELER

NOTE:

Shims must be placed under the maintenance strut bracket, and on 18" and 20" lips, shims must also be welded in between the lip keepers and the vertical face of the curb angle.

10. Hold the leveler closed with the bolt through the lip plate and/or shipping banding securing the lip plate to the frame. Install two load centering eye bolts into the front and rear of the top plate and hoist the leveler into the pit. The dock leveler should not be lifted in any other manner when placed into the pit. See Fig. 4.

⚠ WARNING

Inadequate lifting equipment or practices can cause a load to fall unexpectedly. Make sure the lifting chain or other lifting devices are in good condition and have a rated capacity of at least 3500 lbs for the lifting angle used. Never allow anyone to stand on or near the dock leveler when it is lifted or placed into the pit. Stand clear of the dock leveler when it is placed into the pit. Failure to follow this warning can allow the dock leveler to fall, tip, or swing into people, causing death or serious injury.

NOTICE

Route power cord clear of edges and resting surfaces so that it is not damaged during lifting and placement. Plug end may be routed up through the rear hinge until needed.

INSERTING THE LEVELER INTO THE PIT

11. Position dock leveler in pit about 2' away from the rear pit wall. Connect plug to receptacle on the rear pit wall. Cut tie wrap on cord to allow bag pan removal for service. Place the free length of cord inside of frame area, free of interference as the leveler is moved into the final position. See Fig. 5 and 6 and wiring diagram on page 19.

NOTE:

Do not drag leveler out of pit with legs extended. Do not weld out the rear angle until after setting the front lip keepers.

Fig. 4

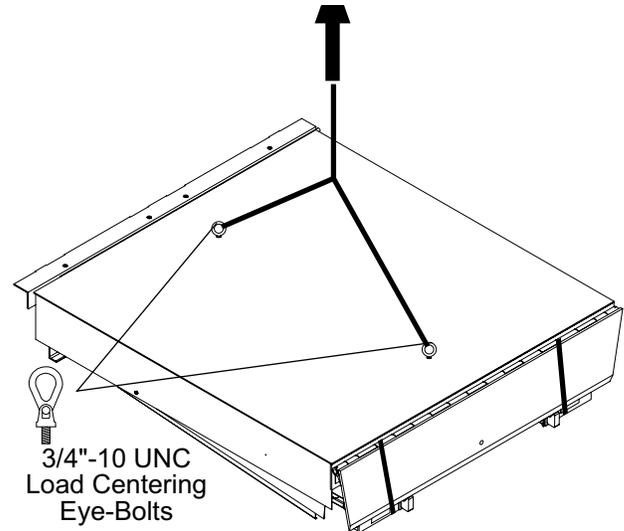
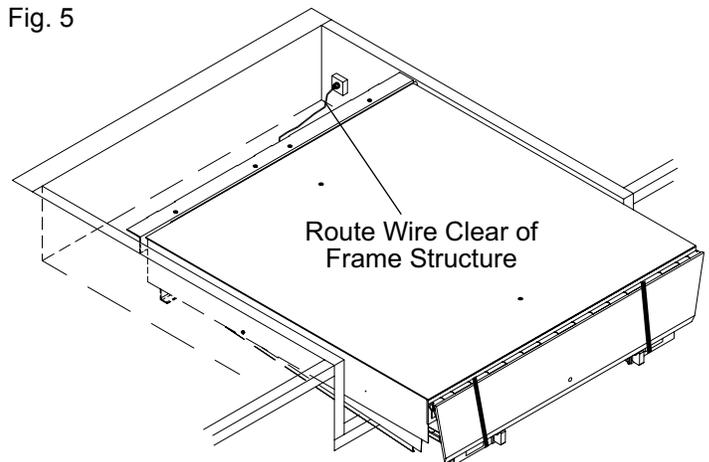


Fig. 5



INSTALLATION, continued

12. Move the dock leveler back to the rear pit curb angle. See Fig. 6. With the rear leveler angle touching the rear pit angle, square up the sides of the pit to the sides of the leveler. The gap should be even on both sides. The rear frame angle should be within $1/8$ " on either sides of the pit curb angle.

NOTE:

The rear frame angle should be about $3/4$ " lower than the pit curb angle before leveling. This is normal. See Fig. 7.

LEVELING THE REAR FRAME

13. Using a $1/2$ " square drive ratchet work from one side to the other, turn each of the leveling screws on the rear angle, counterclockwise until the top surface of the rear angle is level with the rear pit curb angle. Repeat on each leg until all feet are in contact with the pit floor and the top frame angle is flush with the rear curb angle. See Fig 8.

NOTICE

The rear edge of the dock leveler should be level or slightly ($1/16$ " maximum) below dock level.

The top surface of the dock leveler should be level and a smooth transition with the dock floor curb steel. The front end should be level and parallel with the rear frame angle for proper operation. Unequal shimming of the front supports may be required to obtain a level front edge. See Fig. 11.

NOTICE

Turn off all electrical power to the leveler if it has been previously connected. Welding with dock leveler's power connected can damage the electrical components. A ground must be attached to the leveler.

14. Check and adjust the leveler for square and ensure it is in firm contact with the rear angle. The sides of the leveler deck should be centered in the pit opening. Tack weld the rear angle to rear curb angle in 4 places min $3/8$ ", 1 at or near each leveling screw.

NOTE:

Do not weld out the rear angle until after setting the front supports.

Fig. 6

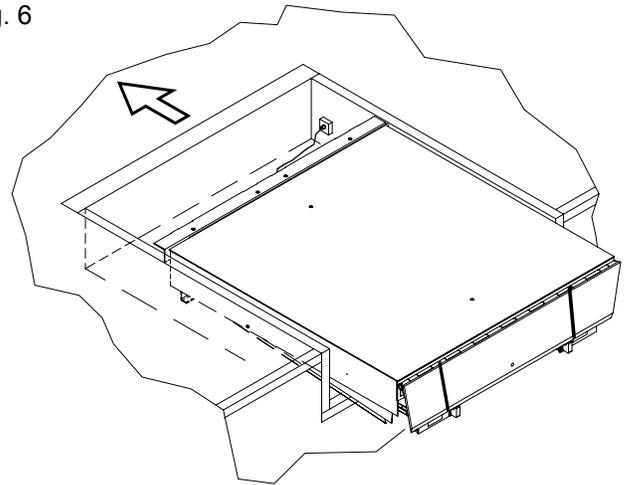
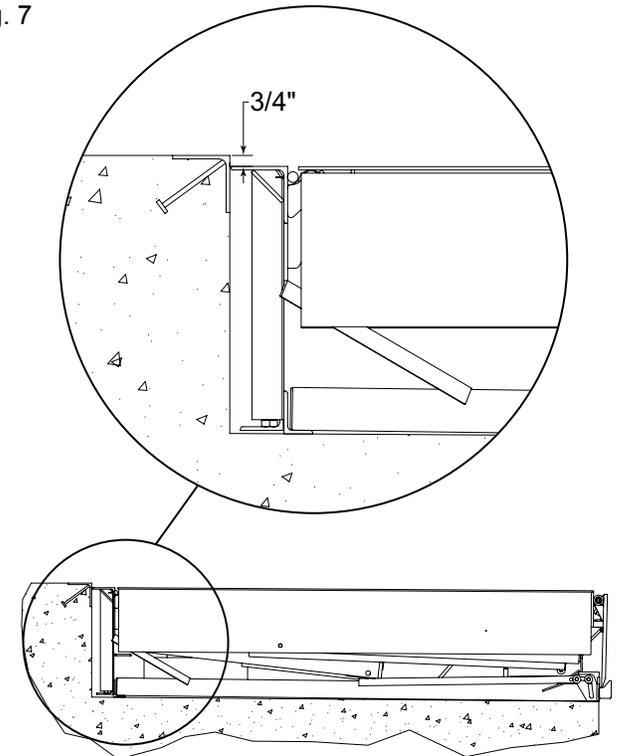


Fig. 7



INSTALLATION, continued

LEVELING THE FRONT FRAME

15. Remove and discard the shipping tie down straps located at the front hinged lip assembly.

NOTICE

Before welding the rear frame, cover the weather seals with a sheet of steel to prevent setting fire to the weather seals. Failure to do so may result in property damage.

NOTICE

Welding with the dock leveler's power connected can damage electrical components. If the dock leveler has previously been electrically connected, turn off power to control box and unplug all dock leveler electrical cords from receptacles in the rear pit wall before welding. Ground welder to dock leveler frame. Failure to do so can result in product damage.

Be certain that the rear frame angle is touching the rear pit curb angle before welding.

If front and rear pit curb angles are not parallel do not attempt to shim dock leveler supports to match pit angles. The lip keepers and lip plate must be parallel for proper operation of the dock leveler. Add or subtract shims as required.

NOTE:

If the pit is out-of-square, the resulting gap between the rear frame angle and the rear curb angle should be shimmed as necessary. Use steel shim(s) and weld in place. See Installation Troubleshooting on page 14.

NOTE:

If the pit width conforms to the certified pit drawing, there will be a 1/8" gap between the ends of the frame at the rear hinge assembly and the side curb angles. If this is not the case, the dock leveler will have to be positioned as required to accommodate dimensional discrepancies and any additional considerations (e.g. conduit runs, etc.).

Fig. 8

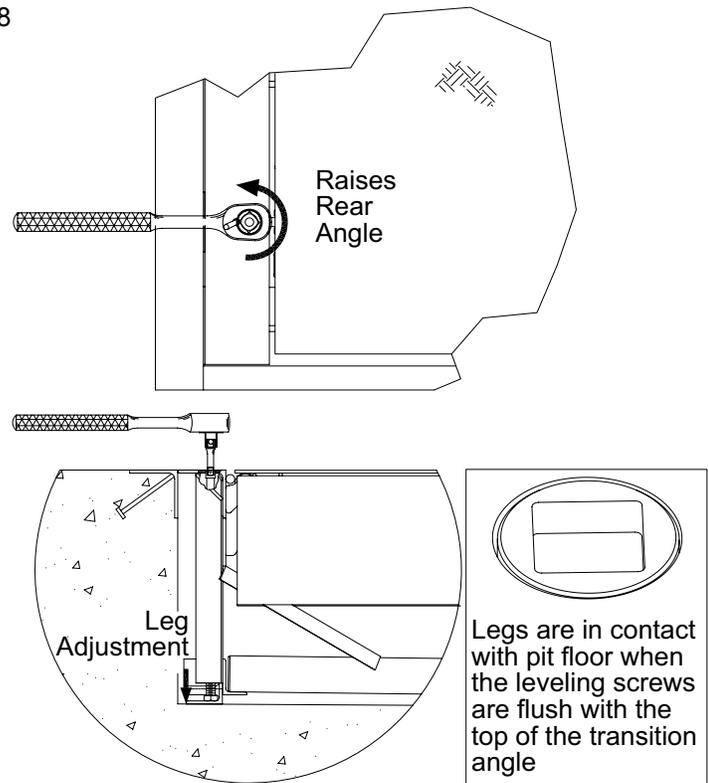


Fig. 9

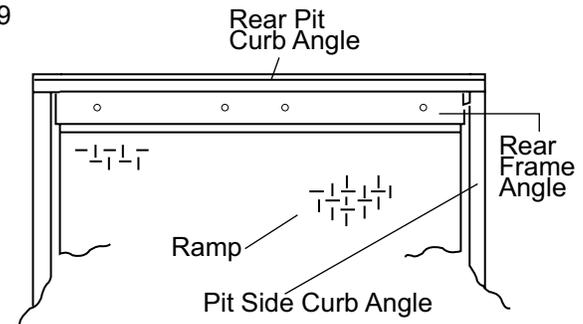
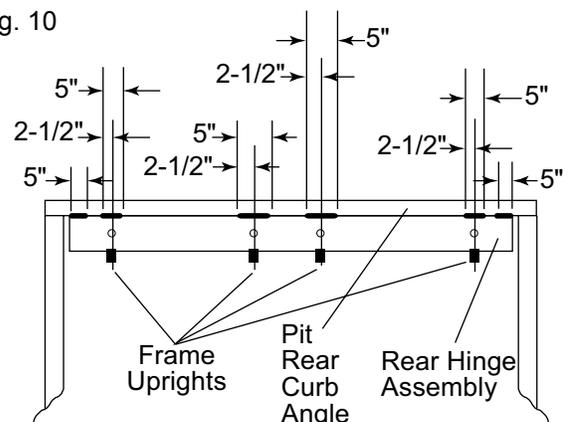


Fig. 10



INSTALLATION, continued

NOTE:

Shims must be placed under the maintenance strut bracket, and on 18" and 20" lips, shims must also be welded in between the lip keepers and the vertical face of the curb angle.

16. Position the dock leveler level with the dock floor (area where door strikes floor). Use 4" x 4" shims to shim under the subframe tubes behind both lip keepers and under the maintenance strut bracket. See Fig. 10 and 11. These shims should be flush with the front of the leveler frame below or behind the lip keepers. Ensure the leveler is level with the finished floor.

17. Tack weld the front shims to the front curb angle as shown in Fig. 11.

NOTICE

The front end should be level and parallel with the rear frame angle for proper operation. Unequal shimming of the front supports may be required to obtain a level front edge.

18. Lower the air bag pan assembly by removing the retainer bolt on top of deck area. See Fig. 13. Bolt should be discarded.

▲ WARNING

The air bag pan will drop rapidly to the pit floor when the retainer bolt is removed. Keep your hands and feet out from under the dock leveler when releasing the air bag pan. Failure to do so could result in death or serious injury.

▲ DANGER

Air pressure or mechanical support must be maintained under the ramp to hold it in the raised position until the maintenance strut is in place. DO NOT WORK UNDER THE DOCK LEVELER RAMP OR LIP UNLESS THE MAINTENANCE STRUT AND LIP MAINTENANCE BAR ARE IN PLACE.

NOTE:

The following procedure requires two persons to lockout and secure the leveler for maintenance.

Fig. 11

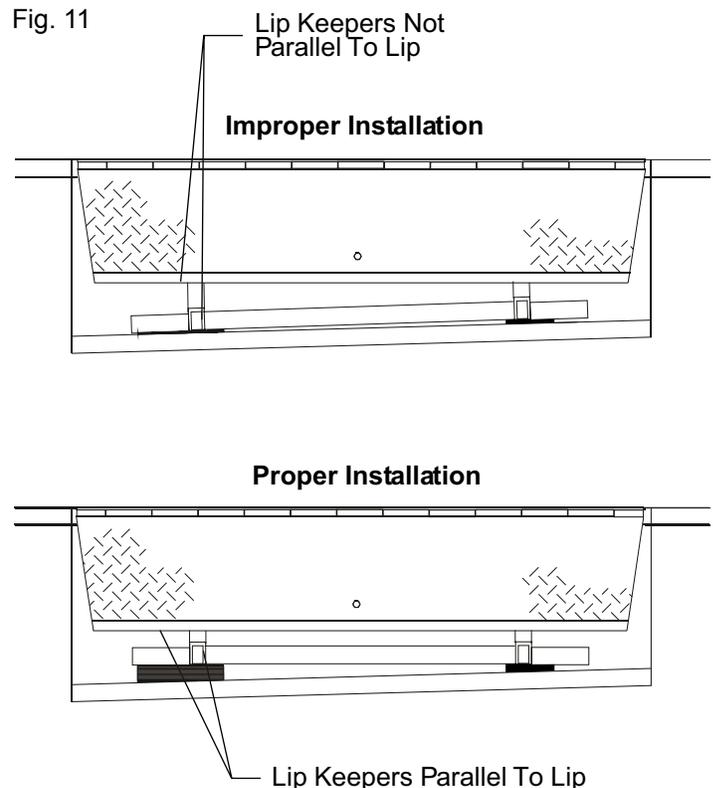
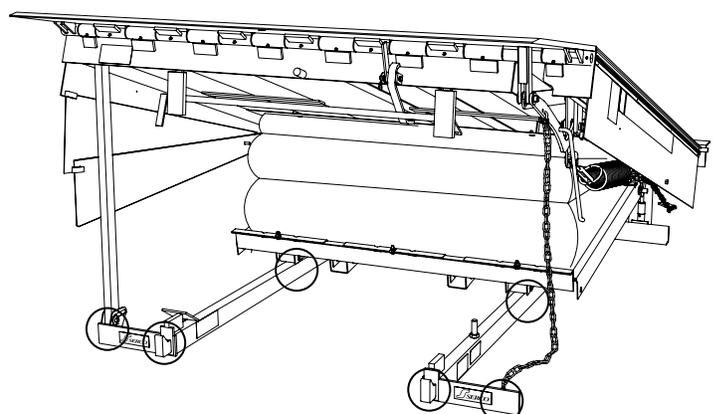


Fig. 12



INSTALLATION, continued

19. Place leveler securely on the maintenance strut. If electrical power is available, use the electrical controls to raise the ramp and lip to their full above dock position. See operating instructions in this manual. If electrical power is not available, use a chain or other suitable lifting device.

- a. Push and hold the **RAISE** button to inflate the air bag until the dock leveler reaches its highest position and hold dock leveler in its highest position.
- b. The second person raises the maintenance strut to the vertical position and ensures it is dropped into the locked position. See page 15 and the instruction label on maintenance strut.
- c. Air pressure or mechanical support may now be removed.

20. Shim under frame struts directly below rollers of air bag fan.

21. If electrical power is not available. Manually lift the hinged lip into the raised position and lock into place with the lip maintenance bar provided on the dock leveler ramp. See Fig. 14 and instruction label located on the underside of the dock leveler ramp.

22. Finish welding the shims to dock level supports and shims to front curb angle with 3" min. long welds in the three places shown. See Fig. 12.

23. Finish welding front shims and shims under the air bag pan rollers. See Fig. 12.

NOTICE

Before welding the rear frame, cover the weather seals with a sheet of steel to prevent setting fire to the weather seals. Failure to do so may result in property damage.

24. Weld the rear frame angle to the rear curb angle using 1/4" bevel joint weld in the grooves provided as shown in Fig. 10.

Fig. 13

Air Bag Pan
Retaining Bolt

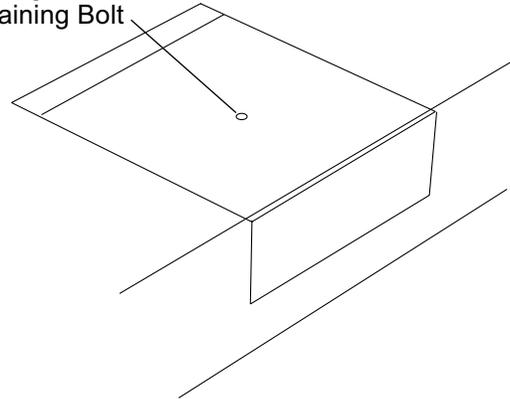
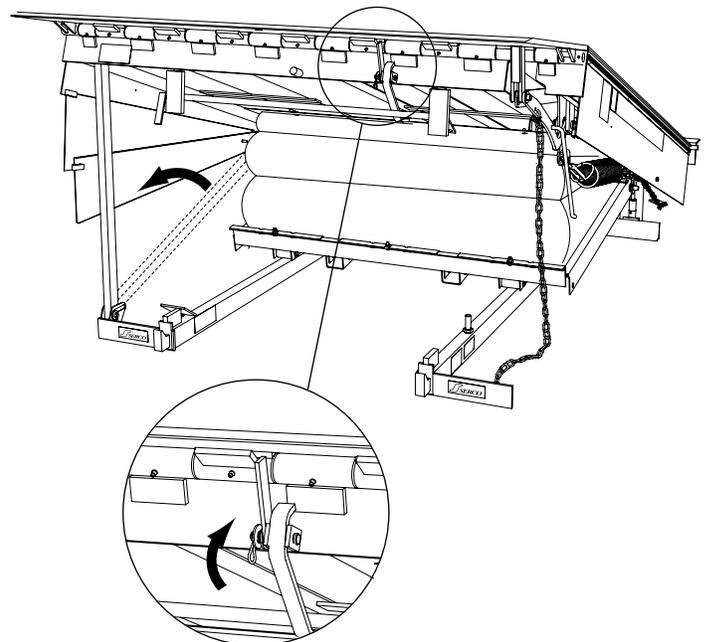


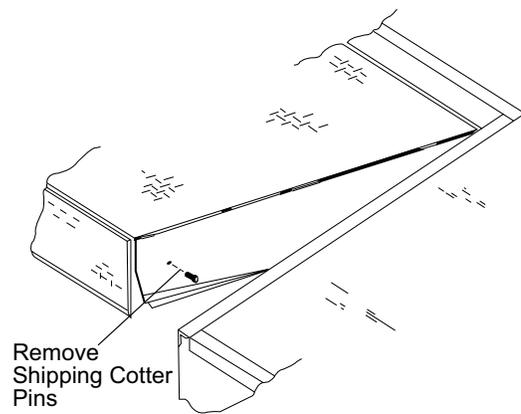
Fig. 14



INSTALLATION, continued

25. After the rear frame angle is welded check that all leveling feet are in contact with the floor of the pit. Once all feet are in contact with the floor. Torque each leveling screw to 25-40 ft.-lbs. counterclockwise.
26. Remove and discard shipping cotter pins from toe guards on both sides of the dock leveler. See Fig. 15.
27. Remove lifting chain and eye bolts.
28. Read the Safety Practices on page 3 and the Operating Instructions on pages 20-22 before operating the dock leveler.

Fig. 15



▲ DANGER

Manually support the lip when storing the lip maintenance bar. Stand clear of the lip when removing support. The lip is free to move downward when support is removed. Anyone in the path of the lip when it moves downward can be struck.

Keep your hands, fingers and head away from the lip when it is released. They could be struck by the lip or caught between the lip and other parts of the dock leveler resulting in death or serious injury.

DO NOT MOVE THE MAINTENANCE STRUT WITHOUT AIR PRESSURE IN THE BAG OR A MECHANICAL LIFTING DEVICE SUPPORTING RAMP. Raise the ramp using air pressure or a mechanical device before storing the maintenance strut. Stand clear of the ramp and lip when air pressure or the mechanical lift is applied or removed. The ramp and lip are free to move downward when the support is removed. Removing the support without air pressure will allow the ramp and lip to drop RAPIDLY. If the dock leveler was raised using a mechanical device, lower it using the same device.

INSTALLATION, continued

29. Lift up on the hinged lip and store the lip maintenance bar under the ramp.
30. Two people are needed to store the maintenance strut.
 - a. One person must push and hold the **RAISE** button until dock leveler reaches its highest position and hold dock leveler in its highest position. The lip will extend when the ramp reaches its highest position.
 - b. The second person lifts the maintenance strut from the bracket on the ramp and pushes it back to lower it. See page 15 and the instruction label on maintenance strut.
 - c. The **RAISE** button may now be released. The ramp will lower and the lip will retract when the leveler reaches full below dock.

▲ WARNING

Improper installation of anchoring devices or installation into aged or unsound concrete could result in death or serious injury.

31. Mount dock bumpers to face of dock. Downhill welds are unacceptable. See Fig. 16 or 17.
32. Permanently mount the dock leveler warning and operating placard on the wall near the dock leveler. *Make sure the customer gets the user's manuals and is properly trained.* See Fig. 18.
33. Operate the dock leveler four times through the complete cycle to check operation. (See Operation section, pages 20-22.)

NOTE:

If you have any problems or questions using or operating the dock leveler, contact your supervisor or local Serco® distributor for assistance.

NOTICE

The dock face must be flush with curb angle to assure proper bumper mounting.

34. Optional (where applicable), install rear angle cap plugs (part number 6004488) into adjustment socket holes. Press cap flush with top surface to rear angle.

Fig. 16

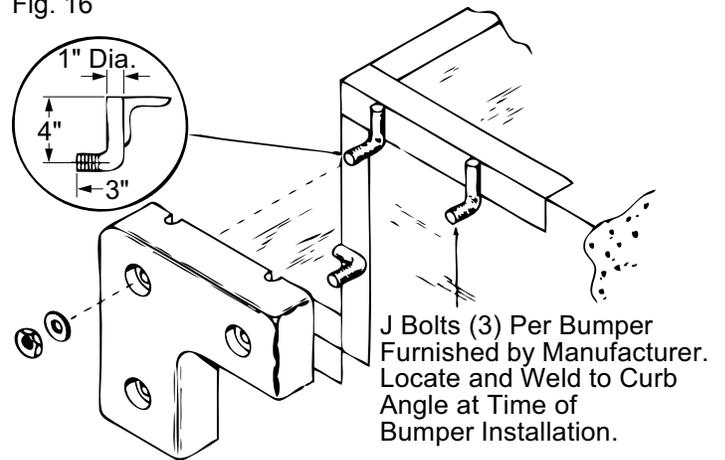


Fig. 17

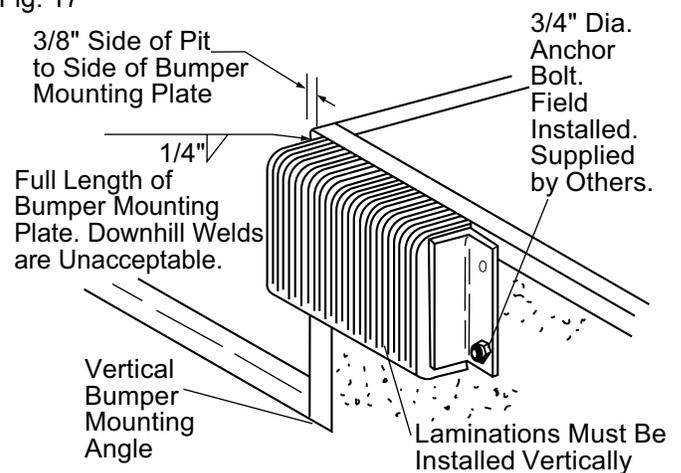
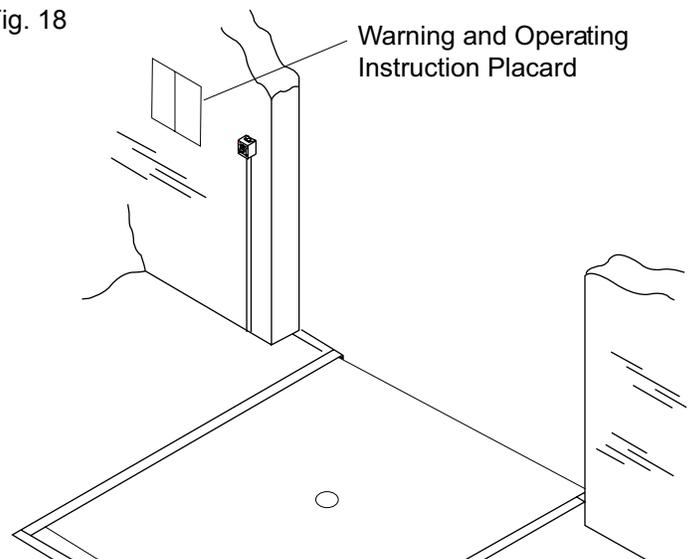


Fig. 18



INSTALLATION, continued

INSTALLATION TROUBLESHOOTING

The following procedures apply after the leveler is level in the pit.

PROBLEM	POSSIBLE CAUSE	SOLUTION
1) Leveler will not fit properly in pit.	<p>a) Pit is out of square with the sides.</p> <p>b) One side and rear angle is out of square.</p> <p>c) Pit floor irregular in rear.</p> <p>d) Pit is too deep.</p>	<p>a1) Align the sides parallel and equally spaced with the rear frame angle touching the rear curb angle in one place. Fill the gap between the rear curb angle and rear frame angle using shims in weld noted in Fig. 10. See Fig. 19.</p> <p>b) Align the leveler with the two square edges. The gap on the sides should be even in the most narrow section (1/2" Max. per side). See Fig. 20.</p> <p>c) If large deformations exist in the concrete work, attempt to flatten out the rough surface using a chisel or grinder to take out the large obstructions. The rear leveling feet can be installed on out of plane surfaces up to 1/8" at each leg. See Fig. 21.</p> <p>d) Weld 4" x 4" shims to the bottom of the adjustable feet.</p>

Fig. 19

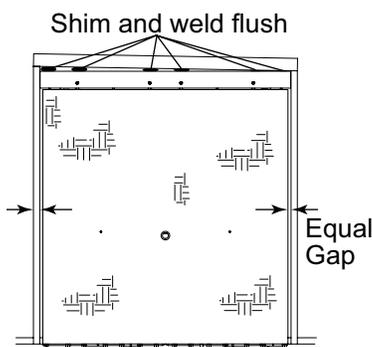


Fig. 20

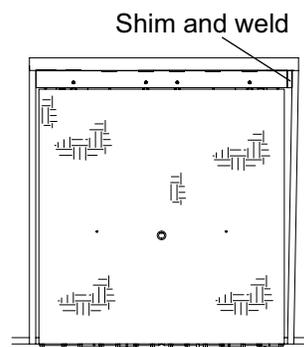
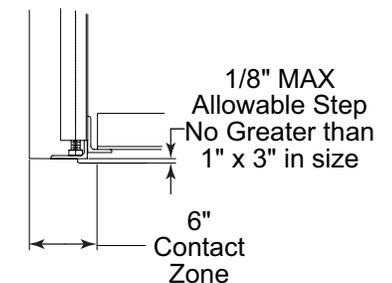


Fig. 21



SERVICE TOOLS

⚠ WARNING

Before servicing the dock leveler, read and follow the Safety Practices on page 3 and the operation section of this manual.

⚠ DANGER

Be certain, before climbing into the dock leveler pit or doing any maintenance or repair under the dock leveler, that:

- 1) THE MAINTENANCE STRUT IS SECURELY IN PLACE.
- 2) The lip maintenance bar is engaged.

MAINTENANCE STRUT AND LIP MAINTENANCE BAR

1. To raise the maintenance strut, two people are needed:
 - a. Push and hold the **RAISE** button on the control panel so leveler is fully raised.
 - b. Second person raise the strut to vertical position.
 - c. Release the maintenance strut, ensure it has dropped into the locked position.
 - d. Release the **RAISE** button.
2. If the lip is extended or you need it extended and the leveler is on the maintenance strut:
 - a. Raise and hold the lip.
 - b. Rotate the lip maintenance bar up to the lock position.
 - c. Release the lip making sure the lip is supported by the lip maintenance bar.
3. Before lowering the maintenance strut, disengage the lip maintenance bar:
 - a. Manually support the lip.
 - b. Rotate the lip maintenance bar down to the release position.
 - c. Carefully lower the lip. Note: Lip may fall pendant or be supported by the lip latch and stay extended.

Fig. 22

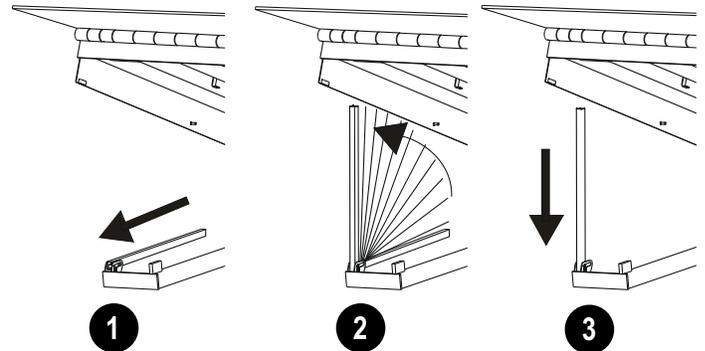
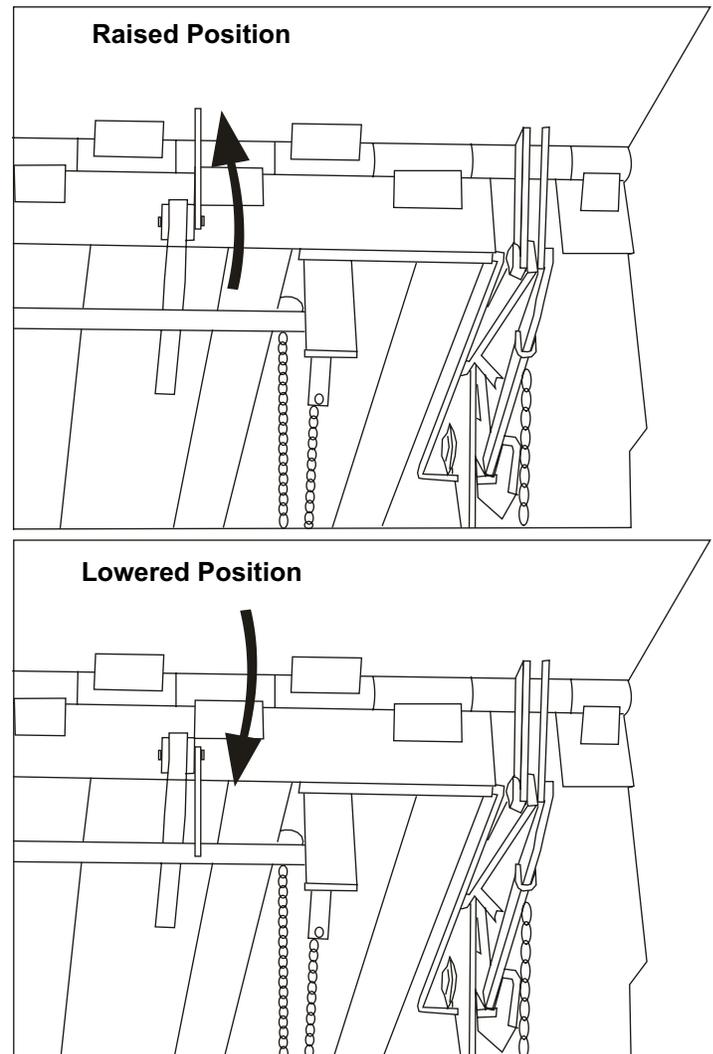


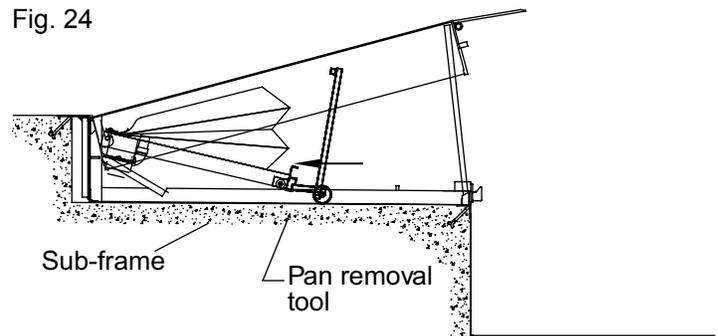
Fig. 23



SERVICE TOOLS, continued

4. To disengage the maintenance strut from its locked upright position two people are needed:
 - a. Push and hold the **RAISE** button on the control panel.
 - b. Second person lift the maintenance strut up to release from locked position.
 - c. Push back to lower the maintenance strut.
 - d. Release the **RAISE** button.

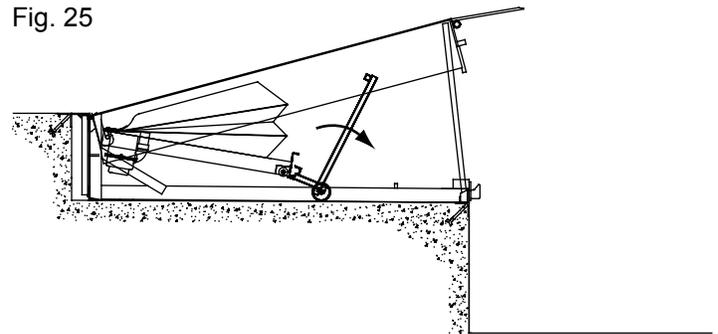
Fig. 24



▲ DANGER

It is important to always engage the lip maintenance bar mechanism when ever working under the leveler with the lip extended. Any upward force on the lip could release the lip latch bar allowing the lip to fall.

Fig. 25



PAN REMOVAL TOOL

The pan removal tool can be used to raise the front end of the bag support pan assembly. This allows for easy access to the pit for cleaning of the pit area.

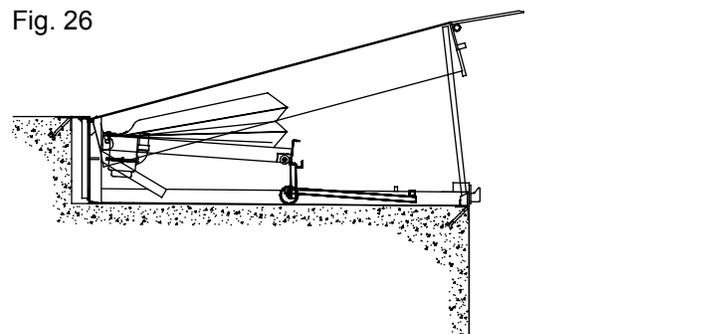
Standard 19" deep pit

Pan Removal Kit part no.: 9-9874 (Lifting tool and Rollers)
Pan Removal Tool: 9-9889
Pan Removal Wheel Assy: 9-9890

24" deep pit conversion

Pan Removal Kit part no.: 9-9984 (Lifting tool and Rollers)
Pan Lifting Tool: 3-5258
Pan Rollers: 3-5259

Fig. 26



▲ DANGER

Be certain, before climbing into the dock leveler pit or doing any maintenance or repair under the dock leveler, that:

- 1) **THE MAINTENANCE STRUT IS SECURELY IN PLACE** (see page 15) and
- 2) **The power is disconnected and properly tagged or locked off.**
- 3) **The lip maintenance bar is in place.**

1. To raise the bag pan assembly:
 - 1.1 Position dock leveler on maintenance strut. See page 15 for instructions.
 - 1.2 Position pan removal tool, in pit and hook tool on front beam in the center of the pit. See Fig. 24.

SERVICE TOOLS, continued

1.3 Using both hands, pull down on handle. This will rotate the pan removal tool on its wheels, pushing the pan assembly upwards. See Fig. 25.

1.4 Move the handle down to the pit floor. See Fig. 26. The removal tool will snap into position, supporting the pan in a raised position. Access to pit floor is clear.

2. To lower the bag pan assembly:

2.1 Using both hands, carefully raise the handle of the removal tool. As the pan begins to lower, you will need to hold the handle to support the pan assembly and prevent the handle from raising rapidly. See Fig. 27.

2.2 Lower the pan assembly to the pit floor.

2.3 Remove removal tool from pit.

▲ DANGER

Be certain, before climbing into the dock leveler pit or doing any maintenance or repair under the dock leveler, that:

- 1) THE MAINTENANCE STRUT IS SECURELY IN PLACE (see page 15) and***
- 2) The power is disconnected and properly tagged or locked off.***
- 3) The lip maintenance bar is in place.***

1. To remove bag support pan assembly:

1.1 Raise bag pan assembly. See instructions on page 16.

1.2 Attach pan removal wheel assy., to both sides of pan assembly, 16" (or 19" on large pan) back from front edge as shown in Fig. 28.

1.3 Lower front of bag pan assembly by raising pan removal tool as shown in Fig. 29. Pan removal wheel assy. will be supported on pit floor.

Fig. 27

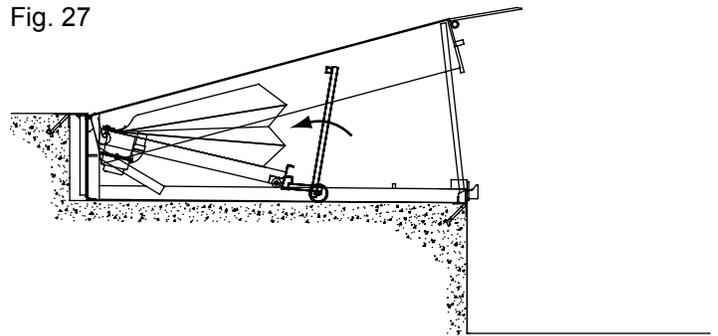


Fig. 28

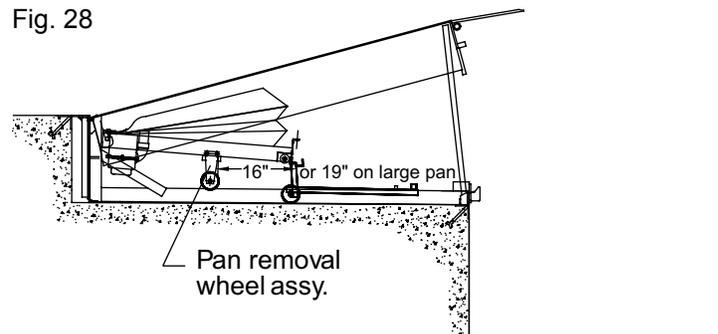
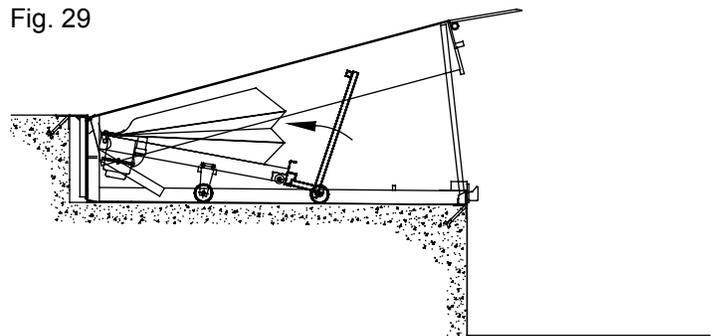


Fig. 29

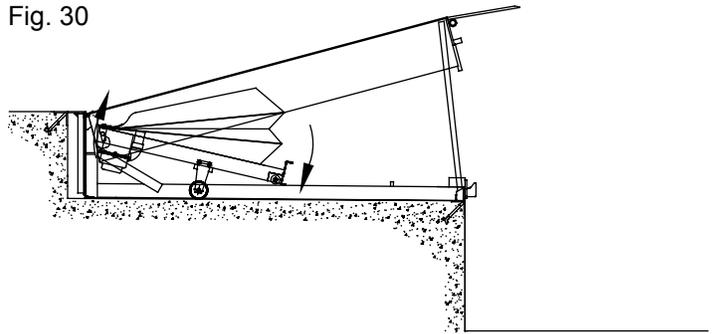


SERVICE TOOLS, continued

1.4 Push down on front of pan assembly to unhook the back of the pan assembly. See Fig. 30.

Fig. 30

1.5 Balancing the pan assembly on the removal wheel assy., roll the assembly to the front of the pit. Rollers will roll on pit floor. See Fig. 31.



2. To install the bag pan assembly:

2.1 Roll the pan assembly back in the pit and align with hooks on the back of the ramp.

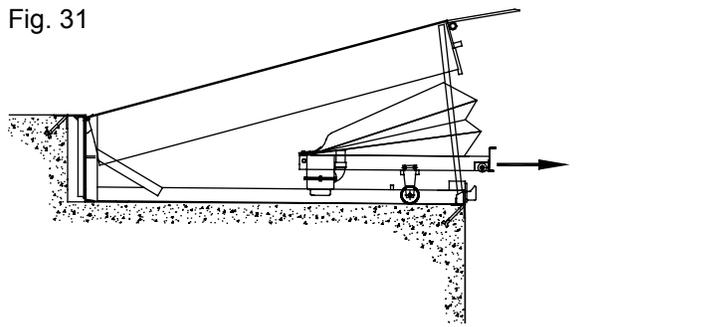
2.2 Hook pan assembly rod on hooks.

2.3 Position removal tool in pit and hook tool on pan axle in the center of the pit. See Fig. 29.

2.4 Using both hands, pull down on handle. Move the handle down to the pit floor. See Fig. 28. The removal tool will snap into position, supporting the pan in a raised position. Remove the wheel assemblies.

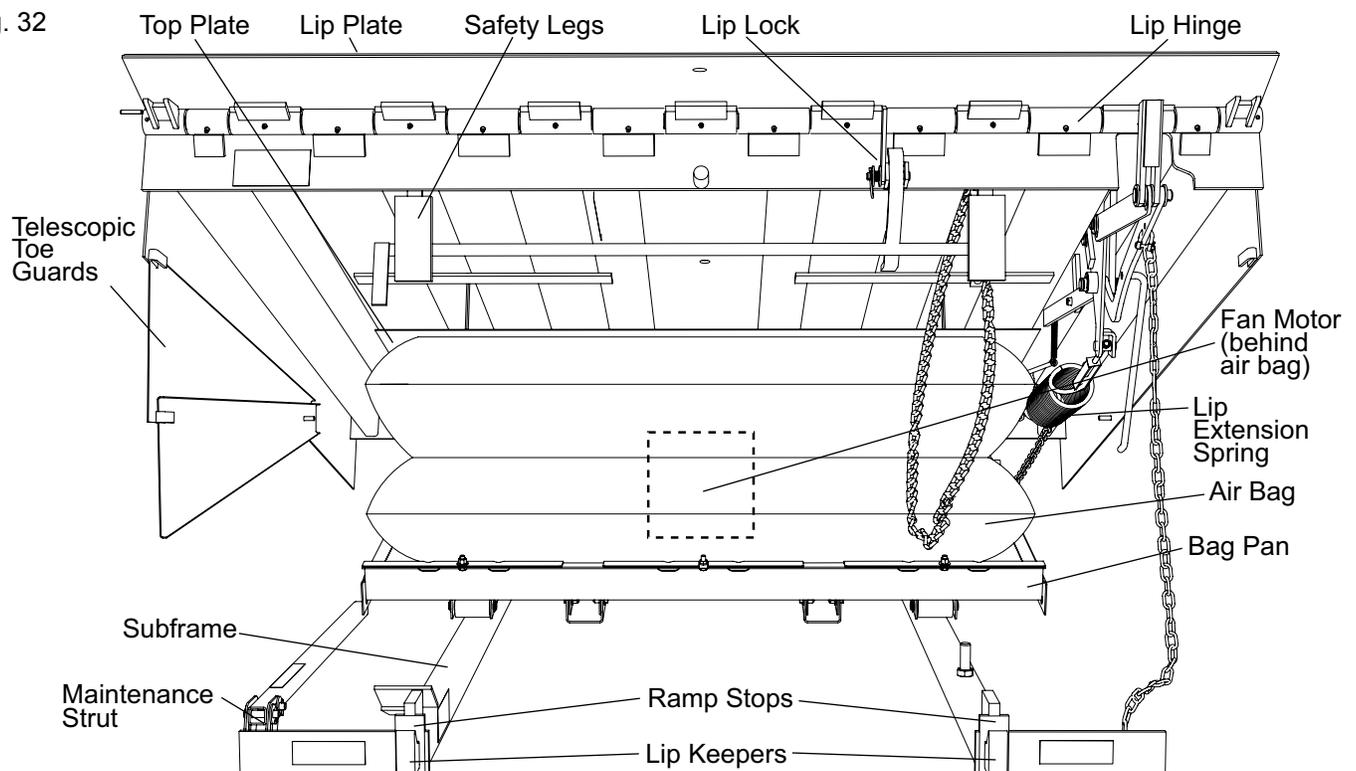
2.5 Lower bag pan assembly following instructions on page 15.

Fig. 31



COMPONENTS AND SPECIFICATIONS

Fig. 32



WIRING DIAGRAM

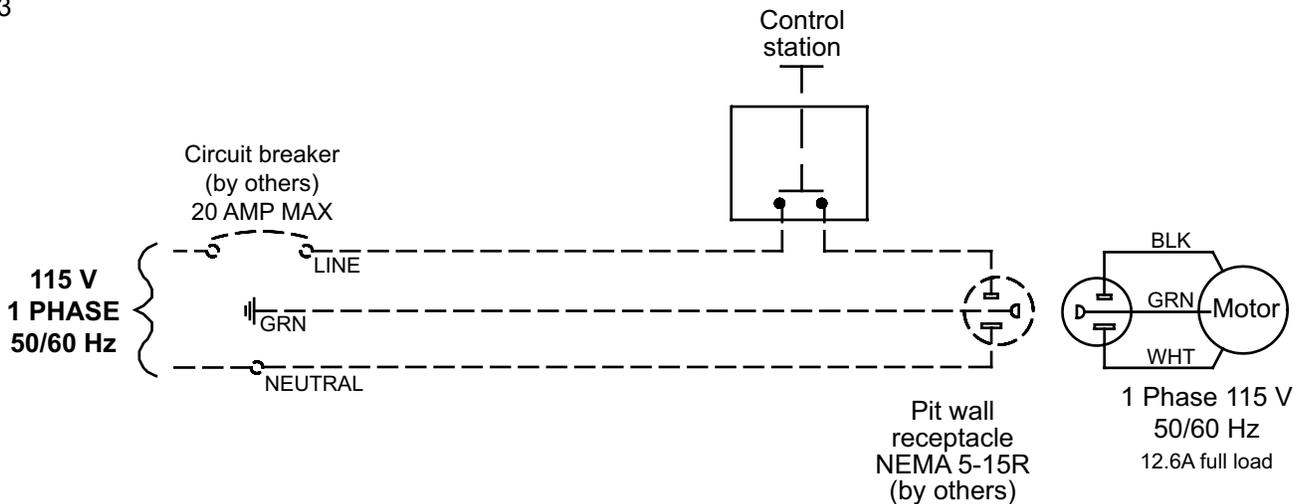
⚠ DANGER

Before doing any electrical work, make certain the power is disconnected and properly tagged or locked off. All electrical work must be done by a qualified technician and meet all applicable codes. If it is necessary to make troubleshooting checks inside the control box with the power on, **USE EXTREME CAUTION**. Do not place your fingers or un-insulated tools inside the control box. Touching wires or other parts inside the control box could result in electrical shock, death or serious injury.

Never allow more than 130V to be connected to the 115V motor circuit. Damage to motor, push-button, air bag may occur which could result in death or serious injury.

115V, Single Phase, 50/60 Hz Single Contact

Fig. 33



OPERATION

⚠ WARNING

Before operating the dock leveler, read and follow the Safety Practices on page 3.

Use of dock leveler restricted to trained operators. Follow procedures on placard posted near dock leveler.

Inspect leveler prior to use. Do not use if operating instructions placard or other parts are missing, leveler looks broken or damaged or does not seem to work right, and tell your supervisor leveler needs repair right away.

Before pressing button, ensure lip avoids contact with vehicle sides and cargo. If lip does not lower to vehicle bed, reposition vehicle.

Stay clear of leveler unless lip is supported by vehicle floor or the leveler is stored at dock level. Visually check that the lip is supported by the vehicle floor or the ramp is supported by both lip keepers or safety legs before driving or walking on the ramp. Unsupported dock levelers can lower unexpectedly.

Before chocking wheels or engaging vehicle restraint, dump air from air ride suspensions and set parking brakes.

Always be certain that the vehicle wheels are chocked, or that the vehicle is locked in place by a vehicle restraining device and the brakes are set before loading or unloading. Vehicles pulling away from the dock unexpectedly can cause uncontrolled drop of the dock leveler which could result in death or serious injury.

The maximum uncontrolled drop of a Serco® AB leveler, if above dock is to the safety legs (approximately 2-1/2" below dock level), or if below dock, is to a full below dock position.

Always return the dock leveler to its dock level (stored) position before allowing the vehicle to leave the dock. If the vehicle pulls away from the dock before the dock leveler is stored, the lip will fall to its pendant position and the ramp will drop. In addition, failure to properly store the leveler may leave the leveler in a position below the level of the dock floor. This condition may result in unexpected drop of personnel or material handling equipment and could result in death or serious injury.

Failure to follow these instructions could result in death or serious injury to operators and/or bystanders.

INTRODUCTION

The Serco® AB dock leveler is designed to span and compensate for space and height differences between a loading dock and transport vehicle to allow safe, efficient freight transfers.

The Serco® AB dock leveler uses a push-button control to position the dock leveler. Pushing and holding the push-button operates a fan which inflates an air bag to raise the ramp. Releasing the push-button allows the ramp to lower.

A mechanical linkage extends the dock leveler lip as the ramp raises to its fully raised position, and the leveler with its lip extended floats down onto the vehicle floor forming a bridge.

After loading, pushing and holding the push-button raises the ramp, and the extended lip lowers to its stored position. Releasing the push-button allows the dock leveler to lower to its level, stored position.

With the dock leveler in its stored position, the lip in the lip keepers support the dock leveler ramp at a position level with the dock floor.

OPERATION, continued

⚠ WARNING

Do not drive on dock leveler or lip until it is fully extended and supported by the vehicle floor.

Never use a fork truck or other material handling equipment to lower the ramp and lip sections.

RAISING LEVELER

Ensure a vehicle restraining device is engaged or wheel chocks in place before operating the dock leveler.

1. **Press the button** on the control panel to raise leveler.
2. Continue to press the button. The lip will automatically extend when the leveler is fully raised.
- 3A. When the lip is fully extended, **release the button** on the control panel. The leveler will float down until the lip of the leveler is supported.
- 3B. If the vehicle is below dock level, **pull the safety leg chain ring** while the leveler is lowering. See Fig. 40. The leveler will then float down until the lip is supported by the vehicle. Ensure the lip is properly supported by vehicle floor.

NOTE:

For models equipped with reflex legs, it is unnecessary to pull the chain when the lip is floating down into the vehicle.

Fig. 34

Press To Raise

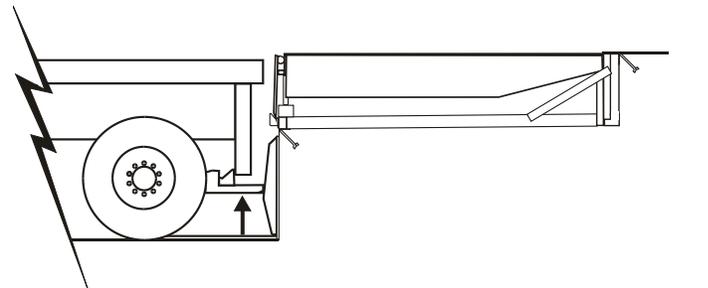


Fig. 35

Press To Extend Lip

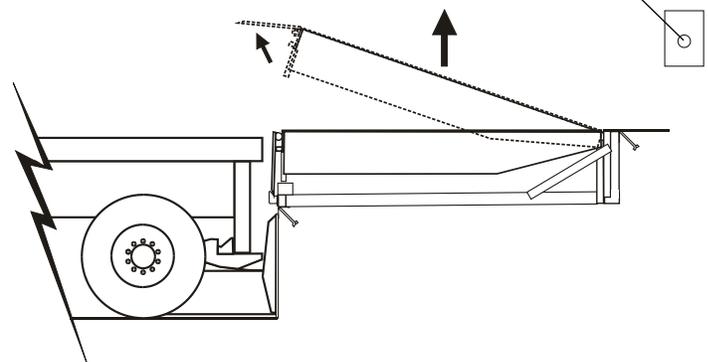
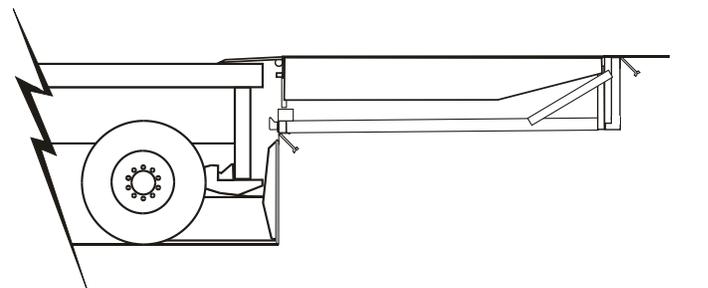


Fig. 36

Release To Lower



OPERATION, continued

⚠ WARNING

Before allowing vehicle to leave, always return the dock leveler to its dock level (stored) position with the lip stored in both lip keepers. See Fig. 37. Failure to do so may leave the dock leveler in a position below the level of the dock floor. This condition may result in unexpected drop of personnel or material handling equipment and could result in death or serious injury.

STORING LEVELER

1. To return the leveler to the stored position, **press the button**. As the leveler raises the lip will retract. When the lip is fully retracted, **release the button**. The leveler will then float down to the stored position with the lip supported by both lip keepers. See Fig. 37 and 38.

BELOW DOCK LEVEL, END LOADING

1. From the stored position, press the raise button until the leveler raises at least six inches above dock level. Pull the safety leg chain and the lip will partially extend to clear the lip keepers. The dock leveler will float down to its full below dock level position. See Fig. 39-40.

Fig. 37

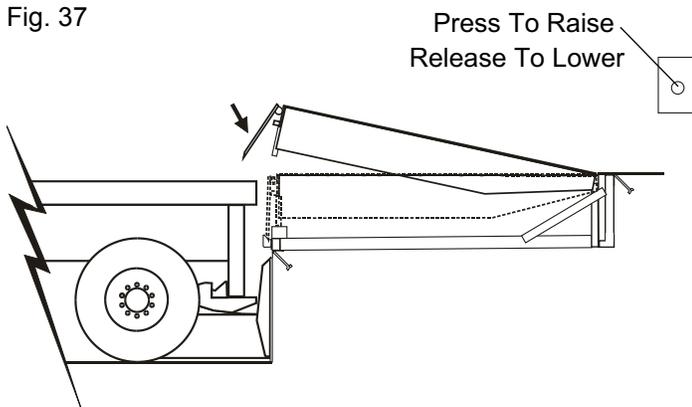


Fig. 38

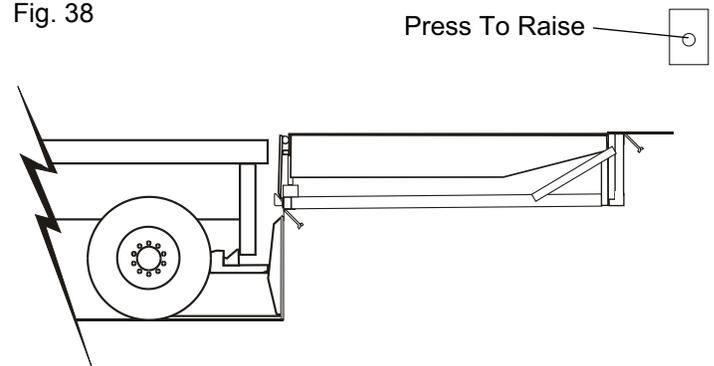


Fig. 39

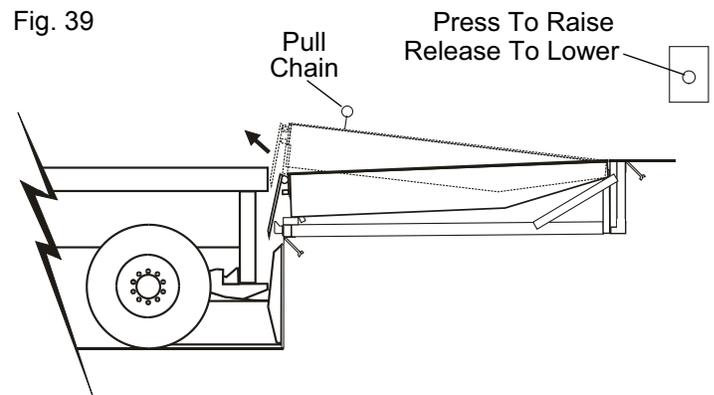
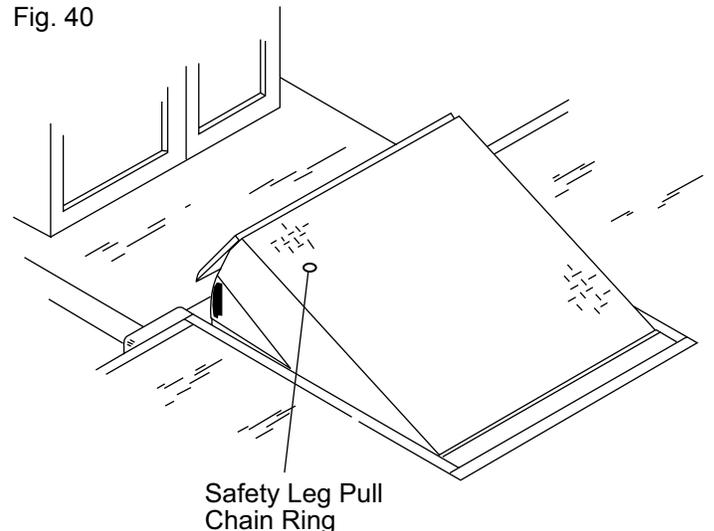


Fig. 40



PLANNED MAINTENANCE

⚠ WARNING

Before servicing the dock leveler, read and follow the Safety Practices on page 3 and the operation section of this manual.

Place barricades on the dock floor around the dock leveler pit and in the driveway in front of the pit while installing, maintaining or repairing the dock leveler.

WEEKLY

1. Inspect for debris in lip hinge. Clean as required.
2. Inspect for debris in rear hinge area of the leveler and between the sides and curb angles to ensure smooth operation. Clean as required.
3. Inspect the safety leg system for free operation, structural defects, pull chain and return spring operation.
4. Inspect the operation of the telescopic toe guards to ensure they are not distorted or binding when operating the leveler.

QUARTERLY

1. Inspect all warning labels and placards. See page 25. Replace as necessary.
2. Clean out the inside of the pit area.
3. Inspect and lubricate all mechanical pivot points on the leveler with a light oil such as S.A.E. 30.
4. Raise and then lower the leveler down to full below dock position with the lip extended. Ensure that the latch bar will disengage and the lip will fall to the pendant position automatically. (See pages 28-29 for adjustment).

⚠ DANGER

Be certain, before climbing into the dock leveler pit or doing any maintenance or repair under the dock leveler, that:

- 1) **THE MAINTENANCE STRUT IS SECURELY IN PLACE** (see page 15) and
- 2) **The power is disconnected and properly tagged or locked off.**

QUARTERLY (continued)

5. Inspect the lip push out arm and lip counterbalance assemblies for damage and check the chain and springs for elongation.
6. Inspect all welds under the leveler for fatigue or failure, particularly the lip plate hinge and top plate beams and front hinge bar.
7. Check the full operation of the leveler. Make any adjustments required.
8. Lubricate the lip hinge tubes with molybdenum disulfide grease NLGI #2. Do not over grease. Stop when grease begins to ooze out of the hinge tube ends. Wipe off excess grease.
9. Inspect dock bumpers. Four inches (4") of bumper protection is required. Worn, torn, loose or missing bumpers must be replaced.

AIR BAG MAINTENANCE

Whenever bag or clamp bar attaching hardware is replaced or re-assembled, perform the following torque procedure:

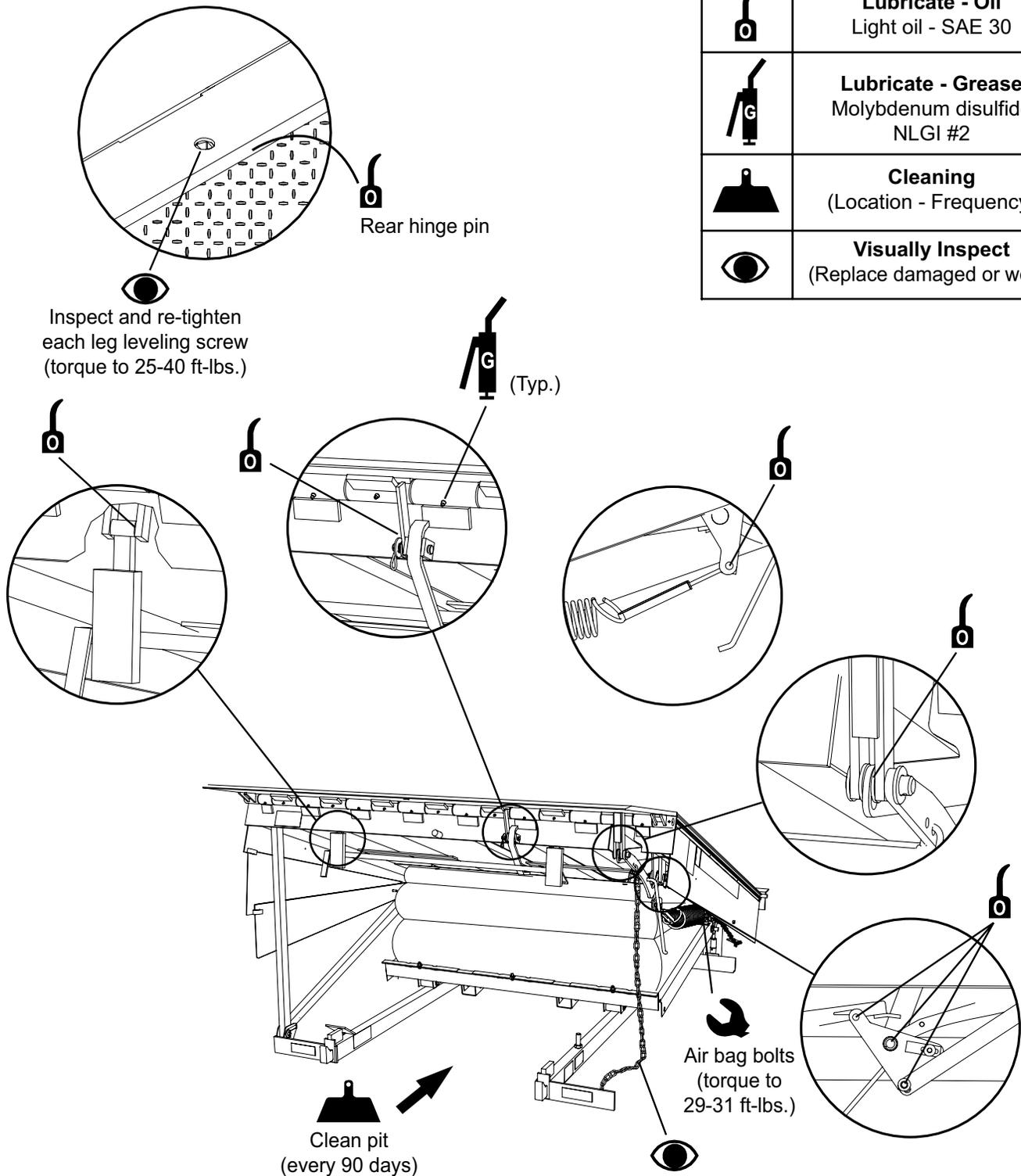
1. Starting in the center of clamp bar and working outwards, torque all 9 nuts to within 29-31 lb.ft.
2. Visually check that each of the 9 torqued nuts has the same amount of bolt protruding through it and that the round bar inside the bag is not physically underneath the clamp bar.

See Service Tool Section, beginning on page 15.

PLANNED MAINTENANCE, continued

Fig. 41

Legend	
Symbol	Description
	Lubricate - Oil Light oil - SAE 30
	Lubricate - Grease Molybdenum disulfide NLGI #2
	Cleaning (Location - Frequency)
	Visually Inspect (Replace damaged or worn)



TROUBLESHOOTING

⚠ WARNING

Before troubleshooting the dock leveler, read and follow the Safety Practices on page 3 and the maintenance and operation sections of this manual.

⚠ DANGER

Be certain, before climbing into the dock leveler pit or doing any maintenance or repair under the dock leveler, that:

- 1) **THE MAINTENANCE STRUT IS SECURELY IN PLACE** (see page 15) and
- 2) **The power is disconnected and properly tagged or locked off.**

NOTE:

Follow service tool use instructions on pages 15 to 18.

PROBLEM	POSSIBLE CAUSE	SOLUTION
1. Leveler does not raise. Motor fails to run.	<ul style="list-style-type: none"> a) Fuse blown or breaker tripped. b) No electrical power to control panel. c) Push-button is broken on control panel. d) Fan plug loose or unplugged in receptacle. e) Loose wires in control panel or junction box. f) Fan assembly damaged/broken. 	<ul style="list-style-type: none"> a) Replace fuse or reset breaker. b) Check all power supplies to control panel and make sure connections are tight. c) Replace push-button on control panel. d) Check and tighten connection to receptacle. e) Adjust or replace wires. f) Replace fan assembly if required.
2. Leveler does not raise. Motor runs.	<ul style="list-style-type: none"> a) Obstruction(s) preventing the leveler from raising. b) Holes or leaks in the lifting bag. c) Loose or misaligned bag fittings or loose bag clamps. 	<ul style="list-style-type: none"> a) If an obstruction is found, turn off power before attempting to clear the obstruction. b) Order the patch kit from your dealer or Serco® to repair holes. If holes are too large, replace bag assembly. (See page 32 for part number). c) Repair or replace as required.

TROUBLESHOOTING, continued

PROBLEM	POSSIBLE CAUSE	SOLUTION
3. Lip plate does not fully extend when leveler is raised.	<ul style="list-style-type: none"> a) Debris or corrosion in the lip hinge. b) Debris or corrosion in the rear hinge. c) Lip spring adjustment is incorrect. d) Motor's electrical supply is inadequate. 	<ul style="list-style-type: none"> a) Clean and lubricate the lip hinge. b) Clean and lubricate the rear hinge. c) Adjust lip spring as shown on page 26, and lubricate mechanism. d) Measure voltage while running at peak load. Motor voltage must be between 110-129 VAC.
4. Lip plate will not start to extend when the leveler is raising.	<ul style="list-style-type: none"> a) Lip chain is broken or disconnected. b) Lip hinge is binding. c) Latch Lip spring is too slack. 	<ul style="list-style-type: none"> a) Inspect and repair as required. b) Clean and lubricate the lip hinge. c) Adjust lip spring to increase tension (see page 26).
5. Lip falls before it floats down to vehicle.	<ul style="list-style-type: none"> a) Lip spring has too much tension b) Lip latch not engaging the latch plate. c) Lip is not fully extending. 	<ul style="list-style-type: none"> a) Adjust lip spring tension shown on page 26. b) Inspect and lubricate lip latch to ensure that it moves freely. Ensure that lip latch chain and springs cause lip latch to raise. c) See problem 4.
6. Lip plate will not retract.	<ul style="list-style-type: none"> a) Lip hinge is binding. b) Lip spring adjustment incorrect. c) Latch bar not releasing. d) Lip counterbalance spring is over-tensioned. 	<ul style="list-style-type: none"> a) Clean and lubricate the lip hinge. b) Adjust spring to decrease tension (see page 26). c) Inspect the latch bar release spring is properly adjusted. Replace if required (see page 26). d) Decrease tension on lip counterbalance.

LIP LATCH ADJUSTMENT

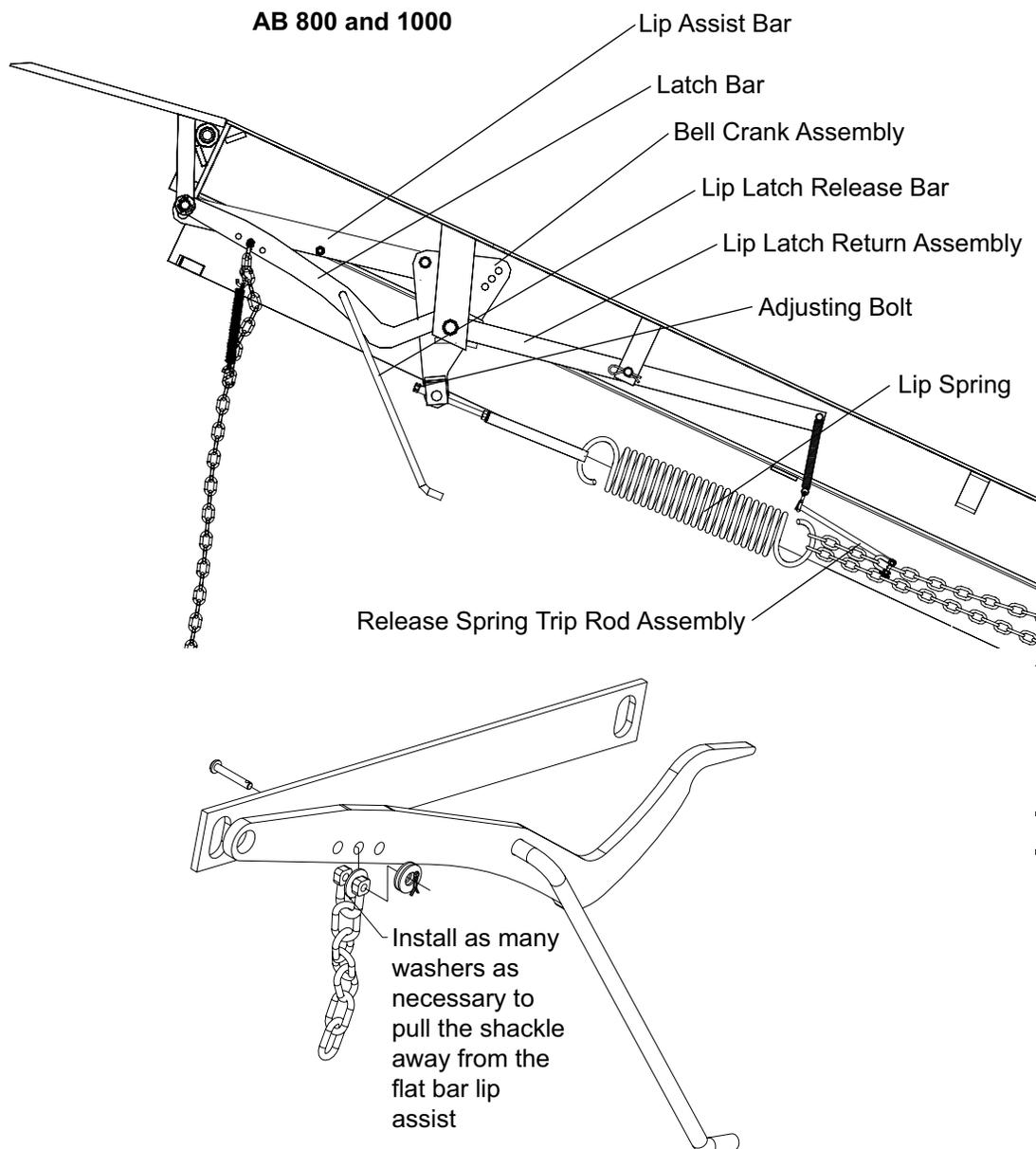
▲ DANGER

- 1) Always position traffic cones or a barricade behind and in front of the dock leveler to warn fork truck operators, vehicle traffic and pedestrians away from the dock leveler.
- 2) Always notify a foreman or supervisor that you are working under the equipment.
- 3) Always make sure that the maintenance strut is securely in place in the raised position before working under a dock leveler (see page 15).

NOTE:

Air bag unit not shown. No adjustment required to air bag/pan assembly for this application.

Fig. 43



LIP LATCH ADJUSTMENT, continued

The lip spring acts through the bell crank and the lip assist bar to counter balance the weight of the lip. The lip spring is attached by two chains to both the deck and to the frame. The upper chain to the deck maintains a minimum tension force in the spring to partially counter balance the lip. The lower chain is attached to the frame and provides an additional tension force that increases as the deck is raised. This increased spring force will fully counter balance the weight of the lip as it is rotated to the extended position. The lip latch bar will be in the engaged (lowered) position but the weight of the lip will be fully supported by the lip spring.

As the deck lowers with the lip extended, the lower chain slackens and the lip spring tension is reduced. When the lip and deck have lowered ten inches from the highest position, the lip must fall on to the lip latch to hold the latch in the engaged position. When leveler is lowered to the working height (approx. 12" above dock) the lower chain will be slack and the upper chain will tighten and extend the lip latch release spring. As long as the lip is resting on the lip latch the latch will not release. When the lip is supported by the vehicle floor, the release spring will rotate the latch release bar and raise the latch bar to the released position. When the leveler is raised, or the vehicle leaves, the lip will then fall to the stored position.

LIP LATCH AND LIP SPRING ADJUSTMENT

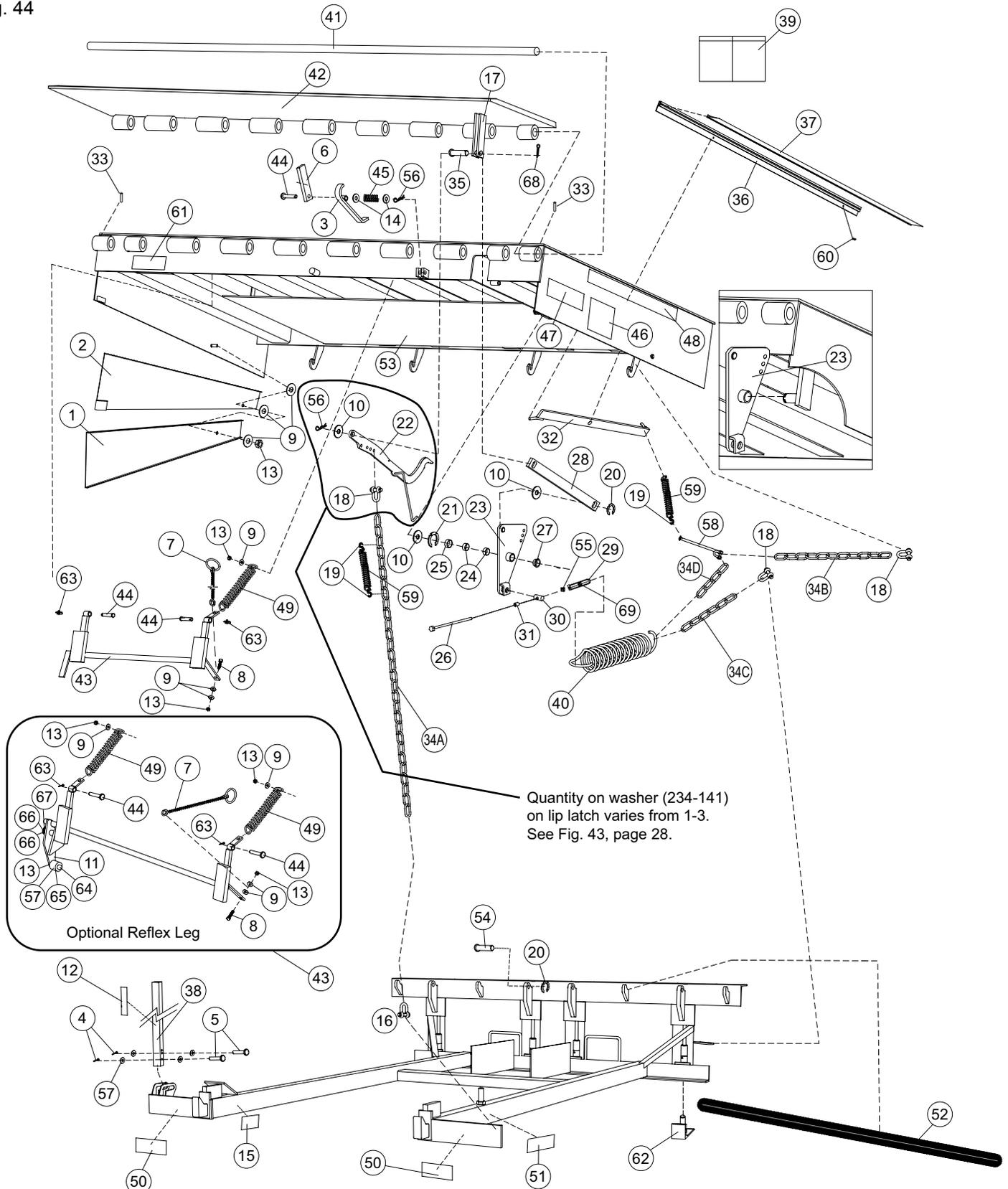
NOTE:

A remote, normally open push-button service switch is required to perform the following steps. If this switch is not available, two people are required for the following steps. One person must remain at the control panel while the other is adjusting the dock leveler.

1. Fully raise the leveler, extend the lip and raise the maintenance strut. Lower the deck to rest on the raised maintenance strut. Raise the lip maintenance support to prevent the lip from falling. Check that the lip latch bar has locked into position. Lubricate all pivots with S.A.E. 30 oil and lip hinge tubes with general purpose grease.
2. If the lip does not fully extend, check for binding of the latch bar, debris in the lip hinge, or improper attachment of the lip chain and lip spring. There are three holes in the lip latch bar. The lip chain is normally attached to the middle hole. If the chain is attached to the front hole leave it there. If the chain is attached to the middle hole and the lip has been properly cleaned and lubricated and will not start to extend, move the chain to the front hole.
3. With the maintenance strut still raised, press the **RAISE** button until the leveler is fully raised. The lip should be held extended by the lip spring and the lip latch should be free to move. If the lip is resting on the lip latch, increase the tension of the lip spring by turning the adjusting bolt clockwise.
4. When the **RAISE** button is released and the leveler is being lowered, the lip spring tension will be reduced. The lip must fall on to the lip latch within 10" from the fully raised position. If the lip does not fall onto the latch bar, reduce tension of the lip spring by turning the adjusting bolt counter-clockwise. There may be very little movement of the lip when it falls on to the lip latch. The movement can be seen more easily by watching the gap between the rear edge of the lip and the front edge of the deck.
5. Raise the leveler and lower the maintenance strut and the lip maintenance support. Allow the leveler to lower. As it reaches the working height, the upper chain will tighten and extend the lip latch release spring. Lifting up on the end of the lip will allow the lip latch to release, and the lip will fall when it is released.
6. The operation of the lip latch and release can be further tested by using a sturdy post cut to the length of the dock height plus 10". Raise the dock leveler, extend the lip and lower the leveler so that the end of the lip is resting on the post. Then raise the leveler again. As the leveler is raised, the lip should fall to the stored position.

PARTS LIST — DOCK LEVELER

Fig. 44



PARTS LIST — DOCK LEVELER, continued

Model and Part Number

Item	Qty.	Part Description	AB 600	AB 800	AB1000
1	1	TOE GUARD, 2ND STAGE, LEFT	586-1659	586-0440	586-1045
	1	TOE GUARD, 2ND STAGE, RIGHT	586-1660	586-0441	586-1044
2	1	TOE GUARD, 1ST STAGE, LEFT	586-1657	586-0439	586-1043
	1	TOE GUARD, 1ST STAGE, RIGHT	586-1658	586-0438	586-1042
3	1	PUSHER ASSY	3-4666	3-4666	3-5273
4	2	COTTER PIN 1/8 X 3/4	231-341	231-341	231-341
5	2	CLEVIS PIN 1/2" DIA X 2-1/4 LG	231-506	231-506	231-506
6	1	LIP PLATE MAINTENANCE BAR – CP	586-2969	586-2969	586-2969
7	1	SAFETY LEG CHAIN ASSEMBLY	8-9610	8-9610	8-9610
8	1	HEX BOLT – 3/8" – 16 UNC 1-1/4" LG	212104	212104	212104
9	10	PW 3/8" BOLT SIZE – 7/16 HOLE (30-35K)	234-101	234-101	234-101
	7	PW 3/8" BOLT SIZE – 7/16 HOLE (40-50K)	234-101	234-101	234-101
10	3	PLAIN WASHER – 13/16" I.D. (30-35K)	234-141	234-141	234-141
	2	PLAIN WASHER – 13/16" I.D. (40-50K)	234-141	234-141	234-141
11**	1	WELDMENT, ROLLER ARM PAL S/L	6000609	6000609	6000609
12	1	DANGER LABEL – MAINTENANCE STRUT	921-074	921-074	921-074
13	3	HEX NUT – 3/8" NYLOCK (30-35K)	214-538	214-538	214-538
	5	HEX NUT – 3/8" NYLOCK (40-50K)	214-538	214-538	214-538
14	2	PLAIN WASHER – 9/16" I.D.	234-121	234-121	234-121
15	1	DANGER LABEL – ENTERING PIT	921-070	921-070	921-070
16	1	CHAIN SHACKLE AND PIN (30-35K)	238-804	238-804	238-804
	1	CHAIN SHACKLE – 1/4" (40-50K)	442-800	442-800	442-800
17	1	LATCH ASSIST ARM	586-2638	586-2638	586-2638
18	3	CHAIN SHACKLE	442-800	—	—
	4	CHAIN SHACKLE	—	442-800	442-800
19	3	"S" – HOOK	238-202	238-202	238-202
20	6	RETAINING RING (5304-75)	236-110	236-110	236-110
21	1	RETAINING RING (5304-100)	236-114	236-114	236-114
22	1	LATCH BAR ASSY	6000694*	6000694*	6001202
23	1	BELL CRANK WELDMENT – HS-CP	3-4734	3-4734	3-4734
24	2	DU BUSHING – 16DU08	821-034	821-034	821-034
25	1	BELL CRANK ROLLER ASSY	3-4745	3-4745	3-4745
26	1	BOLT ROD ASSY – CP	3-4737	3-4737	3-4737
27	1	DU BUSHING – FLANGED: 16FDU08	821-033	821-033	821-033
28	1	FLAT BAR – LIP ASSIST	328-685	328-685	328-685
29	1	SPRING ADJUSTER LOOP	586-3009	586-3009	586-3009
30	1	YOKE PIN	586-1998	586-1998	586-1998

* Use 6001202 if pit is 24" deep — all levelers.

** Optional Reflex Leg.

PARTS LIST — DOCK LEVELER, continued

Model and Part Number

Item	Qty.	Part Description	AB 600	AB 800	AB1000
31	1	ROD SPACER	586-1999	586-1999	586-1999
32	1	LIP LATCH RETURN ASSY	6000708	6000708	6000708
33	2	SLK PIN 1/4X1-1/2	231-123	231-123	231-123
34A	1	CHAIN – LIP LATCH (36/44/45 LINKS)	6012841	6012842	6012843
34B	1	CHAIN – FROM LIP EXT. SPRING TO TOP PLATE (20/44)	—	6000826	6000825
34C	1	CHAIN – FROM LIP EXT. SPRING TO FRAME (29/32/57)	586-3016	586-2270	586-3430
34D	1	CHAIN – LIP LATCH RETURN (4/6 LINKS)	586-3015	6000827	6000827
35	1	PIN – 3/4" DIA X 2-1/8 GR-RNG	583-0003	583-0003	583-0003
36	2	WEATHER SEAL MOUNTING STRIP	328-897	328-898	INCLUDED
IN 37					
37	2	WEATHER SEAL – NARROW PROJECTION – RUBBER	152-324(5FT)	152-324(7FT)	9-8259
	2	WEATHER SEAL – WIDE PROJECTION – RUBBER	152-325(5FT)	152-325(7FT)	9-8272
	2	WEATHER SEAL – NARROW PROJECTION – BRUSH	328-886	328-887	9-8284
	2	WEATHER SEAL – WIDE PROJECTION – BRUSH	328-907	328-908	9-9490
38	1	MAINTENANCE STRUT 600 – C.P.	9-9506	9-9506	9-9506
39	1	AB PLACARD	824-179	824-179	824-179
40	1	EXTENSION SPRING, LIP – 16IN	333-043	333-043	333-043
	1	EXTENSION SPRING, LIP – 18IN	333-043	333-043	333-043
	1	EXTENSION SPRING, LIP – 20IN	333-044	333-044	333-044

Capacity and Part Number

Item	Qty	Part Description	30,000	35,000	40,000	45,000	50,000
41	1	LIP HINGE PIN – 6FT WIDE	586-0017	586-0017	586-0287	586-0287	586-0287
		LIP HINGE PIN – 6.5FT WIDE	586-1494	586-1494	586-1495	586-1495	586-1495
		LIP HINGE PIN – 7FT WIDE	586-0201	586-0201	586-0392	586-0392	586-0392
42	1	LIP ASSEMBLY – 6FT X 16IN (STRAIGHT)	3-0845	3-0848	3-0851	3-0854	3-0857
		LIP ASSEMBLY – 6FT X 18IN (STRAIGHT)	3-0846	3-0849	3-0852	3-0855	3-0858
		LIP ASSEMBLY – 6FT X 20IN (STRAIGHT)	3-0847	3-0850	3-0853	3-0856	3-0859
	1	LIP ASSEMBLY – 6.5FT X 16IN (STRAIGHT)	3-0863	3-0866	3-0869	3-0872	3-0875
		LIP ASSEMBLY – 6.5FT X 18IN (STRAIGHT)	3-0864	3-0867	3-0870	3-0873	3-0876
		LIP ASSEMBLY – 6.5FT X 20IN (STRAIGHT)	3-0865	3-0868	3-0871	3-0874	3-0877
	1	LIP ASSEMBLY – 6.5FT X 16IN (3" TAPER)	3-3645	3-3648	3-3651	3-3654	3-3657
		LIP ASSEMBLY – 6.5FT X 18IN (3" TAPER)	3-3646	3-3649	3-3652	3-3655	3-3658
		LIP ASSEMBLY – 6.5FT X 20IN (3" TAPER)	3-3647	3-3650	3-3653	3-3656	3-3659
	1	LIP ASSEMBLY – 7FT X 16IN (6" TAPER)	3-0881	3-0884	3-0887	3-0890	3-0893
		LIP ASSEMBLY – 7FT X 18IN (6" TAPER)	3-0882	3-0885	3-0888	3-0891	3-0894
		LIP ASSEMBLY – 7FT X 20IN (6" TAPER)	3-0883	3-0886	3-0889	3-0892	3-0895
		LIP ASSEMBLY – 7FT X 16IN (3" TAPER)	3-3663	3-3666	3-3669	3-3672	3-3675
		LIP ASSEMBLY – 7FT X 18IN (3" TAPER)	3-3664	3-3667	3-3670	3-3673	3-3676
		LIP ASSEMBLY – 7FT X 20IN (3" TAPER)	3-3665	3-3668	3-3671	3-3674	3-3677
		LIP ASSEMBLY – 7FT X 16IN (ARC TAPER)	3-3707	3-3710	3-3713	3-3716	3-3719
		LIP ASSEMBLY – 7FT X 18IN (ARC TAPER)	3-3708	3-3711	3-3714	3-3717	3-3720
		LIP ASSEMBLY – 7FT X 20IN (ARC TAPER)	3-3709	3-3712	3-3715	3-3718	3-3721

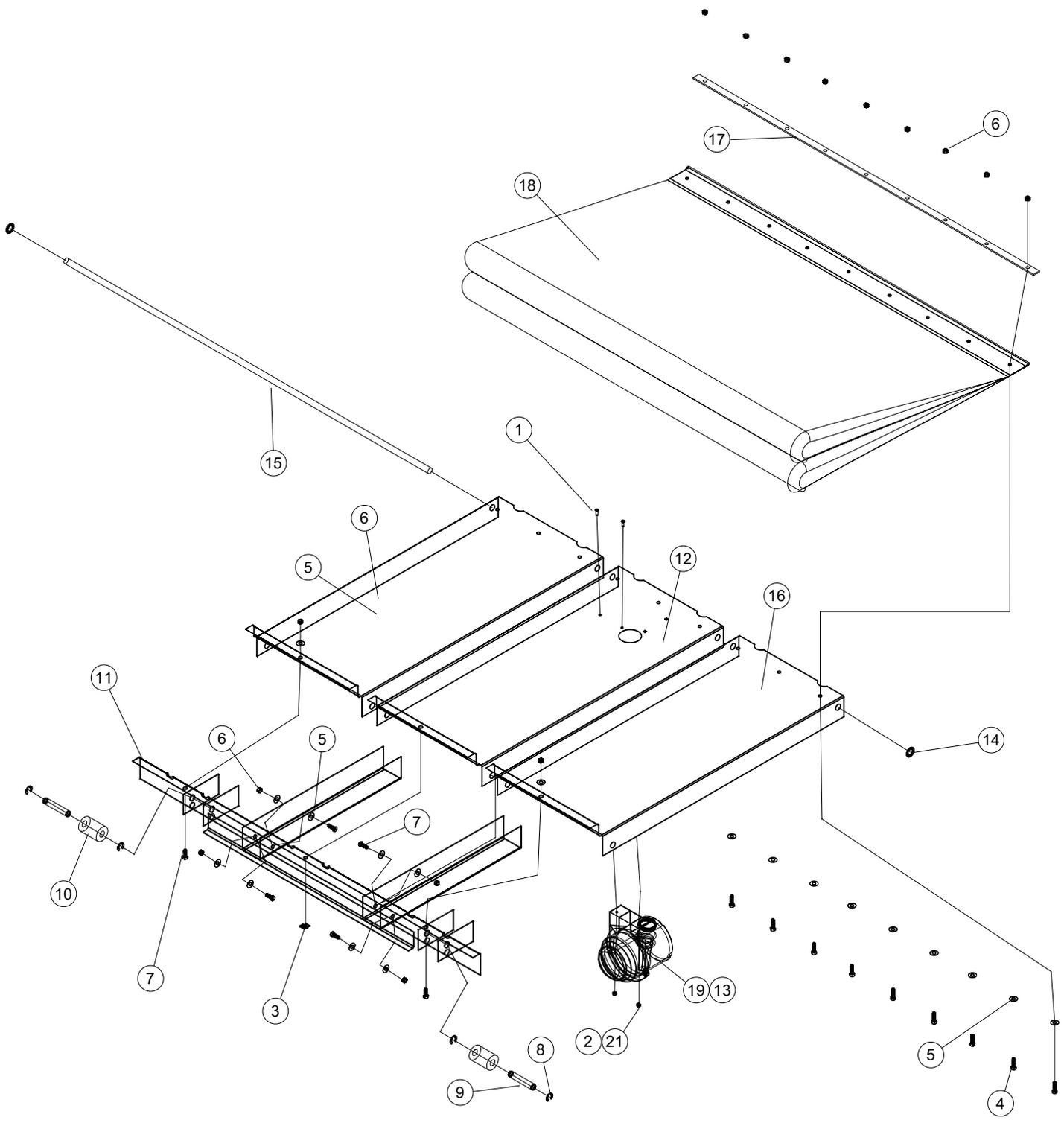
PARTS LIST — DOCK LEVELER, continued

Model and Part Number					
Item	Qty.	Part Description	AB 600	AB 800	AB1000
43	1	SAFETY LEG ARRANGEMENT	6002984	6002984	6002984
	1*	REFLEX LEG	6000613	6000613	6000613
44	3	CLEVIS PIN – 1/2" DIA X 2-3/4 LG	231-502	231-502	231-502
45	1	COMPRESSION SPRING	333-069	333-069	333-069
46	2	BRAND IDENTIFIER LABEL – SERCO®	921-185	921-185	921-185
47	3	WARNING LEVELER INFO. LABEL	6008485	6008485	6008485
48	2	TRIP WARNING LABEL	138-837	138-837	138-837
49	2	SAFETY LEG SPRING	333-055	333-055	333-055
50	1	SERCO® LABEL	824-002	824-002	824-002
51	1	SERIAL TAG	6009761	6009761	6009761
52	1	REAR WEATHER SEAL CP 6FT	6015410	6015410	6015410
	1	REAR WEATHER SEAL CP 6.5FT	6015411	6015411	6015411
	1	REAR WEATHER SEAL CP 7FT	6015594	6015594	6015594
53	1	UPPER AIR BAG SHIELD – SMALL	155-295	—	—
	1	UPPER AIR BAG SHIELD – LARGE	—	155-400	155-400
54	4	PIN 3/4" DIA	586-1467	586-1467	586-1467
55	1	SQ. NUT 3/8-16 UNC PLAIN	214-826	214-826	214-826
56	3	1180 HITCH PIN CLIP	231-503	231-503	231-503
57	4	PLAIN WASHER – 1/2" I.D.	234-260	234-260	234-260
58	1	RETURN SPRING TRIP ROD ASSY	6000692	6000692	6000692
59	2	SPRING, DAMPER	333-042	333-042	333-042
60	6	SCREW, SELF TAPPING, #22-14 X 3/4 TEKS	215-702	—	—
	8	SCREW, SELF TAPPING, #22-14 X 3/4 TEKS	—	215-702	215-702
61	1	LABEL, MAINTENANCE STRUT DANGER	921-217	921-217	921-217
62	4	FOOT ASSEMBLY	6002915	6002915	6002915
63	2	1/2" RUE RING	6006050	6006050	6006050
64*	1	BOLT, SHOULDER, 2-5/8" L X 3/4" THREAD - 3/8X16	6000612	6000612	6000612
65*	1	ROLLER, CAM	156-332	156-332	156-332
66*	1	PW 5/8" ID X 1-5/16" OD X 1/8" THICK	6000614	6000614	6000614
67*	1	SPRING TORSION — DLS CAM	101-091	101-091	101-091
68	1	PIN, COTTER, 1/8"DIA X 1-1/4" LG	035036	035036	035036
69	1	HEX NUT, HEAVY, ZINC PL 3/8"	6014666	6014666	6014666

* Optional Reflex Leg.

PARTS LIST — AIR BAG/PAN ASSEMBLY

Fig. 45



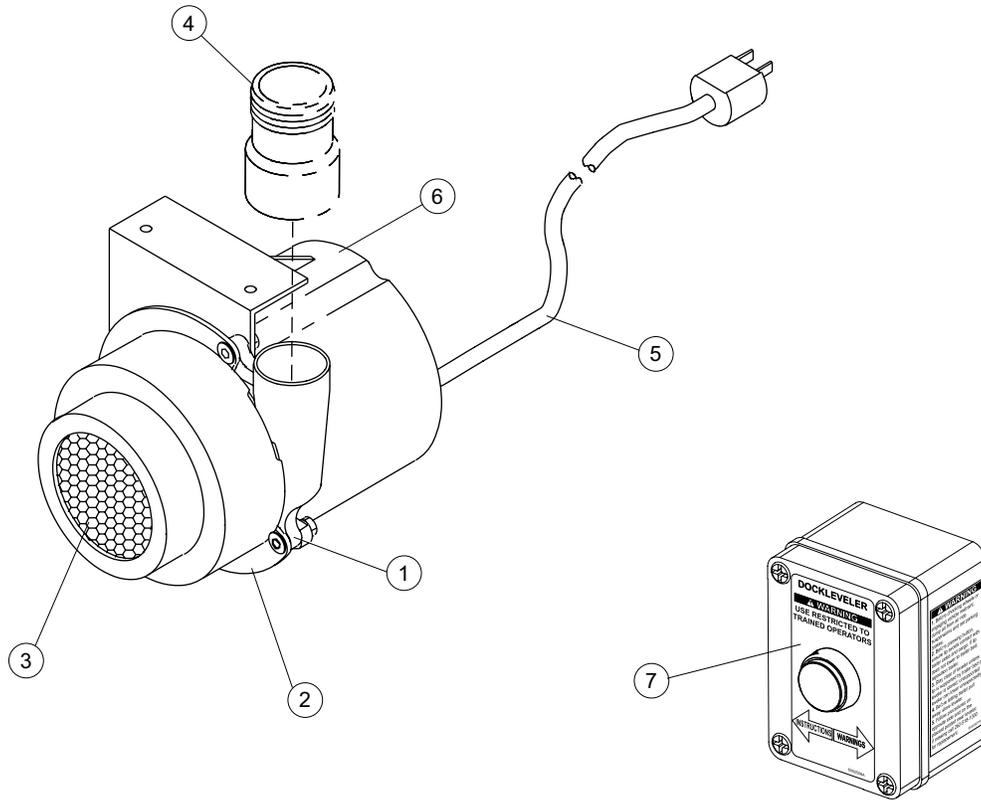
PARTS LIST — AIR BAG/PAN ASSEMBLY, continued

Item	Quantity	Description	AB 600, 800, 1000
1	2	SCREW, BUTTON FLG. HD 1/4-20 X 3/4"	131-483
2	2	LN 1/4-20 ESLOK	214-502
3	1	3/8-16 UNC "J" NUT RETAINER	214-855
4	9	HHMB 3/8-16 X 1-1/4"	212-104
5	19	3/8 FLAT WASHER	234-101
6	15	3/8-16 NYLOCK NUT	214-538
7	6	HHMB 3/8-16 X 1"	212-103
8	4	KLIPRING – 3/4 – 5304 – 75 TRUARC	236-110
9	2	AIR BAG ROLLER PIN	521-001
10	2	AIR BAG ROLLER	153-113
11	1	PAN CONV. REINF ANGLE ASSY – CP	3-4739
12	1	AIR BAG PAN – INNER	155-580
	1	*AIR BAG PAN – INNER LARGE	155-650
13	1	NIPPLE	6017270
14	2	RING, RETAINING	131-457
15	1	AXLE, REAR	712-812
16	2	PAN, OUTER	155-579
	2	*PAN, OUTER LARGE	155-649
17	1	CLAMP BAR	157-747
18	1	LIFTING BAG ASSY – SMALL	713-149
	1	*LIFTING BAG ASSY – LARGE	6010111
19	1	FAN MOTOR ASSY – 120V	6008662
20	A/R	PATCH KIT, BAG (NOT SHOWN)	184-379
21	2	WASHER, FLAT, 1/4"	131-485

**Item 16 and 18: Parts made for all 10' long models, 8' long 50K models, and 8' long 40K and 45K models equipped with an 18" or 20" lips.*

PARTS LIST — FAN/PIPING ASSEMBLY

Fig. 46

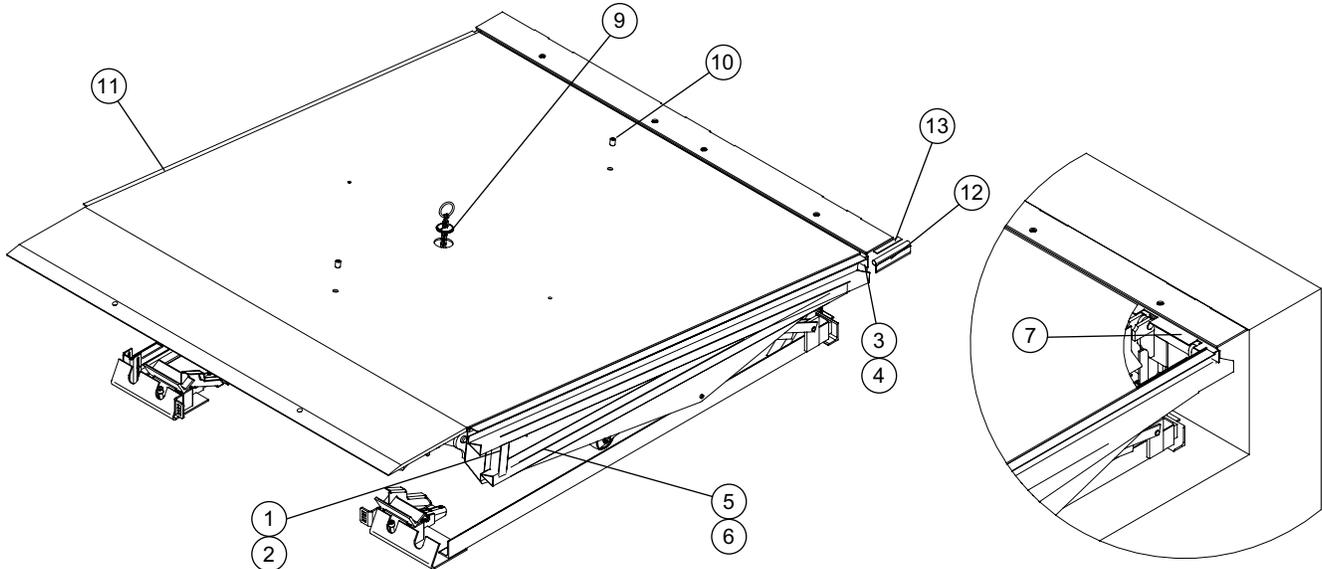


Item	Quantity	Description	AB 600, 800, 1000
1	1	MOTOR, AIR 2 STAGE 120V	6008185
2	1	FILTER HOUSING	712-748
3	1	FILTER, FAN	712-196
4	1	NIPPLE	6017270
5	1	CORD W/PLUG	712-027
6	1	HOUSING, FAN	712-813
7	1	115V CONTROL STATION	908-753

PARTS LIST, continued

OPTIONAL ENERGY GUARD® DOCK LEVELER SEALING SYSTEM

Fig. 47



Item	Description	Quantity									Part Number
		6x6 6008228	6.5x6 6008229	6x7 6008230	6x8 6008231	6.5x8 6008232	7x8 6008233	6x10 6008234	6.5x10 6008235	7x10 6008236	
1	5-1/2" FRONT SEAL	2	2	2	2	2	2	2	2	2	6008166
2	VERTICAL SEAL	2	2	2	2	2	2	2	2	2	6008173
3	6' UPPER SEAL 8' UPPER SEAL 10' UPPER SEAL	2	2	2	2	2	2	2	2	2	6008167 6008169 6008171
4	ALUM. STRIP 53-1/2" ALUM. STRIP 77-1/2" ALUM. STRIP 101-1/2"	2	2	2	2	2	2	2	2	2	6008175 6008177 6008179
5	6' LOWER SEAL 8' LOWER SEAL 10' LOWER SEAL.	2	2	2	2	2	2	2	2	2	6008168 6008170 6008172
6	ALUM. STRIP 6' UPPER ALUM. STRIP 8' UPPER ALUM. STRIP 10' UPPER	2	2	2	2	2	2	2	2	2	6008174 6008176 6008178
7	6' REAR SEAL 6.5' REAR SEAL 7' REAR SEAL	1	1	1	1	1	1	1	1	1	6007674 6007675 6007676
8	TECH SCREWS - NS	26	26	26	26	26	26	28	28	28	215702
9	CHAIN CUP SEAL	2	2	2	2	2	2	2	2	2	0392
10	3/4-10 SET SCREW	2	2	2	2	2	2	2	2	2	6008249
11	W/SEAL 600 W BRUSH W/SEAL 800 W BRUSH W/SEAL 600 W BRUSH CUT	2	2	2	2	2	2	2	2	2	328907 328908 328910
12	CORNER BULB SEAL	2	2	2	2	2	2	2	2	2	6009507
13	TRANSITION ANGLE SEAL*	2	2	2	2	2	2	2	2	2	6008247

*Optional.

LIMITED WARRANTY INFORMATION

THIS LIMITED WARRANTY IS SERCO'S SOLE AND EXCLUSIVE WARRANTY WITH RESPECT TO THE DOCK LEVELER AND IS IN LIEU OF ANY OTHER GUARANTEES OR WARRANTIES, EXPRESS OR IMPLIED

SERCO warrants that this DOCK LEVELER will be free from flaws in material and workmanship under normal use for a period of one (1) year from the earlier of 1) 60 days after the date of initial shipment by SERCO, or 2) the date of installation of the DOCK LEVELER by the original purchaser, provided that the owner maintains and operates the DOCK LEVELER in accordance with this User's Manual.

SERCO expressly warrants that the BAG, MOTOR, GASKETS, FITTINGS and SEALS will be free from flaws in material and workmanship under normal use for a period of five (5) years from the earlier of 1) 60 days after date of shipment, or 2) the date of installation of the DOCK LEVELER by the original purchaser, provided the purchaser maintains and operates the DOCK LEVELER in accordance with the User's Manual.

In the event that this DOCK LEVELER proves deficient in material or workmanship within the applicable Limited Warranty period, owner shall so notify SERCO, and SERCO will, at its option:

1. Replace the DOCK LEVELER, or the deficient portion(s) thereof, without charge to the owner; or
2. Alter or repair the DOCK LEVELER, on site or elsewhere, without charge to the owner.

This Limited Warranty does not cover any failure caused by improper installation, abuse, improper operation, negligence, or failure to maintain and adjust the DOCK LEVELER properly. Parts requiring replacement due to damage resulting from vehicle impact, abuse, or improper operation are not covered by this warranty. SERCO DISCLAIMS ANY RESPONSIBILITY OR LIABILITY FOR ANY LOSS OR DAMAGE OF ANY KIND (INCLUDING WITHOUT LIMITATION, DIRECT, INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES, OR LOST PROFITS OR LOST PRODUCTION) arising out of or related to the use, installation or maintenance of the DOCK LEVELER (including premature product wear, product failure, property damage or bodily injury resulting from use of unauthorized replacement parts or modification of the DOCK LEVELER). SERCO's sole obligation with regard to a DOCK LEVELER that is claimed to be deficient in material or workmanship shall be as set forth in this Limited Warranty. This Limited Warranty will be null and void if the original purchaser does not notify SERCO's warranty department within ninety (90) days after the product deficiency is discovered. .

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF, INCLUDING, BUT NOT LIMITED TO, A WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH SERCO HEREBY DISCLAIMS.

Please direct questions about your dock leveler to your local distributor or to 4Front Engineered Solutions, Inc.

Your local Serco® distributor is:

Corporate Head Office:

1612 Hutton Dr. Suite 140
Carrollton, TX. 75006
Tel. (972) 466-0707
Fax (972) 323-2661

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