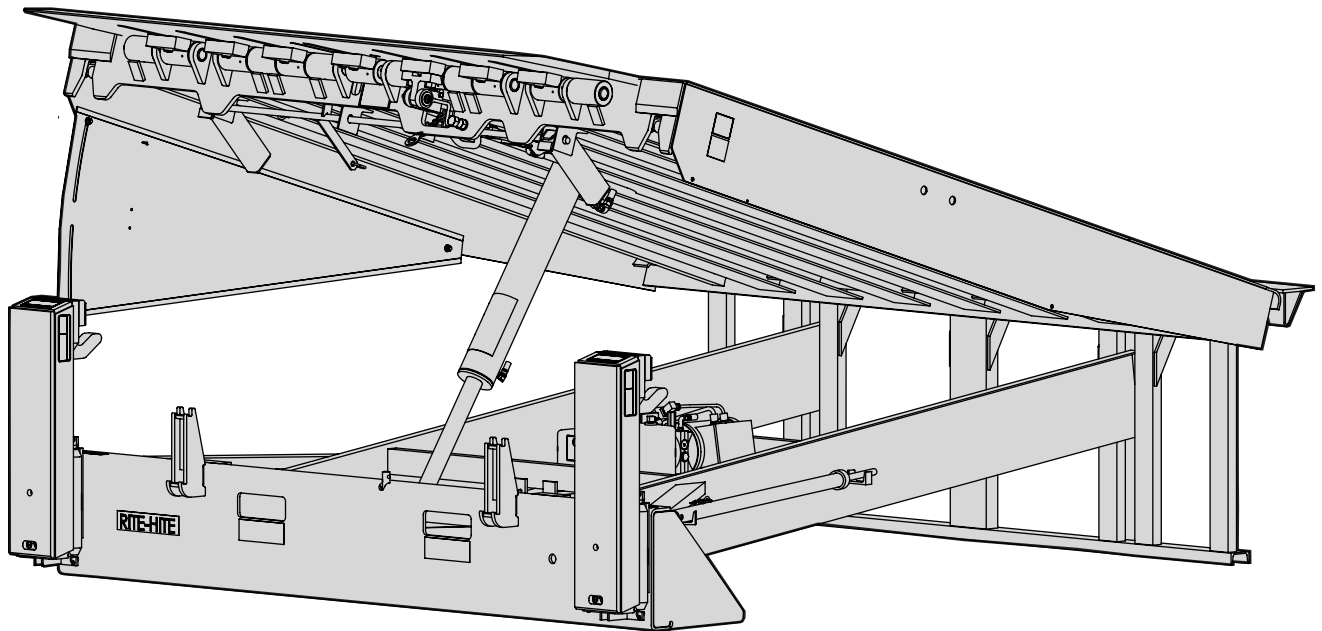

RHJ50 Jumbo Dock Leveler Installation Manual



part of the SMOOTH TRANSITION DOK SYSTEM™

RITE
HITE®



**This Manual Covers Dock Levelers Built After Serial Numbers:
10EH060001M and up**

PRINTED IN U.S.A.
RITE-HITE PRINT SHOP

PUBLICATION NO. 1289
RITE-HITE PART NO. 0128929
DECEMBER 2011

TABLE OF CONTENTS

NOTICE TO USER	2
SAFETY WARNINGS	3
PIT DETAILS	6
INSTALLATION INSTRUCTIONS	8
ELECTRICAL INSTALLATION	12
ELECTRICAL SCHEMATIC	14
HYDRAULIC SCHEMATIC	15
LUBRICATION CHART	17
LEVELER ADJUSTMENTS	18
HYDRAULIC VALVE ADJUSTMENTS	19
STANDARD WARRANTY	BACK COVER

PRODUCT SPECIFIC WARRANTY

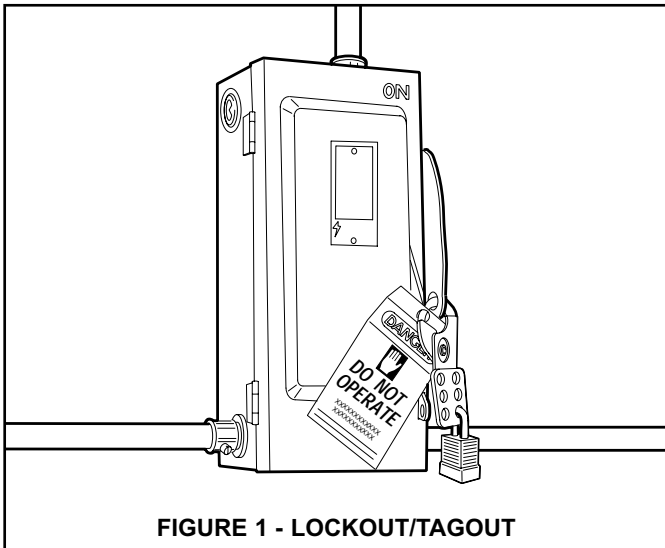
RITE-HITE® warrants the RHH50 Dock Leveler for five-years parts and one-year labor from date of shipment in accordance with Rite-Hite's Standard Warranty Policy.

NOTICE TO USER

Your local RITE-HITE® representative provides a Planned Maintenance Program (P.M.P.) which can be fitted to your specific operation. Call your local representative or the RITE-HITE® Corporation at 414-355-2600.

The RITE-HITE® products in this manual are covered by one or more of the following U.S. patents: 5,271,183; 5,323,503; 5,546,623; 5,553,987; 5,582,498; 5,664,930; 5,702,223; 5,762,459 (RE: 37,570); 5,882,167; 6,065,172; 6,070,283; 6,085,375; 6,092,970; 6,106,212; 6,116,839; 6,190,109; 6,220,809; 6,276,016; 6,311,352; 6,318,947; 6,322,310; 6,360,394; 6,368,043; 6,431,819; 6,488,464; 6,499,169; 6,502,268; 6,505,713; 6,524,053; 6,634,049; 6,654,976; 6,726,432; 6,773,221; 6,832,403; 6,880,301; 6,892,411; 7,032,267; 7,062,814; 7,134,159; 7,213,285; 7,216,391; 7,363,670; 7,380,305; 7,503,089; 7,553,431; 7,584,517; 7,681,271; 7,823,239; 7,841,823; 7,877,831 and pending U.S and foreign patent applications. RITE-HITE®, LEVEL-RITE®, THINMAN™, SAFE-T-LIP®, HYDRACHEK®, WHEEL-LOK™, DOK-LOK®, DUAL-DOK®, SAFE-T-STRUT™, DOK-COMMANDER®, JUMBO™, HYDRA-RITE™, SAFE-T-GATE®, and SMOOTH TRANSITION DOK SYSTEM™, are trademarks of RITE-HITE® Corporation.

SAFETY WARNINGS



WARNING

When working with electrical or electronic controls, make sure that the power source has been locked out and tagged out according to OSHA regulations and approved local electrical codes.

LOCKOUT/TAGOUT PROCEDURES

The Occupational Safety and Health Administration (OSHA) requires, in addition to posting safety warnings and barricading the work area (including, but not limited to, trucking office and loading docks), that the power supply has been locked in the OFF position or disconnected. It is mandatory that an approved lockout device is utilized. An example of a lockout device is illustrated. The proper lockout procedure requires that the person responsible for the repairs is the only person who has the ability to remove the lockout device.

In addition to the lockout device, it is also a requirement to tag the power control in a manner that will clearly note that repairs are under way and state who is responsible for the lockout condition. Tagout devices have to be constructed and printed so that exposure to weather conditions, or wet and damp locations, will not cause the tag to deteriorate or become unreadable.

RITE-HITE® does not recommend any particular lockout device, but recommends the utilization of an OSHA approved device (refer to OSHA regulation 1910.147). RITE-HITE® also recommends the review and implementation of an entire safety program for the Control of Hazardous Energy (Lockout/Tagout). These regulations are available through OSHA publication 3120.

DANGER

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

CAUTION

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

WARNING

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

IMPORTANT

IMPORTANT is used to draw attention to a procedure that needs to be followed to prevent machine damage.

OTHER IMPORTANT OPERATIONAL SAFETY WARNINGS

DANGER

Never be under the dock leveler platform or lip without:

- Installing the Safe-T-Strut™ or other supporting device.
- If lip needs to be extended, follow procedures shown under Safety Devices on the following page.
- Turning off power to the control box.
- Locking out and tagging out the main power source, as shown under Safety Warnings on preceding page.

WARNING

Always barricade the dock leveler at ground level and dock level from any form of traffic when maintenance is required.

CAUTION

Inspect the dock leveler monthly to ensure that there are no broken or worn parts which could cause injury to personnel or damage to the equipment.

WARNING

- Before starting installation or maintenance, check and follow the safety procedures of the facility where the dock leveler is being installed.
- Never enter a truck/trailer until its brakes are set, air has been dumped from air ride suspension (if applicable), and you have visually inspected to be sure truck/trailer is securely held in place by a vehicle restraint or wheel chock per OSHA regulations.
- Never operate the leveler with you, anyone, or anything on, or in front of the leveler, or without a truck/trailer parked in position, or from on the truck/trailer bed.
- DO NOT operate with anyone under platform or in front of the lip.
- When leveler is not in use, always store it so that it is supported by the lip supports and that it is level with the surrounding dock floor.
- If a malfunction does occur, always call your authorized RITE-HITE® service representative immediately.

SAFETY DEVICES RITE-HITE LEVELERS

DANGER

Never be under the dock leveler platform or lip without:

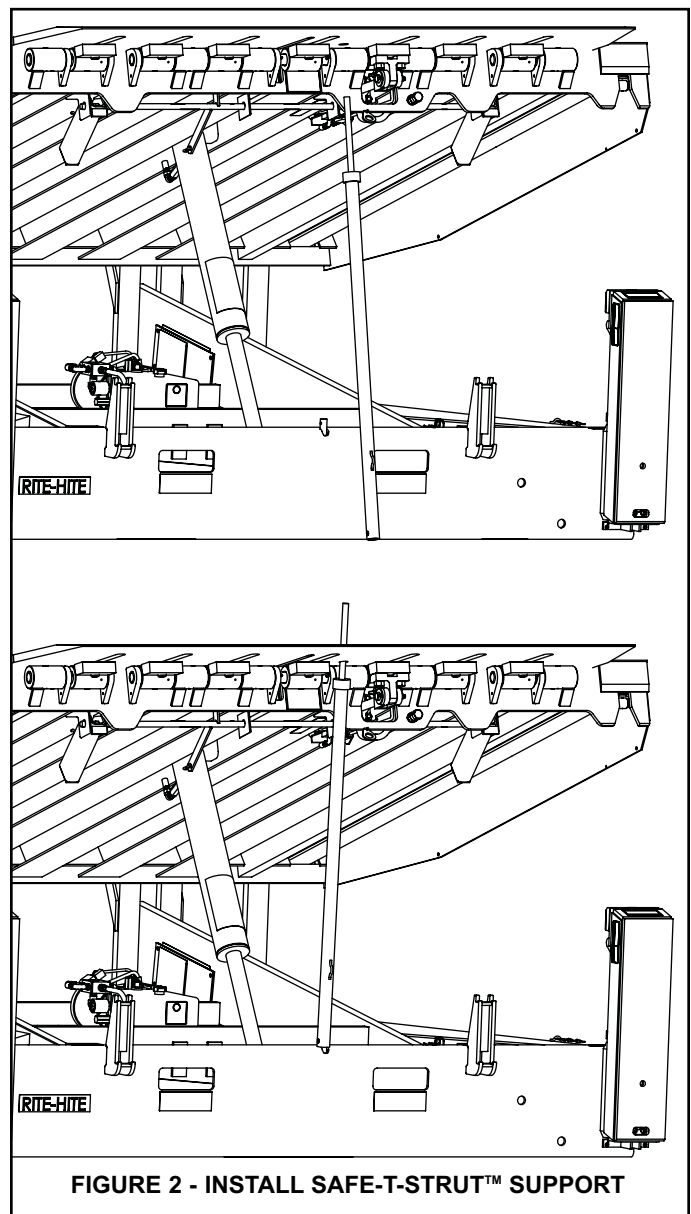
- Installing the Safe-T-Strut™. See below right. This can be done with the assistance of another person by:
 - Raise leveler until platform reaches its highest position and lip extends. Continue to maintain this position.
 - Then have assistant insert the smaller end of the Safe-T-Strut™ through the hole in the middle of the leveler lip and place the strut's wider open end over the base located on the leveler's front frame. Align the holes on the base and the Safe-T-Strut™ so that the leveler may be secured with the retaining pin and safety clip.
 - Release the push button on powered levelers allowing the Safe-T-Strut™ to rest on the underside of the lip.
- Lockout/Tagout power supply.
 - Turn off the power to the control box.
 - Lockout/tagout the main power source, as shown under Safety Warnings on the inside front cover of this manual.
 - Always barricade the leveler at dock level and drive level to prevent any unauthorized use of the leveler.

Remove the Maintenance Support.

- For Safe-T-Strut™ removal, have an assistant raise the leveler to its highest position with lip fully extended. Release the safety clip and remove retaining pin. Lift strut off base, and remove from lip. Return the Safe-T-Strut™ to the proper storage position.
- If you are unable to install the Maintenance Support properly, contact your authorized RITE-HITE® Service Representative or RITE-HITE® Customer Service at 1-414-355-2600.

CAUTION

- Post warnings and barricades at dock level and at drive level to indicate that work is being done around and under the leveler platform.
- Lockout/Tagout power to the leveler and post warnings when work is being performed on the leveler.



PIT DETAILS

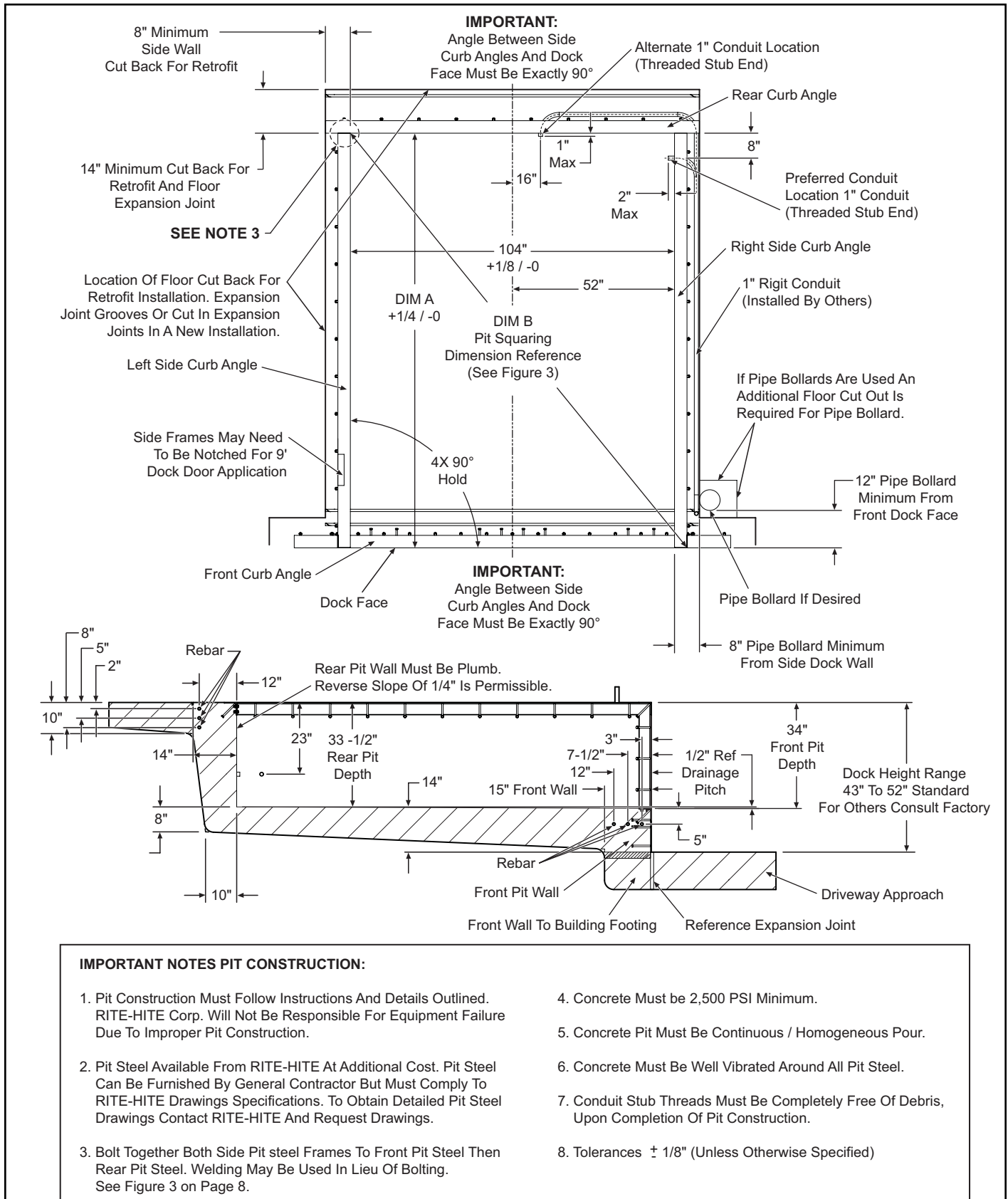
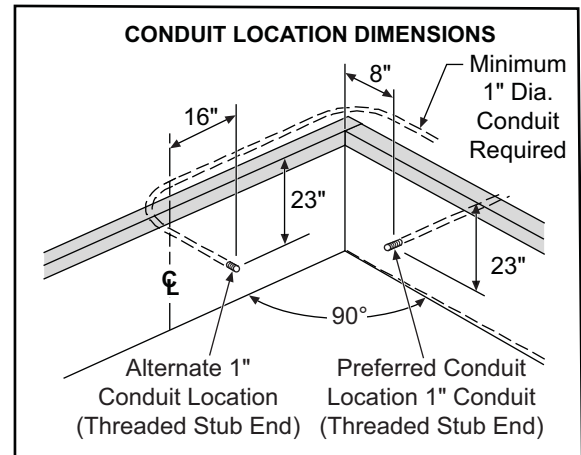
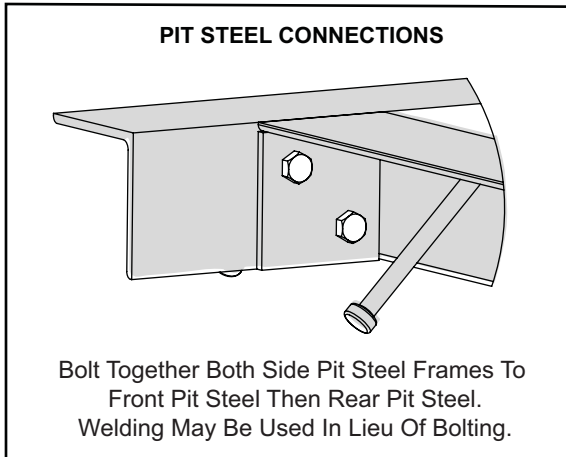


FIGURE 3 — PIT DETAILS

PIT DETAILS (Continued)



CAPACITIES	F and L		
	8' x 8'-6"	10' x 8'-6"	12' x 8'-6"
NOMINAL PIT SIZES (L x W)	8' x 8'-6"	10' x 8'-6"	12' x 8'-6"
PIT LENGTH DIM A	85"	109"	133"
PIT WIDTH	104"	104"	104"
PIT DEPTH DIM C	34"	34"	34"
PIT SQUARING DIM B	134-5/16"	150-5/8"	168-13/16"
PIT STEEL KIT PART #	116777	116778	116779

NOTE

Pit steel is available through RITE-HITE. Pit steel can be furnished by general contractor, but must comply to RITE-HITE drawing specifications. To obtain detailed pit steel drawings contact your local representative or RITE-HITE Applications Dept. and request drawings. Use the correct pit steel kit part number above to request detailed drawings.

FIGURE 4 — ADDITIONAL PIT DETAILS

INSTALLATION INSTRUCTIONS

⚠ DANGER

- Make sure leveler power is disconnected (locked out and tagged out according to OSHA regulations and approved local codes) before performing any welding on the leveler.
- DO NOT position the leveler on its side or turn the leveler top side down at any time.

IMPORTANT

Follow these precautions when installing your hydraulic leveler.

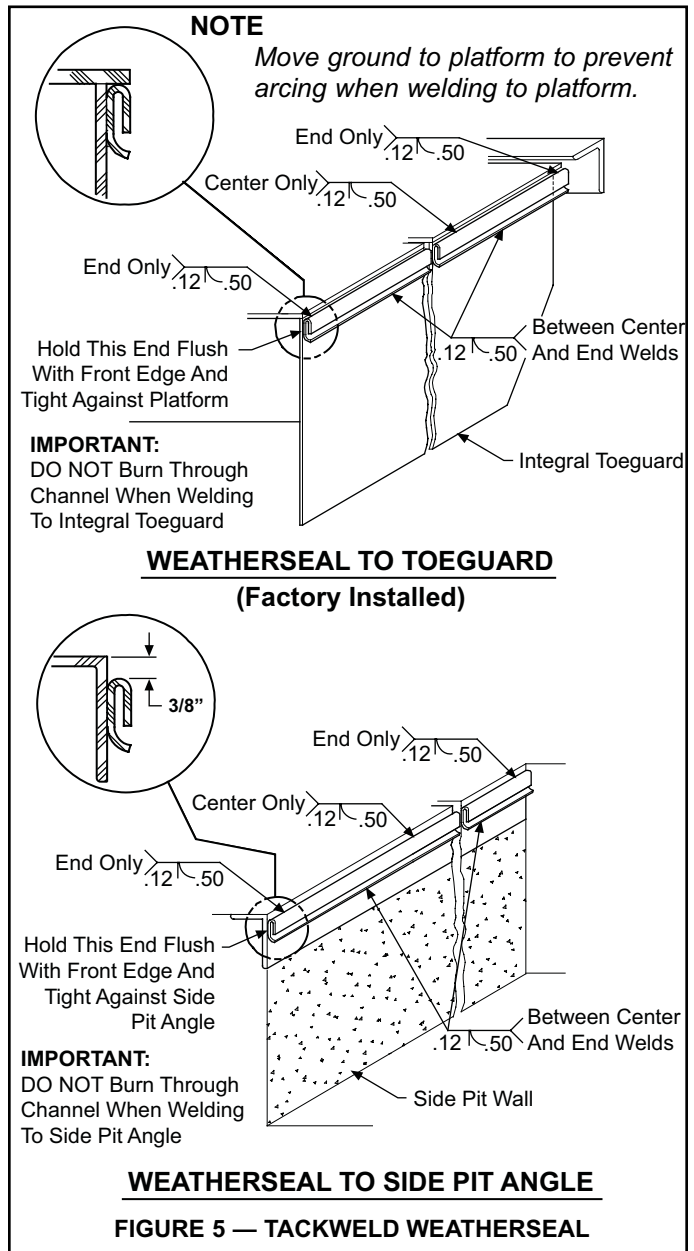
- ALWAYS ground to the Frame or Front Pit Angle when welding. DO NOT have any electrical circuit ground wires connected when welding.
- Check motor rotation by pressing and releasing the PLATFORM RAISE button. If the leveler does not raise, but the motor runs, the motor leads may be reversed. To correct, reverse any two of the T1, T2 or T3 leads in the junction box. DO NOT run the motor in reverse for extended periods of time as it will damage the hydraulic pump.

⚠ WARNING

Always barricade dock leveler at ground level and dock level before performing installation.

PREPARATION PRIOR TO INSTALLATION

1. Check pit to be sure it meets RITE-HITE pit drawings. See Figure 3 on page 6 for details.
2. All Pit Angles must be 4 x 4 x 1/4" minimum. This includes pit steel and concrete pour joints. If the pit has no Front Pit Angle or a 3 x 3 x 3/16" Front Pit Angle, contact RITE-HITE applications department.
3. Weld steel together as shown in figure 7 on page 10.
4. Leave shipping banding on until instructed to remove it.



5. Verify that the control box voltage (inside door) matches the leveler pump motor voltage (recorded on Rear Frame Angle and Motor Plate).

INSTALLATION INSTRUCTIONS

1. Tack weld Weatherseal channel (if shipped loose) to either the Toeguard or the Side Pit Angle. See Figure 5 for details.
2. Verify that all pit steel connection joints are welded. See Figure 7 on page 10.

INSTALLATION INSTRUCTIONS (Continued)

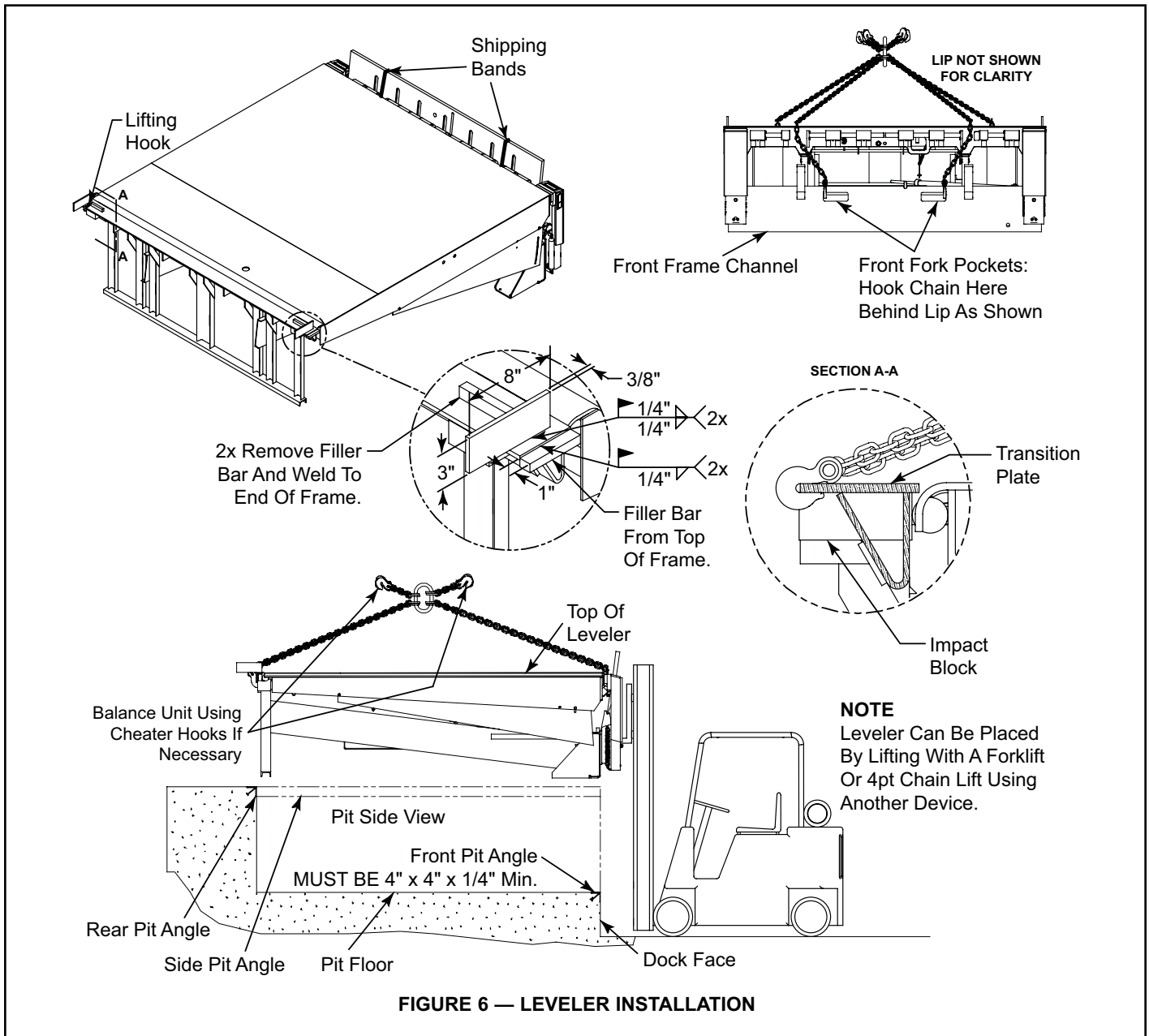


FIGURE 6 — LEVELER INSTALLATION

3. Before placing leveler in pit, tack weld Installation Tabs onto Rear Frame Angle as shown in Figure 6 (if unit is already in pit, raise leveler sufficiently to attach Installation Tabs and lower back into pit).
4. Move 2X Filler Bars from top of rear frame, locate and weld to ends if rear frame 3/16" to 1/4" below top of rear frame.

NOTE

Tabs are designed to support the back edge of the leveler and to align it with the curb steel during installation. Make sure tabs are absolutely level with the leveler deck.

5. Install leveler using front fork pockets or hoist leveler into pit with four point chain assembly. Lower leveler until it rests on the Installation Tabs. See Figure 6.

NOTE

If placing with chains, once installation tabs are one inch on rear pit steel set leveler down into pit and remove rear chains. Pick up leveler slightly and slide back until tight against rear pit steel.

INSTALLATION INSTRUCTIONS (Continued)

⚠ DANGER

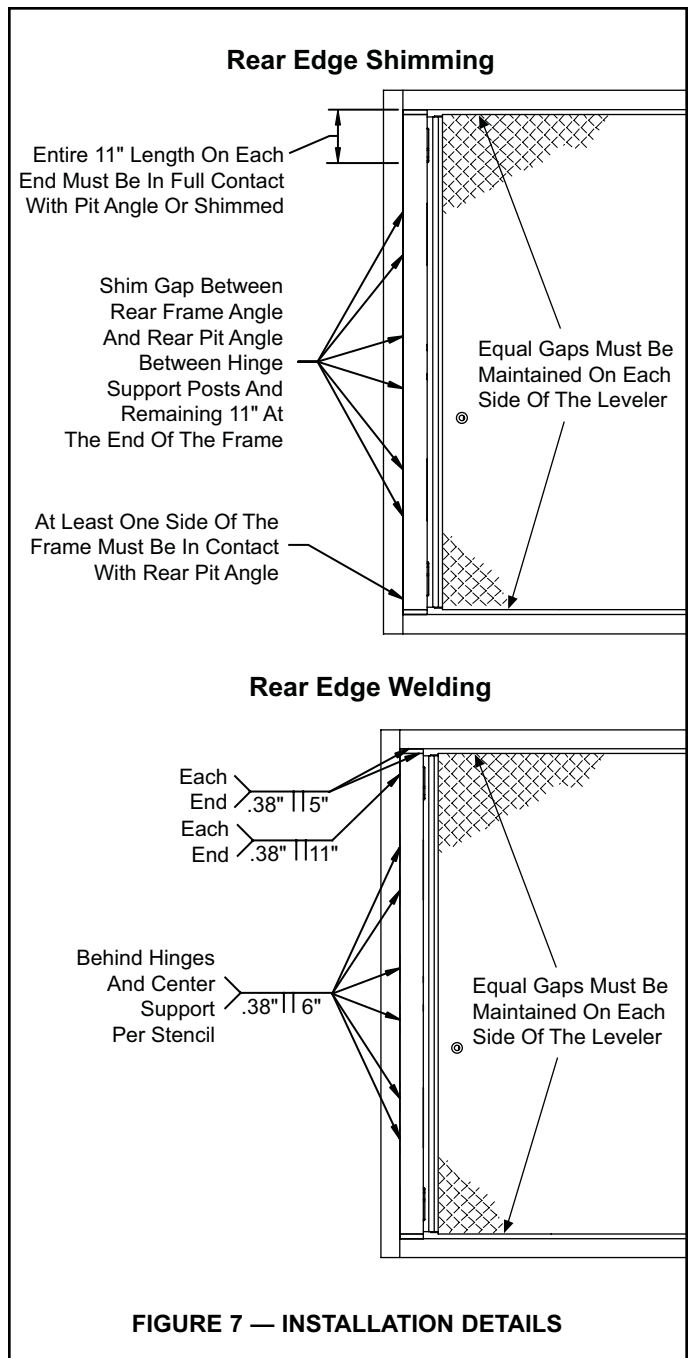
DO NOT connect any electrical circuit ground leads until all welding is completed.

⚠ CAUTION

Shipping bands are under tension. Stand to one side when cutting to avoid being cut by the bands.

IMPORTANT

Cover the main cylinder with a fire retardant material, such as a leather welding apron, prior to welding near the Cylinder Clevis.



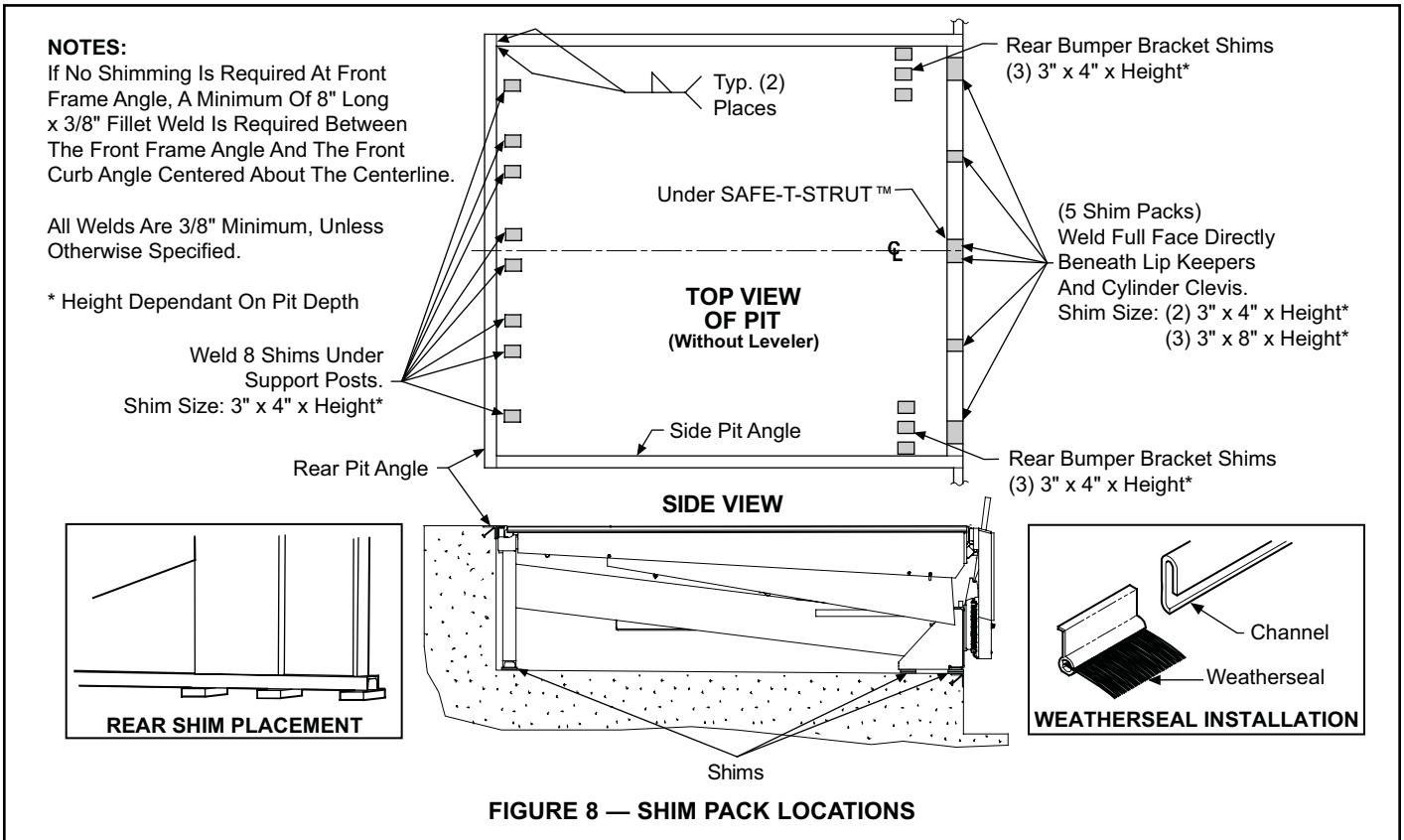
6. Center leveler in pit side to side with rear frame angle in contact with rear pit angle. See Figure 7.
7. Raise front of leveler to be flush with dock floor. Support frame and insert shims (cut shipping bands if required to install shims) under Lip Supports and under Cylinder Clevis. For SAFE-T-LIP levelers, measure distance from lip to lip support on each side of leveler. Distances must match within 1/8". Adjust position of frame if necessary. Tack weld shims in place. See Figure 8 on page 11.
8. Weld all stacked shims together at front of leveler. Weld shim stacks to Front Frame Angle and to the Front Pit Angle. See Figure 8 on page 11.

NOTE

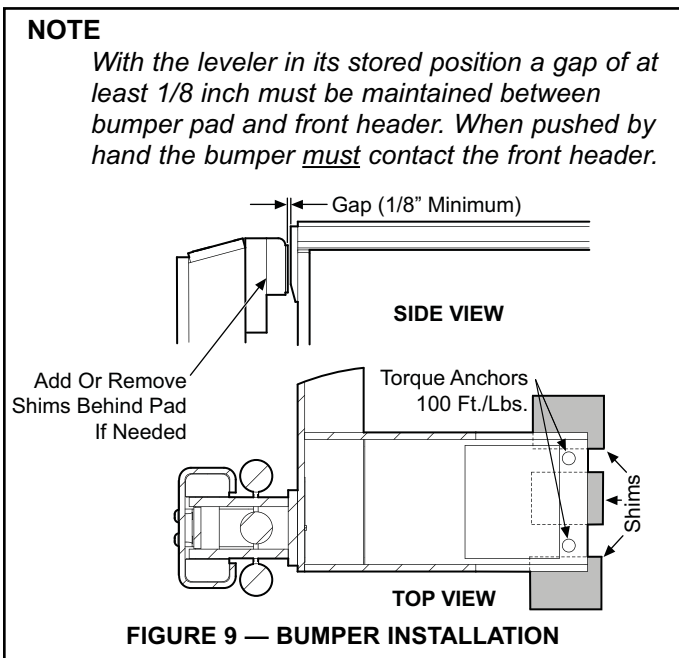
If no shimming was required at the front of the leveler, a minimum of eight inches (8") of weld is required at the Cylinder Clevis and six inches (6") of weld under each lip support.

9. Remove shipping bands and mechanically raise leveler platform and extend the lip completely. Engage SAFE-T-STRUT and secure with retaining pin.
10. Place shims at rear of leveler under Support Posts. See Figure 8 on page 11.
11. Weld all stacked shims together at rear of leveler. Weld all shim stacks to Frame. See Figure 8 on page 11.
12. Stitch weld the rear frame angle of the leveler to the rear pit angle. Place a 6" weld centered on each hinge/support post on the leveler frame. See Figure 8. Remove installation tabs and grind clean.

INSTALLATION INSTRUCTIONS (Continued)



13. Place shims, if required, at rear of bumper brackets and anchor to pit floor. Verify 1/8 inch gap between bumpers and front header. See Figures 8 and 9.
14. Clean and paint all welds and grind marks.
15. Install Weatherseal in channel. See Figure 8.



IMPORTANT

Verify proper hydraulic fluid level before operating leveler by checking decal on the side of the tank. When adding oil, use only manufacturer approved hydraulic oils. Consult your authorized RITE-HITE service representative or call RITE-HITE customer service at (800) 456-0600.

FIGURE 10 — HYDRAULIC FLUID LEVEL INDICATOR

INSTALLATION INSTRUCTIONS (Continued)

WARNING

When working with electrical or electronic controls, make sure that the power source has been locked out and tagged according to OSHA regulations and approved local electrical codes.

CAUTION

- When drilling holes in the box, do not allow the drill to go too deeply into the box. Damage to the control systems may occur.
- DO NOT turn control box upside down to drill any access holes. Cover internal electrical components prior to drilling - this will prevent debris from contacting the internal electrical components potentially causing failure or severe equipment damage.
- Remove all debris from box using a shop vacuum. NEVER use air to blow debris from the control box.

IMPORTANT

- The control box and all wiring should be installed by a qualified electrician in accordance with all national and local electrical codes.
- If rigid conduit is installed, bonding must be maintained between conduit connections by using ground bushings and a jumper wire.

ELECTRICAL INSTALLATION

Connect wiring as indicated by the *Wiring Diagrams and Schematics* see page 14.

Incoming three phase power must connect into terminals L1, L2, and L3. Ground must attach to the ground lug.

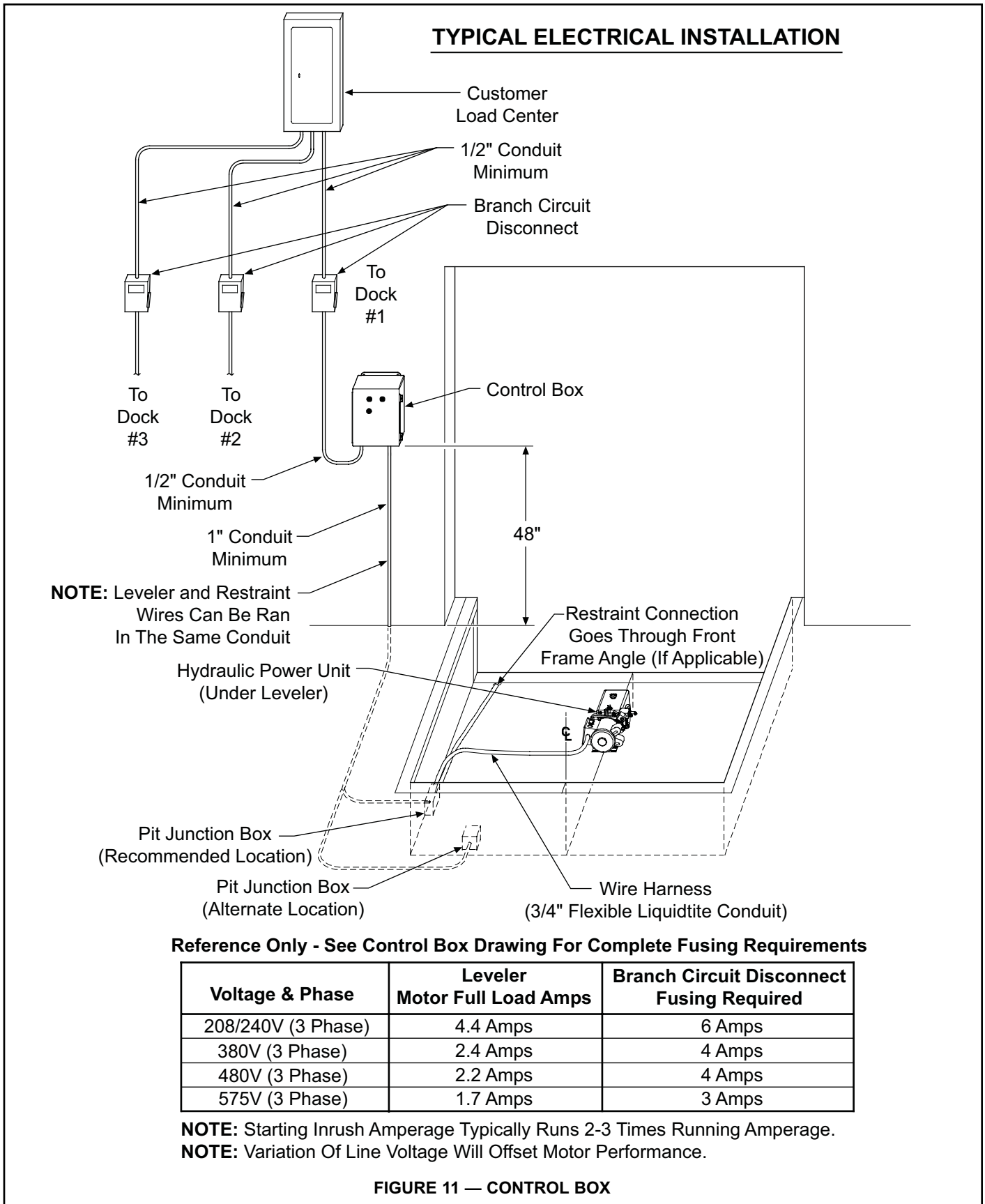
CONTROL BOX AND CONDUIT INSTALLATION PROCEDURES

1. Install the control box on a wall adjacent to the overhead door at approximately 48" above the floor level. See Figure 11.
2. Drill a hole for the power supply conduit (by others) in the bottom of the control box. **All holes drilled through the control box must be through the bottom of the box.**

Minimum Wire Size Chart for Various Line Lengths and Line Loads

		Line Length (In Feet)							
		0-50	51-100	101-150	151-200	201-250	251-300	301-350	351-400
208-240/3	1HP	14	14	12	12	10	10	10	8
380-415/3	1HP	14	14	14	14	14	14	14	14
440-480/3	1HP	14	14	14	14	14	14	14	14
575-600/3	1HP	14	14	14	14	14	14	14	14

WIRING DIAGRAM



Reference Only - See Control Box Drawing For Complete Fusing Requirements

Voltage & Phase	Leveler Motor Full Load Amps	Branch Circuit Disconnect Fusing Required
208/240V (3 Phase)	4.4 Amps	6 Amps
380V (3 Phase)	2.4 Amps	4 Amps
480V (3 Phase)	2.2 Amps	4 Amps
575V (3 Phase)	1.7 Amps	3 Amps

ELECTRICAL SCHEMATIC

NOTE Typical Electrical Schematic Shown. Please refer to Electrical Schematics inside the dock leveler control box for specific voltage, phase, and options ordered on your dock leveler.

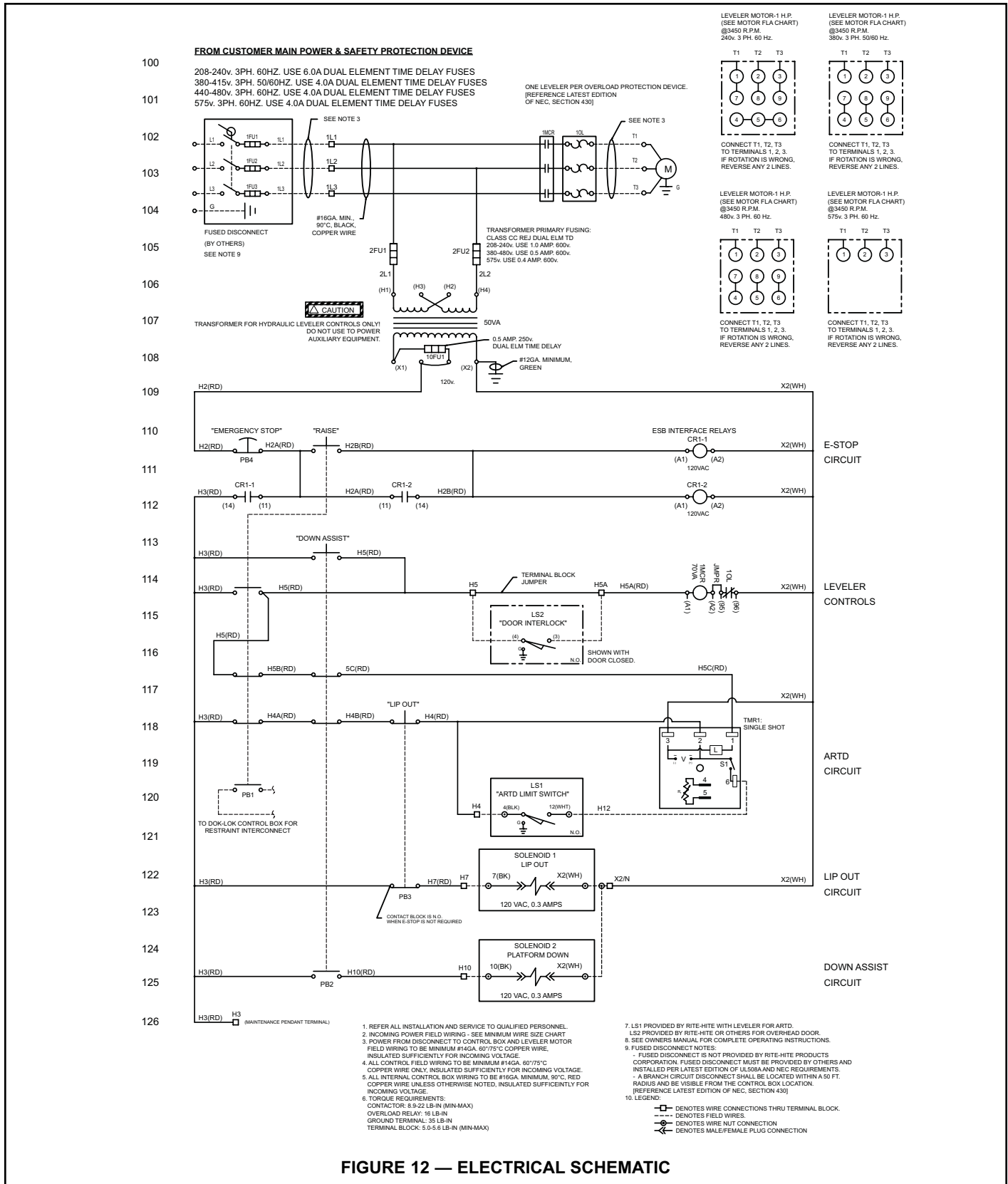


FIGURE 12 — ELECTRICAL SCHEMATIC

HYDRAULIC SCHEMATIC

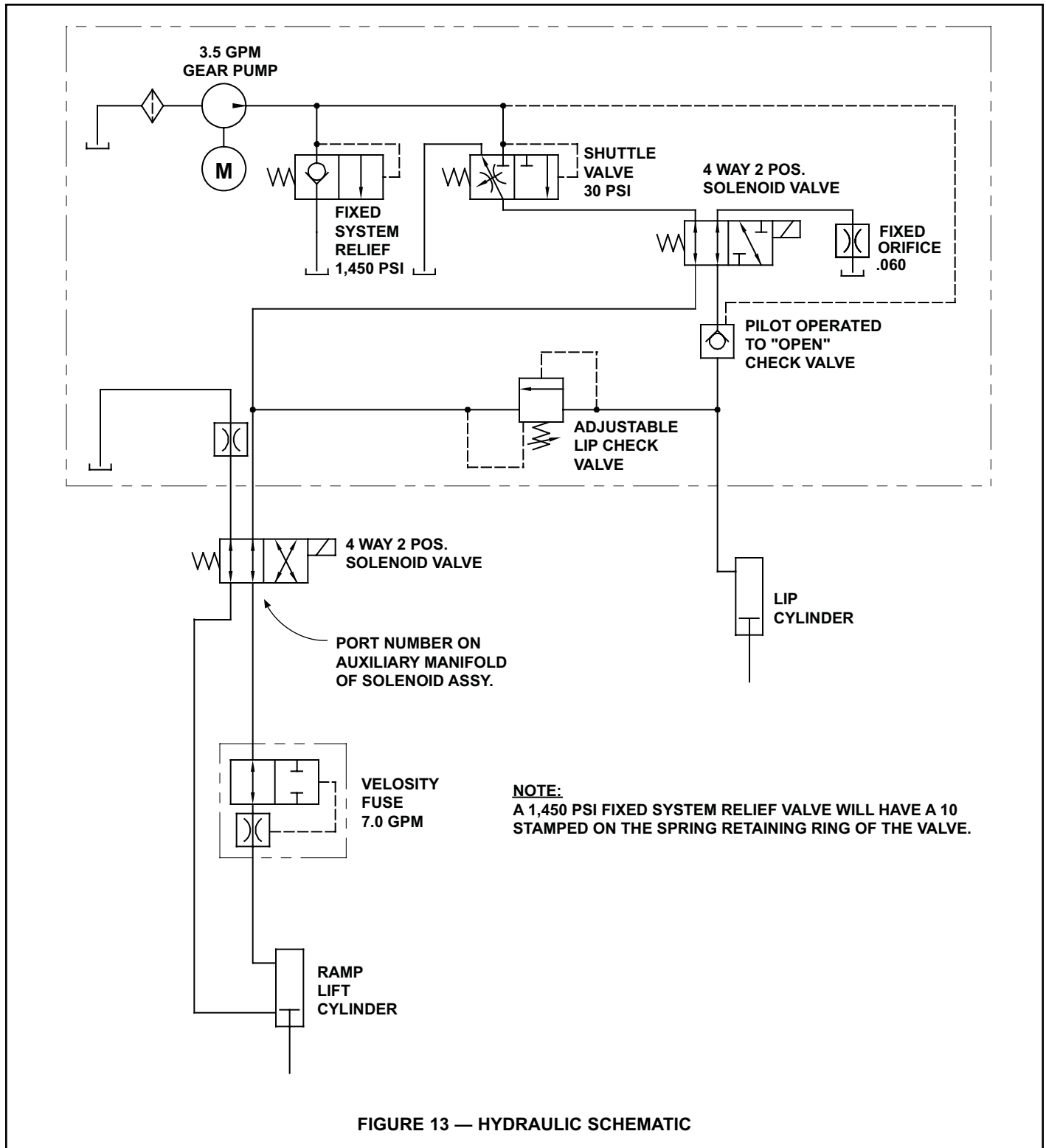
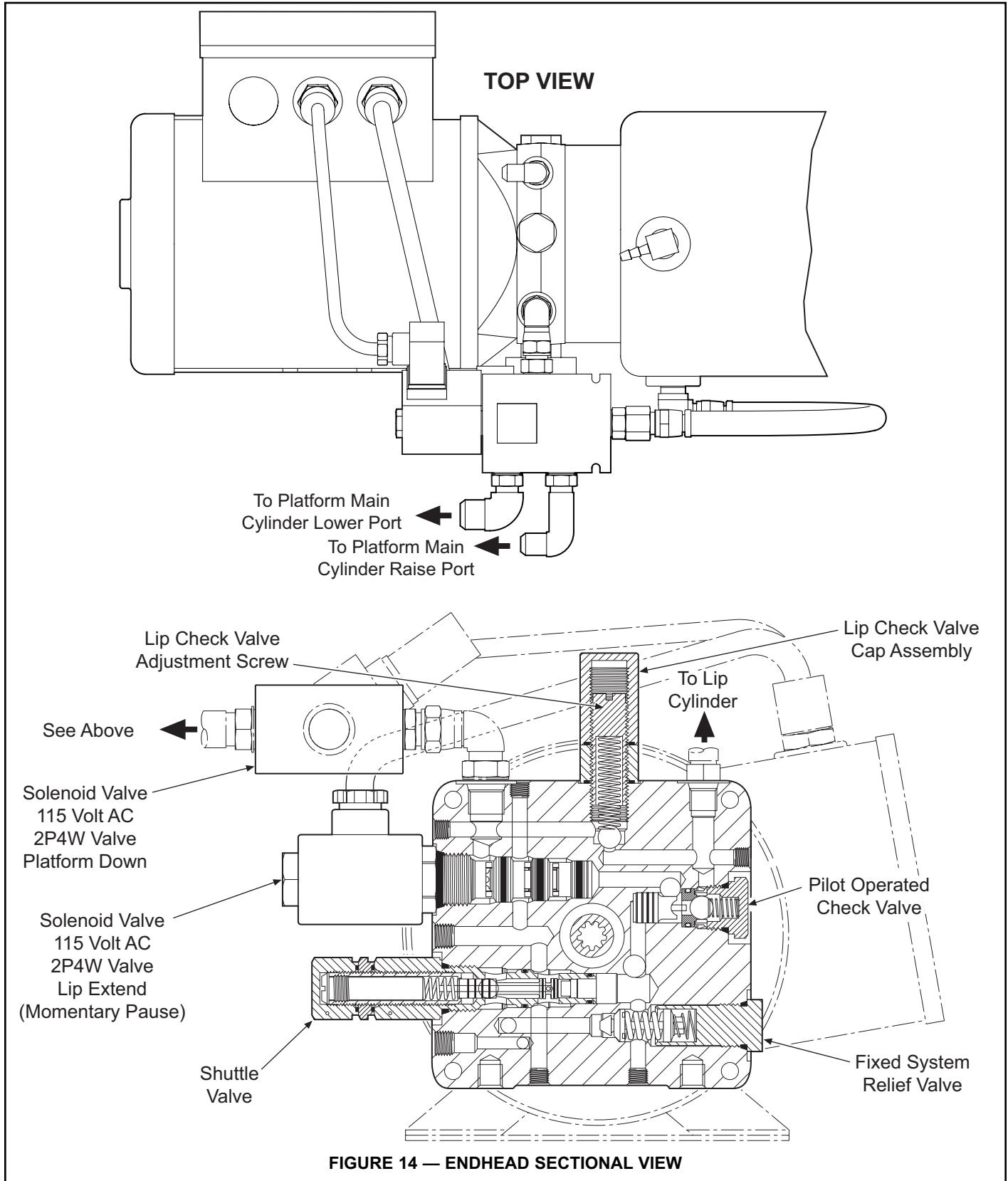


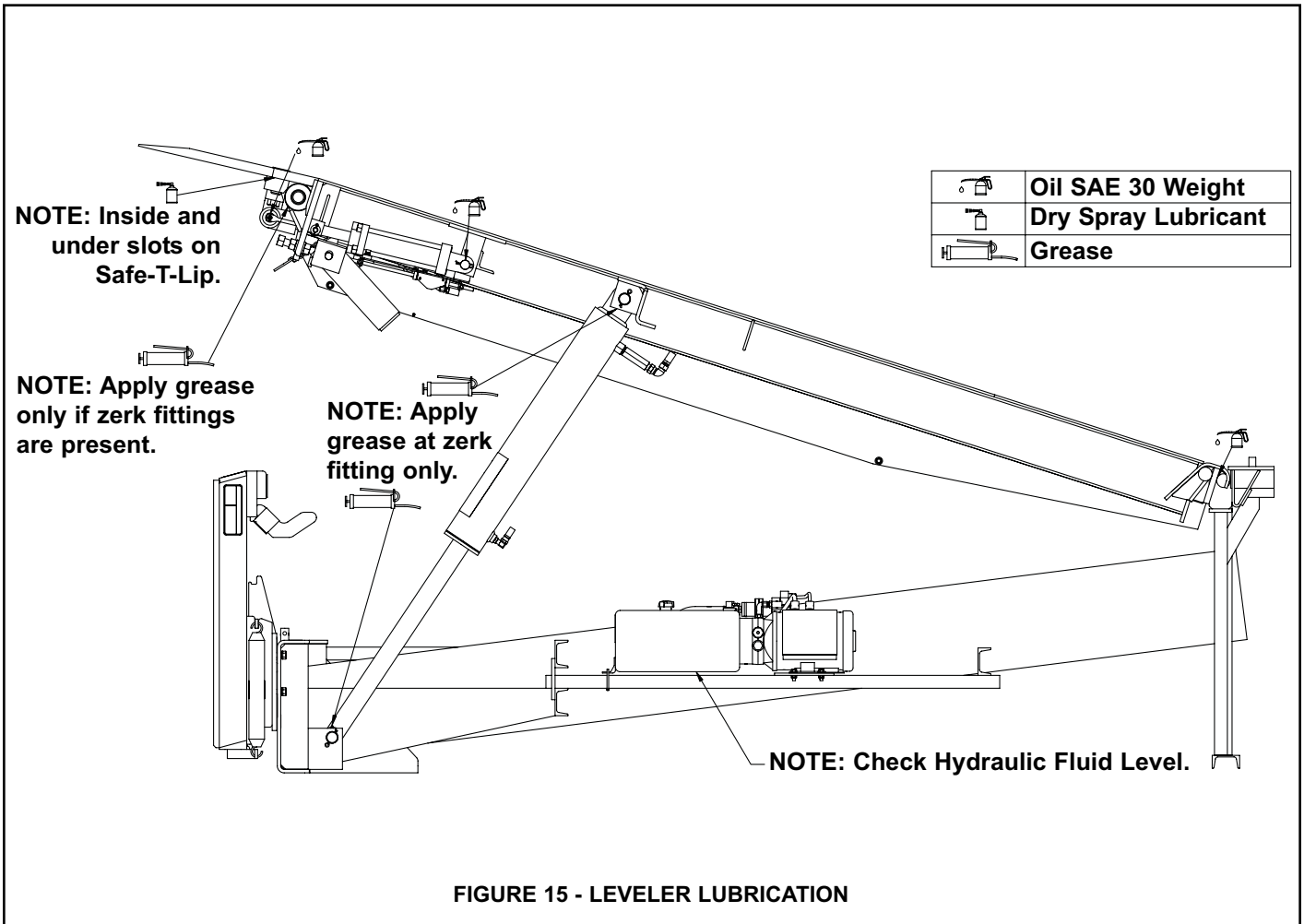
FIGURE 13 — HYDRAULIC SCHEMATIC

HYDRAULIC POWER UNIT AND VALVES

HYDRAULIC PUMP SECTION VIEW



LUBRICATION CHART



LEVELER ADJUSTMENTS

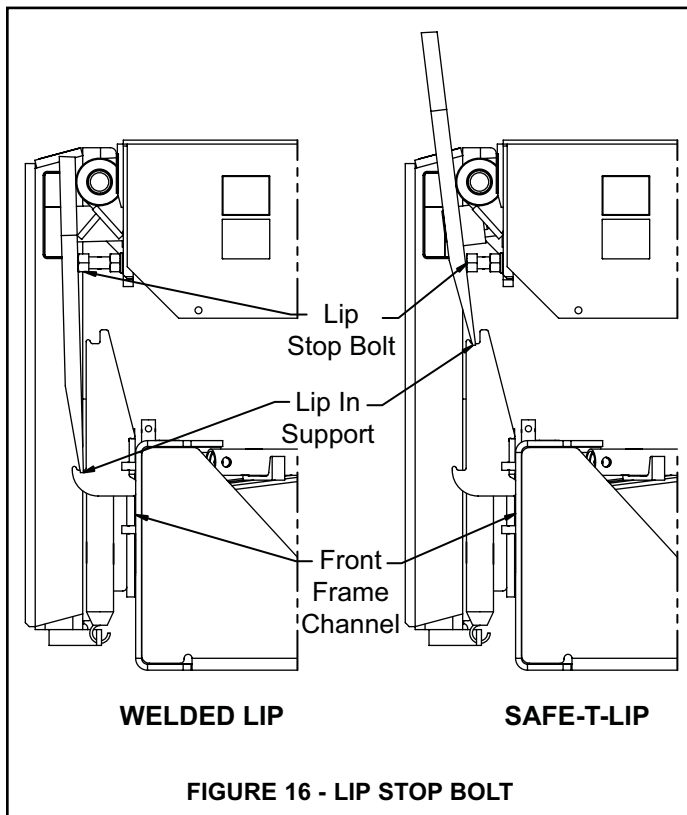
⚠ DANGER

- DO NOT operate leveler with anyone standing on or in front of the lip.
- NEVER go under the hydraulic leveler platform or lip without installing the Maintenance Support.
- Make sure that the leveler power is locked out and tagged out according to OSHA regulations and approved local codes.

LIP STOP BOLT

The lip stop bolt adjusts the position of the lip when the leveler is stored to allow the lip to be centered on lip supports when stored.

NOTE: Lip stop bolt will need to be adjusted on longer lips to allow lip to be centered in the lip keepers.

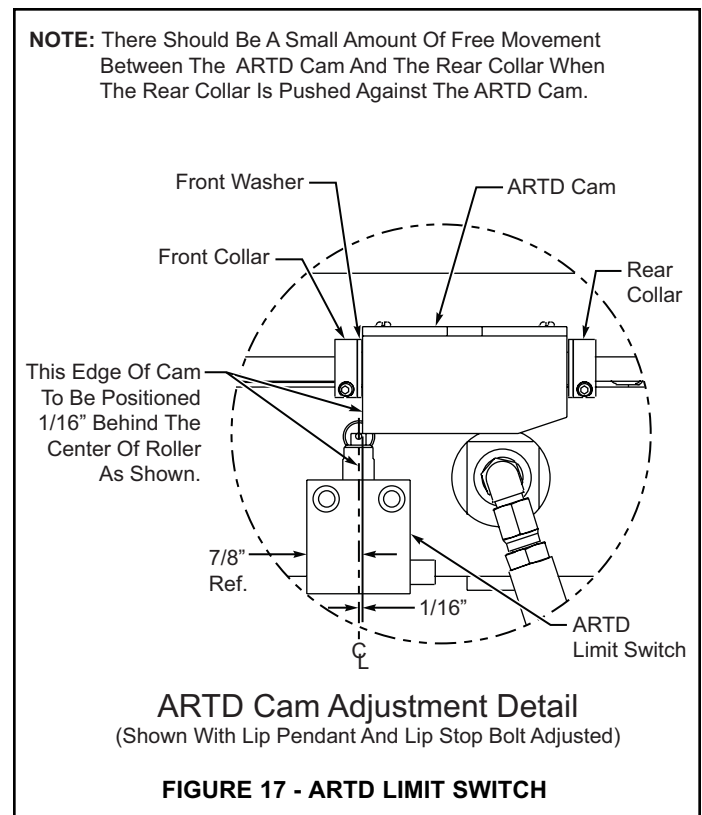


ARTD CAM ADJUSTMENT

NOTE: Before continuing be sure the lip stop bolt is properly adjusted.

1. Raise leveler and install a strut securely behind the header or mini-header to allow the lip to hang pendant and rest against the lip stop bolt.
2. Adjust ARTD Cam.
 - a. Adjust collars so the front edge of ARTD cam is 1/16" behind the centerline of the ARTD limit switch. See figure 17.
 - b. Tighten front collar while holding the 1/16" adjustment.
 - c. Push the rear collar forward as much as possible and tighten. ARTD cam assembly should rotate freely.
3. Run the leveler to test the adjustment. Verify that the lip falls a minimum of 4" before ARTD is initiated. If not, move the cam forward slightly.

NOTE: It is not recommended to position the ARTD cam in front of the ARTD limit switch centerline.



LEVELER VALVE ADJUSTMENTS

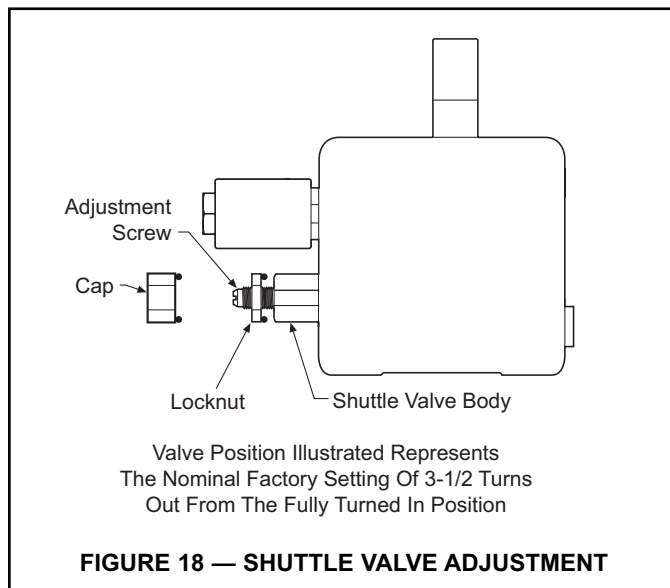
WARNING

- Adjustments to be completed by trained technician only.

SHUTTLE VALVE ADJUSTMENT (Controls Leveler Descent)

NOTE: Check oil level before making any adjustments.

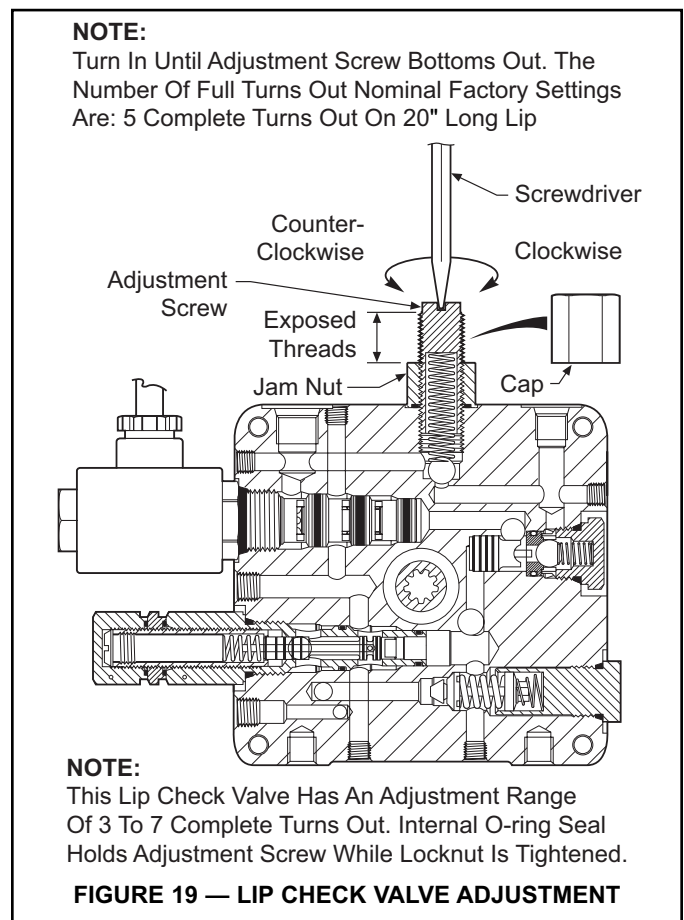
1. Leveler must be adjusted to lower, from full raised position with lip extended to the header stops in less than 13 to 18 seconds.
2. Remove protective cap and O-ring. Loosen locknut without turning valve body or adjustment screw. Turn adjustment screw to vary platform lowering speed. Adjustments should be no more than 1/8 turn increments.
3. Turn adjustment screw counterclockwise to decrease the lowering speed of platform (excessive loosening can eliminate platform lowering).
4. Turn adjustment screw clockwise to increase the lowering speed of platform (velocity fuse may lock-up as a result of increased platform speeds while lowering).
5. Tighten locknut without turning valve body or adjustment screw.
6. Reinstall o-ring and protective cap and tighten cap.
7. Re-test the unit several times to verify the setting.



LIP CHECK VALVE ADJUSTMENT (Controls Lip Fall Speed)

NOTE: Check oil level before making any adjustments.

1. Leveler must be adjusted for the lip to fall in 3 to 4 seconds when the leveler is in below dock position.
2. Remove protective cap and O-ring. Loosen locknut without turning valve body or adjustment screw. Turn adjustment screw to vary lip fall speed. Adjustments should be no more than 1/8 turn increments.
3. Turn adjustment screw counterclockwise to decrease the speed the lip will extend. (If the lip does not start or complete fall, the Lip Check Valve is set to high.)
4. Turn adjustment screw clockwise to increase the speed the lip will fall. (If the lip falls too fast, the Lip Check Valve setting is too low.)
5. Tighten locknut without turning valve body or adjustment screw.
6. Reinstall o-ring and protective cap and tighten cap.
7. Re-test the unit several times to verify the setting.



RITE-HITE® STANDARD WARRANTY

RITE-HITE® warrants that its products will be free from defects in design, materials, and workmanship for a period of 365 days from the date of shipment. All claims for breach of this warranty must be made within 30 days after the defect is or can, with reasonable care, be detected and in no event no more than 30 days after the warranty has expired. In order to be entitled to the benefits of this warranty, the products must have been properly installed, maintained, and operated within their rated capacities and/or specified design parameters, and not otherwise abused. Periodic lubrication and adjustment is the sole responsibility of the owner. This warranty is RITE-HITE's® exclusive warranty. RITE-HITE® EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS. Non-standard warranties, if any, must be specified by RITE-HITE® in writing.

In the event of any defects covered by this warranty, RITE-HITE® will remedy such defects by repairing or replacing any defective equipment or parts, bearing all the costs for parts, labor, and transportation. This shall be the exclusive remedy for all claims whether based on contract, negligence, or strict liability.

LIMITATION OF LIABILITY

RITE-HITE® SHALL NOT IN ANY EVENT BE LIABLE FOR ANY LOSS OF USE OF ANY EQUIPMENT OR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, WHETHER FOR BREACH OF WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.



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