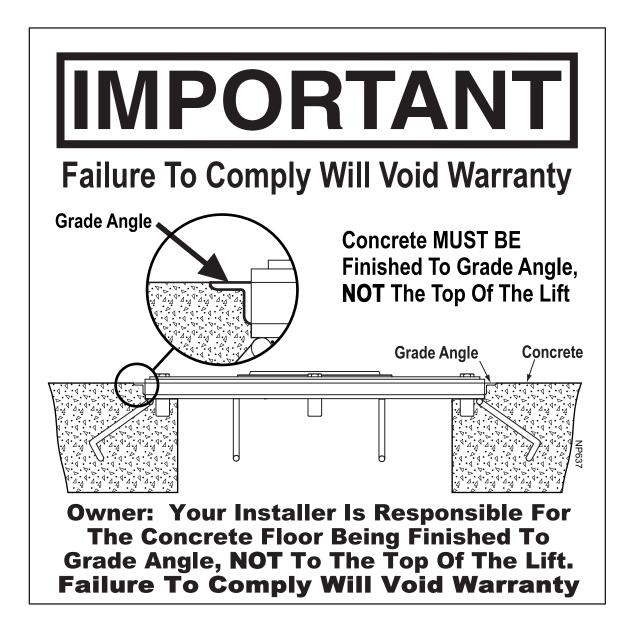


These Instructions Contain General Data. Any Deviation From Customers Prints Or Specifications Should Be Clarified Before Proceeding With Lift Installation.

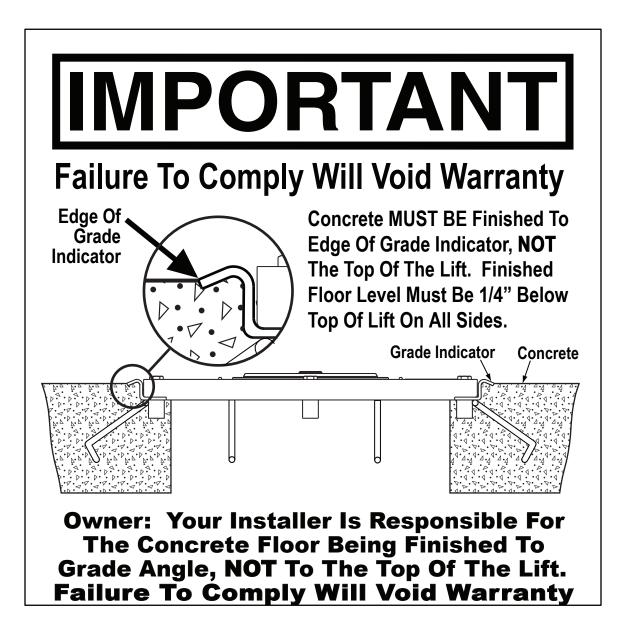
IMPORTANT Check the containment tube for holes due to shipping damage. Do not install a damaged containment tube. Contact Rotary Lift Customer Service For Advice On How To Proceed. If the lift is where it has a chance to be exposed to the elements, protect the lift.

LP20312

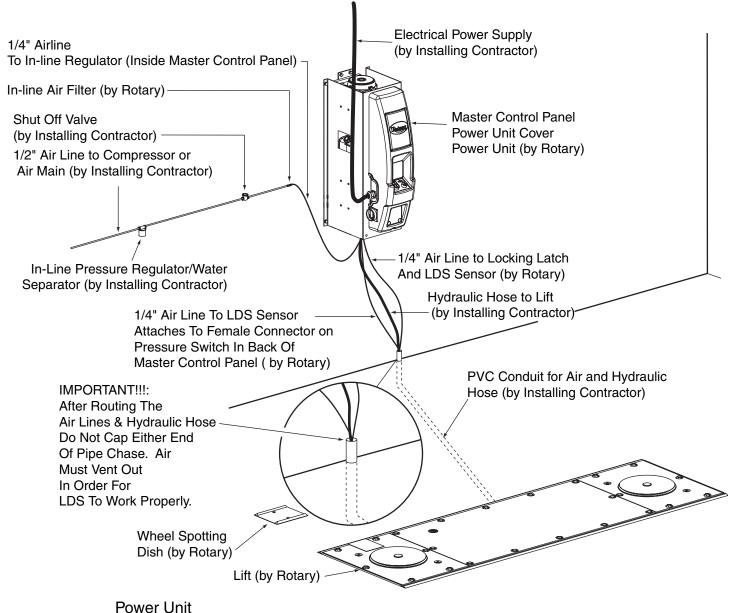
For Lifts With Welded Grade Angle:



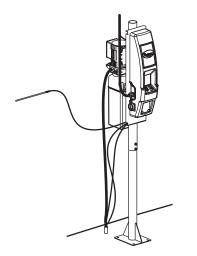
IMPORTANT Contact with the electrical heating coils could cause electrolysis and damage the lift and/or its components. Make sure the lift frame concrete anchors do not contact electrical heating coils, or re-bar that may be in contact with other embedded electrical sources. The lift being physically connected to any source which promotes electrolysis will void the warranty.



IMPORTANT Contact with the electrical heating coils could cause electrolysis and damage the lift and/or its components. Make sure the lift frame concrete anchors do not contact electrical heating coils, or re-bar that may be in contact with other embedded electrical sources. The lift being physically connected to any source which promotes electrolysis will void the warranty.



& Master Control Panel Mounted On Optional Pedestal



Please follow these instructions to ensure a good installation and satisfactory operation of the lift. Check your shipment against the product load list and shipping papers. Enter claims for damage or shortage with the delivering carrier at once.

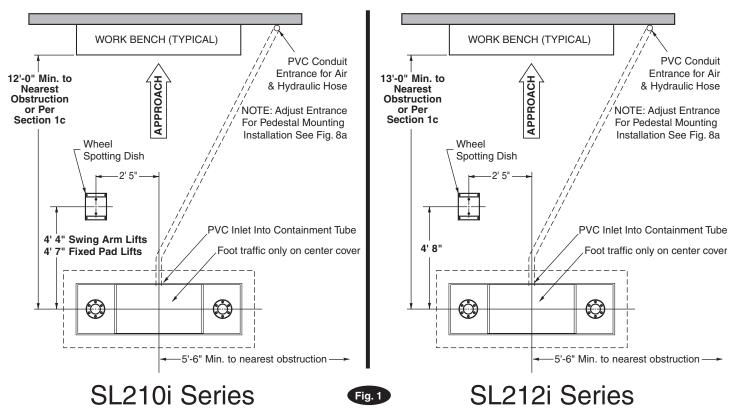
• After installation, please return this booklet to the literature package and give to lift owner/operator.

• Literature package should be kept attached to power unit for easy access.

• Review entire installation instructions before beginning excavation.

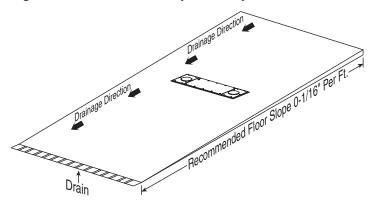
IMPORTANT The center cover is designed for foot traffic only.

IMPORTANT Restrict all unauthorized persons from going near excavation. OSHA standard restricts anyone from getting in excavated hole, unless OSHA guidelines are followed. See OSHA Excavating Standard CFR 1926.



1. Lift Location:

A. Check architect's layout if available. Lay out lift as shown in Fig. 1. Recommended floor slope is 1/16" per foot.



B. *SL210i:* The 5' 6" centerline to side and 12' 0" centerline to front and rear dimensions should be maintained to provide adequate working space. The minimum overhead clearance should be 85" plus height of highest vehicle to be raised. 24' 0" length bay recommended. Other lengths may be used, provided ample clearance is maintained at each end of lift. *SL212i:* The 5' 6" centerline to side and 13' 0" centerline to front and rear dimensions should be maintained to provide adequate working space. The minimum overhead clearance should be 88" plus height of highest vehicle to be raised. 26' 0" length bay recommended. Other lengths may be used, provided ample clearance is maintained at each end of lift.

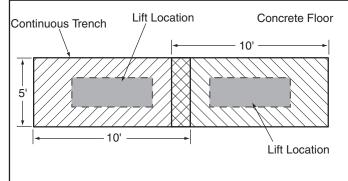
C. Base Unit Lifts: If you are planning to install roll-on/ wheel alignment runways, locate lift per instructions from superstructure manufacturer. Use superstructure manufacturer's instructions for fore and aft, side to side, and ceiling clearances.

2. Excavation: Excavate hole to dimensions shown in Fig. 2. Dig trench for 2" PVC pipe between lift and power unit location. Trench should be dug 11" below finished floor grade. Air line and hydraulic hose to be contained in this 2" PVC pipe.

3. Concrete Preparation:

A. Run 2" PVC from Control Area to Containment Tube. PVC will enter the Containment Tube 9-1/2" below finished floor grade. Hole is centered horizontally in Containment Tube, Fig. 1.
B. Box out a 5' x 10' area around where lift is to be located. NOTE: For multiple lift installations, boxed out areas will overlap. Dig continuous trench, see illustration below.
C. Pour concrete floor ensuring not to get concrete in boxed out area.

NOTE: By using this installation method, the RAI can more accurately set lift to proper grade relative to finished floor. Reference Page 2.

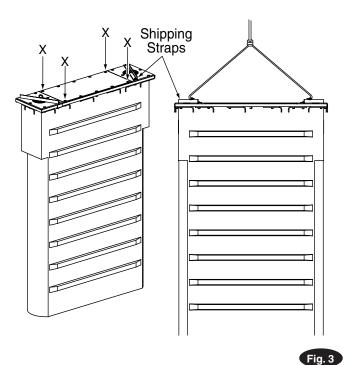


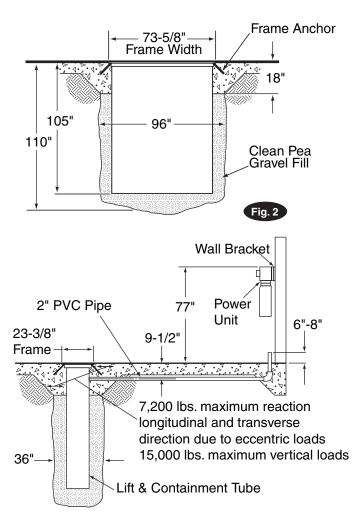
4. Lift Setting:

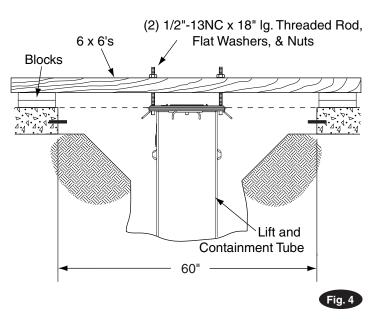
IMPORTANT Check the containment tube for holes due to shipping damage. Do not install a damaged containment tube. Contact Rotary Lift Customer Service.

A. Chain hoist must have capacity of 2,500 lbs. with a clear swing of 9' 0". Rig sling for unit, attaching to the shipping strap, Fig. 3, and lower assembly into hole. Center lift and be sure lift containment inlet is located as shown in Fig. 1.

IMPORTANT Owner: Your Installer Is Responsible For The Concrete Floor Being Finished To The Leading Edge Of The Grade Angle (1/4" Below Top Of Lift), NOT To The Top Of The Lift, Fig. 5. Failure To Comply Will Void Warranty.
B. Bend frame anchors out perpendicular to concrete frame and downward approximately 45° to floor level, Fig. 2.
C. Remove and retain (4) 1/2"-13NC HHCS (marked with X, Fig. 3). Insert 1/2" Threaded Rods x 18" lg. into the holes and secure in place using 1/2" flat washers and nuts, Fig. 4.
D. Attach 6 x 6's to support unit on existing floor and secure in place with 1/2" flat washers and nuts, Fig. 4. Remove shipping straps and install guide barrel bolts in open holes and torque to 60 ft-lbs. Remove protective covers from top of jacks.







NOTE: Make sure rubber thread protectors are still in place on all nuts welded to the concrete frame, including where the hardware was just added, Fig. 5. Note that rubber thread protectors are not required if concrete frame has 1" blind nuts.

E. Plumb and level by placing machinist level on top of jack. Do Not plumb or level off unit frame. See Fig 5.

F. Shore Lift Securely!

G. Connect 2" PVC to containment tube, chamfer PVC entering containment tube seal and lubricate I.D. of seal with grease or oil to ease entry of PVC into seal. PVC pipe should extend into containment tube 1" maximum.

NOTE: If your PVC pipe and containment inlet do not align, you may have to cut back PVC pipe, and attach 2" Flexible PVC to make connection. All PVC joints MUST be leak proof.

H. Recheck plumb.

5. Backfill:

A. Duct tape joint areas indicated by **X**, Fig. 6, to protect these areas during backfill and concrete work. Backfill around unit using only pea gravel to within 18" of top of finished floor.

IMPORTANT Make sure thread protectors (supplied by Rotary) are on the underneath side of the concrete frame on all the bolts in the guide barrel and cover, Fig. 5. Note that thread protectors are not required if concrete frame has 1" diameter blind nuts.

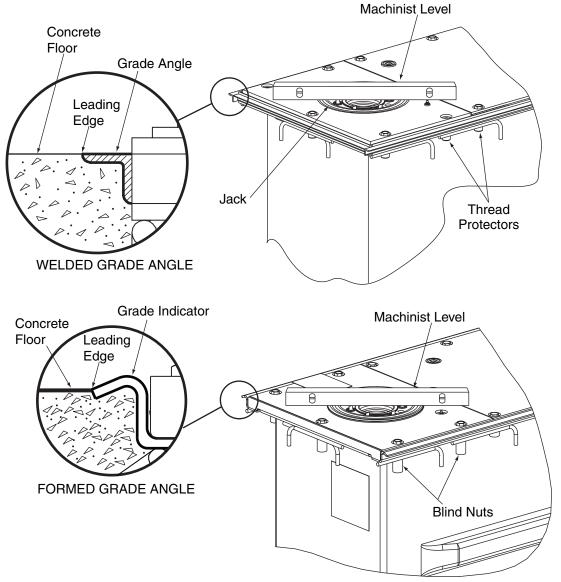
ACAUTION Do not use a mechanical tamper or saturate the backfill material to achieve compaction. This could cause lift containment sides to bend inward, HAND TAMP ONLY.

IMPORTANT Do Not fill plunger with any ballast material.

B. Complete backfill and tamp pipe trench.

C. After lift is backfilled, make final elevation and plumb checks, Fig 5.

D. Make sure frame anchors are bent out, Fig. 7.





6. Concrete Work:

A. Leave 6 x 6's in place.

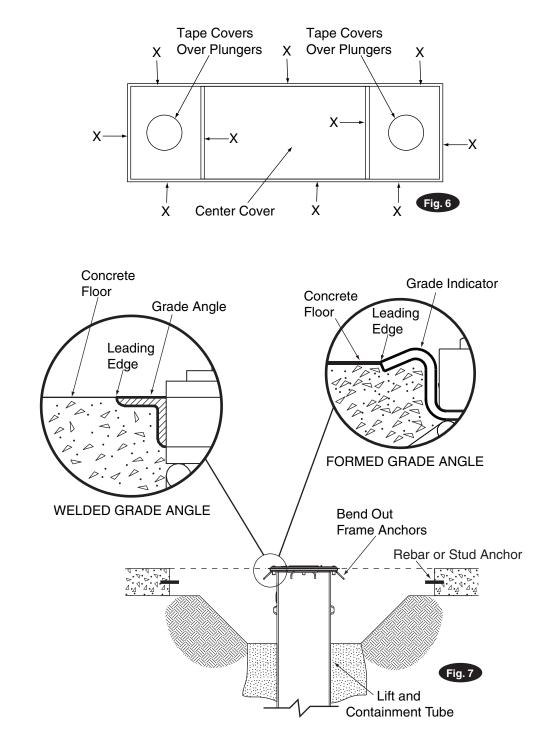
B. New concrete around the lift must be keyed into existing floor with rebar or stud anchors, Fig. 7.

C. A minimum concrete strength of 3,000 PSI is suggested. DO NOT use calcium chloride as a curing accelerator. If using a curing accelerator, we recommend a non-chloride additive such

as High Early* or equivalent. **D.** Pour concrete floor, being careful not to run concrete in and around top surface of lift unit. **IMPORTANT** Owner: Your Installer Is Responsible For The Concrete Floor Being Finished To The Leading Edge Of The Grade Angle (1/4" Below Top Of Lift), NOT To The Top Of The Lift, Fig. 7. Failure To Comply Will Void Warranty.

IMPORTANT It is imperative that lift be set level regardless of floor slope or other factors. Trowel smooth and allow to harden.

- E. After concrete is set-up, remove 6 x 6's and threaded rods.
- **F.** Reinstall the guide barrel bolts, use Loctite 242 (blue) on bolts and torque to 60 ft.-lbs.
- G. Do not use lift until concrete has achieved 3,000 PSI.



7. Power Unit:

A. Wall Mounting: For operating convenience, locate Power Unit wall mounting bracket so top of bracket will be approximately 77" above floor, Fig. 2.

B. Locate and mount the wall bracket, using (4) 3/8" wall anchors, on the wall, Fig. 8. Anchors must be able to hold 20 lbs. of shear force.

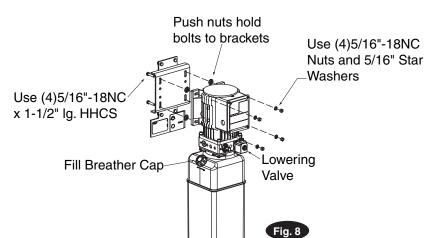
C. Put (4) 5/16"-18NC x 1-1/2" HHCS through wall bracket using push-nuts to hold in place, Fig. 8.

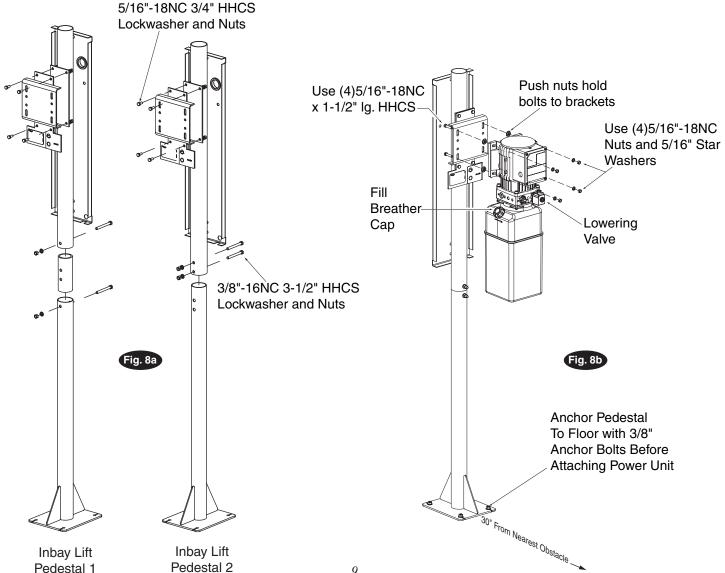
D. Mount power unit, with motor up, to the wall bracket and install (4) 5/16" nuts and lock washers, Fig.8.

E. Pedestal Mounting: Pedestal must be anchored to the floor with 3/8" anchor bolts before attaching power unit, Fig. 8a.

F. Use base for pattern to mark holes for anchoring. Pedestal must be anchored at least 30" away from the any obstacle to allow for wiring and maintenance of the power unit, Fig 8b.

G. Put (4) 5/16"-18NC x 1-1/2" HHCS through power unit bracket using push-nuts to hold in place, Fig. 8b. **H.** Mount power unit, with motor up, to the power unit bracket and install (4) 5/16" nuts and lock washers, Fig.8b.

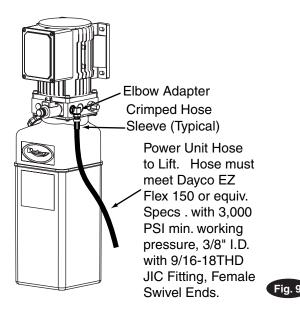




8. Hose And Elbow Attachment (Hose Provided By Installer):

A. Hose must meet Dayco EZ Flex 150 or equivalent specs. with 3,000 PSI minimum working pressure, 3/8" I.D. with 9/16-18THD, JIC fitting, female swivel ends.

- **B.** Hose must be free of debris. Inspect all threads for damage.
- C. Install hose onto elbow adapter on power unit, Fig. 9.
- **D.** Do not route hose to lift at this time.



9. Mounting Power Unit Cover:

A. Align the access hole in the power unit cover with the junction box on the power unit, Fig 10a.

B. Mount the power unit cover, using (4) 3/8" wall anchors, on the wall. Anchors must be able to hold 20 lbs. of shear force.

10. Mounting Master Control Panel:

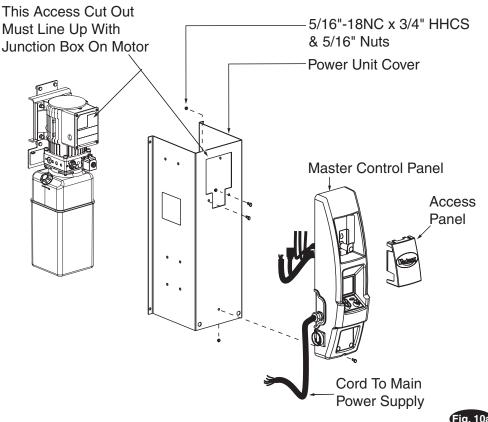
A. Wall Mount: Remove Access Panel from Master Control Panel, Fig. 10a.

B. Place (2) $5/16"-18NC \ge 3/4"$ HHCS and (2) 5/16"-18NC hex nuts through holes in front of power unit cover, Fig. 10a. Leave screws and nuts loose enough to allow you to hang master control panel.

C. Route air lines and cords from rear of master control panel through access cut out in power unit cover, Fig. 10a.

D. Hang master control panel on power unit cover from the two loose bolts and nuts, Fig. 10a. Place (1) $5/16"-18NC \ge 3/4"$ HHCS and (1) 5/16"-18NC hex nut through bottom of master control panel and tighten, Fig 10a. Tighten top two nuts and bolts to secure the master control panel.

Note: All Nuts And Bolts For Mounting The Master Contol Panel are 5/16"-18NC

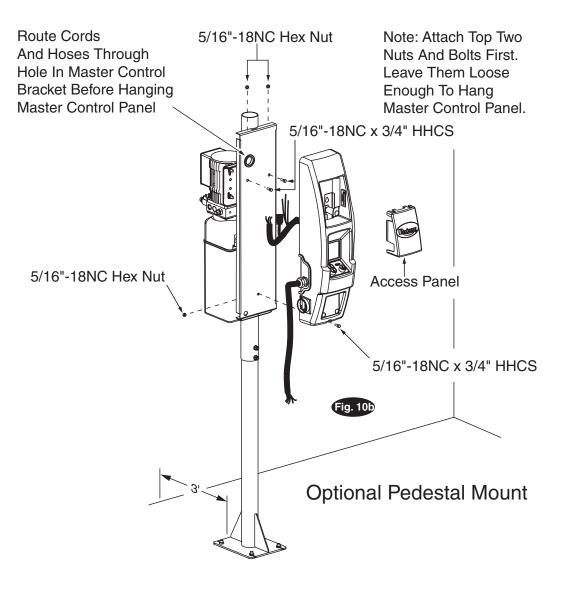


E. Pedestal Mount: Remove Access Panel from Master Control Panel, Fig.10a.

F. Place (2) $5/16"-18NC \ge 3/4"$ HHCS and (2) 5/16"-18NC hex nuts through holes in front of master control bracket, Fig. 10b. Leave screws and nuts loose enough to allow you to hang master control panel.

G. Route air lines and cords through hole in master control bracket Fig. 10b.

H. Hang control panel from the two loose bolts and nuts, Fig. 10b. Place (1) $5/16"-18NC \ge 3/4"$ HHCS and (1) 5/16"-18NC hex nut through bottom of master control panel and tighten, Fig 10b. Tighten top two nuts and bolts to secure the master control panel. Leave access panel off of master control panel until all air and electric connections are made.



I. For 3 Phase 208-230VAC Systems: The transformer inside the master enclosure must be bypassed. Unplug the quickconnectors on the primary and secondary side of the transformer, and unscrew and discard the ends that are connected to the transformer. The transformer is not used and may be removed. The connector that was routed to X1 should be directly plugged into the connector that was routed to H1, and the connector that was routed to X2 should be directly plugged into the connector that was routed to H2, Fig. 10c.

11. Electrical:

Have a certified electrician run appropriate motor voltage. Size wire for 20 amp circuit. See Motor Operating Data Table.

ATTENTION For Models with GFCI Electrical Outlets: The certified electrician should also run a seperate 110V 60Hz line to the junction box. Wire size for 15 amp circuit.

Connect

Discard

Connect

(X) X1

X X2

ACAUTION Never operate the motor on line voltage less than 208V. Motor damage may occur.

IMPORTANT Use separate circuit for each power supply. Protect each circuit with time delay fuse or circuit breaker. For single phase 208-230V, use 20 amp fuse, and three phase use 20 amp fuse. For three phase 460V, use 10 amp fuse. All wiring must comply with NEC and all local electrical codes.

Note: Standard single phase motor CAN NOT be run on 50Hz. line without a physical change in the motor.

Wire motor according to Fig. 11a and wiring diagram provided on pages 13 & 14.

Plug Lowering Valve cord from master control panel into lowering valve on power unit, Fig. 11.

Single Phase Rotary Power Unit

MOTOR OPERATING DATA - SINGLE PHASE					
LINE VOLTAGE		RUNNING MOTOR VOLTAGE RANGE			
208 - 230 Volts	60 HZ	197 - 253 Volts			

Service From Master Control Panel (3 Wire) Into Junction Box On Power Unit Attach With Strain Relief Provided

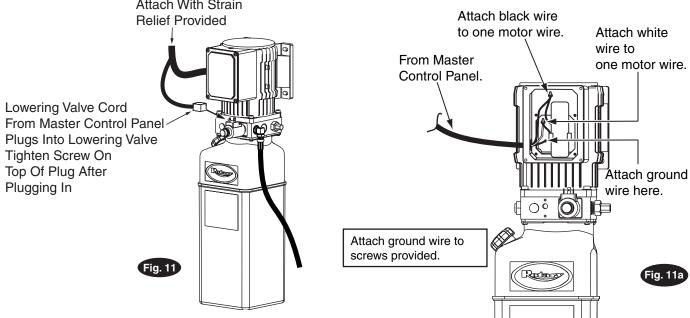
 $H1(\mathbf{X})$

 $H2 \propto$

Fig. 100

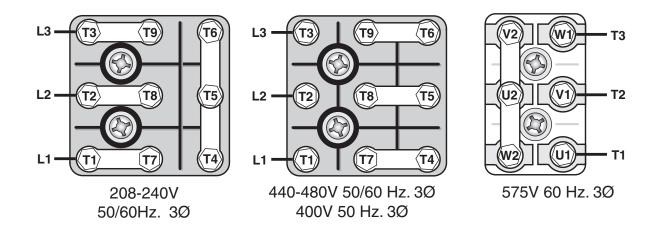
IMPORTANT

IMPORIANI For 208-230 VAC systems, make sure the transformer inside the master enclosure has been bypassed, see Step 10I).



Three Phase Rotary Power Unit							
MOTOR OPERATING DATA - THREE PHASE							
LINE VOLTA 208 - 230 Volts 460 Volts 575 Volts		RUNNING MO 197 414 518	-	506 Volts			

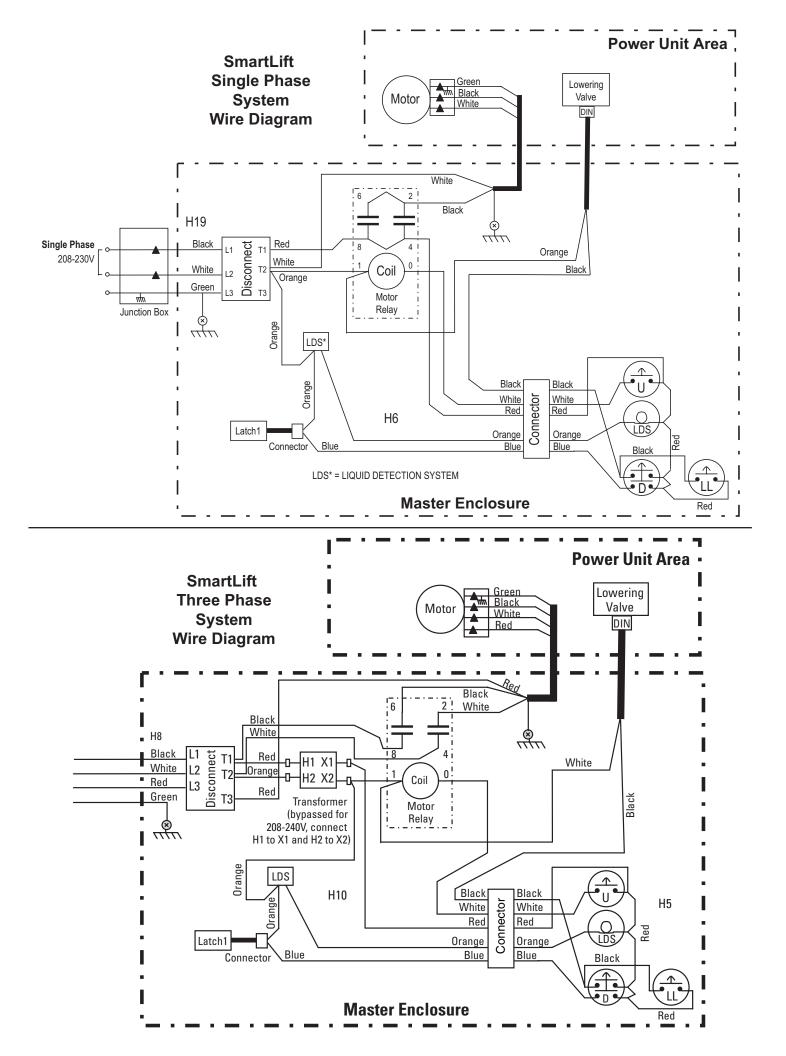
L



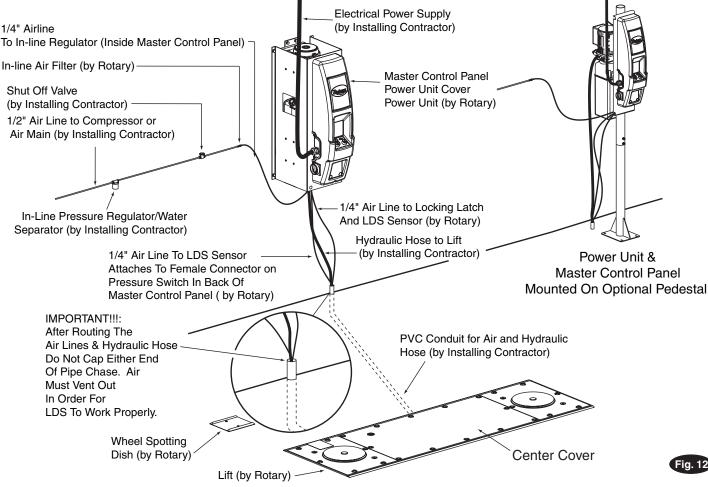
NOTES:

- 2. Verify Coil Rating Matches Supply Voltage
- 3. Motor rotation is counter clockwise when viewed from top of motor.

^{1.} Unit not suitable for use in unusual conditions. Contact Rotary for moisture and dust environment duty unit.



Routing Supply Lines



*LDS = Liquid Detection System

12. Supply Lines (By Installer): Remove duct tape and center cover. Set Bolts and seal aside, taking care not to damage seal.A. Hose:

1. Push the hose through the 2" PVC pipe chase from power unit to lift unit, Fig 12 & Fig. 14.

2. Install to hydraulic fitting in lift containment inlet.

B. LDS Assembly:

1. Remove sensing tube from inside of lift containment.

2. Install sensing tube into LDS valve assembly as shown, Fig. 12a. Sealant may be required on threads to ensure air tight connection. Connection must be air tight to 90 PSI. Hand tighten tube then turn an additonal 2 turns; maximum engagement is 3/8".

3. Install LDS system onto the channel that the sensing tube was shipped in, making sure to place sensing tube inside wire ties, Fig. 12b.

C. Air Lines:

IMPORTANT Shop air supply pressure must be between 90 to 120 psi.

- **1.** Remove access panel from control panel.
- 2. Install in-line air filter, Fig. 12.

3. Cut to fit 1/4" air line and attach it to the in-line air filter and inline regulator in back of master control panel, Fig. 13.

4. Attach (1) 1/4" push-in NPT coupling to 1/4" (#2) air line running from the air valve in the master control panel, Fig.13.
5. Attach 1/4" polypropylene tubing to other end of 1/4" push-in NPT coupling and push the tubing though the 2" PVC pipe chase to the lift, Fig. 14.

6. Attach 1/4" polypropylene tubing into pressure switch, Fig. 13.

7. Push the tubing through the 2" PVC pipe chase to the LDS* valve assembly, Fig. 14.

8. The shortest air line coming from the air valve in the master <u>control panel is</u> for exhaust only.

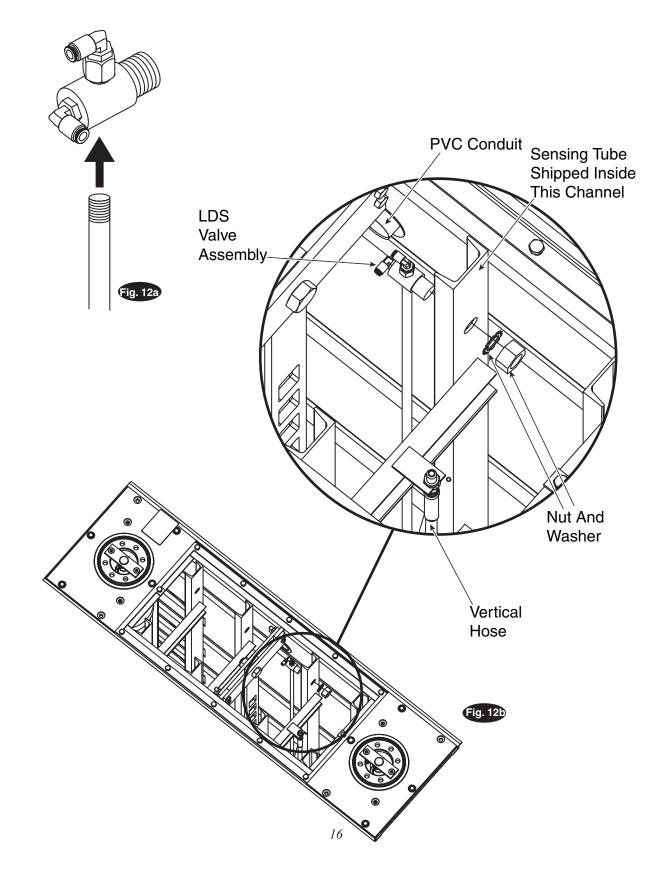
IMPORTANT With shipping updates for SmartLift[®] Base units please review which baseunit you have before completing Step 9. Figs. 14 & 14a will also help clarify which base unit you have as well.

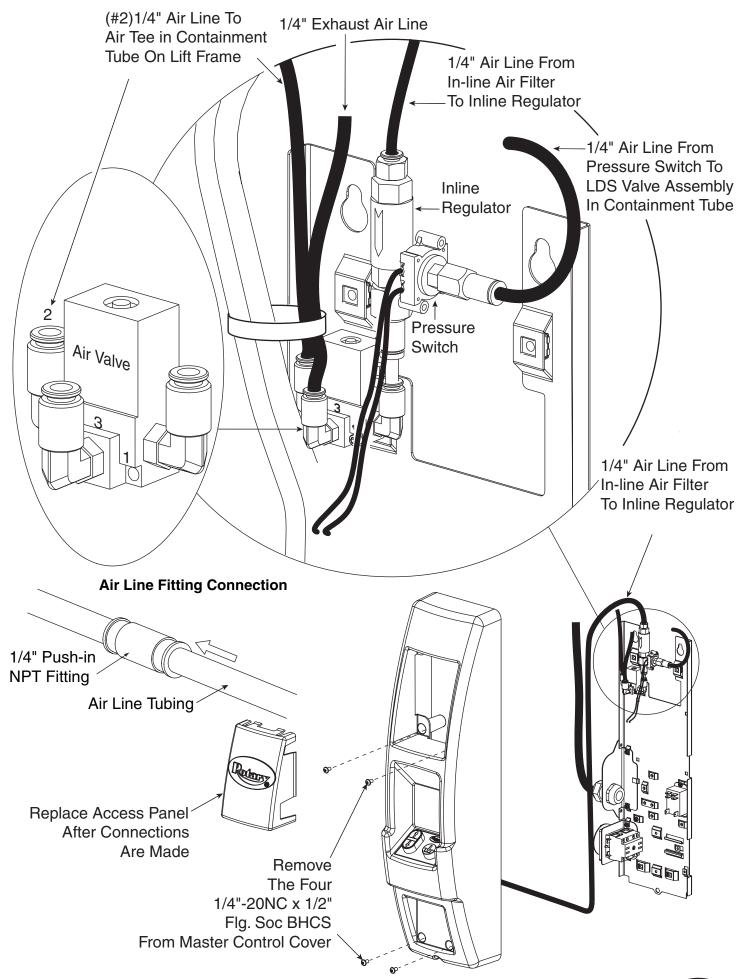
- **9. For Base Units With Recoil Airline:** Cut to fit 1/4" air line and run it from the male tee inside the lift to the top elbow of the LDS* assembly, Fig.14, inside the lift.
- **9.** For Base Units With Airline Attached To Hydraulic Hose: Cut to fit 1/4" air line and run it from air line attached to vertical hose using union tee to the top elbow of the LDS* assembly, Fig.14a, inside the lift.

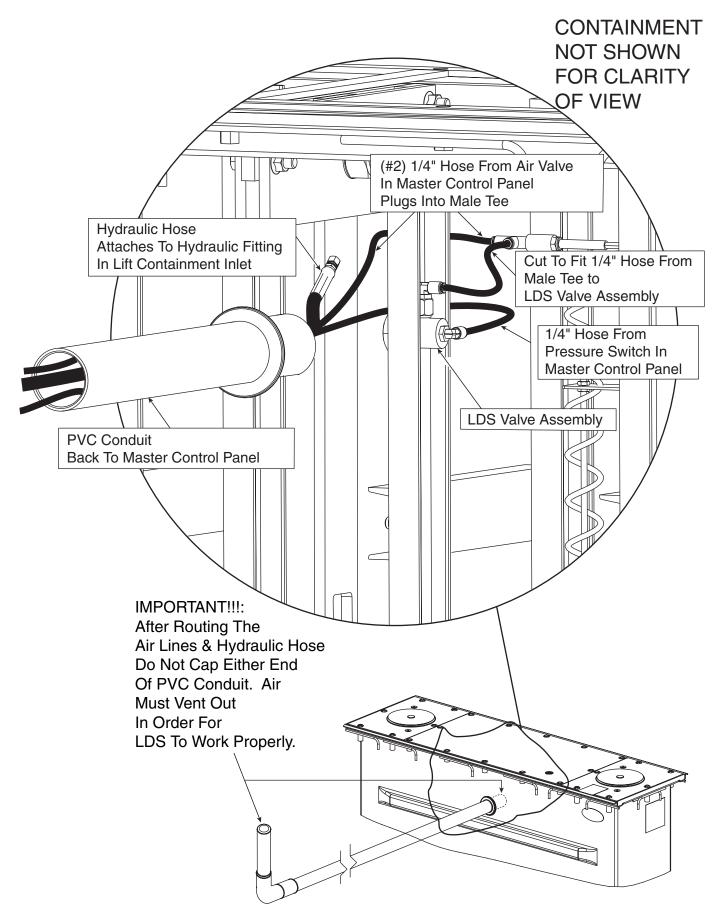
NOTE: All 1/4" polypropylene air line must have a 300 PSI working pressure.

IMPORTANT Failure to connect air lines properly will cause a fault error on the master control panel.

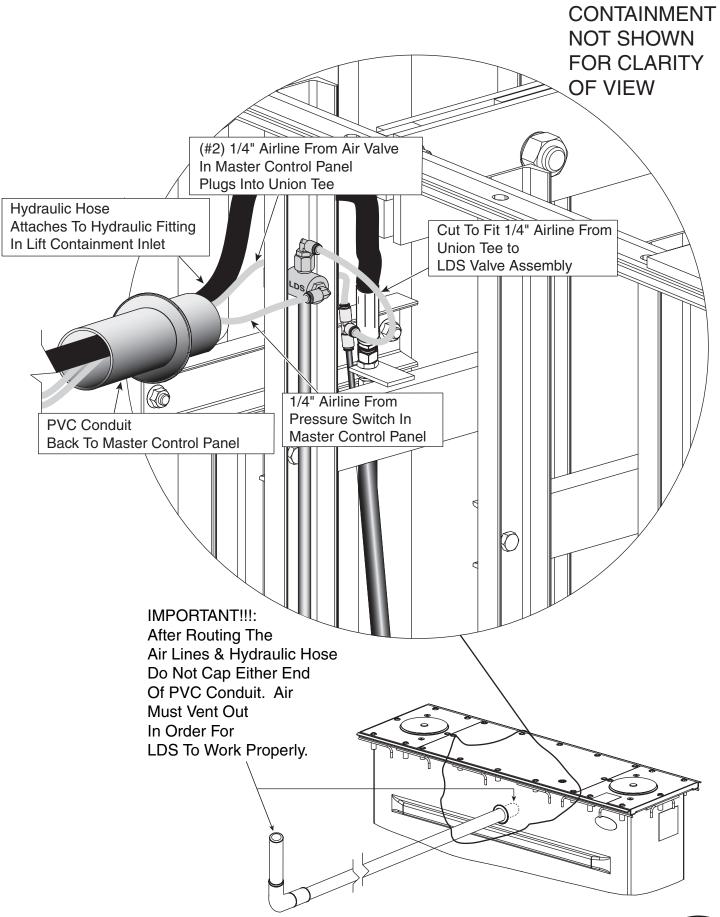
IMPORTANT After routing the air lines and hydraulic hose DO NOT cap either end of the PVC conduit. Air must vent out in order for the LDS* to work properly, Figs. 14 & 14a.

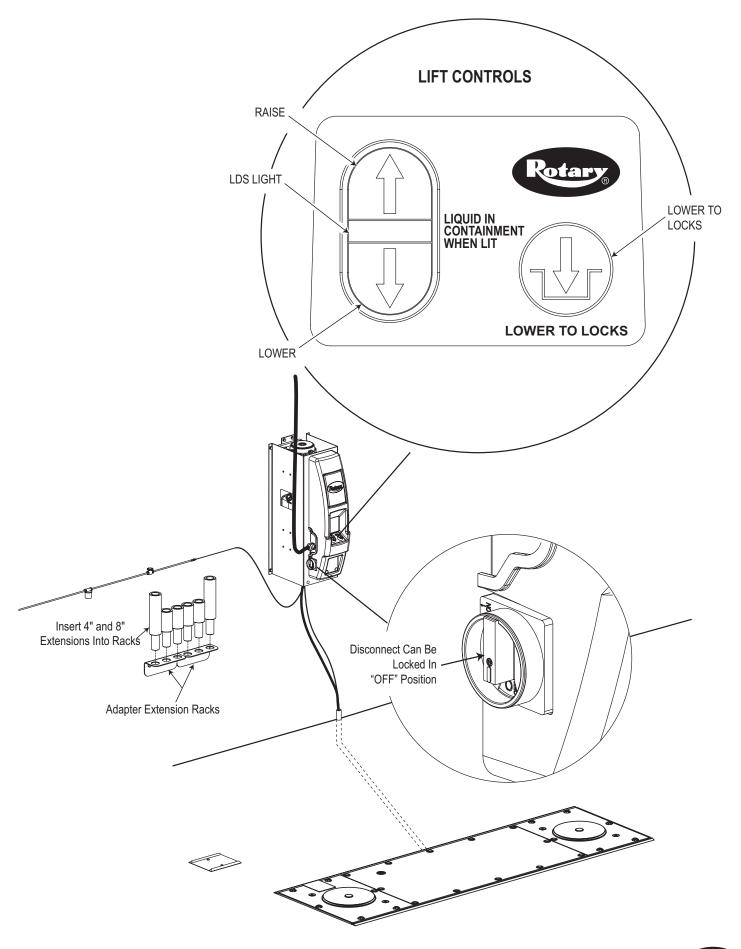






For Base Units With Air Line Attached To Hydraulic Hose:





13. Adapter Extension Racks (For SL212i only):

A. Locate and mount adapter extension racks on the wall convenient to the bay area using (4) 3/8" wall anchors. Anchors must be able to hold 20 lbs. of shear force.

B. Place 4" and 8" extensions into racks.

14. Power Up: Turn disconnect to ON position from the master control panel, Fig. 17.

15. Fluid Filling:

A. System capacity is 19 quarts. Use Dexron III ATF, or Hydraulic Fluid that meets ISO 32 specifications.

B. Remove fill-breather cap, Fig. 8.

C. Add fluid to power unit until it reaches the MIN mark on the tank.

RAISE button and raise lift to full rise, Fig. 15. **D**. Press

LOWER button to fully lower lift, Fig. 15. **E.** Press

F. Bleed lift by cycling to full rise several times.

G. Top off fluid to power unit until it reaches the **MIN** mark on the tank.



IMPORTANT All lifts must be fully lowered before

ACAUTION If fill-breather cap is lost or broken, order a replacement. DO NOT substitute with a solid plug.

16. Locking Latch Test; refer to Fig. 15:

٦ſ A. Press RAISE button and raise lift in up position, press

LOWER TO LOCKS button and lower lift onto locks.

B. Make sure latch engages and releases.

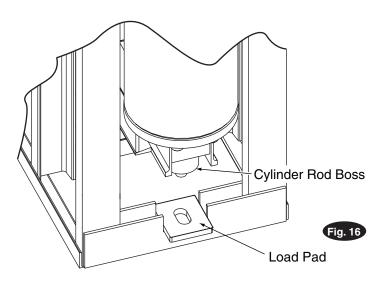
17. Cylinder/Load Pad Test; refer to Fig. 15:

RAISE button and raise lift to full rise and press A. Press

LOWER TO LOCKS button to lower onto locks.

B. Look into the containment tube to check that the high pressure cylinder rod is in the load pad hole, Fig. 16.

C. If not, use a nonmetal object (do not scratch or scar the cylinder rods), try to move the cylinder rod. If it does not move skip step D.



18. Hose Tracking Test:

Have someone raise the lift while another watches the tracking of the hose between the bulkhead fitting and equalizer beam,

Bulkhead Fitting

For Base Units With Recoil Airline:

19. Setting Cover; refer to Fig. 22:

A. Insert cover seal into lip in opening, making sure all holes align.

B. Install center cover onto seal.

C. Install and tighten cover retaining bolts. Torque to 60 ft-lbs. **IMPORTANT** Clean areas indicated with **X**, Fig. 18, and seal with a premium 25 year silicone.

20. Superstructure:

Sl210i Series:

A. Base Unit Lifts: Install roll-on/wheel alignment runway per instructions from superstructure manufacturer.

B. Swing Arm Superstructures: Note arm locations, Fig. 19.

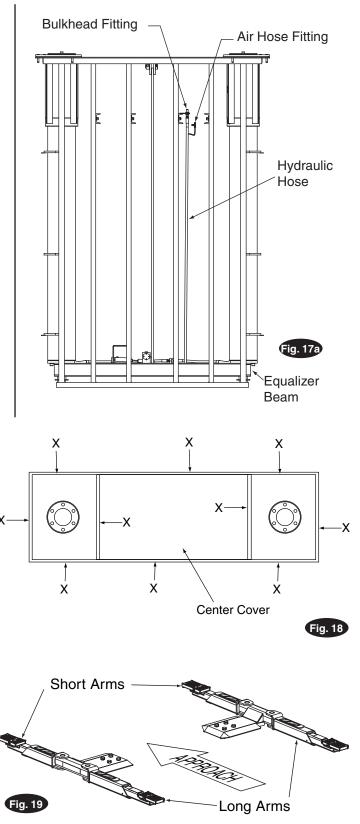
- **1.** Install yokes to plungers with 7/8"-10NC x 3-1/2" HHCS and lock washer. Torque to 150 ft-lbs, Fig. 20.
- 2. Grease swivel arm pins and arm holes with Lithium grease.
- 3. Install (4) arm assemblies using the arm pins and snap
- rings.

Note arm locations, Fig. 19.

- C. Fixed Pad Assemblies:
 - **1.** Install pads on lift using 7/8"-10NC x 3-1/2" HHCS and 3/4" external tooth lockwasher and torque to 150 ft.-lbs, Fig.21.

Figs. 17 & 17a. If the hose does not track between the members of the equalizer beam without rubbing, adjust bulkhead fitting as necessary.

For Base Units With Air Line Attached To Hydraulic Hose:



Please note locations of long and short arms in relation to approach. N/A for lifts with (4) short arms.

SL212i series:

A. Base Unit Lifts: Install roll-on/wheel alignment runway per instructions from superstructure manufacturer.

B. Swing Arm Superstructures:

1. Install yokes to plungers with 7/8"-9NC x 3-1/2" HHCS and lock washer. Torque to 150 ft-lbs., Fig. 22.

2. Grease swivel arm pins and arm holes with Lithium grease.

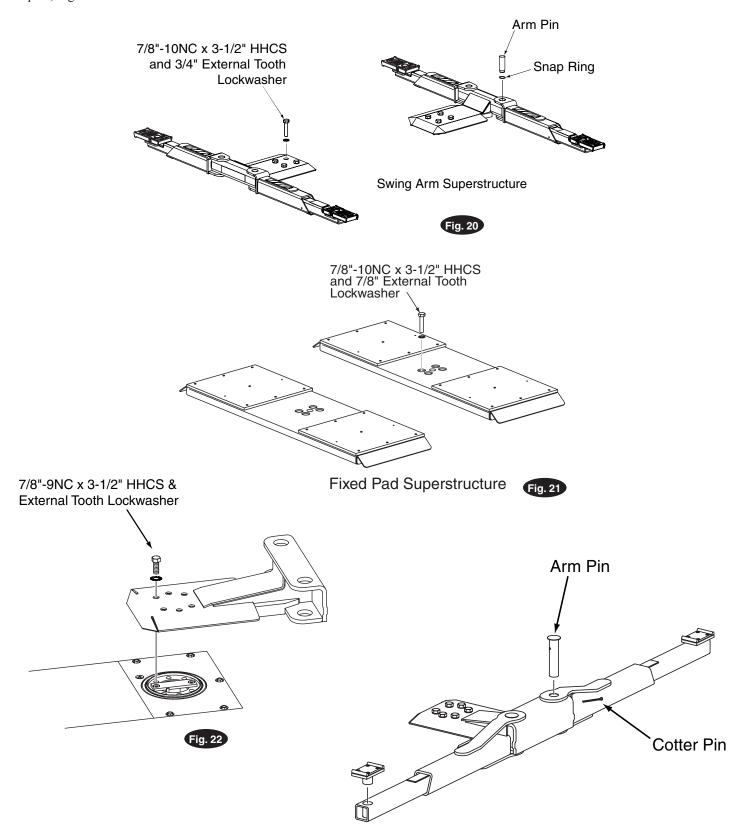
3. Install (4) arm assemblies using the arm pins and cotter pins, Fig. 23.

21. Final Touches:

A. Lag wheel spotting dish to floor using two 3/8" anchors provided. Verify model number of lift being installed and refer to Fig. 1 for respective dimensions.

B. Raise lift and clean sand and dirt from plunger and lift area.

C. Double check to make sure the guide barrel and center cover are sealed per Step 19.



Installer: Please return this booklet to literature package, and give to lift owner/operator.

Thank You

Trained Operators and Regular Maintenance Ensures Satisfactory Performance of Your Rotary Lift.

Contact Your Nearest Authorized Rotary Parts Distributor for Genuine Rotary Replacement Parts. See Literature Package for Parts Breakdown.

DATE REV. CHANGE MADE

- 03-22-05 New 600 Series.
- 07-12-05 A Remove air supply fittings, tool holder and input power junction box strain relief. New containment implementation and side sheet removal.
- 01-05-05 B Updated air line detail.
- 01-05-07 C Added Formed Angle Graphics
- 12-14-07 D Added LDS assembly to Step 12

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