WHEELTRONIC LTD.

INSTALLATION and OPERATION MANUAL

READ THIS INSTRUCTION MANUAL THOROUGHLY BEFORE INSTALLING, OPERATING, SERVICING OR MAINTAINING THE LIFT. SAVE THIS MANUAL.

KODIAK QUAD RACK
MODEL: ALIGNMENT 18405AF/ 18405CW
SERVICE 18406

WHEELTRONIC LTD.
6500 MILLCREEK DRIVE, MISSISSAUGA, ONTARIO
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SEPT 2012 REV.- 6-1690

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1.0 OWNER / EMPLOYER OBLIGATIONS

1. The Owner/Employer shall ensure that lift operators are qualified and that they are trained in the safe use and operation of the lift using the manufacturer's operating instructions; ALI/SM 93-1**, ALI Lifting it Right safety manual**; ALI/ST-90 **ALI Safety Tips card**; ANSI/ALI ALOIM-2008, **American National Standard for Automotive Lifts - Safety Requirements for Operation, Inspection and Maintenance**; ALI/WL Series, **ALI Uniform Warning Label Decals/Placards**; and in the case of frame engaging lifts, ALI/LP-GUIDE, **Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts.**

2. The Owner/Employer shall establish procedures to periodically inspect the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-2008, **American National Standard for Automotive Lifts - Safety Requirements for Operation, Inspection and Maintenance**; and the Employer shall ensure that the lift inspectors are qualified and that they are adequately trained in the inspection of the lift.

3. The Owner/Employer shall establish procedures to periodically maintain the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-2008, **American National Standard for Automotive Lifts - Safety Requirements for Operation, Inspection and Maintenance**; and the Employer shall ensure that the lift maintenance personnel are qualified and that they are adequately trained in the maintenance of the lift.

4. The Owner/Employer shall maintain the periodic inspection and maintenance records recommended by the lift manufacturer's instructions or ANSI/ALI ALOIM-2008, **American National Standard for Automotive Lifts - Safety Requirements for Operation, Inspection and Maintenance**.

5. The Owner/Employer shall display the lift manufacturer's operating instructions; ALI/SM 93-1, **ALI Lifting it Right safety manual**; ALI/ST-90 **ALI Safety Tips card**; ANSI/ALI ALOIM-2008, **American National Standard for Automotive Lifts - Safety Requirements for Operation, Inspection and Maintenance**; ALI/WL Series, **ALI Uniform Warning Label Decals/Placards**; and in the case of frame engaging lifts, ALI/LP-GUIDE, **Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts** in a conspicuous location in the lift area convenient to the operator.

6. The Owner/Operator shall provide necessary lockout/tagout means for energy sources per ANSI Z244.1-1982 (R1993), **Safety Requirements for the Lockout/Tagout of Energy Sources**, before beginning any lift repairs and maintenance.

7. The Owner/Employer shall not modify the lift in any manner without the prior written consent of the manufacturer.

2.0 IMPORTANT SAFETY INSTRUCTIONS

1. **When using this lift, basic safety precautions should always be followed, including the** following:

2. Read all instructions in this manual and on the lift thoroughly before installing, operating, servicing or maintaining the lift.

3. Care must be taken as burns can occur from touching hot parts.

4. Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged – until it has been examined by a qualified service person.

5. Do not let a cord hang over the edge of the table, bench, or counter or come in contact with hot manifolds or moving fan blades.

6. If an extension cord is necessary, a cord with a current rating equal to or more than that of the equipment should be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.

7. Always unplug equipment from electrical outlet when not in use. Never use the cord to pull the plug from the outlet. Grasp plug and pull to disconnect.

8. Let equipment cool completely before putting away. Loop cord loosely around equipment when storing.

9. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).

10. Adequate ventilation should be provided when working on operating internal combustion engines.

11. Keep hair, loose clothing, fingers, and all parts of body away from moving parts.

12. To reduce the risk of electric shock, do not use on wet surfaces or expose to rain.

13. Use only as described in this manual. Use only manufacturer's recommended attachments.

14. **ALWAYS WEAR SAFETY GLASSES**. Everyday eyeglasses only have impact resistant lenses, they are not safety glasses.

15. Inspect lift daily. Do not operate if it malfunctions or problems have been encountered.

16. Never attempt to overload the lift. The manufacturer's rated capacity is shown on the identification label on the power side column. Do not override the operating controls or the warranty will be void.

17. Before driving vehicle between the towers, position the arms to the drive-through position to ensure unobstructed clearance. Do not hit or run over arms as this could damage the lift and/or vehicle.

18. Only trained and authorized personnel should operate the lift. Do not allow customers or bystanders to operate the lift or be in the lift area.

19. Position the lift support pads to contact the vehicle manufacturers recommended lifting points. Raise the lift until the pads contact the vehicle. Check pads for secure contact with the vehicle. Check all arm restraints and insure they are properly engaged. Raise the lift to the desired working height.

20. Some pickup trucks may require an optional truck adapter to clear running boards or other accessories.

21. **NOTE**: Always use all 4 arms to raise and support vehicle.

22. **Caution!** Never work under the lift unless the mechanical safety locks are engaged.

23. Note that the removal or installation of some vehicle parts may cause a critical load shift in the center of gravity and may cause the vehicle to become unstable. Refer to the vehicle manufacturer's service manual for recommended procedures.

24. Always keep the lift area free of obstruction and debris. Grease and oil spills should always be cleaned up immediately.

25. Never raise vehicle with passengers inside.

26. Before lowering check area for any obstructions.

27. Before removing the vehicle from the lift area, position the arms to the drive-thru position to prevent damage to the lift and /or vehicle.

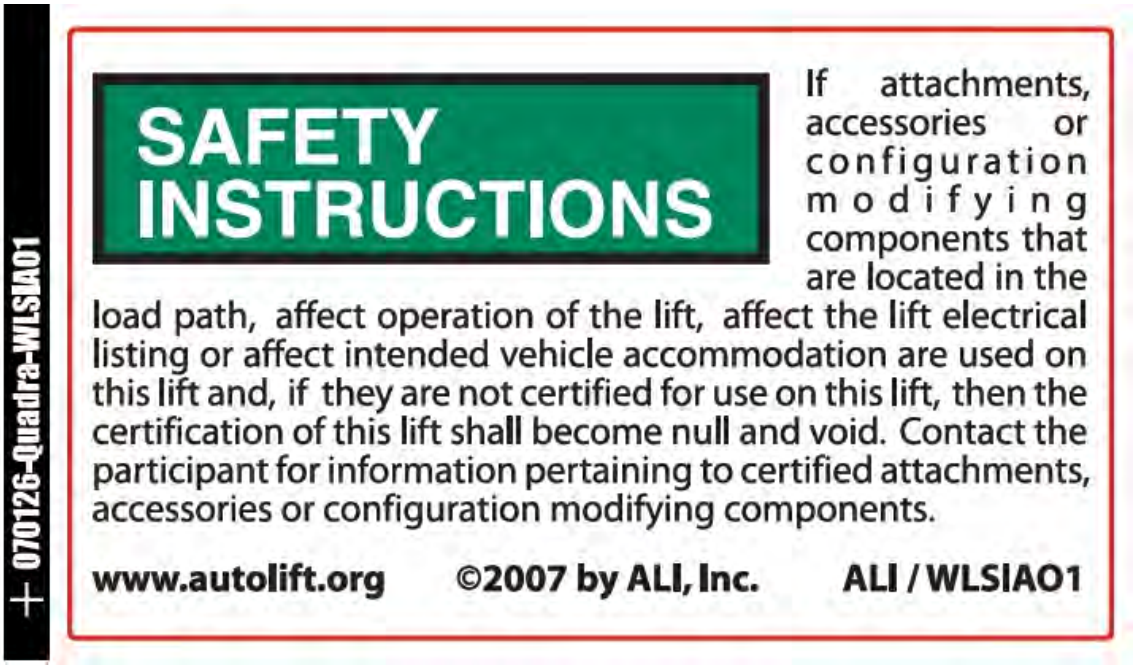
28. **Do not** remove hydraulic fittings while under pressure.

For additional safety instructions regarding lifting, lift types, warning labels, preparing to lift, vehicle spotting, vehicle lifting, maintaining load stability, emergency procedures, vehicle lowering, lift limitations, lift maintenance, good shop practices, installation, operator training and owner/employer responsibilities, please refer to **"Lifting It Right" (ALI/SM) and "Safety Tips" (ALI/ST) and vehicle lift points for service garage lifting SAE J2184.**

For additional instruction on general requirements for lift operation, please refer to **"Automotive Lift-Safety Requirements For Operation, Inspection and Maintenance" (ANSI/ALI ALOIM).**

Installation shall be performed in accordance with ANSO/ALI ALIS, Safety Requirements for Installation and Service of Automotive Lifts.

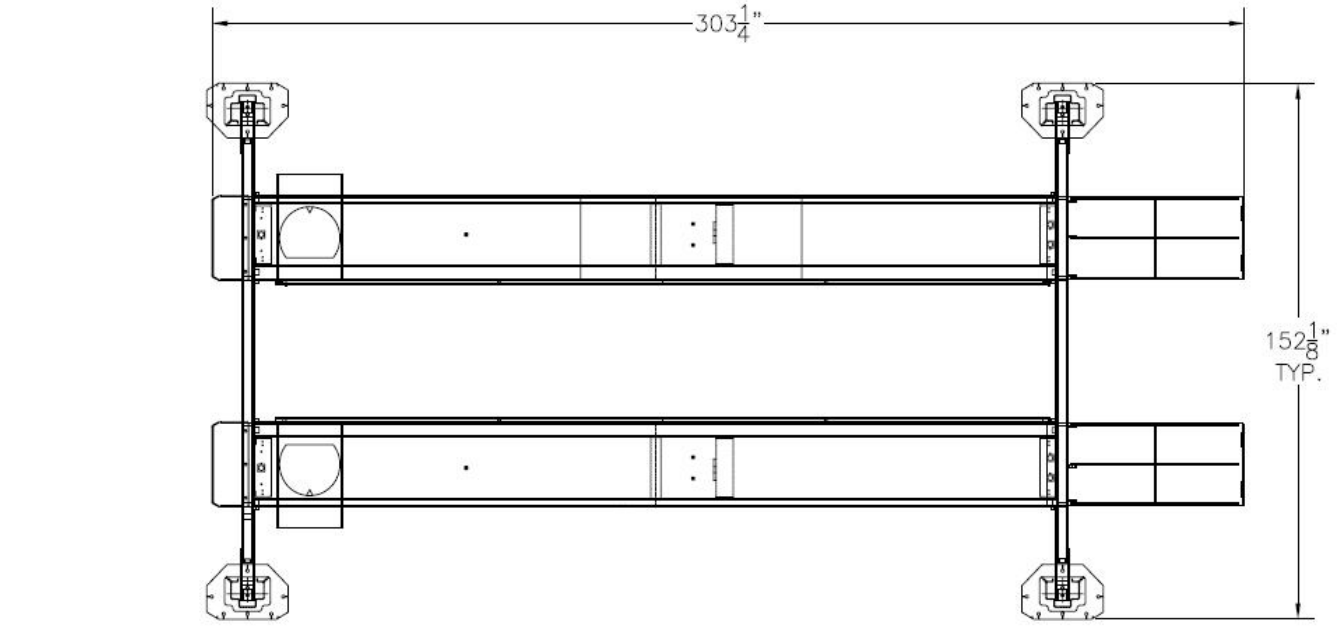
<u>ATTENTION!</u> This lift is intended for indoor installation only. It is prohibited to install this product outdoors. Operating environment temperature range should be 41 – 104 °F (5 – 40 °C). Failure to adhere will result in decertification, loss of warranty, and possible damage to the equipment.

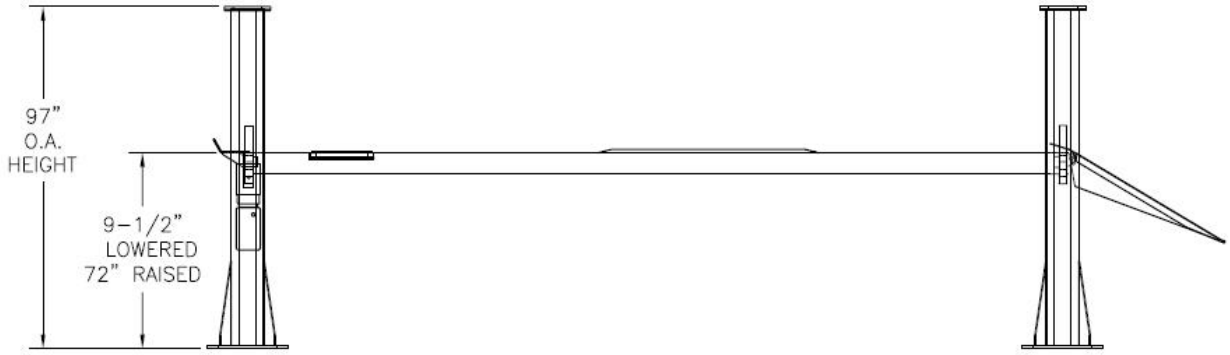


SAVE THESE INSTRUCTIONS

3.0 GENERAL SPECIFICATION

Maximum Capacity:	18,000 lb.	8,165 kg
Overall Length:	304-7/8”	7468mm
Overall Width:	152-1/8”	3864mm
Down Position Height:	9-1/2”	241mm
Maximum Lifting Height:	72”	1829mm
Maximum Wheel Base:	210”	5334mm
Rise Time:	85 Seconds	
Power Rating:	208-230 Volts, 1Ph., 20 Amp, 60Hz.	
Air Requirements:	90 – 120 psi Shop Air	
Shipping Weight:	5,465 lb.	2,484 kg





4.0 INSTALLATION REQUIREMENTS AND TOOLS

4.1 FOUNDATION

It is the user's responsibility to provide a satisfactory installation area for the lift. Lifts should only be installed on level concrete floors with a minimum thickness of five inches (6") or 152 mm. Concrete must have a minimum strength of 4000 psi or 28 MPa and should be aged thirty (30) days prior to installation. Please consult the architect, contractor or engineer if doubt exists as to the strength and feasibility of the floor to enable proper lift installation and operation.

A qualified person should be consulted to address seismic loads and other local or state requirements.

It is the user's responsibility to provide all wiring for electrical hook-up prior to installation and to insure that the electrical installation conforms to local building codes. Where required, it is the user's responsibility to provide an electrical isolation switch located in close proximity to the lift that will enable emergency stop capability and isolate electrical power from the lift for any servicing requirements.

4.2 TOOLS

- ROTARY HAMMER DRILL
- 3/4" CONCRETE DRILL BIT
- 4' LEVEL
- HAMMER (for anchor installation)
- PRY BAR (for shim installation)
- CHALK LINE (lift location)
- TAPE MEASURE
- ELECTRICAL TAPE
- STEP LADDER (adjusting cables and/or safety ladder in posts)
- SIDE CUTTERS (for cutting shipping straps)
- 4 WORK STANDS (set up)
- STANDARD SOCKETS AND WRENCHES
- ALLAN KEY SET
- SCREWDRIVER SET
- FLOOR JACK OR ENGINE HOIST

5.0 CONTENTS

The lift is packaged to protect it from any damage that may occur during shipping. The two deck assemblies and crossmembers are packaged together with the accessory boxes strapped to them.

Main Structural Components:

1 - Left Side Deck Assembly (complete with hydraulic cylinder, sheaves and cables)
1 - Right Side Deck Assembly
1 - Front Crossmember Assembly (with air cylinder release locks and sheaves)
1 - Rear Crossmember Assembly (with air cylinder release locks and sheaves)

Accessory Box Components

Box 1 Contents:

1 - Power Post (with safety ladder)
3 - Post (with safety ladder)

Box 2 Contents:

1 - Hardware Kit (with separate packaging list)
2 - Ramp pin
2 - Front Wheel Stop
4 - Sheave Cover
2 - Approach Ramp
1 - Coupler, ¼"NPT
2 - Recoil Hose
1 - Power Unit 220v/1Ph/3hp
10ft - 1/4" DIA. Polytube
10ft - 3/8" DIA. Polytube
1 - Hose Guard
1 - Hydraulic Hose Assembly (16ft. lg.)
2 - Cable Tie
1 - Air Valve & Filter Assembly
1 - Flow Control
1 - Installation & Operation Manual
1 - Lift it Right Manual "ALI"
1 - Lift it Right Safety Tips
1 - "ALI" Standards
1 - "ALI" Quick Reference Guide
8 - Glide Bearing

6.0 BAY LAYOUT

PLEASE TAKE THE TIME TO READ THESE INSTRUCTIONS COMPLETELY. A QUICK CHECK OF THE CONTENTS OF THE ACCESSORY BOX WOULD ALSO DECREASE THE INSTALLATION TIME.

Gather the tools and materials required for the installation.

Select the location best suited for your lift.

NOTE: In determining lift area check for the following:

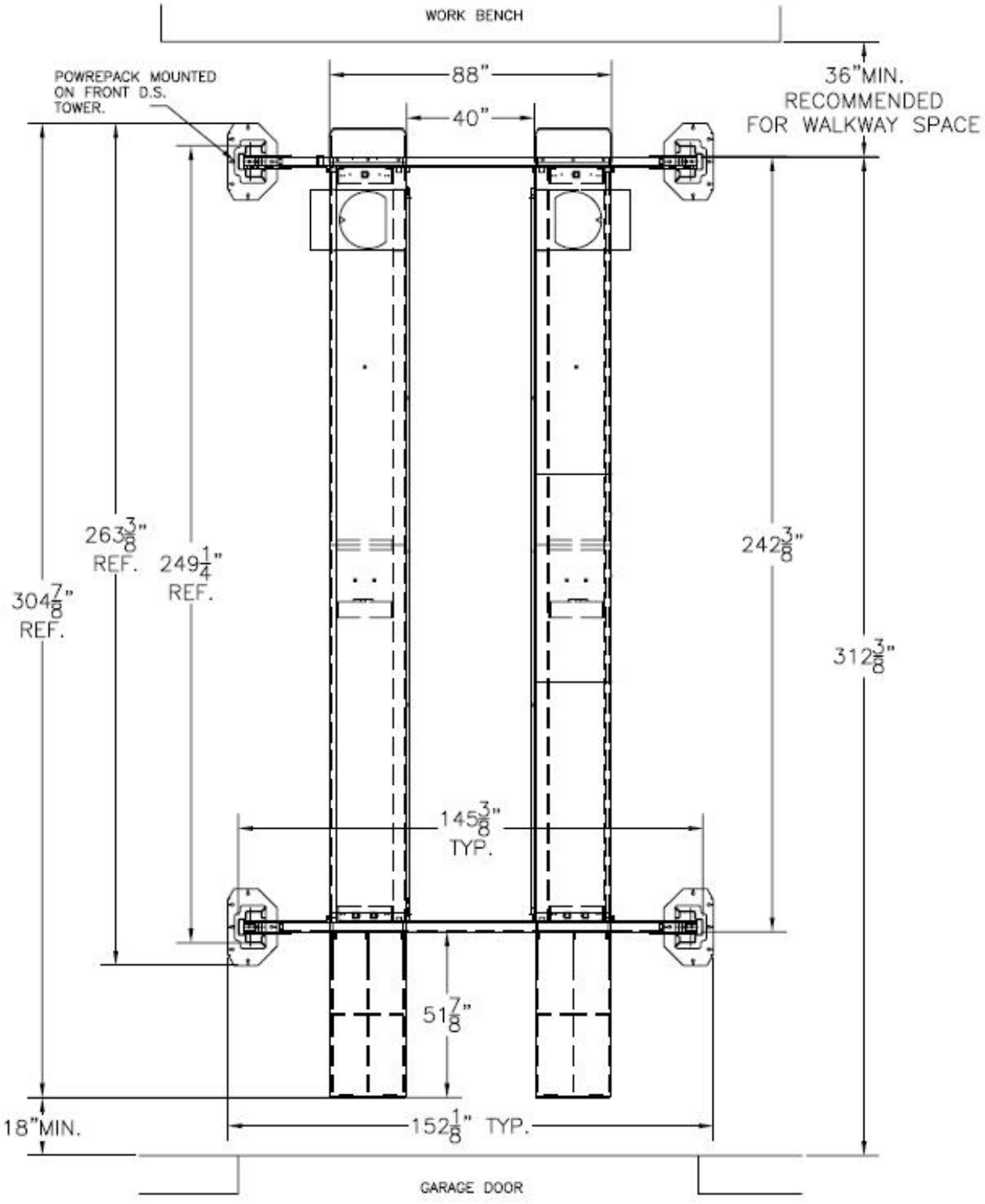
- Ease of driving a vehicle on and off the lift.
- Overhead obstructions, low ceiling height, overhead doors, overhead heaters etc.
- Floor obstructions, uneven floor in lift area, floor drains, work benches, electrical wiring in floor, etc.

An outline matching the dimensions shown in **Error! Reference source not found.** will need to be marked on the floor. Refer to **Error! Reference source not found.** for outline dimensions. Refer to General Lift Specifications for overall lift dimensions.

Recommended clearance around the lift is three (3) feet. Ensure clearance conforms to local building and fire codes.

Recommended overhead clearance is a minimum twelve (12) foot ceiling providing 6 feet for the maximum lift height and 6 feet for the supported vehicle. For vehicles taller than 6 feet it is recommended that the user provides additional overhead clearance or a shut off mechanism to stop the lift from raising the vehicle too high.

6.1 TYPICAL BAY LAYOUT



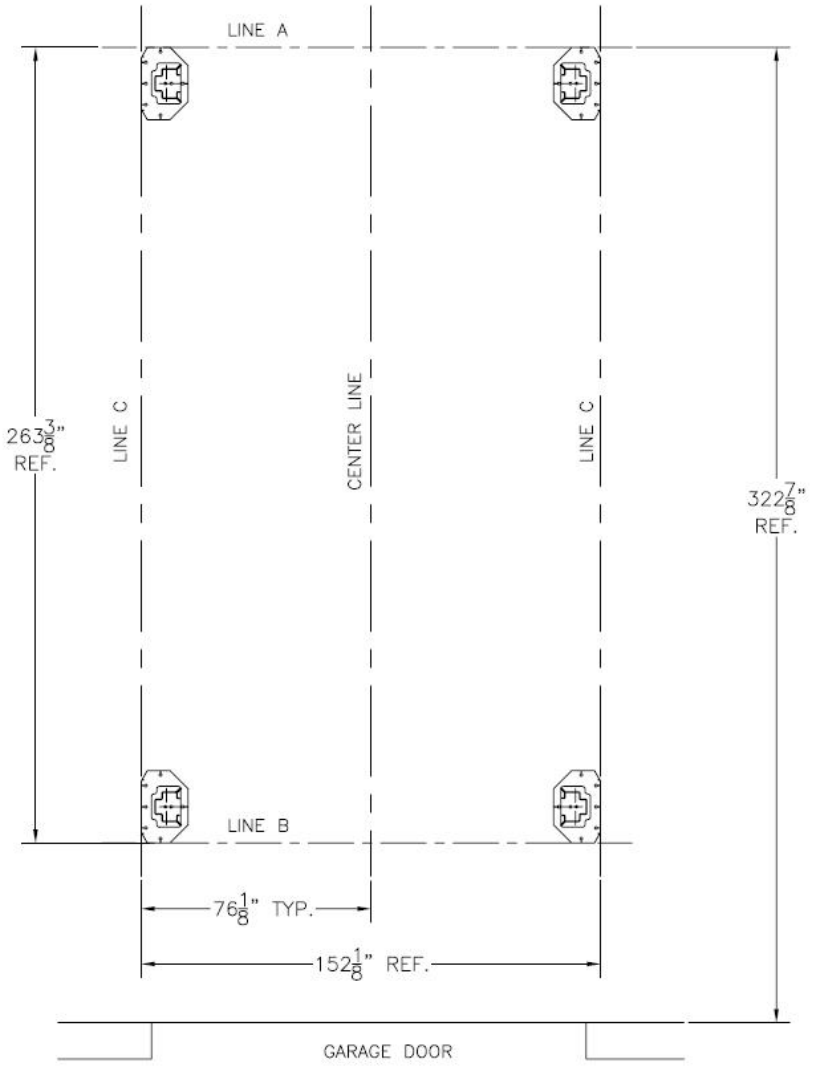
6.2 CHALK LINE LAYOUT

1. **Refer to** Error! Reference source not found.**.** Make a chalk line parallel to the doorway at least 322-7/8” in from the doorway. This will be the location for the front face of the tower baseplate. Call this line "A".

2. Determine the center of the doorway and bay. Make a centerline to intersect with line "A".

3. Make a chalk line parallel to line “A”, 263-3/8” back toward the door. Call this line “B”.

4. Make two chalk lines spaced 76-1/8” to the left and right side of the centerline intersecting line “A” and line ”B”. Call these lines, line “C”. These will be the lines that the outside edge of the tower baseplate runs along.



6.3

Figure 1 - Chalk line layout

6.4 IDENTIFICATION OF COMPONENTS

6.4.1 LS & RS DECK ASSEMBLIES

1. To determine the front, rear, left side and right side of the decks check the following:

2. The left side deck has the hydraulic cylinder mounted to its underside and includes the cables. The work steps, attached to the turn plate pocket cutouts, are located at the front of the lift and should point outward when installed.

6.4.2 FRONT AND REAR CROSSMEMBERS

1. To determine the front and rear, of the crossmembers check the following:

2. The rear crossmember has three ears for attaching the approach ramps. There are 2 locating tabs on each side of the crossmembers for positioning the decks between the crossmembers (see Figure 1).

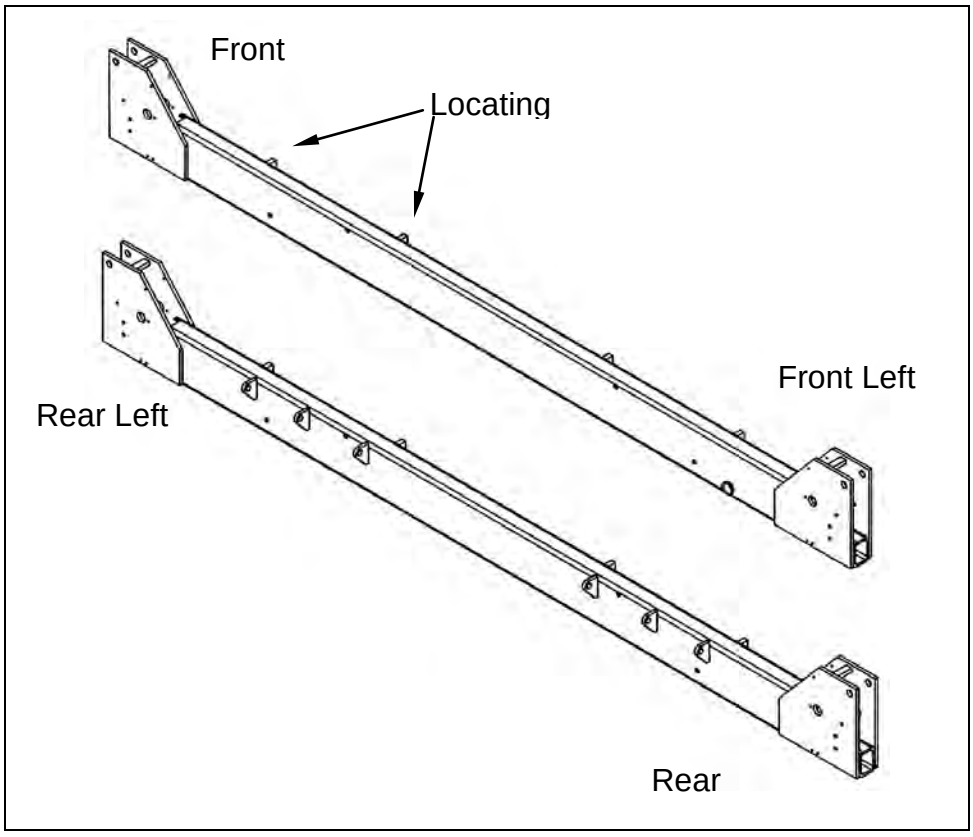


Figure 1. Front and rear crossmembers

7.0 INSTALLATION INSTRUCTIONS

7.1 ASSEMBLY OF DECKS TO CROSSMEMBERS

1. Remove the left and right deck assemblies from their packaging and place them on axle stands as follows (see **Error! Reference source not found.**).

2. Place the left deck assembly so that the inside edge lies along chalk line “B”.

3. Place the right deck assembly so that the inside edge lies along chalk line “C”.

4. Position both decks so that the front edge lies along chalk line “A”

5. Using a floor jack or engine hoist, move the front crossmember into position in front of the lift and the rear crossmember into position at the rear of the lift. Refer to Figure 1 to identify the front and rear crossmembers.

NOTE: THE PULLEYS (SHEAVES) IN THE DECK ASSEMBLY DO NOT NEED TO BE REMOVED FOR ASSEMBLY.

6. Check the part numbers of the cables (located on each stud) to determine routing.
   - 2-1360 FRONT LEFT
   - 2-1361 FRONT RIGHT
   - 2-1362 REAR LEFT
   - 2-1363 REAR RIGHT

NOTE: Refer to Figure 4 and the Parts Manual, Cable Routing Diagram for a detailed layout of cable routing.

7. Remove the pulleys (sheaves) from the crossmembers along with the spacers and nylon thrust washers. Place these to the side of the crossmembers.

8. Run each cable through the crossmembers and out past the safety lock (see Figure 2).

9. Raise the front crossmember up to the level of the decks and attach it using the ½”DIA x 4½”LG Hex Bolts, ½” Washers, ½” Lockwashers and ½” Hex Nuts found in the polybag labeled “D” (Decks).

NOTE: THE CABLES RUNNING INSIDE THE CROSSMEMBERS MUST PASS BETWEEN THE ½”DIA x 4½”LG HEX BOLTS USED TO FASTEN THE CROSSMEMBERS TO THE DECK ASSEMBLIES.

10. Repeat the previous steps for the rear crossmember.

11. Position the decks between the locating tabs on the crossmembers using the ½”-13UNC x 1”LG Set Screws found in the polybag labeled “D” (Decks). The set screws are assembled to the outer locating tabs and should be tightened until

the inside of the edge of the deck assemblies are contacting with the inside edge of the locating tabs on the crossmembers.

12. At this point the decks should be completely fastened to the crossmembers and the threaded portion of each cable should be routed through the crossmembers, past the lock safety.

13. Reinstall pulleys, spacers, washers and pins.

Before proceeding, check that the layout matches that shown in Error! Reference source not found.**, that the lift is square and that there is a 40" gap between the decks along their entire length. This dimension is critical as it is necessary to allow the jackbeams to roll freely.**

7.2 INSTALLATION OF TOWERS

1. Remove the slider block weldments from both crossmembers by removing the 3/8"-16UNC x 1"LG Hex HD Bolts and 3/8" Lockwashers attaching them to the crossmember.

2. Determine which tower is the power post (the tower with the mounting plate for the powerpack) and position it in the front left corner. Position the remaining three towers at the other corners of the lift.

3. Slide each tower around the crossmember so that the holes for attaching the slider blocks are roughly halfway inside the channel.

4. Place the Glide Bearings (located in the accessory box) on the slider block weldments and bolt the slider block weldments back onto the crossmember using the 3/8"-16UNC x 1"LG Hex HD Bolts and 3/8" Lockwashers removed previously.

5. Replace all of the crossmember pulleys, being sure to lock the sheave pins with the 3/8"-16UNC x 1"LG Hex HD Bolt. Be sure to replace pulleys and spacers in the same arrangement as they were removed (see Figure 2 and the Parts Manual, Front Crossmember Assembly).

6. Pull the towers backwards (away from the decks) so that the slider blocks are contacting the inside of the tower.

7.3 CABLE TO TOWER INSTALLATION

NOTE: THE CYLINDER ROD MUST BE FULLY EXTENDED IN ORDER TO ATTACH THE THREADED ENDS OF THE CABLES TO THE TOP PLATE OF THE TOWERS. TO EXTEND THE CYLINDER ROD, THE POWERPACK AND HYDRAULIC KIT MUST BE INSTALLED AND THE ELECTRICAL CONNECTIONS MADE (SEE FOLLOWING SECTIONS).

1. The non-threaded ends of the cables are pre-installed on the cable flange. Ensure that the cable flange in installed with the counterbores facing towards the hydraulic cylinder as shown in Figure 3

2. Ensure that the two retaining nuts are positioned as shown in Figure 3. The nuts should be locked against each other using two wrenches.

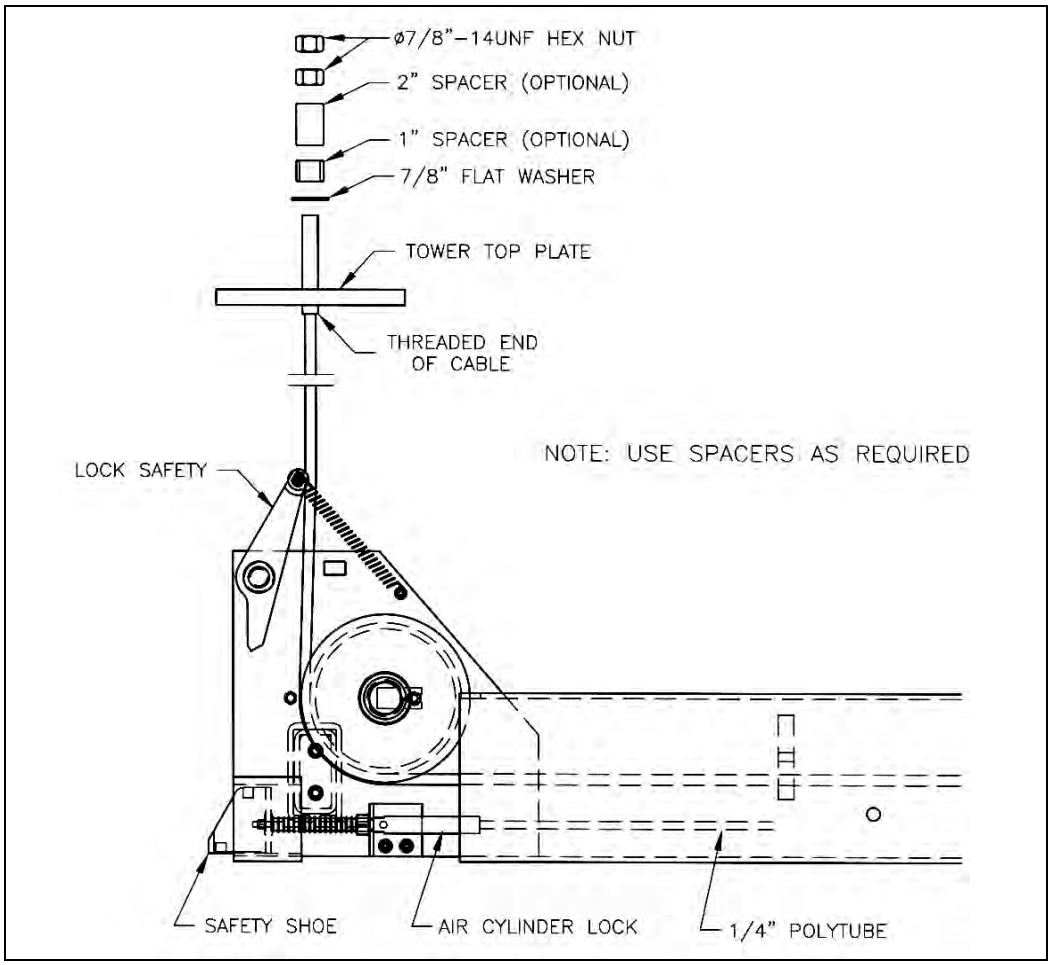


Figure 2. Cable routing diagram

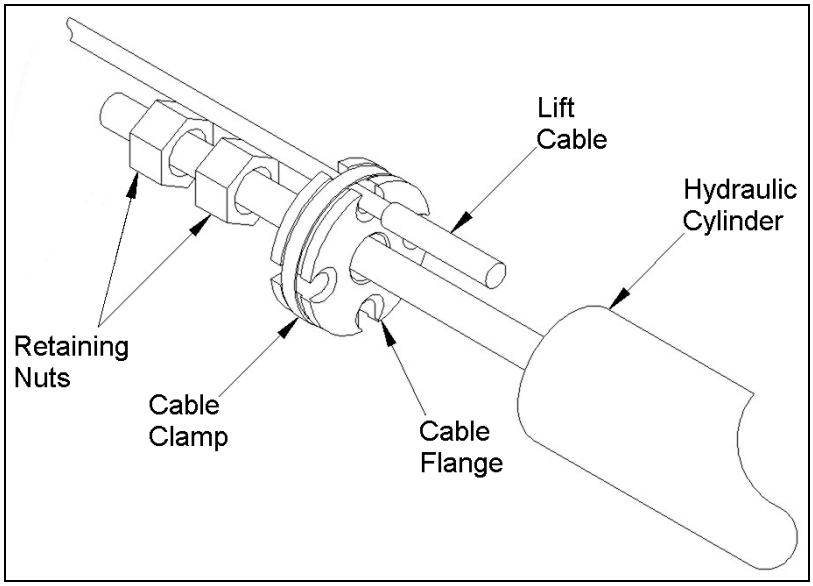


Figure 3. Cable Installation at Flange

7.4 POWER PACK INSTALLATION

NOTE: WHEN WORKING WITH HYDRAULIC LINES AND VALVES, IT IS IMPORTANT TO KEEP ALL COMPONENTS CLEAN AND FREE OF DIRT.

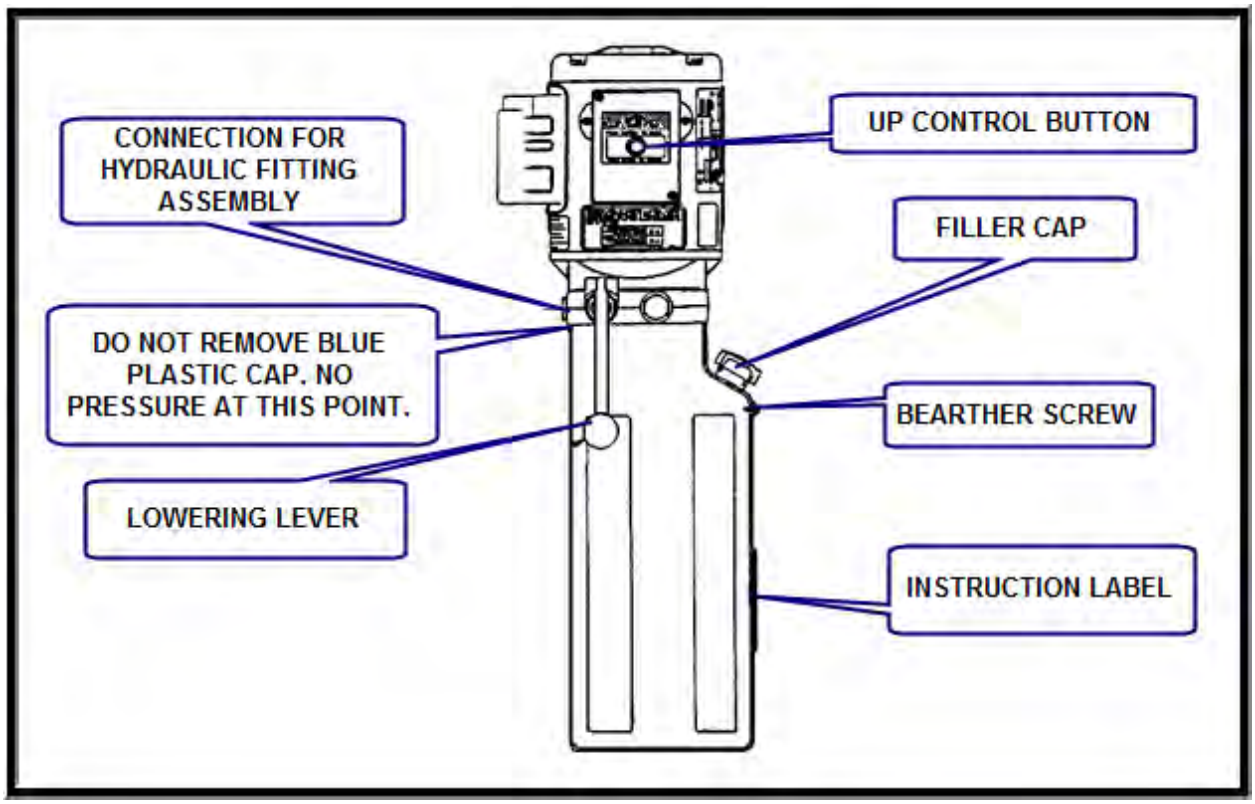


Figure 4. Power pack details

Install the power pack to the mounting bracket on the front face of the left front post using the 5/16"-18UNC × 1"LG. hex head bolts and 5/16" washers, lockwashers and hex head bolts, found in polybag “C” (Powerpack). Refer to the Parts Manual, Power Post Tower Assembly Diagram.

7.5 HYDRAULIC INSTALLATION

Refer to Parts Manual, Hydraulic and Air Kit Diagram

Locate the supply lines: 1/4" and 3/8" polytube (10ft.), 3/8" flexible hydraulic line (16ft.), and install the hose guard to cover all three lines. All four items are found in the accessory box

TIP: TAPE ONE END OF THE HYDRAULIC HOSE TO THE TWO POLYTUBES AND FEED THEM THROUGH HOSE GUARD. NOW REMOVE THE TAPE.

Feed the hose guard through the opening on the front left crossmember assembly.

Connect the end of the flexible hydraulic hose (3/8" JIC, F SWIVEL) to the fitting at the cylinder. **DO NOT OVER TIGHTEN.**

Connect the other end of the flexible hydraulic hose (3/8" JIC, F SWIVEL) to the flow control on the powerpack.

7.6 ELECTRICAL CONNECTIONS

CAUTION: ALL ELECTRICAL CONNECTIONS SHOULD BE MADE BY A QUALIFIED ELECTRICIAN.

Refer to Figure 5, Electrical Diagram for electrical connections.
Electrical Breaker Size Recommendation: 20Amps

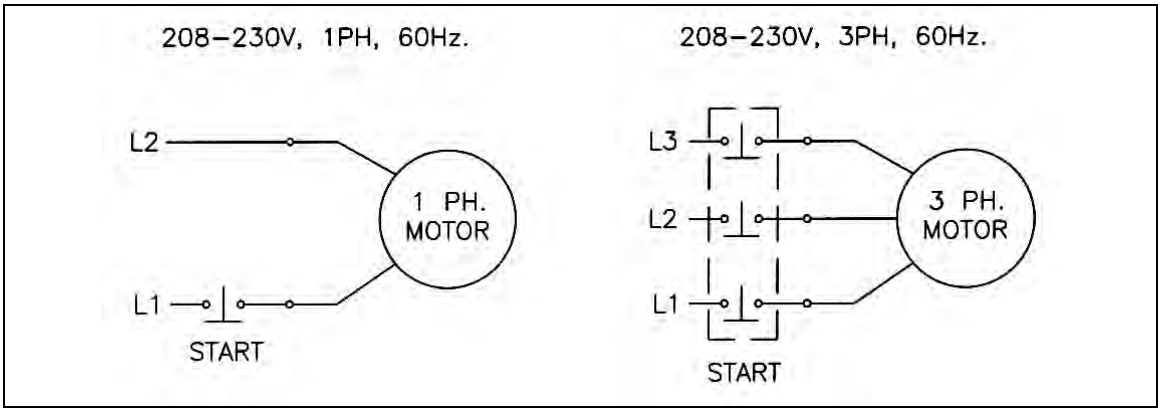


Figure 5. Electrical diagram for 230V/1 ph

7.7 CABLE INSTALLATION

Remove the hydraulic cap from the fitting at the base of the hydraulic cylinder.

Depress the lowering lever on the powerpack, while using an air chuck to blow air into the breather hole at the base of the cylinder to extend the rod.

Extend the rod until it reaches its full stroke.

Fill the reservoir on the powerpack with ISO 32 (10 Hydraulic Weight) hydraulic fluid.

Install the threaded stud end of the cables to the tower top plates using the 7/8” Flat Washer, and two (2) 7/8”-14UNF Hex Nuts with Cable Spacers as required (see Figure 2). The Hex Nuts, Washers and Cable Spacers are located in polybag “A” (cables).

7.8 AIR INSTALLATIONS

NOTE: FOR ALL AIR INSTALLATIONS REFER TO THE HYDRAULIC AND AIR KITS DIAGRAM IN THE PARTS MANUAL.

Install the air valve and filter assembly (found in the accessory box) to the mounting bracket on the power post. To do this pull off the pushbutton and unscrew the plastic nut. Slide the assembly into the mounting bracket and re-fasten the plastic nut so that the assembly is attached to the top hole. Replace the pushbutton by pressing it firmly back onto the air valve and filter assembly.

NOTE: MOST OF THE 1/4" AND 3/8" POLYTUBE CONNECTIONS HAVE BEEN MADE IN THE FRONT AND REAR CROSSMEMBER ASSEMBLIES. THE 1/4” AND 3/8” POLYTUBES THAT RUN THE LENGTH OF THE DECK ARE ALSO INSTALLED. THE 1/4" POLYTUBE IS USED FOR THE AIR CYLINDER LOCKS, THE 3/8" POLYTUBE IS USED FOR THE AIR OUTLETS TO THE JACKING BEAMS.

Connect all of the 1/4" polytubes, coming out of the front left and rear left crossmember assemblies and the front and rear of the left side deck, to the ¼” pushlock cross and tee ftittings – As shown in Views “D” and “E” of the Hydraulic and Air Kit Diagram (Page 35).

Connect the 1/4" polytube from the hose guard (i.e. supply line) to the ¼” pushlock cross at the front of the left side deck assembly. Connect the opposite end to the Air Valve and Filter assembly on the front left tower.

Connect the 3/8” polytube from the hoseguard to the 3/8” fitting at the front of the left deck assembly (jacking beam air bracket). Connect the opposite end to the Air Valve and Filter assembly on the front left tower.

NOTE: FOR THOSE UNITS EQUIPPED WITH JACKING BEAMS, THIS IS THE APPROPRIATE TIME TO INSTALL THEM. CONSULT THE JACKING BEAM INSTRUCTION MANUALS FOUND IN EACH JACKING BEAM BOX.

Hook up an air supply to the inlet of the water trap on the Air Valve and Filter Assembly located on the front left post.

Check for air leaks.

Check the operation of the air cylinder locks by pressing the pushbutton on the Air Valve and Filter Assembly on the front left post. This should cause the safety shoes to be pulled into the crossmembers, releasing the lift from the safety racks.

The pneumatics are now completely installed. Press the "UP" button on the power pack and continue until the lift is fully supported by the cables.

NOTE: MAKE CERTAIN THAT THE MECHANICAL SAFETY LOCKS AND CABLE ROLLERS ARE WORKING PROPERLY.

7.9 DECK LEVELING PROCEDURE

7.9.1 Leveling Lift to Floor

Lower the lift completely to the floor.

Determine the highest corner of the lift and adjust remaining towers to level the lift, front-to-back and side-to-side (See positions 1, 2, 3 and 4 in **Fig. 7**). Use shims under tower base plate, as needed.

7.9.2 Deck Leveling Procedure

Raise the lift so that it is fully supported by the cables and is not resting on the safety ladders.

Using a 4’ level, check the level of the decks front to rear and side to side as shown in **Figure 7**.

Lower the lift onto the nearest safety

Adjust the cable lengths by tightening or loosening the two (2) 7/8”-14UNF hex nuts attached to each cable at the tower top plate to raise or lower each corner.

Repeat the preceding steps until the lift is completely level when supported by the cables.

Raise the lift so that the deck is supported by the cables and is not resting on the safety ladders.

Loosen the 3/8"-16 UNC × 1" LG. hex bolts at the bottom and top of each safety ladder (on the back side of the tower) and pull the safety ladders up until they come into full contact with each safety shoe on the crossmember assemblies.

When flush with the safety shoe, tighten the two (2) 5/8"-11 UNC hex nuts at the top of each safety ladder and the 3/8"-16 UNC × 1"LG hex bolts at the bottom and top of each safety ladder (on the back side of the tower).

Raise the lift and check that the ladders engage evenly.

Raise the lift to its full height and check for full operating height of 72". This measurement is taken from the top of the decks to the floor.

Install the approach ramps using the ramp pins, 1/8” x 2”LG cotter pins, 1/2” washers, and approach ramps provided. The ramps and ramp pins are located in the accessory box, the cotter pins and washers are found in polybag “E” (Misc.). Ensure the proper operation of the ramps.

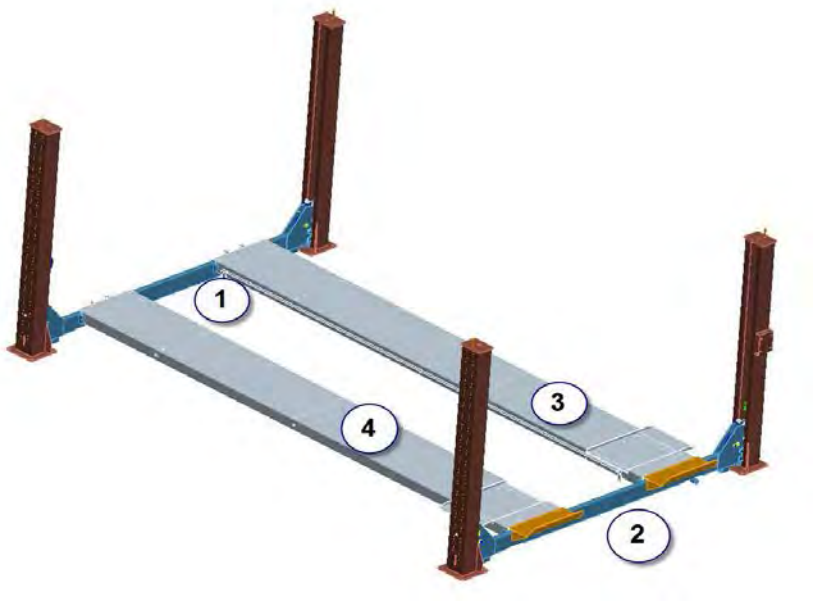


Figure 7. Deck leveling (Lift may not be as shown).

Install the front wheel stops using the 1/2"-13 UNC × 1"LG hex bolts and 1/2" lockwashers found in polybag “E” (Misc.).

Install the (4) sheave covers over the sheaves in the crossmember assembly. These are found in the accessory box.

Cycle the lift several times to check proper operation of the cables, safety lock, air locks, etc.

STOP IMMEDIATELY IF THE LIFT IS NOT OPERATING PROPERLY.

Make any necessary adjustments and check again for proper operation.

7.10 ANCHOR INSTALLATION

Check all layout dimensions in the General Specifications (pg. 4) and **Error! Reference source not found.** before continuing with anchor installation.

Refer to Figure 8 while reading through these instructions.

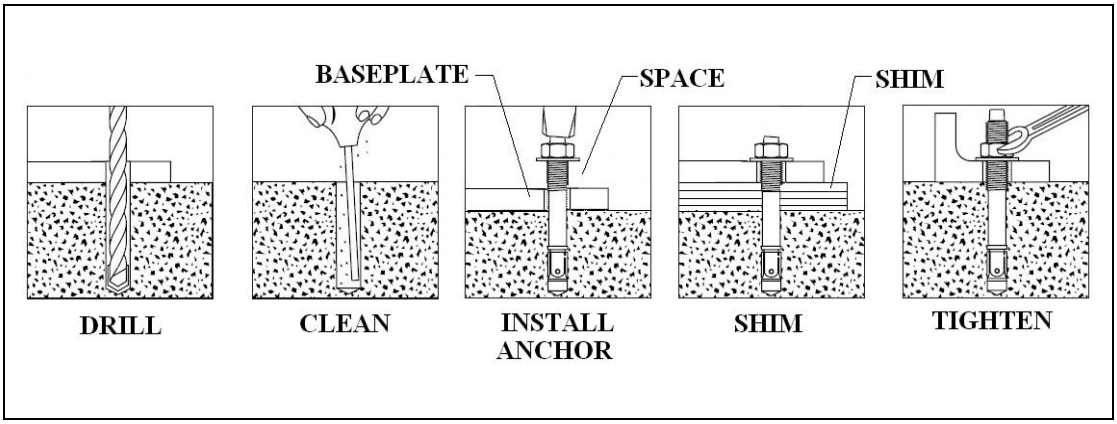


Figure 8. Anchor installation

Ensure that the lift is fully supported by the cables and is at a level just above the work stands.

Prior to installing anchors, assemble the nut and washer onto anchors. A minimum of six threads must be visible below the surface of the nut.

Using a 3/4" concrete drill bit and rotary hammer drill, drill through the concrete floor in the anchor holes positioned on the base of each post. (In case longer anchors are required, supplied anchors can be hammered through concrete).

Using a hammer, drive each anchor into floor leaving space for shimming.

Use a 4' level, to level the posts. Refer to Figure 10.

Shim as required and hammer anchors till they make contact with Baseplate. Do not tighten anchors.

Check the distance from the top of the anchor to the floor. If this dimension exceeds 2¼" due to floor slope, **DO NOT** use the supplied anchors. Longer anchor must be used (see #2 above).

Tighten all anchor bolts to a torque of 110 ft. lbs. Recheck and adjust the level of post(s) and cable(s) if necessary.

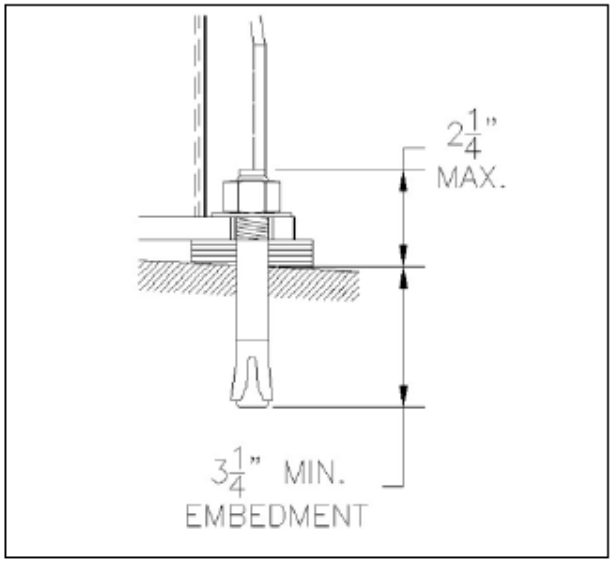


Figure 9. Floor slope

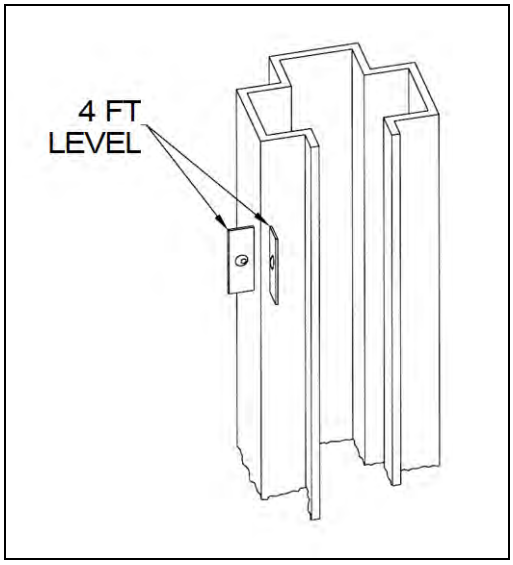


Figure 10. Post leveling

NOTE: The 3/4" × 5 ½" lg. wedge anchor bolts supplied must have a minimum embedment of 3¼" into concrete floor.

NOTE: IN CASES WHERE THE FLOOR IS EXTREMELY OUT OF LEVEL, THE MECHANICAL SAFETIES MAY NOT ENGAGE ON THE SAME LOCK.

7.11 FINAL CHECK OF ASSEMBLED LIFT

Final dimension check after anchoring. ____

Check for air and hydraulic leaks. ____

Ensure cables are properly routed and free from obstructions. ____

Ensure all safety lock mechanism are working correctly. ____

Re-check level of post and decks. ____

Makes sure ramps are secured correctly with cotter pins and washers. ____

Check all fasteners, tighten if necessary. ____

Check direction of flow control (arrow pointed toward power unit). ____

If jack beams are supplied, ensure keeper bracket are installed. ____

Check jam nuts on cables and safety ladders are tightened. ____

Ensure cable flange clamp is installed correctly and tighten. ____

Ensure cylinder shaft Jam Nuts are installed as per instructions. ____

Ensure wheelstops are installed. ____

Ensure wheel chocks are provided. ____

Operate lift to full stroke then lower to ground while checking for proper functionality. ____

Ensure Customer Care Kit is complete and given to operator. ____

Operation Manual ____

ANSI / ALI Lift It Right Manual ____

ANSI / ALI Safety Tip Card____

ANSI / ALI ALIS Safety Requirements for Installation and Service of Automotive Lifts ____

ANSI / ALI Quick Reference Guide ____

Train end user on operation of the lift. ____

7.12 OPERATION TEST WITH VEHICLE

Lower lift to ground.

Drive vehicle on to lift, install wheel chocks.

Raise lift to and lower onto 3-4 lock positions during full rise to ensure all locks are working correctly.

Double check level of runways, front to rear and side to side while on locks.

Re-adjust cables if necessary while vehicle is on.

Check lowering speed and smooth decent rate.

Lower lift to ground, remove wheel chocks and drive vehicle off lift.

If any problems occur during the final checkout or operation of the lift please contact customer service at 1-800-268-7959

8.0 SAFETY AND OPERATING INSTRUCTIONS

Inspect the lift daily. Do not operate if malfunctions occur or damaged parts have been found.

Never attempt to **overload** the lift. The manufacturer's rated capacity is shown on the serial number tag on the power post.

DO NOT OVERRIDE the safeties. The mechanical safeties are designed to engage automatically on the way up. Press the up button on the power pack to go up. When the desired height is reached, release the power pack up button and lower the lift onto the safety. To lower the lift, raise off of the safety locks, then press the air release valve button and the lowering release lever at the same time.

Only trained and authorized personnel should operate the lift. Do not allow customers or bystanders to operate the lift or be in the lift area.

Caution. Never work under the lift unless the mechanical safety locks are engaged.

Before driving vehicle on, make sure lift is in the fully down position.

Before removing the vehicle from the lift, make sure the lift is in the fully down position and ensure that all tools have been removed from the deck surfaces.

Always keep the lift area free from debris. Grease and oil spills should always be cleaned up immediately. **Never leave** any tools or parts laying on the decks.

Never operate lift with passengers in vehicle.

Always raise the lift off safety locks before lowering.

NOTE: DO NOT ATTEMPT TO OPERATE THIS LIFT IF ANY PART IS NOT WORKING PROPERLY OR YOU HAVE NOT READ THE COMPLETE OPERATING INSTRUCTION MANUAL.
NOTE: DO NOT RAISE OR LOWER THE LIFT WITH THE VEHICLE ON THE JACKING BEAM.

Installation shall be performed in accordance with ANSO/ALI ALIS, Safety Requirements for Installation and Service of Automotive Lifts

For additional safety instructions regarding lifting, lift types, warning labels, preparing to lift, vehicle spotting, vehicle lifting, maintaining load stability, emergency procedures, vehicle lowering, lift limitations, lift maintenance, good shop practices, installation, operator training and owner/employer responsibilities, please refer to “Lifting It Right” (ALI/SM) and “Safety Tips” (ALI/ST).

For additional instruction on general requirements for lift operation, please refer to “Automotive Lift-Safety Requirements For Operation, Inspection and Maintenance” (ANSI/ALI ALOIM).

9.0 RECOMMENDED INSPECTION AND MAINTENANCE

9.1.1 Lubrication Specifications

Where hydraulic oil is required > ISO 32 10W - non detergent hydraulic oil
Where grease is required > multi-purpose lithium grease
Where multipurpose lube is required > multi-purpose SAE 30 lubricating oil
Where pneumatic oil is required > Snap-On air motor oil IM1PT
Where cable lube is required > 2001 MONOLEC® wire rope lubricant or equivalent

⚠WARNING If you are not completely familiar with automotive lift maintenance procedures, STOP. Contact Snap-on Equipment Technical Support for instructions. To avoid personal injury, permit only qualified lift service personnel to perform maintenance on this equipment.

Always raise lift when cleaning floor area with solvents and/or cleaning compounds.
Always replace cable break safety springs when replacing cables.

Please refer to the following table for specific inspection and maintenance frequency.

COMPONENT	INSPECTION FREQUENCY					
	DAILY	WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALY	ANNUALY
Entire Lift and surrounding area	8.15					As shown before, and ALI Standard
Entire Lift Operation	8.15					
Fasteners		8.3				
Wire Ropes		8.2.3	8.2.4	8.2.5		
Sheaves		8.4.1		8.4.2		
Sheave Pins		8.4.3		8.4.2		
Safety Dogs	8.5		8.3			
Slack Cable Devices	8.6					
Latch Plates (Ladders)			8.6			
Air Filter, Regulator, Lubricator	8.7					
Approach Ramps, Chocks, Wheel Stops	8.12					
Anchor Bolts			8.11.2			
Turn Tables and Rear Slip Plates	8.13.1		8.13.2	8.13.3	8.13.5	
Bearing Cage / Rear Slip Plates	8.13.1		8.13.2	8.13.4	8.13.5	
Edges of Cable Flange Slots	8.2.6					
Runways			8.10.1			
Columns			8.11.1			
Air cylinders, Lines, Fittings			8.7			
Hydraulic Power Pack, Hose, Fittings			8.8			8.8
Hydraulic Cylinder				8.9		
Jack Beam Rails, Oil Drain Pan				8.10.2		
Anti-skid Surfaces				8.13.5		
Rolling Air Jacks			8.14			

9.2 MAINTENANCE SCHEDULE

Maintenance and Training Performed	Date	By	Notes

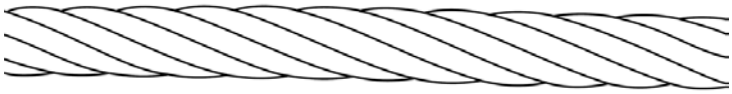
10.0 WIRE ROPES

⚠WARNING

Wire ropes are critical to safe and reliable performance of your lift. Cables are expendable items and should be replaced as a set.

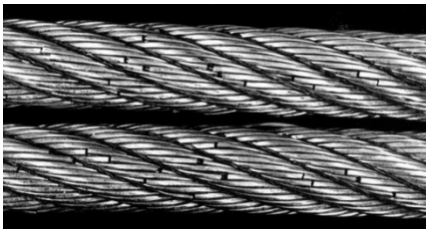
10.1.1 Wire Rope Conditions Guide

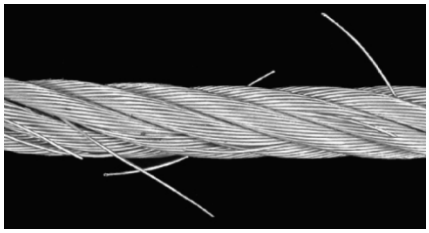
Typical good cable



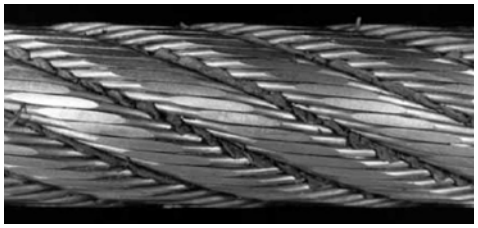
Cable with necking

Broken wires





Excessive wear of wires



Rust on sheave stack and ropes

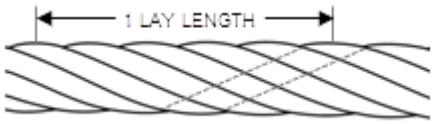
Corrugated sheave groove

Figure 15

10.1.2 Wire Rope Replacement Criteria

⚠WARNING If any cable is found to be in need of replacement, the entire cable set, pulleys and safety rollers must be replaced immediately. See **8.2.1**, cable conditions guide.

In the following table, "lay" means the distance measured along a line parallel to the axis of the rope in which the strand makes one complete turn about the axis of the rope, or the wires make a complete turn about the axis of the strand.



The wire rope must be removed from service if one or more of the following criteria are met:
1. More than six randomly distributed broken wires in one rope lay or 6×d length.
2. More than three broken wires in one strand in one rope lay or 6×d length.
3. Three or more broken wires at rope terminations.
4. One outer wire broken at the point of contact with the core of the rope which has worked its way out of the rope structure and protrudes or loops out from the rope structure
5. Heavy rusting, corrosion, or pitting. A light surface corrosion on outer wires is normal.
6. Wear or scraping of one-third of the original diameter of outside individual wires
7. Excessive stretch. It is normal for new cable to require adjustment during “break-in”, after which small periodic adjustments may be required. However, if a cable that has been in service for 6 months should suddenly require frequent adjustments or has used all the cable adjustment available, all cables must be replaced immediately.
8. Deformed strands, kinking, crushing, birdcaging, or any other damage in distortion of wire rope structure
9. Variations in diameter (necking) or any change from normal appearance
10. Reductions from nominal diameter of more than 1/32" (for cables 3/8" to 1/2" dia. inclusive)
11. End attachments cracked, deformed or worn

10.1.3 Wire Rope Inspection

Inspect wire rope cables for wear or damage. Wipe cables with a rag to detect hard to see small broken or frayed cable strands. See chapter **8.2**, **Fig.15** and ANSI/ALI ALOIM standard.

10.1.4 Wire Rope Lubrication

Lubricate wire ropes with lift in both lowered and raised position, by spraying them with wire rope lubricant (i.e. 2001 MONOLEC®) and wiping the cable down.

10.1.5 Wire Rope Adjustment

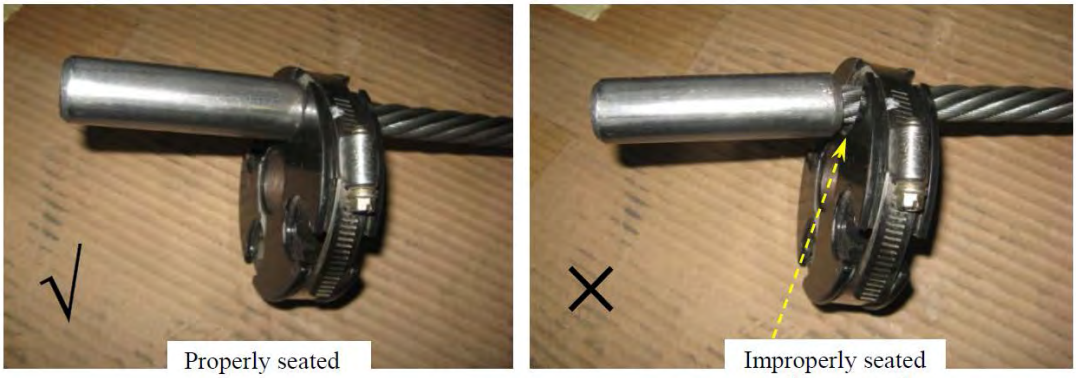
Adjust cables if lifting is uneven or lift is not level (See chapter **6.10.3**). Never make adjustments with weight on lift. If running out of adjustment threads, cables need to be

replaced. Do not add washers or other spacers to re-use previously used adjustment threads.

Wire rope tension adjustment should be performed when installing the lift and every three months.

10.1.6 Inspect Cable Flange

Make sure the edges of the counter-bores in the cable flange are not damaged or worn, indicating that cable sleeves may not be properly seated at all times.



10.2 FASTENERS

Check all the attaching bolts and nuts for tightness.
Note: Air cylinder bolts and nuts should allow movement of the cylinder.

10.3 SHEAVES AND PINS

Sheaves and pins are expendable items. Sheaves and pins should be replaced when worn. Use of sheaves and pins with excessive wear will lead to reduced service life of the cables.

⚠WARNING Bushings inside sheaves work best in “dry” condition. Applying oil will diminish their performance and greases will degrade performance even further. **DO NOT GREASE SHEAVE BUSHINGS OR SHAFTS**.

10.3.1 Visual Inspection of Sheaves

Check sheaves and replace if cracks or other damage are found.
Visually inspect alignment of sheaves. Misalignment of sheaves indicates excessive wear. Remove, inspect, and, if needed replace sheave and pin.

10.3.2 Measure Sheave Wear

Inspect sheaves in cross-members with lift in lowered position and resting on safety latches
Place safety stands under front and rear cross-members. Stop lift on mechanical safety locks. One person should hold the lowering handle on power unit down while another person pulls on cables in each column to create slack in cables.
Check for ease of rotation. If sheaves do not turn freely, the sheave and sheave pin should be removed, inspected, fixed or replaced.
Fully raise the lift, to inspect sheaves in runways. Hold lowering handle down to lower lift onto safety latches
Pull on cables in runway to create slack in cables.

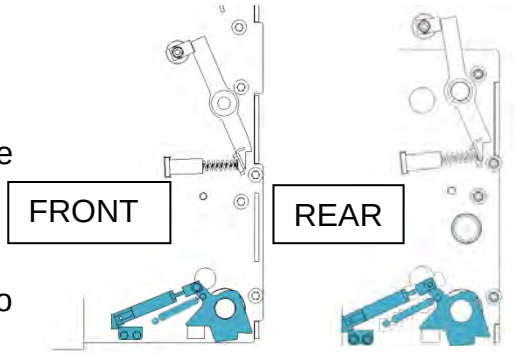
Check all sheaves for excessive wobble, or movement. Grasp rim of sheave and attempt to wobble (tilt) side to side. If sheaves wobble (tilt) more than 3/16” (1.6 mm) side to side, or move in and out more than 1/32 (0.8 mm), the sheave and sheave pin (shaft) should be replaced. Replace immediately if needed.

10.3.3 Sheave Pins

Sheave pins are held in place by a Hex Head Bolt, washer and lock washer.
Check for loose sheave pins, loose or missing fasteners to hold sheave pins in place.
Remediate situation immediately.

10.4 MECHANICAL SAFETY LATCHES (DOGS)

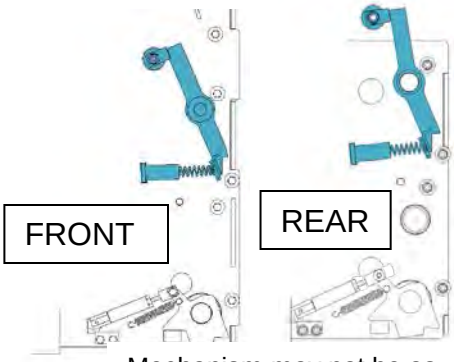
Watch and listen to safety latch operation during lift operation, to ensure that latches move as required, have not lost spring preload, and line up with slots in latch plates (safety ladders) in columns. Watch for broken traction springs on safety latches.Check and adjust safety ladders if lift is not level on safety, or if safeties do not engage properly. Stop using the lift if any malfunction or damage is observed.



Mechanism may not be as shown.

10.5 CABLE BREAK SAFETY MECHANISM

With lift not loaded, all four cable break levers should produce deflection of the lift cables.
Inspect slack cable device as follows:
Check for missing or damaged parts. Watch for broken springs. Check if the spring is properly seated in the support tube and in the holder on the cable break safety lever.
Watch cable tracking properly on cable break safety roller.
Check if the safety roller and bolt are properly attached to the cable break safety lever. Verify that the cable break safety lever is centered within the cross-member, and that it lines up with the openings in the safety ladder. Verify using hand force or a light lever that the cable break safety lever pivots on the shaft.
Lubricate with light lubricant if required.



Mechanism may not be as shown.

10.6 AIR CYLINDERS, AIR LINES, VALVE AND FITTINGS

Check filter/regulator/lubricator in supply line to lift. (customer supplied, typically at compressor). Drain water trap filter bowl and adjust oil feed according to manufacturer’s instructions.
Drain water bowl on lift supplied water separator. Press valve at the bottom of the bowl to clear.
Check operation of air release valve for air leaks.
Check air cylinders for visible damage.
Check air lines for leaks, wear or kinks.

10.7 HYDRAULIC POWER PACK AND HOSE

Check all air and hydraulic hoses, fittings and cylinders for leaks.
Check level of oil in power pack reservoir when lift is in the lowered position. Add if required.
Check fluid level of lift power unit and refill if needed. If refill was needed, inspect all fittings, hoses and seals. Tighten, repair or replace as required.
Change hydraulic fluid every 2 years.

10.8 HYDRAULIC CYLINDER

Inspect the hydraulic cylinder mounting to the runway. Inspect cylinder and hydraulic hose for leaks. Repair or replace as required.
Check and tighten the hydraulic cylinder rod nuts holding the cable flange.
Inspect bolts holding anti-rotation bar onto cable flange and tighten if required. (If applicable)
Inspect sliders on anti-rotation bar for excessive wear or damage. Replace if required. (If applicable)

Failure to do so will lead to reduced service life, which could result in property damage and/or personal injury.

10.9 RUNWAYS

10.9.1 Check Runways

Check level of runways on the floor, on the locks and on the cables: Refer to **Section 6.10**. Adjust as required.
Check runways for damage or abnormal deformation. If such conditions exist, contact Snap-on Equipment Technical Support.

10.9.2 Inspect Jackbeam Tracks

Inspect rolling jack / oil drain pan tracks for cleanliness, corrosion, excessive wear or damage. Clean dirty tracks. Worn or damaged tracks should be repaired immediately.

10.10 COLUMNS

10.10.1 Check Columns

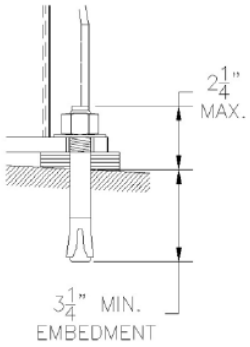
Check columns for corrosion, giving special attention to the area at the base of the column. Check severely corroded areas by pecking with an awl or welder's chipping hammer. If column is corroded through at any point, it must be replaced immediately. If not corroded through, remove old paint and rust scale, then coat with a high quality corrosion resistant paint. Clean and lubricate glide blocks.

10.10.2 Check Column Anchors

Check column anchor bolts for tightness (if loose, re-torque to 110 ft-lb). If anchors do not tighten to required torque, or continue to loosen, contact Snap-on Equipment Technical Support.
Verify proper embedment of anchors after tightening.

NOTE: The 3/4" × 5½" lg. wedge anchor bolts supplied must have a minimum embedment of 3¼" into concrete floor.

NOTE: If anchors do not tighten to required torque, OR project more than 1½" above the concrete surface due to floor slope, contact a foundation engineer to determine the best course of



10.11 APPROACH RAMPS, CHOCKS, FRONT WHEEL STOPS

Inspect for excessive wear or damage. Repair or replace if required.
Inspect hinge pins. Replace if excessively worn. Lubricate if in good condition

10.12 FRONT AND REAR STEER PLATES

10.12.1 Visual Inspection

Check front turn tables and rear slip plates for unusual deflection, damage, fluid spills. Clean or further inspect if needed.

10.12.2 Clean Rear Slip Plates and Front Turn Tables

Clean foreign debris from front turn tables and rear slip plates by blowing out with compressed air.
Check and clean steer plates. Lubricate with oil or light grease.

10.12.3 Maintenance of Rear Steer Plates

Inspect the non-skid coating on rear slip plates for wear. All areas found to be worn smooth should be resurfaced with an Anti-Slip abrasive floor tread tape or a heavy duty Anti-Slip Floor Coating.

Remove rear slip plate covers. Clean runway surface and touch up any paint wear with a rust resistant paint. Allow paint to dry thoroughly. Inspect transfer balls for excessive wear, deformations or corrosion. Inspect plastic pads (pucks) for excessive wear or deformation. Replace if needed.

10.12.4 Maintenance of Rear Steer Plates - If Equipped with Plastic Bearing Cage

Remove top Slip Plate covers by first removing the four (4) shoulder bolts on each cover.
Remove polyethylene-bearing cages insuring that all the Delrin bearings remain in the cages. Additional Delrin bearings may be purchased if required.
Clean runway surface and touch up any paint wear with a rust resistant paint. Allow paint to dry thoroughly.
To obtain optimum performance, the position of the slip-plate bearing cage should be rotated every quarter to change the wear pattern.

With the first quarter maintenance, flip the bearing cage over to the opposite side.

With the second quarter maintenance, rotate the bearing cage end-to-end.

With the third quarter maintenance, flip bearing cage over to the opposite side. Fourth quarter maintenance should see the bearing cage rotated back to the original position.

Quarterly maintenance will optimize performance and contribute to longer slip plate life.

10.12.5 Anti-Skid Coating on Rear Steer Plates

Inspect the non-skid coating on rear steer plates for wear. All areas found to be worn smooth should be resurfaced with an Anti-Slip abrasive floor tread tape or a heavy duty Anti-Slip Floor Coating.

10.13 ROLLING AIR JACKS

Lubricate roller bearings and roller guide springs.
Dismantle and clean lift arms.
Clean and lubricate rollers/sliders and hinge points.
Clean and lubricate safety mechanism.
Change hydraulic oil every two years

10.14 ENTIRE LIFT

Wire ropes, columns, runways and other lift parts should be kept free of corrosive agents, solvents, and road salts. If such agents are spilled or splashed on any lift component, immediately rinse thoroughly with water and wipe down with a clean rag. Lubricate again wire rope as shown at **8.2.4.**

Check general operation of lift. Observe any structural noise, imbalance, binding, or other malfunctions.

⚠WARNING Failure to keep the lift free of corrosive agents and solvents will lead to reduced component service life, cable failure, etc., which could result in property damage and/or personal injury.

11.0 LOCK OUT AND TAG OUT INSTRUCTIONS

IMPORTANT: This machine does not have integral devices that will isolate the electrical, pneumatic, stored and hydraulic energy source. Appropriate isolation or blocking devices must be used that have the provisions to be switched in the off position and locked in that position.

ALL MAINTANANCE AND SERVICE MUST BE PERFORMED BY A QUALIFIED PERSON.

ALL MAINTANANCE AND SERVICE MUST BE PERFORMED WITH THE LIFT UNLOADED.

IT IS THE SHOP OWNERS RESPONSIBILITY TO ENSURE ENERGY ISOLATING DEVICES ARE:

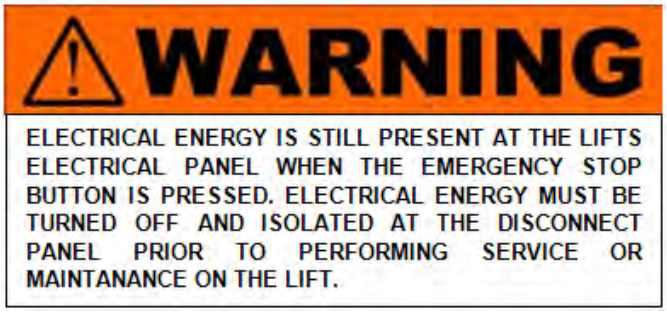
- **Accessible**
- **Conveniently located to facilitate the application of lockout devices during service and maintenance**
- **Located outside any hazardous area.**
- **At a convenient manipulating height (i.e. not overhead, on ladders or under machinery)**
- **Adequately labeled or marked. Identification shall include machine ID, energy type and magnitude.**
- **Capable of being locked or otherwise secured in an effective isolating position.**

Effective hazardous energy control procedures will protect employees during machine and equipment servicing and maintenance where the unexpected energization, start up or release of stored energy could occur and cause injury, as well as while working on or near exposed de-energized electrical conductors and parts of electrical equipment. Hazards being guard against include being caught in, being crushed by, being struck by, being thrown from, or contacting live electrical circuits/parts.

In preparation for lockout, an initial survey must be made to locate and identify all energy isolating devices to be certain which switch, valve, or other energy isolating devices apply to the machine / equipment to be locked out. More than one energy source (electrical, hydraulic, pneumatic, or others) may be involved.

- SHUT DOWN PROCEDURE:

- Notify all affected employees that a lockout or tagout system is going to be utilized and the reason for. The authorized employee shall know the type and magnitude of energy that the lift utilizes and shall understand the associated hazards.
- ELECTRICAL: Located at the main electrical cabinet, and turn off the breaker to the lift disconnecting the raise and lower functions.



11.1 ISOLATION AND VERIFICATION PROCEDURE:

Table 1: ISOLATION AND VERIFICATION PROCEDURES:

ENERGY TYPE AND SOURCE	LOCKOUT LOCATION (TO BE COMPLETED BY END USER)	PROCEDURE FOR LOCING OUT AND OR RELEASING ENERGIES	VERIFY PROCEDURES
STORED ENERGY **AND** **HYDRAULIC PRESSURE 3000-5000 PSI**		LOWER THE LIFT TO ITS LOWEST REST POSTION. IF THE LIFT MUST BE SERVICED OR MAINTAINED IN THE RAISED POSITION, ENSURE THAT THE LIFT IS PLACED ON THE MECHANICAL LOCKS AND SUPPORTED BY SUPPLEMENTARY JACK STANDS, BLOCKED AT THE SLIDERS AND A COME ALONG SECURED BETWEEN THE SCISSORS.	VERIFY THAT THE LIFT IS CONTACTING THE SUPPLEMENTARY JACK STANDS, THE BLOCKS ARE SECURLY PLACED AND THE COME ALONG IS SECURED BETWEEN THE SCISSORS. PRESS THE DOWN BUTTON ON THE CONSOLE AND VERIFY THAT THE LIFT DOES NOT LOWER. VERIFY HYDRAULIC PRESSURE HAS BEEN REMOVED BY SLOWLY OPENING THE MAIN HYDRAULIC FITTING AT THE POWER UNIT ONLY. IF FLUID IS PRESENT UNDER PRESSURE, IMMEDIATLY TIGHTEN AND REPEAT LOWER PROCESS. ENSURE THAT BOTH STRUCTURES ARE SECURELY PLACED ON THE STANDS AND BLOCKED.
ELECTRICAL 240VOLTS		AT THE LIFT, PRESS THE EMERGENCY STOP BUTTON COMPLETELY TO DE-ENERGIZE THE CONTROL BUTTONS. AT THE DISCONNECT PLANEL, PLACE THE DISCONNECT HANDLE IN OFF POSITION. ATTACH A MULTIPLE LOCKOUT DEVICE. LOCK AND TAG. **DANGER: LINE SIDE OF DISCONNECT REMAINS ENERGIZED**	ATEMPT TO RESTART THE SYSTEM, THE SYSTEM MUST NOT START. VISUALLY VERIFY OPEN DISCONNECTS AND LOCKING DEVICE INSTALLED.
PNEUMATIC UPTO 160PSI		SLOWLY CLOSE LOCKOUT VALVE TO RELEASE AIR PRESSURE GRADUALLY. ATTACH MULTIPLE LOCKOUT DEVICE, LOCK AND TAG. **DANGER: LINE SIDE OF DISCONNECT REMAINS PRESSURIZED**	VERIFY THE VALVE IS CLOSED AND LOCKOUT DEVICE IS PROPERLY ATTACHED. OPERATE THE PNEUMATIC SYSTEM TO ENSURE THE SYSTEM IS DE-ENERGIZED. IT MAY BE NECESSARY TO BLEED THE SYSTEM OF REMAINING COMPRESSED AIR, THIS CAN BE PERFORMED AT THE BASE OF THE WATER SEPARATOR BOWL.

- RETURNING TO SERVICE:

- Check the lift and the immediate area around the lift to ensure that nonessential items,, tools and parts are removed and that the lift components are operationally intact.
- Check the work area to ensure that all employees have been safely positioned or removed from the work area.
- Notify all employees that the lockout/tagout is going to be removed and the lift is going to restarted.
- Remove the lockout/tagouts in the reverse order as the installation.
- Verify the proper operation of the equipment.
- Notify affected employees that the maintenance/service is completed and the machine is ready for operation.

11.2 EMERGENCY OPERATION

If the lift becomes inoperative in the raised position, it is best to wait until the electrical power is restored before lowering the vehicle. However, if it's critical to safety that the lift be lowered, the following steps should be taken.

WARNING: DO NOT LOOSEN OR REMOVE HYDRAULIC CONNECTIONS OR FITTINGS UNDER PRESSURE. SERIOUS INJURY OR DEATH COULD OCCUR.

NOTE: Safely performing this process requires 3 people. All personnel should stay clear of the path of the lift. All tools and other non-secured items should be removed from the surface of the ruways.

1) Survey the area surrounding the lift; remove any items and personnel from area before proceeding with this procedure.
2) Perform the appropriate lockout/tag out procedure on the electrical energy.
3) Add additional chocks to the vehicle to secure it from movement in the forward and rear direction.
4) Use a second person standing at a safe distance away from the lift to keep watch on the area, lift, vehicle and other personnel throughout the process. This person should signal the person performing the procedure to stop if necessary.
5) Use a caution tape or similar to barrier the area around the lift to avoid personnel from accidently entering the area while this process is being performed.
6) Do not proceed with this procedure if you are unfamiliar with the lift or its function.

IF THE MECHANICAL LOCKS ARE NOT ENGAGED:

1) **If there is air pressure in the pneumatic system**; have another person press and hold the mechanical safety release button to disengage the mechanical locks. Confirm that all mechanical locks have been disengaged and will allow the lift to lower.
   If there is no air pressure in the pneumatic system; use a portable compressor to provide a temporary air supply to the system.
2) Press and hold the safety release button.
3) Verbally indicate to all those involved that the lift will now be lowered.
4) Slowly push the lowering lever on the powerpack to lower the lift.

5) Keep a close eye on the movement of the lift and the position of the vehicle; release the lowering lever if any abnormal movement is detected.
6) Once the lift is fully lowered, disconnect the temporary air supply.
7) Once power is restored follow the lockout/tag out procedure to return the lift back into service.

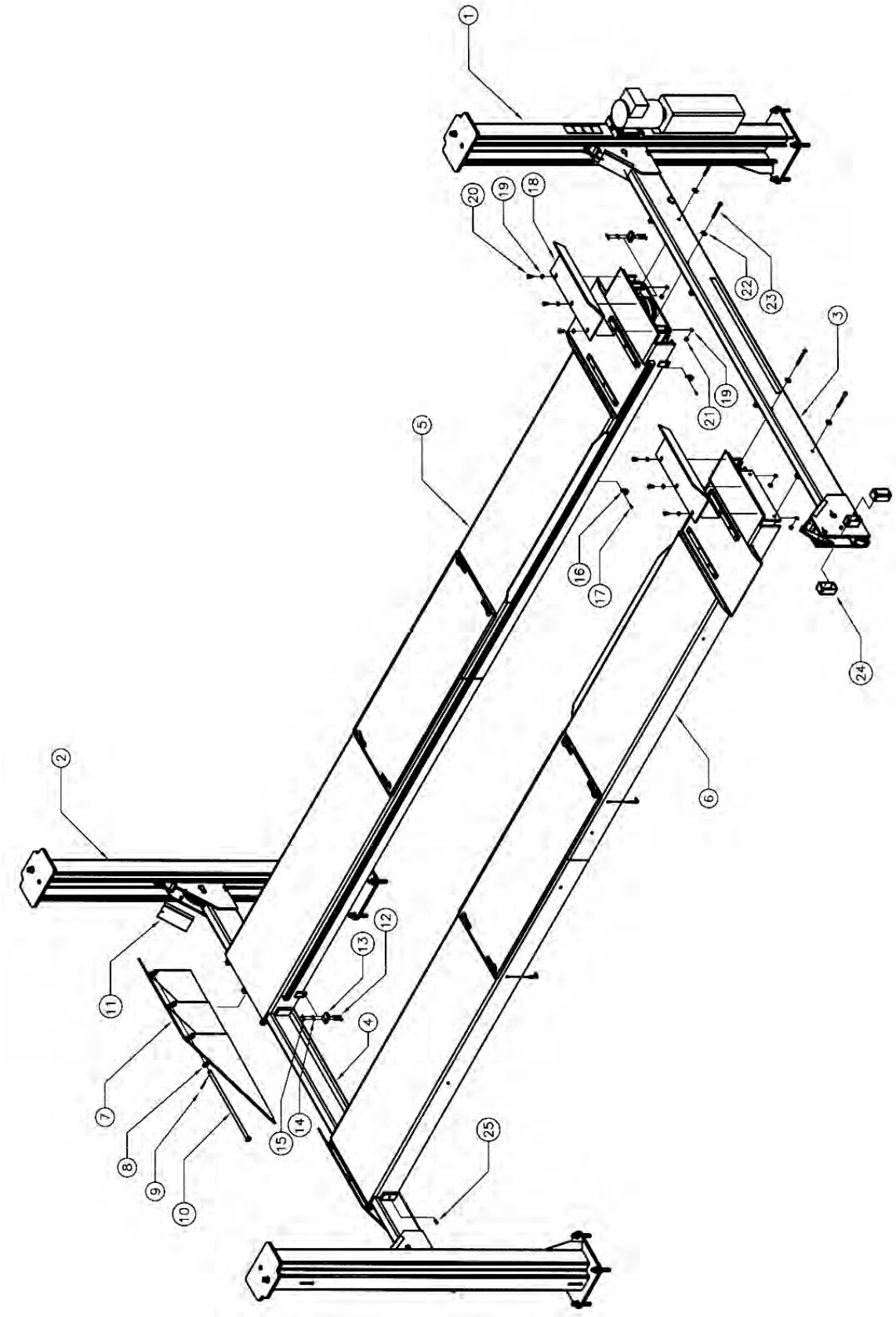
IF THE MECHANICAL LOCKS ARE ENGAGED:

Various methods can be used to raise the lift in order to get sufficient clearance to disengage the mechanical locks. The safest method would employ temporary electrical power to the lift using a portable power generator. Any electrical connections should be done by a licensed electrician; lock out/tag out procedures should also be employed at this time.

This process should only be performed by a trained professional. Contact customer service or a local service professional for further assistance.

12.0 PARTS LIST

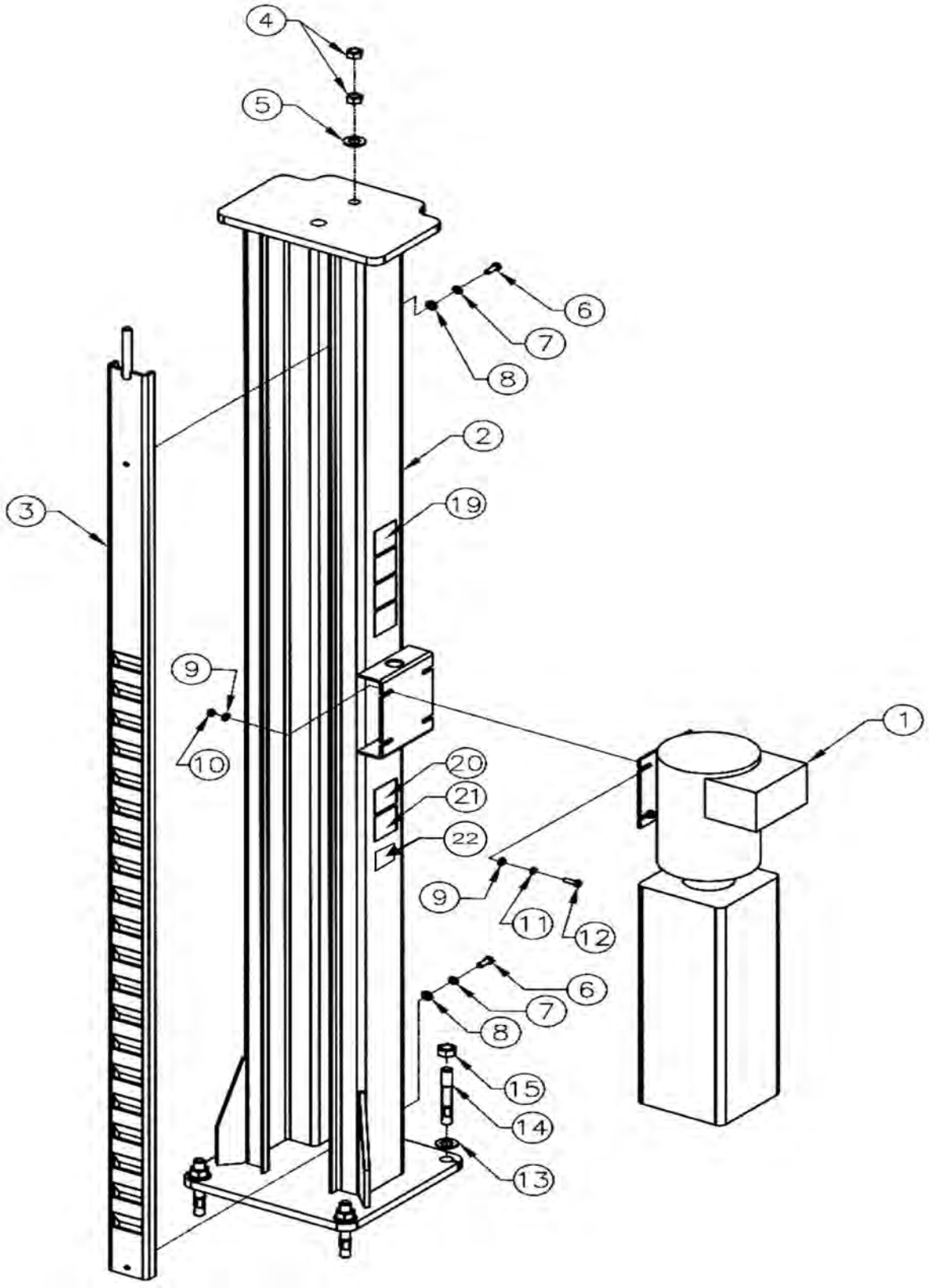
12.1 LIFT ASSEMBLY



12.2 PARTS LIST – LIFT ASSEMBLY

ITEM	QTY.	DESCRIPTION	PART #
1	1	TOWER WELDMENT - POWER POST	4-0636
2	3	TOWER WELDMENT	4-0630
3	1	FRONT CROSSMEMBER WELDMENT	4-0627
4	1	REAR CROSSMEMBER WELDMENT	4-0626
5	1	DECK WELDMENT - L.S. (ALIGNMENT)	4-0629
	1	DECK WELDMENT – L.S. (SERVICE)	4-0916
6	1	DECK WELDMENT - R.S. (ALIGNMENT)	4-0628
	1	DECK WELDMENT – R.S. (SERVICE)	4-0917
7	2	APPROACH RAMP WELDMENT	3-0680
8	2	FLAT WASHER, 3/4”ID	6-0738
9	2	COTTER PIN, 1/8” x 2”LG	6-0115
10	2	APPROACH RAMP PIN	2-1381
11	4	SHEAVE COVER	2-1379
12	4	HEX HD BOLT, 1/4”-20UNC x 2”LG	6-0177
13	2	MANIFOLD	1-1057
14	4	LOCKWASHER, 1/4”ID	6-0056
15	4	HEX NUT, 1/4”-20UNC	6-0032
16	2	HOSE CLAMP, 3/4”	6-1683
17	2	SELF THREADING SCREW, #10 x 3/4”LG	6-0297
18	2	FRONT WHEELSTOP	2-0998
19	14	LOCKWASHER, 1/2”ID	6-0059
20	6	HEX HD BOLT, 1/2”-13UNC x 1”LG	6-0045
21	8	HEX NUT, 1/2”-13UNC	6-0035
22	8	FLAT WASHER, 1/2”ID	6-0063
23	8	HEX HD BOLT, 1/2” x 4 1/2”	6-1694
24	8	GLIDE BEARING	2-0772
25	4	SET SCREW, 1/2”-13UNC x 1”LG	6-0726

12.3 TOWER ASSEMBLY

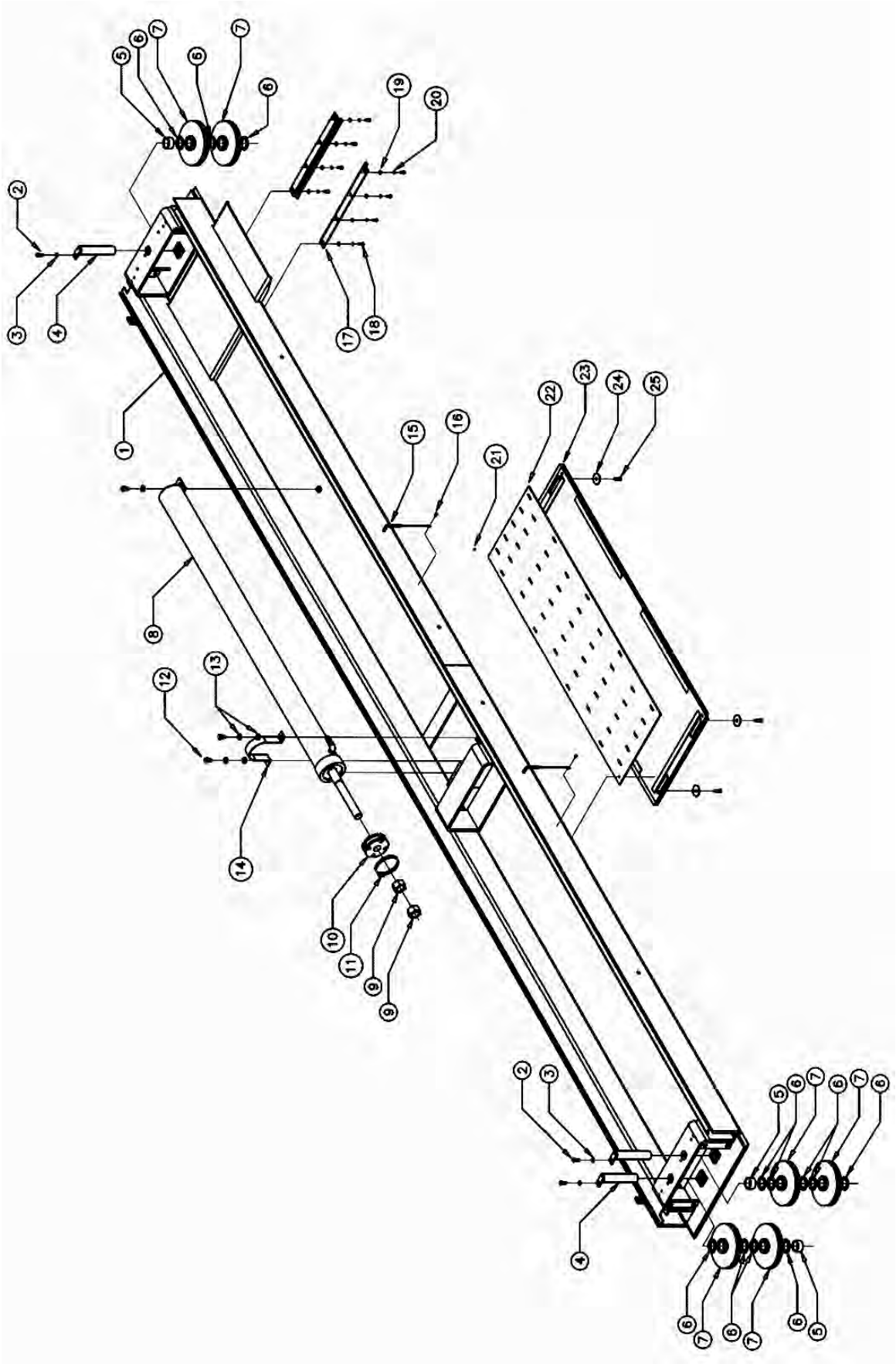


12.4 PARTS LIST – POWER TOWER ASSEMBLY

ITEM	QTY.	DESCRIPTION	PART #
1	1	POWER PACK, 230V/1PH	6-1695
	1	POWER PACK, 230V/3PH	6-2615
2	1	POWER POST WELDMENT	4-0636
3	1	SAFETY RACK WELDMENT	3-0581
4	2	HEX NUT, 5/8”-11UNC, GR8	6-0673
5	1	FLAT WASHER, 3/4" I.D.	6-0738
6	2	HEX HD. BOLT, 3/8”-16UNC X 1”LG., GR.8	6-0668
7	2	LOCK WASHER, 3/8” I.D.	6-0058
8	2	FLAT WASHER, 3/8” I.D.	6-0625
9	8	FLAT WASHER, 5/16” I.D.	6-0295
10	4	HEX NUT, 5/16”-18UNC, GR.8	6-0294
11	4	LOCK WASHER, 5/16” I.D.	6-0674
12	4	HEX HD BOLT, 5/16”-18UNC X 1”LG., GR.8	6-0293
13	5	FLAT WASHER, 3/4 I.D.	6-0738
14	5	WEDGE ANCHOR, 3/4"-10UNC X 5 1/2"LG.	6-0140
15	5	HEX NUT, 3/4"-10 UNC	6-0737
19	1	“ATTENTION” DECAL	6-1637
20	1	SERIAL TAG	
21	1	DECAL SET, ALI/WL 200	6-0988
22	1	WARNING LABEL	6-4086

NOTE: Refer to section 12.1 for other Tower Weldment part numbers.

12.5 DECK ASSEMBLY (LEFT SIDE)

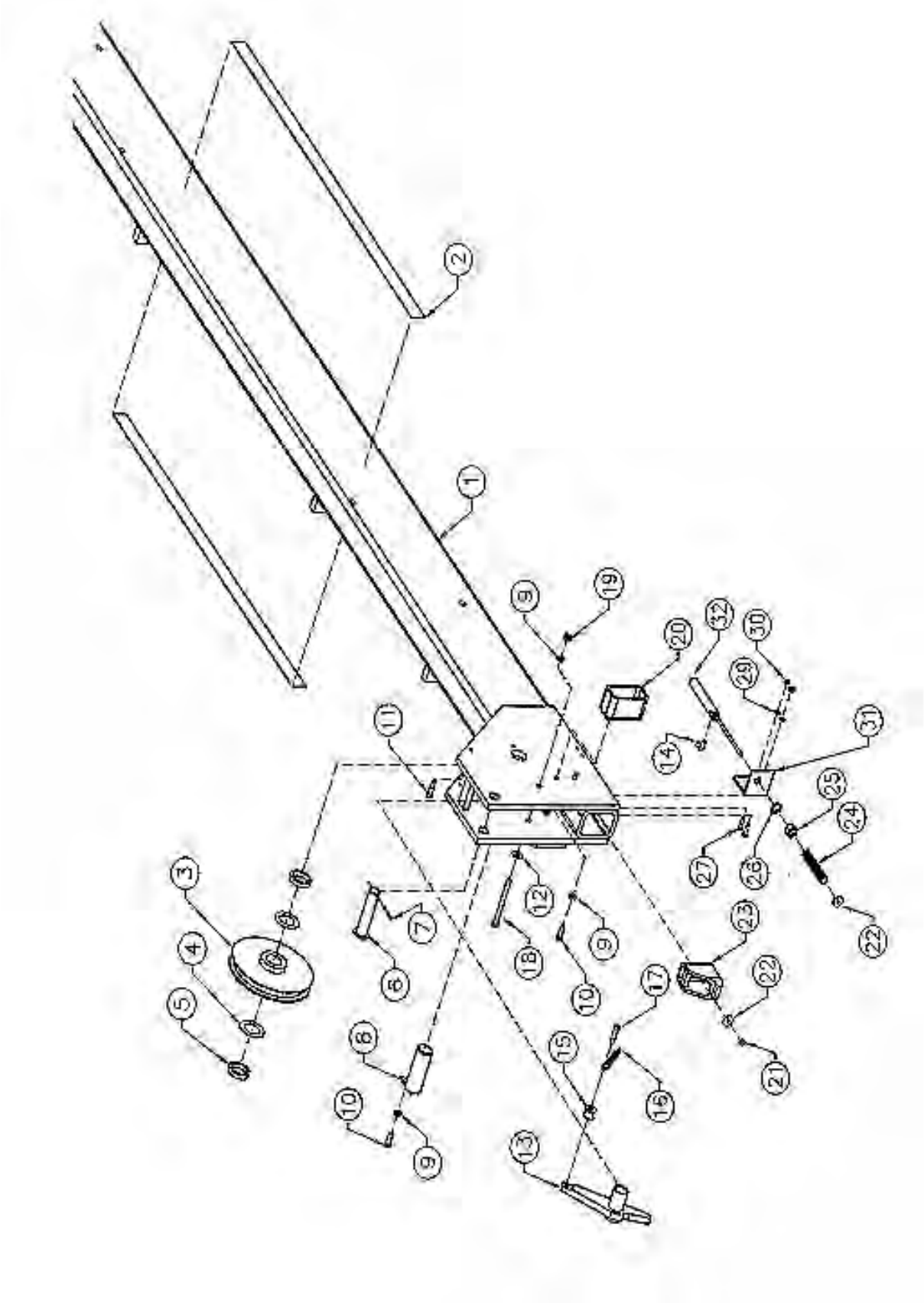


12.6 PARTS LIST – DECK ASSEMBLY (LEFT SIDE)

ITEM	QTY.	DESCRIPTION	PART #
1	1	DECK WELDMENT - L.S. (ALIGNMENT)	4-0629
	1	DECK WELDMENT - L.S. (SERVICE)	4-0916
2	3	HEX HD BOLT, 3/8"-16UNC x 1" LG	6-0668
3	3	LOCKWASHER, 3/8"	6-0058
4	3	DECK SHEAVE PIN WELDMENT	2-1355
5	3	SHEAVE SPACER, 1"	1-1697
6	12	NYLON THRUST WASHER	1-0757
7	6	SHEAVE ASSEMBLY	2-1377
8	1	CYLINDER ASSEMBLY - 4" BORE	3-0681
9	2	HEX NUT, 1 3/8"-12UNF	6-1644
10	1	CABLE FLANGE (18K 4POST)	2-1432
11	1	HOSE CLAMP, 4 1/2" DIA	6-0665
12	3	HEX HD BOLT, 1/2"DIA x 3/4" LG	6-0044
13	5	WASHER, 1/2"ID	6-0248
14	1	CYLINDER SLING	1-1747
15	2	LOCKING PIN ASSEMBLY	2-0637
16	2	SELF TAPPING SCREW, #10 x 1/2" LG	6-0505
17	2	RETAINING BAR	2-1391
18	8	HEX HD BOLT, 1/4"-20UNC x 3/4" LG	6-0128
19	8	WASHER, ¼" ID	6-0060
20	8	LOCKWASHER, ¼" ID	6-0056
21	1	1/4" BALL BEARING (1 PACKET)	6-0829
22	1	BEARING CAGE	3-0196
23	1	REAR SLIP PLATE (FULL FLOATING)	3-0197
24	4	FLAT WASHER, 2" OD x 13/32" ID	6-0426
25	4	SHOULDER BOLT, 3/8" x 5/8" LG	6-0069

NOTE: Refer to section 12.1 for Right Side Deck Weldment part numbers.

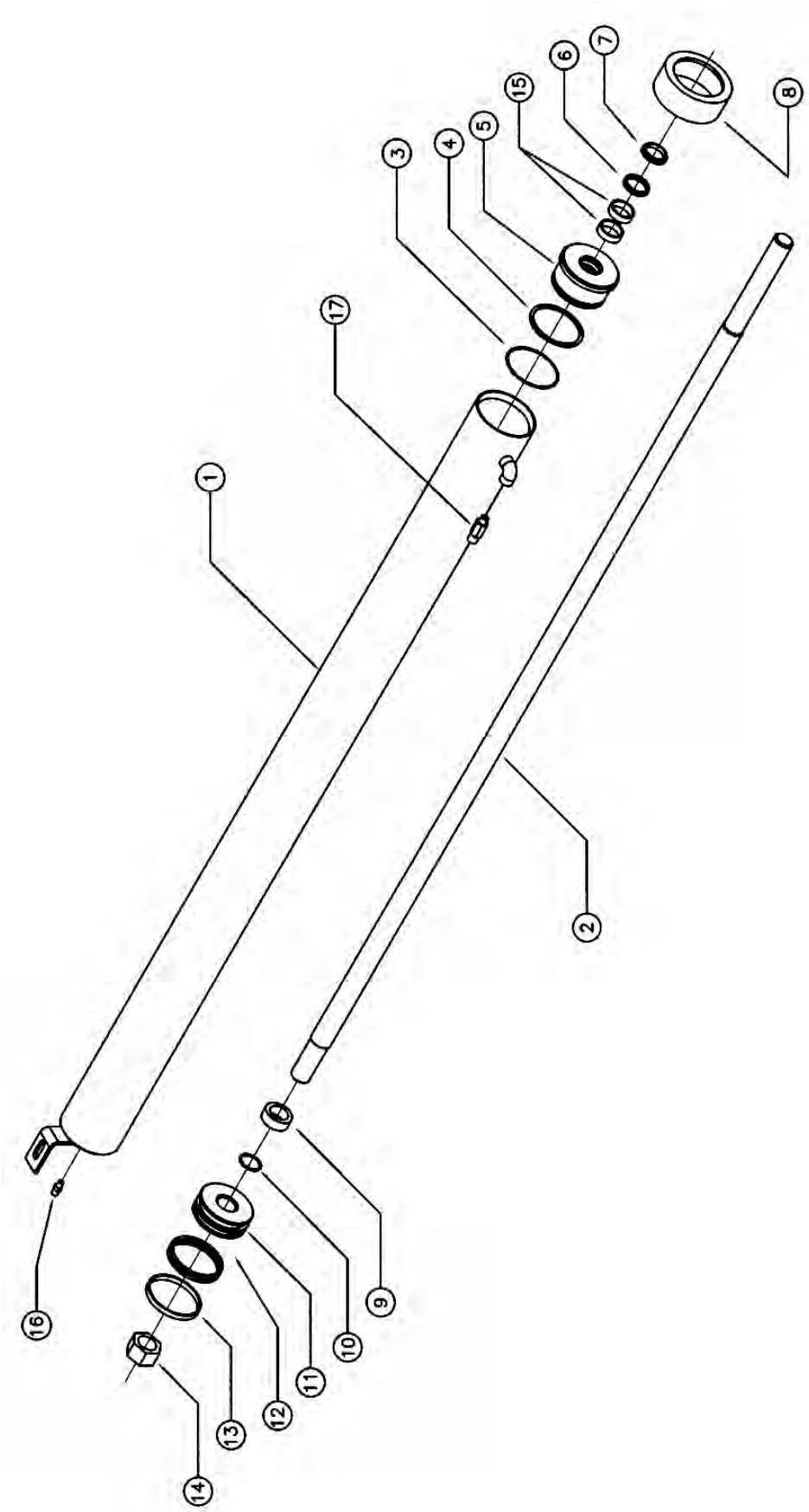
12.7 CROSSMEMBER ASSEMBLY



12.8 PARTS LIST – CROSSMEMBER ASSEMBLY

ITEM	QTY.	DESCRIPTION	PART #
1	1	FRONT CROSSMEMBER WELDMENT	4-0627
	1	REAR CROSSMEMBER WELDMENT	4-0626
2	2	"CAUTION" TAPE, 40" LONG	6-1125
3	2	SHEAVE ASSEMBLY	2-1377
4	4	NYLON THRUST WASHER	1-0757
5	4	SHEAVE SPACER, 3/8" LONG	1-0786
6	2	LOCK SAFETY PIN WELDMENT	1-1744
7	2	COTTER PIN, 1/8" x 2" LG	6-0115
8	2	CROSSMEMBER SHEAVE PIN WELDMENT	2-1356
9	12	LOCKWASHER, 3/8" I.D.	6-0058
10	10	HEX BOLT, 3/8"-16UNC x 1" LG	6-0668
11	2	SHOULDER BOLT, 3/8" x 5/8" LG	6-0069
12	2	FLAT WASHER, 3/8"	6-0625
13	2	LOCK SAFETY	2-1424
14	2	90 ELBOW, 1/8"NPT x 1/4" POLYTUBE	6-0709
15	2	CABLE ROLLER	1-0766
16	4	TENSION SPRING	1-0768
17	2	SHOULDER BOLT, 3/8" x 1 1/2" LG	6-0801
18	2	HEX BOLT, 3/8"-16UNC x 4 1/2" LG	6-1693
19	2	HEX NUT, 3/8"-16UNC	6-0034
20	4	SLIDER BLOCK WELDMENT	2-1376
21	2	HEX NYLON LOCKNUT, 1/4"-28UNF	6-1563
22	4	FENDER WASHER, 1/4" I.D.	6-0626
23	2	SAFETY SHOE WELDMENT	2-1378
24	2	COMPRESSION SPRING	1-0767
25	2	HEX NUT, 5/8"-18UNF	6-0662
26	2	INTERNAL TOOTH LOCKWASHER, 5/8”ID	6-0663
27	4	HEX BOLT, 1/4"-20UNC x 1" LG	6-0008
29	4	LOCKWASHER, 1/4" I.D.	6-0056
30	4	HEX NUT, 1/4"-20UNC	6-0032
31	2	AIR CYLINDER BRACKET	1-1712
32	2	AIR CYLINDER	6-0651

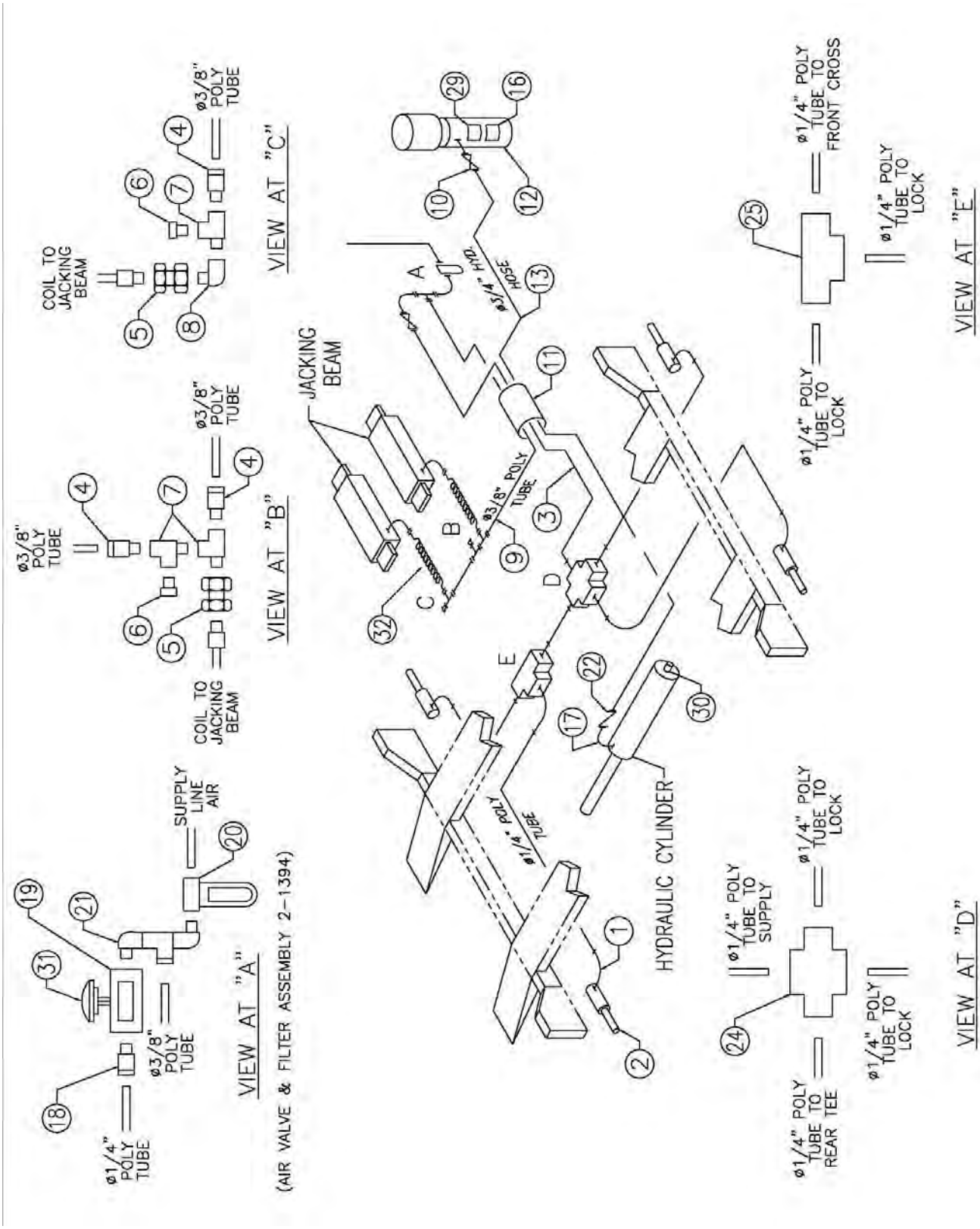
12.9 CYLINDER ASSEMBLY



12.10 PARTS LIST – CYLINDER ASSEMBLY

ITEM	QTY.	DESCRIPTION	PART #
1	1	CYLINDER TUBE WELDMENT 4” BORE	2-1345
2	1	PISTON ROD - MACHINED	2-1340
3	1	ORING, 4”OD x 1/8”C/S	6-1633
4	1	BACKUP RING	6-1634
5	1	GLAND	3-0673
6	1	ROD SEAL, 1½”ID x 1 7/8”OD x 1/4”	6-1892
7	1	ROD WIPER, 1½”ID x 1 7/8”OD x 3/16”	6-0001
8	1	TUBE NUT	2-1343
9	1	KEEPER WASHER	1-1689
10	1	ORING, 1 3/8”ID x 1/8”C/S	6-1632
11	1	PISTON	2-1344
12	1	ROD SEAL, 4”OD x 3½”ID	6-1636
13	1	WEAR RING, 4”OD x 3/8”WIDE x 1/8”THK	6-1635
14	1	LOCKNUT, 1 3/8”-12UNF	6-1645
15	2	WEAR RING, 1 3/4”OD x ½”WIDE x 1/8”THK	6-1686
16	1	ADAPTOR, 1/8”NPT-M TO 1/4”JIC-M	6-0280
17	1	VELOCITY FUSE - 8GPM	6-1684

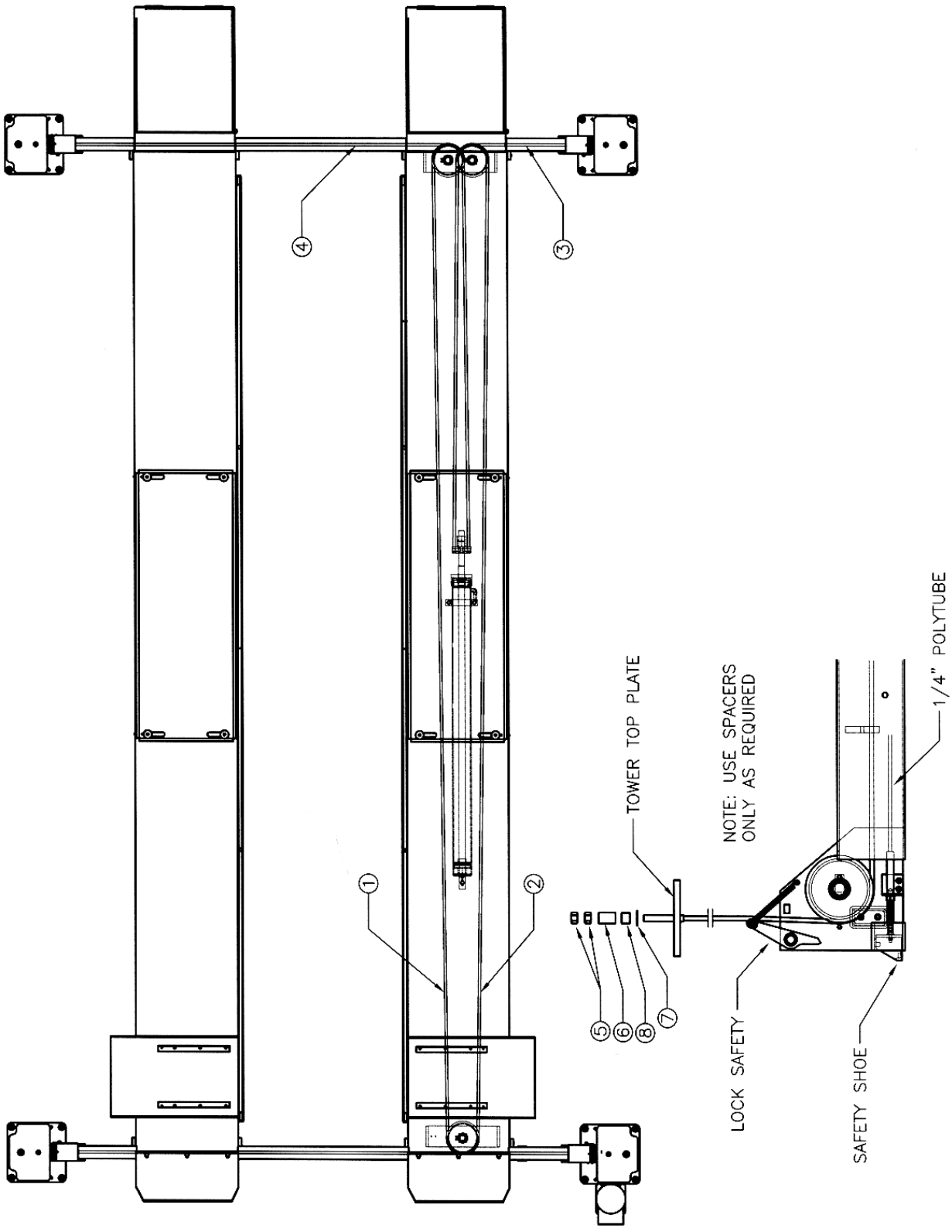
12.11HYDRAULIC AND AIR KIT



12.12 PARTS LIST – HYDRAULIC AND AIR KIT

ITEM	QTY.	DESCRIPTION	PART #
1	8	90° ELBOW, 1/8" NPT x 1/4" POLYTUBE	6-0709
2	4	AIR CYLINDER	6-0651
3	10FT	1/4" DIA. POLY TUBE	6-1396
4	3	ADAPTER, 3/8" POLY TUBE x 1/4" NPT	6-0710
5	2	TERMINAL BOLT, 3/4"	6-0713
6	2	PLUG, 1/4" NPT	6-0282
7	3	1/4" NPT STREET TEE	6-0014
8	1	1/4" NPT STREET ELBOW	6-0015
9	10FT	3/8" DIA. POLY TUBE	6-1400
10	1	FLOW CONTROL	6-1691
11	4FT	HOSE GUARD	6-0714
12	1	POWER PACK 230V/1 PH	6-1695
	1	POWER PACK 230V/3 PH	6-2615
13	1	HYD.HOSE ASS'Y, 3/8" JIC FEMALE, 16FT LONG	6-1692
14	3	CABLE TIE	6-0731
16	1	"NOTICE" DECAL	6-0594
17	1	90° ELBOW, 1/4" NPT M x 3/8" NPT F	6-0796
18	1	ADAPTER, 1/4” POLY x 1/8” NPT	6-0708
19	1	3-WAY AIR VALVE	6-1775
20	1	AIR FILTER ASSEMBLY	6-0772
	1	AIR FILTER ELEMENT, (REPLACEMENT)	6-0180
21	1	AIR VALVE FITTING KIT	0-0405
22	1	VELOCITY FUSE 8GPM	6-1684
24	1	¼” PUSHLOCK CROSS	6-3869
25	1	¼” PUSHLOCK TEE	6-2971
29	1	"LIFT OPERATION" DECAL	6-0593
30	1	ADAPTER, 1/8" NPT M X 1/4" JIC M	6-0280
31	1	AIR VALVE PUSHBUTTON KIT`	6-1777
32	1	RECOIL HOSE	6-0337
*		AIR VALVE & FILTER ASSEMBLY – COMPLETE	2-1394

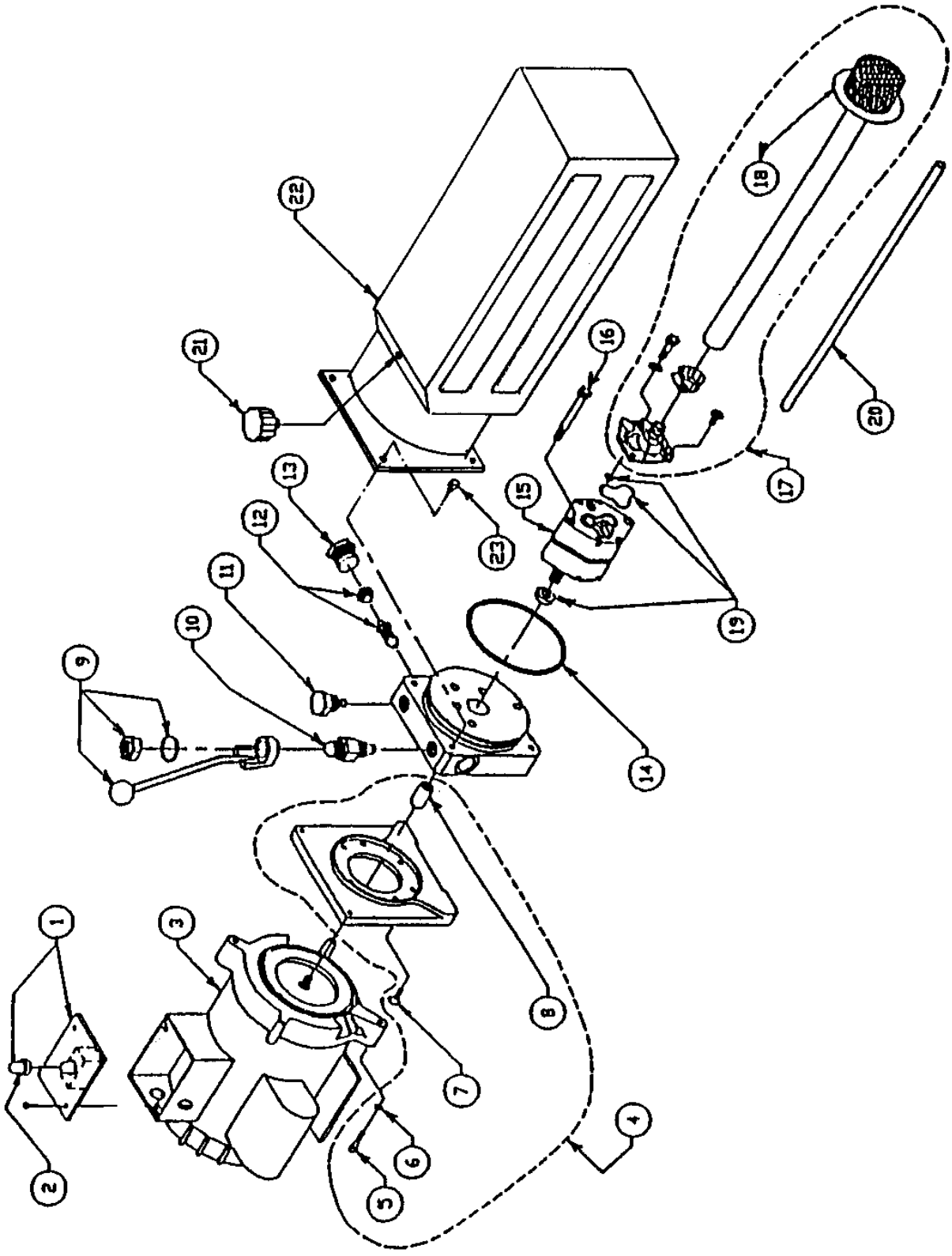
12.13 CABLE ROUTING



12.14PARTS LIST – CABLE ROUTING

ITEM	QTY.	DESCRIPTION	PART #
1	1	CABLE ASSY. 407.5” - FRONT LEFT	2-1360
2	1	CABLE ASSY. 473.5” - FRONT RIGHT	2-1361
3	1	CABLE ASSY. 162” - REAR LEFT	2-1362
4	1	CABLE ASSY. 228” - REAR RIGHT	2-1363
5	8	HEX NUT, 7/8”-14UNF GR5	6-0724
6	4	CABLE SPACER, 2”LG	1-0800
7	4	FLAT WASHER, 7/8”ID	6-0725
8	4	CABLE SPACER, 1”LG	1-0801

12.15POWER PACK ASSEMBLY



12.16 PARTS LIST – POWER PACK

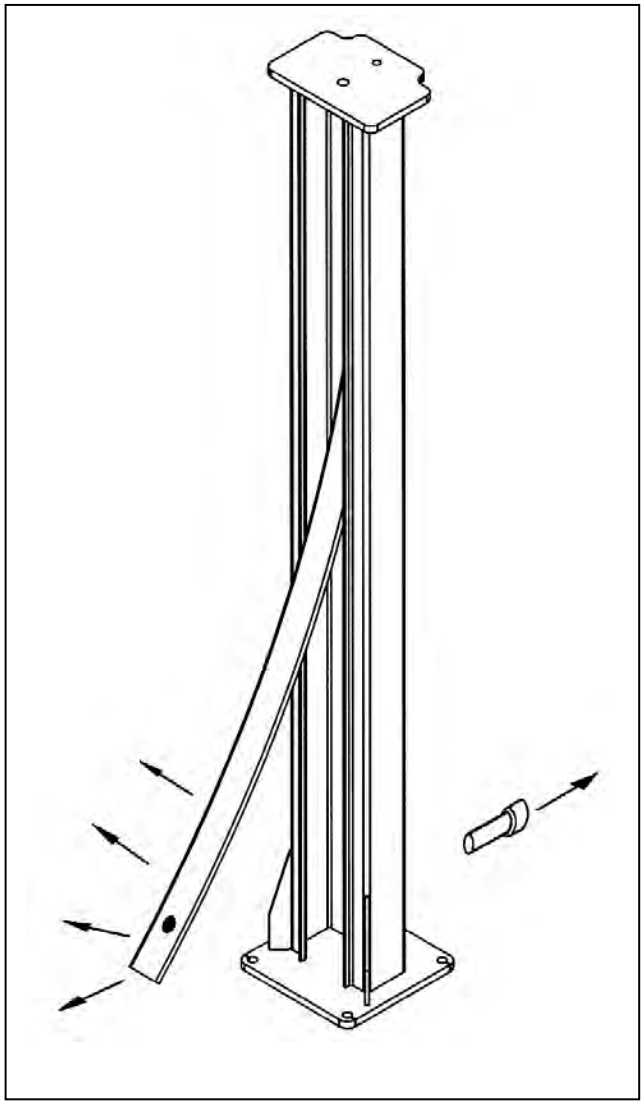
ITEM	QTY.	DESCRIPTION	PART #
1	1	MICROSWITCH AND WIRING ASSEMBLY, 1PH	6-0881
	1	MICROSWITCH AND WIRING ASSEMBLY, 3PH	6-0918
2	1	MICROSWITCH BOOT	6-1084
3	1	MOTOR, 230V AC, 1 PHASE, 60 HERTZ 3HP	6-1959
	1	MOTOR, 230V AC, 3 PHASE, 60 HERTZ	6-1079
4	1	MOTOR ADAPTER KIT	0-0197
5	4	SOCKET HD.CAP SCW. 1/4"-20UNC X 1 5/8"LG.	6-1085
6	4	LOCK WASHER, 1/4"I.D.	6-0056
7	4	ALLEN FLAT HD.SCW. 1/4"-20UNC X 3/4"LG.	6-1086
8	1	COUPLING	6-0774
9	1	RELEASE BRACKET & HANDLE ASSEMBLY	6-0776
10	1	VALVE CARTRIDGE RELEASE	6-0880
11	1	VALVE CARTRIDGE CHECK	6-1087
12	1	FIXED RELIEF VALVE ASSEMBLY (RV 19)	6-1319
13	1	RELIEF VALVE CAP	6-1089
14	1	RESERVOIR "O" RING	6-0875
15	1	PUMP ASSEMBLY	6-1688
16	2	PUMP MOUNTING BOLT	6-1090
17	1	INLET PLUMBING KIT	0-0198
18	1	INLET HOSE / FILTER ASSEMBLY	6-0786
19	1	PUMP "O" RING KIT	0-0199
20	1	RETURN TUBE	6-0783
21	1	BREATHER FILLER CAP	6-0784
22	1	RESERVOIR	6-2828
23	4	RESERVOIR SCREW	6-1091

CAUTION

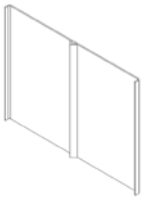
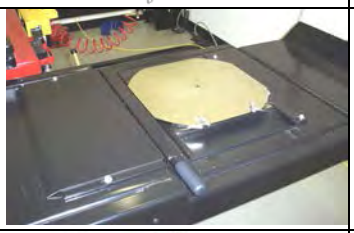
ALL SAFETY LADDERS USED ON 4-POST LIFTS ARE PRELOADED.

REMOVING THE BOLT HOLDING THE BOTTOM PORTION OF THE SAFETY LADDER WITHOUT PROPER PRECAUTIONS CAN RESULT IN INJURY.

PLEASE CONTACT CUSTOMER SERVICE FOR PROPER REMOVAL INSTRUCTIONS.



13.0 AVAILABLE ACCESSORIES

Hydraulic Jack Beams			
	Premium Air / Hydraulic Jack Beam		Standard Air / Hydraulic Jack Beam
4500 lb, 6000 lb, 7000 lb		6000 lb, 7000 lb	
Other Accessories			
	Drive-On Ramp Extension for Low Profile Vehicle (set of 2)		Air Outlet Kit (Factory Installed)
	Sliding Waste Collection Oil Tank 26 gal.		Drive-thru Kit (Quad Rack)
	Front Turning Radius Plates (set of 2)		Alignment Pan Cover, 4-Post
	Stainless Steel Turnplates		Rollback Kit (for Stainless Steel Turnplates)
	Air / Electric Service Station for 2-Post & 4-Post		Rear Slip Plate Refurb Kit - Staniless Steel Base (24" Decks Only - set of 2)
NO PICTURE AVAILABLE	Roll Forward Kit (4-Post)		Tsunami Kit (in-line compressed air dryer)

Accessories may not be available for all models. Contact supplier for availability and part numbers.