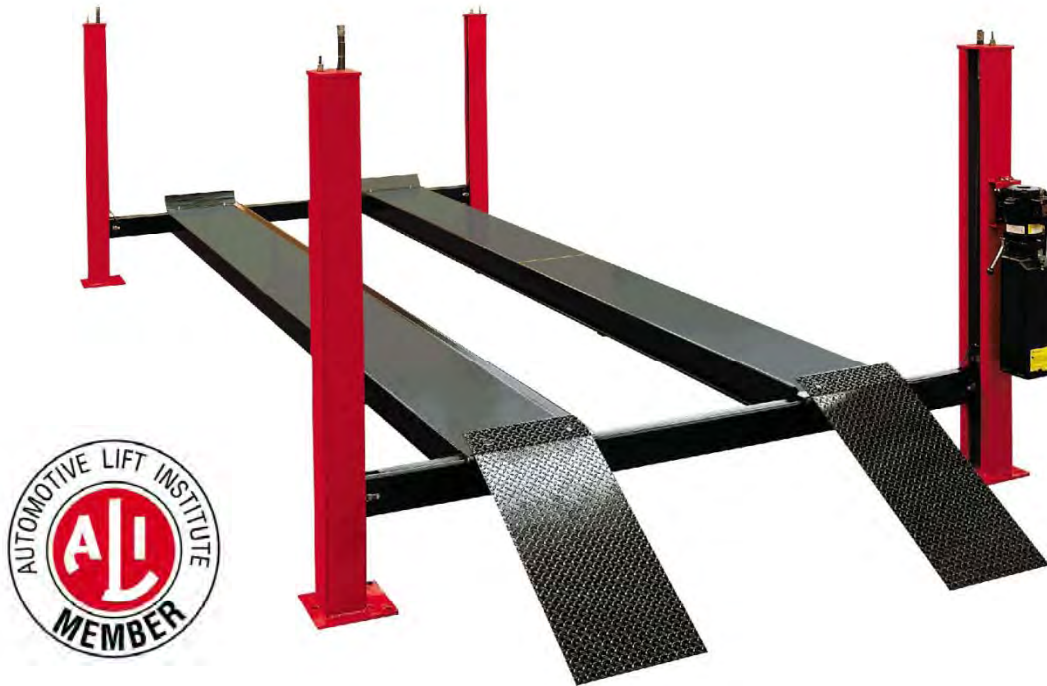


HOFMANN



INSTALLATION and OPERATION MANUAL



**4-POST 12000 LBS.
EFP12172, EFP12210**

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

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1. 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, Appendix A (Operator Training Log)**; 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, Appendix B and Appendixes C through F**; 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, Appendix G (Planned Maintenance Log)**; 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. IMPORTANT SAFETY INSTRUCTIONS

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

1. Read all instructions in this manual and on the lift thoroughly before installing, operating, servicing or maintaining the lift.
2. Care must be taken as burns can occur from touching hot parts.
3. 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.
4. 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.
5. 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.
6. 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.
7. Let equipment cool completely before putting away. Loop cord loosely around equipment when storing.
8. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).
9. Adequate ventilation should be provided when working on operating internal combustion engines.
10. Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
11. To reduce the risk of electric shock, do not use on wet surfaces or expose to rain.
12. Use only as described in this manual. Use only manufacturer's recommended attachments.
13. ALWAYS WEAR SAFETY GLASSES. Everyday eyeglasses only have impact resistant lenses, they are not safety glasses.
14. Inspect lift daily. Do not operate if it malfunctions or problems have been encountered.
15. 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.

16. 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.
17. 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.
18. 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.
19. Some pickup trucks may require an optional truck adapter to clear running boards or other accessories.
20. **NOTE:** Always use all 4 arms to raise and support vehicle.
21. Caution! Never work under the lift unless the mechanical safety locks are engaged.
22. 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.
23. Always keep the lift area free of obstruction and debris. Grease and oil spills should always be cleaned up immediately.
24. Never raise vehicle with passengers inside.
25. Before lowering check area for any obstructions.
26. 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.
27. **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.



ATTENTION! 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.

+ 070126-Quadra-WLSIA01

SAFETY INSTRUCTIONS

If attachments, accessories or configuration modifying components that are located in the load path, affect operation of the lift, affect the lift electrical listing or affect intended vehicle accommodation are used on this lift and, if they are not certified for use on this lift, then the certification of this lift shall become null and void. Contact the participant for information pertaining to certified attachments, accessories or configuration modifying components.

www.autolift.org

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ALI / WLSIA01

SAVE THESE INSTRUCTIONS

Note: Some images in this manual are generic and may not resemble the lift you have purchased.

3. SAFETY AWARENESS

AUTOMOTIVE LIFT INSTITUTE (ALI)

Automotive Lift Institute, Inc.

⚠ CAUTION	⚠ CAUTION
Lift to be used by trained operator ONLY.	Authorized personnel only in lift area.

The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style.

Funding for the development and validation of these labels was provided by the Automotive Lift Institute, PO Box 85 Cortland, NY 13045.

Replacement label sets may be obtained from the original lift manufacturer and ALI's member companies. They are protected by copyright.

www.autolift.org © 2009 by ALI, Inc. ALI/WL200c

NOTICE	NOTICE
Read operating and safety manuals before using lift.	Proper maintenance and inspection is necessary for safe operation.

NOTICE	<p>The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style.</p> <p>Funding for the development and validation of these labels was provided by the Automotive Lift Institute, PO Box 85 Cortland, NY 13045.</p> <p>Replacement label sets may be obtained from the original lift manufacturer and ALI's member companies. They are protected by copyright.</p> <p>www.autolift.org</p> <p>© 2009 by ALI, Inc. ALI/WL200c</p>
Do not operate a damaged lift.	

WL200 Series Label Kit

⚠ WARNING	⚠ WARNING
Clear area if vehicle is in danger of falling.	Remain clear of lift when raising or lowering vehicle.

⚠ WARNING	⚠ WARNING
Keep clear of pinch points when lift is moving.	Keep feet clear of lift while lowering.

⚠ WARNING	⚠ WARNING
Do not override self-closing lift controls.	Chock wheel to prevent vehicle movement.

The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style.

Funding for the development and validation of these labels was provided by the Automotive Lift Institute, PO Box 85 Cortland, NY 13045.

Replacement label sets may be obtained from the original lift manufacturer and ALI's member companies. They are protected by copyright.

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4. GENERAL SPECIFICATIONS

Maximum Capacity:	12,000 lbs	5443 kg
Overall Length, 172" w/b:	261-1/2"	6388 mm
Overall Length, 210" w/b:	299-1/2"	7353 mm
Overall Width:	134-1/4"	3366 mm
Minimum Height:	7"	178 mm
Maximum Lifting Height:	71"	1803 mm
Maximum Wheelbase:	172" or 210"	4369 or 5334 mm
Minimum Wheelbase @ 12000 lbs:	97"	2464 mm
Lifting Time:	55 sec	
Power Requirements:	230 Volts AC, 1Ph, 20 Amps, 60 Hz	
Maximum Operating Pressure @ Rated Load:	2330 psi	
Air Requirements:	90-120 psi Shop Air	
Shipping Weight:	2,300 lbs	1050 kg

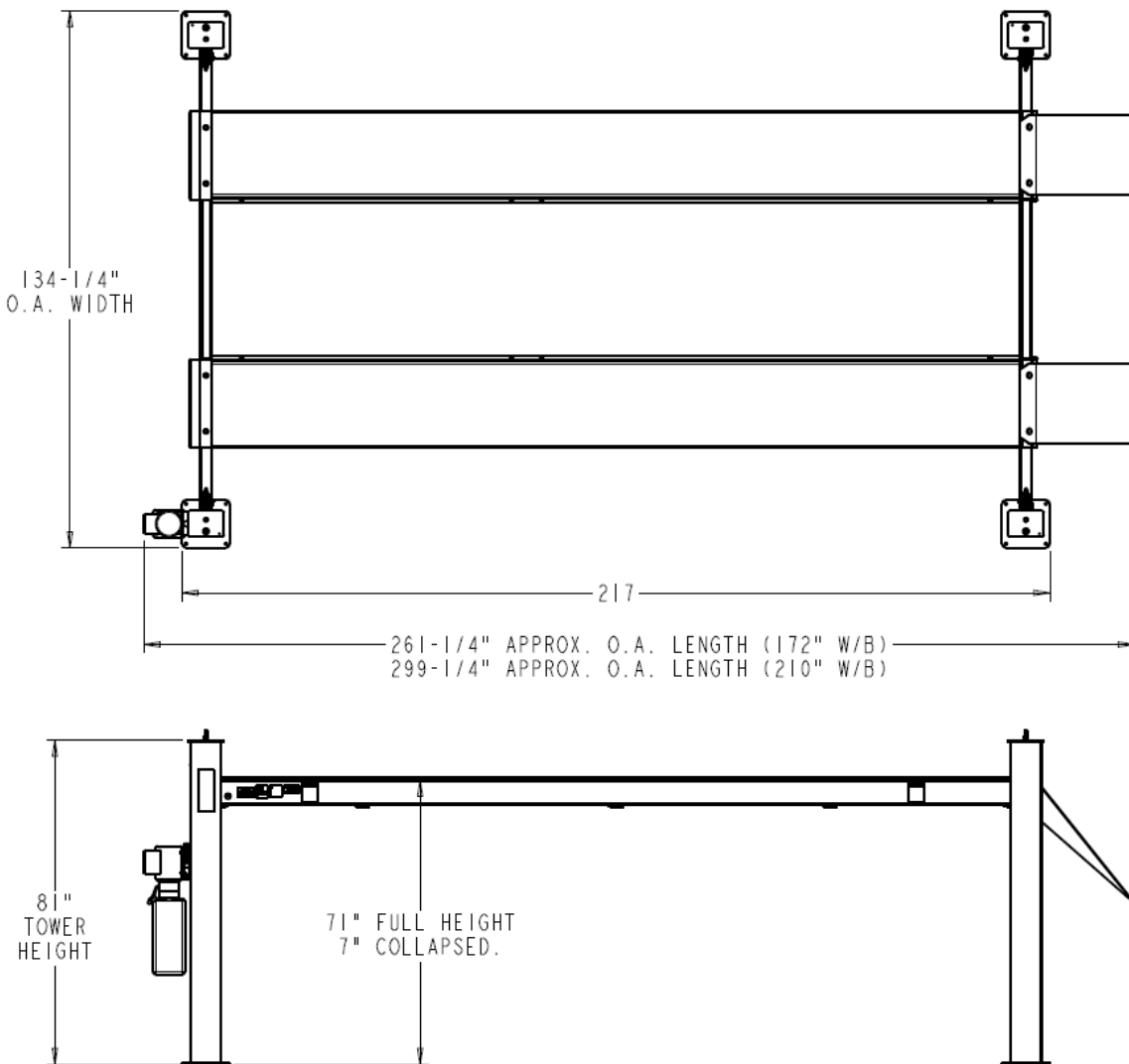


Figure 1 - Plan & Elevation View

5. TOOLS REQUIRED FOR INSTALLATION

- ROTARY HAMMER DRILL
- 1/2" 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

6. PACKAGED 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)
- 1 - Right Side Deck Assembly
- 2 - Crossmember Assemblies (with air cylinder release locks)

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 - Ramp Bracket
- 2 - Front Wheel Stop
- 4 - Sheave Cover
- 2 - Approach Ramp
- 1 - Power Unit 220v/1Ph/3hp
- 30ft - 4mm DIA. Polytube
- 1 - Hydraulic Hose Assembly (16ft. lg.)
- 3 - Cable Tie

- 1 - Hose Guard
- 4 - Crossmember Sheave
- 4 - Crossmember Sheave Pin
- 1 - Air Valve & Filter Assembly
- 1 - Installation & Operation Manual
- 1 - Lift it Right Manual "ALI"
- 1 - Lift it Right Safety Tips
- 1 - "ALI" Standards
- 1 - "ALI" Quick Reference Guide
- 4 - Glide Bearing

7. INSTALLATION INSTRUCTIONS

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.



ATTENTION! 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.

7.1 FOUNDATION

IMPORTANT: 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 six 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.

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.

An outline matching the dimensions shown in Figure will need to be marked on the floor. Refer to Figure for outline dimensions. Refer to General Lift Specifications for overall lift dimensions.



WARNING! Do not install the lift on asphalt or other unstable surfaces. Lift columns are supported only by anchors in the floor.

INSTALLER: Please return this booklet to the lift owner/operator after completing installation.

7.2 GENERAL LIFT LAYOUT

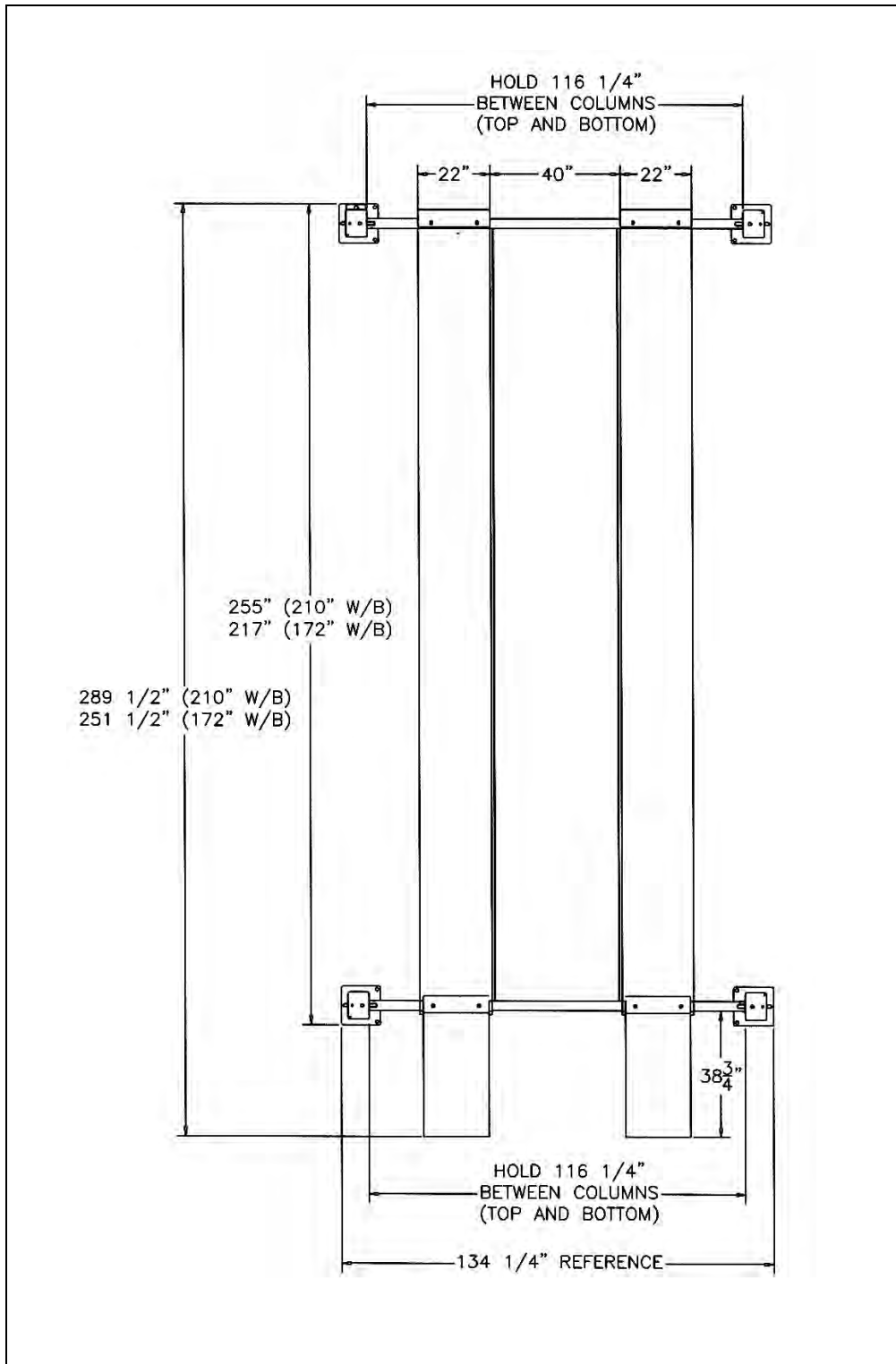


Figure 2. General lift specifications

7.3 CHALK LINE LAYOUT

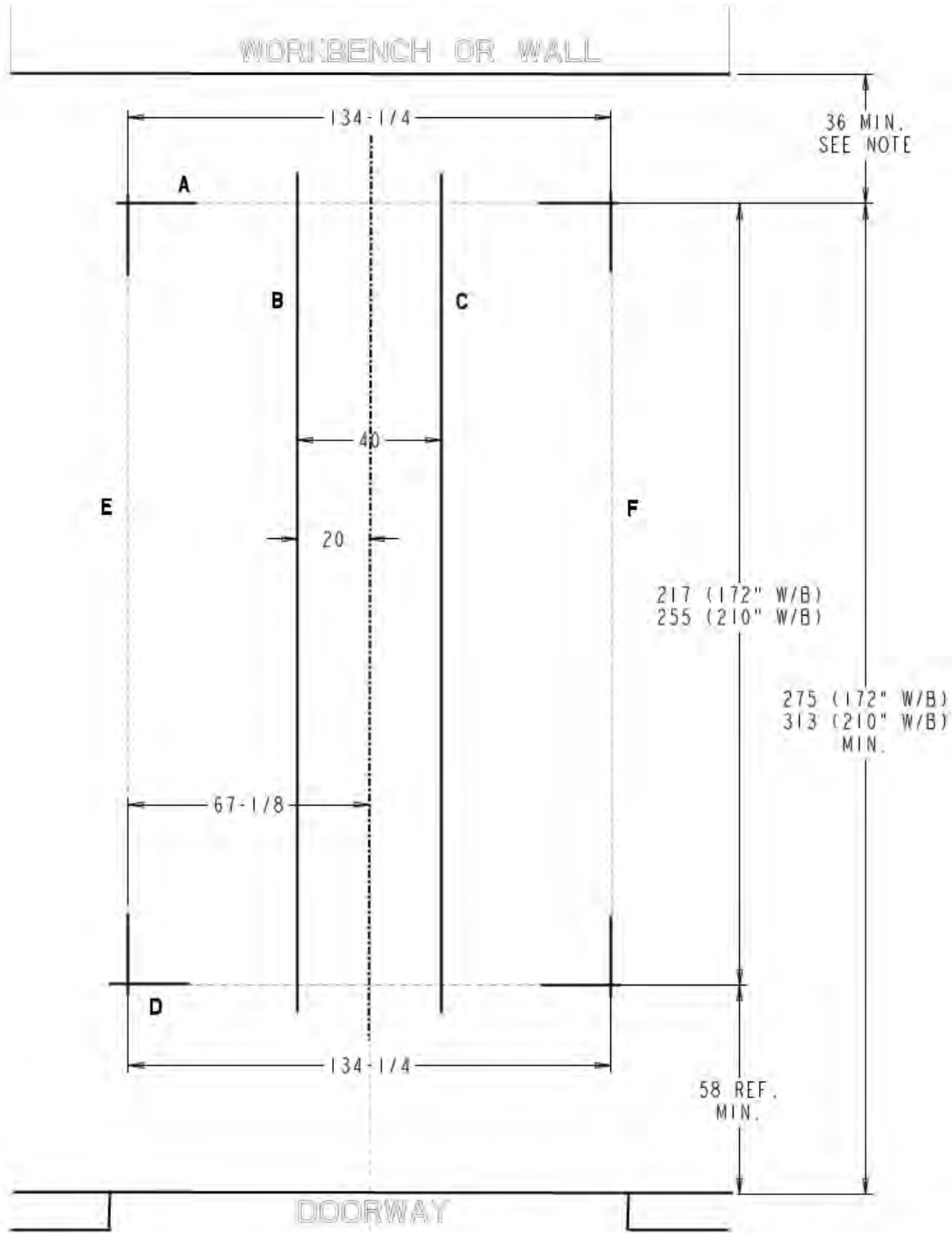


Figure 3. Chalk line layout

WARNING! None of the anchors shall be closer than 4-3/4" to any edge of a concrete slab, expansion joint or crack in the garage floor. Review position of anchors, baseplates and anchors and relocate chalk line "B", "C" & "D" if needed.

1. **Refer to Figure 3.** Make a chalk line parallel to the doorway at least 275" (172" W/B) or 313" (210" W/B) in from the doorway. This will be the location for the front edge of the front tower baseplates, call this line "A".
2. Determine the center of the doorway and bay. Make a centerline to intersect with line "A".
3. Make two chalk lines spaced 20" to the left and right side of the centerline (40" apart). Call these lines "B" and "C" respectively. These will be the lines that the inside edge of the runways run along.
4. Make a chalk line spaced 217" (172" W/B) or 255" (210" W/B) from line "A" towards the doorway entering the bay. This will be the location for the rear edge of the rear tower baseplates, call this line "D".
5. Make two chalk lines spaced 67-1/8" to the left and right side of the center line. Call these "E" & "F" respectively. These will be the location of the outside edges of the baseplates.

7.4 IDENTIFICATION OF MAIN LIFT COMPONENTS

- Identify and unpack all major lift components (cables, columns, traverse beams, runways) and place them in the general area where they belong (front left, front right, etc).

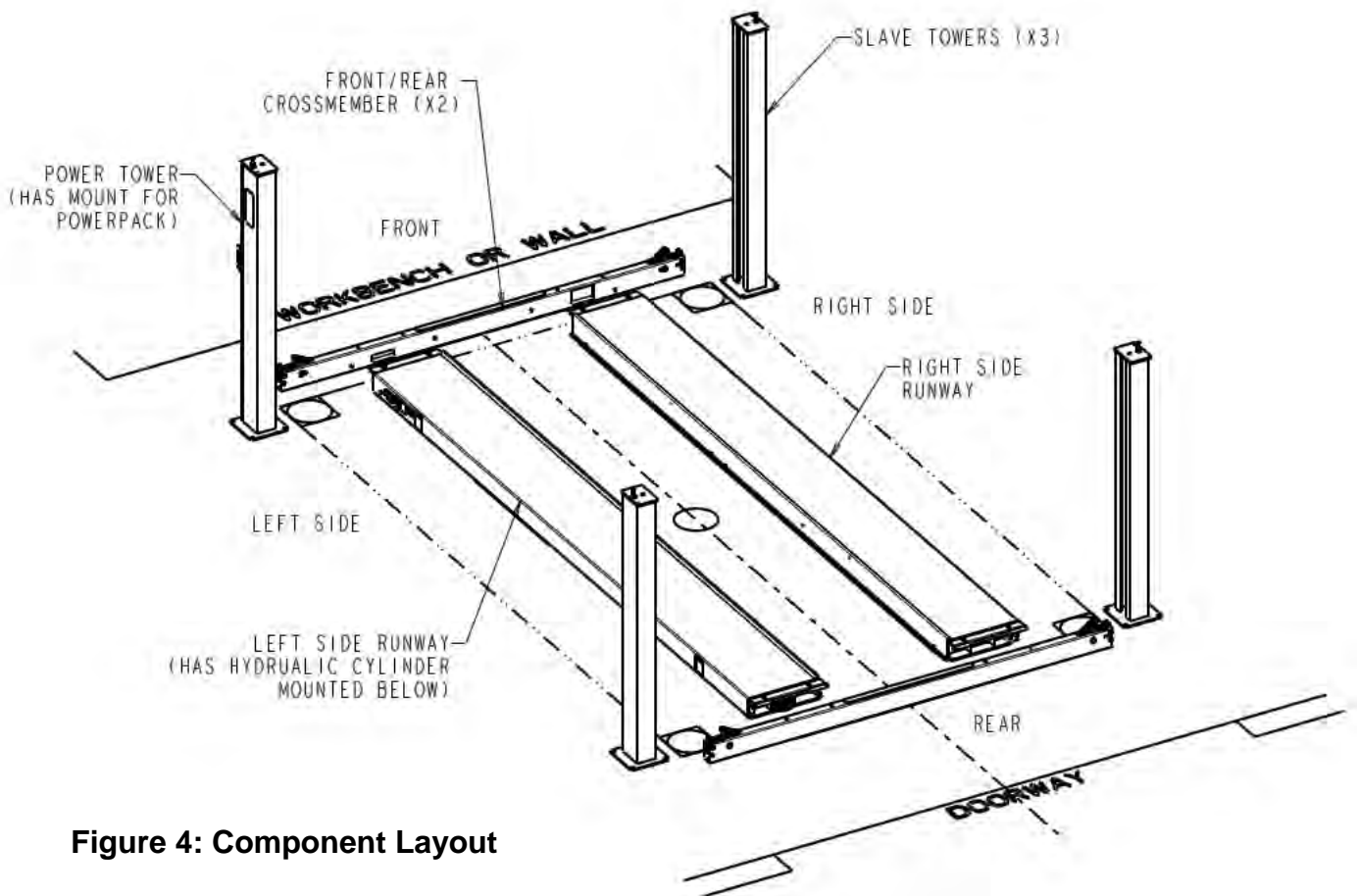


Figure 4: Component Layout

7.5 ROUTING OF AIRLINES IN CROSSMEMBER

7.5.1 Sheave Removal

1. Prior to assembling the crossmembers to the runways, install the 5/32 pneumatic lines for the safety system.
2. Removing the pulleys may make the following steps easier. To do so:
3. Remove the 5/16" bolt and lock washer securing the sheave pin.
4. Unhook the two safety spring from the auxiliary safety.
5. Remove the Sheave Pin, Sheave and spacers.
6. Repeat to other end. Set aside components for later use.

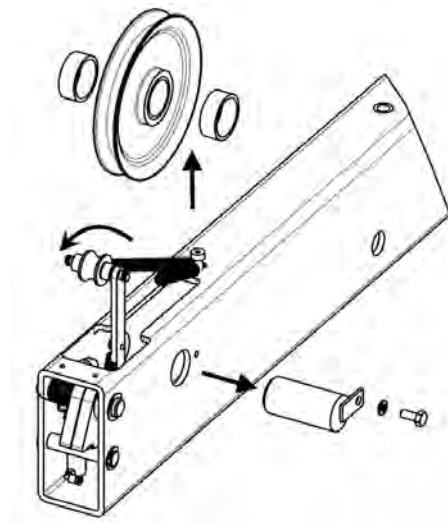


Figure 5: Sheave Removal

7.5.2 Polytube Routing in Front Crossmember

1. In the accessory box, gather the 5/32 polytube and the 5/32 Tee fittings (6-2433).
2. Cut (3) pieces of 5/32 polytube in the lengths shown below:
 - Line A - 22"
 - Line B - 104"
 - Line C - 8"

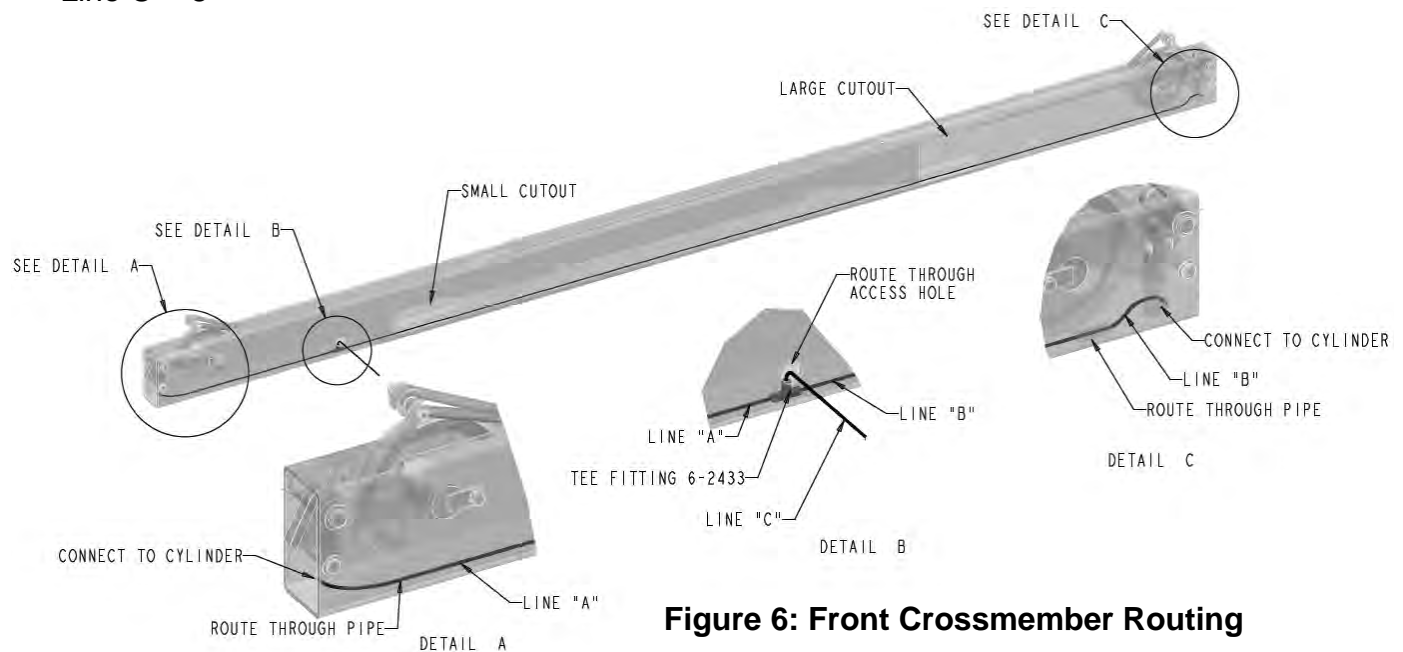


Figure 6: Front Crossmember Routing

3. **Refer to Figure 6.** Connect one end of "Line A" to the Tee fitting. On the opposite end of the tee fitting, connect "Line B". Connect "Line C" to the remaining port on the tee fitting.
4. Route this assembly through the crossmember ensuring the ends of line A & B are routed through the pipe protector at both ends.
5. Connect the ends of the lines A& B to their respective safety cylinder. **Note:** You can remove excess polytube before connecting to cylinders to eliminate slack.
6. Fish "Line C" though the round access hole on crossmember.

7.5.3 Polytube routing in Rear Crossmember

1. Repeat section 7.5.1 Sheave Removal for the rear crossmember.
2. Cut (3) pieces of 5/32 polytube in the lengths shown below:
 - Line D - 22"
 - Line E - 104"
 - Line F - 200"

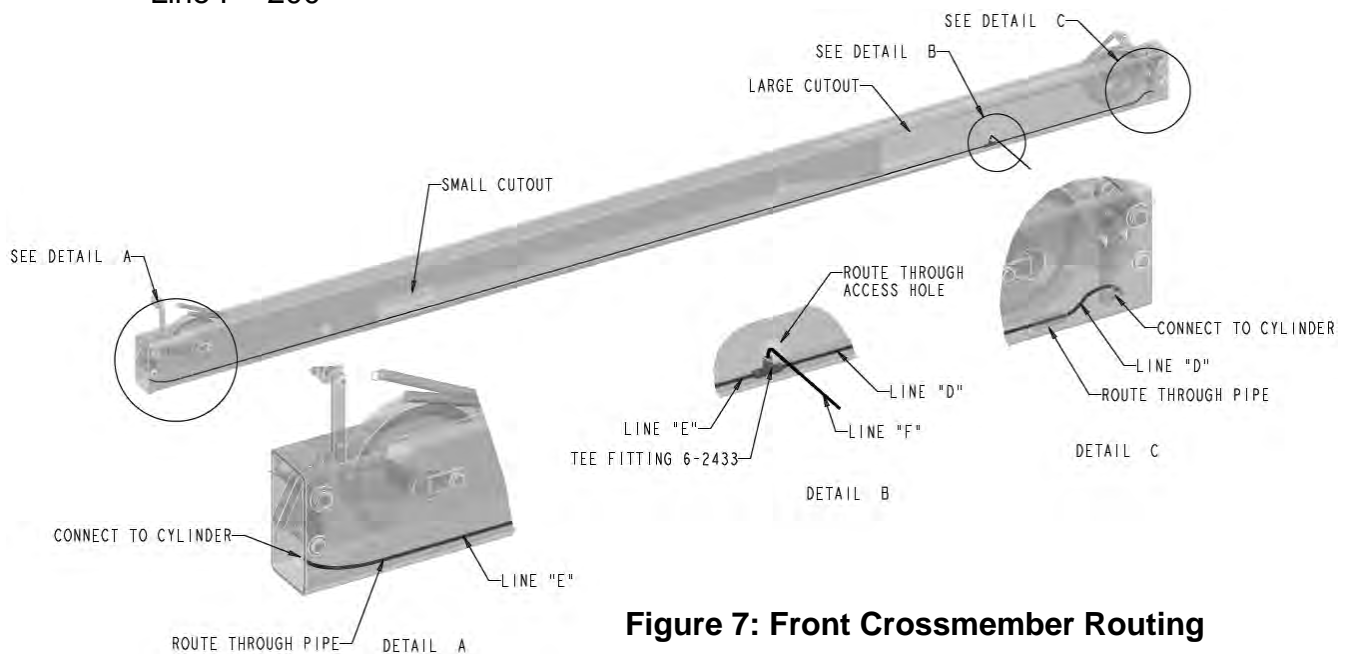


Figure 7: Front Crossmember Routing

3. **Refer to Figure 7.** Connect one end of "Line D" to the Tee fitting. On the opposite end of the tee fitting, connect "Line E". Connect "Line F" to the remaining port on the tee fitting.
4. Route this assembly through the crossmember ensuring the ends of line D & E are routed through the pipe protector at both ends.
5. Connect the ends of the lines D& E to their respective safety cylinder. **Note:** You can remove excess polytube before connecting to cylinders to eliminate slack.
6. Fish "Line F" though the round access hole on crossmember and roll into a bunch.

7.6 RUNWAYS AND CROSSMEMBER INSTALLATION

1. Place the left runway such that the inside surface lies along line "B".
2. Place the right runway such that the inside surface lies along line "A".
3. Support with 4x4 wood blocks under each of end runway.
4. Position both runways so the front edge is 4-1/2" from line "A". **See Figure 8.**

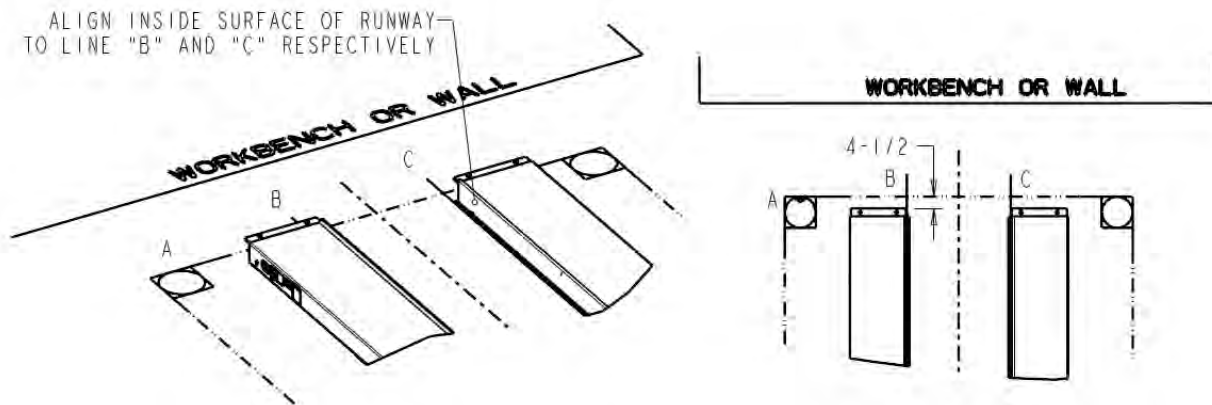


Figure 8 - Runway Positioning

5. Locate the wheelstops in the accessory box.
6. Position the front crossmember under the mounting tabs of the front runways and align holes. Ensure that the rectangular openings in the crossmember are facing towards the runways.
7. Align the wheelstops and bolt to runways and crossmember. **See Figure 9a.**

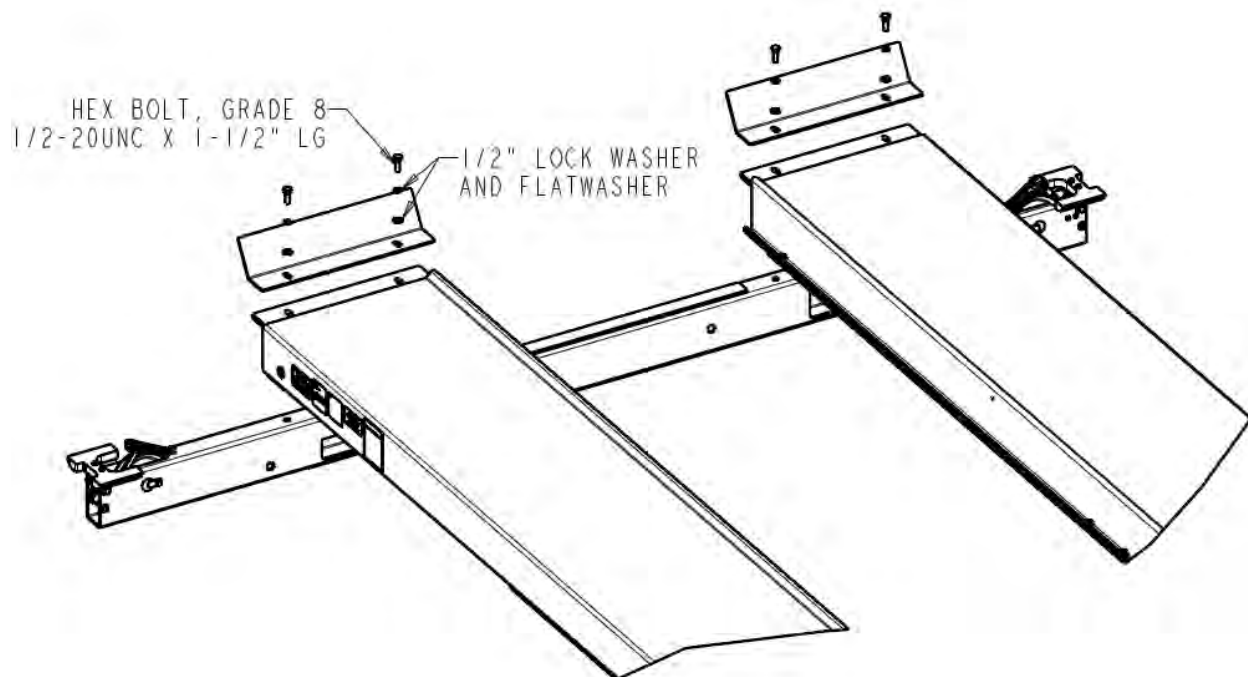


Figure 9a: Front Crossmember Installation

8. Install the rear crossmember as above, along with the approach ramp hinge. **See Figure 9b.**

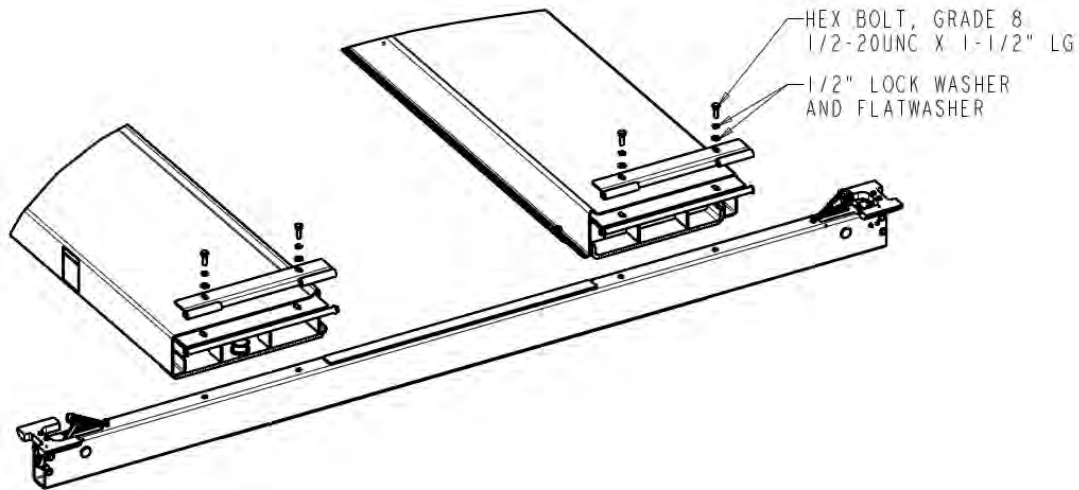


Figure 9b: Rear Crossmember Installation

9. Using a engine hoist (or other lifting devices), pick up the rear of the crossmember/runway assembly and place two axle stands under crossmember.

10. Repeat for the front. Ensure assembly is sturdy. **See Figure 9c.**

Note:

- **Adjust axle stands such that it allows enough room to work under the runways.**
- **Ensure runways are leveled before working underneath.**
- **Be cautious of not pinching the polytubes perturbed from crossmembers when assembling to runways.**



Figure 9c - crossmember and runways assembly

7.7 CABLE ROUTING

1. Remove the cables from the accessory box and check their part numbers (located on each stud) to determine routing.

2-1791	FRONT LEFT 172" W/B
2-1677	FRONT LEFT 210" W/B
2-1792	FRONT RIGHT 172" W/B
2-1678	FRONT RIGHT 210" W/B
2-1679	REAR LEFT, 172" & 21" W/B
2-1680	REAR RIGHT, 172" & 21" W/B

2. Remove the (6) deck sheaves (2) deck sheave pins, and (1) deck sheave spacer (2" lg) from the accessory box. Remove the nylon thrust washers, 5/16" x 3/4 bolts, and 5/16" lock washers from the hardware kit.
3. Remove the red cap from the rear of the cylinder and extend the Hydraulic Cylinder by using compressed air.

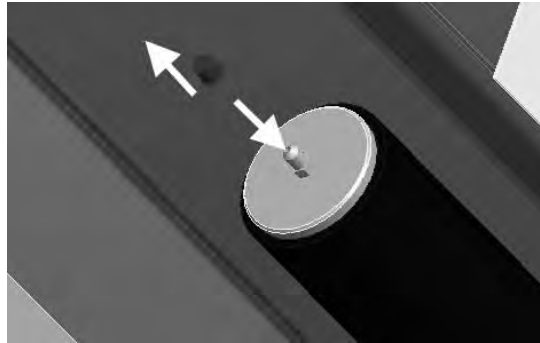


Figure 10: Extension of Cylinder

NOTE: Ensure that the cable flange is installed with the counterbores facing towards the hydraulic cylinder.

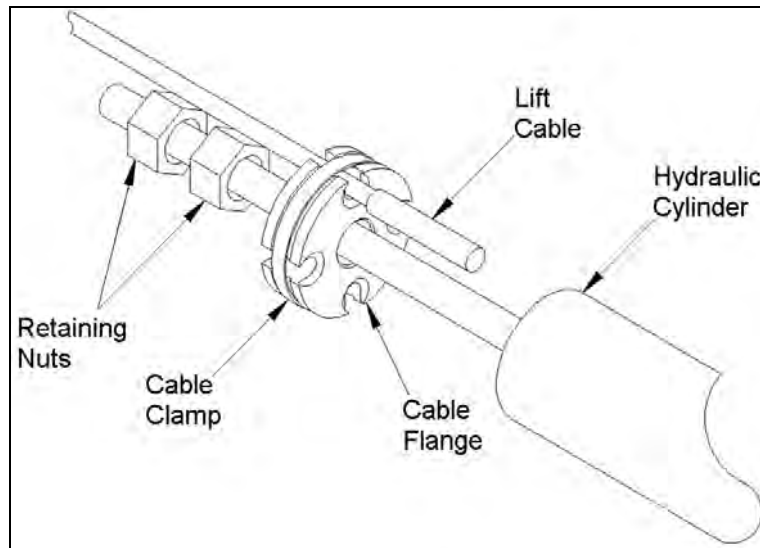


Figure 11 - Cable Installation at Flange

4. Cables should be run in the following order. When attaching the cables at the cable flange this order should be followed in a clockwise direction to prevent cables from becoming tangled.
 - Rear Left
 - Rear Right
 - Front Left
 - Front Right
5. If required, loosen the cable clamp.
6. Attach the Rear Left cable to the cable flange. Run the cable to the rear of the deck and over the first pulley as shown in **Figure 12**. Route the remaining cable through the crossmember, exiting past the safeties. Make sure to place three Nylon washers between the first pulley and the lower pulley box plate.
7. Attach the Rear Right cable to the cylinder at the cable flange next to the previous one. Run the cable to the rear of the deck and over the second pulley as shown in **Figure 12**. Route the remaining cable through the crossmember, exiting past the safeties. Make sure to place a Nylon washer between the pulleys.
8. Attach the Front Left cable to the cylinder at the cable flange next to the previous one. Run the cable to the rear of the deck and over the third pulley as shown in **Figure 12** (threaded end comes around 180 degrees into the deck). Make sure to place a Nylon washer between the pulleys.
9. Pull the Front Left cable through the deck (along the right side) making sure to keep the cable above the deck stiffeners. At the front of the deck, run the cable over the pulley as shown in **Figure 12**. Route the remaining of the Front Left cable through the crossmember and past the safety lock. Make sure to place three Nylon washers between the first pulley and the lower pulley box plate.
10. Attach the Front Right cable to the cylinder at the cable flange next to the previous one. Run the cable to the rear of the deck and over the fourth pulley as shown in **Figure 12** (threaded end comes around 180 degrees into the deck). Make sure to place a Nylon washer between the pulleys.
11. Pull the Front Right cable through the deck (along the left side) making sure to keep the cable above the deck stiffeners. At the front of the deck, run the cable over the pulley as shown in **Figure 12**. Route the remaining of the Front Right cable through the crossmember and past the safety lock. Make sure to place a Nylon washer between the pulleys. Use the sheave spacer to fill the remaining gap.
12. Lock the sheave pins with the 5/16"-18UNC x 3/4"LG Hex HD Bolts and lockwashers (found in the hardware kit).
13. Tighten the hose clamp on the cable flange to secure all the cables. Ensure that the two retaining nuts are positioned as shown in Error! Reference source not found.11. Using two wrenches, lock the retaining nuts against each other.

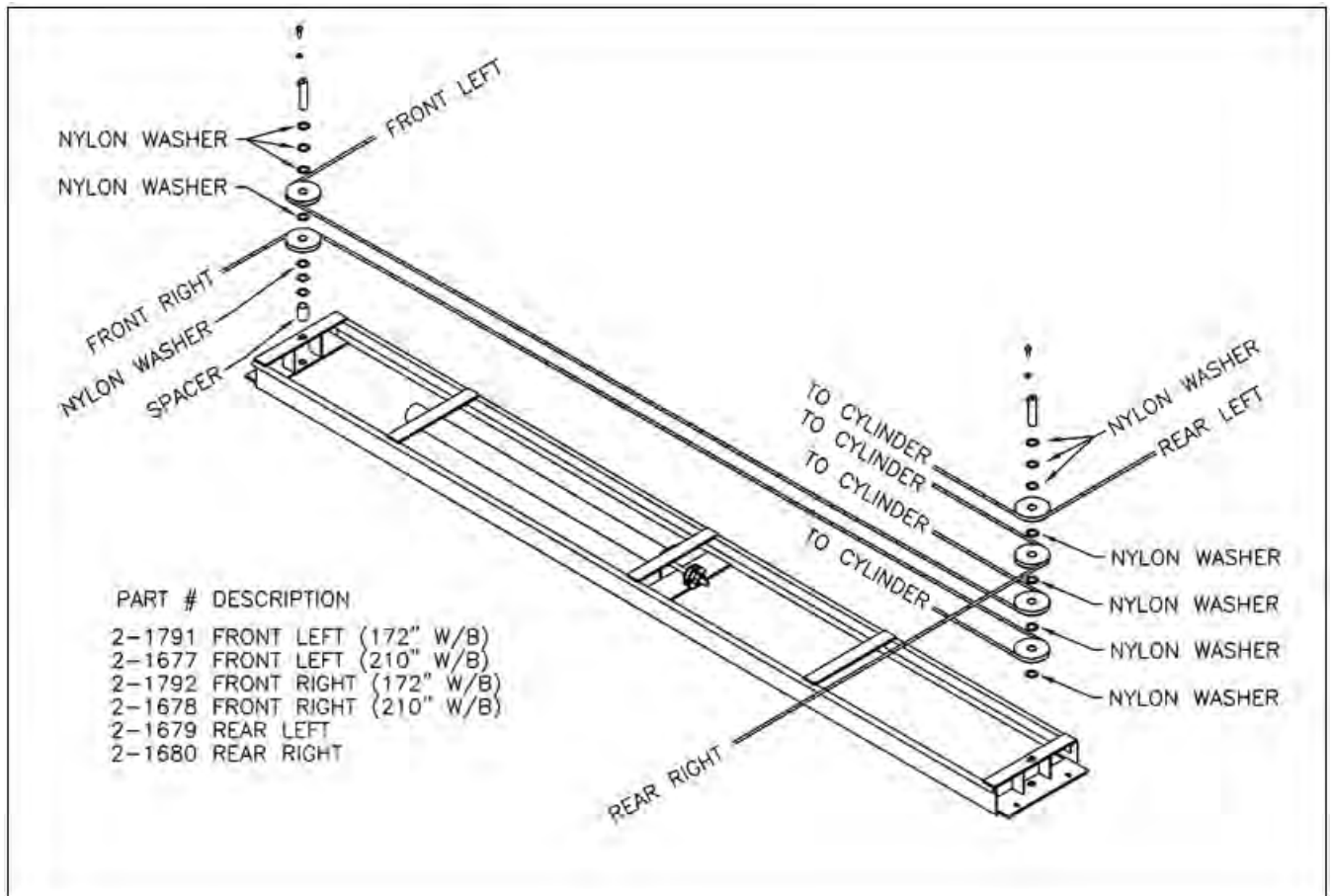


Figure 12. Cable Routing (L.S. Deck)

NOTE: While running the cables through the crossmembers, be careful not to run them around the polytube lines. If this occurs, the lines could be pulled out of the air cylinders when the lift powers up, or the polytubes could be subjected to excessive wear against the cables.

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. Before proceeding, check that the layout matches that shown in **Figure** , that the lift is square and that there is a 40" gap between the decks along their entire length.

NOTE: The 40" Dimension shown in **Figure 2** is critical as it is necessary to allow the jacking beams to roll freely.

14. Reinstall the Sheave, sheave Pin, spacers and hardware that was removed in **Section 7.5.1**.
Ensure that the cable is in the groove of the sheave.
15. Connect the two springs to the auxiliary safety.
16. Route the cable around the sheave then around the roller on the auxiliary safety.
See Figure 14.

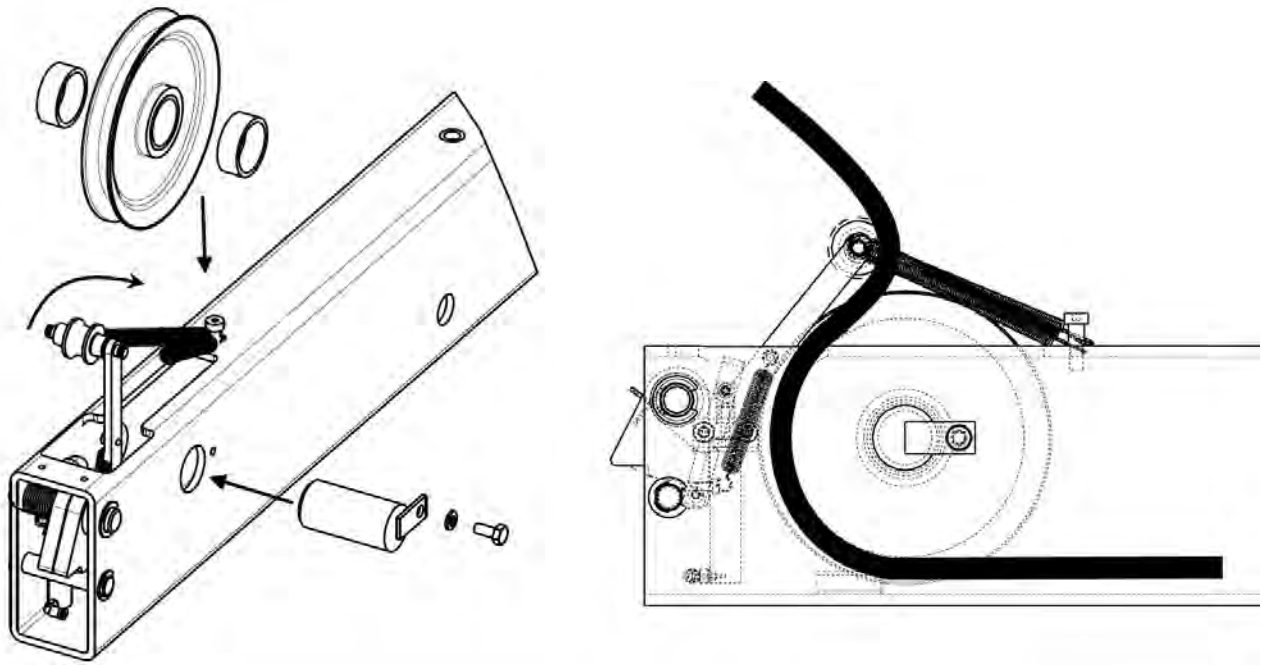


Figure 14: Crossmember Pulley & Cable Assembly

17. Repeat to all corners of the lift.

18. At this point, unravel the 5/32' polytube from the rear crossmember and run it along the inside of the runway towards the front crossmember.

19. Using the a tee fitting, connect the air lines as shown in **Figure 13**.

Note: Excess polytube may be trimmed as required (when cutting polytube, cut the line at ninety degrees to ensure the air line does not leak).

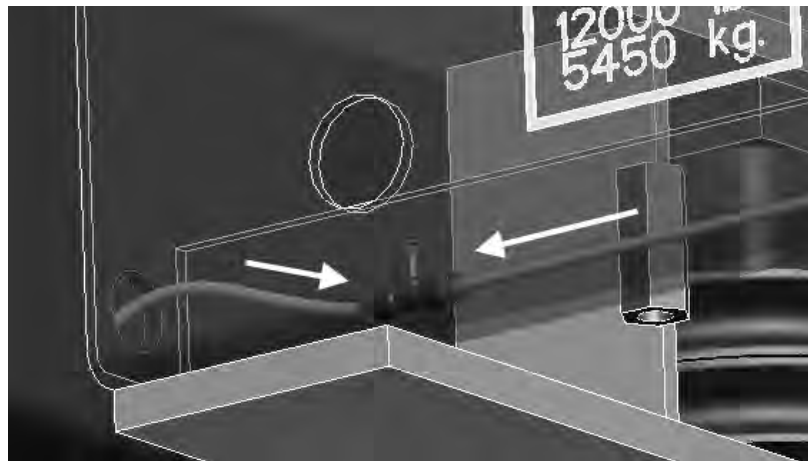


Figure 13: Air line Connection - Rear to Front

7.8 TOWER INSTALLATION

1. Position the Power Post (with powerpack mount) at the front left corner. Slide the tower around the crossmember so the end of the crossmember is approximately 1/2" away from the safety ladder.
2. Locate Glide Bearing 1-2248 in the accessory box, along with the 1/4"x 1 1/2" bolts, 1/4" lock washers, and 1/4" flat washers found in the hardware kit.

Note: The Glide Bearing will maintain the distance between the mechanical locks and the safety ladder.

3. Maneuver the glide bearing into the tower and position it as show below, with chamfer facing down. Use the above mentioned hardware to assemble the block to the crossmember. **See Figure 14.**

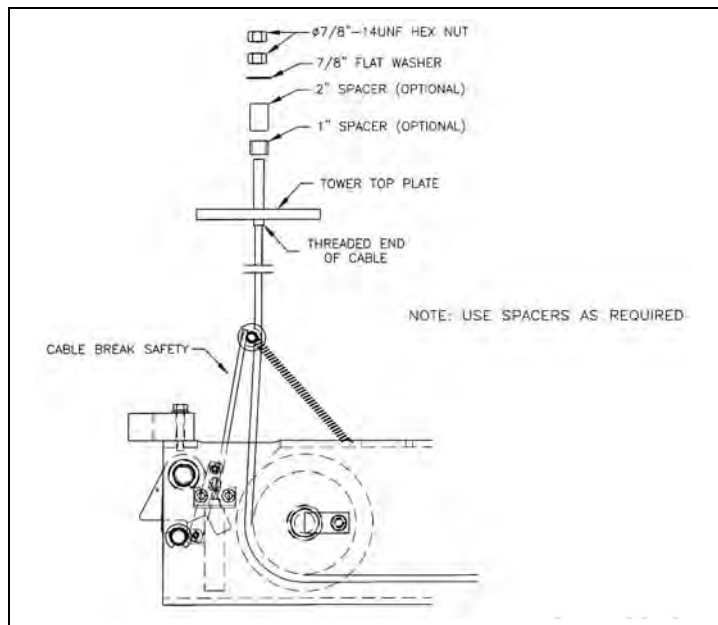
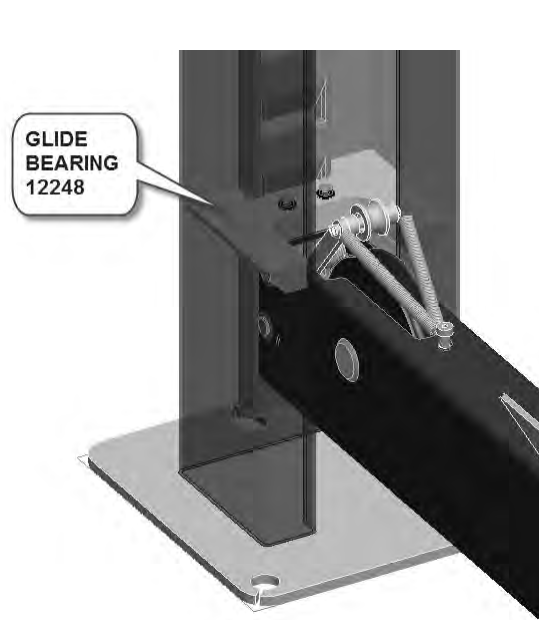


Figure 14: Glide and Retaining Bearing

Figure 15: Cable assembled to Tower.

4. Push the Glide Bearing away from the center of the lift and tighten the 1/4" hex bolts.
5. Pull the towers inwards (towards the decks) so that the slider blocks are flush with the safety ladders.
6. Route the threaded end of the cable through the hole in the tower top plate. Assembly with (1) 7/8 " flat washer and (2) 7/8" nuts found in the hardware kit. Tighten to remove the slack in the cable. If required, use the appropriate spacer(s) to take up any slack in the cable. **See Figure 15.**
7. Repeat for the three remaining towers, one at each corner of the lift.

7.9 HYDRAULIC INSTALLATION

7.9.1 Power Pack Installation

NOTE: When working with hydraulic lines, valves, and fittings, it is important to keep all components clean and free of dirt.

1. Locate the powerpack in the accessory box.
2. Install the power pack to the mounting bracket on the front face of the left front post using the 5/16"-18UNC x 1"LG. hex head bolts, flat washers, lock washers and hex nuts, found in the hardware kit. Leave the (2) hex bolts on the outside of the lift loose until section 7.10 is completed.

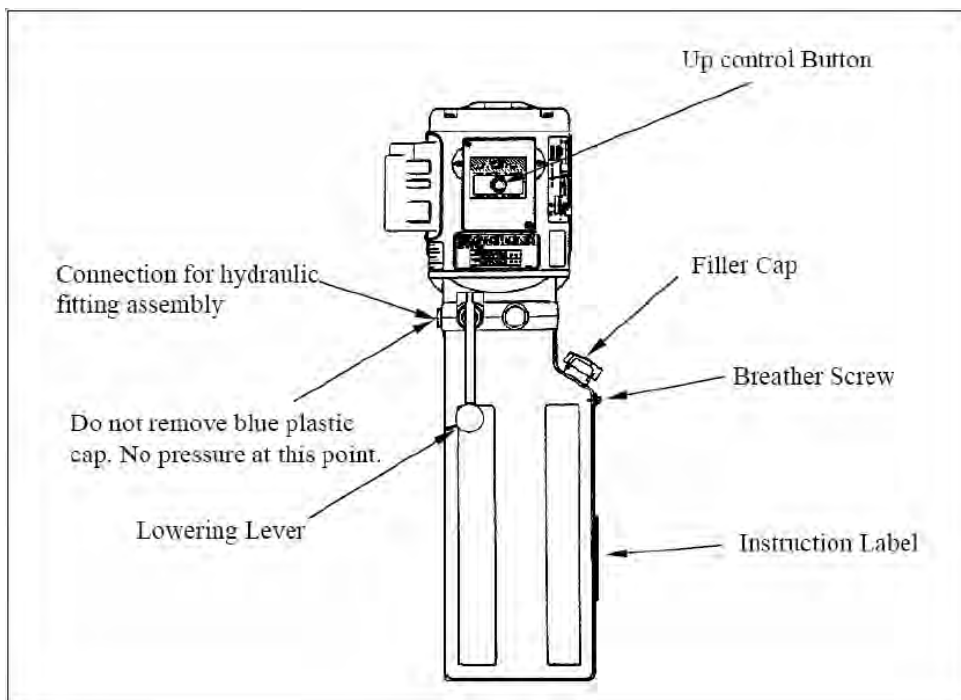


Figure16: Power pack details

7.9.2 Hydraulic Hose Installation

1. Locate hydraulic hose assembly 6-1662 and Hose Guard 6-0714 in the accessory box. Locate elbow fitting 6-0804 in the hardware kit.
2. Connect the end of the flexible hydraulic hose assembly to the flow control at the cylinder. **DO NOT OVER TIGHTEN.** See **Figure 17a.**
3. Feed the hose down the channel inside of the runway toward the front, and then through the hole on the side of the runway. **Figure 17b.**
4. Run the hose through the hose guard and around the outside of the tower.

5. Connect the remaining end of the hydraulic hose assembly to the powerpack using the 90 deg elbow removed from the hardware kit. **DO NOT OVER TIGHTEN.** See **Figure 17c.**

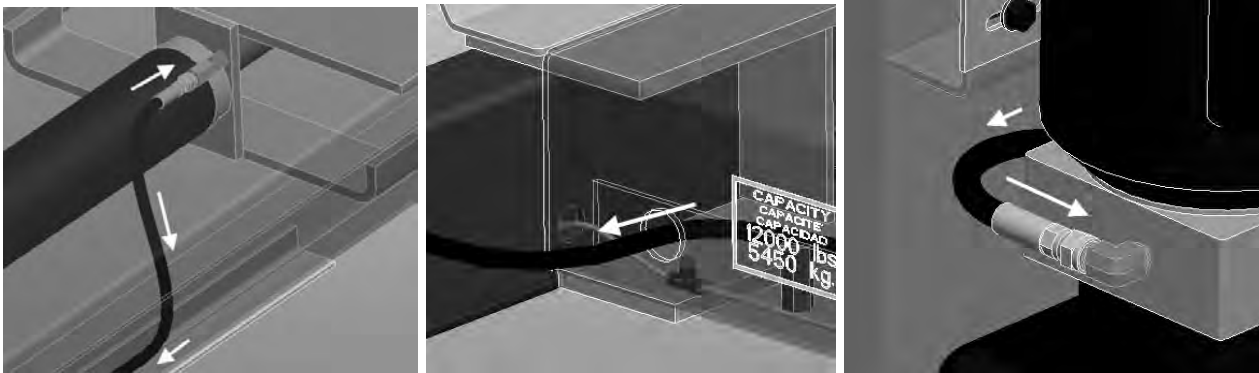


Figure 17a,b,c - Hydraulic Hose Routing

6. Use the frame clips found in the hardware kit to hold the hydraulic line under the deck.

NOTE: Be sure to keep the hydraulic line clear of the cables under the deck.

7.10 AIR INSTALLATIONS

1. Install the air valve and filter assembly (found in the accessory box) to the mounting bracket on the power post.
2. To do this, slide the FRL assembly between the tower bracket and the 5/16" lockwasher.
3. Tighten up the hardware.
4. Install reducer 6-4228 into the 1/4 fitting.
5. Connect the remaining (4mm) 5/32" polytube to the reducer fitting on the air valve.
6. Route it through the hose guard down towards the hole in the runway.

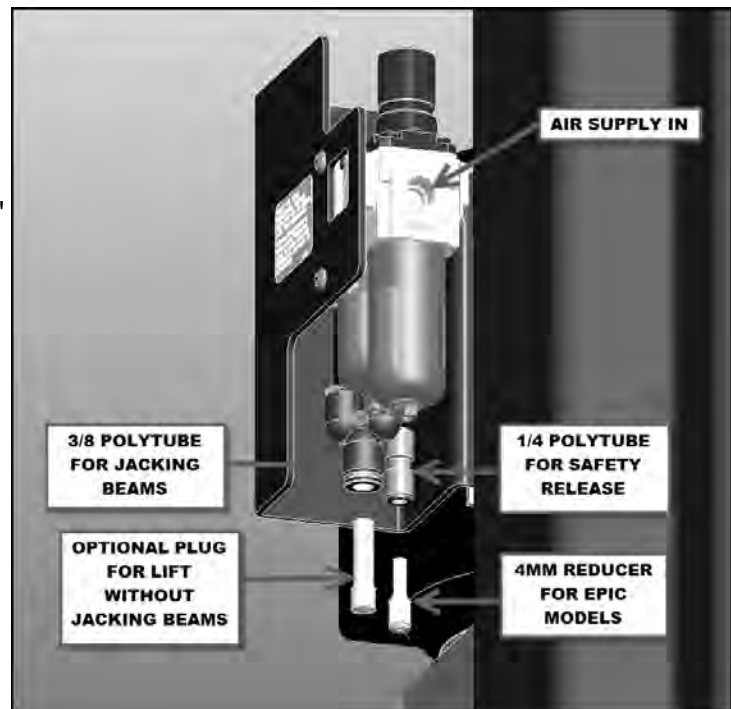


Figure 18: Air Valve & Filter Installation

7. Under the deck, pull the polytube trough, determine how much is required, and cut.
8. Connect to the remaining port of the tee fitting supplying the safety locks.

NOTE: When cutting polytube, be sure to cut the line at 90 degrees. Failure to do so may result in leaks in the air connections.

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.

NOTE: AN (OPTIONAL) JACK BEAM AIR KIT SHOULD BE USED TO MAKE THE NECESSARY CONNECTIONS BETWEEN THE AIR SUPPLY AND THE JACK BEAMS.

9. If the lift does not have jacking beams, install plu #6-4228 into the open terminal of the 3/8" polytube 'Y' fitting.
10. If the lift has jacking beams and the air line kit (sold separately) is installed, the 3/8" polytube can be connected to the this 'Y' fitting.

11. Connect the air supply to the inlet on the FRL.

12. Unscrew the lubricator bowl by turning it in a counter clockwise direction.

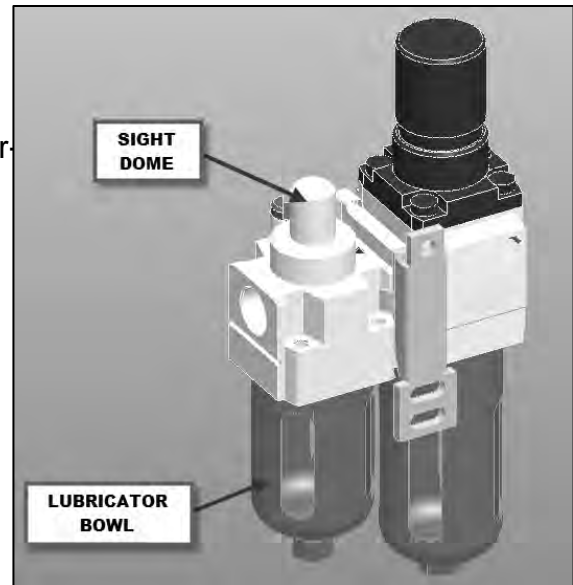
13. Fill the lubricator reservoir with Snap-On Air Motor Oil #IM6 or equivalent. Oil supply to the lubricator should be less than the upper limit of the oil level

14. The air regulator should be set between 90-120 psi.

15. Slowly pressurize the system.

a. **Note: The regulator has been set to operate at 90 psi.**

b. **Note: The sight dome assembly has already been set to provide 3-5 drips per minute. Check the sight dome assembly and verify that oil drips.**



16. Check for air leaks

17. 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 locks to be pulled into the crossmembers, releasing the lift from the safety ladders.

7.11 ELECTRICAL CONNECTIONS

CAUTION QUALIFIED ELECTRICIAN SHOULD MAKE ALL ELECTRICAL CONNECTIONS.

Refer to **Figure 19** for electrical connections. Refer to Page

Electrical breaker must be sized by a qualified electrician. Refer to labeling on powerpack for electrical motor ratings.

208-230V, 1Ph, 60Hz.

208-230V, 3Ph, 60Hz.

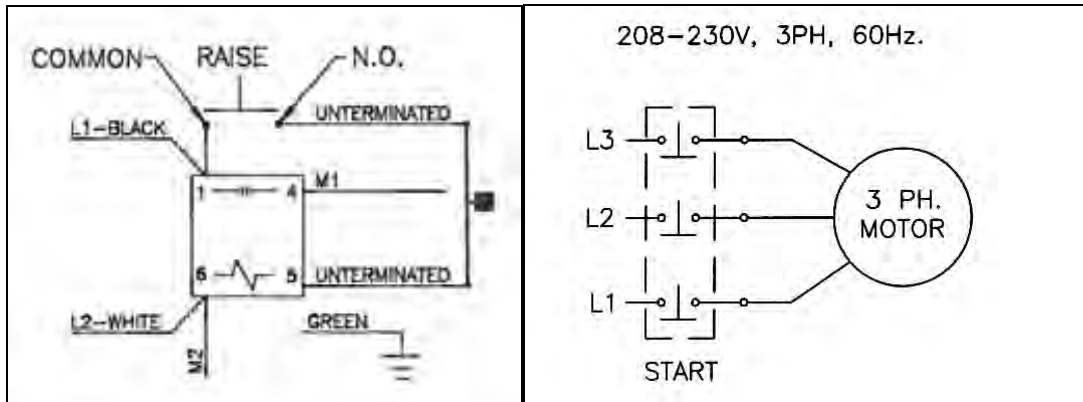


Figure 19. Electrical diagram

7.12 DECK LEVELING PROCEDURE

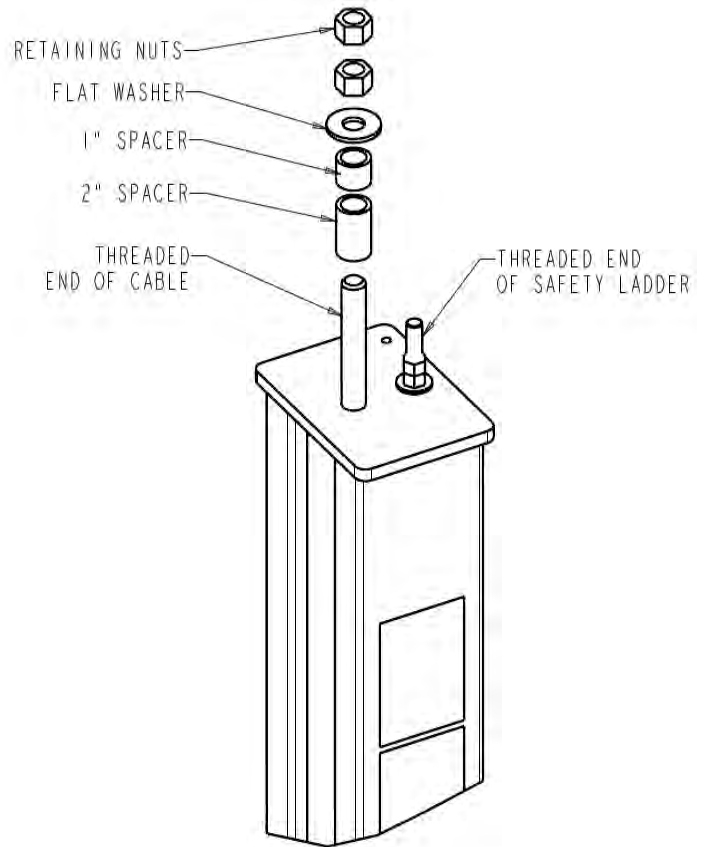
7.12.1 LEVELING SAFETY LADDERS

1. Raise the lift to a comfortable working height.
2. Lower the lift onto the nearest safety.
3. Using a 4ft. level, check the level of the decks 'front to rear' and 'side to side' as shown if **Figure 20**.
4. Determine the highest corner of the lift.
5. The other (3) corners will need to be raised to the level of the highest corner. This is accomplished by tightening the safety ladder retaining nuts on top of the tower.
6. Loosen the nut under the tower top plate and adjust the ladder as needed.
7. Continuously tighten the top nut (which lift that corner up) until that corner is leveled.
8. Repeat this procedure for all 3 corners while checking the level of the decks.

9. When satisfied, tighten all jam nuts.



Figure 20 - Lift & Deck Leveling



7.12.2 Leveling Lift on Cables

1. Raise the lift off the safety ladder to a comfortable working height such that the lift is suspended on the cables.
2. Using a 4ft level, check the level of the decks 'front to rear' and 'sided to side' as shown in **Figure 20**.
3. Determine the highest corner of the lift.
4. The other 3 corners will need to be raised to the level of the highest corner. This is accomplished by tightening the cable retaining nuts on top of the tower (See **Figure 21**).

Note: Use optional 1" and 2" spacers in case of uneven floor slope

Note: There should be two nuts retaining the cable to the top plate of the tower. The upper nut is used as a jam nut to prevent the lower nut from loosening. Both nuts should be installed after the adjustment is completed.

5. Repeat the preceding steps until the lift is completely level on all cables. Tighten the jam nuts after the adjustment is complete.

Figure 21: Cable Adjustment

6. Make sure that the non-threaded sleeve of each wire rope seats in the cable flange properly. (See **Section Figure 7.7, Figure 11**).
7. Raise the lift and check that the ladders engage evenly.
8. Lower the lift onto a mechanical safety position. Raise the lift from this position and ensure the lift rises evenly and level from the resting position.
9. Cycle the lift several times to check proper operation of the cables, safety lock, air locks, etc.

⚠ WARNING

STOP IMMEDIATELY IF THE LIFT IS NOT OPERATING PROPERLY.

10. Make any necessary adjustments and check again for proper operation.
11. Raise the lift to its full height and check for full operating height of 70". This measurement is taken from the top of the decks to the floor. Lower the lift to the ground when complete

7.13 ANCHOR INSTALLATION

1. Check all layout dimensions on **Figure 2** and **Figure 3** before continuing with anchor installation.
2. Refer to **Figure 22** while reading through these instructions.

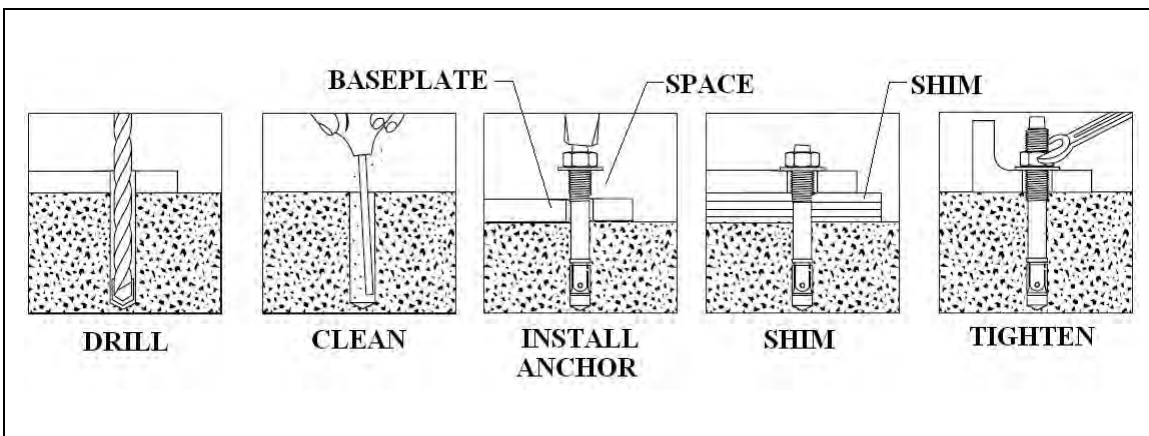


Figure 22. Anchor installation

3. Ensure that the lift is fully supported by the cables and is at a level just above the work stands.
4. 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.

5. Using a 1/2" 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).
6. Using a hammer, drive each anchor into floor leaving space for shimming.
7. Use a 4' level, to level the posts, 'front to back' and 'side to side'.
8. Shim as required and hammer anchors till they make contact with Baseplate. **Do not tighten anchors.**

⚠ WARNING **DO NOT** use more than 1/2" (13mm) of shims per column. Anchor bolts supplied allow for a maximum of 1/2" of shims. If more than 1/2" is required, **DO NOT** proceed with installation and contact *Snap-On Equipment Technical Support* for further details.

9. Check the distance from the top of the anchor to the floor. If this dimension exceeds 2½" due to floor slope, **DO NOT** use the supplied anchors. Longer anchor must be used (**See Figure 23**).
10. Tighten all anchor bolts to a torque of **55 ft. lbs.** (75 Nm), continually checking that the column is level as you proceed. **Do not exceed recommended torque spec.**
11. Recheck and adjust the level of post(s) and cable(s) if necessary.

Figure 23 - Anchor Depth

NOTE: The 1/2" × 4 ½" lg. wedge anchor bolts supplied must have a minimum embedment of 2" into concrete floor.

NOTE: If anchors do not tighten to required torque, OR project more than 2-1/2" above the concrete surface due to floor slope, contact a foundation engineer to determine the best course of action.

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

⚠ WARNING **STOP IMMEDIATELY IF THE LIFT IS NOT OPERATING PROPERLY.**

13. Make any necessary adjustments and check again for proper operation.

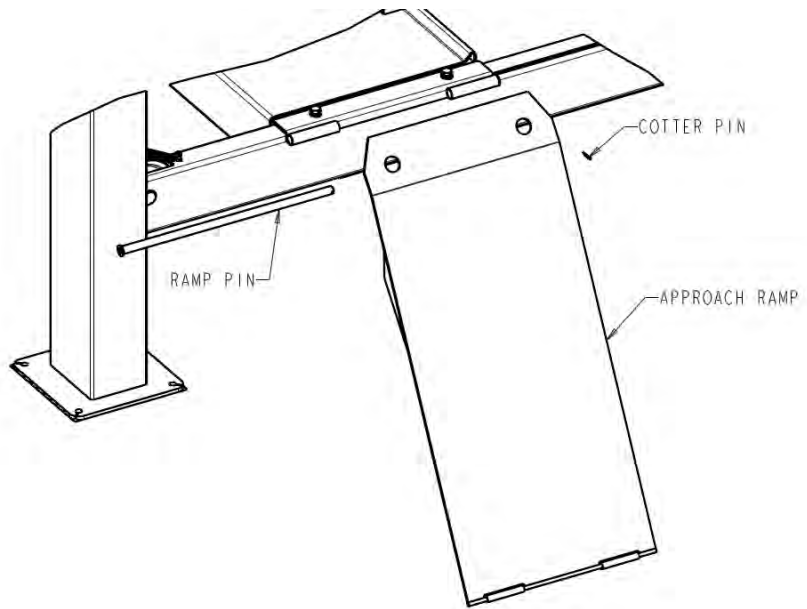
NOTE: IF THE TOWERS ARE LEANING INTO THE LIFT, THE CROSSMEMBERS CAN BECOME WEDGED INTO THE TOWERS AS THE LIFT RAISES.

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

7.13.1 Approach Ramp Installation

1. Install the approach ramps using the ramp pins, 1/8" x 1" LG cotter pins, and approach ramps provided.

The ramps and ramp pins are located in the accessory box, the cotter pins and washers are found in the hardware kit.



2. Ensure the proper operation of the ramps.

7.14 FINAL CHECK OF ASSEMBLED LIFT

1. Final dimension check after anchoring	
2. Check for hydraulic leaks.	
3. Ensure cables are properly routed and free from obstructions.	
4. Check jam nuts on cables are tightened.	
5. Check that LOCTITE has been applied to all hardware where required.	
6. Check adjustment of safety release cable to ensure both sides working properly.	
7. Re-check level of towers.	
8. Check torque of anchor bolts.	
9. Check all fasteners, tighten if necessary.	
10. Check shut off at top of stroke to ensure lift shuts off.	
11. Check proper operation of arm restraints.	
12. Operate lift to full stroke then lower to ground while checking for proper functionality.	
13. Check proper operation of arm restraints.	
14. Ensure Customer Care Kit is complete and given to operator.	
15. Operation Manual	
16. ANSI / ALI Lift It Right Manual	
17. ANSI / ALI Safety Tip Card	
18. ANSI / ALI ALIS Safety Requirements for Installation	
19. ANSI / ALI Quick Reference Guide	
20. Train end user on operation of lift.	

7.15 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

7.16 OPERATING INSTRUCTIONS



To avoid personal injury and/or property damage, permit only trained personnel to operate the lift.

After reviewing these instructions, get familiar with lift controls, by running the lift through a few cycles before loading vehicle on lift.

Observe and heed SAFETY and WARNING labels on the lift.

7.17 LIFT OPERATION

- **Loading:** Lift must be fully lowered, and no one in the service bay while the vehicle is brought in. If the lift is equipped with rolling jacks, jacks must be fully lowered and the rear jack pushed toward center of lift, to provide under-car clearance.
- Stop vehicle before it contacts the front wheel stops. At all times, be sure the rear wheels are forward of the approach ramps/chocks and the approach ramps/chocks will clear the tires when the lift is raised. Driver must exit the vehicle before rising.
- Place triangular wheel chocks on front and rear of one of the rear tires.
- **To raise the lift:** Push the “**RAISE**” button on the power unit. Release button at desired height, ensure that all corners have passed a mechanical lock position.
- After raising the lift to the desired height, press and hold the lowering lever on the hydraulic power unit, until lift stops on safety latches. Cross-members should be stopped on safety latches in all 4 towers before any work can start on the raised vehicle. If any of the safety latches is not engaged, try to raise or lower the lift to the next higher or lower safety position, and observe again if all 4 safety latches have engaged. If the problem persists, lower and unload the vehicle, solve the lift safety problem, and only then resume vehicle service.
- **Before lowering lift:** be sure no one is in the lift area and that all tools, tool trays, etc. have been removed from under the lift and vehicle. If the lift is equipped with rolling jacks, jacks must be fully lowered and the rear jack pushed toward center of lift, to provide under-car clearance.



The runways, approach ramps, and cross-members are designed to rest on the floor when fully lowered. Observe pinch point warning decals.

- **To lower lift:** if lift has been resting on the safety latches, the lift has to be raised high enough for all 4 safety latches to clear the openings in the safety ladder.

- Actuate the latch release valve on the power unit column to disengage all four locking latches. Hold actuator until lift is fully lowered.

NOTE: If actuator on air valve is released, the latches will automatically reset to the engaged position.

- Push the lowering handle on the power unit to lower the lift.
- Observe lift and vehicle to be sure lift is level while being lowered. If not, STOP the lift and try to resume lowering as explained above.
- Fully lower lift, remove the triangular wheel chocks and check to be sure area is clear before removing vehicle from lift.
- If lift is not operating properly, do not use until adjustment or repairs have been made by qualified lift service personnel.
- For Rolling Jack operating instructions, see Rolling Jack Installation, Operation and maintenance Instructions in the rolling jack shipping box.

⚠ WARNING

Do not operate lift with pulley covers removed from cross-member ends. Keep hands clear of the cross-member ends when lift is being raised or lowered.

⚠ WARNING

Do not raise or lower the lift while the jack beams are loaded.

8. RECOMMENDED INSPECTION AND MAINTENANCE

LUBRICATION SPECS

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	8.13					As shown before, and ALI Standard
Entire Lift Operation	8.13					
Fasteners		8.2				
Wire Ropes		8.1.3	8.1.4	8.1.5		
Sheaves		8.3.1		8.3.2		
Sheave Pins		8.3.3		8.3.2		
Safety Dogs	8.4		8.3			
Slack Cable Devices	8.5					
Latch Plates (Ladders)			8.5			
Air Filter, Regulator, Lubricator	8.6					
Approach Ramps, Chocks, Wheel Stops	8.11					
Anchor Bolts			8.10.2			
Edges of Cable Flange Slots	8.1.6					
Runways			8.9.1			
Columns			8.10.1			
Air cylinders, Lines, Fittings			8.6			
Hydraulic Power Pack, Hose, Fittings			8.7			8.7
Hydraulic Cylinder				8.8		
Jack Beam Rails, Oil Drain Pan				8.9.2		
Anti-skid Surfaces				8.11		
Rolling Air Jacks			8.12			

8.1 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.

8.1.1 WIRE ROPE CONDITIONS GUIDE

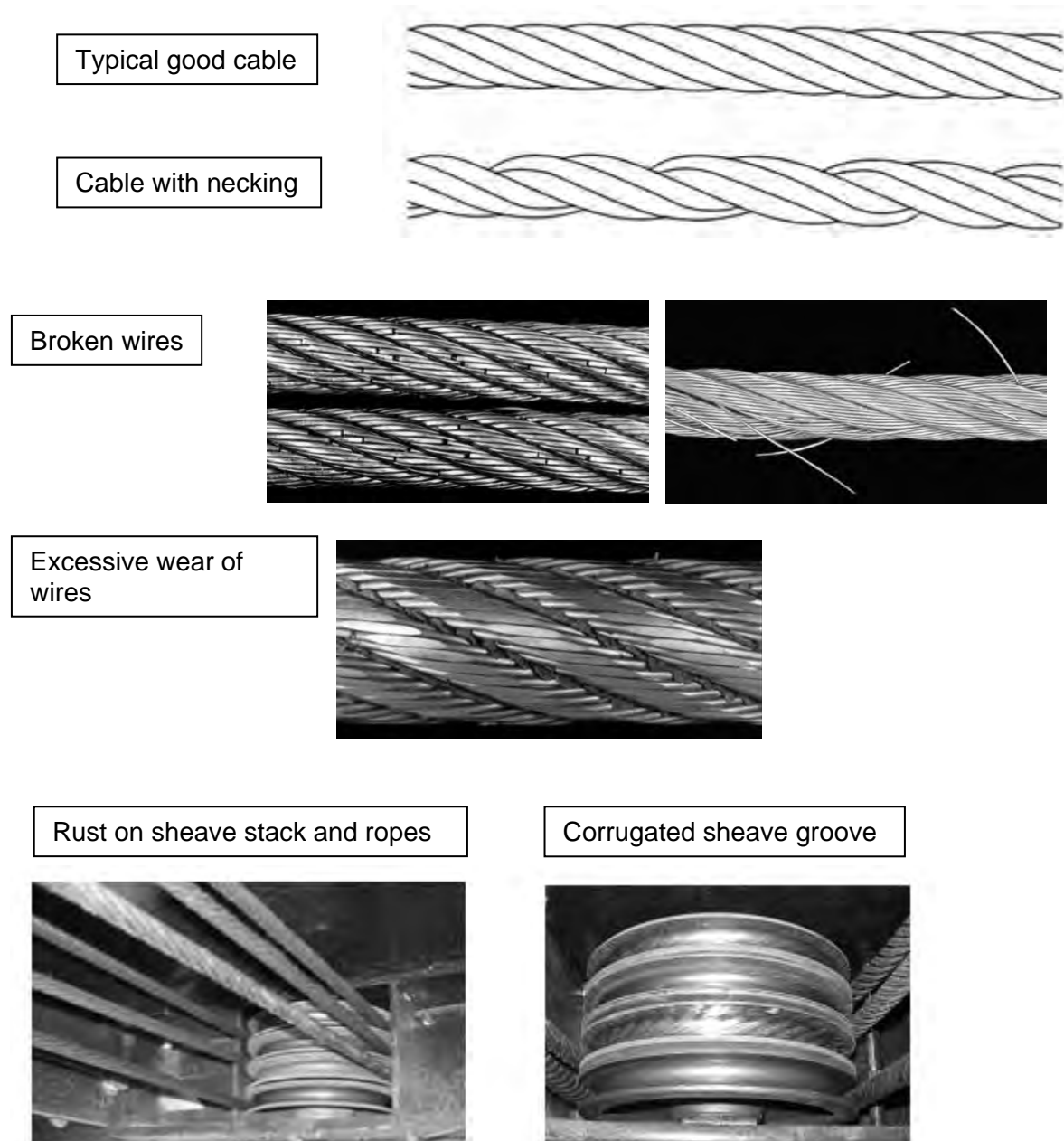


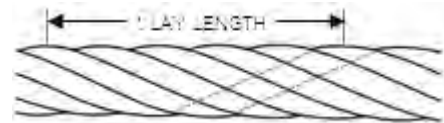
Figure 12

8.1.2 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 9.1.1, 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, bird caging, 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

8.1.3 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 **Section 9.1.1** and **ANSI/ALI ALOIM standard**.

8.1.4 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.

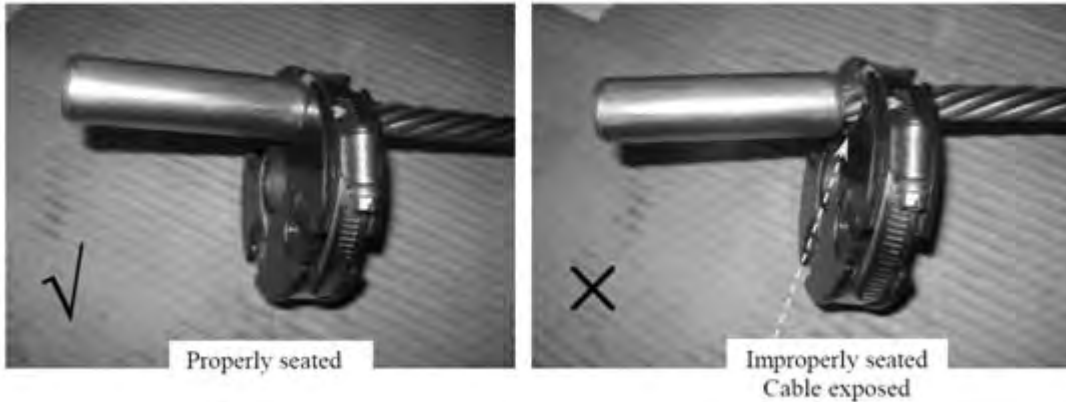
8.1.5 WIRE ROPE ADJUSTMENT

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.

8.1.6 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.



8.2 FASTENERS

Check all the attaching bolts and nuts for tightness.

Note: Air cylinder bolts and nuts should allow movement of the cylinder.

8.3 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.**

8.3.1 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.

8.3.2 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.

8.3.3 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.



8.4 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.



8.5 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.

8.6 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.

8.7 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.

8.8 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)



WARNING

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

8.9 RUNWAYS

8.9.1 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.

8.9.2 INSPECT JACK BEAM 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.

8.10 COLUMNS

8.10.1 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.

8.10.2 CHECK COLUMN ANCHORS

- Check column anchor bolts for tightness (if loose, re-torque to 55 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 1/2" × 4 1/2" lg. wedge anchor bolts supplied must have a minimum embedment of 2" into the concrete floor.

NOTE: If anchors do not tighten to required torque, OR project more than 2-1/2" above the concrete surface due to floor slope, contact a foundation engineer to determine the best course of action.

8.11 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

8.12 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

8.13 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.

9. MAINTENANCE SCHEDULE

Maintenance and Training Performed	Date	By	Notes

10. 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:

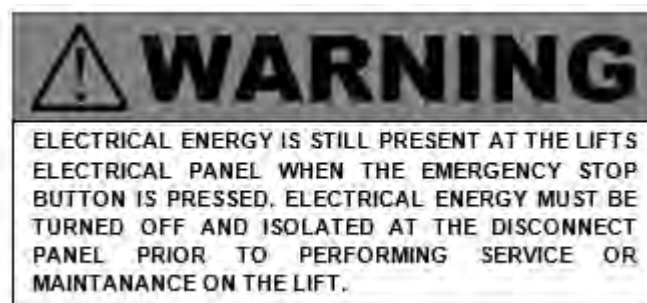
- **Accessible**
- **Conveniently located to facilitate the application of lockout devices during service and maintenance**
- **Located outside any hazardous area.**
- **At a convenient manipulating height (i.e. not overhead, on ladders or under machinery)**
- **Adequately labeled or marked. Identification 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.

10.1 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 user control panel, press the "E-STOP" button (if available) to disconnect the raise and lower functions.



10.2 ISOLATION AND VERIFICATION PROCEDURES:

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
<p>STORED ENERGY</p> <p>AND</p> <p>HYDRAULIC PRESSURE 3000-5000 PSI</p>		<p>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.</p>	<p>VERIFY THAT THE LIFT IS CONTACTING THE SUPPLEMENTARY JACK STANDS.</p>
<p>ELECTRICAL 240VOLTS</p>		<p>AT THE LIFT, PRESS THE EMERGENCY STOP BUTTON COMPLETELY TO DE-ENERGIZE THE CONTROL BUTTONS.</p> <p>AT THE DISCONNECT PANEL, PLACE THE DISCONNECT HANDLE IN OFF POSITION. ATTACH A MULTIPLE LOCUOUT DEVICE. LOCK AND TAG.</p> <p><u>DANGER: LINE SIDE OF DISCONNECT REMAINS ENERGIZED</u></p>	<p>ATEMPT TO RESTART THE SYSTEM, THE SYSTEM MUST NOT START. VISUALLY VERIFY OPEN DISCONNECTS AND LOCKING DEVICE INSTALLED.</p>
<p>PNEUMATIC UPTO 160PSI</p>		<p>SLOWLY CLOSE LOCKOUT VALVE TO RELEASE AIR PRESSURE GRADUALLY. ATTACH MULTIPLE LOCKOUT DEVICE, LOCK AND TAG.</p> <p><u>DANGER: LINE SIDE OF DISCONNECT REMAINS PRESSURIZED</u></p>	<p>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.</p>

10.3 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.

10.4 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 runways.

- 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 (gas powered) or air tank fully charged to provide a temporary air supply to the system.

- 2) Press and hold the safety release button. Confirm that all mechanical locks have been disengaged and will allow the lift to lower.
- 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 and safety release button 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:

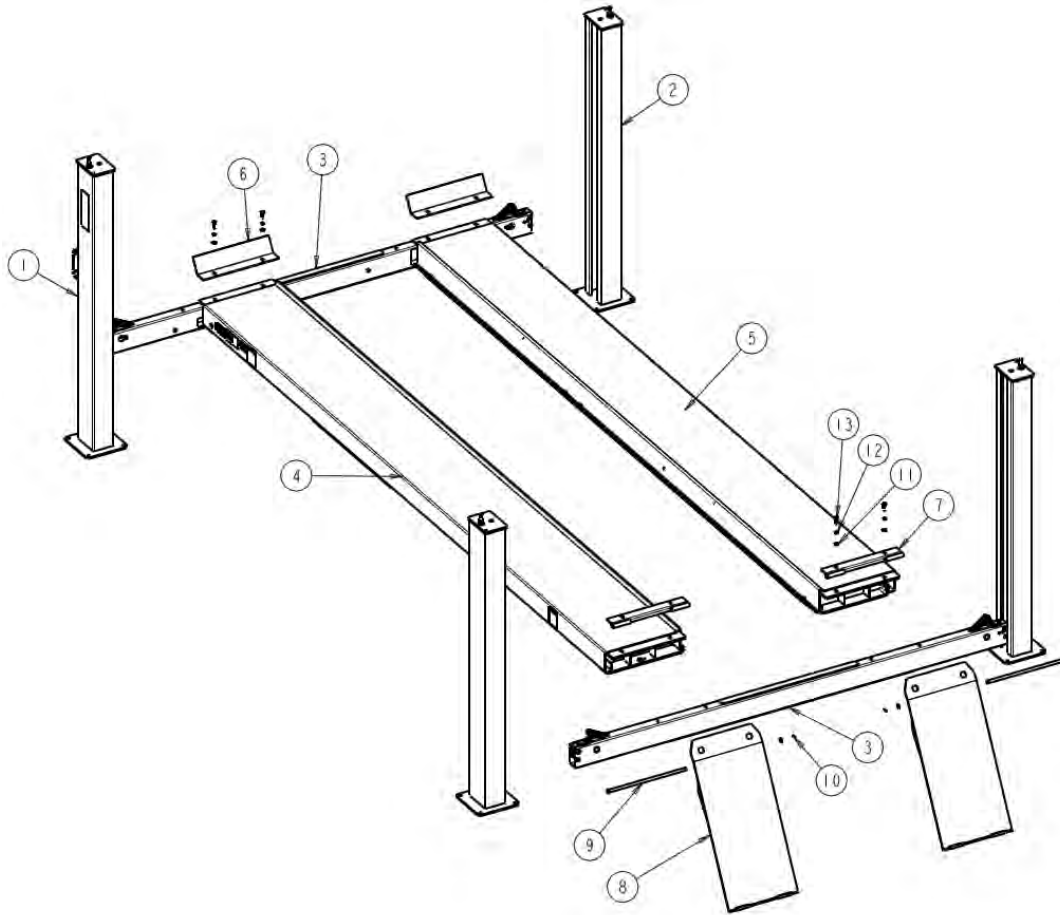
Various methods can be used to raise the lift in order to get sufficient clearance to disengage the mechanical locks. The safest method would employ temporary electrical power to the lift using a portable power generator. Any electrical connections should be done by a licensed electrician; lock out/tag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

11. PARTS LIST

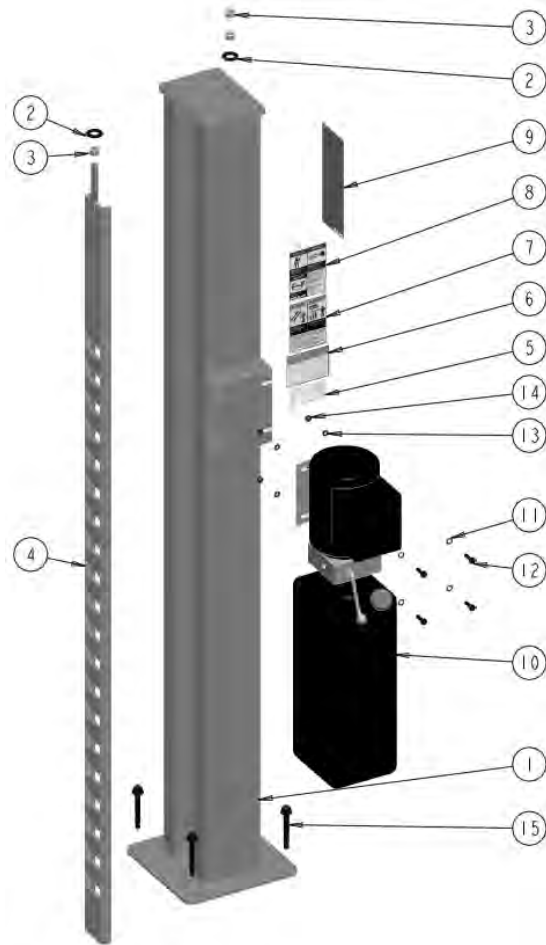
REPLACE WORN, DAMAGED OR BROKEN PARTS WITH PARTS APPROVED BY THE ORIGINAL EQUIPMENT MANUFACTURER ONLY

11.1 LIFT ASSEMBLY - EXPLODED VIEW



11.2 LIFT ASSEMBLY - PARTS LIST

11.3 TOWER ASSEMBLIES - EXPLODED VIEW

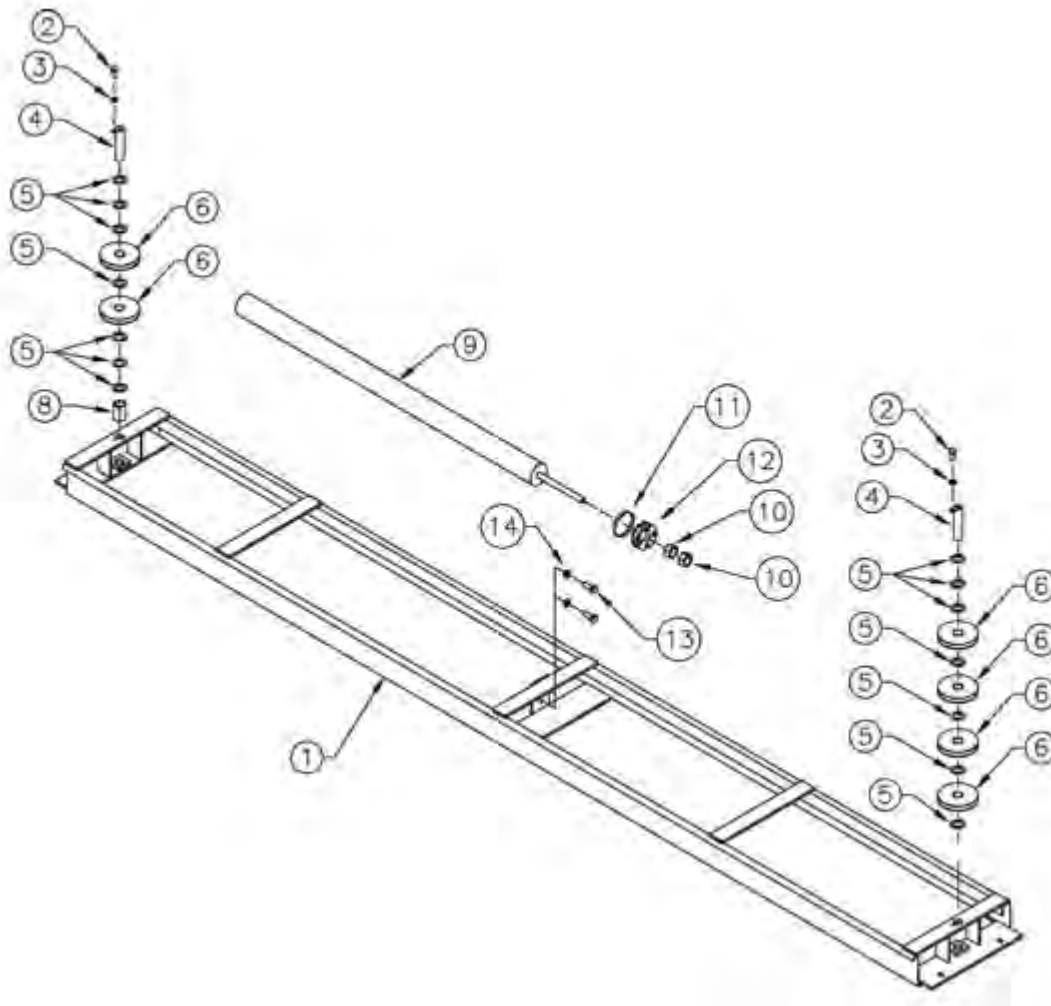


11.4 TOWER ASSEMBLY - PARTS LIST

ITEM	QTY	DESCRIPTION	PART #
1	1	TOWER WELDMENT, POWER POST	4-1363
1	1	TOWER ASEMBLY, POWER POST	4-0928
2	3	TOWER ASSEMBLY, SLAVE POST	4-0929
3	2	TRAVERSE BEAM ASSEMBLY	4-1419-3
4	1	DECK ASSEMBLY, LEFT SIDE	4-1416-3
5	1	DECK WELDMENT, RIGHT SIDE	4-1418
6	2	FRONT WHEEL STOP	2-1752
7	2	RAMP MOUNTING BRACKET	2-1754
8	2	APPROACH RAMP WELDMENT	3-1141
9	2	APPROACH RAMP PIN	1-2242
10	2	COTTER PIN, 1/8" X 1" LG	6-0267
11	10	FLAT WASHER, 1/2"ID	6-0248
12	8	LOCK WASHER, 1/2" ID	6-0059
13	8	HEX HEAD BOLT, 1/2"-13UNC X 1-1/2" LG, GR. 8	82546428
	3	TOWER WELDMENT, SLAVE POST	4-1362
2	2	FLAT WASHER, 3/4" SAE	6-0738

3	3	HEX NUT 5/8", GRADE 8	6-0673
4	1	SAFETY LADDER WELDMENT	3-0832
5	1	SAFETY DECAL	6-1637
6	1	WARNING DECAL, DECK LEVELING	6-4086
7	1	ALI DECAL, CAUTION	WL200C
8	1	ALI DECAL, NOTICE	WL200S
9	1	ALI DECAL, WARNING	WL200W
10	1	POWERPACK, 220V / 1PH / 60HZ	6-1936
11	4	FLAT WASHER, 5/16"	6-0295
12	4	HEX HEAD BOLT, 5/6"-18UNC X 1" LG	6-0293
13	4	LOCK WASHER, 5/16"	6-0674
14	4	HEX NUT, 5/16"-18UNC	6-0294
15	16	WEDGE ANCHOR, 1/2" X 4-1/2" LG	6-0140

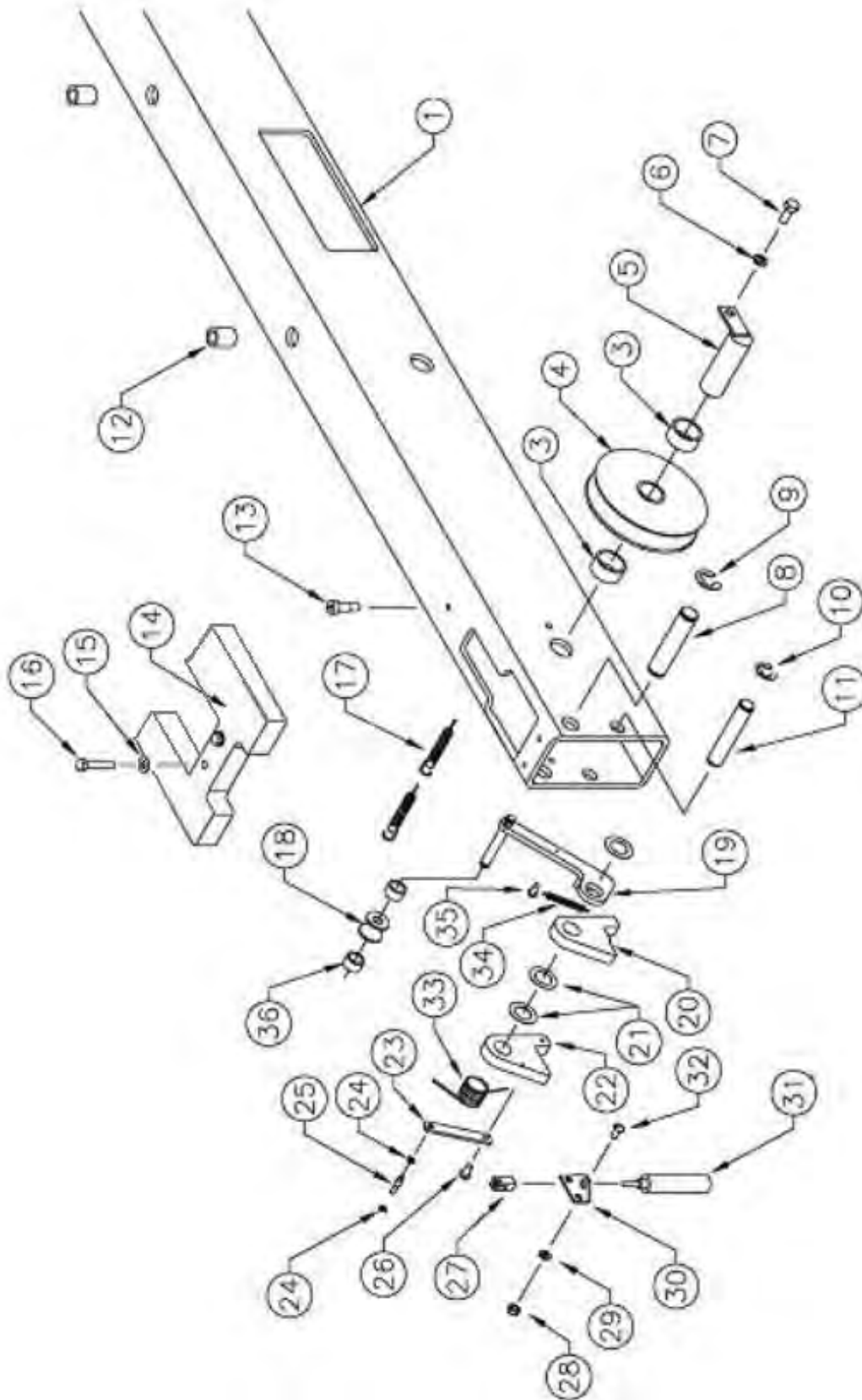
11.5 DECK ASSEMBLY (LEFT SIDE) - EXPLODED VIEW



11.6 DECK ASSEMBLY - PART LIST

ITEM	QTY.	DESCRIPTION	PART #
1	1	DECK WELDMENT (L.S.) 172" W/B	4-1417
2	2	HEX HD BOLT, 5/16"-18UNC x 1" LG	6-0293
3	2	LOCKWASHER, 5/16"	6-0058
4	2	DECK SHEAVE PIN WELDMENT	1-2222
5	14	NYLON THRUST WASHER	1-0757
6	6	SHEAVE ASSEMBLY 6 1/2" C/W BUSHING	1-2347
8	1	SHEAVE SPACER, 2"	1-0943
9	1	CYLINDER ASSEMBLY	4-0393
10	2	HEX NUT, 1"-14UNF	6-0664
11	1	HOSE CLAMP, 4 1/2" DIA	6-0665
12	1	CABLE FLANGE	2-1037
13	2	LOCKWASHER, 3/8"ID	6-0058
14	2	HEX HD BOLT, 3/8"-16UNC x 1 1/4" LG	6-0666
*		L.S. DECK ASSEMBLY COMPLETE 172" W/B	4-1416-3

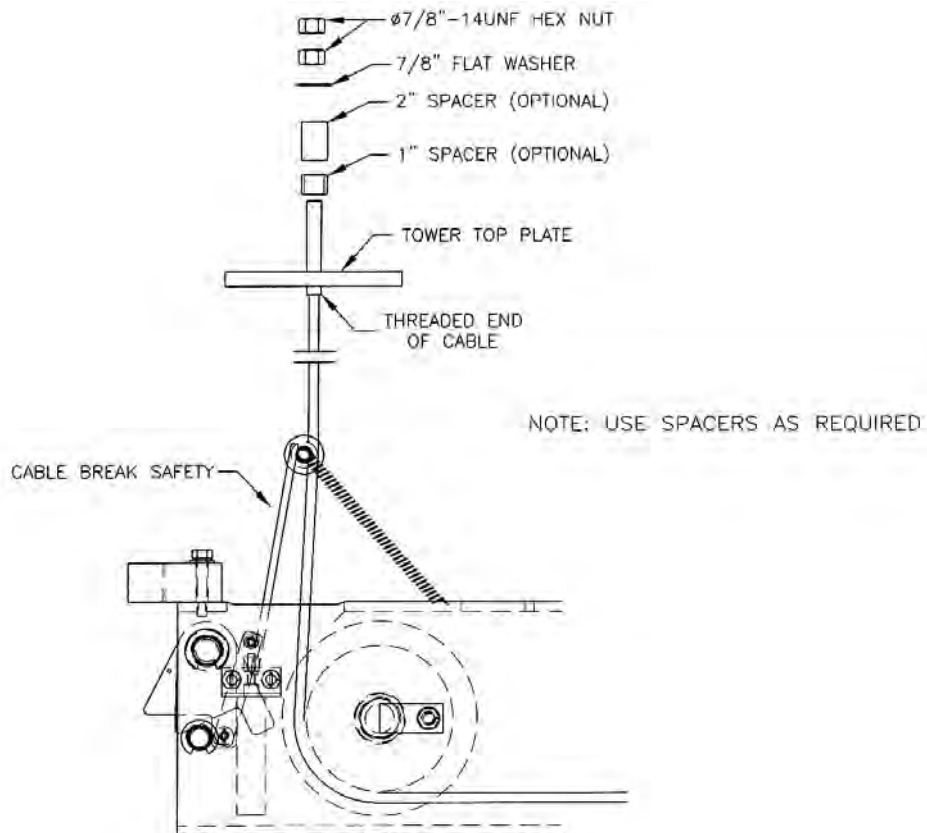
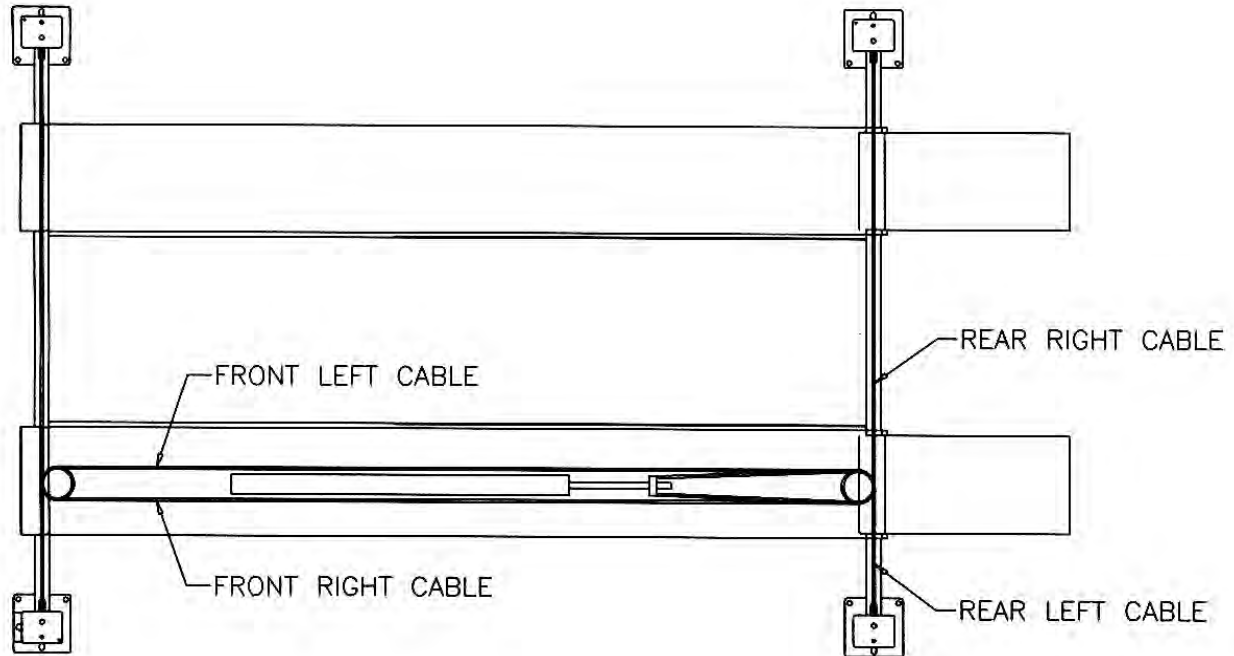
11.7 CROSSMEMBER ASSEMBLIES - EXPLODED VIEW



11.8 CROSSMEMBER ASSEMBLY - PARTS LIST

ITEM	QTY.	DESCRIPTION	PART #
1	2	REAR CROSSMEMBER	4-0869
3	8	SHEAVE SPACER	1-3758
4	4	SHEAVE ASSEMBLY C/W BUSHING	1-2347
5	4	CROSSMEMBER SHEAVE PIN WELDMENT	1-3756
6	4	LOCKWASHER, 5/16"	6-0674
7	4	HEX HD BOLT, 5/16"-18UNC x 3/4" LG	6-0423
8	4	SAFETY PIVOT SHAFT	1-4075
9	8	CIRCLIP, 3/4"	6-2422
10	8	CIRCLIP, 5/8"	6-2442
11	4	CABLE BREAK PIN	1-2245
12	8	THREADED INSERT, 1/2"-NC	6-2432
13	4	SHOULDER BOLT, 3/8" X 1/2"	6-1792
14	4	GLIDE BEARING	1-2248
15	8	FLATWASHER, 1/4"	6-0060
16	8	HEX HD BOLT, 1/4"-NC X 1 1/2"	6-0205
17	4	TENSION SPRING	1-0768
18	4	CABLE ROLLER	1-0766
19	4	CABLE BREAK LEVER	1-2475
20	4	CABLE BREAK LOCK	1-4077
21	12	THRUST WASHER	6-0502
22	4	SAFETY LOCK	1-4078
23	4	SAFETY LINKAGE	1-2249
24	8	CIRCLIP, 3/16"	6-2431
26	4	MACHINE SCREW, #10-32 X 1/2"	6-2446
27	4	ROD CLEVIS & PIN	6-2435
28	8	HEX NUT, 1/4"	6-0032
29	8	LOCKWASHER, 1/4"	6-0056
30	4	CYLINDER MOUNTING BRACKET	1-2315
31	4	AIR CYLINDER	6-2434
32	4	ROUND HD SCREW, 1/4" X 5/8"	6-0335
33	4	TORSION SPRING	1-2316
34	4	SAFETY SPRING	1-1115
35	8	SELF THREADING SCREW, #10 X 3/8"	6-0169
36	8	SPACER	1-2907

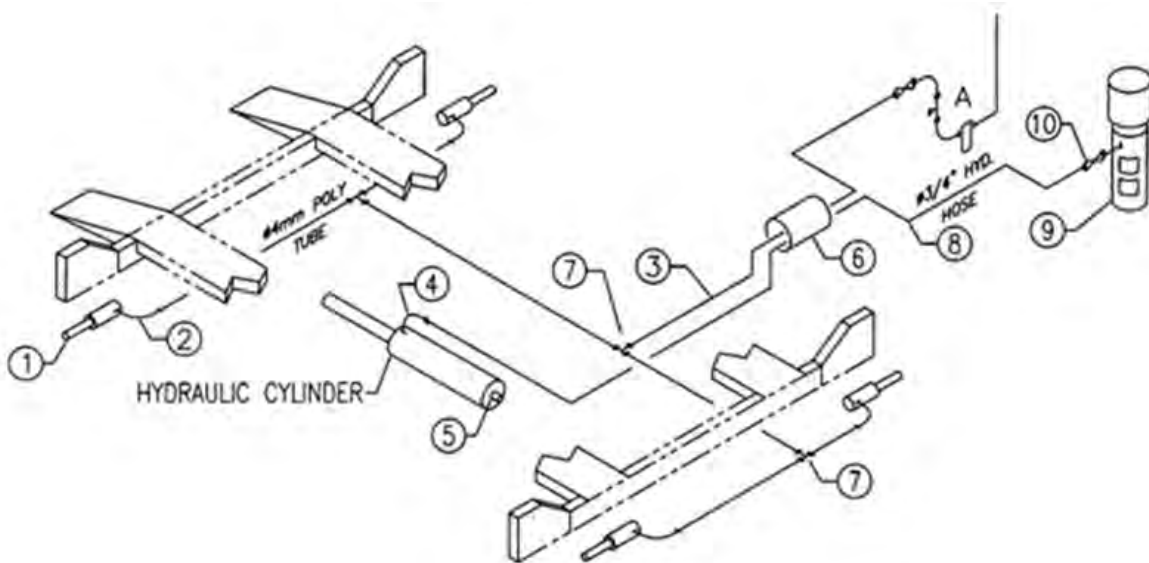
11.9 CABLE ROUTING



11.10 CABLE ROUTING - PARTS LIST

QTY	DESCRIPTION	PART #
1	CABLE ASSY. - FRONT LEFT 172" W/B	2-1791
	CABLE ASSY. - FRONT LEFT 210" W/B	2-1677
1	CABLE ASSY. - FRONT RIGHT 172" W/B	2-1792
	CABLE ASSY. - FRONT RIGHT 210" W/B	2-1678
1	CABLE ASSY. - REAR LEFT	2-1679
1	CABLE ASSY. - REAR RIGHT	2-1680
8	HEX NUT, 7/8"-14UNF GR5	6-0724
4	CABLE SPACER, 2"LG	1-0800
4	FLAT WASHER, 7/8"ID	6-0725
4	CABLE SPACER, 1"LG	1-0801

11.11 AIR AND HYDRAULICS - SCHEMATIC

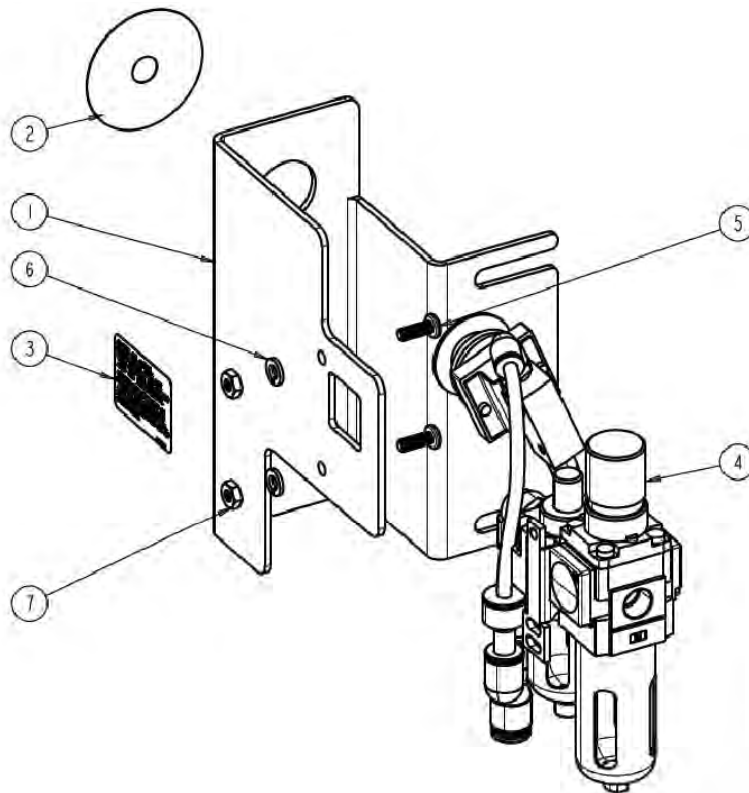


11.12 AIR AND HYDRAULICS - PARTS LIST

ITEM	QTY	DESCRIPTION	PART #
1	4	AIR CYLINDER	6-2434
2	4	ELBOW, 90 DEG, 4mm POLYTUBE TO M5	6-1504
3	50FT	5/32" POLYTUBE	8-0377
4	1	FLOW CONTROL	6-2436
5	1	ADAPTER, 1/8" NPT TO 1/4" JIC	6-0280
6	4FT	HOSE GUARD	6-0714
7	3	UNION TEE 4mm POLYTUBE	6-2433
8	1	HYDRAULIC HOSE, 16FT	6-1692
9	1	POWERPACK, 220V, 1PH	6-1936
	1	POWERPACK, 220V, 3PH	6-1165
10	1	ELBOW 90DEG, 9/16" SAE TO #6 JIC	6-0804

11.13 FILTER/REGULATOR/LUBRICATOR ASSEMBLY

COMPLETE ASSEMBLY PART # 2-3005

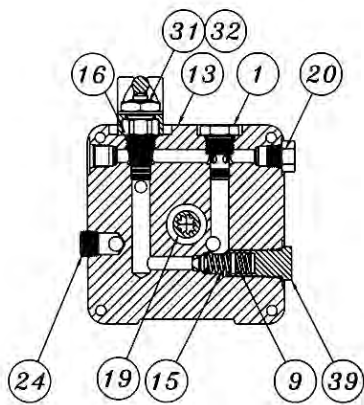
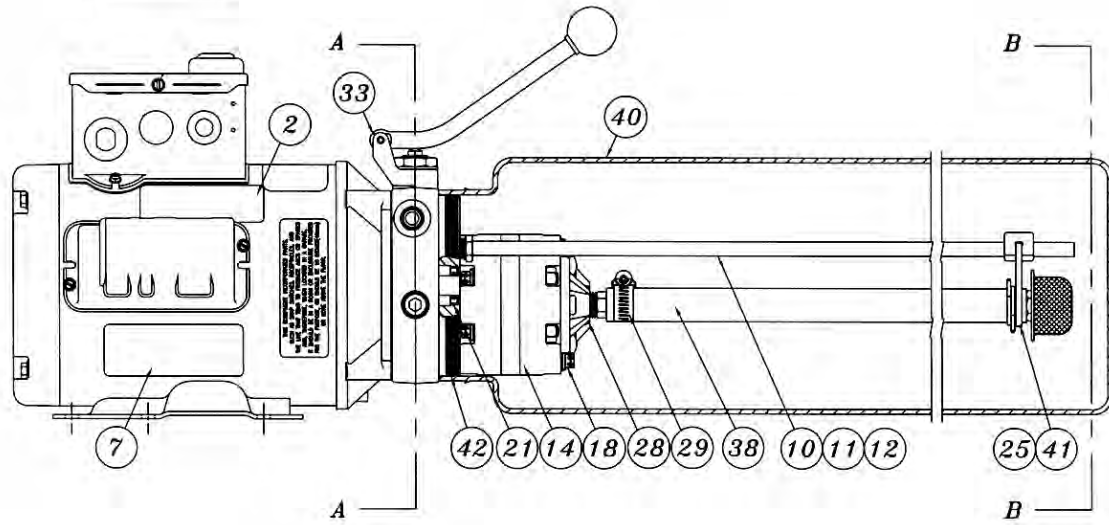
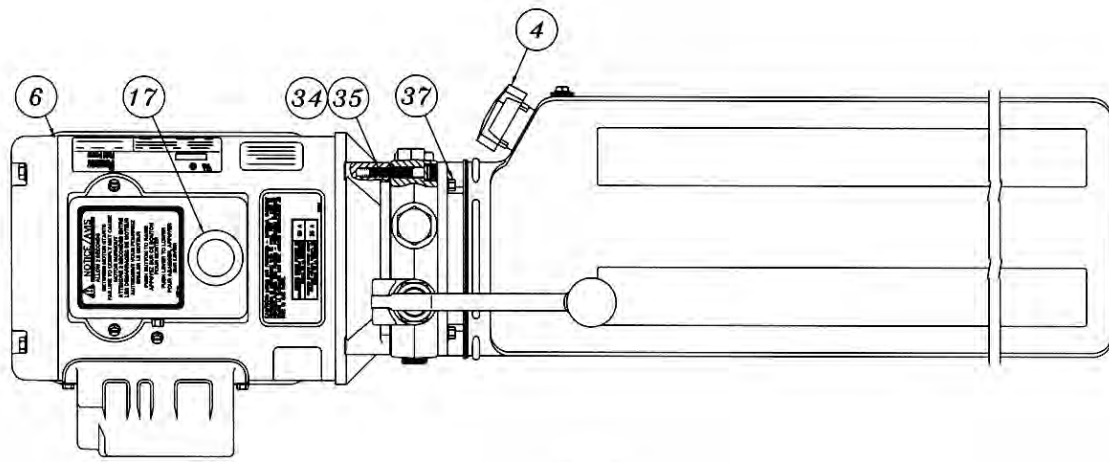


ITEM	QTY	DESCRIPTION	PART #
1	1	MOUNTING BRACKET, FRL	2-3022
2	1	DECAL, SAFETY RELEASE	6-3558
3	1	DECAL, OIL LEVER	6-3696
4	1	FRL ASSEMBLY W/ RELEASE BUTTON, contains:	2-3021
	1	FILTER/REGULATOR/LUBRICATOR ASS'Y	6-4142
	1	90 DEG. ELBOW, 1/4"NPT M - 3/8" POLY	6-3010
	1	AIR VALVE & PUSHBUTTON	6-1777
	1	SWIVEL ELBOW, 1/8"NPT M - 1/4" POLY	6-0709
	1	PUSHLOCK UNION, 3/8" POLY	6-4214
	1	REDUCER, 3/8" STEM - 1/4" POLY	6-3731
	1	PUSHLOCK UNION, 1/4" POLY	6-3202
	1	ADAPTER, 1/8" NPT M - 1/4" POLY	6-0708
5	2	PHMS, #12-24 X 5/8" LG	6-4145
6	2	LOCK WASHER, 1/4" ID	6-0056
7	2	HEX NUT, #12-24	6-4146

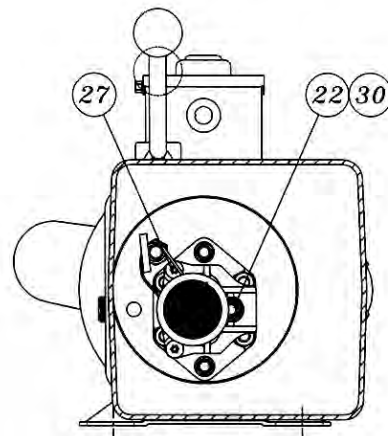
Items not shown:

8	1	Reducer, 1/4 stem - 5/32 polytube	6-3928
19	1	3/8 Pushlock Plug	6-4228

11.14 POWER PACK



A-A



B-B













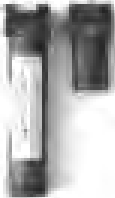
11.15 POWERPACK - PARTS LIST

#6-1936 (AB-1400) & #63125 208-230V/1PH/60Hz

#6-1165 (AD-1044) 208-230V/3PH/60Hz

ITEM	QTY.	DESCRIPTION	PART #
1	1	VALVE CARTRIDGE CHECK	6-1087
2	1	LABEL INSTALLATION AUTOHOIST	6-2136
4	1	BREATHER CAP & BLADDER	6-1376
6	1	MOTOR AC 208-230V. 2HP/1PH/60Hz, BLK	6-2139
	1	MOTOR AC 208-230V. 2HP/3PH/60Hz, BLK	6-1079
7	1	LABEL WARNING AUTOHOIST	6-2149
9	1	SPRING 0.480" x 0.063" x 0.42" COMP	6-2151
10	1	RETURN HOSE 3/8" OD x 21.5"	6-2152
11	1	COMPRESSION TUBE NUT	6-2153
12	1	COMPRESSION TUBE SLEEVE	6-2154
13	1	ENDHEAD UNIVERSAL AUTOHOIST	6-2155
14	1	PUMPASSY 3.1 CC/REV. SHORT SPLINE	6-1688
15	1	RELIEF ASSEMBLY FIXED 170 BAR	6-1317
16	1	VALVE CARTRIDGE RELEASE MANUAL	6-0880
17	1	WIRING ASSEMBLY AC 1PH FENNER	6-2156
	1	WIRING ASSEMBLY AC 3PH FENNER	6-0918
18	2	BOLT 5/16"-24 x 3.00" TORX G8	6-1090
19	1	COUPLING SAE 9T-20/40 1.260"	6-0774
20	1	PLUMBING PLUG 9/16" SAE	6-2157
21	1	SEAL SHAFT 0.500" x 1.00" x 0.25"	6-2158
22	1	WASHER 0.338" x 0.625" x 0.060" STEEL	6-2159
24	1	PLUMBING PLUG 3/8" NPT	6-2161
25	1	PLUMBING MAGNET	6-2162
27	2	SCREW TAPTITE M6 x 1.0 12MM TORX	6-2164
28	1	COVER ASSY SUCTION	6-2165
29	1	PLUMBING CLAMP HOSE ADJ. INLET	6-2166
30	1	BOLT 5/16"-18 x 1.00" SHCS	6-1392
31	1	NUT 3/4"-16 x 1" HEX x 0.250" STEEL	6-2167
32	1	WASHER 3/4" INT. TOOTH LOCK	6-2168
33	1	BRACKET – HANDLE ASSY REL BLACK	6-0776
34	4	BOLT M6 x 1.0 35MM SOC HD	6-2169
35	4	WASHER 1/4" LOCK HI-COLLAR	6-2170
37	4	BOLT #12-24 x 0.50' HEX WSHRHD	6-1091
38	1	PLUMBING ASSY INLET 17.24 (3)	6-0786
39	1	RELIEF VALVE CAP ASSEMBLY	6-1089
40	1	TANK PLASTIC 6.7 OS 22.50" BLK	6-1399
41	1	CABLE TIE 8" LONG WHITE	6-1846
42	1	O-RING 2-348 BUNA	6-0875

12. AVAILABLE ACCESSORIES

Hydraulic Jack Beams			
	Premium Air / Hydraulic Jack Beam		Standard Air / Hydraulic Jack Beam
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 - Stainless 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.