



INSTALLATION and OPERATION MANUAL



**12K 2 POST
EELR354A
(SYMMETRICAL)**

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



Snap-On Tools Corporation
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1 SAFETY AND OPERATING 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. Inspect lift daily. Do not operate if it malfunctions or problems have been encountered.
4. 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.
5. 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.
6. 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.
7. 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.
8. Some pickup trucks may require an optional truck adapter to clear running boards or other accessories.
NOTE: Always use all 4 arms to raise and support vehicle.
9. **Caution! Never work under the lift unless the mechanical safety locks are engaged.**
10. 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.
11. Always keep the lift area free of obstruction and debris. Grease and oil spills should always be cleaned up immediately.
12. Never raise vehicle with passengers inside.
13. Before lowering check area for any obstructions.
14. Before removing the vehicle from the lift area, position the arms to the drive-through position to prevent damage to the lift and /or vehicle.
15. 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).

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.

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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.

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ALI / WLSIA01

2 SPECIFICATIONS

Capacity:
 Arm Capacity:
 Overall Width:
 Width Between Columns:
 Drive-Thru Width:
 Overall Height (14ft Model):
 Under Bar Clearance (14ft Model):
 Height to Lowered Lift Pads:
 Height to Lift Pad (3" Adapter):
 Height to Lift Pad (6" Adapter):
 Retracted Arm Length:
 Extended Arm Length:
 Maximum Lifting Height (6" Adapter):
 Lift Time:
 Power Requirements (Standard):

12000 lbs.	5443 kg
3000 lbs	1361 kg
146"	3708 mm
120"	3048 mm
109"	2769 mm
168"	4267 mm
163"	4137 mm
5 ½"	140 mm
8 ¾"	220 mm
11 ½"	292 mm
34"	864 mm
52 ¾"	1340 mm
80"	2031 mm
55 seconds	
230 Volts AC, 1 Ph., 60Hz.	

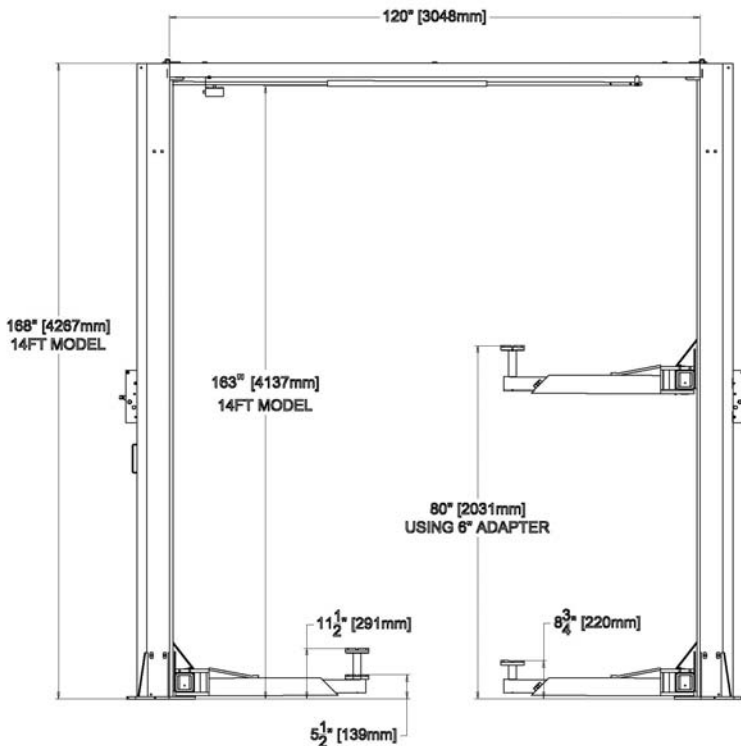


Figure 1 – Front View

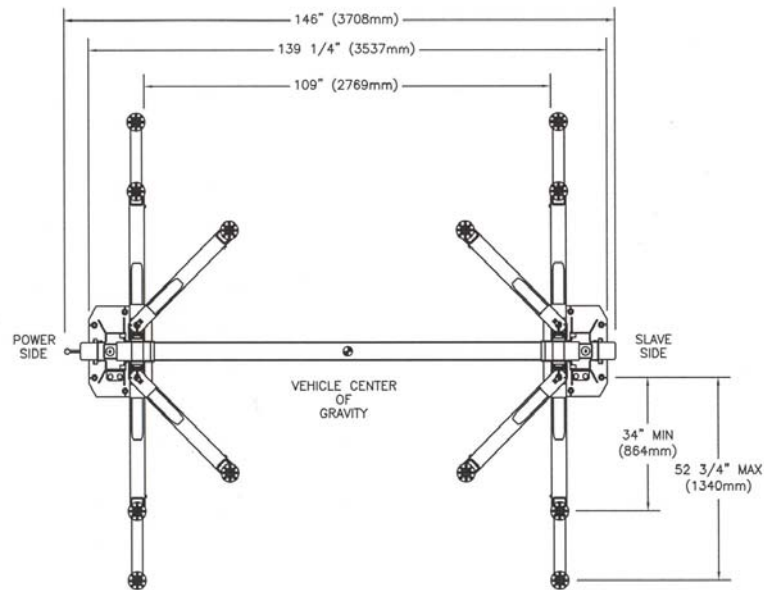


Figure 2 – Top View

3 CONTENTS

The complete lift is contained in two (2) packages:

1. The **main structural components** are packed in a steel frame.
2. The remaining parts are packed in an **accessory box**.

Main Structural Components includes:

- 1pc. - Power side tower and carriage assembly
- 1pc. - Slave side tower and carriage assembly
- 1pc. - Crossmember assembly
- 1pc. - Actuator Bar w/ foam

Accessory box contents:

- 4pcs. - Locking Arm Assembly w/arm pins
- 2pcs. - Safety Covers w/Decals
- 1pc. - Hardware Package w/Packing List
- 1pc. - Actuator Extension
- 1pc. - Actuator Mounting Bracket
- 1pc. - Power Pack
- 4pc. - Arm Restraint
- 4pc. - Stack Pad Assembly
- 4pc. - Stack Pad Adapter (3")
- 4pc. - Stack Pad Adapter (6")
- 1pc. - Safety Release Cable
- 1pc. - Hydraulic Hose (Long)
- 1pc. - Hydraulic Hose (Short)
- 2pcs. - Equalizing Cable w/Hex Nuts
- 1pc. - ALI manual "Lifting It Right"
- 1pc. - Automotive Lift Safety Tips
- 1pc. - Automotive Lift, Operation, Inspection and Maintenance manual
- 1pc. - "ALI" Quick Reference Guide
- 1pc. - Owner's manual
- 1pc. - Safety Shut-off Microswitch Assembly (Components)

4 INSTALLATION REQUIREMENTS AND TOOLS

4.1 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 four and a quarter inches (4¼") or 108 mm. Concrete must have a minimum strength of 3000 psi or 21 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.

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 REQUIRED

- a. 16ft. Measuring Tape
- b. Chalk Line
- c. Rotary Hammer Drill
- d. 3/4" diameter Masonry Drill Bit
- e. Hammer
- f. SAE Wrenches and Ratchet Set
- g. 2ft. Level
- h. 4ft. Level
- i. Crow Bar
- j. 12ft. Step Ladder
- k. Side Cutters
- l. Screwdrivers
- m. 4" x 4" Wooden Blocks (for unpacking)
- n. 4.5 gal. (18L) Hydraulic Fluid
- o. Impact Wrench
- p. Torque Wrench
- q. Bleed hose
- r. Wherever LOCTITE symbol is shown, apply LOCTITE #242 on required fasteners. If fasteners are removed reapply LOCTITE before re-installing.



5 INSTALLATION INSTRUCTIONS

When the lift arrives on site:

- Read the owner's manual and make sure the installation instructions are fully understood.
- Check for any freight damages.
- Check the contents of the accessory and hardware boxes to make sure no parts are missing.
- Gather all the tools listed above.

5.1 UNPACKING PROCEDURE

1. **Important!** Place the main structural components on wooden blocks so that the steel shipping frames can be removed.
2. Remove the plastic wrapping.
3. Remove the crossmember assembly, and the actuator bar.
4. Unbolt the steel shipping frames.
5. Lay each tower on the floor with the carriage side up.
6. Check the installation area for obstructions. (Lights, Heating Ducts, Ceiling, Floor Drains, etc.)

5.2 BAY LAYOUT

1. Prepare the bay by selecting the location of the lift relative to the walls.
2. Clear the installation area of all packaging materials to avoid trip hazards.
3. Measure midpoint of door.
4. Using measuring tape scribe two arcs, equal distance from the midpoint.
5. The centerline of the lift occurs between the intersection of the arcs and the midpoint of the door.

Note: Leave any additional room for any desired aisle or work area. Recommended minimum clearance around lift is three feet (3 ft) and above lift is four inches (4"). Ensure clearance conforms to local building and fire codes.

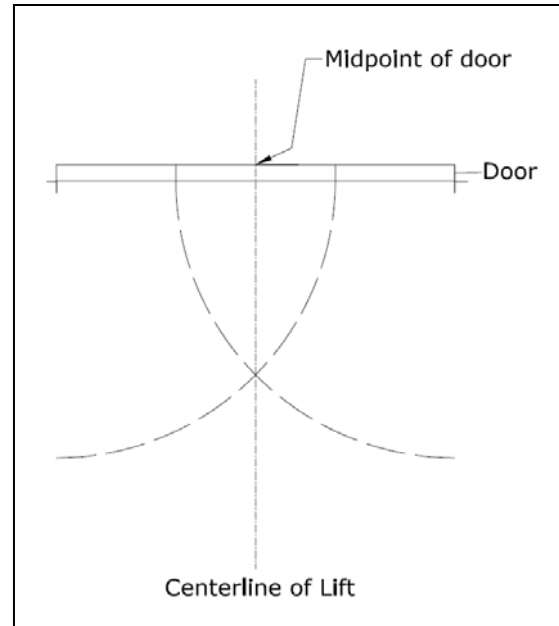


Figure 3. Chalk line

6. Measure the specified distance (126") to draw a second chalk line at 90° for locating the lift towers. Refer to Figure 3.
7. The lift is centered between the door and the walls of the area.

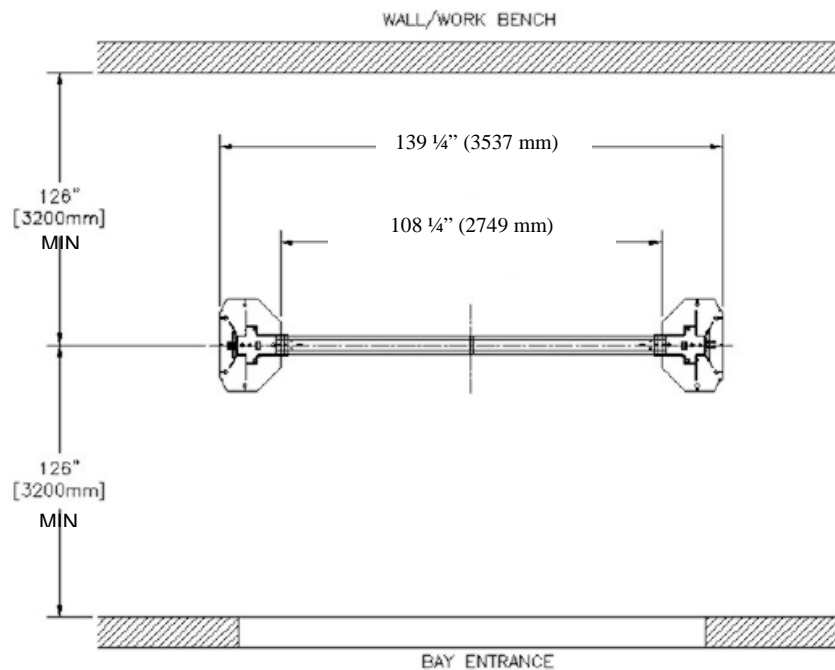


Figure 4. Bay Layout

5.3 TOWER POSITIONING AND SETUP

1. Install the safety pulley on each tower as shown in Figure 5.
2. Attach the safety pulley to the tower using the 3/8" x 5/8" LG. shoulder bolt, 5/16" lockwasher and 5/16" hex nut.

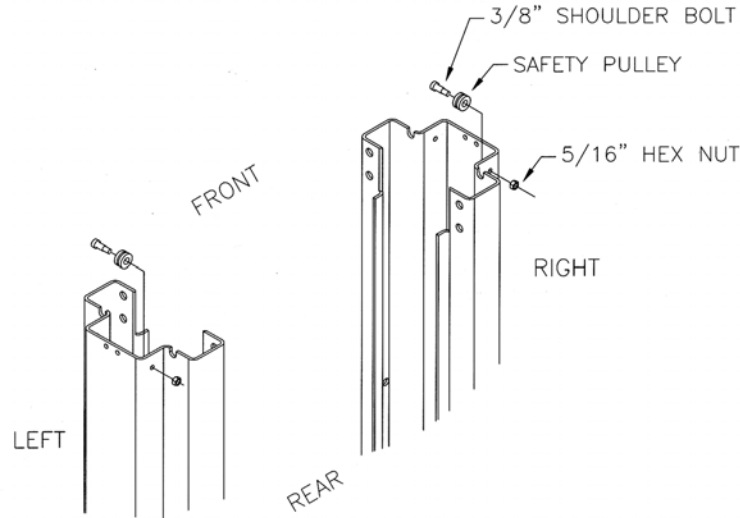


Figure 5 - Safety Release Pulley Installation

3. Locate the power side and slave side towers and position them as shown in Figure 4. Double check all the dimensions in the layout.
4. Using a stepladder, install the crossmember using eight (8) 1/2"-16UNC x 1 1/2" lg. hex head bolts, eight (8) 1/2" ID lock washers, eight (8) 1/2" hex nuts and eight (8) 1/2" flat washers. See Figure 6.
5. Check the towers to make sure they are located, and positioned in the correct location. Figure 4.

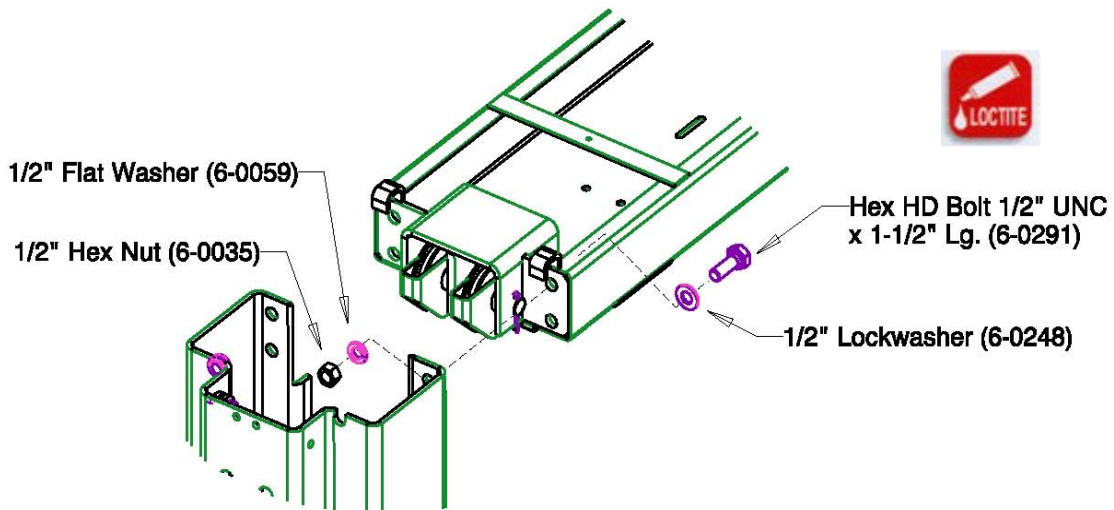


Figure 6 – Crossmember Assembly

5.4 SAFETY SHUT-OFF BAR INSTALLATION

Note: The safety shut off will disconnect the power to the power pack when an obstruction touches the padded bar or the carriages reach their maximum height. The safety shut off switch is factory pre-wired. Refer to **Figure 8**.

1. Attach the Actuator Mounting Bracket to the crossmember using one (1) 1/4"-NC x 1" lg. hex head bolt, one (1) 1/4"ID lockwasher, and one (1) 1/4" NC hex nut. The mounting bracket should be installed in one of center slots at either end of the crossmember. (**Figure 7**)

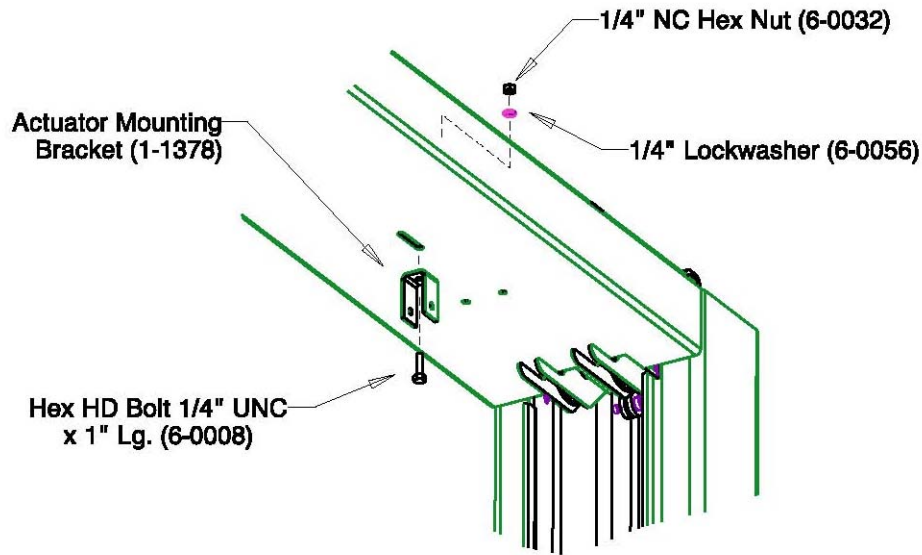


Figure 7: Actuator Mounting Bracket

2. Attach the Actuator Bar to the Actuator Mounting Bracket using one (1) 1/4" NC x 1 1/2" lg. hex head bolt, one (1) 1/4" lockwasher, and one (1) 1/4" NC hex nut. Orient the Actuator Bar so that the last hole (out of the set of 3) is used when mounting. (**Figure 8**)

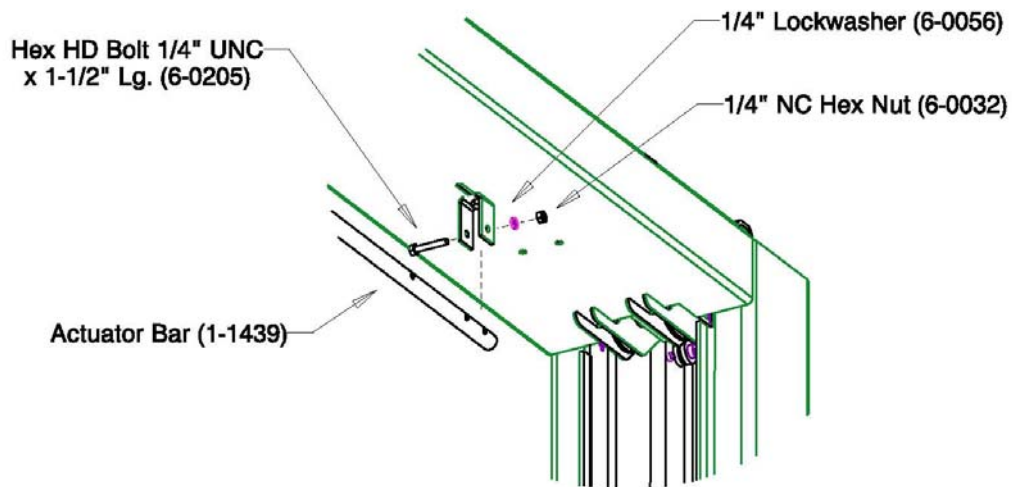


Figure 8: Actuator Bar Installation

- Slide the Microswitch Assembly over the far end of the Actuator Bar. Attach the Microswitch Assembly to the crossmember bar using two (2) 1/4" NC x 1" lg hex head bolts, two (2) 1/4" ID lockwashers, and two (2) 1/4" NC hex nuts.

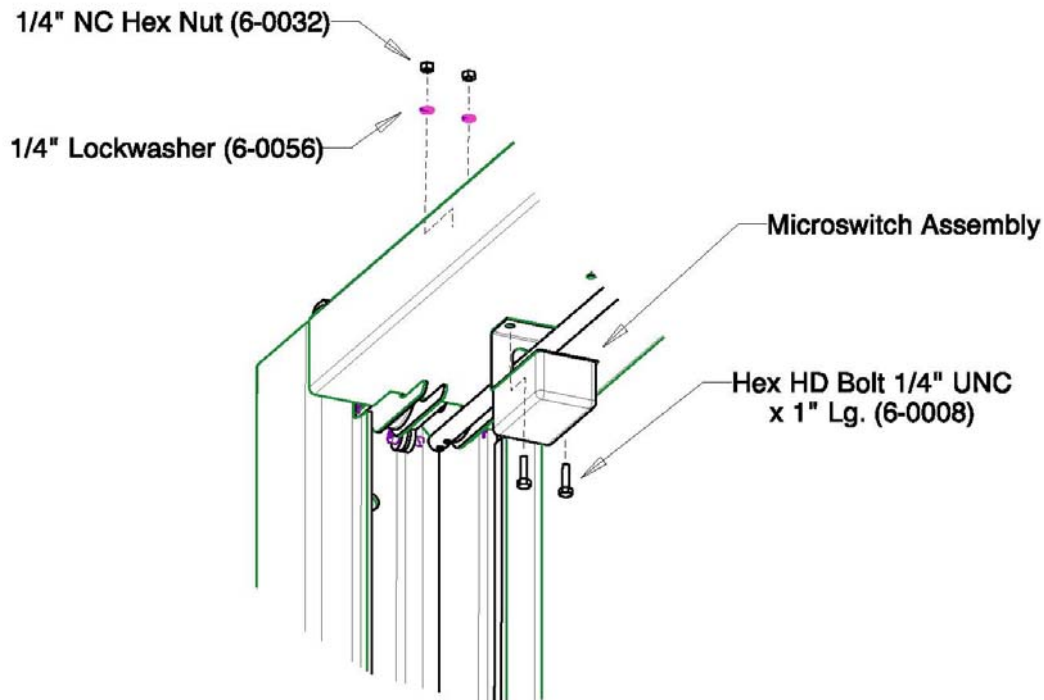


Figure 9: Mounting Microswitch

- Install the 90° degree conduit elbow to the actuator bar. The actuator extension should then be installed in the conduit elbow. Ensure the bolts in the elbow are fully tightened.

5.5 SAFETY RELEASE CABLE ROUTING AND ADJUSTMENT

The mechanical safety automatically engages. To release the mechanical safety, you must first raise the lift approximately 2" then pull the safety release lever down. This disengages the power side safety dog and activates the safety cable to release the slave side safety dog.

- Refer to **Figure 10** for safety release cable routing. The end with the collar is to be installed onto the slave side tower, while the loose end will be installed onto the power side tower with two (2) wire rope clamps.

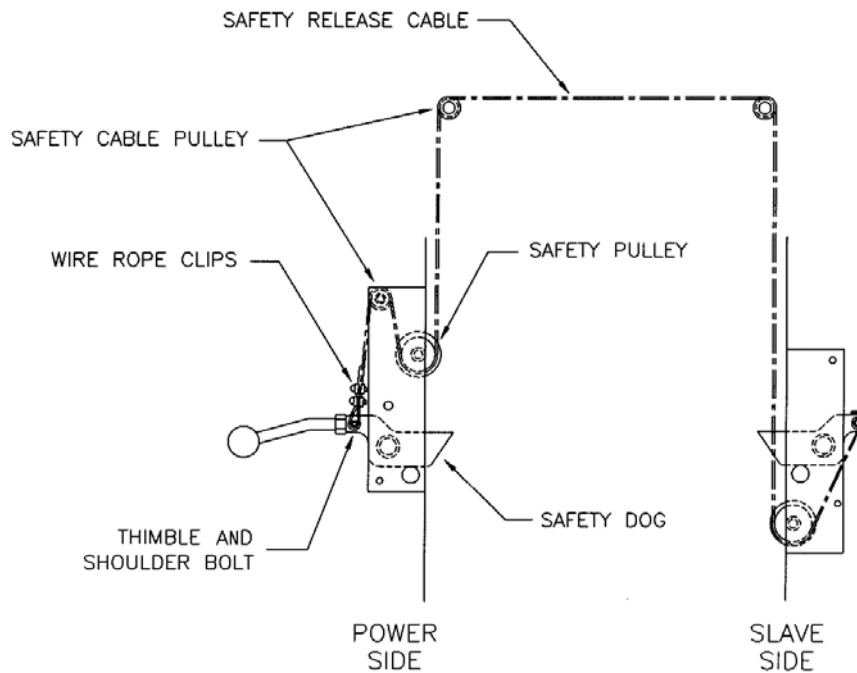


Figure 10 – Safety Release Cable Routing and Adjustment

2. Install the safety release handle onto the power side safety dog.
3. Start routing the safety release cable from the slave side of crossmember. Feed the cable over the small pulley then guide the cable down along the inside of the slave side tower. Pull the cable out through the opening in the back of the tower near the safety dog.
4. Guide the cable up under the large pulley towards the end of the safety dog. Remove the 3/8" x 1 1/2" shoulder bolt from the safety dog. Feed the shoulder bolt through the collar of the safety release cable and then replace the shoulder bolt securely to the safety dog.



NOTE: Make sure the shoulder bolt, 3/8" dia. x 1 1/2" lg. (6-0801), is lock tight to safety dog.

5. Repeat step 3 for the power side tower.
6. Guide the cable up under the large pulley and then over the small pulley towards the safety dog as shown in Error! Reference source not found.. Wrap the cable around the thimble (attached to the safety dog with a 3/8" x 1 1/2" lg. shoulder bolt) and then clamp it using two (2) wire rope clips. *Do not tighten fully at this stage.*
7. Adjust the cable length so that both safety dogs travel from full engagement position to full release position when the safety release handle is pulled.

Tighten both wire rope clips firmly when adjustment is completed.

5.6 POWER PACK INSTALLATION

1. Remove the **red** plastic cap located at the rear of the power pack, and install the "T" fitting located in the hardware kit.
2. Bolt power pack to the mounting bracket on the power side tower using four (4) 5/16" UNC x 1" LG. hex head bolts, four (4) 5/16" ID lock washers, four (4) 5/16" ID flat washers and four (4) 5/16" UNC hex nuts. Do not tighten.
3. Remove the filler cap from the powerpack and fill the reservoir with approximately 4.2 Gal. (16L) of ISO32 hydraulic oil (10 wt. hydraulic oil).
4. A **certified electrician** must connect power to the motor. The electrical diagram is provided, refer to **Figure 11**.

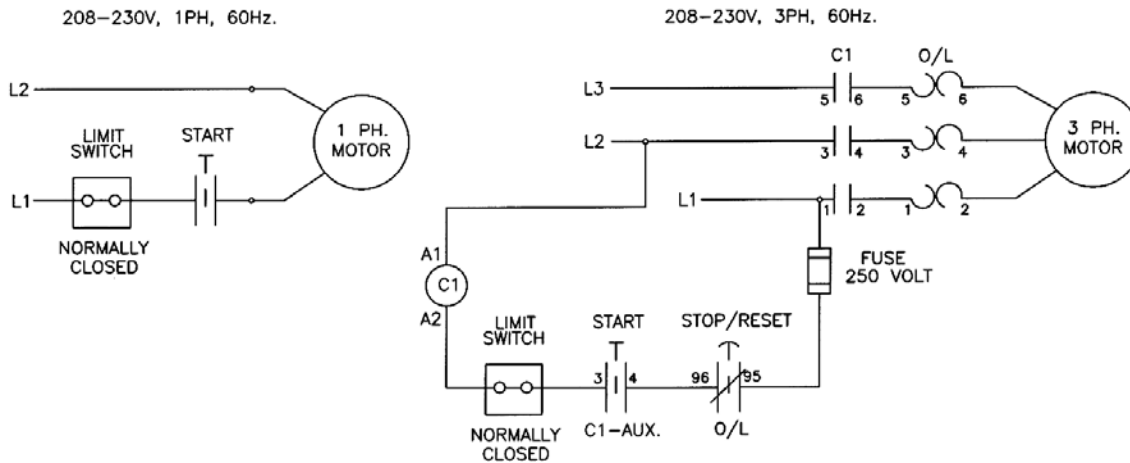


Figure 11 – Electrical Diagram

5.7 HYDRAULIC SYSTEM INSTALLATION

REFER TO HYDRAULIC PARTS LIST

1. Connect the straight end of the short hydraulic hose to the bottom port of the "T" fitting on the powerpack.
2. Remove the cap from the bottom of the power side cylinder and connect the other end of the short hydraulic hose.
3. Connect the straight end of the long hydraulic hose to the top port of the "T" fitting on the powerpack.

4. Loop the long hydraulic hose up the power side tower, across the overhead and down the slave side tower.
5. Remove the cap from the slave side cylinder and attach the other end of the long hydraulic hose.
6. The long hydraulic hose must be fixed to the towers using six (6) hose clamps (3 on each side). Screw the hose clamps into the weld nuts on the towers using 1/4" UNC x 3/8"lg. round head screws.
7. The long hydraulic hose must be fixed to the crossmember using two (2) hose clamps. Screw the hose clamps into the crossmember using #10 x 3/8" lg. self-threading screws.

5.8 HYDRAULIC SYSTEM BLEEDING

1. Crack the bleeder valve located at the top of both cylinders. (Approx. a ¼ turn)
2. Power up 2" – 3". You should hear air escaping around the bleeder valve. Repeat until oil is flowing out of the bleeder valve.
3. Tighten the bleed screw and lower the lift.

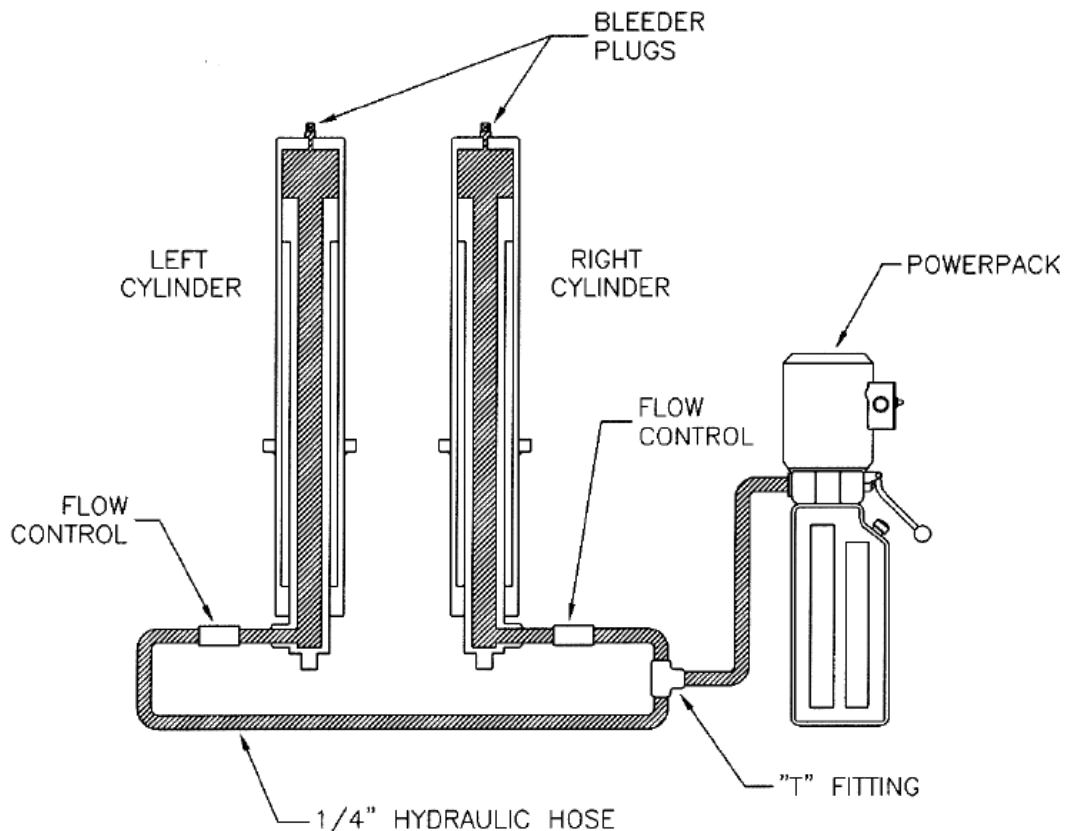


Figure 12: Powerpack installation

5.9 ROUTING OF EQUALIZATION CABLE

1. Move the carriages until they reach the first safety latch.
2. Remove equalizing cables from the accessory kit box, and locate the (8) ½"-13UNC nuts in the hardware kit box.
3. Equalizing cables are to be routed as shown in **Figure 13**.

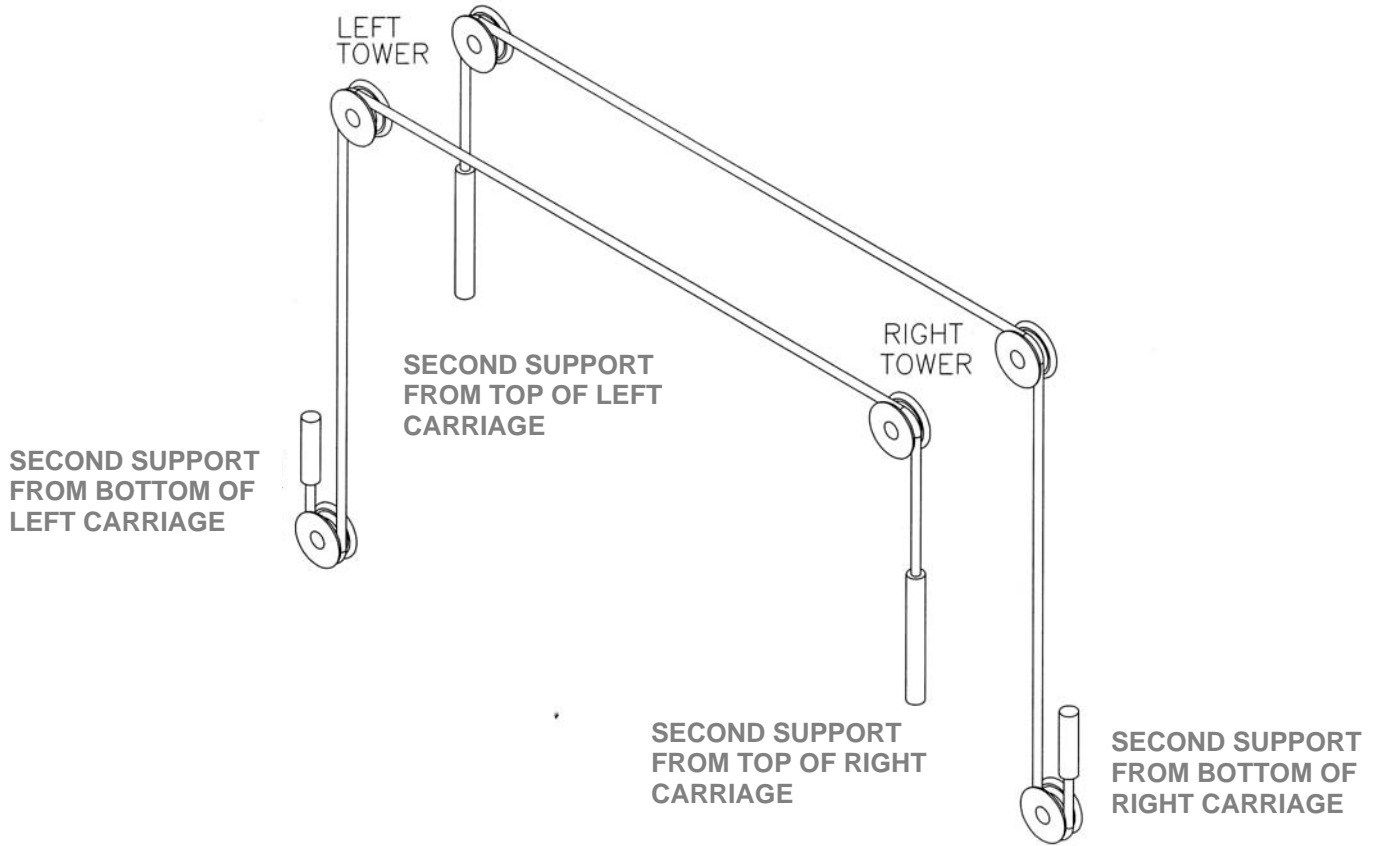
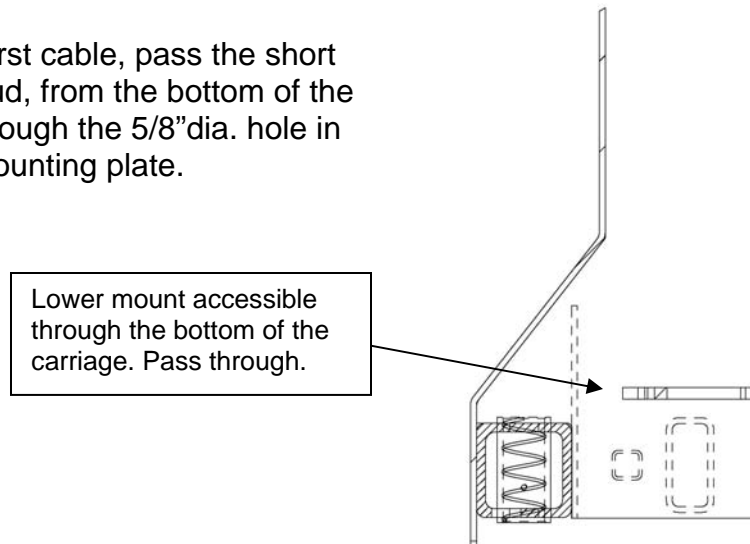
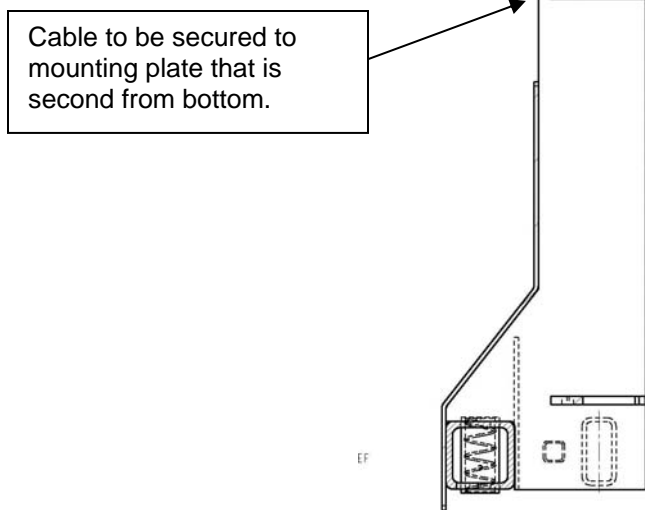


Figure 13: Cable Routing

4. Using the first cable, pass the short threaded stud, from the bottom of the carriage, through the 5/8" dia. hole in the lower mounting plate.



5. Feed the cable upwards until the stud comes through the top of the carriage. Thread the cable through the 5/8" dia. hole in the next mounting plate.



6. Thread a 1/2"-13UNC nut to the center of the stud, and then **firmly tighten** a second nut up against it using two wrenches. Pull the cable tight, through the bottom of the carriage.
7. At the bottom of the column, remove the hitch pin, pulley pin and pulley from the baseplate (**Figure 14**). Route equalizing cable around pulley and reassemble the pulley to the baseplate. **IMPORTANT – Hitch pin must be installed securely.**

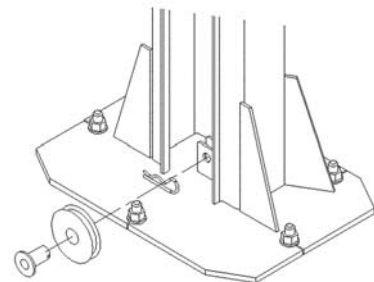


Figure 14: Pulley Pin

8. Route the cable up through the slotted part of the mounting plate from the bottom of the carriage. When routing the cable through the carriage, the cable must be run through the slots in **ALL** cable mounting brackets.
9. Route the cable, around the upper pulley at the top of the column, across the crossmember, around the top pulley on the other column and then down into the opposite carriage. Ensure that the cable is routed through the cable retainers.

10. Insert the threaded stud into the 5/8" dia. hole in the mounting bracket second from the top of the carriage. **(Figure 15).**

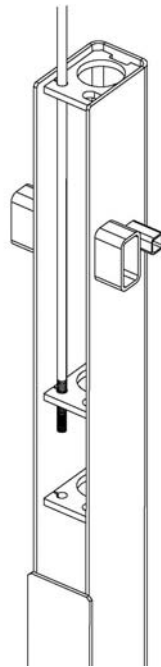


Figure 15: Cable routing

11. Use a wrench to hold the top of the threaded stud to prevent it from rotating. Hand tighten (2) 1/2"-13 UNC nuts onto the threaded stud enough to remove all visible cable slack. Repeat steps 2 to 5 for the other equalizing cable.
12. Using a wrench to hold the top of the threaded stud, to prevent it from rotating, tighten the first nut approximately 1 1/2" past the hand tightened position. Then **firmly tighten** the second nut against the first one to lock it in place. Repeat for the other cable.

5.10 ARM INSTALLATION

1. Remove the four (4) 5/16"-18UNC x 3/4"LG. hex head bolts that are holding the arm pins to the arm. Install the arms on the carriages.
2. Grease and insert arm pins. Align the notch on each arm pin with the tapped hole on the arm, and using the 5/16"-18UNC x 3/4"LG. hex head bolt removed in previous step, reinstall and tighten securely.



NOTE: Make sure the hex head bolts, 5/16" dia. x 3/4" lg. (6-0801), is lock tight into arms.

- Using two (2) 5/16"-18UNC x 1 ¼" LG. hex head bolts and two (2) 5/16" flatwashers, attach each arm restraint gear as shown in **Figure 16**.

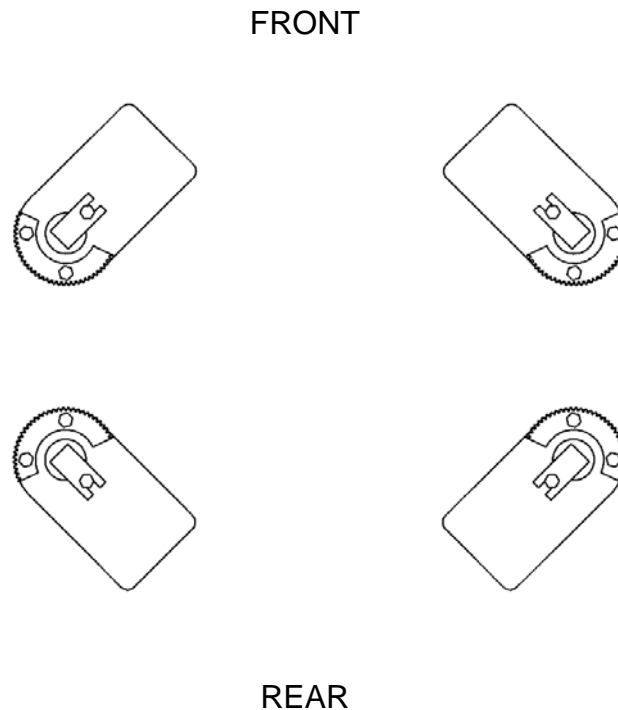


Figure 16 – Arm Installation

5.11 ARM RESTRAINT INSTALLATION

- Refer to **Figure 17 – Arm Restraint Installation**
- Loosen the two 5/16 hex bolts which secure the arm restraint gear to the formed upper ear.
- Insert arm restraint handle weldment through holes in carriage weldment. Arm restraint handle must pass through holes in top and bottom of carriage tube.
- Adjust arm restraint gear so that it engages smoothly through entire range of arm motion. Firmly tighten both 5/16 hex bolts.
- Repeat above steps for all arms.
- Lift arms approximately 30" off the ground.
- Slide arm restraint spring over outboard leg of arm restraint handle (leg which is nearest tower).

8. Apply spring retainer cap to the end of the leg which passes through arm restraint spring. Using a hammer, tap this retainer securely to arm lock leg.

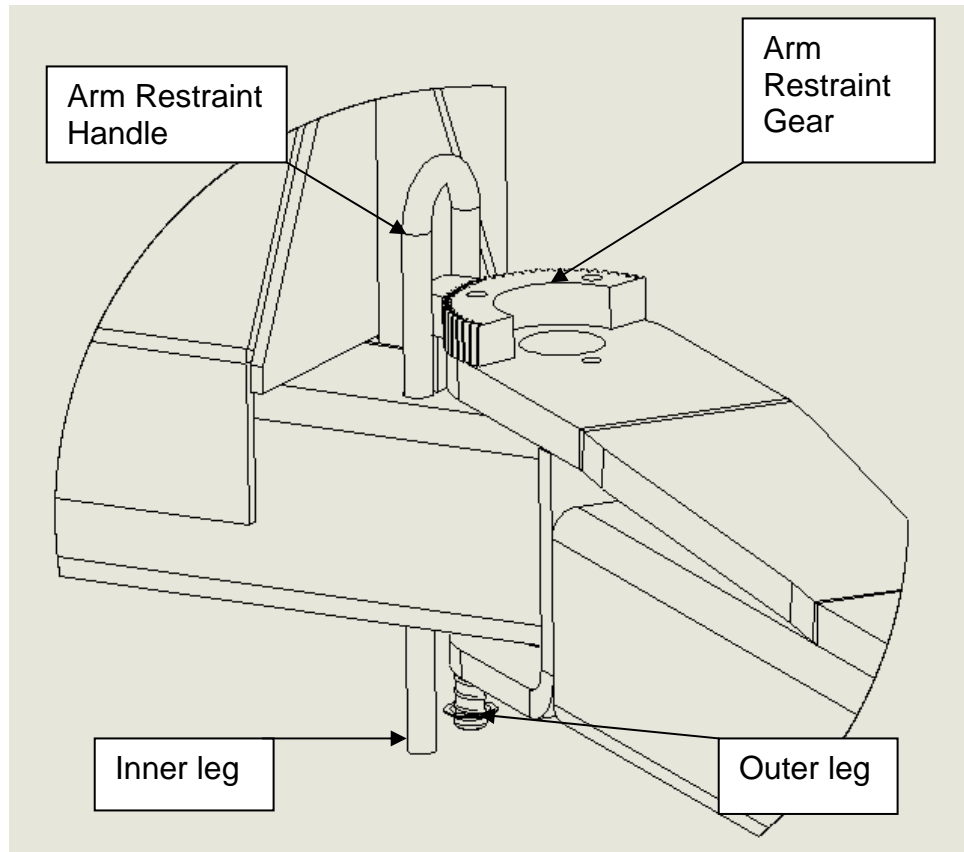


Figure 17 – Arm Restraint Installation

5.12 TOWER POSITIONING AND ANCHORING

WARNING! Failure to follow these instructions may cause an unsafe operating condition.

WARNING! Before proceeding with installation, review Section 4: Installation & Tools.

1. 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.
2. Using a 4ft. level on top of the crossmember, determine which column is higher. Refer to **Figure 18**.
2. Using a 2ft. level on the sides of the high column, ensure that the column is level in the vertical position (**Figure 19**). Use shims under the column baseplate to hold the column level. Ensure that the base plate is completely supported by shims including near the center where it does not contact the floor (**Figure 20**).

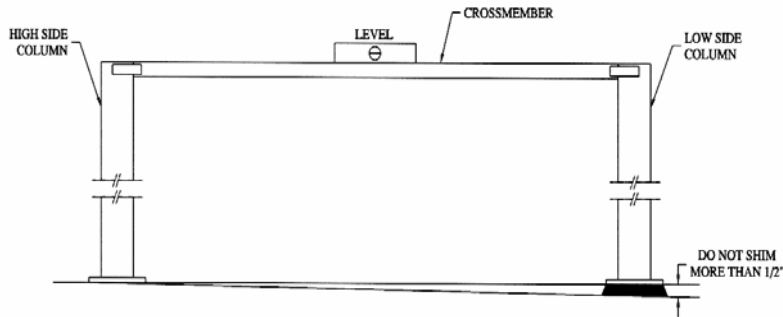


Figure 18

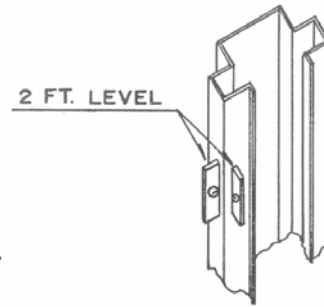


Figure 19

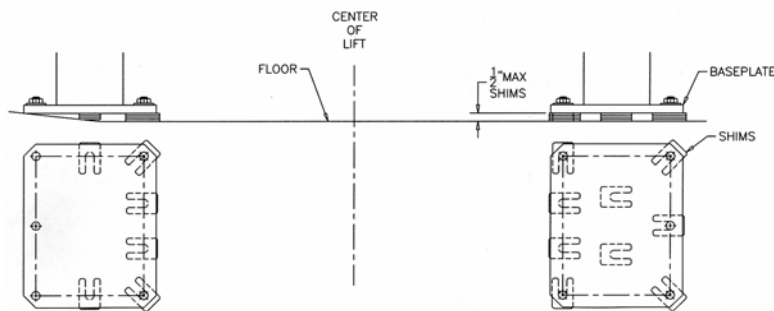


Figure 20 – Shims

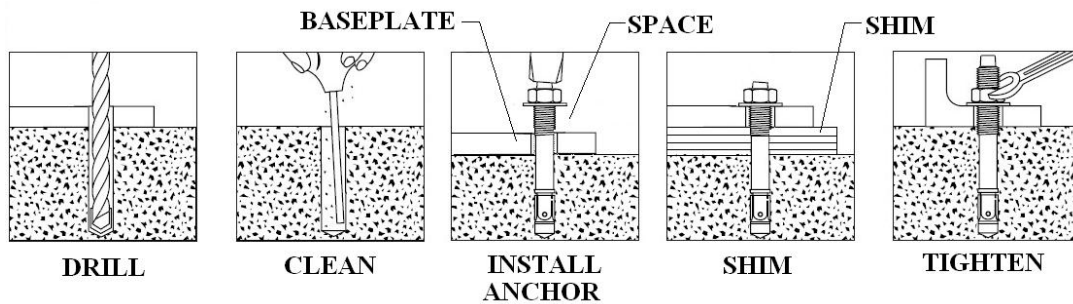


Figure 21 – Anchor Bolts

3. Refer to Bay Layout (**Figure 4**) to ensure that the column is still in the proper position. Using a rotary hammer drill with a 3/4" masonry drill bit and using the tower baseplate as a template, drill holes through the concrete floor on the high side column (In case longer anchors are required, supplied anchors can be hammered through concrete). Make sure that the 3/4" masonry drill is in good condition (**Figure 21**).
4. Carefully clean out drilling dust from the anchor holes. Hammer in the anchor bolts until they make contact with the baseplate (**Figure 21**). Hand tighten all anchor bolts.

5. Check the distance from the top of the anchor to the floor. If this dimension exceeds $2\frac{1}{4}$ " due to floor slope, **DO NOT** use the supplied anchors. Longer anchor must be used (see #1 above).
6. Reconfirm that the column is level front to rear and side to side (**Figure 19**). Add or remove shims as required.

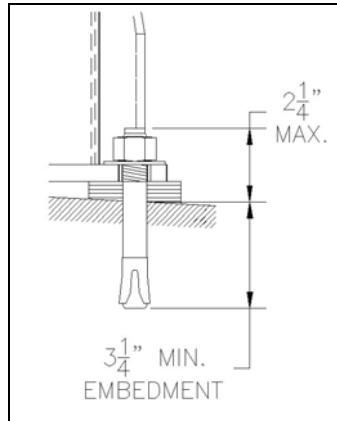


Figure 22. Anchor depth

NOTE:

The $\frac{3}{4}$ " \times $5\frac{1}{2}$ " lg. wedge anchor bolts supplied must have a minimum embedment of $3\frac{1}{4}$ " into concrete floor.

7. Torque all anchor bolts to 150 ft-lbs. (203 Nm), continually checking that the column is level as you proceed. If anchor bolts do not tighten to 150 ft-lbs. OR project more than $2\frac{1}{4}$ " above the concrete surface (**Figure 22**), the concrete should be replaced by an appropriate concrete pad. (*Consult Product Manufacturer / Supplier for further details*).

5.13 SHIMMING OF THE REMAINING TOWER

1. Using a 4ft. level on top of the crossmember (**Figure 18**) and a 2ft. level on the low side column (**Figure 19**), shim underneath the baseplate until the crossmember and column are level. Ensure that the baseplate is completely supported by shims including near the center where it does not contact the floor (**Figure 20**).
2. Refer to Bay Layout (**Figure 4**) to ensure that the column is still in the proper position. Using a rotary hammer drill with a $\frac{3}{4}$ " masonry drill bit and using the tower baseplate as a template, drill holes through the concrete floor on the low side column (In case longer anchors are required, supplied anchors can be hammered through concrete). Make sure that the $\frac{3}{4}$ " masonry drill is in good condition (**Figure 21**).
3. Carefully clean out drilling dust from the anchor holes. Hammer in the anchor bolts until they make contact with the baseplate (**Figure 21**). Hand tighten all anchor bolts.
4. Check the distance from the top of the anchor to the floor. If this dimension exceeds $2\frac{1}{4}$ " due to floor slope, **DO NOT** use the supplied anchors. Longer anchor must be used.

5. Reconfirm that the column is level front to rear and side to side (**Figure 1**). Add or remove shims as required.
6. Torque all anchor bolts to 150 ft-lbs. (203 Nm), continually checking that the crossmember and column are level as you proceed. If anchor bolts do not tighten to 150 ft-lbs. OR project more than 2¼" above the concrete surface (**Figure 21**), the concrete should be replaced by an appropriate concrete pad. (*Consult Product Manufacturer / Supplier for further details*).
7. Verify that the entire lift is level both horizontally and vertically to ensure optimum lifting performance. **NOTE: Perform a monthly inspection and torque all anchor bolts to 150 ft-lbs. (203 Nm).**

5.14 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. Ensure Customer Care Kit is complete and given to operator. _____
 - a. Operation Manual _____
 - b. ANSI / ALI Lift It Right Manual _____
 - c. ANSI / ALI Safety Tip Card _____
 - d. ANSI / ALI ALIS Safety Requirements for Installation and Service of Automotive Lifts _____
 - e. ANSI / ALI Quick Reference Guide _____
14. Train end user on operation of lift. _____

5.15 OPERATION TEST WITH VEHICLE

1. Lower lift to ground.
2. Drive vehicle on to lift and locate the arms as per the “Lift it Right” manual.
3. Raise lift to and lower onto 3-4 lock positions during full rise to ensure all locks are working correctly.
4. Re-adjust cables if necessary while vehicle is on.
5. Check lowering speed and smooth decent rate.
6. Lower lift to ground 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

6 LIFT MAINTENANCE GUIDLINES

6.1 SAFETY INSTRUCTIONS

Read operating and safety manuals before using any lift.
Do not operate a lift that has been damaged or is in disrepair.
Proper inspection and maintenance is necessary for safe operation.

6.2 PERIODIC MAINTENANCE

DAILY:

1. Check all hydraulic lines and fittings for pinch points, damage, cracks or leaks.
3. Check all electrical wiring for pinch points, cracks or damage.
4. Check all moving parts for uneven or excessive wear.
5. Repair or replace all damaged, defective, worn or broken components immediately.
6. Check the telescopic arms for movement. Clean any grease or oil from the lifting adapters.
7. Raise and lower the lift at the beginning of each shift, without a vehicle on, to verify the lift is leveled and operating properly.

EVERY TWO MONTHS:

1. Clean and re-grease slide block channels inside of both columns.
2. Grease arm pins.
3. Lubricate safety dogs and check safety release cable adjustment.
4. Check arm restraints and lubricate.
5. Check anchor bolts and re-torque if required.
6. Check Carriage Stop Block bolts for tightness.

EVERY FOUR MONTHS:

1. Dismantle and clean inner arms.
2. Lubricate cable pulleys.
3. Check equalizing cable adjustment.

EVERY YEAR:

1. Inspect lift as per Automotive Lift Operation, Inspection and Maintenance (ALOIM).

EVERY TWO YEARS:



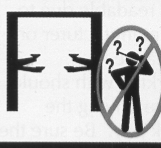


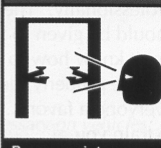


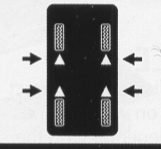
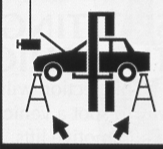


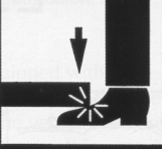
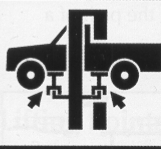
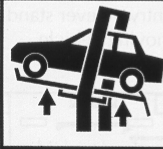
1. Change hydraulic fluid.

LUBRICATION:

Where grease is required	>	multi-purpose lithium grease
Where lubricating oil is required	>	multi-purpose SAE 30 lubricating oil
Where hydraulic oil is required	>	ISO 32 10W - non detergent
hydraulic oil		

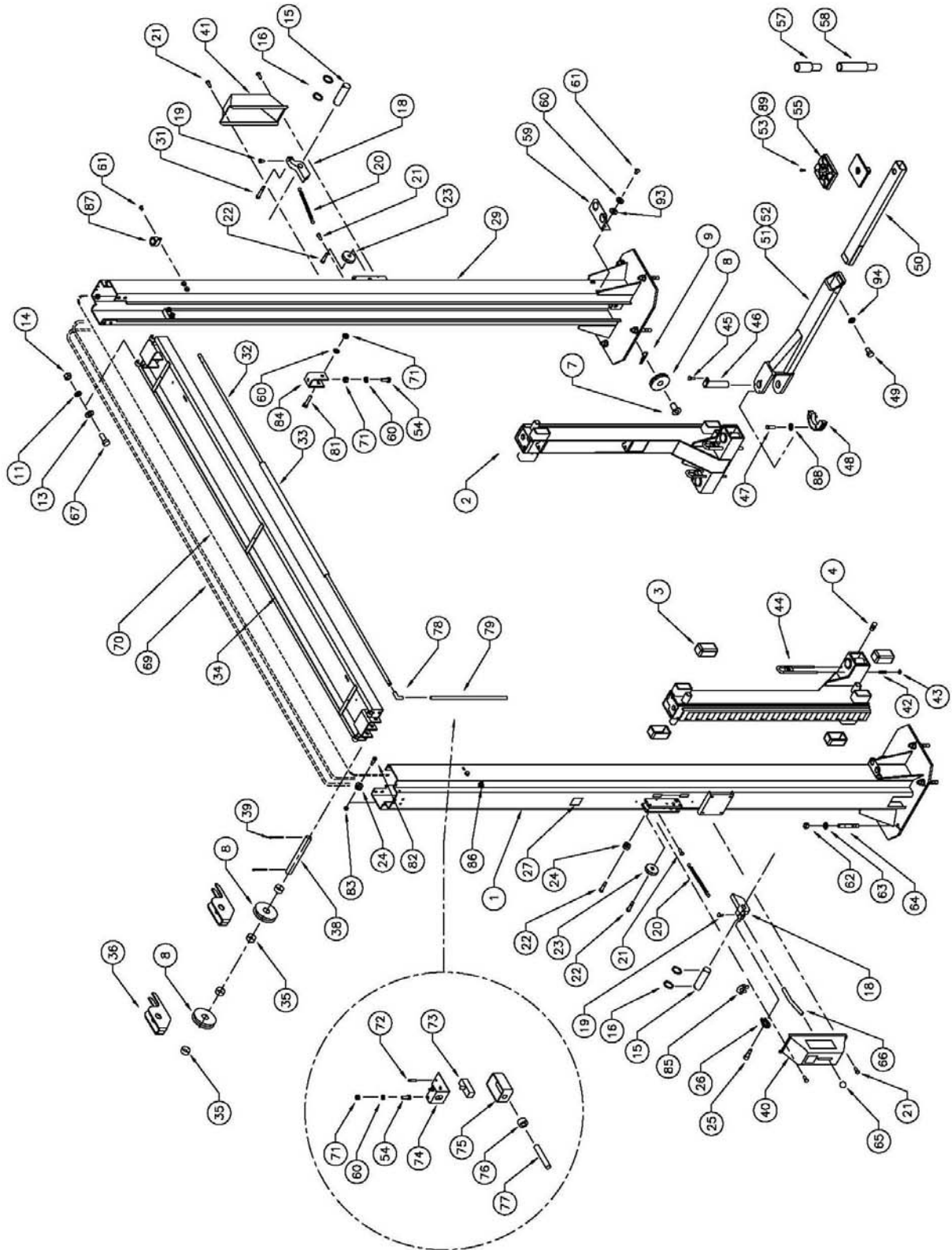
NOTE: If lift locks while in the fully raised position this will indicate that the hydraulic system has not been inspected or maintained as recommended. This is a safety back-up system. If you are unclear call your local representative immediately.

7 SAFETY AWARENESS - AUTOMOTIVE LIFT INSTITUTE (ALI)

<p>⚠ WARNING</p>  <p>Clear area if vehicle is in danger of falling.</p>	<p>⚠ WARNING</p>  <p>Position vehicle with center of gravity midway between adapters.</p>	<p>⚠ CAUTION</p>  <p>Lift to be used by trained operator only.</p>	<p>⚠ CAUTION</p>  <p>Authorized personnel only in lift area.</p>	<p>SAFETY INSTRUCTIONS</p>  <p>Read operating and safety manuals before using lift.</p>	<p>SAFETY INSTRUCTIONS</p>  <p>Proper maintenance and inspection is necessary for safe operation.</p>
<p>⚠ WARNING</p>  <p>Remain clear of lift when raising or lowering vehicle.</p>	<p>⚠ WARNING</p>  <p>Avoid excessive rocking of vehicle while on lift.</p>	<p>⚠ CAUTION</p>  <p>Use vehicle manufacturer's lift points.</p>	<p>⚠ CAUTION</p>  <p>Always use safety stands when removing or installing heavy components.</p>	<p>SAFETY INSTRUCTIONS</p>  <p>Do not operate a damaged lift.</p>	<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, P.O. Box 33116, Indianapolis, FL 32903-3116. They are protected by copyright. Set of labels may be obtained from ALI or its member companies.</p> <p>© 1982 by ALI, Inc. ALI9L1014</p>
<p>⚠ WARNING</p>  <p>Do not override self-closing lift controls.</p>	<p>⚠ WARNING</p>  <p>Keep feet clear of lift while lowering.</p>	<p>⚠ CAUTION</p>  <p>Use height extenders when necessary to ensure good contact.</p>	<p>⚠ CAUTION</p>  <p>Auxiliary adapters may reduce load capacity.</p>	<p><i>Warning Labels for 2-post surface mounted lifts. Daily review of these Safety Messages and Warnings is suggested.</i></p>	

8 PARTS MANUAL

8.1 LIFT ASSEMBLY

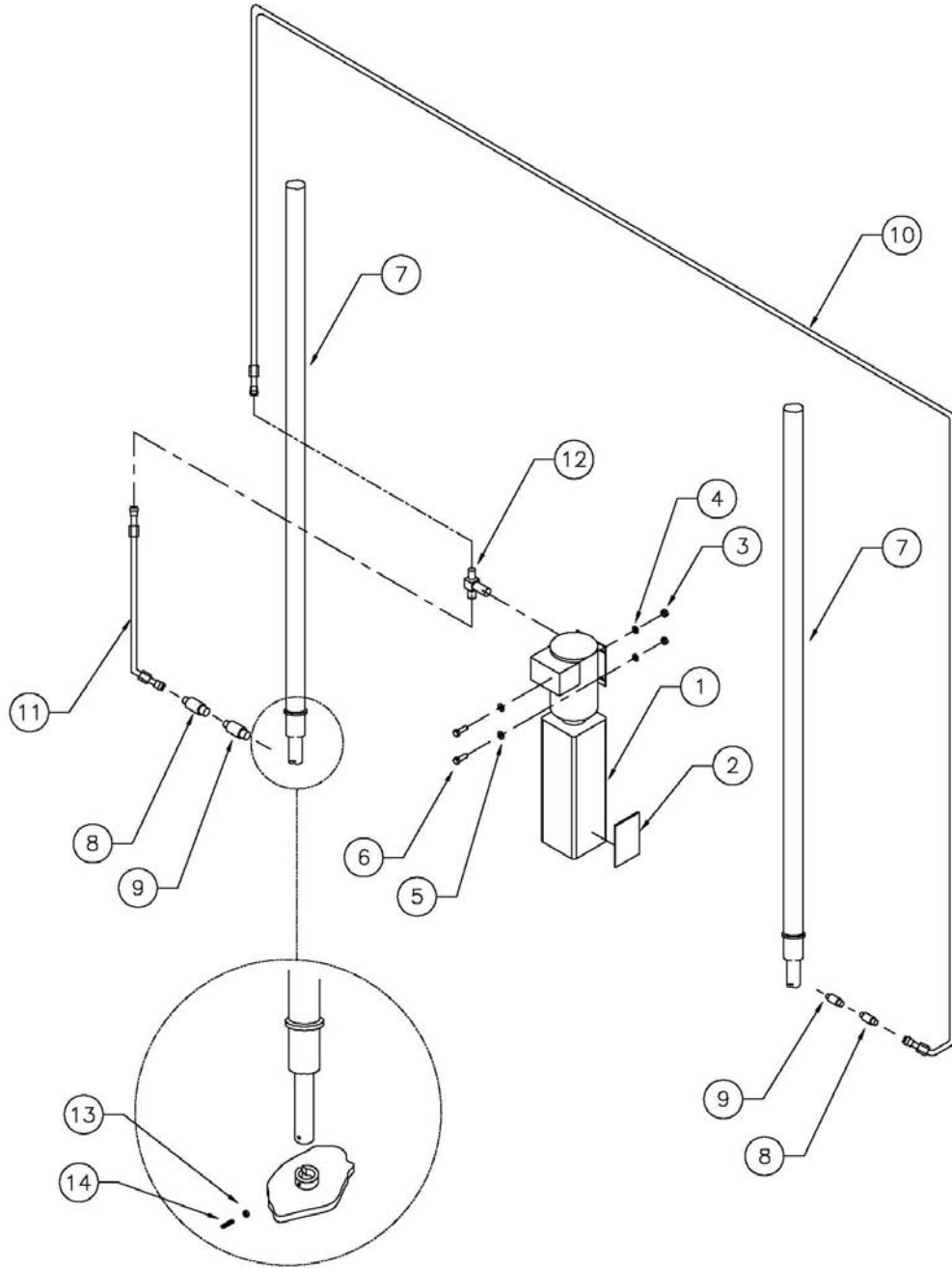


8.2 LIFT ASSEMBLY PARTS LIST

ITEM	QTY	DESCRIPTION	PART #
1	1	TOWER WELDMENT, POWER SIDE	4-1201
2	2	CARRIAGE WELDMENT	4-1170
3	8	GLIDE BEARING	2-0772
4	4	GREASE NIPPLE	6-0000
7	2	PIN, CABLE EQUALIZATION	1-1887
8	6	2-POST PULLEY	1-1898
9	2	HITCH PIN, 1/8" DIA	6-1841
11	8	LOCKWASHER, 1/2"ID	6-0059
13	8	FLAT WASHER, 1/2"ID SAE	6-0248
14	16	HEX NUT, 1/2"-13UNC	6-0035
15	2	SAFETY PIN	1-2337
16	4	SNAP RING 3/4" EXT	6-2445
18	2	SAFETY DOG WELDMENT, POWER SIDE	2-1901
19	4	SELF TAPPING SCREW, #10 X 3/8" LG.	6-0169
20	2	SAFETY SPRING	1-1115
21	6	SELF TAPPING SCREW, #12 x 1/2"LG.	6-1134
22	3	SHOULDER BOLT, 3/8"DIA. x 1"LG.	6-0206
23	2	SAFETY PULLEY	1-0415
24	3	SAFETY CABLE PULLEY	1-1116
25	1	SHOULDER BOLT, 3/8" X 1 1/2" LG.	6-0801
26	1	THIMBLE, 5/32"	6-2074
27	1	CAPACITY DECAL	6-1764
29	1	TOWER WELDMENT, SLAVE SIDE	4-1202
31	1	SHOULDER BOLT, 3/8"DIA. x 1 1/2"LG.	6-0801
32	1	ACTUATOR BAR	1-1439
33	1	FOAM GUARD	6-1404
34	1	CROSSMEMBER WELDMENT	2-2042
35	8	CROSSMEMBER PULLEY PIPE, 1/2"LG.	1-1623
36	2	CABLE RETAINER	1-3493
38	2	CROSSMEMBER PULLEY SHAFT	1-2669
39	4	COTTER PIN, 1/8" X 1 1/2" LG.	6-0978
40	1	SAFETY COVER cw/DECALS, POWER SIDE	0-0204
41	1	SAFETY COVER cw/DECALS, SLAVE SIDE	0-0203
42	4	ARM LOCK SPRING	1-2942
43	4	SPRING RETAINER CAP	6-3086
44	4	LOCK HANDLE WELDMENT	1-2914
45	4	HEX BOLT, 5/16"-18UNC x 3/4" LG.	6-0423
46	4	ARM PIN	2-2032
47	8	HEX BOLT, 5/16"-18UNC x 1 1/4" LG.	6-2059
48	4	ARM RESTRAINT GEAR	1-2618
49	4	HEX BOLT, 3/8"-UNC x 3/4" LG.	6-0030
50	4	INNER ARM WELDMENT	2-2030

ITEM	QTY	DESCRIPTION	PART #
51	4	OUTER ARM WELDMENT	3-0882
52	4	LOCKING ARM ASSEMBLY cw/ARM RESTRAINT PIN	4-1058
53	4	STACK PAD ASSEMBLY	1-3278
54	1	HEX BOLT, 1/4"-20UNC x 3/4" LG.	6-0178
55	4	RUBBER PAD	3-0872
57	4	STACK PAD ADAPTER, 3"	1-3280
58	4	STACK PAD ADAPTER, 6"	2-1580
59	2	STACK PAD ADAPTER HOLDER	1-2012
60	10	LOCKWASHER, 1/4" ID	6-0056
61	10	ROUND HEAD SCREW, 1/4"-20UNC x 3/8" LG.	6-1353
62	10	HEX NUT, 3/4"-10UNC	6-0737
63	10	FLAT WASHER, 3/4"ID	6-0738
64	10	WEDGE ANCHOR, 3/4"-10UNC x 5 1/2"LG.	6-1379
65	1	PLASTIC KNOB	6-1135
66	1	SAFETY RELEASE HANDLE	1-1113
67	8	HEX BOLT, 1/2"-13UNC x 1 1/2" LG.	6-0291
69	2	EQUALIZING CABLE	1-3291
70	1	SAFETY RELEASE CABLE	1-2701
71	7	HEX HD. NUT 1/4"NC	6-0032
72	2	6/32 SCREW (ELECTRICAL BOX)	6-1466
73	1	MICROSWITCH	6-0916
74	1	LIMIT SWITCH MTG. BRACKET	2-1143
75	1	ELECTRICAL UTILITY BOX	6-1403
76	1	CABLE CONNECTOR	6-1133
77	13 3/4 FT	ELEC. CABLE 12/3 (14FT MODEL)	8-0030
78	1	ACTUATOR EXTENSION	1-3554
79	1	90° ELBOW, 1/2" CONDUIT	6-2889
81	1	HEX HD. BOLT 1/4"NC x 1 1/2"LG.	6-0205
82	2	SHOULDER BOLT, 3/8"DIA. x 5/8"LG.	6-0069
83	2	HEX NUT, 5/16"-18UNC	6-0294
84	1	ACTUATOR MTG. BRACKET	1-1378
85	2	WIRE ROPE CLIP, 1/16"	6-2060
86	3	ELECTRICAL CABLE CLIP, 5/8" ID	6-1759
87	6	TUBE CLAMP, 1/2"	6-1547
88	8	FLATWASHER, 5/16"	6-0295
89	4	ALLEN HEX HD SCREW 1/4"	6-1086
93	4	1/4" FLAT WASHER SAE	6-0060
94	4	LOCKWASHER 3/8" ID	6-0058
95	2	HEX BOLT, 1/4"-20UNC x 1" LG.	6-0008

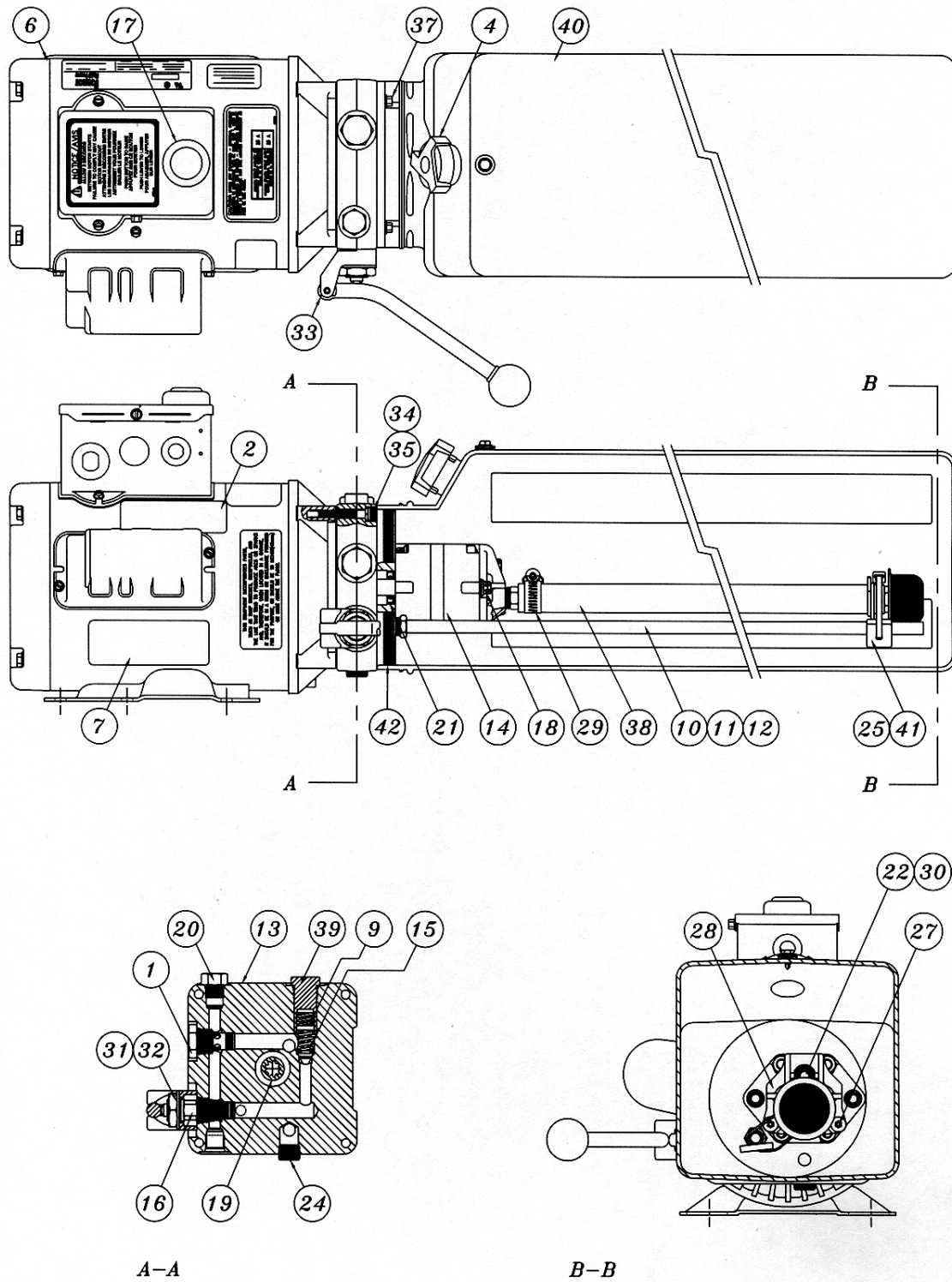
8.3 HYDRAULIC SYSTEM



8.4 HYDRAULIC SYSTEM PARTS LIST

ITEM	QTY	DESCRIPTION	PART #
1	1	POWER PACK, 220V/1PH	6-3647
2	1	“LIFT OPERATION” DECAL	6-3039
3	4	HEX NUT, 5/16”-18UNC	6-0294
4	4	LOCK WASHER, 5/16”I.D.	6-0674
5	4	FLAT WASHER, 5/16”I.D.	6-0295
6	4	HEX BOLT, 5/16”-18UNCx1”LG.	6-0293
7	2	CYLINDER ASSEMBLY	2-2272
8	2	FLOW CONTROL	6-3781
9	2	MALE NIPPLE	6-2095
10	2	HYDRAULIC HOSE (LONG)	1-2673
11	2	HYDRAULIC HOSE (SHORT)	2-1230
12	1	BRANCH “T”	6-1506
13	2	HEX NUT 3/8”-16 UNC	6-3119
14	2	SET SCREW 3/8”-16 x 1” LG	6-3061
	*	SEAL KIT	6-3395

8.5 POWER PACK:






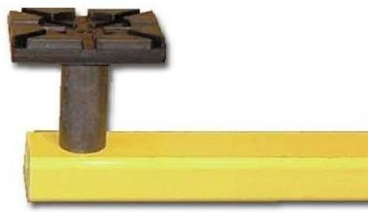







8.6 POWER PACK PARTS LIST:

#6-3647 (AB-6748) 208-230V/1PH/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, ELEC 208-230V 60Hz/1PH/2HP 3450RPM	6-3699
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"	6-3700
11	1	COMPRESSION TUBE NUT	6-2153
12	1	COMPRESSION TUBE SLEEVE	6-2154
13	1	ENDHEAD UNIVERSAL AUTOHOIST	6-3701
14	1	PUMPASSY 2.5 CC/REV. SHORT SPLINE	6-3702
15	1	RELIEF ASSEMBLY FIXED 190 BAR	6-3703
16	1	VALVE CARTRIDGE RELEASE MANUAL	6-0880
17	1	WIRING ASSEMBLY AC 1PH FENNER	6-2473
18	2	BOLT 5/16"-24 x 3.00" TORX G8	6-3704
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	6-3705
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)	6-3706
39	1	RELIEF VALVE CAP ASSEMBLY	6-1089
40	1	TANK PLASTIC 6.7 OS 22.50" BLK	6-3707
41	1	CABLE TIE 8" LONG WHITE	6-1846
42	1	O-RING 2-348 BUNA	6-0875

9 AVAILABLE ACCESSORIES

Flip Pad Accessories					
	Poly Pad Adapter (set of 4)		High Lift Truck Extension Mid-Rise / 2-Post (set of 2)		
3000 lb max capacity each		3000 lb max capacity each			
Stack Pad Accessories					
	Stack Pad Adapter w/ Checker Plate Top (set of 4)		Stack Pad Ass'y w/ 3" & 6" Adapters (set of 1)		
3000 lb max capacity each		3000 lb max capacity each			
	1 1/2" Stack Pad Assembly Kit		4 1/2" Stack Adapter Kit		
3000 lb max capacity each		3000 lb max capacity each			
Common Accessories					
	Tool Tray Kit for 2-Post		Secondary Adapter Pad Kit (Used On Outer Arms)		
		3000 lb max capacity each			
	Air / Electric Service Station for 2-Post & 4-Post (90-110 psi 110 Volts Required)		Foam Door Protector Kit		24" Tower Extension

**Accessories may not be available for all models. Contact supplier for availability and part numbers.
Max capacity is for 12,000 Lb Lifts. Do not exceed rated capacity of lift.**