



INSTALLATION and OPERATION MANUAL



2012S
12,000 LB.
(SYMMETRICAL)

**READ and SAVE THIS
INSTRUCTION MANUAL**



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1 SAFETY AND OPERATING 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.
2. Inspect lift daily. Do not operate if it malfunctions or problems have been encountered.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. **Caution! Never work under the lift unless the mechanical safety locks are engaged.**
9. 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.
10. Always keep the lift area free of obstruction and debris. Grease and oil spills should always be cleaned up immediately.
11. Never raise vehicle with passengers inside.
12. Before lowering check area for any obstructions.
13. 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.

2 SPECIFICATIONS

Capacity:
 Overall Width:
 Width Between Columns:
 Drive-Thru Width:
 Overall Height (12ft Model):
 Under Bar Clearance (12ft 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. | 5400 kg |
| 146" | 3708 mm |
| 120" | 3048 mm |
| 109" | 2769 mm |
| 144" | 3658 mm |
| 140" | 3556 mm |
| 5 1/2" | 140 mm |
| 8 1/2" | 216 mm |
| 11 1/2" | 292 mm |
| 34" | 864 mm |
| 52 3/4" | 1340 mm |
| 75" | 1905 mm |
| 55 seconds | |
| 230 Volts AC, 1 Ph., 60Hz. | |

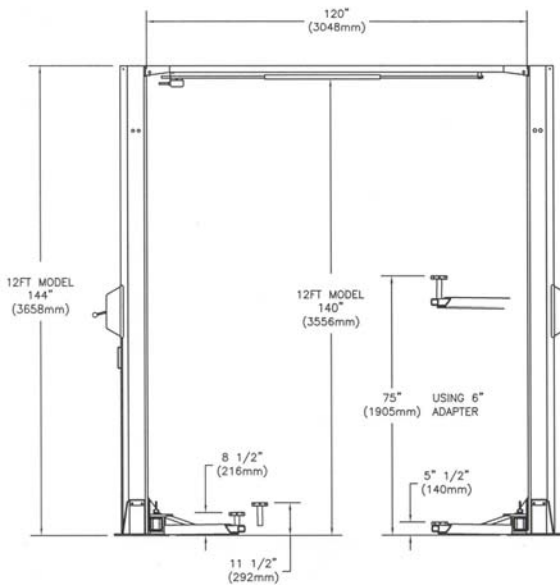


Figure 1 – Front View

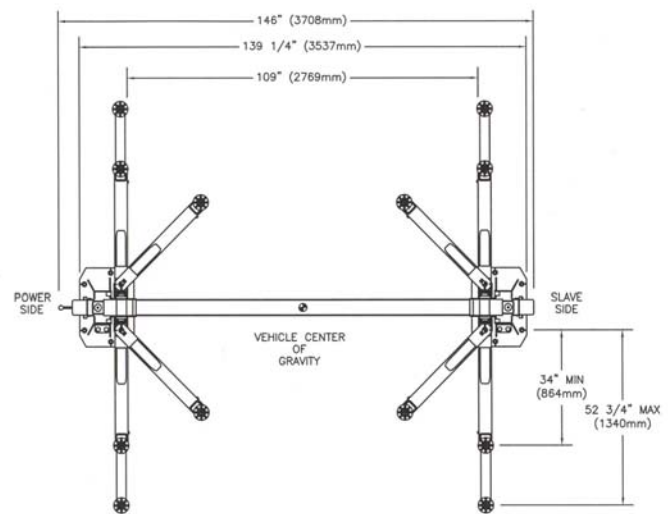


Figure 2 – Top View

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

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 five (5) inches or 130 mm. Concrete must have a minimum strength of 4000 psi or 30 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.

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 (alternate means required when installing tower extensions)
- k. Side Cutters
- l. Screwdrivers
- m. 4" x 4" Wooden Blocks (for unpacking)
- n. Bleed hose

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, 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.)
7. Prepare the bay by selecting the location of the lift relative to the walls. Clear the installation area of all packaging materials to avoid trip hazards. Draw a chalk line on the floor to represent the centerline of the bay then draw a second chalk line at 90° for locating the lift towers. Refer to **Figure 3**.

5.2 BAY LAYOUT

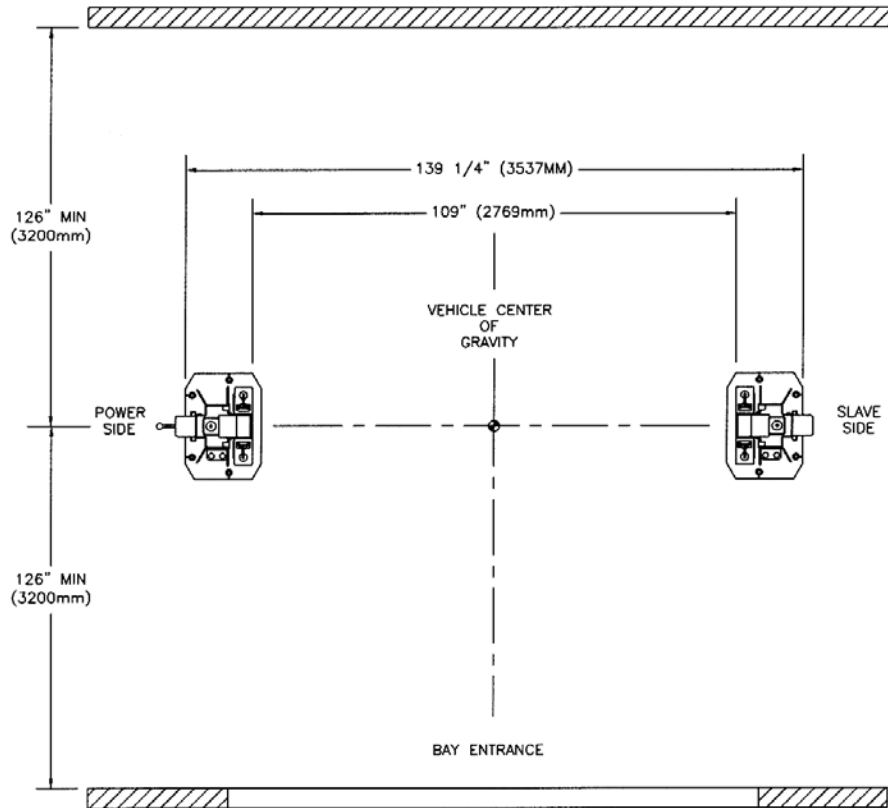


Figure 3 – Bay Layout

5.3 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 4.

Note: This procedure should be done on the floor before installing the crossmember.

1. Attach the Actuator Mounting Bracket (1-1378) to the crossmember using one 1/4"-NC x 3/4" lg. hex head bolt (6-0178), one 1/4"ID lockwasher (6-0056), and one 1/4" NC hex nut (6-0032). The mounting bracket should be installed in one of center slots at either end of the crossmember.

2. Attach the Actuator Bar to the Actuator Mounting Bracket using one 1/4" NC x 1 1/2" lg. hex head bolt (6-0205), one 1/4" ID lockwasher (6-0056), and one 1/4" NC hex nut (6-0032). For 12ft. installations orient the actuator bar so that the single hole is used to mount the actuator bar to the bracket **Figure 4A**. Attach the actuator extension to the actuator bar with two 1/4" NC x 1 1/4' LG. Hex head bolts (6-0027), 1/4" lockwashers (6-0056) and 1/4" hex nuts (6-0032).
3. Slide Safety Shut-Off Microswitch Assembly over the open end of actuator bar and bolt the assembly to the crossmember using two (2) 1/4" NC x 3/4" lg. hex head bolts (6-0178), two (2) 1/4" ID lockwashers (6-0056), and two (2) 1/4" NC hex nut (6-0032).

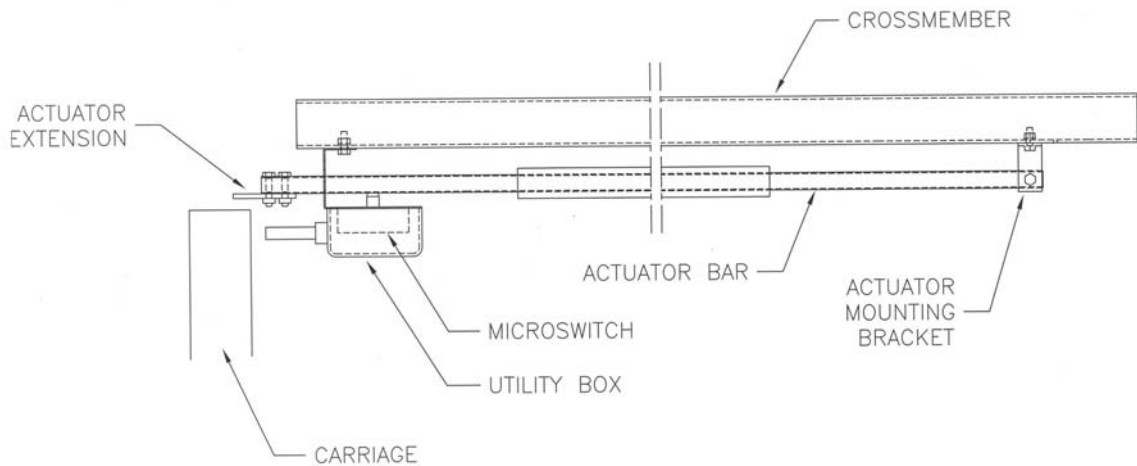


Figure 4A – Safety Shut-Off Bar Installation – 12ft.

5.4 TOWER POSITIONING AND SETUP

1. Locate the power side and slave side towers and position them as shown in **Figure 3**. Double check all the dimensions in the layout.
2. Using a stepladder, install the crossmember using eight (8) ½”-16UNC x 1 ¼” lg. hex head bolts, eight (8) ½” ID lock washers, eight (8) ½” hex nuts and eight (8) ½” flat washers. See **Figure 4**.
3. Check the towers to make sure they are located, and positioned in the correct location. Refer to **Figure 3**.

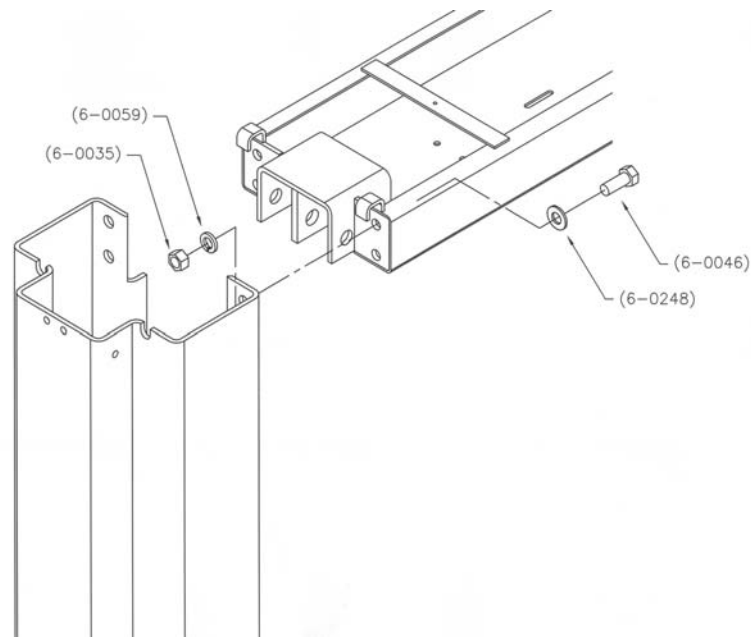


Figure 4 – Crossmember Assembly

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.

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.

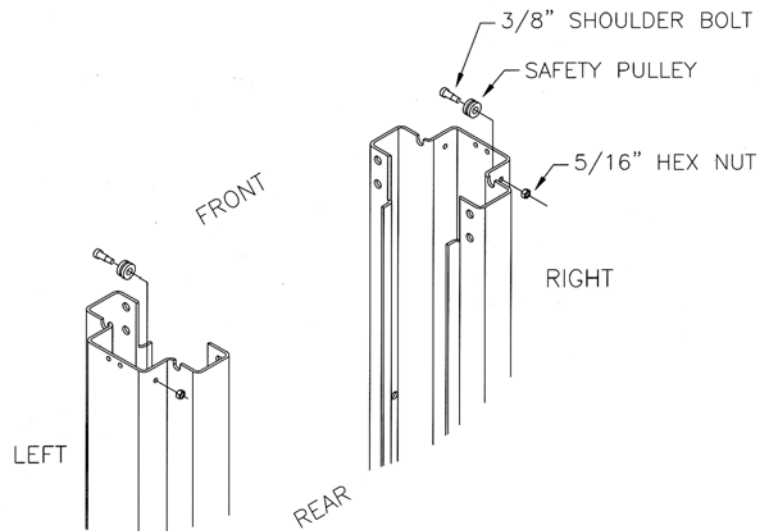


Figure 5 - Safety Release Pulley Installation

3. Refer to **Figure 6** for safety release cable routing. The end of the cable that has a collar attaches to the slave side tower. The free end is fixed to the power side tower using two (2) wire rope clips.
4. Install the safety release handle onto the power side safety dog.
5. 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. **NOTE:** Make sure shoulder bolt, 3/8" dia. x 1 1/2" lg. (6-0801), is lock tight to safety dog.
6. 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.
7. Repeat step 2 for the power side tower.
8. Guide the cable up under the large pulley and then over the small pulley towards the safety dog as shown in Figure 6. 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.
9. 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.**

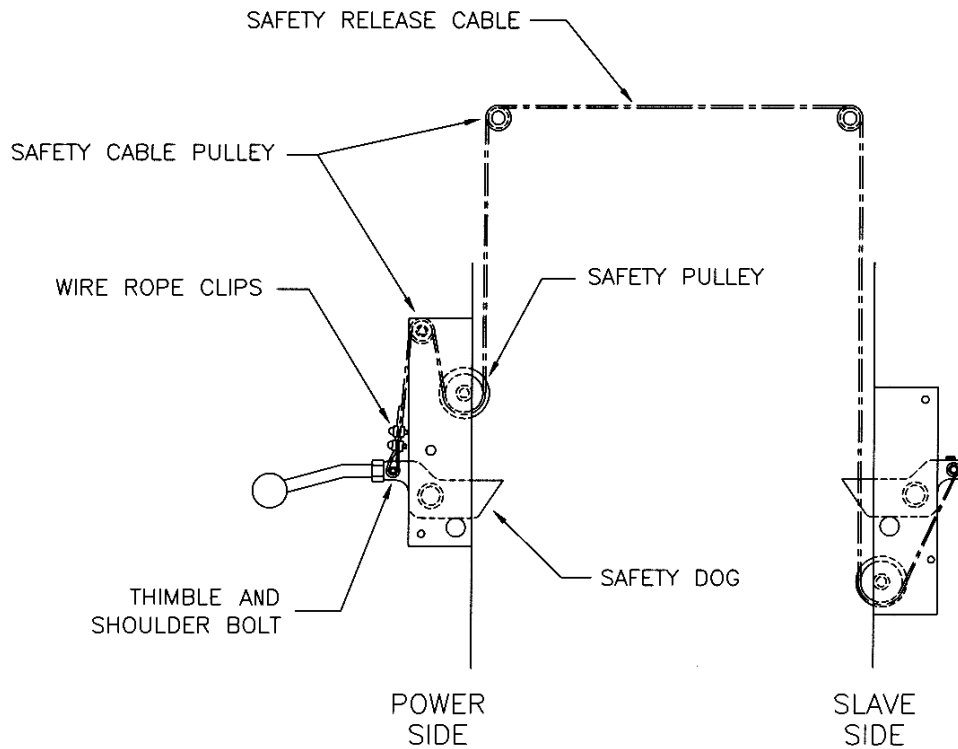


Figure 6 – Safety Release Cable Routing and Adjustment

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"-18UNC 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"-18UNC hex nuts. Do not tighten.
3. Remove the filler cap from the powerpack and fill the reservoir with approximately 4.5 Gal. (18L) of ISO32 hydraulic oil (10 wt. hydraulic oil).
4. A **certified electrician** must connect the 230Volt/1Ph power to the motor. The electrical diagram is provided, refer to **Figure 8**.

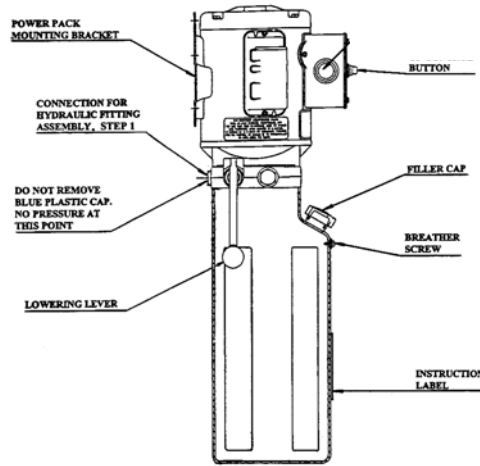


Figure 7 – Powerpack Details

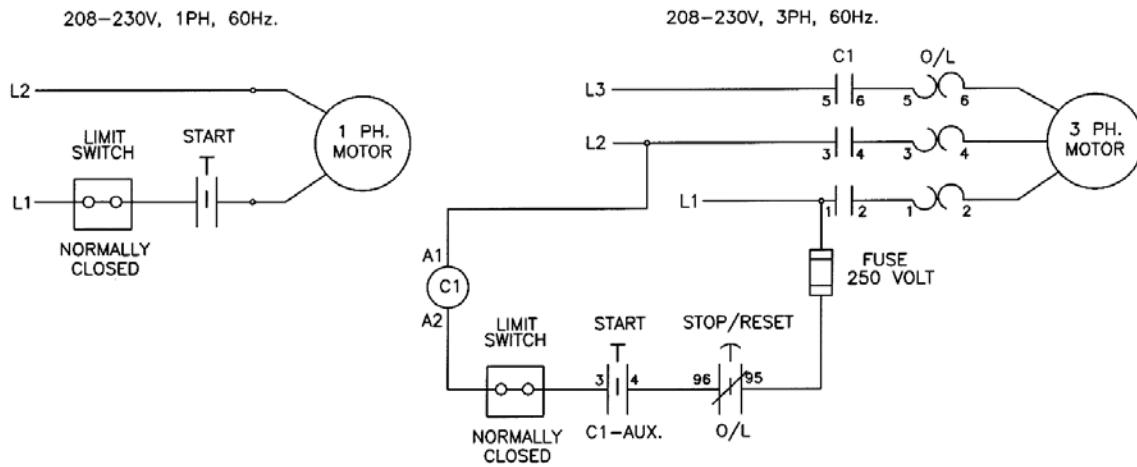


Figure 8 – Electrical Diagram

5.7 HYDRAULIC SYSTEM INSTALLATION

REFER TO HYDRAULIC PARTS LIST

1. Connect the straight end of the long hose to the “T” fitting on the powerpack.
2. Loop the hydraulic hose up the power side tower, across the overhead and down the slave side tower. Place rubber grommets (item 68 in the lift assembly) between the tower and the hose at the top of each tower.
3. Remove the cap from the bottom of the slave side cylinder and connect the 90° end of the long hose to the “T” fitting on the cylinder. Place the cap that was removed on one side of the “T” fitting at the powerpack.
4. Connect the straight end of the short hose to the other end of the “T” fitting.
5. The long hydraulic hose must be fixed to the towers using six (6) hose clamps. Screw the hose clamps into the weld nuts on the towers using 1/4”-20UNC x 3/8”lg. round head screws.
6. 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.
7. Remove the second cap from the “T” fitting on the slave side cylinder and connect a bleed hose that runs from the cylinder to the oil reservoir
8. Run the powerpack until all the oil is removed from the overhead line and the slave side cylinder i.e. until clear fluid is seen running in the bleed hose.
9. Remove the cap from the bottom of the power side cylinder and connect the 90° end of the short hose to the “T” fitting on the cylinder.
10. Remove the cap from the “T” fitting on the powerpack and connect the straight end of the short hydraulic hose to the powerpack.
11. Remove the bleed hose from the slave side cylinder and place a cap on the “T” fitting.
12. Remove the second cap from the “T” fitting on the power side cylinder and connect a bleed hose that runs from the cylinder to the oil reservoir.
13. Run the powerpack until all the oil is removed from the short line and the power side cylinder i.e. until clear fluid is seen running in the bleed hose.
14. Remove the bleed hose from the slave side cylinder and place a cap on the “T” fitting.

5.8 ROUTING OF EQUALIZATION CABLE

1. Power the lift until the carriages come to 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 **Fig. 6a**. Using the first cable, insert the short threaded stud through the 5/8”dia. hole at the bottom of the carriage (see Figure 10 Cable Mount “C”), and feed upwards until the stud comes through the top of the carriage. Place a ½”-13UNC nut at the center of the stud, and then **firmly tighten** a second nut up against it using two wrenches. Pull the cable back down through the bottom of the carriage.
4. At the bottom of the column, remove the hitch pin, pulley pin and pulley from the baseplate (**Fig. 6c**). Route equalizing cable around pulley and reassemble the pulley to the baseplate. **IMPORTANT – Hitch pin must be installed securely.**
5. Route the cable up through the carriage. When routing the cable through the carriage, the cable must be run through the slots in the cable mounting brackets “A”, “B” and “C”(see Figure 10).
6. Route the cable up through the tower, around the pulley at the top of the column, across the crossmember, around the pulley at the top of the other column and then down (**Fig 6a**). Insert the threaded stud into the 5/8” dia. mounting hole in the opposite carriage.

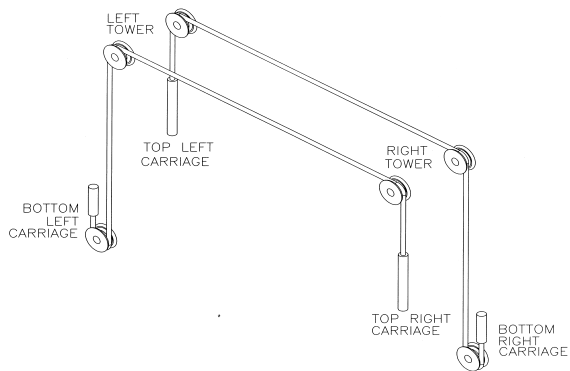


Figure 6a

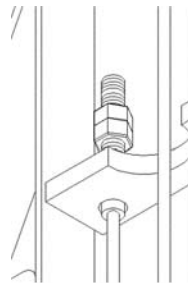


Figure 6b

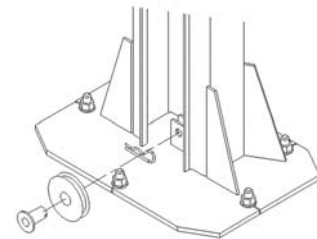


Figure 6c

7. For 12ft models, run the cable through the 5/8” dia. holes in the Cylinder Mount and Cable Mount “A”, and attach the stud to the 5/8” dia. hole in Cable Mount “B” (see Figure 10).
8. Use a wrench to hold the top of the threaded stud to prevent it from rotating. Hand tighten (2) ½”-13 UNC nuts onto the threaded stud enough to remove all visible cable slack (**Step A**). Repeat steps 2 to 5 for the other equalizing cable.

9. Using a wrench to hold the top of the threaded stud, to prevent it from rotating, tighten the first nut approximately 1 1/2" (**Step B**) past the hand tightened position. Then **firmly tighten** the second nut against the first one to lock it in place (**Step C**). Repeat for the other cable.

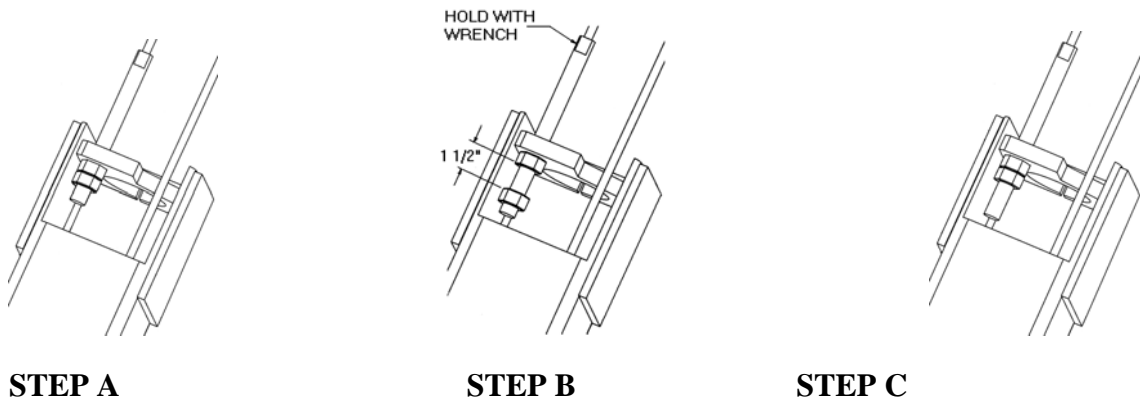


Figure 9

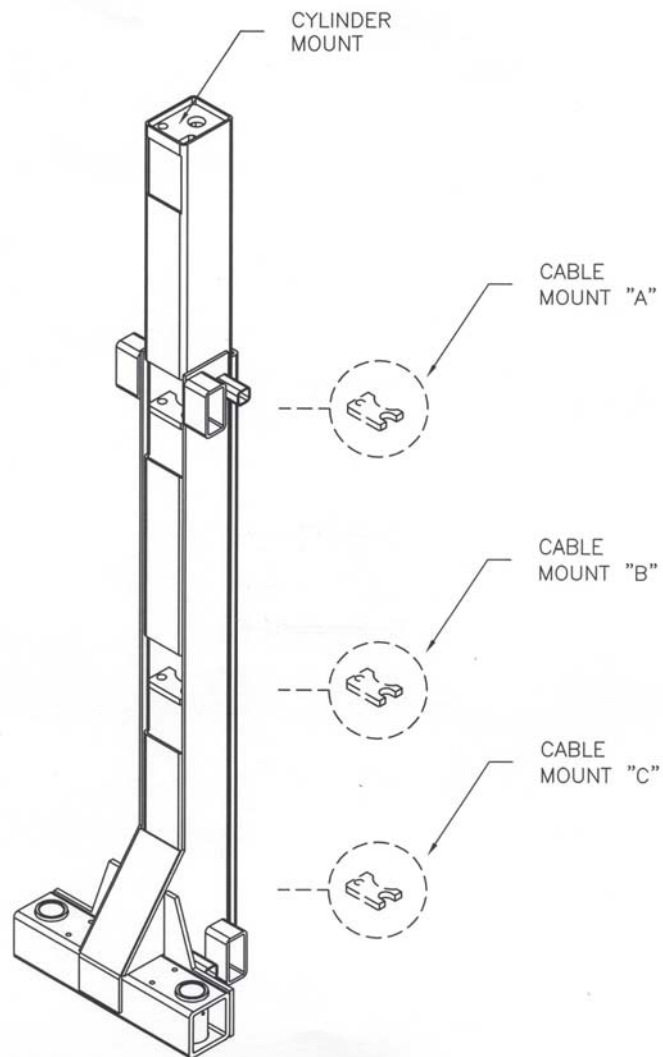
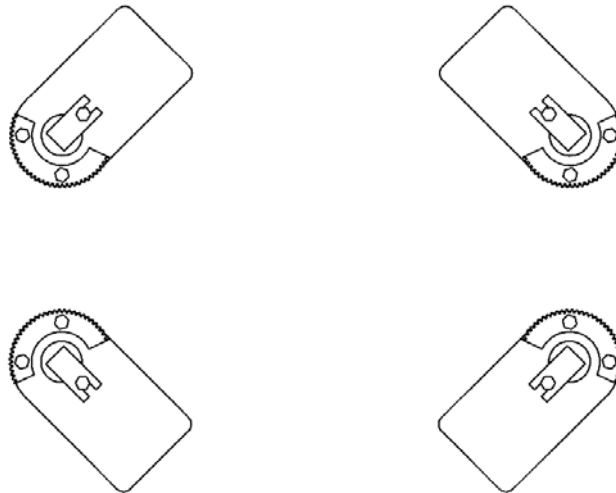


Figure 10

5.9 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.
3. Using two (2) 5/16"-18UNC x 1 1/4" LG. hex head bolts and two (2) 5/16" flatwashers, attach each arm restraint gear as shown in **Figure 11**.

FRONT



REAR

Figure 11 – Arm Installation

5.10 ARM RESTRAINT INSTALLATION

1. Refer to **Figure 9** - arm restraint installation.
2. Loosen the two 5/16 hex bolts which secure the arm restraint gear to the formed upper ear.
3. Insert arm restraint handle weldment through holes in carriage weldment. Arm restraint handle must pass through holes in top and bottom of carriage tube.
4. Adjust arm restraint gear so that it engages smoothly through entire range of arm motion. Firmly tighten both 5/16 hex bolts.
5. Repeat above steps for all arms.
6. Lift arms approximately 30" off the ground. **(This can only be done after bleeding & running the lift, see Section 5.12 HYDRAULIC SYSTEM BLEEDING)**
7. 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.

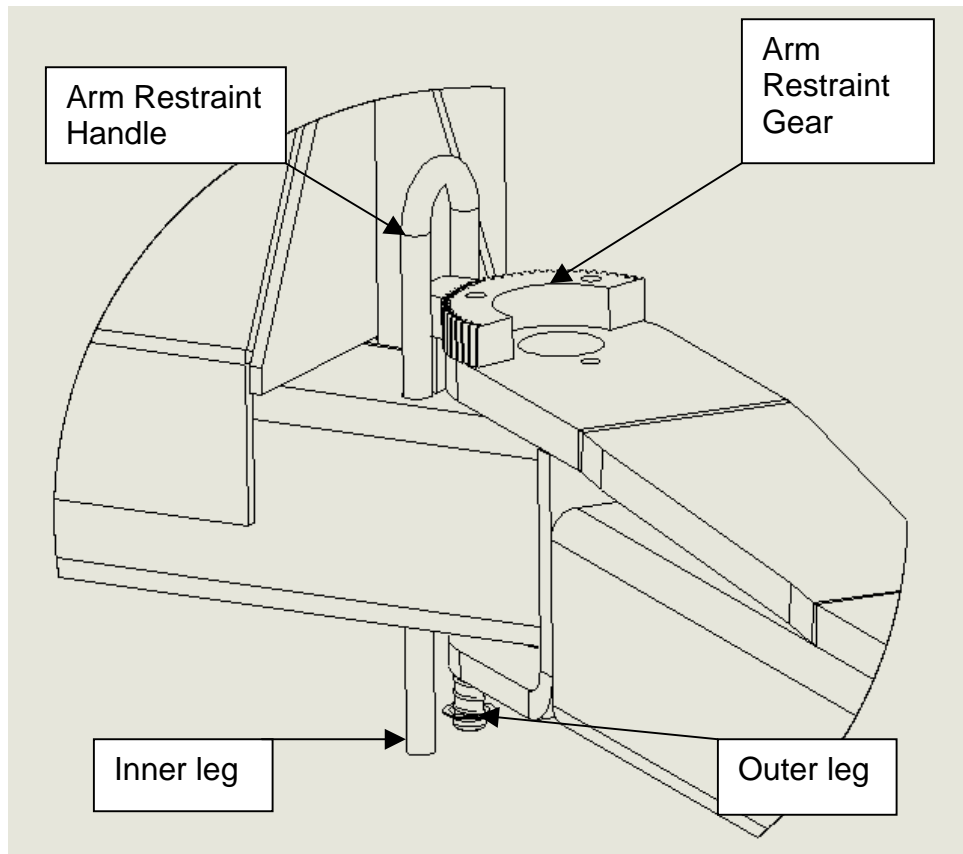


Figure 12 – Arm Restraint Installation

5.11 SAFETY SHUT-OFF BAR ADJUSTMENT

Refer to figure 4.

1. When the lift is fully installed, leveled and operational, extend the carriages to their full upper limit.
2. Lower the carriages $\frac{1}{4}$ " to $\frac{1}{2}$ ".
3. For 13ft. through to 16ft. installations, install the 90° degree conduit elbow to the actuator bar as shown in **figure 4**. The actuator extension should then be installed in the conduit elbow, and should be cut down depending on the installed height of the lift. For 14ft models, cut 24" from the extension, for 15ft models cut 12" from the extension, for 16ft models do not cut the extension.
4. For 12ft. installation, bolt the Actuator Extension (1-2143) onto the open end of actuator bar using two (2) $\frac{1}{4}$ " NC x 1 $\frac{1}{4}$ " lg. hex head bolts (6-0027), two (2) $\frac{1}{4}$ " ID lockwashers (6-0056), two (2) $\frac{1}{4}$ " NC hex nuts (6-0032) and one $\frac{1}{4}$ " NC x 2" lg. Hex bolt (6-0741).
5. Adjust the actuator extension or 2" lg. Hex bolt, so that it is in contact with the carriage.

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. Using a 4ft. level on top of the crossmember, determine which column is higher. Refer to **Figure 12**.
2. Using a 2ft. level on the sides of the high column, ensure that the column is level in the vertical position (**Figure 13**). Use shims under the column baseplate to hold the column level. Ensure that the base plate is completely supported by shims where it does not contact the floor (**Figure 14**).

WARNING! Do not use more than $\frac{1}{2}$ " (13mm) of shims. Anchor bolts supplied allow for a maximum of $\frac{1}{2}$ " (13mm) of shim. If more than $\frac{1}{2}$ " (13mm) of shims are required, **DO NOT** proceed with installation and contact Product Manufacturer / Supplier for further details.

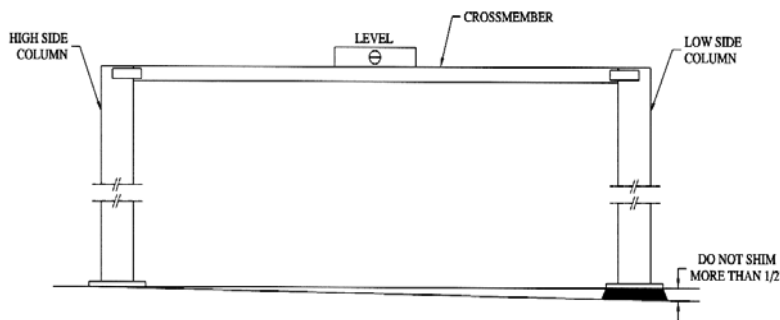


Figure 12

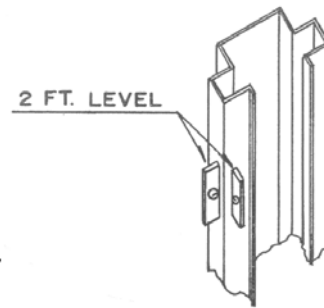


Figure 13

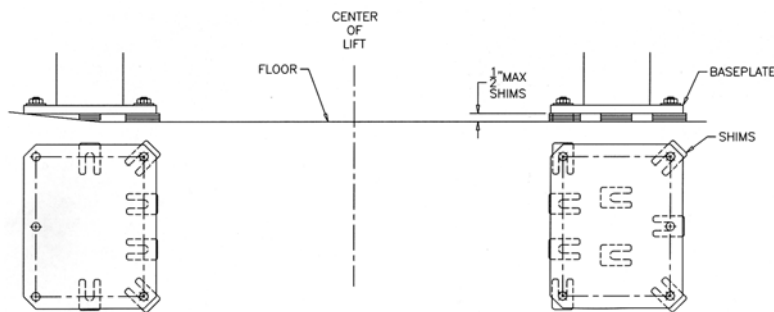


Figure 14 - Shims

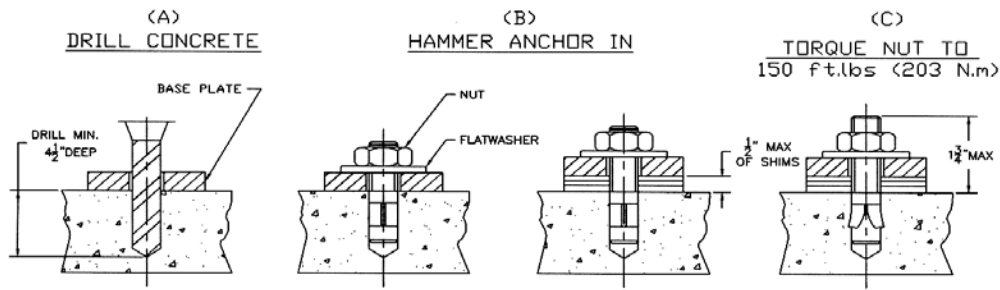


Figure 15 – Anchor Bolts

3. Refer to Bay Layout (**Figure 3**) to ensure that the column is still in the proper position. Using a rotary hammer drill with a 3/4” masonry drill bit, drill holes in the floor on the high side column using the tower baseplate as a template. Make sure that the 3/4” masonry drill is in good condition (**Figure 15**).
4. Carefully clean out drilling dust from the anchor holes. Hammer in the anchor bolts (**Figure 15**). Hand tighten all anchor bolts.
5. Reconfirm that the column is level front to rear and side to side (**Figure 13**). Add or remove shims as required.
6. 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 1 3/4” above the concrete surface (**Figure 15**), the concrete MUST 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 12**) and a 2ft. level on the low side column (**Figure 13**), shim underneath the baseplate until the crossmember and column are level. Ensure that the baseplate is completely supported by shims where it does not contact the floor (**Figure 14**).

WARNING! Do not use more than 1/2” (13mm) of shims. Anchor bolts supplied allow for a maximum of 1/2” (13mm) of shim. If more than 1/2” (13mm) of shims are required, **DO NOT** proceed with installation and contact Product Manufacturer / Supplier for further details.

2. Refer to Bay Layout (**Figure 3**) to ensure that the column is still in the proper position. Using a rotary hammer drill with a 3/4” masonry drill bit, drill holes in the floor on the low side column using the tower baseplate as a template. Make sure that the 3/4” masonry drill is in good condition (**Figure 15**).
3. Carefully clean out drilling dust from the anchor holes. Hammer in the anchor bolts (**Figure 15**). Hand tighten all anchor bolts.

4. Reconfirm that the column is level front to rear and side to side (**Figure 13**). Add or remove shims as required.
5. 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 1 ¾" above the concrete surface (**Figure 15**), the concrete MUST be replaced by an appropriate concrete pad. (*Consult Product Manufacturer / Supplier for further details*).
6. 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).**

6 LIFT MAINTENANCE GUIDELINES

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
2. Check all electrical wiring for pinch points, cracks or damage
3. Check all moving parts for uneven or excessive wear
4. Repair or replace all damaged, defective, worn or broken components immediately
5. Check the telescopic arms for movement. Clean any grease or oil from the lifting adapters

6. Raise and lower the lift at the beginning of each shift, without a vehicle on, to verify the lift is leveled and operating properly.

WEEKLY:

1. Check and adjust hydraulic level

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:



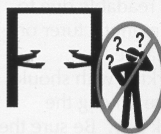


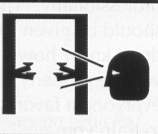


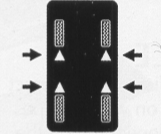



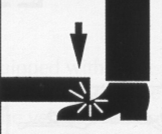
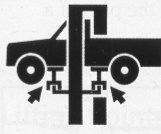
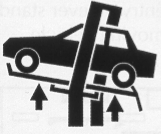
1. Change hydraulic fluid

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 |

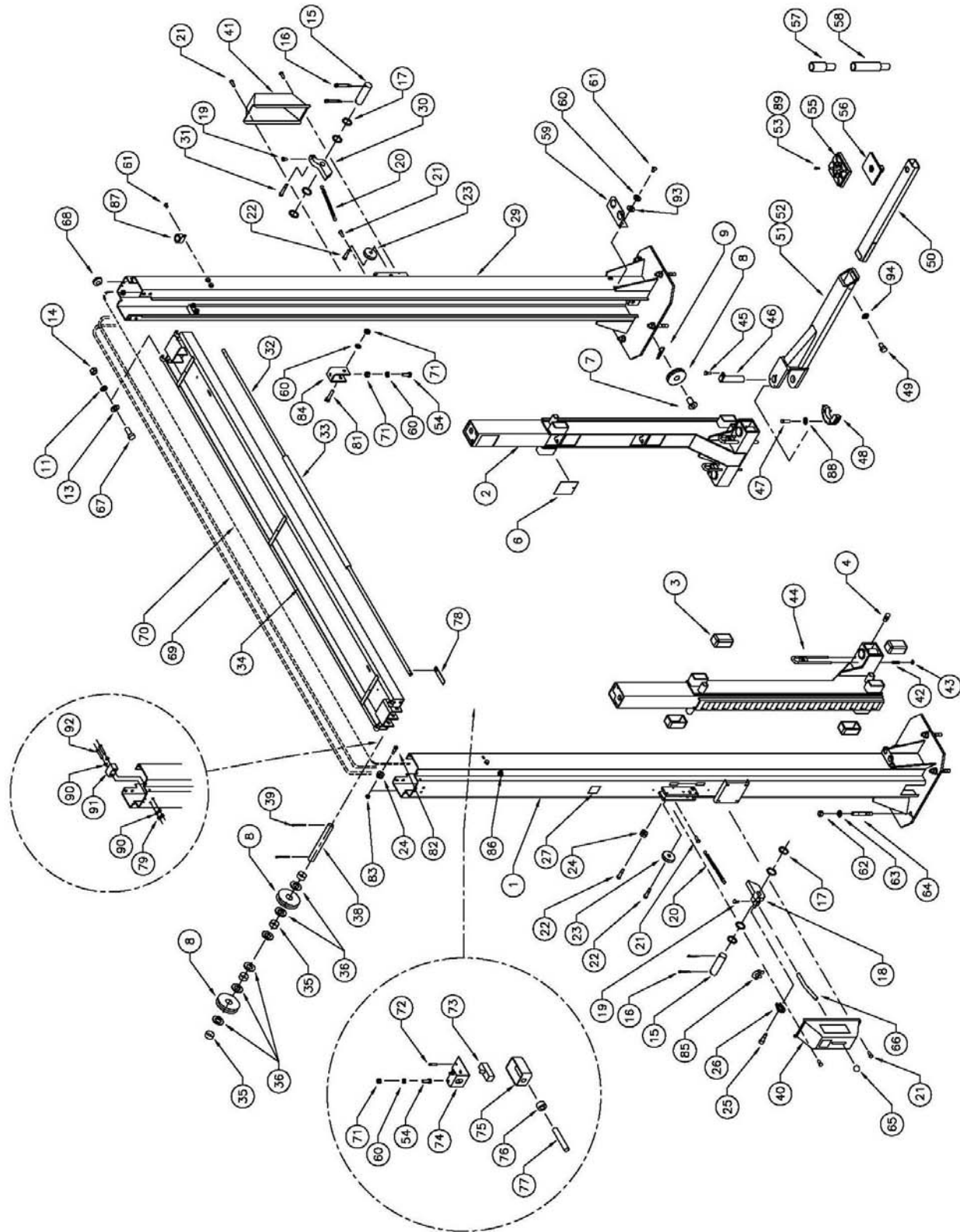
NOTE: If lift locks while in the fully raised position this will indicate that the hydraulic system has not been inspected or maintained as recommended. This is a safety back-up system. If you are unclear call your local representative immediately.

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>© 1992 by ALI, Inc. ALIWL0119</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

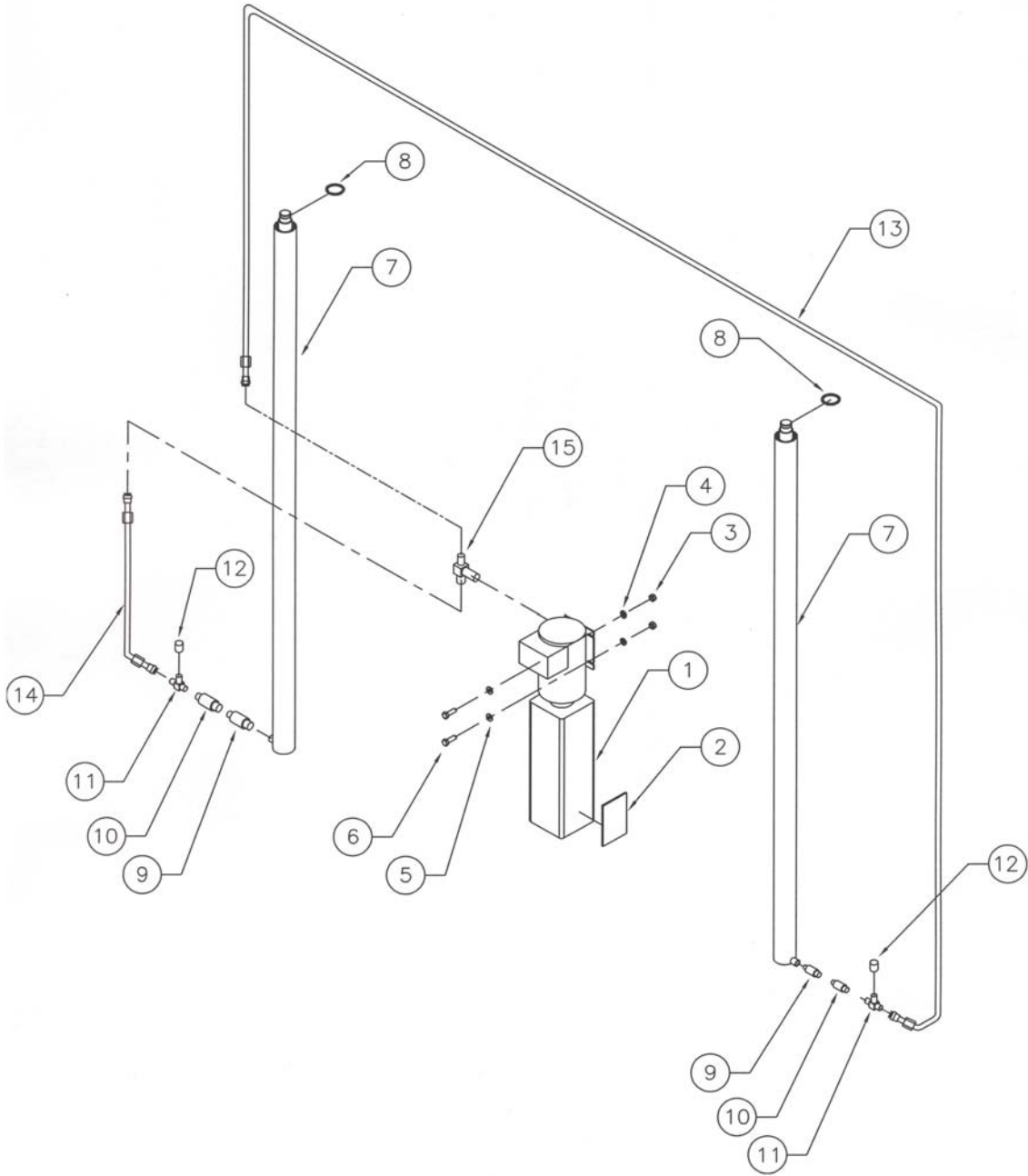


8.2 LIFT ASSEMBLY PARTS LIST

| ITEM | QTY | DESCRIPTION | PART # |
|------|-----|---|--------|
| 1 | 1 | TOWER WELDMENT, POWER SIDE | 4-1077 |
| 2 | 2 | CARRIAGE WELDMENT | 4-1059 |
| 3 | 8 | GLIDE BEARING | 2-0772 |
| 4 | 4 | GREASE NIPPLE | 6-0000 |
| 6 | 4 | CARRIAGE COVER | 1-2732 |
| 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 |
| 17 | 8 | FLAT WASHER, 5/64"ID x 1"OD x 1/16"THK. | 6-0808 |
| 18 | 1 | 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 | 4-1078 |
| 30 | 1 | SAFETY DOG, SLAVE SIDE | 2-0872 |
| 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 | 12 | FLAT WASHER, 3/4"ID | 6-0738 |
| 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 | 6-0386 |
| 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 | 1-2634 |
| 54 | 3 | HEX BOLT, 1/4"-20UNC x 3/4" LG. | 6-0178 |
| 55 | 4 | RUBBER PAD | 3-0872 |
| 56 | 4 | STACK PAD WELDMENT | 2-1993 |
| 57 | 4 | STACK PAD ADAPTER, 3" | 1-1993 |
| 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 1/4" LG. | 6-0046 |
| 68 | 3 | RUBBER GROMMET | 6-1507 |
| 69 | 2 | EQUALIZING CABLE | 1-2715 |
| 70 | 1 | SAFETY RELEASE CABLE | 1-2058 |
| 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 | 11 3/4 FT | ELEC. CABLE 12/3 (12FT MODEL) | 8-0030 |
| 78 | 1 | ACTUATOR EXTENSION | 1-2747 |
| 79 | 4 | HEX NUT, 5/8" | 6-0673 |
| 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" | 6-0536 |
| 88 | 8 | FLATWASHER, 3/8" | 6-0625 |
| 89 | 4 | ALLEN HEX HD SCREW 1/4" | 6-1086 |
| 90 | 8 | LOCK WASHER, 5/8" | 76112200 |
| 91 | 2 | CARRIAGE STOP BLOCK | 1-2748 |
| 92 | 4 | HEX HD. BOLT, 5/8"NC X 3 1/2" LG. | 6-2920 |
| 93 | 4 | 1/4" FLAT WASHER SAE | 6-0060 |
| 94 | 4 | LOCKWASHER 3/8" ID | 6-0058 |

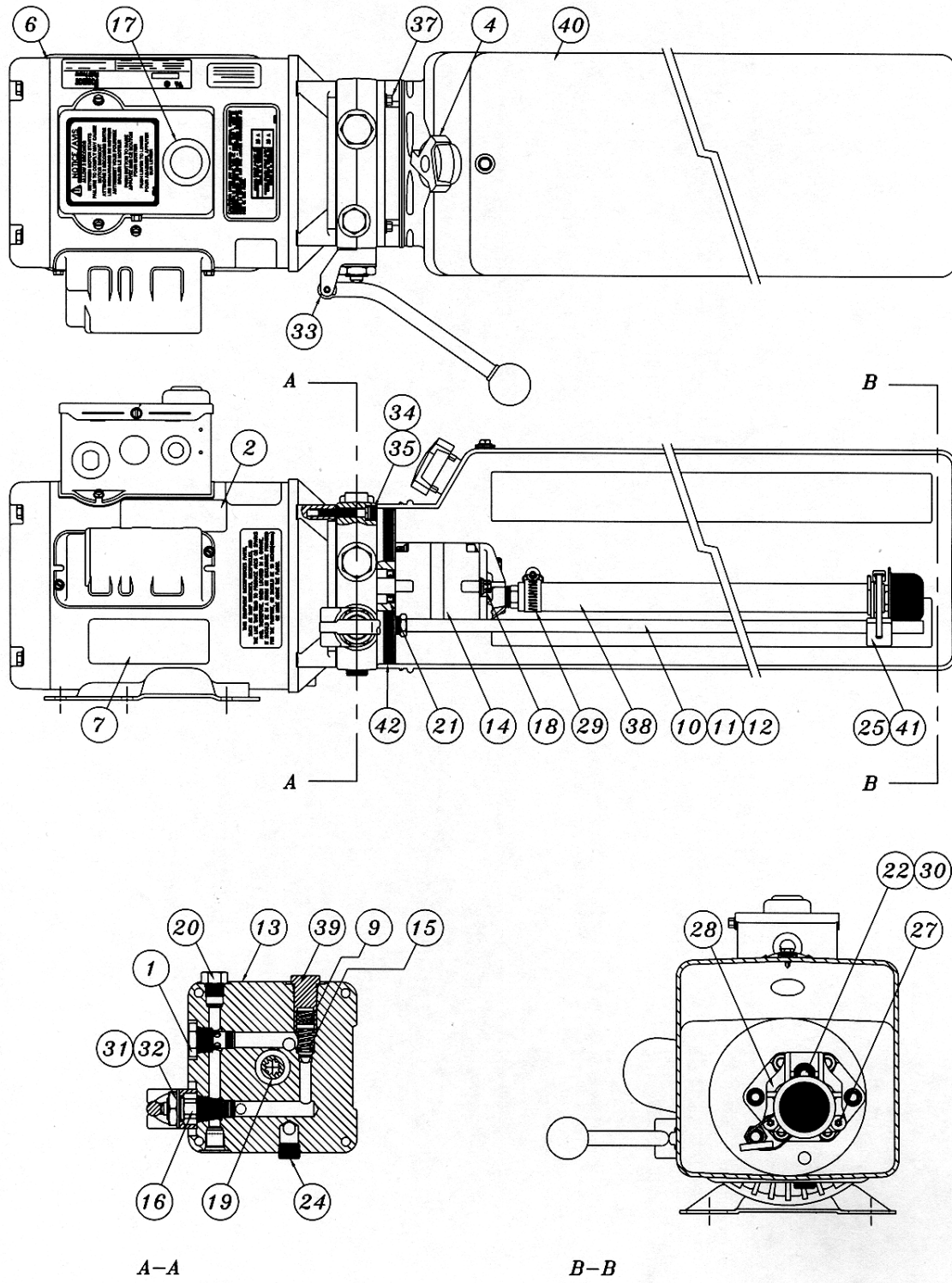
8.3 HYDRAULIC SYSTEM



8.4 HYDRAULIC SYSTEM PARTS LIST

| ITEM | QTY | DESCRIPTION | PART # |
|------|-----|--|--------|
| 1 | 1 | POWER PACK, 220V/1PH | 6-2055 |
| | 1 | POWER PACK, 220V/3PH | 6-2665 |
| 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 | 3-0883 |
| 8 | 2 | CIRCLIP | 6-0340 |
| 9 | 2 | ADAPTER, 1/4" NPT-M TO 1/4" NPT-M | 6-2883 |
| 10 | 2 | FLOW CONTROL | 6-1510 |
| 11 | 2 | SWIVEL "T" | 6-0284 |
| 12 | 2 | 3/8" JIC CAP | 6-0021 |
| 13 | 1 | HYDRAULIC HOSE (LONG) | 1-2714 |
| 14 | 1 | HYDRAULIC HOSE (SHORT) | 2-1230 |
| 15 | 1 | BRANCH "T" | 6-1506 |
| | * | GLAND SEAL KIT | 0-0551 |
| | * | PISTON SEAL KIT | 0-0159 |
| | | <i>3 PH POWERPACK INCLUDES THE FOLLOWING (NOT SHOWN)</i> | |
| * | 1 | CONTACTOR BOX (REMOVE JUMPER & WIRE FOR 3PH) | 6-1575 |
| * | 1 | CONTACTOR BRACKET | 2-1130 |
| * | 1 | COVER PLATE | 1-1369 |
| * | 2 | HEX BOLT, 1/4"-NC x 1" LG | 6-0008 |
| * | 4 | LOCKWASHER, 1/4" | 6-0056 |
| * | 2 | HEX NUT, 1/4"-NC | 6-0032 |
| * | 2 | STRAIN RELIEF | 6-0094 |
| * | 2FT | CABLE, 14/4 | 8-0287 |

8.5 POWER PACK:



8.6 POWER PACK PARTS LIST:

#6-2055 (AB-1381) 208-230V/1PH/60Hz

#6-2665 (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 | 6-2474 |
| | 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 2.5 CC/REV. SHORT SPLINE | 6-1958 |
| 15 | 1 | RELIEF ASSEMBLY FIXED 190 BAR | 6-1319 |
| 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 | 6-1090 |
| 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 |