

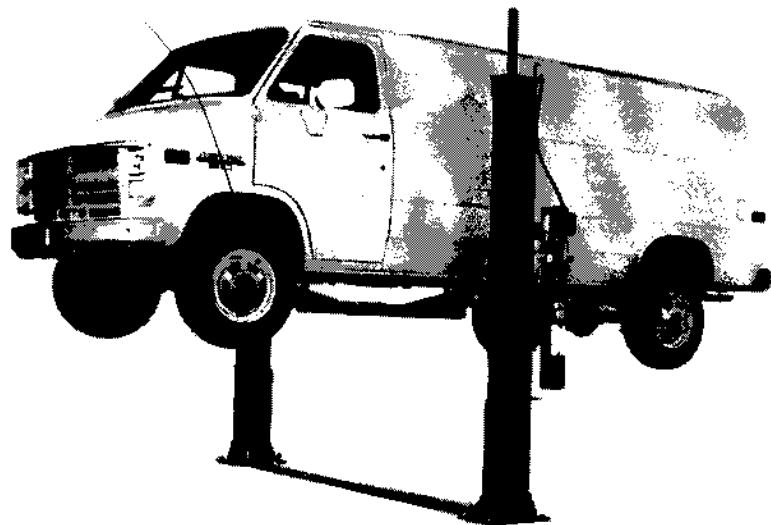
**COATS  
BADA**

**AMMCO**

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**AF**

# **AMMCO Two Post Lift**



## **Installation and Operation Instructions**

*With Troubleshooting  
and Parts Identification*

**HENNESSY INDUSTRIES, INC.**

P. O. Box 3002, 1601 J. P. Hennessy Dr., LaVergne, TN 37086-1982 615/641-7533 800/688-6359  
HENNESSY INDUSTRIES, INC. Manufacturer of AMMCO® COATS® and BADA® Automotive Service Equipment and Tools.

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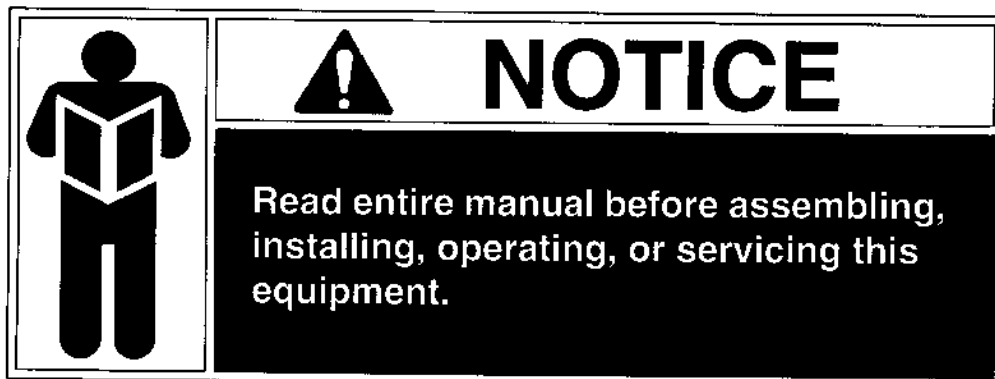
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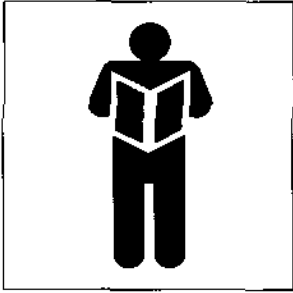
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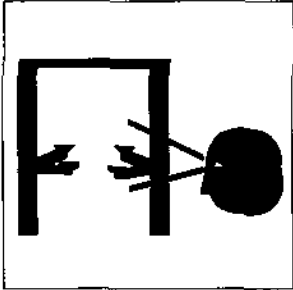
## Before You Begin

### Safety Notices and Decals

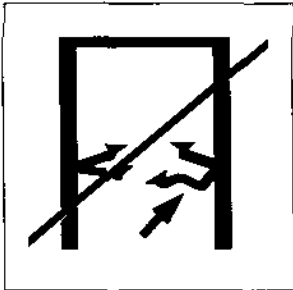
For your safety, and the safety of others, read and understand all of the safety notices and decals included here.



Read entire manual before assembling, installing, operating, or servicing this equipment.



Proper maintenance and inspection is necessary for safe operation.



Do not operate a damaged lift.

#### ▲ WARNING



Clear area if vehicle is in danger of falling.

#### ▲ WARNING



Do not exceed weight capacity.

#### ▲ WARNING



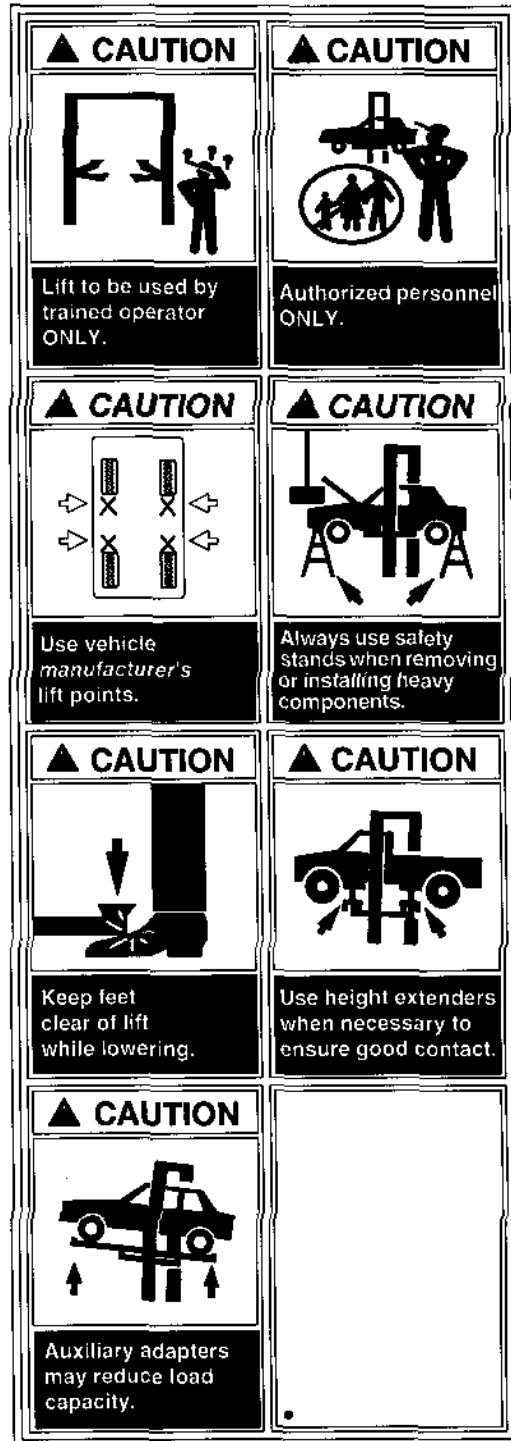
Remain clear of lift when raising or lowering vehicle.

#### ▲ WARNING



Avoid excessive rocking of vehicle while on lift.

The following safety decals are found on a properly installed lift. Be sure that all safety decals have been correctly installed on the lift. Verify that all authorized operators know the location of these decals and fully understand their meaning. Replace worn, faded, or damaged decals promptly.



#### ▲ WARNING

Do not attempt to raise a vehicle on the lift until the lift has been correctly installed and adjusted as described in this manual.

#### ▲ WARNING

Modifications to any lift shall not be made without the prior written consent of the lift manufacturer.

## Receiving

The shipment should be thoroughly inspected as soon as it is received. The signed bill of lading is acknowledgement by the carrier of receipt *in good condition* of shipment covered by our invoice.

If any of the goods called for on this bill of lading are shorted or damaged, do not accept them until the carrier makes a notation on the freight bill of the shorted or damaged goods. Do this for your own protection.

NOTIFY THE CARRIER AT ONCE if any hidden loss or damage is discovered after receipt and request him to make inspection. If the carrier will not do so, prepare an affidavit to the effect that you have so notified the carrier (on a certain date) and that he has failed to comply with your request.

IT IS DIFFICULT TO COLLECT FOR LOSS OR DAMAGE AFTER YOU HAVE GIVEN THE CARRIER A CLEAR RECEIPT.

File your claim with the carrier promptly. Support your claim with copies of the bill of lading, freight bill, invoice, and photographs, if available.

Although AMMCO's responsibility ceases upon delivery of the shipment to the carrier, we will gladly assist in tracing lost shipments. Our willingness to assist in every possible manner does not make AMMCO responsible for collection of claims, or replacement of lost or damaged materials.

## Floor

Floors must be concrete, level between the posts, and in good condition. Minimum requirements for the concrete are: steel reinforced, 4 inches thick, and 3000 PSI ultimate compression strength. If floor does not meet minimum requirements, a new floor or concrete pads must be poured to support the lift post area. Pads must be a minimum of 6 feet wide by 12 feet long, and 6 inches thick. The pads should be connected to the existing slab with steel reinforcements. The new pads must be level with the existing floor.

Lift should not be installed any closer than 12 inches from existing exterior walls, interior walls, or from the edge or seam of a concrete slab unless concrete floor is reinforced and a minimum of 8 inches thick.



**Failure by the purchaser to provide the recommended mounting surface could**

**result in unsatisfactory lift performance, property damage, or personal injury.**

## Vertical Clearance

Check the height of the area where the lift is to be located. A minimum of 11 feet 11 inches unobstructed height is required for the AF-7S, and 12 feet 4 inches (148 inches) unobstructed height is required for all other AF lifts.



**Failure by the purchaser to provide adequate clearance could result in unsatisfactory**

**lift performance, property damage, or personal injury.**

## Electrical Requirements

For lift installation and operation, it is necessary to have a 220 volt, single- or three-phase, 60 cycle dedicated circuit. The maximum current draw on single-phase is 19 amps, and on three-phase is 12 amps. Fused protection should conform to local codes.

## Tools Required for Installation

1. Concrete hammer drill
2. 3/4 inch solid drill bit with carbide tip to ANSI Standard B94.12-1977.
3. Combination wrench set, SAE
4. Open end wrench, SAE
5. Ratchet drive socket set
6. Hammer (2 lb, 4 lb)
7. Funnel
8. Torque wrench: 150 to 250 foot pounds
9. Carpenter's level
10. Pry bars
11. Adjustable wrenches: 8 and 10 inch
12. Measuring tape: 25+ feet
13. Chalk line

## General Anchor Bolt Instructions

1. The anchor bolts must be installed at least 12 inches from any edge or seam in the concrete.
2. Use a concrete hammer drill with a carbide tip solid drill bit the same diameter as the anchor. Tip diameter to ANSI Standard B94.12-1977 (.775 to .787 for the 3/4).
3. Do not use excessively worn bits or bits which have been incorrectly sharpened.
4. Keep the drill in a perpendicular line while drilling.
5. Let the drill do the work. Do not apply excessive pressure.
6. Lift the drill up and down to remove dust and reduce binding.
7. Drill the hole through the floor or to a depth of 5 inches minimum.
8. Vacuum the dust from the hole. This increases the holding power of the anchor bolts.
9. Assemble the washer and nut onto the anchor bolt until approximately 1/16 inch of the bolt is exposed. Using a hammer on the nut, carefully tap the anchor bolt into the concrete. Do not damage the nut or the threads.
10. Nuts should be torqued to 150/160 foot pounds at the proper time during the installation sequence.

## Space Requirements

### Height

The AF-7S lift requires an unimpaired vertical clearance of 11 feet 11 inches, and all other AF lifts require an unimpaired vertical clearance of 12 feet 4 inches (148 inches).

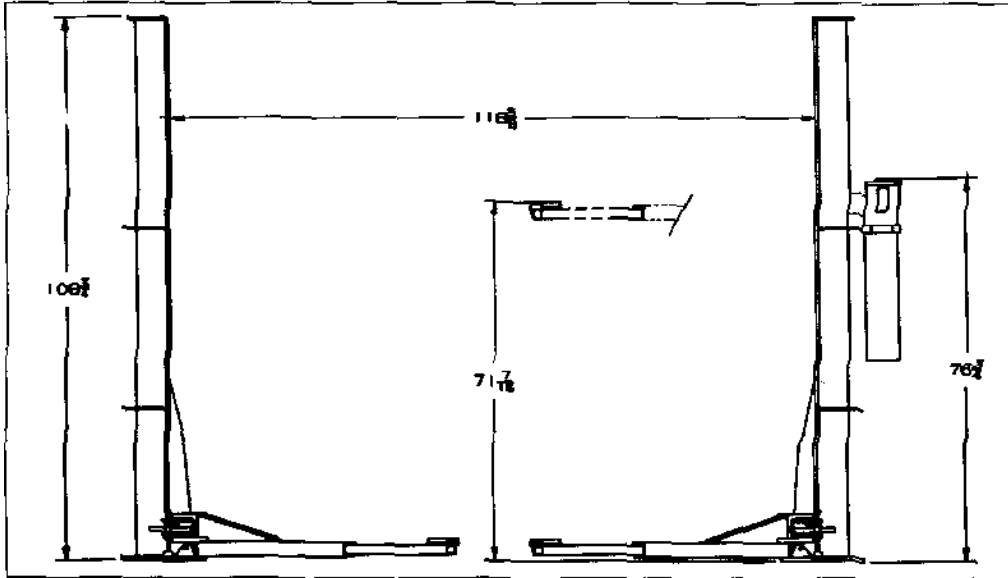


Figure 1 - Height Requirement (Inches)

### Floor Space and Clearances

Minimum specifications must be met to insure proper clearance for lift operation.

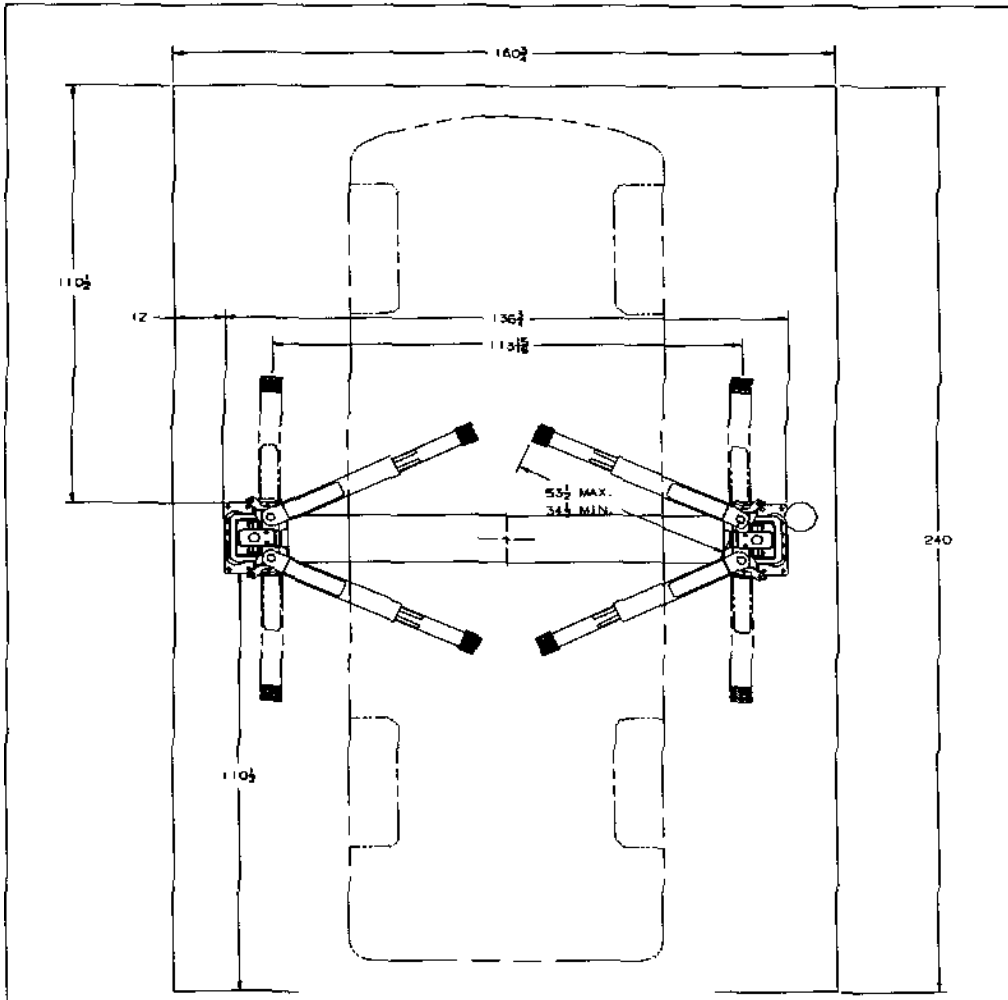


Figure 2 - Floor Space Requirements

## Floor Specifications

Choose your installation area carefully. Check for height and floor space clearances as shown in Figures 1 and 2. Floors must be level between the posts and must be in good condition.



**WARNING** Concrete specifications must be followed. Failure to do so may result in lift or vehicle falling, endangering life and property. Do not install lift on asphalt or other unstable surface.

Minimum requirements for the concrete are:

- Steel reinforced
- 4 inch thickness
- 3000 PSI ultimate compression strength

### Using Pads

If floor does not meet minimum requirements, a new floor or concrete pads should be poured to support the lift post area. Pads must be a minimum of 3 feet wide and 3 feet long. They must be at least 12 inches thick. The pads should be connected to the existing concrete floor with steel reinforcements and must be level with the existing floor.

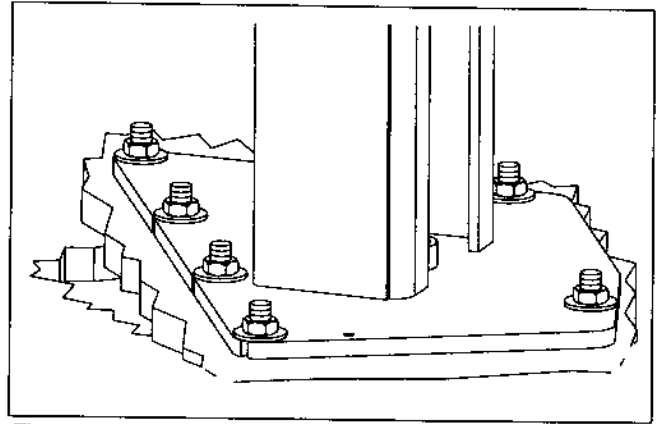


Figure 3 - Unsuitable Installation Surface: Concrete specifications must be followed to insure safe installation and operation.



**WARNING** Do not install this lift in a pit or depression due to fire or explosion risks

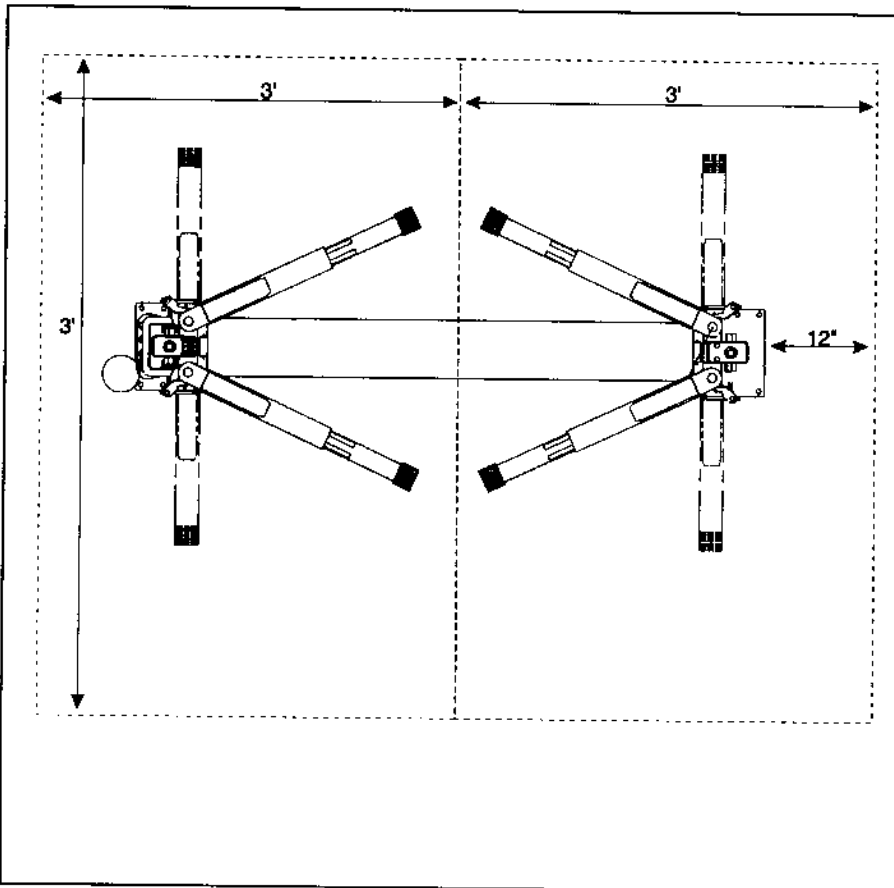


Figure 4 - Pad Specifications

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## Locating the Lift

### Posts and Power Unit

Throughout the installation process, these instructions will refer to the driver side and passenger side of the lift. As you stand at the opening to the garage area and look at the lift, the left side is the driver side and the right side is the passenger side. The end of the lift closest to you (the end from which you drive onto the lift) is the rear, and the opposite end is the front.

The power unit will mount only to the post with the mounting bracket attached. This will be referred to as the "pump side" post and can be installed on either side of the lift. The other post will be referred to as the "offside" post.

**TIP:** Placing the pump side post on the passenger side of the lift saves the user a trip around the vehicle when positioning the lift arms.

### Measuring for Lift Location (with Garage Door)

1. Snap a chalk line in the threshold of the garage door. Measure and divide the distance in half to establish the center of the doorway, point "A", along this baseline. Refer to Figure 5.
2. Measure 68-11/32 inches from "A" along the chalk line to the passenger side. Mark this point "B".
3. Measure 136-11/16 inches along the chalk line from "B" towards the driver side and mark point "C".
4. Measure and strike an arc from "B" to the front of the lift. Measure and strike an arc the same distance from "C". Mark the point where they cross as point "D".
5. Snap a chalk line from "A" through "D" to establish the center line for the lift.
6. Measure and strike an arc 68-11/32 inches from "D" towards the passenger side of the lift. Measure and strike an arc 68-11/32 inches "D" towards the driver side of the lift.
7. Snap a chalkline from "B" through the outside of the arc on the passenger side. Mark the point where the line meets the outside of the arc as point "E". Snap a chalkline from "C" through the outside of the arc on the driver side. Mark the point where the line meets the outside of the arc as point "F".
8. Using the floor space requirements in Figure 2 as a guide, determine the best location for the passenger side post. Measure the distance along the chalk line from "B" to the selected point for the front edge of the base mounting plate. Mark this point "G". Measure the same distance along the chalk line from "C" and mark point "H" for the driver side post. Snap a chalk line between "G" and "H".
9. Place the posts in position at "G" and "H" with the front edges of the base mounting plates touching the "G/H" chalk line and the outside edges of the mounting plates touching the outside chalk lines.

**REMEMBER:** The pump side post can be placed on either side of the lift.

10. Measure from the outside edge of one mounting plate across the lift area to the outside edge of the other mounting plate. This distance should be 136-11/16 inches. If not, recheck your placements and measurements for accuracy, correct as necessary, and remeasure the distance.

### Measuring for Lift Installation (without Garage Door)

1. Determine the approximate location for the lift. Use the floor space requirements in Figure 2 as a guide.
2. Mark a straight 7 foot line along the outside edge of the passenger side post base mounting plate. Refer to Figure 6.
3. Mark point "A" at the center of the 7 foot line. This is the point where the outside front corner of the passenger side post will be located.
4. Measure 36 inches in both directions along the line from "A" and mark point "B" at the front of the lift, and point "C" at the rear of the lift.
5. Measure 136-11/16 inches from "B" perpendicular to the 7 foot line. Mark point "D". Measure 136-11/16 inches from "C" perpendicular to the 7 foot line. Mark point "E".
6. Snap a chalk line from "D" through "E".
7. Measure and strike an arc 150 inches from "B". Measure and strike an arc 150 inches from "C". Mark the point where these arcs cross as "F".
8. Snap a chalk line from "F" through "A". Mark the point where this line intersects the "D/E" line as "G".
9. Place the posts in position at "A" and "G" with the front edges of the base mounting plates touching the "F/A" chalk line and the outside edges of the mounting plates touching the outside chalk lines.

**REMEMBER:** The pump side post can be placed on either side of the lift.

10. Measure from the outside edge of one mounting plate across the lift area to the outside edge of the other mounting plate. This distance should be 136-11/16 inches. If not, recheck your placements and measurements for accuracy, correct as necessary, and remeasure the distance.

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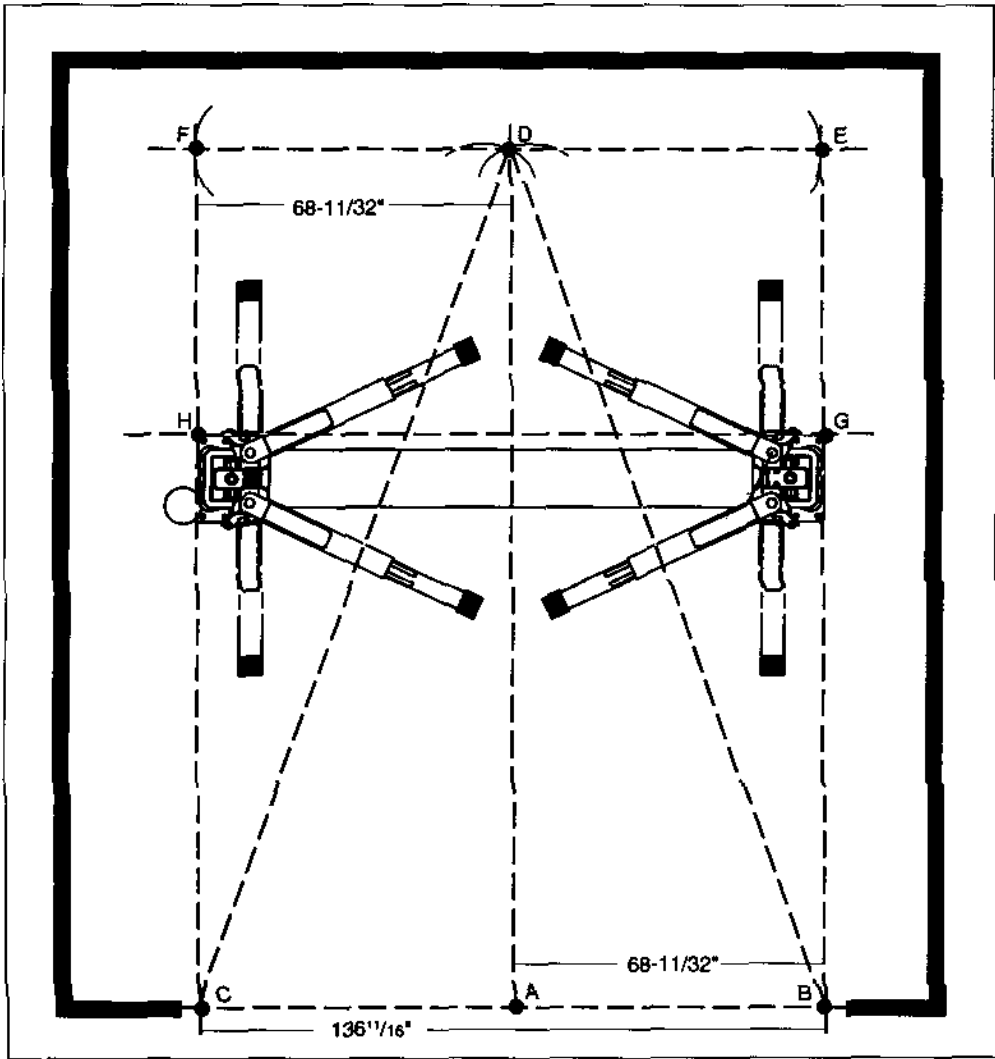


Figure 5 - Locating the Lift (with Garage Door)

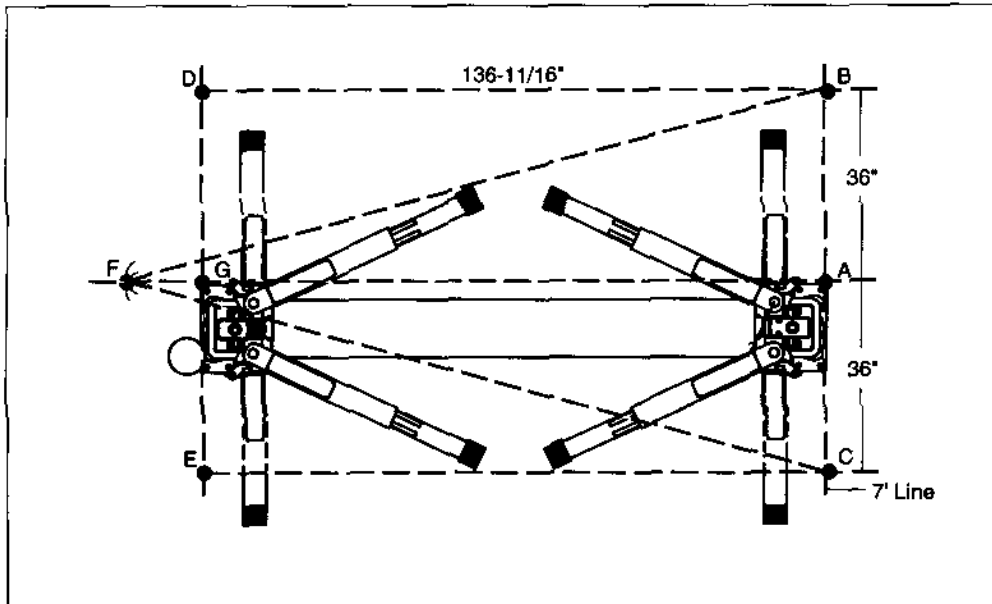


Figure 6 - Locating the Lift (without Garage Door)

## Lift Installation

1. Remove the packing bands from the side posts, the trough, and the trough cover.
2. Remove the shipping brackets at the end of each post.

**CAUTION** The posts could slip or fall when removing the shipping brackets. This could result in personal injury or equipment damage. Lay both side posts flat on the floor to remove the brackets.

3. Stand both posts in position at points "G" and "H". Refer to Figure 5.
4. Temporarily position cover plate to insure proper positioning of posts.
5. Remove the tape holding the single point safety cable to the hydraulic cylinder.
6. To provide clearance for the anchor bolt drill, pull on the safety cable and manually raise the carriage to the height of the stack pad holder (see Figure 7). The safety latch should hold the carriage at this position.
7. Square the base plates with the chalk lines. Plumb the posts using a level front to rear and side to side. Add shims as required.

NOTE: Shims should be used on the vehicle side of the post if there is a gap between the base plate and the floor as a result of using shims elsewhere.

**WARNING** Operation of the lift with the posts not perfectly plumb is hazardous and could cause lift failure, resulting in personal injury or equipment damage.

**WARNING** Do not shim more than  $\frac{1}{4}$  inch in any spot, unless a longer anchor bolt is used. Using the provided anchor bolts with more than  $\frac{1}{4}$  inch of shims may cause the bolts to pull out of the concrete and the lift to fall, resulting in personal injury or equipment damage.

7. Using the base plate as a template, drill a  $\frac{3}{4}$  inch hole through the concrete floor or to a minimum of 5 inches. Drilling through the floor allows the bolts to be driven into the ground and the holes patched if the lift is removed. Repeat for all anchor bolt holes in both base plates.
8. Vacuum the dust from the holes. Screw a nut and washer onto an anchor bolt until approximately  $\frac{1}{16}$  inch of the bolt is exposed above the nut. Insert the anchor bolt through the post base and into the hole. Hammer the anchor bolt into the concrete until the washer and nut contact the baseplate. Torque the nut to 150/160 foot pounds. Repeat for all remaining anchor bolts.

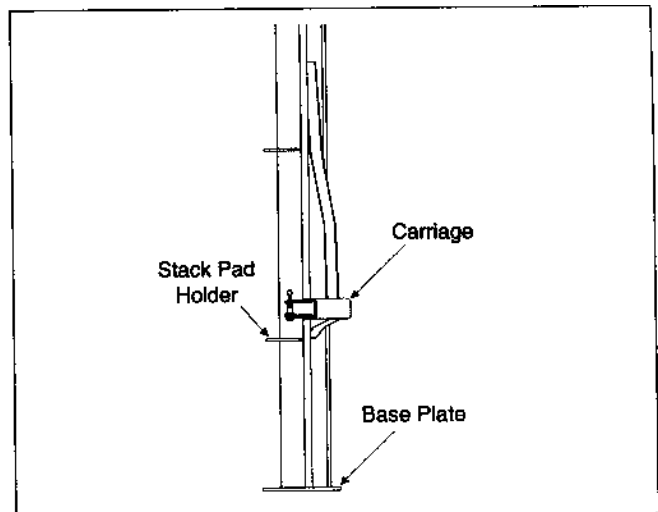


Figure 7 - Raise Carriage

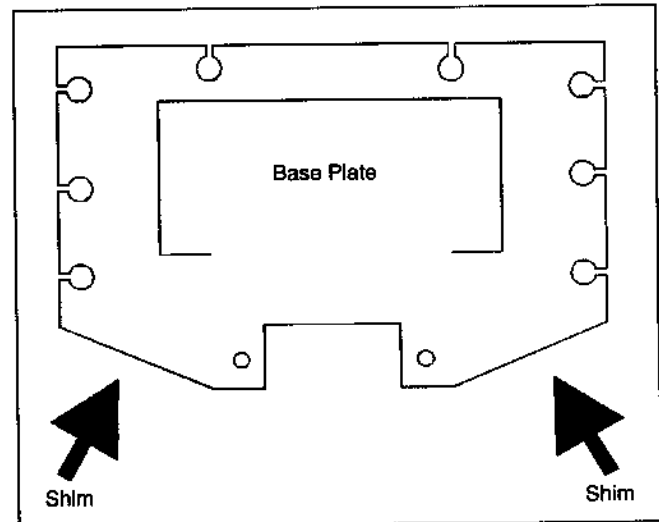


Figure 8 - Adding Shims: Add shims in these locations if gaps appear from shimming other locations.

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### Safety Release Cable Installation

1. Route the safety release cable down the inside of the offside post, under the pulley in the bottom of the post, and across the floor to the pump side post.
2. Route the cable under the pulley in the bottom of the post.
3. Route the cable up the inside of the post to the pulley mounted opposite the safety release mechanism. Route the cable over the pulley and out the hole in the post.
3. Feed the cable through the hole in the cable sear tab. Pull the slack out of the cable.
4. Pull the loose end of the cable up from the sear and parallel to itself. Position the cable clamp over the two cable pieces with the threaded studs between them. Place the clamp cover over the studs and secure with the nuts. Tighten securely.
5. Trim off excess loose cable above the clamp. Remember to leave enough for future adjustments.
6. Attach the safety release handle with the round ball to the sear.

### Hydraulic Hose Installation

1. Remove the plugs that face the inside of the lift at the bottom of the cylinder in each post. Install the provided male connectors into the openings.
2. Place the hydraulic hose into position between the tabs in the center of the trough.
3. Connect the ends of the hose to the cylinders and tighten. DO NOT twist the hose in the fittings.

### Equalizer Cable Installation

1. Position both carriages at the same lock position.
2. Insert the end of one equalizer cable up through the passenger side carriage directly below the cable tabs.
3. Thread a nut about 2 inches onto the end of the cable and insert the end through the lower cable tab. Thread another nut onto the cable to a full nut of threads. Refer to Figure 10.
4. Route the cable under the lower pulley, through the trough, under the matching pulley on the driver side post, up through the carriage, up and over the upper pulley, and down to the upper cable tab.
5. Thread a nut about 2 inches onto the cable end. Insert the cable end down into the upper cable tab until the nut contacts the tab. Thread another nut onto the cable end a full nut of threads.
6. Repeat Steps 2 through 5 for the other cable. Start with the lower cable tab on the driver side post and finish at the upper cable tab on the passenger side.

NOTE: When properly installed, the cables will run parallel to each other and will not cross. If your cables cross, they are incorrectly installed.

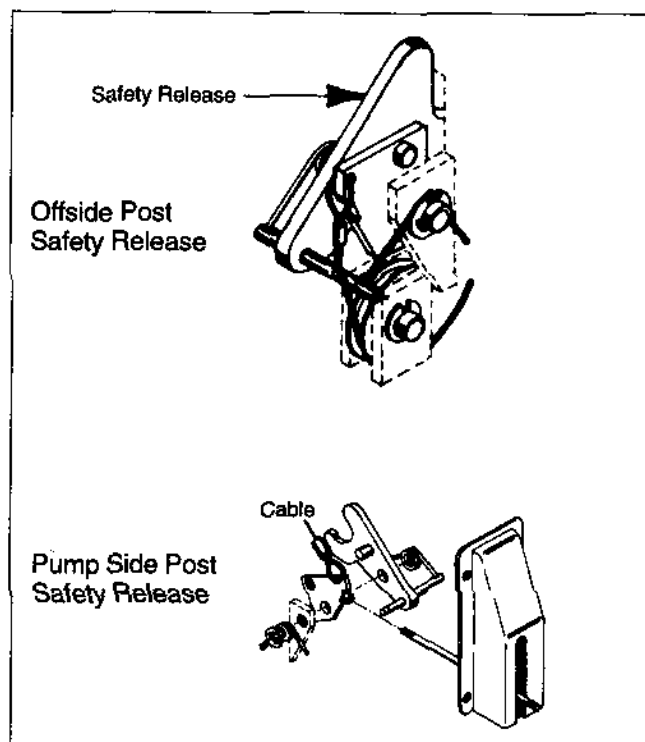


Figure 9 - Safety Release Cable Installation

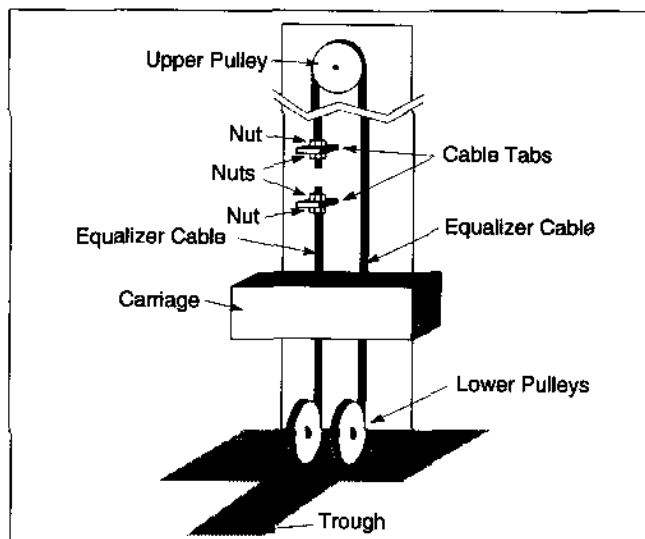


Figure 10 - Equalizer Cable Installation

7. Adjust the equalizer cables by tightening the outer nuts on the cables until the carriages begin to rise off the locks.
8. Loosen the nuts until the carriages lower and lightly touch the locks. They should not be tight enough to lift the carriage off the latches.
9. Tighten the inner nuts down against the cable tabs to secure the cables in position.

### Floor Cover Plate Installation

1. Place floor cover plate over the studs on the base plates.
2. Secure cover to studs with the 3/8 inch washer head screws.

### Power Unit Installation

1. Attach the power unit bracket to the mounting bracket on the pump side post with two 5/16x7/8 inch bolts, lock washers, and nuts.
2. Mount the power unit to the bracket (motor up, tank down) with four 5/16x7/8 inch bolts, lock washers, and nuts.
3. Remove the shipping plug from the power unit pressure port. Install the 90° elbow fitting into the port.
4. Connect the 90° elbow end of the short hydraulic hose to the connector in the post above the power unit.

NOTE: The hose from the connector in the post to the bottom of the cylinder is factory installed. Check the connections and make sure they are tight.

5. Connect the other end of the short hydraulic hose to the pressure port elbow on the power unit.
6. Fill the power unit tank with 14 quarts (3-1/2 gallons) of 10WT non-foaming hydraulic or other brand name automatic transmission fluid.
7. Connect the power unit into the correct phase and voltage power source as noted on the power unit specification plate. See Schematic, page 18.

### Bleeding the Cylinders

1. Actuate the power unit until both carriages rise at the same time. Stop the carriages with the safety latches halfway between clicks.
2. Loosen, but do not remove, the bleed plug on the top of each cylinder until a steady stream of fluid (no air bubbles) flows from the top of the cylinder. See Figure 13.
3. Tighten the bleed plugs. Repeat the procedure until all air is out of the system.
4. If required, re-adjust the cables to level the carriages.

### Lift Arm Installation

1. Place the lift arms on the carriages. Insert a carriage pin through each lift arm and carriage. See Figure 14.

NOTE: The arm restraint tabs should point to the outside of the lift with the arms in stowed position.

2. Install the e-ring on the bottom of the arm lock. Slide the spring over the top of arm lock and down against the e-ring. Insert the assembled arm lock up through the bracket until the spring compresses against the bracket. Use the parts view on page 17 for help.
3. Maintain the spring pressure against the bracket and insert the threaded rod, flat end first, into the arm lock.
4. Secure the flat end of the threaded rod to the lift arm with a hex screw and nut.

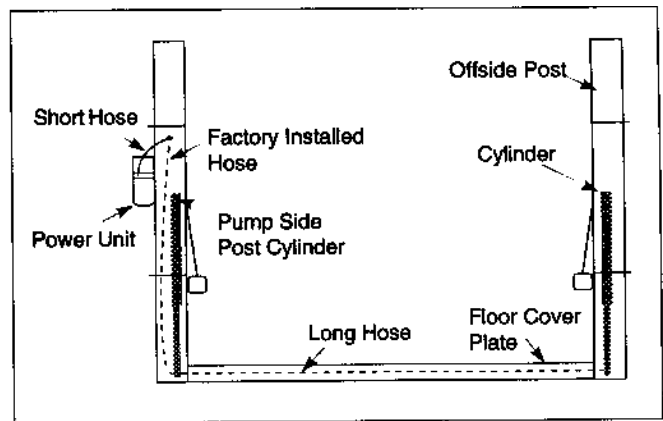


Figure 11 - Hydraulic Hose Connections

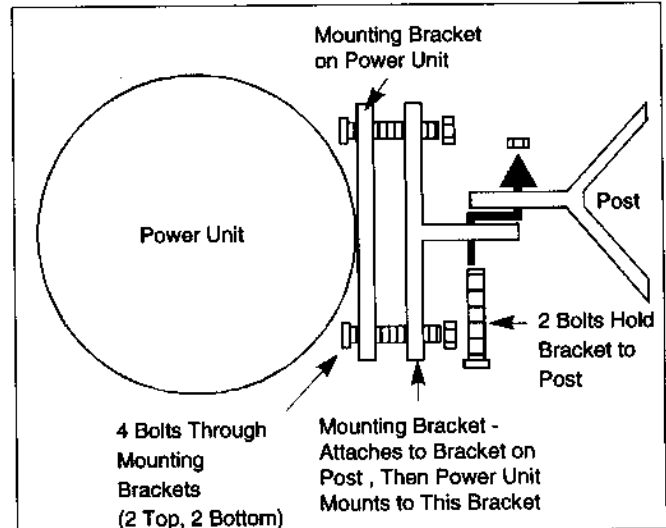


Figure 12 - Power Unit Installation

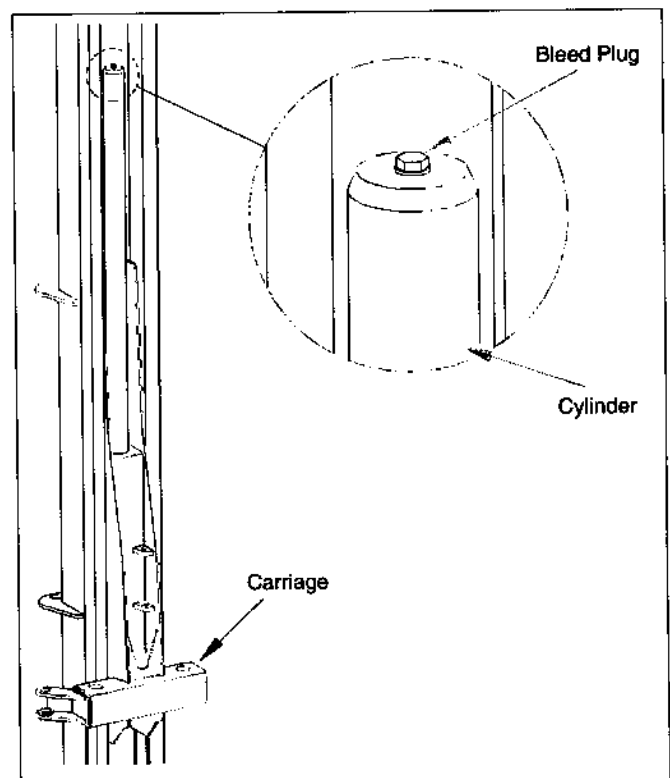


Figure 13 - Cylinder and Bleed Plug Location

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NOTE: Lifting the lift arm safety restraint allows the lift arm to swing freely. When the lift is in the full down position, the safety releases in the base plate will release the arm locks so the arms can be moved freely.



## WARNING

Operation of the lift with the arm restraints disconnected could cause the vehicle to

fall, causing serious damage or injury.

### Finishing the Installation

1. Install the plastic guards over the safety locks on the outside of each post with the self-tapping screws provided.
2. Install the rubber bumper guards on each carriage above the lift arms to protect vehicle doors from damage.
3. Grease the inside of the posts.
4. Check all fittings for leaks.
5. Double check that all bolts and nuts are tight and the anchor bolts are torqued between 150 and 160 foot pounds.

### Bolster Installation — AF 9B Lift Only

1. Bolt the outrigger supports to the posts using 1 inch 8 unc x 2 inch large bolts. Shim under the ends of the outriggers at holes supplied for anchor bolts. Install anchor bolts as described in *General Anchor Bolt Instructions*, page 3.
2. Slide the bolster adapters over the carriages. Insert two carriage pins through each adapter/carriage.
3. Assemble the rack to be used according to the instructions provided with the rack.
4. Attach the rack bolster to the bolster adapters on the carriages. Be sure the rack bolster is mounted under the carriage adapter.

**This completes the installation of the lift.**

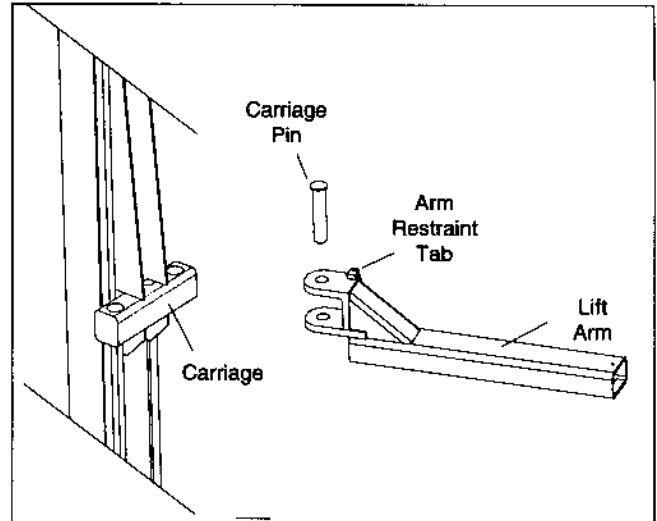


Figure 14 - Lift Arm Installation

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## **Lift Operation**

Use the vehicle manufacturer's recommended lift points when raising a vehicle with the lift. Never lift on a strut or shock absorber mount. Take care not to pinch or bend any brake lines or other functional lines.

### **To Raise the Lift**

Read the safety warnings on page 2 for important safety information on raising and using this lift.

1. Pull the vehicle squarely into the bay and center it between the posts. Positioning of the vehicle from front to back is very critical. The vehicle must be positioned so the weight is balanced equally on the front and rear lift arms. Check all vehicles for any loads or equipment that may cause an unbalanced condition or may exceed the rated capacity of the lift.
2. Push the actuator switch to raise the lift.
3. Raise the lift past desired working height, then pull the lowering valve down to lower the lift slightly and engage the safety latches.

### **To Lower the Lift**

Read the safety warnings on page 2 for important safety information on lowering the lift.

1. Remove all objects from under the lift and vehicle (tools, parts, air hoses, etc.).
2. Push the actuator switch to raise the lift slightly and take the weight off the safety latches. Pull and hold the safety release handle down. Pull down the lowering valve on the power unit to lower the lift.

NOTE: If the safety release handle is not held down, the lift will engage the next safety latch and stop.

## **Lift Maintenance**

To assure a long and useful life for your lift, regular maintenance is required. Do not operate the lift in a damaged condition.

### **Daily**

1. Inspect the equalizing cables for signs of wear or slack. Replace or tighten as required.
2. Inspect for loose bolts and nuts. Tighten as required.

### **Weekly**

1. Check hydraulic fluid level in the power unit. Add fluid as required. Inspect the hoses, pump and fittings for leaks. If hydraulic fluid is spotted, find leak and repair or replace parts as required.

### **Monthly**

1. Apply grease to the post channels that guide the carriage.
2. Re-torque anchor bolts to 150 foot pounds.
3. Lubricate equalizer pulleys with a non-petroleum based grease.

NOTE: Do not use lubricants that advise against use on plastics.

### **Regularly**

1. Inspect the entire lift structure for damage. Replace damaged components with AMMCO replacement parts.
2. Inspect safety latches for proper operation. DO NOT use the lift if safety latches do not ratchet as lift is raised. Repair safety latches immediately.
3. Keep the area around the lift clean and free of obstructions.