

**FORWARD MANUFACTURING COMPANY, INC.**

**MODEL 9000 AN**

**2-POST, 9000-LB. CAPACITY ASYMMETRIC LIFT (Direct Pull)**

**SPECIFICATIONS**

1. Asymmetric, rotated columns, vehicle doors do not hit lift.
2. Clear floor design; full under car access.
3. Automatic arm restraints, arms lock automatically when the lift is raised.
4. Dual point lock release mechanisms for added safety.
5. Overhead shut-off switch.
6. Two hydraulic cylinders--one per column.
7. Non load-bearing cables to synchronize the cylinders.
8. Lifting capacity - 9,000 lbs.
9. Mechanical safety stops - 3" interval
10. Full height lift time - 45 sec.
11. Overall width - 11'-2".
12. Overall height - 12'; no height options.
13. Width between posts - 98"
14. Drive-thru clearance - 86"
15. Lifting height - 75"
16. Pad height from floor - 4-3/4"; pad extensions optional.
17. Rubber lift pads 5" x 5".
18. Power - 2 hp, 208/230 VAC, 20 amp, 60 Hz, single phase. Optional 3 phase.
19. ALI/ETL certified to meet all applicable ANSI and UL safety standards.

Note: Specifications subject to change without notice or liability.

MODEL 9000 AN TWO POST LIFT, 134" WIDE

INSTALLATION AND OWNERS MANUAL

11/93

I MAN 991017

IMPORTANT NOTICE:

THE FLOOR ON WHICH THE LIFT IS TO BE INSTALLED MUST BE 4 INCH MINIMUM THICKNESS CONCRETE, WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI, AND REINFORCED WITH STEEL BAR.

FAILURE BY THE PURCHASER TO PROVIDE THE RECOMMENDED MOUNTING SURFACE COULD RESULT IN UNSATISFACTORY LIFT PERFORMANCE, PROPERTY DAMAGE, OR PERSONAL INJURY.

IMPORTANT NOTICE REGARDING CEILING HEIGHT:

THIS IS AN OVERHEAD TYPE LIFT WHICH REQUIRES A CEILING HEIGHT OF AT LEAST 12'- 0".

IMPORTANT:

READ THIS INSTALLATION MANUAL BEFORE INSTALLING THE LIFT.

READ THE ANCHOR BOLT INSTRUCTION PAGE BEFORE DRILLING AND INSTALLING THE ANCHOR BOLTS.

DO NOT RAISE A VEHICLE ON THE LIFT UNTIL THE LIFT HAS BEEN CORRECTLY INSTALLED AND ADJUSTED AS DESCRIBED IN THIS MANUAL.

DO NOT REMOVE A TRANSMISSION, SUSPENSION ASSEMBLY, OR OTHER HEAVY ITEM FROM THE FRONT OF A FRONT WHEEL DRIVE VEHICLE UNLESS THE VEHICLE IS ADEQUATELY SUPPORTED IN THE REAR.

IMPORTANT NOTICE REGARDING INSTALLATION:

THIS LIFT REQUIRES A CERTAIN PROCEDURE DURING INSTALLATION TO REDUCE THE AMOUNT OF AIR TRAPPED IN THE CYLINDERS. FAILURE TO FOLLOW THE PROCEDURE WILL RESULT IN UNSATISFACTORY LIFT PERFORMANCE.

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## MAINTENANCE, EVERY MONTH

1. Lubricate the four inside corners of the legs with heavy duty bearing grease.
2. Check the hydraulic fluid level. If necessary add oil cross referenced to Mobil DTE 25 or Texaco HD 46. These are petroleum based hydraulic oils, non foaming, non detergent, 10 weight. Fill to screw near top of tank. Do not overfill.
3. Check carriage latch syncing: Latches should click at the same time. Adjust cables if required. Instructions are in the Installation text.
4. Check anchor bolt tightness. If the anchor bolts are excessively loose, check more often.

## OPERATING TIPS

1. Always set a vehicle on the latches before working under it.
2. SLOWLY lower vehicles onto the safety latches.
3. Keep the four inside corners of the legs lubricated with heavy duty bearing grease.
4. If the carriages get out of sync (latches do not click at the same time), readjust the cables as described in the Installation Instructions.
5. Check anchor bolt tightness every month.
6. Do not remove the transmission, suspension assemblies, or other heavy items from the front of front wheel drive vehicles without supporting the rear of the vehicle.

## TOOLS FOR INSTALLATION

Concrete hammer drill with

3/4" bit  
11/16" open end wrench  
3/4" open end wrench  
1-1/16" deep socket  
1-1/8" socket or wrench  
13/16" open end wrench

Level (18" minimum length)  
Vise grips  
Tape measure  
Funnel  
Hoist or forklift  
Two 12' step ladders

3 gallons of petroleum based hydraulic oil, non foaming, non detergent, 10 weight, such as Mobil DTE 25 or Texaco HD 46.

## INSTALLATION

### IMPORTANT NOTICE REGARDING CEILING HEIGHT:

THIS IS AN OVERHEAD TYPE LIFT WHICH REQUIRES A CEILING HEIGHT OF 12'-0".

### IMPORTANT NOTICE REGARDING INSTALLATION:

FOLLOW THE RECOMMENDED PROCEDURE FOR HYDRAULIC SYSTEM BLEEDING TO AVOID UNSATISFACTORY LIFT PERFORMANCE.

1. Unpack the lift. Remove the swing arms, bolt box, power unit box, overhead beam, and uprights. Save all packing bolts.
2. Remove the 1/2" bolts which hold the two legs together. Remove the top leg.
3. Refer to Figure 1, 9000 Two Post Asym. Lift Assembly, to see how the lift is assembled. Note that there is a mainside leg and upright, an offside leg and upright, two overhead ring weldments and an upright ring weldment to guide the overhead switch limit cable, and a system of hoses connecting the cylinders and the power unit.
4. Refer to Figure 2, 9000 Two Post Asym. Lift Placement, to determine where to place the legs in the service bay. The mainside leg holds the power unit. The mainside leg with its power unit is located on the right hand or passenger side of the lift.
5. Position the two legs on the floor on their backs. Refer to Figure 3, Leg Assembly. Attach the mainside upright to the mainside leg using five 1/2 x 2-1/2" grade 5 bolts. See also Step 6 below. The mainside leg has four holes in its back for mounting the power unit. The mainside upright has a bracket on its post for mounting the upright ring weldment and a bracket for mounting the bulkhead tee fitting.
6. Refer to Figure 3, Leg Assembly. Attach the offside upright to the top of the offside leg using five 1/2 x 2-1/2" bolts.
7. Remove the port plugs from the two cylinders. When attaching hydraulic fitting with pipe threads to the cylinders use teflon tape. DO NOT START THE TAPE CLOSER THAN 1/8" TO THE END OF THE PIPE FITTING. This will prevent pieces of tape from contaminating the system. Refer to Figure 3, Leg Assemblies. Attach a male pipe thread to male JIC 90 elbow to the nipple at the rod end of both cylinders. The fitting should face away from the rod end. To one cylinder, attach

a male pipe thread to male JIC branch tee to the top opening. The openings should be perpendicular to the mounting holes in the cylinder end. This is the mainside cylinder.

8. Attach a male pipe thread to male JIC 90 elbow to the top opening of the other cylinder. The opening should be perpendicular to the mounting holes in the cylinder end and face away from the nipple at the rod end. This is the offside cylinder.
9. Mount the mainside and offside cylinders in their respective leg assemblies. Refer to Figure 3. The fittings at the rod end of the cylinders should be placed facing the rear of the leg on the mainside, and to the left on the offside. At the top, the cylinder is mounted using a 1/2 x 5" Grade 8 bolt with nut. Do not extend the cylinder rams for the lower cylinder mounting at this time.
10. Lay out and mark the floor for the leg placement locations. Stand up and place the two legs in the correct locations.
11. Drill the six anchor bolt holes for the MAINSIDE LEG ONLY. SEE THE CONCRETE ANCHOR BOLT INSTRUCTION PAGE FOR DRILLING AND INSTALLATION INFORMATION. Install the anchor bolts but do not tighten the nuts.
12. The mainside leg must be checked for vertical alignment both side to side and front to rear. Use a level to check this. Shim the legs as necessary to level the legs. Shim next to and on both sides of the anchor bolts. Tighten the anchor bolt nuts.

**IMPORTANT: DO NOT USE AN IMPACT WRENCH TO TIGHTEN ANCHOR NUTS.**

Re-check the leg and make any necessary adjustments. See the concrete anchor bolt instruction page for tightening information.

**IMPORTANT:** The legs must be shimmed so that the bases are adequately supported. If more than 1/2" of shimming is required, do not use the small shims provided by the factory. Fabricate larger shims from steel flat, 1/4" or 1/2" thick by 2" or more wide.

13. Raise the overhead beam and attach it to the uprights using 1/2 x 2-1/2" grade 5 bolts. Also attach the overhead limit cable ring weldments to the beam as shown in Figure 5, Limit Cable Installation.
14. Check the alignment and plumbness of the entire structure. Level the offside leg in both the side to side and front to rear directions. The base of the leg may vary slightly from

the measured dimension, but it is more important that the leg be perpendicular and parallel with the other leg.

15. Drill the anchor bolt holes for the offside leg. Install the anchor bolts and shim the base as required. Tighten the nuts and recheck the plumbness of the leg. Make any necessary adjustments. DO NOT USE AN IMPACT WRENCH ON THE ANCHOR BOLTS.
16. Raise the carriages up until they catch the first latch stop. The two carriages should be positioned at the same height above the bases. If one carriage is low, it should be raised to the height of the other. Both carriages should be resting on the same safety latch tooth in each leg. Measure the distance from the leg base to the bottom of each carriage. The two measurements should be within 3/8" of each other. If one carriage is low, raise it to the safety latch tooth which makes the two carriage heights approximately the same.
17. Refer to Figure 4, Two Post Cable Installation. Assemble a 3/4" NF nylon insert nut with a SAE washer onto one end of each cable. Start at the left front hole at the top of the offside carriage. Thread the cable up thru the hole in the carriage top, up to the overhead pulley, across to the other overhead pulley on the mainside, down thru the hole in the leg top, down thru the hole in the right front of the mainside carriage top, around the pulley in the leg bottom, and up to the right rear hole of the carriage top. Secure the cable end with a 3/4" NF nylon insert nut and SAE washer. Do not tighten the cable at this time.
18. Start at the left front hole of the mainside carriage and run the second cable in the same manner. Secure the cable end with a 3/4" NF nylon insert nut and a SAE washer. Do not tighten the cable at this time.
19. The carriages should be resting on the same safety rack tooth and the cables should be slack. The safety latch pull rods will not pull down, indicating that the weight of each carriage is on its safety latch. Measure the height above the base plate for each carriage. The measurements should be within 3/8" of each other. Make a note of the two measurements.

**IMPORTANT:** The carriages must remain at the same height while the cross cables are being tightened. Overtightening of one cable could raise the carriage in the opposite leg and cause the carriage safety latches to be out of sync.

20. Take out the slack, but do not tighten, both cables by turning down the nuts on the top of each carriage top. Use vise grips to hold the cable end while tightening the nut. Do not damage the threads with the vice grips.

21. Alternately tighten the cable nuts at both carriages until the cables are tightened. Correct tension in the cables is indicated by approximately 1/4" deflection on the cable in the leg when pulled at its midpoint. Measure the carriage heights or check the safety latch pull rod for the carriage weight to verify that neither carriage has been raised. If a carriage has been raised more than 1/8", loosen the cables and repeat the procedure.
22. Pull each cylinder rod down and insert the threaded end into the mounting holes at the carriage base. There is a snap ring on each rod just past the threaded end. Attach a 3/4 NF nut to the threaded rod and tighten until the rod turns. DO NOT HOLD THE ROD WITH PLIERS, CHANNEL LOCKS, ETC. CYLINDER LEAKS CAUSED BY DAMAGED FINISH ON THE RODS ARE NOT COVERED BY WARRANTY. Hold the 3/4 nut with a wrench and tighten a 3/4 NF jam nut against it.
23. Locate the power unit mount holes on the back of the main-side leg. Insert the 5/16 x 1" bolts to face the outside and secure with 5/16 plain nuts. Attach the power unit to the bolts and secure with 5/16 nylon insert nuts.
24. Refer to Figure 5, Limit Cable Installation. Attach the upright limit cable ring weldment to the mainside upright using two 5/16 x 1 NC bolts and nylon insert nuts. Strip 6" from the end of the plastic coated 1/16" cable. Attach the cable to the offside overhead ring weldment using a squeeze clamp. Thread the cable thru the mainside overhead ring weldment, down to the upright ring weldment, and down to the power unit. On top of the conduit box of the power unit is the pull rod for the cable. Cut the cable 6" longer than the pull rod location, strip the cable end back 8", and attach with a threaded clamp. The cable should not have any slack, but it should not hold the plunger off the limit switch inside the conduit box. Check and adjust if necessary. Put a dab of grease on the rings where the cable rubs the ring.
25. Refer to Figure 6, Hose Installation. Attach a 9/16 O-ring to 3/8 male JIC 90 elbow to the pressure port of the power unit and attach a 3/8 male pipe to 3/8 male JIC 90 elbow to the return port. On the Fenner unit, the ports are on the left side. On the Barnes, they are on the front and left sides. The 103" hose is run between the fittings on the cylinder tops and the hose sits on top of the overhead beam. The second 86" hose is run from the mainside cylinder top down thru the inside of the upright, out of the side hole, and down thru the guides on the leg to the return port on the power unit.
26. Mount the bulkhead branch tee fitting to the mainside upright



bracket and attach the 3/8 JIC 45 swivel fitting as shown in Figure 6. The 55" hose runs from the bulkhead fitting down thru the leg top, behind the cylinder down to the mainside cylinder port. The 195" hose runs from the bulkhead fitting, up thru the side hole of the upright, over the top of the overhead beam, down thru the offside upright, thru the leg top, down the rear of the cylinder to the port. Tie-wrap these hoses to the cylinders as shown in Figure 6. The 62" hose runs from the 45 swivel fitting down thru the guides on the leg to the high pressure port on the power unit.

27. If the Power Unit is a Fenner, remove the fill level screw near the top of the tank. Remove the breather and insert a funnel in the tank and fill with petroleum base hydraulic oil, non foaming non detergent, such as Mobil DTE 25 or Texaco Hd 46. Replace the screw and tank breather.

If the Power Unit is a J. S. Barnes, attach the elbow fitting to tank vent port on the right side of the unit. Remove the fill level screw near the top of the tank. Insert a funnel in the elbow fitting and fill the tank to the screw hole with petroleum base hydraulic oil, non foaming, non detergent, such as Mobil DTE 25 or Texaco HD 46. Replace the screw. Attach the breather to the elbow fitting.

28. Establish electrical hook-up to 220V single phase. See Figure 7, 9000 Two Post Asym. Electrical Wiring Diagram.
29. Install the swing arms with the swing arm pins. The long arms go to the front, or drive in side of the lift. Lubricate the swivel pad screws and install them onto the arms.
30. Refer to Figure 8, 9000 Two Post Arm Lock Installation. Attach the arm lock parts as shown.
31. Lubricate the four inside corners of both legs with heavy duty bearing grease.
32. DO NOT ATTEMPT TO RAISE A VEHICLE AT THIS TIME.  
THE HYDRAULIC SYSTEM MUST BE BLED TO REMOVE ALL AIR.  
Lower the lift to the ground. To lower, first raise the carriages just enough to release the latches using the push button switch on the power unit. Pull out the latch pull rods under each carriage, lower the lift using the lowering control lever on the power unit.
33. Loosen the hose connections at the rod end of both cylinders. Run the power unit until fluid appears at the mainside cylinder port. Tighten that hose connection. Run the power unit until fluid appears at the offside cylinder port and there is no more air. Tighten that hose connection.

DO NOT ATTEMPT TO RAISE A VEHICLE AT THIS TIME.

Raise the lift to full height. Lower the lift onto the safety latches. Raise the carriages, pull out both latch pull rods, and lower the lift to the ground. If there are any problems, check the Troubleshooting section of the manual.

34. DO NOT ATTEMPT TO RAISE A VEHICLE AT THIS TIME.  
Raise the lift to the top of its travel and lower it to the floor three times to remove air from the hydraulic system.

IMPORTANT: DO NOT ATTEMPT TO RAISE A VEHICLE UNTIL;

1. The cables are adjusted correctly. The latches click together as the lift is raised. Both safety latches lock when the carriages are lowered onto the locks and the pull rods cannot be pulled out.
2. The legs have been leveled and the anchor bolts have been tightened.
3. The leg corners have been greased.
4. The hydraulic system has been bled and the lift has been cycled three times to remove air.

35. THE FIRST TIME A VEHICLE IS PLACED ON THE LIFT, RAISE IT NO HIGHER THAN THREE FEET. Lower the vehicle onto the latches. Lower the vehicle to the floor. The lift should move up and down smoothly. If there are any problems, check the Troubleshooting section of this manual. Correct any problems before continuing.
36. Raise the vehicle to full height and lower the carriages onto the safety latches. Lower the vehicle to the floor. If there are any problems, check the Troubleshooting section of this manual.
37. After cycling the lift a few times with a vehicle on it, re-check the tightness of the anchor bolt nuts. Check the nuts for tightness every week for the first month, and every month afterwards.

## CONCRETE ANCHOR BOLT INSTRUCTIONS

### DRILLING PROCEDURE:

1. The anchor bolts must be installed at least 5" from any edge of the concrete or any seam.
2. Use a CARBIDE TIP, SOLID DRILL BIT, 3/4" diameter. Tip diameter to ANSI STANDARD B94.12-1977. (.775 to .787").
3. Use a concrete hammer drill.
4. Do not use excessively worn bits or bits which have been incorrectly sharpened.
5. Keep the drill in a perpendicular line while drilling.
6. Let the drill do the work. Do not apply excessive pressure.
7. Lift the drill up and down to remove dust and reduce binding.
8. Drill the hole to a depth equal to the full length of the bolt, or completely thru the slab.
9. Blow out the dust from the hole. This increases the holding power.

### INSTALLATION

1. Drill the hole equal to the length of the anchor bolt or completely thru the slab.
2. Assemble the washer and nut onto the anchor bolt. Thread the nut approximately 4/5's of the way onto the anchor bolt. Using a hammer on the nut, carefully tap the anchor bolt into the concrete. Do not damage the nut or the threads.
3. Tap the nut and bolt so that the washer rests against the base of the lift.
4. Tighten the nut two or three turns using hand tools.

IMPORTANT: DO NOT USE AN IMPACT WRENCH ON ANCHOR BOLT NUTS.

## TROUBLESHOOTING

### 1. PUMP MOTOR WILL NOT RUN.

1. Check electrical supply breaker.
2. Check for activation of the travel limit switch by a tall vehicle. Normally, lowering a vehicle onto the safety latches will deactivate the limiting mechanism. However, if the plunger in the switchbox has lifted off the limit switch and the carriages are on the safety latches, the pin on the limit switch must be manually held down to activate the circuit.
3. Check adjustment of overhead cable and microswitch in cable control box. If the cable holds plunger off of the microswitch, the circuit is broken.
4. Check microswitch in motor control box.

### 2. THE VEHICLE DOES NOT MOVE UP AND DOWN SMOOTHLY.

IMPORTANT: IF A VEHICLE DOES NOT MOVE UP AND DOWN SMOOTHLY, DO NOT CONTINUE TO RAISE IT. LOWER THE VEHICLE AND CORRECT THE PROBLEM.

1. Adjust vehicle placement on the lift for more equal weight distribution.
2. Check the four inside corners of the two legs for roughness. Any rust or burrs must be removed with 120 grit emery cloth. The surfaces must be smooth.
3. Lubricate the leg corners with heavy duty bearing grease.
4. Check the legs for vertical alignment both side to side and front to rear. Use a level to check this. Shim the legs as necessary to level the legs. Use steel 3/4" washers or 2x1x1/16" or 1/8" steel flat strips. Shim next to and on both sides of the anchor bolts.

IMPORTANT: The legs must be shimmed so that the bases of the legs are adequately supported. If more than 1/2" of shimming is required, do not use the shims provided by the factory. Fabricate larger shims from steel flat which is 1/4" to 1/2" thick by 2" or more wide.

3. THE LIFT WILL NOT PICK UP ITS RATED LOAD.

1. Adjust vehicle placement on the lift for more equal weight distribution.
2. Check the voltage of the electrical supply with the unit running under load. The voltage should be at least 208 volts. Voltage less than this will not allow the motor to develop full power.
3. The relief valve in the power unit is preset at the pump factory and should not be adjusted. Call the lift manufacturer for assistance.

4. THE LIFT WILL NOT LOWER

A. SAFETY LATCH PULL RODS

The lift will move down approximately 1", then it stops. Check the safety latch pull rods. If one of the rods has moved back up, that carriage is resting on its safety latch.

Explanation: The pull rod is out of adjustment and is rubbing on the leg. When the carriage is lowered, the rod is pulled in, engaging the safety latch. Adjust the rod to clear the leg. Push down on the first bend of the rod just inside the leg. Bend the rod slightly to allow it to move freely between the leg and the carriage.

B. THE LIFT WILL NOT LOWER.

CARRIAGES OUT OF SYNC.

The vehicle is at the top of the lift's travel and one safety latch will not disengage to allow the lift to lower.

Explanation: The carriages are out of sync. The carriage which is "low" cannot be raised enough to clear the latch rack so that it can be disengaged. This is confirmed by the inability to pull down the latch rod on that carriage. Also, the carriages do not "click" at the same time as the lift is raised.

To lower lift:

1. Raise the lift to full height.
2. Push IN both safety latch pull rods to engage latches.
3. Use a hydraulic jack and a length of pipe to raise the low carriage enough to disengage the safety

latch. Pull the latch rod on that carriage only.

4. Remove the jack and pipe.
5. Pull the latch rod on the other carriage to disengage the latch.
6. Lower the lift and remove the vehicle.
7. Readjust the carriage chain nuts and cables as described in this manual.

#### 5. CYLINDER LEAKS DOWN.

There may be some contamination in the check valve which prevents the valve from seating. Hold open the lowering valve while energizing the motor switch. Allow the motor to run for 30 seconds to flush the valve. Repeat 3 or 4 times. If the cylinder continues to leak down, the valve may be faulty. Contact the manufacturer.

#### 6. POWER UNIT SWITCH WILL NOT RELEASE.

Contact the manufacturer for a replacement switch. Also, install a 20 amp, 220 volt twist lock plug in the electrical line just before the power unit electrical box. If the switch should ever stick in the closed position, the plug can be opened.

#### CYLINDER REPLACEMENT:

1. Raise the lift carriages a few inches. Place a 2" spacer under each carriage. Lower carriages onto the spacers.
2. DO NOT HOLD THE CYLINDER ROD WITH ANYTHING WHICH WILL DAMAGE THE FINISH. CYLINDER LEAKS CAUSED BE DAMAGED RODS ARE NOT COVERED BY WARRANTY. Hold the 3/4 full nut and remove the jam nut. Remove the full nut.
3. Remove the pressure hose from the bottom fitting. Remove the low pressure hose from the top fitting.
4. Pull the rod from the carriage bottom plate. Push the rod into the cylinder to prevent damage to the rod during handling.
5. Remove the cylinder from the upright by taking out the 1/2 x 4-1/2 grade 8 bolt at the top of the cylinder.
6. Reverse procedure to replace the cylinder.
7. Bleed hydraulic system as described in Installation steps 32 and 33.

9000 AN, 134" WIDE TWO POST ASYMMETRIC LIFT ASSEMBLY PARTS LIST  
(11/93)

ITEM	PART NO.	NAME/DESCRIPTION	RQD.
1	*994016	Bolt Box 9000 AN, 134" WIDE	1
2	057101	Mainside Leg Weldment	1
3	057201	Offside Leg Weldment	1
4	057500	Carriage Assembly	2
5	057501	Carriage Wldmnt	2
6	070525	Safety Latch	2
7	070528	Wipeout	2
8	070530	Pivot, latch	2
9	991077	Cotter pin, 3/32 x 1-1/2	2
10	913682	Bolt, latch, 3/4 x 2 NC	2
11	913600	Nut, latch, 3/4 nyl insert, NC	2
12	913605	Washer, latch, 3/4 flat	4
13	912005	Washer, wipeout	4
14	090541	Pull rod	2
15	991071	Spring, latch	2
16	991070	Cap nut, 3/16	2
17	*037601	Short Swing Arm, Right Hand	1
18	*037602	Short Swing Arm, Left Hand	1
19	*037603	Long Swing Arm	2
20	*057805	Overhead Wldmnt, 90-3/4" Long	1
21	057801	Mainside Upright Wldmnt	1
22	057802	Offside Upright Wldmnt	1
23	070606	Pad Wldmnt	4
24	991030	1-3/8 Snap Ring	6
25	995020	4" Sheave	4
26	995030	5" Sheave	2
27	991211	Bushing, sheaves	6
28	992317	Cylinder, 2 x 67-1/2	2
29	995120	Rub Block	16
30	992001	Power Unit, AB-1135-A, RV-19	1
31	912701	1/2 x 2-1/2 NC Bolt	14
32	912601	1/2 NC Nut	14
33	912605	1/2 Flat Washer	28

\*BOLT BOX PARTS LIST, PN 994016 (8/93)

1	*991017	Manual 9000 AN, 134" WIDE	1
2	*992631	Cable, 3/8 dia x 32', 8"	1
3	*992632	Cable, 3/8 dia x 32', 2"	1
4	992609	Cable, Limit Switch, 1/16 cable	1
5	995430	Swing Arm Pin, 8"	4
6	991124	Shims	16
7	056805	Overhead Limit Cable Ring Wldmnt	2
8	057804	Upright Limit Cable Ring Wldmnt	1
9	991082	Tie Wrap	5
10	911701	5/16 NC nut, power unit mnting	4

BOLT BOX PARTS LIST, CONT.

ITEM	PART NO.	NAME/DESCRIPTION	RQD
11	911703	5/16 Nyl ins nut, NC, power unit	6
12	911741	5/16 x 1 NC bolt, 4 P/U, 2 ring	6
13	912701	1/2 x 2-1/2 NC Bolt, Assy	6
14	912601	1/2 NC Nut, 8 Assy	6
15	912603	1/2 NC Nylon Insert Nut, cyl mnt	2
16	912605	1/2 Flat Washer	12
17	913604	3/4 Nyl Insert Nut NF, cable mnt	4
18	913606	3/4 SAE Washer, "	4
19	913828	3/4 x 5-1/2 anchor bolt	12
20	913602	3/4 NF Nut, Cyl mnt	2
21	913611	3/4 NF Jam Nut, Cyl mnt	2
22	912791	1/2 x 5 NC Bolt, Gr 8, "	2
	037760	Arm Lock Assy, Asym	4
23	037703	Long Plunger	4
24	037704	Long Slider	2
25	070707	Long Bumper Slider	2
26	991216	Spring, 13/16 dia x 3	4
27	991209	E-Clip	8
28	913206	5/8 SAE Washer	4
29	991269	Rubber Bumper	2
30	992141	3/8 Hose x 55, High Pressure	1
31	992142	3/8 Hose x 62, " "	1
32	*992146	3/8 Hose x 195, " "	1
33	992137	3/8 Hose x 86, High Pressure	1
34	*992147	3/8 Hose x 103, " "	1
35	992463	3/8 JIC Bulkhd Branch Tee	1
36	992454	3/8 Bulkhead Nut	1
37	992410	9/16 O-ring to 3/8 JIC 90 elbow	1
38	992402	3/8 Male JIC to 3/8 MNPT, 90	4
39	992419	3/8 JIC Branch Tee to 3/8 MNPT	1
40	991084	1/16 Cable Clamp, Alum Squeeze	1
41	991244	1/8 Cable Clamp, Threaded	1
42	992464	3/8 JIC 45 Swivel Nut	1

\* DENOTES REPLACEMENT ITEMS FOR 9000 A, 134" WIDE MODEL.



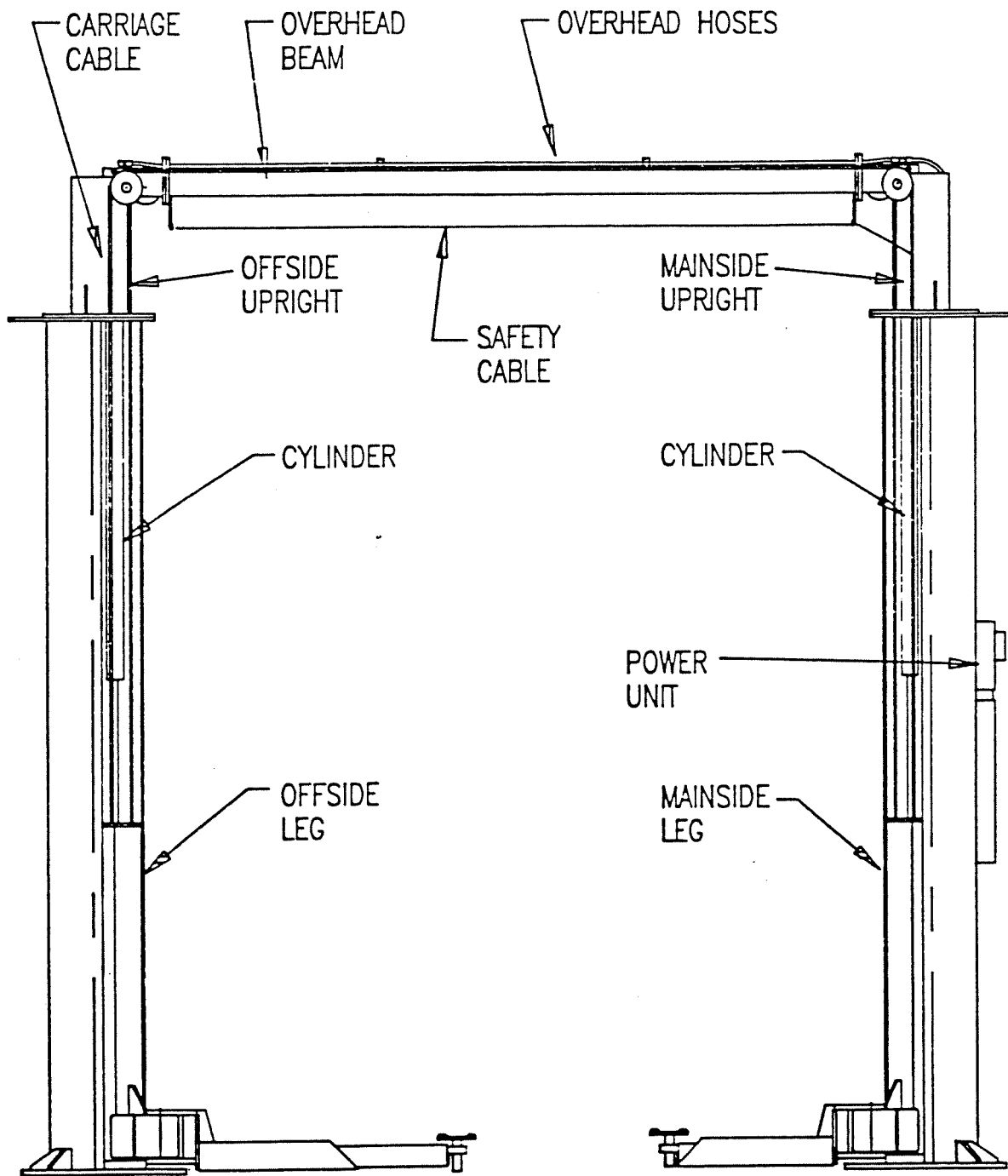


FIGURE #1

9000 TWO POST ASYMMETRICAL LIFT ASSEMBLY

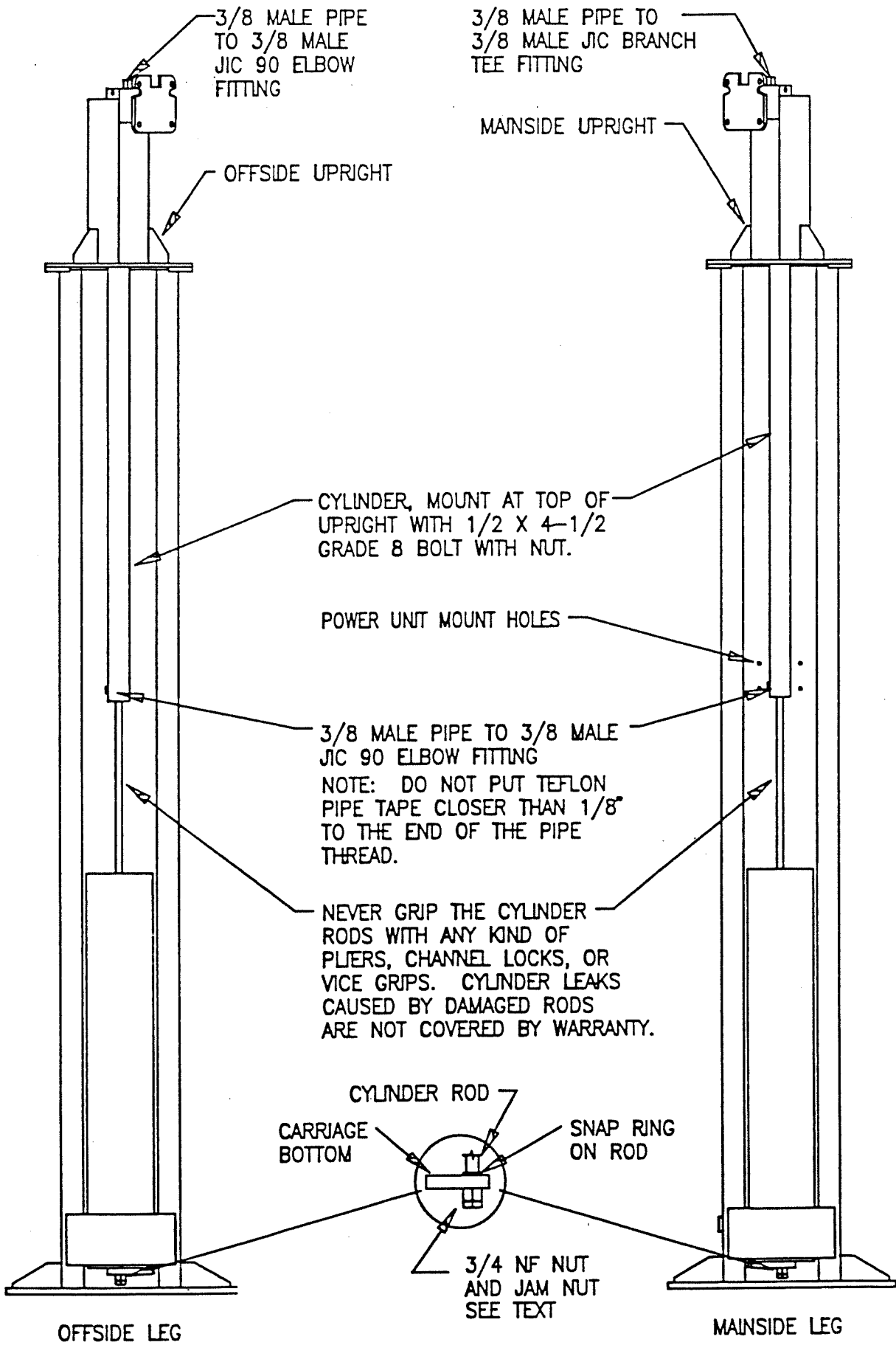


FIGURE #3

9000 TWO POST ASYMMETRICAL LIFT LEG ASSEMBLY

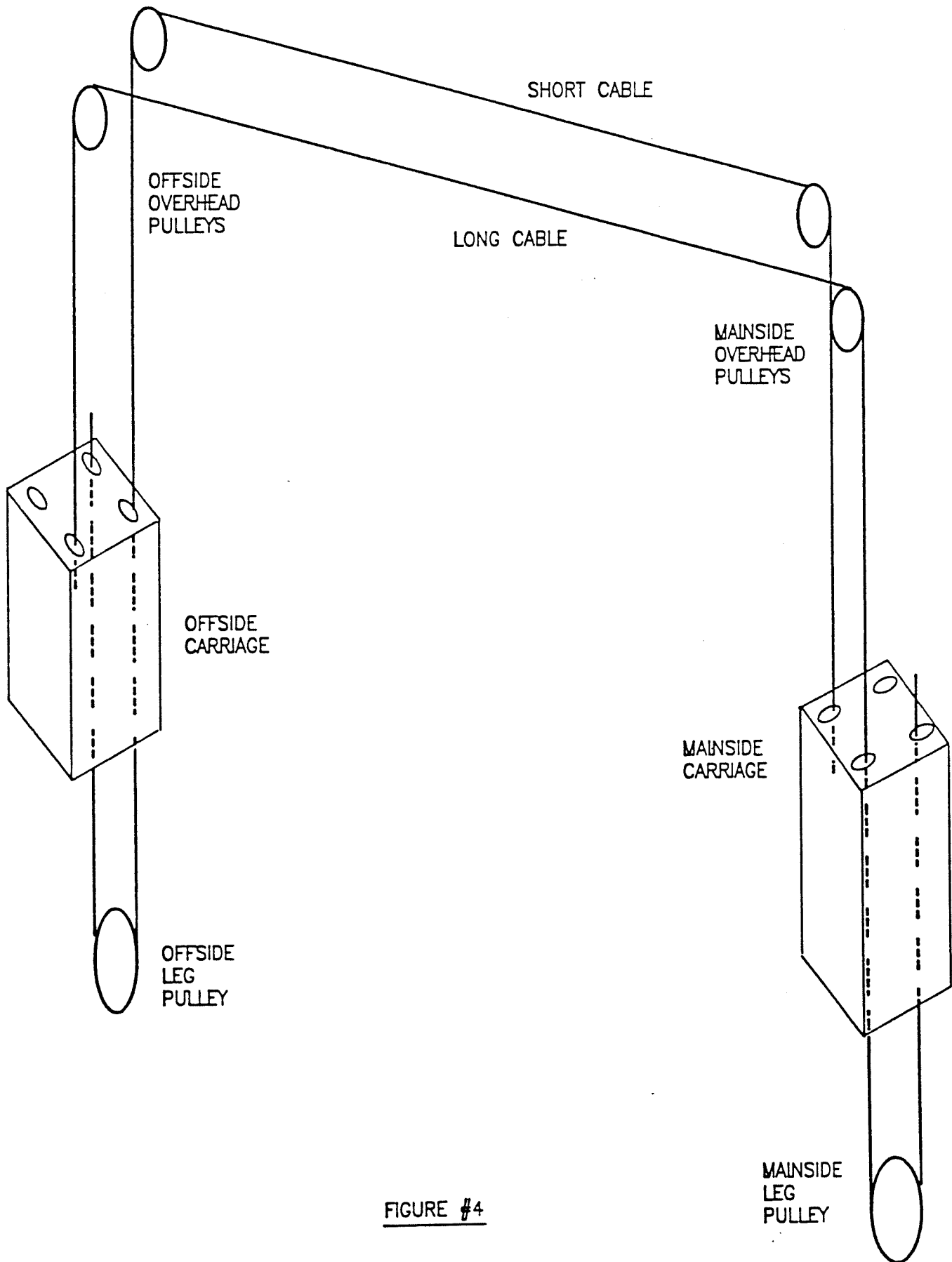
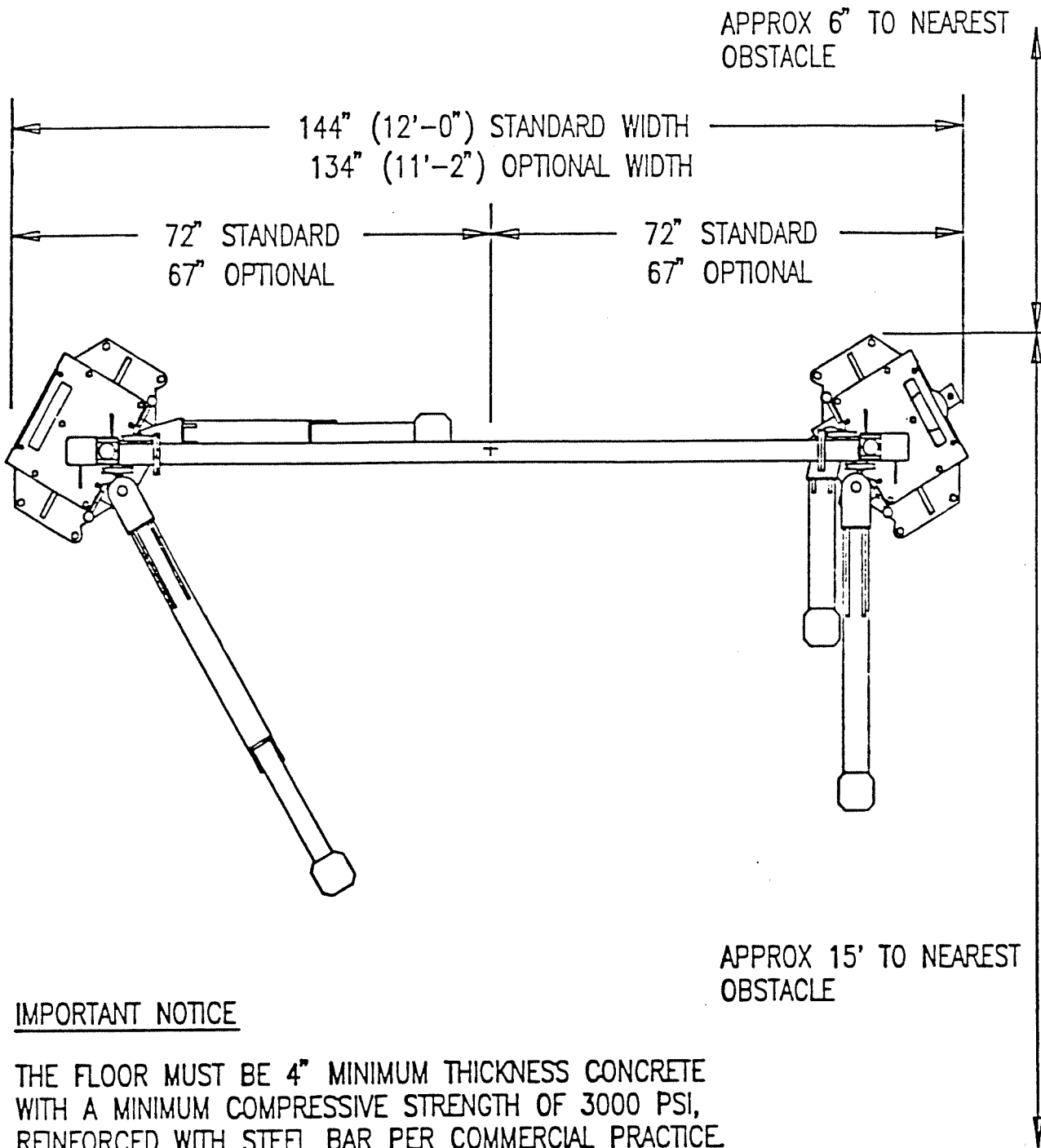


FIGURE #4



IMPORTANT NOTICE

THE FLOOR MUST BE 4" MINIMUM THICKNESS CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI, REINFORCED WITH STEEL BAR PER COMMERCIAL PRACTICE.

NOTE:

THE STANDARD 12' WIDE LIFT HAS AN OVERHEAD BEAM WHICH IS 100-3/4' LONG  
THE OPTIONA' 134" WIDE LIFT HAS AN OVERHEAD BEAM WHICH IS 90-3/4' LONG

FIGURE #2

9000 TWO POST ASYMMETRICAL LIFT PLACEMENT

OFFSIDE OVERHEAD LIMIT CABLE RING

MAINSIDE OVERHEAD LIMIT CABLE RING

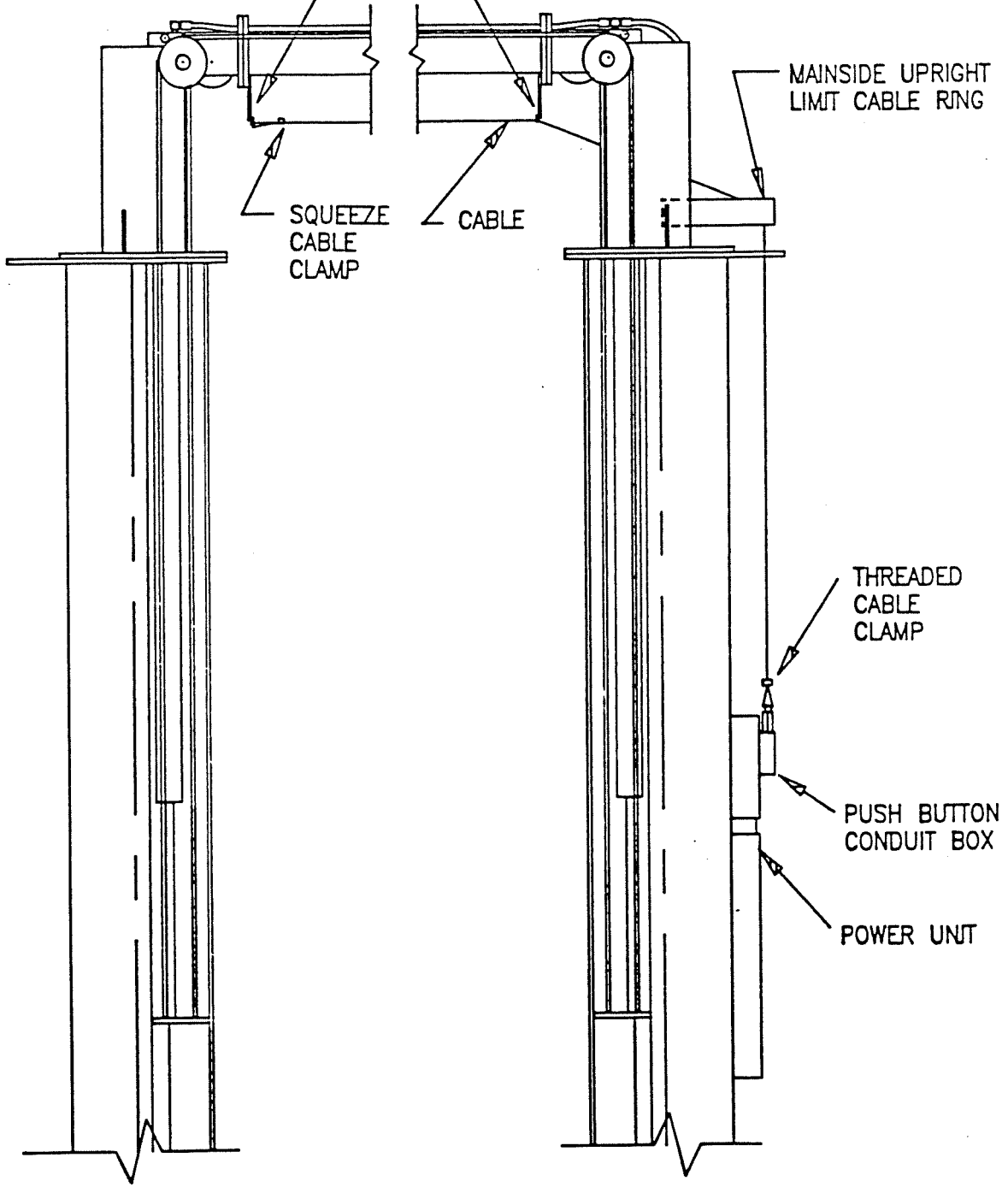


FIGURE #5

9000 TWO POST ASYMMETRICAL LIFT LIMIT CABLE INSTALLATION

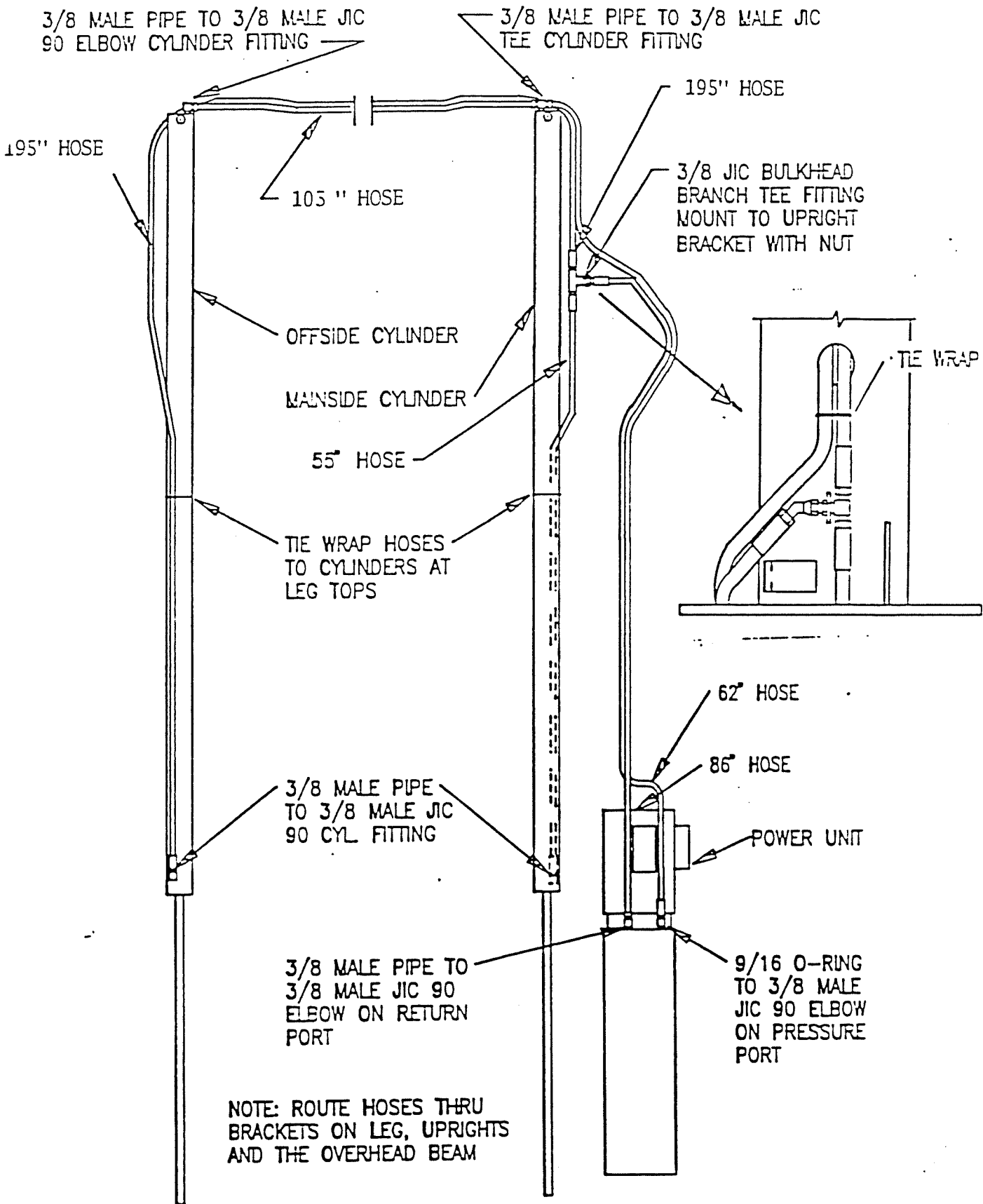
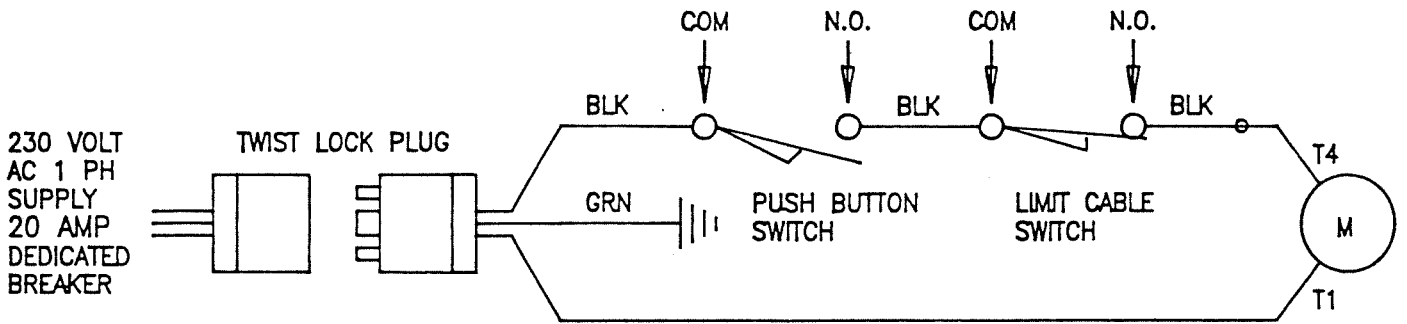


FIGURE #6

9000 TWO POST ASYMMETRICAL LIFT HOSE INSTALLATION



FENNER POWER UNIT ELECTRIC CIRCUIT DIAGRAM

FIGURE #7

9000 TWO POST ASYMMETRICAL LIFT ELECTRICAL WIRING DIAGRAM

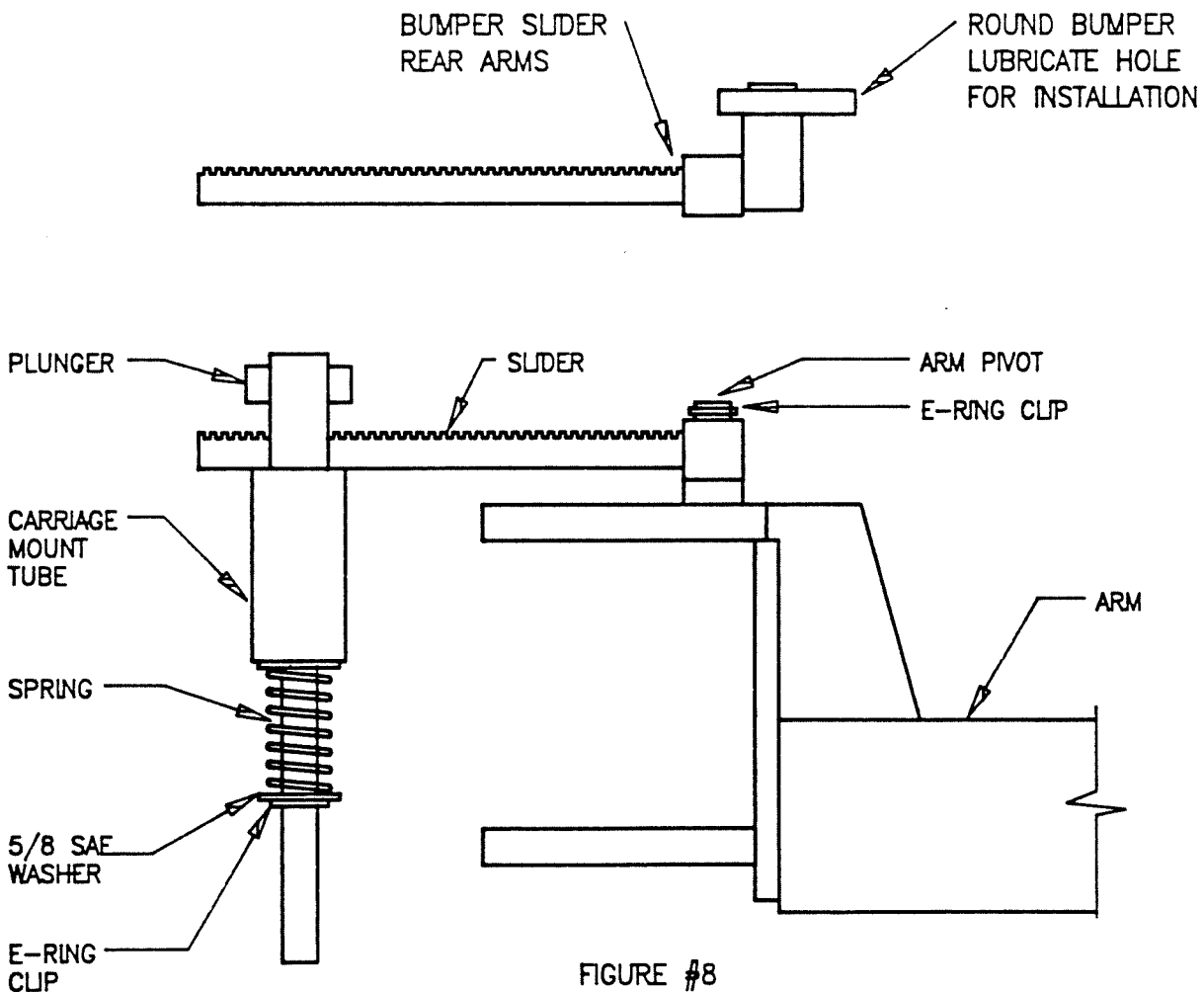


FIGURE #8

9000 TWO POST ASYMMETRICAL LIFT ARM LOCK ASSEMBLY

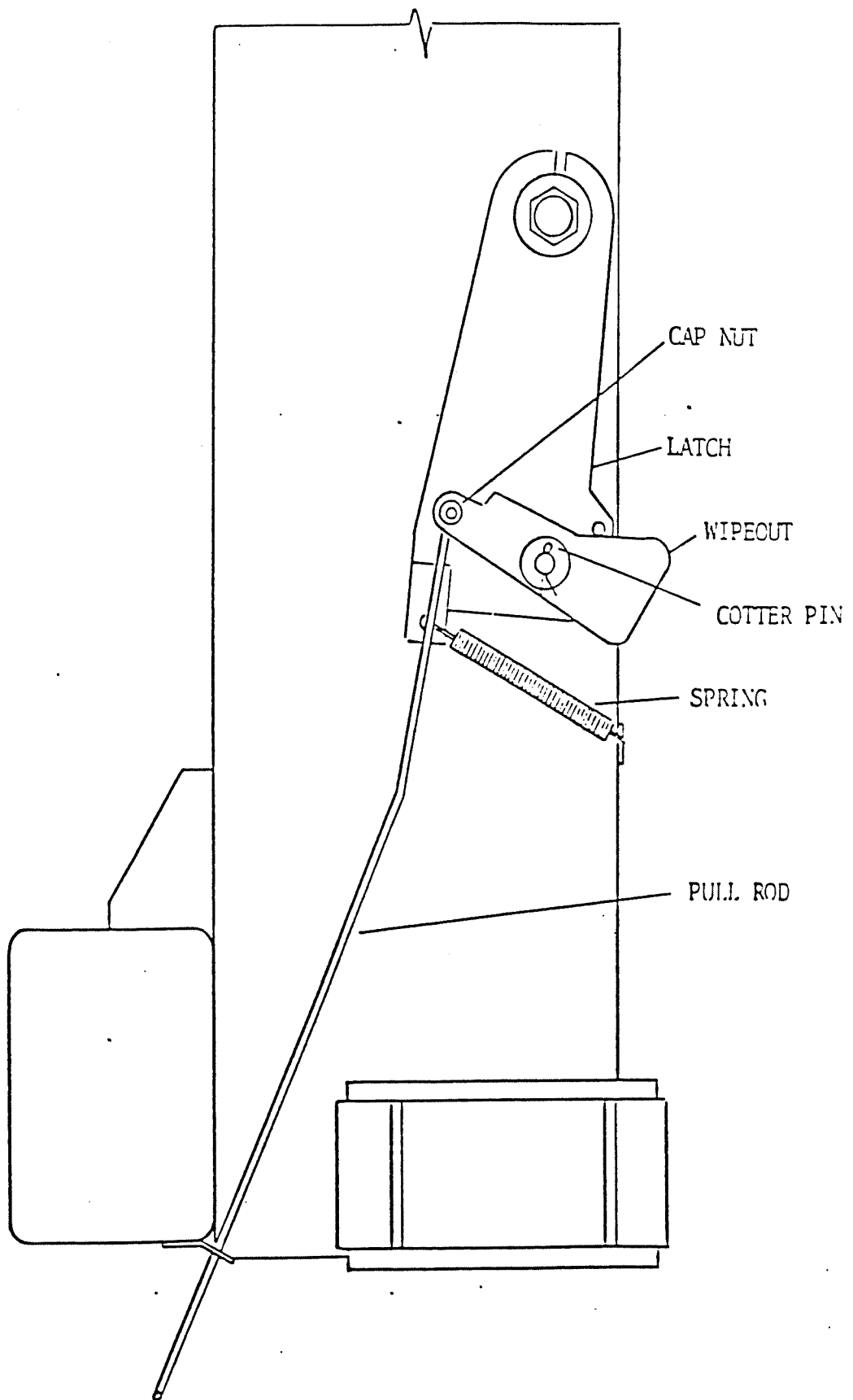


FIGURE #9

9000 TWO POST ASYMMETRICAL LIFT LATCH ASSEMBLY





## WARRANTY

All Forward Manufacturing Company (*FORWARD*) surface-mounted lifts are guaranteed to the original owner for five years from invoice date. *FORWARD* will repair or replace, for the full five years, those parts returned to the factory which prove, upon inspection by *FORWARD*, to be defective. *FORWARD* will pay for reasonable costs of transportation and labor for the replacement of said parts for the first twelve (12) months only. The Purchaser will bear costs of transportation after the first year and the remainder of this warranty. This warranty will not apply unless the product is installed, used and maintained in accordance with *FORWARD'S* installation, operation and maintenance instructions. Excluded from this warranty are the rolling bridge jacks, radius turn plates, and low-rise pad lifts.

This warranty runs in favor of the **ORIGINAL** purchaser only and does not cover normal maintenance or adjustments, damage or malfunction caused by improper handling, installation, abuse, misuse, negligence, carelessness of operation, or normal wear and tear. In addition, this warranty does not cover equipment when repairs have been made or attempted by anyone other than a *FORWARD* authorized service representative.

THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED INCLUDING ANY IMPLIED WARRANTY OR MERCHANTABILITY OR ANY IMPLIED WARRANTY OF FITNESS FROM A PARTICULAR PURPOSE, AND ALL SUCH IMPLIED WARRANTIES ARE EXPRESSLY EXCLUDED.

THE REMEDIES DESCRIBED ARE EXCLUSIVE AND IN NO EVENT SHALL FORWARD MANUFACTURING COMPANY, NOR ANY SALES AGENT OR OTHER COMPANY AFFILIATED WITH IT OR THEM, BE LIABLE FOR SPECIAL CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR THE BREACH OF OR DELAY IN PERFORMANCE OF THIS WARRANTY. THIS INCLUDES, BUT IS NOT LIMITED TO, LOSS OF PROFIT, RENTAL OR SUBSTITUTE EQUIPMENT OR OTHER COMMERCIAL LOSS.

This warranty shall be governed by the laws of the State of Texas, and shall be subject to the exclusive jurisdiction of the Court in the State of Texas in the County of Tarrant.

## CONDITIONS

**PRICES :** Prices and specifications are subject to change without notice. All orders will be invoiced at prices prevailing at time of shipment. Prices do not include any local, state or federal taxes.

**RETURNS:** *FORWARD* products may not be returned without written approval from *FORWARD*. Returns are subjected to a credit deduction to cover transportation cost, 10% handling charge, and any necessary reconditioning costs.