

9000 FP TWO POST LIFT  
INSTALLATION AND OWNERS MANUAL

DECEMBER 1995

I MAN 991022

**IMPORTANT NOTICE:**

THE FLOOR IN 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 MESH OR BAR.

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

**IMPORTANT:**

READ THIS INSTRUCTION MANUAL BEFORE INSTALLING THE LIFT.

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

CHECK THAT THE ARM RESTRAINT MECHANISMS ARE WORKING CORRECTLY BEFORE PLACING THE LIFT IN SERVICE.

DO NOT USE 110V POWER TO TEST THIS LIFT. THE MOTOR MAY BE DAMAGED AND WARRANTY CLAIMS RESULTING FROM THIS DAMAGE WILL NOT BE HONORED. USE ONLY 220V POWER.

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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 synching: Latches should click at the same time. Adjust cables if required. Instructions are in Section 1 of this text.
4. Check anchor bolt tightness. If the anchor bolts are excessively loose, check more often.
5. Lubricate exposed chain surfaces.

## OPERATING TIPS

1. Always set a vehicle on the latches before working under it.
2. SLOWLY lower vehicle 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

Level (18" minimum length)

11/16" open end wrench

Vise grips

3/4" open end wrench

3/4" socket with ratchet drive

Tape measure

1-1/16" deep socket

Funnel

1-1/8" socket or wrench

Hoist or forklift

13/16" open end wrench

2-1/2 gallons of petroleum based hydraulic oil, non foaming, non detergent, 10 weight, such as Mobil DTE 25 or Texaco HD 46.

## SECTION 1

### Installation

1. Remove the shipping bands. Remove the floor plate and power unit from the top of the lift. If the bolster beams are present, remove them also. Remove the swing arms. Remove loose items from the inside of the bottom leg.
2. Remove the four 1/2" bolts which hold the two legs together. Remove the top leg.
3. Refer to Figure 1 to determine the location for the lift. The mainside leg, which has a mount for the power unit welded on the backside of the leg, can go on either side. Stand and position the leg on the floor.

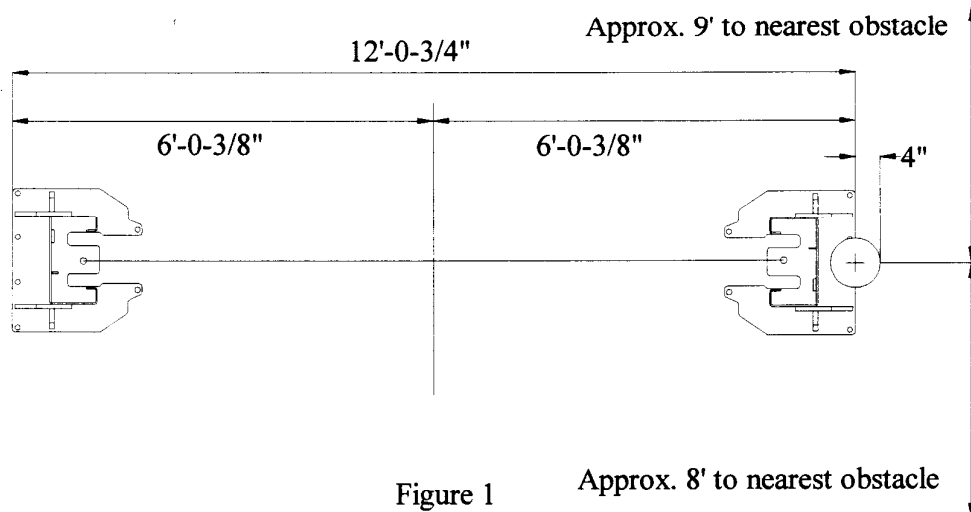


Figure 1

4. Raise the carriage approximately 24" for drill clearance. The carriage will be supported by the safety latch. Position the floor plate at the front of the mainside leg, aligning the holes of the plate end with the front holes of the leg base. Be certain that the leg and plate are square with the mounting location. Using a 3/4" concrete drill, drill holes at these two front holes. SEE THE CONCRETE ANCHOR BOLT INSTRUCTION PAGE FOR DRILLING INFORMATION on Page 7. Drive two anchor bolts into the holes. Do not tighten the nuts at this time.

5. Locate the offside leg at the other end of the floor plate. Raise the carriage approximately 24" for clearance. Line up the front holes of the leg with the holes in the end of the floor plate. Make sure the two legs and the plate are square with each other. Drill the two front holes using the concrete drill. SEE THE CONCRETE ANCHOR BOLT INSTRUCTION PAGE FOR DRILLING INFORMATION. Drive two anchor bolts into the holes. Do not tighten the nuts at this time.

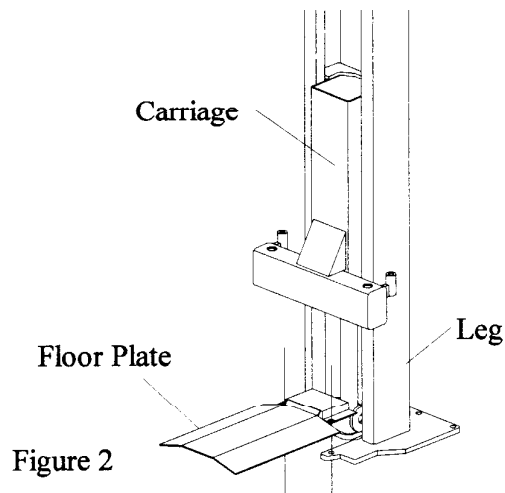


Figure 2

6. Drill the remaining eight holes in the two legs and install the anchor bolts. Do not tighten the nuts at this time. Remove the floor plate from between the legs.

7. The two legs 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. Use the steel shims provided or 3/4" flat washers. Shim next to and on both side of the anchor bolts. Tighten the anchor bolt nuts. See the concrete anchor bolt instruction page for tightening information.

**IMPORTANT:**

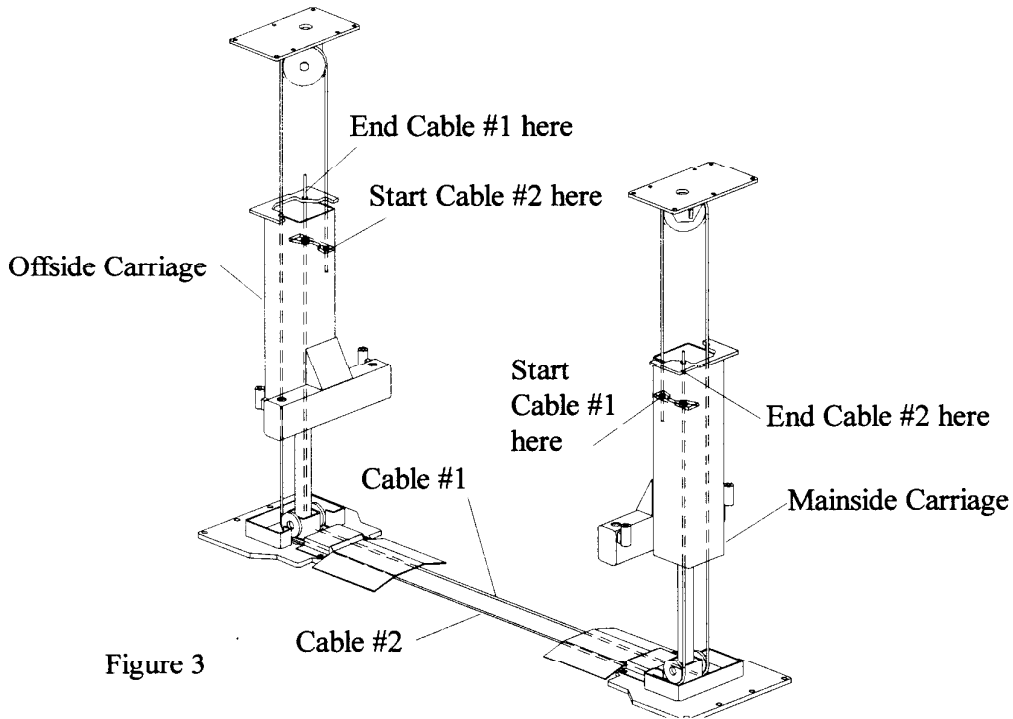
The legs must be shimmed so that the bases of the legs are adequately supported. If more than 1/2" of shimming is required, use heavy steel flat such as 3/8" thick by 2" wide. The base must be adequately supported across the front, rear, and sides.

8. The carriages should both be raised about 24" and they are supported by the safety latches. The carriages must be at the same height, resting on the same safety latch rack 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.

**IMPORTANT:**

THE CARRIAGES MUST BE AT THE SAME HEIGHT AND THE SAFETY LATCHES MUST BE ENGAGED SO THAT THE LATCH RODS WILL NOT PULL OUT.

9. Lay out the two cable assemblies. On one end of each cable install a 3/4" SAE washer and a nylon insert nut. Thread the nut onto the cable until the nylon is engaged.



10. Refer to Figure 3. Start with the mainside (power unit) leg for the cable installation. Run the long threaded end of the cable up thru the front hole of the brace inside and just below the top of the

carriage. Route the cable up and around the large pulley at the leg top, down thru the carriage, around the bottom pulley, and across the floor to the other leg.

11. At the offside leg, run the cable under the right (as you face the leg) pulley, up thru the offside carriage, up thru the rear hole of the inside brace, and up thru the hole in the carriage top. See Figure 3. Secure the cable end with a 3/4" SAE washer and a 3/4" nylock nut. Do not tighten the cable nut at this time.

12. Run the offside cable in the same manner. See Figure 3. Do not tighten the cable nut at this time.

13. 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, as determined in step 8. Make a note of the two measurements.

14. Take out the slack, but do not tighten, the mainside cable by turning down the nut on the mainside carriage. Use vise grips to hold the cable end while tightening the nut. Do not damage the threads with the vise grips. Measure the offside carriage height, or check the safety latch pull rod for the carriage weight, to be sure that the carriage has not been raised.

15. Take out the slack, but do not tighten, the mainside cable by turning down the nut on the mainside carriage. Use vise grips to hold the cable end while tightening the nut. Do not damage the threads with the vise grips. Measure the offside carriage height, or check the safety latch pull rod for the carriage weight, to be sure that the carriage has not been raised.

16. Alternately tighten the mainside and offside cable nuts until the cables are tightened. Correct tension in the cables is indicated by approximately 1/4" deflection of the cable in the leg when pulled at its midpoint.

17. Measure the carriage heights to verify that the carriages are within 1/8" of the original measurements noted in step 13. If a carriage has been raised more than 1/8" by the cable tightening procedure, loosen the cables and repeat the procedure.

18. Install the power unit on the mainside leg

using the 5/16" x 1" bolts and lock nuts provided. Refer to Figure 4.

19. Install the short hydraulic hose between the power unit and the cylinder fitting at the bottom rear of the leg.

20. Install the long hydraulic hose between the two cylinders.

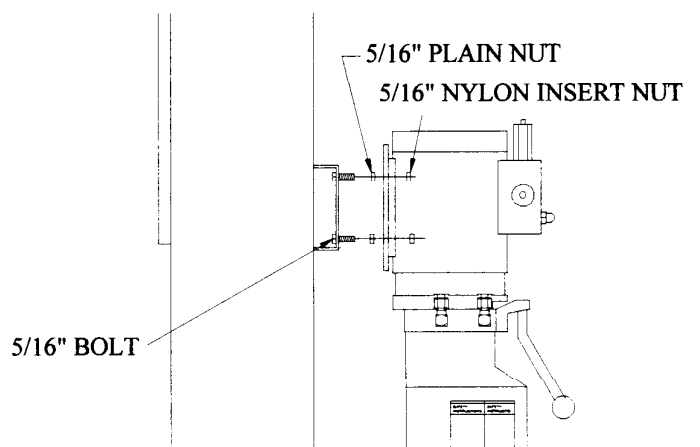


FIGURE 4

21. Install the floor plate between the legs and secure with the anchor bolt nuts. Do not pinch the hydraulic hose with the floor plate.

22. Remove the screw near the top of the power unit tank. Using a funnel in the breather cap fitting on the power unit reservoir, fill the reservoir with 10 quarts of petroleum base (mineral) hydraulic oil, non foaming, non detergent, such as Mobil DTE 25 or Texaco HD 46. Install the breather cap.

**DO NOT OVER FILL THE OIL TANK.** The oil level should be no higher than two inches below the mounting flange of the tank. If the tank has a screw just below the tank mounting flange, remove the screw and fill until oil comes out of the hole. Replace the screw.

23. Lubricate the four inside corners of both legs with heavy duty bearing grease.

24. Install the swing arms on the carriages with the swing arm pins and attach the swing arm restraints as shown in Figure 5.

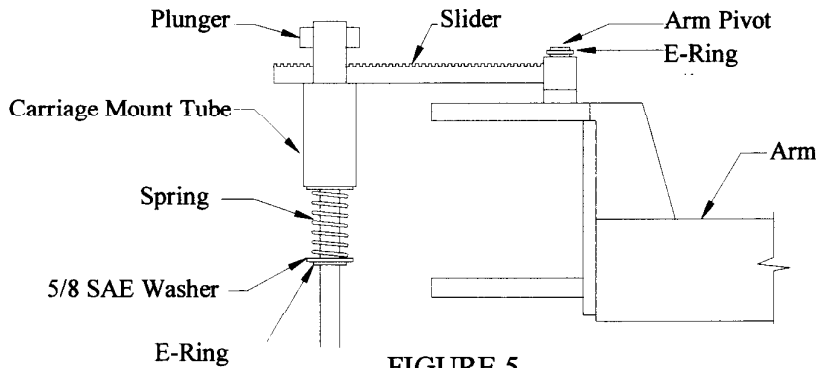


FIGURE 5

25. Establish power hook-up to 220V - 1 Phase power. Figure 6.

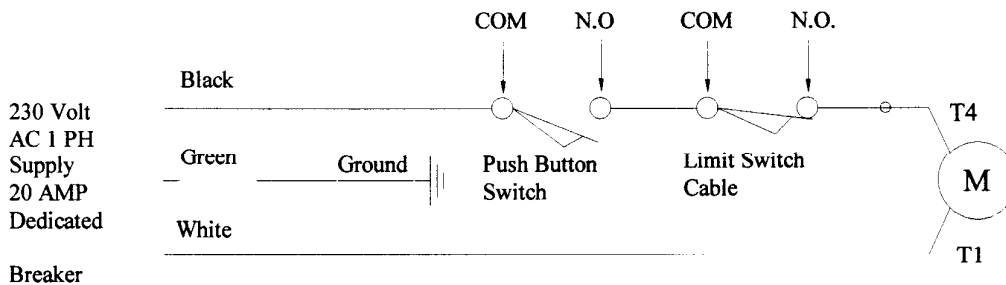


FIGURE 6

26. Verify that the lifting chains are centered on the chain rollers attached to the cylinder rams. **DO NOT ATTEMPT TO LIFT A VEHICLE AT THIS TIME.** Raise the lift approximately three feet. The lifting control is located on the power unit. The safety latches of the two carriages should "click" together as the lift goes up. If they do not, the cables should be loosened and the above procedure for tightening them should be repeated. Lower the carriages onto the safety latches. To lower the lift, first raise the carriages slightly using the power unit. Pull down the two safety latch rods which are located at the bases of the carriages. Lower the lift by working the lowering control on the power unit. If there are any problems, check the Troubleshooting section on Page 8 of the manual.

27. DO NOT ATTEMPT TO LIFT A VEHICLE AT THIS TIME. Raise the lift to the top of its travel. Lower the carriage onto the safety latches. Raise the carriages off the safeties, release the latches, and lower the lift to the ground. If there are any problems, check the troubleshooting section of the manual.

**IMPORTANT:**

DO NOT ATTEMPT TO LIFT A VEHICLE UNTIL:

1. The cables are adjusted correctly and the carriage heights are within 1/8" of the measurements noted in step 13.
2. The legs have been leveled and the anchor bolts have been tightened.
3. The leg corners have been lubricated with heavy duty bearing grease.

28. The first time a vehicle is placed on the lift, raise it NO HIGHER THAN THREE FEET. Lower the vehicle onto the safety latches. Lower the vehicle to the floor using the procedure described in #26. 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.

29. Raise a vehicle to the full height and lower the carriages onto the safety latches. Lower the vehicle to the floor using the procedure described in #26. If there are any problems, check the Troubleshooting section of this manual.

30. After cycling the lift a few times with a vehicle on it, recheck the tightness of the anchor bolt nuts. Check the nuts for tightness every week for the first month and every month afterwards.

31. After cycling the lift a few times with a vehicle on it, recheck the tension of the cross cables by comparing the cables in the two legs for equal tension. Correct tension in the cables is indicated by approximately 1/4" deflection of the cables when pulled at their midpoints. The latches in the legs should click at the same time as the lift moves up. Should it be necessary to re-sync the carriages, first lower the carriages onto the same height safety latch tooth, then adjust the cables as described for their installation. The carriages should be kept in sync for proper operation of the safety equipment.



## SECTION 2

### CONCRETE ANCHOR BOLT INSTRUCTIONS

#### DRILLING AND INSTALLATION 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 B95.12-1977. (.775" to .787").
3. Use a concrete hammer drill only!
4. Do NOT use excessively worn bits or bits which have been incorrectly sharpened.
5. Keep the drill 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 completely through the slab.
9. Blow out the dust from the hole. This increases the holding power.
10. Assemble the washer and nut onto the anchor bolt. Thread the nut approximately 4/5's of the way onto the anchor bolt where the top of the nut is just above the top of the bolt. Using a hammer on the nut, *carefully* tap the anchor bolt into the concrete. DO NOT DAMAGE THE NUT OR THREADS. Figure 15 .
11. Tap the nut and bolt so the washer rests against the base of the lift.
12. Tighten the nut two or three turns using hand tools. DO NOT USE AN IMPACT WRENCH ON ANCHOR BOLTS.

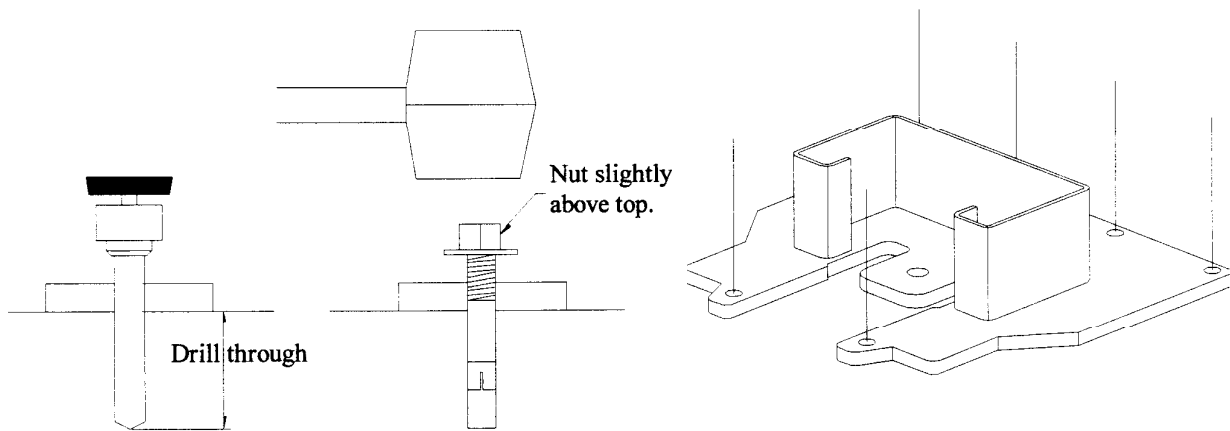


FIGURE 7

## SECTION 3

### TROUBLESHOOTING

#### 1. PUMP MOTOR WILL NOT RUN

- ◆ Check electrical supply breaker.
- ◆ Check micro-switch in motor control box. Figure 8.

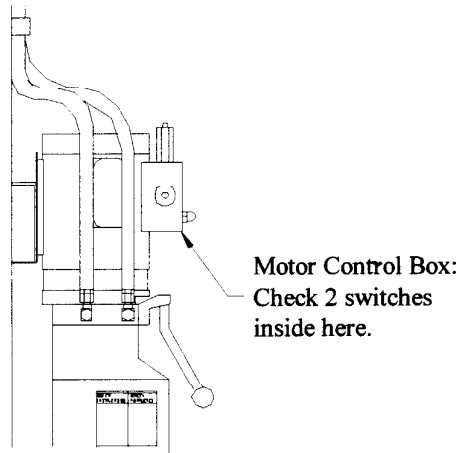


FIGURE 8

#### 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.

- ◆ Adjust vehicle placement on the lift for more equal weight distribution.
- ◆ 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.
- ◆ Lubricate the leg corners with heavy duty bearing grease.
- ◆ Check the legs for vertical alignment both side to side and front to back. use a level to check this. shim the legs as necessary to level the legs. Use steel 3/4" washers or 2 x 1 x 1/16" or 1/8" steel flat strips. Shim next to and on both sides of the anchor bolts.
- ◆ If bouncy, bleed the hoses as described in Step 33 in Section 1 of this manual.

##### 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.

- ◆ Adjust the vehicle placement on the lift for more equal weight distribution.

- ◆ Check the voltage of the electrical supply with the unit running under load. The voltage should be at least 208 V. Voltage less than this will not allow the motor to develop full power.
- ◆ The relief valve in the power unit is preset at the pump factory and cannot be adjusted. Call the lift manufacturer for assistance.

#### 4. THE LIFT WILL NOT LOWER.

##### A. SAFETY LATCH PULL RODS

The lift will lower 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. Figure 9

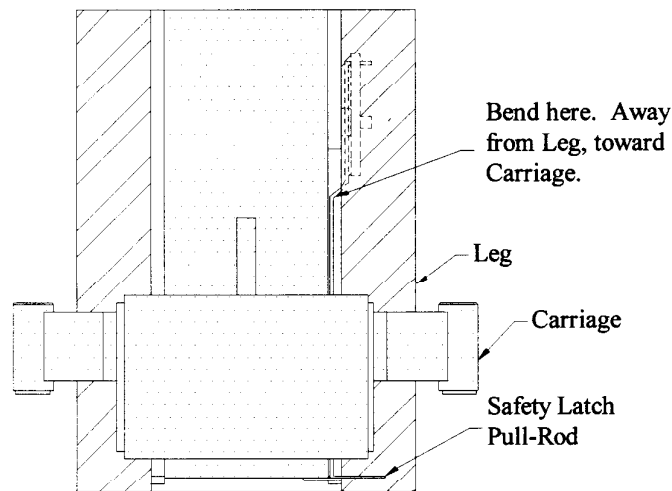


FIGURE 9

##### B. 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 the safety latch 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:

- ◆ Raise the lift to full height.
- ◆ Push IN both safety latch pull rods to engage latches.
- ◆ 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.

- ◆ Remove the jack and pipe.
- ◆ Pull the latch rod on the other carriage to disengage the latch.
- ◆ Lower the lift and remove the vehicle.
- ◆ Readjust the cables as described in the INSTALLATION section of 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 by push the control lever on the power unit.
- ◆ Run the motor by holding the push button switch for 30 seconds to flush the valve.
- ◆ Repeat 3 or 4 times.
- ◆ If 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.

#### 7. SWING ARMS MOVE WHEN THE LIFT IS RAISED AND LOWERED.

Explanation: The lift's legs are not perpendicular, resulting in a changing distance between the legs as the vehicle moves up and down. The swing arms move to accommodate the change.

- ◆ Check the plumbness of the legs. Shim the bases as required.

#### 8. OIL LEAKS

- ◆ Power unit. If the power unit leaks hydraulic oil around the tank mounting flange, check the oil level in the tank. The level should be two inches below the flange of the tank. Check at the screw just below the tank top.
- ◆ Cylinder top. If the cylinder leaks hydraulic oil at the top or out of the breather, the piston seal is leaking. Contact the factory.
- ◆ Cylinder bottom. If the cylinder leaks oil around the base, check the fittings on both the front and back of the cylinder. Check the fittings for tightness. If the threads continue to leak, remove the fitting, reapply teflon tape, and reinstall the fitting.

9000 FP (116000) TWO POST FLOOR PLATE ASSY PARTS LIST (11/96)

ITEM	PART NO.	NAME/DESCRIPTION	RQD.
1	994033	Bolt Box, 9000 FP, New	1
2	116101	Mainside Leg Weldment	1
3	116201	Offside Leg Weldment	1
4	116301	Top Plate Wld	2
5	116500	Carriage Assembly	2
6	116501	Carriage Wldmnt	2
7	070525	Safety Latch	2
8	070528	Wipeout	2
9	070530	Pivot, latch	2
10	991077	Cotter pin, 3/32 x 1-1/2	2
11	913682	Bolt, latch, 3/4 x 2 NC	2
12	913600	Nut, latch, 3/4 nyl insert, NC	2
13	913605	Washer, latch, 3/4 flat	4
14	912005	Washer, wipeout	4
15	090541	Pull rod	2
16	991071	Spring, latch	2
17	991070	Cap nut, 3/16	2
18	116601	Swing Arm	4
19	090806	Floor Plate Wld, 113-3/4	1
20	991030	1-3/8 Snap Ring	6
21	995020	4" Sheave	4
22	995040	7" Sheave	2
23	991211	Bushing, sheaves	6
24	992301	Cylinder, 2.5 x 36 w/ Yoke	2
25	995060	Roller, 4-5/8 Dia, Yoke	2
26	051804	Bearing Shaft Wld, Yoke	2
27	991224	Bearing, 1-1/4 ID x 1-3/4 long	2
28	991223	1-1/4 Retaining Ring	2
29	992613	644 Chain, 93-3/4	2
30	911403	1/4 NC Nyl Ins Nut	4
31	911761	5/16 x 1-1/4 Shoulder Bolt	4
32	992401	3/8 JIC Cap	3
33	992403	3/8 MP to 3/8 MJIC Straight	2
34	992404	3/8 FP to 3/8 MJIC 90	1
35	992405	3/8 x 6 Pipe Nipple	1
36	992408	3/8 Pipe Plug, recessed allen head	1
37	995120	Rub Block	16
38	992030	Power Unit, Fenner 1205, 1.7/21	1
39	912701	1/2 x 2-1/2 NC Bolt	14
40	912601	1/2 NC Nut	14
41	912605	1/2 Flat Washer	28

9000 FP BOLT BOX PARTS LIST, PN 994033 (11/96)

ITEM	PART NO.	NAME/DESCRIPTION	RQD.
1	991022	Manual, 9000 FP	1
2	992645	Cable, 3/8 dia x 29'-5"	2
3	995430	Swing Arm Pin, 8"	4
4	991124	Shims	16
5	911701	5/16 NC nut, power unit mntng	4
6	911703	5/16 Nyl ins nut, NC"	6
7	911741	5/16 x 1 NC bolt	4
8	913604	3/4 Nyl Insert Nut NF, cable mnt	4
9	913606	3/4 SAE Washer, "	4
10	913828	3/4 x 5-1/2 anchor bolt	12
	037760	Arm Lock Assy, Asym	4
11	037703	Long Plunger	4
12	070705	Short Slider	2
13	070706	Short Bumper Slider	2
14	991216	Spring, 13/16 dia x 3	4
15	991209	E-Clip	8
16	913206	5/8 SAE Washer	4
17	991269	Rubber Bumper	2
18	992101	3/8 Hose x 67, High Pressure	1
19	992131	3/8 Hose x 117.5, " "	1
20	992407	9/16 O-ring to 3/8 JIC 90 elbow	1
21	995550	6" Pad Extension	4
22	995560	3" Pad Extension	4
23	996220	1-1/2" Pad Extension	4
24	991234	Rubber Pad Insert	4
25	991243	1/4 x 1 Elevator Bolt	8
26	911401	1/4 NC Nut	8
27	911405	1/4 Flat Washer	8