

Forward 15000TP

Two Post Heavy Duty Lift
15,000lb Capacity



Forward

Manufacturing

Precision Manufacturing Since 1968

Forward Lift is your
assurance of progressive
technology and proven
reliability.



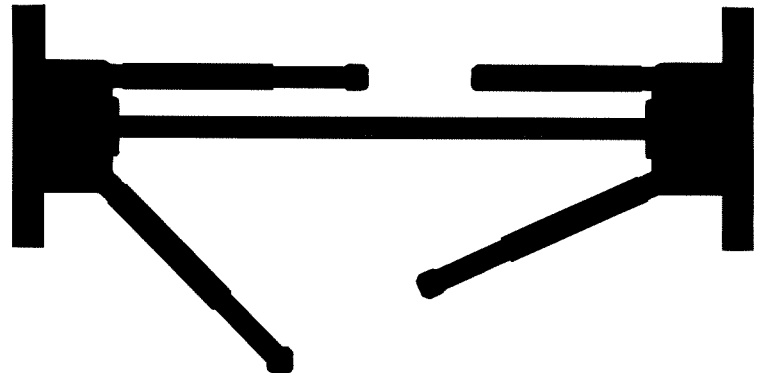
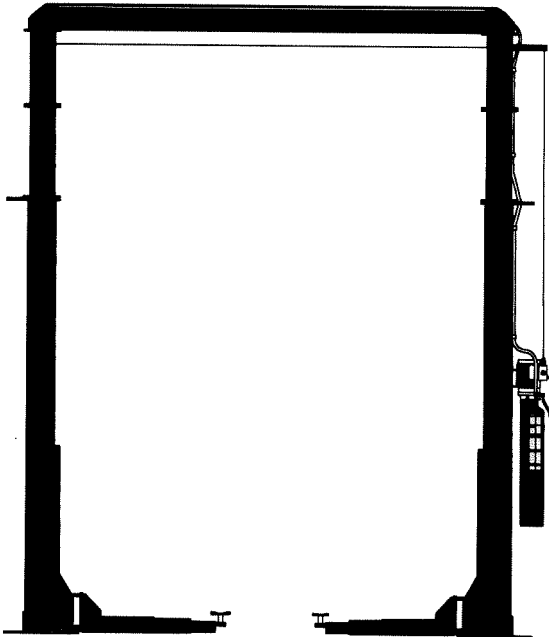
Engineered To Perform - Built To Last

Forward 15000TP Features

- ✓ 15,000lbs Capacity - Suitable for a wide range of commercial vehicles.
- ✓ Overhead Design - Allows for unobstructed work area. Safety Switch prevents damage when lifting extra tall vehicles.
- ✓ Lifting Mechanism - Two heavy duty, direct pull hydraulic cylinders.
- ✓ Carriage Latch System - Automatic engagement every 4" and automatic latch reset.
- ✓ Conforms to requirements of ANSI/ALI B153.1-1990.
- ✓ Swivel Pad Adapters - Versatile pads with adjustable height and no slip surface. Pad extensions supplied for trucks and vans.
- ✓ Automatic Arm Restraints - Heavy duty lifting arms with restraints that disengage for arm positioning and automatically engage when lifting.
- ✓ State-of-the-art powder coat finish.
- ✓ Five year warranty.*
- ✓ Options include 16'7" height, power unit cover.

Specifications

Lifting Capacity	15,000lbs	Overall Width	12'10"
Max Lift Height	74" w/o adapters	Width at Floor	12'4"
Min Lift Height	5 3/8"	Between columns	117"
Overall Height	14'7"	Drive Thru clearance	109"
Recommended Ceiling	14'8"	Speed of Rise	70 sec.
Height to Shut-Off	13'10"	Power Unit	220V/60Hz/Single Phase
Swing arm adjustment	36" to 52"	Stripping weight	2950lbs.



*SEE WARRANTY STATEMENT FOR DETAILS.
 SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE OR LIABILITY.
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 Company, Inc.**

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Distributed By:

15000 TWO POST LIFT
INSTALLATION AND OWNERS MANUAL

JUNE 1996

I MAN 994301

IMPORTANT NOTICE:

THE FLOOR ON WHICH THE LIFT IS TO BE INSTALLED MUST BE 6 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 14' - 8".

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, TIRE ASSEMBLY, OR ANY HEAVY ASSEMBLY FROM ONE END OF A VEHICLE UNLESS THE VEHICLE IS SUPPORTED AT THE OTHER END WITH STANDS.

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 synching: 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 in Section 1 of this manual.
5. Check anchor bolt tightness every month.
6. Do not remove the transmission, suspension assemblies, tire assemblies, or other heavy items from one end of the vehicle without supporting the other end of the vehicle with stands.

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

1-1/2" wrench, 2 required

Level (24" minimum length)

Small vise grips

Tape measure

Funnel

Hoist or Forklift

Two 12' step ladders

Also required for installation:

5 gallons 10 wt hydraulic oil.

One 4 oz. bottle of GM Limited Slip Differential Lubricant Additive

SECTION 1

INSTALLATION

IMPORTANT NOTICE REGARDING CEILING HEIGHT:

THIS IS AN OVERHEAD TYPE LIFT THAT REQUIRES A CEILING HEIGHT OF 14', 8".

1. Unpack the lift. remove the swing arms, bolt box, power unit box, overhead beam, and uprights. **SAVE ALL THE PACKING BOLTS.**
2. Remove the 1/2" diameter bolts that hold the legs together. Remove the top leg.
3. Refer to Figure 1 below to see how the lift is assembled.

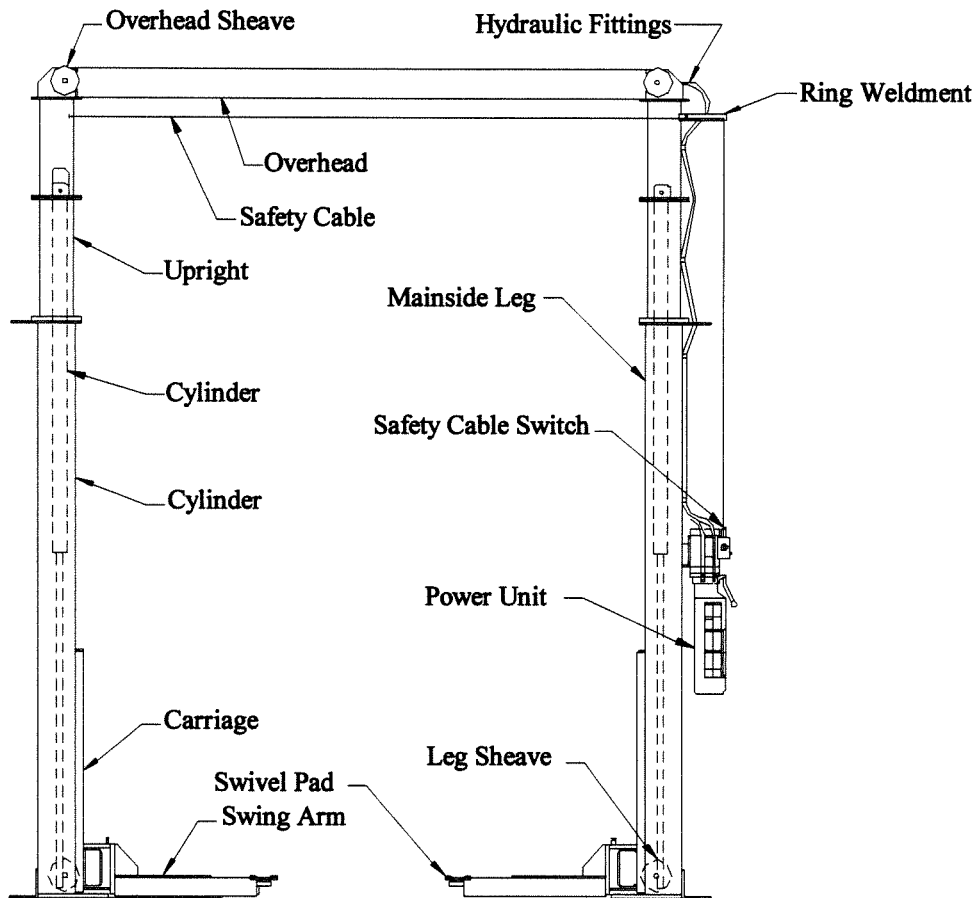


Figure 1

4. Refer to Figure 2 on the following page to determine where to place the legs in the service bay. The mainside leg holds the power unit. It can be placed on either the right or left side. Lay out and mark the floor for leg placement.
5. Place the legs on their backs on the floor. Attach the uprights to the legs using 1/2" diameter bolts as shown in Figure 3 on the following page..

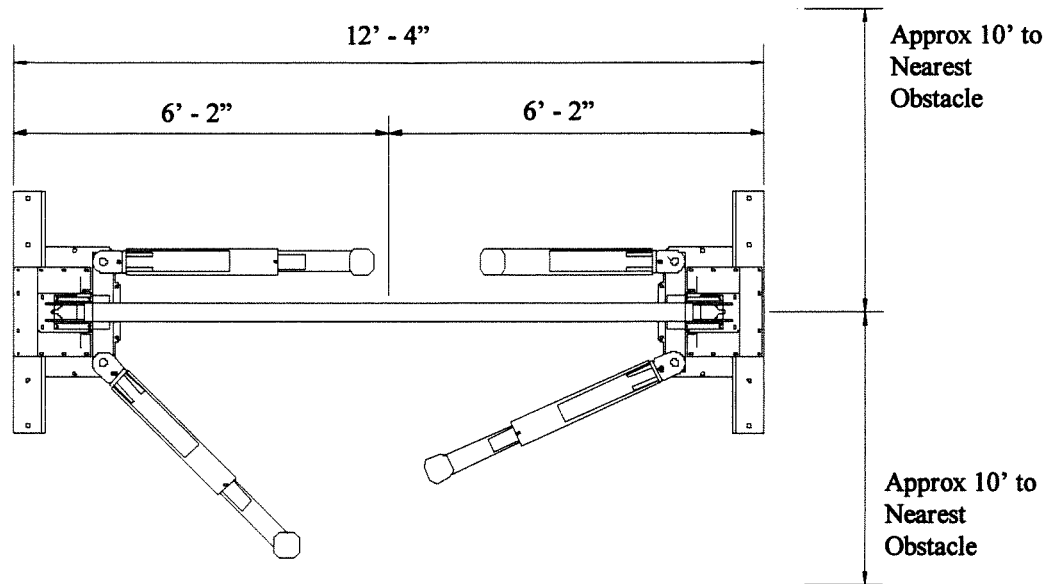


Figure 2

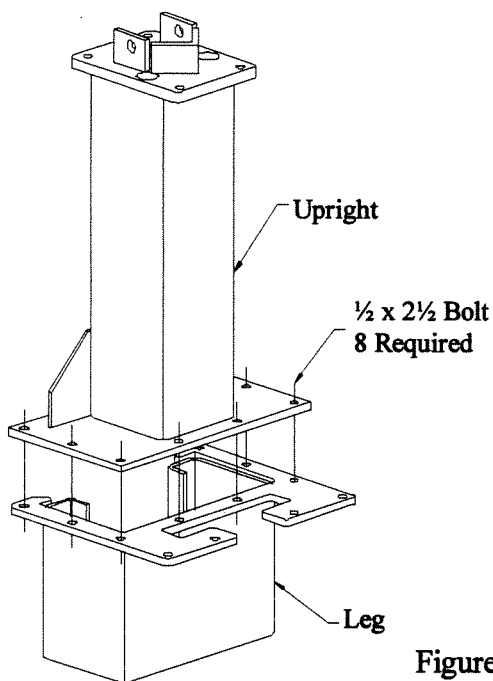


Figure 3

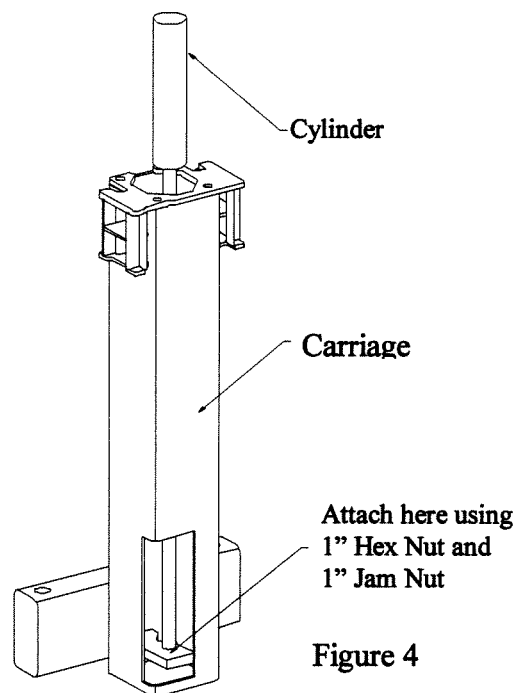


Figure 4

6. Remove the plastic plugs from the ports of the two cylinders. Wrap the pipe threads of two male JIC elbow fittings and two male JIC straight fittings with teflon pipe tape. Install the elbow fittings in the nipples at the rod end of the cylinders. The JIC end should face upward to the mounting end of the cylinder. Install the straight fittings in the ends of the cylinders.

7. Install the cylinders in the leg/upright assemblies. The elbow fitting should face to the outside. The cylinders are secured at the top using a 3/4" diameter bolt and nylon insert nut. Pull out the rod and secure to the carriage bottom using a 1" nut and jam nut as shown in Figure 4 above. If necessary, CAREFULLY use compressed air to extend the cylinder rods. Hold an air nozzle to the top cylinder fitting and SLOWLY apply air. DO NOT ALLOW THE ROD TO SHOOT OUT OF THE CYLINDER AS DAMAGE OR INJURY MAY RESULT. The carriages should be held by the latches about 24" up from the bottom.

WARNING: DO NOT HOLD THE CYLINDER ROD WITH PLIERS, CHANNEL LOCKS, ETC. CYLINDER LEAKS CAUSED BY A DAMAGED FINISH ARE NOT COVERED BY WARRANTY.

8. Stand up and place the two legs in the correct locations.
9. Drill the ten anchor bolt holes for the MAINSIDE LEG ONLY. It is necessary to have the carriage up 24" to drill the holes. SEE THE CONCRETE ANCHOR BOLT INSTRUCTION PAGE IN SECTION 2.. Install the anchor bolts but do not tighten the nuts
10. 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 leg bases as necessary to level the legs. Shim next to and on both sides of the anchor bolts. Tighten the anchor bolt nuts.

WARNING: DO NOT USE AN IMPACT WRENCH TO TIGHTEN ANCHOR NUTS!

Recheck 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 ½" of shimming is required, do not use the small shims provided by the factory. Fabricate larger shims from steel flat, ¼" or ½" thick by 2" or more wide.

11. Refer to Figure 5, 15000 Two Post Hose Diagram. With the overhead beam still on the ground install the bulkhead fittings and the 45 swivel fittings as shown. Run the hoses thru the overhead as shown and attach to the fittings as shown. Attach the outside hoses to the fittings. Attach the ring weldment to its mounting bracket using the 5/16 bolts and nuts provided. See Figure 1 for location of ring weldment on lift. Install the plastic coated limit cable on the overhead. Strip 3" of plastic from one end of the cable. Loop and clamp the end to the ring on the offside side of the overhead. Run the cable across to and thru the ring on the ring weldment just installed as shown in Figure 6 on following page.

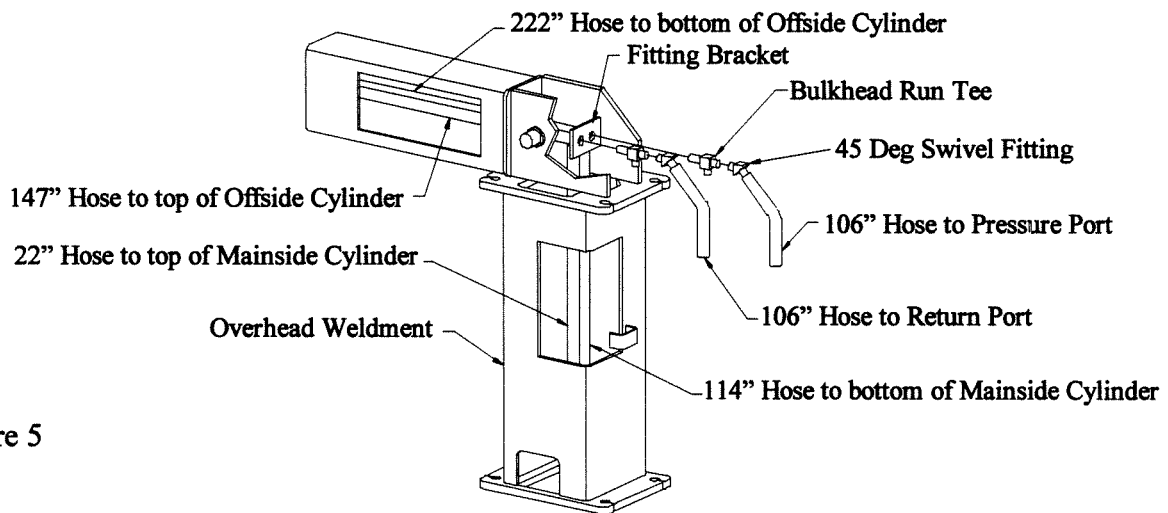


Figure 5

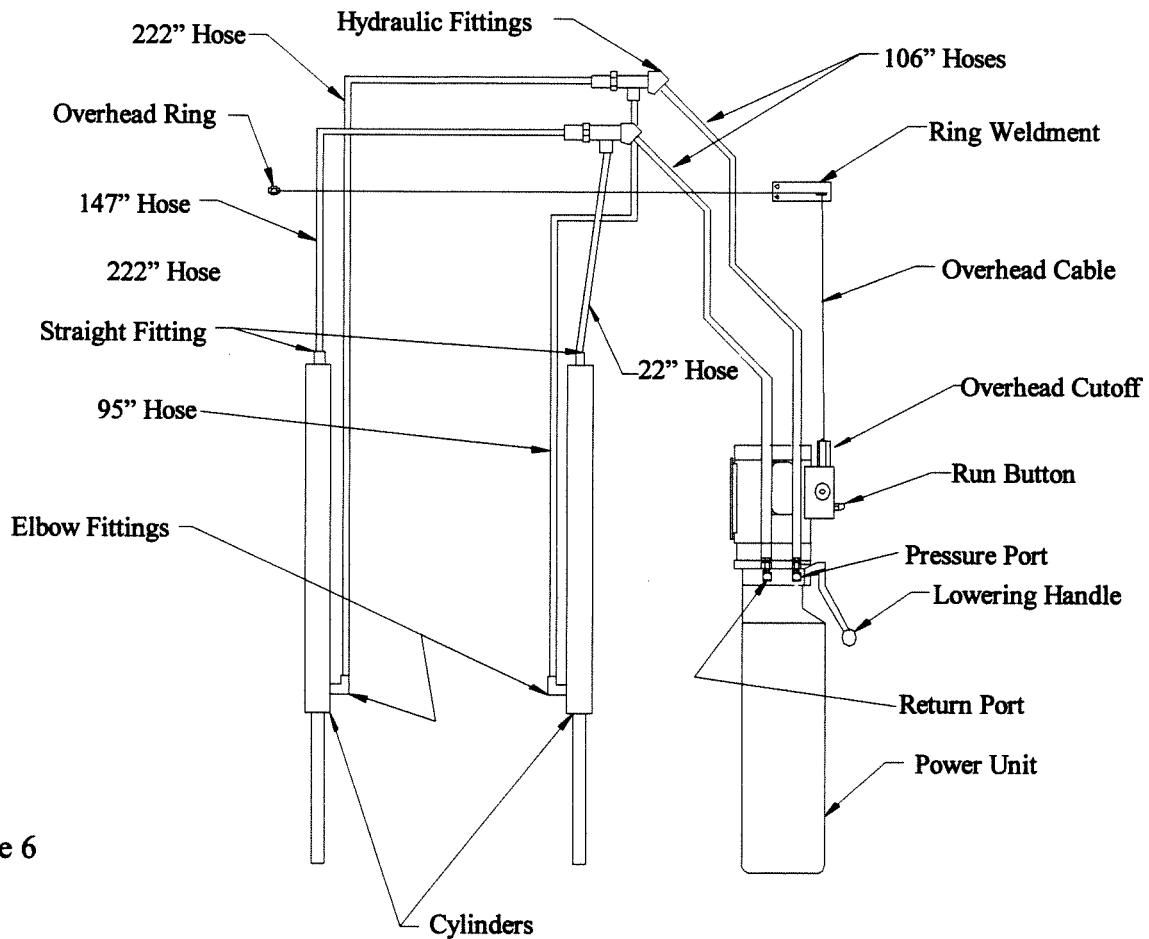


Figure 6

12. Using a hoist or forklift, raise the overhead weldment. Position the overhead over the leg uprights. The side with the fittings and the ring weldment should be over the power unit leg. Bolt the overhead to the uprights using the 1/2" bolts and nuts provided.

13. 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 dimensions, but it is more important that the leg be perpendicular and parallel to the other leg. If the uprights and the legs do not appear to be square with each other you will have to place shims between the top of the leg and the bottom of the upright. The leg and upright must be square with one another.

14. Drill the anchor bolt holes for the offside leg. Install the anchor bolts and shim the leg 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.**

15. Refer to Figure 7 on the following page. Be sure that the carriages are both the same height above the leg bases. Attach a 3/4" SAE washer and a 3/4" nylon insert nut to one end of both cables. Start with the mainside leg for the cross cable installation. Start at the right rear hole of the carriage top. Run the cable end up thru the upright and over the top pulleys, down thru the upright on the offside, down thru the left rear hole of the offside carriage, around the offside leg pulley, and up thru the front left hole of the carriage top. Secure the cable end with a 3/4" SAE washer and nylon insert nut. Do not tighten the cable at this time.

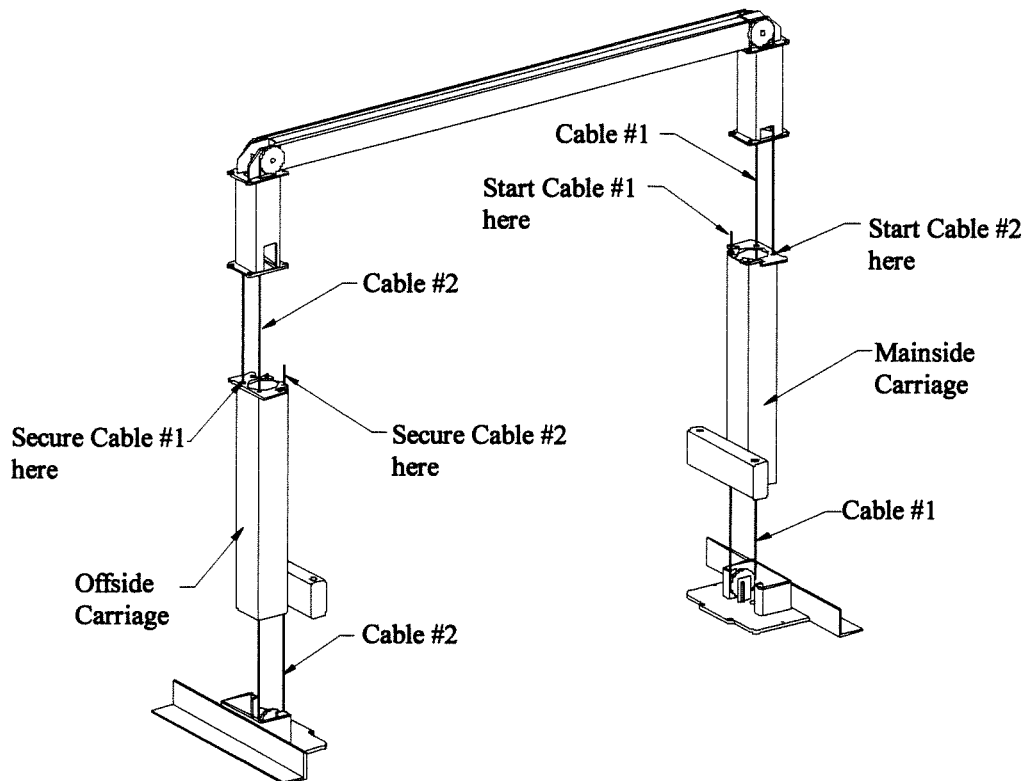


Figure 7

16. Run the second cable by starting at the right rear hole of the offside carriage. Follow the same path to the mainside carriage top. Secure the cable end with a 3/4" SAE washer and nylon insert nut. Do not tighten the cable at this time.

17. 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 the latch.

IMPORTANT: THE CARRIAGES MUST REMAIN AT THE SAME HEIGHT WHILE THE SYNC CABLES ARE BEING TIGHTENED. OVER TIGHTENING OF ONE CABLE COULD RAISE THE CARRIAGE IN THE OPPOSITE LEG AND CAUSE THE CARRIAGE LATCHES TO BE OUT OF SYNC.

18. Take out the slack, but do not tighten, each cable by turning down the nuts on the carriage tops. Use vise grips to hold the cable end while tightening the nut. **DO NOT DAMAGE THE THREADS WITH THE VISE GRIPS. DO NOT NICK THE CYLINDER ROD WITH THE VISE GRIPS.** Check that the safety latch pull rods will not pull out, indicating that the carriages have not moved.

19. 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.

20. Pull on each of the carriage safety latch rods. Neither rod should pull out, indicating that the carriages did not move while the cables were being tightened. If one of the rods pulls out, loosen the cables and repeat the procedure.

21. If you have access to a forklift, lift one carriage up just enough to release pressure from the safety latch. If the cables are installed correctly, both carriages will raise. Pull out the safety latch rods under both carriages and lower to the ground. This will simplify the cylinder bleeding procedure.

22. Refer back to Figure 8 below. Install the power unit on the mainside leg using the 5/16" hardware provided. The power unit has two ports on its left side. The port on the left is the return port. Attach a 3/8" male pipe to 3/8" male JIC 90 elbow to the return port. Attach a 9/16 O-ring to 3/8" male JIC 90 elbow to the pressure port.

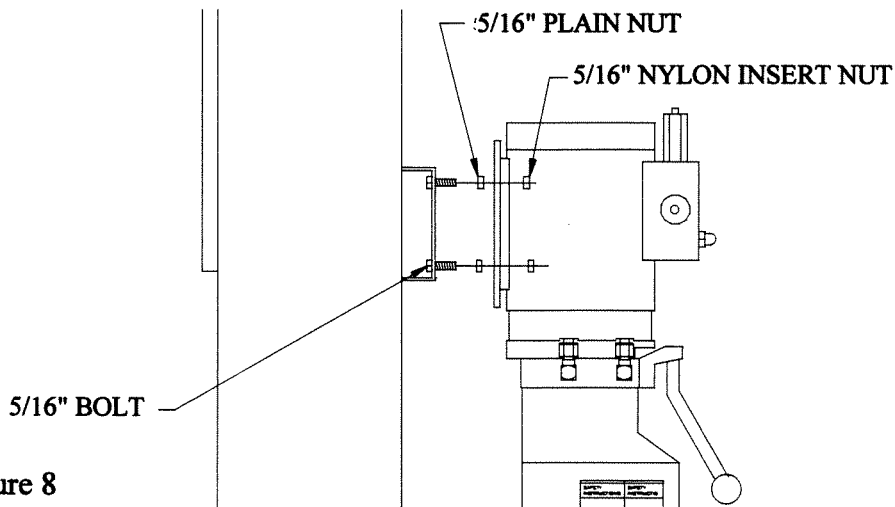


Figure 8

23. Refer to back to Figure 6. Connect the pressure hose and return hose to the power unit fittings. Make the pressure hose and return hose connections to the mainside and offside cylinders. The pressure hoses attach to the elbow fittings at the rod end of the cylinders. The return hoses attach to the straight fittings at the top of the cylinders. Do not tighten the cylinder end of the pressure hoses at this time. The pressure hoses to the cylinders run along the sides of the cylinders. Using two tie wraps per cylinder, attach the hoses to the cylinder barrels. Where the hose goes thru the plate at the top of the leg for the upright, it should be centered on the side of the cylinder.

24. Remove the fill level screw near the top of the tank on the power unit. Remove the breather and insert a funnel in the tank and fill with a petroleum base hydraulic oil, non foaming, non detergent, such as Mobil DTE 25 or Texaco HD 46. Fill until fluid reaches the bottom of the screw hole. Approximately 4-1/2 gallons are required. Also add one 4 oz. bottle of GM Limited Slip Differential Lubricant Additive to the hydraulic oil. This will help stop any cylinder noises. Replace the screw and tank breather.

25. Establish the electrical hookup to 220V single phase as shown in Figure 9 below.

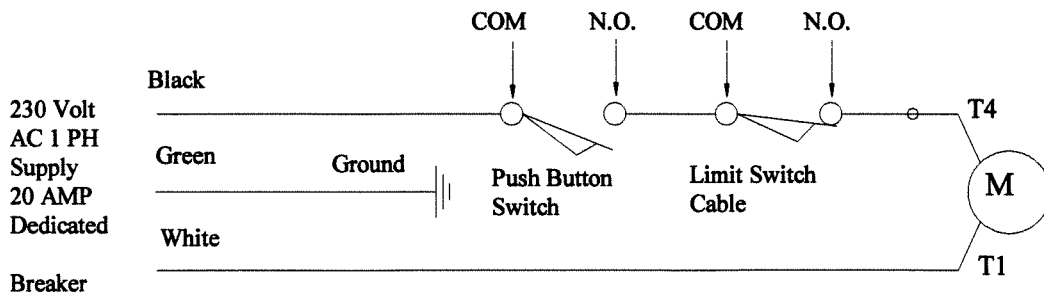


Figure 9

26. To bleed the hydraulic system, first loosen the hose connections at the rod end of both cylinders. Run the power unit until fluid appears at the mainside cylinder fitting. Tighten that hose connection. Run the power unit until fluid appears at the offside cylinder fitting. Tighten that hose connection.

27. If a forklift was used in Step 21 to lower the carriages, no further bleeding is required. If no forklift was used, continue with Steps 28 and 29.

28. Lower the lift to the ground. To do this, first raise the carriages enough to release the latches using the push button switch on the power unit. Pull out the latch pull rods under each carriage, then lower the lift by pushing the lowering control on the power unit. **KEEP CLEAR OF THE CARRIAGES WHILE DOING THIS. THEY CAN DROP VERY SUDDENLY.**

29. Repeat Step 26, bleeding the hoses.

30. Install the swing arms with the swing arm pins. Lubricate the swivel pad screws and install them onto the arms.

31. Refer to Figure 10 below. Attach the armlock parts as shown. The bumper sliders and rubber bumper parts are mounted on the two rear arms.

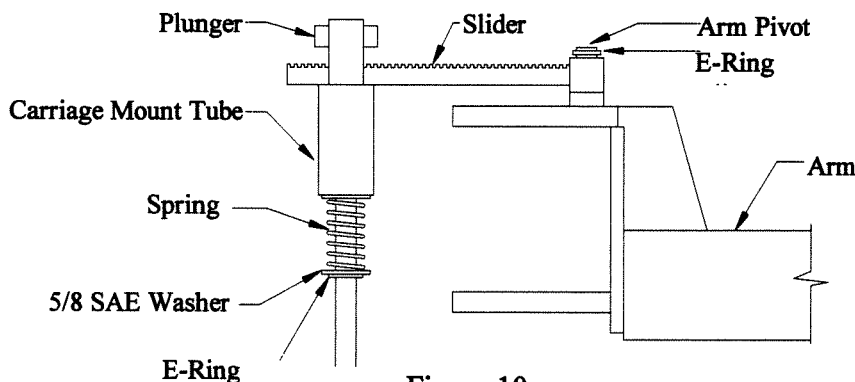


Figure 10

32. Lubricate the four inside corners of each leg with heavy duty bearing grease.

DO NOT ATTEMPT TO RAISE A VEHICLE AT THIS TIME.

33. 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 this manual.

34. Cycle the lift to the top of its travel and lower it to the floor three times without a vehicle to remove the last air from the hydraulic system.

IMPORTANT! DO NOT ATTEMPT TO RAISE A VEHICLE UNTIL

1. The cables are adjusted correctly. The latches should click together as the lift is being 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 any additional air in the system.

35. **THE FIRST TIME A VEHICLE IS PLACED ON THE LIFT, RAISE IT NO HIGHER THAT THREE FEET.** Lower the vehicle onto the safety latches. Raise the lift a few inches, pull out both safety latch pull rods, then lower the vehicle to the floor. 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. Correct any problems before continuing.

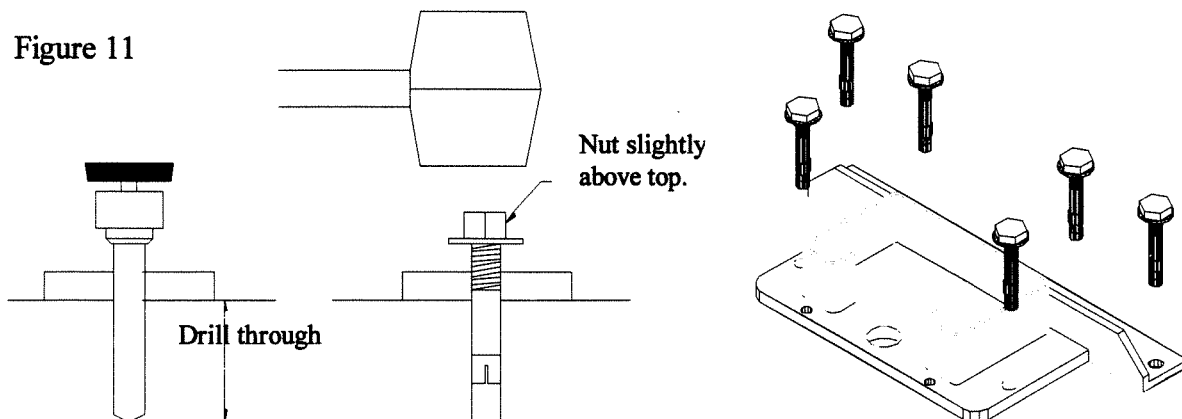
37. After cycling the lift a few times with a vehicle on it, recheck the tightness of the anchor bolt nuts. Check the nuts for tightness every week for the first month, and every month afterwards.

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 11 below.
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 11



SECTION 3

TROUBLESHOOTING

1. PUMP MOTOR WILL NOT RUN

- ◆ Check electrical supply breaker.
- ◆ 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.
- ◆ Check adjustment of overhead cable and micro-switch in motor control box. Figure 17. If the cable holds the plunger off of the micro-switch the circuit is broken and the cable has too much tension. The cable needs to be readjusted.
- ◆ Check micro-switch in motor control box. Figure 12.

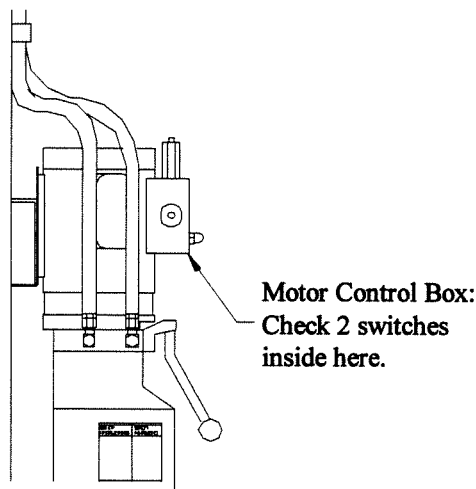


Figure 12

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 29 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.

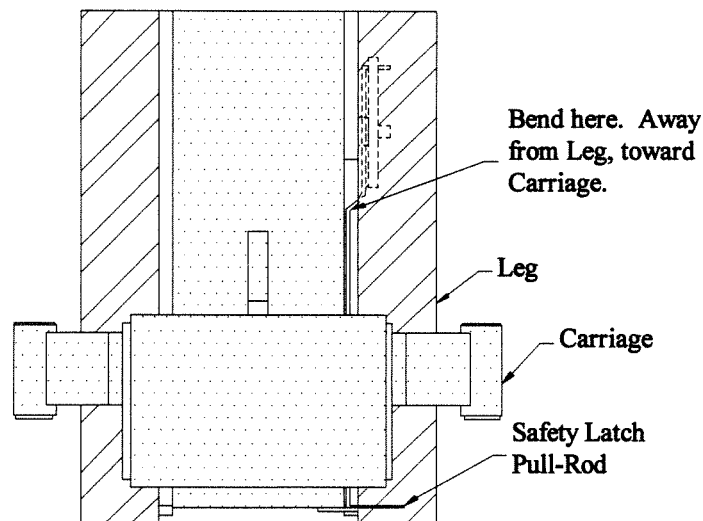


Figure 13

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.

SECTION 4

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 BY 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 of the cylinder. 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 5 grade 8 bolt at the top of the cylinder.
6. Reverse the procedure to replace the cylinder.
7. Bleed hydraulic system as described in INSTALLATION section of this manual.

15k 2 Post 137000 Final Assembly

Items	P/N	Rev	Name	Description	Rqd
1	994136	-	Bolt Box		1
2	137101	-	M/S Leg Weldment	Power Unit Mount	1
3	137201	-	O/S Leg Weldment		1
4	137500	-	Carriage Assembly	Includes Items 5 thru 16	2
5	137501		Carriage Weldment		2
6	051506		Latch Weldment	12K Latch Weldment	2
7	991071		Spring, Latch	3/8 OD x 3-1/2	2
8	913682		Latch Bolt	3/4 x 2 NF	2
9	913600		Nut	3/4 NF Nylon Insert	2
10	913605		Washer	3/4 Flat Washer	4
11	070530		Pivot, Latch	Pipe Spacer	2
12	070528		Wipeout, Latch		2
13	090541		Pull Rod, Latch, 9k		2
14	991070		Cap Nut, Pull Rod		2
15	991077		Cotter Pin, Wipeout	3/32 x 1-1/2	2
16	912005		Washer, Wipeout	3/8 Flat Washer	4
17	051602	-	S/A Tube Weldment		4
18	051603		S/A Slider Weldment		4
19	912631		1/2 x 3/4 NC Bolt	Swing Arm Assy	4
20	912607		1/2 Lock Washer	Swing Arm Assy	4
21	137801	-	Overhead Wld		1
22	137802	-	Upright Wld		2
23	991030		1-3/8 Snap Ring	Sheave Mount	6
24	995030	-	5" Sheave		6
25	991211	-	Bushing, Sheaves		6
26	992322	-	Cylinder,	3-1/4 x 68	2
27	995120	-	Rub Block	UHWMPE	32
28	992010	-	Power Unit	AB-1103 Mod w/ Cutoff switch	1
29	912701	-	1/2 x 2-1/2 NC Bolt		24
30	912601	-	1/2 NC Nut		24
31	912605	-	1/2 Flat Washer		48

15k 2 Post 137000 Bolt Box

Items	P/N	Rev	Name	Description	Rqd
1	994301		Manual, 15k 2 Post		1
2	992626		Cable	3/8 x 40' - 2"	2
3	992609		Cable, Limit Switch	1/16 x 20'	20
4	995910		S/A Pin	10"	4
5	991124		Shims		32
6	057804		Ring Wldmnt, 10A		1
7	911701		5/16 NC Nut		6
8	911703		5/16 Nyl Ins Nut,NC		4
9	911741		5/16 x 1 NC Bolt		6
10	913604		3/4 Nyloc Nut, NF	Cable Mount	4
11	913606		3/4 SAE Washer		8
12	913828		3/4 x 5-1/2 Anchor Bolt		20
13	914402		1" NF Nut	Cylinder Mount, Carriage	2
14	914411		1" NF Jam Nut	Cylinder Mount, Carriage	2
15	913882		3/4x7 Gr8 NF, Cut to 5-1/2	Cylinder Mount, Upright	2
16	913604		3/4 NF Nyloc Nut	Cylinder Mount, Upright	2
17	051703		12-1/2" Plunger Wld		4
18	070705		Short Slider		2
19	070706		Short Bumper Slider		2
20	991269		Rubber Bumper		2
21	991216		Spring	13/16 Dia x 3	4
22	991209		E-Clip		8
23	913206		5/8 SAE Washer		4
24	992166		Hose	3/8 x 21"	1
25	992138		Hose	3/8 x 95"	1
26	992103		Hose	3/8 x 106"	2
27	992168		Hose	3/8 x 147"	1
28	992167		Hose	3/8 x 222"	1
29	992464		3/8 JIC Swivel Nut 45		2
30	992425		3/8 OR to 3/8 MJIC		1
31	992402		3/8 MJ - 3/8 MNPT 90		3
32	992426		3/8 JIC Swivel Nut 90		1
33	992431		3/8 JIC Bulkhead Run T		2
34	992454		3/8 Bulkhead Nut		2
35	992403		3/8 MP - 3/8 JIC Straight		2
36	991084		1/16 Cable Clamp	Squeeze	1
37	991244		1/8 Cable Clamp	Threaded	1
38	991234		Rubber Pad Insert		4

39	991243	1/4 x 1 Elevator Bolt	8
40	911401	1/4 NC Nut	8
41	911405	1/4 Flat Washer	8
42	070706 ^{c70706}	Swivel Pad Wldment	4
43	99182	Tie Wrap, 24"	6



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.

Forward Manufacturing

Forward Manufacturing
3010 South Main
Fort Worth, TX 76110

Phone: 817-921-3523
Fax: 817-927-7329

Facsimile

To: Distribution
From: Forward Manufacturing Company
Date: Saturday, January 11, 1997
Re: Packaging of 15000 lb Lift

Due to the configuration of the 15000 lb Two Post overhead structure, we package this lift differently than we do our other two post offerings. The 15000 Two Post is packed as follows:

1. The posts, arms, and overhead structure are packaged together and attached with brackets.
2. The two cylinders and the power unit will be packaged on a separate pallet.

On motor freight, partial loads, or loads with multiple stops, be sure to check that you have unloaded all the pieces that you should receive. We will mark all boxes and pallets with your company name.

Thank you for your cooperation in this matter.

Mike - Please review. I will send
Monday via fax to all distributors.

Deu

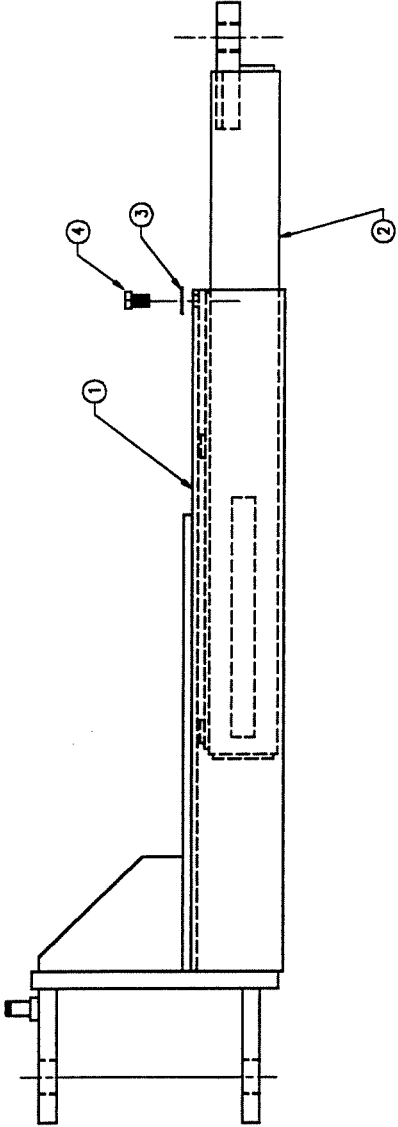
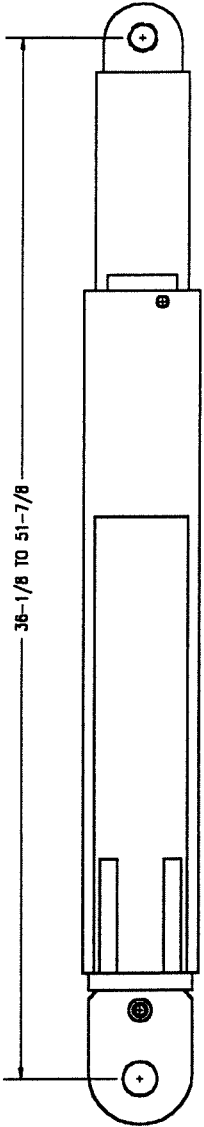
Items	P/N	Rev	Name	Description	Rqd
1	994151	-	Bolt Box		1
2	137101	-	M/S Leg Weldment	Power Unit Mount	1
3	137201	-	O/S Leg Weldment		1
4	137500	-	Carriage Assembly	Includes Items 5 thru 16	2
5	137501	A	Carriage Weldment	8 x 8 x 3/8 x 50-1/2	2
6	051506		Latch Weldment	12K Latch Weldment	2
7	991071		Spring, Latch	3/8 OD x 3-1/2	2
8	913682		Latch Bolt	3/4 x 2 NF	2
9	913600		Nut	3/4 NF Nylon Insert	2
10	913605		Washer	3/4 Flat Washer	4
11	070530		Pivot, Latch	Pipe Spacer	2
12	070528		Wipeout, Latch		2
13	090541		Pull Rod, Latch, 9k		2
14	991070		Cap Nut, Pull Rod		2
15	991077		Cotter Pin, Wipeout	3/32 x 1-1/2	2
16	912005		Washer, Wipeout	3/8 Flat Washer	4
17	137601	C	S/A Tube Weldment		4
18	137602	B	S/A Slider Weldment		4
19	912631		1/2 x 3/4 NC Bolt	Swing Arm Assy	4
20	912607		1/2 Lock Washer	Swing Arm Assy	4
21	137801	-	Overhead Wld		1
22	137802	-	Upright Wld		2
23	991030		1-3/8 Snap Ring	Sheave Mount	6
24	995030	-	5" Sheave		6
25	991211	-	Bushing, Sheaves		6
26	992322	-	Cylinder,	3 x 68	2
27	995120	-	Rub Block	UHMWPE	32
28	992032	-	Power Unit, Fenner	AB1306	1
29	912701	-	1/2 x 2-1/2 NC Bolt		12
30	912601	-	1/2 NC Nut		12
31	912605	-	1/2 Flat Washer		24
32	137604		9" Swivel pad Wld, truck	1-3/4 x 5 thrd x 9" long	4

Items	P/N	Rev	Name	Description	Rqd
1	994301		Manual, 15k 2 Post		1
2	992626		Cable	3/8 x 40' - 2"	2
3	992609		Cable, Limit Switch	1/16 x 20'	20
4	995910		S/A Pin	10"	4
5	991124		Shims		32
6	057804		Ring Wldmnt, 10A		1
7	911701		5/16 NC Nut		6
8	911703		5/16 Nyl Ins Nut,NC		4
9	911741		5/16 x 1 NC Bolt		6
9.1	912701		1/2 x 2-1/2 NC HX Bolt		14
9.2	912601		1/2 NC Nut		14
9.3	912605		1/2 Flat Washer		28
10	913604		3/4 Nyloc Nut, NF	Cable Mount	4
11	913606		3/4 SAE Washer		8
12	913828		3/4 x 5-1/2 Anchor Bolt		20
13	914402		1" NF Nut	Cylinder Mount, Carriage	2
14	914411		1" NF Jam Nut	Cylinder Mount, Carriage	2
15	913882	A	3/4 x 5-3/4 NF Bolt (cut 7)	Cylinder Mount, Upright	2
16	913604		3/4 NF Nyloc Nut	Cylinder Mount, Upright	2
17	148706		12-1/2" Thrd Plunger Wld		4
18	148702		8" Thrd Slider Wld		2
19	148707		8" Thrd Bumper Slider Wld		2
20	991269		Rubber Bumper		2
21	991216		Spring	13/16 Dia x 3	4
22	991209		E-Clip		8
23	913206		5/8 SAE Washer		8
24	992166		Hose	3/8 x 21"	1
25	992180		Hose	3/8 x 95"	1
26	992103		Hose	3/8 x 106"	2
27	992168		Hose	3/8 x 147"	1
28	992167		Hose	3/8 x 222"	1
29	992464		3/8 JIC Swivel Nut 45		2
30	992425		3/8 OR to 3/8 MJIC	Straight Adapter	2
31	992402		3/8 MP - 3/8 MNPT 90		2
32	992426		3/8 JIC Swivel Nut 90		2
33	992431		3/8 JIC Bulkhead Run T		2
34	992454		3/8 Bulkhead Nut		2

15K 2POST 137000 BOLT BOX CONT.

35	992403	3/8 MP - 3/8 JIC Straight		2
36	991084	1/16 Cable Clamp	Squeeze	1
37	991244	1/8 Cable Clamp	Threaded	1
38	991234	Rubber Pad Insert	2 Sets	8
39	991243	1/4 x 1 Elevator Bolt		16
40	911401	1/4 NC Nut		16
41	911405	1/4 Flat Washer		16
42	137603	4" Swivel Pad Wldment	1-3/4 x 5 thrd x 4" long	4
43	991082	Tie Wrap, 24"		6

- A 6/4/97 COMBINE 12K AND 15K TWO POST ARMS, RELOCATE RET. BOLT, WAS CENTERED.
- B 2/20/98 REV B FOR ITEM 1.
- C 3/24/98 NEW C SIZE DRWG.



4	912631	-	1/2 X 3/4 NC BOLT		1
3	912607	-	1/2 LOCK WASHER		1
2	137602	B	SLIDER TUBE WILDMNT	3 X 4 X 3/8 X 29-7/8 TUBE	1
1	137601	C	S/A TUBE WILDMNT	4 X 5 X 1/4 X 29-7/8 TUBE	1
ITEM	P/N	REV	NAME	DESCR.	RQD.

SWING ARM ASSEMBLY
12000/15000 TWO POST

SCALE: 1/4
 DATE: 25 SEP 95

FORWARD MFG. CO. INC.

4 RQD / LIFT REV C PART NO. 137600

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