

World Leader in Lift Systems

Model: AT70E

(Electric/Hydraulic Operated)

Model: AT70H

(Air/Hydraulic Operated)

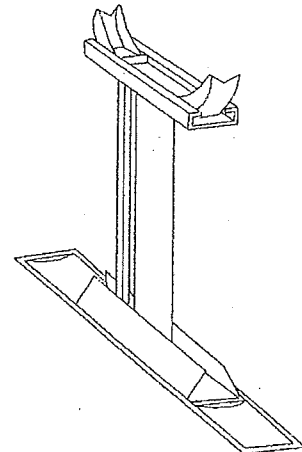
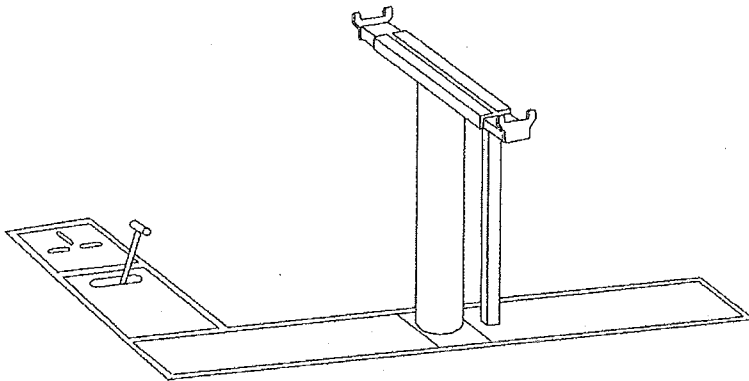
Adjustable Truck and Bus Lift

Capacity: 7 $\frac{1}{2}$ hp. Electric/Hydraulic - 36,000 lbs.
(18,000 lbs. per jack)

10 hp. Electric/Hydraulic - 50,000 lbs.
(25,000 lbs. per jack)

Air/Hydraulic - 24,000 lbs.
(12,000 lbs. per jack)

Installation, Safety, Operation, and Maintenance Instructions



IMPORTANT

We assume no responsibility
for installation errors where
instructions other than those shipped
with equipment are used.

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Glossary

Adjustment - How far the front jack moves. Rotary's standard Adjustment is 102".

Extensions - Are increases to Adjustment and are in one (1) foot increments, i.e.: one (1) foot extension. Adjustments and Extensions determine track and trench length.

Wheelbase - Is the maximum and minimum pick-up positions. Wheelbase range determines how far apart the trench or track is located from the rear jack.

INSTALLATION INSTRUCTIONS

Mr./Ms. Installer: Please follow these instructions to insure a good installation and satisfactory operation of the lift.

Check Shipment: Check your shipment against the product load list and shipping papers. Enter claims for damage or shortage with the delivering carrier at once.

- After installation, please return this booklet to the literature package and give to lift owner/operator.
- Literature package should be maintained for easy access for lift operator.
- Review entire installation instructions before beginning excavation.

▲ WARNING

Restrict all persons from going near excavation. OSHA standard restricts anyone from getting in excavated hole, unless OSHA guidelines are followed. See OSHA Excavating Standard CFR 1926.

Keep excavated hole covered and barricade excavated area.

1. Wheelbase Range:

- A. Wheelbase Range _____ in. to _____ in.
 Dimensions "U" _____ in. "X" _____ in.
- B. Enter minimum and maximum wheel bases in the space provided above.

C. To determine "U" and find "X" dimension as shown in Fig. 2, see Wheelbase Chart.

1. Read down the Min. WB. column to the proper minimum wheelbase (if your wheelbase is not on the chart, see step 3), then to the left is the "U" dim.
2. Go back across to the maximum wheelbase, then to the top of the column to the "X" dim. (trench length).
3. If your wheelbase is not on the Wheelbase Chart.
 - a. Find highest minimum wheelbase on chart without going over your desired min. wheelbase (example; you desire 117" for min. w/b choose 114" min. w/b from the chart).

WHEELBASE CHART

For Model 70H & E

		Trench Length "X" Dimension													
		12'-0"	13'-0"	14'-0"	15'-0"	16'-0"	17'-0"	18'-0"	19'-0"	20'-0"	21'-0"	22'-0"	23'-0"	24'-0"	25'-0"
"U"	Min. W/B	Maximum Wheelbase													
60.5	78	180	192	204	216	228	240	252	264	276	288	300	312	324	336
66.5	84	186	198	210	222	234	246	258	270	282	294	306	318	330	
72.5	90	192	204	216	228	240	252	264	276	288	300	312	324	336	
78.5	96	198	210	222	234	246	258	270	282	294	306	318	330		
84.5	102	204	216	228	240	252	264	276	288	300	312	324	336		
90.5	108	210	222	234	246	258	270	282	294	306	318	330			
96.5	114	216	228	240	252	264	276	288	300	312	324	336			
102.5	120	222	234	246	258	270	282	294	306	318	330				
108.5	126	228	240	252	264	276	288	300	312	324	336				
114.5	132	234	246	258	270	282	294	306	318	330					
120.5	138	240	252	264	276	288	300	312	324	336					
126.5	144	246	258	270	282	294	306	318	330						
132.5	150	252	264	276	288	300	312	324	336						
138.5	156	258	270	282	294	306	318	330							
144.5	162	264	276	288	300	312	324	336							
150.5	168	270	282	294	306	318	330								
156.5	174	276	288	300	312	324	336								
162.5	180	282	294	306	318	330									

Lift Location

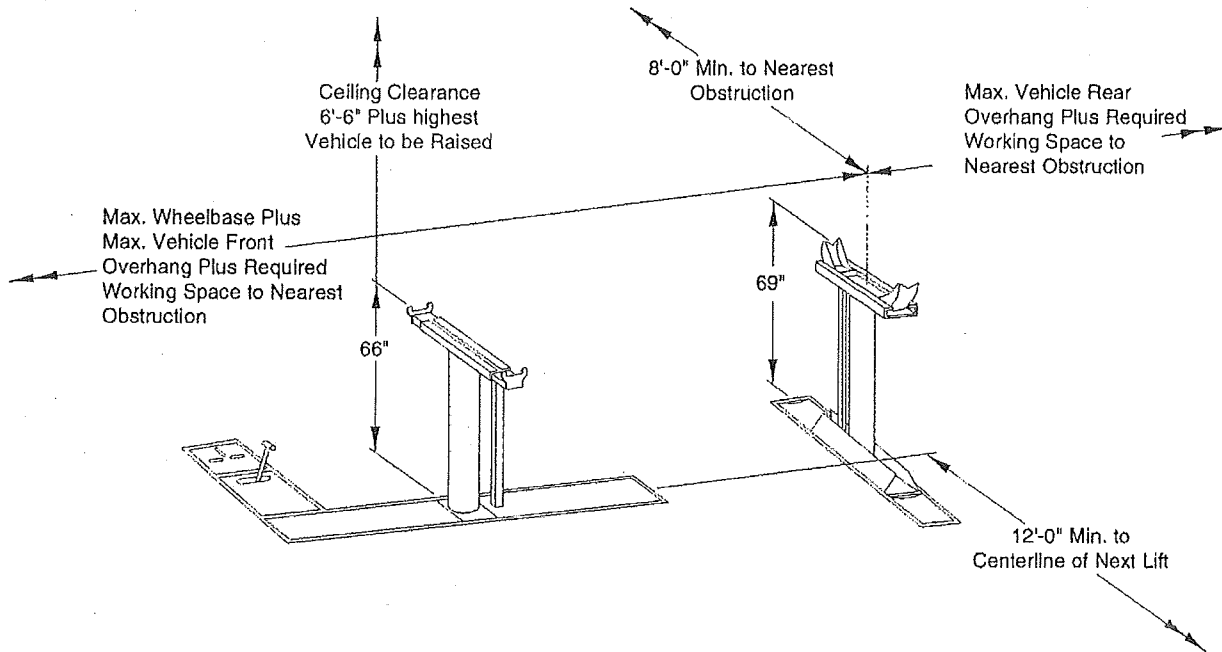


Fig. 1

- b. Subtract chart minimum wheelbase from your desired minimum wheelbase (117"-114"=3").
- c. Find corresponding "U" dimension from chart minimum wheelbase dimension used (96.5").
- d. Add the difference (answer) in step "b" to the "U" dimension found in step "c" to obtain your "U" dimension (96.5"+3"=99.5").
- e. Measure your front frame inside to find track or trench length "X".

IMPORTANT

Enter "U" dim. and "X" dim. in the space provided for reference during installation or specification.

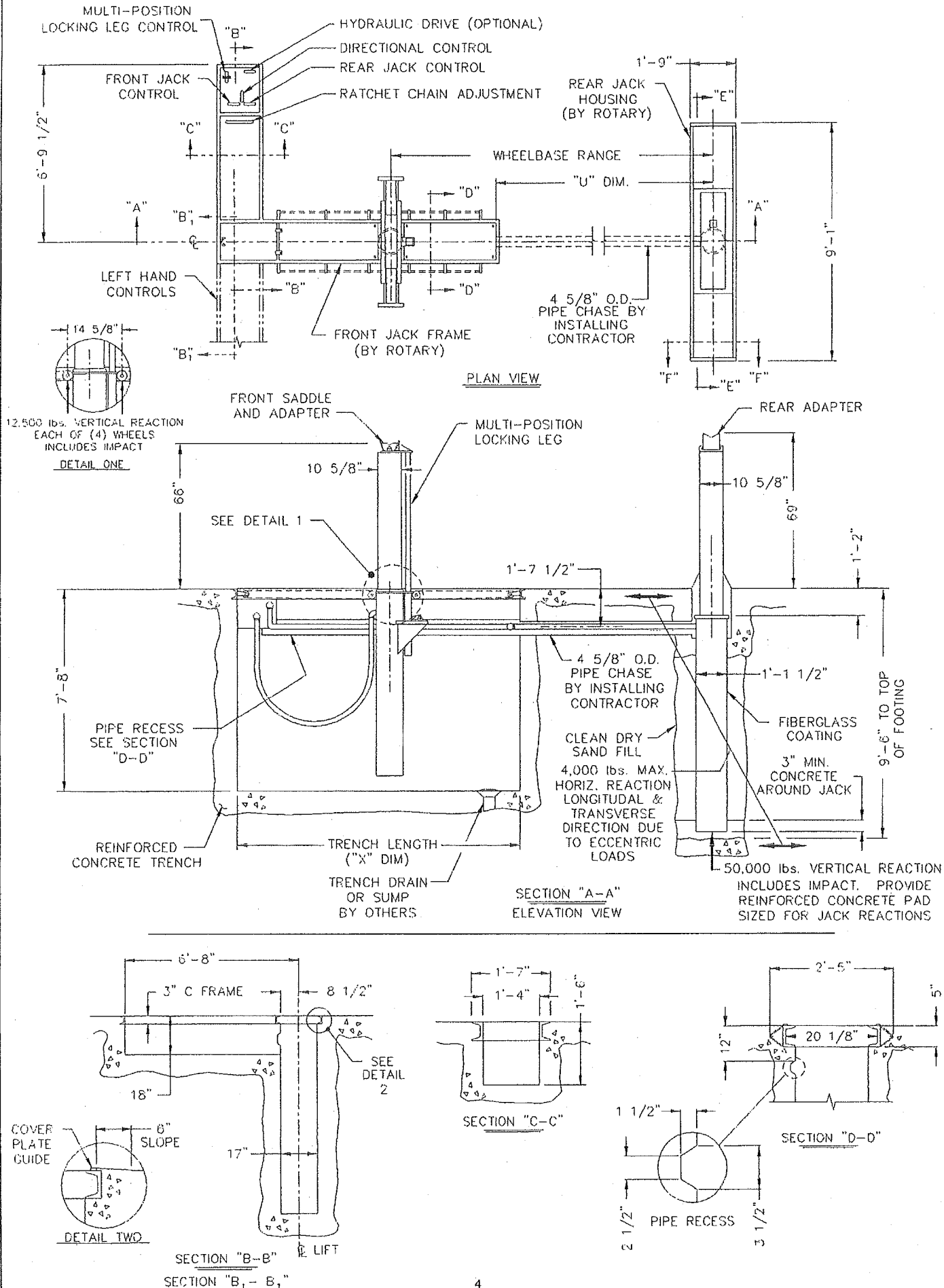
D. Example: If the wheelbase range of the vehicles to be serviced is 102" to 204", then locate the 102" in the Min. WB. column and the next column left is

the "U" dim. of 84.5". Now, read across to the right to 204" and to the top of that column for the "X" dim. (trench length) of 12'-0".

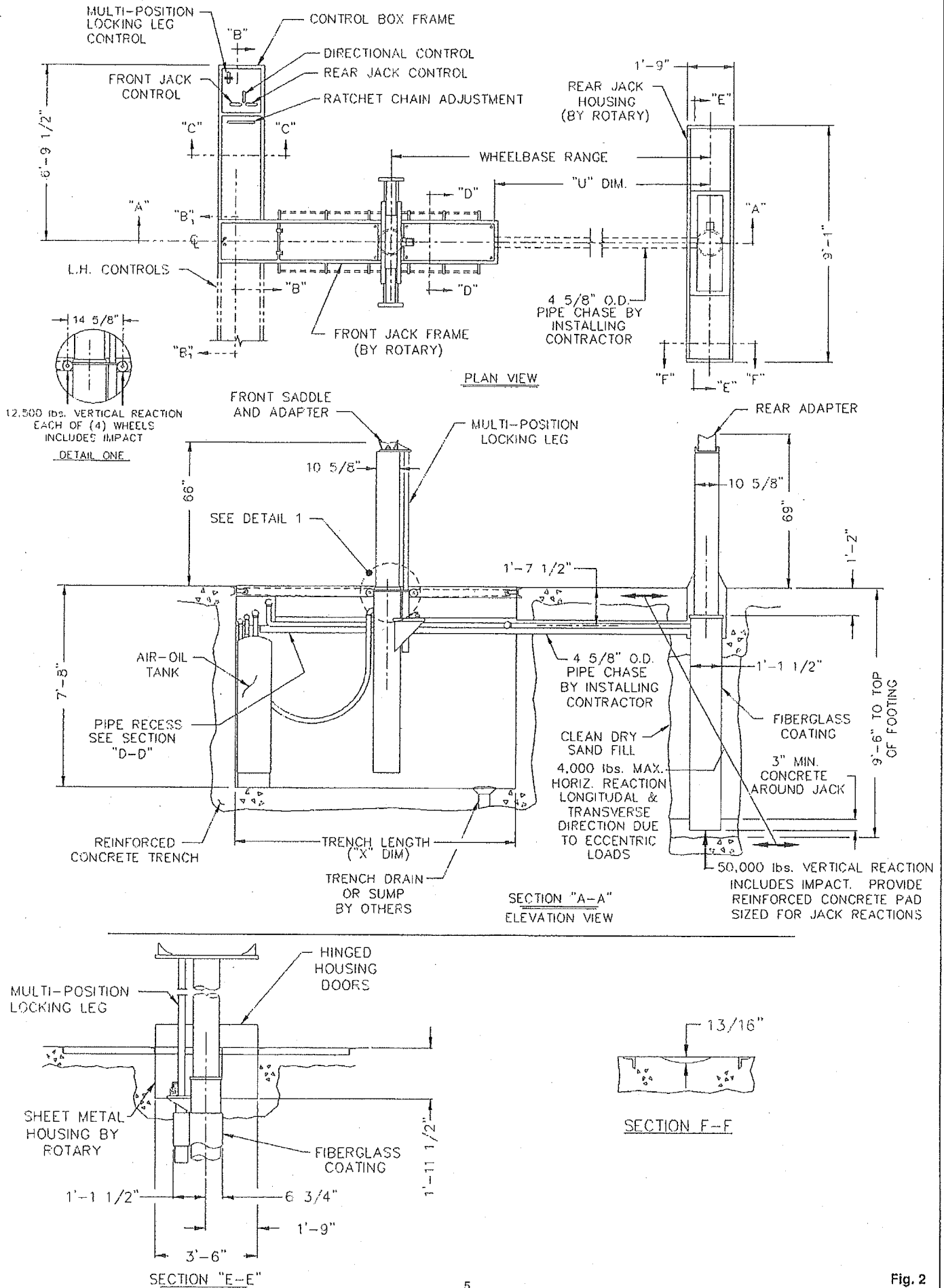
2. Lift Location:

- A. Check architect's layout if available for lift placement.
- B. Locate lift centerline in desired area, Fig. 1.
Note: The centerline of the rear jack housing is 90° to the lift centerline.
- C. Check for required work space around proposed lift/vehicle placement.
- D. Overhead clearance required is 6'-6" plus highest vehicle to be raised.

70E Plan and Elevation



70H Plan and Elevation



3. Soil Testing:

IMPORTANT

Test soil to determine corrosive characteristics. Take necessary measures to protect inground equipment with one of the many cathodic protection systems. Failure to provide underground protection when indicated by soil test could cause fluid leaks to develop in hydraulic system, resulting in costly repairs or making the equipment inoperative and unsafe.

4. Excavation: All concrete thickness shall meet all local and national building codes.

- Locate lift centerlines in desired area in accordance with the information provided in Fig. 1.
- Place the rear housing upside down on the floor aligned on center line. Set the front track right side up on center line and space "U" dimension, Fig. 2 from rear center line.

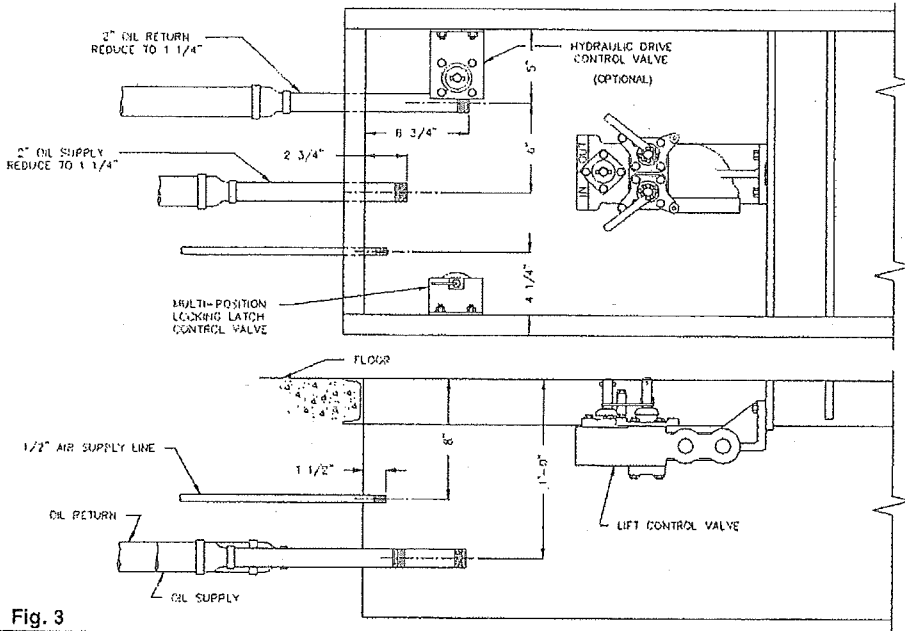


Fig. 3

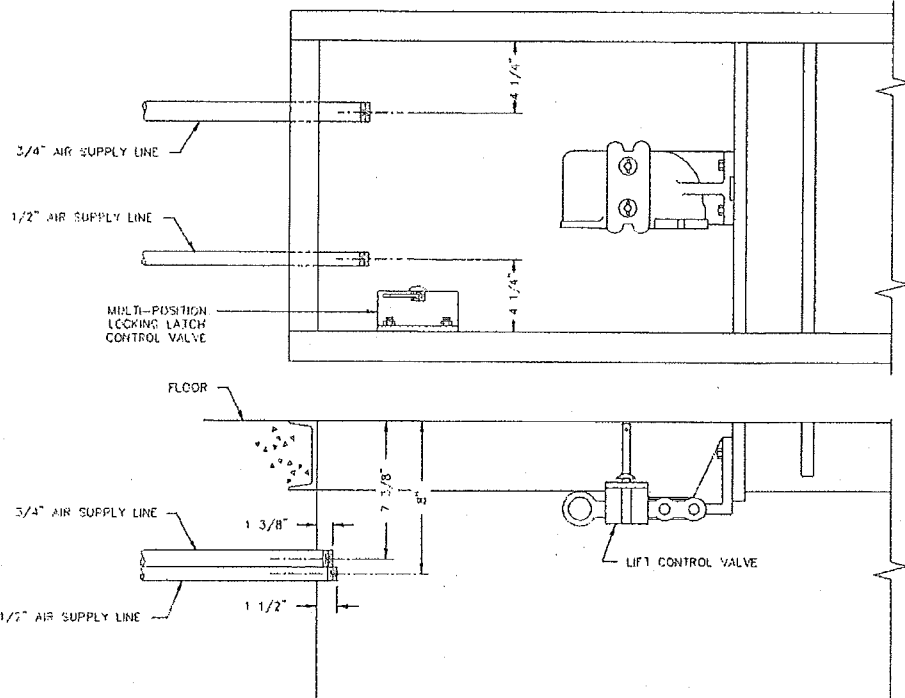


Fig. 4

- Mark excavation outline around both frames.
- Remove frames and excavate front trench, control box and rear jack and housing carefully to dimensions in Fig. 2.
- The concrete pad shall be sized to handle the vertical reaction of each jack, see Fig. 2 for vertical reaction and application.
- Dig a trench or opening between front trench and rear housing excavation for a pipe chase, Fig. 2.
- If desired, locate drain or sump pump in the front trench.

5. Pipe Stub-In Detail (control box):

IMPORTANT

Factory recommends schedule 40 pipe and 300 lbs. fittings (steel). Be sure all piping conforms to local and state codes. All piping supplied by installing contractor. Wash out all pipe with solvent and blow dry with air before installing. Always use a good joint sealant on pipe threads. Do Not use teflon tape. For welded pipe, flush system and install an inline fluid filter.

- Stub-in supply and return lines to dimensions and pipe size shown in Fig. 3 for power unit to control box.
- For lifts with hydraulic tanks, Fig. 4.

6. Rear Jack and Housing:

- Screw four (4) $\frac{3}{8}$ " x $\frac{5}{8}$ " leveling bolts into brackets of rear jack but not thru plate, Fig. 5. Remove housing doors and hinges to prevent damage. Support jack and slide housing over bottom of jack until mounting studs line up with jack brackets. Jack brackets must be on top side of housing supports. Turn jack fluid inlet to hole in housing. Secure jack to housing with four (4) $\frac{1}{2}$ " hex nuts and washers. Install fluid inlet cover with six (6) $\frac{1}{4}$ " x $\frac{1}{2}$ " RHMS and nuts.

Note: Inspect housing for any damage that may have occurred. If housing is bent, straighten.

- Lower jack/housing assembly into excavation until top surface of frame is flush with finished floor level.
- Make rear pipe chase from 4" min. inside diameter PVC pipe. Place the rear pipe chase in trench or hole.
- Guide 4" rear pipe chase into hole in housing. Level jack with machinist level across top of plunger, Fig. 6 by adjusting the $\frac{3}{8}$ " leveling bolts in jack brackets, Fig. 5.

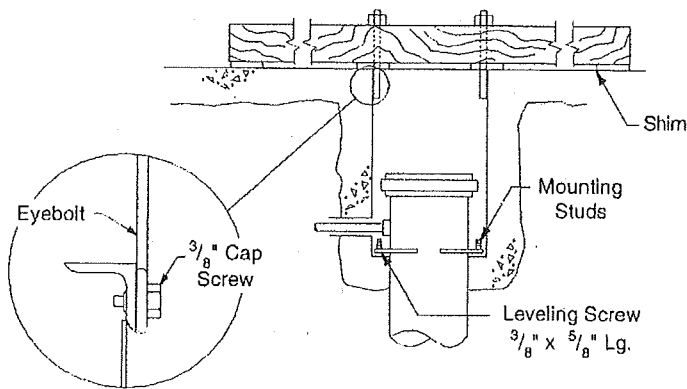


Fig. 5

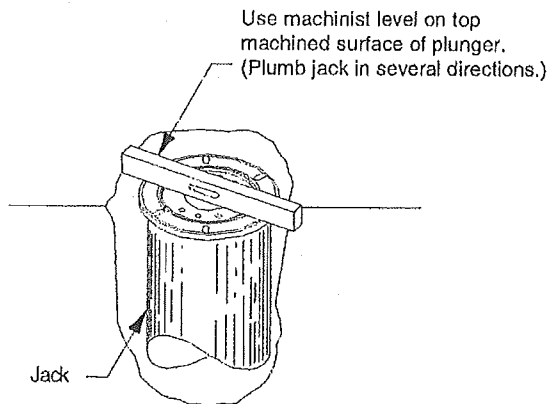


Fig. 6

E. Check housing alignment with lift center lines and recheck dimensions from front track, Fig. 2.

F. Level the rear frame flush with the floor.

Note: The $\frac{1}{2}$ " mounting studs and nuts should be loosened to make this adjustment. Retighten after adjustment.

G. Carefully pour concrete around bottom of jack. Provide reinforced concrete pad sized for jack reactions and soil conditions.

Note: A minimum of 3" of concrete above bottom of jack is required, Fig. 2.

H. Recheck plunger level and adjust if necessary. Backfill over concrete pad with clean sand. Hand tamp often, but not too hard. Stop backfill 6" below housing bottom. Recheck housing position and plunger level and adjust if necessary, Fig. 6.

7. Installation of Front Frame:

- Pour the concrete for the front trench floor. Level or slope ($\frac{1}{8}$ " per foot) towards drain in floor.
- Carefully space $\frac{1}{2}$ " reinforcing rods 8'-6" long around excavation driven vertically into trench floor before it sets.
- Build concrete forms having outside dimensions identical with the inside of the front frame, Figs. 2 & 7, order as they were removed.
- Bolt control box frame to the front frame with four (4) $\frac{3}{8}$ " x $1\frac{1}{4}$ " HHCS, lock washers and nuts. Tie the ratchet shaft assembly to the bottom of the control box frame. Build concrete forms around control box holding 18" depth, Figs. 2, section "C-C" & Fig. 7.

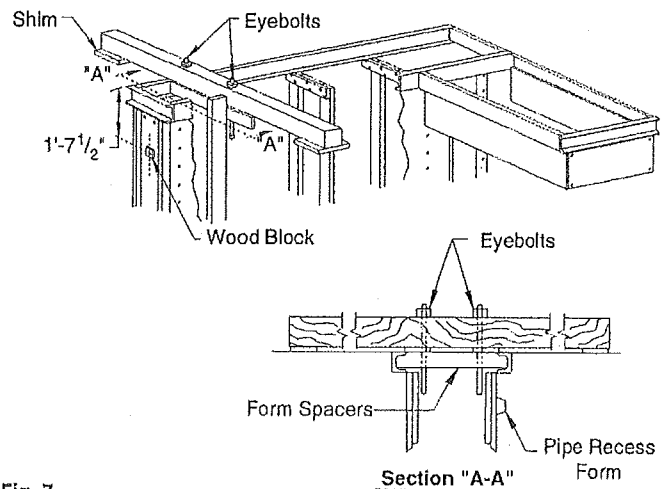


Fig. 7

E. Set form in trench, rear pipe chase should be flush with against form.

IMPORTANT

Visually inspect frame for shipping damage. Be sure frame is not warped or bent. Do Not remove shipping braces.

F. Clamp frame to concrete form. Measure frame at several points along its length and maintain 17" between side channels, Fig. 2, section "B-B". Check/install spacers inside of track every 18" on center to hold the correct dimension, Fig. 2, section "D-D". Recheck trench center line and dimension "U".

G. Level the form assembly with a level. Frame must be level side to side, check at 1'-0" intervals to be sure, shim as required. Maximum frame slope front to rear is $\frac{1}{8}$ " per foot. Shore form for stability. Make sure the top of frame is at finish floor elevation.

H. Wire or weld vertical trench concrete reinforcing bars to the frame reinforcing bars. Bend or cut off bars that would stick out of floor.

I. Pour concrete for front trench and control box.

8. Lift Piping:

Electric/Hydraulic:

A. Pipe sizes shown in this instruction are for pipe length from power unit to the furthest lift of 50'-0" or less. See section 5 for Stub-in details.

Note: If pipe length exceeds 50'-0" or multiple lift application, consult the factory for pipe sizes.

B. Bolt fluid valve and ratchet drive to mounting plate with (2) $\frac{1}{2}$ " x $1\frac{1}{2}$ " HHCS and lock washers, Fig. 12.

C. Install ratchet shaft sprocket hanger to front of frame channel using (2) $\frac{5}{8}$ " hex nuts and lock washers. (Only) if manual ratchet drive. Check and adjust assembly for proper alignment, Fig. 8.

D. Connect fluid lines from reservoir to control valve. Supply line connects to the "IN" side of the control valve, Fig. 8. Return line connects to the "OUT" side of the control valve, Fig. 8.

E. Hydraulic Drive (optional):

- Install (4) $\frac{3}{8}$ " 90° st. elbow on control valve. Install (2) $\frac{3}{8}$ " x $8\frac{1}{2}$ " lg. nipples at ports marked Cyl. 1 and Cyl. 2.
- Install $\frac{1}{2}$ " x 2" lg. nipples and $\frac{1}{2}$ " x $\frac{3}{8}$ " 90° red. elbow on motor.

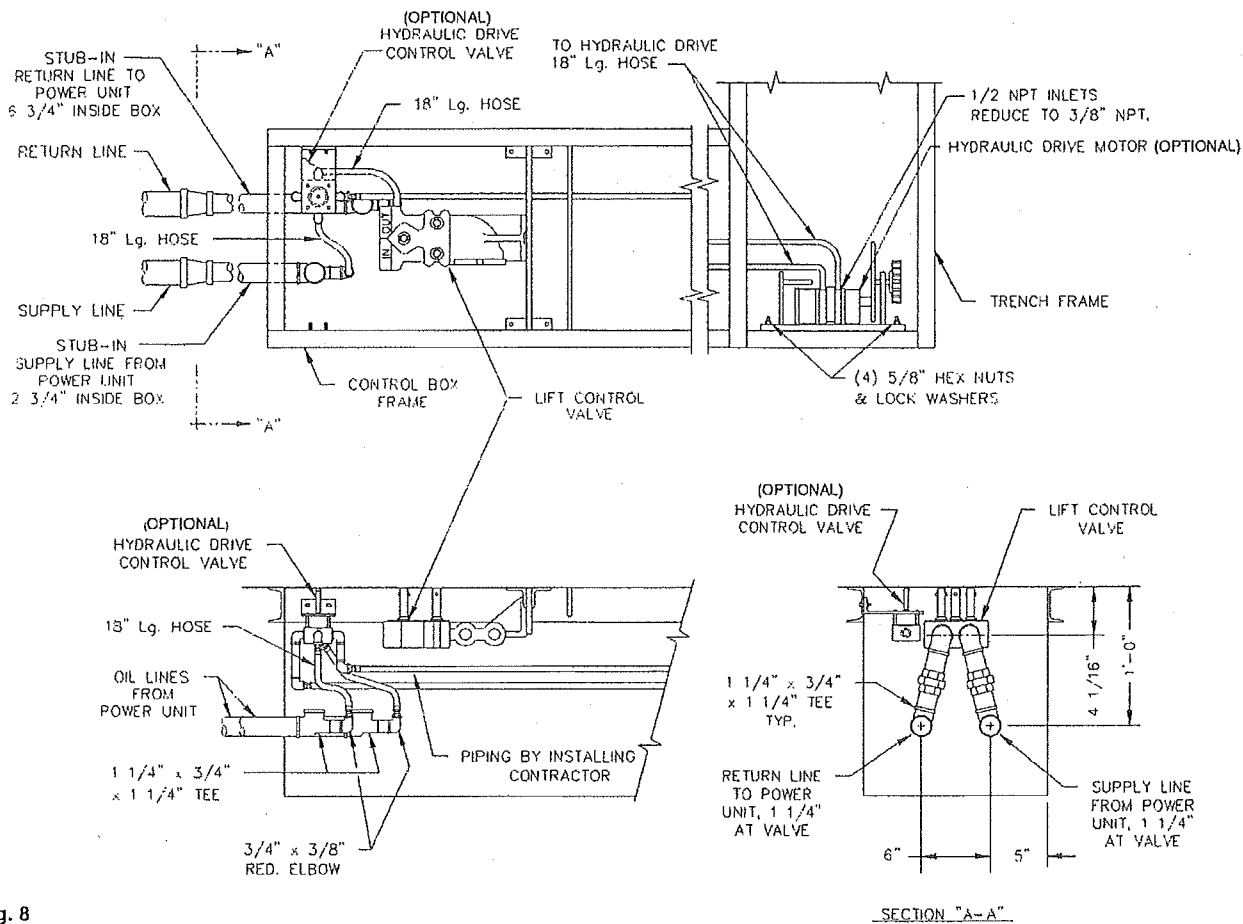
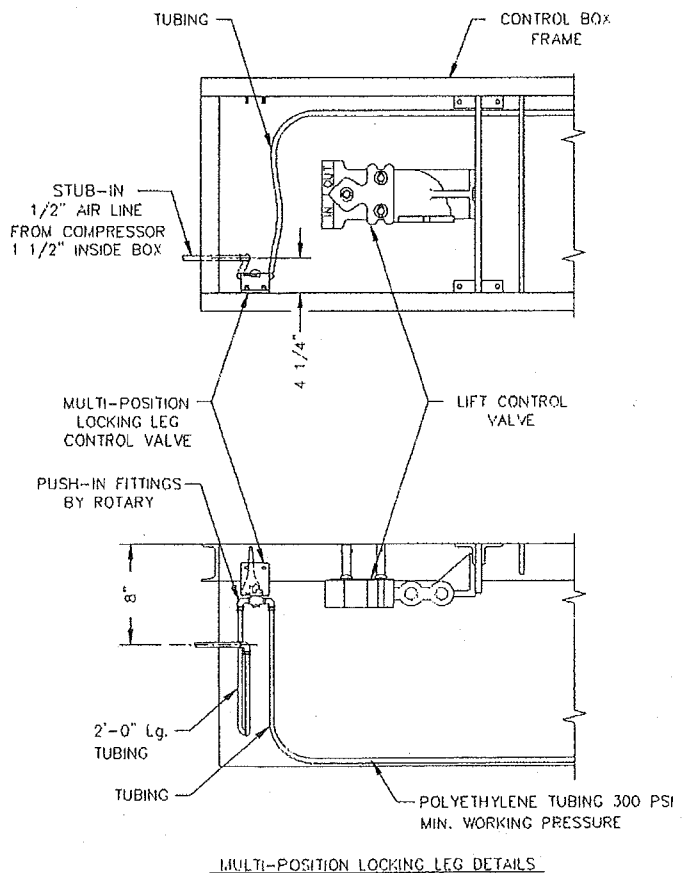


Fig. 8

3. Connect (2) 3/8" x 18" long hoses to hydraulic motor before bolting to front frame.
4. Bolt hydraulic motor assembly to front frame with (4) 5/8" hex nuts and lock washers and control valve to control box frame with 3/8" washers and locknuts, Fig.8
5. Complete connections from stub-ins to control valve ports marked "Press" and "Exh" with 3/8" x 18" lg. hoses.
6. Connect (1) 3/8" x 18" lg. hose assembly from control valve port marked "Cyl. 2" to hydraulic motor port marked "A".
7. Connect (1) 3/8" x 18" lg. hose assembly from control valve port marked "Cyl. 1" to hydraulic motor port marked "B".

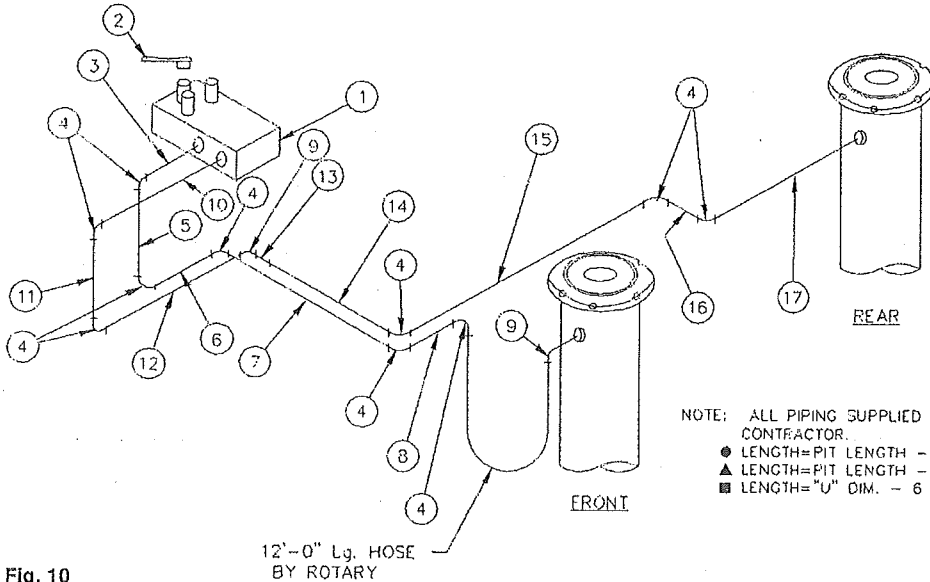
F. Multi-position Locking Leg:

1. Install multi-position locking leg control valve to control box frame using (2) 3/8" hex lock nuts and washers, Fig. 9.
2. Connect air supply stub-in to multi-position locking leg control valve (control valve has 1/4" ports), Fig. 9.
3. Complete stub-in to trench wall from multi-position locking leg control valve, secure 3/8" air line to control box floor, Fig. 9.



MULTI-POSITION LOCKING LEG DETAILS

G. Complete fluid piping to front and rear jack. See piping detail, Fig. 10.



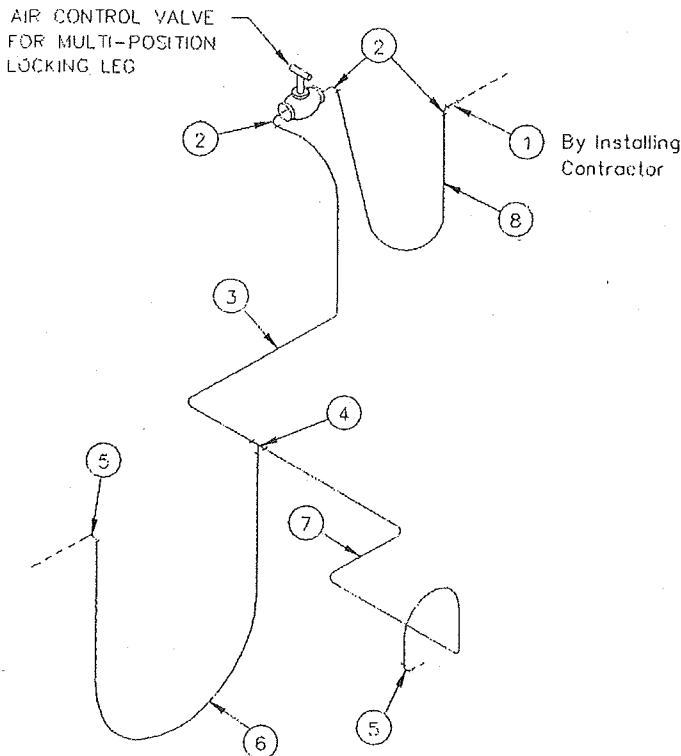
NO.	QTY.	DESCRIPTION
1	1	OIL VALVE w/2 SPRINGS
2	3	CONTROL HANDLE
3	1	1" CLOSE NIPPLE
4	10	1" 90° ELBOW
5	1	1" x 6" NIPPLE
6	1	1" x 9" NIPPLE
7	1	1" x 54 1/2" Lg. PIPE
8	1	1" x _____ Lg. PIPE
9	2	1" 90° ST. ELBOW
10	1	1" x 3 1/2" NIPPLE
11	1	1" x 3" NIPPLE
12	1	1" x 11" NIPPLE
13	1	1" UNION
14	1	1" x 49 1/2" Lg. PIPE
15	1	1" x _____ Lg. PIPE
16	1	1" x 9 5/8" Lg. PIPE
17	1	1" x _____ Lg. PIPE

NOTE: ALL PIPING SUPPLIED BY INSTALLING CONTRACTOR.

- LENGTH=PIT LENGTH - 12'-0"
- ▲ LENGTH=PIT LENGTH - 1'-6"
- LENGTH="U" DIM. - 6 1/4"

Fig. 10

H. Complete multi-position locking leg piping to front and rear jack. See piping detail, Fig. 11.



NO.	QTY.	DESCRIPTION
1	1	1/2" x 1/4" Reducing Coupling
2	3	1/4" 90° Elbow (FC5185-96)
3	1	1/4" x _____ Lg. Tubing
4	1	1/4" Tee (FC5225-46)
5	2	1/8" NPT x 1/4" Elbow (FC5224-39)
6	1	1/4" x 13'-0" Lg. Tubing
7	1	1/4" x _____ Lg. Tubing
8	1	1/4" x 2'-0" Lg. Tubing

NOTE:

All Tubing by Installing Contractor.

Tubing: Polyethylene Tubing 300 psi. min working pressure.

All Fittings and Air Valve Shown by Rotary.

- LENGTH = 9'-0" + (Front Frame Length - 12'-0")
- ▲ LENGTH = 'U' Dim. + 15'-0"

Air Line Fitting Connection

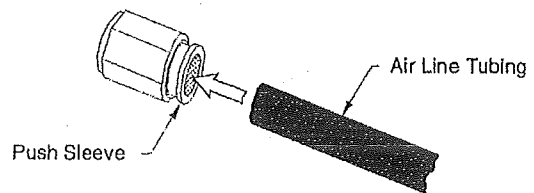


Fig. 11

I. For lift using left hand controls, lift piping is opposite of right hand controls.

Air/Hydraulic:

- A. Position tank in front of trench, Fig. 2.
- B. Connect air supply to air valve, Fig. 12 & 13.
- C. Check valve position with control box cover plate. Center (3) valve stems with hole in cover plate.

IMPORTANT

- 180 psi minimum maintained air pressure will ensure proper operation at capacity load. Never exceed 200 psi. at tank.
- D. Rotate tank with inlets and outlets parallel with long trench wall.
 - E. Shim tank as required for level.

- F. Bolt fluid valve and ratchet assembly to mounting plate with (2) 1/2" x 1 1/2" HHCS and lock washers, Fig. 12.
- G. Run pipe from tank outlet to control valve port, Fig. 13.
- H. For multi-position locking latch see Electric/Hydraulic version, Fig. 9 & 11.
- I. Complete fluid piping to front and rear jack. See piping detail, Fig. 13.

Do Not Install Low Fluid Control At This Time. Low Fluid Control May Be Damaged During Filling.

- J. For lift using left hand controls, lift piping is opposite of right hand controls.

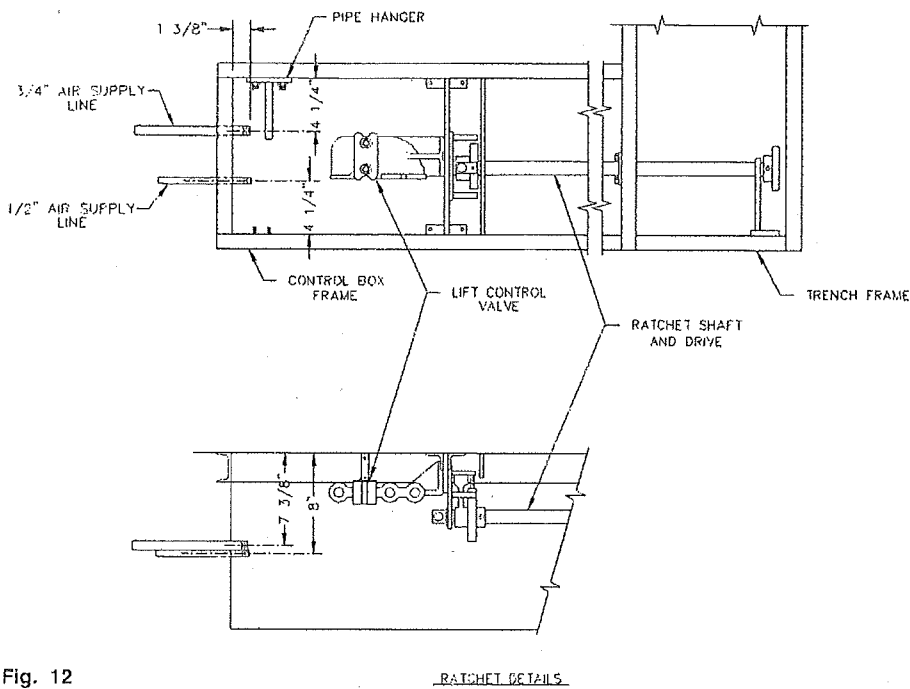
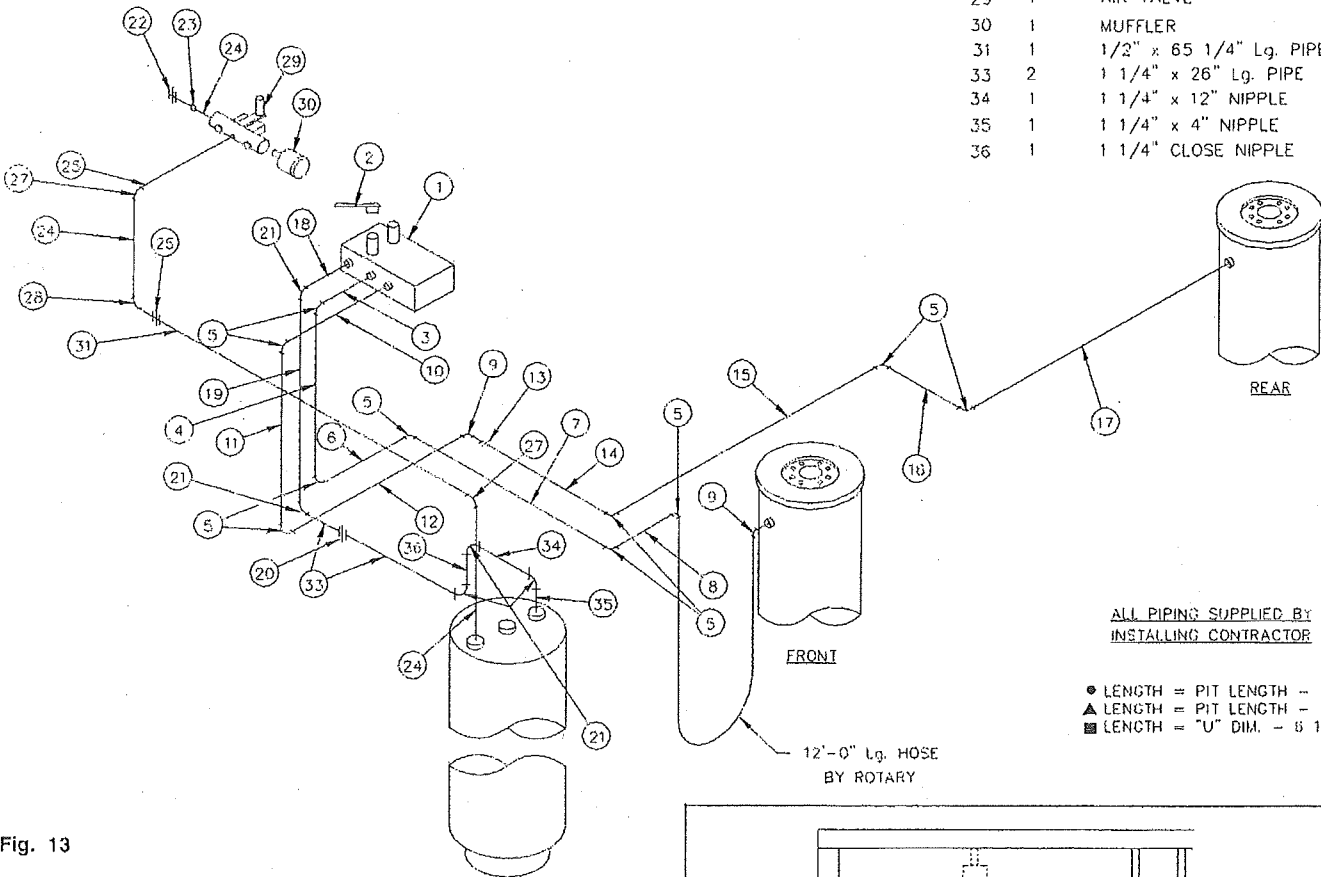


Fig. 12

RATCHET DETAILS

NO.	QTY.	DESCRIPTION
1	1	OIL VALVE WITH 2 SPRINGS
2	2	CONTROL HANDLE
3	1	1" CLOSE NIPPLE
4	1	1" x 6" NIPPLE
5	10	1" 90° ELBOW
6	1	1" x 9" NIPPLE
7	1	1" x 54 1/2" Lg. PIPE
8	1	1" x ----- Lg. PIPE
9	2	1" 90° ST. ELBOW
10	1	1" x 3 1/2" NIPPLE
11	1	1" x 3" NIPPLE
12	1	1" x 11" NIPPLE
13	1	1" UNION
14	1	1" x 49 1/2" Lg. PIPE
15	1	1" x ----- Lg. PIPE
16	1	1" x 7 3/4" Lg. PIPE
17	1	1" x ----- Lg. PIPE
18	1	1 1/4" x 3" NIPPLE
19	1	1 1/4" x 8" NIPPLE
20	1	1 1/4" UNION
21	5	1 1/4" x 90° ELBOW
22	1	3/4" UNION
23	1	3/4" x 1/2" BUSHING
24	3	1/2" x 1 1/2" NIPPLE
25	1	1/2" x 4 1/2" NIPPLE
26	1	1/2" UNION
27	2	1/2" 90° ELBOW
28	1	1/2" 90° ST. ELBOW
29	1	AIR VALVE
30	1	MUFFLER
31	1	1/2" x 65 1/4" Lg. PIPE
33	2	1 1/4" x 26" Lg. PIPE
34	1	1 1/4" x 12" NIPPLE
35	1	1 1/4" x 4" NIPPLE
36	1	1 1/4" CLOSE NIPPLE



ALL PIPING SUPPLIED BY
INSTALLING CONTRACTOR

- LENGTH = PIT LENGTH - 12'-0"
- ▲ LENGTH = PIT LENGTH - 1'-6"
- LENGTH = "U" DIM. - 6 1/4"

Fig. 13

Control Valve:

- A. Install return springs on control valve handles and attach to control box, Fig. 14.
- B. Electric/Hydraulic: set valve stem and roll pin orientation, Fig. 14.

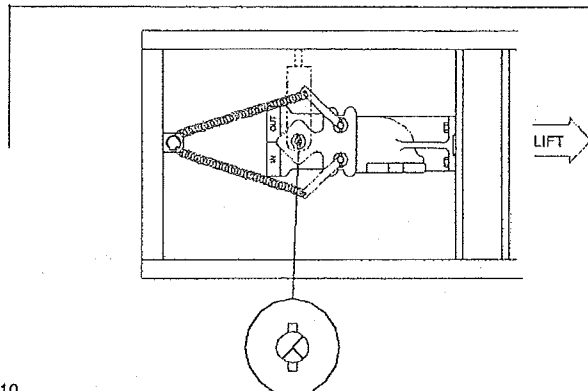


Fig. 14

9. Fluid Filling:

- A. **Electric/Hydraulic:** Fill power unit tank with fluid. See recommended fluid specifications.

Recommended Fluid Specifications for Rotary Lifts

Fluids recommended for use in automotive lifts should conform to the following specifications.

Viscosity Range: 150 SSU to 200 SSU @ 100° F

Aniline Point: 210° F Min.

Viscosity Index: 95 Min.

Additives:

Anti-Foam

Anti-Rust

Anti-Oxidation

Pour Point: 20° F below operating temp.

DO NOT use "hydraulic oils", for they may foam under air pressure.

Fill Plug

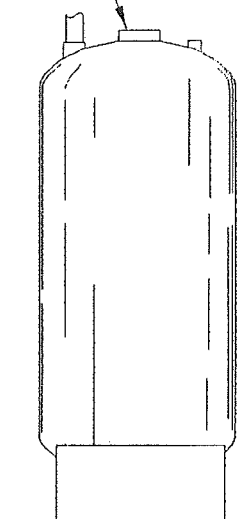
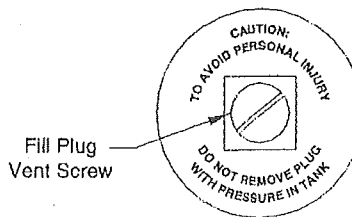


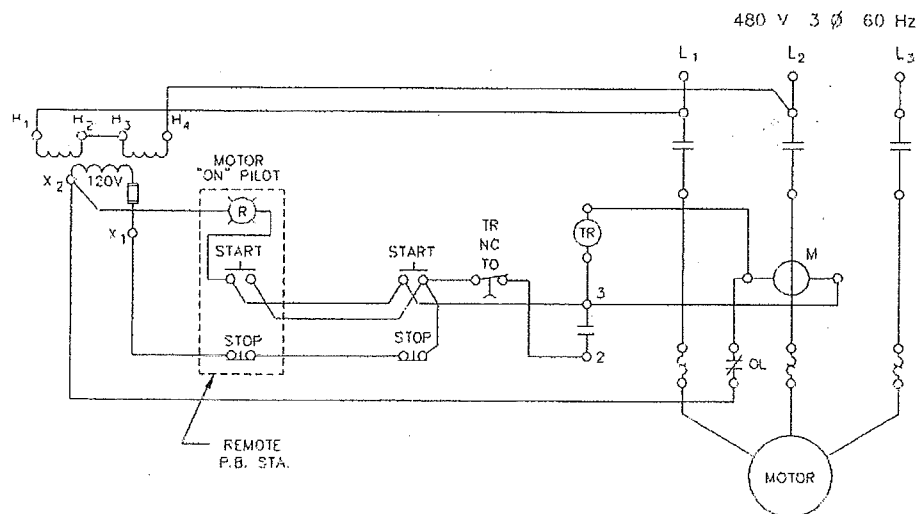
Fig. 15

- B. **Air/Hydraulic:** Fill tank with fluid. See recommended fluid specifications. System capacity is approximately 64 gallons. Tighten fill plug and fill plug vent screw, Fig. 15. Do Not install the low fluid control at this time.

10. Wiring Power Unit (electric/hydraulic):

- A. Power unit motor is normally controlled by "Start-Stop" starting switch located near motor in full view of lift. See wiring schematic for single motor unit, Fig. 16. **Note:** Motor rotation is counter-clockwise.

- B. For multiple lift installations where some lifts may be remote from power unit, use a "Start-Stop" push button station with running light, near each lift wired to starting switch.



11. Concrete Work:

- A. The rest of the concrete may now be poured front and rear. It should be mixed dry enough so that it will not float the wooden forms.
- B. Pour rear jack housing floor first to allow it to partially set-up before pouring sides. Pour per dimensions in Fig. 2.
- C. Recheck front forms to be sure they are shored and braced. Work concrete well under frame channels. Continue to recheck center lines, level and dimensions while pouring.
- D. Pour concrete around rear housing. **Do not crush pipe chase.**
- E. Use the wood sweep furnished to form the two (2) wheel depressions on each side of the rear housing, Fig. 2, section "F"- "F".

Note: Finished floor should be flush with top of rear frame and wheel depressions, Fig. 2, Sec. "F"- "F".

- F. After the concrete has set, remove the wooden front form.

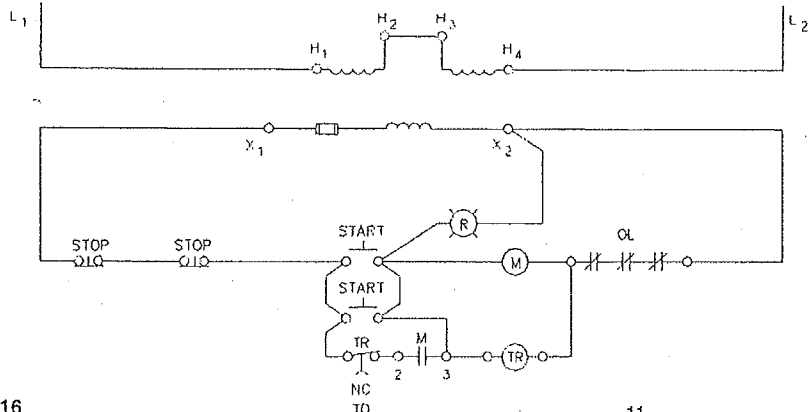


Fig. 16

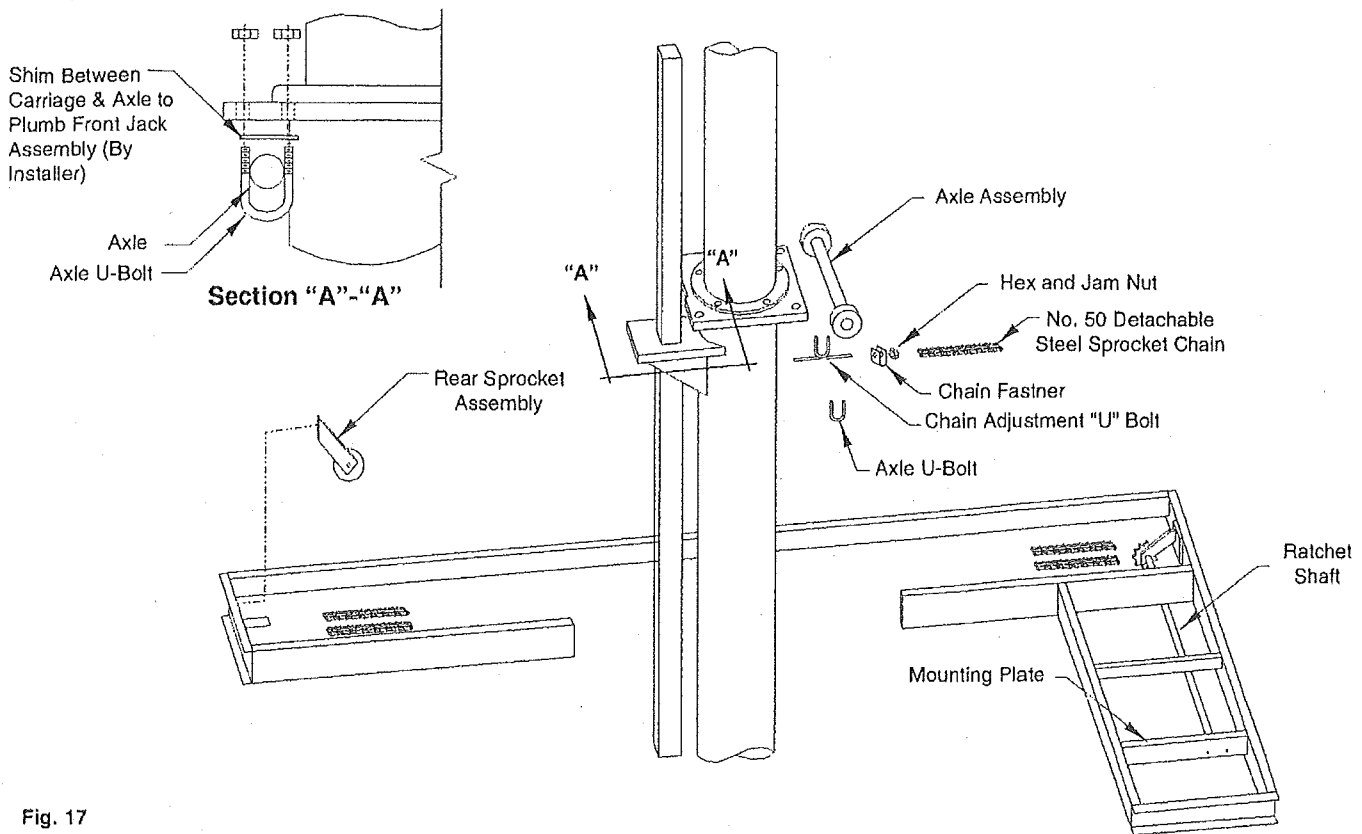


Fig. 17

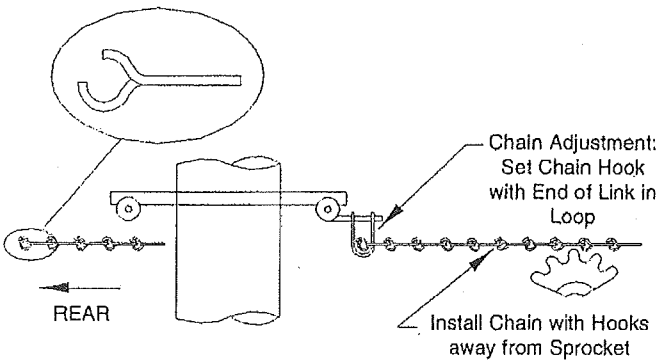


Fig. 18

12. Front Jack Installation:

- A. Remove frame spacers, concrete and dirt from tracks. Install carriage axle and roller assemblies midway of the front frame 12 1/2" apart. Roll full length of channels to check clearance, Fig. 17.
- B. Lower front jack into front trench and onto carriage axles with fluid inlet to the front. Equalize the clearance on each end of carriage axle with front track.
- C. Level the carriage with shims and secure with 3/8" "U" bolts, Fig. 17, Section "A-A".
- D. Install chain over sprockets with hooks away from sprockets, Fig. 18. Lubricate all bearing surfaces.
- E. Attach chain to combination "U" bolt-chain adjusting studs located on carriage/axle assembly with the chain fastener, Fig. 18.
- G. Tighten chain with 1/2" jam nut, Fig. 17 & 18.

H. Adjust chain until positive movement is achieved with drive/ratchet assembly, Fig. 17.

I. Install front jack hose and locking latch air hose.

IMPORTANT Do Not Kink Hose.

13. Ballast: Add 500 lbs. ballast to inside of both plungers to improve lowering when the lift is not loaded.

14. Bleeding:

Electric/Hydraulic:

A. Open bleeders in jacks (2) full turns, Fig. 19.

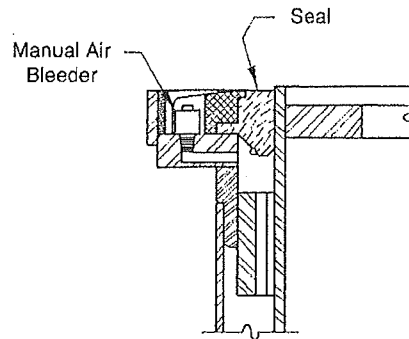


Fig. 19

B. Start power unit and slowly admit flow of fluid to ONE jack. Do Not raise plunger over 2'-0".

C. When constant stream of fluid appears at bleeder, close valve and tighten bleeder.

Note: Jacks may be damaged if lift is operated without being fully bled of air.

D. Repeat procedure with other jack.

E. Lower jacks and refill power unit tank to gage level.

F. Check packing gland bolts, torque to 50 ft.-lbs. and tighten bleeders.

G. Operate plunger to full rise several times. If operation is "jerky" lubricate plungers and repeat bleeding procedure.

Air/Hydraulic:

- A. Open bleeders in jacks (2) full turns, Fig. 19.
- B. Pressurize tank with air by locking air valve handle in up position and fully charge tank.
- C. Slowly admit fluid to ONE jack. Do Not raise plunger over 2'-0".
- D. When constant stream of fluid appears at bleeder, close valve and tighten bleeder.

Note: Jacks may be damaged if lift is operated without being fully bled of air.

- E. Repeat procedure with other jack.
- F. Lock air valve with handle in down position. Exhaust all air from tank. Lower both jacks to floor.
- G. Use screwdriver to manually open fill plug vent screw (3) full turns, Fig. 20. If you hear or feel air escaping "STOP", the system is still pressurized. Repeat step "F".
- H. Be Sure all air pressure has bled off before attempting to remove fill plug vent screw from fill plug.
- I. Use a 3/4" drive pull bar to manually remove fill plug assembly. Do Not use impact wrench.
- J. Add fluid as required to bring to gage level.

Note: Low Fluid Control is attached to gauge.

- K. Remove low fluid control from gauge rod, and install low fluid control, in Fig. 20.
- L. Coat the fill plug threads with anti-seize compound to retard rusting. Reinstall plug in coupling. Do Not coat, dope or tape fill plug vent screw threads. Reinstall fill plug vent screw.
- M. Check packing gland bolts, torque to 50 ft.-lbs. and tighten bleeders.
- N. Operate plunger to full rise several times. If operation is "jerky" lubricate plungers and repeat bleeding procedure.

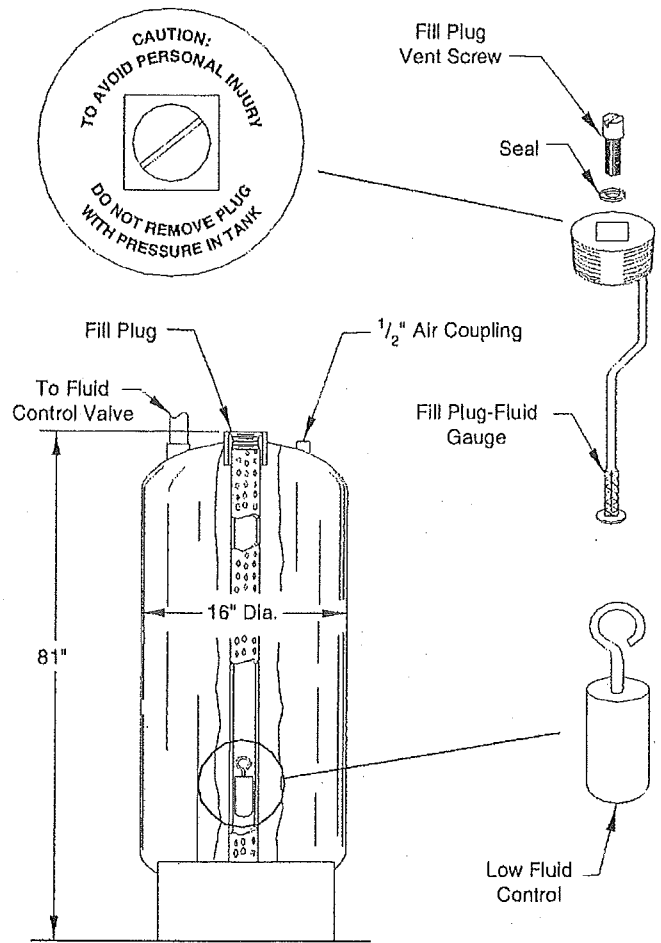


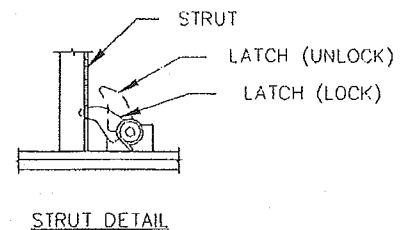
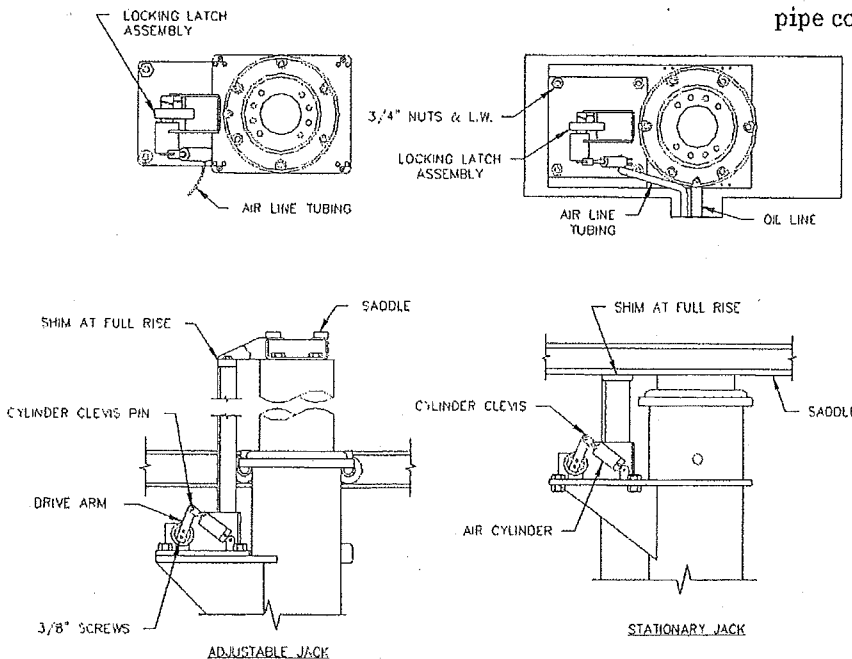
Fig. 20

15. Testing:

- A. Raise lift to full rise and leave under pressure for (5) minutes. (Electric/Hydraulic) Do Not leave motor running.
- B. Check all pipe joints for leaks. (Air/Hydraulic) Check air valve caps for tightness. Do not use pipe compound on caps.

16. Air Operated Multi-Position Locks

- A. The air cylinders are air actuated and should run satisfactory at 75 to 90 psi. Install a filter/regulator in the air supply drop line.
- B. Install the locking latch assembly onto the jack mounting bracket studs. Install the 3/4" lock washers and nuts but do not tighten down at this time.
- C. Complete the air piping, Fig. 11 & 21.



STRUT DETAIL

- D. Turn on air supply and check the action of the air cylinders and locking latches by actuating the control valve lever. When releasing the lever, you should hear the bleed-off air coming out around the valve stem. Hold air control valve open, check all joints and fittings for air leaks.
- E. Raise the jack plungers about 36".
- F. Actuate the control valve and hold open so the locking latches will be in the unlocked position. Install the struts so the top of the strut is just below the top of the jack plunger. Release control valve so locking latches can engage the strut and hold it in place.

17. Installing Superstructures, Coverplates and Nameplates

A. Superstructure:

1. Front:

- a. Clean threads in front plunger bolting ring. Fig. 22.

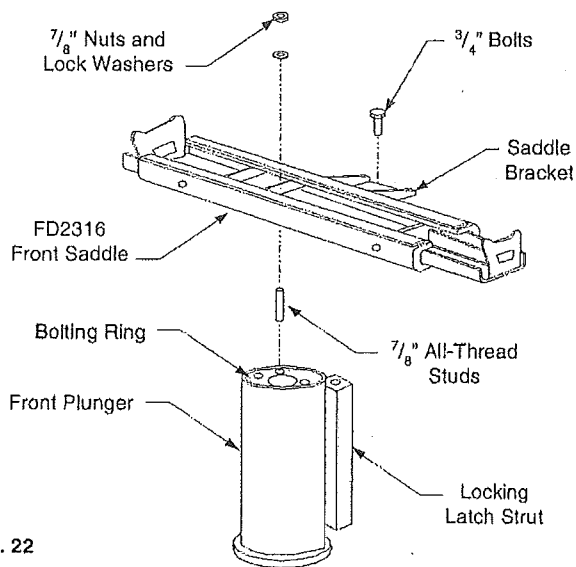


Fig. 22

Kit Contains

- (4) $\frac{7}{8}$ " All-Thread Studs
- (4) $\frac{7}{8}$ " Nuts
- (4) $\frac{7}{8}$ " Spring Lock Washers
- (1) Bottle of Locktite 262 Red

- b. Apply (2) drops of Locktite 262 Red (provided in kit) to the threads in the front plunger and (2) drops to the bottom threads of studs.

- c. Screw $\frac{7}{8}$ " all-thread studs into plunger until stud is just below bottom of plunger bulk-head, Fig. 23.

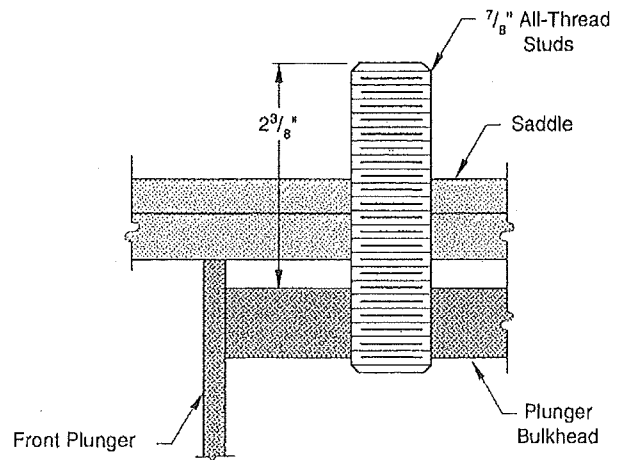


Fig. 23

- d. Wait 15 minutes for locktite to set-up.
 - e. Place saddle on plunger over all-thread studs.
 - f. Insert $\frac{7}{8}$ " nuts and lockwashers on all-thread studs. Torque $\frac{7}{8}$ " nuts to 150 ft.-lbs.
 - 2. Rear: Bolt rear saddle to plunger.
 - 3. Bolt struts to saddles but do not tighten.
 - 4. Install adapters and replace $\frac{3}{8}$ " stop bolts in saddles.
- ### B. Locking Latch:
- 1. Raise jack plungers to full rise.
 - 2. Square up face of locking latch with notches in strut. Tighten $\frac{3}{4}$ " nuts to secure locking latch assembly to jack mounting bracket. Torque to 90 ft.-lbs, Fig. 26.
 - 3. Tighten saddle to plunger bolts to 150 ft.-lbs.
 - 4. The top of the locking latch should be $\frac{1}{4}$ " - $\frac{3}{8}$ " below the top of the last slot in strut. Make necessary adjustments by placing horseshoe shaped shims (by Rotary) between the top of the strut and saddle. Torque $\frac{3}{4}$ " bolts to 150 ft.-lbs,
 - 5. Cycle lift several times to check operation.
- C. Bolt the trench cover plate ahead of front jack and notched cover plate to the rear.
 - D. Mount the lift identification/nameplate plaque near lift controls.
 - E. See nameplate package and instructions for placement of capacity nameplates on the lift.

SAFETY INSTRUCTIONS

- **Daily** inspect your lift. Never operate if it malfunctions or if it has broken or damaged parts. Use only qualified lift service personnel and genuine Rotary parts to make repairs.
- **Thoroughly** train all employees in use and care of lift, using manufacturer's instructions and "Lifting It Right" and "Safety Instructions" supplied with the lift.
- **Never** allow unauthorized or untrained persons to position vehicle or operate lift.
- **Prohibit** unauthorized persons from being in shop area while lift is in use.
- **Do Not** permit anyone on lift or inside vehicle when it is either being raised or lowered.
- **Always** keep the front trench cover plates in position to securely cover the trench at all times.
- **Always** keep rear housing doors closed when lift is not being used.
- **Always** keep area around lift free of tools, debris, grease and oil.
- **Never** Overload lift. Total lift capacity is based on the individual capacity of each jacking unit. Capacity is shown on nameplate affixed to each lift superstructure.
- **Do Not** hit or run over lift saddles or adapters. This could damage lift or vehicle. Before driving vehicle into bay, position saddles and adapters to provide unobstructed entrance onto lift.
- **Always** use the appropriate adapters to contact vehicle at vehicle manufacturer's recommended lift points.
- **Load** vehicle on lift carefully. Position lift adapters to contact the vehicle at manufacturer's recommended lift points. Raise lift until adapters contact vehicle. Check adapters for secure contact with vehicle. Raise lift to desired working height.
- **Always** keep jacks and vehicle level while raising or lowering.
- **Never** operate lift with locking latches disconnected or inoperative.

CAUTION

If you are working under vehicle, lift should be raised high enough for

locking latches to engage.

- **Do Not** block open or override self-closing lift controls, they are designed to return to the Off or Neutral position when released.
- **Never** operate the control valve handles with your feet.
- **Remain** clear of lift and vehicle when lowering.
- **Avoid** excessive rocking of vehicle while on lift.
- **Clear** area if vehicle is in danger of falling.
- **Never** arc weld on vehicle while lift is loaded.
- **Remove** tool trays, stands, etc. before lowering lift. Release locking latches before attempting to lower lift.
- **Position** lift saddles and adapters to provide an unobstructed exit before removing vehicle from lift area.
- **Never** increase power unit relief pressure without factory authorization.
- **Do Not** perform any maintenance on the control valves, air or fluid lines, air-fluid tank, power unit tank, jack(s), or check fluid level until lift has been fully lowered and all pressure has been released from system.

Owner/Employer Responsibilities

The Owner/Employer:

- **Shall** ensure that lift operators are qualified and that they are trained in the safe use and operation of the lift using the manufacturer's operating instructions; ALI/SM 93-1, ALI Lifting it Right safety manual; ALI/ST-90 ALI Safety Tips card; ANSI/ALI ALOIM-1994, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; ALI/WL Series, ALI Uniform Warning Label Decals/Placards; and in the case of frame engaging lifts, ALI/LP-GUIDE, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts.
 - **Shall** establish procedures to periodically inspect the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-1994, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and **The Employer Shall** ensure that lift inspectors are qualified and that they are adequately trained in the inspection of the lift.
 - **Shall** establish procedures to periodically maintain the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-1994, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and **The**
- Employer Shall ensure that lift maintenance personnel are qualified and that they are adequately trained in the maintenance of the lift.
- **Shall** maintain the periodic inspection and maintenance records recommended by the manufacturer or ANSI/ALI ALOIM-1994, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance.
 - **Shall** display the lift manufacturer's operating instructions; ALI/SM 93-1, ALI Lifting it Right safety manual; ALI/ST-90 ALI Safety Tips card; ANSI/ALI ALOIM-1994, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and in the case of frame engaging lifts, ALI/LP-GUIDE, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts; in a conspicuous location in the lift area convenient to the operator.
 - **Shall** provide necessary lockout/tagout means for energy sources per ANSI Z244.1-1982 (R1993), Safety Requirements for the Lockout/Tagout of Energy Sources, before beginning any lift repairs.
 - **Shall** not modify the lift in any manner without the prior written consent of the manufacturer.

Operating Instructions

⚠️ WARNING

Permit only trained personnel to operate lift. After reviewing these instructions, get familiar with lift controls by running the lift through a few cycles before loading vehicle on lift.

⚠️ WARNING

Before attempting to lift vehicles, be sure that:

- Vehicle individual axle weight does not exceed saddle rated capacity.
- Adapters are in secure contact with vehicle manufacturer's recommended lift points.
- Adequate overhead clearance is provided to raise vehicle to desired height.

Observe and heed SAFETY and WARNING labels on the lift.

1. Lift must be fully lowered and service bay clear of all personnel and/or other obstructions before vehicle is brought on lift.

2. Position lift saddles and adapters to provide unobstructed entrance of vehicle onto lift.

3. **Spotting:** Position vehicle centered laterally over the lift jacks and rear wheels centered in wheel dishes.

Note: Some vehicles may have a low slung differential housing or rear spring hanger brackets. It may be necessary to open the rear jack housing doors before positioning vehicle over the lift. Some vehicle applications may require adapter selections that are not standard with this lift.

4. **Lift Controls:** The valve ports are designed to close when released. **Do Not** block open or override self-closing feature.

5. Loading:

Electric/Hydraulic:

- Turn power unit on.
- Locate the front superstructure under the vehicle manufacturer's recommended lift points by moving the jack forward or backward with the shifting lever and ratchet drive or the hydraulic drive feature (optional).
- Slide adapters to proper vehicle manufacturer's recommended lift points. Shift lever may be used to adjust adapters. Adapter inserts (optional) are used to provide more clearance on some vehicles with independent front suspension.
- Adjust rear adapter for picking up by the rear axle, slide adapters to vehicle manufacturer's suggested lift points.

Air/Hydraulic:

- Locate the front superstructure under the vehicle manufacturer's recommended lift points by moving the jack forward or backward with the shifting lever and ratchet drive.
- Slide adapters to proper vehicle manufacturer's recommended lift points. Shift lever may be used to adjust adapters. Adapter inserts (optional) are used to provide more clearance on some vehicles with independent front suspension.
- Adjust rear adapter for picking up by the rear axle, slide adapters to vehicle manufacturer's suggested lift points.

6. To Raise Lift:

Electric/Hydraulic:

A. Set the selector (UP/DOWN) valve handle to the "UP" position, Fig. 24.

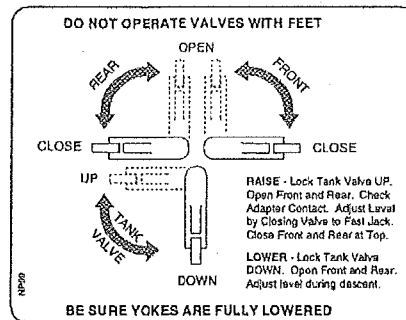


Fig. 24

- Open the rear jack valve port. Raise jack out of the housing. Stop with adapter just below rear axle.
- Open the front jack valve port. Raise jack and stop the adapter just below making contact with vehicle.
- Check both front and rear adapters for lifting point alignment. Adjust adapters as required.
- Raise vehicle until tires clear the floor.

IMPORTANT

Check Adapter Contact: Stop and check adapters for secure contact at vehicle manufacturer's recommended lift points.

- Continue to raise vehicle to desired height. Always keep vehicle level front to rear while raising.
- Do Not go under vehicle unless all four adapters are in secure contact at vehicle manufacturer's recommended lift points and the locking latches are engaged.
- Lower lift and repeat vehicle **spotting** and **loading** procedure if required.
- Turn off power unit.

Air/Hydraulic:

A. Set the selector (UP/DOWN) valve handle to the "UP" position, Fig. 25.

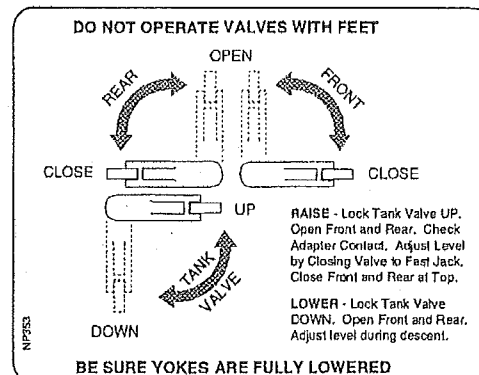


Fig. 25

- B. Fully charge tank.
- C. Open the rear jack valve port. Raise jack out of the housing. Stop with adapter just below rear axle.
- D. Open the front jack valve port. Raise jack and stop the adapter just below making contact with vehicle.
- E. Check both front and rear adapters for lifting point alignment. Adjust adapters as required.
- F. Raise vehicle until tires clear the floor.

IMPORTANT

Check Adapter Contact: Stop and check adapters for secure contact at vehicle manufacturer's recommended lift points.

- F. Continue to raise vehicle to desired height. Always keep vehicle level front to rear while raising.
- G. Do Not go under vehicle unless all four adapters are in secure contact at vehicle manufacturer's recommended lift points and the locking latches are engaged.
- H. Lower lift and repeat vehicle spotting and loading procedure if required.

7. Locking Latches:

- A. The air-operated multi-position remote release locking latches are designed (spring actuated) to engage at 3" increments.
- B. Do Not block the latches open or otherwise override this feature, Fig. 26.

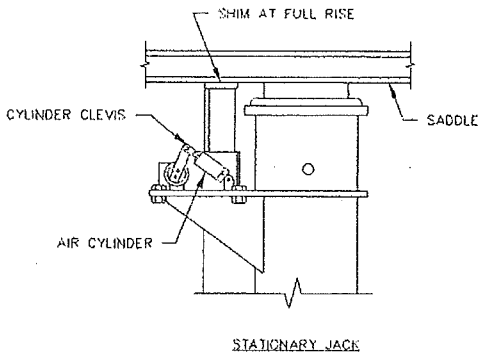
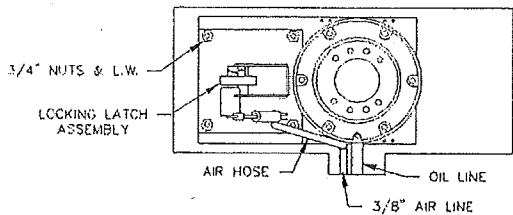


Fig. 26

- 8. **While Using Lift:** Avoid excessive rocking of vehicle while on lift.

- 9. **Before Lowering Lift:** Remove tool trays, safety stands, etc. from area.

Note: If lift has settled down on locking latches, it is necessary to raise lift off locking latches (repeat raise procedure) before attempting to lower lift.

10. To Lower Lift:

- A. Open the latch release air valve to disengage the locking latches. **Note:** Do Not release air valve handle until lift has reached the desired lowered position.
- B. Set the selector (UP/DOWN) valve handle to the "DOWN" position, Fig. 24 or 25.
- C. Air/Hydraulic: Fully discharge air from tank.
- D. Open the both jack valve ports and lower lift. Always keep vehicle level front to rear while lowering.
- E. Remain clear of lift and vehicle when lowering. Observe pinch point WARNING decals.
- F. Lower both jacks until front jack has come to rest on the floor and the rear jack has completely recessed into its housing.
- G. Return adapters to lowest position and move adapters to provide an unobstructed exit before removing vehicle from lift area.

- 11. If lift is not operating properly, Do Not use until adjustment or repairs are made by qualified lift service personnel.

MAINTENANCE INSTRUCTIONS

▲WARNING

If you are not completely familiar with automotive lift maintenance procedures **STOP:** contact factory for instructions. Permit only qualified personnel to perform maintenance on this equipment.

- **Never:** (Electric/Hydraulic) Run the power unit motor continuously. If the magnetic starter is not equipped with a timer, Be Sure to manually shut the system down by pushing the "STOP" on the electrical control panel.
- **Never:** Strike plunger with tools. Sharp edges may result in seal damage. If leak occurs, inspect plunger for sharp edges and sand smooth with fine emery paper before replacing seal.
- **Always:** Keep all packing gland bolts tight, torque to 50 ft.-lbs. If lost, replace with Grade 8 cap screws. The Rotary seal is self adjusting. There should be a thin film of fluid on plungers for proper operation.
- **Always:** Keep all bolts tight.
- **Always:** Keep lift area, superstructure and trenches clean and free of tools, debris, grease, etc.
- **Always:** Keep motor mounting bolts tight.
- **Daily:** (Air/Hydraulic) Drain air compressor tank to eliminate accumulation of water. (Do not rely on automatic drain.) Excessive water is harmful to lift system.
- **Monthly:** Lubricate carriage rollers, housing door hinges, ratchet mechanism, and sprockets.
- **Monthly:** Lubricate the pivot pins on the latch release air cylinders and locking latches.
- **Monthly:** Check adapters for distortion, broken parts, etc., replace as needed.
- **Monthly:** Check and keep superstructure to jack attachment bolts tight. Maintain 150 ft.-lbs. torque.
- **Monthly:** Check and keep locking latch strut to superstructure bolts tight. Maintain 150 ft.-lbs. torque.
- **Monthly:** Check fluid seals at each jack and control valve stems for leakage. Replace as required with genuine Rotary replacement parts.
- **Quarterly:** Check all hoses, pipes and fittings for leaks, drainage or deterioration.
- **Quarterly:** Lubricate roller chain and trench chain with a good grade of chain lube. Check for proper tension.
- **Quarterly:** Check and keep roller channel clean of debris.
- **Quarterly:** Check fluid level in (electric/hydraulic) power unit, (air/hydraulic) fluid tank at least once quarterly or as indicated by lift performance. Should jacks stop short of full rise or the (electric/hydraulic) power unit start to squeal, this is an indication the system may be low of fluid.

(Air/Hydraulic Lifts only) Check Fluid Level In Tank If One Of The Following Conditions Exists:

- A. Lift not raising to full travel. Usually caused by a low fluid condition with low fluid control restricting flow of fluid from air-fluid tank to hydraulic jacks.
- B. Lift jumping at last stage of rise and/or lift dropping suddenly at beginning of down cycle. This indicates the system is low of fluid and air is entering the jacks. A low fluid control must be installed after system has been refilled and bleed.

Check Fluid Level.

Note: Refer to manual bleeder and fill plug sections.

- A. Pressurize tank with air by locking air valve handle in the up position and fully charge tank.
- B. Slowly admit fluid to ONE jack and Do Not raise plunger over 2'-0".
- C. Open manual air bleeders on jacks two full turns. Close when oil appears.
- D. Repeat procedure with other jack.
- E. Lock air valve with handle in down position. Exhaust all air from tank. Lower both jacks.

▲WARNING

Lock air valve handle in the down position and be sure all pressure has been expelled from air-fluid tank before attempting to remove tank fill plug or fill plug vent screw.

- F. Use a screwdriver to manually open fill plug vent screw (3) full turns. If you hear air escaping, "STOP", the system is still pressurized. Repeat step D.
- G. Be Sure all air pressure has bled off before attempting to remove fill plug vent screw from fill plug.
- H. Use a $\frac{3}{4}$ " drive pull bar to manually remove fill plug assembly. Do Not use impact wrench.

IMPORTANT

Do not mix or add "Hydraulic Oil" with Bio-Fluid.

- I. Add fluid as required to gauge level. Do not overfill.
- J. Coat the fill plug threads with anti-seize compound to retard rusting. Reinstall plug in coupling. Do Not coat, dope or tape fill plug vent screw threads. Reinstall fill plug vent screw and seal. Check for fill plug leaks.
- K. Never use a substitute plug or modify this vent feature.

IMPORTANT

Should you find the hydraulic system has lost fluid, it is imperative that the source of the fluid loss be diagnosed and repaired immediately. Federal and state environmental laws prohibit the discharge of contaminants into the subsoil or into sewer drains (without a permit).

SAFETY WARNING LABELS FOR INGROUND LIFTS

Lift Owner/User Responsibilities:

Typical Placard Locations

- A. This Safety Warning placard SHALL be displayed in a conspicuous location in the lift area.
- B. Use one of the mounting arrangements illustrated on back of this placard.
- C. These Safety Warning labels supplement other documents supplied with the lift.
- D. Be certain all lift operators read and understand these labels, operating instructions and other safety related information supplied with the lift.

The following pictograph placard should be located, as shown by Fig. 27, 28, 29 & 30.

Wall Mounted Lift Controls

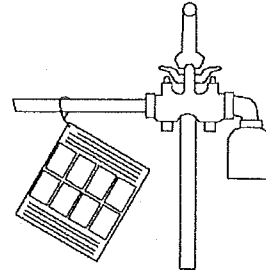


Fig. 27

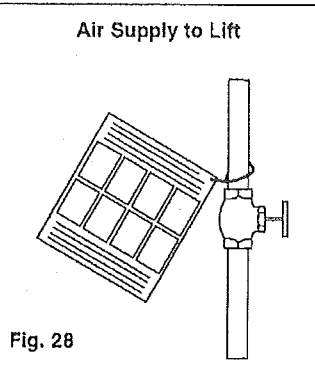
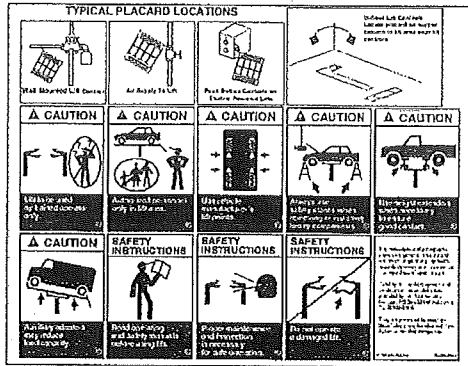


Fig. 28

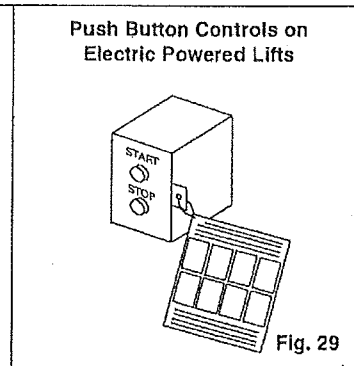


Fig. 29

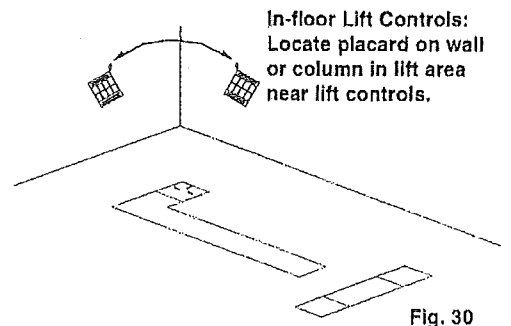


Fig. 30

Mr./Ms. Installer: Please return this booklet to literature package and give to lift owner/operator.

**Trained Operators and Regular Maintenance Ensures
Satisfactory Performance of Your Rotary Lift.**

**Contact Your Nearest Authorized Rotary Parts Distributor for Genuine Rotary
Replacement Parts. See Literature Package for Parts Breakdown.**

This equipment complies with
American National Standard B-
153.1



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