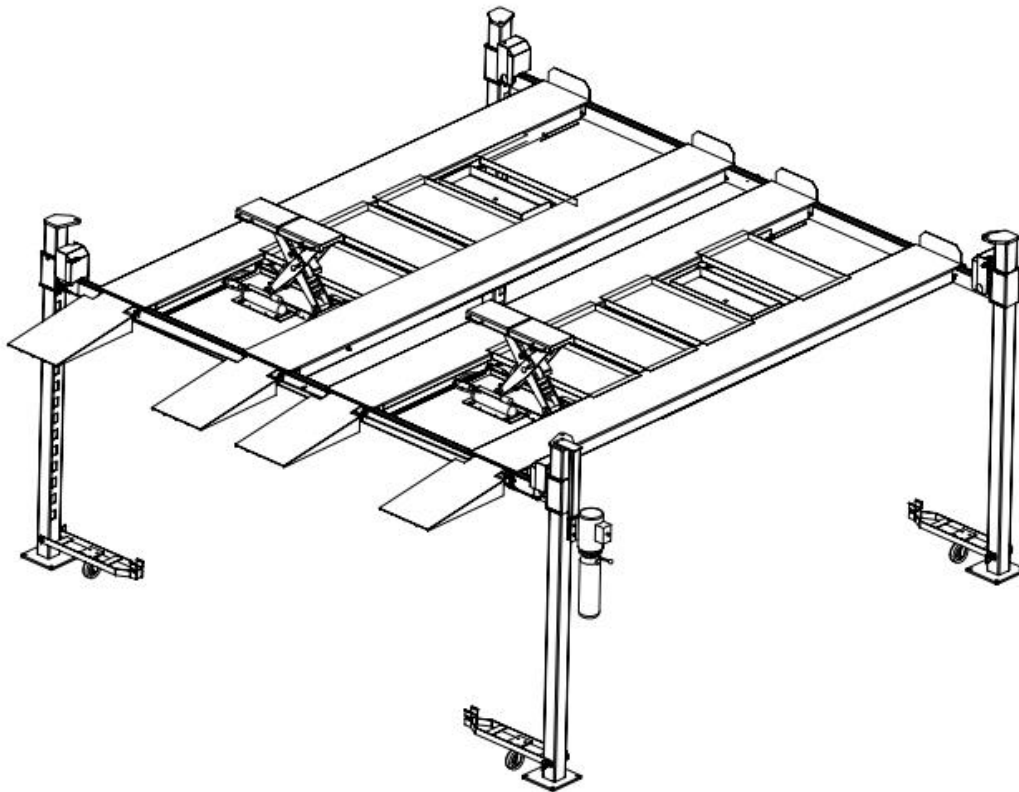


INSTALLATION OPERATION AND MAINTENANCE MANUAL



IMPORTANT SAFETY INSTRUCTIONS

Read these safety instructions entirely

Always lock the lift before going under the vehicle. Never allow anyone to go under the lift when raising or lowering.

INSPECT your lift daily. Never operate if it malfunctions or if it has broken or damaged parts. Repairs should be made with original equipment parts. **ATTENTION! LOOK OUT!** Routine check of safety latch system is very important – the discovery of device failure before needed could save you from expensive property damage, lost production time, serious personal injury and even death.

Operating controls are designed to close when released. Do not block open or override them.

NEVER overload your lift. Manufacturer's rated capacity is shown on nameplate affixed to the lift. ALWAYS know the gross weight of vehicle.

NEVER use the lift to raise one end or one side of vehicle.

NEVER raise vehicle with anyone inside it. No one should be in the lift area during operation.

ALWAYS keep lift area free of obstructions, grease, oil, trash and other debris.

Before lowering lift be sure tool trays, stands, etc. are removed from under vehicle. Release locking devices before attempting to lower lift.

Care must be taken as burns can occur from touching hot parts.

Adequate ventilation should be provided when working on internal combustion engines.

Use only manufacturer's recommended attachments.

KEEP HANDS AND FEET CLEAR. Remove hands and feet from any moving parts. Keep feet clear of lift when lowering. Avoid pinch points.

GUARD AGAINST ELECTRIC SHOCK. This lift must be grounded while in use to protect the operator from electric shock. Never connect the green power cord to a live terminal. This is for ground only.

DANGER! The power unit used on this lift contains high voltage. Disconnect power at the receptacle before performing any electrical repairs. Secure plug so that it cannot be accidentally plugged in during service.

WARNING! RISK OF EXPLOSION. This equipment has internal arcing or sparking parts which should not be exposed to flammable vapors. This machine should not be located in a recessed area or below floor level.

MAINTAIN WITH CARE. Keep lift clean for better and safe performance. Follow manual for proper lubrication and maintenance instructions. Keep control handles and/or buttons dry, clean and free from grease and oil.

STAY ALERT. Watch what you are doing. Use common sense. Be aware.

CHECK FOR DAMAGED PARTS. Check for alignment of moving parts, breakage of parts or any condition that may affect its operation. Do not use lift if any component is broken or damaged.

NEVER remove safety related components from the lift. Do not use lift if safety related components are damaged or missing.

ALWAYS wear safety glasses. Everyday eyeglasses only have impact resistant lenses. They are not safety glasses.

READ AND UNDERSTAND ALL SAFETY WARNINGS & PROCEDURES BEFORE OPERATING LIFT.

POST THESE SAFETY TIPS WHERE THEY WILL BE A CONSTANT REMINDER TO YOUR LIFT OPERATOR. FOR INFORMATION SPECIFIC TO THE LIFT, ALWAYS REFER TO THE LIFT MANUFACTURER'S MANUAL.

RECEIVING YOUR LIFT

Great care was taken in the preparation and packaging of your lift. Before receiving your lift inspect it for any visible damage to the packaging. Any visible damage must be noted on the bill of lading. All freight claims are the responsibility of the consignee.

Mid-AM recommends picking up your lift at a local freight terminal with a trailer at least 16 foot long. The freight carriers we use are trained on handling our lifts and will load the lift directly on your trailer. This method will allow you to unload your lift piece by piece at the installation site directly from your trailer. Your lift can also be delivered to a commercial location with forklift access.

As you are unpacking your lift make sure you have all components before you begin installation. Also, make sure you have all the tools necessary to complete the installation. Do not discard the cardboard packing material until you have completed installing the lift. Cardboard can be used to protect lift components while installing.

TOOLS RECOMMENDED FOR ASSEMBLY

- Rotary Hammer Drill or Similar (If Anchoring)
- M18 Masonry Bit (If Anchoring)
- Hammer
- 4 Foot Level
- Open-End Wrench Set: Metric
- Socket And Ratchet Set: Metric
- Hex-Key / Allen Wrench Set
- Locking Pliers
- 2- ton engine hoist or Come-Along
- Medium Crescent Wrench
- Medium Pipe Wrench
- Pry Bar
- Chalk Line
- Medium Flat Screwdriver
- 25' Tape Measure
- Needle Nose Pliers

USE PROPER LIFTING TECHNIQUES

Your lift has components that weigh up to 500 lbs. You should have at least one assistant when lifting heavy components. Three assistants or material handling equipment is preferred.

Improper installation can cause accelerated wear, resulting catastrophic failure which may cause property damage and / or bodily injury. Manufacturer will assume no liability for loss or damage of any kind, expressed or implied, resulting from improper installation or use of this product. Read this installation manual in its entirety before attempting to install or operate the lift.

SELECTING SITE: Before installing your new lift, check for the following.

OVERHEAD OBSTRUCTIONS: The area where the lift will be located should be free of overhead obstructions such as heaters, building supports, electrical lines, lighting, etc.

FLOOR REQUIREMENTS: Visually inspect the site where the lift is to be installed and check for cracked or defective concrete. This lift must be installed on a solid level concrete floor with no more than 2 degrees of slope. A level floor is suggested for proper installation and level lifting. If a floor is of questionable slope, consider a survey of the site and/or the possibility of pouring a new level concrete slab. This lift is designed to be installed on a minimum of 3 1/2" thick, 3500 psi, and reinforced concrete. Do not install this lift on asphalt, wood, or any other surface other than described. This lift is only as strong as the foundation on which it is installed.

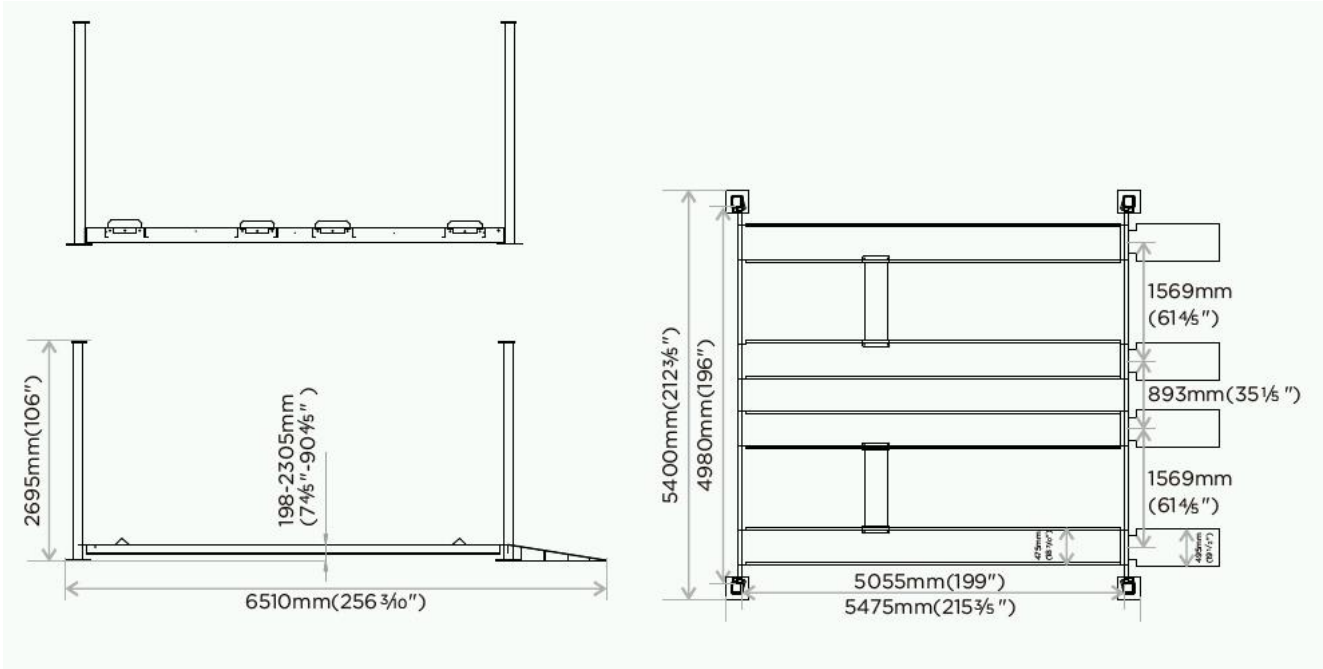
DO NOT install this lift outdoors unless special consideration has been made to protect the power unit from weather conditions.

DO NOT begin installation with lift close to wall. It is necessary to leave adequate clearance for installing safety linkage rods. Allow 60" for clearance. (See Fig. 1)

NOTE the power unit can be placed in one of two locations, front left or rear right. (See Fig. 1)

Layout a chalk line on the floor according to the following dimension . (See Fig. 1)

(Figure 1)



Unpacking: Unpack the lift close to the installation site. Open the small bolt / parts box, and arrange the components of your lift so that every part is visible and easy to identify. Review your packing list and assembly drawing to verify that you have all the parts





The above photos show how we unload a lift off a trailer, when mechanical equipment is not available. First we use 2 skates, placing 1 under the front of the lift while it's still on the trailer, then using the engine hoist, lift the other end, using the hoist to pull the lift to the end of the trailer. Place the 2nd skate between the legs of the hoist, lowering the lift setting it on the skate. Then raise the end of the lift that is still on the trailer and drive the trailer out from under it.

Packed in your unit you will first find two 2 crossbeam on the top, then others nested between the 2 track: a set of ramps, a power unit packed in its own box; 4 columns; a parts box; 3 linkage rods; a linkage release handle; any accessories you might have ordered with your lift. (The track with the cylinder is referred to as the power track.)



Crossarm Installation & Glide Blocks

Once you're sure you have the foot print for your lift laid out where you want it, follow the photos. Remove the columns, they are paired and stacked left and right making a set for each end. Power unit placement will determine which Crossarm goes on what end of the lift (fig.1) there is a welded spacer on each Crossarm, these go to the outside and must line up on the same side, the long linkage rod and handle run through them. The power unit must mount on one of the columns driver side front or passenger side rear next to the spacer.

Place cardboard behind the locks as shown in (fig. 2). This holds the locks open so they can slide. Slide the Crossarms over the columns as shown in (fig.1), take it easy you don't want to scratch your columns; it's easy to get them in a bind, slide them down as square as you can. Pull out the cardboard when the locks go by the 5th position, lock the locks into the 4th positions from the bottom.

(Fig 8) For us that's the best height for installing the tracks. Once you're on the locks you can stand up the columns and work them into place. Next install the UHMW glide blocks; 4 to a column, 4 are cut to fit the locks, take care to make sure you get them in the right lock; 2 left, 2 right. See (Fig. 9 & 10) it is a tight fit when putting the last one or two in, you can wiggle the post this will help with alignment, making it easier to slide. If it's still to tight use a wood block that came in your shipping material and a hammer to tap them down flush, so the retaining cap can be re-stalled. (Fig. 11 & 12)

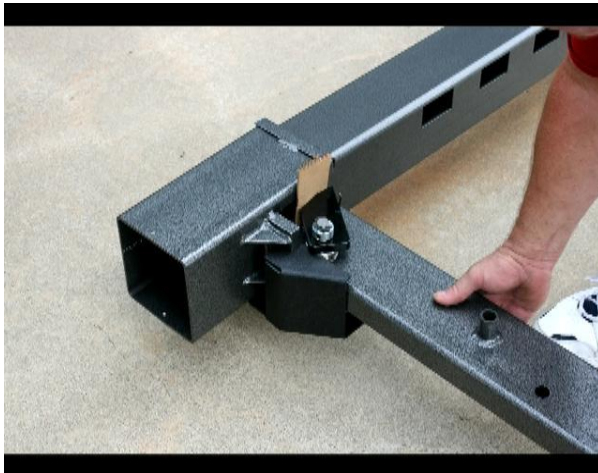


Fig. 1



Fig.2



Fig. 3



Fig. 4



Fig.5



Fig. 6



Fig. 7



Fig. 8



Fig. 9

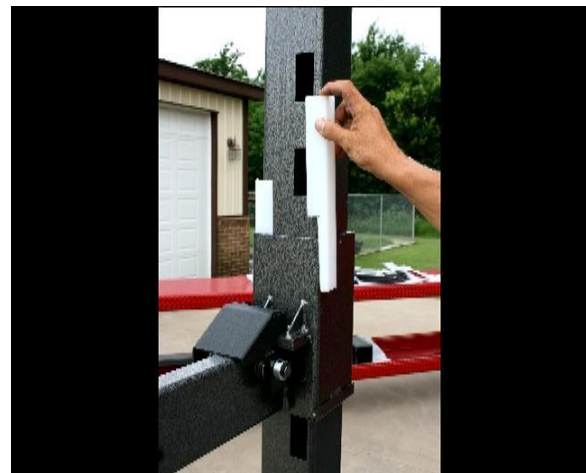


Fig. 10



Fig. 11



Fig. 12

Tack installation

The best we've found to install the track, is to roll them under and between the crossarms as shown in (Fig.18). Unbolt the power track (top track) from the shipping crate. Using your engine hoist and a strap pick the track up in the center, having your assistant balance one end, lift it up and over the crossarm. This can be done by tilting the track so one end is higher than the other letting one end clear the crossarm first; see (Fig.14 & 15). Use a large screw driver or drift pin to align the holes in the track with the hole in the crossarm. Once you have them aligned you can let some of the weight of the track rest on the crossarm. Start the bolts in one end first using the ½" x 4" bolt and 3ea. ½" flat washers, the first washer goes next to the bolt head, the 2nd washer goes between the ramp clip & the crossarm, the 3rd washer goes on the back side with the nut to secure the track to the crossarm.

(Fig. 16) Make sure you put bolts in both ends before starting the next track. Leave the 2nd track on the shipping crate; use the shipping crate to flip the track over see (Fig.17). Repeat the install process for this track. Once you have all the bolts started you are ready to check the lock rod alignment.

Check to make sure the lock handle rod will slide through the spacer on the crossarm and through the guide loops on the bottom of the track at both ends; it should turn freely without binding, if it does not just slide the track one way or the other until it's free. Now tighten the track bolts, to approx. 45 ft lbs.



Fig. 13



Fig. 14

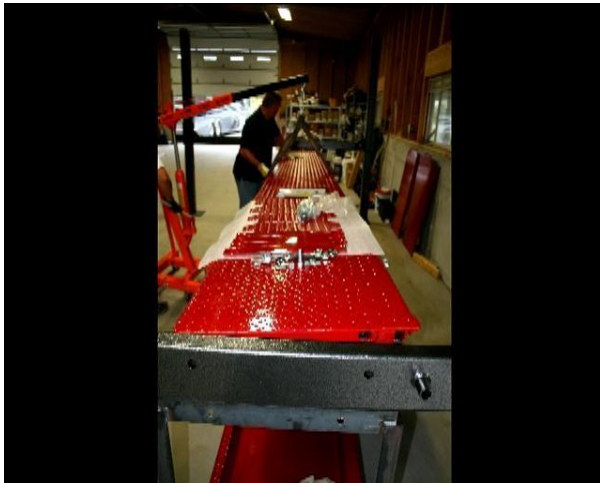


Fig. 15



Fig. 16

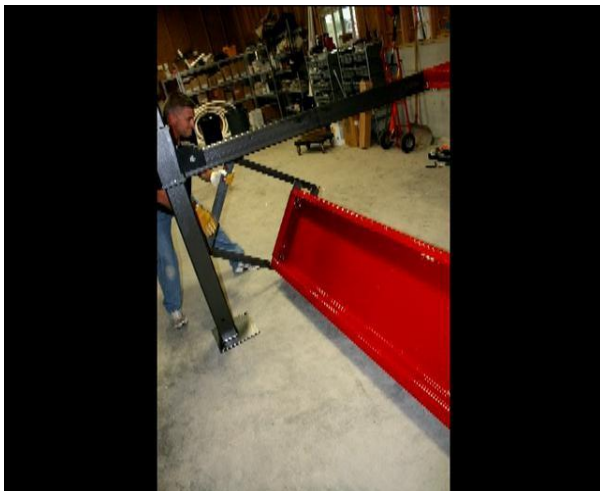


Fig. 17



Fig. 18

Track Lock Linkage Installation

COMPONENTS USED

- 1/2" X 50" Bent Rod
- 1/2" sq. tube X 126" Straight Rod - 1
- 1/2" Rod Coupler
- 1/4" X 4 1/2" Eyebolt - 2
- 1/4" Hex Nut - 4
- 1/4" Washer - 4
- 3/8" X 82" Rod - 2
- 3/8" X 9" Rod - 2
- 3/8" Heim End - 8
- 3/8" shoulder bolts - 8
- Round Knob - 1

Install the 1/2" X 50" bent safety latch linkage rod into the power side track adjacent to the back end of the cylinder (opposite the cylinder rod) (Fig. 21). The track lock linkage rod should pass through guide tubes on the underside of track. Install the **round knob** on the bent rod.

Install the 1/2" X 126" long track lock linkage rod into the power side track from the opposite end. The rod should pass through two guides on the underside of the power side track (fig.19 & 20). In your bolt kit box you will find a 3/4" square tube coupling rod. The handle, and the long linkage rod slide inside this coupling, make sure both the handle and the long rod tee bars are clocked the same (vertical straight up and down). Make both the handle and the long rod are tight against the fixed spacers on the crossarms. Once you have the ends clocked tighten down the bolts on the coupling rod.

Lock Linkage Rods Installation

Nested in your track were 2ea. 3/8" x 82" rods threaded on both ends. In your bolt kit bag you will find 2ea. 3/8" x 9" rods threaded on both ends, also in the bolt kit you will find 8ea. 3/8" Heim ends that thread on the rods. Fig. 22 shows all the linkage parts. On the 82" rods thread a Heim on one end. Install the eyebolts in the center hole of the crossarm (see fig. 23). Then slide the end that does not have the Heim on it through the eyebolt, now thread on the other Heim end. You are now ready to attach the linkage rods to the locks. (Fig. 24)

Note: The short linkage rod always attaches to the bottom of the Tee bracket

Attach the Heim end with the 3/8" shoulder bolt to the lock as shown in (Fig. 24) used the adjustment of the Heim to line up with the holes in the locks. It takes a 5/16" Allen wrench to tighten the shoulder bolts.

After you have finished the assembly of the lift before you load the lift. Check all the locks for clearance. This done by running the power unit to rise the lift off the locks just a couple of inches, enough to release the locks so the handle will rotate easily down, you should see all the points on the locks by looking under the crossbars. Have your assistant walk around and check for good clearance between the locks and columns. The clearance can be adjusted by threading the heim in or out on the linkage rod.

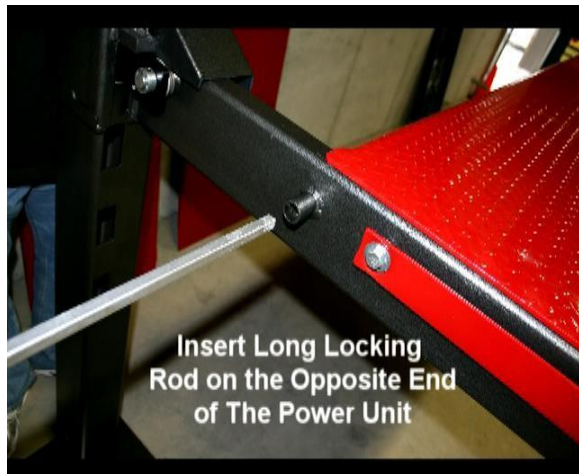


Fig. 19

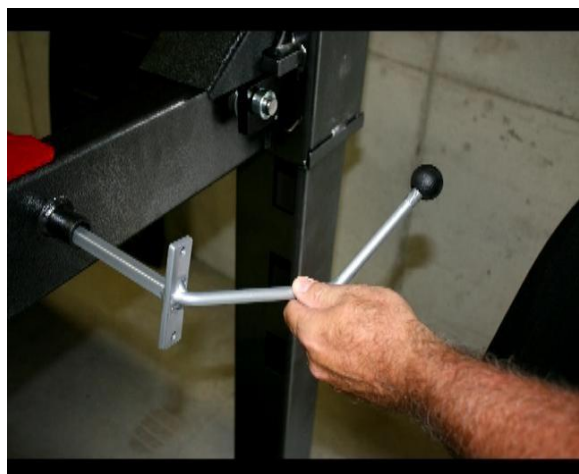


Fig.21

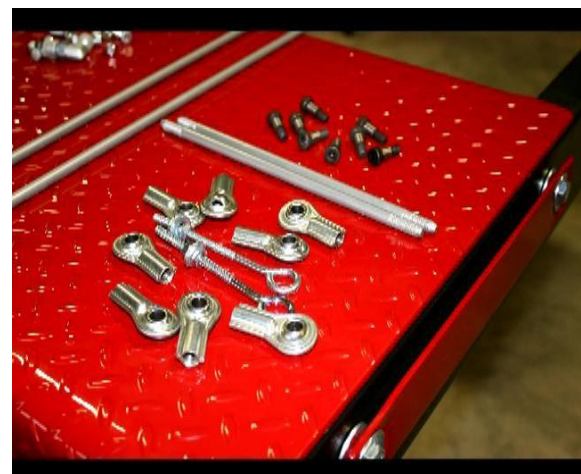


Fig.20



Fig. 24



Fig. 26

Installing Top caps

There are 4 top caps for your lift 2 lefts, and 2 rights. 1 cap will have holes drilled and tapped in it, that's where your hanging power unit bracket mounts. That cap goes in the column where the power unit is being mounted. The top caps are fabricated with two 1" strips on one side of the square tube, which is the side that drops in on the lock side of the column (see Fig. 29)

Installing Cables

The cables come pre-routed on your power track. This makes things very easy; just cut the cable ties loose. (Fig. 27, 28, 31) Use your foot to push out the cylinder rod about 3/4's of the way. This gives you the slack you need to route your cables around the pulleys, and attach them to the top caps. (Fig.32)

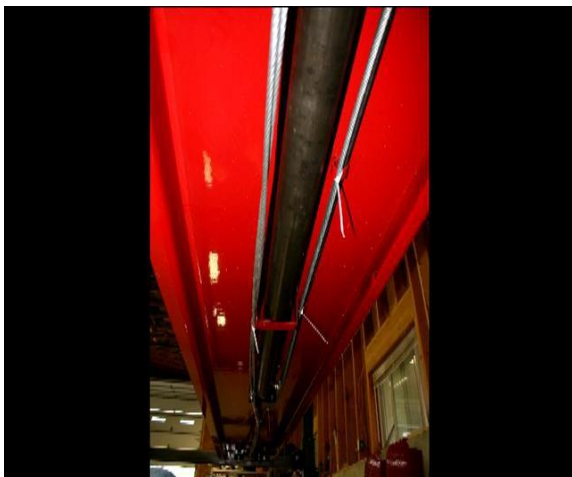


Fig. 27

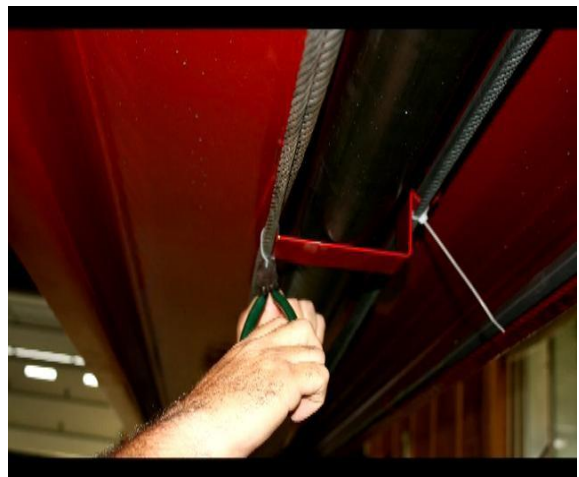


Fig.28



Fig. 29



Fig. 30



Fig. 31

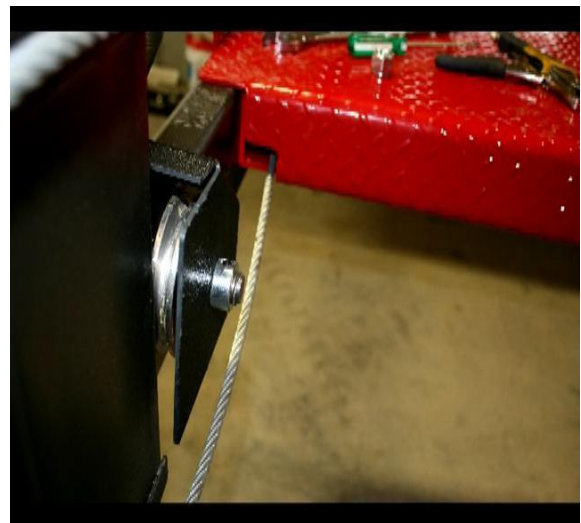


Fig.32

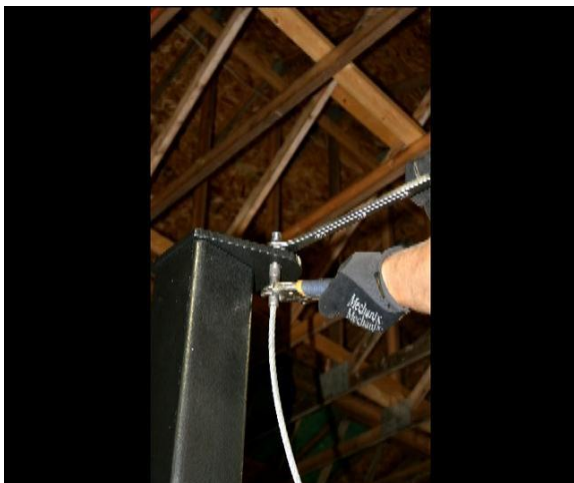
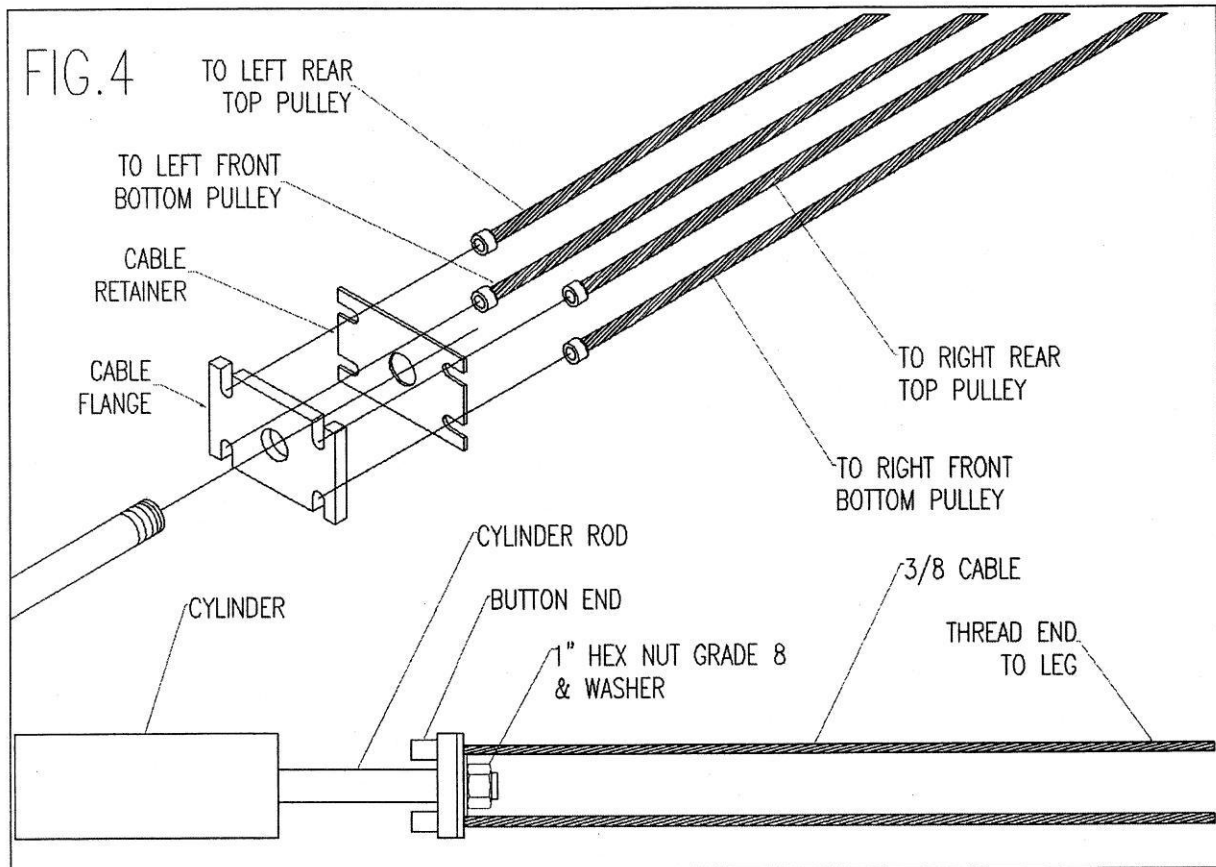


Fig. 33

Note: For purpose of this next drawing, Front = front of cylinder or rod end and Right = right as if facing the same direction as front of the cylinder. Example – Left rear = opposite corner from power unit and has no bearing on the rotation of the lift or orientation to your garage or drive because the ramps and wheel stops can go on either end. These cables are pre strung.



Power Unit Installation

Insert 4 – **5/16" X 1" Hex bolts** into power unit hanging mount on column. Position so that threaded end of bolt is facing out. Secure the bolts with **5/16" Hex Nuts**. Install the **power unit** on column over the exposed ends of the bolts and secure with 4 – **5/16" Nylon Lock Nuts**.

Remove the plastic shipping plug from the base of power unit pump. Install the **90deg #6JIC X 9/16" O-Ring Fitting** in the base of the power unit pump next to the lever operated release valve. Angle the fitting toward the track. **IT IS NOT NECESSARY TO USE TEFLON TAPE ON O-RING FITTINGS**. Install the **90deg #6JIC X #6JIC Bulkhead Fitting w/ Nut** on the outside of the power side track and tighten. Attach the **71" Hydraulic Hose** to the fitting on the power unit. Attach the other end of the **71" Hydraulic Hose** to outside fitting on the power side track.

Warning: Make sure the hose will not hang on tank.

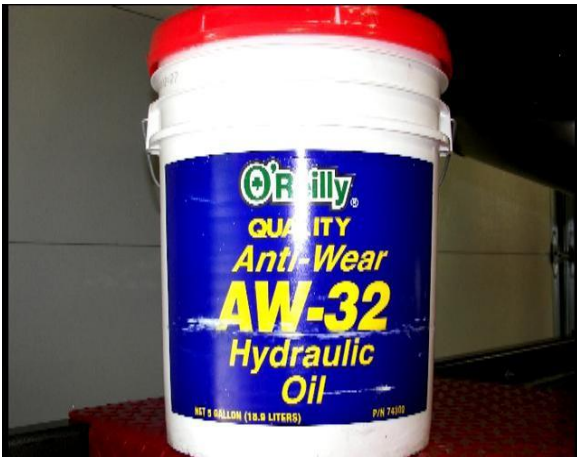
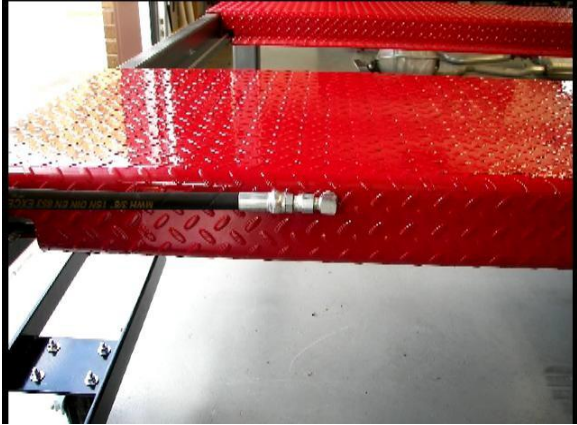
This has already been done for you.

Do not kink hose – the hose can be placed on the other side of power unit by switching plug to other side.

Install the fitting in the rod end of the cylinder. Attach the remaining **71" Hydraulic Hose (81" for XLT)** to the fitting that you have just installed on the cylinder. Attach the other end of the hose to the fitting on the inside of the power side track and tighten.

Check all hydraulic fittings
– **Do not over tighten** – fittings will crack.

Warning: Make sure hoses are kept clear of cables and are allowed to move freely.



Remove fill cap on power unit. Using a funnel and fill tank with one of the following fluids: **AW-32** or **ISO-32** hydraulic oil, **Mobil DTE24**, or **Texaco HD32**. The tank will hold approximately 12 quarts.

Relocating or changing components may cause problems. Each component in the system must be compatible; an undersized or restricted line will cause a drop in pressure. All valve, pump, and hose connections should be sealed and/or capped until just before use. Air hoses can be used to clean fittings and other components. However, the air supply must be filtered and dry to prevent contamination.

IMPORTANT

The most common cause of hydraulic system malfunction or failure is contamination of the hydraulic fluid. The hydraulic system (hose and pipe, cylinders, valves, etc.) must be clean to prevent contamination problems.

Check Pulley Cover and Lock Collars:

Before proceeding, double check to make sure the locking shaft collars with the snap ring, that holds the pulleys to the crossarms and tight and secure. Check all four pulley covers over the shaft located on the pulley side of each cross rail. Check the pulley and cover are firm against the locking shaft collar already in place. Check the additional lock collars on the outside of the shafts are tight and secure. **(See Fig. 2)** To prevent personal injury or death, cross rail lock collars must be tight. If they are ever removed – always make sure the locking shaft collars are tight and secure.

After installation is completed, before start up, be sure to inspect and tighten all bolts.

Start Up

Make sure power unit reservoir is full with 12 quarts of recommended fluid and spray the inside of the columns where the slide blocks glide with a light lubricant.

Initial Operation

Press the power switch on the power unit. Raise the lift slowly until all the slack in the cables are taken out. Raise the lift until the safety latch closest to the power unit comes within 1" of the bottom of the lowest lock position. Tighten the cable adjusting nut on the top of each leg cap until all remaining safety latches come within 1" of the bottom of the lowest lock position. If cables are adjusted evenly the lift should be raising level and all four safety latches engage or audible click simultaneously.

If Lift Does Not Rise

Check hose connections. Fluid should be pumping through hoses. Check fluid level

NOTE

There will be some initial stretching of the cables in the beginning. It may be necessary to readjust the cables a week after first use

Run the lift up and down a few times to make sure the safety latches are engaging uniformly and that the safety latch release is functioning properly. Readjust if necessary.

When lowering the lift **PAY CAREFUL ATTENTION. ALWAYS** make sure that all **FOUR SAFETY LATCHES** are disengaged. If one of the latches locks on descent **STOP** immediately and rise until it is clear of the stop and adjust the heim end on that latch.

Install the approach ramps on the entry side of the lift. Drive a vehicle onto the lift tracks, remove the approach ramps and install the rear wheel drops. Run the lift up and down a few times to insure that the latches are engaging uniformly and that the safety latch release is functioning properly. Readjust if necessary.

OPERATION

CAUTION

Do not use this lift unless you know the proper operation of the lift and its safety devices, and the hazards involved. See Safety Instructions page 1 of this manual.

1. Complete the pre-operation checklist
2. Drive the vehicle onto lift platform. Set the vehicle's parking brake and leave the transmission in park / gear. Chock the vehicles wheels, remove the drive on ramps and insert the rear wheel stops.
3. Stand clear – Push the power button to raise vehicle to desired height. When the desired height is reached, release the power button then push the hydraulic release lever on the power unit and lower tracks until it stops, check all four latches for full engagement in the rack on each leg.
4. To lower – push the power button to raise – rotate latch release rod and hold – push hydraulic release lever on power unit to lower. **Warning:** Make sure all four latches release – if not **STOP**, raise higher until latch is clear, if it still does not work the heim end on that latch needs adjustment.
5. Any hydraulic oil leakage, unusual noise, or excessive wear must be fixed before using lift.

MAINTENANCE SCHEDULE

The following periodic maintenance is the suggested minimum requirements and minimum intervals. If you hear a noise or see any indication of impending failure – **cease operation immediately** – inspect, correct and/or replace parts as required. **DO NOT REPLACE ANY PART OF THE LIFT WITHOUT CONSULTING TECHNICAL SUPPORT.**

WARNING: OSHA AND ANSI REQUIRE USERS TO INSPECT LIFTING EQUIPMENT. THESE AND OTHER PERIODIC INSPECTIONS ARE THE RESPONSIBILITY OF THE USER.

PRE-OPERATION CHECK

The user should perform daily check. **ATTENTION! LOOK OUT!** Daily check of safety latch system is very important – the discovery of device failure before needed could save you from expensive property damage, lost production time, serious personal injury and even death.

- ☐ Check safety latches for free movement and full engagement with rack.
- ☐ Check hydraulic connections, and hoses for leakage.
- ☐ Check cables for damage and that they are in the groove on cable sheave.
- ☐ Check lock collars at all rollers and sheaves.
- ☐ Check bolts, nuts, and screws and tighten if needed.
- ☐ Check wiring and switches for damage.
- ☐ Keep base plate free of dirt, grease or any other corrosive substances.

WEEKLY MAINTENANCE

- ☐ Check hydraulic fluid level.
- ☐ Check and tighten bolts, nuts and screws if needed.

YEARLY MAINTENANCE

- ☐ Lubricate inside column with a light lubricant.
- ☐ Change the hydraulic fluid – good maintenance procedure makes it mandatory to keep hydraulic fluid clean. No hard fast rules can be established; - operating temperature, type of service, contamination levels, filtration, and chemical composition of fluid should be considered. If operating in dusty environment, shorter intervals may be required.

The following items should only be performed by a trained maintenance expert. Consult the factory before performing any of the following tasks.

1. Replace hydraulic hoses.
2. Replace cables and sheaves.
3. Replace or rebuild air and hydraulic cylinders as required.
4. Replace or rebuild pumps / motors as required.
5. Check hydraulic and air cylinder rod and rod end threads for deformation or damage
6. Check cylinder mount for looseness and damage.

TROUBLESHOOTING GUIDE

TROUBLE	CAUSE	SOLUTION
Pump/motor does not start.	Improper electrical hook-up Blown fuse or breaker tripped Pump binding or stuck Motor thermal overload tripped You must have 20 Amps 120 Volts	- Rewire - Replace fuse / reset breaker - Flush unit / replace pump - Let motor cool

Pump/motor operates but no pressure	Wrong rotation of motor (Note: Air bubbles out inlet)	- Rewire
Pump/motor operate low flow and/or low pressure (in raise mode)	Clogged inlet strainer (cracking noise). Relief valve leaking Dirt on seat	- Clean strainer in solvent - Tighten relief valve - Flush seat
Pump/motor operate low flow and/or low pressure (in pressure mode)	Release valve leaking Dirt on seat Release stem out of adjustment O-Ring missing or cut. Relief valve setting too low	- Tighten release valve - Flush seat - Readjust stem setting - Replace O-Ring - Readjust relief valve
Pump/motor operates but does not hold system	Fitting/fittings too loose Check valve leaking Dirt on seat Release stem out of adjustment O-Ring missing or cut Defect in blowhole in motor end head internally.	- Tighten or replace fitting - Tighten check valve - Flush Seat - Readjust stem setting - Replace O-Ring - Replace motor
Failure to lower	Release valve stem sticking Lift out of adjustment	- Replace or readjust stem and/or cartridge - Readjust lift
Air in oil	Loose inlet connection Low fluid level Bad seals in pump Siphon check does not seat	- Tighten Connections - Add Fluid - Replace seals - Replace
Oil blows out the breather/filter port	Oil overload Vehicle has been lowered too fast Seal damage in cylinder	- remove to ½ to 2/3 full - Restrict lowering with manually controlled release valve - Replace cylinder seals
Cylinder will not lift load	Seal damage to piston Oil leaking from front of cylinder	- Replace cylinder seals - Replace cylinder seals
Fluid Requirements	AW-32 or ISO-32 hydraulic fluid	