

National Auto Tools

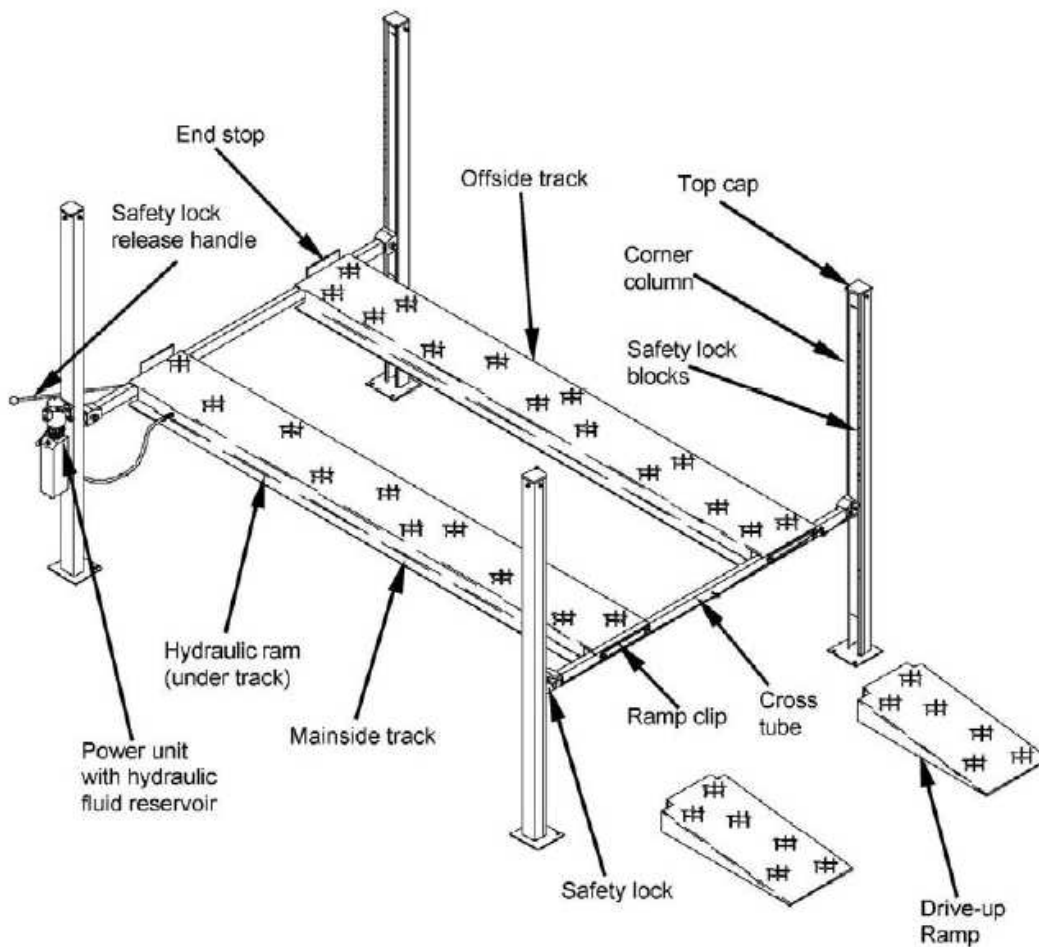
Give your garage a lift.

NSS8 Installation Manual



The Major Components Of Your New Lift

Before you get started assembling your new lift, let's take a moment and become familiar with some of the major components. Becoming familiar with the major components of the lift will make the assembly task quicker and easier.



Major Components of the Series Lift

Let's Assemble Your New Lift

Assembling Your Lift

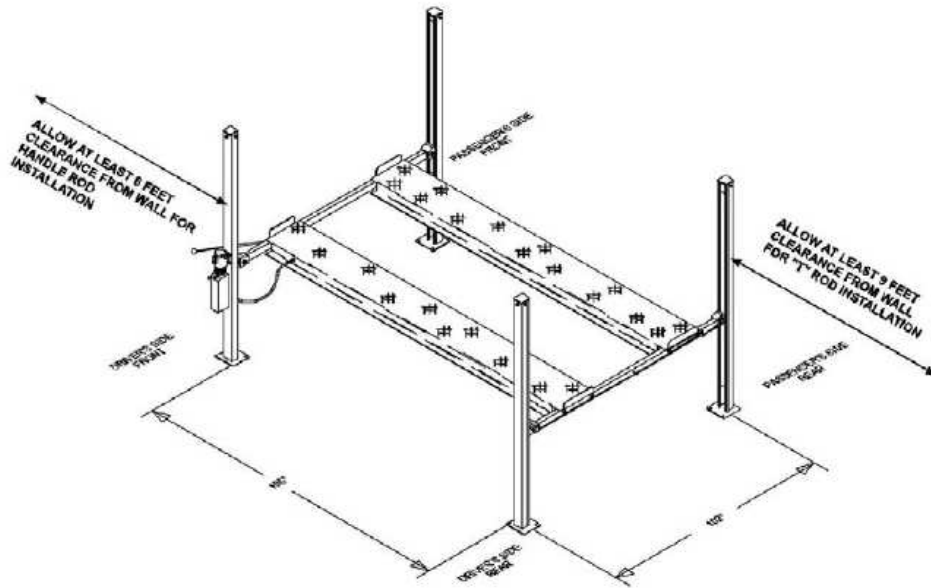
Now that you have your lift unpacked close to the installation site, you may begin assembly. While most assembly procedures may be done by one or two people, remember that you are going to have to lift the heavy components into position – and you'll still need at least two people capable of carrying 75 pounds each to do so.

In the following assembly sequence, an older style of column was used to clearly illustrate the safety stops. Current production lift columns have column stop blocks with a safety cover installed. This safety feature lessens the risk of catching a finger or clothing in the stop blocks.

Positioning and Assembling the Columns



Position the columns according to the floor plan on the following page. Lay down rear columns (*L and R designations or labels do not indicate left or right positions during layout. Check your lift floor plan before positioning the columns, and then check it again after you've positioned them – the assembled columns are heavy and difficult to move.*)



Floor Plan For Initial Column Positioning



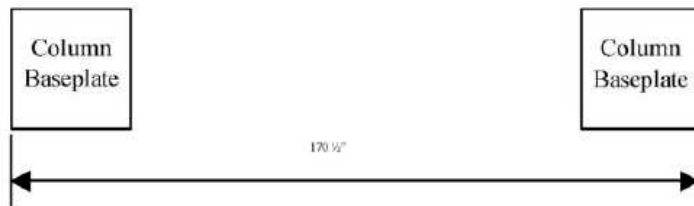
Position the cross rail at the top of the two columns. Install the cross rail in the column tops by inserting the plastic guide blocks in the column channel (Make sure the safety locks are positioned with bevel side up, and with safety locks facing towards the outside of the lift).



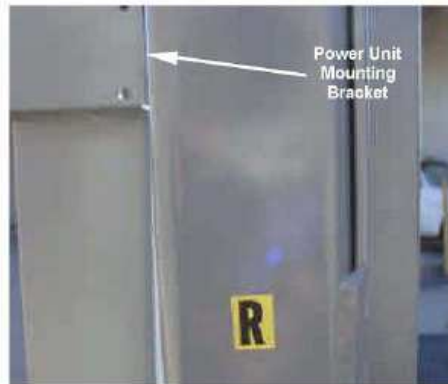
Using two people, lift the safety locks and pull the cross rail down evenly to the lowest stop block. Keep your fingers out of the track – the safety locks aren't heavily loaded, but you can still get your fingers pinched.



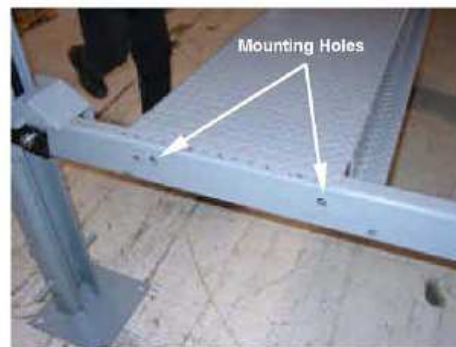
Repeat the procedure for the remaining columns and cross rail. When you have completed assembling the columns and cross rails and are ready to go on to the next step, stand the assembled columns up in the positions indicated on the floor plan. Position the two column assemblies 170 1/2" apart for the lift. Measure the distance from the outside of the column baseplates, so that the measurement includes the column baseplates.



Install the Tracks



At this time you have to decide where you want to place the power unit – your lift controls are on it. The power unit can be mounted to either column marked “R”, with the power unit mounting bracket placed at the driver’s side front or passenger’s side rear. The mainside track will be installed on the same side, with the power cylinder closest to where you will mount the power unit. Position the mainside track and the offside track outside of the columns.



With an assistant, pick up and place one end of the mainside track in location on the crossrail, and then pick up and place the other end on the opposite crossrail (if you have three assistants, place both ends at the same time). Use a large screwdriver or aligning punch to align the mounting holes in the cross rails with the mounting holes in the track.



WARNING!

Do not leave the tracks unbolted – install the mounting bolts immediately!



Install 1/2" x 4" mounting bolts and 1/2" washers in the ramp clips. Make sure the bolt head is on the flat side of the clip. Install the two ramp clips with bolts and washers to secure the mainside track to the cross rail. Secure the bolts with 1/2" washers and nuts placed *hand tight*.

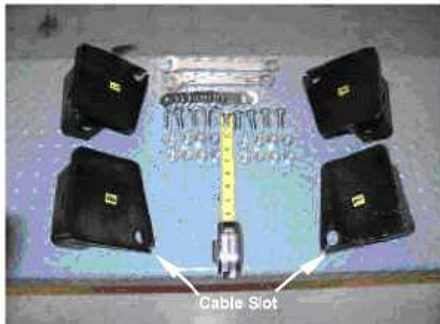


Now, install the offside track and secure with ramp clips and 1/2" x 4" bolts and nuts. After both tracks are installed, tighten all track 1/2" x 4" bolts to a torque of 75 ft-lbs.



Once the offside track has been installed and all mounting bolts tightened, your lift should look like this.

Install Column Top Caps



Locate the column top caps, then locate the necessary hardware 14X25mm bolts (4 each), 14mm nuts (4 each), 14mm flat washers (4 each), 12X25mm bolts (8 each), 12mm nuts (8 each), 12mm flat washers (8 each) in the bolts box. Install the top caps in the columns – “R” caps go on “R” columns, “L” caps go on “L” columns, cable slots face towards the center of the lift.



Secure the top caps with 14X25mm bolts. Place the bolts with washers in through channel and secure with washers and nuts on the outside of the column.



Install the 12X25mm bolts through the column and top cap. Install from outside of the column, and secure with a nut on the inside of the column. Tighten the 14X25mm bolt to torque of 75ft-lbs. Tighten the 12X25mm bolt to a torque of 50ft-lbs. Do not over tighten the 12X25mm bolt, as this may warp the column channel and bind the guide blocks.

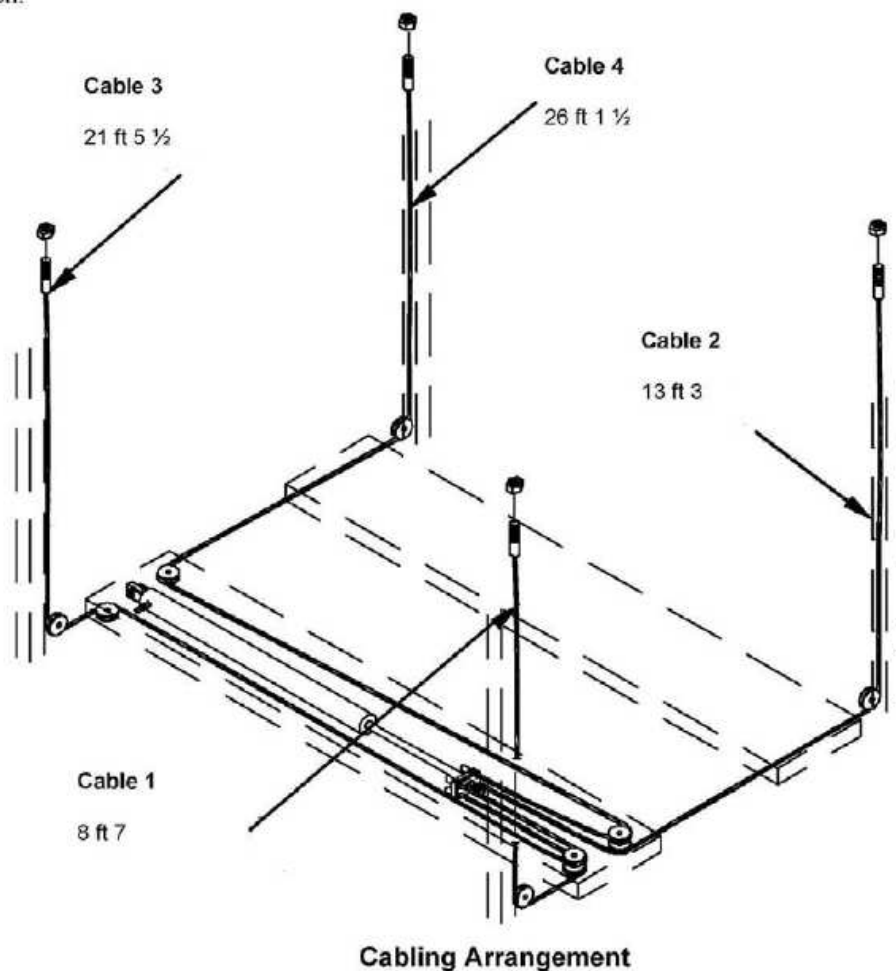
Preparing for Cable Installation



NOTE!

Before installing any cables, be sure to measure and verify the length of each cable as detailed later in this section.

The cables and hydraulic cylinder are the heart of your lift. The cables are responsible for lifting and lowering the lift using a series of pulleys that route the cables to a hydraulic ram under the mainside track. As the ram extends, the lift lowers. As the ram retracts, the lift rises. The illustration below shows the routing of the four lift cables as well as the length of each.



Before installing the cables, you must first extend the ram on the power cylinder located on the underside of the mainside track. The end of the ram should be approximately 18" from the cross rail. This can be done by two methods, depending on the equipment you have available:

Extend The Ram Using Compressed Air (Preferred Method)

This is the easiest way to extend the ram, provided you have a regulated compressed air supply available. When using this method, do not apply air suddenly to the ram – use the air supply regulator to gradually increase the air pressure and do not exceed 40 to 45 psi or the ram will extend too quickly.



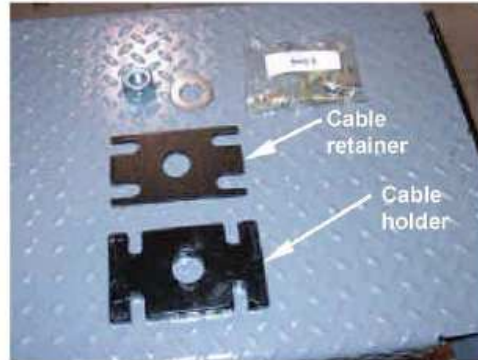
Remove the plastic shipping caps from both ends of the power cylinder.



Install fittings to adapt your supply of compressed air to 3/8" NPT vent fitting on end of power cylinder closest to cross rail. (The fittings are not included with your lift).



Apply compressed air to the vent fitting to extend ram to approximately 18” from the opposite cross rail. (Apply air gradually from 0 psi to the minimum pressure necessary – 45 psi max - to **slowly** extend the ram. Do not apply air at high pressure, as this may damage the ram).



Remove any hardware installed to extend the ram. Locate the cable holder (thick plate), the cable retainer (thin plate). Locate the 1” locking nut and washer from Bag E, and the hydraulic fittings from Bag D.



Install the cable holder on the ram. Install the cable retainer on the ram. Place the 1” washer and nut on the ram. Tighten the nut two to three complete turns on the shaft.

If you have successfully extended the ram using the compressed air method, skip the following section.

Extend The Ram Using A Winch Or Come-Along

If you do not have a regulated compressed air supply, you will have to manually extend the ram to a position approximately 18" from the opposite cross rail. If you are using a winch on a vehicle, make sure the lift is securely braced in order to prevent injury to yourself or any other people nearby, and to prevent damage to your lift, your vehicle, or your building.



Remove the plastic shipping caps from both ends of the power cylinder.



Install the cable holder and the cable retainer on the end of the power cylinder ram. Place the 1" washer and nut onto the ram. Tighten the nut two to three complete turns on the shaft.



Use a come along or winch to extend the ram to approximately 18" from the opposite cross rail.

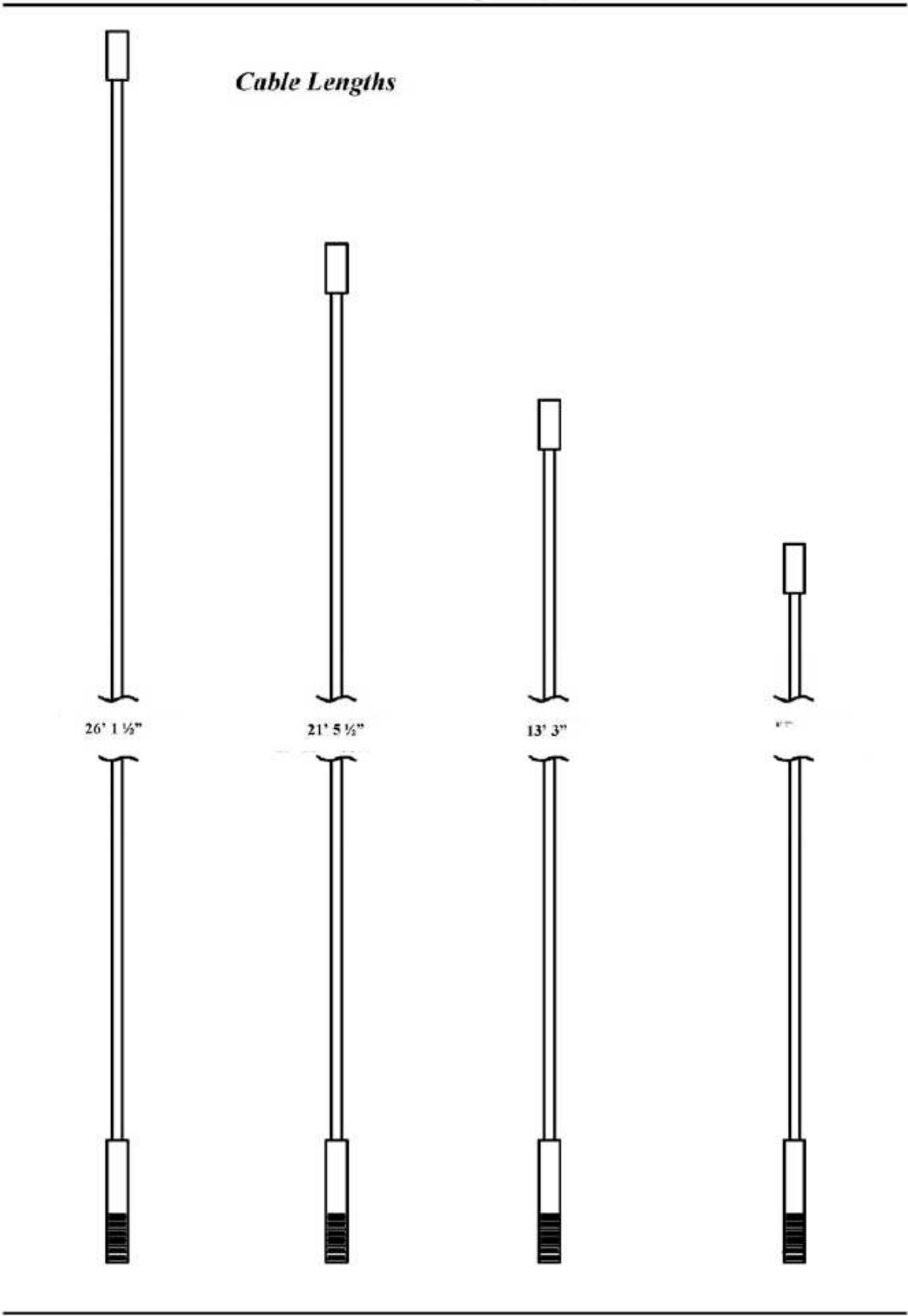
Measuring the Cables



Unbundle the cable package and lay out your cables so they are all parallel to each other on the floor.



Measure your cables, starting at the end of the threaded bolt section to the inside of the button end. Refer to the illustration on the next page and verify that each cable is the proper length. Remember that the different models have different cable lengths.



Installing the Cables



Start with the shortest cable. Thread the cable into the mainside track and around the lowest pulley.



Place the button end in the bottom left cable holder slot and secure with the cable retainer.



Feed the bolt end of the cable around the pulley in the closest column and secure the bolt end of the cable in the column top cap. Place nut on bolt end hand tight.



Get the next shortest cable. Thread the button end through the other side of the mainside track onto the lower pulley. Place button end in bottom right cable holder slot and secure with cable retainer.



Feed the bolt end of the cable through the opening in the offside track, then feed cable around the pulley on the column. Secure the bolt end to the top cap. Place washer and nut on threaded end hand tight as you did with the previous cable.



Feed the button end of the next shortest cable around the pulley on the opposite end of the mainside track.



Feed the threaded end around the column pulley and secure threaded end to top cap with nut hand tight.



Feed the button end of the cable through the underside of the mainside track and around the upper pulley.



Secure the button end to the cable holder and cable retainer.



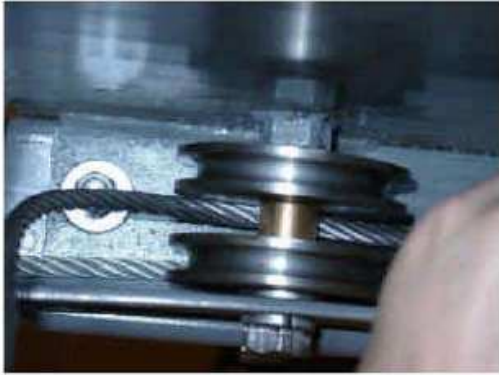
Get the remaining (longest) cable. Feed the button end through the openings in the offside track towards the mainside track.



Feed the bolt end around the column pulley and secure the bolt end to the top cap with nut hand tight .

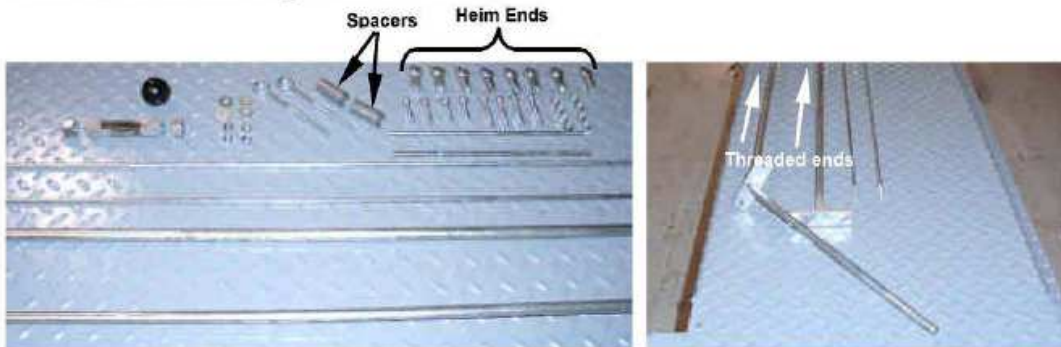


Feed the button end through the underside of the mainside track to the remaining open pulley.

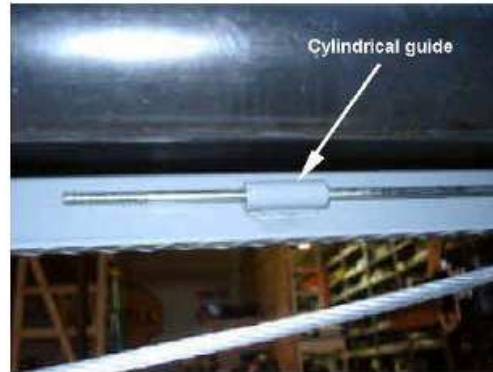


Bring the cable back around to the cable holder and secure it with the cable retainer. Tighten the power cylinder ram nut to show approximately 2 or 3 threads past the nylon insert.

Install the Safety Lock Rods



Locate and identify the components needed to install the safety lock rods. Install the spacers from Bag B on the straight threaded end of the 1/2" x 50" bent rod and the threaded end of the 1/2" x 126" straight safety lock rod.



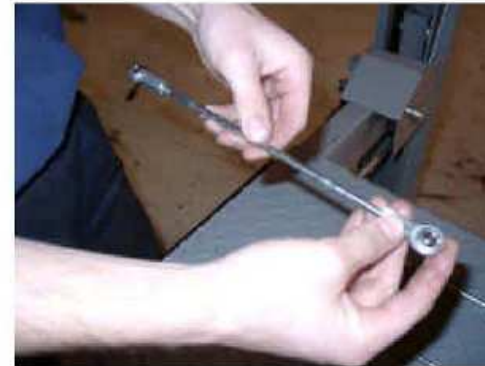
Install the 1/2" x 50" bent safety lock rod into the mainside track adjacent to vent end of the power cylinder. Rod should pass through cylindrical guides on underside of track.



Install the 1/2" x 126" straight safety lock rod into the mainside track from the opposite end. The rod should pass through two guides on the underside of the mainside track.



Install lock nuts on threaded ends of both safety lock rods. Thread nuts down rod to approx $\frac{1}{2}$ " of end of threads.



Locate two $\frac{1}{4}$ " x 79" (82 $\frac{1}{2}$ ") rods. Install heim ends on one end each of both $\frac{1}{4}$ " x 79" (82 $\frac{1}{2}$ ") rods. Locate two $\frac{1}{4}$ " x 6" (9") rods. Install heim ends on both ends of $\frac{1}{4}$ " x 6" (9") rods



Thread a $\frac{1}{4}$ " nut to the end of the threads on each of the two eyebolts. Follow with a $\frac{1}{4}$ " washer. Install eyebolts in center of cross rail, with eye on outside of lift and secure with a $\frac{1}{4}$ " washer and nut.



Install one 1/4" x 79" (82 1/2") rod through the eye bolt to the column safety lock. Install the heim end on the threaded end of the rod, and attach the heim end to the column safety lock with a 1/4" x 1 1/4" bolt.



Attach the other heim end to the upper hole in the bent rod flange with a 1/4" x 1 3/4" bolt. Make final adjustments to the rod length at this time using the heim ends.



Use a 1/4" x 1 3/4" bolt to secure the heim end of one 6"(9") rod to the lower hole in the bent rod flange. Secure the other heim end to column safety lock with 1/4" x 1 1/4" bolt. Make final adjustments to rod length at this time using the heim ends.



Install knob on the bent rod. Reach underneath the mainside track and install a 1/2" nut on other end of the bent rod, and thread it approximately 2" onto the rod. Then, thread the 1/2" coupler approximately 3/4" onto the bent rod.



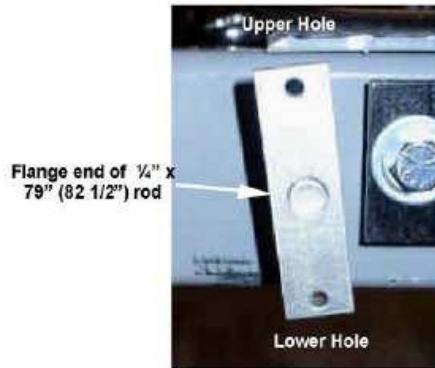
Thread a 1/2" nut onto the 1/2" x 126" rod. Then, thread the 1/2" x 126" rod into the 1/2" coupler. This can be started by hand from underneath, and adjusted and tightened from the flange end using a 1" open end wrench.



Align the flange on the 1/2" x 126" rod to approximately an 11:30 orientation. Have an assistant tighten the lock nuts onto the coupler.



Install 1/4" x 79" (82 1/2") rod through eye bolt. Secure heim end to column safety lock with 1/4" x 1 1/4" bolt.



Install a heim end on the remaining end of the rod, and secure it to the upper hole in the flange with a 1/4" x 1 3/4" bolt. Make a final adjustment of rod length at this time, ensure that the rod does not have more than 1/2" of bend. Secure the heim end of the 1/4" x 6" (9") rod to the lower hole in the flange.



Secure remaining heim end of 6" (9") rod to safety lock. Make final adjustments to rod length. Inspect the 1/4" rods for excessive bowing. If so, adjust strain at the 1/2" coupling.

Install the Hydraulics



Insert four 5/16" x 1" bolts into power unit mount on column. Position so that threaded end of bolt is facing out. Secure the bolts with 5/16" nuts. Install the power unit on column over the exposed ends of the bolts and secure with four 5/16" locknuts.



Remove the plastic shipping plug from the base of power unit pump. Install the 90° fitting w/O-Ring as shown in the base of power unit pump next to the lever operated release valve.



Attach the shorter (71") hose to the fitting on the power unit. Install the 90° fitting w/nut in the mainside track and tighten.



Attach the other end of the 71" hose to outside fitting in mainside track. Attach one end of the longer hose to the opposite side of the 90° fitting on the side of the mainside track.



Wrap pipe threads of the 90° fitting w/o O-Ring with three layers of Teflon tape (not included). Install the fitting in the ram end of power cylinder.



Attach the free end of the 82" hose to the 90° fitting w/o O-Ring that you have just installed on the power cylinder. Install the 3/8" NPT vent fitting in the vent of the power cylinder. Now go back and check ALL the hydraulic fittings and make sure they're tight.



Feed the plastic tie wraps into the slots on the adhesive platforms, and then affix the platforms to underside of the mainside track. Secure the hose to platforms with the tie wraps - make sure you leave the tie wraps loose to allow the hose to move freely.



Fill the power unit fluid reservoir with 3 gallons of AW-32 or ISO-32 hydraulic oil. Install the wheel stops at the end of the lift where the front of the vehicle will be placed.



NOTE!

The most common cause of hydraulic system malfunction or failure is contamination of the hydraulic fluid (water, chips, dirt, etc.). It has extensively cleaned this product during all phases of manufacture, assembly, and testing. The balance of the hydraulic system (hose and pipe, cylinders, valves, etc.) must be thoroughly clean to prevent contamination problems.

Before lifting a vehicle, be sure to adjust the cables and to check all pulley bolts and pulley collars for tightness!

Adjusting the Cables



Upswitch

Release Valve



Plug the power unit into the appropriate electrical receptacle. Operate the power unit by holding the upswitch (The power unit may take a minute or two to prime and evacuate all air). Take the slack off of the cables. Check all pulley bolts and pulley collars to make sure they are tight. Inspect the cables to ensure all are on track and on the pulleys. ***Do not put your fingers between the cable and the pulley!***



Operate the lift to its highest position. Inspect the safety locks. All safety locks should be at least 1" clear of highest safety stops. Safety locks require at least 1" clearance to disengage.



Tighten or loosen cables as necessary at each column top cap to ensure that tracks are even and that all safety locks clear the safety stops simultaneously.

Operating and Maintaining Your New Lift

Operation and Maintenance

Your FPP208 Equipment lift is easy to operate, and needs little maintenance. A quick visual inspection of the lift before operation will ensure that you Equipment lift provides you with years of reliable and safe service.



Operate the safety locks manually before using your lift – make sure all the locks are engaging and disengaging at the same time. If not, adjust the locks by threading the heim ends in or out. **DO NOT OPERATE A LIFT WITH IMPROPERLY ADJUSTED SAFETY LOCKS.** Make sure the safety stops on the columns are clean, clear, and undamaged.



Always check the hydraulic fluid level before operating, and keep the fluid reservoir topped off with clean AW-32 or ISO-32 hydraulic oil. **DO NOT USE DEXRON® IN THIS LIFT!** Operate your lift by pressing and holding the upswitch on the power unit to raise the lift. Lower the lift by pressing the release valve while releasing the safety locks. When you operate your lift, note any jerking, uneven motions. Your lift should move up and down slowly and steadily,

without any abrupt movements. If your lift operates unevenly, lower the lift and inspect for improper adjustment of the cables, or binding cross rails.



Monthly, or after every 50 hours of operation, apply a light coating of “3 in 1” oil, motor oil, or chain lube to the pulley bushings – there are ten in all. ***You do not have to disassemble the lift in any way to perform this maintenance.*** The bushings can be lubricated in place.

Install Drive-On Ramps



Remove the wheel stops. Insert the drive-on ramps in the ramp clips.



Remember to remove the drive-on ramps and reinstall the wheel stops before raising the lift. The ramps can injure you or cause damage on the way up or down, and are difficult to remove when the lift is raised.

Installing Lift Options

Installing The Caster Kit



Install the casters to the caster frames using four 3/8" x 1 1/2" bolts and lock nuts for each caster.



Raise the lift to the lowest safety stop. Secure the casters to the cross rail using the caster pins. Secure the caster pins to frame using the large hitch clips.



After all four casters are installed, lower the lift. As the lift lowers, the casters will touch the floor and the arm of the castor assembly will engage beneath the protruding column pin. The casters will then lift the columns off the ground.



Your lift can now be moved freely. Casters may be installed with or without a vehicle on the lift.



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