## 

## **READ FIRST**



## IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

READ, UNDERSTAND AND FOLLOW THE INFORMATION CONTAINED IN THIS MANUAL. BEFORE INSTALLING, OPERATING, SERVICING OR MAINTAINING THE LIFT. Advantage Lifts Manual, REV.11NOV2017 Models SS9000HD & SS11,000 HD SAVE THESE INSTRUCTIONS

# Advantage Lifts Installation & Operation Manual



Model SS9000HD Shown



#### Contact Us Today!

Richard Hinrichs Email: Richard@advantagelifts.us Phone: 763-300-5730

Gordie Berger: Email: Gordie@advantagelifts.us Ph: 612-363-0012

Tony Weber Email: Tony@advantagelifts.us Ph: 316-648-6213

#### ADVANTAGE LIFTS, LLC.

12671 Meadowvale Road Suite A Elk River, MN 55330-2945



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## **IMPORTANT SAFETY INSTRUCTIONS**

PLEASE READ THE ENTIRE CONTENTS OF THIS MANUAL PRIOR TO INSTALLATION AND OPERATION. BY PROCEEDING YOU AGREE THAT YOU FULLY UNDERSTAND AND COMPREHEND THE FULL CONTENTS OF THIS MANUAL. MAKE THIS MANUAL AVAILABLE TO ALL OPERATORS. FAILURE TO OPERATE THIS EQUIPMENT AS DIRECTED MAY CAUSE INJURY OR DEATH.

## SAVE THESE INSTRUCTIONS

## **SERIAL NUMBER INFORMATION:**

Keep information recorded for future reference:

Date Installed:

Model #:\_\_\_\_\_

Serial #:\_\_\_\_\_

Max Operating Pressure: 3045 PSI

# Keep this operation manual near the machine at all times. Make sure that <u>ALL USERS</u> read and understand this manual.

## WARRANTY

SS 9000 HD and SS 11,000 HD series lifts are warranted to the original purchaser for five years on all structure, two years on Hydraulics and the following components to Be free of defects in material and workmanship:

- Tracks
- Columns
- Cross rails
- Pulleys
- Pins
- Nuts and bolts

- Ramp clips
- Pulley covers
- Linkage
- Lock blocks
- Heim bolts
- Release rods

Advantage Lifts shall repair or replace at their option for the warranty period those parts



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returned to the factory freight prepaid which prove upon inspection to be defective.

This warranty does not extend to defects caused by ordinary wear, abuse, misuse, overloading, improper installation, shipping damage, improper concrete floor, and lack of required maintenance or Act of God.

This warranty also does not cover parts needed for normal maintenance, wear parts, which include but are not limited to; cables, hoses and slider blocks. On-site labor is not covered by this warranty.

Advantage Lifts shall not be liable for loss of use, inconvenience, lost time, commercial loss or other incidental or consequential damages. This warranty is governed by the laws of the State of Minnesota.

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## **IMPORTANT SAFETY INSTRUCTIONS:**

## Read these safety instructions entirely

ALWAYS have the lift setting on the locks 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.

<u>ATTENTION! LOOK OUT!</u> 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.

<u>WARNING!</u> <u>RISK OF EXPLOSION</u>. 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.

<u>MAINTAIN WITH CARE.</u> 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.

<u>CHECK FOR DAMAGED PARTS</u>. Inspect the lift daily. 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.

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

<u>ALWAYS</u> wear safety glasses. Everyday eye glasses only have impact resistant lenses. They are not safety glasses.

READ, UNDERSTAND AND FOLLOW 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.

# SAVE THESE INSTRUCTIONS

## **IMPORTANT NOTICE**

Do not attempt to install this lift if you have never been trained on basic automotive lift installation procedures. Never attempt to lift components without proper lifting tools such as forklift or cranes. Stay clear of any moving parts that can fall and cause injury. These instructions must be followed to ensure proper installation and operation of your lift. Failure to comply with these instructions can result in serious bodily harm and void product warranty. Manufacturer will assume no liability for loss or damage of any kind, expressed or implied resulting from improper installation or use of this product.

## **OWNER'S RESPONSIBILITY**

To maintain the lift and user safety, the responsibility of the owner is to read and follow these instructions:

- Follow all installation and operation instructions.
- Make sure installation conforms to all applicable Local, State, and Federal Codes, Rules, and Regulations; such as State and Federal OSHA Regulations and Electrical Codes.
- Carefully check the lift for correct initial function.
- Read and follow the safety instructions. Keep them readily available for machine operators.

- Make certain all operators are properly trained, know how to safely and correctly operate the unit, and are properly supervised.
- Allow unit operation only with all parts in place and operating safely.
- Carefully inspect the unit on a regular basis and perform all maintenance as required.
- Service and maintain the unit only with authorized or approved replacement parts.
- Keep all instructions permanently with the unit and all decals on the unit clean and visible.

## **DEFINITIONS OF HAZARD LEVELS**

Identify the hazard levels used in this manual with the following definitions and signal words:



Watch for this symbol: It Means: Immediate hazards which will result in severe personal injury or death.



Watch for this symbol: It Means: Hazards or unsafe practices which could result in severe personal injury or death.

# 

Watch for this symbol: It Means: Hazards or unsafe practices which may result in minor personal injury, product or property damage



THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH IF NOT FOLLOWED COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OR YOURSELF AND OTHERS AND CAN CAUSE PERSONAL INJURY OR DEATH. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE THIS MACHINE.

## **BEFORE YOU BEGIN**

#### **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.

Advantage Lifts 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.

#### IF AND ITEM HAS FREIGHT DAMAGE:

**NOTIFY THE CARRIER AT ONCE** if any hidden loss or damage is discovered after receipt. Request that the carrier perform an inspection at the first available opportunity. If the carrier will not do so, prepare a signed statement to the effect that you have notified the carrier (on a specific date) and that the carrier has failed to comply with your request.

#### 1) ACCEPTING AN ITEM WITH FREIGHT DAMAGE

Choose this option if you only have minor cosmetic damage or a part that needs replaced to make the unit complete. Make note of the damage on the freight bill prior to signing and accepting delivery. You will be responsible for filing the freight damage claim with the carrier; the driver can provide a number for you to call his terminal to begin the process. Take pictures and document any damage that is found for future reference. Once you have a filed the claim, Advantage Lifts can provide any replacement parts or touch up paint needed should you choose this option and the carrier should reimburse you for the cost of these items. If you have any questions or need further assistance, please call our customer service department @ 1-763-300-5730

#### 2) REFUSE THE DAMAGED ITEM.

Choose this option if the carrier has severely damaged the freight beyond your judgment of a simple repair. Advantage Lifts will file all freight claims if refused due to severe damage. Make a copy of the freight bill email it to <u>info@advantagelifts.us</u> with a brief explanation of the damage. Take pictures and document any damage that is found. If this is not possible, call Advantage Lifts at 1-763-300-5730 to notify us of the damage so that we can arrange to have a replacement lift shipped.

## TOOLS RECOMMENDED FOR ASSEMBLY

- Rotary Hammer Drill (If Anchoring)
- <sup>3</sup>⁄<sub>4</sub>" Masonry Bit (If Anchoring)
- Hammer
- 4 Ft. Level
- Open-End Wrench Set Metric
- Socket and Ratchet Set
- Hex-Key / Allen Wrenches
- Material Handling lift
- 2 Ton Engine Hoist or Come-Along

- Car Dollies or Skates
- Medium Crescent Wrench
- Medium Pipe Wrench
- Pry Bar
- Chalk Line
- Medium Flat Screwdriver
- 25" Tape Measure
- Needle Nose Pliers
- Locking Pliers

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# **WARNING**

## **USE PROPER LIFTING TECHNIQUES**

The SS9000 HD and SS11000 HD Advantage lifts have components that weigh up to 500 lbs. You should have at least one assistant when lifting heavy components. Three assistants and/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.



## **STEP 1: ASSEMBLY**

#### 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, garage door rails 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 give yourself plenty of space to work safely. It is necessary to leave adequate clearance for installing safety linkage rods. Allow 60" for working clearance during lift assembly. (See Fig. 1)

#### NOTE:

The power unit can be placed in one of two locations, front left or rear right. (See Figure. 1-1)





Model	А	В	С	D	E
SS-9000	181"	112"	98"	71"	93"

## **STEP 2: Unloading and Unpacking:**

Advantage Lifts uses common carriers, FedEx Ground, XPO, and independent freight haulers for shipping. Freight carriers have restrictions on delivering to residential addresses and may require pick-up at your nearest approved freight terminal. Lifts will require a fork-lift to unload and will not be shipped to a location without one available. It is advantageous in those cases to ship to a freight terminal where the terminal personnel will unload the product with a fork-lift and then load it onto the customer's trailer or truck. Do to their size, lifts *cannot* be unloaded using a lift gate vehicle.



Since many purchasers of our lifts do not have access to a fork-lift, these instructions will primarily highlight methods to unload the lift from a customer's trailer or truck using other lifting methods more easily procured. It is the sole responsibility of the installer to ensure that the methods employed and

any lifts or other equipment to be used are of the proper capacity and type to provide for safe working conditions to ensure the safety of personnel performing the work.

The shipping brackets and protective packaging were specifically engineered to aid with the safe shipping, unloading and assembly of the lift and should NOT BE REMOVED from the shipped assembly until the lift is at the installation site and then only after the instructions indicate what to remove and when. Exterior wrappings can, however, be removed to inspect the lift for any shipping damage that may have occurred, as previously instructed.

Links to assembly videos of our products can also be found at our website. The videos can often provide additional details to aid with the assembly as well as keep the customer informed of any new features or assembly methods that may have been adopted since this manual was printed.





Figure 2-1: Freight Terminal

Figure 2-2: Lift Loaded on Customer's Trailer

Maneuver the trailer so it is close to the installation site and position it so any lifting devices that will be used to unload the packaged lift from the trailer are on a hard and smooth improved surface. For this particular installation, a hand operated material handling lift with suitable capacity was used. (see Figure 2-3)



Figure 2-3: Material Handling Lift in Position



Figure 2-4: Removing Protective Wrapping

With the packaged lift close to the installation site, remove all external shrink wrap and protective cardboard. Cut the metal banding to release the wooden strips that line the underside. These strips are used to protect the tracks from paint damage when lifted by fork-trucks from either end or side.

It is now a good time to remove the smaller parts box and other supplied components packaged between the two tracks and arrange the components off to the side so that every part is

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visible and easy to identify. Review your packing list and compare it to the assembly drawing to verify that you have received all the parts that come with your lift. Some of the smaller components found between the two tracks are shown in Figure 2-5. Nested between the plain track and the power track with the mounted cylinder, one should find the Power Unit packed in its own box, the Power Unit Mounting bracket, 4 columns, 4 column caps, 2 Cross-arms, a small parts box loaded with fasteners, links and rod ends, 4 linkage rods one with a linkage release handle, a set of ramps, wheel stops and brackets and any accessories you might have ordered with your lift such as the caster kit, fluid catch pans and lifting tray.



Figure 2-5: Small Parts

With the lift assembly still on the trailer the installers can now use the material handler to lift and position a wheeled car dolly (skate) and any necessary blocking under the front end of the packaged assembly. With the package assembly securely resting on the car dolly, the material handler can now be repositioned to the rear of the trailer and secured to the lift assembly in the same manner as before.

Now by raising the material handler upward the rear section of the packaged assembly will clear the car trailer enough to Figure 2-6: Car Dolly and Blocking carefully roll the entire lift assembly backwards bringing the



front of the packaged assembly safely short of the rear of the car trailer. The lifted end can now be carefully lowered and placed on a car dolly that is positioned on the ground. (See Figures 2-8 thru 2-10)



Figure 2-7:



Figure 2-8:



Figure 2-9:



Figure 2-10:

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Figure 2-11

With one end of the packaged assembly securely on the ground, the material handler can now be repositioned and secured to lift the opposite end that is resting on the car trailer. With the packaged assembly no raised to clear, the car trailer can be driven out from under the supported assembly. Alternatively, if room permits, the packaged assembly can be rolled away to clear the car trailer.



Finally, the car dolly and blocking can be positioned on the ground between the legs of the material handler, directly under the packaged assembly. It can now be safely lowered to rest on the dolly. If possible, leave the packaged lift assembly securely resting on the car dollies. This will allow the assembly and sub-components to be positioned closer to where the assembled lift will come together further aiding to the assembly of the lift. (Figures 2-11 thru 2-13)





Figure 2-12

Figure 2-13

## STEP 3: Columns, Cross-Arm Installation & Guide Blocks

For the next step, you will need to consult the Illustration in Figure 1: Power Unit locations, found in Step 1 of this manual. The information there will help you to finalize your intended layout for positioning of the lift with regard to critical clearances required during assembly and also to determine where your Power Unit will be positioned. Due to the design of the preassemble power track and safety locks, the unit can only be mounted in one of two locations, front left or rear right. It is now a good time to round up some of the tools you will need to continue on with the installation. Keep in mind that with the Caster kit, the lift is easily repositioned after it is fully assembled. (see Figure 3-1)





Figure 3-1

Figure 3-2

Now that you have the general idea for the layout of your lift, it is time to unbolt the columns so they can be removed from in-between the track assemblies. A cordless impact tool works well for this. (see Figure 3-2)



Figure 3-3

Figure 3-4

Remove the columns, they are paired and stacked left and right making a set for each end. Arrange the columns so that the slots cut out for the lock face outwards (Figures 3-3, 3-4). Next remove a Cross-arm assembly from between the tracks and support it on top of the now mobile lift assembly. Remove the protective wrapping. (Figures 3-5, 3-6)

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Figure 3-5



Figure 3- 6

It is now time to prepare the Guide Blocks of the Cross-arm so they can be slipped over the columns. The Cross-Arms Guide Blocks have a spring-loaded feature locking safety that engages the rectangular holes cut into the columns. The locks are designed to automatically engage and hold the Cross arm in place in the event a cable loses tension or breaks. The lock must be manually secured in the retracted position with a zip-tie or other means while the cross-arm is columns. guided over the (Figures 3-7, 3-8)



Figure 3-7



Figure 3-8



Figure 3-9

Figure 3-10

Now with assistance, lay the columns down on the ground. Using wood blocks, prop the columns up so there is clearance to slide the cross-arm down the columns. Position the Cross-arm so the Guide Blocks align with both columns, adjust the column spacing as necessary to match them up. At this point the other spring-loaded lock also needs to be held from engaging so the Cross-arm can feely slide. To accomplish this, take one of the UHMW guide blocks for the inside corners and insert it between the lock and the Guide Block. This will hold the lock back so the Cross-arm can be guided

over the columns. Repeat for both ends of the Cross-Arm then slide the assembly over the columns taking care to go slowly and squarely as not to scratch the paint. Make sure the cross arm is oriented so the safety cable pulleys are outward facing away from the columns. (Figures 3-9 thru 3-12)





*Figure 3-12* 

Once the top of the Guide Block housing is flush with the column, additional UHMW guide blocks can be inserted to help align and guide the Cross-arm. We have found it works best to insert two of the guides first on opposite corners, this will help position the Cross-arm Guide Block so the remaining two blocks can be installed. Take note that there is a special notched UHMW guide block that will be positioned in the corner nearest the spring-loaded lock later in the assembly. (Figures 3-13 thru 3-16)





Figure 3- 13

Figure 3- 14



Figure 3-15



Figure 3- 16

With two UHMW Guide Blocks in each opposite corner, it is now time to slide the Cross-arm further

onto the columns. Pull out the glide block defeating the spring lock when the locks travel by the 6th position. This will secure the locks into the 5th positions from the bottom. We've found this to be a good height for installing the tracks. (Figure 3-17, 3-18)





*Figure 3- 17* 

Figure 3- 18

Once you're on the locks you can stand up the columns and work them into the planned position. Prepare and assemble both ends of the Lift in the same manner. (Figures 3-19, 3-20)





Figure 3-19

Figure 3-20

Next install the remaining UHMW glide blocks but remember 4 are cut to fit the locks. (Figure 3-22) Sometimes you can encounter a tight fit when installing the last block or two. Often you can wiggle the column slightly to help with alignment, making it easier to install. If it's still too snug to install by hand, use a wood block and a hammer to tap them down flush, so the retaining cap can be installed.



Figure 3- 21



Figure 3- 22

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As an alternative to assembling on the Cross-arm to the columns on the floor, the Material Handling lift used to unload the Lift assembly from the trailer, can allow an installer to raise the Cross-arm assembly and lower it over the top of the columns while they are standing in the vertical positions. Figures 3-24 thru 3-33 illustrate this method.





Figure 3- 23

Figure 3- 24

The Cross-arm assembly is loaded onto the material handling lift. The spring-loaded locks are temporarily defeated the same as they were in the stand-up method.



Figure 3-25

Figure 3- 26

The lift is now positioned so that the Cross-arm Guide Block is in vertical alignment to the standing column. The column on the opposite side can now be moved in position to match up with the Guide Block housing on the opposite side of the Cross-arm. (Figures 3-25, 3-26)





Figure 3- 27

Figure 3- 28

# 

The material handling lift can now be raised to lift the Cross-arm assembly upward and then when positioned over the columns, it can now can be carefully lowered to a suitable working height around the 5<sup>th</sup> notch where the UHMW strip can be removed to engage the safety lock. (Figures 3-27 thru 3-30)





Figure 3-29

Figure 3- 30

UHMW Guide Blocks are now slid into place with special attention to placement of the notched guide.









Figure 3-33

The UHMW guide blocks and retainers can now be installed as instructed in the stand-up method at the beginning of the section. (Figures 3-31 thru 3-33)

## **STEP 4: Track Installation**

The Power Track will be installed first, this is the upper track in the package assembly. Take note to visually locate the hole for the hydraulic fitting exiting the side of the Power Track, this fitting must be located next to the column the Power Unit will be bolted to, front left or rear right. Rotate the package assembly, if needed, so the hole is pointed outward and the jack tray feature welded to the side of the track in inward, towards the center. Roughly align the holes in the track with the holes in the Cross-Arm.



Figure 4-3

Figure 4- 2

Center the material handling lift to support the upper Power Track. Unbolt the track from the package supports. Carefully lift or tip one end of the track so that the flange can be placed on top of the Cross-Arm. Now, lift the opposite end and carefully move the columns so this end is now supported on the Cross-Arm as well. Carefully position the holes in the track to mate with the holes in the Cross-Arm. Locate the <sup>3</sup>/<sub>4</sub>" fasteners and ramp clip brackets that will secure the tracks. These will be found in the small parts box that came with the lift. Place a washer on the bolts before passing it threw the ramp clip bracket. Use a screwdriver or drift punch to help alight the holes if needed. (Figures 4-1, 4-2)



Figure 4-3

Figure 4-4

Lower the material handling lift slightly to transfer some of the weight from the track to the cross arms. With the bolts inserted through the ramp clip, pass the bolts through the cross support and into the track. Install the lock washer and hex nut and tighten finger tight. Repeat the process for the other end leaving all bolts finger tight. (Figures 4-3, 4-4)

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Figure 4- 5

Figure 4-6

The next track comes anchored to the shipping brackets upside down so it can better contain and protect the other components for the lift during shipping. This track will need to be turned over for installation. It is highly recommended to leave the shipping brackets installed so the track is supported while you use the material handling lift and an assistant to invert the assembly. Again, take care to make sure the jack tray feature is pointed inward to match the Power Track assembly. (Figures 4-5, 4-6)



Figure 4-7

Figure 4-8

With the track now in the proper orientation resting on the shipping brackets, raise the track with the material handling lift and remove the shipping brackets from both ends of the track. With the brackets removed, you can now raise the track with the material handling lift and position it to rest on the Cross-Arms as you have done with the first track you installed. You may need to come up and over the cross arms at an angle before lowering into place. Repeat the installation methods for the ramp clips and fasteners. Once you have all the bolts started, pull each track outward to have the most width in the center, then tighten the track bolts torqueing them to approx. 45 ft lbs. (Figures 4-7, 4-10)





Figure 4- 5

Figure 4-4

## STEP 5: Track Lock Linkage Installation

#### TABLE 5-1 Lock Linkage Components

- 1/2"x 50" Bent Handle Rod -1
- 1/2" x 80" Straight Rod w/ coupler 1
- 1/2"x 40" T-Handle w/ coupler
- ¼" X 3 ½" Eyebolt 2
- ¼" Hex Nut 4
- 1/4" Washer 4

- 1/4" X 82" Rod 2
- 1/4" X 9" Rod 2
- 1/4" Heim End 8
- 3/8" shoulder bolts 8
- Round Knob 1



Figure 5- 1





Figure 5- 2



Figure 5-3



Figure 5-4

Install the  $\frac{1}{2}$ " X 50" bent handle safety latch linkage rod (Figure 5-2) into the power side track adjacent to the back end of the cylinder. (The end that is closest to the Hydraulic fitting that comes thought the track). The Bent Handle Rod should pass through guide tubes on the underside of track. (Figure 5-4). Install the round knob on the Bent Handle Rod if not already attached.

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Figure 5-5



Figure 5- 6





I Next, install the 1/2" X 40" T-Handle lock linkage rod into the power side track from the opposite end. The rod should pass through the guides on the underside of the power side track as before. You should have 2 couplers and 4 jam nuts, make sure both the bent handle end and the T-Handle are clocked the same (vertical straight up and down) (Figures 5-5 thru 5-7)

Figure 5-7

Figure 5-8

Tighten both couplers so that the bent handle end and the T-Handle rod are up against the fixed spacers on the Cross-Arms but still move freely. Once you have the ends clocked to be in-sync with each other, tighten down the jam nuts on the coupling rod. (Figures 5-7 thru 5-9)



Figure 5-9

## STEP 6: Lock Linkage Rod Installation

Nested in the lower track were 2ea. 1/4" x 82" rods that are threaded on both ends. In the bolt bags from the small parts box, you will find the lock linkage parts, 2ea. 1/4" x 9" rods also threaded on both ends, and 8ea. 1/4" Heim ends that thread onto the ends of the rods. On the 82" long rods, thread a Heim on one end. (Figures 6-1 and 6-2)







Figure 6-2



Figure 6-3

Install the eyebolts in the center

the end that does not have the Heim on it through the eyebolt, now thread on the other Heim end. (Figures 6-3 thru 6-9)



Figure 6-4



Figure 6-5



Figure 6-6

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Figure 6-8



Figure 6-9

You are now ready to attach the linkage rods to the lock linkage T-Handle. For proper clearance and to prevent the Heim joint from binding, it is important to put a flat washer between the Heim joint and the T-Handle, and again on the back side with the nut. The long link rod always connects to the top of the T-Handle Connection. (Figures 6-10 thru 6-12)



Figure 6-10

Figure 6- 11

Figure 6- 12

Next, preassemble the shorter Lock Linkage rods by installing the hex nuts and Heim Joints. The short rods always connect to the lower mounting position of the T-Handle and the other end attaches to the Safety Lock Lever of the Cross-Arm Guide Block Housing. Remember to install the washer between the Heim joint and the T-Handle as before for clearance. (Figures 6-13 thru 6-15)

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Figure 6-14



Figure 6- 15

On the Safety Lever end of the short lock linkage rod, a lock washer will work to act as the spacer between the Heim joint and the Lock Lever. This washer is important to prevent binding of the linkage. Adjust the final lengths of all the linkages so the T-Handle is clocked just past its vertical centerline when the Safety Locks are down in the rectangular slots. (Figures 6-16 thru 6-19)



Figure 6-16







Figure 6- 18

After you have finished the assembly of the lift but 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 Cross-Arms. 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.



## **STEP 7: Installing Top Caps**

There is a Top Cap for each of the four columns that secures the ends of the lift cables. (Figure 7-2) One cap is unique and will have a pattern of holes drilled and tapped in the top for the Power Unit mounting bracket. This Top Cap must go into the column where the Power Unit is being mounted, the Column that is closest to Hyd. fitting coming through the Power Track.



Figure 7-1



Figure 7-1



Figure 7- 3

Insert the Top Caps into the top of each column. The Caps have some material added to the sides to make them a snug fit so some persuasion from a non-marring hammer or block of wood may be required to fully seat them. Orient the holes for the cables so they are pointing inward to the inside corner of the post (Figure 7-2). Another way to verify that you have them installed correctly is to check that the longest flat side of the Top Cap is flush with the outside of the column as referenced from the front or rear. (Figures 7-1 thru 7-4)





Figure 7- 4

Figure 7-5

Figure 7-6

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Figure 7-7

The bracket for the Power Unit can be mounted in two positions, on the outer side of the column or turned to the inside for a narrower width profile. Select the position that favors the layout of your shop or the desire operator position. Attach the Power Unit bracket with the fasteners as shown. Pay attention to the washers placed under the bracket near the edge of the Top Cap. (Figure 7-7) These washers act as a shim to help level the Power Unit and provide adequate clearance from the moving parts of the lift as it is raised or lowered. (Figures 7-5 thru 7-7)

While in the general area of the Power Unit, it is a good time to tidy up some loose ends. Find the 90° bulk head fitting secured to the end of the hydraulic

hose connected to the lift cylinder under the Power

Track. Remove the threaded nut and pass the fitting through the hole in the front corner of the Power Track. Tighten the nut to secure the fitting in place. Next, take the hydraulic



hose from the parts box and attach it to the fitting you just Figure 7-7 secured. A cable strap for the hose can be found in the parts

box. Remove a screw from the Guide Block retainer to secure the hose to the column. Leave adequate slack in the hose to allow it to move with the lift. (Figures 7-7 thru 7-11)



Figure 7-8



Figure 7-9



Figure 7-10

Secure the hydraulic hose under the Power Track with a Zip-Tie to protect it from moving during shock loads or from being snagged while using the lift. (Figure 7-12)





Figure 7-12

Figure 7-11

## **STEP 8: Installing Cables**

The cables come pre-installed and pre-routed on your Power Track. Seeing them dangling from the bottom of the Power Track may make them seem intimidating, but the connections are very intuitive and relatively easy. (Figure. 8-1)

Start by feeding the threaded ends of the cables wrapped around the pulleys from each end and side of the Power Track towards each end of the Cross-Arm. Two of the cables will need to pass through the openings in the non-power track just below the attaching bolts. (Figures 8-2 thru 8-4)



Figure 8-3



Figure 8-2



Figure 8-3



Figure 8-4

To gain enough free cable length to wrap around the various pulleys, and attach the cables to the Top Caps, you will want to pull on a cable which will work to extend the rod on the lift cylinder. Pull until you have the rod cylinder extended about 3/4's of the way out.

**Note:** If the cylinder is fully collapsed into the internal hydraulic cushion, some force may be required. If this is the case, you may need to use a ratcheting strap or come-along to aid with the pull or get an assistant to pull on another cable simultaneously. If you are still not able to get the cylinder to extend, you will need to take a pry bar and put it between the cylinder case and cable block and pry the cylinder rod out at least an inch. This should be far enough for the cylinder piston to escape the suction of the internal hydraulic cushion, allowing you to be able to extend the rod cylinder by pulling on the cable. (Figures.8-5 thru 8-7)

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Figure 8-6



Figure 8-7

The cables pay-off from the lower pulleys to the left and right, on each end of the Power Track and are kept in place on the pulleys with cable keeper bolts. (Figures 8-8, 8-9)





Figure 8-8

Figure 8- 9

Stretch the cable upward toward the Tower Cap to make sure you have enough cable to make the connection. (Figure 8-10)

Now return to the cable guide pulleys and the Cable Tension Safety Lock pulley on the Guide Block Housing of the Cross-Arm assembly. Route the cable around the Guide pulley and then up and over the Cable Tension Safety Lock Pulley as show in Figure 8-11. The cable should just pass through the gap on the black painted pulley guard, if needed the attaching screw for the guard can be loosened slightly to gain more room to run the cable around the pulleys.

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After routing the cable through the lift pullies of the Cross-Arm Guide Block assembly it can be attached to the Top Caps.





Figure 8- 11

Remove the double nuts and washers from the threaded stud on the end of the cable and pass it thru the hole in the Tower Cap. Install the washer first then the two hex nuts and run them down finger tight to just past the end of the stud. Repeat this procedure for each of the four cables. (Figures 8-10 thru 8-15)



Figure 8- 14



Figure 8- 15

rigure o- 10



Figure 8-12



Figure 8- 14

With the cables all attached to the Tower Caps the Zip-Ties can now be cut away from the Cable Tension Safety Lock Levers. It is also a good time to check all the cable routing underneath the Power Track to be sure that all the cables are running straight and parallel to the lift cylinder without excessive slack, and the cable flange and retainer are square with the track. (Figures 8-16 thru 8-18)

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Figure 8- 17



Figure 8-18

Now from the hardware selection locate the socket cap screws that work to act as cable retainers on the Cross-Arm lift pulleys. Install them in the threaded holes just under the axle shaft for the pulley. Take a moment to visually verify that each corner of the Cross-Arm is in approximately the same position when referenced from the top of the black pulley guard to the bottom of the rectangular slot. Adjust the tension of the cable for each corner so this measurement is close to the same. Final cable tension and leveling adjustments will be made later when the lift is moved to its final position. (Figures 8-19 thru 8-21)







Figure 8- 19

Figure 8- 20

Figure 8- 21

Note: For purpose of this next drawing (FIG.4), 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.



## **STEP 9: Power Unit Installation**

Insert four 5/16" X 1" Hex bolts into the outer group of holes on the Power Unit mount. Insert the bolts from behind the bracket and secure with four of the 5/16" hex nut so that the threaded stud of the bolt is facing out from the bracket. On some Power Unit models, the lower left-hand stud (see Figure 9-2) will need to have a shorter threaded projection. This is done by installing a nut on the bolt first, before inserting it through the bracket. This will allow you to adjust the exposed thread length to make it shorter so it doesn't come in contact with the power unit housing (not shown). . Install the Power Unit mounting flange over the threaded studs and secure with the remaining 5/16" Nuts. (Figures 9-1 thru 9-3)



Figure 9-1

Figure 9- 1





Figure 9- 3

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 slightly rearward towards the column. Connect the Hydraulic hose you tethered to the Cross-Arm earlier feeding the lift cylinder mounted in the Power Track, and then fill the hydraulic reservoir of the Power Unit with AW-32 Hydraulic Fluid to a point about two inches below the fill cap of the reservoir. Use the appropriate viscosity fluid for your working climate. (Figures 9-4 thru 9-6)



Figure 9-4

Figure 9-5

Figure 9-6

Use only the following fluids: **AW-32** or **ISO-32** hydraulic oil, **Mobil DTE24**, or **Texaco HD32**. The tank will hold approximately 12 quarts. (Figure. 9-6)

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Leave room for hydraulic oil expansion. Filling the hydraulic system for the first time causes air to mix with the hydraulic fluid and it will need time to permeate out of the oil to the atmosphere. Milky air agitated oil will also affect the hydraulic operation of the lift as air compresses differently than the hydraulic fluid. Do NOT top-off or overfill the system until after the lift has made a few non-full-rise cycles and any air in the system has been allowed to escape.

## STEP 10: Casters and Rolling Jack Tray

Installing the Casters is a very straightforward process. Simply position the Caster assemblies under the Cross-Arm support and install the Hitch Pins that come in the small parts box. The weight of the Cross-Arms and Tracks will push the casters down to make contact with the floor. This elevates the columns of the lift so it can roll and be easily moved. (Figures 10-1 thru 10-4)







Figure 10- 2



Figure 10-3



Figure 10-4

Next you can install the Rolling Jack Tray. Loosen the set screws that secure the Roller shafts in the tubes of the Rolling Jacking Tray. Place the tray in between the tracks so the center groove in the four rollers mate up with the outer edge of the channel that is welded to the inside edge of each Track. Figures 10-5, 10-6)





Figure 10- 6

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Figure 10-7



Figure 10- 8

Center the Rolling Jack Tray between the two tracks. Tighten the sets screws for the two roller shafts that ride on the same track channel, this will allow the roller shafts for the other side to travel in and out slightly to take up any misalignment or skew.



Figure 10-9

A pair of Rubber wheel chocks and some oil catch trays also come standard with your lift.

The aluminum ramps will work from either end. Also included are two aluminum wheel stops that also secure in the Ramp Clips at the end of each track. (Figure 10-10)

Lubricate the four of the rollers for the Jacking Tray. If desired, you can also lubricate the shafts for the rollers that are free to move in and out of the Jacking Tray weldment with the channel. (Figure 10-9)



Figure 10- 10: Assembled Lift show with all the standard features.

## STEP 11: Pre-Operation Check List



Warning: Make sure the hose DOES NOT hang up on tank.

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

#### IT IS NOT NECESSARY TO USE TEFLON TAPE ON O-RING FITTINGS

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.

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.

# **WARNING**

#### **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 Figure. 32)** 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.

## STEP 12: Start Up

Make sure Power Unit reservoir is full with 12 quarts of recommended fluid.

Wax the outside of the columns where the UHMW Guide Blocks will make contact with the column. The wax will reduce friction and make for smooth operation. (Figures 12-1 thru 12-3)



Figure 12- 1



Figure 12-1



Figure 12-3

#### 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 post Top 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



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.

## **STEP 13: 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.

#### For safe operation, follow the steps listed below.

- 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 Bent Handle 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 adjusted.

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 - **<u>STOP operation immediately</u>** - inspect, correct and/or replace parts as required.

#### DO NOT REPLACE ANY PART OF THE LIFT WITHOUT CONSULTING TECHNICAL SUPPORT.

## **M** WARNING

## 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

- □ Waxing outside of columns will help glide blocks slide nice and smooth.
- □ 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**

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TROUBLE	CAUSE	SOLUTION
Pump/motor does not start.	Improper electrical hook-up	- Rewire
	Blown fuse or breaker tripped	<ul> <li>Replace fuse / reset</li> </ul>
	Pump binding or stuck	breaker
	Motor thermal overload tripped	<ul> <li>Flush unit / replace</li> </ul>
	You must have 20 Amps 120 Volts	pump
		- Let motor cool
Pump/motor operates but no pressure	Wrong rotation of motor (Note:	- Rewire
	Air bubbles out inlet)	
Pump/motor operate low flow and/or low	Clogged inlet strainer (cracking	- Clean strainer in
pressure (in raise mode)	noise).	solvent
	Relief valve leaking	<ul> <li>Tighten relief valve</li> </ul>
	Dirt on seat	<ul> <li>Flush seat</li> </ul>
Pump/motor operate low flow and/or low	Release valve leaking	- Tighten release valve
pressure (in pressure mode)	Dirt on seat	- Flush seat
	Release stem out of adjustment	<ul> <li>Readjust stem setting</li> </ul>
	O-Ring missing or cut.	<ul> <li>Replace O-Ring</li> </ul>
	Relief valve setting too low	<ul> <li>Readjust relief valve</li> </ul>
Pump/motor operates but does not hold	Fitting/fittings too loose	-Tighten or replace fitting
system	Check valve leaking	<ul> <li>Tighten check valve</li> </ul>
	Dirt on seat	- Flush Seat
	Release stem out of adjustment	<ul> <li>Readjust stem setting</li> </ul>
	O-Ring missing or cut	- Replace O-Ring
	Defect in blowhole in motor end	<ul> <li>Replace motor</li> </ul>
	head internally.	
Failure to lower	Release valve stem sticking	<ul> <li>Replace or readjust</li> </ul>
		stem and/or cartridge
	Lift out of adjustment	- Readjust lift
Air in oil	Loose inlet connection	- Tighten Connections
	Low fluid level	- Add Fluid
	Bad seals in pump	<ul> <li>Replace seals</li> </ul>
	Siphon check does not seat	- Replace
Oil blows out the breather/filter port	Oil overload	- remove to 1/2 to 2/3 full
	Vehicle has been lowered too fast	- Restrict lowering with
		manually controlled
		release valve
	Seal damage in cylinder	- Replace cylinder seals
Cylinder will not lift load	Seal damage to piston	- Replace cylinder seals
-	Oil leaking from front of cylinder	- Replace cylinder seals
Fluid Requirements	AW-32 or ISO-32 hydraulic fluid	

**Advantage Lifts** offers free lifetime technical support with all of our products. Just call our technical support line 763.300.5730 with any questions on the operation and maintenance of your lift. Our knowledgeable staff will be glad to help you.

## **Options:**

## Available options for your SS 9000 HD Advantage Lift series lift

- SJ-44 Sliding Bridge Jack
- Transmission Jack
- Mobile Oil Drain
- Jack Stands
- Tripod Stands

These are a few of the available options for your lift; we have more many options available. Contact our sales department or details and pricing.

#### NOTES: