



WARNING

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. FORWARD THIS MANUAL TO ALL OPERATORS. FAILURE TO OPERATE THIS EQUIPMENT AS DIRECTED MAY CAUSE INJURY OR DEATH.

Manual REV G 09-05-14

pn#5900033



CAUTION

The safe operating temperature range for this product is 41° F. - 104 °F.

INSTALLATION AND OPERATION MANUAL

**9,000 POUND CAPACITY
SUPER WIDE
FOUR-POST LIFTS**

**MODELS:
HD-9SW
HD-9SWX**

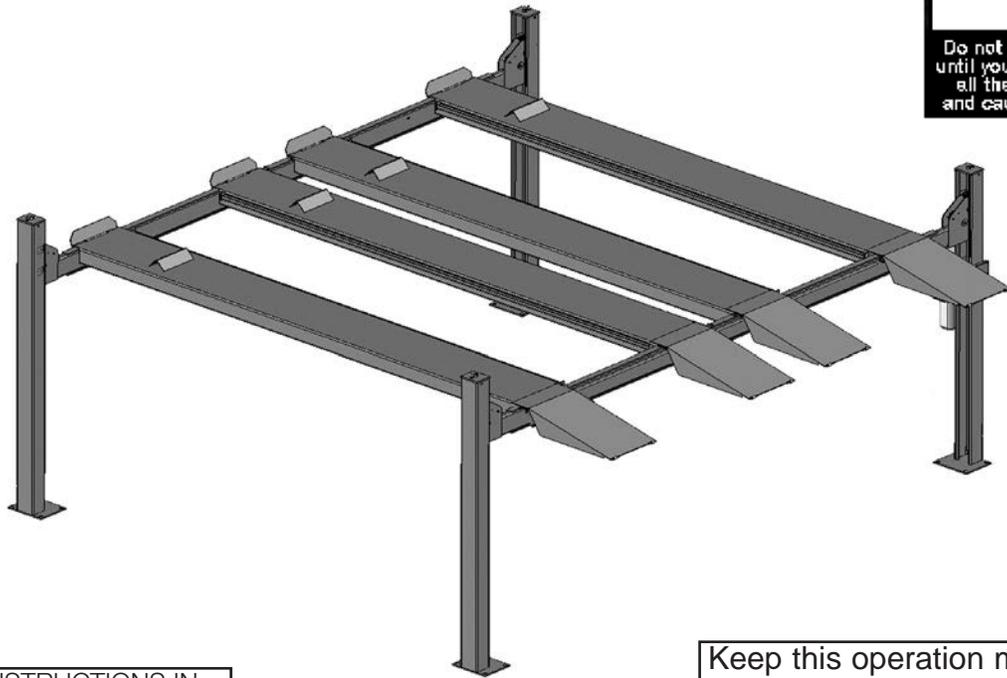
VERSION K



READ FIRST



Do not operate this machine until you read and understand all the dangers, warnings and cautions in this manual.



ORIGINAL INSTRUCTIONS IN ENGLISH LANGUAGE

Keep this operation manual near the machine at all times. Make sure that ALL USERS read this manual.

RECEIVING

The shipment should be thoroughly inspected as soon as it is received. The signed Bill of Lading is acknowledgement by the shipping carrier as receipt of this product as listed in your invoice as being in a good condition of shipment. If any of these goods listed on this Bill of Lading are missing or damaged, do not accept goods until the shipping carrier makes a notation on the freight bill of the missing or damaged goods. Do this for your own protection.

BE SAFE

Your new lift was designed and built with safety in mind. However, your overall safety can be increased with proper training and thoughtful operation on the part of the operator. DO NOT operate or repair this equipment without reading this manual and the important safety instructions shown inside. Keep this operation manual near the lift at all times. Make sure that ALL USERS read and understand this manual.



BendPak®
PROVIDING AUTOMOTIVE SERVICE SOLUTIONS

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9,000 POUND CAPACITY, COMMERCIAL GRADE FOUR POST AUTO / TRUCK LIFT

This instruction manual has been prepared especially for you.
Your new lift is the product of over 40 years of continuous research, testing and development;
it is the most technically advanced lift on the market today.

READ THIS ENTIRE MANUAL BEFORE INSTALLATION & OPERATION BEGINS.

RECORD HERE THE LIFT AND
POWER UNIT INFORMATION WHICH IS LOCATED
ON THE SERIAL NUMBER
DATA PLATES ON THE LIFT AND
ON THE POWER UNIT

Power Unit Model # _____
Power Unit Date Of Mfg. _____
Power Unit Serial # _____
Max Operating Pressure 2,450 PSI

This information is required when
calling for parts or warranty issues.

BP BendPak [®] PROVIDING AUTOMOTIVE SERVICE SOLUTIONS		Santa Paula, CA USA www.bendpak.com
Model Number	Lifting Capacity	Serial Number
Date of Manufacture	Power Unit Number	Volt. / Ph. / Freq. / Amp.
Description	Rolling Jack Max.	Air Pressure Max.
Cable Dia.	Conn. Dia.	Cable Lengths
		A
		B
		C
		D
WARRANTY VOID IF DATA PLATE IS REMOVED. MADE IN CHINA		

PRODUCT WARRANTY

Our comprehensive product warranty means more than a commitment to you; it's also a commitment to the value of your new BendPak lift. For full warranty details and to register your new lift contact your nearest BendPak dealer or visit <http://www.bendpak.com/support/warranty/>

NOTE:

Every effort has been taken to ensure complete and accurate instructions have been included in this manual, however, possible product updates, revisions and or changes may have occurred since this printing. BendPak Ranger reserves the right to change specifications without incurring any obligation for equipment previously or subsequently sold. Not responsible for typographical errors.

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 insure 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.

PLEASE READ ENTIRE MANUAL PRIOR TO INSTALLATION.

DEFINITIONS OF HAZARD LEVELS

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



DANGER !

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



WARNING !

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



CAUTION !

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

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.

BEFORE YOU BEGIN

Receiving:

The shipment should be thoroughly inspected as soon as it is received. The signed bill of lading is acknowledgement by the carrier of receipt in good condition of shipment covered by your invoice. If any of the goods called for on this bill of lading are shorted or damaged, do not accept them until the carrier makes a notation on the freight bill of the shorted or damaged goods. Do this for your own protection.

NOTIFY THE CARRIER AT ONCE if any hidden loss or damage is discovered after receipt and request the carrier to make an inspection. 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.

IT IS DIFFICULT TO COLLECT FOR LOSS OR DAMAGE AFTER YOU HAVE GIVEN THE CARRIER A CLEAR RECEIPT. File your claim with the carrier promptly. Support your claim with copies of the bill of lading, freight bill, invoice, and photographs, if available. Our willingness to assist in helping you process your claim does not make BendPak responsible for collection of claims or replacement of lost or damaged materials.

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**INSTALLER / OPERATOR
PLEASE READ AND FULLY
UNDERSTAND.
BY PROCEEDING YOU AGREE TO
THE FOLLOWING.**

- ◆ I have visually inspected the site where the lift is to be installed and verified the concrete to be in good condition and free of cracks or other defects. I understand that installing a lift on cracked or defective concrete could cause lift failure resulting in personal injury or death.
- ◆ I understand that a level floor is required for proper installation and level lifting.
- ◆ I understand that I am responsible if my floor is of questionable slope and that I will be responsible for all charges related to pouring a new level concrete slab if required and any charges.
- ◆ I understand that the lifts are supplied with concrete fasteners meeting the criteria of the American National Standard "Automotive Lifts - Safety Requirements for Construction, Testing, and Validation" ANSI/ALI ALCTV-2011, and that I will be responsible for all charges related to any special regional structural and/or seismic anchoring requirements specified by any other agencies and/or codes such as the Uniform Building Code (UBC) and/or International Building Code (IBC).
- ◆ I will assume full responsibility for the concrete floor and condition thereof, now or later, where the above equipment model(s) are to be installed. Failure to follow danger, warning, and caution instructions may lead to serious personal injury or death to operator or bystander or damage to property.
- ◆ I understand that Bendpak lifts are designed to be installed in indoor locations only. Failure to follow installation instructions may lead to serious personal injury or death to operator or bystander or damage to property or lift.



Failure to follow danger, warning, and caution instructions may lead to serious personal injury or death to operator or bystander or damage to property.



Please read entire manual prior to installation. Do not operate this machine until you read and understand all the dangers, warnings and cautions in this manual. For additional copies or further information, contact:

BendPak Inc. / Ranger Products

1645 Lemonwood Dr.

Santa Paula, CA. 93060

1-805-933-9970

www.bendpak.com

**INSTALLER / OPERATOR
PROTECTIVE EQUIPMENT**

Personal protective equipment helps makes installation and operation safer, however, it does not take the place of safe operating practices. Always wear durable work clothing during any installation and/or service activity. Shop aprons or shop coats may also be worn, however loose fitting clothing should be avoided. Tight fitting leather gloves are recommended to protect technician hands when handling parts. Sturdy leather work shoes with steel toes and oil resistant soles should be used by all service personnel to help prevent injury during typical installation and operation activities.

Eye protection is essential during installation and operation activities. Safety glasses with side shields, goggles, or face shields are acceptable. Back belts provide support during lifting activities and are also helpful in providing worker protection. Consideration should also be given to the use of hearing protection if service activity is performed in an enclosed area, or if noise levels are high.



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.

INTRODUCTION

1. Carefully remove the crating and packing materials. **CAUTION!** Be careful when cutting steel banding material as items may become loose and fall causing personal harm or injury.

2. Check the voltage, phase and proper amperage requirements for the motor shown on the motor plate. Wiring should be performed by a certified electrician only.

IMPORTANT SAFETY INSTRUCTIONS !

Read these safety instructions entirely!

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.

1. **READ AND UNDERSTAND** all safety warning procedures before operating lift.

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

3. **KEEP WORK AREA CLEAN.** Cluttered work areas invite injuries.

4. Consider work area environment. Do not expose equipment to rain. **DO NOT** use in damp or wet locations. Keep area well lighted.

5. **ONLY TRAINED OPERATORS** should operate this lift. All non-trained personnel should be kept away from work area. Never let non-trained personnel come in contact with, or operate lift.

6. **USE LIFT CORRECTLY.** Use lift in the proper manner. Never use lifting adapters other than what is approved by the manufacturer.

7. **DO NOT** override self-closing lift controls.

8. **REMAIN CLEAR** of lift when raising or lowering vehicle.

9. **CLEAR AREA** if vehicle is in danger of falling.

10. **ALWAYS ENSURE** that the safeties are engaged before any attempt is made to work on or near vehicle.

11. **DRESS PROPERLY.** Non-skid steel-toe footwear is recommended when operating lift.

12. **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 wire to a live terminal. This is for ground only.



13. **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.



14. **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.



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

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

18. **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.

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

19. Keep hair, loose clothing, fingers, and all parts of body away from moving parts

20. Use only as described in this manual. Use only manufacturer's recommended attachments

21. **ALWAYS WEAR SAFETY GLASSES.** Everyday eye-glasses only have impact resistant lenses, they are not safety glasses

22. **SAVE THESE INSTRUCTIONS.**

TOOLS REQUIRED

- ◆ Rotary Hammer Drill or Similar
- ◆ 3/4" Masonry Bit
- ◆ Hammer
- ◆ 4 Foot Level
- ◆ Open-End Wrench Set: SAE/Metric
- ◆ Socket And Ratchet Set: SAE/Metric
- ◆ Hex-Key / Allen Wrench Set
- ◆ Medium Crescent Wrench
- ◆ Medium Pipe Wrench
- ◆ Crow Bar
- ◆ Chalk Line
- ◆ Medium Flat Screwdriver
- ◆ Tape Measure: 25 Foot Minimum
- ◆ Needle Nose Pliers

An air supply (30 PSI Min / 3 CFM Min.) will be required for the safety-lock mechanisms. See Step 11.

IMPORTANT NOTICE!

These instructions must be followed to insure 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.

PLEASE READ ENTIRE MANUAL PRIOR TO INSTALLATION!

STEP 1

(Selecting Site)

Before installing your new lift, check the following.

1. **LIFT LOCATION:** Always use architects plans when available. Check layout dimension against floor plan requirements making sure that adequate space is available.
2. **OVERHEAD OBSTRUCTIONS:** The area where the lift will be located should be free of overhead obstructions such as heaters, building supports, electrical lines etc.
3. **DEFECTIVE FLOOR:** Visually inspect the site where the lift is to be installed and check for cracked or defective concrete.



4. **OPERATING TEMPERATURE.** Operate lift only between temperatures of 41° -104° F.

5. Lift is designed for **INDOOR INSTALLATION ONLY.** Outdoor use permitted only if covered and dry. Always follow warnings illustrated on equipment labels.

STEP 2

(Floor Requirements)



This lift must be installed on a solid level concrete floor with no more than 3-degrees of slope. Failure to do so could cause personal injury or death.

A level floor is suggested for proper use and 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.



- ◆ **DO NOT** install or use this lift on any asphalt surface or any surface other than concrete.
- ◆ **DO NOT** install or use this lift on expansion seams or on cracked or defective concrete.
- ◆ **DO NOT** install or use this lift on a second / elevated floor without first consulting building architect.

CONCRETE SPECIFICATIONS

LIFT MODEL	CONCRETE REQUIREMENTS
HD-9SW	3.5" Min. Thickness / 2,500 PSI
HD-9SWX	3.5" Min. Thickness / 2,500 PSI



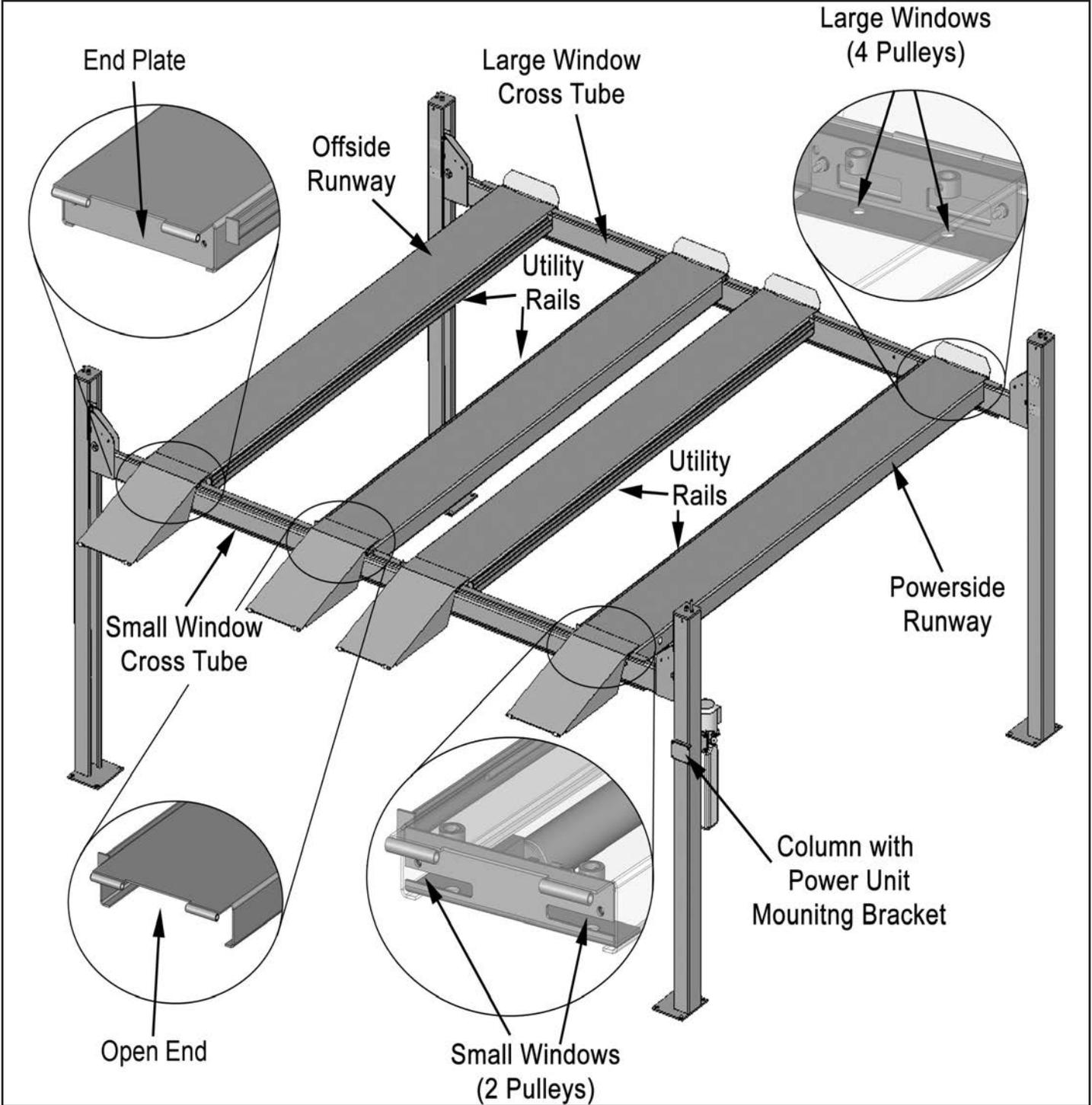
DANGER!

All models **MUST** be installed on 2500 PSI concrete only conforming to the minimum requirements shown above. New concrete must be adequately cured by at least 28 days minimum.

! DANGER

When removing the lift from shipping angles pay close attention as the posts can slide and can cause injury. Prior to removing the bolts make sure the posts are held securely by a fork lift or some other heavy lifting device. Identify the main components prior to starting the assembly process.

HD-9SW SERIES ASSEMBLY VIEW



FLOOR PLAN

IMPORTANT NOTE

Power Unit can be located at either "X" location.

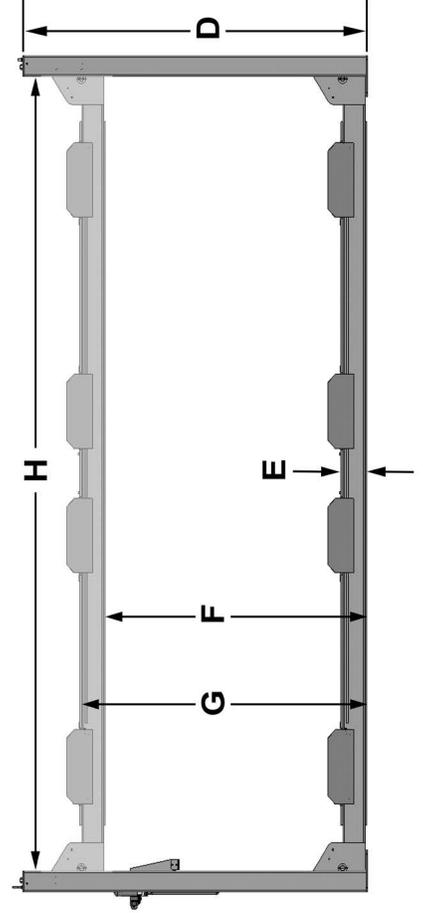
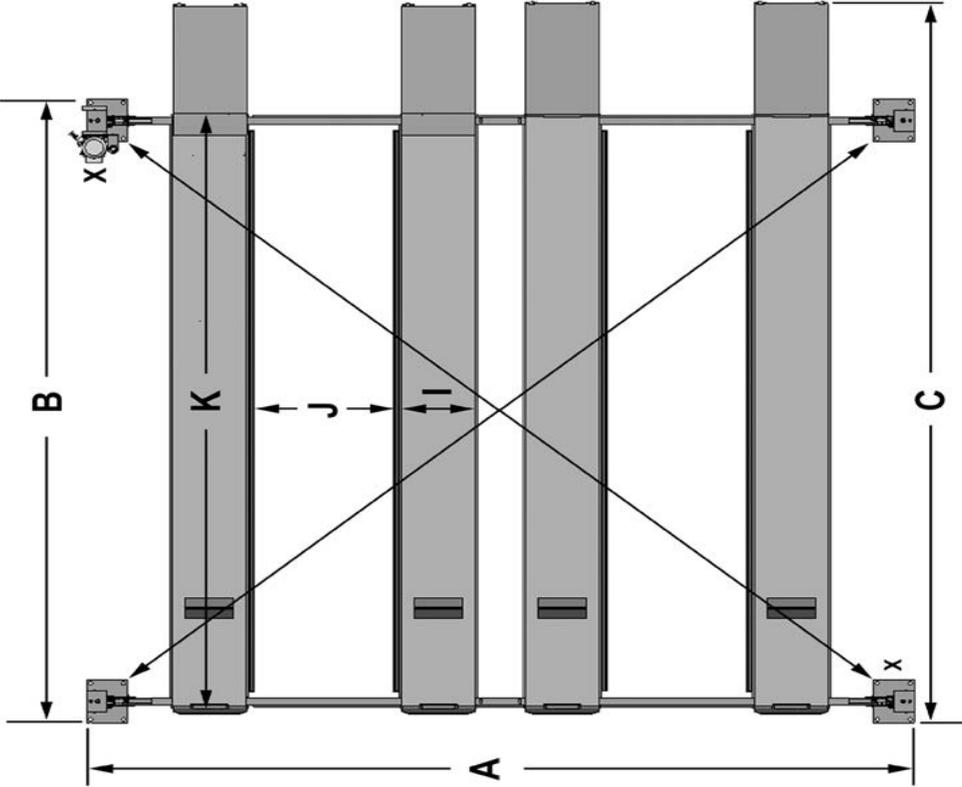
IMPORTANT NOTE

Check Diagonal Measurements

To Ensure Square Layout Diagonal Measurements Must Be Equal.

IMPORTANT NOTE

The Total Combined Weight of all Vehicles, Jacks and or equipment on the lift must not exceed 9,000 lbs.



MODEL	HD-9SW	HD-9SWX
Lifting Capacity	9,000 lbs / 4082 Kg.	9,000 lbs / 4082 Kg.
A - Overall Width	202" / 5131 mm	202" / 5,131 mm
B- Outside Length	174" / 4,420 mm	198" / 5,029 mm
C- Overall Length	201" / 5,109 mm	224" / 5,695 mm
D- Height of Columns	90" / 2284 mm	102" / 2589 mm
E- Min. Runway Height	6.75" / 170 mm	6.75" / 170 mm
F- Max. Rise	70" / 1,778 mm	82" / 2083 mm
G- Max Lifting Height	76.75" / 1949 mm	88.75" / 2254 mm
H- Width Between Columns	192" / 4877mm	192" / 4877mm
I- Runway Width	19" / 182 mm	19" / 182 mm
J - Max Width Between Runways(*)	38" / 965 mm*	38" / 965 mm*
K- Length of Runways	164" / 4178 mm	188.5" / 4788 mm
Locking Positions	14	17
Lock Spacing	Every 4" / 102 mm	Every 4" / 102 mm
Lifting Time	50 Seconds	55 Seconds
Standard Motor (**)	220 VAC / 60Hz 1 Ph.	220 VAC / 60Hz 1 Ph.

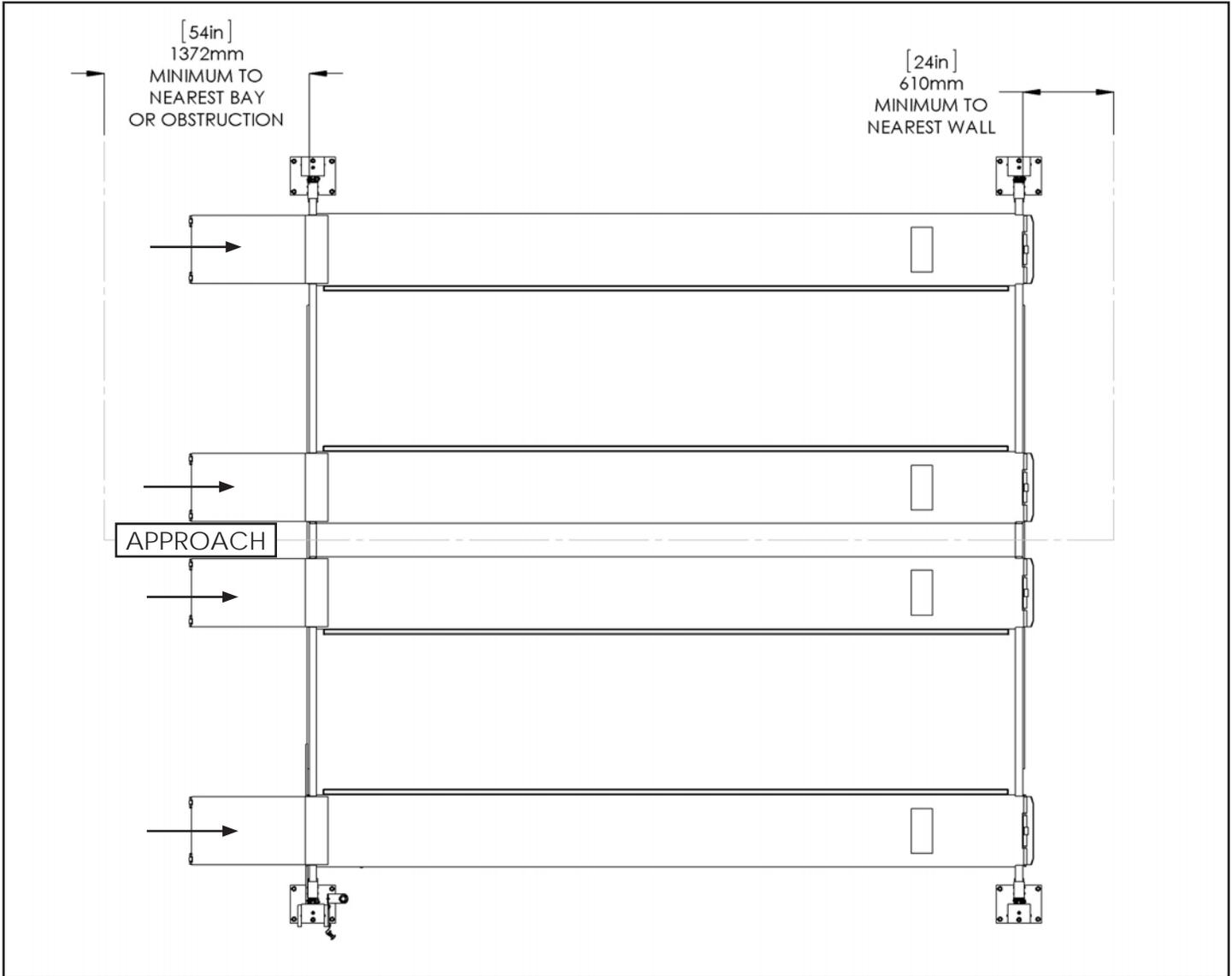
* This dimension may be limited with the addition of rolling jacks. See Rolling Jack Specifications on Separate page.

** Special Voltages Available upon Request.

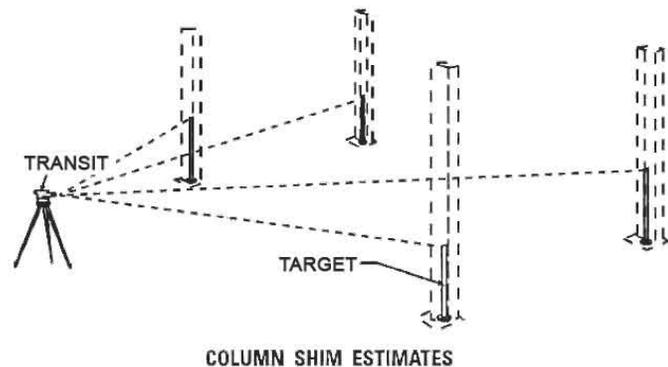
The design, material and specifications are subject to change without notice.
Version A

CLEARANCES

HD LIGHT DUTY DOUBLE WIDE



1. Lift Location: Use architects plan and Engineers automatic level (transit) when available to locate lift. The above shows clearances of a typical bay layout. Lift floor area should be level.



2. Ceiling or overhead clearance must be 80" plus height of tallest vehicle.

3. Estimating Column Shim requirements: In the following section, the terms "highest" and "lowest" refer to elevation of floor.

- A. Mark locations where lift columns will be positioned in bay.
- B. Place target on floor at column positions (NOT on column base plates) and record readings.
- C. Find the highest of the four locations. Find the difference between the readings at each of the remaining three columns and the highest reading.
- D. The difference is the estimated amount of shim thickness needed at each column.

Note: Maximum shim thickness is 1/2" per column using shims and anchors provided with lift.

If no transit is available, floor slope can be determined by using a chalk line and level.

POWER UNIT LOCATION

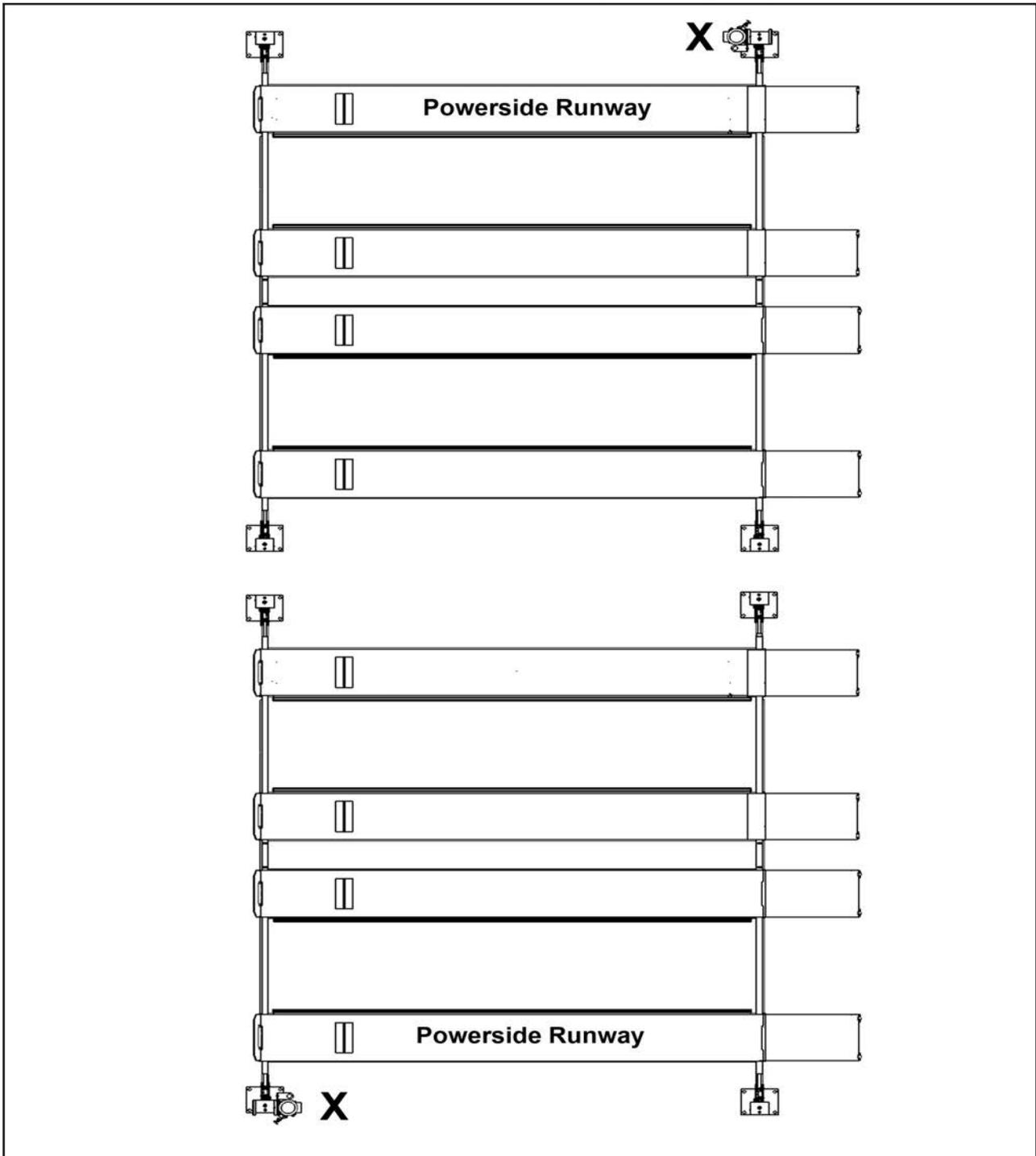
IMPORTANT NOTE

The Power Unit can be located at either “X” location shown below. It is important to locate the POWERSIDE Runway (with Cylinder) on the SAME SIDE as the power unit location.

Utility rails on the side of each Runway MUST be installed to the inside.

For the remainder of this instruction we will illustrate the Power Unit mounted at the PASSENGER-SIDE (RIGHT) REAR Column - TOP ILLUSTRATION.

For Power Unit at left front, rotate lift 180° leaving Approach Ramps and Front Tire Stops in original position.



STEP 3

(Column & Cross Tube Installation)

1. Place a chalk line on the floor according to the floor plan layout. Pay attention to the power Unit location. Locate and stand the columns at their respective locations. **DO NOT BOLT** Columns down at this time. Use caution to prevent the Columns from falling over. (See Fig. 3.1)

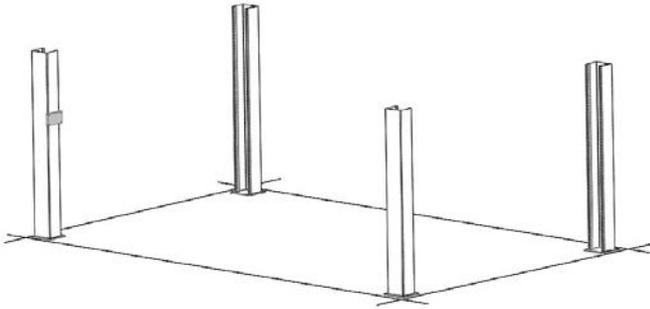


Fig 3.1

(If not bolting lift to the floor, skip to Item 3.)

2. To estimate the shim requirements, place a target on floor at each Column position and record the readings. Find the highest of the four locations then find the difference between each of the remaining columns. This difference is the estimated amount of shim thickness that will be required at each Column. (See Fig. 3.2)

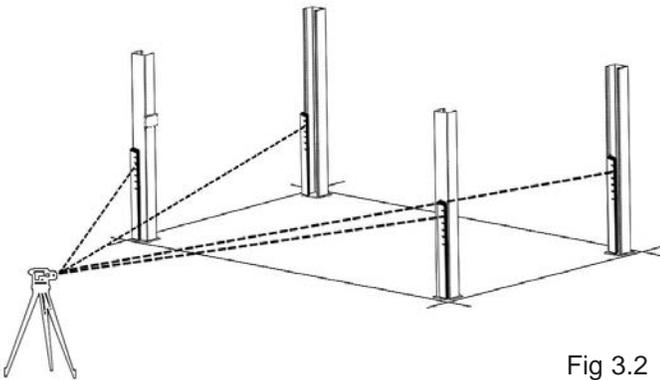


Fig 3.2

Note: The maximum shim thickness recommended by the factory is no more than 1/2" per Column using shims and anchors provided with the lift. A maximum shim thickness of 2" is possible by ordering optional shim plates. Contact your authorized BendPak Distributor for ordering information.

3. Using a forklift or crane, raise the cross tubes (making sure the Plastic Slide Blocks are still in position) and drop down into the top of the Columns. NOTE: The Sheave Windows should be positioned inward and adjacent the Power Unit Column. (See Fig. 3.3)

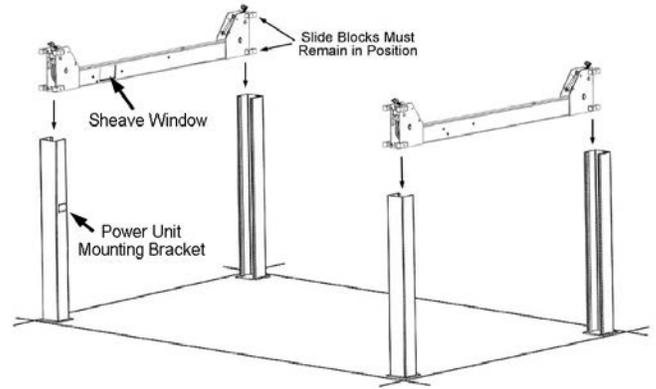
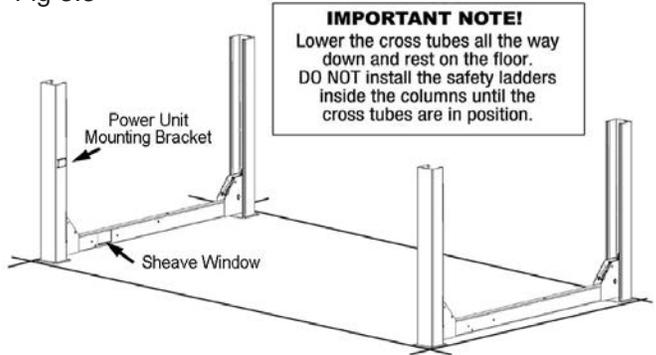


Fig 3.3



4. With the Columns standing and the cross tubes in position, install the Safety Ladders. Pass the Ladders through the Column openings and drop down through the Slide Block guide slots on the cross tube until the Ladders come to rest on the Base Plates. If bolting, **DO NOT BOLT** Columns down at this time. (See Fig. 3.4 - 3.5)

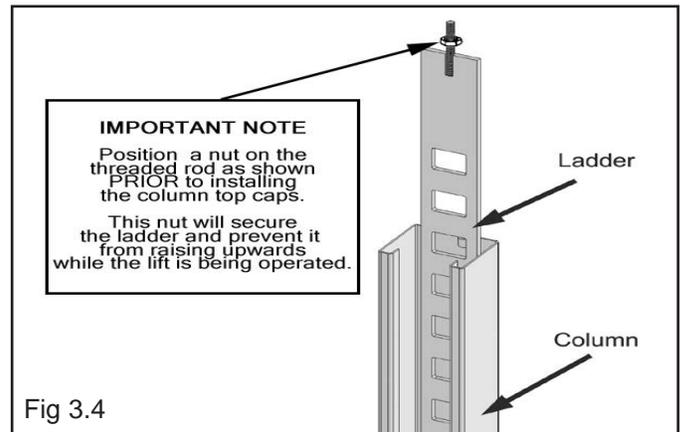


Fig 3.4

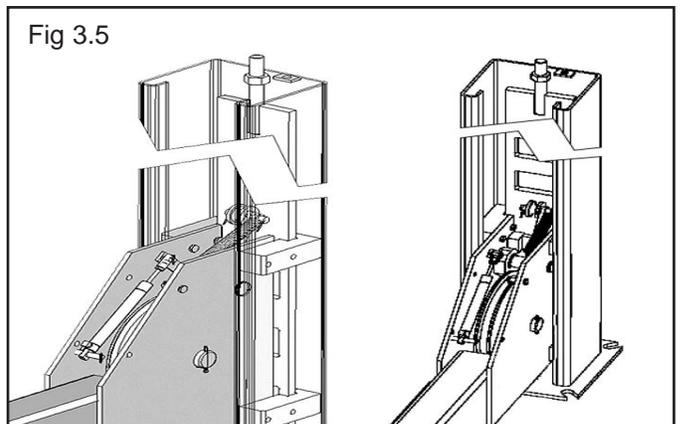
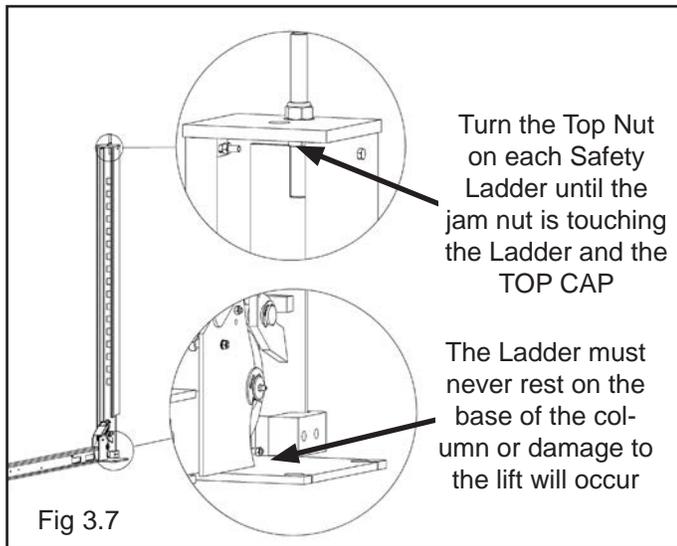
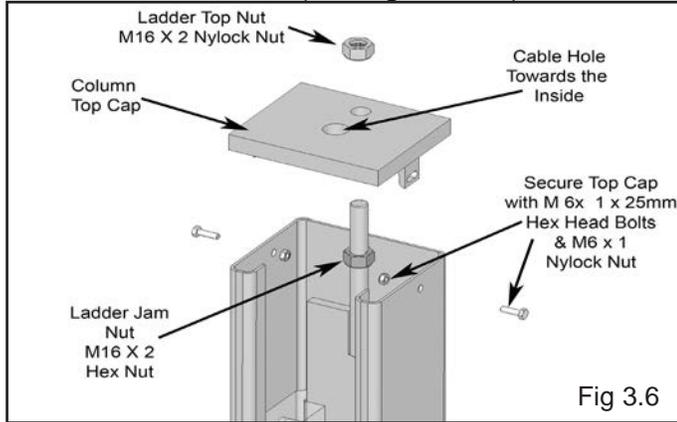


Fig 3.5

5. The Columns and Cross Tubes will now be in position and spaced properly for the Runways.

6. Thread the jam nut all the way to the Ladder. Install the column TOP CAPS using the M16 x 2 Hex Bolts, nuts & washers. Turn the Top Nut on each Safety Ladder until the jam nut is touching the Ladder and the TOP CAP.
NOTE: The Ladder must never rest on the base of the column or damage to the lift will occur. Be sure to position the cable hole INWARD. (See Fig. 3.6 - 3.7)



STEP 4
(Raising The Cross Tubes)

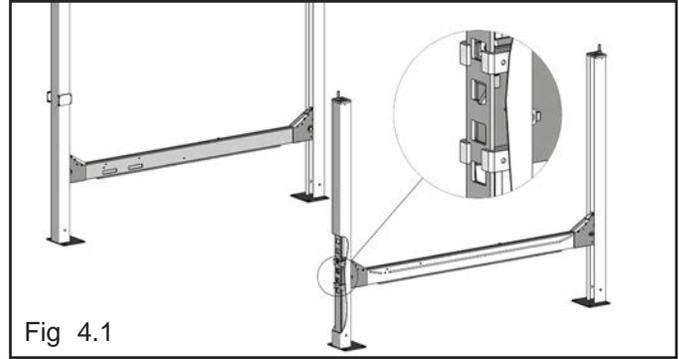
1. Before proceeding it will be necessary to first raise the Cross Tubes off the ground to facilitate Cable routing and final assembly.



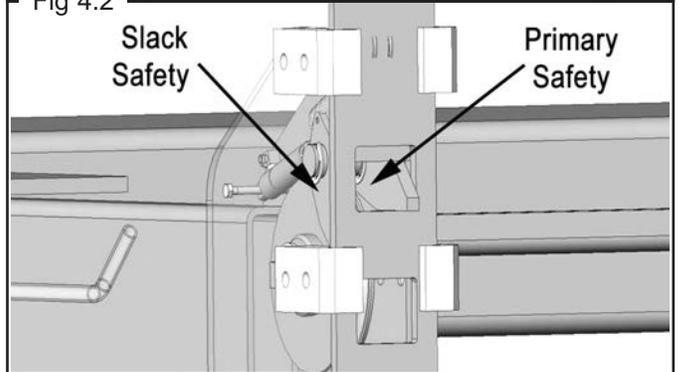
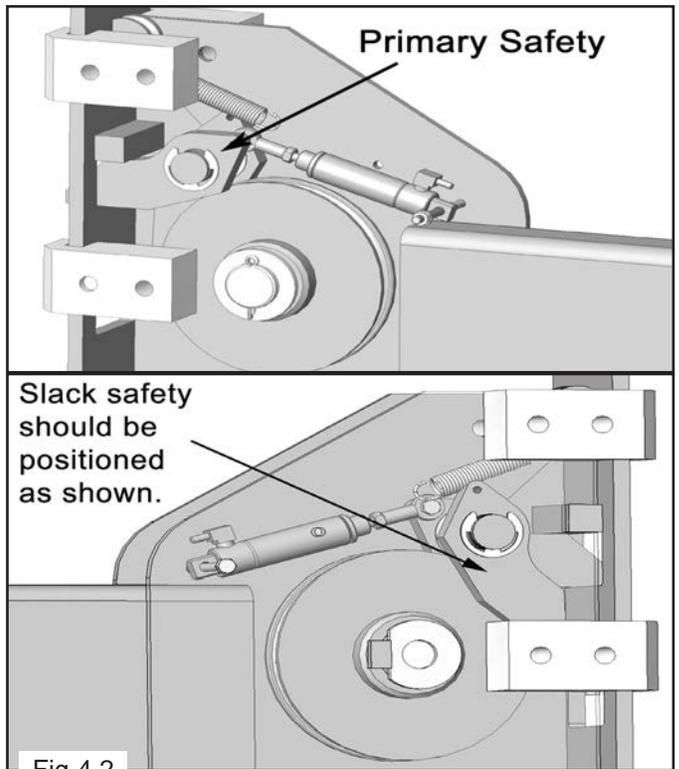
DANGER!
Be careful not to disturb the Columns and Cross tubes as they may tip over causing personal injury or harm

IMPORTANT NOTE
It is important that the SLACK SAFETY LOCK IS CLEARED. The Slack Safety Lock must never rest on the Safety Ladder.

2. Manually raise the Cross Tubes until the Primary Safety Locks engage and rest on the third or fourth lock position or approximately 24" off the ground. (See Fig 4.1)



3. It is important that the SLACK SAFETY LOCK IS CLEARED. The Slack Safety Lock must never rest on the Safety Ladder. (See Fig. 4.2)

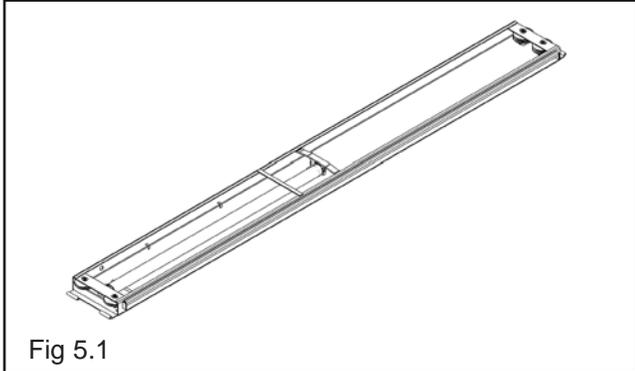


3. The Columns and Cross Tubes will now be in position and spaced properly for the Runways. Be very careful not to disturb the Columns and Cross Tubes at this time as they may tip over causing personal injury or harm.

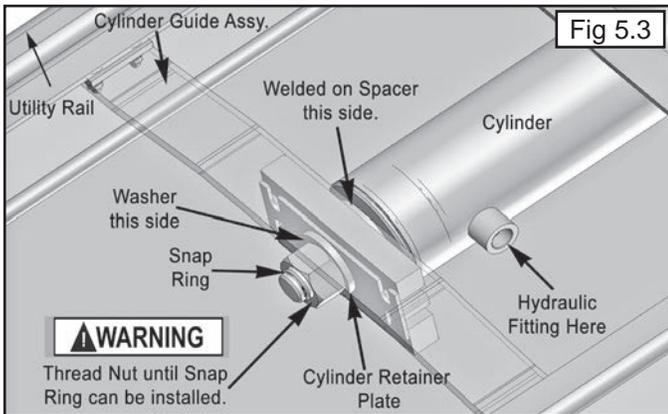
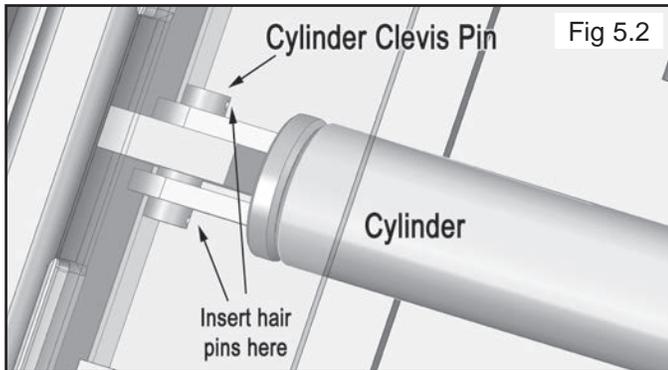
STEP 5

(Powerside Runway Installation)

1. Locate the Powerside Runway easily identified by the Cylinder and Sheave roller mounting structures welded on the underside. The Powerside Runway will be positioned on the side of the lift where the Power Unit is installed. (See Fig. 5.1)



2. Install Cylinder and Cable Block as shown. (See Fig. 5.2-5.3)

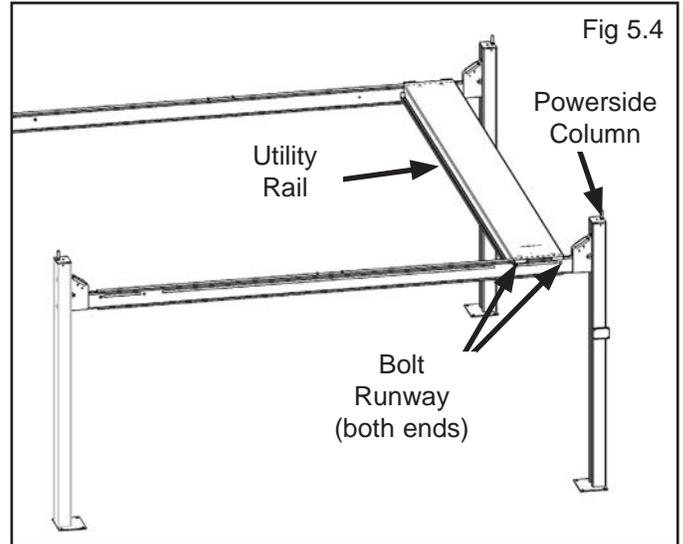


NOTE:

Thread Cylinder Shaft Nut on to the Shaft just enough so that the Snap Ring can be installed on the Cylinder Shaft.

3. Remove any pre-installed Cable Sheaves from the Powerside Runway making sure to pay attention to the order in which they are removed. This will help at the time of re-installation. (See Page 16)

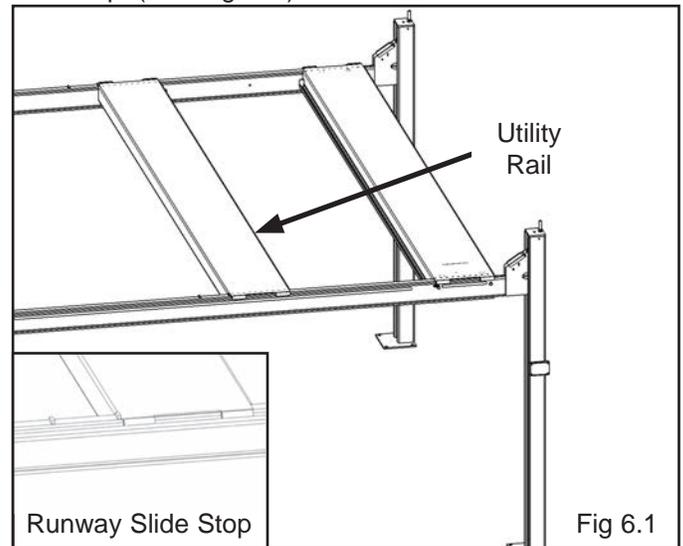
4. Position the Powerside Runway on top of the Cross Tubes with the utility rail towards the center. Align the holes in the Runway with the holes on both ends of the Cross Tubes and bolt together using four M12 x 1.75 x 90 Hex Head Bolts and Washers. (See Fig. 5.4)



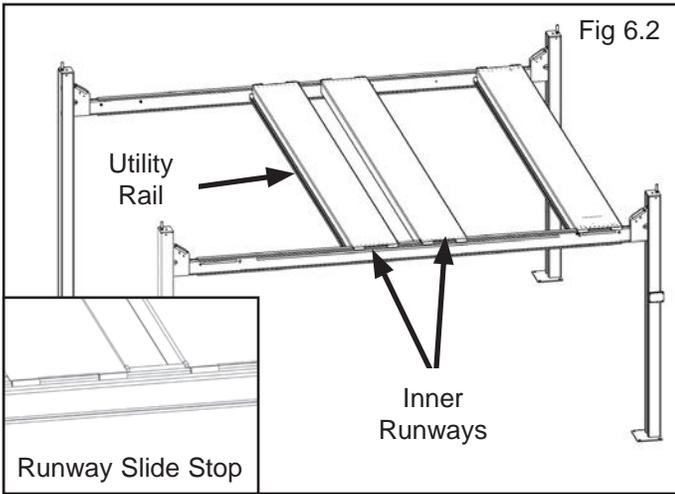
STEP 6

(Offside and Inner Runway Installation)

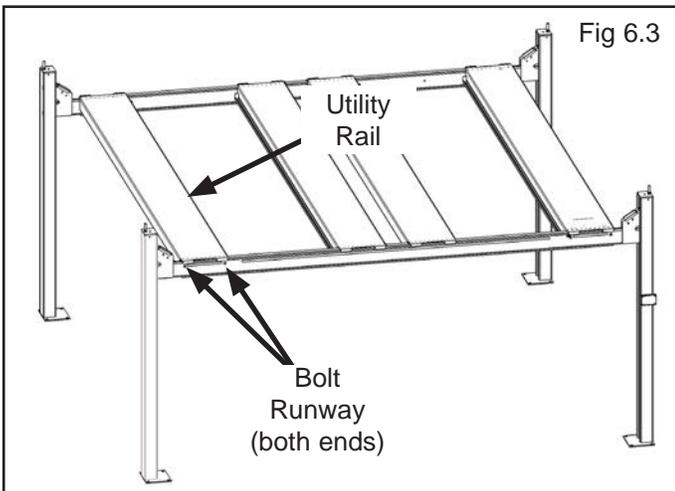
1. Position one Inner Runway on top of the Cross Tubes with the utility rail facing the Powerside Runway inside. Make sure the Runway is placed outside of the Runway Slide Stop. (See Fig. 6.1)



2. Place the other Inner Runway on top of the Crosstubes. Ensure that the Utility Rails is facing toward the Offside of the lift. Make sure the Runway is placed outside of the Runway Slide Stop. (See Fig. 6.2)



3. Position the Offside Runway on top of the Cross Tubes with the utility rail towards the center. Align the holes in the Runway with the holes on both ends of the Cross Tubes and bolt together. Bolt down the Offside Runway using the same procedure as for the Powerside Runway. (See Fig 6.3)



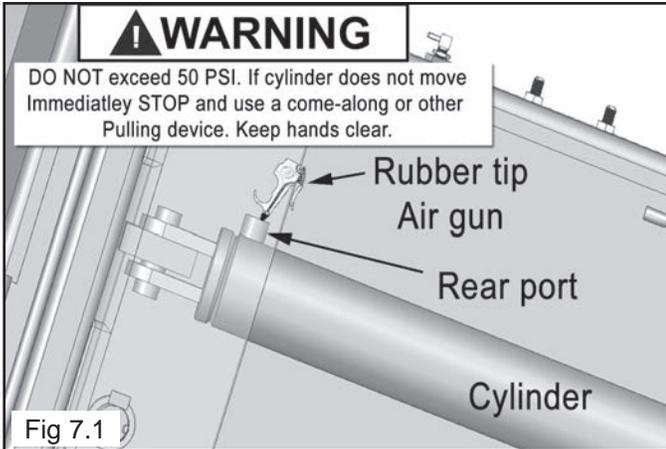
DANGER!
 DO NOT PROCEED with Cable installation or go near the lift work area unless visual confirmation is made of ALL Safety Locks. ALL locks MUST be engaged before proceeding. Failure to comply with these instructions may result in severe personal injury or death. (See page 11)

STEP 7

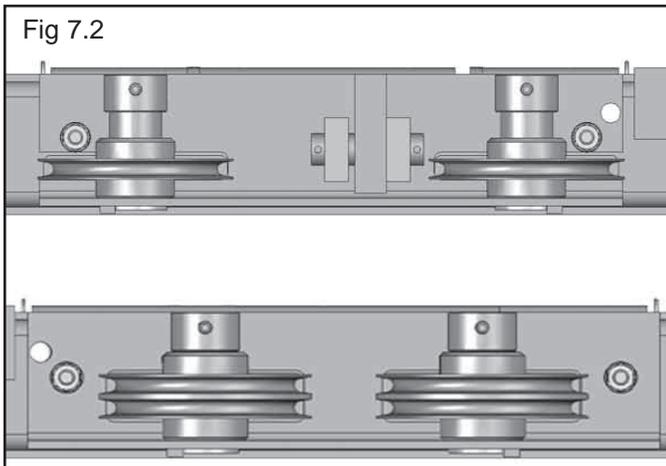
(Cable / Sheave Installation)

1. Inspect Cables to insure proper lengths. All Cables should have ID tags showing proper Cable lengths.
2. In order to install the Cables it is necessary to first extend the Hydraulic Cylinder. Remove both Cylinder port plugs then use an air gun or come-along to extend the Cylinder.

IMPORTANT! - Be careful not to damage the chrome rod during this step. (See Fig. 7.1)



3. You must reinstall the Sheaves and Pins in the same order as they are removed. (See Fig. 7.2)



! DANGER

DANGER!
DO NOT PROCEED unless visual confirmation is made of ALL Safety Locks. ALL locks MUST be engaged before proceeding. Failure to comply with these instructions may result in severe personal injury or death. (See page 11.)

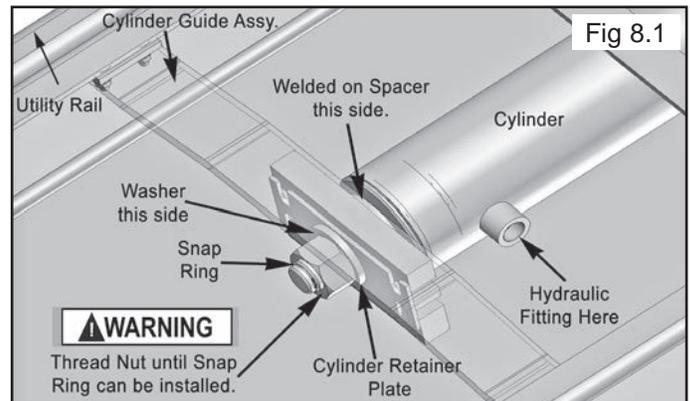
! DANGER

DANGER!
Failure to route Lifting Cables as described may lead to serious personal injury and/or death to operator or bystander and/or may cause damage to property.

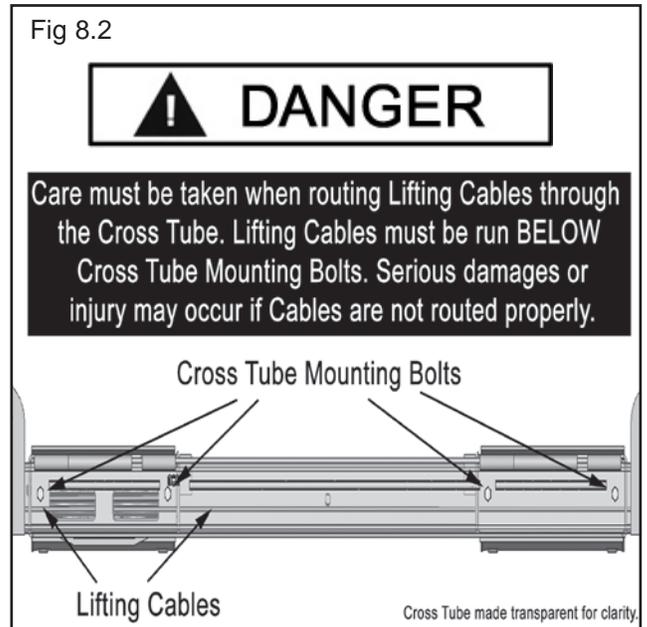
STEP 8

(Cable Installation)

1. Make sure the Cylinder Flange Plate is installed with the guide assembly facing down and the Cylinder Retainer plate on the outside of the guide. Lug ends of Cables start at Cylinder. (See Fig. 8.1)



2. Route the threaded Cable ends through the ends of each Cross Tube. Care must be taken when routing the Lifting Cables to ensure they are routed **below** the Cross Tube Mounting Bolts. (See Fig 8.2)

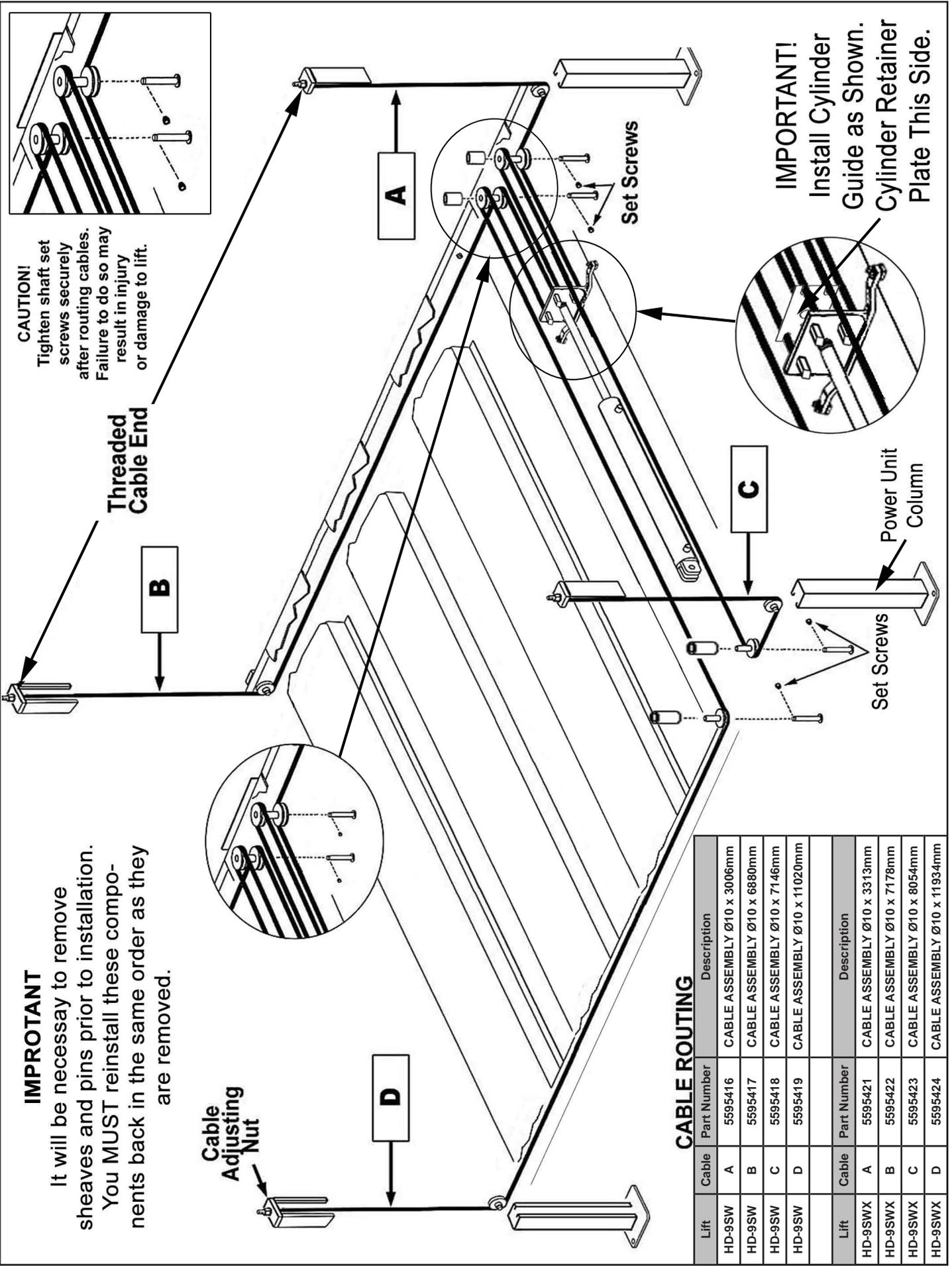


Route Cables over the Slack Safety Sheaves then to the top of each Column. Secure using the M18 Hex Head Nuts and Flat Washers.

IMPROTANT

It will be necessary to remove sheaves and pins prior to installation. You **MUST** reinstall these components back in the same order as they are removed.

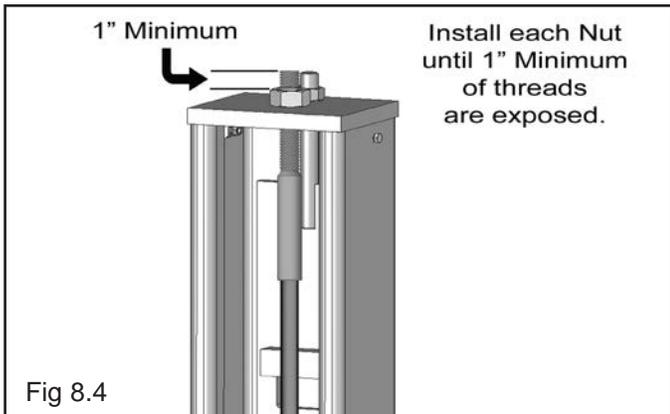
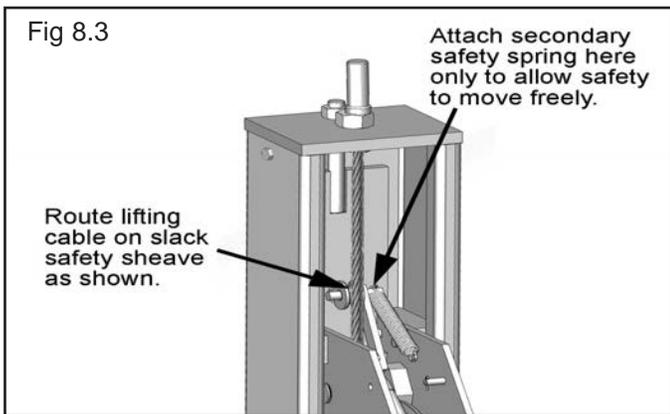
CAUTION!
Tighten shaft set screws securely after routing cables. Failure to do so may result in injury or damage to lift.



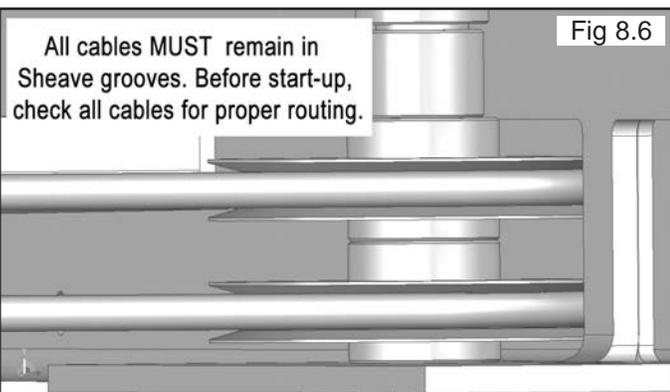
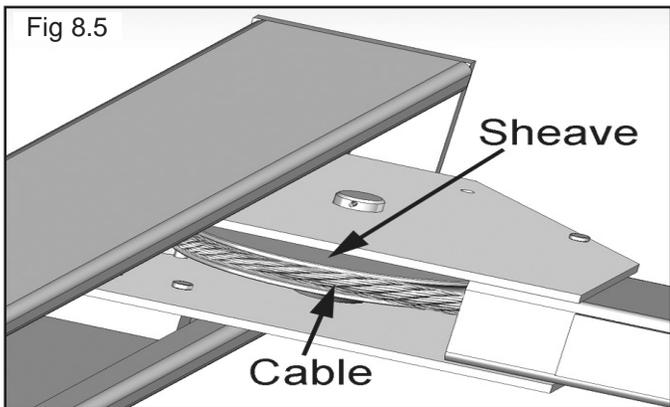
CABLE ROUTING

Lift	Cable	Part Number	Description
HD-9SW	A	5595416	CABLE ASSEMBLY Ø10 x 3006mm
HD-9SW	B	5595417	CABLE ASSEMBLY Ø10 x 6880mm
HD-9SW	C	5595418	CABLE ASSEMBLY Ø10 x 7146mm
HD-9SW	D	5595419	CABLE ASSEMBLY Ø10 x 11020mm
Lift	Cable	Part Number	Description
HD-9SWX	A	5595421	CABLE ASSEMBLY Ø10 x 3313mm
HD-9SWX	B	5595422	CABLE ASSEMBLY Ø10 x 7178mm
HD-9SWX	C	5595423	CABLE ASSEMBLY Ø10 x 8054mm
HD-9SWX	D	5595424	CABLE ASSEMBLY Ø10 x 11934mm

3. Tighten each Nut until there is at least one inch of threads protruding through the top of the nut. The Cables will remain loose until start up and final Cable adjustments are made. (See Fig. 8.3 - 8.4)



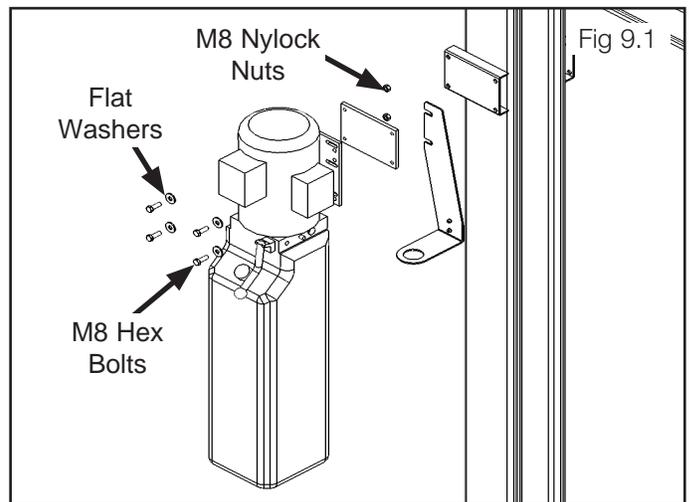
3. After routing the Cables double-check to make sure all are properly positioned and remain within the grooves of ALL Sheaves. (See Fig. 8.5 - 8.6)



STEP 9

(Power Unit Installation)

1. Mount the Power Unit to the Mounting Bracket using the M8 Hex Head Bolts and Nylock Nuts, then fill the reservoir with 12 quarts of 10-WT hydraulic oil or Dexron automatic transmission fluid. (See Fig. 9.1)



DANGER !
ALL WIRING MUST BE PERFORMED BY A LICENSED ELECTRICIAN.



DANGER!
DO NOT PERFORM ANY MAINTENANCE OR INSTALLATION OF ANY COMPONENTS WITH OUT FIRST ENSURING THAT ELECTRICAL POWER HAS BEEN DISCONNECTED AT THE SOURCE OR PANEL AND CANNOT BE RE-ENERGIZED UNTIL ALL MAINTENANCE AND/OR INSTALLATION PROCEDURES ARE COMPLETED.

The standard Power Unit for your lift is 220 volt, 60HZ, single phase. All wiring must be performed by a certified electrician only.
SEE WIRING INSTRUCTIONS AFFIXED TO MOTOR FOR PROPER WIRING INSTRUCTIONS.



WARNING !

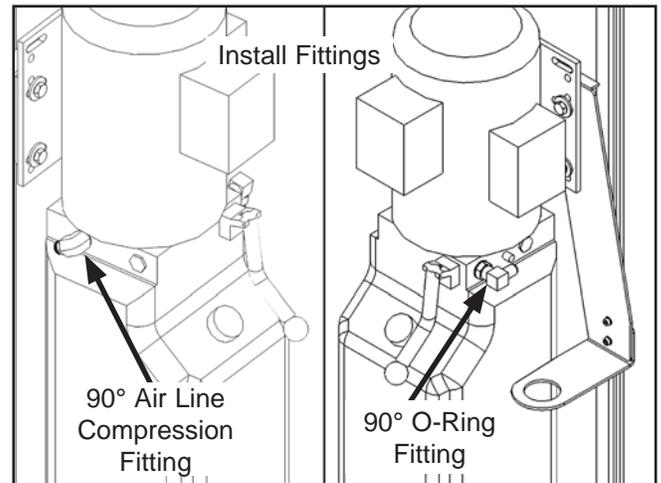
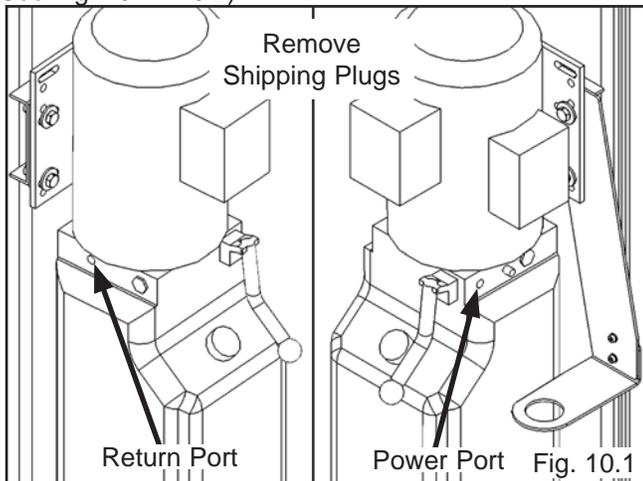
DO NOT run Power Unit with no oil. Damage to pump can occur.
The Power Unit must be kept dry. Damage to Power Unit caused by water or other liquids such as detergents, acid etc., is not covered under warranty.
Operate lift only between temperatures of 41 ° - 104° F.

Improper electrical hook-up can damage motor and will not be covered under warranty.
Motor can not run on 50HZ without a physical change in motor.
Use a separate breaker for each Power Unit.
Protect each circuit with time delay fuse or circuit breaker.
For 208-230 volt, single phase, use a 25 amp fuse.
For 208-230 volt, three phase, use a 20 amp fuse.
For 380-440 volt, three phase, use a 15 amp fuse.

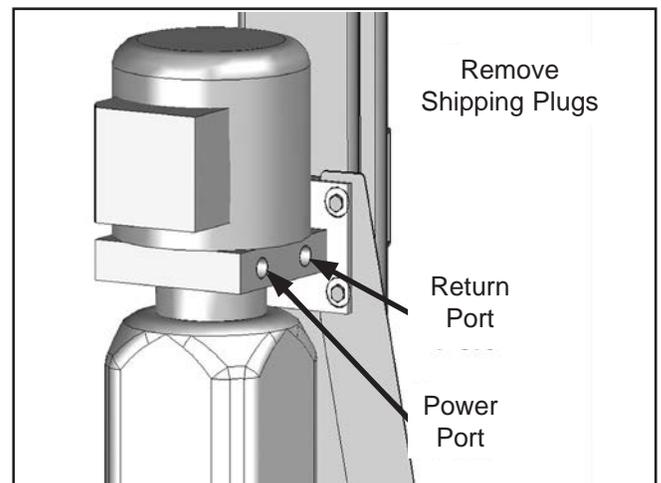
STEP 10

(Routing Hydraulic Hoses)

1. Install the 90-degree Hydraulic Fitting to the POWER PORT and the 90° Air Line Compression Fitting to the RETURN PORT of the Power Unit and connect the Hoses as described below. It will be necessary to remove the shipping plugs from both ports prior to installing the Fittings. (See Fig. 10.1 - 10.2)

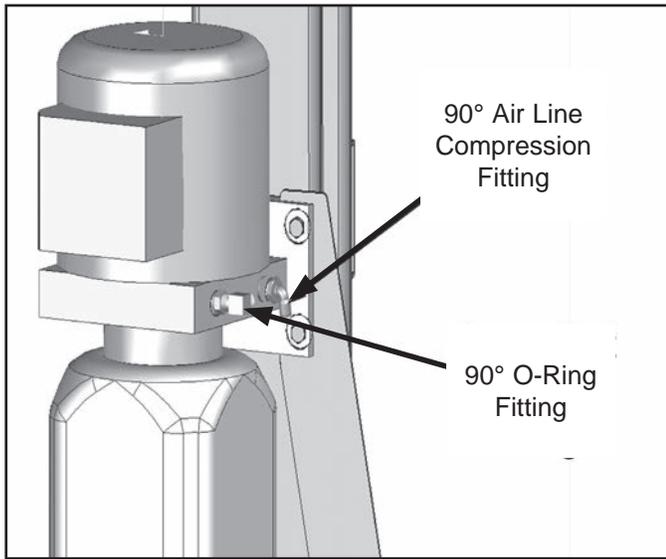


NOTE: Return Port may be on the same side as the Power Port on some models.



NOTE:

Check the Power Unit to determine proper connection ports for Power and Return lines. It will be necessary to remove shipping plugs from both ports prior to installing Fittings.



2. Remove the captive nut on the Compression Fitting. Insert the Plastic Air line through the alignment sleeve and into the end of the fitting until it bottoms out. Then tighten the nut on the fitting. (See Fig 10.3)

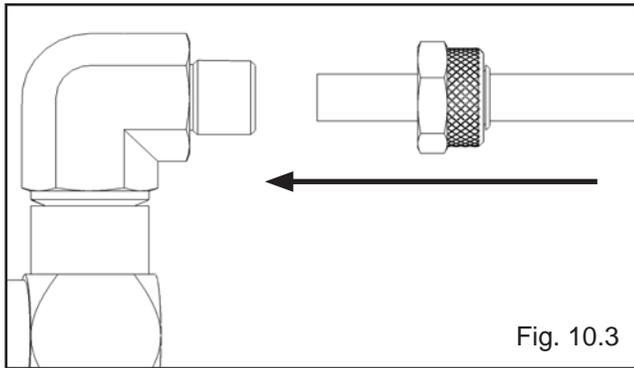


Fig. 10.3

3. Install the 90-degree Hydraulic Fitting in the port at the ram end of the Cylinder. On the pipe thread side of the Fitting it is recommended to use Teflon Tape or pipe sealer. **DO NOT USE TEFLON TAPE on the JIC flared end.** (See Fig. 10.4)

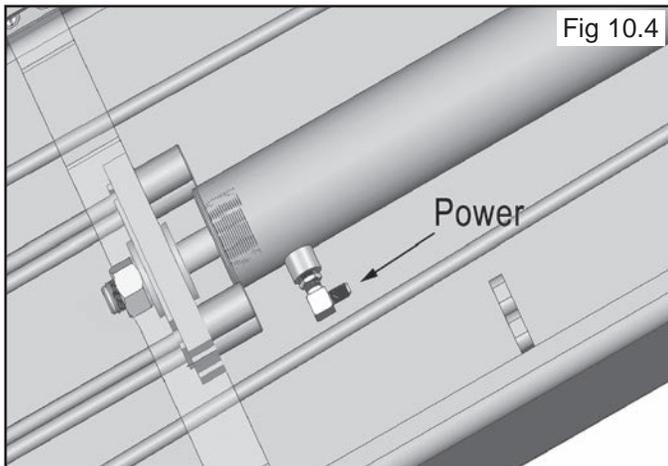


Fig 10.4

4. Install the 90-degree Air Line Compression Fitting in the port at the base, pinned end of the Cylinder. On the pipe thread side of the Fitting, it is recommended to use Teflon Tape or pipe sealer. (See Fig. 10.5)

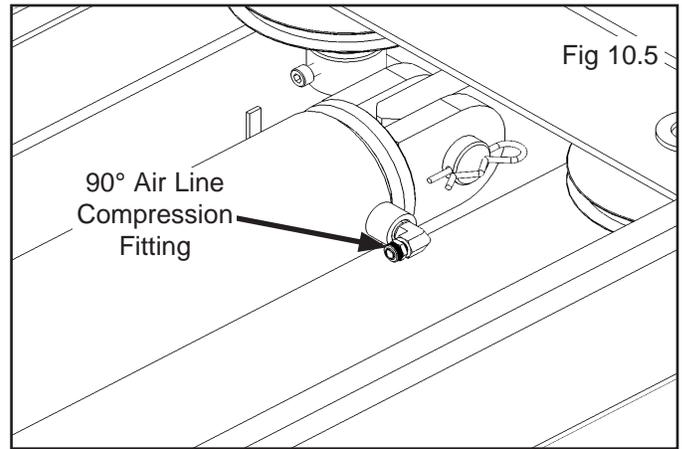


Fig 10.5

5. Route both the Power Unit Hydraulic Hose and TWO (2) lengths of Air Line through the Flex Hose. (See Fig. 10.6)

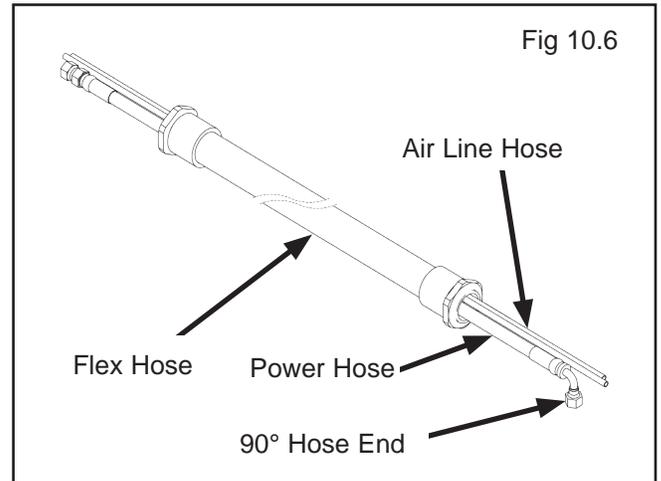


Fig 10.6

6. **Install the end of Flex Hose with the Straight Fitting on the Hydraulic Hose into the hole in the Powerside Runway adjacent to the Power Unit. Install the end of the Flex Hose with the 90° Fitting on the Hydraulic Hose in the Flex Hose Bracket Assy. Tighten the plastic nuts securely.** (See Fig 10.7)

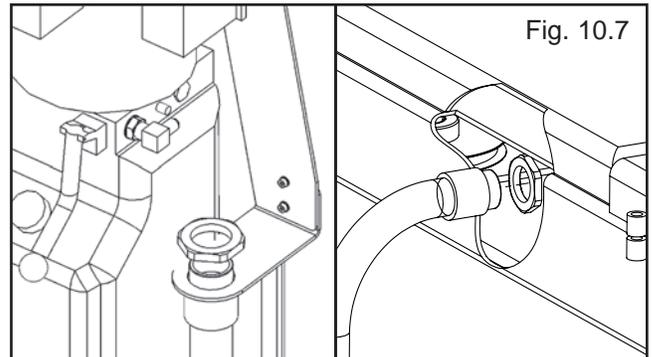
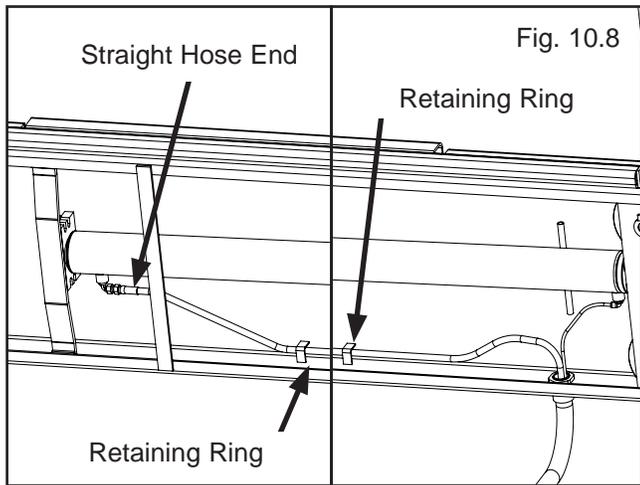
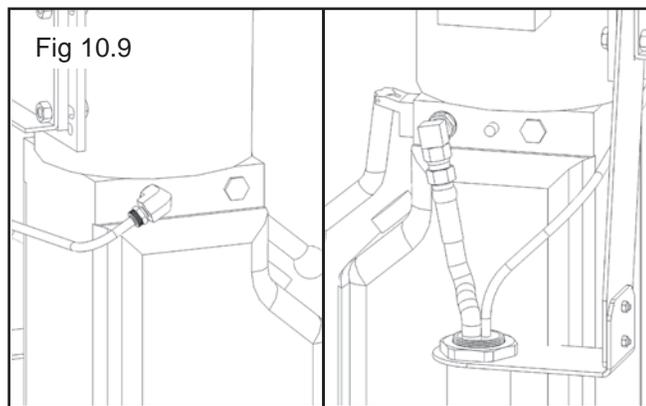


Fig. 10.7

7. Connect the hydraulic hose and air line as shown below making sure the hydraulic hose passes through the retaining rings. **MAKE SURE HOSES ARE KEPT CLEAR OF CABLES.** There will be one air line hose left unconnected in this step. This air line will be used to activate the pneumatic safety locks in the next step. See page 19 for Compression Fitting instructions. (See Fig. 10.8)

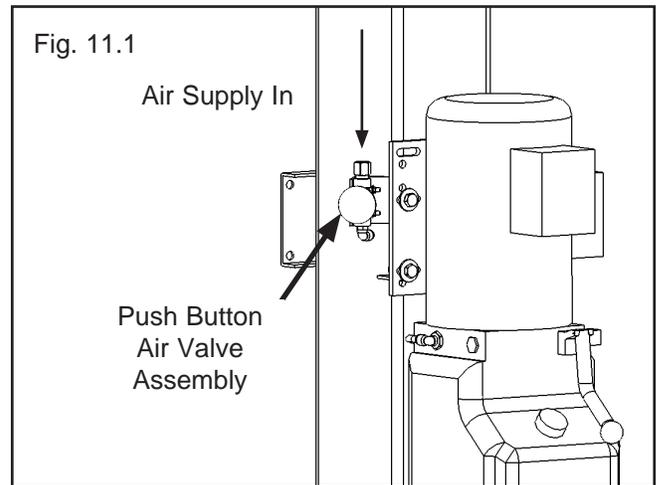


8. Connect the straight end of the Power Unit Hydraulic Line to the 90° Power Unit Fitting. Connect the Return Air Line to the 90° Air Fitting. There will be one air line hose left unconnected at this time. This air line hose will be used to activate the pneumatic safety locks on the next page. (See Fig. 10.9)

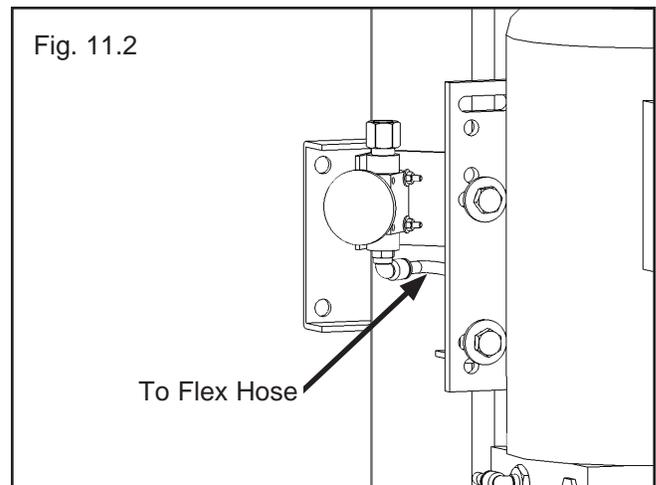


STEP 11 (Routing Air Lines)

1. Mount the Push Button Air Valve Assembly on to the power unit mounting bracket. The Push Button Air Valve should be positioned away from the Power Side Ramp on the “out” side of the lift for operator safety. (See Fig 11.1)



2. Route the air line that was left unconnected in Step 10 to the 90° Air Line Compression Fitting of the Push Button Air Valve Assembly. (See Fig 11.2)



3. Once the air line has been connected with the Push Button Air Valve, cut the air lines to length by following the Safety Air Line Routing diagram located on Page 25 and connect female branch “tee” fittings where needed.

NOTE:
MAKE SURE THE PUSH BUTTON AIR VALVE PORT MARKED “INLET” IS FACING TOWARDS THE SOURCE OF COMPRESSED AIR.

NOTE:
A FILTER/REGULATOR/LUBRICATOR MUST BE INSTALLED ON AIR SUPPLY AT LIFT. FAILURE TO DO SO WILL VOID THE WARRANTY.

SAFETY AIR LINE ROUTING

NOTE:

CUT THE PROVIDED 1/4" AIR LINE TUBING WITH A SHARP BLADE TO LENGTHS AS REQUIRED. TUBING MUST BE CUT SQUARE WITH ALL PLASTIC BURRS REMOVED.

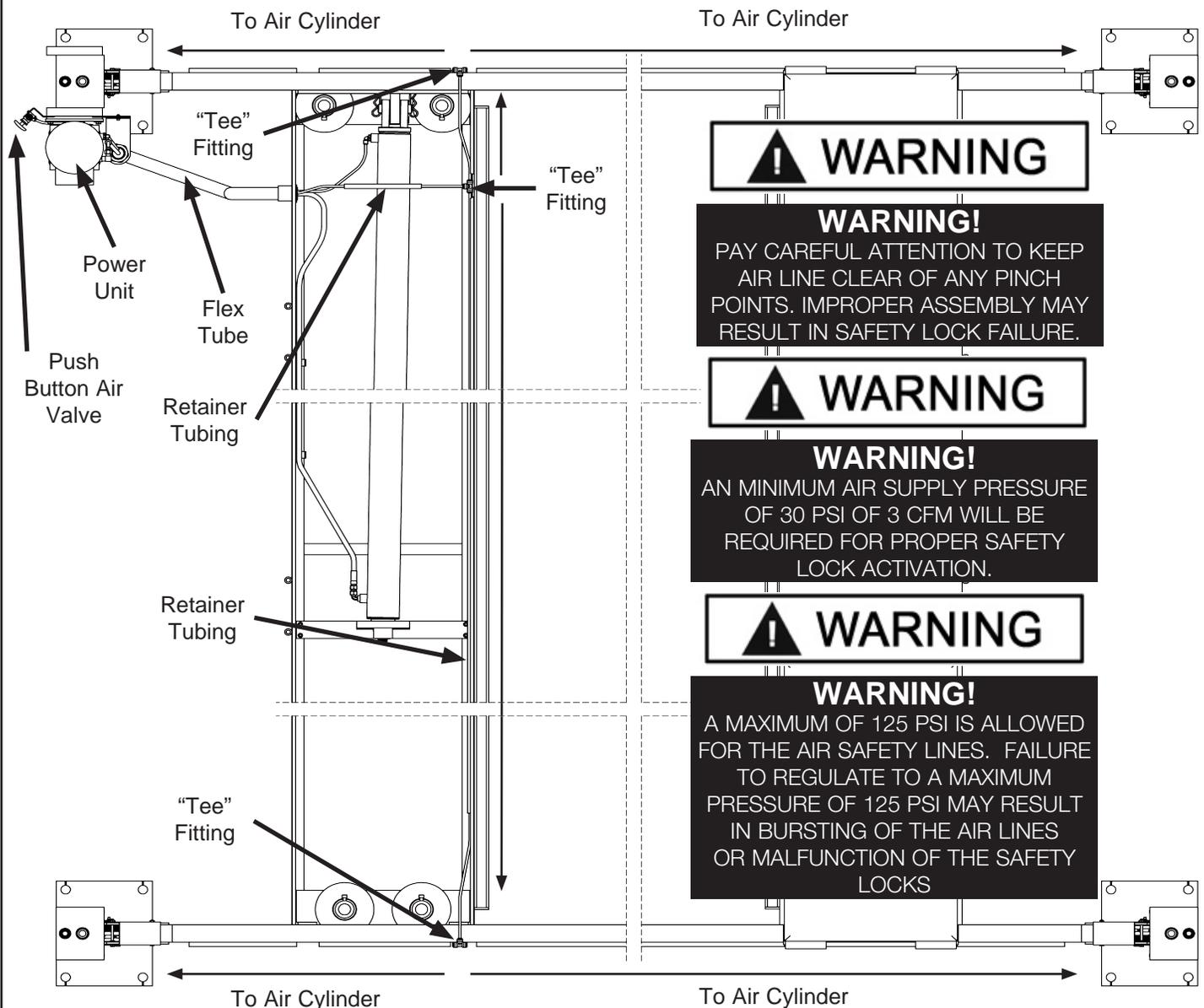
AIR TUBING ASSEMBLY:

SEE PAGE 19 FOR ASSEMBLY OF AIR LINE TUBING INTO FITTING.

CAUTION:

REMOVING THE AIR TUBING FROM THE COMPRESSION FITTINGS WILL CAUSE DAMAGE TO THE TUBING ITSELF. USE OF A DAMAGED AIR LINE MAY RESULT IN SAFETY LOCK FAILURE.

NOTE: FEED AIR LINE TUBING THROUGH THE RETAINER TUBING ON THE INSIDE OF THE POWER SIDE RAMP



WARNING

WARNING!

PAY CAREFUL ATTENTION TO KEEP AIR LINE CLEAR OF ANY PINCH POINTS. IMPROPER ASSEMBLY MAY RESULT IN SAFETY LOCK FAILURE.

WARNING

WARNING!

AN MINIMUM AIR SUPPLY PRESSURE OF 30 PSI OF 3 CFM WILL BE REQUIRED FOR PROPER SAFETY LOCK ACTIVATION.

WARNING

WARNING!

A MAXIMUM OF 125 PSI IS ALLOWED FOR THE AIR SAFETY LINES. FAILURE TO REGULATE TO A MAXIMUM PRESSURE OF 125 PSI MAY RESULT IN BURSTING OF THE AIR LINES OR MALFUNCTION OF THE SAFETY LOCKS

NOTE: FEED AIR LINE TUBING THROUGH THE RETAINER TUBING ON THE OUTSIDE OF THE CROSSTUBES



DANGER!

DO NOT PERFORM ANY MAINTENANCE OR INSTALLATION OF ANY COMPONENTS WITH OUT FIRST ENSURING THAT ELECTRICAL POWER HAS BEEN DISCONNECTED AT THE SOURCE OR PANEL AND CANNOT BE RE-ENERGIZED UNTIL ALL MAINTENANCE AND/OR INSTALLATION PROCEDURES ARE COMPLETED.



IMPORTANT POWER-UNIT INSTALLATION NOTES

- DO NOT run power unit with no oil. Damage to pump can occur.
- The power unit must be kept dry. Damage to power unit caused by water or other liquids such as detergents, acid etc., is not covered under warranty.
- Improper electrical hook-up can damage motor and will not be covered under warranty.
- Motor can not run on 50HZ without a physical change in motor.
- Use a separate breaker for each power unit.
- Protect each circuit with time delay fuse or circuit breaker.
- For 208-230 volt, single phase, use a 25 amp fuse.
- For 208-230 volt, three phase, use a 20 amp fuse.
- For 380-440 volt, three phase, use a 15 amp fuse.

Installation and adjustment.

DO NOT attempt to raise vehicle until a thorough operation check has been completed.

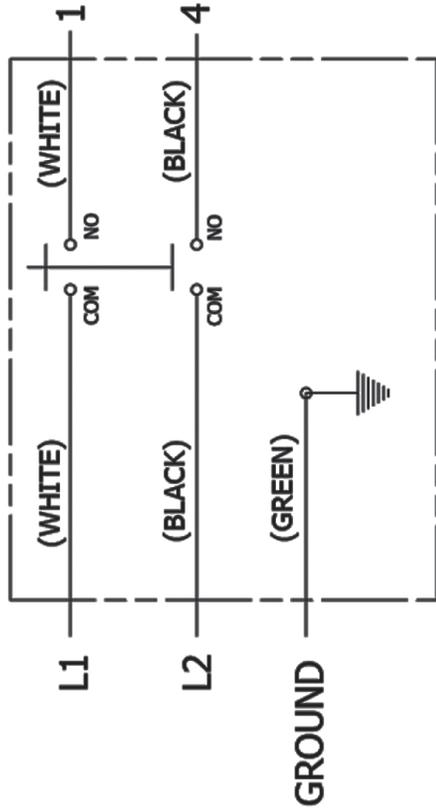
All wiring must be performed by a certified electrician only.

Identify which Power Unit the lift was shipped with by looking on the data tag affixed to the Power Unit motor head. if the model number begins with the letter "S" then use the "S" wiring diagrams. If the model number begins with the letter "E" or "F" then use the "E" or "F" wiring diagrams.

**SEE WIRING INSTRUCTIONS AFFIXED TO
MOTOR FOR PROPER WIRING INSTRUCTIONS.**

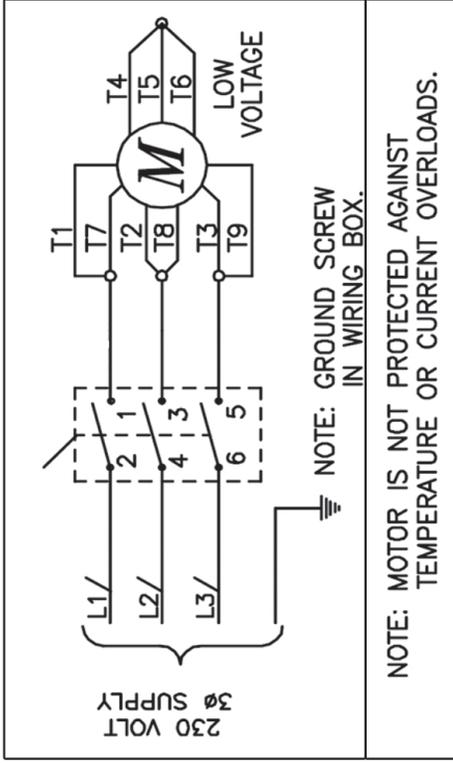
“S” MODEL

Single Phase 220V



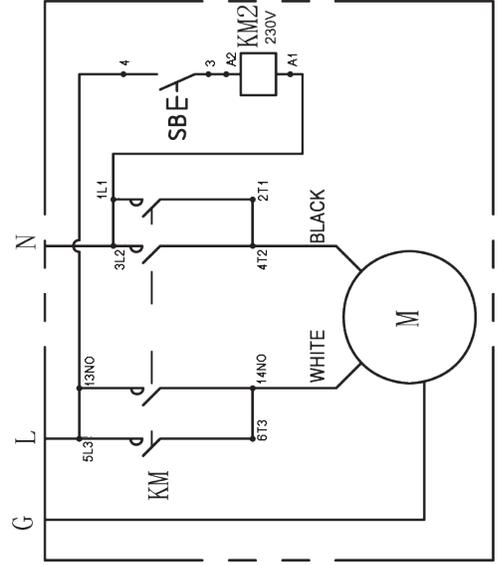
“S” MODEL

Three Phase 220V



“E” or “F” MODEL

Single Phase 220V



STEP 12

(Power Unit Hook Up)

1. Have a certified electrician run the power supply to motor. Refer to the data plate found on the motor for proper power supply and wire size.



RISK OF EXPLOSION!

This equipment has internal arcing or parts that may spark and should not be exposed to flammable vapors. Motor should not be located in a recessed area or below floor level. NEVER expose motor to rain or other damp environments. DAMAGE TO MOTOR CAUSED BY WATER IS NOT COVERED UNDER WARRANTY.

IMPORTANT NOTE:

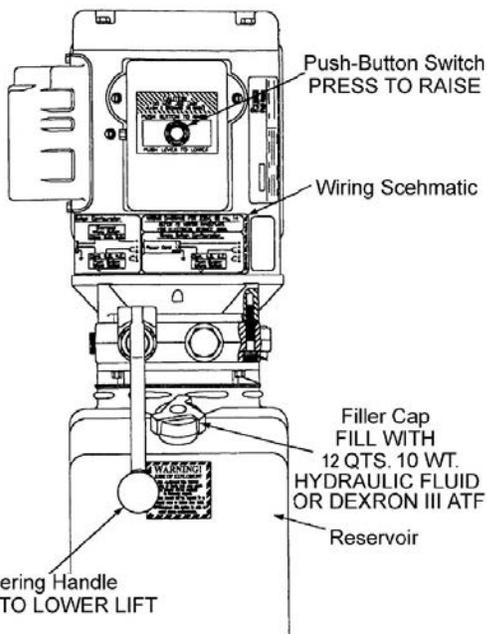
CAUTION Never operate the motor on line voltage less than 208V. Motor damage may occur which is not covered under warranty. Have a certified electrician run appropriate power supply to motor. Size wire for 25amp circuit. See Motor Operating Data Table.

IMPORTANT: Use separate circuit for each power unit. Protect each circuit with time delay fuse or circuit breaker. For single phase 208-230V, use 25 amp fuse.

Three phase 208-240V, use 25 amp fuse. For three phase 400V and above, use 15 amp fuse. All wiring must comply with NEC and all local electrical codes.

Fig. 12.1

POWER UNIT



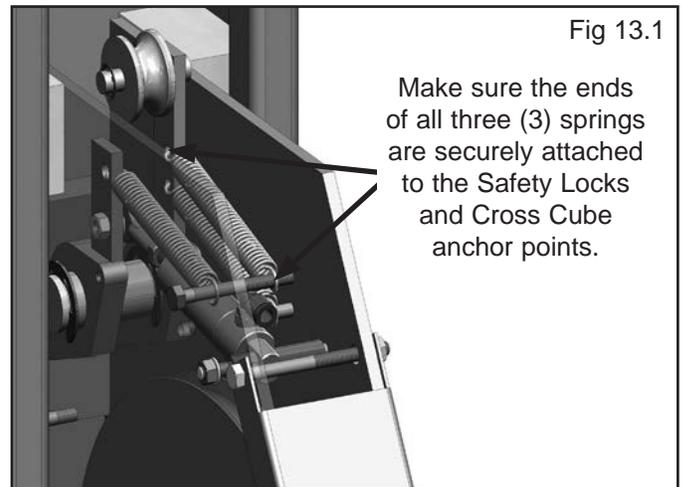
STEP 13

(Inspecting The Slack Safety Springs)



The following steps involve the SLACK CABLE SAFETY DEVICE and MAIN SAFETY. Failure to follow these steps could result in serious injury or death in the event of cable failure.

1. Inspect the ends of the ALL SAFETY LOCK SPRINGS as shown. Make sure the spring ends are secure at both ends. **DO NOT ATTEMPT TO RAISE THE LIFT UNTIL THE SLACK SAFETY SPRINGS ARE ATTACHED AND THE ROLLERS ARE PULLED CLEAR FROM THE LADDER.** (See Fig. 13.1)



Make sure the ends of all three (3) springs are securely attached to the Safety Locks and Cross Cube anchor points.

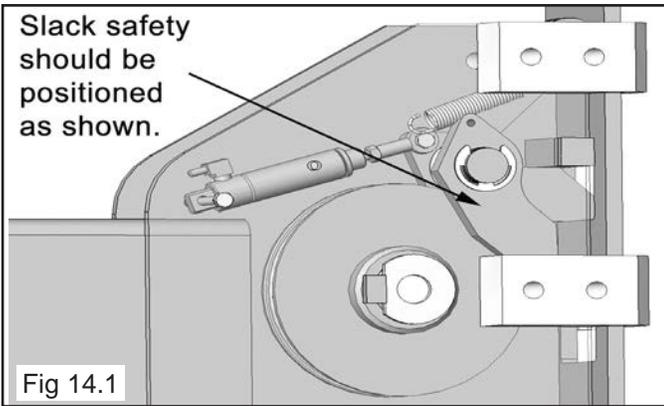
2. Repeat this step for each corner of the lift.

STEP 14

(Lift Start Up / Final Adjustments)

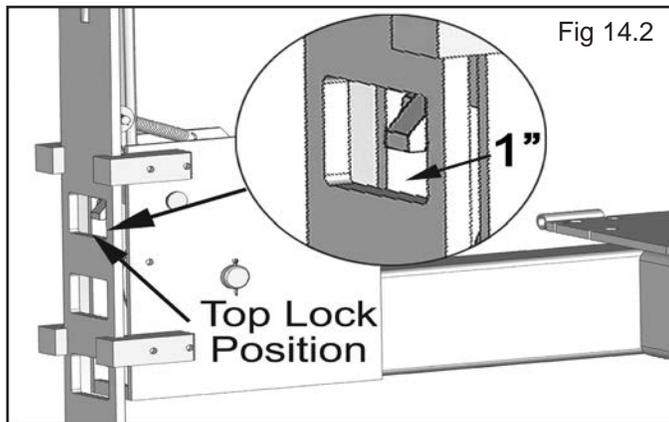
1. Make sure the Power Unit reservoir is full with 12 quarts of 10-WT hydraulic oil or Dexron automatic transmission fluid.
2. Spray the inside of the Columns where the Slide Blocks glide with a light lubricant or WD-40.
3. Test the Power Unit by pressing the push-button switch. If the motor sounds like it is operating properly, raise the lift and check all Hose connections for leaks. If the motor gets hot or sounds peculiar, stop and check all electrical connections.
4. Before proceeding, double-check to make sure all cables are properly positioned within the grooves of ALL Sheaves. Make sure all Cable Sheave retaining Pins and/or Clips are secure.

5. Check to make sure that all slack safety locks are cleared and free. (See Fig. 14.1)



6. Continue pressing the raise button until the Cables get taught and the lift starts to move.

7. Raise lift until the cylinder bottoms out and the lift stops. Adjust each cable so that each safety lock rests at one inch above the top safety lock position. It may be necessary to tighten or loosen each Cable to reach the proper height. The Cable Nuts **MUST** be tightened until there is at least one inch of threads protruding through the nut. (See Fig. 14.2)



All cable nuts **MUST** be tightened on each end until there is at least one inch of threads protruding through the nut. Failure to do so could result in serious injury or death.

NOTE:

There will be initial stretching of the cables in the beginning and/or with increased loads. Adjust the cables as outlined above a week after first use, then every three to six months thereafter depending on usage and/or to compensate for stretch.

8. After connecting the air supply, press the PUSH BUTTON AIR VALVE and check that all safety locks are functioning properly. Lower the lift by pressing the push button air valve and power unit lowering valve simultaneously.



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

9. Check all **MAIN SAFETY LOCKS** to make sure they move freely and spring back to the lock position when released. Lubricate all **SAFETY PIVOT** points with WD-40 or equal.

10. Run the lift up and down a few times to insure that the Locks are engaging uniformly and that the safety release mechanisms are functioning. Re-adjust if necessary.

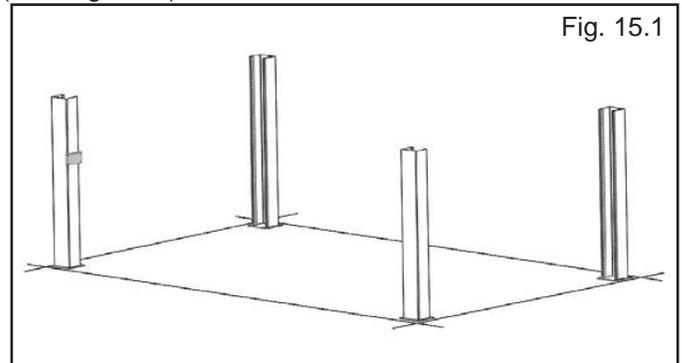
STEP 15

(Anchoring The Columns)

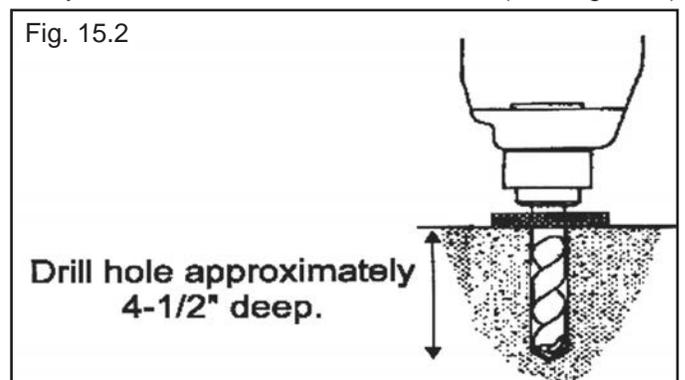
IMPORTANT NOTE:

BendPak lifts are supplied with installation instructions and concrete fasteners meeting the criteria as prescribed by the American National Standard "Automotive Lifts - Safety Requirements for Construction, Testing, and Validation" ANSI/ALI ALCTV-2011. Lift buyers are responsible for any special regional structural and/or seismic anchoring requirements specified by any other agencies and/or codes such as the Uniform Building Code (UBC) and/or International Building Code (IBC).

1. Before proceeding, double check the measurements and make certain that the bases of each Column are square and aligned with the chalk line. Raise the lift up and down and make sure it operates properly at the locations prescribed by the markings on the floor. (See Fig. 15.1)



2. Using the Base plate on each Column as a guide, drill each anchor hole approximately 4-1/2" deep using a rotary hammer drill and 3/4" concrete bit. (See Fig. 15.2)

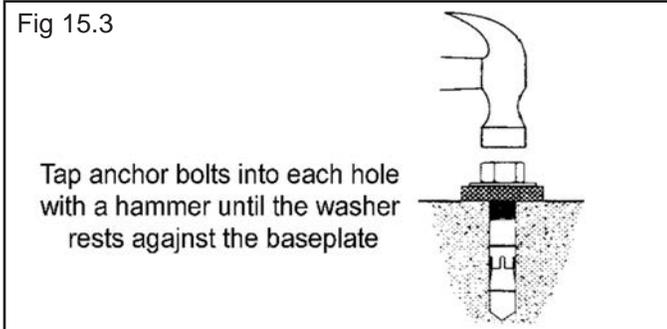


3. After drilling, remove dust thoroughly from each hole using compressed air and/or bristle brush. Make certain that the Columns remain aligned with the chalk line.

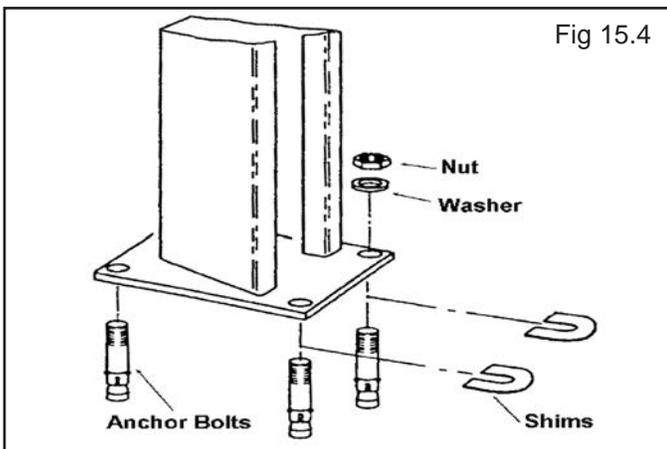
⚠ CAUTION

ALWAYS WEAR SAFETY GOGGLES.

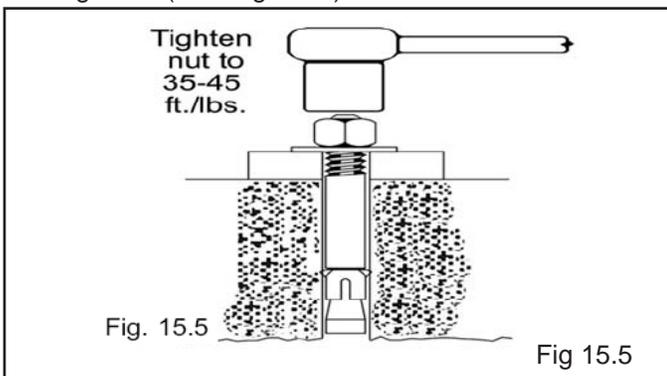
4. Assemble the Washers and Nuts on the anchors then tap each hole with a hammer until the washer rests against base plate. Be sure that if shimming is required, enough threads are left exposed. (See Fig. 15.3)



5. If shimming is required, insert the shims as necessary the base plate so that when the anchor bolts are tightened, the columns will be plumb. (See Fig. 15.4)



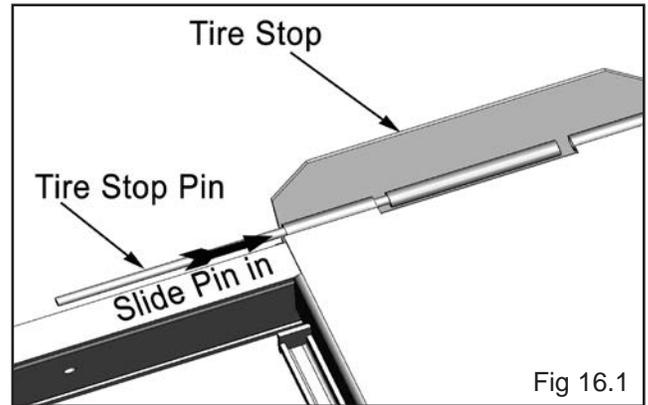
6. After any necessary shims are installed, tighten each nuts. **IMPORTANT** - If anchor bolts do not hold when torqued to required amount, concrete must be replaced. Saw cut and remove 24" x 24" square area each column base then re-pour with reinforced 2500 concrete to a depth of six inches minimum, keying new concrete under existing floor. (See Fig. 15.5)



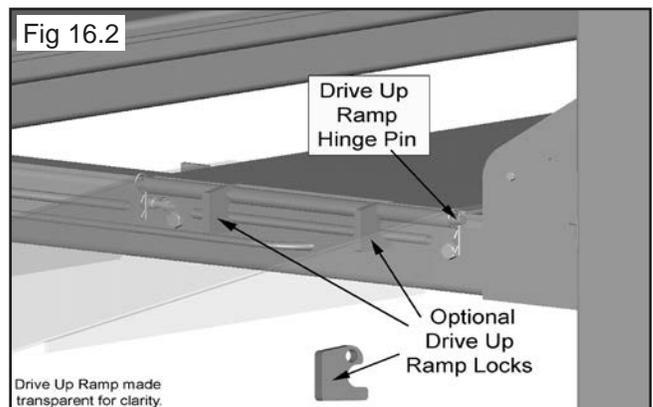
STEP 16

(Attaching the Approach Ramp /Tire Stops)

1. Install the Front Tire Stops at the forward side of the lift. Slide the Tire Stop Pin through the Ramp and the Tire Stop. (See Fig. 16.1)



2. Install the Approach Ramps on the entry side of the lift. (Install the 4 Optional Drive Up Ramp Locks, if desired to keep the Drive Up Ramps from Flipping down.) (See Fig. 16.2)



⚠ WARNING

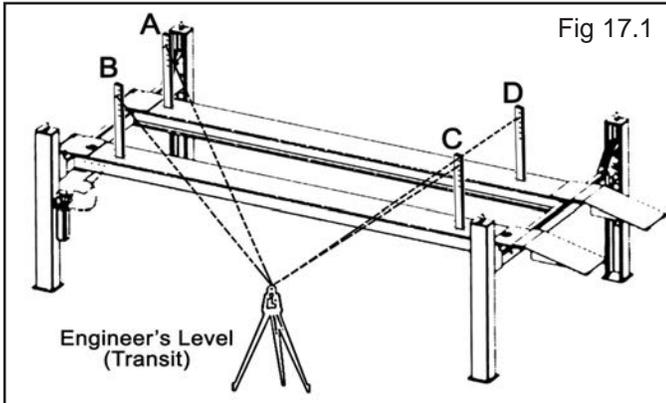
WARNING!
If the Drive Up Ramp Locks are used;
Wheels Chock must be used on the rear wheels.
(See Fig. 16.3)



STEP 17

(Leveling / Synchronizing)

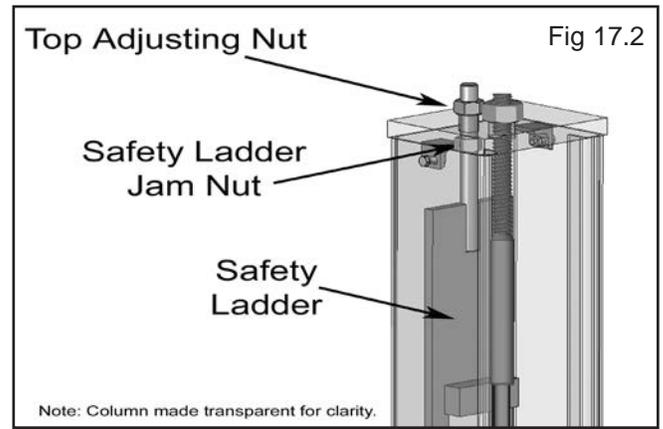
1. Using an engineer's automatic Level (transit), locate the Level, at a convenient location in the shop that allows an unobstructed view of all four corners of the runways.



2. Follow the Level manufacturer's instructions for proper setup of the Level. Be sure it is adjusted level in all directions.
3. Raise the lift approximately 30"- 40". Then lower the lift until all primary safeties are engaged in each column and the runways are completely resting on the primary safeties.
4. Place a Level target on the right/front corner of the runway. (See Fig. 17.1)
5. Beginning with "A" position, sight the level to the target and mark the number or the graduation on the inch scale of the target that aligns to the cross hairs of the Level. (See Fig. 17.1)

Note:
Use a pencil, marking pen or attach a paper clip onto the target scale at the cross hair reference.
6. Next, move the target and place it at point "B" on the runway. (See Fig. 17.1)
7. Rotate the Level and focus on the target scale.
8. Adjust the adjustment nut on the safety ladder bar at the top of the Column at "B" until the cross hairs of the Level align to reference mark on the target scale. (See Fig. 17.1)
9. Repeat steps locating the target assembly at points "C" and "D" and adjusting Safety Ladders at each corresponding Column until the reference mark on the target scale is on the cross hairs of the Level. The Runways are now level at all four points. (See Fig. 17.1)

10. To complete the leveling procedures, lock each Safety Ladder Jam nut tightly against bottom of Column Top Plate. (See Fig. 17.2)



11. Next, load vehicle onto the lift.
12. Raise the lift to full height. Listen and watch as the primary safeties engage the safety ladder. Synchronize by adjusting the cables so that all four latches click at same time. Make necessary adjustments to the cables allowing compensation for stretch.

Safety locks may not engage at exactly the same time when vehicles are being raised. They should be close.

Be sure that all four corners have passed the SAME Safety Ladder position before lowering lift on the safety locks. NEVER lower lift on different Safety Lock position or damage to the lift may result.

STEP 18

(Bleeding)

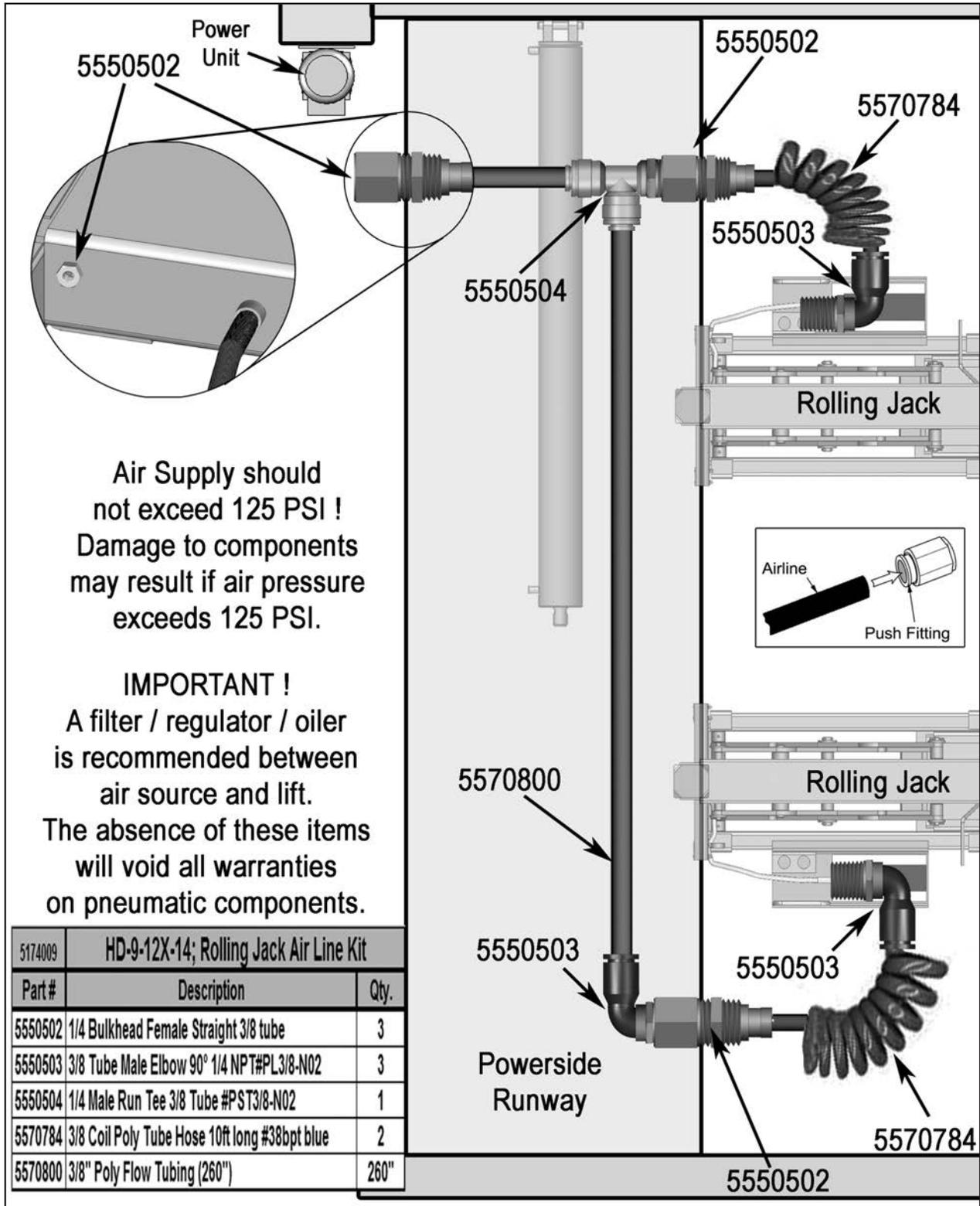
1. Lift must be fully lowered before changing or adding fluid.
2. Raise and lower lift six times. The Cylinder is self-bleeding. After bleeding system, fluid level in Power Unit reservoir may be down. Add more fluid if necessary to raise lift to full height. It is only necessary to add fluid to Raise lift to full height.
3. To pressure test, run lift to full rise and run motor for approximately 3-seconds after lift stops. This will place pressure on the hydraulic system. Stop and check all fittings and hose connections. Tighten or reseal if required.

OPTIONAL EQUIPMENT INSTALLATION

Rolling Jack maximum weight capacity for use with
HD-9 is 4,500 lb (2,041 kg) per unit.

HD-9-12X-14 Rolling Jack Air Line Kit Installation Part # 5174009

REV 01-06-09



Utility Air-Electric Workstation

Utility Station may be mounted on the vertical column of the lift or on a wall.

IMPORTANT: Check State or Local codes for any height requirements for the electrical outlets before mounting.

Adapter Plate Required for HD-9,12,14; HDS-14

To mount the Utility Station on a Lift Column, use the Box as a template, mark and drill 1 1/32" diameter holes. Use 5/16" diameter bolts and lock nuts to secure to the side of the lift.

IMPORTANT: The hole locations are critical to avoid interference with the carriage slide blocks.

For Wall mounting, mount in the same fashion, use appropriate hardware for either sheet rock or concrete.

IMPORTANT: All electrical wiring shall comply with all State and Local Codes.

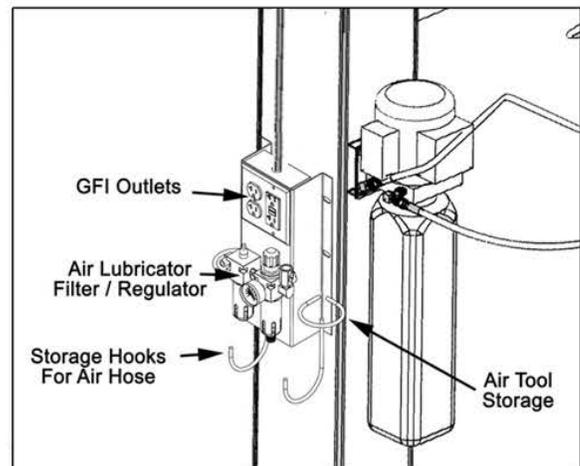
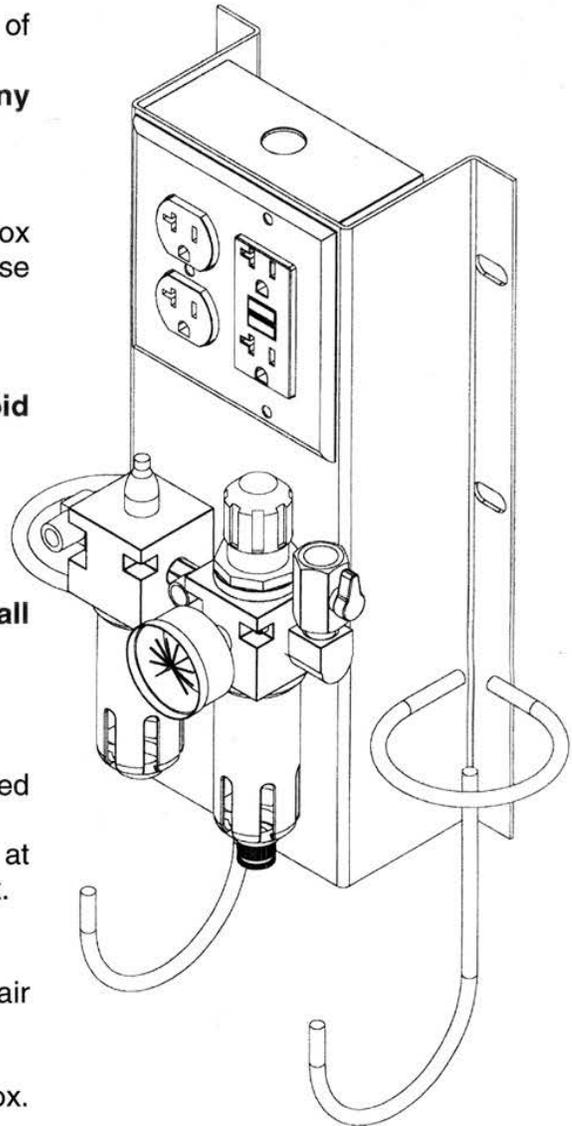
Connect electrical wiring to single phase, 60Hz 115 volt electrical supply using suitable conduit (not supplied). The duplex receptacle must be connected through the GFCI with the input line to the box connected to a circuit breaker or time delay fuse rated at 20 amps. Both receptacles must be grounded to the box.

Connect main air supply to 1/4" ball valve inlet on the Utility Station (Run 1/2" line from compressor or main air system to Utility Station.)

Install Quick Couplers to the 1/4" male fittings on the box. The air supply between the filter and the lubricator will be non-lubricated, used for tire inflation or blowing off. The air outlet on the left side will be lubricated for air tool use.

Regulator Instructions

- Regulate pressure by raising the knob, then turning clockwise to increase and counterclockwise to decrease. Push knob down to lock setting.
- Adjust the oil mist using the screwdriver slot located on top of the lubricator.
- To fill the lubricator, first depressurize the air system, remove the slotted screw plug in the body. Replace the screw before repressurizing.



Adapter Plate Required for HD-9,12,14; HDS-14

POST-INSTALLATION CHECK-OFF

- Columns properly shimmed and stable
- Anchor Bolts tightened
- Pivot / Sheave Pins properly attached
- Electric power supply confirmed
- Cables adjusted properly
- Safety Locks functioning properly
- Check for hydraulic leaks
- Oil level
- Lubrication of critical components
- Check for overhead obstructions
- All Screws, Bolts, and Pins securely fastened
- Surrounding area clean
- Operation, Maintenance and Safety Manuals on site.
- Perform an Operational Test with a typical vehicle

STEP 19

(Operation Instructions)

OWNER/EMPLOYER RESPONSIBILITIES

The Owner/Employer:

- Shall ensure that lift operators are qualified and that they are trained in the safe use and operation of the lift using the manufacturer's operating instructions; ALI/SM01-1, ALI Lifting it Right safety manual; ALI/ST-90 ALI Safety Tips card; ANSI/ALI ALOIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; ALI/WL Series, ALI Uniform Warning Label Decals/Placards; and in the case of frame engaging lifts, ALI/LP-GUIDE, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts.
- Shall establish procedures to periodically inspect the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and The Employer shall ensure that lift inspectors are qualified and that they are adequately trained in the inspection of the lift.
- Shall establish procedures to periodically maintain the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and The Employer shall ensure that lift maintenance personnel are qualified and that they are adequately trained in the maintenance of the lift.
- Shall maintain the periodic inspection and maintenance records recommended by the manufacturer or ANSI/ALI ALOIM-2000, American National Standard for Automotive

Lifts-Safety Requirements for Operation, Inspection and Maintenance.

- Shall display the lift manufacturer's operating instructions; ALI/SM 93-1, ALI Lifting It Right safety manual; ALI/ST-90 ALI Safety Tips card; ANSI/ALI AL-OIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and in the case of frame engaging lifts, ALI/LP-GUIDE, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts; in a conspicuous location in the lift area convenient to the operator.

- Shall provide necessary lockout/tagout means for energy sources per ANSI Z244.1-1982 (R1993), Safety Requirements for the Lockout/Tagout of Energy Sources, before beginning any lift repairs.

- Shall not modify the lift in any manner without the prior written consent of the manufacturer.

STEP 20



(Lift Operation Safety)



WARNING!

TO AVOID PERSONAL INJURY AND/OR PROPERTY DAMAGE, PERMIT ONLY TRAINED PERSONNEL TO OPERATE LIFT. AFTER REVIEWING THESE INSTRUCTIONS, PRACTICE USING LIFT CONTROLS BY RUNNING THE LIFT THROUGH A FEW UNLOADED CYCLES BEFORE LOADING VEHICLE ON LIFT. **NEVER** RAISE JUST ONE END, ONE CORNER, OR ONE SIDE OF VEHICLE.

- **DAILY** inspect your lift. Never operate if it malfunctions or if it has broken or damaged parts. Use only qualified lift service personnel and genuine BendPak parts to make repairs.
- **THOROUGHLY** train all employees in use and care of lift, using manufacturer's instructions and "Lifting It Right" and "Safety Tips" supplied with the lift.
- **NEVER** allow unauthorized or untrained persons to position vehicle or operate lift.
- **PROHIBIT** unauthorized persons from being in shop area while lift is in use.
- **DO NOT** permit anyone on lift or inside vehicle when it is either being raised or lowered.
- **ALWAYS** keep area around lift free of tools, debris, grease and oil.
- **NEVER** overload lift. Capacity of lift is shown on nameplate affixed to the lift.
- **DO NOT** stand in front of the vehicle while it is being positioned in lift bay.
- **DO NOT** block open or override self-closing lift controls; they are designed to return to the "Off" or Neutral position when released.
- **ALWAYS** remain clear of lift when raising or lowering vehicles.
- **ALWAYS** use safety stands when removing or installing heavy components.
- **DO NOT** go under raised vehicle if safety locks are not engaged.
- **NEVER LEAVE LIFT IN ELEVATED CONDITION** unless all Safety Locks are engaged.
- **AVOID** excessive rocking of vehicle while on lift.
- **ALWAYS CLEAR AREA** if vehicle is in danger of falling.
- **ALWAYS REMOVE** tool trays, stands, etc. before lowering lift.
- **ALWAYS RELEASE** safety locks before attempting to lower lift.
- **DO NOT** position yourself between a wall and the lift. If the vehicle falls in that direction, you may be severely injured or killed.

To Raise Lift;

1. Position vehicle tires in the center of each Runway.
2. Set parking brake and use Wheel Chocks to hold vehicle in position.
3. Before raising vehicle, be sure all personnel are clear

of the lift and surrounding area. Pay careful attention to overhead clearances.

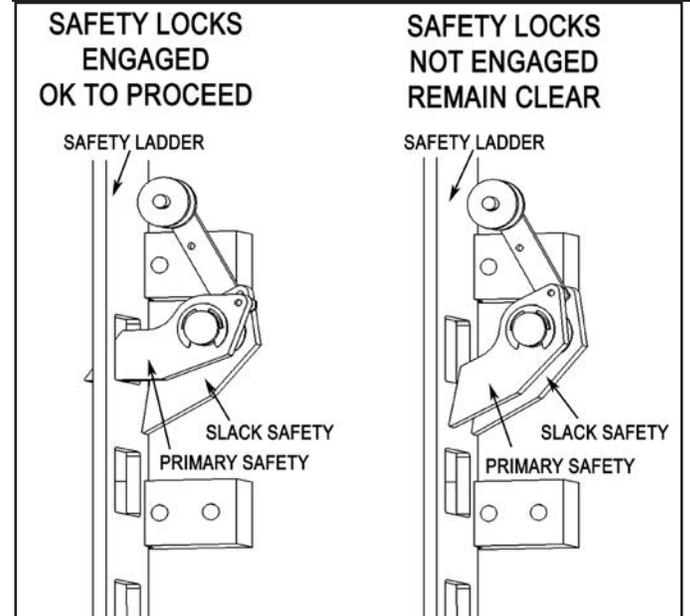
4. Raise the lift to the desired height by pressing the push button on the power unit.

NOTE:
ALLOW (2) SECONDS BETWEEN MOTOR STARTS.
FAILURE TO COMPLY MAY CAUSE MOTOR BURNOUT.

5. After vehicle is raised to the desired height, lower the lift onto the nearest Safety Lock. Do not allow Cables to become slack. ALWAYS ENSURE ALL SAFETY LOCKS ARE ENGAGED before entering work area.



DANGER!
VISUALLY CONFIRM THAT ALL PRIMARY SAFETY LOCKS ARE ENGAGED BEFORE ENTERING WORK AREA. SUSPENSION COMPONENTS USED ON THIS LIFT ARE INTENDED TO RAISE AND LOWER LIFT ONLY AND ARE NOT MEANT TO BE LOAD HOLDING DEVICES. REMAIN CLEAR OF ELEVATED LIFT UNLESS VISUAL CONFIRMATION IS MADE THAT ALL PRIMARY SAFETY LOCKS ARE FULLY ENGAGED AND THE LIFT IS LOWERED ONTO THE SAFETY LOCKS, REFER TO INSTALLATION/OPERATION MANUAL FOR PROPER SAFETY LOCK PROCEDURES AND/OR FURTHER INSTRUCTION.





WARNING!

WHEN LOWERING THE LIFT PAY CAREFUL ATTENTION THAT ALL PERSONNEL AND OBJECTS ARE KEPT CLEAR. ALWAYS KEEP A VISUAL LINE OF SIGHT ON THE LIFT AT ALL TIMES. ALWAYS MAKE SURE THAT ALL LOCKS ARE DISENGAGED. IF ONE OF THE LOCKS INADVERTENTLY LOCKS UPON DESCENT THE VEHICLE MAY DISMOUNT CAUSING PERSONAL INJURY OR DEATH.

To Lower Lift;

1. Before lowering vehicle, be sure all personnel are clear of the lift and surrounding area. Pay careful attention to overhead clearances. Ensure all tools and equipment have been cleared from under the lift.
2. Raise the lift off of the Safety Locks by pressing the push button on the Power Unit. Make sure you raise the lift by at least two inches to allow adequate clearance for the locks to clear.
3. Press the push button air safety valve and HOLD.
4. Push the LOWERING HANDLE on the Power Unit until the lift has descended completely.



CAUTION!

IF YOU ARE NOT COMPLETELY FAMILIAR WITH AUTOMOTIVE LIFT MAINTENANCE PROCEDURES; STOP AND CONTACT THE MANUFACTURER FOR INSTRUCTIONS. TO AVOID PERSONAL INJURY, PERMIT ONLY QUALIFIED PERSONNEL TO PERFORM MAINTENANCE ON THIS EQUIPMENT.

DAILY MAINTENANCE

1. Make a visual inspection of ALL MOVING PARTS and check for excessive signs of wear.
2. Check safety locks to ensure they are in good operating condition.
3. Check cables and sheaves for wear. Replace worn parts as required with genuine BendPak parts.
4. Inspect adapters for damage or excessive wear. Replace as required with genuine BendPak parts.

WEEKLY MAINTENANCE

1. Lubricate all Sheave and rollers with general purpose oil.

2. Check all Cable connections, bolts and pins to ensure proper mounting.

3. Lubricate Safety Lock pivot points with general purpose oil or WD-40.

MONTHLY MAINTENANCE

1. Check Safety Locks to ensure they are in good operating condition. Lubricate locking latch shafts. Push release arm several times for oil to penetrate pivot points.

2. Check equalizer cable tension. Adjust per lift installation instructions.

3. Check all Cables for excessive signs of wear.

4. Make a visual inspection of ALL MOVING PARTS and check for excessive signs of wear.

- Always call local service representative if electrical problems develop.
- Always replace ALL FAULTY PARTS before lift is put back into operation.
- Every 3 Months: Check anchor bolt torque. Anchors should be torqued to 90 ft/lbs.
- Semi-Annually: Check fluid level of lift power unit and refill if required per lift installation instructions.
- Replace all caution, warning or safety related decals on the lift if unable to read or missing. Reorder labels from BendPak.
- Refer to ANSI/ALI ALOIM booklet for periodic inspection checklist and maintenance log sheet.



WIRE ROPE INSPECTION AND MAINTENANCE

◆ Lifting cables should be replaced every three - five years or when visible signs of damage are apparent. **DO NOT USE LIFT WITH DEFECTIVE / WORN CABLES.**

◆ Lifting cables should be maintained in a well-lubricated condition at all times. Wire rope is only fully protected when each wire strand is lubricated both internal and external. Excessive wear will shorten the life of the wire rope. The factory suggested wire rope lubricant that penetrates to the core of the rope and provides long-term lubrication between each individual strand is 90-WT gear oil or ALMASOL® Wire Rope Lubricant. In order to make sure that the inner layers of the rope remain well lubricated, lubrication should be carried out at intervals not exceeding three months during operation.

◆ All sheaves and guide rollers in contact with the moving rope should be given regular visual checks for surface wear and lubricated to make sure that they run freely. This operation should be carried out at appropriate intervals generally not exceeding three months during operation. For all sheave axles, the factory recommends standard wheel bearing grease. For all sheaves and/or guide rollers, the factory recommends 90-WT gear oil or similar heavy lubricant applied by any method including pump / spray dispensing, brush, hand and/or swabbing.

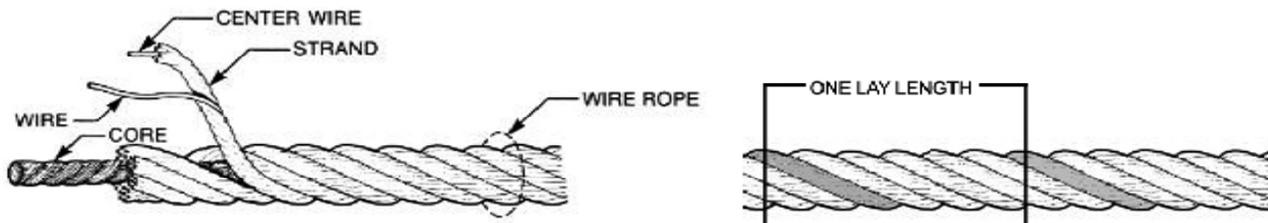
HOW OFTEN TO INSPECT

◆ Lifting cables should be visually inspected at least once each day when in use, as suggested by American Petroleum Institute (API) RP54 guidelines.

◆ Any lifting cables that have met the criteria for removal must be immediately replaced.

WHEN TO REPLACE LIFTING CABLES DUE TO BROKEN WIRES

◆ Lifting cables should be removed from service when you see six randomly distributed broken wires within any one lay length, or three broken wires in one strand within one lay length.



The three basic components of a typical wire rope.

OTHER REASONS TO REPLACE LIFTING CABLES

- ◆ Corrosion that pits the wires and/or connectors.
- ◆ Evidence of kinking, crushing, cutting, bird-caging or a popped core.
- ◆ Wear that exceeds 10% of a wire's original diameter.
- ◆ Evidence of heat damage.

HOW TO FIND BROKEN WIRES

◆ The first step is to relax your rope to a stationary position and move the pick-up points off the sheaves. Clean the surface of the rope with a cloth — a wire brush, if necessary — so you can see any breaks.

◆ Flex the rope to expose any broken wires hidden in the valleys between the strands.

◆ Visually check for any broken wires. One way to check for crown breaks is to run a cloth along the rope to check for possible snags.

◆ With an awl, probe between wires and strands and lift any wires that appear loose. Evidence of internal broken wires may require a more extensive rope examination.

⚠ WARNING

WIRE ROPE INSPECTION AND MAINTENANCE

- Lifting cables should be replaced every three years or when visible signs of damage are apparent. **DO NOT USE LIFT WITH DEFECTIVE / WORN CABLES.**
- Wire rope should be maintained in a well-lubricated condition at all times. Wire rope is only fully protected when each wire strand is lubricated both internal and external. Excessive wear will shorten the life of the wire rope. The factory suggested wire rope lubricant that penetrates to the core of the rope and provides long term lubrication between each individual strand is AMSOIL Synthetic Open Gear and Wire Rope Compound or 90-W1 gear oil or similar heavy lubricant. In order to make sure that the inner layers of the rope remain well lubricated, lubrication should be carried out at intervals not exceeding three months during operation.
- All sheaves and guide rollers in contact with the moving rope should be given regular visual checks for surface wear and lubricated to make sure that they run freely. This operation should be carried out at appropriate intervals generally not exceeding three months during operation. For all sheave axles, the factory recommends standard wheel bearing grease. For all sheaves and/or guide rollers, the factory recommends 90-W1 gear oil or similar heavy lubricant applied by any method including pump / spray dispensing, brush, hand and/or swabbing.

Failure to read, understand, and follow these instructions may cause death or serious injury. Read and understand these instructions before using lift.

⚠ DANGER

THE MAXIMUM LIFTING CAPACITY FOR THIS LIFT IS DESCRIBED BELOW

Maximum TOTAL Lifting Capacity
9,000 Lbs / 4,082 Kg.

Maximum Lifting Capacity Per Vehicle
Two Axle Vehicle / Front Axle
2,250 Lbs / 1,020 Kg.

Maximum Lifting Capacity Per Vehicle
Two Axle Vehicle / Rear Axle
2,250 Lbs / 1,020 Kg.

Exceeding the weight capacity of this lift can damage lift and/or property and may cause personal harm, injury or death to operators and/or bystanders. All vehicles MUST be positioned on lift with CENTER OF GRAVITY midway between adapters and/or centered on runways. Damage to lift due to overloading or misuse IS NOT covered under warranty.

⚠ WARNING

Clear area if vehicle is in danger of falling.

©

⚠ WARNING

Remain clear of lift when raising or lowering vehicle.

©

⚠ WARNING

Keep clear of pinch points when lift is moving.

©

⚠ WARNING

Keep feet clear of lift while lowering.

©

⚠ WARNING

Do not override self-closing lift controls.

©

⚠ WARNING

Chock wheel to prevent vehicle movement.

©

The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style

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SAFETY INSTRUCTIONS

Read operating and safety manuals before using lift.

©

SAFETY INSTRUCTIONS

Proper maintenance and inspection is necessary for safe operation.

©

SAFETY INSTRUCTIONS

Do not operate a damaged lift.

©

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⚠ CAUTION

Lift to be used by trained operator ONLY.

©

⚠ CAUTION

Authorized personnel only in lift area.

©

The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style

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Safe Lift Operation

Automotive and truck lifts are critical to the operation and profitability of your business. The safe use of this and other lifts in your shop is critical in preventing employee injuries and damage to customer's vehicles. By operating lifts safely you can insure that your shop is profitable, productive and safe.

Safe operation of automotive lifts requires that only trained employees should be allowed to use the lift.

TRAINING SHOULD INCLUDE, BUT NOT LIMITED TO:

- ◆ Proper positioning of the vehicle on the runway. (See manufacturers minimize wheel base loading requirements.)
- ◆ Use of the operating controls.
- ◆ Understanding the lift capacity.
- ◆ Proper use of jack stands or other load supporting devices.
- ◆ Proper use, understanding and visual identification of safety lock devices and their operation.
- ◆ Reviewing the safety rules.
- ◆ Proper housekeeping procedures (lift area should be free of grease, oil, tools, equipment, trash, and other debris)
- ◆ A daily inspection of the lift should be completed prior to its use. Safety devices, operating controls, lift arms and other critical parts should be inspected prior to using the lift.
- ◆ All maintenance and repairs of the lift should be completed by following the manufacturer's requirements. Lift repair parts should meet or exceed OEM specifications. Repairs should only be completed by a qualified lift technician.
- ◆ The vehicle manufacturer's recommendations should be used for spotting and lifting the vehicle.

LIFT OPERATION SAFETY

- ◆ It is important that you know the load limit. Be careful that you do not overload the lift . If you are unsure what the load limit is, check the data plate found on one of the lift columns or contact the manufacturer.
- ◆ The center of gravity should be followed closely to what the manufacturer recommends.
- ◆ Always make sure you have proper overhead clearance. Additionally, check that attachments, (vehicle signs, campers, antennas, etc.) are not in the way.
- ◆ Be sure that prior to the vehicle being raised, the doors, trunk, and hood are closed securely
- ◆ Prior to being raised, make sure there is no one standing closer than six feet from the lift
- ◆ After positioning the vehicle on the lift runways, set the emergency brake, make sure the ignition is off, the doors are closed, overhead obstructions are cleared, and the transmission is in neutral.
- ◆ Double check that the automatic chock devices are in position and then when the lift is raised, observe the chocks
- ◆ Put pads or adapters in the right position under the contact points that have been recommended
- ◆ The lift should be raised just until the vehicle's wheels are about one foot off the ground. If contact with the vehicle is uneven or it appears that the vehicle is not sitting secure, carefully lower the lift and readjust.
- ◆ Always consider potential problems that might cause a vehicle to slip, i.e., heavy cargo, undercoating, etc.
- ◆ Pay attention when walking under a vehicle that is up on the hydraulic lift.



- ◆ **DO NOT** leave the controls while the lift is still in motion.
- ◆ **DO NOT** stand directly in front of the vehicle or in the bay when vehicle is being loaded or driven into position.
- ◆ **DO NOT** Go near vehicle or attempt to work on the vehicle when being raised or lowered.
- ◆ **REMAIN CLEAR** of lift when raising or lowering vehicle.
- ◆ **DO NOT** rock the vehicle while on the lift or remove any heavy component from vehicle that may cause excessive weight shift.
- ◆ **DO NOT** lower the vehicle until people, materials, and tools are clear
- ◆ **ALWAYS INSURE** that the safeties are engaged and lowered on to the safety ladders before any attempt is made to work on or near vehicle.
- ◆ Some vehicle maintenance and repair activities may cause the vehicle to shift. Follow the manufacturer's guidelines when performing these operations. The use of jack stands or alternate lift points may be required when completing some repairs.
- ◆ **READ AND UNDERSTAND** all safety warning procedures before operating lift.
- ◆ **KEEP HANDS AND FEET CLEAR.** Remove hands and feet from any moving parts. Keep feet clear of lift when lowering. Avoid pinch points.
- ◆ **ONLY TRAINED OPERATORS** should operate this lift. All non-trained personnel should be kept away from work area. Never let non-trained personnel come in contact with, or operate lift.
- ◆ **USE LIFT CORRECTLY.** Use lift in the proper manner. Never use lifting adapters other than what is approved by the manufacturer.
- ◆ **DO NOT** override self-closing lift controls.
- ◆ **CLEAR AREA** if vehicle is on danger of falling.
- ◆ **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.
- ◆ When the lift is being lowered, make sure everyone is standing at least six feet away.
- ◆ Be sure there are no jacks, tools, equipment, left under the lift before lowering.
- ◆ Always lower the vehicle down slowly and smoothly.

LIFT WILL NOT RAISE

POSSIBLE CAUSE

1. Air in oil, (1,2,8,13)
2. Cylinder binding, (9)
3. Cylinder leaks internally, (9)
4. Motor run backward under pressure, (11)
5. Lowering valve leaks, (3,4,6,10,11)
6. Motor runs backwards, (7,14,11)
7. Pump damaged, (10,11)
8. Pump won't prime, (1,8,13,14,3,12,10,11)
9. Relief valve leaks, (10,11)
10. Voltage to motor incorrect, (7,14,11)

REMEDY

INSTRUCTION

- | | |
|---|--|
| 1. Check for proper oil level. | The oil level should be up to the bleed screw in the reservoir with the lift all the way down. |
| 2. Bleed cylinders. | See Installation Manual |
| 3. Flush- Release valve to get rid of. possible contamination | Hold release handle down and start unit allowing it to run for 15 seconds. |
| 4. Dirty oil. | Replace oil with clean Dexron ATF. |
| 5. Tighten all fasteners. | Tighten fasteners to recommended torques. |
| 6. Check for free movement of release. | If handle does not move freely, replace bracket or handle assembly. |
| 7. Check motor is wired correctly. | Compare wiring of motor to electrical diagram on drawing. |
| 8. Oil seal damaged or cocked | Replace oil seal around pump shaft. |
| 9. See Installation Manual | Consult Lift Manufacturer. |
| 10. Replace with new part | Replace with new part. |
| 11. Return unit for repair | Return unit for repair. |
| 12. Check pump-mounting bolts | Bolts should be 15 to 18 ft. lbs. |
| 13. Inlet screen clogged | Clean inlet screen or replace. |
| 14. Check wall outlet voltages and wiring | Make sure unit and wall outlet are wired properly. |

MOTOR WILL NOT RUN

POSSIBLE CAUSE

1. Fuse blown, (5,2,1,3,4)
2. Limit switch burned out, (1,2,3,4)
3. Microswitch burned out, (1,2,3,4)
4. Motor burned out, (1,2,3,4,6)
5. Voltage to motor incorrect, (2,1,8)

REMEDY

- | REMEDY | INSTRUCTION |
|---|--|
| 1. Check for correct voltage | .Compare supply voltage with voltage on motor name tag. Check that the wire is sized correctly. N.E.C. table 310-12 requires AWG 10 for 25 Amps. |
| 2. Check motor is wired correctly | .Compare wiring of motor to electrical diagram on drawing. |
| 3. Don't use extension cords | .According to N.E.C. : " The size of the conductors... should be such that the voltage drop would not exceed 3% to the farthest outlet for power..." Do not run motor at 115 VAC – damage to the motor will occur. |
| 4. Replace with new part | .Replace with new part. |
| 5. Reset circuit breaker/fuse | .Reset circuit breaker/fuse. |
| 6. Return unit for repair | Return unit for repair. |
| 7. See Installation Manual | .See Installation Manual. |
| 8. Check wall outlet voltage and wiring | Make sure unit and wall outlet is wired properly. Motor must run at 208/230 VAC. |

LIFT LOWERS SLOWLY OR NOT AT ALL

POSSIBLE CAUSE

1. Cylinders binding, (1)
2. Release valve clogged, (5,4,2,3)
3. Pressure fitting too long, (6)

REMEDY

- | REMEDY | INSTRUCTION |
|---|--|
| 1. See Installation Manual | .Consult Lift Manufacturer. |
| 2. Replace with new part | .Replace with new part. |
| 3. Return for repair | .Return for repair. |
| 4. Check oil. | Use clean 10-WT hydraulic oil or Dexron automatic transmission fluid only. If ATF is contaminated, replace with clean ATF and clean entire system. |
| 5. Clean release valve | Wash release valve in solvent and blow out with air. |
| 6. Replace fitting with short thread lead | Replace fitting with short thread lead. |

WILL NOT RAISE LOADED LIFT

POSSIBLE CAUSE

1. Air in oil, (1,2,3,4)
2. Cylinder binding, (5)
3. Cylinder leaks internally, (5)
4. Lift overloaded, (6,5)
5. Lowering valve leaks, (7,8,1,5,9)
6. Motor runs backwards, (10,12,9)
7. Pump damaged, (5,9)
8. Pump won't prime, (1,2,3,4,5,11,9)
9. Relief valve leaks, (8,5,9)
10. Voltage to motor incorrect, (10,12,5)

REMEDY

- | | |
|--|---|
| 1. Check oil level | The oil level should be up to the bleed screw in the reservoir [with the lift all the way down. |
| 2. Check/Tighten inlet tubes | Replace inlet hose assembly. |
| 3. Oil seal damaged or cocked | Replace oil seal and install. |
| 4. Bleed cylinders | See Installation Manual. |
| 5. See Installation Manual | Consult Lift Manufacturer. |
| 6. Check vehicle weight | Compare weight of vehicle to weight limit of the lift. |
| 7. Flush release valve | Hold release handle down and start unit allowing it to run for 15 seconds. |
| 8. Replace with new part | Replace with new part. |
| 9. Return unit for repair | Return unit for repair. |
| 10. Check motor is wired correctly | Compare wiring of motor to electrical diagram on power unit drawing. |
| 11. Inlet screen clogged | Clean inlet screen or replace. |
| 12. Check wall outlet voltage and wiring | .Make sure unit and wall outlet is wired properly. |

INSTRUCTION

IMPORTANT

If vehicle becomes stranded in the air, follow all operation instructions as shown on pages 31, 33, and 40 If after observing that all mechanical locks are released and the lift still fails move following all standard operating procedures, immediately stop using the lift and contact factory or factory approved service center for further instructions.

LIFT WILL NOT STAY UP

POSSIBLE CAUSE

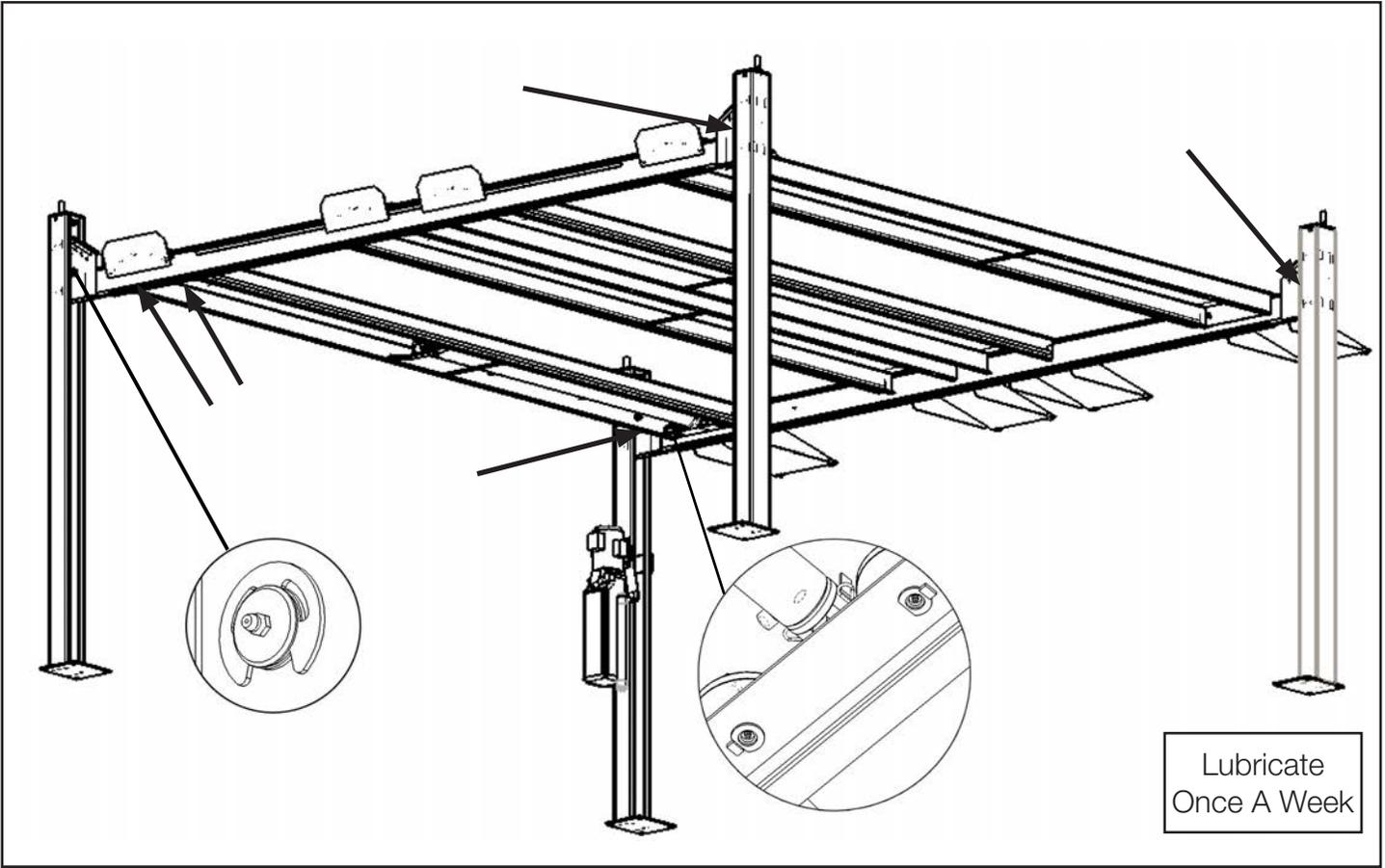
1. Air in oil, (1,2,3)
2. Check valve leaks, (6)
3. Cylinders leak internally, (7)
4. Lowering valve leaks, (4,5,1,7,6)
5. Leaking fittings, (8)

REMEDY

INSTRUCTION

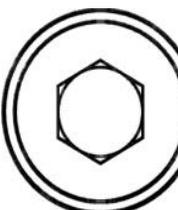
- | | |
|---|--|
| 1. Check oil level | The oil level should be up to the bleed screw in the reservoir with the lift all the way down. |
| 2. Oil seal damaged and cocked | Replace oil seal around pump shaft. |
| 3. Bleed cylinder | Refer to Installation Manual. |
| 4. Flush release valve | Hold release handle down and start unit allowing it to run for 15 seconds. |
| 5. Replace with new valve | Replace with new valve. |
| 6. Return unit for repair | Return unit for repair. |
| 7. See Installation Manual | Consult Lift Manufacturer. |
| 8. Check complete hydraulic system for leaks. | Tighten all hydraulics fittings and inspects all hoses. |

Grease Port / Lubrication Locations



Torque Recommendations

VALUES ARE STATED IN FOOT POUNDS (ft-lb)

					
		SAE 0-1-2 CLASS 4.8	SAE Grade 5 CLASS 8.8	SAE Grade 8 CLASS 10.9	SOCKET HEAD CAP SCREW CLASS 12.9
Bolt Size (SAE)	Bolt Size (Metric)				
1/4-20	M6 x 1.0	6	10	14	13
5/16-18	M8 x 1.25	12	19	29	31.4
3/8-16	M10 x 1.50	20	33	47	62
7/16-14		32	54	78	
1/2-13	M12 x 1.75	47	78	119	108
9/16-12	M14 x 2.00	69	114	169	173
5/8-11	M16 x 2.00	96	154	230	269
3/4-10	M18 x 2.50	155	257	380	372
7/8-9	M22 x 2.50	206	382	600	716
3/4 Anchor Bolts		75 MIN 110 MAX			

INSTALLATION FORM

Customer Name:		Date of Installation:
Company Name:		
Street Address:		
City:	State:	Zip:
Phone:	Fax:	

Pre-Install Agreement

I, (the undersigned) acting as the owner of the business listed above assume responsibility for any permits required, either state or county mandated, related to the installation and/or operation of this equipment. I assume responsibility for the concrete floor and condition thereof, now or later, where the above equipment model(s) are installed. I will assume all liability for losses, damages (including loss of use), expenses, demands, claims, and judgments in connection with or arising out of any personal injury or alleged damage to property, sustained or alleged to have been sustained in connection with, or to have arisen out of the condition and/or drilling of the concrete near or adjacent to the equipment model(s) listed above. If my employee(s) offer assistance of any kind during installation of the above equipment model(s) I hold the manufacturer and installation company harmless of all liability for losses, damages, expenses, claims, and judgments in connection with or arising out of any personal injury or alleged damage to property, sustained or alleged to have been sustained in connection with the installation of the above equipment model(s).

I understand that the lifts above are supplied with concrete fasteners meeting the criteria of the American National Standard "Automotive Lifts - Safety Requirements for Construction, Testing, and Validation" ANSI/ALI ALCTV-1998, and that I will be responsible for all charges related to any special regional structural and/or seismic anchoring requirements specified by any other agencies and/or codes such as the Uniform Building Code (UBC) and/or International Building Code (IBC).

Customer Signature: _____ Print Name: _____ Date: _____

Post-Installation Check-Off

- | | |
|--|--|
| <input type="checkbox"/> Base and Columns Properly Shimmed And Stable
<input type="checkbox"/> Anchor Bolts Tightened
<input type="checkbox"/> Runways Properly Attached and Secured
<input type="checkbox"/> Electric Power Supply Confirmed
<input type="checkbox"/> Cables / Chains Adjusted Properly
<input type="checkbox"/> Safety Locks Functioning Properly
<input type="checkbox"/> Check For Hydraulic Leaks
<input type="checkbox"/> Oil Level | <input type="checkbox"/> Lubrication of Critical Components
<input type="checkbox"/> Lift Adapters
<input type="checkbox"/> Check For Overhead Obstructions
<input type="checkbox"/> Runways Level
<input type="checkbox"/> All Screws, Bolts, and Pins Secured
<input type="checkbox"/> Surrounding Area and Lift Clean In Appearance
<input type="checkbox"/> Proper Operation, Maintenance and Safety Explained
<input type="checkbox"/> Operation and Safety Manual(s) Left at Site |
|--|--|

I, (the undersigned) confirm that the above installation procedure(s) were completed. I understand that I will be responsible for maintaining this equipment as outlined in the accompanied **Installation and Operation Manual** and **ANSI/ALI ALOIM Safety Requirements for Operation, Inspection and Maintenance**. I understand that personal injury and/or damage to property can occur if the above equipment model(s) are not maintained or used improperly and take full responsibility for training my employees on proper use and maintenance of this equipment. I hold the manufacturer and installation company harmless of all liability for losses, damages (including loss of use), expenses, demands, claims, and judgments in connection with or related to improper use, improper training, or lack of required maintenance. I understand that the warranty does not cover replacement of parts worn or damaged due to normal use or lack of required maintenance

Customer Signature: _____ Print Name: _____ Date: _____

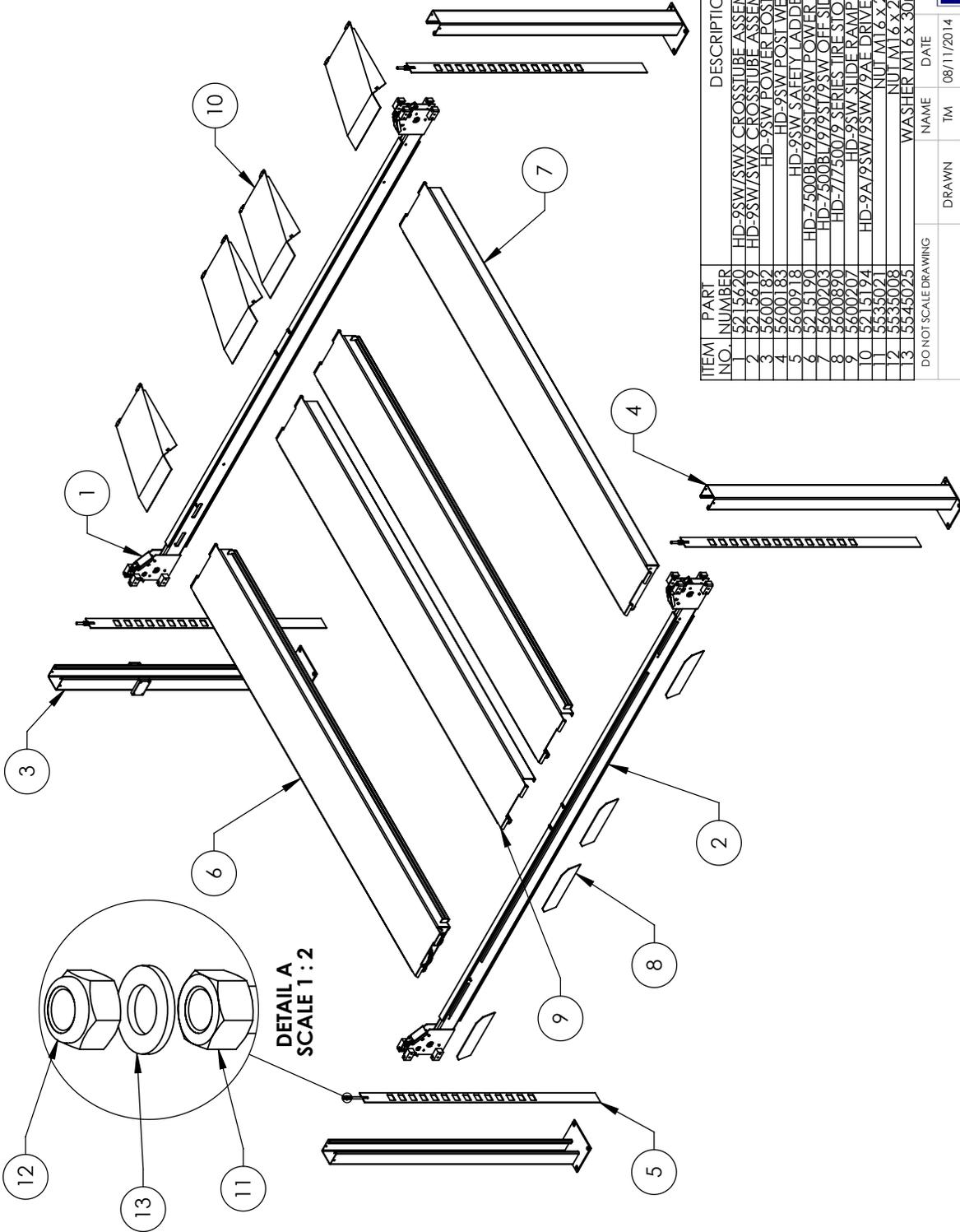
Installer Signature: _____ Print Name: _____ Date: _____

Installer Company Name: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Phone (Other): _____



NOTE: UNLESS OTHERWISE SPECIFIED.

1. SEE SHIPPING INSTRUCTIONS FOR FINAL PACKAGING
2. THREAD M16 HARDWARE ONTO LADDER BOLTS AS SHOWN

NEXT ASSEMBLY
5260529

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	REV
1	5215670	HD-9SW/SWX CROSS-TIRE ASSEMBLY - SMALL WINDOW	1	C
2	5215679	HD-9SW/SWX CROSS-TIRE ASSEMBLY - LARGE WINDOW	1	C
3	5600182	HD-9SW POWER POST WELDMENT	1	B
4	5600183	HD-9SW POST WELDMENT	3	B
5	5600918	HD-9SW SAFETY LADDER WELDMENT	4	A
6	5215190	HD-7500B1/919S1/9SW POWER SIDE RAMP ASSEMBLY	1	M
7	5600203	HD-7500B1/919S1/9SW OFF-SIDE RAMP WELDMENT	4	E
8	5600890	HD-77750019 SERIES TIRE STOP PLATE WELDMENT	4	E
9	5600207	HD-9SW SLIDE RAMP WELDMENT	2	C
10	5215194	HD-9A/9SW/SWX/9AE DRIVE UP RAMP ASSEMBLY	4	E
11	5535021	NUT M16 x 2.0	4	-
12	5535008	NUT M16 x 2.0	4	-
13	5545025	WASHER M16 x 30mm - FLAT	4	-

DO NOT SCALE DRAWING

DRAWN	TM	DATE
CHECKED		08/11/2014

THIRD ANGLE PROJECTION

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1645 LEMONWOOD DR.
SANTA PAULA, CA 93066

BendPak
POWER STRUCTURE TECHNOLOGY

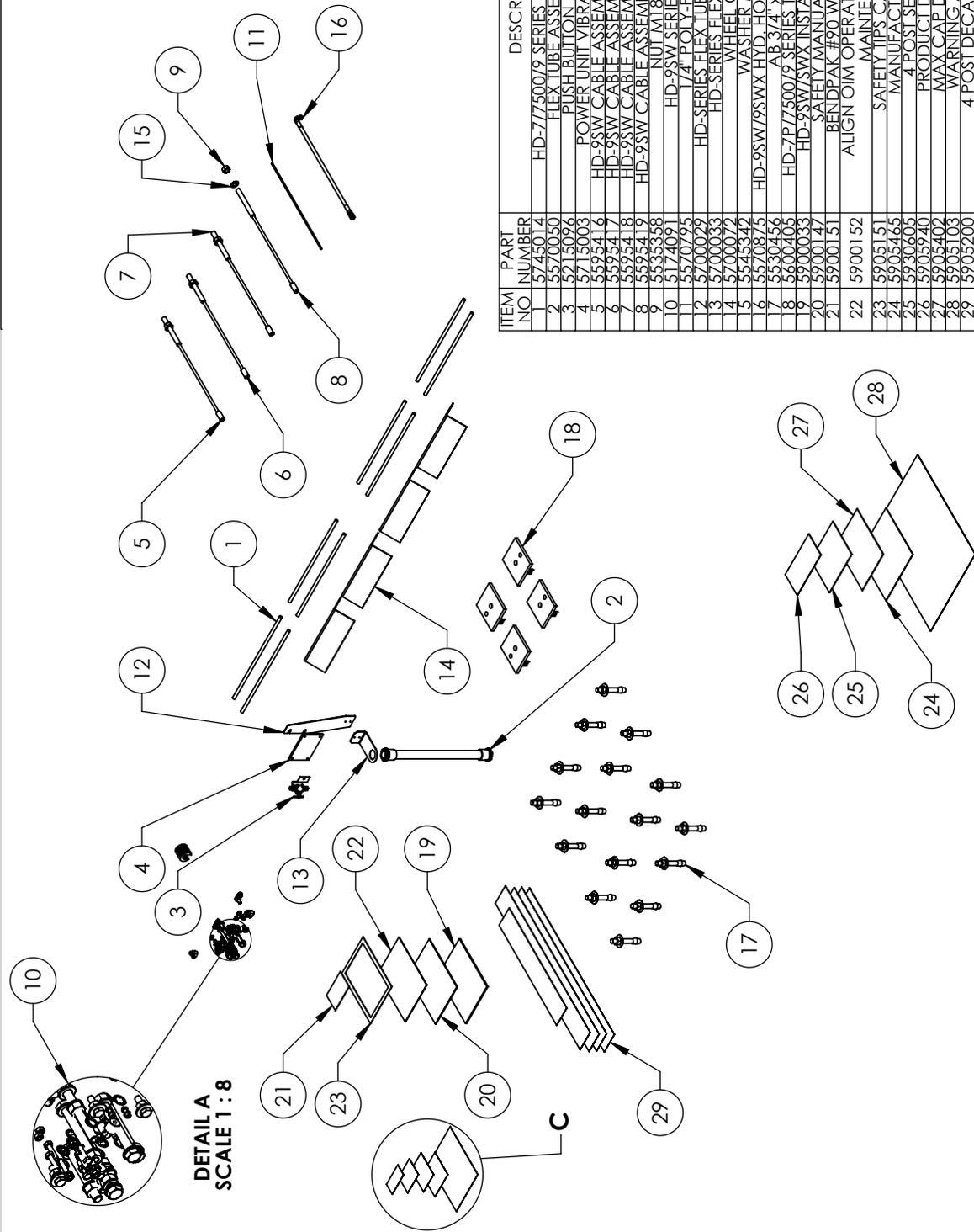
TITLE: HD-9SW LIFT SUPERSTRUCTURE

SIZE DWG. NO. 5245390

SCALE: 1:45

REV A

SHEET 1 OF 1

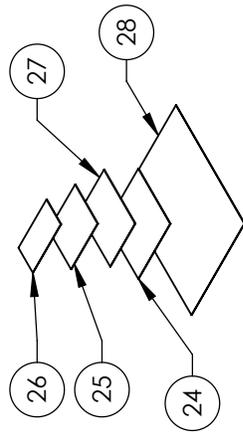


DETAIL A
SCALE 1 : 8

NOTE: UNLESS OTHERWISE SPECIFIED.

1. SEE SHIPPING INSTRUCTIONS FOR FINAL PACKAGING
2. INSERT PARTS BAG INTO PARTS BOX FOR SHIPMENT
3. THREAD 5535358 WITH 5545342 ONTO CABLES FOR SHIPMENT
4. HOSES AND CABLES IN REPRESENTATIONAL FORM
5. (*) LENGTH FOR REFERENCE ONLY
6. ALL LABELS TO BE APPLIED TO POSTS AFTER PAINTING. SEE RECEIVED LIFT FOR PLACEMENT
7. 5930605 TO BE ADDED BY REQUEST ONLY

DETAIL C
SCALE 1 : 12



ITEM NO	PART NUMBER	DESCRIPTION	QTY	REV
1	5745014	HD-7/7500/9 SERIES DRIVE UP RAMP PIN	8	B
2	5570050	FLEX TUBE ASSEMBLY 1320mm		B
3	5710096	PUSH BUTTON AIR ASSEMBLY		B
4	5715003	POWER UNIT VIBRATION DAMPENER		B
5	5595419	HD-9SW CABLE ASSEMBLY Ø10 x 300.6mm ST		A
6	5595419	HD-9SW CABLE ASSEMBLY Ø10 x 288.0mm ST		A
7	5595418	HD-9SW CABLE ASSEMBLY Ø10 x 146mm ST		A
8	5595419	HD-9SW CABLE ASSEMBLY Ø10 x 110.2mm ST		A
9	5535358	NUT M18 x 2.5 NL	4	A
10	5174091	HD-9SW SERIES PARTS BAG		D
11	5570795	1/4" POLY-FLO TUBING	21000mm*	F
12	5700079	HD-SERIES FLEX TUBE BRACKET PLATE		F
13	5700033	HD-SERIES FLEX TUBE ANGLE		F
14	5700072	WHEEL CHOCK	4	A
15	5545342	WASHER M18 FLAT	4	A
16	5570875	HD-9SW/9SWX HYD HOSE ASSY Ø6.4x 3890mm	1	C
17	5530486	HD-7P/7500/9 SERIES TOP PLATE WELDMENT	16	C
18	5600403	HD-9SW/SWX INSTALLATION MANUAL	4	C
19	5900033	SAFETY MANUAL ALL7 SM 93-1		-
20	5900147	BENDPAK #90 WARRANTY CARD		-
21	5900151	ALIGN OIM OPERATION INSPECTION & MAINTENANCE	1	-
22	5900152	SAFETY TIPS CARD ALL7 90		-
23	5905151	MANUFACTURER LABEL		-
24	5905465	4 POST SERIAL TAG		-
25	5930605	PRODUCT DATA LABEL		-
26	5905940	MAX CAP DANGER 9K		-
27	5905402	WARNING ALL7 200		-
28	5905103	4 POST DECAL KIT LESS ALL		-
29	5905200			A

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DRAWN TM 05/10/2013
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THIRD ANGLE PROJECTION



THIRD ANGLE PROJECTION

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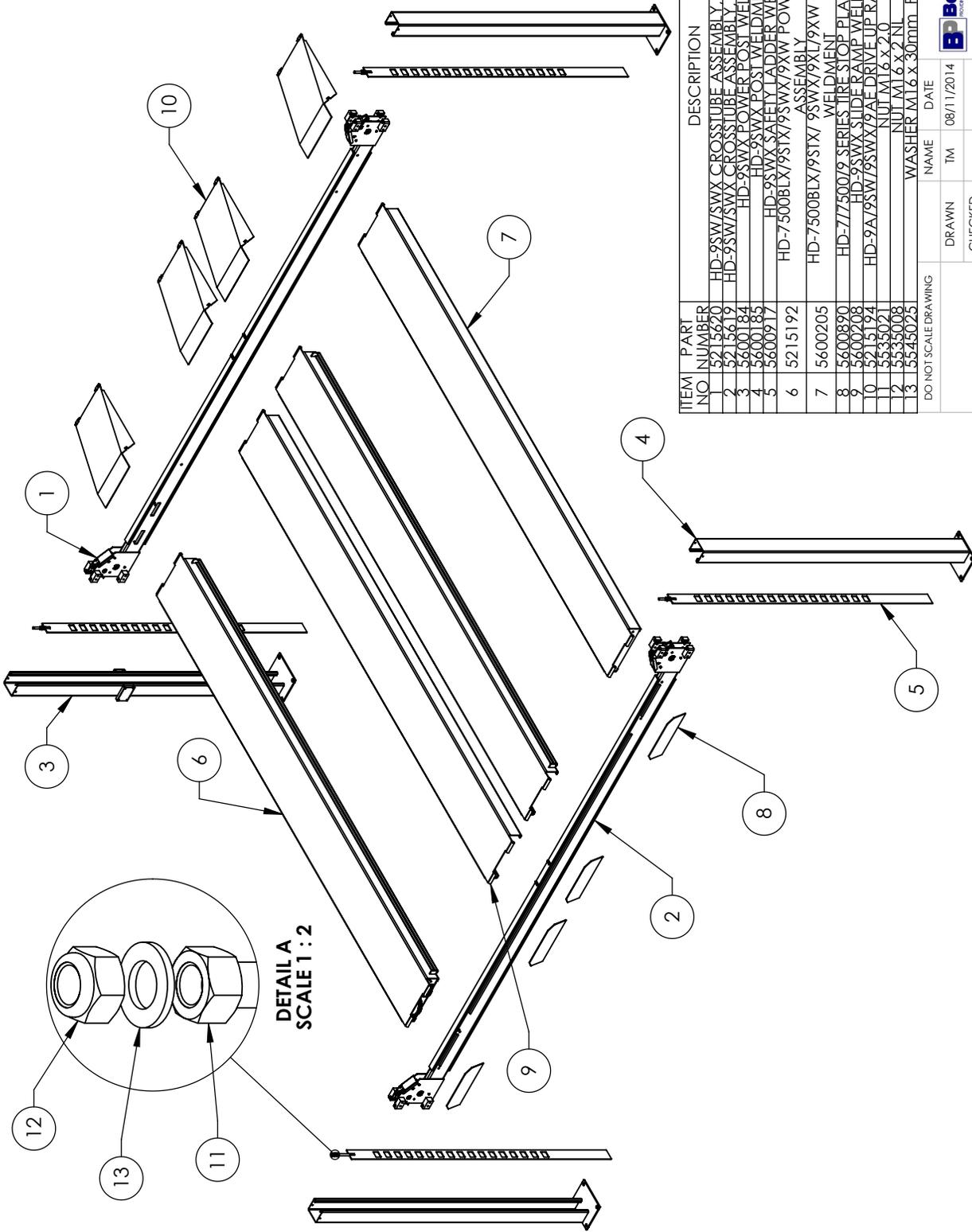
TITLE: PARTS BOX HD-9SW

SIZE DWG. NO. 5250197

SCALE: 1:25

NEXT ASSEMBLY 5260529

SHEET 1 OF 1



ITEM NO	PART NUMBER	DESCRIPTION	QTY	REV
1	HD-9SW/9SX CROSS-TUBE ASSEMBLY - SMALL WINDOW		1	C
2	HD-9SW/9SX CROSS-TUBE ASSEMBLY - LARGE WINDOW		1	C
3	HD-9SWX POWER POST WELDMENT		1	B
4	HD-9SWX POST WELDMENT		3	B
5	HD-9SWX SAFETY LADDER WELDMENT		4	A
6	HD-7500BLX/95TX/95WX/9XW POWER SIDE RAMP ASSEMBLY		1	Q
7	HD-7500BLX/95TX/95WX/9XL/9XW OFFSIDE RAMP WELDMENT		1	G
8	HD-777500/9 SERIES TIRE STOP WELDMENT		4	E
9	HD-9SWX SLIDE RAMP WELDMENT		2	F
10	HD-9A/9SW/95WX/9AE DRIVE UP RAMP ASSEMBLY		4	E
11	NUT M16 X 2.0		4	-
12	NUT M16 X 2.0		4	-
13	WASHER M16 X 30mm FLAT		4	-

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NAME: _____ DATE: _____

DRAWN: _____ TM: 08/11/2014

CHECKED: _____

THIRD ANGLE PROJECTION

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SMILEY FACE

TITLE: HD-9SWX LIFT SUPERSTRUCTURE

SIZE DWG. NO. A 5245389

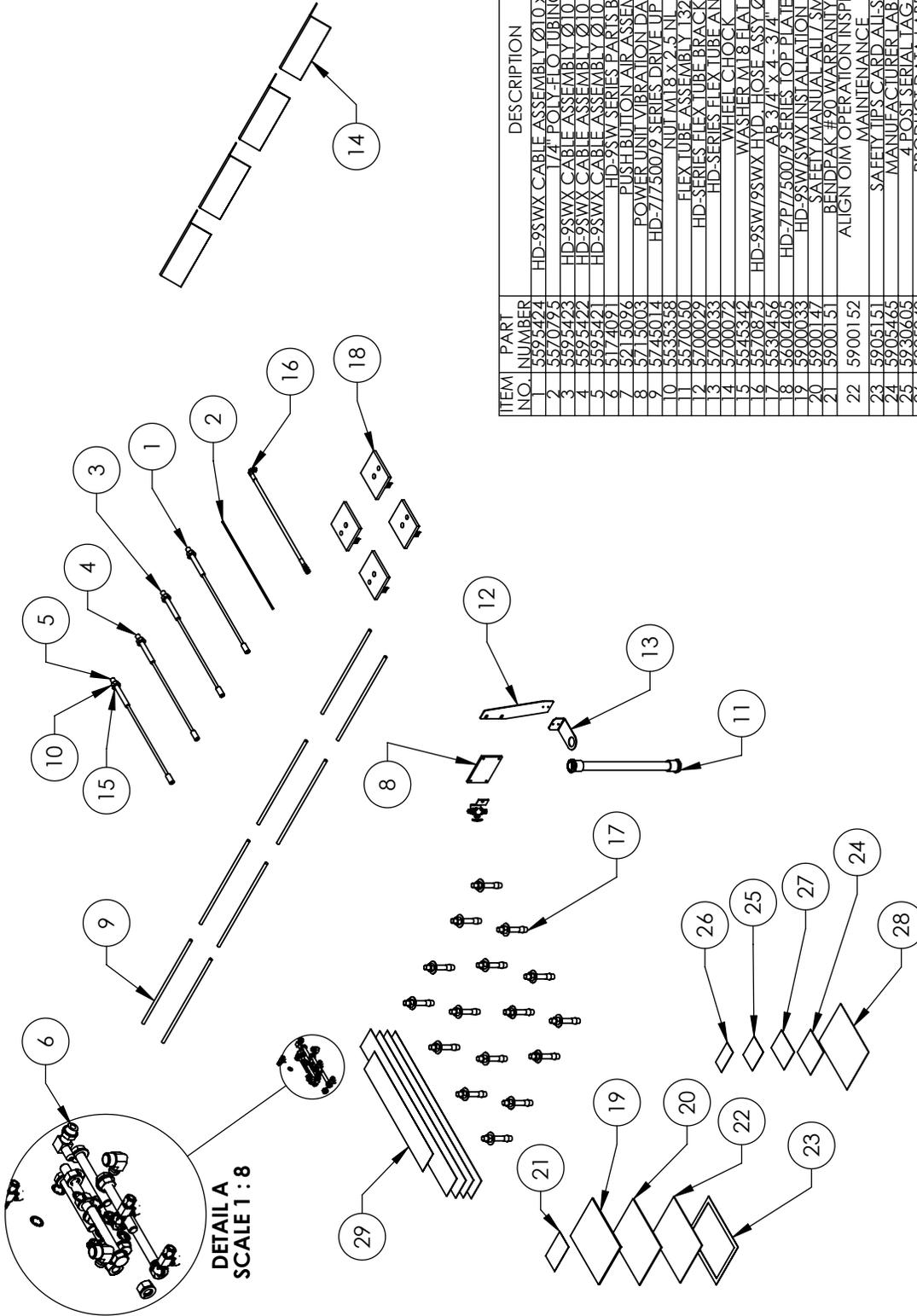
SCALE: 1:45

REV A

SHEET 1 OF 1

NEXT ASSEMBLY
5240530

NOTE: UNLESS OTHERWISE SPECIFIED.
 1. SEE SHIPPING INSTRUCTIONS FOR FINAL PACKAGING
 2. THREAD M16 HARDWARE ONTO LADDER BOLTS AS SHOWN



DETAIL A
SCALE 1:8

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	REV
1	5595424	HD-9SWX CABLE ASSEMBLY Ø10 x 1193.4mm ST	21000*	A
2	5570795	1/4" POLY FLO TUBING		-
3	5595423	HD-9SWX CABLE ASSEMBLY Ø10 x 805.4mm ST		A
4	5595422	HD-9SWX CABLE ASSEMBLY Ø10 x 718mm ST		A
5	5595421	HD-9SWX CABLE ASSEMBLY Ø10 x 331.3mm ST		A
6	5574061	HD-9SWX SERIES PARTS BAG		D
7	5715024	PUSH BULLDOZER ASSEMBLY		B
8	3715003	POWER UN VIBRATION DAMPENER		B
9	5745014	HD-77750079 SERIES DRIVE UP RAMP PIN	8	B
10	5535358	NUT M18 X 2.5 NL	4	-
11	5570050	FLEX TUBE ASSEMBLY 1320mm	1	B
12	5700079	HD-SERIES FLEX TUBE BRACKET PLATE	4	F
13	5700072	HD-SERIES FLEX TUBE ANGLE	4	E
14	5700072	WHEEL CHOCK	4	A
15	5545342	WASHER M18 FLAT	4	-
16	5570875	HD-9SW79SWX HYD. HOSE ASSY Ø6.4x 3820mm	16	C
17	5530456	AB 3/4" x 4 - 3/4"	4	-
18	5500405	HD-7P7750079 SERIES TOP PLATE WELDMENT	4	C
19	5900033	HD-9SWX INSTALLATION MANUAL		-
20	5900033	SAFETY MANUAL ALL SW 93.1		-
21	5900147	BENDPAK #90 WARRANT CARD		-
22	5900151	ALIGN OIM OPERATION INSPECTION & MAINTENANCE	1	-
23	5905151	SAFETY TIPS CARD ALL ST 90		-
24	5905465	MANUFACTURER LABEL		-
25	5930605	4 POST SERIAL TAG		-
26	5905940	PRODUCT DATA LABEL		-
27	5905402	MAX CAP DANGER 9K		-
28	5905103	WARNING ALL WLT 200		-
29	5905200	4 POST DECAL KIT LESS ALL		A

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DRAWN TM 05/10/2013

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THIRD ANGLE PROJECTION

SMILEY FACE

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1645 LEMONWOOD DR.
SANTA PAULA, CA 93060

BendPak
Performance Drives You

TITLE: PARTS BOX HD-9SWX

SIZE DWG. NO. 5250198

SCALE: 1:25

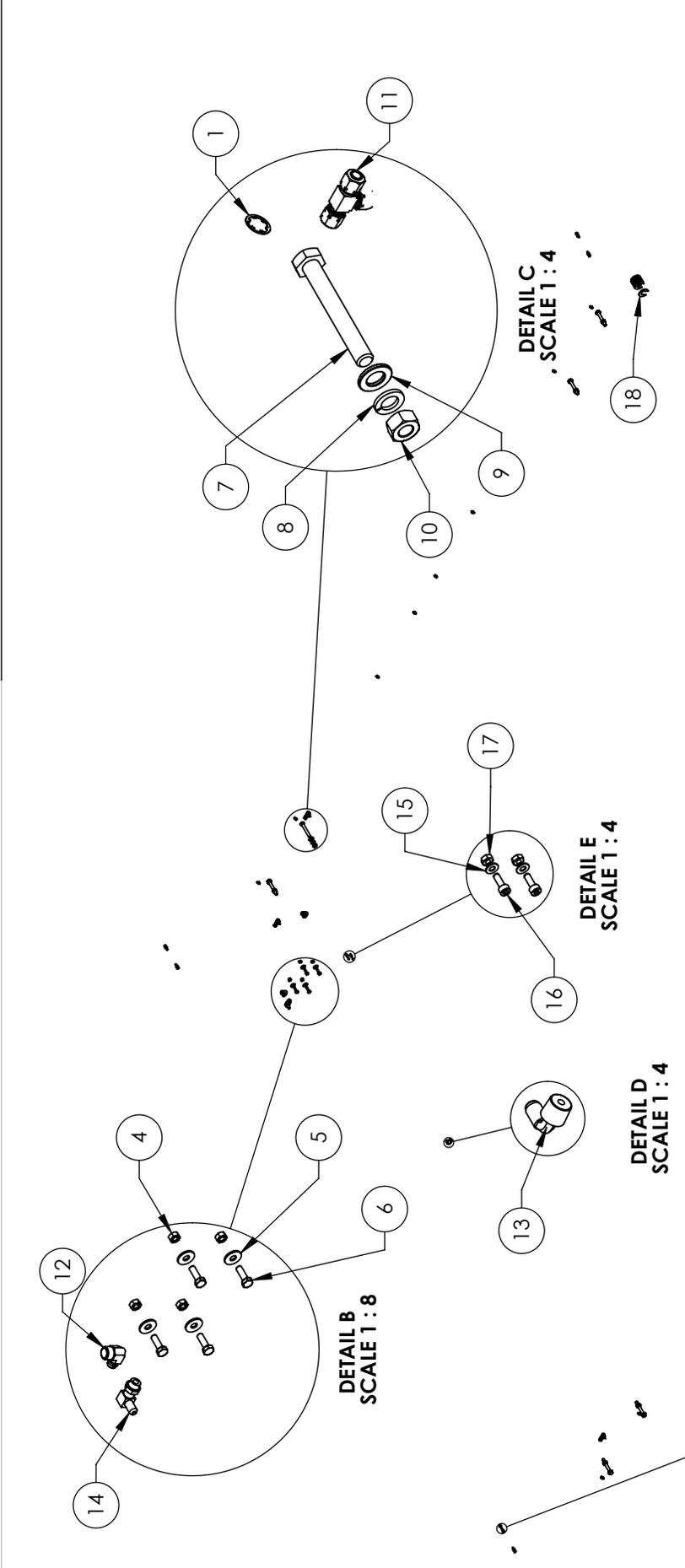
REV B

SHEET 1 OF 1

NOTE: UNLESS OTHERWISE SPECIFIED.

- SEE SHIPPING INSTRUCTIONS FOR FINAL PACKAGING
- INSERT PARTS BAG INTO PARTS BOX FOR SHIPMENT
- THREAD 5535358 WITH 5545342 ONTO CABLES FOR SHIPMENT
- HOSES AND CABLES IN REPRESENTATIONAL FORM (*) LENGTH FOR REFERENCE ONLY
- ALL LABELS TO BE APPLIED TO POSTS AFTER PAINTING. SEE RECEIVED LIFT FOR PLACEMENT
- 5930605 TO BE ADDED BY REQUEST ONLY

NEXT ASSEMBLY 5260550



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.	REV
1	5509031	ROTOR CLIP 12mm SS	16	-
2	5530756	HHB M6 x 1 x 25	8	-
3	5535357	NUT M6 x 1.0 NL	8	-
4	5535001	NUT M8 x 1.25 NL	4	-
5	5545340	WASHER M8 x 24 FLAT	4	-
6	5530010	HHB M8 x 1.25 x 25	4	-
7	5545201	HHB M12 x 1.75 x 90 C18.8	8	-
8	5530009	WASHER M12 SPRING LOCK	8	-
9	5545347	WASHER M12 FLAT WASHER	8	-
10	5535354	NUT M12 x 1.75	8	-
11	5550395	FIG TEE-04 COMP X-04 COMP X-04 COMP	3	-
12	5550089	FIG-04 COMP X-06 NPT	3	-
13	5550107	FIG-04 COMP X-06 NPT	1	-
14	5550106	FIG-ELB-04 JIC-06 NPT	1	-
15	5550008	FIG-ELB-04 JIC-06L ORB	1	-
16	5545009	WASHER-024.3 x Ø9mm x 0.8mm	2	-
17	5530008	SHCS M4 x 0.7mm x 12mm	2	-
18	5535010	NUT M4 x 0.7	2	-
18	5545335	C WASHER SHIM FOR LIFTS	20	-

DO NOT SCALE DRAWING

NAME: AC DATE: 08/08/2008

DRAWN: AC

CHECKED:

THIRD ANGLE PROJECTION

1645 LEMONWOOD DR.
BendPak SANTA PAULA, CA 93060
INDUSTRIAL PACKAGING RESOURCE

TITLE: HD-9SW SERIES PARTS BAG

SIZE DWG. NO.: A 5174091

REV: D

SCALE: 1:30

SHEET 1 OF 1

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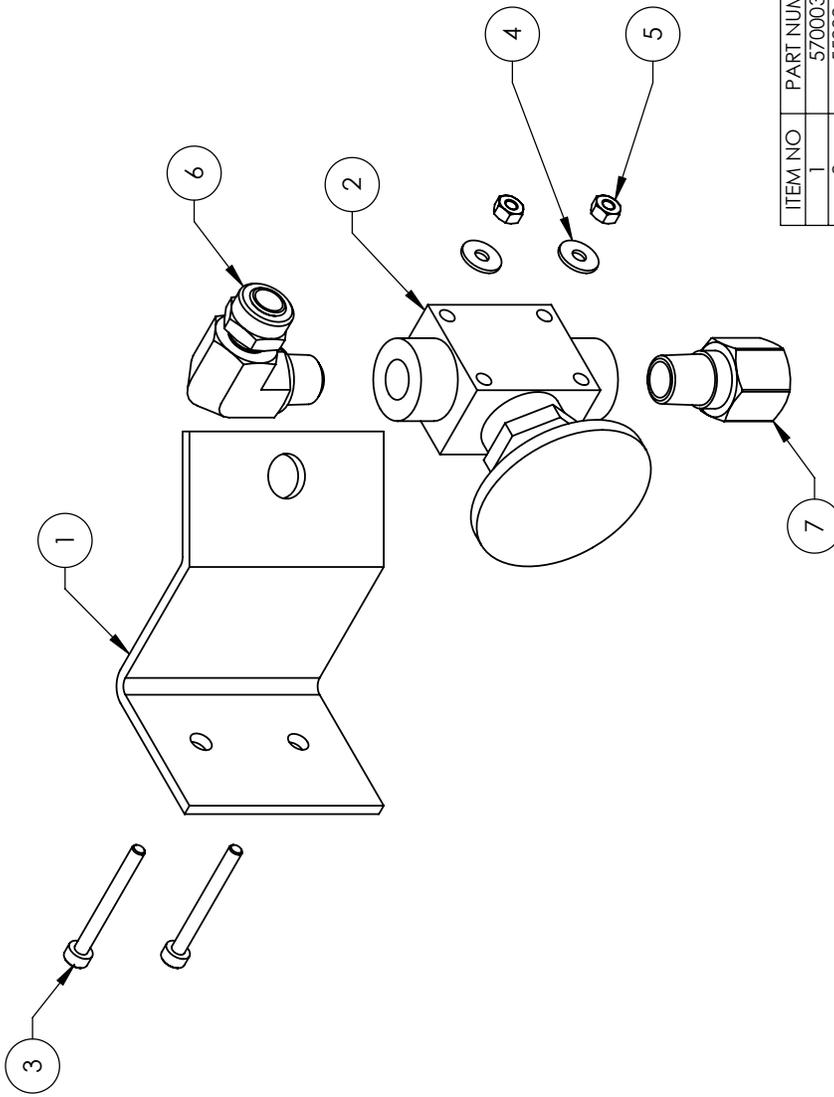
MATERIAL: ---

SIZE: ---

NEXT ASSEMBLY: 5250197

5250198

NOTE: UNLESS OTHERWISE SPECIFIED.
 1. SEE SHIPPING INSTRUCTIONS FOR FINAL PACKAGING



ITEM NO	PART NUMBER	DESCRIPTION	QTY	REV
1	5700031	ZERO ANGLE MTG BRACKET	1	C
2	5590240	PUSH BUTTON AIR VALVE	1	A
3	5530043	SHCS M3 x 0.5 x 30	2	-
4	5545024	WASHER M3 x 9mm	2	-
5	5535020	NUT M3 x 0.5 NL	2	-
6	5550087	FIG -04 COMP x -02 NPT	1	-
7	5550486	FIG NPL -02 NPT x -04 F NPT	1	-

DO NOT SCALE DRAWING	NAME	DATE
DIMENSIONS ARE IN MM	DRAWN AC	3/14/2008
	CHECKED	



THIRD ANGLE PROJECTION



BendPak
PROFESSIONAL DESIGN DIVISION
 16445 LEMONWOOD DR.
 SANTA PAULA, CA 93066

TITLE: PUSH BUTTON AIR ASSEMBLY
 SIZE DWG. NO. **A** 5215096 REV **E**
 SCALE: 2:3 SHEET 1 OF 1

NEXT ASSEMBLY	MATERIAL
HD/HDS/HDSO	
SERIES	
5250118	
5250249	

NOTE: UNLESS OTHERWISE SPECIFIED.

1. ASSEMBLE ITEMS AS SHOWN



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**BendPak Inc. / Ranger Products
1645 Lemonwood Dr.
Santa Paula, CA. 93060**

**Tel: 1-805-933-9970
Toll Free: 1-800-253-2363
Fax: 1-805-933-9160**

www.bendpak.com

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