APlusLift

INSTALLATION AND OPERATION MANUAL

MODEL: AP-12SR

2 Post Automotive Lift

Maximum Lifting Capacity 12000 lbs.

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

Keep this operation manual near the machine at all times. Make sure all users read this manual.

⚠WARNING:

INSTRUCTIONS TO READ THE MANUAL(S) THOROUGHLY BEFORE INSTALLING, OPERATING, SERVICING, OR MAINTAINING THE LIFT.

PLEASE **READ THE ENTIRE CONTENTS OF THIS MANUAL AND THE ANSI/ALI ALIS, SAFETY REQUIREMENTS FOR INSTALLATION AND SERVICE FOR AUTOMITIVE LIFTS LITERATURE**, PRIOR TO INSTALLATION AND OPERATION. BY PROCEEDING WITH THE LIFT INSTALLATION AND OPERATION YOU AGREE THAT YOU FULLY UNDERSTAND THE FULL CONTENTS OF THIS MANUAL. THIS MANUAL MUST BE READ BY ALL USERS. FAILURE TO OPERATE THIS EQUIPMENT AS DIRECTED MAY CAUSE INJURY OR DEATH.

ORIGINAL INSTRUCTIONS IN ENGLISH LANGUAGE

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.

⚠WARNING:

Questions, problems, missing parts? Before returning to your retailer, call our customer service department at 800-616-9618

Read carefully and understand all **ASSEMBLY AND OPERATION INSTRUCTIONS** before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

READ THIS ENTIRE MANUAL BEFORE INSTALLATION & OPERATION BEGINS

IMPORTANT

Before You Begin Register This Product.
For future reference, record the model name, model number, serial numbers, date of manufacture and purchase date of this product. You can find this information on the product.

Model Name	
Model Number	
Lift Serial #	
Date of Manufacture	
Date of Purchase	
Power Unit Model #	
Power Unit Date of Mfg.	
Power Unit Serial #	

Save the receipt, warranty and these instructions. **This information is required when calling for parts or warranty issues. Warranty is non-transferable. To be able to make a claim under a written warranty, the manufacturer requires you to register the product by filling in and returning a warranty card or by registering the product online at www.torin-usa.com.**

TO VALIDATE YOUR LIFT WARRANTY

Register online before first use at www.apluslift.com help@apluslift.com

SAVE THESE INSTRUCTIONS

OWNER / USER RESPONSIBILITY

DO NOT OPERATE OR REPAIR THIS PRODUCT WITHOUT READING THIS MANUAL.
Read and follow the safety instructions. Keep Instructions readily available for operators. Make certain all operators are properly trained and understand how to safely and correctly operate the product. By proceeding you agree that you fully understand and comprehend the full contents of this manual. Failure to operate this product as intended may cause injury or death. The manufacturer is not responsible for any damages or injury caused by improper use or neglect. Allow product operation only with all parts in place and operating safely. Use only genuine replacement parts. Service and maintain the product only with authorized or approved replacement parts; negligence will make the product unsafe for use and will void the warranty. Carefully inspect the product on a regular basis and perform all maintenance as required. Store these instructions in a protected dry location. Keep all decals on the product clean and visible. Do not modify and/or use for any application other than that for which this product was designed. If you have any questions relative to a particular application, DO NOT use the product until you have first contacted the distributor or manufacturer to determine if it can or should be performed on the product.

SHIPPING DAMAGE CLAIMS

Once the equipment/product has been shipped, bill of sale passes to the Purchaser. Materials damaged in shipment claims must be made by the Purchaser against the Freight Carrier at the time of shipment arrival. Any freight damage must be noted on the freight bill before signing and reported to the freight carrier with a freight claim established. Manufacturer is not responsible for freight claims. Identify the components and check for shortages. If shortages are discovered, please contact the Distributor / Sales Representative in your area for service. It is the customer's responsibility to arrange for unloading of products shipped.

SHIPPING FREIGHT

This item is shipped via "truck freight" (common carrier or flat-bed, not UPS). Truck freight companies do NOT require their drivers to unload shipments. An additional "Lift Gate" fee will apply if the driver unloads the merchandise. The shipping carrier will call and schedule delivery, at which time, you may request a "Lift Gate" (provided the weight and dimensions of the product fits the criteria for lift gate service) and arrange payment with the carrier for that service.

GENERAL SAFETY RULES

 **WARNING: Read and understand all instructions.** Failure to follow all instructions listed below may result in serious injury.

 **CAUTION: Do not allow persons to operate or assemble this product until they have read this manual and have developed a thorough understanding of how the product works.**

 **WARNING: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions or situations that could occur.** It must be understood by the operator that common sense and caution are factors that cannot be built into this product, but must be supplied by the operator.

HAZARD DESCRIPTIONS

Use alertness and prudence in a hazardous situation; care; wariness.
Identify the hazard levels used in this manual with the following definitions and signal words:

⚠ DANGER:
Immediate hazards which will result in severe liability or exposure to personal injury or death.

⚠ WARNING:
Hazards or unsafe practices which could result in severe personal injury or death.

⚠ CAUTION:
Hazards or unsafe practices which may result in personal injury, product or property damage.

IMPORTANT INFORMATION:

This lift is designed for indoor use only, and should not be installed in a pit or uneven surface. Manufacturer recommends the floor on which the lift is to be installed must be 6" inch minimum thickness concrete, with a minimum compressive strength of 3000 psi, and reinforced with steel bar, and a minimum edge distance of 8 inches. (Contact your building architect for information before installing on Pre-stressed concrete.)

The lift has specific electrical requirements as described in the Installation Instructions section of this manual. This lift has a minimum ceiling height requirement as described in the Installation Instructions section of this manual. **Failure by the owner to provide the recommended shelter, mounting surface, electrical supply, and ceiling height could result in unsatisfactory lift performance, property damage, or personal injury.**

IMPORTANT SAFETY INSTRUCTIONS

WARNING: When using your garage equipment, basic safety precautions should always be followed, including the following:

1. Read all instructions. Study, understand, and follow all instructions before operating this device.
2. Care must be taken as burns can occur from touching hot parts.
3. Do not operate equipment, with a damaged cord or if the equipment has been dropped or damaged - until it has been examined by a qualified service person.
4. Do not let a cord hang over the edge of the table, bench, or counter or come in contact, with hot manifolds or moving fan blades.
5. If an extension cord is necessary, a cord, with a current rating equal to or more than that of the equipment should be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.
6. Always unplug equipment from electrical outlet when not in use. Never use the cord to pull the plug from the outlet. Grasp plug and pull to disconnect.
7. Let equipment cool completely before putting away. Loop cord loosely around equipment when storing.
8. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).
9. Adequate ventilation should be provided when working on operating internal combustion engines.
10. Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
11. To reduce the risk of electric shock, do not use on wet surfaces or expose to rain.
12. Use only as described in this manual. Use only manufacturer's recommended attachments.
13. ALWAYS WEAR SAFETY GLASSES. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses.
14. To reduce the risk of injury, close supervision is necessary when this product will be used around children. (Pertains to cabinets only.)
15. To reduce the risk of injury, never overload the drawers or shelves. Refer to loading instructions.
16. To reduce the risk of electric shock or fire, never overload receptacles. Refer to markings for the proper load on receptacles.
17. Do not exceed rated capacity.
18. Use only on hard, level surfaces with less than 3 degrees of slope.
19. Do not move or dolly the vehicle while on the lift.
20. Lift only on areas of any vehicle as specified by the vehicle manufacturer.
21. No alterations shall be made to this product.
22. Only attachments and/or adapters supplied by the manufacturer shall be used.
23. Do not get under or allow anyone under the vehicle until it has been supported with auxiliary jack stands on both the front and rear of the vehicle.
24. Center load on lifting arms and saddles prior to lifting.
25. Secure vehicle to ensure no shifting, movement, or tipping will occur when performing maintenance on any vehicle.
26. Verify that safety locks are engaged on the arms and lifting carriages before performing any work.
27. NEVER use lift with a motorcycle, lawn mower, or lawn tractor.
28. Do not use this product for any use other than the manufacturer specified usage. Failure to heed these warnings may result in personal injury and/or property damage. The distributor is not responsible for any damages or injury caused by improper use or neglect.
29. Do not use wood blocks or any other non-approved load sustaining devices or any other non-approved lifting devices for a means of lifting a vehicle, stabilizing, securing, spacing, adding additional height, or load being raised. The manufacturer only warrants loads to be sustained by adapters or accessories validated by the manufacturer. Failure to head these warnings may cause injury or death.
30. Do not adjust power unit pressure relief valve, any tampering will void warranty and may cause catastrophic failure. Failure to head these warnings may result in injury or death.

IMPORTANT SAFETY CONSIDERATIONS

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

- Inspect the product for proper operation and function before each use.
- Do not modify the product in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment. There are specific applications for which the product was designed.
- Always check for damaged or worn out parts before using the lift. Broken parts will affect the equipment operation. Replace or repair damaged or worn parts immediately.
- Keep instructions readily available for equipment operators.
- Make certain all equipment operators are properly trained; understand how to safely and correctly operate the unit.
- Allow unit operation only with all parts in place and operating properly.
- Use only genuine replacement parts.
- Service and maintain the unit only with authorized or approved replacement parts; negligence will make the product unsafe for use and void the warranty.
- Carefully inspect the unit on a regular basis and perform all maintenance as required.
- Keep all decals on the unit clean and visible.

⚠ GENERAL SAFETY INSTRUCTIONS:

Training - Do not allow anyone who has not read this manual, and/or does not understand the requirements to use the product.

Spectators - Do not allow bystanders around the lift or under the load supported. Do not allow anyone in a vehicle while the lift is in use or is supporting a load. Keep all bystanders away from lift when in use.

Operators - Not for use by children or people with reduced mental capacity. Not for use under the influence of drugs or alcohol.

Inspection - Inspect the product carefully before each use. Ensure the product is not damaged, excessively worn, or missing parts. Do not use the lift unless it is properly lubricated. Using a lift that is not in good clean working condition or properly lubricated may cause serious injury.

INTENDED USE

This two-post car lift is designed to lift and raise light duty vehicles under 10,000-lbs. Our 2 post car lifts offer variable lifting configurations, for unobstructed floor space while repairing vehicles.

TECHNICAL SPECIFICATIONS

Description	US Imperial (in) (lbs)		Metric (mm) (kg)
Lift Capacity	12,000 lbs.		5909 -kg
Max Rise from the ground	76 in		1930mm
Lifting Range	70.1 in		1780mm
Lowest Clearance from the ground	3.9 in		100mm
Drive-Thru Clearance	109.1 in		2770mm
Overall Width	149.1 in		3787mm
Width Inside of Columns	122.9 in		3121mm
Front Arm Reach	37.5 to 72.2 in		952-1834mm
Rear Arm Reach	37.5 to 72.2 in		952-1834mm
Overall Height	165 in	13.75ft	4191mm
Ceiling Height Requirements	168-in	14ft	4267mm
Max Load Per Arm	3250-lbs.		1477-kg

Description	Specifications
Lock Mechanism	Manual
Motor Phase(s)	1 Phase
Volts	208-240
Hertz	50/60
Amps	16 Amps (2.2 kw)
Time to Full Rise (seconds)	75
Maximum operating hydraulic pressure developed upon lifting the rated capacity	1880 psi / 129.62 bar
Manufacturer Warranty	2 year parts warranty

OVERALL HEIGHT CONSIDERATION:

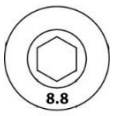
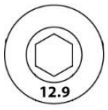
Standard Ceiling Height Requirements: 14-ft

Safe Operating Temperature is between 40°F – 105°F (4°C - 41°C)

Manufacturer recommends using a 25-amp circuit for operating lift

FASTENER TORQUE RECOMMENDATIONS

Values are stated in foot pounds (ft-lbs)

HHCS SHCS CSCS (SAE)	HHCS SHCS CSCS (Metric)	 SAE Grade 2	 SAE Grade 5	 SAE Grade 8	 Socket Head Cap Screw	 Socket Head Cap Screw
		Class 5.8	Class 8.8	Class 10.9	Class 12.9	Class 12.9
¼-20	M6 X 1.0	6	10	14	7.1	11.6
5/16-18	M8 X 1.25	12	19	29	17	29
3/8-16	M10 X 1.50	20	33	47	34	57
7/16-14	NA	32	54	78	NA	NA
½-13	M12 X 1.75	47	78	119	59	99
9/16-12	M14 X 2.00	69	114	169	94	158
5/8-11	M16 X 2.00	96	154	230	146	250
¾-10	M18 X 2.50	155	257	380	210	341
7/8-9	M22 X 2.5	206	382	600	NA	559
¾ Anchor Bolts		150 ft-lbs (for Simpson Anchors provided)				

For national, state, and local building codes requiring CLASS C anchoring requirements, please refer to ASTM C881 / C881M - 15 Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete

CONCRETE FOUNDATION ANCHORING SPECIFICATIONS AND REQUIREMENTS

Manufacturer recommends installation on 2-Post Models use a concrete pad 6 Inch Min. Thickness / 3,000 PSI (4,000 PSI Recommended)
Before installing your new lift, check the following:

Select Lift Location: Always use architects building plans when available. Check layout dimension against floor plan requirements making sure that adequate space is available.

Floor Requirements: The lift should be located on a relatively level floor of less than **3 degrees' slope**. If slope is questionable, consider a survey of the site and/or the possibility of pouring a new level concrete slab. Failure to do so could cause personal injury or death.

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

Defective Concrete: Visually inspect the site where the lift is to be installed and check for cracked or defective concrete. If site is in question, contact a local inspection agency before installing lift.
DO NOT install on asphalt or other similar unstable surface. Columns are supported only by anchoring to concrete floors.
Manufacturer will not be held responsible for any concrete that may not meet slope requirements and will not be responsible for any charges relating to new concrete slabs pouring or leveling or damage.
For national, state, and local building codes requiring CLASS C anchoring requirements, please refer to ASTM C881 / C881M - 15 Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete

IMPORTANT INFORMATION AND GENERAL NOTES FOR EXPANSION ANCHORS

General Instructions for Installing Concrete Anchors

- These general instructions for the installer are provided to ensure the proper selection and installation of Anchor Products and must be followed carefully. These general instructions are in addition to the specific design and installation instructions and notes provided for each particular product, all of which should be consulted prior to and during the installation Anchor Products.
- Use proper safety equipment.
- Most concrete mixes are designed to obtain the desired properties within 28 days after being cast (28-day cure).
- Concrete shall have compression strength of at least 3,000 PSI and a minimum thickness of 6" in order to achieve a minimum anchor embedment. NOTE: When using the standard supplied ¾" x 5 ½" anchors; if the top of the anchor exceeds 2 ¼" above the floor grade you DO NOT have enough embedment.
- Maintain a 8" minimum distance from any slab edge or seam. Hole to hole spacing should be a minimum 6 ½" in any direction. Hole depth should be a minimum of 6".
- Do not modify Mechanical Wedge Anchor products. The performance of modified products may be substantially weakened. Manufacturer will not warrant or guarantee the performance of such modified products.
- Do not alter installation procedures from those set forth in this Manual.
- Drill holes for mechanical anchors with carbide-tipped drill bits meeting the diameter requirements of ANSI B212.15. A properly-sized hole is critical to the performance of mechanical anchors.
- Rotary-hammer drills with light, high frequency impact are recommended for drilling holes.
- Do not use excessively worn bits or bits which have been incorrectly sharpened.
- Please note that the use of oversized holes' is NOT permitted for anchoring any lift. DO NOT USE Anchor Adhesive to fill spacing of oversize holes'. Move lift location or fill holes with Anchor Adhesive and Re-drill to correct Hole Specification. (See manufacturer for proper anchor adhesive curing times.)

CONCRETE FOUNDATION ANCHORING SPECIFICATIONS AND REQUIREMENTS

Manufacturer recommends installation on 2-Post Models use a concrete pad 6 Inch Min. Thickness / 3,000 PSI (4,000 PSI Recommended)
Before installing your new lift, check the following:

Select Lift Location: Always use architects building plans when available. Check layout dimension against floor plan requirements making sure that adequate space is available.

Floor Requirements: The lift should be located on a relatively level floor of less than **3 degrees' slope**. If slope is questionable, consider a survey of the site and/or the possibility of pouring a new level concrete slab. Failure to do so could cause personal injury or death.

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

Defective Concrete: Visually inspect the site where the lift is to be installed and check for cracked or defective concrete. If site is in question, contact a local inspection agency before installing lift.

DO NOT install on asphalt or other similar unstable surface. Columns are supported only by anchoring to concrete floors.

Manufacturer will not be held responsible for any concrete that may not meet slope requirements and will not be responsible for any charges relating to new concrete slabs pouring or leveling or damage.

CLASS C SIESMIC APPLICATIONS: For national, state, and local building codes requiring CLASS C anchoring requirements, please refer to ASTM C881 / C881M - 15 Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete

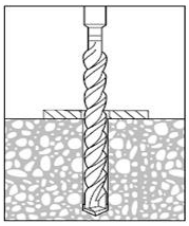
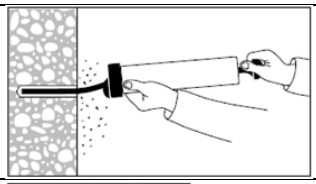
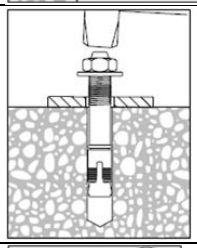
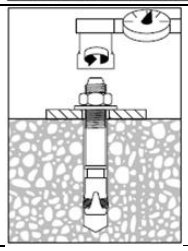
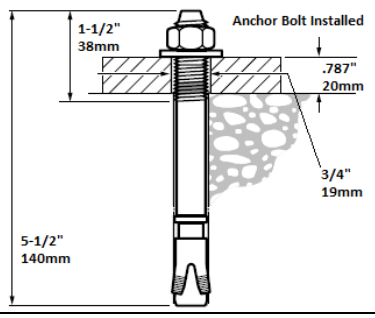
IMPORTANT INFORMATION AND GENERAL NOTES FOR EXPANSION ANCHORS

General Instructions for Installing Concrete Anchors

EXPANSION ANCHOR INSTALLATION INSTRUCTIONS ¾” X 5-1/2”

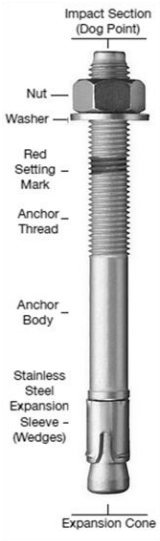
Anchor size is same as drill bit size (.775" to .787“)

Use a hammer drill with a Carbide tip, 3/4" diameter, solid drill bit. The bit tip diameter should be to ANSI Standard B212.15-1994. The Simpson-Tie Strong Bolt 2 wedge anchor is used to resist static, wind and seismic tension and concrete loads in cracked and uncracked concrete applications, with a compressive strength of 3,000psi to 8,500psi. Supports Compliance with 2015, 2012, 2009, and 2006, 2003 International Building Code (IBC); and International Residential Code (IRC). The Strong-Bolt 2 wedge anchors are torque-controlled, mechanical expansion anchors consisting of an anchor body, expansion clip, nut, and washer.

1. 	Hammer Drill a hole to the same nominal diameter as the expansion anchor. The hole depth must exceed the anchor embedment at least ¼”. Use the baseplate as a drilling template to ensure proper anchor locations. (Drill completely through the concrete floor in case movement of the lift is required.)
2. 	Clean hole completely. Remove dirt and dust with the use of a shop vac. or an air compressor.
3. 	Assemble the flat washer and nut flush on the anchor bolt. Drive the expansion anchor into the hole using a hammer. If shimming is required, make sure to leave threads exposed for proper shimming.
4. 	Tighten the nut to the recommended installation torque.
5. 	Installation complete.

Do not disturb, bolt up, or apply load to adhesive anchors prior to the full cure of any adhesive.
Metal anchors and fasteners will corrode and may lose load-carrying capacity when installed in corrosive environments or exposed to corrosive materials. There are many environments and materials which may cause corrosion including ocean salt air, fire-retardants, fumes, fertilizers, preservative-treated wood, dissimilar metals, and other corrosive elements.
Finished Diameters for Rotary and Rotary Hammer Carbide Tipped Concrete Drills per ANSI B212.15

Do not cut or drill through a post tension cable! (Locate any post tension cables before you drill.)



PRE-INSTALLATION PROCEDURES

Before beginning your installation make sure you read the installation manual and insure all instructions and safety guidelines are fully understood. Check that all component parts are accounted for. Locate the installation area, identify the center line of the bay and mark the floor. Also mark the center of bay entrance door. Connect these two points with a short chalk line in the area where lift will be located. Draw a second chalk line at 90° to locate the positions of both lift columns. (Refer to lift dimensions on this page)
Keep this manual with lift at all times.

DO NO INSTALL LIFT ON ASPHALT OR ANY OTHER SURFACE THAN A CONCRETE FLOOR CONFORMING TO THE MINIMUM REQUIREMENTS DETAILED IN THIS MANUAL. DO NOT INSTALL THIS LIFT ON CONCRETE WITH SEAMS OR CRACKS OR DEFECT. IF YOU HAVE ANY QUESTIONS AND CONCERNS WITH THE LIFT LOCATION SELECTED CONTACT YOUR LOCAL ARCHITECT.

Use safety protective clothing and protective wear when installing lift.

Installation Tools Required:

- 16ft. Measuring tape
- Chalk line and chalk
- Heavy duty metal wire cutters
- 3 ft. Crow bar
- Full set of metric wrenches and ratchet set
- Full set SAE wrenches and ratchet set
- Full set metric and SAE Allen keys
- 1-1/8” Socket and Calibrated Torque Wrench
- Hammer
- Sledge hammer (for installing anchor bolts)
- Rubber mallet
- Phillip screwdrivers
- Flat blade screwdrivers
- Snap ring pliers
- (2) 12 ft. Step ladders
- (1) 4 ft. Level
- (1) rotary hammer drill with 3/4” diameter masonry drill bit
- Lifting devices: Use proper lifting devices such as cranes or a forklift.
- 4” x 4” wooden blocks (use for unpacking)
- Additional help
- Gloves

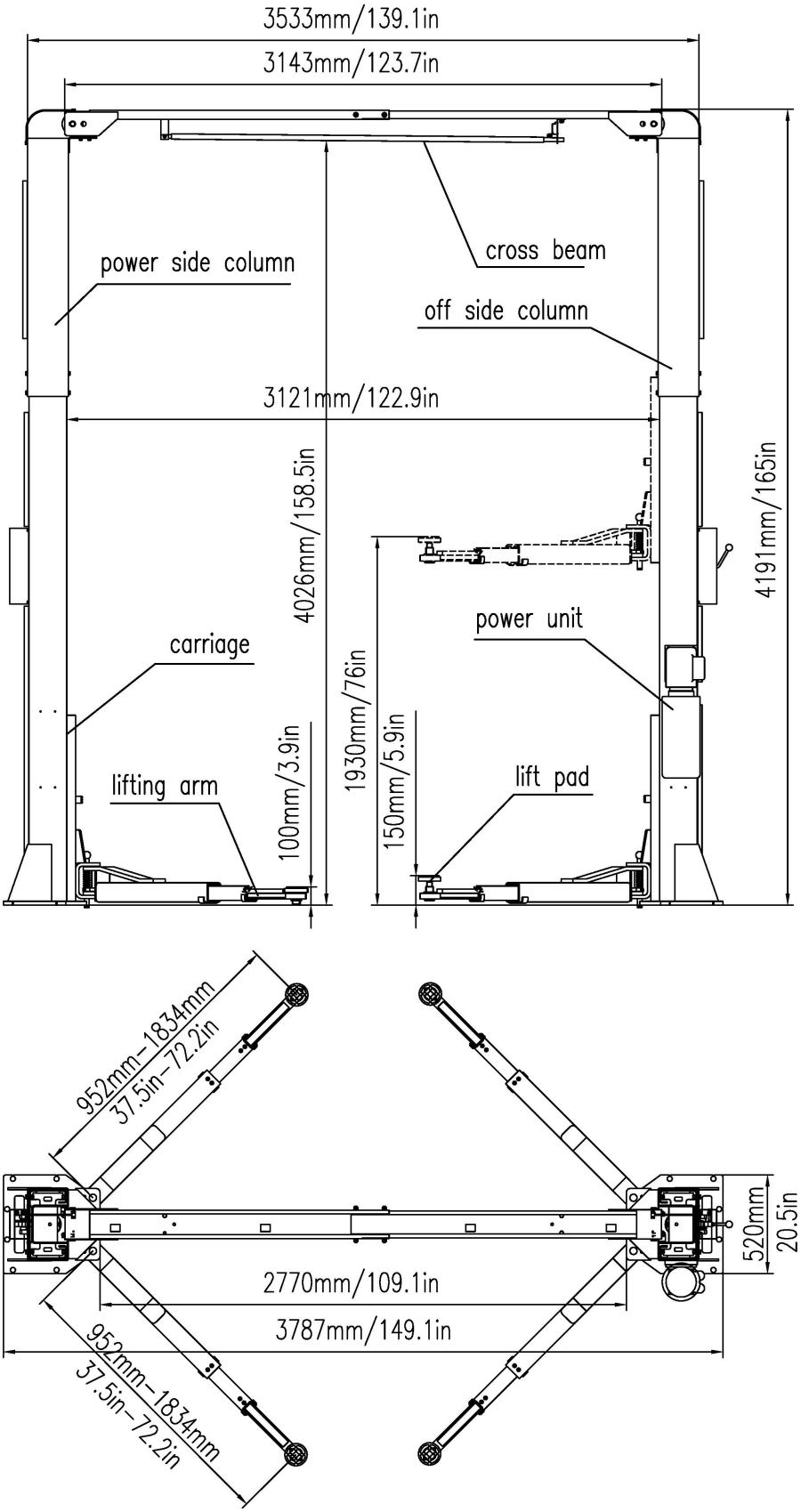
List of items included in shipment:

- 1– Power Side Column
- 1– Non-Power Side Column
- 2—Lifting Carriages
- 2– Cylinders
- 1– Crossover Beam Assembly
- 1– Long Hydraulic Hose
- 1– Medium Hydraulic Hose
- 1– Short Hydraulic Hose
- 1—Power Unit
- 1—Limit Switch
- 4—Lifting Arms
- 4—Drop Pins
- 4—Lifting Pads
- 8—Lift Pad Extension
- 2– Safety Latch Assemblies
- 2– Safety Covers
- 2—Boxes Hardware
- 12—Expansion Anchor Bolts 3/4” X 5 –1/2”
- 1—Installation Manual
- 4—Safety Labels

A qualified person should be consulted to address seismic loads and other local or state requirements.

This car lift is designed for indoor installation, prohibiting outdoor installation of this lift. Approved only for indoor installation.

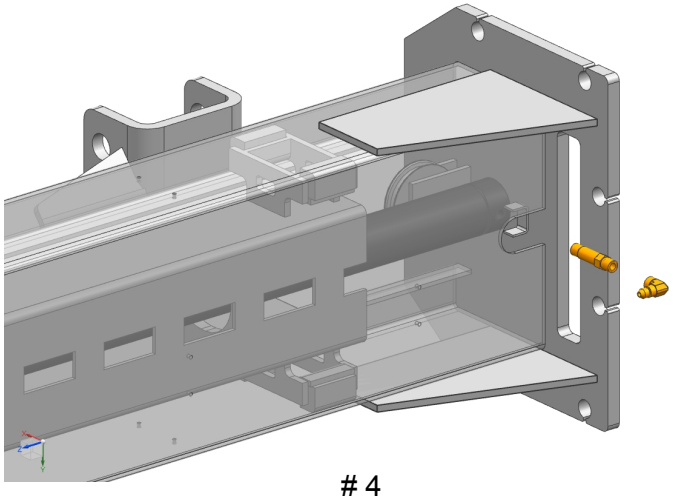
CAR LIFT DIMENSIONS



INSTALLATION PROCEDURE

Make sure you have extra help or heavy duty lifting equipment when unloading and assembling the lift. Manufacturer will assume no liability for loss or damage of any kind, expressed or implied resulting from improper installation or use of this product. Do not attempt to install equipment unless you have been trained on 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. After unloading the lift, place it near the intended installation location.
2. Remove the shipping bands and packing materials from the lift. The power unit will be unpacked from the top. Note: Be careful not to drop power unit on heavy end
3. Open the wrapping, remove the parts and parts boxes from the packaging. Unbolt the structure from the shipping brackets. (Use proper lifting devices, cranes or a forklift to lift off of shipping brackets.)
4. Slide each carriage 20-30" towards top of columns to expose base of cylinders.
   Attach the straight connector and right angle connector to the cylinder.



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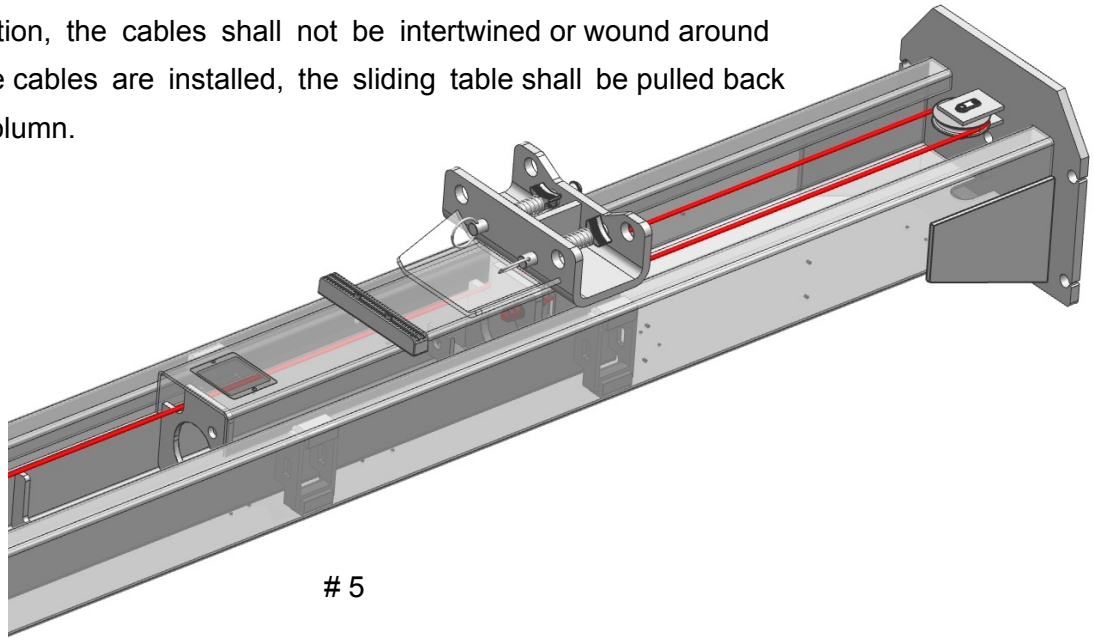
5. In order to install cables, it is required to pull the sliding table to the top of the column by 20-30”, fix the short thread end of the equalizer cable to the sliding table with two nuts M16,washer M16, and then place the other thread end in the column after passing through the sliding table through the cable sheave. In addition, the cables shall not be intertwined or wound around the cylinder. After the cables are installed, the sliding table shall be pulled back to the bottom of the column.



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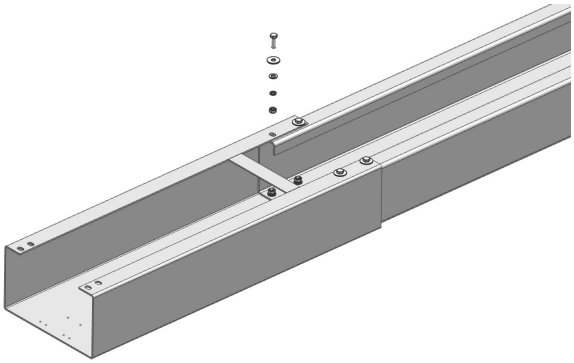
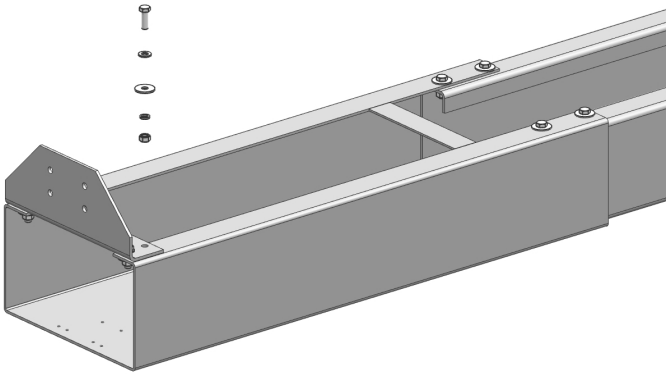
6. Assemble the extension column to the main column with bolt M12x35, flat gasket 12, washer 12, spring washer 12 and jam nut M12.

Fix the crossbeam connection plate to the extension column ith bolt M12x35, flat gasket 12, washer 12, spring washer 12 and jam nut M12.

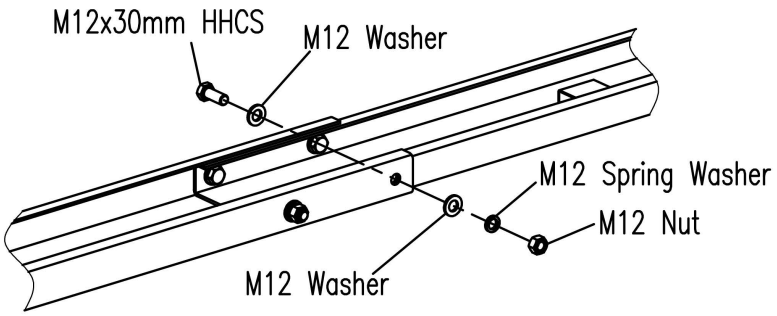


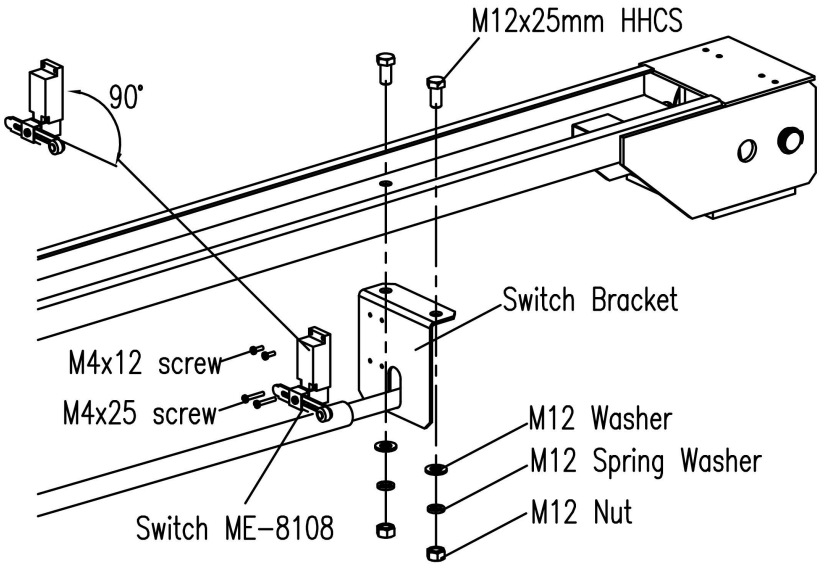
6-1

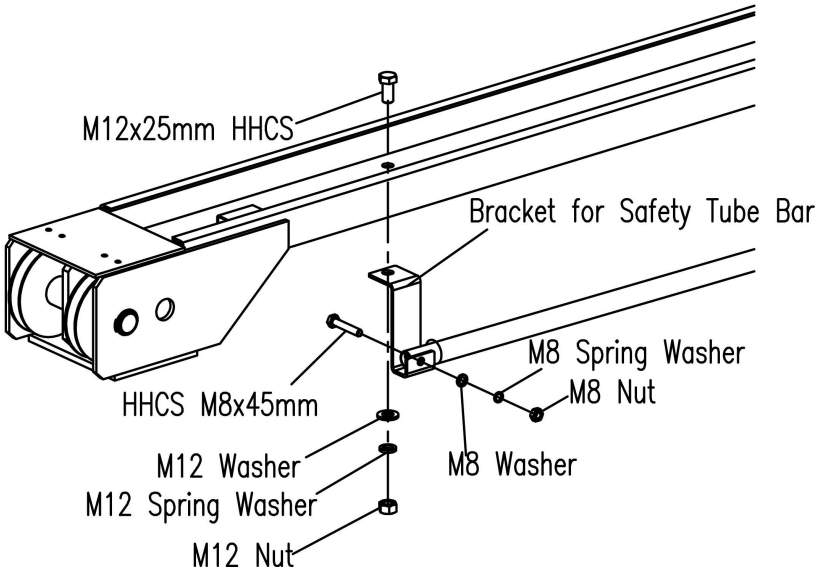


6-2

7. In order to assemble the crossbeam, it is required to install the crossbeam parts.

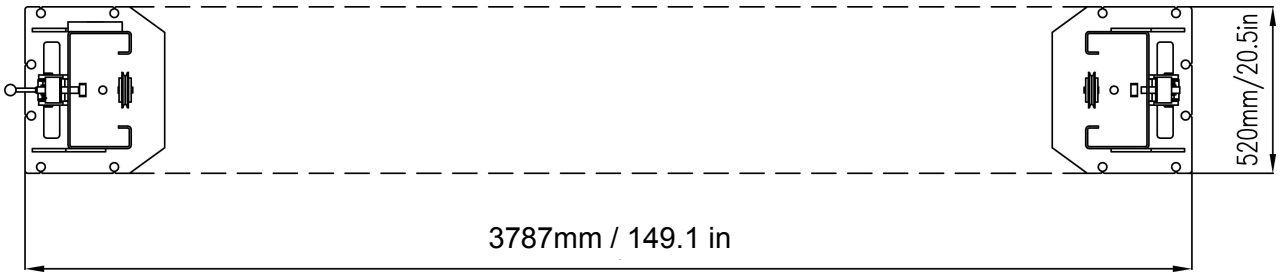






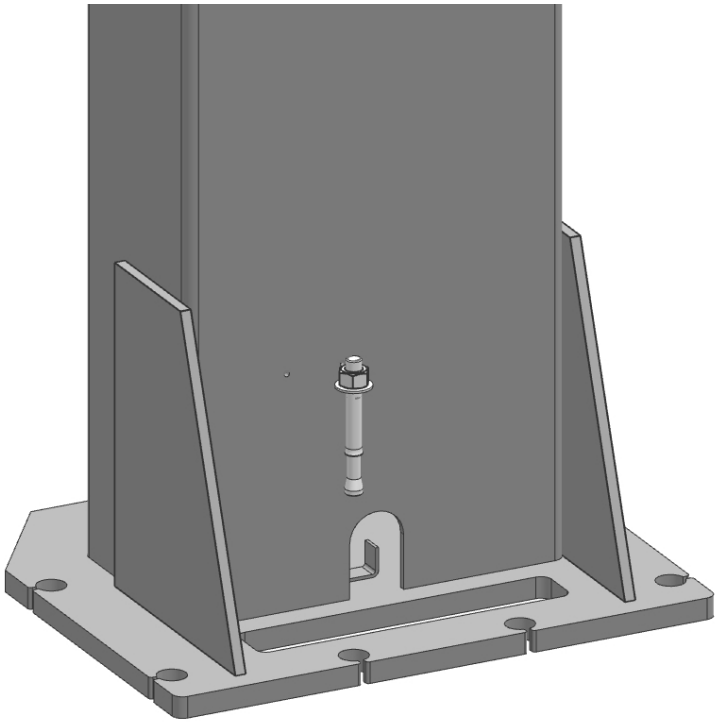
7

8. It is required to draw a rectangle (L: 149.1 in; W: 20.5 in) with chalk in the installation position of lifting machine, erect the main column to place it according to the angle and hold it to prevent it from falling down.



8

9. It is required to drill a hole along the mounting hole of the expansion bolt on the bottom plate and install the expansion bolt in order to prevent the column from falling down (please note that only one expansion bolt will be installed, and other boreholes and expansion bolts will be fixed after the crossbeam is installed).



9

Installation Instruction for Expansion Anchors.

For additional detailed information on foundation requirements see **(See Foundation, Anchoring Requirements, and Anchoring Tips Instructions.)**

CAUTION: Anchors must be at least 8" from the edge of the slab or any seam.

A. *Measure Lift Placement. (Recommended using columns as a template before drilling and marking holes.)*
B. *Keep the drill in a perpendicular line while drilling.*

C. *Let the drill do the work. Do not apply excessive pressure. Lift the drill up and down occasionally to remove residue to reduce binding.*

D. *Drill the hole to depth equal to the length of anchor. Note: Drilling all the way through the concrete (recommended) will allow the anchor to be driven through the bottom of foundation if the threads are damaged or if the lift will need to be relocated. (Example A.1)*

E. *After drilling blow the dust from the holes. (Example A.2)*

F. ***Repeat Steps 1 through 5 (Qty x 12) after the overhead crossbeam has been installed.***

G. *Move column into place carefully. Then complete the following steps.*

1) *Place flat washer and hex nut over threaded end of 3/4" x 5 1/2" wedge anchor, leaving approximately 1/16 inch of thread exposed carefully tap anchor (use a hammer). Do not damage threads. Tap anchor into the concrete until nut and flat washer are against base plate.*

2) *Using the horseshoe shims provided, shim each column base as required until each column is plumb. If one column has to be elevated to match the plane of the other column, add shim plates. Torque anchors to 150 ft.-lbs. Shim thickness MUST NOT exceed ½" when using the 5 ½" long anchors provided with the lift. Adjust the column extensions plumb.*

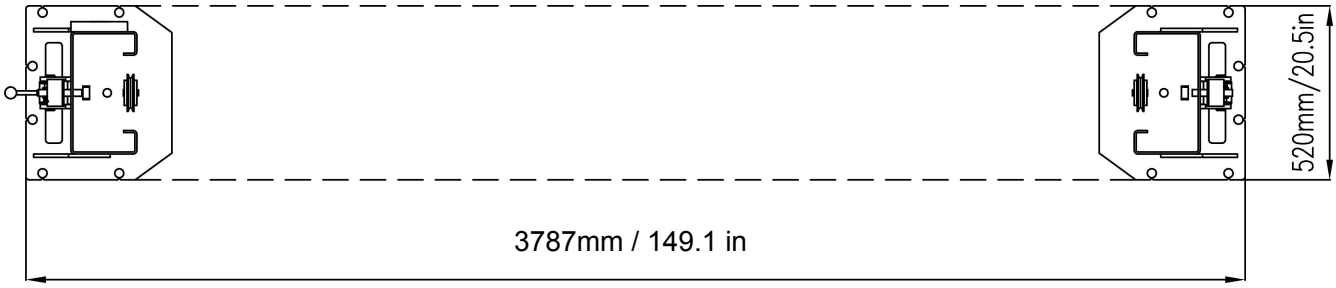
3) *Tighten the nut, two or three turns. Check each anchor bolt with torque wrench set to 100 foot pounds' torque.*

4) *Mechanical Anchors: Tighten the expansion anchors several hours after the initial installation. The anchors should be checked with the daily inspection to make sure they are properly maintained.*

5) *For mechanical anchors that require a specific installation torque: Failure to apply the recommended installation torque can result in excessive displacement of the anchor under load or premature failure of the anchor. These anchors will lose pre-tension after setting due to pre-load relaxation.*

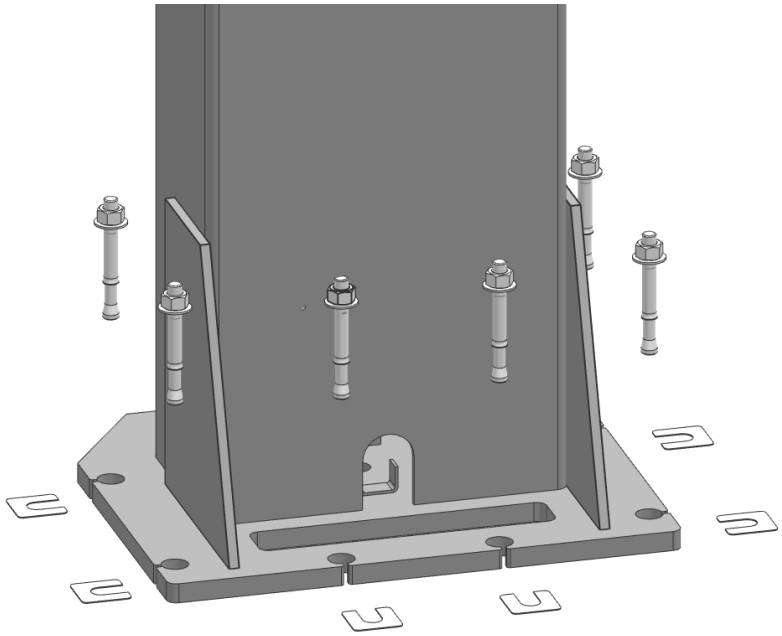
6) ***If anchors do not tighten to 150 ft.-lbs. installation torque, replace the concrete under each column base with a 4' x 4' x 6" thick (Recommended 4,000 PSI) 3000psi minimum concrete pad keyed under and flush with the top of existing floor. Allow concrete to cure before installing lifts and anchors (typically 28 days).***

10. Use your measurement markings to center and locate lift. Once this has been accomplished, the column base plate will be used as a guide for drilling the 3/4" diameter holes into the concrete. **DRILL THE ANCHOR HOLES ONLY FOR THE "POWERSIDE COLUMN"**, installing anchors as you go. NOTE: Drill through concrete slab (recommended) this will allow the anchor to be driven through the bottom of slab, if the threads are damaged or if the lift will need to be relocated.
(See Foundation, Anchoring Requirements, and Anchoring Tips Instructions.)



 # 10

11. Using a level, check column for side-to-side plumb and front-to-back plumb. If needed, use shims provided by placing shims underneath the base plate and around the anchor bolt. (Shim thickness must not exceed 1/2") This will prevent bending the column bottom plates. Tighten the (2) 3/4" anchor bolts 2 to 3 turns.

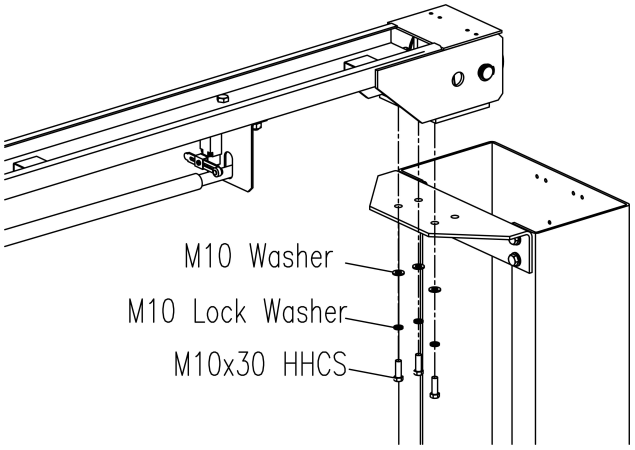


 # 11

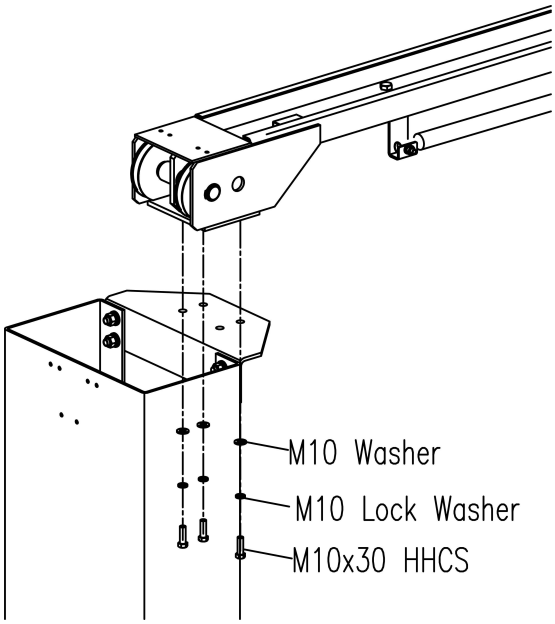
12. Using a tape measure, measure from back corner of the base to the opposite back corner to insure columns are square. After confirming dimensions, install the Overhead Crossbeam

13. DO NOT ANCHOR THE NON-POWERSIDE COLUMN AT THIS TIME.
Note: (Verify column is secure standing alone before beginning next procedures. If needed have another team member secure column standing before performing next steps.)

14. It is required to place the crossbeam parts on the crossbeam connection plate at the top of the main and auxiliary columns to ensure that the crossbeam will not fall. In addition, it is required to fix the crossbeam to the crossbeam connection plate at the top of the main and auxiliary columns with bolt M10x30, spring washer 10, flat gasket 10 .



 # 14-1

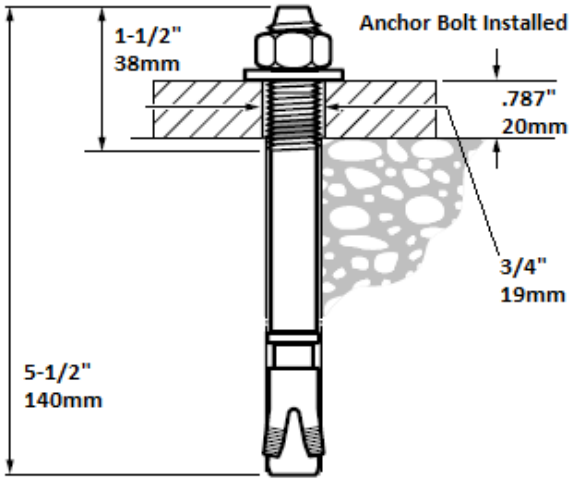


 # 14-2

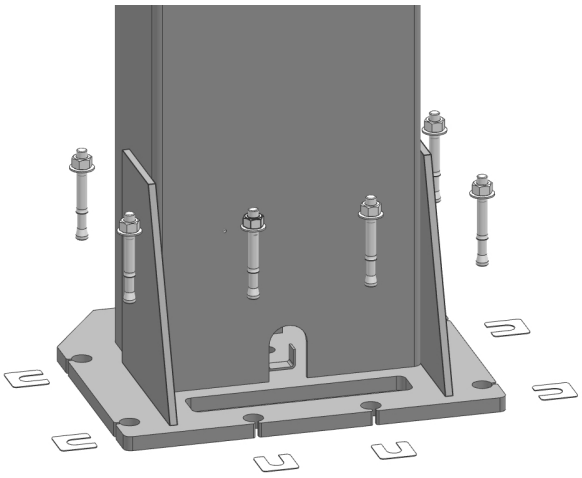
15. It is required to move the parts of the auxiliary column appropriately to make sure that its bottom plate is parallel and aligned with that of the main column hold the auxiliary column, drill a hole and install the expansion bolt. Please pay attention not to tighten the expansion bolt at the beginning.

DANGER: #18
the crossover beam and install on the column mounting points to your proper configuration. Make sure to use proper lifting devices (cranes, forklift, ect.), also **USE HELPERS** to install crossover beam. Make sure to use extreme caution when installing the crossover beam. **CROSSBEAM IS TOP HEAVY.**

16. Using a level, check both columns for side-to-side plumb and front-to-back plumb. If needed, use shims provided by placing shims underneath the base plates and around the anchor bolt. (Shim thickness must not exceed 1/2") This will prevent bending the column bottom plates and installation on an uneven surface. Do not exceed 3 degrees on the foundation of slope between the two columns.



 # 16-1

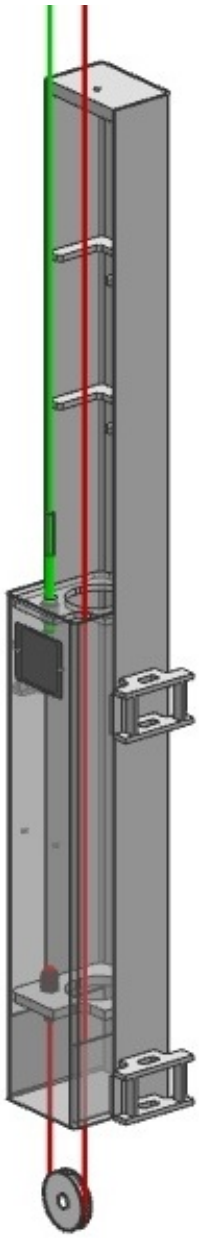


 # 16-2

17. Complete the installation of the remaining anchor bolts by drilling and installing the anchors on the on both posts as shown in Steps 9 to 11. Hand tighten all the anchor bolts at this time.

18. **Route the Equalizer Cables**

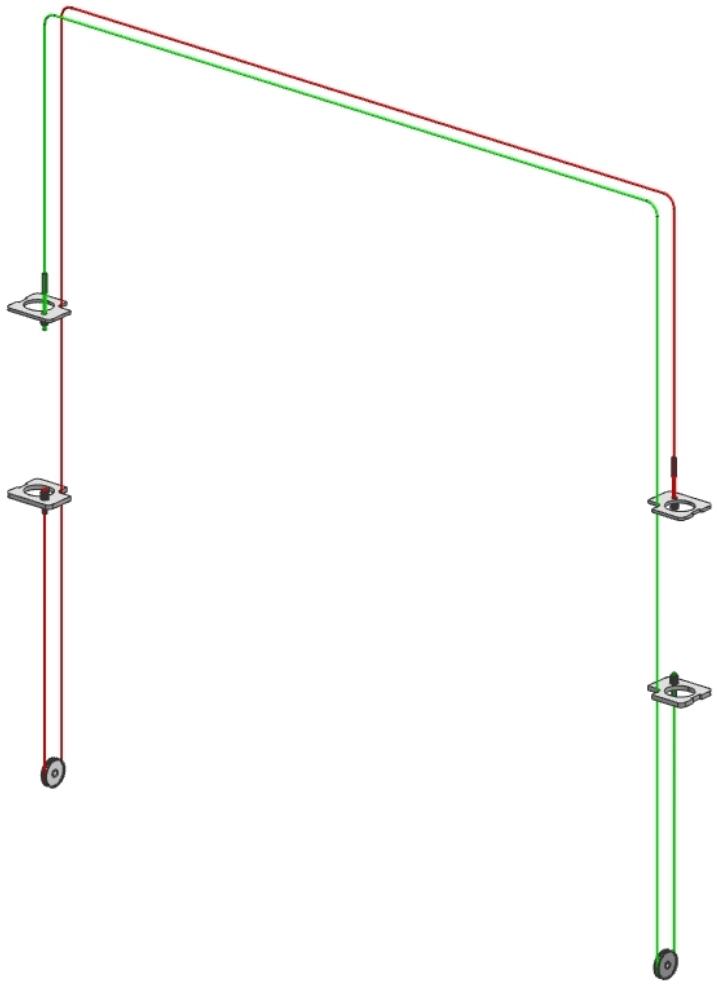
a. Connect the equalizing cables as shown in the diagram below. Do not tighten completely at this stage of assembly. Leave cables hand tight.
b. If applicable remove the access panel on the front of the carriage.
c. Remove the top sheaves so the cable will seat.
d. Route cable through crossover beam sheaves.
   ⚠ **CAUTION: make sure not to cross cables over each other when cable is routed back down opposite side column.**
e. Fasten cable facing down on opposite side column front mounting point.
f. Fasten cable end with hex nut on end of cable until 1/2" of threads are showing above hex nut. Pull back down through carriage until properly seated.
g. Repeat steps A through G for off side cable.



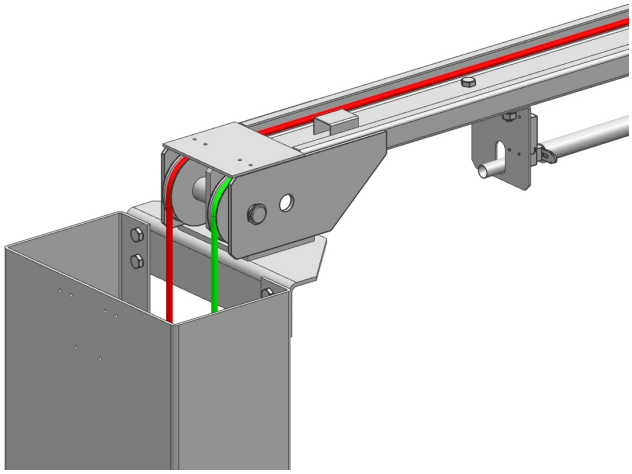
B&G.

 # 18

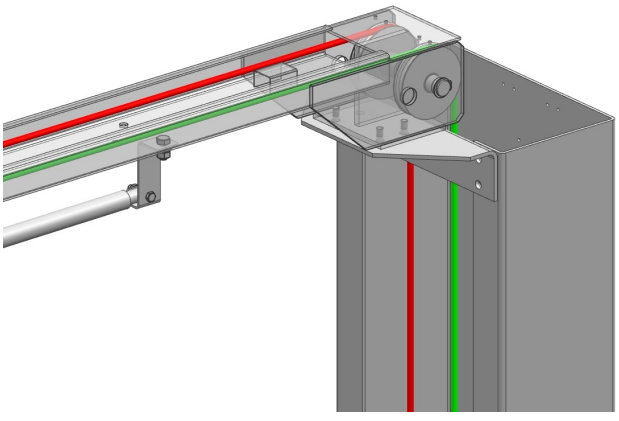
19: Route cables as show in Diagram below for your lift configuration. Be sure to remove the sheaves and replace after cables have been routed.



 # 19-1



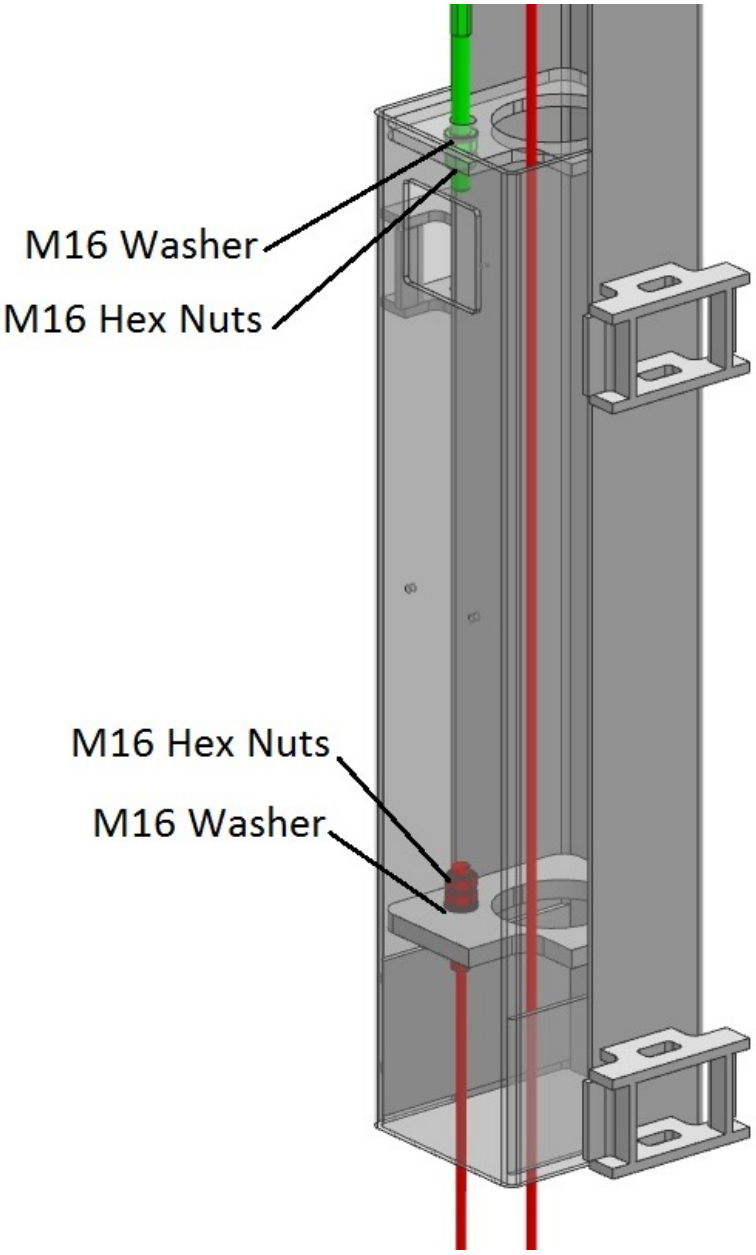
 # 19-2



 # 19-3

20. Check that the cables are correctly wrapped over all sheaves before completely adjusting cables or operating lift.

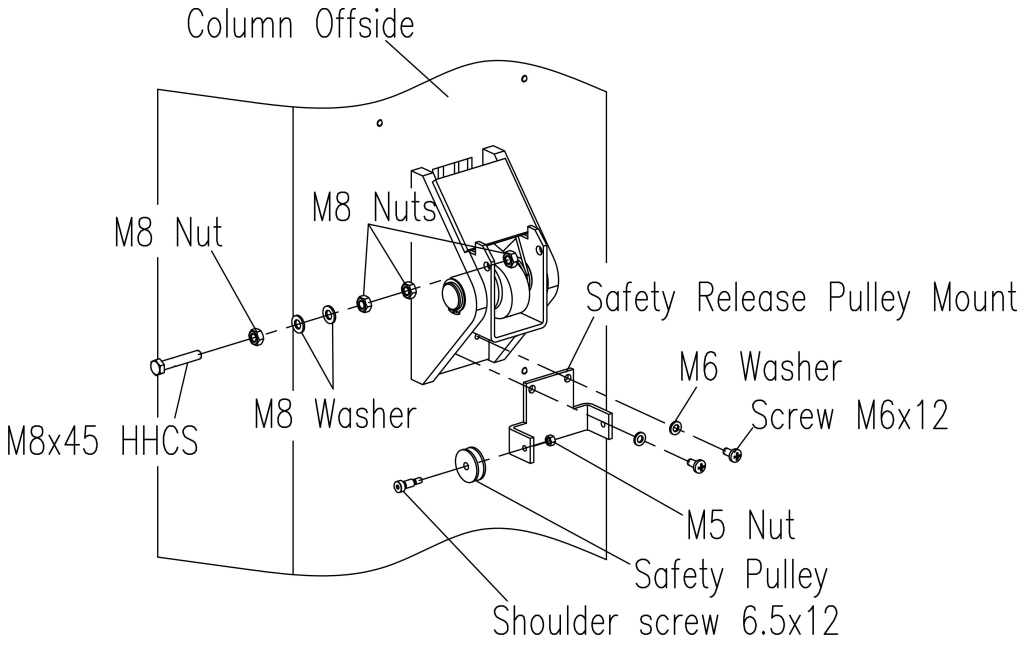
21. Adjust the carriage cable tension. This is accomplished by tightening the (2) M16 tie off hex nuts on each connector the carriage to the cables. Adjust each cable to approximately 1/2” side-to-side play.
Note: The left post carriage nut adjusts the right column carriage.
Note: The right column carriage nut adjusts the left column carriage.



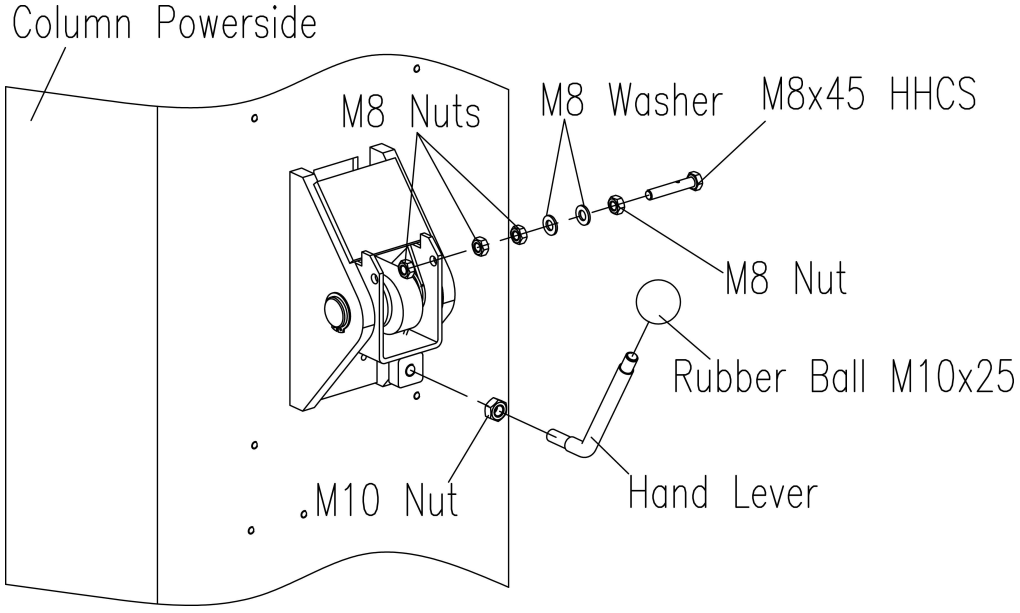
 # 21

Safety Latches and Safety Cable

22. Install Non-Powerside Safety Latch System. See steps below.

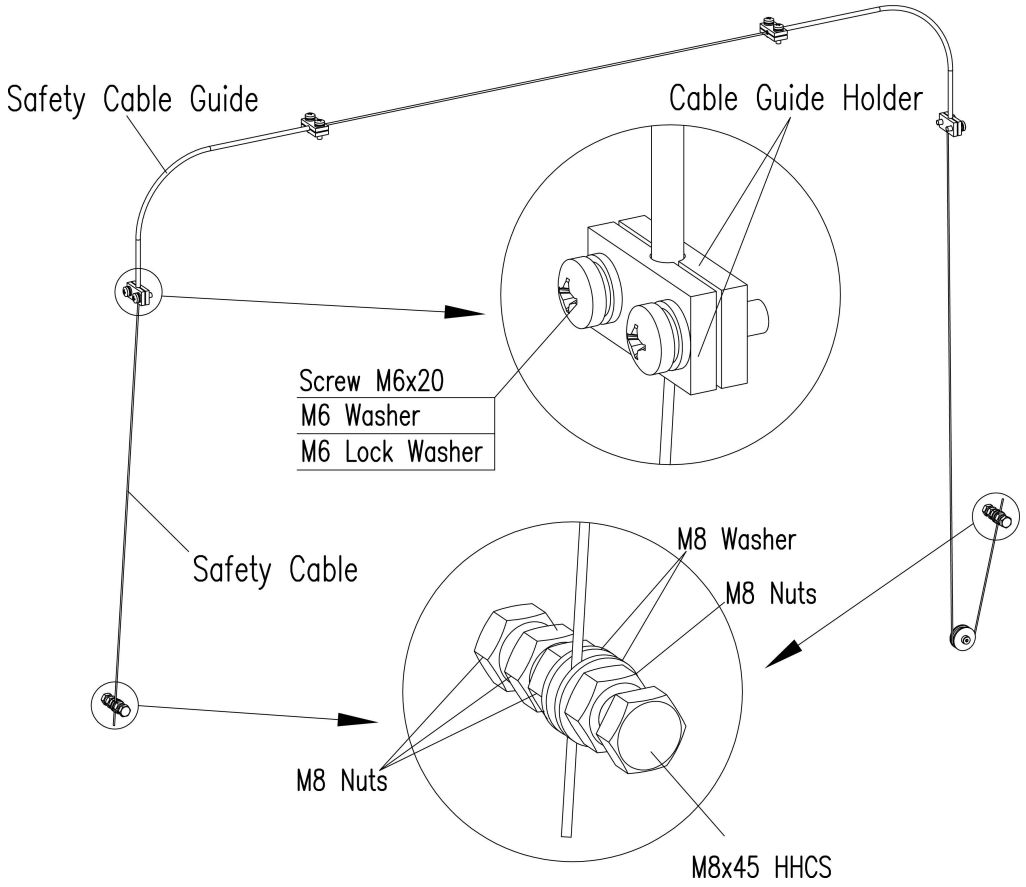


 # 22-1



 # 22-2

23. It is required to install the safety cable.



 # 23

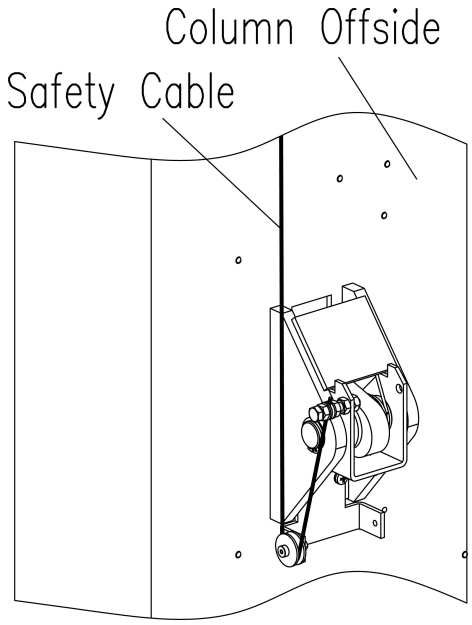
a. It is required to fix the end with lantern ring of the safety cable to the safety cable of the auxiliary column with bolt M8x35 and nut M8.

b. It is required to pass the safety cable through the cable bracket of the auxiliary column after passing through the small cable pulley bracket.

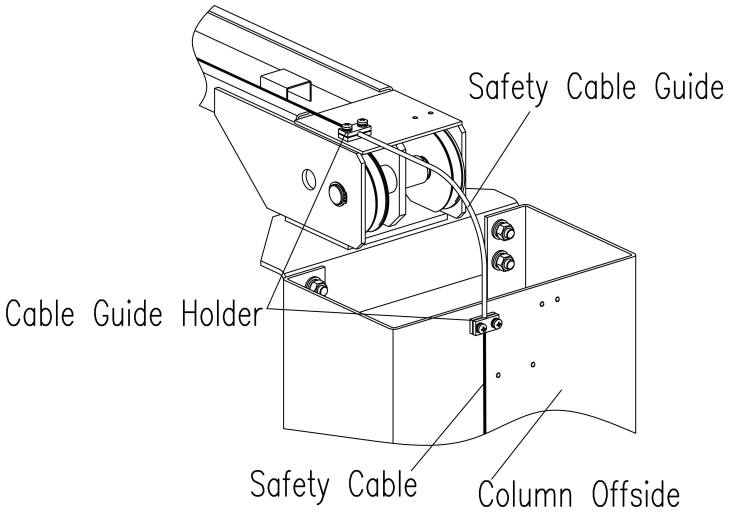
c. It is required to pass the safety cable through the cable pulley of the main column.

d. It is required to pass the safety cable through the small cable pulley bracket of the main column, and fix the safety cable to the cable of the main column with a bolt M8x45, two flat gasket M8 and three nuts M8.

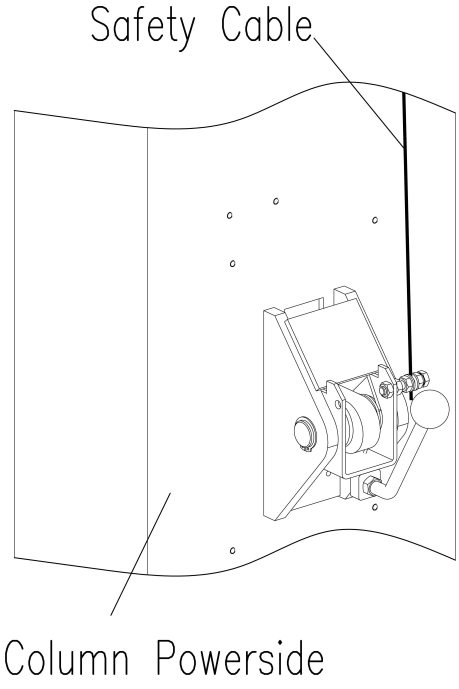
In addition, it is required to check whether the safety cable is falling off and ensure that the safety cable is not intertwined with the oil pipe and equalizer cable.


Column Offside
Safety Cable

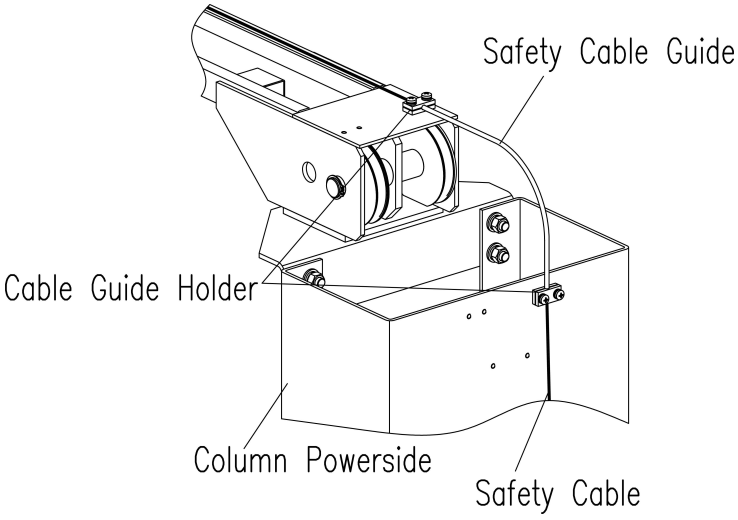
a


Safety Cable Guide
Cable Guide Holder
Safety Cable
Column Offside

b


Safety Cable
Column Powerside

c

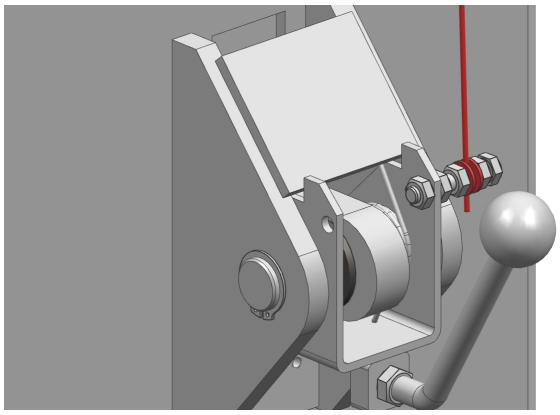

Safety Cable Guide
Cable Guide Holder
Column Powerside
Safety Cable

d

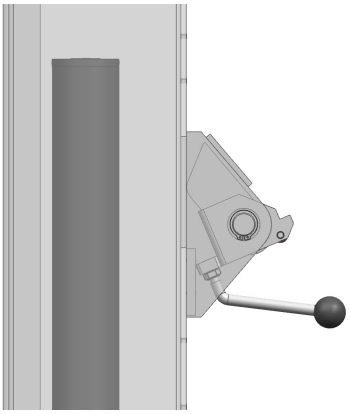
24. Route the safety cable through the Custom M8x45mm HHCS and attach to Powerside safety latch assembly by tightening the M8 Hex Nuts and the M8 Flat washers together.
Note: Before tightening check that cable is routed over all safety sheaves.
25. Verify the connection of the safety cable between the two latches. Check that the tension of the cable is tight. Pull the safety release handle several times and check the tension again by making sure both latches are adjusted correctly by pulling down on the power side Safety Lock Lever. The safety release locks will need to click at the same time when the handle is pulled and released. Retighten as needed until adjusted properly.
Note: Do not over tighten as this will result in a malfunction of locking mechanisms.
Note: The safety cable will need to be adjusted periodically. The cable will stretch with-in the first few uses.

⚠ **CAUTION: Always verify that Both Safety Latches are released before lowering vehicle.**

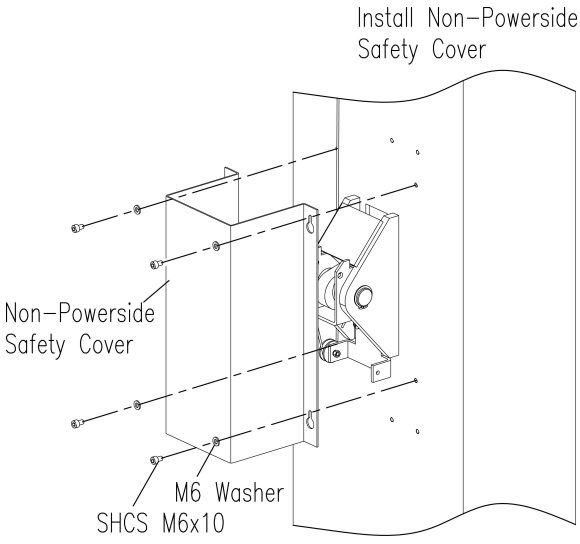
#24



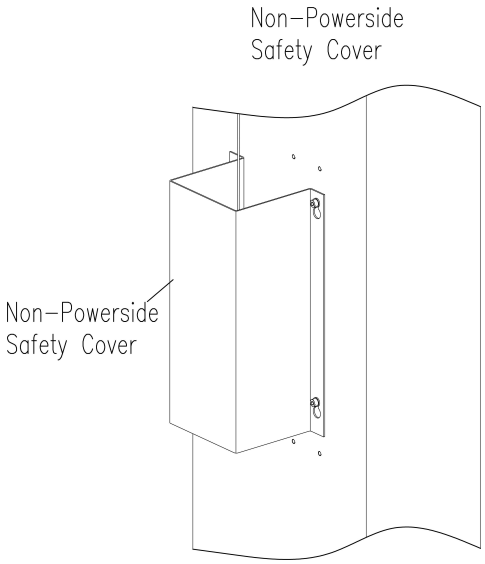
#25



26. Install Non-powerside safety cover.

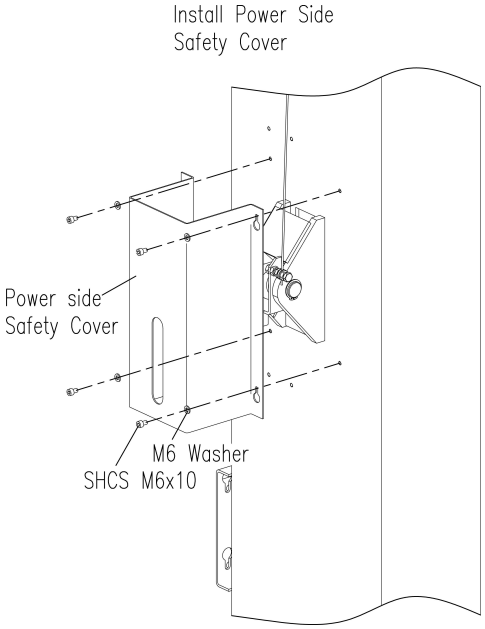


#26-1

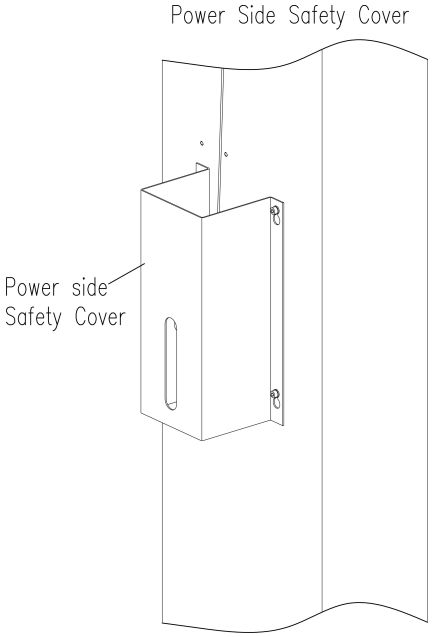


#26-2

27. Install Powerside safety cover.

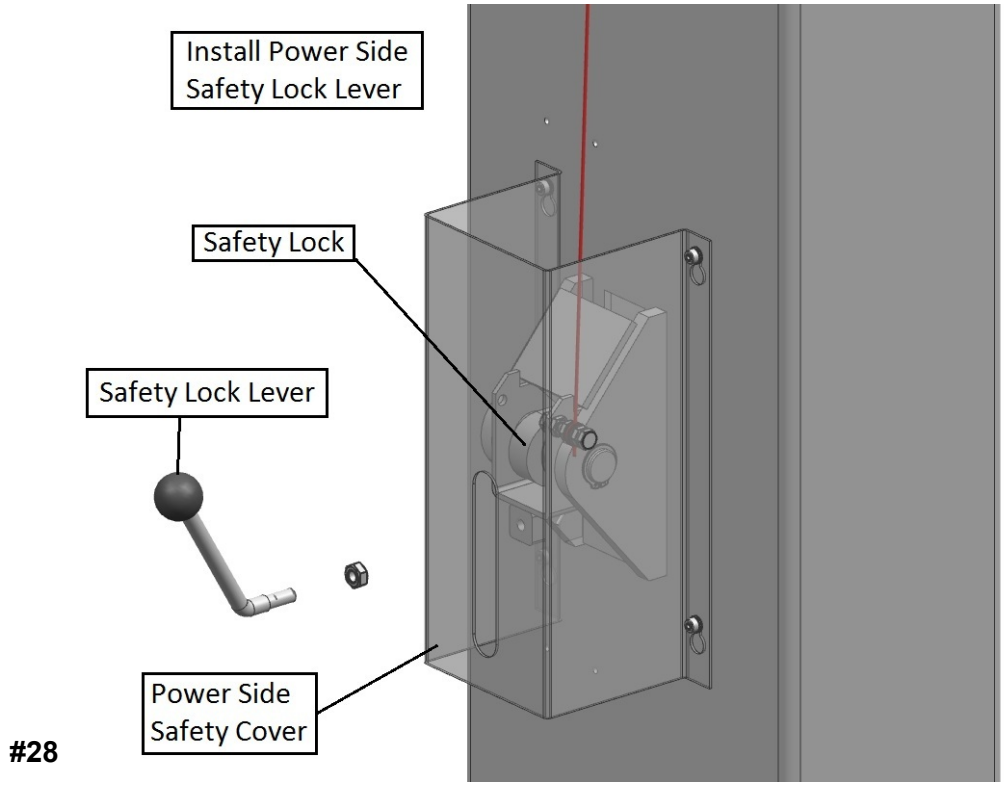


#27-1



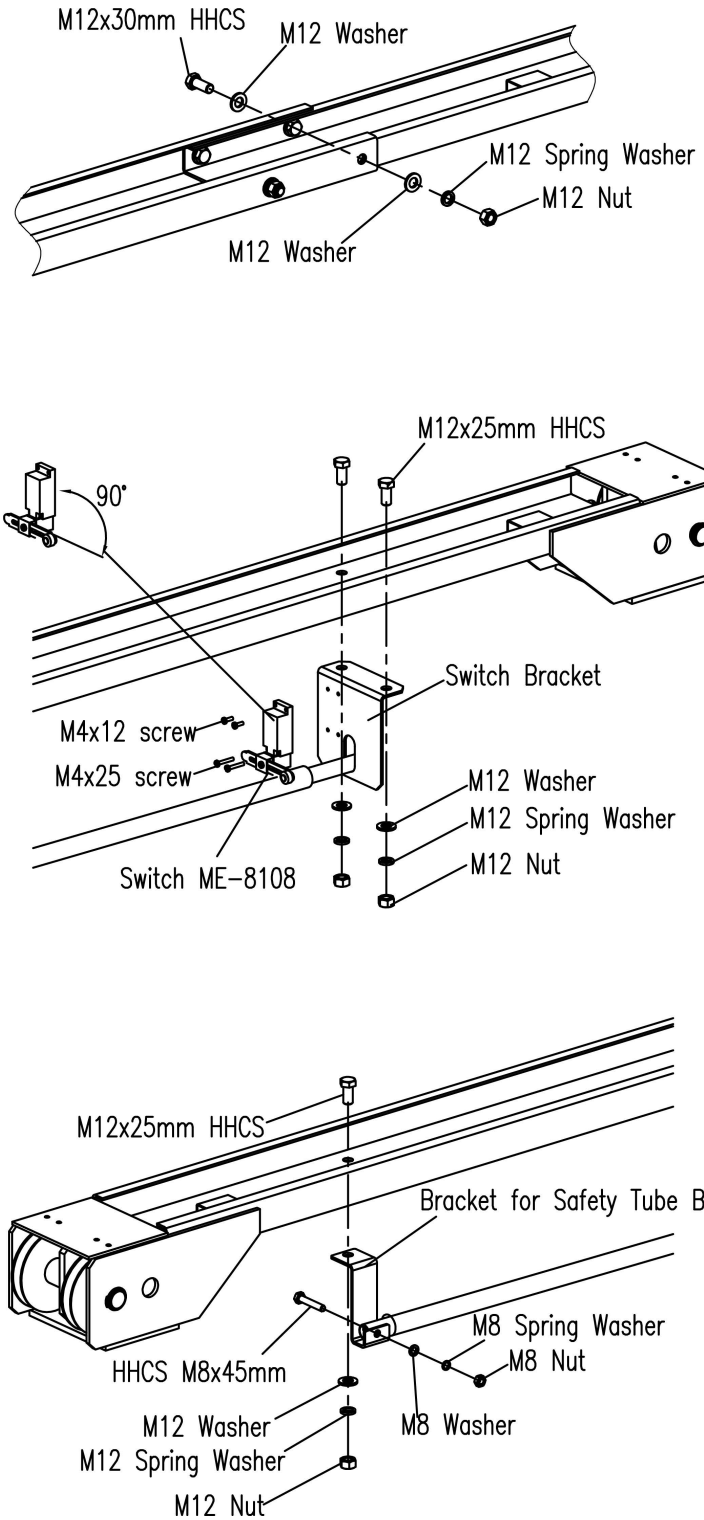
#27-2

28. Install Powerside Safety Lock Lever.



#28

29. Install Limit Switch on the Powerside.
    Install the Safety Bar on the Non-Powerside

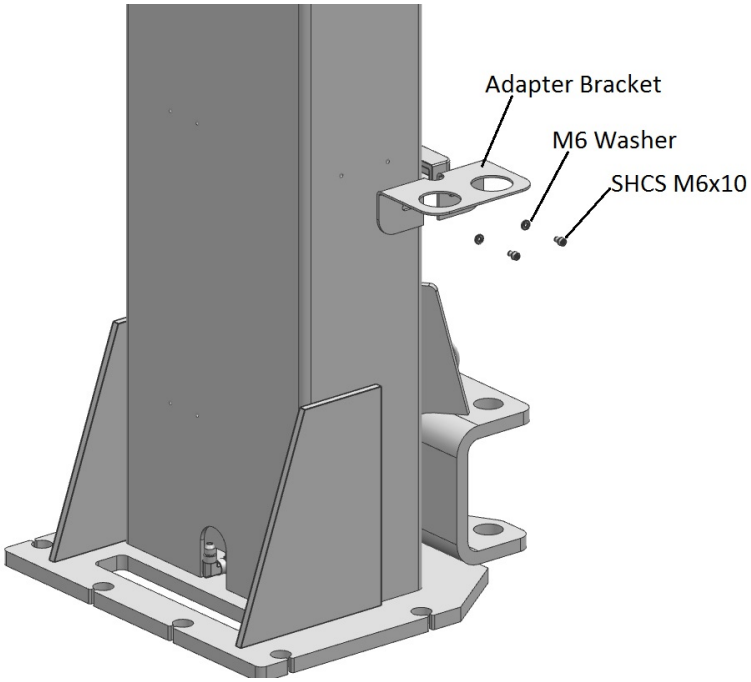


#29

30. Route Electrical Cable down outside of Powerside post. Leave wire to be connected to power unit.

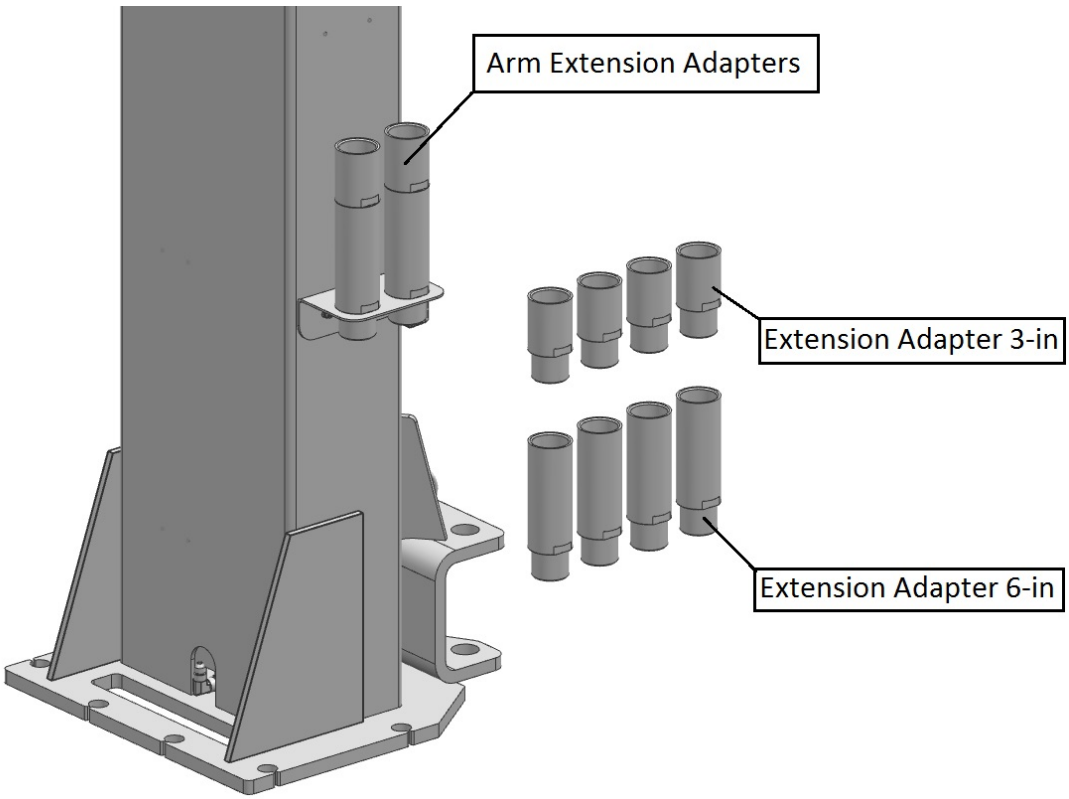
31. Install the arm extension brackets on each post as shown below.

32. There is (1) bracket set to be installed on both the Powerside and Non-Powerside Posts.



#32

33. Place the Arm Extension Adapters into the arm extension adapter brackets on both the Power and Non-Powerside Posts.

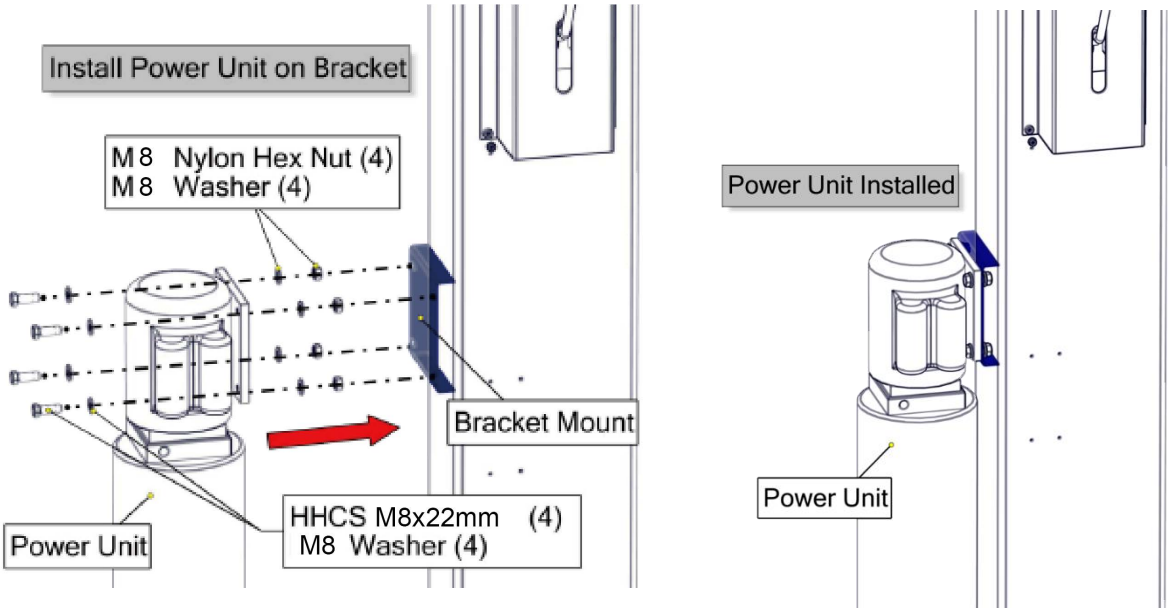


#33

Power Unit and Hydraulic System

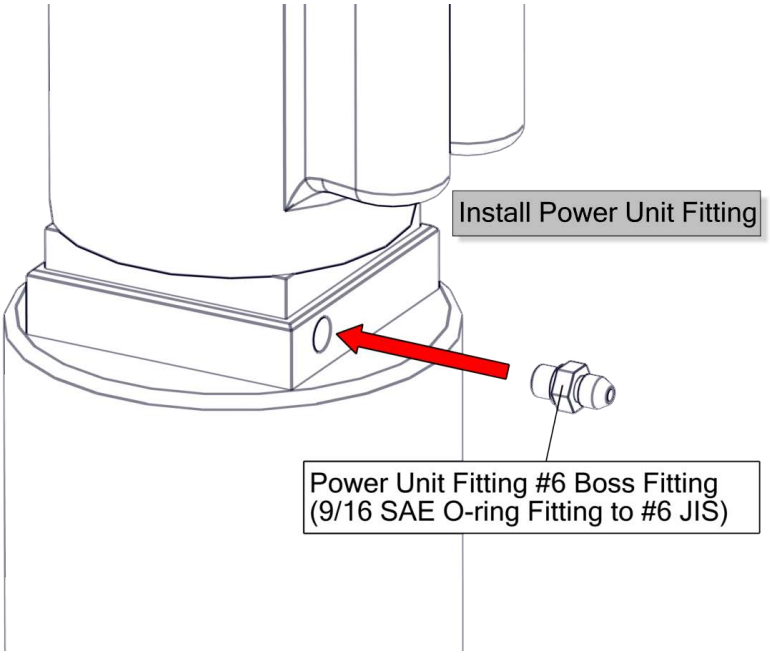
34. Install power unit.

35. Mount the power unit on the power side column bracket using the four M8 x 22mm HHCS, M8 washers, and M8 nylon lock nuts.



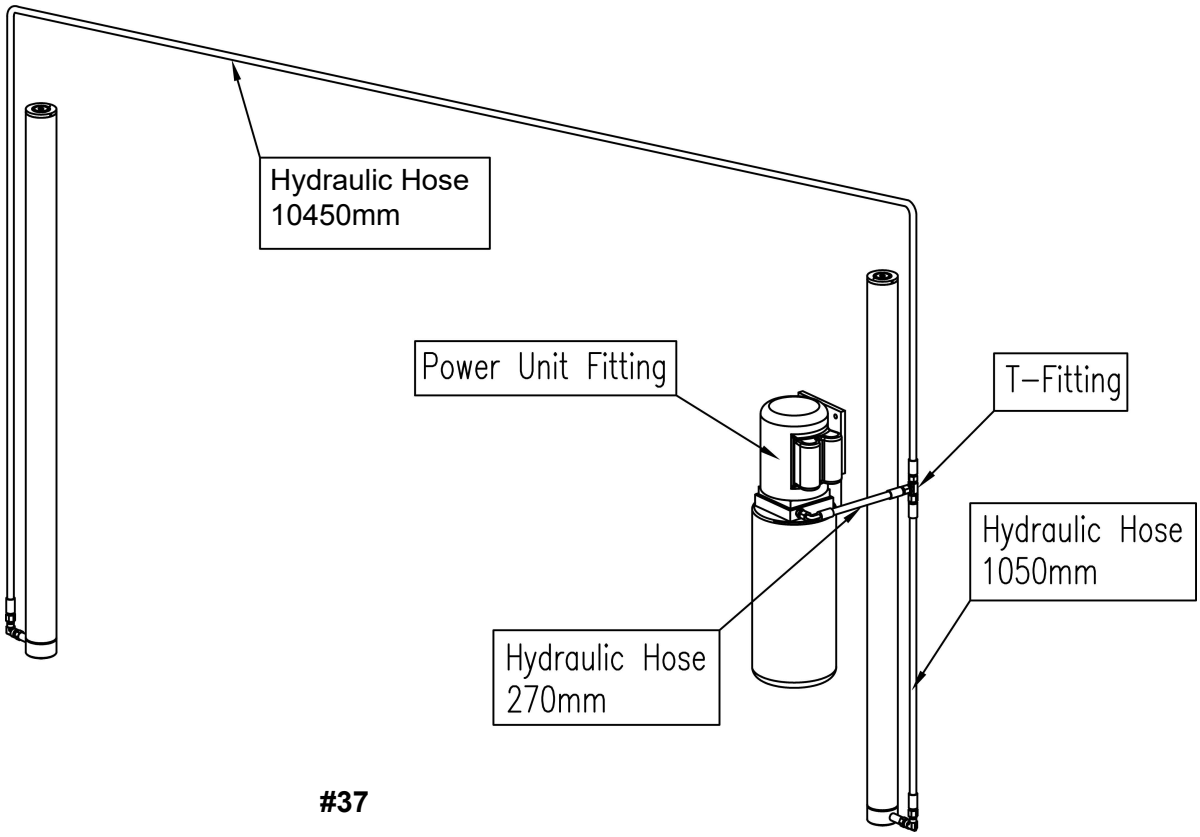
#35

36. Install the #6 SAE O-ring fitting on the power port.



#36

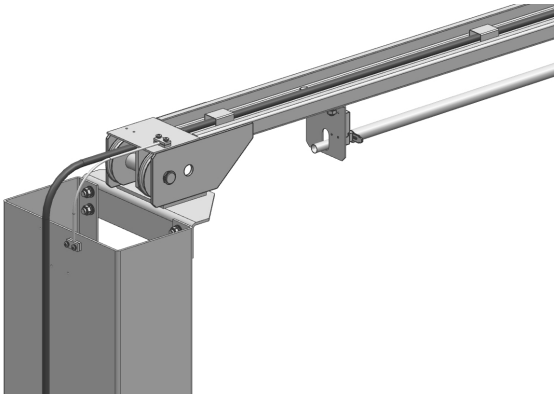
37. Install the Hydraulic Hoses as shown in the routing image below.



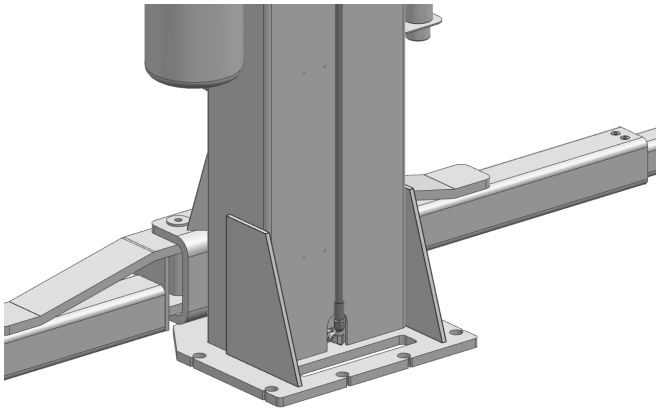
#37

38. Route the long hose along the back of the columns and as shown in the crossover beam assembly. This will be completed on both the left and right sides. Hose must be routed through the brackets as shown to avoid any potential binding with the equalizer cables.

39. Connect the long hose and the medium hoses to the hydraulic cylinder fitting.



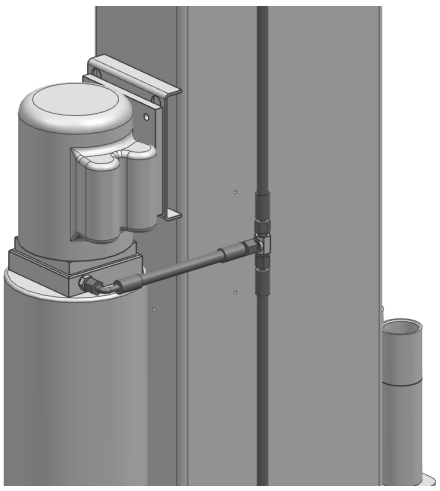
#38



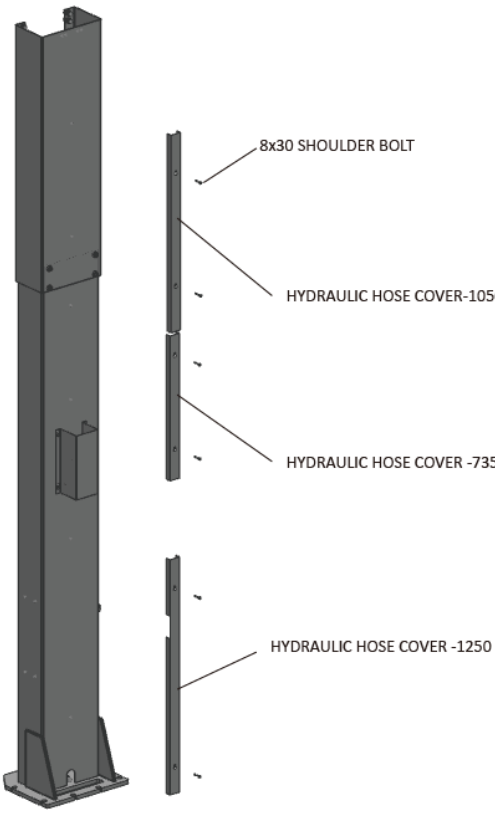
#39

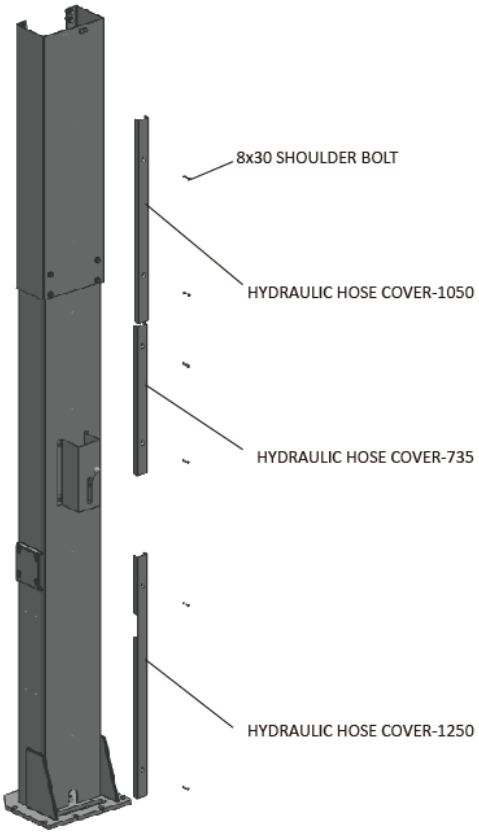
40. Connect the power unit hose to the power unit fitting.
41. Connect the power unit hose to “T-fitting”.
42. Connect the long and medium hydraulic hoses to the “T-fitting”.
43. Secure the hoses and make sure all the connection fittings are tight.
44. Important: Make sure the long hose does not interfere with equalizing cable or safety cable. **NOTE: DO NOT USE TEFLON TAPE WITH JIS FITTINGS IT WILL DAMAGE THE FITTINGS AS WELL AS CAUSE FAILURES AND OIL LEAKAGE.**

#40 to #44

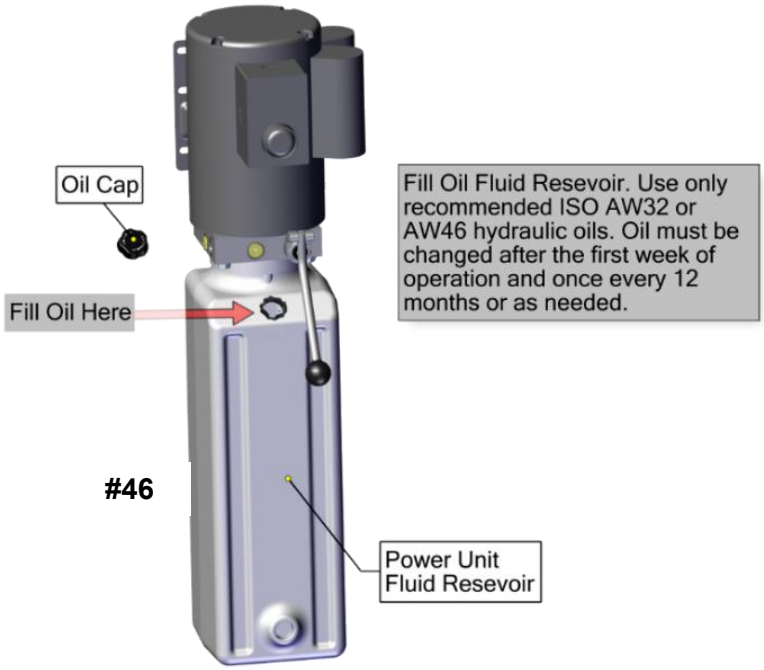


45. Attach the hose cover to the main and auxiliary columns with Shoulder bolt 8x30.





46. Fill the Power Unit with hydraulic oil. Remove the oil vent cap from the power unit and fill the reservoir. Use a non-foaming, non-detergent hydraulic fluid Ten Weight (Hydraulic Oil ISO AW32). The unit will hold approximately 4 to 5 gallons depending on tank size different amounts of fluid may be required.



Hydraulic Oil ISO AW32 Attributes:

Flash Point (°F):	350
ISO Viscosity Grade (ISO-VG):	32
Maximum Operating Temperature (°F):	300
Plastic Safe:	Yes
Pour Point (°F):	-30

IMPORTANT POWER-UNIT INSTALLATION NOTES

⚠ DO NOT run power unit without 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 connection can damage motor and will not be covered under warranty.
⚠ Motor works with both 50Hz and 60Hz.
⚠ Use a separate breaker for each power unit.
⚠ Protect each circuit with time delay fuse or circuit breaker.
⚠ For 208-230 volt, single phase, manufacturer recommends using a 25-amp fuse.

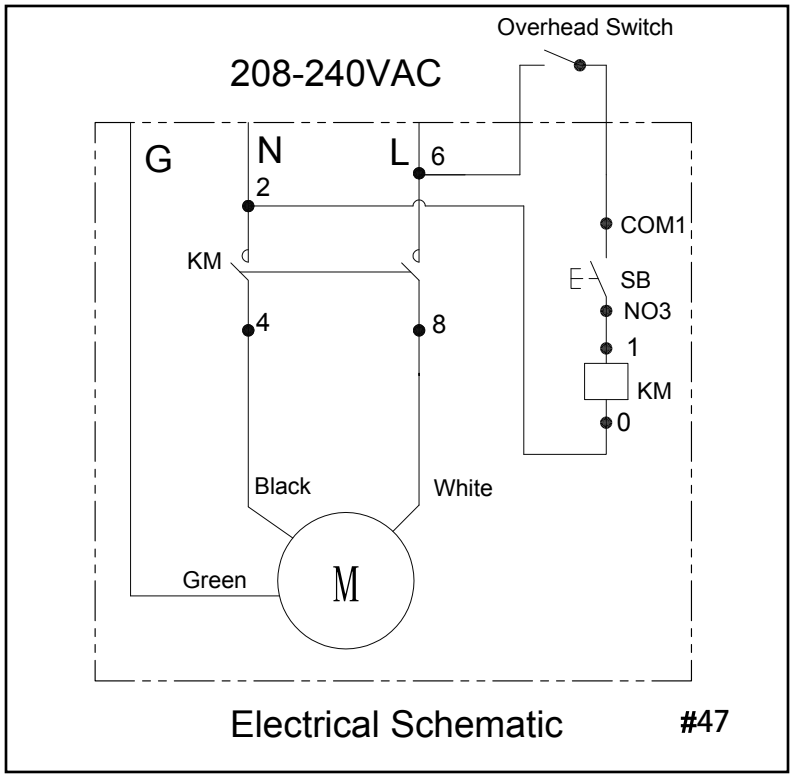
INSTALLATION AND ADJUSTMENT.

⚠ DO NOT attempt to raise vehicle until a thorough operation check has been completed.
⚠ ALL WIRING MUST BE PERFORMED BY A CERTIFIED ELECTRICIAN ONLY.
⚠ SEE WIRING INSTRUCTIONS AFFIXED TO MOTOR FOR PROPER WIRING INSTRUCTIONS.

47. Connect the Electrical hookup to the power unit; 208-240VAC Single Phase. Use wire capable of supporting a 25-amp circuit. Longer Electrical Runs may require a larger diameter electrical wire.

⚠ **WARNING: A certified electrician must install any and all electrical wiring. Protect each circuit with a time delay fuse or circuit breaker; 208v-240v single phase 50/60 Hz 25 amp. Requires AWG 10 Wire. Do not adjust power unit pressure relief valve, any tampering will void warranty and may cause catastrophic failure. Failure to head these warnings may result in injury or death.**

Wiring Schematics for Overhead Safety Switch (Use Motor option that applies.)

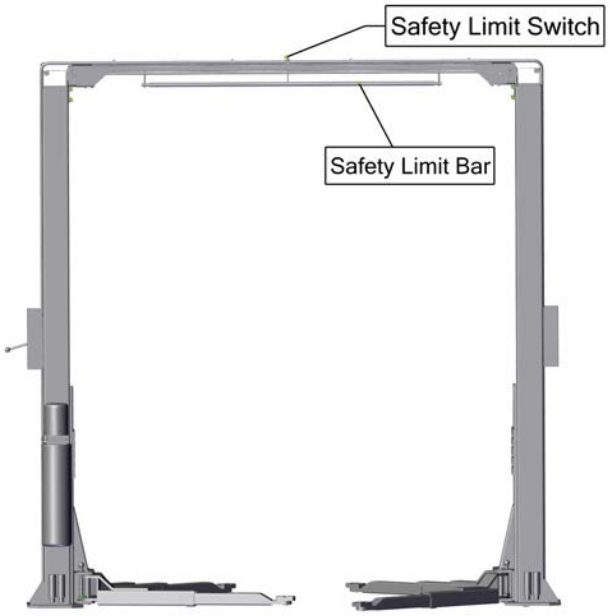


48. **Test Power to Lift**, verify power unit is functioning properly. Raise the lifting carriages 18 inches and lower to the resting position. **Review the "How to Operate Lift" section.**

Safety Limit Bar Switch

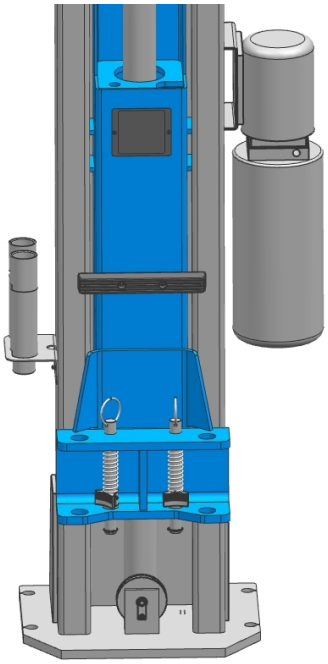
49. **VERIFY AND TEST OPERATION** of the Limit Switch.
50. While pressing press the power “on” button, use a long stick to push upward on the Safety Limit Bar. Verify that the switch is operating correctly. Operate lift and apply pressure to switch with a piece of non-conductive material to push down on switch. A chance of shock could occur if wiring has been installed incorrectly. This switch will insure the motor shuts off prior to any part of vehicle coming in contact with overhead crossbeam or preset height restrictions limit switch location.
51. The power unit should automatically TURN OFF.
52. When motor shuts off while pushing “ON” button the motor will stop automatically.
53. The lift is now operating properly.

⚠RNING:
Lock Out electrical supply before installing any electrical components or performing maintenance on the lift. Do not ever allow power supply to be connected when working on or repairing lift.



LIFT ARMS

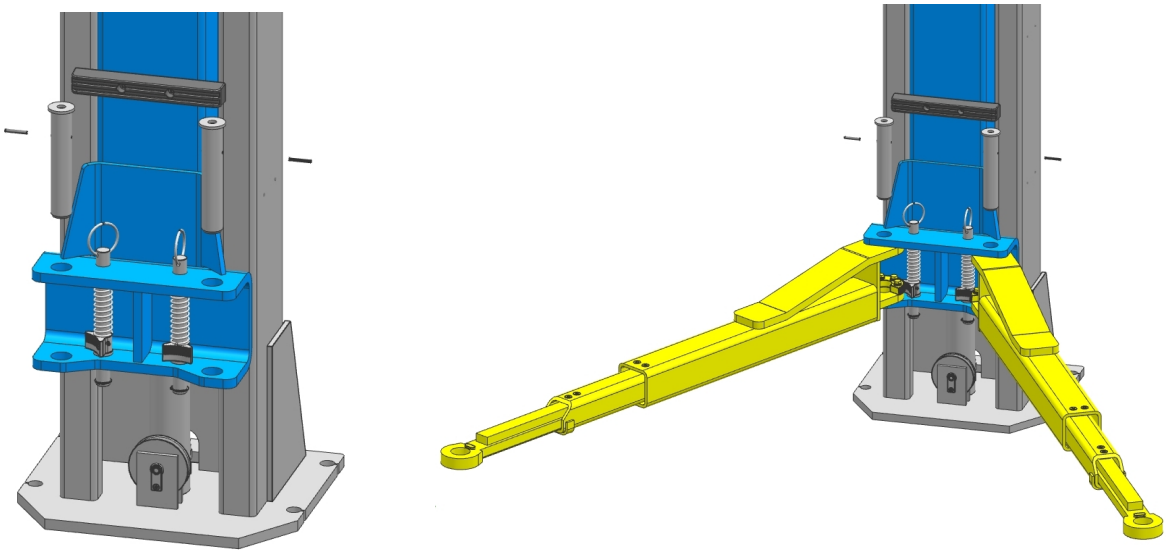
54. Install Lift arms.
55. Raise both lifting carriages at the same time once power has been turned onto the power unit.



#55

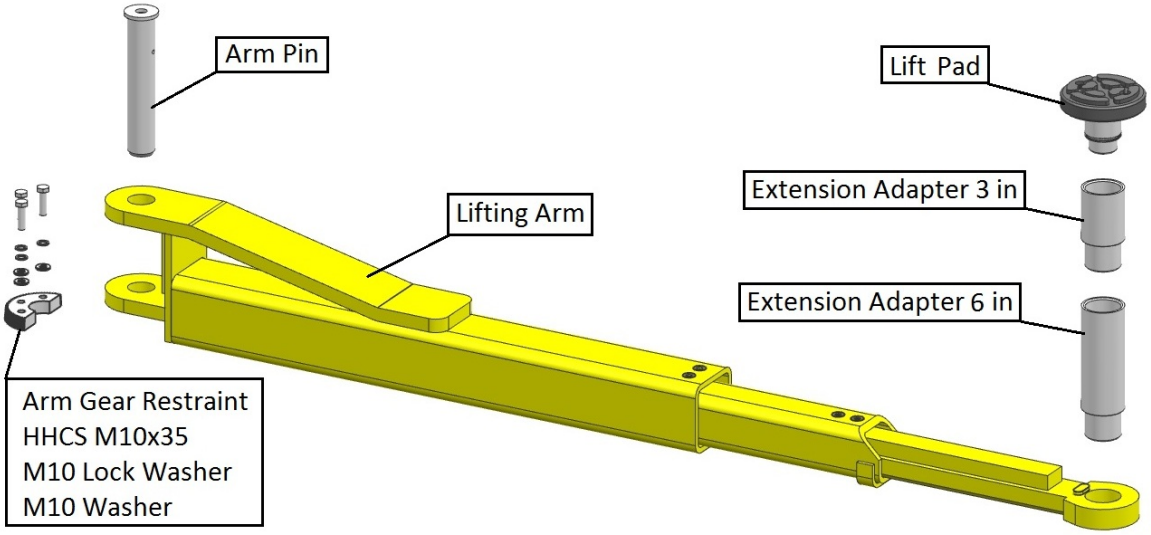
56. To install the lifting carriage arm, drop pins, first test fit the Arm Pins into the lifting carriage receiver assembly without the arms. The arms pins should rest in the holes easily. If arm pins are fitting to tight remove the residual powder coating by using a wire brush to clean the holes. The drop pins should then slide easily and fit snug.
Note: Do not use a grinder to clean the holes, this could cause an over-sizing of the holes which would result in the arm pins not fitting securely and safely.

57. Install 38M External Retaining Ring on all lift arm drop pins.

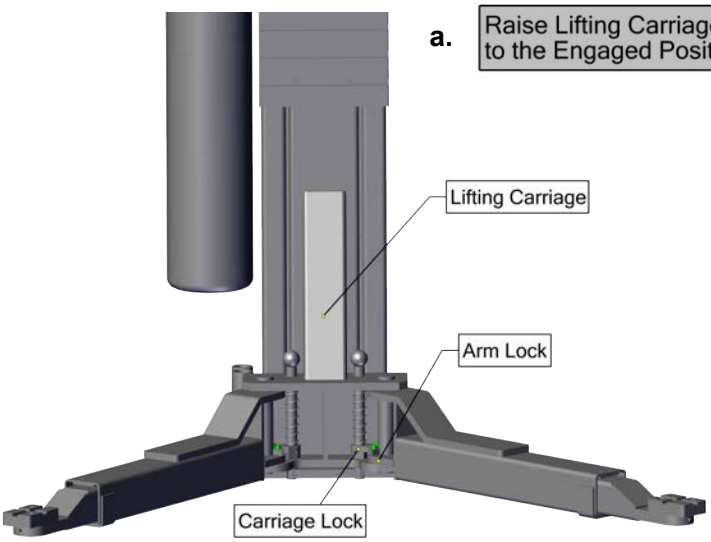


#56 & 57

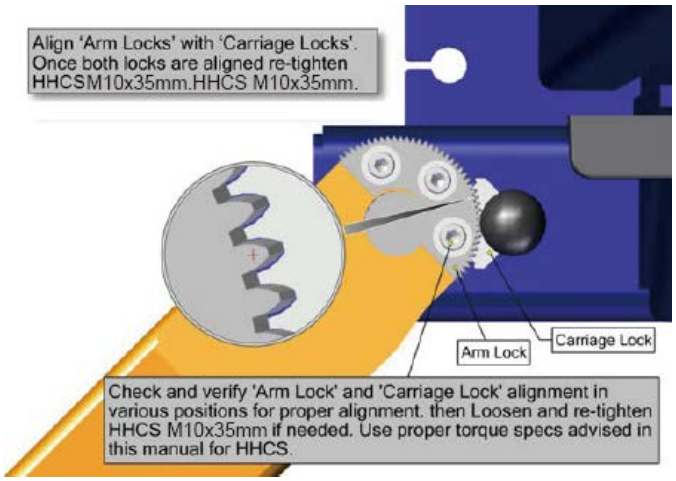
58. Check the fitment of the “half-moon” gear restraints on each lifting arm are already installed. Position the lifting arms on the carriages. Check for proper engagement of the arm restraints (arm locks). The safety gear restraints should fully engage the gear restraints on the arm. After checking that the safety gear restraints and arm gear engage properly. Verify that Allen Bolts on gear restraints are tight and secure.



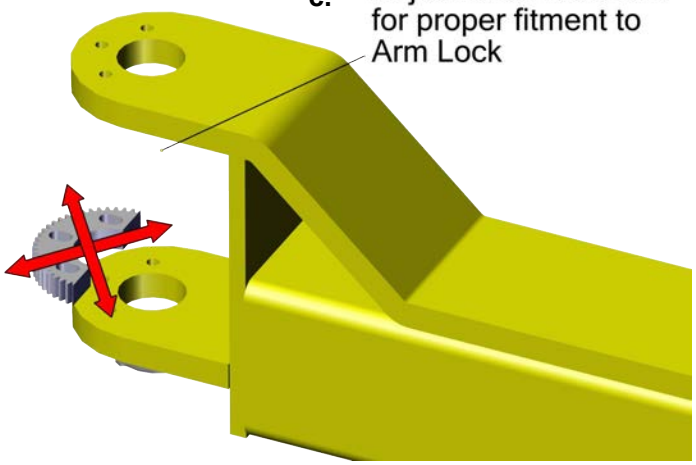
a. Raise Lifting Carriage high enough to align 'Arm Lock' and 'Carriage Lock' to the Engaged Position.



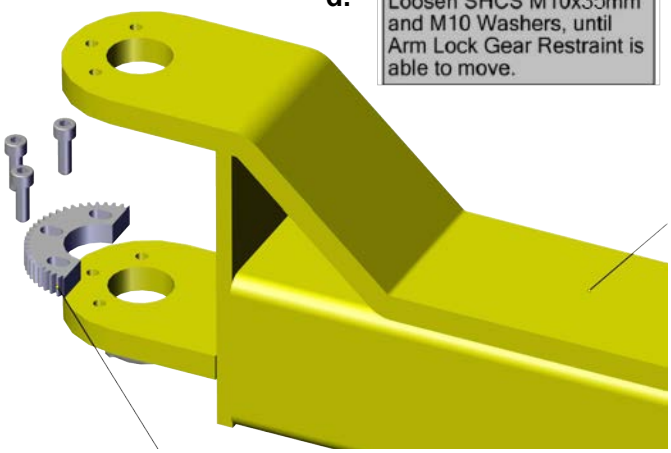
b.



c. Adjust Gear Restraint for proper fitment to Arm Lock

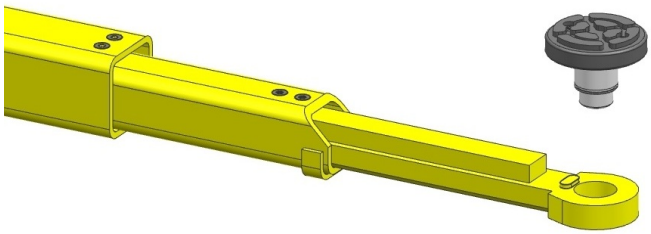


d. Loosen SHCS M10x35mm and M10 Washers, until Arm Lock Gear Restraint is able to move.



59. Attach Lift Pad to Lift Arms, by inserting the lift pad into the arm receiver hole.

60. Test fit all Truck Adapters and return to storage locations when complete.



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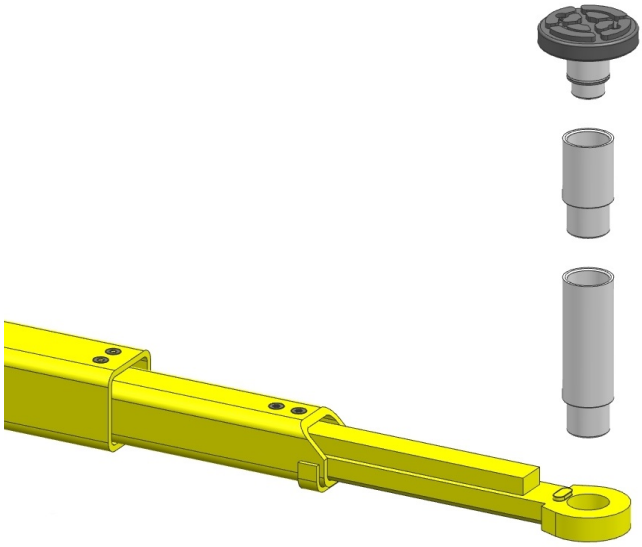
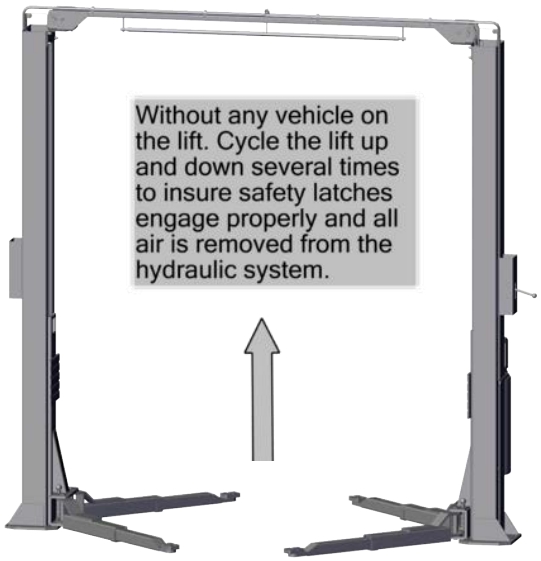


#60

Air Purge Procedure

61. Without any weight on the lift raise the cylinders 2 feet off the ground just high enough to clear locking mechanisms. Slowly loosen the bleed screws located at the top of each cylinder. (One or two turns should be all that is needed to remove the air). DO NOT REMOVE BLEED SCREW COMPLETELY. Listen for air to release and watch for clean fluid to escape from each cylinder.

62. Continue to raise the cylinders one full rotation and lower the lifting arms to an unlocked position 2 feet off the ground. Slowly loosen the bleed screws located at the top of each cylinder. (One or two turns should be all that is needed to remove the air). DO NOT REMOVE BLEED SCREW COMPLETELY. Listen for air to release and watch for clean fluid to escape from each cylinder. Repeat steps if air is still in the cylinder.
NOTE: If cylinder continues to shake or vibrate when lifted or lowered repeat steps until trapped air is removed from cylinders. (Use a ladder for safety.)



#61

Hydraulic Cylinder Air Purge Procedure

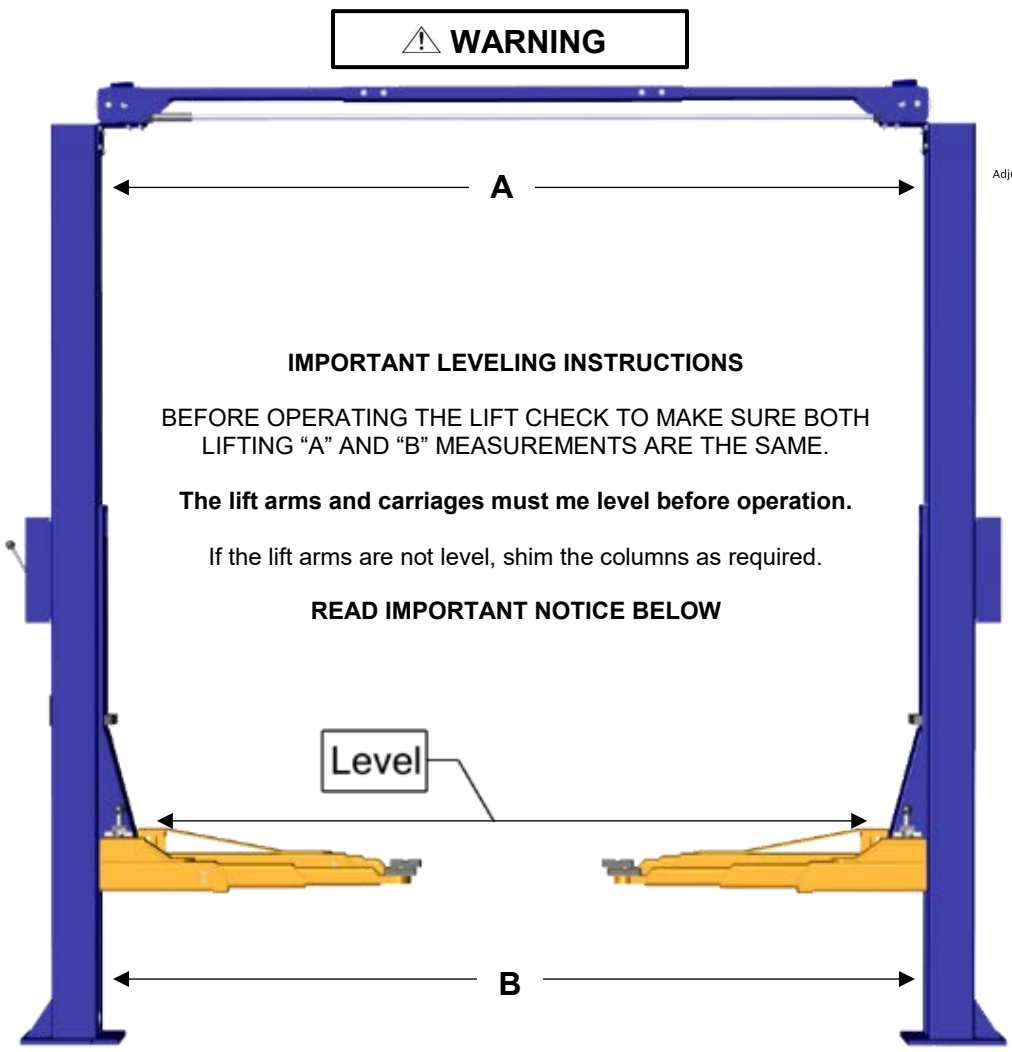
1. Without any weight on the lift raise the cylinders 2 feet off the ground just high enough to clear locking mechanisms. Slowly loosen the bleed screws located at the top of each cylinder. (One or two turns should be all that is needed to remove the air). DO NOT REMOVE BLEED SCREW COMPLETELY.
Listen for air to release and watch for clean fluid to escape from each cylinder.

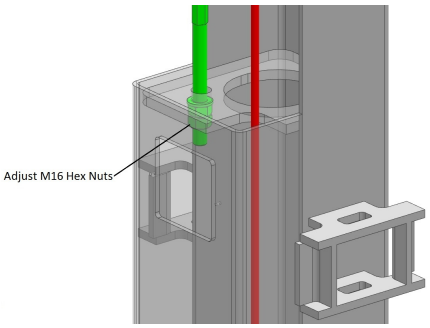
2. Continue to raise the cylinders one full rotation and lower the lifting arms to an un-locked position 2 feet off the ground. Slowly loosen the bleed screws located at the top of each cylinder. (One or two turns should be all that is needed to remove the air). DO NOT REMOVE BLEED SCREW COMPLETELY.
Listen for air to release and watch for clean fluid to escape from each cylinder.
Repeat steps if air is still in the cylinder.

NOTE: If cylinder continues to shake or vibrate when lifted or lowered repeat steps until trapped air is removed from cylinders. (Use a ladder for safety.)

Synchronizing Equalizing Cables and Locks

63. Without any vehicle on the lift. Cycle the lift up and down several times to insure safety latches engage properly and all air is removed from the hydraulic system. To lower the lift, first raise the lift to clear the safety latches, then pull down the safety release handle to lower the lift.
64. Raise lift and **LISTEN**. You will hear the lock latches begin to hit and release as the lift is being raised. After 3 or 4 clicks you will hear the latches synchronizing at the same time. If the safety latches are out of synchronization you will have to re-adjust the equalizing cables.
65. If safety latches are out of sync, adjust the cable on the latch that engages first.
66. To adjust, tighten the Long Cable End Terminal on the latch that is engaging first. This could be either the Powerside or Non-Powerside Posts.
67. The safety lock latches and cables should now be synchronized.





#62 to #67

⚠ WARNING:

68. **Equalizing Cables Important Notice: Equalizing Cables must be checked with each daily inspection for equal tension. The cables should always be adjusted so that they are equal tension when resting on the safety locks. Failure keep cables synchronized could cause DANGER and will cause uneven lifting. Equalizing cables should always be adjusted so that safety latches are in sync. Always check that both safety latches are engaging on the appropriate latch.**

69. Lubricate the four inside corners of the columns with heavy duty bearing grease.

70. Complete Post Installation Procedure.

71. WITHOUT ANY WEIGHT ON THE LIFT TEST CYCLE THE LIFT TO VERIFY LIFT IS OPERATING AS INTENDED.

- SEE “OPERATOR TRAINING and SAFE PRACTICES” and “HOW TO OPERATE LIFT” prior to first use.

POST INSTALLATION PROCEDURE:

✓ Check boxes to verify work has been completed

	Electric wired by a professional technician.
	Power unit functioning properly.
	With the in lift in the lowered position, check that the hydraulic fluid level is full. If needed, add oil as described in the Installation Instruction section of this manual.
	Check for “no” hydraulic leaks.
	Check that all posts are square and plumb.
	Lubricate posts with grease. Lubricate the four inside corners of the columns with heavy-duty bearing grease as needed.
	Inspect lifting arms making sure they are functioning properly.
	Visually inspect safeties for proper operation. Check all arm adjusting locks for proper operation.
	Check lifting carriage gear restraints securely fastened.
	Inspect all arms pins making sure they are properly secure.
	Inspect that arm pads are in good condition.
	Check that lift arms are level and synchronized.
	Check equalizer cable tension, and adjust if necessary, see manual instructions.
	Check all cables connections, bolts and pins to ensure proper mounting and torque.
	Check safety latch synchronization: Safety latches should click at the same time. If necessary, adjust equalizing cables as described in the Installation Instruction section of this manual.
	Lubricate all Cable Sheaves.
	Check tightness of all bolts, nuts, pins, and hardware. Re-tighten as needed. See installation manual torque specified ratings.
	Inspect all anchors bolts and retighten if necessary. Re-torque as needed. See installation manual for instructions.
	Inspects all roll pins and sheave pins are in proper alignment and secured.
	Make a visual inspection of all moving parts and check for excessive signs of wear.
	Check for no overhead obstructions.
	If lift is equipped with an overhead stop bar, check for proper operation.
	Test switch operation.
	Check all warning labels and power unit safety stickers are in good condition. Replace all caution, warning or safety related decals on the lift if unable to read or missing. Reorder labels from manufacturer.
	All components functioning properly.
	All integral moving parts lubricated.
	Working area clean.
	Operation, maintenance and safety manuals in designated location.

HOW TO OPERATE THE LIFT

1. Familiarize yourself with the lift before use.
2. Precautions and Safety should always be followed when operating this lift.
3. **ONLY TRAINED** and **AUTHORIZED PERSONNEL** should operate the lift. Do not allow customers or unauthorized personnel to operate the lift or remain in the lift area during use.
4. Understand the vehicle lift operating controls before use. Make sure all operators have been trained and review the OPERATOR TRAINING AND SAFE PRACTICES of this manual before using lift.
5. Always allow a minimum 2-second delay between motor starts. Failure to comply may cause switch and/or motor to burnout. This could cause serious damage to the equipment and/or personal property. Power unit must be wired by a qualified electrician. This power unit should be located at least 18 inches (460 mm) above the floor. Motor duty cycle is one full lifting operation 10 minutes.
6. This equipment has internal arcing or sparking parts which should not be exposed to flammable vapors.
7. Use only recommended ISO AW32 or AW46 hydraulic oils. Oil must be changed after the first week of operation and once every 12 months or as needed. Add extra oil as needed.
8. See the instructions in the maintenance section of this manual how to add oil to the Power Unit.
9. Have a complete understanding of the carriage safety lock mechanisms.
   - ✓ The “LOCKED position” will be used when raising the lift. This function should always work automatically.
   - ✓ The “UN-LOCKED position” will be used when lowering a lift or adjust

   Note: DO NOT remove or tamper with the design of the locking assembly.
   Failure to use locks as designed or forcing a lock to stay in the open position during use will be grounds for immediate termination of this warranty and any manufacturer liabilities.
10. **ALWAYS** ensure the safeties are engaged before any attempt is made to work on or near the vehicle.
11. **NEVER** leave lift in elevated position unless the safeties are engaged.
12. **NEVER** operate the lift with any person or equipment below the vehicle.
13. **NEVER** exceed the rated lift capacity.
14. **DO NOT PERMIT ELECTRIC MOTOR TO GET WET!** Motor damage caused by dampness is not covered under warranty.
15. **NEVER** lift any vehicle in any manner with less than all four (4) arms. Rated capacity of each lift arm is no greater than one fourth (1/4) of the overall lift capacity.
16. **ALWAYS** position lifting arms, ramps, adapters and accessories properly out of the way before pulling the vehicle into or out of the bay. Failure to do so could damage the vehicle and/or the lift.
17. After positioning the vehicle, set the emergency brake, make sure the ignition is off, the doors are closed, overhead obstructions are cleared.

⚠ **Warning:**

18. Make sure vehicle is not front or rear heavy. The center of balance should be midway between adapters.

⚠ **DANGER:**

19. **DO NOT RAISE OR LOWER ANY VEHICLE UNLESS TOOLS, MATERIALS AND PEOPLE ARE CLEAR. CLEAN UP GREASE AND OIL SPILLS IMMEDIATELY.** When the lift is being lowered, make sure everyone is standing at least six feet away. Be sure there are no jacks, tools, or equipment, left under the lift before lowering. Always lower the vehicle down when the area is safe and clear.

⚠ **DANGER:**

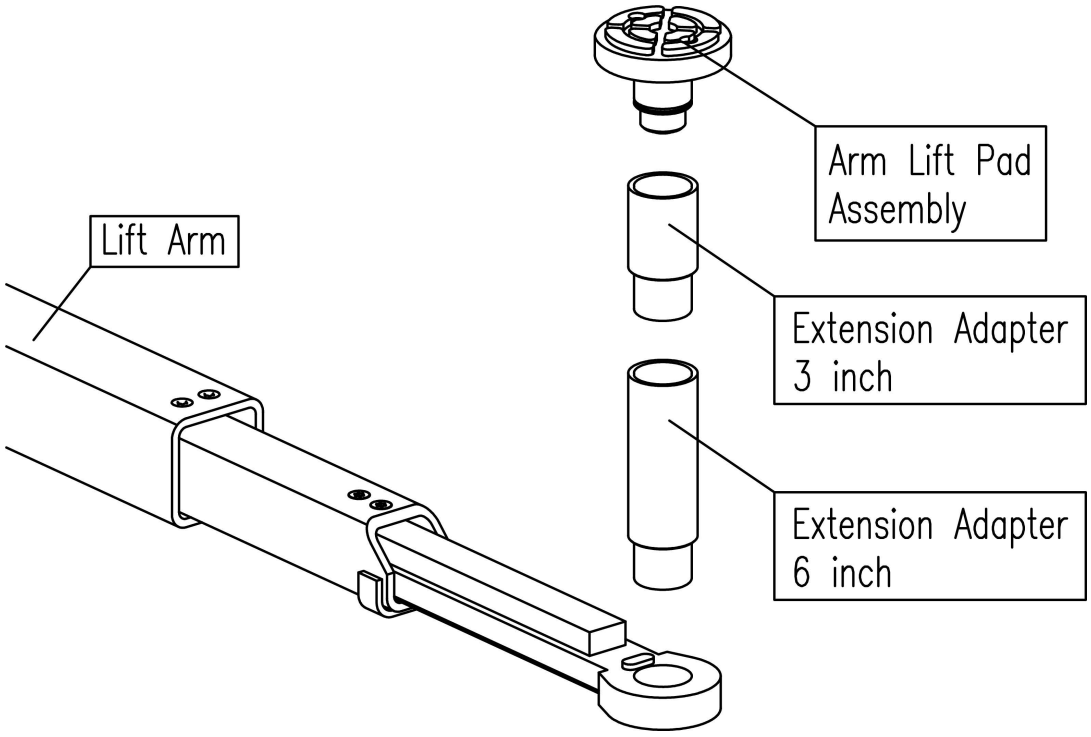
20. Check the fitment of the “half-moon” gear restraints on each lifting arm. Check for proper engagement of the arm restraints (arm locks) before raising a vehicle. The safety gear restraints should fully engage the gear restraints on the arm automatically.
    Note: Regularly verify that Allen Bolts on gear restraints are tight and secure.

NOTE:

21. Many specialty or modified vehicles cannot be raised on a two-post frame engaging lift. Contact YOUR vehicle manufacturer for raising or jacking details.

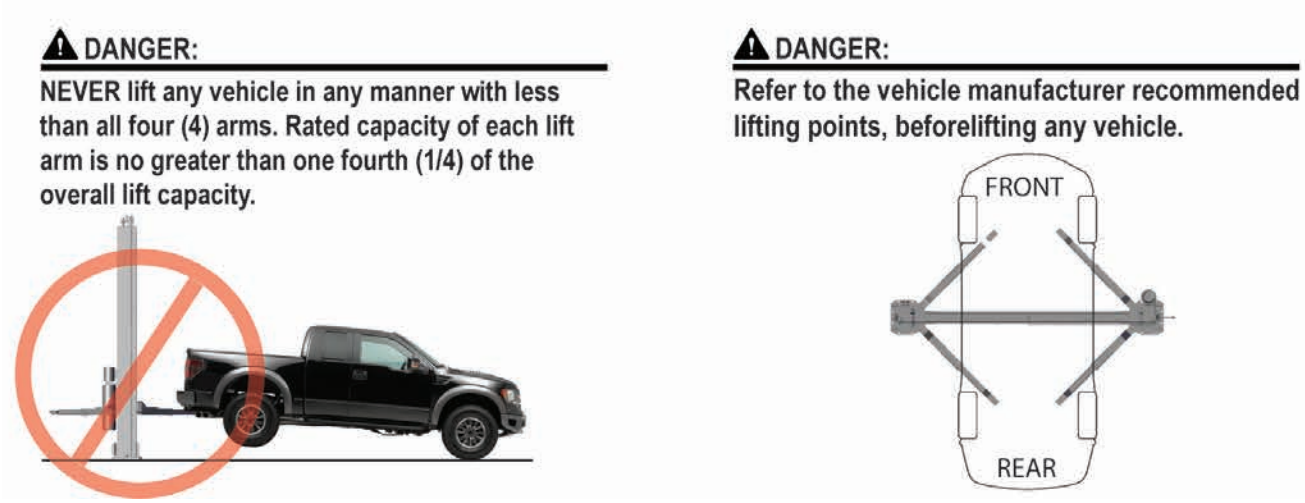
22. **ALWAYS** load vehicle on lift carefully. Position the lifting arms, ramps, adapters and accessories to the vehicle manufacturer’s recommended pickup points. Raise the lift until contact is made with the vehicle. Make sure that the lifting arms, ramps, adapters and accessories have properly engaged the vehicle before raising the lift to a working height.

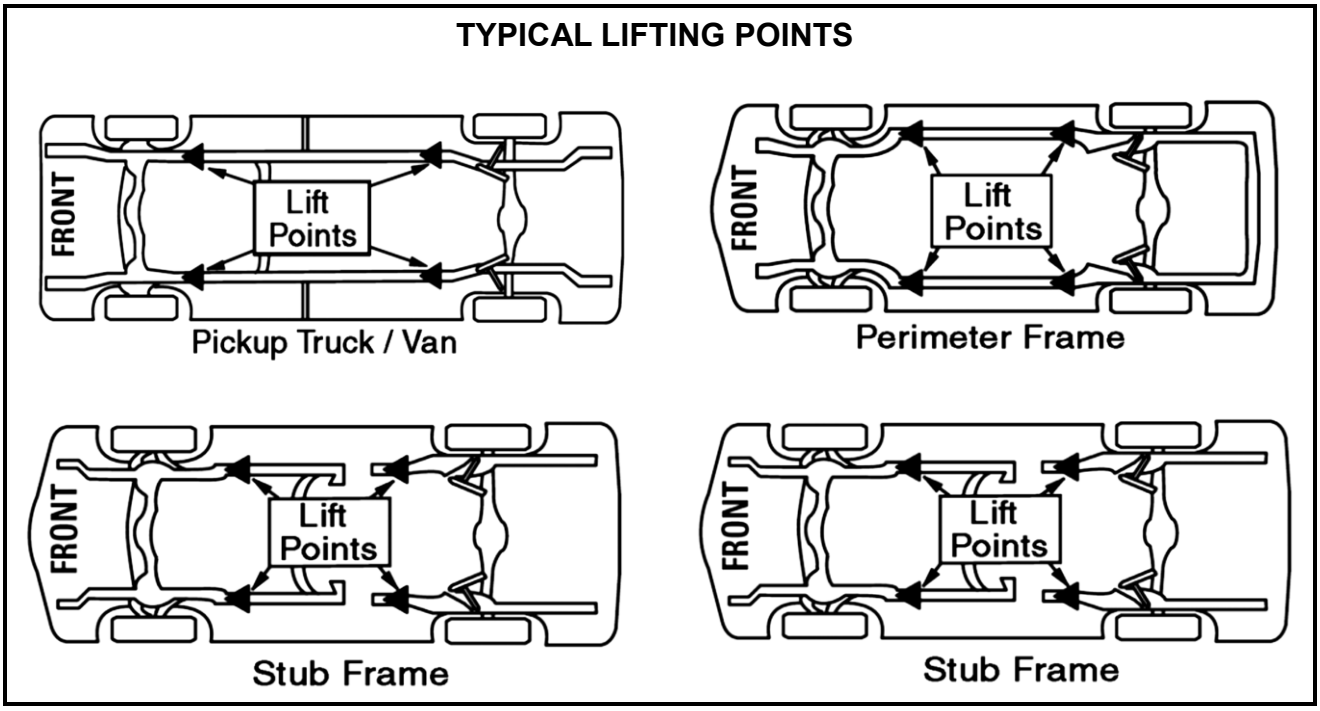
⚠ **DANGER:** Check adapters for secure contact with vehicle before operating.



⚠ **DANGER:**

23. Use all 4 arms to raise a vehicle or make sure vehicle is positioned correctly so all four corners of vehicle are stationary with wheel stops. Position all lift pads to contact vehicle manufacturers' recommended lifting points. **Raise lift slowly until all pads contact the vehicle. Check all pads for complete and secure contact with the vehicle. Check all arm restraints to insure they are engaged properly. Check that the vehicle is stable on the lift.** Only after confirming these procedures, raise the lift to desired working height.

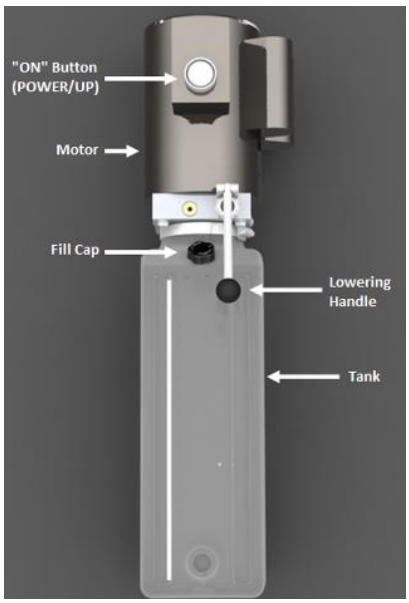




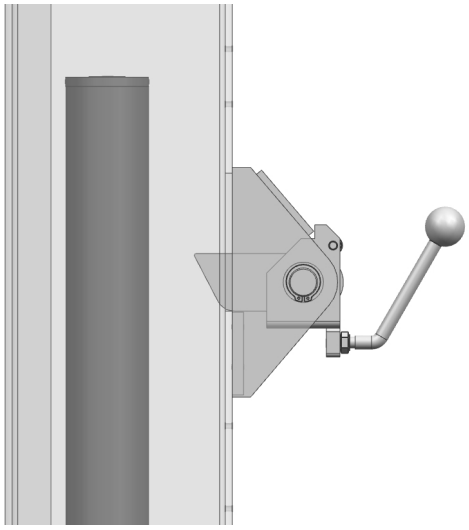
24. Some vehicles may have the manufacturer's Service Garage Lift Point locations identified by triangle shape marks on the undercarriage (reference ANSI/SAE J2184). Also, there may be a label located on the right front door jamb area showing specific vehicle lift points.
Note: Also provided with your purchase is a copy of the ALI LP - QUICK REFERENCE GUIDE VEHICLE LIFTING POINTS FOR FRAME ENGAGING LIFTS, this is a guide for basic lifting point locations on your vehicle. For actual vehicle recommended lifting points consult your vehicle manufacturer.

DESCRIPTION OF LIFT CONTROLS

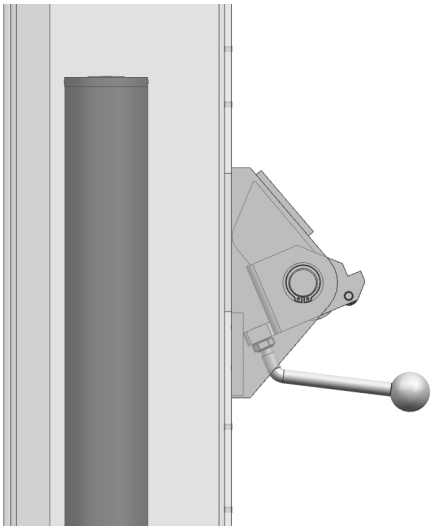
Description:	Purpose:
Safety Release Handle	Used to release safety latches when lowering vehicle.
Power “ON” Button	Controls electrical power to the hydraulic power unit. Push to turn-on.
Lowering Handle	Used to relieve hydraulic pressure when pressed to lower lifting carriages.
Fill Cap	Power unit fill Cap for the power unit fluid reservoir. Remove to add fluid.
Tank	Used to store hydraulic fluid.



CARRIAGE LOCK CONTROLS

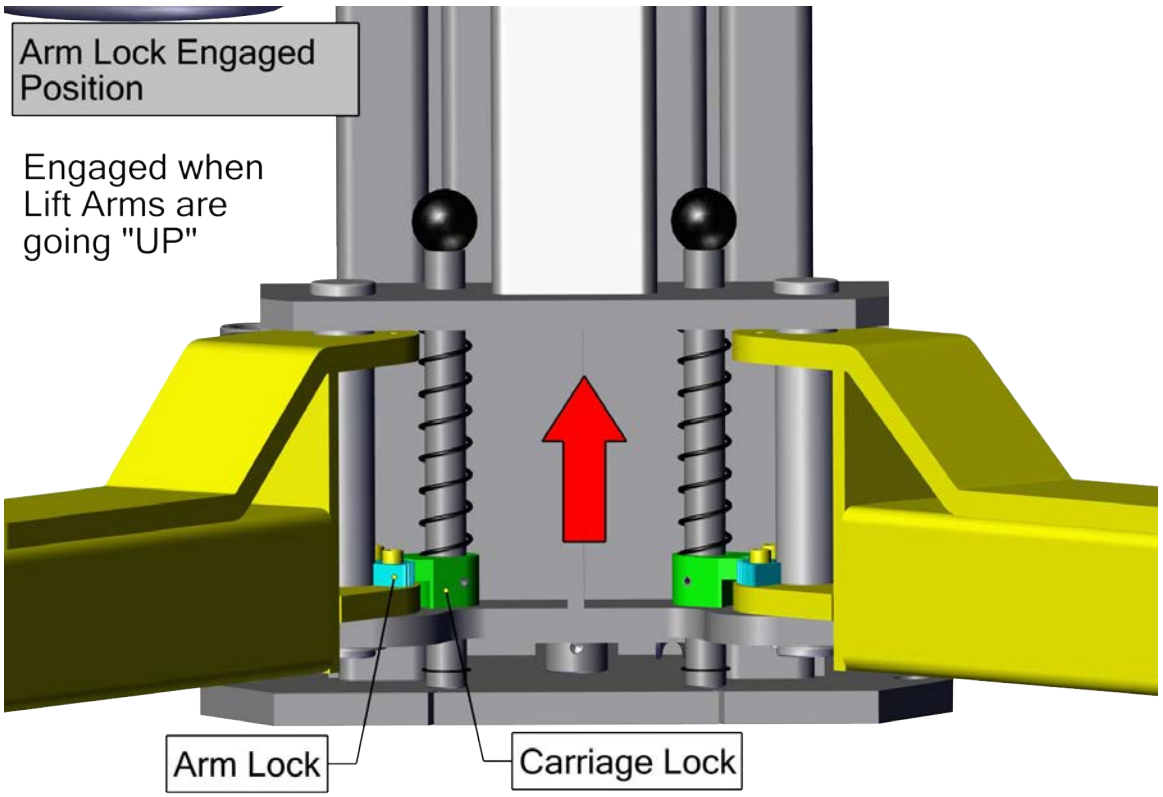


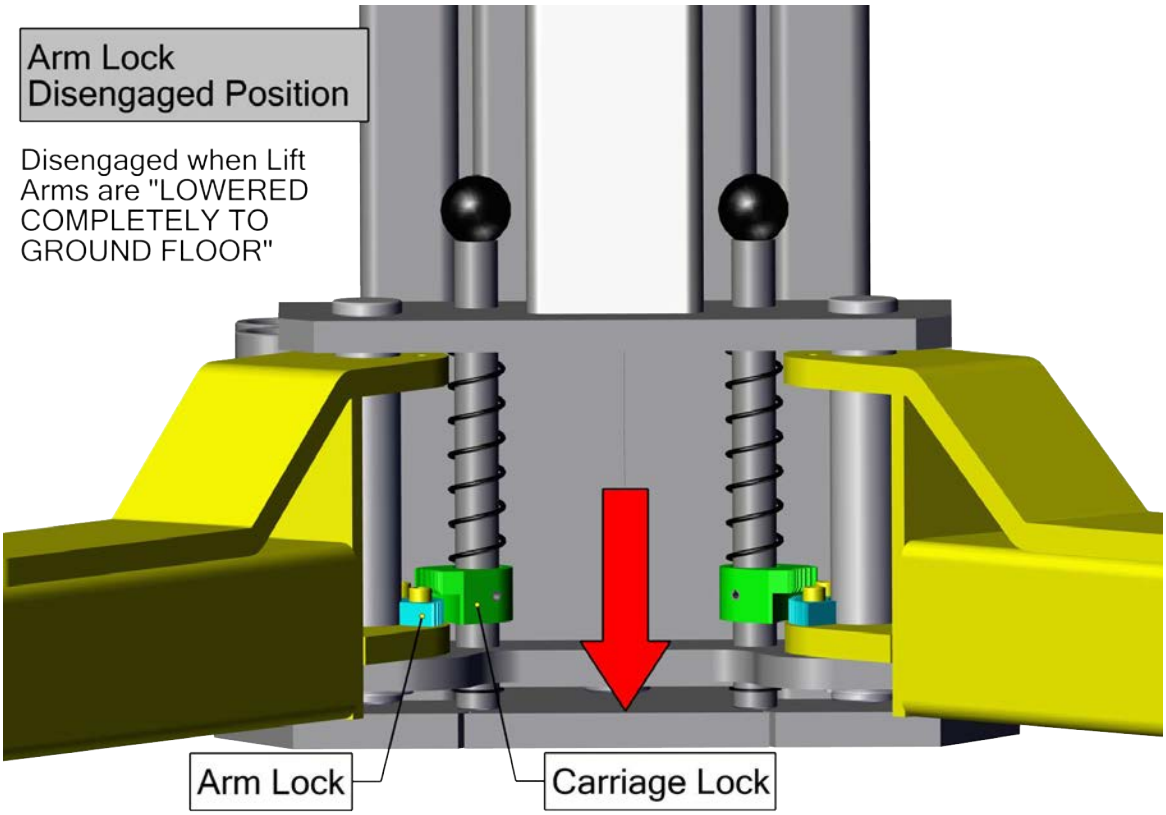
LOCKED Position



UN-LOCKED Position

ARM LOCK ENGAGEMENT





TO RAISE THE LIFT,

25. Adjust the lifting arms so that the vehicle is positioned with the center of gravity midway between the lift pads. (Use truck adapters as needed.)
    ⚠ **DANGER: NEVER** use the lift pad assemblies without the rubber pads in place.

26. Press the power “on” button.

27. A clicking sound will be heard as the lift raises. These are the carriage locks that will securely hold a vehicle.

28. Once the desired height has been achieved slightly raise the carriage and lift arms just above the last latch position and slowly lower the load on the safety locks.

29. Verify that both Safety Carriage locks have been engaged before beginning work.

30. Use of jack stands or other load supporting devices will help in preventing load shifts. Manufacturer suggests that jack stands or other load supporting devices are used at all times for additional security. Use additional lifting equipment or stands when removing or installing heavy vehicle components.

31. Make sure the vehicles center of gravity is always safe before raising vehicle. Any points of contact on vehicle that are not in good contact with lifting pads or contact with lift should always be double checked. Always make sure the vehicle is secure before lifting using only your vehicle manufacturers’ recommended lifting points.

TO LOWER THE LIFT,

32. To lower the lift, first raise the lift to clear the safety latches, press the power “on” button, then pull down the safety release handle to lower the lift. The carriages should now be in the free UN-LOCKED position.

33. Simultaneously hold the Safety Carriage Locks in the UN-LOCKED Position and press the lowering control valve on the power unit.

34. Lower the lift slowly until reach the lowest retracted position.

35. Retract the lifting arms to the shortest position.

36. Place any arm extension adapters on column storage brackets.

CUSTOMER DAILY MAINTENANCE INSPECTION RECORD DATE: _____

✓ Check boxes to verify work has been completed

	Power unit functioning properly.
	With the lift in the lowered position, check that the hydraulic fluid level is full. If needed, add oil as described in the Installation Instruction section of this manual.
	Check for "no" hydraulic leaks
	Check that all posts are square and plumb.
	Lubricate posts with grease. Lubricate the four inside corners of the columns with heavy-duty bearing grease as needed.
	Inspect lifting arms making sure they are functioning properly.
	Visually inspect safeties for proper operation. Check all arm adjusting locks for proper operation.
	Check that all lifting carriage gear restraints are securely fastened, and that screws are tightened.
	Inspect all arms pins making sure they are properly secure.
	Inspect that arm pads are in good condition, replace if worn.
	Check that lift arms are level and synchronized.
	Check equalizer cable tension, and adjust if necessary, see manual instructions.
	Check all cables connections, bolts and pins to ensure proper mounting and torque.
	Inspect all cables for any damage, breaks, worn out, or corrosion. Replace cables if needed.
	Check safety latch synchronization: Safety latches should click at the same time. If necessary, adjust equalizing cables as described in the Installation Instruction section of this manual.
	Lubricate all Cable Sheaves.
	Check tightness of all bolts, nuts, pins, and hardware. Re-tighten as needed. See installation manual torque specified ratings.
	Inspect all anchors bolts and retighten if necessary. Re-torque as needed. See installation manual for instructions.
	Inspects all roll pins and sheave pins are in proper alignment and secured
	Make a visual inspection of all moving parts and check for excessive signs of wear.
	Check for no overhead obstructions
	If lift is equipped with an overhead stop bar, check for proper operation.
	Test switch operation
	Check all warning labels and power unit safety stickers are in good condition. Replace all caution, warning or safety related decals on the lift if unable to read or missing. Reorder labels from manufacturer.
	All components functioning properly
	All integral moving parts lubricated
	Working area clean
	Operation, maintenance and safety manuals in designated location

⚠ **DANGER**: If anchor bolts are loose or any component of the lift is found to be defective**, DO NOT USE THE LIFT.**

• **ALWAYS** keep lift components clean.
• **ALWAYS** if oil leakage is observed, place lift out of service and contact Customer Service.
• **ALWAYS** contact a local service representative if electrical problems develop.
• **ALWAYS** keep bolts tight.
• **ALWAYS** replace ALL FAULTY PARTS before lift is put back into operation.
• Refer to ANSI/ALI ALOIM booklet for periodic inspection checklist and maintenance log sheet.

Replace damaged, broken or wearing parts with lift manufacturer's approved OEM parts only.

NOTES:_____

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PRINT COPY PAGES FOR DAILY RECORDS

CUSTOMER MAINTENANCE INSPECTION AND LUBRICATION

If you use and maintain your equipment properly, it will give you many years of service. Follow the maintenance instructions carefully to keep your equipment in good working condition. Never perform any maintenance on the equipment while it is under a load. Refer to the CUSTOMER DAILY MAINTENANCE INSPECTION RECORD for proper inspections to be completed by user daily.

Inspection
You should inspect the product for damage, wear, broken or missing parts (e.g.: pins) and that all components function before each use. Follow lubrication and storage instructions for optimum product performance.

Cleaning
If the moving parts of the equipment are obstructed, use cleaning solvent or another good degreaser to clean the equipment. Remove any existing rust, with a penetrating lubricant.

Lubrication
This equipment will not operate safely without proper lubrication. Using the equipment without proper lubrication will result in poor performance and damage to the equipment. Some parts in this equipment are not self-lubricating. Inspect the equipment before use and lubricate when necessary. After cleaning, lubricate the equipment using a high grade penetrating lubricant.
Use a good lubricant on all moving parts.
For light duty use, lubrication is needed once a month.
For heavy and constant use, lubrication is recommended every week.
NEVER USE SANDPAPER OR ABRASIVE MATERIAL ON THESE SURFACES!
See the Wire Rope Section for details on lubrication wire ropes and cables.

Rust Prevention:
Check hydraulic cylinder ram assemblies daily for any signs of rust or corrosion. Without a load lift the equipment as high as it goes and look under and behind all components. If signs of rust are visible clean as needed.

Grease Fittings
Some models contain grease fittings that will regularly need to be greased and lubricated.

Additional Lubrication:
1. Periodically check the hydraulic cylinders for signs of rust or corrosion. Clean as needed and wipe with an oil cloth. NEVER USE SANDPAPER OR ABRASIVE MATERIAL ON THESE SURFACES!
2. When not in use, lower the lift to the fully retracted position. Failure to do so can cause rust and corrosion to degrade the life of the hydraulic cylinders.

CUSTOMER MAINTENANCE

TO ADD HYDRAULIC OIL:

1. Lower the lift to its lowest resting position.
2. Remove the oil plug.
3. Fill the oil case until oil level is just beneath the lower rim of the oil fill hole.
4. Replace oil plug.
5. Perform the Air Purge Procedure.

TO REPLACE HYDRAULIC OIL:

Hydraulic oil should only be changed when equipment is fully lowered. Use only recommended ISO AW32 or AW46 hydraulic oils. Oil must be changed after the first week of operation and once every 12 months or as needed.

1. Lower the lift to its lowest resting position.
2. Remove power unit from lift.
3. Remove the oil fill plug.
4. Turn the power unit on its side to drain old oil from the oil fill hole.
5. Ensure the tank is clean before refilling.
6. Remount the power unit on the lift. Fill the oil case until oil level is just beneath the lower rim. Keep dirt and other foreign materials clear when pouring.
7. Replace oil plug.
8. Perform Air Purge Procedure.

⚠ **ADDITIONAL WARNINGS:**

- ✓ DO NOT USE MOTOR OIL, HYDRAULIC BRAKE FLUID, ALCOHOL, GLYCERINE, DETERGENT, OR DIRTY OIL, TURBINE OIL, TRANSMISSION FLUID, OR GLYCERIN. IMPROPER FLUID CAN CAUSE FAILURE OF THE HYDRAULIC SYSTEM AND HAS THE POTENTIAL FOR SUDDEN AND IMMEDIATE LOSS OF LOAD.
- ▪ ALWAYS ONLY USE A HIGH GRADE ANTI-FOAMING HYDRAULIC OIL.
- ▪ USE OF A NON-RECOMMENDED FLUID CAN CAUSE DAMAGE TO THE HYDRAULIC SYSTEM.
- ✓ AVOID MIXING DIFFERENT TYPES OF FLUID AND DISPOSE OF HYDRAULIC FLUID IN ACCORDANCE WITH LOCAL REGULATIONS.

HYDRAULIC OIL PERFORMANCE ADDITIVES:

Description: Add (1-qt)
Additives perform to Lower friction for some hydraulic systems
Attributes: Relieves "stick-slip" on noisy hydraulic cylinders (eg. Humming noise or exxecssive vibrating),
Recommended Application: .95-liter bottle recommended. Used as a friction modifier to help reduce noise level.
Caterpillar Equipment part number: 1U-9891

SYSTEM AIR PURGE PROCEDURE

⚠ **IMPORTANT: BEFORE FIRST USE** perform the following Air Purge Procedure to remove any air that may have been introduced into the hydraulic system. This step is to be completed without any weight or vehicles on the lift.

- Refer to page 40 for additional information.

SERVICE MAINTENCE AND SERVICE CALLS

The manufacturer can provide on-site service to your lift product by a qualified lift service technician. The owner may be responsible for all costs and direct payment to the contractor at the time the work is completed. It is the owner's responsibility to return any parts to the manufacturer for warranty validation. Repairs should only be completed by a qualified lift technician.

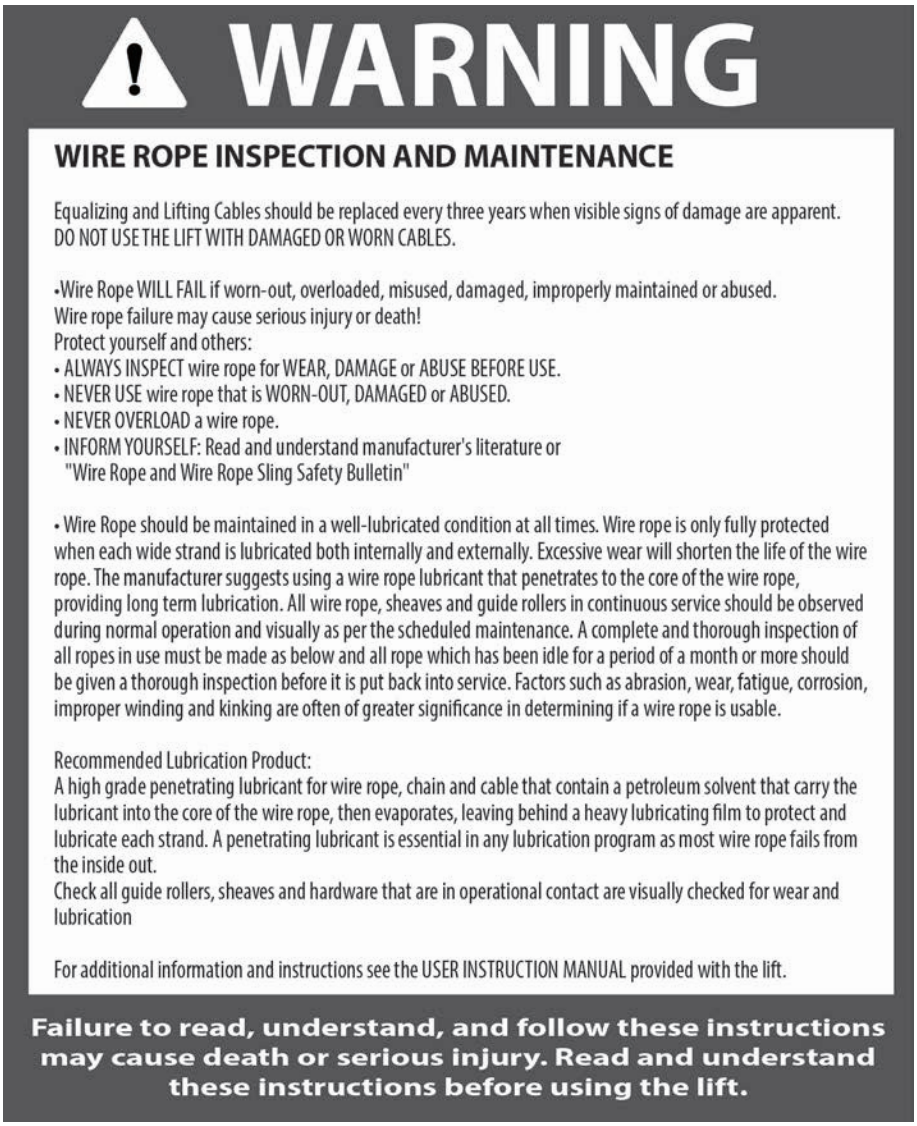
For additional lift maintenance and issues please contact a CUSTOMER SERVICE REPRESENTATIVE or a LOCAL TRAINED LIFT SERVICE TECHNICIAN.

DO NOT assume how to repair lift.

If product is "Binding" contact a customer service agent.

Binding

If the product binds while under a load, use equipment with equal or a larger load capacity to lower the load safely to the ground. After un-binding; clean, lubricate and test that equipment is working properly. Rusty components, dirt, or worn parts can be causes of binding clean and lubricate the equipment as indicated in the lubrication section. Test the equipment by lifting without a load. If the binding continues, contact Customer Service.



WIRE ROPE INSPECTION, USE, AND CARE

The following information is NOT a complete discussion of wire rope.
WHAT FOLLOWS IS A BRIEF OUTLINE OF THE BASIC INFORMATION REQUIRED TO SAFELY USE WIRE ROPE AND WIRE ROPE SLINGS.

Equalizing and Lifting Cables should be replaced every three years when visible signs of damage are apparent. DO NOT USE THE LIFT WITH DAMAGED OR WORN CABLES.

Wire Rope should be maintained in a well-lubricated condition at all times. Wire rope is only fully protected when each wide strand is lubricated both internally and externally. Excessive wear will shorten the life of the wire rope. The manufacturer suggests using a wire rope lubricant that penetrates to the core of the wire rope, providing long term lubrication. All wire rope, sheaves and guide rollers in continuous service should be observed during normal operation and visually as per the scheduled maintenance. A complete and thorough inspection of all ropes in use must be made as below and all rope which has been idle for a period of a month or more should be given a thorough inspection before it is put back into service. Factors such as abrasion, wear, fatigue, corrosion, improper winding and kinking are often of greater significance in determining if a wire rope
is usable.

1. Wire rope WILL FAIL IF WORN OUT, OVERLOADED, MISUSED, DAMAGED or IMPROPERLY MAINTAINED.
2. In service, wire rope loses strength and work capability. Abuse and misuse increase the rate of loss.
3. The NOMINAL STRENGTH, sometimes called CATALOG strength, of a wire rope applies ONLY to a NEW, UNUSED rope.
4. The Nominal Strength of a wire rope SHOULD BE CONSIDERED the straight line pull which will ACTUALLY BREAK a new, UNUSED rope. The Nominal Strength of a wire rope should NEVER BE USED AS ITS WORKING LOAD.
5. WIRE ROPES WEAR OUT. The strength of a wire rope begins to decrease when the rope is put in use, and continues to decrease with each use.
6. NEVER OVERLOAD A WIRE ROPE. This means NEVER USE the rope where the load applied to it is greater than the working load determined by dividing the Nominal Strength of the rope by the appropriate Design Factor.
7. NEVER "SHOCK LOAD" a wire rope. A sudden application of force or load can cause both visible external damage and internal damage. There is no practical way to estimate the force applied by shock loading a rope. The sudden release of a load can also damage a wire rope.
8. Lubricant is applied to the wires and strands of a wire rope when it is manufactured. This lubricant is depleted when the rope is in service and should be replaced periodically.
9. Regular, periodic INSPECTIONS of the wire rope, and keeping of PERMANENT RECORDS. The purpose of inspection is to determine whether or not a wire rope may continue to be safely used on that application. Inspection criteria, including number and location of broken wires, wear and elongation, should be recorded. IF IN DOUBT, REPLACE THE ROPE. An inspection should include verification that none of the specified removal criteria for this usage are met by checking for such things as:

- Surface wear: Normal and unusual.
- Broken wires: Number and location.
- Reduction in diameter.
- Rope stretch (elongation).
- Integrity of end attachments.
  In addition, an inspection should include the condition of sheaves, drums and other apparatus with which the rope makes contact.

10. When a wire rope has been removed from service because it is no longer suitable for use, IT MUST NOT BE RE-USED ON ANOTHER APPLICATION.
11. Every wire rope user should be aware of the fact that each type of fitting attached to a wire rope has a specific efficiency rating which can reduce the working load of the rope assembly or rope system, and this must be given due consideration is determining the capacity of a wire rope system.
12. Some conditions that can lead to problems in a wire rope system include:

- Sheaves that are too small, worn or corrugated cause damage to a wire rope.
- Broken wires mean a loss of strength.
- Kinks permanently damage a wire rope and must be avoided.
- Wire ropes are damaged by knots, and wire ropes with knots must never be used.
- Environmental factors such as corrosive conditions and heat can damage a wire rope.
- Lack of lubrication can significantly shorten the useful service life of a wire rope.
- Contact with electrical wires and the resulting arcing will damage a wire rope.

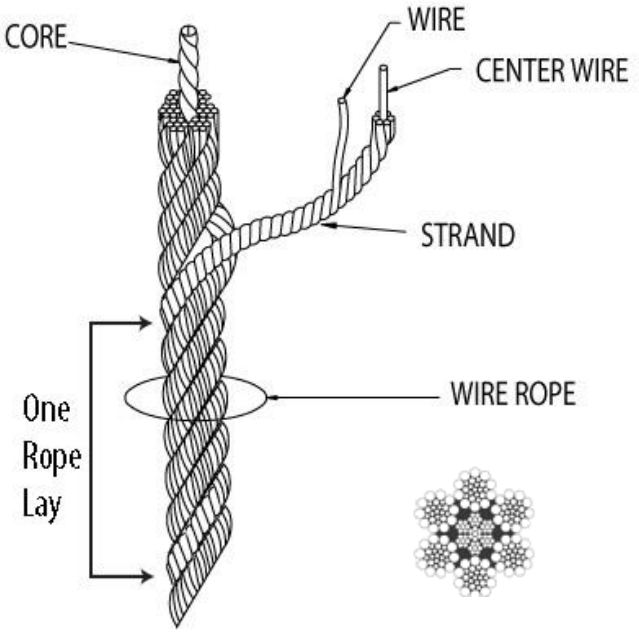
Recommended Lubrication Product:
A high-grade penetrating lubricant for wire rope, chain and cable that contain a petroleum solvent that carry the lubricant into the core of the wire rope, then evaporates, leaving behind a heavy lubricating film to protect and lubricate each strand. A penetrating lubricant is essential in any lubrication program as most wire rope fails from the inside out.
Check and lubricate all guide rollers, sheaves and hardware that are in operational contact are visually checked for wear and lubrication

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.



OTHER REASONS TO REPLACE WIRE ROPE

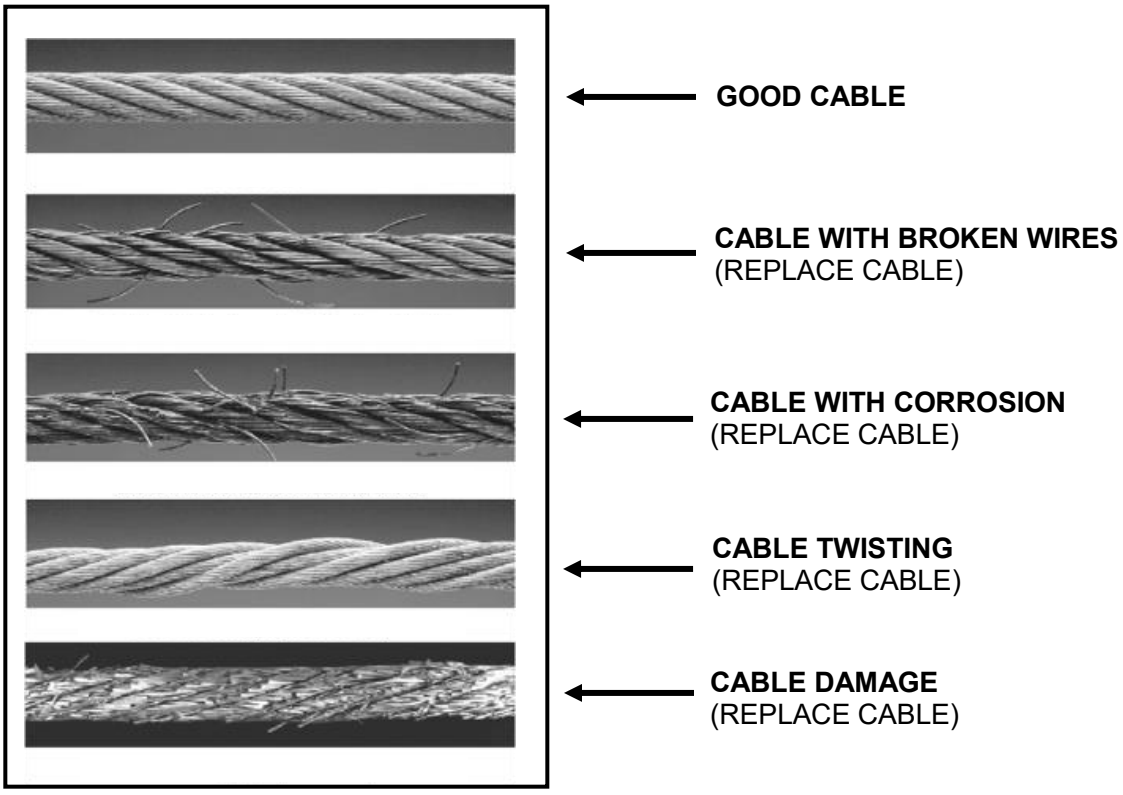
- Corrosion that pits the wires and/or connectors.
- Evidence of kinking, crushing, cutting, bird-caging or a popped core.
- Wear that exceeds 10% of a wire's original diameter.
- Evidence of heat damage.

HOW TO INSPECT WIRE ROPE

I. Relax the rope to a stationary position and move the pick-up points off the sheaves. Clean the surface of the wire rope with a cloth this will allow you to see breaks. (Use a stiff wire brush, if necessary.)
II. Flex the rope to expose any broken wires hidden in the channels between the strands.
III. 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.
IV. With an awl tool, probe between wires and strands and lift any wires that appear loose. Evidence of internal broken wires may require a more extensive rope examination. (IF IN DOUBT REPLACE CABLES)
V. Check for layer to layer crushing or individual wires that may have been displaced from their normal position.
VI. Check Sheaves for deeply corrugated sheaves that may also be causing damage to wire ropes. Replace sheaves if needed.
VII. Replace wire rope if any failing condition is found.

- A lubricant suited to the conditions under which the rope is operating should then be applied. Several methods are suggested, and the one most suited to the installation and lubricant being used may be chosen. It is better to lubricate lightly and frequently than heavily and infrequently. For best results lubricate to core of cables.
- Improve rope performance and overall effectiveness
- Check all guide rollers, sheaves and hardware that are in operational contact are visually checked for wear and lubrication.
- Visually Inspect and Apply lubricants to all contact points using a heavy weight lubricant using the methods as described: spray, pump, brush or hand lubrication.

For Additional Information see “Wire Rope User’s Manual 4th Ed.”.
Failure to read, understand, and follow these instructions may cause death or serious injury. Read and understand these instructions before using the lift.



ELECTRICAL LOCKOUT PROCEDURE

Purpose

This procedure establishes the minimum requirements for the lockout of energy that could cause injury to personnel by the operation of lifts in need of repair or being serviced. All employees shall comply with this procedure. See ANSI/ASSE Z244.1-2003 (R2014) Control of Hazardous Energy Lockout/Tagout and Alternative Methods for additional information.

Responsibility

The responsibility for assuring that this procedure is followed is binding upon all employees and service personnel from outside service companies (i.e., authorized installers, contactors, etc.). All employees shall be instructed in the safety significance of the lockout procedure by the facility owner/manager. Each new or transferred employee along with visiting outside service personnel shall be instructed by the owner/manager (or assigned designee) in the purpose and use of the lockout procedure.

Preparation

Employees authorized to perform lockout shall ensure that the appropriate energy isolating device (i.e., circuit breaker, fuse, disconnect, etc.) is identified for the lift being locked out. Other such devices for other equipment may be located in close proximity of the appropriate energy isolating device. If the identity of the device is in question, see the shop supervisor for resolution. Assure that proper authorization is received prior to performing the lockout procedure.

Sequence of Lockout Procedure

1. Notify all affected employees that a lockout is being performed for servicing or maintenance and that the lift must be shut down and locked out to perform the servicing or maintenance
2. Unload the subject lift (remove vehicle). Shut it down and assure the disconnect switch is “OFF” if one is provided on the lift.
3. The authorized lockout person operates the main energy isolation device removing power to the lift being taken out of service. Stored or residual energy (such as capacitors, springs, elevated machine members, hydraulic systems, air, or etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc. If this is a lockable device, the authorized lockout person places the assigned padlock on the device to prevent its unintentional reactivation. An appropriate tag is applied stating the person’s name, at least 3” x 6” in size, an easily noticeably color, and states not to operate device or remove tag. If this device is a non-lockable circuit breaker or fuse, replace circuit with a “dummy” device and tag it appropriately as mentioned above.
4. Ensure that the equipment is disconnected from the energy sources’ by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the push button or other normal operating controls’ or by testing to make certain the equipment will not operate. Be sure to return any switches to the “OFF” position.
5. The equipment is now locked out and ready for the required maintenance or service.

Restoring Equipment to Service

1. Check the lift and the immediate area around the lift to ensure that nonessential items have been removed (clear all tools, vehicles and personnel) and that the completion of all lift components are operationally intact.
2. The authorized person can now remove the lock (or dummy circuit breaker or fuse) and tag. Activate the energy isolating device so that the lift may again be placed into operation.

Rules for Using Lockout Procedure

All employees are required to comply with the restrictions and limitations imposed upon them during the use of lockout. The authorized employees are required to perform the lockout in accordance with this procedure. All employees, upon observing a piece of lifting equipment which is locked out to perform servicing or maintenance shall not attempt to start, energize, or use that machine or equipment. The Lockout Procedure should be used whenever the lift is being repaired or serviced, waiting for repair when current operation could cause possible injury to personnel, or for any other situation when unintentional operation could injure personnel. No attempt shall be made to operate the lift when the energy isolating device is locked out.

INSTRUCTIONS TO READ THE MANUAL(S) THOROUGHLY BEFORE INSTALLING, OPERATING, SERVICING, OR MAINTAINING THE LIFT.

PLEASE **READ THE ENTIRE CONTENTS OF THIS MANUAL AND THE SAFETY REQUIREMENTS FOR INSTALLATION AND SERVICE FOR AUTOMITIVE LIFTS LITERATURE**, PRIOR TO INSTALLATION AND OPERATION. BY PROCEEDING WITH THE LIFT INSTALLATION AND OPERATION YOU AGREE THAT YOU FULLY UNDERSTAND THE FULL CONTENTS OF THIS MANUAL. THIS MANUAL MUST BE READ BY ALL USERS. FAILURE TO OPERATE THIS EQUIPMENT AS DIRECTED MAY CAUSE INJURY OR DEATH**.**

OPERATOR TRAINING AND SAFE PRACTICES

Owner/Employer/User :

- **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
- **SHALL** establish procedures to periodically inspect the lift in accordance with the lift manufacturer's instructions and 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 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 Lifts-Safety Requirements for Operation, Inspection and Maintenance.
- **SHALL** display the lift manufacturer's operating instructions; for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; in a conspicuous location in the lift area convenient to the operator
- **SHALL** provide necessary Lockout/Tagout means for energy sources per ANSI Z244.1-2003 (R2014), 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
- **WILL NOT** modify the lift in any manner without the prior written consent of the manufacturer.
- Manufacturer has provided Labels that follow the guidance of ANSI Z535.1, *American National Standard for Safety Color Code.*

OPERATOR TRAINING AND SAFE PRACTICES, CONT.

- Manufacturer has provided Label symbols that follow the guidance of ANSI Z535.3, *American National Standard, Criteria for Safety Symbols.*
- Manufacturer has provided Labels designs that follow the guidance of ANSI Z535.4, *American National Standard for Product Safety Signs and Labels.*
- **Precautions and Safety should always be followed when installing and operating this lift.**
- **ONLY TRAINED** and **AUTHORIZED PERSONNEL** should operate the lift. Do not allow customers or unauthorized personnel to operate the lift or remain in the lift area.
- **Review regularly** the safety rules and guidelines with personnel. All non-trained personnel should be kept away from work area. Never let non-trained personnel come in contact with, or operate lift.
- **Be aware. Watch what you are doing. Use common sense.**
- **Understand** the vehicle lift operating controls before use.
- **DO NOT** leave the operational controls while the lift is still in motion.
- **DO NOT** stand in front of the vehicle or in the bay when vehicle is being loaded or driven into position.
- **DO NOT** attempt to work on the vehicle or go near vehicle when lift is being raised or lowered.
- **ALWAYS** stay clear of lift when raising or lowering vehicle.
- **ALWAYS** clear the area if a vehicle is in danger of falling.
- **KEEP** hands and feet clear. Remove hands and feet from any moving parts. Keep feet clear of lift when lifting or lowering to avoid bodily harm or any pinch points.
- **DO NOT** raise a vehicle on the lift until the installation is completed as described in this manual.
- **DO NOT raise or lower the vehicle unless tools, materials and people are clear. Clean up grease and oil spills immediately.** When the lift is being lowered, make sure everyone is standing at least six feet away. Be sure there are no jacks, tools, or equipment, left under the lift before lowering. Always lower the vehicle down when the area is safe and clear.
- **INSPECT THE LIFT DAILY.** Do not operate if potential problems have been identified or lift malfunctions. Do not operate if lift has damaged or broken components. Check all moving parts for any type of damage that may affect misalignment or operation of lift.
- **NEVER** walk under or work under the lift unless all safety locks are completely engaged.
- A daily inspection of the lift should be completed prior to any use. Safety mechanisms, operating controls, lifting arms, ramps and any other critical parts should be inspected prior to using the lift.

OPERATOR TRAINING AND SAFE PRACTICES, CONT.

- **ALWAYS KNOW YOUR LOAD LIMIT.** Use caution so that you do not overload the lift. It is important that you know the load limit. To check the rated capacity, decals are located on one of the lift columns or contact the manufacturer for replacements labels. The hydraulic system on this lift is not designed to be a load holding device. Mechanical safety locks must be engaged before proceeding under the lift, with vehicle servicing, or system maintenance. Never override operating controls. This is unsafe and will void the warranty, before driving a vehicle between the columns, position all arms to insure unobstructed entry. Do not hit or run over arms as this could damage the lift and/or vehicle.

- **ALWAYS make sure you have proper overhead clearance.**

- **WARNING! RISK OF EXPLOSION.** This equipment has internal arcing or sparking parts which should not be exposed to any flammable vapors.

- **DO NOT** locate this machine in a recessed area or below floor level. ALLOW FOR PROPER DRAINAGE.

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

- Positioning the vehicle is very important. Only trained technicians should position the vehicle on the lift. Never allow anyone to stand in the path of the vehicle as it is being positioned.

- Keep the area around the lift clean and free of debris.

- 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. Special care must be used when lifting light duty trucks. Optional truck adapters may be required for each manufacturer's recommended lifting points. Always use these lifting points. Running boards and other installed accessories may also require optional adapters**.** Insure vehicle is balanced when lifting light duty trucks, failure to do so can cause injury and/or death.

- Removal or installation of heavier parts can change the vehicle's center of gravity on the lift resulting in a critical load shift. The vehicle may then be unstable. Plan ahead for this possibility to insure continued safety and refer to the vehicle manufacturers' service manual for recommended procedures.

- **DO NOT** remove any heavy component from vehicle that may cause excessive weight shift.

- **ALWAYS** keep the lift area free of obstructions and debris.

- **NEVER** raise a vehicle with passengers inside. Before lowering a vehicle, check the lift and lift area and remove all obstructions. Before removing vehicle from the lift or lift area, position arms to the drive through position and confirm an unobstructed exit.

- Use of jack stands or other load supporting devices will help in preventing load shifts. Manufacturer suggests that jack stands or other load supporting devices are used at all times for additional security. Use additional lifting equipment or stands when removing or installing heavy vehicle components.

OPERATOR TRAINING AND SAFE PRACTICES, CONT.

- **ALWAYS** Make sure the vehicle's center of gravity is always safe before raising vehicle. Any points of contact on vehicle that are not in good contact with lifting pads or contact with lift should always be double checked. Always make sure the vehicle is secure before lifting using vehicle manufacturers' recommended lifting points.

- Large vehicles, such as limousines, RV's, and long wheelbase vehicles, may not be suitable for lifting on this equipment.

- **DO NOT** rock or tip the vehicle while working on or around lift.

- **VERIFY** that all safety latches are engaged and lowered on to the safety ladders before any attempt is made to work on or near vehicle.

- **NEVER** override self-operating lift controls.

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

- **DO NOT** block open or override self-closing lift controls; they are designed to return to the "Off" or Neutral position when released.

- **DO NOT** remove or disable arm restraints.

- **DO NOT** hit or run over lift arms or adapters. This could damage lift or vehicle. Before driving vehicle into lift bay, position arms and adapters to provide unobstructed entrance onto lift.

- **USE THE LIFT ONLY AS DESCRIBED IN THIS MANUAL.**

- Use only manufacturer's recommended attachments.

- The troubleshooting and maintenance procedures described in this manual can be done by the lift's owner/employer. Any other procedure should only be performed by trained lift service personnel. These restricted procedures include, but are not limited to, the following: cylinder replacement, carriage and safety latch replacement, arm replacement, overhead structure replacement, or electrical troubleshooting/repair.

- **NEVER** use the lift on curved or tubular bumper. Do not lift curved bumpers as this will result in slipping off and falling, causing serious injury or death. A bumper lift will lift most vehicles with curved bumpers or plastic bumpers.

- **PAY ATTENTION** when walking under a vehicle that is raised on the vehicle lift.

OPERATOR TRAINING AND SAFE PRACTICES, CONT.

 DANGERS:

- To reduce the risk of personal injury, keep hair, loose clothing, fingers, and all body parts away from moving parts.
- To reduce the risk of electric shock, do not use the lift when wet. The lift should not be exposed to the rain.
- To reduce the risk of fire, do not operate equipment in the close proximity of open containers containing flammable liquids (example: Gasoline, flammable solvents).
- Anyone who will be in the vicinity of the lift when it is in use should familiarize themselves with following Caution, Warning, and Safety related decals supplied with this lift and replace them if they are illegible or missing.
- Anyone who will be in the vicinity of the lift when it is in use should read and refer to publications supplied with this lift.

TROUBLESHOOTING

LIFT WILL NOT RAISE

	Air is in the oil	• 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. • Bleed cylinders. See Installation Manual • Oil seal damaged or cocked. Replace oil seal around pump shaft. • Inlet screen clogged. Clean inlet screen or replace
	Cylinder is binding	• Contact Customer Service.
	Cylinder leaks internally	• Contact Customer Service
	Lift does not raise and lower smoothly	• Reposition vehicle for a more even weight distribution • Check the four inside corners of the two columns for roughness. Any rust or burrs must be removed with emery cloth. • Lubricate the four corners with heavy duty bearing grease. • Use a level to check the columns for vertical alignment both side to side and front to back. Shim the columns as necessary per the Installation Instruction section of this manual. • Check the oil level • Inspect that there is no air in the hydraulic lines. Bleed the hydraulic system as described in the Installation Instruction section of this manual.
	Lowering valve is leaking	• Contact Customer Service
	Motor runs backwards	• Check if motor is wired correctly. Compare wiring of motor to electrical diagram on drawing. • Check wall outlet voltages and wiring. Make sure unit and wall outlet are wired properly. • Contact Customer Service
	Motor run backward under pressure	• Contact Customer Service
	Power Unit will not stop running	• Switch is damaged. Turn off power to the lift and replace switch
	Pump is damaged	• Contact Customer Service
	Pump will not prime	• 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. • Flush release valve to get rid of. Hold release handle down and start unit allowing possible contamination it to run for 15 seconds. • Oil seal damaged or cocked. Replace oil seal around pump shaft. • Replace with new part. • Check pump-mounting bolts. Bolts should be 15 to 18 ft. lbs. • Inlet screen clogged. Clean inlet screen or replace. • Check wall outlet voltages and wiring. Make sure unit and wall outlet are wired properly. • Contact Customer Service
	Relief valve leaks	• Contact Customer Service
	Voltage to the motor is incorrect	• Check if motor is wired correctly. Compare wiring of motor to electrical diagram on drawing. • Check wall outlet voltages and wiring. Make sure unit and wall outlet are wired properly. • Contact Customer Service
	The power unit does not run	• Check electrical supply breaker or fuse • Check to see if limit switch is being contacted by a tall vehicle • Check micro-switch and connections in motor control box • Check voltage to the motor • Check micro-switch and connections on the overhead switch
	The power unit runs but does not raise the lift	• Check the oil level • Check that the lowering valve is not stuck open • Check the connections and components on the suction side of the pump
	The power unit raises the lift empty but will not lift a vehicle	• Make sure the vehicle is not above the rated capacity of the lift • Make sure the vehicle is positioned properly • Clean the lowering valve by running the power unit for 20 seconds while holding the lowering valve open • Check the motor voltage

TROUBLESHOOTING

MOTOR WILL NOT RUN

	Fuse is blown	• Check for correct voltage. Compare supply voltage with voltage on motor name tag. Check that the wire is sized correctly. Requires AWG 10 for 30 Amps. • Check motor is wired correctly. Compare wiring of motor to electrical diagram on drawing. • Don't use extension cords. 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. • Reset circuit breaker/fuse. Reset circuit breaker/fuse. • Contact Customer Service.
	Limit switch is burned out	• Check for correct voltage. Compare supply voltage with voltage on motor name tag. Check that the wire is sized correctly. Requires AWG 10 for 30 Amps. • Check motor is wired correctly. Compare wiring of motor to electrical diagram on drawing. • Don't use extension cords. 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. • Contact Customer Service.
	Mercury switch is burned out	• Check for correct voltage. Compare supply voltage with voltage on motor name tag. Check that the wire is sized correctly. Requires AWG 10 for 30 Amps. • Check motor is wired correctly. Compare wiring of motor to electrical diagram on drawing. • Don't use extension cords. 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. • Contact Customer Service
	Motor is burned out	• Check for correct voltage. Compare supply voltage with voltage on motor name tag. Check that the wire is sized correctly. Requires AWG 10 for 30 Amps. • Check motor is wired correctly. Compare wiring of motor to electrical diagram on drawing. • Don't use extension cords. 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. • Replace with a new part. • Contact Customer Service
	Voltage to the motor is not correct	• Check for correct voltage. Compare supply voltage with voltage on motor name tag. Check that the wire is sized correctly. Requires AWG 10 for 30 Amps. • Check motor is wired correctly. Compare wiring of motor to electrical diagram on drawing. • 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

	Lift lowers slowly down	• Check for oil leaks • Clean the lowering valve by running the power unit for 20 seconds while holding the lowering valve open. Repeat this procedure a few times • Clean the check valve seat
	The cylinders are binding	• Contact Customer Service.
	The release valve is clogged	• Check the hydraulic oil. Use a clean hydraulic oil, Use only a recommended ISO AW32 or AW46 hydraulic oil. If the hydraulic oil is contaminated, replace with a clean hydraulic oil and clean entire system. • Clean the release valve. Thoroughly wash the release valve in solvent and blow out with air. • Contact Customer Service.
	The lift will only lower completely to 1" from the floor	• Adjust cable as needed to assure that cables have not been over tightened and check that both safety latches are disengage. • Check that the safety latches are disengaged

TROUBLESHOOTING

WILL NOT RAISE LOADED LIFT

	Lift is overloaded	• Check the weight of the vehicle. Compare the weight of vehicle to weight limit of the lift. • Contact Customer Service.
	Slow Lifting and/or oil foaming up	• Check that oil used meets the specification in the Installation Instruction section of this manual • Tighten all suction line fittings • Not enough oil in tank and air has been transferred into the hoses and cylinder. (Complete bleed system and replace oil.)
	There is air is in the oil	• Check the oil level. The oil level should be just below the fill cap in the reservoir with the lift at its lowest resting position. • Check and tighten all hydraulic fittings. Check that hydraulic hose assembly is not clogged with debris. • The oil is seal damaged or cracked. Replace the oil seal and re-install. • Bleed cylinders. See Instruction Manual.
	The cylinder is binding	• Contact Customer Service.
	The cylinder leaks internally,	• Contact Customer Service.
	Lowering valve leaks	• Check the oil level. The oil level should be just below the fill cap in the reservoir with the lift at its lowest resting position. • Flush the release valve. To do this hold release valve handle down and start unit. Allow the power unit to run for 15 seconds. • Contact Customer Service.
	The motor runs backwards	• Check that the motor is wired correctly. Compare the wiring of motor to electrical diagram on power unit drawing. • Check the outlet voltage and wiring. Make sure that the power unit and the wall outlet are wired properly. • Contact Customer Service.
	The pump is damaged	• Contact Customer Service.
	The pump will not prime	• Check the oil level. The oil level should be just below the fill cap in the reservoir with the lift at its lowest resting position. • Check and tighten all hydraulic fittings. Check that hydraulic hose assembly is not clogged with debris. • The oil seal is damaged or cracked. Replace the oil seal and re-install. • Bleed cylinders. See Instruction Manual. • The inlet screen is clogged. Clean the inlet screen or replace the screen. • Contact Customer Service.
	The relief valve leaks	• Contact Customer Service.
	Voltage to the motor is not correct	• Contact Customer Service. • Check that the motor is wired correctly. Compare the wiring of motor to electrical diagram on power unit drawing. • Check the outlet voltage and wiring. Make sure that the power unit and the wall outlet are wired properly.

LIFT WILL NOT STAY UP

	Air in is the oil	• Check the oil level. The oil level should be just below the fill cap in the reservoir with the lift at its lowest resting position. • The oil seal is damaged and cocked. Replace oil seal around the pump shaft. • Bleed cylinder. Refer to Instruction Manual.
	The power unit check valve leaks	• Contact Customer Service.
	Cylinders is leaking internally	• Contact Customer Service.
	Lowering valve leaks	• Check the oil level. The oil level should be just below the fill cap in the reservoir with the lift at its lowest resting position. • Flush the release valve. Hold release handle down and start unit allowing it to run for 15 seconds. • Contact Customer Service.
	Leaking fittings	• Check the entire hydraulic system for leaks. Check that all hydraulics fittings are tightened and inspects all hoses.

TROUBLESHOOTING

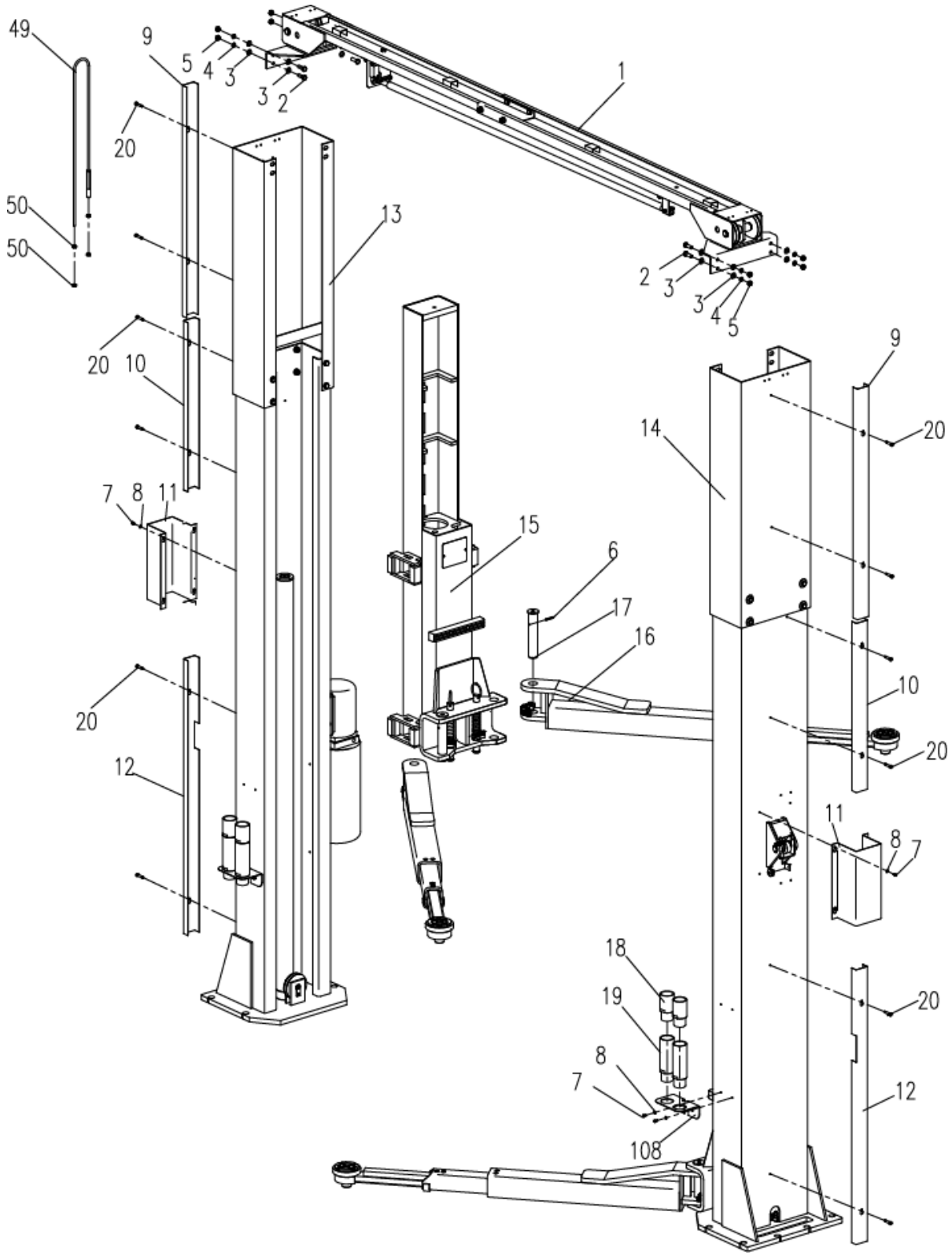
OTHER ISSUES

	Safety lock are out of adjustment	• If the equalization cables are out of adjustment, the carriages are out of sync. When the lift is at full rise, one of the safety latches may not have the clearance to disengage and allow the lift to lower. Read adjust cables as described in manual.
	At full rise the safety latch will not disengage and the lift cannot be lowered	• Check oil level • If the equalization cables are out of adjustment, the carriages are out of sync. When the lift is at full rise, one of the safety latches may not have the clearance to disengage and allow the lift to lower
	Anchors continually work loose	• If holes were drilled too large, relocate the lift per the Installation Instruction section of this manual. • Floor is not sufficient to provide the necessary resistance. Remove an area of concrete and re-pour as described in the Expansion Anchor Installation Instruction section of this manual.
	Humming or vibration coming from cylinders	• Perform Air purge procedure • Add (1qt) of a Hydraulic Oil Performance Additives: Attributes: Relieves "stick-slip" on noisy hydraulic cylinders (eg. Humming noise or exxecssive vibrating), Recommended Application: .95-liter bottle recommended. Used as a friction modifier to help reduce noise level. **Caterpillar Equipment part number: 1U-9891** • Check for leaking cylinders or seal damage

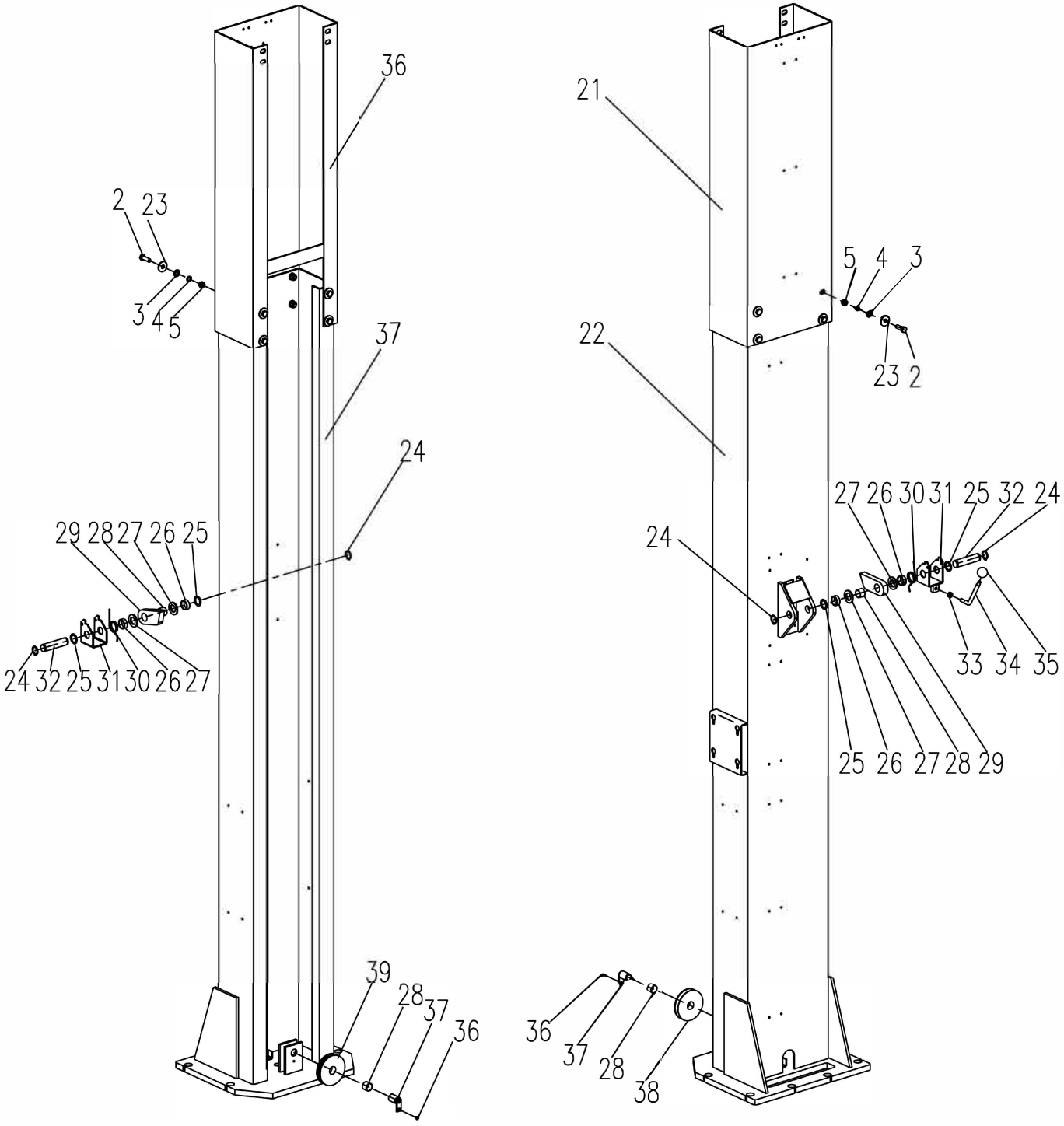
⚠ DANGER:
IF A VEHICLE BECOMES STUCK ON THE LIFT IN THE AIR, FOLLOW ALL OPERATION INSTRUCTIONS AS SHOWN IN THE OPERATING INSTRUCTIONS AND TROUBLESHOOTING SECTION OF THIS MANUAL. IF AFTER OBSERVING THAT ALL MECHANICAL LOCKS ARE RELEASED AND THE LIFT STILL FAILS MOVE FOLLOWING ALL STANDARD OPERATING PROCEDURES, IMMEDIATELY STOP USING THE LIFT AND CONTACT CUSTOMER SERVICE FOR FURTHER INSTRUCTIONS.

For all other issues, questions, or concerns please contact a Customer Support Service Representative.
800-616-9618 http://www.apluslift.com help@apluslift.com

AP-12SR- GENERAL ASSEMBLY DIAGRAM



AP-12SR- GENERAL ASSEMBLY DIAGRAM



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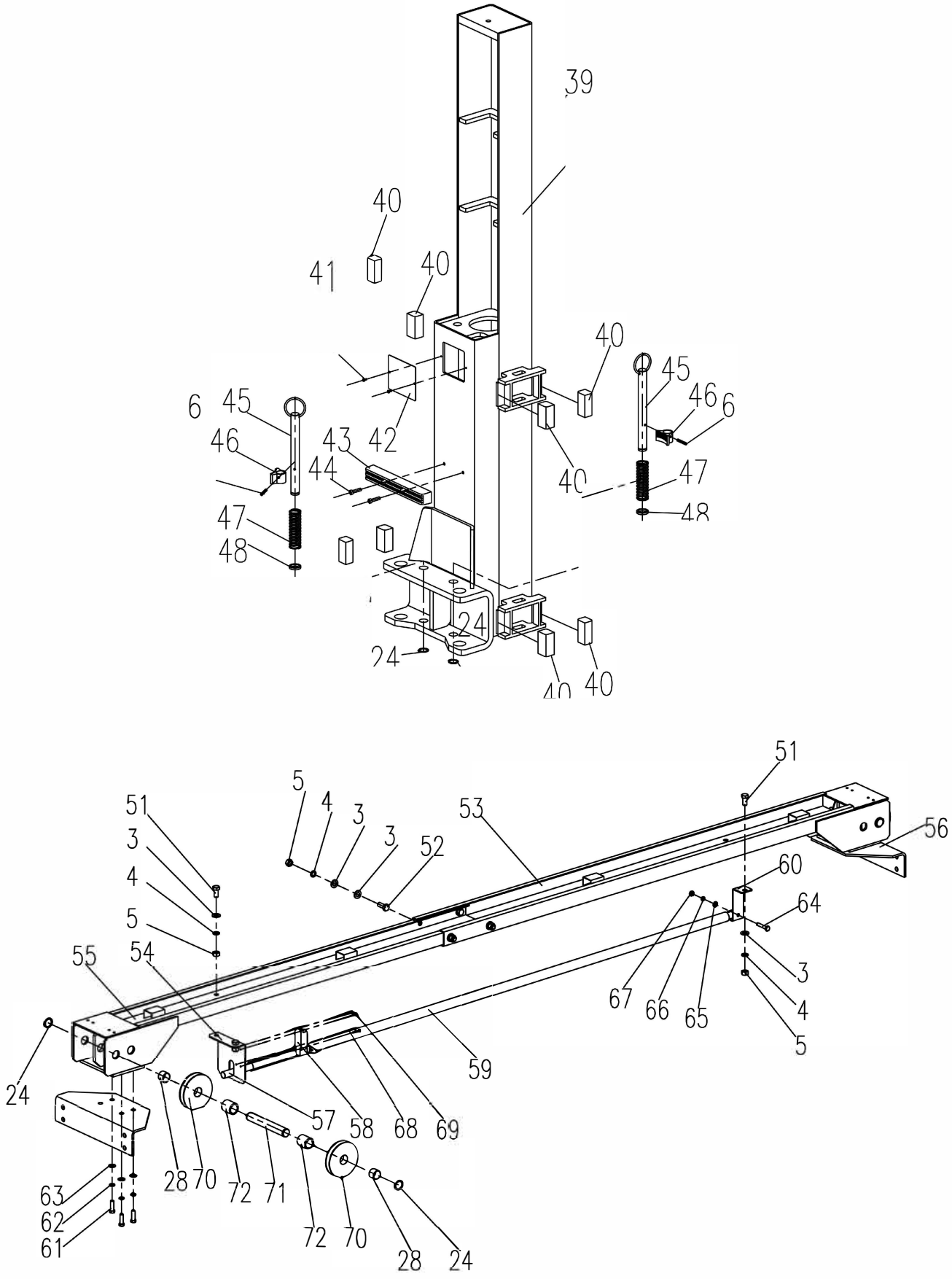

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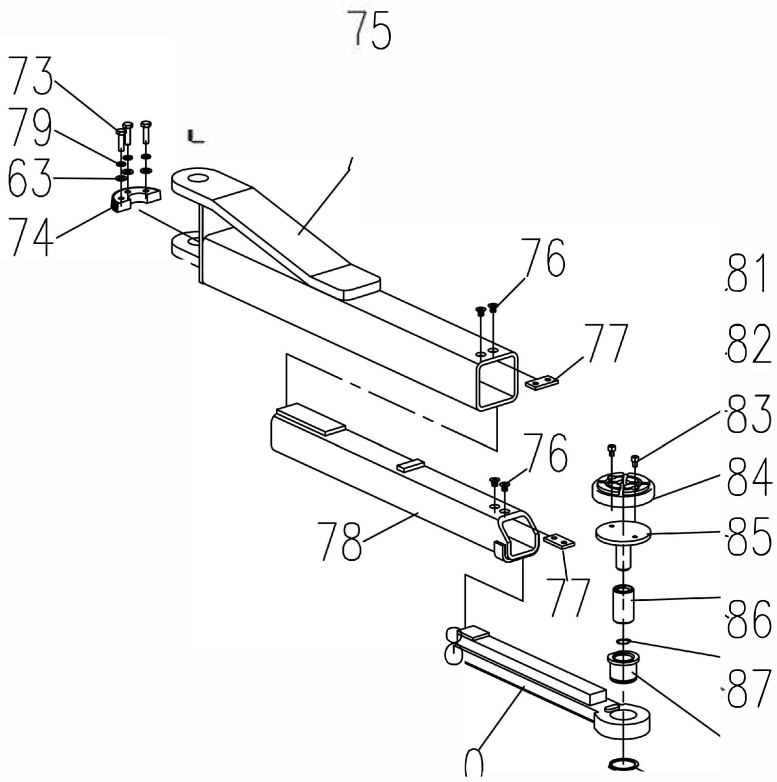

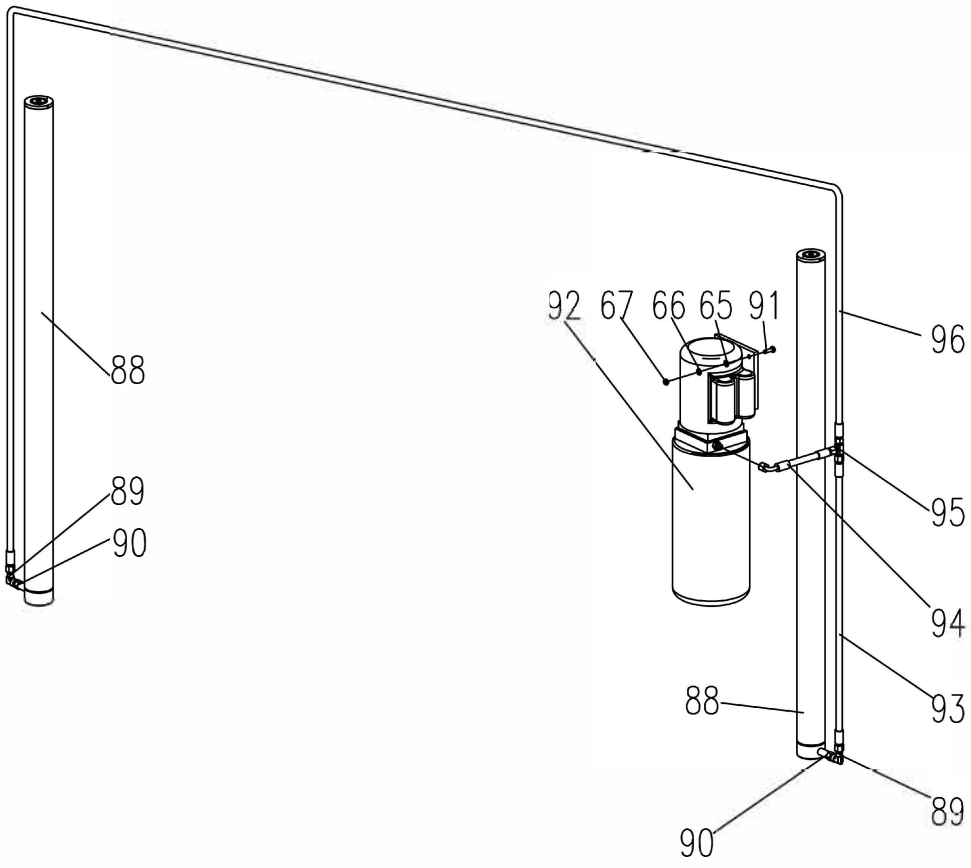

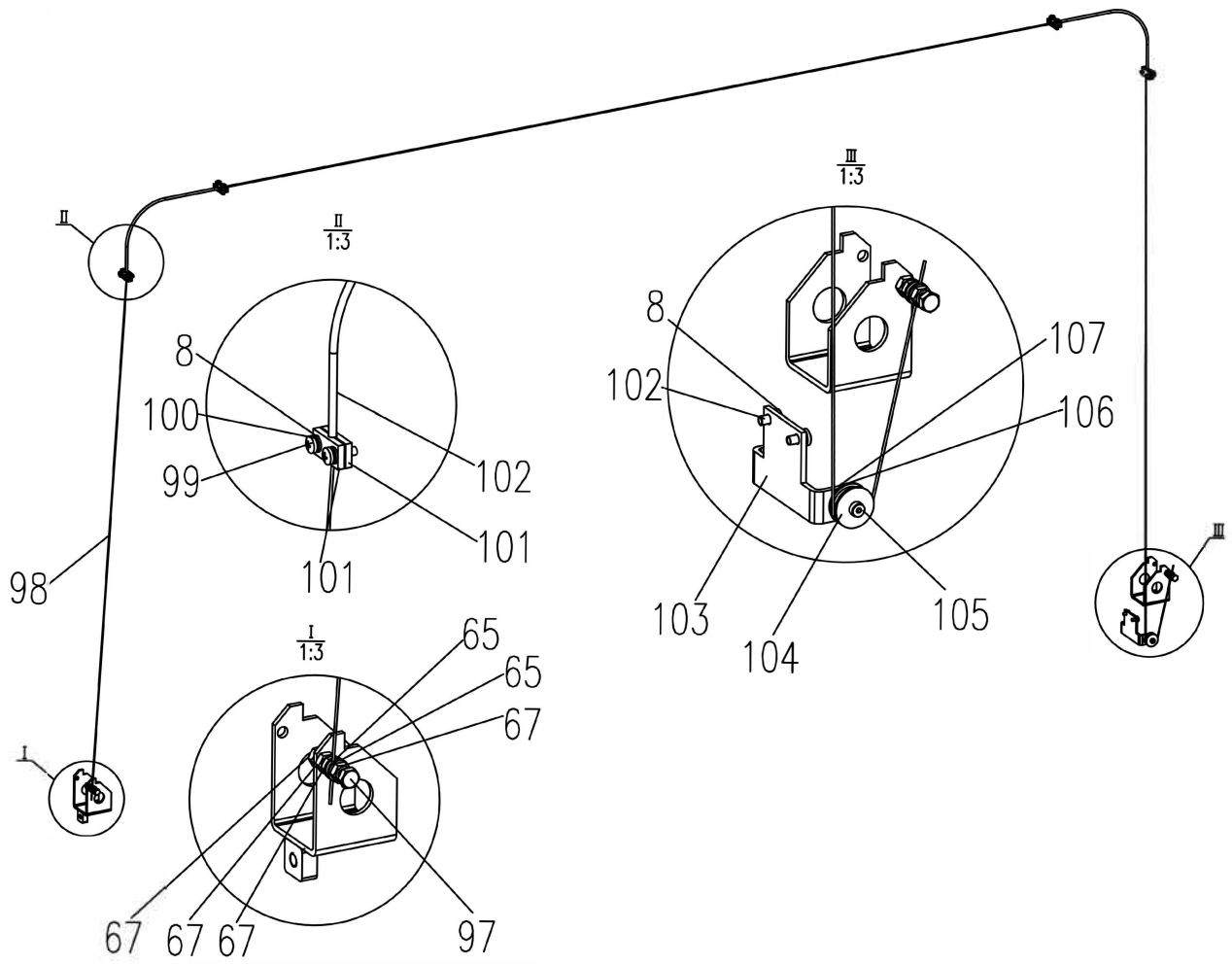
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AP-12SR - GENERAL ASSEMBLY PARTS LIST

1	QJY260DP.9	Crossbeam	1	55	QJY260DP.9.2	inside the beam section parts	1
2	GB/T5783	HEX HEAD BOLT M12X35	20	56	QJY260D.9-01	connecting plate1	2
3	GB/T97.1	FLAT WASHER 12	31	57	QJY230DY.3-06	SAFETY TUBE BAR	1
4	GB/T93	SPRING WASHER 12	27	58	QJY230C-XW.1-05	SWITCH ME-8108	1
5	GB/T6170	NUT M12	27	59	QJY245DX.9-03	SOFT FOAM TUBE	1
6	GB/T894.1	EALSTIC PIN 6X40	6	60	QJY230DY.3-05	connecting plate	1
7	GB/T70.1	SOCKET HEAD CAP SCREW M6X10	48	61	GB/T5783	HEX HEAD BOLTM10X25	6
8	GB/T97.1	FLAT WASHER 6	58	62	GB/T93	SPRING WASHER 10	6
9	QJY260DP-E-01	HYDRAULIC HOSE COVER-1	2	63	GB/T97.1	FLAT WASHER 10	18
10	QJY260DP-E-03	HYDRAULIC HOSE COVER-3	2	64	GB/T5783	HEX HEAD BOLTM8X45	1
11	QJY260D-03	SAFETY COVER POWER SIDE	2	65	GB/T97.1	FLAT WASHER 8	5
12	QJY260DP-02	HYDRAULIC HOSE COVER	2	66	GB/T93	SPRING WASHER 8	5
13	QJY260DP.1	POWER POST ASSEMBLY	1	67	GB/6170	NUTM8	5
14	QJY260DP.2	NON-POWER POST ASSEMBLY	1	68	GB/T818	MACHINE SCREW SUNK HEADM4X25	2
15	QJY260D.3	CARRIAGE ASSEMBLY	2	69	GB/T818	MACHINE SCREW SUNK HEADM4X12	2
16	QJY260DP.4	ARM ASSEMBLY-L	4	70	QJY260D.9-02	CABLE WHEEL	4
17	QJY260D-06	ARM PIN	4	71	QJY260D.9-04	wire wheel axis	2
18	QJY260D-07	EXTENSION ADAPTER SHORT	4	72	QJY260D.9-03	wire wheel spacer	4
19	QJY260D-08	EXTENSION ADAPTER LONG	4	73	GB/T5783	HEX HEAD BOLTM10X35	12
20	1-56288A	BOLT M6	12	74	QJY260D.4-01	ARM TEETH BLOCK	4
21	QJY260DP.1.2	EXTENSION COLUMN	2	75	QJY260DP.4.1	BACK ARM WELDMENT	4
22	QJY260DP.1.1	POWER POST WELDMENT	1	76	GB/T2673	NUT BOLTM10X12	16
23	GB/T96	FLAT WASHER 12	16	77	QJY230C.4-02	ARM STOP	8
24	GB/T894.1	CIRCLIP25	12	78	QJY260DP.4.2	MIDDLE ARM WELDMENT	4
25	QJY260D.1-05	LOCK washer	4	79	GB/T859	washer 10	4
26	QJY260D.1-06	INSURANCE RING	4	80	QJY260DP.4.3	FRONT ARM WELDMENT	4
27	GB/T95	FLAT WASHER 24	4	81	GB/T70.1	SOCKET HEAD CAP SCREWM8X12	4
28	SF-2	BUSHING 2520	8	82	QJY230C.4.3b-04	ROUND LIFTING PAD	4
29	QJY260D.1-01	SAFETY LOCK	2	83	QJY230C.4.3b-01	LIFTING TRAY	4
30	QJY260D.1-03	SAFETY SPRING	2	84	QJY230C.4.3b-02	SWIVEL SHEATH	4
31	QJY260D.1.4	INSURANCE SHAFT PART	2	85	GB/T894.1	Circlip 22	4
32	QJY260D.1-02	INSURANCE	2	86	QJY230C.4.3b-05	LONG INSIDE SWIVEL SHEATH	4
33	GB/T6170	NUTM10	1	87	GB/T894.1	Circlip 50	12
34	QJY245DX-03	HANDLE	1	88	QJY260D.8-05	Cylinder	2
35	GB/T84141.11-84	HANDLE BALLM10X25	1	89	QJY260D.8-07	90° Fitting	2
36	GB/T819	MACHINE SCREW SUNK HEADM6X10	2	90	QJY260D.8-06	Flow Restrictor	2
37	QJY260D.1.3	AXLE PARTS	2	91	GB/T5783	HEX HEAD BOLTM8X22	4
38	QJY260D.1-04	CABLE WHEEL	2	92	QJY260D.8-04	POWER UNIT	1
39	QJY260D.3.1	CARRIAGE WELDMENT	2	93	QJY260D.8-01	Hydraulic Hose 1050mm	1
40	QJY260D.3-03	SLIDER	8	94	QJY260D.8-02	Hydraulic Hose 270mm	1
41	GB/T818	NUT BOLTM4X10	4	95	QJY245DS.8-06	T-Fitting	1
42	QJY245DS.3-09	SQUARE TUBE COVER	2	96	QJY260DP.8-03	Hydraulic Hose 10050mm	1
43	QJY260D.3-01	RUBBER PAD	2	97	QJY245DX.10-02	M8X45 HHCS	2
44	GB/T70.1	SOCKET HEAD CAP SCREWM8X20	4	98	QJY260DP.6-01	Insurance of wire rope	1
45	QJY260D.3.2	CARRIAGE RESTRAINT PIN	4	99	GB/T818	MACHINE SCREW SUNK HEADM6X20	8
46	QJY260D.3-02	TEETH BLOCK	4	100	GB/T93	SPRING WASHER 6	8
47	QJY260D.3-01	SPRING	4	101	QJY260D.6-01	TUBE CLAMP	8
48	QJY260D.3-04	BUSHING	4	102	GB/T818	MACHINE SCREW SUNK HEADM6X12	2
49	QJY260DP-01	CABLE	2	103	QJY260D.6-03	Main pillar insurance wire rack	1
50	GB/T6170	NUT M16	8	104	QJY260D.6-04	wire wheel	1
51	GB/T5783	HEX HEAD BOLTM12X25	3	105	GB/T5281	Shoulder Screw 6.5X12	1
52	GB/T5783	HEX HEAD BOLTM12X30	4	106	GB/T93	SPRING WASHER 5	1
53	QJY260D.9.1	outside the beam section parts	1	107	GB/T6170	NUTM5	1
54	QJY230DY.3-04	switch limit Board	1	108	QJY260D-09	Support saddle rack	2

POWER UNIT (SEE DIAGRAM NEXT PAGE)

INDEX #	ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
2001	YBZ-SLYX-12L-L-B	(1) TANK PLASTIC (BLACK)	1
2002	YBZ-E2D311/1-10	(2) SUCTION FILTER	1
	AM61-3HAM-3BA14R	(3) AC MOTOR 208-240V, UL 277V 25A 2.17CDR	
2003	LHRV-08-42	(4)RELIEF VALVE 2740PSI(+1-100PSI), FIXED	1
2004	YBZ-E2D311/1-02	(5) RELEASE VALVE	1
2005	YBZ-E2D31111-03	(6) CHECK VALVE	1
	YBZ-E2D311/1-05A	(7) BUFFER VALVE	N/A
	CBK-F2.1F	(8) GEAR PUMP	N/A
2006	BSB-MS1-A	(9) START BUTTON	1
2007	HLR6100-2ATNBCF	(10) RELAY	1
2008	LBZ-T1KK-1	(11) END HEAD	N/A
2009	YBZ3-EH1/1-04	(12) SEE INDEX #3 AND #4	1
		NOT PICTURED	
2010	NOT LISTED	HONEYWELL SWITCH	1
2011	NOT LISTED	RELAY CONTROL BOX	1
2012	NOT LISTED	LEVER	1
2013	NOT LISTED	LEVER BALL	1

POWER UNIT DRAWING

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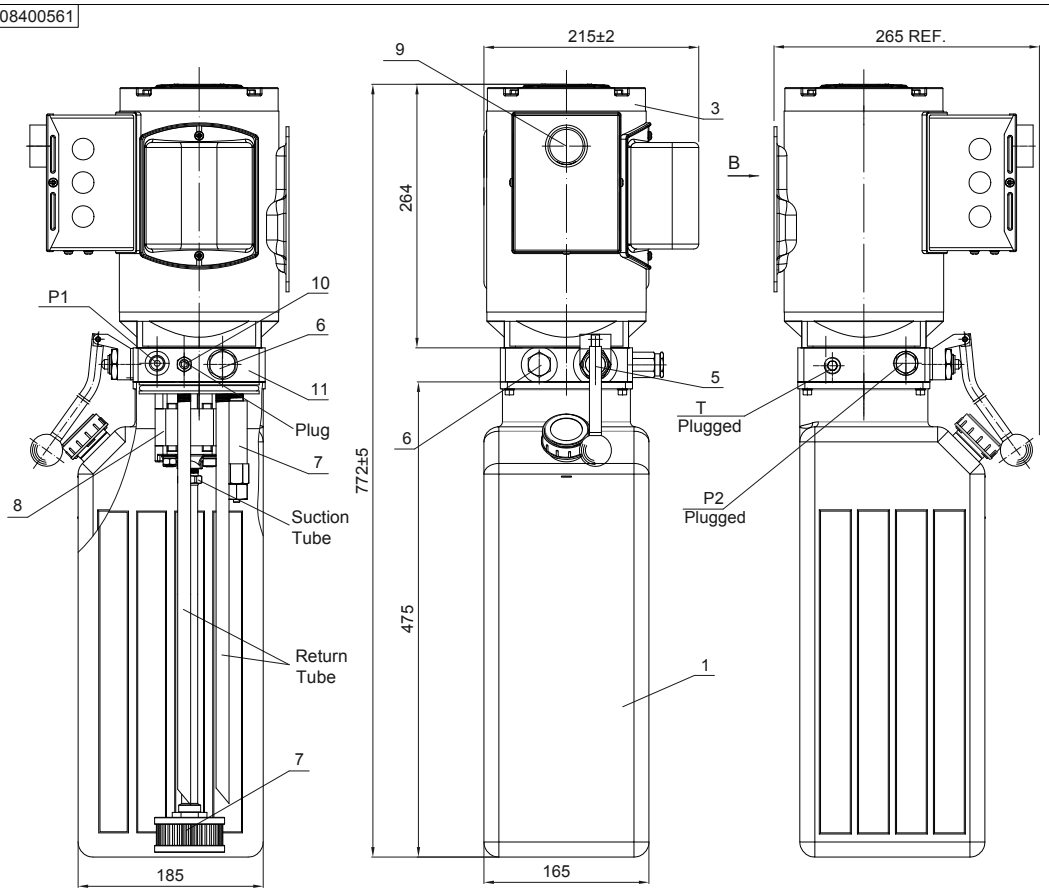
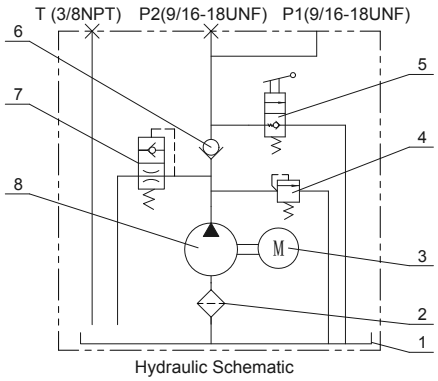
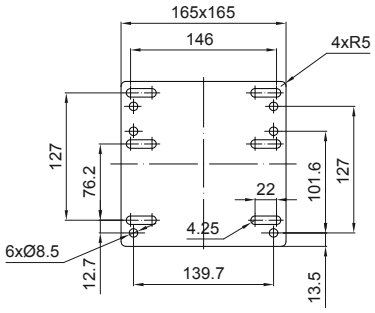
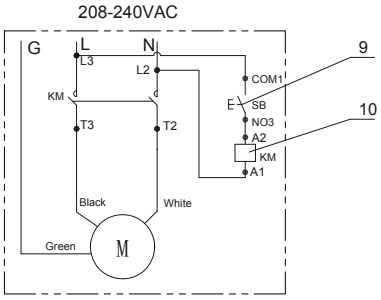




Hydraulic Schematic



View B



Electrical Schematic

Notes: This power unit is ETL approved,

No.	Description	P/N	Technical data
11	Endhead	LBZ-T1KK-1	
10	Contactor	TMC-18-230V	208-240V,UL
9	Start button	BSB-MS1-A	277V 25A
8	Gear Pump	CBKA-F2.1F	2.11cc/r
7	Buffer valve	YBZ-E2D3I1/1-05A	
6	Check valve	YBZ-E2D3I1/1-03	
5	Release valve	YBZ-E2D3I1/1-02	
4	Relief valve	LHRV-08-42	2740PSI(+/-100PSI), Fixed
3	AC Motor	AM61-3HAM-3BA42R-00	208-240V, 1PH, 50/60Hz, 2850/3450rpm, 3HP,UL certification
2	Suction Filter	YBZ-E2D3I1/1-10	
1	Tank	YBZ-SLYX-12L-L-B	12L Usable Plastic (Black)

Designed by	Checked by	Reviewed by	Approved by

Name: Hydraulic Power Unit

P/N : YBZ5-F2.1E3H1/AMQOT6

A/N : E2740 Rev. : A

Bucher Hydraulics(Wuxi) Co., Ltd.

POWER UNIT CERTIFICATE

intertek
Total Quality. Assured.

AUTHORIZATION TO MARK

This authorizes the application of the Certification Mark(s) shown below to the models described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report. This authorization also applies to multiple listee model(s) identified on the correlation page of the Listing Report.

This document is the property of Intertek Testing Services and is not transferable. The certification mark(s) may be

Applicant:	Bucher Hydraulics (Wuxi) Co., Ltd.	**Manufacturer:**	Bucher Hydraulics (Wuxi) Co., Ltd.
Address:	No. 225, Xitai Rd., New District, Meicun, Wuxi, Jiangsu Province, 214112	**Address:**	No. 225, Xitai Rd., New District, Meicun, Wuxi, Jiangsu Province, 214112
Country:	CHINA	**Country:**	CHINA

Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Intertek Testing Services Shanghai Limited

Control Number: *4009069* **Authorized by:** _____
for L. Matthew Snyder, Certification Manager

RECOGNIZED COMPONENT
C ETL LISTED US
Intertek

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Intertek Testing Services NA Inc.
545 East Algonquin Road, Arlington Heights, IL 60005
Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672

Standard(s):	Garage Equipment [UL 201:2015 Ed.3+R:18Mar2022] Motor-Operated Appliances (Household and Commercial) (R2019) [CSA C22.2#68:2018 Ed.8+U1]
Product:	Power Unit
Brand Name:	BUCHER
Models:	YBZ followed by 5 or 6; followed by -E or -F; followed by 0.8, 1.2, 1.6, 1.8, 2.1, 2.5 or 2.7; followed by B3H, C3H, D3H, E3H, F3H, B6H, C6H, D6H, E6H, F6H, B8F, C8F, D8F, E8F, F8F, H3H, H6H or J6H; followed by 0, 1 or 2; followed by /AMQOT, /AMQBT, /AMQPT, /ACQOT, /ACQBT, /ACQPT, /AMDOT, /AMDBT, /ACDOT, /AMDPT, /ACDBT or /ACDPT; followed by 4, 5, 6, 7, 8, 9, 10, 11, 12 or 13; may be followed by A, M or AM. YBZ5-G2.1D21I2/ACQIT1, YBZ5-G2.1D21I2/ALQIT1. YBZ5-E3.2F20H202A/AMDIT1.

NOTES:

NOTES:

WARRANTY NOTICE

This product is covered under a 2 year parts warranty when used as recommended. Only those items listed with a Part # are available for purchase. For assistance with the operation or the availability of replacement parts, contact our Parts and Warranty Department. Please have available a copy of your receipt, the model number of the product, serial number, and specific details regarding your question.

Not all equipment components are available for replacement; illustrations provided are a convenient reference of location and position in the assembly sequence.

ANY PRODUCT THAT IS NOT REGISTERED WILL AUTOMATICALLY DEFAULT TO PRODUCT MANUFACTURED DATE FOR WARRANTY START DATE. CUSTOMERS THAT DO NOT REGISTER A PRODUCT MUST PROVIDE PROOF OF PURCHASE AT THE TIME OF WARRANTY CALL.

For online warranty registration please visit: www.apluslift.com / help@apluslift.com

The manufacturer reserves the rights to make design changes and or improvements to product lines and manuals without notice.

WARRANTY INFORMATION

We want to know If you have any concerns with our products. If so, please call toll-free for Immediate assistance. For additional web customer support help inquiries visit the Customer Service section at: https://www.apluslift.com /help@apluslift.com

LIMITED WARRANT

With proof of purchase for a period of two years from the date of that purchase, the manufacturer will repair or replace, at its discretion, without charge, any of its products or parts thereof which fail due to a defect in material or workmanship. This warranty does not cover damage or defects caused by improper use, careless use or abuse of the equipment. This warranty does not cover parts normally considered to wear out or be consumed in the normal operation of the equipment. Except where such limitations and exclusions are specifically prohibited by applicable law, (1) the CONSUMERS SOLE AND EXCLUSIVE REMEDY SHALL BE THE REPAIR OR REPLACEMENT OF DEFECTIVE PRODUCTS AS DESCRIBED
ABOVE, and (2) THE MANUFACTURER SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGE OR LOSS WHATSOEVER, and (3) THE DURATION OF ANY AND ALL EXPRESSED AND IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS LIMITED TO A PERIOD OF TWO YEAR FROM DATE OF PURCHASE. Product alteration in any manner by anyone other than us, with the sole exception of alterations made pursuant to product instructions and in a workman like manner. You acknowledge and agree that any use of the product for any purpose other than the specified use(s) stated in the product instructions is at Your own risk.
Always check for damaged or worn out parts before using any product. Broken parts will affect the equipment operation. Replace or repair damaged or worn parts immediately. Do not modify the product in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment. There are specific applications for which products are designed and tested during production. Manufacturer provided warranted items are not authorized to be repaired by anyone other than the manufacturer or manufacturer approved repair person. Distributer does not have authorization to amend these statements. You acknowledge and agree that any modification of the product for any purpose other than manufacturer completed repairs is at your own risk. Before using this product, read the owner's manual completely and familiarize yourself thoroughly with the product and the hazards associated with its improper use.
IMPORTANT: BEFORE FIRST USE on any Lift verify that a daily inspection has been completed and that all components are in the proper working order.
This limited warranty gives you specific legal rights, and you also may have other rights, which vary from state to state. Some states do not allow limitations or exclusions on implied warranties or incidental or consequential damages, so the above limitations may not apply to You. This limited warranty is governed by the laws of the State of California, without regard to rules pertaining to conflicts of law. The state courts located in San Bernardino County, California shall have exclusive jurisdiction for any disputes relating to this warranty.

Manufacturer reserves the rights to make design changes and or improvements to this product line and manual without notice. We have taken every effort 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. We reserve the right to change specifications without incurring any obligation for equipment previously or subsequently sold. Not responsible for typographical errors.

Not all equipment components are available for replacement, but are illustrated as a convenient reference of location and position in the assembly sequence. Contact Customer Service for equivalent component. When you contact us, please have your Product’s Model number, Serial Number and Description ready so that we may help you efficiently. This information can be found on a sticker on the product.

INSTALLATION AGREEMENT

Pre-Installation Agreement

I, (the undersigned) acting as the installer listed assume responsibility for any permits required for city, 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 purchased 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) purchased. If anyone offers assistance of any kind during the installation of the purchased equipment model(s) I will not hold the manufacturer and installation company responsible for any 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 purchased equipment model(s).

I understand that the lifts purchased are supplied with concrete fasteners meeting the criteria of the ICC-ES compliance, 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). *This addendum also covers lifts installed in other distributor markets that included the European Unions, Mexico, South America, Africa, Russia, and Australia under CE Ref. no. EN1493-2010 European Standard for Vehicle Lifts and North American Standards.*

Post-Installation Agreement

I, (the undersigned) confirm that the purchased equipment 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 Safety Requirements for Operation, Inspection and Maintenance. I understand that personal injury and/or damage to property can occur if the purchased 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 will not hold the manufacturer and installation company responsible for any 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.

Miscellaneous Terms

- No Other Agreement. Except as otherwise mutually agreed in writing, this Installation Agreement and the incorporated Purchase Order are the complete agreement of the parties and supersede all other agreements or understandings, written or oral.
- Indemnification: Our liability for damage caused by our negligence or that of our subcontractors/agents shall be limited to the applicable policy limits of our liability insurance.
- Terms of Payment. In addition, the terms stated above, you agree to pay all costs of collection, whether or not we enforce a mechanic's lien or otherwise file suit, including without limitation all attorney's fees, filing fees, and court costs as they are billed by us. Such unpaid additional costs shall be subject to interest at 1.5% per month until paid.
- Limitation of Damages. We will not be liable for any delay in performing any work or providing any materials hereunder, or any cessation of or interruption of services, including but not limited to those arising out of fire, flood, explosion, war, strike, power blackout, nature, civil or military authority, inability to obtain labor or materials or reasonable substitutes therefore, terrorist threats or activities or any other cause beyond our reasonable control or acts of God.
- Limitation of action. Except for claims for overdue balances, any other lawsuit hereunder shall be brought within one (1) year of completion of our installation not withstanding any other statute of limitation that would otherwise apply.
- Choice of Law. This Agreement shall be governed by the laws of the State of California, without regard to rules pertaining to conflicts of law. The state courts located in San Bernardino County, California shall have exclusive jurisdiction for any disputes relating to this warranty.
- Successors and assigns. Your rights hereunder may not be assigned to a third party.
- Venue. The parties agree that the state courts located in San Bernardino County, California, shall be the only proper forum and court of competent jurisdiction for any dispute arising hereunder.
- Authorship. The parties agree that this Agreement has been negotiated and drafted by them equally and that neither party shall have the benefit of an adverse inference being drawn against the other party.
- Severability. If any provision herein should, for any reason, be construed by a court of competent jurisdiction to be invalid or unenforceable, all other provisions shall remain in full force and effect and be construed so as to make this Agreement enforceable to the maximum extent allowed by law.
- Counterparts; Facsimile. This Amendment may be executed in counterparts, each of which when so executed and delivered shall be taken together to be an original; but such counterparts shall together constitute one and the same document. Facsimiles shall have the force of an original.

LIMITATION OF REMEDIES AND DISCLAIMER OF WARRANTIES. WE WILL NOT BE LIABLE IN ANY CASE FOR ANY LOSS OF USE, LOST PROFITS, SPECIAL, INCIDENTAL, CONSEQUENTIAL, INDIRECT, OR PUNITIVE DAMAGES. IN NO EVENT, SHALL OUR LIABILITY EXCEED REIMBURSEMENT OF ANY MONIES PAID BY YOU UNDER THIS AGREEMENT AND THIS SHALL BE YOUR EXCLUSIVE AND SOLE REMEDY FOR ANY CLAIM HEREUNDER. THE FOREGOING LIMITATION SHALL NOT APPLY TO CLAIMS FOR PERSONAL INJURY. THE LIMITATIONS, EXCLUSIONS AND DISCLAIMERS IN THIS SECTION AND ELSEWHERE IN THESE TERMS OF USE APPLY TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW.

INSTALLATION AGREEMENT

Email Signed Installation Agreement to https://help@apluslift.com

8512 122ND AVE NE UNIT 25, KIRKLAND, WA 98033

Pre-Installation Agreement Signatures Required:

Customer Name:		Date of Installation:
Company Name (if applicable):		
Street Address:		
City:	State:	Zip:
Phone:	Fax:	

Customer Signature:	Print Name:	Date:
Product Model Number:	Product Serial Number:	Product Manufactured Date:

Post-Installation Agreement Signatures Required:

Installer Company Name:		
Street Address:		
City:	State:	Zip:
Phone:	Phone (Other):	
Customer Signature:	Print Name:	Date:
Installer Signature:	Print Name:	Date:

✓ *Check boxes to verify work has been completed*

- ☐ Base and columns properly shimmed and stable
- ☐ Anchor bolts tightened to 150 ft-lbs torque
- ☐ All screws, bolts, and pins secured
- ☐ Electric power supply confirmed
- ☐ Cables and chains adjusted properly
- ☐ Safety locks functioning properly
- ☐ Checked for hydraulic leaks
- ☐ Oil level is full
- ☐ Lubrication of critical components complete
- ☐ Lift adapters and accessories functioning properly
- ☐ No overhead obstructions
- ☐ Surrounding area and lift clean in appearance
- ☐ Proper operation, maintenance and safety explained
- ☐ Operation and safety manual(s) left at site
- ☐ Runways properly attached and secured (if applicable)
- ☐ Runways level and plumb (if applicable)

Contact Customer Service directly by telephone at:
800-616-9618

https://www.apluslift.com