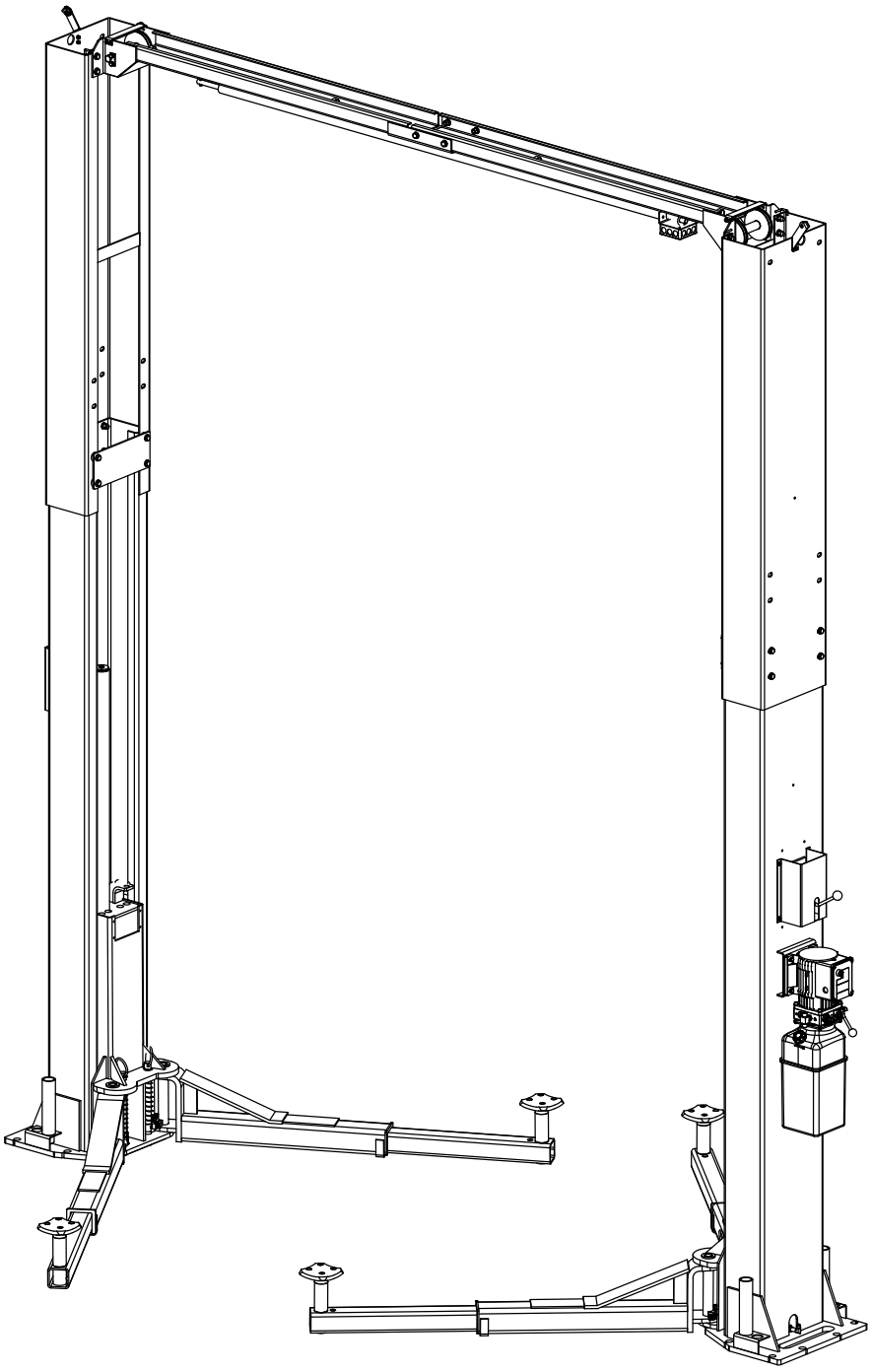
12,000 LB. 2-POST AUTOMOBILE LIFT



⚠IMPORTANT Reference ANSI/ALI ALIS, Safety Requirements for Installation and Service of Automotive Lifts before installing lift.

IN60028
Rev. - 07/26/2013

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IMPORTANT SAFETY INSTRUCTIONS

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

1. Read all instructions

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.

SAVE THESE INSTRUCTIONS

Safety Summary

General Safety Instructions
This summary describes physical and chemical processes that may cause injury or death to personnel, or damage to equipment if not properly followed. This safety summary includes general safety precautions and instructions that must be understood and applied during operation and maintenance to ensure personnel safety and protection of equipment. Prior to performing any task, the WARNINGs, CAUTIONs, and NOTEs included in that task should be reviewed and understood.

Warnings, Cautions, and Notes
WARNINGs and CAUTIONs are used in this manual to highlight operating or maintenance procedures, practices, conditions or statements that are considered essential to protection of personnel (WARNING) or equipment (CAUTION). WARNINGs or CAUTIONs immediately precede the step or procedure to which they apply. NOTEs are used in this manual to highlight operating or maintenance procedures, practices, conditions or statements that are not essential to the safeguarding of personnel or equipment. NOTEs may precede or follow the step or procedure, depending on the information to be highlighted. The Headings used and their definitions are as follows.

WARNING!

Highlights essential operating or maintenance procedure, practice, condition, statement, etc. that if not strictly observed, could result in injury to, or death of, personnel or long term health hazards.

CAUTION!

Highlights essential operating or maintenance procedure, practice, condition, statement, etc. that if not strictly observed, could result in damage to, or destruction of equipment.

NOTE

Highlights essential operating or maintenance procedure, practice, condition, or statement.

1 General Information and Specifications

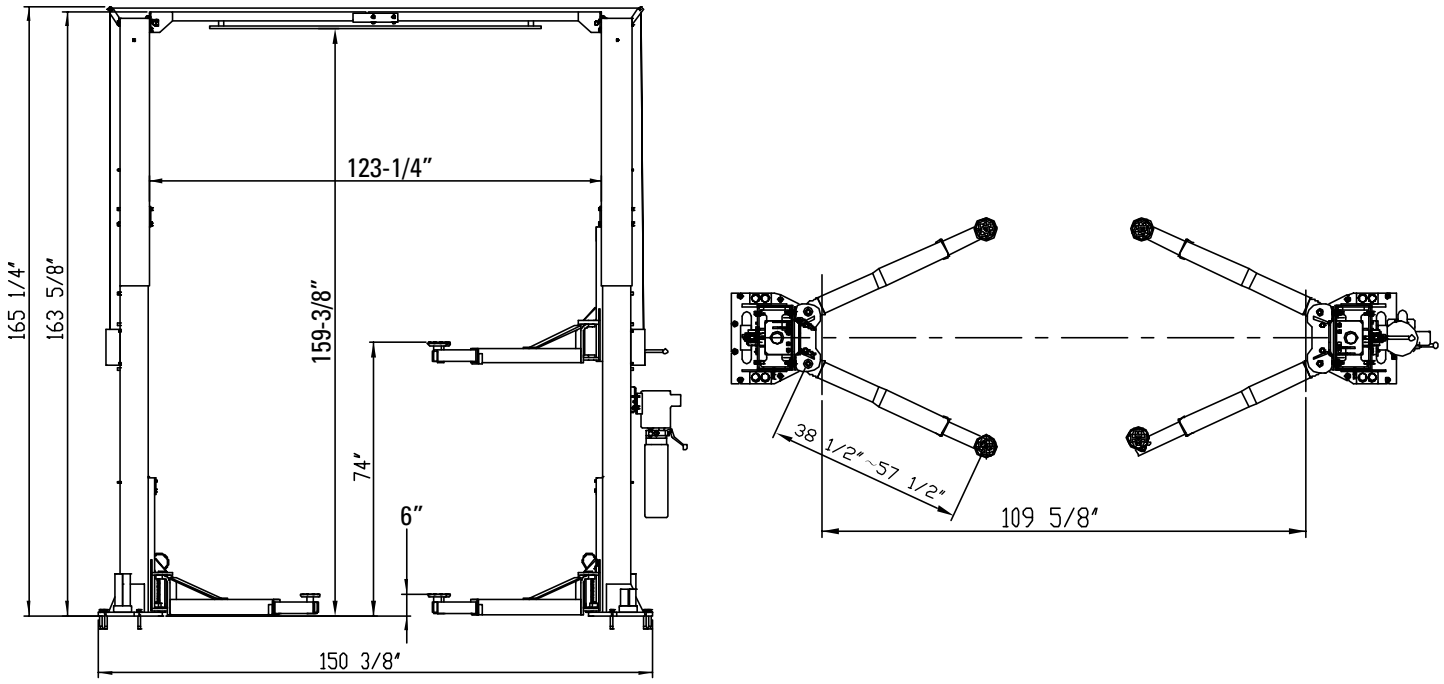
General Information
This lift is a 12,000 lb. capacity, two-column lift. The safety system in this lift is attached to the back of the carriage to provide a single point release that saves time when operating. This lift is equipped with two heavy-duty direct-drive cylinders to provide consistent power to the lift.

An electrical-hydraulic power unit included with the lift will provide up to 3000 psi of hydraulic pressure to actuate the cylinders.

Specifications

The specifications are shown in the following table.

Basic Specifications



Specification	Value
A. Rise Height	82-1/2 in., Highest position, with long truck adapter
B. Adjustable Overall Height	165 in. Standard Setup; 177 in. High Setup
C. Width Overall	150-3/8 in.
D. Drive Through	109-1/2 in.
E. Floor to Overhead Switch	159-3/8 in. Low, 171-3/8 in. High
F. Front Arm Reach	Min. 38-1/2 in./Max. 57-1/2 in.
G. Real Arm Reach	Min. 38-1/2 in./Max. 57-1/2 in.
H. Lifting Pad Height	6 in.
Lifting Pad Height w/Short Ext.	10-1/2 in.
Lifting Pad Height w/High Ext.	14-1/2 in.
I. Between Columns	123-1/4 in.
Lifting Capacity	12000 Lbs
Max. Load Per Arm	3000 Lbs per arm
Cylinders	Dual Cylinder, Direct Drive
Motor	2 HP
Voltage	208v - 230v
Speed of Rise	60 Seconds

2 Installation and Preparation for Use

General Information

1 Any freight damage must be noted on the freight bill before signing and reported to the freight carrier with a freight claim established. Identify the components and check for shortages. If shortages are discovered, contact lift manufacturer immediately.

2 Consult building owner and / or architect's plans when applicable to establish the best lift location. The lift should be located on a relatively level floor with 4 in. minimum thickness, 3000-psi concrete slab that has been properly cured. There can be no cracks in the slab within 36 in. of the base plate locations, and no seams in the foundation within 6 in. of its' location! Remember: any structure is only as strong as the foundation on which it is located!

3 This lift has two set-up dimensions as below:
- a) STANDARD set-up
  - 1) Overhead Clearance: 165 in.
  - 2) Ceiling Height Required: 167 in.
- b) HIGH set-up
  - 1) Overhead Clearance: 177 in.
  - 2) Ceiling Height Required: 179 in.

NOTE

Check for ceiling clearance first to see how high the lift can be set up in your bay.

Tools and Equipment Required

The installation of this lift is relatively simple and can be accomplished by two men in a few hours. The following tools and equipment are needed:

- Appropriate lifting equipment
- AW 32, 46 or other good grade Non-Detergent Hydraulic Fluid DEXRON III or ATF (10 quarts)
- Chalkline and 12' Tape Measure
- Rotary Hammer Drill with 3/4 in. Drill Bit. Core Drill Rebar Cutter recommended
- Transit and a 4' Level
- Sockets and Open Wrench set, 1/2 in. thru 1-1/2 in. (1-1/8 in. for 3/4 in. Anchors)
- Locking Pliers, 8mm Socket Head Wrench

Foundation Requirements

CAUTION!

Columns are supported only by anchoring in the floor. DO NOT install on asphalt or other similar unstable surface failure to follow the requirements of the following step could result in damage to, or destruction of equipment.

Assemble Columns and Uprights

Concrete And Anchoring Requirements
Floor Requirements: Minimum 3000 PSI concrete
Optimum Floor Thickness: 5-1/2" -6"
Minimum Floor Thickness: 4-1/4"
Minimum Anchor Embedment: 3-1/4"
Maximum Anchor Exposure Floor Grade to Top of Anchor: 2-1/4". Exposure greater than 2-1/4" NOT ACCEPTABLE.
Note: Anchors are provided for standard installation the minimum distance you can install them to an edge, expansion joint, or abandoned anchor hole is 2-3/4".
For installations not meeting these requirements or for seismic anchor information contact customer service.

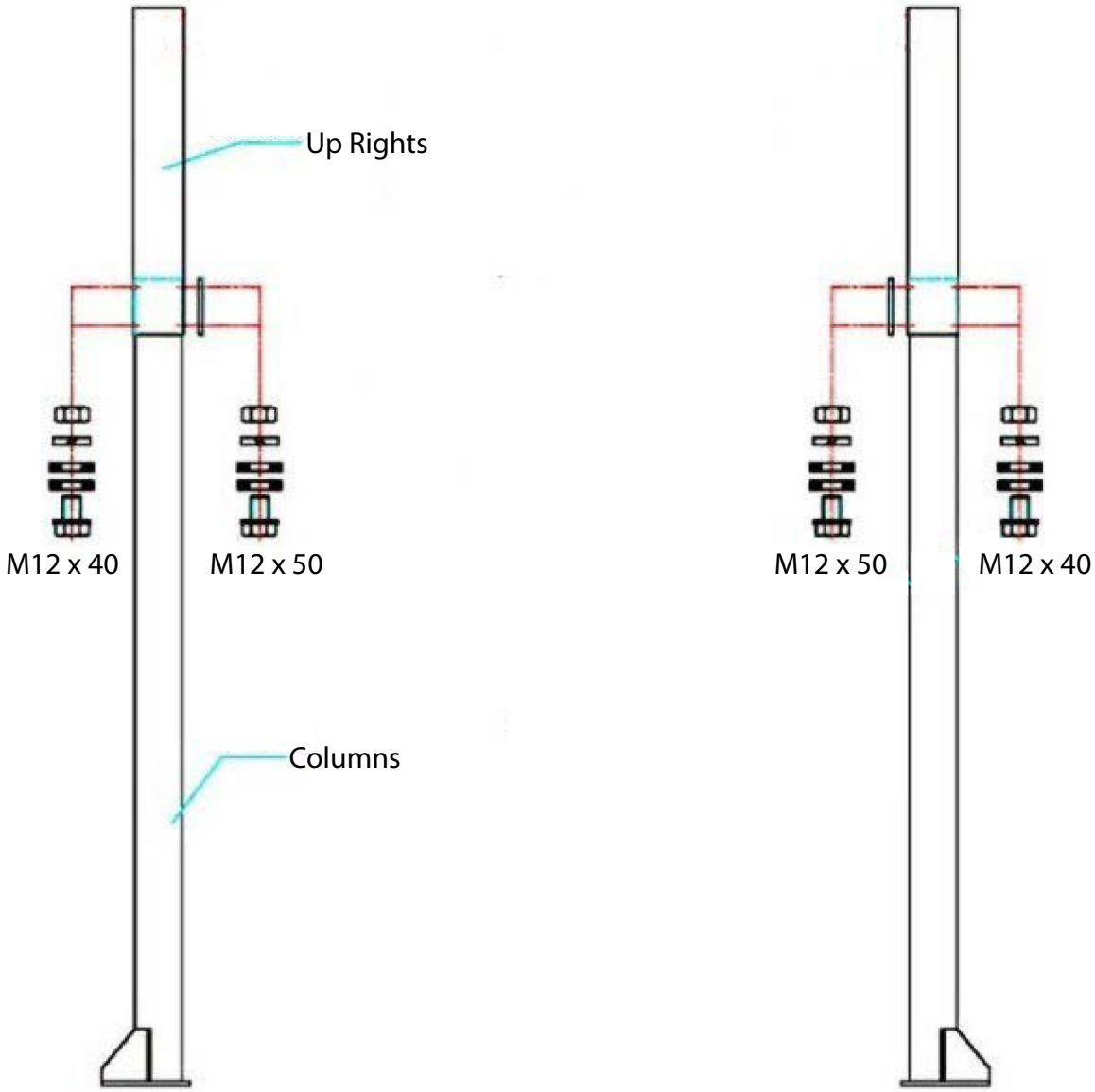
Assemble the columns and uprights according to the following steps:

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. Take out all parts and components packed inside the column other than carriage, including cylinders.

3 Unbolt the column from the shipping brackets. Unbolt the up-rights from the columns and assemble it to the column as shown in figure 2-2.

Figure 2-2. Overhead Beam and Upright Assembly



4. Open the oil port on each cylinder by unscrewing the black plastic cap. The oil port is located in the cylinder rod end that will fit into the hole on the bottom plate of the column. Move the carriage up about 50 in. to 60 in. Next, carefully slide the cylinder inside from the bottom of the carriage.

WARNING!

Failure to position the columns as directed in the following step could result in foundation damage that can cause death or serious injury as well as damage to the equipment. Columns are supported only by anchoring in the floor. DO NOT install on asphalt or other similar unstable surfaces.

5. Position the columns facing each other 150-3/8 in. outside base plates (see figure 2-3). Allow a minimum of 6 in. from the column base plate to the foundation edge. Square the columns by using a chalkline or measuring diagonally from corner points on base plates (within1/4 in.). Trace around the column base plates to make sure that positions do not shift in the following steps.

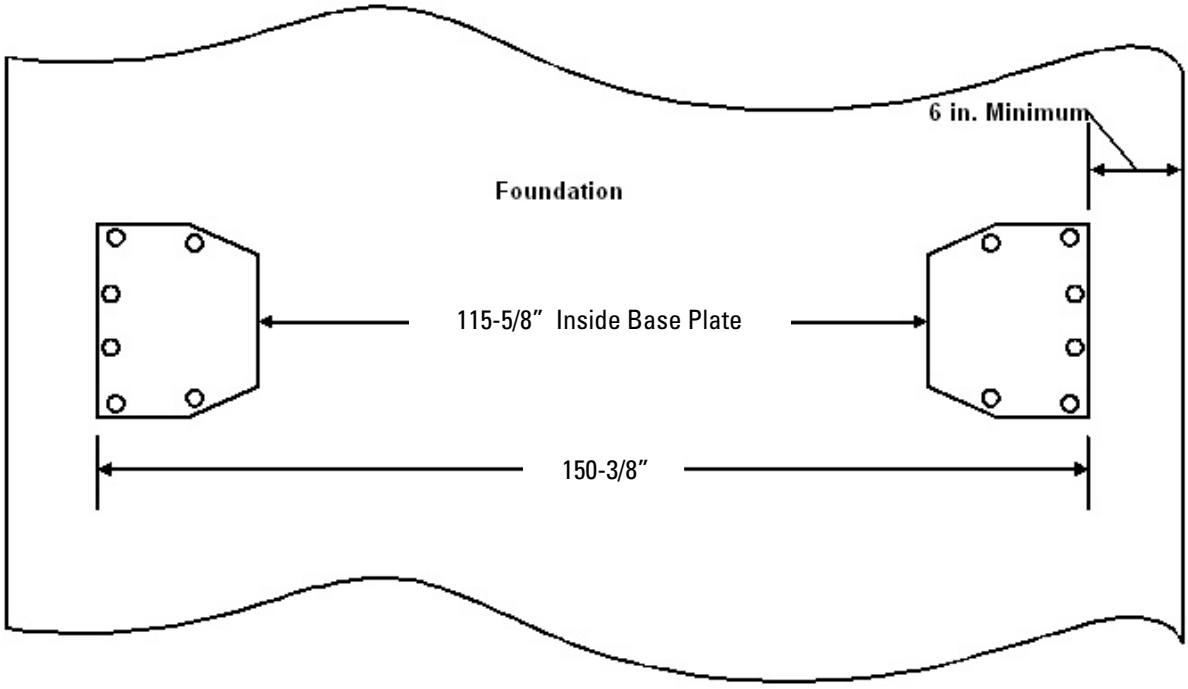


Figure 2-3. Placement of Columns on Foundation

WARNING!

Failure to follow the requirements of the following step could result in damage to, or destruction of equipment. 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 in. thick 3,000 PSI minimum concrete pad keyed under and flush with the top of existing floor. Allow concrete to cure and return to Step 5.

Installation and Preparation for Use

6. Secure the columns to the foundation as follows (refer to figure 2-4):
   a) Using a 3/4 in. diameter concrete drill, drill the anchor holes in the concrete for the main side column, installing anchors as you go. Use a concrete hammer drill with a carbide tip solid drill bit the same diameter as the anchor, 3/4". (.775 to .787 inches diameter). Do not use excessively worn bits or bits which have been incorrectly sharpened. Refer to figure 2¬4 Detail A. Use the following guide while drilling the anchor holes in the concrete:

      1) Keep the drill in a perpendicular line while drilling.

      2) Drill to a minimum depth of 4 in. to make sure maximum holding power is achieved. Drilling thru concrete (recommended) will allow the anchor to be driven thru the bottom if the threads are damaged.

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

      4) For better holding power blow dust from the hole (Refer to figure 2-4 Detail B).

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

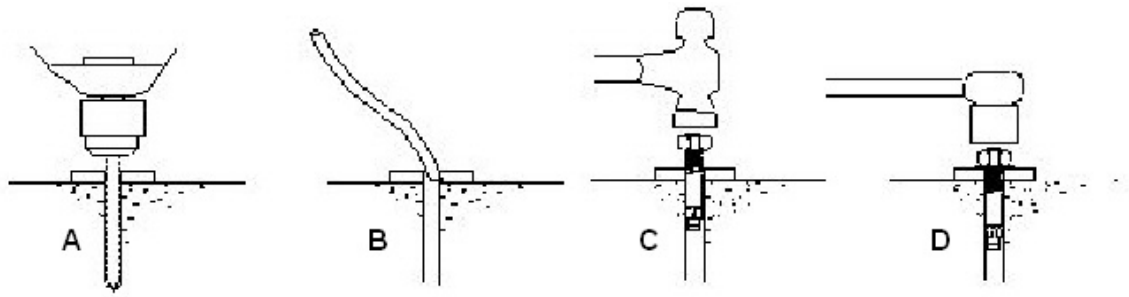


Figure 2-4. Anchor Hole Drilling and Seating

   b) Place a flat washer and hex nut over threaded end of anchor, leaving approximately 1/2 inch of thread exposed and carefully tap anchor (Refer to figure 2-4 Detail C). Do not damage threads. Use a block of wood or rubber mallet to drive anchor bolts into the concrete.

   c) Tap anchor into the concrete until nut and flat washer are against base plate. Do not use an impact wrench to tighten (Refer to figure 2-4 Detail D).

   d) Tighten the nut (two or three turns on average concrete (28-day cure). If the concrete is very hard, only one or two turns may be required. Check each anchor bolt with torque wrench set to 150 foot-pounds.

NOTE

If 150 foot-pounds of torque cannot be obtained on any anchor, return to the warning preceding step 6 and follow the instructions in the warning.

7. Using a level, check column for side-to-side plumb and front-to-back plumb. If needed, use horseshoe shims provided by placing shims underneath the base plate and around the anchor bolt. This will prevent bending the column bottom plates (Shim thickness should not exceed ½ in.). Tighten ¾ in. anchor bolts to 85 ft-lbs. of torque.

NOTE

If 85 foot-pounds of torque cannot be obtained on any anchor, return to the warning preceding step 6 and follow the instructions in the warning.

8. Using a tape measure and chalk line, measure from back of the base to the opposite column to make sure the legs are square. After confirming dimensions, drill and install the anchors on the other side leg as given in step 6.

9. Level the second column as described in step 7.

2.4.2 Installation of Overhead Beam

Install the overhead beam as follows:

1. Install the overhead cross beam as shown in figure 2-5. This cross beam has two pieces, to be connected by six (6) bolts in the center of the beam. **Be sure to bolt them together by installing the bolts from inside the cross beam out.** This is to avoid interference with the cable when operating the lift.

2. Bolt overhead beam assembly to column uprights. Overhead beam has hooks on each end to aid assembly.

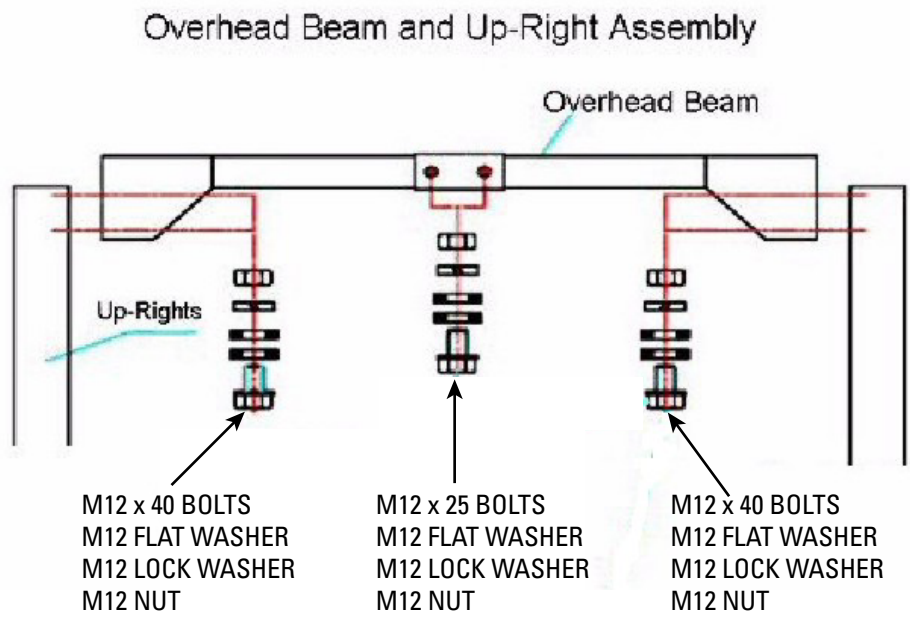


Figure 2-5. Overhead Beam Installation

3. Mount the latch cable brackets to the tops of the column extensions and onto the offside column.

4. Run the straight end of the latch release cable (the end without the loop) through the hole in the offside latch, down under the cable guide, over the bracket at the top of the offside column, over and down the bracket on the mainside column, and through the latch on the mainside lock release. Tighten the cable adjusting nut after pulling slack out of the cable.

Installation of Power Unit

Install the power unit as follows. Refer to figure 2-7:

1 Mount the power unit on the main side leg to the power unit bracket using the four 8mm bolts and nuts. Install the "T" fitting with o-ring on the power unit, and then install the adapter and flow control valve, into the backside of each cylinder. (Note direction of flow on valve. Arrow on valve points away from the cylinder.)

2 Connect the 90-degree hydraulic fitting on the other end of the flow control valve.

3 Connect the short hydraulic hose to one side of the "T" fitting at power unit, then run the hose down the column and connect to the elbow on the base of cylinder.

4 Connect the long hydraulic hose to the other side of the "T" fitting. Place the hose across over the overhead beam to the opposite column, then down the side and connect to the elbow on the other column cylinder. Make sure hose goes through hose guides / retainers in center of overhead beam.

Installation of Equalizing Cables

Connect the equalizing cables as shown in figure 2-8 by doing the following in the order given:

NOTE

For lower setting use cable attachment points further up inside of carriages.

NOTE

The cables can be installed in the lower bracket on carriage before standing up column to ease assembly.

NOTE

Do not tighten at this stage of assembly.

1 Note – The cable stud that connects to the front right corner of the carriage should be connected first by pulling the stud through the carriage hole and up where it is easy to be held by locking pliers. Pull the stud back into place after threading at least ½ in. of the stud past locknut.

2 Connect the other ends to the right corners of the carriage with at least ½ in. of thread showing past lock nut (cables run on inside of carriage). It may be necessary to manually raise both carriages above the cylinder to provide enough space to use the locking pliers. Make sure the carriage is set in the LOCK position.

3 Adjust the carriage cable tension. This is accomplished by tightening the center nut on top of each carriage. The center carriage adjustment nut adjusts the opposite post carriage height. The left post carriage nut adjusts the right column carriage, and the right column carriage nut adjusts the left column carriage. Adjust each cable to approximately 1/2 in. side-to-side play. Check the latch releases to make sure the carriage is still engaged in the appropriate latch.

4 Install the half moon gear locks on each swing arm (USA side up). Position the swing arms on the carriages using the included 1 1/2 in. diameter pins. Check for proper engagement of the arm lock – the rack on the lock should fully engage the gear on the arm.

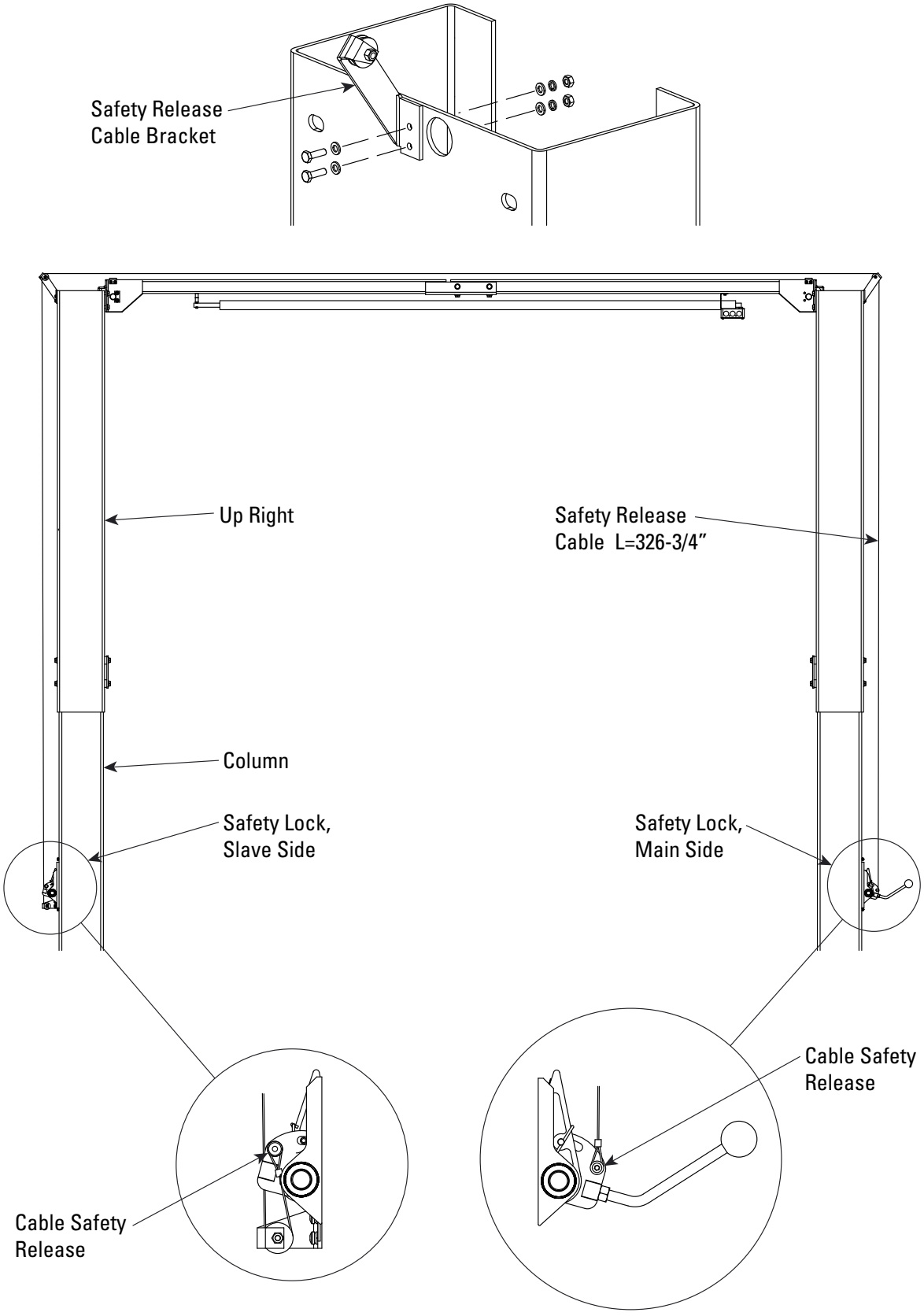


Figure 2-6. Safety Release Cable Installation

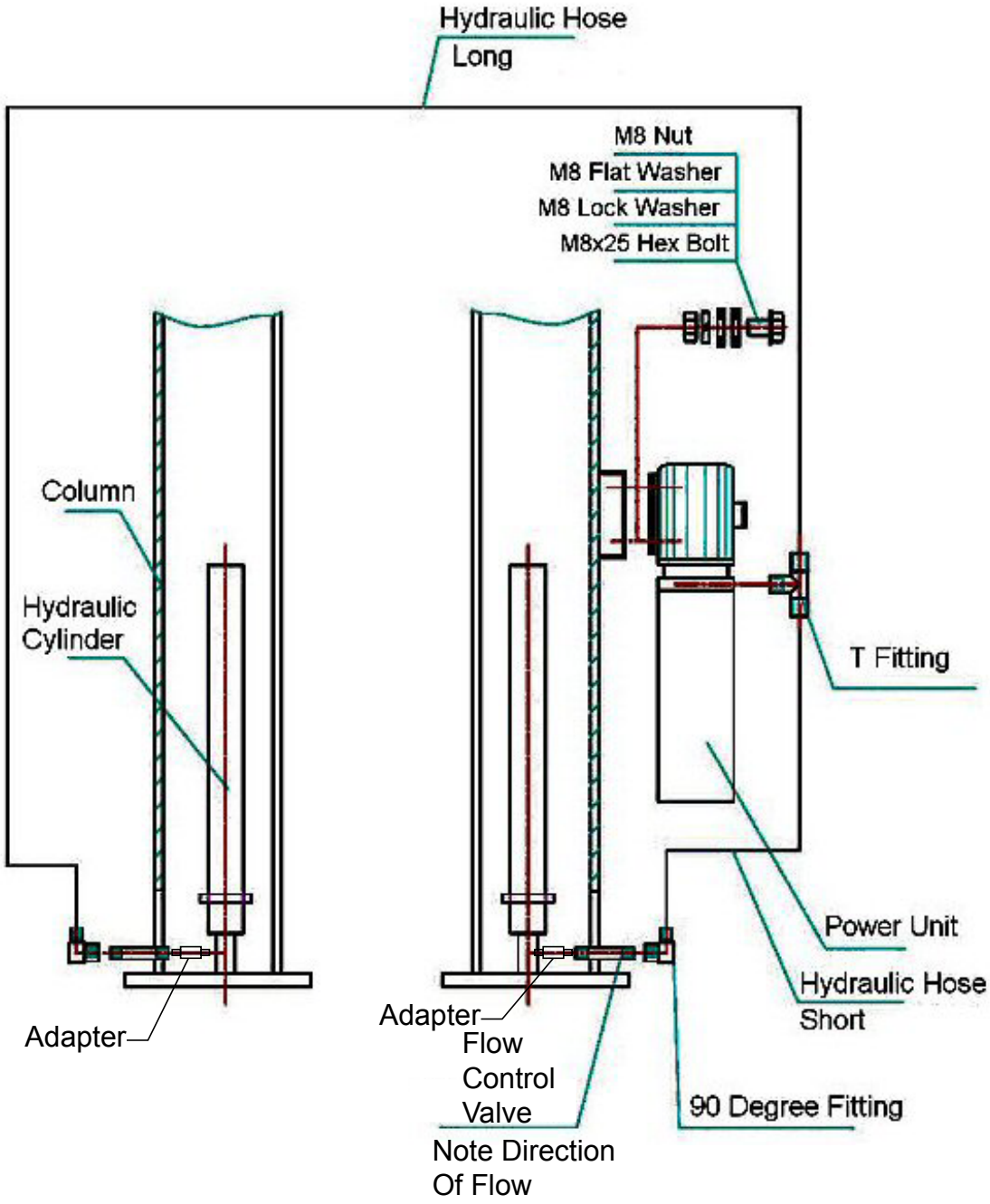


Figure 2-7. Power Unit Installation

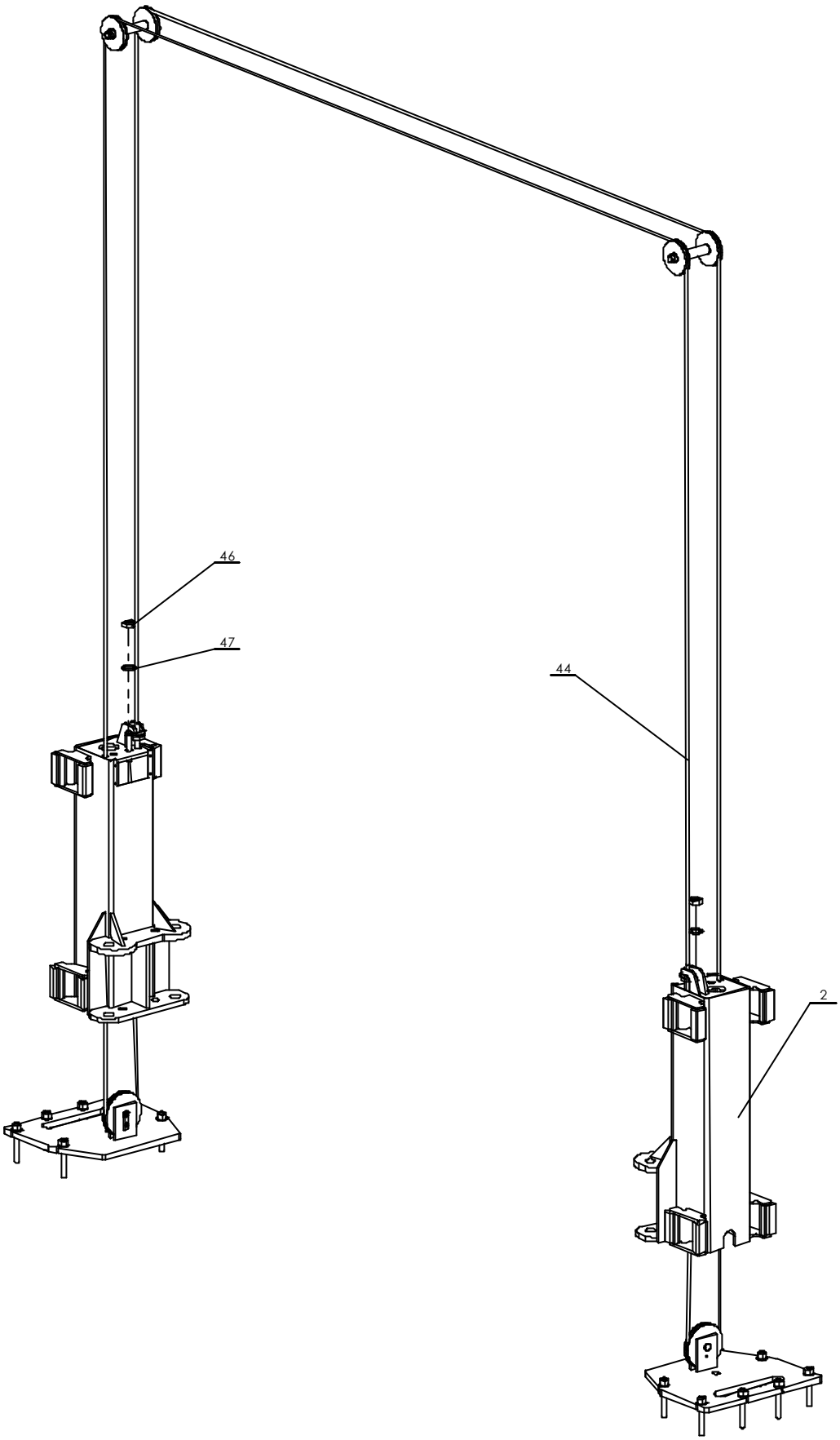


Figure 2-8. Installation of Equalizing Cables

5. Install Overhead Switch

Slide Switch Box over switch bar ensuring knock out holes face the power unit column. Use (2) 1/4"-20NC x 3/4" lg. HHCS, 1/4"-20NC Nuts and 1/4" Star Washers to mount switch box to overhead.

5a. Continued Overhead Assembly:

For single phase lifts (Figure 2-9): Insert 1/4"-20NC x 2-3/4" HHCS through pivot hole in end of switch bar. Insert opposite end of bar through slot in switch mounting bracket. Then secure HHCS and Switch Bar to overhead as shown, Fig. 11, using (2) 3/4" spacers and 1/4"-20NC Locknut. Tighten Hex bolt leaving 1/16" gap between the spacer and the overhead assembly.

For three phase lifts (Figure 2-9a): Remove Limit Switch cover, Fig. 2-9a. Insert Actuator end of Switch Bar into slot located inside Limit Switch. A small amount of silicone sealant on the lower part of the actuator will help hold it in place. Insert 1/4"-20NC x 2-3/4" HHCS through pivot hole in end of Switch Bar. NOTE which hole to use. Then secure HHCS and Switch Bar to overhead as shown, using (2) 3/4" spacers and 1/4"-20NC Locknut. Tighten Hex bolt leaving 1/16" gap between the spacer and the overhead assembly. Replace limit switch cover.

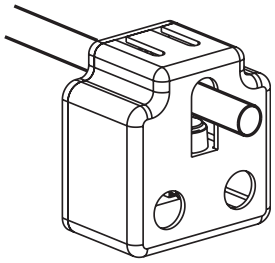


Figure 2-9
Overhead Switch
Single Phase

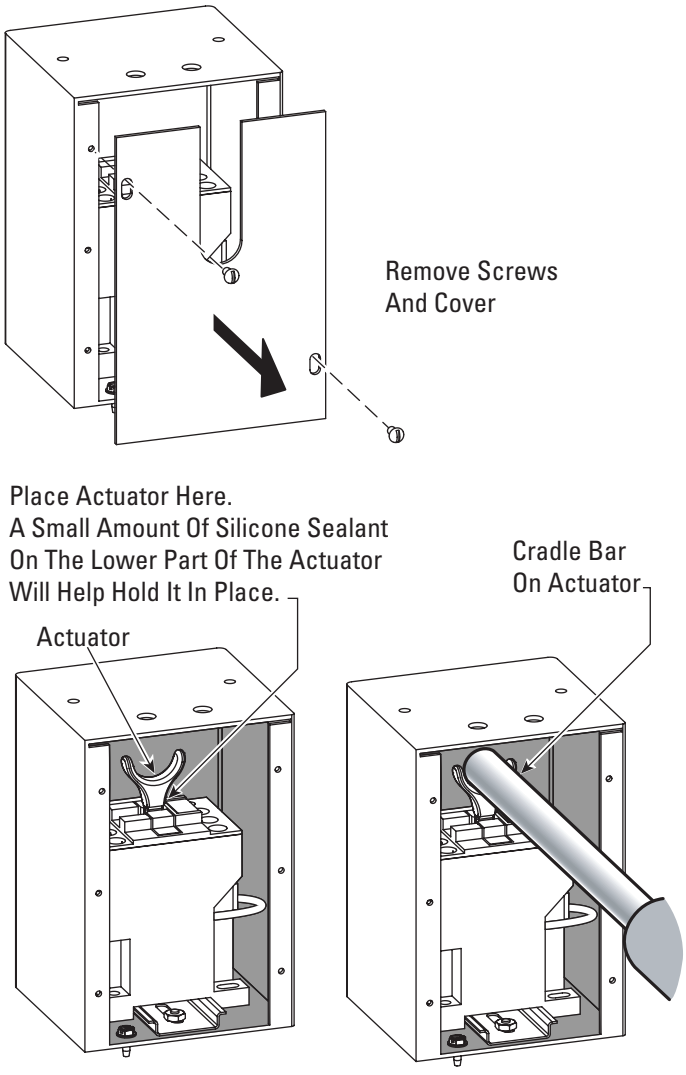


Figure 2-9 a
Overhead Switch
Three Phase

Installation and Preparation for Use

6. Wire overhead switch per figure 2-10.

WARNING!

Failure to comply with this warning could result in death or injury. The wiring must comply with local code. In the following step have a certified electrician make the electrical hook-up to the power unit. Protect each circuit with time delay fuse or circuit breaker rated at 208v-230v single phase. 60 Hz 20 amp. Motor cannot run on 50 Hz without a physical change to motor

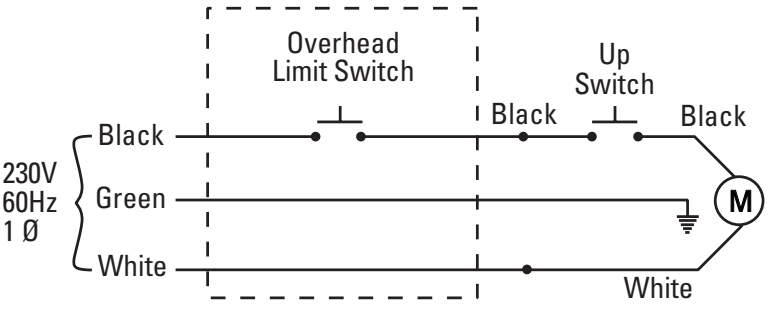
7. Make the Electrical hookup to the power unit; 220V Single Phase. It is recommended that a 220 Volt, 30 Amp twist lock plug be installed in the power line just ahead of the power unit. Use wire capable of supporting a 20-amp circuit.

CAUTION!

Failure to comply with this caution could result in damage to the lift. Do not place any vehicle on the lift at this time.

Single Phase Power Unit

MOTOR OPERATING DATA TABLE - SINGLE PHASE	
LINE VOLTAGE	RUNNING MOTOR VOLTAGE RANGE
208-230V 50Hz.	197-253V
208-230V 60Hz.	197-253V



Note: 60Hz. Single phase motor CAN NOT be run on 50Hz. line without a physical change in the motor.

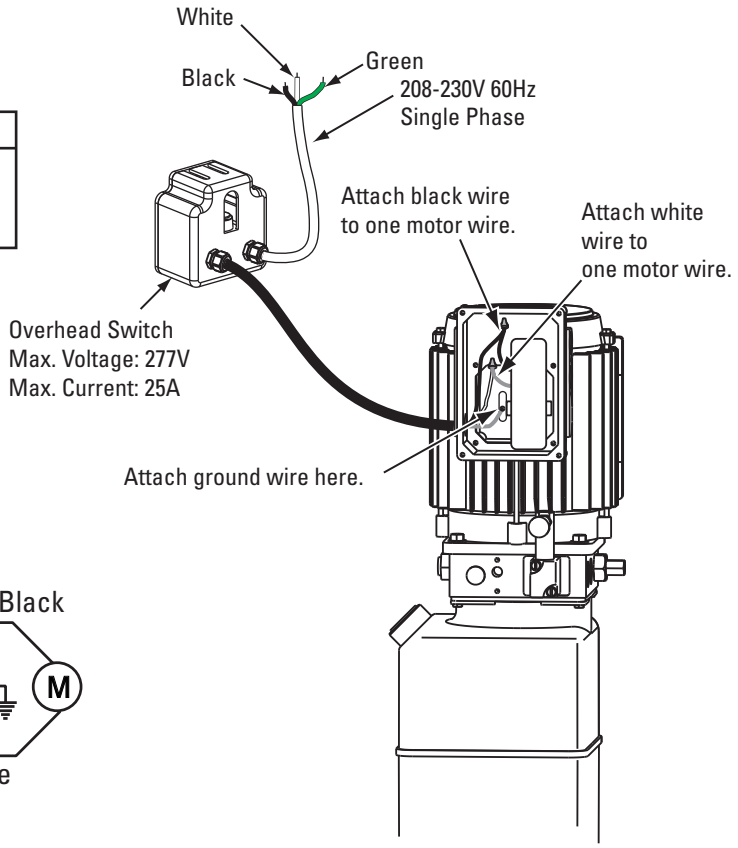
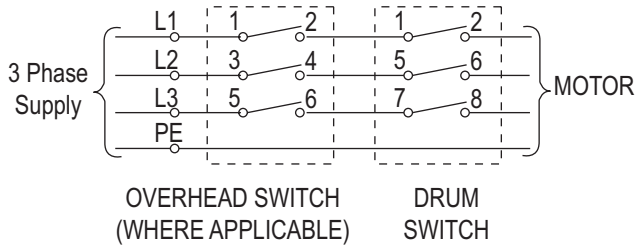


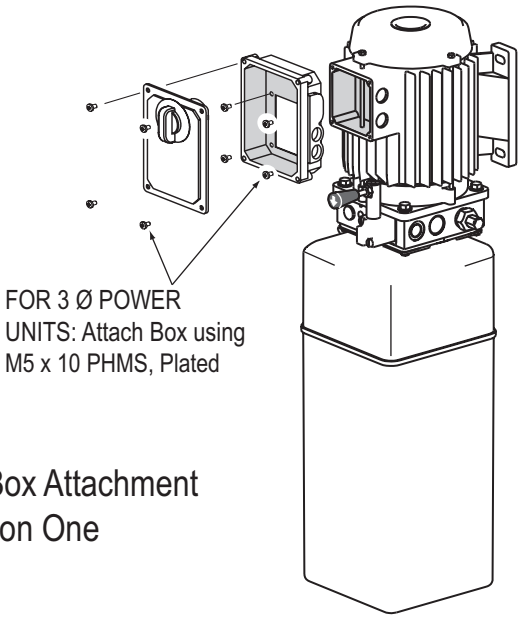
Figure 2-10 Wiring Overhead Switch

NOTE: Two Different Drum Switches were used please select one of the two options below.

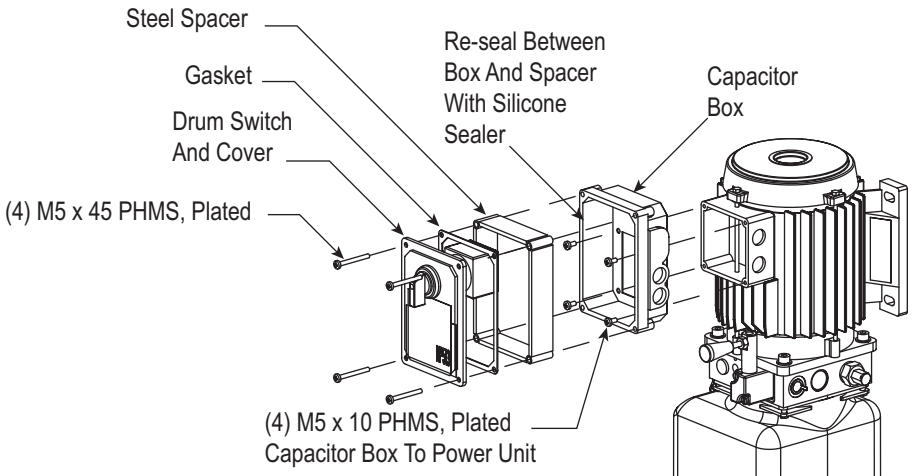
NOTES:

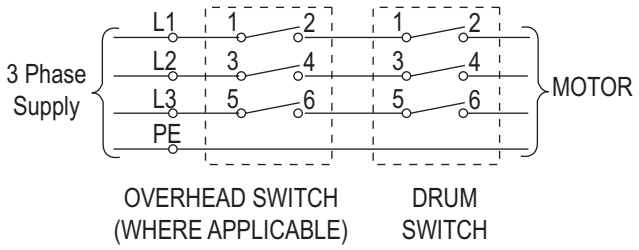
1. Unit not suitable for use in unusual conditions. Contact Rotary for moisture and dust environment duty unit.
2. Control Box must be field mounted to power unit.
3. Motor rotation is counter clockwise from top of motor.





Capacitor Box Attachment Option One

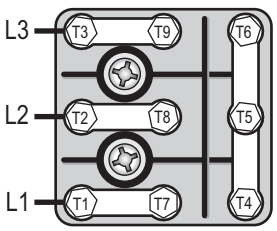




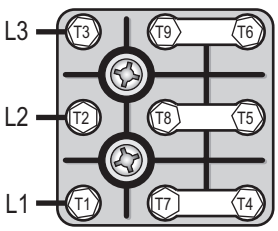
Capacitor Box Attachment Option Two

Three Phase Power Unit

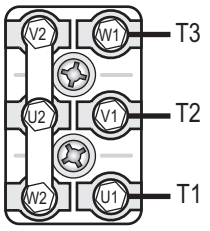
MOTOR OPERATING DATA TABLE - THREE PHASE	
LINE VOLTAGE	RUNNING MOTOR VOLTAGE RANGE
208-240V 50/60Hz.	197-253V
400V 50Hz.	360-440V
440-480V 50/60Hz.	396V-528V
575V 60Hz.	518V-632V



208-240V
50/60Hz. 3Ø



440-480V 50/60 Hz. 3Ø
380-400V 50 Hz. 3Ø



575V 60 Hz. 3Ø

8. **Oil Filling & Bleeding:** Use a Ten Weight (SAE-10) non-foaming, non-detergent hydraulic fluid (Texaco HD46 or Dexron III ATF), or Hydraulic Fluid that meets ISO 32 specifications. Remove fill-breather cap, Fig. 3-1. Pour in (8) quarts of fluid. Start unit, raise lift about 2 ft. Open cylinder bleeders approximately 2 turns.

Close bleeders when fluid streams. Torque values for the bleeders are 15 ft. lb. minimum and 20 ft lb. maximum. Fully lower lift. Add more fluid until it reaches the MIN_____ mark on the tank. Replace fill-breather cap.

CAUTION!

If fill-breather cap is lost or broken, order replacement. Reservoir must be vented.

9. Cycle the lift up and down several times to make sure latches engage properly and all air is removed from the system. To lower the lift, first raised the lift to clear the latches and then pull down the safety release handle to lower the lift. If latches function out of synchronization, tighten the cable on the latch that engages first.

Installation test

Test the Lift operation by doing the following:

10. Raise the lift by pressing the button on the power unit.

NOTE

The safety latch mechanism will 'trip over' when the lift raises and drop into each latch stop. To lock the lift you must press the Lower lever to relieve the hydraulic pressure and let the latch set tight in a lock position.

NOTE

In the following step it is normal for an empty lift to lower slowly - it may be necessary to add weight.

11. Lower the lift by doing the following:

a) Raise the lift until the latches clear the safety racks in both sides.

CAUTION!

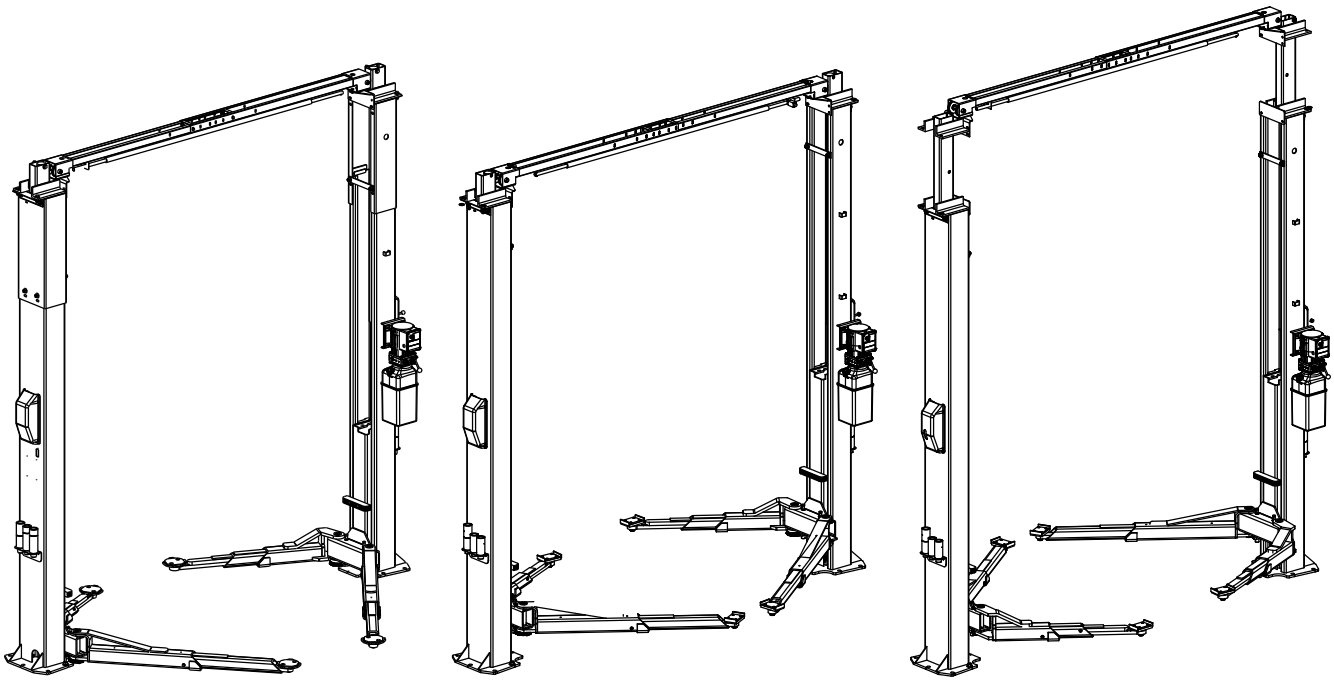
Failure to comply with this caution could result in damage to the lift. In the following step always make sure latches on both sides clear the rack at same time when pulling down the release handle by adjusting the cable

b) Pull down and hold the safety release handle.

c) Press the lowering lever at the power unit to lower the lift.

Vehicle Service Group[SM]
2700 Lanier Drive
Madison, IN 47250, USA
1-800-640-5438
www.vsgdover.com

2-Post Lift
Operations and Maintenance Manual



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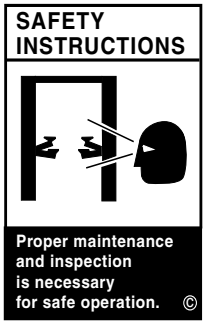
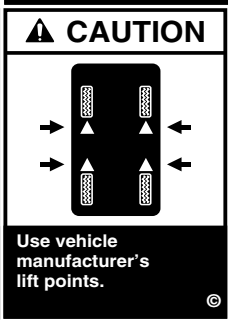
Installer: Please return this booklet to literature package and give to lift owner/operator.

CO8571.4

OM60025
Rev. A 4/18/2013





- Daily inspect your lift. Never operate if it malfunctions or if it has broken or damaged parts. Use only qualified lift service personnel and genuine parts to make repairs.
- Thoroughly train all employees in use and care of lift, using manufacturer's instructions and "Lifting It Right" and "Safety Tips" supplied with the lift.
- Never allow unauthorized or untrained persons to position vehicle or operate lift.
- Prohibit unauthorized persons from being in shop area while lift is in use.
- Do Not permit anyone on lift or inside vehicle when it is either being raised or lowered.
- Always keep area around lift free of tools, debris, grease and oil.
- Never overload lift. Capacity of lift is shown on nameplate affixed to the lift.
- Do Not stand in front of the vehicle while it is being positioned in lift bay.
- Do Not 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.
- Load vehicle on lift carefully. Position lift adapters to contact at the vehicle manufacturer's recommended lift points. Raise lift until adapters contact vehicle. Check adapters for secure contact with vehicle. Raise lift to desired working height.

⚠CAUTION DO NOT go under vehicle if locking latches are not engaged.

- 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.
- Remain clear of lift when raising or lowering vehicle.
- Always use safety stands when removing or installing heavy components.
- Avoid excessive rocking of vehicle while on lift.
- Clear area if vehicle is in danger of falling.
- Remove tool trays, stands, etc. before lowering lift.
- Release locking latches before attempting to lower lift.
- Position lift arms and adapters to provide an unobstructed exit before removing vehicle from lift area.

OWNER/EMPLOYER RESPONSIBILITIES

The Owner/Employer:

- Shall ensure that lift operators are qualified and that they are trained in the safe use and operation of the lift using the manufacturer's operating instructions; ALI/SM01-1, ALI Lifting it Right safety manual; ALI/ST-90 ALI Safety Tips card; ANSI/ALI ALOIM-2008, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; ALI/WL Series, ALI Uniform Warning Label Decals/Placards; and in the case of frame engaging lifts, ALI/LP-GUIDE, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts.

- Shall establish procedures to periodically inspect the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-2008, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and The Employer Shall ensure that lift inspectors are qualified and that they are adequately trained in the inspection of the lift.

- Shall establish procedures to periodically maintain the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-2008, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and The Employer Shall ensure that lift maintenance personnel are qualified and that they are adequately trained in the maintenance of the lift.

- Shall maintain the periodic inspection and maintenance records recommended by the manufacturer or ANSI/ALI ALOIM-2008, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance.

- Shall display the lift manufacturer's operating instructions; ALI/SM 93-1, ALI Lifting it Right safety manual; ALI/ST-90 ALI Safety Tips card; ANSI/ALI ALOIM-2008, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and in the case of frame engaging lifts, ALI/LP-GUIDE, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts; in a conspicuous location in the lift area convenient to the operator.

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

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

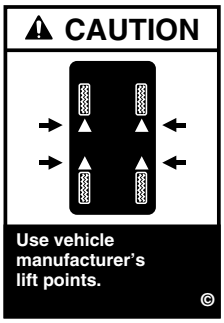
OPERATING CONDITIONS

Lift is not intended for outdoor use and has an operating ambient temperature range of 41°-104°F (5°-40°C).

OPERATING INSTRUCTIONS

⚠WARNING To avoid personal injury and/or property damage, permit only trained personnel to operate lift. After reviewing these instructions, get familiar with lift controls by running the lift through a few cycles before loading vehicle on lift.

IMPORTANT Always lift the vehicle using all four adapters. NEVER raise just one end, one corner, or one side of vehicle.



Observe and heed Safety, CAUTION and Warning labels on the lift.

1. Before Loading: Lift must be fully lowered and service bay clear of all personnel before the vehicle is brought on lift. Swing arms out to full drive-thru position.
2. Spot vehicle over lift. Make sure you are using the correct adapter, Fig. 1.
3. Loading: Swing arms under vehicle and position adapters at vehicle manufacturer's recommended lift points, Fig. 2. Use intermediate, high step, or optional adapters for under body clearance when required.

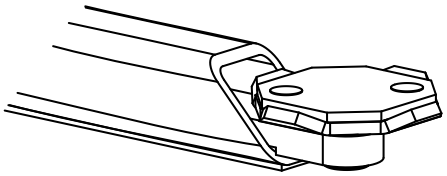
Note: Allow (2) seconds between motor starts. Failure to comply may cause motor burnout.

IMPORTANT DO NOT rest adapter against edge of arm.

*Maximum operation pressure is:
2755 psi for DP10, RTP10

4. To Raise Lift:
   A. For all lifts. Push Raise switch on power unit, Fig. 3.
   B. Stop before making contact with vehicle. Check arm restraint pins for engagement. If required, slightly move arm to allow restraint gear and pawl to mesh. DO NOT hammer pin down as this will damage the restraint gear teeth.
   C. Raise vehicle until tires clear the floor.
   D. Stop and check adapters for secure contact at vehicle manufacturer's recommended lift points.
   E. Continue to raise to desired height only if vehicle is secure on lift.
   F. Do Not go under vehicle if all four adapters are not in secure contact at vehicle manufacturer's recommended lift points.
   G. Repeat complete spotting, loading and raising procedures if required.
   H. Lower lift onto locking latches.

Adapter Recommendations



This style adapter recommended for lifting Unibody Vehicles.

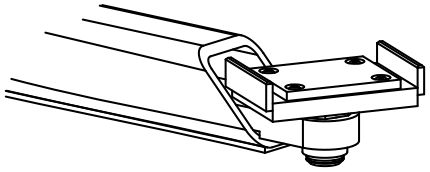
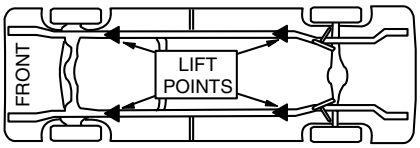


Fig. 1

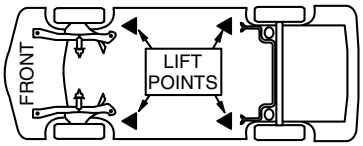
This style adapter recommended for lifting Frame, Stub Frames, and Perimeter Frame Vehicles.

⚠WARNING Most specialty or modified vehicles cannot be raised on a frame engaging lift. Contact vehicle manufacturer for raising or jacking details.

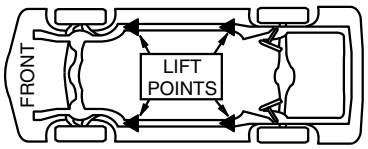
Typical Lifting Points



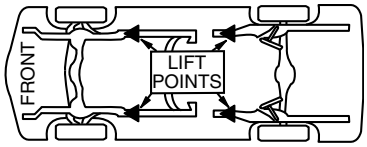
Pickup Truck



Unitized Body



Perimeter Frame



Stub Frame

NOTE: Some vehicles may have the manufacturer's Service Garage Lift Point locations identified by triangle shape marks on it's undercarriage (reference ANSI/SAE J2184-1992). Also, there may be a label located on the right front door lock face showing specific vehicle lift points. If the specific vehicle lift points are not identified, refer to the "Typical Lift Points" illustrated herein. ALWAYS follow the operating instructions supplied with the lift.

Fig. 2

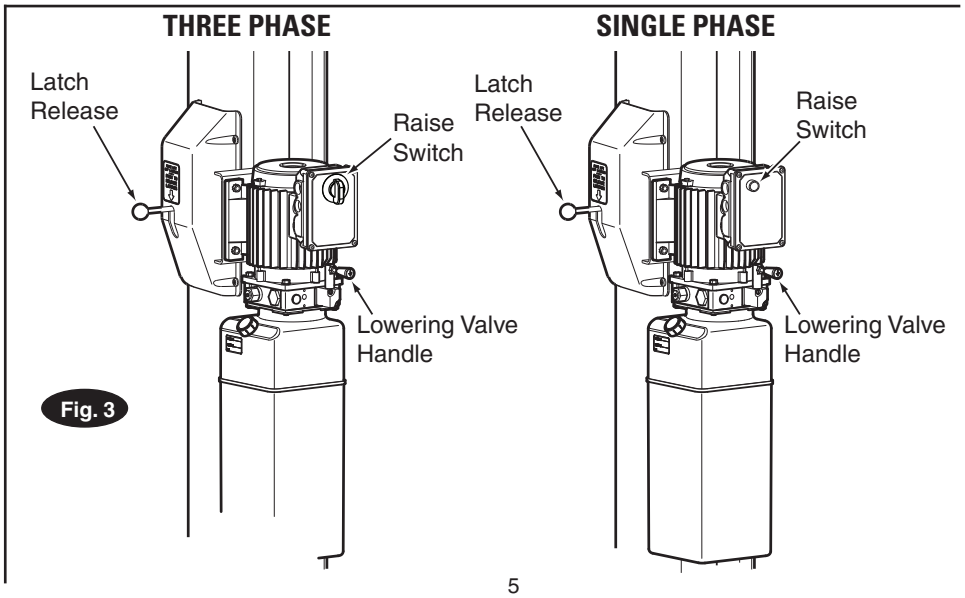


Fig. 3

⚠CAUTION DO NOT go under vehicle if locking latches are not engaged.

⚠WARNING Before attempting to lift pickup trucks or other truck frame vehicles, be sure that:

A. Vehicle frame is strong enough to support it's weight and has not been weakened by modification or corrosion.
B. Vehicle individual axle weight does not exceed one-half lift capacity.
C. Adapters are in secure contact with frame at vehicle manufacturers recommended lift points.
D. Vehicle is stable on lift and neither front nor "tail" heavy.
E. The overhead switch bar will contact the highest point on the vehicle.

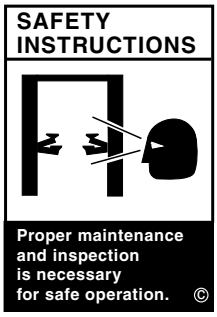
5. While Using Lift:
   A. Avoid excessive rocking of vehicle while on lift.
   B. Always use safety stands as needed or when removing or installing heavy components.
6. To Lower Lift:
   A. Remove all tools or other objects from lift area.
   B. Raise lift off locking latches.
   C. Pull latch release handle fully and hold.
   D. Push lowering valve handle to lower, Fig. 3.

Note: Both latch release and lowering valve handles are deadman-type design. Each must be held down to lower lift. Do not override self-closing lift controls.

7. Remain clear of lift when lowering vehicle. Observe pinch point warning decals.

8. Remove adapters from under vehicle and swing arms to full drive-thru position before moving vehicle.

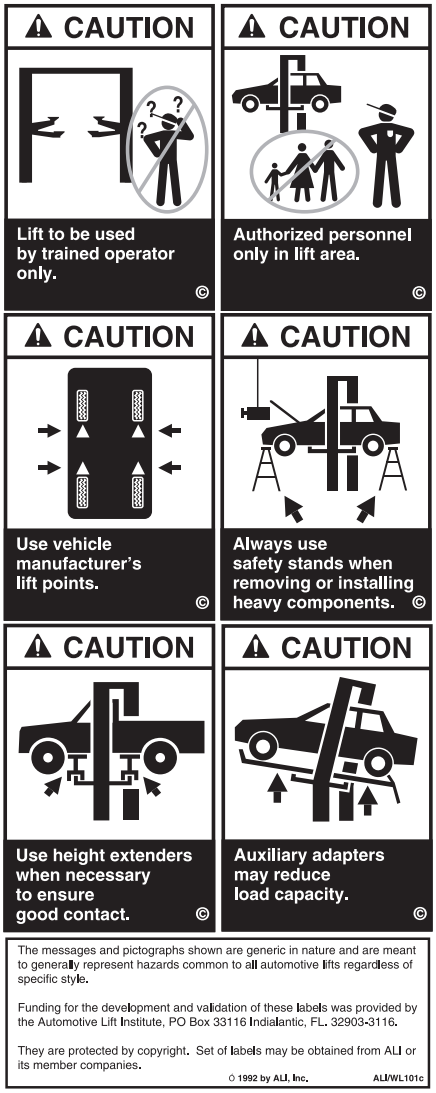
9. If lift is not operating properly, Do Not use until adjustment or repairs are made by qualified lift service personnel.



MAINTENANCE INSTRUCTIONS

If you are not completely familiar with automotive lift maintenance procedures; STOP: Contact factory for instructions. To avoid personal injury, permit only qualified personnel to perform maintenance on this equipment.

- Always keep bolts tight. Check periodically.
- Always keep lift components clean.
- Always if oil leakage is observed, call local service representative.
- Always if electrical problems develop, call local service representative.
- Daily: Check cables and sheaves for wear. Observe for frayed cable strands. Wipe cables with a rag to detect hard to see small broken cable strands. Replace cables showing any broken strands. Replace worn parts as required with genuine parts.
- Daily: Inspect adapters for damage or excessive wear. Replace as required with genuine parts.
- Monthly: Check equalizer cable tension. Adjust per lift installation instructions. If there are no more threads available for adjustment, replace the cable. Do not use washers to stand off the nut to use previously used threads.
- Monthly: Lubricate the four inside corners of the columns with heavy duty bearing grease.
- Monthly: Lubricate locking latch shafts. Push latch handle several times for oil to penetrate pivot points.
- Every 3 Months: Check anchor bolts for tightness. Anchors should be torqued to 90 ft/lbs.
- Semi-Annually: Check fluid level of lift power unit and refill if required per lift installation instructions.
- Replace all caution, warning or safety related decals on the lift if unable to read or missing.



INSPECTION and MAINTENANCE
See ANSI/ALI ALOIM booklet for periodic inspection checklist and maintenance log sheet.

TROUBLE SHOOTING

Trouble	Cause	Remedy
Motor does not run.	1. Blown fuse or circuit breaker. 2. Incorrect voltage to motor. 3. Bad wiring connections. 4. Motor up switch burned out. 5. Overhead limit switch burned out. 6. Motor windings burned out.	1. Replace blown fuse or reset circuit breaker. 2. Supply correct voltage to motor. 3. Repair and insulate all connections. 4. Replace switch. 5. Replace switch. 6. Replace motor.
Motor runs but will not raise lift.	1. Open lowering valve. 2. Pump sucking air. 3. Suction stub off pump. 4. Low oil level.	1. Repair or replace lowering valve. 2. Tighten all suction line fittings. 3. Replace suction stub. 4. Fill tank to proper level with ISOVG32 Hydraulic Oil or Dexron III ATF.
Motor runs—raises unloaded lift but will not raise vehicle.	1. Motor running on low voltage. 2. Debris in lowering valve. 3. Improper relief valve adjustment. 4. Overloading lift.	1. Supply correct voltage to motor. 2. Clean lowering valve. 3. Replace relief valve cartridge. 4. Check vehicle weight and/or balance vehicle weight on lift.
Lift slowly settles down.	1. Debris in check valve seat. 2. Debris in lowering valve seat. 3. External oil leaks.	1. Clean check valve. 2. Clean lowering valve. 3. Repair external leaks.
Slow lifting speed or oil blowing out filler breather cap.	1. Air mixed with oil. 2. Air mixed with oil suction. 3. Oil return tube loose.	1. Change oil using ISOVG32 Hydraulic Oil or Dexron III ATF. 2. Tighten all suction line fittings. 3. Reinstall oil return tube.
Lift going up unlevel.	1. Equalizer cables out of adjustment. 2. Lift installed on unlevel floor.	1. Adjust equalizer cables to correct tension. 2. Shim lift to level columns (Not to exceed 1/2"). If over 1/2" break out floor and repour per lift installation instructions.
Anchors will not stay tight.	1. Holes drilled oversize. 2. Concrete floor thickness or holding strength not sufficient.	1. Relocate lift using a new bit to drill holes. Reference installation instructions for minimum spacing requirements. 2. Break out old concrete and repour new pads for lift per lift installation instructions.
Locking latches do not engage.	1. Latch shafts rusted. (Usually occurs on outside installations or in high humidity areas such as vehicle wash bays.) 2. Latch spring broken. 3. Latch cable needs adjustment.	1. Remove covers, oil latch mechanism. Actuate latch release handle several times to allow oil to coat shaft. 2. Replace broken spring. 3. Adjust clamp at cable end per lift installation instructions.
Locking latches do not disengage.	1. Latch cable is broken. 2. Cable is off sheaves/upper guides. 3. Latch cable is loose.	1. Replace cable. 2. Check position of cable on sheaves/ upper guides; adjust cable tension. 3. Adjust cable tension.
Lift stops short of full rise or chatters.	1. Low oil level. 2. Air in hydraulic lines/cylinder.	1. Fill tank to proper level with ISOVG32 Hydraulic Oil or Dexron III ATF. 2. Bleed lift per installation instructions.* *Lifts with bleeders only.
Lift will not raise off of latches	1. Motor, pump, or cylinder failure.	1. Contact lift manufacturer's Customer Service.

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.

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 Lift 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 and the reason for it.
2) Unload the subject lift. 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 subject lift.
    - 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 with a "dummy" device and tag it appropriately as mentioned above.
4) Attempt to operate lift to assure the lockout is working. 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) Assure the work on the lift is complete and the area is clear of tools, vehicles, and personnel.
2) At this point, the authorized person can remove the lock (or dummy circuit breaker or fuse) & tag and activate the energy isolating device so that the lift may again be placed into operation.

Rules for Using Lockout Procedure

Use the Lockout Procedure 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.

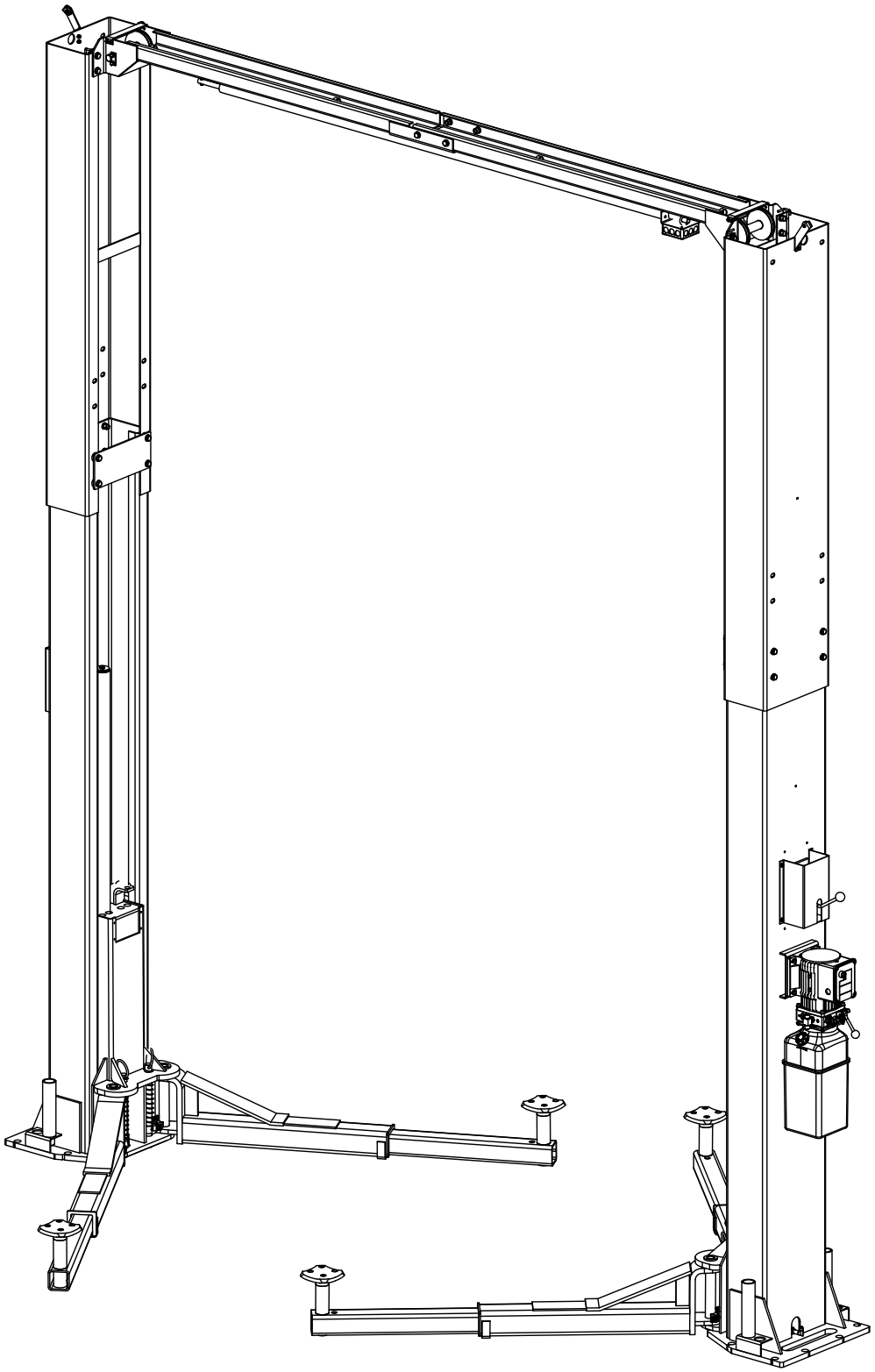
NOTES

NOTES

Vehicle Service Group[SM]
2700 Lanier Drive
Madison, IN 47250, USA
1-800-640-5438
www.vsgdover.com

Parts Breakdown

Capacity 12,000 lbs.



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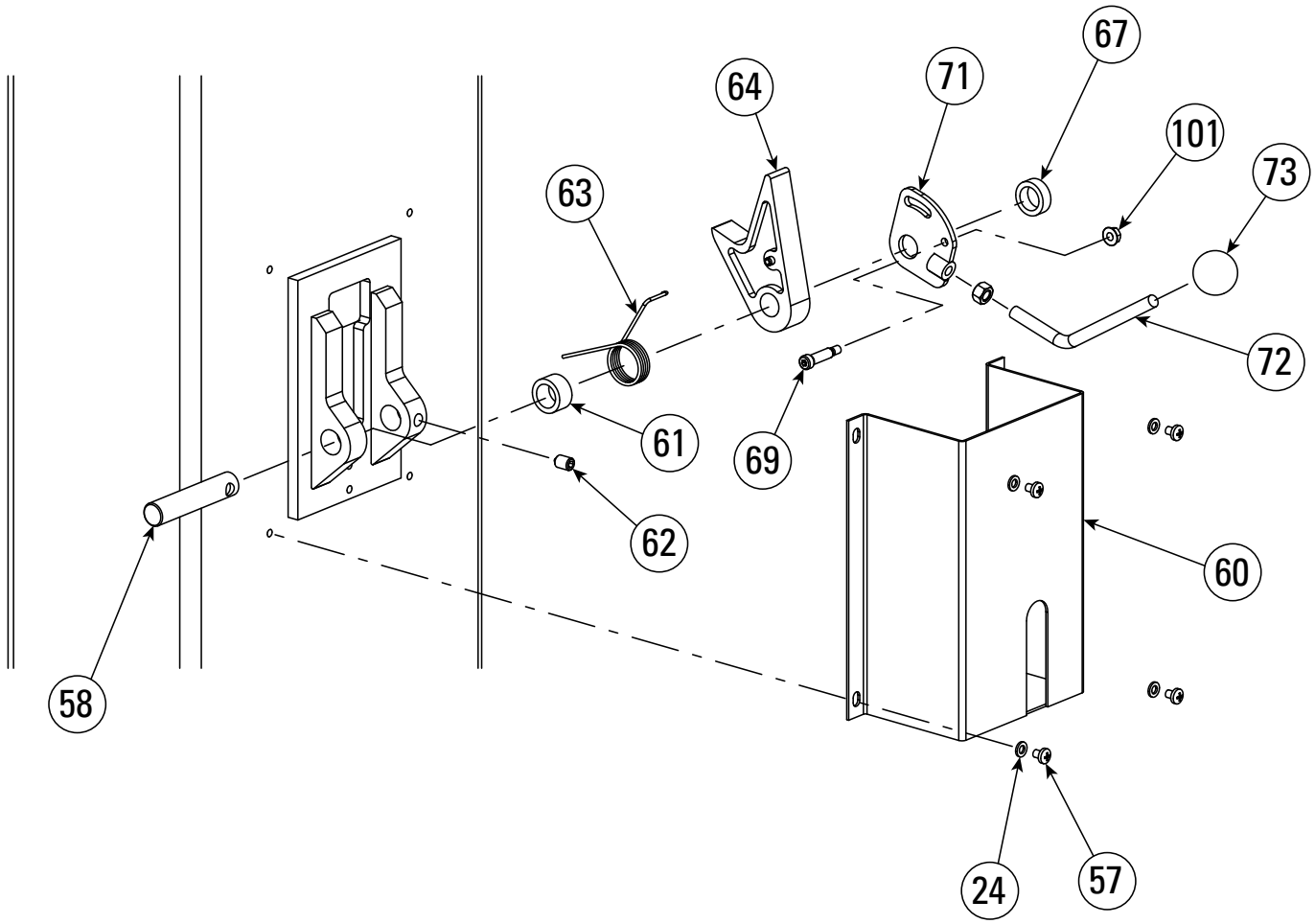
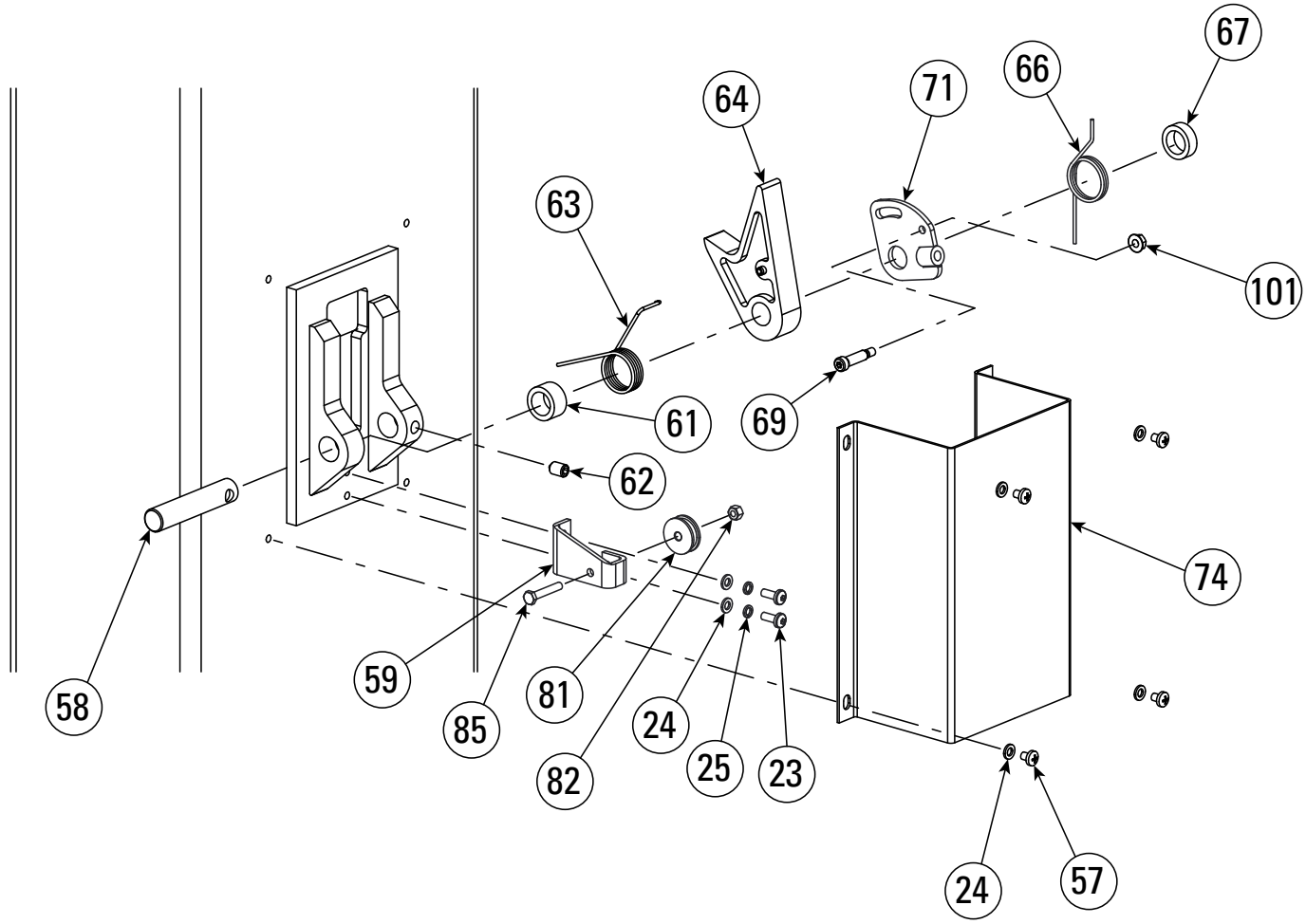
Parts Breakdown

PARTS LIST			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	V12TP-1000G1DC	COLUMN SLAVE SIDE	1
2	V12TP-5000G	CARRIAGE WELDMENT	2
3	V12TP-4000G	ARM WELDMENT	4
4	V12TP-4410	LIFT PAD WELDMENT	4
5	N2122	MOON GEAR ARM LOCK	4
6	B40-10	LOCK WASHER 10	9
7	B20-10×35	SOCKET HEAD SCREW M10×35	8
8	V12TP-5200	ARM PIN	4
9	V12TP-2000	UP-RIGHT WELDMENT	2
10	B10-12×40	HEXHEAD BOLT M12×40	8
11	B41-12	FLAT WASHER 12	44
12	B40-12	LOCK WASHER 12	22
13	B30-12	NUT M12	22
14	V12TP-1015	FACE BRACE	2
15	B60-25	SNAP RING 25	8
16	30500-3000-09	SPACER B	4
17	52005	4.75" CABLE PULLEY	4
18	30500-3000-08	SPACER A	2
19	V12TP-3001	SHAFT TOP CABLE PULLEY	2
20	V12TP-3100G	CROSS BEAM WELDMENT A	1
21	B10-12×25	HEXHEAD BOLT M12×25	6
22			
23	B20-6×16	SOCKET HEAD BOLT M6×16	2
24	B41-6	FLAT WASHER ø6	39
25	B40-6	LOCK WASHER ø6	14
26	V12TP-3200G	CROSS BEAM WELDMENT B	1
27	B30-6	NUT M6	5
28	30500-8000-2-1	PULLEY BRACKET A	2
29	B10-6×20	HEXHEAD BOLT M6×20	4
30	B10-8×35	HEXHEAD BOLT M8×35	4
31	B41-8	FLAT WASHER ø8	14
32	B40-8	LOCK WASHER ø8	10
33	B30-8	NUT M8	4
34	P3291	1ø 60 Hz. POWER UNIT	1
	P3556	1ø 50 Hz. POWER UNIT	
	P3526	3ø POWER UNIT	
35	V12TP-4301	SHORT ADAPTER	4
36	V12TP-4302	LONG ADAPTER	4
37	B14-3/4×140	ANCHOR BOLT 3/4"×140	12
38	2WB-18	HYDRAULIC HOSE	1
39	N380	HYDRAULIC CYLINDERS	2

40	N3142	FLOW CONTROL	2
41	N3143	ELBOW FITTING	2
42	2WB-17	HYDRAULIC HOSE	1
43	V12TP-6005	T FITTING	1
44	V12TP-6001	EQOALIZING CABLE	2
45	V12TP-9001	ø2.5 CABLE	1
46	B33-3/4-16	NYLON LOCK NUT 3/4"-16 UNF	4
47	B41-20	FLAT WASHER ø20	4
48	V12TP-1012	CABLE PULLEY	2
49	V12TP-1010	SHAFT TOP CABLE PULLEY	2
50	B10-8×16	BOLT M8×16	2
51	V12TP-5101	PIN ARM LOCK	4
52	V12TP-5102	SPRING	4
53	N2121	MOON GEAR ARM LOCK	4
54	B51-6×40	ROLL PIN ø6×40	4
55	V12TP-5009	RUBBER BLOCKS	16
56	V12TP-5010	COVER	2
57	B23-6×8	PHILLIP SCREWS M6×8	26
58	30500-5001(B)-09G	SHAFT	2
59	30500-8000-3-1G	PULLEY BRACKET B	1
60	30500-8000-1GDC	COVER A	1
61	30500-5001(B)-07G	SPACER	2
62	B22-10×16	BOLT M10×16	3
63	30500-5001B-10G	SPRING	2
64	TP10-1010	LATCHES	2
65			
66	30500-5001(B)-25G2	SPRING	1
67	30500-5001(B)-24G	SPACER	2
69	40220	SHOULDER BOLT	2
70			
71	FJ7594-5	CAM PLATE	2
72	HT0-1210	OPERATING HANDLE	1
73	B84-35	KNOB ø35×3/8"	1
74	30500-8000-1G	COVER B	1
75	B10-12×50	BOLT M12×50	8
76	N467(1PH)/N434(3PH)	SWITCH BAR ASSEMBLY	1
77	DP9-7009	3/4" SPACER	2
78	N413(1PH)/N432(3PH)	OVERHEAD SWITCH ASSY.	1
79	30500-2000-12	HYDRAULIC HOSE GUIDE	2
80	B20-6×25	SOCKET HEAD SCREW M6×25	2
81	30500-8000-2-2	CABLE SHEAVE	3
82	B33-6	NYLON LOCK NUT M6	6
83	52200-3	RUBBER PAD	4
84	B13-6×28	M6×28 SCREW	8
85	B10-6×35	HEXHEAD BOLT M6×35	1

86	V12TP-1000G1	COLUMN MASTER SIDE	1
87			
88			
89	30400-1999	WASHER	4
90	NH4D-2005	STOP NON-ROTATOR BAR	2
91	B10-8×16	HEXHEAD BOLT M8×16	4
92	B20-6×16	SOCKET HEAD SCREW M6×16	8
93	V12TP-3110G	RESTRICT SHELF	2
94	N3144	ADAPTER	2
95	B10-6×70	HEXHEAD BOLT M6×70	1
96		WIRE	1
97	B20-6×20	SOCKET HEAD SCREW M6×16	2
98	FA7366	CONTROL_3PH(only 3 phase use)	1
99	40275	M5×10 PHMS PLATED (only 3 phase use)	4
100	YG15-9106	RUBBER CUSHION	2
101	41423	NUT	2

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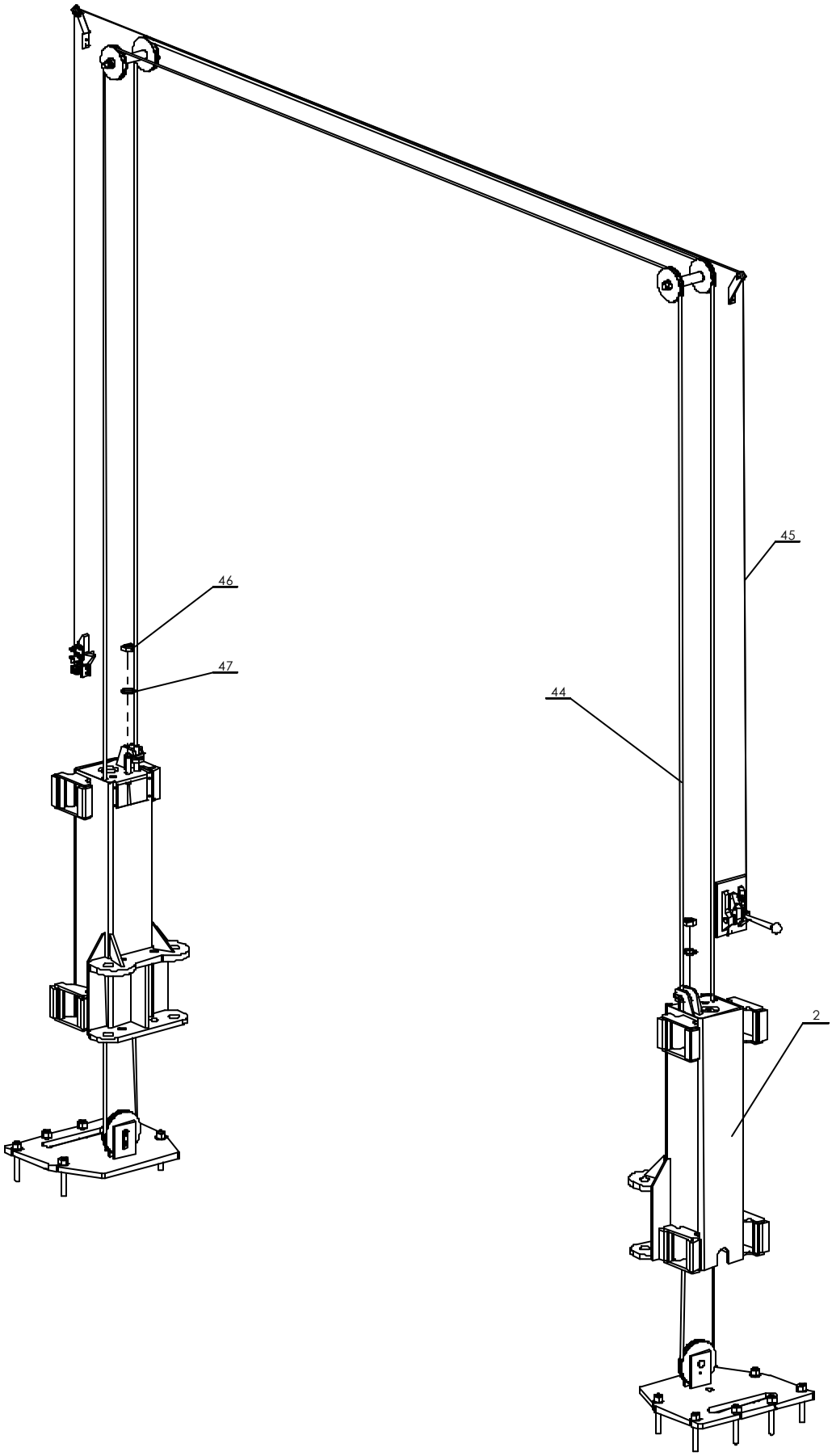
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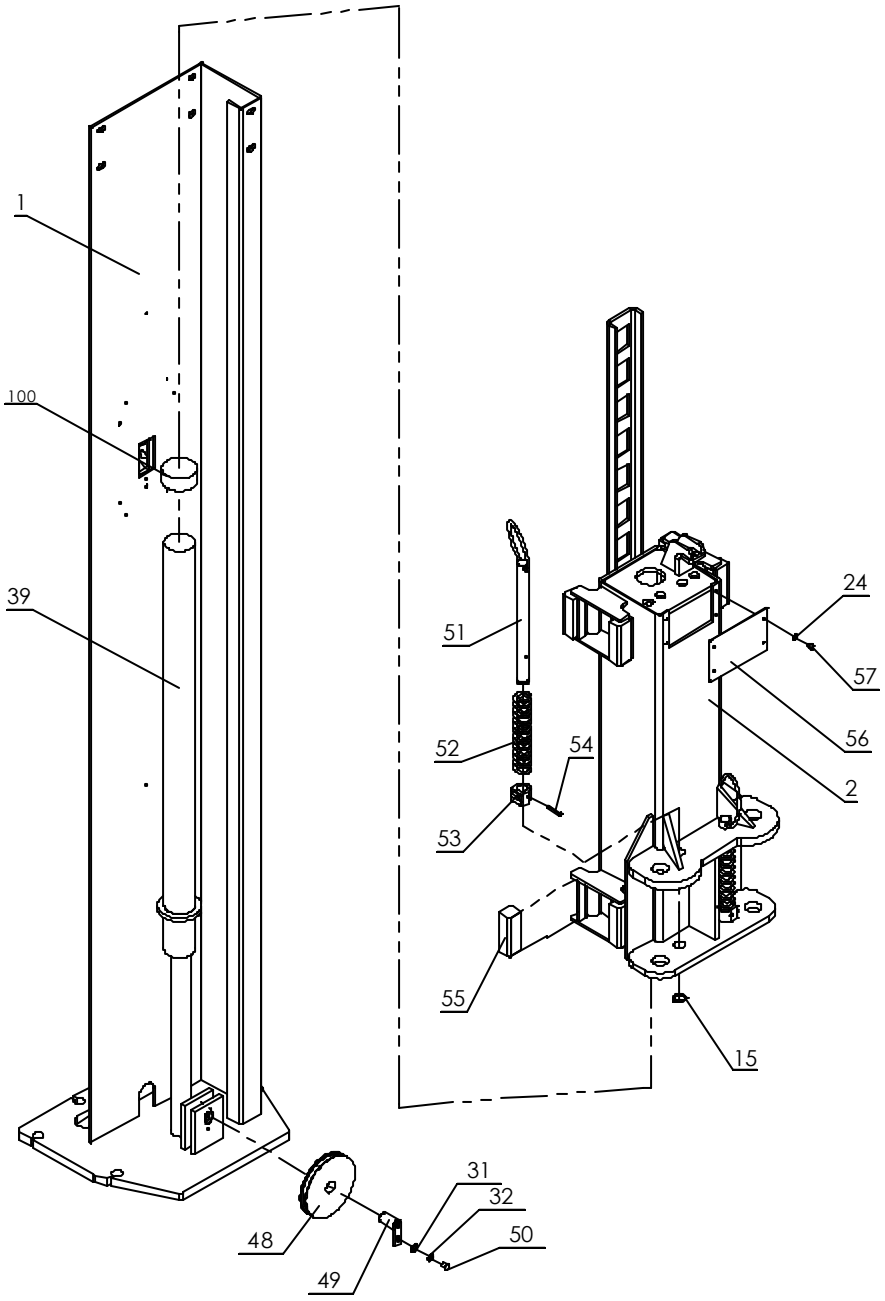
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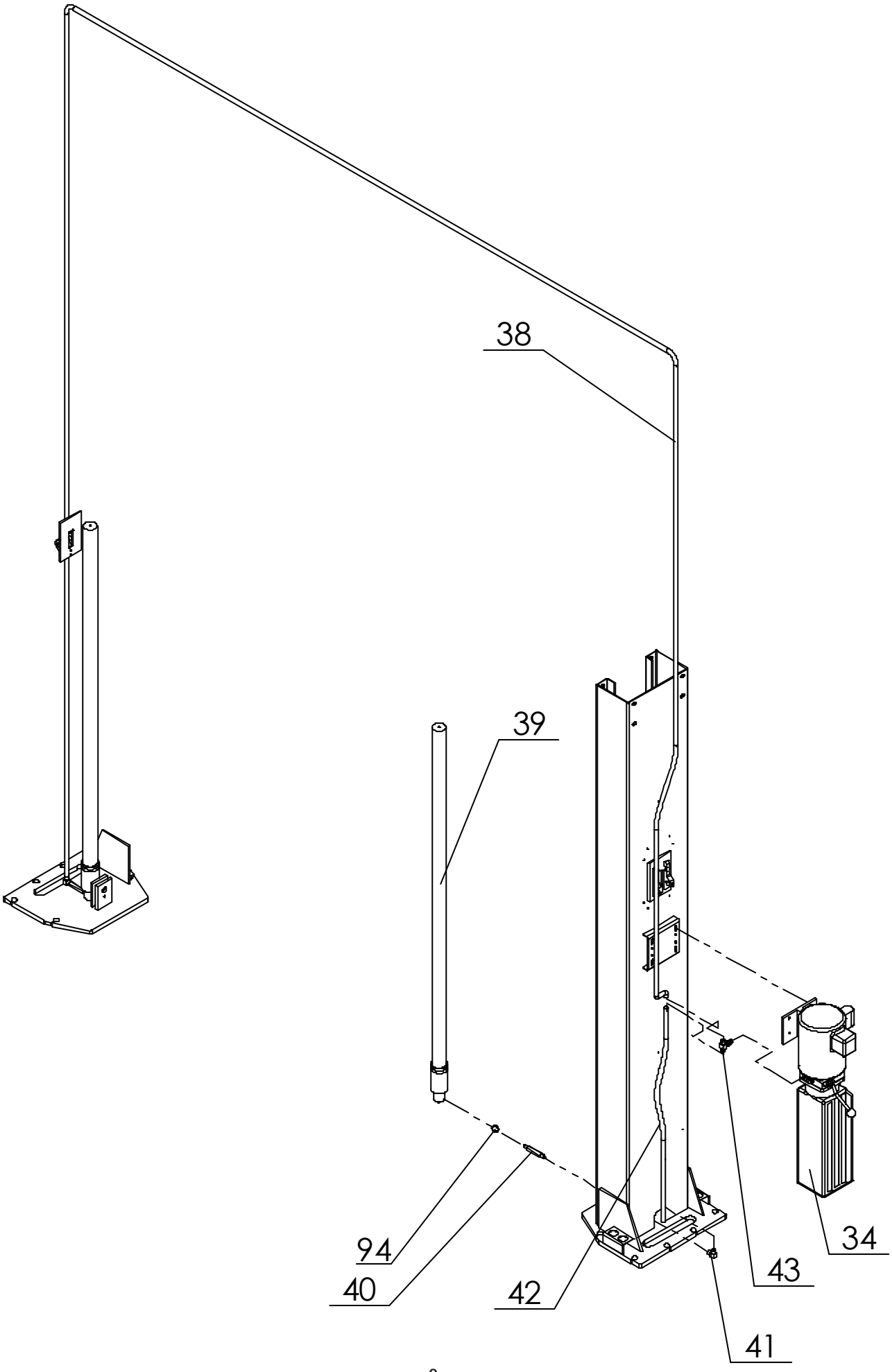
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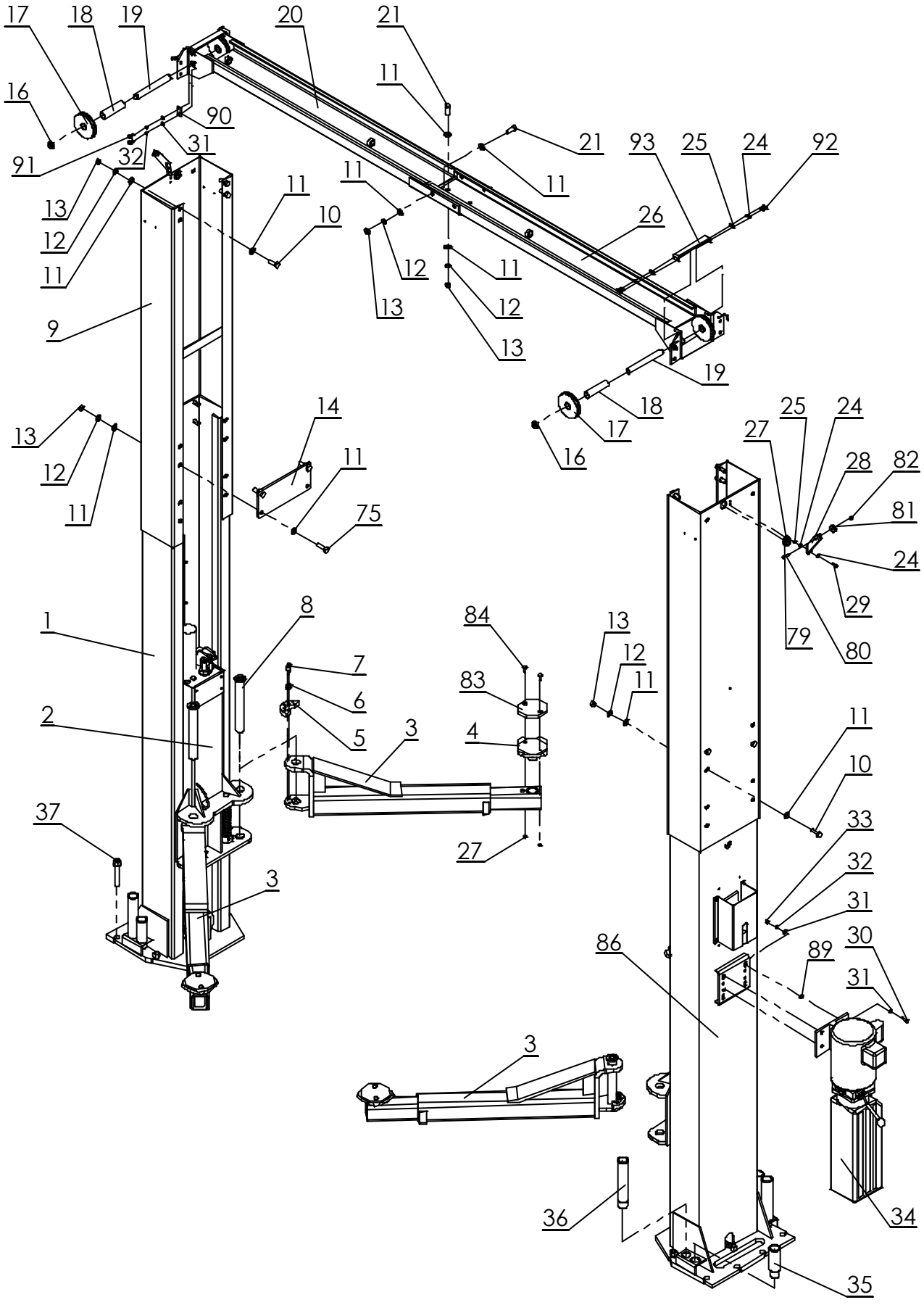
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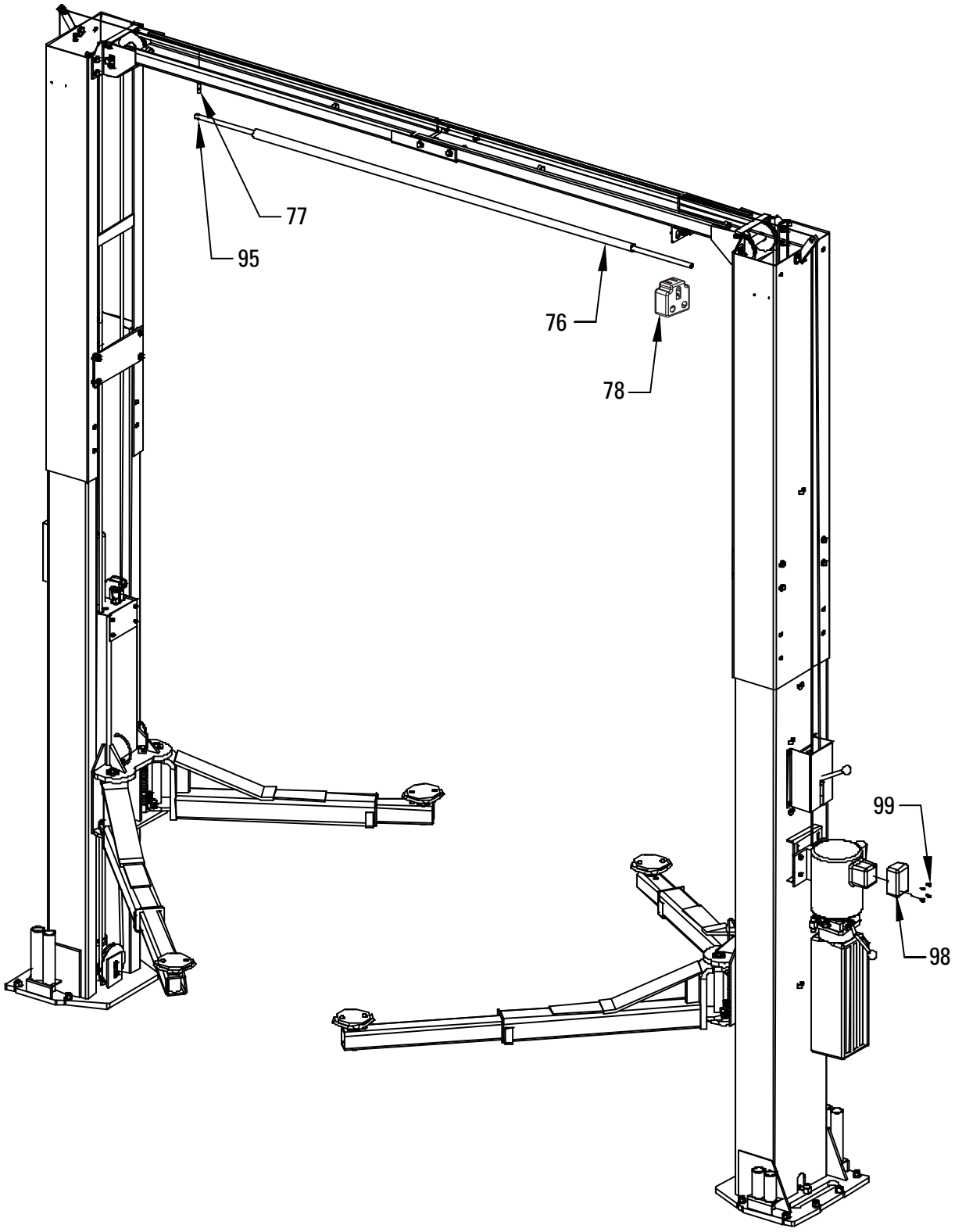
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