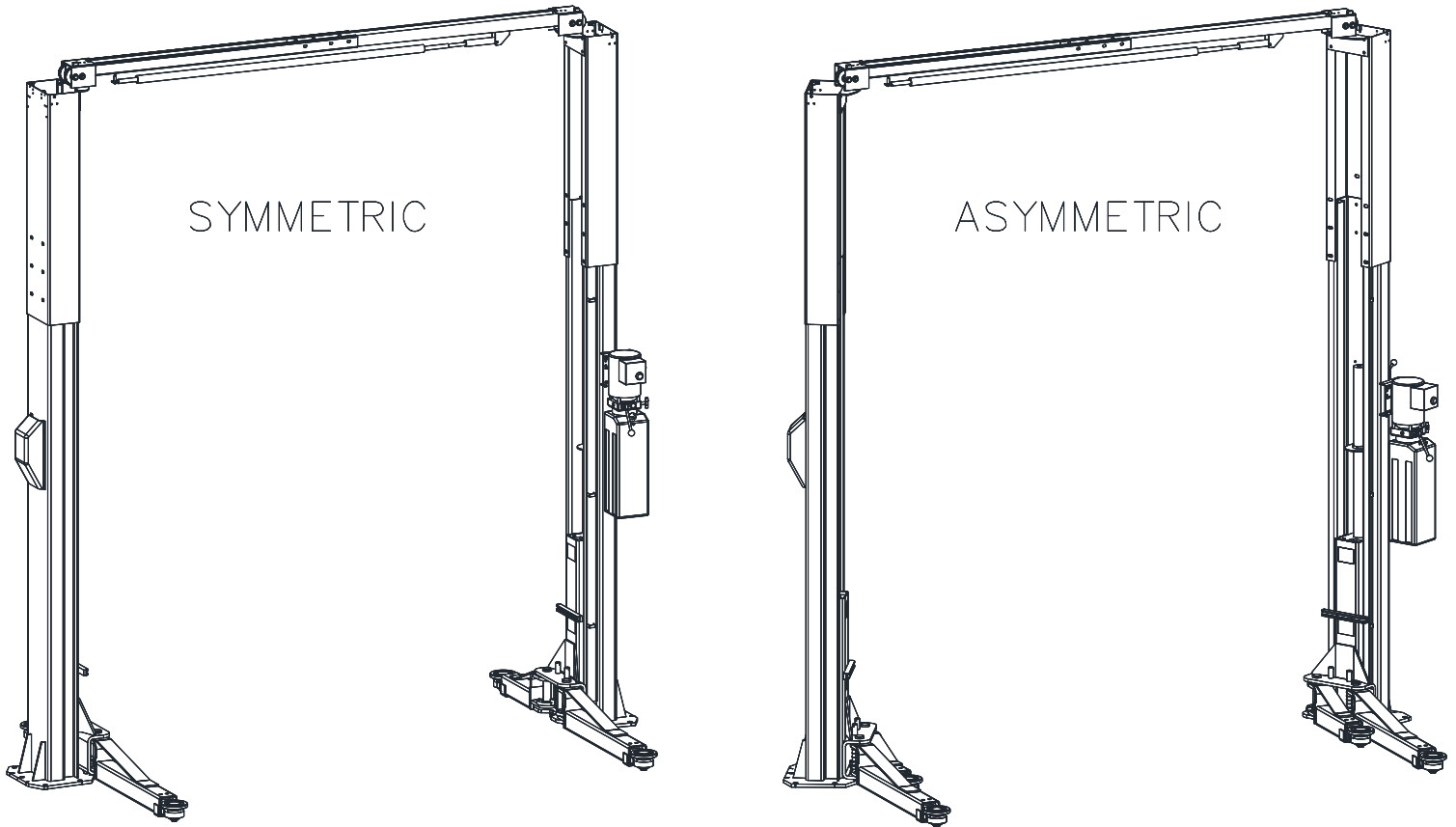


# **CL Challenger Lifts**

## Installation, Operation & Maintenance Manual

### Two Post Surface Mounted Lift



## MODEL SA10

(This lift may be installed either symmetrically or asymmetrically)

**10,000 LBS. CAPACITY** (2500 lbs. per Arm)

200 Cabel Street, P.O. Box 3944 Louisville, Kentucky 40201-3944  
Email: [sales@challengelifts.com](mailto:sales@challengelifts.com) Web site: [www.challengelifts.com](http://www.challengelifts.com)

**Office 800-648-5438 / 502-625-0700 Fax 502-587-1933**

**IMPORTANT: READ THIS MANUAL COMPLETELY BEFORE  
INSTALLING or OPERATING LIFT**

Rev. 7/10/12

## GENERAL SPECIFICATIONS

See Figure 1	SA10 (Symmetric Install)	SA10 (Asymmetric Install)
<b>A</b> Rise Height *	<b>78 7/8" (2004mm)</b>	<b>78 7/8" (2004mm)</b>
<b>B</b> Overall Height (Cylinder)	<b>150 1/2" (3820mm)</b>	<b>150 1/2" (3820mm)</b>
<b>C</b> Overhead Height (Adjustable)	<b>144 1/4" / 150 1/4" (3664mm/3814mm)</b>	<b>144 1/4" / 150 1/4" (3664mm/3814mm)</b>
<b>D</b> Base Width (Adjustable) **	<b>135 1/8" / 140 7/8" (3432mm/3578mm)</b>	<b>137 5/8" / 143 3/8" (3495mm/3641mm)</b>
<b>E</b> Drive-Thru Clearance	<b>98 7/8" / 104 5/8" (2510mm/2656mm)</b>	<b>94 5/8" / 100 3/8" (2403mm/2549mm)</b>
<b>F</b> Floor to Overhead Switch	<b>138 1/4" / 144 1/8" (3510mm/3660mm)</b>	<b>138 1/4" / 144 1/8" (3510mm/3660mm)</b>
<b>G</b> Short Arm Reach	<b>22 3/8" / 41 1/2" (568mm-1055mm)</b>	<b>22 3/8" / 41 1/2" (568mm-1055mm)</b>
<b>H</b> Long Arm Reach	<b>39 1/4" / 61" (995mm-1550mm)</b>	<b>39 1/4" / 61" (995mm-1550mm)</b>
<b>K</b> Screw Pad Height	<b>4 3/4" – 6 7/8" (120mm-175mm)</b>	<b>4 3/4" – 6 7/8" (120mm-175mm)</b>
<b>L</b> Inside of Columns	<b>112 3/4" / 118 1/2" (2864mm/3010mm)</b>	<b>107 5/8" / 113 3/8" (2734mm/2880mm)</b>
Lifting Capacity ***	<b>10,000 lbs. (4536 kg)</b>	<b>10,000 lbs. (4536 kg)</b>
Ceiling Height Required	<b>151 1/2" (3848mm)</b>	<b>151 1/2" (3848mm)</b>
Motor	<b>2HP, Single Phase, 60Hz</b>	<b>2HP, Single Phase, 60Hz</b>
Voltage	<b>208-230</b>	<b>208-230</b>
Speed of Rise ****	<b>51 seconds</b>	<b>51 seconds</b>
Max Load Per Arm	<b>2500 lbs (1134 kg)</b>	<b>2500 lbs (1134 kg)</b>

\* Rise Height measured with footpads in the highest position.

\*\* Overall width of Asymmetric Lift is 141 1/4"/147" including Power Unit. Use Dimension "D" for installation purposes.

\*\*\* Lift capacity ratings are based on loads equally distributed on all four arms.

\*\*\*\* Lifting and lowering speeds may vary depending on the weight of the vehicle.

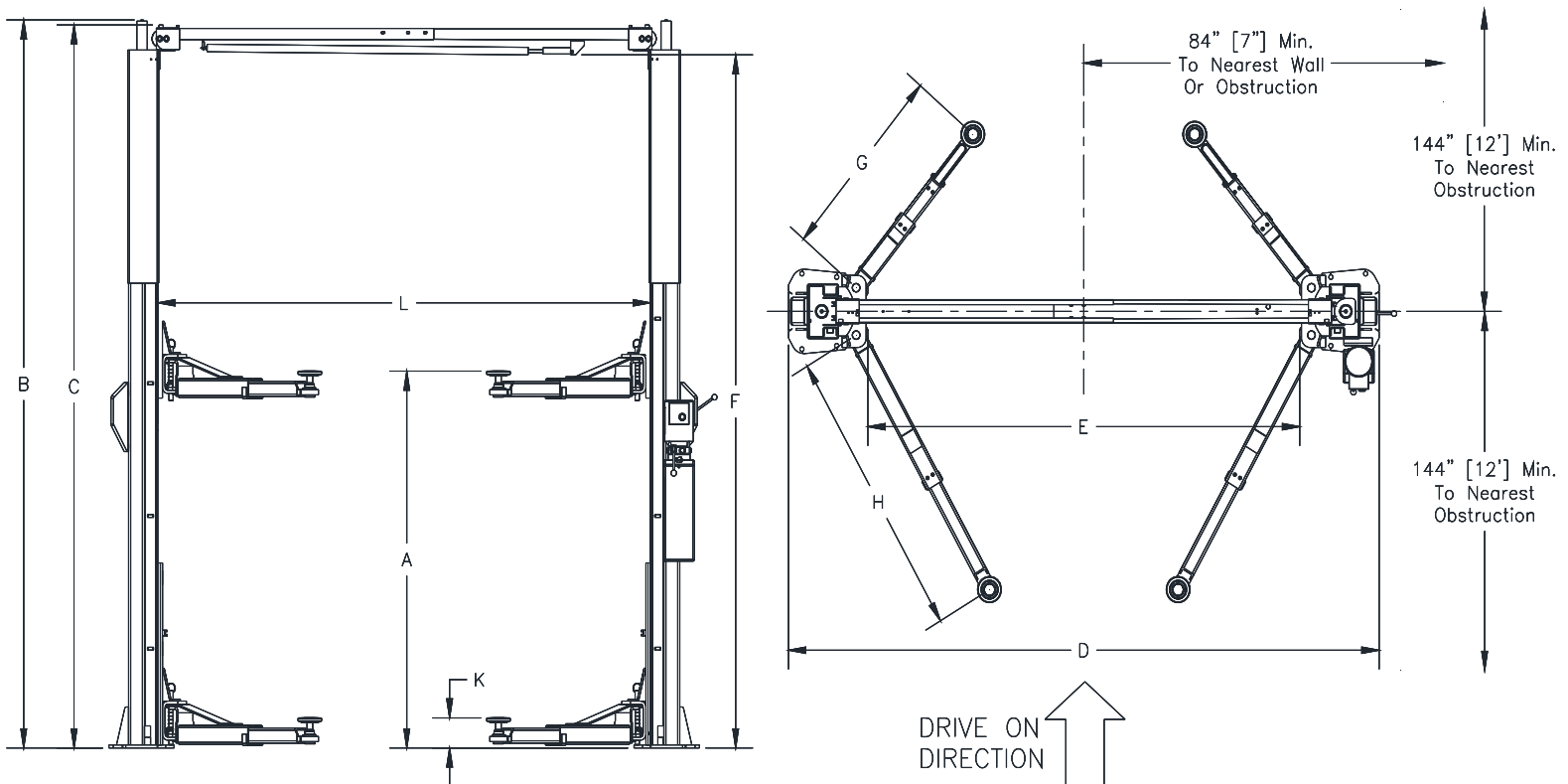


Fig 1 - General Specifications / Service Bay Layout

## VERTICAL CLEARANCE

Check the height of the area where the lift is to be installed. Clearance should be calculated based on the full raised height of the lift.



**WARNING** Failure by purchaser to provide adequate clearance could result in unsatisfactory lift performance, property damage, or personal injury.

## FLOORING

Be certain you have the proper concrete floor to properly handle the loaded lift. Floor should be in generally good condition with no large cracks, spalling or deterioration.

**Minimum requirements for concrete are 4 inches minimum depth, with steel reinforcement, 3500 psi, cured for 28 days per local commercial practice.** Floor should be level within 3/8 inch over the installation area. No anchors should be installed within 8 inches of any crack, edge, or expansion joint. If these conditions cannot be met, a pad may be poured to accommodate the lift.

Check with local building inspectors and/or permits office for any special instructions or approvals required for your installation.



**WARNING** Failure by purchaser to provide the recommended mounting surface could result in unsatisfactory lift performance, property damage, or personal injury.

## LOCATION

This lift has been evaluated for indoor use only with an operating ambient temp. range of 5 – 40°C (41–104°F)

## ELECTRICAL REQUIREMENTS

For lift installation and operation for single phase units, it is necessary to have a dedicated circuit with a double pole 25 amp circuit breaker or time delay fuse.

## SAFETY NOTICES AND DECALS

For your safety, and the safety of others, read and understand all of the safety notices and decals included here.

**READ ENTIRE MANUAL BEFORE ASSEMBLING, INSTALLING, OPERATING, OR SERVICING THIS EQUIPMENT. PROPER MAINTENANCE AND INSPECTION IS NECESSARY FOR SAFE OPERATION. DO NOT OPERATE A DAMAGED LIFT.**

Safety decals similar to those shown here are found on a properly installed lift. Be sure that all safety decals have been correctly installed on the Power Unit reservoir. Verify that all authorized operators know the location of these decals and fully understand their meaning. Replace worn, faded, or damaged decals promptly.



**WARNING** Do not attempt to raise a vehicle on the lift until the lift has been correctly installed and adjusted as described in this manual.

<p><b>SAFETY INSTRUCTIONS</b> Read operating and safety manuals before using lift.</p>	<p><b>SAFETY INSTRUCTIONS</b> Proper maintenance and inspection is necessary for safe operation.</p>	<p>If attachments, accessories or configuration modifying components that are located in the load path, affect operation of the lift, affect the lift electrical listing or affect intended vehicle accommodation are used on this lift and, if they are not certified for use on this lift, then the certification of this lift shall become null and void. Contact the participant for information pertaining to certified attachments, accessories or configuration modifying components.</p> <p><b>SAFETY INSTRUCTIONS</b></p> <p>load path, affect operation of the lift, affect the lift electrical listing or affect intended vehicle accommodation are used on this lift and, if they are not certified for use on this lift, then the certification of this lift shall become null and void. Contact the participant for information pertaining to certified attachments, accessories or configuration modifying components.</p> <p>www.autolift.org ©2007 by ALI, Inc. ALI/WLSIAO1</p>
<p><b>SAFETY INSTRUCTIONS</b> Do not operate a damaged lift.</p>	<p>The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style.</p> <p>Funding for the development and validation of these labels was provided by the Automotive Lift Institute, PO Box 33116 Indianapolis, FL 32903</p> <p>They are protected by copyright. Set of labels may be obtained from ALI or its member companies.</p> <p>© 1992 by ALI, Inc. ALI/WLSIAO1</p>	

<p><b>CAUTION</b> Lift to be used by trained operator only.</p>	<p><b>CAUTION</b> Authorized personnel only in lift area.</p>	<p><b>WARNING</b> Clear area if vehicle is in danger of falling.</p>	<p><b>WARNING</b> Position vehicle with center of gravity midway between adapters.</p>
<p><b>CAUTION</b> Use vehicle manufacturer's lift points.</p>	<p><b>CAUTION</b> Always use safety stands when removing or installing heavy components.</p>	<p><b>WARNING</b> Remain clear of lift when raising or lowering vehicle.</p>	<p><b>WARNING</b> Avoid excessive rocking of vehicle while on lift.</p>
<p><b>CAUTION</b> Use height extenders when necessary to ensure good contact.</p>	<p><b>CAUTION</b> Auxiliary adapters may reduce load capacity.</p>	<p><b>WARNING</b> Do not override self-closing lift controls.</p>	<p><b>WARNING</b> Keep feet clear of lift while lowering.</p>
<p>The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style.</p> <p>Funding for the development and validation of these labels was provided by the Automotive Lift Institute, PO Box 33116 Indianapolis, FL 32903.</p> <p>They are protected by copyright. Set of labels may be obtained from ALI or its member companies.</p> <p>© 1992 by ALI, Inc. ALI/WLSIAO1</p>		<p>The messages and pictographs shown are generic in nature and are meant to generally represent hazards common to all automotive lifts regardless of specific style.</p> <p>Funding for the development and validation of these labels was provided by the Automotive Lift Institute, PO Box 33116 Indianapolis, FL 32903.</p> <p>They are protected by copyright. Set of labels may be obtained from ALI or its member companies.</p> <p>© 1992 by ALI, Inc. ALI/WLSIAO1</p>	

## RECEIVING

The shipment should be thoroughly inspected as soon as it is received. The signed bill of lading is acknowledgement by the carrier of receipt in good condition of shipment covered by our invoice.

If any of the goods called for on this bill of lading are shorted or damaged, do not accept them until the carrier makes a notation on the freight bill of the shorted or damaged goods. Do this for your own protection.

NOTIFY **Challenger Lifts** AT ONCE if any hidden loss or damage is discovered after receipt.

IT IS DIFFICULT TO COLLECT FOR LOSS OR DAMAGE AFTER YOU HAVE GIVEN THE CARRIER A CLEAR RECEIPT.

File your claim with **Challenger Lifts** promptly. Support your claim with copies of the bill of lading, freight bill, and photographs, if available.

## Component Packing List

PART #	QTY/ LIFT	DESCRIPTION
3W-01P	1	Power Column Assembly
3W-01I	1	Idler Column Assembly
3W-03	1	Overhead Assembly
AB-9367	1	Power Unit
SA10-HW-A	1	Hardware Box
3W-01-05A	1	Power Column Extension
3W-01-05B	1	Idler Column Extension
3W-04-01	2	Rear Arm Assembly
3W-04-19	2	Front Arm Assembly
3W-05	4	Foot Pad Assembly
3W-06-08	2	Synchronizer Cable Ass'y
3W-06-06	1	Power Hose
3W-06-07	1	Idler Hose
3W-06-05	1	Extension Hose
3W-01-11-01	1	Power Lock Cover
3W-01-11-02	1	Idler Lock Cover
3W-03-13/15	1	Shutoff Bar/Foam Cover
3W-03-07	2	Overhead Bracket

## INSTALLATION

IMPORTANT: Always wear safety glasses while installing lift.

### TOOLS (MINIMUM REQUIRED)

- a. Tape measure, 16ft
- b. Chalk line
- c. 4ft level
- d. Carpenters Square
- e. 10" adjustable wrench
- f. Open end wrenches 14mm,16mm,17mm,19mm
- g. Needle Nose pliers
- h. Snap Ring pliers
- i. Screw Drivers (Flat and Phillips)
- j. Hammer drill with 3/4" diameter carbide tipped bits
- k. 2lb hammer
- l. Torque wrench: 150 foot pounds minimum with 1 1/8" socket
- m. Allen wrench set
- n. 12 ft. Step ladder
- o. Anti-Seize lubricant (arm pins, foot pad screw threads, and foot pad stop rings)
- p. EP-2 Multipurpose Grease (slide block tracks)

### LAYOUT

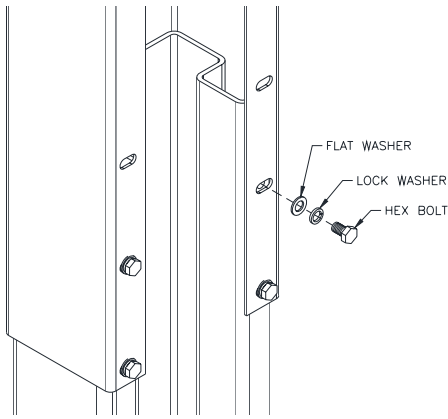
- 1) Layout the service bay according to architect's plans or owners instructions (**see Fig 1**). **Failure to install in this orientation can result in personal and property damage.** Be certain that the proper conditions exist, see page 3.

### DISASSEMBLY

- 2) Place a 4x4 piece of lumber 2' from each end of the packaged lift. Remove steel end brackets bolted to Columns. Remove all wrapping and banding. Remove Arms and hoses from inside Column Extensions. Remove remaining items from shipping support brackets.

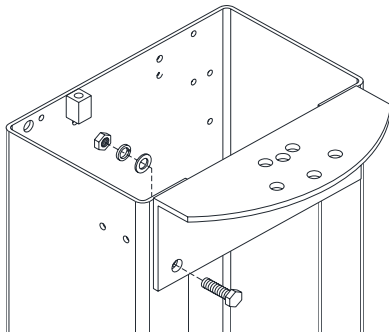
### COLUMNS

- 3) With Columns still laying horizontal, assemble Power Column Extension to Power Column using (8 sets) M12 x 20 Hex bolts, flat washers, and lock washers. **The Lock Release Guide Block at top of Column Extension should be in-line with Lock Release Pulley in Column.** For the tall height setting, use bottom holes as shown in **Fig 2**. For the short setting, use the upper holes. Repeat for opposite Idler Column and Idler Column Extension.



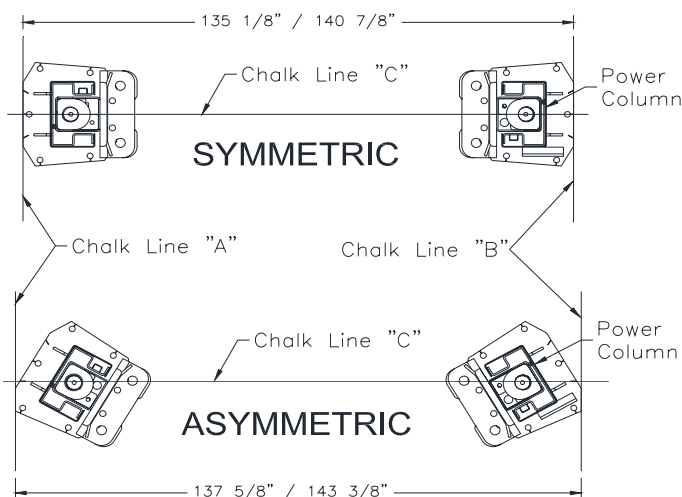
**Fig 2 - Column Extension**

- 4) Assemble Overhead Mounting Bracket to the Column Extension using (4 sets) M12 x 35 Hex bolts, flat washers, lock washers, and nuts. Repeat for opposite bracket and extension. See Fig 3 below.



**Fig 3 - Column Extension**

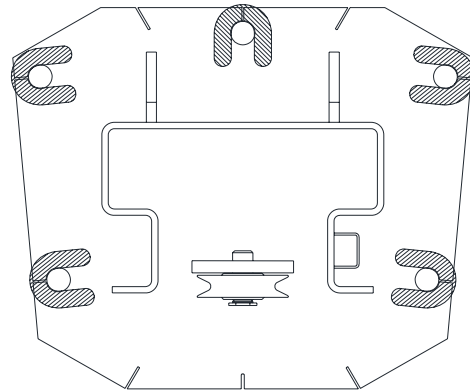
- 5) Refer to Fig 1. Using the Base Width (D) Dimension, chalk two parallel lines (A & B) on the floor within 1/8" tolerance. Chalk a third line (C) perpendicular to lines A & B to designate fore and aft location. Erect both Column assemblies. Align the base plate edges to the chalk lines as seen in Fig 4 below. Slots in front and back of base plate should be in-line with chalk line "C".



**Fig 4 - Layout**

**ANCHORING**

- 6) The anchor bolts must be installed at least 8" from any crack, edge, or expansion joint.
- 7) Use a concrete hammer drill with a 3/4 inch carbide bit. Tip diameter should conform to ANSI Standard B94.12-1977 (.775 to .787). Do not use excessively worn bits or bits which have been incorrectly sharpened. A core bit may be necessary if an obstruction is encountered. **Never substitute with shorter anchor.**
- 8) Recheck "Base Width" dimension, Fig 1. Drill the anchor holes (Power Column Only) using the base plate as a template. Drill through the floor if possible or to a depth of 5 inches minimum.
- 9) Vacuum dust from the hole for proper holding power.
- 10) Shim column to plumb using the shims provided as shown in Fig 5. DO NOT shim more than 1/2" at any given point. Use a level no less than 24" in length to plumb Columns.
- 11) Assemble washer and nut to anchor with nut just below impact section of bolt. Drive anchor into hole until nut and washer contact base.

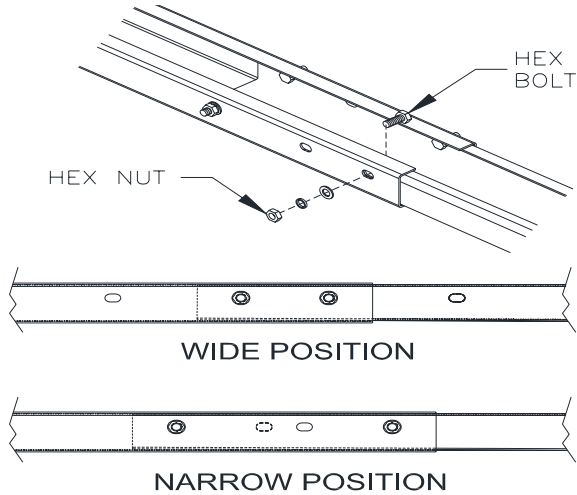


**Fig 5 - Column Shimming**

- 12) Tighten Power Column anchors and recheck Column for plumb. Re-shim if necessary. Torque to 150 foot-pounds to set anchors.

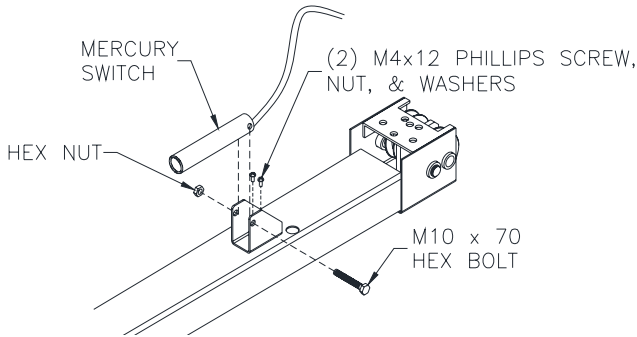
OVERHEAD

- 13) Assemble two Overhead pieces using (6 sets) M10 x 25 bolt, nut, flat washer, and lock washer as shown in **Fig 6**. Hand-tighten bolts to allow adjustment if needed. Use Base Width (D) Dimension to determine proper holes to use.



**Fig 6 – Overhead**

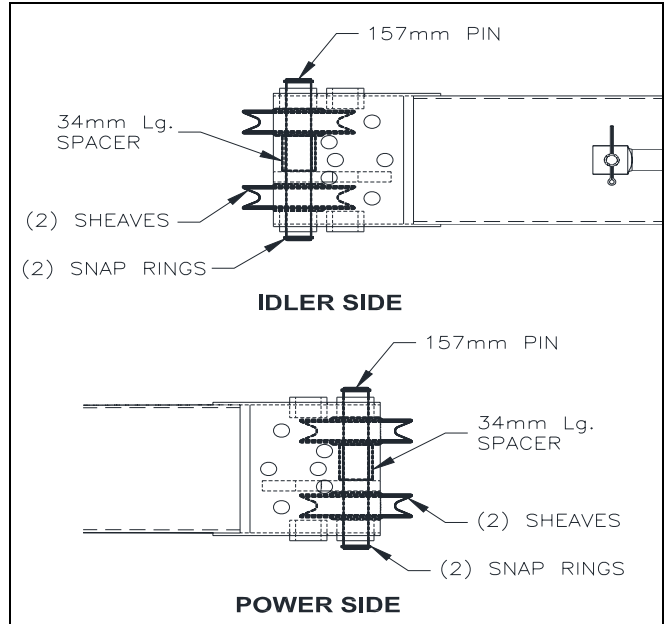
- 14) Assemble the Overhead Limit Switch and bracket with Overhead as shown in **Fig 7** below. **Switch should be installed with cord located on top side of the pin at end of switch.**



**Fig 7 – Overhead Limit Switch**

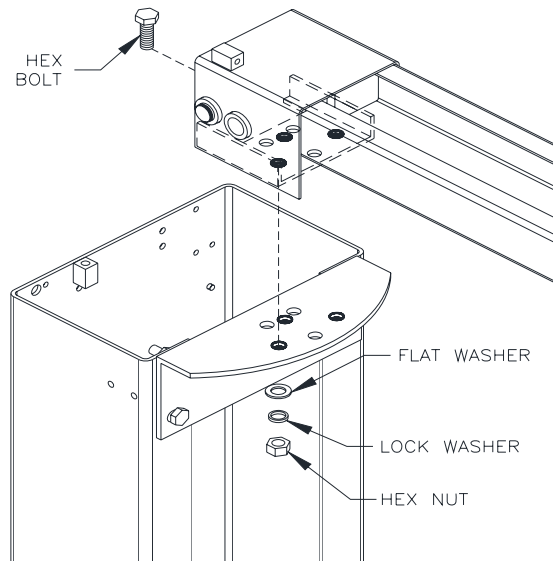
SYMMETRIC

- 15) For Asymmetric installation, skip to Step 18.  
16) With the Overhead positioned **UPSIDE DOWN**, assemble the cable sheaves, spacers, and pins as shown in **Fig 8** below.



**Fig 8 – Symmetric Sheave Assembly**

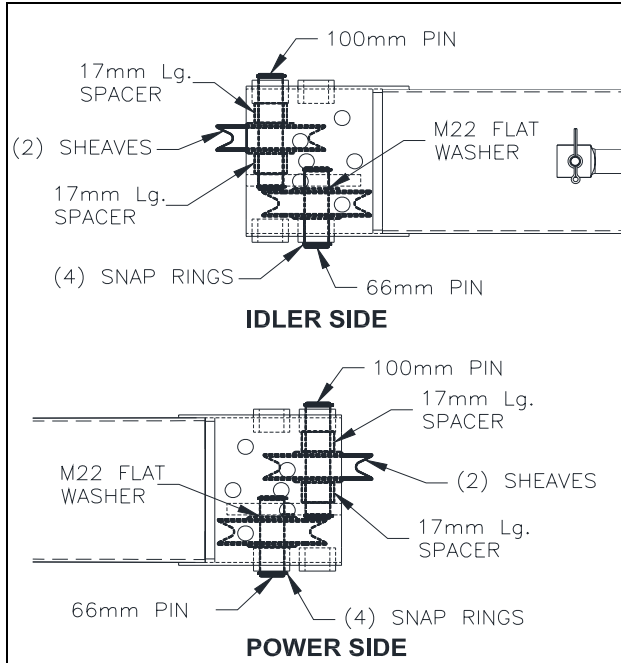
- 17) Place the Overhead on top of the mounting brackets on Column Extensions and bolt together using (3 sets) M12 x 35 Hex bolt, nut, flat washer, and lock washer. Hand-tighten bolts to allow for column adjustment if needed. Use the holes highlighted below in **Fig 9** below.



**Fig 9 – Symmetric Overhead Mounting**

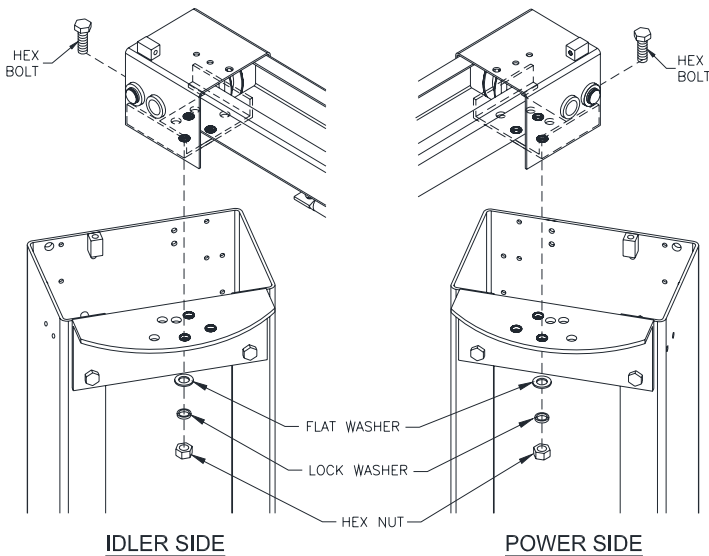
**ASYMMETRIC**

- 18) Disassemble sheave assemblies from each end. With the Overhead positioned **UPSIDE DOWN**, assemble the cable sheaves, spacers, and pins as shown in **Fig 10** below. A flat washer should be placed between sheave and offset plate.



**Fig 10 – Asymmetric Sheave Assembly**

- 19) Place the Overhead on top of the mounting brackets on Column Extensions and bolt together using (3 sets) M12 x 35 Hex bolt, nut, flat washer, and lock washer. Hand-tighten bolts to allow for column adjustment if needed. Use the holes highlighted in **Fig 11** below.



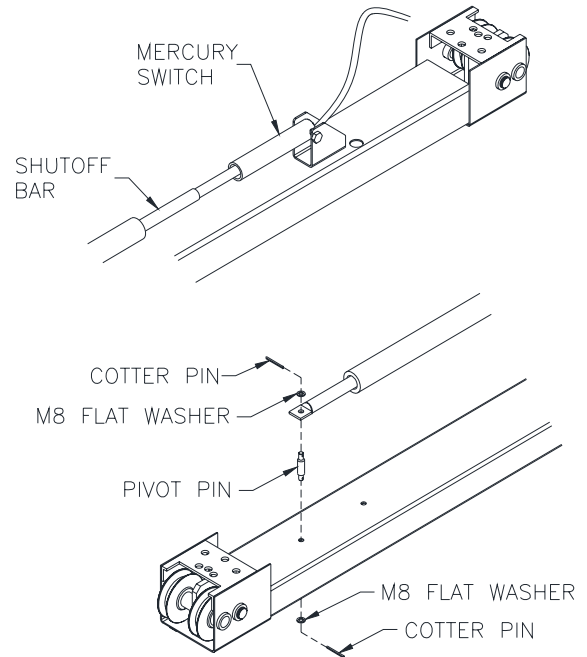
**Fig 11 – Asymmetric Overhead Mounting**

**ANCHORING CONT.**

- 20) Check Idler Column shimming. Use additional shims (see **Fig 5**) to remove any gaps that may have been created while installing Overhead. Repeat steps 6-12 for the Idler Column anchoring.
- 21) Tighten all bolts in Overhead after both Columns are secured to the floor.

**SHUTOFF BAR**

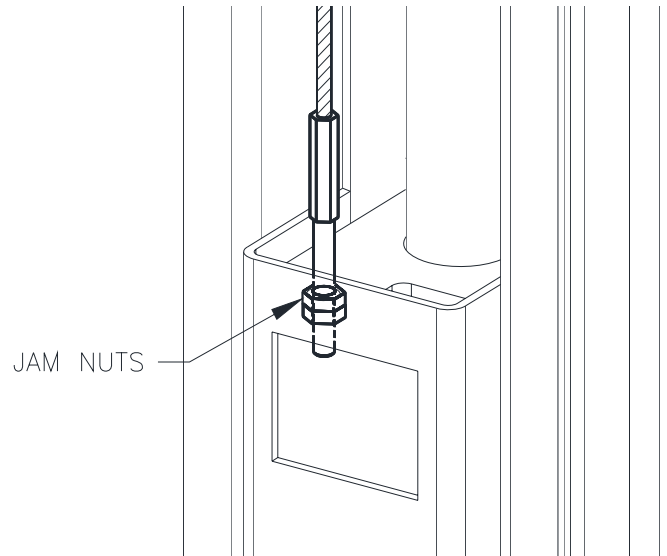
- 22) Install Shutoff Bar as shown in **Fig 12** below



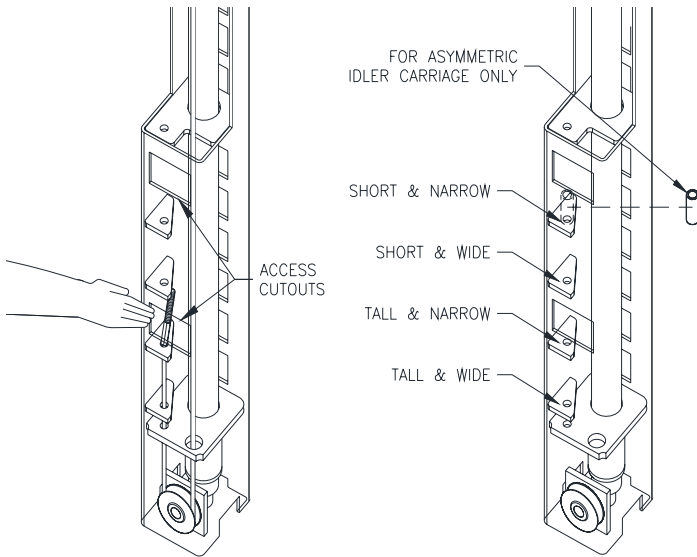
**Fig 12 – Shutoff Bar**

SYNCHRONIZER CABLES

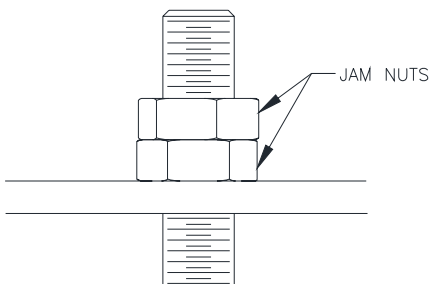
- 23) Manually raise each Carriage into the first lock position. Ensure both locks are engaged.
- 24) Each cable is pre-routed around base sheave and up through the bottom of the Carriage. Attach that end of the Synchronizing Cable to the proper carriage tab according to **Fig 13a**. For Asymmetrical lift, use 65mm lg. spacer in Idler Carriage above appropriate tab.
- 25) Secure the cables with the jam nuts provided as shown in **Fig 13b**.
- 26) Route other end of cable up and over sheave in Overhead. Follow across to sheave on opposite Column. Route cable down through Column to top mounting plate in Carriage. Attach cable to Carriage top plate as seen in **Fig 13c** with (2) hex jam nuts. Repeat for opposite side.
- 27) Adjust nuts on cable fitting inside carriage up or down to allow only enough room to get a nut started on the opposite to allow plenty of room to tighten cables.



**Fig 13c - Carriage Connection**



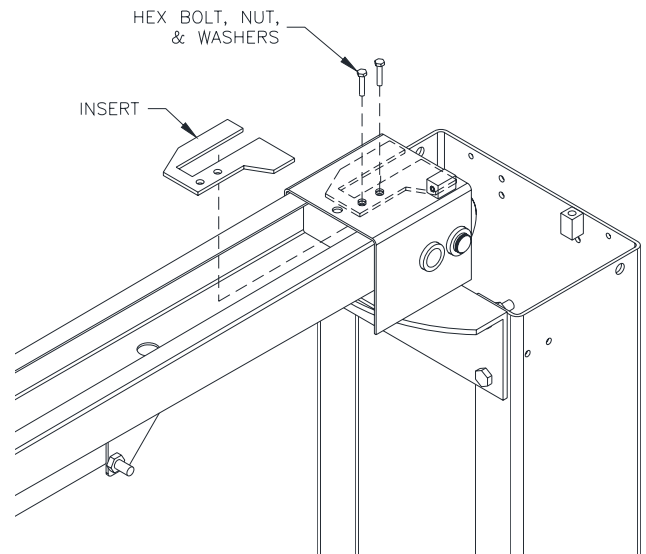
**Fig 13a – Cable Attachment Points**



**Fig 13b – Jam Nuts**

CABLE TRAPPING

- 28) Place Cable Trap Plate inside Overhead and slide into end of Overhead. Bolt plate to Overhead end using (2 Sets) M6 bolt, nut, flat washer, and lock washer as shown in **Fig 14**. Repeat for both sides.

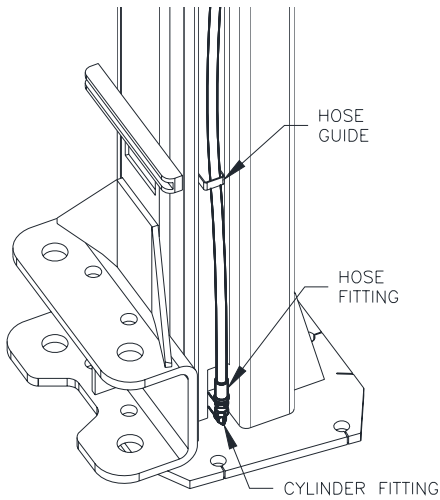


**Fig 14 – Cable Trapping**



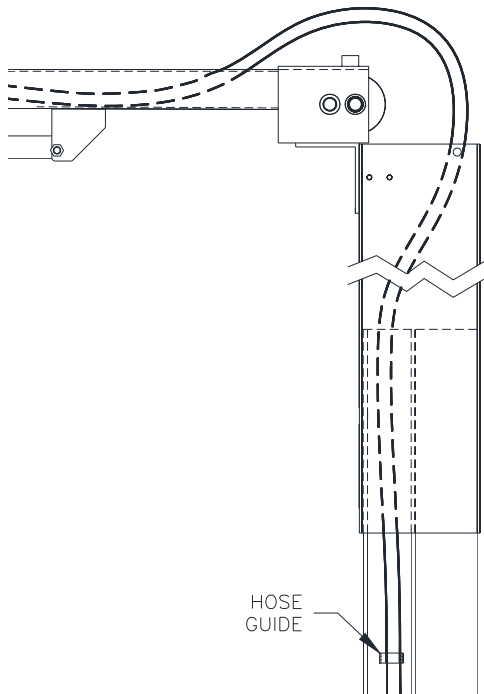
HYDRAULIC HOSES

- 29) Attach Power Hose to Cylinder Fitting at the bottom of the Power Column as shown in **Fig 15** below. Repeat with longer Idler Hose and Idler Column.



**Fig 15 – Bottom Hose Connection**

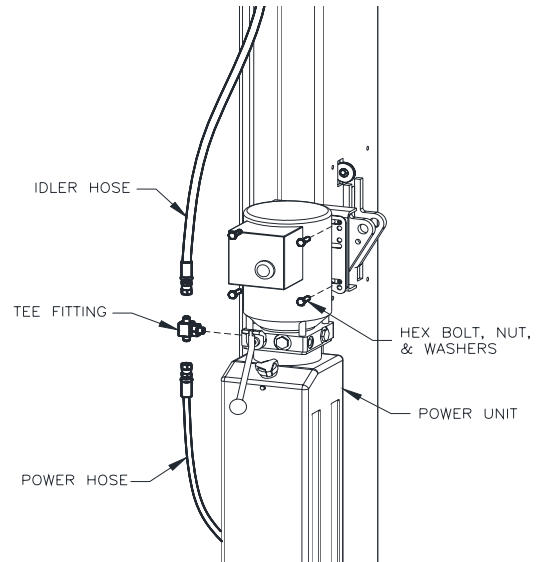
- 30) Route hoses through hose guides in Column. Run Idler hose up through Column Extension, over the top of the Overhead, and down through the opposite Column Extension as shown in **Fig 16** below.



**Fig 16 – Hose Routing**

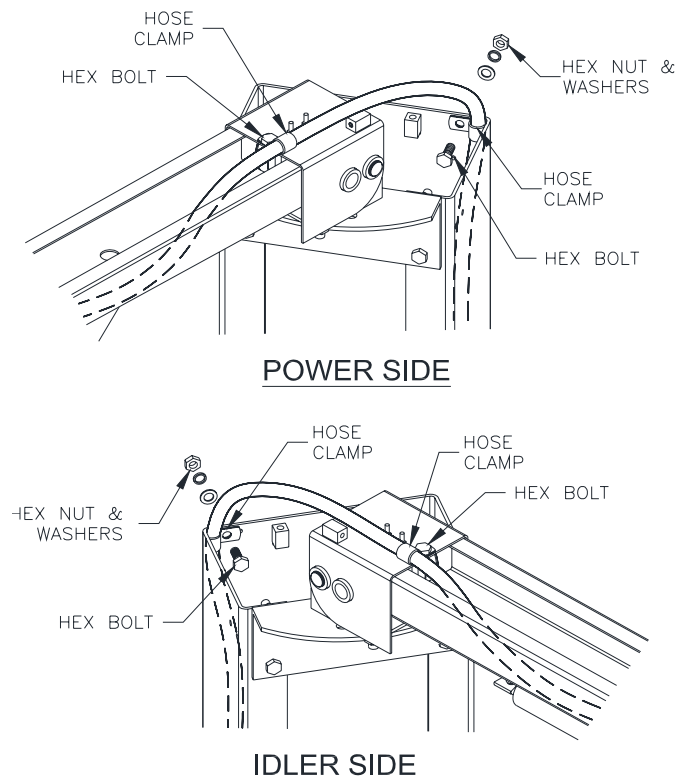
- 31) Assemble Power Unit, Tee Fitting, and hoses together as shown in **Fig 17**. Use (4 sets) M8 bolt, nut, flat washer, and lock washer to attach Power Unit to column bracket. Use Extension

Hose between Idler Hose and Tee Fitting if necessary.



**Fig 17 – Power Unit Assembly**

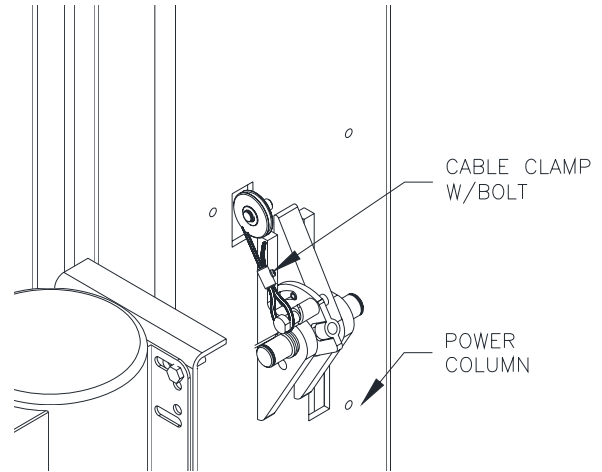
- 32) Clamp the Idler Hose to the Overhead and Column Extensions using a (1 set) hose clamp, M10 x 20 hex bolt, nut, flat washer, and lock washer as shown in **Fig 18** below. For both the Symmetric and Asymmetric configuration, the hose clamp in the Column Extension should be on the same side as the hose guides welded on the Columns. **IMPORTANT: ENSURE HOSE DOES NOT CONTACT CYLINDERS WHEN LIFT IS FULLY RAISED.**



**Fig 18 – Hydraulic Hose Routing**

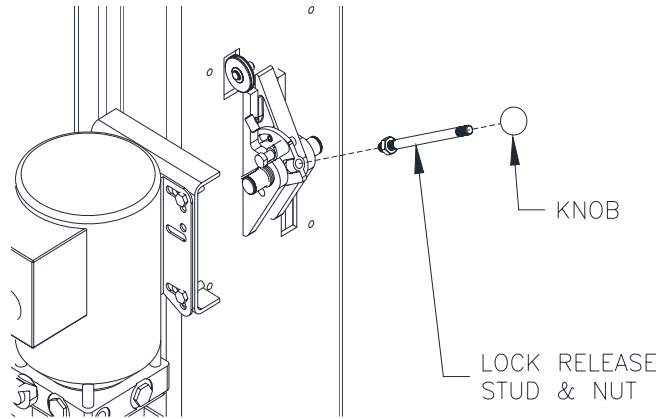
LOCK RELEASE

- 33) While the carriages are still sitting in the locks from the previous steps, route the Lock Release Cable assembly (Loop End) through the Idler Column opening, around the pulley and attach to the Lock Release Cam as seen in **Fig 19a**.
- 34) Continue routing the cable up the inside of the Idler Column and through guide block at top of Column Extension. Then route cable through Flexible Guide Tube and guide block on top of Overhead. Insert ends of Flexible Guide Tube into guide blocks. See **Fig 19b**. Reverse this step for the Power side. **IMPORTANT: ENSURE FLEXIBLE GUIDE TUBE DOES NOT CONTACT CYLINDERS WHEN LIFT IS FULLY RAISED.**
- 35) Continue routing the cable down the inside of the Power Column and out through the column opening and around the Upper Pulley as seen in **Fig 19c**. Insert the Lock Release Cable through the Cable Clamp Tube and loop the remaining cable around the pin of the Lock Release Cam. Remove all slack in the cable until cam on Idler side is rotated as shown in **Fig. 19a** and tighten the clamp bolt.

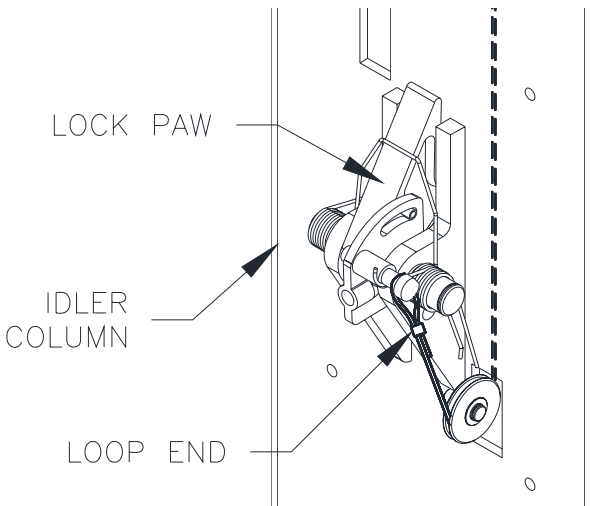


**Fig 19c – Lock Release (Power Side)**

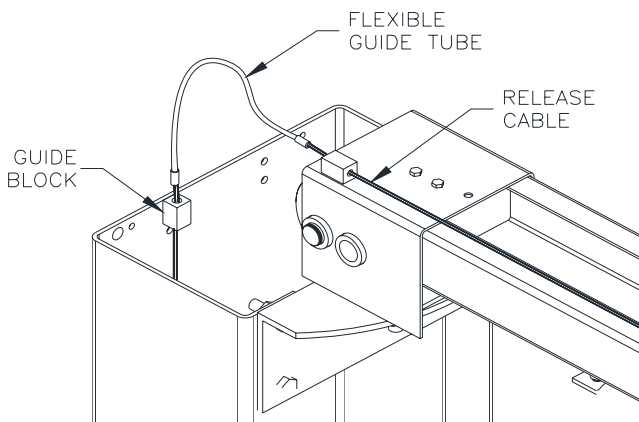
- 36) Attach Lock Release Stud and M10 Hex Jam Nut to Lock Release Cam. See **Fig 20**.



**Fig 20 – Lock Release Cover**



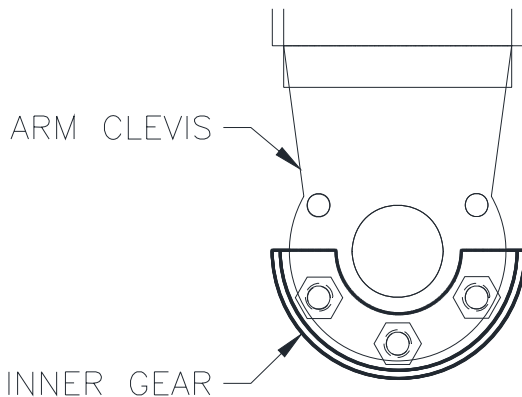
**Fig 19a – Lock Release (Idler Side)**



**Fig 19b – Lock Release (Idler Side)**

#### SYMMETRIC ARM INSTALLATION

- 37) For Asymmetric installation, skip to step 39. Ensure the Inner Gear is positioned on the arms as shown in **Fig 21**. Lubricate the Arm Pin or carriage arm pin hole with “anti-seize” and install the arms. Place snap ring in groove on bottom of arm pin. Ensure that the arm restraint gears engage and disengage properly. Arm restraint gears should disengage completely when lift is fully lowered. When gears are engaged, Outer Gear should lower enough for top of teeth to be level with top of Inner Gear teeth. If any binding occurs, adjust Inner Gear as necessary.

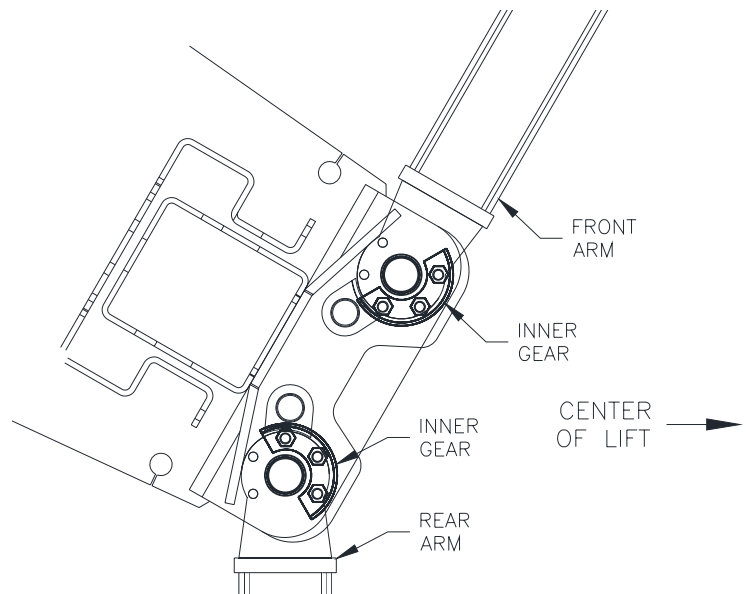


**Fig 21 – Symmetric Inner Gear**

- 38) Extend the Foot Pad to both extents and apply “anti-seize” to the three retaining rings and where the double screw makes contact with the base of the Foot Pad.

#### ASYMMETRIC ARM INSTALLATION

- 39) With arms spread open, Inner Gear should be rotated to face center of lift for all (4) arms as shown in **Fig 22**. Lubricate the Arm Pin or carriage arm pin hole with “anti-seize” and install the arms. Place snap ring in groove on bottom of Arm Pin. Ensure that the arm restraint gears engage and disengage properly. Arm restraint gears should disengage completely when lift is fully lowered. When gears are engaged, Outer Gear should lower enough for top of teeth to be level with top of Inner Gear teeth. If any binding occurs, adjust Inner Gear as necessary.



**Fig 22 – Asymmetric Inner Gear**

- 40) Extend the Foot Pad to both extents and apply “anti-seize” to the three retaining rings and where the double screw makes contact with the base of the Foot Pad.

**BE CERTAIN ALL FITTINGS AND CONNECTIONS ARE TIGHT. IT IS THE INSTALLERS RESPONSIBILITY TO INSURE THE SYSTEM IS LEAK-FREE.** Fill the Power Unit with three gallons of clean 10wt anti-foam, anti-rust hydraulic oil or Dexron III ATF. **DO NOT USE OILS WITH DETERGENTS.**

#### ELECTRICAL

- 41) Refer to **Fig 24 Wiring Diagram** for all steps under this heading.

##### Single Phase

- 42) After routing Overhead Limit Switch wires through hole in Overhead and along the hydraulic line to the power unit, connect the Overhead Limit Switch Cord to Power Unit as shown.
- 43) Connect Power Unit to suitable electrical source as shown.

##### Three Phase

- 44) Power unit is factory wired for 240 volt. Refer to wiring diagram or motor plate for optional voltages.
- 45) Connect Contactor Enclosure to column. Mounting hardware should be centered on the column side to side to avoid the path of the slide blocks.
- 46) Connect Overhead Limit Switch Cord to Contactor as shown.
- 47) Connect Contactor to Power unit as shown. Connect Contactor to suitable electrical source as shown.

**IMPORTANT:** AFTER WIRING HAS BEEN COMPLETED, TEST OPERATION OF POWER UNIT & OVERHEAD LIMIT SWITCH. WHILE RAISING LIFT, OPERATE OVERHEAD SHUTOFF BAR. POWER UNIT MOTOR SHOULD STOP WHEN SHUTOFF BAR IS RAISED.

#### COLUMN EXTENSION DECAL PLACEMENT

- 48) Center decal on Idler Column Extension, opposite of the power unit.
- 49) Apply the decal on the drive-in side of the lift.

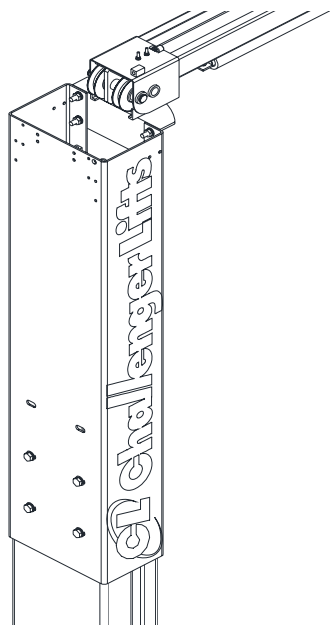


Fig 23 – Column Decal Placement

#### FINAL ADJUSTMENTS

##### HYDRAULICS

- 50) Lower the lift to the floor and raise the lift approximately one foot.
- 51) Start with Idler side first. Slowly and carefully loosen the bleed plug on top of the cylinder just enough to allow the entrapped air to escape. Tighten plug if fluid starts leaking out. Repeat for power side.
- 52) If lift lowers completely before all of the air has escaped, raise lift 6 inches. Repeat step 51 until no air comes out of cylinder.
- 53) Pressure test hydraulic system. Energize power unit, raise lift to full rise and continue to run motor for additional 10 seconds. (NOTE: pressure relief will make a high pitch squeal sound for these 10 seconds.) Check hydraulic system for leaks.
- 54) Energize power unit again for 10 seconds. With a clean rag, wipe down both cylinder rods. (The cylinders are shipped with a small amount of clear anti-corrosive lubricant that will be forced out through the wiper when the lift reaches full rise.) **If lubricant is not wiped clean from the cylinder rod, the cylinder may appear to be leaking.**

##### SYNCHRONIZING CABLES

- 55) Raise lift and insure carriages lower into same lock position.
- 56) Adjust synchronizing cables so the tension is equal in both cables and carriages are firmly sitting on locks.
- 57) Cycle lift to insure that latches engage simultaneously.

##### LOCK RELEASE CABLE

- 58) Install Lock Release Lever and Knob to power side Lock Release cam
- 59) Raise lift to a lock position but don't set into the lock. Pull and release Power Column lock release handle while watching Idler Column lock. Adjust Cable tension by removing slack and retightening cable clamp at the power side. Both locks should engage and disengage simultaneously.
- 60) Install both Lock Release Covers using the M8 x 10 Phillips Screws provided. Knob will need to be removed and re-installed after power side cover is in place.

##### COLUMNS

- 61) Apply grease to all (4) corners inside the columns for the entire length of travel of the slide blocks. Run lift up and down at least once after corners have been fully greased.

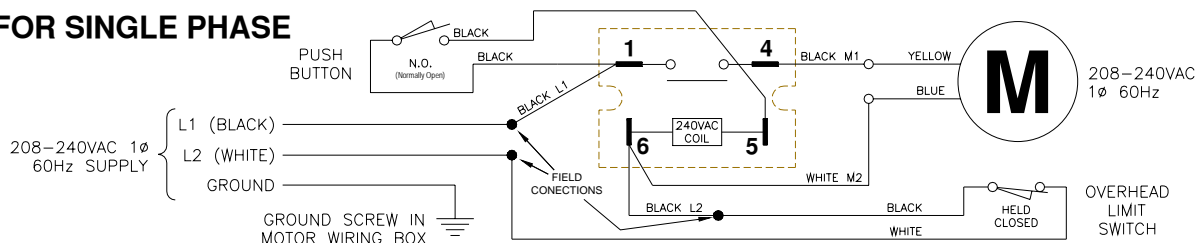
# Wiring Diagram

EACH LIFT SHOULD HAVE A DEDICATED CIRCUIT WITH A DOUBLE POLE (THREE POLE FOR 440-480V) BREAKER OR TIME DELAY FUSE SIZED ACCORDING TO THE FOLLOWING CHART

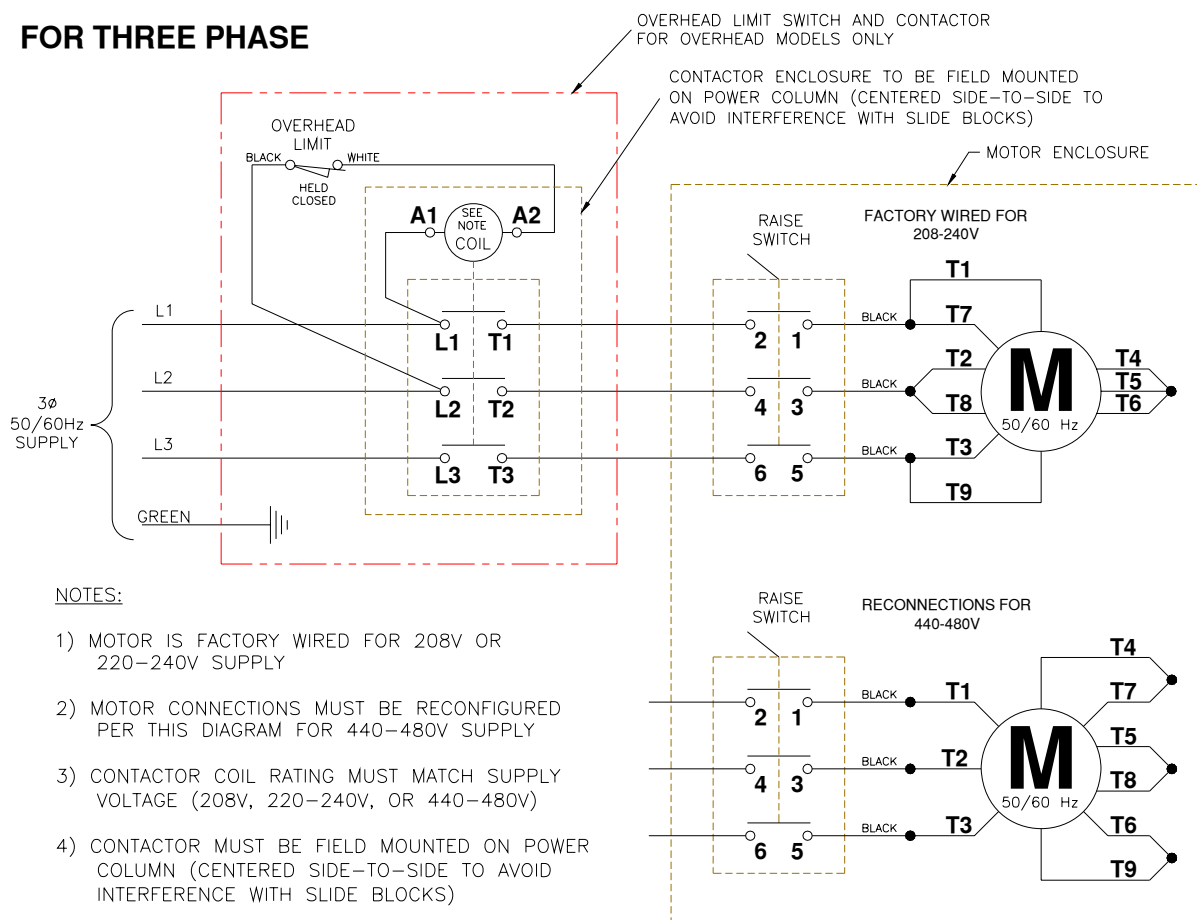
	1 $\phi$ 208-240V	3 $\phi$ 208V	3 $\phi$ 220-240V	3 $\phi$ 440-480V
2Hp	25amp	15amp	15amp	5amp

\* WIRING MUST COMPLY WITH ALL LOCAL ELECTRICAL CODES \*

## FOR SINGLE PHASE



## FOR THREE PHASE



**NOTES:**

- 1) MOTOR IS FACTORY WIRED FOR 208V OR 220-240V SUPPLY
- 2) MOTOR CONNECTIONS MUST BE RECONFIGURED PER THIS DIAGRAM FOR 440-480V SUPPLY
- 3) CONTACTOR COIL RATING MUST MATCH SUPPLY VOLTAGE (208V, 220-240V, OR 440-480V)
- 4) CONTACTOR MUST BE FIELD MOUNTED ON POWER COLUMN (CENTERED SIDE-TO-SIDE TO AVOID INTERFERENCE WITH SLIDE BLOCKS)
- 5) MOTOR ROTATION IS COUNTER CLOCKWISE FROM TOP OF MOTOR

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Fig 24 – Electrical Wiring Diagram

#### OWNER/OPERATOR CHECKLIST

- 62) Demonstrate the operation of the lift to the owner/operator and review correct and safe lifting procedures using the **Lifting It Right** booklet as a guide.
- 63) Complete the Installation Checklist/Warranty Validation questionnaire with the owner. Review the terms of the warranty registration card, and return the card and a copy of the questionnaires to:

*Challenger Lifts, Inc.*  
200 Cabel Street  
Louisville, KY. 40206

### OPERATION PROCEDURE

#### SAFETY NOTICES AND DECALS

**This product is furnished with graphic safety warning labels, which are reproduced on page 3 of these instructions. Do not remove or deface these warning labels, or allow them to be removed or defaced. For your safety, and the safety of others, read and understand all of the safety notices and decals included.**

#### OWNER/EMPLOYER RESPONSIBILITIES

This lift has been designed and constructed according to ANSI/ALI ALCTV-2006 standard. The standard applies to lift manufactures, as well as to owners and employers. The owner/employer's responsibilities as prescribed by ANSI/ALI ALOIM-2000, are summarized below. For exact wording refer to the actual standard provided with this manual in the literature pack.

**The Owner/Employer shall** insure 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/SM 93 -1, ALI Lifting it Right safety manual; ALI/ST-90 ALI Safety Tips card; ANSI/ALI ALOIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; ALI/WL Series, ALI Uniform Warning Label Decals/Placards; and in case of frame engaging lifts, ALI/LP-GUIDE, Vehicle Lifting Points/Quick Reference Guide for Frame Engaging Lifts.

**The Owner/Employer shall** establish procedures to periodically inspect the lift in accordance with the lift manufacturer's instructions or ANSI/ALI ALOIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and the employer shall insure that the lift inspectors are qualified and that they are adequately trained in the inspection of the lift.

**The Owner/Employer shall** establish procedures to periodically maintain the lift in accordance with the lift manufacturer's instructions or ANSI/ALOIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and the employer shall insure that the lift maintenance personnel are qualified and that they are adequately trained in the maintenance of the lift.

**The Owner/Employer shall** maintain the periodic inspection and maintenance records recommended by the manufacturer or ANSI/ALI ALOIM-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance.

**The Owner/Employer 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-2000, American National Standard for Automotive Lifts-Safety Requirements for Operation, Inspection and Maintenance; and in the case of frame engaging lift, 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.

#### 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. To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).
4. Keep hair, loose clothing, fingers, and all parts of body away from moving parts.
5. Use only as described in this manual. Use only manufacturer's recommended attachments.
6. ALWAYS WEAR SAFETY GLASSES. Everyday eyeglasses only have impact resistant lenses, they are not safety glasses.

#### LIFTING A VEHICLE

- 1) Ensure that the lifting arms are parked, out to full drive thru position.
- 2) Center the vehicle between the columns in the service bay and position the vehicle's center of gravity midpoint between the columns. NOTE: the center of gravity is based on the weight distribution and is not the same as the center point of the vehicle.

**DO NOT EXCEED 2500 POUNDS PER ARM.**

**DO NOT ATTEMPT TO LIFT THE VEHICLE WITH ONLY TWO ARMS, AS THIS WILL VOID THE WARRANTY**

**INSURE THAT THE HIGHEST POINT ON THE VEHICLE WILL CONTACT THE OVERHEAD LIMIT SWITCH BAR.**

**DO NOT PLACE THE VEHICLE IN THE SERVICE BAY BACKWARDS.**

**WHEN LIFTING FRAMED VEHICLES IT IS SUGGESTED THAT YOU USE THE FRAME ENGAGING ADAPTERS (10318) OPTIONAL. FAILURE TO DO SO ON SLICK (UNDERCOATED) AND/OR PITCHED FRAME RAILS MAY RESULT IN PERSONAL OR PROPERTY DAMAGE.**

**REFER TO THE VEHICLE MANUFACTURERS SERVICE MANUAL, TECHNICAL BULLETINS, "VEHICLE LIFTING POINTS GUIDE" (ALI/LP-GUIDE) OR OTHER PUBLICATIONS TO LOCATE THE RECOMMENDED LIFTING POINTS.**

- 3) Position the arms and adapters so all four pads contact the vehicle simultaneously.

**The vehicle should remain level during lifting.**

- 4) Raise the lift until all four wheels are off the ground. Test the stability of the vehicle by attempting to rock the vehicle. Check adapters for secure contact with vehicle lift points. If the vehicle seems unstable, lower the lift and readjust the arms. If the vehicle is stable, raise the vehicle to a height a few inches above the desired working height.
- 5) Lower the vehicle until the safety locks on both columns engage. The vehicle should remain level when both locks are engaged. If one side engages and the other continues to descend, stop lowering the vehicle, raise it several inches, and try to engage both locks.

**Always lower lift into locks before entering the area beneath the vehicle.**

**Always use safety stands when removing or installing heavy components.**

#### LOWERING A VEHICLE

- 1) Insure that the area under the vehicle is clear of personnel and tools.
- 2) Raise the vehicle until both latches are free.
- 3) Disengage the latches by pressing and holding the lock release button.
- 4) Lower the vehicle by depressing the lowering valve handle.

- 5) Continue to lower the vehicle until the carriages stop against the base plate. Retract the extension arms, and park them.

#### MAINTENANCE

To avoid personal injury, permit only qualified personnel to perform maintenance on this equipment. Maintenance personnel should follow lockout/tagout instructions per ANSI Z244.1.

The following maintenance points are suggested as the basis of a routine maintenance program. The actual maintenance program should be tailored to the installation. See ANSI/ALI ALOIM booklet for periodic inspection checklist and maintenance log sheet.

- If lift stops short of full rise or chatters, check fluid level and bleed both cylinders per Installation Instructions.
- Replace all Safety, Warning or Caution Labels if missing or damaged (**See Installation instructions page 3.**)

#### Daily

- Keep lift components clean.
- Check for loose or broken parts.
- Check hydraulic system for fluid leaks.
- Check adapters for damage or excessive wear. Replace as required with genuine Challenger Lifts parts.
- Check lock release activation. When properly adjusted, the idler column lock should rest firmly against the back of the column when engaged.

#### Weekly

- Check synchronizer cables and sheaves for wear. Replace as required with genuine Challenger Lifts parts.
- Check synchronizer cable tension per Installation Instructions. Adjust if necessary.

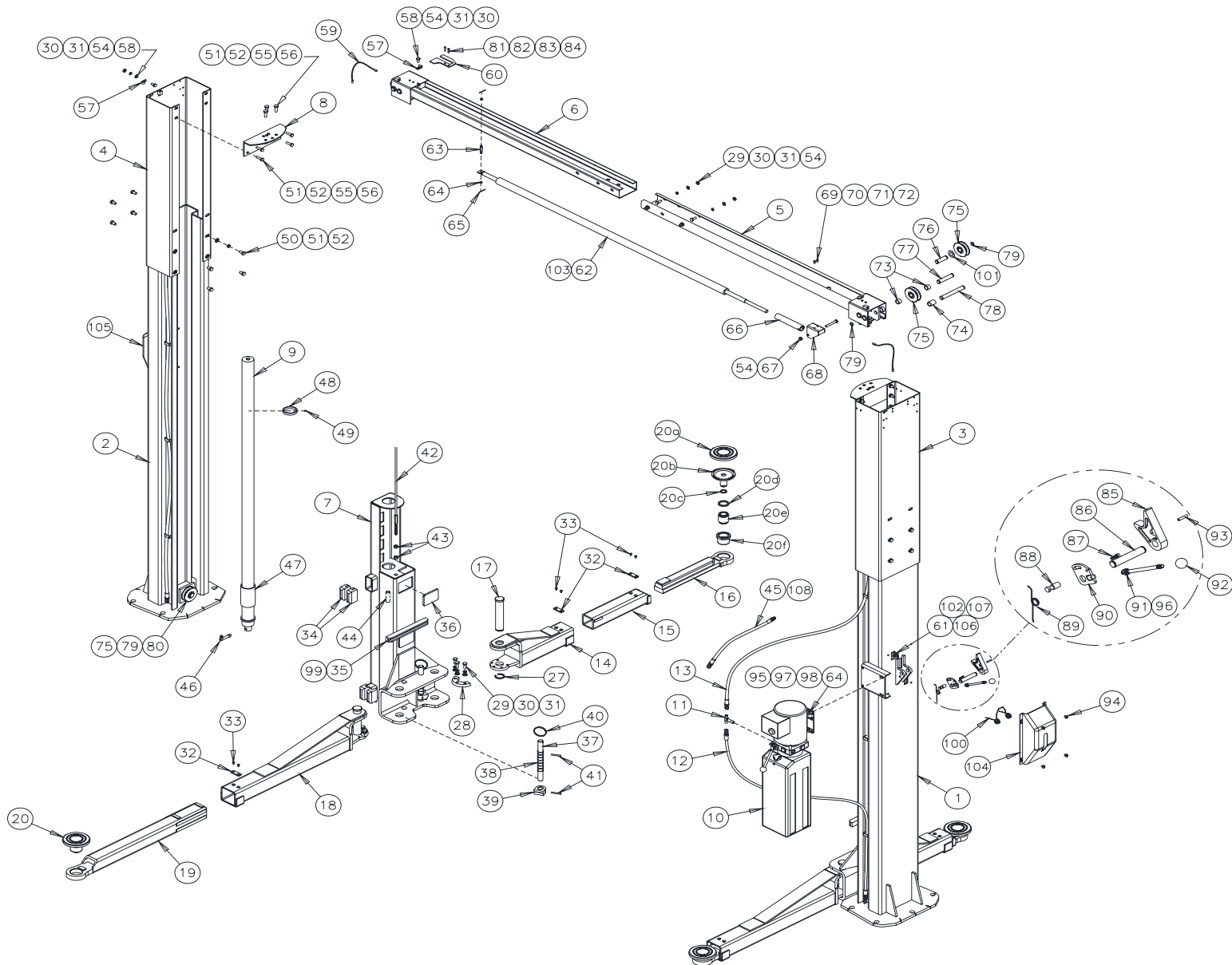
#### Monthly

- Torque concrete anchor bolts to 80 ft-lbs.
- Visually inspect concrete floor for cracks and/or spalls within 12" of base plate
- Check overhead shutoff switch. While raising lift, operate overhead shutoff bar. Power Unit motor should stop when bar is raised.
- Lubricate carriage slide tracks with heavy viscous grease. (Grease all (4) corners of both columns.)
- Visually inspect concrete floor for cracks and/or spalls within 12" of base plate

**If any problems are encountered, contact your local service representative.**

**If any problems are encountered, contact your local Challenger Service Representativ**

Model SA10  
 Installation, Operation and Maintenance  
**PARTS BREAKDOWN**



**IMPORTANT**

Replace all worn or broken parts with **genuine Challenger Lifts, Inc. parts**. Contact your local Challenger Lifts parts distributor for pricing and availability. Call Challenger Lifts, Inc. at **(502) 625-0700** for the distributor in your area.



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Installation, Operation and Maintenance

<u>Item #</u>	<u>Part #</u>	<u>Qty.</u>	<u>Description</u>	<u>Item #</u>	<u>Part #</u>	<u>Qty.</u>	<u>Description</u>
1	3W-01A	1	Power Column Weld	31	B31037	22	M10 Spring Lock Washer
2	3W-01B	1	Idler Column Weld	32	3W-04-18	6	Arm Stop Insert
3	3W-01-05A	1	Power Column Extension Weld	33	VS10-31-08	12	M8 x 10 Flat Head Phillips Screw
4	3W-01-05B	1	Idler Column Extension Weld	34	3W-02-11	16	Carriage Slide Block
5	3W-03A	1	Power Overhead Weld	35	3W-06-03	2	Rubber Bumper Insert
6	3W-03B	1	Idler Overhead Weld	36	3W-06-16	4	Access Cover
7	3W-02	2	Carriage Weld	37	3W-02-14	4	Arm Restraint Gear Shaft
8	3W-03-07	2	Overhead Mounting Bracket	38	3W-02-15	4	Arm Restraint Shaft Spring
9	39097R	2	Cylinder	39	3W-02-13	4	Outer Arm Restraint Gear
10	AB-9367	1	Power Unit	40	3W-02-16	4	Pull Ring
11	3W-06-15	1	Tee Fitting	41	3W-10-01	8	M6 x 50 Roll Pin
12	3W-06-06	1	Power Hose Assembly	42	3W-06-08	2	Synchronization Cable
13	3W-06-07	1	Idler Hose Assembly	43	HJNM12	8	M12 Hex Jam Nut
14	3W-04-20	2	Front Female Arm Weld	44	3W-06-18	1	Cable Spacer (Asymmetric Only)
15	3W-04-23	2	Front Intermediate Weld	45	3W-06-05	1	Hose Extension Assembly (if needed)
16	3W-04-28	2	Front Male Weld	46	3W-01-25	2	Cylinder Elbow Fitting
17	3W-02-12	4	Arm Pin	47	3W-02-18	2	Cylinder Sleeve
18	3W-04-02	2	Rear Female Weld	48	3W-02-19	2	Cylinder Clamp Ring
19	3W-04-09	2	Rear Male Weld	49	3W-10-02	2	6 dia. x 20mm Set Screw
20	B2260	4	<u>Foot Pad Assembly</u>	50	17314	16	M12 x 20 Hex Bolt
20a	B2208	1	<i>Rubber Insert</i>	51	X10-038	30	M12 Flat Washer
20b	B2262	1	<i>Foot Pad Weld</i>	52	X10-039	30	M12 Spring Lock Washer
20c	B17256	1	<i>2 dia. x 30mm Retaining Ring</i>	53	B1068	6	M10 x 25 Hex Bolt
20d	B17257	2	<i>3 dia. x 45mm Retaining Ring</i>	54	HNM10	11	M10 Hex Nut
20e	B2261	1	<i>Threaded Sleeve</i>	55	VS10-40-13	14	M12 x 35 Hex Bolt
20f	B17276-1	1	<i>Threaded Insert</i>	56	HNM12	14	M12 Hex Nut
27	3W-06-01	4	Arm Pin Retaining Ring	57	3W-10-15	4	Hose Clamp
28	3W-04-17	4	Inner Arm Restraint Gear	58	MR6-002	10	M10 x 20 Hex Bolt
29	HEXHM1025	12	M10 x 30 Hex Bolt	59	3W-01-20	2	Flexible Guide Tube
30	X10-073	22	M10 Flat Washer	60	3W-03-18	2	Cable Trap Plate

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<u>Item #</u>	<u>Part #</u>	<u>Qty.</u>	<u>Description</u>
61	3W-06-19	1	Lock Release Cable Clamp w/M6 Screw
62	3W-03-13	1	Shutoff Bar Weld
63	3W-03-16	1	Shutoff Pivot Pin
64	VS10-10-26	6	M8 Flat Washer
65	VS10-20-11	2	M3 x 26mm Cotter Pin
66	12045	1	Overhead Limit Switch
67	HEXHM1070	1	M10 x 70 Hex Bolt
68	3W-03-17	1	Shutoff Mounting Bracket
69	3W-10-3	2	M4 x 12 Phillips Head Screw
70	HNM4	2	M4 Hex Nut
71	3W-10-04	2	M4 Flat Washer
72	3W-10-05	2	M4 Lock Washer
73	3W-03-09B	4	17mm Sheave Spacer (Asymmetric Only)
74	3W-03-09	2	34mm Sheave Spacer (Symmetric Only)
75	3W-01-04-03	6	Cable Sheave
76	3W-03-12	2	Short Sheave Pin (Asymmetric Only)
77	3W-03-11	2	Medium Sheave Pin (Asymmetric Only)
78	3W-03-10	2	Long Sheave Pin (Symmetric Only)
79	SR-0121	10	M19 Snap Ring
80	3W-01-04-05	2	Sheave Retaining Bolt
81	X10-051	4	M6 x 20 Hex Bolt
82	X10-034	4	M6 Hex Nut
83	X10-032	4	M6 Flat Washer
84	X10-033	4	M6 Lock Washer

<u>Item #</u>	<u>Part #</u>	<u>Qty.</u>	<u>Description</u>
85	3W-01-08	2	Lock Paw
86	3W-01-14	2	Lock Clevis Pin
87	QRJ9-41	2	M6 x 20 Socket Head Cap Screw
88	3W-01-16	2	Lock Release Cam Pin
89	3W-01-06	2	Lock Spring (Cam)
90	3W-01-19	2	Lock Release Cam
91	3W-01-17	1	Lock Release Lever
92	3W-01-22	1	Knob
93	X10-027	2	M6 x 35 Roll Pin
94	3W-10-06	8	M8 x 10 Phillips Head Screw
95	MR6-008	4	M8 Spring Lock Washer
96	HJNM10	1	M10 Hex Jam Nut
97	MR6-009	4	M8 x 25 Hex Bolt
98	X10-048	4	M8 Hex Nut
99	Q4P09-006	2	M8 x 20 Socket Head Cap Screw
100	3W-01-13	2	Lock Spring (Paw)
101	3W-10-07	2	M22 Flat Washer (Asymmetric Only)
102	3W-06-11	1	Lock Release Cable
103	3W-03-15	1	Shutoff Bar Cover
104	3W-01-11-01	1	Power Lock Cover
105	3W-01-11-02	1	Idler Lock Cover
106	3W-01-18	2	Lock Pulley
107	VS10-10-27	2	M9 Snap Ring
108	3W-06-04	1	Hose Extension Connector

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NOTES