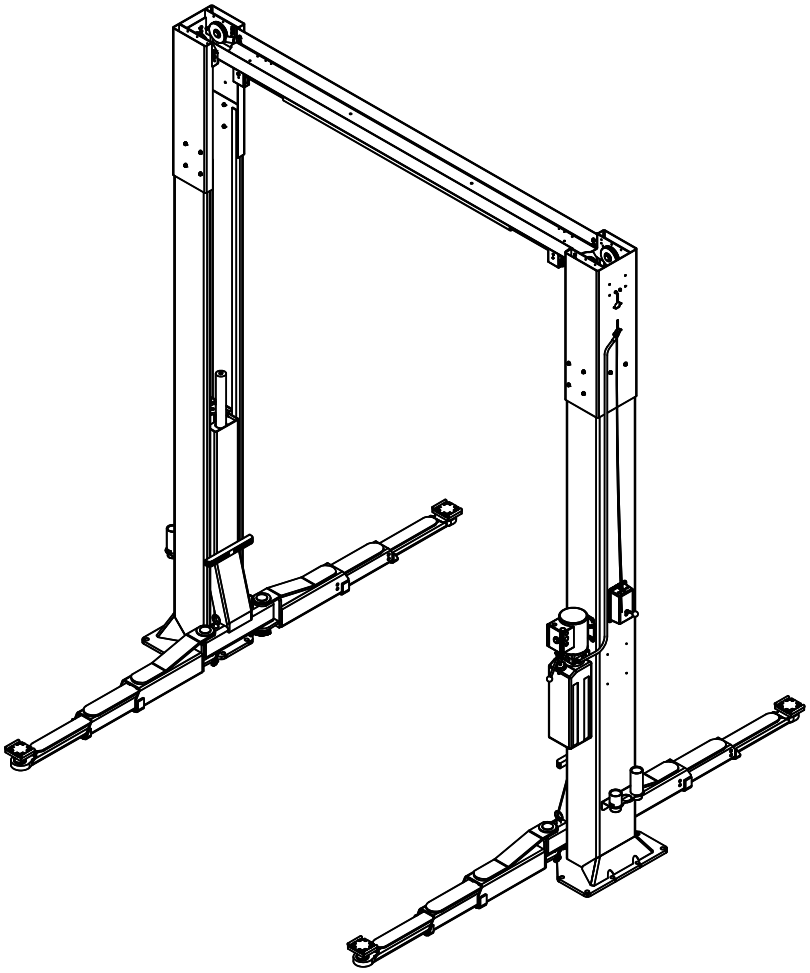
Installation, Operation & Maintenance Manual
Two Post Surface Mounted Lift



MODEL CL12A

12,000 LBS. CAPACITY
3000 LBS. PER ARM

2311 South Park Rd, Louisville, Kentucky 40219
Email:sales@challengerlifts.com Web site:www.challengerlifts.com

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

IMPORTANT: READ THIS MANUAL COMPLETELY BEFORE INSTALLING or OPERATING LIFT

Rev. 01/23/2023

GENERAL SPECIFICATIONS – STANDARD AND QUICK CYCLE (CL12A-HT AND CL12A-HT-QC)

See Figure 1	CL12A-LC	CL12A (-6")	CL12A (MAX)	CL12A-1 (-6")	CL12A-1 (MAX)	CL12A-2 (-6")	CL12A-2 (MAX)
A Column Height	**143" [11'-11"]**	**158" [13'- 2"]**	**164" [13'-8"]**	**170" [14'-2"]**	**176" [14'- 8"]**	**182" [15'-2"]**	**188" [15'- 8"]**
Ceiling Height Required	**144" [12']**	**159"**	**165"**	**171"**	**177"**	**183"**	**189"**
B Floor to Overhead Switch	**136 ½"**	**152"**	**158"**	**164"**	**170"**	**176"**	**182"**
C Rise Height (Screw Pads Highest Position)	**74 ¾"**	**78 ¾"**					
Cylinder Stroke	**68"**	**72"**					
D Screw Pad Height	**5"** to **6 5/8"**						
Stack Adapter Height	**3"** & **6"**						
E Overall Width (3 OPTIONS AT INSTALL)	(-12") **142"**	(-6") **148"**	(MAX) **154"**				
F Inside of Columns	(-12") **114 ½"**	(-6") 120 ½"	(MAX) **126 ½"**				
G To Nearest Obstruction	(-12") **7'-0"**	(-6") **7'-3"**	(MAX) **7'-6"**				
Drive Thru Clearance	(-12") **103 ½"**	(-6") **109 ½"**	(MAX) **115 ½"**				
* Lifting Capacity* (Hydraulic Pressure at Cap.)	**12,000 lbs**. (**3000 lbs**. Per Arm) **(3200 psi)**						
** Rise Time (approx..)	**60 Sec**.	**63 Sec.**					
Motor	**2HP, Single Phase, 60Hz, 208/230** Optional – 2HP, Three Phase, 50/60Hz, for 208 or 230 or 460						

* 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.

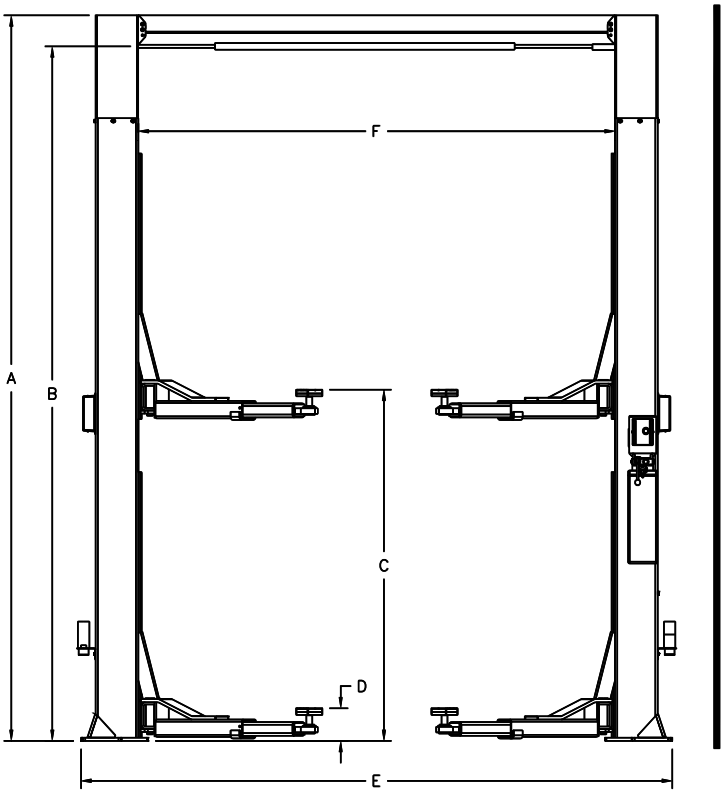


Fig. 1a - General Specifications

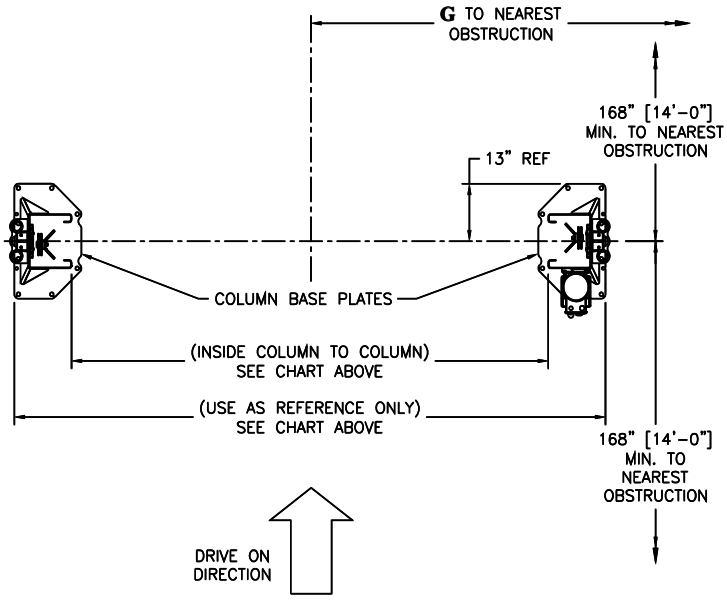


Fig. 1b - Service Bay Layout

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.

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

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, it is necessary to have a dedicated circuit with circuit breaker or time delay fuse. Refer to wiring diagram for circuit sizing.

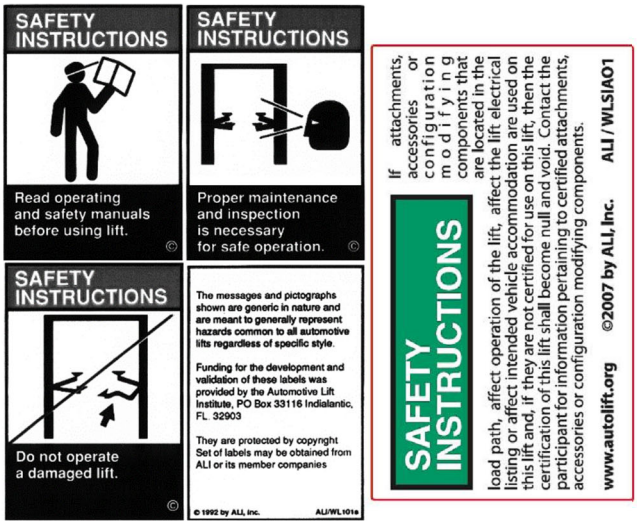
Safety Notices and Decals

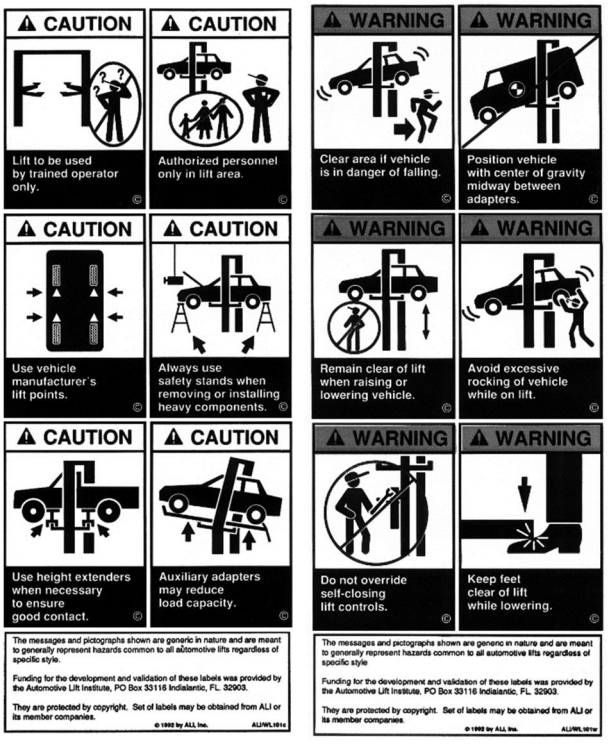
For your safety, and the safety of others, read and understand all of the safety notices and decals included here.

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. 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.**





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
12809*-P	1	POWER COLUMN ASSEMBLY
12809*-I	1	IDLER COLUMN ASSEMBLY
CL12A-HW-A	1	HARDWARE BOX
12503-3S	1	3-STAGE ARM PACK
12820-143	2	COLUMN EXT. ASSY CL12A-LC
12820-164		COLUMN EXT. ASSY CL12A-0
12820-176		COLUMN EXT. ASSY CL12A-1
12820-188		COLUMN EXT. ASSY CL12A-2
12815	1	OVERHEAD BEAM
A2066	1	OVERHEAD SHUTOFF BAR ASSY
B2064-01	1	OVERHEAD LIMIT SWITCH
12803-*	1	SYNC. CABLE PACK
12804-*	1	LOCK RELEASE CABLE ASS'Y
B2206-6	2	ADAPTER EXTENSION (6")
B2206-3	4	ADAPTER EXTENSION (3")
B2209	2	ADAPTER RACK
AB-9858	1	STANDARD 1 PH POWER UNIT
AB-11530		QC 1 PH POWER UNIT
AD-9858		3 PH POWER UNIT
CL12A-LP-A	1	LITERATURE PACK

INSTALLATION

IMPORTANT: Always wear safety glasses while installing lift.

Tools (minimum required)

a. Tape measure, 16ft
b. Chalk line
c. 4ft level
d. 10" adjustable wrench
e. Standard open end wrenches 7/16", 1/2", (2) 9/16", (2) 11/16", 3/4"
f. 5/16" allen wrench
g. Needle nose pliers
h. Hammer drill with 3/4" dia. carbide tipped bits
i. 2 lb hammer
j. Torque wrench: 150 ft.-lbs. min. w/ 1-1/8" socket
k. 12 ft. stepladder
l. Anti-Seize lubricant (for arm pins and foot pad screw threads and stop rings)

Layout

Note:

x**This lift can be installed at two different heights and three different widths. The Cable adjustment for the Height and Width variations will be accommodated by the Lower Sheave Bracket.**

x**The height and width must be established before beginning, as this will determine the lower sheave position.**

1) Once the general location of the lift has been determined, ensure that the proper conditions exist per **page 3**.
2) Determine which side of the bay the power unit will be located and identify the column assembly with the power unit bracket.
3) Lay out the service bay according to the architect's plans or owner's instructions (see **Fig 1b**–Service Bay Layout). **Failure to install in this orientation can result in personal and property damage.**

Lift Preparation

4) With column assemblies lying flat, remove cable and hose rolls from inside the column.
5) Manually push carriages up enough to unhook the cylinder hose from the base plate tabs. Proceed with pushing the cylinder and carriage up enough to access all five sheave locations on the sheave bracket, see **Fig 3**.

6) Determine the sheave location on the lower bracket based on the overall height and width of the lift at its chosen configuration. Use the General Specifications table from **page 2** and **Fig 2** below.

Note: The column has been assembled with the sheave in the highest position on the bracket for the lift installed at max height and max width.

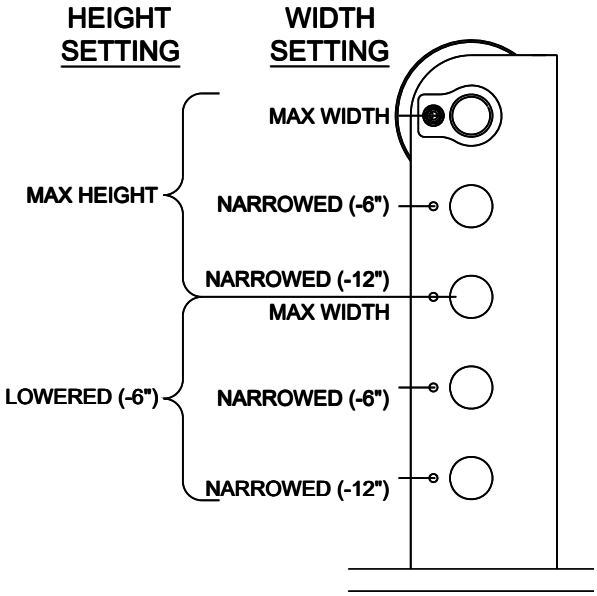


Fig. 2 –Sheave Position in Lower Bracket

7) The sheave must be removed and reassembled to route the synchronizer cable. Remove the bolt, sheave pin, bearing disc, sheave, and spacer bushing, **Fig. 3**.
8) Route a cable through a carriage and out the bottom. Route it back up and into the inside hole at the top of the carriage, see **Fig 3**. **Ensure cables do not twist or wrap around hoses during routing**.
9) Install a nut and jam nut at the cable end, **Fig 3**.
10) Reinstall the sheave. Place the bearing disc inside the bracket centered over the bracket hole based on the chosen install height. Install the cable on the sheave and slide into place. Stack the spacer bushing onto the sheave assembly. Still holding the sheave assembly, slide the pin into place and secure it with the bolt, see **Fig 3**.
11) Pull tension on the free end of the cable and ensure proper routing. While pulling tension on the cable, slide the cylinder and carriage down until the carriage is 8" from the baseplate. Slide the hydraulic cylinder down and route the hydraulic hose around the hose guide tabs to prevent rotation of the cylinder, **Fig 4**. While pulling tension on the cable to avoid kinking, slide the carriage and cylinder down to base of lift.

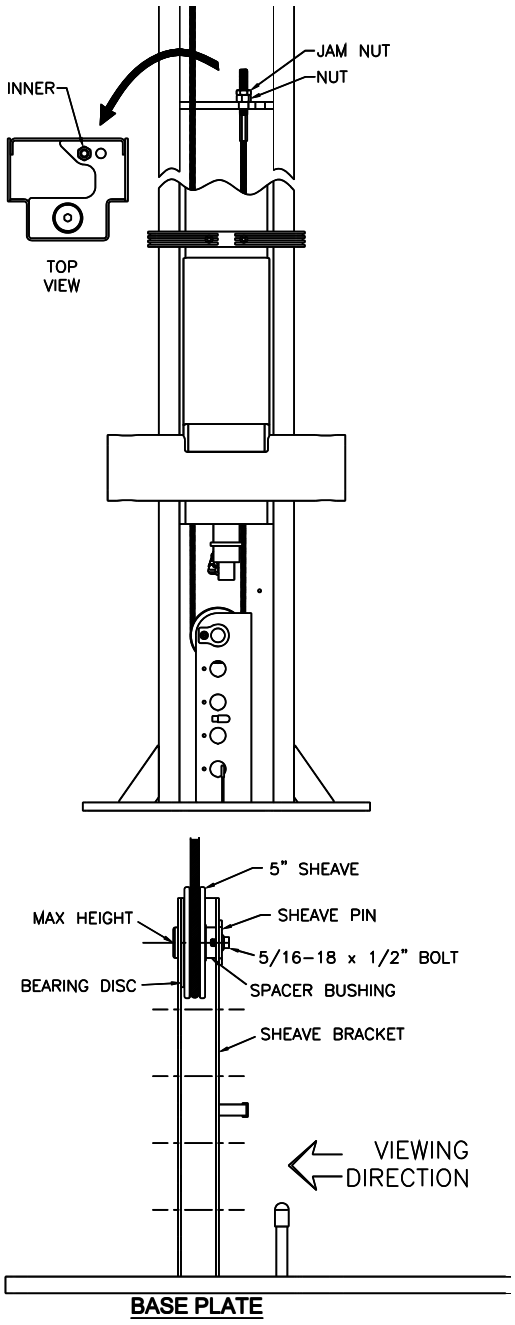


Fig. 3 – Cable Routing

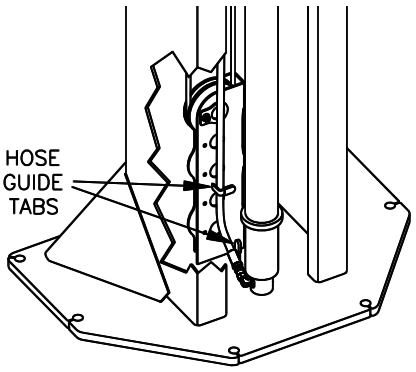


Fig. 4 - Hose Connection

12) Assemble column extension to column by lining up the correct set of holes and using the 3/8”-16 x 3/4" lg. hex flange head bolts, **Fig. 5.**

Note: the column extensions are adjustable by 6” except for the CL12A-LC.

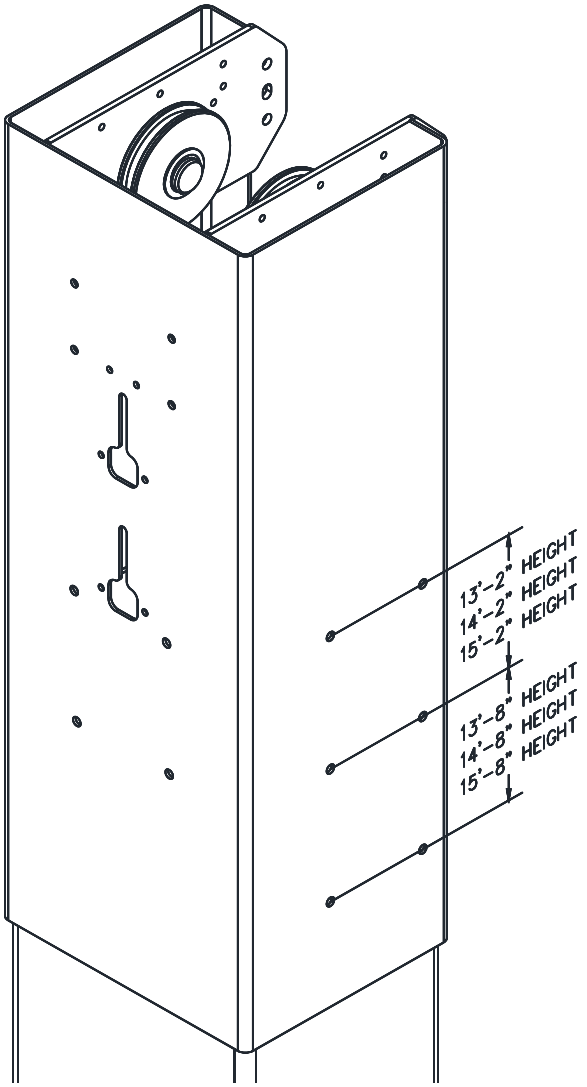


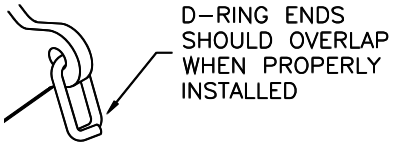
Fig. 5 – Column Extension Assembly

13) Repeat the cable routing / lower sheave install and the column extension install for the other column.

14) Erect and align both column assemblies.

Lock Pawl

15) Install the lock components on the Power & Idler columns as shown in **Fig. 6a & 6b**. The D-Rings used to connect both ends of the Long 3/8 OD Spring act as chain links. Feed one end of the D-Ring through both items and squeeze the link closed with pliers until ends overlap as shown.



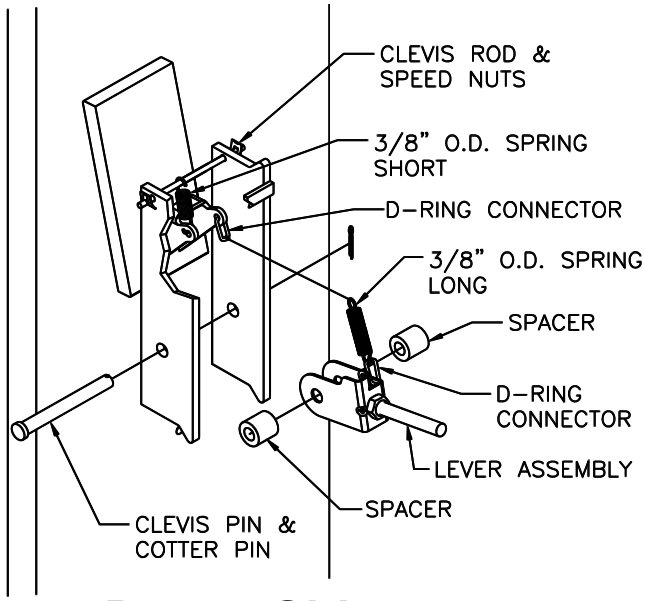


Fig. 6a – Power Locking Pawl Assembly

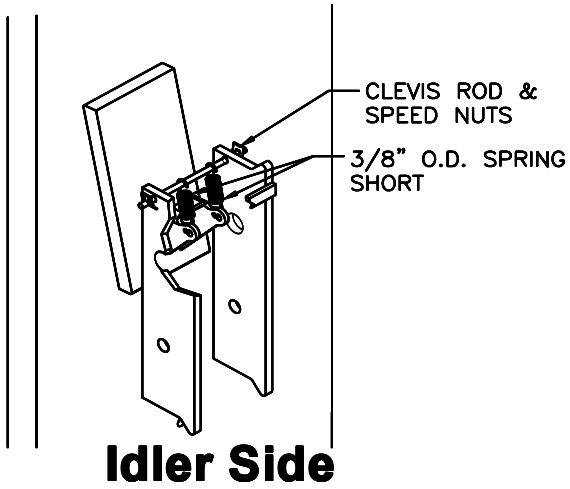


Fig. 6b – Idler Locking Pawl Assembly

Anchoring

- The anchor bolts must be installed at least 8” from any crack, edge, or expansion joint. Recheck the area around both base plates.
- 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.**

16) Recheck “Inside of Columns” dimension (**Fig. 1**).
17) Using the base plate as a template, drill one anchor hole. Drill through the floor if possible or to a depth of 5 inches minimum.
18) Clean the hole inside and out.
19) Assemble a washer and nut to the anchor with nut just below impact section of bolt. Drive the anchor into the hole until the nut is 3/4” above the baseplate (leaving room for shims).

Complete steps 17 thru 19 for the six (6) exposed anchors (one at a time) around each column.

20) Raise both carriages (275 lbs. ea.) high enough to drill the two inner anchor holes on each column. Measure both carriage heights to ensure they are in the same lock position.
21) **IMPORTANT**: Place a safety support inside each column as a backup to the locks, since the hydraulic cylinders are no longer engaged with the carriages.
22) Repeat steps 17 thru 19 for the two (2) anchors under each carriage.
23) Shim both columns to plumb using the shims provided as shown in **Fig. 7**. DO NOT shim more than 1/2" at any given point. Use a level no less than 24” in length to plumb columns.
24) Drive all the anchors until nut and washer contact baseplate.

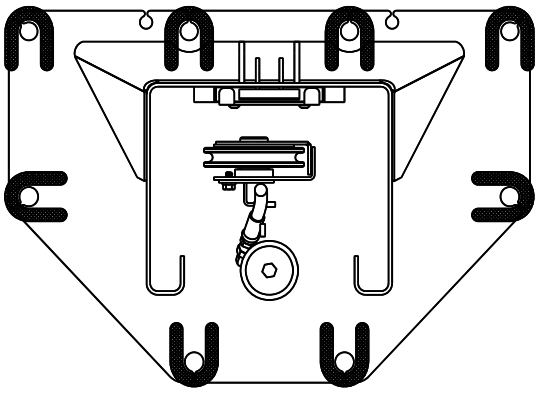


Fig. 7 – Column Shimming

25) Tighten Power Column anchors and recheck column for plumb. Re-shim if necessary. Torque to 150 foot pounds to set anchors.
26) Loosen Idler Column anchors 1/8” and proceed with the Overhead Beam installation.

Overhead

27) Before raising overhead into position install 4 (2 per column) hex flange bolts and nuts in bottom hole of column extension (see Fig. 8 Installation Aid) for temporary support of overhead. Lift overhead assembly up into position and install with 8 each (4 per column) 3/8”-16 x 3/4” lg. hex flange bolts and hex flange nuts per side as shown in **Fig. 8**. For the max width position, the outer overhead holes will be used. For the (-6”) width, use one set of outer overhead holes and one set of inner overhead holes. For the (-12”) width, use the inner sets of overhead holes.

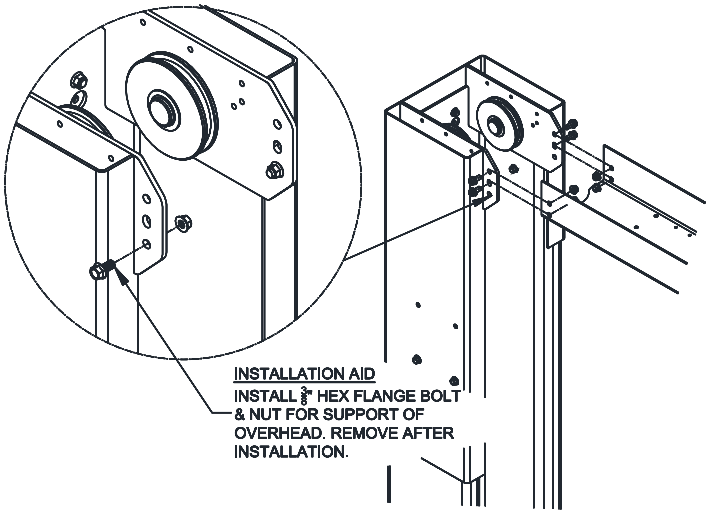


Fig. 8 – Overhead Assembly

28) Check idler column shimming. Use additional shims (see Fig. 7) to remove any gaps that may have been created while installing overhead beam. Tighten anchor bolts and re-check column for plumb. Torque to 150 foot-pounds.

29) Attach the Overhead Limit Switch to the rear set of holes on the Power Side of the Overhead Beam using the hardware already attached to the switch bracket, **Fig. 9.**

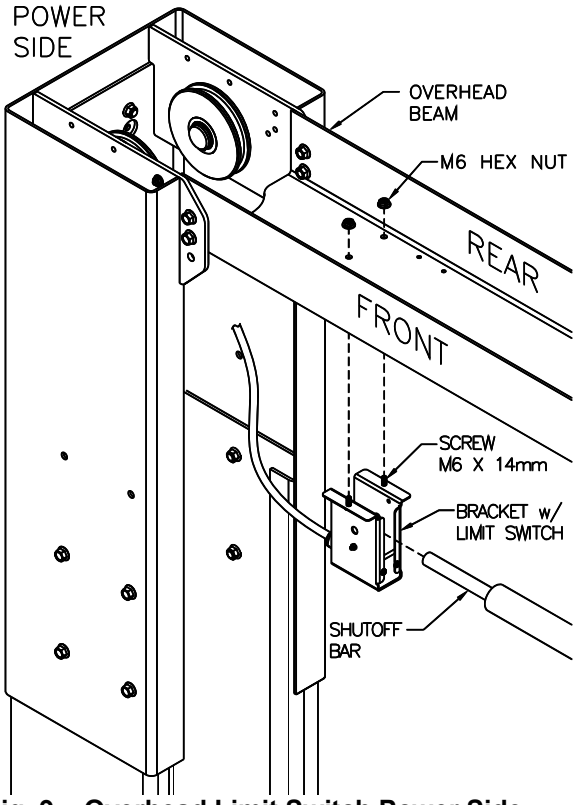


Fig. 9 – Overhead Limit Switch Power Side

30) Repeat for Idler Side – Attach the Idler Bracket to the rear set of holes on the Idler Side of the Overhead Beam using the hardware already attached to the bracket, **Fig. 10. Note the orientation of the Idler Bracket. The narrow slot needs to be facing towards the Power Column.**

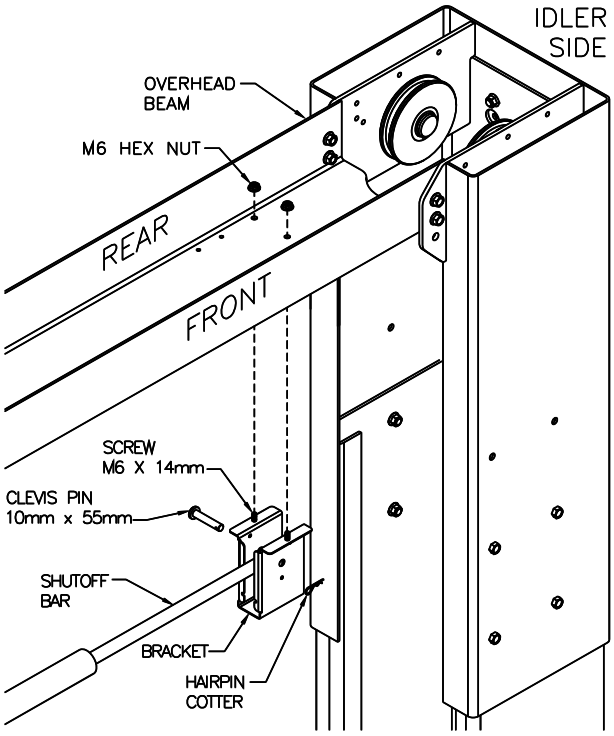


Fig. 10 – Overhead Bracket Idler Side

31) Carefully insert the Shutoff Bar into the Power Side Switch Bracket over the limit switch and pin the Shutoff Bar to the Idler Side Bracket with the 10mm dia. x 55mm Lg. clevis pin & hairpin cotter.

Synchronizer Cables

32) Route the free end of a cable coming out the top of the carriage up and over the upper sheaves and back down the opposite side. Install a 3/8x3 cable trapping bolt with a nut on each side of the overhead support plate at each sheave, **Fig. 11**. Do this for both cables.

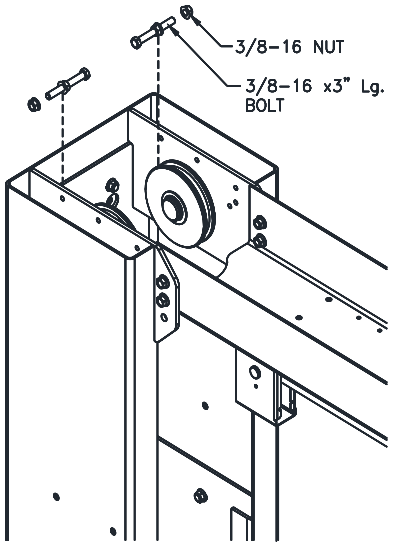


Fig. 11 – Column Ext. Cable Trapping

33) Mount synchronizer cables to carriages as shown in **Fig. 12**.

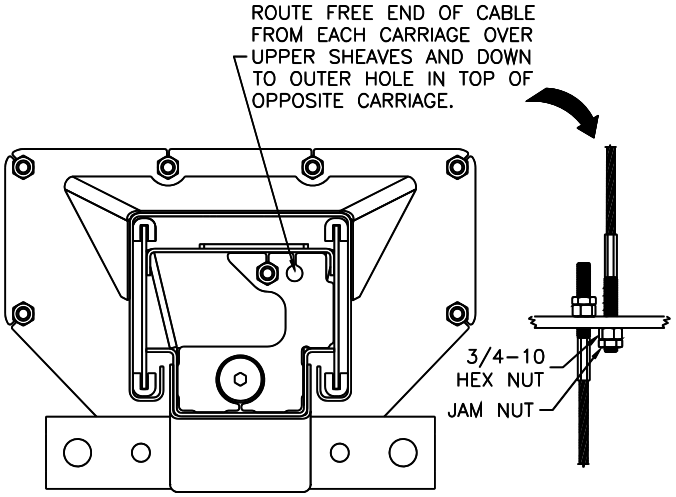


Fig. 12 – Cable Attachment at the Carriage

Hydraulics

IMPORTANT: To ensure proper hose fitting seal without damage to the fitting follow this procedure for each hose connection: Screw flared fitting on finger tight. Rotate flared fitting 1 1/2 hex flats (90 deg.). Back the flared fitting off one full turn. Again tighten flared fitting finger tight, then rotate flared fitting 1 1/2 hex flats (90 deg.).

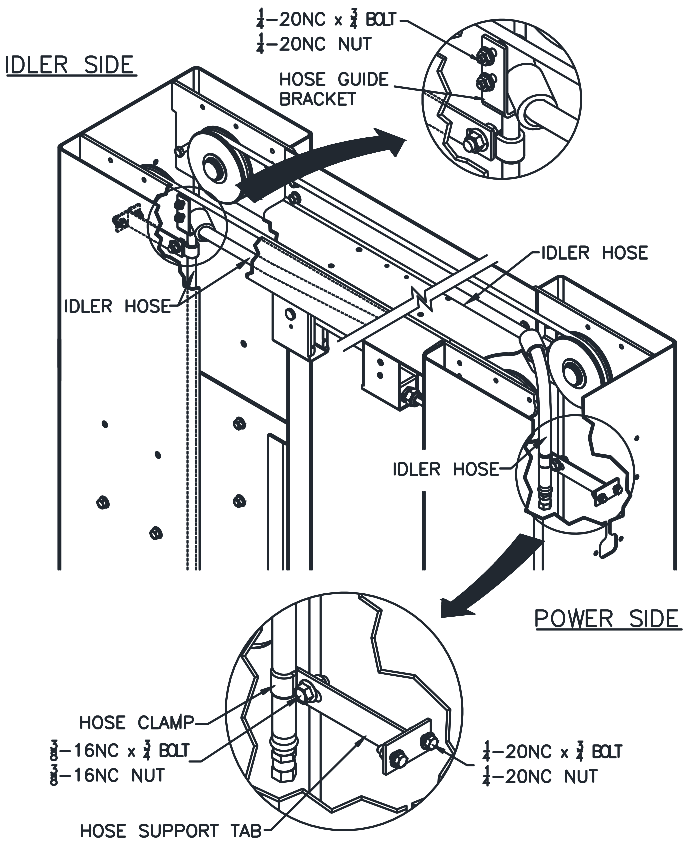


Fig. 13 – Idler Hose Routing & Hose Brackets

34) Install the Hose Guide Brackets and Hose Support Tabs to both the Idler & Power Columns using 1/4"-20NC x 3/4" lg. hex flange bolt and nut, see **Fig 13**.

35) Uncoil Idler side hose and Overhead hose and attach them together. Route the loose end up the Idler Side column extension and attach to the Hose Support Tab with a "P" Clamp, **Fig. 13**. (Each hose clamp requires one 3/8"-16NC x 3/4" lg. hex flange bolt and one hex flange nut.) Remove slack and tighten the clamp.

36) Route hose across overhead through both Hose Guide Brackets, **Fig.13**, and down through the Power Side column extension. Do not attach clamps to the Overhead Hose at this time.

37) Uncoil Power Column hose and loosely attach it to the hydraulic tee fitting (in hardware box). **Note: CL12A-1 & CL12A-2 will require two extension hoses (supplied) to be attached to the tee fitting to extend the power column hose and to the power unit to extend the power unit hose.**

38) Bring the Power Unit Hose and Power Side Hose up the column to the lowest available hole of the column extension. Insert steel tubing end of the Power Unit Hose into the extension (outside in) and loosely connect to the tee. Leave the assembly hanging.

39) Install a steel line clamp and hose clamp on the outside of the power column extension to secure the power unit hose, as shown in **Fig 14**. (Use 1/4"-20NC x 3/4" lg. hex flange bolt, Spacer, and hex flange nut for steel line clamp. The Spacer goes between the Power Side Column Extension and Line Clamp.) **Note: The steel line inside the column should be horizontal.**

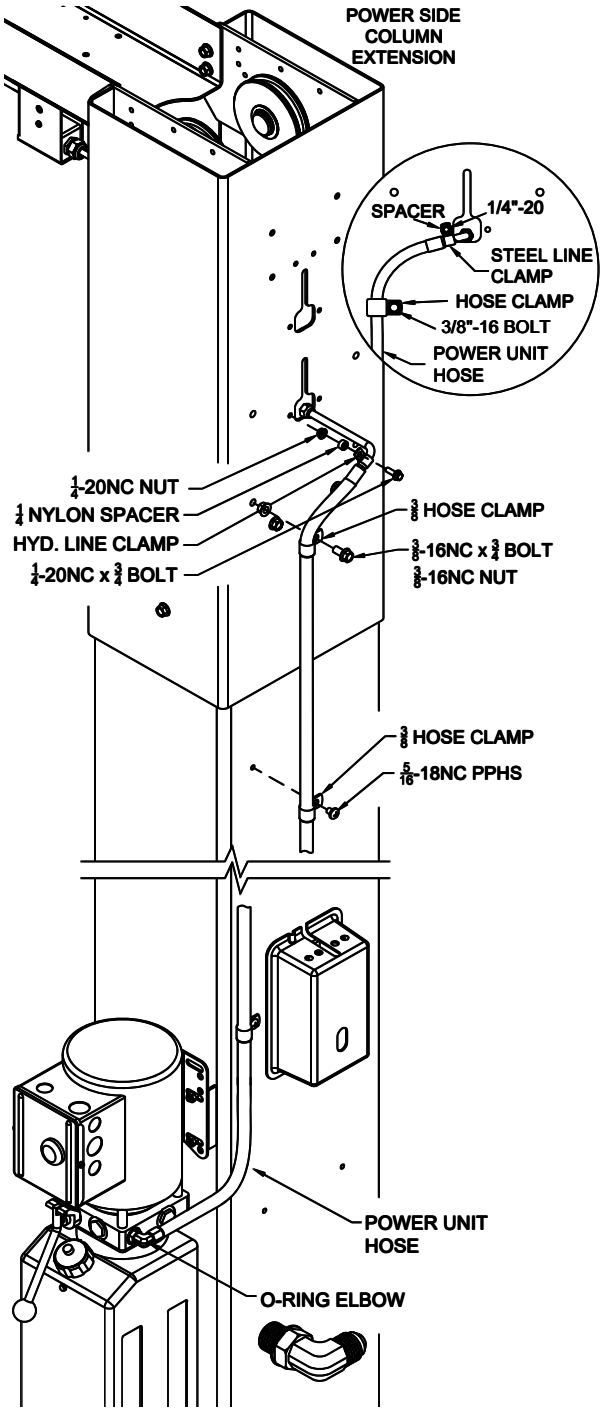
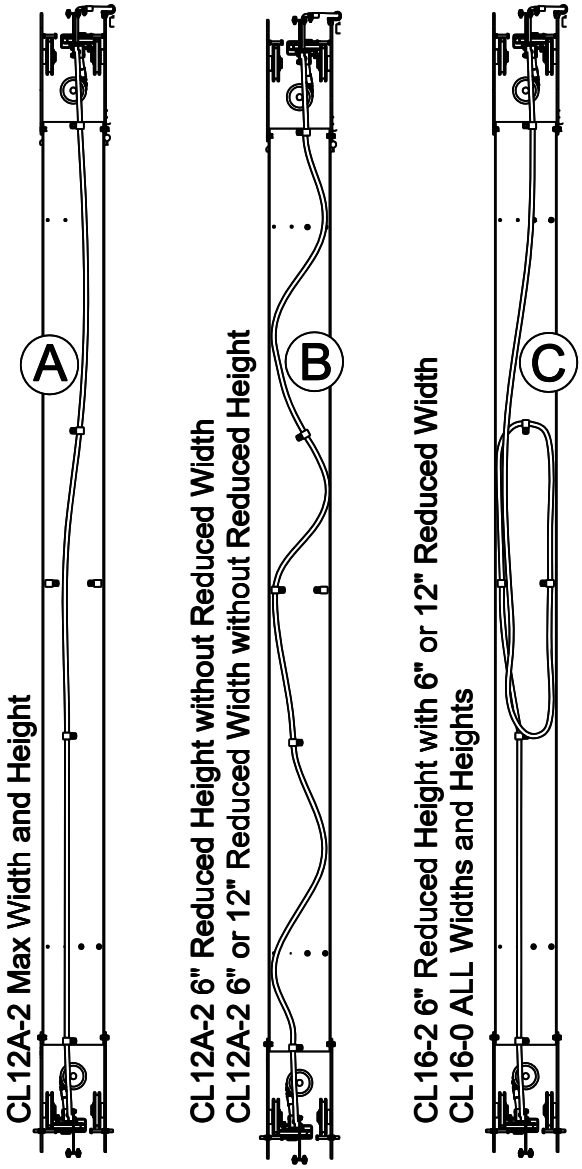


Fig. 14 - Power Unit Hose Clamps

40) If installing a CL12A-LC, CL12A-0 or CL12A-1, use the Routing Diagram C in **Fig 15**. If installing a CL12A-2 use the table in Fig 14 to determine the proper routing diagram A, B, OR C.

HOSE ROUTING DIAGRAMS



HOSE ROUTING TABLE

CL12A-2 HEIGHT	CL12A-2 WIDTH: STD	-6"	-12"
MAX	A	B	B
-6"	B	C	C

Fig. 15 – Overhead Hose Routing Diagram

41) Route the overhead hose based on the lifts height and width. To make a loop, twist the hose. Loosely connect the overhead hose to the other end of the tee.

42) Tighten the three hose fitting connections at the Tee taking care not to twist or change the lay of any hose. Install and tighten the “P” clamp on the power side to hold up the connection to the tee, see **Fig 16**.

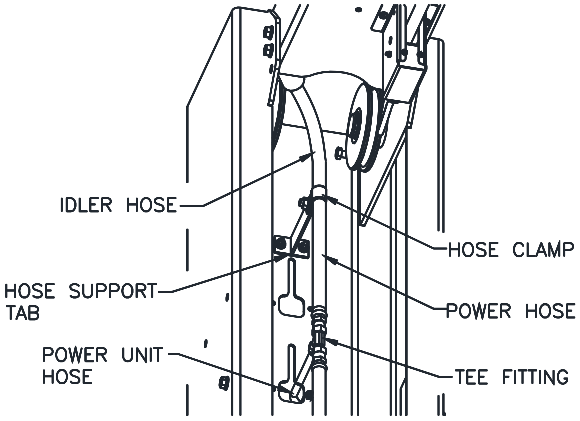


Fig. 16 – Power Side Hose Routing

43) Install the rest of the overhead hose clamps as shown in **Fig 15** depending on the lift configuration.

44) Each column hose should connect to its cylinder with a 90 degree elbow rotated up from horizontal and be routed thru the Hose Guide Tabs as shown in **Fig. 17.**

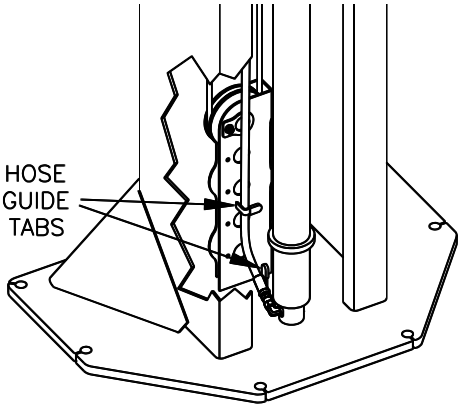


Fig. 17 - Hose Connection

45) Slightly loosen the 90 Degree Fitting jam nut at the bottom of the Power Side Cylinder. Rotate fitting to remove the slack from the power side hose and tighten jam nut. **Note: This is not necessary for the Idler side.**

46) Mount Power Unit to power unit bracket on the column as shown in **Fig. 14**. The mounting hardware, (4) 5/16”-18 hex nuts, are pre-installed on power unit mounting bracket.

47) Install 9/16”-18 O-ring elbow (in hardware box) into power unit, and attach free end of power unit hose to elbow, **Fig.14.**

48) Attach the power unit hose to the column and column extension using the hose clamps, **Fig.14.**

49) **BE CERTAIN ALL FITTINGS AND CONNECTIONS ARE TIGHT. IT IS THE INSTALLERS RESPONSIBILITY TO ENSURE 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.**

LOCK RELEASE

50) Pick one end of the Lock Release Cable Assembly and attach its Threaded Adjustment Sleeve to the Upper Mounting Tab on the power side lock. Insert the adjustment sleeve into the mounting tab notch and position the adjustment sleeve nuts so the bottom of the sleeve sticks out approx. 3/8” from bottom hex jam nut, **Fig. 18a.**

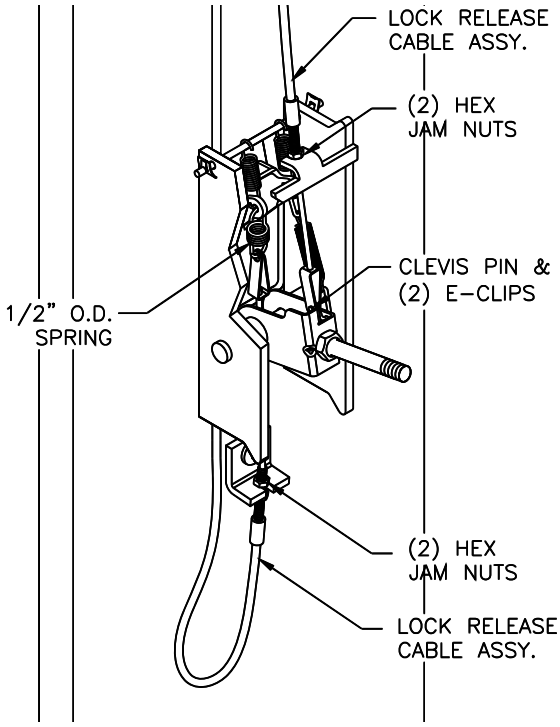


Fig. 18a-Lock Release – Power Side

51) Connect clevis end of the cable assembly to the center tab of the lever assembly using a clevis pin and (2) E-clips, **Fig. 18a.**

52) Route other end of lock release cable up thru power side column extension, over and thru idler side column extension, and down to mounting location on idler column.

53) Attach the Lower Mounting Tab to the idler column using the 5/16-18 x 3/8 long Phillips pan head screw. Rotate slightly to be in-line with connection to lock pawl as shown in **Fig. 18b**.

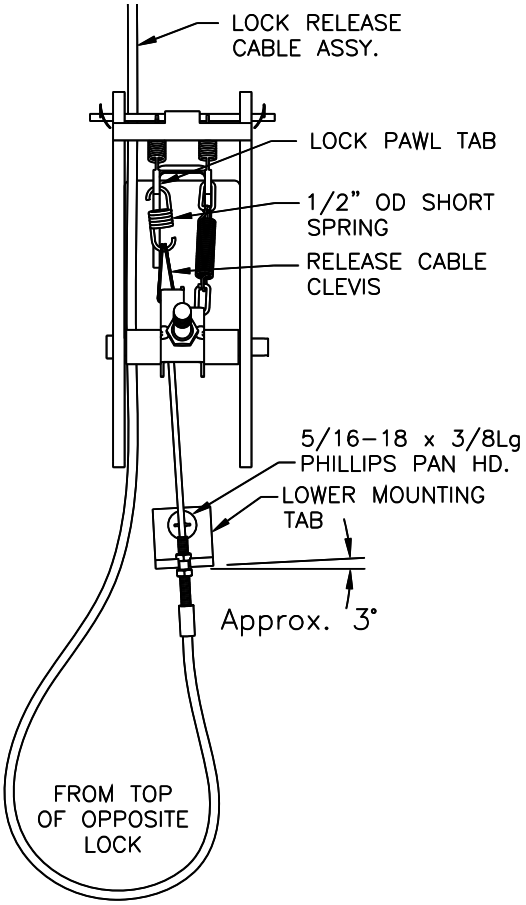


Fig. 18b-Lock Release – Idler Side

54) Hook the 1/2" O.D. (short) spring to the left side of the Lock Pawl Tab, collapse the clevis at the end of the lock release cable, and hook the clevis to the bottom of the 1/2" O.D. spring, **Fig. 18b**.

55) Mount lock release cable threaded adjustment sleeve to lower mounting tab using jam nuts.

56) Use wire ties provided to secure lock cable to the hydraulic hose.

Arm Installation

57) Extend the foot pad to both extents and apply "anti-seize" to the retaining ring.

58) Arm restraint assemblies should be installed on carriage as shown in **Fig. 19**.

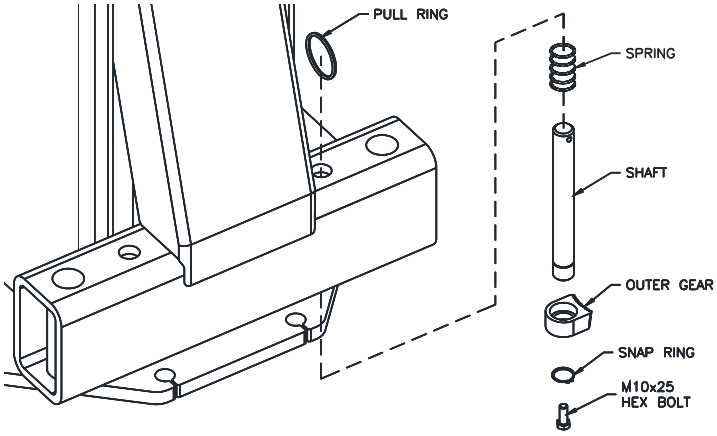


Fig. 19-Arm Restraint

59) Install inner arm gear to bottom of arm using (2) M10 x 25 Hex bolts as shown in **Fig. 20**. Do not tighten bolts at this time.

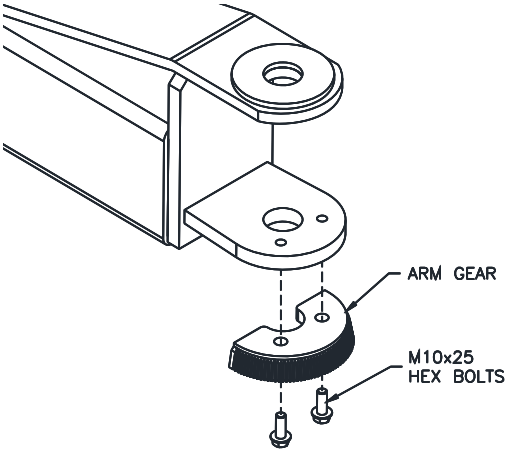


Fig. 20-Inner Arm Gear

60) Lubricate the arm pin or carriage arm pin hole with "anti-seize" and install the arms.

61) Adjust placement of inner arm gear until gears fully engage with one another throughout the rotation of the arm and tighten bolts.

62) Adjust the hex head bolt in the bottom of the arm restraint shaft so the arm is allowed to rotate freely when lift is completely lowered, **Fig. 21**.

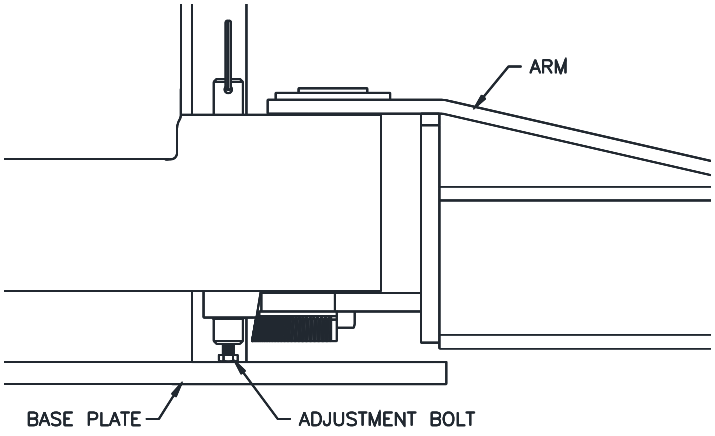


Fig. 21-Bolt Adjustment

ADAPTER RACK INSTALLATION

63) Locate the two pre-drilled holes on the back of each column 19” up from the top of the base plate and tap 5/16-18. Center the adapter rack and attach with 5/16-18NC Phillips Pan Head Screws supplied, Fig. 22.