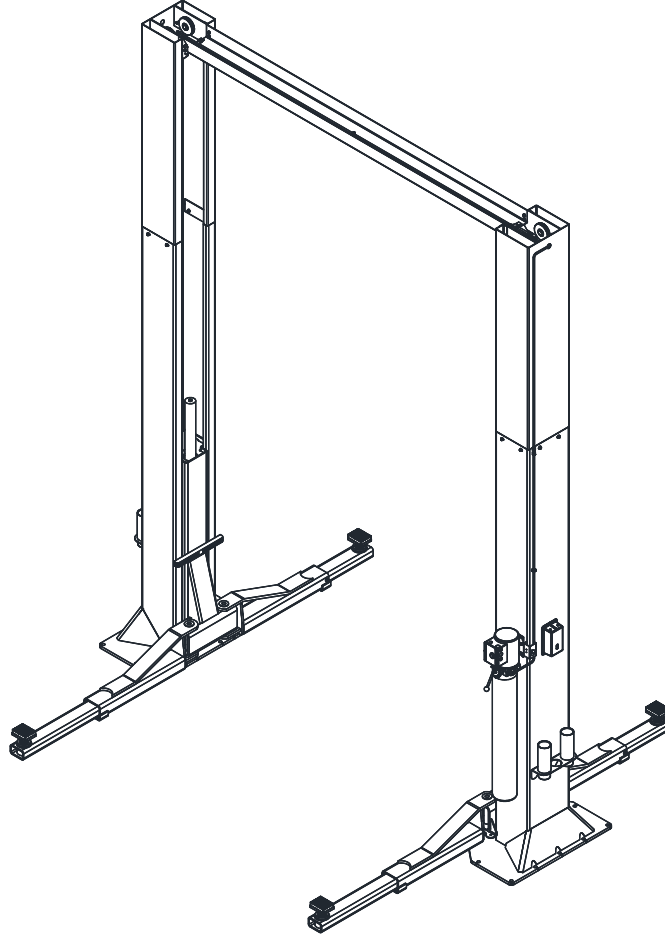


JohnBean®

Installation, Operation & Maintenance Manual Two Post Surface Mounted Lift



MODEL EELR538A & EELR539A

15,000 LB CAPACITY - 3750 LB PER ARM

MODEL EELR540A & EELR541A

18,000 LB CAPACITY – 4500 LB PER ARM

Snap-on Equipment

309 Exchange Avenue, Conway, Arkansas, 72032

Tel: 501-450-1500

Fax: 501-450-1585

IMPORTANT: READ THIS MANUAL COMPLETELY BEFORE
INSTALLING or OPERATING LIFT

GENERAL SPECIFICATIONS

See Figure 1	EELR538A	EELR539A	EELR540A	EELR541A
A Column Height	174" [14'-6"]	198" [16'-6"]	174" [14'-6"]	198" [16'-6"]
Ceiling Height Required	176"	200"	176"	200"
B Floor to Overhead Switch	167" [13'-11"]	191" [15'-11"]	167" [13'-11"]	191" [15'-11"]
C Max Rise Height w/ Stack Adapters (Screw Pads Only)	84 9/16" (76 9/16")			
D Screw Pad Height	6 3/16" to 7 9/16"			
Stack Adapter Height	4" & 8"			
E Overall Width	154 3/4"			
F Inside of Columns	119 7/8"			
Drive Thru Clearance	104 1/4"			
Arm Reach (Min.-Max.)	38 1/2"-62"			
* Lifting Capacity (Hydraulic Pressure at Cap.)	15,000 lbs (3750 lbs. Per Arm) (2150 psi)		18,000 lbs (4500 lbs. Per Arm) (2575 psi)	
** Rise Time	77 Sec. (approximate)			
Motor	2HP, 1PH, 60Hz, 208/230 VAC		3HP, 1PH, 60Hz, 208/230 VAC	
	Optional – 2HP, 3PH, 50/60Hz, for 208/230 or 460 VAC		Optional – 2HP, 3PH, 50/60Hz, for 208/230 or 460 VAC	

* 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.

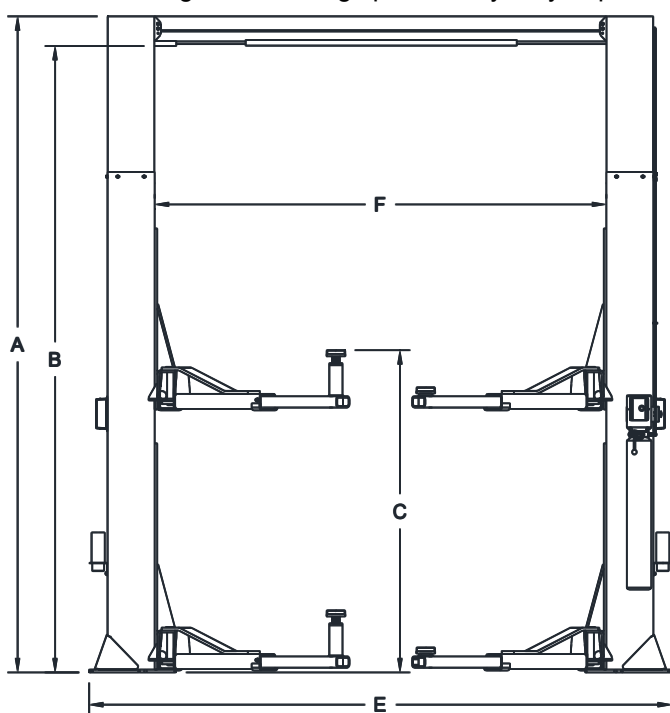


Fig. 1a- General Specifications

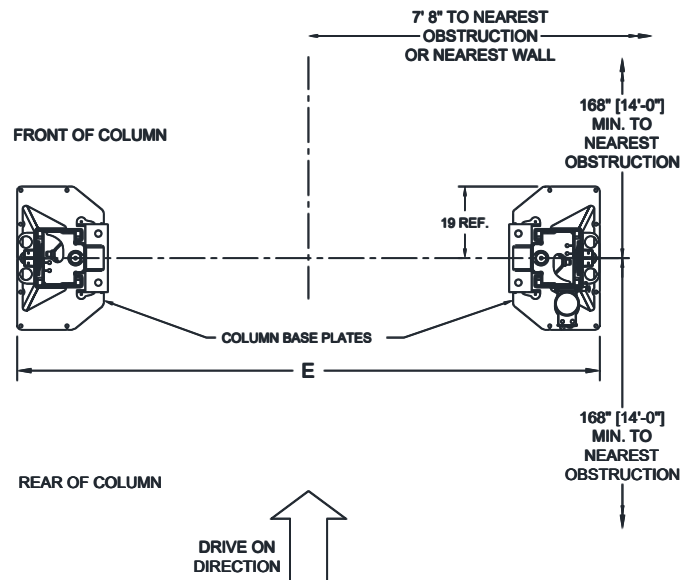


Fig. 1b- Service Bay Layout

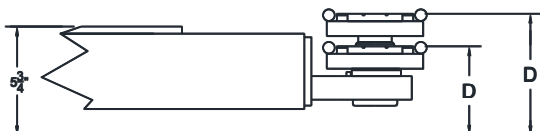


Fig 1c- Arm and Pad Height
WITHOUT STACK ADAPTERS

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). Outdoor Installation is Prohibited.

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.

AIR REQUIREMENTS

This lift is equipped with an air operated lock release system. **The air supplied to the lift must be clean, dry, lubricated, and regulated to 90-120 psi, FRL (Filter/Regulator/Lubricator).** The FRL must be within 30 feet of lift. **Failure to provide clean, dry, lubricated, and pressure regulated air will void warranty on pneumatic components.**

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.

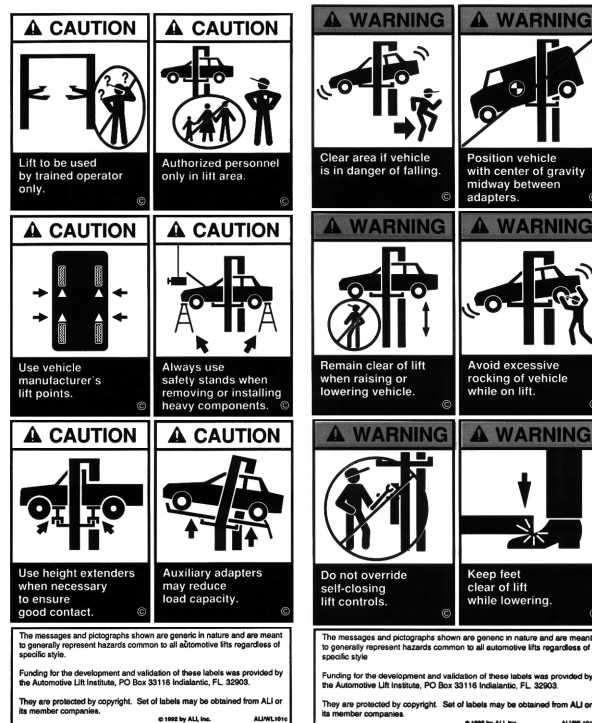
PROPER MAINTENANCE AND INSPECTION IS NECESSARY FOR SAFE OPERATION.

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.



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
15000	18000		
12001	12001-18	1	POWER COLUMN ASS'Y
12002	12002-18	1	IDLER COLUMN ASS'Y
12004		1	OVERHEAD PACK
15-18000-HW-W		1	HARDWARE BOX
B12048S-1		4	ARM ASSEMBLY
12102	12022	2	COLUMN EXT. (14'-6" O.A. Ht.)
12022			COLUMN EXT. (16'-6" O.A. Ht.)
12074		1	OVERHEAD SHUTOFF BAR ASS'Y
12045		1	OVERHEAD LIMIT SWITCH
12100	12019	2	SYNC. CABLE ASS'Y (14'-6")
12019			SYNC. CABLE ASS'Y (16'-6")
B12069		4	ADAPTER EXTENSION (4")
B12068		2	ADAPTER EXTENSION (8")
12071		2	ADAPTER RACK
12093		4	ARM RESTRAINT ASSEMBLY
12119	12087-19	1	POWER UNIT – SINGLE PHASE
12089	12089-19		POWER UNIT – THREE PHASE
15-18000-LP-W		1	LITERATURE PACK

ACCEPTED OILS – Do not use oils with detergents
Hydraulic fluid is not provided with the lift shipment
-10 wt. anti-foam, anti-rust hydraulic / biodegradable oil
-Dexron III ATF

INSTALLATION

SAFETY REQUIREMENTS FOR INSTALLATION AND SERVICE

Refer to ANSI/ALI ALIS (current edition)

IMPORTANT: Always wear safety glasses while installing lift.

TOOLS (MINIMUM REQUIRED)

- Tape measure, 16ft
- Chalk line
- 4ft level
- 10" adjustable wrench
- Standard open end wrenches 7/16", 1/2", (2) 9/16", (2) 11/16", 3/4"
- 5/16" allen wrench
- Needle nose pliers
- Hammer drill with 3/4" diameter carbide tipped bits
- 2 lb hammer
- Torque wrench: 150 foot pounds minimum with 1 1/8" socket
- 12 ft. Step ladder
- Anti-Seize lubricant (for arm pins and foot pad screw threads and stop rings)

LAYOUT

- Layout the service bay according to the architect's plans or owners instructions (**see Fig. 1b**). **Failure to install in this orientation can result in personal and property damage.** Be certain that the proper conditions exist, see page 3.
- Assemble column extension to column using 3/8"-16 x 3/4" lg Hex flange head bolt. Repeat for opposite column and extension.
- Erect and align both column assemblies.

LOCK RELEASE/PAWL

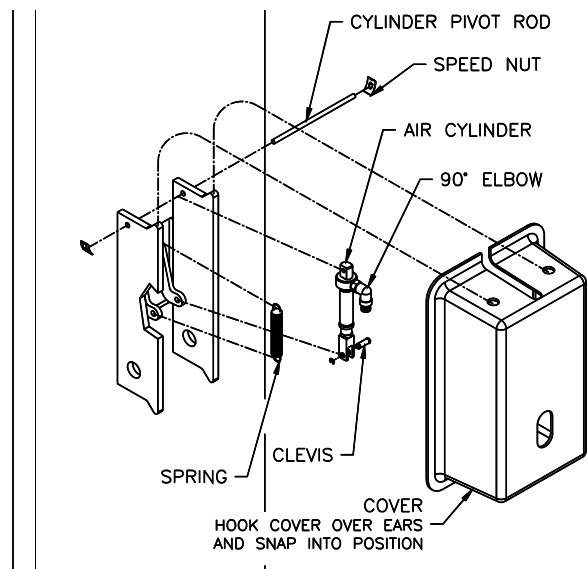


Fig. 2 – Locking Pawl Assembly

- 4) Install the locking pawl, actuator, and spring (**Fig. 2**). Adjust air cylinder clevis to retract lock against inside of back of column when air cylinder is fully extended. Tighten air cylinder clevis jam nut against clevis.

ANCHORING

- 5) The anchor bolts must be installed at least 8" from any crack, edge, or expansion joint.
- 6) 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.**
- 7) Recheck "Inside of Columns" dimension (**Fig. 1**). Drill the anchor holes using the base plate as a template. Drill through the floor if possible or to a depth of 5 inches minimum.

Complete steps 8 thru 11 for the six (6) exposed anchors around each column, then raise the carriages. Repeat steps 8 thru 11 for the two (2) anchors under each carriage.

- 8) Vacuum dust from the hole for proper holding power.
- 9) Shim both columns to plumb using the shims provided as shown in **Fig. 3**. DO NOT shim more than 1/2" at any given point. Use a level no less than 24" in length to plumb columns.
- 10) Assemble washer and nut to anchor with nut just below impact section of bolt. Drive anchor into hole until nut and washer contact base.

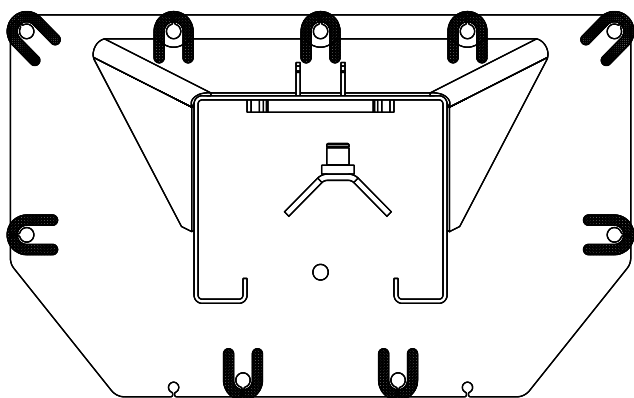


Fig. 3 – Column Shimming

- 11) Tighten power column anchors and recheck column for plumb. Re-shim if necessary. Torque to 150 foot pounds to set anchors.

OVERHEAD

- 12) Before raising overhead into position install 4 each (2 per column) hex flange bolts and nuts in bottom hole of column extension (**see Fig. 4 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. 4**.

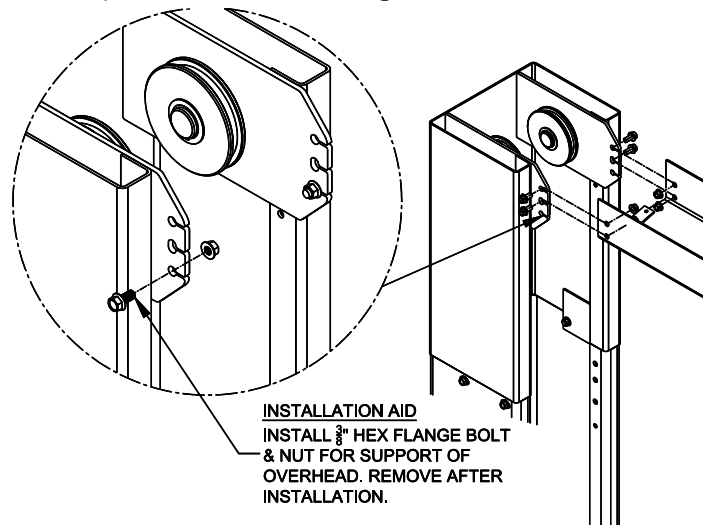


Fig. 4 – Overhead Assembly

- 13) Check idler column shimming. Use additional shims (**see Fig. 3**) 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.
- 14) Install Overhead Limit Switch to the Overhead Beam using the rear set of holes on the Power Side of the lift. **Fig. 5**.

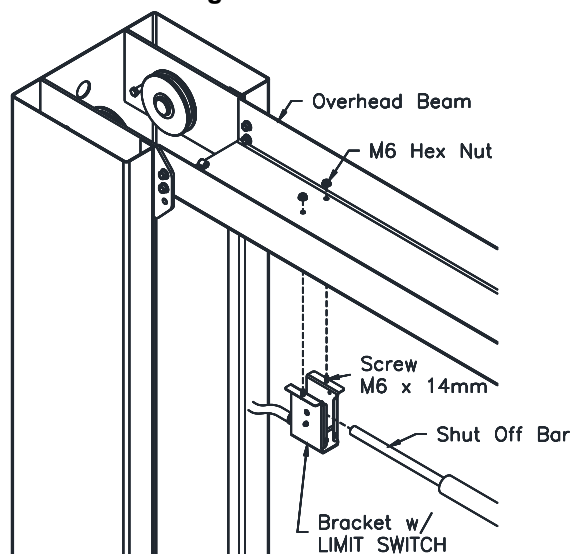


Fig. 5 – Overhead Limit Switch Power Side

- 15) Install the Idler Bracket to the Overhead Beam using the rear set of holes on the Idler Side of the lift. **Fig. 6. Note the orientation of the Idler Bracket. The narrow slot needs to be facing towards the Power Column.** Slide the Shutoff Bar over the limit switch on the Power Side. Pin the Shutoff Bar to the Idler Side Bracket with the 10mm dia. x 55mm Lg. clevis pin & hairpin cotter.

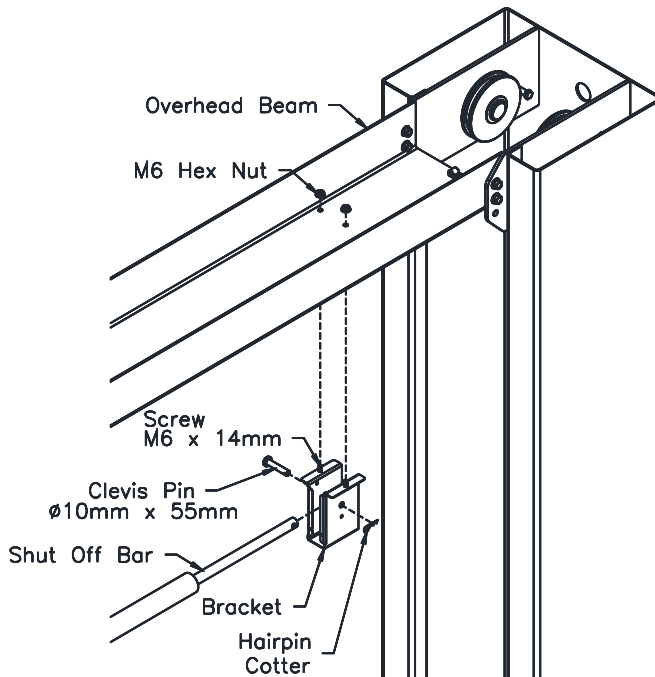


Fig. 6 – Overhead Bracket Idler Side

- 16) Assemble the cable trapping hardware with a 3/8"-16 x 3" Lg bolt with (2) 3/8"-16 flange nuts at each upper sheave location. For the lower sheaves, use a 3/8"-16 x 3/4" Lg. bolt and a 1/4" dia. x 1 3/4" Lg. clevis pin (**Fig. 7**). At the upper and lower sheave connections, disassemble and reassemble the cable trapping hardware.

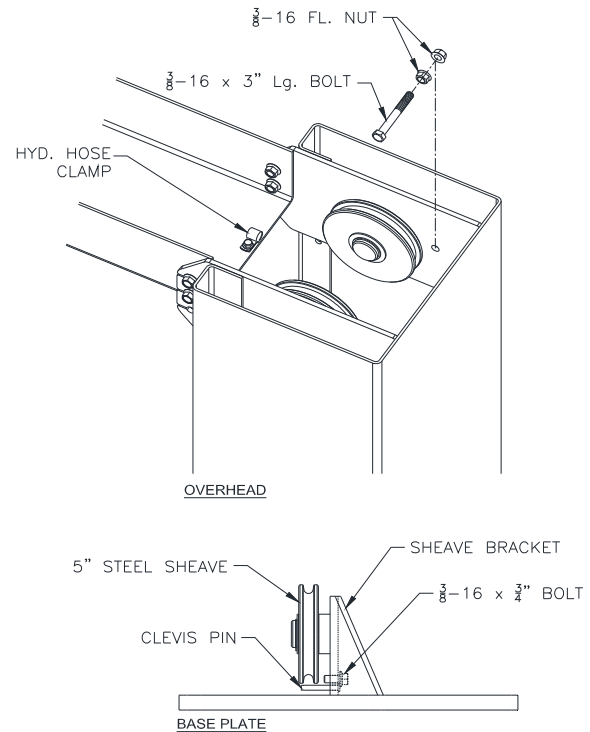
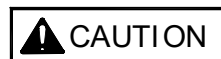


Fig. 7 – Cable Trapping

SYNCHRONIZER CABLES

- 17) Manually raise the carriages to a common lock position, to gain access to the top of the carriage.

Insure that the top of the hydraulic cylinder is out of the way but still retained in the opening of the top plate of the carriage as shown in Fig 8.



Failure to follow previous step could result in personal injury.

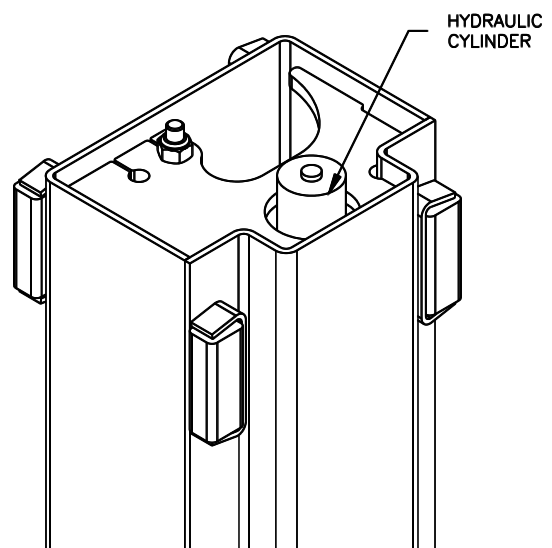


Fig. 8 – Cable Assembly

- 18) Route the synchronizer cables as shown in **Fig. 9**. Routing the cable from the inner hole location on the top of the carriage down to the column pulley and up to the overhead pulley. From the other hole location rout the cable up to the overhead pulley.

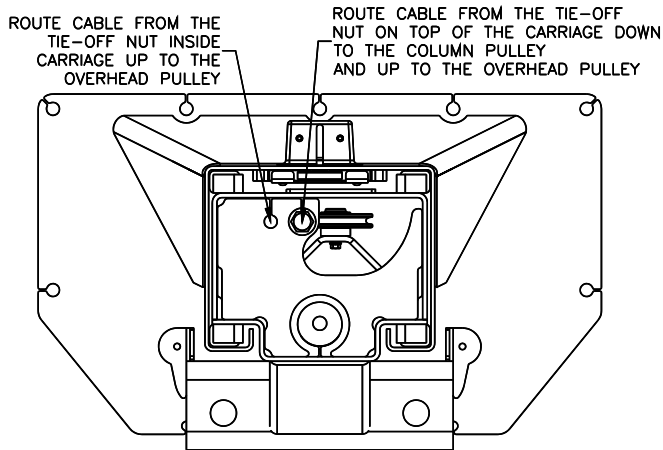


Fig. 9 – Cable Assembly/Cable Extensions

POWER UNIT & HYDRAULIC LINES

- 19) Mount Power Unit to power column as shown in **Fig. 10**. The mounting hardware, (4) 5/16"-18 hex nuts, are pre-installed on power unit mounting bracket.

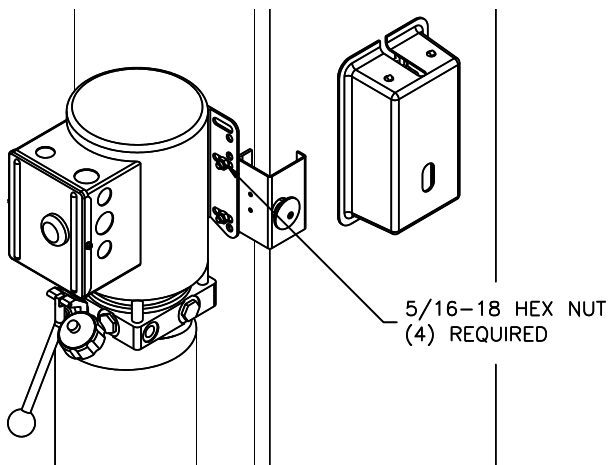


Fig. 10 – Power Unit Mounting

- 20) Connect the cylinder line to the overhead line using a tee. Install the power unit line to the tee in the Power column and to the power unit outlet port. Install hose clamps with a 3/8"-16 x 3/4" hex flange bolt and 3/8"-16 hex flange nut. Install (2) hose clamps in overhead and (1) hose clamp in each column extension (**Fig. 11**).

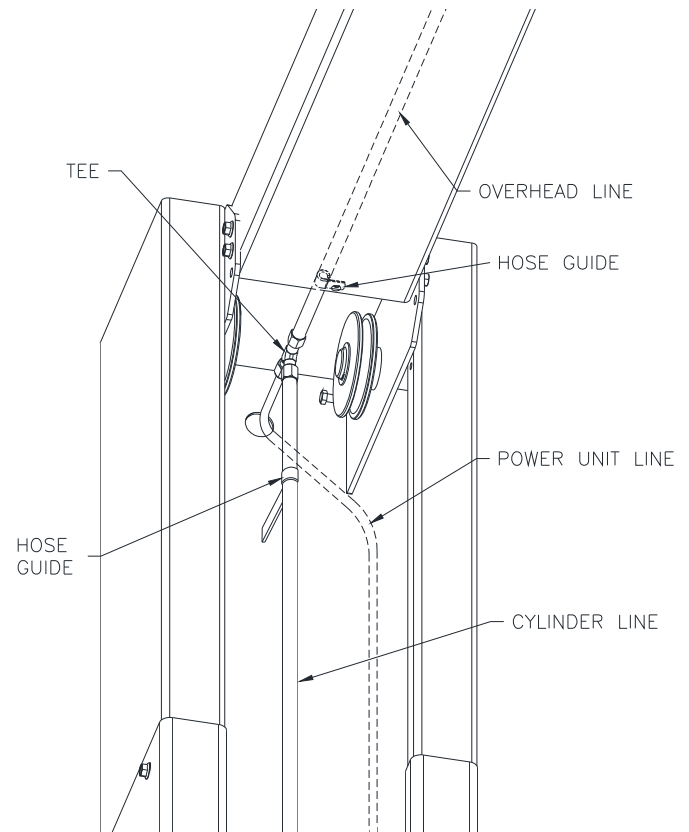


Fig. 11– Power Side Column Ext. Hyd. Routing

- 21) Thread 9/16"-18 O-ring elbow (*in hardware box*) into power unit. Attach free end of power unit hose to elbow. See **Fig 12**. **CAUTION** do not damage rubber O-ring.

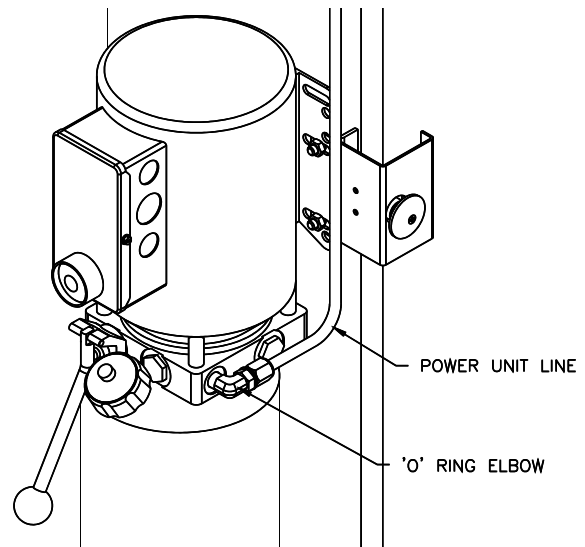


Fig. 12-Power Unit Connection

- 22) Install (1) hose clamp on the outside of the power column with a 3/8"-16 x 3/4" hex flange bolt and 3/8"-16 hex flange nut. Install (1) line clamp with a 1/4"-20 x 3/4" hex flange bolt and hex flange nut (**Fig. 13**).

Models EELR538A and EELR539A
Models EELR540A and EELR541A
Installation, Operation and Maintenance

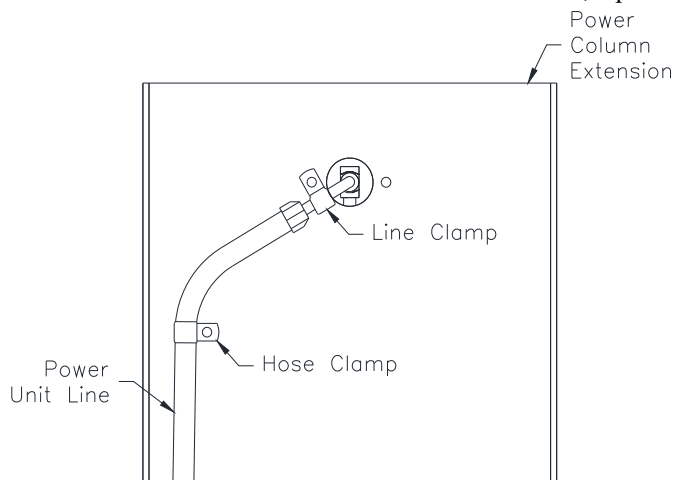


Fig. 13-Hose and Line Clamps

- 23) Hoses should connect to cylinders with a 90 degree elbow rotated 25 degrees upward and be routed thru hose guide (**Fig. 13B**).

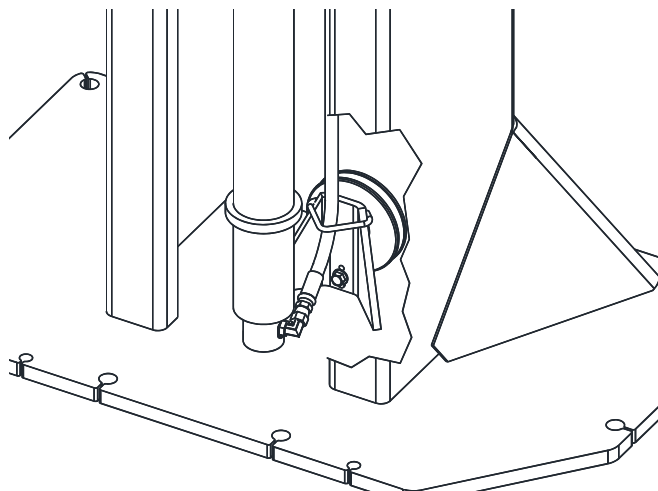


Fig. 13B-Hose Connection

- 24) **BE CERTAIN ALL FITTINGS AND CONNECTIONS ARE TIGHT. IT IS THE INSTALLERS RESPONSIBILITY TO INSURE 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

- 25) On the Power Column, attach the 1/8" air line from the lock release air cylinder to the push-lock tee fitting. Run another section of 1/8" air line from the button valve to the tee (**Fig. 14**).
- 26) Connect the rest of the 1/8" air line to the top of the tee and run it up the column attaching it to the hydraulic line using wire ties (**Fig. 14**).

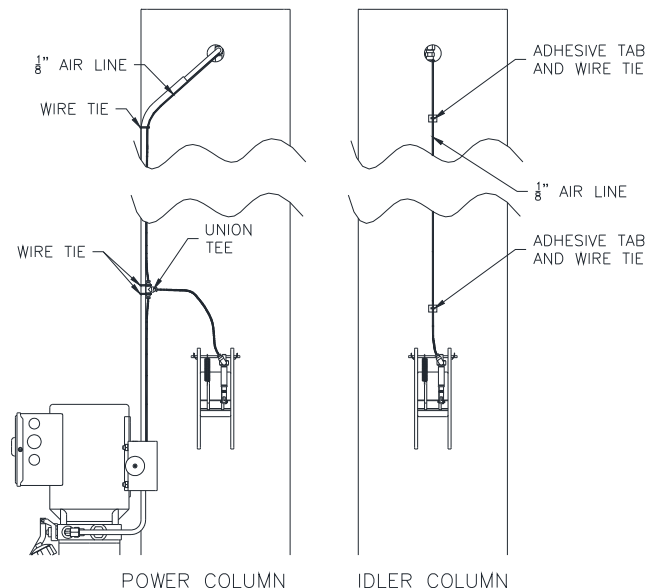


Fig. 14-Lock Release

- 27) After running the 1/8" air line along the hydraulic line in the overhead and out the other opening in the Idler Column (**Fig. 14**), run the air line down the column using adhesive tab and wire ties. Attach it to the lock release air cylinder (**Fig. 14**).

ARM INSTALLATION

- 28) Lubricate the arm pin or carriage arm pin hole with "anti-seize" and install the arms. Insure that the arm restraint gears engage and disengage properly. Arm restraints should disengage when lift is fully lowered (**Fig. 15**).
- 29) Extend the footpad to both extents and apply "anti-seize" to the retaining ring.

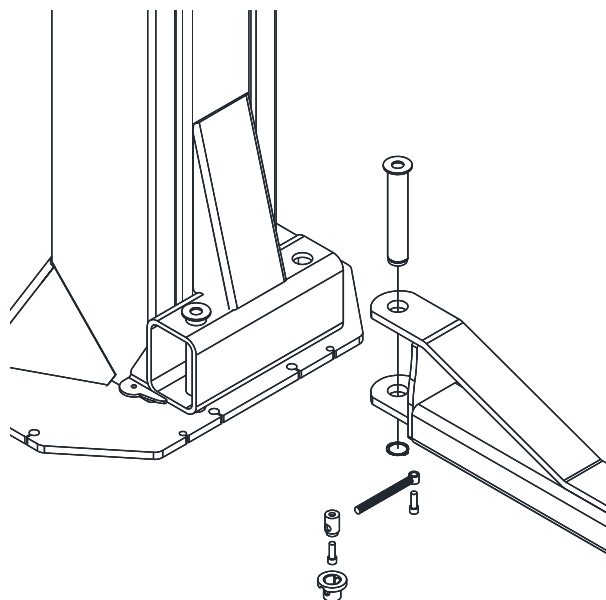


Fig. 15-Arm Installation

- 30) Make sure all the arm bolts are tight using a 3/8" hex key. Slide all the arms out so they are fully extended making sure that the male is retained in the female.

ADAPTER RACK INSTALLATION

- 31) 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"-18 x 1" Lg hex flange cap screw and 5/16"-18 hex flange nut (**Fig. 16**).

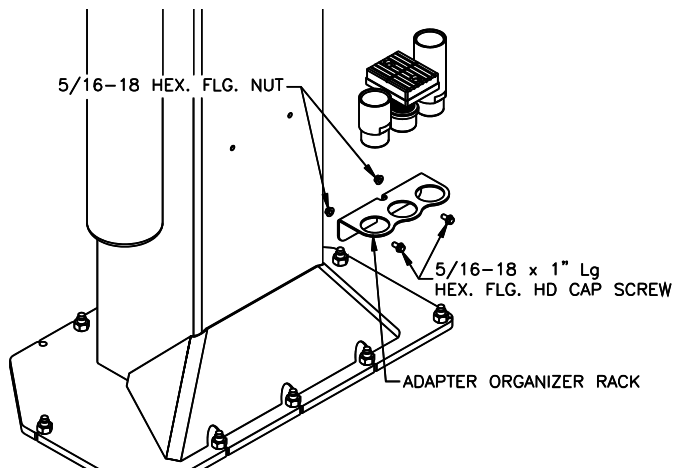


Fig. 16-Adapter Rack Installation

ELECTRICAL

See Figure 17 for the following steps.

- 32) Wire tie Limit Switch cord to column hydraulic line and power unit line.
33) Connect the Overhead Limit Switch Cord to Power Unit as shown in **Fig. 17**.
34) Connect Power Unit to suitable electrical source as shown in **Fig. 17**.
35) **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.

FINAL ADJUSTMENTS HYDRAULICS

- 36) Lower the lift to the floor and raise the lift approximately one foot.
37) 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. Repeat for power side.
38) Raise lift 6 inches. Repeat step 36 until no air comes out of cylinder.
39) 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.
40) 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 will appear to be leaking.**

SYNCHRONIZING CABLES

- 41) Raise lift and insure carriages lower into same lock position.
42) Adjust synchronizing cables so the tension is equal in both cables and carriages are firmly sitting on locks.
43) Cycle lift to insure that locks operate simultaneously. Adjust if necessary.

OWNER/OPERATOR CHECKLIST

- 44) 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.
45) Return all provided literature (including this manual) to the literature pack envelope and deliver the envelope to the owner/operator/employer.
46) Complete the online warranty registration (refer to the included warranty statement).

Wiring Diagram

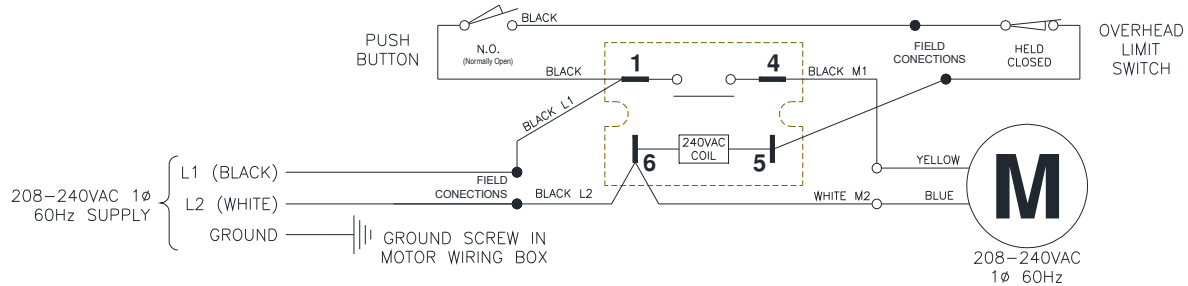
* EACH LIFT SHOULD HAVE A DEDICATED CIRCUIT WITH A DOUBLE POLE (THREE POLE FOR 3 PHASE) BREAKER OR TIME DELAY FUSE SIZED ACCORDING TO THE FOLLOWING CHART.

* WIRING MUST COMPLY WITH ALL LOCAL ELECTRICAL CODES.

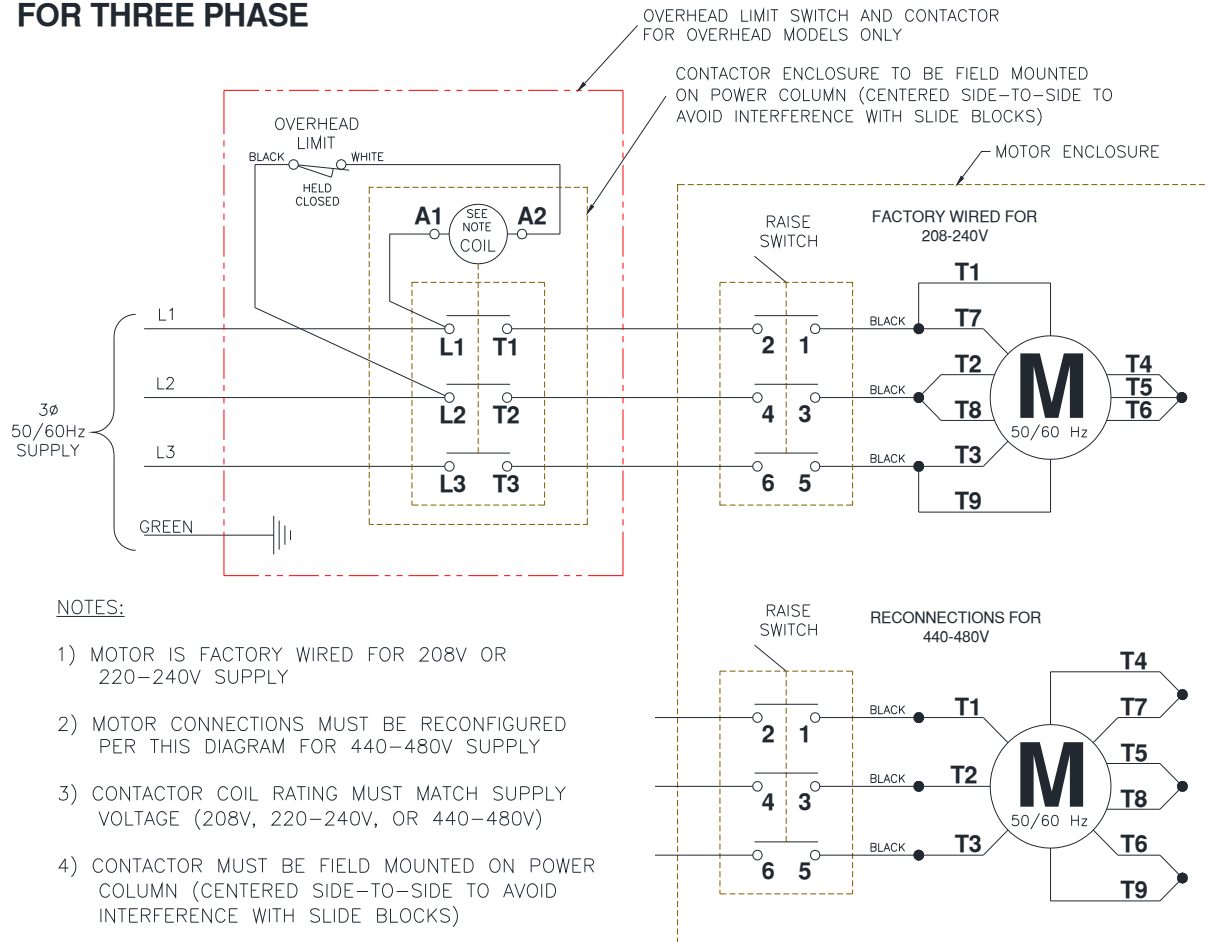
* ELECTRICAL CODE REQUIRES A SERVICE DISCONNECT FOR THIS DEVICE. WE SUGGEST THIS SERVICE DISCONNECT BE LOCATED NEAR THE POINT OF OPERATION.

	1 ϕ 208–240V	3 ϕ 208V	3 ϕ 220–240V	3 ϕ 440–480V
2Hp	30amp	15amp	15amp	5amp
3Hp	30amp			

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

Fig 17 – Electrical Wiring Diagram

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 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, 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, 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, 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/ALIOIM, 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, 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, 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.

SAVE THESE INSTRUCTIONS

LIFTING A VEHICLE

- 1) Insure 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 3750 POUNDS PER ARM (15K).

DO NOT EXCEED 4500 POUNDS PER ARM (18K).

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.

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 again 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 locks are free.
- 3) Disengage the locks by pressing and holding the lock release palm 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.

LOSS OF POWER

If for any reason the lift will not raise off the locks or the locks will not retract, consult factory authorized personnel.

DO NOT OVERRIDE ANY SAFETY FEATURE IN AN ATTEMPT TO LOWER THE LIFT.

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 and against the spring mount tab when disengaged.

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.

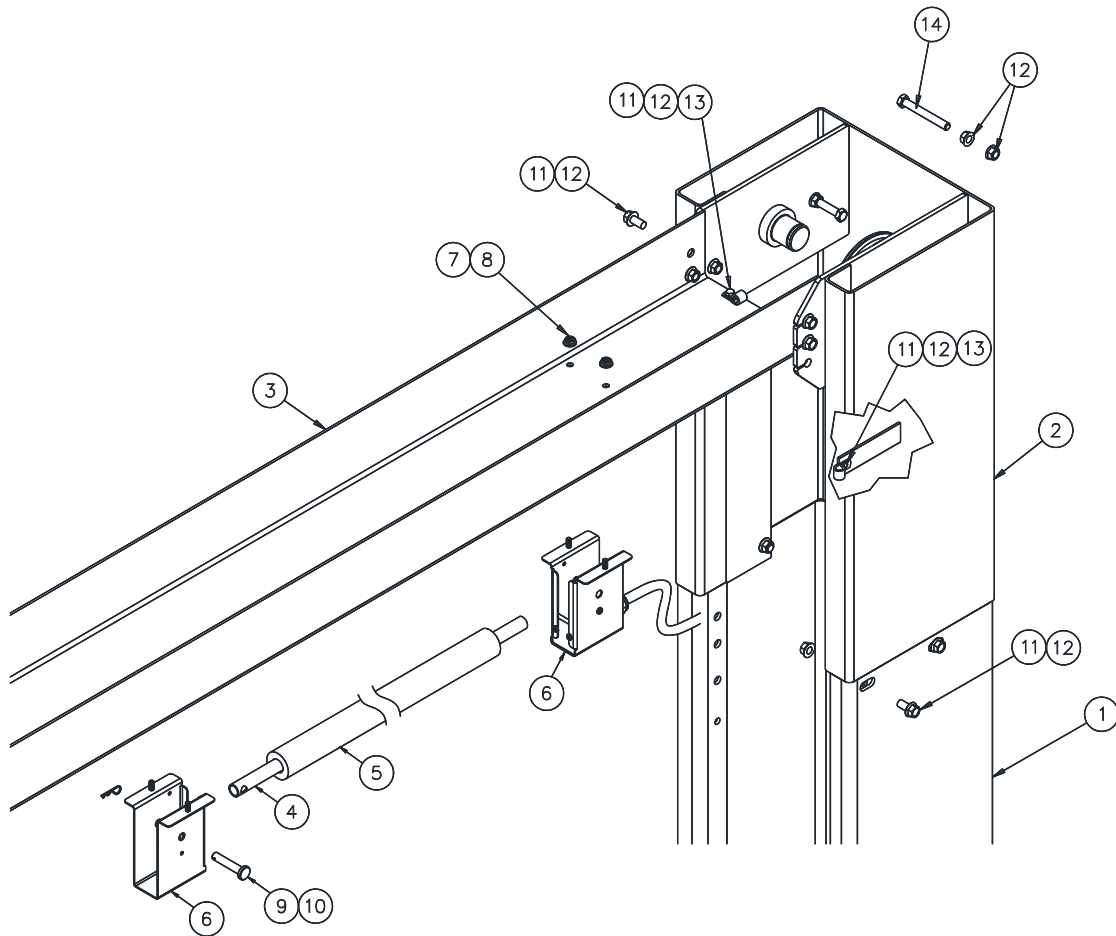
Monthly

- Torque concrete anchor bolts to 80 ft-lbs.
- Visually inspect concrete floor for cracks and/or sprawls 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.)

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

PARTS BREAKDOWN

Fig A. Column Extension & Overhead



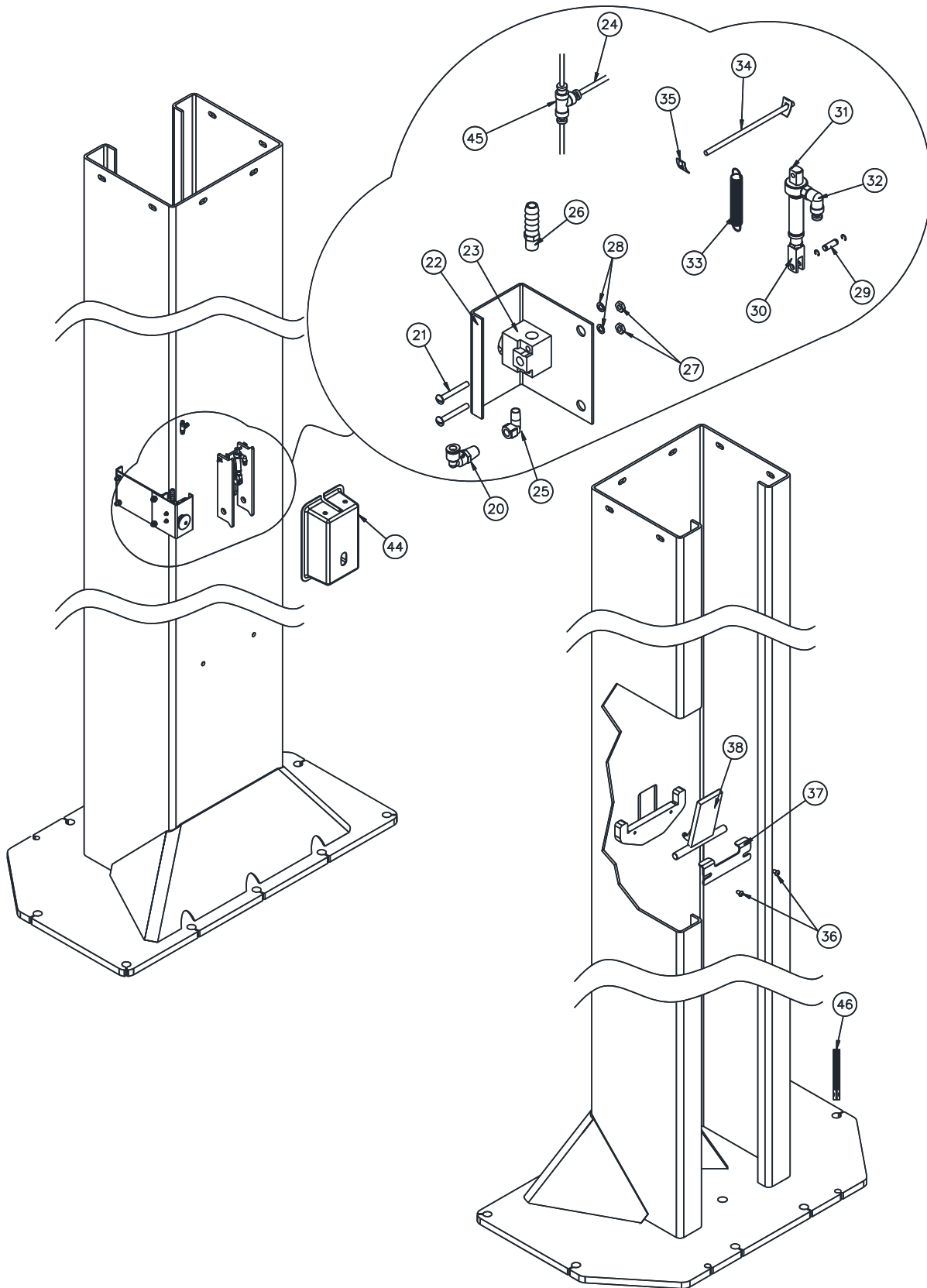
ITEM #	PART #	QTY/LIFT	DESCRIPTION
1	12025	1	POWER COLUMN WELD
	12026		IDLER COLUMN WELD
2	12102	2	COLUMN EXTENSION (14'-6" O.A. Ht.)
	12022		COLUMN EXTENSION (16'-6" O.A. Ht.)
3	12039	1	OVERHEAD
4	A2067	1	SHUTOFF BAR
5	31129	1	SHUTOFF BAR CUSHION
6	B2064-01	1	LIMIT SWITCH PACKAGE (INCLUDES SWITCH w/ CORD, BOTH BRACKETS, & ITEMS 7-10)
7	B2065-3	4	M6 x 14mm PHILLIPS PAN HEAD SCREW
8	B2065-4	4	M6 SERRATED FLANGE HEX NUT
9	B2065-5	1	CLEVIS PIN 10mm x 55 Lg.
10	GJY12-3	1	HAIRPIN COTTER
11	A1153	24	3/8"-16NC HEX. FLG. HD. C.S x 3/4" Lg.
12	A1154	32	3/8"-16NC HEX. FLG. NUT
13	A1122-12	4	HOSE CLAMP (.68") FOR 3/8" HOSE
14	A2159	4	3/8"-16NC x 3" Lg. HEX HEAD CAP SCREW
	12116H	1	COLUMN EXTENSION PACK (14'-6" O.A. Ht.) Items (2, 64, 65, 66, 67)
	12117H		COLUMN EXTENSION PACK (16'-6" O.A. Ht.) Items (2, 50, 64, 65, 66, 67)

IMPORTANT

Replace all worn or broken parts with **genuine Snap-on Equipment parts**. Contact your local Snap-on Equipment parts distributor for pricing and availability. Call Snap-on Equipment at **(501) 450-1500** for the distributor in your area.

Models EELR538A and EELR539A
Models EELR540A and EELR541A
Installation, Operation and Maintenance
PARTS BREAKDOWN (continued)

Fig B. Lock-Power/Idler



Models EELR538A and EELR539A
Models EELR540A and EELR541A
Installation, Operation and Maintenance

Table B. Lock-Power/Idler

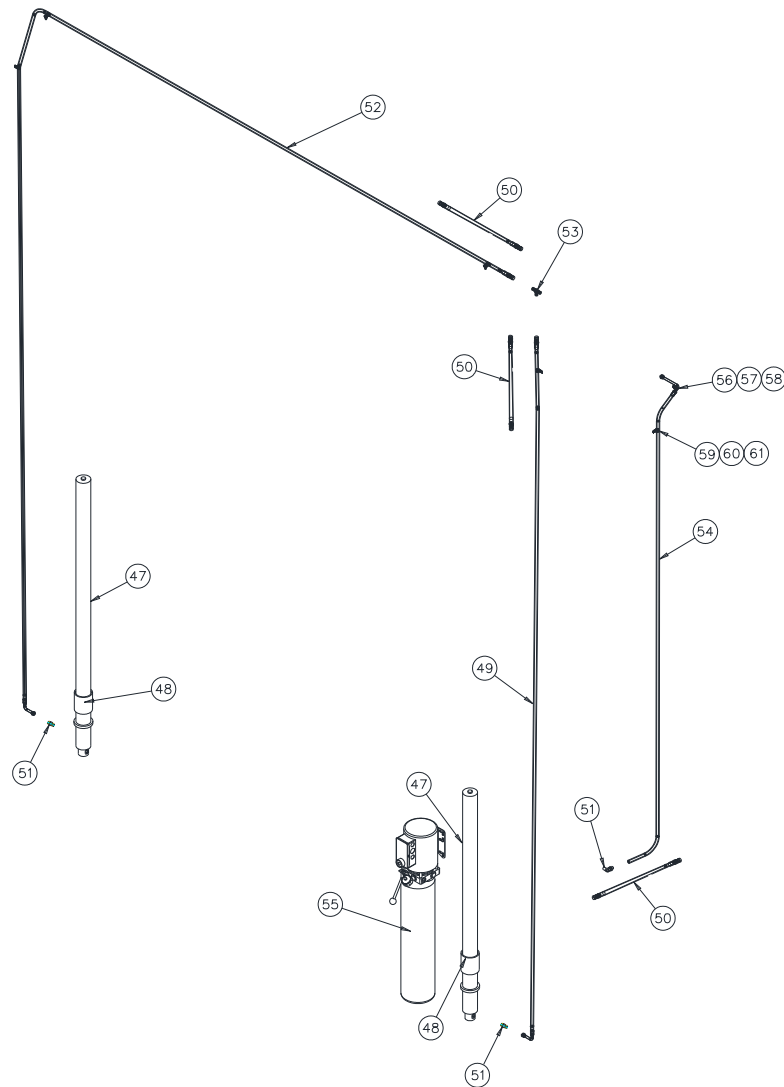
ITEM #	PART #	QTY/LIFT	DESCRIPTION
20	37019	1	ELBOW 1/8" NPTM x 1/8" PUSH-LOCK
21	37022	2	#8-32 x 1 1/4" Lg. PAN HEAD SCREW
22	37015	1	BUTTON VALVE BRACKET
23	37016	1	AIR VALVE
24	12105	1	Ø1/8" NYLON AIR LINE x 35' Lg.
25	37020	1	STREET ELBOW 1/8" NPTM x 1/8" NPTF
26	37021	1	HOSE BARB 1/8" NPTM x 3/8" BARB
27	37024	2	#8-32 HEX NUT
28	37023	2	#8 LOCK WASHER
29	37119	2	CLEVIS PIN KIT
30	37120	2	ROD END
31	37026	2	AIR CYLINDER
32	37041	2	SWIVEL ELBOW, 1/8" PUSH-LOCK
33	12088	2	EXTENSION SPRING
34	37042	2	CYLINDER PIVOT ROD
35	37031	4	5/32" SPEED NUT
36	12073	4	5/16"-18 x 5/8" Lg. THREAD CUTTING PAN HEAD SCREW
37	12037	2	LOCK RETAINER
38	12033	2	LOCK WELD
44	37072	2	SNAP ON LOCK COVER
45	37032	1	1/8" UNION TEE PUSH-LOCK
46	31058	18	ANCHOR BOLT, 3/4" x 5 1/2" lg

IMPORTANT

Replace all worn or broken parts with **genuine Snap-on Equipment parts**. Contact your local Snap-on Equipment parts distributor for pricing and availability. Call Snap-on Equipment at **(501) 450-1500** for the distributor in your area.

Models EELR538A and EELR539A
Models EELR540A and EELR541A
Installation, Operation and Maintenance
PARTS BREAKDOWN (continued)

Fig C. Hydraulics



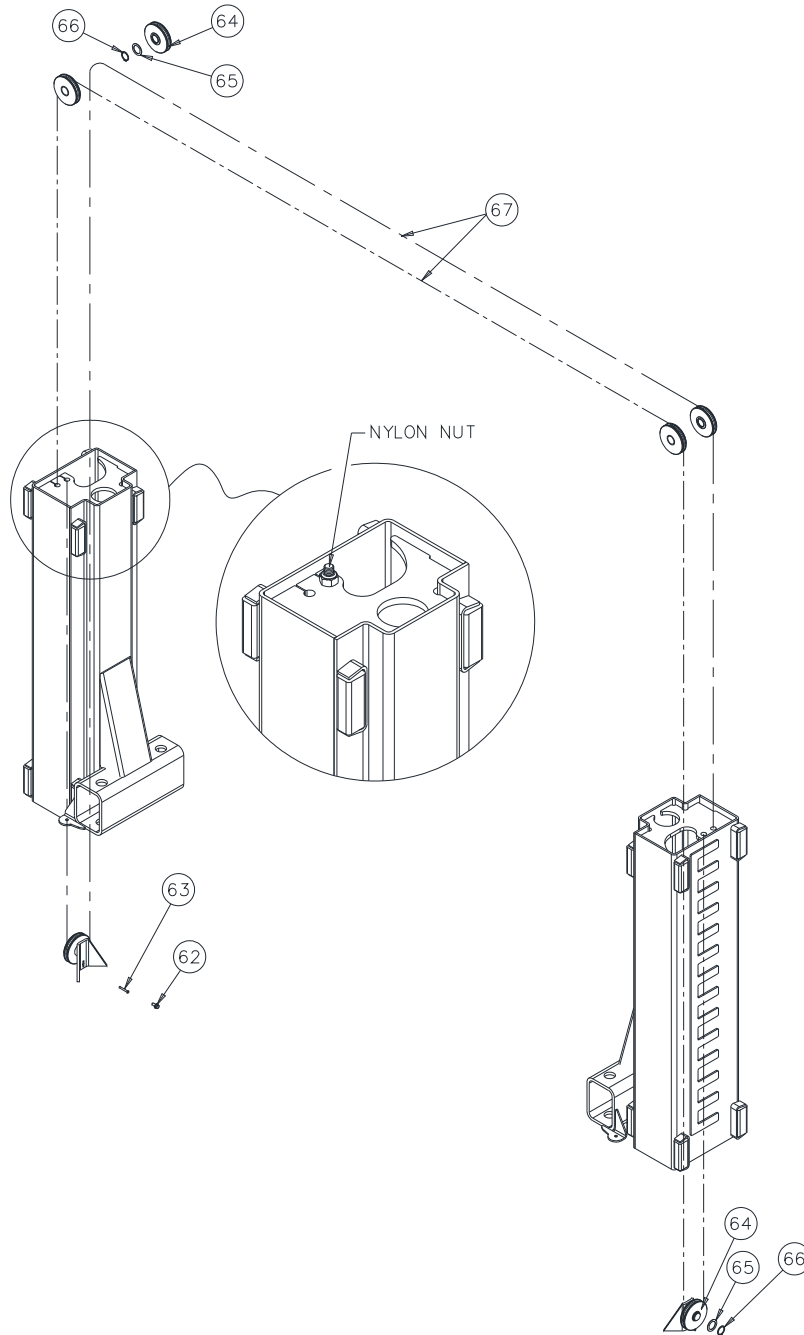
ITEM #	PART #	QTY/LIFT	DESCRIPTION
47	15075	2	HYD. CYLINDER (69" STROKE)
48	12111	2	CYLINDER SPACER
49	12258	1	POWER HOSE ASSEMBLY
50	12539-024	3	EXTENSION HYD. LINE (16'-6" O.A. HT. ONLY)
51	16167	3	O-RING ELBOW
52	12256	1	IDLER HOSE ASSEMBLY
53	39103	1	HYD. TEE
54	12257	1	POWER UNIT HOSE ASSEMBLY
55	12119	1	POWER UNIT – SINGLE PHASE
	12089		POWER UNIT – THREE PHASE 15000
	12087-19		POWER UNIT – SINGLE PHASE
	12089-19		POWER UNIT – THREE PHASE 18000
56	31025	1	LINE CLAMP
57	40085	1	1/4" -20 HEX FLANGE NUT
58	A2125	1	1/4" -20 x 3/4" LG. HEX FLANGE BOLT
59	A1122-12	1	HOSE CLAMP
60	A1153	1	3/8" -16 x 3/4" LG. HEX FLANGE BOLT
61	A1154	1	3/8" -16 HEX FLANGE NUT

IMPORTANT

Replace all worn or broken parts with **genuine Snap-on Equipment parts**. Contact your local Snap-on Equipment parts distributor for pricing and availability. Call Snap-on Equipment at **(501) 450-1500** for the distributor in your area.

Models EELR538A and EELR539A
Models EELR540A and EELR541A
Installation, Operation and Maintenance
PARTS BREAKDOWN (continued)

Fig D. Synchronizer



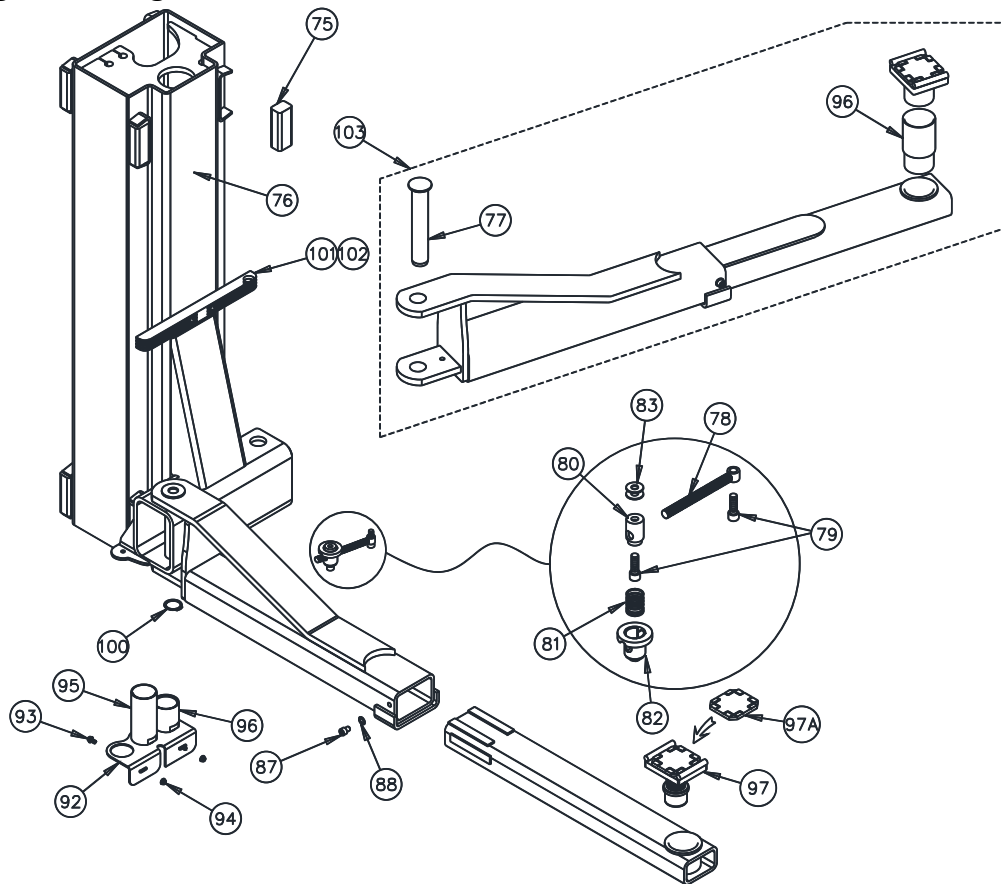
ITEM #	PART #	QTY/LIFT	DESCRIPTION
62	A1153	2	3/8-16 x 3/4" Lg. LOCK HEX FLG. HD.CAP SCREW
63	A2158	2	Ø1/4" x 1 3/4" Lg. CLEVIS PIN
64	31019	6	PULLY ASSEMBLY
65	31020	6	WASHER
66	31021	6	1 3/8" RETAINING RING
67	12100PR	2	SYNC. CABLE ASSEMBLY (14'-6" O.A. Ht.)
	12019PR	2	SYNC. CABLE ASSEMBLY (16'-6" O.A. Ht.)

IMPORTANT

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Models EELR538A and EELR539A
Models EELR540A and EELR541A
Installation, Operation and Maintenance
PARTS BREAKDOWN (continued)

Fig E. Carriage & Arms



ITEM #	PART #	QTY	DESCRIPTION	ITEM #
75	12021	16	SLIDE BLOCK	
76	B12007-18	2	CARRIAGE WELD	
77	B12046	4	ARM PIN	
78	12060	4	LINK WELD	
79	31112	8	1/2"-13NC x 1 1/2" Lg. SOCKET HEAD CAP SCREW	
80	31108	4	INSERT	
81	31109	4	COMPRESSION SPRING	
82	12096	4	SLEEVE WELD	
83	31014	12	1/2" FLAT WASHER (SHIM AS NEEDED)	
87	12072	4	1/2"-13 x 5/8" SOCKET HD. C.S.	
88	12084	4	1/2" INTERNAL TOOTH LOCKWASHER	
92	12091	2	ADAPTER RACK	
93	A1153	4	3/8"-16NC x 3/4" Lg. HEX. FLG. HD. C.S.	
94	A1154	4	3/8"-16NC HEX. FLG. NUT	
95	B12068	2	STACK ADAPTER (8")	
96	B12069	4	STACK ADAPTER (4")	
97	B12162S	4	FOOT PAD ASSEMBLY	
97A	A1104-H	4	PAD	
100	B1084	4	45mm RETAINING RING	
101	B2026-3	2	DOOR GUARD	
102	X10-088	4	M8 x 30 SOCKET HEAD CAP SCREW	
103	B12048S-1	4	ARM ASSEMBLY, 2-STAGE	

IMPORTANT

Replace all worn or broken parts with **genuine Snap-on Equipment parts**. Contact your local Snap-on Equipment parts distributor for pricing and availability. Call Snap-on Equipment at **(501) 450-1500** for the distributor in your area.

REVISIONS

- 11/06/2019- THE ADAPTER RACK INSTALLATION INSTRUCTIONS WERE UPDATED TO CALL OUT 5/16-18 HARDWARE.
- 12/03/2019- SPEC PAGE HAS BEEN UPDATED WITH PAD HEIGHTS, MALE ARM HEIGHT, AND ARM SWING. SYNC CABLE PART NUMBER WERE UPDATED IN PBD. ANCHOR BOLT PART NUMBERS WERE ADDED TO PBD. ADDED STEP TO CHECK THE ARM STOP BOLTS TO MAKE SURE THEY ARE TIGHT.
- 02/13/2020- 12073 WAS CHANGED TO A THREAD CUTTING SCREW
- 02/18/2021- UPDATED THE ANSI/ALI ALCTV AND ALOIM. UPDATED THE LIFT OVERALL WIDTH.
- 08/27/2021- OUTDOOR INSTALLATION IS PROHIBITED, SPEC PAGE REORGANIZED, UPDATED FIG E AND TABLE E.