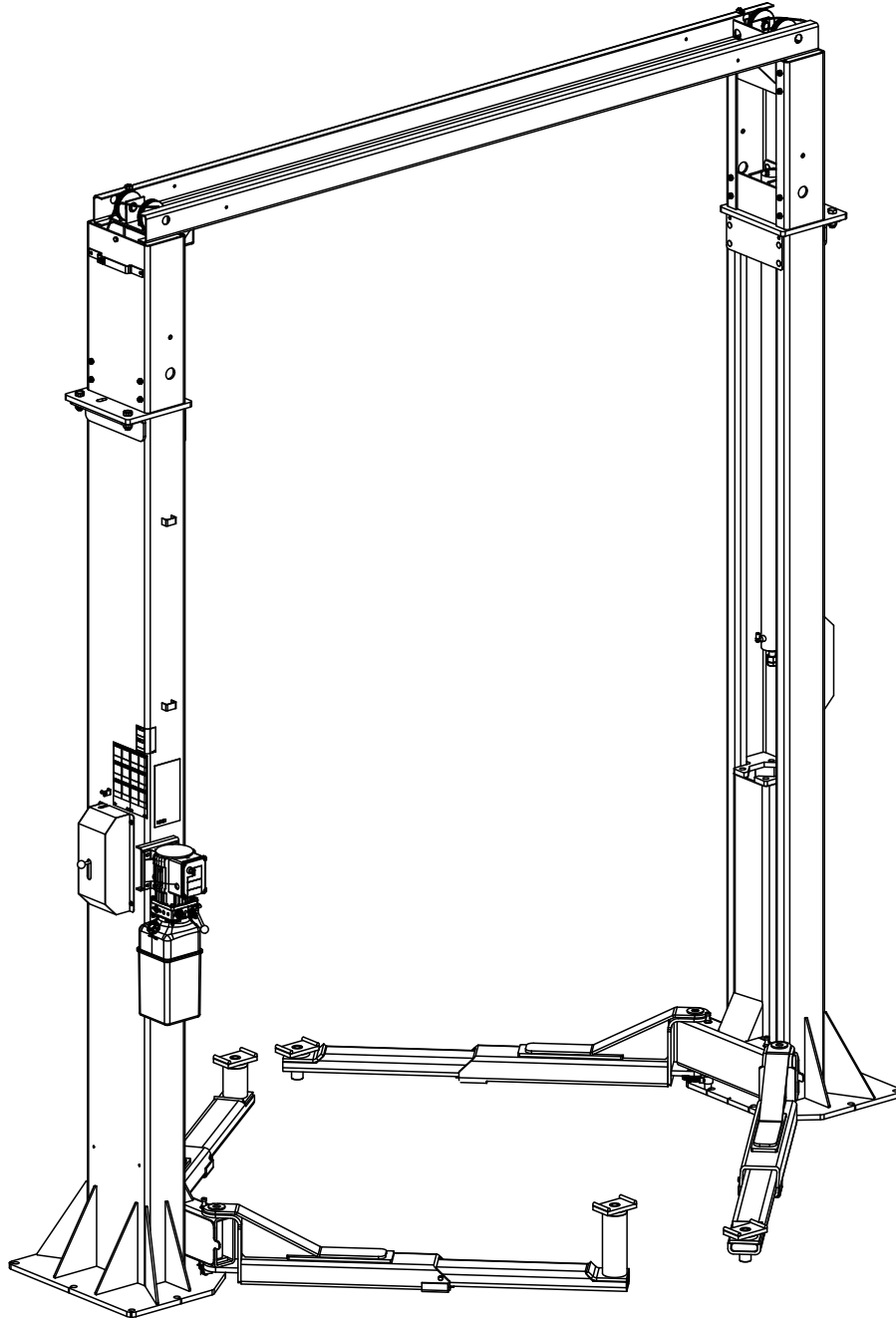


Installation Instructions

Capacity 15,000 lbs.

Capacity 18,000 lbs.



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

OPERATING CONDITIONS

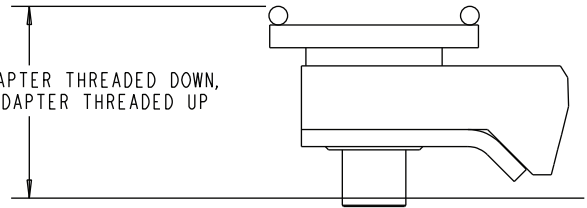
Lift is not intended for outdoor use
and has an operating ambient temperature
range of
41°-104°F (5°-40°C)

LP20639

NOTES:

- 1.) ALL HEIGHT DIMENSIONS ARE WITHOUT LEVELING SHIMS
- 2.) STANDARD HEIGHT LIFT SHOWN
- 3.) POWER UNIT RISE TIME (60Hz, 68" STROKE):
 $\varnothing$ ~48 SEC UNLOADED, 53 SEC. $\varnothing$ FULL LOAD
 $\varnothing$ ~45 SEC UNLOADED, 50 SEC. $\varnothing$ FULL LOAD
- 4.) LIFT CAPACITY: 18,000 LBS.
- 5.) MAX LOAD PER ARM: 4500 LBS.

5-9/32 WITH ADAPTER THREADED DOWN,
7-9/32 WITH ADAPTER THREADED UP



THREADED ADAPTER HEIGHT (TO FLOOR)

Fig. 1

PACKAGING WEIGHT AND DIMENSION	DIMENSION (INCH)	WEIGHT (LBS)
ONE BASE LIFT (NO EXTENSION KIT)	156 X 30 X 46	3434
STD. EXTENSION KIT	31 X 19 X 14	175
EXT. EXTENSION KIT	55 X 19 X 14	310

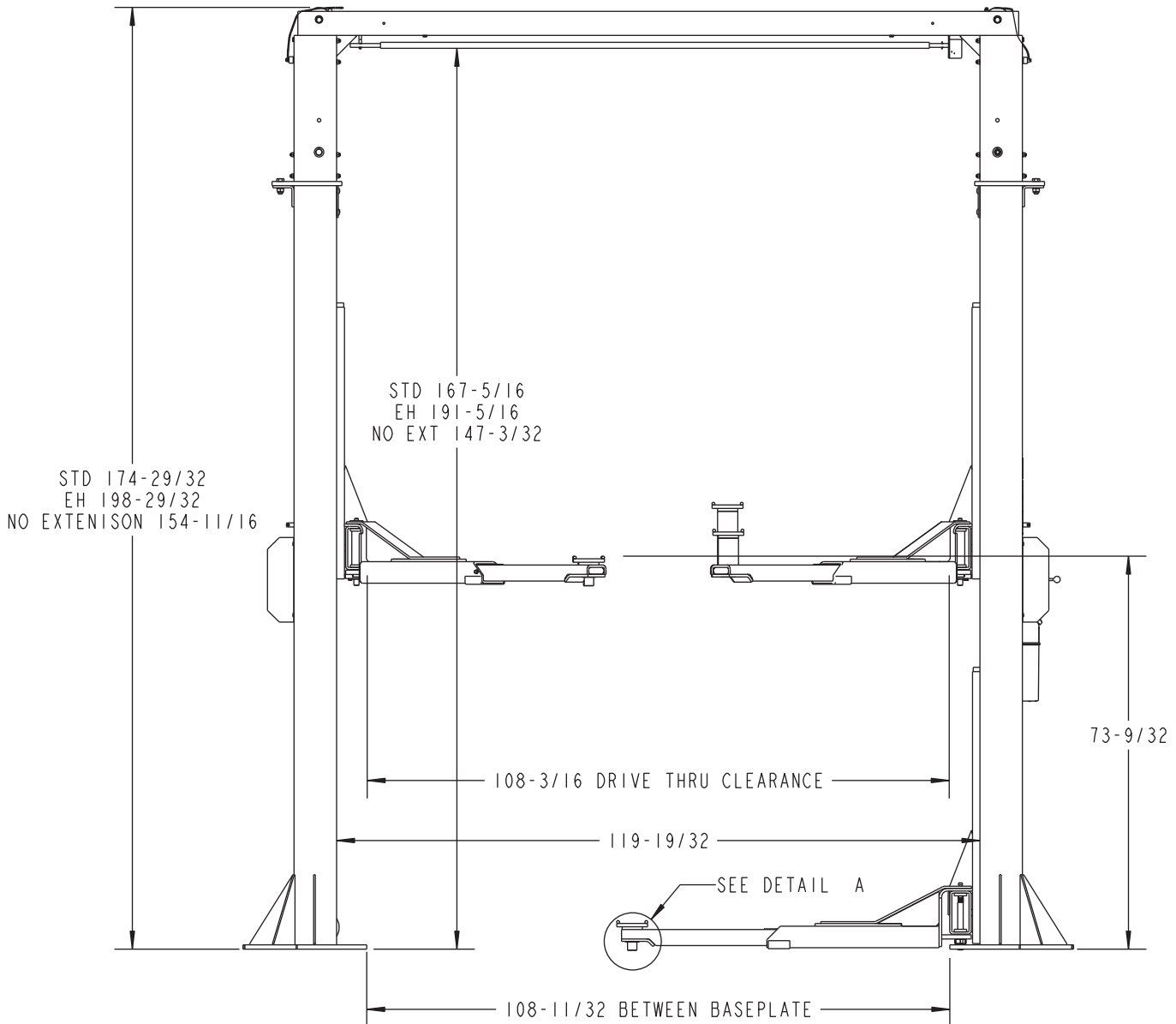


Fig. 2
2-STAGE ARMS

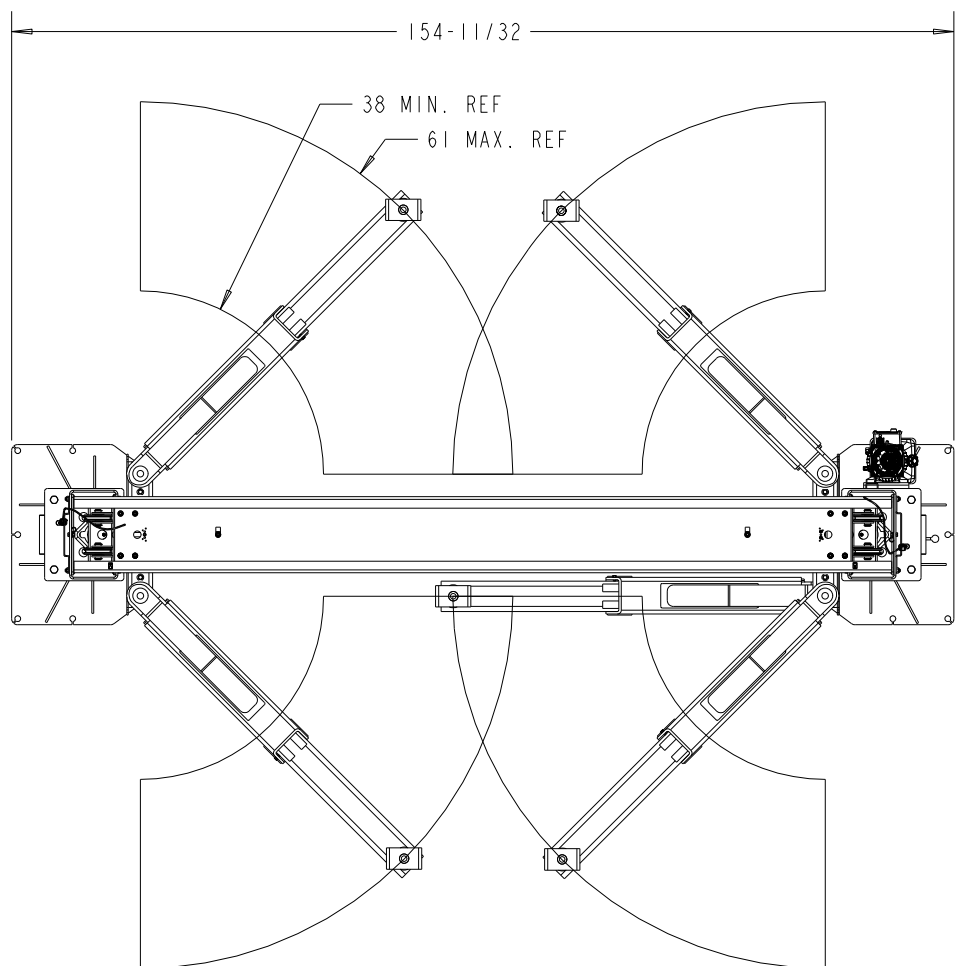
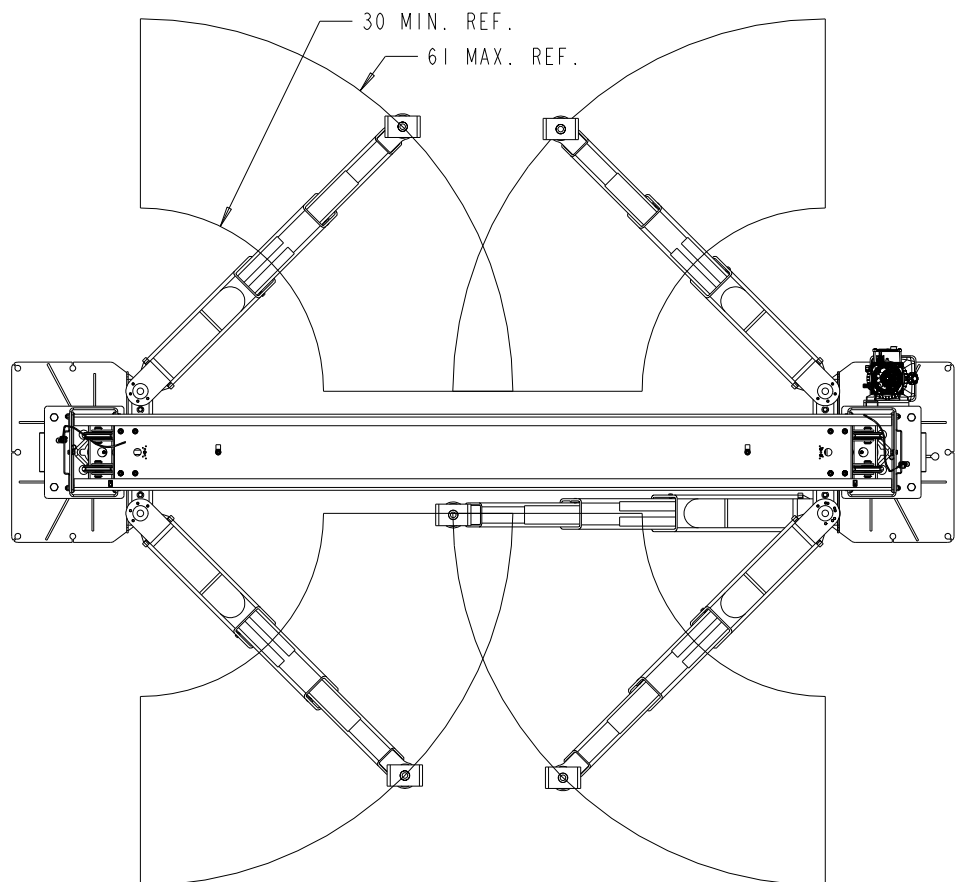


Fig. 3
3-STAGE ARMS



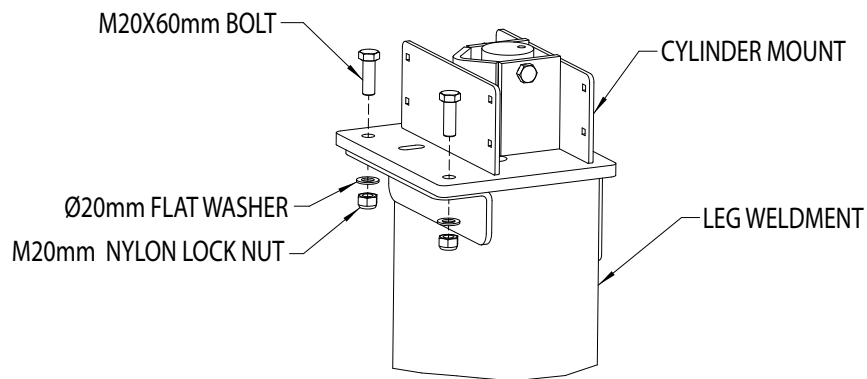
1. Lift Location: Use architects plan when available to locate lift. Fig. 1 shows dimensions of a typical bay layout.

2. Lift Height: See Fig. 1 for overall lift height of each specific lift model. Add 1" min. to overall height to lowest obstruction.

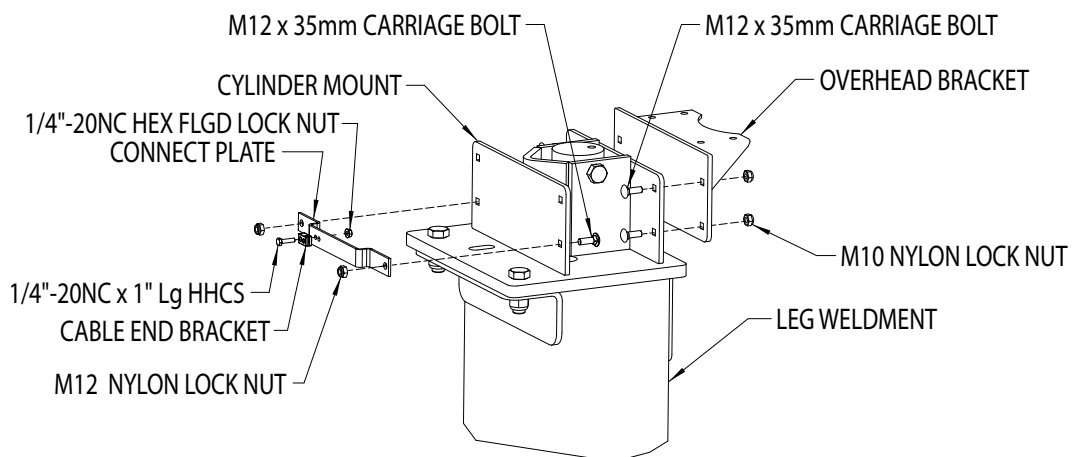
⚠️ WARNING DO NOT install this lift in a pit or depression due to fire or explosion risks.

Fig. 4

USE M20 BOLTS, NUTS, AND WASHERS AS SHOWN TO REPLACE THE PACKAGING BOLTS, NUTS



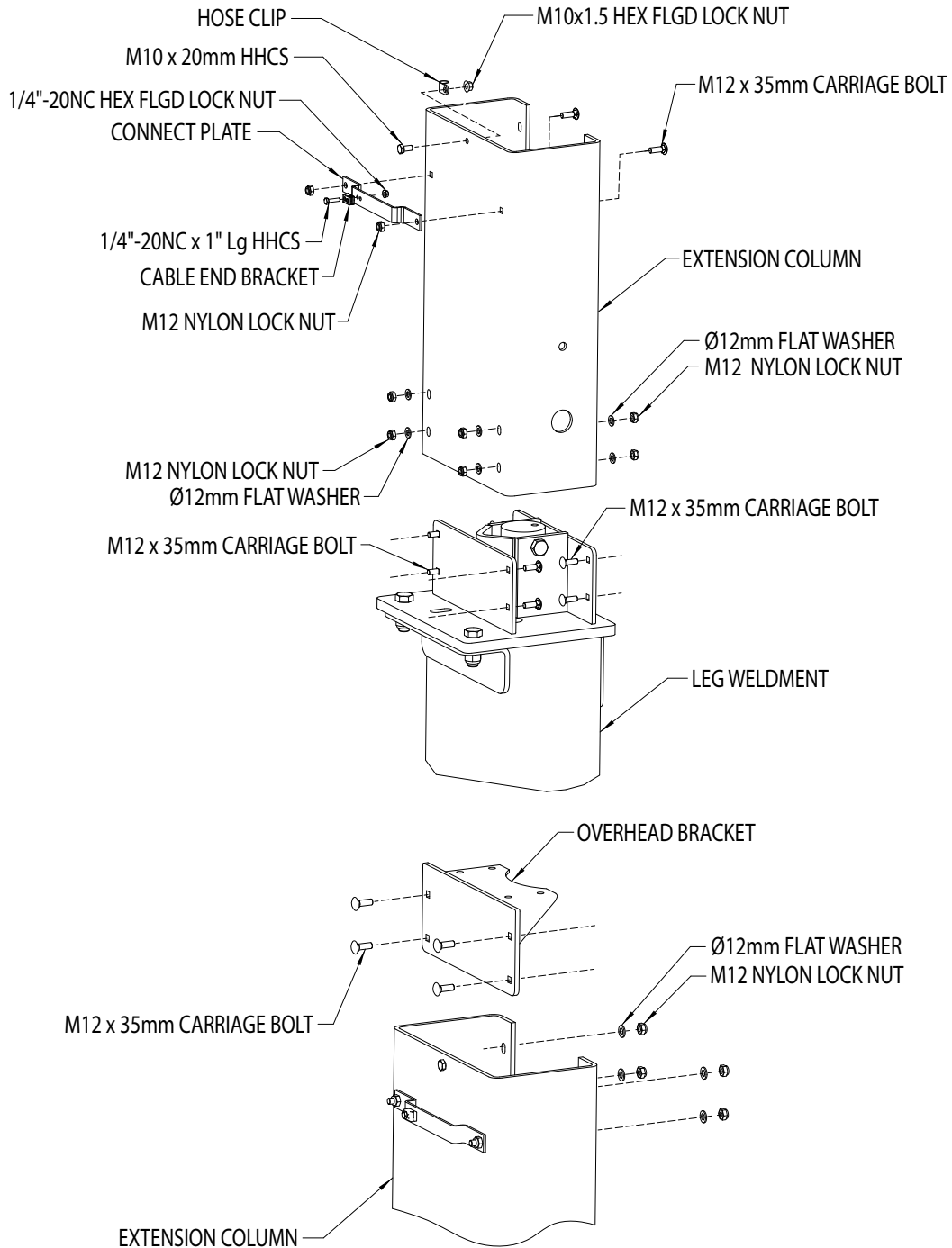
LH, NO EXTENSION COLUMN MODEL:



3. Install column extensions: Install extensions to columns using (8) M10 x 30mm lg. Carriage Bolts, (8) Ø10mm Flat Washers, and (8) M10 Nylon Lock Nuts, Fig. 5.

Fig. 5

STD & EH WITH EXTENSION COLUMN MODELS :

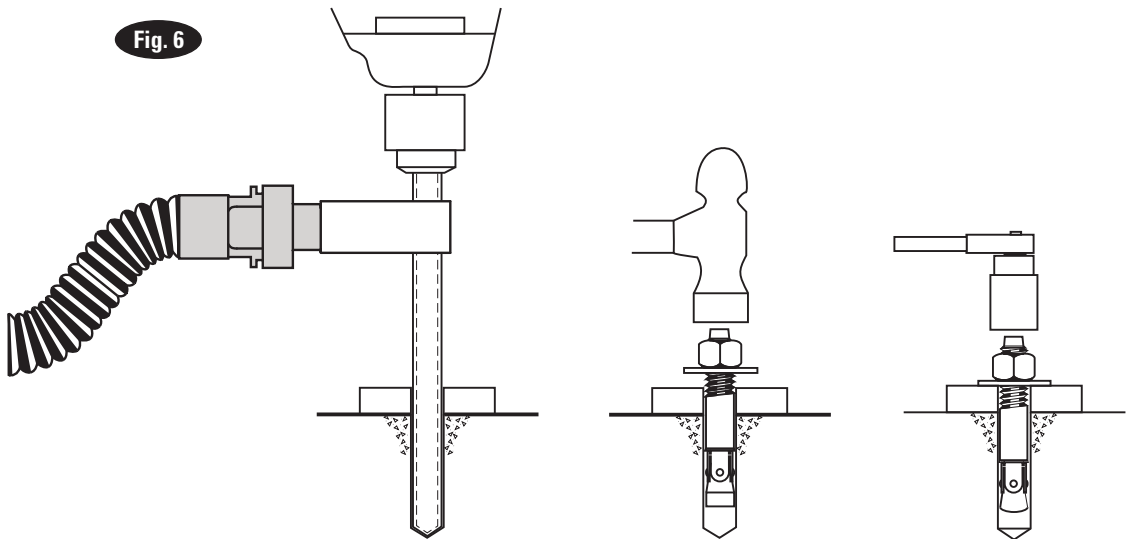


4. Lift Setting: Position columns in bay using dimensions shown in Fig.1. Place column with power unit mounting bracket on vehicle passenger side of lift. Both column base plate backs must be square on center line of lift. Notches are cut into each base plate to indicate center line of lift.

Use appropriate equipment to raise carriage to first latch position. Be sure locking latch is securely engaged.

5. Concrete and Anchoring: Drill (18) 3/4" dia. holes in concrete floor using holes in column base plate as a guide. See diagrams for hole depth, hole spacing, and edge distance requirements, Fig 6.

CAUTION DO NOT install on asphalt or other similar unstable surfaces. Columns are supported only by anchors in floor.



Drill holes using 3/4" carbide tipped masonry drill bit per ANSI B212.15-1994 (R2000). Construction dust collected per OSHA 29 CFR 1926.1153.

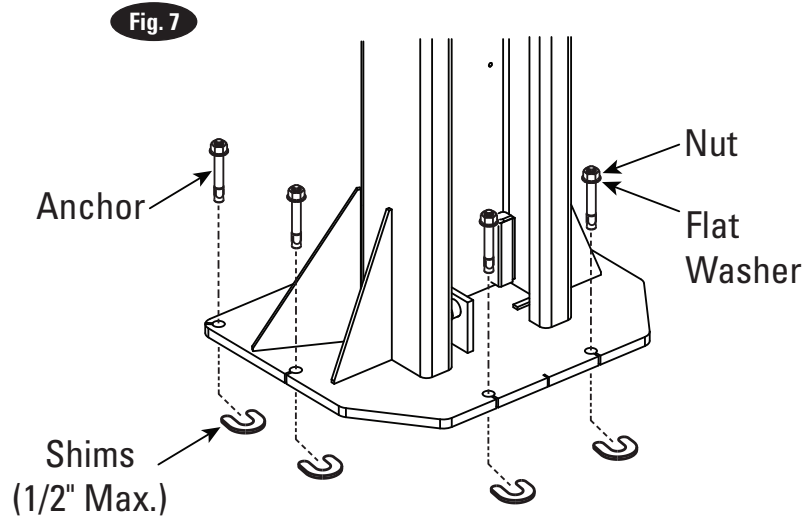
Run nut down just below impact section of bolt. Drive anchor into hole until nut and washer contact base.

Tighten nut with Torque wrench to 110 ft.-lbs. (149 Nm).

CONCRETE AND ANCHORING REQUIREMENTS				
STANDARD	ANSI/ALI ALCTV	IBC		SEISMIC
Minimum Floor Thickness	4-1/4 INCHES	5 INCHES	6 INCHES	Varies by location consult with your structural engineer and manufacturer's representative.
Anchor	Hilti Kwik Bolt III 3/4" x 5-1/2" Anchors supplied with the lift.*	Hilti HIT-HY 150 MAX-SD Adhesive; Hilti HIT-HY 150 MAX Adhesive; HILTI HIT-RE 500-SD Adhesive	Hilti Kwik Bolt III 3/4" x 7"	
Minimum Concrete Strength	3000 PSI	3000 PSI	3000 PSI	
Minimum Anchor Embedment	3-1/4 INCHES	3-1/2 INCHES	3-3/4 INCHES	
Minimum Distance to Concrete Edge, Crack, Expansion Joint, Abandoned Anchor Hole	4-1/2 INCHES	5-1/4 INCHES	3-1/4 INCHES	
*The supplied concrete fasteners meet the criteria of the American National Standard "Automotive Lifts - Safety Requirements for Construction, Testing, and Validation" ANSI/ALI ALCTV-2017, and the lift owner is responsible for all charges related to any additional anchoring requirements as specified by local codes. Contact customer service for further information at: 800.445.5438				

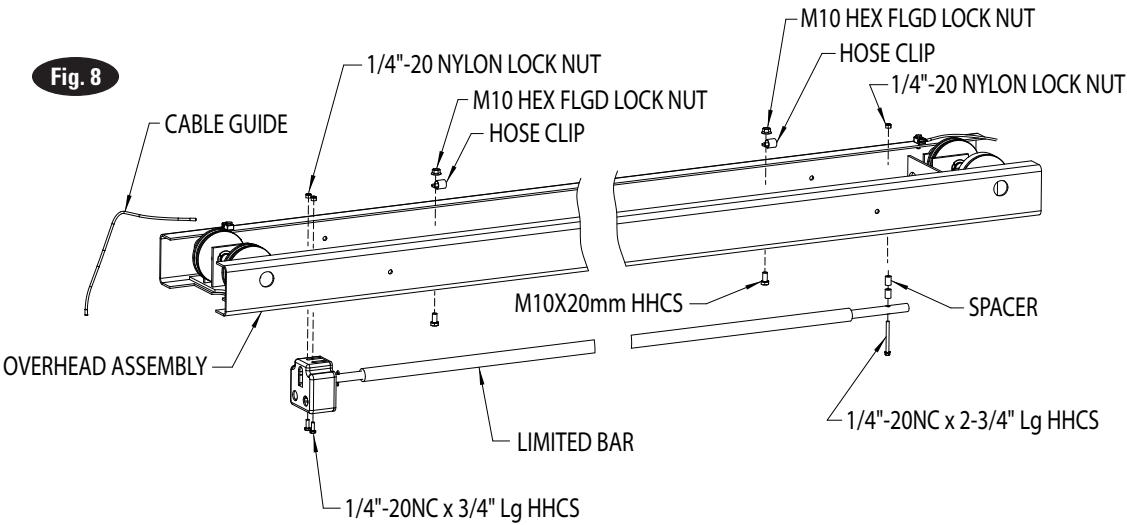
6. Column Shims: **IMPORTANT** Using the horse shoe shims provided, shim each column base until each column is plumb. If one column has to be elevated to match the plane of the other column, full size base shim plates should be used (Reference Shim Kit). Recheck columns for plumb. Tighten anchor bolts to an installation torque of 110 ft-lbs. Shim thickness **MUST NOT** exceed 1/2" when using the 5-1/2" long anchors provided with the lift, Fig 7.

If anchors do not tighten to 110 ft-lbs. installation torque, replace concrete under each column base with a 6' x 6' x 6" thick 3000 PSI minimum concrete pad keyed under and flush with the top of existing floor. Let concrete cure before installing lifts and anchors.

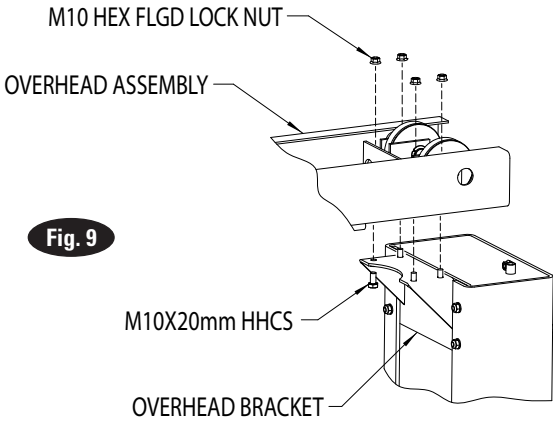


NOTE: If more than 2 horse shoe shims are used at any of the column anchor bolts, pack non-shrink grout under the unsupported area of the column base. Insure shims are held tightly between the baseplate and floor after torquing anchors.

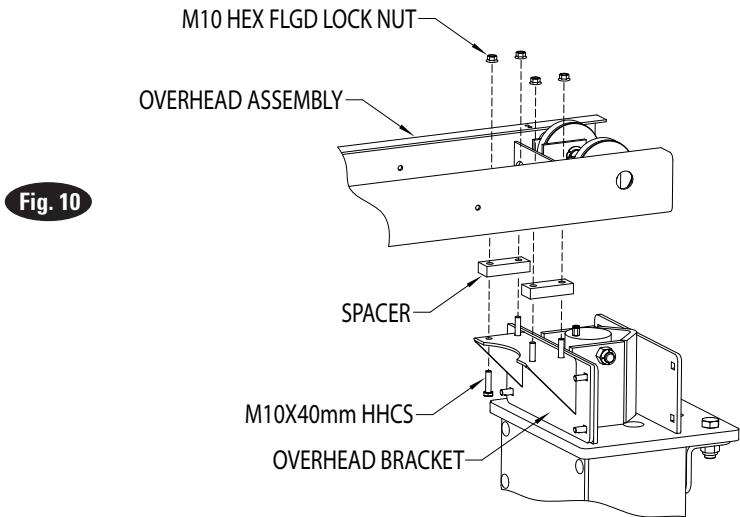
7. Overhead Assembly: Install overhead assembly to column extensions with (4) M10 x 20mm Lg. HHCS and Flanged Locknuts, Fig. 9. To ease installation, use the tabs on the overhead to rest it on the extensions when installing.



STD & EH WITH EXTENSION COLUMN MODELS



LH, NO EXTENSION COLUMN MODELS



8. Switch Assembly Mounting: Mount switch assembly towards power unit column as shown, Fig. 8, using (2) 1/4"-20NC x 3/4" lg. HHCS, nuts and Star Washers.

For single and three phase lifts with push button control box: Insert 1/4"-20NC x 2-3/4" HHCS through pivot hole in end of switch bar. Insert opposite end of bar through slot in switch mounting bracket, Fig. 11 and Fig. 12. Then secure HHCS and Switch Bar to overhead as shown, Fig. 8, using (2) 3/4" spacers and 1/4"-20NC Locknut. Tighten Hex bolt leaving 1/16" gap between the spacer and the overhead assembly.

Fig. 11

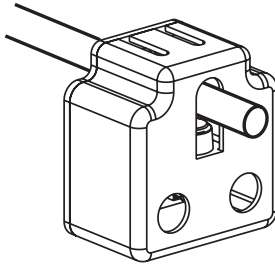
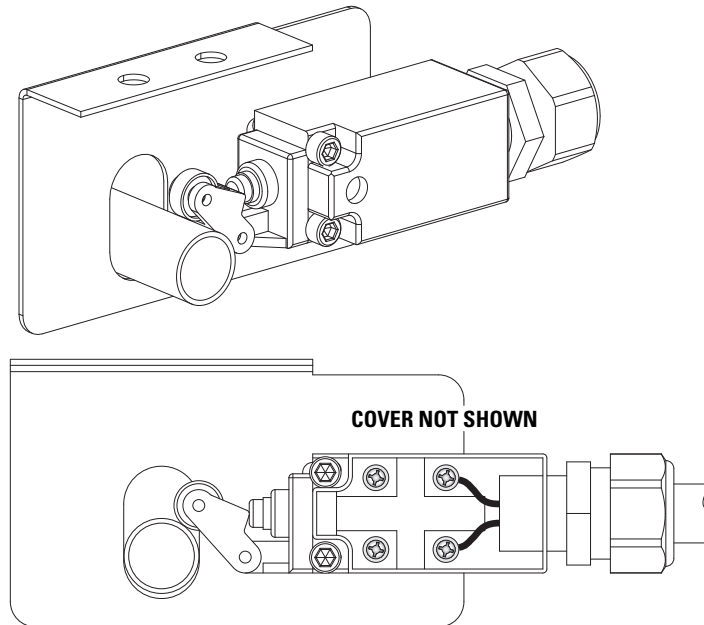


Fig. 12



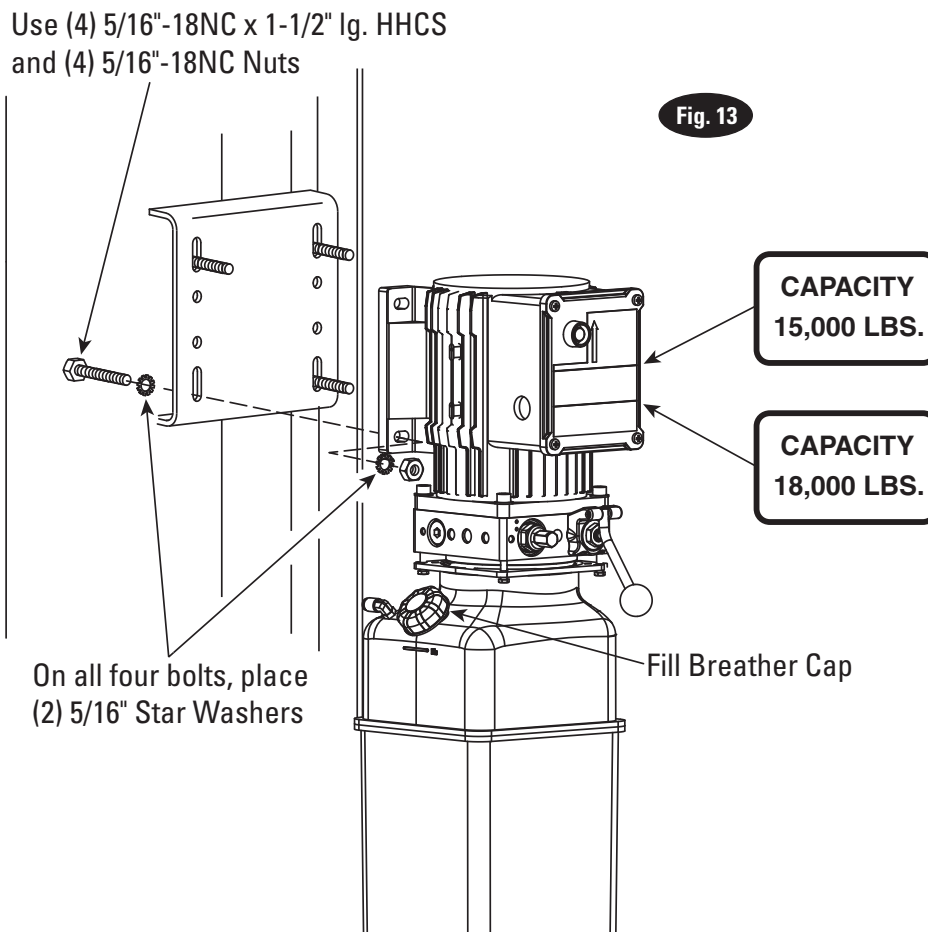
9. Power Unit: Put the (4) 5/16"-18NC x 1-1/2" flanged Locking HHCS thru holes in power unit bracket using Push-Nuts to hold in place, Fig. 13. Mount unit with motor up to column bracket and install (2) 5/16" Flanged Locking Nuts. Install and hand tighten Branch Tee to pump until O-ring is seated. Continue to tighten the locknut to 10-15 ft.-lbs., or until the nut and washer bottom out against the pump manifold. **NOTE:** You may still be able to rotate the Branch Tee. This is acceptable unless there is seepage at the O-ring. If so, slightly tighten the locknut.

CAUTION Over tightening locknut may tear O-ring or distort threads in pump manifold outlet.

10. Hoses: Clean adapters and hose. Inspect all threads for damage and hose ends to be sure they are crimped, Fig. 14.

11. Flared Fittings Tightening Procedure:

1. Screw the fittings together finger tight. Then, using the proper size wrench, rotate the fitting 2-1/2 hex flats (1/3 of a revolution).
2. Back the fitting off one full turn.
3. Again tighten the fittings finger tight; then using a wrench, rotate the fitting 2-1/2 hex flats (1/3 revolution). This will complete the tightening procedure and develop a pressure tight seal.



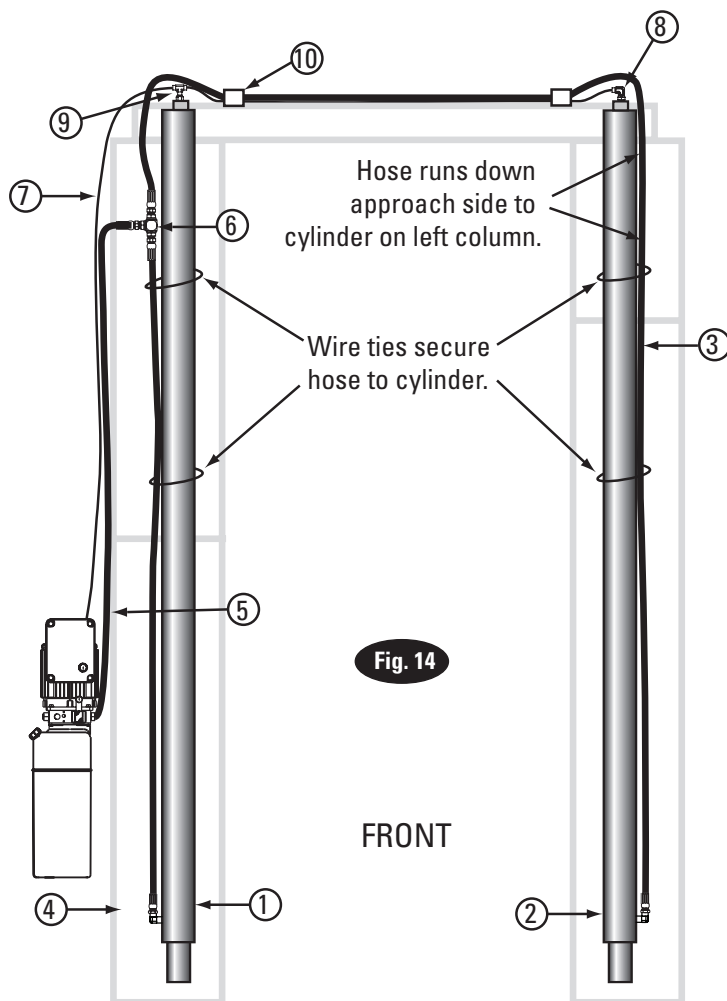
12. Adapter & Hose Installation:

1. Before installing the hoses into the lift, attach the Overhead hose Pc. (3) and Cylinder hose Pc. (4) to the "T" fitting Pc. (6) as shown in Fig. 16.
2. Route the assembled hose through the overhead but do not attach to either cylinder.
3. Route the Power Unit hose Pc. (5) through the column hole and attach it to the "T" fitting.

IMPORTANT: Before you connect the power unit hose you must tuck the hoses and union tee behind the cylinder to give you room to complete installation, Fig 16.

4. Place the assembled "T" fitting behind the cylinder and connect the hoses to the two cylinder ends and the Power Unit.
5. Take up the slack in the Power Unit side cylinder hose and wire tie the "T" fitting tightly to the power unit side cylinder.
6. Secure each hose as needed.
7. Run return line from elbow Pc. (8) to tee Pc. (9). The return line then runs outside of column down and connects to the power unit, Fig. 14.
8. Verify hydraulic return line fitting is located on fluid tank, Fig. 17. If not, install included return line fitting to power unit, Fig. 18.

NOTE: Overhead hose goes over top end of overhead assembly, Fig. 15.



ITEM	QTY.	DESCRIPTION
1	1	Power Unit Side Cylinder
2	1	Passenger Side Cylinder
3	1	Passenger Side Hose
4	1	Cylinder Hose
5	1	Power Unit Hose
6	1	3/8" Branch Tee
7	1	Return Line
8	1	1/4" Elbow
9	1	1/4" Branch Tee
10	2	Hose Clamps
	2	M10-1.5 x 20mm HHCS
	2	M10-1.5 Flanged Locknuts

Fig. 15

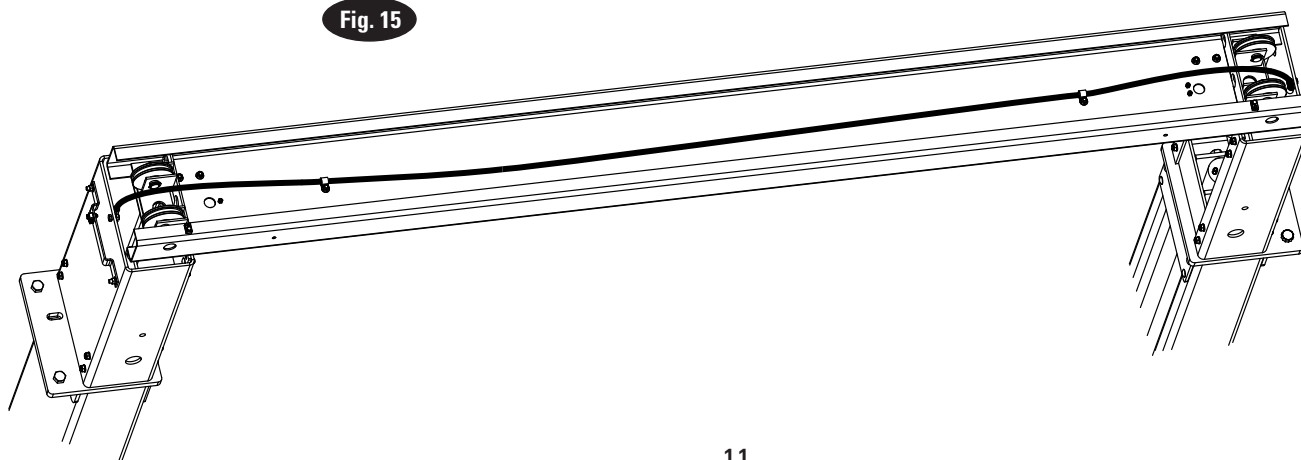
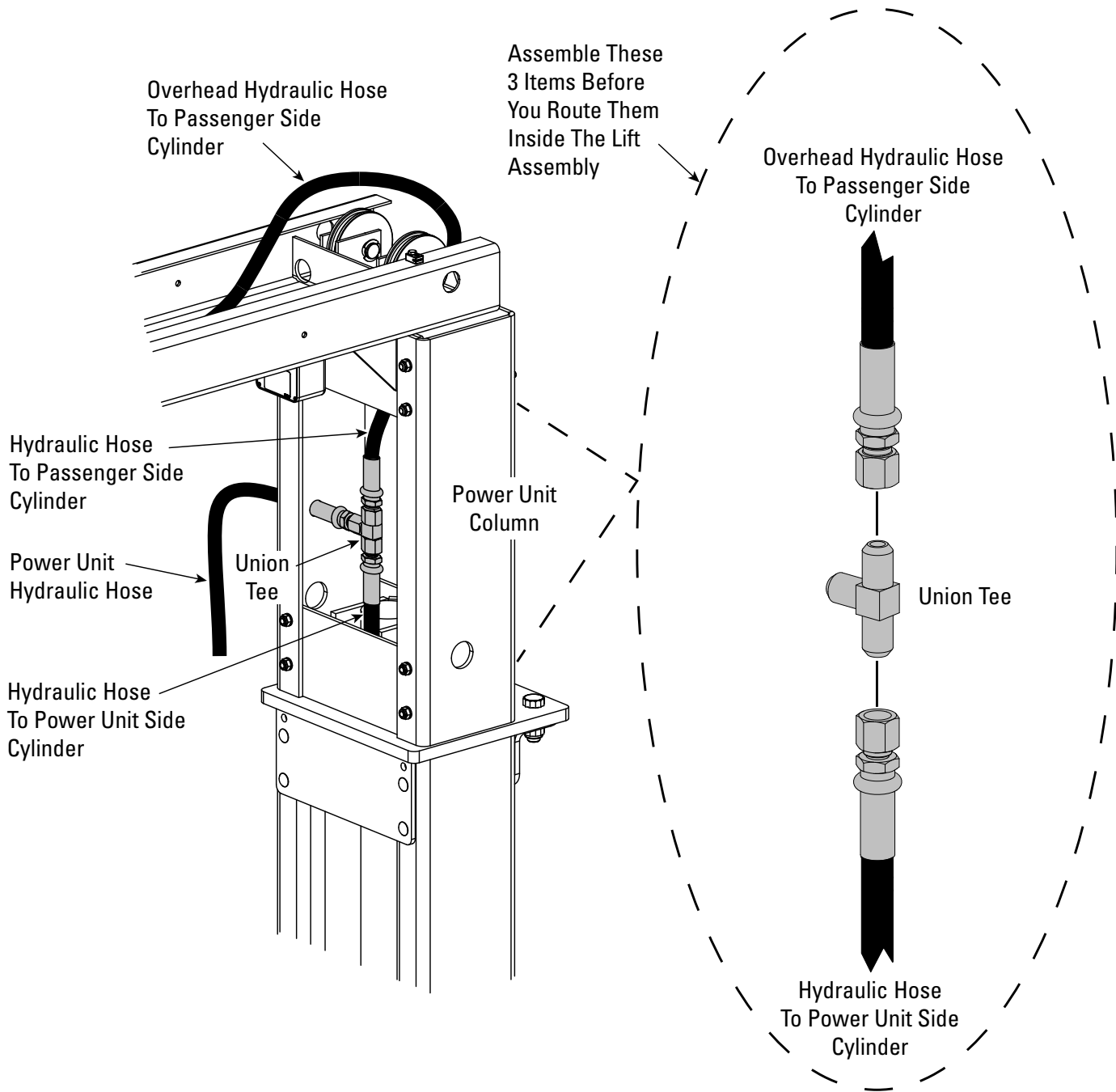


Fig. 16



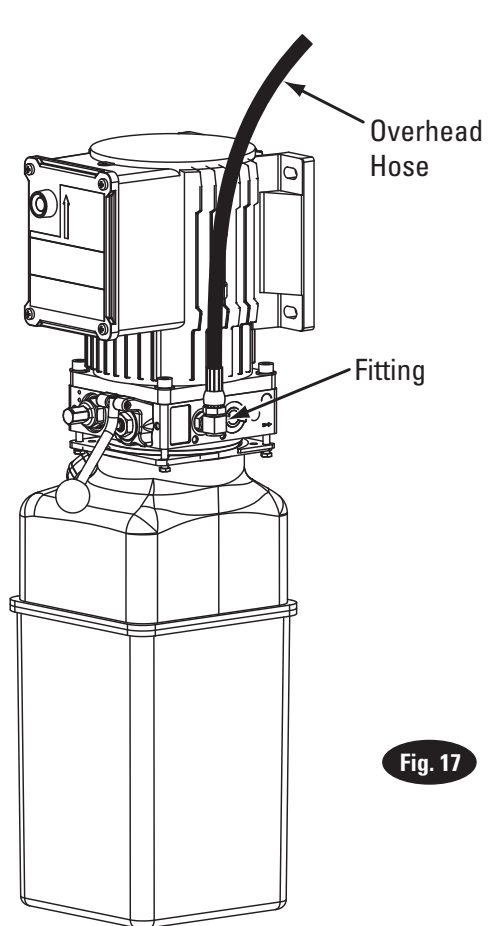


Fig. 17

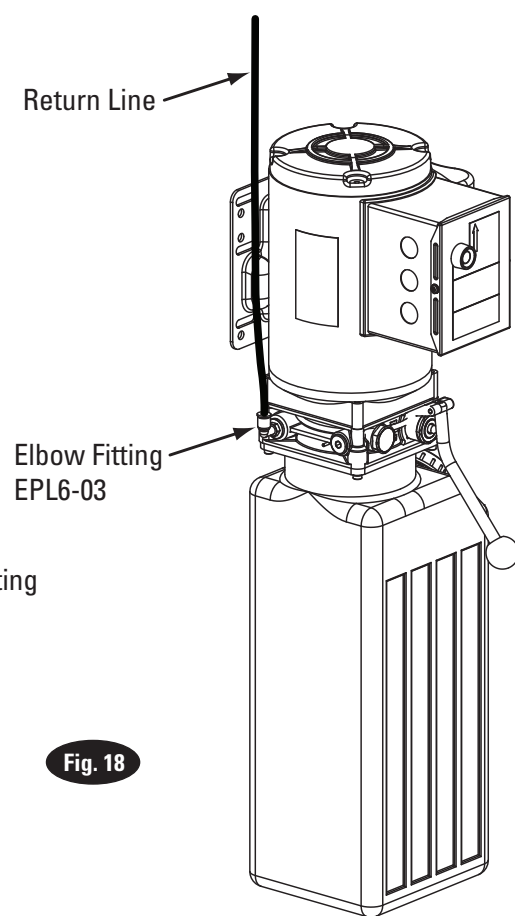
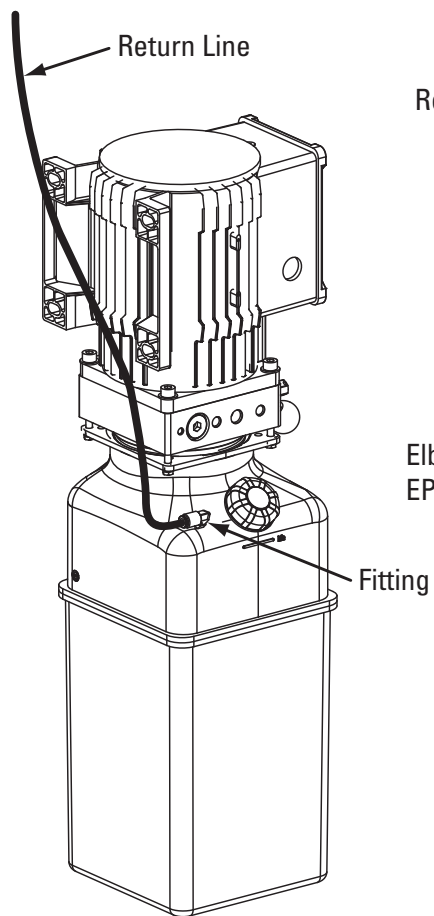


Fig. 18

13. Assemble carriage cables

1. The carriages should be resting on the same safety rack tooth. Measure the height above the baseplate for each carriage. The measurements should be within 3/8" of each other. Make a note of the two measurements.
2. Standing between the two legs looking at either carriage, push one end of a cable down through the right-rear hole in the top of the carriage until the cable hits the floor.
3. Attach a 3/4" nylon insert nut with an SAE washer to the end of the cable. Connect the nut to the cable so that approximately 1/8" of the cable end sticks past the end of the nut.
4. Running the cables, Figure 19 and 20.
 - Thread the other end of the cable up through the upright
 - Over the rightmost pulley at the top of the lift
 - Over to the leftmost overhead pulley on the other side of the lift
 - Down through the left rear hole in the top of the carriage
 - Around the pulley in the bottom of the leg
 - Up through the left-front hole in the top of the carriage
5. Secure the cable end with a 3/4" nylon insert nut and SAE washer. Do not tighten the cable at this time.
6. Repeat the process for the other cable, taking care not to cross them.
7. Take out the slack, but do not tighten, both cables by turning down the nuts on the top of each carriage top. Use vise grips to hold the cable end, but be very careful not to damage the threads.
8. The carriages must remain at the same lock position while the cables are being tightened. Overtightening of one cable could raise the carriage in the opposite leg and cause the carriage safety latches to be out of sync.
9. Alternately tighten the cable nuts at both carriages until the cables are tightened. Correct tension in the cables is indicated by approximately 1/4" deflection on the cable in the leg when pulled at its midpoint.
10. Measure and compare the carriage heights to the earlier measurement, or check that the safety latch pull rod will not disengage to verify that neither carriage has been raised. If a carriage has been raised more than 1/8", loosen the cables and repeat the procedure.
11. If the cables are installed correctly, both carriages will raise together. If equipment capable of lifting the carriages is readily available, lift one of them just enough to pull out the safety latch pull rods under both carriages and carefully lower to the ground. This will simplify the cylinder bleeding procedure.
12. Install 5/16" -18NC x 1 1/2" HHCS and 5/16" lock washer as shown in detail by all six sheaves to provide cable retention.

Fig. 19

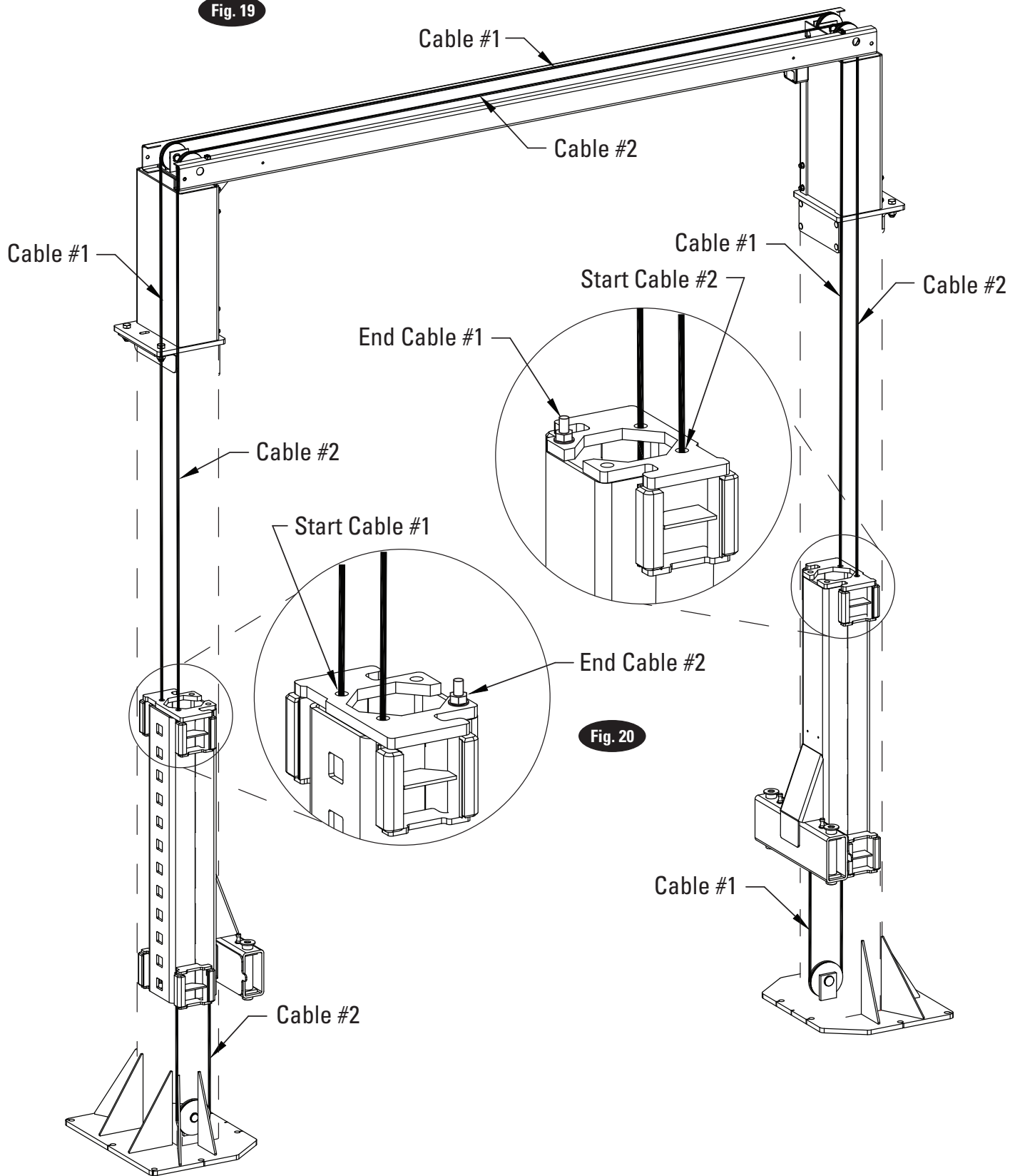


Fig. 20

14. Locking Latch Cable:

1. Install latch cable sheave and retaining rings in upper slot of power unit column as shown, Fig. 21.
2. Slip loop end of cable over end of shoulder screw on right side latch control plate, Fig. 21.
3. Feed the other end of the cable through the latch cable sheave slot making sure that the cable is running under the bottom side of the latch cable sheave and inside the right column, Fig. 21.
4. Attach latch cable conduit guide brackets to overhead as shown, Fig. 22. Always use the holes on the approach side of the lift. HHCS should be in hole nearest the center of the overhead.
5. Route cable up inside column and through the latch cable guide, Fig. 22.

IMPORTANT

Using wire ties provided, tie off hydraulic hose snug to cylinders to keep hose away from equalizing cable, Fig. 14.

6. Continue routing cable to the left column latch cable guide, Fig. 22, routing the cable through the left column latch cable guide.
7. Bring the cable down inside the left column and feed the end of the cable through the lower latch cable sheave slot so that the cable is now back outside the column, Fig. 23.
8. Route cable under the bottom side of the latch cable sheave, Fig. 23.
9. At this point you **MUST** install the latch handle, jam nut, and right column latch cover Fig. 21 & Fig. 24. Install latch handle ball, Fig. 24.
10. Insert cable in cable clamp along one side, loop around shoulder screw and back down, inserting cable along other side of cable clamp, Fig. 23. Place top back on clamp, barely tightening.
11. Next, pull the control plate down, Fig. 22 & Fig. 23, to eliminate any clearance between the control plate slot and the latch dog pin, Fig. 22.
12. Using Pliers, pull cable tight and secure the clamp close to the shoulder screw. Tighten clamp.

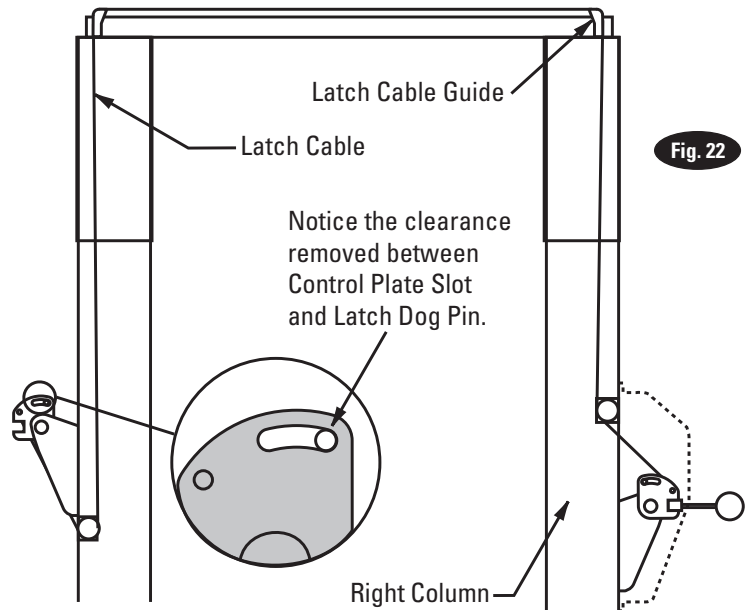
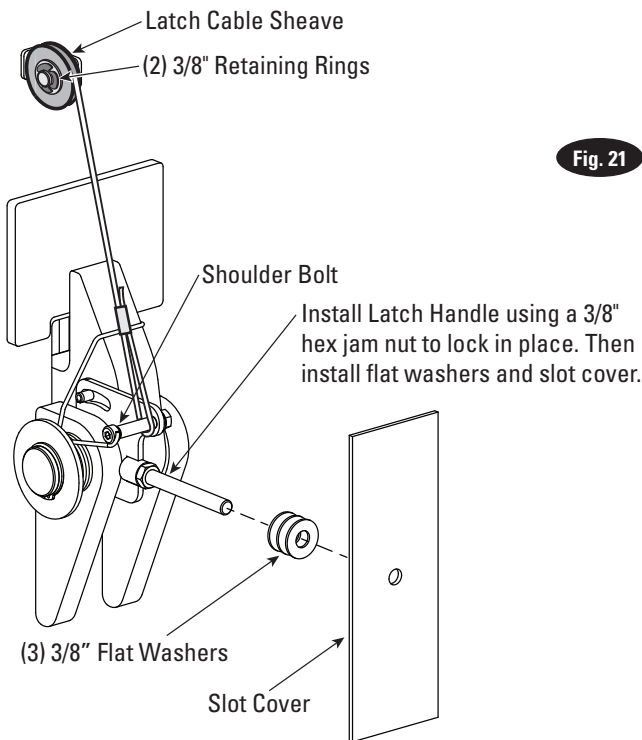


Fig. 23

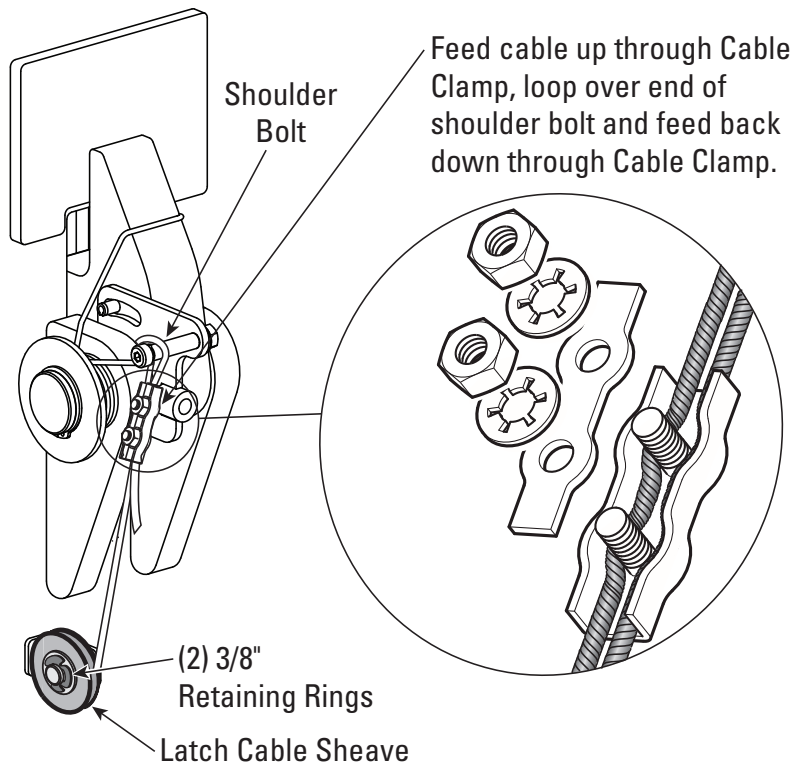
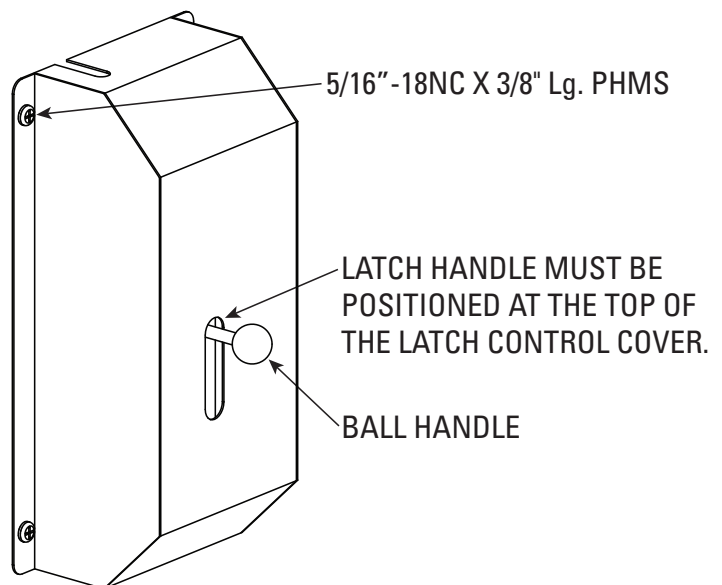


Fig. 24



15. Electrical (1Ø Only): Have a certified electrician run appropriate power supply to motor, Figs. 25 thru 27. Size wire for 20 amp circuit. See Motor Operating Data Table.

CAUTION Never operate the motor on line voltage less than 208V. Motor damage may occur.

IMPORTANT: Use separate circuit for each power unit. Protect each circuit with time delay fuse or circuit breaker. For single phase 208-230V, use 20 amp fuse. Three phase 208-240V, use 20 amp fuse. For three phase 400V and above, use 10 amp fuse. For wiring see Figs. 25 thru 29. All wiring must comply with NEC and all local electrical codes.

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

16. Overhead switch: Check overhead switch assembly to assure that switch bar is depressing switch plunger sufficiently to actuate the switch. The overhead switch is wired normally open, see Figs. 25 thru 29. Lift will not operate until weight of switch bar is depressing switch plunger. Verify that Power Unit stops working when switch bar is raised, and re-starts when the bar is released.

CAUTION When bleeding, hold a shop cloth over bleeder screw to buffer the air and fluid while bleeder valve is open.

17. Oil Filling & Bleeding: Use Dexron III ATF, or Hydraulic Fluid that meets ISO 32 specifications. Remove fill-breather cap, Fig. 13. Pour in (8) quarts of fluid. Start unit, raise lift about 2 ft. Open cylinder bleeders approx. 2 turns, Fig. 14.

Close bleeders when fluid streams. Torque values for the bleeders are 15 ft. lb. minimum and 20 ft lb. maximum. Fully lower lift. Add more fluid until it reaches fill line on the tank. System capacity is (14) quarts. Replace fill-breather cap.

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

Single Phase Power Unit

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

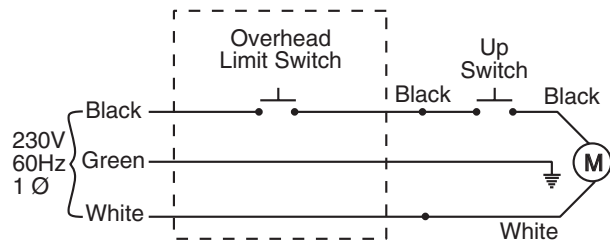


Fig. 25

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

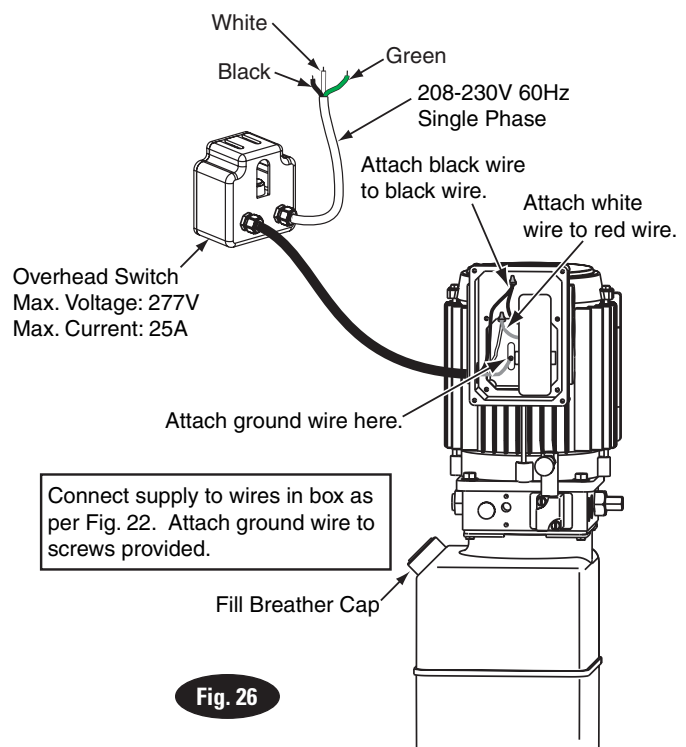


Fig. 26

NOTE: Assure cord used for connection between the overhead switch and power unit is of the type specified in:

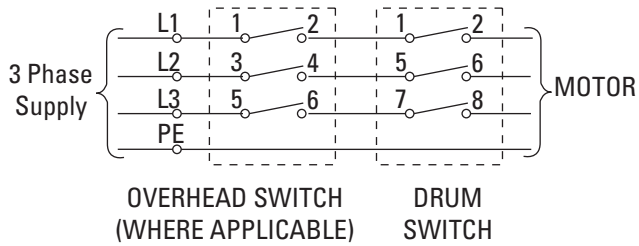
UL201, Sections 12.1.2 & 12.1.4

(Example: SO, G, STO) Size for 25 amp circuit. See UL 201, Section 14 for proper wiring requirements for this connection.

NOTE: Two Different Drum Switches were used please select one of the two options below.
Newer model three phase lifts use the push button control box with contactor. Its instructions follow the Drum Switch instructions.

NOTES:

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



FOR 3 Ø POWER
 UNITS: Attach Box using
 M5 x 10 PHMS, Plated

**Capacitor Box Attachment
 Option One**

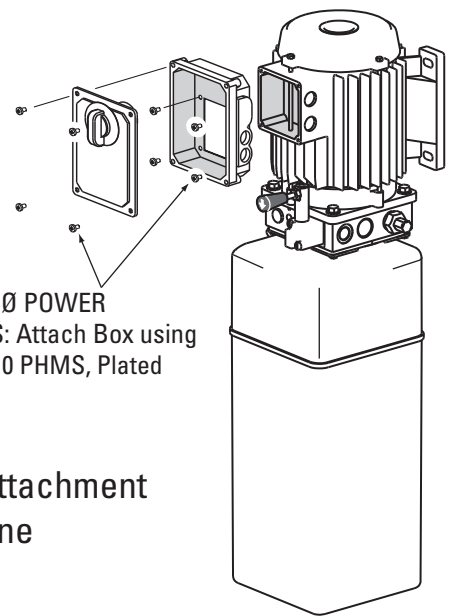
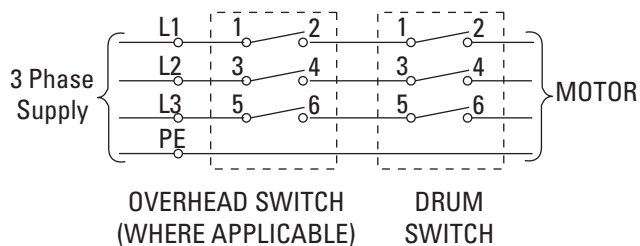
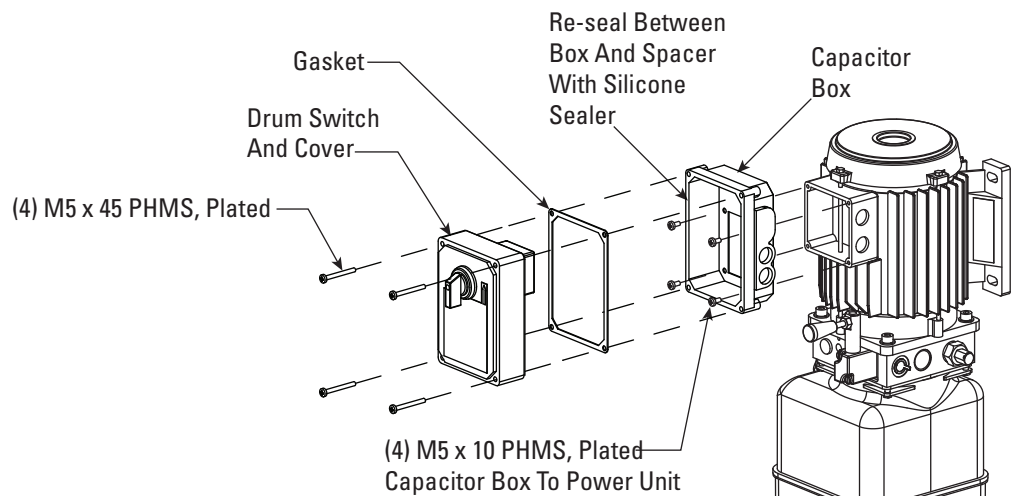
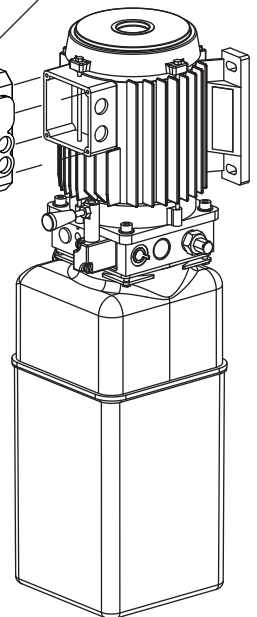


Fig. 27



**Capacitor Box Attachment
 Option Two**



18. 3Ø Control Box Installation:

1. Attach Mounting Bracket on column, as shown in Fig. 13, using (1) 5/16"-18NC x 1/2" Socket Head Counter Sunk Machine Screw, (2) 5/16"-18NC x 1/2" HHCS, and (2) 5/16" Flat Washers.
2. Attach Control Box to Bracket using (4) 1/4"-20NC x 1/2" HHCS, (4) 1/4" Flat Washers, and (4) 1/4" Star Washers.
3. Route cord through strain relief on motor and connect per table on the bottom of page.

Note:

The contactor in the control box has a 480V coil. For installations where the electric supply is 230V, the coil must be replaced with the extra 230V coil shipped with the control box. For 575V electric supply, the coil must be replaced with the extra 575V coil shipped with the lift.

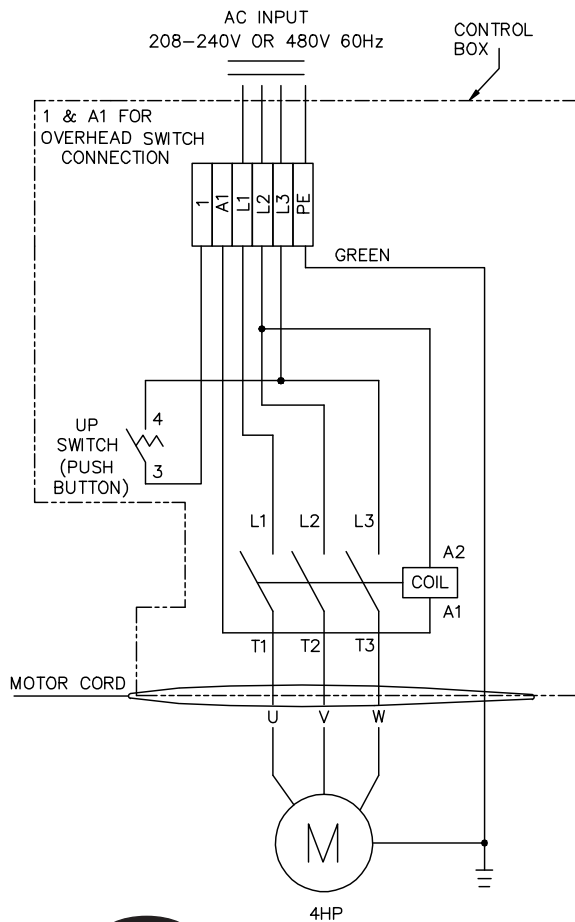
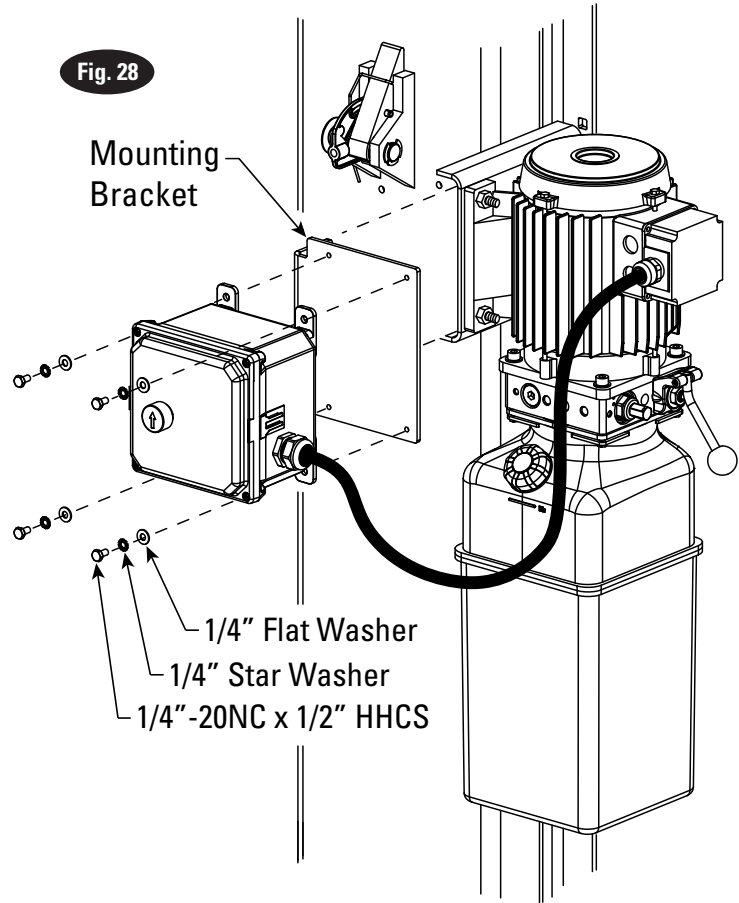
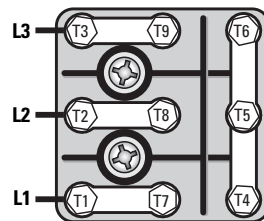


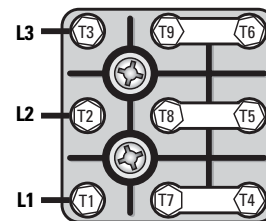
Fig. 28a



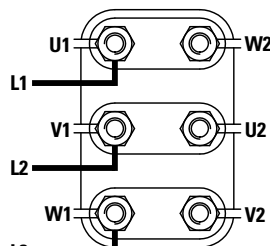
Use Appropriate Terminal Diagram



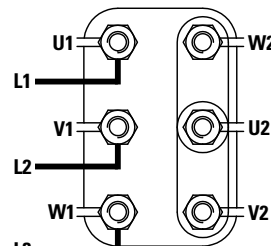
208-240V
50-60Hz. 3Ø



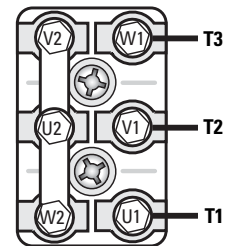
440-480V 50-60Hz. 3Ø
380-400V 50Hz. 3Ø



208-240V
50-60Hz. 3Ø



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



575V 60Hz. 3Ø

Three Phase Power Unit

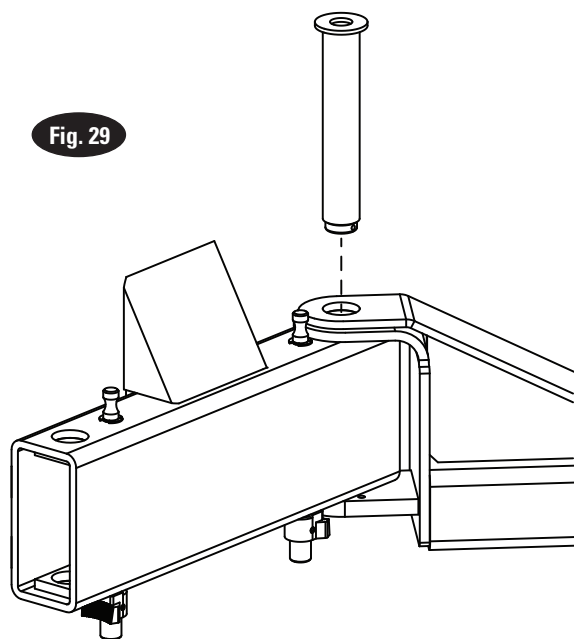
MOTOR OPERATING DATA TABLE - THREE PHASE	
LINE VOLTAGE	RUNNING MOTOR VOLTAGE RANGE
208-240V 50/60Hz.	197-253V
400V 50Hz.	360-440V
440-480V 50/60Hz.	396V-528V
575V 60Hz.	518V-632V

- 19. Oil Filling & Bleeding:** Use Dexron III ATF, or Hydraulic Fluid that meets ISO 32 specifications. Remove fill-breather cap, Fig. 13. Pour in (8) quarts of fluid. Start unit, raise lift to full rise several times until lift operates smoothly.

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

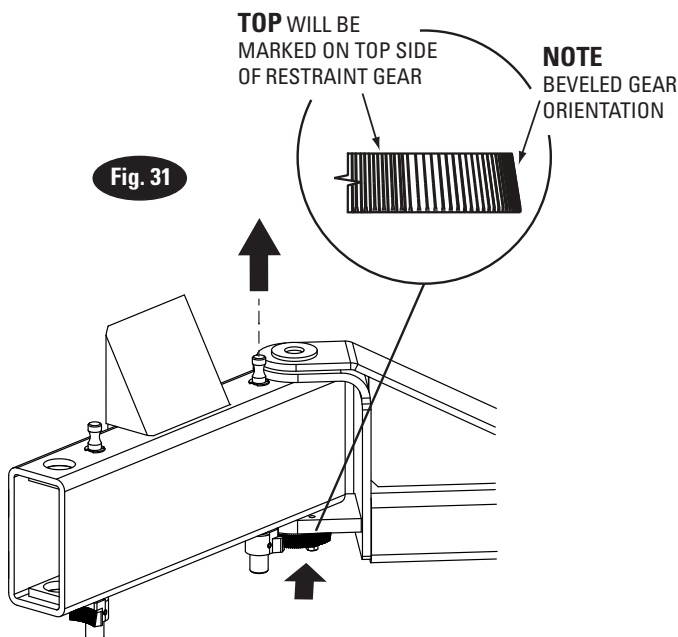
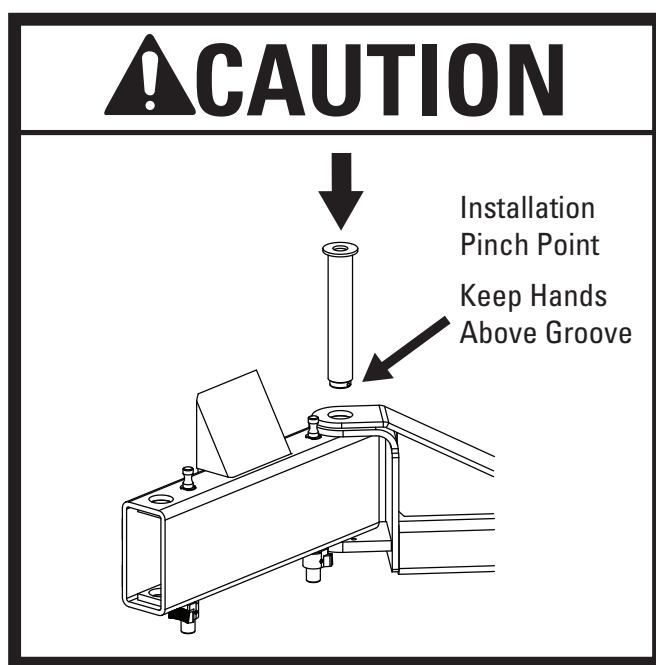
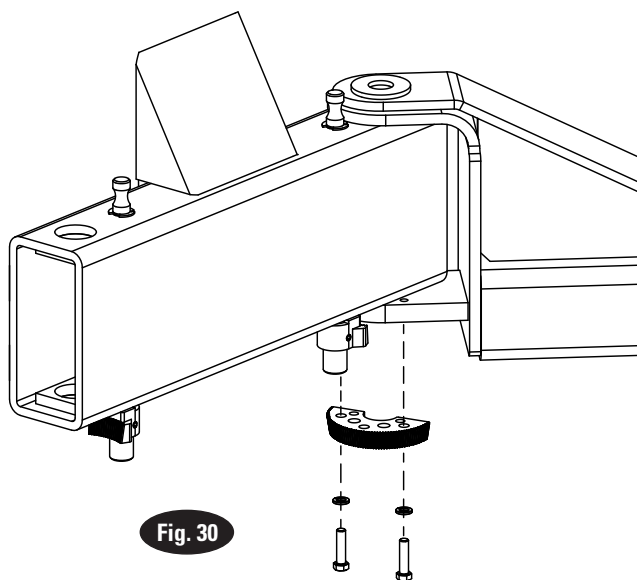
- 20. Overhead switch:** Check overhead switch assembly to assure that switch bar is depressing switch plunger sufficiently to actuate the switch. The overhead switch is wired normally open, see Fig. 26. Lift will not operate until weight of switch bar is depressing switch plunger. Verify that Power Unit stops working when switch bar is raised, and re-starts when the bar is released.

- 21. Arms & Restraints:** Before installing arms, raise carriages to a convenient height. Grease swivel arm pins and holes with Lithium grease. Slide arm into yoke. Install 1-3/4" diameter arm pin(s), Fig. 29.



After installing arms and pins, install arm Restraint Gears as follows: Install Restraint Gear onto arm clevis, as shown, Fig. 30. Ensure side of gear marked **TOP** is facing upward, Fig. 31.

NOTE: **TOP** is stamped on top side of gear. You may need to pull up on the pin to allow enough room to install Restraint Gear.

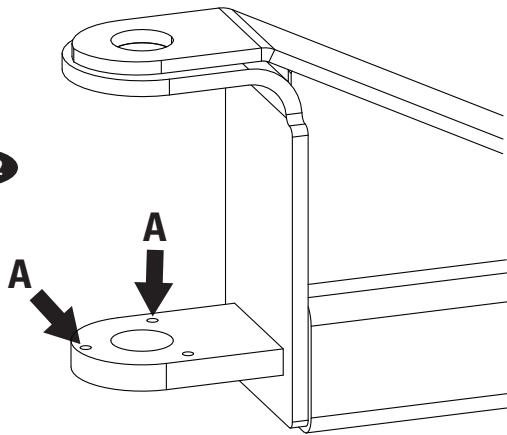


22. Arms With 3 Holes In Bearing Bars:

Install the (2) 3/8"-16NC x 1-1/2" Lg. HHCS ((8) total for all (4) arms) into the gear and arm. Reference Fig. 32 and Fig. 32a.

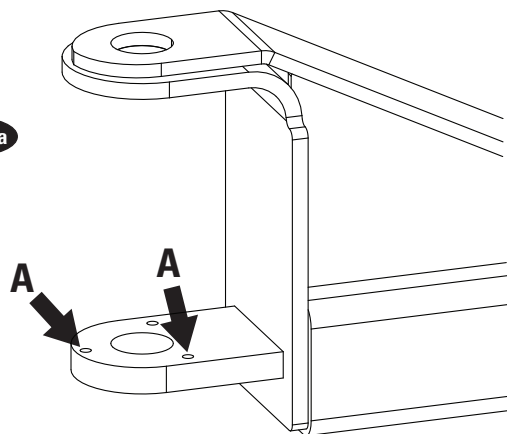
Torque the Restraint Gear bolts to 30-34 ft.-lbs.

Fig. 32



USE HOLES MARKED "A" FOR
RIGHT FRONT AND LEFT REAR.

Fig. 32a



USE HOLES MARKED "A" FOR
LEFT FRONT AND RIGHT REAR.

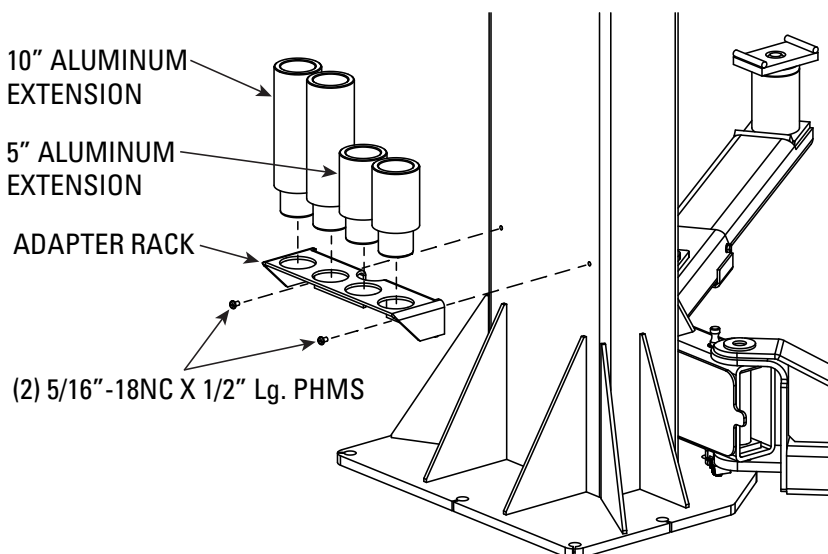
NOTE: To check operation of arm restraints, raise carriage 1" min. from full down position. Pull up on pin and adjust arms to desired position. To engage restraint, let pin-ring down allowing gear teeth to mesh together. It may be necessary to rotate arm slightly to engage gear teeth.

NOTE: Pin, Spring, & Gear Block are all pre-assembled.

23. Adapter Rack: Install adapter rack, Fig. 33. Place extension in racks.

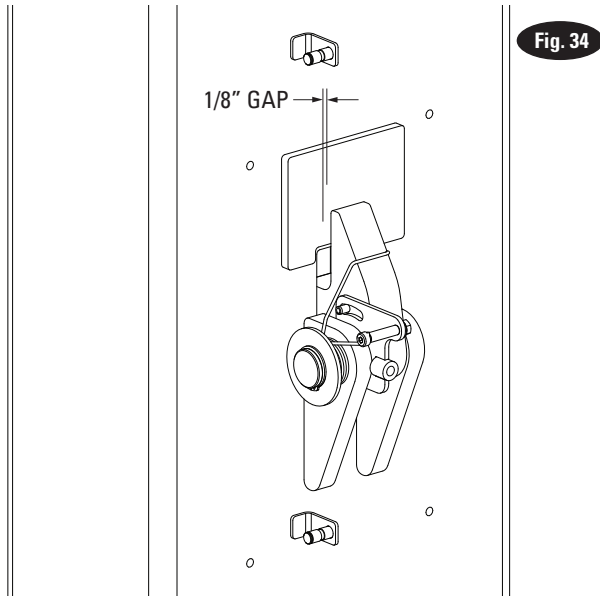
⚠ WARNING (2) qty. 10" adapter extensions and (4) qty. 5" adapter extensions are supplied with each lift. These extensions should not be stacked more than 15" high.

Fig. 33



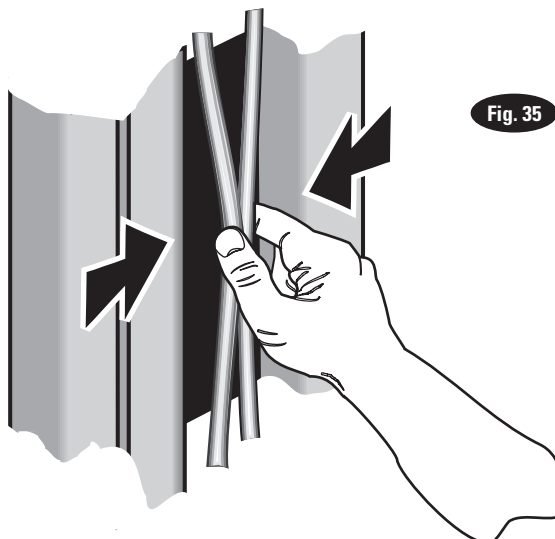
24. Latch Cable Adjustment:

1. Check to make sure the latch will properly engage and disengage. Slowly release the latch handle. A 1/8" gap between the top of the latch dog and the column is allowable, Fig. 34.
2. When raising, listen to latches to be sure that both latch dogs fall into latch slots. If they do not, loosen clamp and adjust tension as necessary.
3. Install left latch cover using 5/16"-18NC x 3/8" lg PHMS.

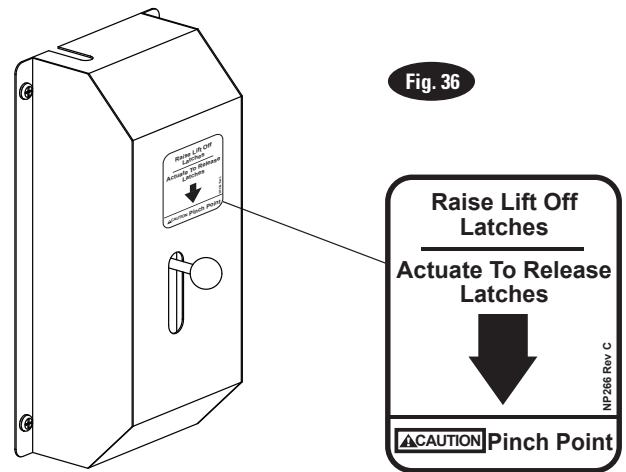


25. Pressure Test: Run lift to full rise and keep motor running for 5 seconds. Stop and check all hose connections. Tighten or reseal if required. Repeat air bleeding of cylinders.

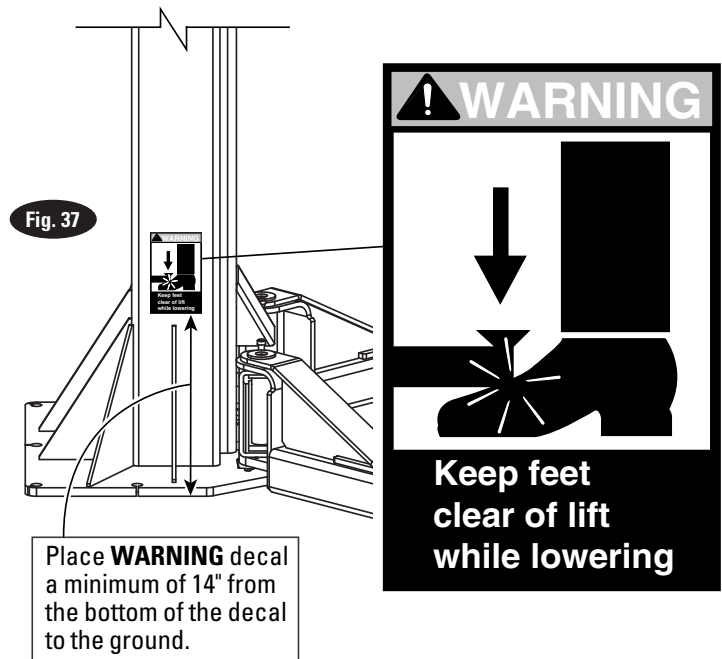
26. Equalizer Cable Adjustment: Raise lift to check equalizer cable tension. Below carriage, grasp adjacent cables between thumb and forefinger, with about 15 lbs. effort you should just pull the cables together, Fig. 35. Adjust at upper tie-offs Fig. 20.



27. Latch Release Decal: Install latch release decal on cover above latch release handle, Fig. 36.



28. Decal Location: Install enclosed pinch point decals. Place (1) decal on each column, Fig. 37.



29. Pressure Test: Run lift to full rise and keep motor running for 5 seconds. Stop and check all hose connections. Tighten or reseal if required. Repeat air bleeding of cylinders.

30. Upon completion of the assembly of the lift, the lift is to be operated to assure proper function. Observe for locks operating in all locking positions, each side lifts equally, hydraulics do not leak, all electrical controls function as labeled, all pneumatics are functional and leak free, ramps rotate freely (if applicable), and proper clearances with all items in bay have been maintained.

Operate the lift with a typical vehicle and observe to assure the same items for proper functioning.

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