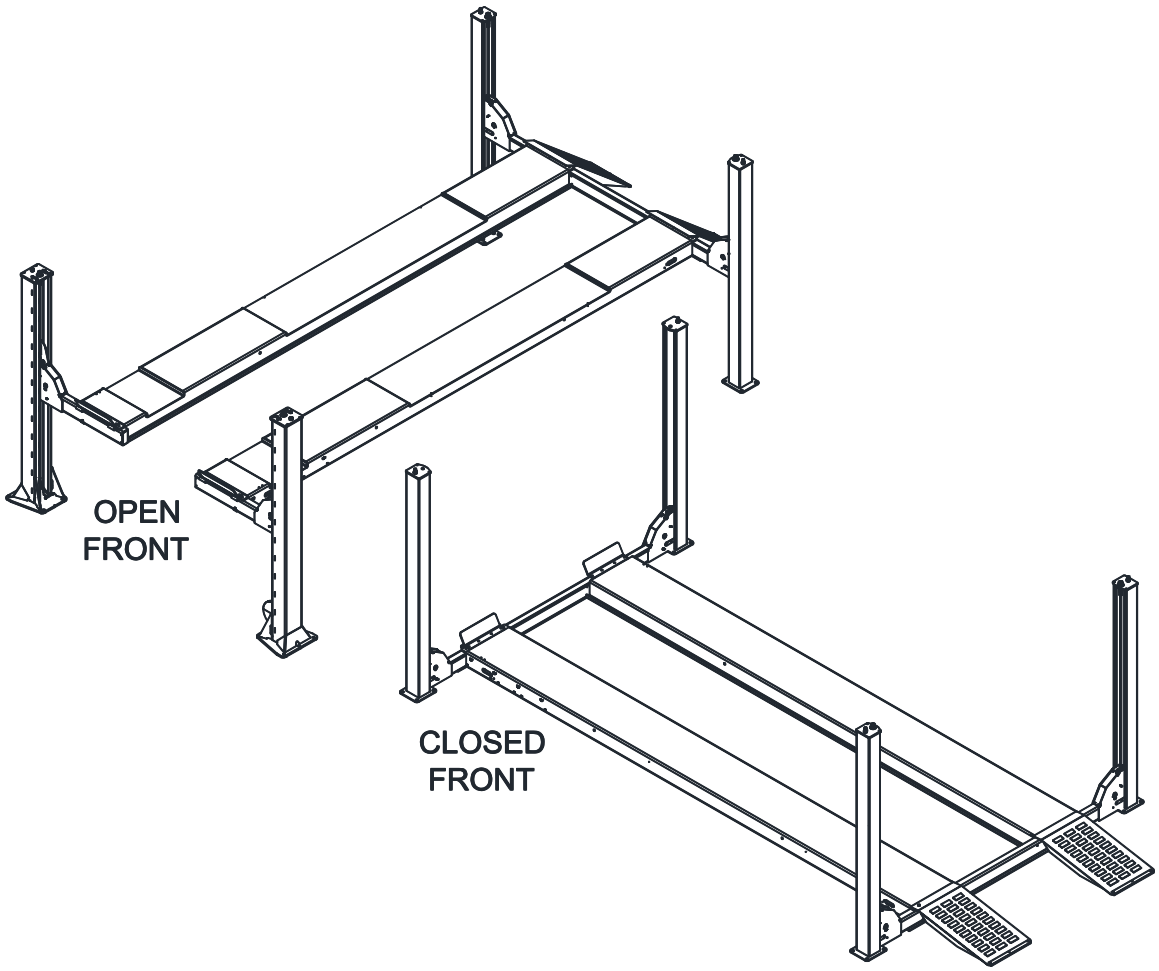
Installation, Operation & Maintenance Manual

Four Post

Surface Mounted Lift



Model 4115

Open Front and Closed Front

(15,000 lb Capacity)

2311 South Park Rd Louisville, Kentucky 40206

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. 11/09/2020

GENERAL SPECIFICATIONS

MODEL: 4115 [E OR X] [A OR F] [O OR X]
[LENGTH)] [ALIGN OR FLAT DECK] [OPEN OR CLOSED FRONT]

SPECIFICATIONS	4115EAO	4115XAO	4115EFO	4115XFO
A Length Overall	20' 10 3/4"	23' 1"	20' 10 3/4"	23' 1"
B Width Overall	11' 10" Front - 11' 9 3/4" Rear			
C Inside Columns	120 3/4" Front - 125 1/2" Rear			
D Between Columns	16' 3"	18' 6½"	16' 3"	18' 6½"
E Height of Columns	99 1/4" front - 98" rear			
F Height of Runways	7"			
G Width of Runways	22 3/8"			
H Width Between Runways	40 5/8"			
I Maximum Wheelbase *	183"	210 1/2"	183"	210 1/2"
J Max. 2 Wheel Alignment	167 3/4"	195 1/4"	N/A	
K 4 Wheel Alignment	68" - 158"		N/A	
L Rise Height	78"			
Lifting Capacity (Hydraulic Pressure at Cap.)	15,000 lbs. (2190 psi)			
Air Supply Required	90-120 psi Clean & Dry			
Motor	3HP			
Voltage (Single Phase Std.) **	208v-230V, 60Hz			
Rise Time	85 Seconds (approximate)			
Min. Recommended Bay Size	14' x 24'	14' x 26'	14' x 24'	14' x 26'
Approximate Shipping Weight	4350~4550 lbs.			

* Wheelbase is based on a tire diameter of 30"
** Optional 3 phase, 50/60Hz, 208, 230 or 460V available.

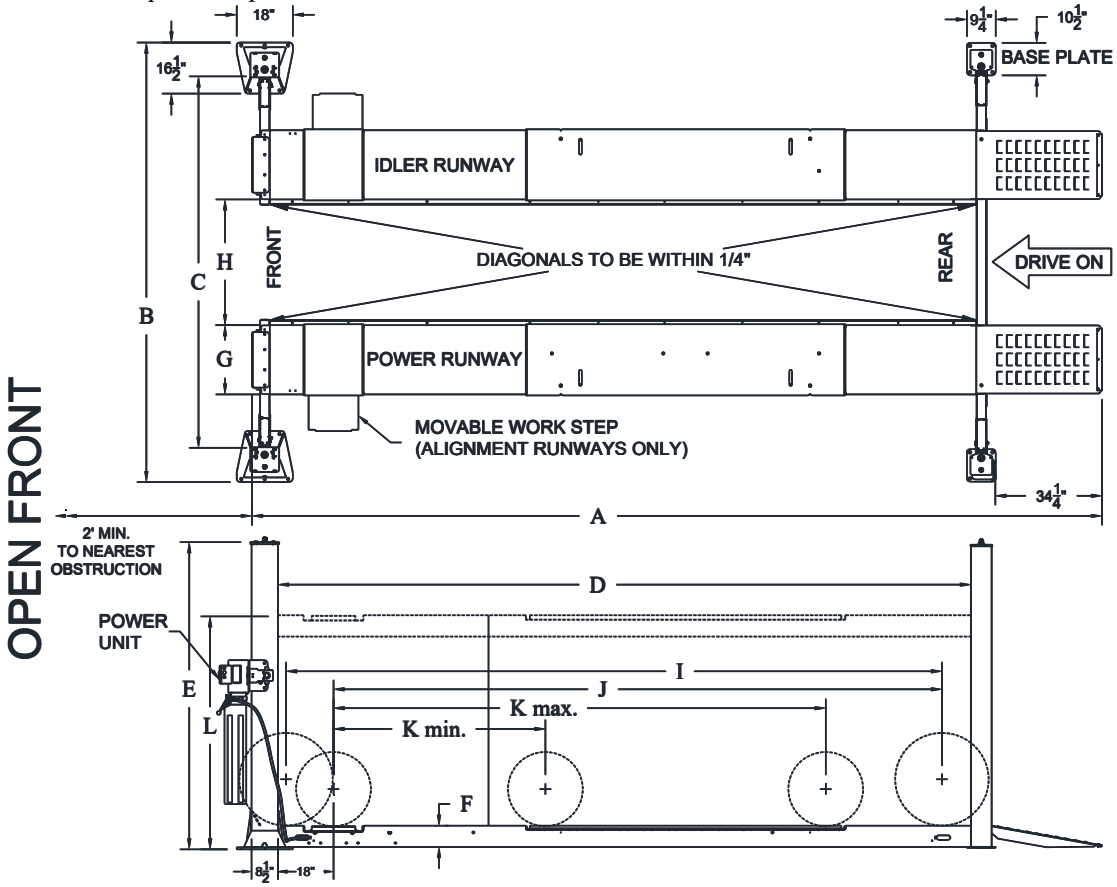


Fig 1a – General Specifications and Service Bay Layout

MODEL: 4115 [E OR X] [A OR F] [O OR X]
[LENGTH)] [ALIGN OR FLAT DECK] [OPEN OR CLOSED FRONT]

SPECIFICATIONS	4115EAX	4115XAX	4115EFX	4115XFX
A Length Overall	20' 7 5/8"	22' 11 1/2"	20' 7 5/8"	22' 11 1/2"
B Width Overall	11' 9 3/4"			
C Inside Columns	125 1/2"			
D Between Columns	16' 4 3/8"	18' 7 3/8"	16' 4 3/8"	18' 7 3/8"
E Height of Columns	98"			
F Height of Runways	7"			
G Width of Runways	22 3/8"			
H Width Between Runways	40 5/8"			
I Maximum Wheelbase *	183"	210 1/2"	183"	210 1/2"
J Max. 2 Wheel Alignment	167 3/4"	195 1/4"	N/A	
K 4 Wheel Alignment	68" - 158"		N/A	
L Rise Height	78"			
Lifting Capacity (Hydraulic Pressure at Cap.)	15,000 lbs. (2190 psi)			
Air Supply Required	90-120 psi Clean & Dry			
Motor	3HP			
Voltage (Single Phase Std.) **	208v-230V, 60Hz			
Rise Time	85 Seconds (approximate)			
Min. Recommended Bay Size	12' x 24'	12' x 26'	12' x 24'	12' x 26'
Approximate Shipping Weight	4000~4150 lbs.			

* Wheelbase is based on a tire diameter of 30"
** Optional 3 phase, 50/60Hz, 208, 230 or 460V available.

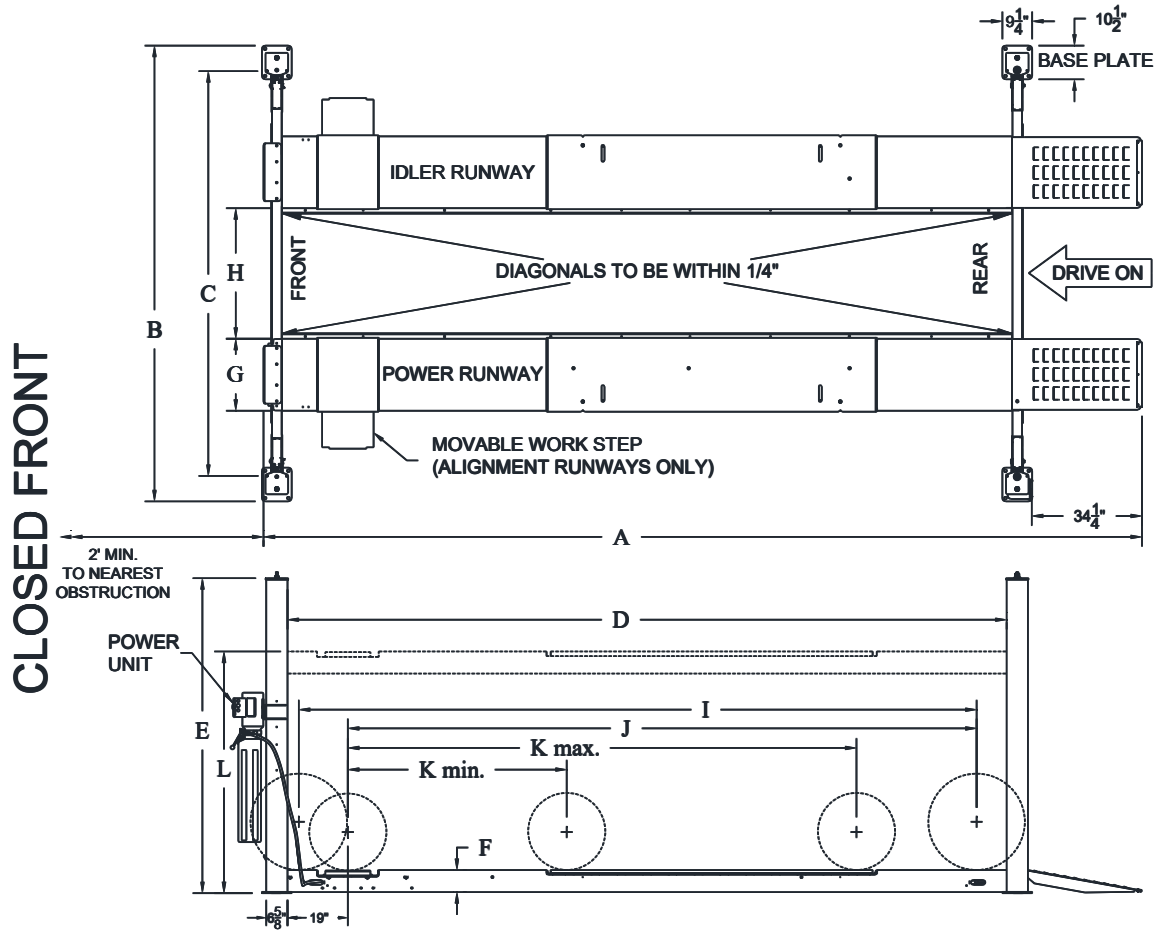


Fig 1b – General Specifications and Service Bay Layout

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. This lift is designed to accommodate a 3 inch total variation in elevation at the base of the four posts. Floor should be level within 1/2 inch from side-to-side and 2 1/2 front-to-rear to avoid special shimming. 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.

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** (**F**ilter/**R**egulator/**L**ubricator). 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.

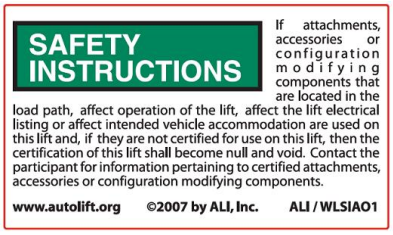
READ ENTIRE MANUAL BEFORE ASSEMBLING, INSTALLING, OPERATING, OR SERVICING THIS EQUIPMENT.

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.

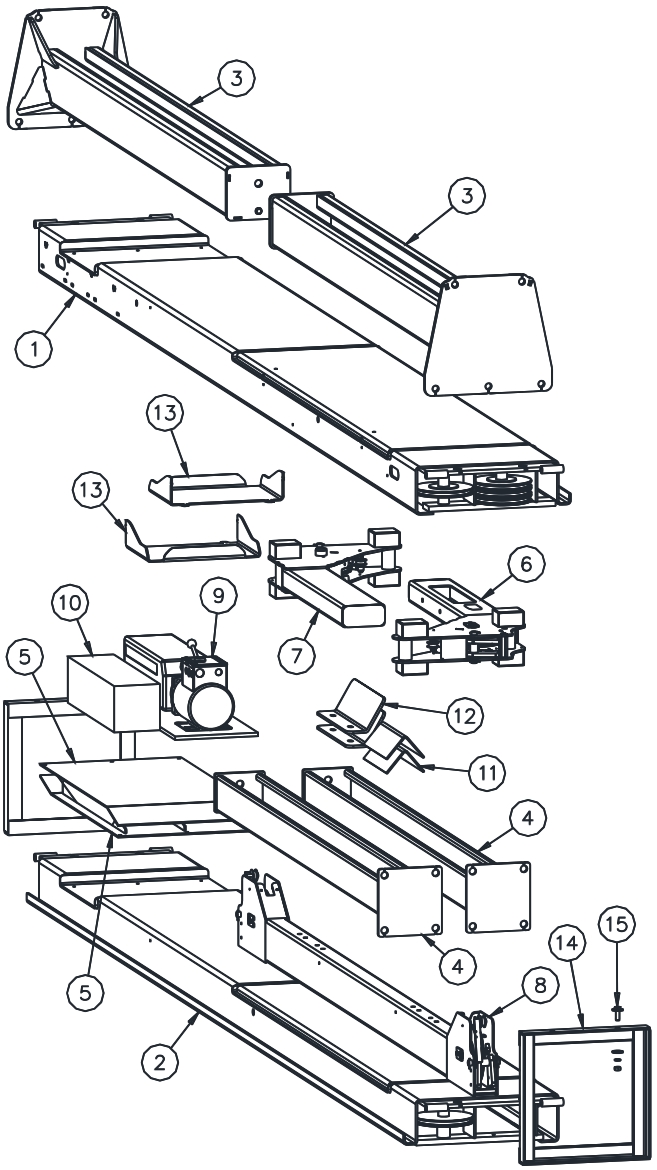


Fig 2 – Package Components

Component Packing List

ITEM #	QTY/ LIFT	DESCRIPTION
1	1	POWER RUNWAY ASS'Y.
2	1	IDLER RUNWAY ASS'Y
3	2	FRONT COLUMN ASS'Y
4	2	REAR COLUMN ASS'Y
5	2	ENTRANCE RAMP WELD
6	1	FRONT POWER CROSSBEAM
7	1	FRONT IDLER CROSSBEAM
8	1	REAR CROSSBEAM ASS'Y
9	1	POWER UNIT
10	1	HARDWARE BOX
11	2	MOVABLE WHEEL CHOCK
12	2	FRONT WHEEL STOP
13	2	WORK STEP (alignment lifts only)
14	2	SHIPPING BRACKET WELD
15	8	½" SHIPPING HARDWARE

Installation

Important: Always wear safety glasses while installing lift.

Refer to ANSI/ALI ALIS (current edition)

Tools (minimum required)

a. Tape measure, 25ft
b. Chalk line
c. 4ft level
d. 10" & 12" adjustable wrench (1-1/4 Opening)
e. Standard open end wrenches 3/8", 7/16", 1/2", 9/16", 5/8", (2) 11/16", 3/4", 15/16", 1-1/8"`
f. Box knife
g. Thread locking compound
h. Thread tape sealant (for air line)
i. Needle nose pliers
j. Hammer drill with 3/4" diameter carbide tipped bits
k. 2lb hammer
l. Rolling Head Pry Bar
m. Torque wrench: 150 foot pounds minimum with 1-1/8" socket
n. 8 ft. Step ladder
o. Blocking – (4) 4x4x30", (4) 1/4" shim
p. Transit for leveling alignment lift

Layout

1) Lay out the service bay according to the architect's plans or owners instructions ***(see Fig 1***). Be certain that the proper conditions exist, see page 4.
2) Unpack lift. Remove all packaging from Power Runway (power runway has four cable sheaves at rear end). Cut the white cable ties, but leave the black cable ties. Pull the three threaded cable ends out the rear and one threaded cable out the front. See **Fig 3**.

3) Position runways on blocking ***(see Fig 3)*** per layout lines established in step 1. Use four 30" long 4x4's spanning the width of the runway and four 1/4" spacers to shim up the jack-rail side of the runway. Cable #1, #3, & #4 should be extending out from the rear of the power runway and cable #2 from the front of the power runway, **Fig 4**. **Check Cables to make sure each is being retained/routed as shown in Fig 4.**

NOTE: If assembling a Closed Front lift the following steps will be repeated for the front.

4) Position the crossbeam near the end of the runways as in **Fig 3**. Reach in through each of the access holes in the Rear Crossbeam and pull out the roll of 4mm" dia. plastic air line. Each air line has already been ran through the chase tube and connected to an air cylinder. Insert the air line into the first Ring in the runway end. See **Fig 4 and 5.**

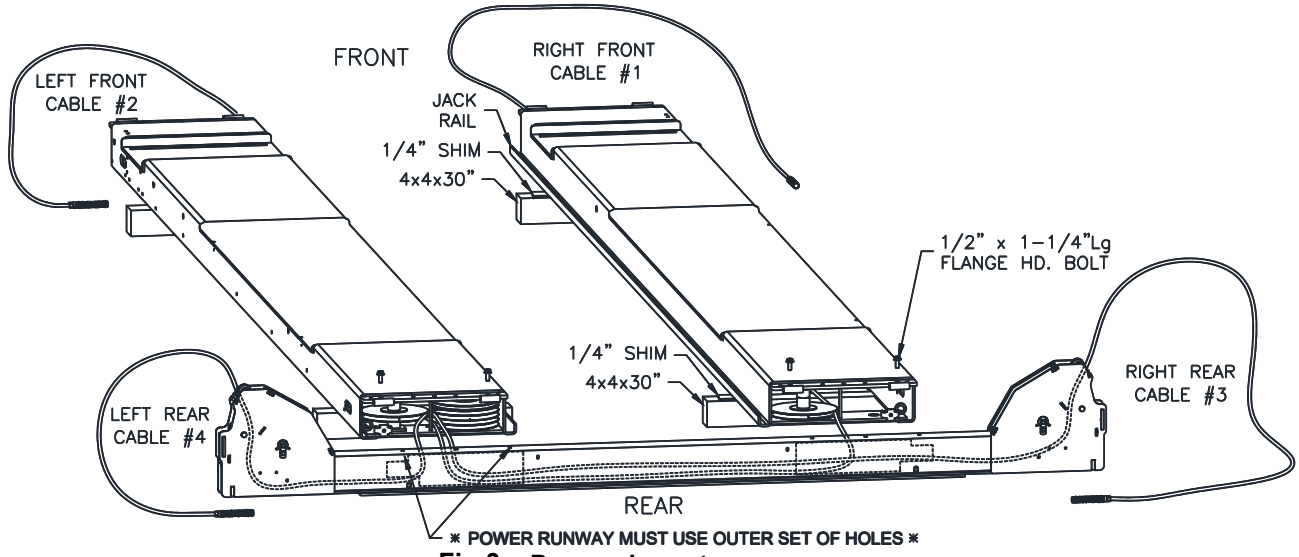


Fig 3 – Runway Layout

Fig 4 – Power Runway 3-Stack & Single Stack

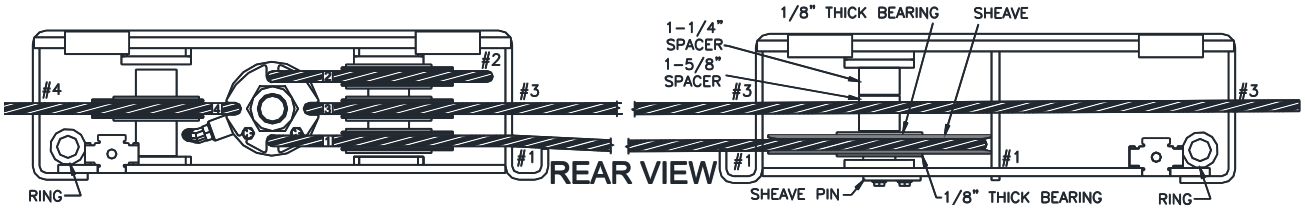


Fig 5 – Idler Runway Single-Stack

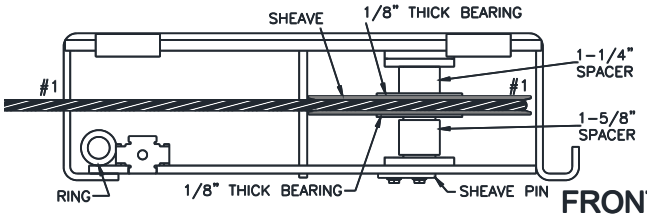


Fig 6 – Idler Runway Single Stack

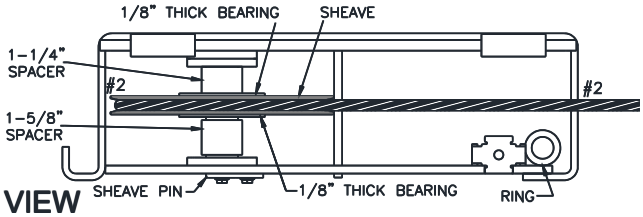


Fig 7 – Power Runway Single-Stack

5) Remove the two sheave guards and sheaves from the rear crossbeam and drop the two pins just lowered enough to remove the sheaves from the idler runway.
6) Starting from the left single stack, route cable #4 through the access hole and up out the left end of the beam. Repeat for cable #3 out the right end of the beam. Route cable #1 through the access hole, and back out the idler side access hole. **Look through the idler end of the crossbeam and ensure that cable #1 and #3 have not crossed**. Route cable #1 through the idler runway (don't forget to route it up over the cross-braces in the bottom of the runway). Double check to make sure Cable #3 is above Cable #1 and not crossed. See **Fig 4 and 5**.
7) Reinstall the crossbeam sheaves. Slide the sheave pin through the hole, slide one sheave spacer onto the pin followed by one 1/8" plastic bearing washer, and the sheave. Set the cable into the Sheave channel and proceed to adding a 1/8"plastic washer and sheave spacer to the

pin. Install the 5/16 x 3/4 bolt to retain the sheave. Reinstall the sheave guards.

8) Reinstall the idler runway sheaves. Assemble as shown in **Fig 5** & **Fig 6**.
9) Route each air line through the first ring in the runway for both sides, see **Fig 4 and 5**. Bring the crossbeam up to the runways being careful to not pinch the air line, cables, and sheaves.
10) The runways to crossbeam can be located using a tapered punch to pry on the locating holes in the runway and crossbeam **NOTE:** The locating holes are not threaded. See **Fig 11**.
11) Attach the rear crossbeam to the runways **(Fig. 3)** with 1/2 x 1-1/4" lg. flange head bolts. (Leave the air lines hanging out the bottom of the runway at this time. They will be fed in through the runway after the lift is raised.) **The outermost runway holes should be in line with the outermost holes in the top of the crossbeam, see Fig. 3**. Do not torque bolts yet.
12) Check the layout of the lift in the bay. **(This is the last opportunity to reposition the lift. Take a moment to determine the position of the front column anchors to ensure proper clearance from any crack, edge, or expansion joint. Ensure proper clearance for the lift operator at the Power Unit Controls).** Adjust the position of the runways so the distance from power side jack rail to idler side jack rail is the same at the front and rear and the diagonal measurements from the front tip of one rail to the rear tip of the opposite rail are within 1/4", **Fig 8**.

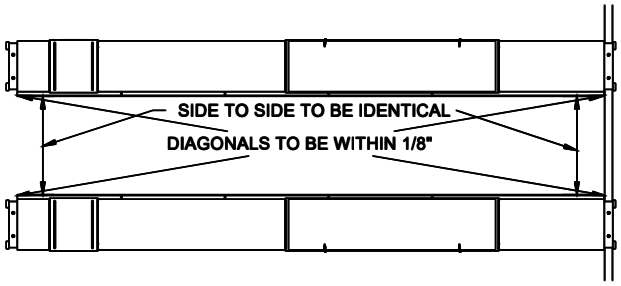


Fig 8 – Final Runway Positioning

13) Tighten rear crossbeam bolts to 60-80ft-lb.

Rear Columns

14) Stand up both rear (small base) column assemblies near the rear corners of the lift Thread the locking ladder jam nut (located under the column top plate) down approximately 9.5" to allow the ladder to be lifted freely.
15) Slide power side column onto crossbeam until the end of the crossbeam is approximately one inch from the back of the column. Position slide blocks as shown in **Fig 9** and attach with 5/16-18 x 3/4" bolts. Lift the column and place on wood 2" x 4"s.

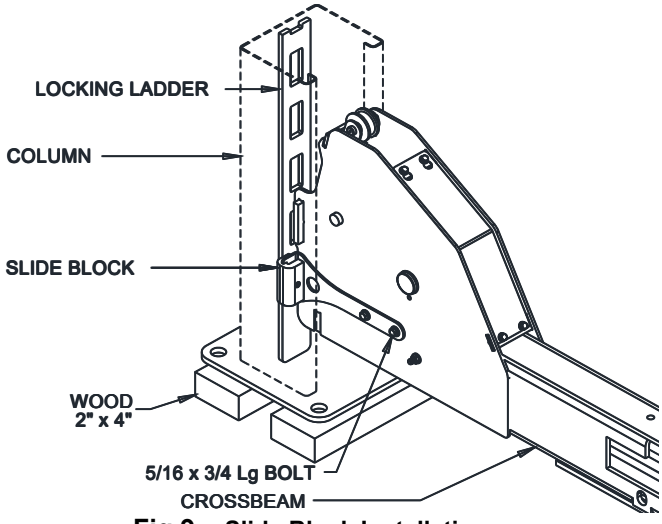


Fig 9 – Slide Block Installation

16) Raise the locking ladder, push the column against the slide blocks, and lower the ladder into crossbeam slot, **Fig 10**. Remove the Wood 2" x 4"s and push the column so the slide blocks are in the rear of the column as shown in **Fig 10**.

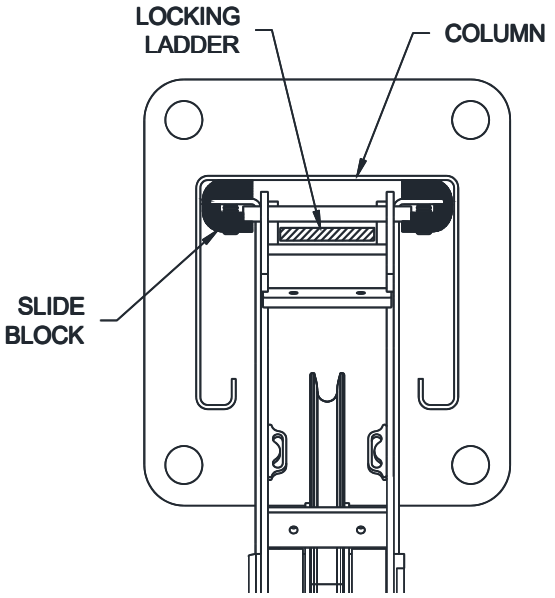


Fig 10 – Locking Ladder Orientation

17) Repeat for idler side rear column.

Anchoring *(rear columns only at this time)*

18) The anchor bolts must be installed at least 8" from any crack, edge, or expansion joint.
19) 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.**
20) 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.

21) Vacuum dust from the hole for proper holding power.
22) Shim columns to plumb using the shims provided or steel washers. DO NOT shim more than 1/2" at any given point. Use a level no less than 24” in length to plumb columns.
23) Assemble washer and nut to anchor with nut just below impact section of bolt. Drive anchor into hole until nut and washer contact base. Tighten anchor bolts and recheck column for plumb. Re-shim as required.

NOTE: Level bubble should not only be between the lines, the bubble should be <u>centered</u> between the lines. If the provided shims do not allow sufficient centering of the bubble, it is best to lean the rear columns or closed front columns in the direction toward each other and the open front columns in the direction away from each other.

Close Front Columns/Crossbeam

24) Repeat Steps 6-11 for Front Crossbeam and Columns. For Flat decks, install the wheel stops before tightening runway bolts in Step 12. See **Fig 11**. Alignment Wheel Stop will be installed in a later step.

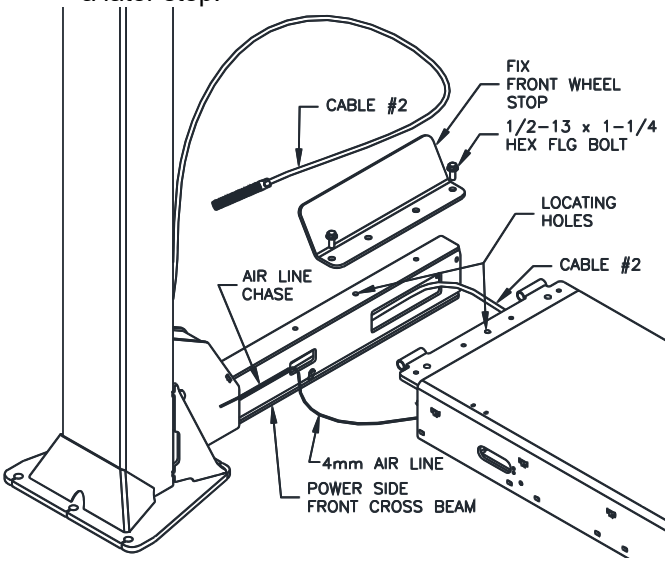


Fig 11 – Front CrossBeam Installation

25) Repeat Steps 12-15. Make sure the columns are pushed all the way against the slide blocks and the runways. Make sure Step 10 and Step 11 are complete before proceeding.
26) Repeat Steps 16-21 to anchor the Closed Front Columns.

Open Front Columns/Crossbeams

27) Position the two front columns near the front corners of the lift on their sides; remove the pins from the top of the column and slide the top plate/ladder assembly out. Reach inside and pull out the Slide Blocks out of each crossbeam and place on 2”x4” ends. Insert the front crossbeams as shown in **Fig 12**. Notice that the front columns are identical, but the crossbeams are not. Make sure the slide block contact areas are greased with heavy viscous grease

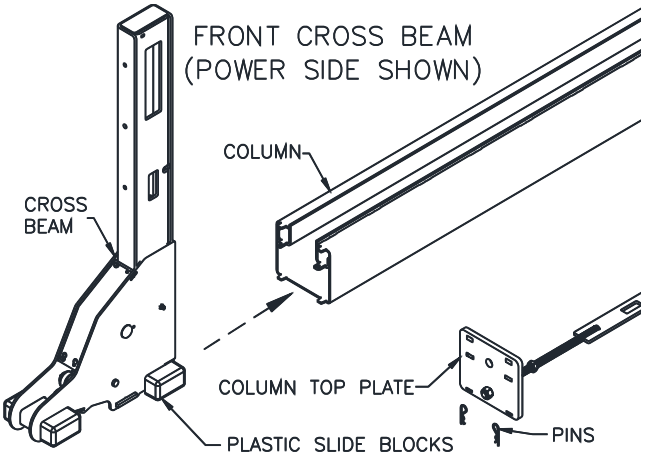


Fig 12 – Front CrossBeam Installation

28) Ensure that the power side front crossbeam is touching the power column base plate and stand the column up. Insert the Lock Ladder into the slot, **Fig 13**, and reinstall the Column Top Plate and pins. Move the column into position and remove the crossbeam sheave. Reach in through the small access hole in the crossbeam tube, **Fig 11**, and pull out the 6 ft. roll of 4mm dia. plastic air line connected to the air cylinder at the end of the crossbeam. Feed cable #2 into the crossbeam’s large access hole and back out the top, **Fig 11**. Insert the air line into the first Ring in the runway end. See **Fig 6 and 7** for ring location.

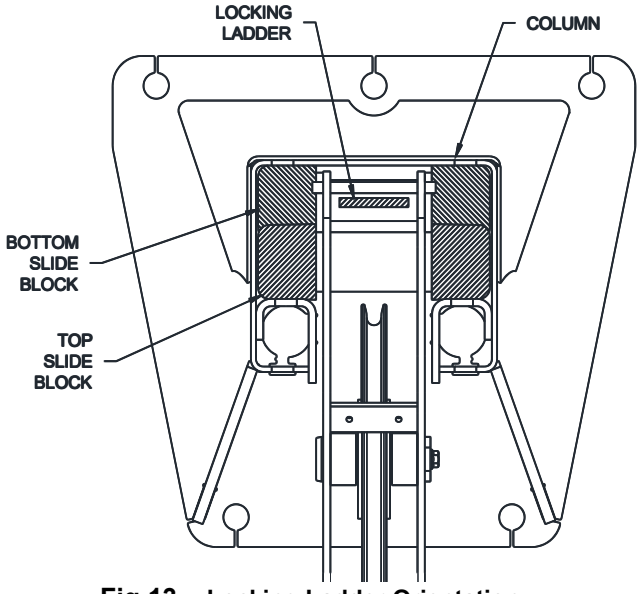


Fig 13 – Locking Ladder Orientation

29) Attach the crossbeam to the runway with 1/2 x 1-1/4 lg. flange head bolts being careful not to pinch the air line. (Leave the air line hanging out the bottom of the runway at this time. It will be fed in through the runway after the lift is raised.) Center the crossbeam bolts with slots in runway while squaring the cross tube with the runway (gap between the front of the runway and cross tube should be the same on both sides of the runway). Torque runway bolts to 60-80 foot pounds.
30) Repeat for idler side crossbeam.
31) Recheck the four runway measurements from **Fig 8**.
32) After ensuring column is touching lower Slide Block and not the upper Slide Blocks, drill and install anchors per steps 17-22.
33) After properly shimming column plumb, loosen anchors and add one shim to both of the two inside anchors to lean the column outward slightly. Make sure lower Slide Blocks are in contact with column and torque all anchor bolts to 150 foot-pounds,**Fig 14**.

Fig 14 – Front Column Shimming

Open Front Power Unit Bracket Install

34) ***POWER COLUMN ONLY*** – To install the Power unit, slide the Power Unit Bracket in place. On the open side of the column screw in the 5/16" x 1" flange head bolt, see **Fig 15a**. Using the nuts at the top of the column to lower the lock ladder until it contacts the top of the column baseplate. Now look inside the column, the 2 upper holes for the power unit should be visible through the lock ladder window. Insert two 5/16" x 1" flange head bolts from the inside out and screw on the two 5/16 nuts. **Note:** The bracket may need to be pivoted to align the bracket holes with the column holes.

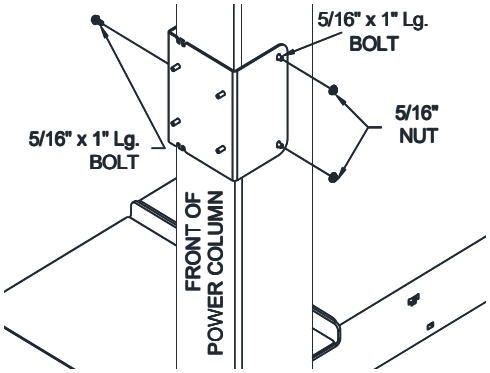


Fig 15a – Power Unit Bracket

Closed/Open Front Power Unit Install

35) Note the Power Unit bracket is welded on the Closed Front Power Column. Place the power unit on the studs and start to thread each nut on just to hold the power unit on the studs. Slip the FLR mounting bracket behind the power unit and tighten all 4 nuts down. See **Fig 15b**.

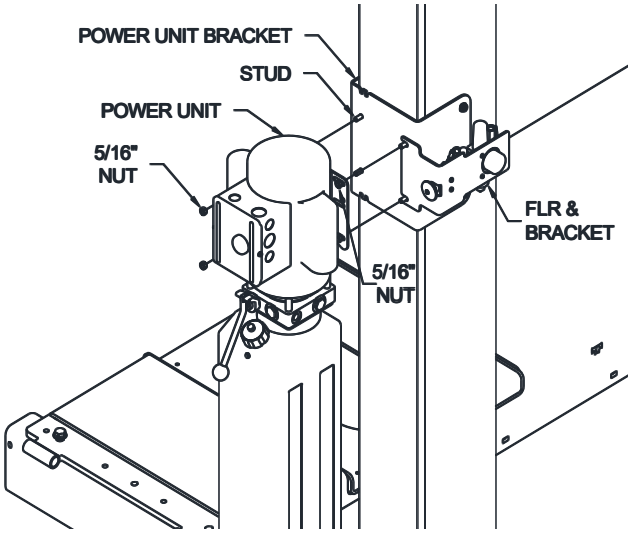


Fig 15b – Power Unit Bracket & Power Unit Mounting

36) Install the four cable ends with one flat washer, one load nut, and one jam nut. Thread the nut all the way down the threaded stud to maximize stroke (rise height).
37) Install O-Ring end of 90 degree hydraulic elbow (9/16-18 O-Ring x 37° Male JIC) to power unit output port. The hydraulic hose is pre-installed to the hydraulic cylinder and secured inside the runway. Pull loose end out through the opening and attach to the elbow fitting.

Do Not Use Teflon Tape or Pipe Dope on fittings.

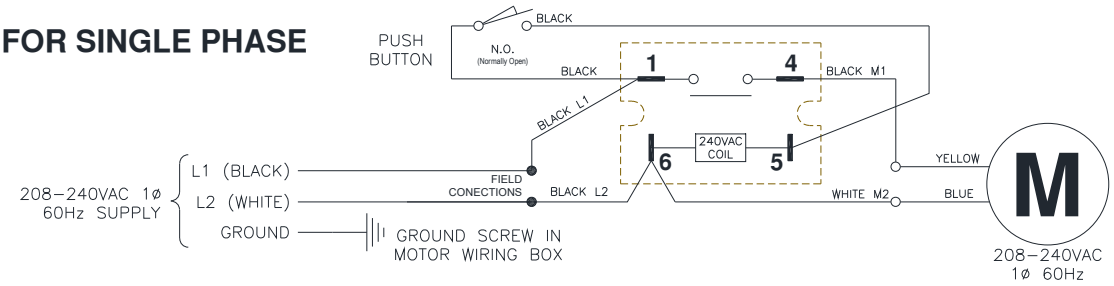
38) Have a certified electrician connect the power unit to a suitable electrical power source as shown in **Fig 16**.

Wiring Diagram

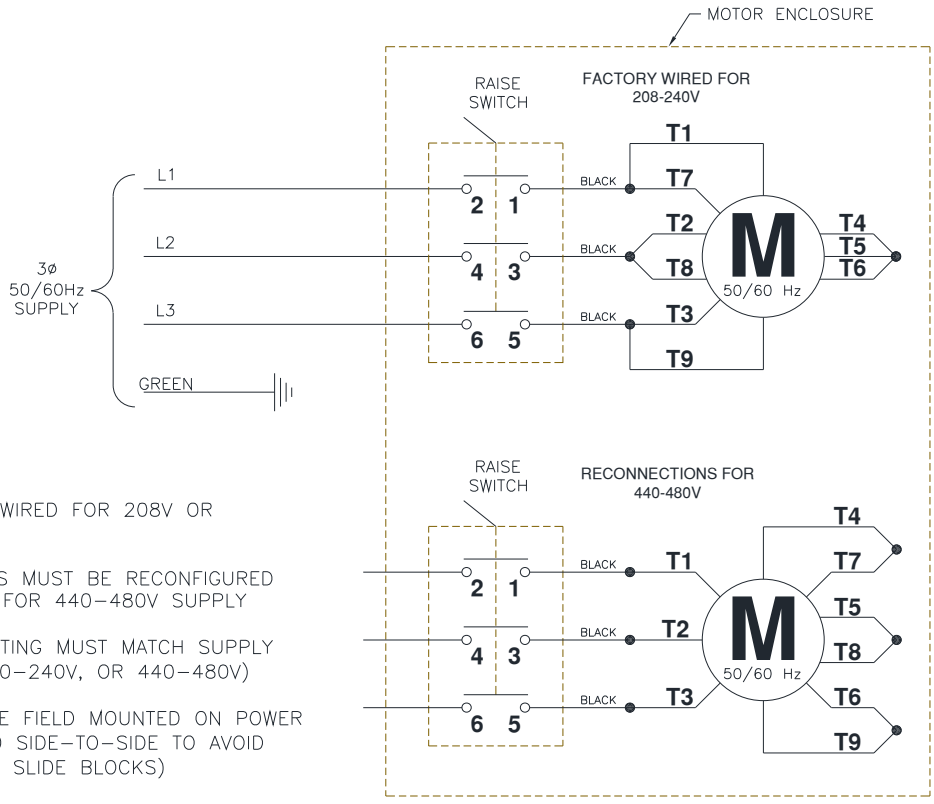
* EACH LIFT SHOULD HAVE A DEDICATED CIRCUIT WITH A DOUBLE POLE (THREE POLE FOR 3 PHASE) BREAKER OR TIME DELAY FUSE SIZED ACCORDING TO THE FOLLOWING CHART.
* WIRING MUST COMPLY WITH ALL LOCAL ELECTRICAL CODES.
* ELECTRICAL CODE REQUIRES A SERVICE DISCONNECT FOR THIS DEVICE. WE SUGGEST THIS SERVICE DISCONNECT BE LOCATED NEAR THE POINT OF OPERATION.

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

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 16 – Electrical Wiring Diagram

39) **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.**

40) Energize the power unit and raise the lift approximately 1 ft off the ground and look underneath the power runway to verify that the cable lugs are resting firmly against the cylinder pull bar.

41) Install 4mm air line from air valve assembly thru opening in runway to *Tee*. See **Fig 17**

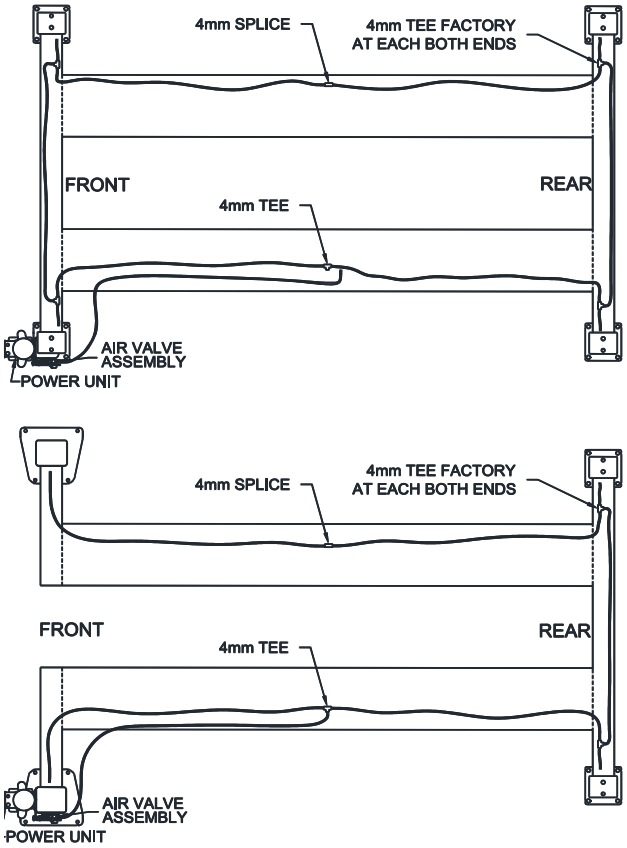


Fig 17 – Lock Release Air Line Routing

42) Route power side front and rear crossbeam air lines through power runway rings to *Tee*. Route idler side front and rear crossbeam air lines through idler runway rings and connect together with 4mm air line spice provided.

43) Using a screwdriver remove the filler cap on the top of the FRL. Fill FRL to the max line. Re-install the oil filler cap. Adjust the drips to 2-3 per minute.

44) Using a suitable air source, connect the air source to the Female 1/4" NPT ball valve fitting.

45) Pull up on the regulator knob and adjust the pressure to 100psi (allowable range 90-120 psi).

46) Press the lock release air valve button and ensure that all air cylinders are working properly.

47) If lift is an alignment lift, use the hinge pin and cotter pins to install the wheel stop. See **Fig 19**

48) Raise and lower lift several times to bleed hydraulic cylinder. Hydraulic cylinder is self bleeding. Lower lift and check fluid level in reservoir. Add fluid as needed.

49) 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

50) Place the two provided wheel chocks on top of the drivers side runway one wheel chocks on each runway.

LIFT LEVELING

51) Adjust all four column lock ladders so the bottom of the ladder is floating just above the column base plate. Lower the lift into a lock position.

52) Using a 4ft level placed at the following four different locations, find the highest corner of the lift:

A. Spanning the two runways at the front turn plate cutouts

B. Spanning the two runways at the middle of the rear slip plates

C. Placed in-line with the power side runway just in front of the rear slip plate

D. Placed in-line with the idler side runway just in front of the rear slip plate

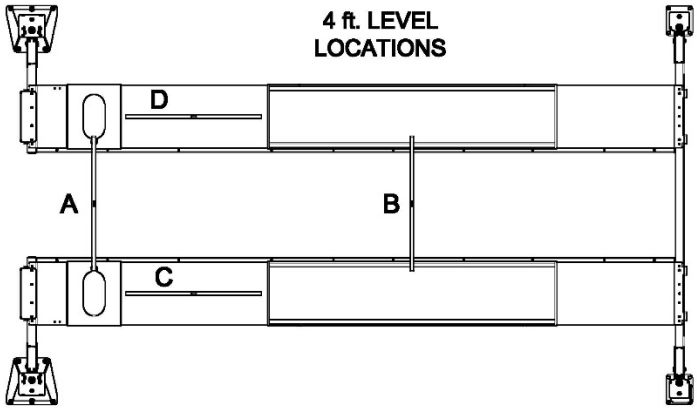


Fig 18 – 4 ft. Level Locations

53) Adjust the other three column ladders until the runways are level front-to-rear and side-to-side based on the four level locations shown above. Note: the ladder at the highest corner determined in **Step 52** should not be adjusted.

54) To synchronize all four locks, start with each cable nut threaded all the way down on its stud, as noted in the cable assembly instructions, to maximize lift stroke (rise height). Press the power unit raise button and listen to determine the lowest corner (last latch to engage). Loosen

the other three cable nuts until the latches are synchronized with the lowest corner.

55) Raise lift to the Max Height and place a piece of tape on the power column lined up with the bottom of the crossbeam. Lower the lift into the nearest lock position and measure from the bottom of the crossbeam to the tape, **Fig 19**.

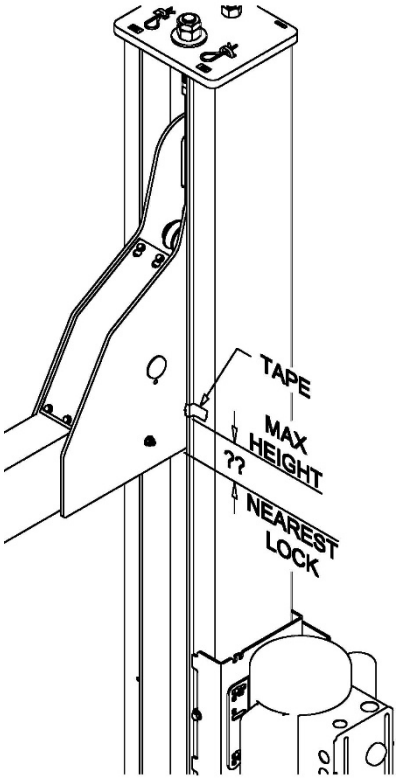


Fig 19 – Lock Clearance Measurement

56) If this distance is less than 1", adjust all four column ladders up by 12 revolutions (approx. 1-1/4") to ensure proper latch engagement in the highest position.

FRONT TURNPLATE LEVELING (Alignment Only)

57) Place the level in a front turn plate cutout, **Fig 20**. Place three 1/16" thick column shims (3/16" total thickness) under the level at the outside edge of the cutout and adjust the runway pitch leveling screws until the bubble is centered between the lines. Make sure all leveling screws are touching the crossbeam. Torque runway bolts to 60-80 foot pounds and recheck the level. Repeat for other side. (The rear of the runway usually does not require pitch adjustment as this is a closed rear crossbeam.)

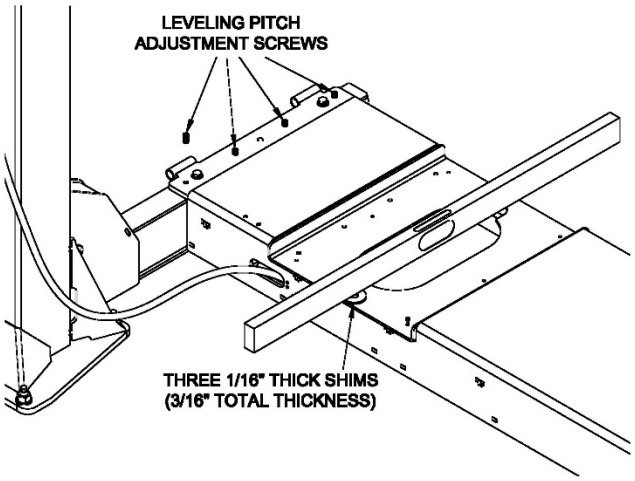


Fig 20 – Runway Pitch Adjustment

LEVELING WITH A TRANSIT (Alignment Only)

58) Use a transit to fine-tune the lift leveling while the lift is resting in its locks. Place the target on the center of the turn plate and the center of the rear slip plate. Adjust the column ladders as needed so all 4 target locations are on the same level plane.

59) Re-adjust cables until all four locks are synchronized when lift is raised.

FINALIZING LIFT LEVELING

60) Tighten lock ladder jam nut against bottom side of each column top plate.

61) Tighten cable jam nuts against adjustment nuts.

62) Attach a Work Step to each runway. (The Work Step may be located in three different positions on each runway.) See **Fig 21.**

63) Use the hinge pin and cotter pins to install the alignment wheel stop. See **Fig 21.**

64) Install Handle to Drop-In Spacer and position behind rear Guide Bar. The Drop-In Spacer is provided for "Roll Back" alignment.

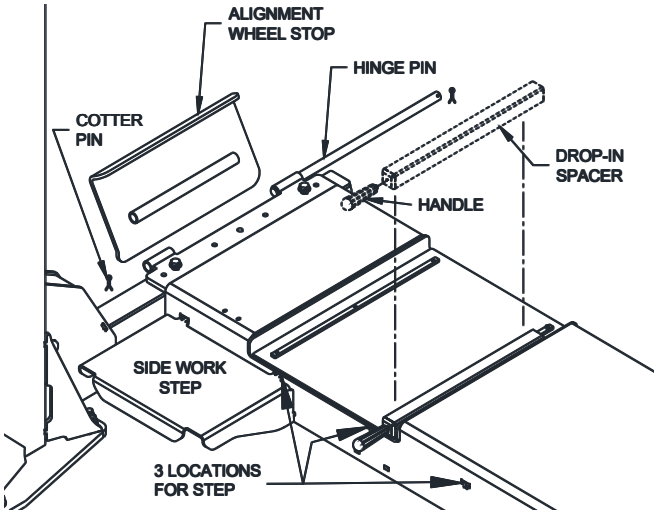


Fig 21 – Alignment Wheel Stop & Turn Plate Installation

Column Decal Placement

65) Apply decal 4” from top of columns, **Fig 22**. Center a decal on the front drivers side column and rear passenger side column.

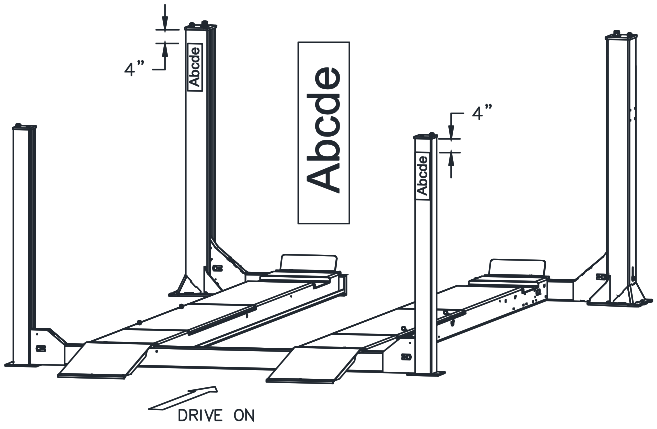


Fig 22 – Decal Placement

66) Place the Warning Decal, Notice Decal, and Caution Decal as shown in **Fig 23**.

POWER COLUMN LABEL LOCATION

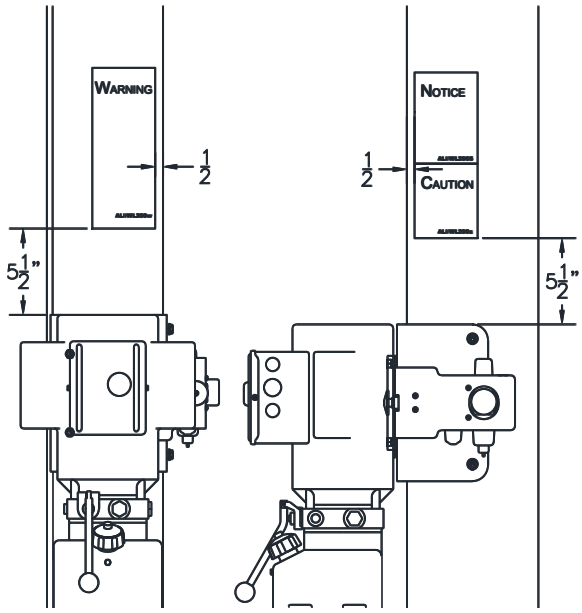


Fig 23 – Warning & Caution Decal

Ramp Installation

67) Install the four 1/2-13 x 4” bolts through front and rear crossbeam and into the runways. Torque to 60-80 foot pounds. See **Fig 24**

68) Assemble the each Ramp using the hinge pins and cotter pins. See **Fig 24**.

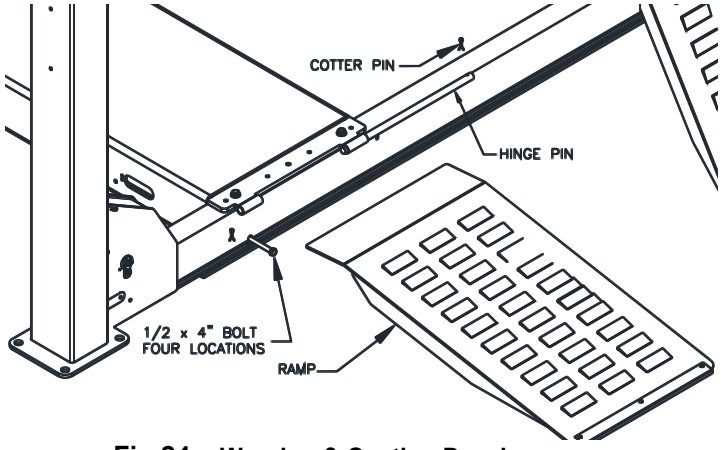


Fig 24 – Warning & Caution Decal

Final Checkout Procedure

69) Demonstrate the operation of the lift to the owner/operator/employer using a typical vehicle and review correct and safe lifting procedures using the **Lifting It Right** booklet as a guide.

70) Return all provided literature (including this manual) to the literature pack envelope and deliver the envelope to the owner/operator/employer.

71) Complete the online warranty registration (refer to the included warranty statement).

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

Drive vehicle onto lift. Set parking brake and use wheel chocks that are provided with lift. Wheel chocks should be used at the front and back of the same wheel.

When the vehicle has reached the desired working height, release the power pack button, and lower the vehicle until the locks are engaged. The vehicle should remain level when all 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 locks.

IMPORTANT, Before walking under the lift insure that all locks are properly engaged.

It is not safe to work under the vehicle unless all locks are engaged, and the vehicle is level.

Lowering a vehicle

Insure that the area under the vehicle is clear of personnel and tools.

Raise the vehicle until locks are free.

Disengage the locks by depressing and holding the palm button.

Lower the vehicle by depressing the lowering valve handle. Watch lift to insure that the lift is lowering evenly. If not, raise lift and check all locks to insure they are disengaged before trying to lower lift again.

Continue to lower the vehicle until the crossbeams stop against the base plate. It is important to fully lower the lift to release hydraulic pressure on the system.

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.
- Replace all Safety, Warning or Caution Labels if missing or damaged. (***See Installation instructions page 3***.)

Daily

- Keep lift components clean. **To keep alignment lifts with rear slip plates working properly use compressed air to blow out any debris from the bearing area.**
- Check for loose or broken parts.
- Check hydraulic system for fluid leaks.
- Check lock release activation.

Weekly

- Check cables and sheaves for wear or damage. Replace as required with genuine Challenger Lifts parts.
- Inspect lock mechanism for proper function.

Monthly

- Lubricate Open Front slide tracks with heavy viscous grease. (Grease all four slide block contact areas on Open Front Columns.)
- Torque concrete anchor bolts to 80 ft-lbs.
- Clean and inspect cables and sheaves for wear or damage. Lubricate cables and sheaves with light oil.

NOTE: The Open-Front crossbeam rollers require traction to roll along the column surface. Do not lubricate roller surface. Lubrication will cause skidding and wear flat spots into the roller.

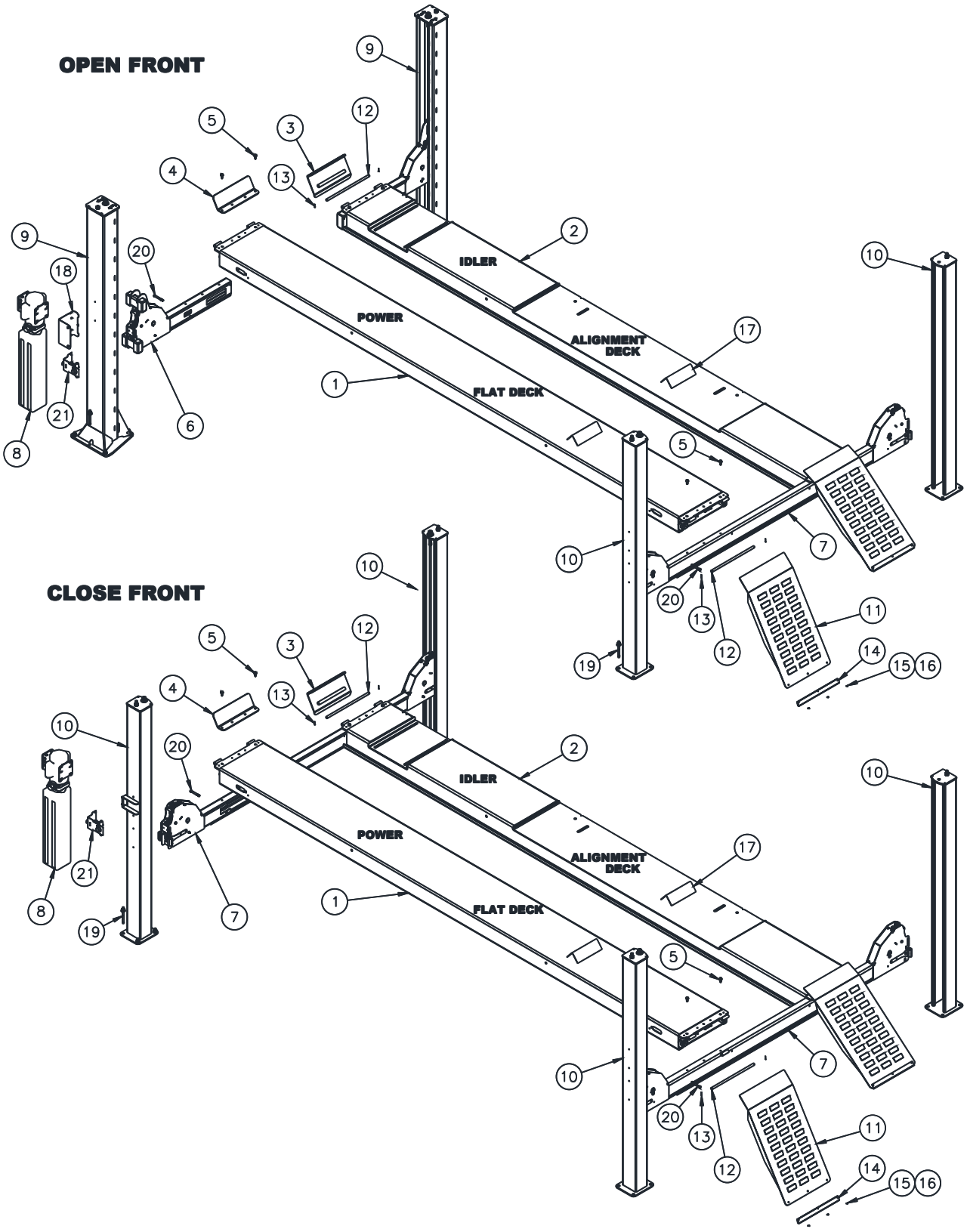
- Visually inspect concrete floor for cracks and/or spalls within 12” of base plate

IMPORTANT ! Failure to keep lift free of corrosive agents and solvents will lead to reduced service life, which could result in property damage and/or personal injury.

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

Parts Breakdown

Fig A. General Layout



PARTS BREAKDOWN (continued)

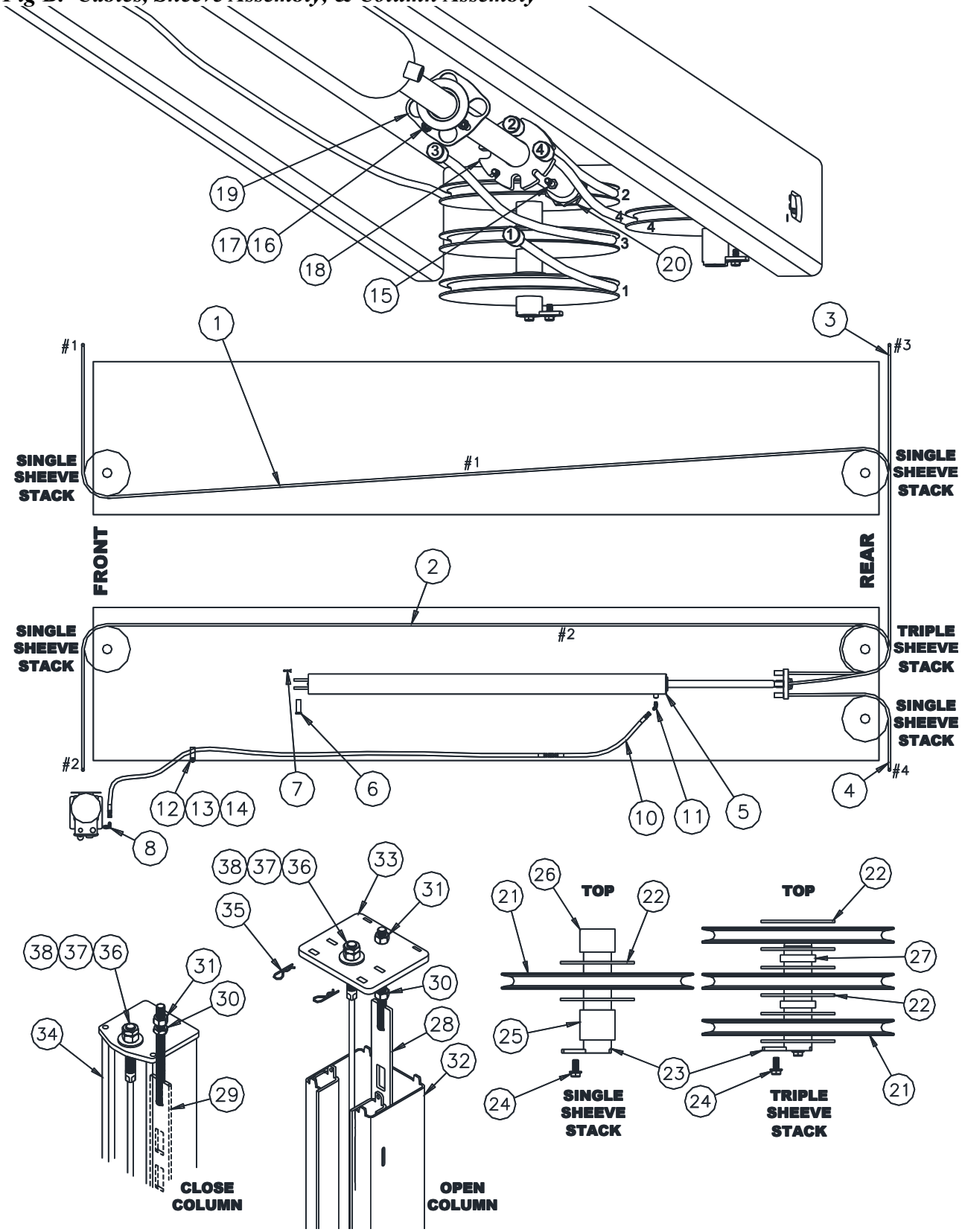
Table A. General Layout

ITEM #	PART #	QTY/LIFT	DESCRIPTION
1	40791	1	FLAT DECK POWER RUNWAY WELD (4115XFO)
	40781		FLAT DECK POWER RUNWAY WELD (4115EFO)
	40796		ALIGNMENT POWER RUNWAY WELD (4115XAO)
	40786		ALIGNMENT POWER RUNWAY WELD (4115EAO)
2	40793	1	FLAT DECK IDLER RUNWAY WELD (4115XFO)
	40783		FLAT DECK IDLER RUNWAY WELD (4115EFO)
	40798		ALIGNMENT IDLER RUNWAY WELD (4115XAO)
	40788		ALIGNMENT IDLER RUNWAY WELD (4115EAO)
3	40801	2	FOLD-DOWN FRONT WHEEL STOP
4	40705	2	WHEEL STOP
5	40083	8	1/2–13 x 1-1/4 HEX.FLG.HD.CAP SCREW
6	40719-P	1	FRONT POWER CROSSBEAM ASSEMBLY
	40719-I	1	FRONT IDLER CROSSBEAM ASSEMBLY
7	40760	1	REAR CROSSBEAM ASSEMBLY
8	AB-81795	1	POWER UNIT 1 PHASE, 60Hz, 208-230VAC
	AD-81795		POWER UNIT 3 PHASE, 230/460VAC
9	40710	2	FRONT COLUMN ASSEMBLY
10	40755-P	1	POWER CLOSE COLUMN ASSEMBLY
10	40755-I	3	IDLER CLOSE COLUMN ASSEMBLY
11	B40708	2	ENTRANCE RAMP
12	40165	2	RAMP HINGE PIN
13	40126	5	1/8 x 1 1/2" Lg. COTTER PIN
14	40168	2	RAMP SLIDE
15	31062	6	1/4-20NC x 3/4" Lg. PAN HEAD SCREW
16	40085	6	1/4-20NC HEX FLANGE NUT
17	40265	2	WHEEL CHOCK
18	40872	1	POWER UNIT BRACKET ASSEMBLY
19	31058	18	ANCHOR BOLT, 3/4 x 5 1/2"
20	40809	4	1/2 -13 x 4” HEX.HD.CAP SCREW
21	40878	1	AIR CONTROL BRACKET ASSEMBLY
22	480589	2	SHIM KIT (NOT SHOWN)

Replace all worn, damaged, or broken parts with parts approved by ***Challenger Lifts Inc.*** or with parts meeting ***Challenger Lifts Inc.*** specifications.
Contact your local Challenger Lifts Parts Distributor for pricing and availability.
(Call Challenger Lifts Inc. (502) 625-0700 for the Parts Distributor in your area)

PARTS BREAKDOWN (continued)

Fig B. Cables, Sheeve Assembly, & Column Assembly



PARTS BREAKDOWN (continued)

Table B. Cables, Sheeve Assembly, & Column Assembly

ITEM #	PART #	QTY/LIFT	DESCRIPTION
1	40703-X1	1	RIGHT FRONT CABLE #1 (4115X)
	40703-E1		RIGHT FRONT CABLE #1 (4115E)
2	40703-X2	1	LEFT FRONT CABLE #2 (4115X)
	40703-E2		LEFT FRONT CABLE #2 (4115E)
3	40703-3	1	RIGHT REAR CABLE #3
4	40703-4	1	LEFT REAR CABLE #4
5	40611	1	HYDRAULIC CYLINDER
6	40082	1	CLEVIS PIN
7	40126	5	1/8 x 1 1/2" Lg. COTTER PIN
8	16167	1	90 DEGREE ADAPTER ELBOW – MALE #6 O-RING x MALE #6 J.I.C.
9	40349	1	HYDRAULIC HOSE – FEMALE #6 J.I.C. BOTH ENDS
10	39101-024	1	HYDRAULIC HOSE EXTENSION – 2 ft (Model 4115E)
	39101-048		HYDRAULIC HOSE EXTENSION – 4 ft (Model 4115X)
11	A2128	1	45 deg ELBOW - #6 O-RING x #6 JIC 37 deg
12	A1122-12	1	HOSE CLAMP
13	A1153	1	3/8-16NC x 3/4 HEX. FLG. HD. CAP SCREW
14	A1154	1	3/8-16NC HEX FLANGE NUT
15	44207	2	5/16-18NC x 2 HEX HD CAP SCREW
16	6-0295	2	5/16 SAE FLAT WASHER
17	4100237	2	5/16-18NC FLANGE HD LOCKING HEX NUT
18	40770	1	CABLE PULL BAR
19	40810	1	CABLE RETAINER WELD
20	44015	2	1 3/8-12NF JAM NUT
21	B40650	7	SHEAVES
22	40053	19	1/8" THICK BEARING
23	B40055	4	SHEAVE PIN WELD (RUNWAY)
24	40807	16	5/16 – 18NC x 3/4 HEX. SER. FLG. HD. CAP SCREW
25	40774-B	4	SHEAVE SPACER, **B**OTTOM 1-5/8
26	40774-T	4	SHEAVE SPACER, **T**OP 1-1/4
27	40774-S	2	SHEAVE SPACER, 3-**S**TACK 3/8
28	40750	2	LADDER WELD (OPEN END)
29	40452	2	LADDER WELD (CLOSED END)
30	CL40130	4	3/4-10NC HEX JAM NUT
31	40129	4	3/4-10NC HEX NUT
32	40712	2 O	OPEN FRONT COLUMN WELD
33	40711	2 O	OPEN FRONT COLUMN TOP PLATE
34	40756	2 X/ 4 O	IDLER COLUMN WELD
35	40126	4 O	1/8 x 1-1/2" Lg. COTTER PIN
35	40147	4	7/8-9NC HEX NUT
36	40148	4	7/8-9NC HEX JAM NUT
37	CL40149	4	7/8 FLAT WASHER

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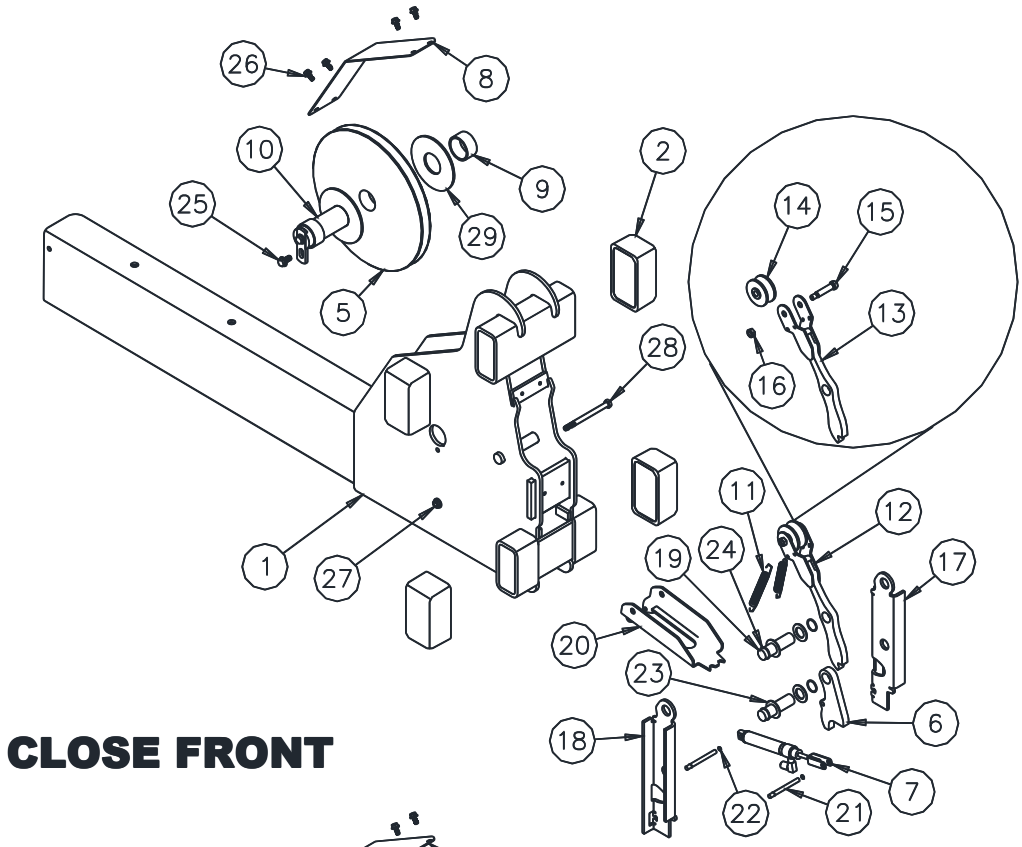
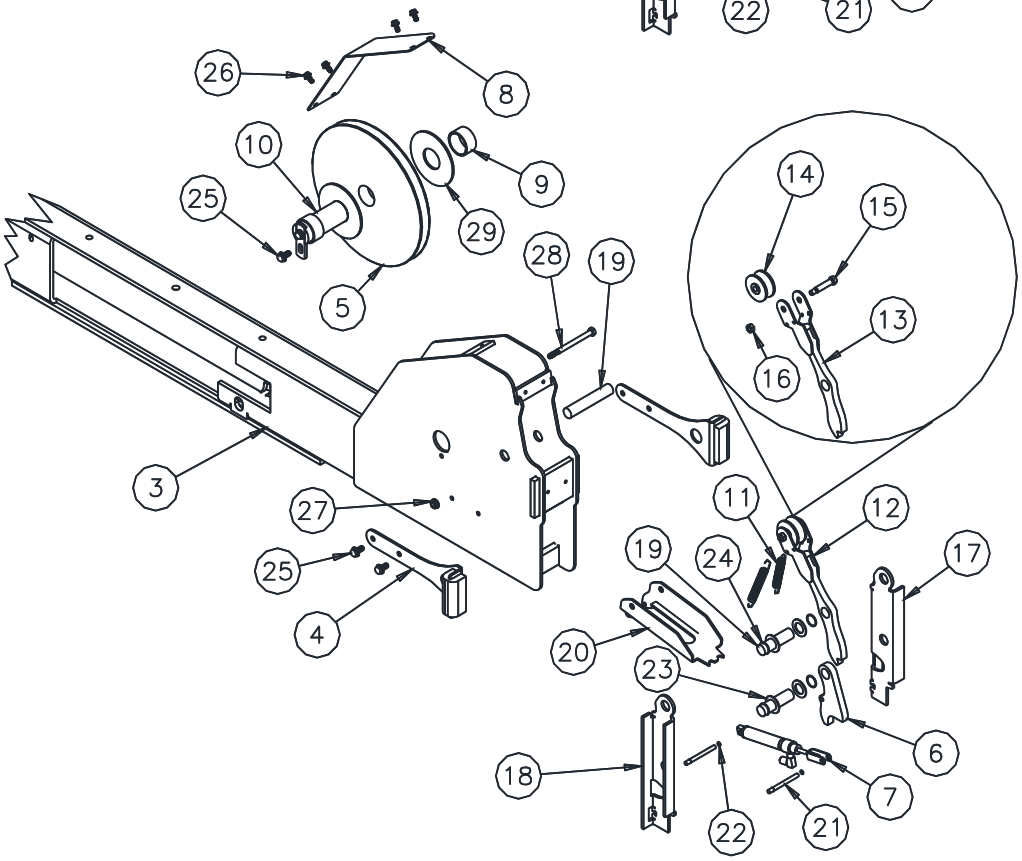
PARTS BREAKDOWN (continued)

Fig C. Front and Rear CrossBeam Assembly

OPEN FRONT



CLOSE FRONT



PARTS BREAKDOWN (continued)

Table C. Front and Rear CrossBeam Assembly

ITEM #	PART #	QTY/LIFT	DESCRIPTION
1	40720-P	1	OPEN CROSSBEAM WELD, POWER
	40720-I	1	OPEN CROSSBEAM WELD, IDLER
2	2-0772	4	OPEN SLIDE BLOCKS
3	40761	1 O/ 2 X	CROSSBEAM WELD
4	40766	4	CLOSE SLIDE BLOCKS ASSEMBLY
5	B40650	11	SHEAVE
6	40625	4	PRIMARY LOCK PAWL
7	CL40141	4	AIR CYLINDER ASSEMBLY
8	40709	2	SHEAVE GUARD
9	40739-X	4	SHEAVE SPACER BUSHING (CROSSBEAM)
10	B40116	4	SHEAVE PIN (CROSSBEAM)
11	CL40139	8	EXTENSION SPRING
12	40741	2	SLACK LATCH ASSEMBLY
13	40742	2	SLACK LATCH WELD
14	40745	2	CABLE ROLLER
15	36065	1	3/8 x 1-1/2 SHOULDER BOLT
16	70081	1	5/16 – 18 KEPS NUT
17	40746-L	2	LOCK SUPPORT CHANNEL, LEFT
18	40746-R	2	LOCK SUPPORT CHANNEL, RIGHT
19	40747	4	LATCH PIVOT PIN
20	40748	2	AIR CYLINDER SUPPORT BRACKET
21	40749	2	AIR CYLINDER PIVOT PIN
22	40732	4	O-RING, AIR CYLINDER ROD
23	40734	4	FLAT WASHER, 3/4 x 1-1/4
24	40733	4	O-RING, LATCH PIVOT PIN
25	40807	16	5/16–18NC x 3/4 HEX. SER. FLG. HD. CAP SCREW
26	40120	16	1/4-20NC x 1/2" Lg. SELF TAPPING SCREW
27	4100237	4	HEX FL HD SL NUT 5/16-18NC
28	40808	4	5/16-18NC x 4 HHCS GR5 PLATED
29	40053	8	SHEAVE THRUST BEARING (1/8” THICK)

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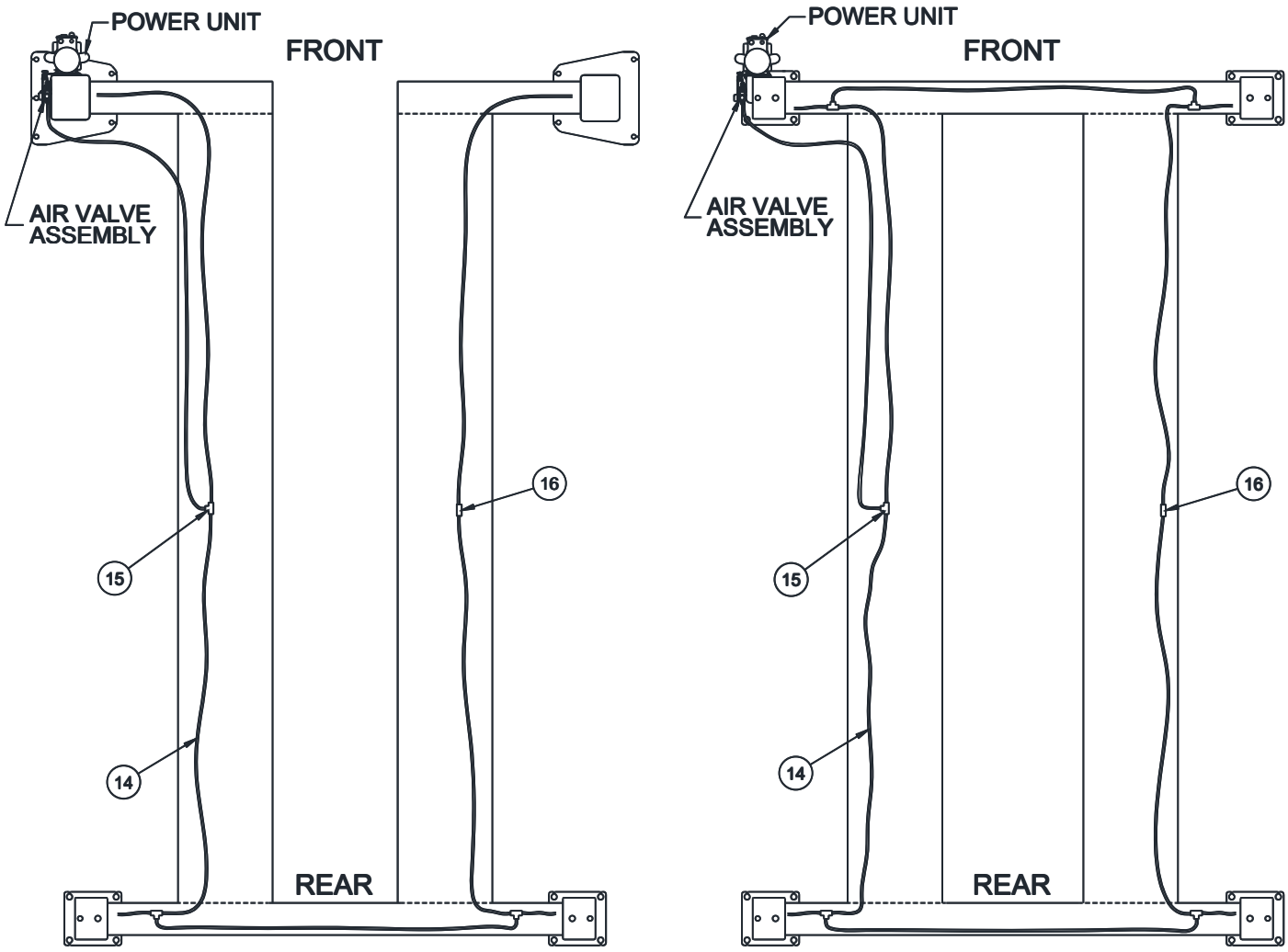
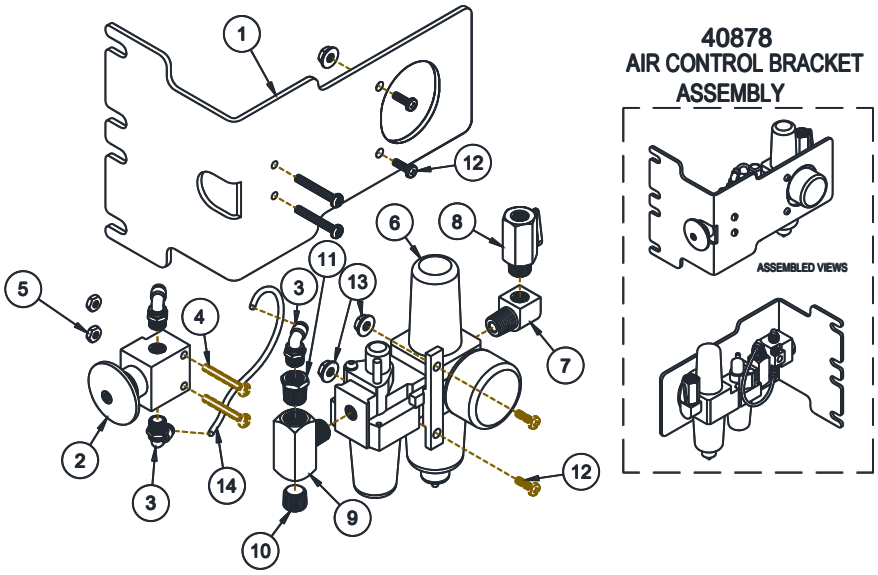
PARTS BREAKDOWN (continued)

Fig D. Air Lock Release





PARTS BREAKDOWN (continued)

Table D. Air Lock Release

ITEM #	PART #	QTY/LIFT	DESCRIPTION
1	40879	1	POWER UNIT BRACKET WELD
2	37016	1	PNEUMATIC VALVE (MAC)
3	B37019	1	ELBOW 1/8 NPT MALE x 4mm PUSH-LOCK
4	37022	1	#8-32 x 1 1/4 PAN HEAD SCREW
5	CL37024	1	#8-32 HEX NUT
6	40803	1	FRL ASSEMBLY
7	24104	1	STREET ELBOW, 1/4 NPT
8	RJ6-32	1	BALL VALVE, 1/4 NPT MALE x FEMALE
9	40236	1	BRANCH TEE, 1/4 NPT
10	40237	1	HEX SOCKET PLUG, 1/4 NPT
11	40805	1	REDUCER, 1/4 NPT x 1/8 NPT
12	VS10-40-18	1	#10-32 x 1/2 PHILLIPS PAN HEAD SCREW
13	A1206-15-14	1	#10-32 SERRATED FLG. HEX. NUT
14	00909	60 ft	4mm DIA. PLASTIC AIR LINE
15	B37032	3 O / 5 X	4mm UNION TEE
16	B40445	1	4mm STRAIGHT UNION

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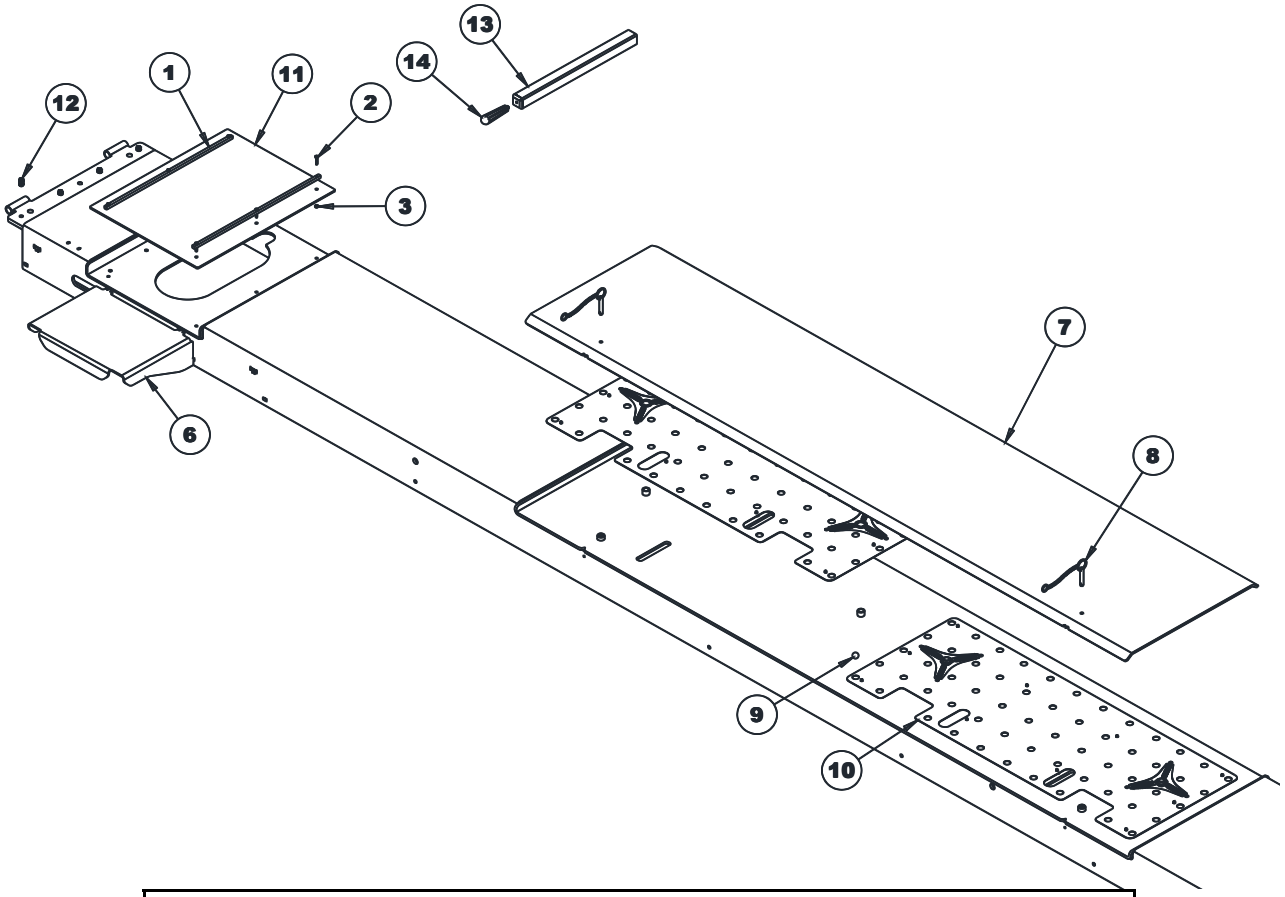
(Call Challenger Lifts Inc. (502) 625-0700 for the Parts Distributor in your area)

PARTS BREAKDOWN (continued)

Fig E. Alignment Equipment



ITEM #	PART #	QTY/LIFT	DESCRIPTION
1	40842	4	GUIDE BAR 3/8 SQ 4115
2	40299	12	#10-24 x 1" SOC.HD.CAP SCREW
3	055-127	12	#10-24 HEX LOCK NUT
4	40296	2	DROP-IN SPACER
5	40295	2	HANDLE
6	40506	2	WORK STEP
7	40833	2	REAR SLIP PLATE WELDMENT
8	40220	4	PIN ASSEMBLY
9	40211	116	3/4" DIA. BALL
10	40835	2	BALL RETAINER ASSEMBLY
	40836	2	BALL RETAINER SHEET
	40527	28	STAND-OFF PIN
	40528	28	STAND-OFF SPACER (GROMMET)
	40221	24	1/2" DIA. EXTENSION SPRING
	CL40219	8	7/8" INTERNAL TOOTH LOCK WASHER
11	40840	2	FRONT PAN FILLER PLATE
12	6-0726	8	1/2-13NC x 1 SET SCREW
13	40296	2	DROP-IN SPACER
14	40295	2	HANDLE

Replace all worn, damaged, or broken parts with parts approved by ***Challenger Lifts Inc.*** or with parts meeting ***Challenger Lifts Inc.*** specifications.
Contact your local Challenger Lifts Parts Distributor for pricing and availability.
(Call Challenger Lifts Inc. (502) 625-0700 for the Parts Distributor in your area)

REVISIONS

- 02/07/2020- Added step for adjusting runway pitch. Added step for placing the Warning Decal, Notice Decal, and Caution Decal on the Power column. Added approximate shipping weights to General Specification.
- 02/17/2020- Added steps for installing through bolts for crossbeam and runways. Added steps to install ramps
- 3/18/2020- Change the type of Lubrication used for the columns.
- 5/23/2020- Corrected Spec Page
- 5/29/2020- Corrected Cables in Fig B of Parts Breakdown.
- 9/23/2020- Corrected Fig A and Fig D of Parts Breakdown, Fig 1a & 1b, Fig 15a, Fig 15b, Fig 17, Fig 18, and Fig 21 to show correct Power Unit Bracket and design