WARRANTY REGISTRATION

Model	LA-WFP15ARO-E
Serial Number	
Name of Distributor	
Date of Installation	
Installation Address Street	
City	
State	
Zip Code	
Phone	
Fax	
Email	

Important Notice: Warranty registration must be received by U.S. Postal Service or via email to: sales@whipindustries.com within two weeks of install date.

WHIP INDUSTRIES, INC.

WFP15ARO

&

WFP15ARO-E

15,000 LBS CAPACITY

FOUR POST GROUND ALIGNMENT LIFT

INSTALLATION INSTRUCTIONS & MANUAL

WHIP INDUSTRIES, INC
3010 S MAIN ST.
FORT WORTH, TEXAS 76110
PH (800) 256-7391 FAX (817) 289-1412
E-MAIL: WhipInd@whipindustries.com

REV. E

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IMPORTANT INFORMATION

1. The floor where the lift is to be installed must be a minimum of 4" thickness of concrete. Concrete must be reinforced with steel rebar with a minimum compressive strength of 3,000 psi . Failure by the purchaser to provide the recommended mounting surfaces could result in personal injury, property damage and/or unsatisfactory lift performance.

2. Read the installation manual before installing the lift.

3. This lift is a four post alignment lift which requires a minimum Std. (15'-0" x 26'-0") & Ext. (15'-0" x 27'-8") bay area.

4. Read anchoring tips information before drilling and installing the anchor bolts.

5. Do not raise a vehicle with the lift until the lift has been correctly installed and adjusted as described in this manual.

6. Maximum floor variation between any two posts is 2 inches.

CAUTIONS AND WARNINGS

MOTORS AND ELECTRIC CONTROLS ARE NOT – SEALED AGAINST WEATHER OR MOISTURE. DAMAGE OR ELECTRICAL SHOCK MAY OCCUR IF INSTALLED UNPROTECTED OUTDOORS.

FACTORY MUST BE NOTIFIED WITHIN 30 DAYS OF DELIVERY IF THERE ARE ANY PARTS MISSING FROM SHIPMENT.

RECOMMENDED OIL: HYDRUALIC MEDIUM OIL SAE-10 OR EQUIVALENT. MAY USE TRANSMISSION FLUID DEXRON II OR III ATF.

ALL BOLTS PLACED IN THE COLUMN MUST BE PLACED FROM THE OUTSIDE FACING INWARD. UNLESS NOTED IN THE INSTALLATON INSTRUCTIONS.

TOOLS REQUIRED

Concrete rotary hammer drill with ¾" carbide bit

Open End Wrenches: 7/16", 1/2", 3/4", & 1 1/8"

Ratchet Driver

Sockets: 1/2", 3/4" X 1/2" deep

12" Crescent Wrench

3/16 Allen Wrench

Phillips & Flat Head Screwdriver

Hammer

Needle Nose Pliers

Retainer Ring Pliers

Electrical Pliers

Level

Fish Tape

25' Tape Measure

Chalk Line

Small Drift Punch

Step Ladder

3 gallons of hydraulic medium oil SAE-10 or Dexron II or III ATF.

1 1/2 to 2 1/2 Gallons of Grout (Masterflow 928, Wedjrok Ready Mix Grout or Equivalent)

ANCHORING TIPS

1. Anchor must be at least 5” from the edge of the slab or any seam.
2. Use a concrete hammer drill with a 3/4” carbide bit.
3. Do not use a worn bit.
4. Drill in a perpendicular line with the hole.
5. Do not apply excessive pressure to the drill. Let the drill do the work.
6. Lift the drill up and down occasionally to remove residue and to reduce binding.
7. Drill the hole depth equal to the length of the anchor, or completely through the slab.
8. For better holding power, blow all dust and residue from the hole before driving anchor into hole.

Place a flat washer over threaded end of anchor. Spin nut 1/2” down past end of anchor. Carefully tap anchor into the concrete until nut and flat washer are against base plate. Do not use an impact wrench to tighten.

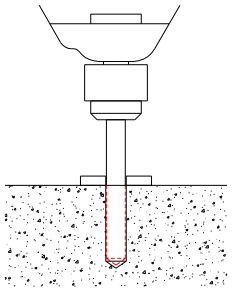


FIG. #1

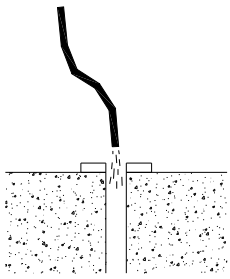


FIG. #2

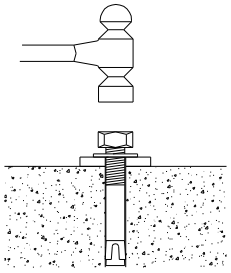


FIG. #3

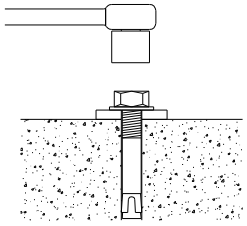


FIG. #4

INSTALLATION INSTRUCTIONS

1) Area required for four post alignment lift is a minimum of Std. (15' x 26') or Ext. (15' x 27'-8") area.

2) Using the chalk line layout a rectangle (Std.) 15'-9" x 11'-9 3/8" or (Ext.) 17'-5" x 11'-9 3/8" atleast 3'-7 3/8" from the ramp location and 1'-7 3/8" from either side of the lift (see Layout & Installation Specification sheet). This should give the lift 4" clearance in front of the ramps and 1'-7 3/8" from the side of the any leg.

3) Unpacking lift, inspect lift for any damages due to transportation and check shipping list for missing parts.

4) Locate the both Mainside Legs (see Fig. #2). Position legs as shown in the Installation Specification sheet for recommended installation. Optional - Mainside legs can be mounted on opposite side of lift depending on customer preference Hold the 14'-8" dimension of the legs center to center.

5) After measuring, Step #1 (see Fig. #5A) is to drill holes using a ¾" diameter carbide drill bit. Keep in mind the anchoring tips mentioned previously in the manual. After drilling all 8 hole on the Mainside Legs, anchor them down with ¾-10UNC 5 ½ anchor bolts (8 pcs. - 91578A501). Make sure legs are level and plumb. Use ½-13UNC x 2 all threaded HHCS (4 pcs. - 92865A720) with ½-13UNC reg. hex nuts (4 pcs. – 90473A223) at the base plate to level legs. Make sure all bolts are properly set and meet 75 ft. lbs of torque. DO NOT USE AN IMPACT.

6) Locate Top Rail assembly as shown in Fig. #1. Step #2 is to mount Top Rail assembly on top of Mainside Legs (see Fig. #5A). Secure Top Rail to Mainside Legs using ½-13UNC x 2 HHCS (4 pcs. – 91247A720), 1/2 flat washers top and bottom (4 pcs. – 90126A033), ½ lock washers (4 pcs. - 91102A033) & ½-13UNC hex nut (4 pcs. – 90473A223).

7) Locate LH & RH Cross Rails see Fig.#3. Fig. #3 shows RH Cross Rail. The pin stops and the hose guide brackets are some of the determining factor between the LH and RH Cross Rails. Both pin stops and hose guide brackets go to the inside of the lift. Also locate cross rail leaf chain (2 pcs. - ALIG-412-097 – 206 ¼" long). Run chain through Cross Rail as shown in Fig.#3. Chain goes over the 2 ¼" pulley on the mainside end and under the pulley at the offside end. Do the same for both Cross Rails. After routing chains through Cross Rails Step #3 is to connect the end of the mainside chains to the chain connector at the bottom of both Mainside Legs using 5/16 x 1 ¼ shoulder bolt (2 pcs. - 91259A585) and ¼-20UNC nylon lock nut (2 pcs. – 90640A129). ****IMPORTANT - Leaf chain must be mounted vertically on the chain connector to eliminate any chance of binding or kinking. *IMPORTANT* - Note the orientation of the Top Rail to the location of the LH and RH Cross Rail on Fig. #5A. The Cross Rail with the short chain connector must connect to the long Top Rail chain and the tall chain connector must connect to the short Top Rail chain. If the Top Rail is rotated 180 degrees the chain connectors must be switched. The lift will lift load uneven if the connectors are not at the proper**

location. Do this before moving the Cross Rail into the Mainside Leg weldment. Now move Cross Rail into the leg to mount nylon rub blocks (3 pcs. – ALIG-412-019) and guide brackets (1/1 pc. – ALIG-412-082 & -083). The ALIG-412-082 always goes to the outside of the lift and ALIG-412-083 always goes to the inside of the lift. Move Cross Rail to the inside of the lift about an 1" off center and mount the double guide bracket with the rub block first. Slide rub blocks into each cut out of guide brackets (ALIG-412-082) see Fig. #5B. Take the guide assembly to the top of the inside leg and rotate the assembly so that it goes into the formed leg see Fig. #5C. Slide it down the leg and bolt it to the out side of the Cross Rail using ½-13UNC x ¾ HHCS (2 pcs. - 92865A710). Repeat the same procedure for Single Guide (ALIG-412-083).

8) Step #4 is to repeat the same procedure on the opposite mainside for the LH Cross Rails.

9) Step #5 is to locate the LH/RH Offside Legs shown in Fig. #2. LH Offside Leg is shown. See Fig. #5A for location on lift assembly. Slide LH Offside Legs into the RH Cross Rail about 11'-9 3/8" apart form the Mainside at the base plate. Repeat the mounting procedure of the guide brackets (ALIG-412-083 & -082) and the nylon rub blocks (ALIG-412-019). Guide brackets hold the Offside Leg the correct distance from the Mainside Leg.

10) Step #6 is to connect the cross rail leaf chain on the offside to the Theaded Chain Connector (1 pc. – ALIG-415-049) see Fig. #5D. Use the 5/16 x 1 ¼ shoulder bolt (2 pcs. - 91259A585) and ¼-20UNC nylon lock nut (2 pcs. – 90640A129) to connect the leaf chain to the chain connector.

11) Step #7 is to repeat Step #5 & #6 of the RH Offside Leg.

12) Step #8 is to move the Offside Legs apart to hold the 14'-8" dimension at the center to center of the legs and to anchor the legs to the concrete repeating Step #1.

13) Step #9 is to locate the LH/RH Track Weldm't. (1/1 pcs. – (Std.) ALIG-412-020 or (Ext.) ALIG-412-220) and position them on top of the Cross Rails as shown in Fig. #5E. Hold 37 1/2" inside Track Weldm't. and centered on the Cross Rails side to side.

14) Step #10 is to extend hydraulic cylinder which lower both Top Rail Chain to connect to chain connectors on Cross Rail. Use a 5/16 shoulder screw (2 pcs. – 91259A587) and ¼-20UNC nylon lock nut (2 pcs. – 90640A129) to secure the chain.

15) Step #11 is to mount the 3-way pneumatic valve, F/R/L air system & power unit to the LH Mainside Leg using the #6 pan screw, #6 lock washer #6 hex nut, #10 pan screw, #10 lock washer, #10 hex nut, 5/16-18UNC x 1" bolts, 5/16-18UNC hex nuts and 5/16 lock washers respectively see View A in Fig. #6B. Before connecting the hydraulic hoses from the power unit to the cylinder you must first install two 90 deg. fittings (2501-06-06) on the cylinder and two 90 deg. fittings with o-rings (6801-LL-06-06) on the power unit. The 108" hose (ALIF-412-029) goes from the fitting on the cylinder next to the rod to the fitting of the power unit on the side of the handle. The

48” hose (ALIF-412-030) goes from the fitting of the cylinder next to the power unit to the fitting of the power unit on the opposite side of the handle. Next connect the electricity to the power unit. Power requirements: 230 Volt, single phase power, 12 amp. Use separate circuit for each unit and protect each circuit with 30 amp time delay fuse or circuit breaker.

16) Fill pumping unit with hydraulic medium oil SAE-10 or equivalent. It will take approximately 3 US gallons. Automatic transmission fluid may be substituted.

17) Use plastic ties or steel loops to secure slack in hydraulic hose and hydraulic cylinders.

18) Before operating lift visually inspect lift to make sure the chains and hoses are not rubbing on hardware or lift parts.

19) Step #12 is to raise lift with track and rest on latch bar about 30” to 36” to secure Tracks on the Cross Rails and assemble the remaining parts and hardware on the Tracks. Use figure #4A, #4B and #4C.

20) Step #13 is to assemble and install the air hoses and fitting as shown in Fig. #6A and #6B. **Note: 1/8” and 3/8” tube run thru the hose brackets in the rear Cross Rail and thru the holes underneath the Track Weldm’t. Air pressure requirements: 100 psi minimum to 120 psi maximum.** Use 3/8” Heli Tube (ALIG-415-119) to wrap 1/8” & 3/8 tube together.

21) OPTIONAL - Load both Air Jacks between Track Weldm’t. one at each end with air fittings facing the front and rear of lift. Connect the two ¼ retractable air hoses to the jacks (2 pcs. – 5245K12).

22) Connect the external air supply to1/4 FNPT Air Ball Valve.

23) Again before operating lift visually inspect lift to make sure hoses are not rubbing on hardware or lift parts. Push button on power unit to raise lift until safety latches rise off the latch bar, then press the 3-Way Pneumatic Valve and at the same time pull release handle on the power unit to lower lift.

24) Raise lift about 60” and set safety latches on latch bar. Adjust latch bars on legs to set Track level. This is done by turning the ¾-10UNC hex nut on the threaded rod of the latch bar.

25) Raise and lower lift repeatedly to purge air trapped in hydraulic lines and to adjust Cross Rails. Each Cross Rail must be synchronized as the lift moves up and down. Adjust Cross Rails by turning the 1” hex nut of the chain connector on the Offside Legs.
26) Refill tank with hydraulic oil.

27) After lift is leveled and operating properly, pour grout between the base plate and the concrete floor to stabilize the lift. Do not use lift for 24 hours.

30 DAY MAINTENANCE

1) Inspect the chains for wear. Grease inside formed legs as needed.

2) Check equalizer cables regularly for proper tension and adjustment.

3) Inspect adapters and pads for damage or wear. Replace if necessary.

4) Inspect all hydraulic lines and fittings for leaks and tighten if necessary.

5) Check locking latches and releases for proper operation.

6) Check automatic arm lock device for proper operation.

TROUBLE SHOOTING GUIDE

POSSIBLE PROBLEM	POSSIBLE CAUSE & SOLUTIONS
1. MOTOR DOES NOT RUN	A) Breaker tripped or fuse blown B) Motor thermal overload tripped. Wait for overload to cool. C) Check thermal overload in starter box (three phase only). Push to reset. D) Defective control switch, replace E) Faulty wiring connections. Call electrician.
2. MOTOR RUNS BUT THE LIFT WILL NOT RAISE OR HOLD A LOAD	A) A foreign object under check valve. Push handle down and push "raise" switch. Foreign matter should release under pressure. B) Remove check valve. Clean and replace. C) Oil level low: check oil reservoir. With carriage in the down position, pump reservoir should be full.
3. MOTOR RUNS BUT THE LIFT PICKS UP PARTIAL LOAD ONLY.	A) Relief valve setting is too low. Remove back hexcap on pump and and adjust valve clockwise. B) Hydraulic seals damaged (call factory for instructions)
4. OIL BLOWS OUT BREATHER	A) Oil reservoir overfilled B) Lift lowered too quickly while under heavy load.
5. LIFT MAKES A GROANING SOUNDING WHEN RAISING OR LOWERING.	A) Bleed cylinder manually. B) Add an ounce of oil to the air side of the piston.
6. LIFT RAISES UNEVENLY	A) Chain are not properly adjusted or tightened. B) Use lighter weight oil in the pump.
7. LIFT DOES NOT LOWER	A) Adjust yokes out at pneumatic cylinders in the Cross Rails

PARTS & SHIPPING LIST

PART NUMBER	DESCRIPTION	QTY.	
	Ramp Assy.	**2**	
ALIG-412-01	Ramp Weldm't.	2	
5304Z	52 O.D. x 20 I.D. x 22W DS Bearing	4	
98410A128	0.75 Dia. Retainer Ring	6	
ALIG-412-101	¾ Dia.Ramp Pins	2	
	Top Rail Assy.	**1**	
ALIG-412-001	Std. Top Rail Weldm't.	1	
(ALIG-415-201)	Ext. Top Rail Weldm't.	1	
AA-3515001	3.50 Dia. 72" Stroke Hyd. Cylinder	1	
98023A045	2.00 SAE Flat Washer	2	
98410A152	2.000 Dia. Retainer Ring	2	
98410A249	1.375 Dia. Retainer Ring	3	
98410A133	1.000 Dia. Retainer Ring	1	
98381A593	0.313 Dia. x 2.5 Lg. Dowel Pin	2	
ALIG-412-009	Cylinder Chain Connector	1	
ALIG-412-098	BL646, 127 Pitch Male Ends, Std. Short Top Rail Chain	1	
(ALIG-415-298)	BL646, 153 Pitch Male Ends, Ext. Short Top Rail Chain	1	
GL-12-053	5.5 Dia. Roller	2	
GL-12-056	4.0 Dia. Pulley	3	
GL-12-096	BL646, 347 Pitch Male Ends, Std. Long Top Rail Chain	1	
(ALIG-415-296)	BL646, 399 Pitch Male Ends, Ext. Long Top Rail Chain	1	
GL-12-100	1 Dia. Cylinder Pin	1	
GL-12-101	1 3/8 Dia. Pulley Pin	3	
2501-06-06	0.375MNPT x 0.375MJIC 90 Deg. Adapter	2	HK
6801-LL-06-06	0.375MORB x 0.375MJIC 90 Deg. Adapter w/O-ring	2	HK
3225T6	¾" Rubber Cushion Steel Loops (Optional)	4	HK
91247A720	½-13UNC x 2.0 HHCS Grd. 5	4	HK
90473A223	½-13UNC Hex Nut Grd. 2	4	HK
91102A033	½ Lock Washer	4	HK
90126A033	½ SAE Flat Washer	8	HK
7130K55	11" Black Ties	12	HK
ALIF-412-029	0.375FJICS Hose x 108"	1	PKG
ALIF-412-030	0.375FJICS Hose x 48"	1	PKG

	LH/RH Cross Rail Assy.	**1/1**	
ALIG-412-060L/R	LH/RH Cross Rail Weldm't.	1/1	
6498K334-1.00	0.75 Dia. x 1.0 Stroke Pnuem Cylinder	4	
6498K42	0.75 Dia. Cylinder Yokes	4	
6498K72	0.75 Dia. Cylinder Brackets	4 Sets	
5315	0.375 Dia. x 0.41W x 1.00 Lg. Ext. Spring	4	
SPC-2001	1/8 MNPT x 1/8 Push-On Fitting	4	
90096A242	#10-24 Hex Head Thread Cutting Screws	8	
91251A542	¼-20UNC x 1.0 Lg. SHCS	4	
91251A546	¼-20UNC x 1.5 Lg. SHCS	4	
90473A029	¼-20UNC Hex Nut Grd. 2	4	
90126A038	1" SAE Flat Washer	4	
91102A029	¼ Lock Washer	12	
98410A128	0.750 Dia. Retainer Ring	6	
98410A133	1.000 Dia. Retainer Ring	4	
91309A537	¼-20UNC x 0.50 Lg. HHCS Grd. 2	8	
ALIG-412-007	CR Cover Plate	4	
ALIG-412-076	Safety Locks	4	
ALIG-412-088	3/4 Dia. Pulley Pin	6	
ALIG-412-089	1 Dia. Safety Latch Pin	4	
ALIG-412-090	Mach. Chain Connector 3" Lg. (LH Cross Rail)	1	
ALIG-412-090A	Mach. Chain Connector 2 ¼" Lg. (RH Cross Rail)	1	
ALIG-412-102	Safety Latch Spacer	4	
GL-12-055	2.25 Dia. Pulley	4	
91259A585	0.313 Dia. 1.25 Lg. Shoulder Bolt	4	HK
91259A587	0.313 Dia. 1.50 Lg. Shoulder Bolt	2	HK
90640A129	¼-20UNC Nylon Lock Nut	6	HK
92865A710	½-13UNC x 0.75 Lg. HHCS Grd. 2	16	HK
ALIG-412-019	Nylon Rub Blocks	12	PKG

	LH/RH Mainside Leg Assy.	**1/1**	
	LH/RH Offside Leg Assy.	**1/1**	
ALIG-412-070L/R	LH/RH Mainside Leg	1/1	
ALIG-412-071L/R	LH/RH Offside Leg	1/1	
ALIG-412-084	Latch Bar Weldm't.	4	
ALIG-412-105	Holding Bracket	24	
90272A247	#10-24UNC x 1.00 Pan Head Phillips Screw	24	
91102A011	#10 Lock Washer	24	
95462A538	¾-10UNC Hex Nut Grd. 2	8	
91247A583	5/16-18UNC x 1.0 Lg. HHCS Grd. 5	4	HK
95473A030	5/16-18UNC Hex Nut Grd. 2	8	HK
91102A030	5/16 Lock Washer	4	HK
92865A720	½-13UNC x 2.0 Lg. (Full Thrd) HHCS Grd. 5	16	HK
90473A223	½-13UNC Hex Nut Grd. 2	16	HK
91578A501	¾-10UNC x 5 Lg. Anchor Bolts w/SAE FW & Hex Nuts	16	HK

94846A555	1-14UNF Hex Nut Grd. 5	4	HK
90126A038	1.0 SAE Flat Washer	2	HK
ALIG-415-049	Threaded Chain Connector	2	PKG

LH/RH Track Assy. 1/1

ALIG 412-020L/R	Std. LH/RH Track Weldm't.	1/1	
(ALIG 412-220L/R)	Ext. LH/RH Track Weldm't.	1/1	
3896T1	1/16 Oval Sleeve Alum. Ferrules	16	
3461T82	1/16 Wire Rope (8 pcs – 12" lg.)	8 Ft.	
ALIG-412-008	Slip Plate Pin	8	
9614K37	1.0 Dia. Delrin Ball	56	HK
92865A714	½-13UNC x 1.25 Lg. HHCS Grd. 5	38	HK
90473A223	½-13UNC Hex Nut Grd. 2	54	HK
91102A033	½ Lock Washer	54	HK
92865A841	¾-10UNC x 1.75 Lg. HHCS Grd. 5	10	HK
90473A036	¾-10UNC Hex Nut Grd. 2	10	HK
91102A036	¾ Lock Washer	10	HK
90566A031	3/8-16UNC Thin Nylon Lock Nut.	8	HK
91090A115	3/8 Fender Washer x 1 ½ OD	16	HK
93548A644	3/8-16UNC Carriage Bolt x 5 Lg.	8	HK
ALIG-412-099	½-13UNC x 3.25 x 6.50 U-Bolts	8	HK
ALIG-412-046	0.25 x 2.50 x 71.625 CDFB, 1018	4	PKG
ALIG-412-047	16 Ga. MSSH x 5.00 x 35.00, A366	8	PKG
ALIG-412-051	Front Stop Weldm't.	2	PKG
ALIG-412-055	Ramp Support Weldm'.	2	PKG
ALIG-412-093	Track Steps	2	PKG
ALIG-412-101	Ramp Pivot Pin	2	PKG
ALIG-412-107	Quick Disconnect Brkt.	2	PKG
ALIG-412-109	Elect. Box Brkt.	1	PKG

Misc. Parts

92865A719	½-13UNC x 1.75 HHCS Grd. 5	16	
91236A724	½-13UNC x 3.0 HHCS Grd. 5	4	
90473A223	½-13UNC Hex Nut Grd. 2	20	
90096A242	#10-24 HH Thread Cutting Screw	4	
91102A033	½ Lock Washer	20	
90126A033	½ SAE Flat Washer	40	
4534K42	*¼ NPTF FM Seal Hex Socket Plug (ALIF-209 Cyl.)	1	HK
60115K39	F/R/L Air System	1	HK
6464K18	3-Way Pneumatic Valve	1	HK
SPC-2001	1/8 MNPT x 1/8 Push-On Fitting (Plastic)	3	HK
SPE-20	1/8 Push-On Union Tee (Plastic)	3	HK
SPC-6002	¼ MNPT x 3/8 Push-On Fitting (Plastic)	8	HK

SPE-60	3/8 Push-On Union Tee (Plastic)	6	HK
47865K21	¼ FNPT x ¼ FNPT Ball Valve (Brass)	1	HK
5485K22	¼ MNPT x ¼ MNPT Hex Nipple (Brass)	2	HK
50785K72	¼ FNPT Tee Connector (Brass)	1	HK
50785K61	¼ MNPT x 1/8 FNPT Hex Bushing (Brass)	1	HK
50785K41	1/8 MNPT x 1/8 FNPT 90 Deg. Street Elbow (Brass)	2	HK
91247A583	5/16-18UNC x 1.0 Lg. HHCS Grd. 5	2	HK
95473A030	5/16-18UNC Hex Nut Grd. 2	2	HK
91102A030	5/16 Lock Washer	2	HK
94070A153	#6-32UNC x 1.00 Pan Head Phillips Screw	2	HK
91102A007	#6 Lock Washer	2	HK
90480A007	#6-32UNC Hex Nut Grd. 2	2	HK
6536K18	¼ MNPT x ¼ F Quick Disconnect Hose Coupling (Ind.)	6	HK
5245K12	¼ MNPT x ¼ Self Retracting Nylon Air Hose 25’	2	HK
AH-1008	Power Unit	1	PKG
ALIG-412-119	Turntable Cover (Only on Extended Lifts)	2	PKG
ALIG-415-097	BL644, 275 Pitch Male Ends, Cross Rail Chain	2	PKG
ALIG-415-117	45’ - PT23002BK - 1/8 Black Tube	1	PKG
ALIG-415-118	55’ – PT24006BK - 3/8 Black Tube	1	PKG
ALIG-415-119	6’ – HT-00375 - 3/8 Heli Tube	1	PKG

OPTIONAL EQUIPEMENT

ALIF-ARJ-06K	6K Air Roller Jack	2	PKG
ALIF-TT1	13” Dia. Turntables	2	PKG

*** Note: All hardware unless specified is grade 2. All hardware is zinc coated unless specified. Parts with PKG at the end are packed on the lift and parts with HK at the end are packaged in a box and put on the lift.

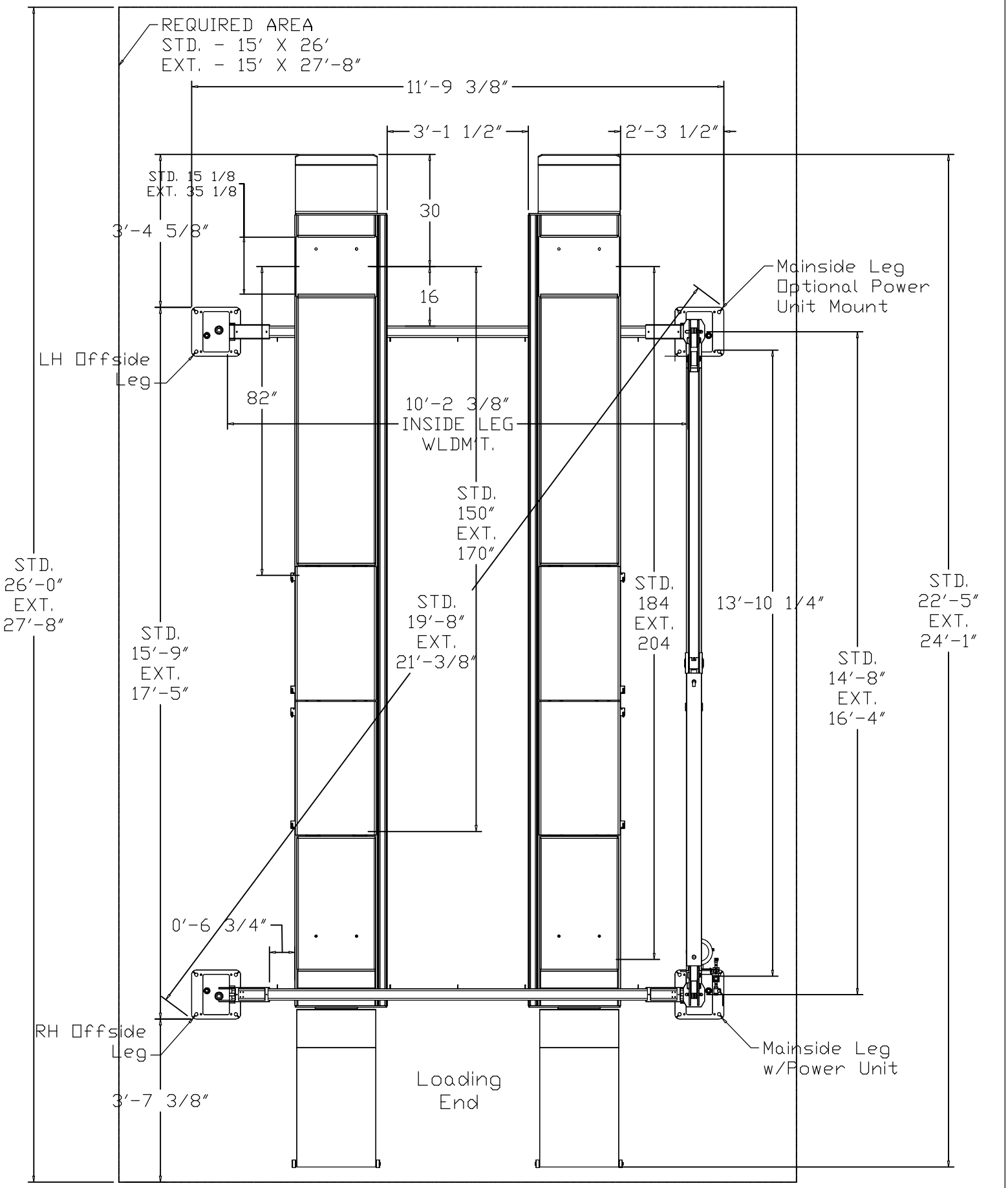
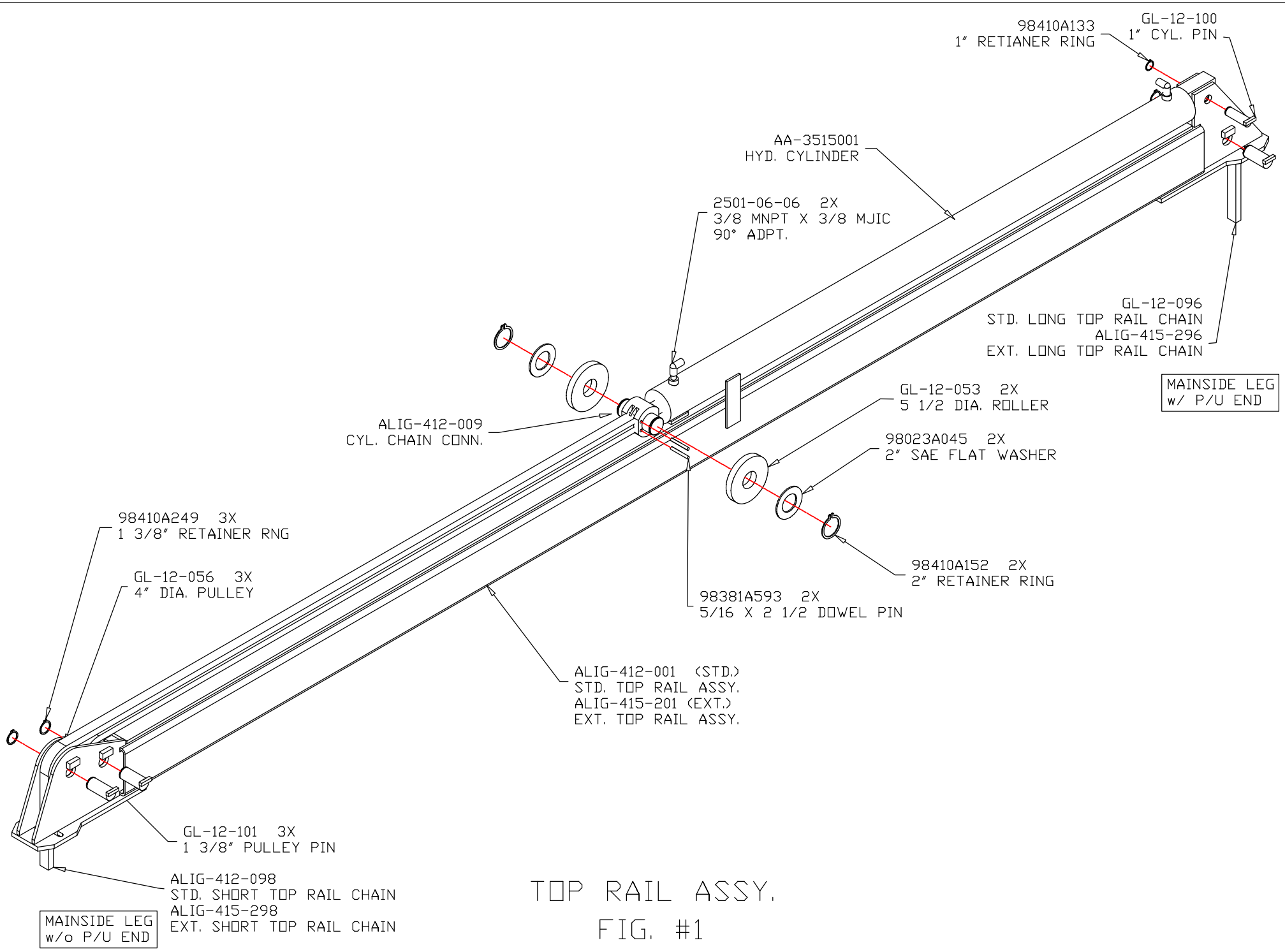


FIG #1 WFP15ARO - LAYOUT &
INSTALLATION SPECIFICATION



TOP RAIL ASSY.

FIG. #1

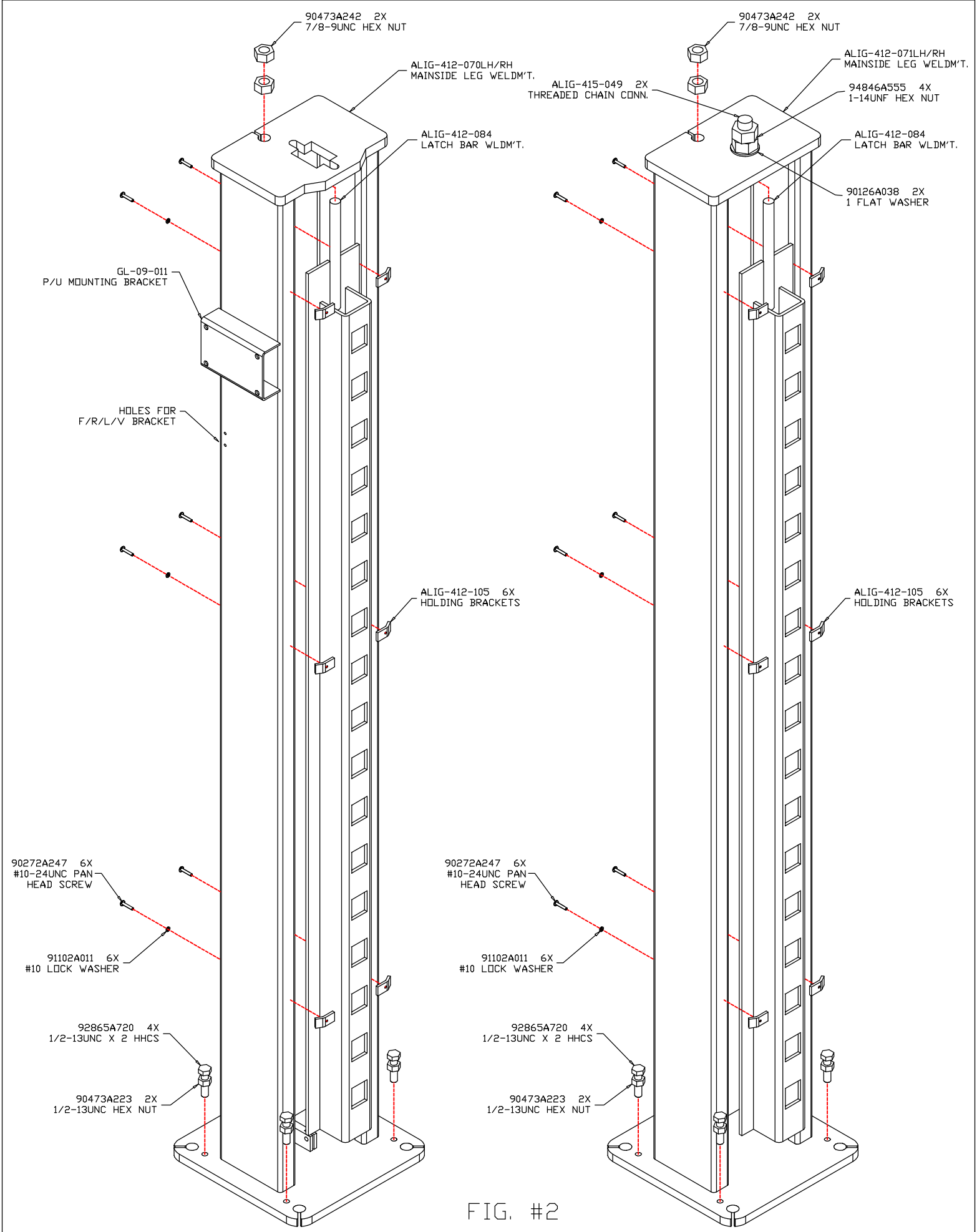


FIG. #2

MAINSIDE LEG ASSY. LH/RH
LH MAINSIDE LEG ASSY. SHOWN

OFFSIDE LEG ASSY. LH/RH
LH OFFSIDE LEG ASSY. SHOWN

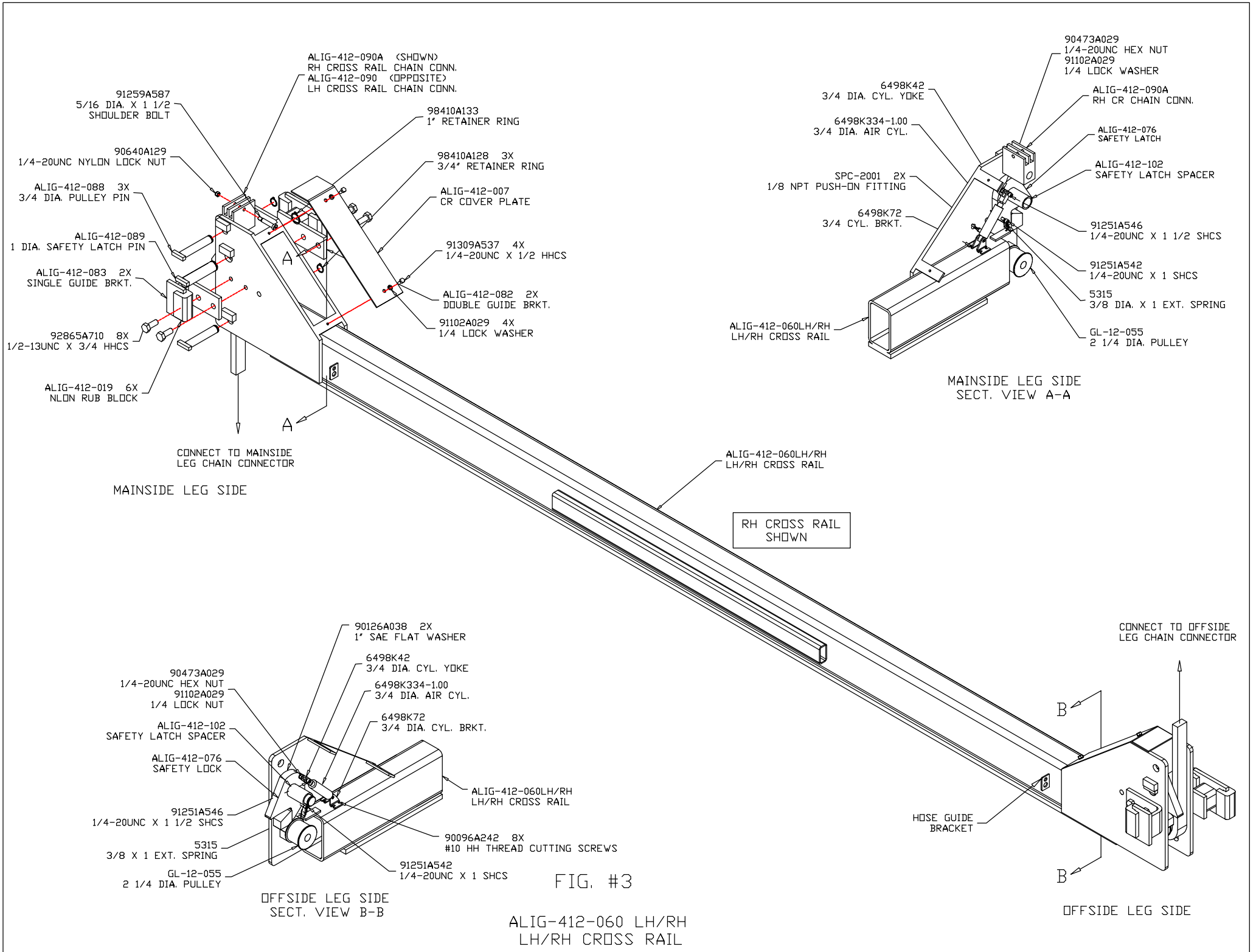


FIG. #3

ALIG-412-060 LH/RH
LH/RH CROSS RAIL

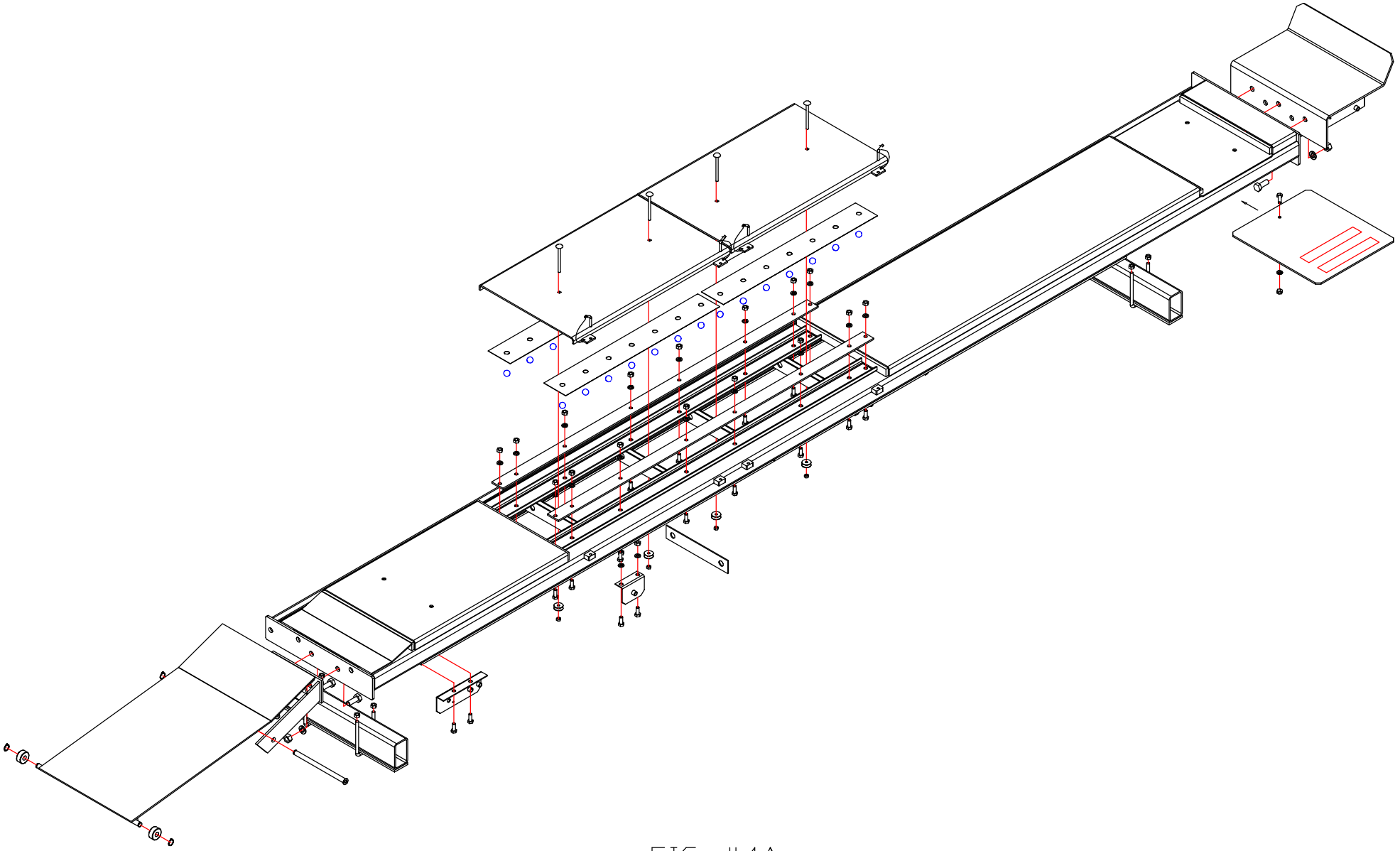


FIG. #4A

TRACK ASSY.

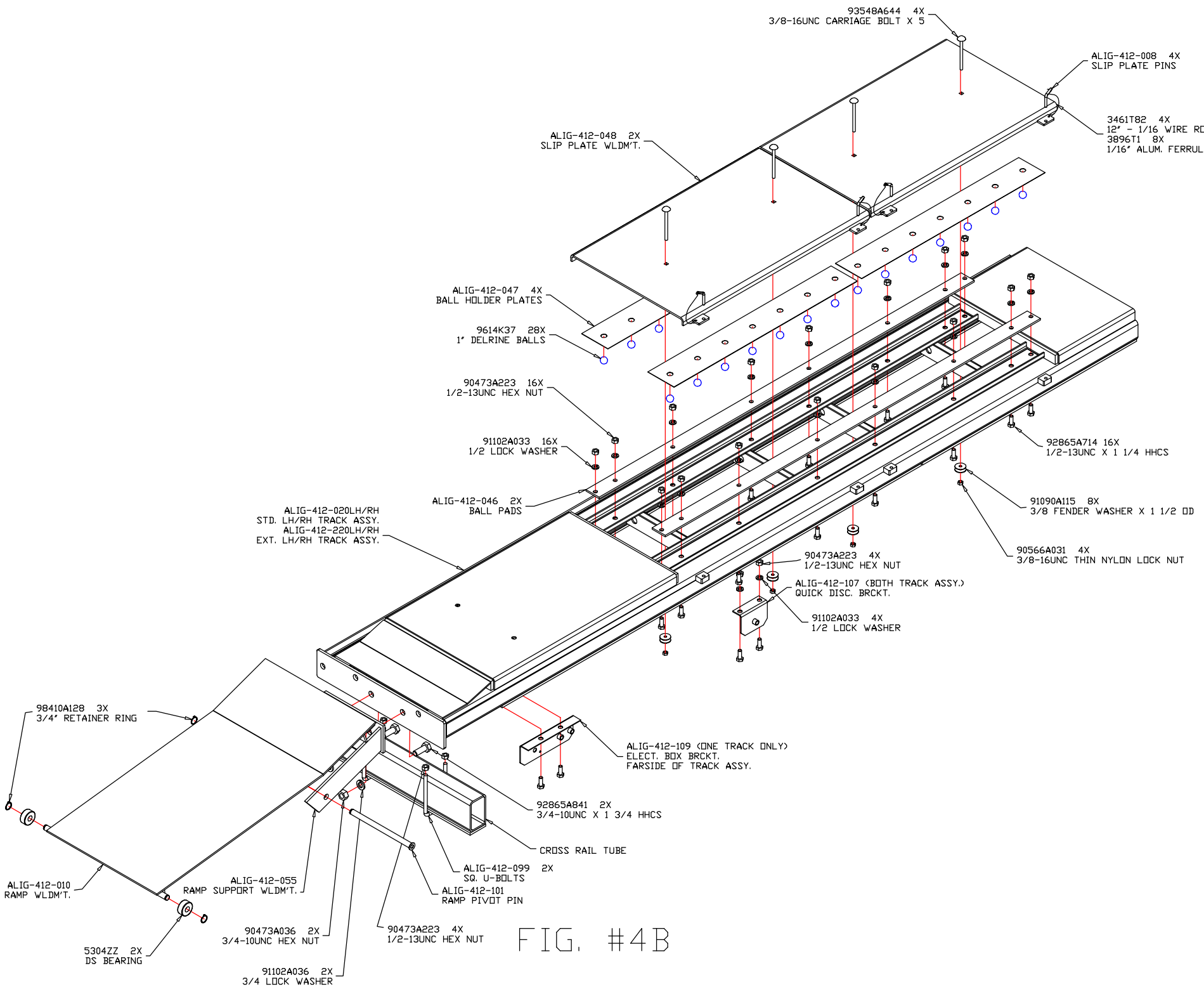

93548A644 4X
3/8-16UNC CARRIAGE BOLT X 5
ALIG-412-008 4X
SLIP PLATE PINS
3461T82 4X
12" - 1/16 WIRE ROPE
3896T1 8X
1/16" ALUM. FERRULES
ALIG-412-048 2X
SLIP PLATE WLDM'T.
ALIG-412-047 4X
BALL HOLDER PLATES
9614K37 28X
1" DELRINE BALLS
90473A223 16X
1/2-13UNC HEX NUT
91102A033 16X
1/2 LOCK WASHER
92865A714 16X
1/2-13UNC X 1 1/4 HHCS
ALIG-412-046 2X
BALL PADS
91090A115 8X
3/8 FENDER WASHER X 1 1/2 OD
ALIG-412-020LH/RH
STD. LH/RH TRACK ASSY.
ALIG-412-220LH/RH
EXT. LH/RH TRACK ASSY.
90566A031 4X
3/8-16UNC THIN NYLON LOCK NUT
90473A223 4X
1/2-13UNC HEX NUT
ALIG-412-107 (BOTH TRACK ASSY.)
QUICK DISC. BRCKT.
91102A033 4X
1/2 LOCK WASHER
98410A128 3X
3/4" RETAINER RING
ALIG-412-109 (ONE TRACK ONLY)
ELECT. BOX BRCKT.
FARSIDE OF TRACK ASSY.
92865A841 2X
3/4-10UNC X 1 3/4 HHCS
CROSS RAIL TUBE
ALIG-412-099 2X
SQ. U-BOLTS
ALIG-412-101
RAMP PIVOT PIN
ALIG-412-055
RAMP SUPPORT WLDM'T.
ALIG-412-010
RAMP WLDM'T.
90473A036 2X
3/4-10UNC HEX NUT
90473A223 4X
1/2-13UNC HEX NUT
5304ZZ 2X
DS BEARING
91102A036 2X
3/4 LOCK WASHER

FIG. #4B

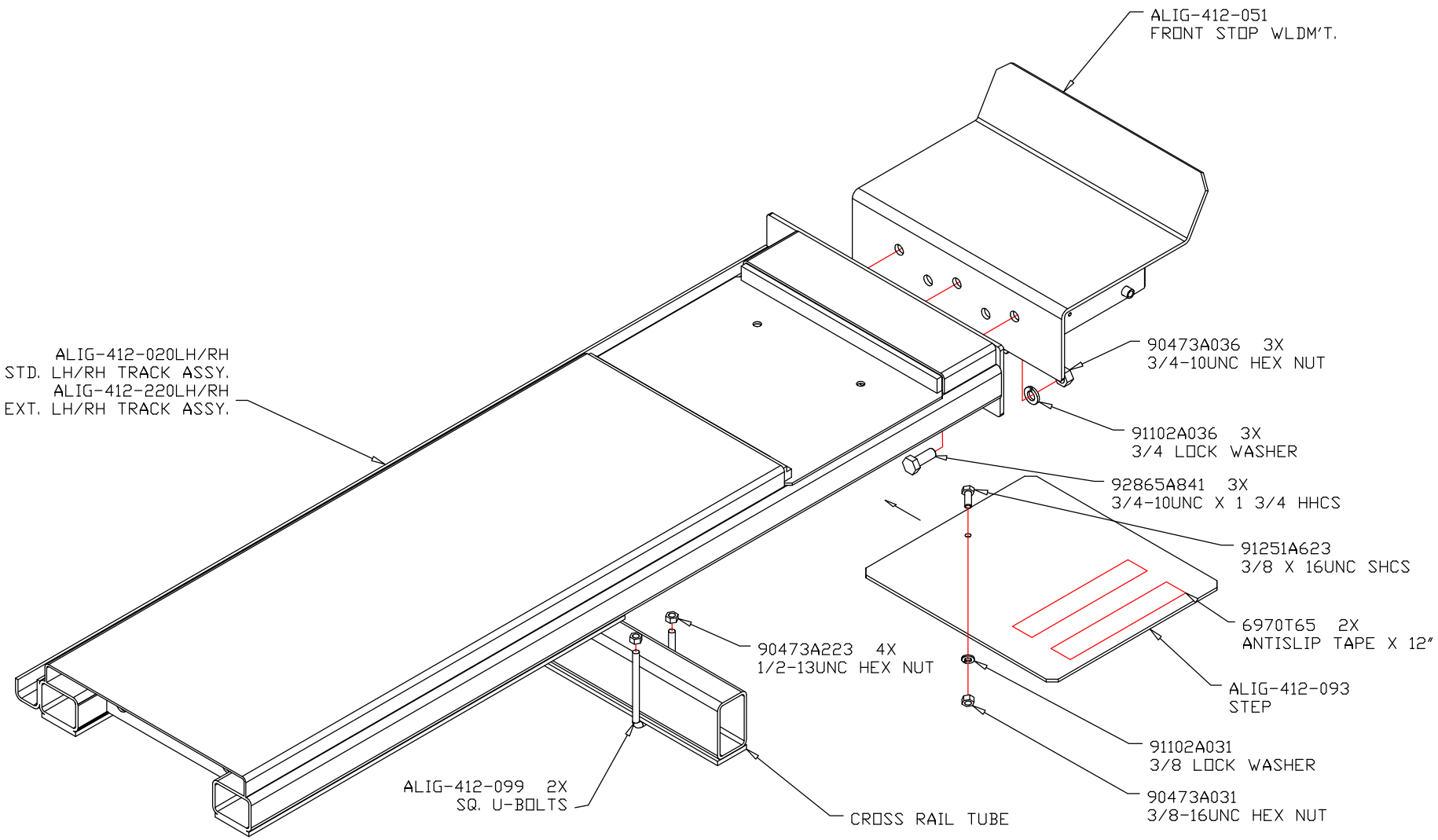

ALIG-412-051
FRONT STOP WLDM'T.
ALIG-412-020LH/RH
STD. LH/RH TRACK ASSY.
ALIG-412-220LH/RH
EXT. LH/RH TRACK ASSY.
90473A036 3X
3/4-10UNC HEX NUT
91102A036 3X
3/4 LOCK WASHER
92865A841 3X
3/4-10UNC X 1 3/4 HHCS
91251A623
3/8 X 16UNC SHCS
6970T65 2X
ANTISLIP TAPE X 12"
ALIG-412-093
STEP
90473A223 4X
1/2-13UNC HEX NUT
91102A031
3/8 LOCK WASHER
90473A031
3/8-16UNC HEX NUT
ALIG-412-099 2X
SQ. U-BOLTS
CROSS RAIL TUBE

FIG. #4C

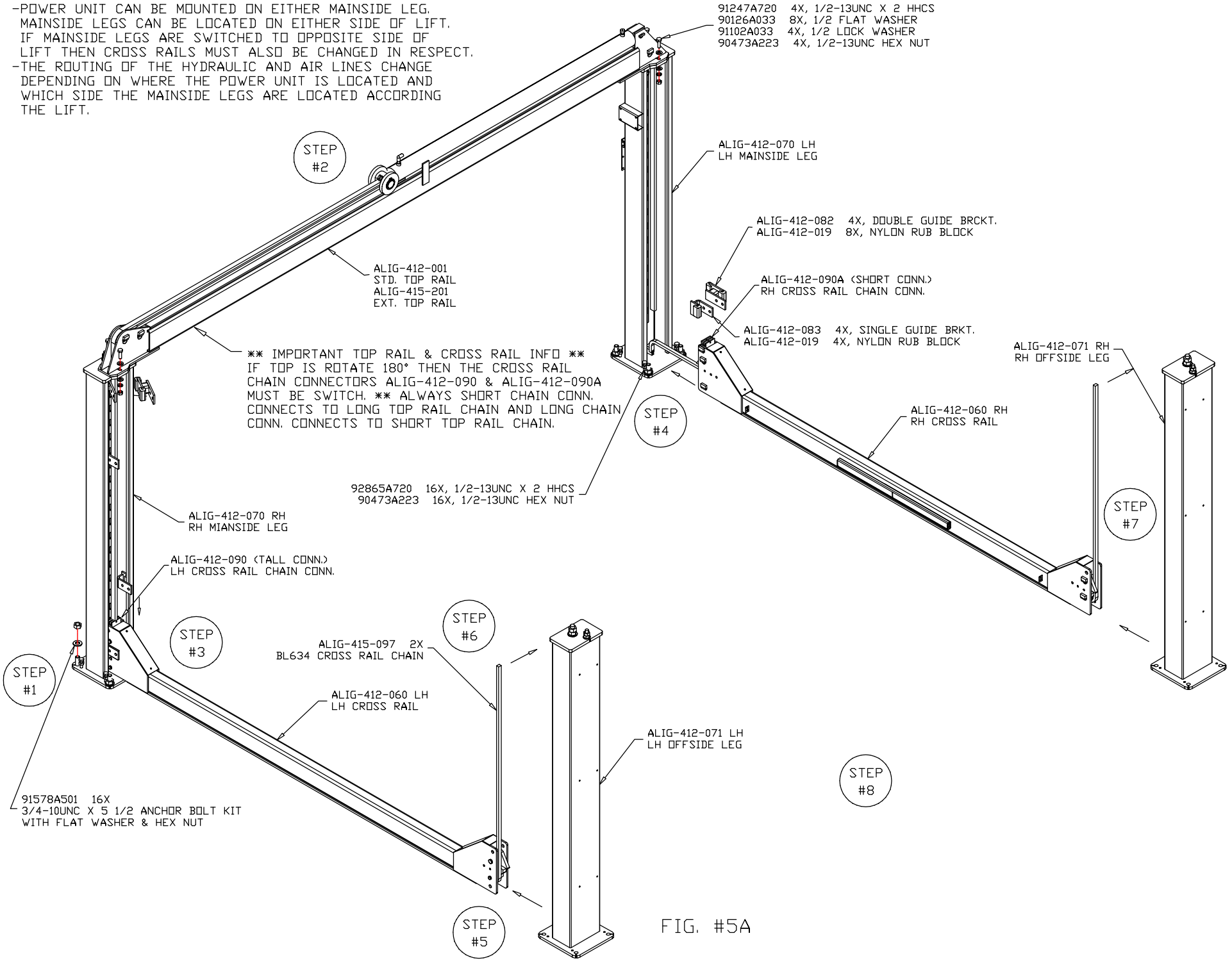

*NOTE:
-POWER UNIT CAN BE MOUNTED ON EITHER MAINSIDE LEG. MAINSIDE LEGS CAN BE LOCATED ON EITHER SIDE OF LIFT. IF MAINSIDE LEGS ARE SWITCHED TO OPPOSITE SIDE OF LIFT THEN CROSS RAILS MUST ALSO BE CHANGED IN RESPECT.
-THE ROUTING OF THE HYDRAULIC AND AIR LINES CHANGE DEPENDING ON WHERE THE POWER UNIT IS LOCATED AND WHICH SIDE THE MAINSIDE LEGS ARE LOCATED ACCORDING THE LIFT.
91247A720 4X, 1/2-13UNC X 2 HHCS
90126A033 8X, 1/2 FLAT WASHER
91102A033 4X, 1/2 LOCK WASHER
90473A223 4X, 1/2-13UNC HEX NUT
STEP #2
ALIG-412-070 LH
LH MAINSIDE LEG
ALIG-412-082 4X, DOUBLE GUIDE BRCKT.
ALIG-412-019 8X, NYLON RUB BLOCK
ALIG-412-001
STD. TOP RAIL
ALIG-415-201
EXT. TOP RAIL
ALIG-412-090A (SHORT CONN.)
RH CROSS RAIL CHAIN CONN.
ALIG-412-083 4X, SINGLE GUIDE BRKT.
ALIG-412-019 4X, NYLON RUB BLOCK
** IMPORTANT TOP RAIL & CROSS RAIL INFO **
IF TOP IS ROTATE 180° THEN THE CROSS RAIL CHAIN CONNECTORS ALIG-412-090 & ALIG-412-090A MUST BE SWITCH. ** ALWAYS SHORT CHAIN CONN. CONNECTS TO LONG TOP RAIL CHAIN AND LONG CHAIN CONN. CONNECTS TO SHORT TOP RAIL CHAIN.
STEP #4
ALIG-412-071 RH
RH OFFSIDE LEG
ALIG-412-060 RH
RH CROSS RAIL
92865A720 16X, 1/2-13UNC X 2 HHCS
90473A223 16X, 1/2-13UNC HEX NUT
STEP #7
ALIG-412-070 RH
RH MIANSIDE LEG
ALIG-412-090 (TALL CONN.)
LH CROSS RAIL CHAIN CONN.
STEP #6
STEP #3
ALIG-415-097 2X
BL634 CROSS RAIL CHAIN
STEP #1
ALIG-412-060 LH
LH CROSS RAIL
ALIG-412-071 LH
LH OFFSIDE LEG
STEP #8
91578A501 16X
3/4-10UNC X 5 1/2 ANCHOR BOLT KIT
WITH FLAT WASHER & HEX NUT
STEP #5

FIG. #5A

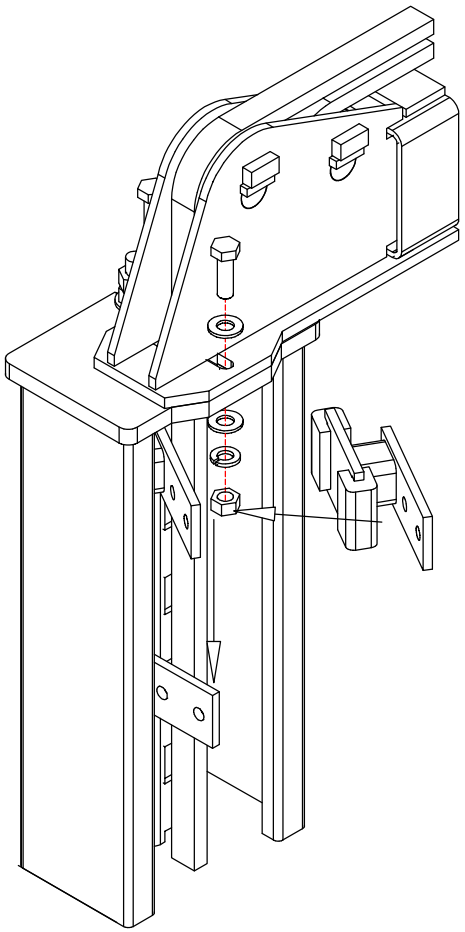


FIG. #5C

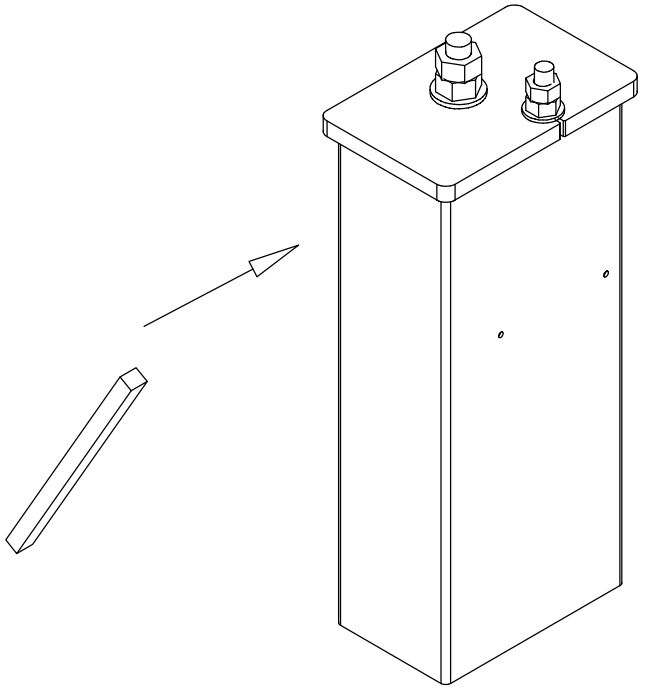


FIG. #5D

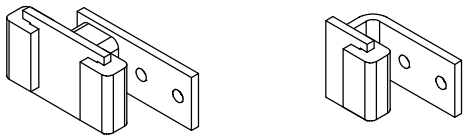


FIG. #5B

*NOTE:
-POWER UNIT CAN BE MOUNTED ON EITHER MAINSIDE LEG. MAINSIDE LEGS CAN BE LOCATED ON EITHER SIDE OF LIFT. IF MAINSIDE LEGS ARE SWITCHED TO OPPOSITE SIDE OF LIFT THEN CROSS RAILS MUST ALSO BE CHANGED IN RESPECT.
-THE ROUTING OF THE HYDRAULIC AND AIR LINES CHANGE DEPENDING ON WHERE THE POWER UNIT IS LOCATED AND WHICH SIDE THE MAINSIDE LEGS ARE LOCATED ACCORDING THE LIFT.

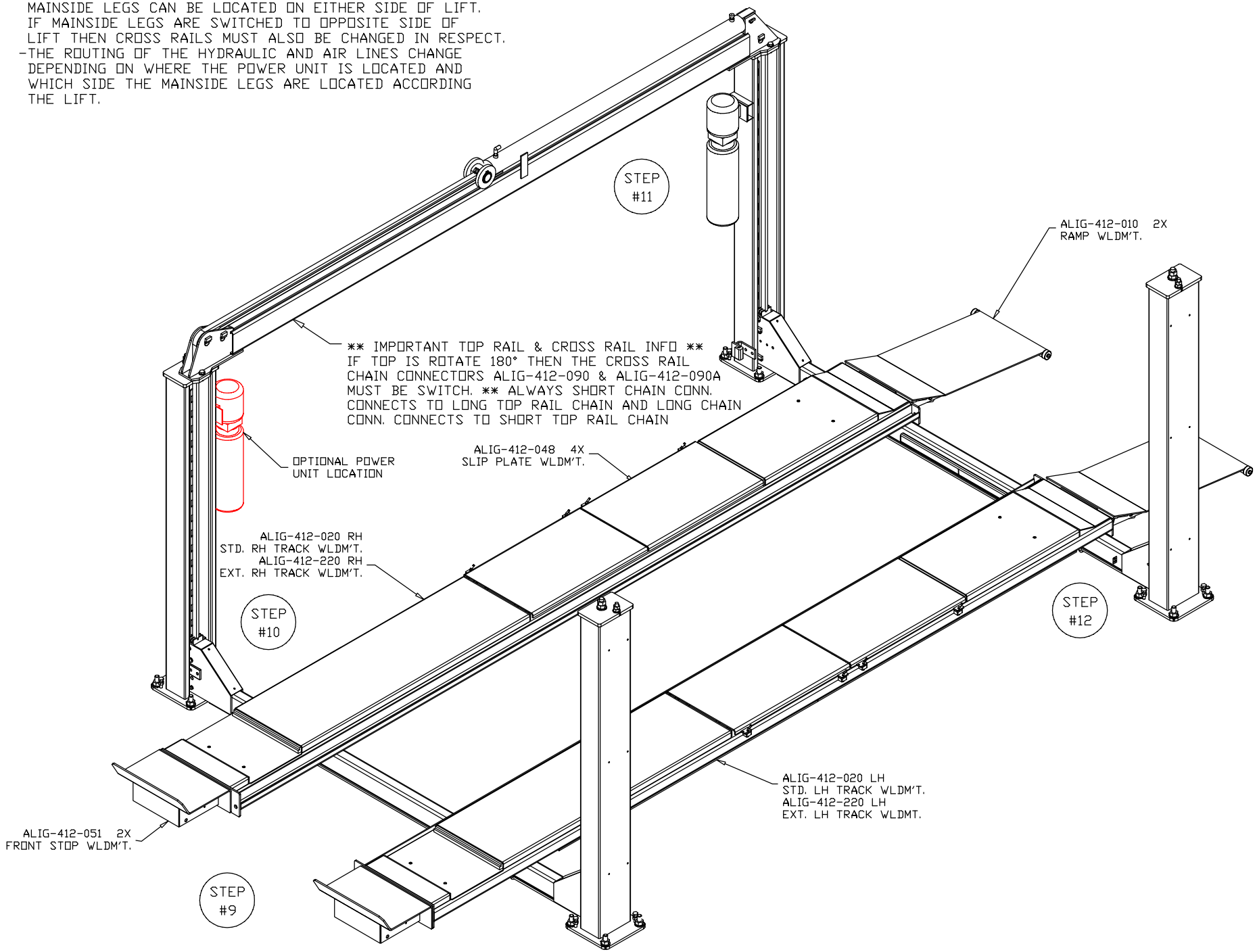


FIG. #5E

*NOTE:
THIS IS THE RECOMMENDED CONFIGURATION FOR THE AIR AND HYDRAULIC LINES, BUT THE CONFIGURATION COULD VARY DEPENDING ON CUSTOMER PREFERENCE. POWER UNIT CAN BE MOUNTED ON EITHER MAIN SIDE LEG.

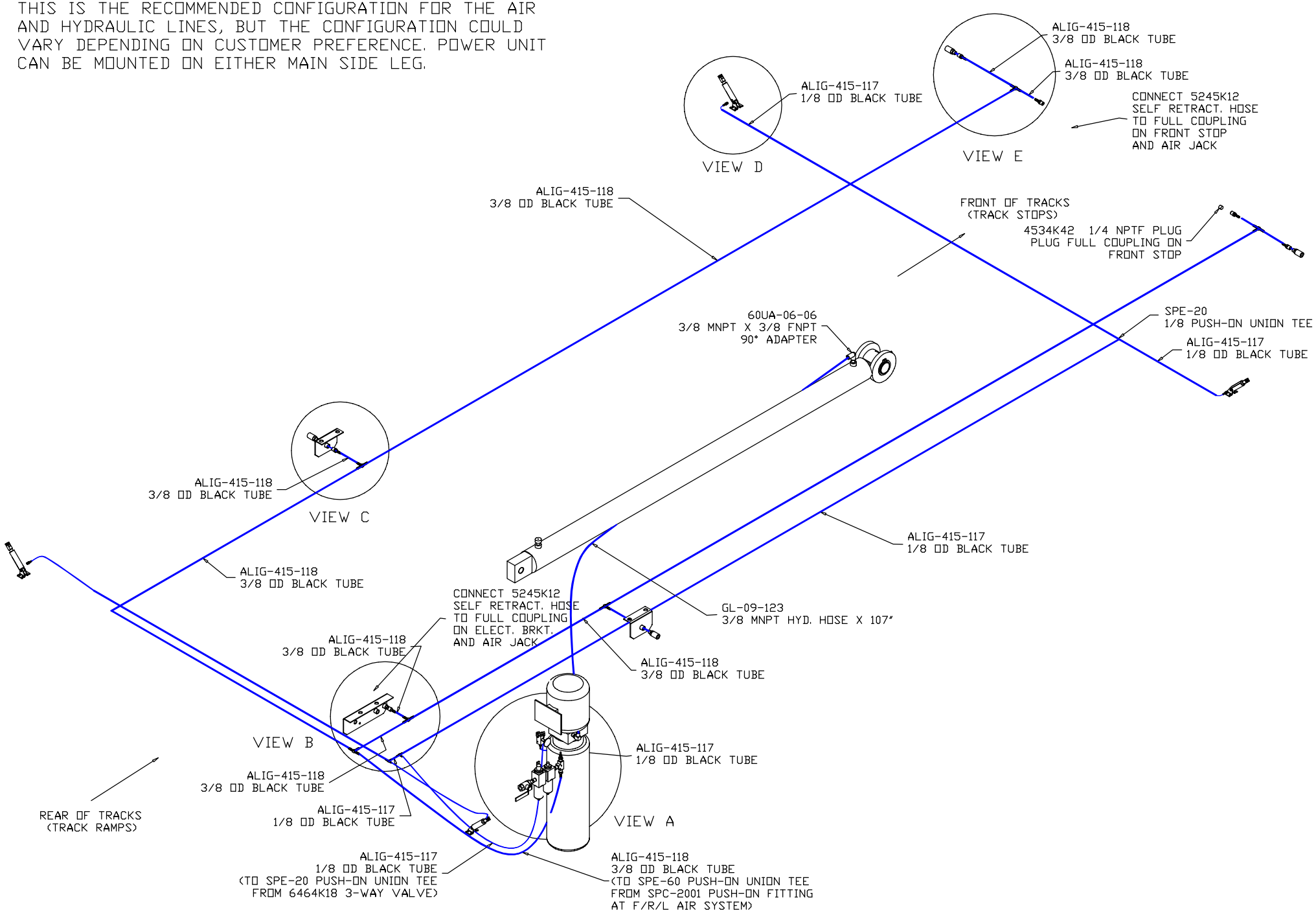
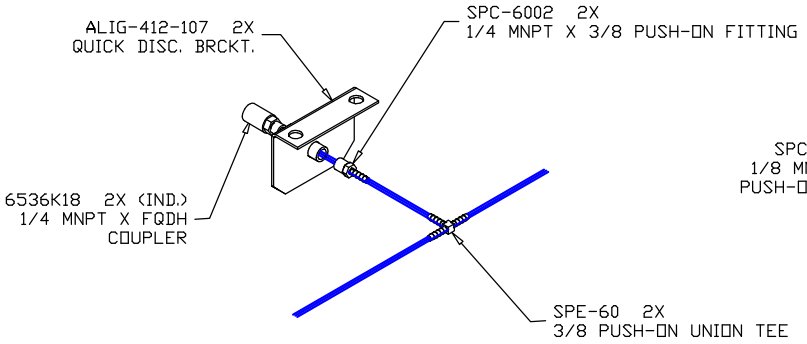
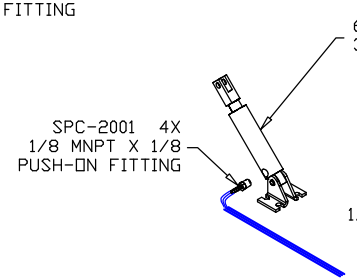


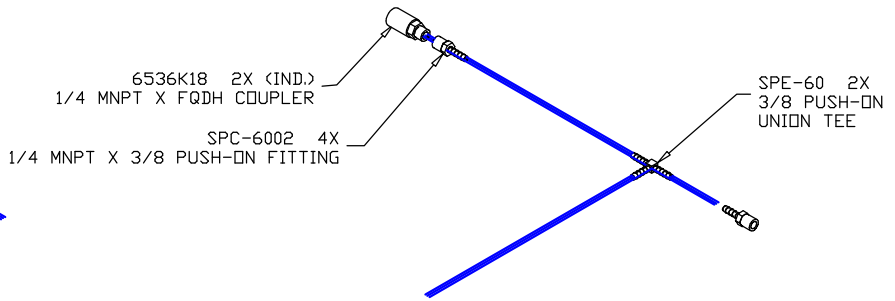
FIG #6A



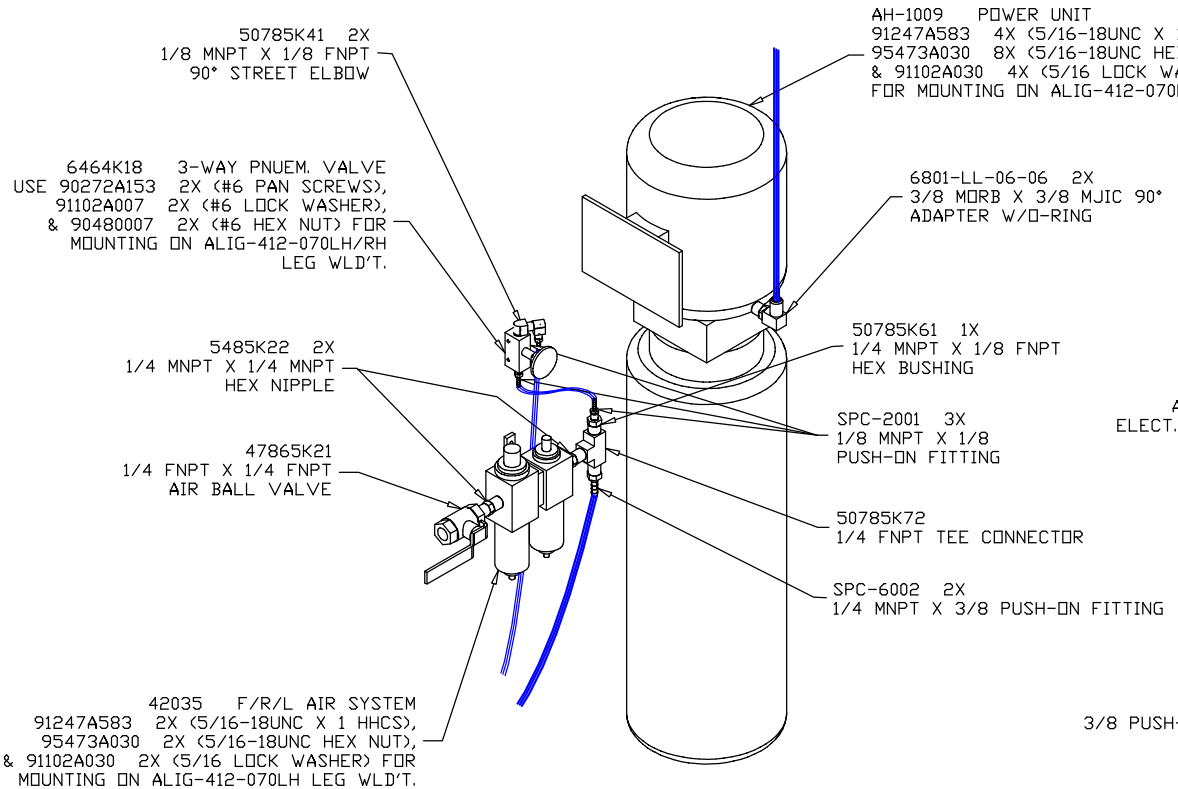
VIEW C



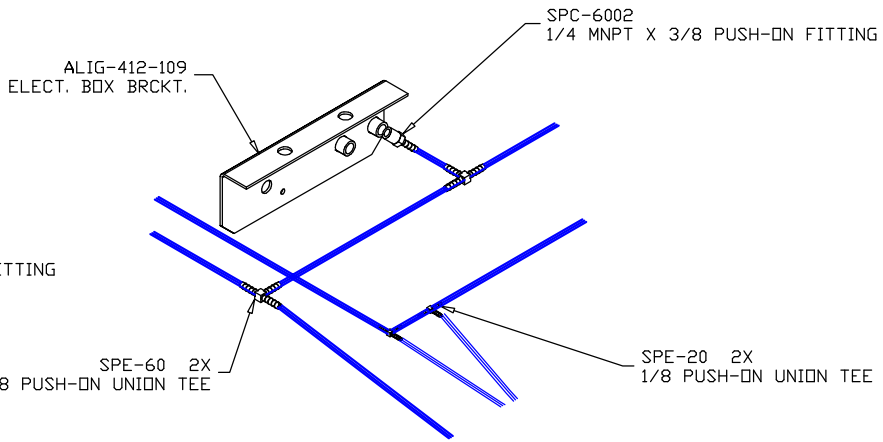
VIEW D



VIEW E



VIEW A



VIEW B

FIG #6B

WHIP INDUSTRIES, INC.

Automotive Lift Safety Guidelines

WHIP Industries
3010 S. Main St.
Fort Worth, Texas 76110
Ph (800) 256-7390
Fax (817) 289-1412

Notice:

This document is designed to help you use your automotive lift safely. This document may not cover all possible scenarios so users are encouraged to take all appropriate precautions to avoid injury or property damage.

For more safety information please see the OSHA Safety and Health Standards 29 CFR1910, ANSI/ALI ALCTV-1998 and ANSI Z244.1. You can also find information on their web site at: www.osha.gov.

Please note that these standards apply only to use of lifts in the United States, Anyone operating these lifts outside the US needs to consult their own government standards organization.

Rev B 4/16

About this Document

Whip Industries has provided this document to help you use your automobile lift safely. In this case, safely means without injury to you or damage to the automobile.

If you operate an automotive lift on the job, or manage a shop where one is used this document is for you! We'll cover types of lifts, general lift use and safety tips to keep you, your employees, and your lift equipment in top shape.

Revised: April 2002

Table of Contents

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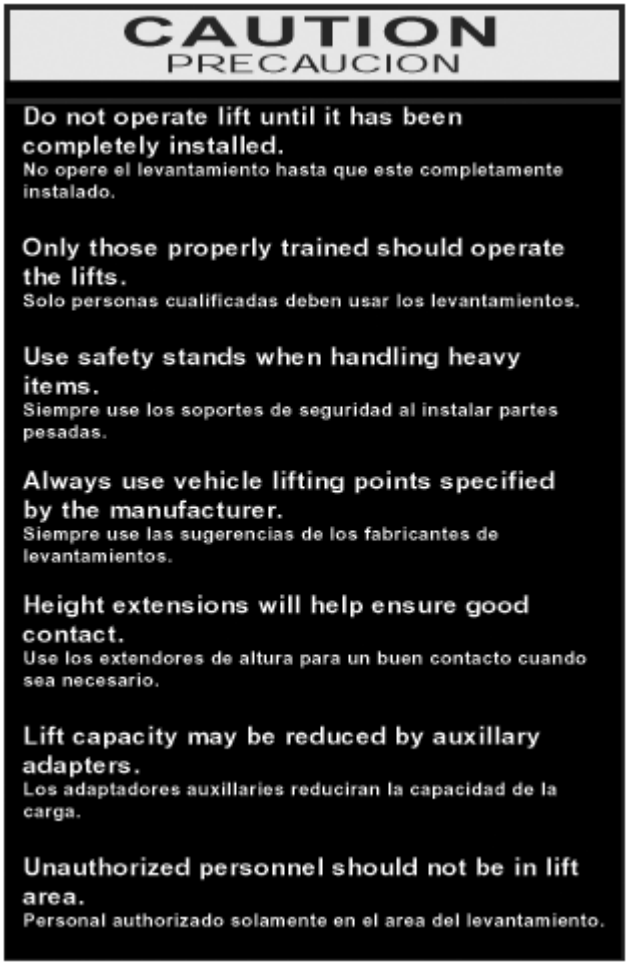
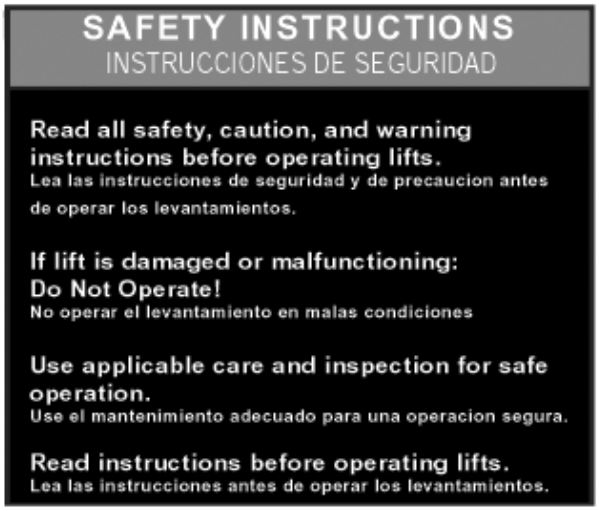
The Signs of Safety

Labels convey very important messages in simple, straightforward ways. You should receive a complete set of Safety, Caution and Warning labels with your new lift. Be sure to adhere the appropriate labels to the lift itself and place any placards in easy sight of the lift. Review the information on your labels often. You can contact your manufacturer for more labels if replacements are needed.

Caution, Safety, and Warning Stickers





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How to Lift & Lower

Pre Lift

Make sure that you and your employees are fully trained on the operation of your lift. The lift is a complex tool that should be respected for it's potential danger. Don't "rig" your lift if it is not working properly. If something is wrong just don't use it until a repair is made. Remember that your lift was built to lift vehicles only and not used for any other purpose. A lift is not a toy to be ridden or hung on for fun. Using it for anything other than a vehicle can cause wear that was not anticipated by the manufacturer and can lead to costly repairs later.

Keep all non- employees out of the lift area. There is no reason to have unauthorized and untrained people in the lift area especially when it is in operation. Consider this area a danger zone and treat it accordingly.

Check the area for obstacles or debris before driving a vehicle onto the lift. Hoses, tools, oil and trash should be removed before lift use.

The Load

Do not overload your lift. The rated load capacity for your lift should appear on the lift itself. Contact your manufacturer for a replacement if required. Make sure the lift is all the way down before trying to load and all lift parts are clear of the vehicle's tires. Running over a lift arm may damage the car as well as the lift.	**Capacity in Lbs.** **6,000**

Spotting

The most important thing about spotting the vehicle is finding its center of gravity. This is the point between the front and rear where the weight of the vehicle is evenly distributed. Many factors can affect the exact location on a given vehicle. These include the wheelbase, drive train location, cargo and general weight distribution.

Here is a good rule of thumb:

Passenger Car Type	Location of center of gravity
FWD or Front Wheel Drive	Just in front of the driver's seat
RWD or Rear Wheel Drive	Just below the driver's seat

Frame-engaging Lifts

A frame-engaging lift uses the vehicle's frame to lift it. This type of lift has many components that need to be inspected and cared for to ensure that the lift will work properly.

Lift Points and Extenders

Always consult the manufacturer's information on lift points for the vehicle. Make sure the contact pads are in the correct position per this information as well. Also make sure these points on the vehicle are in good condition without rust, dirt or other damage. Do not lift a vehicle if this damage exists. You may also need lift adapters at each point to protect the

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undercoating. Damage of the undercoat at these points can lead to rust damage later and may void the owner's rustproofing warranty.
Extenders may be required for vehicles like vans and pickup trucks. If you need them use extenders from the manufacturer and do not substitute blocks, wood or other homemade shortcuts.

Contact Pads

The frame-engaging type lift uses contact pads that swivel or drop in place at the end of each lift arm. The pads may be adjusted by screwing in or out to the proper height. It is important to make sure they are placed evenly to avoid making the vehicle unstable. Keep your pads clean and in working condition with proper maintenance. If you see cracking or any damage on the pads do not attempt to operate the lift and have the lift serviced before any other use.

Asymmetrical Lift Arms

A lift with different arm lengths in the front and back is an asymmetrical lift. Always follow the manufacturer's instructions when using these lifts.

Spotting

When using any frame- engaging lift the spot points will vary depending on the type of vehicle. The manufacturer of your lift will provide you vehicle spotting specifications so always check this information before you lift. Once lifted, do not move the vehicle forward or back for any reason as this will cause you to loose the center of gravity and the vehicle can fall.

A few standard tips are:

- Using a two post drive through surface mounted lift always put the center of gravity between the two posts
- Using a two post drive through surface mounted lift always center your vehicle from side to side.

Drive-On Lifts

A drive-on or runway lift will lift the vehicle by its tires instead of its frame. Make sure the tires are the same distance from the ramp edges on each side to make sure the vehicle is stable. Check your manufacturer's specifications when lifting a truck with dual wheels. You may be able to engage the inside tires and keep the truck perfectly stable but always check the specs before you lift.

Spotting

When using any frame- engaging lift the spot points will vary depending on the application.

A few standard tips are:

- Using a two post drive through surface mounted lift, always put the center of gravity between the two posts
- Using a four post lift put the center of gravity at the runway midpoint.
- Using a wheel alignment runway put the front wheels on the swivel plates and the rear wheel on the slip plate, if any.

Avoiding Roll Offs

Make sure to chock the vehicle on the drive-on lift in same fashion. Most drive-on or runway lifts come with some type of roll off protection. Often the ramps lock into place to be used as chocks. If not, use manual chocks sent by the manufacturer instead of bricks or wood blocks.

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Free-Wheeling Jacks

There are air or hydraulic jacks that may be used to lift the vehicle off the runways of a drive-on lift. Be sure the jack is lowered all the way before driving onto the ramps. As with any lift, check the center of gravity so you know the vehicle is stable. Make sure any contact areas between the jack and lift are clean and damage free. Consult the vehicle's manufacturer's info for the appropriate lifting points for that vehicle.

Lifting

1. When you are sure the vehicle is stable and spotted correctly you may now operate the lift.

2. Stop and check the contact points when the lift and the vehicle initially meet. Look at the each point to make sure the supports are contacting the correct lifting points.

3. Lift about a foot and check the vehicle for stability. This can be done easily by pushing one of the bumpers. Look at the contact points again and make sure nothing has slipped before completing the lift. Avoid uneven surfaces as contact points since they tend to slip easily.

4. If any contact has slipped or appears unstable lower the lift, reposition the supports, and start again

5. If the vehicle is secure, lift it up to the height you need to do the work.

6. Look at the contact points one more time to be sure all is well before you start. Be sure the lift is locked and lower the vehicle immediately if the lock doesn't work. If the lift does not have locks put 4 jack stands under the frame.

Always use 4 jack stands to support the vehicle when using the movable type wheel engaging lifts. Make sure these stands can support 2 times the weight capacity of the lift. Vehicles with air bag suspensions should not be supported on stands alone. Use lifts and four jack stands any time you must lift one of these vehicles.

Don't remove or override the safety features of the lift. These were placed there for your protection so make sure they are in working order.

Stability

Once the vehicle is lifted make sure it is stable enough for you to do the work safely. Many things can cause a dangerous shift to occur.

Possible Cause	To Avoid
Using a cheater bars to loosen fasteners	Use an impact wrench instead
Energy released by springs or loaded bolts	Use caution and pay attention to the vehicle's center of gravity
An unequal load like a truck with cargo	Use four jack stands to support and do not lift if the cargo is unstable and likely to shift
Removing large components like rear axles and differentials, transmissions, engines, and body, frame or suspension components. Removing any item of great weight can change the center of gravity drastically.	Use four jack stands if you need to remove any of these major components. Also check the vehicle manufacturer's information for the recommended process for component removal. Do not use engine or transmission supports instead of jack stands.

Any time you are using jack stands be sure the supports are secure and do not try to lower the vehicle onto the stands.

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In Case a Vehicle Falls

Once it is lifted, pay attention to the vehicle at all times. If it begins to fall get out of the way as quickly as possible. Remember to warn others in the area and do not try to catch the vehicle. When escaping a falling vehicle get as far away as possible but make sure you are not in a position to be pinned against a wall or rack. No one enjoys damaging property but injury to yourself or your employees would be far worse.

Lowering

Make sure the area beneath the vehicle is clear before lowering it. Check carefully for jacks, tools, or anything else you have used while working on the vehicle. If using a scissors lift stray tools can get caught damaging the lift and causing a possible projectile danger.

Make sure no one is in the area when you lower the vehicle. It is best to have the area clear of people when operating the lift. While the lift is in motion the lift operator must control it. Be sure the lift is not blocked open by any debris. Also, don't override the self-closing features of the lift controls. For wheel-engaging lifts, make sure to lower each lift at the same pace.

Before pulling the vehicle off the lift, make sure it is all the way down and all the arms and pads are out of the way. Running over lift parts will damage the lift and possibly the vehicle. Remove any frame contact extenders before you move the vehicle as well.

Your Lift as A Tool

Your lift is a tool you designed to help you do your work easier. Treat it like any tool you rely upon and take care of it. Learn the limitations of your lift as you might any tool. Your lift must function properly to be useful to you. If your lift has been damaged or may be malfunctioning, have it serviced before you use it again. Use qualified service people and parts to make any needed repairs.

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There are several parts of your lift that may require maintenance. Here is a quick key to some of them:

Component	Maintenance Requires
Telescoping lift arms Used mostly on two post surface-mounted lifts.	▪ Lubricate the swivel points ▪ Check all adapters and extenders before using the lift ▪ Check over-travel stops for wear ▪ Look for breaks or stress cracks in welds and castings ▪ Inspect arms for permanent bending- Do not rebend or reweld ▪ Replace worn or defective parts with original equipment
Chains & Cables Used mainly on frame contact lifts, they adjust for different vehicles. To maintain the arms:	▪ Lubricate chains and cables ▪ Check for wear and stretch ▪ Look at end connections for wear, hole elongation, deformation, corrosion or fatigue ▪ Check slack sensors ▪ Check pulley and sprockets for damage or wear. Keep lubricated so they roll freely ▪ Inspect cables sheaths and coatings for wear ▪ Watch for rust ▪ Keep salt, sand, water, dirt etc. away from all lift parts ▪ Replace any damaged parts using qualified service people **Replace chain if:** ▪ They are rusted, bent, deformed or broken ▪ The end connectors have damage or wear ▪ They are contaminated with foreign materials ▪ There is an increase in slack ▪ You see excessive wear on links, pins, guides or side of sprockets **Replace cables if:** ▪ Any wires are crushed, bent, cut or broken ▪ There is an increase of slack ▪ End connectors are damaged or worn ▪ The cables comes apart or un-stranded ▪ They are contaminated with foreign materials ▪ The cable is kinked, deformed, corroded or excessively worn ▪ The cable diameter is reduced
Load bearing components	Check and lubricate load bearings, rollers and side blocks per the manufacturer's instructions. Look there also for info on care of your floor bolts as well.
Surface mounted systems These systems can be electrically powered hydraulic cylinders.	▪ Have a qualified service man replace any parts. ▪ Check hydraulic oil levels. ▪ Don't exceed the lifts load capacity. If this information should appear on the lift's nameplate. Replace the nameplate if it is missing. ▪ Don't block or override the self-closing feature of the lift controls.

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Lift Types

Surface Mounted

One of the most commonly seen lifts is the surface mounted lift. Surface-mounted lifts are bolted to the floor and powered by an electric motor. The motor runs either a screw drive or a hydraulic pump and cylinders. The drive and synchronization systems can be located across the floor or overhead.

Two Post Lifts

Pictured below is a typical two-post drive through frame engaging lift with asymmetric arms. A hydraulic pump with lines internal to the lift powers this particular model. The power unit may also positioned on either side of the lift.

The lift arms ride up each column and may be synchronized:

- Hydraulically
- Electronically using synchronized motors
- Mechanically with steel roller chains or cables

Lifting power comes from the hydraulic pump and cylinders often using cable systems or leaf chains. Rotating screw pillars lift the arms of the screw type lift.

Low Rise Lifts

The Low Rise or Short Rise lift is another common surface mounted lift. Compressed air or an electric hydraulic power unit powers this drive on lift. Commonly used for brake, tire and body work, these lifts usually engage the vehicle frame.

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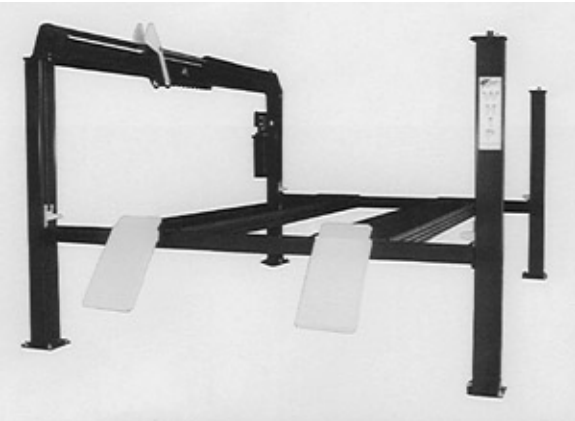
Four Post Lifts



The four post surface mounted lift is most often used for oil changes, muffler and transmission work and wheel alignment. The vehicle is driven up the ramps and lifted so work can be done beneath it.

Scissors Lift

This lift may be either a drive-on or frame engaging lift. Unlike a parallelogram-style lift, this one raises and lowers the vehicle straight up and down without a shift either forward or backward.

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The Human Factor

Personal Safety

Heavy Lifting

Make sure you know how to lift heavy object so you do not injure your back. If an object is too heavy for one person to lift stop and get more people to help. The more people the better the weight is distributed between them. Lift using your leg muscles instead of those in your arms or back. Carry the object in the area between your shoulders and waist and keep the weight as close to you as possible. Do not snap or jerk the weight but lift it smoothly. If the weight is on the floor lift from a bent knee position and do not be afraid to set the object on a table or bench mid way up. Before you pick up the object make sure you have a clear path to your destination and the floor is not slippery or slick. For long objects carrying on your shoulder is fine as long as you are aware of your height clearance before you start. The bottom line is don't take chances with your safety.

Gear

Simple gear like safety glasses, shoes, caps, gloves, and earmuffs can help you avoid many accidents in your shop. Safety glasses can keep your eyes clear of anything that may come from the vehicle above you. Non-slip shoes can help you keep you footing while working around various liquids that may be on the floor. The cap will keep you from hitting your head on protruding parts of the car as you work underneath it and gloves protect your hands from heat, sharp objects, and caustic liquids. Earmuffs will protect your ears from noise damage that might be produced by tools like air chisels.

Hazardous Chemicals

Working around autos and other complex mechanical devices can also expose you to some very dangerous substances. Hazardous chemicals must be clearly labeled and information sheets on each must be maintained. The OSHA Hazard Communication Standard explains in depth the training and information required on working with or just around hazardous chemicals. You should know how to handle and identify these chemicals as well as any health risks associated with working their use. Make sure this information is available to all your shop employees.

Accidents

You and your employees are, after all, only human. People make mistakes and get hurt but you can minimize these accidents by paying attention and having safety in mind. Are there hoses strewn about that anyone could trip over? Are people trained in use of protective gear? Is there a plan for how to deal with burns, sprains or abrasions that happen on the job? Are emergency phone numbers posted someplace accessible? A First Aid kit is only useful if everyone knows where it is located and that it is kept well stocked. Thinking through these scenarios before you need them can be a life saver-literally!

Your Lift Site

If you are having a lift installed, use someone you trust and can communicate with freely. Check the installer's references or talk to other shops around you to see whom they use. Just as word of mouth can help you find a good installer it can save you dealing with an inferior one as well.

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Spaces and Floors

Before your lift is installed there are several factors you need to think about. Carefully review the specifications for the lift and make sure the lift and its load will be clear of any obstructions. Pay particular attention to the space above the lift. Within a shop this means things like ceilings, lamps, overhead doors, beams, ductwork, pipes or other structures that might get in the way of a vehicle at the top the lift.

Consider also the space beneath your lift. What is the quality of your floor? Pay attention to the manufactures' instructions on the anchor bolts, floor thickness and concrete strength to make sure you comply from the start.

If your shop contains several lifts be sure you have enough workspace around each one for your employees workstation. Also make sure the lift controls are labeled clearly so there can be no confusion about which controls go to which actual lift.

The bottom line here is pay attention to the lift site before and after the install. Plan for the space issues beforehand and check for cracks or leaks afterwards. Keeping a close eye out can help you spot the small things that can be big trouble later.

The Last Word

The Basics

As soon as you say, "That won't happen to me" it usually does. The best way to make sure trouble doesn't find you is to remember the basics.

Take care of your lift as you would any other tool you use. Spotting possible trouble can save you much time and expense. Make sure you maintain, inspect and repair your lift so it will be in tip-top shape. The better you care for your tools the better they care for you.

Know how to use your lift before you begin. Make sure you and your employees have spent enough time training before you start using your lift. You wouldn't want a mechanic working on your automobile if he only had a vague idea of how it worked. The time you take now could save you more time and money later.

Use basic safety around your lift. Remember that the lift may be holding tons of metal right over your shop and your employees. Respect that danger and don't play games near the lift.

Operation Safety Requirements "OSR"

Here is a list of Operation Safety Requirements that you can reference, to ensure a safe lift workplace for yourself or fellow employees:

1. Proper training is required of the operator prior to operating lift. Proper positioning of the support points onto the lifting points of the vehicle is mandatory. Never operate the lift with out proper training.
2. As true on most equipment, electric switches and hydraulic valve controls on vehicle lift are designed in a "dead man mode". Releasing the controls will cause operations to cease. Never override controls by tying the controls in place or rerouting wire.
3. Vehicle lift should be inspected daily, and maintained in accordance with the manufacture's recommended procedures. If a malfunction occurs discontinue use of the equipment immediately. Misplaced accessories and spare parts are available from the manufacturer.

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4. Prior to positioning vehicle into the lifting area, ensure that lifting arms have been pulled back to their full drive thru dimension. Confirm that the area is clear of any foreign obstacles, lubricants, refuse, tools or mobile equipment. Damage to the automobile or lift will likely occur if the automobile comes into contact with any portion of the lift or foreign object.
5. The manufactures' recommended lifting locations allow for the proper positioning of the center of gravity of the specific vehicle. Never remove or add anything from a vehicle that may cause a drastic relocation of the center of gravity. It is possible that a change in the center of gravity could create a hazardous situation. Check with the vehicle manufacturer for specific information.
6. Lift is never to be overloaded. Rated lift capacity is posted to the lift. When lifting trucks or service vehicles be certain that the total weight of the vehicle and any cargo. Do not exceed the rate capacity.
7. Prior to raising the vehicle, confirm that the vehicle is not occupied. Check the area immediately surrounding the lift for unauthorized personnel and have them vacate the area prior to operation.
8. Exercise caution when placing the lifting arms or support brackets against the vehicle frame. Follow the vehicle manufactures' recommendations for the proper contact locations on the frame. After initial contact with the vehicle, walk around the vehicle and check all points of contact prior to raising the vehicle off the floor. Never place any part of your body underneath the lift until the lift has been raised to the minimum locking height and you have engaged the safety locks. No one should ever work underneath the lift at any time without the lift in the fully locked position.
9. When preparing to remove the vehicle from the lift, check again for unauthorized personnel or items that may have been left under the lift. Follow the manufactures' instructions for releasing any locking devises.
10. Before final drive away, return lifting arms back to their full drive thru dimension. Clear drive path of any obstruction and be aware of any unauthorized personnel that may step into the vehicle path.

Note: "OSR" should always be kept in mind when lift operators are around lift areas or operating lifts.

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