HOFMANN

INSTALLATION and OPERATION MANUAL

14K SCISSOR LIFT

SLA14178

SLA14178FM

READ and SAVE THIS INSTRUCTION MANUAL

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1 SAFETY INSTRUCTIONS

When using this lift, basic safety precautions should always be followed, including the following:

1. Read all instructions and safety information in this manual and on the lift.
2. Inspect the lift DAILY. Do not operate if it malfunctions or problems have been encountered.
3. Never attempt to overload the lift. The manufacturer's rated capacity is shown on the identification label on side of the deck. Do not override the operating controls or safety devices.
4. Only trained and authorized personnel should operate the lift. Do not allow customers or bystanders to operate the lift or be in the lift area.

5. **CAUTION! Never work under the lift unless mechanical safety locks are engaged.**
6. Always keep the lift area free of obstruction and debris. Grease and oil spills should always be cleaned up immediately.
7. Never raise a vehicle with passengers inside.
8. Always chock vehicle wheels before raising or lowering the lift.
9. Before lowering check the area for any obstructions including people.
10. To protect against risk of fire, do not operate the lift in the vicinity of open containers of flammable liquids.
11. Adequate ventilation should be provided when working on internal combustion engines.

READ AND SAVE THESE INSTRUCTIONS

SPECIFICATIONS

Maximum Capacity:	14 000 lbs	6 363 kg
Overall Width:	94.5 Inches	2400 mm
Overall Length:	270 Inches	6858 mm
Maximum Raised Height:	72 inches	1829mm
Minimum Lowered Height:	10 Inches	254 mm
Lifting Time:	89 seconds at max. capacity	
Power Requirements:	230V, 1 Ph, 60 Hz, 20A	
Air Supply requirements:	90 to 120 psi	
Shipping Weight:	4 870 lbs	2 209 kg

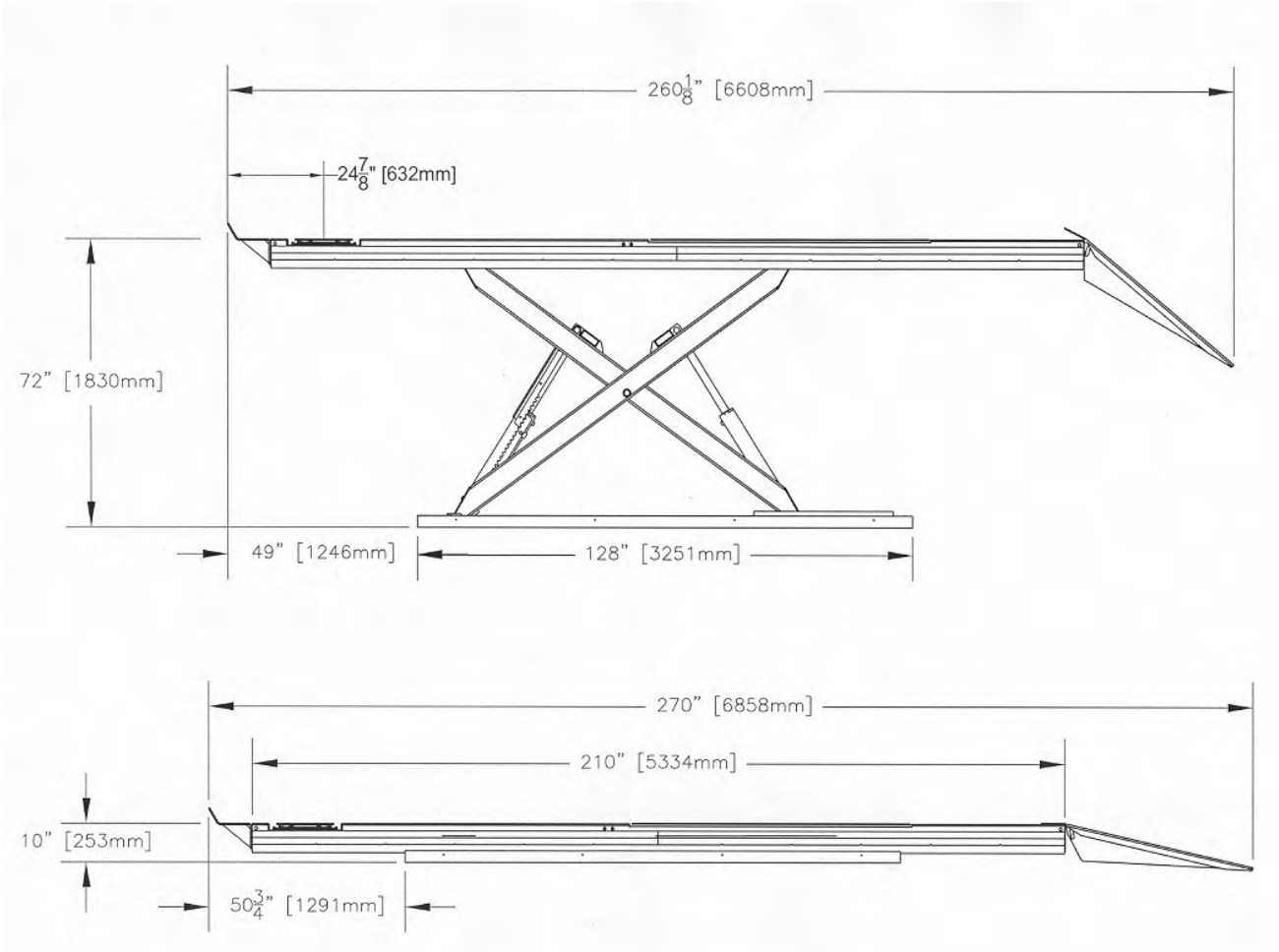


Figure 1 - Lift Dimensions

2 CONTENTS

The complete lift is contained in two (2) packages:

1. The main structural components are pre-assembled and packaged on top of each other.
2. The remaining parts, including the console are packed in two accessory boxes. Refer to the packing slip inside the accessory box for a list contents.

The Main Structural Components include:

1pc. – Left Side Main Frame Assembly: Runway, Scissors and Base Frame
1pc. – Right Side Main Frame Assembly: Runway, Scissors and Base Frame

3 TOOLS REQUIRED FOR INSTALLATION OF LIFT

- ✓ Rotary Hammer Drill or similar, 1/4” and 1/2” Concrete Drill Bits
- ✓ 4’ Level
- ✓ SAE Wrenches and Sockets
- ✓ Hammer
- ✓ Pry Bar – 5’ Long
- ✓ Chalk Line
- ✓ Tape Measure
- ✓ Side Cutters
- ✓ Screw Drivers
- ✓ Hydraulic Fluid ISO 32 (10 weight hydraulic oil) - 25 liters/6.5 Gallons
- ✓ Funnel
- ✓ Utility Knife

Recommended:

- ✓ Laser Leveler
- ✓ Plumb Bob
- ✓ Impact Gun
- ✓ Boom and/or Engine Hoist
- ✓ 8’ Sling

4 INSTALLATION INSTRUCTIONS

When the lift arrives on site, please read the owner's installation and operation manual completely. Check the contents to make sure no parts are missing before starting installation. Gather all of the tools listed and make sure that the instructions are fully understood before commencing with the installation.

IMPORTANT: It is the user's responsibility to provide a satisfactory installation area for the lift. Lifts should only be installed on a level concrete floor with a minimum thickness of five (5) inches or 130 mm. Concrete must have a minimum strength of 4000 psi or 30 MPa and should be aged thirty (30) days prior to installation. Please consult the architect, contractor or engineer if doubt exists as to the strength and feasibility of the floor to enable proper lift installation and operation.

IMPORTANT: It is the user's responsibility to provide all wiring for electrical hook-up prior to installation and to ensure that the electrical installation conforms to local building codes. Where required, it is the user's responsibility to provide an electrical isolation switch located in close proximity to the lift that will enable emergency stop capability and isolate electrical power from the lift for any servicing requirements.

4.1 Bay Layout

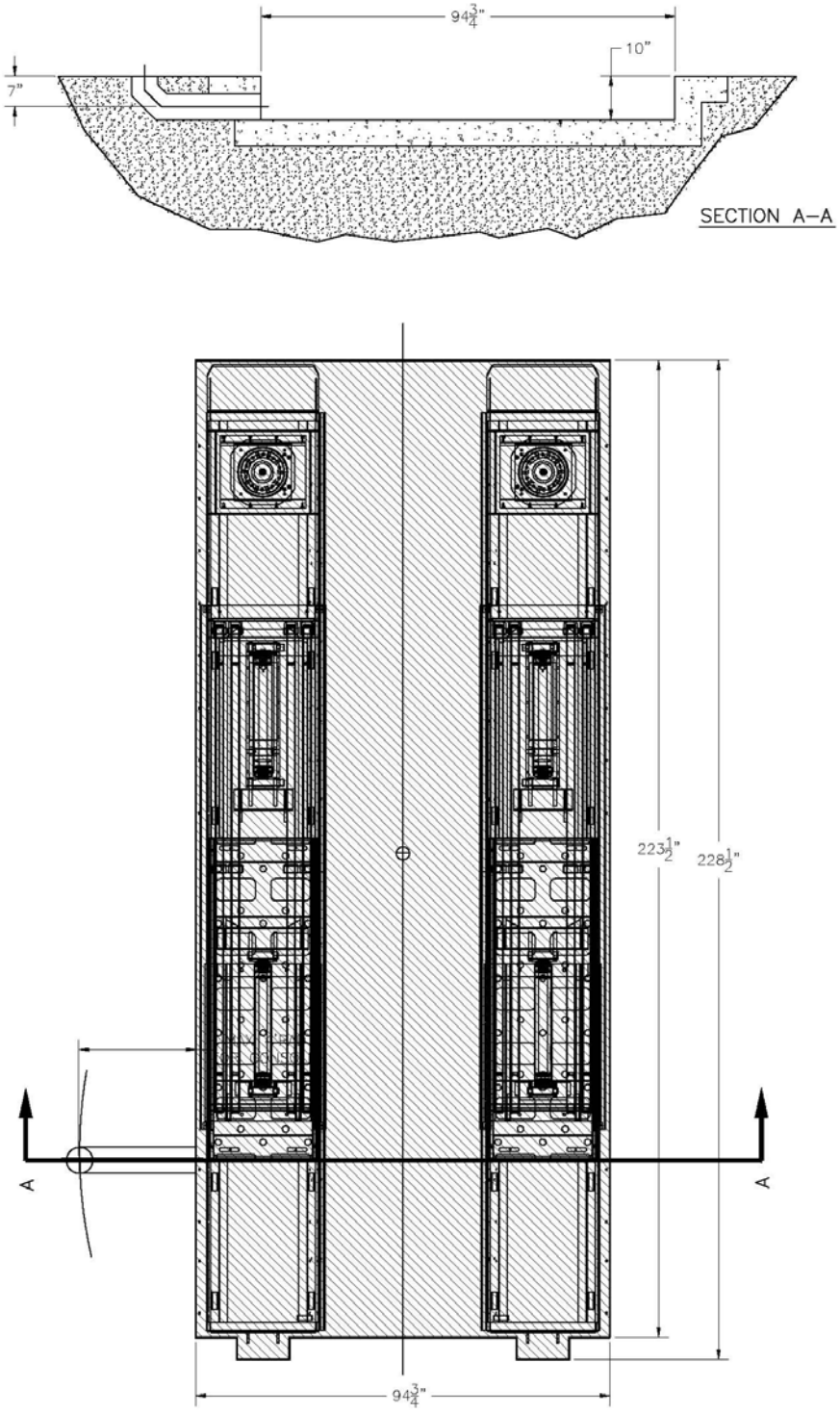


Figure 2 - Typical Bay Layout (Flush Mount)

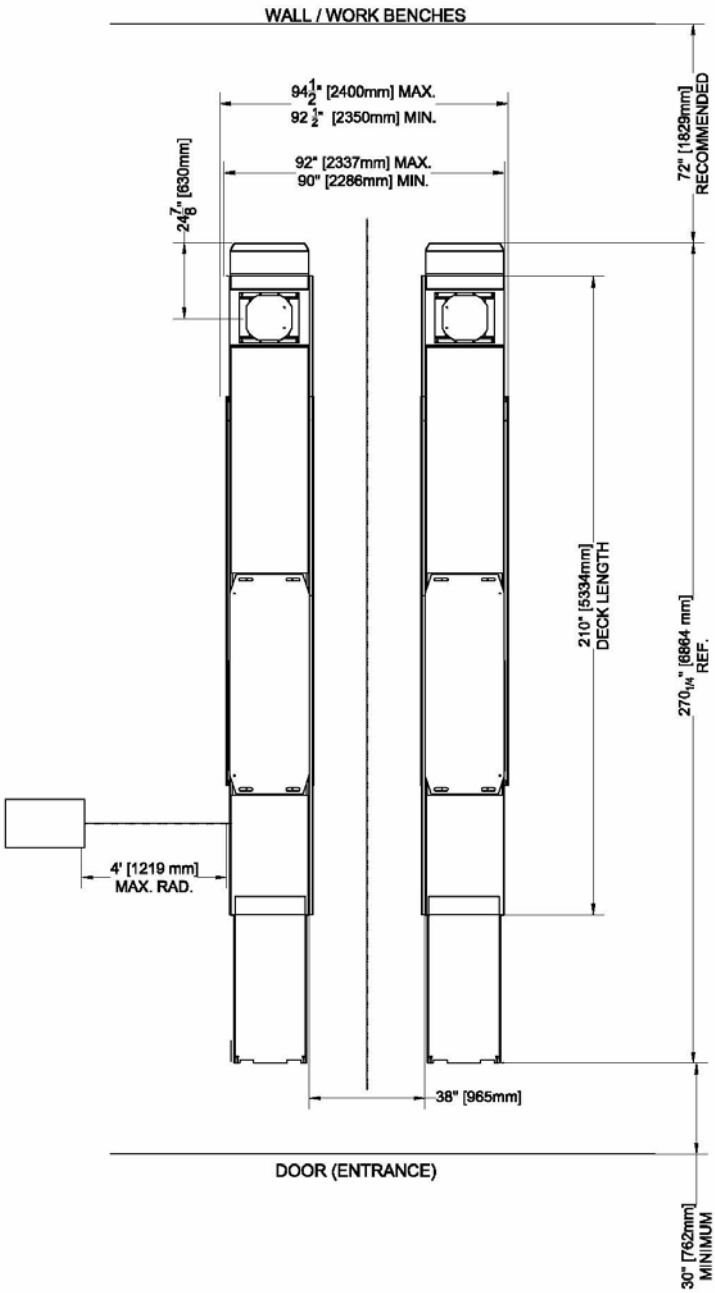


Figure 3 - Typical Bay Layout (Surface Mount)

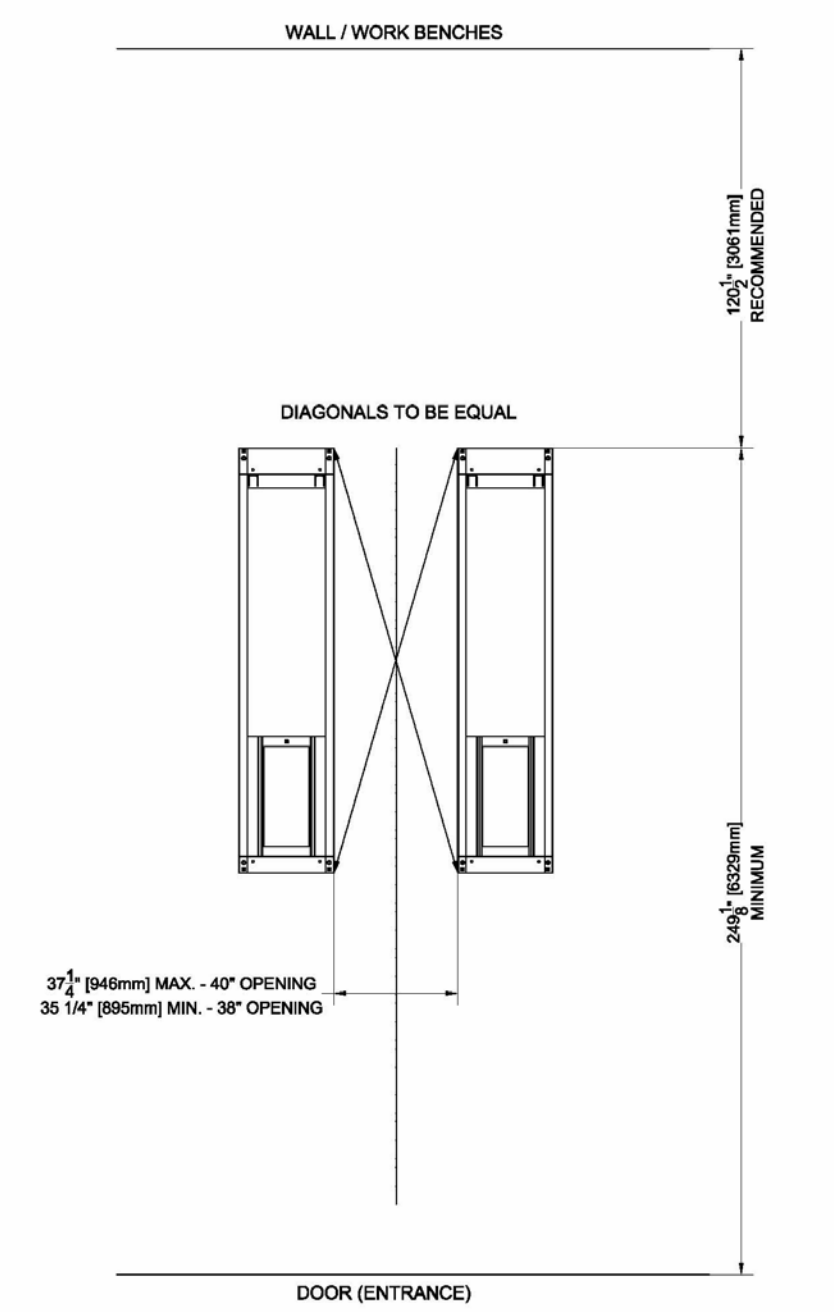


Figure 4 – Baseframe Locations

IMPORTANT: DO NOT CUT THE SHIPPING STRAPS HOLDING EACH MAIN FRAME ASSEMBLY TOGETHER UNTIL INSTRUCTED TO DO SO

1. With reference to **Figure 3**, the installer should locate the most suitable location in the shop for the lift.
2. Snap a chalk line for the centerline of the lift ensuring that it matches the centerline of the bay door.

3. Measure and snap two (2) parallel chalk lines on either side the centerline for the inside edges of the baseframes. Refer to **Figure 4** for the dimensions necessary to provide the desired width between the two runways. A distance of 35 ¼" (895mm) between the baseframes will provide the standard width of 38" between the inside of the runways.
4. Measure and snap a chalk line parallel to the shop door for the front of the baseframes, a minimum distance of 249 1/8" (6329mm) is recommended.
5. Before proceeding, ensure that once the runways are installed adequate workspace will remain in front of the lift. Refer to the minimum requirements listed in the installation and operation manual of any alignment equipment as needed.

4.2 Unpacking the Lift

1. Unpack the console and place it in the desired location at the rear of the lift. The console can be placed on either the left or right hand side of the lift.
2. Unpack the runways and lay each baseframe along the chalk lines. **Do not remove the individual strapping on the runways until they have been positioned on the chalk lines.** Ensure that the turnplate pockets are at the front, and that Jack Beam rails for each runway face each other.
3. Position the baseframes on chalk lines, and ensure that the runways are parallel. Before complete positioning of the last scissor be sure to remove the shipping tubes. Ensure that both the inside dimensions (front and back) of the baseframes as well as the diagonal distances are equal.
4. Remove the remaining packing straps, and remove the hydraulic hoses, polytube and proximity switch wires from under the deck. Hoses and wiring are located under the rear portion of the deck and are factory pre-installed – do not pull excessively on the hoses and wiring as it may strain the connections to the baseframe.

4.3 Hydraulic Connections

1. Open the front and rear access covers of the console.
2. Unravel all hoses, air lines, and sensor cables from each runway and connect the hydraulic lines as shown in **Figure 5**. Always make sure that the connections are clean to avoid contaminating the hydraulic system.
   Do not kink hydraulic hoses or air lines save the caps from the hydraulic lines for capping other fittings mentioned in the next step.
3. The primary supply lines and equalizing lines from each runway are:

Left Side (L):	Right Side (R):
CL	CR
EQL	EQL

("C" for "Cylinder" and "EQ" for "Equalize")

Only the cylinder hoses should be connected to their respective connections on the pump manifold, the equalizing hoses will be connected after the bleeding procedure.

Use caps to plug EQL and EQR fittings on the manifold. Do not over tighten hydraulic connections.

One supply line hose and one equalizing hose will be longer than the others and excess hose should be coiled inside the console and stored in the area below the reservoir.

4. At this point the bleeding procedure should be followed, **see Section 4.4**.
5. The 3/8" polytube return lines in the baseframes should be joined inside the console using a 3/8" "T" from the hardware kit. The 3/8" polytube return line (located in the accessory box) should be connected to the "T", be sure to remove the caps, and the opposite end should be connected to the pump connection marked T (Tank).
6. The feed lines for the secondary cylinders are joined by connecting the hose from the left side baseframe (straight male fitting) to the hose on the right side baseframe (swivel female fitting). Repeat the process by connecting the hose from the right side baseframe (straight male fitting) to the hose on the left side baseframe (swivel female fitting).

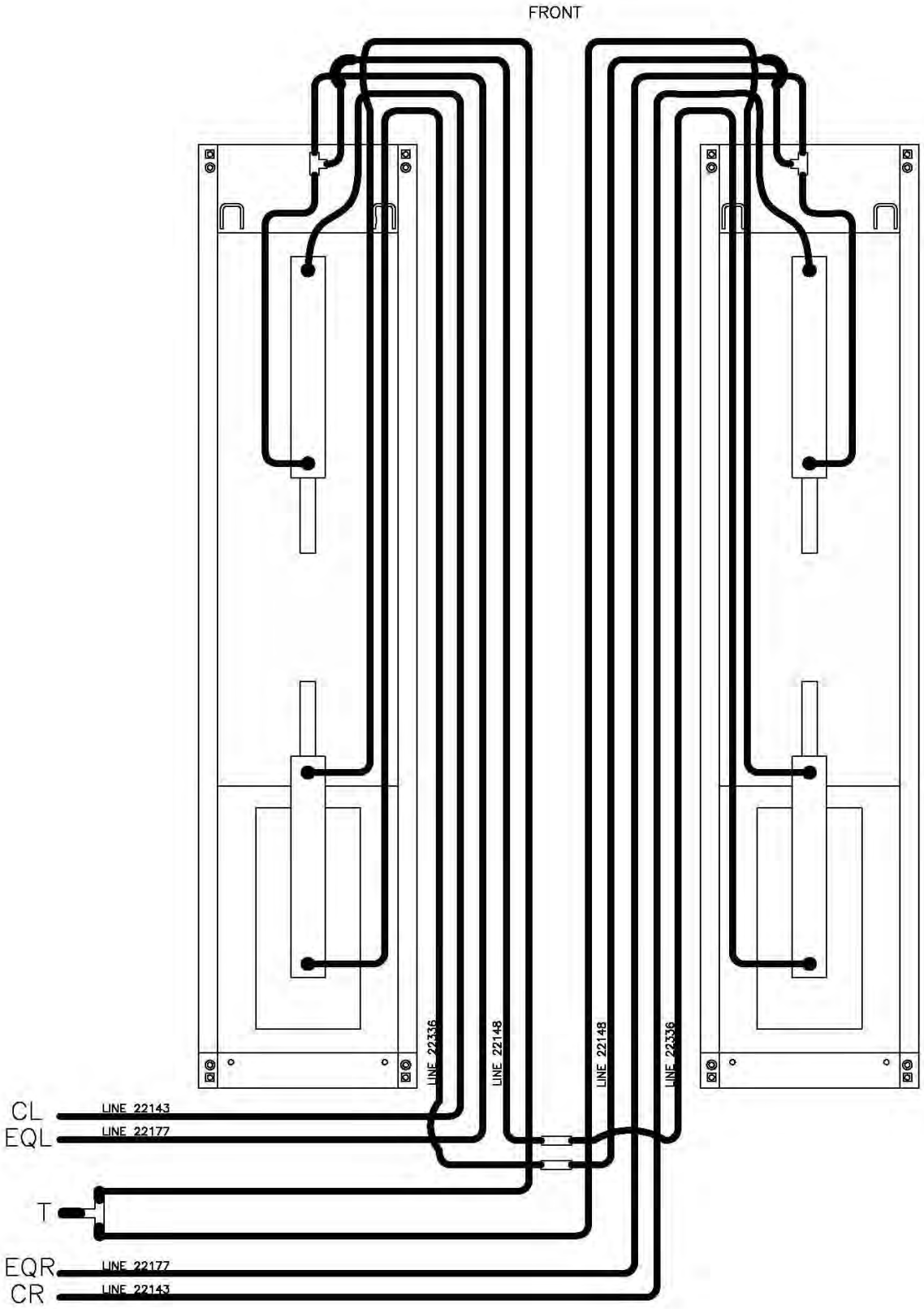


Figure 5 – Hydraulic Connections

4.4 Bleeding Procedure

BEFORE PROCEEDING:

1. Make sure you have a clean container (bleed container). This is used to store aerated oil separate from the new hydraulic fluid.
2. The lift must be fully collapse before proceeding.

BLEEEDING PROCEDURE FOLLOW STEP BY STEP:

1. If the lift is already installed, remove the EQL and EQR lines at the power unit and **plug** the ports on the manifold with 3/8" JIC caps, leave the lines **open** to vent.
2. Place the EQL and EQR lines into the bleed container.

   NOTE: DO NOT PLACE THESE LINES IN THE NEW HYDRAULIC FLUID CONTAINER USED TO TOP UP THE TANK

3. Ensure there is sufficient fluid in the reservoir.
4. In order to raise the lift to the bleed zone the safety locks at the power pack must be bypassed.
   Remove the 2 air supply lines to the safety cylinders after the tee and add constant air supply.
5. Raise the lift until it reaches the shut off limit, use the bypass switch to raise the lift into the bleed zone.
6. Keep the bypass button energized until the open EQL and EQR lines start to bleed fluid. Once all the air has escaped from these lines, stop energizing the bypass button and **cap** the EQL and EQR lines with 3/8" JIC plugs.
7. Check the reservoir and add hydraulic fluid as required.

   NOTE: WITH THE OIL LEVER SOWN SO NOT ALLOW AIR TO FLOW THROUGH THE PUMP. THIS WILL DAMAGE THE PUMP.
   NOTE: DO NOT ADD THE OIL FROM THE BLEED CONTAINER.

8. Remove the polytube bleed lines from the manifold and place them into the bleed container.
9. Energize the bypass button and bleed the lift until all the air has escaped from the bleed lines. Once air has escaped uncap the manifold and install the lines.
10. Check the amount of fluid in the reservoir. Leave approximately ¾ of the tank empty to leave space for fluid from the cylinders to empty into the tank without over flowing.
11. Reconnect the polytube lines and the EQL and EQR lines. Ensure all connection a tight. Release the lever then depress the hydraulic lowering lever. Lower the lift a few feet and reconnect air lines for the safety release.

12. Completely lower the lift and ensure that all the equalizing solenoids have "lit" up.
13. Once the solenoids have de-energized, raise the lift two feet (2ft) and lower the lift completely.
14. The bleeding procedure is now complete.

The fluid in the bleed container may be reused once the trapped air has escaped. (Note: This may take an undetermined period of time)

4.5 Air Safety and Auxiliary Air Connections

1. The ¼" polytube in the baseframes should be joined in between the runways using a ¼" "T" from the hardware kit as shown in **Figure 8**. The ¼" polytube in the control console is already connected to the manual pushbutton release valve. The polytube should be uncoiled, cut to size and connected to the "T".
2. The 3/8" polytube for the auxiliary air connections is coiled under the right side runway. Route this hose to the console and connect it to the "T" inside the console where the shop air is connected.
3. Connect the compressed air line from the shop to the ¼" NPT port on the back of the console. A regulator (supplied by customer) set at 90-120 psi should be used to control the supply of air to the lift. An air line filter and water separator should be installed on the air supply and is the owners responsibility to provide. Failure to ensure a clean air supply can result in the premature wear of air cylinders and valves.
4. Press up button to raise lift off mechanical safety locks. While holding the air safety release button, press the down button and lower the lift completely to the ground. Check that the reservoir is almost full, and top up with hydraulic oil if needed.
5. Check the air system for any leaks.

4.6 Proximity Sensor Connections/Adjustment

There are three (3) proximity switches on this lift. Each runway is outfitted with an individual equalizing proximity switch mounted on a bracket located under the front of the runway. The third proximity switch, used for upper limit detection, is located at the pivot point on the right scissor.

Connect the proximity switches as shown in **Figure 6b**.

NOTE: THE MICROPHONE CONNECTORS ARE LOCATED ON THE UNDERSIDE OF THE ELECTRICAL HOUSING LOCATED IN THE CONSOLE. THIS CAN BE ACCESSED BY REMOVING THE REAR OR FRONT CONSOLE COVER (View from front cover shown for clarity)

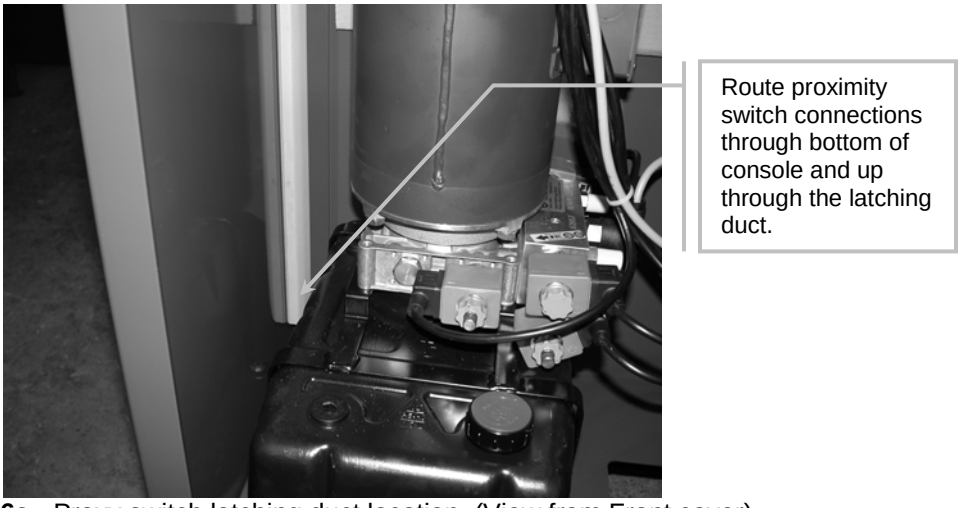


Figure 6a - Proxy switch latching duct location. (View from Front cover)

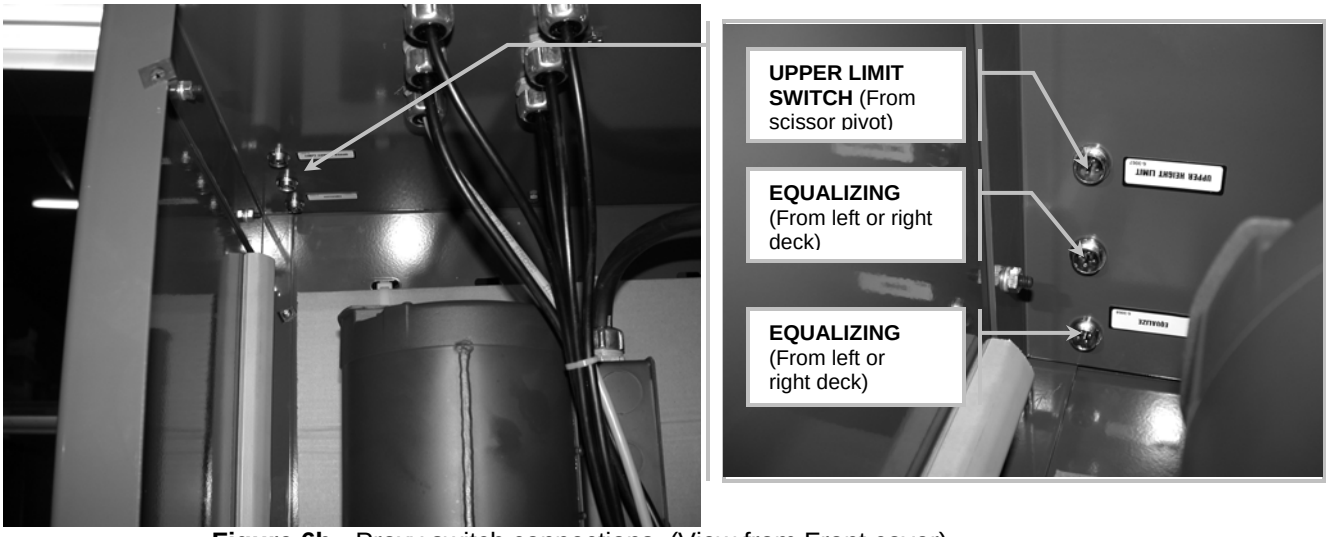


Figure 6b - Proxy switch connections. (View from Front cover)

4.7 Electrical Connections

DANGER! ENSURE THAT ELECTRICAL CONNECTIONS ARE COMPLETED BY A LICENSED ELECTRICIAN! ELECTRICAL SHOCKS CAN CAUSE SERIOUS INJURY OR EVEN DEATH.

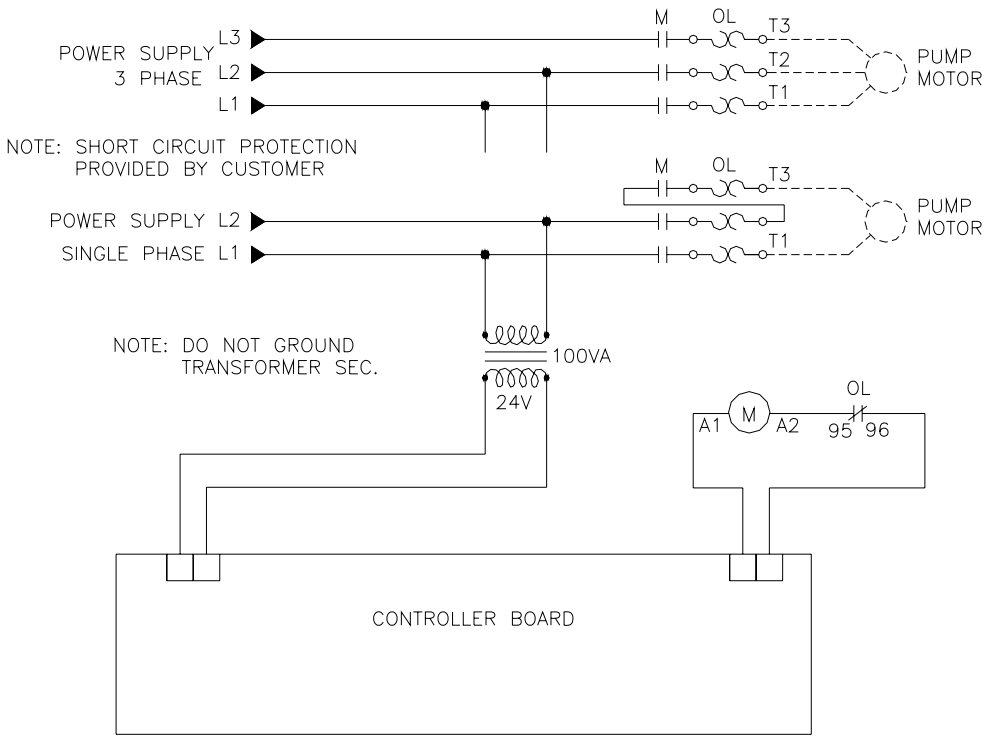


Figure 6 – Electrical Connections

NOTE: Overload fuse does not come with single phase power unit

NOTICE: FLUSH MOUNT

THIS APPARATUS IS INTRINSICALLY SAFE AND PROVIDES INTRINSICALLY SAFE CIRCUIT EXTENSIONS FOR USE IN CLASS I, DIVISION I, GROUPS C&D, HAZARDOUS (CLASSIFIED) LOCATIONS WHEN CONNECTED PER PANEL CONTROL DRAWING 2-2167.

NOTICE: SURFACE MOUNT

THIS APPARATUS IS NONINCENDIVE AND PROVIDES NONINCENDIVE CIRCUIT EXTENSIONS FOR USE IN CLASS I, DIVISION 2, GROUPS C&D, T4 RATED, HAZARDOUS (CLASSIFIED) LOCATIONS WHEN CONNECTED PER PANEL CONTROL DRAWING 2-2230.

NOTE: Optional Voltage and Phase power units will include separate wiring diagrams.

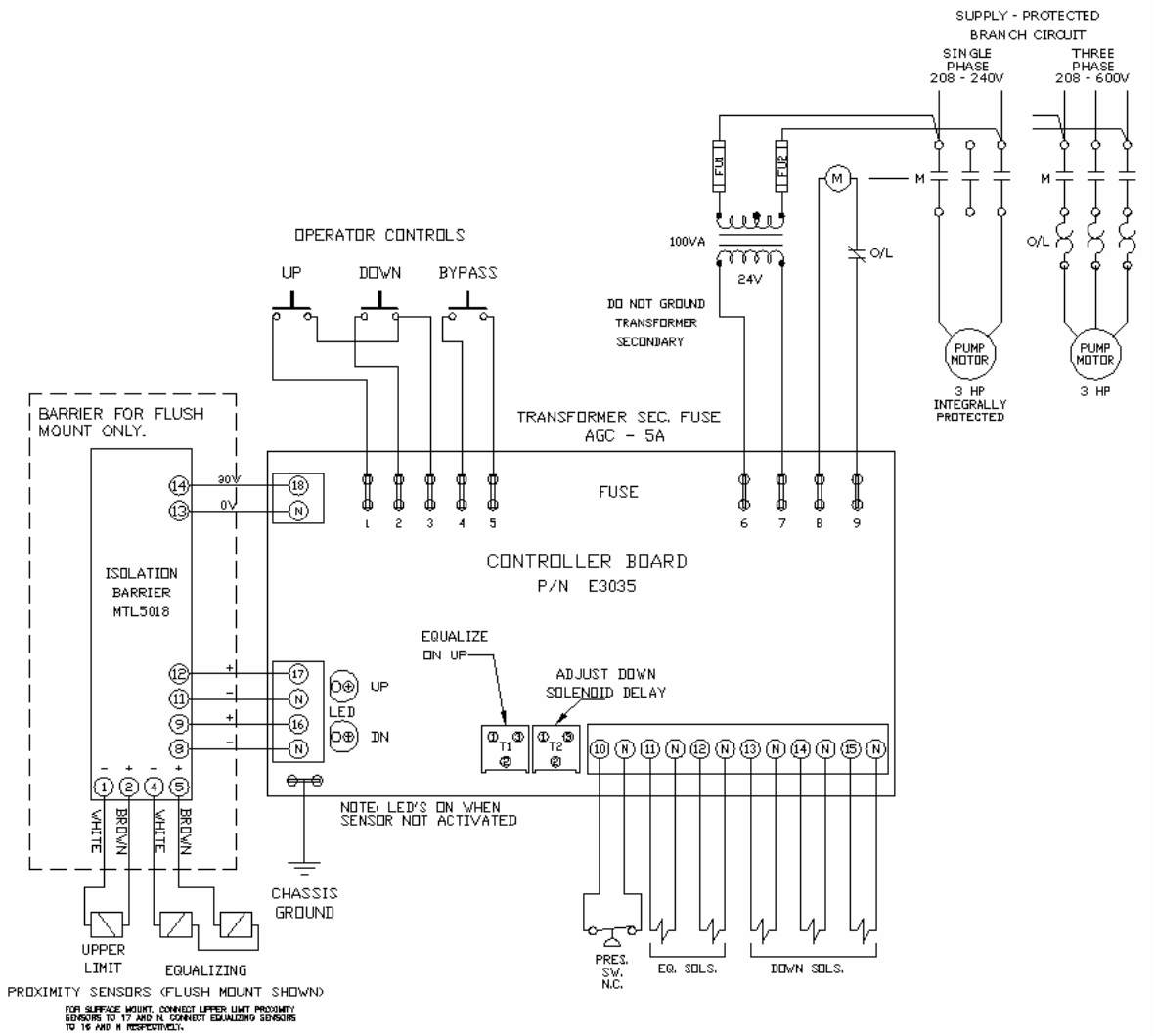


Figure 7 – Console Circuit Connections

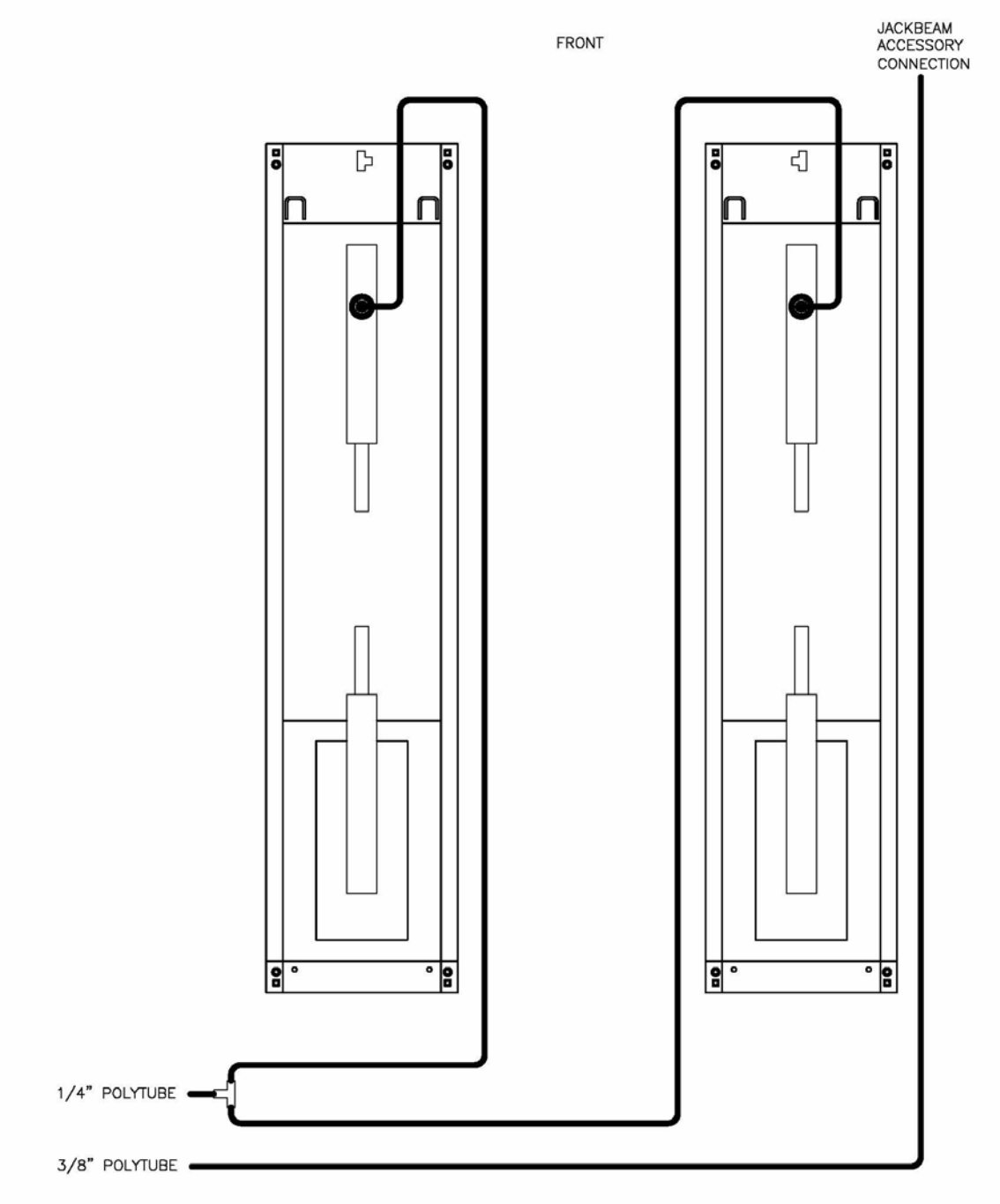


Figure 8 – Air Safety & Auxiliary Air Connections

WARNING! WEAR SAFETY GOGGLES AND PRACTICE CAUTION WHILE WORKING WITH COMPRESSED AIR.

4.8 Proximity Sensor Adjustment

a) UPPER LIMIT PROXIMITY SWITCH

LOCATION: Right side scissor at pivot point.

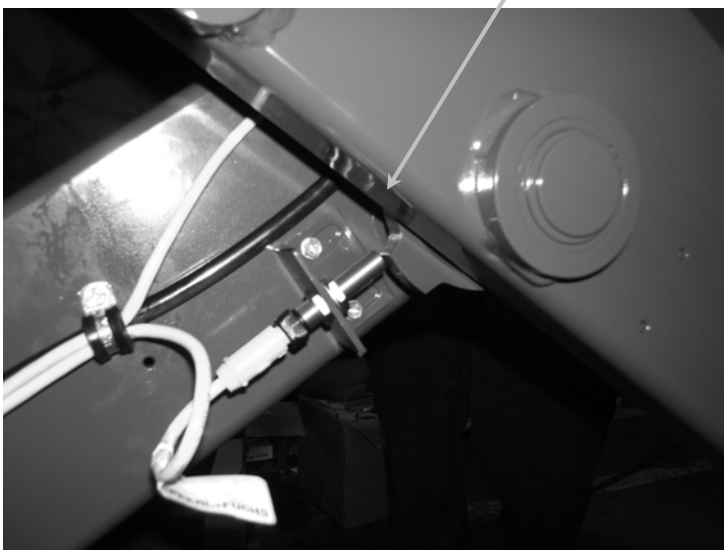


Figure 9a – Upper limit proximity sensor

1. Raise lift to full height by pressing the up button (do not press the by-pass button).
2. The limit switch (**see Figure 9a**) should automatically stop the lift once the 72" working height (floor to top of runway) is reached. If necessary, an adjustment can be made by turning the cam towards the proximity switch.

NOTICE

The limit switch should never allow the working height to be above 72". If the automatic stop height is above 72", damage or failure of the hydraulic seals in the cylinder can occur.

3. If a stop height is desired that is below 72", adjust the sensor cam so that contact is made with the proximity sensor at the maximum desired working height.

b) EQUALIZING PROXIMITY SWITCH CHECK

LOCATION: Underside of the front section of each deck.

Figure 9b – Equalizing proximity sensor Under front of deck.

The proximity switches are adjusted at the proper height prior to leaving the factory, however, if adjustment is required, use the following procedure.

PROXY CHECK:
To verify that the proximity switches are adjusted correctly, open the front panel on the console and locate the red led's shown in **Figure 9c**. When the lift is fully lowered, these led's should light up for 3 – 5 seconds. If this does not occur, adjust the proximity switches as detailed below.

ADJUSTMENT:

CAUTION: BEFORE PROCEEDING, THE LIFT MUST BE LOWERED ONTO THE MECHANICAL SAFETY'S. WHEN THE PROXIMITY SWITCH SENSES METAL, THE LIFT WILL START TO DESCEND. PLACING THE LIFT ON THE MECHANICAL SAFETY'S WILL ENSURE A SAFE WORKING ENVIRONMENT.

1. Access to the underside of the deck is required to adjust the proximity switch. Raise the lift to a comfortable working height and lower it onto the mechanical safety locks. Press 'E' stop to make sure no power is going through and ensure no movement of the lift.
2. Remove the proxy sensing plate and bolt shown in **Figure 9d**. In order to maintain the adjusted height of the runway, do not loosen any of the jam

nuts. Loosen the bolt from the head as an assembly and use a measuring tape to get the correct dimension (see **Figure 9e**).

3. Loosen the upper and lower jam nut retaining the proximity switch in place.
4. Place the bolt head against the mounting bracket so that the sensing plate is under the proximity switch. Adjust the upper jam nut until the proximity switch is approximately 2mm above the sensing plate (see **Figure 9e**)
5. Tighten the lower jam nut to secure the proximity switch.
6. Repeat this process for the next runway and check the function of the proximity switches as detailed above.

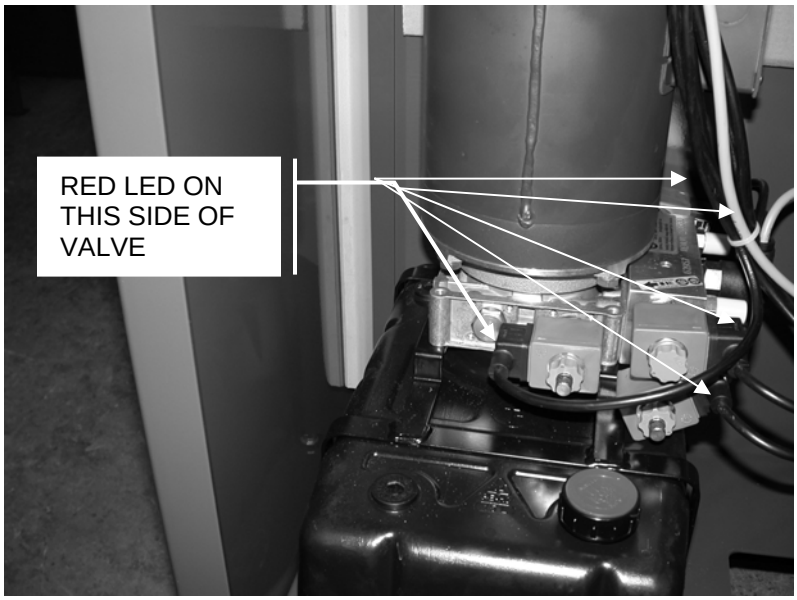


Figure 9c – Red Led located on solenoid (black) portion of valve. (View from front cover)

Figure 9d - Proxy sensing plate locate at the front of the baseframe

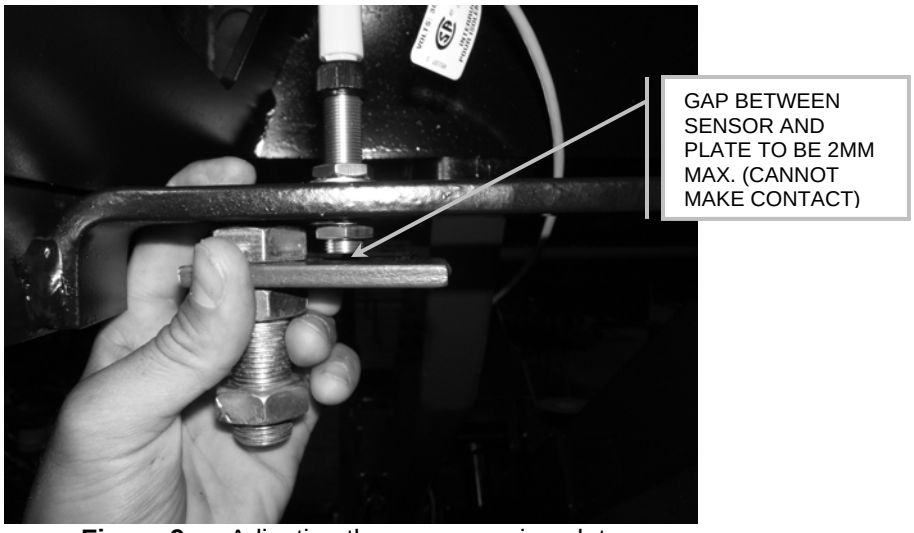


Figure 9e – Adjusting the proxy sensing plate

4.9 Level and Support

NOTICE

CORRECT LEVELING IS IMPORTANT TO ENSURE THE PROPER OPERATION OF THE LIFT. TAKE PRECAUTIONS TO ENSURE ACCURATE LEVEL READINGS WHEN PERFORMING THIS PROCEDURE.

Side-to-side leveling measurements should be taken off the baseframe, and measurements should be taken on each baseframe as well as between the two baseframes. Front-to-back level measurements should be taken on the runways.

1. Press the up button and raise the lift to the fully extended operating position. Check the location of the baseframes compared to **Figure 4**, and make minor adjustments as required.
2. Level the baseframes using the 5/8" leveling bolts provided at each of the four (4) corners.
3. Use shims provided to support under glide block area of baseframe and under front hinges. See **Figure 10**.

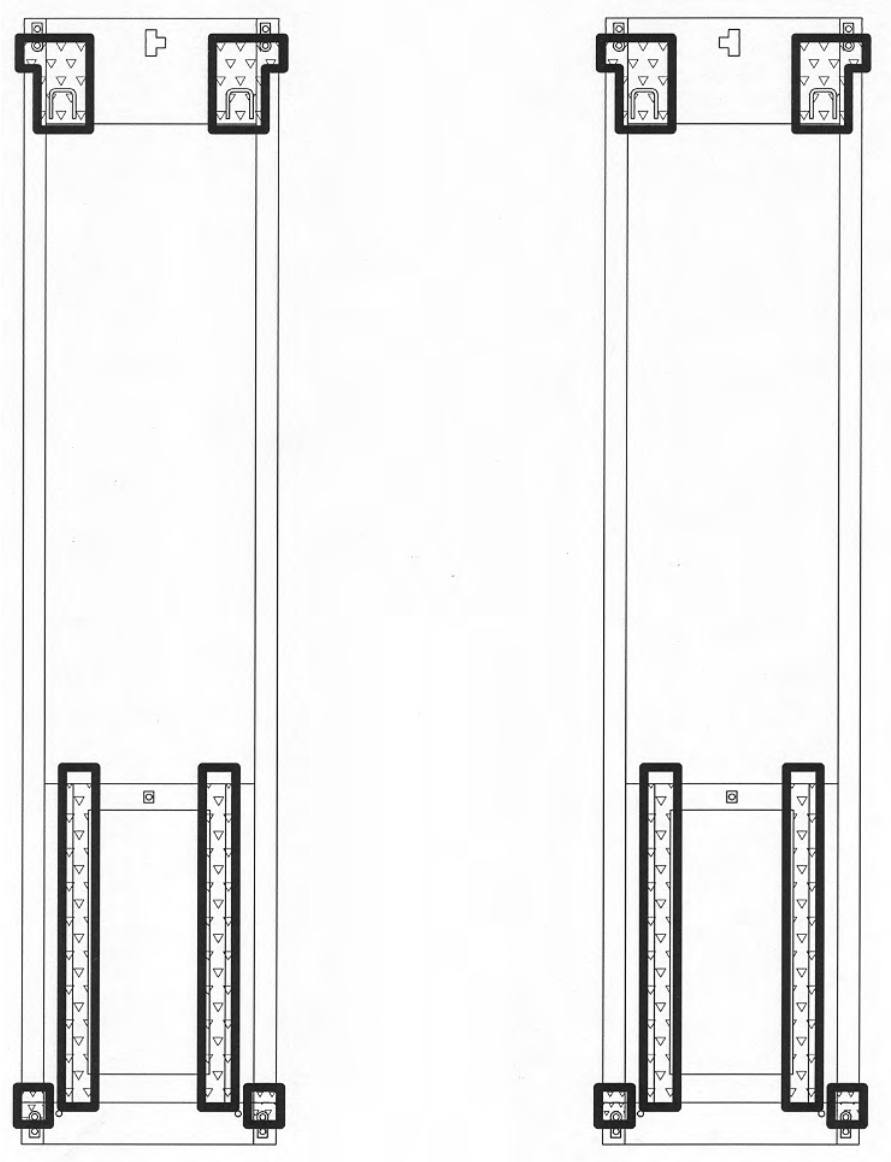


Figure 10 – Shimming

4. Verify that the baseframes are level side-to-side and that the runways are level front-to-back. The front turnplate and rear slip plate are the areas of interest. Check that the spacing between the runways is as desired, and that this spacing is equal at both the front and rear of the lift. Check that the diagonal measurements between opposite corners of the baseframes are equal. Lower and raise the lift and repeat these measurements.
5. Adjust the 3/4" support bolts on the four (4) corners of the baseframes to level the runway at fully collapsed position.
6. Once lift is level, back off 5/8" leveling bolts so that the base is firmly sitting on the shims. Re-check to make sure the lift is still level and shims are holding properly.
   Note: These bolts must be removed once the shims are installed under the base correctly (same as the center bolt on the base).

4.10 Anchoring Procedure

CAUTION! WEAR SAFETY GOGGLES AND PRACTICE CAUTION WHILE DRILLING CONCRETE.

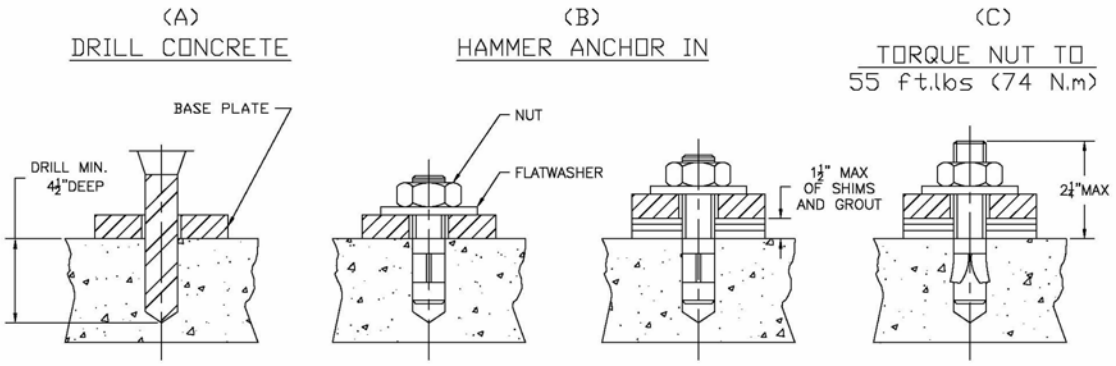


Figure 11 - Anchoring

1. Lower the lift and measure the distance between the Jackbeam rails at front and rear of the lift.
2. Raise the lift to full height and repeat the measurements, and ensure there are no differences.
3. Using a rotary hammer drill and a 1/2” concrete bit, drill through the floor at each of the four (4) anchor bolt locations on each of the base frames. Make sure that the 1/2” concrete drill bit is in good condition. Refer to **Figure 11**.
4. Insert the 1/2” x 4 1/2” long wedge anchor bolts supplied, and place a flat washer and nut on each anchor. Tighten securely by hand.
5. Use shims provided to support around anchor position.
6. Torque all anchor bolts to 55 ft-lbs.
7. Position the console in the final desired location. Using a rotary hammer drill and a 1/4” concrete bit, drill and anchor the console to the floor using the Nail in Anchors located in the hardware kit.
8. Use the line covers to protect all cables, hoses, and wiring running to the lift. Using a rotary hammer drill and a ¼” concrete bit, drill and anchor the line covers using the nail in anchors located in the hardware kit.

4.11 Grouting Procedure

1. Pour grouting under the load area of each base frame as shown in **Figure 12**. Ensure that grout is evenly distributed under the frame and finish the edges with a 45 degree chamfer. Refer to specific grouting instructions on the package. Leave a drain area to allow any liquids to escape.
2. GROUTING MUST FULLY CURE BEFORE PROCEEDING. Do not operate the lift while grout is curing. Refer to instructions on the package for recommended cure times. [Non-Shrink Grout (3000psi min. in 24hrs, 7000psi min. in 30 days)]

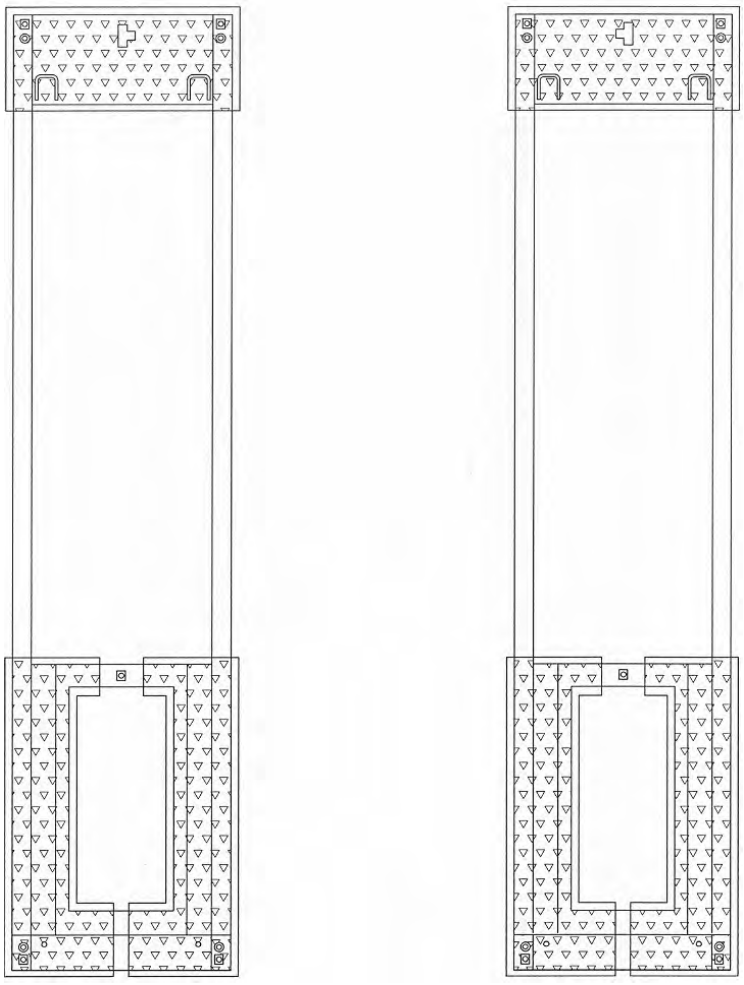


Figure 12 – Grouting Locations

5 Accessory Installation

1. Install the front Wheelstops located in the accessory box using the ½" Hex Bolts, Washers, Lockwashers, and Hex Nuts located in the hardware kit.
2. Install the rear approach ramps using the Approach Ramp Pins located in the accessory box, and the Flatwashers and Cotter Pins located in the hardware kit.
3. Install Jackbeams with reference to the Jackbeam user manual.

WARNING! ENSURE WORKSTEP IS FULLY ENGAGED PRIOR TO USE. IF MORE THAN ONE WORKSTEP IS IN USE, DO NOT TRY TO STEP ACROSS OR JUMP FROM ONE STEP TO ANOTHER. NEVER USE THE WORKSTEP WHILE THE LIFT IS IN OPERATION. SERIOUS INJURY COULD RESULT FROM IMPROPER USAGE OF THE WORKSTEPS.

WARNING! WORKSTEP MAXIMUM CAPACITY IS 250 LBS.

WARNING! FOR FLUSHMOUNT INSTALLATIONS ENSURE WORKSTEP IS REMOVED BEFORE RAISING OR LOWERING THE LIFT.

4. Position the moveable workstep in the desired location. There are slots along the span of each runway where the workstep can be mounted. When not in use, the workstep can be stored under the front section of the runway.

6 LIFT OPERATION

6.1 Raising the Lift

1. If the lift is equipped with sliding Jack Beam(s), be sure that the Beam(s) are positioned at the front or mid travel of the lift, fully down, and with the risers removed and stored. Never store Jack Beams at the rear of the lift.
2. Ensure that the lift is fully lowered before attempting to load or unload a vehicle.
3. Ensure that locking pins are in the front turnplates and rear slip plates before driving a vehicle onto the lift.
4. Position the vehicle on the lift ensuring the resulting load on the deck is distributed as evenly as possible. Under no circumstances should a vehicle be lifted if the weight distribution is unbalanced by more than 10% on either side.
5. **ATTENTION:** THE VEHICLE IS POSITIONED CORRECTLY WHEN THE DISTANCE FROM THE CENTER OF THE TIRES TO THE INSIDE EDGE IF THE RUNWAYS IS EQUAL ON BOTH RUNWAYS, FOR BOTH THE FRONT AND REAR TIRES.
6. Chock the vehicle using the wheel chocks provided.
7. Check that there are no obstructions above the lift that could damage the lift or vehicles.
8. Raise the lift by pressing the up button on the control console. Raise the lift past the desired working height until both mechanical safeties are heard engaging. Press the down button to lower the lift down onto both of the mechanical safeties.

WARNING: NEVER WORK UNDER A VEHICLE OR THE LIFT UNLESS IT IS POSITIONED ON BOTH MECHANICAL SAFETIES!

6.2 Lowering the Lift

1. Check that there are no obstructions under the lift or vehicle. Be sure that the sliding Jack Beams are fully lowered and positioned at the front or mid section of the lift.
2. Raise the lift by pressing the up button until both runways are clear of their mechanical safety locks.
3. Press the air safety release button to release the mechanical safeties.
4. While holding the air safety release button, press the down button and lower the lift to the completely collapsed position.
5. Remove wheel chocks and ensure that locking pins are in the front turnplates and rear slip plates before driving a vehicle off the lift.

6. Be certain that the lift is completely lowered before removing the vehicle from the lift.

ATTENTION: THE OPERATOR MUST ALWAYS KEEP THEIR ATTENTION ON THE OPERATION OF THE LIFT WHILE RAISING OR LOWERING. IF AN OBSTRUCTION IS SEEN, RELEASE BOTH THE AIR SAFETY RELEASE BUTTON AND THE DOWN BUTTON TO STOP THE LIFT.

7 RECOMMENDED MAINTENANCE

The following maintenance schedule is recommended for ensuring the operation of the lift. A record of maintenance performed should be maintained and any items that resulted in additional service should be noted.

Schedule	Maintenance Required
Daily	• Check that the upper and lower glide tracks are clean and free of debris. This area should be checked before raising or lowering the lift. • Inspect the operation of the lift by raising and lowering the lift fully. • Check for the proper engagement and release of mechanical safety locks. • Check hydraulic lines for leaks and fraying. Frayed hoses must be replaced immediately.
Weekly	• Check the fluid level in the reservoir with the lift fully lowered. Top up reservoir with ISO 32 (10 weight) hydraulic oil as needed.
Monthly	• Check anchor bolts for tightness. Torque to 85 ft-lbs if needed. • Inspect the electrical and mechanical operation of all switches.
5 Year	• Change the hydraulic fluid every five years. Use only ISO 32 (10 weight) hydraulic oil.

8 Record of Maintenance / Training

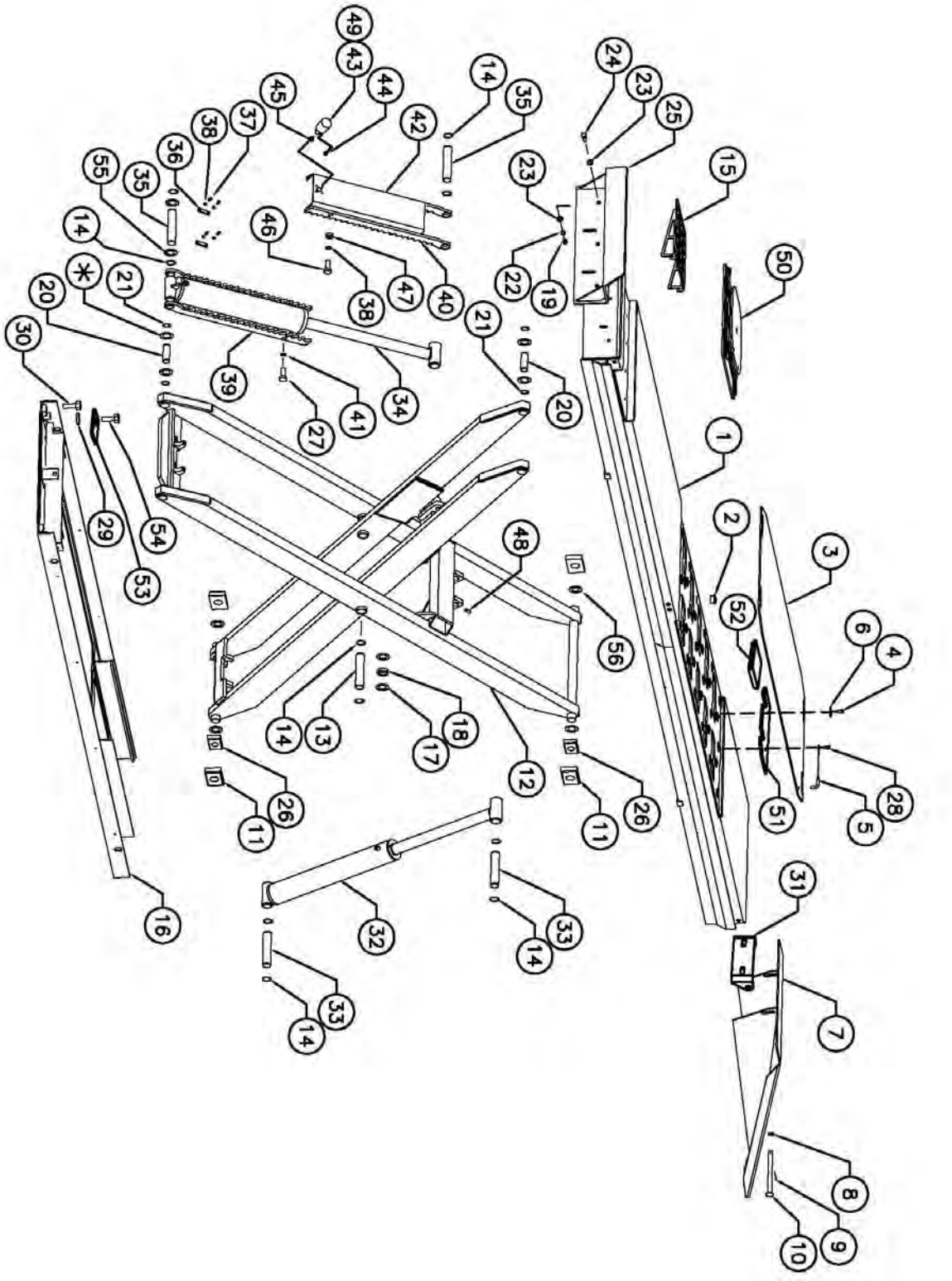
Records of all lift maintenance and operator training should be recorded in the following table.

MAINTENANCE & TRAINING PERFORMED	DATE	BY:	NOTES

9 Safety Warning Decals

10 PARTS LIST

10.1 Lift Assembly

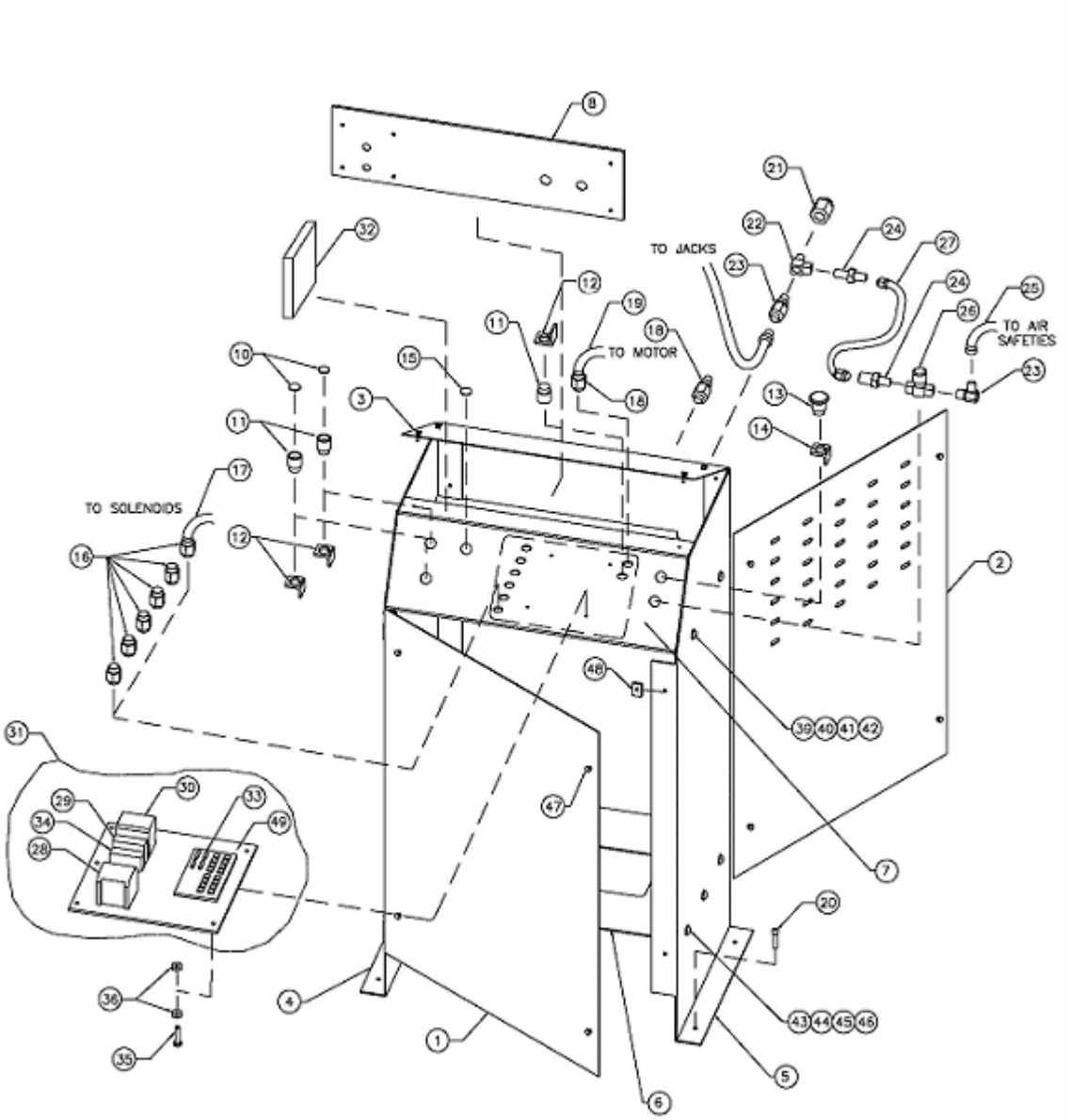


10.2 Lift Assembly Parts List

ITEM NO.	QTY.	DESCRIPTION	PART NO.
1	1	DECK WELDMENT RHS	4-1091
	1	DECK WELDMENT LHS	4-1090
2	54	BALL BEARING	6-2940
3	2	REAR SLIP PLATE	2-2088
4	8	SHOULDER BOLT 3/8" X 1.0"LG	6-0206
5	4	LOCKING PIN ASSEMBLY	2-0637
6	8	FLAT WASHER	6-0426
7	2	APPROACH RAMP ASSEMBLY	3-0905
8	4	WASHER 3/4" FLAT	6-0738
9	4	COTTER PIN, 1/8"DIAMETER X 1 1/2" LONG	6-0978
10	4	APPROACH RAMP PIN	1-1887
11	8	SLIDER BLOCK	1-2792
12	2	SCISSOR WELDMENT	4-1081
13	4	SCISSOR PIN	1-2791
14	24	SNAP RING #5100-150	6-0233
15	2	WORKSTEP WELDMENT	2-2119
16	2	BASE FRAME WELDMENT	3-0902
17	8	THRUST WASHER - NYLON 1/16" THICK	1-0757
18	4	SCISSOR SPACER	1-2795
19	12	HEXAGON NUT 1/2"-13UNC, ZINC PLATED	6-0035
20	8	HINGE PIN	1-2788
21	16	SNAP RING #5100-125	6-0340
22	12	LOCK WASHER 1/2"	6-0059
23	24	FLAT WASHER 1/2"	6-0063
24	12	HEX BOLT 1/2-NC X 1 ½" LONG	6-0291
25	2	WHEELSTOP WELDMENT	2-2117
26	8	SLIDER BLOCK ASSEMBLY	1-3047
27	4	HEX BOLT, ¾”-NF x 1 ½” LG	6-2936
28	4	SELF TAPPING SCREW, #10 x ½” LG	6-0505
29	16	HEX JAM NUT, ¾”-NF	80259000
30	10	HEX BOLT, 5/8”-NC x 2” LG	6-1670
31	2	ADAPTER PLATE	1-3159
32	2	CYLINDER ASSEMBLY, SECONDARY	3-0897
33	4	CYLINDER PIN, SECONDARY	1-2790
34	2	CYLINDER ASSEMBLY, PRIMARY	3-0896
35	4	CYLINDER PIN, PRIMARY	1-2789
36	8	CYLINDER RETAINER	1-2793
37	16	HEX BOLT, 3/8”-NC x 1” LG	6-0067
38	32	LOCKWASHER, 3/8”	6-0058
39	4	SAFETY BAR, BOTTOM	2-2111
40	4	SAFETY BAR, TOP	2-2112
41	4	LOCKWASHER, ¾”	6-0259
42	2	SAFETY COVER	2-2183
43	2	AIR CYLINDER	3-0812
44	2	ROD END, CYLINDER	2-1733
45	8	PHILIPS SCREW, #6-32 x ¾” LG	6-2281

46	16	HEX BOLT, 3/8”-NC x 1 ¼” LG	6-0666
47	16	HEX NUT, 3/8”-NC	6-0034
48	8	SET SCREW, 3/8”-NC x 1” LG	6-3061
49	2	BREATHER, 1/8” NPT	6-0183
50	2	STAINLESS STEEL TURNPLATE ASSEMBLY (OPTIONAL)	4-1101
51	4	SLIDER PLATE	1-3033
52	16	SLIDER PLATE INSERT	1-3032
53	2	PROXY PLATE 14K SCISSOR	1-3035
54	8	HEX HD GR8 ¾”-16UNF 2 ¼” FTHD	6-3194
55	8	SPACER SAFETY LOCKS	1-2905
56	8	THRUST WASHER	1-3171
*	1	HINGE SPACER KIT – 1/8” & 1/16” (16/PKG)	0-1506

10.3 Console Assembly



10.4 Console Parts List

ITEM	QTY	DESCRIPTION	PART #
1	1	CONSOLE FRONT COVER	2-2126
2	1	CONSOLE REAR COVER	2-2127
3	1	CONSOLE TOP COVER	2-2128
4	1	LHS PANEL	2-2122
5	1	RHS PANEL	2-2125
6	1	BOTTOM POWER PACK STEP	2-2123
7	1	ELECTRICAL HOUSING	2-2124
8	1	ELECTRICAL BACK PANEL	3-0900
10	2	PUSHBUTTON PLATE (UP/DOWN ARROW)	6-1251
11	3	PUSHBUTTON	6-1247
12	3	PUSHBUTTON CONTACTS	6-1248
13	1	EMERGENCY STOP PUSHBUTTON W/ RESET	6-2921
14	1	EMERGENCY PUSHBUTTON CONTACT	6-2922
15	1	ELECTRICAL KNOCKOUT PLUG	6-2314
16	6	STRAIN RELIEF, 1/4”	6-0092
17	24FT	COIL/PRESSURE SWITCH CABLE	8-0306
18	2	STRAIN RELIEF, ½” (1 PHASE)	6-1370
	2	STRAIN RELIEF, ½” (3 PHASE)***	6-0094
19	4FT	MOTOR CABLE (1 PHASE)	8-0030
	4FT	MOTOR CABLE (3 PHASE)***	8-0189
20	4	CONCRETE NAIL, 1/4” X 1”LG.	6-0141
21	1	BULKHEAD, ¼”NPT	6-0713
22	1	TEE ¼” NPT	6-0014
23	1	ADAPTER, ¼” NPT TO 3/8” POLYTUBE	6-0710
24	2	ADAPTER, ¼” NPT TO ¼” POLYTUBE	6-1347
25	30FT	¼” POLYTUBE	8-0141
26	1	MANUAL SAFETY RELEASE VALVE	6-1055
27	1 FT	3/8” POLYTUBE	8-0142
28	1	TRANSFORMER, 220V	6-2978
	1	TRANSFORMER, 460V	6-2171
	1	TRANSFORMER, 575V	6-2147
29	1	THERMAL OVERLOAD, 1.8A-2.8A (575V, 3PHASE)***	6-2174
	1	THERMAL OVERLOAD, 2.7A-4.2A (460V, 3PHASE)***	6-2175
	1	THERMAL OVERLOAD, 6.0A-9.2A (220V, 3PHASE)***	6-2176
30	1	CONTACTOR (1PH, 24V COIL)	6-2979
	1	CONTACTOR (3PH, 24V COIL)***	6-2601
31	1	PRINTED CIRCUIT BOARD ASSEMBLY	6-2958
*32	1	INTRINSIC SAFETY BARRIER	6-2962
33	1	FUSE, 5A	6-2981
34	2	FUSE, 2A	6-2982
35	4	BOLT, #8-32NC X 1” LG.	6-1094
36	8	NUT, #8-32NC	6-1095
37	1	QUICK CONNECTOR MALE	6-2964
38	1	QUICK CONNECTOR FEMALE	6-2975
39	8	SCREW, ¼” –20 UNC	6-0588
40	8	WASHER,FLAT,1/4 SAE PLT #140-0	6-0060
41	8	NUT 1/4-20 HEX PL	6-0032
42	8	WASHER,LOCK,1/4"ID	6-0056
43	6	BHCS 3/8-16UNC x 1.0"LG	6-3037
44	6	WASHER,FLAT,3/8"ID,SAE	6-6062
45	6	NUT,3/8"-16UNC,GR5,PL,HEX	6-0034
46	6	WASHER,LOCK,3/8"ID	6-0058

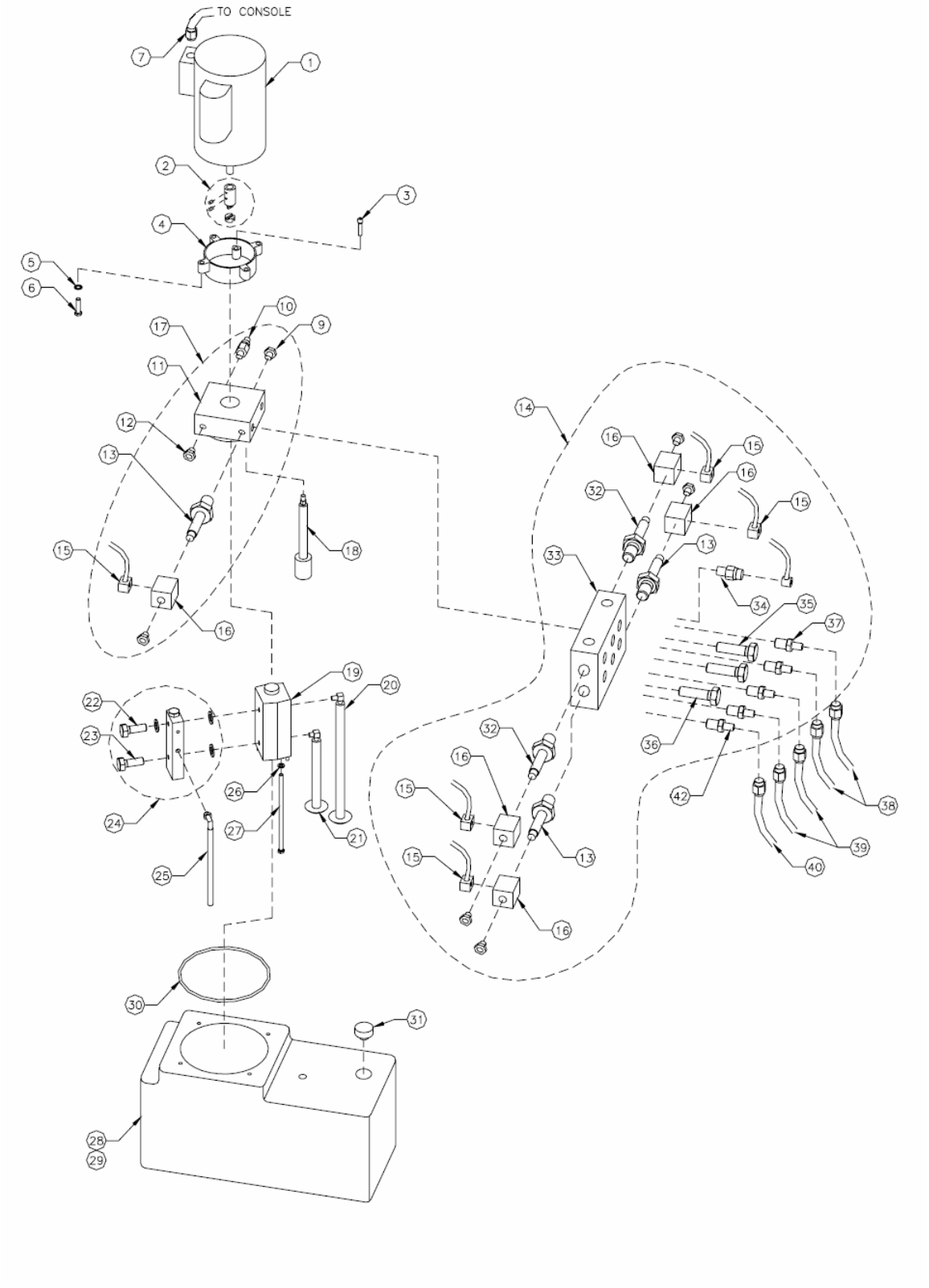
47	16	SCREW 10-24 PHILLIPS 5/8"LG	6-3075
48	16	U-TYPE FASTENER	6-3074
49	1	PRINTED CIRCUIT BOARD	6-3274

NOTE: Console Assembly is Part # 3-0901

* Used on Flush mount models only

***When converting a 1 PH unit to a 3PH unit order all 3PH components marked.

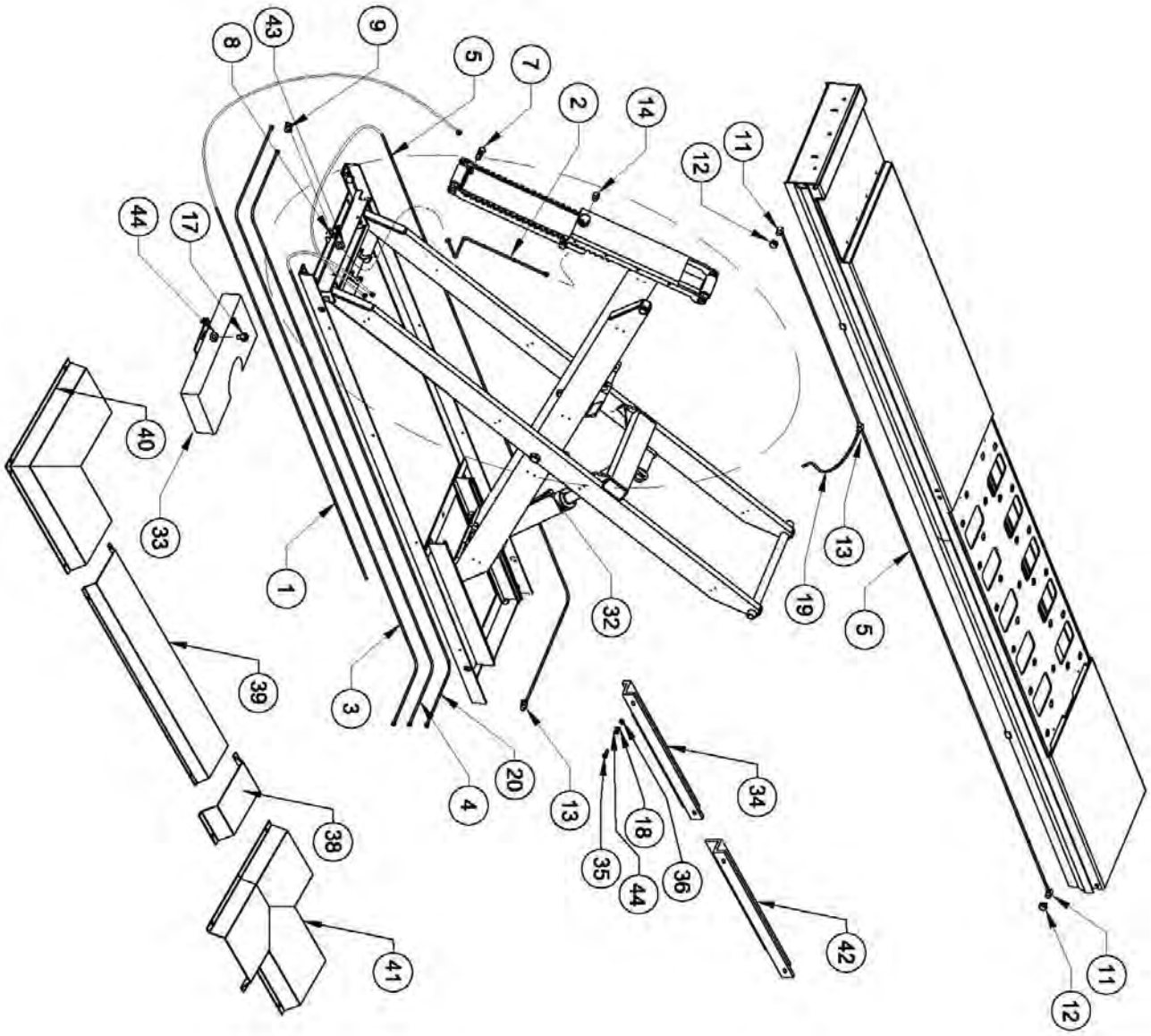
10.5 Powerpack Assembly

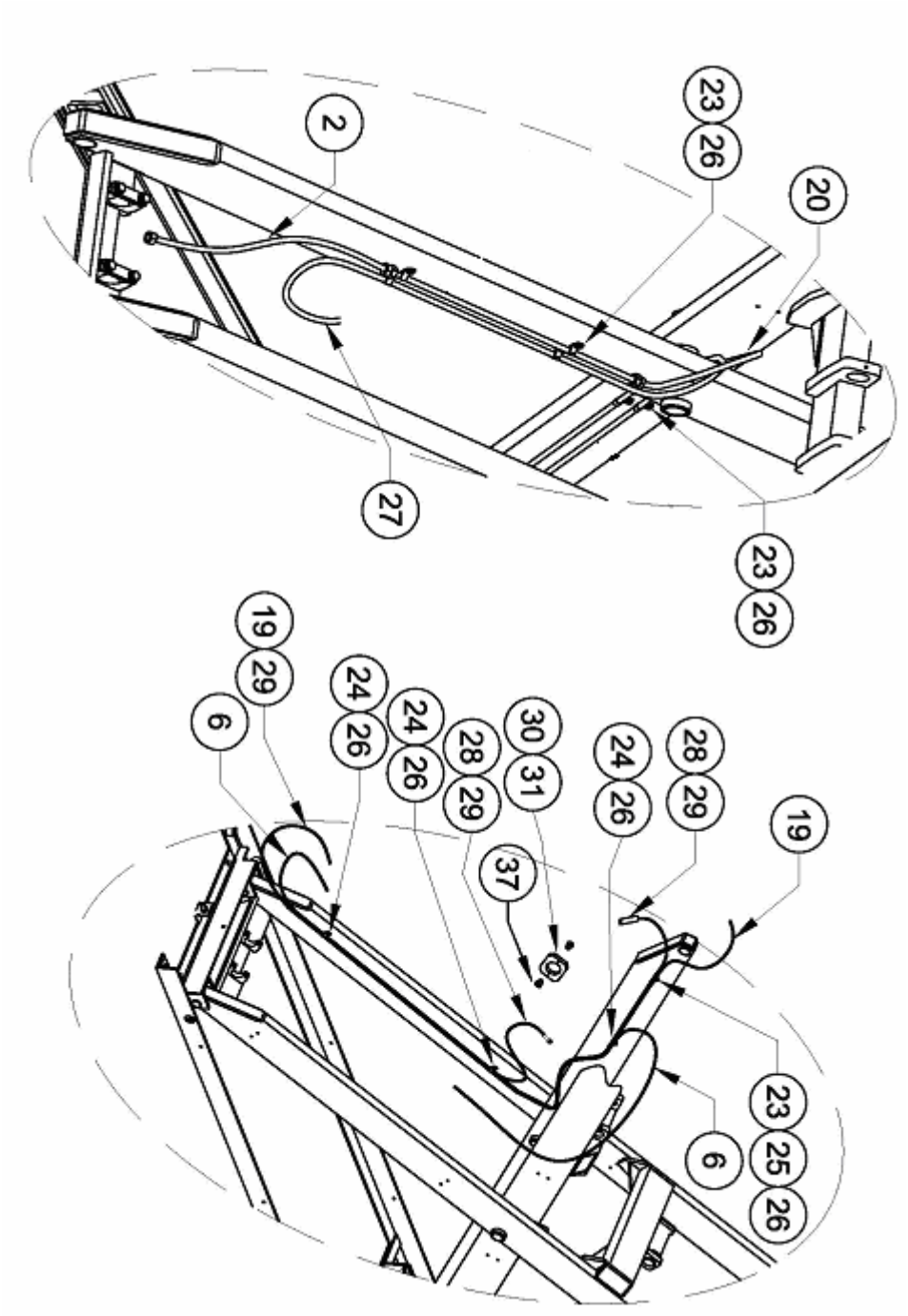


Powerpack Parts List

ITEM NO.	QTY.	DESCRIPTION	PART NO.
1	1	MOTOR, 220V (1 PHASE)	6-0087
	1	MOTOR, 220V (3 PHASE)	6-0446
	1	MOTOR, 575V (3 PHASE)	6-0447
2	1	MOTOR COUPLER	6-2537
3	2	CAP SCREW, M6x20	6-2984
4	1	BELLHOUSING	6-2507
5	4	LOCKWASHER, INTERNAL TOOTH, 3/8”	6-2547
6	4	CAP SCREW, HEX HEAD, 3/8”-16UNC x 1 ½” LG	6-2558
7	1	½” STRAIN RELIEF CONNECTOR (1 PHASE)	6-1370
	1	½” STRAIN RELIEF CONNECTOR (3 PHASE)	6-0094
9	1	CHECK VALVE	6-2985
10	1	RELIEF VALVE (4500 PSI)	6-2986
11	1	MAIN BODY	6-2987
12	1	FLOW CONTROL	6-2988
13	3	SPOOL VALVE (C/W MANUAL OVERRIDE)	6-2129
14	1	MANIFOLD ASSEMBLY	6-3002
15	5	DIN CONNECTOR (24V)	6-2236
16	5	SQUARE COIL (24V)	6-2128
17	1	MAINBODY ASSEMBLY	6-2989
18	1	RETURN FILTER ASSEMBLY	6-2990
19	1	TANDEM PUMP	6-2991
20	1	LONG INLET STRAINER ASSEMBLY	6-2992
21	1	SHORT INLET STRAINER ASSEMBLY	6-2993
22	1	BANJO BOLT (INCLUDES 2 WASHER SEALS)	6-2525
23	1	BANJO BOLT (INCLUDES 2 “O”-RINGS AND 1	6-2526
24	1	UNLOADING MANIFOLD ASSEMBLY	6-2555
25	1	RETURN TUBE ASSEMBLY	6-2532
26	4	LOCKWASHER, 5/16”	6-0674
27	2	CAP SCREW, HEX HEAD, 5/16”-18UNC x 6 ½” LG	6-2533
28	1	OIL TANK 15L	6-2994
29	2	OIL TANK BRACKET	6-2995
30	1	OIL TANK ORING	6-2996
31	1	FILLER / BREATHER CAP	6-2997
32	2	SPOOL VALVE (RESQUARE)	6-3403
33	1	MANIFOLD	6-2998
34	1	PRESSURE SWITCH (INCLUDES BONDED SEAL)	6-2548
35	2	BOLT, M8x65	6-2999
36	1	BOLT, M6x65	6-3000
37	4	ADAPTER SAE#6 TO 3/8” JIC	6-3001
38	2	PRIMARY HYDRAULIC HOSE	2-2143
39	2	EQUALIZING HYDRAULIC HOSE	2-2177
40	2	3/8” POLYTUBE RETURN LINES	6-3082
42	1	90 DEG ELBOW 3/8” NPT TO 3/8” POLYUBE	6-3058
***NOTE		PUMP ASSY. INCLUDING MANIFOLD ASSY.	6-2957

10.6 Hydraulic & Air Assembly

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10.7 Line Routing Parts List

ITEM	QTY	DESCRIPTION	PART #
1	2	3/8” HYDRAULIC HOSE – PRIMARY	2-2143
2	2	3/8” HYDRAULIC HOSE – SHORT (PRIMARY)	2-2145
3	2	3/8” HYDRAULIC HOSE – EQUALIZE	2-2177
4	2	3/8” HYDRAULIC HOSE – CROSSOVER	2-2148
5	1	3/8” POLYTUBE, 215” LG	6-3009
6	1	¼” AIR HOSE, 350” LG	6-3020
7	2	VELOCITY FUSE	6-2956
8	2	ELBOW BULKHEAD 90 DEG WITH JAM NUT	6-0012
9	2	TEE 3/8”F JIC, SWIVEL 3/8” MALE JIC	6-0284
10	2	90 DEG ELBOW, 3/8” JIC-M, 3/8’ JIC-F	6-0813
11	2	90 DEG ELBOW, ¼” NPT-M, 3/8” POLYTUBE	6-3010
12	2	TERMINAL BOLT, ¾”	6-0167
13	2	TEE FITTING, 3/8” POLYTUBE	6-3011
14	2	90 DEG ELBOW, 1/8” NPT, ¼” POLYTUBE	6-0709
15	1	TEE FITTING, ¼” POLYTUBE	6-2971
16	2	FRONT COVER	2-2185
17	6	HEX BOLT, ¼” NC x ¾” LG	6-0178
18	14	LOCKWASHER, ¼”	6-0056
19	1	3/8” POLYTUBE, 480” LG	6-3019
20	2	3/8” HYDRAULIC HOSE 283” LG FEMALE ENDS	2-2336
23	17	PIPE CLAMP, 3/8”	6-0170
24	5	PIPE CLAMP, ½”	6-0536
25	2	PIPE CLAMP, ¼”	6-3059
26	24	SELF THREADING SCREW	6-1134
27	2	POLYTUBE RETURN LINE 3/8” - 400” LG	6-3082
**28	3	PROXIMITY SENSOR	6-2960
**29	3	PROXIMITY SENSOR CABLE	6-2961
30	1	SENSOR CAM CLAMP (HALF 1)	1-2944
31	1	SENSOR CAM CLAMP (HALF 2)	1-2945
32	2	90 DEG ELBOW, 3/8” NPT-M, 3/8” POLYTUBE	6-3058
33	2	FRONT COVER	2-2185
34	3	BASEFRAME LINE COVER RS	2-2299
35	12	HEX HD BOLT ¼”	6-0008
36	12	NUT PL ¼”	6-0032
37	2	HEX SOCKET CAP SCREW #10-24 UNCx 1”LG	6-3096
38	3	SHORT LINE COVER	1-2799
39	3	REAR LINE COVER	1-2800
40	2	LINE COVER ELBOW	1-2806
41	2	LINE COVER TEE	1-2807
42	3	BASEFRAME LINE COVER LS	2-2301
43	2	WASHER FLAT ½” ID	6-0063
44	15	WASHER FLAT ¼ SAE	6-0060

** Use for Flush Mount models. For Surface Mount models, proximity sensor and cable are one part [6-3198].