

III. BAYLIFT MAINTENANCE AND REPAIR

Regular maintenance of the Ricon BayLift Public Use Wheelchair lift is essential for optimum performance, and will reduce the need for repairs. During the Ricon warranty period, a Ricon dealer or qualified service technician must perform maintenance. Ricon recommends that a Ricon dealer or qualified service technician continue maintenance when the warranty expires.

 WARNING
THIS RICON PRODUCT IS HIGHLY SPECIALIZED. MAINTENANCE AND REPAIRS MUST BE PERFORMED BY A RICON DEALER OR QUALIFIED SERVICE TECHNICIAN USING RICON REPLACEMENT PARTS. MODIFYING OR FAILING TO PROPERLY MAINTAIN THIS PRODUCT WILL VOID WARRANTY, AND MAY RESULT IN UNSAFE OPERATING CONDITIONS.

The BayLift requires a minimum amount of maintenance. Below are basic care and maintenance items.

A. VISUAL INSPECTION


Prior to operating the lift, and during repair procedures and during the vehicle's standard preventive maintenance schedule, the unit should be inspected. The operator and maintenance personnel should routinely inspect the following items.

1. ATTACHING HARDWARE

Periodically inspect for loose or missing attaching hardware. Tighten or replace as required

2. HYDRAULIC HOSES

For the hydraulics, flexible hose lines are used to provide routing ease, vibration absorption, sound deadening and the ability to accommodate movement of equipment. Hoses have a finite service life and should be inspected periodically.

 CAUTION
If a hydraulic hose is found defective or is damaged, it must be replaced. DO NOT repair hydraulic hoses, replace as an assembly. Attempting to repair a hose can undermine design and operational parameters and create an unsafe condition for personnel and equipment. Hose assemblies are available from Ricon. Hoses must be made by a shop qualified to make high pressure hydraulic hoses assemblies. Hose assemblies made by an outside vendor must meet or exceed the parameters of the original equipment.

If any of the following conditions exist, the hose assembly must be replaced:

- ◆ Leaks at fitting or in hose.
- ◆ Damaged, cut or abraded cover (reinforcement is exposed).
- ◆ Kinked, crushed, flattened, or twisted hose.
- ◆ Hard, stiff, heat cracked or charred hose.
- ◆ Blistered, soft, degraded, or loose cover material.
- ◆ Cracked, damaged, or badly corroded fittings.
- ◆ Fitting slippage on hose.

The following items must be tightened, repaired or replaced as required:

- ◆ Leaking port connections.
- ◆ Clamps, guards, shields.
- ◆ Remove excessive dirt buildup.
- ◆ System fluid level, fluid type, and any air entrapment.
- ◆ Contaminated (dirt, debris) or deteriorated fluid.

3. HYDRAULIC CYLINDERS

Inspect cylinders for leaks. A minor amount of oil on the piston shaft is acceptable. If leaks are detected, install new seal kit or replace cylinder as required.

4. POWER UNITS

Inspect for leaks, repair as required. Test the operation of the hand pump.

5. NON-SKID SURFACES

Check non-skid surfaces for excessive wear and loose edges. Repair or replace as required.

B. CHAIN LUBRICATION

A light coat of oil should be applied to the chain located inside the moving frames approximately every 12 months or whenever the chain is detached or handled for the maintenance/service. The amount of oil and service interval may vary depending on use and local environmental conditions.

C. HYDRAULIC RESERVOIR

The hydraulic reservoir fluid level should be checked, as well as during the vehicle's standard preventative maintenance schedule.

1. TO CHECK AND FILL:

- ◆ Lower platform to ground level. This is to collapse the cylinders.

CAUTION

When the lift is completely lowered, the hydraulic cylinders are drained and the reservoir is at its fullest. Checking and filling the reservoir with the lift elevated will cause an overflow condition.

- ◆ Use the dipstick to measure the amount of oil in the reservoir.
- ◆ Using a long necked funnel, fill the reservoir through the dipstick tube or the breather cap. If filling through the dipstick tube, add oil then let the oil level stabilize before measuring. Repeat the procedure until the level is at the full mark on the dipstick.

2. FILTER INSPECTION:

- ◆ The intake tube is equipped with a screen filter. The filter should not require maintenance as long as the oil remains clean, however the filter should be inspected every 500 operating hours or anytime oil contamination is suspected. Refer to section E for disassembly and cleaning procedures.
- ◆ Change the hydraulic fluid every 500 hours or when inspecting the filter. Refer to section E for disassembly procedures.
- ◆ The reservoir holds approximately 6 quarts of hydraulic fluid. Amount may vary slightly because of the quantity of oil in the cylinders and hoses. Use Pentosin G002000 or hydraulic fluid.
- ◆ Whenever the system is opened and drained, it is necessary to bleed the system after filling. Refer to section E for procedures.

D. DIAGNOSES PROCEDURE OVERVIEW

1. VERIFY PROBLEM EXISTS

The first step in diagnosing any problem is to identify what the problem is. Mistaking or ignoring symptoms can lead to unnecessary work and/or part replacement. Spend time with the operator to determine what is wrong and what is working right. Eliminate operator error, (switches not turned on, gear not engaged etc.)

2. PERFORM PRELIMINARY DIAGNOSTICS

A combination of visual inspection and a review of recent work along with some basic inspection procedures are used to eliminate fundamental causes such as low battery voltage, etc.

3. REVIEW TECHNICAL SERVICE BULLETINS (TBS'S)

If a common issue occurs that may affect units in service, vendors and/or the factory may issue TBS's that explain the problem and subsequent solutions.

4. DIAGNOSE SYMPTOMS

Follow the step-by-step procedures in this section to analyze the problem and repair as required.

5. CONTROL CIRCUIT BOARD

The electronic control circuit board controls and push buttons coordinate the various functions of the lift. A series of LED indicators are used to indicate which function activity is being performed. These lights can be used to diagnose and troubleshoot the operation of the lift.

TABLE 3-1: LED FUNCTIONS

LED	FUNCTION	DESCRIPTION
12	DEPLOY SOLENOID <i>(EXTEND SCISSORS)</i>	On when the DEPLOY function is activated. Indicates that function valve (SV1) and motor solenoid are energized when the DEPLOY button is being depressed. Lift must be at stow level and platform folded with the handrails locked in. This LED will come off when the lift is extended.
13	DOWN SOLENOID	On when the DOWN function is activated. Indicates that power is applied to the pressure switch. If inner barrier is down, power applied to SV4 and motor solenoid to raise barrier. If inner barrier is up, power is applied to valve SV3 and drain valve SV6. Lift must be fully deployed with the outer barrier in the vertical and locked position.
14	IN BAR UP	On when the inner barrier switch is activated to lower barrier. Indicates that function valve SV4 and SV6 are energized. Lift must be fully deployed with the outer barrier in the vertical and locked position.
15	TWS	On when the lift is powered up. It indicates that the Threshold Warning System (TWS) is active. This LED will only come off when the lift is at vehicle floor level and the inner barrier is down. It will come back on after activating the DOWN function and the inner bar is rising.
16	COUNTER	On when it counts one cycle. A cycle starts when the lift is fully deployed and raised to vehicle floor level where the inner barrier is lowered then raised. The lift must then be lowered to floor level where the outer barrier is lowered then raised. The lift must then be raised to stow level and be stowed to be counted as one cycle.
17	PUMP SOLENOID	On when the DEPLOY, UP, or STOW functions are activated. Indicates that any of the function valves and the motor solenoid have been energized when any of these buttons are being depressed. When activating the UP function, the lift must be fully deployed with the outer barrier in the vertical and locked position. When activating the DEPLOY or STOW functions the platform must be folded with the handrails locked in. This LED will come off when the lift has been fully stowed, deployed or when the lift has reached vehicle floor height.
18	UP SOLENOID	On when the UP function is activated. Indicates that the function valve (SV3) and motor solenoid is energized when the UP button is being depressed. Lift must be fully deployed with the outer barrier in the vertical and locked position.
19	STOW SOLENOID <i>(RETRACT SCISSORS)</i>	On when the STOW function is activated. Indicates that function valve (SV2) and motor solenoid is energized when the STOW button is being depressed. Lift must be at stow height and platform must be folded with the handrails locked in. This LED will come off when the lift is stowed.
21	ABOVE STOW	On when lift is above stow level. This LED will come off when the lift is below stow level.
22	STOW LEVEL	On when lift is at stow level. This LED will come off when the lift is above stow level, or below stow level.
23	FLOOR LEVEL	On when the lift reaches vehicle floor level. This LED will come off when the lift is lowered.
24	SCISSOR EXTEND	On when the scissors are extended. This LED will come off when the scissors are retracted.
25	PLATFORM STOW	On when the platform is folded with the handrails locked in. This LED will come off when the handrails are unlocked.
26	OUT BAR UP	On when the lift is fully deployed and the outer bar is in the vertical and locked position. This LED will come off when the outer bar is lowered.

TABLE 3-1: LED FUNCTIONS

LED	FUNCTION	DESCRIPTION
27	IN BAR UP	On when the inner barrier is in the vertical position. This LED will come off when the lift is at vehicle floor level and the inner bar has been lowered.
43	PRESSURE SWITCH	On when there is pressure on the inner barrier or when it is in the vertical position. This LED will come off when the lift is at vehicle floor level and the inner barrier is in the lowered position.
44	PEND UP	On when the UP function is activated.
45	PEND DOWN	On when the DOWN function is activated.
46	PEND DEPLOY	On when the DEPLOY function is activated.
47	PEND STOW	On when the STOW function is activated.
49	BELOW STOW	On when the lift is below stow height. This LED will come off when the lift is at stow height or above stow height.
50	DOOR CLOSE	On when the bus access door is closed.
END OF TABLE		

6. SPECIFIC CONDITION DIAGNOSTIC TABLES

TABLE 3-2: PRELIMINARY INSPECTIONS			
DP1	PRELIMINARY INSPECTION	RESULT	ACTION TO TAKE
DP1-1 Standard maintenance			
	1. Clean machine to prevent buildup of debris.	OK	No fault found. Conditions are satisfactory.
	2. Inspect fluid levels and fill as required.	Not OK	Conditions are not satisfactory – perform standard maintenance and retest problem.
	3. Ensure that equipment has been correctly lubricated and maintained.		
DP1-2 Inspect recent work done			
A.	Inspect recent work performed including repairs or new installations (e.g. radio). Ensure that work has not corrupted or altered existing function configurations.	OK	No fault found. Conditions are satisfactory.
		Not OK	Conditions are not satisfactory – correct condition and retest problem.
DP1-3 Inspect problem area			
	Visually inspect problem area for obvious obstructions, fluid leaks, disconnected or broken wires and hoses or other obvious conditions such as broken or misaligned components.	OK	No fault found. Conditions are satisfactory.
		Not OK	If component or condition (e.g. fluid leak) is found, investigate and repair as required. Retest.
DP1-4 Confirm electrical power to lift			
A.	Confirm that interlock conditions are set <ul style="list-style-type: none"> • Transmission in NEUTRAL or PARK. • Parking brake ON. • Engine set on HIGH IDLE. • Passenger door open. • Follow the interlock instructions provided by the vehicle manufacturer. 	OK	No fault found. Conditions are satisfactory.
		Not OK	Correct as required. If problem persists – go to DP1-4B.
B.	Check that control power is ON.	OK	No fault found. Conditions are satisfactory.
		Not OK	Check components (i.e. switches) and wiring between vehicle battery and lift; check all ground circuits for lift; and, check circuit breaker on circuit board. Repair as required. <ul style="list-style-type: none"> • If LED is on and lift still does not operate – go to DP1-4C. • If LED is not on and power is present at “POWER IN” connection on circuit board, replace circuit board.

TABLE 3-3: PRELIMINARY INSPECTIONS (CONT)

DP1	PRELIMINARY INSPECTION	RESULT	ACTION TO TAKE
DP1-4 Confirm electrical power to lift (cont)			
C.	Check that power is on.	OK	No fault found. Conditions are satisfactory.
		Not OK	Check the lift control circuit components and wiring between vehicle battery and lift. Repair as required. <ul style="list-style-type: none"> If LED is ON and lift still does not operate-go to DP1-5. If LED is NOT ON and power is present at "RLY8 ENABLE" on circuit board, replace circuit board.
DP1-5 Confirm operation of hydraulic system			
A.	Check function valve manual bypass settings. For normal operation, all valves (SV1, SV2, SV3, SV4 and drain valve) must be in the closed position.	OK	No fault found. Conditions are satisfactory.
		Not OK	Reset valves and retest the functions.
B.	Perform all functions using the manual operation procedures section of document 32DBLE03.	OK	Problem is electrical. Go to DP1-6.
		Not OK	Problem is mechanical/hydraulic. Test components- Repair as required.
DP1-6 Check operation of hydraulic power pack			
A.	Does power at motor run when function switch is activated.	YES	Go to DP1-6D.
		NO	Go to DP1-6B.
B.	Confirm power at motor solenoid when function switch is activated.	YES	Go to DP1-6C.
		NO	<ul style="list-style-type: none"> Confirm power out at P2-5 when switch is activated. If power present, test continuity of harness between circuit board and solenoid – repair as required. If power not present, board is bad – replace.
C.	Test motor solenoid. When function switch is activated and power is present to coil, test power from coil is present at motor.	YES	Power present ground is good by motor does not run – motor is bad – replace or have motor repaired by qualified repair shop.
		NO	No power out from motor solenoid – solenoid is bad – replace.
D	Test drain valve coil. Confirm that coil is NOT energized when the following functions are active: deploy, stow, up, in barrier up. Confirm that coil is energized when the following functions are active: down, stow (if not at stow height).	YES	<ul style="list-style-type: none"> Coil is energized. Check harness and wiring connections to drain valve coil. Repair as required. If wiring OK – board is bad - -replace.
		NO	Coil is not energized. Check that valve cartridge is not frozen open. Place a pressure guage in line between the pressure port of the pump and the hydraulic manifold. Use the manual operation procedures and observe pressure. If no pressure is present, drain valve is bad – replace. If valve OK – go to Specific Condition Diagnostic.
END OF TABLE			

TABLE 3-4: DP2 CONDITION DIAGNOSTICS			
DP2	LIFT DOES NOT DEPLOY	RESULT	ACTION TO TAKE
DP2-1 Perform preliminary inspection			
A.	Follow procedures listed under DP1.	OK	No fault found. Conditions are satisfactory.
		Not OK	Conditions are not satisfactory – correct condition and retest.
B.	Confirm location of lift. 1. Is lift at stow height? Or does lift raise/lower to stow height then stop?	YES	<ul style="list-style-type: none"> • Problem is electrical. Go to DP1-6.
		NO	<ul style="list-style-type: none"> • Lift is above stow height and does not automatically lower to stow height – go to DP5. • Lift is below stow height and does not automatically raise to stow height – go to DP6.

TABLE 3-5: DP3 CONDITION DIAGNOSTICS			
DP3	LIFT DOES NOT STOW	RESULT	ACTION TO TAKE
DP3-1 Perform preliminary inspection			
A.	Follow procedures listed under DP1	OK	No fault found. Conditions are satisfactory.
B.	Confirm location of lift. 1. Lift must be fully deployed. 2. Lift must be above stow height 3. Outer barrier is in the vertical position.	Not OK	Conditions are not satisfactory – correct condition and retest.

TABLE 3-6: DP4 CONDITION DIAGNOSTICS			
DP4	LIFT DOES NOT RAISE	RESULT	ACTION TO TAKE
DP4-1 Perform preliminary inspection			
A.	Follow procedures listed under DP1	OK	No fault found. Conditions are satisfactory.
B.	Confirm location of lift. 1. Lift must be fully deployed. 2. Lift must be above stow height 3. Outer barrier is in the vertical and locked position.	Not OK	Conditions are not satisfactory – correct condition and retest.

TABLE 3-7: DP5 CONDITION DIAGNOSTICS			
DP5	LIFT DOES NOT LOWER	RESULT	ACTION TO TAKE
DP5-1 Perform preliminary inspection			
A.	Follow procedures listed under DP1.	OK	No fault found. Conditions are satisfactory.
B.	Confirm location of lift. 1. Lift must be fully deployed. 2. Outer barrier is in the vertical and locked position.	Not OK	Conditions are not satisfactory – correct condition and retest.

TABLE 3-8: DP6 CONDITION DIAGNOSTICS			
DP6	INNER BARRIER DOES NOT LOWER	RESULT	ACTION TO TAKE
DP6-1	Perform preliminary inspection		
A.	Follow procedures listed under DP1	OK	No fault found. Conditions are satisfactory.
B.	Confirm location of lift. 1. Lift must be fully deployed. 2. Outer barrier is in the vertical and locked position.	Not OK	Conditions are not satisfactory – correct condition and retest.

TABLE 3-9: DP7 CONDITION DIAGNOSTICS			
DP7	NON-STANDARD PERFORMANCE	ACTION TO TAKE	
NOTE: <i>The following are conditions that may occur during normal operation that indicate a performance concern.</i>			
DP7-1	Lift continuously cycles UP and DOWN		
A.	Vertical adjustment of SW4 and/or SW5 switches is incorrect.	Refer to “Stow Switch Adjustment Procedure” in section G – repair as required.	
B.	Horizontal adjustment of SW4 switch is incorrect.		
C.	STOW LEVEL switch or harness is bad.		
DP7-2	Lift lowers to bottom when stow switch is pressed		
A.	Adjustment of SW4 and/or SW5 switches is incorrect.	Refer to “Stow Switch Adjustment Procedure” in section G.	
DP7-3	Lift moves in a jerky fashion or responses are “spongy”		
A.	Air is present in the system. NOTE: <i>Foamy oil flowing out of the fill hole also indicates air in the system.</i>	Refer to the bleeding procedures in section E.	
DP7-4	Pump does not operate in cold weather		
A.	Water is in the reservoir. The water can freeze and cause pump not to work until the water thaws.	Drain hydraulic system and reservoir and fill with clean new hydraulic fluid.	
DP7-5	Cylinder does not extend		
A.	Pump relief pressure is too low. Additional symptoms are: <ul style="list-style-type: none"> • Motor RPM is faster than normal. • Excessive turbulence in the reservoir. 	This occurs because the adjusting screw has moved or dirt is trapped between the seat and the ball or cone of the valve. To correct: <ul style="list-style-type: none"> • Place a pressure gauge in line with the pressure line to the manifold. Loosen the jamb nut and turn the adjusting screw clockwise and watch the gauge; if the pressure rises, turn screw until the pressure reaches 2000 psi. Tighten jamb nut. • If the pressure does not increase, turn the adjusting screw counter clockwise all the way out; energize the pump to “flush” the dirt past the seat. After flushing, turn screw until the pressure reads 2000 psi. Tighten jamb nut. 	
END OF TABLE			

E. HYDRAULIC SYSTEMS REPAIRS

1. REPLACING THE BARRIER CYLINDER

The barrier cylinder is located beneath the rear platform. To remove:

- ◆ Lift platform to its maximum height.
- ◆ Lower the inner barrier. The cylinder and connecting pins are now accessible from below the platform.
- ◆ SLOWLY loosen and remove hose from cylinder. Plug open port and hose end.
- ◆ Remove cylinder from unit.
- ◆ Re-install new cylinder and connect hose.

2. BLEEDING THE BARRIER CYLINDER

When replacing the barrier cylinder or hose, it is necessary to bleed the system to remove air from the system.

- ◆ Inner barrier should be down.
- ◆ If hose is connected “crack” open hose fitting at cylinder. If hose is not installed, loosely hand tighten hose fitting onto cylinder.
- ◆ Using the manual bypass, open the barrier valve (SV4). Open the valve by screwing the knob clockwise.
- ◆ Observe the cylinder fitting while operating the hand pump. When air no longer escapes, tighten the fitting on the cylinder.
- ◆ Relieve the pressure by slowly opening the manual drain valve.
- ◆ Close the barrier valve (SV4) and the manual drain valve.
- ◆ Check and fill reservoir as required.

3. REPLACING THE DEPLOY/STOW CYLINDERS

- ◆ Manually extend lift and lower platform. Manual operation instructions can be found on page 7.
- ◆ Remove access panel in front frame.
- ◆ Relieve the system pressure by opening valves SV1, SV2 and the manual drain valve.
- ◆ SLOWLY loosen and remove hoses from cylinder. Plug all open ports and hoses.
- ◆ Remove cylinder from unit.
- ◆ Close all valves opened.
- ◆ Re-install new cylinder and connect hose.

4. BLEEDING THE DEPLOY/STOW CYLINDERS

- ◆ Fill pump reservoir, check and fill during this procedure.
- ◆ Deploy lift. Remove inspection cover.
- ◆ Disconnect cylinder shafts from scissor assembly.
- ◆ Turn valve SV2 to bypass.
- ◆ Refer to Figure 3-1, “B” stowed. Collapse both cylinders by slowly manually pumping.
- ◆ Refer to Figure 3-1, “B” stowed. Loosen hose fitting.
- ◆ Fasten shaft of cylinders so they do not extend.
- ◆ Turn valve SV1 to bypass; slowly manually pump until no air is in the line. Tighten fitting F1.
- ◆ Unfasten cylinders. Loosen fitting F2 (“B” stowed), manually pump until cylinders are fully extended. Turn valve SV1 to normal position. Tighten fitting F2.
- ◆ Fasten cylinder shaft ends so they do not retract. Loosen fitting F2 (“A” deployed). Turn SV2 to bypass and slowly manually pump until all the air is out of the line. Tighten fitting F2. Turn SV2 to normal position.
- ◆ Attach shaft ends to scissor assembly. Check fluid level and fill if needed.

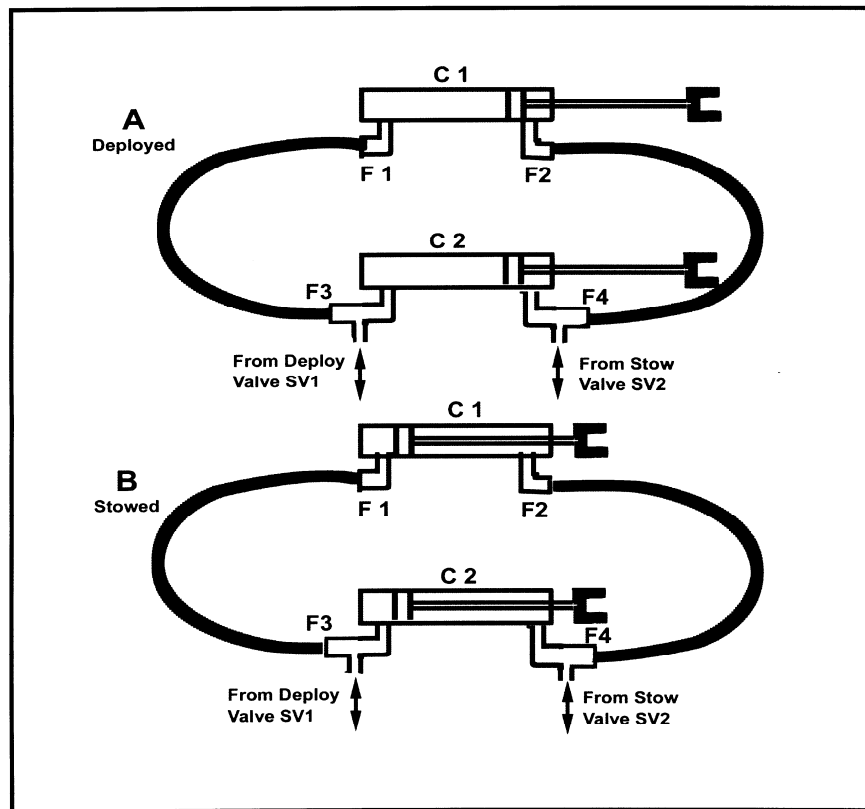


FIGURE 3-1: BLEEDING STOW/DEPLOY CYLINDERS

5. REPLACING THE LIFT CYLINDERS

To replace the lift cylinders, the procedure requires removal of the platform assembly. An overhead hoist or similar device is required for this operation.

- ◆ Disconnect the electrical power.
- ◆ Using the manual operations, extend the lift out of the vehicle.
- ◆ Place 4-inch blocks under the platform area. Use a quantity that will evenly support the platform assembly.
- ◆ Lower the platform down onto the blocks. Continue to lower until there is slack in the lift chain.
- ◆ Remove the chain guards.
- ◆ Disconnect the lift chain from both sides. Lift the chain off of the pulley and lay over the front frame.
- ◆ Disconnect the over the pulley cable for the barrier sensor and position out of way on the platform.
- ◆ Disconnect the over the pulley hose for the barrier cylinder. Plug open port and hose end. Position hose over front frame.
- ◆ Using the manual raise operation, lift the intermediate frame up until the slide channels on the intermediate frame clears the slide bars mounted on the inner side plates of the platform assembly.
- ◆ Move the platform assembly out of the way.
- ◆ Relieve the hydraulic pressure in the lift cylinders. Open the raise/lower valve (SV3) then slowly open the manual drain valve. The cylinders will lower to the collapsed position. It may be necessary to press down on the intermediate barrier. Close all the valves when the cylinders are collapsed. Use caution to not bind the lift chains or hose for the barrier cylinder.
- ◆ Disconnect the hose(s) from the lift cylinder(s) and plug the open ports and hose ends.
- ◆ Mark the location of the pulleys and remove cylinder from unit.
- ◆ To reinstall the cylinders and platform assembly proceed to section F.

6. SETTING THE RELIEF VALVE PRESSURE

- ◆ Place a pressure gauge in line with the retract port of the hydraulic manifold.
- ◆ Remove the cap from the relief valve.
- ◆ Position the platform in the stow height position.
- ◆ Manually operate the retract function while observing the gauge. When the lift is fully retracted, pressure should read 650 psi \pm 20 psi.
- ◆ If pressure is not within limits, turn the adjustment screw with a 1/4 in. Allen wrench. Turning the screw clockwise increases the setting, turning the screw counter clockwise reduces the setting.
- ◆ When the correct pressure is established, replace the cap on the valve.
- ◆ Remove gauge.

7. HYDRAULIC PUMP AND RESERVOIR

The reservoir and filter may be serviced while the unit is mounted in the vehicle.

- ◆ Position the lift fully extended and down. This will collapse the cylinders.
- ◆ Disconnect vehicle battery. This will disconnect power to the lift.
- ◆ Manually open the function valves (SV1, SV2, SV3 and SV4) and the manual drain valve. This is to relieve pressure in the system.
- ◆ Disconnect the vacuum hose from the hand pump. Place the end of the hose in an appropriate container and drain the oil from the reservoir. Plug the open port and cap the hose end when the reservoir is drained.

NOTE: Clean spills immediately.

- ◆ Remove dipstick assembly.
- ◆ Remove attaching hardware and remove reservoir from assembly. Use care to not damage the reservoir o-ring.
- ◆ Empty and clean reservoir. Set reservoir aside.
- ◆ Remove filter and clean or replace as required.
- ◆ Lightly lubricate o-ring and install reservoir.
- ◆ Install dipstick assembly.
- ◆ Attach the vacuum hose.
- ◆ Fill the reservoir with Pentosin G002000. Capacity is approximately 6 quarts.
- ◆ Follow instructions in this section and bleed the system. Each hydraulic cylinder circuit must be done.
- ◆ Fill reservoir as required after bleeding system.

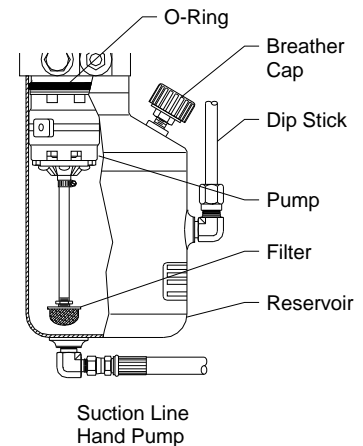


FIGURE 3-2: PUMP AND RESERVOIR

F. PLATFORM INSTALLATION

Steps 1 through 8 must be completed before attaching the chain.

- If not previously done, slide the intermediate frame into the front frame. This is done from the top of the front frame.
- Support the intermediate frame with jacks or an overhead lift.
- Attach fittings to cylinders. This must be done before the cylinders are installed.
- Attach the lift cylinders to the frames. The pulleys must be installed at this time.

NOTE: The chain pulleys are the same. The metal pulley for the wire harness goes on the right side; the nylon pulley for the barrier cylinder hose goes on the left side. The two pulleys cannot be switched.

- Lower the intermediate frame until the cylinders are completely collapsed.
- Attach hose to fittings but do not tighten fitting completely. Leave the hose fitting "cracked open". This is to bleed the system.
- Clamp the frames together to prevent movement.
- Bleed the lift system by using the manual lift procedure: Open SV3 by screwing the knob clockwise then operate the hand pump until air no longer escapes from the cracked fitting. Tighten the hose fitting.

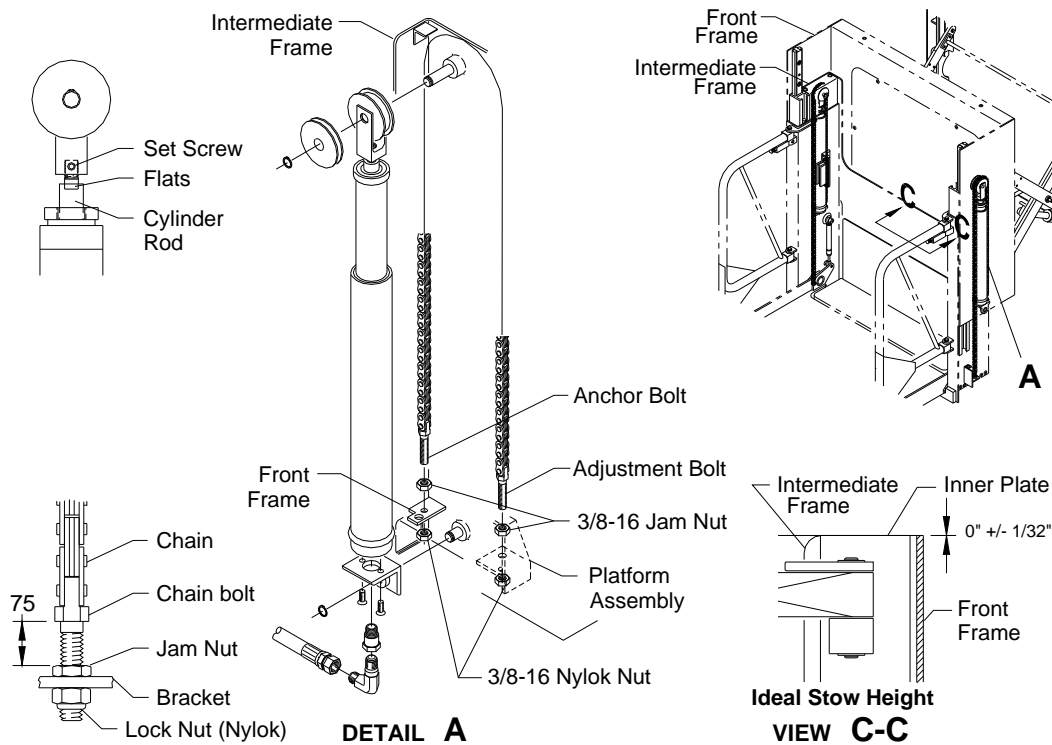


FIGURE 3-3: PLATFORM INSTALLATION

1. LIFT CHAIN INSTALLATION AND ADJUSTMENT

- ◆ Refer to **Figure 3-3**. If previously removed, place a jam nut onto the chain anchor bolt. Set the jam nut $\frac{3}{4}$ " from the shoulder of the bolt.

NOTE: The chain anchor bolt and chain adjustment bolt are identified by location. The anchor bolt attaches to the front frame, the adjustment bolt attaches to the inner side plates of the platform assembly.

- ◆ Place the bolt into the bracket on the front frame. Coat threads with anti-seize compound then secure using a 3/8-16 Nylock nut. Torque nut to 20 ft-lb.
- ◆ Position chain up and over back of front frame.
- ◆ Using the manual lift procedure, raise the intermediate frame high enough to allow the platform assembly (with the inner side plates attached) to slide under the intermediate frame.
- ◆ Close SV3 and open the drain valve to lower the intermediate frame onto the slides of the inner panels until the lift cylinders are completely collapsed. It may be necessary to physically press down on the intermediate frame. Close the drain valve when the frame is down.
- ◆ Route the chains over the pulleys and down. Ensure that the chain does not twist or kink. It must hang straight.
- ◆ Using an overhead crane or other suitable device, physically lift the platform assembly up until the chain adjustment bolt hangs below the brackets on the inner panels.
- ◆ Place a jam nut on the bolt and run up to the shoulder on the bolt.
- ◆ Place the bolt through the bracket and place a standard 3/8-16 nut onto the bolt.
- ◆ Using the manual lift procedures, raise the platform until the platform hangs on the chains.

The following procedures should be followed on the right side first, and then repeated as necessary on the left side.

- ◆ Using the manual operation, raise the platform until the top of the front and intermediate frames are flush.
- ◆ Alternately tighten the standard nuts on the adjusting bolts until the top of the platform assembly is flush with the top of the front frame. This is identified as the absolute stow height.
- ◆ Ensure that chains are not twisted then tighten jam nut onto bracket.
- ◆ Raise and lower the platform 2 or 3 times and check that the platform assembly is flush when the intermediate and front frames are flush. Repeat steps 19 through 22 until the absolute stow height is repetitive.

- ◆ Support the platform assembly and remove the standard nuts on the adjustment bolt. Coat threads with anti-seize compound then secure using a 3/8-16 Nylock nut. Torque nut to 20 ft-lb.
- ◆ Route barrier hose over pulley and attach to block on inner side plate.
- ◆ Route the outer barrier sensor cable over pulley and attach connector.
- ◆ Install chain covers.
- ◆ Follow the procedures on page 9 to bleed the barrier cylinder.
- ◆ Connect electrical power.

G. STOW SWITCH ADJUSTMENT PROCEDURE (SW4 AND SW5)

⚠ WARNING

THIS PROCEDURE REQUIRES THAT POWER IS SUPPLIED TO THE CONTROLS AND ALLOWS THE LIFT TO OPERATE IF THE CONTROL PUSH BUTTONS ARE ACTIVATED. MOVING COMPONENTS CAN CAUSE SERIOUS INJURY. KEEP BODY PARTS AWAY FROM MOVING COMPONENTS.

Two roller plunger limit switches are used to determine when the platform is at the correct stow height. These are located on the right side on the back of the front frame. The upper switch (SW4) contacts a "T" bolt located on the intermediate frame to determine if the platform is at the correct stow height. The lower switch (SW5) is used to determine if the platform is above or below the correct stow height. For the below stow height condition, the switch contacts the intermediate frame. For the above stow height condition, the switch does not make contact.

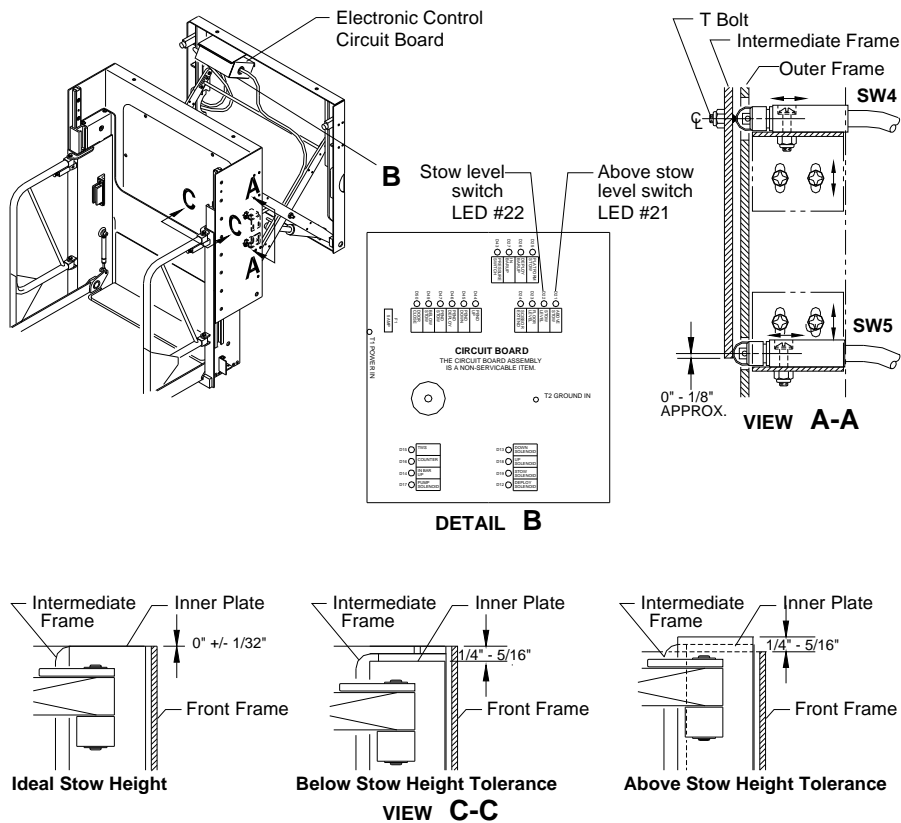


FIGURE 3-4: STOW SWITCH ADJUSTMENT


1. ADJUSTMENT OF STOW HEIGHT SWITCHES (SW4 AND SW5)

- ◆ With the lift fully deployed, position the platform at the ideal stow height using the manual operation procedures described in 32DBLE03.
- ◆ The ideal stow height is when the top edges of the platform side plates, intermediate frame and front frame align. A tolerance of +/- 1/32" (.8mm) is acceptable.
- ◆ Remove the cover of the control circuit board. This is necessary to be able to monitor the LED indicators on the board.

- ◆ Loosen the screws holding the mounting bracket for the upper switch (SW4). Vertically align the SW4 switch with the “T” bolt located on the intermediate frame. Tighten attaching hardware.
- ◆ Loosen the screws holding the mounting bracket for the lower switch (SW5). Visually align the SW5 switch vertically within 1/8” (3mm) or less of the bottom edge of the intermediate frame.
- ◆ With power supplied to the lift controls, loosen the screws holding the SW4 switch and move switch until the roller makes contact with the “T” bolt. Continue to move the switch until LED #22 illuminates, then secure switch in this position.
- ◆ Disconnect the spade connectors for black and blue wires going to the lower switch (SW5). Connect a continuity tester to the black and blue leads of the switch. Move the switch against the intermediate frame. Then continue to adjust the switch in until the contacts are closed.
- ◆ Remove the tester and reconnect the spade connectors.
- ◆ Using the manual operation procedures, raise the lift 3”-4”.
- ◆ With power on, slowly lower the lift while observing LED #22. Stop the lift when LED #22 illuminates.
- ◆ Measure the distance between the top of the inner frame and the top of the outer frame. The distance should be 1/4” – 5/16” (6.4mm – 8mm).
- ◆ Using the manual operation procedures, lower the lift 3”-4” (75mm – 100mm).
- ◆ With power on, slowly raise the lift while observing LED #22. Stop the lift when LED #22 illuminates.
- ◆ Measure the distance between the top of the inner side plate and the top of the front frame. The distance should be 1/4” – 5/16” (6.4mm – 8mm).
- ◆ If the measurements are within range, continue with the next step. If measurements are not within range, adjust SW4 and retest until measurements are within range.


NOTE: Moving the switch toward the “T” bolt will reduce the distance measured in steps 8 and 11. Moving the switch away from the “T” bolt will increase the measurements in steps 8 and 11.

- ◆ Tighten attaching hardware for SW4 and SW5 switches.
- ◆ Slowly retract lift while observing LED #24. Stop the lift when LED #24 goes out.
- ◆ Using the manual operation procedures, lower the lift 3”-4” (75mm – 100mm).
- ◆ Using the pendant control, activate the DEPLOY push button. The platform should rise to the stow height, and then deploy. If the lift does not perform correctly, refer to the troubleshooting section.

 **CAUTION**

If the lift does not stop at the stow height, do not allow the lift to continue to rise. Serious damage can occur to the lift and vehicle.

- ◆ Slowly retract lift while observing LED #24. Stop the lift when LED #24 goes out.
- ◆ Using the manual operation procedures, raise the lift 3”-4” (75mm – 100mm).
- ◆ Using the pendant control, activate the DEPLOY push button. The platform should lower to the stow height, and then deploy. If the lift does not perform correctly, refer to the troubleshooting section.

 **CAUTION**

If the lift does not stop at the stow height, do not allow the lift to continue to lower. Serious damage can occur to the lift and vehicle.

2. COMMON SWITCH MISALIGNMENT PROBLEMS

If SW4 and/or SW5 switches are misaligned, the following problems can occur when the DEPLOY switch is activated:

- ◆ Lift lowers and raises in a continuous cycle:
 - SW5 switch is cycling between “above stow height” and “below stow height” before lift reaches stow height.
 - Vertical adjustment of SW4 and/or SW5 switches is incorrect.
 - SW4 switch is not being activated at stow height.
 - Horizontal adjustment of SW4 switch is incorrect.
 - Switch is bad.
- ◆ Lift lowers to bottom:
- ◆ SW4 and SW5 switches are both out of alignment.

H. ELECTRICAL DIAGRAMS

1. DIAGRAM LABELS

POWER DISTRIBUTION

24VDC - Power supply for the Wheelchair Lift Controller and Pump Motor.

+24VDC - Power from Wheelchair Lift Controller to Control Panel, Indicator Switches and TWS.

GROUND - Electrical ground.

*Power lift protected by 5 Amp Circuit Breaker on Printed Circuit Board.

REQUEST SIGNALS

DOWN ATTEMPT - Signal from Control Panel to Wheelchair Lift Controller requesting lower function.

DEPLOY ATTEMPT - Signal from Control Panel to Wheelchair Lift Controller requesting deploy function.

STOW ATTEMPT - Signal from Control Panel to Wheelchair Lift Controller requesting stow function.

UP ATTEMPT - Signal from Control Panel to Wheelchair Lift Controller requesting raise function.

STATUS SIGNALS

SCISSORS EXTENDED INDICATOR SW1 - Normally open. Switch is activated when the scissors are extended.

OUTER BARRIER INDICATOR SW2 - Normally open. Switch is activated when the outer barrier is in the vertical and locked position. Platform must be fully deployed with outer barrier in the vertical and locked position for the up and down functions to work.

PRESSURE SW3 - Normally open. Switch is activated when there is pressure on the inner barrier or when the inner bar is in the vertical position.

STOW LEVEL INDICATOR SW4 - Normally open. Switch is activated when the lift is at stow level.

ABOVE/BELOW STOW LEVEL INDICATOR SW5 - Normally open when the lift is below stow level.

It is normally closed when the lift is above stow level.

INNER BARRIER UP INDICATOR SW6 - Normally open. Switch is activated when the inner barrier is in the vertical position.

PLATFORM STOWED INDICATOR SW7 - Normally open. Switch is activated when the platform is folded and the handrails locked.

FLOOR LEVEL INDICATOR SW8 - Normally open. Switch is activated when the lift is at vehicle floor level.

DRIVING SIGNALS

COUNTER OUT - COUNTER is pulsed to 24V to register one cycle count.

DEPLOY - Signal from Wheelchair Lift Controller to extend solenoid valve (DEPLOY SV1).

DEPLOY SV1 - Electrically operated hydraulic valve which controls the extend movement of the scissors. Wheelchair lift scissors extend when the solenoid is energized. Platform must be folded and handrails locked.

STOW - Signal from Wheelchair Lift Controller to retract solenoid valve (STOW SV2).

STOW SV2 - Electrically operated hydraulic valve which controls the retraction movement of the scissors. Wheelchair lift scissors retract when the solenoid is energized. Platform must be folded and handrails locked.

UP - Signal from Wheelchair Lift Controller to the raise solenoid valve (UP SV3).

UP SV3 - Electrically operated hydraulic valve which controls the raise movement of the lift.

Platform must be fully deployed with the outer barrier in the vertical and locked position.

DOWN - Signal from the Wheelchair Lift Controller to inner bar (SV4) if inner barrier is down or raise solenoid valve (SV3) and pump drain solenoid valve (SV6) if inner barrier is up.

INNER BAR SV4 - Electrically operated hydraulic valve which controls the raise movement of the inner barrier.

PUMP DRAIN SV6 - Electrically operated hydraulic valve which drains.

DEVICES

TWS - Threshold Warning System.












M - Hydraulic Pump Motor. Produces hydraulic pressure to raise wheelchair lift.

COUNTER - Registers cycle count.

FIGURE 3-5: DIAGRAM LABELS

2. WIRING DIAGRAM

The baylift private use wheelchair lift electrical schematic is divided across the following pages. An internal schematic for the controller is not shown because this part is serviced by the factory.

ELECTRICAL SYMBOLS LEGEND						
 MOTOR SOLENOID	 PRESSURE SWITCH	 HYDRAULIC VALVE SOLENOID	 BUTT CONNECTOR	 GROUND	SWITCH CONTACTS □ - CLOSED ● - NORMALLY CLOSED ○ - NORMALLY OPEN	WIRE CROSSINGS + NOT CONNECTED + CONNECTED
 PUSH BUTTON	 SPDT RELAY	 SPDT SWITCH	 SPST SWITCH	 INDICATOR LIGHT		 MOTOR

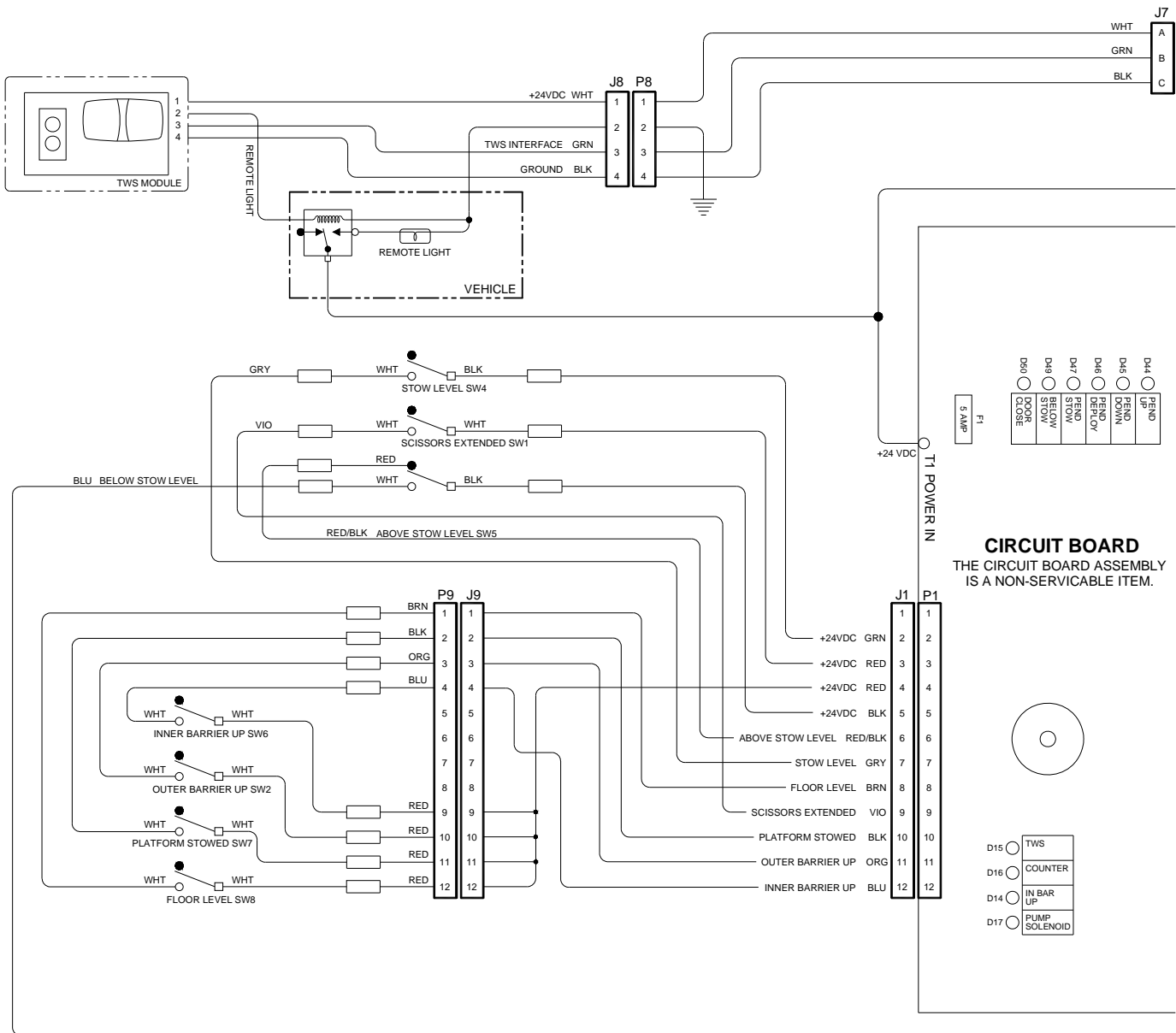


FIGURE 3-6: ELECTRICAL SCHEMATIC PAGE 1

WIRE COLOR CODES					
BRN- BROWN	RED- RED	GRY- GRAY			
BLK- BLACK	PUR- PURPLE	VIO- VIOLET			
ORG- ORANGE	WHT- WHITE	YEL- YELLOW			
BLU- BLUE	GRN- GREEN				

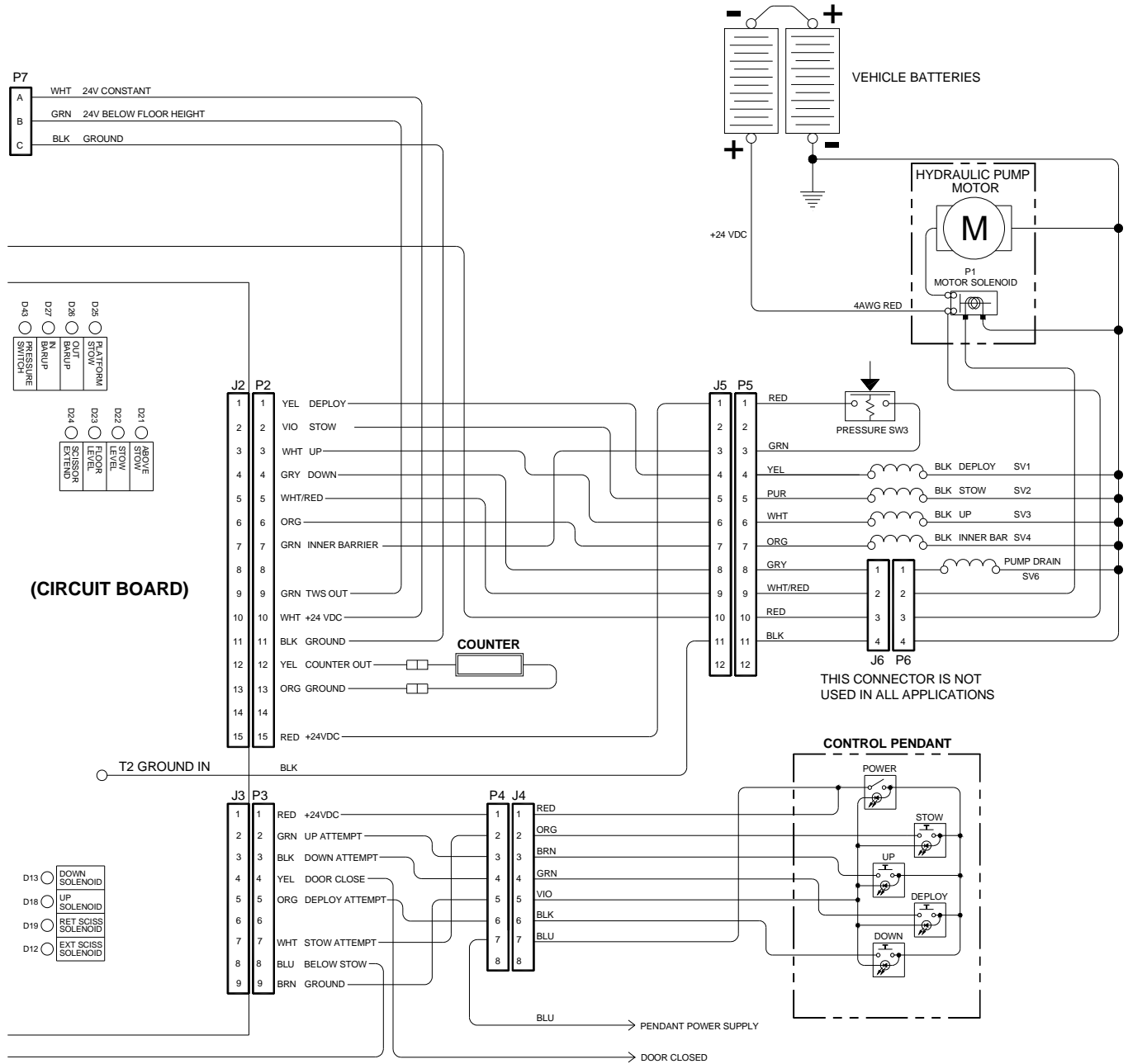


FIGURE 3-7: ELECTRICAL SCHEMATIC PAGE 2

I. HYDRAULIC DIAGRAM

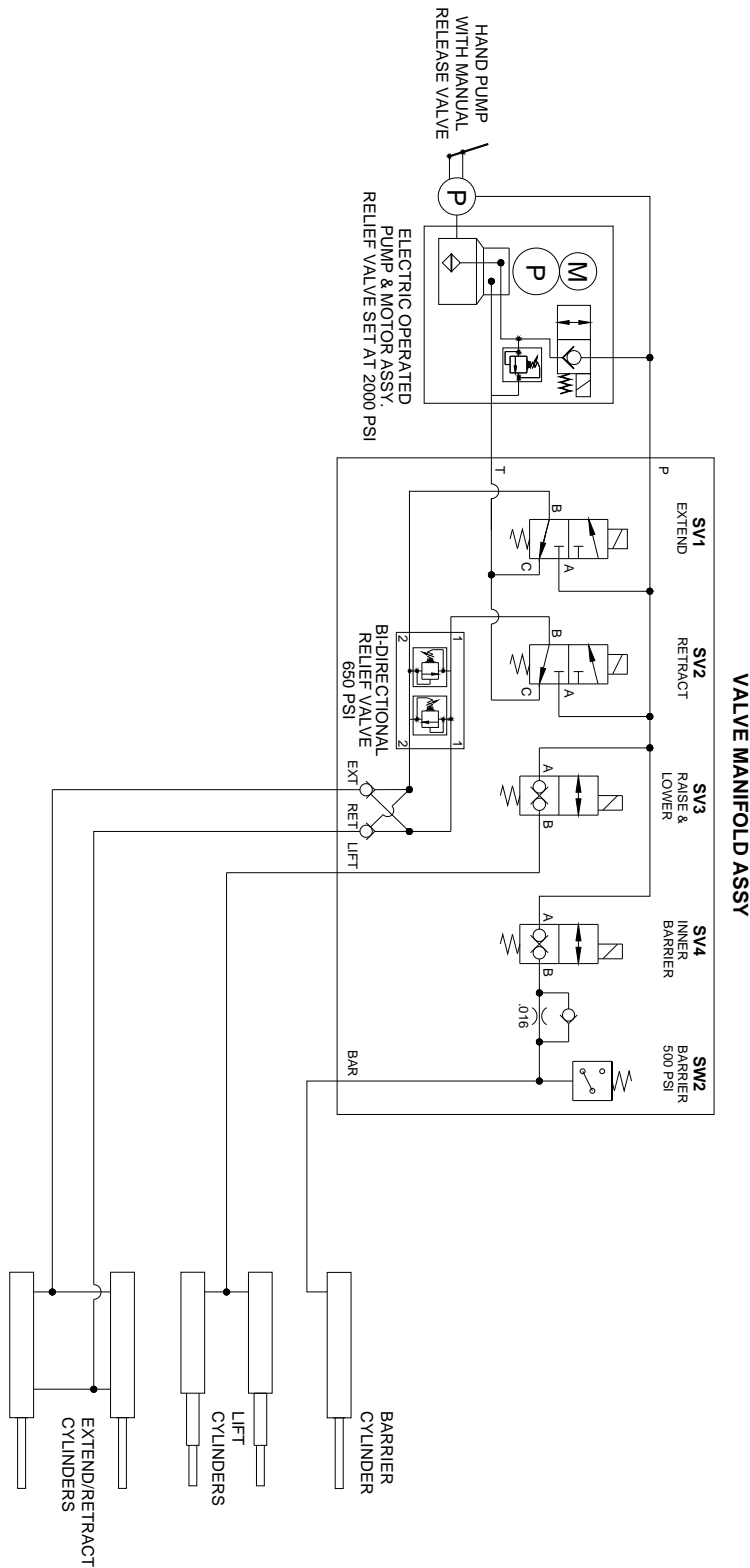


FIGURE 3-8: HYDRAULIC DIAGRAM