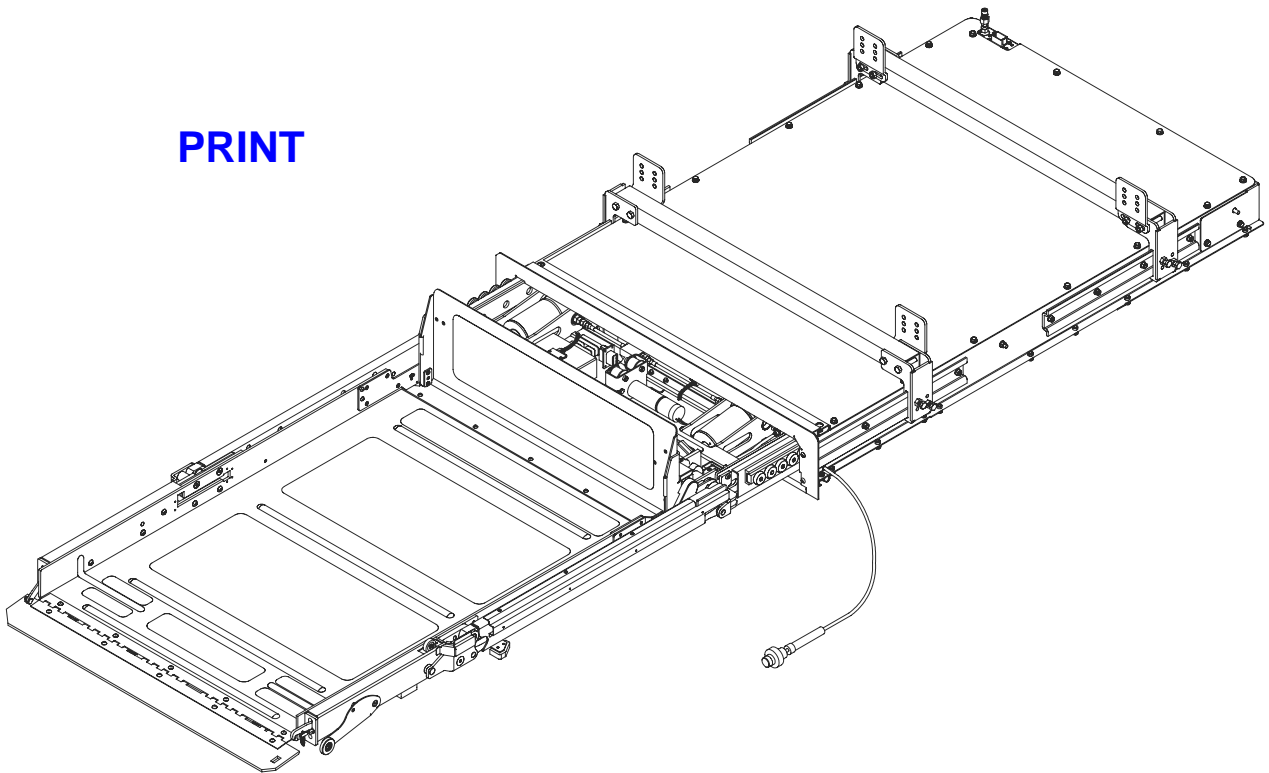


# **RICON**®

*INNOVATION IN MOBILITY*

## **Phantom Thin-profile Personal Wheelchair Lift**

**PRINT**



## **SERVICE MANUAL**

07/28/04

32DPH02.B

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U.S. and foreign patents pending.  
Printed in the United States of America

This Ricon service manual is for use by qualified service technicians, and is not intended for use by non-professionals. The manual provides essential instructions and reference information, which supports qualified technicians in the correct installation and maintenance of Ricon products.

Qualified service technicians have the training and knowledge to perform maintenance work properly and safely. For the location of a Ricon authorized service technician in your area, call Ricon Product Support at 1-800-322-2884.

Customer Name: \_\_\_\_\_

Installing Dealer: \_\_\_\_\_

Date Installed: \_\_\_\_\_

Serial Number: \_\_\_\_\_

## REVISION RECORD

REV	DATE	PAGES	DESCRIPTION OF CHANGE	ECR/ECO
32DPH02. B	06/08/04	1-4	Changed Fig 1-1 to reflect TL2 configuration.	
		2-1	Added "Controller Calibration for Stow Height and Floor Height" section.	
		2-2	Added "Bridgeplate Drive Chain Adjustment" section.	
		3-4	Changed figure 3-1 to show rearrangement of components in TL2.	
		3-5	Rewrote "Position Sensor Activity Description" section to reflect differences between TPL and TL2, and changed Fig 3-2 for same reason.	
		3-11 & 12	Extensive changes to schematic to reflect differences between TPL and TL2.	
		4-1 – 4-22	Changed all figures and lists to reflect differences between TPL and TL2.	

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**I. INTRODUCTION**

This manual provides operating instructions and maintenance procedures for the Ricon Phantom personal wheelchair lift. The Phantom provides safe and easy access to full size vans for an individual using a wheelchair or scooter. The Phantom is sometimes referred to as the Thin Platform Lift, or TL2.

The Phantom is typically installed in the side of the van, between the floor and frame. The lift is operated by the vehicle operator or a trained attendant.

A hydraulic pump driven by an electric-motor supplies lifting force to a pair of hydraulic cylinders. Maximum lifting capacity is 660 pounds (300 kilograms).

The operator uses the control pendant to withdraw the platform from the vehicle and lower it to the ground. The passenger moves onto the large non-skid platform and is then raised to floor height. After the passenger enters the vehicle, the operator lowers the platform and retracts it back into the vehicle.

When a passenger exits, the operator uses the control pendant to withdraw the platform from the vehicle and raise it to floor height. The passenger moves onto the platform, and is then lowered to the ground. After the passenger departs the platform, the platform is stowed.

One individual can manually operate the lift when normal power is not present. A manual release mechanism is provided to ease the task of pulling the platform out of the enclosure by hand. The hydraulic pump assembly includes a manually operated back-up pump to raise the platform, and a pressure release valve to lower it.

This manual contains instructions for installation, maintenance, and service of major components, plus a chapter listing available spare parts. For safety reasons, it is important that service personnel be familiar with the Operating Instructions chapter in the Phantom personal operator manual 32DPH01.

**A. RICON SERVICE SUPPORT**

If there are questions about this manual, or you need copies, please contact Ricon Product Support at the following location:

**Ricon Corporation**  
**7900 Nelson Road**  
**Panorama City, CA 91402 ..... (818) 267-3000**  
**Outside 818 area code ..... (818) 322-2884**  
**World Wide Website ..... [www.riconcorp.com](http://www.riconcorp.com)**

**B. WARRANTY INFORMATION**

Refer to the following page for detailed coverage of the two-year limited warranty. Complete the warranty and owner registration cards, and return them to Ricon within 20 days to validate the warranty.

## RICON CORPORATION TWO-YEAR LIMITED WARRANTY

**Ricon Corporation (Ricon)** warrants to original purchaser of this product that Ricon will repair or replace, at its option, any part that fails by reason of defective material or workmanship as follows:

- Repair or replace parts for a period of one year from date of purchase. A complete list of parts covered by this warranty can be obtained from Ricon Product Support.
- Labor costs for specified parts replace under this warranty for a period of one year from date of purchase. A Ricon rate schedule determines the parts covered and labor allowed.

**If You Need to Return a Product:** Return this product to Ricon. Please give as much advance notice as possible and allow a reasonable amount of time for repairs.

**This Warranty does not Cover:** Malfunction or damage to product parts caused by accident, misuse, lack of proper maintenance, neglect, improper adjustment, modification, alteration, mechanical condition of vehicle, road hazards, overloading, failure to follow operating instructions, or acts of nature (i.e., weather, lightning, flood).

**Note:** Ricon recommends that this product be inspected by an authorized Ricon service technician at least once every six months, or sooner if necessary. Any required maintenance should be performed at that time.



### WARNING

THIS PRODUCT HAS BEEN DESIGNED AND MANUFACTURED TO EXACT SPECIFICATIONS.  
MODIFICATION OF THIS PRODUCT IN ANY RESPECT CAN BE DANGEROUS

***This Warranty is Void if:***

- Product has been installed or maintained by someone other than an authorized Ricon service technician.
- Product has been altered in any respect from its original design without written authorization by Ricon.

Ricon disclaims liability for any personal injury or property damage that results from operation of a Ricon product that has been modified from the original Ricon design. No person or company is authorized to change the design of this Ricon product without written authorization by Ricon.

Ricon's obligation under this warranty is exclusively limited to the repair or exchange of parts that fail within the applicable warranty period.

Ricon assumes no responsibility for expenses or damages, including incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply.

Important: The warranty registration card must be completed and returned to Ricon within 20 days after installation of this Ricon product for the warranty to be valid. The warranty is not transferable.

The warranty gives specific legal rights, and there may be other rights that vary from state to state.

### **C. GENERAL SAFETY PRECAUTIONS**

The following general safety precautions must be followed during installation, operation, service, and maintenance:

- Under no circumstances should installation, maintenance, repair, or adjustments be attempted without immediate access to competent first aid.
- An injury, no matter how slight, must be attended to. Always administer first aid or seek medical attention immediately.
- Protective eyeshields and appropriate clothing should be worn at all times.
- To avoid injury, exercise caution when operating the Phantom wheelchair lift, and be certain that hands, feet, legs, and clothing are not in the path of platform movement.
- Work in a properly ventilated area.
- Do not place anything metallic on top of battery. Do not smoke or use an open flame near battery. Batteries contain acid that can burn. If acid comes in contact with skin, flush affected area with water and wash with soap immediately.
- Check under vehicle before drilling to avoid drilling into frame, subframe members, wiring, hydraulic lines, fuel lines, fuel tank, etc.
- Read and understand the operating instructions before operating the wheelchair lift.
- Inspect the lift before each use. If any unsafe condition exists, such as unusual noises or movements, do not use the lift until the problem is corrected.
- Do not load or stand on the platform until installation is complete.
- Stand clear of doors and platform and keep others clear during operation.

The product requires regular periodic maintenance. A thorough inspection is recommended at least every six months. The product must be maintained at its highest level of performance.



## D. MAJOR LIFT COMPONENTS

The component references used throughout this manual are illustrated in **Figure 1-1** and defined in **Table 1-1**. Refer to **Chapter IV, Spare Parts**, for a more complete list of parts. For clarity, the figure below shows the carriage pulled further out of the enclosure than would occur during normal operation.

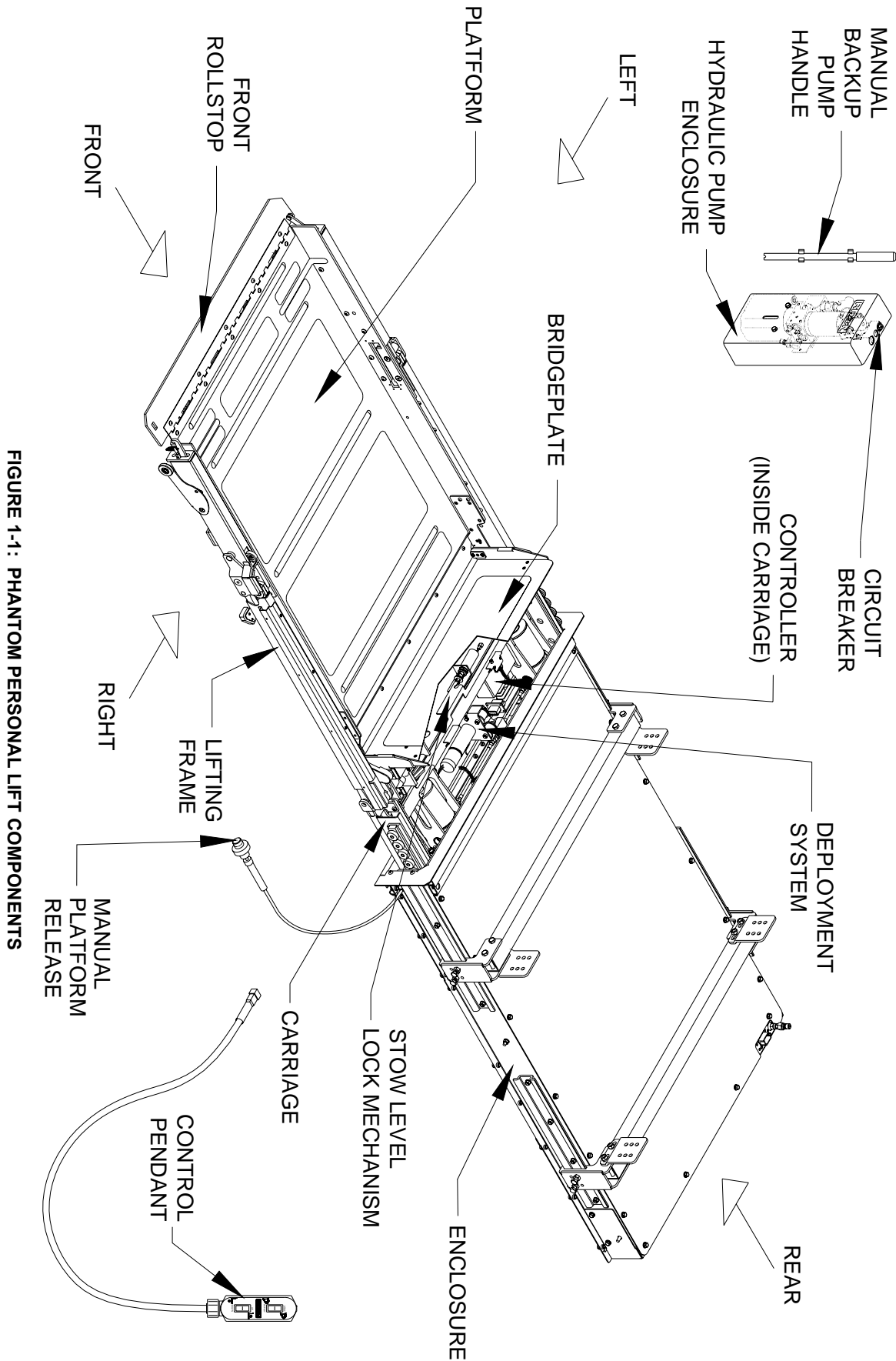


FIGURE 1-1: PHANTOM PERSONAL LIFT COMPONENTS

**TABLE 1-1: PHANTOM WHEELCHAIR LIFT TERMINOLOGY**

NAME	DESCRIPTION
Left, Right, Front, Rear	Lift references when viewing installation from outside of vehicle.
Lifting frame	Hinged arms that lift or lower platform; arms are raised by hydraulic cylinders anchored to carriage.
Carriage	Rear part of traveling frame that is mounted on rollers; moves on rails located inside enclosure. Supports lifting frame.
Platform	Curbed area occupied by passenger during lift operations.
Travelling frame (not shown)	Major assembly that consists of the carriage, lifting frame, and platform and moves in and out of enclosure as a unit.
Front rollstop	Front barrier prevents wheelchair from inadvertently rolling off the platform during lift use. Rollstop is hydraulically actuated.
Bridgeplate (rear rollstop)	Plate unfolds when platform is at floor height to bridge gap between platform and vehicle interior. Functions as a rear rollstop when platform is in motion. Located in pump enclosure.
Hydraulic power unit	Electro-hydraulic unit provides hydraulic pressure used to raise platform; also contains a backup pump and pressure relief valve to raise and lower platform manually.
Control pendant	Hand-held device used to control lift operations.
Manual backup pump handle	Used to operate the manual hydraulic back-up pump and the hydraulic pressure relief valve.
Enclosure	Housing for wheelchair platform that is rigidly attached to vehicle chassis.
Pump enclosure	Contains electrical and hydraulic power and control components; also referred to as the "pump box".
Deployment system	Employs an electric gear-motor and toothed belt to propel platform out of enclosure, or to pull it back into the enclosure. Located at top center of carriage.
Controller	Electronic module translates pendant commands into signals that control lift electrical and hydraulic components. Also monitors lift electrical activity and position of platform.
Stow level lock mechanism	A mechanical mechanism that establishes the correct platform height before the platform is retracted into enclosure.
Circuit breakers	Small circuit breakers that protect the pendant and lift control circuits.
Manual platform release knob	Disengages travelling frame from enclosure, thus allowing platform to be pulled from enclosure by hand.
<b>END OF TABLE</b>	

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## II. PHANTOM INSTALLATION

The RICON Phantom Personal Wheelchair Lift is typically installed by a van conversion specialist. Detailed instructions for installing the lift into specific vehicles is supplied with the lift installation kits. After mechanical and electrical installation, it may be necessary to adjust the platform vertical travel limit. Other adjustments given here can be necessary as part of routine maintenance or when major lift disassembly is performed. It should not be necessary to bleed the hydraulic system or adjust the platform stow height, as these have been done at the factory.

### A. FINAL ADJUSTMENTS



#### WARNING

IMPROPER ADJUSTMENT MAY RESULT IN UNSAFE OPERATING CONDITIONS FOR THE LIFT USER.

This section contains procedures that may be needed after the lift is installed in the vehicle. It is not a requirement to perform this procedure after lift installation if it is not necessary.

#### 1. ADJUSTING THE PLATFORM VERTICAL TRAVEL LIMIT

The platform must be 1–1½" above the vehicle floor when the platform is at its maximum height (hydraulic cylinders fully extended). Use the following procedure to correct a height that is lower or higher than this.



#### CAUTION

The following procedure checks and sets the platform height when at floor level. The actual adjustment to the platform height is made at a lower height to reduce loading on the hydraulic cylinder and pistons. Do not attempt to rotate the hydraulic cylinder piston rods if excessive resistance is felt. Determine the cause of resistance, and correct it before rotating piston rod.

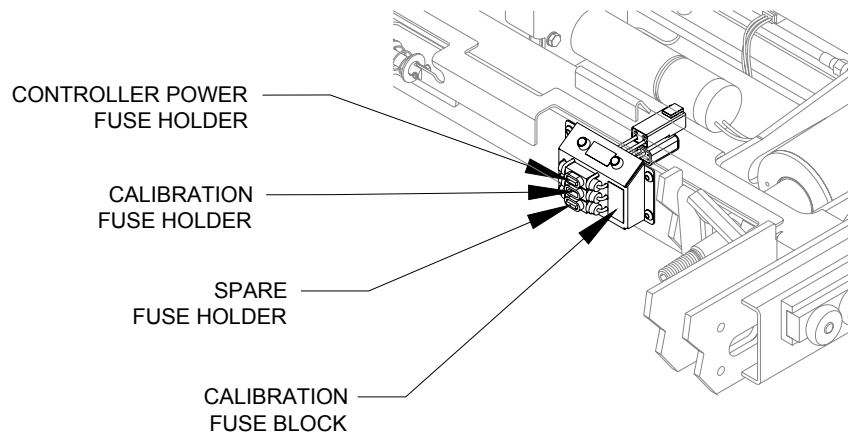
- a. Raise platform until both hydraulic cylinders are fully extended.
- b. Measure vertical distance between vehicle floor and rear edge of platform floor. Note the amount of error, and whether platform needs to be raised or lowered.
- c. Lower the platform to a height about one foot below vehicle floor level, and support it.
- d. Loosen jam nuts on both hydraulic cylinder piston rods.
- e. Rotate both piston rods equally to raise or lower platform the required amount; rotate CCW to raise platform and CW to lower. Do not rotate piston rod more than ¼ turn without checking result.
- f. Return platform to floor height (fully extend both hydraulic cylinders), and re-measure the distance between floor and platform. If readjustment is necessary, repeat steps c through f.
- g. Tighten jam nuts.

#### 2. CONTROLLER CALIBRATION FOR STOW HEIGHT AND FLOOR HEIGHT

This procedure programs the controller to recognize the platform when it is at stow height or at floor height. This procedure is typically necessary when a lift is first installed or when major lift disassembly has been done.

**NOTE:** • Floor height and stow height calibrations must be done together in a single calibration process.

- The floor height must be set at least seven inches above the stow height.
  - Perform the Platform Vertical Travel Limit Adjustment described above before proceeding.
- a. Apply power to the lift and fully deploy the platform.
  - b. Refer to **Figure 1** on following page. The calibration fuse block is located at the right front of the carriage frame. Remove power to the controller by removing the fuse from the controller power fuse holder.
  - c. Put the controller in calibration mode by removing the fuse from the spare fuse holder and installing it in the calibration fuse holder.
  - d. Reinstall the fuse in the controller power fuse holder.
  - e. Press and hold the UP button until the platform stops at floor height. Release the UP button and press the DEPLOY button to program the floor height value in the controller.
  - f. Press and hold the DOWN button until the platform is stopped by the stow level latch mechanism. Release the DOWN button and press the DEPLOY button to program the stow height value in the controller.
  - g. Remove controller from calibration mode by removing the fuse from the calibration fuse holder and installing it in the spare fuse holder.
  - h. Cycle the platform from ground to floor height and verify that the platform stops 1 – 1½" above the floor. Press and hold the STOW button and verify that the platform lowers to stow level and then is fully withdrawn into enclosure.

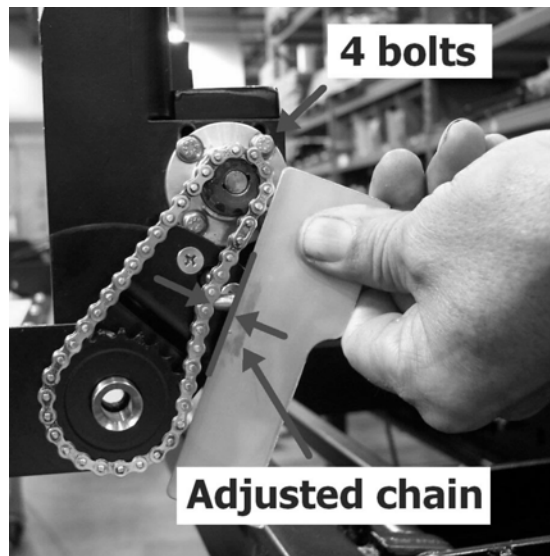


**FIGURE 1: CALIBRATION FUSE HOLDER**

### 3. BRIDGEPLATE DRIVE CHAIN ADJUSTMENT

The chain that drives the bridgeplate requires a small amount of slack to prevent binding when the bridgeplate is raised and lowered.

- a. Raise bridgeplate to vertical position.
- b. Refer to **Figure 2**. Place a straight edge along chain and deflect chain at its midpoint as shown. The measured gap should be between 1/8th inch and 3/16th inch. Continue with procedure if gap is outside of this range.



**FIGURE 2: BRIDGEPLATE DRIVE CHAIN SLACK**

- c. Slightly loosen the four bolts that hold the bridgeplate motor to allow the motor to be moved in its mounting slots. Move the motor up or down to correct the gap. Tighten the four screws.
- d. Verify that gap is correct. Repeat previous step if gap is not correct.

### 4. VERIFY INSTALLATION

Lifts that are installed for the first time in a new application, or installations carried out by technicians with limited experience, must be checked by a representative of Ricon Applications Engineering.

The installer must verify that the lift operates without interference, and must also load test the lift.

- ◆ Be certain there is no interference with operation of lift by interior or exterior components. All parts of installed lift must have a minimum clearance to any vehicle surface of .25" and moving parts of lift must have a minimum clearance .50".



## CAUTION

- Do not operate lift during load test. The load test is intended to test lift installation mounting points, not lifting capacity. Remove test weight immediately after test.
  - When test weight is placed on platform, the vehicle suspension will compress and vehicle will lean. If weighted platform touches ground, remove weight, raise platform, and retest.
- ◆ The installed lift must be test loaded to 125% of its rated 660 pound load capacity to verify the integrity of the installation. Position platform 2" – 6" above ground, and place 825 pounds in center of platform. Inspect the brackets and hardware at the points where the lift is mounted to the vehicle.
  - ◆ REMOVE TEST WEIGHT. Run lift through several complete deploy-raise-lower-stow cycles to verify proper operation.

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**III. PHANTOM WHEELCHAIR LIFT MAINTENANCE**

**R**egular maintenance of the RICON Phantom Personal Wheelchair and Standee Lift optimizes lift performance and reduces the need for repair. This chapter contains a lift maintenance schedule, a maintenance checklist, plus lift hydraulic and electrical diagrams.

 <b>CAUTION</b>
This Ricon product is highly specialized. Maintenance and repair work must be performed by a Ricon authorized service technician, using Ricon replacement parts.

 <b>WARNING</b>
MODIFYING OR FAILING TO PROPERLY MAINTAIN THIS PRODUCT WILL VOID THE WARRANTY AND MAY RESULT IN UNSAFE OPERATING CONDITIONS.

**A. MAINTENANCE SCHEDULE**

Climate (weather), lift usage (rate of lift cycling), and lift age (vehicle mileage) combine to determine the maintenance interval for a specific lift. Ricon recommends carrying out the inspection tasks listed on the Maintenance Checklist on page three. During the Ricon warranty period, an authorized Ricon service technician must perform the inspection tasks listed on the Maintenance Checklist. Ricon recommends that an authorized Ricon service technician continue maintenance when the warranty expires. Perform maintenance at the interval prescribed on the Maintenance Interval Chart below.

**TO DETERMINE MAINTENANCE INTERVAL:**

The Maintenance Interval Chart below represents vehicle types in terms of their maintenance needs. Refer to the column that contains the lift usage (low, normal, or high) and climate type (mild, average, or severe) that applies to your vehicle. Then refer to the Maintenance Checklist on page three and do the maintenance tasks at the interval that is listed above your vehicle type (refer to arrow below). Use the mileage or time interval that occurs first.

Select an interval 

**MAINTENANCE INTERVAL CHART**

<b>Interval</b> (prescribed maintenance interval)	6 wks/ 18,000 miles	24 wks/ 30,000 miles	28 wks/ 30,000 miles	28 wks/ 30,000 miles	32 wks/ 30,000 miles	32 wks/ 30,000 miles	36 wks/ 30,000 miles
<b>Lift Usage</b> (rate of lift cycling)	0 – 231+ cycles/ month  Low, normal, and high usage	231 + cycles/ month  High usage	116 - 230 cycles/ month  Normal usage	231 + cycles/ month  High usage	0 – 115 cycles/ month  Low usage	116 - 230 cycles/ month  Normal usage	0 – 115 cycles/ month  Low usage
<b>Climate type</b> (weather exposure)	Severe climate (average to heavy snow)	Average climate (light snow)	Average climate (light snow)	Mild climate (light or no snow)	Mild climate (light or no snow)	Average climate (light snow)	Mild climate (light or no snow)



## **B. MAINTENANCE CHECKLIST**

The Maintenance Checklist is on the following page, and can be copied for routine use. Enter information in the Date, Vehicle #, and Lift serial # boxes. Inspect each item listed in the Inspection Items column of the Maintenance Checklist. Initial the appropriate box after inspecting each item. Print name, sign, and write notes as appropriate.

Ricon suggests using these solvents, cleaners, and lubricants:

- Zep Formula 50 R.T.U, part #599A, or equivalent; use to clean decals and platform
- Zep I.D. Red, part #399C, or equivalent; use to clean carriage assembly
- Zep PLS, part #497C, or equivalent; use to lubricate carriage assembly
- Aeroshell grease #22, or equivalent; use to lubricate carriage rollers



## PHANTOM PERSONAL WHEELCHAIR LIFT MAINTENANCE CHECKLIST

Date: \_\_\_\_\_ Vehicle #: \_\_\_\_\_ Lift serial #: \_\_\_\_\_

*A checked safety issue requires repairing before the vehicle is returned to service.*  
Initial appropriate boxes ☒

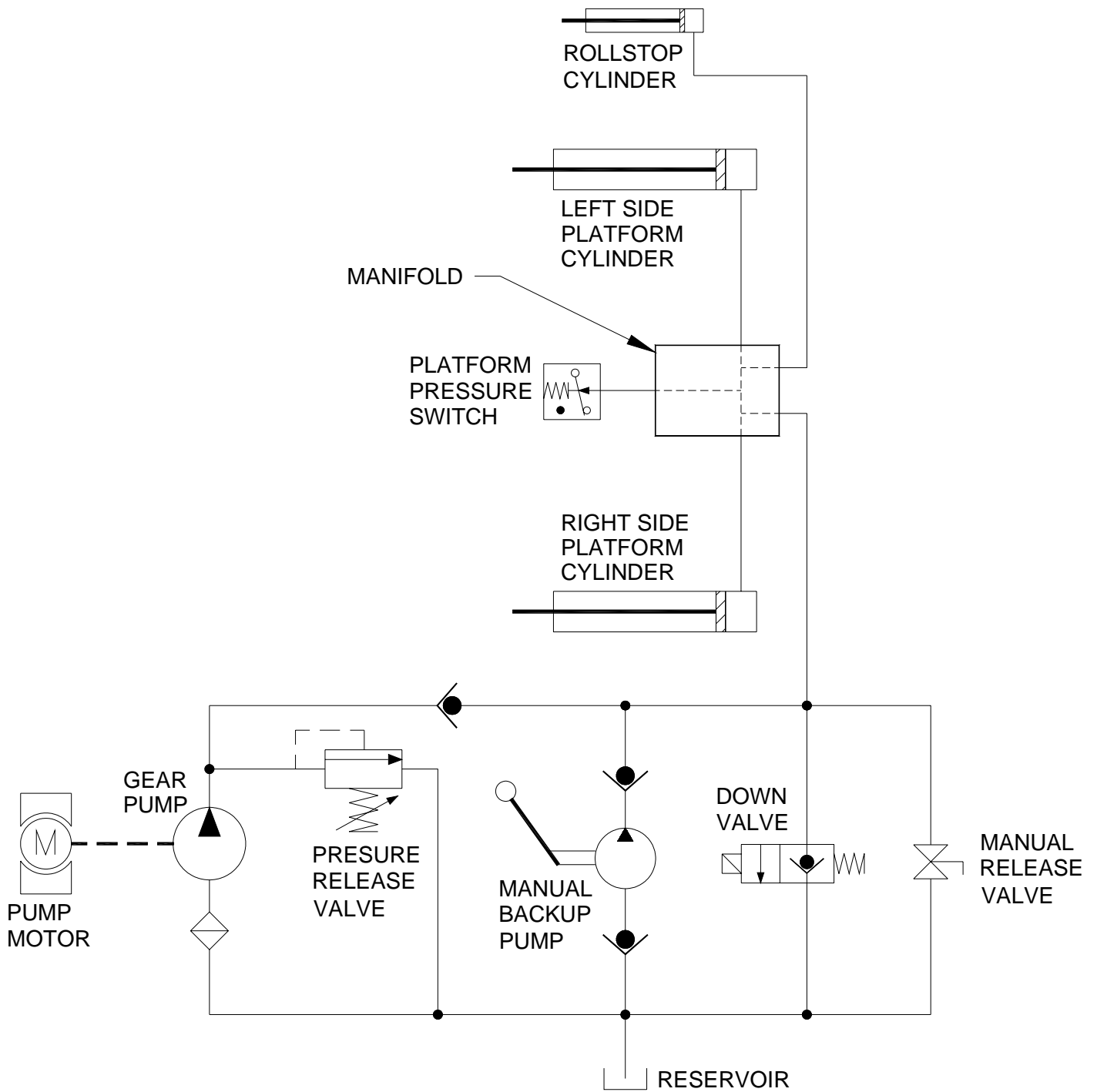
Inspection Items	OK	Requires repair	Repair at next service	Repair before returning to service
Platform is clean. Non-skid strips are attached and in good condition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Platform deploys and lowers to ground.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check manual pump operation, and hydraulic fluid level. Use Texaco No.1554 aircraft hydraulic fluid (or equivalent U.S. mil spec H5606G oil).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Front roll stop is open (down).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Safety issue</b> Raise platform; verify that front rollstop is closed (up). Verify that it is locked by pulling on rollstop.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Check all decals. Decals should be readable and securely attached.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Safety issue</b> Bridgeplate is up (vertical).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Safety issue</b> Raise platform to floor level; bridgeplate must overlap floor 1"– 2".	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Stow platform from floor level. Platform must stow smoothly and completely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check hydraulic system for leaks (lines, cylinder, and connections).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean carriage assembly with Zep I.D. Red degreaser.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspect and lube twelve side carriage rollers with Aeroshell #22. Remove excess grease.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspect trunnions and their pivot pins; lube with Zep PLS lubricating spray.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remove rollstop covers from both sides of platform; clean rollstop pivot points with Zep I.D. Red degreaser. Replace covers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Raise bridgeplate and measure amount of slack in drive chain. Refer to chapter 2 for details.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTES: \_\_\_\_\_

Print name: \_\_\_\_\_

Signature: \_\_\_\_\_

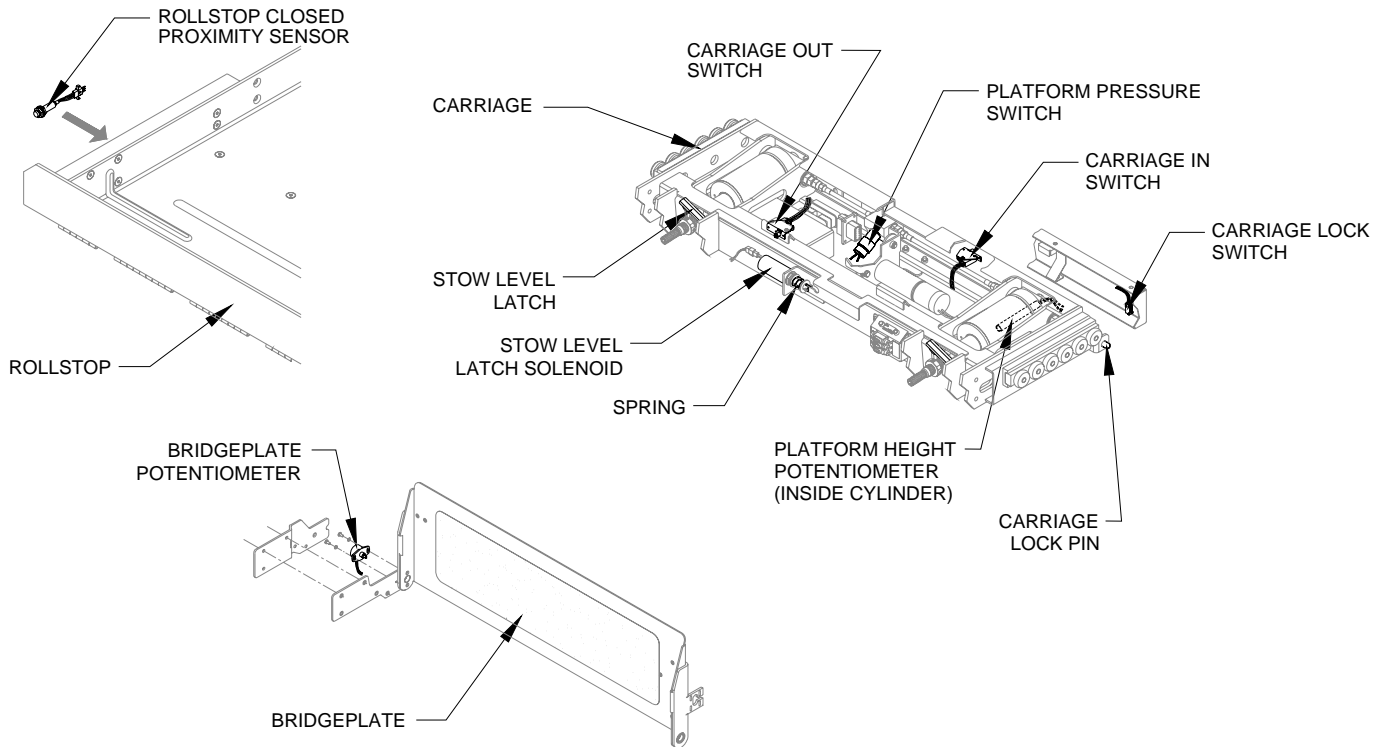
**C. HYDRAULIC SYSTEM DIAGRAM**



**FIGURE 3-1: PHANTOM PERSONAL HYDRAULIC SYSTEM**


## D. POSITION SENSOR ACTIVITY DESCRIPTION – PERSONAL

The following sections explain the platform motions that occur when a button is pressed on the control pendant, and how the lift proximity sensor, limit switches, and potentiometers are involved in the resulting motions. Refer to **Figure 3-2** for locations of the position sensors referred to below. Refer to the two electrical diagrams at the end of this chapter for schematic illustrations of the sensor connections. Keep in mind that upward movement of the platform is achieved with hydraulic pressure and lowering the platform is done by releasing the pressure. Also, remember that the travelling frame is an assembly consisting of the carriage + lifting frame + platform.



**FIGURE 3-2: LIFT POSITION SENSOR LOCATIONS - PERSONAL**

**NOTE:** In the following sections references to control pendant buttons are in **bold** and references to position sensors are underlined.

 <b>CAUTION</b>
In the following sections where a button is pressed it is mandatory that the button be held depressed until all platform, rollstop, and bridgeplate activity is completed. If a button is released early you will have to move the platform back to the position it was in when the button was first pressed.

### 1. PRESSING THE DEPLOY BUTTON

#### From stowed position:

Pressing and holding the **Deploy button** causes the platform to initially move inward slightly to allow the carriage lock pin to move freely, and then the pin is withdrawn from the enclosure by the carriage lock solenoid. The platform now moves out of the enclosure. Outward movement is stopped when the carriage contacts mechanical stop blocks inside the enclosure and actuates the Carriage Out switch. When the platform is fully deployed the carriage lock pin drops into a recess in the front right side of the enclosure. The travelling frame is now locked in the deployed position and the **Deploy button** can be released.

### 2. PRESSING THE UP BUTTON

#### a. From stow level:

- 1) Pressing and holding the **Up button** causes the bridgeplate to rise to the vertical position, where it is latched in place. When the Bridgeplate potentiometer confirms that the bridgeplate is vertical the platform moves upward.
- 2) Upward movement is stopped mechanically when the hydraulic cylinders reach full extension (the platform is at its maximum height). The hydraulic pump will continue to operate for a few seconds.

- 3) When the Platform Height potentiometer detects the platform at its maximum height the bridgeplate is unlatched and lowered to the vehicle floor. The **Up button** can be released.

**b. From ground level:**

- 1) Pressing and holding the **Up button** causes the front rollstop to rise to the vertical position and then the platform moves upward. When the rollstop is vertical it is latched in place and the Rollstop Closed proximity sensor changes state.
- 2) When the platform is just above ground level the electronic controller verifies that the Rollstop Closed proximity sensor has changed state. If it has not changed state then platform movement is halted. If the sensor has changed state, the platform continues to move upward.
- 3) Upward movement is stopped mechanically when the hydraulic cylinders reach full extension (the platform is at its maximum height). The hydraulic pump will continue to operate for a few seconds.
- 4) When the Platform Height potentiometer detects the platform at its maximum height the bridgeplate is unlatched and lowered to the vehicle floor. The **Up button** can be released.

### 3. PRESSING THE DOWN BUTTON

**a. From Stowed Position:**

- 1) Pressing and holding the **Down button** causes the bridgeplate to rise to the vertical position, where it is latched in place. The platform then rises about six inches and hesitates briefly. This removes weight from the stow level latch mechanism and allows the spring on the stow level latch solenoid to disengage the latch mechanism. The platform now moves downward (if the Carriage Out switch remains actuated, the Bridgeplate potentiometer confirms the bridgeplate is up, and the Rollstop Closed proximity sensor confirms the rollstop is up).
- 2) Downward movement of the platform stops when it settles on the ground. When the platform contacts the ground the rollstop is mechanically unlatched and allowed to lower to the ground. The **Down button** can be released.

**b. From Floor Level Position**

- 1) Pressing and holding the **Down button** causes the bridgeplate to rise to the vertical position, where it is latched in place.
- 2) The platform begins to move downward (if the Rollstop Closed proximity sensor confirms that the rollstop is up, and the Bridgeplate potentiometer confirms the bridgeplate is up). The spring on the stow level latch solenoid holds the latch mechanism disengaged while the platform passes through stow level.
- 3) Downward movement of the platform stops when it settles on the ground. When the platform contacts the ground the rollstop is mechanically unlatched and allowed to lower to the ground. The **Down button** can be released.

### 4. PRESSING THE STOW BUTTON

**a. From Floor Level Position:**

- 1) Pressing and holding the **Stow button** causes the bridgeplate to rise to the vertical position, where it is latched in place.
- 2) The platform begins to move downward (if the Bridgeplate potentiometer confirms the bridgeplate is vertical and the Rollstop Closed proximity sensor confirms the rollstop is up).
- 3) Downward movement pauses when the platform is about six inches above stow height to allow the electronic controller to verify that a load is not present on the platform (which it does by monitoring the Platform Pressure switch in the hydraulic system). If a load is present, the platform remains where it is to safeguard against stowing the platform with a passenger onboard.
- 4) If a load is not present, the bridgeplate pivots 90<sup>0</sup> to the front where it rests on the rear portion of the platform. The platform begins to move downward while the stow level latch solenoid engages the latching mechanism. Downward movement of the platform is stopped when it reaches stow level.
- 5) When the Platform Height potentiometer confirms that the platform is at stow level the carriage lock pin is withdrawn from the enclosure and the platform moves into the enclosure. Inward movement stops when the carriage contacts mechanical stop blocks inside the enclosure and actuates the Carriage In switch. When the travelling frame is fully stowed the carriage lock pin drops into a recess in the right rear side of the enclosure and actuates the Carriage Lock switch. The travelling frame is now securely retained in the enclosure and the **Stow button** can be released.

**b. From Ground Level:**

- 1) Pressing and holding the **Stow button** causes the bridgeplate to rise to the vertical position, where it is latched in place.
- 2) The front rollstop rises to the vertical position, locks in place, and then the platform moves upward (if the Bridgeplate potentiometer confirms the bridgeplate is vertical and the Rollstop Closed proximity sensor confirms the rollstop is up).
- 3) Upward movement continues until the platform rises to a height about six inches above stow level and then pauses. During the pause the electronic controller verifies that a load is not present on the platform (which it does by monitoring the Platform Pressure switch in the hydraulic system). If a load is present, the platform remains where it is to safeguard against stowing the platform with a passenger onboard.
- 4) If a load is not present, the bridgeplate pivots 90<sup>0</sup> to the front where it rests on the rear portion of the platform. The platform begins to move downward while the stow level latch solenoid engages the latching mechanism. Downward movement of the platform is stopped when it reaches stow level.
- 5) When the Platform Height potentiometer confirms that the platform is at stow level the carriage lock pin is withdrawn from the enclosure and the platform moves into the enclosure. Inward movement stops when the carriage contacts mechanical stop blocks inside the enclosure and actuates the Carriage In switch. When the travelling frame is fully stowed the carriage lock pin drops into a recess in the right rear side of the enclosure and actuates the Carriage Lock switch. The travelling frame is now securely retained in the enclosure and the **Stow button** can be released.

## E. ELECTRICAL SYSTEM DIAGRAM

Refer to **Figures 3-4** and **3-5** at the end of this chapter for an electrical schematic of the lift. Refer to **Table 3-1** for wire color codes used on the schematic. Refer to **Figure 3-3** for a list of symbols used on the schematic. Refer to **Table 3-2** for descriptions of the individual signals appearing at each pin of the controller connector. Refer to **Table 3-3** for an explanation of labels used on the schematic.

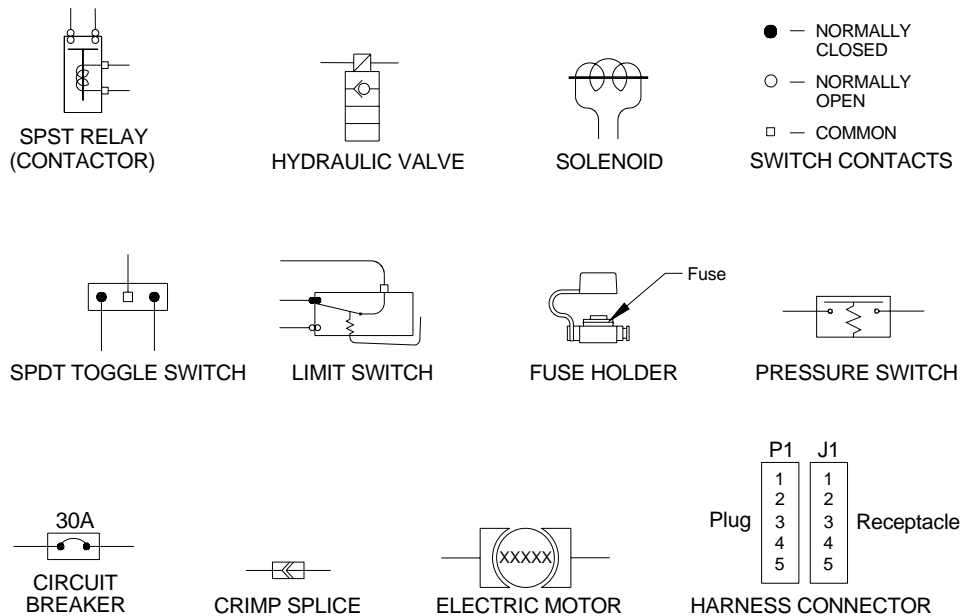
The schematic is divided across two pages and is sub-divided into five major lift areas. An internal schematic for the controller is not shown because Ricon services it.

### 1. DIAGRAM LEGENDS

#### a. Color Codes

TABLE 3-1: WIRE COLOR CODES			
CODE	COLOR	CODE	COLOR
BLK	Black	RED	Red
BLU	Blue	VIO	Violet
BRN	Brown	GRA	Gray
GRN	Green	WHT	White
ORN	Orange	YEL	Yellow

#### b. Electrical Diagram Symbols



**FIGURE 3-3: ELECTRICAL SYMBOL DESCRIPTIONS**

**TABLE 3-2: ELECTRONIC CONTROLLER CONNECTOR PIN SIGNAL DESCRIPTIONS**

PIN	COLOR	DESCRIPTION	AT REST	IN ACTION	
<b>J7</b>	1	Black	Signal to bridgeplate motor negative terminal	0 VDC	12 VDC to raise bridgeplate; ground to lower bridgeplate
	3	Red	Signal to bridgeplate motor positive terminal	0 VDC	12 VDC to lower bridgeplate; ground to raise bridgeplate
	5	White	Signal to bridgeplate latch solenoid	0 VDC	12 VDC to unlock bridgeplate from vertical or horizontal positions
	6	Yellow	Signal to stow level latch solenoid	0 VDC	12 VDC to engage stow level latch mechanism (stopping platform movement at stow level)
	7	Yellow	Signal to carriage lock solenoid	0 VDC	12 VDC when platform is fully extended or retracted
	8	Red	Signal to hydraulic down valve	0 VDC	12 VDC when DOWN button is pressed and platform is deployed
	9	Brown	Signal to hydraulic pump relay	0 VDC	12 VDC when UP button is pressed and platform is deployed
	10	Brown	Signal to carriage motor negative terminal	0 VDC	0 volts when DEPLOY button is pressed; 12 VDC when STOW button is pressed
	13	Green	Bridgeplate position potentiometer B+	12 VDC	12 VDC
	14	Blue	Signal from bridgeplate position potentiometer	0 VDC; bridge plate down	0 to 12 VDC as bridgeplate rises
	15	Brown	Bridgeplate position potentiometer B-	0 VDC	ground
	16	Black	System ground (common)	0 VDC	0 volts
	17	Black	System ground (common)	0 VDC	0 volts
	18	Red	Signal to controller power LED	0 VDC	12 VDC when power is supplied to controller
	20	Brown	Signal to carriage motor negative terminal	0 VDC	0 volts when DEPLOY button is pressed; 12 VDC when STOW button is pressed
	21	Red	12VDC buss	12 VDC	12 VDC supply for switches and sensors
	22	Brown	Signal from platform load sensor pressure switch	0 VDC	12 VDC when a load of 75 lbs is on platform
24	Yellow	Signal from carriage out switch	0 VDC when carriage not deployed	12 VDC when carriage is fully extended	
25	Black	Ground buss	0 VDC	Ground supply for switches and sensors	
27	Violet	Calibration mode select input	0 VDC	12 VDC when fuse is in calibration fuse holder	
28	Yellow	Signal from carriage in and carriage lock limit switches	0 VDC when carriage not stowed	12 VDC when carriage is fully stowed and carriage lock pin is engaged with enclosure	
29	Blue	Signal to carriage motor positive terminal	0 VDC	12 VDC when DEPLOY button is pressed; 0 volts when STOW button is pressed	
30	Blue	Signal to carriage motor positive terminal	0 VDC	12 VDC when DEPLOY button is pressed; 0 volts when STOW button is pressed	
31	White	12VDC; 30A supply to controller	12 VDC	12 VDC from 30A circuit breaker in pump box	



**TABLE 3-2: ELECTRONIC CONTROLLER CONNECTOR PIN SIGNAL DESCRIPTIONS**

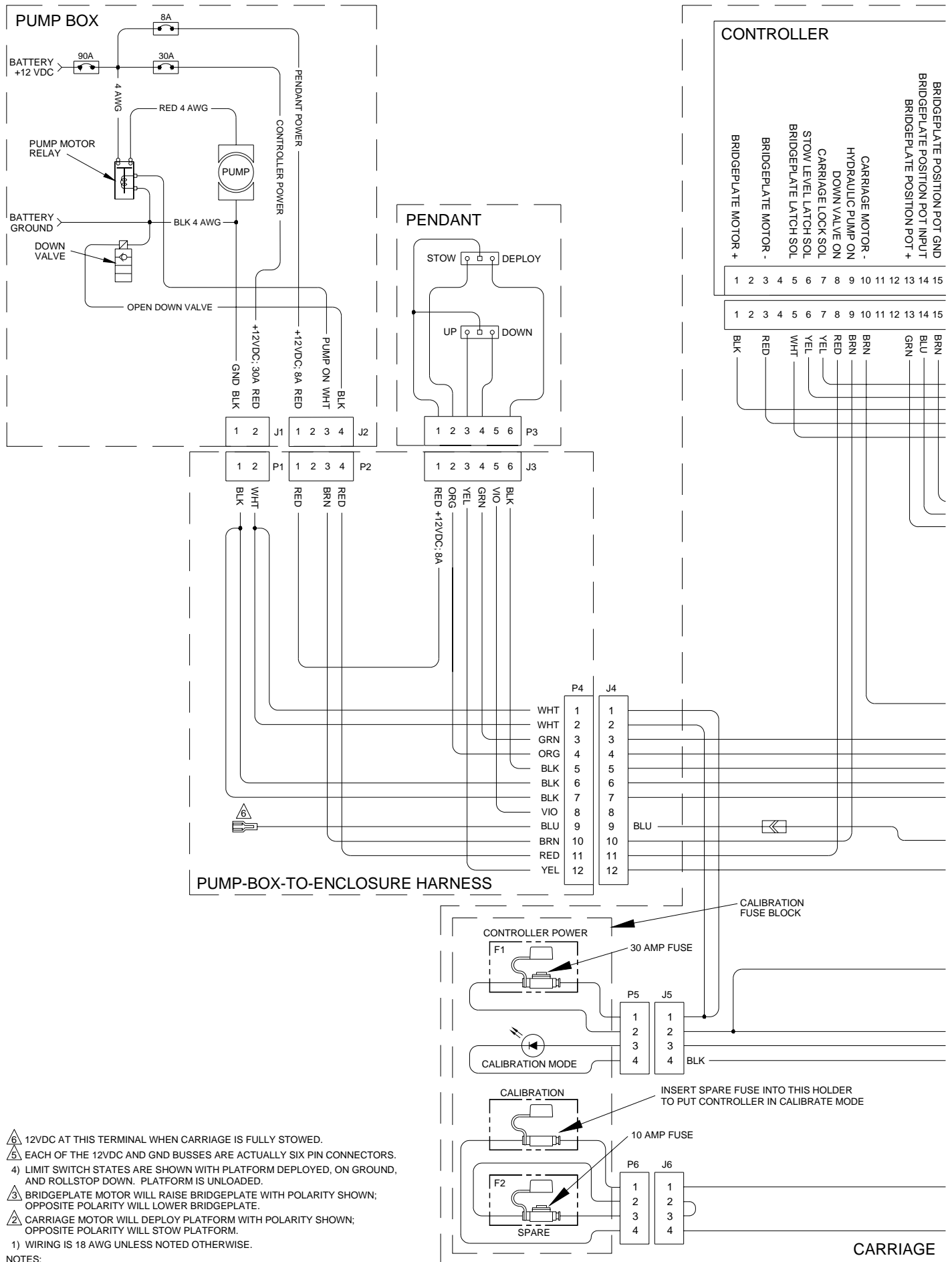
<b>PIN</b>	<b>COLOR</b>	<b>DESCRIPTION</b>	<b>AT REST</b>	<b>IN ACTION</b>
32	Green	Signal from rollstop sensor	0 VDC when rollstop is open	12 VDC when rollstop is closed (raised)
33	Black	Platform height potentiometer B+	12 VDC	12 VDC
34	Green	Signal from platform height potentiometer	0 VDC when platform is on ground	0 to 12 VDC as platform rises
35	Red	Platform height potentiometer B-	0 VDC	0 VDC
36	White	12VDC; 30A supply to controller	12 VDC	12 VDC from 30A circuit breaker in pump box
37	Gray	UP signal from control pendant	0 VDC	12 VDC when UP button is pressed
38	Green	DOWN signal from control pendant	0 VDC	12 VDC when DOWN button is pressed
39	Orange	STOW signal from control pendant	0 VDC	12 VDC when STOW button is pressed
40	Black	DEPLOY signal from control pendant	0 VDC	12 VDC when DEPLOY button is pressed
<b>END OF TABLE</b>				

**TABLE 3-3: WIRING DIAGRAM LABEL DEFINITIONS**

LABEL	DESCRIPTION
+12 VDC	System power for control pendant, limit switches, and electronic controller.
STOW LEVEL LATCH	Solenoid operated mechanical latch that holds platform at stow level.
PLATFORM HEIGHT	Linear potentiometer located inside RH hydraulic cylinder; translates platform height.
BRIDGEPLATE LATCH	Solenoid operated latch that holds bridgeplate in either raised or lowered positions.
BRIDGEPLATE [MOTOR]	Electric gearmotor that raises and lowers bridgeplate.
PENDANT	Control pendant used to control platform motions.
CONTROLLER	Electronic controller that translates pendant commands into signals that control lift electrical and hydraulic components. Also monitors lift electrical activity and positions of platform and bridgeplate.
CARRIAGE	Major lift subassembly mounted on rollers.
GROUND; GND	System electrical common; 0 volts.
DOWN VALVE	Solenoid controlled hydraulic valve that releases fluid from hydraulic cylinders to lower platform.
PLATFORM	Major lift subassembly where a passenger resides during lift operations.
PUMP-BOX-TO-ENCLOSURE HARNESS	Electrical harness interconnecting pendant with components in pump box and carriage.
CARRIAGE IN	Limit switch located on carriage that changes state when carriage is fully stowed.
STOW LOCK PIN	Limit switch located on carriage that changes state when pin on stow lock solenoid has engaged enclosure
CARRIAGE OUT	Limit switch located on carriage that changes state when carriage is fully deployed.
CONTROLLER POWER (F1)	Fuse holder in series with the +12VDC supply to controller; contains 30 amp fuse.
PLATFORM LOAD	Pressure sensitive switch changes state when a load of 75lbs, or greater, is on platform.
CARRIAGE [MOTOR]	Electric gearmotor that moves travelling frame in and out of enclosure.
PUMP [MOTOR]	Electric motor that drives hydraulic pump.
PUMP MOTOR RELAY	Electrical relay (contactor) that controls heavy current to pump motor.
ROLLSTOP CLOSED	Proximity sensor that changes state when rollstop is fully closed (raised).
CARRIAGE LOCK	Solenoid driven pin that locks carriage to enclosure in either fully stowed or fully deployed positions.
SPARE (F2)	Fuse holder that contains spare 10 amp fuse used when calibrating controller.
CALIBRATION	Fuse holder used when calibrating controller; contains no fuse during normal operation.
CALIBRATION MODE	LED that illuminates when controller is in calibration mode.
CALIBRATION FUSE BLOCK	Three-position fuse holder located at right front face of carriage frame. Used to calibrate stow height and floor height into controller.

**END OF TABLE**

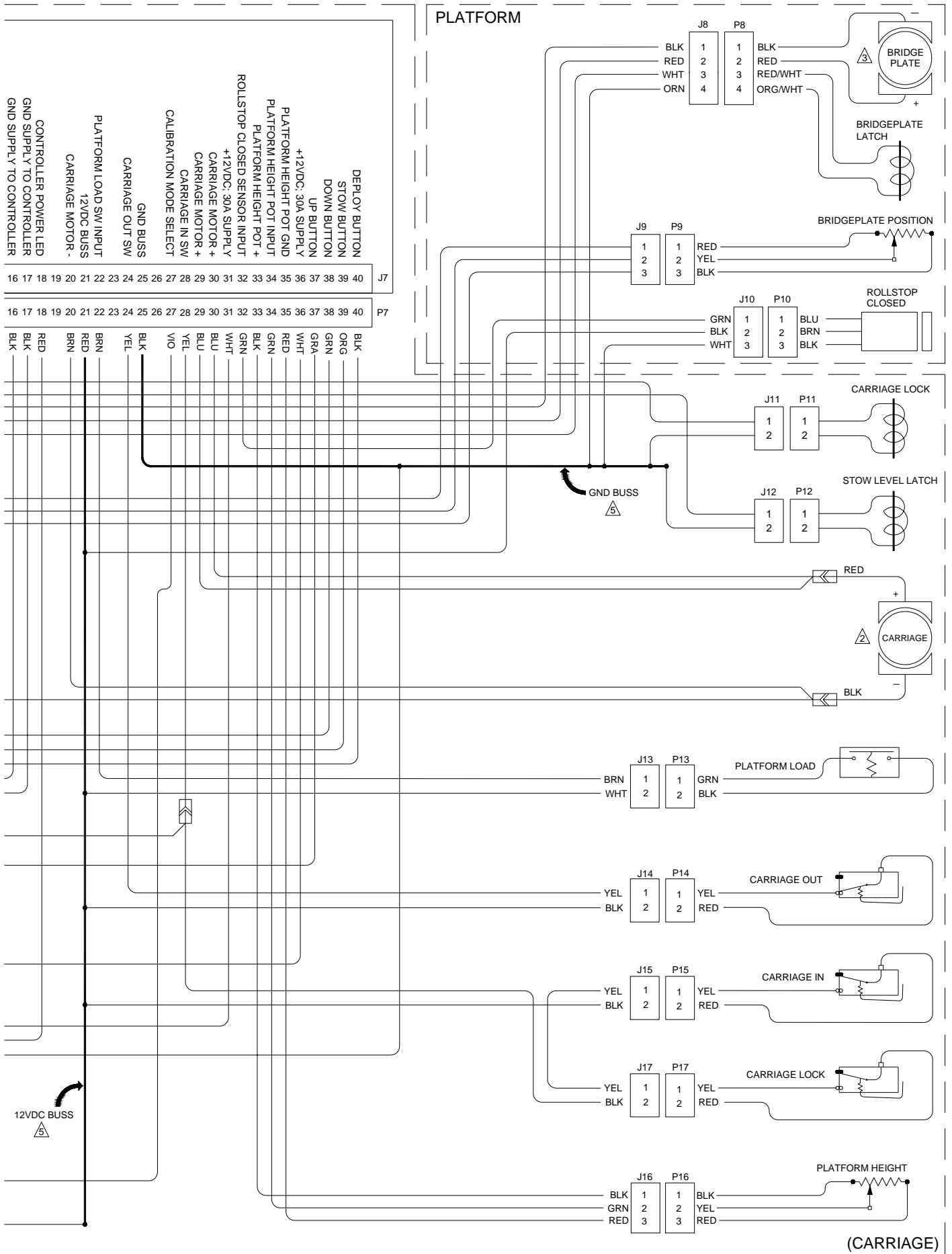
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- ⚠ 12VDC AT THIS TERMINAL WHEN CARRIAGE IS FULLY STOWED.
  - ⚠ EACH OF THE 12VDC AND GND BUSSES ARE ACTUALLY SIX PIN CONNECTORS.
  - 4) LIMIT SWITCH STATES ARE SHOWN WITH PLATFORM DEPLOYED, ON GROUND, AND ROLLSTOP DOWN. PLATFORM IS UNLOADED.
  - ⚠ BRIDGEPLATE MOTOR WILL RAISE BRIDGEPLATE WITH POLARITY SHOWN; OPPOSITE POLARITY WILL LOWER BRIDGEPLATE.
  - ⚠ CARRIAGE MOTOR WILL DEPLOY PLATFORM WITH POLARITY SHOWN; OPPOSITE POLARITY WILL STOW PLATFORM.
- 1) WIRING IS 18 AWG UNLESS NOTED OTHERWISE.

NOTES:

FIGURE 3-4: PHANTOM PERSONAL ELECTRICAL DIAGRAM – SHEET 1



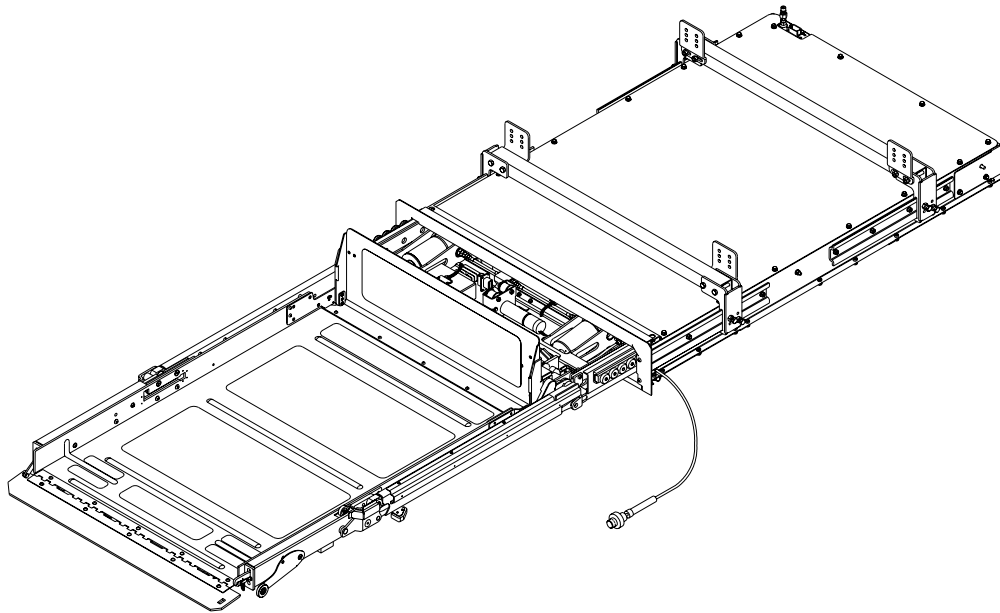
## IV. PHANTOM PERSONAL SPARE PARTS

This chapter contains parts illustrations and parts lists for the RICON Phantom TL2 personal wheelchair and standee lift. Each exploded view of a major lift assembly shows smaller assemblies, components, and kits referenced with numbers. The exploded view is followed by an associated parts list that contains the reference numbers, part descriptions, quantities required for the major assembly shown, and Ricon part numbers.

To order a part: Locate the part or assembly on an exploded view, and note its reference number. Find this number on the associated parts list (following page), and order the Ricon part number in the far right column.

### NOTE:

- Most items that are described as “kits” contain a single part (plus hardware). Therefore, you may need to order more than one kit if the part is used more than once on the assembly shown.
- Small, inexpensive hardware items are supplied in a minimum quantity of ten, and are packaged in a bag. A single bag may provide more parts than you need, or you may need multiple bags when working on a large assembly. The QTY/ASSY column indicates how many individual parts are used on the assembly shown; you will need to determine the number of bags required for your task.



### PARTS DIAGRAMS

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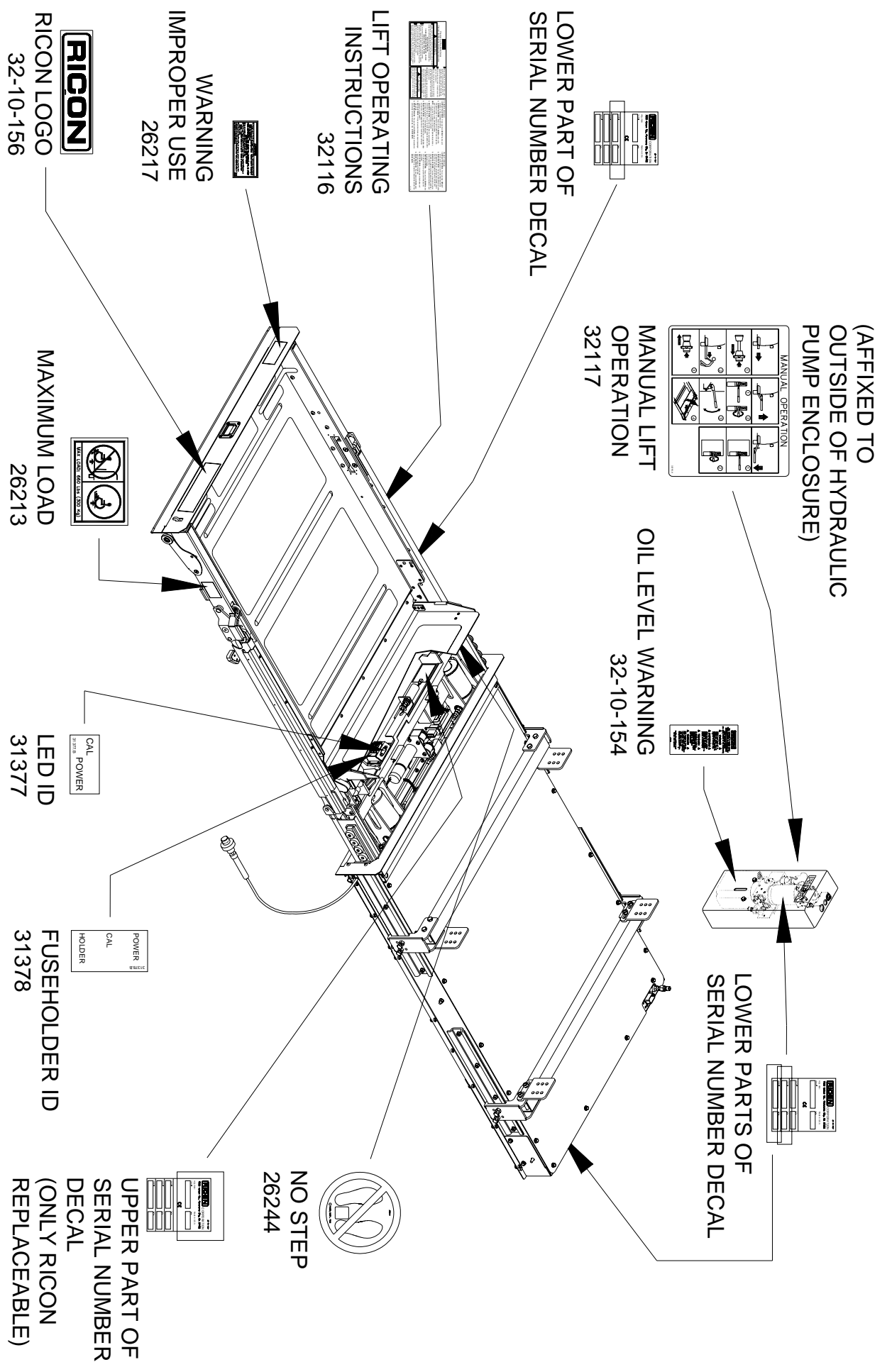
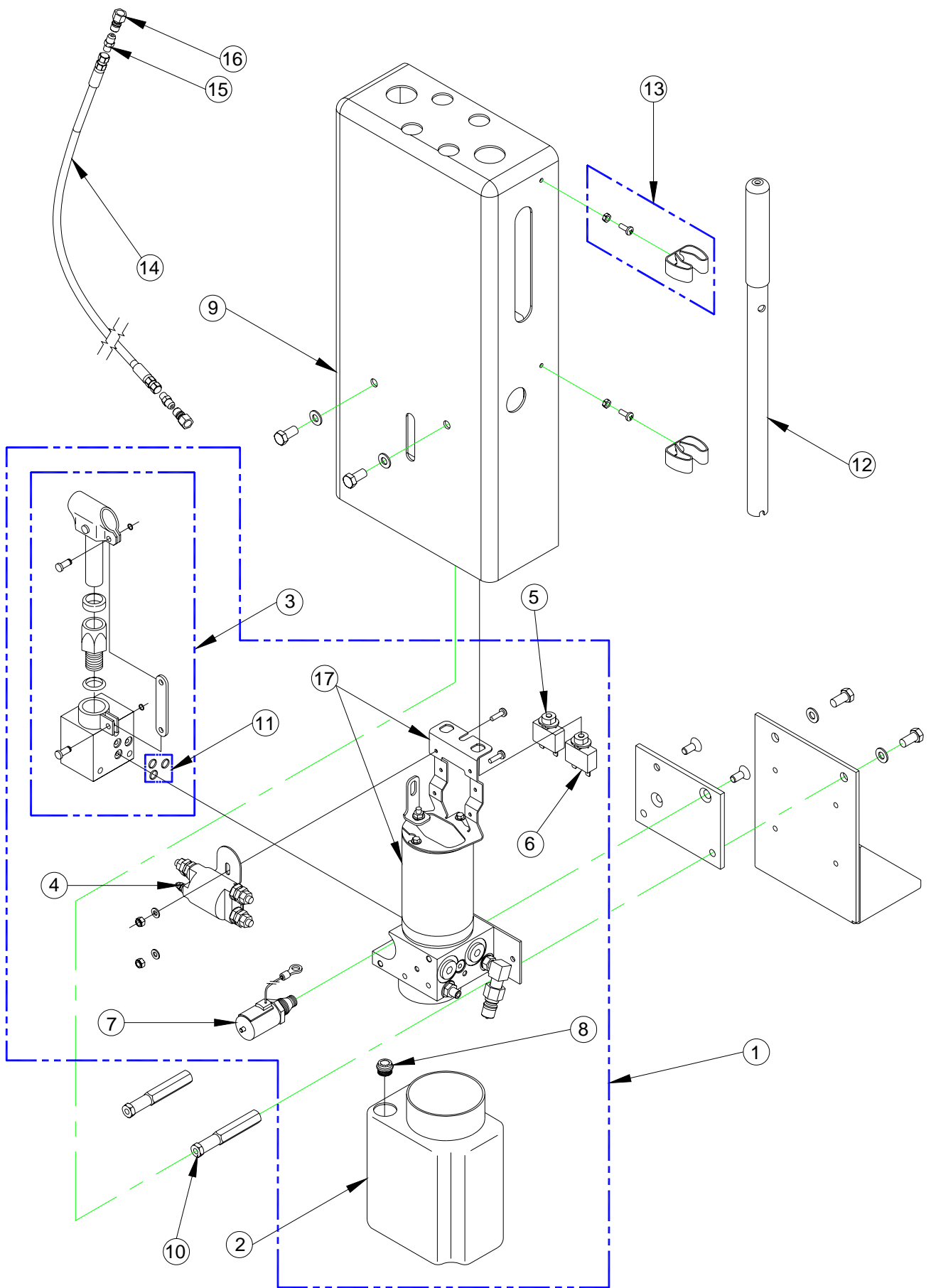


FIGURE 4-1: PERSONAL DECAL LOCATIONS AND PART NUMBERS

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**FIGURE 4-2: HYDRAULIC PUMP ASSEMBLY**  
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**FIGURE 4-2: HYDRAULIC PUMP ASSEMBLY**

REF	ITEM DESCRIPTION	QTY/ASSY	PART NO.
1	HYDRAULIC PUMP ASSY	1	PM212072007
2	HYDRAULIC PUMP RESERVOIR	1	30938
3	MANUAL BACK-UP PUMP ASSY	1	V2-SH-210
4	PUMP MOTOR RELAY, 12V	1	20670
5	CIRCUIT BREAKER, 30 AMP	1	26510
6	CIRCUIT BREAKER, 8 AMP	1	265108
7	HYDRAULIC DOWNVALVE, 12V	1	V2-SH-105
8	BREATHER PLUG, RESERVOIR	1	10333
9	HYDRAULIC PUMP ASSY COVER	1	10346
10	PUMP MOUNTING STANDOFF	2	V2-CV-015
11	SEAL KIT, MANUAL BACK-UP PUMP	1	V2-SH-220
12	MANUAL PUMP HANDLE	1	V2-SH-111
13	KIT, TOOL CLIP	2	01267
14	HYDRAULIC HOSE, 23 FEET	1	F9-HH-23
15	FITTING, MCN, 1/4J, 1/4P, STL	2	V2-SH-84
16	FITTING, QUICK DISCONNECT, 1/4	2	UV-SH-003
17	KIT, MOTOR ASSY, W/BRKT, 12V	1	14345

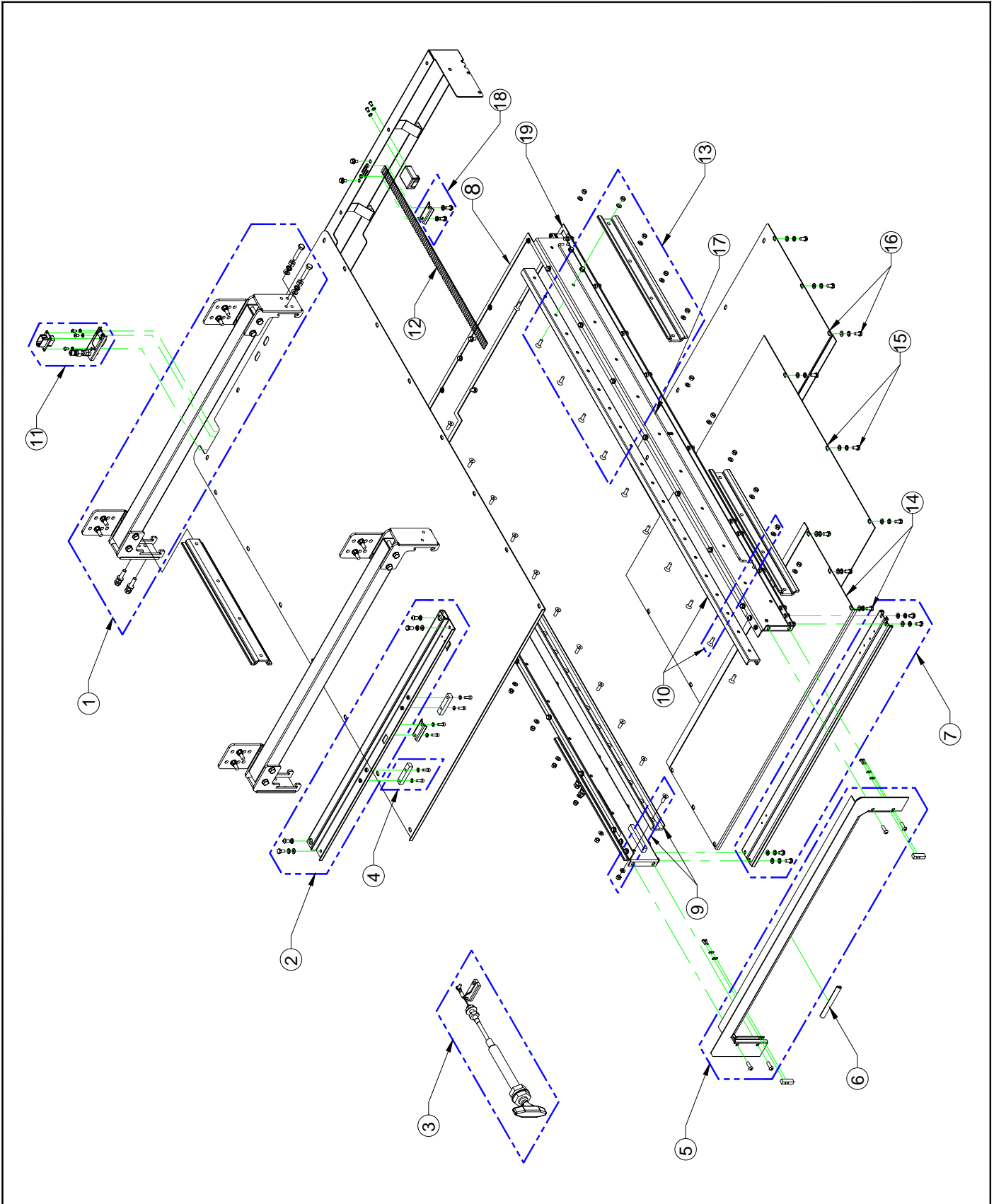
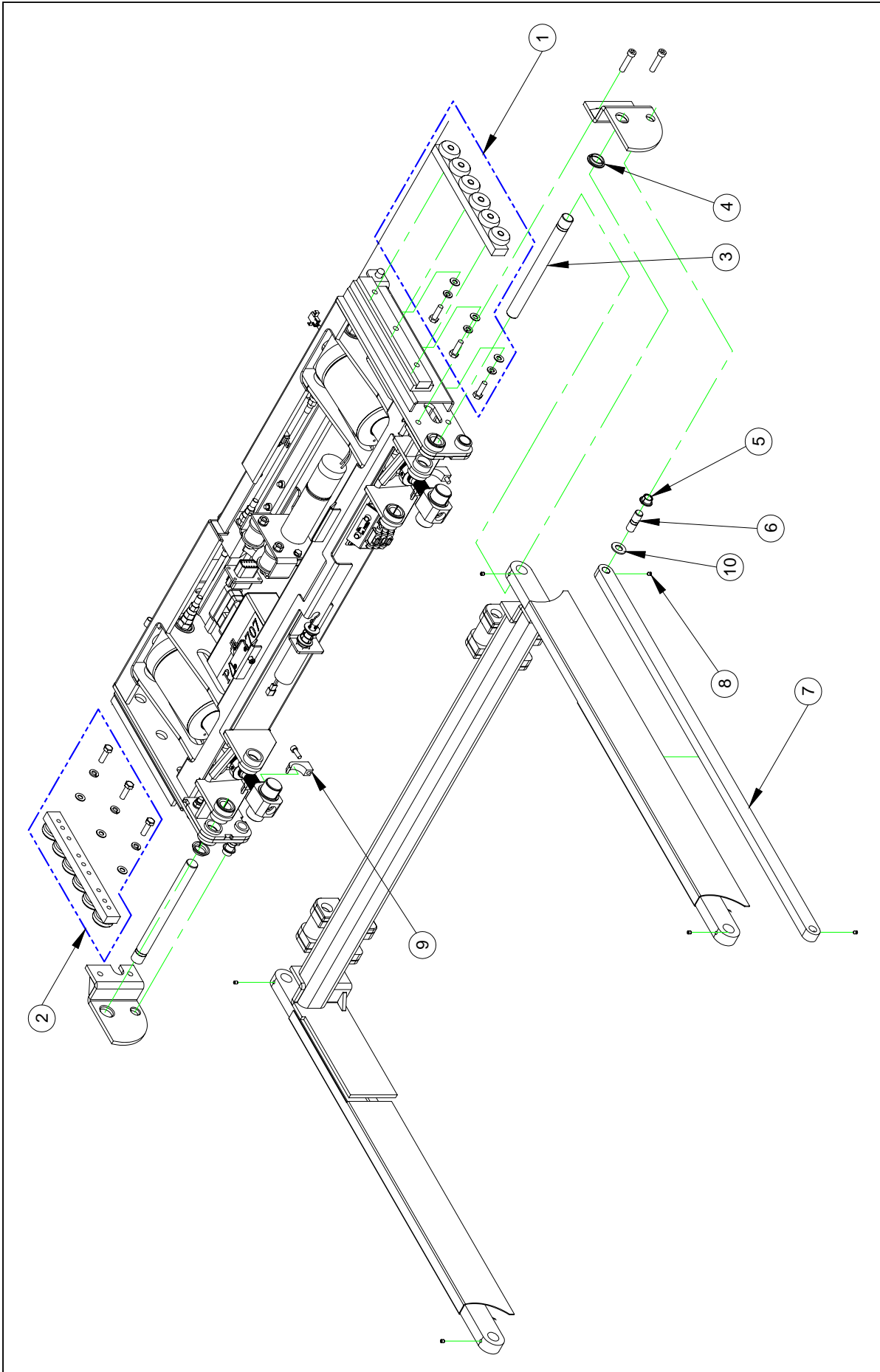


FIGURE 4-3: ENCLOSURE ASSEMBLY

**FIGURE 4-3: ENCLOSURE ASSEMBLY**

<b>REF</b>	<b>DESCRIPTION</b>	<b>QTY/ASSY</b>	<b>PART NO.</b>
1	KIT, LIFT MOUNTING BRACKET ASSY, W/HDWR	2	30155
2	KIT, FRONT REINFORCEMENT PANEL W/HDWR	1	30971
3	KIT, MANUAL PLATFORM RELEASE CABLE ASSY	1	32122
4	KIT, STOP BLOCK, W/HDWR	2	30157
5	KIT, FRONT TRIM PANEL, W/HDWR	1	30973
6	SEAL, RUBBER, SINGLE-UP D SHAPE, FOAM TAPE	3.75FT	29871
7	KIT, ENCLOSURE SUPPORT BEAM, W/HDWR	1	30974
8	ENCLOSURE TOP COVER SEAL	2	31304
9	KIT, CARRIAGE GUIDE RAIL, LH	1	32123
10	KIT, CARRIAGE GUIDE RAIL, RH	1	32124
11	KIT, CONNECTOR ASSY, ENCLOSURE	1	30977
12	DRIVE BELT, .375 PITCH X 1.00, 90" LONG	1	23172
13	KIT, LIFT MOUNTING RAIL, W/HDWR	1	30165
14	KIT, FRONT BOTTOM COVER, W/HDWR	1	30166
15	KIT, MIDDLE BOTTOM COVER, W/HDWR	1	32125
16	KIT, REAR BOTTOM COVER, W/HDWR	1	30168
17	ROD, ACTUATOR RELEASE	1	30560
18	KIT, MANUAL RELEASE PLATE	2	30979
19	ENCLOSURE BOTTOM COVER SEAL	1	31305



**FIGURE 4-4: TRAVELING FRAME ASSEMBLY**

**FIGURE 4-4: TRAVELING FRAME ASSEMBLY**

<b>REF</b>	<b>ITEM DESCRIPTION</b>	<b>QTY/ASSY</b>	<b>PART NO.</b>
1	KIT, ROLLER ASSY, RH, W/HDWR	1	30903
2	KIT, ROLLER ASSY, LH, W/HDWR	1	30905
3	PIN, PIVOT, UPPER ARMS, LONG	2	31188
4	KIT, FLANGED BEARING, ¾ ID (KIT OF 10)	2	19576
5	BUSHING, .50IDX.38W	2	25384
6	PIN, PIVOT, LOWER ARMS	2	31145
7	LOWER ARM	2	31150
8	SETSCREW, M6-1.0X6MM, SST (BAG OF 10)	8	20907
9	CAP, RETAINING, TRUNNION	4	31155
10	WASHER, FLT, .578 X 1.067 X .062 NYL (BAG OF 10)	4	13343

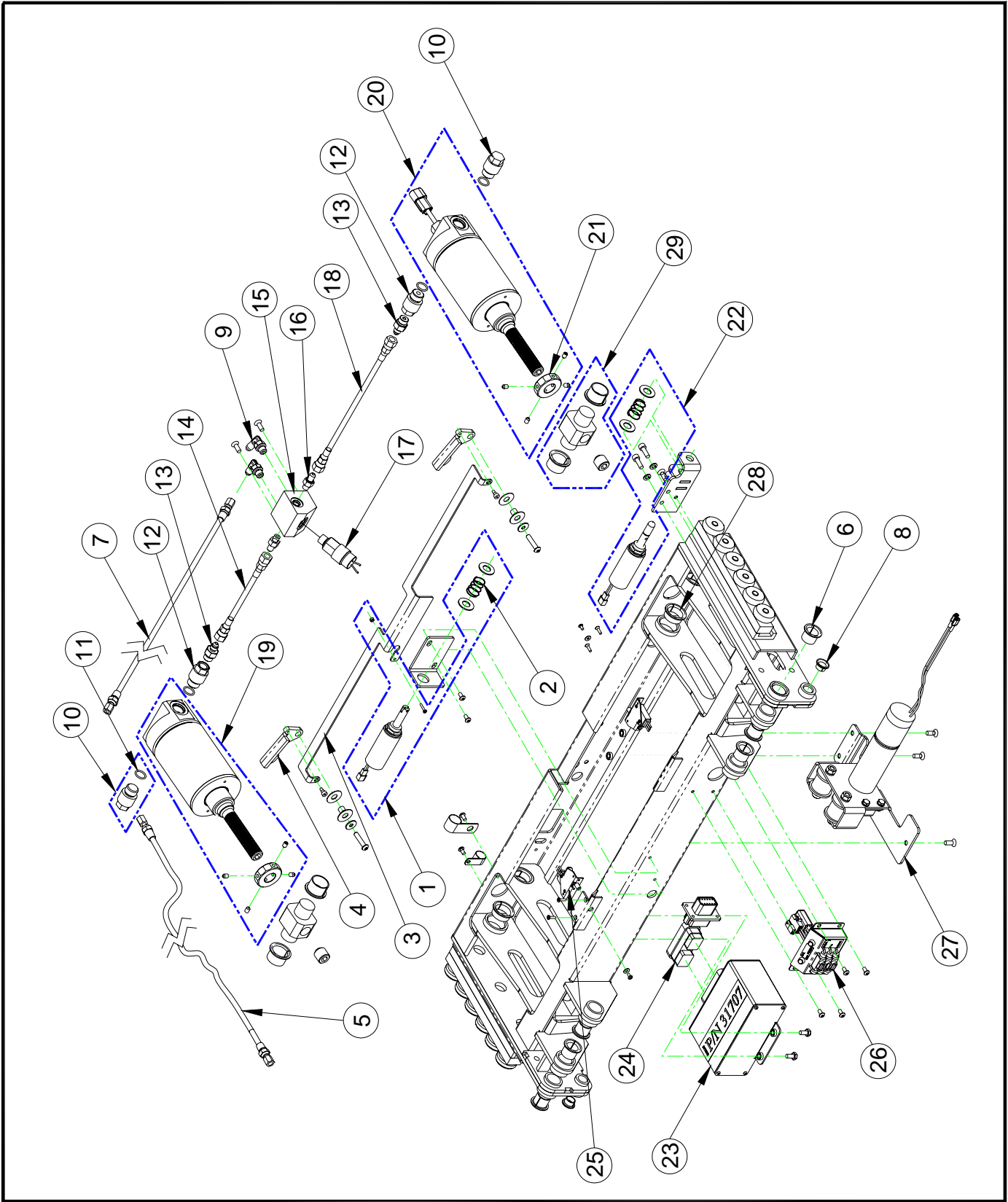


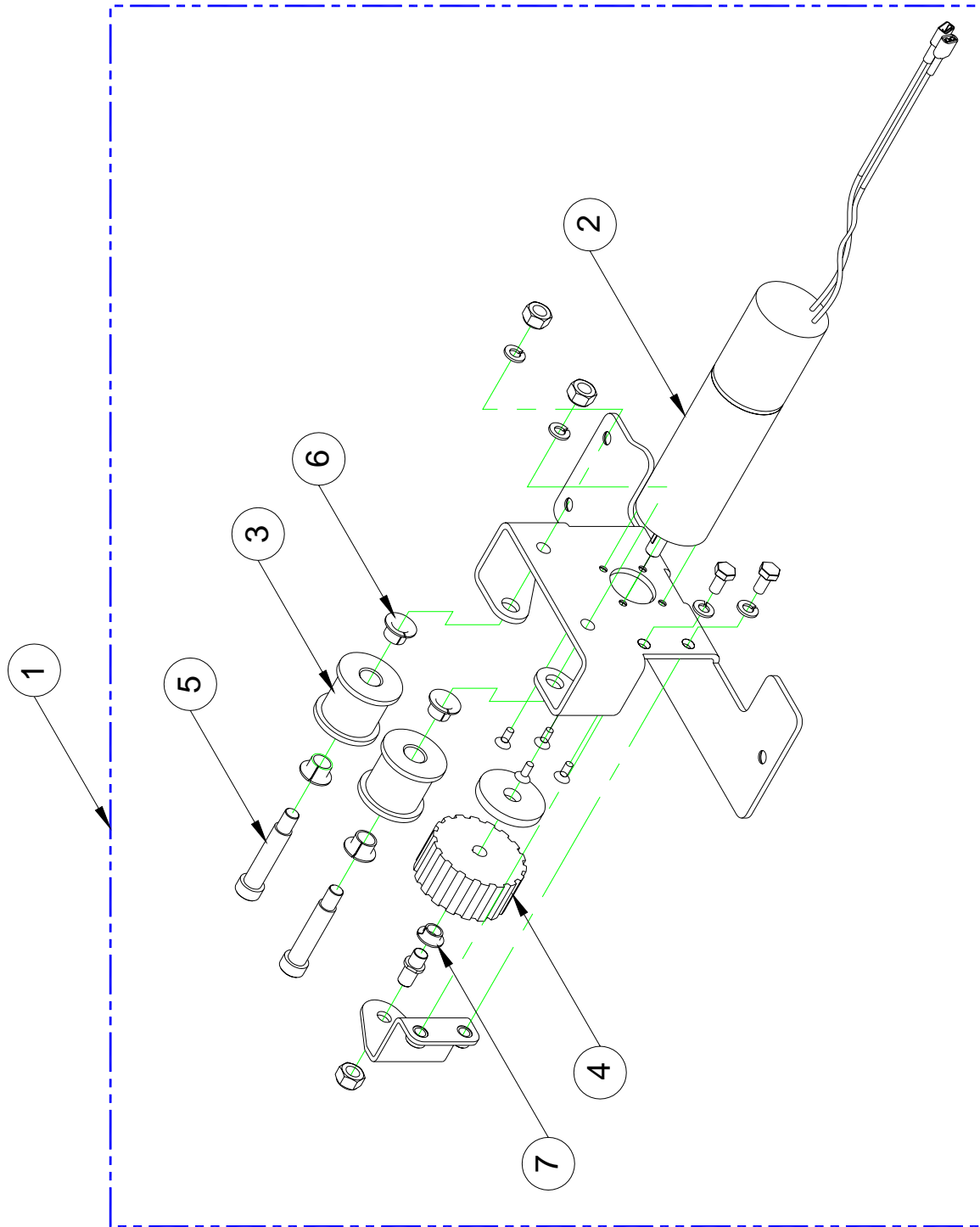
FIGURE 4-5: CARRIAGE ASSY

**FIGURE 4-5: CARRIAGE ASSY**

REF	ITEM DESCRIPTION	QTY/ASSY	PART NO.
1	KIT, STOW HEIGHT SOLENOID ASSY	1	30906
2	COMPRESSION SPRING, TAPERED, SST	1	29575
3	SLIDER, STOW LEVEL LOCKING MECHANISM	1	31351
4	LATCH, STOW LEVEL LOCKING MECHANISM	2	31360
5	HYDRAULIC HOSE, 3/16IDX 5/16ODX 72.5" LONG (TO ROLLSTOP CYLINDER)	1	32240
6	BUSHING, ¾ DIA X 3/4	6	25383
7	HYDRAULIC HOSE ASSY, 5/16 IDX 3/8 ODX 72" LONG	2	30689
8	BUSHING, ½" X 3/8"	2	25384
9	FITTING, ELBOW, #4, STD THD, #4 JIC	2	18235
10	KIT, FITTING, PIVOT ASSY W/O-RING	2	20658
11	O-RING, NITRILE, .644IDX.087W (BAG OF 10)	4	20662
12	FITTING, PIVOT, O-RING, NON-SAE	2	15519
13	ADAPTER, ORB, 6XJIC, 4STL	2	26591
14	HYDRAULIC HOSE, 7.88L X .125ID	1	27729
15	DISTRIBUTION MANIFOLD	1	31363
16	ADAPTER, ORB, 4XJIC, 4STL	2	17208
17	SENSOR ASSY, PRESSURE	1	24399
18	HYDRAULIC HOSE, 10.72L X .25 ID	1	27728
19	KIT, HYDRAULIC CYLINDER ASSY, W/HDWR	1	32120
20	KIT, HYDRAULIC CYLINDER ASSY, W/HDWR	1	32121
21	NUT, HEX, 1-12 UNF-2B, SST	2	31716
22	KIT, SOLENOID ASSY, STOW LOCK 12V	1	30991
23	KIT, CONTROLBOX ASSY	1	32118
24	HARNESS, CONTROLLER	1	32232
25	SWITCH ASSY, W/PLUNGER	2	24397
26	FUSE BLOCK, CALIBRATION	1	31375
27*	MOTOR DRIVE ASSY	1	30542
28	KIT, FLANGED BEARING, 1"ID (KIT OF 10)	4	19579
29	KIT, TRUNNION, W/HDWR	2	30199

\*Refer to the following figure for greater detail.





**FIGURE 4-6: CARRIAGE MOTOR ASSEMBLY**

**FIGURE 4-6: CARRIAGE MOTOR ASSEMBLY**

<b>REF</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>PART NO.</b>
1	MOTOR DRIVE ASSY	1	30542
2	GEARMOTOR ASSY	1	30551
3	DRIVE BELT ROLLER	2	30535
4	TIMING BELT PULLEY	1	24081
5	SCREW, SHOULDER, 10MMX40MM, M8-1.25 SST	2	30540
6	BEARING, FLANGED, M10 IDX 12MM ODX6MM LONG	4	29402
7	BEARING, FLANGED, 8MM IDX6MM LONG	1	24611

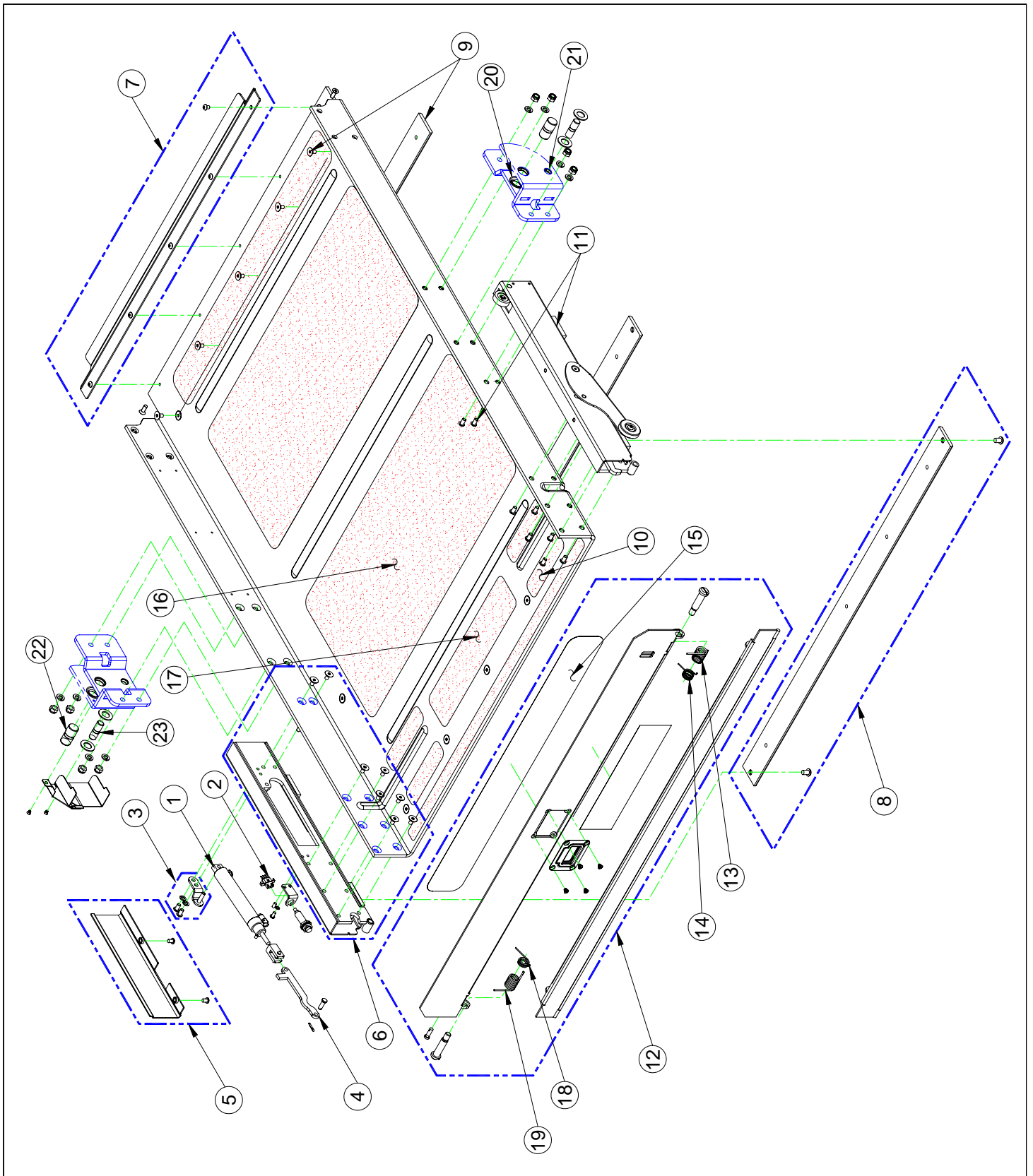


FIGURE 4-6: PLATFORM ASSEMBLY

**FIGURE 4-6: PLATFORM ASSY**

<b>REF</b>	<b>ITEM DESCRIPTION</b>	<b>QTY/ASSY</b>	<b>PART NO.</b>
1	CYLINDER ASSY, ROLLSTOP	1	29406
2	SENSOR, PROXIMITY	1	31198
3	KIT, BRACKET, ROLLSTOP CYLINDER, W/HDWR	1	30916
4	LINK, CYLINDER EXTENSION, ROLLSTOP	1	31332
5	KIT, COVER, ROLLSTOP ACTUATOR, W/HDWR	1	30980
6	KIT, ROLLSTOP ACTUATOR ENCLOSURE, W/HDWR	1	32126
7	KIT, TRANSITION PLATE, W/HDWR	1	30179
8	KIT, REINFORCEMENT BAR	2	30982
9	KIT, REINFORCEMENT BAR, REAR	1	30983
10	SAFETREAD, 5.5X1.5, YELLOW, SAFETY	4	25674
11	KIT, LATCH ACTUATOR ASSY, W/HDWR	1	32127
12	KIT, ROLLSTOP ASSY W/HINGE	1	32128
13	SPRING, ROLLSTOP, RH	1	30577
14	SPRING, ROLLSTOP SEAL, RH	1	30588
15	SAFETREAD, 25.5X3 YELLOW	1	25664
16	SAFETREAD, 25.5X12 OCEAN GRAY	2	25661
17	SAFETREAD, 12.75X3.0, YELLOW	1	25673
18	SPRING, ROLLSTOP SEAL, LH	1	30589
19	SPRING, ROLLSTOP, LH	1	30578
20	KIT, FLANGE BEARING, ¾ ID (KIT OF 10)	4	19576
21	BEARING, DU FLANGED, 12IDX1/4L	4	253846
22	PIN, PIVOT, UPPER ARMS	2	31144
23	PIN, PIVOT, LOWER ARMS	2	31145

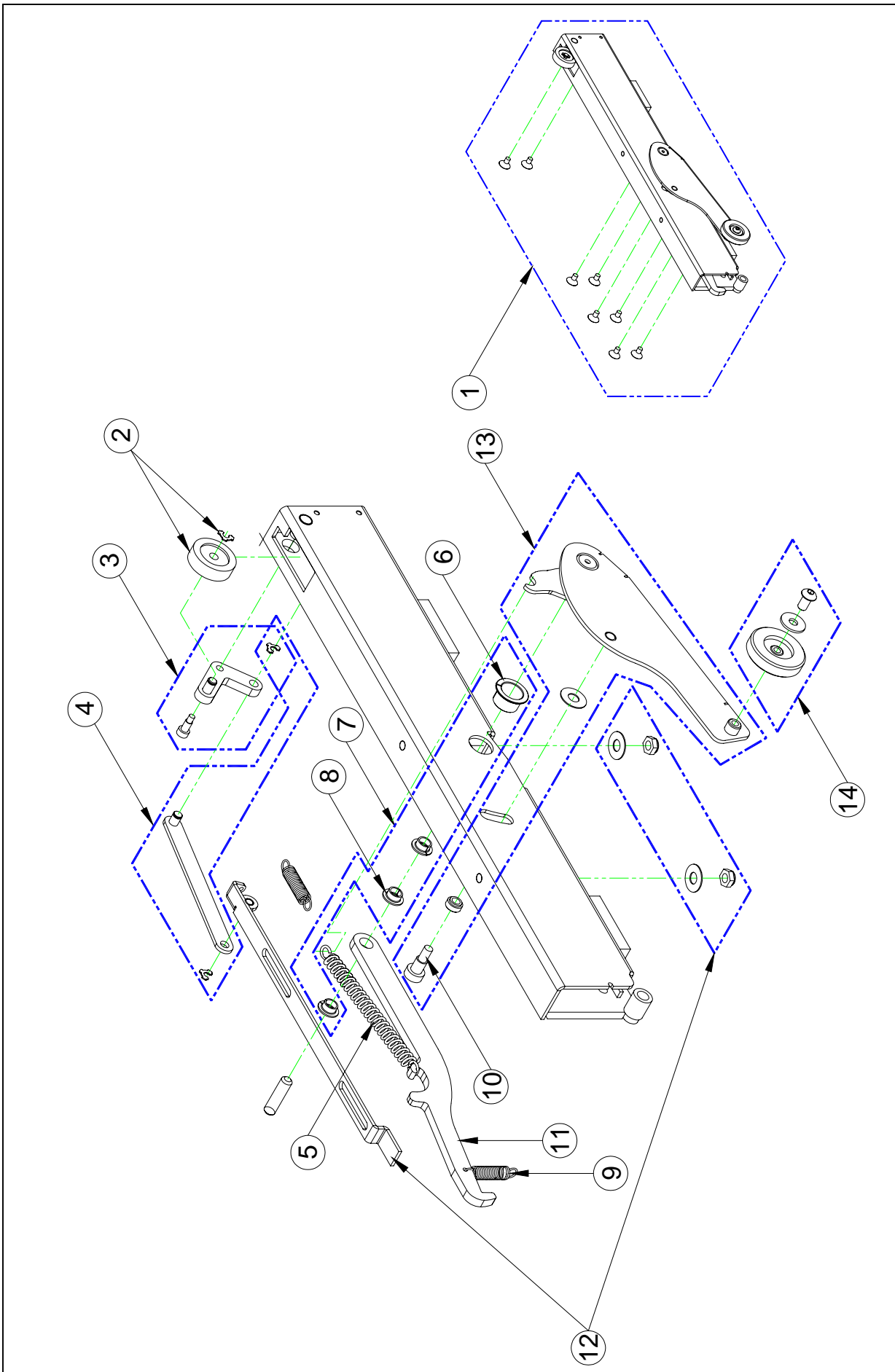
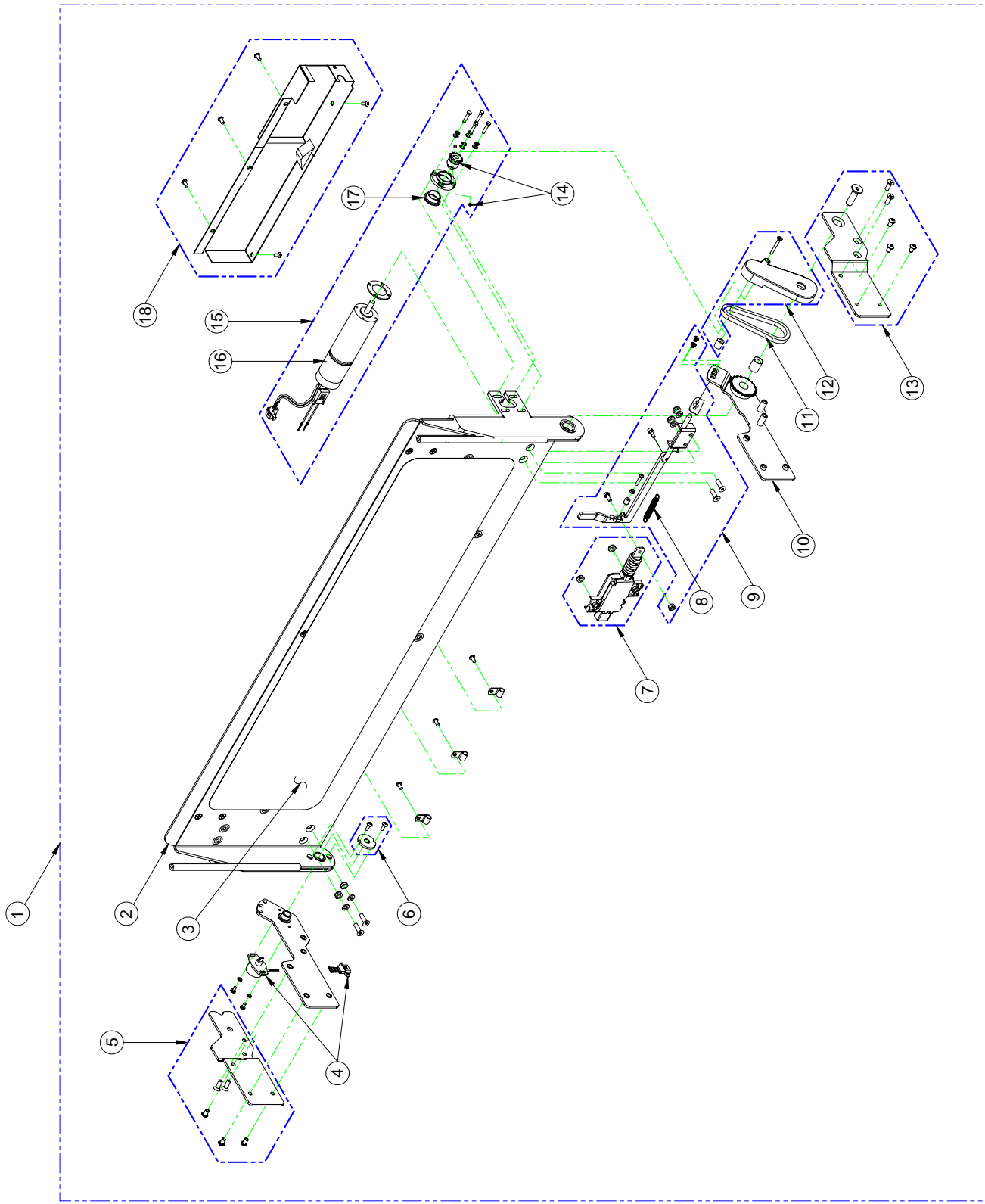


FIGURE 4-7: ROLLSTOP LATCH ACTUATOR ASSEMBLY  
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**FIGURE 4-7: ROLLSTOP LATCH ACTUATOR ASSEMBLY**

<b>REF</b>	<b>ITEM DESCRIPTION</b>	<b>QTY/ASSY</b>	<b>PART NO.</b>
1	KIT, ROLLSTOP LATCH ACTUATOR ASSY W/HDWR	1	32127
2	KIT, GUIDE ROLLER	1	30992
3	KIT, ACTUATOR LINK, ANGLED	1	30994
4	KIT, ACTUATOR, LINK	1	30995
5	SPRING, EXTENSION, .437ODX3.13L, SST	1	24619
6	BEARING, FLANGED, 16MMIDX12MM LONG	1	24609
7	KIT, BEARING REBUILD	1	30171
8	BEARING, FLANGED, 8MM IDX6MM LONG	3	24611
9	SPRING, EXTENSION, .359 ODX.150L, SST	2	24621
10	SCREW, SHOULDER, M8X10MM, M6-1.0X11MM, SST	1	19222
11	ACTUATOR HOOK	1	31329
12	KIT, ACTUATOR LINK W/HDWR	1	30996
13	KIT, ACTUATOR FOOT W/HDWR	1	30997
14	KIT, ACTUATOR FOOT ROLLER	1	30173

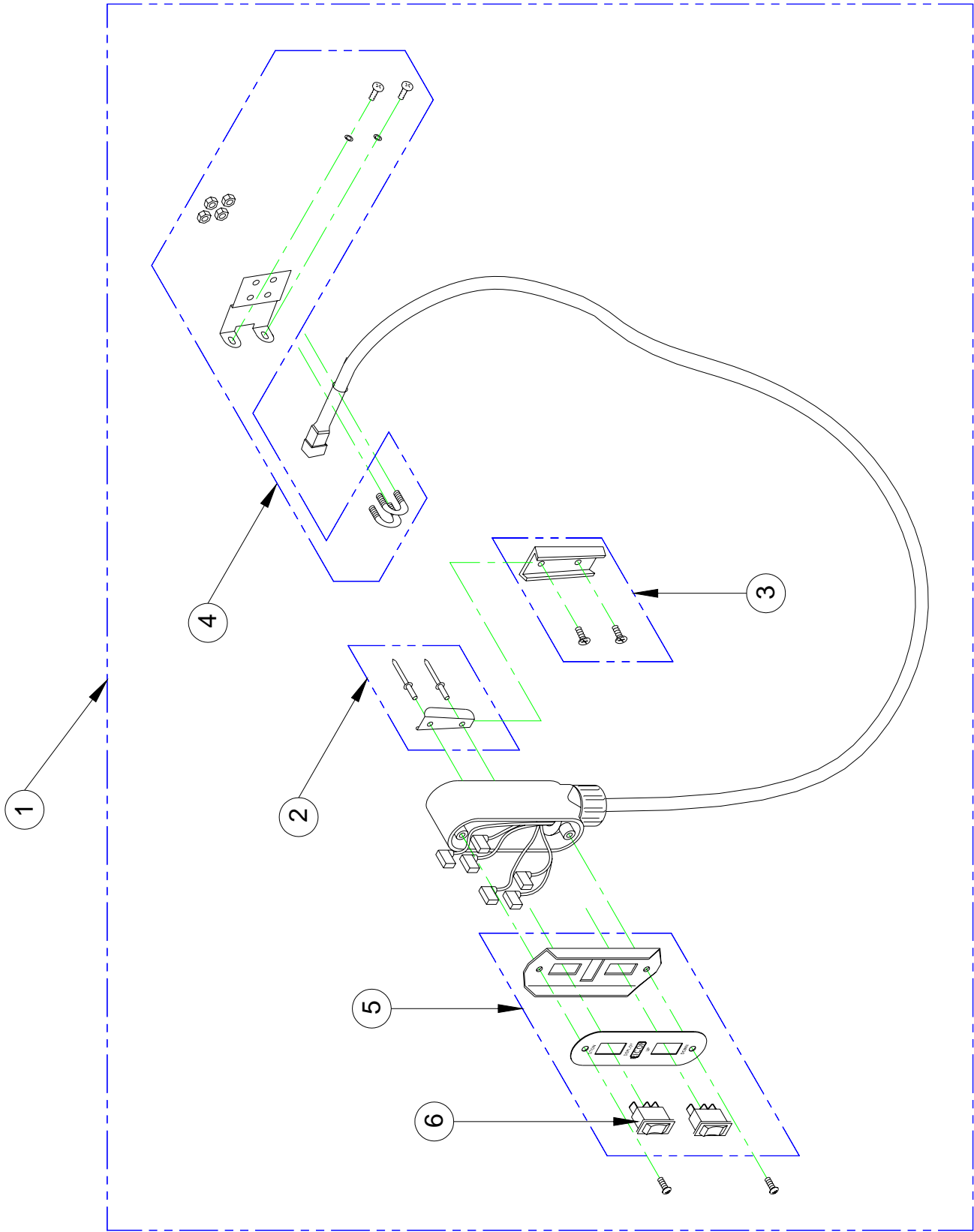


**FIGURE 4-9: PLATFORM BRIDGEPLATE ASSEMBLY**

**FIGURE 4-9: PLATFORM BRIDGEPLATE ASSY**

REF NO.	ITEM DESCRIPTION	QTY/ASSY	PART
1	KIT, BRIDGEPLATE ASSY	1	32129
2	KIT, BRIDGEPLATE WITH SAFETREAD	1	32130
3	SAFETREAD, 25.5X7 YELLOW, SAFETY	1	25665
4	HARNESS, POTENTIOMETER	1	30815
5	KIT, OUTER BRIDGEPLATE PIVOT BRACKET, LH, W/HDWR	1	32103
6	KIT, POTENTIOMETER SHAFT PLATE	1	30988
7	KIT, RELEASE MECHANISM SOLENOID	1	30184
8	EXTENSION SPRING	1	29577
9	KIT, BRIDGEPLATE RELEASE MECHANISM, W/HDWR	1	30185
10	KIT, INNER BRIDGEPLATE PIVOT BRACKET ASSY, RH	1	30989
11	DRIVE CHAIN, #25	1	29413
12	KIT, CHAIN COVER, W/HDWR	1	30186
13	KIT, OUTER BRIDGEPLATE PIVOT BRACKET, RH, W/HDWR	1	30187
14	KIT, BRIDGEPLATE MOTOR SPROCKET	1	30188
15	KIT, BRIDGEPLATE MOTOR ASSY	1	30189
16	BRIDGEPLATE GEARMOTOR	1	30216
17	BUSHING, 3/4" ID X 3/8W	1	25381
18	KIT, MOTOR COVER, W/HDWR	1	30190





**FIGURE 4-10: CONTROL PENDANT ASSEMBLY**

**FIGURE 4-10: CONTROL PENDANT ASSEMBLY**

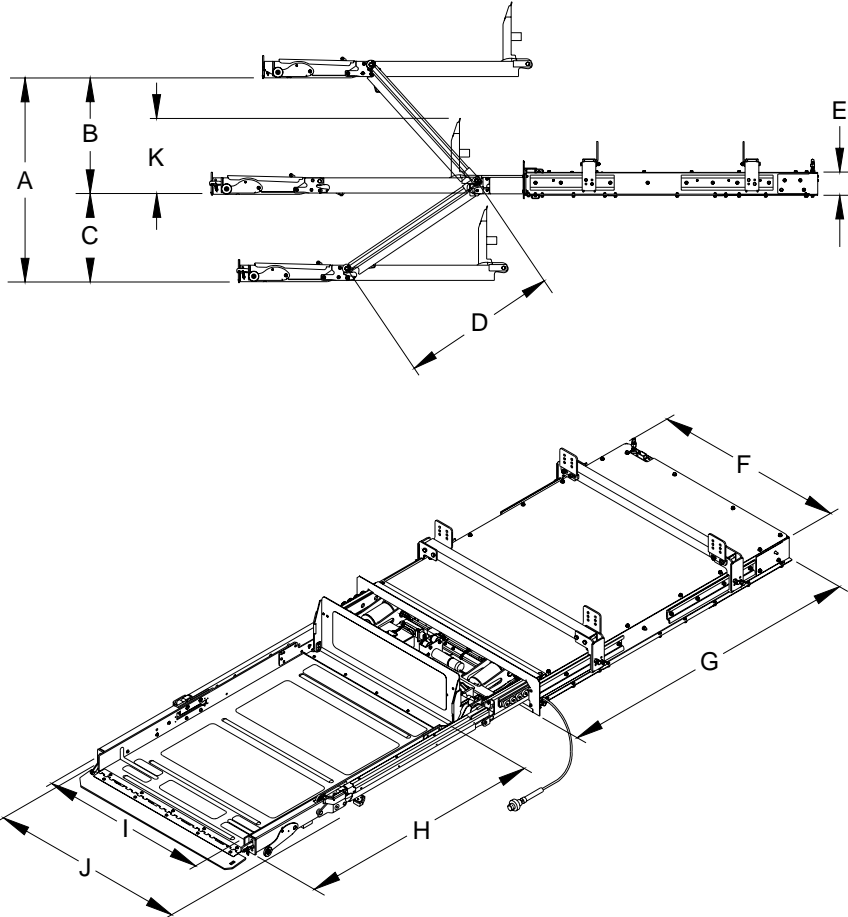
<b>REF</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>PART NO.</b>
1	KIT, HAND CONTROL PENDANT	1	01008B
2	KIT, MOUNTING CLIP, PENDANT	1	28781
3	KIT, MOUNTING CLIP, VEHICLE	1	01118
4	KIT, STRAIN RELIEF W/U-BOLT HDWR	1	01007
5	FACEPLATE ASSY, PENDANT	1	V2-ES-035
6	SWITCH, ROCKER, SP, ON-OFF-ON, BLK	2	26455

## APPENDIX 1 LIFT SPECIFICATIONS

### PHANTOM TL2 PERSONAL WHEELCHAIR AND STANDEE LIFT

Power:  
 Platform up.....electro-hydraulic  
 Platform down.....gravity  
 Pump rating:..... 1800psi @ 12 VDC  
 Hydraulic cylinders.....2ea, Ø3.0", single acting

Rated load capacity .....600 lbs  
 Manual backup-up ..... hand pump  
 Manual backup-down..... pressure release valve  
 Lift weight ..... approx. 425 lbs



#### DIMENSIONS – inches (centimeters)

Models	A	B	C	D	E	F	G
<b>TL2-01112000</b>	Floor to ground travel	Travel above	Travel below	Arm length	Enclosure height	Enclosure width	Enclosure length
	<b>40.0 (101.6)</b>	<b>23.0 (58.4)</b>	<b>17.0 (43.2)</b>	<b>31.0 (78.7)</b>	<b>4.3 (10.9)</b>	<b>40.0 (101.6)</b>	<b>77.0 (195.6)</b>
	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>	<b>L</b>		
	Usable platform length	Usable platform width	Traveling frame width	Bridgeplate height	Handrail height		
<b>48.0 (121.9)</b>	<b>32.0 (81.3)</b>	<b>38.0 (96.5)</b>	<b>20.0 (50.8)</b>	<b>44.0 (111.8)</b>			

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