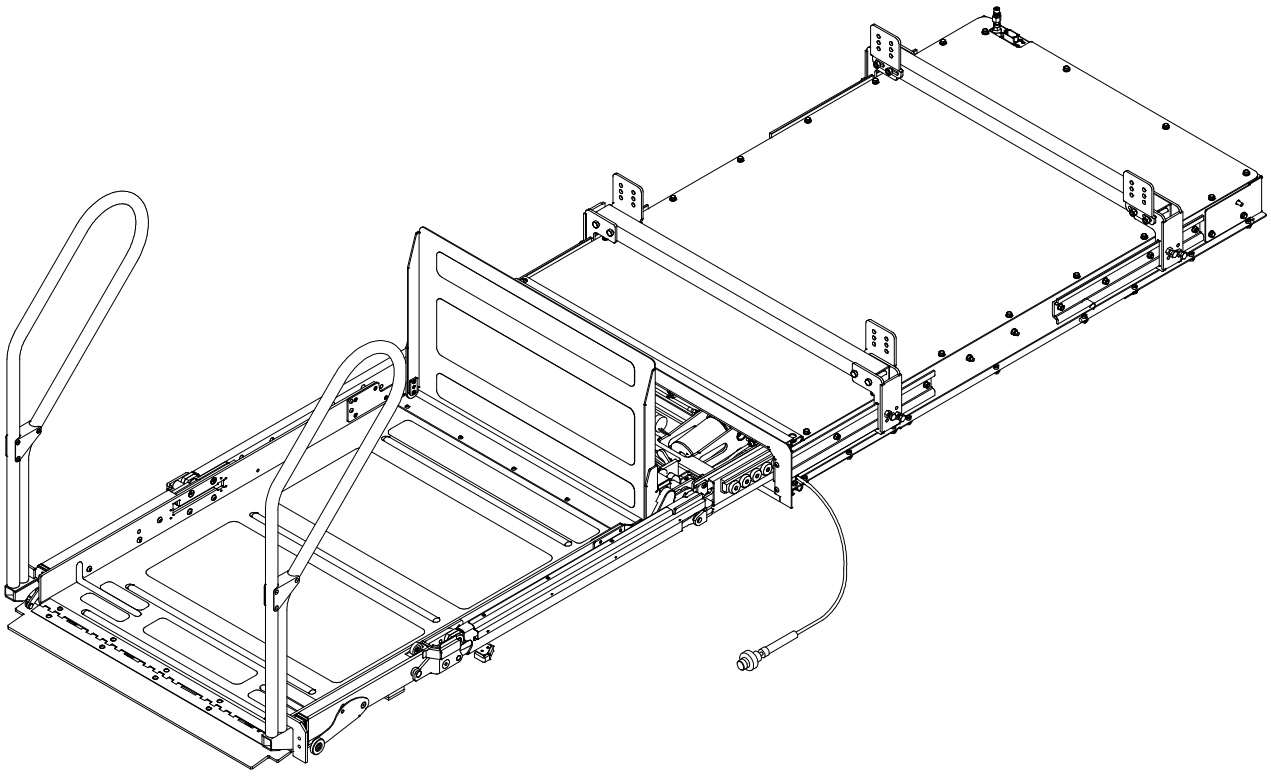
RICON®

*INNOVATION IN MOBILITY*

# Phantom

## Thin-profile Commercial Wheelchair Lift

PRINT



# SERVICE MANUAL

**06/08/04** **32DPH04.B**

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 |
|---|---|---|---|---|
| 32DPH04.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. | |
| | | 3-4 | Changed figure 3-1 to show rearrangement of components. | |
| | | 3-5 | Rewrote “Position Sensor Activity Description” section to reflect differences between TPL and TL2. | |
| | | 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 commercial wheelchair lift. The Phantom provides safe and easy access to buses and motor coaches for an individual using a wheelchair or scooter. The lift can also assist a standing passenger. The Phantom is sometimes referred to as the Thin Platform Lift, or TL2.

The Phantom is installed in a vehicle baggage bay, or similar sheltered location. 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 commercial operator manual 32DPH03.

## A. RICON SERVICE SUPPORT

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

**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**

## 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 modified or 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.

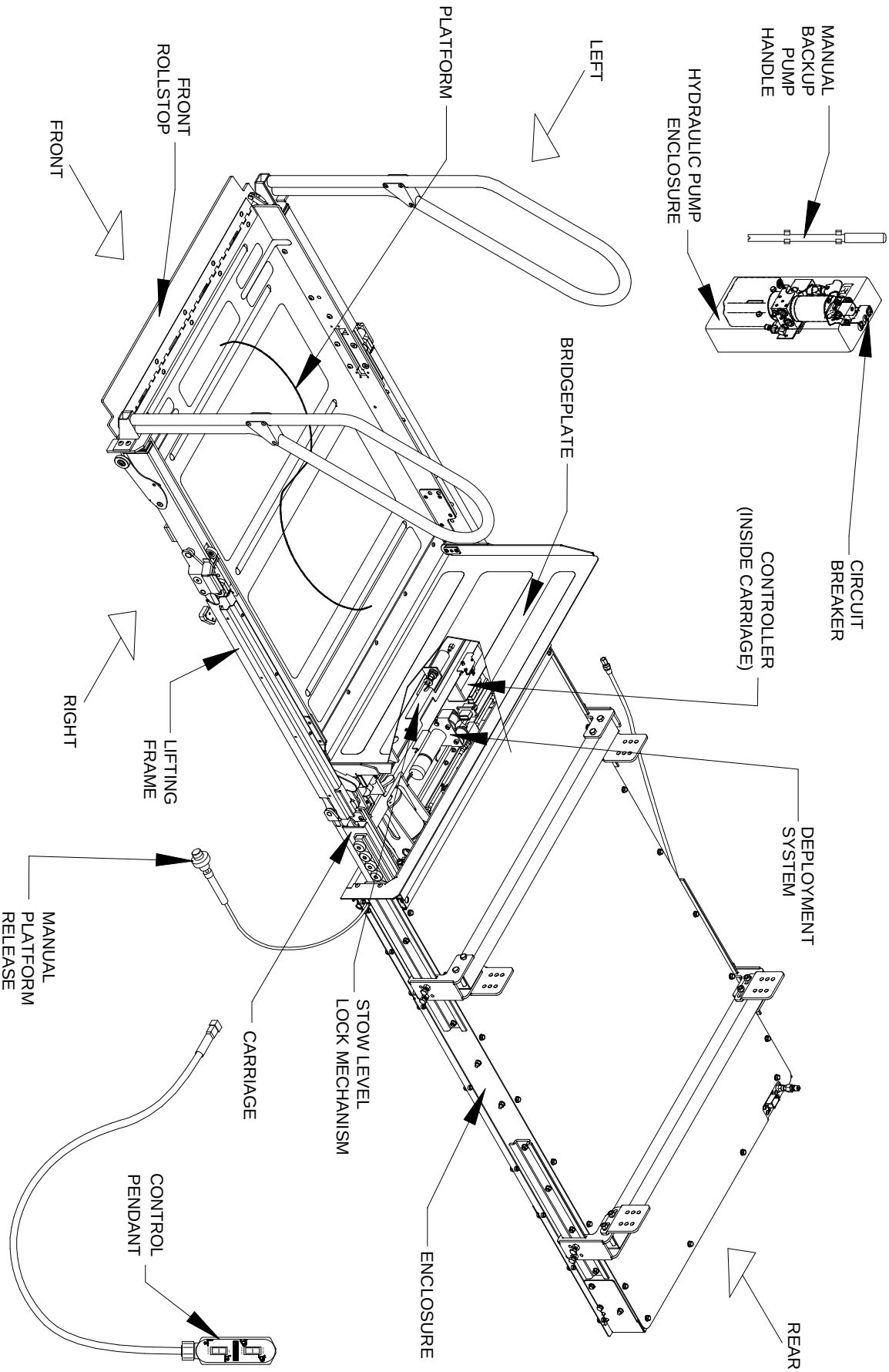


**FIGURE 1-1: PHANTOM COMMERCIAL LIFT COMPONENTS**

| 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 | Major assembly that consists of the carriage, lifting frame, and platform. |
| Handrails | (left and right) Provide handholds for user. Handrails may vary from what is shown. |
| 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; 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 | 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 establishs the correct platform height for retracting the platform into enclosure. |
| Circuit breakers | Small circuit breakers that protect the pendant and lift control circuits. |
| Manual platform release knob | Allows platform to be pulled from enclosure by hand. Pull knob to disengage platform from enclosure |
| **END OF TABLE** | |

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## II. PHANTOM INSTALLATION

The RICON Phantom Commercial Wheelchair Lift is installed by the bus builder. After mechanical and electrical installation, it may be necessary to adjust the platform vertical travel limit. 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**. 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.

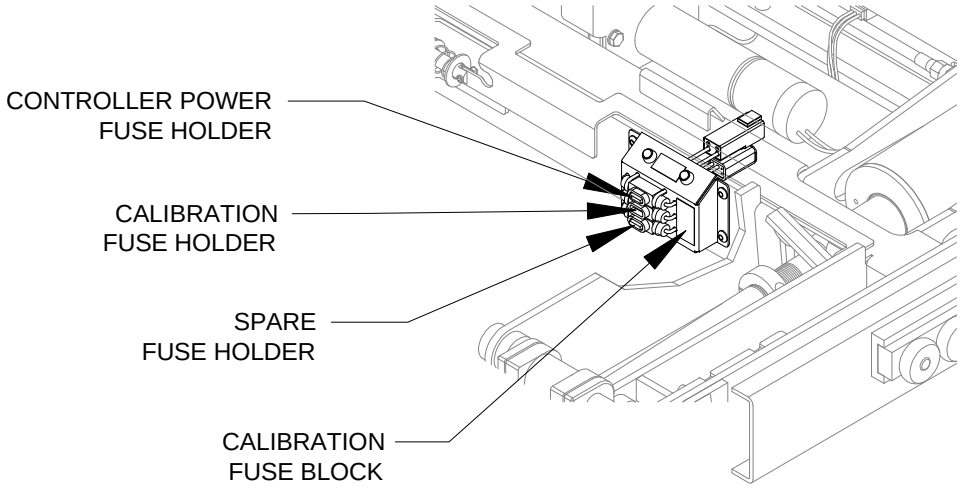


**FIGURE 1: CALIBRATION FUSE HOLDER**

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.

### 3. 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.

## III. PHANTOM COMMERCIAL MAINTENANCE

Regular maintenance of the RICON Phantom Commercial 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.

**⚠ CAUTION**

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

**⚠ WARNING**

MODIFYING OR FAILING TO PROPERLY MAINTAIN THIS PRODUCT WILL VOID THE WARRANTY AND MAY RESULT IN UNSAFE OPERATING INSTRUCTIONS.

### 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**

| **Interval** (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 |
|---|---|---|---|---|---|---|---|
| **Lift Usage** (rate of lift cycling) | 0 – 231+ cycles/ month<br>Low, normal, and high usage | 231 + cycles/ month<br>High usage | 116 - 230 cycles/ month<br>Normal usage | 231 + cycles/ month<br>High usage | 0 – 115 cycles/ month<br>Low usage | 116 - 230 cycles/ month<br>Normal usage | 0 – 115 cycles/ month<br>Low usage |
| **Climate type** (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

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## PHANTOM COMMERCIAL 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. | ☐ | ☐ | ☐ | ☐ |
| | Platform deploys and lowers to ground. | ☐ | ☐ | ☐ | ☐ |
| | Check manual pump operation, and hydraulic fluid level. Use Texaco No.1554 aircraft hydraulic fluid (or equivalent U.S. mil spec H5606G oil). | ☐ | ☐ | ☐ | ☐ |
| | Front roll stop is open (down). | ☐ | ☐ | ☐ | ☐ |
| ***Safety issue*** | Raise platform; verify that front rollstop is closed (up). Verify that it is locked by pulling on rollstop. | ☐ | ☐ | ☐ | ☑ |
| | Check all decals. Decals should be readable and securely attached. | ☐ | ☐ | ☐ | ☐ |
| ***Safety issue*** | Bridgeplate is up (vertical). | ☐ | ☐ | ☐ | ☑ |
| ***Safety issue*** | Raise platform to floor level; bridgeplate must overlap floor 1"– 2". | ☐ | ☐ | ☐ | ☑ |
| | Stow platform from floor level. Platform must stow smoothly and completely. | ☐ | ☐ | ☐ | ☐ |
| | Check hydraulic system for leaks (lines, cylinder, and connections). | ☐ | ☐ | ☐ | ☐ |
| | Clean carriage assembly with Zep I.D. Red degreaser. | ☐ | ☐ | ☐ | ☐ |
| | Inspect and lube twelve side carriage rollers with Aeroshell #22. Remove excess grease. | ☐ | ☐ | ☐ | ☐ |
| | Inspect trunnions and their pivot pins; lube with Zep PLS lubricating spray. | ☐ | ☐ | ☐ | ☐ |
| | Remove rollstop covers from both sides of platform; clean rollstop pivot points with Zep I.D. Red degreaser. Replace covers. | ☐ | ☐ | ☐ | ☐ |

NOTES:

Print name: _____

Signature:

## C. HYDRAULIC SYSTEM DIAGRAM

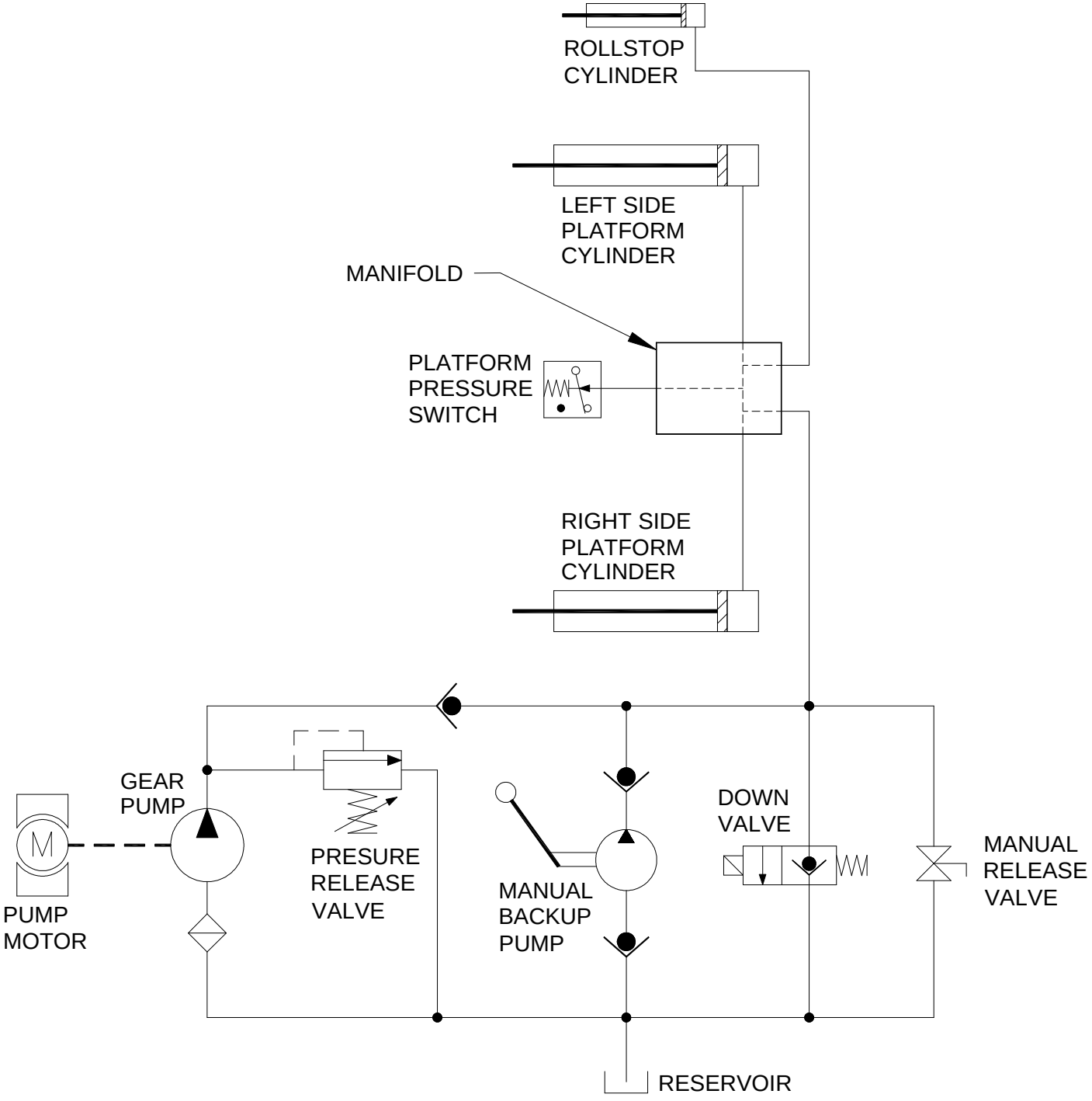


**FIGURE 3-1: PHANTOM COMMERCIAL HYDRAULIC SYSTEM**

## D. POSITION SENSOR ACTIVITY DESCRIPTION

The following sections explain the platform motions that occur when a button is pressed on the control pendant, and how the lifts 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 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.

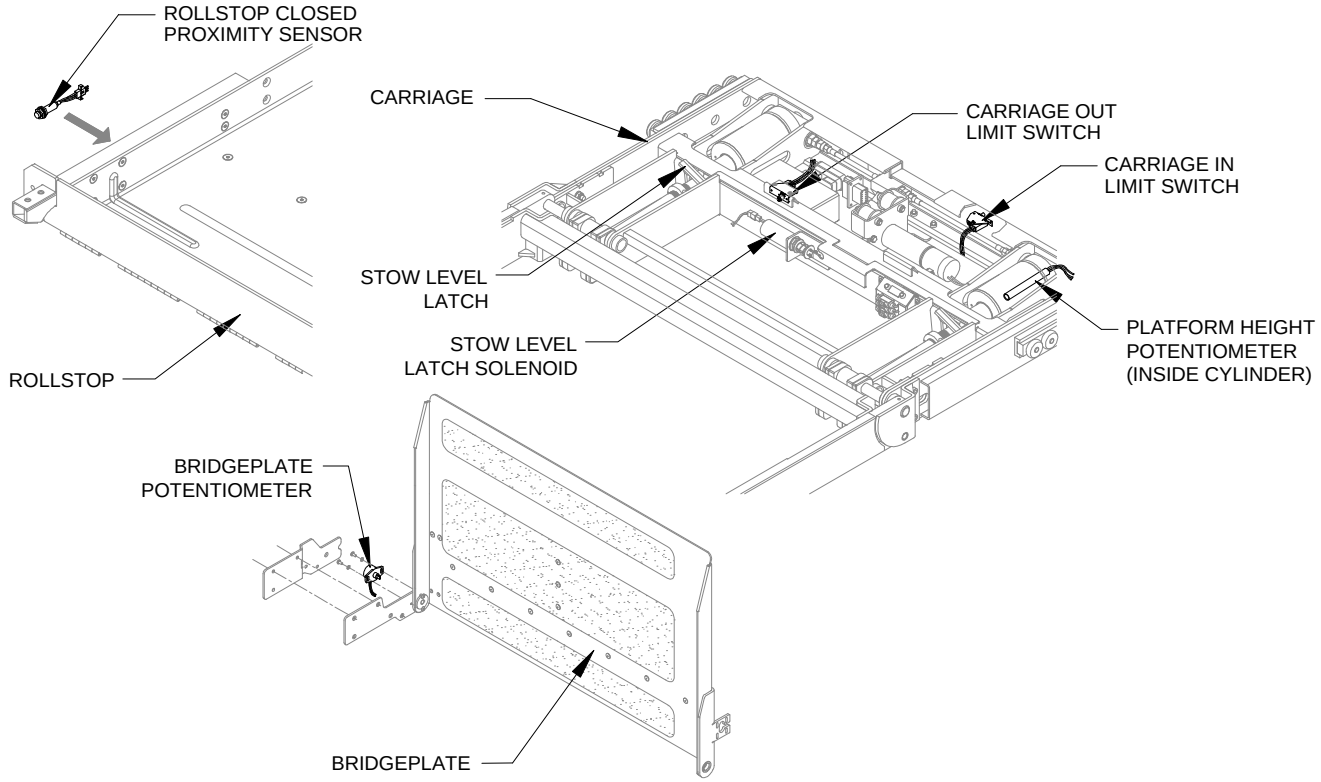


**FIGURE 3-2: LIFT POSITION SENSOR LOCATIONS**

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

### 1. PRESSING THE DEPLOY BUTTON

#### a. From stowed position:

1) Pressing and holding the **Deploy button** causes the platform to move outward from the enclosure. Outward movement is stopped by the platform contacting mechanical stop blocks inside the enclosure. The platform also actuates the Platform Out switch at this point.
2) When the Platform Out switch is actuated the bridgeplate is raised to the vertical position, where it is locked in place and its position is monitored by the Bridgeplate potentiometer. The **Deploy button** can be released.

### 2. PRESSING THE UP BUTTON

#### a. From stow level:

1) Pressing and holding the **Up button** causes the platform to begin moving upward (if the Platform Out switch remains actuated and the Bridgeplate potentiometer detects that the bridgeplate is vertical).
2) Upward movement stops when the hydraulic cylinders are fully extended (the platform has reached its maximum height). Maximum height is monitored by the Platform Height potentiometer.
3) When the Platform Height potentiometer determines the platform is at maximum height then the bridgeplate is unlocked and lowered to the vehicle floor. The Bridgeplate potentiometer detects that the bridgeplate is now horizontal. The **Up button** can be released.

#### b. From ground level:

1) Pressing and holding the **Up button** causes the platform to begin moving upward. When the Platform Height potentiometer detects the platform leaving the ground the front rollstop is raised to the vertical position and locked in place. The Rollstop Closed proximity sensor changes state when the rollstop is locked in the vertical position.

2) When the platform is about six inches above ground level the electronic controller verifies that the Rollstop Closed proximity sensor has changed state. If the sensor has changed state, the platform will continue to move upward. If it has not changed state then platform movement is halted.
3) Upward movement stops when the hydraulic cylinders are fully extended (the platform has reached its maximum height). Maximum height is monitored by the Platform Height potentiometer.
4) When the Platform Height potentiometer determines the platform is at maximum height the bridgeplate is unlocked and lowered to the vehicle floor. The Bridgeplate potentiometer detects that the bridgeplate is now horizontal. The **Up button** can be released.

**3. PRESSING THE DOWN BUTTON**

**a. From Stowed Position:**

1) Pressing and holding the **Down button** (if the Platform Out switch remains actuated, the Bridgeplate potentiometer determines the bridgeplate is up, and the Rollstop Closed proximity sensor determines the rollstop is up) causes the platform to rise just slightly, thereby removing weight from the stow level latch mechanism. This slight height change is monitored by the Platform Height potentiometer.
2) The stow height solenoid disengages the latch mechanism and the platform begins to move downward.
5) Downward movement stops when the platform settles on the ground. Ground level is also monitored by the Platform Height potentiometer. The front rollstop is now unlocked and lowered to the ground (the Rollstop Closed proximity sensor changes state). The **Down button** can be released.

**b. From Floor Level Position**

1) Pressing and holding the **Down button** raises the bridgeplate to the vertical position, where its position is monitored by the Bridgeplate potentiometer.
2) If the Rollstop Closed proximity sensor detects that the rollstop is up then the platform begins to move downward. The stow height solenoid disengages the latch mechanism before the platform passes through stow level.
3) Downward movement stops when the platform settles on the ground. Ground level is also monitored by the Platform Height potentiometer. The front rollstop is now unlocked and lowered to the ground (the Rollstop Closed proximity sensor changes state). The **Down button** can be released.

**4. PRESSING THE STOW BUTTON**

**a. From Floor Level Position:**

1) Pressing and holding the **Stow button** raises the bridgeplate to the vertical position, where it is locked in place and its position monitored by the Bridgeplate potentiometer.
2) If the Bridgeplate potentiometer determines the bridgeplate is up, and the Rollstop Closed proximity sensor determines the rollstop is up, then the platform begins to move downward.
3) Downward movement pauses when the platform is slightly above stow height while the electronic controller verifies that a load is not present on the platform (by monitoring the platform pressure switch in the hydraulic system). If a load is present, the platform remains where it is (this safeguard prevents stowing of the platform with a passenger onboard).
4) If a load is not present on the platform it will continue to move downward until stopped by the stow level mechanical locking mechanism. The platform position is monitored by the Bridgeplate potentiometer.
5) When the Platform Height potentiometer determines that the platform is at stow level the platform begins to move into the enclosure. Inward movement is stopped by the platform contacting mechanical stop blocks inside the enclosure. The platform also actuates the Platform In switch. The **Stow button** can be released.

**b. From Ground Level:**

1) Pressing and holding the **Stow button** causes the platform to begin moving upward. When the platform leaves the ground the front rollstop rises to the vertical position and is locked in place.
2) Upward movement stops when the platform rises to a height slightly above stow level, as determined by the Platform Height potentiometer. At this point the electronic controller verifies that a load is not present on the platform by monitoring the platform pressure switch (part of the hydraulic system). If a load is present, the platform remains where it is (this safeguard prevents stowing the platform with a passenger onboard).
3) If a load is not present, the platform moves downward until stopped by the stow level locking mechanism.
4) When the Bridgeplate potentiometer determines that the platform is at stow level the platform begins to move into the enclosure. Inward movement is stopped by the platform contacting mechanical stop blocks inside the enclosure. The platform also contacts the Platform In switch. 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

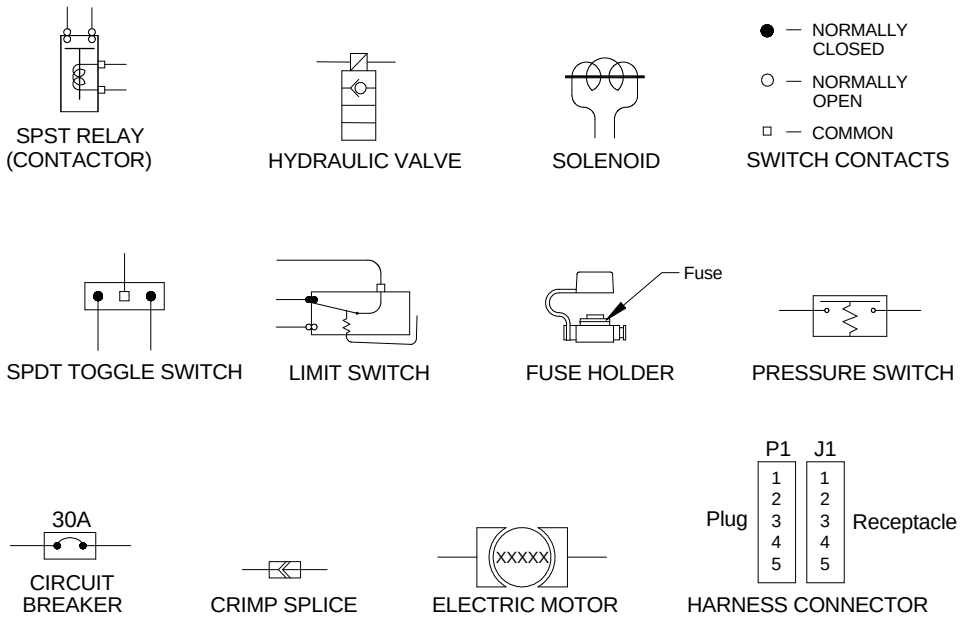


**FIGURE 3-3: ELECTRICAL SYMBOL DESCRIPTIONS**

| TABLE 3-2: ELECTRONIC CONTROLLER CONNECTOR PIN SIGNAL DESCRIPTIONS | | | | | |
|---|---|---|---|---|---|
| **PIN** | | **COLOR** | **DESCRIPTION** | **AT REST** | **IN ACTION** |
| **J7** | 1 | Black | Signal to bridgeplate motor negative terminal | 0 VDC | 12 volts to raise bridgeplate; ground to lower bridgeplate |
| | 3 | Red | Signal to bridgeplate motor positive terminal | 0 VDC | 12 volts to lower bridgeplate; ground to raise bridgeplate |
| | 5 | White | Signal to bridgeplate latch solenoid | 0 VDC | 12 volts to unlock bridgeplate from vertical or horizontal positions |
| | 6 | Yellow | Signal to stow level latch solenoid | 0 VDC | 12 volts to engage stow level latch mechanism (stopping platform movement at stow level) |
| | 7 | Yellow | Signal to carriage lock solenoid | 0 VDC | 12 volts when platform is fully extended or retracted |
| | 8 | Red | Signal to hydraulic down valve | 0 VDC | 12 volts when DOWN button is pressed and platform is deployed |
| | 9 | Brown | Signal to hydraulic pump relay | 0 VDC | 12 volts 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 volts when STOW button is pressed |
| | 13 | Green | Bridgeplate position potentiometer B+ | 12VDC | 12VDC |
| | 14 | Blue | Signal from bridgeplate position potentiometer | 0 VDC; bridge plate down | 0 to 12VDC 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 volts when power is supplied to controller |
| | 20 | Brown | Signal to carriage motor negative terminal | 0 VDC | 0 volts when DEPLOY button is pressed; 12 volts when STOW button is pressed |
| | 21 | Red | 12VDC buss | 12VDC | 12VDC supply for switches and sensors |
| | 22 | Brown | Signal from platform load sensor pressure switch | 0 VDC | 12VDC when a load of 75 lbs is on platform |
| | 24 | Yellow | Signal from carriage out switch | 0 VDC when carriage not deployed | 12 volts 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 | 12VDC when fuse is in calibration fuse holder |
| | 28 | Yellow | Signal from carriage in switch | 0 VDC when carriage not stowed | 12 volts when carriage is fully stowed |
| | 29 | Blue | Signal to carriage motor positive terminal | 0 VDC | 12 volts when DEPLOY button is pressed; 0 volts when STOW button is pressed |
| | 30 | Blue | Signal to carriage motor positive terminal | 0 VDC | 12 volts when DEPLOY button is pressed; 0 volts when STOW button is pressed |
| | 31 | White | 12VDC; 30A supply to controller | 12VDC | 12VDC from 30A circuit breaker in pump box |
| | 32 | Green | Signal from rollstop sensor | 0 VDC when rollstop is open | 12VDC when rollstop is closed (raised) |

| TABLE 3-2: ELECTRONIC CONTROLLER CONNECTOR PIN SIGNAL DESCRIPTIONS | | | | | |
|---|---|---|---|---|---|
| PIN | | COLOR | DESCRIPTION | AT REST | IN ACTION |
| | 33 | Black | Platform height potentiometer B+ | 12VDC | 12 volts |
| | 34 | Green | Signal from platform height potentiometer | 0 VDC when platform is on ground | 0 to 12VDC as platform rises |
| | 35 | Red | Platform height potentiometer B- | 0 VDC | 0 volts |
| | 36 | White | 12VDC; 30A supply to controller | 12VDC | 12VDC from 30A circuit breaker in pump box |
| | 37 | Gray | UP signal from control pendant | 0 VDC | 12 volts when UP button is pressed |
| | 38 | Green | DOWN signal from control pendant | 0 VDC | 12 volts when DOWN button is pressed |
| | 39 | Orange | STOW signal from control pendant | 0 VDC | 12 volts when STOW button is pressed |
| | 40 | Black | DEPLOY signal from control pendant | 0 VDC | 12 volts when DEPLOY button is pressed |
| END OF TABLE | | | | | |

| 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. |
| 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 operated 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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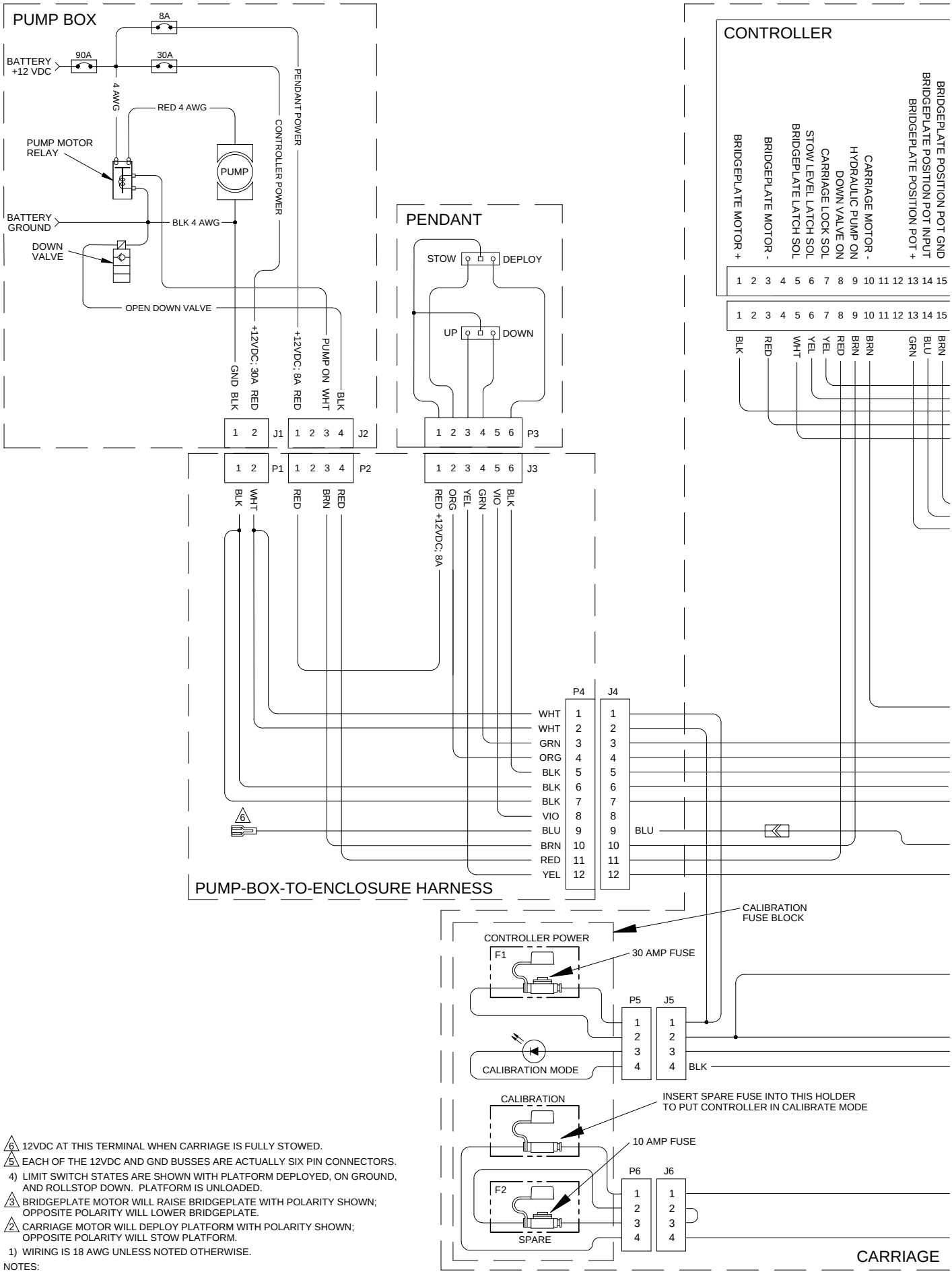


6 12VDC AT THIS TERMINAL WHEN CARRIAGE IS FULLY STOWED.

5 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.

3 BRIDGEPLATE MOTOR WILL RAISE BRIDGEPLATE WITH POLARITY SHOWN; OPPOSITE POLARITY WILL LOWER BRIDGEPLATE.

2 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 COMMERCIAL ELECTRICAL DIAGRAM – SHEET 1**

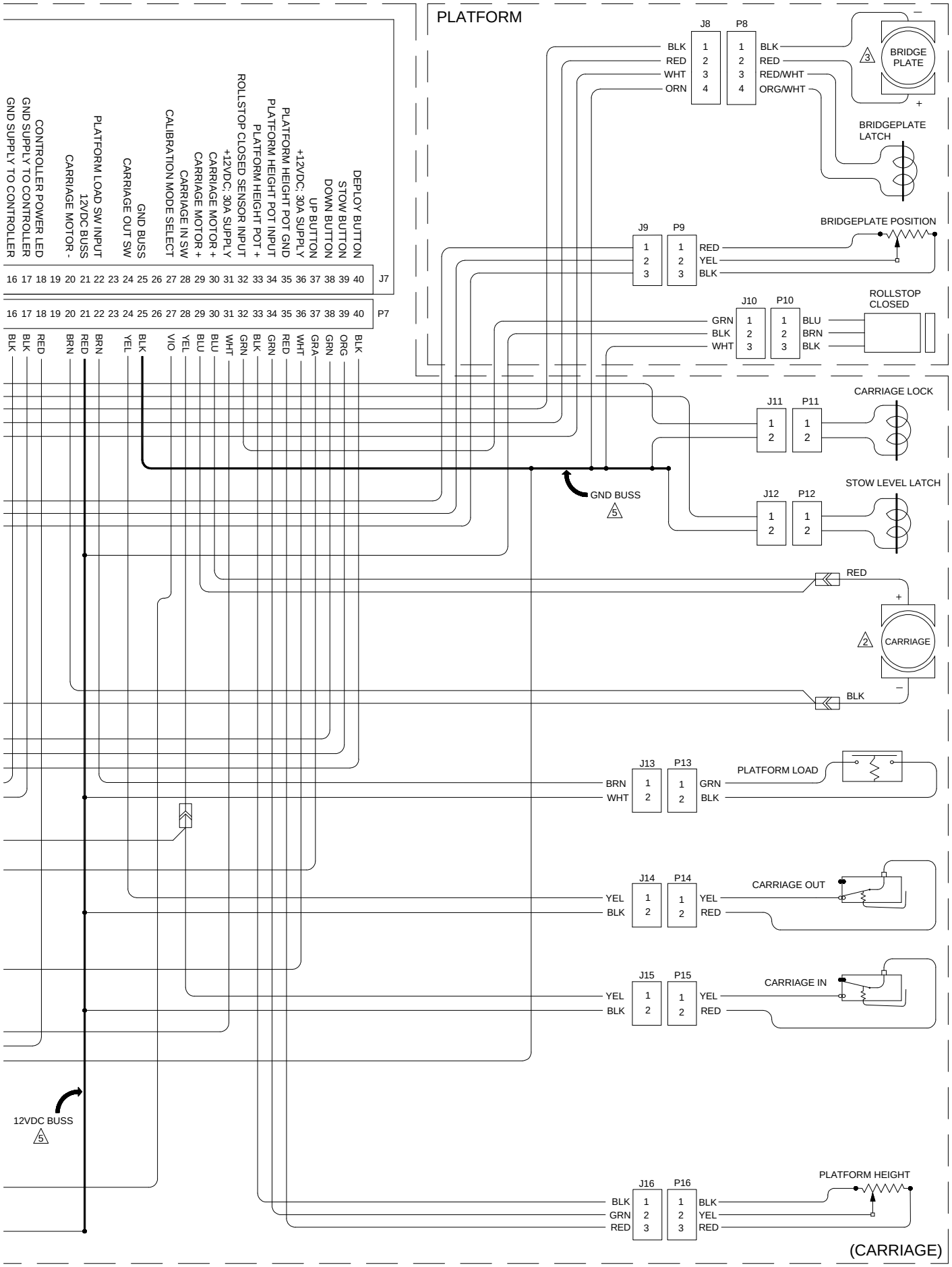


**FIGURE 3-5: PHANTOM COMMERCIAL ELECTRICAL DIAGRAM – SHEET 2**

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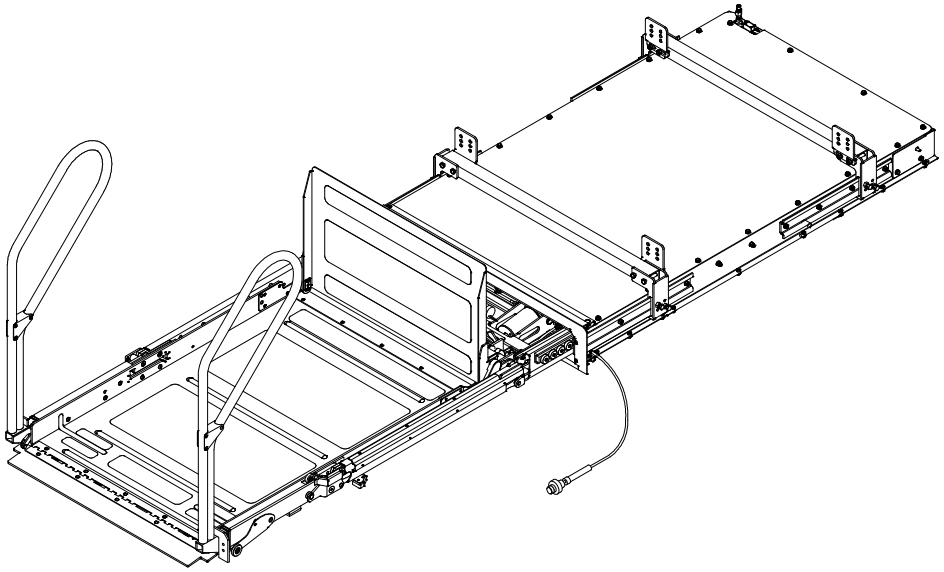
## IV. PHANTOM COMMERCIAL SPARE PARTS

This chapter contains parts illustrations and parts lists for the RICON Phantom commercial 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** **PAGE**

**FIGURE 4-1: DECAL LOCATIONS AND PART NUMBERS**

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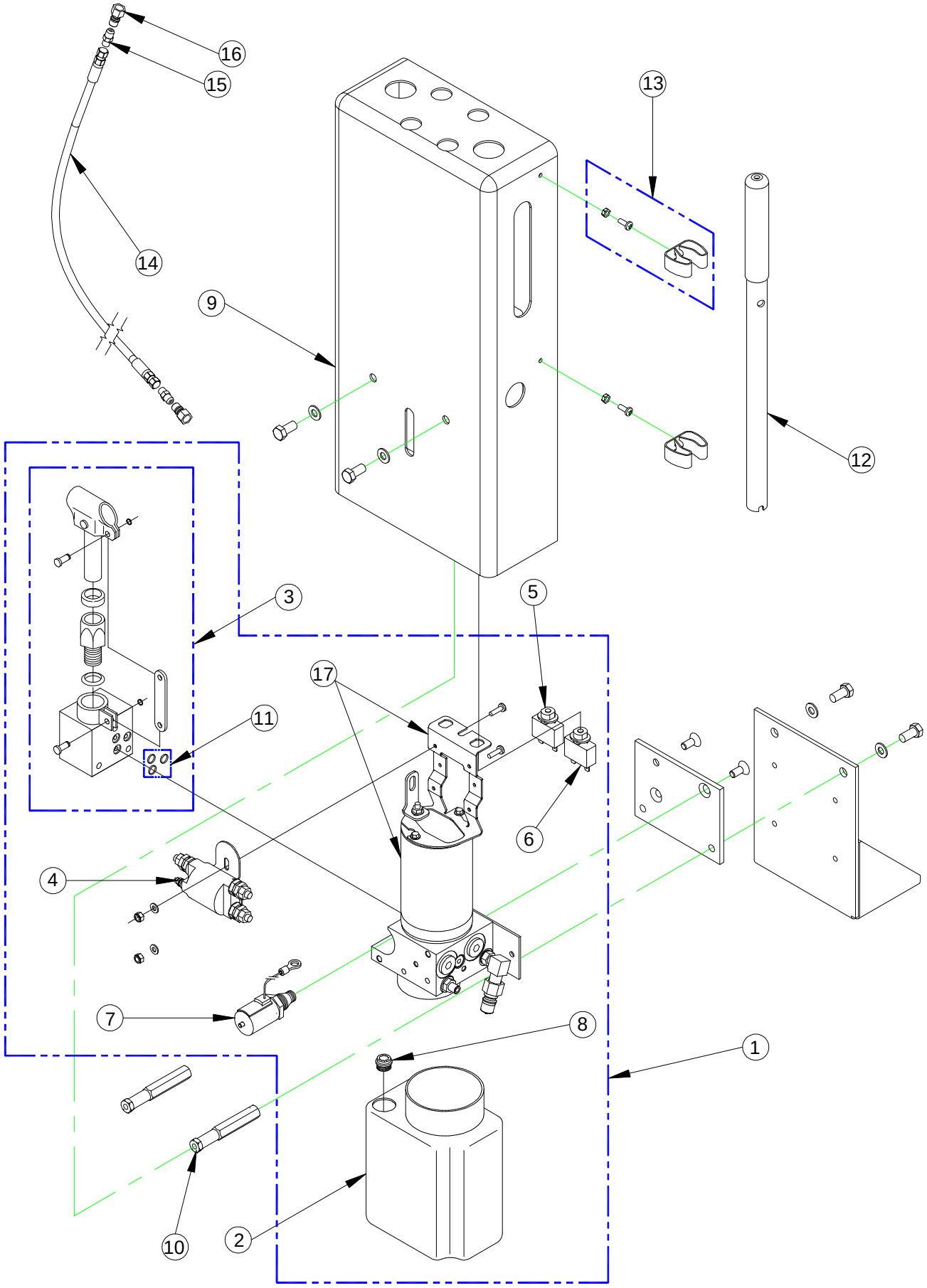



**FIGURE 4-2: HYDRAULIC PUMP ASSEMBLY**

| 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, ¼ | 2 | UV-SH-003 |
| 17 | KIT, MOTOR ASSY, W/BRKT, 12V | 1 | 14345 |

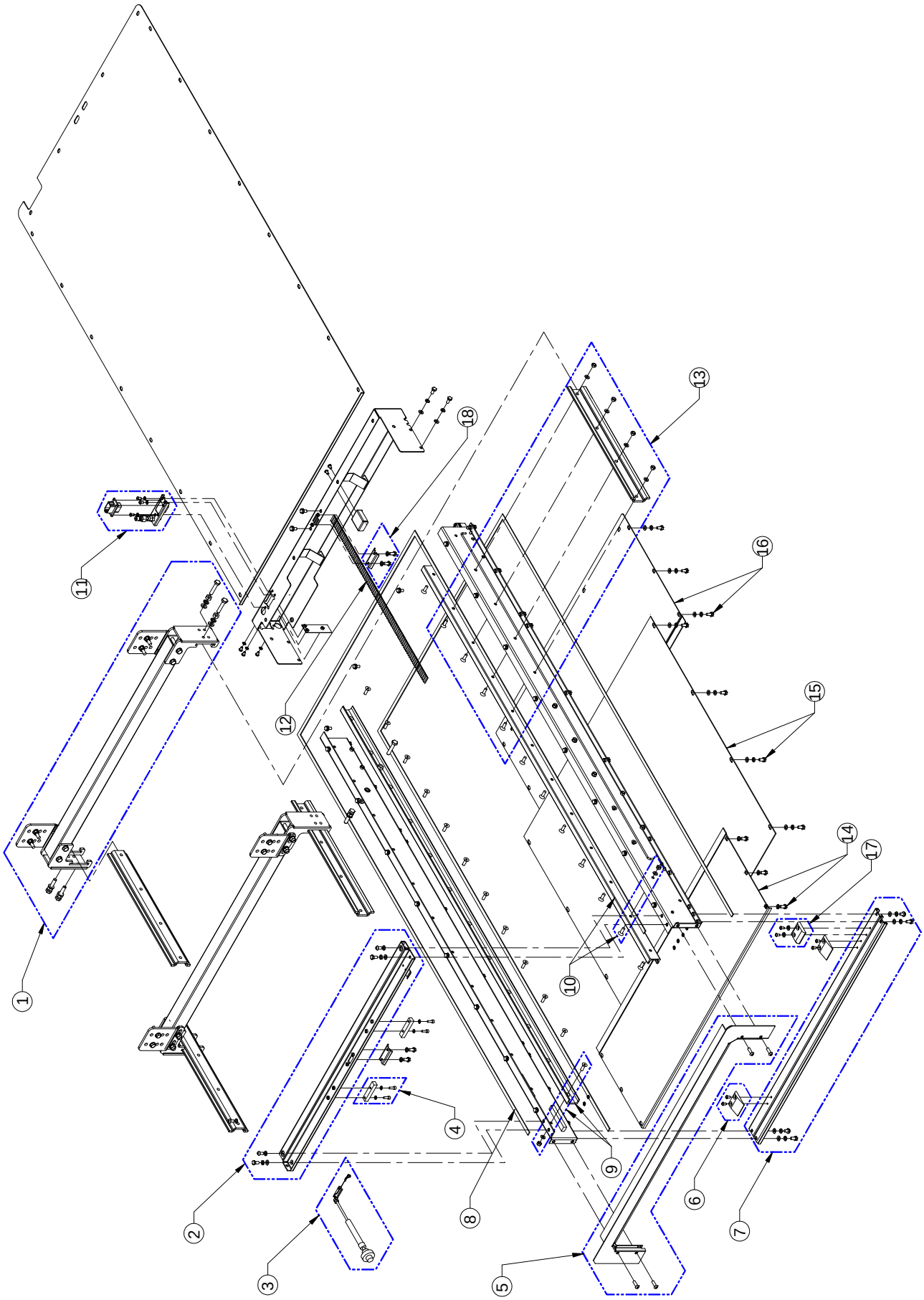



**FIGURE 4-3: ENCLOSURE ASSEMBLY**

| FIGURE 4-3: ENCLOSURE ASSEMBLY | | | |
|---|---|---|---|
| **REF** | **DESCRIPTION** | **QTY/ASSY** | **PART NO.** |
| 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 | 30972 |
| 4 | KIT, STOP BLOCK, W/HDWR | 2 | 30157 |
| 5 | KIT, FRONT TRIM PANEL, W/HDWR | 1 | 30973 |
| 6 | KIT, THRESHOLD SLIDE, W/HDWR | 2 | 30159 |
| 7 | KIT, ENCLOSURE SUPPORT BEAM, W/HDWR | 1 | 30974 |
| 8 | ENCLOSURE COVER SEAL | 2 | 30254 |
| 9 | KIT, CARRIAGE GUIDE RAIL, LH | 1 | 30975 |
| 10 | KIT, CARRIAGE GUIDE RAIL, RH | 1 | 30976 |
| 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 | 30167 |
| 16 | KIT, REAR BOTTOM COVER, W/HDWR | 1 | 30168 |
| 17 | KIT, BLOCK, PLATFORM SUPPORT W/HDWR | 1 | 30978 |
| 18 | KIT, MANUAL RELEASE PLATE | 2 | 30979 |

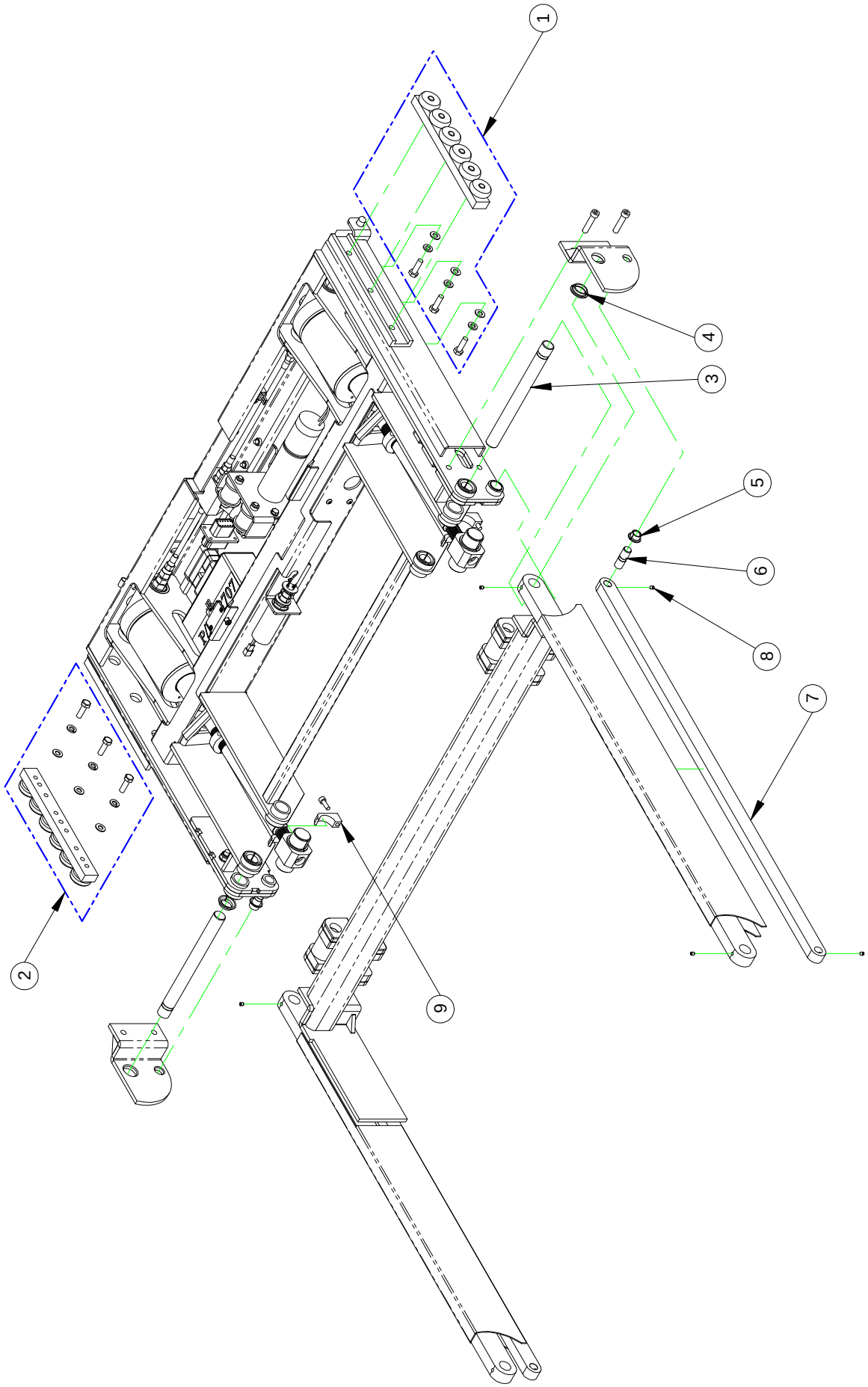



**FIGURE 4-4: TRAVELING FRAME ASSEMBLY**

| FIGURE 4-4: TRAVELING FRAME ASSEMBLY | | | |
|---|---|---|---|
| **REF** | **ITEM DESCRIPTION** | **QTY/ASSY** | **PART NO.** |
| 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 |

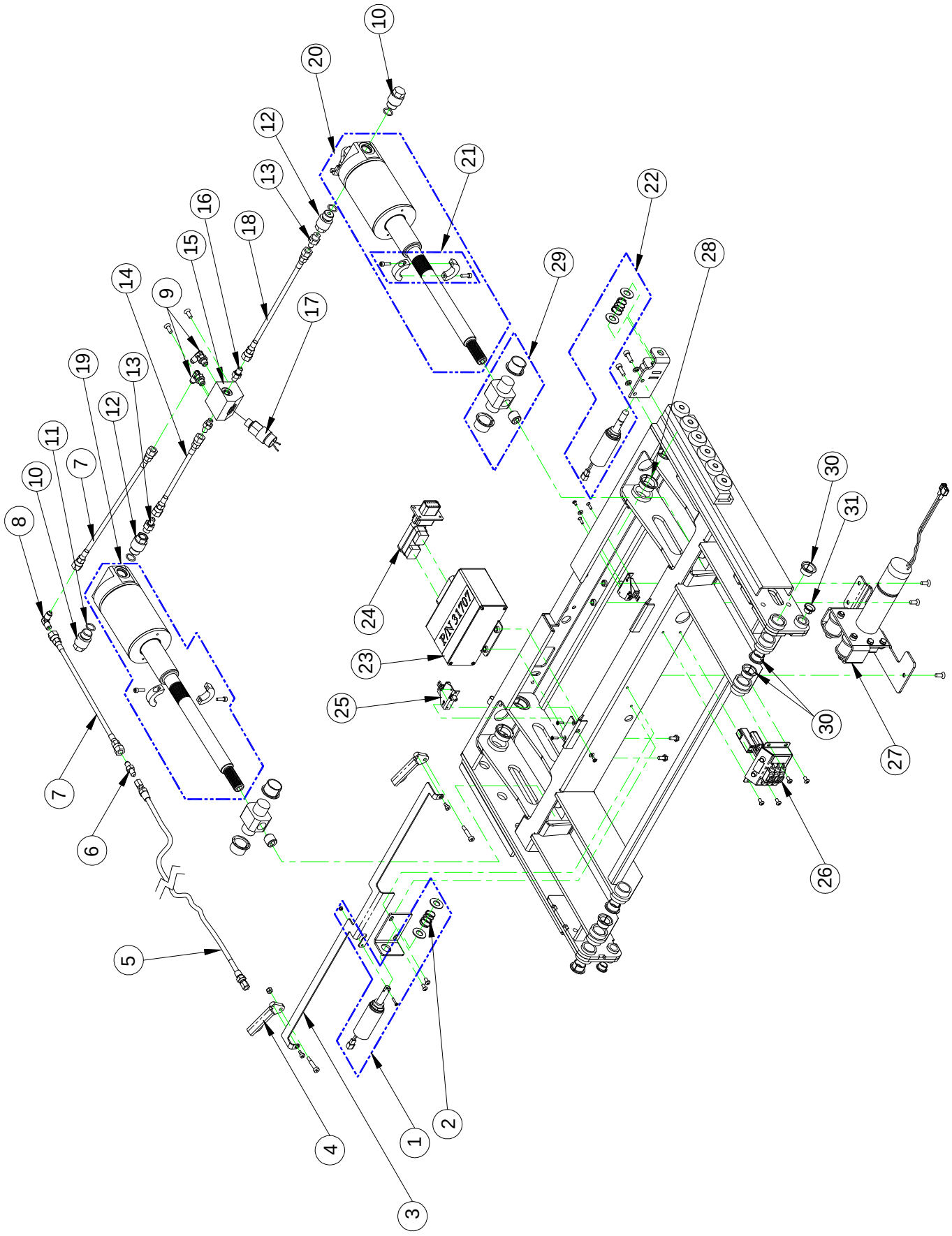



**FIGURE 4-5: CARRIAGE ASSY**



32DPH04.B

| 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 | HOSE, HYDRAULIC, SST BRAID, 1/4IDX5/16ODX59 | 1 | 24454 |
| 6 | FITTING, UNN, 1/4J, STL | 1 | V2-SH-17 |
| 7 | HYDRAULIC HOSE, 12.00” LX.25ID | 2 | 30689 |
| 8 | FITTING, MALE, JIC#4 MALE JIC#4, 90 DEGREE | 1 | 31362 |
| 9 | FITTING, ELBOW, #4, STD THD, #4 JIC | 2 | 18235 |
| 10 | FITTING, PIVOT | 2 | F8-0009 |
| 11 | O-RING, NITRILE, .644IDX.087W | 4 | 24908 |
| 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, 10.72LX.25 ID | 1 | 27728 |
| 19 | KIT, HYDRAULIC CYLINDER ASSY, W/HDWR | 1 | 30987 |
| 20 | KIT, HYDRAULIC CYLINDER ASSY, W/HDWR & POTENTIOMETER | 1 | 30990 |
| 21 | KIT, COLLAR, STOW LEVEL LOCKING MECHANISM, W/HDWR | 2 | 30911 |
| 22 | KIT, SOLENOID ASSY, STOW LOCK 12V | 1 | 30991 |
| 23 | CONTROLLER, ELECTRONIC | 1 | 31707 |
| 24 | HARNESS, CONTROLLER | 1 | 31197 |
| 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 |
| 30 | BUSHING, ¾ DIAX3/4 | 6 | 25383 |
| 31 | BUSHING, ½”X3/8” | 2 | 25384 |

*Refer to the following figure for greater detail.

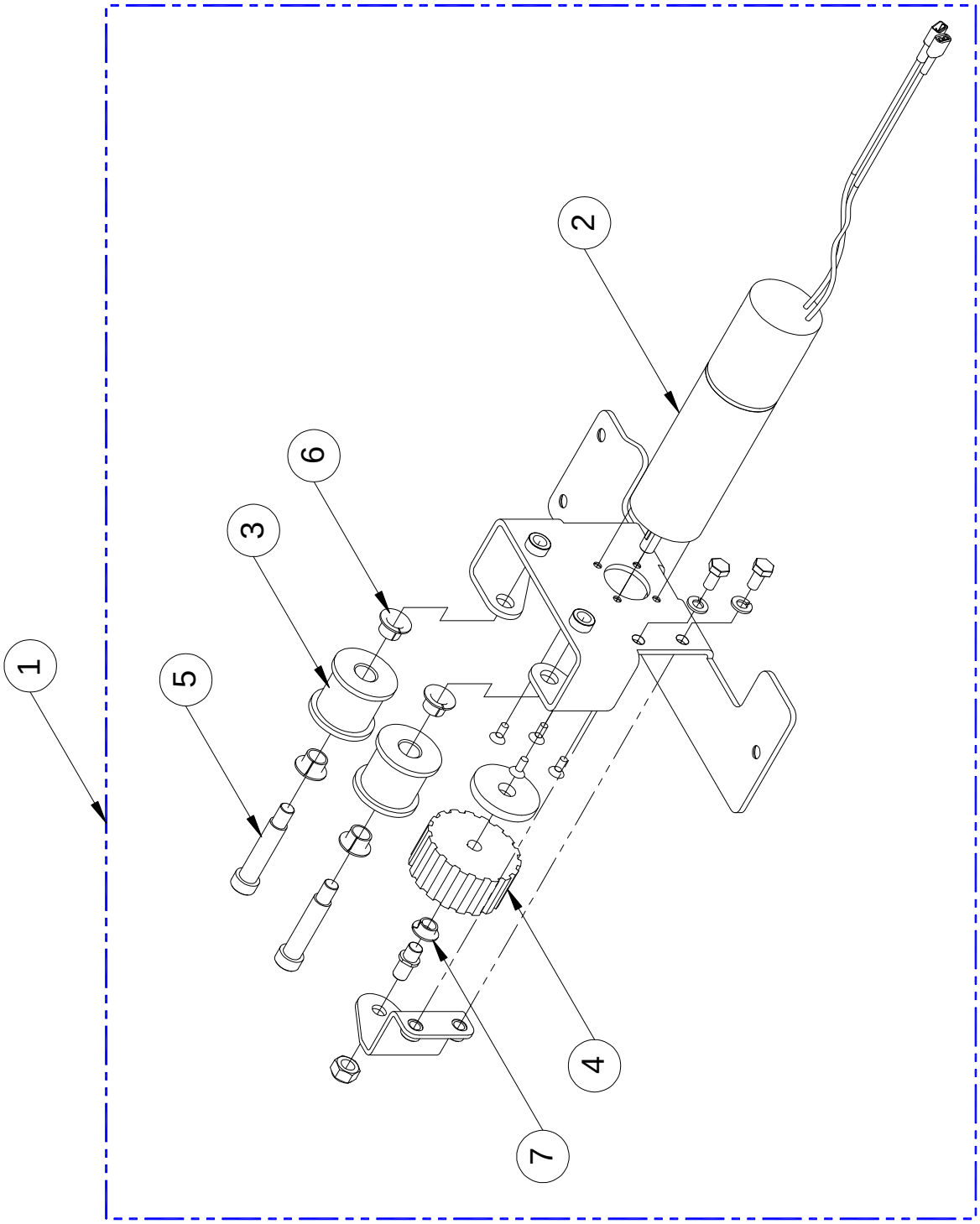



**FIGURE 4-6: CARRIAGE MOTOR ASSEMBLY**

| FIGURE 4-6: CARRIAGE MOTOR ASSEMBLY | | | |
|---|---|---|---|
| **REF** | **DESCRIPTION** | **QTY** | **PART NO.** |
| 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 |

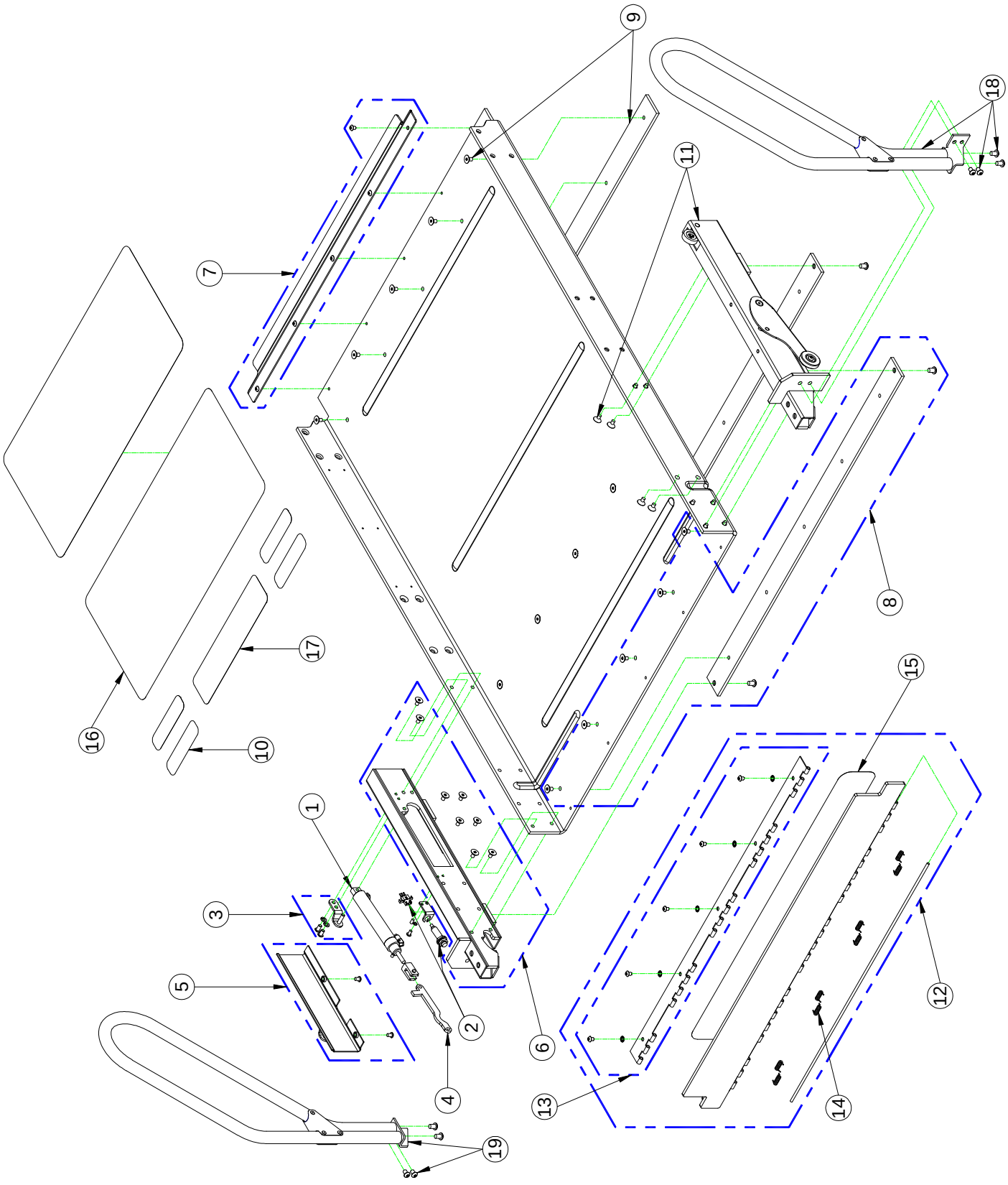



**FIGURE 4-6: PLATFORM ASSEMBLY**

| FIGURE 4-6: PLATFORM ASSY | | | |
|---|---|---|---|
| **REF** | **ITEM DESCRIPTION** | **QTY/ASSY** | **PART NO.** |
| 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 | 30981 |
| 7 | KIT, TRANSITION PLATE, W/HDWR | 1 | 30179 |
| 8 | KIT, REINFORCEMENT BAR | 1 | 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 | 30985 |
| 12 | KIT, ROLLSTOP ASSY W/HINGE | 1 | 30986 |
| 13 | KIT, HINGE, W/HDWR | 1 | 30178 |
| 14 | SPRING, BARRIER HINGE | 8 | 25434 |
| 15 | SAFETREAD, 25.5X3 YELLOW | 1 | 25664 |
| 16 | SAFETREAD, 25.5X12 OCEAN GRAY | 2 | 25661 |
| 17 | SAFETREAD, 12.75X3.0, YELLOW | 1 | 25673 |
| 18 | KIT, HANDRAIL ASSY, RH, TL2 | 1 | 30998 |
| 19 | KIT, HANDRAIL ASSY, LH, TL2 | 1 | 30999 |

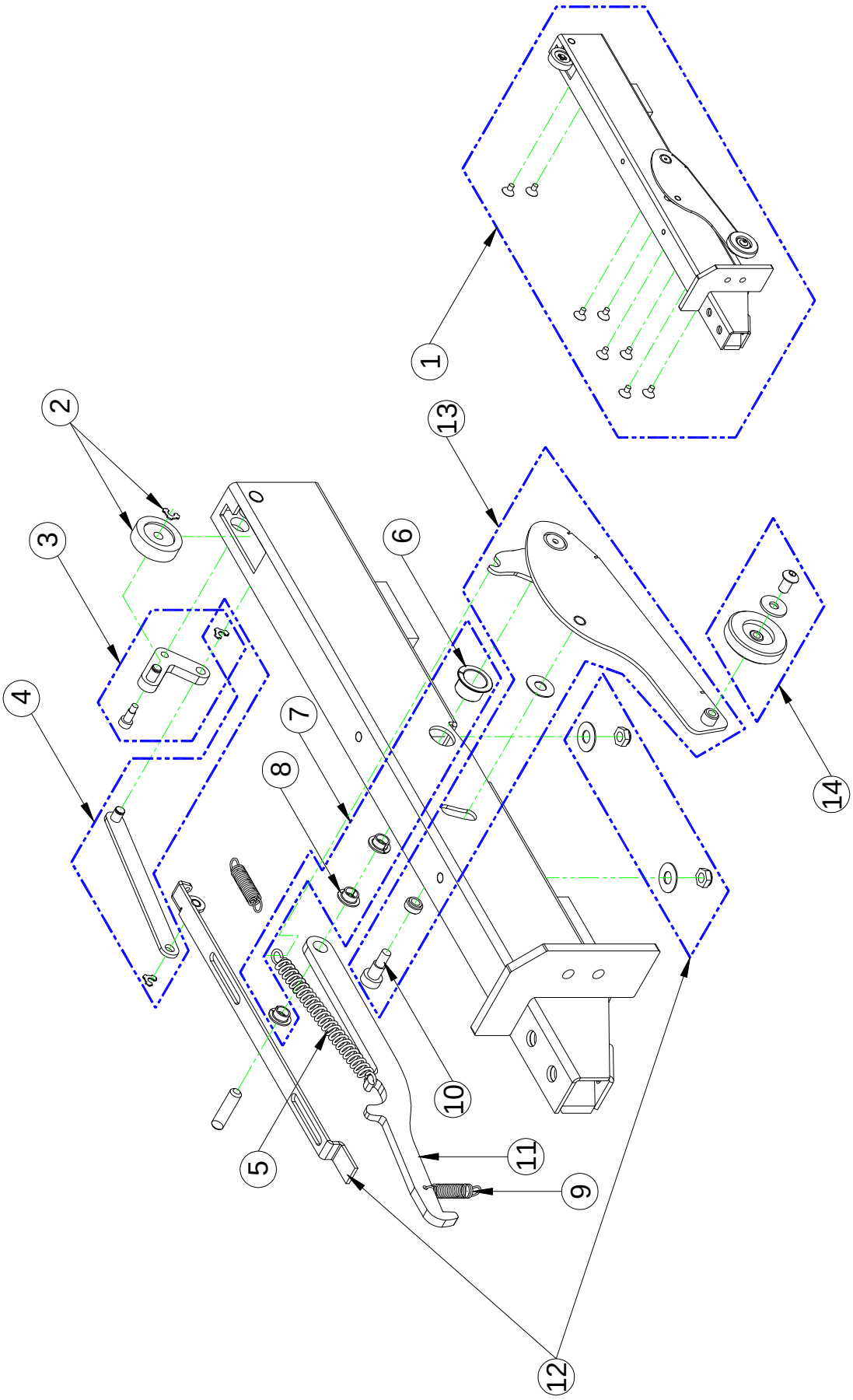



**FIGURE 4-7: ROLLSTOP LATCH ACTUATOR ASSEMBLY**

| FIGURE 4-7: ROLLSTOP LATCH ACTUATOR ASSEMBLY | | | |
|---|---|---|---|
| **REF** | **ITEM DESCRIPTION** | **QTY/ASSY** | **PART NO.** |
| 1 | KIT, ROLLSTOP LATCH ACTUATOR ASSY W/HDWR | 1 | 30993 |
| 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 |

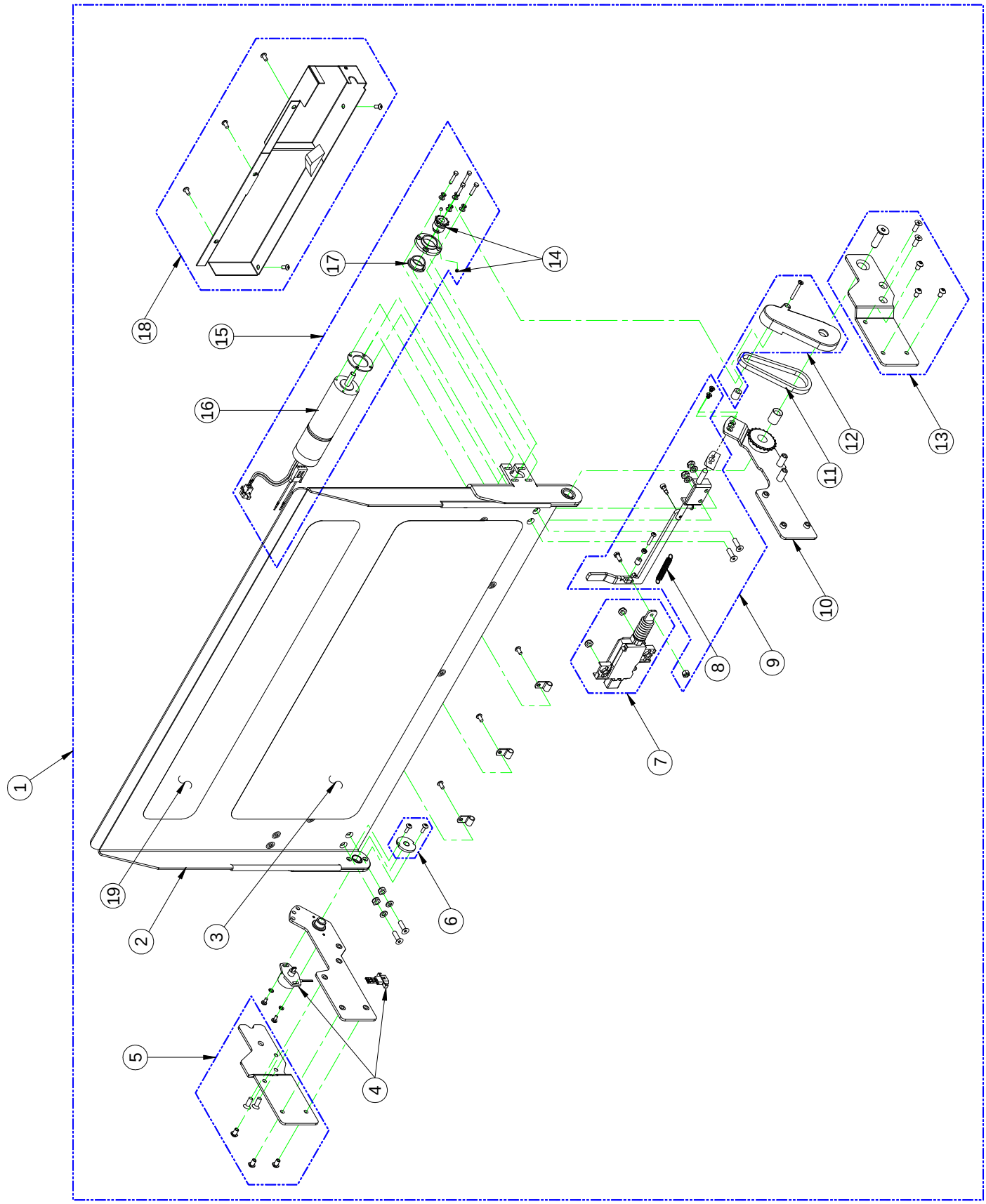



**FIGURE 4-9: PLATFORM BRIDGEPLATE ASSEMBLY**

| FIGURE 4-9: PLATFORM BRIDGEPLATE ASSY | | | |
|---|---|---|---|
| **REF** | **ITEM DESCRIPTION** | **QTY/ASSY** | **PART NO.** |
| 1 | KIT, BRIDGEPLATE ASSY | 1 | 30984 |
| 2 | KIT, BRIDGEPLATE WITH SAFETREAD | 1 | 30181 |
| 3 | SAFETREAD, 25.5X12, OCEAN GRAY | 1 | 25661 |
| 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, .25ODX1.5L SST | 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, ¾” ID X 3/8W | 1 | 25381 |
| 18 | KIT, MOTOR COVER, W/HDWR | 1 | 30190 |
| 19 | SAFETREAD, 25.5X3, YELLOW | 1 | 25664 |

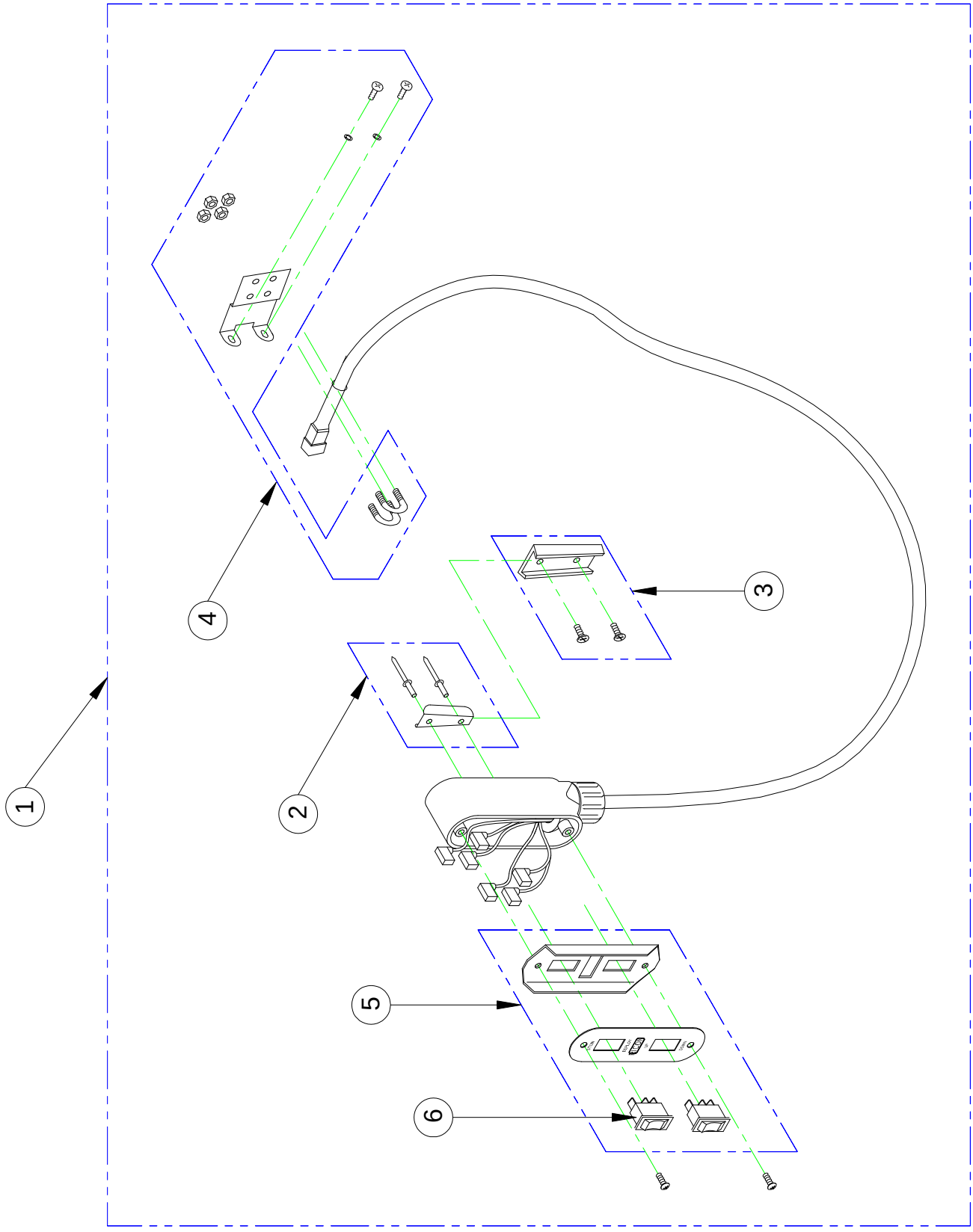



**FIGURE 4-10: CONTROL PENDANT ASSEMBLY**

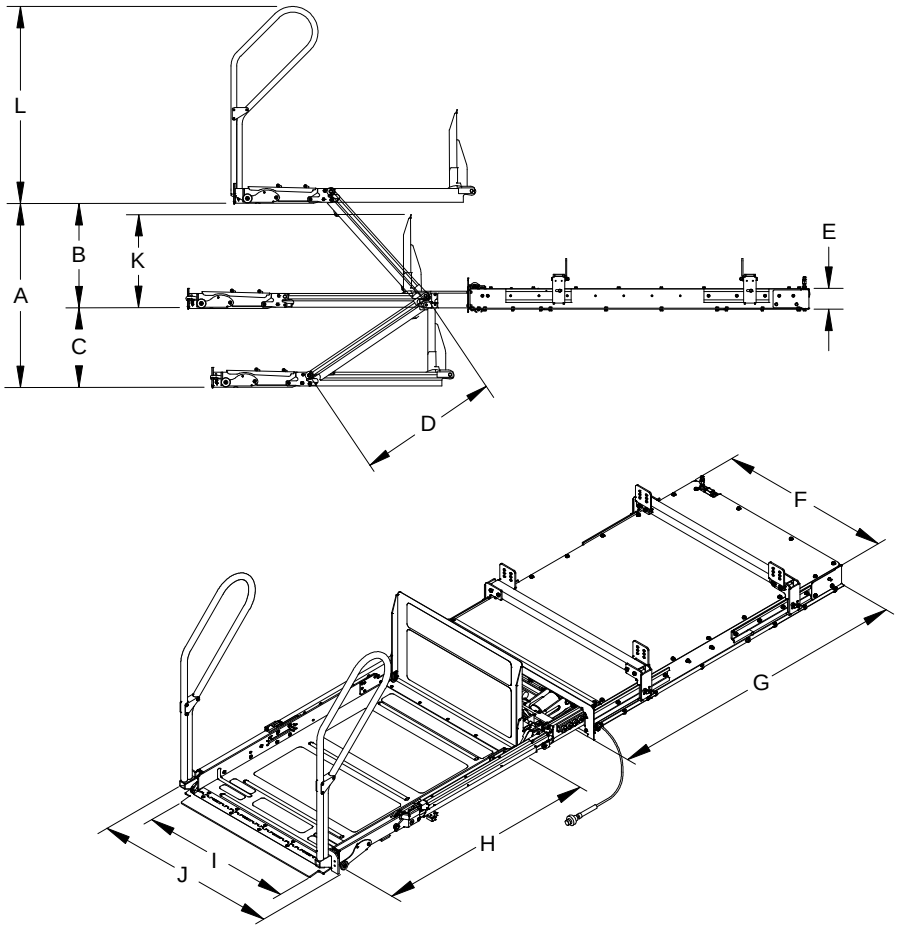
| FIGURE 4-10: CONTROL PENDANT ASSEMBLY | | | |
|---|---|---|---|
| **REF** | **DESCRIPTION** | **QTY** | **PART NO.** |
| 1 | KIT, HAND CONTROL PENDANT | 1 | 01008B |
| 2 | KIT, MOUNTING CLIP, PENDANT | 1 | 28781 |
| 3 | KIT, MOUNTING CLIP, VEHICLE | 1 | 01118 |
| 4 | KIT, STRAIN RELIEF W/U-BOLT HDWR | 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 COMMERCIAL WHEELCHAIR AND STANDEE LIFT**

| | |
|---|---|
| Power: | Rated load capacity..... 600 lbs |
| Platform up..... electro-hydraulic | Manual backup–up.....hand pump |
| Platform down ..... gravity | Manual backup–down ..... pressure release valve |
| Pump rating: .....1800psi @ 12 VDC | Lift weight..... approx. 425 lbs |
| Hydraulic cylinders..... 2ea, ∅3.0”, single acting | |




**DIMENSIONS – inches (centimeters)**

| Models | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| **TL2-10000000** | Floor to ground travel | Travel above | Travel below | Arm length | Enclosure height | Enclosure width | Enclosure length |
| | **40.0 (101.6)** | **23.0 (58.4)** | **17.0 (43.2)** | **31.0 (78.7)** | **4.3 (10.9)** | **40.0 (101.6)** | **77.0 (195.6)** |
| | | | | | | | |
| | **H** | **I** | **J** | **K** | **L** | | |
| | Usable platform length | Usable platform width | Traveling frame width | Bridgeplate height | Handrail height | | |
| | **48.0 (121.9)** | **32.0 (81.3)** | **38.0 (96.5)** | **20.0 (50.8)** | **44.0 (111.8)** | | |

RICON