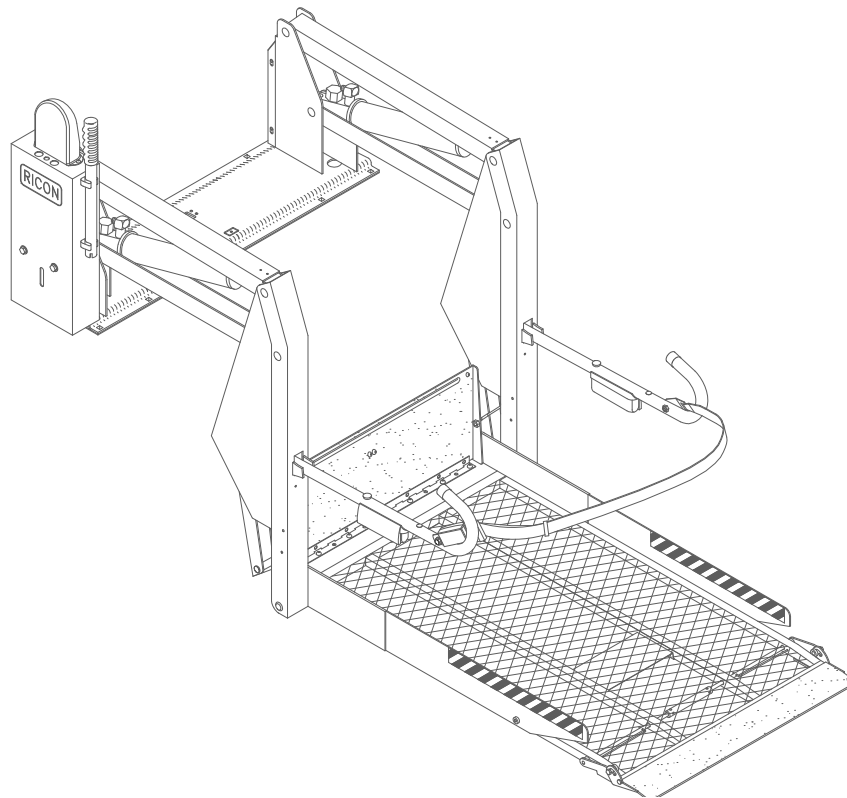




# **S-Series™**

## **DOT - Public Use Lift**



### **SERVICE MANUAL**



07/31/13

32DSST06.A.1

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U.S. Patent Nos: 4,534,450; 5,308,215; 5,445,488; 5,605,431; 5,944,473;  
Australia Patent Nos: 661127; 687066;  
Canadian Patent Nos: 1,245,603; 2,168,761  
Other U.S. and foreign patents pending

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United States of America

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

Qualified service technicians have the training and knowledge to perform maintenance work properly and safely. For the location of a VMI authorized service technician in your area, call VMI Technical Support at 1-800-348-8267.

“DOT – Public Use Lift” verifies that this platform lift meets the public use lift requirements of FMVSS no. 403. This lift may be installed on all vehicles appropriate for the size and weight of the lift, but must be installed on buses, school buses, and multi-purpose passenger vehicles other than motor homes with a gross vehicle weight rating (GVWR) that exceeds 10,000 lbs (4,536 kgs).

Customer Name: _____
Installing Dealer: _____
Date Installed: _____
Serial Number: _____

## REVISION RECORD

REV	PAGES	DESCRIPTION OF CHANGE	ECO
32DSST06. A.1	2-6	Update to Figure 2-9	6663
	2-7	Update to Section B.2	
	2-7	Update to Figure 2-10	
	2-8	Update to Figure 2-11	
	2-13	Update to Section C.3	
	2-13	Added Figure 2-19	
	2-14	Added Figure 2-20	
	2-14	Update to Figure 2-21	
<b>END OF TABLE</b>			

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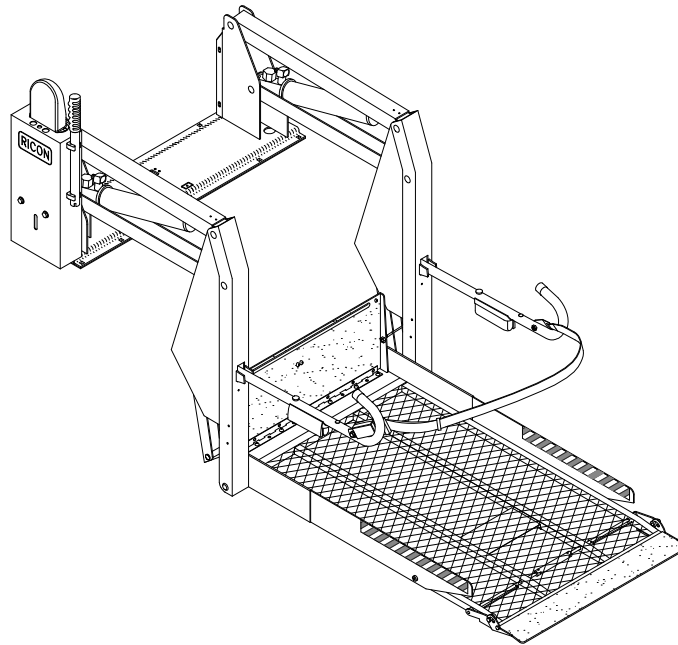
## I. S-SERIES PUBLIC INTRODUCTION

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The VMI S-Series Public Use wheelchair lift provides wheelchair access to vans and buses. The patented movement provides smooth, safe entry and exit and lifts up to 800 pounds. It is to be operated by a trained attendant. The lift contains a powerful electro-hydraulic pump that includes a built-in manual backup pump. If the lift loses electrical power, it can be raised or lowered manually.

By using the lift control switches, the lift is unfolded out from the vehicle (deployed). The user boards the large non-skid platform and the operator uses the control switches to gently lower the platform to the ground. After the user departs, the platform is raised and folded into the vehicle (stowed). The lift is also available with a platform that splits and folds when stowed, providing easy vehicle access through the lift.

This manual contains installation instructions; maintenance and repair instructions; troubleshooting guide; parts and diagram lists. It is important to user safety that the lift operator be completely familiar with the operating instructions. Once the lift is installed, it is very important that the lift be properly maintained by following the VMI recommended cleaning, lubrication, and inspection instructions.



### A. VMI PRODUCT SUPPORT

If you have questions about this manual, or additional copies are needed, please contact VMI Product Support at one of the following locations:

**VMI**  
**5202 S. 28<sup>th</sup> Place**  
**Phoenix, AZ 85040..... (602) 243-2700**  
**Outside 602 Area Code ..... (800) 348-8267**  
**World Wide Website ..... [www.vantagemobility.com](http://www.vantagemobility.com)**

## B. VMI FIVE-YEAR LIMITED WARRANTY

### VMI S-SERIES PUBLIC FIVE-YEAR LIMITED WARRANTY

**Vantage Mobility International (VMI)** warrants to the original purchaser of this product that VMI will repair or replace, at its option, any part that fails due to defective material or workmanship as follows:

- Repair or replace parts for a period of one year from the date of purchase.
- Labor costs for specified parts replaced under this warranty for a period of one year from the date of purchase. A VMI rate schedule determines the parts covered and labor allowed.
- Repair or replace lift power train parts for a period of five years from the date of purchase. A list of parts covered can be obtained from VMI Product Support.

**If you need to return a product:** Return this product to VMI. 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, the mechanical condition of the vehicle, road hazards, overloading, failure to follow operating instructions, or acts of nature (i.e., weather, lightning, flood).

**Note:** VMI recommends that this product be inspected by a VMI authorized service technician at least once every six months, or sooner if necessary. 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:***

- The product has been installed or maintained by someone other than a VMI authorized service technician.
- The product has been modified or altered in any respect from its original design without written authorization by VMI.

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

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

***VMI 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 VMI within 20 days after installation of this VMI 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. SHIPMENT INFORMATION

- When the product is received, unpack the product and check for freight damage. Claims for any damage should be made to the carrier immediately.
- Be sure the installation kit contains all items listed on the kit packing list. Please report any missing items immediately to VMI Product Support. The warranty and owner registration cards must be completed and returned to VMI within 20 days for the warranty to be valid.

**NOTE:** The Sales or Service personnel must review the Warranty and the Operator Manual with the user to be certain that they understand how to safely operate the product. Instruct the user to follow the operating instructions without exception.

### D. GENERAL SAFETY PRECAUTIONS

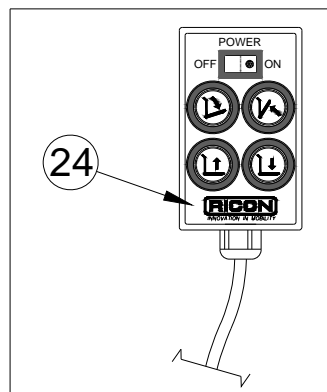
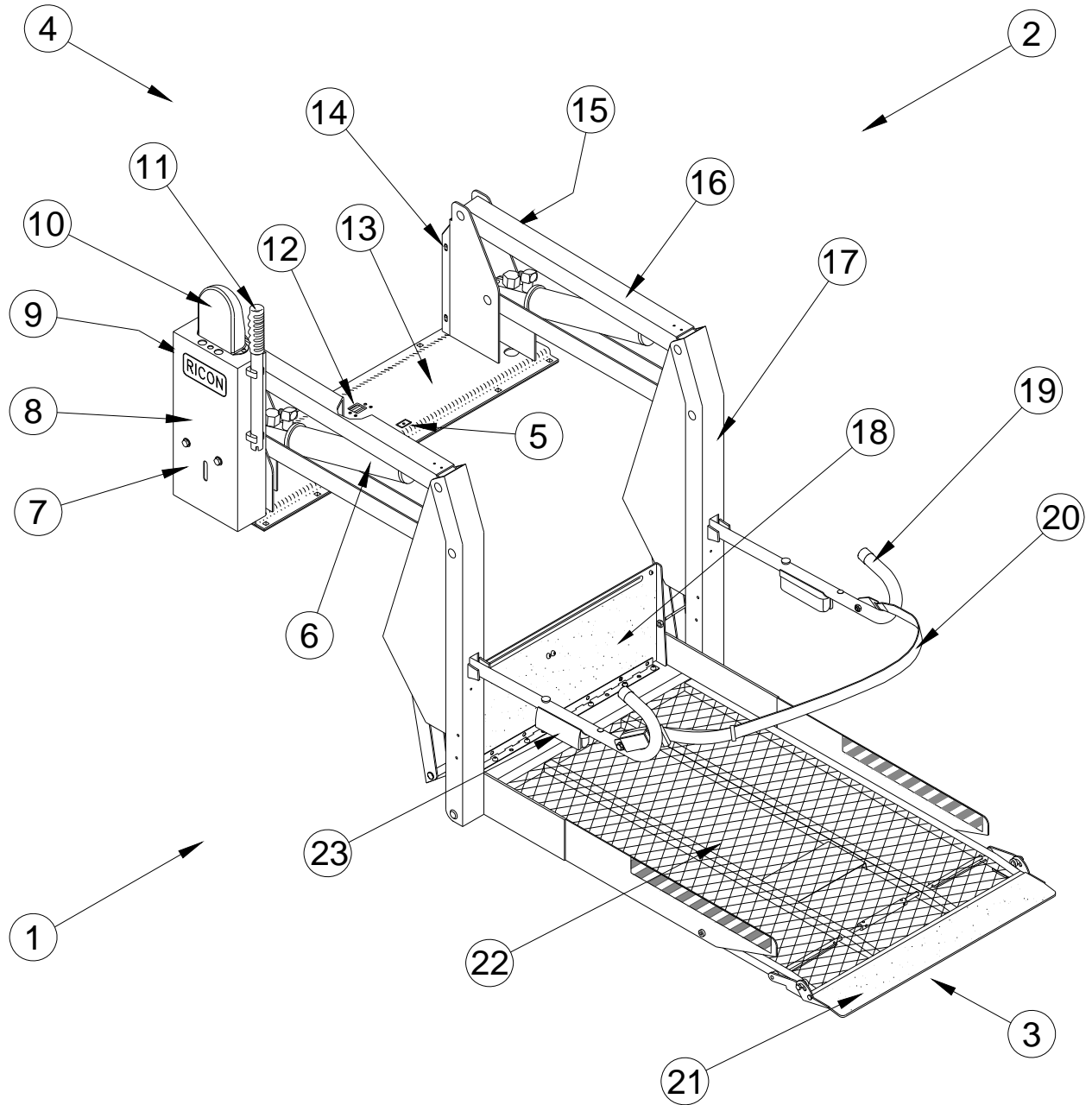
The following general safety precautions must be followed during installation, operation, and maintenance:

- Under no circumstances should installation, maintenance, repair, and adjustments be attempted without the immediate presence of a person capable of rendering aid.
- An injury, no matter how slight, should always be attended. Always administer first aid or seek medical attention immediately.
- Protective eyeshields and appropriate clothing should be worn at all times.
- To avoid injury, always exercise caution when operating and be certain that hands, feet, legs, and clothing are not in the path of product movement.
- Batteries contain acid that can burn. If acid comes in contact with skin, flush affected area with water and wash with soap immediately.
- Always work in a properly ventilated area. Do not smoke or use an open flame near a battery.
- Do not lay anything metallic on top of a battery.
- Check under vehicle before drilling to avoid drilling into frame, subframe members, wiring, hydraulic lines, fuel lines, fuel tank, etc.
- Read and thoroughly understand the operating instructions before attempting to operate.
- Inspect the product before each use. If an unsafe condition is noted, such as unusual noises or movements, do not use lift until the problem is corrected.
- Never load or stand on the platform until installation is complete. Upon completion of installation, test load the lift to 100% of its rated load capacity.
- Stand clear of doors and platform and keep others clear during operation.
- The product requires regular periodic maintenance. Inspections are recommended at the intervals prescribed in chapter three. The product must be maintained at the highest level of performance.



## E. MAJOR LIFT COMPONENTS

The references used throughout this manual are illustrated in **Figure 1-1** and defined in the **Table 1-1**. Refer to **Chapter IV** "Parts Diagrams and Lists" for more details.



**FIGURE 1-1: PUBLIC USE WHEELCHAIR LIFT**

**TABLE 1-1: S-SERIES PUBLIC USE LIFT COMPONENT TERMS**

REF	NAME	DESCRIPTION
1, 2, 3, 4	Left, right, front, rear	Position references when lift is viewed from outside of vehicle.
5	Bridgeplate load sensor	Senses if weight is present on the lowered bridgeplate.
6	Hydraulic cylinder	(left and right) Telescoping single-acting cylinders convert hydraulic pressure into platform lifting and folding force.
7	Hydraulic power unit	Contains hydraulic pump driven by electric motor that produces pressure to raise and fold platform, and a pressure release valve to unfold and lower it.
8	Audible alarm	(inside housing for hydraulic unit) Announces when something has passed over threshold. Activated by threshold beam.
9	Cycle counter	Visible at rear of housing, it records number of times platform has moved from floor to ground and back to floor.
10	Visual alarm	Flashing light makes it known when something has passed over threshold. Activated by threshold beams.
11	Manual backup pump handle	Used to operate manual back up-pump (located on hydraulic power unit cover).
12	Stow-Lock catch	Engages latch located on bottom of bridgeplate when platform is fully stowed.
13	Baseplate assembly	Bolts to vehicle floor; provides secure foundation for lift.
14	Threshold beams	Light-beams detect presence of objects in threshold area.
15	Serial number	Location of serial number decal.
16	Top and bottom arms	(left and right) Upper and lower links connecting vertical arm to base assembly.
17	Vertical arm	(left and right) Connects platform to top and bottom arms.
18	Bridgeplate (inboard rollstop)	Plate bridges gap between platform and baseplate when platform is at floor level. Acts as barrier to prevent wheelchair from rolling off of the platform during "Up" and "Down" platform motions.
19	Handrail	(left and right) Provides a handhold for standing passenger.
20	Occupant restraint belt	Electrically interlocked safety belt that is intended to prevent acceleration of wheelchair from platform. Lift will not operate unless belt is properly connected.
21	Front rollstop	Front barrier prevents the wheelchair from inadvertently rolling off of the platform during lift operation.
22	Platform	Component of lift where the wheelchair and occupant are situated during "Up" and "Down" lift motions.
23	Platform light	(left and right) Directs light onto platform surface.
24	Control pendant	Hand-held device controls platform motions.
<b>END OF TABLE</b>		

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## II. INSTALLATION

This chapter contains instructions for installing the VMI S-Series Public Use wheelchair lift into most vans and buses, although custom installations are also possible in other types of vehicles. Due to the wide range of applications for lift, specific information for every possible application is not available. The following general procedures will apply to most installations. Contact VMI Product Support for instruction concerning installations not covered. To install lift, refer to following sections and perform procedures carefully and in the order that they are presented. Be certain that installation instructions are followed exactly and do not eliminate any steps or modify product.

**NOTE:** Please review carefully the installation instructions (32ii375e) that are supplied with this lift before beginning the following procedures. Where these procedures conflict, the installation instructions take precedence.

### A. GENERAL MECHANICAL INSTALLATION

#### 1. LIFT LOCATION

The installation surface must be flat and level. It is recommended that lift be installed on a ½", minimum, high-grade plywood sub-floor. However, this additional installation height may not be acceptable in cases where overhead clearance is limited.

**NOTE:** Check for proper travel clearance through doorway.

- With doors fully open, place/position lift in vehicle doorway as close as possible to door, with lift's baseplate assembly parallel to side of vehicle.
- Allow a distance of 3/4", if possible, between door and the part of lift closest to it. Adjust lift left and right-side locations to accommodate subframe members.
- Verify proper clearance of door frame, passenger seats, and outer edge of vehicle floor and possible interference with wires, fluid lines, subframe members, etc.

#### 2. LIFT INSTALLATION GUIDELINES

The lift mounting is a very important step. Improper mounting or fastening of baseplate can adversely affect lift performance. Although fastening details may vary from one vehicle to the next, these general principles apply:

- Be certain that all mounting bolts are properly installed and tightened. Bolts used to fasten baseplate assembly to vehicle floor must have a minimum strength rating of SAE Grade 5 and be torqued to 28 ft lbs, dry. Recognize that the most important bolts are those along the rear of lift, since these bolts retain the majority of the load.
- Refer to **Figures 2-1** and **2-5**. Improper torquing sequence of baseplate bolts may result in a warped or bowed baseplate, which can cause platform to move erratically.

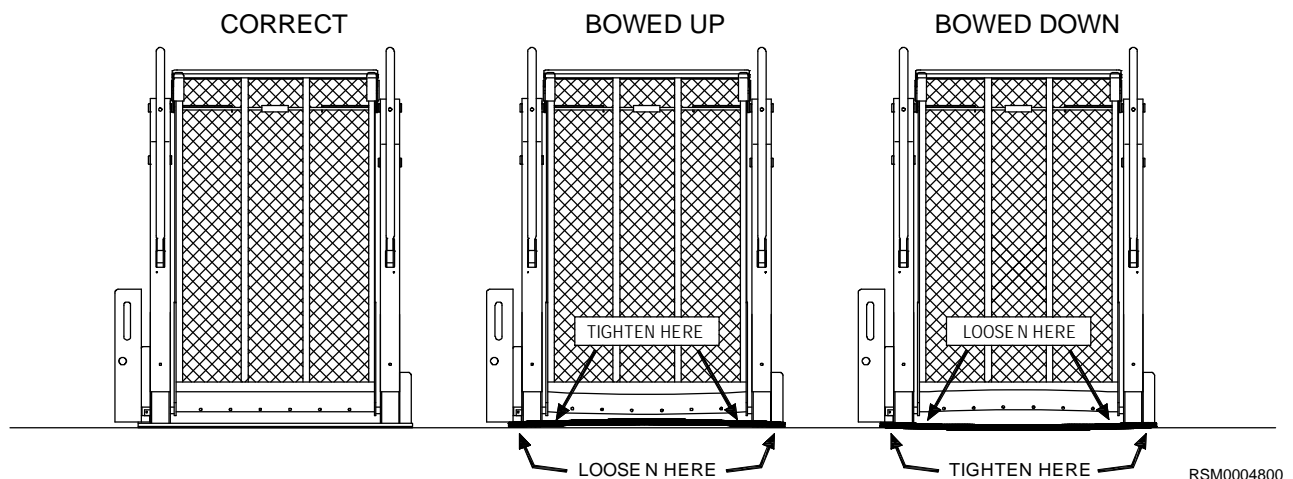
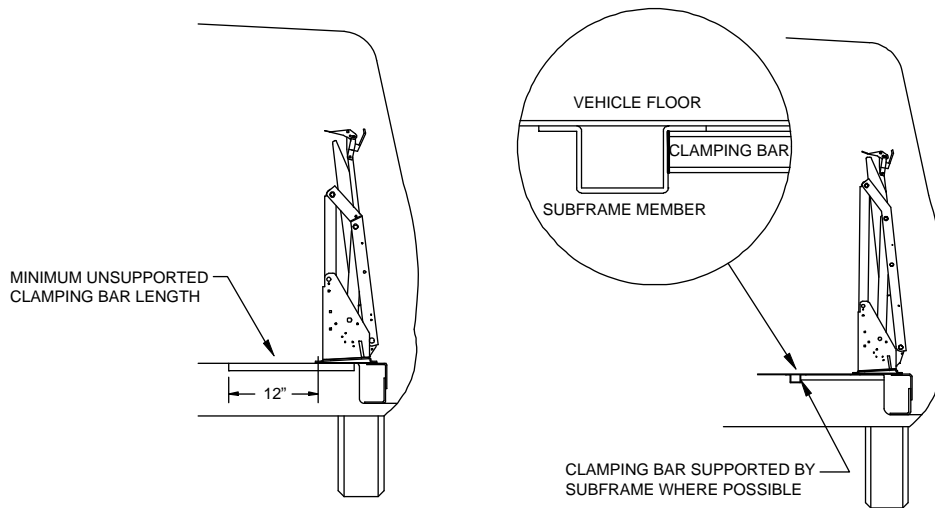


FIGURE 2-1: EXAMPLES OF BASEPLATE WARPAGE

- ◆ Refer to **Figure 2-2**. On Ford van installations, clamping bars are used to help evenly distribute floor loading and should only be cut if needed to clear a subframe member. A subframe member must be used to support clamping bar.



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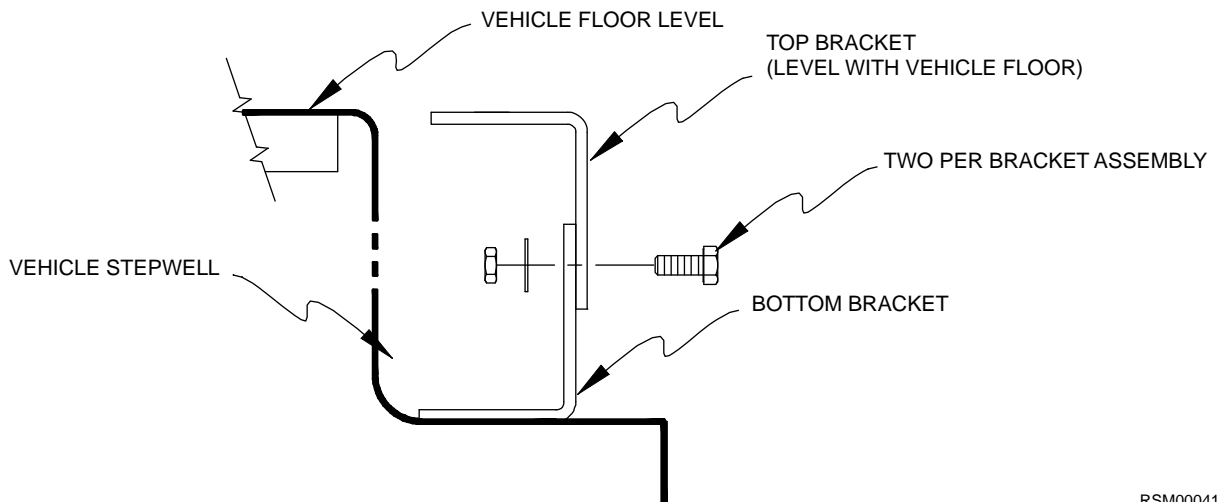
**FIGURE 2-2: FORD VAN CLAMPING BAR ARRANGEMENT**

### 3. LIFT INSTALLATION INTO VANS

This is a general procedure for installing VMI lifts into Ford, Dodge, and Chevrolet full size vans.

- Refer to **Figure 2-3**. Use four 1" x 3/8" bolts, 3/8" washers, 3/8" lock washers, and 3/8" hex nuts to assemble two bracket assembly kits.

**NOTE:** The top bracket must overlap bottom bracket, and both slots must face outward.



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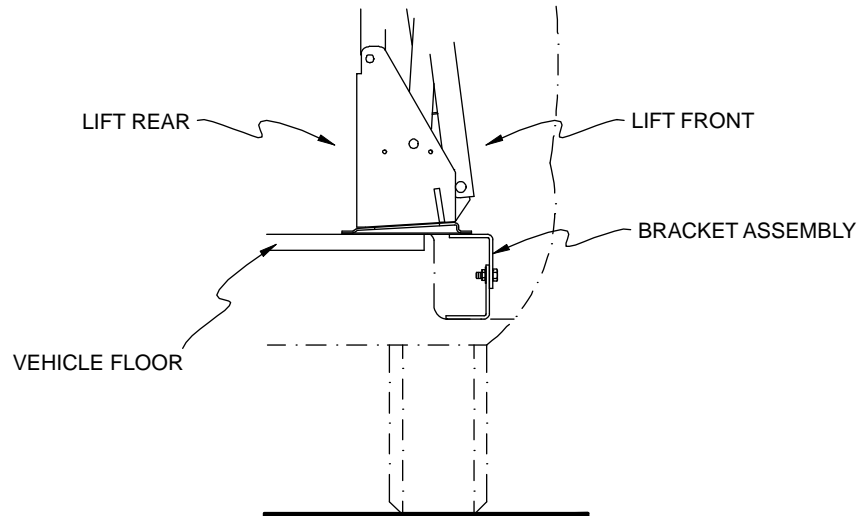
**FIGURE 2-3: STEPWELL BRACKET**

- Position brackets on stepwell and adjust height of both bracket assemblies so that top bracket is level with vehicle floor. Tighten bracket assembly bolts.
- Verify that lift is fully folded (stowed) with handrails folded tight against vertical arms. If necessary, use manual pump.

**⚠ WARNING**

LIFT WEIGHT IS APPROXIMATELY 350 - 375 LBS. USE EXTREME CARE WHEN POSITIONING BECAUSE STEPWELL BRACKETS MAY TIP. THIS PROCEDURE MUST NOT BE ATTEMPTED BY ONE PERSON.

- d. Refer to **Figure 2-4**. With doors fully open, position lift in vehicle doorway so that back of lift is supported by vehicle floor, and front of lift is supported by both bracket assemblies.



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**FIGURE 2-4: BRACKET ASSEMBLY**

- e. Fasten Baseplate to Floor:

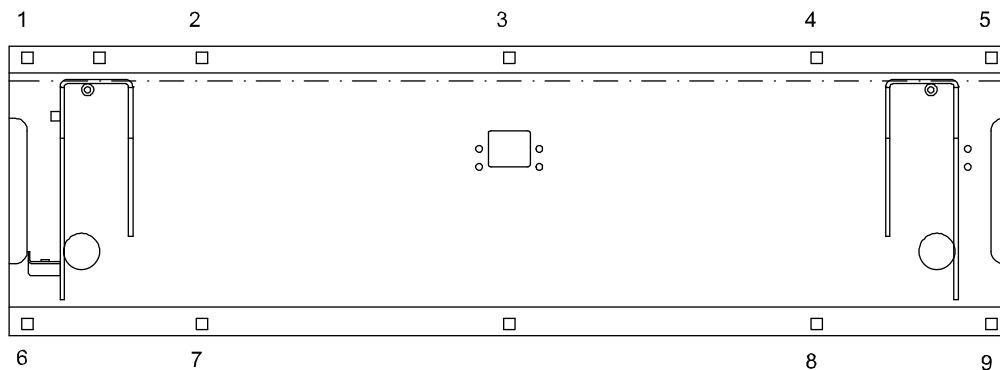
**NOTE:** If VMI power door operators are used, install them first. They may influence location of lift.

- ⌘ Be certain baseplate is flush against vehicle floor. The baseplate may be slightly offset in door opening to provide proper clearance for passenger seats.
- ⌘ Before drilling, verify that lift position does not interfere with closing of vehicle doors or operation of passenger seats.
- ⌘ If this lift is being installed in a Dodge van with sliding doors, omit the bolts in baseplate holes 7 and 8.

- f. Mark and Drill Holes:



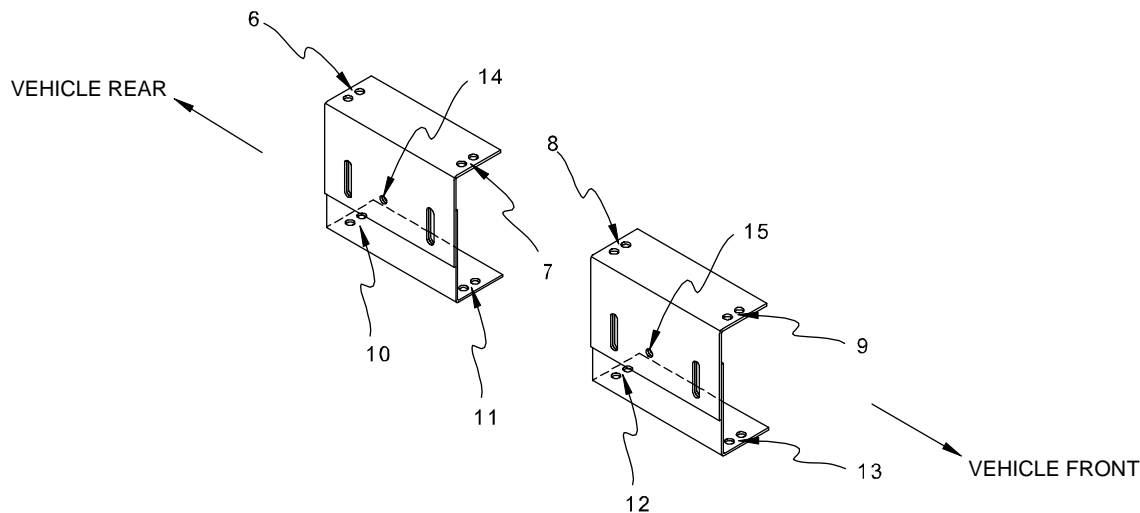
- 1) Refer to **Figure 2-5**. Mark and drill five 25/64" baseplate mounting holes (1, 2, 3, 4, and 5) through vehicle floor. (On Dodge and GM vans, you must drill through vehicle floor and subframe).
- 2) Place five 8" x 3/8" carriage bolts (use 4" x 3/8" bolts on Ford vans) into holes to secure position.



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**FIGURE 2-5: VAN BASEPLATE HOLES**

- 3) Refer to **Figure 2-6** on the following page. Match and align top holes of stepwell brackets 6, 7, 8, and 9, with baseplate holes 6, 7, 8, and 9. Mark lower stepwell bracket holes 10, 11, 12, and 13 onto vehicle step.
- 4) Remove five carriage bolts installed in step 2). Carefully push lift into vehicle interior.
- 5) Drill 1/4" dia holes through marked locations 10, 11, 12, and 13.



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**FIGURE 2-6: STEPWELL BRACKET HOLE LOCATIONS**

g. Fasten Bracket Assemblies and Lift:

- 1) Use 1-1/2" x 5/16" sheet metal screws with 5/16" lock washers to secure lower brackets to vehicle step holes 10 through 13.

**NOTE:** If the screw in position 13 interferes with proper door operation, do not install.

- 2) Reposition lift and verify that surface beneath lift is free of obstacles.
- 3) Insert five 8" x 3/8" carriage bolts through mounting holes at rear of baseplate assembly, and insert four 1-1/2" x 3/8" carriage bolts through baseplate and bracket assemblies. Place 3/8" washers, lock washers, and nuts under bracket assemblies, and finger tighten nuts.

**NOTE:** On Dodge and GM vans, place five 4" x 4" plates, 3/8" washers, lock washers and hex nuts on 8" x 3/8" carriage bolts under van and finger tighten. On Ford models, reinforce vehicle floor with clamping bars. They are installed in positions 1, 2, 3, 4, and 5 and run across width of baseplate towards center of van.

- 4) Before tightening carriage bolts, verify that lift is level with vehicle floor. Adjust bracket assembly bolts if necessary.
- 5) Tilting lift towards inside of van may hinder its initial unfolding. Install lift with its baseplate assembly as level as possible. Tightening carriage bolts requires special care to keep baseplate assembly from warping when secured to vehicle floor. If baseplate assembly warps, the vertical arms will not be parallel. Make corrections by shimming at appropriate locations. To help prevent warping, tighten the eight carriage bolts (six on Dodge van with sliding door) to 28 ft. lbs. in the appropriate sequence:

DODGE WITH SWING DOORS, ALL FORD AND GM VANS ..... **3, 1, 2, 4, 5, 6, 7, 8, 9**

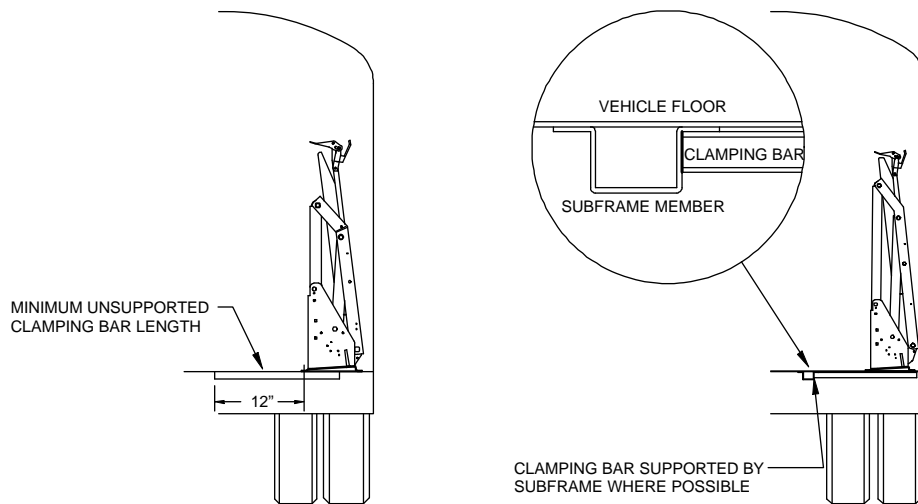
DODGE WITH SLIDING DOORS ..... **3, 1, 2, 4, 5, 6, 9**

**NOTE:** Vertical arms must be parallel for proper operation. Adjust bolts as required. Best results are obtained when lift is mounted on plywood. Shims, although best avoided, may be used if required.

- 6) Make certain that holes 14 and 15 on the front of each bracket assembly are drilled through, and 5/16" bolts are inserted to lock position of bracket assemblies.

#### 4. LIFT INSTALLATION INTO BUSES

Refer to **Figure 2-7**. Clamping bars are used on most bus installations to help distribute floor loading, and should only be cut if needed to clear a subframe member. A subframe member should be used to support clamping bar.



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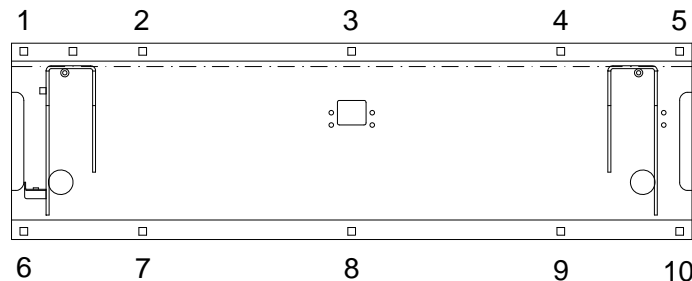
**FIGURE 2-7: BUS CLAMPING BAR ARRANGEMENT**



### WARNING

LIFT WEIGHT IS APPROXIMATELY 350-375 LBS. TAKE EXTREME CARE WHEN POSITIONING BECAUSE STEPWELL BRACKETS MAY TIP. THIS PROCEDURE SHOULD NOT BE ATTEMPTED BY ONE PERSON.

- a. With doors fully open, position lift in vehicle doorway as close as possible to inside surface of door. Lift baseplate must be parallel to side of vehicle.
- b. Refer to **Figure 2-8**. Mark and drill ten 25/64" baseplate mounting holes (1 thru 10) through vehicle floor.



**FIGURE 2-8: BUS BASEPLATE HOLES**



### CAUTION

Before drilling holes, verify that underlying wires and tubing will not be damaged.

- c. Fasten Lift:
  - 1) Insert ten 4" x 3/8" carriage bolts through baseplate and vehicle floor.
  - 2) Refer to **Figure 2-7**. Install four clamping bars to bolts underneath vehicle floor across baseplate, i.e., from 1 to 6, 2 to 7, etc, and secure lift to vehicle floor with 3/8" washers, lock washers and hex-nuts.
  - 3) Tightening carriage bolts requires special care to keep baseplate assembly from warping when secured to vehicle floor. If baseplate assembly warps, vertical arms will not be parallel. Make corrections by shimming at appropriate locations. To help prevent warping, tighten the eight carriage bolts to 28 ft. lbs. in the following sequence:

**3, 8, 1, 2, 4, 5, 6, 7, 9, 10**

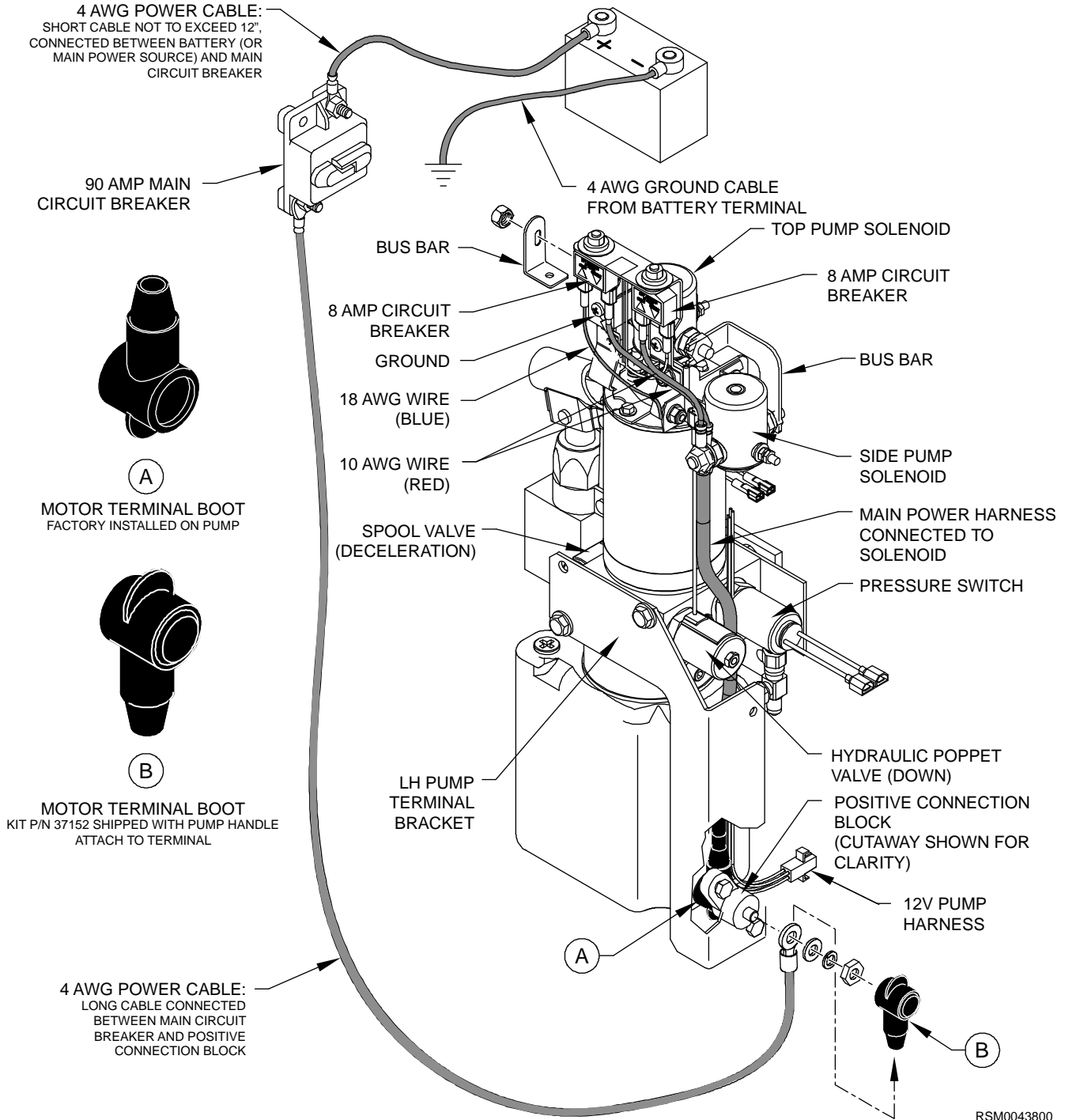
**NOTE:** Vertical arms must be parallel for proper operation. Adjust bolts as required. Best results are obtained when lift is mounted on plywood. Shims, although best avoided, may be used if required.



## B. ELECTRICAL INSTALLATION

### ⚠ CAUTION

- Do not route a wire if it is connected to the battery.
- Route wires clear of moving parts, brake lines, and the exhaust system. Secure to the vehicle.
- When routing an electrical wire through vehicle floor or walls, use a grommet to protect wires from chafing.
- Check underside of vehicle before drilling to avoid damage to fuel lines, vent lines, brake lines, or wiring.



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FIGURE 2-9: ELECTRICAL INSTALLATION DIAGRAM

### ⚠ CAUTION

KIT P/N 37152 (SHIPPED WITH PUMP HANDLE) MUST BE INSTALLED ONTO RING TERMINAL BEFORE ATTACHING POWER CABLE TO A BATTERY OR POWER SOURCE.

## 1. INSTALL MAIN CIRCUIT BREAKER

- Disconnect battery.
- Mount main circuit breaker inside engine compartment within 12 inches of battery to minimize length of unprotected cable. Avoid installing near a heat source.

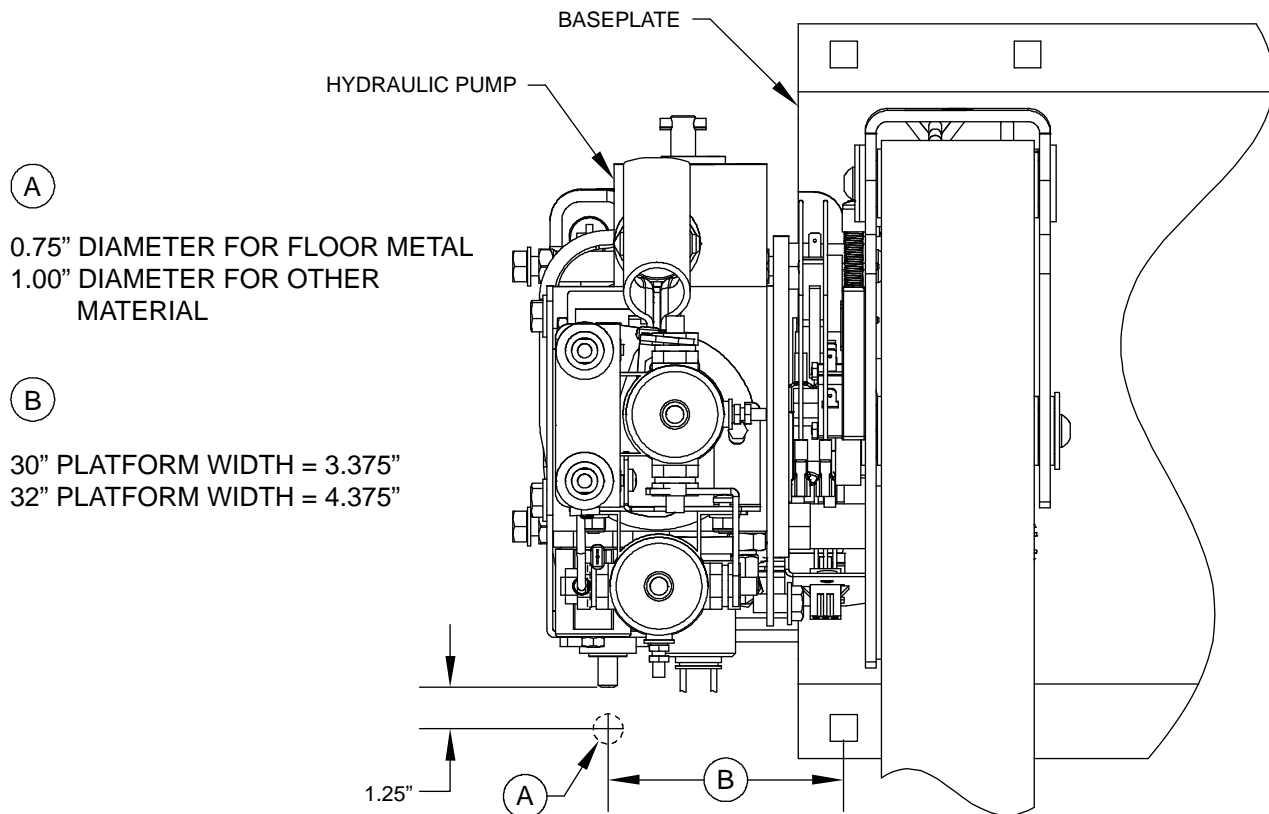
## 2. ROUTE AND CONNECT MAIN POWER CABLE

### CAUTION

Check under-side of vehicle before drilling to avoid damage to fuel lines, vent lines, brake lines, or wiring.

**NOTE:** For applications where power cable is to pass through sheet metal, drill a 3/4" hole and use wire clamp provided. For applications where cable is to pass through plywood, drill a 1" hole and use black plastic grommet provided.

- Refer to **Figures 2-9** and **2-10**. Drill a hole through vehicle floor near positive connection block so power cable can reach stud of positive connection block. Drill hole where the installed pump cover will cover it.



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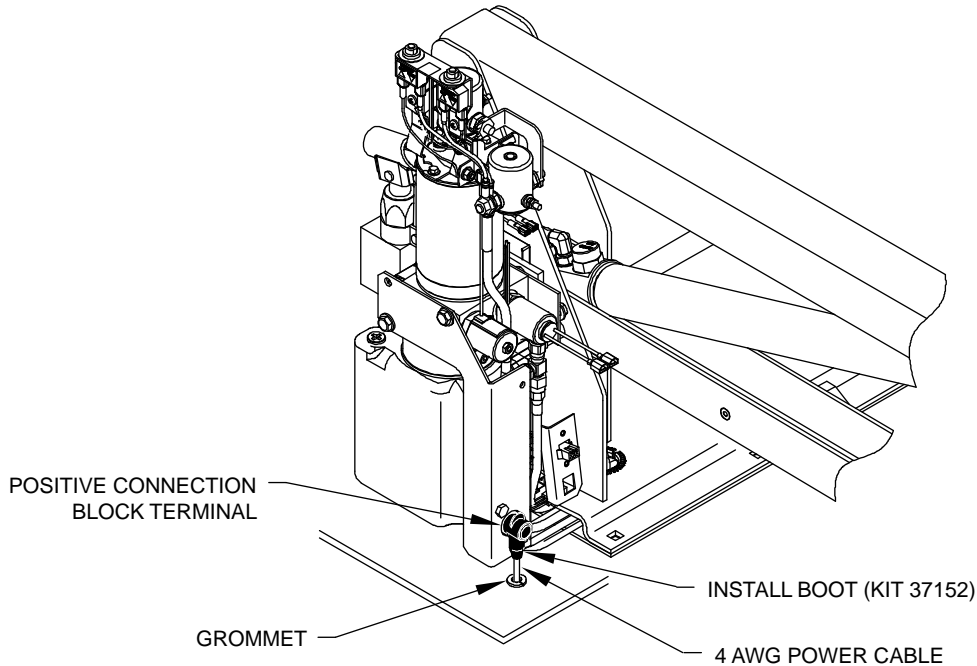
**FIGURE 2-10: POWER CABLE ACCESS HOLE**

- Refer to **Figure 2-9**. Install supplied heavy ring terminals to each end of the short (12" long) 4 AWG power cable. Install one ring terminal, only, to one end of long power cable. Use an appropriate crimp tool (such as VMI hammer tool, part of kit P/N 01243).
- Connect end of long 4 AWG power cable (with ring terminal) to 90A main circuit breaker, then route power cable underneath vehicle floor and up through hole in floor.
- Refer to **Figure 2-9**. Detach Kit P/N 37152 (Shipped with pump handle) then install onto ring terminal connector before installing ring terminal onto positive connection block.
- Tie power cable to vehicle chassis, and to pump assembly harness using cable ties. Avoid pinch points, exhaust system, moving parts, and brake lines. Verify that power cable is secure.

### CAUTION

Be sure that there is no interference with any parts that could damage power cable or other wires in any way.

- f. Refer to **Figure 2-11**. Cut any excess wire from long cable, install remaining heavy ring terminal to unterminated end of long cable, and connect it to live side of solenoid. Verify that red wire from main circuit breaker (if applicable) is connected to positive solenoid pole.



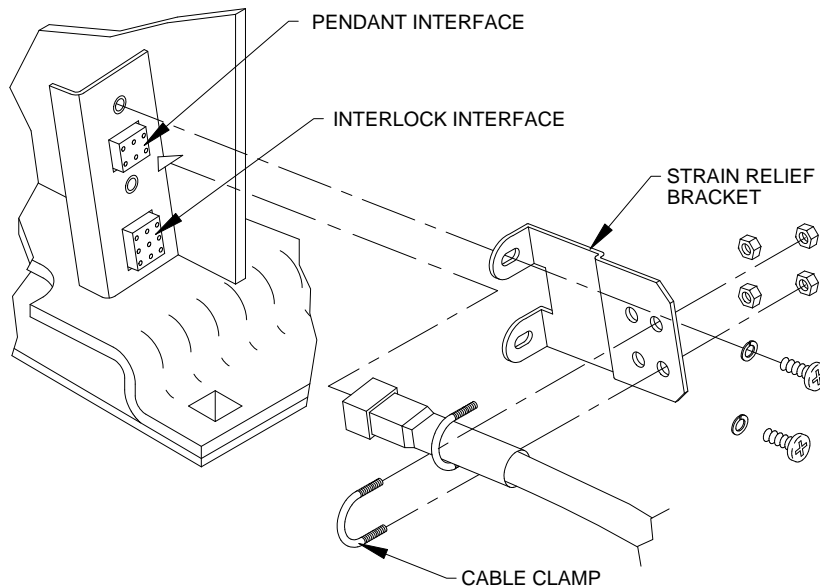
RSM0044000

**FIGURE 2-11: CABLE ROUTING**

- g. Connect 12" cable, with ring terminals, from positive battery terminal to main circuit breaker terminal.

**3. CONNECT CONTROL PENDANT**

- a. Refer to **Figure 2-12**. Connect hand-held control pendant to six-pin connector at left side of baseplate and secure cable with supplied cable clamp.



**FIGURE 2-12: STRAIN RELIEF KIT**

- b. Install wall portion of dovetail clip (pendant storage) in an appropriate and safe location near lift.

<b>CAUTION</b>
Be sure that harness does not interfere with any moving parts, or binds against any parts, or is pinched in any way.

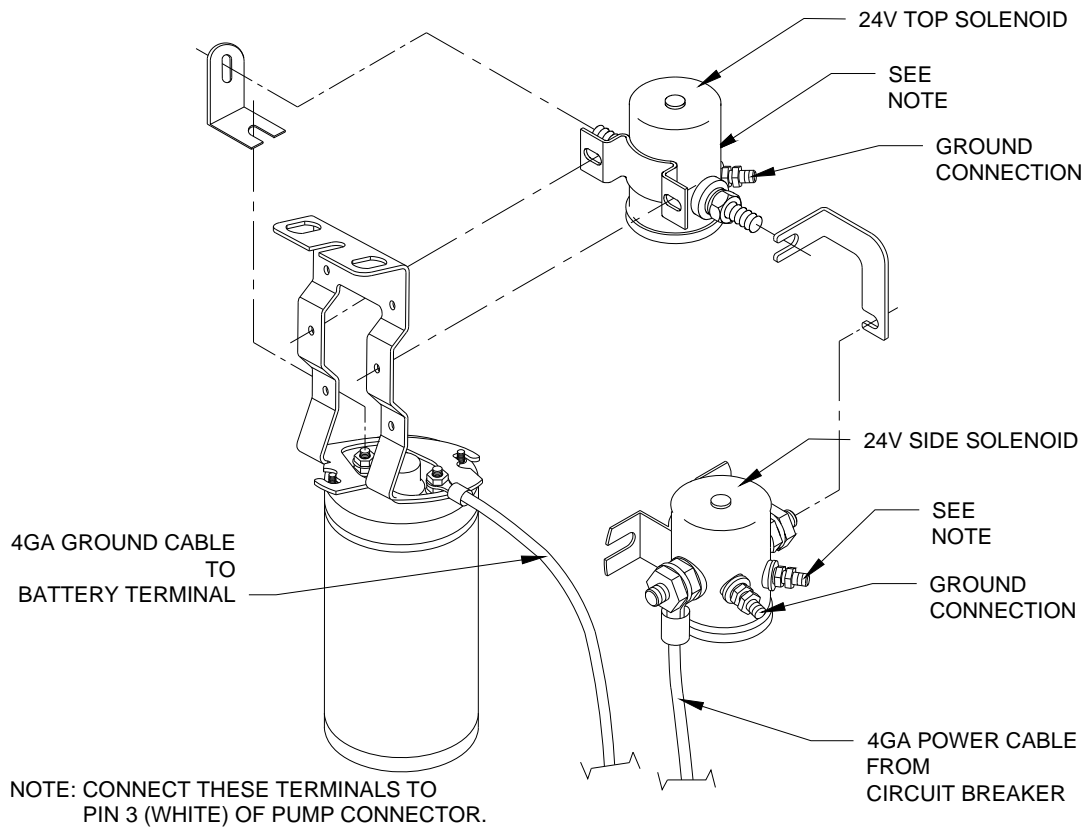
#### 4. GROUND (COMMON) CONNECTIONS

##### a. 12VDC Systems

12VDC powered lifts are chassis grounded and do not require a separate ground cable connection to battery. However, if the common side of the lift electrical system is connected to chassis with a cable, the cable must be attached in a manner that provides a reliable electrical connection. If ground cable is attached to an existing ground circuit, the circuit must be capable of conducting an additional 90 amps.

##### b. 24VDC Systems

- 1) VMI recommends that a dedicated ground cable be used in 24VDC installations. A 4GA cable, or heavier, must be used.
- 2) Refer to **Figure 2-13**. The ground cable is connected from the negative stud (-) on pump motor to the negative battery terminal.



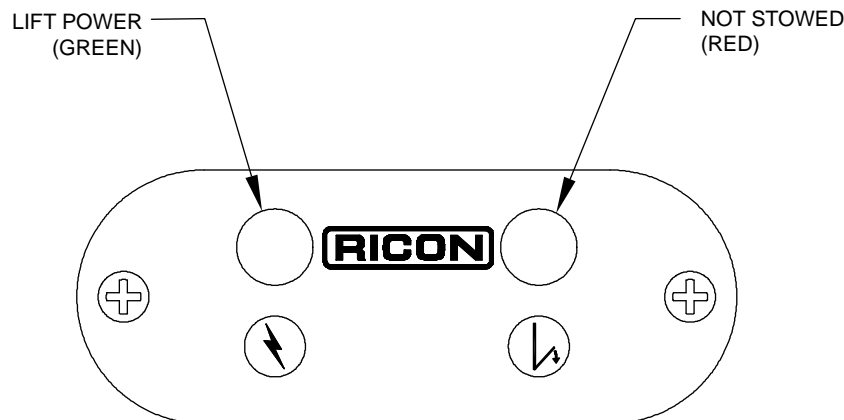
**FIGURE 2-13: 24VDC DUAL SOLENOID WIRING**

## 5. INSTALLATION OF INTERLOCK DEVICE

The supplied interlock device must be installed to prevent operation of the lift or vehicle when it is unsafe to do so. The S-Series lift provides an electrical interlock signal to the vehicle that prevents movement of the vehicle unless the platform is fully stowed. The interlock control also supplies power to the lift only when the vehicle parking brake is set and the transmission is in PARK.

**NOTE:** An 8-amp circuit breaker is located within the lift as a circuit protection device. The circuit interface used by the installer must be capable of carrying an additional 8 amps of continuous current.

Refer to **Figure 2-14**. The interlock installation kit provides a display panel for mounting on the vehicle dashboard. The figure shows an LED display panel. The Lift Power LED lights green when the vehicle transmission is in PARK and the parking brake is set. While the LED is green the lift is lowered and the platform can be deployed. The Not Stowed LED lights red when the platform is not fully stowed into the vehicle. While the LED is red the transmission cannot be shifted out of PARK.



RSM0005100

**FIGURE 2-14: INTERLOCK DISPLAY PANEL**

The installer must verify that none of the original equipment circuit breakers, fuses, or solenoids are bypassed, removed, or altered. Be sure that no wires are left frayed or hanging loose after installation of the interlock device. If you have any questions concerning the proper installation of this interlock device, please contact our Product Support department.

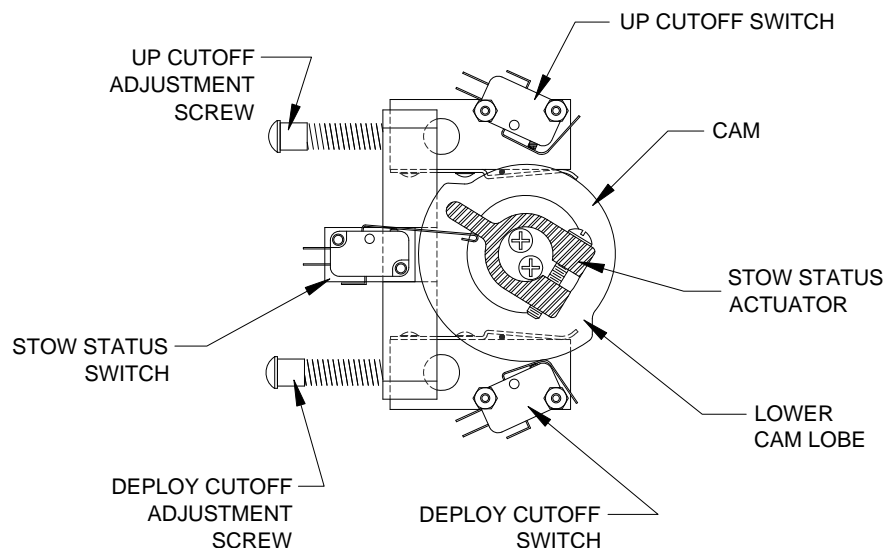
## C. FINAL ADJUSTMENTS

### 1. LIMIT SWITCH ADJUSTMENT

Refer to **Figures 2-15, 2-16**, and the following procedure.

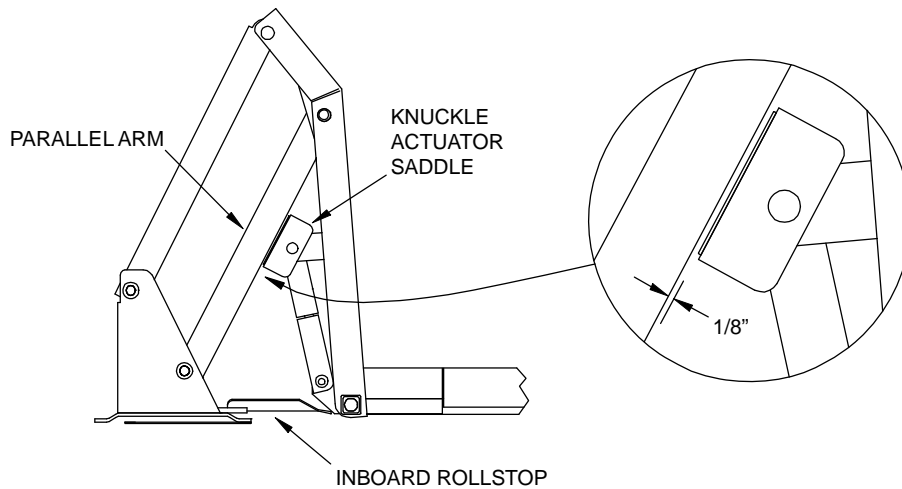
**NOTE:** To avoid operational “dead-spots”, adjust **DEPLOY CUTOFF SWITCH** before **UP CUTOFF SWITCH**.

**NOTE:** When loosening adjustment screws, apply enough pressure to screw to move block instead of screw. (The block might stick if insufficient pressure is applied to screw.)



**FIGURE 2-15: LIMIT SWITCH ADJUST DIAGRAM**

- a. Fully DEPLOY platform.
- b. Adjust UP CUTOFF ADJUSTMENT SCREW and DEPLOY CUTOFF ADJUSTMENT SCREW 6-8 turns **counterclockwise** and then push screws FORWARD.
- c. Cycle platform to STOW then DEPLOY.
- d. When in DEPLOY position, platform should stop at an angle and NOT even with vehicle floor. If not, turn DEPLOY CUTOFF ADJUSTMENT SCREW an additional 2-3 turns **counterclockwise**, push screw forward, STOW then DEPLOY platform, then repeat this step.
- e. Cycle platform to UP position.
- f. When in UP position, platform should stop short of vehicle floor level. If not, turn UP CUTOFF ADJUSTMENT SCREW an additional 2-3 turns **counterclockwise**, push screw forward, cycle platform DOWN then UP, then repeat this step.
- g. Cycle platform to STOW then DEPLOY.
- h. Push and hold control pendant DEPLOY switch. Slowly turn DEPLOY CUTOFF ADJUSTMENT SCREW **clockwise** until platform “jogs” down to vehicle floor level. Make sure that clearance between knuckle actuator saddle and parallel arm is 1/8" minimum (distance may be 1/2" maximum and unequal from left or right arm), stop turning screw and release DEPLOY switch.



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**FIGURE 2-16: LIMIT SWITCH ADJUSTMENT CLEARANCE**

- i. Position platform DOWN to ground level then UP until it stops.
- j. Push and hold control pendant UP switch. Slowly turn UP CUTOFF ADJUSTMENT SCREW **clockwise** until platform “jogs” up to vehicle floor level. Make sure that clearance between knuckle actuator saddle and parallel arm is 1/8" minimum (distance may be 1/2" maximum and unequal from left or right arm), stop turning screw and release UP switch.

**NOTE:** If lift does not operate after 1-2 full turns of adjustment screw, cycle platform UP and DOWN (The UP CUTOFF SWITCH is less sensitive than DEPLOY CUTOFF SWITCH.)

- k. Cycle platform through all functions (DEPLOY, DOWN, UP, and STOW) to verify correct adjustment. Refer to **Table 2-1** if necessary.

<b>TABLE 2-1: LIMIT SWITCH ADJUSTMENT CHART</b>			
<b>COMPONENT</b>	<b>SYMPTOM</b>	<b>CORRECTIVE ACTION</b>	<b>ADJUSTMENT PROCEDURE</b>
Fold cutoff actuator	Lift does not fold tightly.	Rotate actuator counter-clockwise.	With lift fully folded (handrails should be folded tight against vertical arms), rotate actuator so that it barely trips fold cutoff switch.
	Pump runs continuously.	Rotate actuator clockwise.	Test lift. Pump should cutoff when lift is folded tight.

TABLE 2-1: LIMIT SWITCH ADJUSTMENT CHART			
COMPONENT	SYMPTOM	CORRECTIVE ACTION	ADJUSTMENT PROCEDURE
Up cutoff adjustment screw	Lift stops low.	Adjust screw clockwise.	Adjust up cutoff switch so that lift stops just before first knuckle actuator saddle or roller touches underside of lower parallel arm. (Saddle or roller should be about 1/8" from lower parallel arm.)
	Lift stops high.	Adjust screw counter-clockwise.	
Deploy cutoff adjustment screw	Lift stops low.	Adjust screw counter-clockwise.	Adjust deploy limit switch so that lift stops just below "Up" cutoff described in above step. This will give the necessary overlap to avoid "dead" spots.
	Lift stops high.	Adjust screw clockwise.	
END OF TABLE			

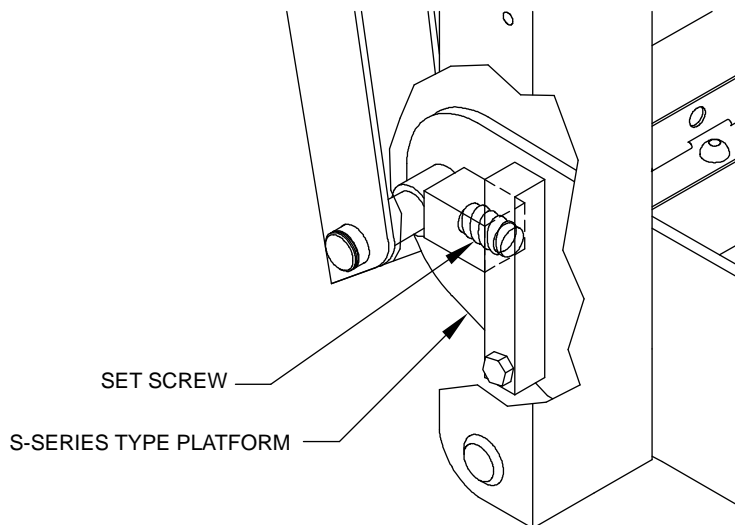
## 2. PLATFORM TILT ADJUSTMENT

Correct platform tilt adjustment is crucial for proper platform rollstop operation, but cannot be adjusted at factory. Factors such as vehicle floor height, lift tilt angle and stiffness of vehicle springs will vary installation geometry.

- a. Deploy and lower lift platform to a position halfway between vehicle floor level and ground level.
- b. Refer to **Figure 2-17**. Adjust left and right platform set screws until platform is level at zero (0) degrees. Turn setscrews clockwise to angle front-end of platform upward, or counter-clockwise to angle downward.

**NOTE:** At ground level, the distance between heel of platform and ground should be 3/4" to 1". This distance should be measured at initial point of rollstop full deployment.

**NOTE:** Adjust setscrews on both sides of platform simultaneously and evenly to ensure proper leveling of platform.



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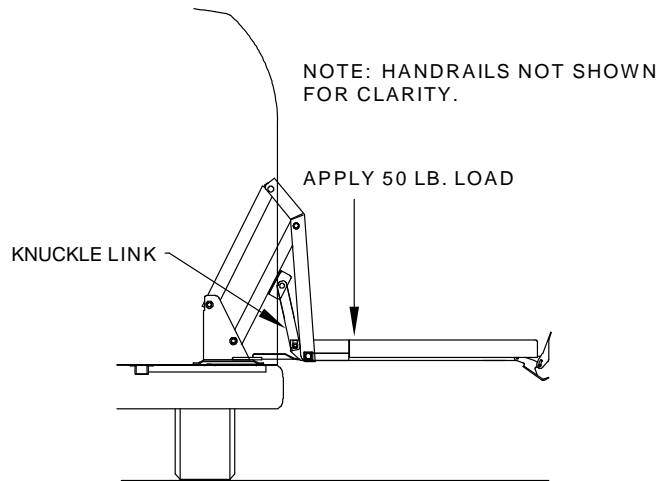
**FIGURE 2-17: PLATFORM SET SCREWS**

- c. Repeat steps a and b as required to achieve proper rollstop operation.

### 3. PLATFORM PRESSURE SWITCH CHECK AND ADJUSTMENT

Correct adjustment of this pressure switch will prevent platform from folding into vehicle when there is a load of 50 lbs, or more, on the platform.

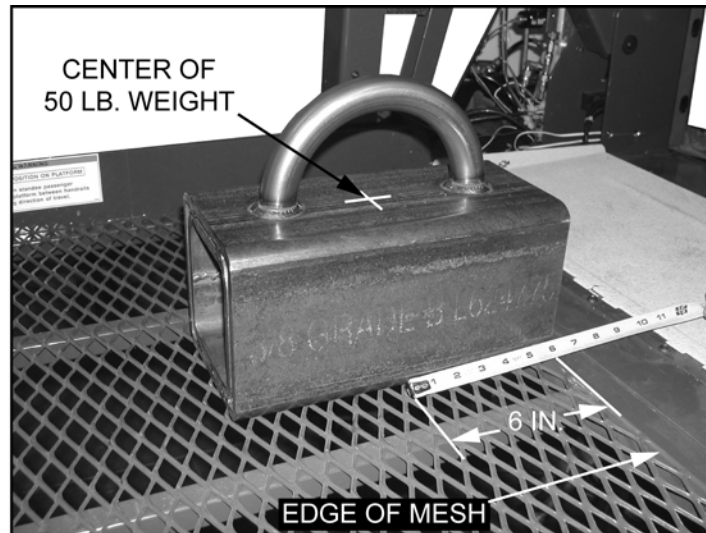
- a. Refer to **Figure 2-18**. Deploy and lower platform to ground.



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**FIGURE 2-18: PRESSURE SWITCH TEST AT FLOOR LEVEL**

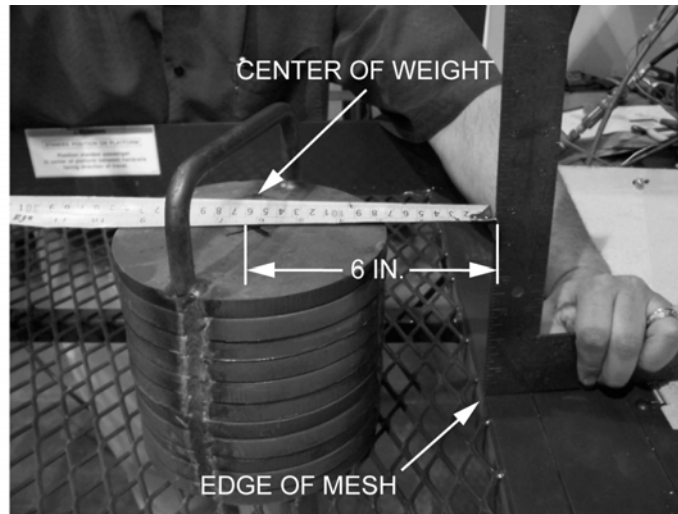
**NOTE:** Weight must be 50 lbs. and placed 6 inches from rear edge of platform mesh as shown in **Figure 2-19**.



**FIGURE 2-19: 50 LB. WEIGHT PLACEMENT ON PLATFORM**

- b. Place a 6" x 6" x 12", 50 lb. load on the rear, center portion of platform then raise platform to floor level by pressing and holding the STOW switch.
- c. Refer to **Figure 2-20**. If an alternate weight is to be used, the center of the weight must be 6 inches from the rear edge of the platform mesh.



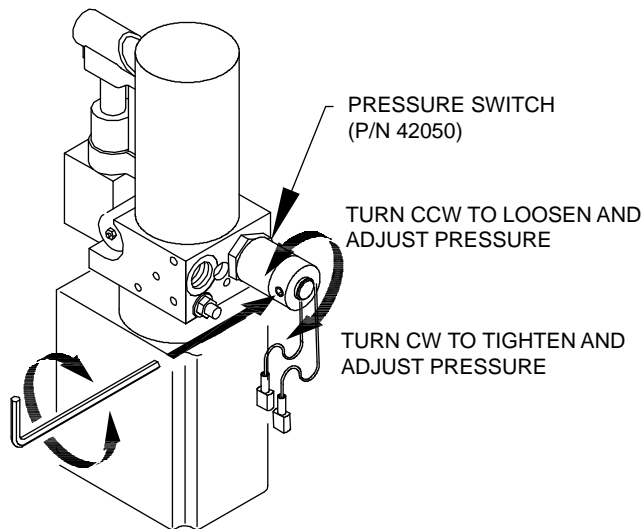


**FIGURE 2-20: ALTERNATE 50 LB. WEIGHT**

- d. The pressure switch is correctly set if pump motor shuts off when attempting to stow the lift, preventing inward movement of the platform.
- e. The pressure switch is not correctly set if pump motor does NOT shut off and there is inward movement of the platform. Adjustment of the pressure switch will be required.

**NOTE:** If adjustment is necessary then pressure switch must be adjusted as shown in **FIGURE 2-21**.

- f. Refer to **Figure 2-21**. Loosen the locking set screws from the hydraulic pressure switch, using a 5/64" hex wrench to allow adjustment of the hydraulic pressure switch.



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**FIGURE 2-21: PRESSURE SWITCH ADJUSTMENT (P/N 42050)**

- g. Turn the hydraulic pressure switch enclosure 1/8 of a turn **counterclockwise** (CCW), by hand to reduce the pressure.

**NOTE:** Turn the hydraulic pressure switch enclosure **clockwise** (CW) to increase pressure and **counterclockwise** (CCW) to decrease pressure, by hand.


- h. Stow platform and observe if the motor shuts off.
- i. If the motor does not shut off, turn the hydraulic pressure switch enclosure 1/8 of a turn **counterclockwise** (CCW), by hand to reduce the pressure.

**NOTE:** The lift should NOT stow or have inward movement with the weight on the platform.

- j. Repeat pressure switch adjustment as necessary to achieve correct setting.
- k. Tighten the locking set screw when the correct pressure setting is achieved.

## D. VERIFY INSTALLATION

- Be certain that no vehicle components interfere with operation of lift.
- The lift is designed to carry the weight of a wheelchair and its passenger. The vehicle structure must be capable of supporting all loads produced during lift operation as well as those forces caused by motion of vehicle when it is driven.

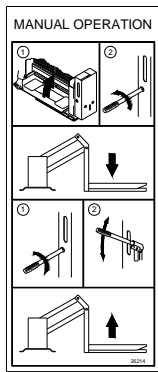
 <b>CAUTION</b>
<ul style="list-style-type: none"><li>Do not operate lift when test weight is on platform. This load test is designed to test the lift <b>mounting method</b>, not the lift capacity. Remove test weight immediately after check.</li><li>Vehicle suspension will compress and vehicle will lean when test weight is placed on platform. If weighted platform contacts ground, remove weight, raise platform, and retest.</li></ul>

- VMI recommends that the lift be test loaded at its rated 800 pound load capacity to verify integrity of installation. Position lift platform 2" - 6" above the ground, place 800 pounds in center of platform, and inspect lift mounting brackets and hardware. REMOVE TEST WEIGHT.
- Run lift through several complete cycles while checking for proper operation.
- Refer to **Figure 2-22** and verify that all decals are properly located and affixed as shown.

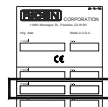
**NOTE:** The installing dealer affixes the Operating Instructions decal to vehicle in a location clearly visible to the lift operator.

## E. CUSTOMER ORIENTATION

<b>IMPORTANT</b> - Customer Orientation -
VMI Sales or Service personnel must review the warranty card and Operator manual with the customer to be certain they understand how to safely operate the lift. The customer should be instructed to follow the operating instructions without exception.



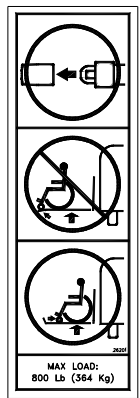
MANUAL OPERATION  
PN 26214



PART OF SERIAL NUMBER  
DECAL (LOCATED ON  
INNER SIDE OF HYDRAULIC  
CYLINDER; ONLY VMI  
REPLACEABLE)



PART OF SERIAL NUMBER  
DECAL (ONLY VMI  
REPLACEABLE)



MAXIMUM  
LOAD  
PN 26201

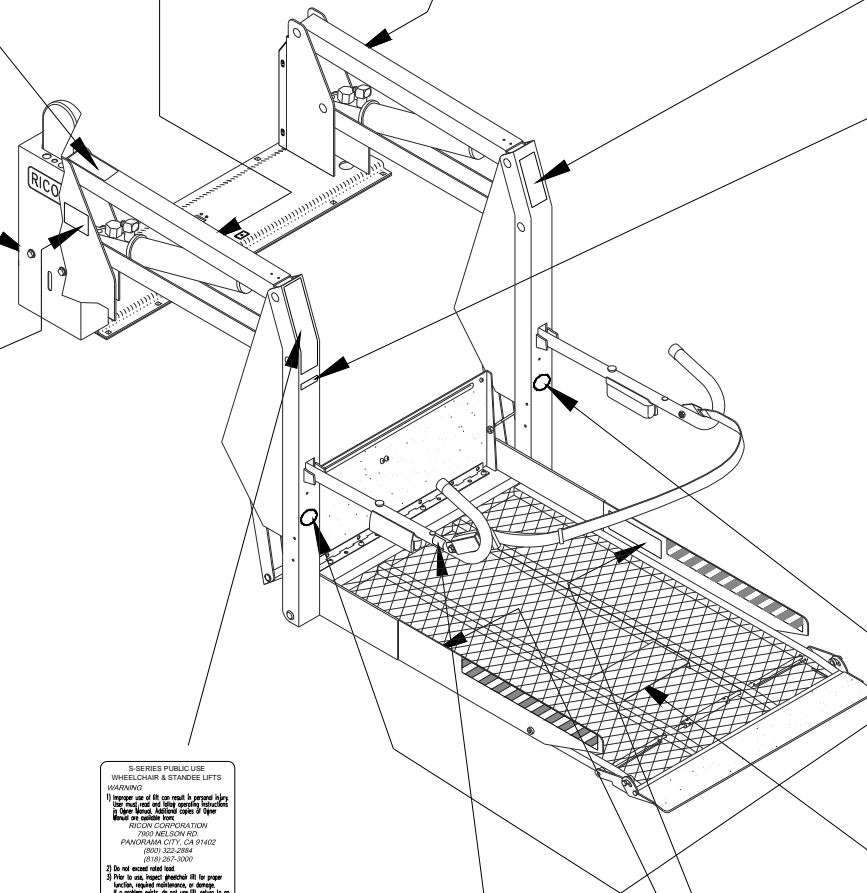
PUMP COVER  
PN 26292



DOT - Public Use Lift

DOT - PUBLIC  
USE LIFT  
PN 32113

S-SERIES  
PATENT NO.  
PN 32-10-173



"VMI" BADGE (AFFIX TO  
BOTH VERTICAL ARMS)  
PN 33179

**INSTALLER**  
To comply with certain State and Federal regulations, this lift's operating instruction decal should be affixed to the vehicle door in a location clearly visible to the lift operator.

**SEE USER**

**S-SERIES/S-SERIES PUBLIC USE WHEELCHAIR & STANDEE LIFTS WARNING**

- 1) Integrate use of lift can result in personal injury. Use must meet and fully comply with instructions in Owner Manual. Additional copies of Owner Manual are available here.
- 2) Do not exceed rated load capacity.
- 3) Prior to use, inspect wheelchair fit for proper function, required maintenance, or damage. If a problem exists, do not use lift, return to an authorized service technician for repair. Rico Corporation disclaims liability for damage or personal injury resulting from fit modification, lack of maintenance, repair, negligence, abuse or failure to follow lift operating instructions.

**OPERATING INSTRUCTIONS (ALSO READ OWNER MANUAL)**

**DISPENSER:**

- 1) Fully open doors.
- 2) Use pendant switch to apply power to pendant.
- 3) Press and hold **DEPLOY** button to unfold platform to vehicle floor level.
- 4) Press and hold **DOWN** button to lower platform to ground level.

**ENTER VEHICLE:**

- 1) Place wheelchair in center of platform, facing nearest if possible. **LOCK WHEELCHAIR BRAKES.** (SHIELDS See below)
- 2) Fasten Occupant Restraint Belt.
- 3) Press and hold **UP** button to raise platform to vehicle floor level.
- 4) Release wheelchair brakes and enter vehicle.

**EXIT VEHICLE:**

- 1) Fasten Occupant Restraint Belt.
- 2) Place wheelchair in center of platform, facing nearest if possible. **LOCK WHEELCHAIR BRAKES.** (SHIELDS See below)
- 3) Press and hold **DOWN** button to lower platform to ground level.
- 4) Release wheelchair brakes and exit platform.

**STAY LIFT:**

- 1) Press and hold **STOP** button to hold platform, which will stop automatically when completely locked.
- 2) Turn pendant switch off.
- 3) Close doors.

**STANDEES:**  
Standees should centrally stand in center of platform, facing direction of travel (into or out of vehicle) and firmly grasp handrails.

**MANUAL OPERATION**

See instructions on pump cover and in Owner Manual.

**CAUTION:**  
Always when close of lift when operating. Be certain vehicle is safely parked before using lift. Occupant Restraint Belt should always be fastened before operating lift. Wheelchair should be positioned in center of platform or it may not operate properly. Do not attempt to operate (lowering) from loading.

PUBLIC USE  
OPERATING  
INSTRUCTIONS  
(VEHICLE  
EXTERIOR)  
PN 32146

**S-SERIES PUBLIC USE WHEELCHAIR & STANDEE LIFTS WARNING**

- 1) Integrate use of lift can result in personal injury. Use must meet and fully comply with instructions in Owner Manual. Additional copies of Owner Manual are available here.
- 2) Do not exceed rated load.
- 3) Prior to use, inspect wheelchair fit for proper function, required maintenance, or damage. If a problem exists, do not use lift, return to an authorized service technician for repair. Rico Corporation disclaims liability for damage or personal injury resulting from fit modification, lack of maintenance, repair, negligence, abuse or failure to follow lift operating instructions.

**OPERATING INSTRUCTIONS**

**DISPENSER LIFT:**

- 1) Fully open doors.
- 2) Use pendant switch to apply power to pendant.
- 3) Press **DOWN** button to unfold platform to vehicle floor level.
- 4) Press **UP** button to raise platform to ground level.

**ENTER VEHICLE:**

- 1) Place wheelchair in center of platform, facing nearest if possible. **LOCK WHEELCHAIR BRAKES.** (SHIELDS See below)
- 2) Fasten occupant restraint belt.
- 3) Press **UP** button to raise platform to vehicle floor level.
- 4) Release wheelchair brakes and enter vehicle.

**EXIT VEHICLE:**

- 1) Fasten occupant restraint belt.
- 2) Place wheelchair in center of platform, facing nearest if possible. **LOCK WHEELCHAIR BRAKES.** (SHIELDS See below)
- 3) Press and hold **DOWN** button to lower platform to ground level.
- 4) Release wheelchair brakes and exit platform.

**STAY LIFT:**

- 1) Press and hold **STOP** button to hold platform, which will stop automatically when completely locked.
- 2) Turn pendant switch off.
- 3) Close doors.

**Standees:**  
Standees should stand in center of platform, facing direction of travel (into or out of vehicle) and firmly grasp handrails.

**MANUAL OPERATION**

See instructions on pump cover and in Owner Manual.

**CAUTION:**  
Always when close of lift when operating. Be certain vehicle is safely parked before using lift. Occupant Restraint Belt should always be fastened before operating lift. Wheelchair should be positioned in center of platform or it may not operate properly. Do not attempt to operate (lowering) from loading.

PUBLIC USE  
OPERATING  
INSTRUCTIONS  
PN 32136

RESTRAINT  
BELT  
PN 26155



STAND CLEAR  
CAUTION  
PN 26185



STANDEE LOCATION  
DECALS (2)  
PN 26255

**WARNING**  
**STANDEE POSITION ON PLATFORM**  
Position standee passenger in center of platform between handrails facing direction of travel.


FIGURE 2-22: PUBLIC LIFT DECAL LOCATIONS AND PART NUMBERS

### III. S-SERIES PUBLIC USE MAINTENANCE AND REPAIR

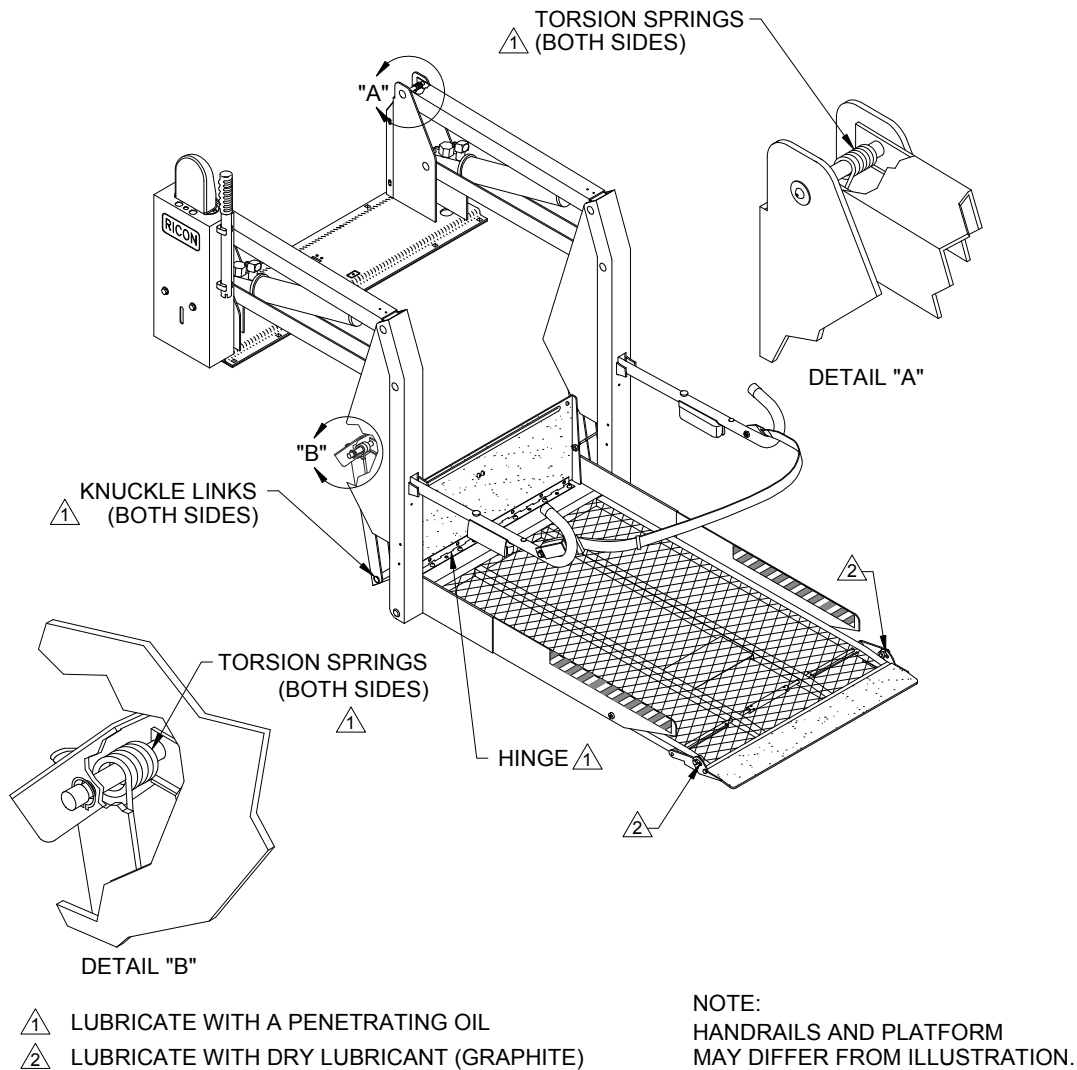
Regular maintenance of the VMI S-Series Public Use wheelchair lift will help optimize its performance and reduce the need for repairs. This chapter contains cleaning and lubrication instructions, maintenance schedule, troubleshooting section, and maintenance diagrams.

 <b>CAUTION</b>
This VMI product is highly specialized. Maintenance and repairs must be performed by an authorized VMI service technician using VMI replacement parts. Modifying or failing to properly maintain this product will void warranty and may result in unsafe operating conditions.

#### A. LUBRICATION

 <b>CAUTION</b>
Do not lubricate motor or other electrical components. Lubrication of electrical components may create unintentional short circuits.

Lubrication should be performed at least every six months, or sooner depending on usage. Refer to **Figure 3-1** and the following Maintenance Schedule. Lubricate lift at points specified.



**FIGURE 3-1: LIFT LUBRICATION POINTS**

#### B. CLEANING

Regular cleaning with mild soap (i.e. dish soap, car wash liquid) and drying thoroughly will protect lift painted surfaces. Cleaning is especially important in areas where roads are salted in winter. Make sure that lift pivot points remain clear and clean prior to lubrication.

### C. MAINTENANCE SCHEDULE

Under normal operating conditions, maintenance inspections are required at least every six months (1750 cycles) and a thorough inspection should be performed at service intervals referenced in **Table 3-1**. Service should be increased under conditions of heavier use (more than 10 cycles per day).

<b>TABLE 3-1: MAINTENANCE SCHEDULE</b>	
<b>SERVICE POINT</b>	<b>ACTION TO PERFORM</b>
<b>10 CYCLES</b>	
Overall condition	Listen for abnormal noises as lift operates (i.e. grinding or binding noises.)
Control pendant	Verify that control pendant is undamaged and cable connector is tight.
Threshold warning system	Verify that system properly detects objects in threshold area and actuates the audible alarm.
Bridgeplate load sensor	Verify that sensor inhibits downward movement of platform when a weight is present on lowered bridgeplate.
<b>150 CYCLES</b>	
Electrical wiring	Inspect electrical wiring for frayed wires, loose connectors, etc.
Vehicle interlock	Place vehicle in non-interlock mode and verify that lift does not operate.
Decals	Verify that lift decals are properly affixed, clearly visible, and legible. Replace, if necessary.
Armrests	Verify that armrest fasteners are properly tightened.
Lift mounting points	<ul style="list-style-type: none"> <li>▪ Verify that vehicle mounting and support points are undamaged.</li> <li>▪ Verify that mounting bolts are sufficiently tight and free of corrosion.</li> </ul>
Main lifting pivots	Verify that link pins on arms are properly installed, free from damage, and locked in position.
Platform pivot points	Verify that platform moves freely, without binding, and does not wobble.
Bridgeplate	<ul style="list-style-type: none"> <li>▪ Verify that bridgeplate operates without binding during lift functions.</li> <li>▪ Verify that bridgeplate deploys fully when platform stops at floor level.</li> <li>▪ Verify bridgeplate rests flat against baseplate.</li> </ul>
Front rollstop	<ul style="list-style-type: none"> <li>▪ Verify that rollstop is opened completely when platform is at ground level.</li> <li>▪ Verify that rollstop closes and locks when platform leaves ground.</li> </ul>
Hydraulic power unit	 <b>CAUTION</b>
	<p>Check and add fluid when platform is at ground level. Fluid that is added when platform is raised will overflow when platform is lowered.</p> <ul style="list-style-type: none"> <li>▪ Verify that pump hydraulic fluid level is at FULL mark when platform is at ground level. Add Texaco 01554 Aircraft Hydraulic Oil or equivalent U.S. mil spec H5606G fluid.</li> <li>▪ Verify there are no hydraulic fluid leaks.</li> <li>▪ Verify that manual backup pump operates properly.</li> </ul>
<b>1800 CYCLES</b>	
Cleaning and lubrication	<ol style="list-style-type: none"> <li>1. Clean lift with mild soap and water and wipe dry. Prevent rust by coating all surfaces with a light weight oil. Remove excess oil.</li> <li>2. Spray penetrating oil (Curtisol® Red Grease 88167 or WD-40®) where specified following directions on container. Remove excess grease from surrounding areas.</li> </ol>
 <b>CAUTION</b>	
A VMI authorized dealer must perform the following safety check.	
<b>3600 CYCLES</b>	
Hydraulic cylinder, hoses and fittings	<ul style="list-style-type: none"> <li>▪ Check hydraulic cylinder for evidence of leaks.</li> <li>▪ Inspect hydraulic hoses for damage.</li> <li>▪ Verify that all fittings are tight.</li> </ul>
<b>END OF TABLE</b>	

## D. TROUBLESHOOTING

The troubleshooting guides are designed to provide logical starting points to locate general problems that could occur with lift. However, not all possible problems or combinations of problems are listed. For troubleshooting lift, refer to **Tables 3-2** and **3-3**. The guides do not incorporate routine safety precautions or preliminary procedures and assume that vehicle battery is fully charged and battery terminals/connectors are clean and tight.

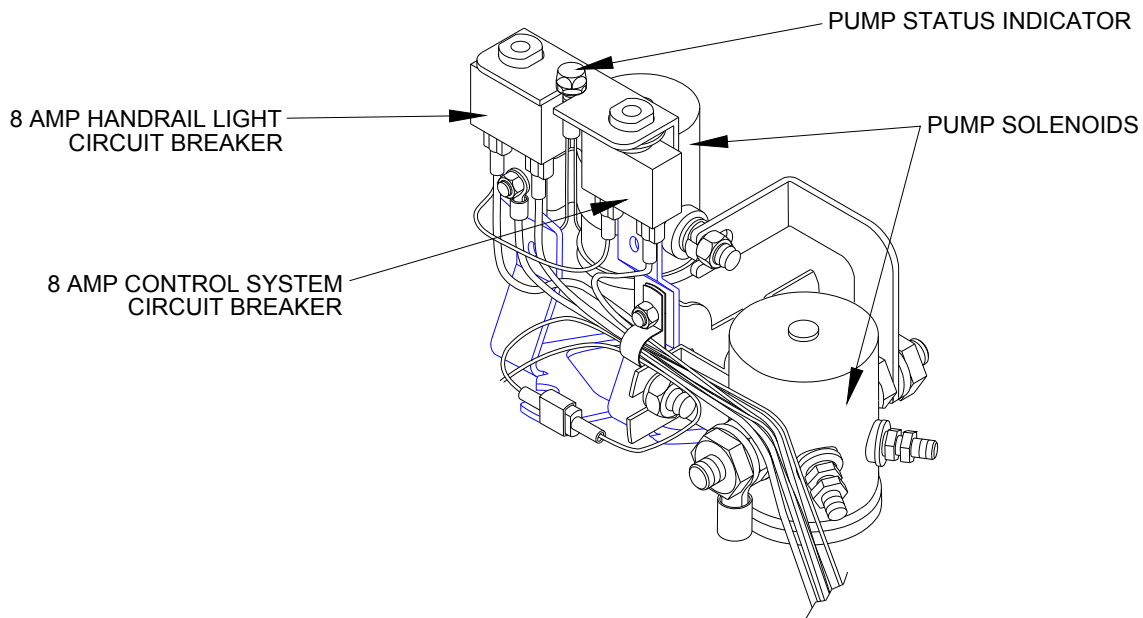
 <b>WARNING</b>
THE TROUBLESHOOTING GUIDES DO NOT INCORPORATE ROUTINE SAFETY PRECAUTIONS OR PRELIMINARY PROCEDURES. DURING THE VMI WARRANTY PERIOD A TRAINED, VMI AUTHORIZED SERVICE TECHNICIAN MUST PERFORM TROUBLESHOOTING. AFTER THE WARRANTY PERIOD, IT IS RECOMMENDED THAT TROUBLESHOOTING BE CONTINUED BY A VMI AUTHORIZED SERVICE TECHNICIAN.

### 1. LIFT TROUBLESHOOTING

<b>TABLE 3-2: TROUBLESHOOTING LIFT OPERATION</b>			
<b>SYMPTOM</b>		<b>POSSIBLE CAUSE</b>	<b>REMEDY</b>
Hydraulic fluid leaks		Loose hydraulic fitting.	Make sure fitting is PROPERLY tightened.
		Hydraulic component defective.	Discontinue use of lift. Have repairs made by an authorized VMI dealer.
Rollstop does not open		Obstruction of rollstop release latch.	Raise lift and remove obstruction.
Lift functions	Abnormal operation.	Obstruction in lifting frame.	Remove obstruction and check for any damage
		Backup pump manual release valve OPEN.	Turn manual release valve CLOCKWISE until slightly snug.
		Hydraulic fluid may be low.	While platform is at GROUND LEVEL, be certain that pump hydraulic fluid level is maintained at required FULL level. Add only Texaco 01554 Aircraft Hydraulic Oil or equivalent U.S. mil spec H5606G fluid.
		Air may be trapped in hydraulic system.	Purge hydraulic system by operating lift through its maximum range of travel for at least four complete cycles. (For vehicles that do not use full travel of lift, the maximum range of travel is accomplished by raising vehicle on a service hoist or ramp.)
	No operation.	Control system circuit breaker tripped.	Reset circuit breaker.
		Backup pump manual release valve OPEN.	Turn manual release valve CLOCKWISE until slightly snug.
		Hydraulic hose or fitting leak.	Contact an authorized VMI dealer for repair.
		Hydraulic fluid may be low.	While platform is at GROUND LEVEL, be certain that pump hydraulic fluid level is maintained at required FULL level. Add only Texaco 01554 Aircraft Hydraulic Oil or equivalent U.S. mil spec H5606G fluid.
		Air can be trapped in hydraulic system.	Purge hydraulic system by operating lift through its maximum range of travel for at least four complete cycles. (For vehicles that do not use full travel of lift, the maximum range of travel is accomplished by raising vehicle on a service hoist or ramp.)
<b>END OF TABLE</b>			

## 2. PUMP SOLENOID LED STATUS INDICATOR

Refer to **Figure 3-2**. Two identical solenoids provide a margin of safety in the event that one of the solenoids fails with its contacts closed. A two-color status indicator LED is located between the 8A circuit breakers to monitor the condition of the two solenoids. The LED is normally off when the pump is not operating and becomes green when the pump operates. When the pump is not operating and the top solenoid has failed the LED will be red. The LED will be green when the side solenoid has failed.

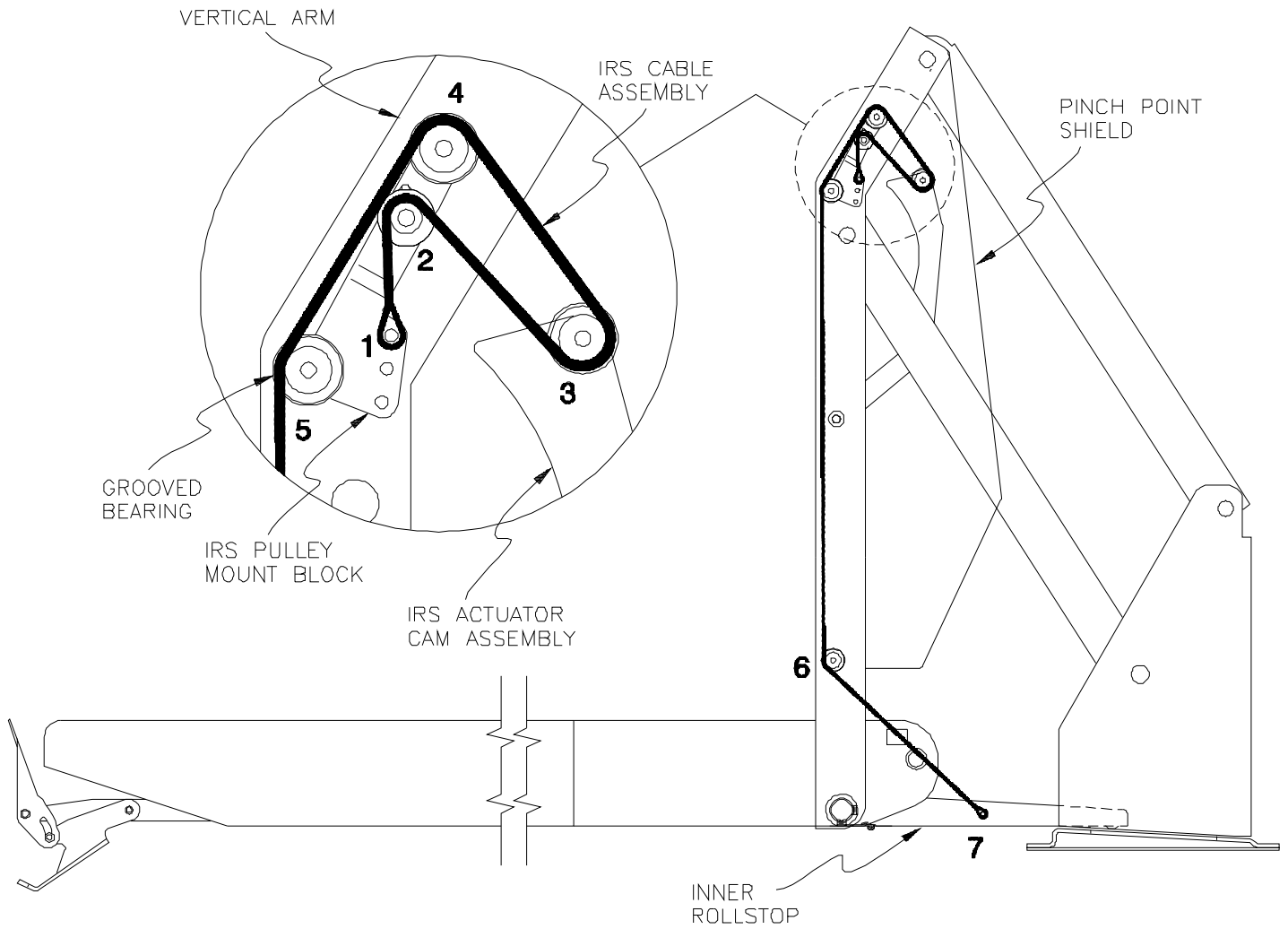


**FIGURE 3-2: STATUS INDICATORS FOR PUMP SOLENOIDS**

## 3. BRIDGEPLATE CABLE ASSEMBLY REPLACEMENT

The following steps provide instructions for replacing the bridgeplate (also known as inner rollstop or IRS) cable assembly. Refer to **Figure 3-3** on following page. Please follow these instructions carefully. Call VMI Product Support if you need assistance.

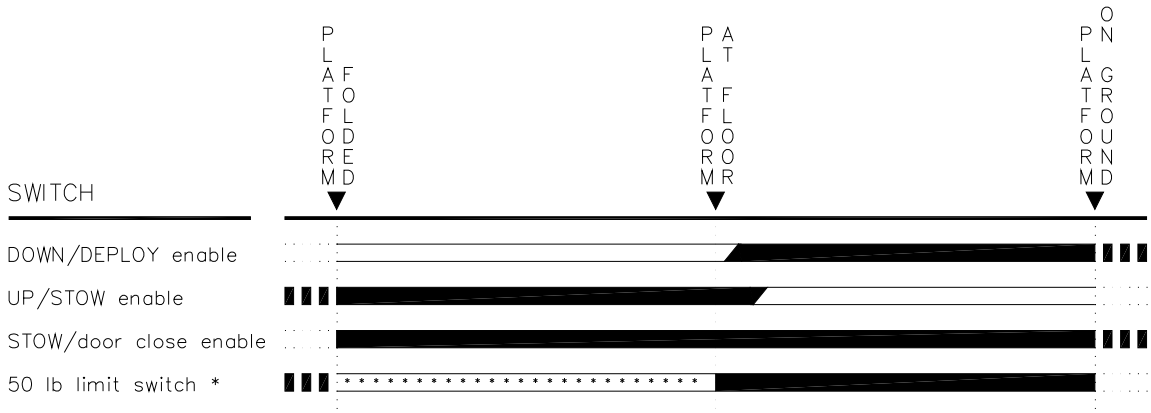
- a. Study the routing of the cable before removing it.
- b. Deploy the lift platform to vehicle floor level. Be certain that bridgeplate is resting against baseplate assembly.
- c. Remove pinch point shields from the left and right vertical arm assemblies.
- d. Assemble and secure one end of an IRS cable to the IRS pulley mount block (#1; located inside the left vertical arm assembly) using a hex screw, bushing, and washer.
- e. Route the cable around the IRS pulley mount block bushing (#2). Verify that cable is routed between the bushing tab and the point where the cable makes contact with the bushing. Install washer and hex nut over bushing and cable assembly.
- f. Continue to route the cable around grooved bearings #3, #4, and #5.
- g. Route the cable down the length of the vertical arm assembly and around grooved bearing #6.
- h. Assemble and secure the end of the IRS cable to the left side of the bridgeplate (#7) using a hex screw, washer, bushing, and he nut. Be sure to install a hex nut on the inside of the inner rollstop.
- i. Repeat for right side.
- j. Reinstall pinch point shields removed in step 2.



**FIGURE 3-3: BRIDGEPLATE CABLE ROUTING**

**4. S-SERIES LIMIT SWITCH STATES**

Refer to **Figure 3-4**. The limit switch actuation diagram shows the state of all limit switches as the platform travels from fully stowed, to vehicle floor level, and to ground level. The solid (—) line indicates the normally CLOSED portion of switch is operational, while the two thin lines (≡) indicate the normally OPEN portion of the switch is operational. The dotted lines (· · ·) are used to show switch states beyond normal travel boundaries of the platform. This is useful to show the operation of switches that change state at folded or ground level positions. For proper operation of lift, the switch actuations must overlap as shown.

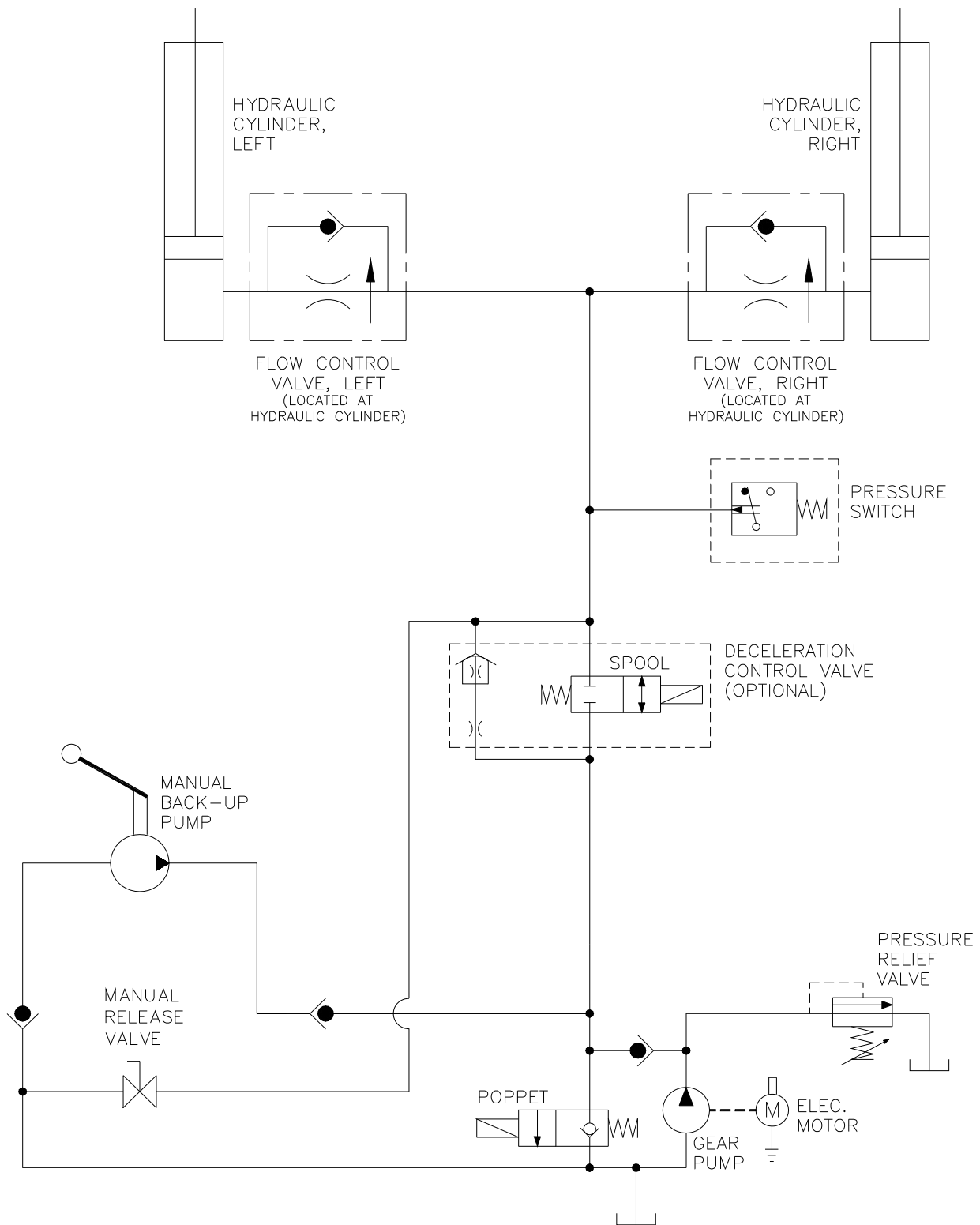


\* 50 lb limit switch actuates when weight on platform exceeds 50 lbs during IN platform motion.

**FIGURE 3-4: LIMIT SWITCH ACTUATION**  
32DSST06.A.1



## E. HYDRAULIC CIRCUIT DIAGRAM



**FIGURE 3-5: S-SERIES HYDRAULIC CIRCUIT**

## F. ELECTRICAL WIRING DIAGRAMS

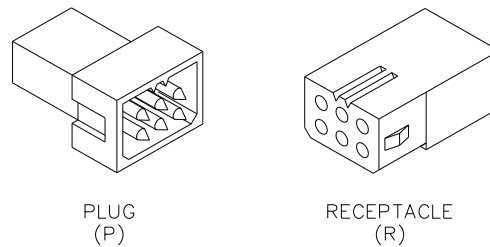
### 1. DIAGRAM LEGEND

#### a. Wire Color Codes

TABLE 3-4: WIRE COLOR CODES			
LETTER	COLOR	LETTER	COLOR
BK	Black	R	Red
BL	Blue	VI	Violet
BR	Brown	GY	Gray
GN	Green	W	White
O	Orange	Y	Yellow
<b>END OF TABLE</b>			

#### b. Electrical Connector Description

Refer to **Figure 3-6**. The standard electrical connectors used by VMI are Molex .062" Series. These connectors have terminal numbers molded onto the back. Use these numbers and colors to identify all wires.



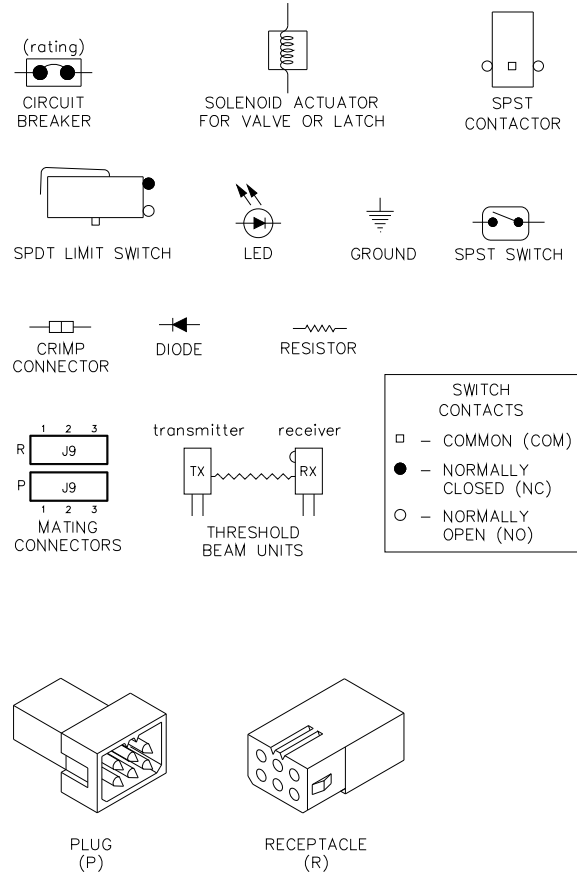
**FIGURE 3-6: MOLEX CONNECTORS**

#### c. Diagram Labels

12V	12 Volts – Circuit current rating is also given
DC	Door Close – Direct command
DO	Door Open – Direct command
DOE	Door open Enable – From Door Open cutoff switch
DWN	Pump Down – Used by OUT and DWN
DWNA	Down Attempt – Must be enabled
FAST	Signal to speedup valve for UP and DOWN
GND	GROUND
OUTA	Out Attempt – Out must be enabled
SDA	System Deploy Attempt – DO followed by OUT
SSA	System Store Attempt – IN followed by DC
UP	Pump Up – Used by UP and IN
UPA	Up Attempt – Up must be enabled

**d. Electrical Symbols**

Figure 3-7 shows standard symbols used in the electrical wiring diagram.



**FIGURE 3-7: DIAGRAM SYMBOLS**

**e. WIRING DIAGRAM**

Refer to Figures 3-8 and 3-9 on the following two pages for the VMI S-series public use wiring diagram.

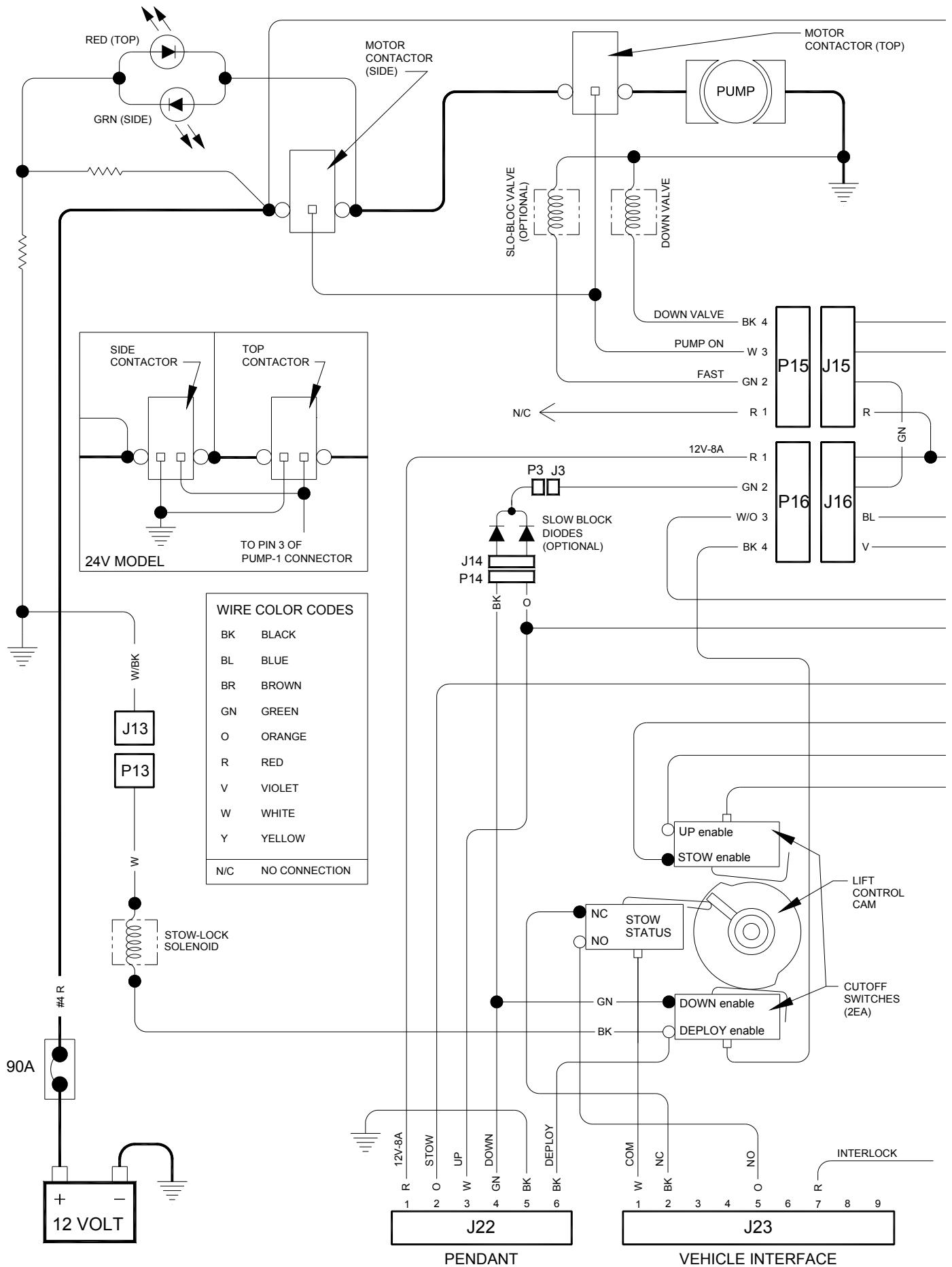
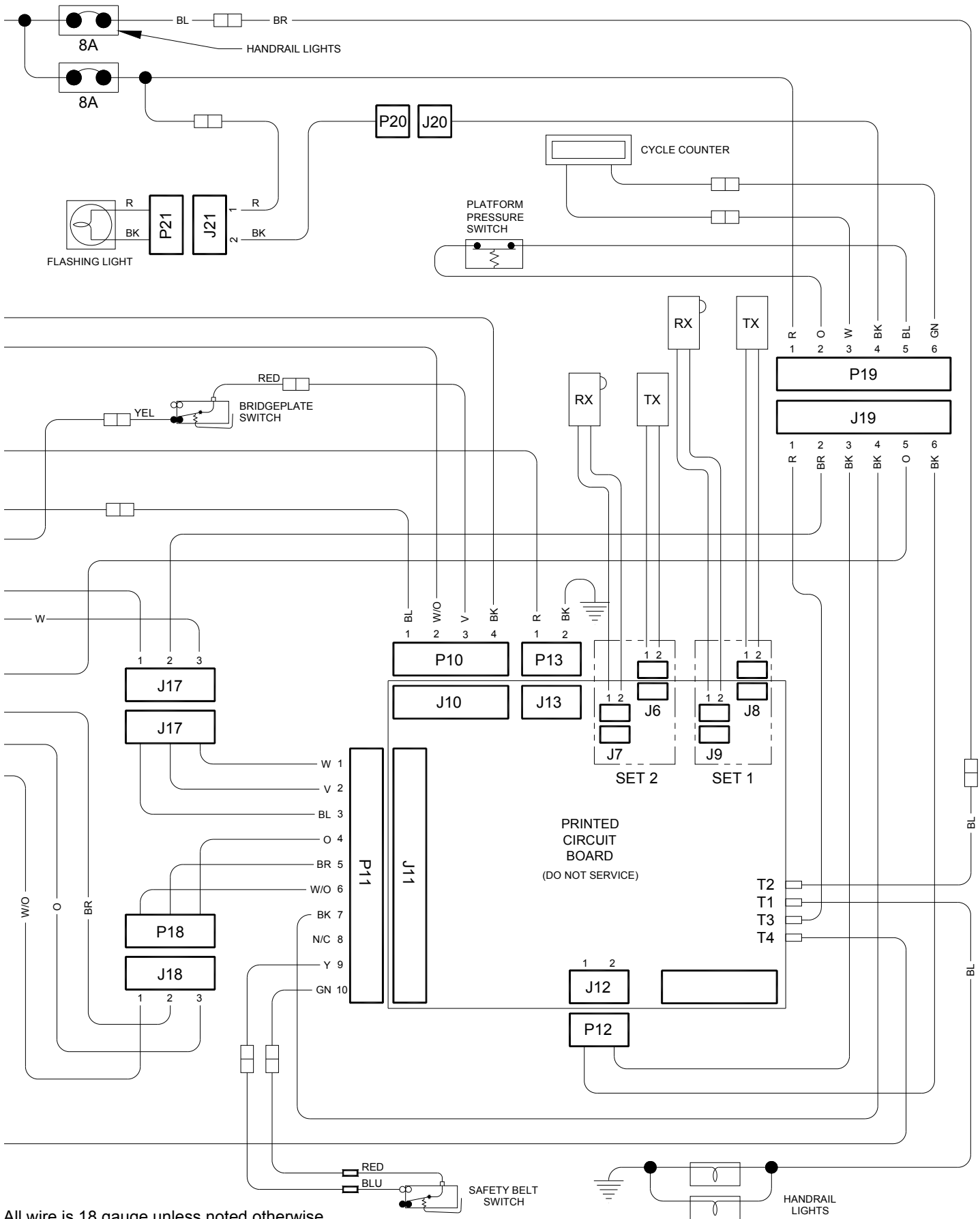


FIGURE 3-8: S-SERIES PUBLIC USE WIRING DIAGRAM – SHEET 1

32DSST06.A.1



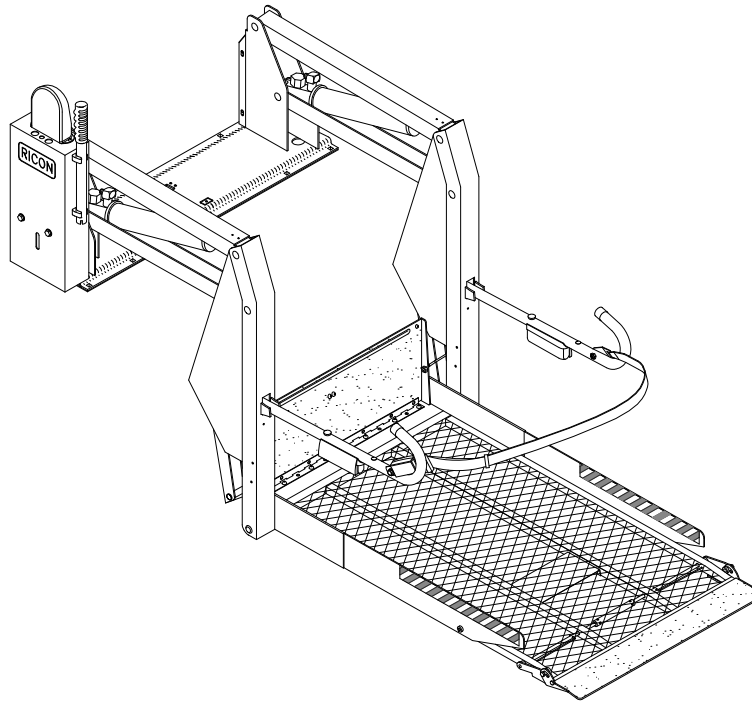
All wire is 18 gauge unless noted otherwise.

FIGURE 3-9: S-SERIES PUBLIC USE WIRING DIAGRAM – SHEET 2

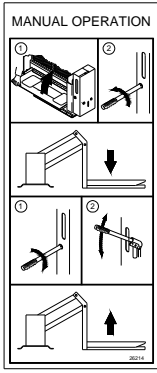
## IV. S-SERIES PUBLIC USE SPARE PARTS

This chapter contains spare parts diagrams and lists for the VMI S-Series Public Use wheelchair lift. The exploded view of each major lift assembly shows individual components referenced by numbers. On each associated list are the reference numbers, part descriptions, quantities used, and VMI part numbers.

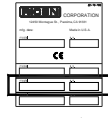
**NOTE:** To order a part, locate the part or assembly on an exploded view, note its reference number, find this number on the associated parts list (following page), and order the part number in the far right column. Most kits contain a single part (plus hardware). Therefore, you may need to order more than one kit if the part is used more than once on a major assembly.



<b>PARTS DIAGRAM .....</b>	<b>PAGE</b>
FIGURE 4-1: PUBLIC USE DECALS .....	4-2
FIGURE 4-2: PUBLIC USE PUMP ASSEMBLY .....	4-4
FIGURE 4-3: PUBLIC USE HYDRAULIC SYSTEM.....	4-6
FIGURE 4-4: PUBLIC USE ELECTRICAL SYSTEM .....	4-8
FIGURE 4-5: PUBLIC USE PENDANT .....	4-10
FIGURE 4-6: PUBLIC USE PLATFORM.....	4-12
FIGURE 4-7: PUBLIC USE TRAVELING FRAME .....	4-16
FIGURE 4-8: PUBLIC USE HANDRAILS.....	4-20
<b>LIFT SPECIFICATIONS .....</b>	<b>4-22</b>



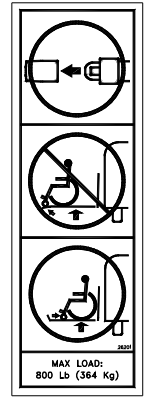
MANUAL OPERATION  
PN 26214



PART OF SERIAL NUMBER  
DECAL (LOCATED ON  
INNER SIDE OF HYDRAULIC  
CYLINDER; ONLY VMI  
REPLACEABLE)



PART OF SERIAL  
NUMBER DECAL  
(ONLY VMI  
REPLACEABLE)



MAXIMUM  
LOAD  
PN 26201

PUMP COVER  
PN 26292

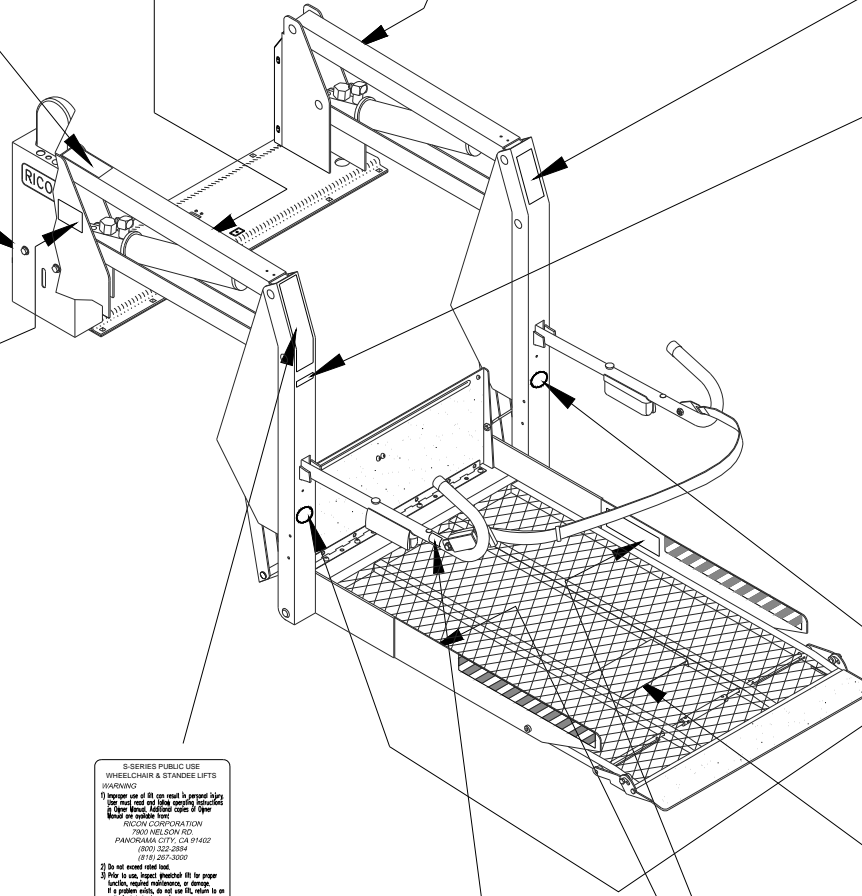


S-SERIES  
PATENT NO.  
PN 32-10-173



DOT - Public Use Lift

DOT - PUBLIC  
USE LIFT  
PN 32113



"VMI" BADGE (AFFIX TO  
BOTH VERTICAL ARMS)  
PN 33179



STAND CLEAR  
CAUTION  
PN 26185

**INSTALLER**  
To comply with certain State and Federal regulations, this lift operating instruction decal should be affixed to the vehicle door in a location clearly visible to the lift operator.

**INSTALLER USE**

**S-SERIES/SERIES PUBLIC USE WHEELCHAIR & STANDEE LIFTS**  
**WARNING**  
1) Proper use of lift can result in personal injury. Read and follow operating instructions in User Manual. Additional copies of User Manual are available from:  
RICOON CORPORATION  
7500 NELSON RD.  
PANORAMA CITY, CA 91402  
(800) 322-2884  
(714) 267-3000

2) Do not exceed rated load capacity.  
3) Prior to use, inspect wheelchair lift for proper function, required maintenance, or damage. If a problem exists, do not use lift, return to an authorized service technician for repair.  
Ricoon Corporation disclaims liability for damage or personal injury resulting from lift malfunctions, lack of maintenance, repair, negligence, abuse or failure to follow lift operating instructions.

**OPERATING INSTRUCTIONS**  
**(READ REAR OPERATOR MANUAL)**  
**Display Lift:**  
1) Fully open door.  
2) Use present switch to apply power to platform.  
3) Press and hold **DEPLOY** button to unfold platform to vehicle floor level.  
4) Press and hold **DOWN** button to lower platform to ground level.

**Enter Vehicle:**  
1) Place wheelchair in center of platform, facing subject if possible. **LOCK WHEELCHAIR BRAKES.** (SWITCHES see here)  
2) Fasten Occupant Restraint Belt.  
3) Press and hold **UP** button to raise platform to vehicle floor level.  
4) Release wheelchair brakes and enter vehicle.

**Exit Vehicle:**  
1) Fasten Occupant Restraint Belt.  
2) Place wheelchair in center of platform, facing subject if possible. **LOCK WHEELCHAIR BRAKES.** (SWITCHES see here)  
3) Press and hold **DOWN** button to lower platform to ground level.  
4) Release wheelchair brakes and exit vehicle.

**Standee Lift:**  
1) Press and hold **STOP** button to hold platform, which will stop automatically when completely closed.  
2) Turn present switch off.  
3) Close door(s).

**Standee:**  
Standee should centrally stand in center of platform, facing direction of travel (into or out of vehicle) and firmly grasp handrail.

**MANUAL OPERATION**  
1) See instructions on pump cover and in Operator Manual.  
**CAUTION**  
Keep others clear of lift when operating. Be certain vehicle is safely parked before using lift. Occupant restraint belt should always be fastened before operating lift. Wheelchair should be positioned in center of platform so it does not interfere with other raising operation (preventing it from coming

PUBLIC USE  
OPERATING  
INSTRUCTIONS  
(VEHICLE  
EXTERIOR)  
PN 32146

**S-SERIES PUBLIC USE WHEELCHAIR & STANDEE LIFTS**  
**WARNING**  
1) Proper use of lift can result in personal injury. Read and follow operating instructions in User Manual. Additional copies of User Manual are available from:  
RICOON CORPORATION  
7500 NELSON RD.  
PANORAMA CITY, CA 91402  
(800) 322-2884  
(714) 267-3000

2) Do not exceed rated load.  
3) Prior to use, inspect wheelchair lift for proper function, required maintenance, or damage. If a problem exists, do not use lift, return to an authorized service technician for repair.  
Ricoon Corporation disclaims liability for damage or personal injury resulting from lift malfunctions, lack of maintenance, repair, negligence, abuse or failure to follow lift operating instructions.

**OPERATING INSTRUCTIONS**  
**Display Lift:**  
1) Fully open door.  
2) Use present switch to apply power to platform.  
3) Press **DEPLOY** button to unfold platform to ground level.  
4) Press **DOWN** button to lower platform to ground level.

**Enter Vehicle:**  
1) Place wheelchair in center of platform, facing subject if possible. **LOCK WHEELCHAIR BRAKES.** (SWITCHES see here)  
2) Fasten occupant restraint belt.  
3) Press **UP** button to raise platform to vehicle floor level.  
4) Release wheelchair brakes and enter vehicle.

**Exit Vehicle:**  
1) Fasten occupant restraint belt.  
2) Place wheelchair in center of platform, facing subject if possible. **LOCK WHEELCHAIR BRAKES.** (SWITCHES see here)  
3) Press **STOP** button to hold platform, which will stop automatically when completely closed.  
4) Turn present switch off.  
5) Close door.

**Standee:**  
Standee should stand in center of platform, facing direction of travel (into or out of vehicle) and firmly grasp handrail.

**MANUAL OPERATION**  
1) See instructions on pump cover and in Operator Manual.  
**CAUTION**  
Keep others clear of lift when operating. Be certain vehicle is safely parked before using lift. Occupant restraint belt must be fastened before operating lift. Wheelchair should be positioned in center of platform so it does not interfere with other raising operation (preventing it from coming

RESTRAINT  
BELT  
PN 26155



PUBLIC USE  
OPERATING  
INSTRUCTIONS  
PN 32136

STANDEE LOCATION  
DECALS (2)  
PN 26255

**WARNING**  
**STANDEE POSITION ON PLATFORM**  
Position standee passenger in center of platform between handrails facing direction of travel.

FIGURE 4-1: PUBLIC USE DECAL LOCATIONS

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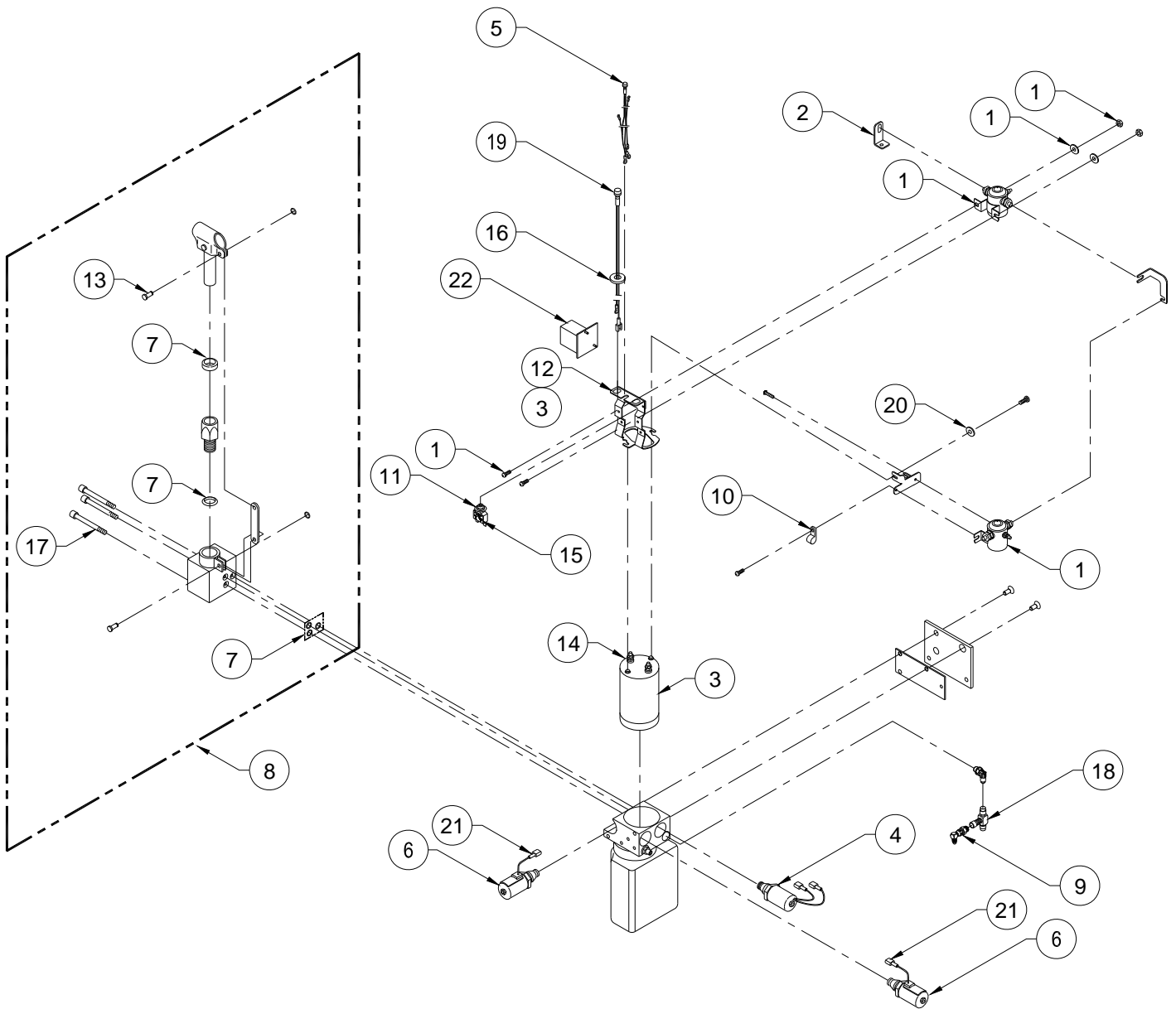
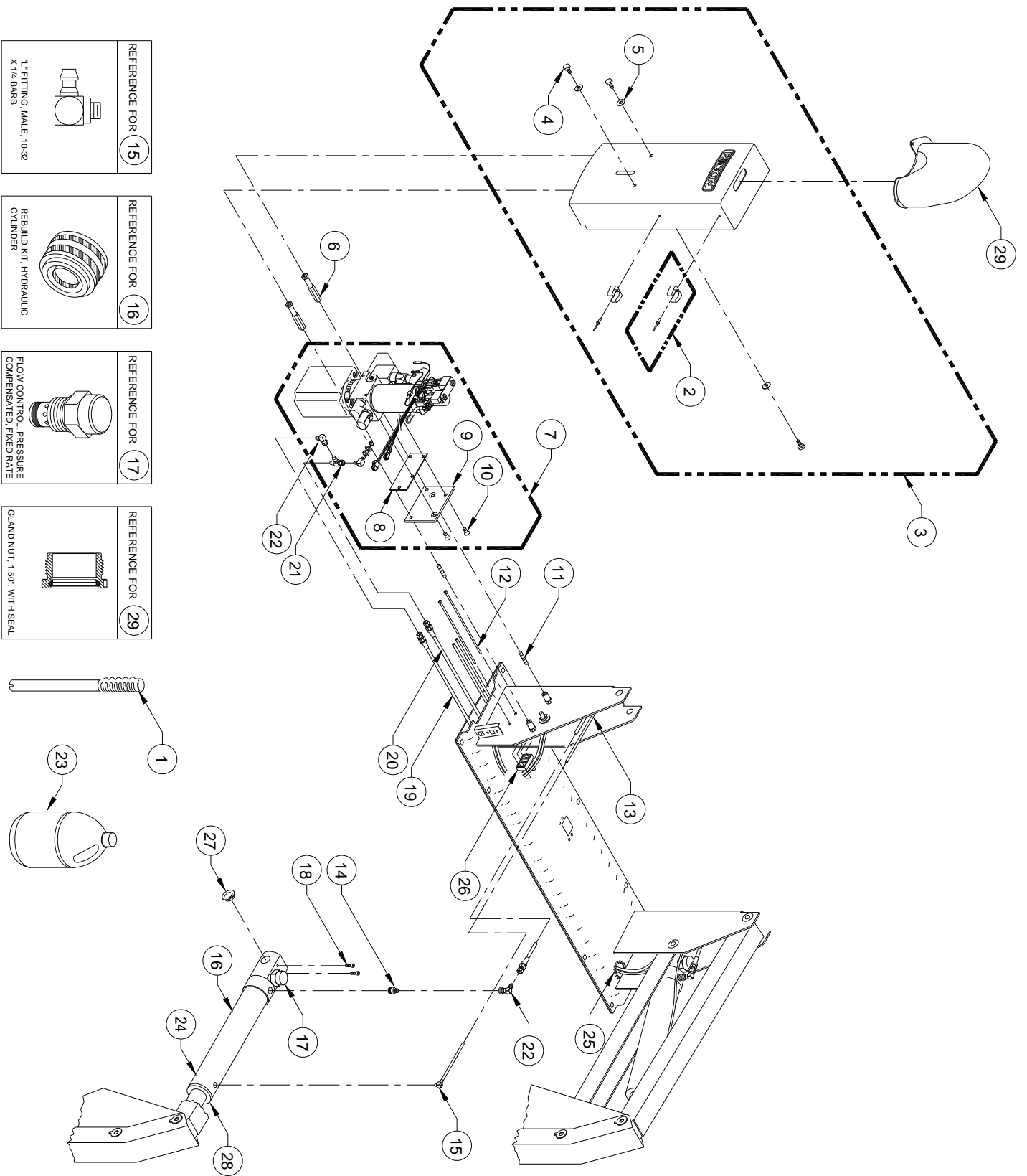


FIGURE 4-2: PUBLIC USE PUMP ASSY

32DSST06.A

**FIGURE 4-2: PUBLIC USE PUMP ASSY**

<b>REF</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>PART NO</b>
1	KIT, SOLENOID, 12V, SPST	2	29297
2	BUS BAR, ISKRA MOTOR	1	10807
3	KIT, MOTOR ASSY, W/BRACKET, 12V	1	14345
4	SWITCH, HYDRAULIC PRESSURE, ADJUSTABLE	1	15207
5	INDICATOR LIGHT ASSY, 12V	1	19067
6	SPOOL VALVE ASSY, 12V	2	01176
7	KIT, SEAL, MANUAL BACK-UP PUMP	1	V2-SH-220
8	BACK-UP PUMP, MANUAL	1	V2-SH-210
9	FITTING ASSY, SNL, 1/4J X 1/4J, STEEL	1	VS-SH-06
10	CABLE CLAMP, 3/16", NYLON, BAG OF 10	1	19798
11	CIRCUIT BREAKER KIT, 8 AMP, w/HDWR & DECAL	2	V2-SH-005
12	BRACKET, SOLENOID	1	10507
13	PIN & RETAINING RING	2	V2-SH-017
14	KIT, PUMP MOTOR BRUSH SET (located inside motor)	1	14334
15	DECAL, 8 AMP CIRCUIT BREAKER	1	18797
16	ADAPTER, .625 D-HOLE TO .484 ROUND	1	V2-ES-059
17	SCREW, SHC, 1/4-20 X 2.25L, BAG OF 10	3	32407
18	FITTING, SRT, 1/4J, STEEL	1	V2-SH-012
19	LIGHT, LIFT ARMED INDICATOR, 12V, GREEN	1	UL-ES-034
	LIGHT ASSY, INDICATOR, 12V	1	19067
20	WASHER, FLAT, .406X.812X.065, BAG OF 10	1	17510
21	TERM, SPL, M22-18 FULLINS, BAG OF 10	1	33336
22	COUNTER ASSY	1	33048



**FIGURE 4-3: PUBLIC USE HYDRAULIC SYSTEM**

**FIGURE 4-3: PUBLIC USE HYDRAULIC SYSTEM**

REF	DESCRIPTION	QTY	PART NO
1	HANDLE, MANUAL BACKUP PUMP	1	V2-SH-111
2	KIT, TOOL CLIP, W/HDWR	2	19557
3	COVER, ASSY, PUMP, LH	1	V2-CV-220
*	COVER, ASSY, PUMP, RH	1	V2-CV-221
4	SCREW, HEX, 5/16-18 X .625, BAG OF 10	3	14495
5	WASHER, FLAT, 5/16", SAE, BAG OF 10	3	13350
6	HEX ROD, PUMP STANDOFF	2	V2-CV-015
7 **	PUMP ASSY, 12V, FMVSS, LH MOUNTING, DECEL VALVE, COUNTER, PRESSURE SWITCH, W/INTERLOCK	1	PM212210108
**	PUMP ASSY, 12V, FMVSS, RH MOUNTING, DECEL VALVE, COUNTER, PRESSURE SWITCH, W/O INTERLOCK	1	PM212210308
8	PLATE, PUMP COVER MOUNT	1	V2-AC-71
9	PLATE, PUMP MOUNT	1	V2-AC-70
10	SCREW, FLAT HEAD, 5/16-18 X 3/4", BAG OF 10	2	14499
11	STUD, THREADED, 5/16-18 X 1.75", BAG OF 10	2	14500
12	CABLE TIE, 5.5", BLACK, BAG OF 10	2	25697
13	TUBE, POLYURETHANE, 6MM x 4MM, BLACK	9'	22-02-230
14	ADAPTOR, # 6 SAE MALE X # 4 JIC MALE	2	26591
15	FITTING, "L", MALE 10-32 X 1/4, BARB	2	V2-SH-16
16	KIT, CYLINDER REPAIR, W-PISTON ASSY, GLAND NUT, AND SEAL	2	V2-SH-56
17	KIT, FLOW CONTROL, FIXED RATE .50 GPM, KIT OF 2	1	30968
18	SCREW, HEX RECESS HEAD, 1/4-20 X 1, BAG OF 10	4	14491
19	HOSE ASSY, HYDRAULIC, 61" X 1/4 JIC X 1/4 JIC	1	V2-SH-009
	HOSE ASSY, HYDRAULIC, 64" X 1/4 JIC X 1/4 JIC	1	16601
20	HOSE ASSY, HYDRAULIC, 26" X 1/4 JIC X 1/4 JIC	1	V2-SH-008
21	FITTING, RUN TEE, 1/4 JIC M-M-F	1	V2-SH-012
22	FITTING, "L", 1/4 JIC M-F SWIVEL	3	VS-SH-06
23	OIL, HYDRAULIC, TEXACO #15, MEETS MIL-H-5606G	1 GAL	20-16-051
24	CYLINDER ASSY, S2000 SERIES	2	VT-SH-105
	CYLINDER ASSY, S5000 SERIES	2	V5-SH-105
	CYLINDER ASSY, S5500 SERIES	2	30836
25	GROMMET, CATERPILLAR, 3/16" X 12"	1	26647
26	SPACER, CABLE OR HOSE	2	25557
27	BUSHING, 3/4"ID X 3/8W	4	25386
28	GLAND NUT, 1.50", WITH SEAL	2	13009
29	LIGHT ASSY, WARNING, FLASHING	1	33049

\* Not shown

\*\* Refer to Pump Assembly figure for parts breakdown.

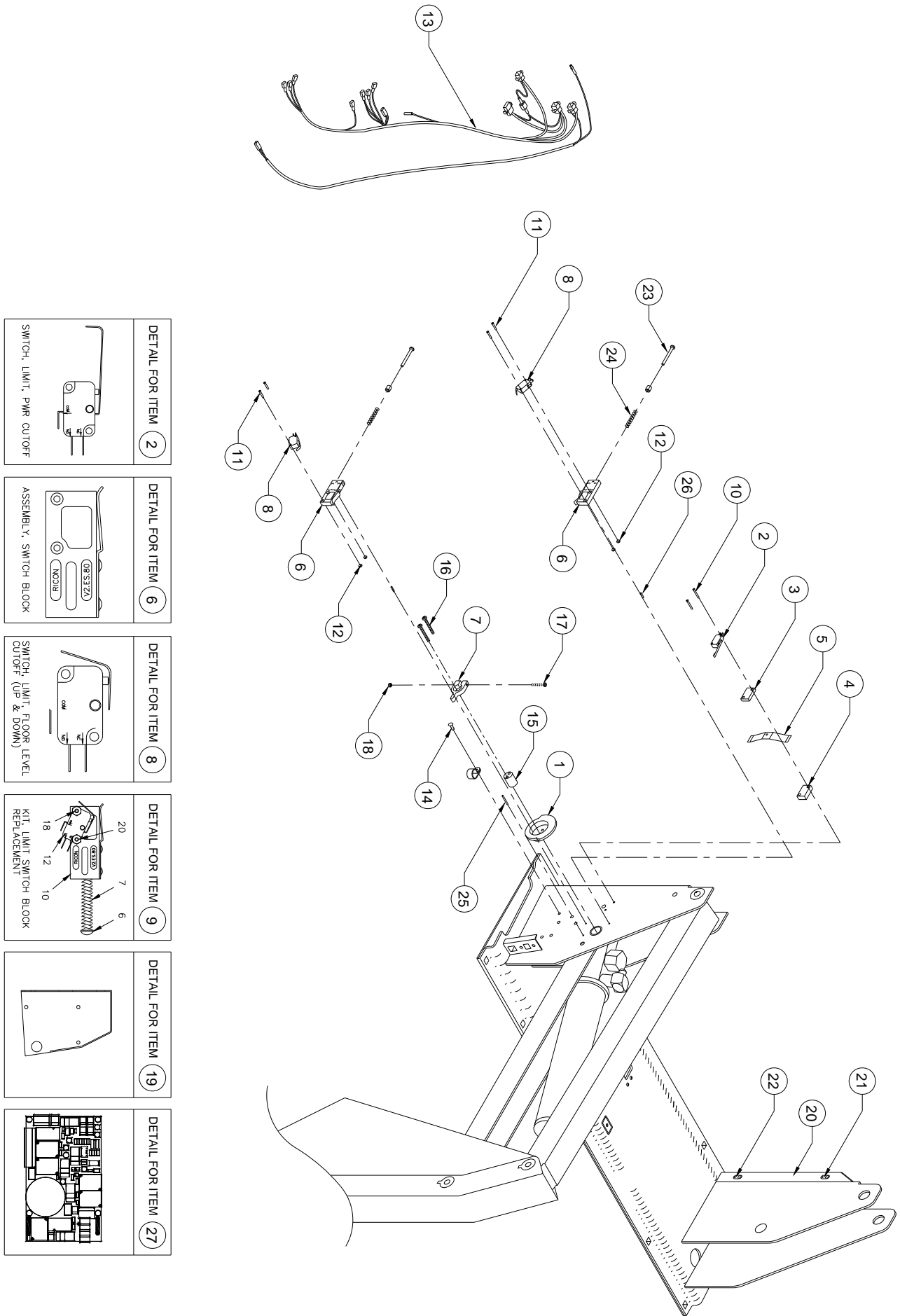


FIGURE 4-4: PUBLIC USE ELECTRICAL DIAGRAM

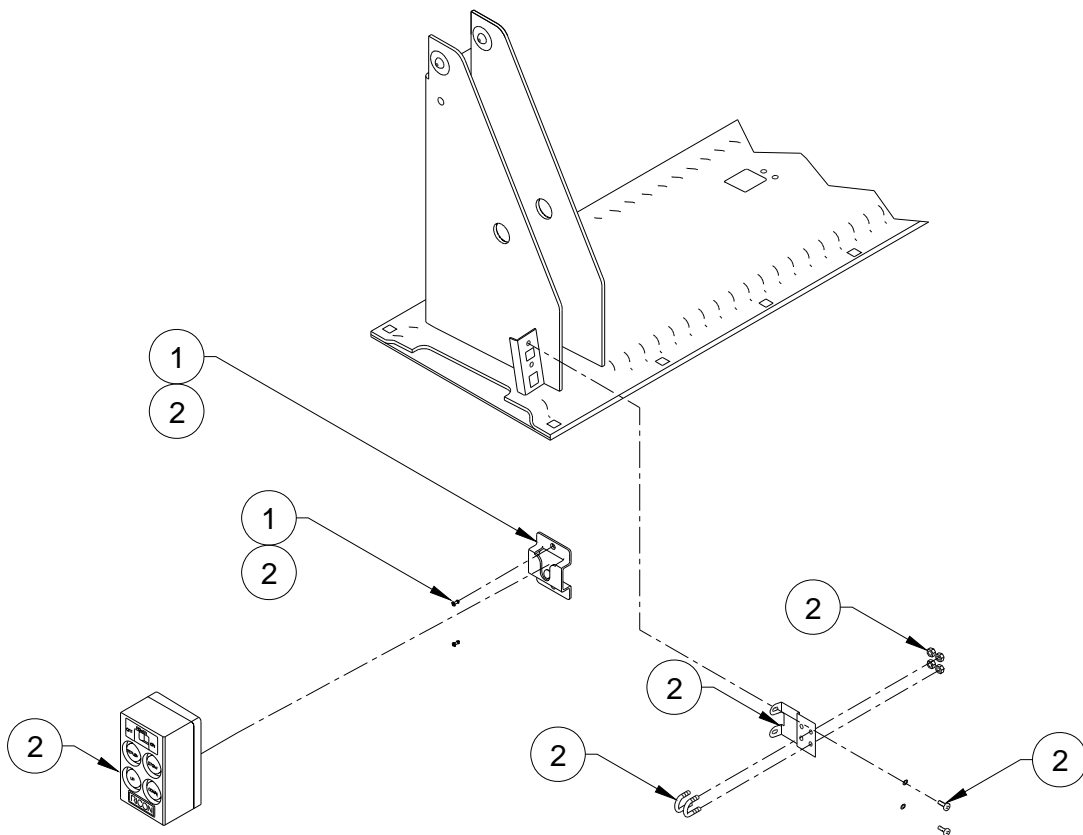
32DSST06.A

**FIGURE 4-4: PUBLIC USE ELECTRICAL SYSTEM**

REF	DESCRIPTION	QTY	PART NO
1	CAM, LIFT CONTROL	1	V2-AC-107
2	SWITCH, LIMIT, FOLD CUTOFF	1	V2-ES-111
3	BLOCK, FOLD CUTOFF SWITCH OFFSET, 1/4" THICK	1	V2-ES-78
4	BLOCK, FOLD CUTOFF SWITCH OFFSET, 3/8" THICK	1	V2-ES-79
5	SPRING, RETAINING, UPPER/LOWER SWITCH BLOCK	1	V2-ES-95
6	SWITCHBLOCK ASSEMBLY	2	V2-ES-82
7	ACTUATOR, FOLD CUTOFF	1	V2-AC-089
8	SWITCH, LIMIT, FLOOR LEVEL POWER CUTOFF, UP & DOWN	2	V2-ES-110
9	KIT, LIMIT SWITCH BLOCK REPLACEMENT	2	V2-ES-61
10	SCREW, 4-40 X 1.25 PAN HEAD, BAG OF 10	1	15908
11	SCREW, 4-40 X .75 PAN HEAD, BAG OF 10	1	15909
12	NUT, HEX, 4-40, BAG OF 10	1	15903
13	ELECTRICAL HARNESS, MAIN, w/o INTERLOCK	1	33032
14	MS, 10-24 X 1/2 PHIL PAN, BAG OF 10	1	13304
15	PIN, EXTENSION FOLD CUTOFF, BAG OF 10	1	15914
16	MS 10-24 X 1 3/4 PHIL PAN, BAG OF 10	1	29318
17	MS 8-32 X 1 1/4 PHIL PAN, BAG OF 10	1	15906
18	NUT, HEX, 8-32 NYLON INSERT, BAG OF 10	1	15907
19 *	COVER ASSY, PUMP, L/H	1	V2-CV-220
20	ENCLOSURE, PHOTOBEAM SENSORS	1	31779
21	SENSOR, PHOTOBEAM, RECEIVER	2	32499
22	SENSOR, PHOTOBEAM, TRANSMITTER	2	32498
23	SCREW, RD HEAD, 10-24 X 2", BAG OF 10	1	14497
24	SPRING, COMPRESSION, .30 X 2.06L	2	V2-ES-93
25	ROLLPIN, .94 X 1.0, BAG OF 10	1	14498
26	ROLLPIN, .94 X .50, BAG OF 10	1	14496
27	PCB ASSEMBLY, PUBLIC	1	33461
28 **	HARNESS, PCB TO CAM SWITCH	1	33030
29 **	HARNESS, PCB TO POWER INTERRUPT	1	33031
30 **	HARNESS, INTERLOCK	1	33044
31 **	HARNESS, PCB TO PLATFORM	1	33807

\* Used for left hand installation only.

\*\* Not shown.

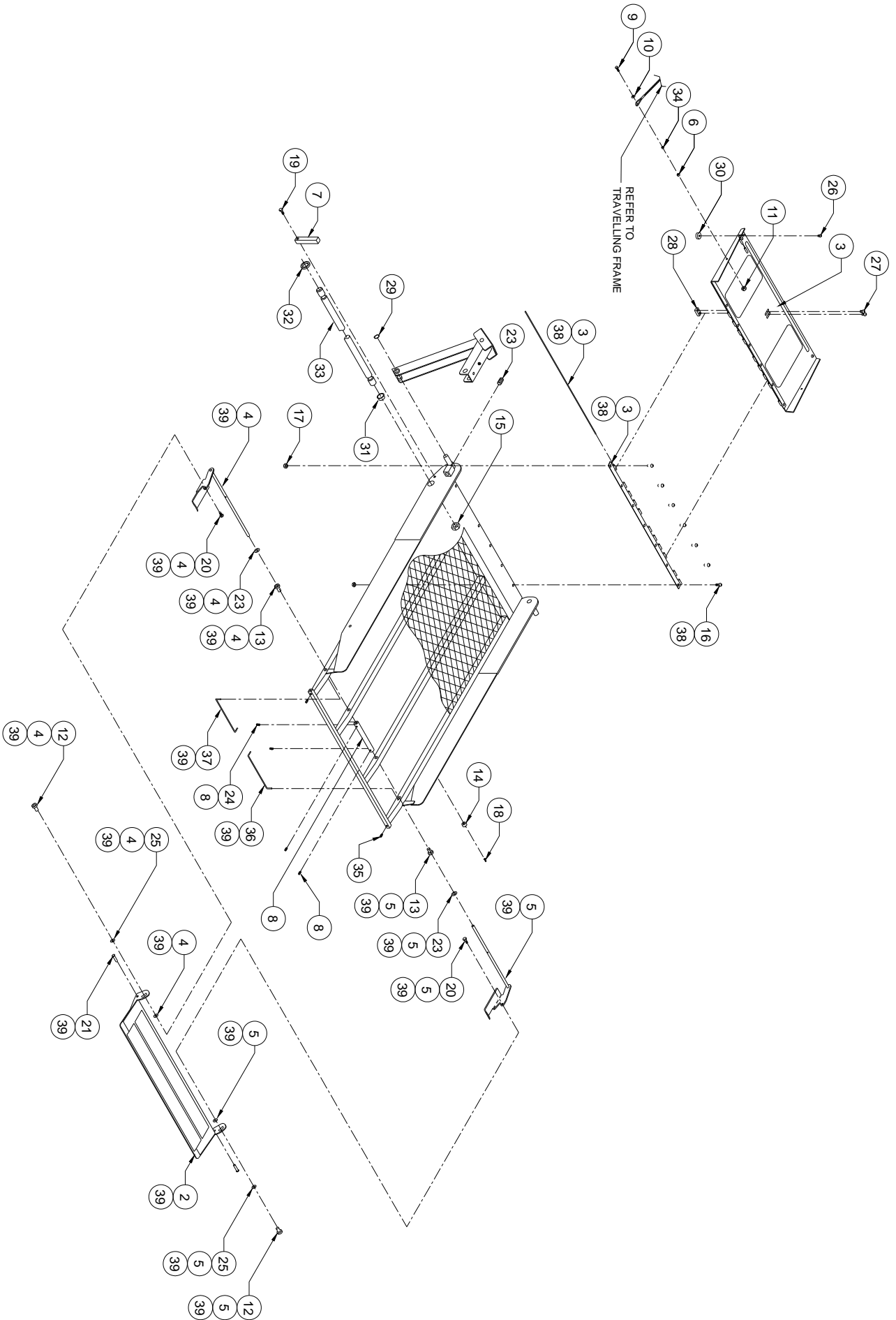


**FIGURE 4-5: PUBLIC USE PENDANT**

**FIGURE 4-5: PUBLIC USE PENDANT**

<b>REF</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>PART NO</b>
1	KIT, PENDANT, MOUNT	1	33021
2	KIT, PENDANT, W/7FT CORD	1	33022
	KIT, PENDANT, W/COILED CORD	1	33436
	KIT, PENDANT, W/STEEL JACKETED CORD	1	33029





**FIGURE 4-6: PUBLIC USE PLATFORM**  
32DSST06.A

**FIGURE 4-6: PUBLIC USE PLATFORM**

REF	DESCRIPTION	QTY	PART NO
1 *	PLATFORM ASSY, SOLID, 30 X 51, S2003, S5003	1	32467
*	PLATFORM ASSY, SOLID, 30 X 51, S5503	1	33489
*	PLATFORM ASSY, SOLID, 32 X 51, S2005	1	32446
*	PLATFORM ASSY, SOLID, 34 X 54, S2010, S5510	1	32469
2	ROLLSTOP ASSY, 6", 30" WIDE PLATFORM, S2003, S5003, S5503	1	32446
	ROLLSTOP ASSY, 6", 32" WIDE PLATFORM, S2005	1	32445
	ROLLSTOP ASSY, 6", 34" WIDE PLATFORM, S2010, S5510	1	32471
3	BRIDGEPLATE, 30", S2003, S5003	1	32464
	BRIDGEPLATE, 30", S5503	1	33488
	BRIDGEPLATE, 32", S2005	1	32444
	BRIDGEPLATE, 34", S2010, S5510	1	32470
4	KIT, ROLLSTOP ACTUATOR REPLACEMENT, LH	1	22903
5	KIT, ROLLSTOP ACTUATOR REPLACEMENT, RH	1	22902
6	SPACER, BRIDGEPLATE SPRING	2	UV-PF-839
7	BLOCK, PLATFORM LEVEL ADJUSTMENT	1	VT-AH-142
8	KIT, COLLAR, ROLLSTOP ACTUATOR, 6.25"	1	28775
9	SCREW, HEX HEAD, 1/4-20 X 7/8", BAG OF 10	2	15920
10	WASHER, 1/4"ID, FLAT SAE, BAG OF 10	2	17504
11	NUT, HEX, 1/4-20, NYLON INSERT, BAG OF 10	2	15919
12	"T" NUT, STAINLESS, BAG OF 10	2	14485
13	BUSHING, BRONZE, .392ID	2	V2-BU-195
14	BUMPER, UHMW PLASTIC, 75ID X .38 T	2	V2-AC-027
15	NUT, HEX, 5/16-18, BAG OF 10	2	13349
16	SCREW, BUTTON HEAD, 5/16-18 X 3/4", SST, BAG OF 10	7	15983
17	NUT, HEX, 5/16-18, NYLON INSERT, SST, (BAG OF 10)	7	14415
18	SCREW, TEK PAN HEAD, 8 X 3/4", BAG OF 10	2	15911
19	SCREW, HEX HEAD, 5/16-18 X 1, GR5, BAG OF 10	2	15953
20	SCREW, HEX HEAD, 1/4-20 X 1/2", GR5, SST, BAG OF 10	2	13307
21	PIN, ROLLSTOP, BAG OF 10	2	19513
22	WASHER, FLAT, .81OD X .41ID, BAG OF 10	2	17510
23	SETSCREW, HEX RECESS, 1/2-20 X 1-1/4", BAG OF 10	2	19704
24	SETSCREW, HEX RECESS, 1/4-20 X 1/4" CUP POINT, BAG OF 10	4	13312
25	WASHER, FLAT, NYLON, .32ID X .75OD X .031, BAG OF 10	4	14467
26	SCREW, BUTTON HEAD, 1/4-20 X 3/8, SST, BAG OF 10	2	13309
27	SCREW, BUTTON HEAD, 5/16-18 X 1/2, SST, BAG OF 10	2	14484
28 **	CATCH, BASE LATCH	1	V2-AC-103
29	RETAINING RING, .75" EXT, BAG OF 10	2	11796
30	GUIDE, 1.00 OD X 1/4-20 ID	2	13309
31	BUSHING, 1"ID X 1/2", BAG OF 10	2	19579
32	SHIM, PVC	2	V2-BU-091
33	SHAFT, MAIN, PLATFORM, 1" X 39.13", 32"	1	VT-PI-49
	SHAFT, MAIN, PLATFORM, 1" X 40.50", 34"	1	16607
34	BUSHING, STEEL, .25ID X .32OD X .19L	2	V2-BU-003
35	SETSCREW, HEX RECESS 1/4-20 X 1/4", CONE POINT, BAG OF 10	2	14492

36	SPRING, TORSION, RH	1	V2-SP-022
37	SPRING, TORSION, LH	1	V2-SP-021
38	KIT, HINGE, W/PIN, CHARCOAL GREY	1	32107
39	KIT, REPLACEMENT ASSY, 6" ROLLSTOP, 32" PLATFORM	1	010012

\* Fully assembled platform with all items shown except 33 and 34.

\*\* Must be used with V2-AC-102.

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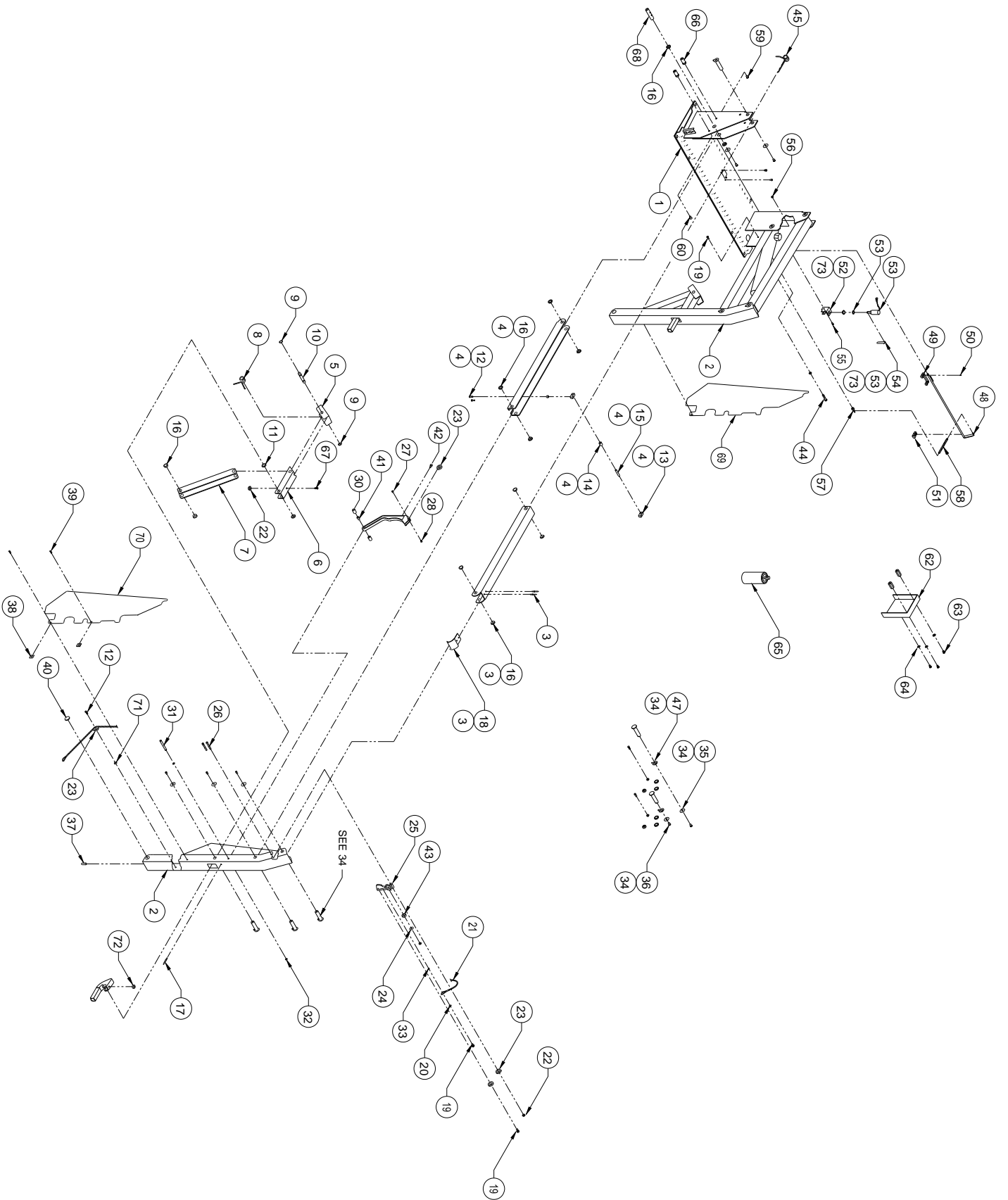


FIGURE 4-7: PUBLIC USE TRAVELING FRAME

**FIGURE 4-7: PUBLIC USE TRAVELING FRAME**

REF	DESCRIPTION	QTY	PART NO
1	BASEPLATE ASSY, 30, w/o INTERLOCK, S2003, S5003, S5503	1	33058
	BASEPLATE ASSY, 32", w/o INTERLOCK, S2005	1	33059
	BASEPLATE ASSY, 34", w/o INTERLOCK, S2010, S5510	1	16618
2	VERTICAL ARM ASSY, RH, S2000 SERIES	1	VT-AC-241
	VERTICAL ARM ASSY, LH, S2000 SERIES	1	VT-AC-242
	VERTICAL ARM ASSY, RH, S5003	1	V5-AC-241
	VERTICAL ARM ASSY, LH, S5003	1	V5-AC-242
	VERTICAL ARM ASSY, RH, S5500	1	33476
	VERTICAL ARM ASSY, LH, S5500	1	33477
3	TOP ARM ASSY, S2000	2	VT-AC-250
	TOP ARM ASSY, S5000	2	30858
4	BOTTOM ARM ASSY, S2000 SERIES	2	VT-AC-252
	BOTTOM ARM ASSY, S5000 SERIES	2	V5-AC-252
	BOTTOM ARM ASSY, S5500 SERIES	2	30835
5	SADDLE ASSEMBLY, w/T-NUT	2	VT-AC-046
6	UPPER LINK, KNUCKLE	2	VT-AC-070
7	LINK, VERTICAL KNUCKLE ASSY, S2000 SERIES	2	VT-AC-069
	LINK, VERTICAL KNUCKLE ASSY, S5000 SERIES	2	V5-AC-069
	LINK, VERTICAL KNUCKLE ASSY, S5500 SERIES	2	30863
8	SPRING, KNUCKLE ACTUATOR	2	VT-SP-42
9	RETAINING RING, .75" EXT, BAG OF 10	1	14-31-075
10	PIN, SNAP RING, .75 OD X 2.15L	2	VT-PI-41
11	KIT, SPACER, IRS CAM	4	01224
12	SCREW, BUTTON HEAD, 1/4-20 X 1", SST, BAG OF 10	1	19715
13	RETAINER, CAM ROLLER	4	V2-AC-025
14	ROLLER, BRIDGEPLATE CAM	2	V2-AC-124
15	PIN, CAM ROLLER	2	V2-PI-094
16	FLANGE BEARING, .75ID, BAG OF 10	3	19576
17	RIVET, BLIND, 3/16 X 3/8", ALUM, BAG OF 10	1	15918
18	CAP, END, UPPER PARALLEL ARM	2	V2-AC-89
19	SCREW, HEX HEAD, 1/4-20 x 3/4, GR5, BAG OF 10	4	13308
	SCREW, FLAT HEAD, 1/4-20 x 1/2, BAG OF 10	1	15928
20	WASHER, FLAT HEAD, .63OD x .28ID x .065, BAG OF 10	2	17504
21	CABLE ASSY, REPLACEMENT, BRIDGEPLATE, S2000, 52.75"	2	16094
	CABLE ASSY, REPLACEMENT, BRIDGEPLATE, S5000, 49.75"	2	16095
	CABLE ASSY, REPLACEMENT, BRIDGEPLATE, S5500, 58.50"	2	34246
22	NUT, HEX, 1/4-20, NYLON INSERT, BAG OF 10	2	15919
23	BEARING, GROOVED	8	VS-AH-06
24	WASHER, FENDER, 1.00OD x .28ID x .065, BAG OF 10	2	25623
25	BLOCK, PULLEY MOUNT, BRIDGEPLATE	2	V2-AC-112
26	SCREW, BUTTON HEAD, 1/4-20 x 2 1/4, SST, BAG OF 10	1	19720
27	T-NUT, FLAT HEAD, 10-24 X .25 OD X .44L	2	V2-AC-015
28	SCREW, FLAT HEAD, 10-24 x 1/2, BAG OF 10	1	13303

REF	DESCRIPTION	QTY	PART NO
29	CAM ASSY, BRIDGEPLATE ACTUATOR	2	V2-AC-190
30	KIT, SPACER, RUBBER, BRIDGEPLATE CAM	4	01224
31	PIN, SNAP RING, .38 OD X 3.09 L	2	VS-PI-09
32	RETAINING RING, .38 ID, BAG OF 10	1	11795
33	BUSHING, STEEL, .25 ID X .32 OD X .19 L	2	V2-BU-003
34	KIT, RETROFIT, PIN, LINK-ARM, w/ HDWR	3	16679
35	WASHER, FENDER, 5/16, SST, BAG OF 10	1	15921
36	SCREW, BUTTON HEAD, 5/16-18 X 1/2 SST, w/ NYLOCK, BAG OF 10	1	14494
37	SETSCREW, 3/8-16 x 3/8, CUP PT, BAG OF 10	1	11797
38	SPRING NUT, 10-24, U-TYPE, BAG OF 10	1	11799
39	SCREW, PAN HEAD, 10-24 x 1/2, BAG OF 10	1	13304
40	PLUG, 1" LOW PROFILE, BLACK NYLON	2	25563
41	BEARING, NYLINER, 3/8 ID 11/16 L	2	25562
42	BUMPER, BUTTON, BRIDGEPLATE CAM, BAG OF 10	1	19783
43	BUMPER, BRIDGEPLATE CAM, ANTI-RATTLE	2	V2-BU-090
44	SCREW, HEX HEAD, 1/4-20 X 1-3/4, GR5, BAG OF 10	1	25696
45	SPRING, UPPER PARALLEL ARM	2	V2-SP-97
46	SETSCREW, 5/16-18 x 1, CUP PT, BAG OF 10	1	15830
47	WASHER, KEYED	2	20258
48	KIT, LATCH RELEASE, 30", w/BLOCKS & HDWR	1	28768
	KIT, LATCH RELEASE, 26", w/BLOCKS & HDWR	1	28767
49	BLOCK, CENTER MOUNTING, BASE LATCH	1	V2-AC-102
50	DOWEL PIN, .094 DIA X .38 L, BAG OF 10	1	25615
51	BLOCK, MOUNT, BASE LATCH	1	V2-AC-001
52	BRACKET, STOW LOCK SOLENOID	1	V2-AC-108
53	KIT, SOLENOID ASSY, 12V	1	V2-ES-127
54	CLIP, SPRING, BASE LATCH, SST	1	V2-AC-009
55	SCREW, PAN HEAD, 10-24 x 1/2, BAG OF 10	1	13304
	SCREW, FLAT HEAD, 10-24 x 1/2, SST, BAG OF 10	1	14426
56	NUT, HEX, NYLON INSERT, 10-24, BAG OF 10	1	13382
57	PIN, SPRING MOUNTING	1	V2-PI-095
58	SPRING, STO-LOCK RELEASE, .38OD X 3.5"	1	V2-SP-093
59	SCREW, HEX HEAD, 5/16-18 X 3/4", BAG OF 10	1	15901
60	SCREW, FLAT HEAD, 5/16-18 X 3/4", BAG OF 10	1	14499
61	SCREW, BUTTON HEAD, 1/4-20 X 1/2", SST, BAG OF 10	1	15902
62	COVER, BASE LATCH	1	V2-CV-123
63	SCREW, HEX HEAD, 5/16-18 X .625, GR 5, BAG OF 10	1	14495
64	WASHER, FLAT, .69OD x .34ID x .065, BAG OF 10	1	13350
65	SPRAY PAINT, TOUCH-UP, CHARCOAL	1	25340
66	BUSHING, E-COVER MOUNT	2	V2-BU-081
67	SCREW, HEX HEAD, 1/4-20 X 1, GR5, BAG OF 10	1	14493

REF	DESCRIPTION	QTY	PART NO
68	PIN, CONTROL CAM	1	V2-PI-091
69	KIT, PINCH POINT SHIELD w/ HDWR, RH, S2000	1	29170
	KIT, PINCH POINT SHIELD w/ HDWR, RH, S5000 & S5500	1	29171
70	KIT, PINCH POINT SHIELD w/ HDWR, LH, S2000	1	29156
	KIT, PINCH POINT SHIELD w/ HDWR, LH, S5000 & S5500	1	29157
71	BUSHING, 5/8" OD X 3/16" ID	2	VS-AH-13
72	GROMMET, .30 ID x .88 OD x .44, BAG OF 10	1	23391
73	KIT, REPLACEMENT SOLENOID, 12V	1	01238



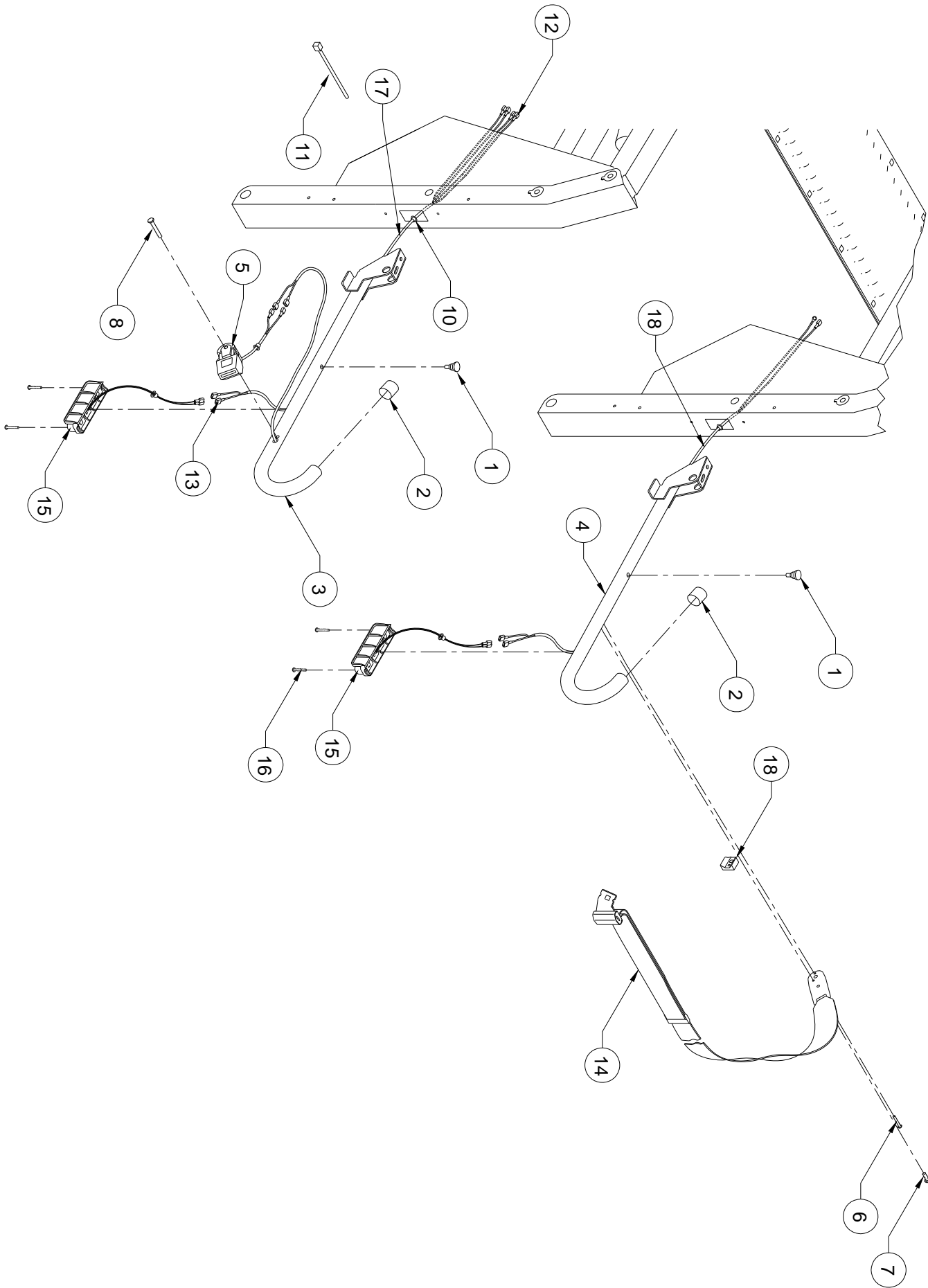


FIGURE 4-8: PUBLIC USE HANDRAILS

**FIGURE 4-8: PUBLIC USE HANDRAILS**

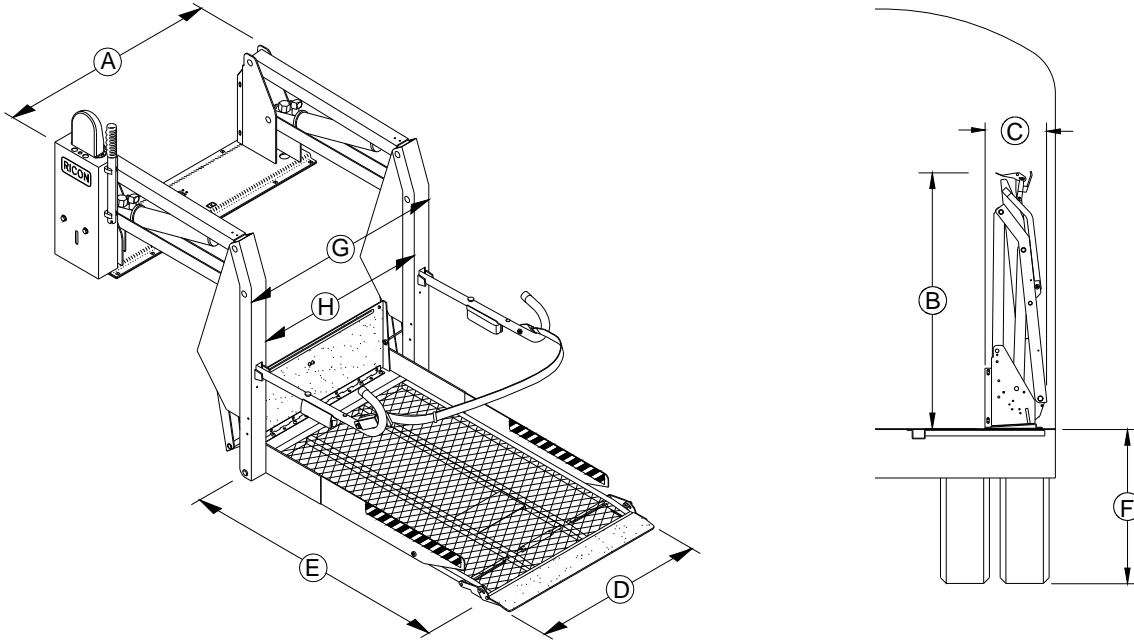
REF	DESCRIPTION	QTY	PART NO
1	BUMPER, RUBBER, BAG OF 10	1	20653
2	CAP, ROUND, BLACK	2	25550
3	HANDRAIL, LH, S2000, S5000, & S5500 SERIES	1	32989
4	HANDRAIL, RH, S2000, S5000, & S5500 SERIES	1	32988
5	KIT, BUCKLE ASSY, w/ SWITCH	1	22017
6	SCREW, PAN HEAD, 10-24 X 3/4, BAG OF 10	1	15957
7	SCREW, HEX HEAD, 5/16-18 X 3/8, BAG OF 10	1	34517
8	SCREW, HEX HEAD, 5/16-18 X 1.0, SST, BAG OF 10	1	19706
9	SCREW, PHP, 8TEK X 3/4, BAG OF 10	1	15911
10	BUSHING, SNAP-IN	1	28-26-077
11	CABLE TIE, STD X 1.5 DIA, BLACK, BAG OF 10	1	25697
12	TERMINAL, SLIP, F, 14-16, FULLINSUL, BAG OF 10	1	13318
13	TERMINAL, SLIP, M, 22-18, FULLINSUL, BAG OF 10	1	34516
14	RESTRAINT BELT, ANGLED, W/SLIDER	1	12150
	RESTRAINT BELT, ANGLED, W/SLIDER, 34"	1	16092
15	LIGHT ASSY, PLATFORM	2	32478
16	SPACER, HANDRAIL	1	V2-AC-063
17	HARNESS, RESTRAINT BELT, LH	1	32455
18	HARNESS, RESTRAINT BELT, RH	1	33808
*	KIT, BUCKLE ASSY & ANGLED RESTRAINT BELT, W/SLIDER, 30" & 32"	1	13054

\* Not shown

## APPENDIX 1 LIFT SPECIFICATIONS

### VMI S-SERIES PUBLIC USE WHEELCHAIR LIFT

Power ..... electro-hydraulic Motor rating@12 volts DC ..... 65 amp avg/cycle, 1250 psi Motor rating@24 volts DC ..... 32.5 amp avg/cycle, 1250 psi Hydraulic cylinders ..... 2ea, 1.5", power up – gravity down	Rated load capacity, max..... 800 lbs Manual backup–up..... hand pump Manual backup–down ..... pressure release valve Lift weight..... approx 325 - 370 lbs
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#### DIMENSIONS (inches/millimeters)

MODEL	A	B	C	D	E	F	G	H
	Stationary frame width	Height (folded)	Installation depth (folded)	Usable platform width	Usable platform length	Floor-to-ground travel	Traveling frame width	Clear entry width
S2005	47 / 1194	55 / 1397	14 / 356	32 / 813	51 / 1295	42 / 1067	40 / 1016	32 / 813
S2010	49 / 1245	55 / 1397	14 / 356	34 / 864	54 / 1372	42 / 1067	42 / 1067	34 / 864
S5505	47 / 1194	60 / 1524	14 / 356	32 / 813	51 / 1295	51 / 1295	40 / 1016	32 / 813
S5510	49 / 1245	60 / 1524	14 / 356	34 / 864	54 / 1372	51 / 1295	42 / 1067	34 / 864

**END OF TABLE**

