Innovation in Mobility

KlearVue
K-Series
Folding Platform
Personal and Transit Use
Wheelchair Lift

SERVICE MANUAL

Printed in the United States of America

THIS RICON PRODUCT MUST BE INSTALLED AND SERVICED BY AUTHORIZED RICON SERVICE TECHNICIANS.

AUTHORIZED RICON SERVICE TECHNICIANS MUST REFER TO THIS MANUAL FOR REPAIR INFORMATION AND MAINTENANCE INSTRUCTIONS.

Customer Name: _____

Installing Dealer: _____

Date Installed: _____

Serial Number: _____

Revision Record

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TABLE OF CONTENTS

Chapter *Page*

I. INTRODUCTION 1-1
WARRANTY INFORMATION 1-2
SERVICE TECHNICIAN INFORMATION 1-3
GENERAL SAFETY PRECAUTIONS 1-3
PRODUCT TERMINOLOGY 1-4

II. INSTALLATION 2-1
A. MECHANICAL INSTALLATION 2-1
1. LIFT LOCATION 2-1
2. LIFT INSTALLATION GUIDELINES 2-1
3. LIFT INSTALLATION INTO VANS 2-2
4. LIFT INSTALLATION INTO BUSES 2-4
B. ELECTRICAL INSTALLATION 2-6
1. INSTALL MAIN CIRCUIT BREAKER 2-7
2. ROUTE/CONNECT MAIN POWER CABLE 2-7
3. GROUNDING INSTRUCTIONS 2-9
4. RICON UNSUPPORTED INTERLOCK DEVICE INSTALLATION 2-10
C. FINAL ADJUSTMENTS 2-14
1. LIMIT SWITCH ADJUSTMENTS 2-14
2. ROLLSTOP (PLATFORM TILT) ADJUSTMENT 2-16
3. PLATFORM PRESSURE SWITCH CHECK AND ADJUSTMENT (S/N'S 104,000 TO PRESENT) 2-17
D. VERIFY INSTALLATION 2-19
E. CUSTOMER ORIENTATION 2-19

III. MAINTENANCE AND REPAIR 3-1
A. LUBRICATION 3-1
B. CLEANING 3-2
C. MAINTENANCE SCHEDULE 3-2
D. TROUBLESHOOTING 3-4
1. INTERLOCK INDICATOR DIAGNOSTICS 3-4
2. LIFT TROUBLESHOOTING 3-5
E. HYDRAULIC CIRCUIT DIAGRAM 3-6
F. ELECTRICAL WIRING DIAGRAMS 3-7
1. DIAGRAM LEGEND 3-7
2. K-SERIES LIMIT SWITCH STATES 3-8
3. WIRING DIAGRAMS 3-9

IV. SPARE PARTS LIST 4-1
APPENDIX 1 4-12

LIST OF FIGURES

1-1 LIFT REFERENCE 1-4

2-1 PLATFORM MOUNTING 2-1
2-2 FORD VAN CLAMPING BAR ARRANGEMENT 2-2
2-3 STEPWELL BRACKET 2-2
2-4 BRACKET ASSEMBLY 2-3
2-5 VAN BASEPLATE HOLES 2-3
2-6 TOP BRACKET HOLES 2-4
2-7 BUS CLAMPING BAR ARRANGEMENT 2-5

2-8 BUS BASEPLATE HOLES 2-5
2-9 ELECTRICAL INSTALLATION DIAGRAM 2-6
2-10 POWER CABLE ACCESS HOLE 2-7
2-11 CABLE ROUTING 2-8
2-12 CONTROL INTERFACE AND STRAIN RELIEF 2-9
2-13 24VDC WIRING 2-10
2-14 INTERLOCK METHOD #1 DIAGRAM 2-13
2-15 INTERLOCK METHOD #2 DIAGRAM 2-13
2-16 INTERLOCK METHOD #3 DIAGRAM 2-14
2-17 LIMIT SWITCH ADJUSTMENT DIAGRAM 2-14
2-18 LIMIT SWITCH ADJUSTMENT CLEARANCE 2-15
2-19 PLATFORM SET SCREWS 2-17
2-20 PRESSURE SWITCH TEST AT FLOOR LEVEL 2-17
2-21 HYDRAULIC PUMP WITH PRESSURE SWITCH 2-18
2-22 DECAL LOCATIONS AND PART NUMBERS 2-20

3-1 LIFT LUBRICATION POINTS 3-1
3-2 K-SERIES HYDRAULIC CIRCUIT DIAGRAM 3-6
3-3 MOLEX CONNECTORS 3-7
3-4 DIAGRAM LABEL CHART 3-7
3-5 ELECTRICAL WIRING DIAGRAM SYMBOLS 3-8
3-6 LIMIT SWITCH ACTUATION DIAGRAM 3-8
3-7 WIRING DIAGRAM FOR LIFT W/DOOR OPERATOR 3-9
3-8 WIRING DIAGRAM FOR LIFT W/O DOOR OPERATOR 3-10

4-1 MONARCH HYDRAULIC POWER UNIT #1 4-2
4-2 HYDRAULIC SYSTEM 4-4
4-3 ELECTRICAL SYSTEM 4-6
4-4 PENDANT 4-8
4-5 K-LIFT FOLDING PLATFORM ASSEMBLY, 1200 4-10
4-6 K-LIFT FOLDING PLATFORM ASSEMBLY, 2003 & 2005 4-12
4-7 TRAVELING FRAME 4-14
4-8 K-1200 HANDRAIL ASSEMBLY 4-18
4-9 K-2005 (ADA) HANDRAIL ASSEMBLY 4-20

LIST OF TABLES

1-1 K-1200 SERIES LIFT TERMINOLOGY 1-5

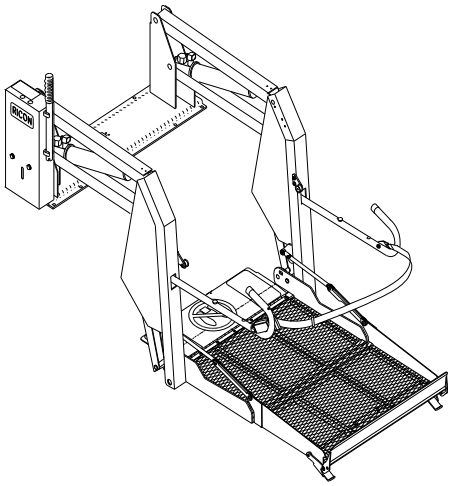
2-1 LIMIT SWITCH ADJUSTMENT CHART 2-17

3-1 MAINTENANCE SCHEDULE 3-2
3-2 INTERLOCK INDICATOR TROUBLESHOOTING GUIDE 3-4
3-3 LIFT OPERATIONAL TROUBLESHOOTING GUIDE 3-5
3-4 WIRE COLOR CODES 3-7

I. INTRODUCTION

The RICON KlearVue Series wheelchair lift provides wheelchair access to vans and buses. The patented movement provides smooth, safe entry and exit, and lifts up to 800 pounds (354 kilograms.) The platform is raised with a powerful electro-hydraulic pump. The pump has a built-in manual backup pump, so that it can be raised or lowered manually.

By using the lift control switches, the platform is unfolded 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 platform splits and folds horizontally when stowed.



This manual contains operation and maintenance instructions and a troubleshooting guide for the lift. It is important to user safety that the lift operator(s) be completely familiar with the Operating Instructions chapter of this manual. Once the lift is installed, it is very important that the lift be properly maintained by following the Ricon recommended cleaning, lubrication and inspection instructions.

If there are questions about this manual, or additional copies are needed, 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

Ricon U.K. Ltd.
Littlemoss Buisness Park, Littlemoss Road
Droylsden, Manchester
United Kingdom, M43 7EF . . . . .(+44) 161 301 6000

Ricon Scandinavia A/S
Stanseveien 27
N-0976 Oslo
Norway . . . . .(+47) 22 16 70 90

RICON
5-YEAR LIMITED WARRANTY

Ricon Corporation (Ricon) warrants to the original purchaser of this product that Ricon will repair or replace at its option any parts that fail because of defective material or workmanship as follows:

- Repair or replace parts for a period of one year starting from the date of purchase. A complete list of parts covered by this warranty can be obtained from an authorized Ricon service technician.
- Labor costs for specified parts replaced under this warranty for a period of one year from the date put into service. A Ricon rate schedule determines parts covered and labor allowed.
- Repair or replace lift power train parts for a period of five years from date of purchase. A complete list of parts covered can be obtained from your authorized Ricon service technician or Ricon.

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

If you are traveling: All authorized Ricon service agents will honor this warranty. Consult the telephone directory or call or Service Department for the name of the nearest authorized Ricon service technician.

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, etc.).

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

This Warranty Is Void If:

WARNING

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

- The product has not been installed and maintained by an authorized Ricon service technician.
- The 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 twenty days after installation of this Ricon product for the warranty to be valid. The warranty is not transferable.

The warranty gives specific legal rights. There may be other rights that vary from state to state.

SERVICE TECHNICIAN INFORMATION

Because of the specialized nature of this product, Ricon does not sell directly to the user. Instead, the product is distributed through the woldwide network of authorized Ricon Service Technicians, who perform the actual installation.

- 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 the items listed on the kit packing list. **Please report any missing items Immediately to the Ricon Product Support Document.** The warranty and owner's registration cards must be completed and returned to Ricon within 20 days for the warranty to be valid.

NOTE

The Sales/Service Personnel must review the Warranty and this Service/Owner Manual with the user to be certain that they understand the safe operation of the product. Instruct the user to follow the operating instructions without exception.

GENERAL SAFETY PRECAUTIONS

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

1. Under no circumstances should installation, maintenance, repair, and adjustments be attempted without the immediate presence of a person capable of rendering aid.

2. An injury, no matter how slight, should always be attended. Always administer first aid or seek medical attention immediately.

3. Protective eyeshields and appropriate clothing should be worn at all times.

4. 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.

5. Batteries contain acid that can burn. If acid comes in contact with skin, flush affected area with water and wash with soap immediately.

6. Always work in a properly ventilated area. Do not smoke or use an open flame near a battery.

7. Do not lay anything on top of a battery.

8. Check under vehicle before drilling so as not to drill into frame, subframe members, wiring, hydraulic lines, fuel lines, fuel tank, etc.

9. Read and thoroughly understand the operating instructions before attempting to operate.

10. Inspect the product before each use. If an unsafe condition, unusual noises or movements exist, do not use until the problem is corrected.

11. Never load or stand on the platform until the installation is complete. Upon completion of installation, always test load the lift to 125% of its rated load capacity.

12. Stand clear of doors and platform and keep others clear during operation.

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

PRODUCT TERMINOLOGY

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

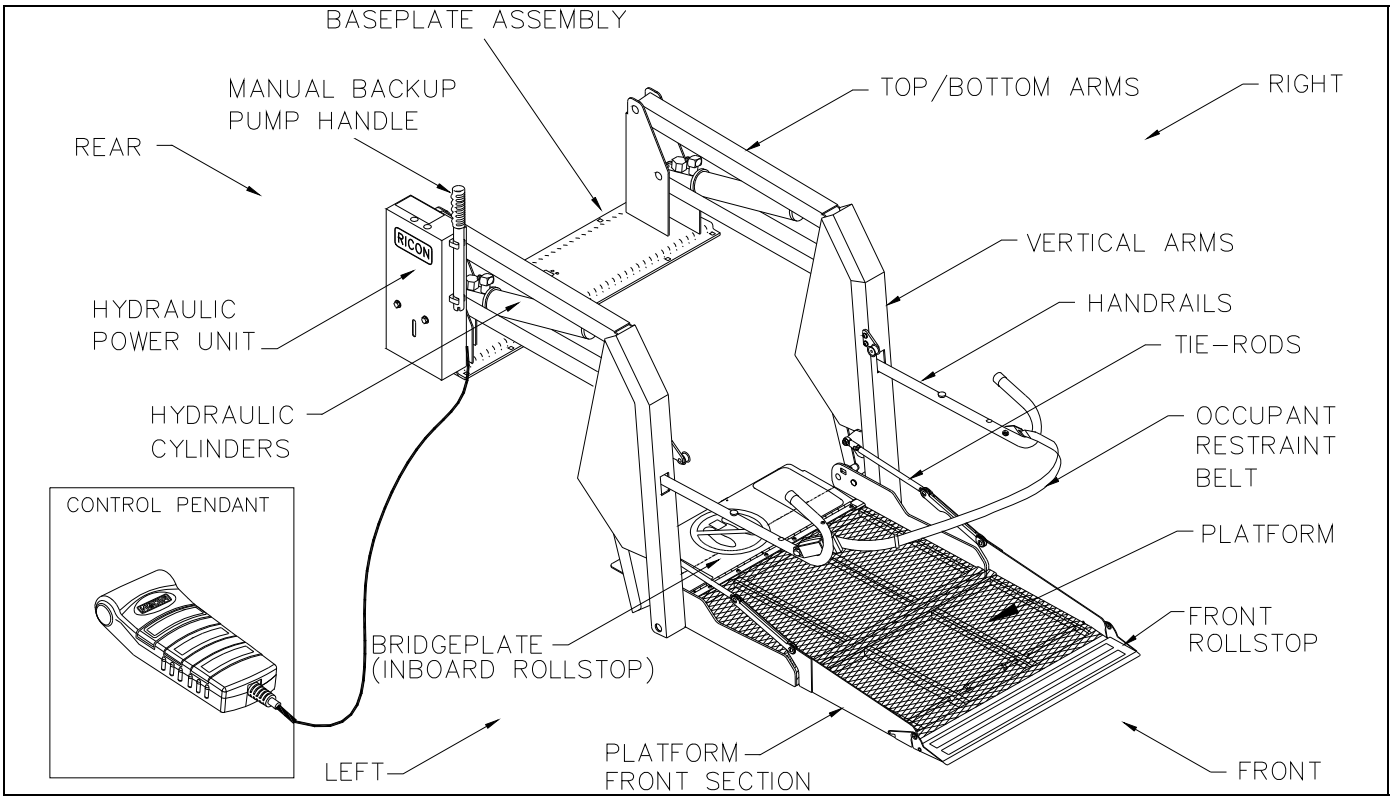


FIGURE 1-1: LIFT REFERENCES

TABLE 1-1: KLEARVUE SERIES WHEELCHAIR LIFT TERMINOLOGY	
NAME	**DESCRIPTION**
Left	Lift references when installation is viewed from outside of vehicle.
Right	
Front	
Rear	
Top/Bottom Arms	(Left/Right) Upper and lower links connecting vertical arm to base plate assembly.
Vertical Arms	(Left/Right) Connects platform and top/bottom arms.
Handrails	(Left/Right) Provide a handhold for platform occupant.
Tie-Rods	Left and Right) Links that cause platform to split as it folds.
Occupant Restraint Belt (K-2005 model)	Electronically interlocked safety belt that is intended to prevent acceleration of wheelchair from platform. Lift will not operate unless belt is properly engaged.
Front Rollstop	Front barrier provided to prevent wheelchair from slow, inadvertent rolling off of platform when above ground level.
Platform (Split Front Section)	Component of lift (platform) which folds during “stow” operation and unfolds during “deploy” operation.
Platform	Component of lift where wheelchair and occupant sit during "Up" and "Down" operations.
Bridgeplate (Inboard Rollstop)	Plate that bridges gap between platform and lift baseplate when platform is at floor level. Also acts as a rear rollstop when platform is in motion.
Hydraulic Cylinders	(Left/Right) Telescoping steel tube which converts hydraulic pressure into lifting force.
Hydraulic Power Unit	Contains pump used to create hydraulic pressure to raise and fold the lift, as well as a valve to unfold and lower lift.
Control Pendant	Hand-held device used to control the lift operating functions.
Manual Backup Pump Handle	Used to operate manual back-up pump.
Baseplate Assembly	Assembly that bolts securely to the vehicle floor.
END OF TABLE	

II. INSTALLATION

This chapter contains information for installing the RICON KlearVue Series platform 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 of lift, specific information for every possible application is not available. The following general procedures will apply to most installations. Contact Ricon Product Support for instruction about installations not covered. To install lift, refer to following sections and perform procedures carefully and in the order they are presented. Be certain that installation instructions are followed exactly and do not eliminate any steps or modify product.

A. MECHANICAL INSTALLATION

1. LIFT LOCATION

   The installation surface must be flat and level. It is recommended that the 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: Be certain to check for proper travel clearance through the doorway.

a. With door(s) fully open, place/position lift in vehicle doorway as close as possible to door, with lift's baseplate assembly parallel to side of vehicle.

b. Be sure to allow a distance of ¾", if possible, between door and the part of lift closest to it. Adjust lift's left and right-side locations to accommodate subframe members.

c. 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 mounting of lift is a very important step. Lift performance can be greatly affected by improper mounting and/or fastening of lift. Although fastening details may vary from one vehicle to the next, some general principals always apply:

- Be certain that all mounting bolts are properly installed and tightened. Bolts used to fasten baseplate assembly to vehicle floor should be equivalent to or greater than a strength rating of SAE Grade 5 and torqued to 28 ft. lbs, dry. Always remember that the most important bolts are those at the rear of the lift, since these bolts retain most of load.
- Refer to **Figure 2-1**. Improper fastening sequence or torquing of bolts may result in a warped or buckled baseplate and, therefore, cause lift to operate unevenly.
- Refer to **Figure 2-2**. On Ford van installations, clamping bars should be used to help distribute floor loading and should only be cut if needed to clear a subframe member. Use the subframe member as a support for the clamping bar.

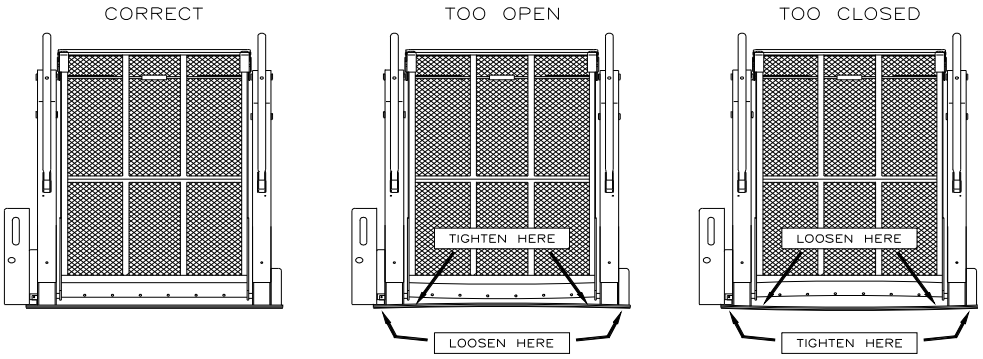


FIGURE 2-1: PLATFORM MOUNTING

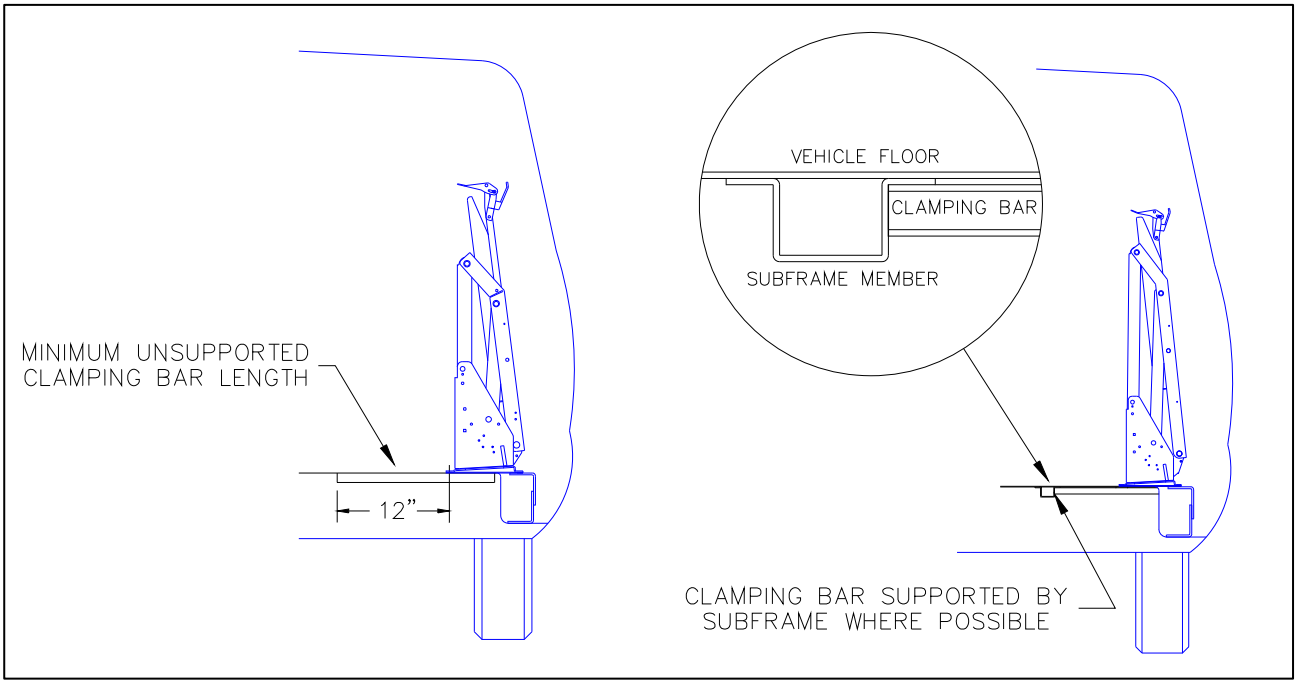


FIGURE 2-2: FORD VAN CLAMPING BAR

3. LIFT INSTALLATION INTO VANS

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

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

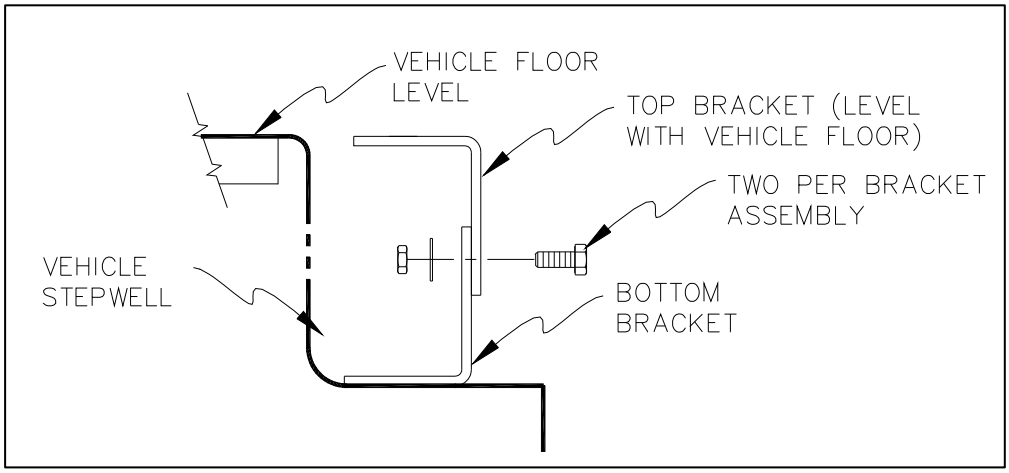


FIGURE 2-3: STEPWELL BRACKET

b. Position and adjust height of both bracket assemblies so that top bracket is level with vehicle floor. Tighten bracket assembly bolts.

c. Be certain that lift is fully closed with handrails folded tight against vertical arms. If necessary, use manual pump.

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

⚠ WARNING

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

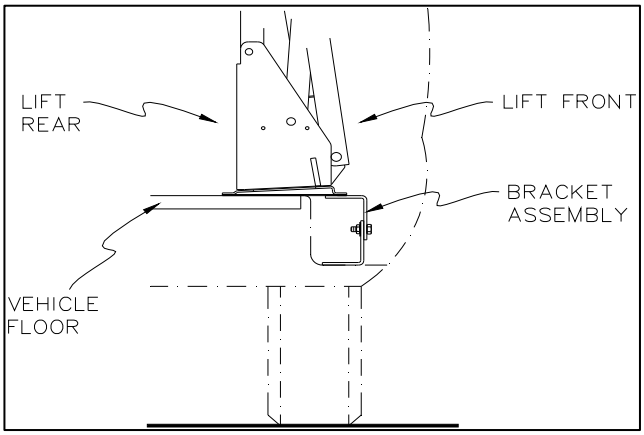


FIGURE 2-4: BRACKET ASSEMBLY

e. Adjust Base Assembly:

NOTE: If Ricon Power Door Operators are used, install them first. They may have some influence on location of lift.

1) Be certain baseplate assembly is parallel with vehicle floor. The baseplate assembly may be slightly offset in door opening to provide proper clearance for passenger seats.

2) Before drilling, be certain that lift's position does not interfere with closing of vehicle door(s) as well as clear all passenger seats.

f. Mark/Drill Holes:

NOTE: Before drilling holes, be sure that no underlying wires or tubes are in the way.

1) Refer to **Figure 2-5**. Mark/drill four 25/64" baseplate assembly mounting holes (1, 2, 3 and 4) through vehicle floor. (On Dodge and GM vans, you must drill through vehicle floor and subframe.)

2) Place four 8" x 3/8" carriage bolts (4" x 3/8" bolts on Ford vans) into holes to secure position.

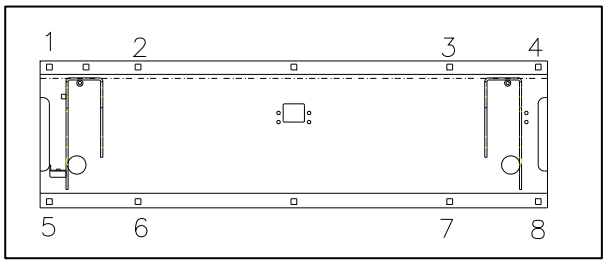


FIGURE 2-5: VAN BASEPLATE HOLES

3) Refer to **Figure 2-6**. Align the top bracket holes 5, 6, 7 and 8 with baseplate assembly holes 5, 6, 7 and 8. Mark bracket assembly mounting holes 9, 10, 11, and 12 onto vehicle step.

4) Remove carriage bolts installed in step **2** and carefully push lift back into vehicle interior.

5) Drill ¼" holes through marked locations 9, 10, 11 and 12.

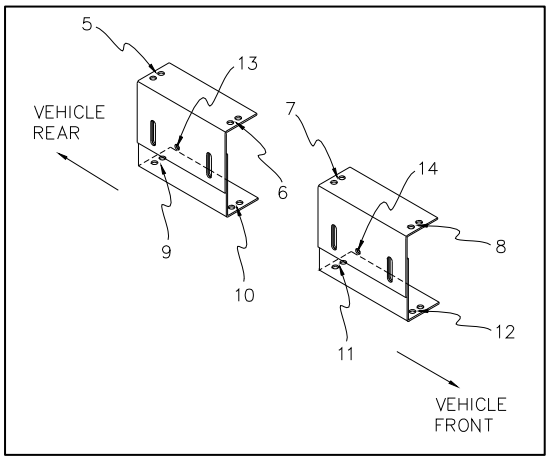


FIGURE 2-6: TOP BRACKET HOLES

g. Fasten Bracket Assemblies/Lift:

1) Using 1-1/2" x 5/16" sheet metal screws with 5/16" lock washers, secure lower brackets to vehicle step holes 9 through 12.

NOTE: If screw in position 12 interferes with proper door operation, do not install.

2) Reposition lift ensuring that surface beneath lift is free of obstacles.

3) Reinsert four 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 four 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 to be bolted in positions 1, 2, 3 and 4 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.

NOTE: Tilting lift towards inside of van may hinder its initial unfolding. Install lift with its baseplate assembly as level as possible.

5) 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. Corrections can be made by shimming at appropriate locations. Refer to **Figure 2-5**. To help prevent warping, tighten the eight carriage bolts (six on Dodge van with sliding door) to 28 ft-lbs in the following sequence:

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

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) Refer to **Figure 2-6.** Make certain that holes 13 and 14 on 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**. Since clamping bars are used on most bus installations, they 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.

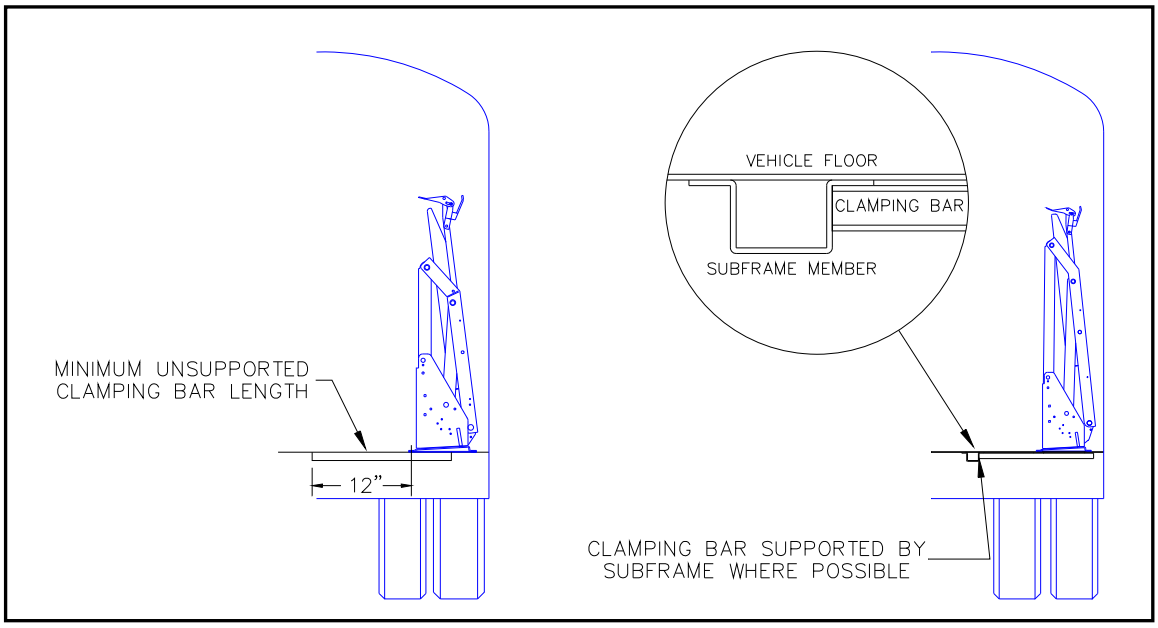


FIGURE 2-7: BUS CLAMPING BAR ARRANGEMENT

a. With door(s) fully open, position lift in vehicle doorway as close as possible to door with lift's baseplate parallel to side of bus.

⚠ WARNING

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

b. Refer to **Figure 2-8**. Mark/drill eight 25/64" baseplate assembly mounting holes (1 thru 8) through vehicle floor.

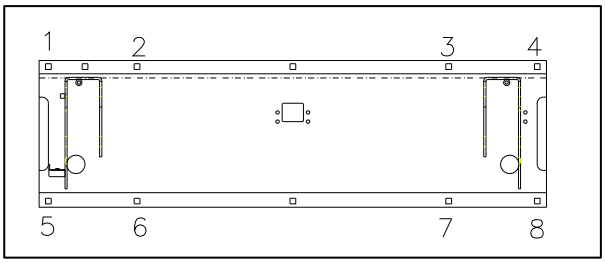


FIGURE 2-8: BUS BASEPLATE HOLES

NOTE: Before drilling any holes, be sure that no underlying wires or tubes are in the way.

c. Fasten Lift:

1) Insert eight 4" x 3/8" carriage bolts through baseplate and vehicle floor.

2) Install support tubes, 4 ea to bolts underneath vehicle floor across baseplate, i.e., from 1 to 5, 2 to 6, 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. Corrections can be made by shimming at appropriate locations. To help prevent warping, tighten the eight carriage bolts to 28 ft-lbs in following sequence:

2, 3, 6, 7, 1, 4, 5, 8

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

- NEVER ROUTE A LIVE WIRE. BE CERTAIN THAT BATTERY IS DISCONNECTED.
- ALWAYS ROUTE ELECTRICAL WIRE CLEAR OF ANY MOVING PARTS, BRAKE LINES AND EXHAUST SYSTEMS. ATTACH SECURELY.
- WHEN ROUTING ELECTRICAL WIRE THROUGH VEHICLE FLOOR OR WALLS, USE A SUITABLE GROMMET TO PROTECT WIRES FROM CHAFFING.
- IF DRILLING IS NECESSARY, BE SURE TO CHECK UNDERSIDE OF VEHICLE BEFORE DRILLING SO AS TO NOT DAMAGE ANY FUEL LINES, VENT LINES, BRAKE LINES OR WIRES.
- USE SUPPLIED GROMMET AROUND DRILLED HOLE TO PROTECT CABLE FROM CHAFFING.

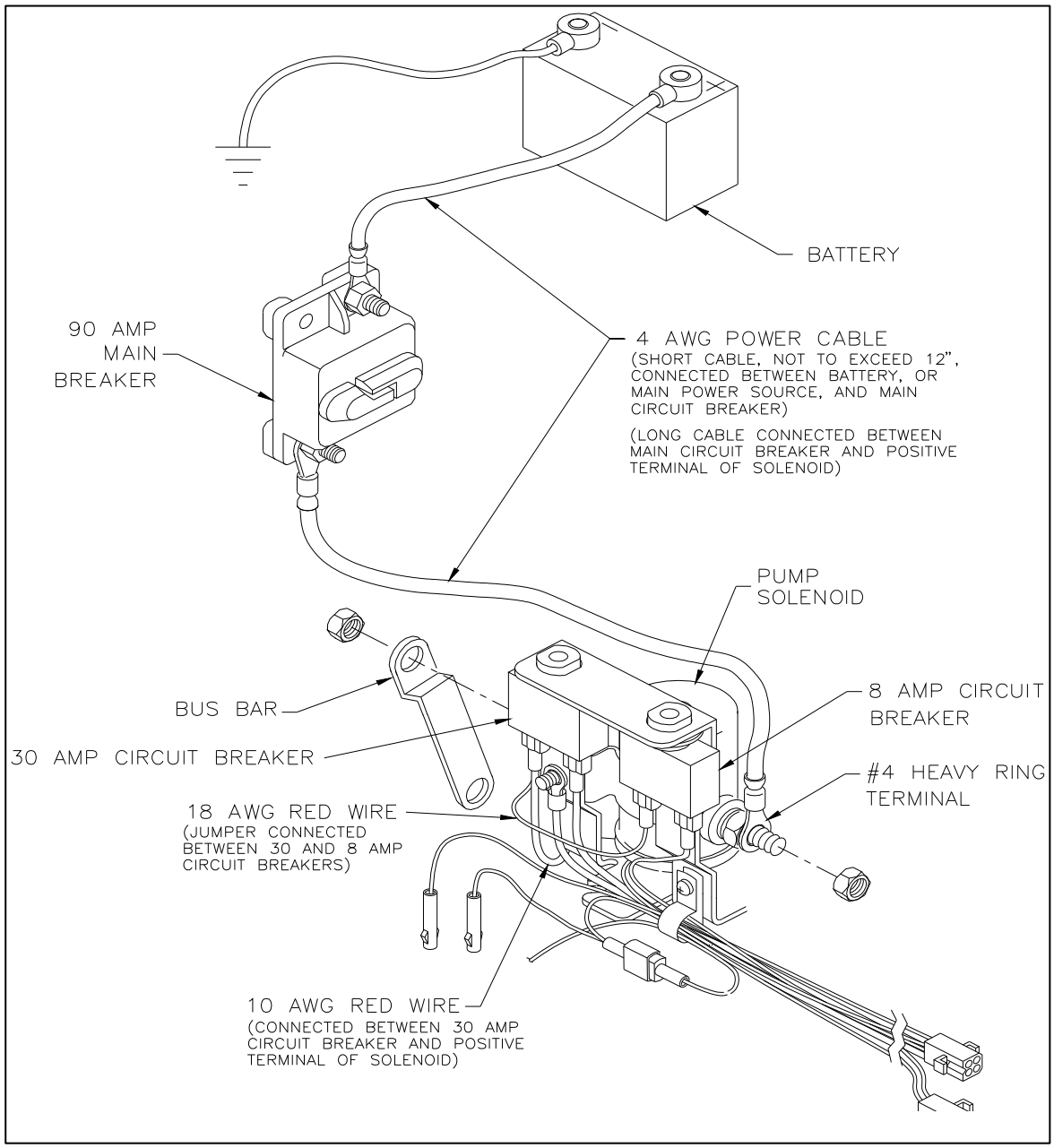


FIGURE 2-9: ELECTRICAL INSTALLATION DIAGRAM

1. INSTALL MAIN CIRCUIT BREAKER

   a. Disconnect battery. Avoid heat sources.

   b. Mount main circuit breaker inside engine compartment as near to battery as possible (within 10-12 inches) to minimize amount of unprotected cable.

2. ROUTE/CONNECT MAIN POWER CABLE

⚠ WARNING

IF ANY DRILLING IS NECESSARY, ALWAYS CHECK UNDERSIDE OF VEHICLE BEFORE DRILLING SO AS NOT TO DAMAGE ANY FUEL LINES, VENT LINES, BRAKE LINES OR WIRES.

NOTE: For applications where power cable is to pass through sheet metal, drill a ¾" 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.

   a. Refer to **Figure 2-10**. Locate and drill hole through the vehicle floor near or under pump cover so power cable may reach positive pole of solenoid, the side opposite to where the solenoid is connected to the pump motor. The hole should be drilled so that it will be hidden by pump cover.

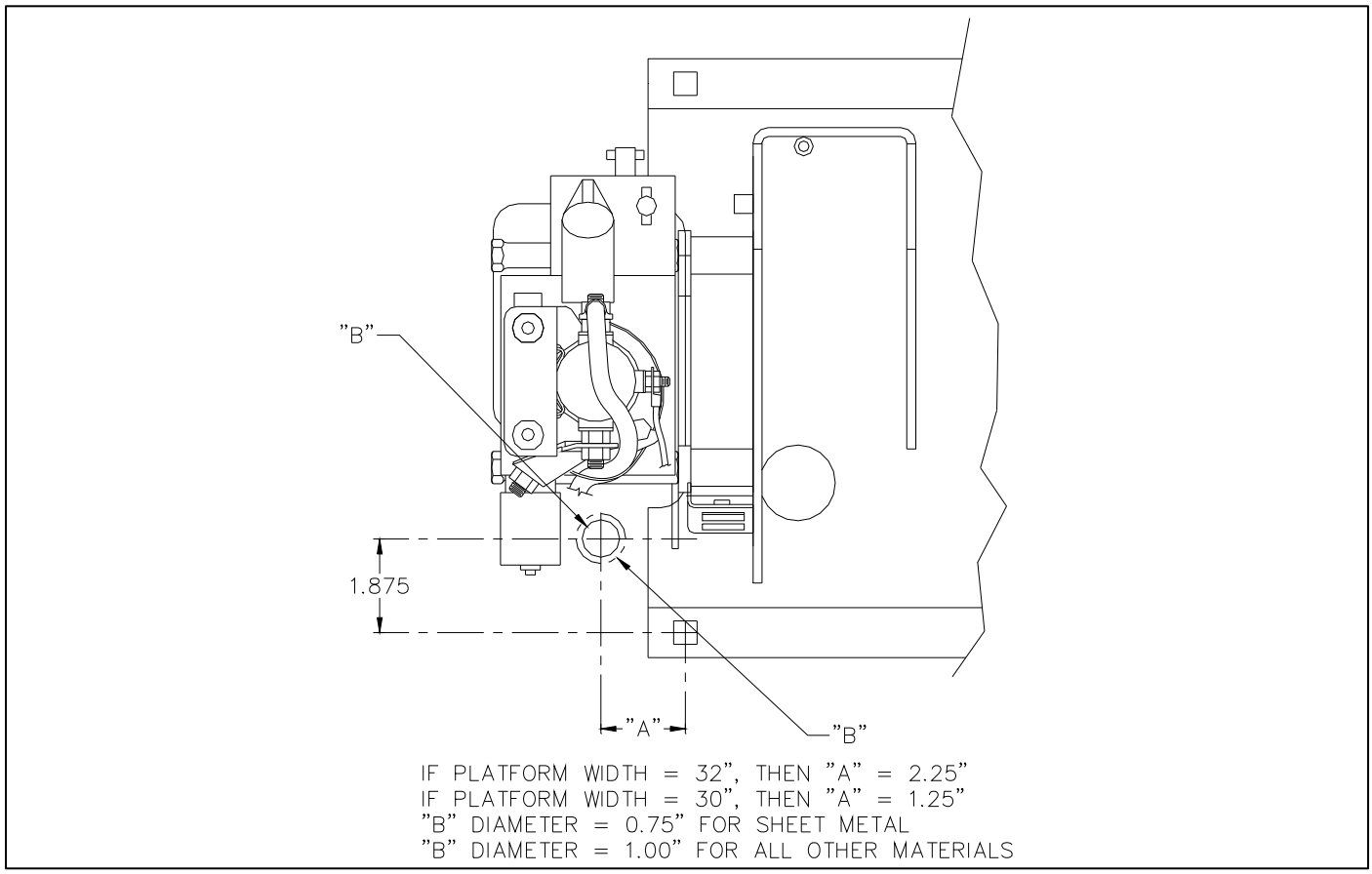


FIGURE 2-10: POWER CABLE ACCESS HOLE

NOTE: Two circuit breakers, one 30amp and one 90 amp, are provided for lift as circuit protection devices. Whatever circuit interface is supplied by the OEM, it should be capable of carrying sufficient amperage of continuous current.

   b. Install ring terminals (supplied) to each end of short power cable (12" long), and one ring terminal to one end, and one end only, of long power cable using an appropriate crimp tool (such as Ricon P/N 26553.)

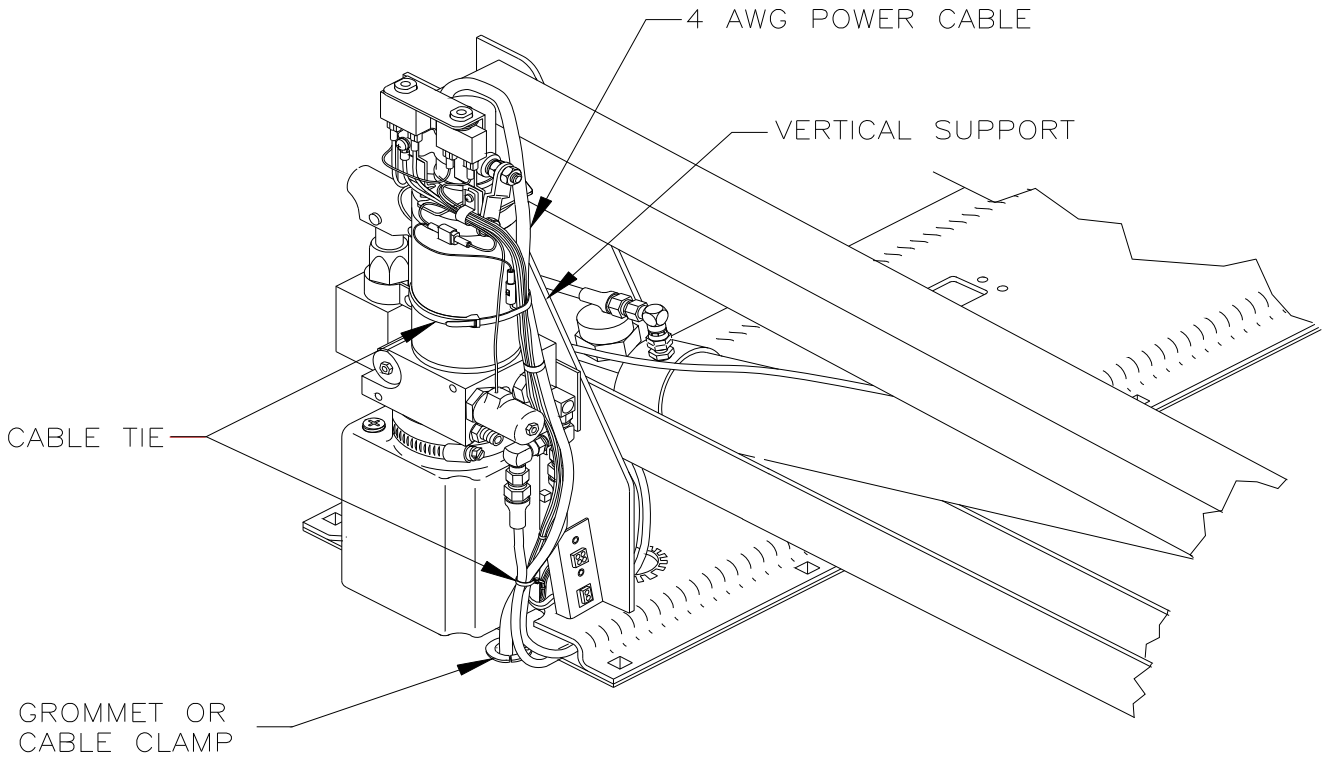
   c. Connect end of the long 4 AWG power cable (with ring terminal) to main circuit breaker, then

route power cable underneath vehicle floor and up through hole in floor.

d. Be certain that power cable is secure. Bind power cable to pump assembly harness and to pump motor using cable ties. Avoid pinch points, exhaust system, any moving parts and brake lines.

⚠ WARNING
BE SURE THAT THERE IS NO INTERFERENCE WITH ANY PARTS THAT COULD DAMAGE POWER CABLE OR OTHER WIRES IN ANY WAY.

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



f. Refer to **Figure 2-12** (next page). Connect appropriate RICON lift control interface to lift and secure control interface to lift and secure control cable to vehicle floor with supplied cable clamp.

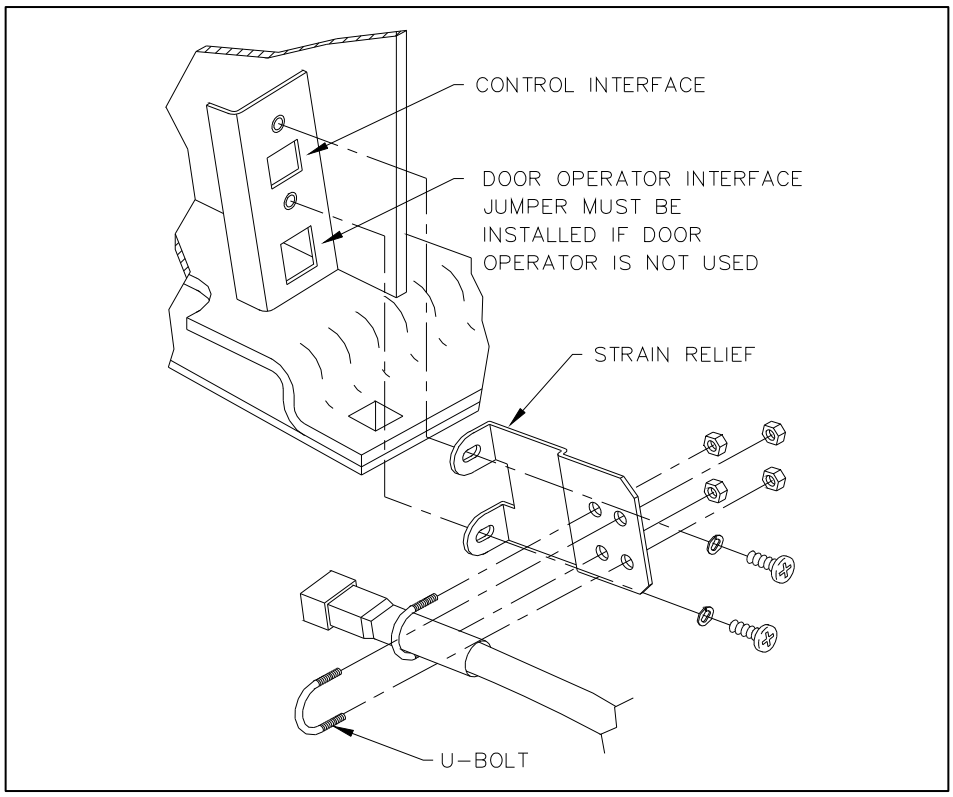


FIGURE 2-12: CONTROL INTERFACE AND STRAIN RELIEF

NOTE: For applications where a hand-held control pendant is used, it is essential that strain relief be installed.

⚠ CAUTION
BE SURE THAT HARNESS DOES NOT INTERFERE WITH ANY MOVING PARTS, OR BINDS AGAINST ANY PARTS, OR IS PINCHED IN ANY WAY.

g. Connect short (12") cable from battery's positive terminal to main breaker terminal closest to battery.

h. Install wall portion of pendant dovetail clip in an appropriate safe location.

3. GROUNDING INSTRUCTIONS

a. 12VDC Systems

12VDC-powered systems require a good ground capable of conducting 90A. Most vehicles have a smaller body ground.

b. 24VDC Systems

1) All 24VDC installations require an isolated ground return to battery. To assure proper operation of lift, an isolated ground of 4 AWG or heavier cable must be installed.

2) Refer to **Figure 2-13**. The ground cable should be routed from motor grounding stud on pump motor to an appropriate location.

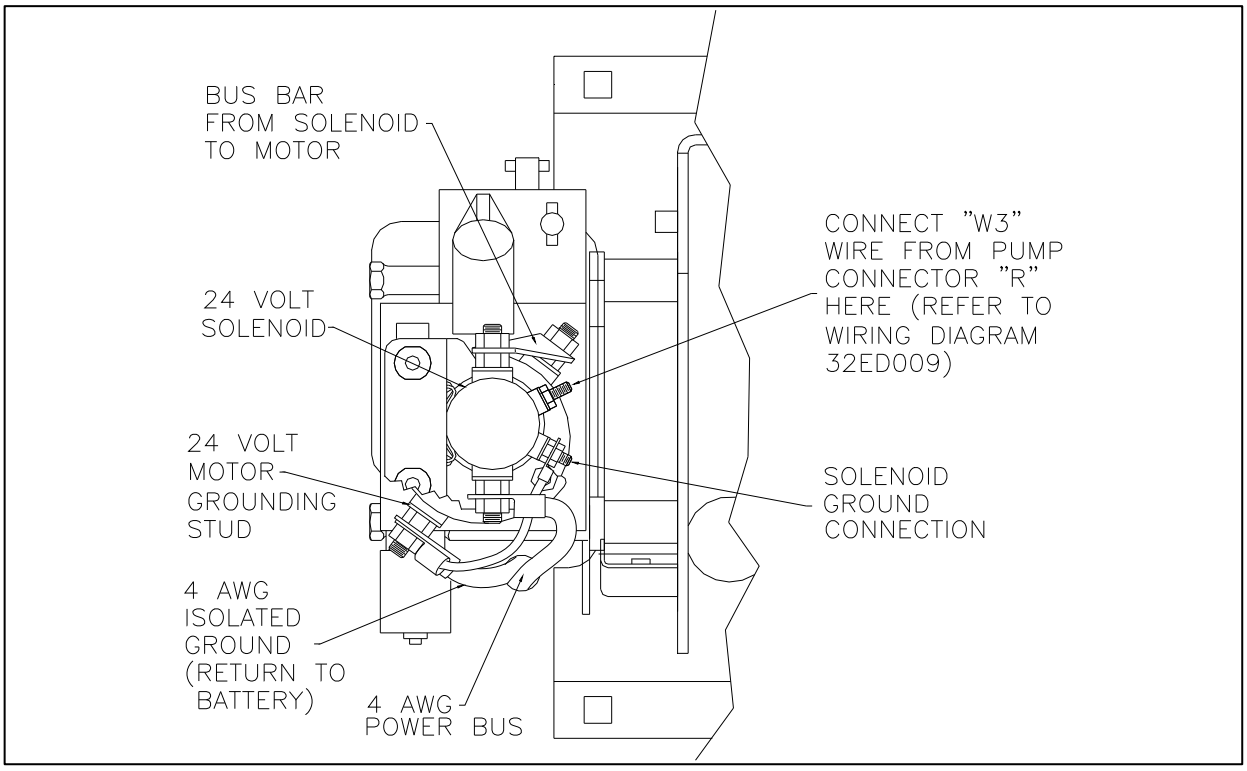


FIGURE 2-13: 24VDC WIRING

NOTE: If vehicle's system is chassis grounded, a grounding strap may be attached to a bare metal chassis surface; if not, grounding strap must be attached to a ground circuit capable of carrying 90 amps leading back to battery's negative terminal.

4. RICON UNSUPPORTED INTERLOCK DEVICE INSTALLATION

An interlock device may be installed that is designed to prevent operation of lift or vehicle when it is not safe to do so. The interlock is supplied by the installing Ricon service technician and **is not** a Ricon product.

Some interlock devices lock vehicle transmission in PARK when lift is deployed, or do not allow lift to be deployed unless vehicle transmission is in PARK **and** emergency brake is set. Other devices will stall vehicle's engine if lift is deployed and emergency brake is released or transmission is shifted from PARK. There may be other types of interlock devices that disable lift or vehicle and prevent unsafe lift operating conditions.

Because these devices are non-Ricon products, Ricon is not aware of all that are available. For this reason it is **very important** that interlock device be properly installed, such that it does not interfere with safe operation of lift or create an electrical or fire hazard.

The installer should always be certain that none of the original equipment electrical circuit breakers, fuses, or solenoids are bypassed, removed, or altered. Be sure no wires are left frayed or hanging loose after installation of the interlock device. If you have **any** questions about proper installation of these interlock devices, please contact our Product Support Department immediately. DO NOT OPERATE LIFT UNLESS YOU ARE CERTAIN THAT INTEGRITY OF LIFT'S ELECTRICAL CIRCUITS, AS DESIGNED, HAS BEEN MAINTAINED.

⚠ CAUTION

WIRING ATTACHED DIRECTLY TO A BATTERY'S POSITIVE TERMINAL IS NOT PROTECTED AGAINST SHORT CIRCUITS. WIRING ATTACHED DIRECTLY TO A BATTERY MUST BE KEPT AS SHORT AS POSSIBLE (12" OR LESS) AND MUST BE ROUTED SO THAT THERE IS NO RISK OF PINCHING. WIRES FOR INTERLOCK CIRCUIT SHOULD BE ROUTED FROM AN APPROPRIATELY PROTECTED POWER SOURCE SUCH AS A DEDICATED ACCESSORY ON AN EXISTING FUSE PANEL.

Ricon recommends using one of three possible installation methods:

a. Interlock Method #1 (Signal interrupt, feed from lift)

Refer to **Figure 2-14**. This method interrupts power to lift's hand control pendant. It does not require additional circuit protection, but does require a modification to lift harness.

1) Disconnect battery.

2) Remove piggyback spade connector wire from OUTPUT side of 8 amp circuit breaker (refer to decal on circuit breaker.)

NOTE: The OUTPUT side of breaker must be used to avoid possibility of an electrical short.

3) Connect female spade connector of interlock circuit provided by installer to OUTPUT side of 8 amp breaker using 16 AWG or larger wire.

NOTE: All connectors provided on interlock circuit must be fully insulated type.

4) Cut piggyback connector from light assembly and female spade connector from signal power wire. Strip both wires about ½" being careful not to nick connector. Crimp both wires in a single ¼" fully insulated female spade connector designed for use on 14-16 AWG wire.

5) Connect male spade connector of interlock circuit to female spade connector added to harness in above step.

6) Dress wires in such a way as to not allow rubbing or chafing of insulation, and so there is no strain at any terminals or body of light.

b. Interlock Method #2 (Signal interrupt, feed from vehicle)

Refer to **Figure 2-15**. This method interrupts power between lift's 8 amp breaker and vehicle's battery. It requires circuit protection to be provided by installer.

1) Disconnect battery.

2) The cable leading to applicable circuit protection from battery must be at least 16 AWG or larger, and must not exceed 12" in length.

3) Connect INPUT side of interlock circuit to OUTPUT side of circuit protector using 16 AWG or larger wire.

4) If an optional 30 amp circuit breaker has been installed next to 8 amp breaker, **completely remove** 18 AWG wire connecting INPUT sides of 30 amp and 8 amp circuit breakers. To do this, the spade connector must be removed from 8 amp INPUT and 18 AWG wire must be cut as close as possible to 30 amp INPUT connector, since it is crimped to that connector along with a 10 AWG wire.

5) Connect OUTPUT side of interlock circuit to INPUT side of lift's 8 amp circuit breaker using 16 AWG or larger wire.

6) Re-connect battery.

c. **PREFERRED METHOD (Power interrupt)**

Refer to **Figure 2-16**. This method interrupts power between interlock's solenoid and battery. This cuts all power to lift. It requires circuit protection to be supplied by installer.

1) Disconnect battery.

2) Disconnect 4 AWG power cable from main breaker at pump solenoid.

3) Connect cable to one of terminal posts of interlock solenoid.

4) Connect other terminal post of interlock solenoid to empty terminal post of pump solenoid using 4 AWG wire.

5) Connect circuit protector provided by installer (should be 8 amp, maximum) to main power cable coming from battery (which should be disconnected at this time) using wire at least 16 AWG or larger, not to exceed 12" in length. Be sure that wiring cannot pinch or chafe.

6) Connect OUTPUT side of circuit protector to INPUT side of interlock circuit provided by installer using 16 AWG or larger wire.

7) Connect OUTPUT side of interlock circuit to coil terminal of solenoid using 16 AWG or larger wire.

8) Be sure that interlock is properly grounded. If a separate grounding post is provided, connect a 16 AWG wire from ground post to a suitable chassis ground. If coil is grounded through body of solenoid, be sure that solenoid is mounted to a suitable chassis ground.

9) Reconnect the battery.

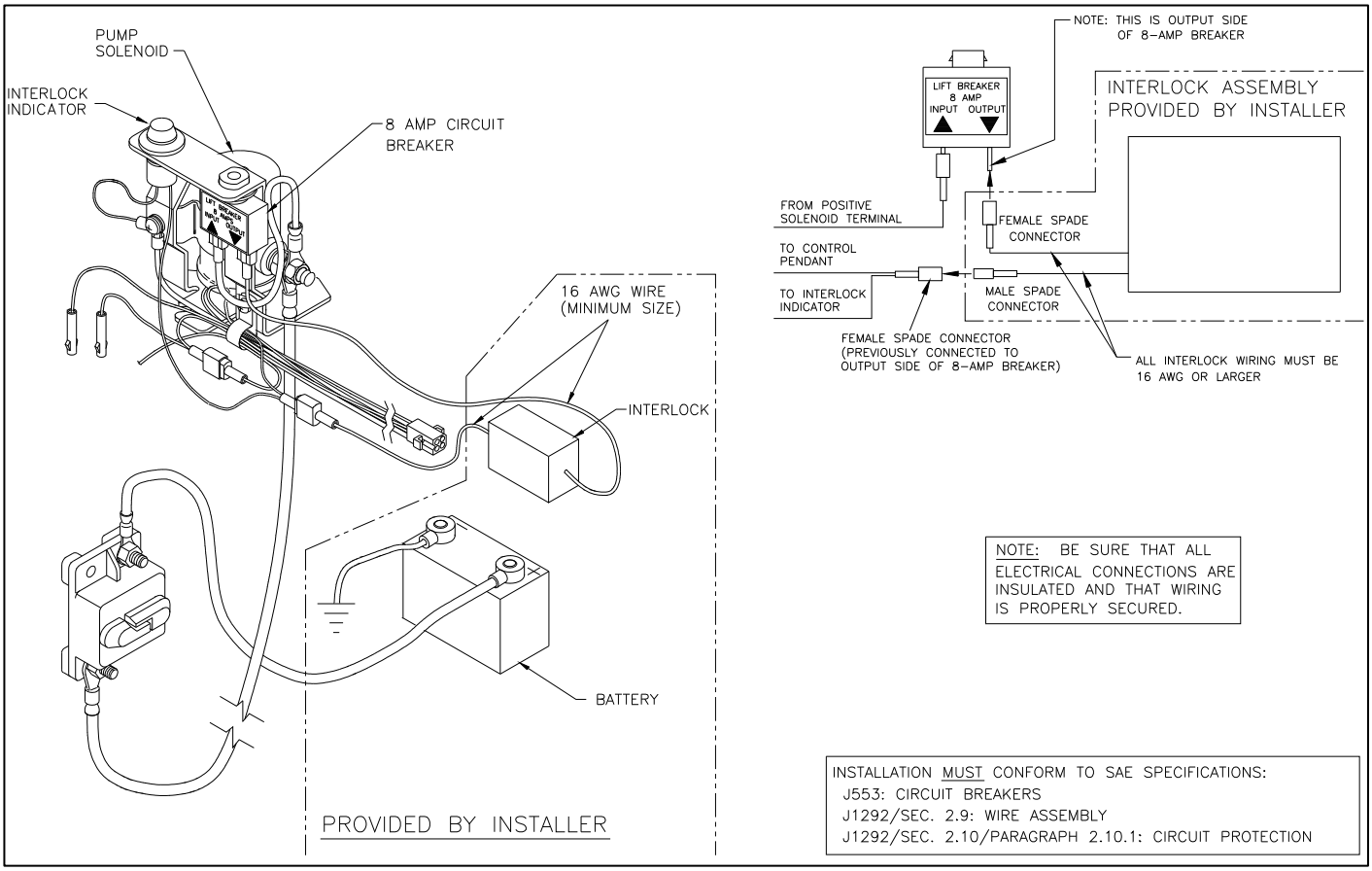


FIGURE 2-14: INTERLOCK METHOD #1 DIAGRAM

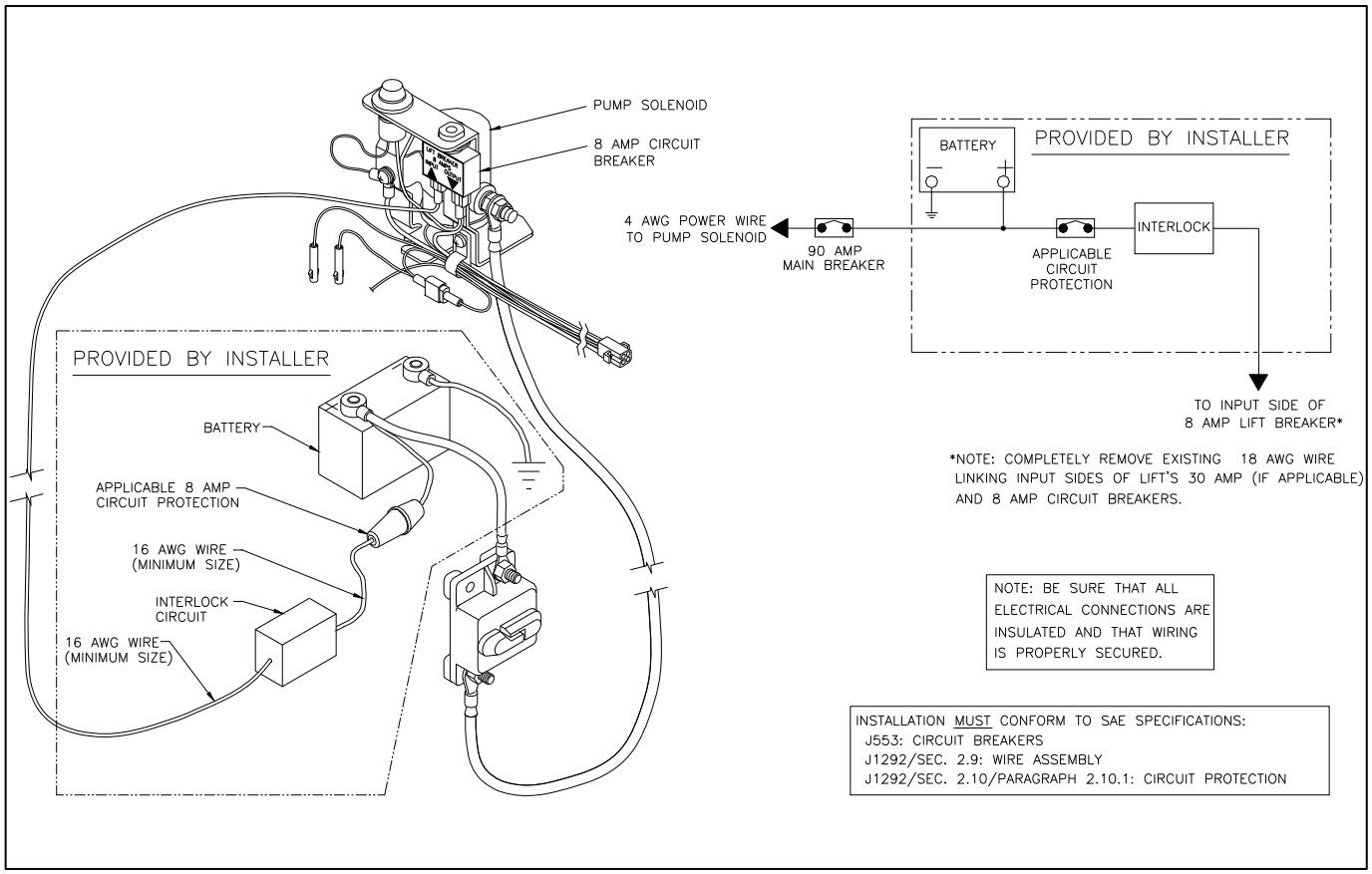


FIGURE 2-15: INTERLOCK METHOD #2 DIAGRAM

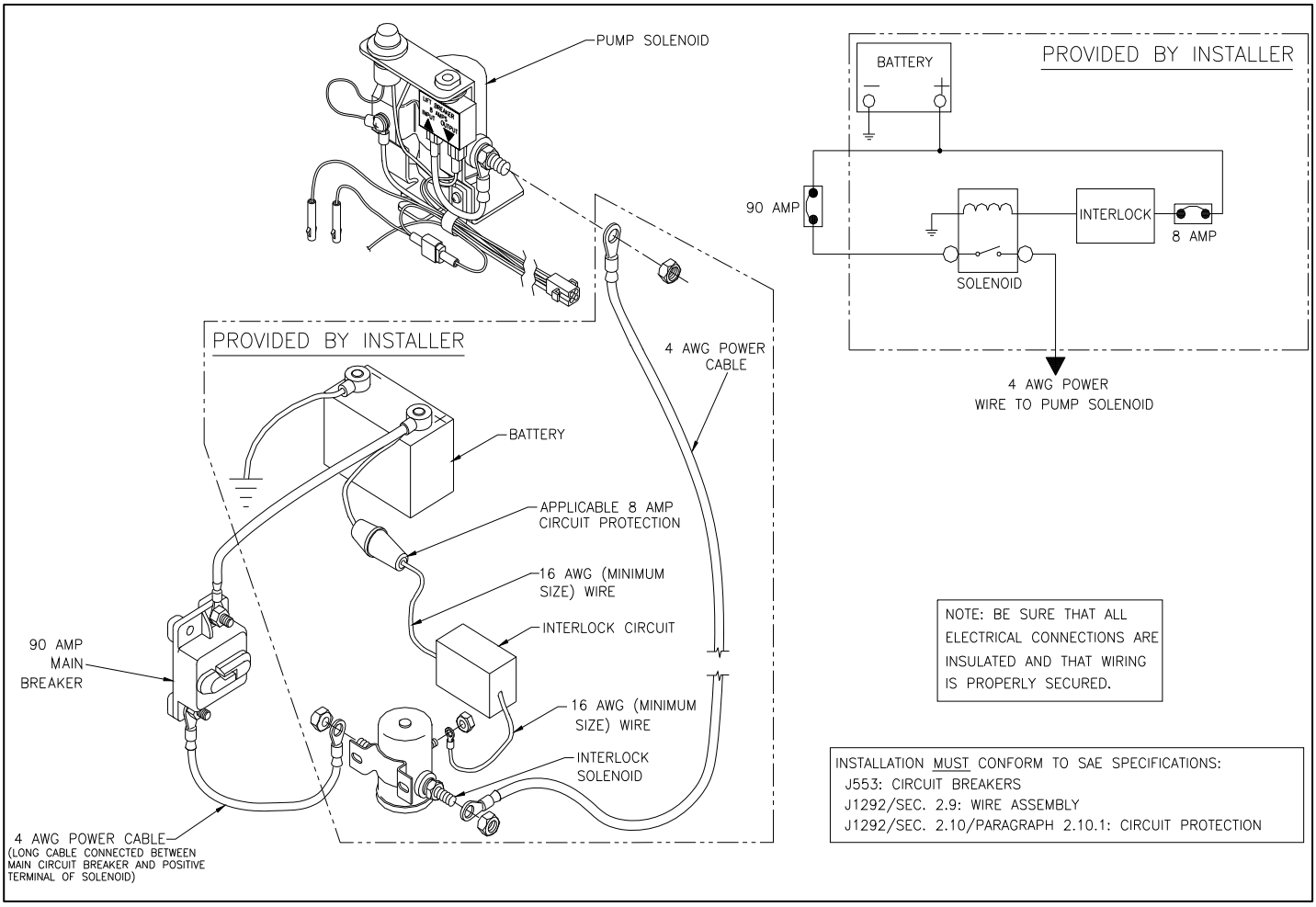


FIGURE 2-16: INTERLOCK METHOD #3 DIAGRAM

C. FINAL ADJUSTMENTS

1. LIMIT SWITCH ADJUSTMENT

   For lift limit switch adjustment, refer to **Figure**s **2-17**, **2-18** and the following procedure. Contact the Ricon Product Support Department for assistance, if needed.

   NOTE: To avoid operational “dead-spots”, always adjust OUT 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).

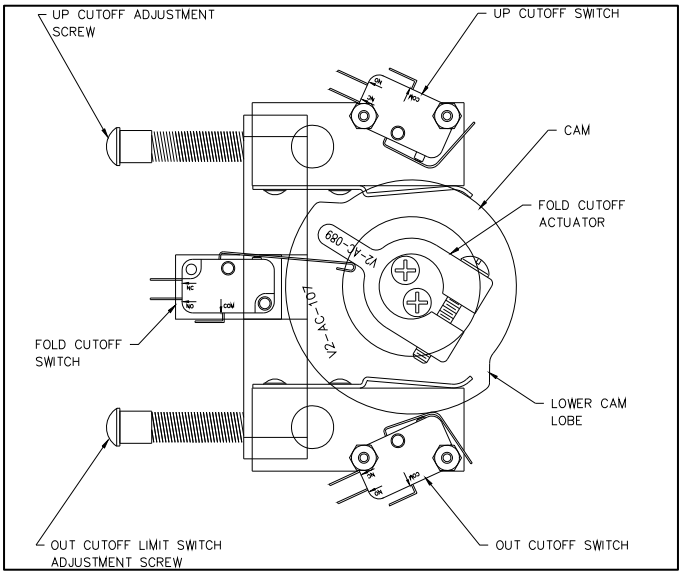


FIGURE 2-17: LIMIT SWITCH ADJUSTMENT DIAGRAM

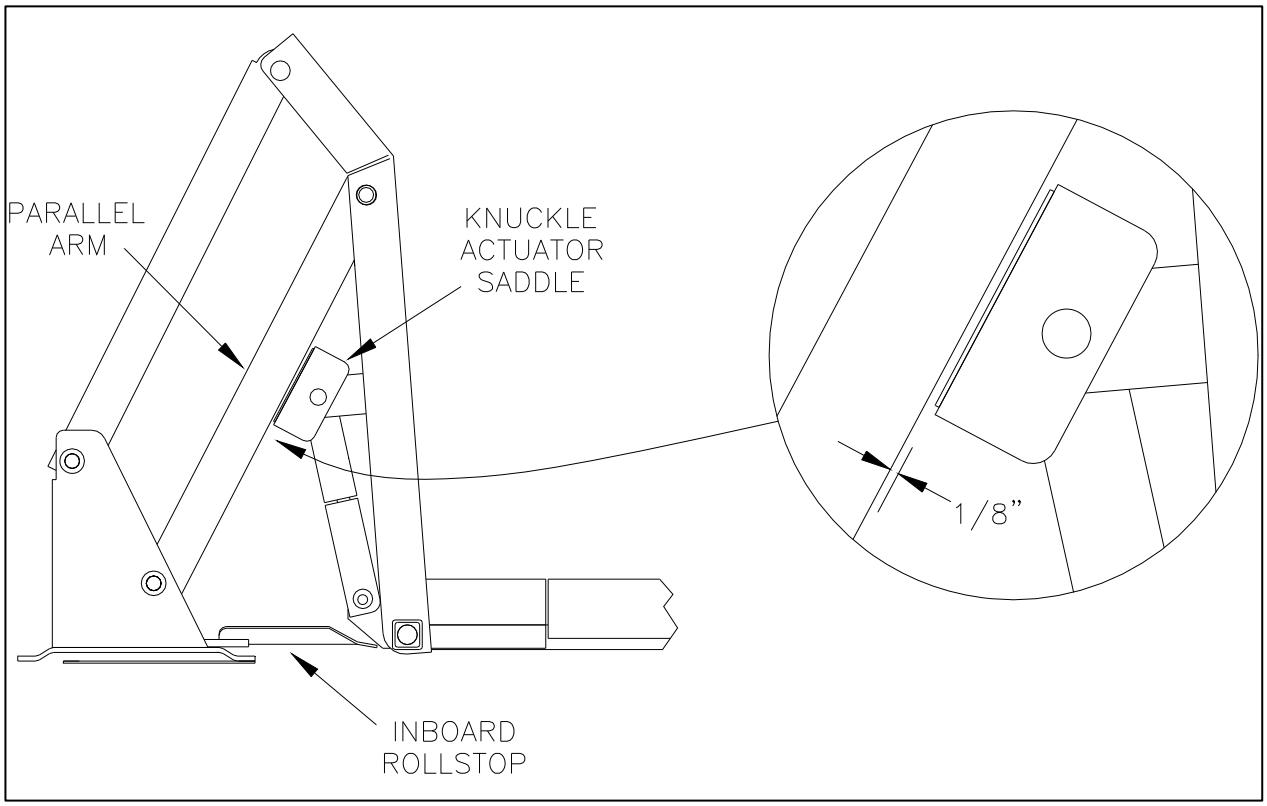


FIGURE 2-18: LIMIT SWITCH ADJUSTMENT CLEARANCE

a. Fully DEPLOY platform.

b. Adjust UP CUTOFF ADJUSTMENT SCREW and OUT CUTOFF ADJUSTMENT SCREW 6-8 turns **counter-clockwise** and then push screws FORWARD.

c. Cycle platform to STOW and DEPLOY.

d. When in DEPLOY position, platform should stop at an angle and NOT even with vehicle floor. If not, turn OUT CUTOFF ADJUSTMENT SCREW an additional 2-3 turns **counter-clockwise**, push screw forward, STOW and 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 **counter-clockwise**, push screw forward, cycle platform DOWN then UP, then repeat this step.

g. Cycle platform to STOW and DEPLOY.

h. Push and hold control pendant DEPLOY switch. Slowly turn UP 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 ½” maximum and unequal from left or right arm), stop turning screw and release DEPLOY switch.

i. Cycle platform DOWN to ground level then UP until it stops.

j. Push and hold 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 ½” 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 OUT CUTOFF SWITCH.)

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

TABLE 2-1: LIMIT SWITCH ADJUSTMENT CHART

COMPONENT	SYMPTOM	CORRECTIVE ACTION	ADJUSTMENT PROCEDURE
Fold Cutoff Actuator	Lift does not fold tightly.	Rotate collar counter-clockwise.	With lift fully folded (handrails should be folded tight against vertical arms), rotate actuator so that fold cutoff leg barely trips fold cutoff switch.
	Pump runs continuously.	Rotate collar clockwise.	Test lift. Pump should cutoff when lift is folded tight.
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.	
Out Cutoff Adjustment Screw	Lift stops low.	Adjust screw counter-clockwise.	Adjust lower 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 (ROLLSTOP) ADJUSTMENT

The platform tilt adjustment is crucial for proper 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 the lift platform to a position halfway between vehicle floor level and ground level.

b. Refer to **Figure 2-19**. Adjust left/right platform set screws until platform is level at zero (0) degrees. Turn set screws clockwise to angle front-end of platform upward, or counter-clockwise to angle downward.

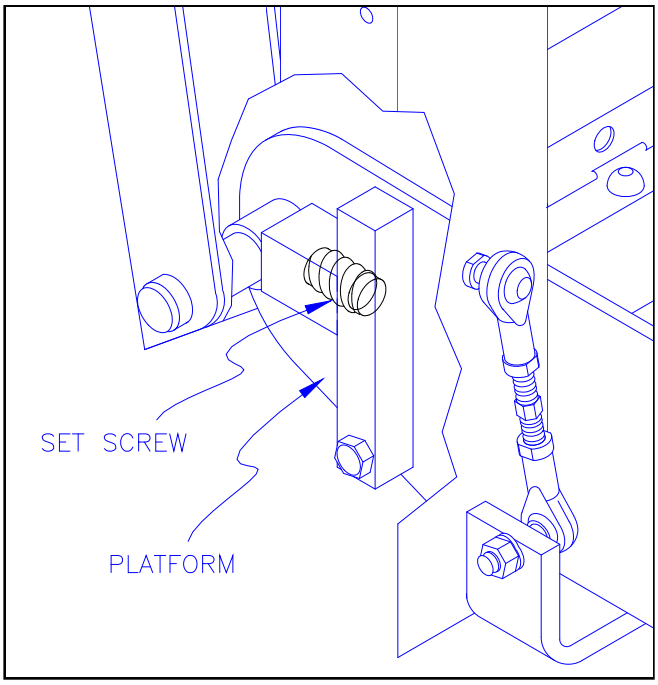


FIGURE 2-19: PLATFORM SET SCREWS

c. At ground level, the distance between heel of platform and ground should be ¾" to 1". This distance should be measured at initial point of rollstop full deployment.

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

d. Repeat steps **a** and **b** as required to achieve proper rollstop operation.

3. PLATFORM PRESSURE SWITCH CHECK AND ADJUSTMENT
(SERIAL NUMBERS 104,000 TO PRESENT)

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

a. Refer to **Figure 2-20**. Deploy and lower platform to ground. Place a 50 lb. load in center of platform and then raise platform to floor level. Press and hold STOW switch.

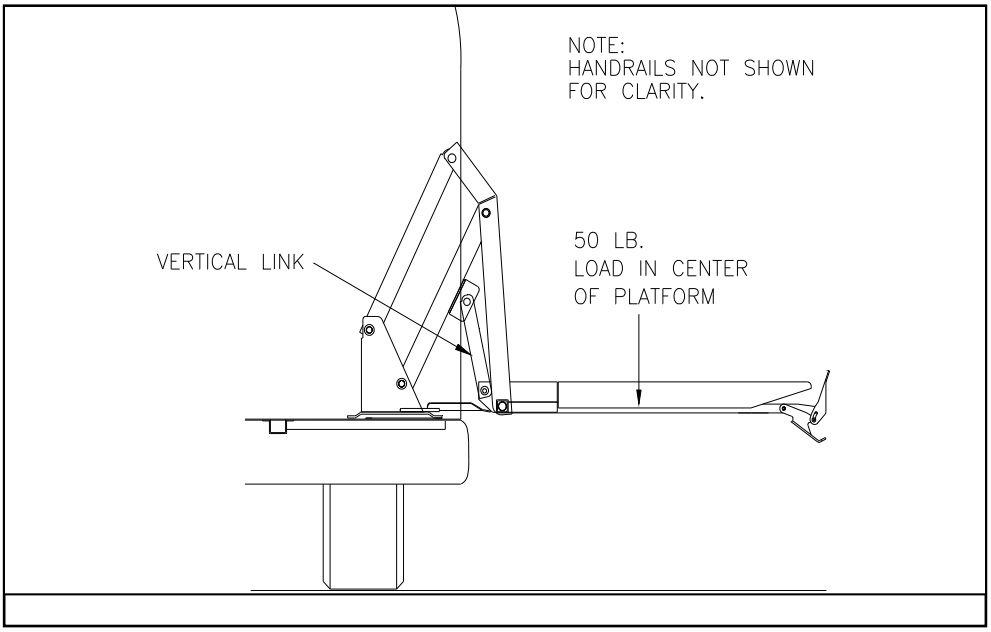


FIGURE 2-20: PRESSURE SWITCH TEST AT FLOOR LEVEL

b. Pressure switch is correctly set if pump motor shuts off, preventing further movement of platform. There should not be excessive on/off clicking of pump motor that would indicate switch is set

marginally. Proceed to next step if pump motor does not shut off.

c. Refer to **Figure 2-21**. Remove the ¼-20 x 1.00" locking set screw (with hex recess) from end of pressure switch to gain access to adjustment screw. Save screw for reinstallation.

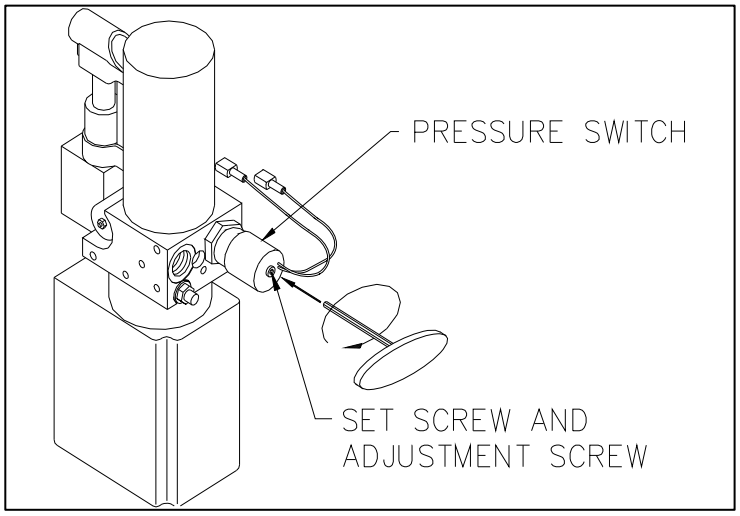


FIGURE 2-21: HYDRAULIC PUMP WITH PRESSURE SWITCH

d. Insert a 1/8" hex wrench into pressure switch and engage adjustment screw inside. Turn screw 1/8 turn clockwise, this will increase the weight required to activate switch, and then repeat 50 lb. load check described above. Repeat adjustment, as necessary, to achieve correct setting.

e. Reinstall set screw and tighten locking set screw.

D. VERIFY INSTALLATION

- Verify there is no interference with operation of the lift by interior or exterior components.
- The lift is designed to carry the weight of a wheelchair and its passenger. The vehicle structure must be adequate to support all loads produced during lift operation, as well as forces incurred by motion of vehicle while driven.

⚠ 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 lift must be test loaded to 125% of its rated 800 pound load capacity to verify integrity of installation. Raise lift platform 2" – 6" above ground, place **1000** pounds in center of platform, then inspect lift mounting points. REMOVE TEST WEIGHT.
- Run lift through several complete cycles while checking for proper operation.

E. CUSTOMER ORIENTATION

IMPORTANT

-Customer Orientation-

Ricon Sales/Service personnel must review Warranty and Service/Owner Manual with customer to be certain he/she understands safe operation of lift. Instruct customer to always follow operating instructions without exception.

- Refer to **Figure 2-23** on next page and be certain that all decals are secure and located as shown.

NOTE

The installing dealer must affix Operating Instructions decal to vehicle in a location clearly visible to lift operator.

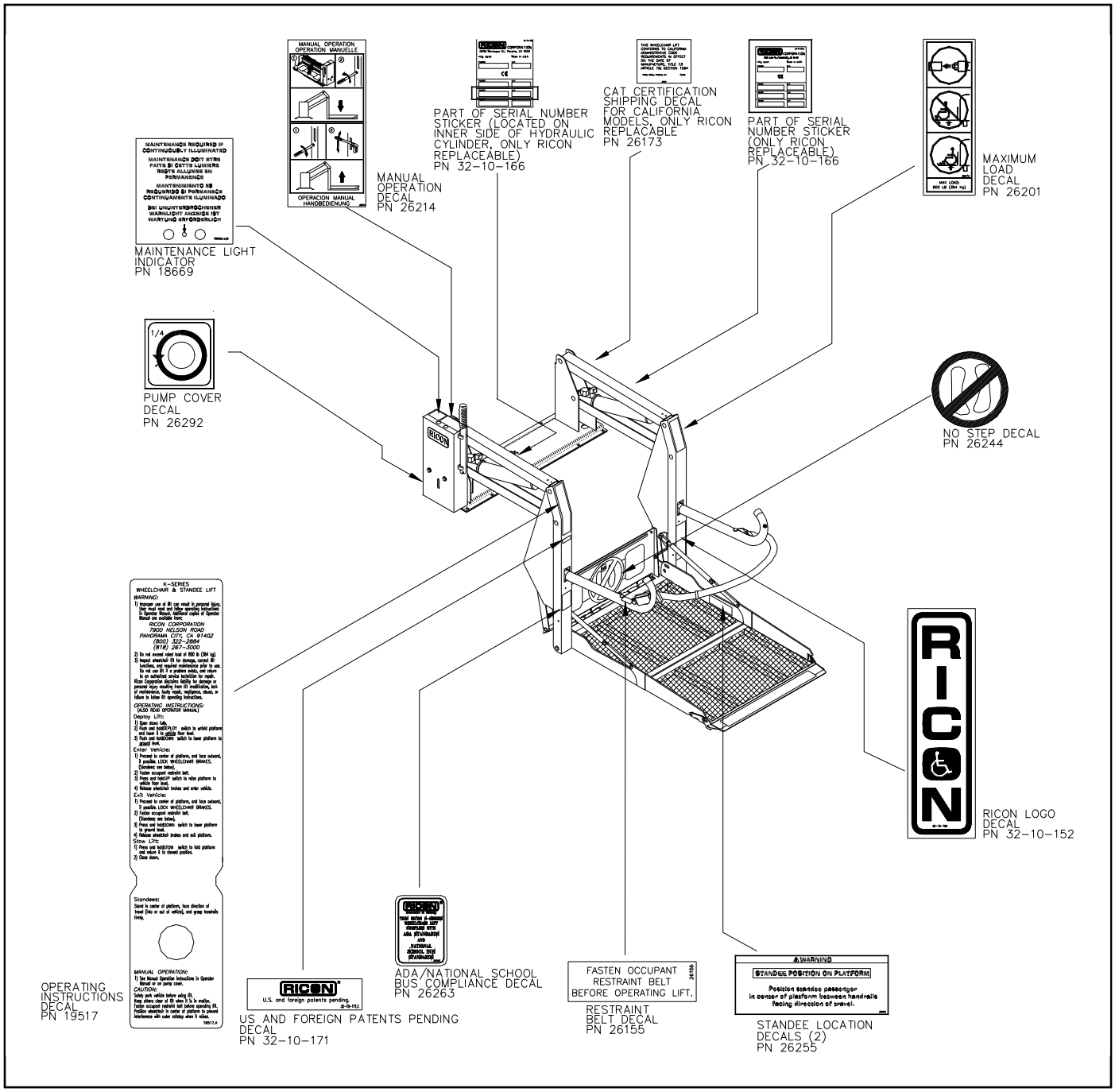


FIGURE 2-22: DECAL LOCATIONS AND PART NUMBERS

III. MAINTENANCE AND REPAIR

Regular maintenance of the Ricon KlearVue Series platform wheelchair lift is required to help optimize its performance and reduce the need for repairs. This chapter contains lubrication and cleaning instructions, a maintenance schedule, troubleshooting section, and maintenance diagrams.

⚠ CAUTION

THIS RICON PRODUCT IS HIGHLY SPECIALIZED. MAINTENANCE AND REPAIRS MUST BE PER- FORMED BY AN AUTHORIZED RICON SERVICE TECHNICIAN USING RICON REPLACEMENT PARTS.

F. LUBRICATION

⚠ CAUTION

DO NOT LUBRICATE MOTOR OR OTHER ELECTRICAL COMPONENTS. LUBRICATION OF ELECTRICAL COMPONENTS MAY ATTRACT DIRT AND DEBRIS, CAUSING SHORT CIRCUITS.

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

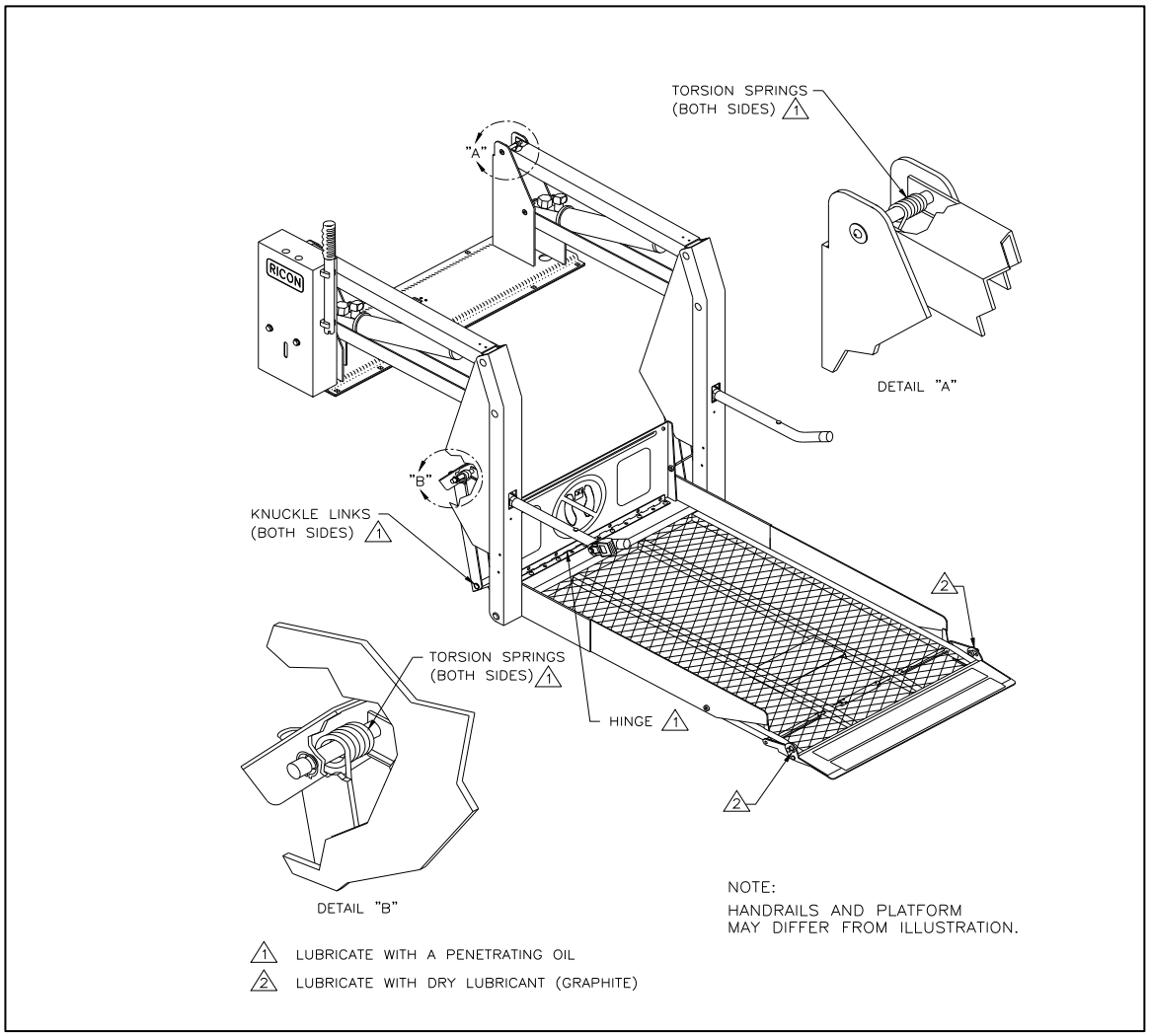


FIGURE 3-1: LIFT LUBRICATION POINTS

G. 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.

H. 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 heavy use (more than 10 cycles per day.)

TABLE 3-1: MAINTENANCE SCHEDULE

SERVICE POINT	ACTION TO PERFORM
	DAILY SAFETY CHECK
Overall Condition	Listen for any abnormal noises as lift operates (i.e. grinding or binding noises).
Control Pendant	Check that control pendant is not damaged and cable connectors are tight.
	TWO-WEEK SAFETY CHECK
Overall Condition	▪ Listen for any abnormal noises as lift operates (i.e. grinding or binding noises). ▪ Inspect underside of vehicle to be certain nothing is out of the ordinary.
Control Pendant	Check that control pendant is not damaged and cable connectors are tight.
Electrical Wiring	Inspect electrical wiring for frayed wires, chaffed wires, loose connectors, etc.
Vehicle Interlock	Place vehicle in NON-INTERLOCK mode and attempt to operate lift.
Decals	Be certain that all lift decals are affixed properly, clearly visible and legible. Replace if necessary.
Handrails	Be certain that all handrail fasteners are properly tightened.
Lift Mountings and Support Points	▪ Be certain that all lift mounting and support points are in proper order and free from damage. ▪ Be certain that all mounting bolts are sufficiently tight.
Main Lifting Pivots	Be certain all arm pins are installed properly, free from damage and locked in position.
Platform and Platform Attachment Points	Be certain platform operates without binding during lift functions.
Inner Rollstop	▪ Be certain that inner rollstop operates without binding during lift functions. ▪ Be certain that inner rollstop deploys fully when platform stops at vehicle floor level. ▪ Be certain inner rollstop rests flat against baseplate.
Platform Rollstop	Be certain that rollstop opens completely, without binding when platform contacts ground..

TABLE 3-1: MAINTENANCE SCHEDULE	
SERVICE POINT	**ACTION TO PERFORM**
Hydraulic Power Unit	**⚠ CAUTION**
	DO NOT ADD FLUID UNTIL PLATFORM IS LOWERED TO GROUND LEVEL. ADDING FLUID WHILE LIFT IS ELEVATED WILL CAUSE TANK TO OVERFLOW WHEN PLATFORM IS LOWERED.
SIX-MONTH SERVICE CHECK (or @ 1750 cycles of operation)	
Handrails	Be certain that all handrail fasteners are properly tightened.
Cleaning and Lubrication	▪ Clean lift with a mild soap and wipe dry. Rub down all surfaces with a light oil using a soft cloth to avoid rusting of material. Wipe clean any excess oil. ▪ Following labeled directions on container, spray lubricant (Curtisol® Red Grease 88167 or WD-40®); where specified in Lift Lubrication Points diagram. Wipe excess grease from surrounding areas.
Hydraulic Power Unit	While platform is at GROUND LEVEL, be certain that pump hydraulic fluid level is maintained at required FULL level. Add only Texaco hydraulic fluid or equivalent U.S. mil spec H5606 fluid.
⚠ CAUTION	
THIS SAFETY CHECK MUST BE PERFORMED BY AN AUTHORIZED RICON SERVICE TECHNICIAN.	
ANNUAL SAFETY CHECK (or @ 3500 cycles of operation)	
Hydraulic Cylinder, Hoses and Fittings	▪ Check Hydraulic Cylinder for evidence of leaks. ▪ Inspect hydraulic hoses for damage. ▪ Be certain that all fittings are tightly secured.
END OF TABLE	

I. 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 trouble-shooting lift, refer to **Tables 3-2** and **3-3**. The guides do not incorporate routine safety precautions or pre-liminary procedures and assume that vehicle battery is fully charged and battery terminals/connectors are clean and tight.

⚠ WARNING

THE TROUBLESHOOTING GUIDES DO NOT INCORPORATE ROUTINE SAFETY PRECAUTIONS OR PRE-LIMINARY PROCEDURES. DURING THE RICON WARRANTY PERIOD ONLY A TRAINED, AUTHORIZED RICON SERVICE TECHNICIAN MAY PERFORM TROUBLESHOOTING. AFTER WARRANTY PERIOD, IT IS RECOMMENDED THAT TROUBLESHOOTING BE PERFORMED BY AN AUTHORIZED RICON SERVICE TECHNICIAN.

4. INTERLOCK INDICATOR DIAGNOSTICS

The purpose of a vehicle interlock system is to prevent operation of lift if an unsafe condition is present. When vehicle interlock systems are interfaced with lift circuitry, the interlock indicator shows whether or not interlock is providing power to lift, or not. It does not indicate proper operation of the interlock. The light is interfaced with the electrical system so that no matter which interlock system/method is used, the light will be ON when interlock allows electrical power to lift and OFF when interlock has disabled power to lift. When there is no interlock system installed, the light stays illuminated at all times.

A light-assembly is installed in the position where door operator circuit breaker would normally be mounted on all lift assemblies **without** optional door operator. The light indicates power is supplied to signal portion of electrical system, and will aid in diagnosing electrical problems.

TABLE 3-2: INTERLOCK INDICATOR TROUBLESHOOTING GUIDE

SYMPTOM	POSSIBLE CAUSE
Light is not lit, lift does not operate.	Control system circuit breaker is tripped.
	Interlock system is not allowing power to lift due to an unsafe condition or a faulty interlock.
Light is not lit, lift operates.	Light needs to be replaced.
Light is lit, lift works in an unsafe condition.	Interlock is not functioning.
Light is lit, lift does not operate.	There is a problem with electrical system, either with power or signal side. Both will have to be checked, but start with power side since it is less complicated.

END OF TABLE

TABLE 3-3: LIFT OPERATIONAL TROUBLESHOOTING GUIDE			
SYMPTOM		**POSSIBLE CAUSE**	**REMEDY**
HYDRAULIC FLUID LEAKS		Loose hydraulic fitting.	Make sure fitting is PROPERLY tightened.
		Hydraulic component defective.	Discontinue use of lift until repairs are made by an authorized Ricon service technician.
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 lightly-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 lightly-snug.
		Hydraulic hose or fitting leak.	Contact an authorized Ricon service technician 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 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.)
END OF TABLE			

J. HYDRAULIC CIRCUIT DIAGRAM

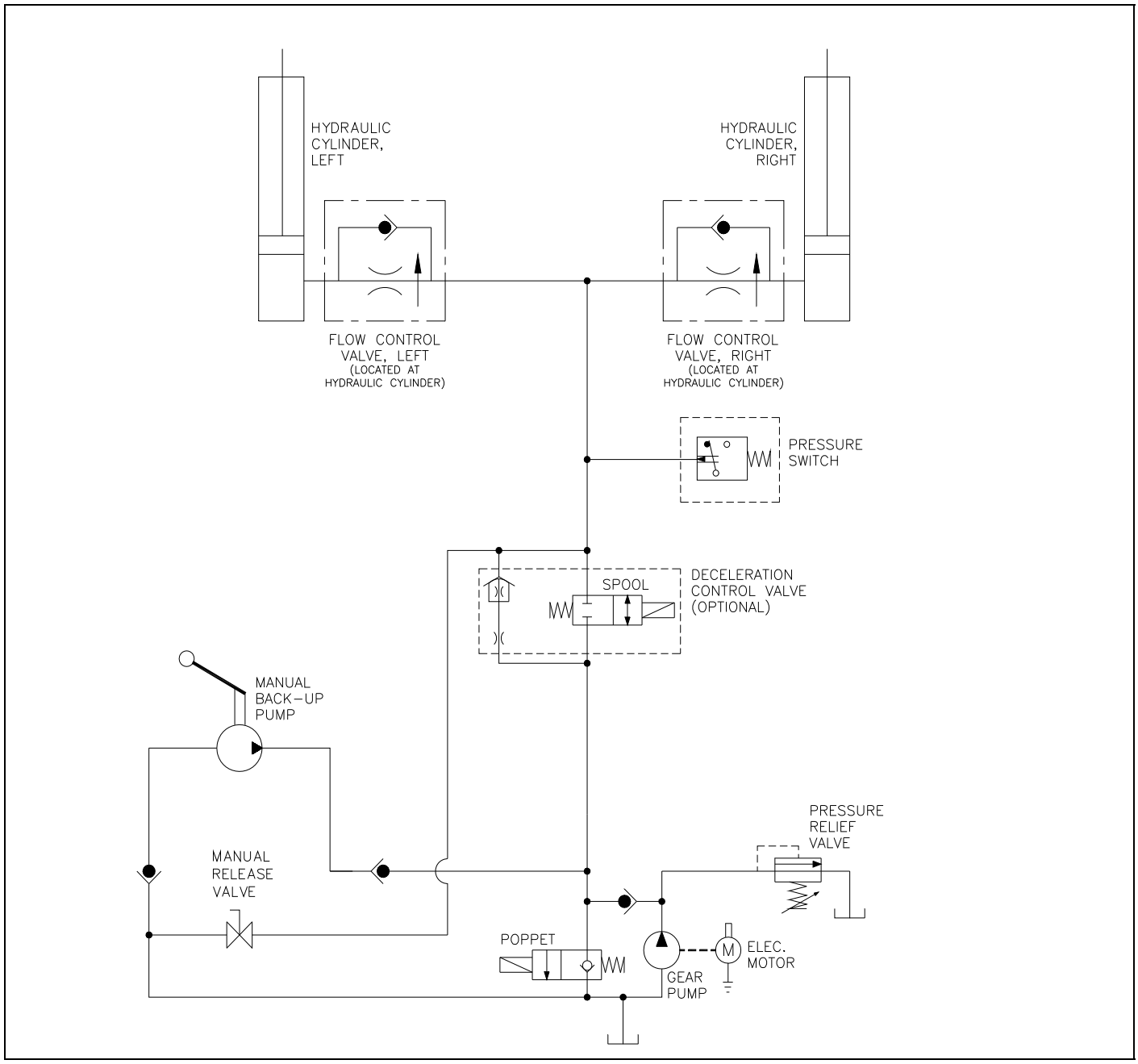


FIGURE 3-2: K-SERIES HYDRAULIC CIRCUIT DIAGRAM

K. ELECTRICAL WIRING DIAGRAMS

1. DIAGRAM LEGEND

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
END OF TABLE			

f. Electrical Connector Description

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

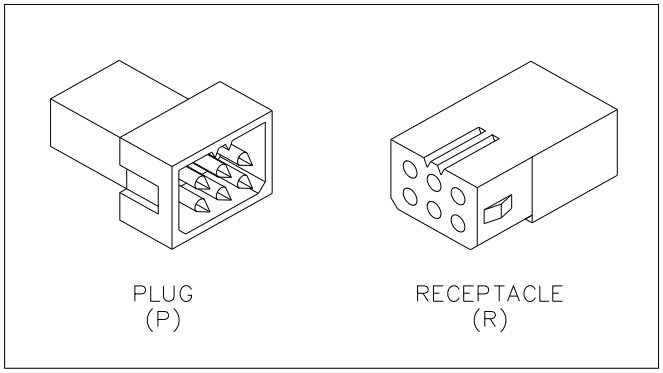


FIGURE 3-3: MOLEX CONNECTORS

g. 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 Stow Attempt – IN followed by DC
UP	Pump Up – Used by UP and IN
UPA	Up Attempt – Up must be enabled

FIGURE 3-4: DIAGRAM LABEL CHART

h. Electrical Symbols

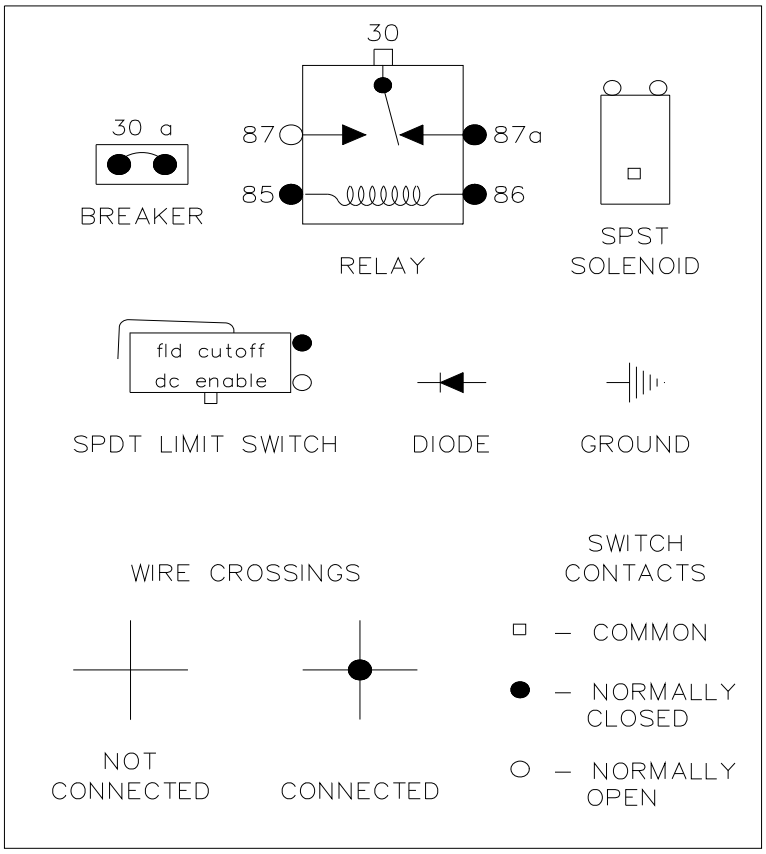


FIGURE 3-5: ELECTRICAL WIRING DIAGRAM SYMBOLS

2. K-SERIES LIMIT SWITCH STATES

Refer to **Figure 3-6**. The limit switch actuation diagram shows state of all limit switches as platform travels from fully closed, to vehicle floor level, and to ground level. The solid (▬) line indicates normally CLOSED portion of switch is operational, while the two thin lines (=) indicates normally OPEN portion of switch is operational. The dotted lines (■■■) are used to show switch states beyond normal travel boundaries of platform. This is useful in showing the operation of switches which change states at folded or ground level positions. For proper operation of lift, the switch actuations must overlap as shown.

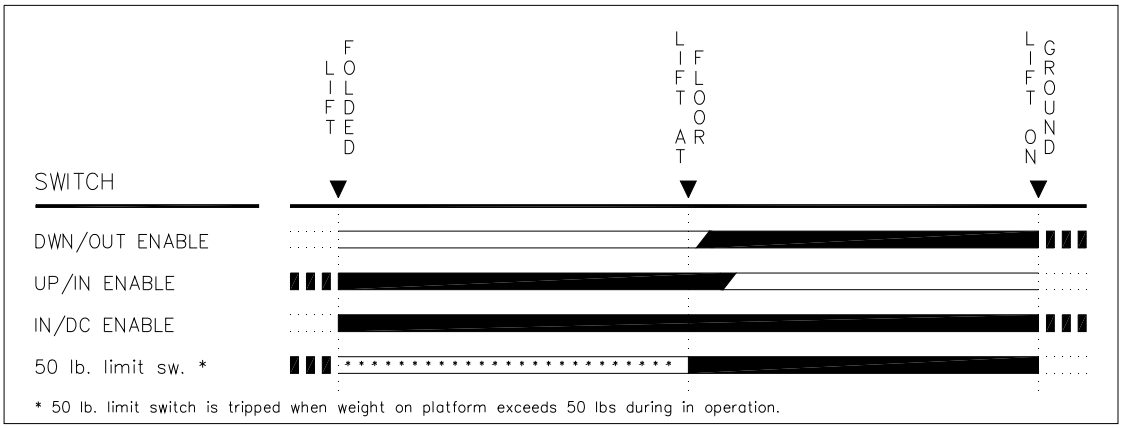


FIGURE 3-6: LIMIT SWITCH ACTUATION DIAGRAM

3. WIRING DIAGRAMS

Refer to following pages.

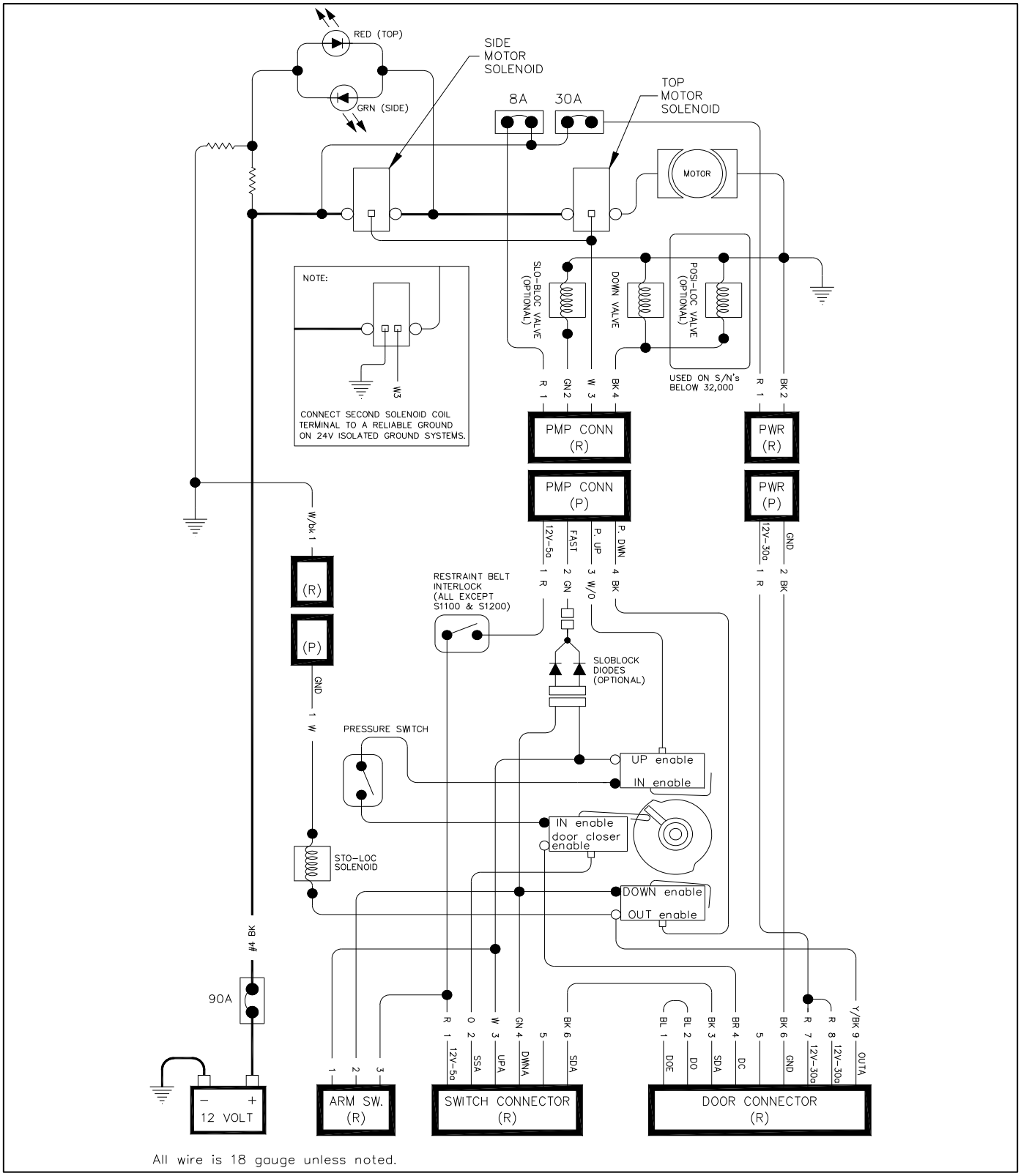


FIGURE 3-7: WIRING DIAGRAM FOR LIFT W/DOOR OPERATOR

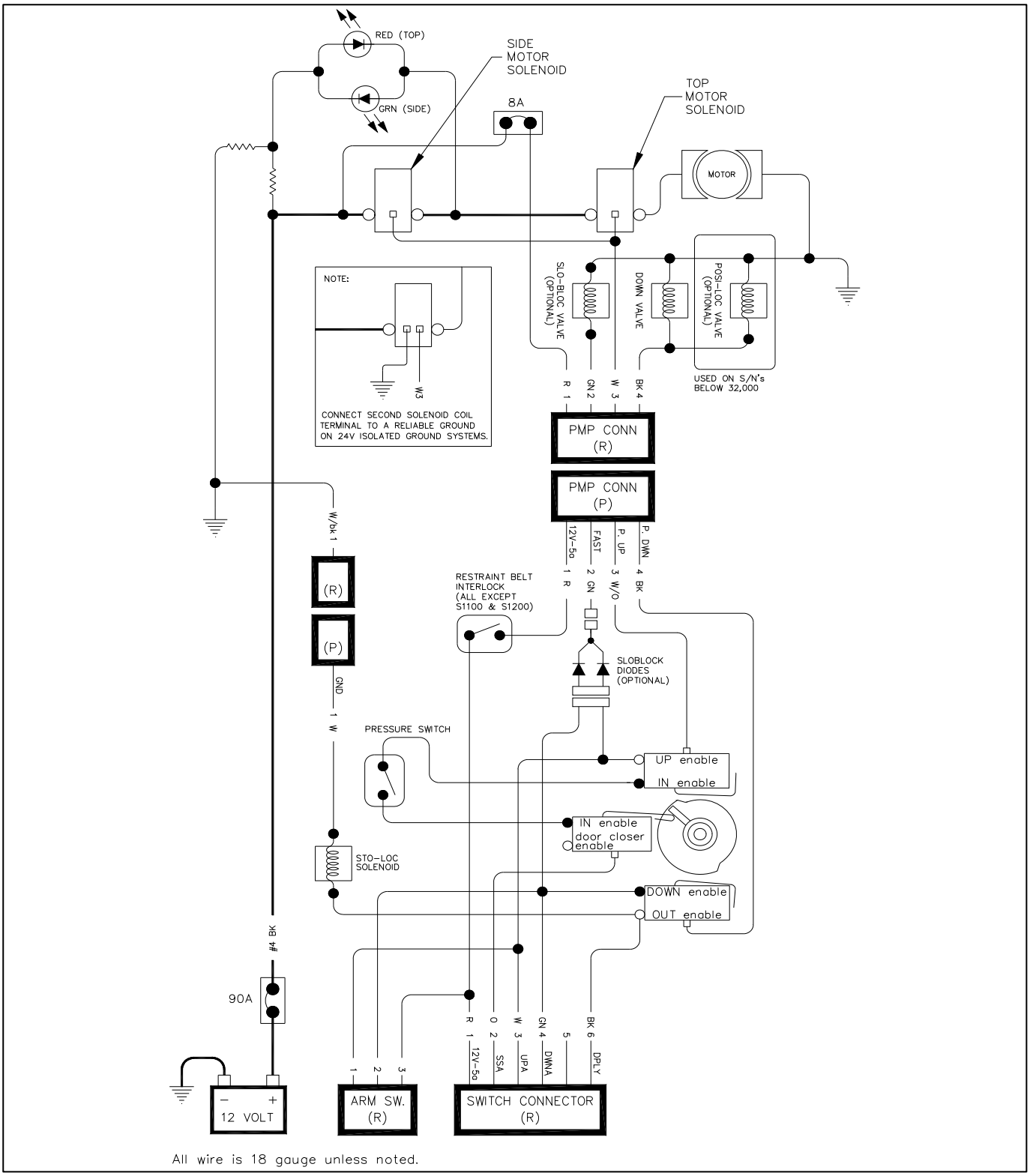
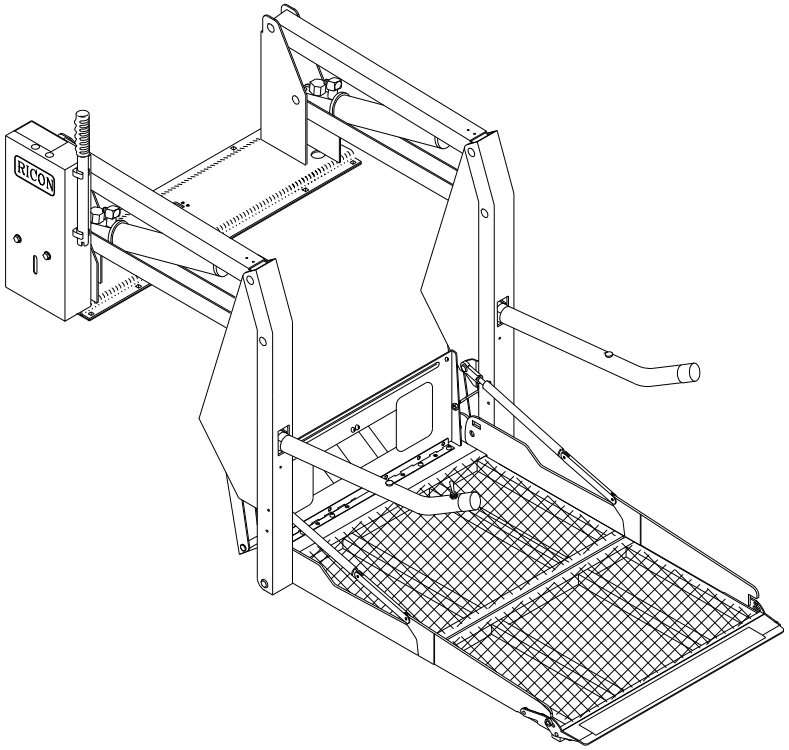


FIGURE 3-8: WIRING DIAGRAM FOR LIFT W/O DOOR OPERATOR

IV. SPARE PARTS

This chapter contains parts diagrams and parts list for the Ricon KlearVue Wheelchair Lift. The exploded view of each major lift assembly shows individual or kit components referenced by numbers. On each associated list is the reference number, a part description, the quantity used and the Ricon part number. For part numbers of lift decals, refer to the “Decal Locations and Part Numbers” **Figure 2-22** in **Chapter II** of this manual.



PARTS DIAGRAMS PAGE

FIGURE 4-1: MONARCH HYDRAULIC POWER UNIT #1 ... 4-2
FIGURE 4-2: HYDRAULIC SYSTEM ... 4-4
FIGURE 4-3: ELECTRICAL SYSTEM ... 4-6
FIGURE 4-4: PENDANT ... 4-8
FIGURE 4-5: K-LIFT FOLDING PLATFORM ASSEMBLY, 1200 ... 4-10
FIGURE 4-6 K-LIFT FOLDING PLATFORM ASSEMBLY, 2003 & 2005 ... 4-12
FIGURE 4-7 TRAVELING FRAME ... 4-14
FIGURE 4-8 K-1200 HANDRAIL ASSEMBLY ... 4-18
FIGURE 4-9 K-2005 (ADA) HANDRAIL ASSEMBLY ... 4-20

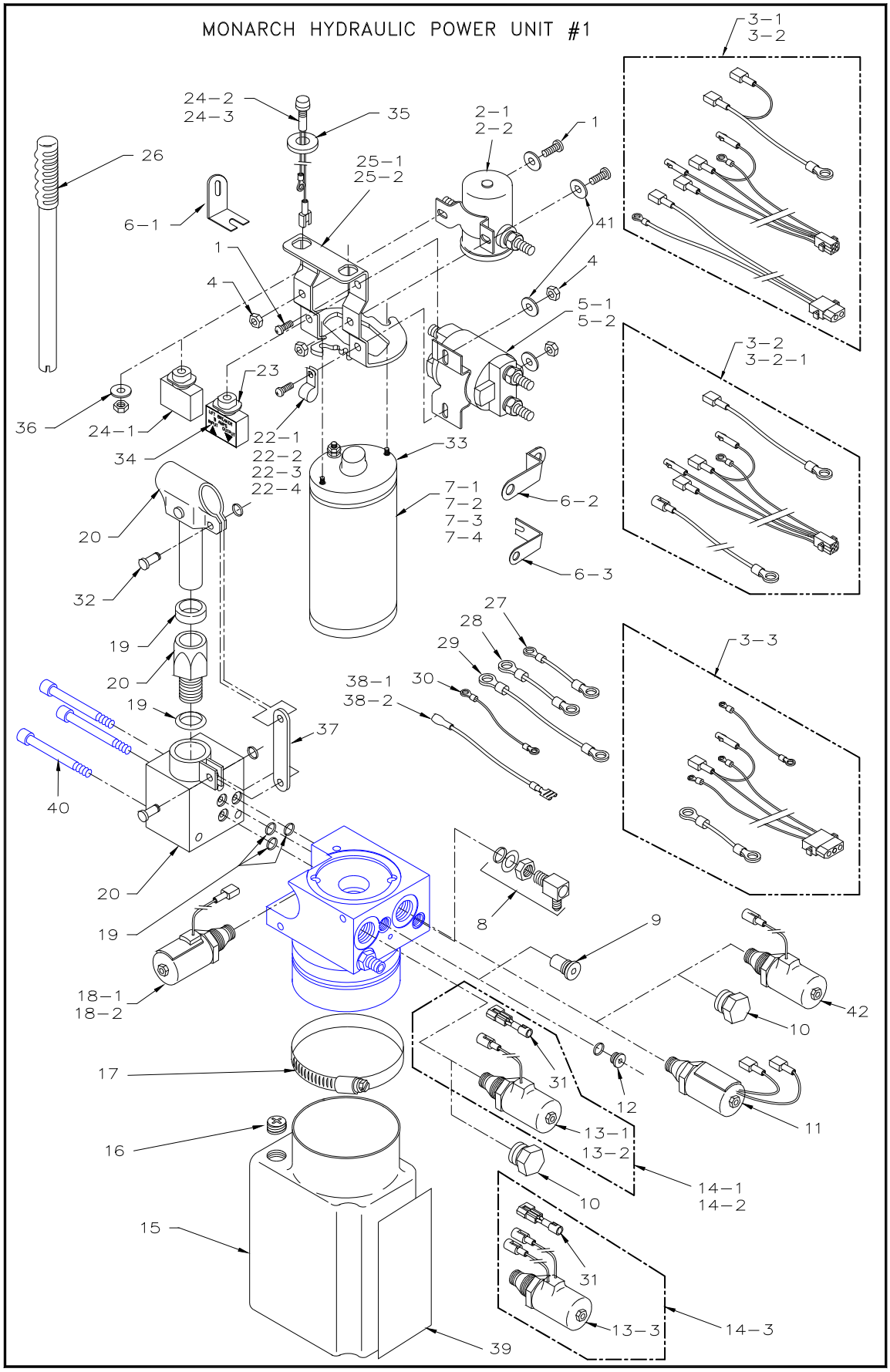


FIGURE 4-1: MONARCH HYDRAULIC POWER UNIT #1

MONARCH HYDRAULIC POWER UNIT #1

REF	DESCRIPTION	QTY	PART NO.
1	MS, 10-24 X ½ PHIL PAN, SELF TREAD	3	28111T
2-2	SOLENOID, SPST, 12V	1	26444
2-2	SOLENOID, SPST, 24V	1	26449
3-1	HARNESS, PUMP, W/DOOR INTERLOCK	1	V2-ES-100
3-2	HARNESS, PUMP, W/OUT DOOR INTERLOCK	1	V2-ES-150
4	NUT, HEX, 10-24 (BAG OF TEN)	3	14489
5-1	SOLENOID, DPST, 12V	1	26447
5-2	SOLENOID, DPST, 24V	1	26450
6-1	BUS BAR, MOTOR/SOLENOID (SP SOLENOID)	1	V2-ES-034
6-2	BUS BAR MOTOR/SOLENOID (DP SOLENOID) (32000-95999)	1	UV-ES-040
6-3	BUS BAR (SN 96000-)	1	13087
7-1	MOTOR ASSY, 12V, 3", MONARCH PUMP (SN 32000-95999)	1	V2-SH-115
7-2	MOTOR ASSY, 24V, 3", MONARCH PUMP (SN 32000-95999)	1	V2-ES-116
7-3	MOTOR ASSY 12V ISKRA (96000-)	1	14332
	MOTOR ASSY, W/BRACKET, 12V ISKRA	1	14345
7-4	MOTOR ASSY 24V ISKR (SN 96000-)	1	14333
	MOTOR ASSY, W/BRACKET, 24V ISKRA	1	14346
8	FITTING, "L" ¼" SAE O-RING BOSS, ¼" JIC	1	V2-SH-011
9	DECELERATION VALVE, PARTS KIT	1	V2-SH-279
10	PLUG, ¾-16 CAVITY, W/O-RING	2	V2-SH-001
11	SWITCH, HYDRAULIC PRESSURE	1	15207
12	PLUG WITH O-RING	1	V2-SH-182
13-1	HYD SPOOL VALVE ASSY., 12V DELTROL	1	V2-SH-175
13-2	HYD SPOOL VALVE ASSY., 24V DELTROL	1	V2-SH-176
14-1	SPOOL VALVE KIT, 12V, ADA APPLICATIONS	1	01176
14-2	SPOOL VALVE KIT, 24V, ADA APPLICATIONS	1	01177
15	RESERVOIR, RICON POWER UNIT, PLASTIC	1	V2-SH-108
16	PLUG, RESERVOIR, BREATHER FILLER	1	V2-SH-106
17	CLAMP HOSE	1	V2-SH-106
18-1	HYD.POPPET VALVE ASSY., 12V DELTROL	1	V2-SH-105
18-2	HYD. POPPET VALVE ASSY., 24V DELTROL	1	V2-SH-136
19	SEAL KIT, MANUAL BACK-UP PUMP	1	V2-SH-220
20	BACK-UP PUMP, MANUAL W/OUT HANDLE	1	V2-SH-210
21	BRACKET, TENSION LINK, MONARCH PUMP	1	V2-SH-149
22	CABLE CLAMP, 3/8"	1	25516
23	CIRCUIT BREAKER, 8 AMP, WITH DECAL	1	V2-SH-005
24-1	CIRCUIT BREAKER, 30 AMP	1	26510
24-2	LIGHT-LIFT ARMED INDICATOR, 12V (SN's 61878-)	1	UL-ES-034
24-3	LIGHT-LIFT ARMED INDICATOR, 24V (SN's 61878-)	1	V2-ES-016
25-1	BRACKET, SOLENOID MOUNTING (32000-95999)	1	V2-SH-127
25-2	BRACKET, SOLENOID ISKRA (SN 96000)	1	10507
26	HANDLE, MANUAL BACK-UP PUMP	1	V2-SH-111
27	JUMPER, DPDT SOLENOID	1	ELJ00121
28	JUMPER, DPDT SOLENOID W/ISOLATED GROUND	1	ELJ00122
29	JUMPER, DPDT SOLENOID	1	ELJ02055
30	JUMPER, DPDT SOLENOID	1	ELJ03061
31	DIODE BLOCK ASSEMBLY	1	08232
32	PIN & RETAINING RING-BACKUP PUMP	2	V2-SH-017
33-1	KIT, PUMP MOTOR BRUSH SET (SN 32000-95999)	1	V2-SH-115B
33-2	KIT, BRUSH SET (SN 96000-)	1	13087
34	DECAL, 8 AMP CIRCUIT BREAKER	1	26290
35	LIFT ARMED INDICATOR LIGHT ADAPTER (SN's 61878-)	1	UL-ES-034
36	WASHER 7/16 FLAT (SN's 61878-)	1	28291
37	BRACKET, TENSION LINK, MONARCH PUMP	1	V2-SH-149
38-1	JUMPER, SWITCH, PRESSURE, RH PUMP	1	15860
38-2	JUMPER, SWITCH, PRESSURE, LH, PUMP	1	15861

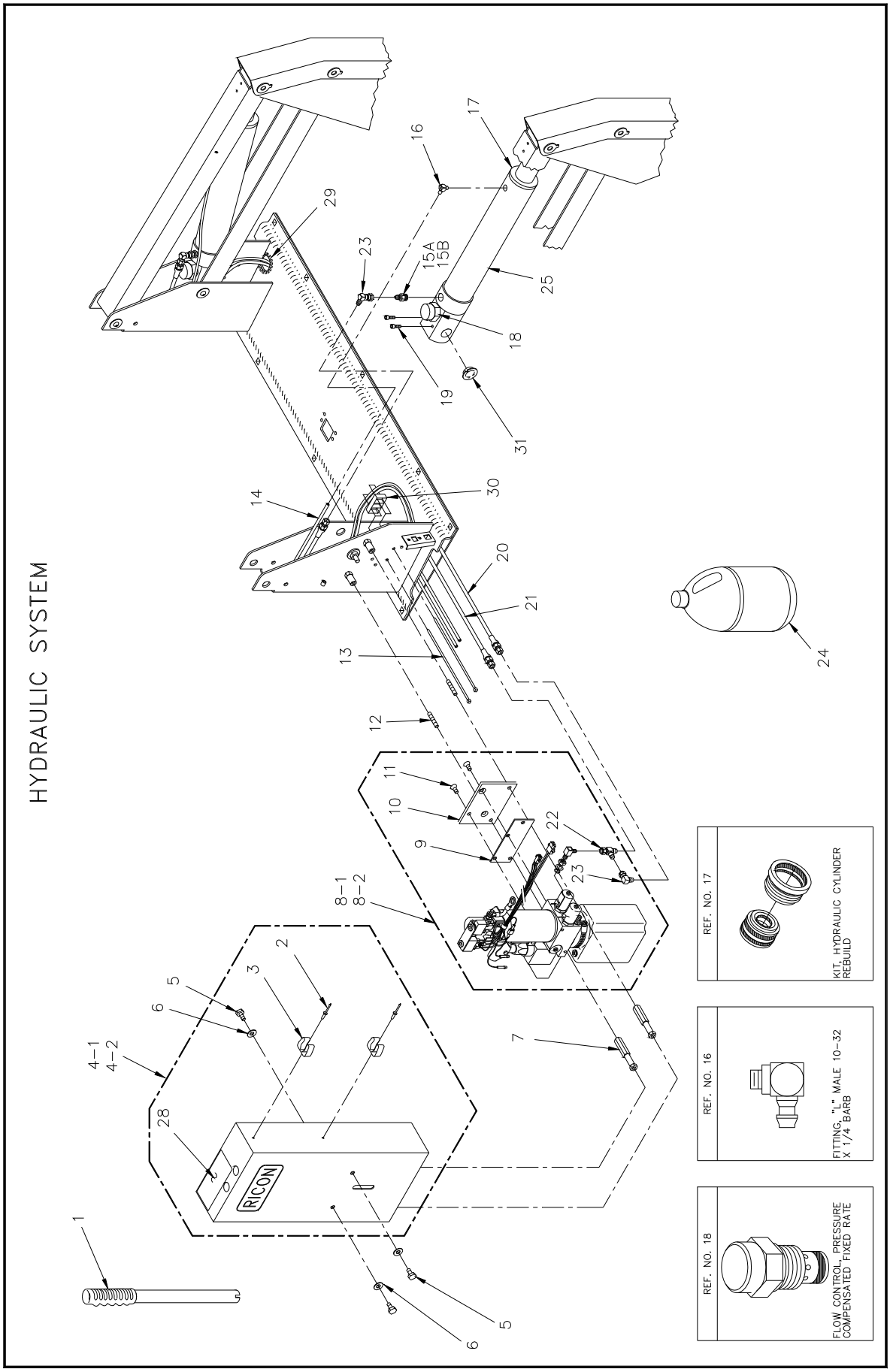


FIGURE 4-2: HYDRAULIC SYSTEM

HYDRAULIC SYSTEM

REF	DESCRIPTION	QTY	PART NO.
1	HANDLE, MANUAL BACK-UP PUMP	1	V2-SH-111
2	RIVET – 3/16 X ½' SD64BS BLIND, STEEL, DOME	2	14-30-408
3	CLIP, BACK-UP PUMP HANDLE, RETAINING	2	25543
4	PUMP-COVER, RH; S-SERIES	1	V2-CV-121
4-1	COVER-PUMP L.H. MECH. ASSY.	1	V2-CV-220
4-2	COVER, PUMP, S-SERIES 9 (SN's 32000-34999)	1	V2-CV-031
5	BOLT, HEX 5/16-18 X 0.625 (BAG OF TEN)	3	14495
6	WASHER, 5/16" FLAT SAE	3	28277
7	HEX ROD, PUMP STANDOFF	2	V2-CV-015
8	PUMP NOTOP, UV RES, 2KPSI	1	PMP212002007
	PUMP W/INTLK & ANTIDRIFT 12V	1	PM212090110
8-1	S-SERIES PUMP, 12V W/COMMOM BRACKET	1	PM212090100
8-2	S-SERIES PUMP, 24V W/COMMOM BRACKET	1	PM224110100
9	PLATE, PUMP COVER MOUNT	1	V2-AC-71
10	PLATE, PUMP MOUNTING	1	V2-AC-70
11	SOCKET, FLAT, 5/16-18 X ¾" (BAG OF TEN)	2	14499
12	STUD, 5/16-18 X 1.75" (BAG OF TEN)	2	14500
13	CABLE TIE, STD X 1.5 DIA, BLACK, SPEACIAL	2	255201
14	TUBE, BLK POLYRETHANE, 6MM/4MM (PER FOOT)	9'	22-02-230
15A	ADAPTOR, STRT ¼ NPT MALE (SN's. 32000-63999)	2	V2-SH-84
15B	ADAPTER - #6 SAE MALE -# JIC MALE (SN's 64000-)	2	26591
16	FITTING, "L", MALE 10-32 – ¼ BARB	2	V2-SH-16
17	KIT, CYLINDER REPAIR, S-SERIES GLAND & NUT	2	V2-SH-56
18	FLOW CONTROL, PRESSURE COMPENSATED, FIXED RATE	2	V2-SH-70
19	SOCKET CAP, ¼-20 X 1 (BAG OF TEN)	4	14491
20	HOSE ASSY., 61"X ¼ JIC X ¼ JIC	1	V2-SH-009
21	HOSE ASSY., 25" X ¼ JIC X ¼ JIC	1	V2-SH-008
22	FITTING, RUN TEE, ¼ JIC M-M-F	1	V2-SH-012
23	FITTING, "L", ¼ JIC M-F SWIVEL	3	VS-SH-06
24	OIL, HYDRAULIC, TEXACO 01554, MEETS MIL-H-5606G	1 GAL	20-16-051
25	CYLINDER ASSY., S-1200	2	VS-SH-105
28	DECAL, MANUAL OPERATION (TOP, W/CB)	1	26214
29	GROMMET, CATERPILLAR, 3/16	8.5"	26647
30	SPACER, CABLE OR HOSE, PANDUIT	2	25557
31	BUSHING 12FDU06, ¾"D X 3/8	4	25381

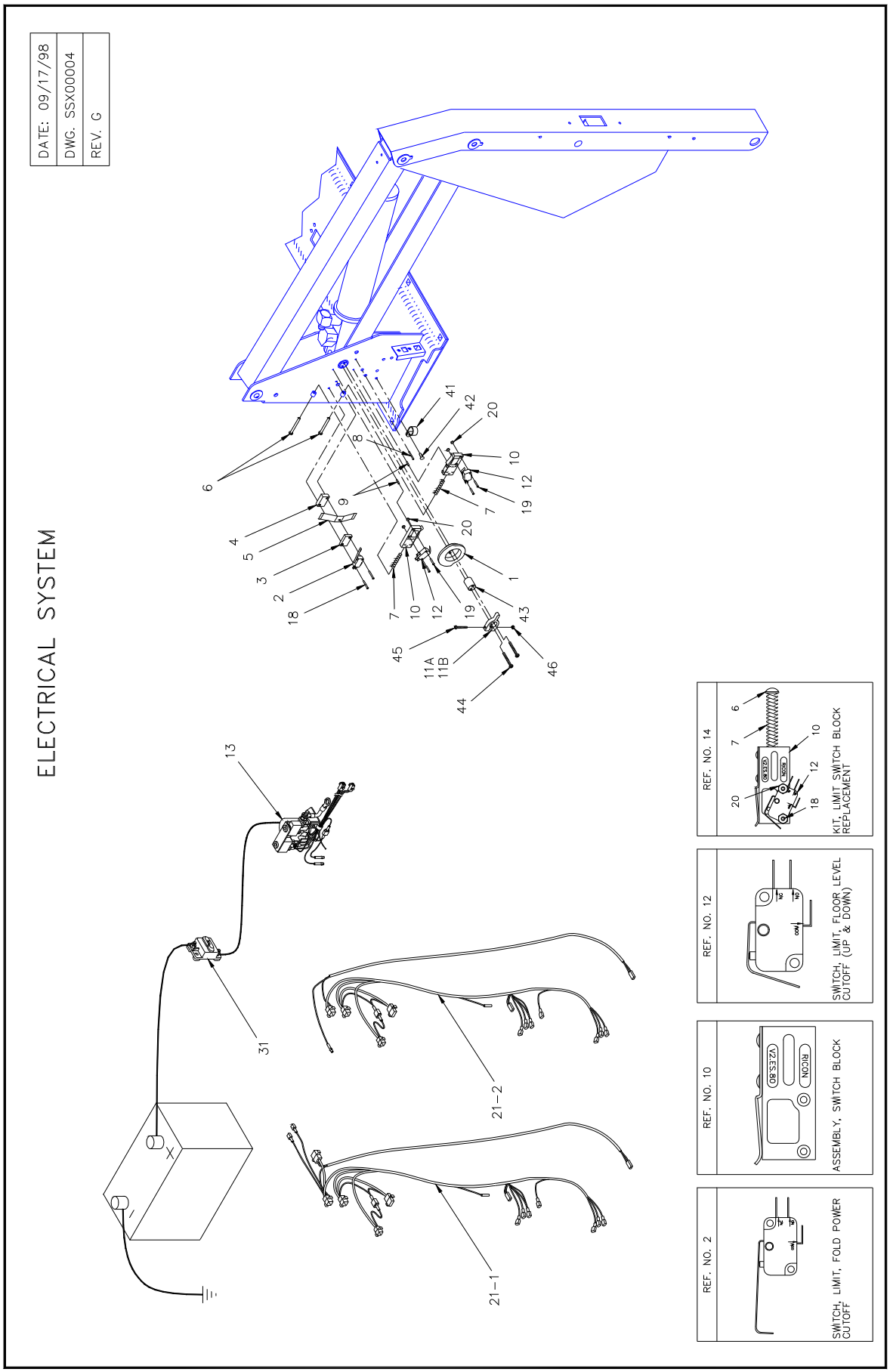


FIGURE 4-3: ELECTRICAL SYSTEM

ELECTRICAL SYSTEM

REF	DESCRIPTION	QTY	PART NO.
1	CAM, LIFT CONTROL (SN's 62560-)	1	V2-AC-107
2	SWITCH, LIMIT, FOLD POWER CUTOFF	1	V2-ES-111
3	BLOCK, FOLD CUTOFF SWITCH OFFSET, ¼" 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	SCREW, PHILLIPS ROUND HEAD, 10-24 X 2" (ADJUSTING) BAG OF TEN)	2	14497
7	SPRING, COMPRESSION, .30 OD X 2.06	2	V2-ES-93
8	ROLL PIN, 94 X 1 (TIMING PIN) (BAG OF TEN)	2	14498
9	ROLL PIN, 94 X 50 (SWITCH BLOCK MOUNT) (BAG OF TEN)	2	14496
10	SWITCH BLOCK, ASSY., (UPPER & LOWER)	2	V2-ES-82
11A	ADJUSTING COLLAR, ASSY., FOLD POWER CUTOFF (SN's 32000-62559)	1	V2-BU-89
11B	ACTUATOR, FOLD CUTOFF (SN'S 62560-)	1	V2-AC-089
12	SWITCH, LIMIT, FLOOR LEVEL POWER CUTOFF (UP & DOWN)	2	V2-ES-110
13	COMPONENTS, SOLENOID BRACKET (FOR REPLACEMANT PARTS, REFER TO HYDRAULIC POWER UNIT PARTS LIST DRAWING	-	-
14	KIT, LIMIT SWITCH BLOCK REPLACEMENT	2	V2-ES-61
18	SCREW, MACHINE, 4-40 X 1.25 PHIL PAN (BAG OF TEN)	2	15908
19	SCREW, MACHINE, 4-40 X .75 PHIL PAN (BAG OF TEN)	4	15909
20	NUT, HEX, 4-40 (BAG OF TEN)	4	15903
21-1	HARNESS, MAIN ELECTRICAL, w/INTERLOCK	1	V2-ES-051
21-2	HARNESS, MAIN ELECTRICAL, W/OUT INTERLOCK	1	V2-ES-050
31	CIRCUIT BREAKER, MAIN	1	01010
39	SPRING, EXTIONSION (COVERING CORD V2-ES-25C)	2	25448
40	PLATE, PENDANT SWITCH GUARD, ASSY.	1	V2-ES-035
41	CLAMP, CABLE 11/16 (SN's 53168-)	1	255161
42	MS, 10-24 X ½ PHIL PAN	1	28111
43	PIN EXTENSION FOLD CUTOFF (SN's 62560-) (BAG OF TEN)	1	15914
44	MS 10-24 X 1 ¾ PHIL PAN (SN's 62560-)(BAG OF TEN)	2	15915
45	MS 8-32 X 1 ¼ PHIL PAN (SN's 62560-) (BAG OF TEN)	1	15906
46	NUT-HEX 8-32 NYLON INSERT (SN'S 62560-) (BAG OF TEN)	1	15907
47	COVER, ELEC SYSTEM; S	1	V2-CV-110

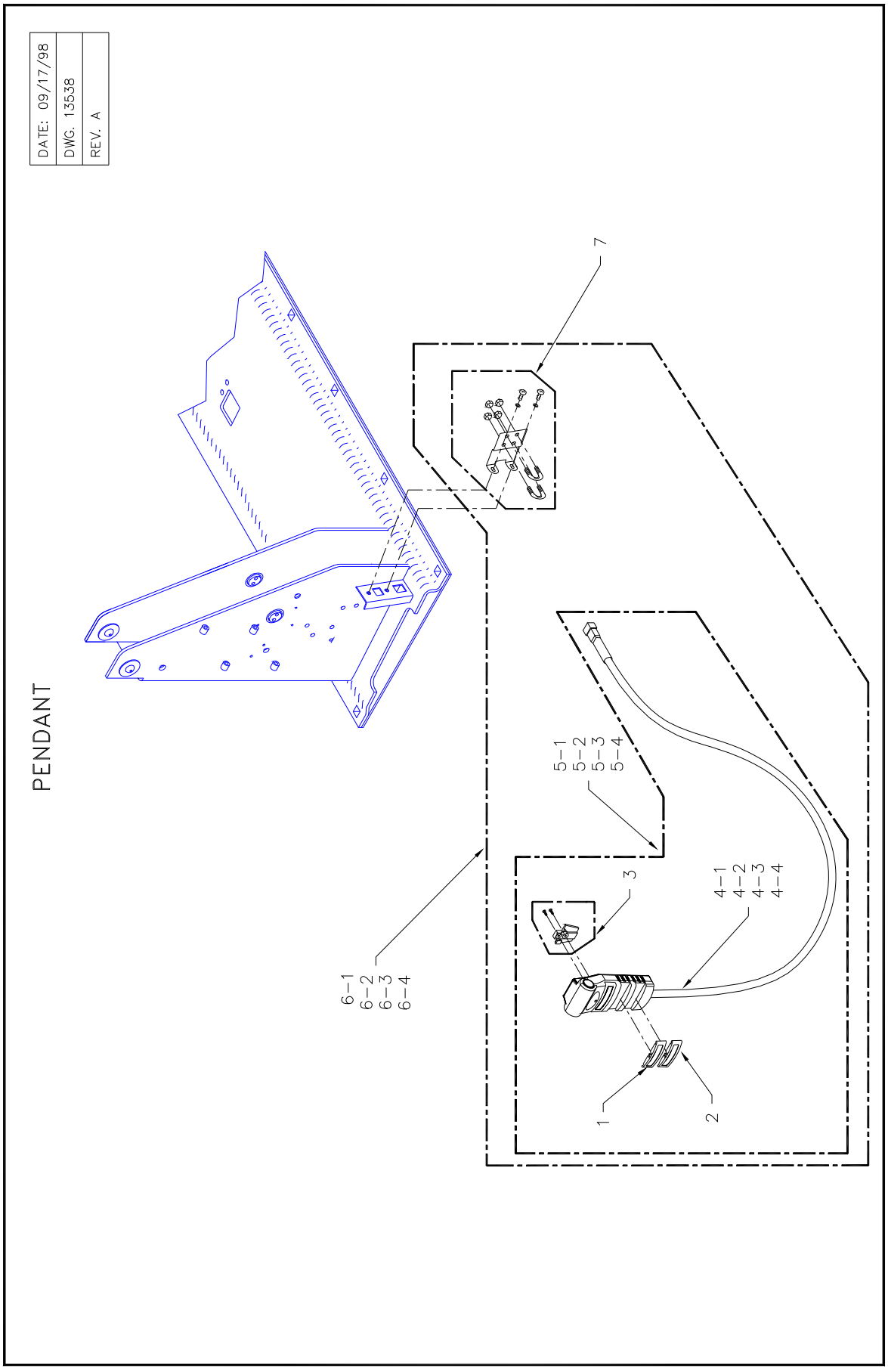


FIGURE 4-4: PENDANT

PENDANT

REF	DESCRIPTION	QTY	PART NO.
1	SPARE PARTS, STOW/DEPLOY BUTTON	1	14731
2	SPARE PARTS, UP/DOWN BUTTON	1	14732
3	SPARE PARTS, V BRACKET, PLASTIC	1	14733
5-1	PENDANT STANDARD	1	12848
5-2	PENDANT, STANDARD CONFIG, COIL CORD	1	14710
5-3	PENDANT, STANDARD CONFIG, 10 FT CORD	1	14711
5-4	PENDANT, STANDARD CONFIG, STEEL CORD	1	14712
6-1	KIT PENDANT, 7 FT, UNIVERSAL	1	14727
6-2	KIT PENDANT, COILCORD	1	14728
6-3	KIT, PENDANT, 10 FT	1	14729
6-4	KIT PENDANT, STEEL	1	14730
7	KIT, CTL HRNS STRAIN RELIEF;	1	01007

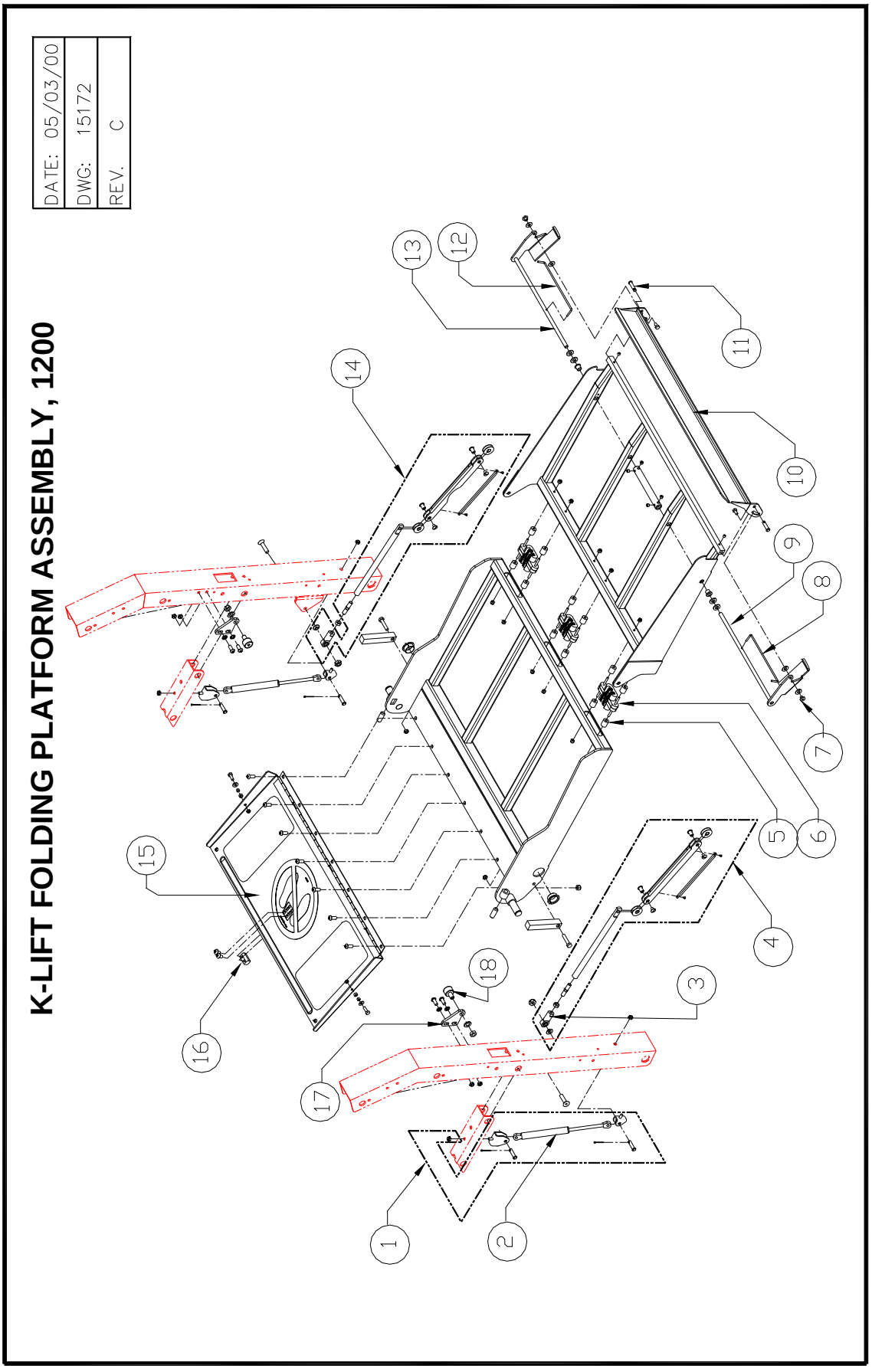


FIGURE: 4-5: K-LIFT FOLDING PLATFORM ASSEMBLY, 1200

K-LIFT FOLDING PLATFORM ASSEMBLY, 1200

REF	DESCRIPTION	QTY	PART NO.
1	KIT, RETROFIT, GAS SPRING	2	19318
2	SPRING PNEUMATIC ASSIT	2	R5-SP-502
3	ROD END, 3/8 UNF-LH THREAD	2	15162
4	KIT, ASSY, LINK, RH	1	19507
5	HINGE, SPLIT PLTFRM	1	VS-BU-01
6	HINGE, CONCEALED, PLTFRM	3	13351
7	NUT, TEE, ¼-20 X 14LNECK, SST (BAG OF TEN)	1	14485
8	TORSION BAR, LH (3030)	1	V3-SP-21
9	ACTUATOR WLDT, ROLLSTOP, LH	1	V2-FL-95
10	ROLLSTOP ASSY 4” X 30”	1	V2-PF-160
11	PIN, CLEVIS 5/16 X 1-1/4 (BAG OF TEN)	1	19513
12	TORSION BAR, RH (3030)	1	V3-SP-22
13	ACTUATOR WLDT, ROLLSTOP, RH	1	V2-FL-94
14	KIT, ASSY, LINK, LH	1	19508
15	ASSY, ROLLSTOP, INNER, 30”	1	V2-PF-141
16	CATCH, BASE LATCH	1	V2-AC-103
17	ADJUSTMENT, CAM ROLLER FOLDING	2	15157
18	CAM FOLLOWER, 1X 5/8, 7/16-20	1	40-20-007

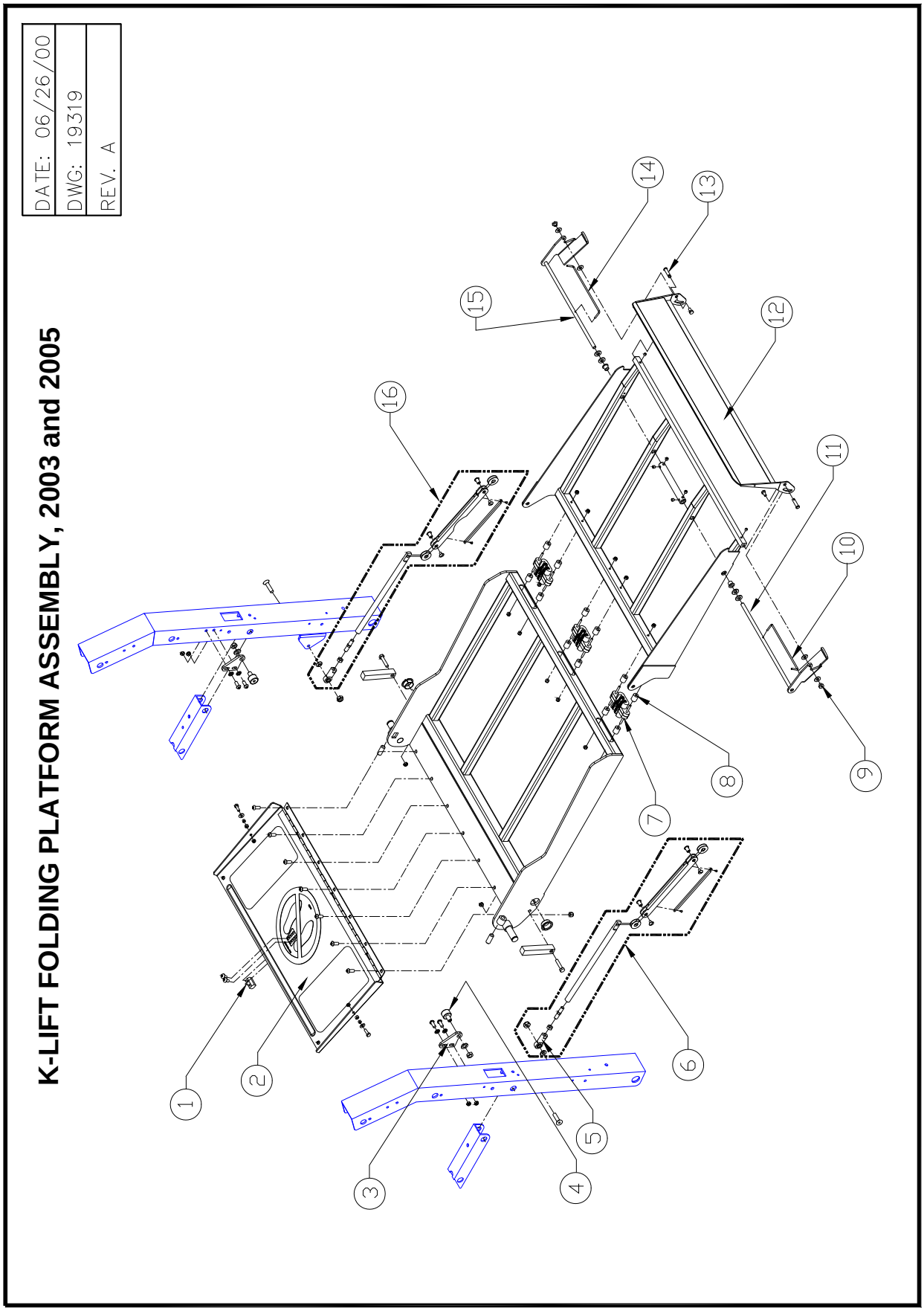


FIGURE 4-6: K-LIFT FOLDING PLATFORM ASSEMBLY, 2003 & 2005

K-LIFT FOLDING PLATFORM ASSEMBLY, 2003 & 2005

REF	DESCRIPTION	QTY	PART NO.
1	CATCH, BASE LATCH	1	V2-AC-103
2	ASSY, ROLLSTOP, INNER, 30”	1	V2-PF-141
3	ADJUSTMENT, CAM ROLLER, FLDG PLATFORM	2	15157
4	CAM FOLLOWER, 1X 5/8, 7/16-20	2	40-20-007
5	ROD END, 3/8-24, UNF-LH THREAD, FE	2	15162
6	KIT, ASSY LINK, RH, 2003/2005	1	19522
7	HINGE, CONCEALED, PLTFR	3	13351
8	HINGE, SPLIT PLTFRM	12	VS-BU-01-21
9	NUT, TEE, ¼-20 X ¼ L NECK SST	1	14485
10	TORSION BAR, LH (3030)	1	V3-SP-21
11	ACTUATOR WLDT, ROLLSTOP, LH	1	V2-FL-95
12	ROLLSTOP ASSY, 4” X 30”	1	V2-PF-160
13	PIN, CLEVIS 5/16 X 1 ¼ #B363	2	V2-FL-93
14	TORSION BAR, RH (3030)	1	V3-SP-22
15	ACTUATOR WLDT, ROLLSTOP, RH	1	V2-FL-941
16	KIT, ASSY LINK, LH, 2003/2005	1	19523

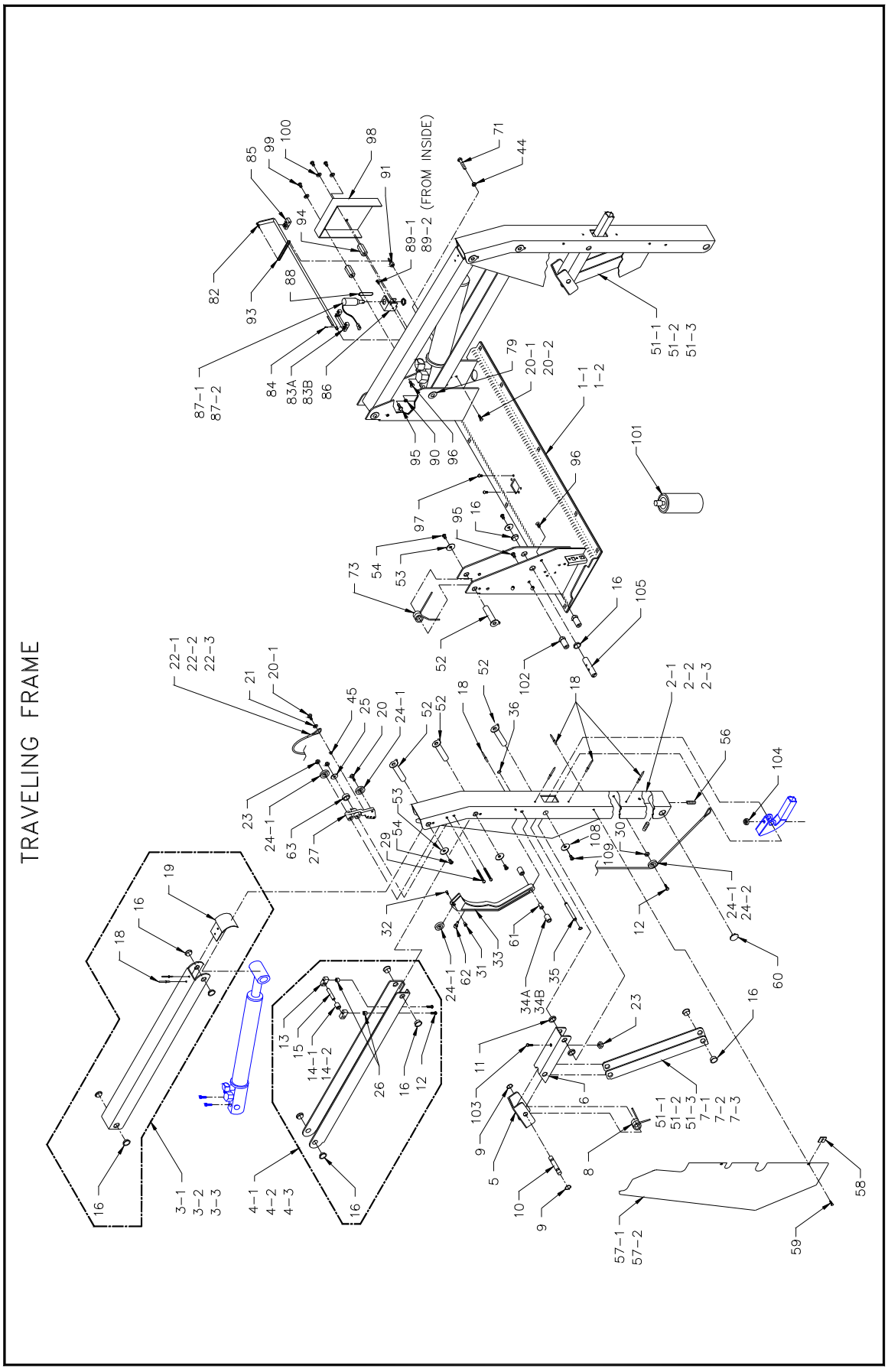


FIGURE 4-7: TRAVELING FRAME

TRAVELING FRAME

REF	DESCRIPTION	QTY	PART NO.
1-1	30", WELD ASSY.	1	V2-BA-044
1-2	32", WELD ASSY.	1	V2-BA-045
2-1	VERTICAL ARM, S1200, WELD ASSY.	2	VS-AC-141
2-2	VERTICAL ARM, S2000, WELD ASSY.	2	VT-AC-141
2-3	VERTICAL ARM, S5000, WELD ASSY.	2	V5-AC-141
3-1	TOP ARM, S1200, MECH. ASSY.	2	VS-AC-250
3-2	TOP ARM, S2000, MECH. ASSY.	2	VT-AC-250
3-3	TOP ARM, S5000, MECH, ASSY.	2	V5-AC-250
4-1	BOTTOM ARM, S1200, MECH. ASSY.	2	VS-AC-252
4-2	BOTTOM ARM, S2000, MECH. ASSY.	2	VT-AC-252
4-3	BOTTOM ARM, S5000, MECH. ASSY.	2	V5-AC-252
6	UPPER, LINK KNUCKLE LEVER, WELD ASSY.	2	VT-AC-070
7-1	LINK, VERTICAL KNUCKLE S1200, ASSY. W/LOAD SENSOR	1	VS-AC-058
7-2	LINK, VERTICAL KNUCKLE S2000, ASSY. W/LOAD SENSOR	1	VT-AC-058
7-3	LINK, VERTICAL KNUCKLE S5000, ASSY. W/LOAD SENSOR	1	V5-AC-058
8	SPRING, KNUCKLE ACTUATOR	2	VT-SP-42
9	RETAINING RING, ¾"	4	14-31-075
10	PIN, SNAP RING, 0.75 OD X 2.145L	2	VT-P1-41
11	SPACER, KNUCKLE LINK	4	VT-BU-42
12	SOCKET BUTTON ¼-20 X 1", SST	6	28805
13	RETAINER, CAM ROLLER	4	V2-AC-025
14-1	ROLLER, IRS CAM (S2000 & S5000)	2	V2-AC-124
14-2	ROLLER, IRS CAM (S1000 & S1200)	2	V2-AC-024
15	PIN, CAM ROLLER	2	V2-P1-094
16	BUSHING, 12FDU04 ¾ X ¼"	24	25386
18	RIVET, 3/16 X ½" BLIND AL	10	15918
19	CAP, END, UPPER PARALLEL ARM	2	V2-AC-89
20-1	BOLT-HEX ¼-20 X ¾ GR5	4	28166
20-2	SOCKET FLAT, ¼-20 X ½, S1100 (BAG OF TEN)	1	15928
21	WASHER ¼ FLAT SAE	2	28273
22-1	KIT, INSTL, IRS CBL ASSY REP; S1200	2	16093
22-2	KIT, INSTL, IRS CBL ASSY REP; S2000	2	16094
22-3	KIT, INSTL, IRS CEL ASSY REP; S5000	2	16095
23	NUT-HEX ¼ - 20 NYLON INSERT (BAG OF TEN)	1	15919
24-1	GROOVED BEARING SR 342-161-DS	8	VS-AH-06
24-2	BEARING- 1" OD GROOVED, 0.25 ID, S1100 (S.N's. 62044)	2	25374
25	WASHER ¼ FENDER 1" OD	2	28275
26	STAND OFF, 0.375 LG, ¼" ID X ½" OD	4	V2-AC-011
27	BLOCK, PULLEY MOUNT, IRS	2	V2-AC-112
29	SOCKET BUTTON HEAD, ¼-20 X 2.25, SST	4	28810
30	BUSHING 5/8 OD X 3/16L	2	VS-AH-13
31	T-NUT, FLAT HEAD, 10-24 X .25 OD X .44L	2	V2-AC-015
32	MS 10-24 X ½ PHIL FLAT	2	28110
33	CAM ASSY, IRS ACTUATOR	2	V2-AC-190
34A	BUSHING, 0.675 OD X 0.407 ID X 0.97 (S.N's. 32000-46979) KIT #01224	4	V2-BU-003
34B	SPACER, RUBBER, IRS CAM (S.N.'s 46980-)	4	V2-BU-078
35	PIN, SNAP RING, .38 D X 3.09 L	2	VS-PI-09
36	RETAINING RING 3/8"	4	14-31-037
45	BUSHING, STEEL, 251D X .32OD X .19L	1	V2-BU-003
51-1	LINK, VERTICAL KNUCKLE S1200 WELD ASSY. W/O LOAD SENSOR	2	VS-AC-069
51-2	LINK, VERTICAL KNUCKLE S2000 WELD ASSY. W/O LOAD SENSOR	2	VT-AC-069
51-3	LINK, VERTICAL KNUCKLE S5000 WELD ASSY. W/O LOAD SENSOR	2	V5-AC-069
52	PIN, LINK ARM, S-SERIES	6	14322
53	WASHER, FENDER 5/16, SST (BAG OF TEN)	9	15921
54	SOCKET BUTTON, 5/16-18 X ½ SST (BAG OF TEN)	9	14494
55-1	PIN, SNAP RING, 0.75 D X 3.047 L (USE WITH 107-1)	2	VT-PI-44
55-2	PIN-LINK, ARM, S-SERIES (USE WITH 107-2, 108 AND 109	2	14322
56	SCREW, SOCKET SET, 3/8-16 X 3/8" COP PT.	4	14-32-706
57-1	SHIELD, PINCH POINT, PVC PLASTIC S1200/S2000	4	V2-AC-057

57-2	SHIELD, PINCH POINT, PVC PLASTIC S5000	4	V5-AC-057
58	NUT, SPRING, #10	8	14-50-402
59	SCREW, 10-24 X ½ PHIL PAN	8	28111
60	PLUG, HOLE BLK. NYLON 1" LOW PROFILES (S.N's. 52246)	2	25563
61	BEARING, NYLINER 3/8 ID 11/16 LONG (S.N's. 56000-)	2	25562
62	BUMPER, BUTTON IRS CAM (S.N's. 56000-)	2	25561
63	BUMPER, IRS CAM ANTI-RATTLE (S.N's. 56000-)	2	V2-BU-090
71	BOLT HEX ¼-20 X 1 ¾ PL GR5	1	14-02-028
73	SPRING, UPPER PARALLEL ARM	2	V2-SP-97
79	PIN, CAM	1	V2-PI-097
80	SCREW, SET 5/16-18 X 1"	1	14-32-615
81	ADAPTER, PIN CAM S-SERIES	1	V2-P1-096
82	WELD ASSY., LATCH RELEASE	1	V2-AC-006
83	BLOCK, CENTER MOUNTING, BASE LATCH (S.N's. 44720)	1	V2-AC-102
84	DOWEL PIN, .094 DIA X .38 L	1	283485
85	BLOCK, MOUNTING, BASE LATCH	1	V2-AC-001
86	BRACKET, PULL SOLENOID STOLOK SOLENOID	1	V2-AC-108
87-1	SOLENOID, ASSY., S-SERIES, 12V (S.N's. 50517-)	1	V2-ES-127
87-2	SOLENOID, ASSY., S-SERIES, 24V (S.N's. 50517-)	1	V2-ES-128
88	CLIP, SPRING, BASE LATCH	1	V2-AC-009
89-1	SCREW 10-24 X ½ PHIL PAN	2	28111
89-2	SOCKET FLAT 10-24 X ½ SST S1100	2	28137
90	NUT-HEX 10-24 NYLON INSERT	2	28305
91	PIN, SPRING MOUNTING	1	V2-P1-095
93	SPRING-DOOR HELPER .38OD X 3.5"	1	V2-SP-093
94	BUSHING LATCH COVER	2	V2-BU-080
95	BUSHING LATCH COVER	2	V2-BU-080
96	SOCKET, FLAT 5/16-18 X ¾ (BAG OF TEN)	2	14499
97	SOCKET BUTTON, ¼-20 X ½" SST (BAG OF TEN)	6	15902
98	COVER, BASE LATCH (S.N's 50517-)	1	V2-CV-123
99	BOLT HEX 5/16-18 X 0.625 (BAG OF TEN)	3	14495
100	WASHER, 5/16" FLAT, SAE	3	28277
101	TOUCH-UP PAINT SPRAY, CHARCOAL	1	10-04-002
102	BUSHING, E-COVER MOUNT	2	V2-BU-081
103	BOLT-HEX ¼-20 X 1 GR5 (BAG OF TEN)	2	14493
104	GROMMET, 5/16" ID, ½ OD, 3/32"	2	26665
105	PIN-CONTROL CAM, S-SERIES (S.N's. 62560-)	1	V2-PI-091
106	RIVET-3/16-5/8 SD68BS BLIND, STEEL	4	14-30-410
107-1	RETAINING RING, ¾"	4	14-31-075
107-2	WASHER, DOUBLED KEY HOLE	2	14719
108	WASHER, FENDER 5/16, SST (BAG OF TEN)	2	15921
109	SOCKET, BUTTON, 5/16-18 X ½ SST (BAG OF TEN)	2	14494

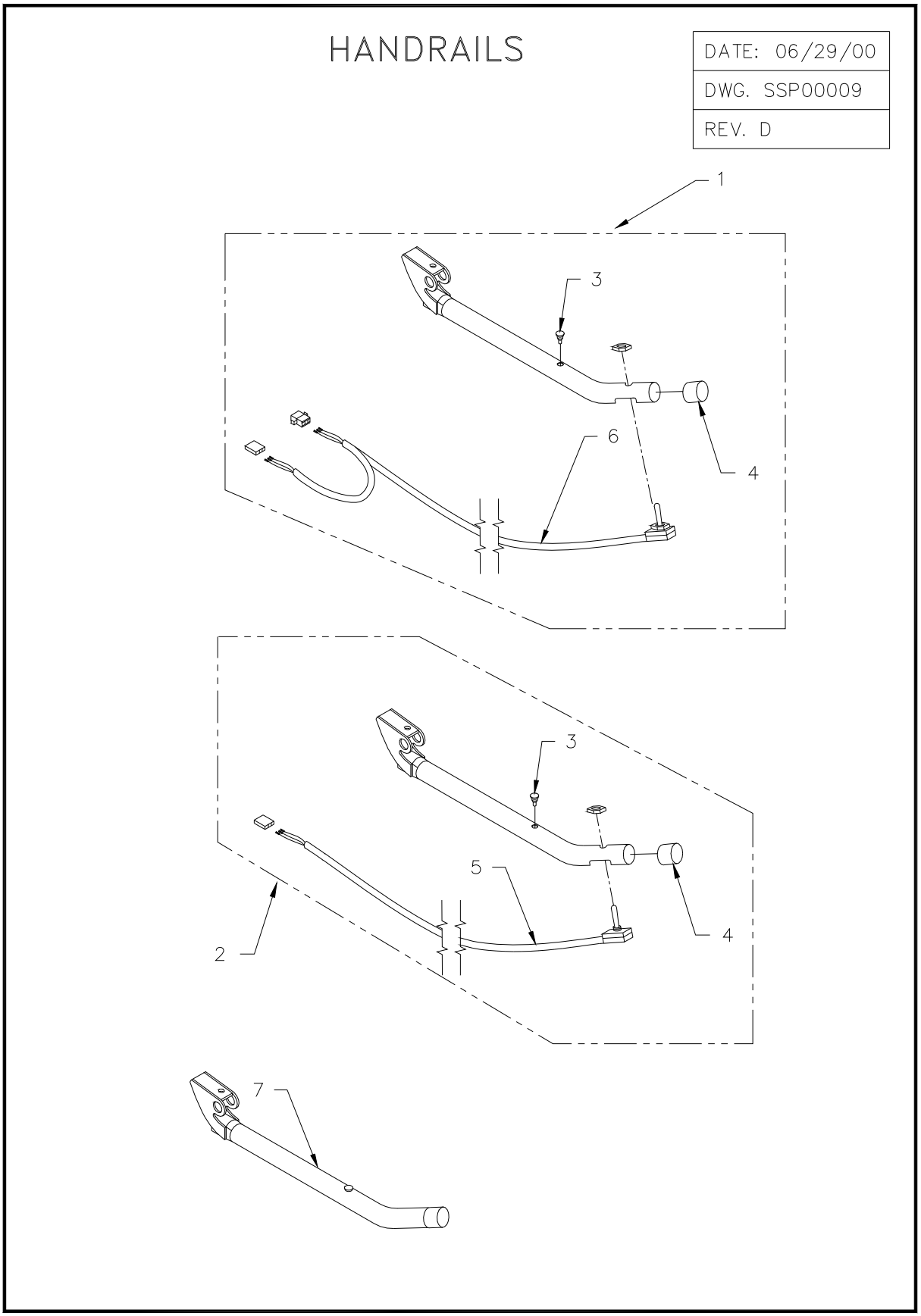


FIGURE 4-8: HANDRAIL ASSEMBLY

HANDRAIL ASSEMBLY

REF	DESCRIPTION	QTY	PART NO.
1	HANDRAIL ASSY, S1200 W/SWITCH, RIGHT (TUBE STYLE)	1	VS-AC-161
2	HANDRAIL ASSY, W/SWITCH, S1200, LEFT (TUBE STYLE)	1	VS-AC-160
3	BUMPER, RUBBER	2	V2-AC-86
4	CAP, ROUND BLACK (S.N's. 49648-)	2	25550
5	HANESS, ARM SWITCH	1	V2-ES-012
6	HARNESS, RIGHT HANDRAIL SWITCH	1	V2-ES-013
7	HANDRAIL ASSY, W/O SWITCH	1	VS-AC-159

K-2005 (ADA) HANDRAILS ASSEMBLY

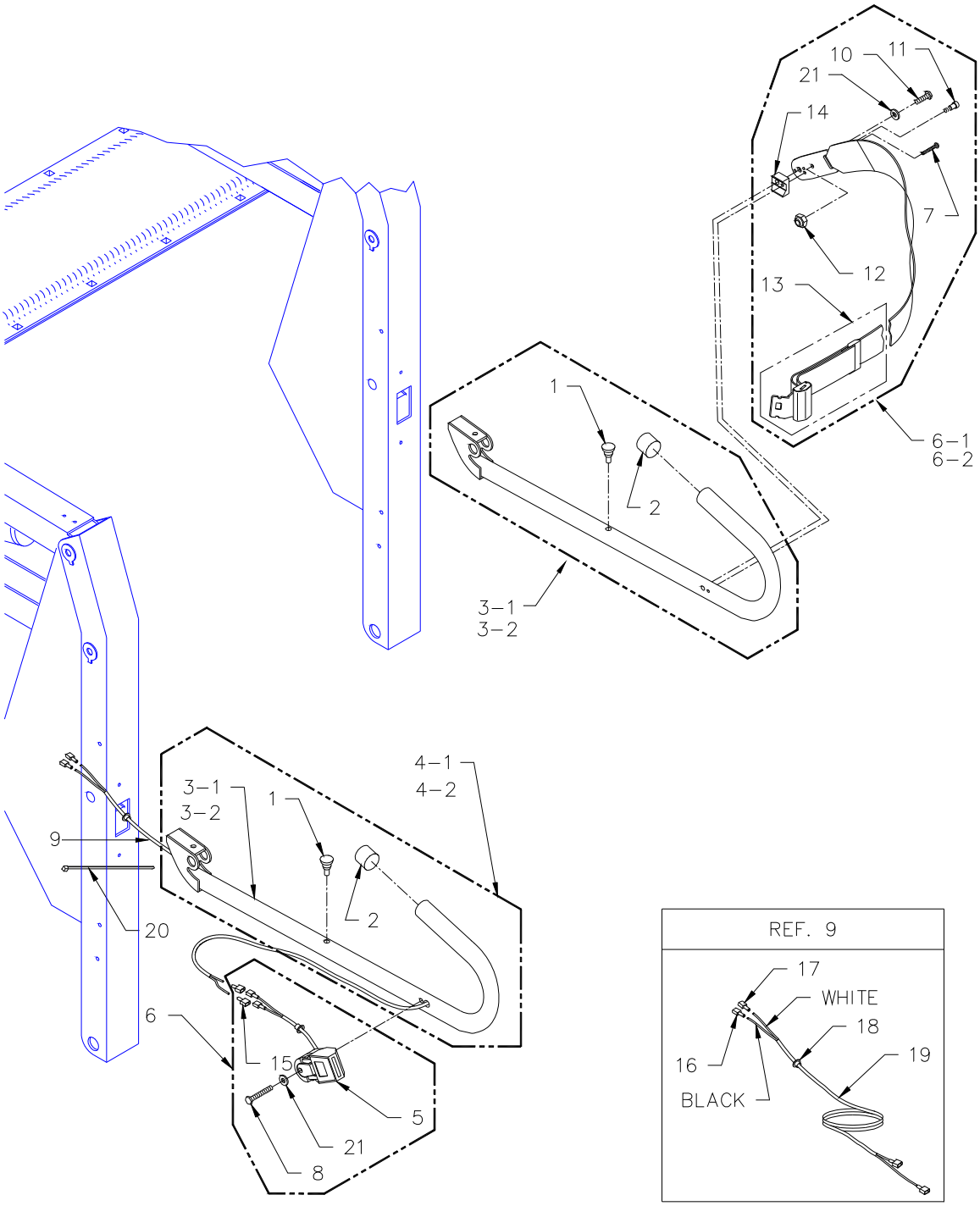


FIGURE 4-9: K-2005 (ADA) HANDRAIL ASSEMBLY

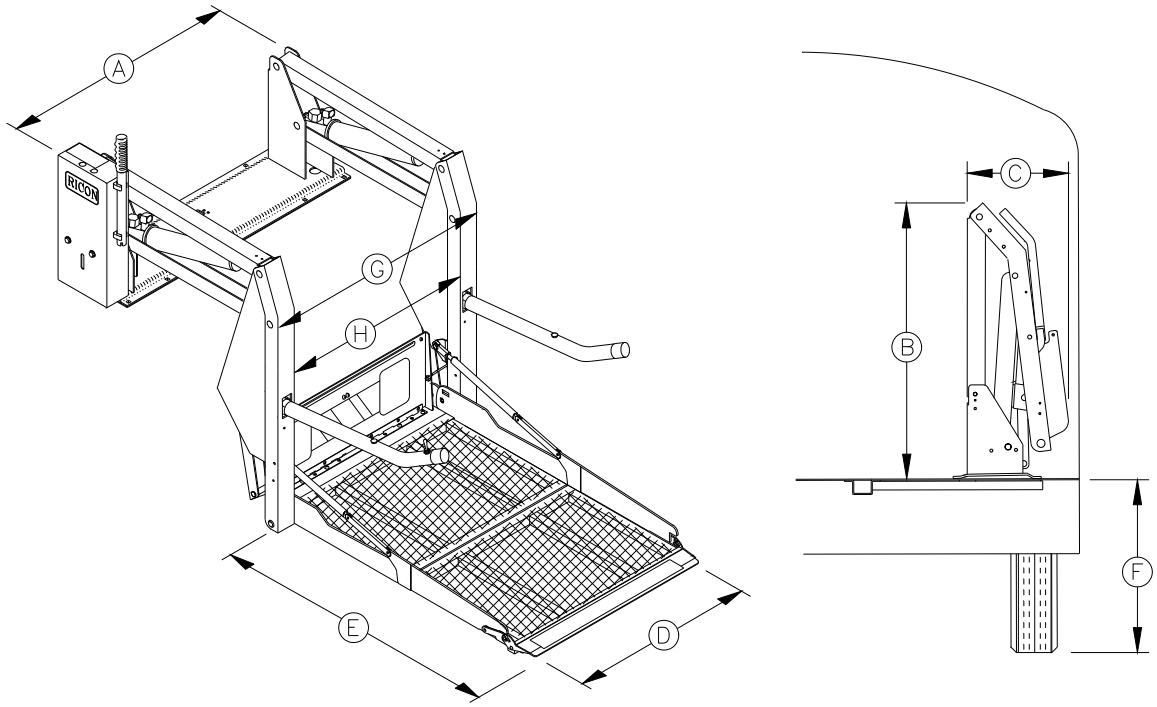
K-2005 (ADA) HANDRAIL ASSEMBLY

REF	DESCRIPTION	QTY	PART NO.
1	BUMPER, RUBBER	2	V2-AC-86
2	CAP, ROUND BLACK	2	25550
3-1	HANDRAIL-ASSY, S2000 ADA L.K.	2	VT-AC-84
3-2	HANDRAIL-ASSY, S5000 ADA L.H.	2	V5-AC-84
4-1	HANDRAIL-ASSY, S2000 ADA R.H.	2	VT-AC-85
4-2	HANDRAIL-ASSY, S5000 ADA R.H.	2	V5-AC-85
5	BUCKLE-ASSY W/SWITCH	1	12160
6-1	KIT, E-BELT INTERLOCK, 12VDC (S.N's. 61878-)	1	13054
6-2	KIT, RESTRAINT BELT, 34", ADA APPS,	1	16092
7	MS, 10-24 X 1 ¼, PHIL PAN	1	28115
8	BOLT-HEX 5/16-18 X 1/75 SST	2	282176
9	KIT, HARNESS BELT RESTRAINT	1	01274
10	SCREW, HEX, 5/16 – 18 X ¾ SST	1	282205
11	SCREW, 5/16 X 3/8 SSS	1	28373
12	NUT, ESN, ¼-20 THIN, SST	1	283096
13	STRAP ASSY, ANGLED SLIDER	1	12150
14	SPACER, TRANSIT HANDRAIL	1	V2-AC-063
15	TERMINAL, SLP, M, 22-18, FULINS	2	26352
16	TERMINAL, SLP, M, 16-14, FULINS	1	26368
17	TERMINAL, SLP, M 16-14, FULINS	1	26369
18	BUSHING SNAP IN #315-711	1	28-26-077
19	HARNESS BELT RESTRAINT	1	VT-SB-73
20	CABLE TIE, STD X 1.5 DIA BLACK, SPECIAL	1	255201
21	WASHER FLT, .344 X .688 X .065	2	14-18-005

APPENDIX 1
LIFT SPECIFICATIONS

K-SERIES LIFT

Power..... electro-hydraulic (power-up/gravity-down)	Rated load capacity.....800 lbs.
Pump rating: 12 volts DC..... 65A avg/cycle, 1250 psi	Manual backup (up) ..... hand pump
24 volts DC..... 32.5A avg/cycle, 1250 psi	Manual backup (down)..... pressure release valve
Hydraulic cylinders.....2ea, 1.5" dia	Lift Weight ..... 310-325 lbs.



DIMENSIONS – inches

	A	B	C	D	E	F	G	H
Model	Stationary frame width	Height (folded)	Installation depth (folded)	Usable platform width	Usable platform length	Floor-to-ground travel	Traveling frame width	Clear entry width
K-1200	47	43.5	15.5	30	44	31	37.5	31
K-2003	47	47	15.5	30	51	37	37.5	29.4
K-2005	49	47	15.5	32	51	42	39.5	31.4
K-2005 ADA	49	55	15.5	32	51	42	39.5	31.4