Ricon®
A Wabtec subsidiary

TITANIUM™ LINE
S-SERIES® AND *K-SERIES®*
DOT – PUBLIC USE LIFT

Service Manual

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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

This Ricon 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 Ricon products.

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

“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
32DSKF02.C	Cvr	Update to cover	8445
	3-14, 3-15	Update to Wiring Diagram	
	4-1.1	Update to Figure 4-1.1	
	4-1.2	Update to Figure 4-1.2	
	4-5	Update to Parts List 4-1	
	4-7	Update to Parts List 4-2	
	4-11	Update to Parts List 4-4	
	4-14	Update to Figure 4-6	
	4-21	Update to Parts List 4-6	

CHAPTER **PAGE**

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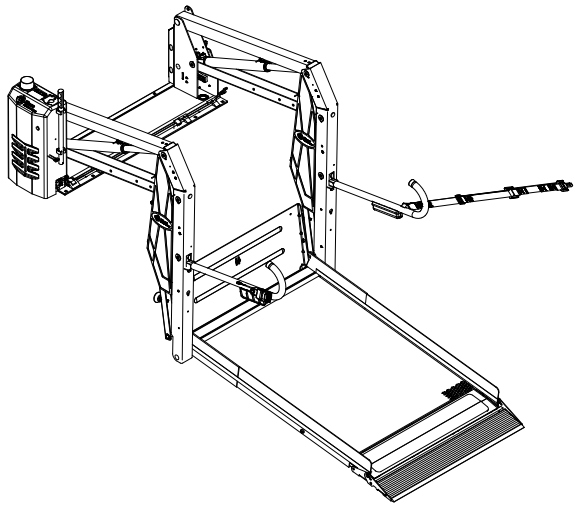
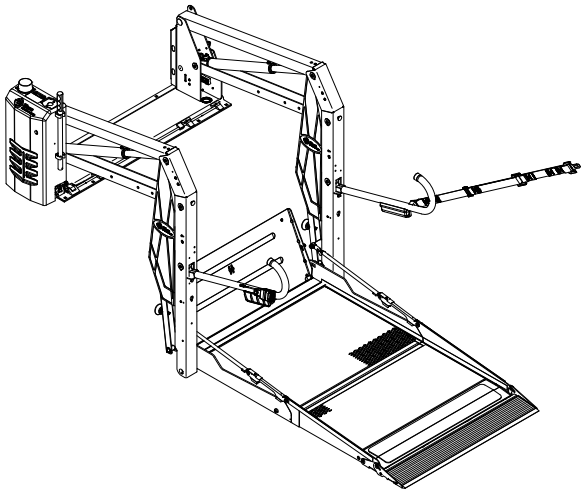
I. INTRODUCTION

The RICON Titanium™ S-Series® and K-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 1,000 pounds (454kg). 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 Ricon recommended cleaning, lubrication, and inspection instructions.





A. RICON PRODUCT SUPPORT

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

Ricon Corporation
1135 Aviation Place
San Fernando, CA 91340 ..... (818) 267-3000
Outside (818) Area Code ..... (800) 322-2884
Website ..... www.wabtec.com

Vapor Ricon Europe Ltd.
Meadow Lane
Loughborough, Leicestershire 0044 (9) 1509 635 920
LE 1HS United Kingdom
Website ..... www.wabtec.com

B. RICON TITANIUM LIMITED WARRANTY

RICON CORPORATION
TITANIUM™ LIMITED WARRANTY

Ricon Corporation (Ricon) warrants to the original purchaser of this product that Ricon 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 three (3) years from the date of lift purchase.
- Labor costs for specified parts replaced under this warranty for a period of three (3) years from the date of lift purchase. A Ricon rate schedule determines parts covered and labor allowed.
- Repair or replace only power train parts for a period of five (5) years from the date of lift purchase. A complete list of parts covered under the power train warranty can be obtained from your Ricon dealer or Ricon Corporation.
  (Note: See specified labor costs for explanation of when labor is covered under this warranty.)

If you need to return a product: Return this product to Ricon, following the Ricon RMA procedure. Please give as much advance notice as possible, and allow a reasonable amount of time for repair.

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: Ricon recommends that this product be inspected by a Ricon dealer or qualified 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. ANY 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 Ricon dealer or qualified 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 and the authorized labor to accomplish said repair.

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

Important: The warranty registration card must be completed and returned to Ricon within 20 days after installation of this Ricon product for the warranty to be valid. The warranty is not transferable.
The warranty gives specific legal rights. There may be other rights that vary in each state.

C. SHIPMENT INFORMATION

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

NOTE: The Sales or Service personnel must review the Warranty and this Operator Manual with the user to be certain that they understand how to safely operate the product and 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.
- Only one (1) control pendant can safely operate the wheelchair lift at any time. Do not control wheelchair lift with two control pendants simultaneously.

E. MAJOR LIFT COMPONENTS

The references used throughout this manual are illustrated in **Figures 1-1, 1-2** and defined in the **Tables 1-1, 1-2**. Refer to **Chapter IV** "Parts Diagrams and Lists" for more details.

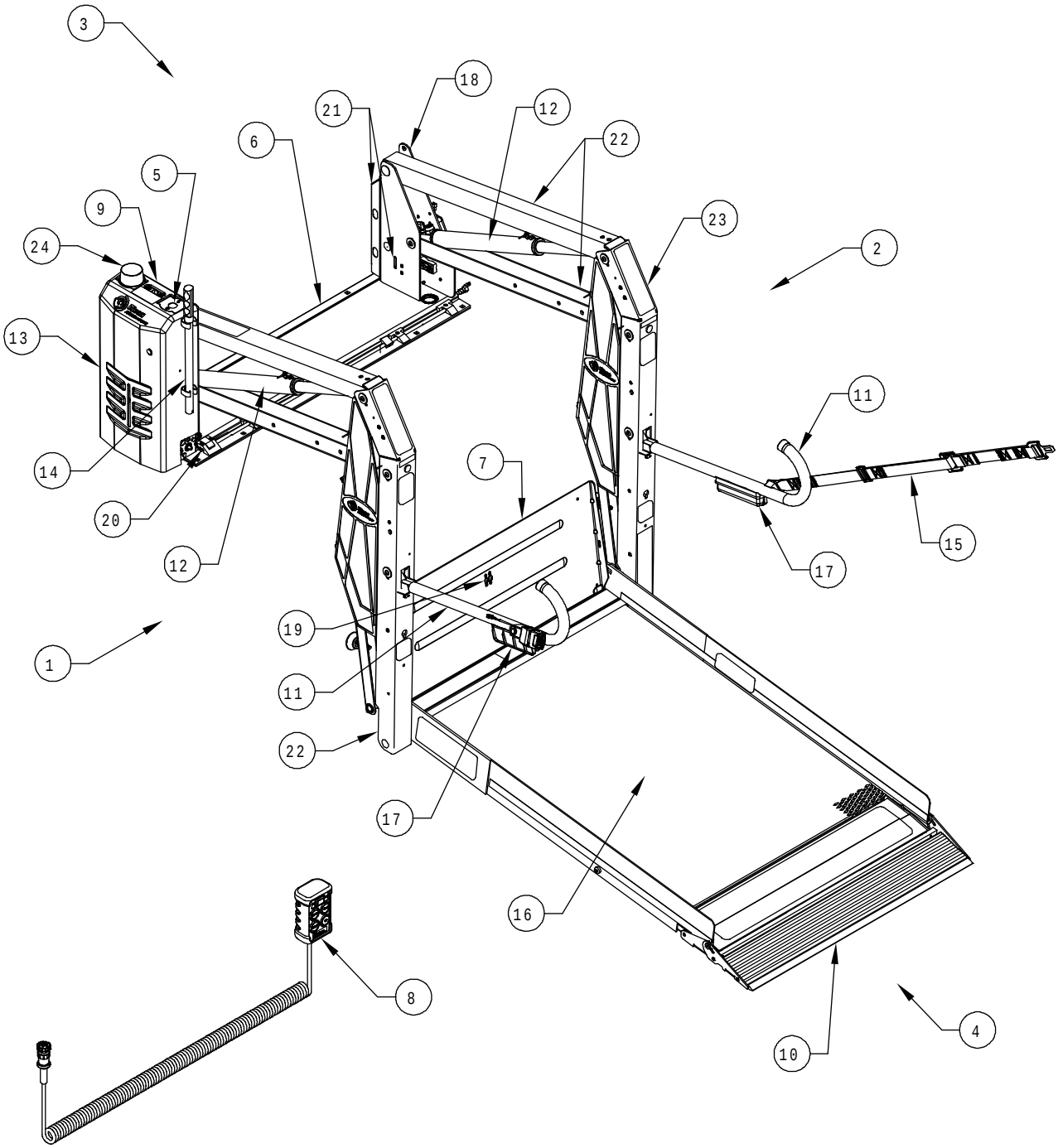


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FIGURE 1-1: TITANIUM S-SERIES MAJOR COMPONENTS

TABLE 1-1: TITANIUM 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	Audible alarm	(inside housing for hydraulic unit) Announces when something has passed over threshold. Activated by threshold beam.
6	Baseplate assembly	Bolts to vehicle floor; provides secure foundation for lift.
7	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.
8	Control pendant	Water resistant, hand-held device controls platform motions.
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	Front rollstop	Front barrier prevents the wheelchair from inadvertently rolling off of the platform during lift operation.
11	Handrail	(left and right) Provides a handhold for standing passenger.
12	Hydraulic cylinder	(left and right) Telescoping single-acting cylinders convert hydraulic pressure into platform lifting and folding force.
13	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.
14	Manual backup pump handle	Used to operate manual back up-pump (located on hydraulic power unit cover).
15	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.
16	Platform	Component of lift where the wheelchair and occupant are situated during "Up" and "Down" lift motions.
17	Platform light	(left and right) Directs light onto platform surface.
18	Serial number	Location of serial number decal.
19	Stow-Lock catch	Engages latch located on bottom of bridgeplate when platform is fully stowed.
20	Switch - Bridgeplate load sensor	Senses if weight is present on the lowered bridgeplate.
21	Threshold beams	Light-beams detect presence of objects in threshold area.
22	Top and bottom arms	(left and right) Upper and lower links connecting vertical arm to base assembly.
23	Vertical arm	(left and right) Connects platform to top and bottom arms.
24	Visual alarm	Flashing light makes it known when something has passed over threshold. Activated by threshold beams.
END OF TABLE		

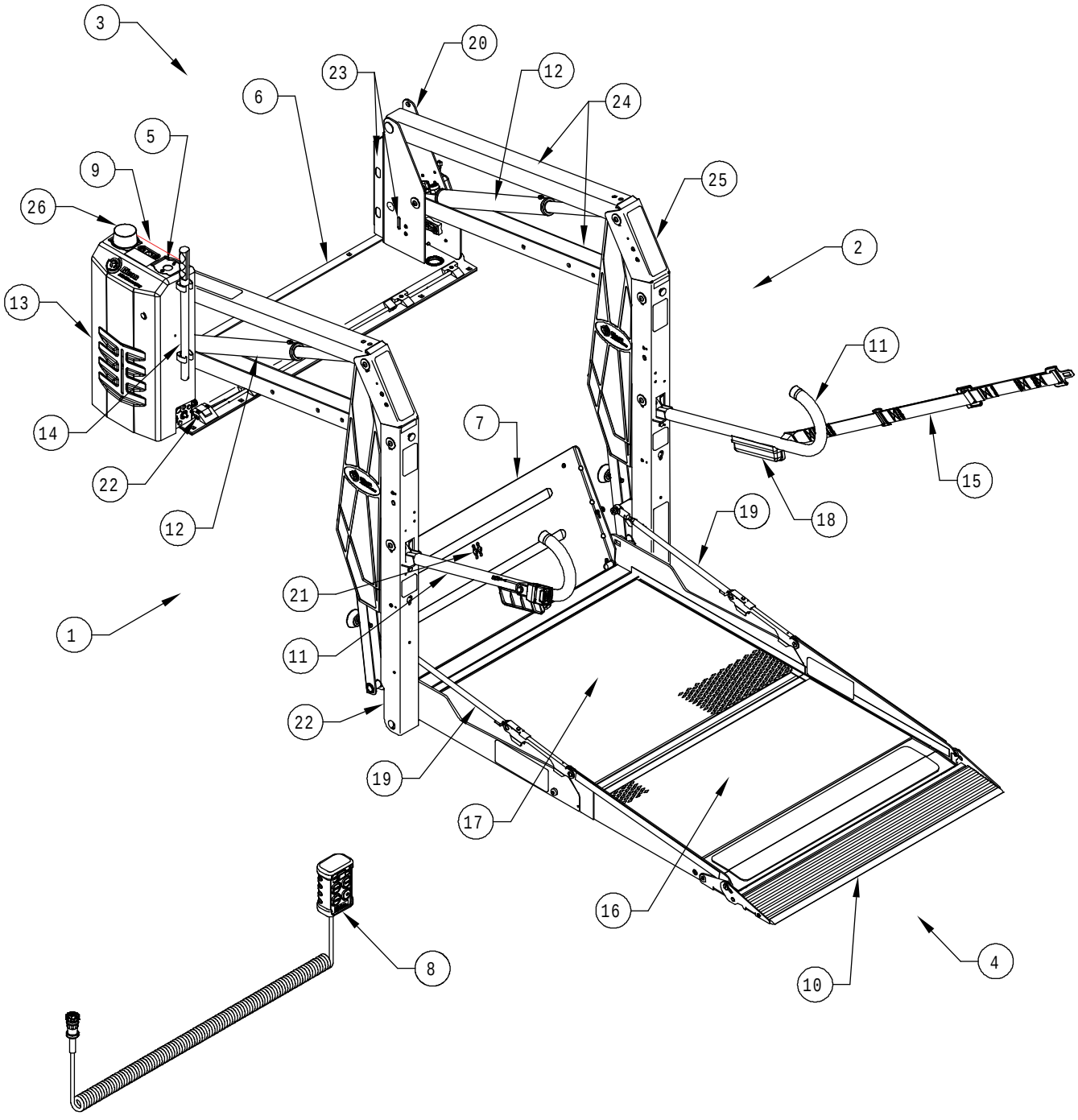

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FIGURE 1-2: TITANIUM K-SERIES MAJOR COMPONENTS

TABLE 1-2: TITANIUM K-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	Audible alarm	(inside housing for hydraulic unit) Announces when something has passed over threshold. Activated by threshold beam.
6	Baseplate assembly	Bolts to vehicle floor; provides secure foundation for lift.
7	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 plat-form during "Up" and "Down" platform motions.
8	Control pendant	Water resistant, hand-held device controls platform motions.
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	Front rollstop	Front barrier prevents the wheelchair from inadvertently rolling off of the platform during lift operation.
11	Handrail	(left and right) Provides a handhold for standing passenger.
12	Hydraulic cylinder	(left and right) Telescoping single-acting cylinders convert hydraulic pressure into platform lifting and folding force.
13	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.
14	Manual backup pump handle	Used to operate manual back up-pump (located on hydraulic power unit cover).
15	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.
16	Platform (Front)	Front portion of platform that unfolds during deploy and folds during stow. See “Platform folding linkage”.
17	Platform (Rear)	Rear portion of platform that is folded by linkage located within the vertical arms.
18	Platform LED Light	(left and right) Directs light onto platform surface.
19	Platform Folding Linkage	(left and right) Directs light onto platform sur-face.
20	Serial Number	Location of lift serial number decal.
21	Sto-Loc Catch	Engages latch located on bottom of bridgeplate when platform is fully stowed.
22	Switch (Bridgeplate Load Sensor)	Senses if weight is pre-sent on the lowered bridgeplate.
23	Threshold Warning System (TWS)	Light-beams detect some-thing passing through the threshold area while platform is below floor level.
24	Top and Bottom Arms	(left and right) - Upper and lower links that connect vertical arms to baseplate.
25	Vertical Arm	left and right) - Connects platform to top and bot-tom arms.
26	Visual Alarm	Flashing light makes it known when something passes through threshold area. Activated by threshold beams.
END OF TABLE		

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II. INSTALLATION

This chapter contains instructions for installing the Ricon Titanium™ S-Series® and K-Series® Public Use wheelchair lift into most vans and busses, although custom installations are also possible in other types of vehicles. Due to the wide range of lift applications, specific information for every possible application is not available. The following general procedures will apply to most installations. Contact Ricon 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 (32ii463e) 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.

Refer to Figure **2-1.**

NOTE: Check for proper travel clearance through doorway.

a. 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.

b. 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.

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. VEHICLE DIMENSIONAL REQUIREMENTS

The following figures and text provide installation guidelines for the RICON Titanium S-Series and K-Series Public Use wheelchair lift into most vans and busses. Adherence to these requirements will verify that the lift installation conforms to the requirements of FMVSS 403 and 404.

a. **VEHICLE DOOR OPENING DIMENSIONAL REQUIREMENTS** in inches and [millimeters].

MODEL	A (Width)	B (Height)	C (Floor-To-Ground)
S2005	40.5 [1029]	55.0 [1397]	42.0 [1067]
S2010	43.0 [1092]	55.0 [1397]	42.0 [1067]
S5505	40.5 [1029]	58.0 [1473]	51.0 [1295]
S5510	43.0 [1092]	58.0 [1473]	51.0 [1295]
K2005	40.5 [1029]	55.0 [1397]	37.0 [940]
K2010	43.0 [1092]	55.0 [1397]	37.0 [940]
K5505	40.5 [1029]	58.0 [1473]	48.0 [1219]
K5510	43.0 [1092]	58.0 [1473]	48.0 [1219]

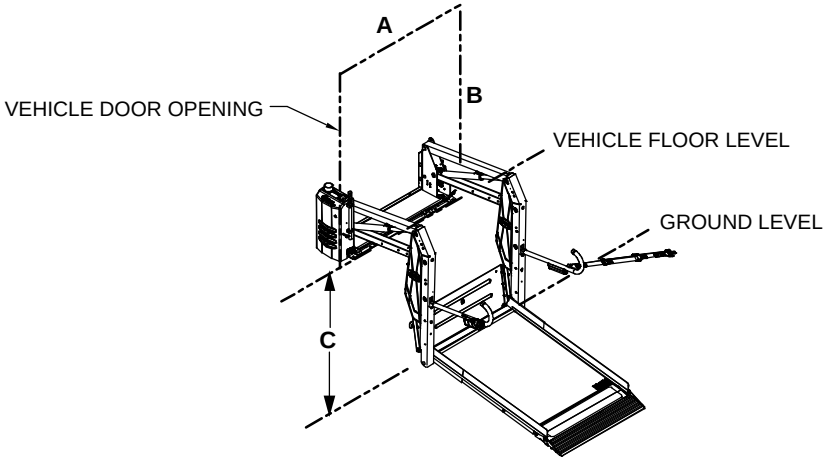

FIGURE 2-1: DOOR OPENING REQUIREMENTS

b. **VEHICLE FLOOR STRENGTH REQUIREMENTS**

NOTE: The Ricon Titanium™ model lift structure has been bench tested to four (4) times its rated load. Consistent with the requirements of FMVSS 404, Ricon recommends that the vehicle structure be tested to three (3) times the rated load of the lift (3,000 lbs.) to ensure sufficient capacity exists in the

NOTE: The Ricon Titanium™ lift is shipped with a 1,000 lbs. capacity rating. Ricon understands that the 1,000 lbs. rating is not required to meet the minimum requirements of FMVSS 404. In the event the aforementioned recommended test load for the Titanium™ lift cannot be met, the vehicle manufacturer may de-rate the installation to 800 lbs. using new decals available from Ricon (Ricon P/N 26201).

NOTE: The table below illustrates the reaction forces present when the lift platform is loaded to three (3) times the rated capacity or three thousand pounds (3,000 lbs.)

MODEL	L1	L2	A *	B **	C
S/K-20XX w/51" platform	11.00	36.25	-9,886	12,886	-3,000
S/K-20XX w/54" platform	11.00	37.75	-10,295	13,295	-3,000
S/K-50XX w/51" platform	11.00	41.50	-11,318	14,318	-3,000
S/K-50XX w/54" platform	11.00	43.00	-11,727	14,727	-3,000

***** Negative numbers (column A) indicate tensile load pulling upward at the inboard edge mounting holes of the base plate.

****** Positive numbers (column B) indicate compressive load pushing floor downward at the outboard edge mounting holes of the base plate.

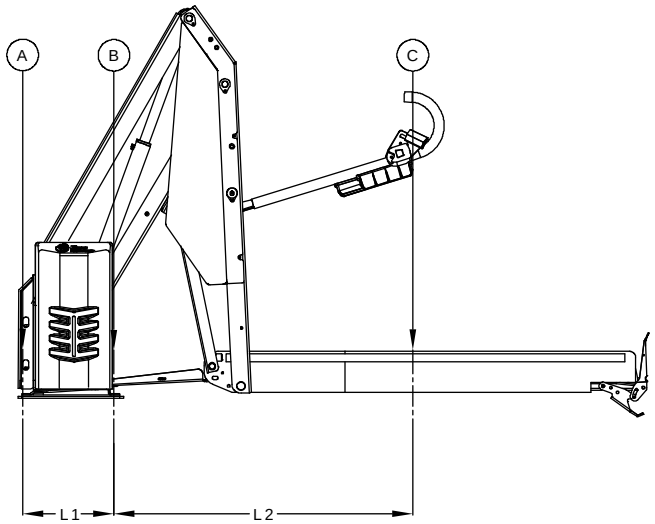

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FIGURE 2-2: FLOOR STRENGTH REQUIREMENTS

3. 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 2-3** and **2-7**. Improper torqueing sequence of baseplate bolts may result in a warped or bowed baseplate, which can cause platform to move erratically.

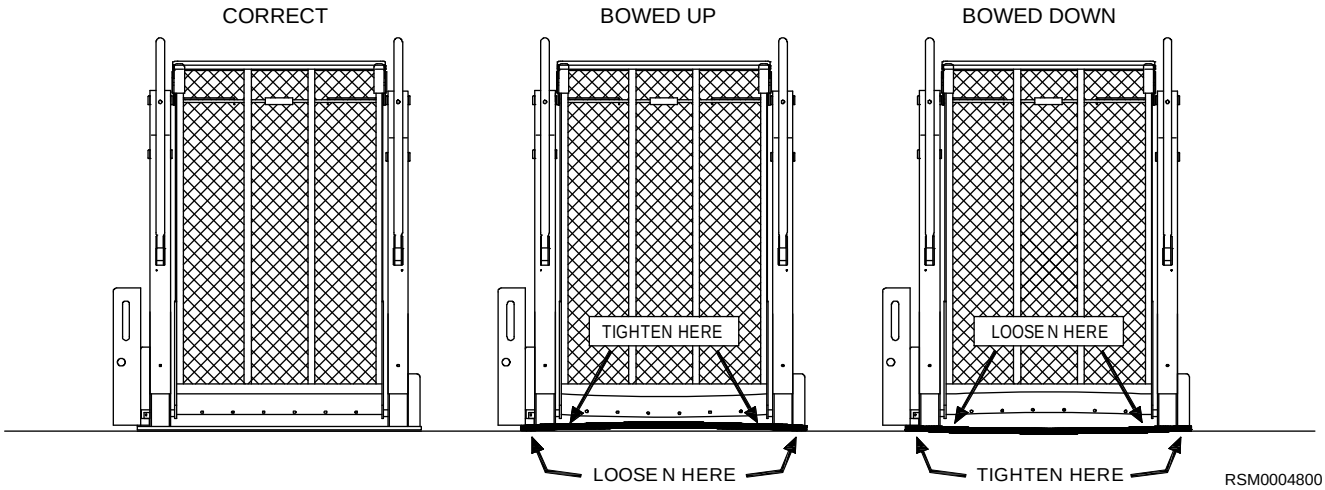


FIGURE 2-3: FORD VAN CLAMPING BAR ARRANGEMENT

4. LIFT INSTALLATION INTO BUSES

Refer to **Figure 2-9**. 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.

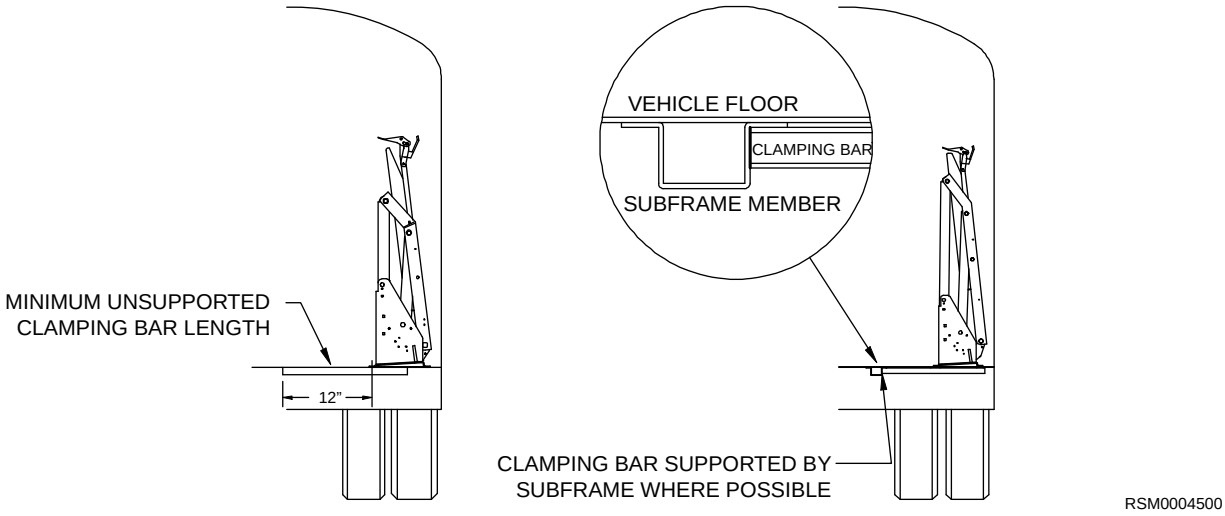


FIGURE 2-9: BUS CLAMPING BAR ARRANGEMENT

⚠ WARNING

LIFT WEIGHT IS APPROXIMATELY 400-425 LBS. TAKE EXTREME CARE WHEN POSITIONING BECAUSE STEPWELL BRACKETS MAY TIP. THIS PROCEDURE MUST NOT BE ATTEMPTED BY ONE PERSON.

a. Open doors fully and position lift so that it is centered in vehicle doorway. Close doors and move lift outward until it clears doors by a minimum of ½". The baseplate must be parallel to side of bus. Open manual pump release valve (CCW) and allow folded platform to fully settle against latch on baseplate. Verify that interference is not present between lift and doors. Reposition lift, if necessary. Close pump release valve; do not over tighten valve.

b. Refer to **Figure 2-10**. Mark and drill ten 25/64" baseplate mounting holes (1 thru 10) through vehicle floor.

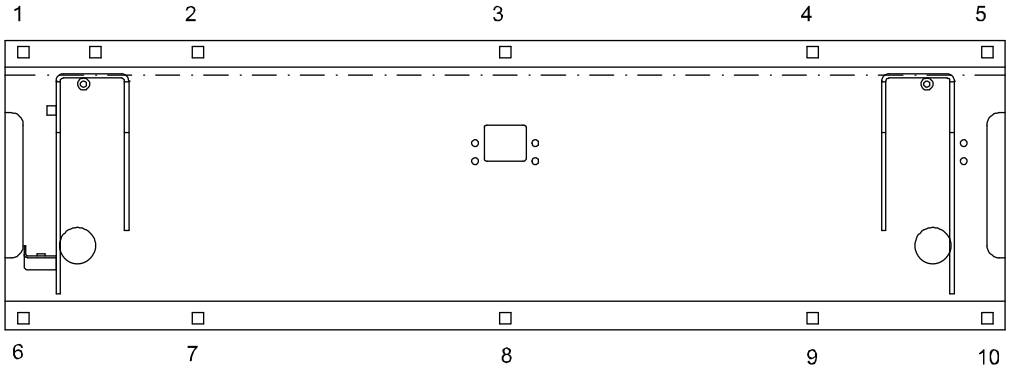


FIGURE 2-10: BUS BASEPLATE HOLES

⚠ 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 2-9**. Install five clamping bars on 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) Use care when tightening carriage screws to prevent baseplate warpage. 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, 2, 4, 7, 9, 1, 5, 6, 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 any wire while 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.

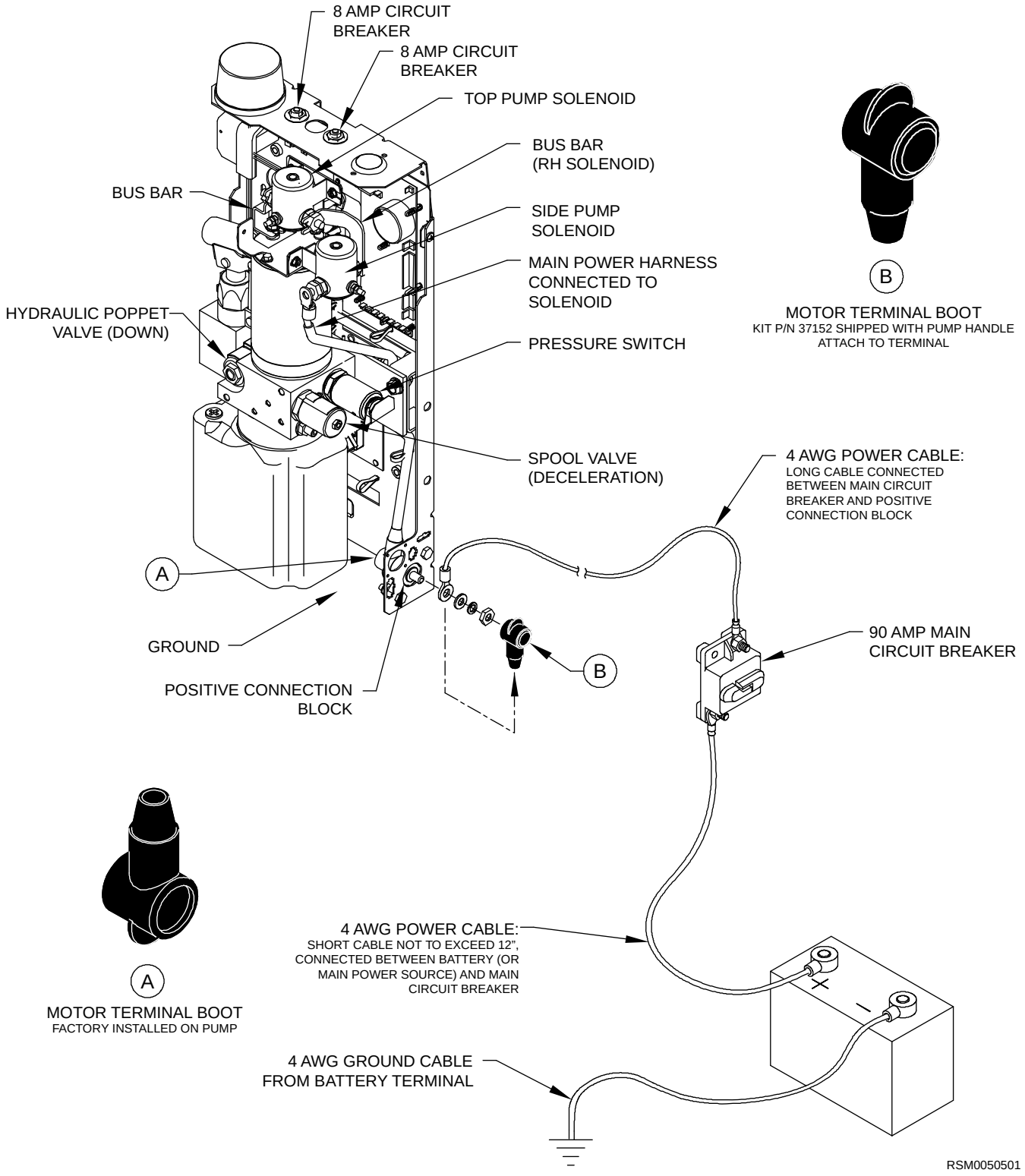


FIGURE 2-11: ELECTRICAL INSTALLATION DIAGRAM

1. INSTALL MAIN CIRCUIT BREAKER

a. Disconnect battery.

b. 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.

a. Refer to **Figure 2-11** and **2-12**. 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.

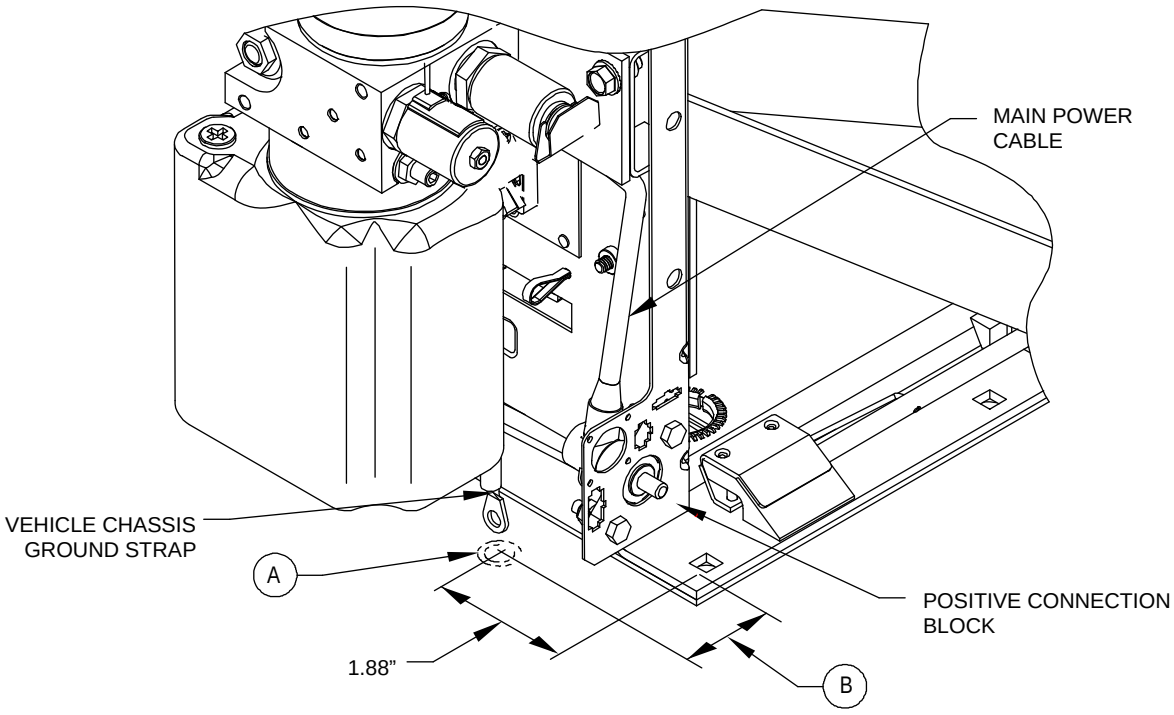


FIGURE 2-12: POWER CABLE ACCESS HOLE

b. Refer to **Figure 2-11**. 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 Ricon hammer tool, part of kit P/N 01243).

c. Connect ring terminal end of long 4 AWG power cable to 90A main circuit breaker, then route power cable underneath vehicle floor and up through hole in floor.

d. Refer to **Figure 2-11**. Detach Kit P/N 37152 (Shipped with pump handle) then install onto ring terminal connector before installing ring terminal onto positive connection block.

e. 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 2-13**. Cut excess wire from long cable, install heavy ring terminal, and then connect to positive connection block. Verify that red wire from main circuit breaker (if applicable) is securely connected to positive connection block.

⚠ CAUTION

Ensure that shrink tube and black boots are secure and properly installed on both wire connections near the positive connection block.

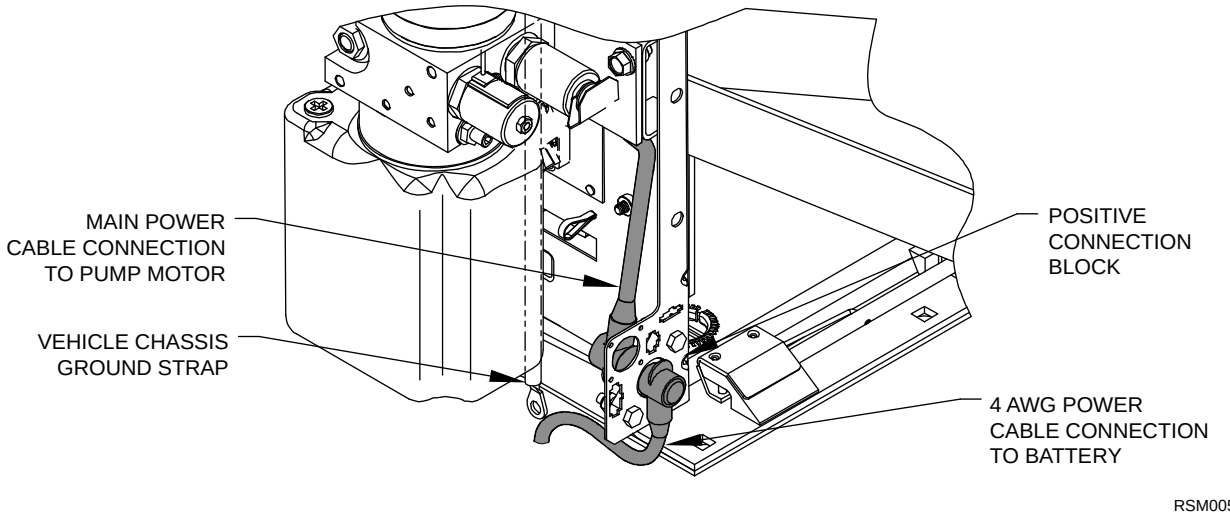


FIGURE 2-13: CABLE ROUTING

g. Refer to **Figure 2-11**. Connect 12" cable, with ring terminals, from positive battery terminal to main circuit breaker terminal.

3. GROUND CONNECTIONS

a. Refer to **Figure 2-13**. Locate 4GA vehicle chassis ground cable that is pre-installed then install ground cable to vehicle chassis. Avoid pinch points, exhaust system, moving parts, and brake lines. Verify that ground cable is secure.

b. Ensure other wires that are fasted with the ground cable are secure and remain connected after installation.

c. **12 VDC Systems**

12 VDC 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.

4. CONTROL PENDANT

The water resistant control pendant can be connected on either the left hand or right hand side of the wheelchair lift. Connections for the control pendant are located on the pump chassis, close to the connection block. An alternate control pendant connection is located opposite the pump chassis, near the stow lock cover.

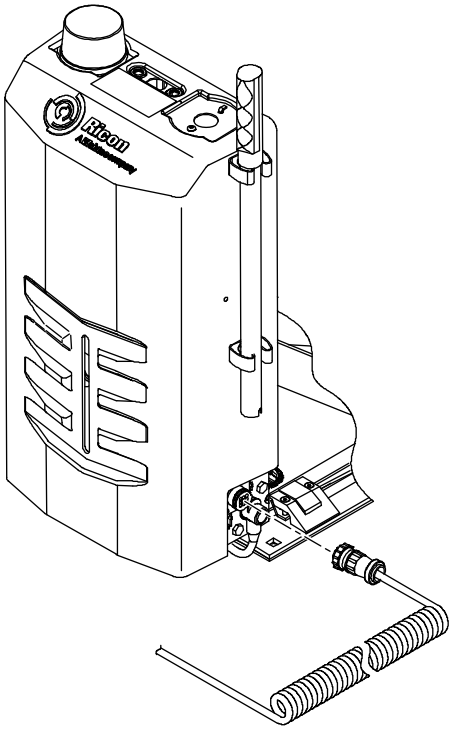
⚠ CAUTION

Only one control pendant can safely operate the wheelchair lift at any time. Use of more than one control pendant at the same time is not permitted.

a. Press Power switch to OFF position on control pendant. Illuminated lights will turn off.

b. Refer to **Figure 2-14**. Locate control pendant connector installed on pump chassis side of wheelchair lift.

c. Twist and unlock connector then remove from pump chassis.



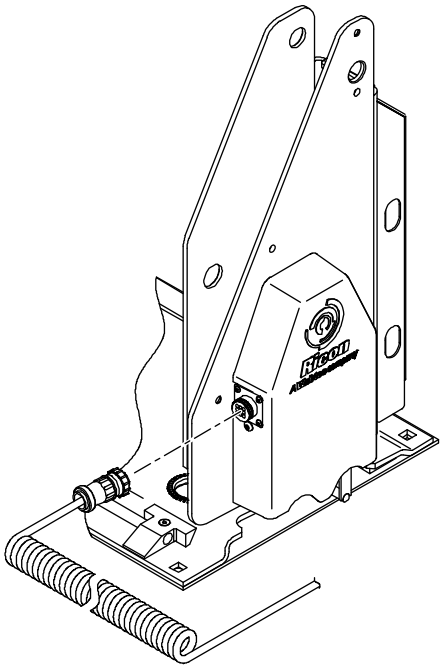
LH PUMP CONFIGURATION SHOWN

RSM0050800

FIGURE 2-14: CONTROL PENDANT CONNECTION ON PUMP CHASSIS

d. Refer to **Figure 2-15**. Locate control pendant connector enclosed with stow lock cover.

e. Twist and lock control pendant connector onto connection point. Power on control pendant.



RH STOW LOCK CONFIGURATION SHOWN

RSM0050900

FIGURE 2-15: ALTERNATE CONTROL PENDANT CONNECTION ON STOW LOCK

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

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 and K-Series lifts provide 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: A 30-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 30 amps of continuous current.

Refer to **Figure 2-16**. 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.

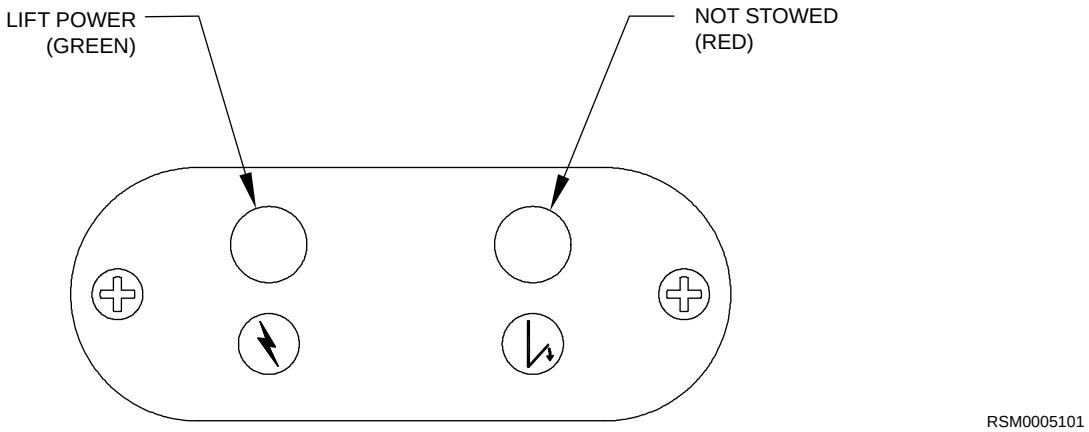


FIGURE 2-16: INTERLOCK DISPLAY PANEL

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 2-17, 2-18,** 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.)

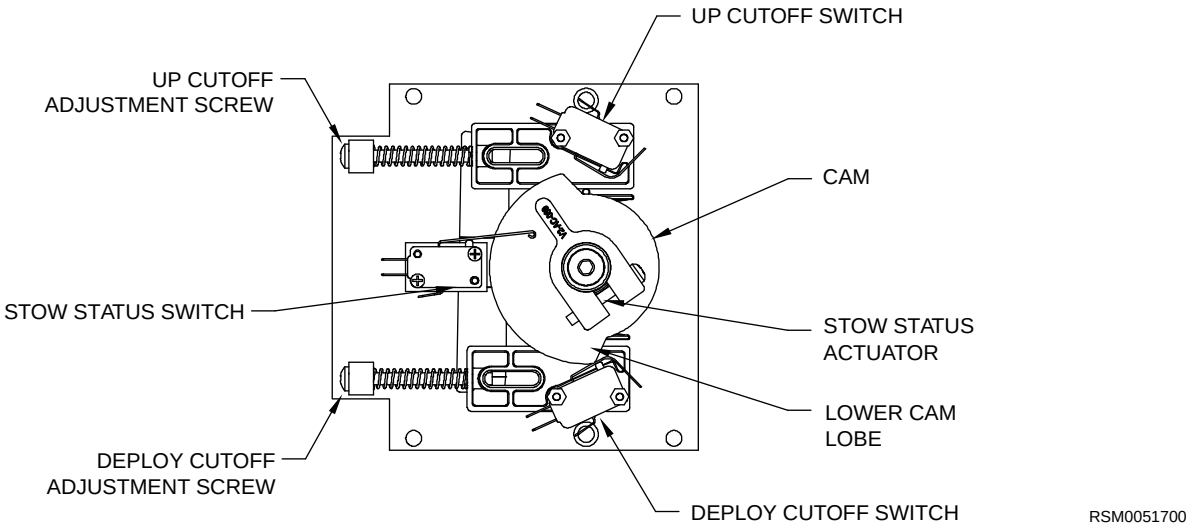


FIGURE 2-17: LIMIT SWITCH ADJUSTMENT DIAGRAM

a. Fully DEPLOY platform.
b. Adjust UP CUTOFF ADJUSTMENT SCREW and DEPLOY CUTOFF ADJUSTMENT SCREW 6-8 turns **counterclockwise** (CCW) 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** (CCW), 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** (CCW), 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** (CW) 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.
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** (CW) 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.)

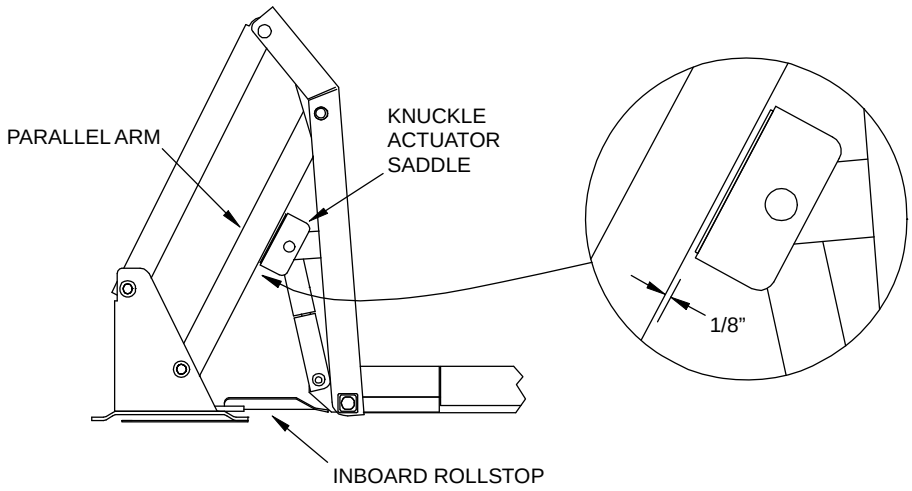


FIGURE 2-19: LIMIT SWITCH ADJUSTMENT CLEARANCE

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 CAM (CCW).	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 (CW).	Test lift. Pump should cutoff when lift is folded tight.
Up cutoff adjustment screw	Lift stops low.	Adjust screw (CW).	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 (CCW).	
Deploy cutoff adjustment screw	Lift stops low.	Adjust screw (CCW).	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 (CW).	

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 2-20**. 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.

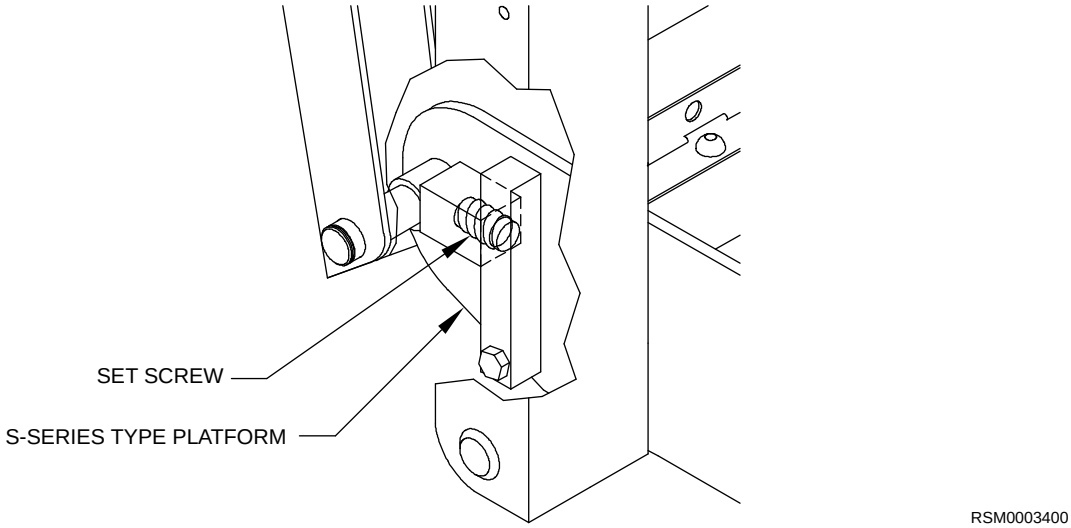


FIGURE 2-20: S/K-SERIES PLATFORM SET SCREWS

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

3. K-SERIES PLATFORM FOLDING LINKAGE ADJUSTMENT

For K-Series with split platforms, the front portion of the platform is connected to the rear portion with a hinge. The front portion is folded with linkages located at the right and left sides of the platform. The length of the linkage might require adjustment after installation of the lift or after disassembly of the platform.

NOTE: Perform the PLATFORM TILT ADJUSTMENT procedure before adjusting the linkage.

a. Deploy and lower the platform to a position about halfway between floor level and ground level.

b. Refer to **Figure 2-21**. Inspect the gaps on both sides of the platform folding joints. The gaps must be uniform. If the gaps are not uniform, adjustment is required.

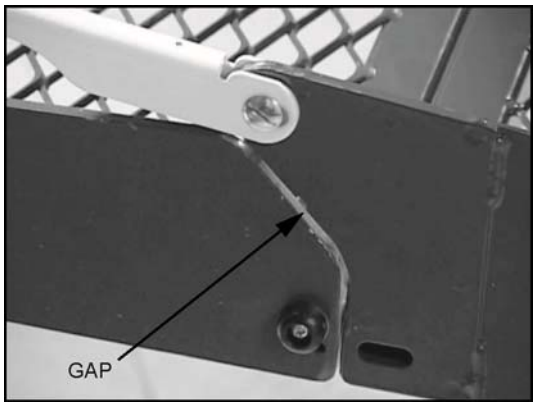


FIGURE 2-21: S/K-SERIES PLATFORM SET SCREWS

c. Refer to **Figure 2-22**. Loosen the jam nuts (right and left sides) and use the adjusters to set the length of the linkages so that the front and rear portions are in the same plane; the two surfaces of the platform portions must be flat without any apparent folding along the hinge.

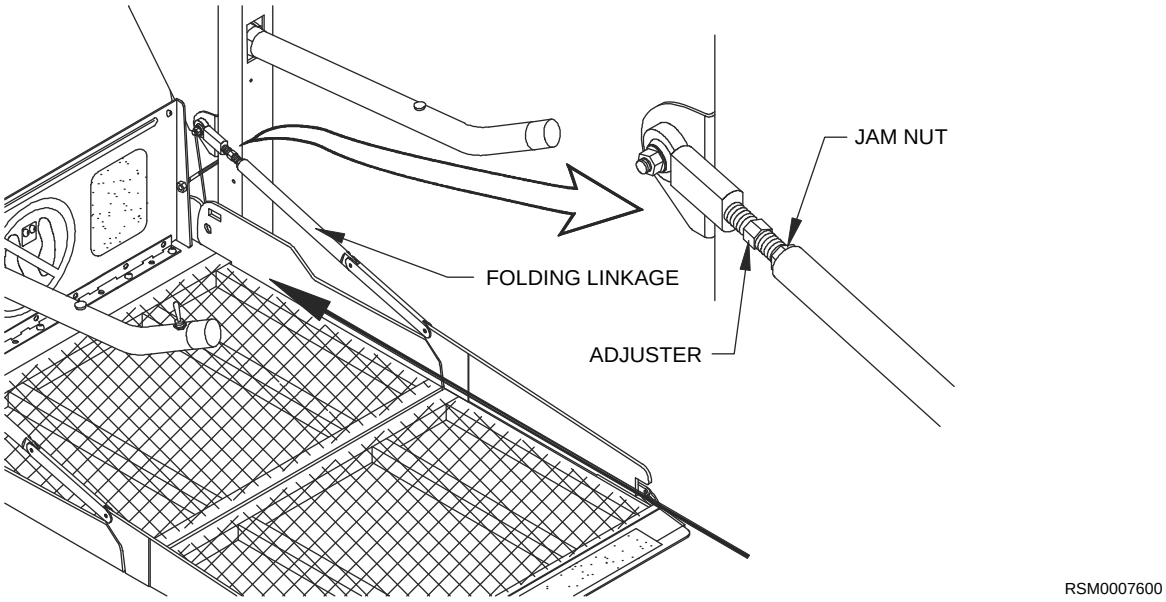


FIGURE 2-22: ADJUSTMENT HARDWARE FOR PLATFORM FOLDING LINKAGE

d. Verify that the tension of both linkages is the same by sighting along the outer edge of the platform (arrow in figure). Tighten jam nuts.

e. Lower platform until it settles on the ground. Verify that a slight amount of slack is present in both linkages. If either linkage is under tension, repeat steps a and b.

4. K-SERIES OUTER ROLLSTOP BARRIER ADJUSTMENT

NOTE: This procedure is done to tighten the outer rollstop barrier by adjusting the universal platform folding brackets that are attached to the vertical arms on a K-Series lift.

a. Fully stow the platform and check to see if there is movement of the outer rollstop barrier. If there is sufficient movement, deploy the platform to floor level.

b. Refer to **Figures 2-23**. Turn the screws to loosen the folding bracket. Slightly move the bracket down to add pre-load on the platform link assembly.

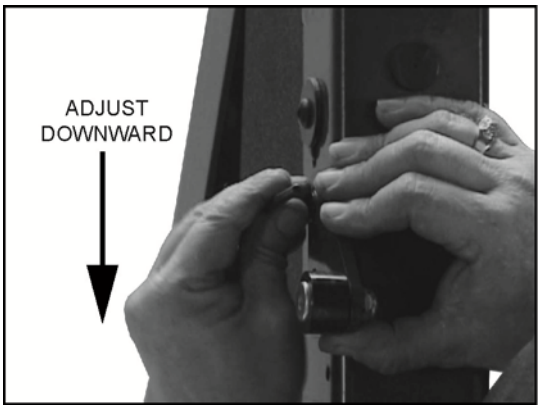


FIGURE 2-23: PLATFORM FOLDING BRACKET

c. Tighten the screws then repeat for the opposite folding bracket.

d. Stow the platform and verify that the outer rollstop barrier securely folds and locks with no movement.

5. PLATFORM PRESSURE SWITCH CHECK AND ADJUSTMENT

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 2-24**. Deploy and lower platform to ground.

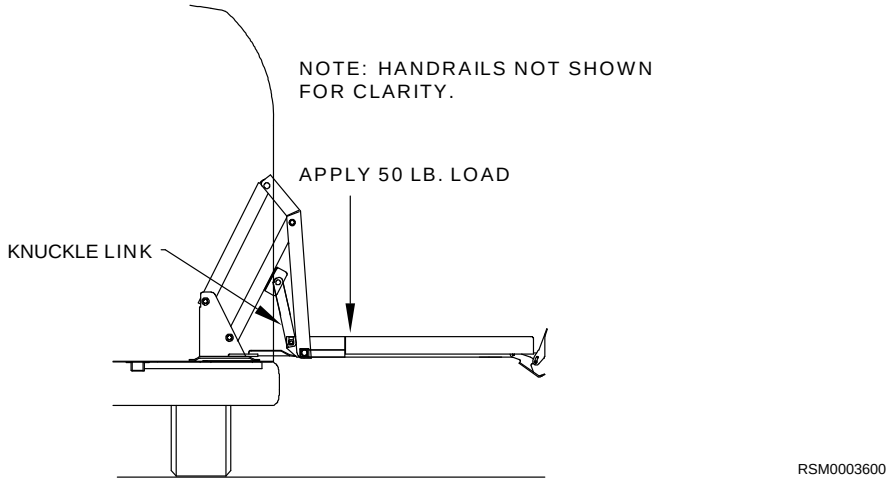


FIGURE 2-24: PRESSURE SWITCH TEST AT FLOOR LEVEL

NOTE: Weight must be 50 lbs. and placed 6 inches from rear edge of platform mesh as shown in **Figure 2-25**.

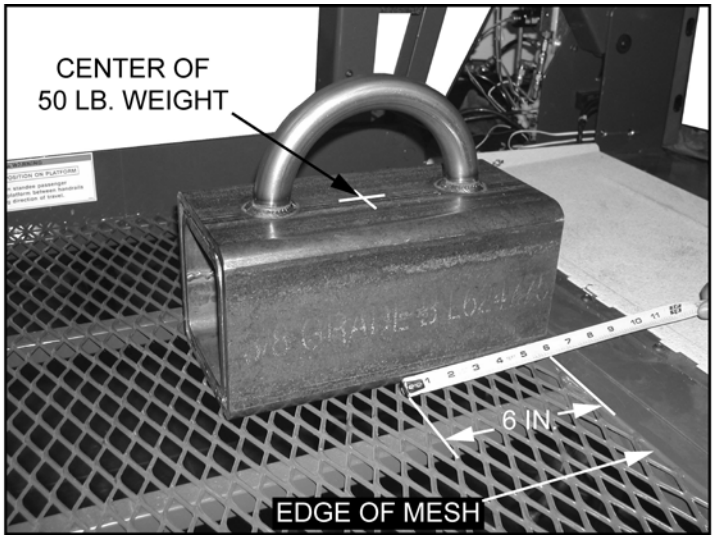


FIGURE 2-25: 50 LB. WEIGHT PLACEMENT ON PLATFORM

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 2-26**. 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.

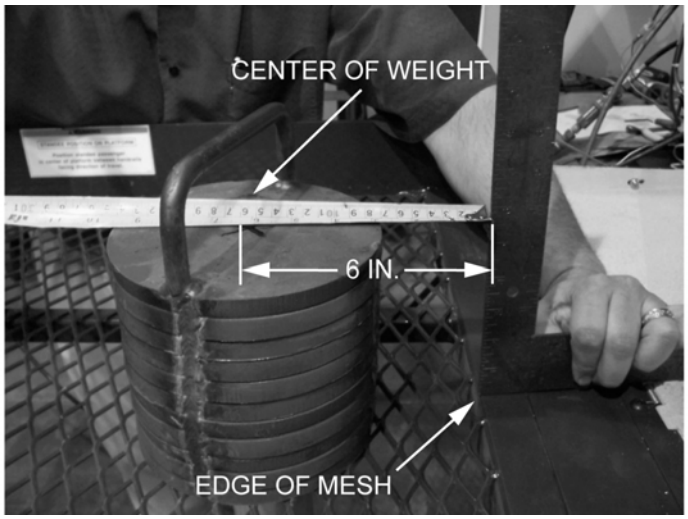


FIGURE 2-26: ALTERNATE 50 LB. WEIGHT

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 2-27**.

f. Refer to **Figure 2-27**. Loosen the locking set screws from the hydraulic pressure switch, using a 5/64" hex wrench to allow adjustment of the hydraulic pressure switch.

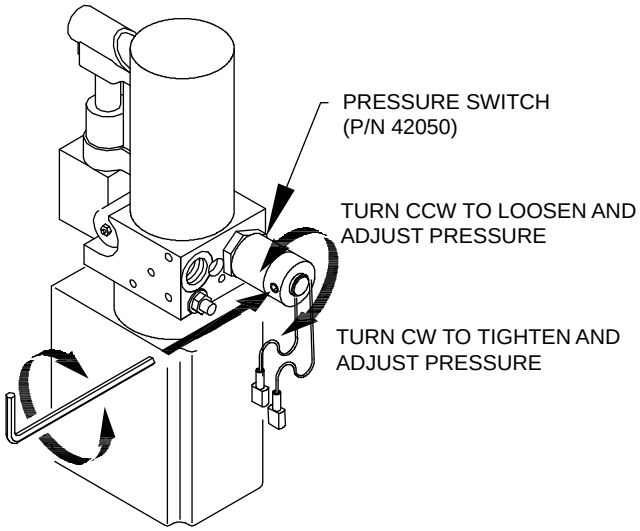


FIGURE 2-27: PRESSURE SWITCH ADJUSTMENT (P/N 42050)

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.

⚠ CAUTION

- Do not operate lift when test weight is on platform. This load test is designed to test the lift **mounting method**, not the lift capacity. Remove test weight immediately after check.
- 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.

- Ricon recommends that the lift be test loaded at its rated 1,000 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.

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

E. SAFETY CHECKLIST FOR VEHICLE MANUFACTURER

This checklist is intended to verify safe operation of Ricon FMVSS 403 and 404 compliant wheelchair lifts. All requirements must be met for the wheelchair lift to be considered compliant.

COMPLIANT	NON-COMPLIANT	REQUIREMENT
		Wheelchair lift and vehicle properly interlocked (lift cannot be powered unless vehicle interlocks are activated, and interlocks cannot be disengaged unless lift is fully stowed).
		Threshold warning device functioning properly (audible warning and visual warning is activated if threshold area is entered when platform is at least one inch below vehicle floor level).
		Main power switch enables and disables the lift control system.
		Control pendant illuminated when the lift is powered (Public Use Lift Only).
		Inboard rollstop does not rise from floor level with 50 pounds, or more, at center of barrier.
		Platform unable to rise more than 3” above ground if safety belt is not engaged.
		Platform lighting functional when lift is powered.
		Platform does not stow if a weight of 50 pounds, or more, is present on platform.
		Manual back-up operation fully functional (see operator manual for directions).

III. MAINTENANCE AND REPAIR

Regular maintenance of the RICON Titanium S-Series and K-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.

⚠ CAUTION

This Ricon product is highly specialized. Maintenance and repairs must be performed by a Ricon dealer or qualified service technician using Ricon replacement parts. Modifying or failing to properly maintain this product will void warranty and may result in unsafe operating conditions.

A. LUBRICATION

⚠ CAUTION

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.

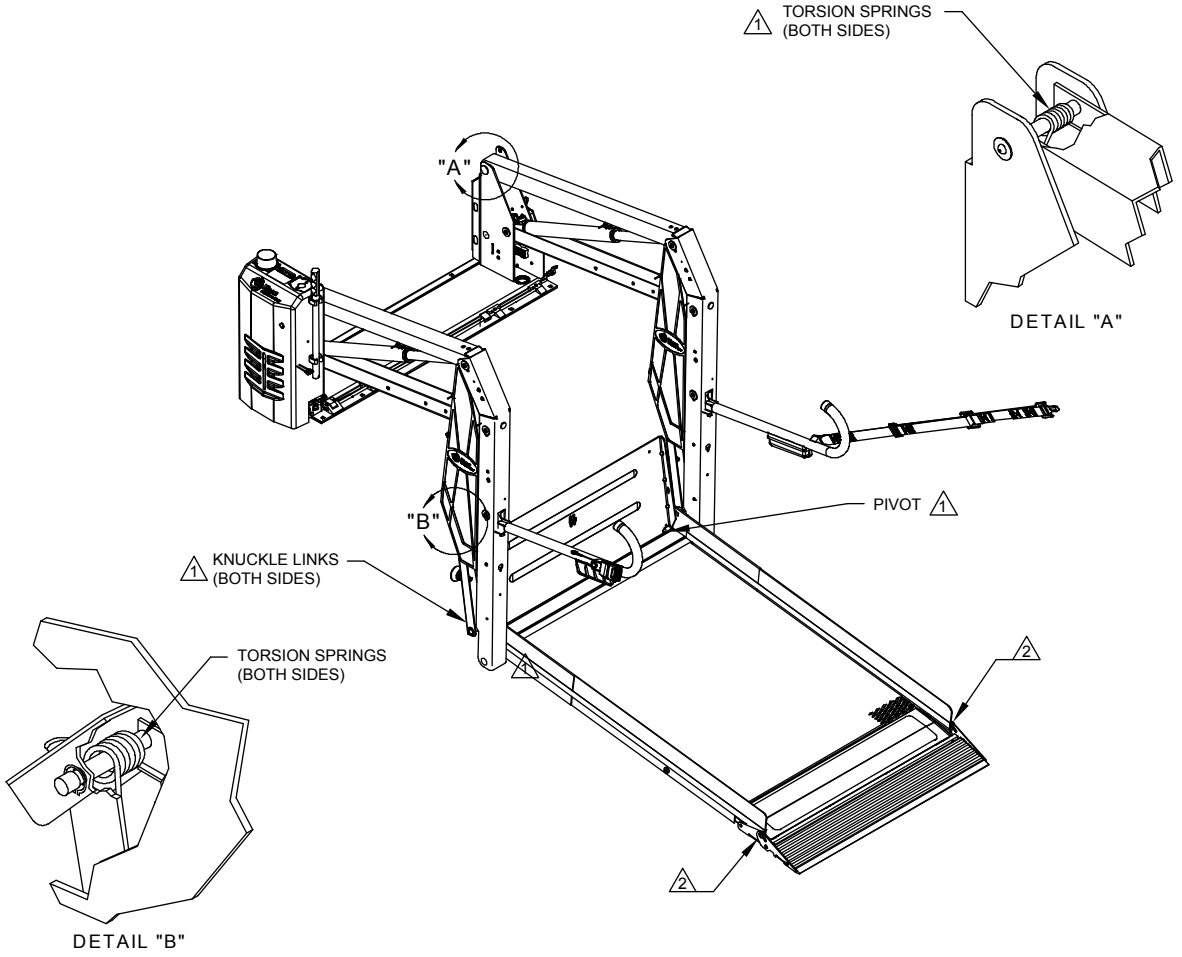


FIGURE 3-1: LIFT LUBRICATION POINTS

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).

TABLE 3-1: MAINTENANCE SCHEDULE

SERVICE POINT	ACTION TO PERFORM
10 CYCLES	
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.
150 CYCLES	
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	▪ Verify that vehicle mounting and support points are undamaged. ▪ Verify that mounting bolts are sufficiently tight and free of corrosion.
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	▪ Verify that bridgeplate operates without binding during lift functions. ▪ Verify that bridgeplate deploys fully when platform stops at floor level. ▪ Verify bridgeplate rests flat against baseplate.
Front rollstop	▪ Verify that rollstop is opened completely when platform is at ground level. ▪ Verify that rollstop closes and locks when platform leaves ground.
Hydraulic power unit	**⚠ CAUTION**
	Check and add fluid when platform is at ground level. Fluid that is added when platform is raised will overflow when platform is lowered.
	▪ 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. ▪ Verify there are no hydraulic fluid leaks. ▪ Verify that manual backup pump operates properly.
1800 CYCLES	
Cleaning and lubrication	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. 2. Spray penetrating oil (Curtisol® Red Grease 88167 or WD-40®) where specified following directions on container. Remove excess grease from surrounding areas.
⚠ CAUTION	
A Ricon dealer or qualified service technician must perform the following safety check.	
3600 CYCLES	
Hydraulic cylinder, hoses and fittings	▪ Check hydraulic cylinder for evidence of leaks. ▪ Inspect hydraulic hoses for damage. ▪ Verify that all fittings are tight.
END OF TABLE	

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**. The guide 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.

⚠ WARNING

THE TROUBLESHOOTING GUIDES DO NOT INCORPORATE ROUTINE SAFETY PRECAUTIONS OR PRELIMINARY PROCEDURES. DURING THE RICON WARRANTY PERIOD A TRAINED, RICON DEALER OR QUALIFIED SERVICE TECHNICIAN MUST PERFORM TROUBLESHOOTING. AFTER THE WARRANTY PERIOD, IT IS RECOMMENDED THAT TROUBLESHOOTING BE CONTINUED BY A QUALIFIED SERVICE TECHNICIAN.

1. LIFT TROUBLESHOOTING

TABLE 3-2: TROUBLESHOOTING LIFT OPERATION

SYMPTOM		POSSIBLE CAUSE	REMEDY
Hydraulic fluid leaks		Loose hydraulic fitting.	Make sure fitting is PROPERLY tightened.
		Hydraulic component defective.	Discontinue use of lift. Have repairs made by a Ricon dealer or qualified 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 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 a Ricon dealer or qualified 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 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.)

END OF TABLE

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 two 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 left solenoid has failed the LED will be red. The LED will be green when the right solenoid has failed.

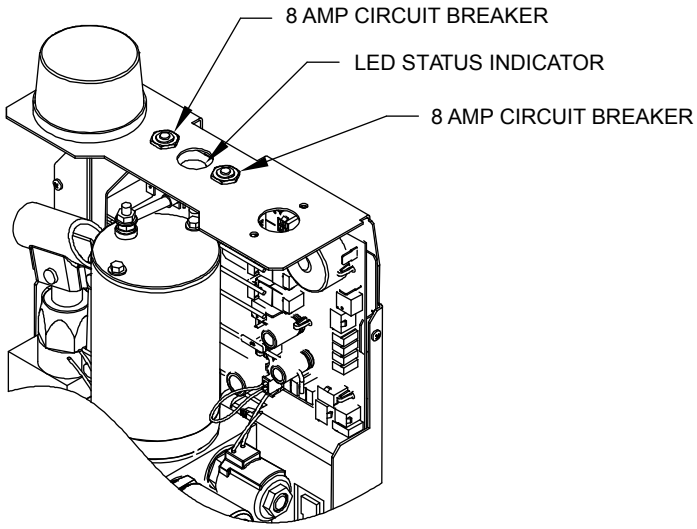


FIGURE 3-2: STATUS INDICATORS FOR PUMP SOLENOIDS

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 Ricon 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 switch 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.

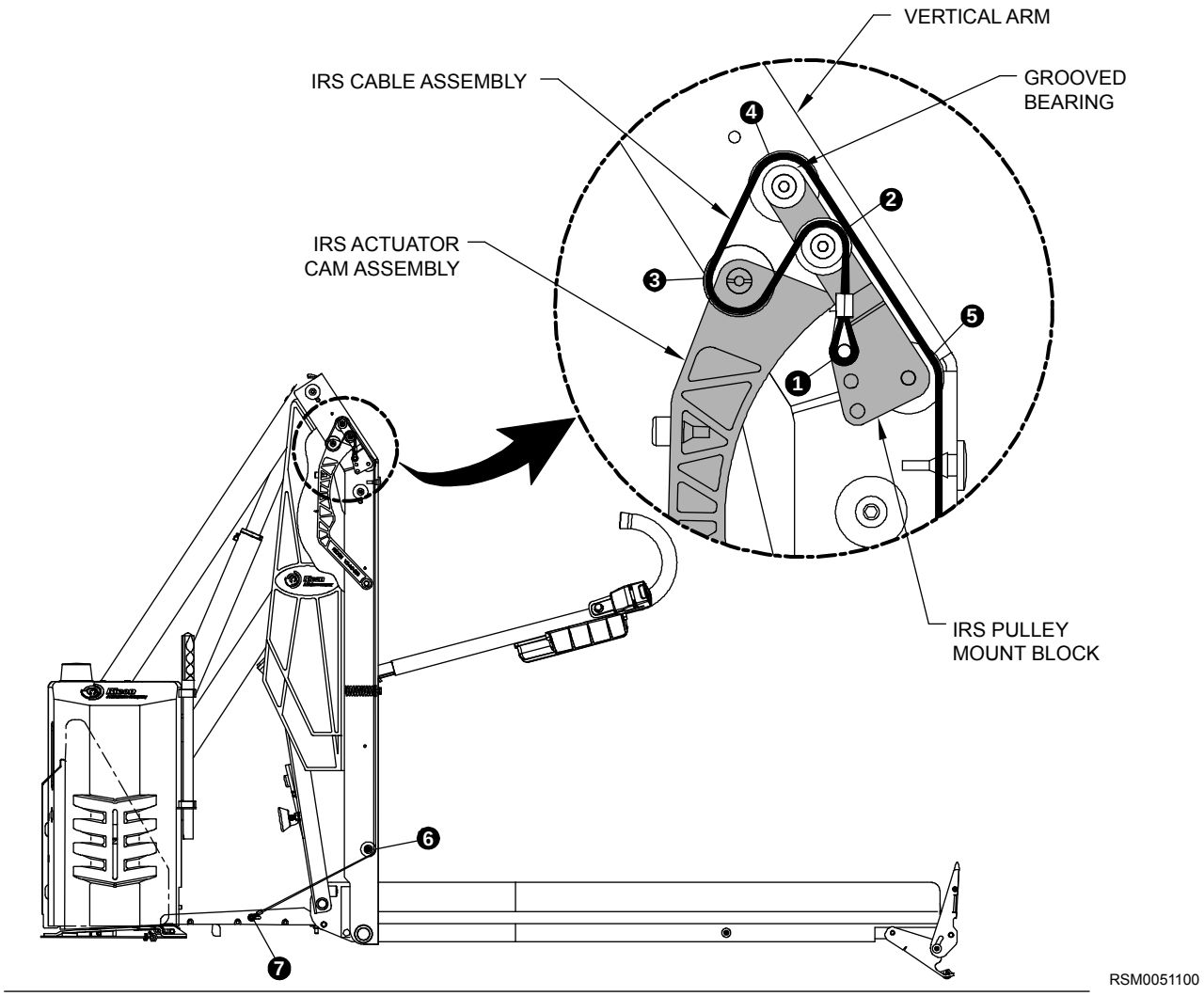


FIGURE 3-3: BRIDGEPLATE CABLE ROUTING

4. S-SERIES AND K-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.

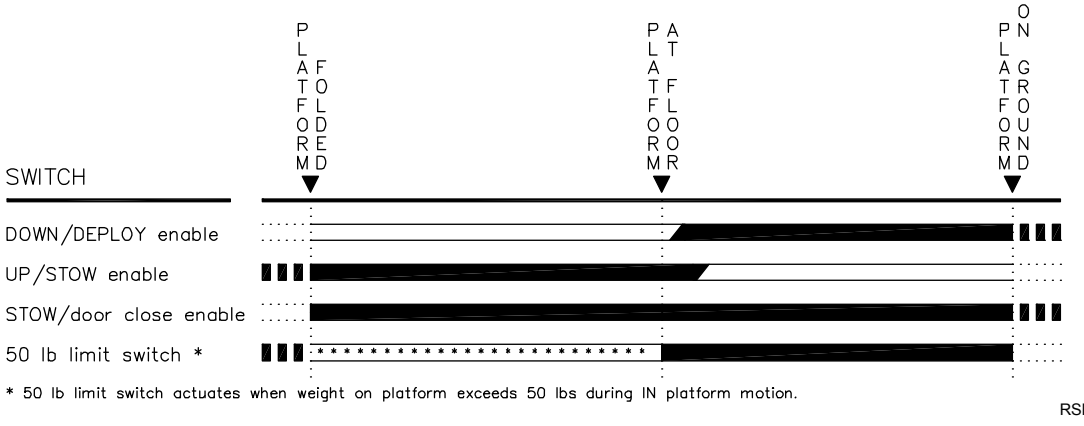


FIGURE 3-4: LIMIT SWITCH ACTUATION CHART

5. BRIDGEPLATE ADJUSTMENT

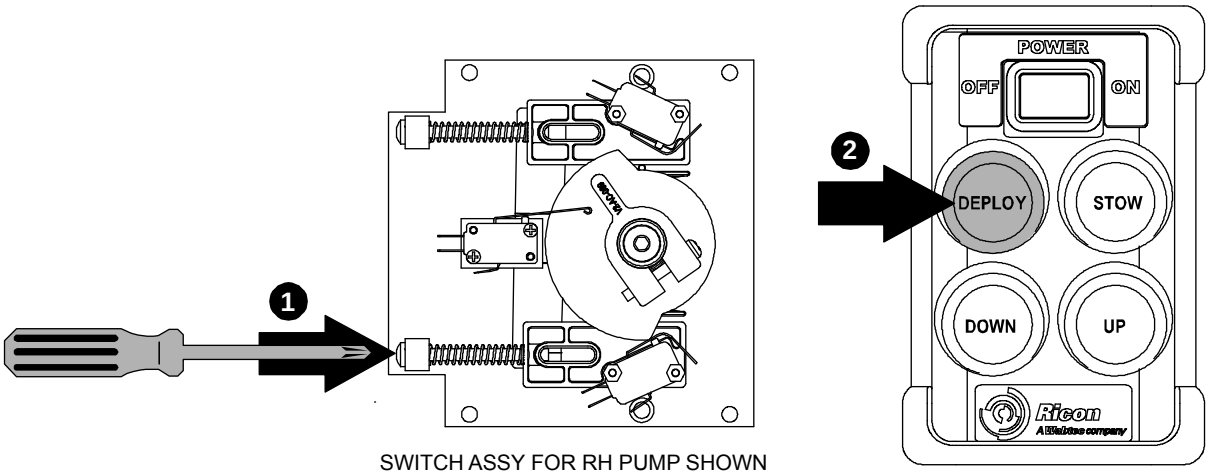
NOTE: The purpose of the bridgeplate adjustment is to adjust the floor level setting by adjusting the Up Cutoff Adjustment Screw and Deploy Cutoff Adjustment Screw so that the bridgeplate properly sits onto the bridgeplate switch sensor assembly.

a. Fully STOW platform.

b. Refer to **Figure 3-5.**

1) Insert screwdriver into the DEPLOY CUTOFF ADJUSTMENT SCREW (bottom adjusting screw).

2) Deploy the platform to floor level. Push and hold control pendant DEPLOY switch.

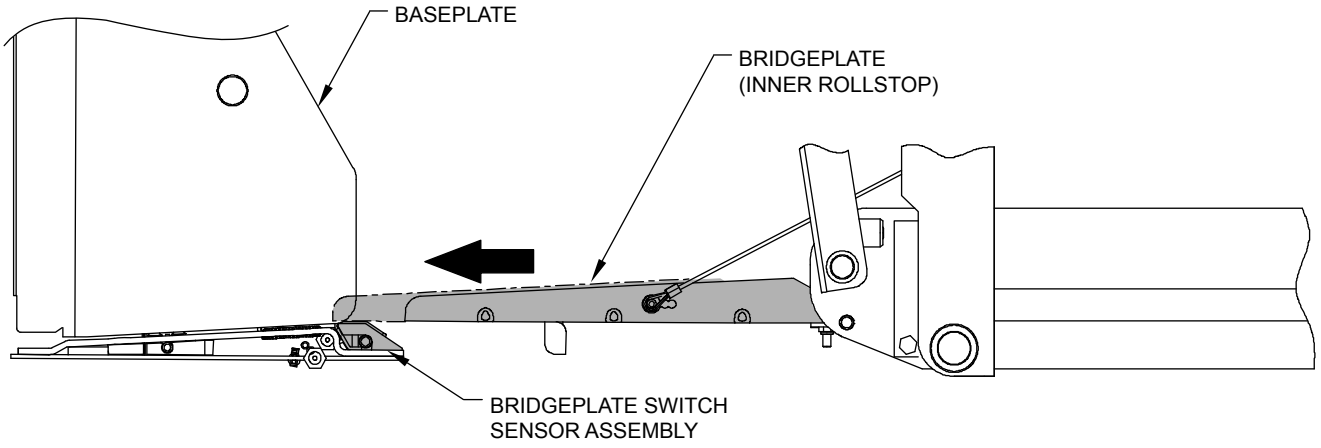


SWITCH ASSY FOR RH PUMP SHOWN

RSM0051200

FIGURE 3-5: BOTTOM ADJUSTING SCREW

c. Slowly turn DEPLOY CUTOFF ADJUSTMENT SCREW **clockwise** until the bridgeplate moves onto the bridgeplate switch sensor assembly, as shown in **Figure 3-6**.



RSM0051300

FIGURE 3-6: BRIDGEPLATE ADJUSTMENT

d. DEPLOY platform about 10 inches from ground.

e. Refer to **Figure 3-7**. Insert the screwdriver into the UP CUTOFF ADJUSTMENT SCREW (top adjusting screw) then push and hold control pendant UP switch to cycle the platform back up to floor level.

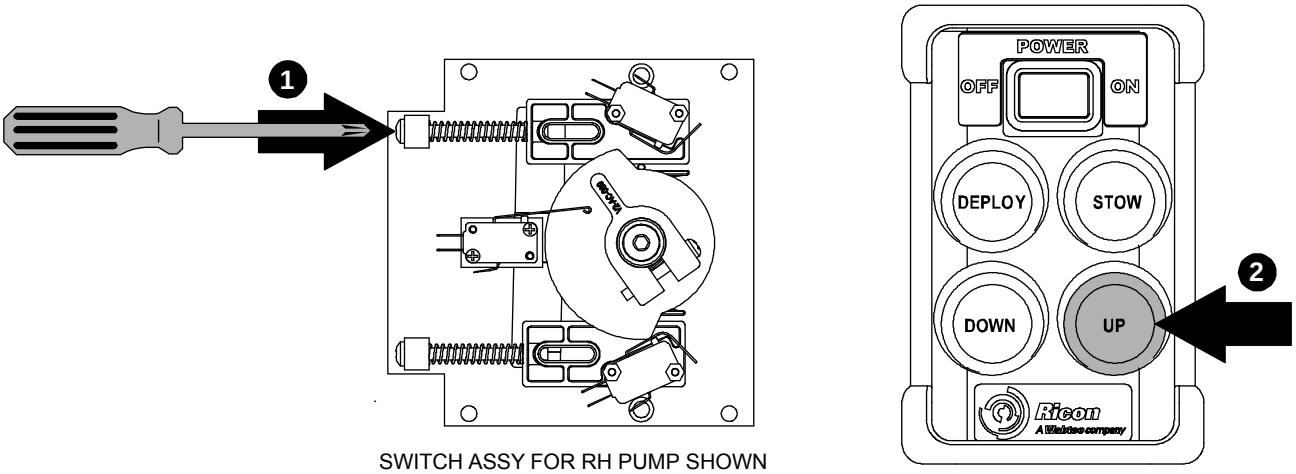


FIGURE 3-7: PUSH AND HOLD UP

f. Refer to **Figure 3-6.** When the platform is at floor level, observe where the bridgeplate sits on the bridgeplate switch sensor assembly.

g. Refer to **Figure 3-7.** Slowly turn the UP CUTOFF ADJUSTMENT SCREW **counterclockwise** to adjust the bridgeplate backward or **clockwise** to adjust the bridgeplate forward.

h. Cycle platform to DEPLOY then UP to floor level. Observe the position of the bridgeplate to the bridgeplate switch sensor assembly and make any necessary adjustments. The bridgeplate should sit on the bridgeplate switch sensor, as shown in **Figure 3-6**.

6. STOW-LOCK ADJUSTMENT

NOTE: The purpose of this procedure is to replace and properly set the stow lock.

a. Fully STOW platform.

b. Refer to **Figures 3-8.** Use a 3/16" allen wrench to remove the two screws and washers that attach the base latch block to the bridgeplate. Partially deploy platform then remove base latch block for replacement.

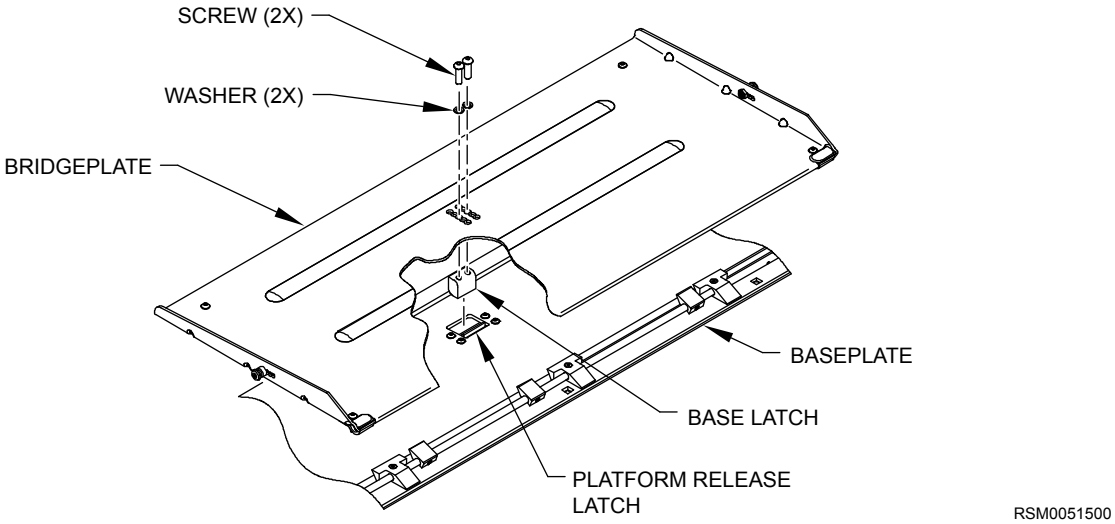


FIGURE 3-8: BASE LATCH

c. Place sharp edge of the base latch block against the blade of the platform latch release weldment in the baseplate, as shown in **Figure 3-8**.

d. Stow the platform.

e. Add medium strength thread lock to the screws then install the two screws and washers. Turn the screws out one turn so that the screws are not completely tightened.

NOTE: This is done to ensure the sharp edge of the base latch block contacts the blade of the platform latch release weldment in the baseplate before tightening.

f. Slowly open the manual release valve to apply load to the lift. The weight of the lift will pull the base latch block flush with the blade of the platform latch release weldment. Tighten the screws until the base latch block is secured in place.

g. Close the manual release valve then press the STOW function to remove the load from the lift.

h. Partially deploy the lift. Ensure that the platform deploys with no delay. Stow the lift and verify that there is a positive lock when the lift is stowed.

7. REAR SPRING REPLACEMENT

NOTE: A well maintained and lubricated parallel arm spring will prolong the life of the spring. In the event that the spring will need to be replaced, proceed with rear spring replacement.

a. Deploy platform to ground level onto a pallet for support and to maintain the parallel arms at a 90 degree angle perpendicular to the rear of the platform towers. The tine of the spring will load straight up and down when done so.

b. Use a 3/16" allen wrench to remove screw and lock washer from the pin.

c. Refer to **Figures 3-9 and 3-10**. Attach pin alignment tool to pin. Replace pin with appropriate tool to hold parallel arm and rear spring in place.

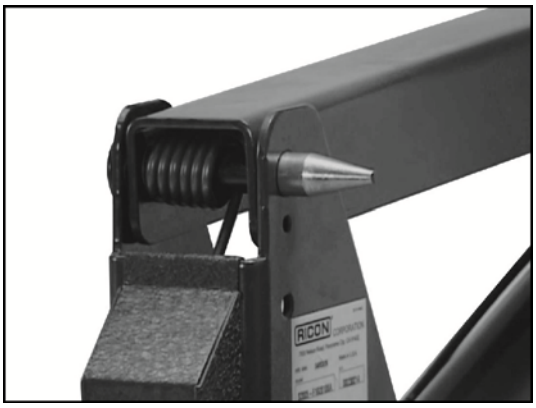


FIGURE 3-9: PIN WITH PIN ALIGNMENT TOOL

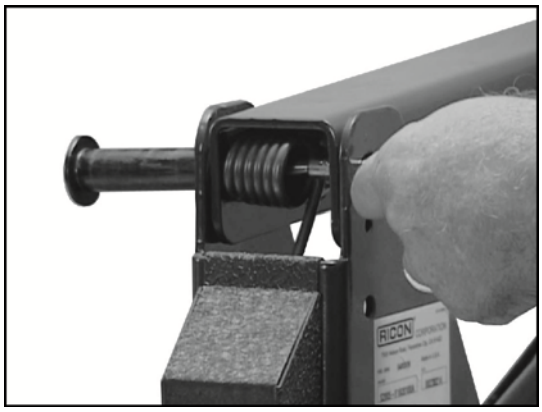


FIGURE 3-10: PIN WITH PIN ALIGNMENT TOOL

d. Refer to **Figure 3-11.** Carefully remove tool holding parallel arm and rear spring in place. Hold rear spring and parallel arm, then pull parallel arm up and remove rear spring.

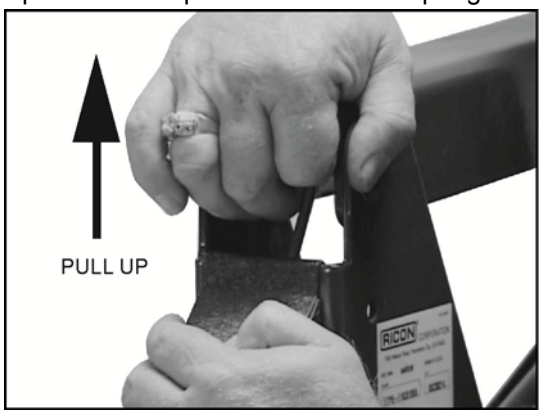


FIGURE 3-11: PIN WITH PIN ALIGNMENT TOOL

e. Replace and install rear spring.

f. Refer to **Figures 3-12**. Install a 2" extension pin through parallel arm and rear spring.

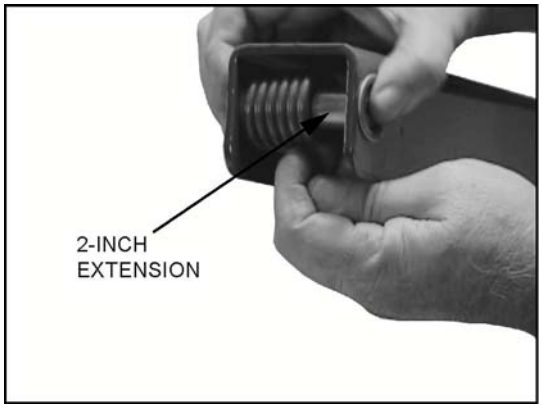


FIGURE 3-12: 2-INCH EXTENSION

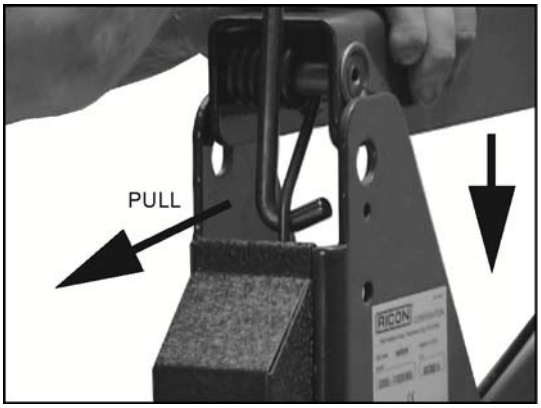


FIGURE 3-13: PLACE REAR SPRING

g. Refer to **Figure 3-13.** Use appropriate tool to use as leverage to pull back tine of bent rear spring and place into baseplate tower.
h. Replace 2-Inch extension with existing pin.
i. Reinstall screw and lock washer.
j. Repeat removal and installation for opposite parallel arm.

8. HYDRAULIC CYLINDER GLAND NUT AND PISTON REPLACEMENT

a. Lower lift to ground level.

NOTE: Lift must be lowered as far as possible to avoid personal injury and oil spillage when hydraulic components are dismantled.

b. Fully open manual release valve.

NOTE: Important for allowing easy removal/insertion of ram into cylinder.

c. Install hydraulic breather tube if available.

NOTE: The hydraulic breather tube may help in avoiding oil overflow from filler neck when reinstalling ram. An assistant may be required to check oil level in filler neck as ram is reinserted, if breather tube is not available.

d. Loosen both hydraulic button head screws with 3/16” hex wrench to loosen pin.
e. Remove and retain cap screw with 5/32” hex wrench.
f. Refer to **Figure 3-14**. Drive rear pin out and retain. Use pin driver, pin is driven towards bushing side.

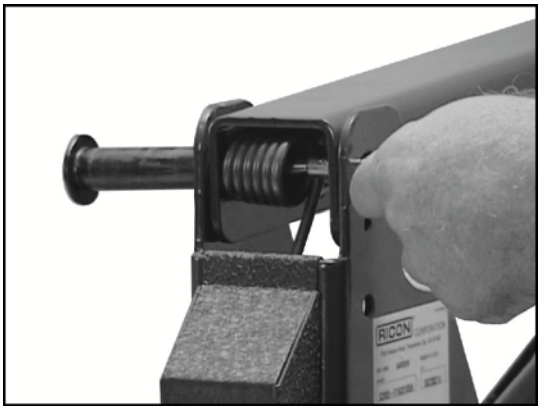


FIGURE 3-14: PLATFORM FOLDING BRACKET

g. Drive front pin out and retain.

NOTE: Hydraulic cylinder may be left in baseplate “U” tower for this and proceeding operations.

i. Refer to **Figure 3-15**. Unscrew gland nut.
j. Refer to **Figure 3-15**. Pull shaft out.
k. Refer to **Figure 3-15**. Remove old piston using appropriate tool. Heat piston thread if required to soften the thread lock and remove piston.

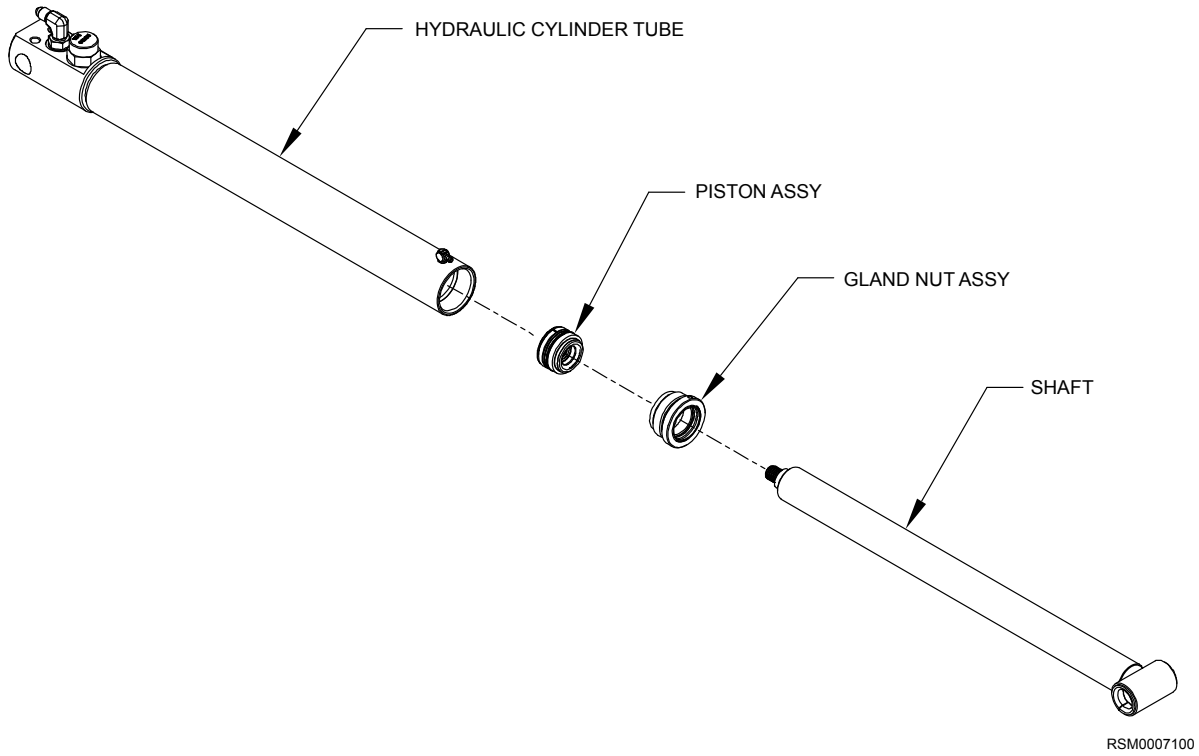


FIGURE 3-15: HYDRAULIC CYLINDER

l. Refer to **Figure 3-15**. Replace gland nut with the gland nut supplied in kit. Apply thin film of hydraulic fluid to the seals before installing.

m. Thoroughly clean shaft and new piston threads.

NOTE: If shaft threads were damaged by the thread locking punch, rethread with 1/2-20 die. Use a wire brush to remove all thread sealer from shaft threads. Blow clean. Always blow piston threads clean even if no dirt is visible.

n. Refer to **Figure 3-15**. Install new piston supplied in kit. Apply medium strength thread lock (blue) on shaft threads and tighten securely.

o. Refer to **Figure 3-15**. Reinsert shaft into cylinder. Apply thin film of hydraulic fluid to seals before installing. Use split cup tool to insert piston.

NOTE: Be extra careful not to damage piston seals.

p. Firmly tighten gland nut. Apply medium strength thread lock (blue) on gland nut threads.

q. Install front pin. Place set screw face down. Apply medium strength thread lock (blue) on cap screw. Tighten using 5/32" hex wrench.

r. Install rear spring using spring installation tools.

s. Install rear pin. Insert pin from bushing side. Apply medium strength thread lock (blue) to button head screw. Tighten using 3/16" hex wrench.

NOTE: Air in Cylinder will require purging for proper wheelchair lift function.

t. Deploy lift and cycle three to four times to ensure any air in hydraulic cylinders is removed before stowing wheelchair lift.

E. HYDRAULIC CIRCUIT DIAGRAM

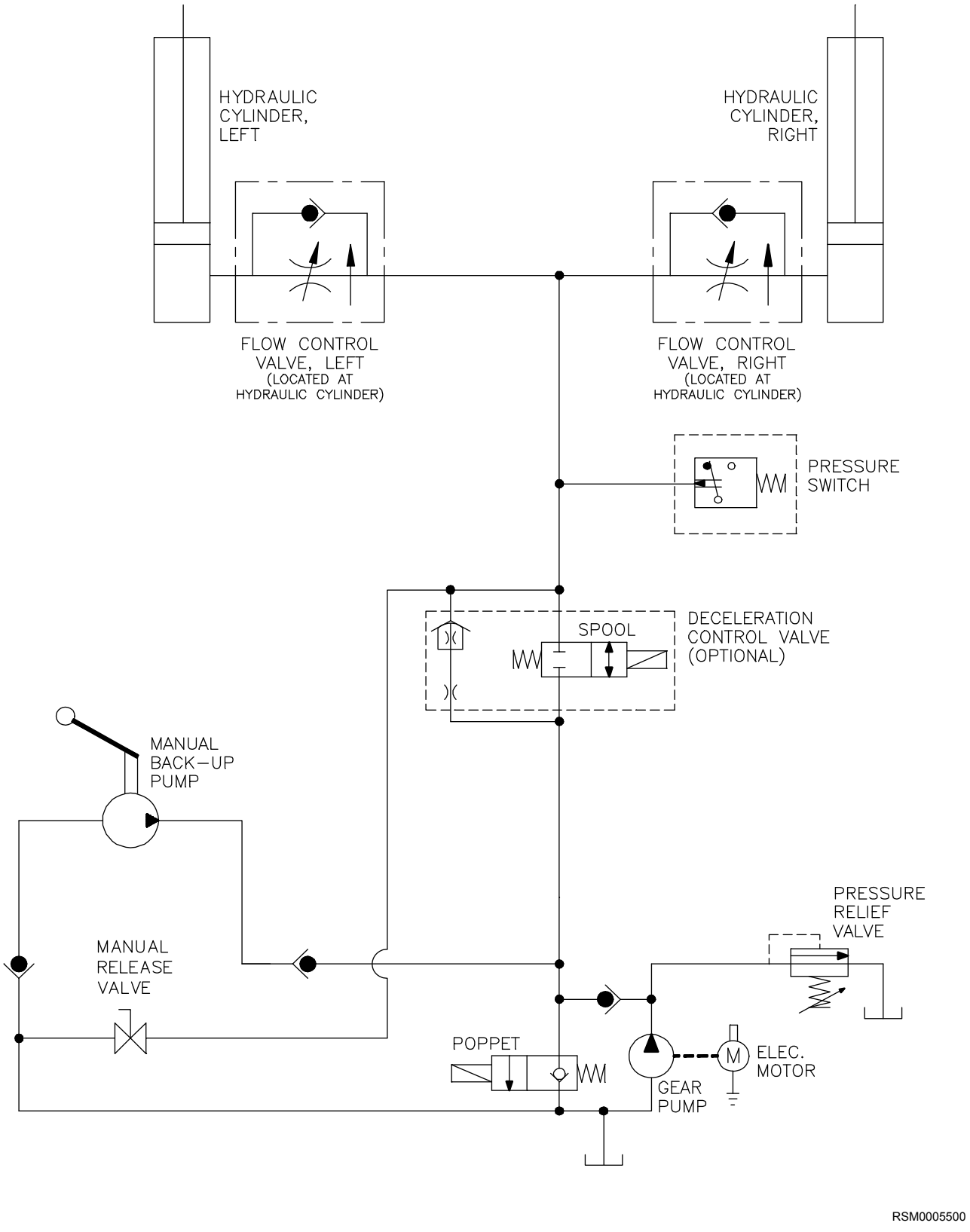


FIGURE 3-16: S/K-SERIES HYDRAULIC CIRCUIT

F. ELECTRICAL WIRING DIAGRAM

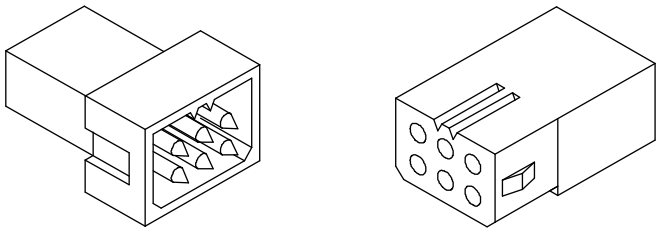
1. DIAGRAM LEGEND

a. **Wire Color Codes**

TABLE 3-3: WIRE COLOR CODES			
LETTER	**COLOR**	**LETTER**	**COLOR**
BLK	Black	RED	Red
BLU	Blue	VIO	Violet
BRN	Brown	GRY	Gray
GRN	Green	WHT	White
ORG	Orange	YEL	Yellow
END OF TABLE			

b. **Electrical Connector Description**

Refer to **Figure 3-17**. 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.



PLUG (P) RECEPTACLE (R)

RSM0005600

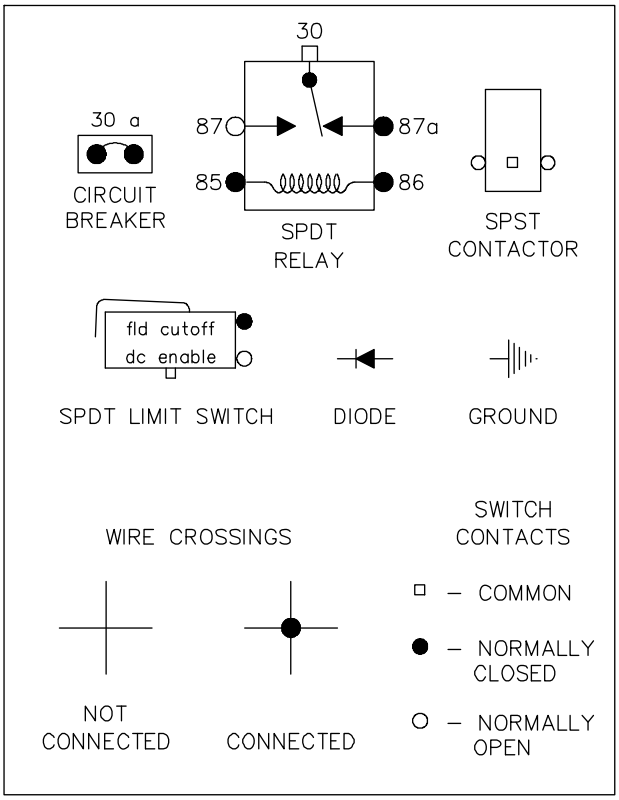
FIGURE 3-17: MOLEX CONNECTORS

c. **Diagram Labels**

TABLE 3-4: DIAGRAM LABELS		
Diagram Label	**Definition**	**Command/Description**
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 Cut-off switch.
DWN	Pump Down	Used by OUT and DOWN
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
END OF TABLE		

d. **Electrical Symbols**

Figure 3-18 shows standard symbols used in the electrical wiring diagram.

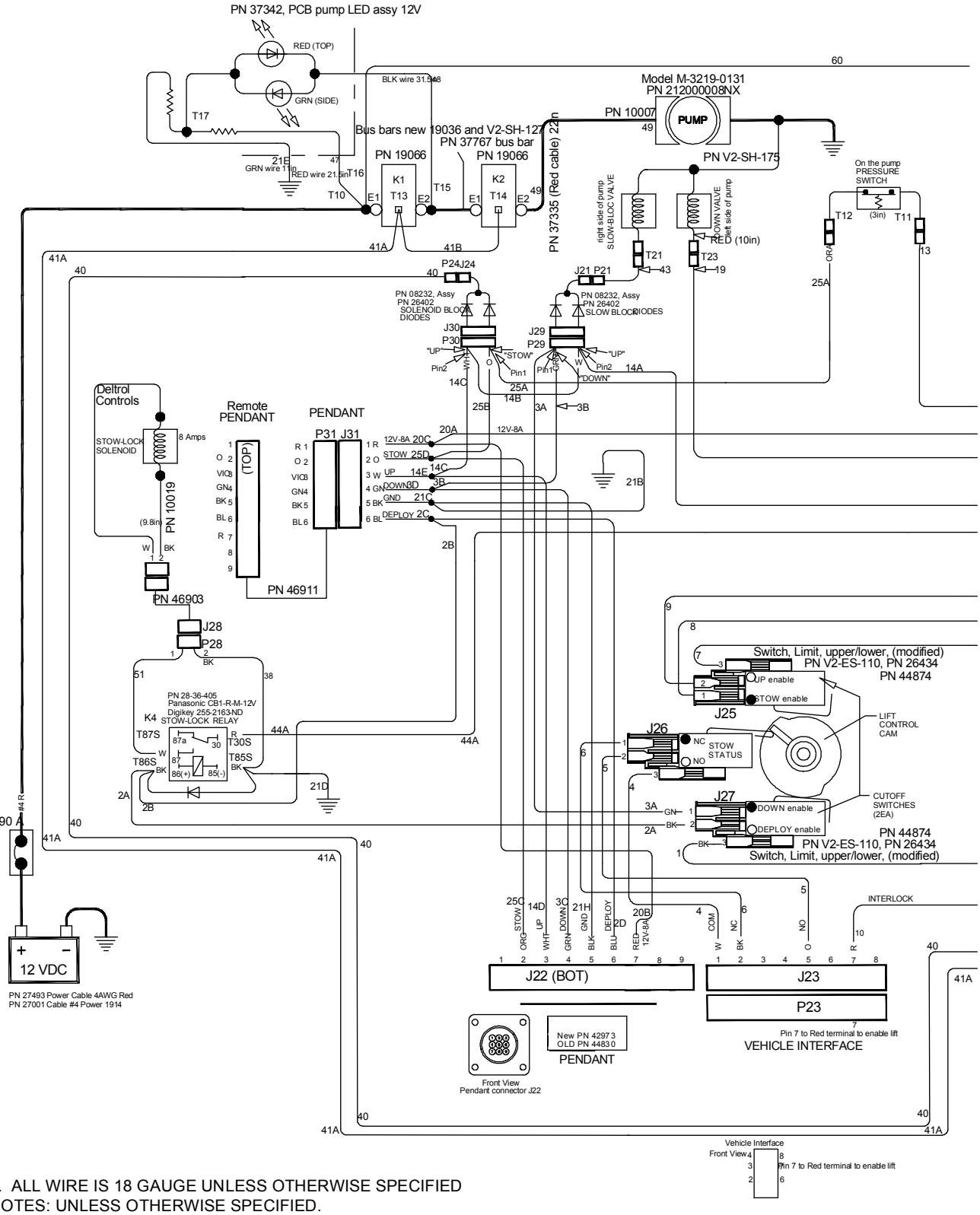


RSM0005700

FIGURE 3-18: DIAGRAM SYMBOLS

e. **WIRING DIAGRAM**

Refer to **Figures 3-19** on the following page for the S/K-Series Public Use wiring diagram.

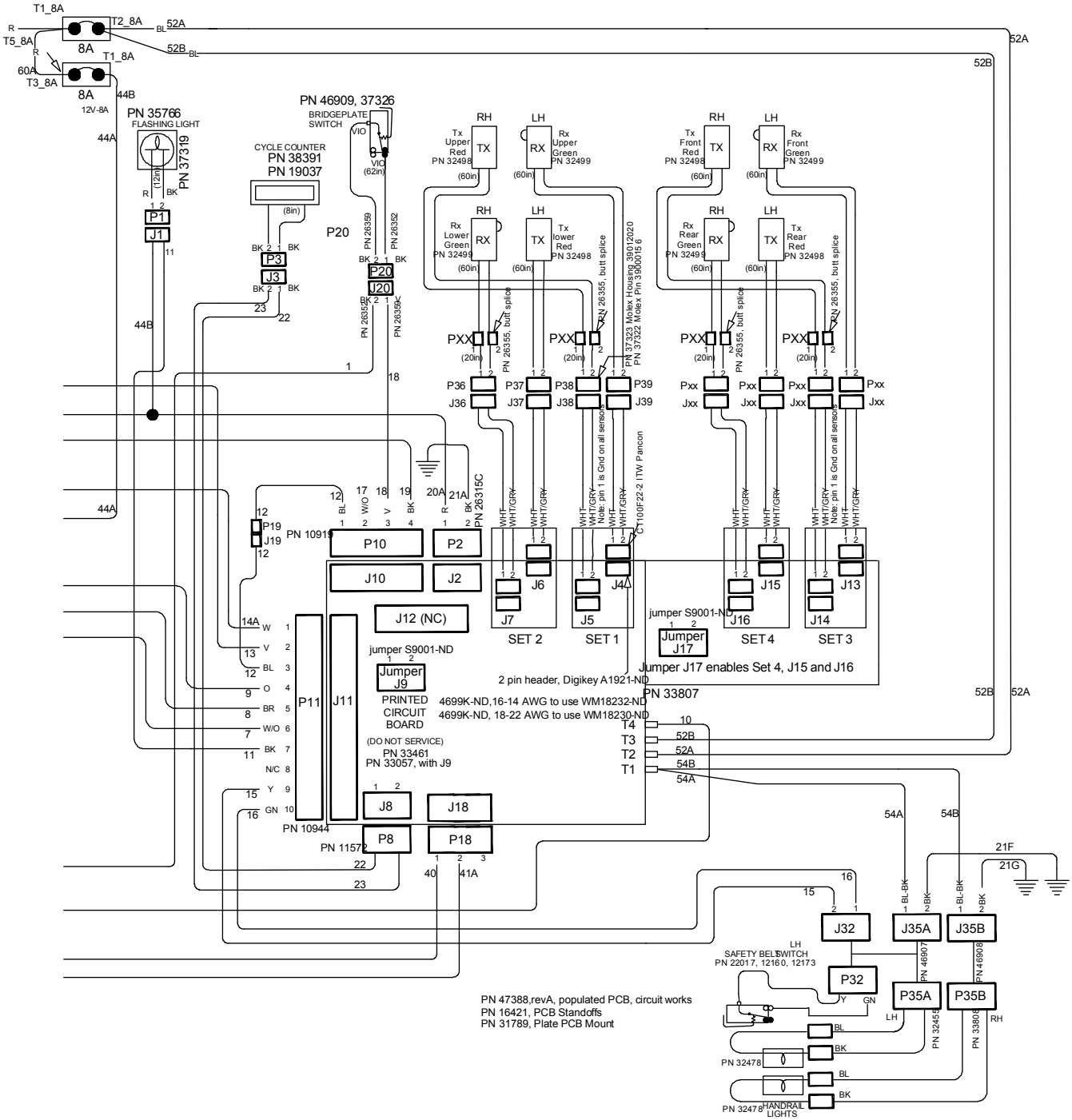


1. ALL WIRE IS 18 GAUGE UNLESS OTHERWISE SPECIFIED

NOTES: UNLESS OTHERWISE SPECIFIED.

RSM0050101

FIGURE 3-19.1: TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE WIRING DIAGRAM (SHEET 1 OF 2)



RSM0050201

FIGURE 3-19.1: TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE WIRING DIAGRAM (SHEET 2 OF 2)

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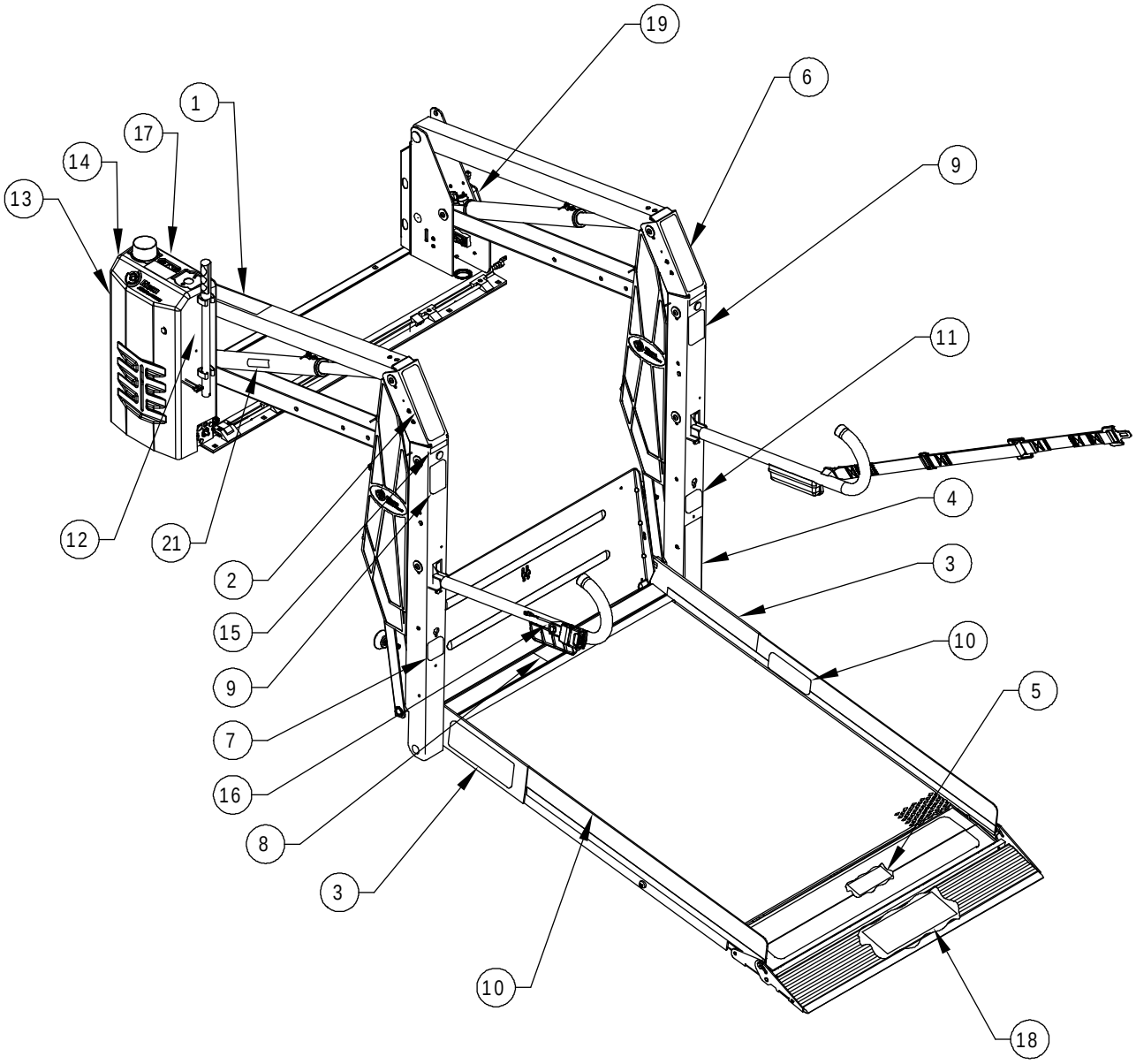
IV. SPARE PARTS

This chapter contains spare parts diagrams and lists for the RICON Titanium Line S-Series and K-Series Public Use wheelchair lifts. The part diagrams are exploded views of each major lift assembly, with individual parts and components referenced by numbers. Each accompanying parts list contains figure item numbers, part descriptions, quantities used, configurations and the Ricon part number. To order parts, locate part on an appropriate diagram and note the figure item number. Find the figure item number on the accompanying parts list and use the part number in the far right column. Note that parts identified with (REF) in the QTY column of the spare parts list are for reference purposes only and are not sold for spare parts. Refer to the DECAL LOCATIONS AND PART NUMBERS figure in **Chapter II** for decal part numbers.

NOTE: 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.

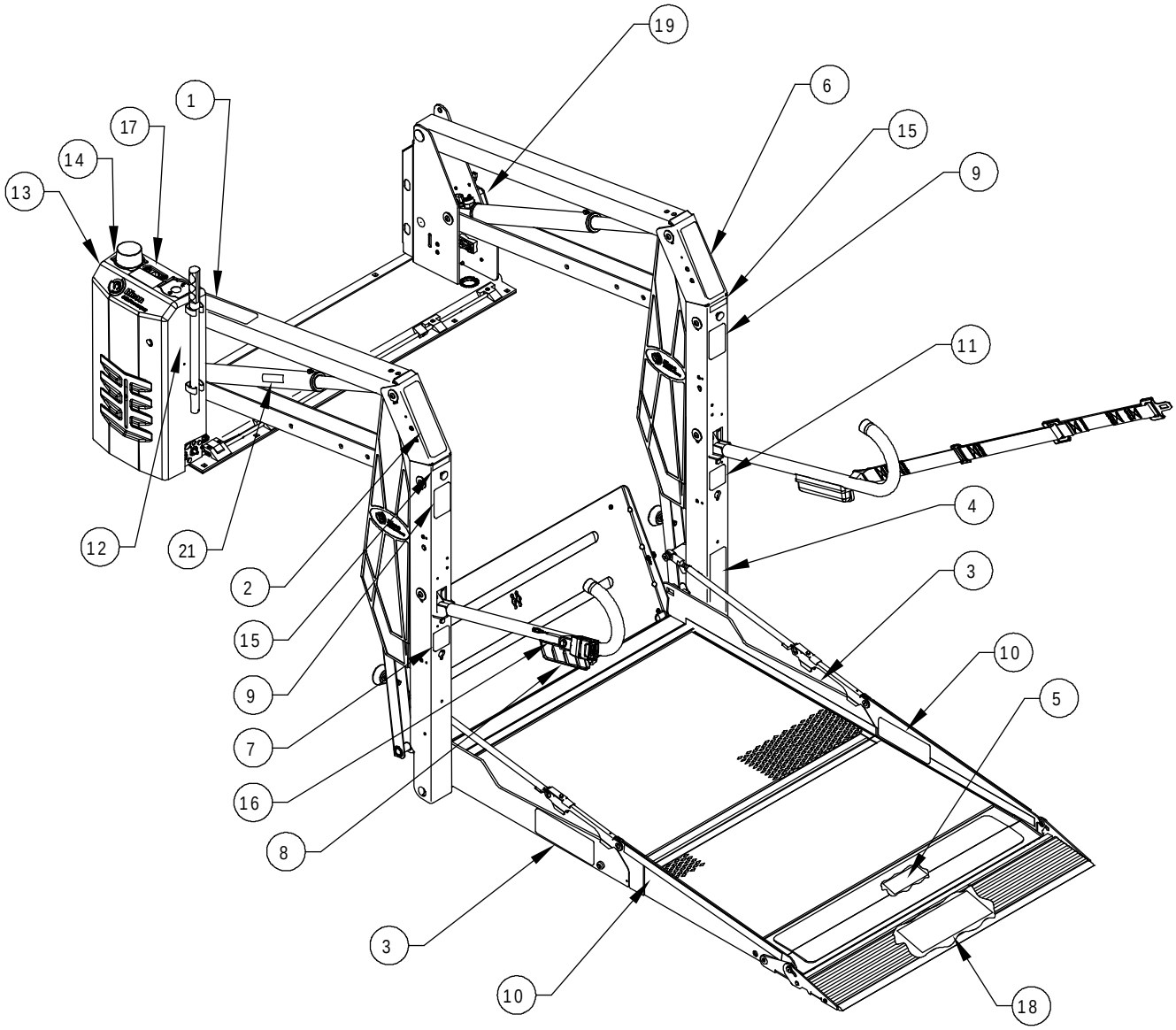
TITANIUM LIFT MODEL AND KIT NUMBERS	
PRODUCT NUMBER	S5510-XXXXXXX (first model in number sequence)
DOCUMENTATION KIT NUMBER	44277
Spare Parts BOM	45550

PARTS DIAGRAM ..... PAGE



RSM0049102

FIGURE 4-1.1: TITANIUM S-SERIES PUBLIC USE LIFT DECAL LOCATIONS



RSM0051801

FIGURE 4-1.2: TITANIUM K-SERIES PUBLIC USE LIFT DECAL LOCATIONS

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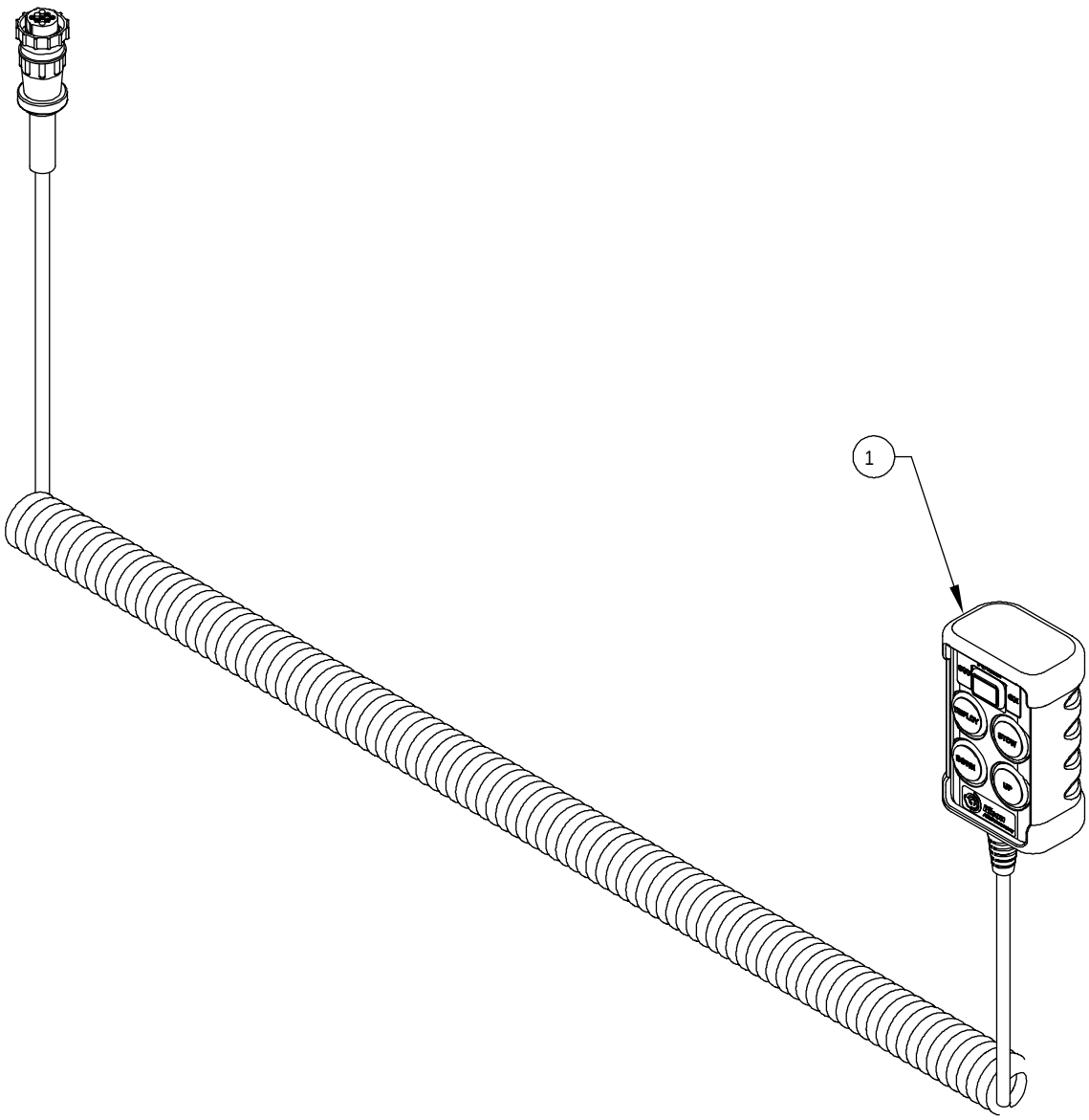
FIGURE 4-1: TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE DECALS

FIG. ITEM	DESCRIPTION	QTY	CONFIG.	PART NO.
1	DECAL, MANUAL OPER., DOT TITANIUM LINE , S -SERIES	1		44240
2	DECAL, OPER. INSTR., DOT TITANIUM LINE, S-SERIES	1	S-SERIES	44241
2A	DECAL, OPER. INSTR., DOT TITANIUM LINE, K -SERIES	1	K-SERIES	44287
3	DECAL, RICON-WAB, 3.5" X 10", WHITE ON CLEAR	1		46586
4	DECAL, RICON-WAB, 2.5" X 8.5", WHITE ON CLEAR	1		46587
5	DECAL, RICON-WAB, 7.75" X 2.75" WHITE ON CLEAR	1		46588
6 **	DECAL, PROPER LOAD, DOT, TITANIUM S/K, MAX LOAD 1000 LB	1		44244
7	DECAL, PENDANT CONTROL REMOVAL, S/K-SERIES	1		44262
8	DECAL, DO NOT STEP ON BRIDGEPLATE, S/K-SERIES	1		42079
9	DECAL, STANDEE INSTR., S/K-SERIES	2		42092
10	DECAL, STANDEE LOCATION, S/K-SERIES	2		42094
11	DECAL, LOGO, STAND CLEAR, SQUARE, S/K-SERIES	1		42099
12	DECAL, PRESSURE SWITCH ADJUSTMENT, S/K-SERIES	1		36947
13	DECAL, LIMIT SWITCH ADJUSTMENT, S/K-SERIES	1		36948
14	DECAL, SECOND SOLENOID, S/K-SERIES	1		36932
15	DECAL, DOT, PUBLIC USE LIFT	1		32113
16	DECAL, "CAUTION" RESTRAINT BELT	1		26155
17	DECAL, PATENT#, S-SERIES	1	S-SERIES	32-10-173
17A *	DECAL, PATENT#, K-SERIES	1	K-SERIES	32-10-173
18	DECAL, RICON-WAB LOGO, DOT TITANIUM, S/K-SERIES	1		44242
19	DECAL, 1 PENDANT ONLY, CAUTION	1		46591
20 *	SET, DECAL, DOT FMVSS TITANIUM *(REFERENCE ONLY)*	REF	S-SERIES	44239
20A *	SET, DECAL, DOT FMVSS TITANIUM *(REFERENCE ONLY)*	REF	K-SERIES	44247
21	DECAL, PURGE AIR, CYLINDER	2		46592

NOTE: (REF) in QTY column is for Referenced Parts Only and are not sold as spare parts.

NOTE: * Item or configuration not shown.

NOTE: ** Ricon Titanium™ lifts are shipped with a 1,000 lb. capacity rating. Only the vehicle manufacturer may change the capacity of the lift. See Chapter II, Section A.2.b - Vehicle Floor Strength Requirements.



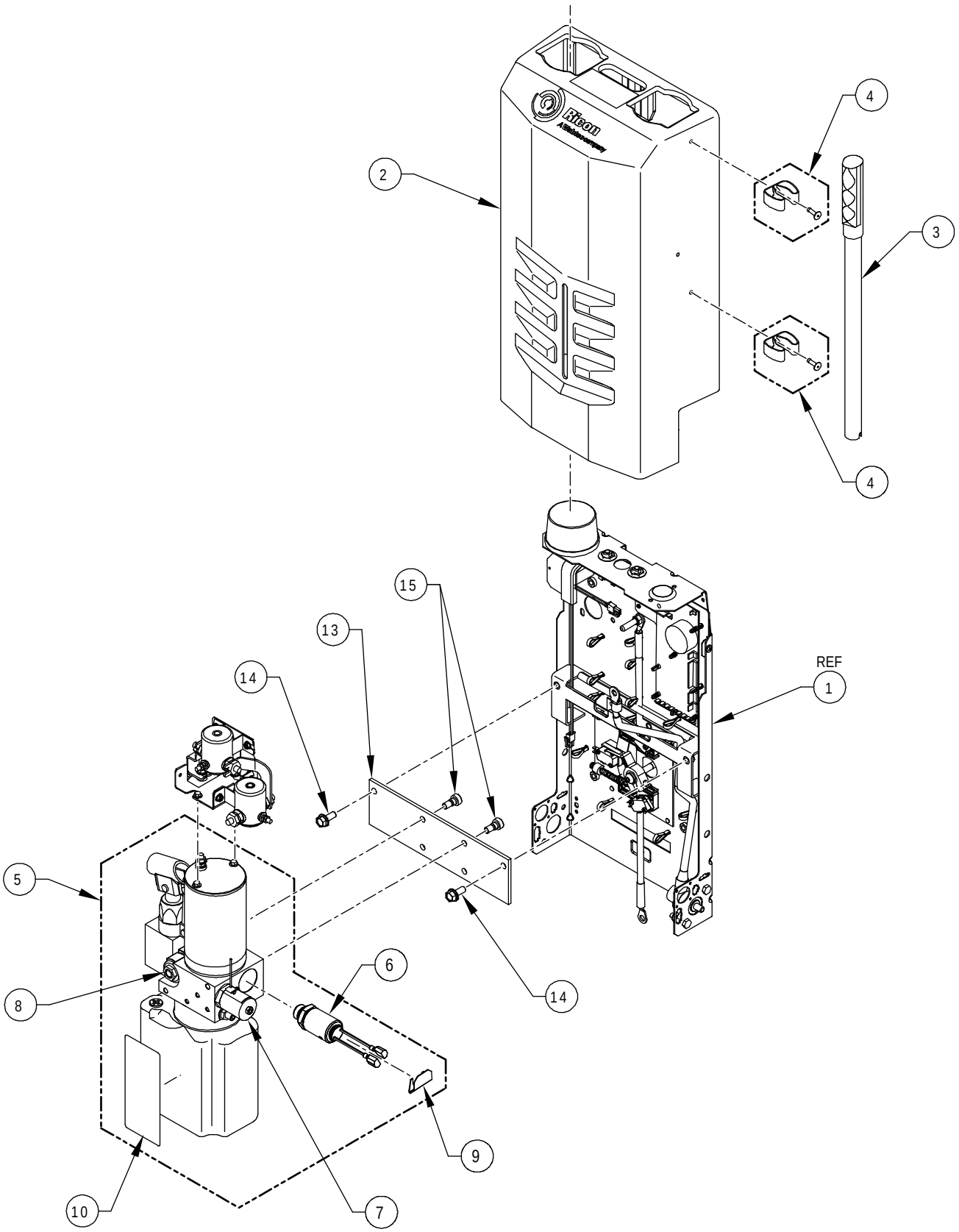
RSM0049300

FIGURE 4-2: TITANIUM S-SERIES AND K-SERIES DOT PUBLIC USE PENDANT

FIGURE 4-2: TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE PENDANT				
FIG. ITEM	**DESCRIPTION**	**QTY**	**CONFIG.**	**PART NO.**
1	KIT, PENDANT ASSY, COIL, 9 PIN, FMVSS, IP67	1		45635

NOTE: (REF) in QTY column is for Referenced Parts Only and are not sold as spare parts.

NOTE: * Item or configuration not shown.



RSM0049200

FIGURE 4-3: TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE PUMP ASSY (LEFT HAND SIDE PUMP SHOWN)

FIGURE 4-3: TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE PUMP ASSY

FIG. ITEM	DESCRIPTION	QTY	CONFIG.	PART NO.
1	CHASSIS ASSY, 12V LH PUMP, 20"HT (*REFERENCE ONLY*)	REF	LH	45652
1A *	CHASSIS ASSY, 12V RH PUMP, 20"HT (*REFERENCE ONLY*)	REF	RH	45643
2	COVER, PUMP, 20.58" TALL, LH	1	LH	45295-1
2A *	COVER, PUMP, 20.58" TALL, RH	1	RH	45295-2
3	HANDLE ASSY, PUMP, MANUAL OPERATION	1		V2-SH-111
4	KIT, CLIP, TOOL, EMERGENCY, PAINTED	2		42033
5	PUMP ASSEMBLY, 12V, EXPORT	1		PM212000008NX
6	PRESSURE SWITCH, MODEL CJ	1		42050
7	KIT, SPOOL VALVE, W/DECEL, 12V	1		01176
8	VALVE ASSY, POPPET, DELTROL, 12V	1		V2-SH-105
9	C-CLIP, PRESSURE SWITCH	1		42318
10	DECAL, OIL FILL LEVEL WARNING, S/K	1		42030

NOTE: (REF) in QTY column is for Referenced Parts Only and are not sold as spare parts.

NOTE: * Item or configuration not shown.

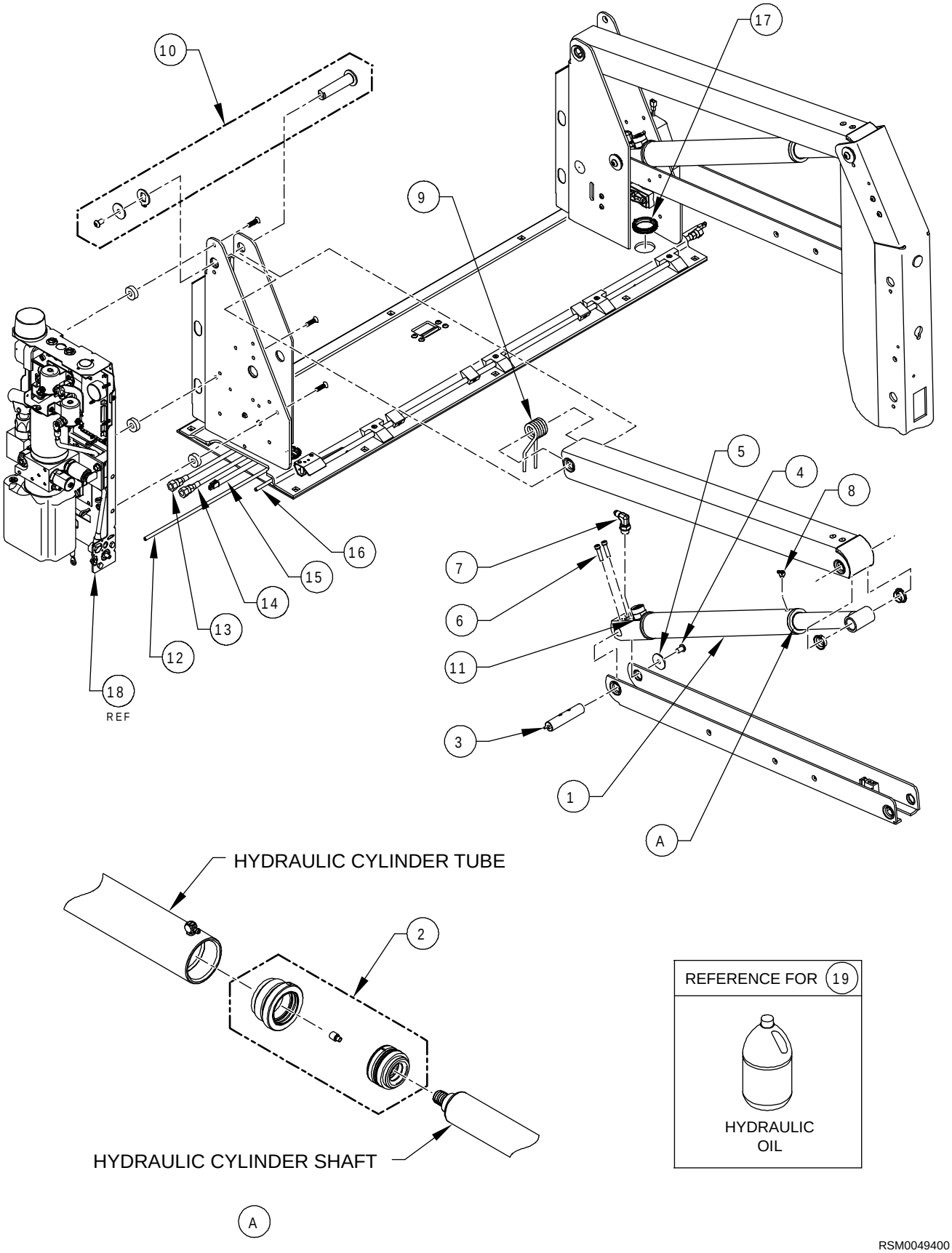


FIGURE 4-4: TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE HYDRAULIC SYSTEM

FIGURE 4-4: TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE HYDRAULIC ASSY

FIG. ITEM	DESCRIPTION	QTY	CONFIG.	PART NO.
1	CYLINDER, HYD ASSY, OPEN 43.04" CLSD 27.29" (BLK)	2	S5505	30836K
1	CYLINDER, HYD ASSY, OPEN 43.04" CLSD 27.29" (BLK)	2	S5510	30836K
1	CYLINDER, HYD ASSY, OPEN 43.04" CLSD 27.29" (BLK)	2	K5505	30836K
1	CYLINDER, HYD ASSY, OPEN 43.04" CLSD 27.29" (BLK)	2	K5510	30836K
1A *	CYLINDER, HYD ASSY, OPEN 37" CLSD 21.25" (BLK)	2	S2005	VT-SH-105K
1A *	CYLINDER, HYD ASSY, OPEN 37" CLSD 21.25" (BLK)	2	S2010	VT-SH-105K
1A *	CYLINDER, HYD ASSY, OPEN 37" CLSD 21.25" (BLK)	2	K2005	VT-SH-105K
1A *	CYLINDER, HYD ASSY, OPEN 37" CLSD 21.25" (BLK)	2	K2010	VT-SH-105K
2	KIT, CYLINDER REPAIR (PISTON AND GLAND NUT ASSY)	2		21829
3	PIN ASSY, PIVOT, CAM SIDE	2		37780
4	SCREW, BHS, 5/16-18 X 1/2 SST BLK OX W/NYLOK (BAG OF 10)	1		14494
5	WASHER, FDR, .31 X 1.25 SST BLK OXIDE (BAG OF 10)	1		15921
6	SCREW, SHC, 1/4-20 X 1, BLK (BAG OF 10)	2		14491
7	FITTING, STE, 1/4J/9/16-18STL	2		V2-SH-14
8	FITTING, "L", MALE, M5, BARB	2		V2-SH-16
9	SPRING, TOP ARM	2		V2-SP-97
10	KIT, PIN, LINK, ARM W/HARDWARE	2		34586
11	KIT, FLOW CONTROL, FIXED RATE .50 GPM, (KIT OF 2)	1		30968
12	TUBE, POLYURETHANE, 6MM OD X 4MM ID, 9.0	1		21828
13	HOSE ASSY, HYD, 74" X 1/4 JIC X 1/4 JIC	1		37716
14	HOSE ASSY, HYD, 36" X 1/4 JIC X 1/4 JIC	1		UV-SH-013
15	HARNESS, STOW-LOC SOLENOID EXTENSION	1		37333
16	TUBE, POLYURETHANE, 6MM OD X 4MM ID, 6.0'	1		21827
17	GROMMET, CATERPILLAR, 3/16 X 12" LONG	2		26647
18	CHASSIS ASSY, 12V LH PUMP, 20"HT	1		45652
18A*	CHASSIS ASSY, 12V RH PUMP, 20"HT (*REFERENCE ONLY*)	REF		45643
19	OIL, HYDRAULIC, TEXACO #15, MEETS MIL-H-5606G	1	GAL	20-16-051

NOTE: (REF) in QTY column is for Referenced Parts Only and are not sold as spare parts.

NOTE: * Item or configuration not shown.

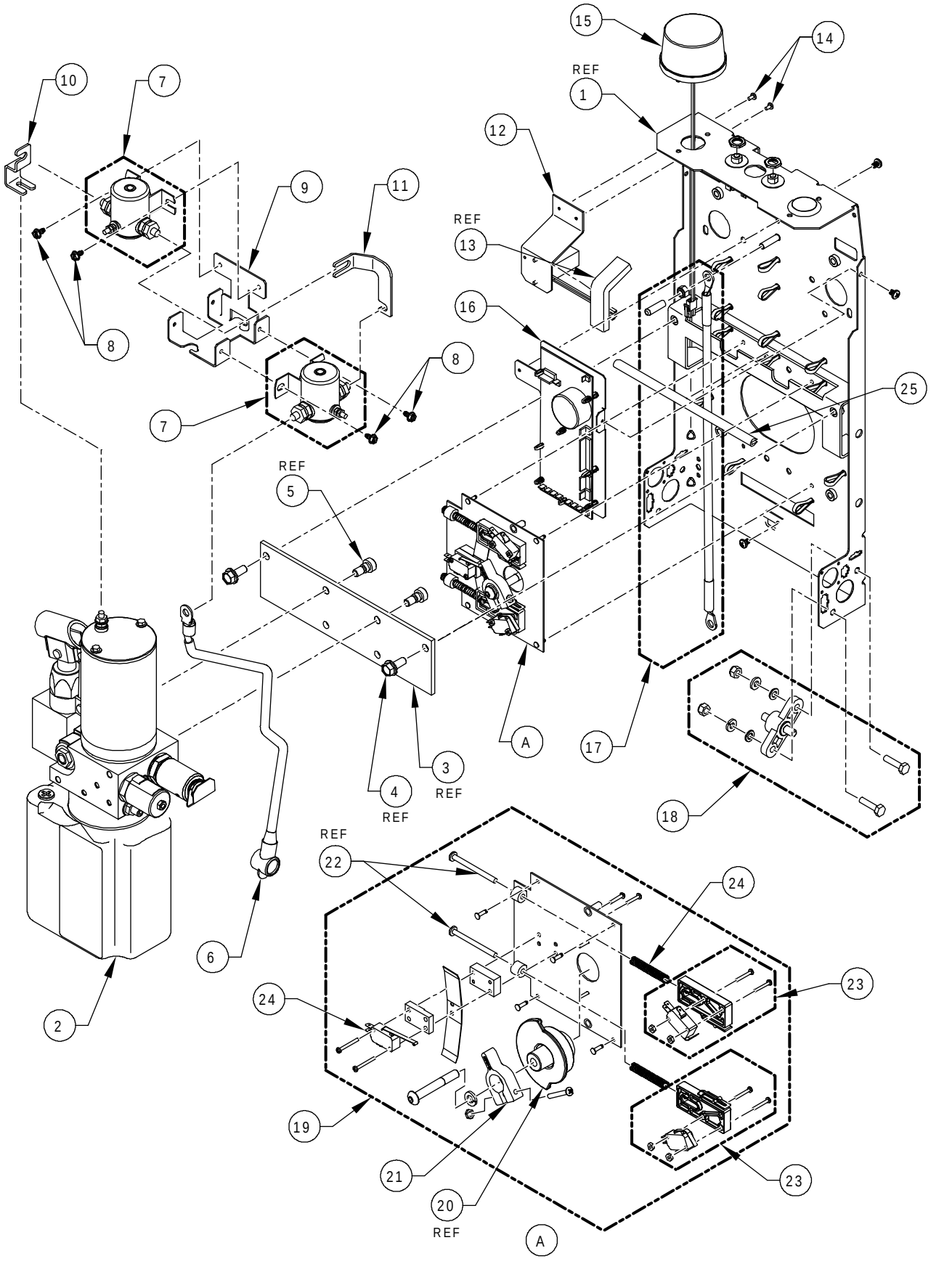


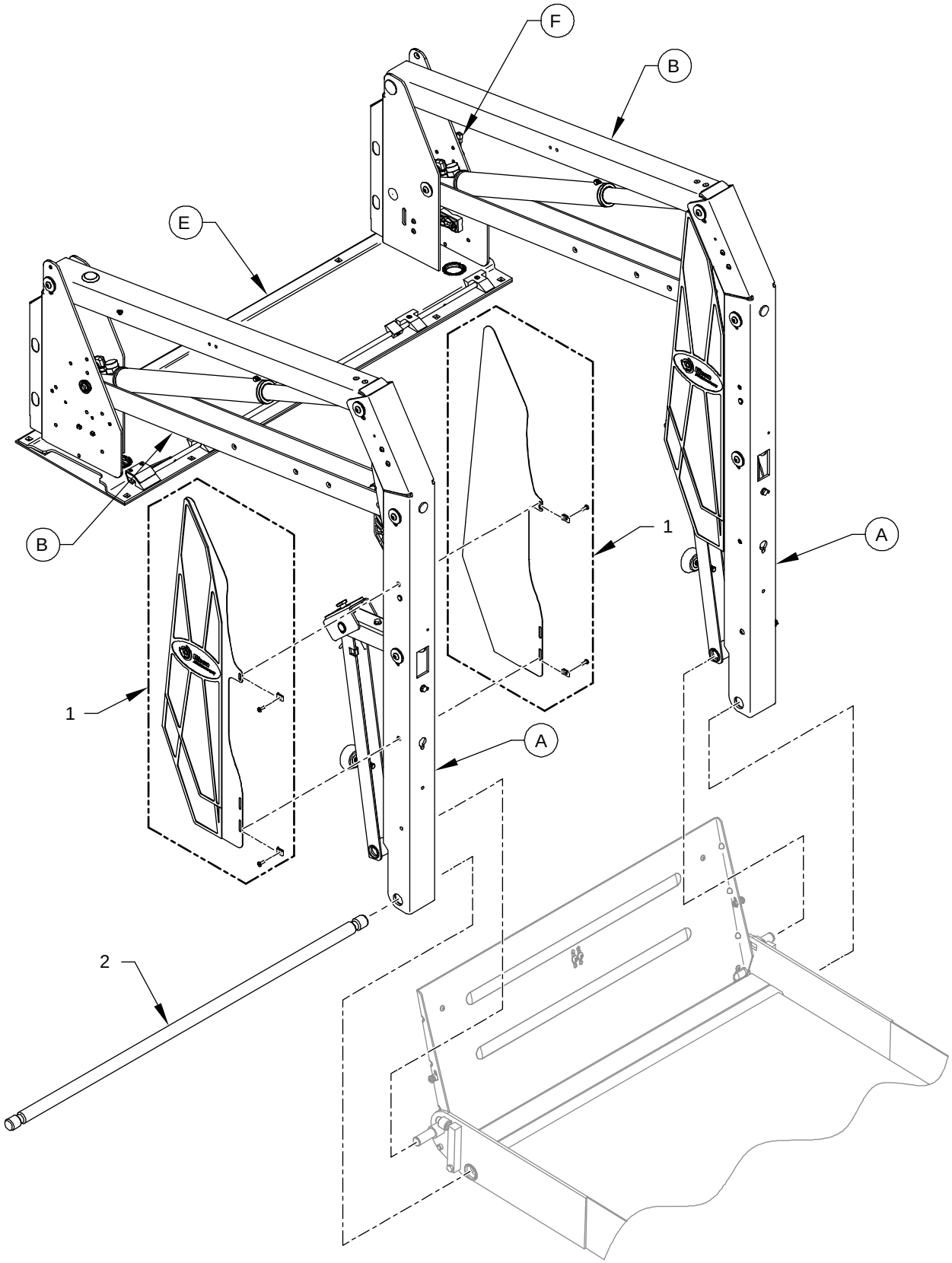
FIGURE 4-5: TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE ELECTRICAL SYSTEM

FIGURE 4-5: : TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE ELECTRICAL ASSY

FIG. ITEM	DESCRIPTION	QTY	CONFIG.	PART NO.
1	BRACKET WLDT, PUMP CHASSIS (*REFERENCE ONLY*)	REF		45626
2	PUMP ASSEMBLY,12V	1		RIPM212000008NX
3	PLATE, PUMP MOUNTING (*REFERENCE ONLY*)	REF		46027
4	SCREW, FLANGED, 5/16-18X.75L, ZINC (*REFERENCE ONLY*)	REF		37703
5	SCREW, SSS, 3/8 X 1/4 5/16 18 X 1/2 SST (*REFERENCE ONLY*)	REF		283794
6	HARNESS, MAIN POWER STRAP	1		45654
7	KIT, SOLENOID, 12V, SGL POLE, SGL THROW	2		29297
8	SCREW, HEX, 10-24 X 3/8, QUICK-DRIVE (*REFERENCE ONLY*)	REF		37702
9	BRACKET, PUMP SOLENOID	1		45580
10	BUSBAR, ISKRA, MOTOR	1		45581
11	BUSBAR, ISKRA, SOLENOID (RH)	1		45582
12	COUNTER ASSY, 12V, MODULAR	1		38391
13	TRACK, SMALL (SCHLEGEL #1755-2211-6)	1		45579
14	SCREW, PHP, 6-32 X 1/4, TYPE F, SST (*SEE KIT P/N 38391*)	REF		21953
15	LIGHT ASSY, RED W/CONNECTORS	1		37319
16	KIT, PCB ASSY, LH, W/BRACKET & HARDWARE	1		45553
16A *	KIT, PCB ASSY, RH, W/BRACKET & HARDWARE	1		45554
17	KIT, GROUND STRAP, LONG	1		37388
18	KIT, BLOCK, POSITIVE CONNECTION, MODULAR	1		35454
19	KIT, SWITCH ASSY, POSITION INPUT	1		44236
20	CAM, POSITION INPUT (*SEE KIT P/N 44236*)	REF		45200
21	ACTUATOR, FOLD CUTOFF	1		V2-AC-089
22	SCREW, PHP, 10-24 X 2 ¼ (*SEE KIT P/N 44236*)	REF		10860
23	KIT, SWITCH BLOCK/MICROSWITCH W/HARDWARE	2		44237
24	SPRING, ADJUSTABLE LIMIT SWITCH	2		V2-ES-93
25	SWITCH, LIMIT, IN ENABLE, FOLD CUTOFF	3		V2-ES-111
26 *	KIT, CIRCUIT BREAKER, MAIN (90A)	1		01010K

NOTE: (REF) in QTY column is for Referenced Parts Only and are not sold as spare parts.

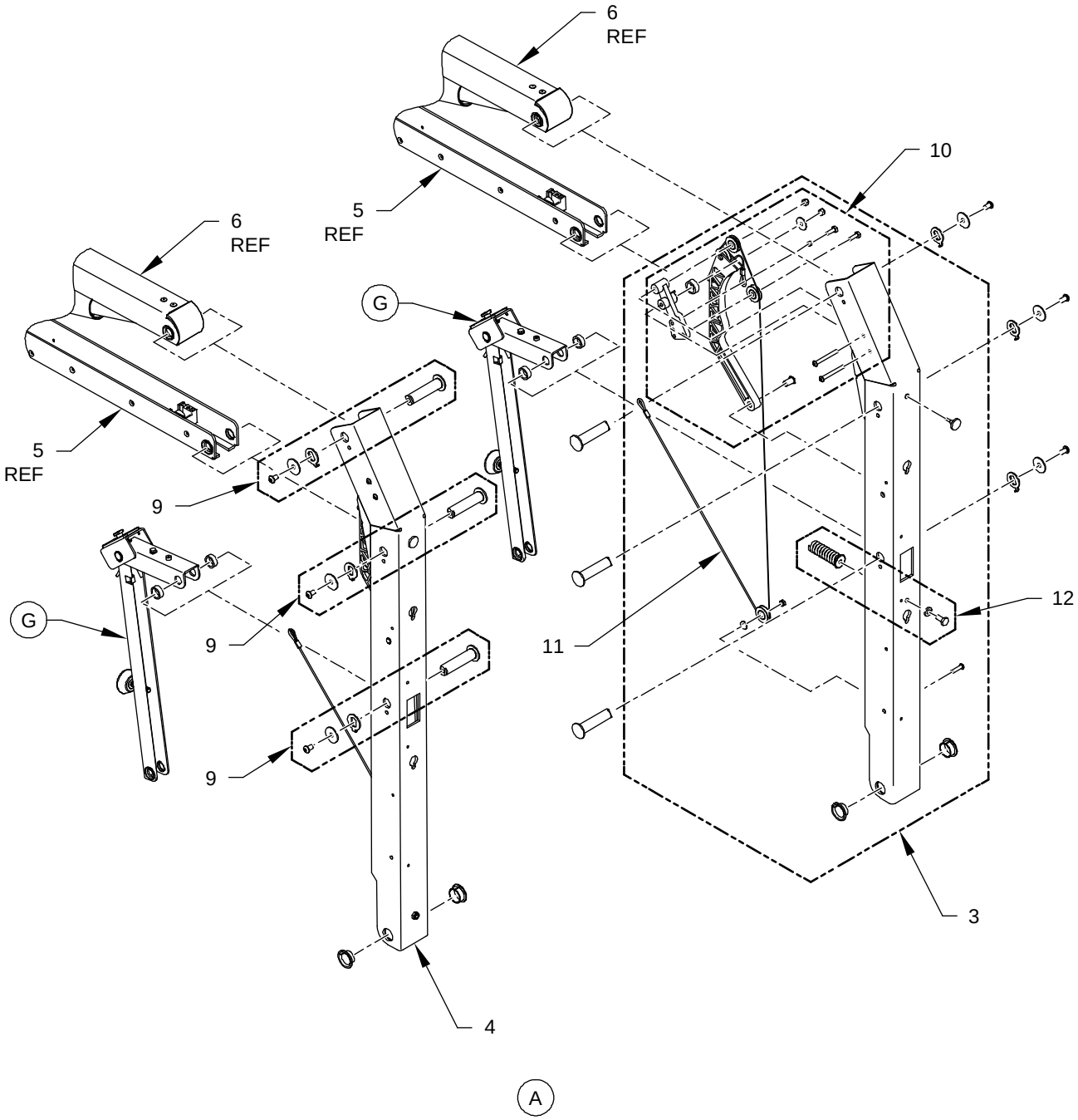
NOTE: * Item or configuration not shown.



S-SERIES TRAVELING FRAME

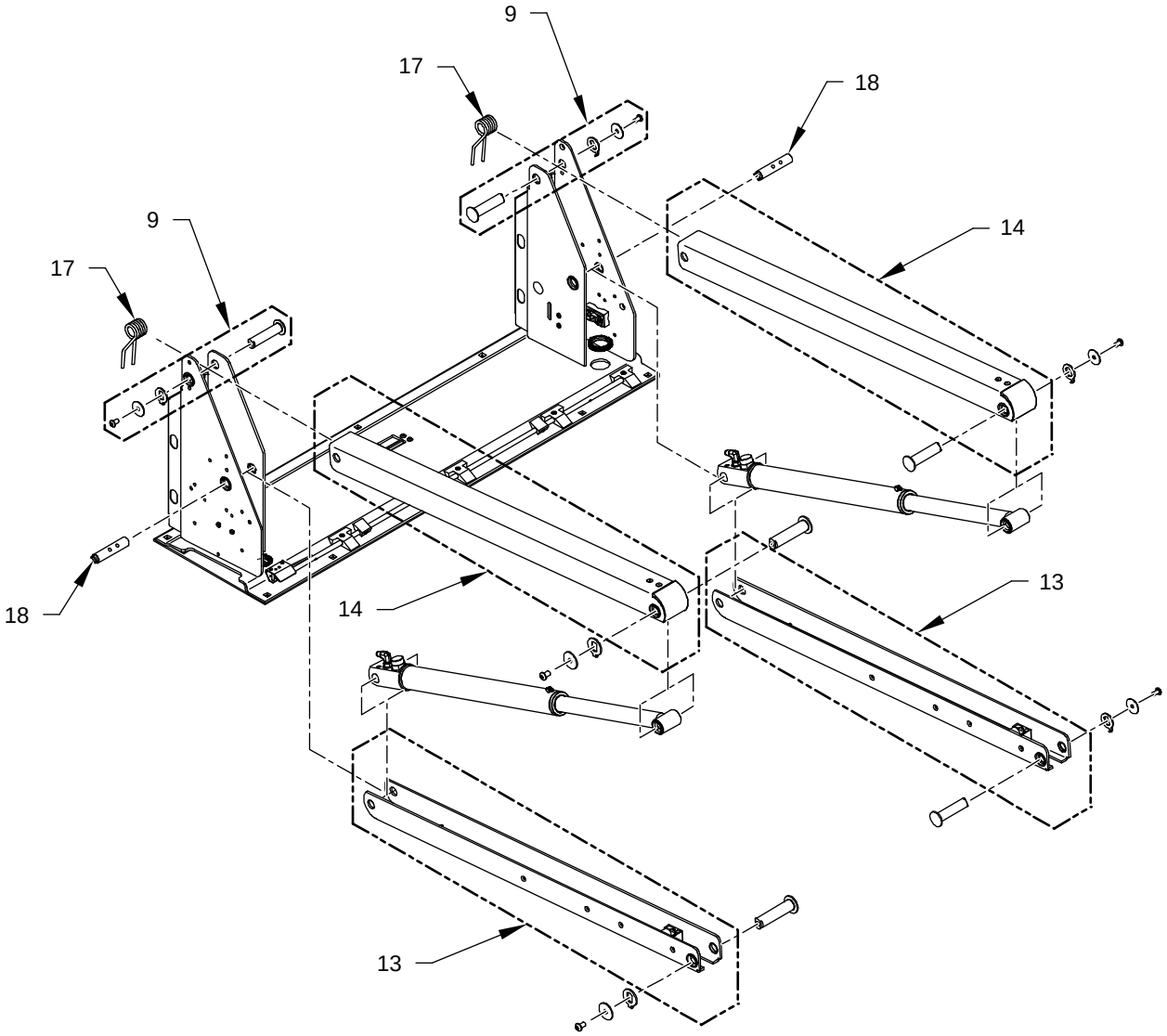
RSM0071700

FIGURE 4-6: TITANIUM S-SERIES DOT PUBLIC USE TRAVELING FRAME (SHEET 1 OF 7)



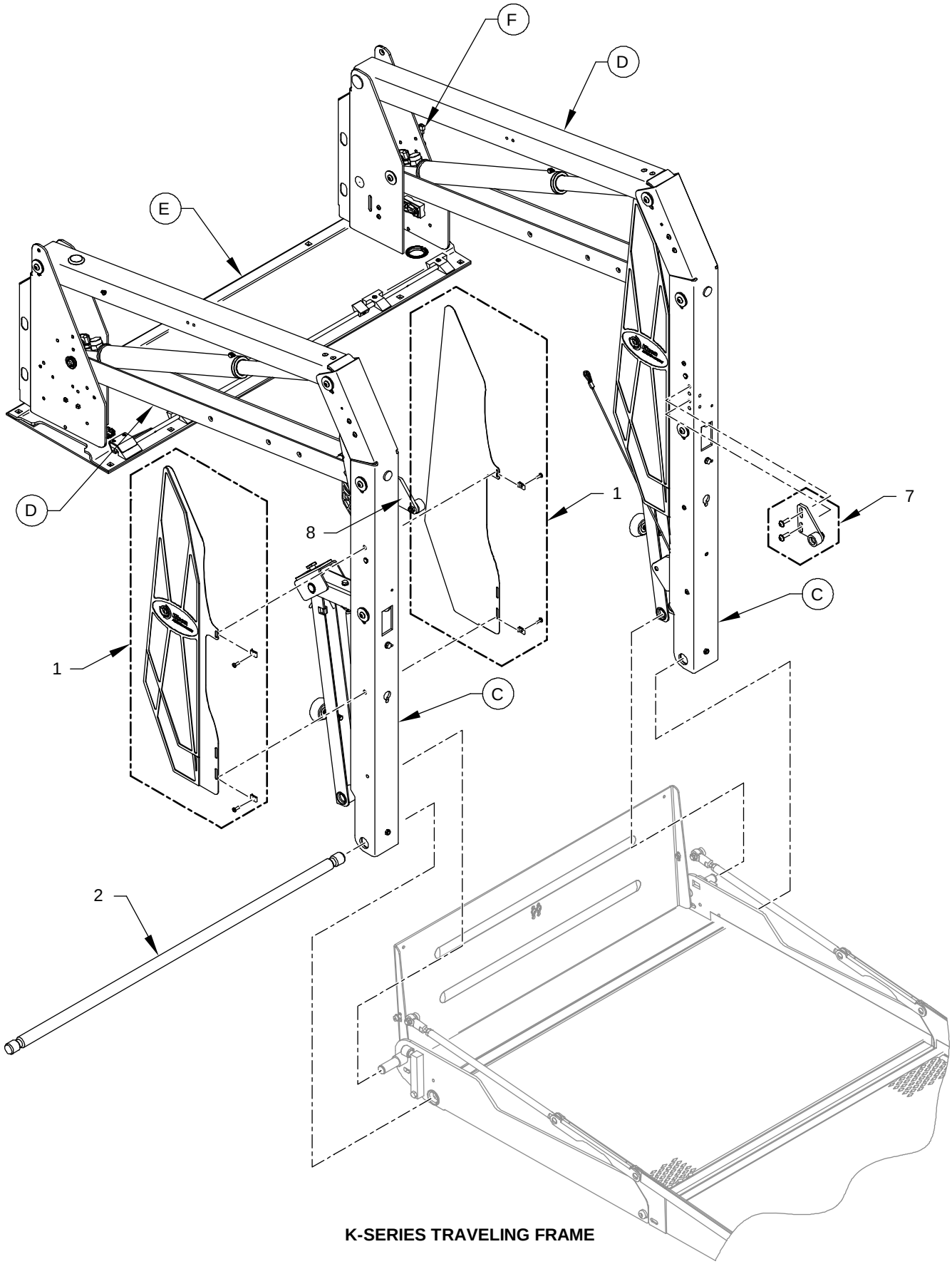
RSM0071800

FIGURE 4-6: TITANIUM S-SERIES DOT PUBLIC USE TRAVELING FRAME (SHEET 2 OF 7)



RSM0071900

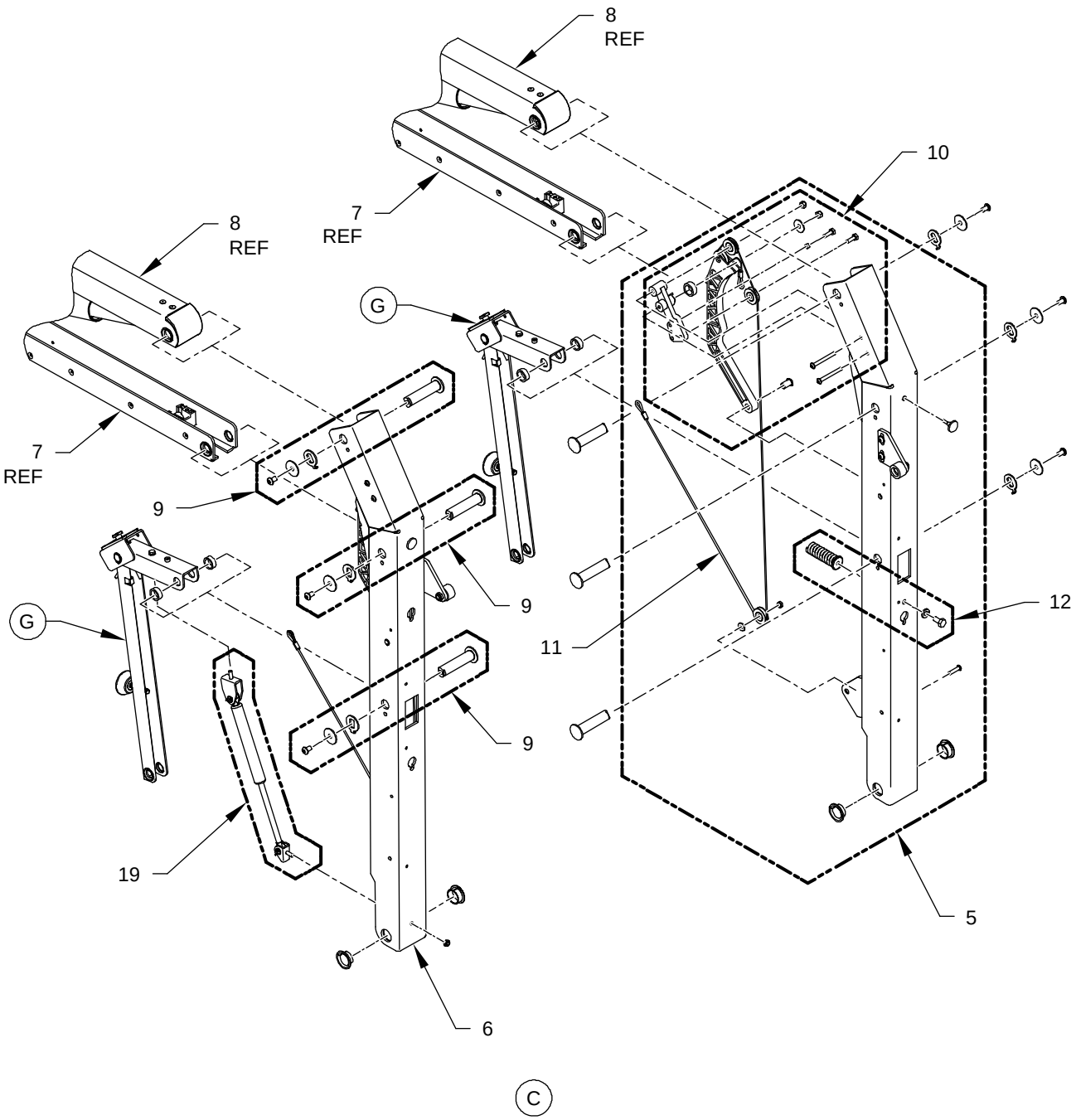
FIGURE 4-6: TITANIUM S-SERIES DOT PUBLIC USE TRAVELING FRAME (SHEET 3 OF 7)



K-SERIES TRAVELING FRAME

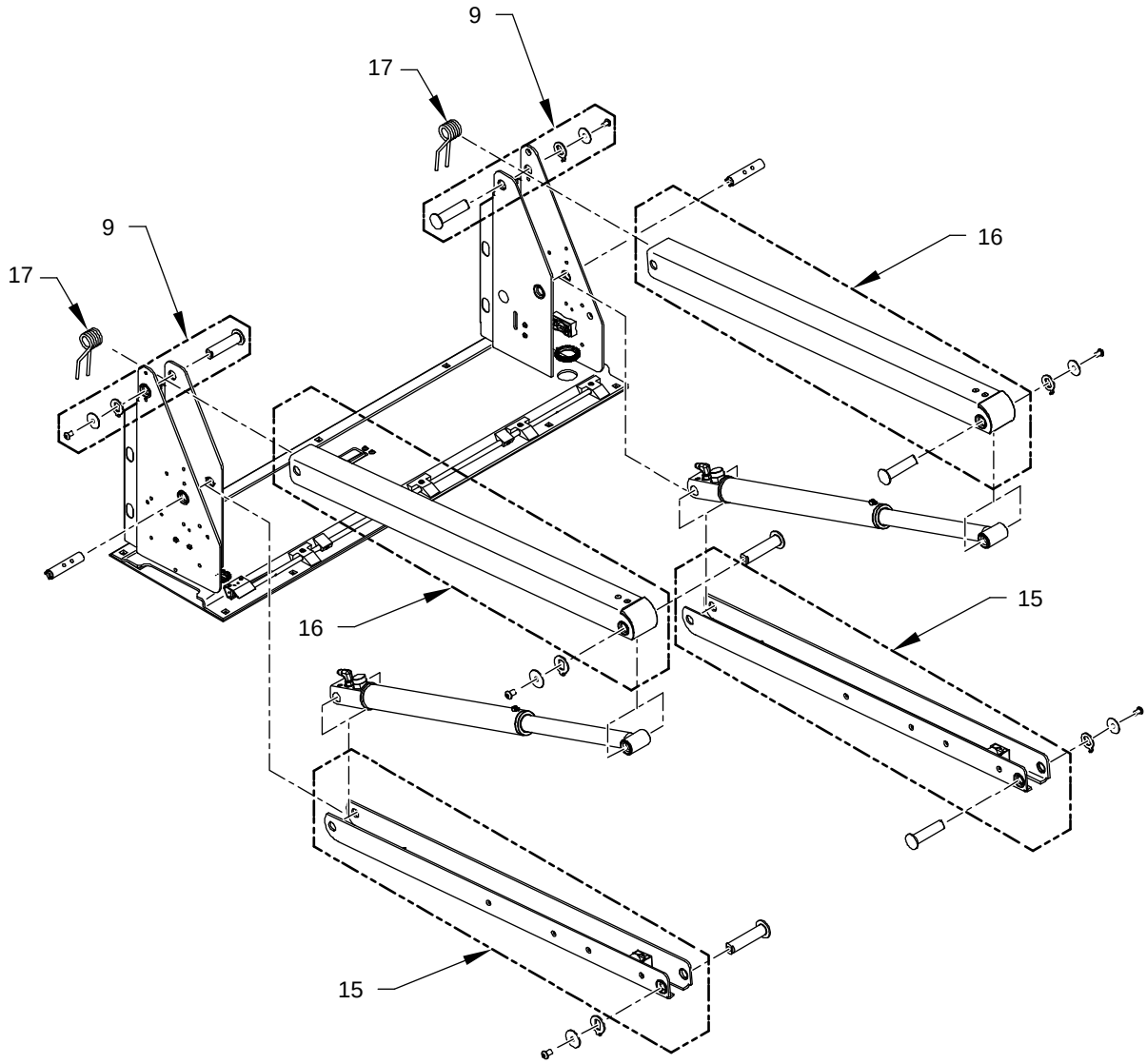
RSM0072000

FIGURE 4-6: TITANIUM K-SERIES DOT PUBLIC USE TRAVELING FRAME (SHEET 4 OF 7)



RSM0072100

FIGURE 4-6: TITANIUM K-SERIES DOT PUBLIC USE TRAVELING FRAME (SHEET 5 OF 7)



RSM0072200

FIGURE 4-6: TITANIUM K-SERIES DOT PUBLIC USE TRAVELING FRAME (SHEET 6 OF 7)

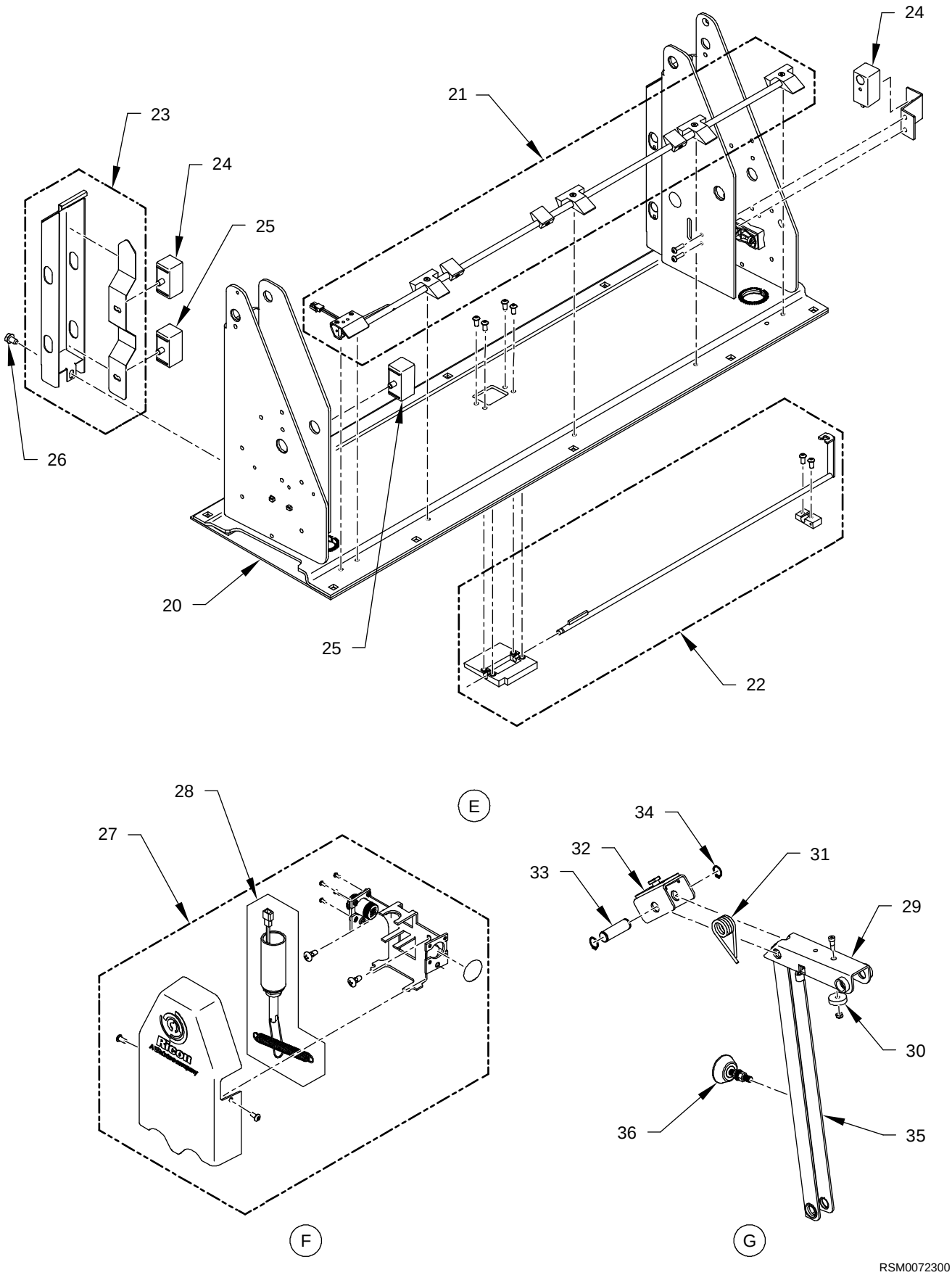


FIGURE 4-6: TITANIUM S-SERIES AND K-SERIES DOT PUBLIC USE TRAVELING FRAME (SHEET 7 OF 7)

FIGURE 4-6: TITANIUM S-SERIES & K-SERIES TRAVELING FRAME ASSY

FIG. ITEM		DESCRIPTION	QTY	CONFIG.	PART NO.
1		KIT, SET, PINCH SHIELDS, OUTSIDE	1	S5510	45551
1		KIT, SET, PINCH SHIELDS, OUTSIDE	1	S5505	45551
1		KIT, SET, PINCH SHIELDS, OUTSIDE	1	K5510	45551
1		KIT, SET, PINCH SHIELDS, OUTSIDE	1	K5505	45551
1A	*	KIT, SET, PINCH SHIELDS, OUTSIDE	1	S2010	45552
1A	*	KIT, SET, PINCH SHIELDS, OUTSIDE	1	S2005	45552
1A	*	KIT, SET, PINCH SHIELDS, OUTSIDE	1	K2010	45552
1A	*	KIT, SET, PINCH SHIELDS, OUTSIDE	1	K2005	45552
2		KIT, SHAFT, MAIN, 1.00 x 40.50L (PACKAGED)	1	S5510	34887
2		KIT, SHAFT, MAIN, 1.00 x 40.50L (PACKAGED)	1	S2010	34887
2		KIT, SHAFT, MAIN, 1.00 x 40.50L (PACKAGED)	1	K5510	34887
2		KIT, SHAFT, MAIN, 1.00 x 40.50L (PACKAGED)	1	K2010	34887
2A	*	KIT, SHAFT, MAIN, 1.00 X 39.13L (PACKAGED)	1	S5505	34893
2A	*	KIT, SHAFT, MAIN, 1.00 X 39.13L (PACKAGED)	1	S2005	34893
2A	*	KIT, SHAFT, MAIN, 1.00 X 39.13L (PACKAGED)	1	K5505	34893
2A	*	KIT, SHAFT, MAIN, 1.00 X 39.13L (PACKAGED)	1	K2005	34893
3		VERTICAL ARM ASSY, LH, S20XX, TI SERIES	1	S20XX	58603
3A	*	VERTICAL ARM ASSY, LH, S55XX, TI SERIES	1	S55XX	58605
4		VERTICAL ARM ASSY, RH, S20XX, TI SERIES	1	S20XX	58604
4A	*	VERTICAL ARM ASSY, RH, S55XX, TI SERIES	1	S55XX	58606
5		VERTICAL ARM ASSY, LH, K20XX, TI SERIES	1	K20XX	58607
5A	*	VERTICAL ARM ASSY, LH, K55XX, TI SERIES	1	K55XX	58609
6		VERTICAL ARM ASSY, RH, K20XX, TI SERIES	1	K20XX	58608
6A	*	VERTICAL ARM ASSY, RH, K55XX, TI SERIES	1	K55XX	58610
7		KIT, LH BRACKET W/CAM FOLLOWER	1		58517
8		KIT, RH BRACKET W/CAM FOLLOWER	1		58518
9		KIT, PIN, LINK, ARM W/HARDWARE	6		34586
10		KIT, CAM ASSY, IRS ACTUATOR, W/ (59.13”) CABLE	2	S55XX	46596
10		KIT, CAM ASSY, IRS ACTUATOR, W/ (59.13”) CABLE	2	K55XX	46596
10A	*	KIT, CAM ASSY, IRS ACTUATOR, W/ (52.75”) CABLE	2	S20XX	46599
10A	*	KIT, CAM ASSY, IRS ACTUATOR, W/ (52.75”) CABLE	2	S20XX	46599
11		KIT, CABLE ASSY w/SLEEVE (59.13”), (2 CABLES PER KIT)	1	S55XX	34247
11		KIT, CABLE ASSY w/SLEEVE (59.13”), (2 CABLES PER KIT)	1	K55XX	34247
11A	*	KIT, CABLE ASSY (52.75”), IRS (2 CABLES PER KIT)	1	S20XX	16094
11A	*	KIT, CABLE ASSY (52.75”), IRS (2 CABLES PER KIT)	1	K20XX	16094
12		KIT, KICKOUT SPRING WLDT (GREY)	1		42565
13		ARM ASSY, LOWER, PARALLEL, SILVER	1	S5510	30835S
13		ARM ASSY, LOWER, PARALLEL, SILVER	1	S5505	30835S
13A	*	ARM ASSY, PARALLEL, LOWER (SILVER)	1	S2010	VT-AC-252S
13A	*	ARM ASSY, PARALLEL, LOWER (SILVER)	1	S2005	VT-AC-252S
14		ARM ASSY, TOP, SILVER	1	S5510	45645

FIGURE 4-6: TITANIUM S-SERIES & K-SERIES TRAVELING FRAME ASSY

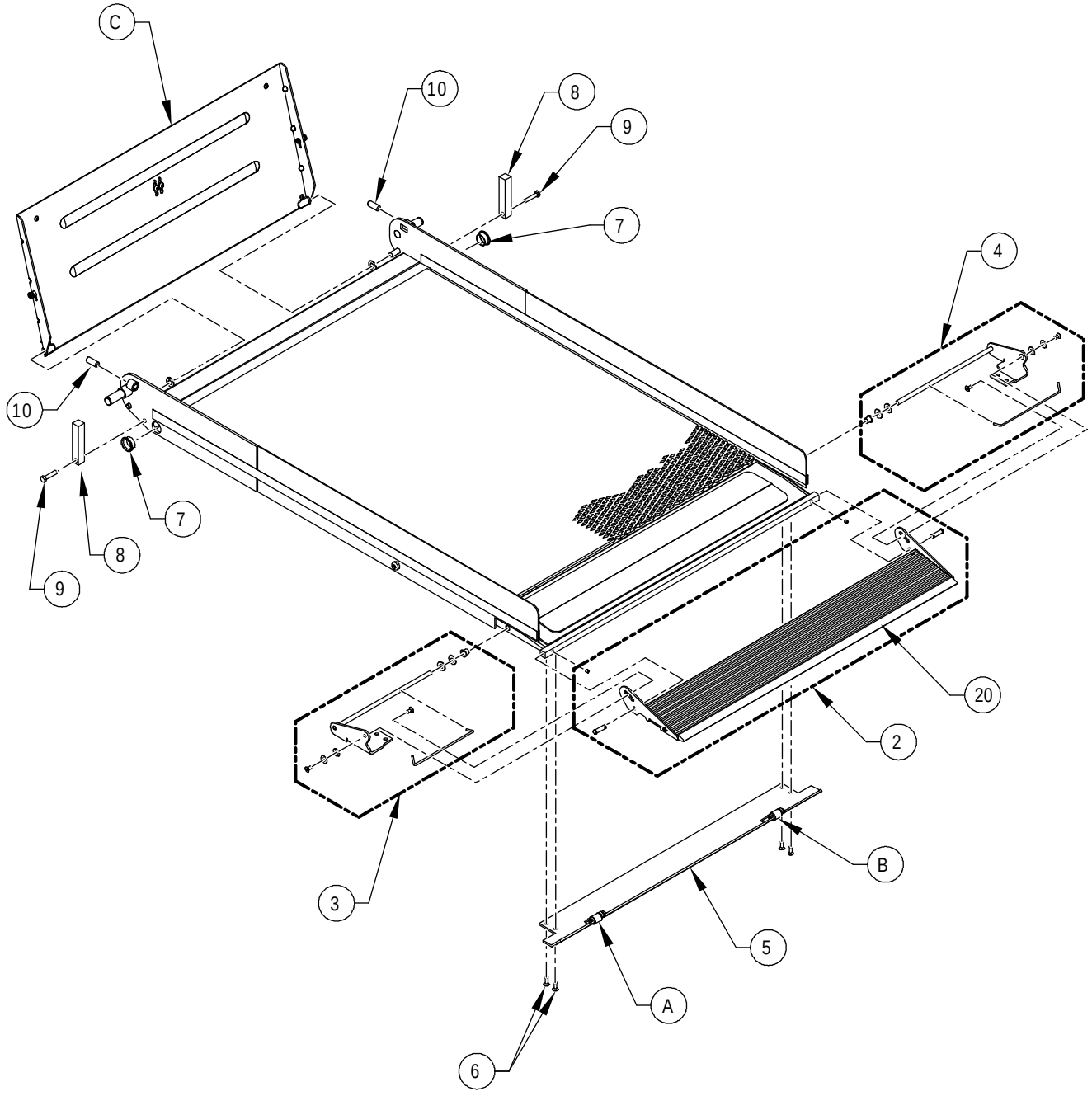
FIG. ITEM	DESCRIPTION	QTY	CONFIG.	PART NO.
14	ARM ASSY, TOP, SILVER	1	S5505	45645
14A *	ARM ASSY, PARALLEL, UPPER (SILVER)	1	S2010	VT-AC-250S
14A *	ARM ASSY, PARALLEL, UPPER (SILVER)	1	S2005	VT-AC-250S
15	ARM ASSY, LOWER, PARALLEL, SILVER	1	K5510	30835
15	ARM ASSY, LOWER, PARALLEL, SILVER	1	K5505	30835
15A *	ARM ASSY, PARALLEL, LOWER (SILVER)	1	K2010	VT-AC-252S
15A *	ARM ASSY, PARALLEL, LOWER (SILVER)	1	K2005	VT-AC-252S
16	ARM ASSY, TOP, SILVER (*REFERENCE ONLY*)	1	K5510	45645
16	ARM ASSY, TOP, SILVER (*REFERENCE ONLY*)	1	K5505	45645
16A *	ARM ASSY, PARALLEL, UPPER (SILVER)	1	K2010	VT-AC-250S
16A *	ARM ASSY, PARALLEL, UPPER (SILVER)	1	K2005	VT-AC-250S
17	SPRING, TOP ARM	2		V2-SP-97
18	PIN ASSY, PIVOT, CAM SIDE	2		37780
19	KIT, GAS SPRING ASSY, TRAVELING FRAME	1		19318
20	BASEPLATE WLDT, 34" PLATFORM (*REFERENCE ONLY*)	REF	S5510	45678
20	BASEPLATE WLDT, 34" PLATFORM (*REFERENCE ONLY*)	REF	S2010	45678
20	BASEPLATE WLDT, 34" PLATFORM (*REFERENCE ONLY*)	REF	K5510	45678
20	BASEPLATE WLDT, 34" PLATFORM (*REFERENCE ONLY*)	REF	K2010	45678
20A *	BASEPLATE WLDT, 41.5" W PLATFORM (*REFERENCE ONLY*)	REF	S5505	48208
20A *	BASEPLATE WLDT, 41.5" W PLATFORM (*REFERENCE ONLY*)	REF	S2005	48208
20A *	BASEPLATE WLDT, 41.5" W PLATFORM (*REFERENCE ONLY*)	REF	K5505	48208
20A *	BASEPLATE WLDT, 41.5" W PLATFORM (*REFERENCE ONLY*)	REF	K2005	48208
21	KIT, SWITCH ASSY, BP W/BLOCK	1	S5510	46593
21	KIT, SWITCH ASSY, BP W/BLOCK	1	S2010	46593
21	KIT, SWITCH ASSY, BP W/BLOCK	1	K5510	46593
21	KIT, SWITCH ASSY, BP W/BLOCK	1	K2010	46593
21A *	KIT, SWITCH ASSY, BP W/BLOCK	1	S5505	46594
21A *	KIT, SWITCH ASSY, BP W/BLOCK	1	S2005	46594
21A *	KIT, SWITCH ASSY, BP W/BLOCK	1	K5505	46594
21A *	KIT, SWITCH ASSY, BP W/BLOCK	1	K2005	46594
22	KIT, LATCH RELEASE, 34" PLATFORM	1		46597
22A *	KIT, LATCH RELEASE, 41.5" PLATFORM	1		46598
23	SENSOR, PHOTOBEAM, TRANSMITTER	3		32498
24	SENSOR, PHOTOBEAM, RECEIVER	3		32499
25	KIT, TWS COVER, S&K	1		39979
26	SCREW, HWH, 5/16-18D X ½	2		282155
27	KIT, STOW LOCK WITH COVER	1		46595
28	KIT, SOLENOID ASSY, 12V, W/CLIPSPRING	1		V2-ES-127
29	UPPER LINK, KNUCKLE(SILVER)	2		VT-AC-070S
30	KIT, GROMMET, (KIT OF 10)	1		23391
31	SPRING, KNUCKLE ACTUATOR	2		VT-SP-42

FIGURE 4-6: TITANIUM S-SERIES & K-SERIES TRAVELING FRAME ASSY

FIG. ITEM	DESCRIPTION	QTY	CONFIG.	PART NO.
32	SADDLE ASSEMBLY (SILVER)	2		VT-AC-046S
33	PIN, SNAP RING	2		VT-PI-41
34	SNAPRING, 3/4 (BAG OF 10)	1		11796
35	LINK, KNUCKLE, LONG, 18.25" (SILVER)	2	S20XX	48289
35	LINK, KNUCKLE, LONG, 18.25" (SILVER)	2	K20XX	48289
35A *	KNUCKLE LINK, SILVER (*REFERENCE ONLY*)	REF	S55XX	45629
35A *	KNUCKLE LINK, SILVER (*REFERENCE ONLY*)	REF	K55XX	45629
36	KIT, RUBBER BUMPER, VERTICAL ARM	2		45685

NOTE: (REF) in QTY column is for Referenced Parts Only and are not sold as spare parts.

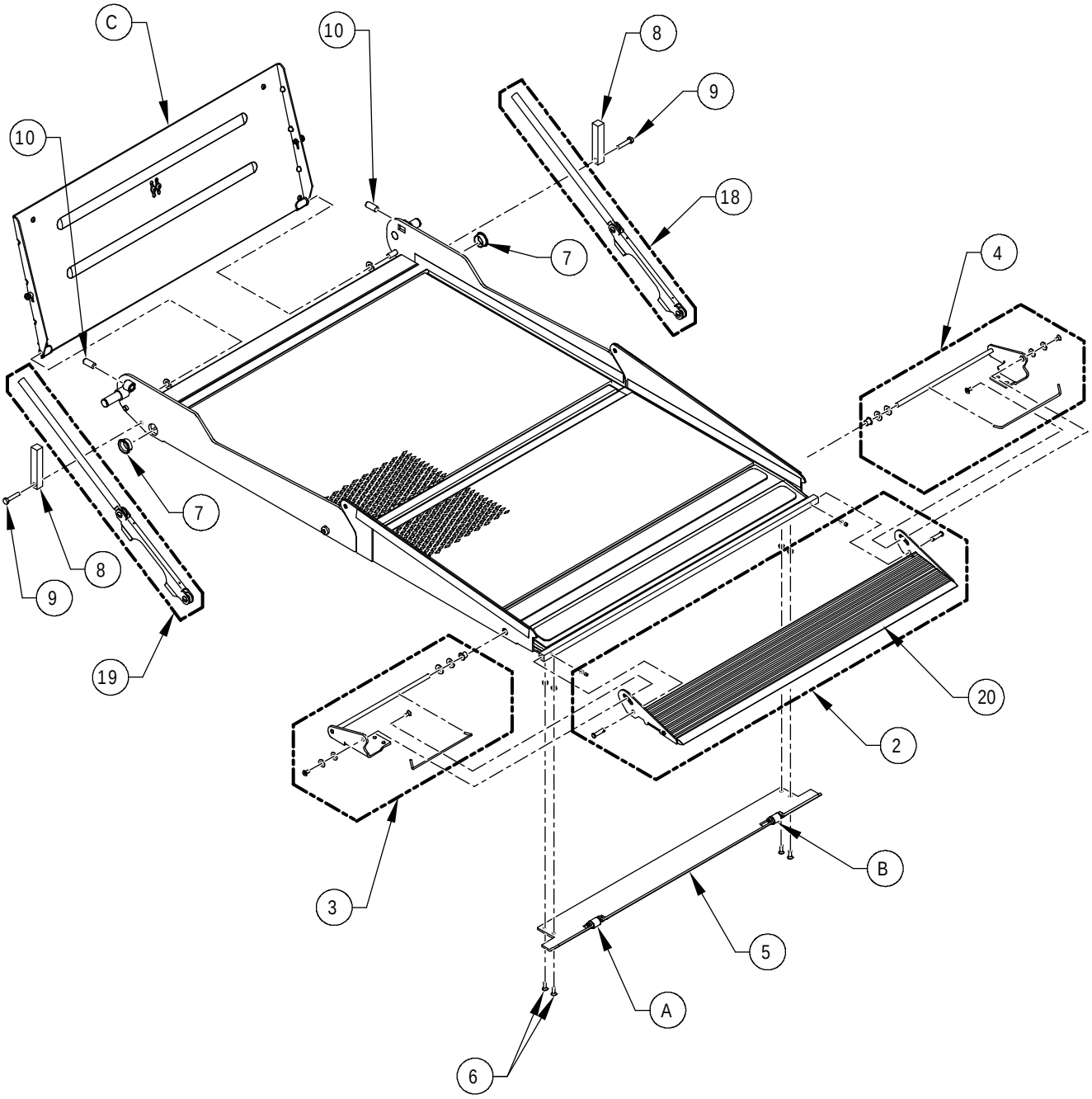
NOTE: * Item or configuration not shown.



S-SERIES PLATFORM ASSEMBLY

RSM0049802

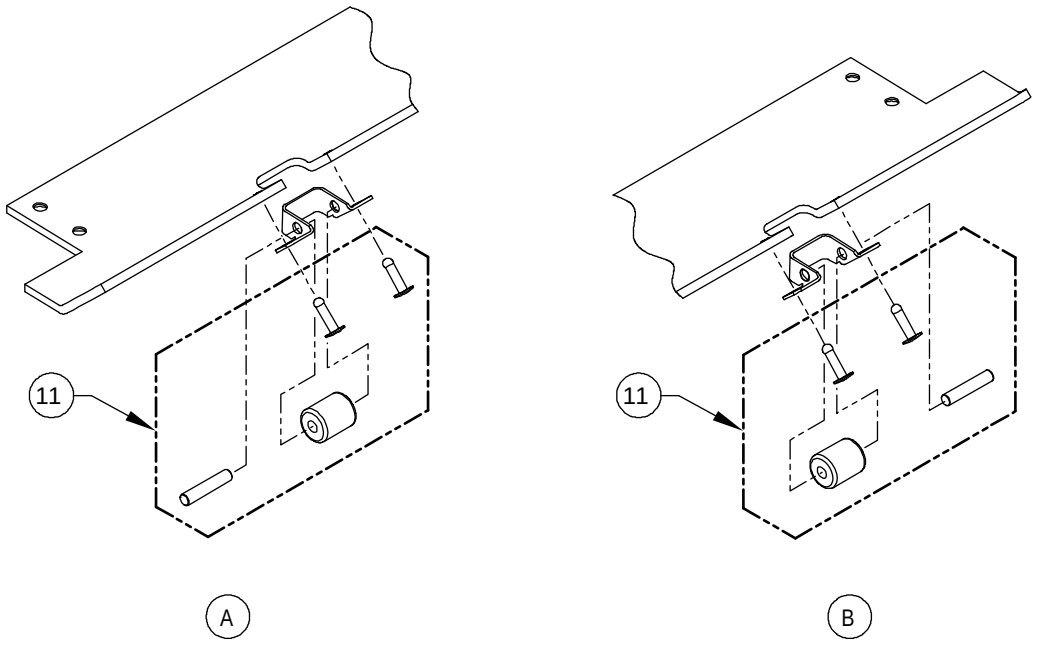
FIGURE 4-7.1: TITANIUM S-SERIES DOT PUBLIC USE PLATFORM ASSEMBLY (SHEET 1 OF 3)

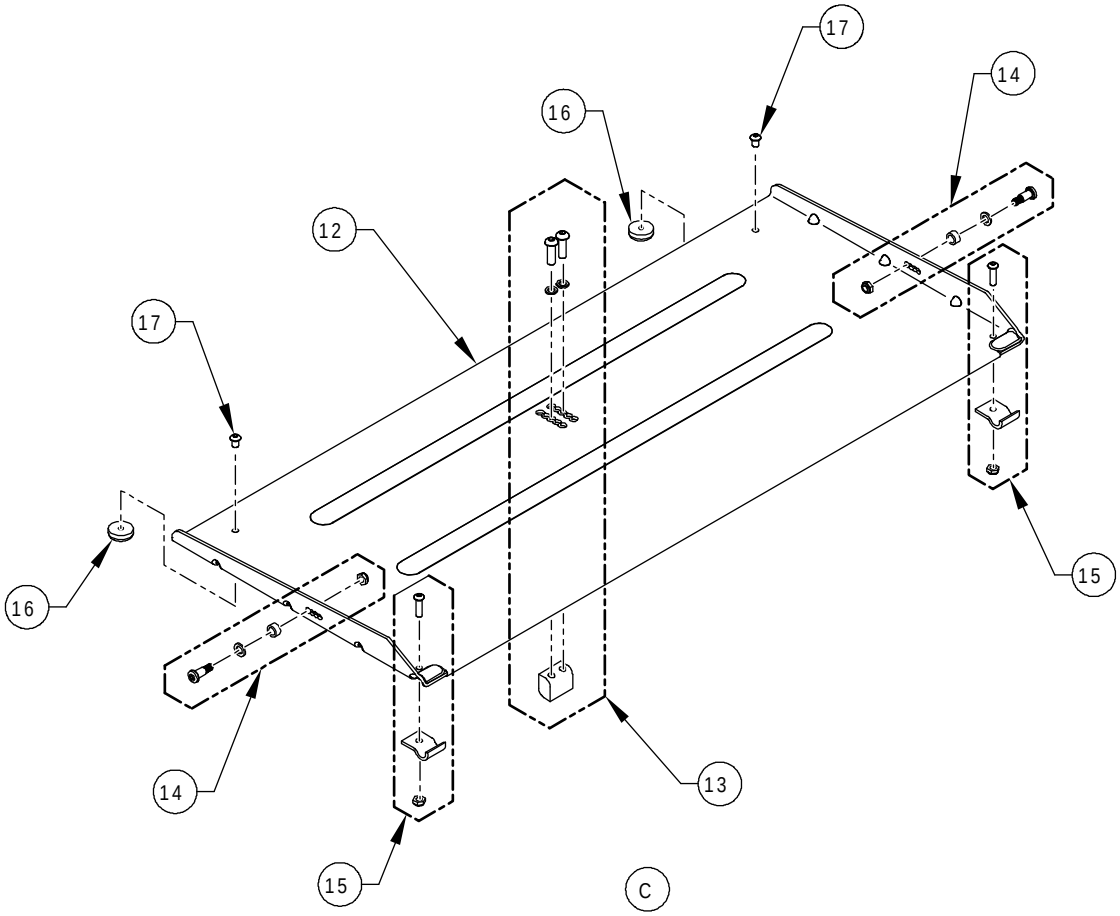


K-SERIES PLATFORM ASSEMBLY

RSM0052602

FIGURE 4-7.2: TITANIUM K-SERIES DOT PUBLIC USE PLATFORM ASSEMBLY (SHEET 2 OF 3)





RSM0049901

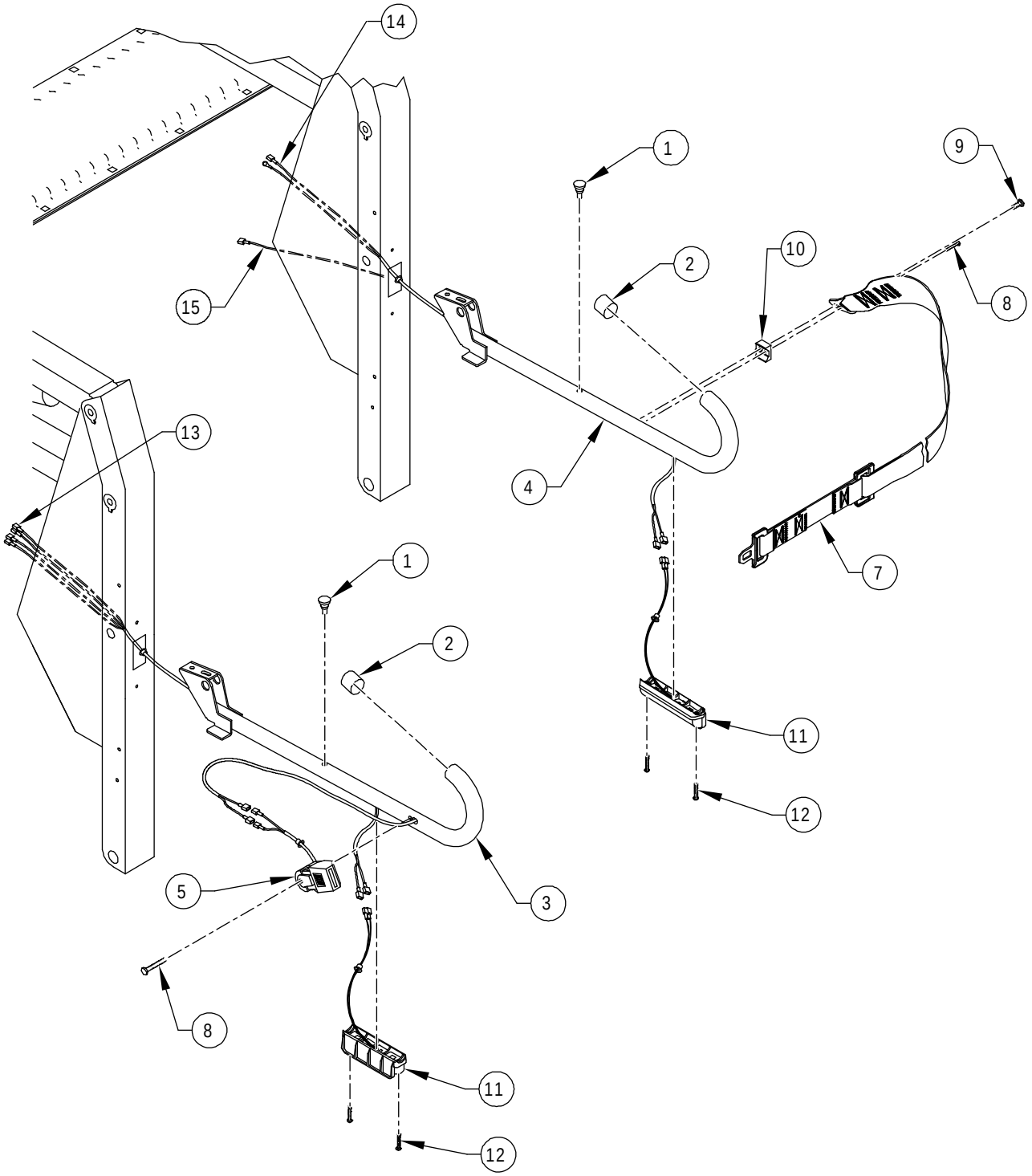
FIGURE 4-7.3: S-SERIES & K-SERIES DOT PUBLIC USE PLATFORM ASSEMBLY (SHEET 3 OF 3)

FIGURE 4-7: TITANIUM S-SERIES DOT PUBLIC USE PLATFORM ASSY

FIG. ITEM	DESCRIPTION	QTY	CONFIG.	PART NO.
1	PLATFORM WLDT, SOLID (34 X 54") SILVER (*REFERENCE ONLY*)	REF	S2010	45672
1	PLATFORM WLDT, SOLID (34 X 54") SILVER (*REFERENCE ONLY*)	REF	S5510	45672
1A *	PLATFORM WLDT, SOLID (32 X 51") TI GREY (*REFERENCE ONLY*)	REF	S2005	48201
1A *	PLATFORM WLDT, SOLID (32 X 51") TI GREY (*REFERENCE ONLY*)	REF	S5505	48201
1B *	PLATFORM WLDT, FLDG, (34 X 54"), TI GREY (*REFERENCE ONLY*)	REF	K2010	48236
1B *	PLATFORM WLDT, FLDG, (34 X 54"), TI GREY (*REFERENCE ONLY*)	REF	K5510	48236
1C *	PLATFORM WLDT, FLDG, (34 X 54"), TI GREY (*REFERENCE ONLY*)	REF	K2005	48212
1C *	PLATFORM WLDT, FLDG, (34 X 54"), TI GREY (*REFERENCE ONLY*)	REF	K5505	48212
2	KIT, ROLLSTOP ASSY, 6"H X 34"W	1	S2010	39953
2	KIT, ROLLSTOP ASSY, 6"H X 34"W	1	S5510	39953
2	KIT, ROLLSTOP ASSY, 6"H X 34"W	1	K2010	39953
2	KIT, ROLLSTOP ASSY, 6"H X 34"W	1	K5510	39953
2A *	KIT, ROLLSTOP ASSY, 6"H X 32"W	1	S2005	39952
2A *	KIT, ROLLSTOP ASSY, 6"H X 32"W	1	S5505	39952
3	KIT, REPLACEMENT, ROLLSTOP ACTUATOR, LH	1		46576
4	KIT, REPLACEMENT, ROLLSTOP ACTUATOR, RH	1		46577
5	KIT, PLATE, ROLLSTOP, ACROSS SKI	1		46578
6	SCREW, FHH, 1/4-20 X 3/4 SST (BAG OF 10)	1		13310
7	KIT, FLANGE BEARING 1"ID (BAG OF 10)	1		19579
8	BLOCK, GREY, PLATFORM LEVEL ADJ	2		VT-AH-142
9	SCREW, HEX, 5/16-18 X 1 1/2 GR5 (BAG OF 10)	1		14403
10	SCREW, HSS, 1/2-20 X 1 1/4 W/ NYLOK (BAG 10)	1		19704
11	KIT, PLATE, ROLLSTOP, WHEEL	1		46566
12	BRIDGEPLATE, 34"W x 13"L	REF	S5510	45636
12A *	ROLLSTOP ASSY, INNER, 32 X 13 BP, PC YELLOW	REF	S5505	54000
12B *	ROLLSTOP ASSY, INNER, 34 X 13.15" BRIDGEPLATE	REF	S2010	54018
12C *	ROLLSTOP ASSY, INNER, 34 X 13 BP, PC YELLOW	REF	K5510	45637
12C *	ROLLSTOP ASSY, INNER, 34 X 13 BP, PC YELLOW	REF	K5505	45637
12C *	ROLLSTOP ASSY, INNER, 34 X 13 BP, PC YELLOW	REF	K2010	45637
12C *	ROLLSTOP ASSY, INNER, 34 X 13 BP, PC YELLOW	REF	K2005	45637
13	KIT, BLOCK, BASE LATCH, RATCHET	1		46559
14	KIT, SPACER, BRIDGEPLATE	2		42038
15	KIT, HINGE,BRIDGE PLATE, SUPPORT	2		46567
16	GUIDE, 1"D X 1/4-20 X .25	2		UL-AC-034
17	SCREW, BHS, 1/4-20 X 3/8 SST, BLK OXIDE	REF		42963
18	KIT, LINK ASSY, RH, YELLOW, 54" LONG PLATFORM	1		42039
19	KIT, LINK ASSY, LH, YELLOW, 54" LONG PLATFROM	1		44264
20	EXTRUSION, LIP, 34"W ROLLSTOP	1		39963
20A *	EXTRUSION, LIP, 32"W ROLLSTOP	1		39962

NOTE: (REF) in QTY column is for Referenced Parts Only and are not sold as spare parts.

NOTE: * Item or configuration not shown.



RSM0050000

FIGURE 4-8: TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE HANDRAILS

FIGURE 4-8: TITANIUM S-SERIES & K-SERIES DOT PUBLIC USE HANDRAILS ASSY

FIG. ITEM	DESCRIPTION	QTY	CONFIG.	PART NO.
1	BUMPER, RUBBER (BAG OF 10)	1		20653
2	CAP, ROUND, BLACK	2		25550
3	HANDRAIL, LH (*REFERENCE ONLY*)	REF		32989
4	HANDRAIL, RH (*REFERENCE ONLY*)	REF		32988
5	KIT, BUCKLE ASSY, w/ SWITCH	1		46589
6	SCREW, SHOULDER, HEX HD,10-24 X 3/4, SST (*REFERENCE ONLY*)	REF		46033
7	STRAP ASSY, STRAIGHT SLIDER	1		46590
8	SCREW, HEX, 5/16-18 X 1 SST (BAG OF 10)	1		19706
9	SCREW, HEX, 5/16-18 X 1 1/2 SST (BAG OF 10)	1		14413
10	SPACER, TRANSIT HANDRAIL	1		V2-AC-063
11	LIGHT ASSY, WHITE LED, PLATFORM	1		46011
12	SCREW, PHP, 8TEK X 3/4 (BAG OF 10)	4		15911
13	HARNESS, BELT & HANDRAIL LIGHT	1		37348
14	HARNESS EXTENSION, HANDRAIL LIGHT	1		37346
15	KIT, HARNESS BELT RESTRAINT, W/SLP TERMS	1		01274

NOTE: (REF) in QTY column is for Referenced Parts Only and are not sold as spare parts.

NOTE: * Item or configuration not shown.

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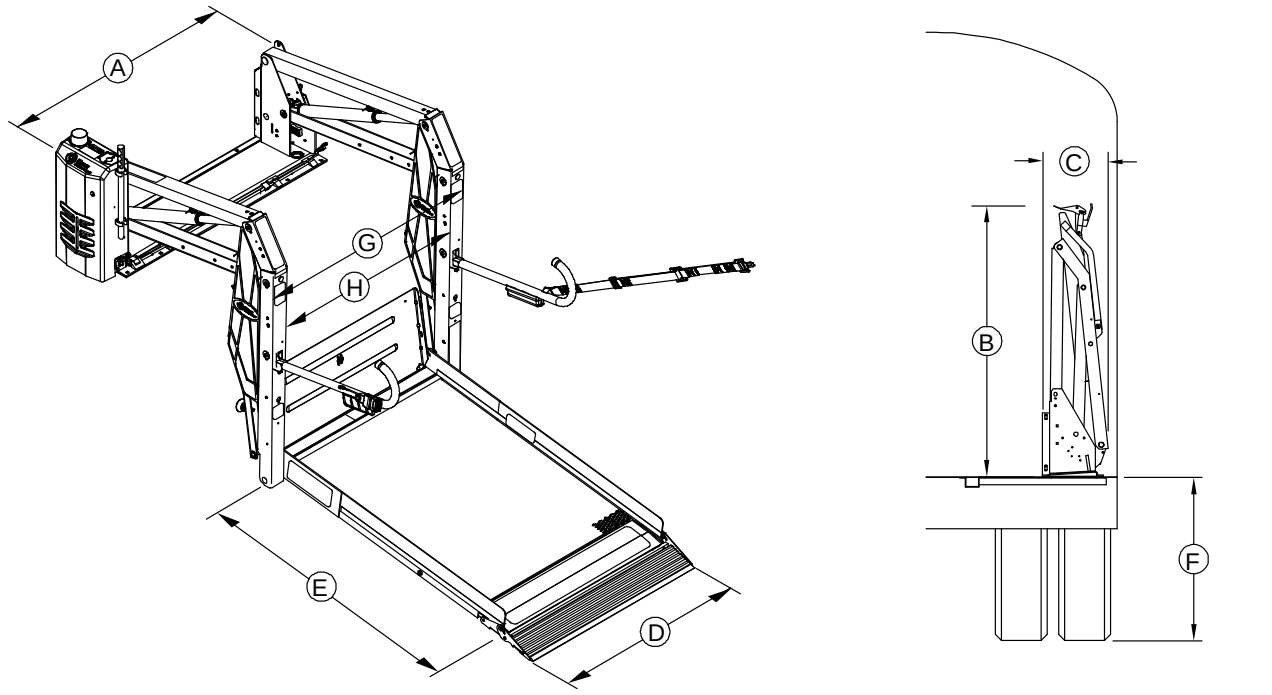
APPENDIX 1

LIFT SPECIFICATIONS

TITANIUM S-SERIES & K-SERIES PUBLIC USE WHEELCHAIR LIFT

Power.....Electro-Hydraulic	Rated Load Capacity, Max .....1,000 lbs
Motor rating@12 volts DC .....65 Amp Avg/Cycle, 1750 psi	Manual Backup–Up ..... Hand Pump
Hydraulic cylinders..... 2ea, 1.5", Power Up – Gravity Down	Manual Backup–Down..... Pressure Release Valve
	Lift Weight.....Approx 400 - 425 lbs / 181-193 kg



RSM0052700

DIMENSIONS (inches/millimeters)

MODEL	A Stationary frame width	B Height (folded)	C Installation depth (folded)	D Usable platform width	E Usable platform length	F Floor-to-ground travel	G Traveling frame width	H 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	58 / 1473	14 / 356	32 / 813	51 / 1295	51 / 1295	40 / 1016	32 / 813
S5510	49 / 1245	58 / 1473	14 / 356	34 / 864	54 / 1372	51 / 1295	42 / 1067	34 / 864
K2005	47 / 1194	55 / 1397	17 / 432	32 / 813	51 / 1295	37 / 940	40 / 1016	32 / 813
K2010	49 / 1245	55 / 1397	17 / 432	34 / 864	54 / 1372	37 / 940	42 / 1067	34 / 864
K5505	47 / 1194	58 / 1473	17 / 432	32 / 813	51 / 1295	48 / 1219	40 / 1016	32 / 813
K5510	49 / 1245	58 / 1473	17 / 432	34 / 864	54 / 1372	48 / 1219	42 / 1067	34 / 864

END OF TABLE