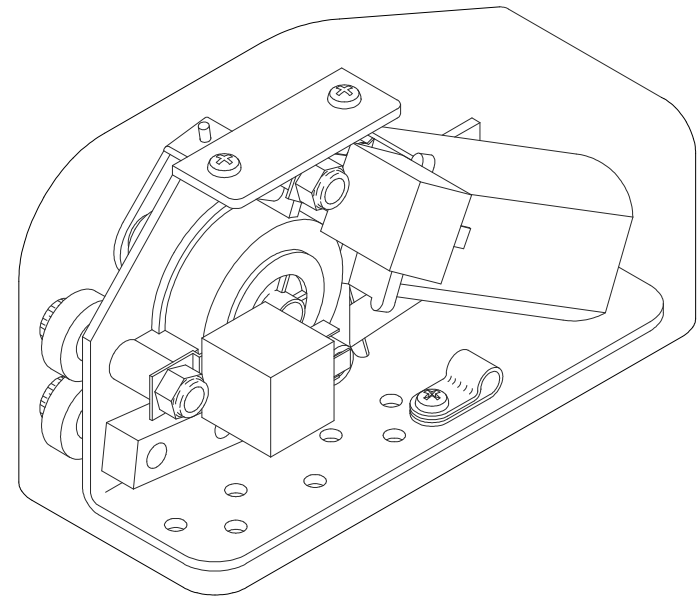


RICON[®]

Innovation in Mobility

PRINT MANUAL

*RD02500 Series
Power Sliding Door Operator*



Operator Manual

02/14/02

32DD001.A

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RICON

U.S. Patent Nos 5,613,321; 5,794,381;
Other U.S. and foreign patents pending.
Printed in the United States of America

This RICON product must be installed and serviced by authorized RICON service technicians.

The operator must refer to this manual for operating instructions, and retain it for future reference.

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

REVISION RECORD

REV	PAGES	DESCRIPTION OF CHANGE	ECR/ECO
32DD003. A	All	New release, in two-book format.	3882/4864
END OF LIST			

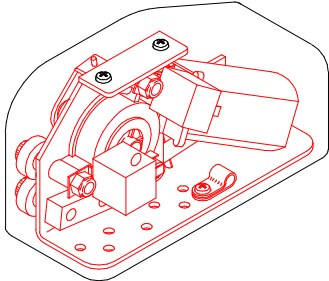
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I. INTRODUCTION

The RICON RDO2500 Series Power Sliding Door Operator opens and closes sliding van doors. It has been designed to operate in most full-size vans, and works in conjunction with Ricon S-Series, Spirit, and UNI-lite wheelchair lifts.



The power door operator is electrically connected to and operated with the controls of the wheelchair lift. As the lift is activated to DEPLOY/OUT, or extend from the vehicle, the power door operator automatically opens the vehicle door to allow the lift to deploy. After the lift has been used and is activated to STOW/IN and retract into the vehicle, the door operator automatically closes the vehicle door.

This manual contains warranty information, operation and maintenance instructions for the Power Door Operator. It is important that operator(s) be completely familiar with the operating instruction. For installation instructions, please refer to the service manual. Once the Door Operator is installed, it is very important that it be properly maintained by following the Ricon recommended maintenance schedule.

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

Ricon Corporation
7900 Nelson Road
Panorama City, CA 91402 (818) 267-3000
Outside (818) Area Code..... (800) 322-2884
World Wide Website..... www.riconcorp.com

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

A. RICON ONE-YEAR LIMITED WARRANTY (refer to following page)

RICON CORPORATION
ONE-YEAR LIMITED WARRANTY

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

- Repair or replace parts for a period of one year from date of purchase. A complete list of parts covered by this warranty can be obtained from an authorized Ricon dealer.

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

If You are Traveling: All authorized Ricon dealers honor this warranty. Consult telephone directory, or call our Product Support department for the name of nearest authorized Ricon dealer.

This Warranty does not Cover:

- Labor or service charges (these may be covered separately by the installing dealer).
- Malfunction or damage to product parts caused by accident, misuse, lack of proper maintenance, neglect, improper adjustment, modification, alteration, the mechanical condition of vehicle, road hazards, overloading, failure to follow operating instructions, or acts of Nature (i.e., weather, lightning, flood).

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



WARNING!

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

This Warranty is Void if:

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

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

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

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

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

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

B. SHIPMENT INFORMATION

Ricon does not sell directly to the user because of the specialized nature of this product. The product is distributed through a worldwide network of authorized Ricon dealers who perform actual installation.

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 for the warranty to be valid.

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

C. GENERAL SAFETY PRECAUTIONS

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

- Avoid injury. Exercise caution when operating, and be certain that hands, feet, legs, and clothing are not in the path of door or product movement.
- Read and thoroughly understand the operating instructions before attempting to operate.
- Inspect the product before each use for any unsafe condition. If an unusual noise or movement exists, do not use door operator until the problem is corrected.
- Keep others clear during operation.
- The product requires periodic maintenance. A thorough inspection is recommended at least once every six months. The product should be maintained at the highest level of performance.

D. PRODUCT TERMINOLOGY

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

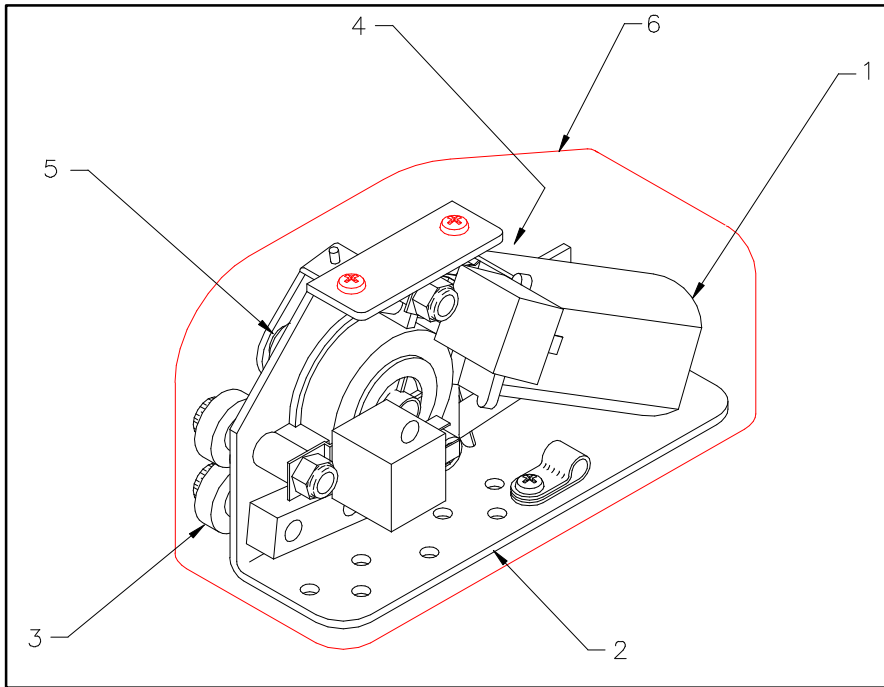


FIGURE 1-1: RDO2500 SERIES POWER OPERATOR REFERENCE

TABLE 1-1: RDO2500 SERIES POWER SLIDING DOOR OPERATOR TERMINOLOGY		
REF	NAME	DESCRIPTION
1	Gearmotor	Electrically opens and closes the vehicle door.
2	Main plate	Mounts the door operator assembly securely to the vehicle door.
3	Exit rollers	Routes chain to and from gearmotor.
4	Clutch release handle	Engages and disengages the clutch assembly.
5	Clutch assembly	Disengages gear motor sprocket from gear motor, allowing free rotation of gear sprocket and easy manual operation of vehicle door.
6	Cover	Houses the door operator assembly.
END OF TABLE		

II. OPERATING INSTRUCTIONS

This chapter contains safety precautions, daily safety check instructions, control and indicator descriptions, and operating instructions for the RICON RDO2500 Series Power Sliding Door Operator. This chapter must be read and thoroughly understood by the operator before attempting to use the power door operator.

NOTE: The Operating Instructions chapter of the applicable Ricon S-Series or UNI-lite Wheel-chair Lift Operator Manual must also be read and understood.

A. SAFETY PRECAUTIONS

- Refer to **Figure 2-1**. A hazardous situation may exist when using the lift if the vehicle is parked on either a side or front-to-rear slope. Operate the door operator with the vehicle parked on level ground.

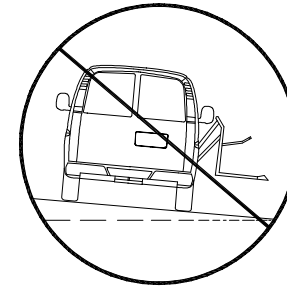


FIGURE 2-1: UNSAFE VEHICLE SLOPING

- Vehicle must be safely parked with the engine turned off before using the door operator.
- Inspect the power door operator prior to each use. If unusual noises or movements exist, DO NOT use and contact an authorized Ricon service technician for repair.
- Do not place arms, legs, or clothing in or near moving parts.
- Keep others clear while operating.
- Do not allow an untrained person to operate.
- Exercise supervision if used by or near children.
- Never leave the lift outside of vehicle and the vehicle door open. Always return lift to stowed position and allow the power door operator to close the vehicle door after use.

Be sure that these safety precautions have been read and understood. Review them periodically, and ask any attendants or other operators to read them as well. If there are any questions, contact an authorized Ricon dealer or call Ricon Product Support.

B. DAILY SAFETY CHECK

Inspect the power door operator prior to each use and check that the following conditions are met before operating:

- All functions operate properly. If unusual noise or movement is present, DO NOT use and contact an authorized Ricon dealer for repair.
- No objects are present that may interfere with operation.
- General appearance and lubrication are satisfactory.
- All fasteners are tight.

C. CONTROLS AND INDICATORS

The power door operator is electrically connected to and operated with the controls of the Ricon wheelchair lift or ramp. As the lift or ramp is activated to DEPLOY, or extend from the vehicle, the power door operator automatically opens the vehicle door. After the lift or ramp has been used and is activated to STOW, the lift or ramp retracts into the vehicle and the door operator automatically closes the door.

Refer to the appropriate Ricon wheelchair lift or ramp manual for detailed door operator control and indicator descriptions.

If so equipped, the door operator may also be controlled with a dash-mounted, momentary toggle switch. Maintain pressure on the switch in the appropriate direction until the vehicle door is either fully closed or fully opened. Refer to the appropriate Ricon Wheelchair Lift or Ramp Operator manual and follow the operating instructions carefully.

D. LIFT OR RAMP CONTROL PENDANT

Refer to **Figures 2-2** and **2-3**. The power door operator is electrically interfaced with and automatically controlled by the Ricon wheelchair lift or ramp control pendant. The control pendant is a hand-held, hard-wired remote device that also controls the door operator or ramp functions. The pendant has two rocker switches to control functions, and is mounted on a wall-clip inside the vehicle (near the door opening). To perform the desired function, push and hold the appropriate switch until the function is completed.

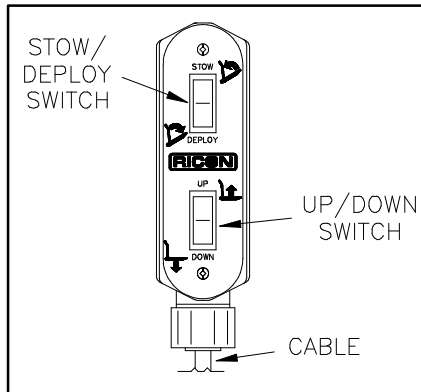


FIGURE 2-2: LIFT CONTROL PENDANT

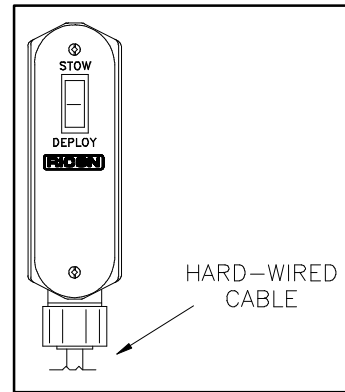
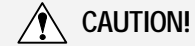


FIGURE 2-3: RAMP CONTROL PENDANT

E. ELECTRICAL CONTROLS AND INDICATORS



REMINDER TO RICON SERVICE TECHNICIAN:

Do not replace a circuit breaker with one of greater amperage. Locate and repair short circuit to correct problem.

1. POWER DOOR OPERATOR CIRCUIT BREAKER

Refer to **Figures 2-4 through 2-6**. The power door operator circuit breaker is located on either the S-Series hydraulic pump enclosure or the Spirit or UNI-lite electrical box. In the event of a short circuit, the circuit breaker button will pop-up; press to reset. **Do not press and hold** if pressing and releasing the button does not restore power. Contact an authorized Ricon dealer for repair.

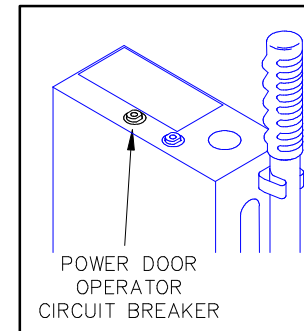


FIGURE 2-4: S-SERIES POWER DOOR OPERATOR CIRCUIT BREAKER

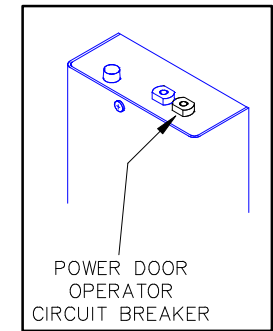


FIGURE 2-5: UNI-LITE POWER DOOR OPERATOR CIRCUIT BREAKER

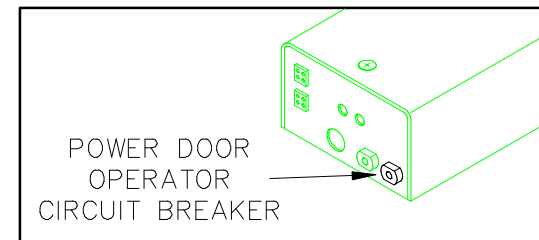


FIGURE 2-6: SPIRIT POWER DOOR OPERATOR CIRCUIT BREAKER

2. LIFT OR RAMP MAIN CIRCUIT BREAKER

Refer to **Figures 2-7** and **2-8**. The door operator or ramp main circuit breaker is located in the vehicle engine compartment and is designed to interrupt electrical power to the door operator or ramp electrical system in case of a short circuit. In the event of a short circuit, the circuit breaker reset tab or button will “swing-down” or “pop-out”. Press to reset. **Do not press and hold** if pressing and releasing the button does not restore power. Contact an authorized Ricon dealer for repair.

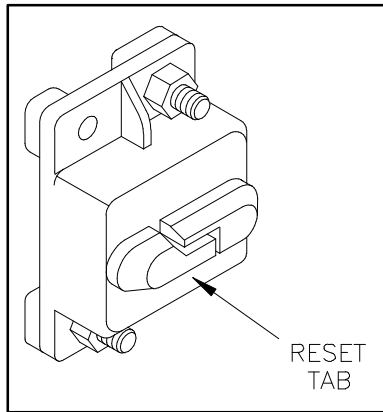


FIGURE 2-7: DOOR OPERATOR MAIN CIRCUIT BREAKER

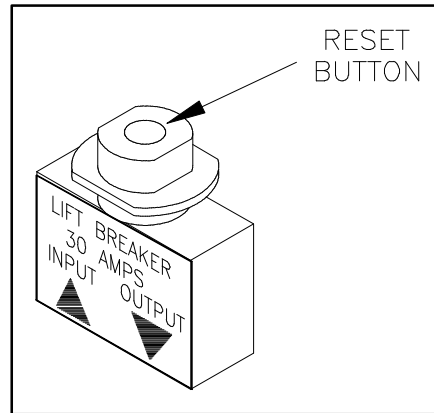


FIGURE 2-8: RAMP MAIN CIRCUIT BREAKER

F. POWER DOOR OPERATION

 **WARNING!**

IMPROPER USE OF THE DOOR OPERATORS CAN RESULT IN PERSONAL INJURY. USERS MUST READ AND FOLLOW THE OPERATING INSTRUCTIONS IN THIS MANUAL. ADDITIONAL COPIES OF THE MANUAL ARE AVAILABLE FROM:

RICON CORPORATION
7900 NELSON ROAD
PANORAMA CITY, CA 91402
(800) 322-2884 or (818) 267-3100

PRIOR TO USE, INSPECT THE DOOR OPERATORS FOR PROPER FUNCTION, REQUIRED MAINTENANCE, OR DAMAGE. IF A PROBLEM EXISTS, DO NOT USE AND CONTACT AN AUTHORIZED RICON SERVICE TECHNICIAN FOR REPAIR.

RICON CORPORATION DISCLAIMS LIABILITY FOR DAMAGE OR PERSONAL INJURY RESULTING FROM MODIFICATION TO THE DOOR OPERATOR, LACK OF MAINTENANCE OR REPAIR, NEGLIGENCE, ABUSE, OR FAILURE TO FOLLOW THE OPERATING INSTRUCTIONS.

- Before operating the power door operator and lift or ramp, be certain vehicle is safely parked on a level area away from traffic. Allow enough space for operation and passenger boarding.
- Be certain vehicle safety interlock mechanism (e.g., emergency/power brake) is properly engaged before attempting to operate the lift (or ramp). The lift (or ramp) will not operate until the safety interlock function has been engaged.
- Take special care to ensure the area is clear before deploying the lift (or ramp).

 **WARNING!**

ATTENDANT MUST REMAIN IN CLOSE PROXIMITY TO PASSENGER TO RENDER IMMEDIATE ASSISTANCE, IF NECESSARY. KEEP OTHERS CLEAR WHEN OPERATING DOOR OPERATOR. MAINTAIN PRESSURE ON SWITCH UNTIL FUNCTION IS COMPLETE.

If the vehicle is equipped with a dash-mounted, momentary toggle switch for the door operator, maintain pressure on the switch until the vehicle door is either fully closed or fully opened. Refer to the appropriate Ricon Operator manual and follow the operating instructions carefully.

If the vehicle is not equipped with a dash-mounted, momentary toggle switch for the door operators, follow the instructions below:

1. ENTER VEHICLE

- a. **OPEN DOORS and DEPLOY PLATFORM (OR RAMP)** - Press and hold control pendant DEPLOY/STOW switch in the DEPLOY position until the doors open and the platform fully deploys and stops automatically at vehicle floor level (or the ramp fully deploys).
- b. **LOWER PLATFORM** - Press and hold the UP/DOWN switch in the DOWN position until the platform reaches ground level and the outer rollstop opens completely.


- c. Carefully place wheelchair centrally on platform, facing outward, and **LOCK WHEELCHAIR BRAKES**. Be certain wheelchair is properly positioned on platform; it must not contact outer rollstop and prevent it from locking as the platform rises.
- d. **RAISE PLATFORM** - Press and hold the UP/DOWN switch in the UP position until the platform rises and stops automatically at the vehicle floor level.
- e. **STOW PLATFORM (OR RAMP) and CLOSE DOORS** - Press and hold the DEPLOY/STOW switch until the platform (or ramp) fully stows and the doors close completely.

2. TO EXIT VEHICLE:

- a. **OPEN DOORS and DEPLOY PLATFORM (OR RAMP)** - Press and hold control pendant DEPLOY/STOW switch in the DEPLOY position until the doors open and the platform fully deploys and stops automatically at the vehicle floor level (or the ramp fully deploys).
- b. **EXIT VEHICLE FACING OUTWARD**. Be certain platform is safely at vehicle floor level and platform rollstop is in an up and locked position.
- c. **LOWER PLATFORM** - Press and hold the UP/DOWN switch in the DOWN position until the platform reaches ground level and the outer rollstop opens completely.
- d. Release wheelchair brakes and carefully exit platform.
- e. **RAISE PLATFORM** - Press and hold the UP/DOWN switch in the UP position until the platform rises and stops automatically at the vehicle floor level.
- f. **STOW PLATFORM (OR RAMP) and CLOSE DOORS** - Press and hold the DEPLOY/STOW switch until the platform (or ramp) fully stows and the doors close completely.

3. MANUAL OPERATION

In the event the power door operator becomes inoperable under its own power, it can be operated manually.

 WARNING!
<p>DO NOT REMOVE THE EMERGENCY RELEASE PIN WHILE VEHICLE IS IN MOTION, AS DOORS CAN OPEN, CREATING A HAZARDOUS SITUATION FOR PASSENGERS. DO NOT ALLOW CHILDREN TO PLAY WITH THE RELEASE PIN.</p>

- a. Refer to **Figure 2-9**. Pull the Emergency Release Pin UPWARDS through the anchor bracket.
- b. Push doors open to clear path of platform (or ramp).
- c. Refer to the lift Operator Manual for lift operating instructions.

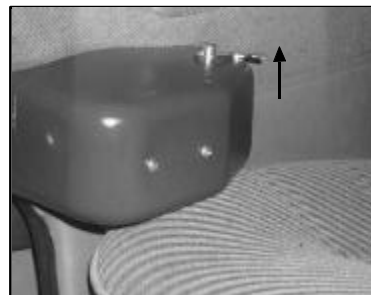


FIGURE 2-9: EMERGENCY RELEASE PIN

III. MAINTENANCE

Regular routine maintenance of the RICON RDO2500 Series Power Sliding Door Operator is required to provide optimum performance. During the Ricon warranty period, maintenance inspections must be performed by an authorized Ricon service technician at least once every six months, or sooner depending on usage. After the warranty period, it is recommended that maintenance inspections be continued at the same time intervals.

 CAUTION!
This Ricon product is highly specialized. Maintenance must be performed by an authorized Ricon service technician using Ricon replacement parts. Modifying or failing to properly maintain this product may void the warranty and result in unsafe operating conditions. To maintain the warranty, this product must be inspected at least every six months, or sooner depending on usage.

A. MAINTENANCE INFORMATION

Additional maintenance information is available in the RDO2500 Series Power Sliding Door Service manual, part number 32DDO02. This manual is available from Ricon in printed hard copy, or at the Ricon website in PDF format. The website is located at www.riconcorp.com.

B. MAINTENANCE SCHEDULE

TABLE 3-1: PERIODIC MAINTENANCE	
@ 6 MONTHS OF OPERATION	
Check and clean chain and rollers.	Lightly oil as needed.
Check door motion for complete travel.	Adjust as needed.
Check all fasteners for tightness.	Tighten as needed.
Check crossover harness for interference with moving components.	Adjust as needed.
Check manual operation of power door operator per instructions in Chapter II of this manual.	Verify proper operation.
REMOVE DOOR PANELS	
Check spur gear and bushings for signs of wear.	Replace if needed.
Check wiring and limit switches for proper connection and/or interface points.	Adjust as required.
END OF TABLE	

C. TROUBLESHOOTING GUIDE

The troubleshooting guide is designed to provide a logical starting point to locate general problems that could occur with the lift. However, not all possible problems or combinations of problems are listed. For trouble shooting the door operator, refer to **Table 3-2**. The guide does not incorporate routine safety precautions or preliminary procedures and assumes that the vehicle battery is fully charged and the battery terminals/connectors are clean and tight.



WARNING!

THE TROUBLESHOOTING GUIDE DOES NOT INCORPORATE ROUTINE SAFETY PRECAUTIONS OR PRELIMINARY PROCEDURES. DURING THE RICON WARRANTY PERIOD A TRAINED, AUTHORIZED RICON SERVICE TECHNICIAN MUST PERFORM TROUBLESHOOTING. AFTER THE WARRANTY PERIOD, IT IS RECOMMENDED THAT TROUBLESHOOTING CONTINUE TO BE PERFORMED BY AN AUTHORIZED RICON SERVICE TECHNICIAN.

TABLE 3-2: TROUBLESHOOTING GUIDE

SYMPTOM		POSSIBLE CAUSE	REMEDY
NO OPERATION	No Power to Door Operator	Battery terminals dirty.	Clean/tighten.
		Ground connection.	Clean/repair.
		Battery defective.	Replace.
		Battery discharged.	Check battery capacity/charge battery.
		Circuit breaker defective.	Check 30 amp circuit breaker for short in power wire or replace.
	Power to Switches Only	Switch defective.	Replace.
		Loose connection.	Repair.
OPEN MOTION	No Motion	Toggle switch defective.	Replace.
		Wiring connection.	Clean/repair.
		Limit switch at right door defective.	Replace.
		Motor defective.	Replace.
		Poor ground connection.	Repair.
CLOSE MOTION	No Motion	Toggle switch defective.	Replace.
		Wiring connection.	Repair.
		Limit switch at left door defective.	Replace.
		Left motor defective.	Replace.
		Ground connection.	Clean/repair.
END OF TABLE			