



INNOVATION IN MOBILITY™

***RDO2900 Series
Internal Power
Swing Door Operator***

PRINT

Service Manual

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 Ricon authorized service technician in your area, call Ricon Product Support at 1-800-322-2884.

Customer Name:_____

Installing Dealer:_____

Date Installed:_____

Serial Number:_____

REVISION RECORD

REV	PAGES	DESCRIPTION OF CHANGE	ECR/ECO
32DDO06. A	All	New release, in two-book format.	3882/4864
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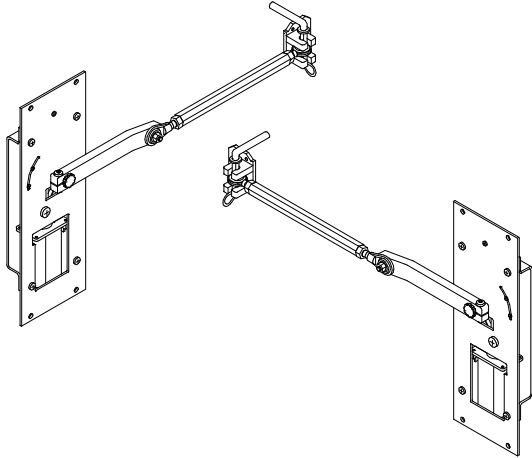
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I. INTRODUCTION

The RICON RDO2900 Series Internal Power Swing Door Operator electrically opens and closes swing-type van doors. They have been designed to operate in most full size vans, and provide up to 90° of motion for each door. The power door operators are installed within the doors behind the door panel. Adjustable bell-cranks provide smooth operation, and a splined connection between the crank-arm and the motor output shafts maintain wobble-free operation.



The power door operator works with wheelchair lifts and ramps. As the lift or ramp is deployed, or extended from the vehicle, the power door operator automatically opens the vehicle doors. After the lift or ramp has been used and is stowed and retracted into the vehicle, the door operator automatically closes the vehicle doors. The power door operators can be installed on two doors, however, for safety reasons the doors are operated one at a time.

This manual contains installation and maintenance instructions for the power door operators, as well as spare parts. The installation instructions must be followed exactly, no steps should be eliminated nor should the product be modified. It is important to user safety that the installation is thorough and correct. Once the operators are installed, it is important that they be properly maintained by following the Ricon recommended cleaning, lubrication, and inspection instructions.

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

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

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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 a Ricon authorized 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 Ricon authorized dealers honor this warranty. Consult a telephone directory or our Product Support department for the name of the nearest Ricon authorized 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 a Ricon authorized 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. Instead, the product is distributed through a worldwide network of authorized Ricon dealers who perform the actual sale and installation.

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

C. GENERAL SAFETY PRECAUTIONS

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

- Under no circumstances should installation, maintenance, repair, and adjustments be attempted without the immediate presence of a person capable of rendering aid.
- An injury, no matter how slight, must be attended. Always administer first aid or seek medical attention immediately.
- Protective eye shields 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, unusual noises or movements exists, do not use it until the problem is corrected.
- Keep others clear during operation.
- The product requires regular periodic maintenance. A thorough inspection is recommended at least once every six months. The product must always be maintained at the highest level of performance.

D. COMPONENT TERMINOLOGY

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

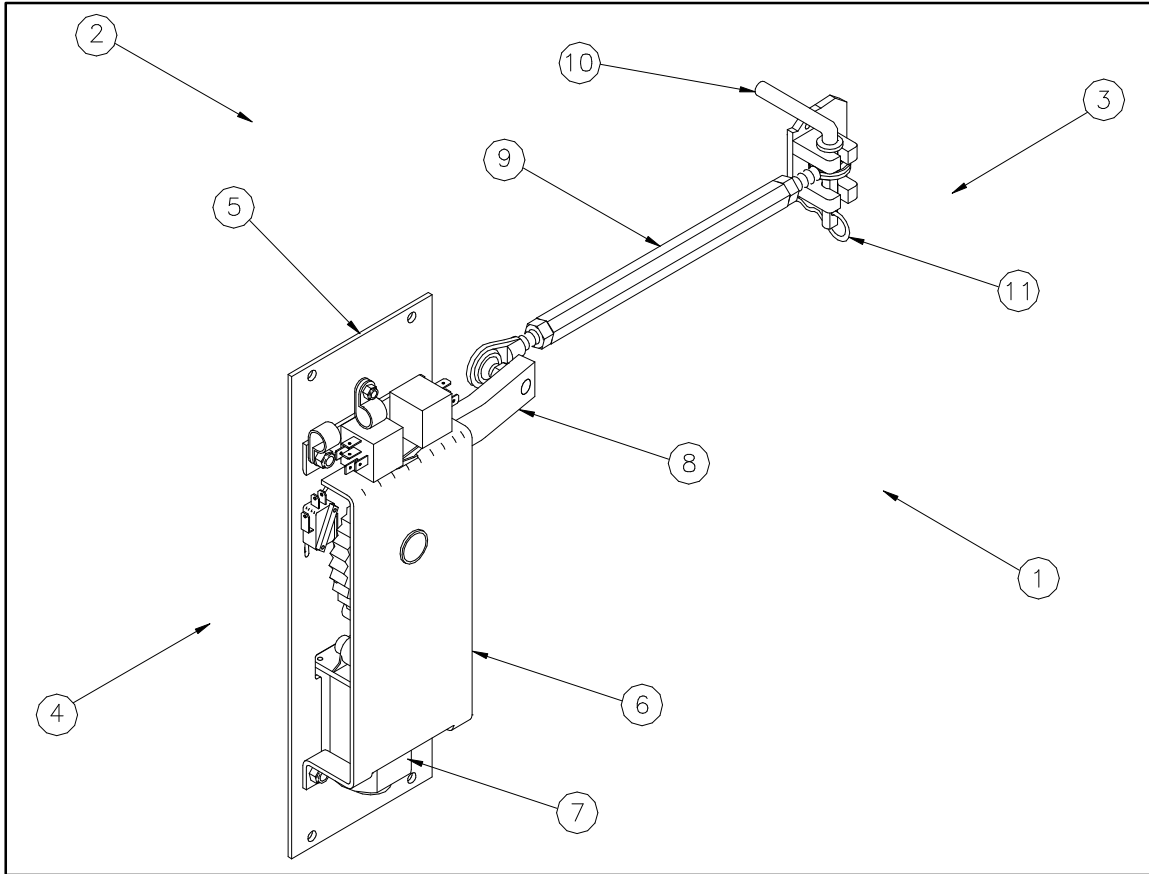


FIGURE 1-1: RD02900 SERIES INTERNAL POWER DOOR OPERATOR (RIGHT DOOR MODEL SHOWN)

TABLE 1-1: RDO2900 SERIES COMPONENT TERMINOLOGY		
REF	NAME	DESCRIPTION
1	Right	Reference points from outside the vehicle.
2	Left	
3	Front	
4	Rear	
5	Main plate	Mounts the door operator assembly to the vehicle door.
6	Support plate	Encloses component parts and mounts onto main plate.
7	Gear motor	Electrically opens and closes the vehicle door.
8	Actuator arm	Connects hex-rod to motor assembly.
9	Hex-rod	Connects actuator arm to clevis bracket.
10	Quick release latch pin	Disconnects door operators in the event of power failure.
11	Clip-hitch pin	Releases latch pin to operate door normally.
END OF TABLE		

II. INSTALLATION

The chapter provides instructions for installing the RICON RDO2900 Series Internal Power Swing Door Operator into full-size 1992 and later Ford vans, 1990 and later Chevrolet & GMC vans, and 1994 and later Dodge vans. Custom installations are also possible in other types of vehicles. If a question arises that is not covered in this manual, or by the Installation Instructions provided with this product, contact Ricon Product Support for assistance.



WARNING!

THIS PRODUCT MUST BE INSTALLED BY A TRAINED, AUTHORIZED RICON SERVICE TECHNICIAN.

NOTE: Installation Instructions specific to the vehicle's make/model are included in the kit supplied with the power door operators. Refer to **Table 2-1** to verify the kit number and the serial number of the operators.

TABLE 2-1: VEHICLE DOOR OPERATOR AND KIT NUMBERS			
VEHICLE TYPE	DOOR LOCATION	OPERATOR MODEL	KIT NUMBER
1992 & Later Full Size Ford Van	Side	RDO2901	01038
	Rear	RDO2902	01005
1990 & Later Full Size Chevrolet Van	Side	RDO2903	01269
1990 & Later Full Size GMC Van	Rear	RDO2904	01240
1994 & Later Full Size Dodge Van	Side	RDO2905	01307
	Rear	RDO2906	01308
END OF TABLE			

NOTE: Refer to **Figure 2-1**. Verify and record the serial number of this product.

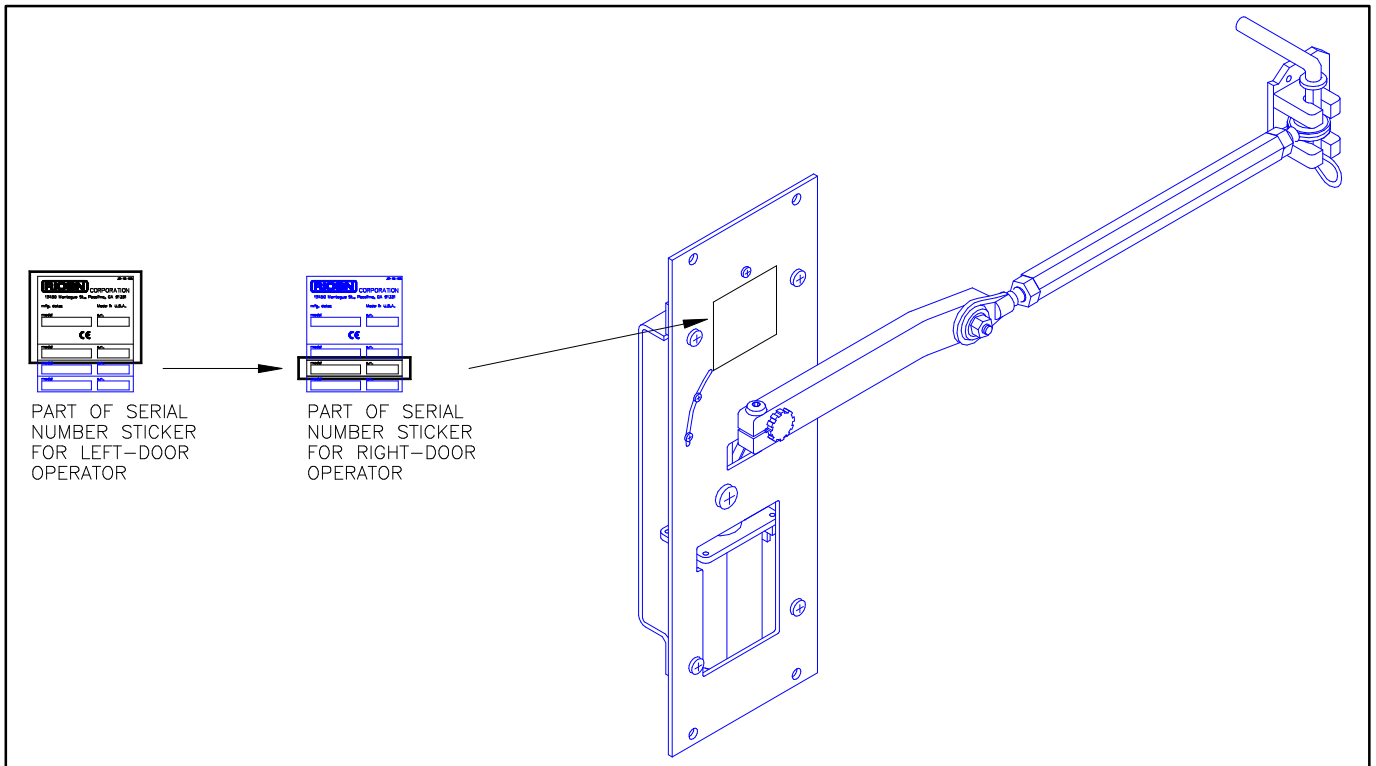


FIGURE 2-1: SERIAL NUMBER DECAL LOCATION


A. MECHANICAL INSTALLATION

To install the power door operators, refer to the following sections and perform the procedures carefully and in the order that they are presented. Be certain that the installation instructions are followed exactly and do not eliminate any steps or modify the product.

1. VEHICLE PREPARATION

Prepare the vehicle for installation:

- a. Safely park vehicle on a flat, level surface and turn engine off.

 WARNING!
<ul style="list-style-type: none">▪ WEAR PROTECTIVE CLOTHING AND EYE PROTECTION AT ALL TIMES. BATTERIES CONTAIN ACID THAT CAN BURN. IF ACID COMES INTO CONTACT WITH SKIN, IMMEDIATELY FLUSH AFFECTED AREA WITH WATER AND WASH WITH SOAP.▪ DO NOT SMOKE OR USE OPEN FLAME IN THE VICINITY OF BATTERY. WORK IN A PROPERLY VENTILATED AREA.▪ DO NOT LAY ANYTHING METALLIC ON TOP OF BATTERY.

- b. At vehicle engine compartment, disconnect the cable from the positive battery terminal.
- c. The power door operators must be mounted directly to the metal doors of the vehicle. Remove door trim, carpet, plywood, molding, wall paneling or any other material that may interfere with the installation.
- d. Remove plastic moisture barriers from doors.
- e. Remove all doorstops and latches, where applicable, from the vehicle.
- f. Remove interior panels from door post.
- g. If installing in side door, remove stepwell cover from vehicle.
- h. Doors should open and close freely.

2. SIDE-DOOR INSTALLATIONS

- For LEFT-SIDE angle and clevis bracket installation, install angle bracket to the clevis bracket.
 - For RIGHT-SIDE clevis bracket installation, refer to the kit installation instructions. Loosen the seat belt retractor bolt and slide the clevis bracket under the seat belt return mechanism. (If necessary, bend the seat belt return mechanism slightly upward in order to slide the bracket into position.)
- a. Refer to the kit installation instructions. Position and level angle/clevis bracket. Mark the bracket holes to be drilled.
 - b. Using a 3/16" diameter drill bit, carefully drill holes into door post.
 - c. Insert bolts through the drilled holes with their threaded ends pointing toward the inside of the vehicle. Install and fasten the right and left bracket assemblies to the door posts.
 - d. Refer to the kit installation instructions. Cut and drill holes to the door top bracket as shown.
 - e. Position, align and tape template to the door panel, and mark all locations to be either cut out or drilled.
 - f. For left-side installations, refer to the kit installation instructions and cut a slot out of the door panel as shown.
 - g. Using the templates, verify proper hole alignments and drill holes into door panel.
 - h. Refer to the kit installation instructions. Locate top bracket behind door panel, and fasten angle/clevis bracket to the panel. Be sure to insert bolts with threads toward the inside of the vehicle.
 - i. Refer to the kit installation instructions. Locate door operators down and behind door panels, and fasten door operators to the top brackets and lower door panels.

3. REAR-DOOR INSTALLATIONS

- a. Attach angle bracket to the clevis bracket.
- b. Refer to the kit installation instructions. Position and level angle/clevis bracket. Mark the bracket holes to be drilled.
- c. Using a 3/16" diameter drill bit, carefully drill holes into door post.
- d. Refer to **Figure 2-2**. (Figure also applies to left-rear door installation except viewed in the opposite direction. Bracket appearance may vary slightly for different vehicle manufacturers.) Install and fasten the right and left bracket assemblies to the door posts.

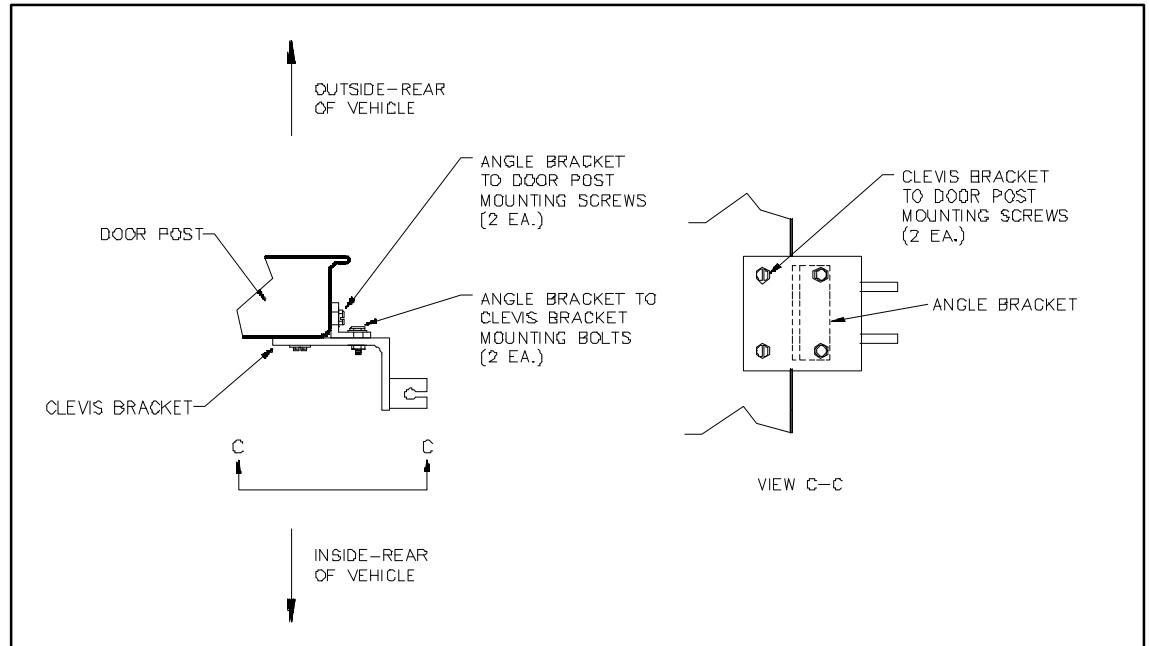


FIGURE 2-2: RIGHT-REAR BRACKET ASSEMBLY INSTALLATION

- e. Refer to the kit installation instructions. Cut and drill holes to the rear right door top and bottom brackets as shown.
 - f. Position, align and tape template to the door panel, and mark all locations to be either cut-out or drilled.
 - g. Refer to the kit installation instructions. Cut out slots in the door panel as shown.
 - h. Drill mounting holes into the inside door panel.
 - i. For right-rear door installation, remove the license plate box from the door.
- NOTE:** Use the supplied spacers to fill gaps between the top brackets and door operator main plates when installing bolts.

- j. Refer to the kit installation instructions and **Figure 2-3** or **Figure 2-4**, as applicable. Position and fasten the top bracket to the door. Be sure to insert bolt so that the hex-nut is installed behind the door panel.

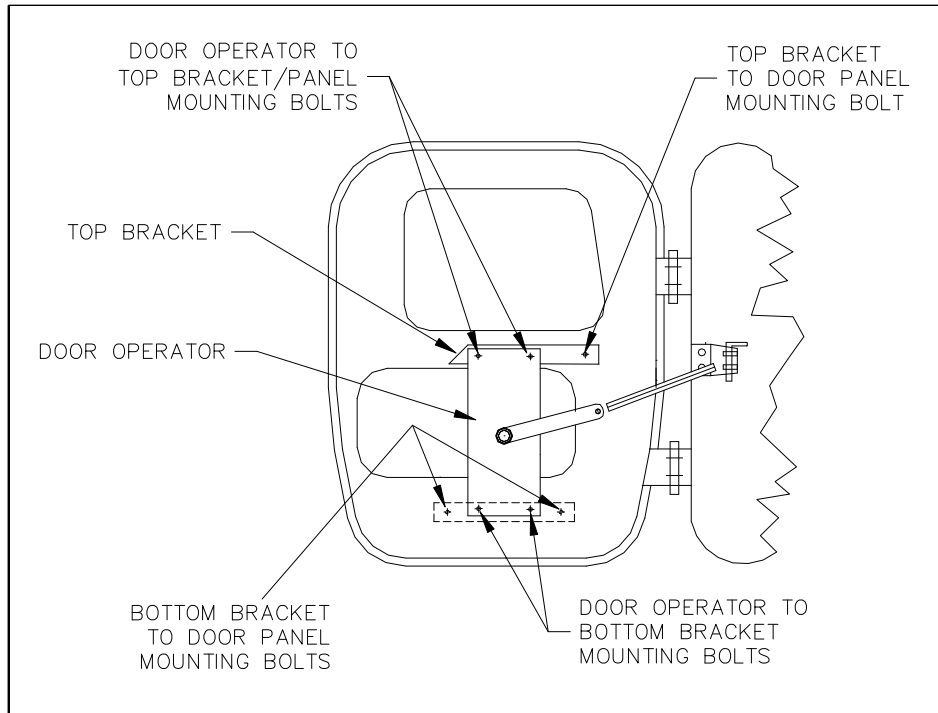


FIGURE 2-3: LEFT-REAR DOOR OPERATOR MOUNTING LOCATIONS

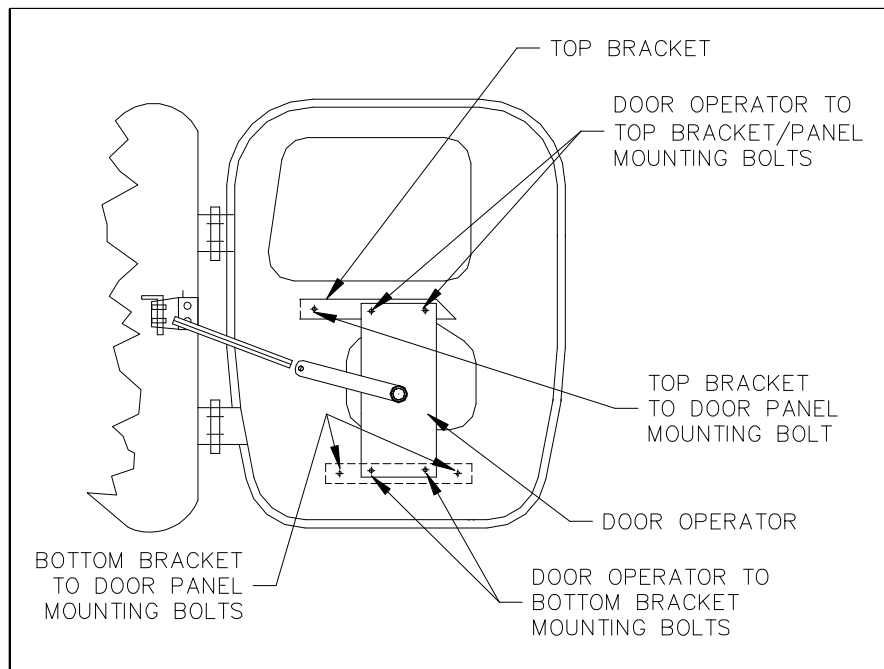


FIGURE 2-4: RIGHT-REAR DOOR OPERATOR MOUNTING LOCATIONS

- k. Refer to the kit installation instructions. Locate bottom bracket down and behind lower door panel, and fasten bracket to the pane. Be sure to insert attaching bolts so that hex-nuts are installed behind the door panel.
- l. Refer to the kit installation instructions. Position and fasten door operators to the top and bottom brackets.

NOTE: Position and configuration of mounting brackets will vary slightly with vehicle manufacturer.

- m. For right-rear door installation, reinstall the license plate box. The top left-corner screw should be cut to fit.

B. ELECTRICAL INSTALLATION

1. Refer to the kit installation instructions. Drill a 3/4" diameter hole in the door frame.



2. Drill a 3/4" diameter hole in the door jamb opposite the hole drilled in the door frame.
3. Deburr all drilled holes, installed the supplied grommet, and route the main harness assembly through the grommet and into the vehicle.
4. For side-door installations, refer to the kit installation instructions and attach the helper-spring provided to the end of the flex conduit and secure the other end inside the vehicle. This prevents the operator mechanism from getting caught in the door jamb.
5. Refer to **Figure 2-5**. Plug the interconnecting electrical crossover cable between the power door operators and the lift. Be certain to connect the end of the crossover cable with two cables (the short cable terminates at the lift connector) to the left door operator, and the opposite end to the right door operator. If not connected properly, the door sequencing will be reversed.

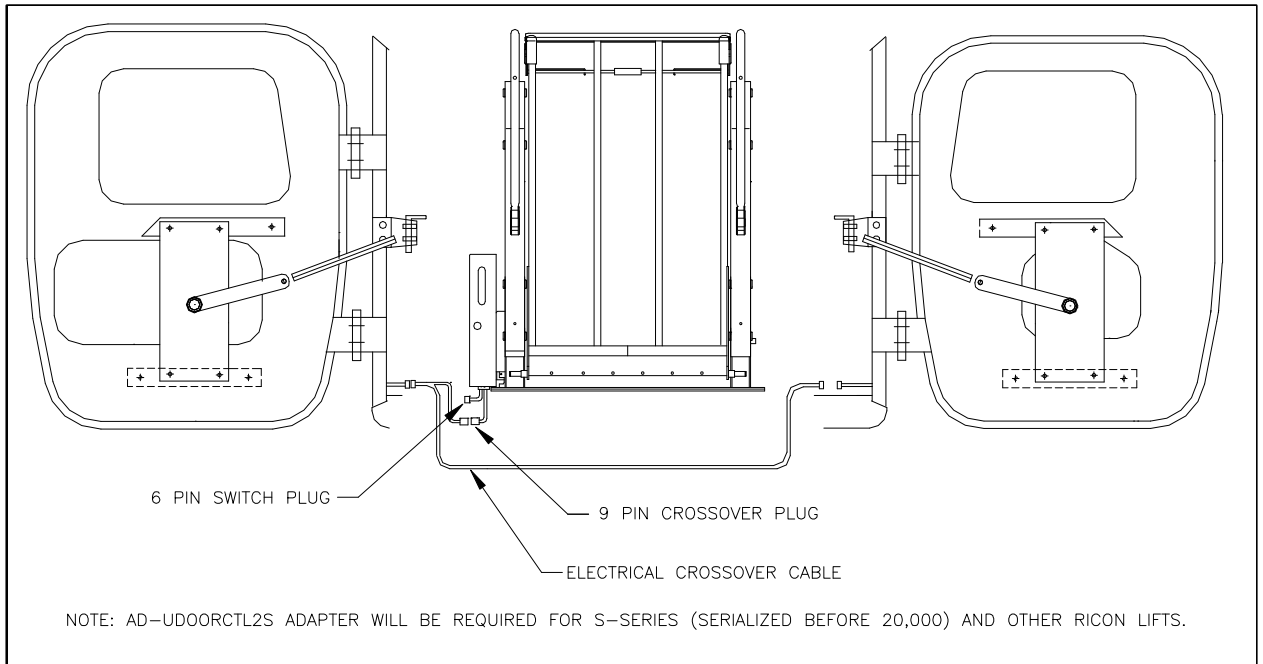


FIGURE 2-5: POWER DOOR OPERATOR AND LIFT INTERCONNECT DIAGRAM

6. At vehicle engine compartment, connect the cable to the positive battery terminal.

C. FINAL ADJUSTMENTS

The power door operators are shipped with the actuator arms in the "Open" position. To make certain that the vehicle doors are opened and closed properly, it may be necessary to adjust the actuator rod length and limit switches. If more than one power door operator is installed in the same vehicle, adjust the operators one at a time and repeat the procedure for the other operator. To adjust the power door operators, follow this procedure:

1. Assemble hex-rod assembly between the door operator actuator arm and clevis bracket.
2. Refer to **Figure 2-6**. With the actuator arm pointing inward INTO the door jam (the "open" position), the door operator mechanical stop located on the spur gear should make contact with the main plate adjustable setscrew. If not, with the "open" limit switch mounting position centered between its adjustment slot, turn setscrew clockwise to decrease the "open" door travel limit, or counter-clockwise to increase the "open" door travel limit.

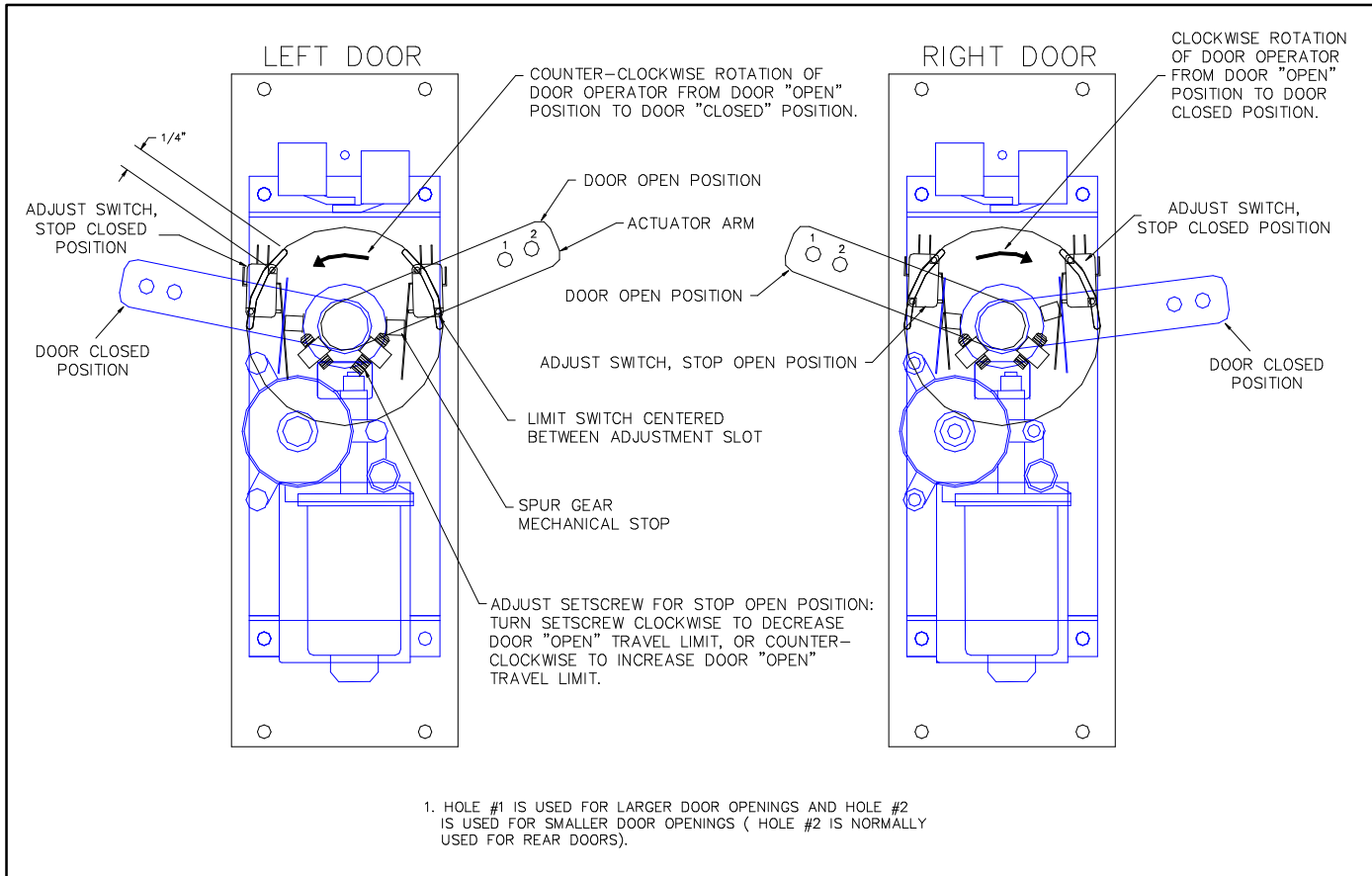


FIGURE 2-6: DOOR OPERATOR ADJUSTMENTS

3. Deploy the lift or ramp with the control pendant. Verify proper "door open position" of the power door operator and readjust setscrew as required.
4. Stow the lift or ramp with the control pendant. Verify proper "door closed position" of the power door operator (the actuator arm is pointing outward AWAY from door jamb.)
5. At the "closed" position, the limit switch should be tripped by the spur gear mechanical stop. If not, loosen the limit switch mounting screws and slide the switch up or down until it contacts the mechanical stop (the switch will "click"). The top limit switch mounting screw position should be approximately 1/4" from top of adjustment slot. Tighten mounting screws sufficiently to allow the switch to be adjusted.
6. Verify proper opening and closing by repeating the above steps.
7. Tighten limit switch mounting screws.

8. Refer to **Figure 2-7**. Adjust the length of the hex-rod assembly as required until the left door closes tightly. To adjust, loosen locknuts at ends of hex-rod, rotate the hex-rod, and then retighten the locknuts.

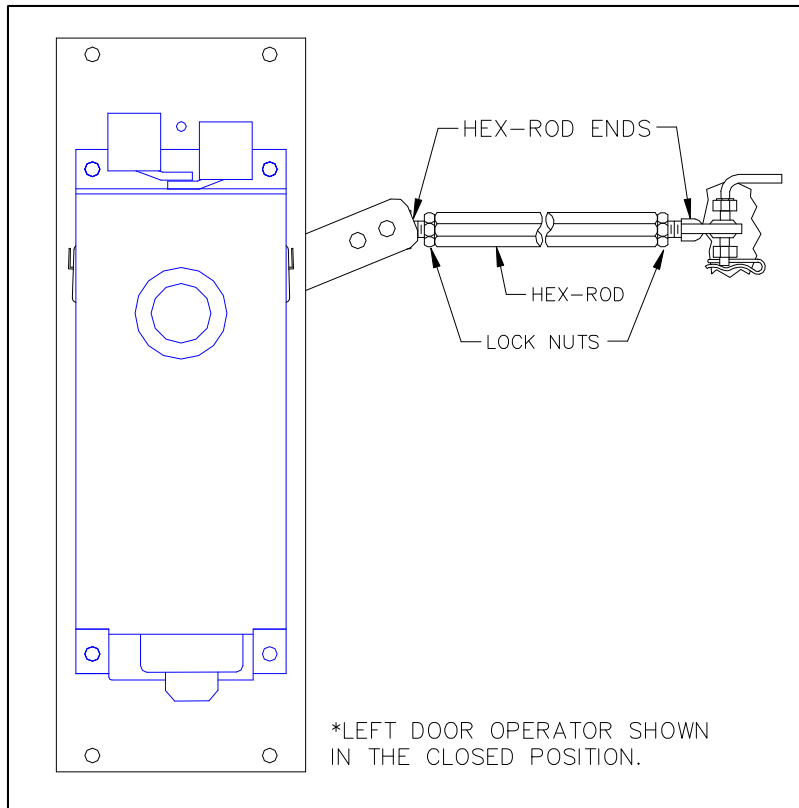


FIGURE 2-7: HEX ROD ADJUSTMENT

9. Remove actuator arms from the operators. Leave hex-rod assemblies attached at clevis bracket assemblies.

D. INSTALLATION COMPLETION

1. If power door operators are installed in side doors, reinstall stepwell cover.
2. Reinstall all door stops and latches, where applicable.
3. Reinstall plastic moisture barriers on doors.
4. Use door flange washer to cover the interior panel exit holes for the actuator arms. Reinstall door interior panels, and then reinstall actuator arms on door operators.
5. Reinstall door trim, carpet, plywood, molding, wall paneling or any other material that was removed.
6. Refer to the Operating Instructions chapter of this manual and perform several cycles of operation.

E. CUSTOMER ORIENTATION

IMPORTANT
- Customer Orientation -

Ricon Sales/Service Personnel must review the Warranty and Operator Manual with the customer to be certain they understand safe operation of the equipment. Instruct the customer to follow the operating instructions without exception.

- Refer to **Figure 2-8** and verify that all decals are properly located and affixed as shown.

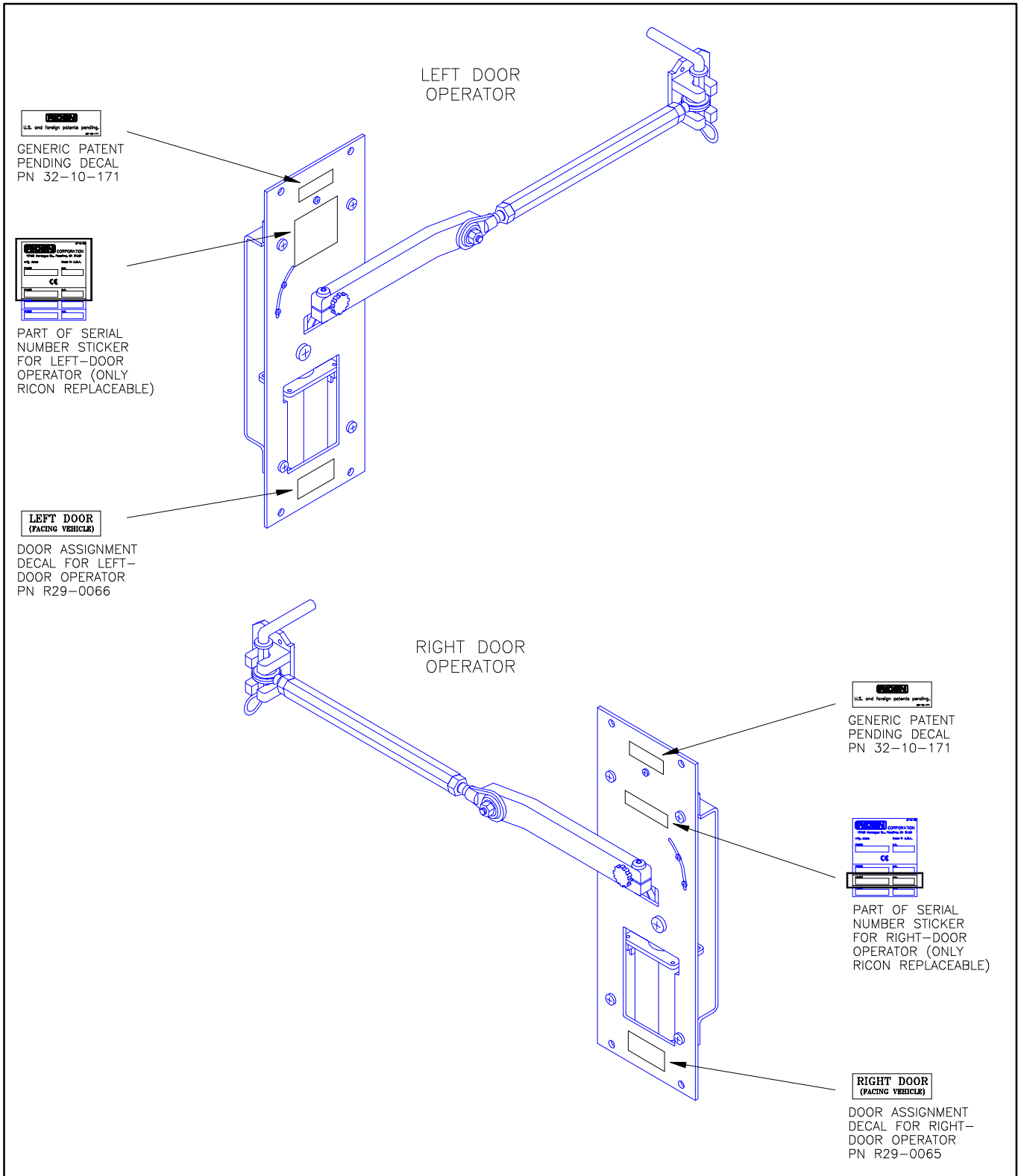


FIGURE 2-8: DECAL LOCATIONS AND PART NUMBERS

III. MAINTENANCE

Regular maintenance of the RICON RDO2900 Series Internal Power Swing 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, maintenance inspections are recommended at the same time intervals.

 **WARNING!**

THIS RICON PRODUCT IS HIGHLY SPECIALIZED. MAINTENANCE AND REPAIRS MUST BE PERFORMED BY A RICON AUTHORIZED SERVICE TECHNICIAN USING RICON REPLACEMENT PARTS. MODIFYING OR FAILING TO PROPERLY MAINTAIN THIS PRODUCT WILL VOID THE WARRANTY, AND MAY 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 SCHEDULE

TABLE 3-1: SIX-MONTH MAINTENANCE CHECK	
INSPECTION AREA	ACTION
Rod ends and hex rod.	Clean, tighten, and lubricate with light oil as needed.
Check door motion for complete travel.	Adjust as needed.
Check all fasteners for tightness.	Tighten as needed.
Check electrical crossover cable for interference with moving members.	Adjust and secure as needed.
Check manual operation of power door operators.	Verify proper operation.
NOTE: The following steps require removal of the 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	

B. TROUBLESHOOTING GUIDE

The troubleshooting guide is designed to provide a logical starting point to locate general problems that could occur with the power door operators. However, not all possible problems or combinations of problems are listed. For troubleshooting the door operators, 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. A TRAINED, RICON AUTHORIZED SERVICE TECHNICIAN MUST PERFORM TROUBLESHOOTING. AFTER THE WARRANTY PERIOD, IT IS RECOMMENDED THAT TROUBLESHOOTING BE CONTINUED BY AN AUTHORIZED SERVICE TECHNICIAN.

TABLE 3-2: TROUBLESHOOTING GUIDE			
SYMPTOM		POSSIBLE CAUSE	REMEDY
NO OPERATION	No power to door operators	Battery terminals dirty.	Clean/tighten.
		Ground connection.	Clean/repair.
		Power door operator circuit breaker "tripped".	Reset circuit breaker.
		Lift main circuit breaker "tripped".	
		Wiring short circuit.	Repair.
		Circuit breaker defective.	Replace.
		Loose connection.	Repair.
OPEN MOTION	No motion	Toggle switch defective.	Replace.
		Wiring connection.	Clean/repair.
		Limit switch at right door defective.	Replace.
		Right motor defective.	Replace.
		Ground connection.	Repair.
	Only right door opens	Limit switch at right door defective.	Adjust/replace.
		Loose 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.
	Only left door closes	Limit switch at left door defective.	Adjust/replace.
		Wiring connection.	Repair.

CLOSE MOTION	Only left door closes	Right motor defective.	Replace.
		Ground connection.	Clean/repair.
DOOR OPERATOR SEQUENCE	Sequence is correct, but open is closed	Actuator arm is installed upside-down.	Reverse actuator arm.
		Motor wires reversed.	Motors are shipped with brown wire toward inside of vehicle.
END OF TABLE			

C. ELECTRICAL WIRING DIAGRAM

1. DIAGRAM LEGEND

a. Wire Color Codes

TABLE 3-3: WIRE COLOR CODES			
CODE	COLOR	CODE	COLOR
Bk	Black	R	Red
Bl	Blue	Vi	Violet
Br	Brown	Vi/bk	Violet w/ black
Gn	Green	W	White
Gn/bk	Green w/ black	W/o	White w/ orange
O	Orange	Y	Yellow
O/bk	Orange w/ black	Y/bk	Yellow w/ black
END OF TABLE			

b. Electrical Connectors

Refer to **Figure 3-1**. The standard electrical connectors used by Ricon are Molex .062" series. These connectors have terminal numbers molded into the back. Use these numbers and wire colors to identify wires.

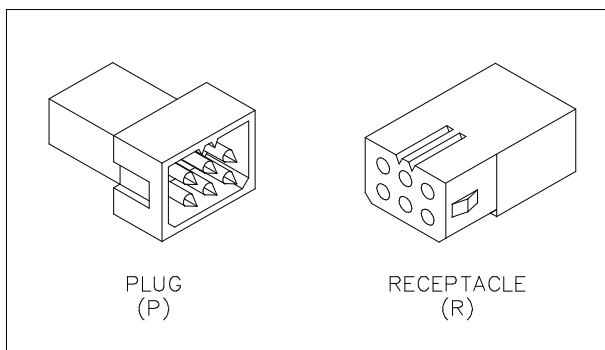


FIGURE 3-1: MOLEX CONNECTORS

c. Wiring Diagram Labels

12V	12 Volts – Circuit current rating is also given
DC	Door Close
DCL	Door Close, Left
DCR	Door Close, Right
DO	Door Open
DOE	Door Open Enable – Used in sequenced systems only
DOL	Door Open, Left
DOR	Door Open, Right
GND	GROUND
OUT	Out signal to lift
OUTA	Out Attempt (checks door first) – Non sequenced
SDA	System Deploy Attempt – DO followed by OUT

d. Electrical Symbols

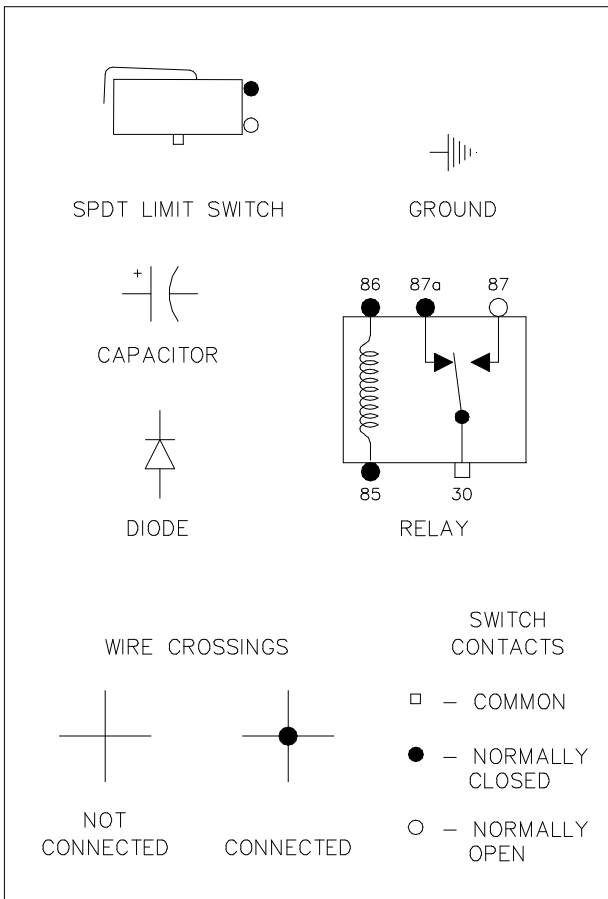


FIGURE 3-2: DIAGRAM SYMBOLS

2. DOOR OPERATOR LIMIT SWITCH STATE

Refer to **Figure 3-3**. The limit switch actuation diagram shows the state of all limit switches as the doors go from fully closed to fully open. The solid (—) line indicates the normally closed circuit is active, while the two thin lines (≡) indicate the normally open circuit is active. The dotted lines (???) are used to show the switch states beyond the normal travel boundaries of the door. This is useful in showing the operation of switches that change state at the boundary point.

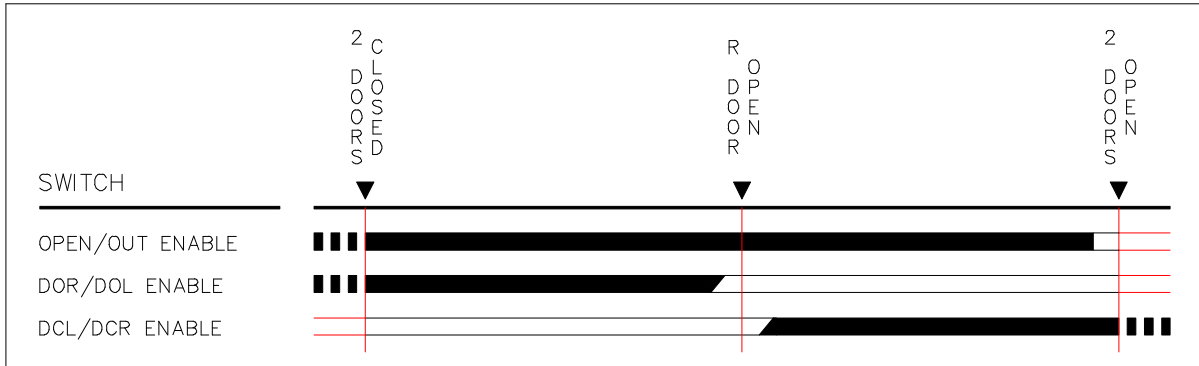


FIGURE 3-3: LIMIT SWITCH STATE CHART

3. WIRING DIAGRAM

Refer to **Figure 3-4** on the following page for the door operator electrical wiring diagram.

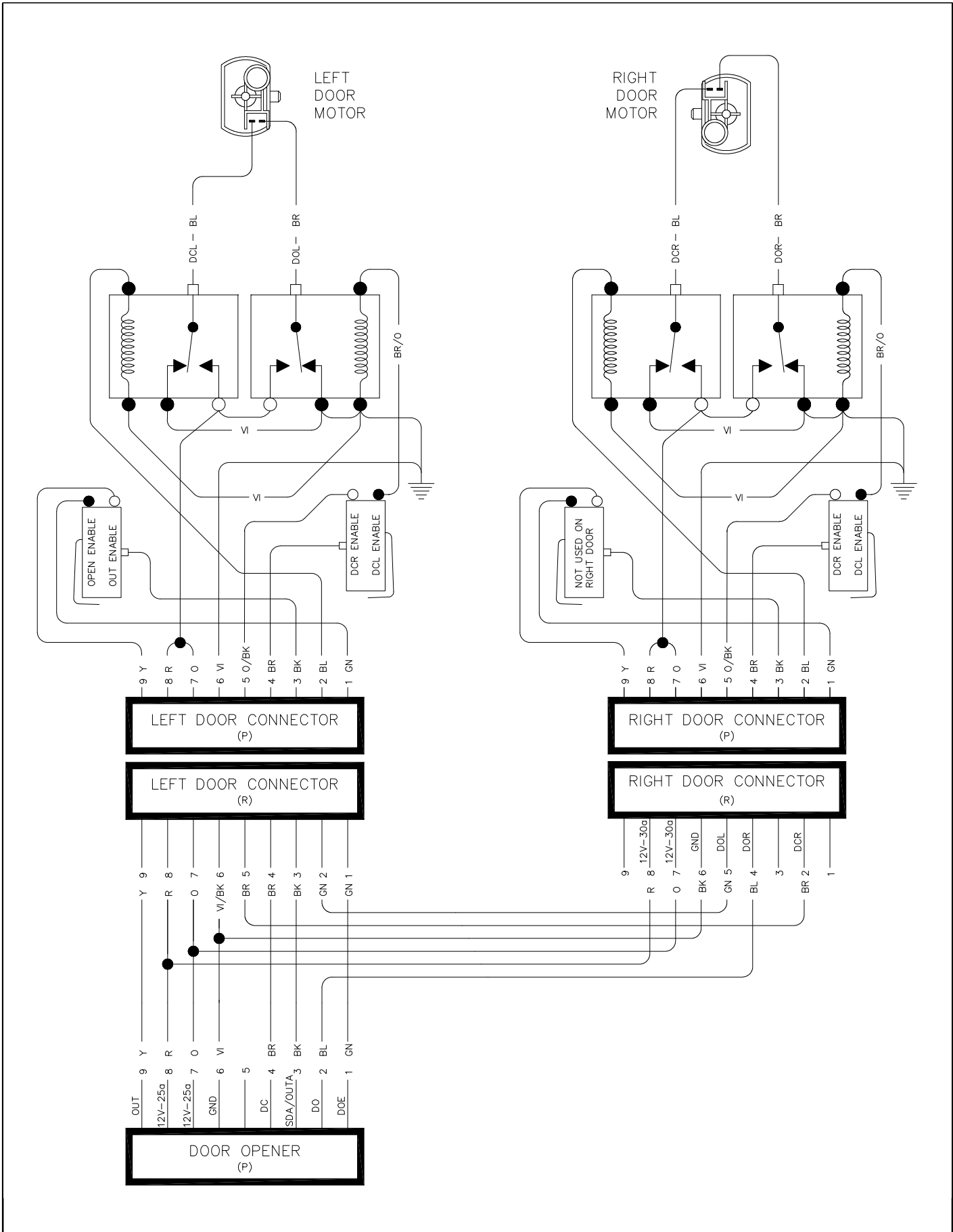
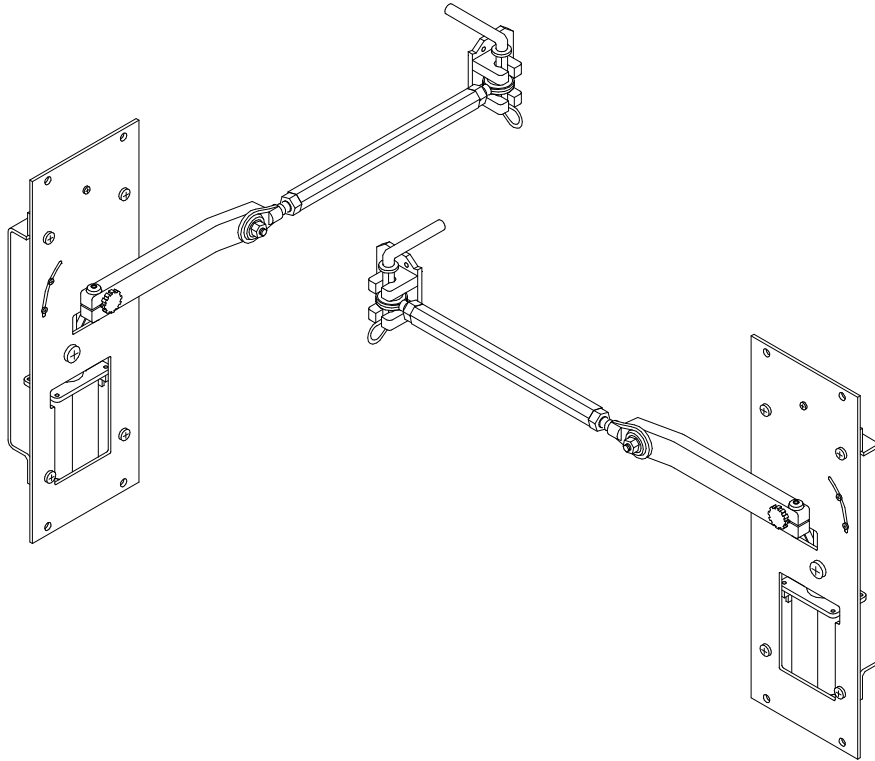


FIGURE 3-4: RD02900 ELECTRICAL WIRING DIAGRAM

IV. SPARE PARTS

This chapter contains parts diagrams and lists for the RICON RDO2900 Series Internal Power Swing Door Operator. The parts diagram is an exploded view of the operator, with components referenced by numbers. The accompanying parts list has the part reference number, description, quantity used, and the Ricon stock number. To order a part, locate the part on the drawing and note the reference number. The accompanying parts list will have the reference number and the stock number of the desired part. For the part numbers of the door operator decals, refer to the Decal Locations and Part Numbers figure in Chapter II of this manual.



PRODUCT MODEL AND KIT NUMBERS	
PRODUCT NUMBER	RDO2901 thru RDO2907
DOCUMENTATION KIT NUMBER	01077
SPARE DECAL KIT NUMBER	26002

POWER DOOR OPERATOR
RDO-2900 SERIES
SERIAL NO's. 290001-PRESENT

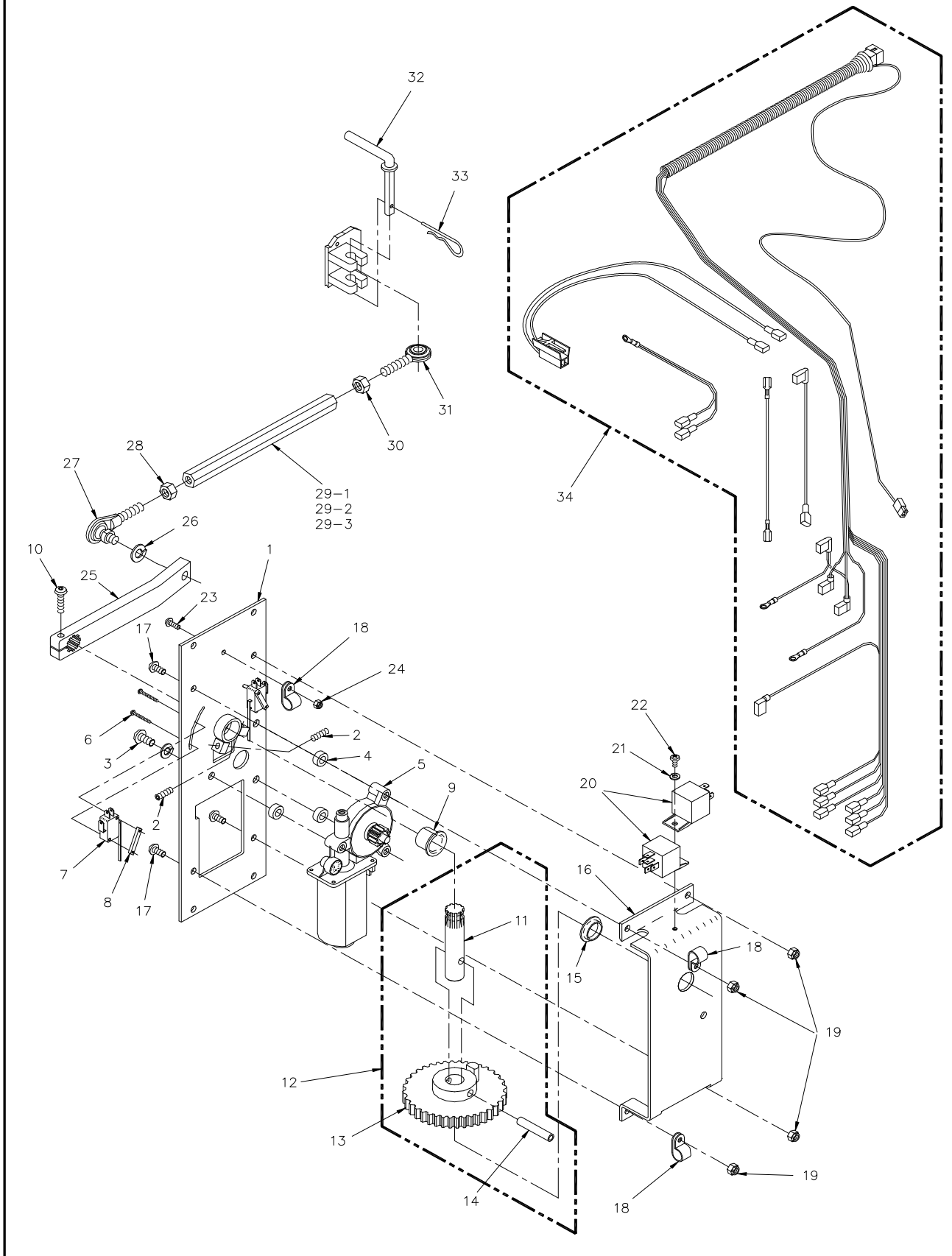


FIGURE 4-1: RD02900 SERIES POWER DOOR OPERATOR (LEFT AND RIGHT)

**FIGURE 4-1: POWER DOOR OPERATOR
RDO2900 SERIES
SERIAL No's. 290001 – PRESENT**

REF	DESCRIPTION	QTY	PART NO.
1	PLATE, MAIN	1	R29-0006
2	SOCKET, SET 1/4-20 X 1 NYLON LOCK	2	282035
3	MS, SOCKET, BUTTON, 5/16-18 X 1, SST	3	282296
4	SPACER, MOUNTING MOTOR	3	R29-0009
5	GEAR MOTOR, DELCO PH3, 12T, HI TORQ RH	1	25482
6	SMS #4 X 1, PHIL PAN, TYPE AB, ZINC	4	28036
7	SWITCH-LIMIT SGL POLE SMALL (E23)	2	26434
8	BLOCK, SWITCH RETAINER, PLASTIC	2	UL-AC-011
9	BUSHING, 12FDU12, 3/4 DIA X 3/4	1	25383
10	SCREW, BHS, 1/4-20X1, SST (BAG OF TEN)	1	15958
11	SHAFT, MAIN-SPLINED	1	R29-0031
12	SPUR GEAR ASSY	1	R29-0008
13	SPUR GEAR, WELDMENT	1	R29-0007
14	ROLL PIN 5/16 X 1-3/4	1	28365
15	BUSHING, MODIFIED	1	25386
16	SUPPORT, PLATE	1	19069
17	SOCKET BUTTON, 1/4-20 X 1/2 SST	4	281965
18	CLAMP NYLON 3/8	3	28-02-352
19	NUT-HEX 1/4-20 NYLON INSERT	4	28309
20	RELAY, SPDT, 12VDS BOSCH	2	28-36-405
21	WASHER #10 SPLIT LOCK	1	28272
22	MS 10-24 X 3/8 PHIL PAN	1	28109
23	MS-10-24 X 1/2 PHIL PAN	1	28111
24	NUT-HEX 10-24 NYLON INSERT	1	28305
25	ARM-ACTUATOR, SPLINED	1	R29-0019
26	WASHER 3/8 SPLIT LOCK	1	28280
27	ROD END-MODIFIED	1	01673
28	NUT-HEX 3/8-24	1	28319
29-1	HEX ROD-14.50, RDO1790 SERIES, 92 FORD	1	01737
29-2	HEX ROD-15.5"	1	01245
29-3	ROD-HEX 8.00"	1	01705
30	NUT-HEX 3/8-24 LEFT HAND THREAD	1	28320
31	ROD END (M) LEFT HAND THREAD	1	25501
32	LATCH ASSY., QUICK RELEASE	1	01640
33	CLIP-HITCH PIN #7	1	25548
34	MAIN HARNESS ASSY	1	17794

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