



INNOVATION IN MOBILITY™

**PF5000 Series™
Low Floor Vehicle
Access Ramp
for
Custom Installation**

PRINT

Operator Manual

02/29/02

32DPF501.A

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U.S. Patent # 5,636,399; 5,832,555; Australian Patent No. 692683;

UK Patent No. GB 2,313,589B;

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

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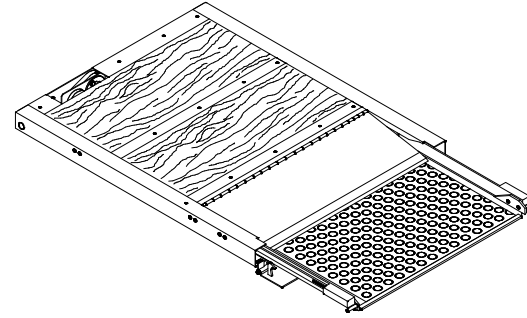
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I. INTRODUCTION

The RICON PF5000 Series Low-Floor Vehicle Access Ramp is an electrically operated ramp that provides vehicle access to people using mobility equipment (wheelchairs, scooters). The ramp has been designed for custom installations and is operated by the vehicle driver using a dashboard mounted control switch or an optional controller interface kit.



When the vehicle is safely parked with the doors open, and the driver holds the control switch in the DEPLOY position, the ramp extends from the vehicle and stops when it contacts the ground. As a safety function, movement will automatically stop if the ramp encounters an obstruction. After the passenger enters the vehicle, the driver holds the switch in the STOW position and the ramp retracts into the vehicle. The rated load capacity is 750 pounds (341 kilograms).

This manual contains operation and maintenance instructions for the ramp. For installation instructions please refer to the Service Manual. It is important to user safety that the vehicle operators be completely familiar with the operating instructions. Once the ramp is installed, it is very important that it 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

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 Ricon Product Support.
- Labor costs for specified parts replace under this warranty for a period of one year from date of purchase. A Ricon rate schedule determines the parts covered and labor allowed.

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

This Warranty does not Cover:

- Malfunction or damage to product parts caused by accident, misuse, lack of proper maintenance, neglect, improper adjustment, modification, alteration, the mechanical condition of 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

- 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.

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

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, or adjustment be attempted without the immediate presence of a person capable of rendering aid.
- An injury, no matter how slight, should be attended to. 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 ramp, and be certain that hands, feet, legs, and clothing are not in the path of ramp movement.
- Batteries contain acid that can burn. If acid comes in contact with skin, immediately flush affected area with water and wash with soap.
- Always work in a properly ventilated area. Do not smoke or use an open flame near a battery.
- Do not lay metallic anything on top of battery.
- Check under vehicle before drilling to avoid damaging 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 noise or movements exist, do not use 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 must always be maintained at the highest level of performance.

D. PRODUCT TERMINOLOGY

The references for the ramp are illustrated in **Figure 1-1** and defined in **Table 1-1**. Refer to Service Manual, Chapter IV, Parts Diagrams and Lists for more details.

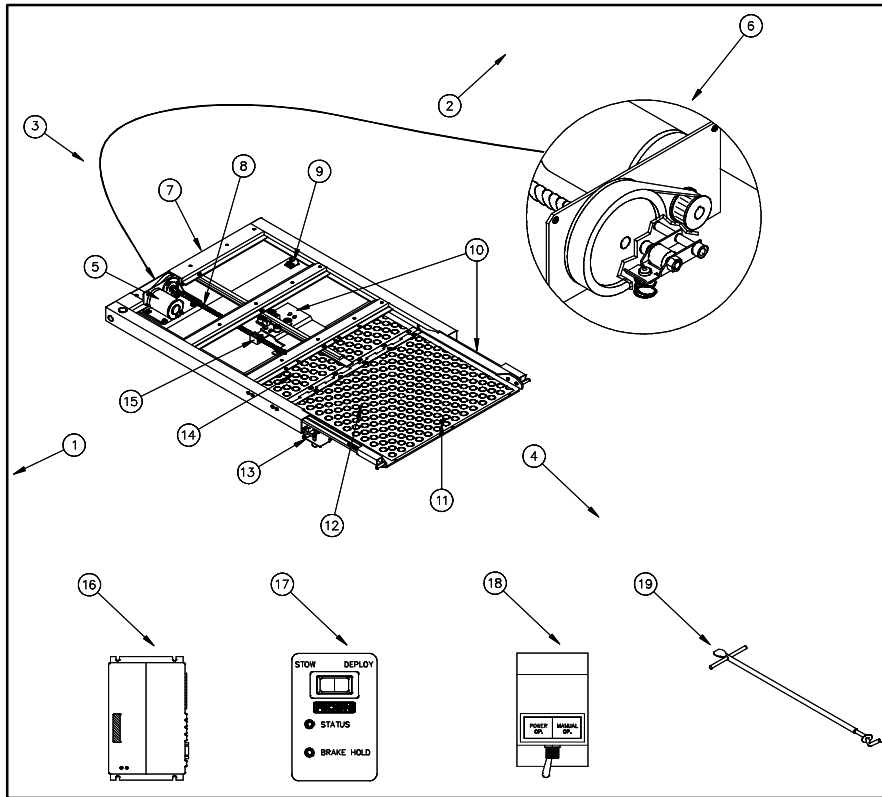


FIGURE 1-1: RAMP REFERENCES

TABLE 1-1: PF5000 RAMP TERMINOLOGY		
REF	NAME	DESCRIPTION
1	Left	Reference point from outside the vehicle looking inward.
2	Right	
3	Back	
4	Front	
5	Drive System Motor	Electric motor used to operate the ramp.
6	Belt Failure Ratchet	A mechanism to keep the ramp from deploying if the drive system belt breaks.
7	Ramp Enclosure	Cassette type enclosure, rigidly attached to the vehicle, which contains the ramp.
8	Drive System	Components used to extend/DEPLOY and retract/ STOW the ramp.
9	Sensor Assembly	Magnetic device used to signal the ramp controller when the ramp is in the fully stowed position.
10	Traveling Frame	Mechanical assemblies that operate the ramp and maintain ramp-assembly alignment.
11	Manual Deploy Hole	Insertion point for the manual operation lever.
12	Ramp Assembly	Assembly that extends from the vehicle during ramp operation.
13	Enclosure Door	Mechanical door that protects the ramp internal components from road debris, etc.
14	Carriage Assembly	Mechanical assembly that operates the ramp assembly.
15	Ball Nut/Screw Assembly	Mechanical component of the drive system used to extend and retract the ramp.
16	Ramp Controller	Electronically controls all of the ramp functions and safety features.
17	Optional Ramp Control Panel	Electrically STOW and DEPLOY the ramp and shows the status of the ramp with indicator lights.
18	Optional Manual Operation Panel	Enables the operator to use the ramp either electrically or manually.
19	Manual Operation Lever	Used to manually stow and deploy the ramp.
END OF TABLE		

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II. OPERATING INSTRUCTIONS

This chapter contains safety precautions, daily safety check, control and indicator descriptions, and operating instructions for the RICON PF5000 Series Low-Floor Vehicle Access Ramp. This chapter must be read and thoroughly understood before attempting to use the ramp.

A. SAFETY PRECAUTIONS

The following safety precautions must be observed at all times:

- Vehicle must be safely parked with the parking brake set before using ramp.
- Always face outward when exiting vehicle
- People using mobility equipment (e.g., wheelchairs, scooters) should always enter or exit the vehicle slowly and carefully.
- Unusual noises or movements should be inspected immediately by an authorized Ricon service technician.
- Inspect the ramp prior to each use. Check for loose nuts and bolts. If any unsafe condition exists or unusual noises or movements are noticed, **DO NOT** use the ramp. Return the vehicle to an authorized Ricon service technician for repair.
- Wheelchair and scooter brakes are less effective if the ramp and/or mobility equipment wheels are wet. Use extreme care in wet conditions.
- Keep others clear while operating ramp.
- The ramp is designed for one user at a time. Do not overload the ramp. Be certain mobility aid equipment fits safely on the ramp before entering or exiting the vehicle.
- Never leave ramp outside of vehicle. Always return ramp to its stowed position after use.
- Do not allow children or others to play with the ramp as this may be dangerous.
- Close supervision is necessary if the ramp is used near children.
- Do not place your arms or legs in or near any moving parts of the ramp or other components.
- Avoid operating ramp while vehicle is parked on a slope, since the ramp will also slope creating an unsafe condition.

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

B. DAILY SAFETY CHECK

Inspect the ramp each day prior to use and check that the following conditions are met before operating:

- All functions operate properly. If unusual noise or movement exist, DO NOT use ramp, and contact a Ricon service technician for repair.
- No objects that may interfere with operation are present.
- General appearance and lubrication are satisfactory.
- All fasteners are tight.

C. CONTROLS AND INDICATORS

1. OPTIONAL RAMP CONTROL PANEL

Refer to **Figure 2-1**. The optional ramp control panel contains a two-position momentary function switch and two indicators. Refer to the following paragraphs for the descriptions of the Ramp Control Panel components:

a. Ramp Function Switch

When the switch is pushed and held in the STOW position, the ramp retracts into the vehicle. When the switch is pushed and held to DEPLOY, the ramp extends out of the vehicle.

b. Status Indicator

Refer to **Table 2-1**. The status indicator is a two-color light emitting diode (LED) capable of illuminating GREEN or RED. It illuminates when the ramp is in operation, is not fully stowed, or when an unsafe condition occurs. Unsafe ramp operating conditions occur when the vehicle is either moving or parked without the vehicle parking brake being set. The status of the ramp is determined by the indicator being GREEN or RED, and either flashing or continuous.

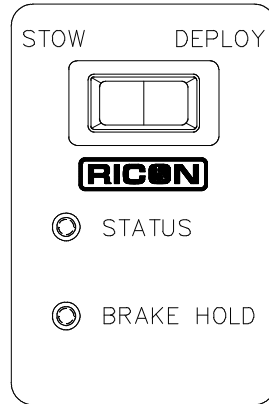


FIGURE 2-1: RAMP CONTROL PANEL

TABLE 2-1: STATUS INDICATOR		
COLOR	RAMP STATUS	OPERATOR ACTION
OFF	Ramp is fully stowed.	None required
CONTINUOUS GREEN	Ramp in operation.	<ul style="list-style-type: none"> Continue stowing ramp until fully stowed. Continue deploying ramp until adequately deployed.
FLASHING GREEN	Ramp is not fully stowed.	None required
CONTINUOUS RED	Ramp is not fully stowed and is automatically trying to stow. The duration for it trying to stow itself is three seconds.	None required
FLASHING RED	<ul style="list-style-type: none"> The ramp was unsuccessful in automatically stowing within three seconds. Conditions are unsafe (parking brake not set or vehicle is moving) to deploy the ramp. 	<ul style="list-style-type: none"> Stop the vehicle. Set the vehicle parking brake. Check the position of the ramp.
END OF TABLE		

c. Brake Hold Indicator

The BRAKE HOLD indicator is a yellow LED that illuminates when the ramp electrical system will not allow the vehicle parking brake to be released. The indicator illuminates when the manual operation switch is in the MANUAL position. When the indicator illuminates due to unsafe conditions, it is because the ramp is not fully stowed.

The status of the BRAKE HOLD is indicated by the LED being either OFF or ON. Refer to **Table 2-2** for descriptions of the indicator state:

TABLE 2-2: BRAKE HOLD INDICATOR		
STATE	MEANING	ACTION
OFF	Normal operation of vehicle parking brake.	None required
ON	<ul style="list-style-type: none"> If the status indicator is OFF, the manual operation switch is in MANUAL position and the parking brake is set. If the status indicator is flashing green, then the ramp brake is on, but the ramp is not fully stowed (If unable to stow the ramp, make sure the manual operations switch is in the POWER position). 	<ul style="list-style-type: none"> The switch must be switched to POWER OP before the parking brake can be released. Stop the vehicle and make sure the ramp is fully stowed.
END OF TABLE		

2. OPTIONAL MANUAL OPERATION PANEL

Refer to **Figure 2-2**. The purpose of the dynamic Sto-Loc is to keep the ramp fully stowed. The normal operation of the dynamic Sto-Loc is automatic but is overridden by the manual operation switch in the MANUAL OP position. This allows manual operation of the ramp. The vehicle parking brake cannot be disengaged while the switch is in the MANUAL OP position. The manual operation switch in the POWER OP position allows normal operation of the dynamic Sto-Loc the vehicle parking brake, and the ramp.

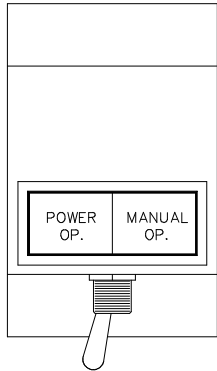


FIGURE 2-2: MANUAL OPERATION PANEL

3. MANUAL OPERATION LEVER

Refer to **Figure 2-3**. The manual operation lever is used to manually deploy and stow the ramp. It has a spade-end and a hook-end. This lever is supplied by Ricon. If the ramp is inoperable by electrical power, the lever must be used according to the manual operating instructions in the next section.

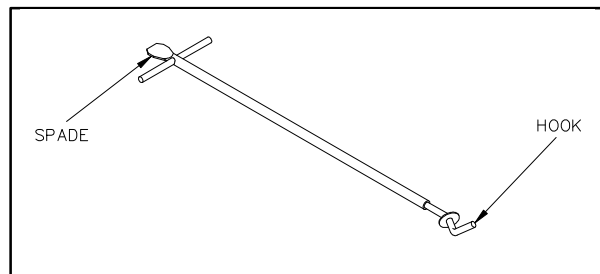


FIGURE 2-3: MANUAL OPERATION LEVER

D. RAMP OPERATION (with optional controller interface kit)

WARNING!

- IMPROPER USE OF THE RAMP CAN RESULT IN PERSONAL INJURY. USERS MUST READ AND FOLLOW THE OPERATING INSTRUCTIONS IN THIS SERVICE/OWNER MANUAL. ADDITIONAL COPIES OF THIS MANUAL ARE AVAILABLE FROM:

**RICON CORPORATION
7900 NELSON WAY
PANORAMA CITY, CA 91402
(800) 322-2884 OR (818) 267-3000**

- PRIOR TO USE, INSPECT RAMP AND OTHER RAMP COMPONENTS FOR PROPER FUNCTION, REQUIRED MAINTENANCE, OR DAMAGE. IF A PROBLEM EXISTS, DO NOT USE AND RETURN VEHICLE TO AN AUTHORIZED SERVICE TECHNICIAN FOR REPAIR.
- DO NOT EXCEED RAMP RATED LOAD CAPACITY OF 750 LBS (341 KG).
- THE RAMP IS DESIGNED FOR USE ONLY BY PERSONS ON MOBILITY AID EQUIPMENT (I.E., WHEELCHAIRS, SCOOTERS, WALKERS)

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

- Before operating ramp, be certain the vehicle is safely parked and on level ground away from traffic. Allow enough space for ramp operation, passenger entering and exiting. Be certain there are no obstructions within three feet of the ramp that may interfere with its operation.
- Be certain that the vehicle parking brake is properly set before operating the ramp.
- The ramp will not deploy until the vehicle is completely stopped and the parking brake is set.
- The parking brake will not be released until the ramp is fully stowed.

1. **NORMAL RAMP OPERATION**

- a. **PREPARE VEHICLE:** Stop vehicle and, if applicable, kneel/lower vehicle. Set vehicle parking brake and open vehicle doors.
- b. **CHECK RAMP MANUAL OPERATION PANEL:** Make sure ramp manual operation switch is positioned to POWER OP.
- c. **CHECK RAMP CONTROL PANEL:** Make sure neither indicator is lit.



CAUTION!

Ramp does not need to be fully deployed to be used, however, it must be extended at least 24" (61cm), to prevent damage to ramp hinge.

- d. **DEPLOY RAMP:** At ramp control panel, press and hold ramp function switch in DEPLOY position until ramp is deployed at least 24" (61cm).
- ✘ Allow wheelchair occupant and other ramp users to carefully enter or exit vehicle, facing direction of travel into or out of vehicle.



CAUTION!

Do not allow use of ramp if an unsafe condition exists with the ramp or the mobility equipment being used by the passenger.

- e. **STOW RAMP:** At ramp control panel, press and hold ramp function switch in STOW position until ramp is fully stowed.
- f. **SECURE VEHICLE:** After passenger has safely entered or exited vehicle, close vehicle doors, release parking brake, and if applicable, unkneel/raise vehicle.

2. MANUAL RAMP OPERATION

a. Manually Deploy Ramp

- 1) Stop vehicle and, if applicable, kneel/lower vehicle. Set vehicle parking brake and open vehicle doors.
- 2) At ramp manual operation panel, position switch to MANUAL OP.
- 3) Refer to **Figure 2-4**. Insert the spade end of manual operation lever into slot located on top-left corner of enclosure door.

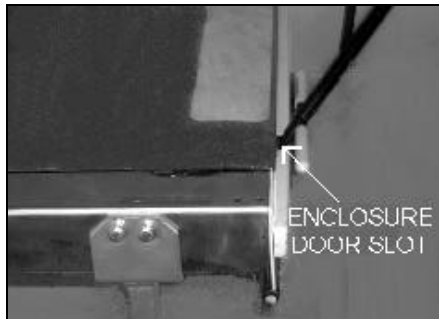


FIGURE 2-4: ENCLOSURE DOOR

- 4) Refer to **Figure 2-5**. Push manual operation lever DOWN until enclosure door is completely open.



FIGURE 2-5: DOOR OPEN

- 5) Refer to **Figure 2-6**. Insert hook end of manual operation lever into manual operation hole.

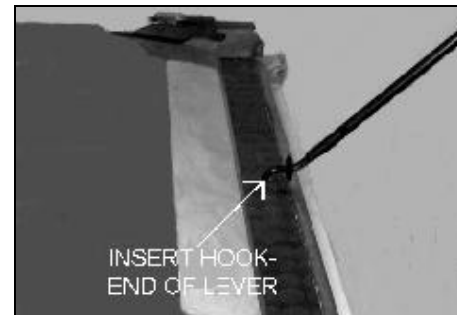


FIGURE 2-6: HOOK-END OF LEVER

- 6) Refer to **Figure 2-7**. Raise lever UP until pointing INWARD and swing manual operation lever around until pointing OUTWARD.



FIGURE 2-7: RAISE LEVER UP



CAUTION!

Ramp does not need to be fully deployed to be used, however, it must be extended at least 24" (61 cm) to prevent damage to ramp hinge.

- 7) Refer to **Figure 2-8**. Pull manual deploy lever OUT to deploy ramp.

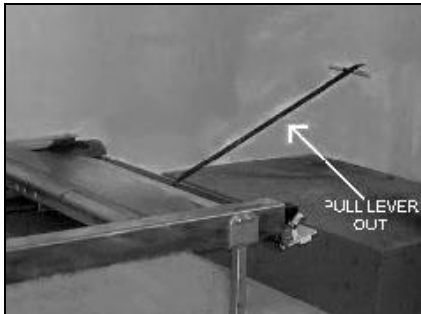


FIGURE 2-8: PULL LEVER OUTWARD

- 8) Swing lever around until pointing INWARD and remove.
- 9) Allow wheelchair occupant to carefully enter or exit vehicle.

d. Manually Stow Ramp

- 1) Allow wheelchair occupant to carefully enter or exit vehicle.
- 2) Insert hook-end of lever into manual operation hole.
- 3) Raise lever UP until pointing INWARD and swing manual deploy lever around until pointing OUTWARD.
- 4) Push ramp IN until enclosure door starts to raise.
- 5) Swing lever around until pointing INWARD and remove.
- 6) Insert spade-end of lever into slot located on top-left corner of enclosure door.
- 7) Raise lever UPWARD to close enclosure door.
- 8) At manual operation panel, position switch to POWER OP.

III. MAINTENANCE

Maintenance instructions for the RICON PF5000 Series Low-Floor Vehicle Access Ramp consists of a maintenance schedule, troubleshooting guide, and electrical wiring diagram. Maintenance and repairs should be performed by an authorized Ricon service technician.

A. MAINTENANCE INFORMATION

Additional maintenance information is available in the PF5000 Series Low-Floor Vehicle Access Ramp Service manual, part number 32DPF502. 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. Click on RICON CORPORATION and then DEALER'S ROOM at the website. Entry to the dealer's room will require a Dealer Number and a Password.

B. MAINTENANCE SCHEDULE

Refer to **Table 3-1**. Under conditions of heavy use (in excess of 20 cycles per day), maintenance should be performed more frequently. Modifying or failing to properly maintain the ramp will void the warranty and may result in unsafe operating conditions for the users. Safety inspections should be performed according to the following intervals:

TABLE 3-1: MAINTENANCE SCHEDULE	
SERVICE POINT	DESCRIPTION
DAILY SAFETY CHECK	
General Appearance	If abnormal noises exist, notify a Ricon authorized service technician immediately. Inspect underside of vehicle to verify that nothing is out of the ordinary. <ul style="list-style-type: none"> • Verify that the lower surfaces of the side channels are free of debris.
Ramp Mountings and Support Points.	<ul style="list-style-type: none"> • Verify that ramp mounting and support points are in proper order and free from damage. • Verify that mounting bolts are of proper grade and are sufficiently tight.
Main Pivot Points	Verify carriage/ramp pivot pins are installed properly, free from damage and locked in position with proper fasteners.
4-MONTH SAFETY CHECK	
Ramp Enclosure	Vacuum inside the ramp enclosure using an industrial vacuum cleaner.
ANNUAL SAFETY CHECK	
Cam Followers	Grease all eight Cam Followers using Low Temperature Grease such as Aeroshell Grease #22, Starfak EP or equivalent. Grease fittings should be wiped clean prior to grease injection to prevent contamination.
Ball Screw Assembly	Grease Ball Screw using Low Temperature Grease such as Aeroshell Grease #22, Starfak EP or equivalent.
RAMP IN STOWED POSITION:	
Ramp Mounting and Support Points	<ul style="list-style-type: none"> • Verify that all ramp support points under vehicle are in proper working order, and free from damage. • Verify that mounting bolts are properly fastened.

DEPLOY RAMP TO FULL EXTENSION:	
General Operation	Listen for abnormal noises as the ramp deploys (i.e., grinding or scraping noises). Carriage stops are in place and stop ramp squarely.
Main Pivots	Verify carriage/platform pivot pins are installed properly, free from damage and locked in position with proper fasteners.
Ramp Points	Verify ramp operates properly during deploy and stow modes without obstruction.
END OF TABLE	

C. LIFT DECALS

Refer to **Figure 3-1**. Inspect decals at intervals in **Table 3-1**. Inspect for chipping, peeling, fading, and illegibility. Order replacement decals with part numbers given in **Figure 3-4**, and apply where shown.

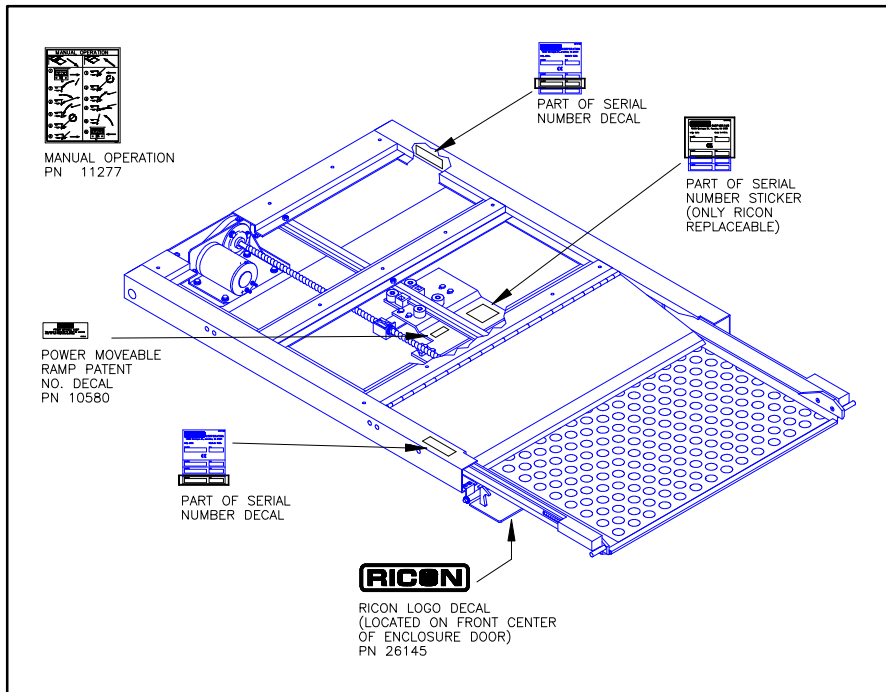


FIGURE 3-1: DECAL LOCATIONS AND PART NUMBERS