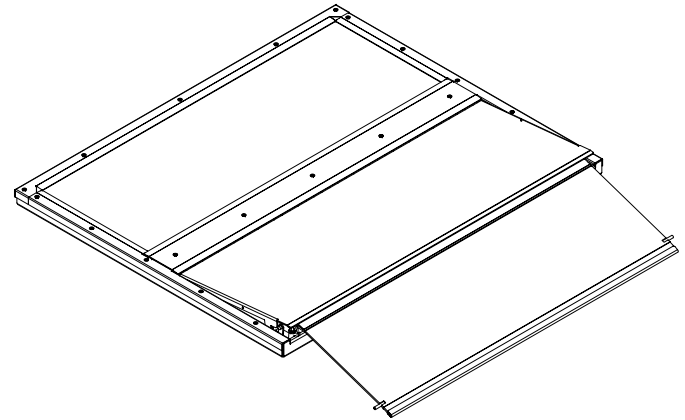




# PF7000 Series™ Express Ramp



## Operator Manual



05-08-07

32DPF701.A

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**PRINT**

**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: \_\_\_\_\_

Installed by: \_\_\_\_\_

Date Installed: \_\_\_\_\_

Serial Number: \_\_\_\_\_

## REVISION RECORD

REV	PAGES	DESCRIPTION OF CHANGE	ECR/ECO
32DPF701 A 05/08/07	ALL	NEW RELEASE	500229
END OF LIST			

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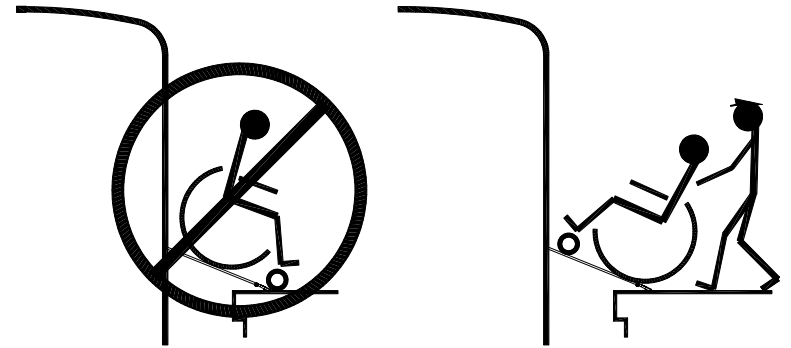
## II. OPERATING INSTRUCTIONS

This chapter contains safety precautions, daily safety check, ramp control panel descriptions, and operating instructions for the RICON PF7000 Series Express 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:

- Refer to **Figure 2-1**. Always face inward when entering or exiting the train. The ramp is not designed to be used by a wheelchair occupant without assistance. It is important that a railroad employee assist the wheelchair occupant to enter the train by pushing the wheelchair with occupant facing inward and exit the train by pulling the wheelchair with occupant facing inward.



**FIGURE 2-1: PROPER WAY TO ASSIST WHEELCHAIR PASSENGER**

- People using other mobility equipment (e.g. scooters, walkers) should always be assisted by a railroad employee when entering or exiting the train.
- 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. Contact 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 other people clear while operating ramp.
- The ramp is designed for one user at a time. **DO NOT** overload the ramp. Be certain mobility equipment fits safely on the ramp before entering or exiting the train.
- Never leave ramp outside of train. 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.
- Be sure to follow proper operation procedures. Improper use or operation may result in injury and/or cause ramp damage.

Be sure that these safety precautions have been read and understood. Review them periodically, and ask other railroad employees 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 movements exist, **DO NOT** use ramp, and contact a Ricon service technician for repair.
- **DO NOT** apply 220V power for more than one hour continuously to the controller.
- No objects that may interfere with operation are present.
- General appearance and lubrication are satisfactory.
- All fasteners are tight.

## C. CONTROL PANEL

### 1. CONTROL SWITCHES

Refer to **Figure 2-2**. The ramp control panel contains a DEPLOY/STOW switch, and an AUTO/MANUAL switch that controls the movements of the ramp. Refer to the following paragraphs for the descriptions of the switches:

#### a. DEPLOY/STOW Switch

The DEPLOY/STOW switch is a two-way rocker switch. When the switch is pressed and held in the DEPLOY position, the ramp will move from its fully stowed position to its fully deployed position. When the switch is pressed and held in the STOW position, the ramp will move from its fully deployed position to its fully stowed position. Releasing the switch will cause movement to stop.

#### b. AUTO/MANUAL Switch

The AUTO/MANUAL switch is a two-position toggle function switch that selects the operating mode of the ramp. While in AUTO mode, the ramp may be deployed or stowed using the DEPLOY/STOW switch. In Manual mode, the ramp may be deployed and stowed manually, as described in **Chapter 2, Section D-3** of this manual. In order to switch between MANUAL and AUTO, the switch must be pulled down vertically (as shown in **Figure 2-2**) and turned to AUTO or MANUAL while it is held down.

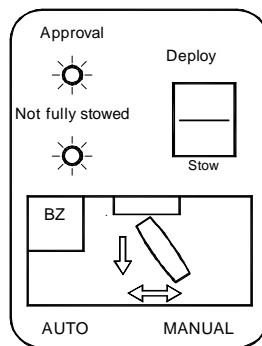


FIGURE 2-2: RAMP CONTROL PANEL

## 2. INDICATOR LIGHTS

Refer to **Figure 2-2**. The ramp control panel contains two indicator lights. Refer to the following paragraphs for the descriptions of the ramp control panel components:

a. Approval Indicator Light (Green color)

Refer to **Figure 2-2** and **Table 2-1**. The Approval indicator signals the railroad employee as to when the ramp can be operated. In order for the Approval indicator to light, three conditions must be met: the train has come to a complete stop or is moving at a speed less than 5km/h, the train doors have been fully opened on the side selected by the door selection switch located in the driver room, and the ramp controller has been powered by the ramp main switch located in the driver room.

b. Not Fully Stowed Indicator Light (Amber color)

Refer to **Figure 2-2** and **Table 2-1**. The Not Fully Stowed indicator signals the railroad employee that the ramp is not fully stowed. It will also light if the AU-TO/MANUAL switch is set to MANUAL.

## 3. AUDIBLE ALARM

Refer to **Figure 2-2** and **Table 2-1**. The audible alarm (BZ shown in **Figure 2-2**) will sound off, calling attention to the surrounding passengers that the ramp is in motion. The audible alarm will only sound when the ramp is DEPLOYING or STOWING.

TABLE 2-1: STATUS INDICATOR			
	INDICATOR LIGHT		AUDIBLE ALARM
	APPROVED (Green color)	NOT FULLY STOWED (Amber color)	
Train stopped and train doors fully open. Ramp controller is powered	ON	OFF	OFF
Press DEPLOY button (Ramp is moving)	ON	ON	ON
Ramp fully deployed (Ramp not moving)	ON	ON	OFF
Press STOW button (Ramp is moving)	ON	ON	ON
Ramp fully stowed	ON	OFF	OFF
Train doors fully closed	OFF	OFF	OFF
END OF TABLE			



## D. RAMP OPERATION

### 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 ROAD  
PANORAMA CITY, CA 91402 USA  
TELEPHONE: +18182673000  
FAX: +18182673001

- PRIOR TO USE, INSPECT RAMP AND OTHER RAMP COMPONENTS FOR PROPER FUNCTION, REQUIRED MAINTENANCE, OR DAMAGE. IF A PROBLEM EXISTS, DO NOT USE AND CONTACT AN AUTHORIZED RICON SERVICE TECHNICIAN FOR REPAIR.
- DO NOT EXCEED RAMP RATED LOAD CAPACITY OF 800 LBS (363 KG).
- THE RAMP IS DESIGNED FOR USE ONLY BY PERSONS USING MOBILITY EQUIPMENT (e.g., WHEELCHAIRS, SCOOTERS, WALKERS), AND SHOULD ALWAYS BE ASSISTED BY A RAILROAD EMPLOYEE.

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.

- Assure that there are no persons or obstacles located near the ramp before operating the ramp.
- After operating the ramp for five continuous cycles, allow it to rest for one or two minutes before using it again.


### 1. NORMAL RAMP OPERATION

- a. After train has come to a complete stop, open train doors, and turn ramp main switch in the driver room ON to power up the ramp controller.
- b. Verify that the AUTO/MANUAL switch is selected to AUTO and that the Approval indicator is lit.
- c. **DEPLOY RAMP:** Push and hold DEPLOY switch until the ramp is fully deployed and the audible alarm stops.


**NOTE:** The right and left side ramps cannot be operated simultaneously. The railroad employee must wait for the first ramp to complete its motion before operating the other ramp.

### WARNING!

A FULLY DEPLOYED RAMP DOES NOT GUARANTEE THAT THE TIP OF THE RAMP IS AT A SAFE CONDITION FOR PASSENGER BOARDING. ASSURE THAT THE TIP OF THE RAMP IS RESTING SAFELY ON THE GROUND BEFORE ASSISTING PASSENGERS USING MOBILITY EQUIPMENT (e.g., WHEELCHAIRS, SCOOTERS, WALKERS) TO ENTER OR EXIT THE TRAIN.

 **WARNING!**


PASSENGERS USING MOBILITY EQUIPMENT (e.g., WHEELCHAIRS, SCOOTERS, WALKERS) SHOULD ALWAYS BE ASSISTED BY A RAILROAD EMPLOYEE. WHEELCHAIR OCCUPANTS SHOULD ALWAYS FACE INWARD WHEN ENTERING OR EXITING THE TRAIN.

 **CAUTION!**

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

- d. **ASSIST PASSENGER(S):** Assist passengers using mobility equipment to carefully enter and/or exit the train. Passengers using wheelchairs should enter the train with railroad employee pushing the wheelchair with occupant facing inward. To exit the train, pull wheelchair with occupant facing inward. Refer to **Figure 2-1**.
- e. **STOW RAMP:** Push and hold STOW switch until the ramp is fully stowed and the audible alarm stops. Verify that the Not Fully Stowed indicator light is off.
- f. After passenger has safely entered or exited the train, turn the ramp main switch in the driver room OFF and close train doors completely before moving train.

**2. RESETTING RAMP AFTER ENCOUNTERING AN OBSTACLE**

 **CAUTION!**

ASSURE THAT THE OBSTACLE IS REMOVED AND THAT THERE ARE NO PERSONS OR OBSTACLES NEAR THE RAMP BEFORE OPERATING THE RAMP.

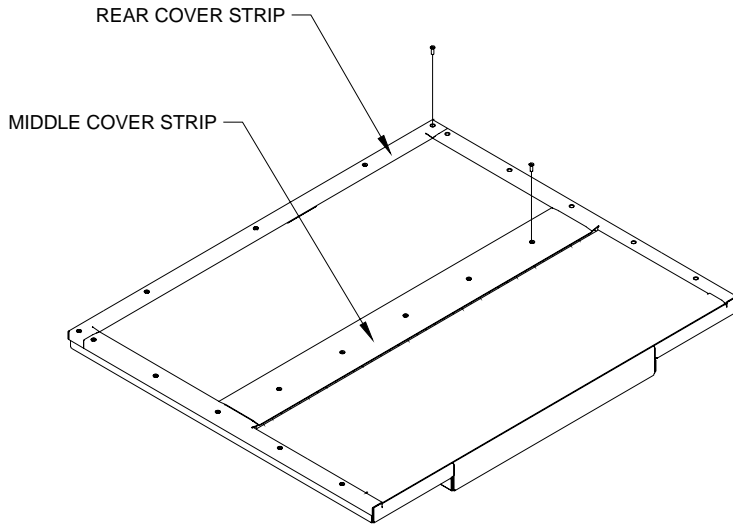
If the ramp encounters an obstacle during deployment, the motor may experience an over-current condition which will disable the DEPLOY function. To restore DEPLOY function:

- a. Push STOW switch for one second.
- b. Push and hold the DEPLOY switch to deploy the ramp.

### 3. MANUAL RAMP OPERATION

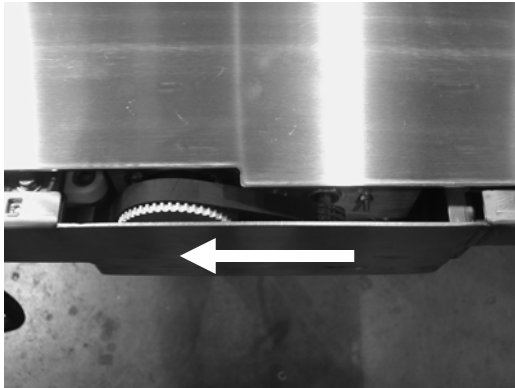
Ricon recommends that manual operation only be used if the ramp experiences power failure to deploy ramp to allow a passenger to exit the train and to stow the ramp.

- a. After train has come to a complete stop, open train doors.
- b. Switch the AUTO/MANUAL switch to the MANUAL position.
- c. **DEPLOY RAMP:**
  - 1) Refer to **Figure 2-3**. Remove middle and rear cover strips using a Phillips screwdriver and save screws.



**FIGURE 2-3: MIDDLE AND REAR COVER STRIPS**

- 2) Refer to **Figure 2-4**. Manually turn timing belt counterclockwise (when standing at rear of ramp) to partially open hinged floor.

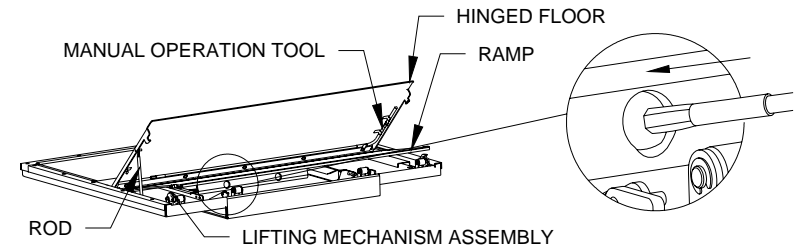


**FIGURE 2-4: TIMING BELT**

**⚠ WARNING!**

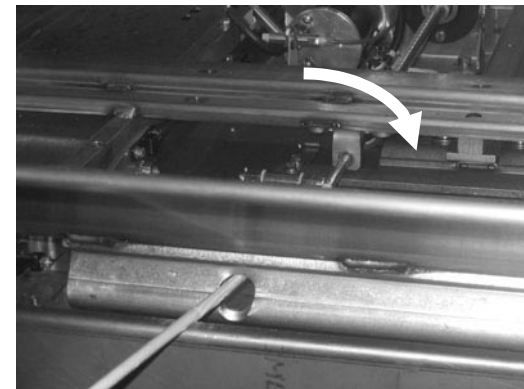
VERIFY HINGED FLOOR IS PROPERLY LOCKED IN A RAISED POSITION BEFORE ATTEMPTING TO STOW OR DEPLOY RAMP.

- 3) Refer to **Figure 2-5**. Lift hinged floor using rod to keep it open and remove manual operation tool located under hinged floor.
- 4) Refer to **Figure 2-5**. Insert hex end of the manual operation tool through the left hole under the ramp and onto the end of the ball screw assembly.



**FIGURE 2-5: RAISED HINGED FLOOR**

- 5) Refer to **Figure 2-6**: Turn manual operation tool clockwise (when standing in front of ramp) to deploy ramp.



**FIGURE 2-6: MANUAL OPERATION TOOL**

- 6) With ramp fully deployed, place manual operation tool back under hinged floor. Disengage rod and lower hinged floor.

**⚠ WARNING!**

A FULLY DEPLOYED RAMP DOES NOT GUARANTEE THAT THE TIP OF THE RAMP IS AT A SAFE CONDITION FOR PASSENGER EXITING. ASSURE THAT THE TIP OF THE RAMP IS RESTING SAFELY ON THE GROUND BEFORE ASSISTING PASSENGERS USING MOBILITY EQUIPMENT, (e.g., WHEELCHAIRS, SCOOTERS, WALKERS) TO EXIT THE TRAIN.

**⚠ WARNING!**

PASSENGERS USING MOBILITY EQUIPMENT (e.g., WHEELCHAIRS, SCOOTERS, WALKERS) SHOULD ALWAYS BE ASSISTED BY A RAILROAD EMPLOYEE. WHEELCHAIR OCCUPANTS SHOULD ALWAYS FACE INWARD WHEN ENTERING OR EXITING THE TRAIN.

**⚠ CAUTION!**

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

- d. **ASSIST PASSENGER(S):** Assist passengers using mobility equipment to carefully exit the train. Passengers using wheelchairs should exit the train with railroad employee pulling the wheelchair with occupant facing inward as shown in Figure 2-1.

**⚠ WARNING!**

VERIFY HINGED FLOOR IS PROPERLY LOCKED IN A RAISED POSITION BEFORE ATTEMPTING TO STOW OR DEPLOY RAMP.

e. **STOW RAMP:**

- 1) Refer to Figure 2-5. Lift hinged floor using rod to keep it open and remove manual operation tool located under hinged floor.
- 2) Refer to Figure 2-5. Insert hex end of manual operation tool through left hole under hinged floor and onto end of ball screw assembly.
- 3) Refer to Figure 2-7. Turn manual operation tool counterclockwise (when standing in front of ramp) until ramp locking pins barely touch the lifting mechanism assembly.

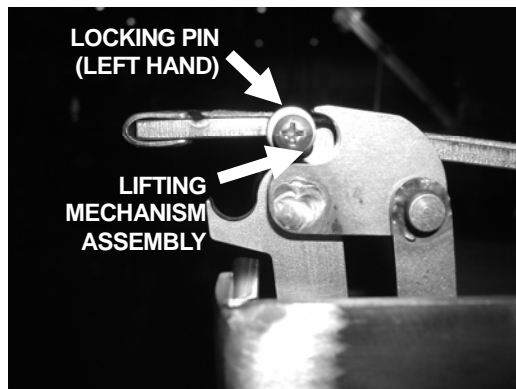
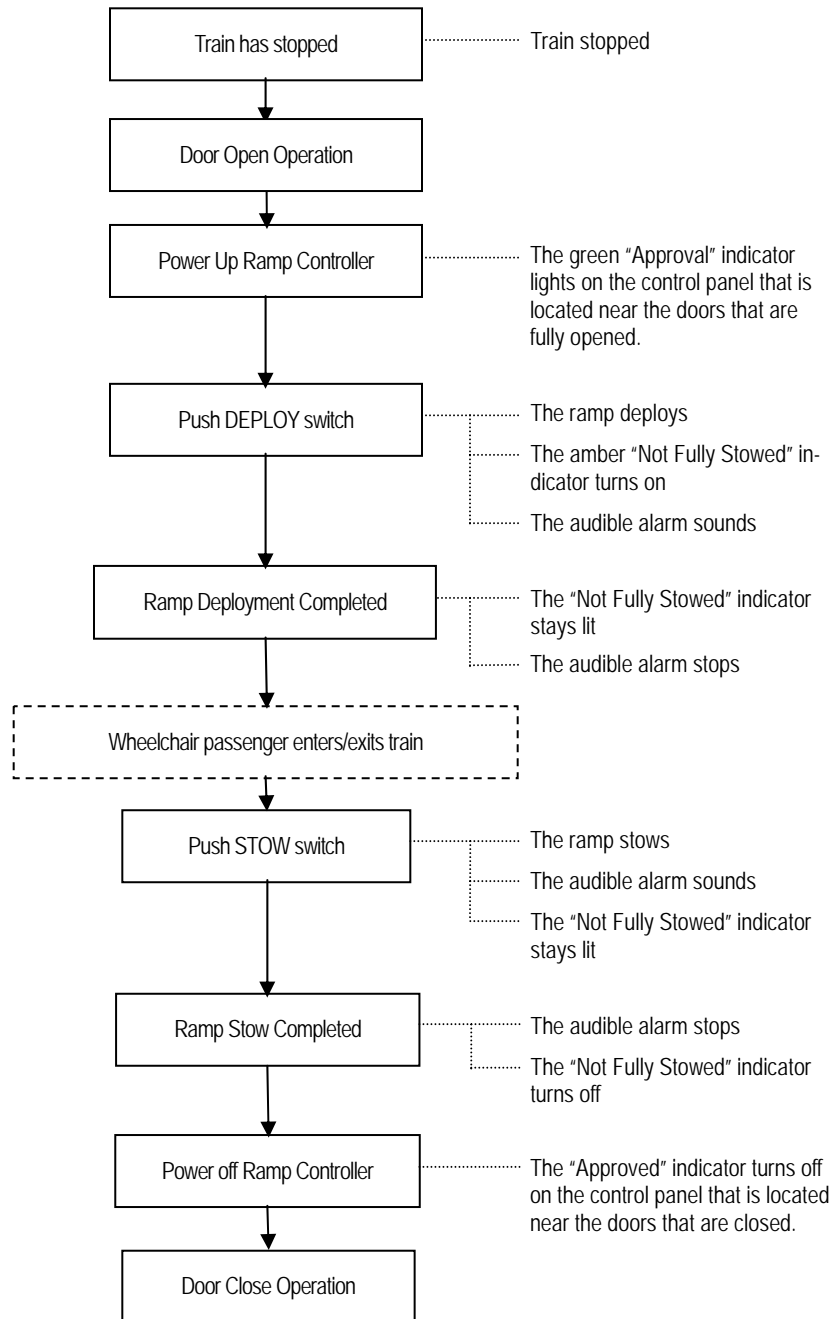


FIGURE 2-7: LIFTING MECHANISM ASSEMBLY

- 4) With ramp almost fully stowed, place manual operation tool back under hinged floor. Disengage rod and lower hinged floor.
- 5) Manually turn timing belt clockwise (when standing at rear of ramp) to fully stow ramp.
- 6) Replace rear and middle cover strips using the original screws and a Phillips screwdriver.
- 7) Switch the AUTO/MANUAL switch to AUTO.

#### 4. OPERATION FLOW



### III. MAINTENANCE

Maintenance instructions for the RICON PF7000 Series Express Ramp consists of a maintenance schedule, and ramp decals location. As to the troubleshooting guide, repair instructions, and the electrical wiring diagram, please refer to the PF7000 Series Express Ramp Service Manual, part number 32DPF702. Maintenance and repairs should be performed by an authorized Ricon service technician.

#### A. MAINTENANCE INFORMATION

Additional maintenance information is available in the PF7000 Series Express Ramp Service Manual, part number 32DPF702. 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](http://www.RiconCorp.com).

#### 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
<b>DAILY SAFETY CHECK</b>	
General Appearance	<ul style="list-style-type: none"> <li>• If abnormal noises exist, notify a Ricon authorized service technician immediately. Inspect underside of vehicle to verify that nothing is out of the ordinary.</li> <li>• Verify that the inside of the enclosure is free of debris.</li> </ul>
Mounting Support Points	Refer to <b>Figure 3-1</b> . Verify that mounting bolts are of proper grade and are sufficiently tightened (27~33Nm).
Main Pivot Points	Refer to <b>Figure 3-1</b> . Verify carriage and ramp pivot pins are installed properly, free from damage and locked in position with proper fasteners.
<b>EVERY 4-MONTH SAFETY CHECK</b>	
Ramp Enclosure	Vacuum inside the ramp enclosure using an industrial vacuum cleaner. Do not use forced air or water to clean the inside of the enclosure.
Flutter Valve	Refer to <b>Figure 3-1</b> . Verify no debris or dirt is clogging the valve from draining fluid. Remove debris or dirt if any exists. Inspect the valve rubber for any damages. Do not use forced air inside the enclosure.



TABLE 3-1: MAINTENANCE SCHEDULE	
SERVICE POINT	DESCRIPTION
<b>ANNUAL SAFETY CHECK</b>	
Ball Screw Assembly	Grease Ball Screw using Low Temperature Grease such as Aeroshell Grease #22, Starfak EP or equivalent.
<b>END OF TABLE</b>	

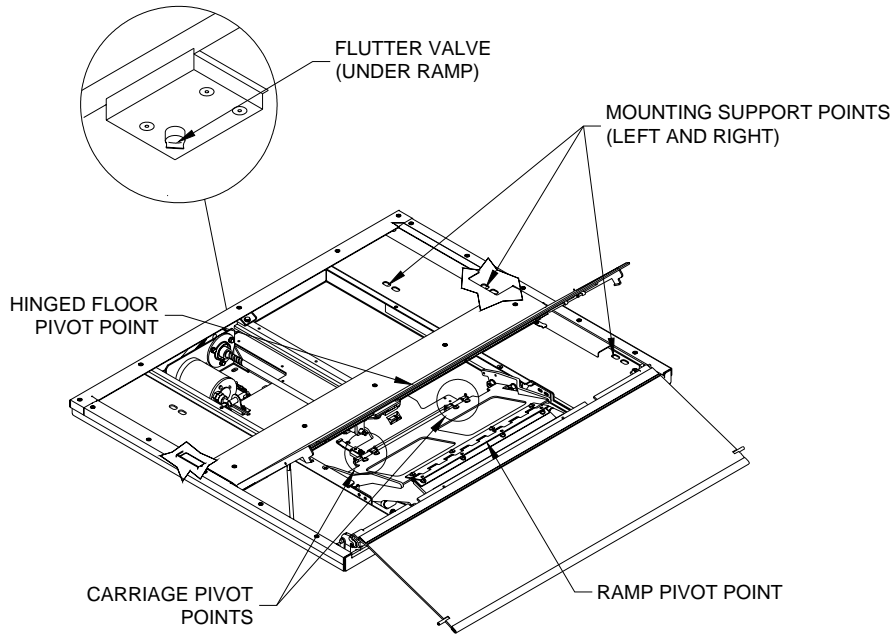
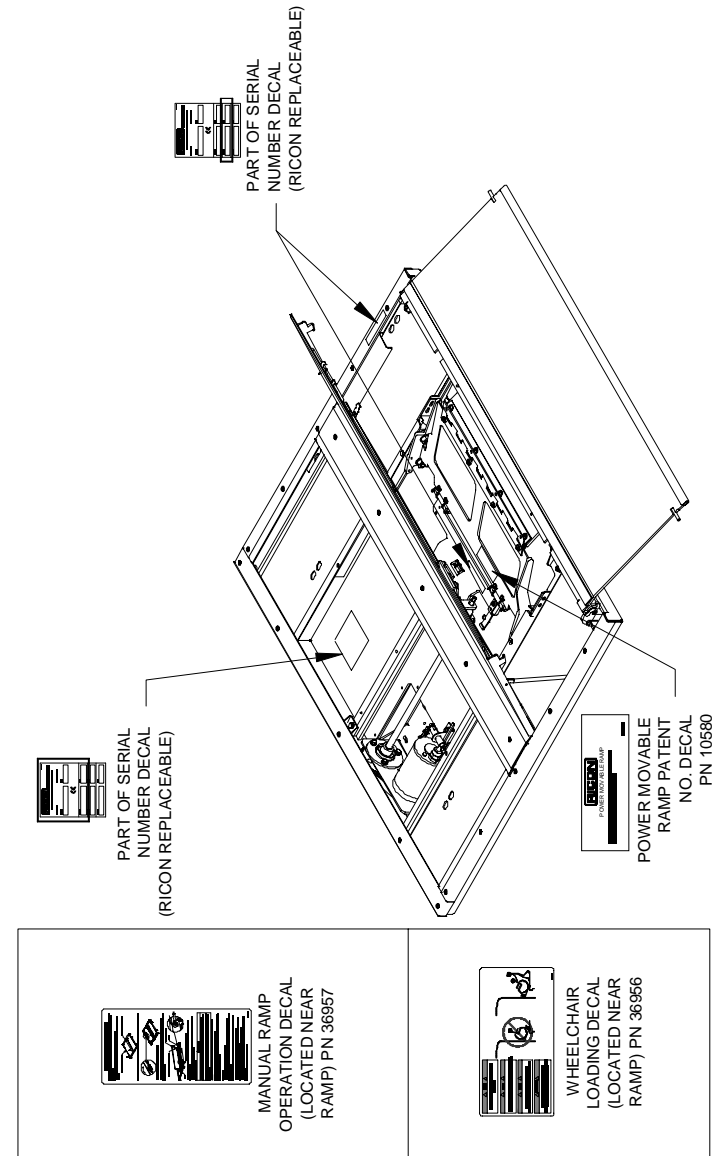


FIGURE 3-1: PIVOT AND SUPPORT POINTS

### C. RAMP DECALS

Refer to **Figure 3-2**. Inspect decals at intervals in **Table 3-1**. Inspect for chipping, peeling, fading, and illegibility. Order replacement decals with part numbers given in **Figure 3-1**, and apply where shown.



**FIGURE 3-2: DECAL LOCATIONS AND PART NUMBERS**

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