

# I. 621SA-SERIES FOLDOVER® MULTI-SLOPE RAMP INTRODUCTION

This manual applies to the Ricon FoldOver® 621SA-Series Multi-Slope Low Floor Bus Ramp when installed in transit vehicles. The chapters in this service manual contain a product description, maintenance instructions, and a spare parts list. The descriptions in this chapter apply to the Ricon FoldOver® 621SA-Series Multi-Slope Low Floor Bus Ramp when installed in transit vehicles. The FoldOver ramp is installed in transit vehicles to accommodate persons with disabilities using mobility-aid equipment or who cannot easily climb steps. The electro-mechanically powered ramp folds into the vehicle vestibule flooring when not in use.

All 621SA-Series Multi-Slope ramps have a 1000 lb. (453kg) load limit. Passengers must use the ramp one at a time; **do not overload ramp**. Be certain that persons with mobility-aid equipment fit between the left- and right-side ramp barriers without any interference before allowing use of ramp.

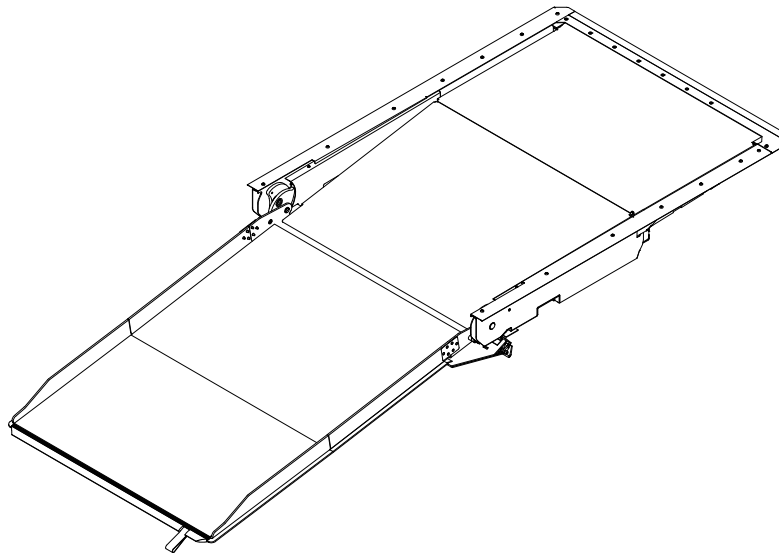


FIGURE 1-1: RICON FOLDOVER MULTI-SLOPE RAMP

## A. RAMP FEATURES

### 1. INTERLOCK SUPPORT

The ramp electronics can interface with the vehicle interlock circuitry to prevent vehicle departure when ramp is deployed. The ramp interlock circuitry senses the position of the ramp (stowed or deployed) and makes this information available by the controller and through the 55-pin amp harness connector. A vehicle interlock circuit typically requires that the following conditions be met before operating power is supplied to ramp:

- Park vehicle and set parking brake.
- Place transmission in neutral.
- Open vehicle door adjacent to ramp.

### 2. AUDIBLE ALERT

**NOTE:** This feature is optional and may not have been connected during ramp installation.

The ramp supports an audible alert device that sounds while the ramp is in motion.

### 3. RAMP CONTROL PANEL

Refer to **Figure 1-2**. Ricon typically does not provide a control panel. However, the ramp can be operated with one similar to that shown (the actual panel appearance will vary between transit authorities and vehicles). The control panel is normally installed in the driver area. It should have a power ON/OFF switch, a power on indicator light, and a spring-loaded, three-position ramp control switch (center-off). The ramp receives power from the vehicle when the interlock conditions are met and the power on/off switch is ON. The control panel can then be used to transmit deploy or stow signals to the ramp.

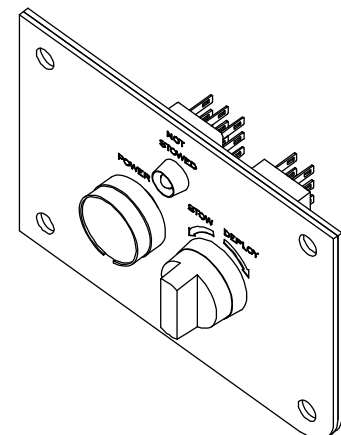


FIGURE 1-2: TYPICAL CONTROL PANEL

**B. RICON PRODUCT SUPPORT**

If you have questions about this manual, or you need additional copies, please contact Ricon Product Support at the locations listed. Also, refer to the Ricon website at: [www.riconcorp.com](http://www.riconcorp.com)

**Ricon Corporation**

1135 Aviation Place

San Fernando, CA 91340

Telephone: ..... (818) 267-3000  
 ..... (800) 322-2884  
 (in US but outside 818 area code)

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**John Condon** Email: [jcondon@wabtec.com](mailto:jcondon@wabtec.com)

**National Sales Manager**

Telephone: ..... 209-603-5189

**Mike O'Neill**Email: [moneill@wabtec.com](mailto:moneill@wabtec.com)**Eastern Area Sales Manager**

Telephone: ..... 847-224-5087

**Peter Buckley**Email: [pbuckley@wabtec.com](mailto:pbuckley@wabtec.com)**Central Area Sales Manager**

Telephone: ..... 847-226-8102

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**Vapor Ricon Europe Ltd.**

Meadow Lane

Loughborough, Leicestershire

LE 1HS, United Kingdom

Telephone: ..... (+044) 1509 635 920

**C. RICON TWO-YEAR LIMITED WARRANTY**

The following warranty provides two years of limited coverage for the Ricon FoldOver 621SA-Series Multi-Slope Low Floor Bus Ramp.



## RICON FOLDOVER® 621SA-SERIES MULTI-SLOPE LOW FLOOR BUS RAMP TWO-YEAR LIMITED WARRANTY

**Ricon Corporation (Ricon)** warrants to the original purchaser of this product that Ricon will repair or replace, at its option, any parts that fail because of defective material or workmanship as follows:

- Repair or replace parts for a period of two years starting from the date ramp is put into service. Obtain a complete list of parts covered by this warranty from Ricon Product Support.
- Labor costs for specified parts replaced under this warranty for a period of two years from the date put into service. A Ricon rate schedule determines parts covered and labor allowed.

***This Warranty Does Not Cover:***

- Malfunction or damage of product parts caused by accident, misuse, lack of proper maintenance, neglect, improper adjustment, modification, alteration, mechanical condition of vehicle, road hazards, overloading, failure to follow operating instructions, or acts of nature (i.e., weather, lightning, flood).

**NOTE:** Ricon recommends this product be inspected by a Ricon dealer or qualified service technician at least once every six months, or sooner if necessary. Perform required maintenance at this time.



### WARNING!

THIS PRODUCT HAS BEEN DESIGNED AND MANUFACTURED TO EXACT SPECIFICATIONS. ANY MODIFICATION OF THIS PRODUCT CAN BE HAZARDOUS.

***This Warranty is Void If:***

- The product is not installed and maintained by a Ricon dealer or qualified service technician.
- The product is modified, in any respect from its original design, without written authorization from Ricon.

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

Ricon 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 product installation to validate this warranty. The warranty is not transferable.

The warranty gives specific legal rights. There may be other rights that vary in each state.

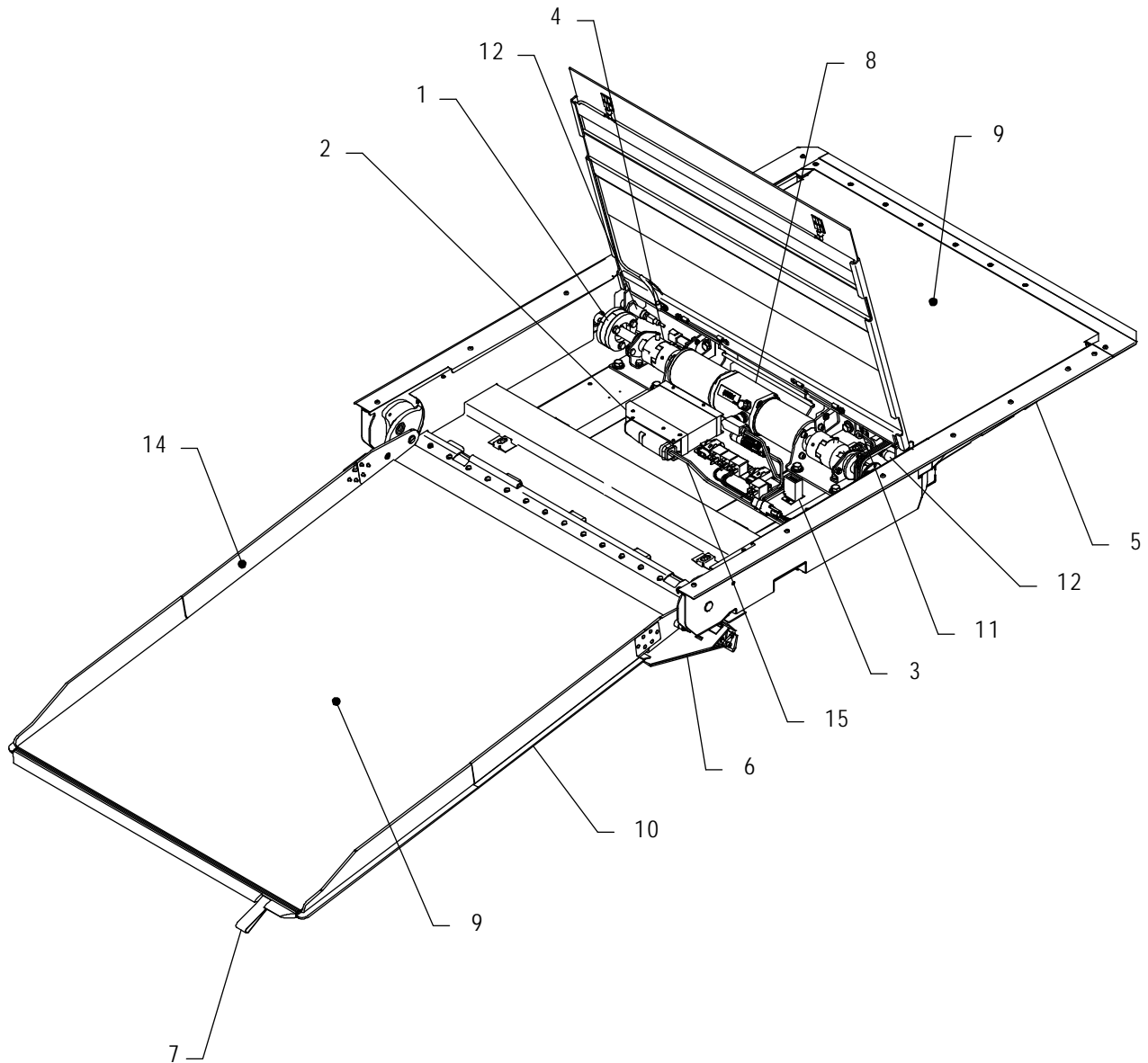
**D. SHIPPING INFORMATION**

- 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 ramp assembly contains all items listed on the included bill of material. Please report any missing items immediately to Ricon Product Support. Save bill of material for later reference. Return the completed warranty and owner registration cards to Ricon within 20 days to validate warranty.

**NOTE:** The Sales or Service personnel must review the Warranty and this Operator Manual with the user to be certain that they understand how to safely operate the product. Instruct the user to follow the operating instructions without exception.

### E. CUSTOMER ORIENTATION

- 1. **Figure 1-3** shows major components of the 621SA-Series FoldOver® Multi-Slope ramp. A description of each component is provided in **Table 1-1**. Refer to Chapter IV "Parts Diagrams and Lists" for more details.



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FIGURE 1-3: 621SA-SERIES Multi-Slope RAMP MAJOR RAMP COMPONENTS

**TABLE 1-1: MAJOR 621SA-SERIES FOLDOVER® MULTI-SLOPE RAMP COMPONENTS**

ITEM	DESCRIPTION
Front, Rear, Left and Right	Reference point from outside the vehicle looking inward.
1	Adjustable Coupler - Use for adjustment and alignment of chain sprocket.
2	Controller - Translates electrical commands from bus control panel into signals that control ramp electro-mechanical components. Monitors ramp position and drives counter.
3	Counter - Counts each cycle.
4	Couplings - (Left & Right) Transmits rotary motion and attaches the drive motor shaft assemblies to the dual gearboxes.
5	Flange Kit - Perimeter trim pieces that are installed after the ramp has been installed in vehicle.
6	Front Cover - Front edge of ramp that opens and closes when platform is deployed or stowed.
7	Harness - Integrates conduits, relays, etc.
8	Lifting Strap - Use to assist in manual deploy or stow ramp.
9	Motor Drive System - Electro-mechanical motor-gearbox combination used to operate the ramp.
10	Non-Slip Surface - Flooring over which passengers traverse.
11	Platform Assembly - Area where passengers traverse over to enter and exit vehicle.
12	Positive Connection Block - Connection through which the ramp receives power from vehicle.
13	Proximity Sensors - Magnetic sensor devices that send signals to the ramp controller to indicate when the ramp is fully stowed (locks electromagnets) or deployed (unlocks electromagnets).
14	Ramp Tray Barrier - Left and Right side barrier of platform.
15	Slanted Floor Plate (Access Cover) - Portion of ramp that passenger traverses over to enter and exit vehicle which also provides access to electro-mechanical ramp components.
<b>END OF TABLE</b>	