II. INNOVATOR INSTALLATION

This chapter contains instructions for installing the RICON Innovator Series Personal Use Wheelchair Lift. The installation kit for the Innovator Series Lift (provided with lift) contains detailed installation instructions. Contact Ricon Product Support for applications not covered by the included installation instructions or the instructions that follow. Be certain that installation instructions are followed exactly and do not eliminate any steps or modify product.

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

NOTE: Refer to **Figure 2-1**. Verify the serial number of this product. Record number on page i of this manual.

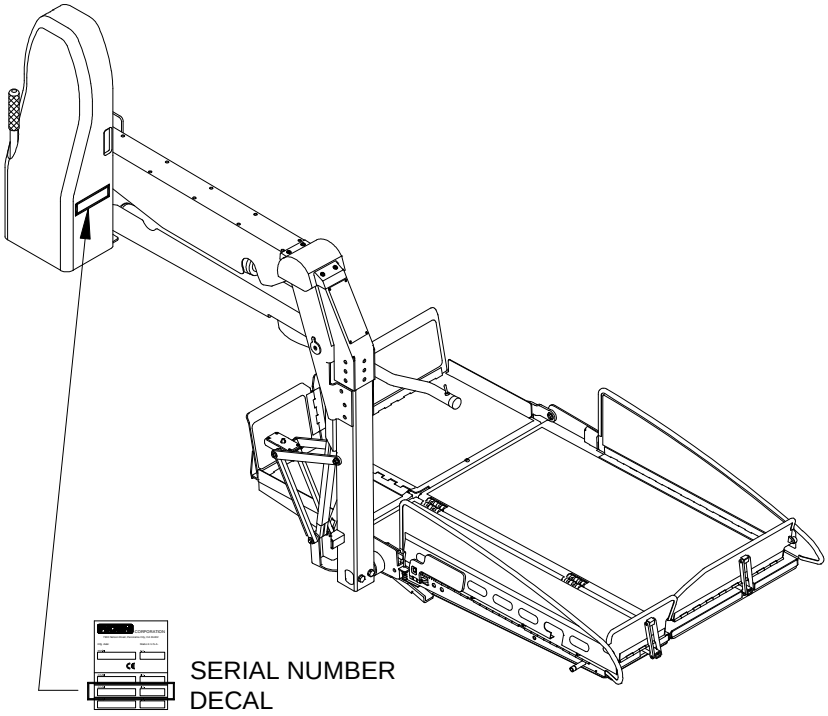


FIGURE 2-1: SERIAL NUMBER LOCATION

Lift installation consists of the following four steps, each of which is briefly explained in this chapter. Refer to the kit installation instructions for more detailed installation information.

A. Mechanical installation
B. Electrical installation
C. Final adjustments
D. Installation verification

A. MECHANICAL INSTALLATION

1. VEHICLE PREPARATION

⚠ WARNING!

- 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 PLACE ANYTHING METALLIC ON TOP OF BATTERY.

- The lift is designed to carry the weight of one wheelchair and its passenger. The vehicle structure must be capable of supporting all loads produced during lift operation, as well as those forces caused by motion of the vehicle when it is driven.
- Safely park vehicle on a flat, level surface and turn engine off.
- Disconnect the cable from the negative battery terminal at vehicle engine compartment.
- The lift installation surface must be flat, with a total variation of less than ¼".
- Perform the procedures in the order that they are presented here.
- Remove vehicle stepwell cover.
- Install power door operators, if used, before installing lift; door operators may influence lift location. Refer to power door operator installation instructions for more information.

2. LIFT INSTALLATION NOTES

The correct lift mounting is very important. Improper mounting and/or fastening of lift can adversely affect lift performance. Although installation details vary amongst vehicle makes, the following principle applies to all vehicles:

- The lift must be fastened directly to the vehicle floor. Remove door trim, carpet, plywood, molding, wall paneling or any other material that may interfere with the installation. If subflooring is present, you must cut out an area in the subfloor of sufficient size to accommodate the stepwell bracket and baseplate. Use the bracket as a template to determine the size of the area to be cut.

NOTE: Refer to vehicle-specific installation instructions for appropriate dimensions and fastening details.

3. LIFT INSTALLATION

a. Install power door operators, if used. Refer to the installation instructions provided with the door operators for more information.

NOTE: Refer to installation instructions, as necessary.

b. Assemble aluminum baseplate to lift as shown in installation instructions.

c. Check location of lift.

⚠ CAUTION!

CHECK VEHICLE BEFORE DRILLING. DO NOT DRILL INTO FACTORY WIRING, HYDRAULIC LINES, FUEL LINES, FUEL TANK, ETC.

d. If necessary, cut a hole in subflooring to accommodate baseplate installation.

e. Refer to installation instructions. Using stepwell bracket as a template, drill mounting holes for baseplate as follows:
   1) Drill two ¼" holes in side of stepwell. Install two ¼" screws to secure bracket.
   2) Drill four 3/8" holes in stepwell. Install four 3/8" screws in stepwell.
   3) Drill two ½" mounting holes.
   4) Cut two 1-1/8" holes using hole saw as shown in the installation instructions.

f. Install the wall mounting brackets.

⚠ WARNING!

LIFT WEIGHT IS APPROXIMATELY 330 LBS. USE EXTREME CARE WHEN POSITIONING. POSITIONING MUST BE PERFORMED BY AT LEAST TWO PEOPLE.

g. Position lift; align the rear mounting holes of lift with holes in floor bracket.
h. Secure lift:
    1) Insert two ½-13 screws through holes.
    2) Loosely install below-floor reinforcement brackets.
    3) Install the front ¾-10 x 4" studs through the reinforcement brackets and secure with flat washers, lock washers, and nuts.
    4) Tighten all ½" and ¾" hardware.
i. Install mounting support bracket.
j. Install vertical support.

B. ELECTRICAL INSTALLATION

⚠ CAUTION!

- DISCONNECT BATTERY BEFORE STARTING WORK.
- ROUTE ELECTRICAL CABLES AWAY FROM ANY MOVING PARTS, FUEL/HYDRAULIC LINES AND EXHAUST SYSTEM. ATTACH SECURELY TO VEHICLE.
- USE SUITABLE GROMMETS TO PROTECT CABLES FROM DAMAGE WHEN ROUTING THEM THROUGH VEHICLE FLOOR OR WALLS.
- CHECK VEHICLE BEFORE DRILLING. DO NOT DRILL INTO FACTORY WIRING, HYDRAULIC LINES, FUEL LINES, FUEL TANK, ETC.
- MOUNT MAIN CIRCUIT BREAKER WITHIN 12” OF BATTERY.
- 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 PLACE ANYTHING METALLIC ON TOP OF BATTERY.

1. CONTROL INTERFACE AND DOOR OPERATOR

a. Connect appropriate RICON lift interface control (control pendant, etc.) to lift connector. Secure interface control cable to lift bracket with supplied strain relief kit.

b. Connect power door operator to lift connector. If a power door operator is not used, install a shorting plug (included in installation kit) here.

⚠ CAUTION!

Check control interface and door operator cables for interference with moving lift parts.

c. Route control interface and door operator cables and secure them so that moving lift parts or lift users will not entangle them. Use nylon cable ties and cable clamps to secure cables.

d. Install the pendant mounting clip on interior wall. Locate the clip where it will be accessible from either inside or outside of vehicle.

2. MAIN CIRCUIT BREAKER

a. Disconnect battery ground lead.

b. Mount main circuit breaker within 12" of battery and use no more than 12” of cable to connect. Locate it as near to battery as possible to minimize length of unprotected cable.

⚠ CAUTION!

Do not over tighten circuit breaker mounting hardware.

c. Fasten circuit breaker to supplied bracket. Fasten bracket to vehicle structure with sheet metal screws or blind rivets.

3. MAIN POWER CABLE

⚠ CAUTION!

Check vehicle before drilling. Do not drill into factory wiring, hydraulic lines, fuel lines, fuel tank, etc.

a. Refer to installation instructions. Using hole saw, drill two 1.0" dia. holes through vehicle floor to provide routing for heavy power cables to power terminals located on base at left side of lift tower. Use split plastic grommets (supplied) to protect cable.

b. Crimp #4 ring terminal (supplied) on each end of short power cable (minimum 12" long). Connect one end of cable to BAT terminal on circuit breaker; leave other end disconnected.

c. Install one ring terminal on end of long 4 AWG power cable.

⚠ CAUTION!
Route electrical cables away from moving parts, fuel/ hydraulic lines, and exhaust system.

d. Connect long power cable to main circuit breaker AUX terminal. Route power cable beneath vehicle floor, back to lift and up through hole near lift baseplate. Secure cable to vehicle with nylon clamps and/or cable ties.

e. Cut cable about one foot beyond power terminals (located at base of tower). Install ring terminal on cable and fasten it to red (positive) power terminal.

f. Connect short cable from main circuit breaker BAT terminal to positive battery terminal.

4. LIFT ELECTRICAL GROUNDING

a. Refer to installation instructions. Connect the black (negative) power terminal (located at lower left of lift) to vehicle chassis. Grounding point on chassis must be free of paint and other material.

b. Make connection using an appropriate length of 4 AWG cable. Install two #4 ring terminals (supplied) on cable, and fasten one end to black (negative) power terminal on lift. Route other end through vehicle floor, using a grommet to protect cable.

c. Fasten ground cable to chassis with a #14 (1/4") hex head sheet metal screw. Clean area of electrical contact to bare metal before fastening.

C. FINAL ADJUSTMENTS

It may be necessary to adjust the PLATFORM ABOVE FLOOR and PLATFORM BELOW FLOOR limit switches after installation if the platform does not deploy and stow properly. The ANTI-STOW PRESSURE SWITCH may require adjustment after replacement or when major lift repair work is done.

⚠ CAUTION!
Be certain the area is clear of obstruction before operating lift.

1. PLATFORM LIMIT SWITCHES

NOTE: To avoid operational "dead spots", always adjust PLATFORM ABOVE FLOOR switch before PLATFORM BELOW FLOOR switch.

NOTE: When loosening adjustment screws, apply enough pressure to screw to move block instead of screw. (The block might stick if insufficient pressure is applied to screw.)

NOTE: If lift does not operate after 1-2 full turns of adjustment screw, cycle platform UP and DOWN (the PLATFORM BELOW FLOOR switch is less sensitive than the PLATFORM ABOVE FLOOR switch).

NOTE: Contact Ricon Product Support for assistance, if needed.

a. Be certain that area is clear and the vehicle is parked on a flat, level surface.
b. Deploy lift using control pendant DEPLOY button until lift platform is at vehicle floor level.
c. Refer to **Figures 2-2** and **2-3**. Rotate PLATFORM ABOVE FLOOR and PLATFORM BELOW FLOOR adjustment screws 6-8 turns counter-clockwise, and then slowly push both screws toward rear of lift (interior of vehicle) until they hit the mechanical stops.

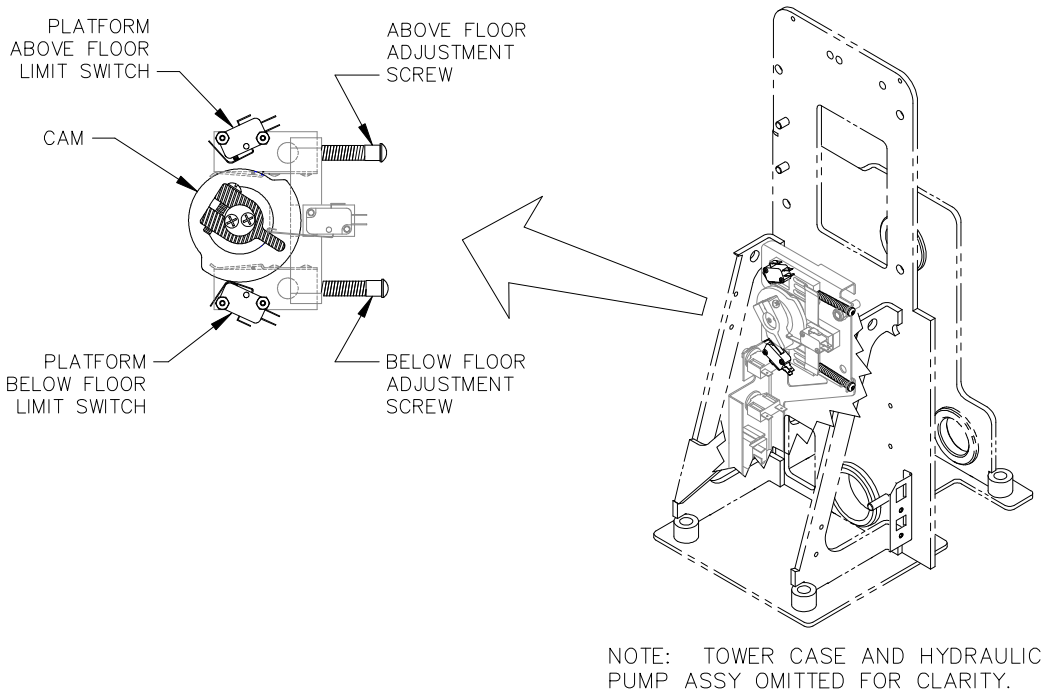


FIGURE 2-2: PLATFORM ABOVE FLOOR AND BELOW FLOOR LIMIT SWITCHES

d. Push control pendant STOW button, then push and hold control pendant DEPLOY button until platform stops moving.
e. Push and hold control pendant DEPLOY button. Slowly turn PLATFORM ABOVE FLOOR adjustment screw clockwise until platform moves down to vehicle floor level.
f. Push and hold control pendant DOWN button until platform is at ground level.
g. Push and hold control pendant UP button until platform stops moving.
h. Push and hold control pendant UP button. Slowly turn PLATFORM BELOW FLOOR adjustment screw clockwise until platform moves up to vehicle floor level. Release UP button.
i. Repeat steps d-h until platform stops at floor level.
j. Cycle platform through all functions (DEPLOY, DOWN, UP, and STOW) to verify correct adjustment.

2. ANTI-STOW PRESSURE SWITCH

An adjustable, pressure-sensitive, electrical switch is installed in the body of the hydraulic pump. When properly adjusted, the switch protects platform occupants by preventing the accidental stow or deploy of the platform; the platform cannot be stowed if a weight of 50 pounds, or greater, is on the platform. The switch changes state when a 50 lb load is on the deployed platform.

a. CHECK SWITCH

1) Apply power to lift and deploy platform.
2) Lower platform to ground, and place a 50 lb weight in center of platform.
3) Press STOW button. Platform should stop at stow height but not enter enclosure. Proceed to next step if platform moves into enclosure.

b. ADJUST SWITCH

1) Refer to **Figure 2-3**. The adjusting screw is on the end face of the pressure switch body, between the two lead wires. There is a setscrew locking the adjustment screw in place, and this setscrew must be removed before you can access the adjustment screw.

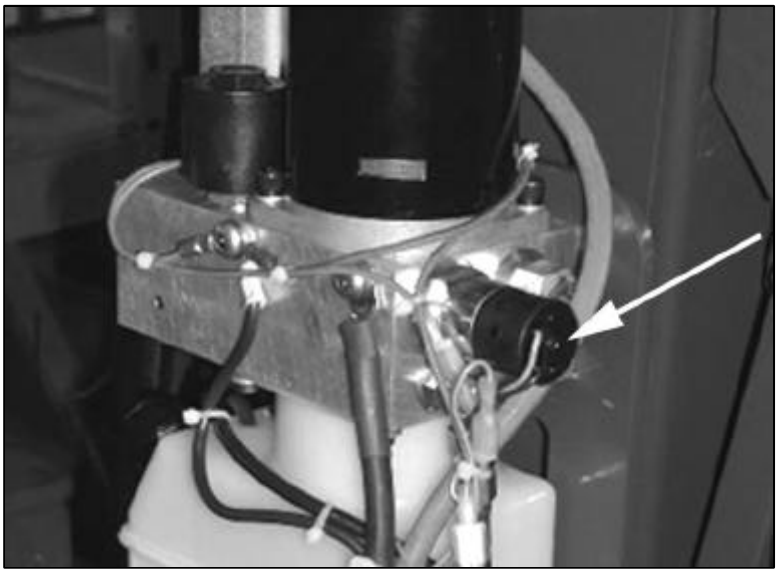


FIGURE 2-3: ANTI-STOW PRESSURE SWITCH

2) Remove locking setscrew (requires hex key) and turn adjustment screw 1/8 turn CCW to increase sensitivity.
3) Repeat above steps until the 50 lb weight inhibits stowing of platform. Repeat test from floor height; platform should stop at stow height and not enter enclosure.
4) Remove test weight and check platform stow function from ground height and floor height. Platform should stow properly from either level. Replace locking setscrew.

NOTE: Normal platform operation (platform does not stow when a weight that is significantly less than 50 lb is present) is not possible if the pressure switch adjustment is too sensitive. Turn adjusting screw CW to decrease pressure switch sensitivity. Also, if erratic platform movement occurs because the setting of the pressure switch is marginal, correct this by turning adjusting screw 1/16 turn in the appropriate direction.

D. VERIFY INSTALLATION

1. LOAD TEST

⚠ CAUTION!
• This load test is designed to test the vehicle structure and the lift mounting method, not the lift capacity. • **Do not** operate lift while test weight is on platform. Remove test weight immediately after test. • Vehicle suspension will compress and vehicle will lean when test weight is placed on platform. If weighted platform contacts ground, remove weight, raise platform, and retest. • Test weight requirement is 825 lbs. Use great care when handling weight. Positioning must be performed by at least two people.

a. Verify that neither the vehicle structure nor any other components interfere with movement of the platform.

b. Verify integrity of lift installation by test loading the platform at 125% of its rated load capacity of 660 pounds. Position lift platform 2" - 6" above ground. Place 825 pound test weight in center of platform and inspect lift mounting points for deformation or loosening of hardware. **REMOVE TEST WEIGHT.**

2. DECAL INSPECTION

Verify that all decals are properly located and affixed as shown in **Figure 2-4** on following page.

3. MISCELLANEOUS

- Reinstall stepwell cover.
- Reinstall plastic moisture barriers on doors.
- Reinstall door trim, carpet, plywood, molding, wall paneling, or any other material that was removed.
- Perform several cycles of operation with the control pendant. During each cycle, check for the following conditions:
  - Operation must be smooth and free of wobble or hesitation.
  - If power door operators are installed, doors must open and close in proper sequence.
  - Bridgeplate must deploy when platform reaches vehicle floor level. Bridgeplate must be stowed at all other positions.
  - Front rollstops and side barriers must lower when platform contacts ground. Rollstops and barriers must be raised at all other platform positions.

NOTE: If you observe unusual movements or noise during any cycle of operation, stop the cycle immediately. Check that the lift is installed as specified in the installation instructions. Refer to Chapter III for detailed troubleshooting information.

- Set WRAP DISABLE switch to on position. Perform one cycle of operation (deploy, lower, raise, stow) while observing lift. When STOW button is pressed, the platform must fold into vertical position and move into vehicle, but not wrap.
- Set WRAP DISABLE switch to off position. Perform one cycle of operation while observing lift. Platform must fully fold and wrap into vehicle when control pendant STOW button is pressed.

E. CUSTOMER ORIENTATION

IMPORTANT CUSTOMER ORIENTATION
Ricon Sales or Service personnel must review the Warranty and Operator Manual with customer to be certain he or she understands the safe operation of lift. Instruct customer to follow operating instructions without exception.

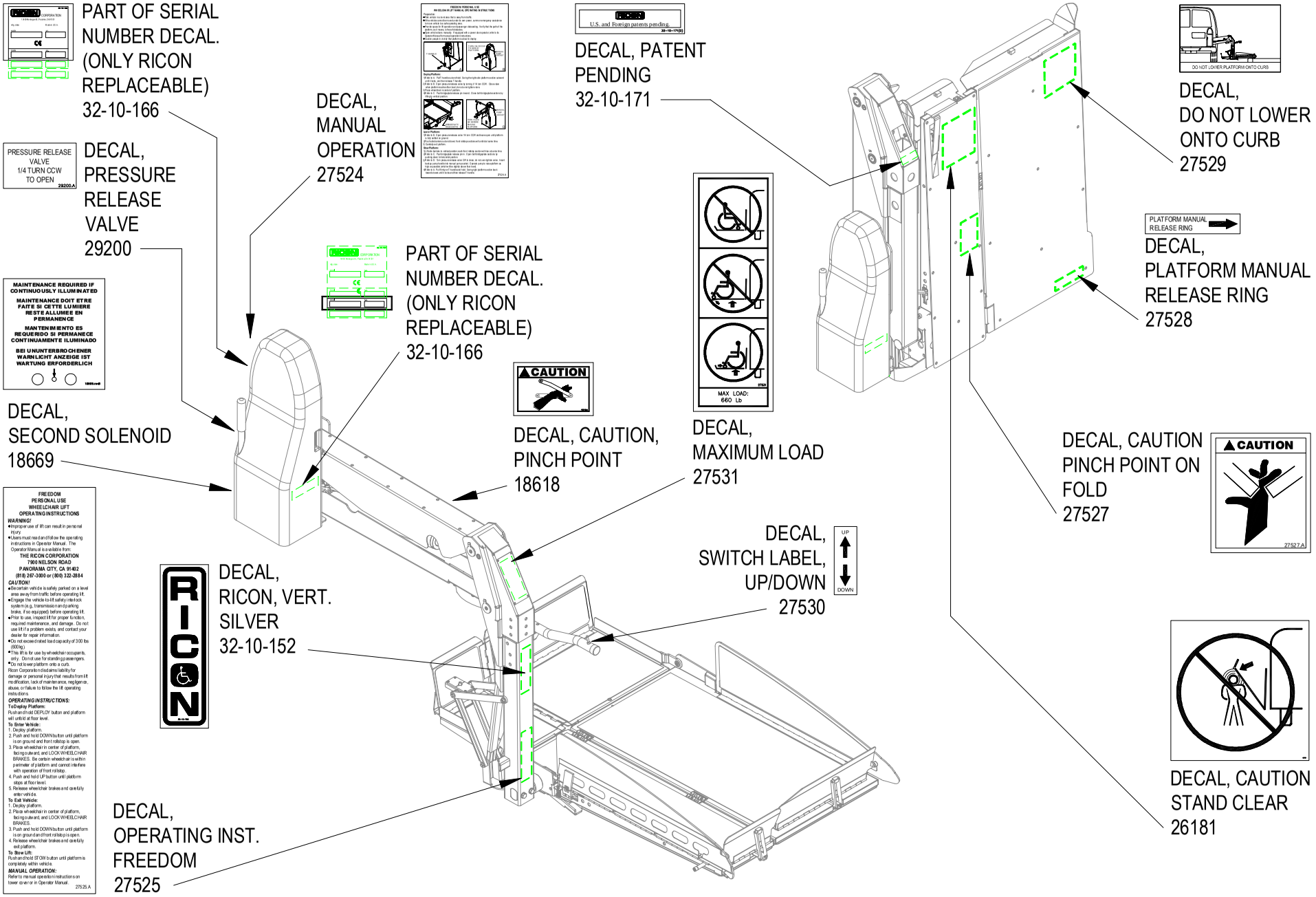


FIGURE 2-4: DECAL LOCATIONS

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