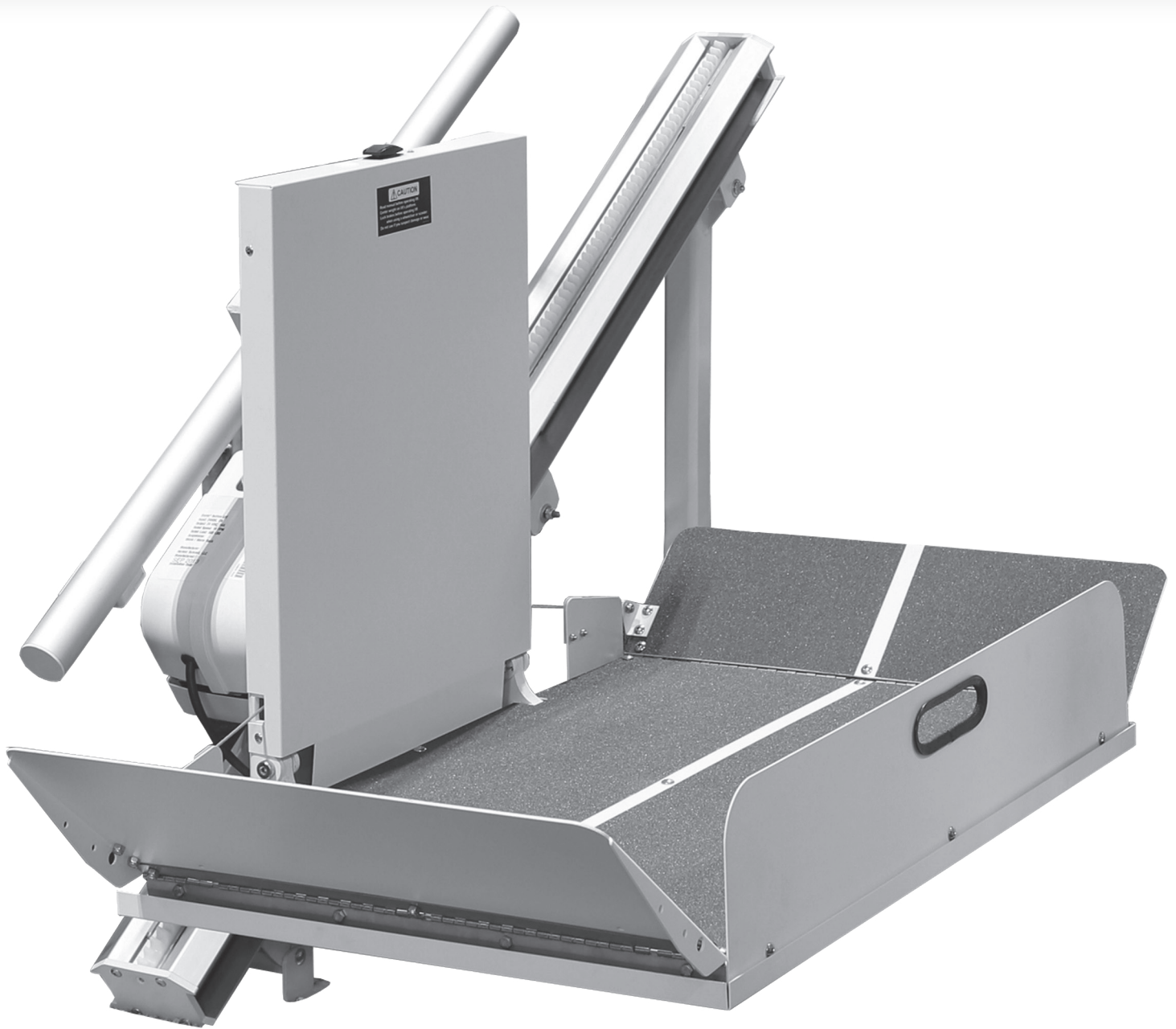


# IL500 Sierra Inclined Platform Lift

Installation & Service Manual

 **Harmar**<sup>®</sup>  
America's Lift Leader™

[www.harmar.com](http://www.harmar.com) | 800-833-0478



**IMPORTANT:** Read and understand this manual thoroughly before attempting to install or operate the lift. If you have any questions, please contact your Authorized Harmar Dealer or Harmar's Technical Service Department.

**P 800-833-0478 | F 866-234-5680 | TECH@HARMAR.COM**

20180221 PN: 630-00001 REV C

Dealer Name & Contact Information:

Serial # of Your Lift:

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The Sierra Inclined Platform Lift is designed to transport a user and their manual wheelchair up or down a straight stairway.

This manual provides instructions for properly installing this Inclined Platform Lift.

Please refer to the Owner's Manual for operating instructions. Be sure to give the Owner's Manual to the lift's owner before it is put into service.

Any alterations to the equipment without written authorization by the manufacturer may void the warranty.

Harmar lifts are designed to install with as little assembly by the installer as possible. If you have questions, concerns or comments, please contact Harmar's Technical Service Department at **1-866-378-6848** or email **tech@harmar.com**.

### "Indications of Use Statement"

The Sierra inclined platform lift is to assist transfer of patient or mobility impaired person up and down a straight stairway in their manual wheelchair..

## NOTE: New Control Board & Charging System On Sierra Inclined Platform Lifts (IL500)

**All Sierra Inclined Platform Lifts manufactured since June 30, 2014 were shipped with an improved Control design.**

The new Control Board affects Sierra Inclined Platform Lifts starting with Serial Number 400362. It replaces the earlier model Control Board for Lifts with Serial Number 400361 and lower.

The new Control Board and the earlier Board are NOT compatible for direct replacement.

### Charging System

A new Battery Charger is now onboard the control board and is powered by an external 33VDC 1A Power Supply. (Part Number 320-00004)

The 29.1 VDC power supply (Part #320-00004) has a green LED that only indicates that the supply is connected to household current.

**IR Remotes and Receivers:** Compatible and interchangeable with the new and old control boards.

### FOR ADDITIONAL INFORMATION:

Please call Harmar Technical Support: 866-378-6648.



### CAUTION

This new Power Supply is NOT a replacement for the older battery charger.

**NOTE:** The following symbols indicate areas where you should take special care to avoid danger to individuals or property.



### WARNING

Hazardous situation. If not avoided, could result in serious injury to installer or user.



### CAUTION!

Hazardous situation. If not avoided, could result in serious damage to property.

# Specifications

<b>Rated Load</b>	500 lbs.
<b>Stair Angles</b>	32-45 degrees
<b>Drive</b>	Rack and Worm Gear / 24 VDC 1/8 hp motor with brake
<b>Power Supply</b>	Input: 110 VAC; 50-60 Hz / Output: 29.1 VDC; 1.2 Amps
<b>Power Source</b>	24VDC Battery
<b>Platform</b>	25" x 36" Manual Fold Power Folding Ramp for Entry and Exit Interchangeable Side to side
<b>Travel</b>	40 Feet Maximum
<b>Rail</b>	Extruded Aluminum
<b>Speed</b>	14 Feet per Minute
<b>Controls</b>	Constant Pressure Rocker Switch on Platform Infrared wireless call/send controls
<b>Manual Lowering</b>	Device Provided
<b>Safety Design Standards</b>	ASME A18.1, Section 6 - Incline Platform Lifts CAN/CSA B44.1 / ASME A17.5 - Elevator & Escalator Equipment ETL Listed 3148125
<b>Safety Features</b>	Overspeed Governor Upper and Lower Landing Limits Upper and Lower Final Limit Ramp Obstruction Sensors Under Platform Safety Pan Obstruction Sensors Drive Chassis Obstruction Sensors Non-skid Surface Emergency stop

# Preliminary Checks

## HEADROOM

Before beginning installation, ensure that there is an 85-inch vertical clearance top and bottom for the lift.

## TOOLS REQUIRED

- Cordless drill
- Phillips screwdriver (#3)
- 6-10" driver extension
- Level (3' and 4')
- SAE socket set
- Allen wrench (5/64", 5/32", 3/16", 5/16")
- Nut driver (3/8" and 5/16")
- T30 Torx bit (included)
- Hack saw or chop saw
- Tape Measure
- Volt meter
- Hammer

## INCLUDED PARTS

Before beginning installation, inspect and check the box contents. Report any damage to your dealer. Parts are packed on a long skid. Skid will contain the following:

### Chassis Box:

- Chassis
- Call/send parts
- 2 Call/send hand controls
- Power Supply
- Manual Hand Crank
- Installation Manual
- Owner's Manual

### Rail Bracket Box

- Rail brackets (2, 3, 4, or 6 per set)
- Wood screws (#14 X 2" (4 per rail bracket)

### Upper Guide Rail

### Platform

### Unit Box

### Rail Box:

- Bottom rail pre-installed with:
  - Bottom end plate
  - Charge strip wire harness
- Bottom limit cam
- Joint pins and joint brackets (two-piece rail only)
- Plastic gear rack
- Top rail pre-installed with:
  - Charge strip wire harness
- Rail accessories (plastic bag):
  - Top end plate
  - Compression bolts (2 sizes)
- Self-cutting screws (1/4"-20 X 1")

- Torx T30 driver bit
- Rail parts (plastic bag):
  - Extra plastic racks (2 or 3)
  - Top limit cam

## INSTALLATION PROCEDURES

**NOTE:** If installing unit with free standing posts, refer to page 11-13 before proceeding with these install procedures..

**1. Position rail mounting legs on steps.** The number of legs and spacing will be determined by the overall length and number of pieces of rail. *[Figure 5-1]*

**NOTE:** .If your lift was ordered with the rail pre-cut to length, a drawing for your specific installation will detail the leg locations.

**2. Set the lower section of rail into the mounting legs.** The clamps fit into a small channel on the bottom of the rail. **DO NOT** fully tighten the clamps at this time. *[Figure 5-2]*

**3. If your lift has multiple rail sections, splice them together** using the supplied splice bars and screws. The alignment pins will come pre-installed in one of the rail sections. *[Figure 5-3]*

Before sliding rail sections together be sure to plug together the charge wires running inside the rail. After tightening the splice bar screws slide down the sections of gear rack to avoid gaps.

**4. Position the rail and mounting legs on the stairs** until you obtain the desired dimension from the nose of the steps to the underside of the rail. This dimension is noted on your specific installation drawing. *[Figure 5-4]*

The bottom end of the rail should be no more than ½" off the floor; a short leg secures the bottom. After ensuring the rail is in the proper location, anchor the legs with the four #14 wood lags provided with each leg.

The top end of the rail will typically stop short of the top landing and never needs to extend beyond. *[Figure 5-5]*

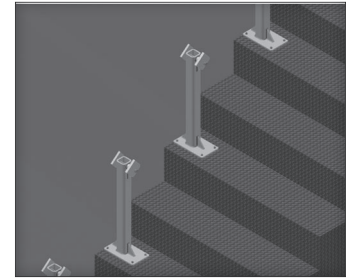


Figure 5-1

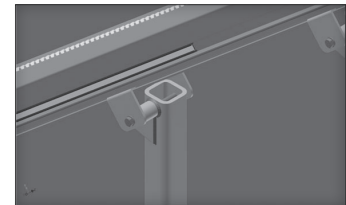


Figure 5-2

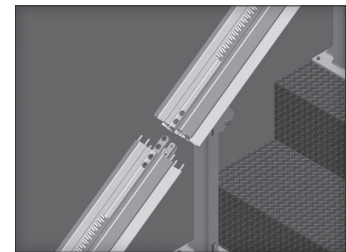


Figure 5-3

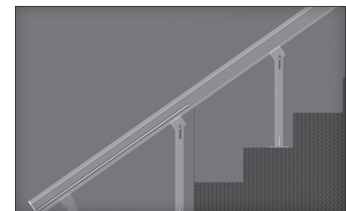


Figure 5-4



Figure 5-5

**5. Mark the location for the upper guide rail.** Measure from the leg base plate up the wall 36.25" (as indicated by the red vertical line). Measure in the center of the leg and use a 3 or 4' level to ensure that the leg is plumb vertically. [Figure 6-1]

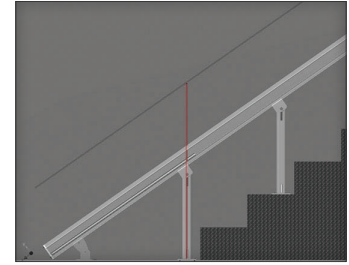


Figure 6-1

**6. Measure at least one more leg.** Then mark a straight line between these measurements. If needed, a chalk line can be filled with talcum powder so there is no risk of discoloring the wall with standard chalk or pencil line. This line is where the upper guide rail mounting brackets will be anchored.

[Figure 6-2]

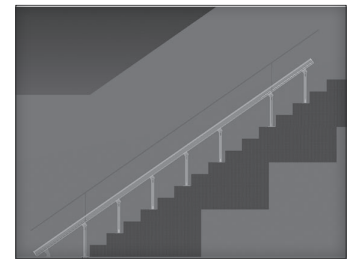


Figure 6-2

**7. Lag the upper guide rail brackets into a wall stud and space evenly.** The upper guide rail brackets do *not* need to be directly above the track mounting legs. Put one as close to each end of the rail as possible.

The guide rail will be longer than needed to allow the joint splice to be placed directly on one of the mounting brackets. The joint will have one alignment pin and a splice bar. The bracket attachment bolt will tighten into the splice bar and the remaining three set screws are tightened into the splice bar. [Figure 6-3]

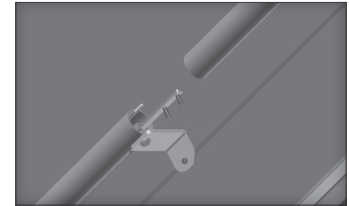


Figure 6-3

**8. Secure the remaining guide rail mounting brackets** to the rail with the threaded bars inside the rail channel. The bottom end of the guide rail should extend at least as far as the bottom end of the rail. [Figure 6-4]

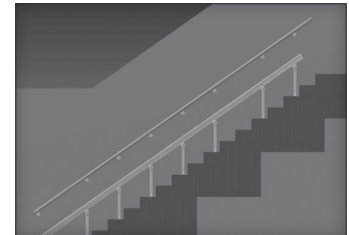


Figure 6-4

**9. Slide the chassis onto the top of the rail** until it engages the gear rack. Cut the plastic cable tie on the main power breaker (ON/OFF) switch. Turn the main power breaker on; the lift will emit a long beep.

Run the lift down near the bottom of the rail using the install switch (black rocker) on top of the chassis. When you have the lift in the proper location turn off the main power breaker.

[Figure 7-1]

**10. Install the platform mount onto the chassis** by aligning the two large holes on the end of the slots with the two large Allen-headed cap bolts protruding from the side of the chassis. For the bottom slot, use the one on the downhill side of the mount. [Figure 7-2] Ensure that the bolt heads are fully seated in the top of the slots, level the mount and tighten securely. Tighten the two more cap bolts on the back side of the chassis as well.

**11. Install the Upper Guide Roller** on the back side of the platform mount. Align the two wheels with the guide rail and secure with a bolt, nut and washer through the vertical slot in the platform mount. [Figure 7-3]

Route the wire harness from the bottom end of the chassis, up under the platform mount and up to the mating connectors. Plug the connectors into each other.

**12. Secure cable with wire ties** through hole in platform support. [Figure 7-4]

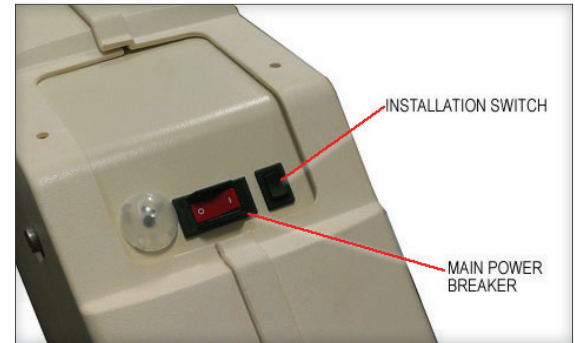


Figure 7-1

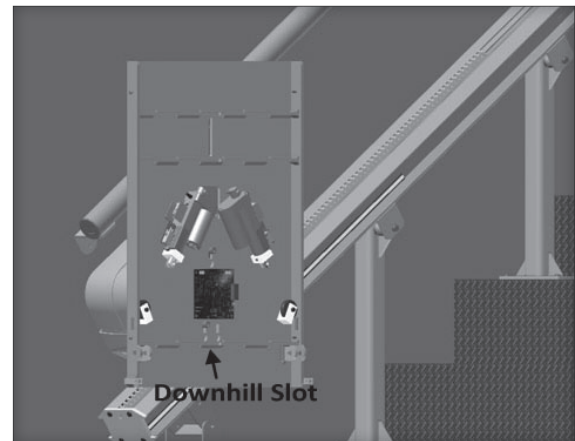


Figure 7-2

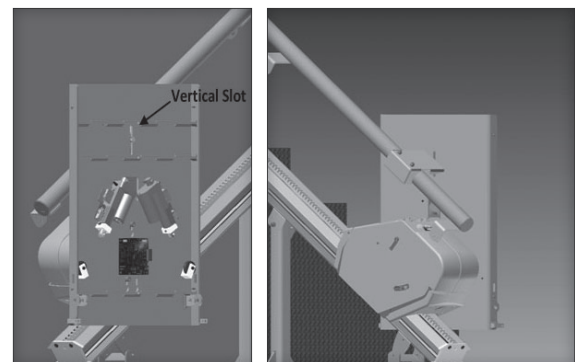


Figure 7-3



Figure 7-4

## 13. Connect harnesses to Platform Ramp Circuit Board

Connect the communications cable to COMM. Connect the Black/Green wire to 'BATT+'. Connect the ground wire to 'BATT-'. [Figure 8-1]

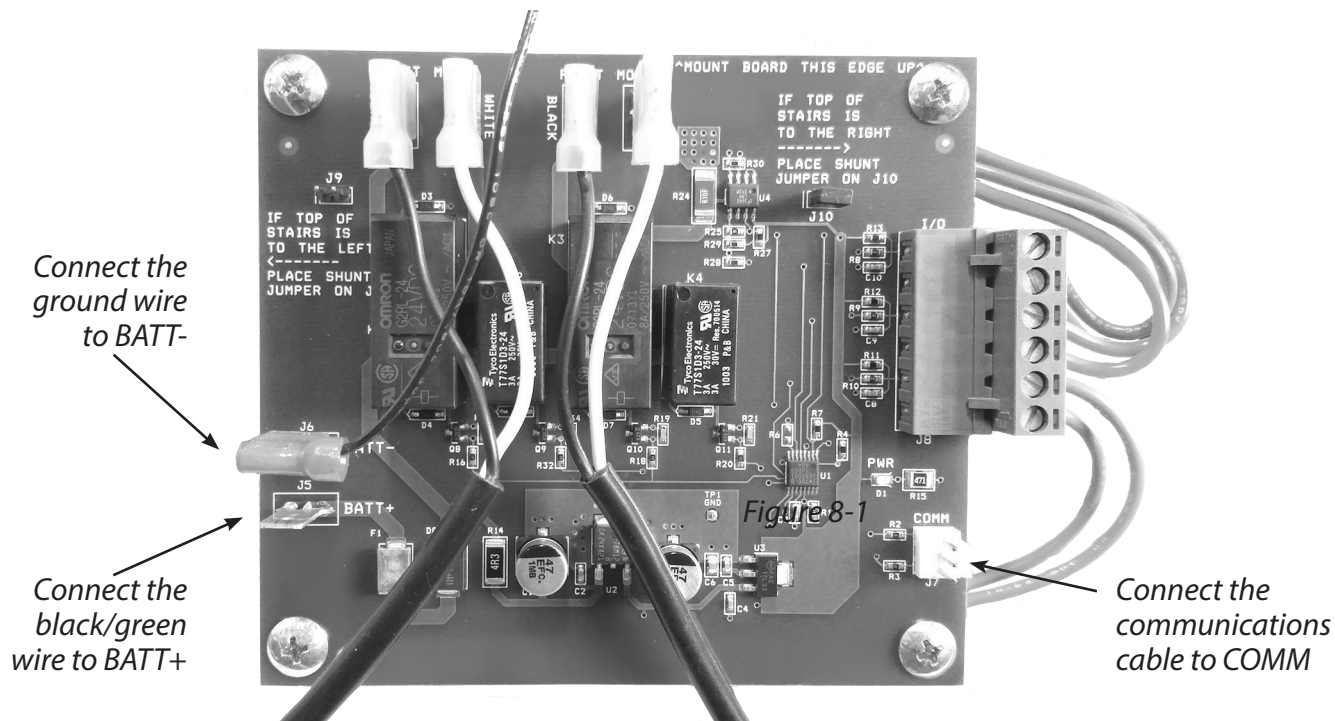


Figure 8-1

**14. If necessary, loosen leveling bolts on the back side of the platform.** Loosen the jam nut on each and turn the bolts in or out to position the platform. [Figure 8-2]

When empty, the edge farthest away from the chassis should be slightly (1/2" – 3/4") higher to compensate for the deflection when fully loaded with a passenger and chair.

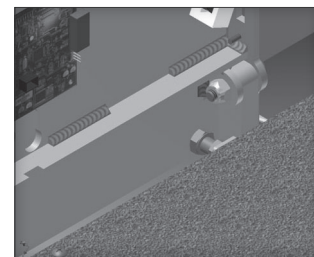


Figure 8-2

**15. Plug the harness on the shroud** into the harness at the top of the platform mount. Route the two ramp cables through the two slots on either side of the shroud then secure the shroud with the four screws on the sides. [Figure 8-3]

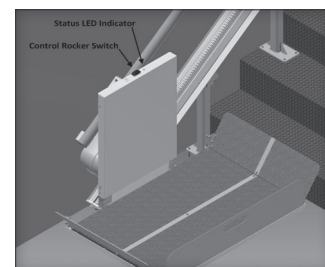


Figure 8-3



**16. If equipped with a 90° ramp,** insert the corner rod through the gray slide block on the underside of the ramp and attach the ramp to the hinge with three (3) Phillips head screws and nuts. [Figure 9-1]

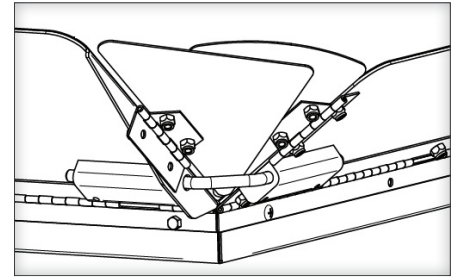


Figure 9-1

**17. Insert the upper limit cam into the slot in the rail** at the top and tighten the set screw, this will need to be adjusted later to stop the lift in the proper location. [Figure 9-2]

Insert the rest of the gear rack into the top of the rail. The gear rack should be even with the end of the rail and the last piece may need to be cut off. Install the end plate using the four Torx head screws and Torx driver (provided).

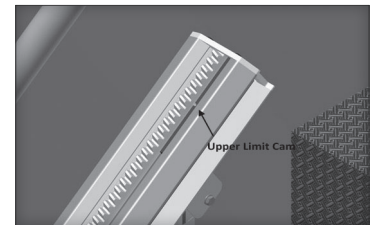


Figure 9-2

**18. Install the rack compression screw** into the end plate to pre-load the gear rack. Install the Hand Rail end plates into each end of the Hand Rail. [Figure 9-3]

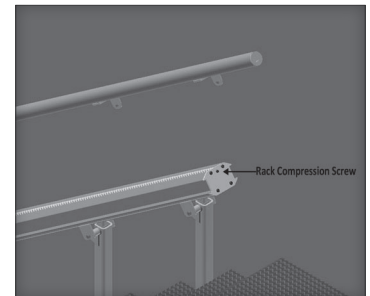


Figure 9-3

**19. Plug in the power supply.** The top and bottom of the rail each have a short wire and plug coming from the rail end. Plug the power supply into one of these plugs and plug the other end of the power supply into a wall outlet. You may use whichever end is a more convenient location to a wall outlet. [Figure 10-1]

**20. Turn on the main power breaker on the chassis.** The status LED indicator will cycle from RED to AMBER to GREEN to OFF, and then the lift will emit a beep. The indicator should then return to GREEN, indicating the lift is now ready to run.

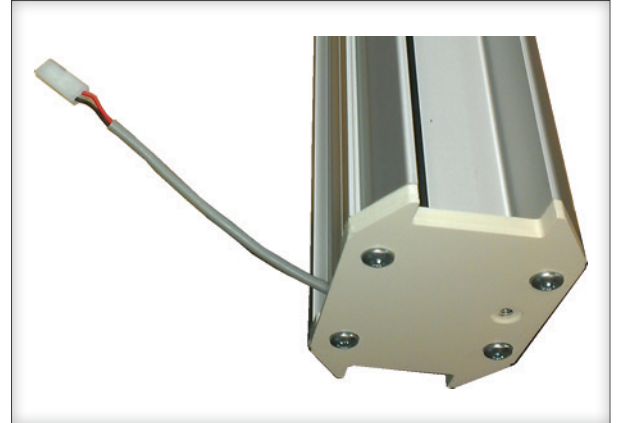


Figure 10-1

If the indicator does not return to GREEN, check the following:

- **AMBER:** Indicates an obstruction. Five obstruction sensors include: uphill chassis, downhill chassis, uphill ramp, downhill ramp, and platform safety pan. Check them all to ensure that one (or more) is not triggered and check all these wiring connections.
- **RED:** Indicates a fault or double obstruction. If two or more obstruction sensors are triggered at the same time the lift will disable itself. Turn the main power breaker off, wait a couple of seconds and then turn the breaker back on.

If the lift is on the final limit it is also treated as a fault and the lift will have to be hand cranked off the limit. To do this, run the lift up to the top landing until the lift stops. When the lift stops, the ramp motor will turn on to lower the ramp. If you release the rocker switch the ramp will stop; continue holding the rocker switch until the ramp stops on its own. It may be necessary to slide the upper limit cam down to get the lift to stop at the proper place in relation to the landing.

## INSTALLATION PROCEDURES FOR FREE STANDING POST OR LOWER POST

**NOTE:** .Reference your application drawing for placement.

**1. Which support to use for yor application?** Use when there is no wall present at the lower landing. *[Figure 11-1]*

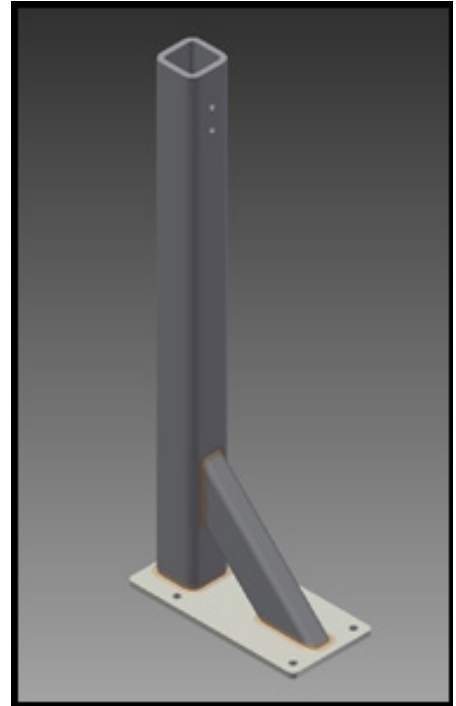


Figure 11-1

**2. Use if no wall is present thru the entire staircase and using free standing post.** *[Figure 11-2]*

**Attaches to the stair riser.**

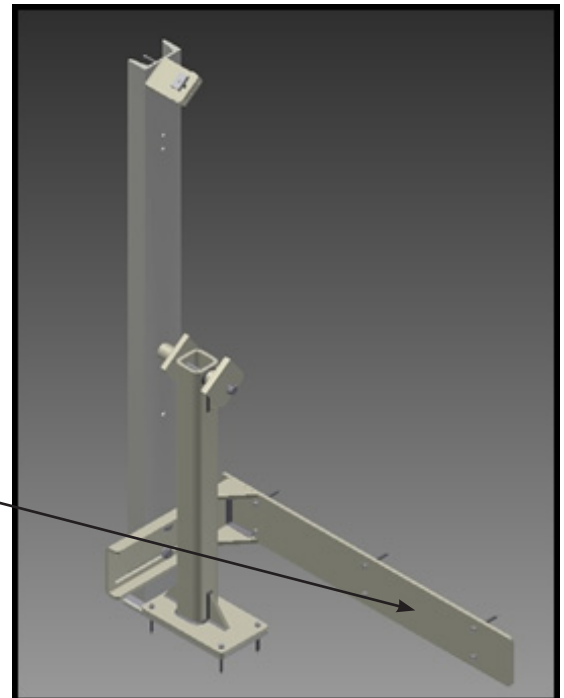


Figure 11-2

# Installation Procedures

### 3. Correct and incorrect way of mounting.

Incorrect way of mounting.

Correct way of mounting.



### 4. Mounting of handrail, and track.



**Example of mounting free standing post on stair treads.**



### REMOTE CONTROL PROGRAMMING

If there are multiple lifts in the home, the infra-red remote controls can be programmed to work with individual lifts.

1. Remove the battery door on each IR remote.
2. Move the dip switches to a different code. The two remotes must be set to the same code.
3. Replace the battery doors.
4. Use the unit control switch to move the lift so that it is not on a limit switch.
5. Turn the ON/OFF switch or main breaker to OFF.
6. Disconnect the two wire harnesses between the chassis and the platform mount.
7. Turn the ON/OFF switch or main breaker to ON. Fast beeping should occur indicating the circuit board is in the IR Learning mode.
8. Aim the first IR remote at the chassis, press and release the UP or DOWN button. The fast beeping should end with a single beep, indicating that the first remote is programmed.
9. Aim the second IR remote at the chassis, press and release the UP or Down button. Two beeps should sound indicating the second remote is programmed.
10. Turn the ON/OFF switch or main breaker to OFF and reconnect the wire harnesses.
11. Turn the ON/OFF switch or main breaker to ON and test each remote in each direction.

## TEST CONTROL SWITCH

1. Ensure that the unit travels correctly by operating the control switch while standing in front of the unit.
2. Depress the switch in the upstairs direction to move up. The lift will beep. Wait three (3) seconds and begin to smoothly accelerate upwards. The lift will continue to move upwards as long as the switch is depressed.
3. Release the switch and the lift will come to an immediate stop.
4. Depress the switch in the downstairs direction to move down. The lift will beep, wait three (3) seconds and begin to smoothly accelerate downwards.
5. Release the switch and the lift will come to an immediate stop.
6. Run the lift all the way up and down the rail to ensure there is at least a 1/2" clearance from the wall and any obstructions.



### WARNING

DO NOT ride on the lift until the install is complete.

## TIGHTEN BRACKETS

1. Install and fully tighten the rail bracket mounting screws, four (4) screws per bracket. For hardwood stairs, drill a pilot hole first. For plywood or particle board stairs, take care to prevent stripping.

## SET UPPER AND LOWER TRAVEL LIMITS

1. Test the lower travel limit by operating the lift downward, keeping the switch depressed. The lift should begin to decelerate about 3" from its final resting position and stop clear of the floor.
2. The final stopped position can be adjusted to accommodate the height of the ramp to the floor by repositioning the limit cam located in a slot in the rail.
3. Use a 5/64" Allen wrench to loosen the set screw in the limit cam. Adjust the limit cam up or down and retighten the set screws.

Repeat the above steps until the lift stops in the desired position.

## YOUR LIFT IS NOW READY TO OPERATE.







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2075 47th Street Sarasota, Florida 34234