PINNACLE
STAIR LIFT
SL600HD

INSTALLATION & SERVICE MANUAL

HARMAR®
we lift lives

16AUG2024 | 75403 F

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SECTION 1

SAFETY

SAFETY DEFINITIONS

This safety alert symbol appears with safety statements. It means attention, become alert, your safety and the safety of others are involved! Please read and abide by the message that follows the safety alert symbol.

⚠ WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which can cause damage to the lift and/or the environment, or cause the lift to operate improperly.

NOTE: Indicates a condition that should be followed in order for the lift to function in the manner intended.

ENVIRONMENTAL CONDITIONS

The technician shall assess the surrounding conditions and verify that the location is acceptable before performing installation and/or servicing tasks. If you do not understand any portion of the installation or operation procedures, please consult Harmar's Technical Service Department at 800-833-0478. Do not attempt to install or use this lift if you have any hesitation or question. Serious injury or damage can result if proper procedures are not followed.

SECTION 2

INTRODUCTION

DEVICE NAME: PINNACLE SL600HD STAIR LIFT

Indications of Use: The Harmar Pinnacle SL600HD is to assist the transfer of patients or mobility impaired persons up and down levels of a residence. or a place of business.

READ AND UNDERSTAND

This manual provides instructions for proper installation and maintenance of the SL600HD stair lift. Please refer to the owner's manual for operating instructions. Any alterations to the equipment without written authorization by the manufacturer is prohibited and will void the warranty.

WARRANTY

Please ensure that you advise the owner of the Pinnacle SL600HD stair lift to fill out the separate warranty form and return it within ten (10) days of purchase to register the lift.

TECHNICAL SPECIFICATIONS

Visit harmar.com for specifications on the lift model.

CODE STATEMENT

Code requirements for SL600HD may vary depending on location. It is the installer's responsibility to contact their state, city or local code enforcement office and determine all the regulations the lift and installation are subject to. This must be done before installing the SL600HD. Intertek (ETL) Certified to safety standard ASME A18.1-2020 section 4 and section 7.

SECTION 3

PREPARATION

Installations may vary to some degree, but below are the basic tools to have on hand for a Pinnacle stair lift installation.

If you have any questions, concerns or comments, please contact our Technical Service Department at 800-833-0478 or tech@harmar.com.

REQUIRED TOOLS

- Cordless drill
- Allen wrenches (5⁄64", 5⁄32", 3⁄16", 5⁄16")
- Phillips screwdriver (#3)
- Nut driver (3⁄8", 5⁄16")
- 6" - 10" driver extension
- Level
- Hack saw or chop saw
- SAE socket set
- SAE wrenches
- Tape measure
- Volt meter

INCLUDED PARTS

Before beginning installation, inspect and check the box contents and report any damage or missing items to Harmar.

CHASSIS BOX CONTENT:

- Chassis
- Call / send parts
- Two (2) call/send hand controls
- Battery charger

RAIL BOX CONTENT:

- 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)* with:
  - Top end plate
  - Compression bolts *(2 sizes)*
  - Self-cutting screws ¼"-20 x 1"
  - Torx T30 driver bit
  - Extra plastic racks *(2 or 3)*
  - Top limit cam

RAIL BRACKET BOX:

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

CHAIR AND FOOTREST BOX:

- Chair
- Back rest
- Seat belt
- Footrest complete with swivel slide rails and swivel pin bracket
- Rear seat support

SECTION 4

INSTALLATION

DETERMINE OVERALL RAIL LENGTH

*NOTE: Use this only if the rail did **NOT** come precut to length)*

1. Determine any obstructions that will affect the position and length of the rail. These may include walls, doors, hallway orientation, etc.

2. Measure the overall length of the stairs from the nose at the top landing of the stairs to the floor at the bottom (nose to floor measurement). ***See Figure 4-1.***

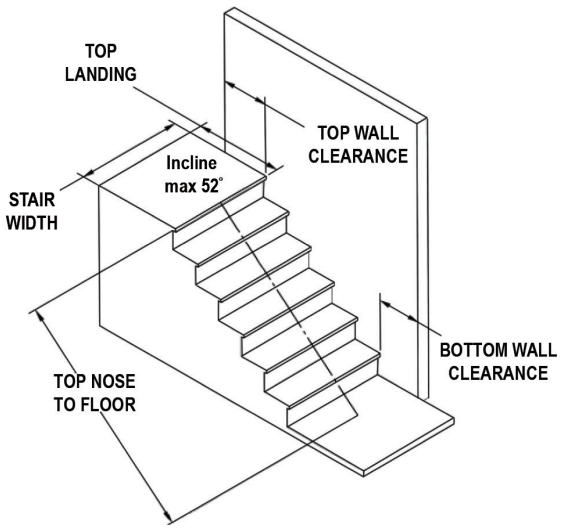


Figure 4-1

3. For a normal stairway with adequate space for a landing, add 7" to the nose to floor measurement. This will provide enough rail length to allow the stair lift to be adjusted so that the floor-to-seat height will be the same at both the top and bottom.

4. If the top landing has restrictions (i.e. a wall or doorway), use the chart to determine the length of extension that should be used. ***See Figures 4-2 and 4-3.***

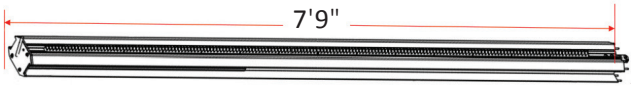
Extension

7"	9"	11"	13"
3.9"	5"	6.1"	7.2"

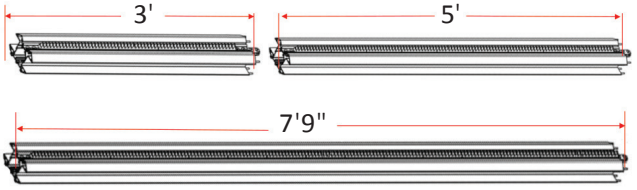
Horizontal intrusion on top landing

Figure 4-2

The lower rail measures 7'9"



Optional middle rail lengths are 3', 5', and 7'9"



The upper rail measures 7'9".

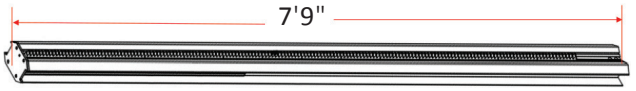


Figure 4-3

5. To cut the rail, use a standard chop saw with a 12" blade designed to cut aluminum.

NOTE: Do not cut rail inside the house (aluminum chips are very difficult to remove from carpets).

NOTICE

Do not cut the end of the rail that contains the joint holes. Remove the charger strips and wire harness before cutting.

Harmar offers a rail jig that allows holes to be drilled in the end of a rail. Contact LiftSquad Support at techservices@harmar.com

INSTALLATION SITE ELECTRICAL REQUIREMENTS

The lift must be connected to a dedicated 120V AC 15A electrical circuit.

RAIL INSTALLATION

1. Open the rail box and remove its contents.
2. Position the bottom rail (the rail with the end plate attached) directly on the stairs with the end plate towards the bottom of the stairs and the plastic rack facing up. Place and object that measures ½" between end plate and the floor. ***See Figure 4-4.***

NOTE: The minimum staircase angle is 30° and maximum is 45°. Lift can accommodate staircases with angles over 45° up to 52° with a code variance.

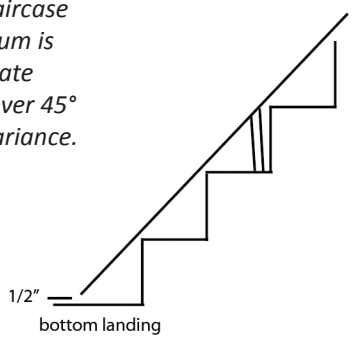


Figure 4-4

NOTE: Use the chair box, or another heavy object, like a toolbox, at the bottom of the rail to prevent it from sliding down the stairs.

3. Install two (2) splice bars into the end of the track containing the splice pins. They will each be secured by the "joint fasteners" (5⁄16" flathead screws).
4. Position the two ends of the rail close together. Locate and connect the plug on the ends of the two power harnesses inside the two rail pieces. ***See Figure 4-5.***

Figure 4-5

5. With the plastic rack facing up, slide the top into the bottom rail and guide them together using the pre-installed pins. Gently tap on the top rail if necessary to get them close together. Be careful not to pinch the power harness. ***See Figure 4-6.***

Figure 4-6

6. Install two (2) joint fasteners and firmly tighten with 3⁄16" Allen wrench. ***See Figure 4-7.***

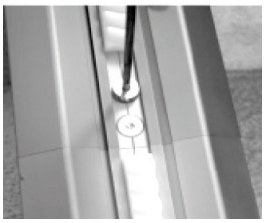


Figure 4-7

7. Turn rail over and install the remaining two (2) joint fasteners and firmly tighten with 3⁄16" Allen wrench. ***See Figure 4-8.***

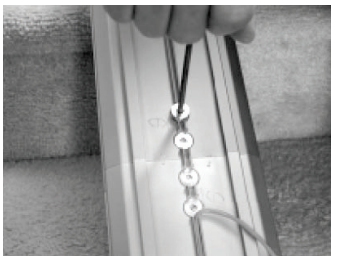


Figure 4-8

8. Install rail brackets with label facing the staircase side by loosening the screws and snapping each bracket edge into the slot, or slide the brackets on from the top of the rail. ***See Figure 4-9.***

Figure 4-9

NOTE: When installing the track brackets, if the rail is upside-down, the nut side should be facing the middle of the staircase, then if the rail is flipped over, the nut side will face the wall and so will the label.

- For double rails, the first rail bracket should be tightened in place so when turned over the back of the bracket touches the riser of the first step from the bottom landing. The second and third brackets should be placed and tightened on the steps on each side of the rail joint, again so the back of the bracket touches the riser of the step. The fourth and final bracket should be placed on the last step before the top landing, again tightening it so it touches the front of the riser of the last step.
- Tighten the first rail bracket in place so when turned over the back of the bracket touches the riser of the first step from the bottom landing. Place the other bracket on the last step before the top landing, again tightening it so it touches the riser of the last step.

9. Turn the rail right side up (gear rack facing up). ***See Figure 4-10.***

Figure 4-10

10. Measure any obstruction from the wall (this may include handrails, molding, light switches, etc.) and adjust the edge of the brackets and equal distance from the wall. The minimum distance will be 5" from the wall or any other obstruction.

11. The underside of the rail must be at least 2" above the stair tread nose to provide clearance for the footrest. To achieve this 2"

clearance move the rail and bracket forward. Once the clearance is 2", tighten all bracket nuts to hold the brackets in position. To maintain the 2" clearance, and to hold the rail in place, secure the bottom bracket to the first step from the floor with 2" wood screws, using a ⅜" nut driver on a 6"-10" extension of a cordless drill. ***See Figure 4-11.***

Figure 4-11

ZERO INTRUSION INSTALLATION

1. Measure (A) top landing to (B) bottom landing. ***See Figure 4-12.***

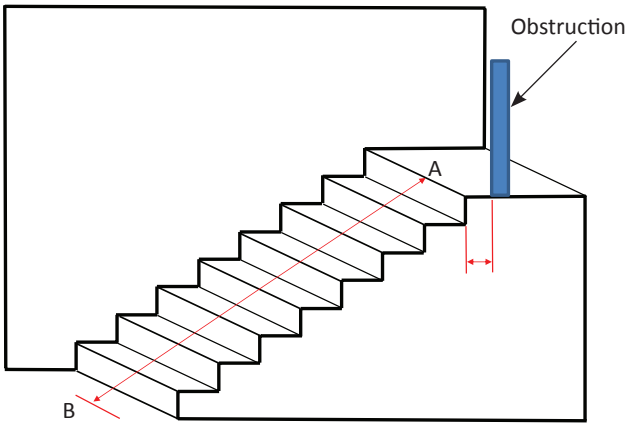


Figure 4-12

2. 7" of overrun should be added for a normal overrun with no obstructions within 3.9" of the nose of the top step. ***See Figure 4-12.***

NOTE: The top rail is normally cut unless the length of travel is short, less than the length of the bottom rail when the bottom rail will need to be cut.

3. If there is an obstruction within 3.9" of the top nose, tall brackets must be used to lift the top of the rail for zero overrun. Multiple tall and/or short brackets can be ordered. ***See Figure 4-13 and 4-14.***

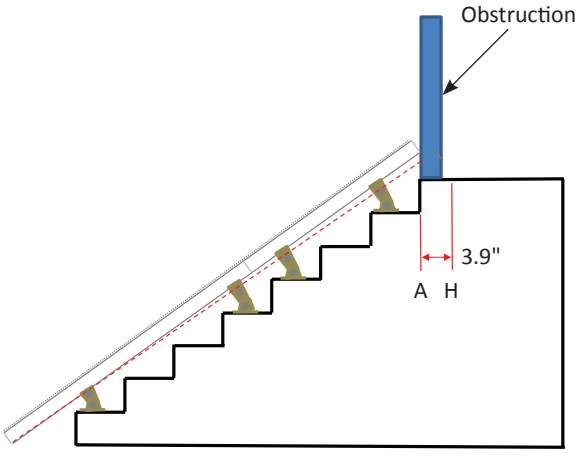


Figure 4-13

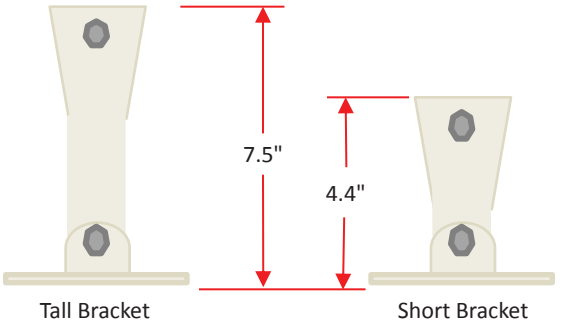


Figure 4-14

CHASSIS INSTALLATION

1. Remove chassis from box.
2. Lift the chassis with the manual override hole (on bottom) facing the downhill side of the stairs and gently slide the chassis onto the rail until it makes contact with the plastic rack. Do not let the chassis free fall down the rail. ***See Figure 4-15.***

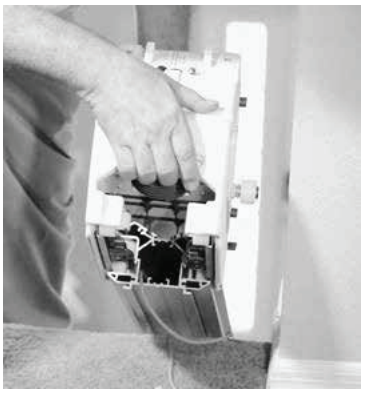


Figure 4-15

⚠ WARNING

Be careful not to trap fingers between the rail and the chassis.

3. Remove the zip tie on the power switch and turn the unit on. The unit will beep once indicating it is ready for use.
4. Use the installation switch (the black switch on the top of the chassis) to move the chassis at least 24" down the rail, pushing gently on the chassis to ensure the chassis does not pull any rack to the top. ***See Figure 4-16.***

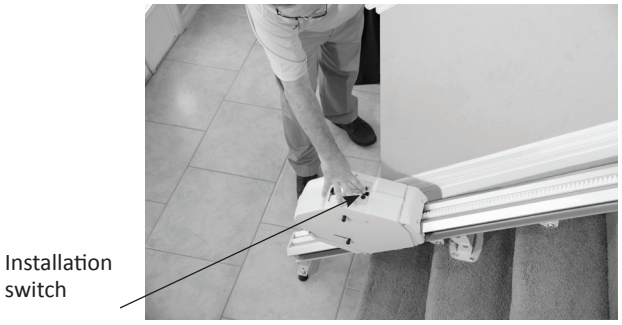


Figure 4-16

5. Loosen, but do not remove, the four (4) seat-leveling bolts (two (2) on each side of the chassis), and then align them vertically using a level. ***See Figure 4-17.***

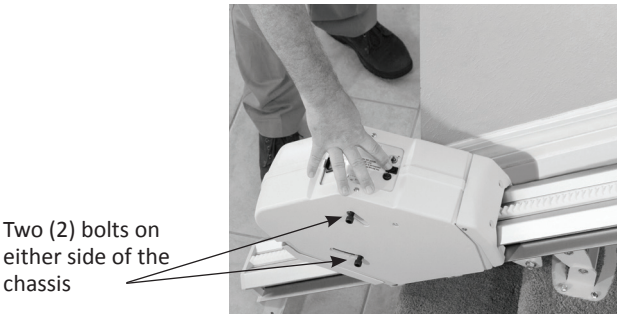


Figure 4-17

⚠ WARNING

Do not ride on the chassis or lift until the installation is complete.

FINAL RAIL INSTALLATION

1. Install the remaining plastic rack pieces in the upper rail. ***See Figure 4-18.***

Figure 4-18

2. Use a hacksaw or chop saw to cut the last plastic rack piece flush with the rail end. Place something on the floor to catch debris or mark and cut the rack outside.

   The exposed, cut end of the plastic rack should be facing the top end of the rail (the factory-cut side should butt against the lower rack). ***See Figure 4-19.***

Figure 4-19

3. Slide the top limit cam into one of the cam slots on either side, and tighten the pre-inserted Allen screw with a 5⁄64" Allen wrench. This will be used to set the final upper limit for the stair lift. ***See Figure 4-20.***

Figure 4-20

4. Remove the charging strips from the rail box. Connect the charging strip connector to the power wire that runs through the center of the rail from the lower charging strips.

   Insert the two (2) charging strips into the keyed slots at the top of the rail (while standing on the top landing looking down). The charging strip with the red wire should be inserted into the left slot with the metal strip facing out. The charging strip with the black wire should be inserted into the right slot with the metal strip pointing out. ***See Figure 4-21.***

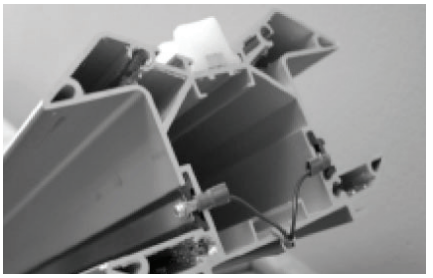


Figure 4-21

   Bend the red and black wire tabs in toward the center of the track.

   Insert excess cable into the rail, leaving the pigtail with the Molex connector on the outside.

5. Install the end plate to the top of the track with the four (4) self-cutting Torx screws using the supplied T30 Torx bit. Making sure not to pinch the wires on the pigtail.

NOTICE

Too much torque applied to these screws may result in damage. Take your time and apply grease to threads.

6. Install one of the rack pre-compression screws in the threaded hole in the top plate of the rail, and tighten it as firmly as possible by hand with a 5⁄32" Allen wrench. Make sure to use the 1 ¼" pre-compression screw. ***See Figure 4-22.***

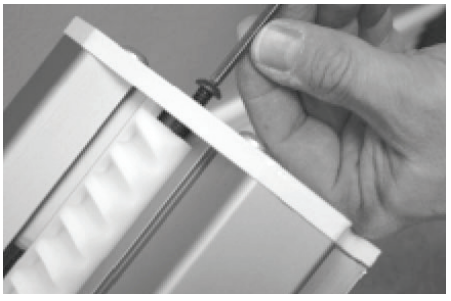


Figure 4-22

7. Plug in the power supply at either end of the rail, depending on the closest or most convenient location of a wall power supply. Minimize wire length and intrusion.

⚠ WARNING

Use care in routing the charger lead. If possible, secure along or inside wall to avoid the creation of a tripping hazard.

FOOTREST AND SEAT INSTALLATION

1. Remove the footrest from the box and use the installation switch to drive the chassis downward to a position about 6" clear off the floor. This will provide a safe area to install and adjust the footrest. Do not drive the unit into bottom stop. ***See Figure 4-23.***

Figure 4-23

2. Turn the red "On/Off" switch located on the top of the chassis to the "Off" position.

3. Position the footrest onto the two (2) seat-leveling bolts on the outside of the chassis by aligning the large opening at the slot ends of the footrest. ***See Figure 4-24.***

Figure 4-24

4. Ensure that the footrest is fully engaged.

5. Position the rear seat support onto the two (2) seat-leveling bolts on the backside of the chassis by aligning the large opening at the slot ends of the footrest. ***See Figure 4-25.***

Figure 4-25

6. Secure the rear seat support to the footrest/ seat support using the two (2) hex-bolts and washers. ***See Figure 4-26.***

Figure 4-26

7. Secure the rear of the slider rails to the rear support using the two (2) socket bolts. ***See Figure 4-27.***

Figure 4-27

8. Ensure that the seat support is level and tighten the two (2) front and two (2) rear leveling bolts. ***See Figure 4-28.***

Figure 4-28

9. Connect the footrest cable to the 6-pin connector on the chassis. ***See Figure 4-29.***

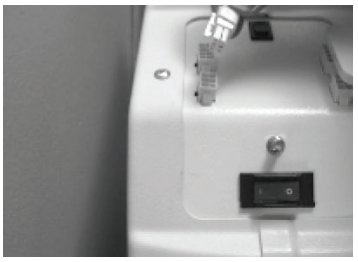


Figure 4-29

NOTICE

If the wrong set of connectors are used, the unit will work backwards.

NOTICE

When the 6-pin footrest and/or the 8-pin chair cables are connected to the chassis, the black installation switch on the chassis is disabled and will not function.

10. Align the seat roller with the slider rails and slide the seat half way back. ***See Figure 4-30.***

Figure 4-30

11. Swivel the seat approximately 45° to one side. ***See Figure 4-31.***

Figure 4-31

12. Attach the swivel pin bracket with the flat side towards the footrest support using the two hex bolts and washers. Ensure that one of the swivel pins is engaged into the slot in the swivel cam. ***See Figure 4-32.***

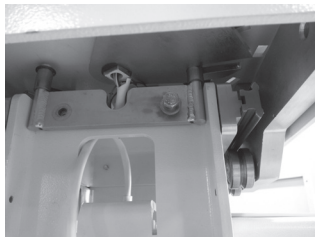


Figure 4-32

13. Connect the seat cable to the 8-pin connector on the chassis. ***See Figure 4-33.***

Figure 4-33

14. If the lift is equipped with the optional key lock, ensure that the key switch on the armrest control is in the locked position; the key should be in the vertical position. ***See Figure 4-34.***

Figure 4-34

15. Turn the red "On/Off" switch located on the top of the chassis to the "On" position. You should hear a single beep and the LED indicator light on the armrest control should cycle through a test sequence, showing red, yellow and green respectively. If any of the system controls or safety sensors are engaged the LED indicator light will turn to yellow.

16. If the LED indicator light is not green, check the safety sensors. If the LED indicator light is still not green after testing the sensors, turn the unit off and re-check all wire plugs. Turn the unit on and re-check the LED indicator light cycle. When the LED indicator light remains green, the lift is ready to operate. ***See Figure 4-35.***

Seat swivel sensor	Seat should be in the locked position
Footrest lower sensor	Check by pushing in on the safety pan on the footrest
Upper foot pan safety sensor	Check by pushing on the safety pan on the footrest
Front foot pan safety sensor	Check by pushing on the safety pan on the footrest
Uphill safety sensor	Ensure nothing is blocking upward passage
Downhill safety sensor	Ensure nothing is blocking downward passage

Figure 4-35

SECTION 5

COMPLETION PROCEDURES

REMOTE CONTROL RE-PROGRAMMING

All call/send controls are factory programmed. In the event that the remote call/send controls need to be re-programmed, it is essential to program both controls in one programming cycle.

1. Start with the red "On/Off" switch in the "Off" position.
2. Disconnect the 6-pin and 8-pin chair wire harness from the chassis.
3. Press and hold the install switch (located on the top of the chassis) in either direction.
4. Turn the red "On/Off" switch to the "On" position. Wait for the circuit board to beep and then release the install switch.
5. The lift will begin to beep rapidly, advising that the first remote is ready to be programmed.
6. Making sure that the remote is pointed at one of the IR sensors on the chassis, press and release the "Up" or "Down" button of the first remote. The first remote is now programmed.
7. Press and release the "Up" or "Down" button on the second remote. The second remote is now programmed.
8. Upon completion, two beeps will indicate that both remotes have been successfully programmed.
9. Turn the "On/Off" switch to the "Off" position.
10. Connect the 6-pin and 8-pin chair wire harness to the chassis and then turn the red "On/Off" switch back to the "On" position.
11. Test each remote in both the up and down directions.

TEST ARMREST CONTROL SWITCH

1. Ensure that the stair lift travels correctly by operating the armrest control switch while standing in front of it.
2. Press the switch in the upstairs direction to move up. The lift will begin to smoothly accelerate upward. The lift will continue to move upward as long as the switch is pressed.
3. Release the switch and the lift will come to an immediate stop.
4. Press the switch in the downstairs direction to move downward. The lift will 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 that the top of the seat back has at least a ½" in clearance from the wall and any obstructions.

⚠ WARNING

Do not ride on the chassis or lift until the installation is complete.

TIGHTEN BRACKETS

Install and fully tighten the rail bracket mounting screws four (4) screws per bracket). For hardwood stairs, a pilot hole should be drilled first. For plywood or particle board stairs, care must be taken to prevent stripping.

SET UPPER AND LOWER TRAVEL LIMITS

1. Test the lower travel limit by operating the lift downward, keeping the switch pressed. The unit 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 user 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 re-tighten the set screws. Repeat above steps until the lift stops in the desired position.
4. Repeat the above steps to set the upper limit. For safety, the footrest should be set at least level with the upper landing.
5. The optimum position is met when the seat height above the floor is the same at the top and bottom of the stairs.

TEST SAFETY STOP SWITCHES

1. Safety stop switches are located in both the upward and the downward ends of the chassis providing protection from obstructions on the rail.
2. Safety stop is located in the footrest providing protection from obstructions and trapping hazards on the stairs.
3. A safety stop switch is part of the swivel seat mechanism and prevents the lift from operating when the swivel is in use.
4. Test all safety stop switches by driving the lift down and touching the downward end of the chassis, the lower edge of the footrest, and the underside of the footrest in both its folded and unfolded positions.
5. In each of the above cases the unit should come to an immediate halt. The LED indicator light on the armrest control should turn to orange and the unit should beep intermittently.
6. When the control switch is released, the unit should NOT be able to be driven in the direction that the lift initially engaged the obstacle. Test this condition.
7. Test to ensure that the lift can only be driven away from the obstruction. The LED indicator light will turn to green and stop beeping indicating a safe operating condition.
8. Repeat the above tests while driving the lift in the opposite direction.
9. If any safety condition does not function properly, carefully review all installation instructions, reset the "On/Off" switch and check that the LED indicator light is green. Repeat the above tests.
10. If any safety stop switch fails to immediately

stop the lift and/or a red LED indicator light appears, remove the key to prevent further use of the lift and immediately call the manufacturer for assistance in diagnosing and repairing the problem. **DO NOT USE THE LIFT.**

ADDITIONAL SYSTEM CHECK

1. After the successful testing of all safety switches, secure the seat belt, sit on the lift and operate to the top of the stairs. Keeping the control switch pressed continuously, the lift should gently decelerate and then stop at the top of the rail.
2. As a final adjustment, sit on the lift and do two (2) complete up trips and stop with the chair at the bottom. Then tighten the compression screw in the top end plate, then run the chair to the top and again tighten the compression screw. Run the chair to the middle and do a final tightening of the compression screw.
3. Drive the lift to the bottom, keeping the control switch pressed all the time, and check that the lift gently decelerates and stop so the footrest pan is clear of the floor. If necessary adjust the limit cams with a 5⁄64" Allen wrench.
4. Move the lift about 3' from either the top of bottom of the rail. After 30-seconds the armrest LED indicator light will show orange and beep indicating that the lift is not positioned on a charge point. The beep will stop after 30-seconds, but the armrest LED indicator light will continue to flash orange.
5. Test the seat swivel at the top by using the levers and swiveling the seat towards the landing and stop the seat at 35 and 85 degrees. The seat swivel levers will release into a locked position at each of these angles. The lift will not operate in any of these positions if the control switch is depressed, and the LED indicator light will turn orange. Return the seat to its normal position and the LED indicator light will turn green and the lift will now operate normally.
6. Drive to the top or bottom and check the battery charging light. If the light is orange or red, the batteries are being charged.

SECTION 6

TROUBLESHOOTING

LED INDICATOR LIGHTS

If your lift does not operate, diagnose the problem by observing the LED indicator light on the armrest and listening to the beeps emitted:

- A green light indicates the lift is in operating mode and may be moved in either direction.
- An orange light indicates the lift is touching an obstruction and may be operated only in the direction away from the obstruction.
- A flashing orange light, accompanied by an intermittent beep for 30 seconds (after a 5 second delay) indicates the lift has been stopped off the charge station. It is recommended that the lift be immediately moved to a charge station (located either end of the rail).
- A red light indicates a problem that may require a service call. If the light remains red after attempting to reset the lift by turning it “Off” and then “On” again, please contact your local dealer and describe the problem.

MANUAL OVERRIDE OPERATION

If your lift fails to operate and the operator is unable to exit the lift on the stairway, another person may use either a ¼" socket and wrench or a 7mm socket and wrench, depending on your model, to lower or raise the lift to a landing. However, please follow the instructions on the bottom safety flap of the lift and turn the on/off switch to “Off”. Insert the socket into the hole in the lower safety flap until it engages the motor shaft, then turn in the direction desired.

If the LED indicator light is not green, check the safety sensors.

- Seat swivel sensor: Seat should be in the locked position.
- Footrest lower sensor: Check by pushing in on the safety pan on the footrest.
- Upper foot pan safety sensor: Check by pushing on the safety pan on the footrest.
- Front foot pan safety sensor: Check by pushing on the safety pan on the footrest.
- Uphill safety sensor: Ensure that nothing is blocking upward passage.
- Downhill safety sensor: Ensure nothing is blocking the downward passage.

If the LED indicator light is still not green after testing the sensors, turn the unit off and re-check all the wire plugs. Turn the unit on again and re-check the LED indicator light cycle. When the LED indicator light remains green, the lift is ready to operate.

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