

HELIX CURVED STAIR LIFT



INSTALLATION & SERVICE MANUAL



TABLE OF CONTENTS

SAFETY	4
Safety Definitions	4
Special Cautions	4
INTRODUCTION	5
Device Name: Helix	5
Read and Understand	5
Warranty	5
Technical Specifications	5
Code Statement	5
PREPARATION	6
Required Tools	6
Included Parts	6
INSTALLATION	7
Battery Installation	9
Chassis Installation	10
Seat Installation	11
Mid-Charging Station Installation	12
Supports	13
Charging Station	13
Alignment	14
Final Limit	14
Overspeed	14
Wireless Remote Reprogramming	16
Operational Check	17
TROUBLESHOOTING	18
Controls	18
MAINTENANCE	19
6-Month Maintenance Checklist	19
Annual Checklist	20

SAFETY

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.

SPECIAL CAUTIONS



Pay attention to the following Special Cautions while operating your stair lift.

- Do not exceed the maximum payload capacity of 350 lb.
- Make sure any obstructions are cleared from underneath the lift before use.
- Do not disable any safety equipment or switches supplied with this lift.
- Do not attempt to service the lift yourself. Contact your Harmar dealer for assistance.
- Do not allow children to operate or play around the lift.
- This product is designed only for lifting people within the specified load capacity. Do not use it for freight or any other purpose.
- Read all instructions in this manual before operating the lift.

SECTION 2

INTRODUCTION

DEVICE NAME: HELIX

Indications of Use: The intended use of the Helix is the transfer of patients or mobility impaired persons up and down levels of a residence or commercial building.

READ AND UNDERSTAND

This manual provides instructions for proper installation and maintenance of the Helix curved 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 Helix stair lift to fill out the separate warranty form, located on page 13 of the Owner's Manual, and return it within ten (10) days of purchase to register the lift.

TECHNICAL SPECIFICATIONS

Contact our LiftSquad technical service department at 800-833-0478 or email helix@harmar.com if you have any questions regarding the installation of this lift.

CODE STATEMENT

Code requirements for Helix curved stair lifts 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 lift.

COMMERCIAL

4 INCLINED STAIRWAY CHAIRLIFTS

Section 4 applies to inclined stairway chairlifts installed in locations other than in or at a private residence for use by the mobility impaired.

4.1 Runways

4.1.1 Lifts shall be installed so that means of egress is maintained as required by the authority having jurisdiction.

4.1.2 The structure on which the equipment is installed shall be capable of safely supporting the loads imposed.

4.1.3 The installation of electrical equipment and wiring shall conform to the requirements of NFPA 70.

4.6.4 Footrest Clearance. At no point in its travel shall the edge of the footrest facing the upper landing be more than 600 mm (24 in.) above the step or landing as measured vertically

RESIDENTIAL

7 PRIVATE RESIDENCE INCLINED STAIRWAY CHAIRLIFTS

Section 7 applies to inclined stairway chairlifts where installed in or at a private residence for use by the mobility impaired.

7.1 Runways

7.1.1 The structure on which the equipment is installed shall be capable of safely supporting the loads imposed.

7.1.2 The installation of electrical equipment and wiring shall conform to the requirements of NFPA 70.

PREPARATION

SECTION 3

PREPARATION

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

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

REQUIRED TOOLS

- Metric and SAE Allen Wrenches
- Angle Meter
- Assorted Drill Bits
- Cordless Drill
- Drill Extension Bit
- Electrical Tape (helps pull wire attached to Fish Tape)
- Emery/Sandpaper
- Fish Tape
- Lightweight Grease: White Lithium Grease
- Mirror (for checking charger)
- Shims
- Tape Measure
- Towels (for cleaning)
- Wire Stripper/Crimper

OPTIONAL TOOLS:

- Mounting Screws could be needed, based on flooring
- Pull Strap/Ratcheting Strap
- Volt OHM Meter

INCLUDED PARTS

Before beginning installation, inspect and check that the box contents are complete and undamaged. Also check the enclosed illustration to verify specific parts as each lift is customized to the application. Report any damaged or missing items to Harmar or the shipping company immediately.

- Batteries
- Call/Send
- Charge Stations
- Complete Seat Assembly and Chassis
- Legs
- Pipe and Support Caps
- Power Supply
- Rails
- Screws
- Wires

SECTION 3 **INSTALLATION**

The standard installation will require two installers and should take approximately three hours to complete. The time will vary depending on the complexity of the lift ordered and custom designs.

1. Review installation drawing. The dimensions on the drawing show numbers on the stairs. These numbers indicate the position of the supports.
See Figures 3-1 and 3-2.

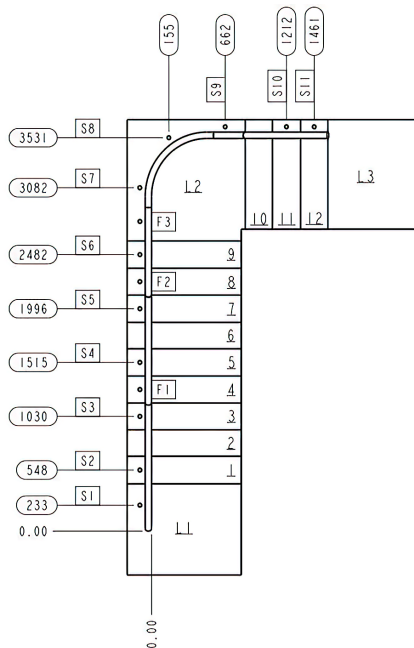


Figure 3-1

NOTE: S is the leg position. F is the rail stabilizer and does not go to the floor.

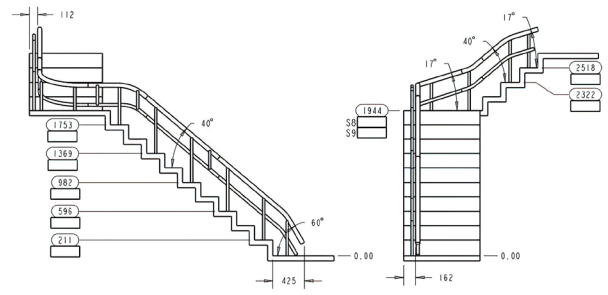


Figure 3-2

NOTE: You may complete the wiring while putting the rail together or use a fish tape on the completed unit to run the wire.

2. Carry the chair and chassis to the location of the installation. Usually this will be at the top of the stairs. It is best to install the chassis on a flat section of rail.
3. Position the stair supports. Place stair supports on the stair based on the installation drawing, but do not bolt down at this point.
See Figure 3-3.

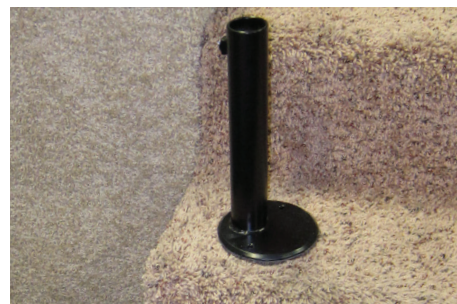


Figure 3-3

HELIX CURVED STAIR LIFT: SECTION 3 INSTALLATION

- Place the rail in the correct position, beginning with the first section downstairs. Unwrap the rail, checking the stamp located on each rail for order of placement on stairs. **See Figures 3-4 and 3-5.**



Figure 3-4



Figure 3-5

Follow the drawing included with the rail system.

Run the charging station wire through the lower rail. There is a hole at the charger location for it to come out. **See Figure 3-6.**



Figure 3-6

- Check both ends of the rail and wipe clean. You may need to clean the ends with Emery paper and add a small amount of grease to help slide the pipes together. **See Figure 3-7.**



Figure 3-7

- Slide the pipes together one at a time, starting at the bottom in the order indicated on the label. Install on the stair supports. **See Figures 3-8 through 3-10.**



Figure 3-8



Figure 3-9

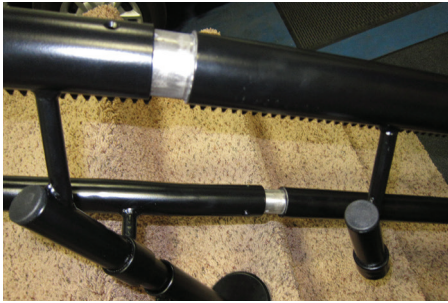


Figure 3-10

7. Connect parts at the joint with the supplied bolts. Carefully tighten as you assemble the rail. DO NOT overtighten. **See Figure 3-11.**

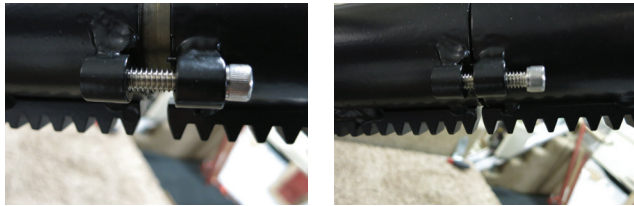


Figure 3-11

When you arrive upstairs, adjust the position of the rail and supports while you compare with the drawing.

NOTE: When installing to the stairs, ensure the hardware is long enough. If the carpet is very thick, it might require longer hardware.

Watch out for tack strips. Avoid mounting on them. If you can't avoid them, shims are required.

8. Using the angle meter, set the rail to the correct angles and check the drawing to verify that all clearances are correct. DO NOT tighten all the leg set screws yet, only set enough to support the rail. Leave the others floating.

BATTERY INSTALLATION

1. Install the battery. Open the front of the chassis by removing the screws on shroud. **See Figure 3-12.**



Figure 3-12

2. Install the batteries and connect wires. Ensure sure that the black wire is connected to the black terminal on one battery and that the red wire is connected to the red terminal on the other battery. Connect the black terminal on one battery to the red terminal on the other battery with the white jumper. If wired incorrectly, the universal access board may get damaged. **See Figure 3-13.**

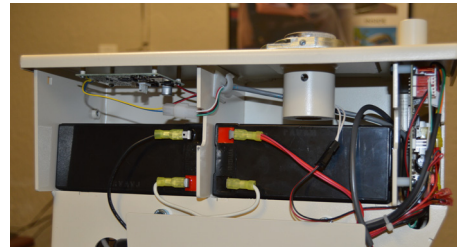


Figure 3-13

3. Remove the back cover to expose the loading switch. **See Figure 3-14.**



Figure 3-14

NOTICE

TEST RUN. Prior to bolting down the supports, install the chassis and run it on the rail to check all clearances. It may be necessary to bolt down one or two legs to hold the rail in place. If necessary, move the rail position to provide the best fit.

4. To use install switch, press the emergency safety switch in, if you do not have that option, separate the male female connector. After using the install switch, release the safety or put the wires back together. *See Figure 3-15.*

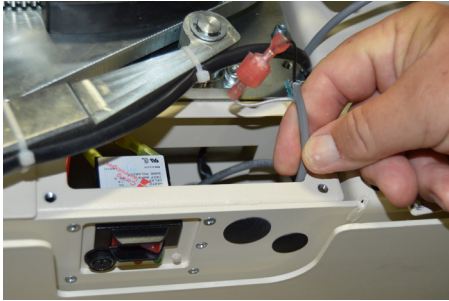


Figure 3-15

CHASSIS INSTALLATION

1. Ensure that the charging strips are oriented on the top of the bottom rail. *See Figure 3-16.*

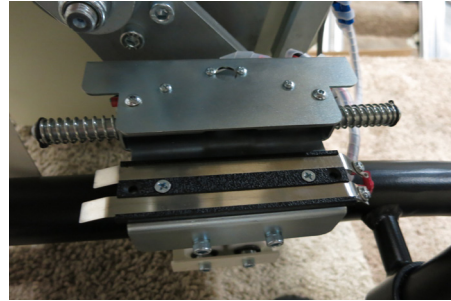


Figure 3-16

2. Install the loading bar. *See Figure 3-17.*



Figure 3-17

3. Slide the chassis on until the pinion gear hits the gear rack. Activate the installation rocker switch to drive onto the rack, watching the wheels to ensure they go on smoothly. Ensure the unit goes down the gear rack about 6" (15.2 cm). *See Figure 3-18.*

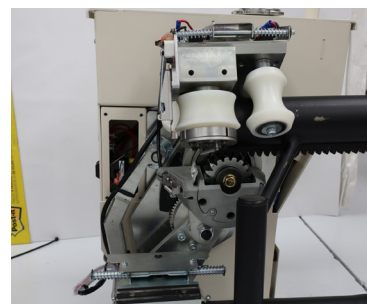


Figure 3-18

4. If installing on a standard incline, tilt the upper rollers to match the angle of the rails. This will allow the chassis to slide on. *See Figure 3-19.*

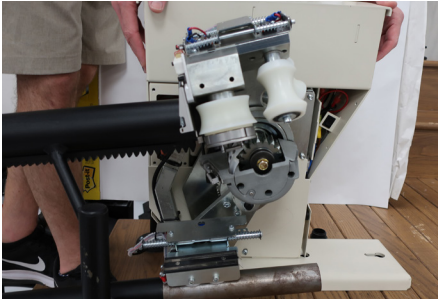


Figure 3-19

SEAT INSTALLATION

NOTICE

Do not lay chair on its back.

1. To install the seat, remove the batteries.
2. Route the wires through the mounting hole, making sure that the wiring goes all the way down. The swivel arm must be pushed down when installing to clear the seat post lock. **See Figure 3-20.**

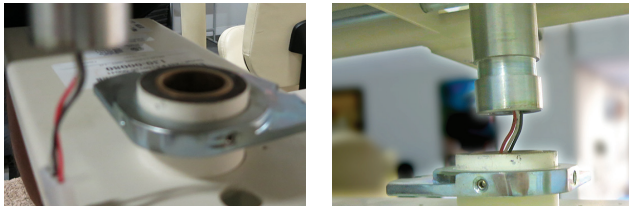


Figure 3-20

3. Observe the magnet switch for seat safety. **See Figure 3-21.**

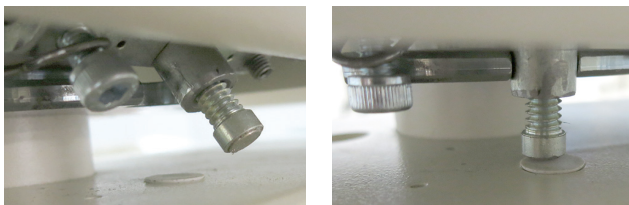


Figure 3-21

NOTE: Lubricate the seat post before installing using a white lithium grease.

4. Install the set screw, that holds the seat from coming up, in collar where the wires for the hand control comes through. **See Figure 3-22.**



Figure 3-22

5. Connect the seat rocker switch wires. **See Figure 3-23.**

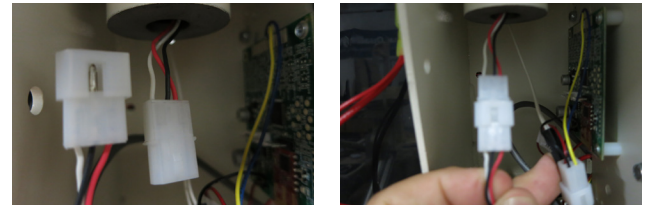


Figure 3-23

6. Reconnect the batteries and test run the chassis (using the seat control to move the seat and chassis) to ensure all the clearances are OK. Move the rail as needed to make the best fit. If installing a mid-charging location, locate it now.

HELIX CURVED STAIR LIFT: SECTION 3 INSTALLATION

MID-CHARGING STATION INSTALLATION

1. Locate the chassis to where the mid-station park should be on the rail. *See Figure 3-24.*

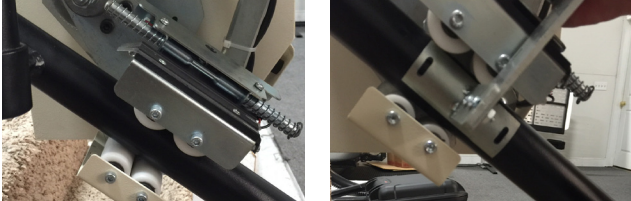


Figure 3-24

2. Mount the station to the rail using the self tapping screws provided. *See Figure 3-25.*

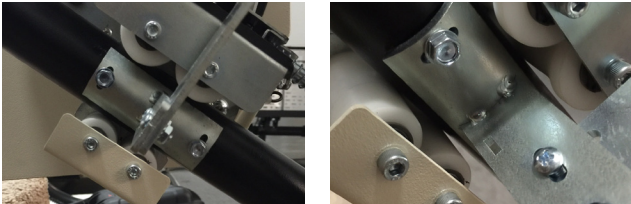


Figure 3-25

3. Align the charge feet to the chassis and ensure the charge feet are compressing about 1/4". *See Figures 3-26 through 3-28.*

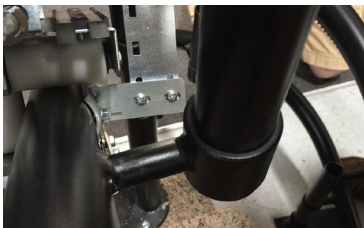


Figure 3-26



Figure 3-27

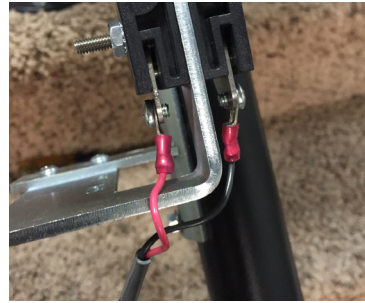


Figure 3-28

4. Drill the size 3/8" hole in the rack to pull the wire out. *See Figure 3-29.*

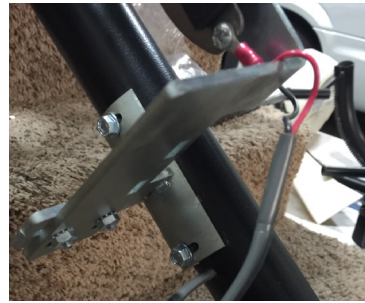


Figure 3-29

5. Connect the wire to the charge station and ensure the red wire matches the location of the red wire on the chassis. *See Figure 3-30.*

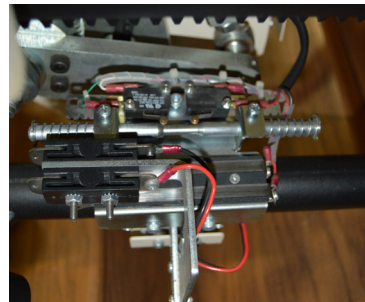


Figure 3-30

6. Install cover.

SUPPORTS

INDOOR UNITS

1. Re-check angles, then, using the appropriate hardware, attach the supports to the stairs, starting at a corner. Firmly set the supports to the rail with set screw. Repeat the process at the other corners; re-check angles. Complete all other legs. *See Figure 3-31.*

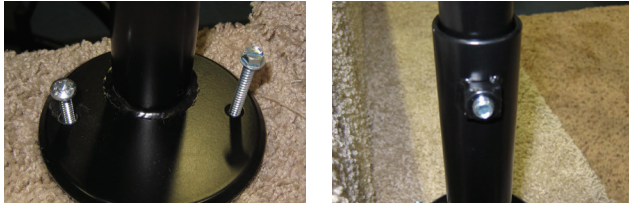


Figure 3-31

NOTE: When on carpet, tighten down the floating legs first, then tighten the set screw on them. Loosen the set screws on the legs you were using for support and tighten them to the floor. Tighten the sets screws.

OUTDOOR UNITS

1. After all the legs are set, add caulking to all the leg joints including the collars. Spray the back of the chassis with some type of corrosion blocker and ensure the customer has a lift cover.

CHARGING STATION

1. Install the charging station on the rail. *See Figure 3-32.*

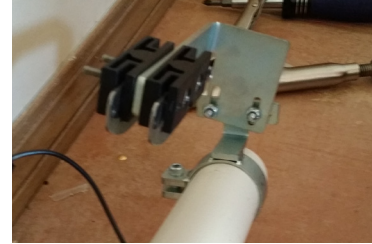


Figure 3-32

2. Align with the chassis. *See Figure 3-33.*

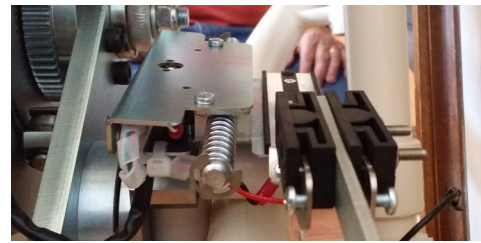


Figure 3-33

HELIX CURVED STAIR LIFT: SECTION 3 INSTALLATION

ALIGNMENT

Align charging stations. Pay attention to the charging contacts, where the drive unit meets the station. They should apply pressure to the charging strips on the chassis. Adjust as needed.

1. The spring loaded contacts should compress about $\frac{1}{4}$ ". *See Figure 3-34.*

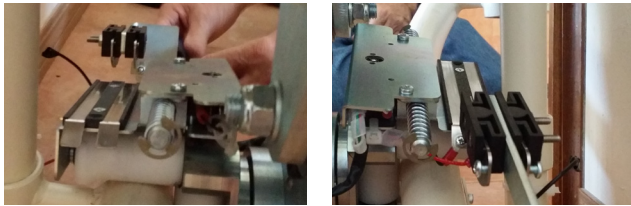


Figure 3-34

2. Route the red and black wires through the hole provided in the rail by the charging station. Use provided grommet to protect the wire.
3. Determine which end has the AC power for the power supply. Connect the power supply with the provided connector, which has a red and black wire, to the red and black wires. Using the provided terminals, attach the charge wire to the wires in the rail. *See Figure 3-35.*

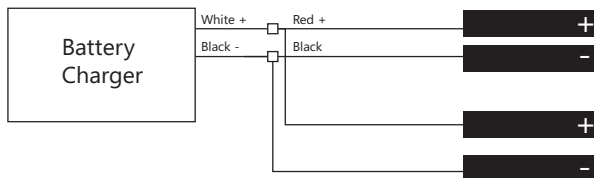


Figure 3-35

4. Attach to the charge station and install cover. *See Figures 3-36 through 3-39.*



Figure 3-36

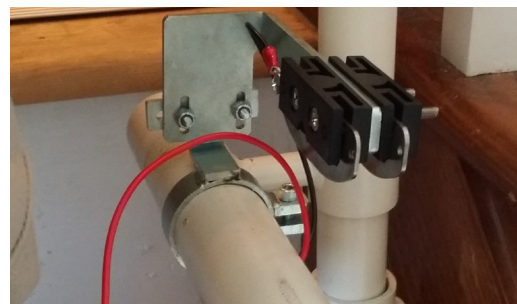


Figure 3-37

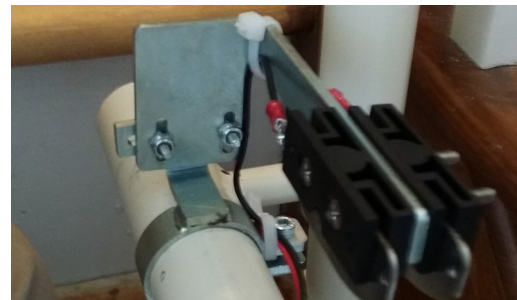


Figure 3-38

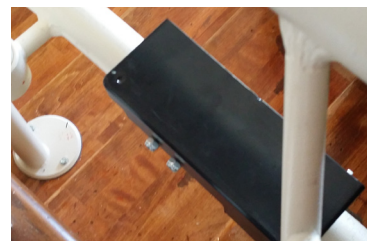


Figure 3-39

FINAL LIMIT

1. Install hard final limit on the gear rack at both ends of the rail. Rail end caps and support caps need to be installed. *See Figure 3-40.*



Figure 3-40

OVERSPEED

This is an emergency brake that is designed to stop the lift if it has a runaway situation.

1. Remove tag and screw. *See Figure 3-41 and 3-42.*



Figure 3-41

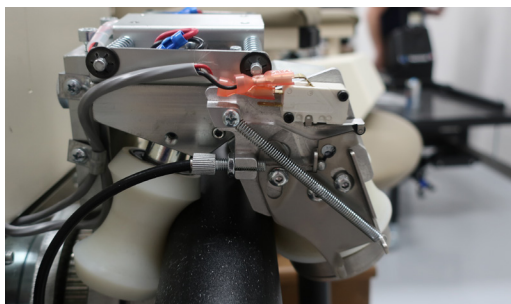


Figure 3-42

WARNING

If the unit fires due to a runaway situation contact Harmar tech services to evaluate. The unit should not be put back in service until the reason for overspeed activation has been determined.

2. To activate the overspeed, if you move the arm it will release a jammer that will go between the gear rack and the sprocket, and the limit switch will remove power. *See Figure 3-43.*

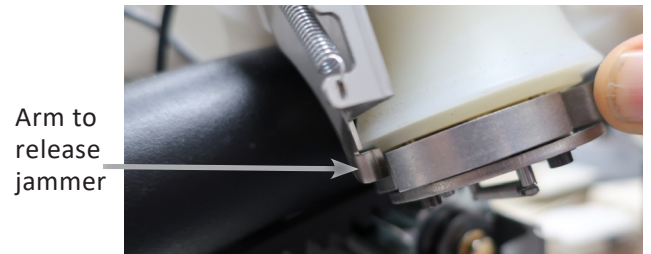


Figure 3-43

3. Resetting the unit, if it is activated as a test or a false activation it can be reset by pushing it back in place and resetting the release. *See Figures 3-44 and 3-45.*



Figure 3-44



Figure 3-45

WIRELESS REMOTE REPROGRAMMING

The wireless controllers are shipped pre-programmed for the seat.

Note: The remote board will beep once and the chassis board will beep once.

If the remotes need to be re-programmed or you have a replacement remote, do the following:

1. On the wireless control board, press and hold the small black button that says "pair". At the same time, hold the up button on remotes for three (3) seconds. This will link the board and the remotes to your lift.

See Figures 3-46 and 3-47.

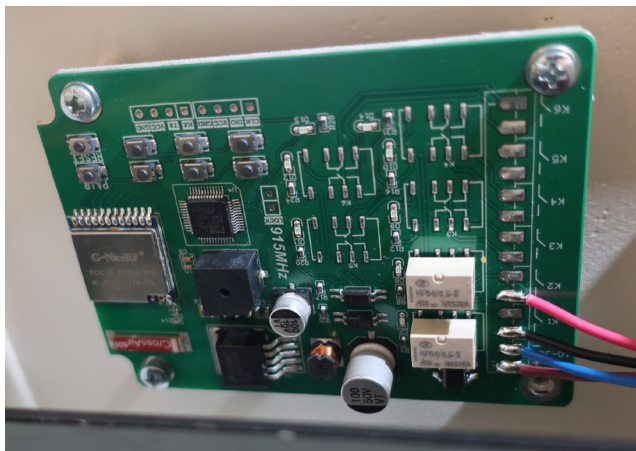


Figure 3-46

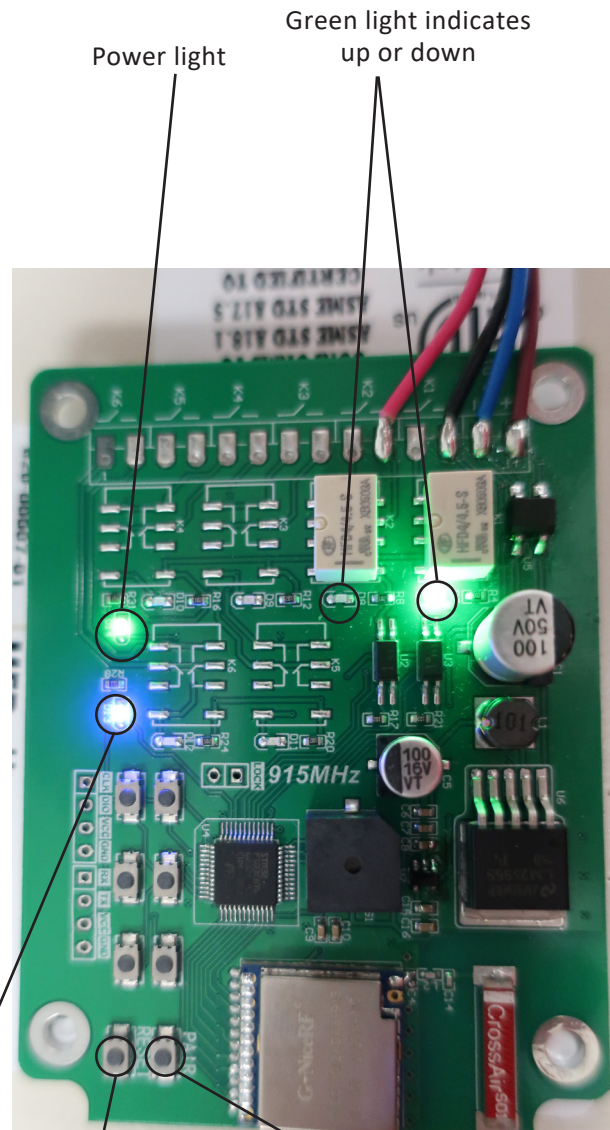


Figure 3-47

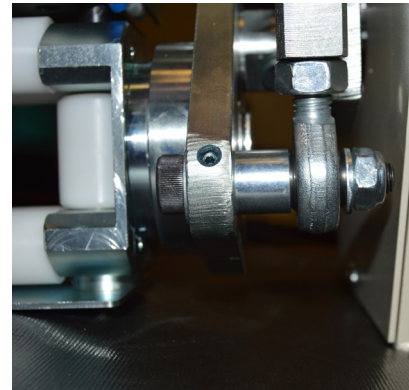
OPERATIONAL CHECK

Before putting the lift into operation for the user, verify the following:

- Check all stops (top, middle & bottom)
- Footrest obstruction sensor (both directions of travel)
- Rail obstruction sensor (both directions of travel)
- Rail (all hardware and mounting hardware are tight)
- Final limit (both ends of travel)
- Seat swivel sensor (lift won't run if seat is swiveled)
- Check all clearances to ensure there are no pinch points
- Provide the Owner's Manual and review the lift's operation and stops with the customer
- Charge for 12-hours after testing is complete
- Test wireless remote (in both direction of travel)
- Ensure that all legs are caulked (*outdoor unit only*)
- Corrosion blocking has been applied to chassis (*outdoor unit only*)
- Verify that the Overspeed Shipping Bolt was removed (*the overspeed feature will not operate with the bolt in place.*)

Seat position, level at top and bottom. If it is not level or customer would like the chair to have a slight uphill tilt, adjust with the leveling joint.

- Loosen set screw
- Remove shoulder bolt
- Adjust joint in or out depending on which direction you want the chair to go
- Re-tighten all with Loctite 243



The lift is now ready to use. Remember to leave the Owner's Manual with the end-user and answer any questions they may have on the use of the curved stair lift. Ensure that the owner is comfortable and confident in the lift's use.

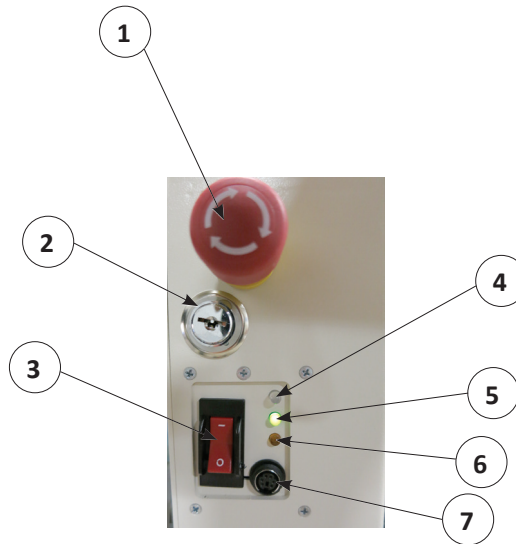
TROUBLESHOOTING

SECTION 4

TROUBLESHOOTING

CONTROLS

1. Emergency stop (optional)
2. Key lock (optional)
3. Power switch
4. Status light
Red: Major fault
Yellow: Obstruction
Green: Ready
5. Power light
6. Charging light
7. Diagnostic port



If the lift does not operate, diagnose the problem by observing the LED status light on the lift and listening to the beeps emitted. A red LED status light indicates a possible problem.

Note: The unit will beep once when turned on and the wireless remote board will beep once. Beeps should be counted after the unit is turned on and the first audible beep.

	Number of Beeps
Runaway	1
No 12-volt power on the board	2
Conflicting switches FOOTREST UP and FOOTREST DOWN	3
Conflicting switches OBSTRUCTION UP and OBSTRUCTION DOWN	4
Conflicting switches FOOTREST UP and OBSTRUCTION DOWN	5
Conflicting switches FOOTREST DOWN and OBSTRUCTION UP	6
Conflicting switches STOP UP and STOP DOWN switches both detected	7
Conflicting switches STOP UP and STOP DOWN switches both NOT detected	8
FINAL LIMIT switch detected	9

SECTION 5 **MAINTENANCE**

To clean the rail, use a moistened cloth, if necessary. The seat can be wiped gently, using a soft cloth and a mild detergent.

For many years of enjoyable use, we recommend that the mechanical and electrical safety equipment of the lift be regularly inspected and maintained by a certified Harmar technician.

6-MONTH MAINTENANCE CHECKLIST (INDOOR & OUTDOOR UNITS)

CHASSIS & RAIL

- Clean rail with mild soap and water
- Lubricate rail teeth with white lithium grease lightly
- Clean out sprocket cover
- Touch up any scratches with paint
- Check upper rollers (*wear, cracks, rolling*)
- Check lower rollers (*wear, cracks, rolling*)
- Lubricate seat swivel, seat hinge and footrest
- Check sealant on all legs (*outdoor units only*)
- Apply corrosion block on chassis and exposed metal (*outdoor units only*)

SAFETY SWITCHES ENSURE SWITCHES ARE WORKING BY ACTIVATING EACH CONDITION

- Seat (*locking and seat cut-off switch*)
- Footrest Up (*lift stops in up direction*)
- Footrest Down (*lift stops in down direction*)
- Rail Guard Up (*lift stops in up direction*)
- Rail Guard Down (*lift stops in down direction*)
- Step Guard Up (*lift stops in up direction*)
- Step Guard Down (*lift stops in down direction*)
- Optional Emergency Switch On (*lift runs up and down with Emergency Stop button in run position and does not run when in stop position*)
- Optional Emergency Switch Off
- Optional Key Switch
- Chassis Lights On (*power light "ON" when "I" is pushed on power switch*)
- Chassis Lights Off (*power light "OFF" when "O" is pushed on power switch*)
- Optional Overspeed check (*ensure it fires and disables the power*)

MAINTENANCE

CHASSIS STOP

- Up Primary
- Up Final
- Down Primary
- Down Final
- Test Remotes (*up and down buttons*)

CHARGING STATION CONTACTS

- Top (*voltage reading between 27 and 29 volt*)
- Bottom (*voltage reading between 27 and 29 volt*)
- Charger functionality & voltage

GEAR RACK SAFETY STOP

- Top (*check tightness of stop*)
- Bottom (*check tightness of stop*)

MOUNTING BOLTS

- Check all rail bolts for tightness
- Check all leg bolts for tightness

ANNUAL CHECKLIST

(INDOOR & OUTDOOR UNITS)

- Same as 6-month maintenance
- Replace batteries
- Replace batteries on remotes



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