



# HELIX

## Curved Stair Lift

Installation &  
Service Manual



This image is for illustrative purposes only.

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## SYMBOLS USED IN THIS MANUAL



**READ MANUAL** - Pay close attention to the instructions in the manual.



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



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



**HEAVY** - Be sure to have help available to avoid back injury.



**TIP** - Helpful tips that will facilitate ease of installation.



**CHECK** - Reminder to check certain portions of installation before continuing.



This manual provides instructions for proper installation of this Curved Stair Lift. Please refer to the Owner's Manual for operating instructions. Be sure to provide the Owner's Manual to the owner of the lift before it is put into service. Any alterations to the equipment without written authorization by the manufacturer may void the warranty.

Our lifts are designed to install with as little assembly 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](mailto:tech@harmar.com).

**Device Name:** Harmar Helix Curved Stair Lift

**Indications for Use:** The intended use of the Helix Stair Lift is to assist transfers of patients or mobility impaired persons up and down flights of stairs.

Lifts shall be installed so that means of egress is maintained as required by the authority having jurisdiction. 7.1.1

The structure which equipment is installed shall be capable of supporting the loads imposed. 7.1.2

The installation of electrical equipment and wiring shall conform to the requirements of NFPA70 7.6.4

**Foot Rest Clearance.** At no point in its travel shall the edge of the footrest facing the upper landing be more than 24 inches (610 mm) above the step or landing as measured vertically.

ASME A18.1-2014 "SAFETY STANDARD FOR PLATFORM LIFTS AND STAIRWAY CHAIR LIFTS"

# WHAT'S IN THE BOX

## Box Contents

Before beginning installation, please check the Curved Stair Lift contents and ensure that all components are complete and undamaged. Also check the enclosed illustration to verify specific parts since each lift is customized to the application. Report missing parts or shipping damage to your dealer or the shipping company.

## Contents

- Legs
- Rails
- Complete Seat Assembly and chassis
- Power Supply
- Wires
- Bag of Screws
- Pipe and Support Caps
- Charge Station



# REQUIRED TOOLS

The tools required for installation of the lift will be referenced throughout the manual. Each page will have a tool icon area at the top to help determine which tools will be needed during that part of the installation.



Drill



Assorted Drill Bits



Allen Wrenches



Emery/Sandpaper



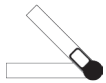
Towels (for cleaning)



Lightweight grease (white lithium)



Tape Measure



Angle Meter



Mirror for checking charger



Wire Stripper/Crimper



Fish Tape



Drill Extension Bit



Shims



**Recommended:** Volt OHM Meter



**Optional:** Pull Strap/Ratcheting Strap

Mounting Screws could be needed, based on flooring (not shown)

# INSTALLATION

**Harmar's Curved Stair Lift is easy to install.** The standard installation will normally take two installers approximately three hours. 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.
2. **Carry chair/chassis to the location of the installation.** Usually top of stairs. It's best to be a flat section of rail.

**IMPORTANT** - Do NOT lay chair on its back.

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

3. **Position Stair Supports** Place on the stair based on the installation drawing but do not bolt anything down at this point. *[Figure 5-1]*
4. **Assemble the Rail** Place the rail in the correct position beginning with the first section downstairs. Unwrap the rail, checking the label for order of placement on stairs. *[Figures 5-2, 5-3]*

Follow the drawing included with the rail system.

Run a wire through the lower rail. There is a hole at the charger location for it to come out. *[Figure 5-4]*

5. 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. *[Figure 5-5]*



Figure 5-1



Figure 5-2



Figure 5-3

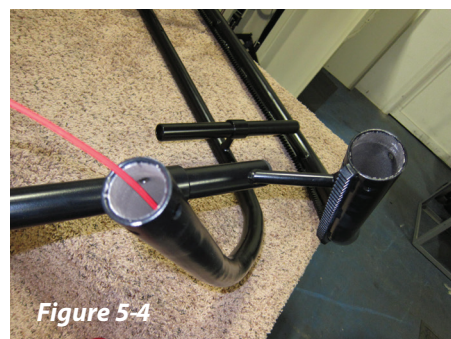


Figure 5-4

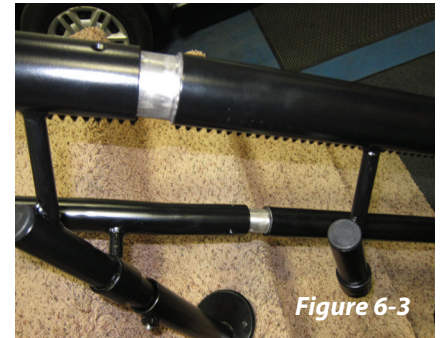
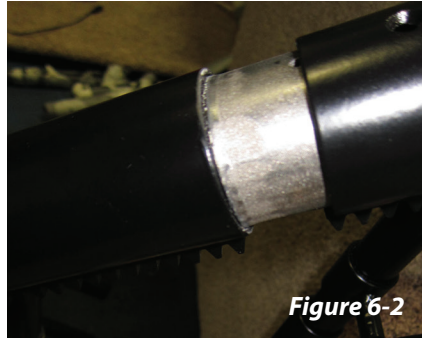


Figure 5-5

# INSTALLATION

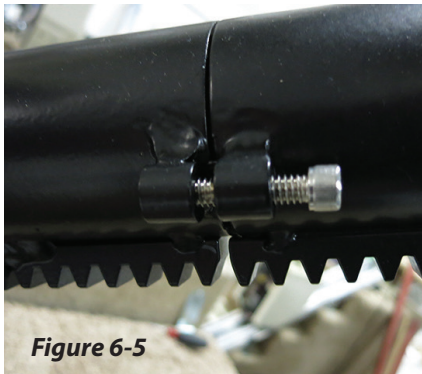
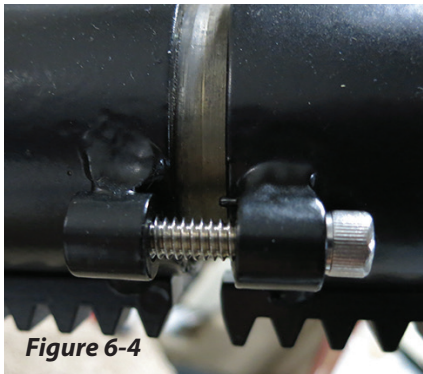
- Slide the pipes together one at a time starting at the bottom in the order indicated on the label. Install on the stair supports. [Figures 6-1, 6-2, 6-3]

A ratcheting strap can be used to help pull the rails together.



- Connect parts at the joint with the supplied bolts. Carefully tighten as you assemble the rail [Figures 6-4, 6-5]

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



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

**NOTE:** Watch for tack strips. Avoid mounting on them. If you can't avoid them, shims will be required.

- Rail Leveling/Alignment:** 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.



**CHECK**

*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*

# INSTALLATION

## 9. Install Battery

Open front of chassis, by removing screws on shroud. [Figure 7-1].  
Install batteries. Connect wire. [Figures 7-2, 7-2].

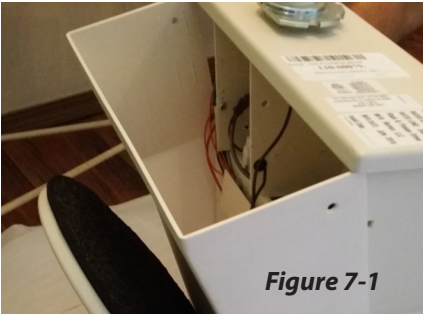


Figure 7-1



Figure 7-2

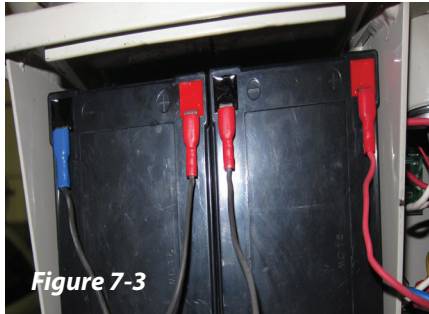


Figure 7-3

Remove rear cover to expose loading switch. [Figure 7-4]



Figure 7-4



Use Caution when handling the battery.

**CAUTION**

Route wire of seat thru seat mounting hole. Install seat [Figures 7-5, 7-6].

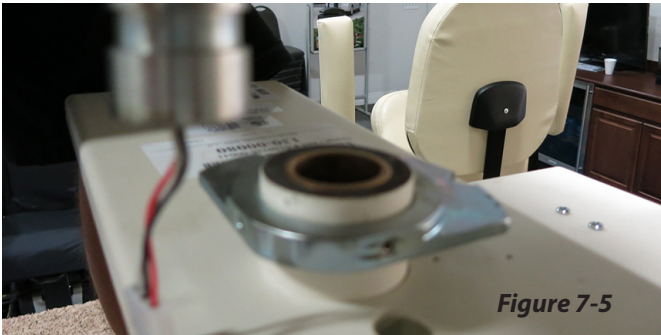


Figure 7-5

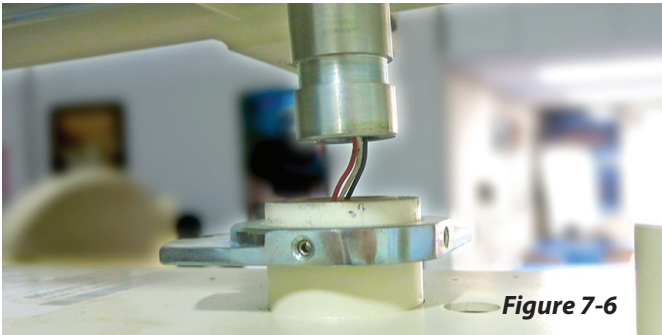


Figure 7-6

Observe magnet switch for seat safety. [Figures 7-7, 7-8]



Figure 7-7

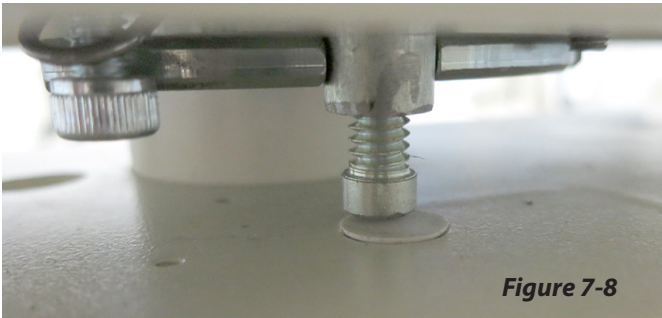


Figure 7-8

# INSTALLATION

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

Install set screw, that holds seat from coming up, in collar where the wires for the hand control comes through. [Figures 8-1, 8-2]. Connect seat rocker switch wires. [Figures 8-3, 8-4]



Figure 8-1

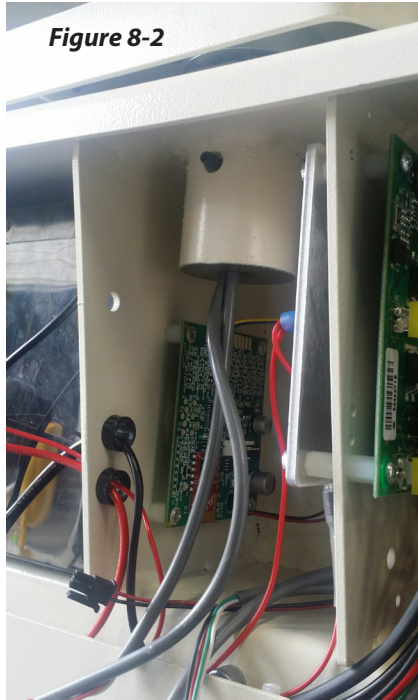


Figure 8-2

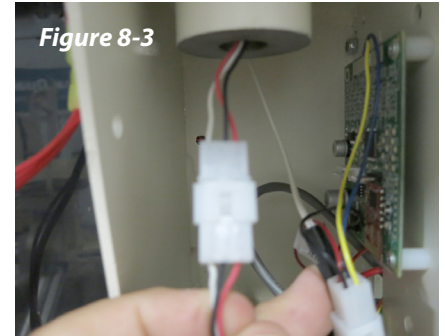


Figure 8-3

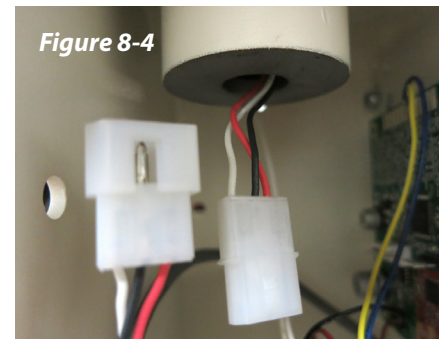


Figure 8-4

## 10. Chassis Load

Roller position-Ensure charging point [Figure 8-5] is on the top.

Using the loading bar, [Figure 8-6] slide on until drive hits the gear rack.

Activate the rocker [Figure 8-7] to drive onto rack, watching the wheels to ensure they go on smoothly. Ensure the unit goes down the gear rack about 6".

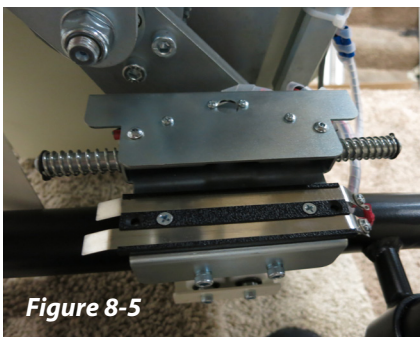


Figure 8-5



Figure 8-6



Figure 8-7



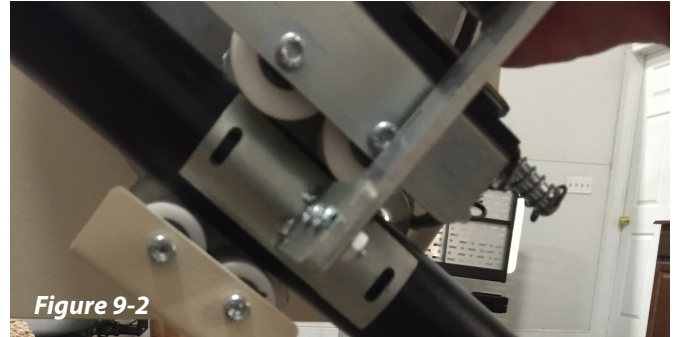
# INSTALLATION

## 11. Replace Shroud and install load switch cover on back.

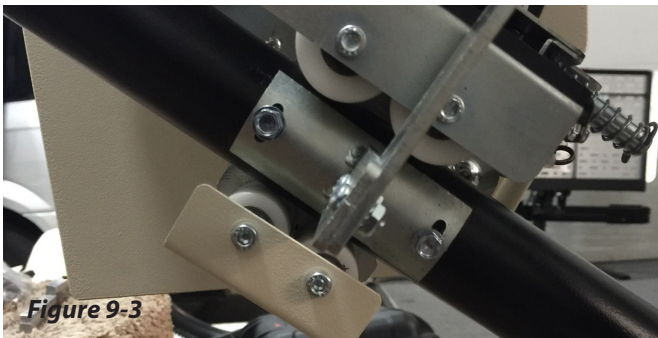
**Test run chassis** to ensure all the clearances are ok. Move rail as needed to make the best fit. If installing mid-charging location locate it now.

### Installing Mid-Charge Locations

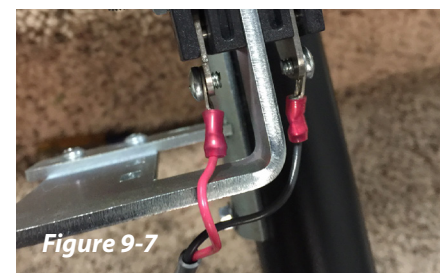
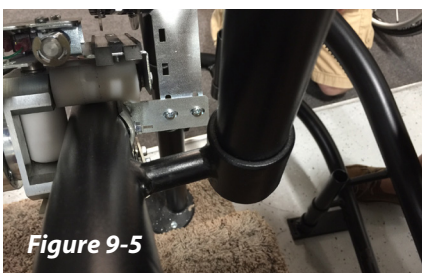
1) Locate Chassis to where the midstation park should be on the rail. [Figures 9-1, 9-2]



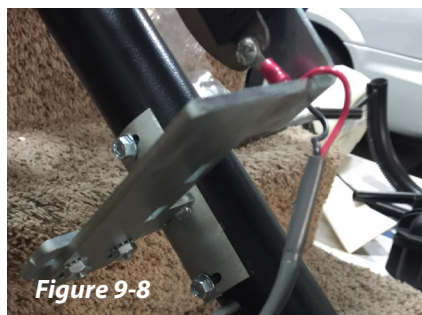
2) Mount to the rail using self tapping screws provided [Figures 9-3, 9-4]



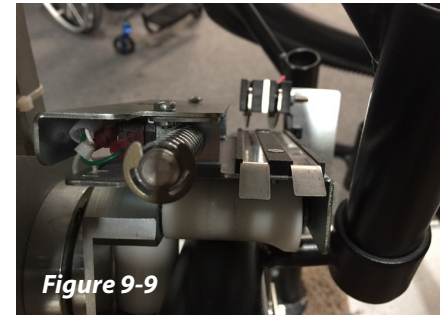
3) Align charge feet to chassis, ensure the charge feet are compressing about 1/4". [Figures 9-5, 9-6, 9-7]



4) Drill the hole in the rack to pull wire out. [Figure 9-8]



5) Connect wire to charge station, ensure the red wire matches the location of the red wire on the chassis. [Figure 9-9]



6) Install Cover

The unit will stop on this when driven with the wireless remote. It will stop for 5 to 6 seconds then continue.

# INSTALLATION

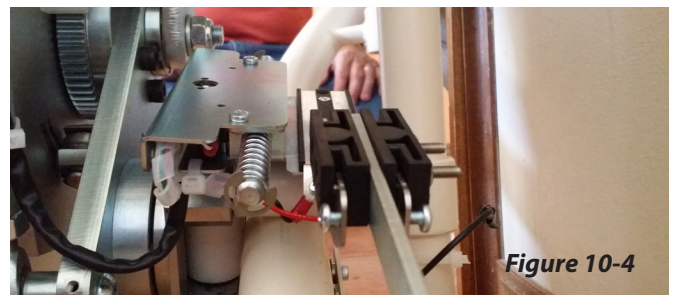
12. **Supports:** Re-check angles, then, using the appropriate hardware, attach the supports to the stairs, starting at a corner. Firmly set the supports to the rail with set screw. Repeat the process at the other corners; re-check angles. Complete all other legs. [Figures 10-1, 10-2]



**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 set screw.

## 13. Charging Station

Install charging station on rail. [Figure 10-3] Top and bottom. Align with chassis [Figure 10-4]

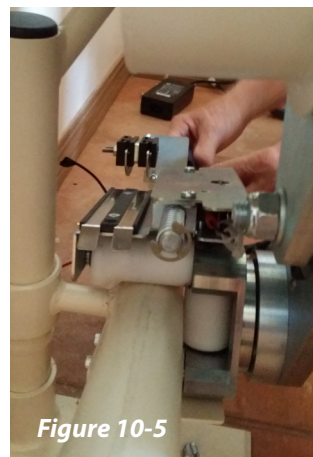


### Alignment

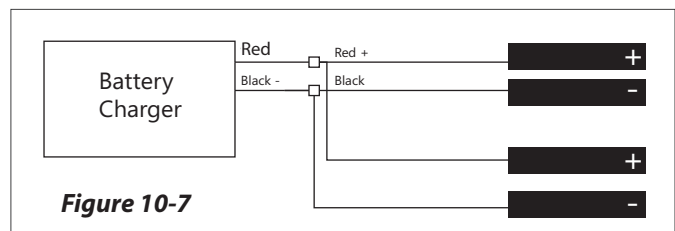
Align charging stations. Pay attention to the charging contacts where the drive unit meets the station. They should apply pressure to the charging strips on the chassis. Adjust as needed.

The spring loaded contacts should compress about 1/4 of an inch. [Figures 10-5, 10-6]

Route red and black wires through hole provided in rail by charging station. Use provided grommet to protect wire.



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. [Figure 10-7]



**NOTE:** The power supply charger needs to be placed out of the weather elements to be protected.

# INSTALLATION

## 14. Then attach to the charge station.

[Figures 11-1, 11-2, 11-3]

Install cover on charging station.[Figure 11-4].



Figure 11-1

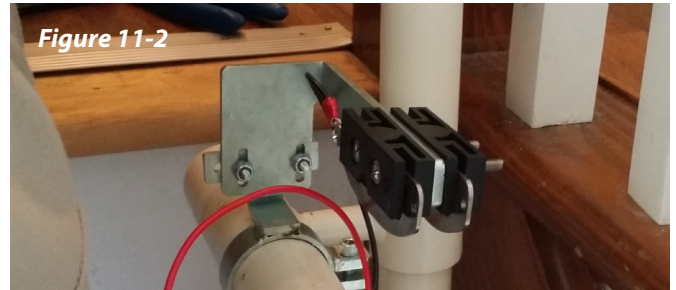


Figure 11-2



Figure 11-3

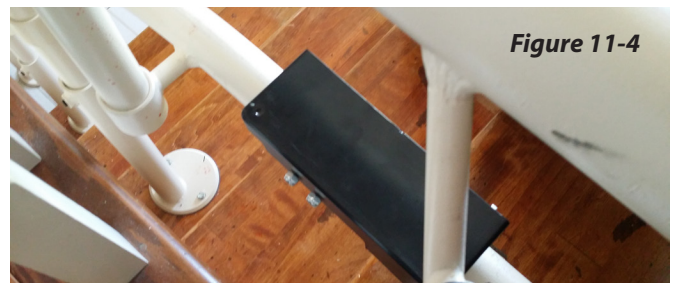


Figure 11-4

## 15. Final Limit

Install hard final limit on gear rack at both ends of rail. [Figures 11-5, 11-6]

Rail end caps and support caps need to be installed



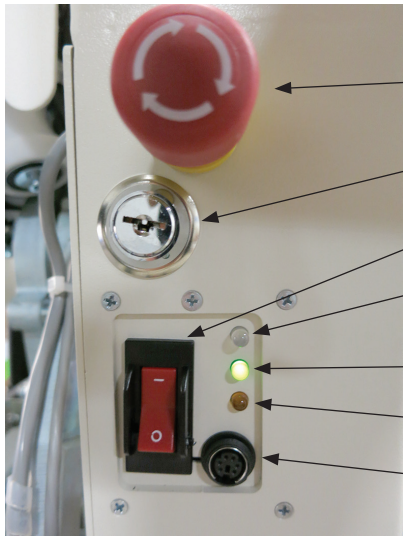
Figure 11-5



Figure 11-6

# INSTALLATION

## 16. Controls



### Controls

- Emergency Safety
- Key Lock (Optional)
- Power Switch
- Status Light  
(Red = Major Fault, Yellow = Obstruction, Green = Ready)
- Power On Light
- Charging Light
- Test/Diagnostic Port  
This port enables you to connect a PC to the unit to check several functions on the unit.

## 17. Tones with red status light on

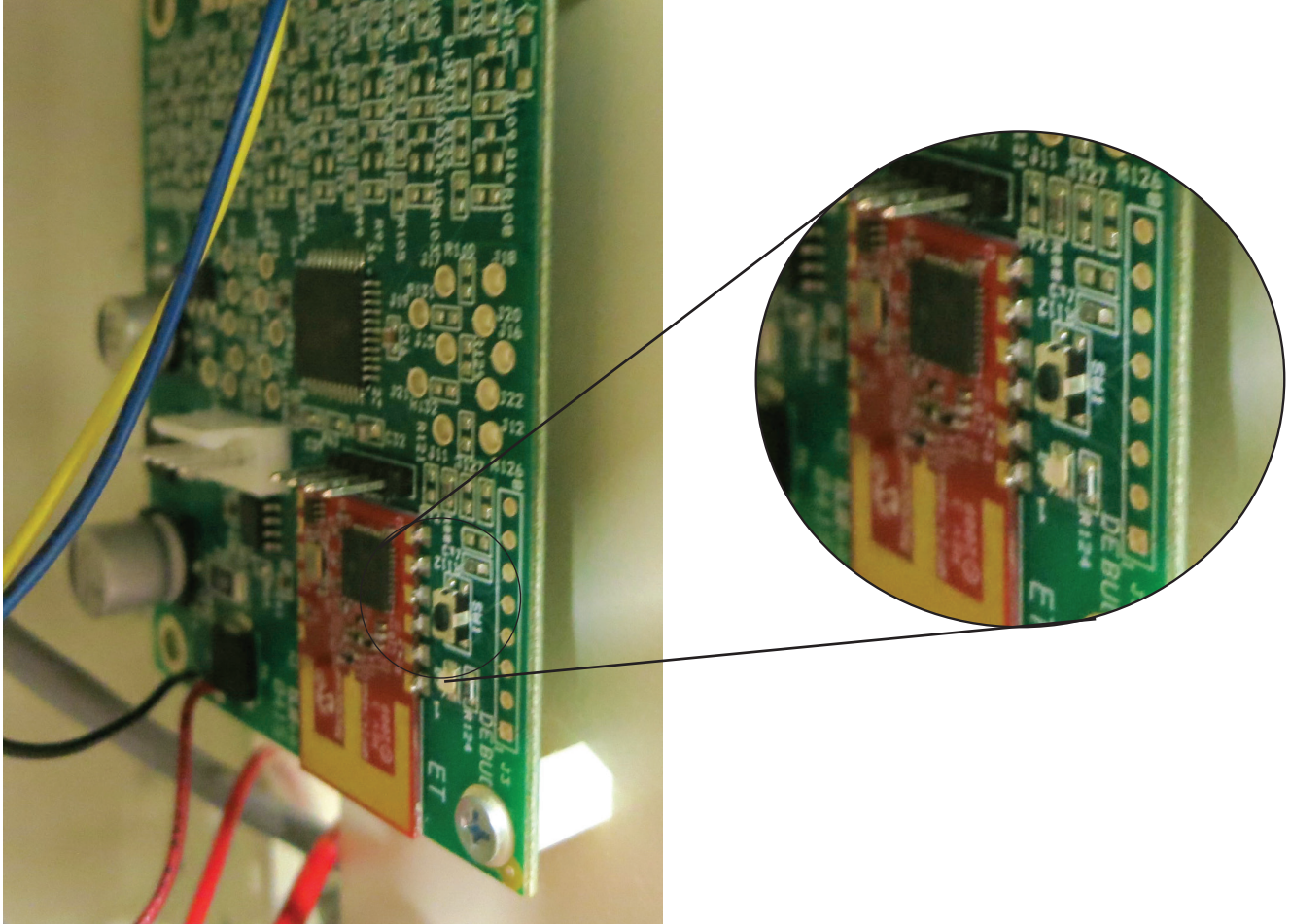
Tones	Beeps
Runaway	1
12V Supply	2
Conflicting Switches Footrest	3
UP & Footrest DOWN	
Conflicting Switches Obstruction	4
UP & Obstruction Down	5
Conflicting Switches Footrest	6
UP & Obstruction DOWN	
Conflicting Switches STOP UP & STOP	7
DOWN switches both Detected	
Conflicting Switches STOP UP & STOP	8
DOWN switches both not Detected	
Helix Only LIMIT Switch Detected	9

## Wireless Remote Reprogramming

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

If the unit needs to be reprogrammed or you replace a remote.

On the wireless control board press and hold the little button on the board then hold the up button on the remote for 3 to 4 seconds and it should learn the remote. Hit other remote at same time.

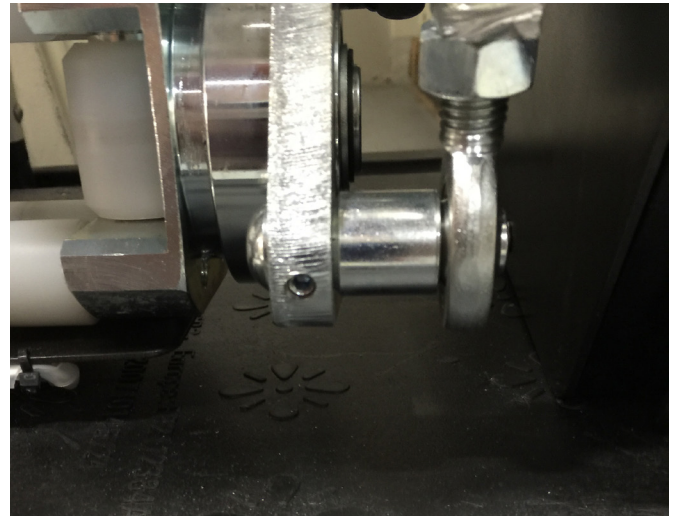
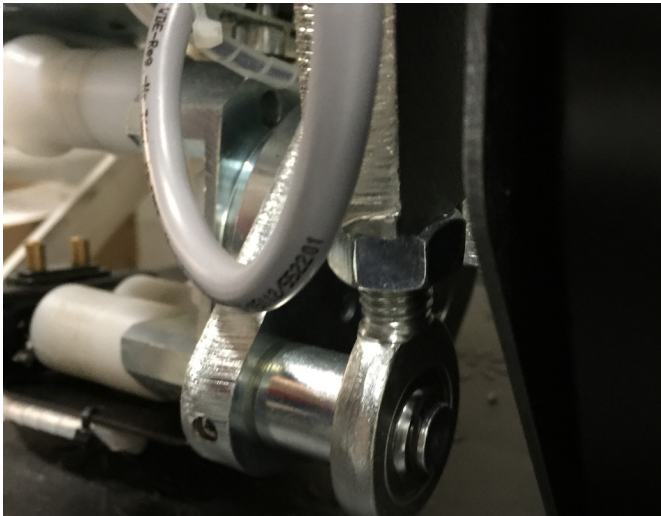


# FINAL CHECKS

## Final Checks

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

- Check all stops (top, middle & bottom)
- Foot rest (Both direction of travel)
- Rail obstruction-both directions
- Rail (all hardware and mounting hardware are tight)
- Final limit (both ends of travel)
- Seat swivel (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)
- 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 (2.5 mm)
- Remove screw (6mm)
- Adjust joint in or out depending on which direction you want the chair to go
- Retighten all

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.

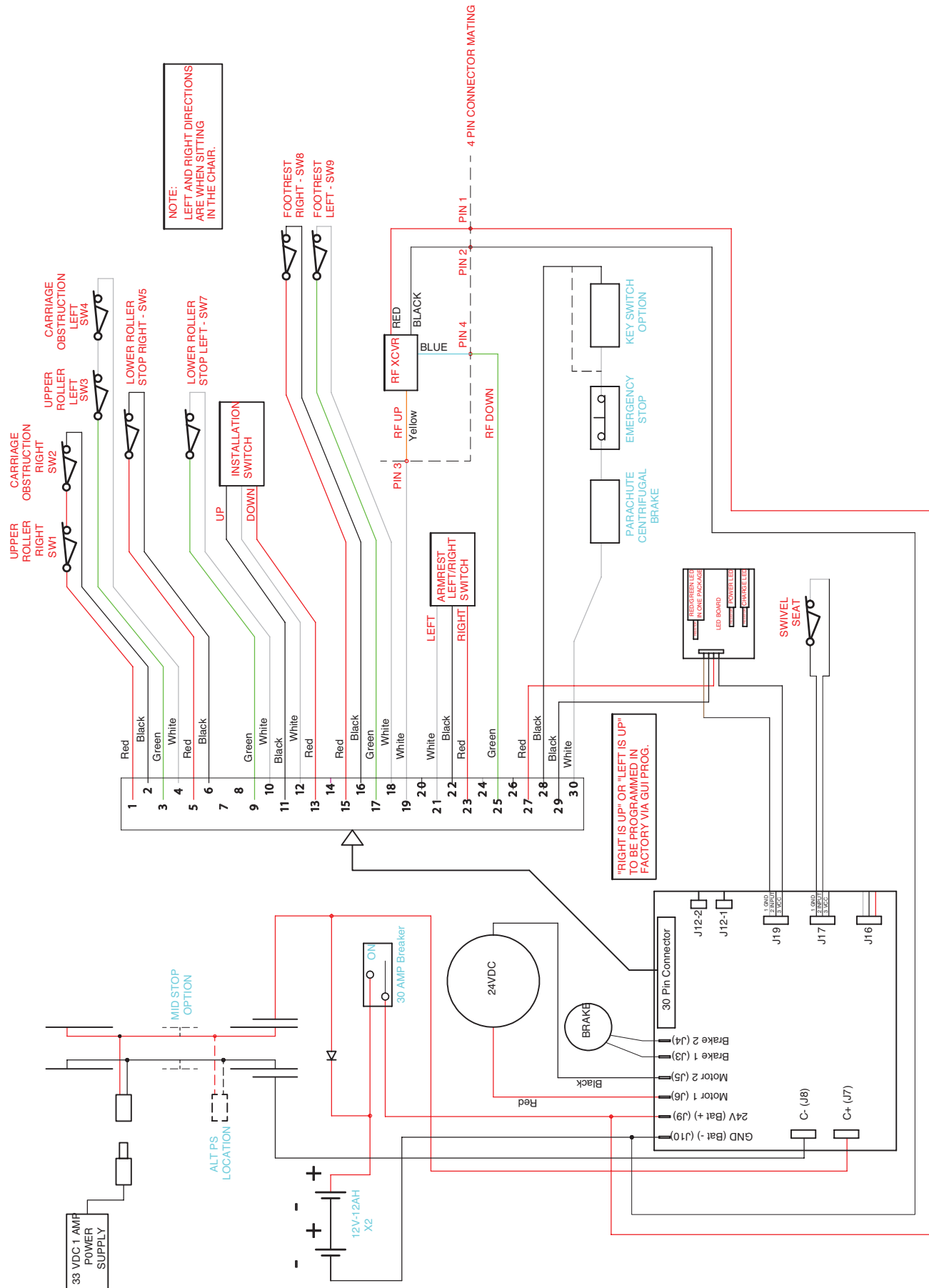
# TECHNICAL SPECIFICATIONS

## Technical Specifications

Weight capacity:	350 lbs.
Track (rail) Type:	Steel, Powder Coated
Travel:	20' Standard; 164' Maximum
Average Number of Return Trips per Charge (varies with load, length):	10
Symmetrical Lift (Ships and installs non-handed):	No
Control in Armrest: (left or right hand operation)	Yes
Lift Mounts to Steps or Wall:	Steps
Minimum Folded Width:	14.37" (365 mm)
Minimum Footrest Height:	5 1/2" (140 mm)
Clear Distance Between Armrests:	20.47" - 23.6" (520 - 600 mm)
Floor to Seat Height:	24" (610 mm)
Minimum Wall to Stair Side of Rail:	4.7" (120 mm)
Seat Depth:	14.96" (380 mm)
Backrest Height From Top of Seat:	20.47" (520 mm)
Electrical Requirements:	120VAC 15A (240 VAC optional)
Operation Power:	24V DC Battery
Speed:	20 fpm
* Incline Range: (max. 450 by code):	60°
Drive System:	Rack & Pinion Gear
Safety Features:	Direction Limit Switches Final Limit Switch Footrest Obstruction Switch Seat Swivel/Cut-off Switch Constant Pressure Controls Seat Belt Safety Edges Overspeed Governor Emergency Stop
Safety Design Standards:	Complies with ASME A18.1, CAN/CSA B44.1, ASME A17.5
Warranty:	2-Year on Components

\*Note: Average incline must not exceed 45° per ASME A18.1.

# WIRING DIAGRAM





## 6 Month Maintenance Checklist (3 Months for Outdoor):

### CHASSIS & RAIL

- Clean rail with mild soap & water
- Lubricate rail with white lithium grease , lightly
- Clean out sprocket cover
- Touch up any scratches with paint
- Check upper rollers
- Check lower roller

### SAFETY SWITCHES – ensure switches are working by activating each condition

- Seat
- Footrest Up
- Footrest Down
- Rail Guard Up
- Rail Guard Down
- Step Guard Up
- Step Guard Down
- Emergency Switch On
- Emergency Switch Off
- Chassis Lights On
- Chassis Lights Off

# MAINTENANCE

## CHASSIS STOP

- Up Primary
- Up Final
- Down Primary
- Down Final

## CHARGING STATION CONTACTS

- Top
- Bottom
- Charger functionality & voltage

## GEAR RACK SAFETY STOP

- Top
- Bottom

## MOUNTING BOLTS

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

## ANNUAL CHECKLIST

- Same as above
- Replace Batteries





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# Helix Curved Stair Lifts

## Installation Manual