Congratulations on your new lift purchase. The AL 600 Series lifts are one of the easiest and most trouble free ways to transport your scooter or power chair. This manual is written to be used both as an installation guide as well as an operation guide for the end user. Please read the manual thoroughly BEFORE attempting any installation, adjustment or use of the lift.

Both installers and operators should familiarize themselves with this entire manual.

If you have any questions or comments concerning the installation or operation of your scooter lift, please contact your local distributor for additional technical information. Only authorized dealers should install this lift.

Caution: Some scooters and power chairs may be unsuitable for transport in or on a motor vehicle. Please contact the manufacturer of your mobility device to determine its transportability.
Unpacking the Lift

Detailed below is the inventory of parts included with your lift. If any parts are missing or if any shipping damage is noted, immediately contact the distributor from which you purchased your lift. DO NOT attempt to install or use the lift with any missing or damaged parts.

**Box Contents:**
1 Lift Assembly  
1 Platform  
1 Leg Assembly  
1 Hardware Pack

**600 Hardware Pack:**
- Owners Manual 1  
- Vehicle Wiring Harness 1  
- Hand Control 1  
- Hex Bolts DIA. 5/16” x 4” 2  
- Hex Nuts DIA. 5/16” 2  
- Washers 5/16” 2  
- Lock Washers 5/16” 2  
- Installation Washers 2  
- Hex Bolts DIA. 1/2” x 2.5” 2  
- Washers 1/2” 4  
- Lock Nuts DIA. 1/2” 2  
- Butt Connectors 10-12 gauge 2  
- Rubber Grommet 1

610  
Platform with Spreader Bar 1

650  
Anchor Plate 1  
Anchor U-Bolt Pack 1  
Platform with Q-Straints 1

**Applications:** The AL610 lift is intended for the transport of three or four wheel scooters. The AL650 is intended for the transport of power chairs. The maximum weight that can be safely lifted by either of these lifts is 350 LBS. This lift is intended for installation in the enclosed rear cargo area of most vans, mini-vans, and S.U.V.s. This lift is not intended for use with vehicles with taigates. This lift is not intended for application where it would be left outdoors.
Installing the Vehicle Wiring Harness

*Important Note: IMPROPER WIRING IS THE #1 CAUSE OF PROBLEMS IN THE OPERATION OF A VEHICLE LIFT. FOLLOW THE WIRING INSTRUCTIONS CAREFULLY*

Located in the hardware package is the vehicle wiring harness. The harness is manufactured to, and complies with the SAE J1128 requirements. The wire harness is approximately 23 ft. long and will accommodate most vehicles.

1. Unwind the harness and lay it flat. One end of the harness has a black plug. This is the lift end of the harness and goes to the rear of the vehicle.

![Image of harness layout](image1)

2. Begin routing the wiring harness from the vehicle’s battery. Attach the black wire to the negative terminal on the battery. **Do not attach the red wire yet, however be sure the length of the wire will reach the battery terminal without obstruction.**

![Image of battery connection](image2)

3. Run the wiring harness under or when possible through the vehicle, back to the lift. If you need to pass the wiring through a fire wall or hole in the vehicle you may cut the double wire and reassemble it with butt connectors. Always locate the wiring harness where it can not be snagged by road debris and away from the vehicles gas tank.

![Image showing wiring under vehicle](image3)

4. If the harness is too long for the vehicle, coil the excess wire and secure it to the vehicle frame with the supplied tie wraps.

![Image of secured harness](image4)

5. Attach the red wire to the positive terminal on the battery.

**Important Reminder: Never attempt to attach the wire harness to a secondary power source. The lift requires direct connection to the battery.**

**Caution:** When the installation requires the wiring harness be run on the underside of a vehicle, route the harness away from the exhaust system, brake lines, fuel lines, gas tank, pinch points, and sharp edges. Locate the wiring harness where it can not be snagged by road debris.

**Manufacturer’s Recommendation:** Schedule a routine maintenance visit with the end user. Harmar recommends that the lift be greased in the applicable areas, and the wire harness connections be checked for corrosion, and/or decay, as such conditions are normal due to environmental changes.
AL610 Exploded View

1. Gear Motor ALA60010
2. Motor Mount ALA60850
3. Inner Tube ALA600
4. Short Motor Coupler ALA60551
5. Ball Screw Assembly ALA60008
6. Middle Tube ALA602
7. 3rd Stage ALA603
8. Switch Cover ALA67002
9. Axle Assembly (R,L) ALA624, ALA626
10. Wheel ALA60061
11. Bottom Bracket ALA601
12. Spreader Bar Assembly AL116
13. Platform ALA612
14. Large Clevis Pin ALA65590
15. Thrust Bushing ALA60620
16. Sleeve Bushing ALA60630
17. Middle Stage ALA620
18. Flange Bushing ALA60610
19. Leg Assembly ALA606
20. J-Bolt ALA60133
21. J-Bolt Bracket ALA67001
22. 1/4" Bolt & Nut N/A
23. 1/4" Thick Bracket ALA67010
24. 1/8" Thick Bracket ALA67011
25. Hold Down Rod ALA67012
26. Foot ALA68020
27. Wiring Carrier and Harness ALA68010
28. Bumper ALA687100
29. Base Assembly ALA610
30. Acme Screw Assembly ALA60003
31. Short Motor Coupler ALA60551
32. Hold Down Foot ALA18020
33. Hold Down Arm ALA130
AL650 Exploded View

1. Gear Motor ALA60010
2. Motor Mount ALA60850
3. Inner Tube ALA600
4. Short Motor Coupler ALA60551
5. Ball Screw Assembly ALA60008
6. Middle Tube ALA602
7. 3rd Stage ALA603
8. Switch Cover ALA67002
9. Axle Assembly (R,L) ALA624, ALA626
10. Wheel ALA60061
11. Bottom Bracket ALA601
12. Restraint (R,L) ALA50010, ALA50011
13. Platform ALA612
14. Large Clevis Pin ALA65590
15. Thrust Bushing ALA60620
16. Sleeve Bushing ALA60630
17. Middle Stage ALA620
18. Flange Bushing ALA60610
19. Leg Assembly ALA606
20. J-Bolt ALA60133
21. J-Bolt Bracket ALA67001
22. 1/4" Bolt & Nut N/A
23. 1/4" Thick Bracket ALA67010
24. 1/8" Thick Bracket ALA67011
25. Hold Down Rod ALA67012
26. Foot ALA68020
27. Wiring Carrier and Harness ALA68010
28. Bumper ALA687100
29. Base Assembly ALA610
30. Acme Screw Assembly ALA60003
31. Short Motor Coupler ALA60551
Prepping the vehicle’s cargo area: Most mini vans, vans and some S.U.V.s have a removable third row seat. For installations in these vehicles, remove this seat. If your vehicle does not have a removable third row seat, see the next page for instructions.

Installing the Leg Assembly: Place the leg assembly into the vehicle. Orientate the leg assembly as shown in the drawing to the right. Hook both of the J-Bolts into the third row seat attachment points. Verify that the leg assembly is centered from side to side within the vehicle. Tighten the nuts on the J-bolts until the assembly is firmly attached to the vehicle.

Place the lift into the vehicle: Pick up the lift and place it into the vehicle’s cargo area. This operation will require two people to perform. Take care during this operation not to scratch the vehicle’s interior. Position the lift such that it will be one inch inside of the rear door. Verify this by closing the rear door and inspecting the fit from inside of the vehicle.

If your vehicle has a lip at the rear door you will need to use the adjustable feet to raise the entire lift so that all of its moving parts will clear the door lip.

Use a wrench to extend the adjustable feet until the lift’s middle stage will clear the door lip and door latch by 1-3/4". The lift’s wiring is housed in a plastic carrier below the middle stage. It is important that the lift be positioned high enough so that this wiring will not hit the door lip or door latch. After the lift is installed and running, you may lower the lift slightly to gain additional head room.

Caution: When adjusting the lift’s height, observe the location of the plastic wiring carrier, be sure the wiring carrier or any other part of the lift can not hit the door lip or door latch. The tab on the end of the middle stage serves as a protector for the plastic wiring carrier. Do not remove this part from the lift.

Leveling the lift: The floor in some vehicles is not level. Park the vehicle on level ground. Use a carpenter’s level to verify the lift is level. If it is not, adjust the four feet until the lift is level.

Attaching the lift into the vehicle: The leg assembly has two sets of large holes in its upper surface. When installing an AL610 select the holes that will offset the lift to the driver’s side of the vehicle. When installing an AL650 select the holes that will offset the lift to the passenger's side of the vehicle. Insert both hold down rods into the holes in the leg assembly. If needed you may slide the hold down brackets along the lift’s body so that the hold down rods line up with the holes in the top of the leg assembly. Crossbolt the hold down rods in place with the supplied hardware. Tighten the 5/8” nuts on the hold down rods, until the lift is attached securely to the vehicle.

Caution: Do not remove the hold down brackets and reattach them on the opposite side of the vertical block.
Installing in Vehicles Without a Removable Third Row Seat

Installing the Leg Assembly: Place the leg assembly into the vehicle. Orientate the leg assembly as shown in the drawing to the right. Pick up the lift and place it into the vehicle’s cargo area. This operation will require two people to perform. Take care during this operation not to scratch the vehicle’s interior. Position the lift such that it will be one inch inside of the rear door. Verify this by closing the rear door and inspecting the fit from inside of the vehicle. Position the leg assembly so that it is located in line with the hold down rods on either side of the lift. (See the picture at the bottom of this page.) If needed you may slide the hold down brackets along the lift’s body.

Caution: Do not remove the hold down brackets and reattach them on the opposite side of the vertical block.

Remove the J-bolts from the leg assembly and replace them with the hardware shown in the drawing to the right. Use an 11/32” drill bit to drill holes though the vehicle floor for attaching the 5/16” bolts.

Caution! Inspect the underside of the vehicle for obstacles before drilling any holes. Avoid the vehicle’s wiring, fuel lines, fuel tanks, spare tires, seat cushions, etc.

From beneath the vehicle attach the installation washers, 5/16” lock washers and 5/16” nuts. Verify that the leg assembly is centered from side to side within the vehicle. Tighten the nuts on the 5/16” bolts until the assembly is firmly attached to the vehicle.

If the vehicle has a lip at the rear door you will need to use the adjustable feet to raise the entire lift so that all of its moving parts will clear the door lip.

Use a wrench to extend the adjustable feet until the lift’s middle stage will clear the door lip and door latch by 1-3/4”. The lift’s wiring is housed in a plastic carrier below the middle stage. It is important that the lift be positioned high enough so that this wiring will not hit the door lip or door latch. After the lift is installed and running you may lower the lift slightly to gain additional head room.

Caution: When adjusting the lift’s height, observe the location of the plastic wiring carrier, be sure the wiring carrier or any other part of the lift can not hit the door lip or door latch. The tab on the end of the middle stage serves as a protector for the plastic wiring carrier. Do not remove this part from the lift.

Leveling the Lift: The floor of some vehicles are not level. Park the vehicle on level ground. Use a carpenter’s level to verify the lift is level. If it is not adjust the four feet until the lift is level.

Attaching the Lift into the Vehicle: The leg assembly has two sets of large holes in its upper surface. When installing an AL610 select the holes that will offset the lift to the driver’s side of the vehicle. When installing an AL650 select the holes that will offset the lift to the passenger’s side vehicle. Insert both hold down rods into the holes in the leg assembly. Crossbolt the hold down rods in place with the supplied hardware. Tighten the 5/8” nuts on the hold down rods, until the lift is attached securely to the vehicle.
Connecting the Electrical Components: 
Plug the hand control into the vehicle wiring harness. Then plug the other end into the electrical harness located on the driver’s side of the lift.

Extending the Lift: Push the down button on the hand control to extend the lift in the horizontal direction.

CAUTION: Watch the lift as it extends. Make sure the moving components of the lift do not rub against the vehicle’s interior, door lip, or door latch. You may need to stop and adjust the lift’s height, by repeating the steps on the installation page.

When the lift is fully extended, it will start to run down in the vertical direction. At this point stop the lift and you are ready to install the platform.

Installing the Platform: Bolt the platform to the lift assembly using the supplied 1/2” diameter hex bolts and lock nuts.
Power Chair Preparation (AL650)

This section describes how to attach the supplied mounting hardware to a power chair. If you have a scooter you should skip forward to the Scooter Preparation and Loading section.

Included with this lift are two different styles of mounting hardware.

**Anchor Plate:** The Anchor Plate is a flat steel bar with a oval shaped hole in each end. This plate will work with any chair that has a center seat post. Perform the following steps to attach the anchor plate.

1. Remove the seat from the chair and turn it upside down.
2. Loosen the screws that attach the plate to the bottom of the seat. Allow enough room to slide the Anchor Plate between the seat and the seat plate.
3. Position the anchor plate on the seat such that it is centered on the seat post with the oval shaped holes protruding to each side of the seat.
4. Retighten the screws that hold the seat plate to the bottom of the seat.
5. Replace the seat on the chair.

**Anchor U-Bolts:** The U-Bolts are intended for use with power chairs that do not have a center seat post. On this type of chair, the seat is normally attached to a tubular frame. Attach two U-Bolts, on each side of the frame as shown to the right. Locate the U-bolts as close to the center of the seat as possible. The loops should extend to the sides of the chair to allow the strap hooks from the platform to be attached by the end user.
Loading a Power Chair (AL650)

Parking the Chair on the Platform: Before loading the power chair, verify that the platform has been lowered all the way to the ground. Set your chair’s speed control at a slow speed so that you may maneuver comfortably onto the platform. You may drive onto the platform from either side. Park the chair such that it is centered on the platform.

Securing the Chair to the Platform: The AL650 platform has a restraint attached to each of its corners. Depress the red button on a restraint while at the same time pulling on that restraint’s hook. The hook and strap will extend from the restraint. Attach the hook to the either the Anchor Plate or Anchor U-Bolts that you have mounted to your chair. Repeat these steps until all four restraints are attached to the chair. Tighten the restraints by turning the knob located on the restraint’s body.

Folding Seat Backs: If your chair has a folding seat back you may wish to fold it to the down position. This will allow you more clearance when loading the chair into the vehicle. Depending on the size of your chair, you may need to remove the head rest to provide for sufficient clearance.

Raising the Chair: Before raising, verify that the chair is secured to the platform. While holding the hand control stand to the side and away from the lift. Press the up button. The lift will raise and retract into the vehicle. The lift is retracted fully when the platform is fully inside of the vehicle and the lift’s motion stops. At this point release the button. Secure the hand control by placing it on the hook and loop patch attached to the lift. Close the rear door carefully taking notice of any baskets, backpacks or additional items attached to the chair that may be hit by the door.
Scooter Preparation and Loading (AL610)

Parking the Scooter on the Platform: Before loading the scooter, verify that the platform has been lowered all the way to the ground. Set your scooter’s speed control at a slow speed so that you may maneuver comfortably onto the platform. You must drive onto the platform from the driver’s side of the vehicle. Park the scooter such that the rear wheels are cradled between the platform and the rear wheel spreader bar.

Securing the Scooter to the Platform: The AL610 lift has a automatic restraint system. While holding the hand control, stand to the side and away from the lift. Press the up button. The platform will raise and the hold down arm will deploy over the scooter’s foot rest. When the lift is fully raised and starts to retract into the vehicle, stop the lift by taking your finger off of the button. The rubber foot attached the hold down arm should press firmly against the scooter’s foot rest. If it does not you may adjust the foot’s height by screwing it up or down. After you located the foot correctly, secure it in place buy tightening the foot’s hex nut against the hold down arm.

Folding Seat Backs: If your scooter has a folding seat back you may wish to fold it to the down position. This will allow you more clearance when loading the chair into the vehicle. Depending on the size of your scooter, you may need to remove the head rest to provide sufficient clearance.

Stowing the Scooter: While holding the hand control, stand to the side and away from the lift. Press the up button again. The lift will raise and retract into the vehicle. The lift is retracted fully when the platform is inside of the vehicle and the lift’s motion stops. At this point release the button. Secure the hand control by placing it on the hook and loop patch attached to the lift. Close the rear door carefully taking notice of any baskets, backpacks or additional items attached to the scooter that may be hit by the door.
SAFETY:

- **Caution:** Do not operate this lift until your dealer has satisfactorily instructed you in the proper operation of the lift.
- Your Harmar lift has been engineered and designed for years of trouble free use. Although, with everyday use, some parts may become loose or worn. **IMPORTANT!** Check regularly for any worn, loose or damaged parts of your lift. **If anything is observed, DO NOT USE THE LIFT!** Contact your dealer or installer of the lift for repairs to be made. **Failure to act may cause severe injury!**
- Your Harmar lift should only be used for the loading and unloading of scooters and power wheelchairs for which it is designed. **DO NOT add to or modify any part of the lift system without first contacting the manufacturer of the lift.** Any modifications may void any warranties as well as effect the structural integrity of the lift.
- Always make sure the vehicle’s parking brake is firmly set before operating the lift.
- **Caution:** When using the lift, keep your hands and feet from under the scooter or power chair as it is being loaded or unloaded.

MAINTENANCE:

The Harmar lift has been designed to be as trouble free as possible for the owner. But, as with any mechanical device, regular care should be given while owning and using this device. Maintenance should be performed regularly.

- We recommend that dealers schedule a preventative maintenance inspection at least once a year on motors, lift frame, wiring harness and all moving parts of the lift.
- Check for paint chips and touch up any bare metal with a good gloss black enamel or lacquer to inhibit rust. This may be necessary more frequently when subjected to salt air or road salt.

TROUBLESHOOTING:

PROBLEM: The lift will not operate or operates slowly.

**Possible Causes:**

- **Bad Connection** - Verify the vehicle wiring harness is tightly attached to the battery and that there is no build up on the terminals.
- **Battery** - Check to see if the battery needs to be replaced or if the terminals are corroded. Clean the terminals if any corrosion is present. 12 volts should be present at the lifting motors from the vehicles battery. This can be tested with a voltage meter.

PROBLEM: Intermittent power to the lift. The lift will operate for a short period of time and quit. At a later time it will start working again.

**Possible Causes:**

- **Circuit Breaker** - Although the breaker resets itself automatically, it may be malfunctioning and need to be replaced. Check for power at the lift with a test lamp.
- **Bad Connection** - Verify the vehicle wiring harness is tightly attached to the battery and that there is no build up on the terminals.
- **Hand Control** - Test by bypassing the hand control. Do this for only a second or two. The lift, vehicle, scooter or chair may be damaged if continuous power is left supplied to the unit.

PROBLEM: Platform will not sit level on the ground.

**Possible Causes:**

- **Terrain** - Verify that the vehicle is parked on flat level ground.
- **Orientation of the lift’s base** - Adjust the lift’s four feet until the platform sits level on the ground.

PROBLEM: Lift is loose in the back of the vehicle or vibrates during use.

**Possible Causes:**

- **Hold down rods** - Verify that the hold down rods are tightened sufficiently to hold the lift in place.