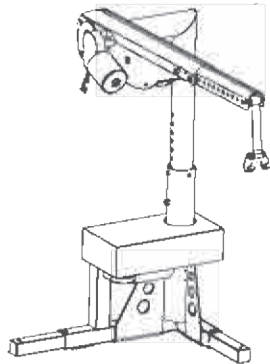
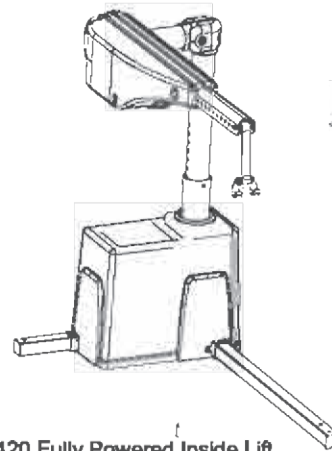




AL055 Economy Inside Lift  
Capacity: 200 lbs



AL220 Fully Powered Inside Lift  
AL210 Universal Inside Lift  
Capacity: 250 lbs



AL420 Fully Powered Inside Lift  
Capacity: 400 lbs



**Read manual thoroughly before attempting to install or operate lift.**

This manual has been provided to assist you with lift installation and operation. For further assistance please contact your authorized Harmar Mobility dealer or Harmar's Technical Services department.

Tel: 800.833.0478

Fax: 866.234.0478

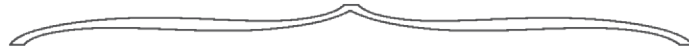
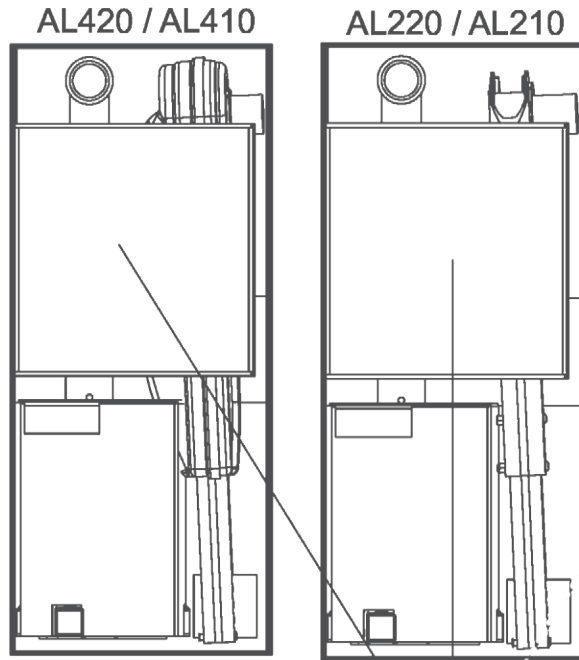
Email: [tech@harmar.com](mailto:tech@harmar.com)

Dealer:

Serial Number:

# Unpacking the Lift

Your Fully Powered or Universal Inside Lift was factory pre-assembled to require little assembly before installation.

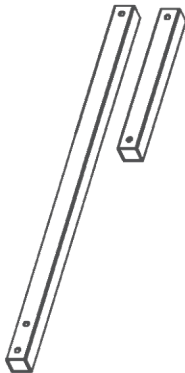


2x

LEG  
EXTENSIONS

AL420/410/430

AL220/210



HAND  
CONTROLLER

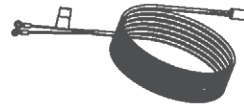


HARDWARE  
PACK

3x



INSTALLATION  
WASHERS



VEHICLE  
HARNESS

- 2 - 3/8"-16 X 3-1/2" HHCS (fully threaded)
- 1 - 3/8"-16 X 3" HHCS (fully threaded)
- 3 - 3/8"-16 NYLOCS
- 3 - 3/8"-SAE FLAT WASHERS
- 1 - 3/8" FENDER WASHER
- 10 - 15" WIRE TIES
- 1 - 6" STRIP of VELCRO ( for hand controller )
- 1 - RUBBER GROMMET ( for Vehicle Harness )
- OWNERS MANUAL WITH WARRANTY

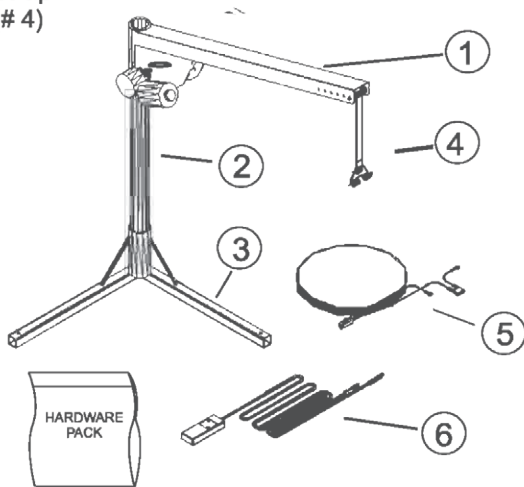
Be sure and check the contents of the box against the package check list to be sure that all parts are included with the lift that are required for proper installation. If any parts are missing or if any damage is noted, immediately contact the distributor from which you purchased your lift. DO NOT attempt to install or use the lift with any missing or damaged parts.

# Unpacking the Lift

## AL055 Economy Lift

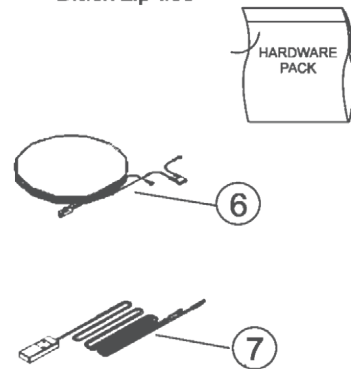
### Package Check List

- Lifting Arm (# 1)
- Post (# 2)
- Base (# 3)
- Strap (# 4)



### Hardware Package

- Contents include:
- Vehicle Wiring Harness (# 6)
  - Hand Control (# 7)
  - 3 - Installation Washers
  - Required Fasteners
  - Black zip ties

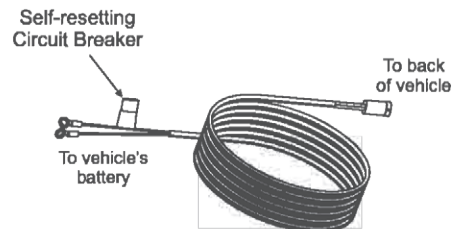


Be sure and check the contents of the box against the package check list to be sure that all parts are included with the lift that are required for proper installation. If any parts are missing or if any damage is noted, immediately contact the distributor from which you purchased your lift. DO NOT attempt to install or use the lift with any missing or damaged parts.

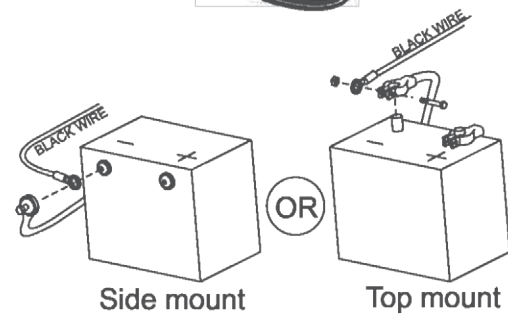
# Vehicle Wiring Harness

## Installation Instructions

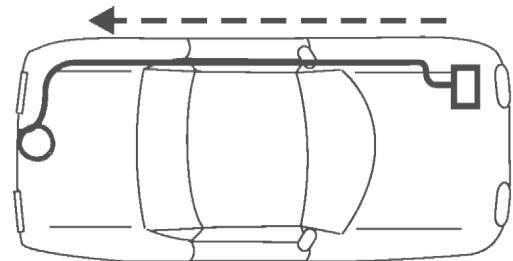
- 1 Unwind the harness and lay it flat. One end of the harness has a black plug . This end of the harness goes to the back of the vehicle.



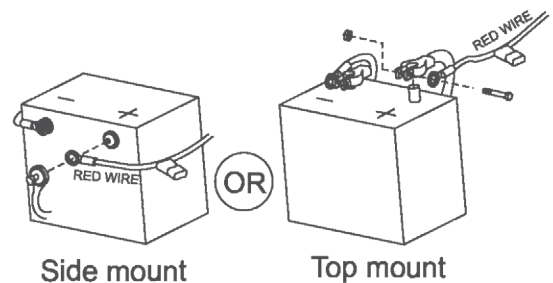
- 2 **BEGIN ROUTING THE VEHICLE HARNESS AT THE BATTERY**  
Attach the black wire to the negative terminal on the battery. **Do not attach the red wire yet.**



- 3 Run the wiring harness under, or when possible through the vehicle, back to the rear. Always locate the wiring harness where it can not be snagged by road debris and away from the vehicle's gas tank.  
If the harness is too long for the vehicle, coil the excess wire and secure it to the vehicle frame with cable ties. **Do not cut or shorten the harness.** Secure the plug where the lift will be installed.



- 4 Attach the red wire to the positive terminal on the battery.

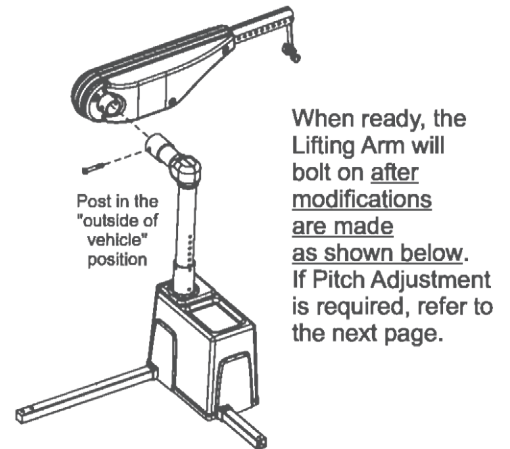
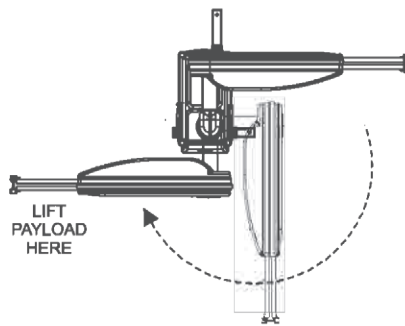
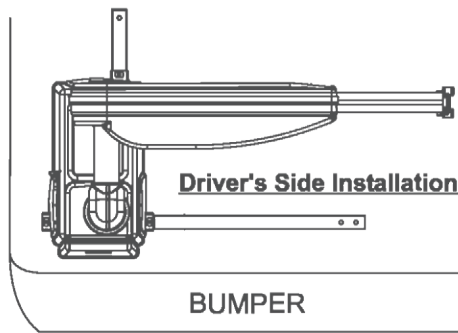
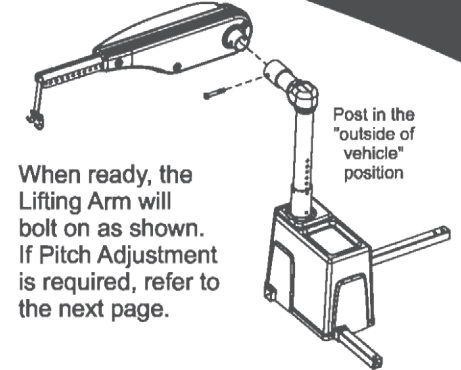
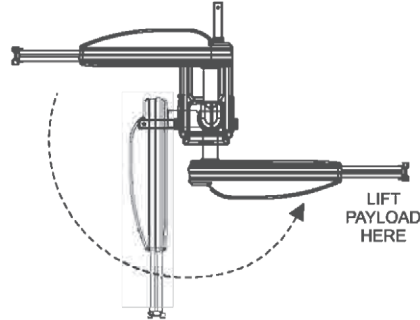
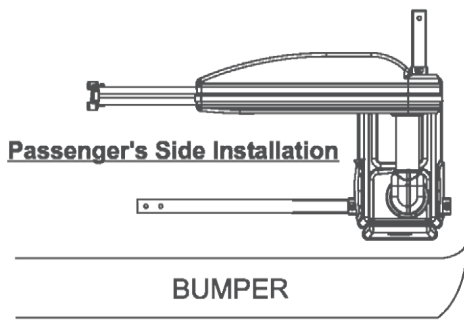


**Important Reminder:** Never attempt to attach the wire harness to a secondary power source. The harness requires direct connection to the battery.

**Caution:** 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.

# AL420 / 410 / 220 / 210 Lift Preparation

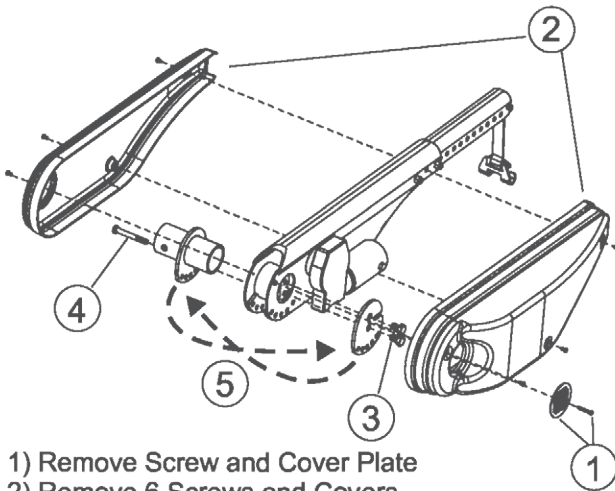
The Universal Inside Lift has been assembled from the factory for Passenger Side installation.




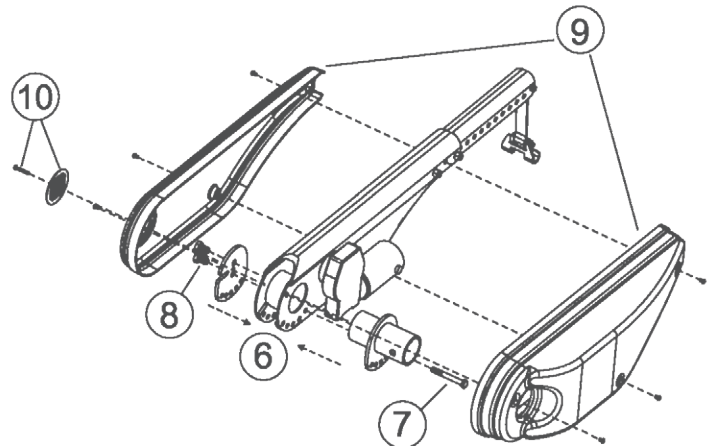
If the application calls for a Driver's Side installation, two of the Lifting Arm's component locations will need to be swapped as shown below.

## Swapping Lifting Arm Components For Driver's Side Installation

*If Arm Pitch Adjustment is required, please review next page prior to this procedure, as steps can be consolidated.*



- 1) Remove Screw and Cover Plate
- 2) Remove 6 Screws and Covers
- 3) Remove both 1/2" dia Bolts
- 4) Remove 3/8" dia Bolt
- 5) Swap positions of Arm Components as shown  
leave wire connected to motor, and feed through notch in 



- 6) Insert Arm Components as shown
- 7) Install and tighten 3/8" dia Bolt
- 8) Install and tighten both 1/2" dia Bolts
- 9) Re-Attach Covers with 6 Screws
- 10) Re-attach Cover Plate with Screw

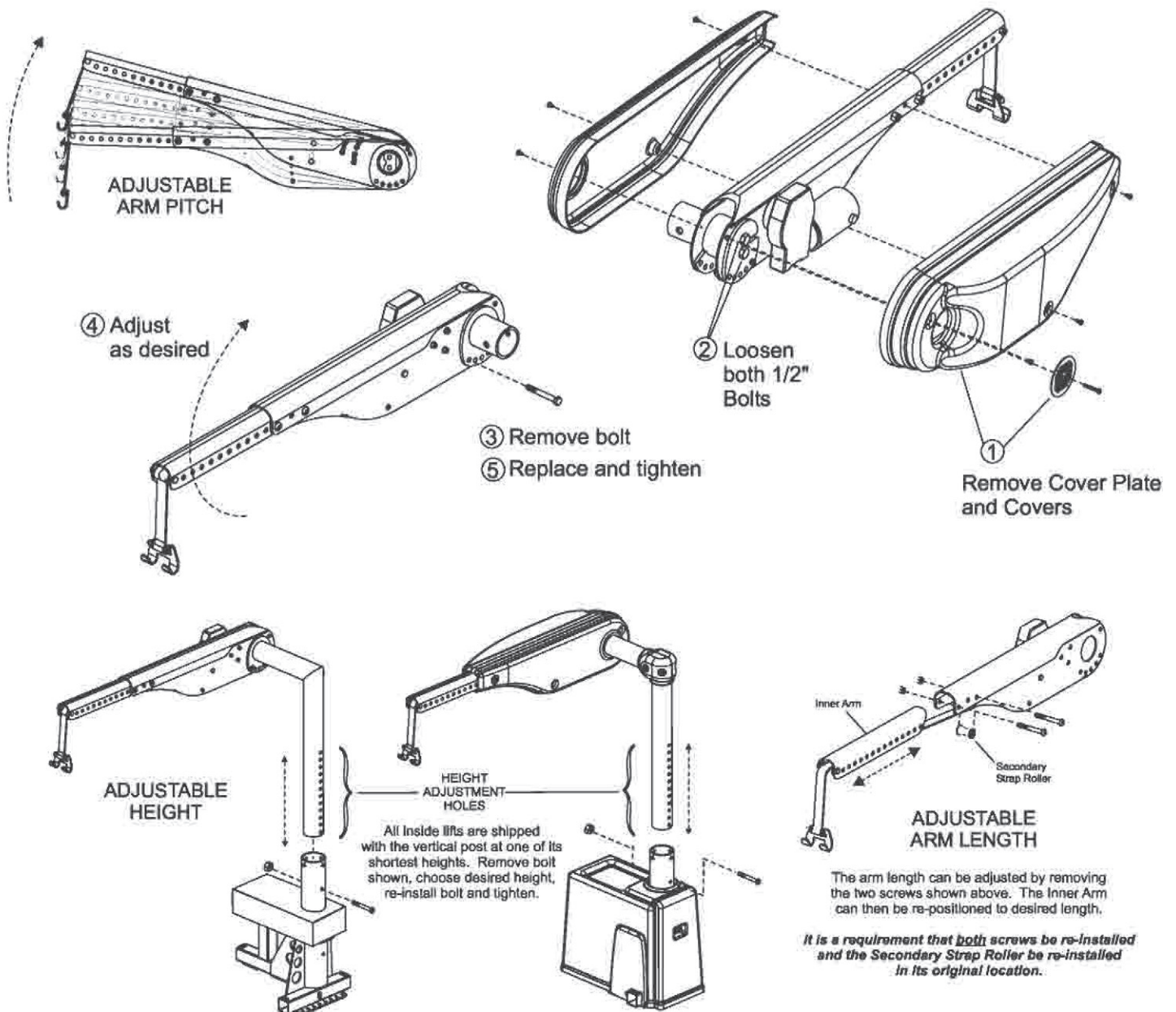
# AL420 / 410 / 220 / 210 Lift Preparation

The Inside Lift has been designed with the shortest height and smallest footprint requirements to allow maximum room for the loading and unloading of your scooter or power chair. It is important to familiarize oneself with the available adjustments in order to effectively install the lift, and maintain the maximum available cargo area.

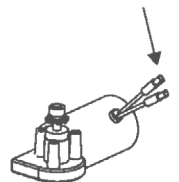
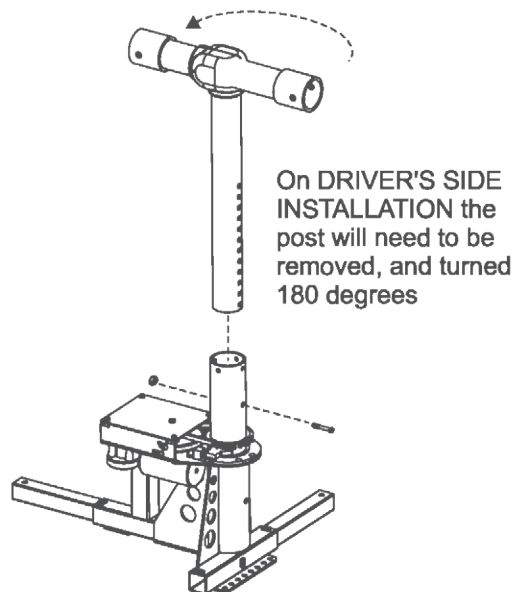
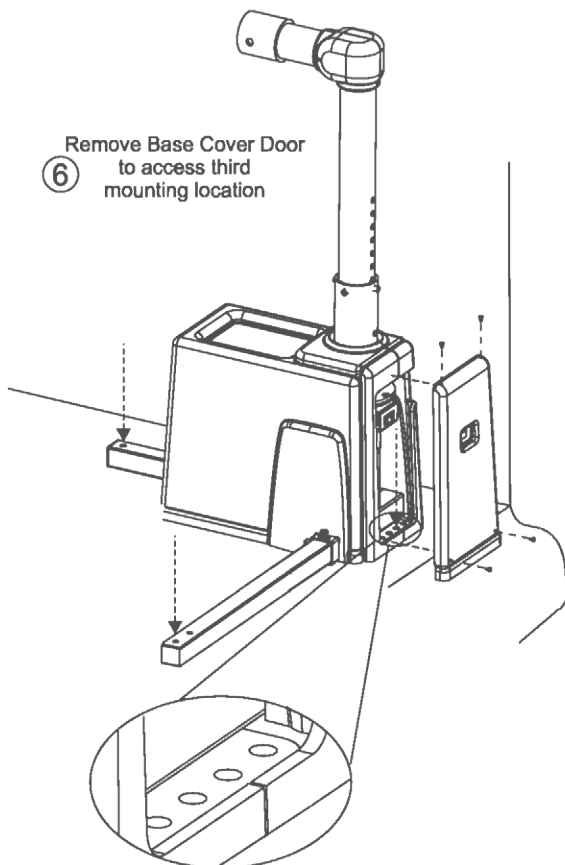
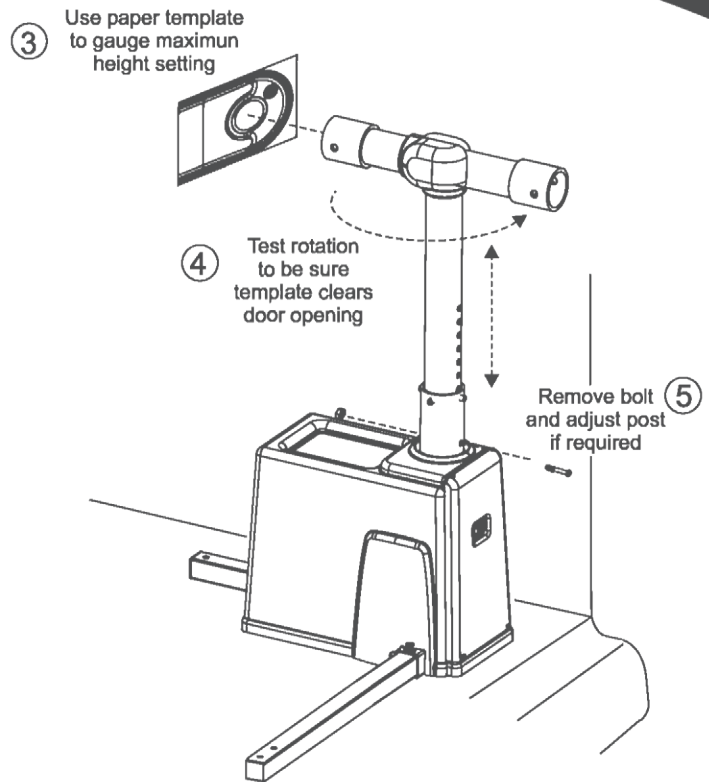
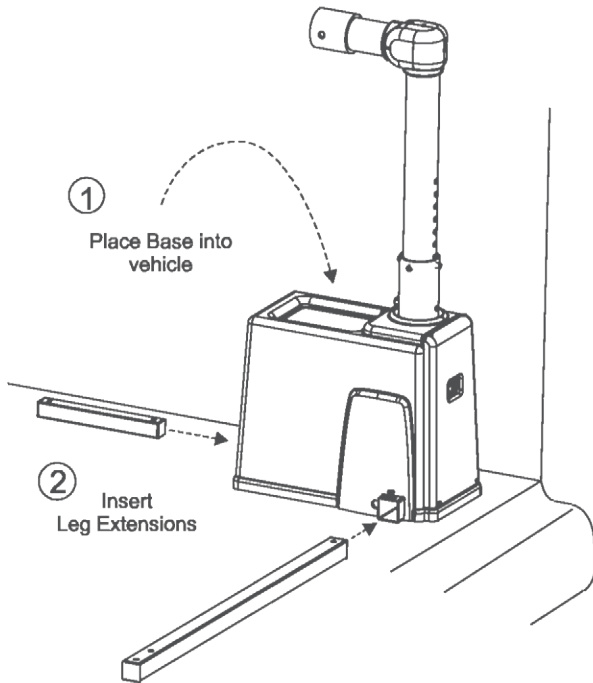
## Trial Fit Procedure:

- To obtain the ideal mounting location and avoid possible interference, the lift should be pre-assembled and "trial fit" in the desired installation location. This procedure may require two people, one person to hold the lift in the desired position and another to move the Lifting Arm through its full range of motion. The Inside Lifts have been engineered so it can easily be configured as a solution for most applications. This "trial fit" will also help you determine where the Vehicle Wiring Harness will be run.

**Hint:** It is always best to check with the customer when determining lift placement and ask permission before drilling through the vehicle's floor.



# AL420 / 410 / 220 / 210 Lift Preparation



On Power Rotation Models it will also be necessary to switch polarity of the motor to match the direction of the motor to the hand control

Simply swap the wire connections at the rotation motor, located in the base.

# AL420 / 410 / 220 / 210 Installation

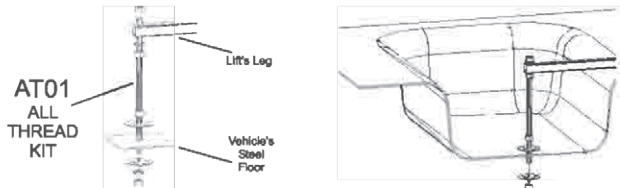
Once confidence has been gained on the position of the lift mounting, and the "Trial Fit" procedure has been completed, three 3/8" holes will need to be drilled on the marked locations.

**Caution!** Avoid the vehicle wiring, fuel lines, fuel tanks, spare tires, etc. when drilling



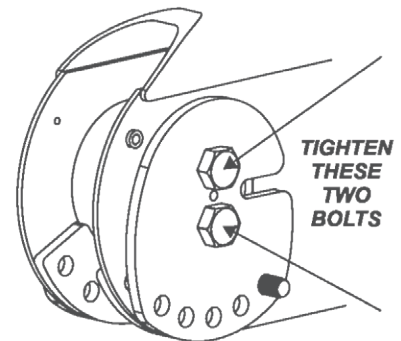
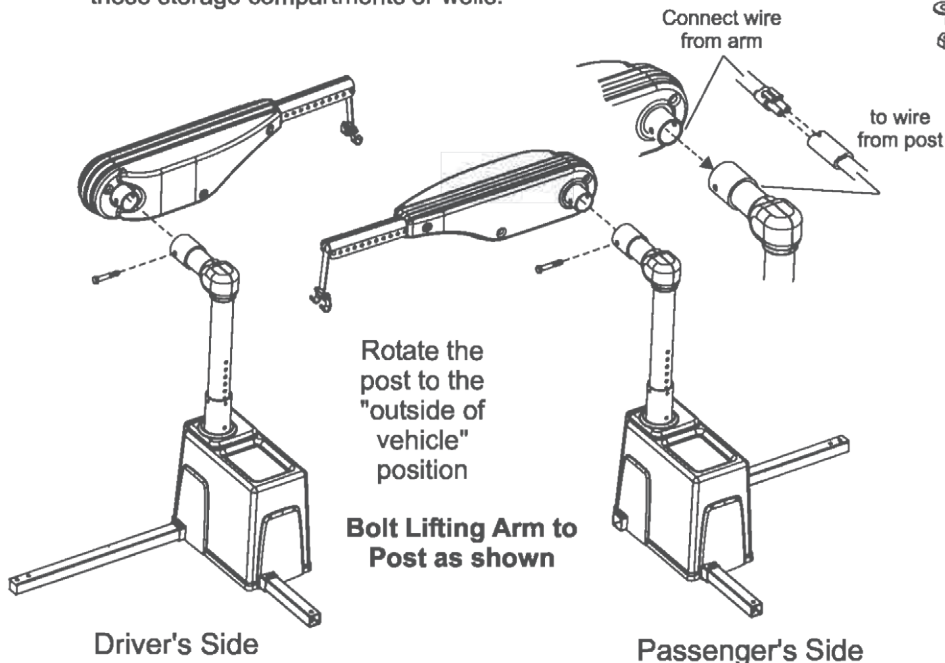
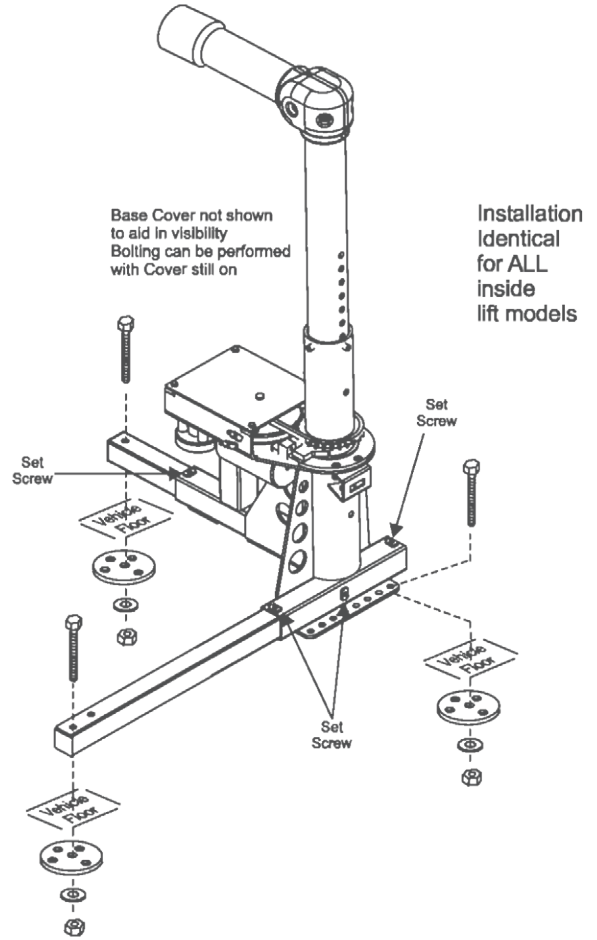
Once holes are drilled, fasten lift to vehicle floor using supplied hardware in the Hardware Pack. Be sure to tighten ALL fasteners including Set Screws.

ALL THREAD KIT MAY BE REQUIRED



Spare tire storage - Some vehicles store the spare tire under the floor of the vehicle. Make sure that the base can be bolted through to a steel floor or frame.

Some vehicles have storage compartments in the rear cargo area, potentially effecting lift placement. Most of these can be overcome with the aid of an ALL THREAD KIT. Shown above is the typical application for overcoming these storage compartments or wells.

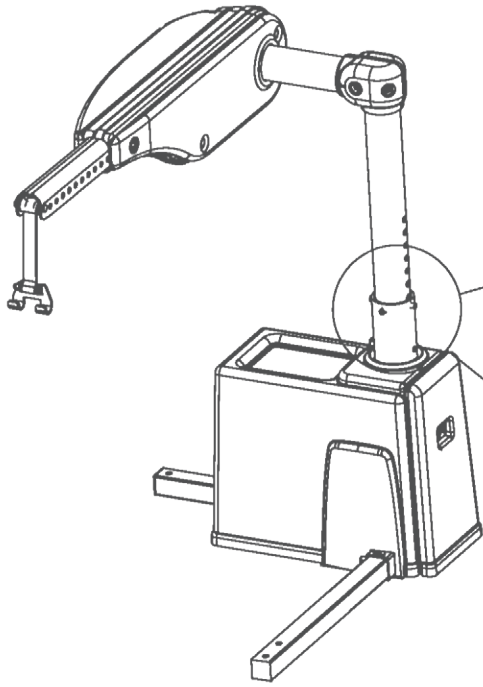


Once the lift's installation has been completed, and arm pitch is satisfactory, it is crucial these bolts be tightened **BEFORE** any payload lifting is attempted

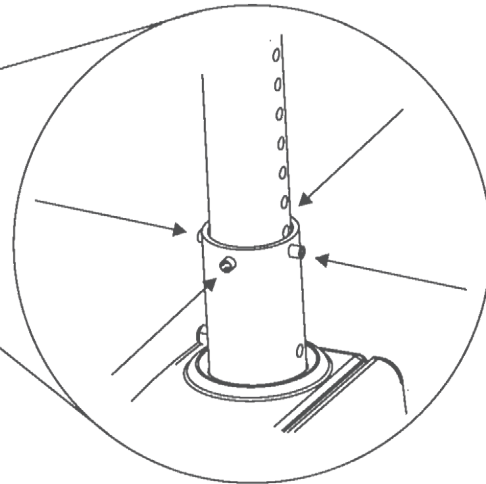
This can be accomplished even with the cosmetic arm cover on. The arm cover's face plate can be removed with one screw to gain access.



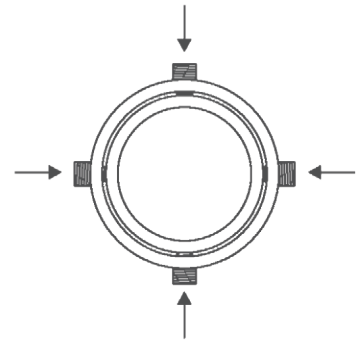
# AL420 / 410 / 220 / 210 Installation



Once proper arm height is determined, tighten the four set screws shown below.

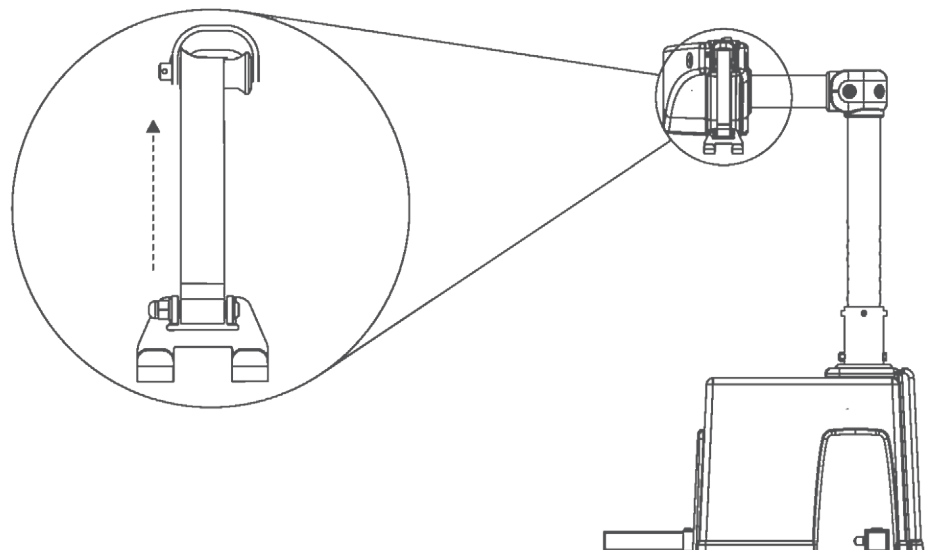


Providing the base can be mounted level, the set screws should be tightened equally all around. Tightened so that there is equal distance all around the two tubes and the post is vertical to the base.



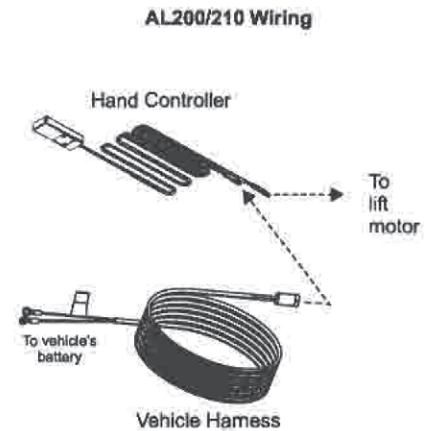
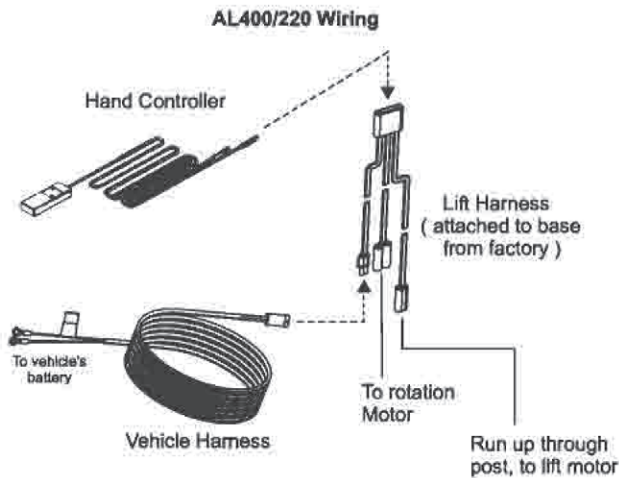
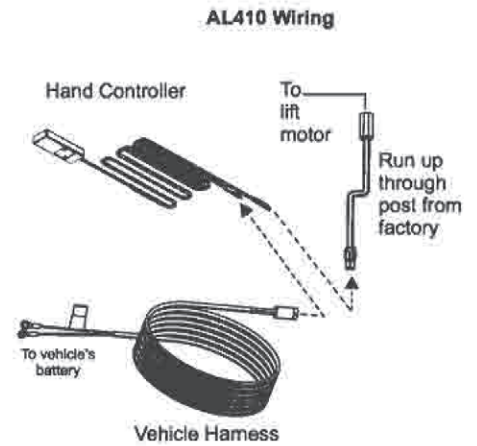
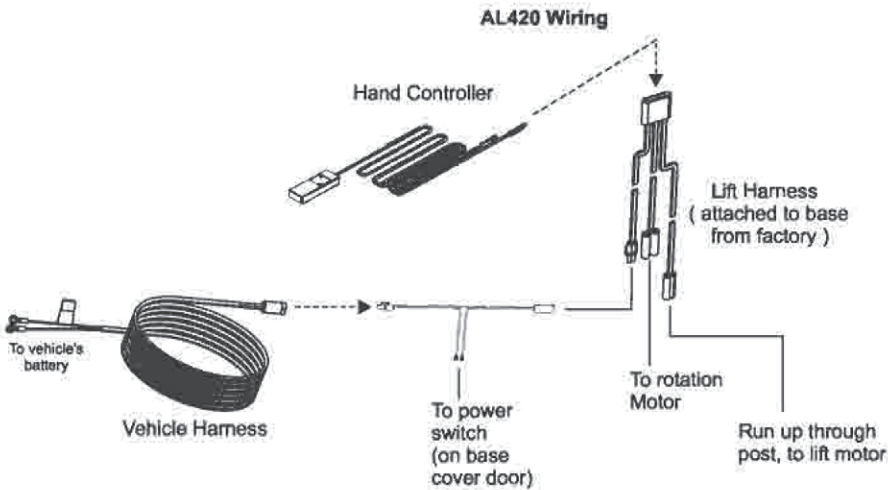
Should the base be installed less than level, use these screws to bring the post back to vertically level.

Should the strap begin to ride up the side of the roller while lifting the payload, check the set screws that center the post in the base.



# AL420 / 410 / 220 / 210 Wiring

Connect Hand Controller and Power Wiring  
as shown below (dotted lines depict connections required )



It is now possible to re-attach Lift Arm and Base covers  
( if applicable ) as the installation is complete.

Re-check all fasteners

## Operational Guidelines:

- Inspect the Lifting Strap prior to each use. Contact your distributor if it shows signs of wear or fraying.
- Do not operate this lift until you dealer has satisfactorily instructed you in the proper operation of this lift.
- Always make sure the vehicle's parking brake is firmly set before operation.
- Keep hands and feet from under the scooter or power chair as it is being lifted.
- Take care not to hold one of the buttons on the Hand Controller until the Lifting Strap switches direction. The UP button should always pull the strap up and vice versa. If your buttons cause opposite movement, contact your distributor.

## Loading your Scooter or Power Chair

**Note:** Due to the wide variety of scooters, power chairs and vehicles, your dealer may offer a different method for Loading and Unloading your scooter. Please follow the guidelines they have offered.

- Swing the Lifting Arm out of the vehicle toward the scooter or chair ( using the Hand controller if equipped with power rotation )
- Maneuver the scooter parallel to the rear bumper and two inches behind the vehicle. Depending on the vehicle, it may be necessary to: remove the seat; fold down or remove the handle bar; remove accessories such as brackets, baskets, crutch holders, etc.
- With the docking device positioned directly under the Strap Hook, lower the Lifting Strap using the DOWN button on the Hand Control until the Strap Hook (or C-Arm) can be engaged into the docking device installed on the scooter or chair. Hook the docking device on the scooter or chair with the Strap Hook and remove any play in the strap by pushing the UP button on the Hand Control until tension is felt.

**Caution:** Ensure that the Lifting Strap is secure and taught and that it points straight down. Failure to do so could result in the scooter or chair swinging toward the operator or the vehicle.

- Raise the scooter or chair using the UP button until the scooter or chair is just above the highest obstacle. This is usually the van floor, door sill or tailgate.

**Caution:** Stop lifting before the Strap Hook contacts the Strap Roller mounted on the Lifting Arm. Contact will result in damage to the lift. A properly adjusted and operated lift will avoid this.

- Swing the scooter or chair into the vehicle ( using the Hand controller if equipped with power rotation ) ensuring that the scooter or chair does not contact the vehicle.
- With the scooter or chair positioned above its stowed position, lower the lift using the DOWN button on the Hand Controller. The scooter or chair should be lowered until it is sitting firmly on the floor but the strap should remain taut. This facilitates a quicker and easier unloading of the scooter later.

**Caution:** Ensure that the scooter or chair is firmly sitting on the floor and not suspended by the lift

If preparations need to be made to secure the scooter or power chair for transport, such as parking brakes or wheel chocks, do these now. Dealers should instruct operators on how, if necessary to secure the scooter or chair for transport. Place the Hand Control on the Velcro mounting pad and close the doors or tailgate and you are ready to go.

# AL420 / 410 / 220 / 210

## Operation

### Unloading Your Scooter or Power Chair

- Undo any preparations made to secure the scooter or power chair for transport.
- Raise the scooter or chair by pressing the UP button on the Hand Control until the tires are high enough to clear the highest obstacle, usually the door sill or tailgate.

**Caution:** *Stop lifting before the Strap Hook contacts the Strap Roller mounted on the Lifting Arm. Contact will result in damage to the lift. A properly adjusted and operated lift will avoid this.*

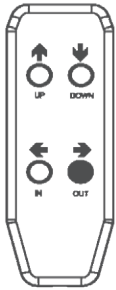
- Swing the scooter or chair out of the vehicle ( using the Hand controller if equipped with power rotation ) carefully ensuring that the scooter does not contact the vehicle.
- With the scooter or chair positioned away from the vehicle, lower the lift using the DOWN button. Continue lowering the lift slightly beyond the scooter or chair touching the ground to allow removal of the Strap Hook from the docking device on the scooter.

**Caution:** *Do not allow the scooter or chair to come in contact with the vehicle. Damage may result to both the vehicle AND the operator.*

Replace anything removed from the scooter or chair for loading purposes. Swing the Lifting Arm back into the vehicle and place the Hand Control on the Velcro mounting pad. Close the doors or tailgate and you are ready to go.

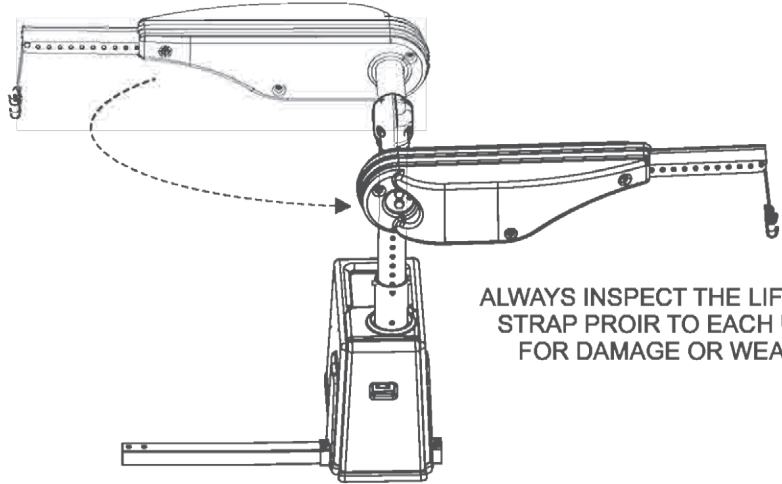
# AL420 / 410 / 220 / 210 Operation

( For AL410 and 210 models  
substitute "IN" and "OUT"  
function for manual rotation )

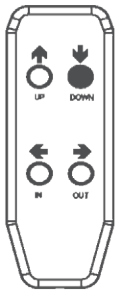


Press the "OUT" button  
swinging the lift to the  
outside of the vehicle

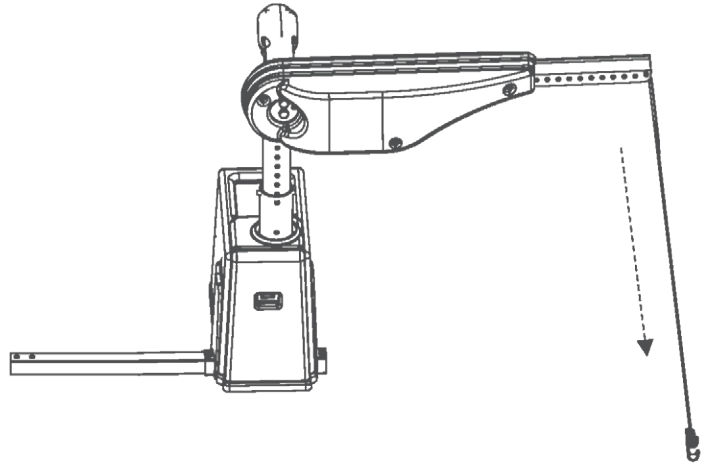
Position so the lifting strap  
can be lowered to the  
location of the chair



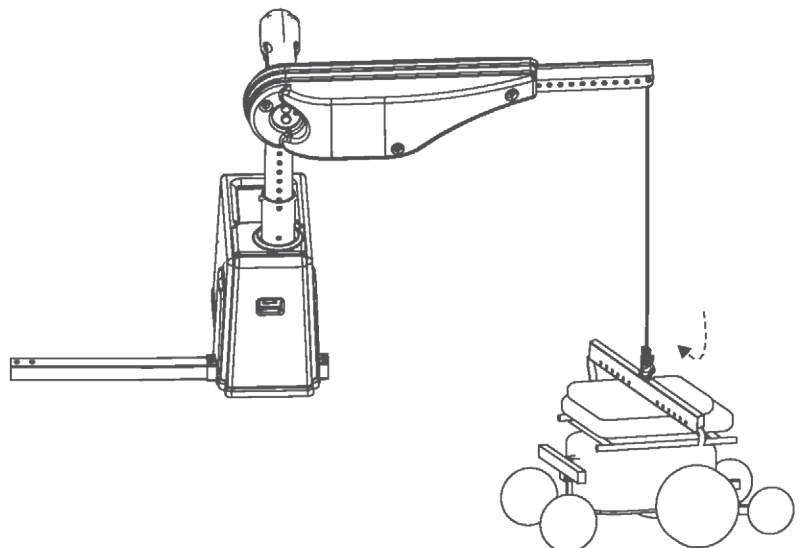
**ALWAYS INSPECT THE LIFTING  
STRAP PRIOR TO EACH USE  
FOR DAMAGE OR WEAR**



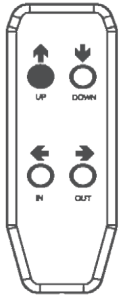
Press the "DOWN" Button  
lowering the strap until it  
can reach the docking  
device of the chair



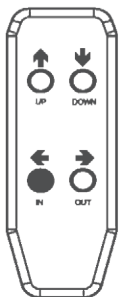
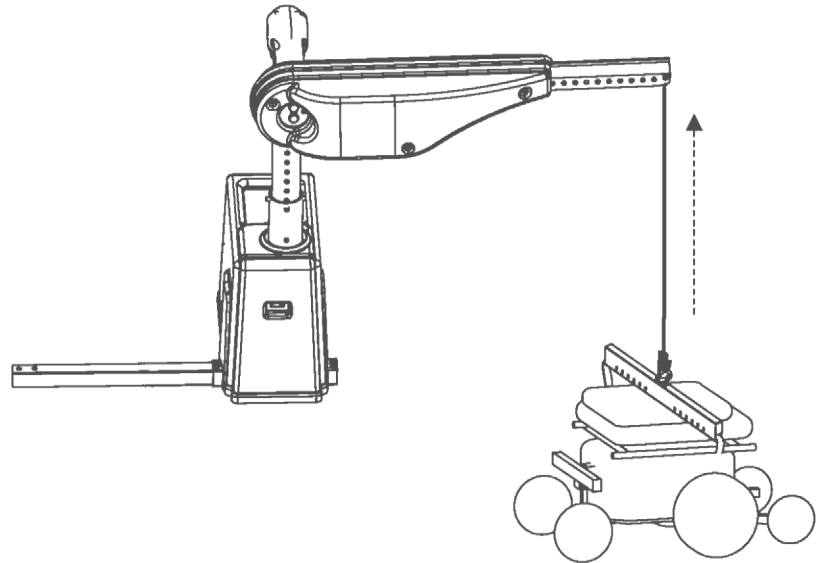
Secure the Lifting Strap to the  
chair by placing the Strap hook  
to the bar on the docking device.



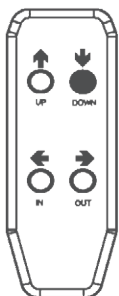
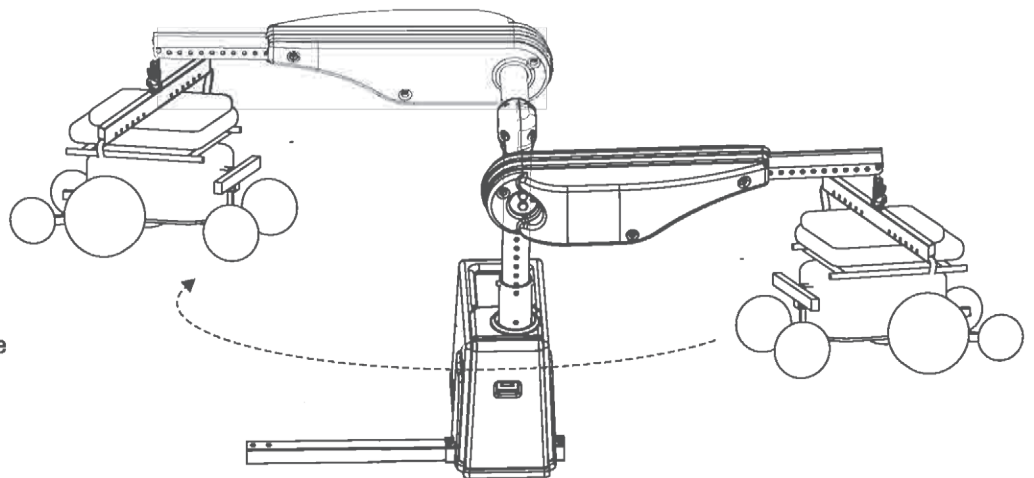
# AL420 / 410 / 220 / 210 Operation



Press the "UP" button on the Hand Controller, raising the chair until it will clear the floor of the vehicle.

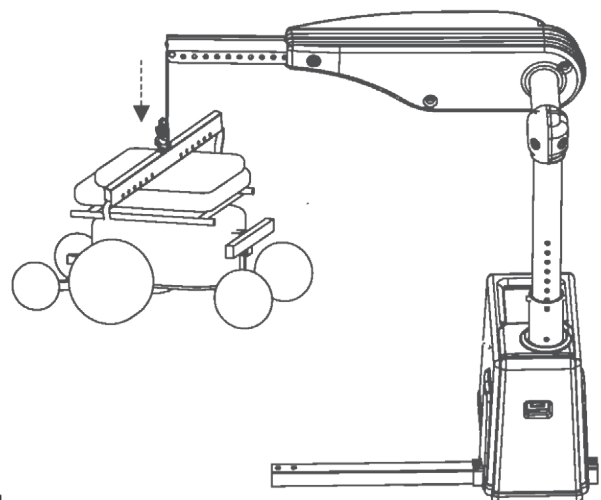


Press the "IN" button to rotate the chair into the vehicle until desired placement inside the vehicle is achieved.



Press the "DOWN" button to lower the chair to the vehicle floor.

Once the chair has reached the floor and the lifting strap will have some "slack" to it. It is recommended to leave the strap attached during transport, and to take the "slack" out of the strap by pressing "UP" button just enough to straighten the strap but DO NOT lift the chair off the floor



# AL420 / 410 / 220 / 210 Safety and Maintenance

## SAFETY:

- **Caution:** Do not operate this lift until your dealer has satisfactorily instructed you in the proper operation of the lift.
- Your Harmar Inside 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 Inside 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 CHECK THE LIFTING STRAP BEFORE EACH USE FOR DAMAGE OR WEAR.**
- Always make sure the vehicle's parking brake is firmly set before operating the lift.
- **Caution:** Insure that the Lifting Strap is secure and taught and that it points straight down before lifting of the scooter or power chair. Failure to do so could result in the scooter or chair swinging toward the operator of the vehicle.
- **Caution:** When using the lift, keep your hands and feet from under the scooter or power chair as it is being loaded or unloaded.
- **Caution:** Stop lifting before the Strap Hook contacts the Strap Roller mounted on the Lifting Arm. Contact will result in damage to the lift. A properly adjusted and operated lift will avoid this.
- **Caution:** Insure that the scooter or chair is firmly sitting on the floor of the vehicle and not suspended by the lift. If the scooter or power chair is not firmly on the floor of the vehicle, it may move during transportation and cause damage to the lift, scooter or power chair, vehicle, or passengers.

## MAINTENANCE:

The Harmar Inside 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 is no exception.

- We recommend that dealers should 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.
- Always check the lifting strap before each use. If any wear or fraying is noticed **DO NOT USE THE LIFT!** Contact the installer or dealer for repair. Failure to act may cause damage to the vehicle or severe injury!
- Hand control units should not be exposed to the weather. If the lift is mounted in the bed of a truck, remove the hand control between each use. Exposure to the elements may cause the unit to fail.

## WARRANTY:

This lift is covered by a three year factory warranty on materials and workmanship. Contact your local dealer for more information or go to [www.harmar.com](http://www.harmar.com) for complete details.

# Troubleshooting

Problem	Possible Cause	Suggestions
Lift does not operate Lift operates slowly	Electrical Connections	Verify that battery connections are clean with good contact. Inspect full length of wiring harness. Test the electrical connection by powering lift through a fully charged shop battery using a secondary harness.
Intermittent power to lift	Circuit Breaker	Circuit breaker resets itself automatically, to test for a malfunction check for power at the lift with a test lamp.
	Electrical Connections	See item #1 top of page
	Hand Control	Test by bypassing the hand control for 1-2 seconds. <b>Caution:</b> Damage to lift, mobility device or vehicle can occur if continuous power is supplied to the lift.
Lifting arm is slow to swing in and out	Dirty Bushings	Clean and apply new grease to white plastic bushings located in the base of the lift.
	Electrical Connections	See item #1 top of page
Lifting strap operates in reverse	Overextended Strap	The lifting strap could have been lowered too far, causing it to wind backwards. Lower strap until it unravels from spool, then raise in the proper direction.
Scooter/Power Chair tips while being lifted	Lifting Off-Center	The docking device should be positioned so that the lifting strap is over the center of gravity. This is normally near the center of the seat. Also confirm that correct docking device is being used.



# AL200 / AL400 / AL055 Vehicle Preparation

The AL200 / 400 / 055 Lift has been designed with the shortest height and smallest footprint requirements to allow maximum room for the loading and unloading of your scooter or power chair. If there is 30" of headroom and room for the scooter or chair in the vehicle, then the AL200 / 400 should be able to be installed and operate properly. (The AL055 requires 37" of headroom unless the post is cut for smaller openings)

- To obtain the ideal mounting location and avoid possible interference, the lift should be pre-assembled and "trial fit" in the desired installation location. This procedure may require two people, one person to hold the lift in the desired position and another to move the Lifting Arm through its full range of motion. Please refer to the packaging checklist for the parts identification and exploded view of the lift. The Inside Lifts have been engineered so that it can easily be configured as a solution for most applications. This "trial fit" will also help you determine where the Vehicle Wiring Harness will be run.

**Hint:** *It is always best to check with the customer when determining lift placement and ask permission before drilling through the vehicle's floor.*

- **Typical Applications**  
Car Trunk—AL055 or AL200 only  
Rear Cargo Area—for most vans and SUV's.  
  
Tailgate applications for SUV's, Station Wagons and Trucks using the offset arm conversion option. (AL200/400 only)

NOTE: The base should be mounted as far to the rear corner of the vehicle as possible in most rear mount applications. This allows for the maximum reach of the lifting arm.

There are some vehicles that, due to their setup, will not accommodate a standard lift installation. Please check for the following:

- Vehicle must have 30" **clear headroom** for operation for the AL200/400. Be sure and check during "trial fit" that a full range of motion can be achieved without any roof or lift gate interference. (37" headroom required for AL055)
- Spare tire storage—Some vehicles store the spare tire under the floor of the vehicle. Make sure that the base can be bolted through to a steel floor or frame.
- Some vehicles have been manufactured with a "false floor" which is made of composite materials. The lift must be anchored to a steel floor or frame.
- Trunk applications must be secured to a flat trunk floor. (AL055 only) Make sure that there are not deep wells in the trunk that will affect placement of the base. Most of these can be overcome.
- Offset Arm Applications (AL200/400) The offset arm allows the lifting arm to reach around to the side of the vehicle. This allows the loading and unloading of the scooter or power chair when there is a tailgate to contend with or when the base location does not allow a straight post to be used. Many times this application is referred to as a "curbside" installation.

## **Trial Fit Procedure:**

- Place the assembled lift as it is configured in the shipping carton into the desired location.  
When using the Offset Post Conversion (AL200/400), bolt the Lifting Arm to the Post using the supplied 3-3/4" Hex bolt and lock nut. The offset arm can be configured to left side or right side applications by bolting the Lifting Arm to the Offset Post in either orientation.
- Raise the Lifting Arm to achieve to an 1/8" clearance to the lowest point of the vehicle's roof that the Lifting Arm will encounter during its travel (usually the door opening or rear A/C vents).
- On the AL200/400, unscrew the Adjustable Link to provide the desired height of the Lifting Arm and bolt the two components together using the supplied 3/8" x 2" hex bolt, washers and 3/8" Stover lock nut—no nylon.
- Mark the desired position for installation.

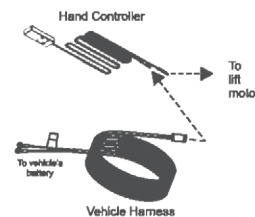
# AL055 Installation

- You should have established a mounting position for the lift during the "trial fit" as described earlier in this manual. If not, it is recommended that you go through that procedure.
- Mount the lift in the location determined during the "trial fit" in the vehicle. Mark the 3 mounting hole locations or use the Base as a guide and drill holes using a 3/8" drill bit. Bolt the Base to the floor of the vehicle using the supplied 3/8" x 3" hex bolt in the corner, two 3/8" x 2" hex bolts for each Leg. Use the supplied multi-hole Installation Washers on the underside to help reinforce the vehicle's floor, see below. Replace an Installation Washer with a 3/8" fender washer if necessary due to size constraints. Secure the Legs by tightening the 2 set screws on the inside of the base.

Hint: Variations in the flatness of the vehicle's floor can be compensated for by adding 3/8" washers to the mounting hardware under the base. Always mount the base so it is level.

**Caution! Avoid the vehicle wiring, fuel lines, fuel tanks, spare tires, etc. when drilling holes for mounting hardware!**

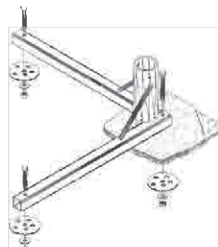
- Once the base has been mounted, place the Post into the nylon bushing that is located in the base.
- When the Post is properly seated in the Base, place the Lifting Arm onto the Post until it rests on the Adjustment Collar located on the Post. Adjust the height of the Lifting Arm by loosening the hex allen screw on the Adjustment Collar, move the Lifting Arm to the desired height and retighten the collar.



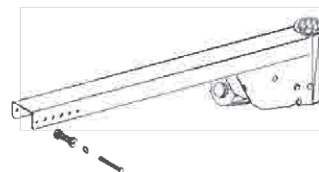
- The Hand Control has two plugs on it. The male plug attaches to the Vehicle Wiring Harness that was installed on the lifting arm. At this time, reconnect the vehicle's earlier. The other, the female plug, attaches to the motor ground (-) cable on the battery.
- Tie the long leads of the Hand Control Harness to the Post using the plastic ties where necessary. This step will be skipped when using the lift in a "Take Apart" configuration, as the Lifting Arm and the Post must be disassembled.
- Follow the Operator Instructions in this section to Load and Unload the scooter or chair from the vehicle to test operation and clearances.
- Determine if the scooter or chair will need to be moved closer to the lift or further from the side of the vehicle. This will be done by adjusting the location of the Strap Roller on the Lifting Arm. The Lifting Arm is factory pre-assembled with the strap out at the furthest extent and may need to be adjusted to fit a particular application.
- Measure the distance the scooter should be moved to clear any obstacles.
- To move the Strap Roller, remove the Split Ring (like on a key chain) from the Clevis Pin. Pull out the Clevis Pin and Strap Roller and replace it in the desired hole location. Holes on the Lifting Arm are on one inch centers. See below.

## Base Installation

- Recheck all fasteners.



## Adjustable Strap



Refer to the instructions included with your docking device for information on preparing the scooter or power chair for use with the Universal Inside Lift.

# AL055

## Operation

### Operational Guidelines:

- Inspect the Lifting Strap prior to each use. Contact your distributor if it shows signs of wear or fraying.
- Do not operate this lift until you dealer has satisfactorily instructed you in the proper operation of this lift.
- Always make sure the vehicle's parking brake is firmly set before operation.
- Keep hands and feet from under the scooter or power chair as it is being lifted.
- Take care not to hold one of the buttons on the Hand Controller until the Lifting Strap switches direction. The UP button should always pull the strap up and vice versa. If your buttons cause opposite movement, contact your distributor.

### Loading your Scooter or Power Chair —Trunk Applications

**Note:** Due to the wide variety of scooters, power chairs and vehicles, your dealer may offer a different method for Loading and Unloading your scooter. Please follow the guidelines they have offered.

- To assemble your lift, begin by inserting the Post into the Base mounted on the floor. Next, slide the Lifting Arm onto the top of the Post.
- Plug the Hand Control into the lifting arm and into the Vehicle Harness.
- Swing the Lifting Arm out of the vehicle toward the scooter.
- Maneuver the scooter parallel to the rear bumper and two inches behind the vehicle. Depending on the vehicle, it may be necessary to: remove the seat; fold down or remove the handle bar; remove accessories such as brackets, baskets, crutch holders, etc.
- With the docking device positioned directly under the Strap Hook, lower the Lifting Strap using the DOWN button on the Hand Control until the Strap Hook can be engaged into the docking device installed on the scooter or chair. Hook the docking device on the scooter or chair with the Strap Hook and remove any play in the strap by pushing the UP button on the Hand Control until tension is felt.

**Caution:** Ensure that the Lifting Strap is secure and taught and that it points straight down. Failure to do so could result in the scooter or chair swinging toward the operator of the vehicle.

- Raise the scooter or chair using the UP button until the scooter or chair is just above the trunk lip.

**Caution:** Stop lifting before the Strap Hook contacts the Strap Roller mounted on the Lifting Arm. Contact will result in damage to the lift. A properly adjusted and operated lift will avoid this.

- Swing the scooter or chair into the vehicle, ensuring that the scooter or chair does not contact the vehicle.
- With the scooter or chair positioned above its stowed position, lower the lift using the DOWN button on the Hand Controller. Continue lowering the Strap Hook slightly beyond the scooter touching the floor to allow removal of the Strap Hook from the Docking Device on the scooter or chair.
- To disassemble the lift, first raise the strap until the freed Strap Hook is about an inch away from the Lifting Arm. Unplug the Hand Control harness from both the Vehicle Harness and the Lifting Arm.
- Pull the Lifting Arm off the Post and lay it on the floor of the trunk. Then, pull the Post out of the Base and set it down with the Lifting Arm.

## Trunk Applications:

- If preparations needed to be made to secure the scooter or chair for transport, such as parking brakes or wheel chocks, do these now. Dealers should instruct operators on how, if necessary, to secure the scooter or chair for transport. Close the trunk and you are ready to go.

## Unloading Your Scooter or Power Chair—Trunk Applications

- Undo any preparations made to secure the scooter or power chair for transport.
- To assemble your lift, begin by inserting the Post into the Base mounted on the floor. Next, slide the Lifting Arm onto the Post.
- Plug in the Hand Control.
- By pressing the DOWN button on the Hand Control harness, run the Strap Hook down until it is slightly lower than the docking device on the scooter.
- Attach the Strap Hook to the docking device on the scooter or chair and remove any play in the strap by pressing the UP button on the Hand Control until tension is felt.

**Caution:** *Ensure that the Lifting Strap is secure and taught and that it points straight down. Failure to do so could result in the scooter or chair swinging toward the vehicle or operator.*

- Raise the scooter using the UP button until the scooter or chair is just above the trunk lip.

**Caution:** *Stop lifting before the Strap Hook contacts the Strap Roller mounted on the Lifting Arm. Contact will result in damage to the lift. A properly adjusted and operated lift will avoid this.*

- Swing the scooter or chair out of the vehicle, carefully ensuring that the scooter does not contact the vehicle.
- With the scooter or chair positioned away from the vehicle, lower the lift using the DOWN button. Continue lowering the lift slightly beyond the scooter or chair touching the ground to allow removal of the Strap Hook from the docking device on the scooter.
- To disassemble the lift, first raise the Lifting Strap until the freed Strap Hook is about an inch away from the Lifting Arm. Unplug the Hand Control harness from both the Vehicle Harness and the Lifting Arm.
- Pull the Lifting Arm off of the Post and lay it on the floor of the trunk. Then pull the Post out of the Base and set it down with the Lifting Arm.

Replace anything removed from the scooter or chair for loading purposes. Close the trunk and you are ready to go.

# AL055

## Operation

### Enclosed Vehicle Applications:

#### Operational Guidelines:

- Inspect the Lifting Strap prior to each use. Contact your distributor if it shows signs of wear or fraying.
- Do not operate this lift until you dealer has satisfactorily instructed you in the proper operation of this lift.
- Always make sure the vehicle's parking brake is firmly set before operation.
- Keep hands and feet from under the scooter or power chair as it is being lifted.
- Take care not to hold one of the buttons on the Hand Controller until the Lifting Strap switches direction. The UP button should always pull the strap up and vice versa. If your buttons cause opposite movement, contact your distributor.

#### Loading your Scooter—Enclosed Vehicle Applications

**Note:** Due to the wide variety of scooters, power chairs and vehicles, your dealer may offer a different method for Loading and Unloading your scooter. Please follow the guidelines they have offered.

- Unhook the Strap Hook or optional C-Arm from the gusset on the Base (recommended stowed position).
- Swing the Lifting Arm out of the vehicle toward the scooter.
- Maneuver the scooter parallel to the rear bumper and two inches behind the vehicle. Depending on the vehicle, it may be necessary to: remove the seat; fold down or remove the handle bar; remove accessories such as brackets, baskets, crutch holders, etc.

**Note:** When using the Offset Post Conversion, position the scooter on the side of the vehicle parallel to the vehicle with the front tires even with the vehicle's rear bumper.

- With the docking device positioned directly under the Strap Hook, lower the Lifting Strap using the DOWN button on the Hand Control until the Strap Hook (or C-Arm) can be engaged into the docking device installed on the scooter or chair. Hook the docking device on the scooter or chair with the Strap Hook and remove any play in the strap by pushing the UP button on the Hand Control until tension is felt.

**Caution:** Ensure that the Lifting Strap is secure and taught and that it points straight down. Failure to do so could result in the scooter or chair swinging toward the operator of the vehicle.

- Raise the scooter or chair using the UP button until the scooter or chair is just above the highest obstacle. This is usually the van floor, door sill or tailgate.

**Caution:** Stop lifting before the Strap Hook contacts the Strap Roller mounted on the Lifting Arm. Contact will result in damage to the lift. A properly adjusted and operated lift will avoid this.

- Swing the scooter or chair into the vehicle, ensuring that the scooter or chair does not contact the vehicle.
- With the scooter or chair positioned above its stowed position, lower the lift using the DOWN button on the Hand Controller. The scooter or chair should be lowered until it is sitting firmly on the floor but the strap should remain taut. This facilitates a quicker and easier unloading of the scooter later.

**Caution:** Ensure that the scooter or chair is firmly sitting on the floor and not suspended by the lift

If preparations need to be made to secure the scooter or power chair for transport, such as parking brakes or wheel chocks, do these now. Dealers should instruct operators on how, if necessary to secure the scooter or chair for transport. Place the Hand Control on the Velcro mounting pad and close the doors or tailgate and you are ready to go.

## Enclosed Vehicle Applications:

### Unloading Your Scooter—Enclosed Vehicle Applications

- Undo any preparations made to secure the scooter or power chair for transport.
- Raise the scooter or chair by pressing the UP button on the Hand Control until the tires are high enough to clear the highest obstacle, usually the door sill or tailgate.

**Caution:** *Stop lifting before the Strap Hook contacts the Strap Roller mounted on the Lifting Arm. Contact will result in damage to the lift. A properly adjusted and operated lift will avoid this.*

- Swing the scooter or chair out of the vehicle, carefully ensuring that the scooter does not contact the vehicle.
- With the scooter or chair positioned away from the vehicle, lower the lift using the DOWN button. Continue lowering the lift slightly beyond the scooter or chair touching the ground to allow removal of the Strap Hook from the docking device on the scooter.

**Caution:** *Do not allow the scooter or chair to come in contact with the vehicle. Damage may result to both the vehicle AND the operator.*

Replace anything removed from the scooter or chair for loading purposes. Swing the Lifting Arm back into the vehicle and place the Hand Control on the Velcro mounting pad. Close the doors or tailgate and you are ready to go.

**PLEASE PROCEED TO SAFETY AND MAINTENANCE INFORMATION.**

# AL200 / AL400 / AL055

## Safety and Maintenance

### SAFETY:

- **Caution:** Do not operate this lift until your dealer has satisfactorily instructed you in the proper operation of the lift.
- Your Harmar Inside Lift has been engineered and designed for years of trouble free use. Although, with every-day 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 Inside 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 CHECK THE LIFTING STRAP BEFORE EACH USE FOR DAMAGE OR WEAR.**
- Always make sure the vehicle's parking brake is firmly set before operating the lift.
- **Caution:** Insure that the Lifting Strap is secure and taught and that it points straight down before lifting of the scooter or power chair. Failure to do so could result in the scooter or chair swinging toward the operator of the vehicle.
- **Caution:** When using the lift, keep your hands and feet from under the scooter or power chair as it is being loaded or unloaded.
- **Caution:** Stop lifting before the Strap Hook contacts the Strap Roller mounted on the Lifting Arm. Contact will result in damage to the lift. A properly adjusted and operated lift will avoid this.
- **Caution:** Insure that the scooter or chair is firmly sitting on the floor of the vehicle and not suspended by the lift. If the scooter or power chair is not firmly on the floor of the vehicle, it may move during transportation and cause damage to the lift, scooter or power chair, vehicle, or passengers.

### MAINTENANCE:

The Harmar Inside 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 is no exception.

- We recommend that dealers should 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.
- Always check the lifting strap before each use. If any wear or fraying is noticed **DO NOT USE THE LIFT!** Contact the installer or dealer for repair. Failure to act may cause damage to the vehicle or severe injury!
- Hand control units should not be exposed to the weather. If the lift is mounted in the bed of a truck, remove the hand control between each use. Exposure to the elements may cause the unit to fail.

### WARRANTY:

This lift is covered by a three year factory warranty on materials and workmanship. Contact your local dealer for more information or go to [www.harmar.com](http://www.harmar.com) for complete details.

# AL200 / AL400 / AL055 Troubleshooting

**PROBLEM:** The lift will not operate or operates slowly.

**Possible Causes:**

**Bad Electrical Connections** —Verify that both connections at the battery are clean and have good surface area contact at both terminals of the battery. Inspect the full length of the wiring harness to be sure the insulation of the wire has not caused a short to the vehicle frame.

If the lift does not have good electrical connections, the motor will not run under full power and will affect the lifting capacity and the speed in which it operates. This can be tested by attaching a test harness to a fully charged shop battery, that is not on a vehicle, and try running the lift.

**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 Electrical Connections** —Verify that both connections at the battery are clean and have good surface area contact at both terminals of the battery. Inspect the full length of the wiring harness to be sure the insulation of the wire has not caused a short to the vehicle frame.

If the lift does not have good electrical connections, the motor will not run under full power and will affect the lifting capacity and the speed in which it operates. This can be tested by attaching a test harness to a fully charged shop battery, that is not on a vehicle, and try running the lift.

**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:** Lifting arm is slow to swing in / out. (AL400 only)

**Possible Causes:**

**Dirty Bushings**—Clean and apply new grease to the white plastic bushing that is located in the Base.

**Bad Electrical Connections** —Verify that both connections at the battery are clean and have good surface area contact at both terminals of the battery. Inspect the full length of the wiring harness to be sure the insulation of the wire has not caused a short to the vehicle frame.

If the lift does not have good electrical connections, the motor will not run under full power and will affect the lifting capacity and the speed in which it operates. This can be tested by attaching a test harness to a fully charged shop battery, that is not on a vehicle, and try running the lift.

**PROBLEM:** The lifting strap operates in reverse.

**Possible Causes:**

The lifting strap was overextended. The lifting strap was lowered too far, causing the strap to wind around the spool backwards. Lower the strap until it unravels from the spool. Then, raise the strap in the proper direction.

**PROBLEM:** AL400 rotates in wrong direction when installed on the passenger side of the vehicle.

**Possible Causes:**

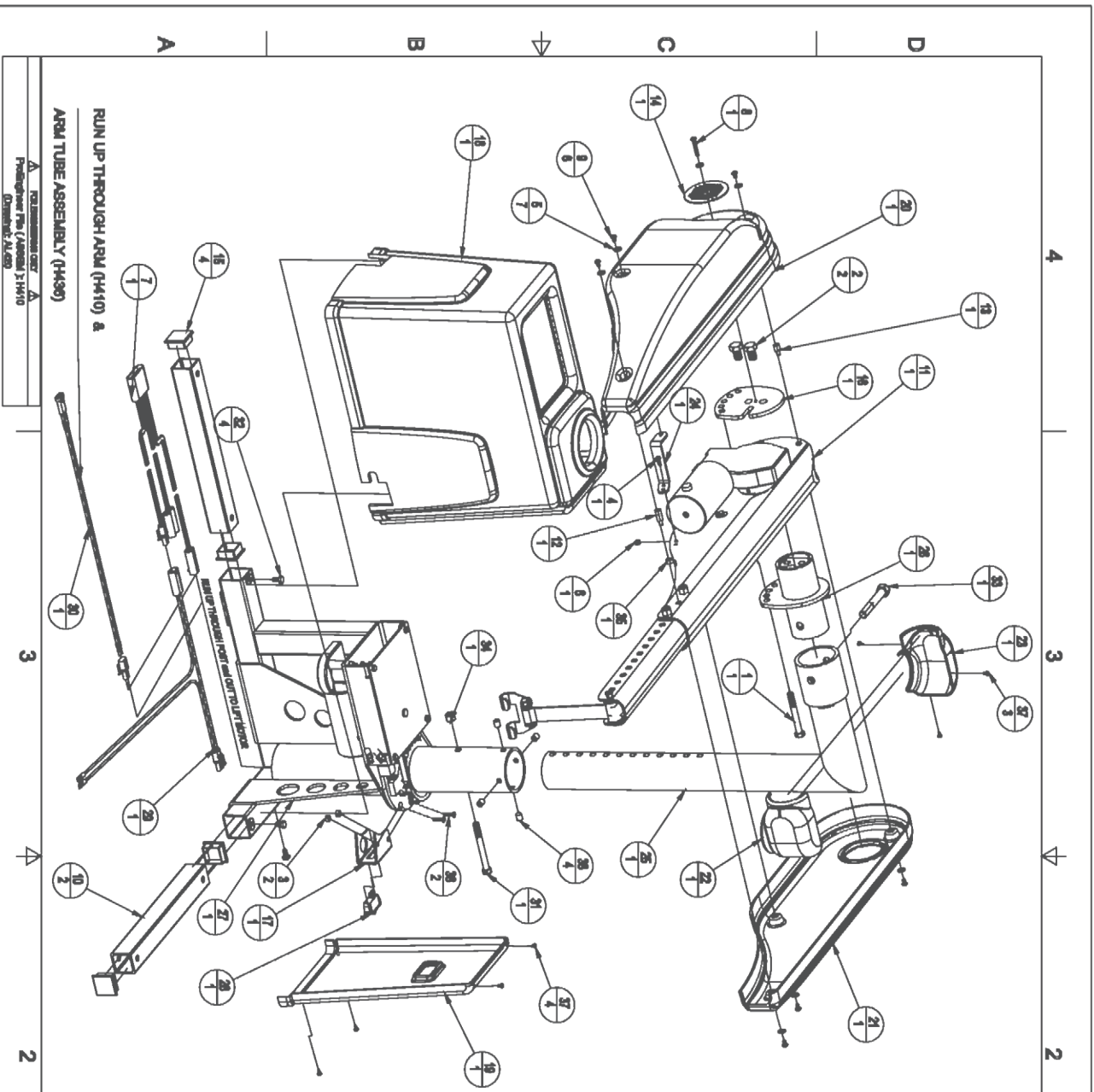
The lift is shipped from the factory to be mounted on the drivers side of the vehicle. To change the rotation for the passenger side remove the bolt located near the bottom of the post, rotate the motor 180 degrees and reinsert the bolt. Next, change the rotation of the motor located in the base by switching the wires on the motor to reverse the polarity.

**PROBLEM:** The scooter or chair tips to the front or back while it is being lifted.

**Possible Causes:**

The scooter or chair is being lifted off center. The docking device should center the lifting strap over the center of gravity which is generally around the center of the seat. Check to make sure the proper docking device is being used.





ITEM QTY	PART NO.	DESCRIPTION
1	1	HCS 38-10 x 3.0"
2	2	HCS 12-18 x 3/4"
3	2	NUT 10-32 Nylon Nut
4	1	PH-ND 8-32 x 1/2" Phillips Pan Head
5	7	WASHER #10, 7/64" ID, 1/2" O.D., Zinc
6	1	8-32 Nylon Nut
7	1	AL400TB 8-32 Nylon Nut
8	1	AL400TB 10-34 x 1-1/4" Button Head Socket
9	8	BHSC 10-32 x 3/8"
10	2	H206 LEG EXTENSION
11	1	PH-10 LIFTING ARM ASST
12	1	H42007 Hex Standoff 10-32 - 3/4"
13	1	H42008 Hex Standoff 10-32 - 3/8"
14	1	H42004 COVER PLATE CAP for 1.25in x 1.25in Tube
15	4	H4205 TILT BRACKET
16	1	H4200 TILT BRACKET
17	1	H42100 AL420 ON/OFF SWITCH BRKT
18	1	H42112 AL420 PLASTIC BASE COVER
19	1	H42110 AL420 PLASTIC ACCESS DOOR (WITH CUT OUT)
20	1	H42114 AL420M 10 TOP LEFT COVER
21	1	H42115 TOP RIGHT COVER
22	1	H42116 AL420 90 DEGREE COVER (LEFT)
23	1	H42117 AL420 90 DEGREE COVER (RIGHT)
24	1	H42118 COVER ATTACH BRACKET
25	1	H405 AL420 OFFSET POST
26	1	H409 AL420 ARM TUBE ASSEMBLY
27	1	PH-10 BASE ASSEMBLY
28	1	H4030 POWER SWITCH
29	1	H4005 AL420 ON/OFF SWITCH WIRE
30	1	H4006 AL410W4201020 POST/WIRE SHORT WIRE
31	1	H4219 38-10 x 3.25"
32	4	H4218 14-20 x 1/2"
33	1	H4213 12-18 x 3.25"
34	1	NUT 3/8-16 Nylon Nut
35	1	NUT 1/4-20 NUT
36	1	PH-10 10-32 x 3/4" Phillips Pan Head
37	7	PH-ND 8-32 Nylon Nut
38	4	SETSCREW 3/8-16 x 1/2" Allen Head

COMPENSATION INFORMATION NOT TO BE COMPILED OR LISTED WITHOUT WRITTEN CONSENT

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.

FINISH: 3.0

SCALE: AS SHOWN

DATE: 01/01/01

DESIGNED BY: [ ]

DRAWN BY: [ ]

DATE: [ ]

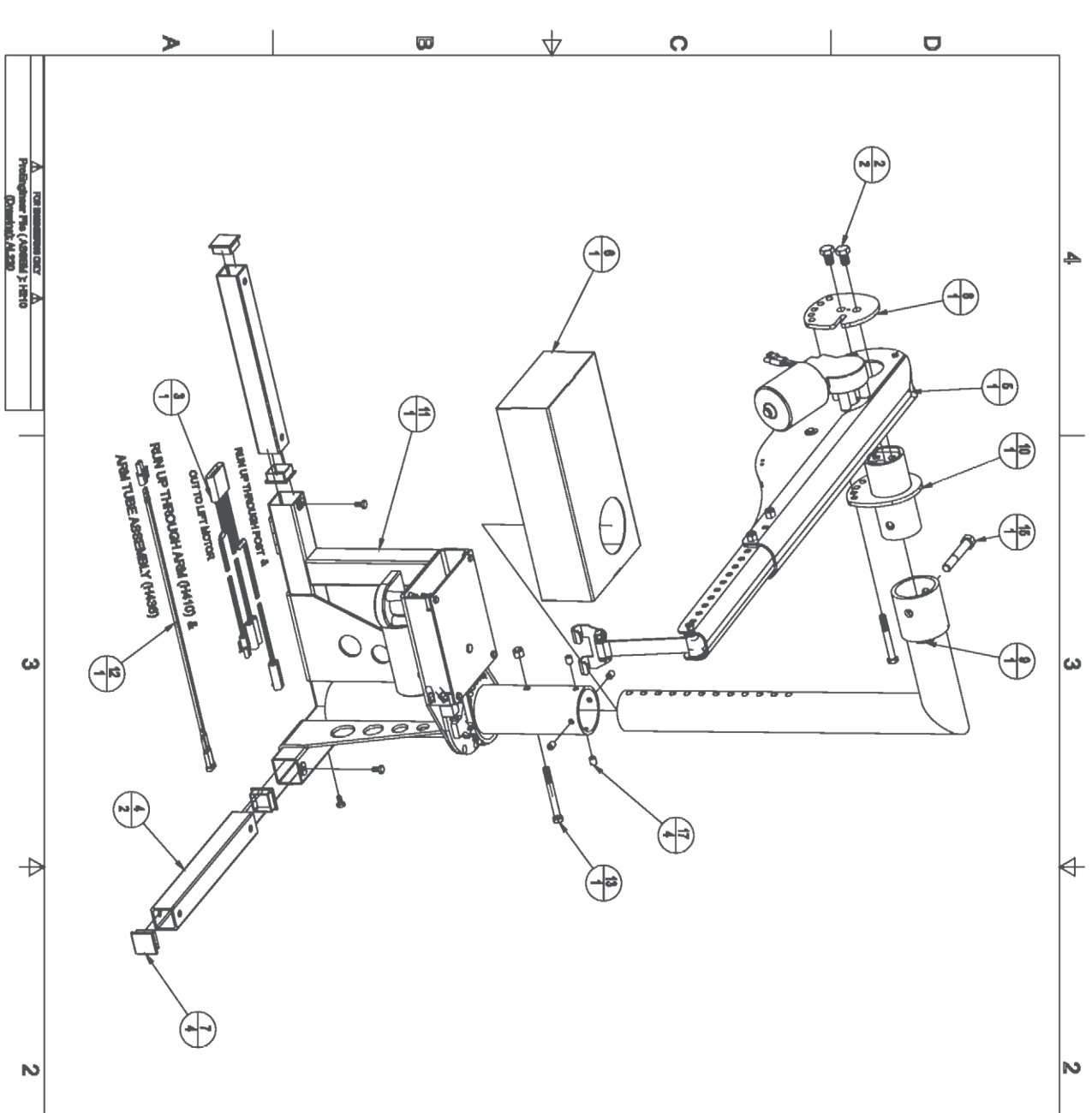
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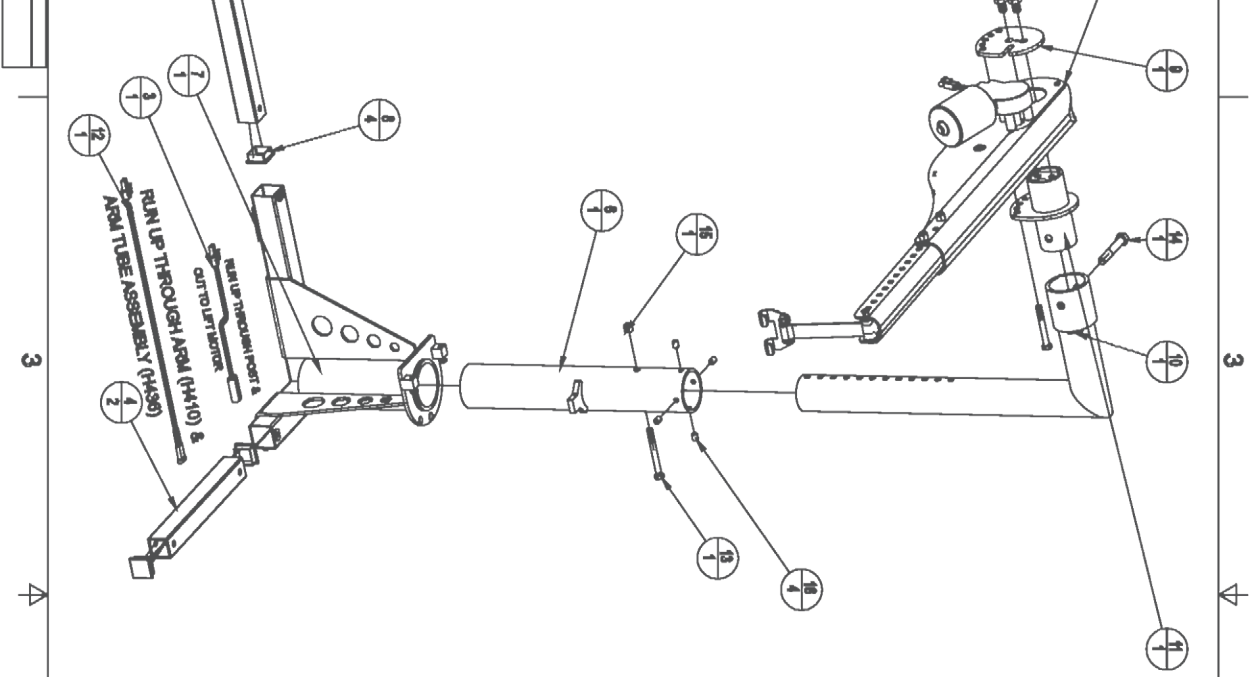


ITEM QTY	PART NO.	DESCRIPTION
1	1	HC8 28-16 x 3.00"
2	2	HC8 1/2-19 x 3/4"
3	1	AL44016 AL44016 LEG EXTENSION
4	2	H205 LIFTING ARM ASSY
5	1	H210 AL220 BASE COVER
6	1	H22010 CAP for 1.5sq x .120w Tube
7	4	H4205 TLI BRACKET
8	1	H4200 AL420 OFFSET POST
9	1	H498 AL420 ARM TUBE ASSEMBLY
10	1	H470 BASE ASSEMBLY
11	1	H4008 AL410420/14220 PORTABLE SHORT WIRE
12	1	HC8 28-16 x 3.5"
13	1	HC8 1/4-28 x 1/2"
14	4	HC8 1/2-19 x 3.25"
15	1	HC8 38-18 Hysoc Nut
16	1	NUT 38-18 x 1/2" allen head
17	4	BETSCREW 38-16 x 1/2" allen head

<p>CONFIDENTIAL INFORMATION          NOT TO BE RELEASED          WITHOUT WRITTEN CONSENT          OF THE COMPANY</p> <p>UNLESS OTHERWISE SPECIFIED          DIMENSIONS ARE IN INCHES.          TOLERANCES ARE:          FRACTIONS DECIMALS          .001 .001          .005 .001          .015 .001</p> <p>DO NOT SCALE DIMENSIONS</p>	<p>DWG NO.</p> <p>AL220</p>
<p>DESCRIPTION</p> <p>Fully Powered Inside LR</p>	<p>DATE</p>
<p>SCALE: 0.000</p>	<p>DATE</p>

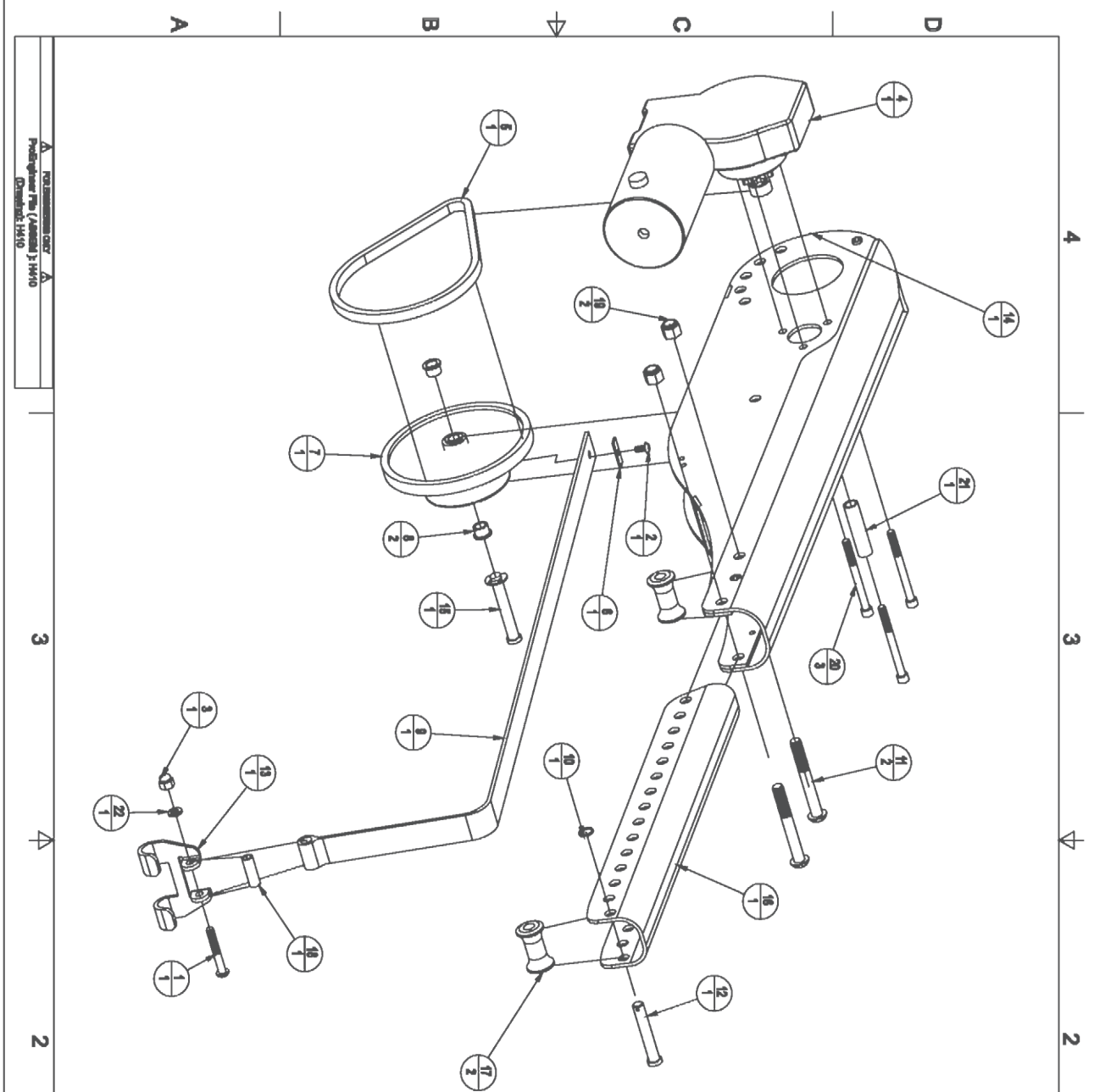
AL220  
 Fully Powered Inside LR  
 Drawing: AL220

AL210  
 AL210  
 AL210



ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	H403	38-10 x 3.07"
2	2	H402	1/2-13 x 3/4"
3	1	AL40060	AL210 Winding Hardware
4	2	H205	LE3 EXTENSION
5	1	H210	LIFTING ARM ASSEMBLY
6	1	H245	AL210 OUTER TUBE ASSEMBLY
7	1	H201	AL210 BASE ASSEMBLY
8	4	H205	Cap for 1.8sq x 1.2sq Tube
9	1	H2000	TLT BRACKET
10	1	H405	AL420 OFFSET POST
11	1	H408	AL420 ARM TUBE ASSEMBLY
12	1	H4008	AL410/AL210/AL220 POST/WIRE ASSEMBLY
13	1	H403	38-10 x 3.07"
14	1	H402	1/2-13 x 3/4"
15	1	NLT	38-10 Nylon Nut
16	1		
17	4		
18	4	GETBCHRY	38-10 x 1/2" allen head

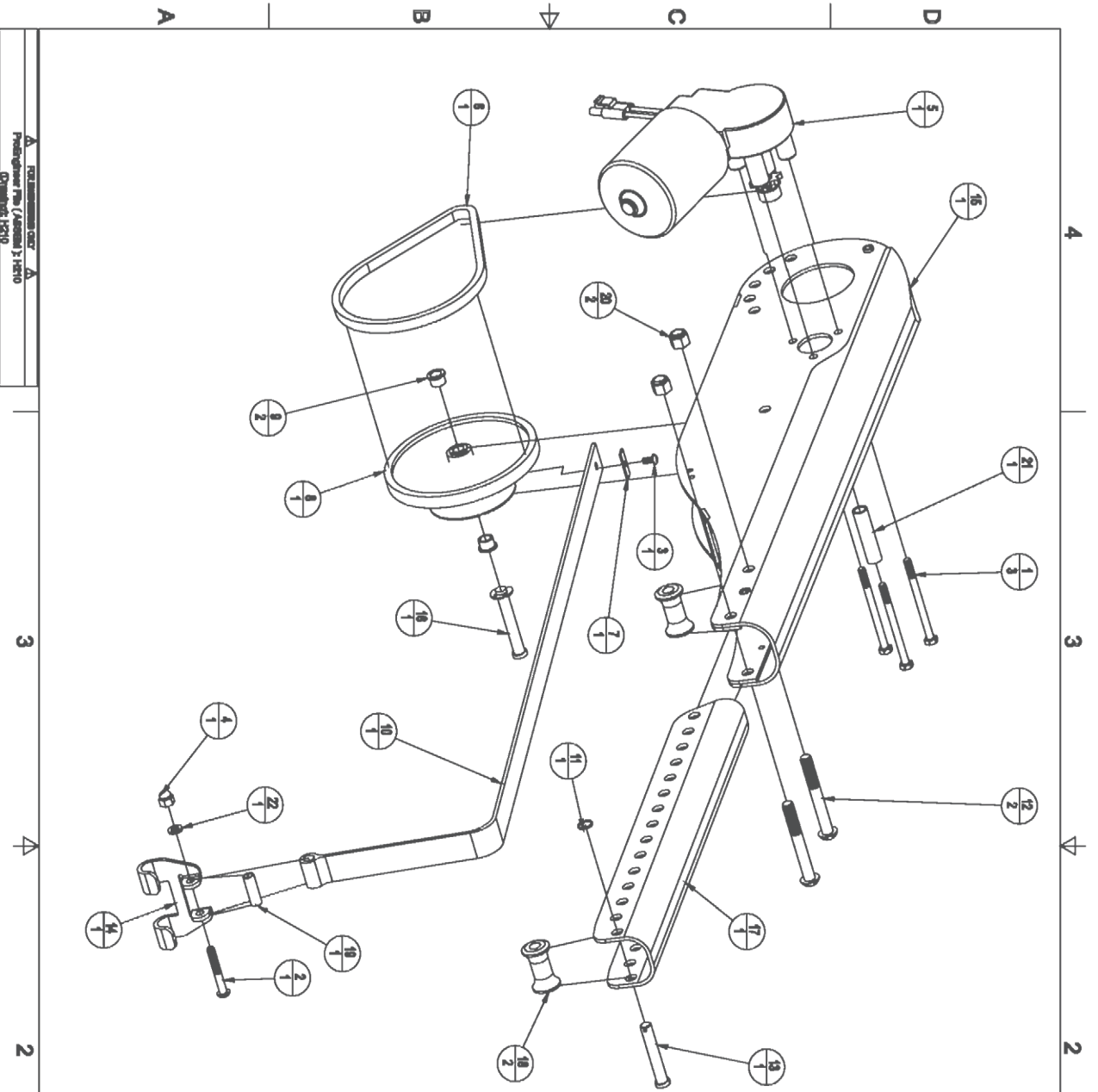
CONFIDENTIAL INFORMATION NOT TO BE CIRCULATED OR USED WITHOUT WRITTEN COMMENT FROM THE ISSUING OFFICE UNLESS OTHERWISE SPECIFIED IN THE DRAWING			
DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED IN THE DRAWING	DIMENSIONS IN METERS UNLESS OTHERWISE SPECIFIED IN THE DRAWING		
DO NOT SCALE DRAWINGS			
DRAWING NO. <b>AL210</b>			
DESCRIPTION <b>UNIVERSAL INSIDE LIFT</b>			
MATERIAL	FINISH	DRAWN BY	DATE
SCALE 1:1	SIZE B	SHEET 1 OF 3	



ASSEMBLY PARTS		1	
ITEM QTY	PART NO.	DESCRIPTION	
1	BHCS	1/4-20 x 1.75 Button Head Cap	
2	BHCS	10-32 x 3/8" Button Head	
3	ACORN NUT	1/4-20 Acorn Nut	
4	ALAZ1071	LIFTING MOTOR	
5	ALAZ1020	SPOOL CHAIN 50 LINKS	
6	ALAZ1005	STRAP TUB	
7	ALAZ14	SPOOL	
8	ALAZ1410	FLANGE BUSHING BRZ 3/8X1/2X3/8	
9	ALAZ1007	LIFTING STRAP	
10	ALAZ08P14	SPRIT RING	
11	BHCS	3/8-16 x 2.00" Button Head Cap	
12	CLEVIS PIN	3/8 x 2.25 (2.018 unthread)	
13	HZ1072	DETACHABLE HOOK	
14	HA1000	LIFTING ARM (field only)	
15	HA1020	CLEVIS 3/8 x 2.25 (2.243 unthread)	
16	HA2040	ALZ00 INNER ARM	
17	HA2060	STRAP ROLLER	
18	HA2006	STRAP HOOK BOLT SLEEVE	
19	NUT	3/8-16 Nyloc Nut	
20	BHCS	1/4-20 x 2.75" Button Head Cap	
21	TUV-050-05VAL-2-00	ALUMINUM SPRACER	
22	WASHER	1/4" SPRIT LOCK WASHER	

<p>CONSPICUOUS IDENTIFICATION SHALL BE OBTAINED FOR ALL PARTS AND COMPONENTS WITHOUT EXCEPTION COMMENT</p> <p>REVISIONS SHALL BE IDENTIFIED BY DATE AND BY THE ENGINEER</p> <p>DO NOT SCALE DIMENSIONS</p>		<p>DATE: 01 JUN 01</p> <p>BY: [Signature]</p>
<p>DESCRIPTION</p> <p><b>H410</b></p>		<p>DATE:</p>
<p>LIFTING ARM ASSY</p>		<p>DATE:</p>
<p>MATERIAL:</p>	<p>FINISH:</p>	<p>DATE:</p>
<p>SCALE: 1:10</p>	<p>SIZE: B</p>	<p>HEET: 2 OF 3</p>

A PLYS...  
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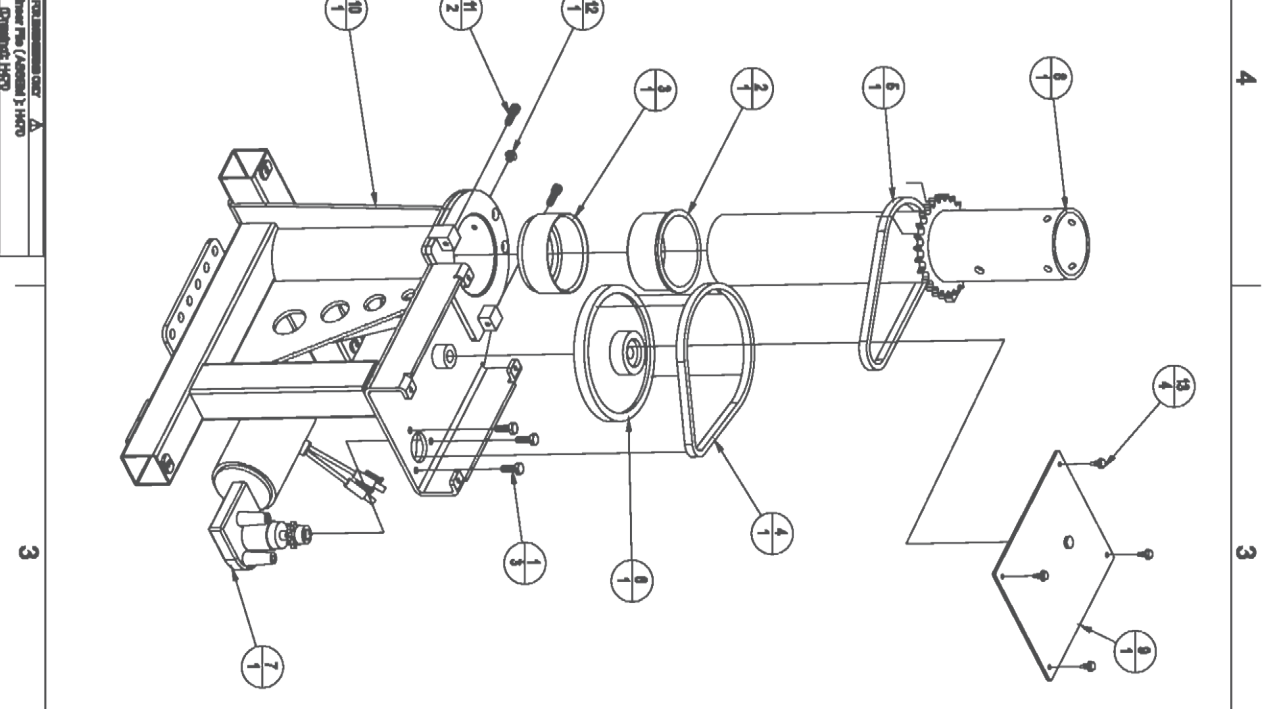


ASSEMBLY PARTS		
ITEM QTY	PART NO.	DESCRIPTION
1	HHCS	M6-1.0 x 80mm
2	BHCS	1/4-20 x 1.75 Button Head Cap
3	BHCS	10-32 x 3/8" Button Head
4	ACORN NUT	1/4-20 Acorn Nut
5	ALAD011	ECONOMY LIFTING MOTOR
6	ALAC1020	SPOOL CHAIN 50 LINKS
7	ALAC1020	STRAP TUB
8	ALAC14	SPOOL
9	ALAC1410	FLANGE BUSHING BRZ 50X1225/8
10	ALAC707	LIFTING STRAP
11	ALAC08714	87LIT RING
12	BHCS	3/8-16 x 3.00" Button Head Cap
13	CLEVIS PIN	3/8 x 2.25 (2.016 length)
14	H21072	DETACHABLE HOOK
15	H4100	LIFTING ARM (hard only)
16	H41020	CLEVIS 3/8 x 2.25 (2.543 length)
17	H42040	AL20 INNER ARM
18	H42080	STRAP ROLLER
19	H42065	STRAP HOOK BOLT SLEEVE
20	NUT	3/8-16 Nyloc Nut
21	TU1-080-086AL-2-00	ALUMINUM SPACER
22	1	1/4" 87LIT LOCK WASHER

<p>COMPONENTS, SUBASSEMBLY PARTS TO BE COVERED OR LABELED WITHOUT WRITING COMMENT</p> <p>LIST AND IDENTIFY ALL SUBASSEMBLY PARTS TO BE COVERED OR LABELED WITHOUT WRITING COMMENT</p> <p>IDENTIFY ALL SUBASSEMBLY PARTS TO BE COVERED OR LABELED WITHOUT WRITING COMMENT</p> <p>DO NOT SCALE DIMENSIONS</p>		<p>DATE NO.</p> <p>H210</p>
<p>DESCRIPTION</p> <p>LIFTING ARM ASSY</p>		<p>DRAWN BY</p> <p>DATE</p>
<p>MATERIAL</p> <p>SCALE 1:500</p>	<p>FIGURE</p> <p>DATE</p>	<p>SHEET 2 OF 3</p>

A FOR DIMENSIONS SEE A  
 Part number 776 (Assembly) 3 18710  
 Drawing 15210

A FOR INFORMATION ONLY  
 Prealigner Pin (Ass'mly 5 HW0)  
 Dimension H50



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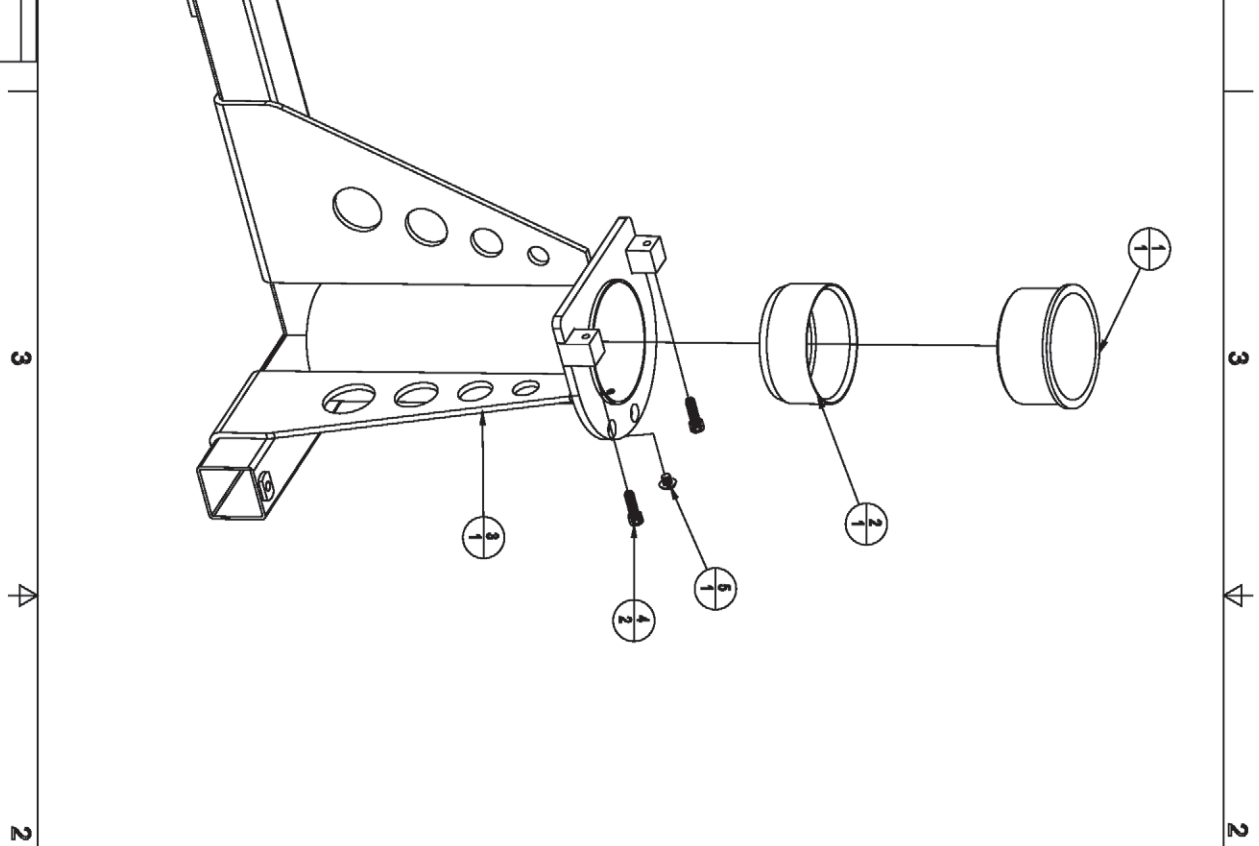
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ITEM	QTY	PART NO.	DESCRIPTION
1	3	HHCS	14-20 x 3/4" HHCS
2	1	AL2004	FLANGE BUSHING
3	1	AL2005S	CLP BUSHING
4	1	AL40021	36 PITCH CHAIN, 82 LINKS
5	1	AL40022	40 PITCH CHAIN, 88 LINKS
6	1	AL4004	DOUBLE SPROCKET
7	1	AL41011	ROTATION MOTOR
8	1	H440	OUTER POST/TUBE
9	1	H440	BASE LID ASSEMBLY
10	1	HW00	WELDED BASE
11	2	HW005	SHCS 14-20 x 3/4" Full
12	1	R485	14-20 x .25" NYLON Flat Head Round
13	4	TEX SCREW	#12 x 1/2" self drilling

<p>CONFIDENTIAL INFORMATION          NOT TO BE CURED OR LEND          WITHOUT WRITTEN COMMENT</p> <p>USE AND DISSEMINATION RESTRICTED          TO PERSONNEL ONLY BY INSTRUCTIONS          AND/OR PROCEDURES FILED IN CONTROL</p> <p>EXEMPT: X-X          25X          30X          40X          50X          60X          70X          80X          90X          100X          110X          120X          130X          140X          150X          160X          170X          180X          190X          200X          210X          220X          230X          240X          250X          260X          270X          280X          290X          300X          310X          320X          330X          340X          350X          360X          370X          380X          390X          400X          410X          420X          430X          440X          450X          460X          470X          480X          490X          500X          510X          520X          530X          540X          550X          560X          570X          580X          590X          600X          610X          620X          630X          640X          650X          660X          670X          680X          690X          700X          710X          720X          730X          740X          750X          760X          770X          780X          790X          800X          810X          820X          830X          840X          850X          860X          870X          880X          890X          900X          910X          920X          930X          940X          950X          960X          970X          980X          990X          1000X</p>			<p>DWG NO. HW00</p>	<p>DATE</p>
<p>DESCRIPTION</p> <p style="text-align: center;"><b>FULLY POWERED BASE ASSEMBLY</b></p>	<p>DRAWN BY</p>	<p>DATE</p>		
<p>MATERIAL</p>	<p>FINISH</p>	<p>DATE</p>		
<p>SCALE 1:1</p>	<p>REV B</p>	<p>SHEET 1 OF 2</p>		

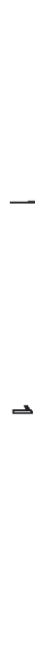
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FOR INFORMATION ONLY  
 Polygrapher File (Access) 3-11891  
 Drawing# 12891

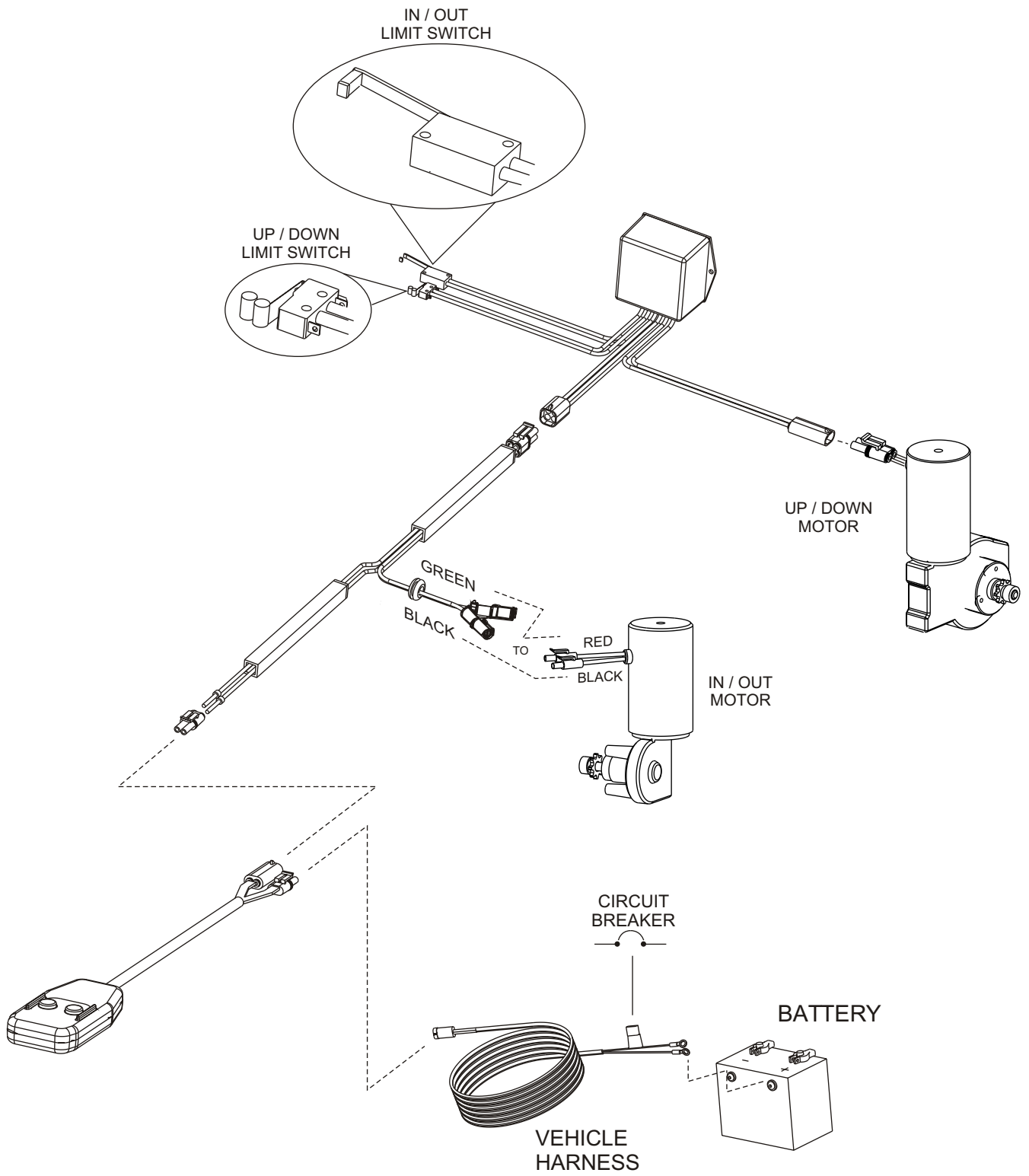


ASSEMBLY PARTS			
ITEM QTY	PART NO.	DESCRIPTION	
1	AL2004	FLANGE BUSHING	
2	AL2006	CLIP BUSHING	
3	H2810	AL410 BASE (weld only)	
4	H47088	SHCS 1/4-20 x 3/4" padel	
6	RHSS	1/4-20 x .25" NYLON Flat Head Round	

DIMENSIONAL INFORMATION DIMENSIONS ARE IN INCHES TOLERANCES ARE: DIMENSION X X X ANGLES ± DO NOT SCALE DRAWING		DIMS NO. <b>H281</b>	
DESCRIPTION <b>AL210 BASE</b>		DRAWN BY DATE	
MATERIAL SCALE 0.500		PART SHEET 1 OF 2	

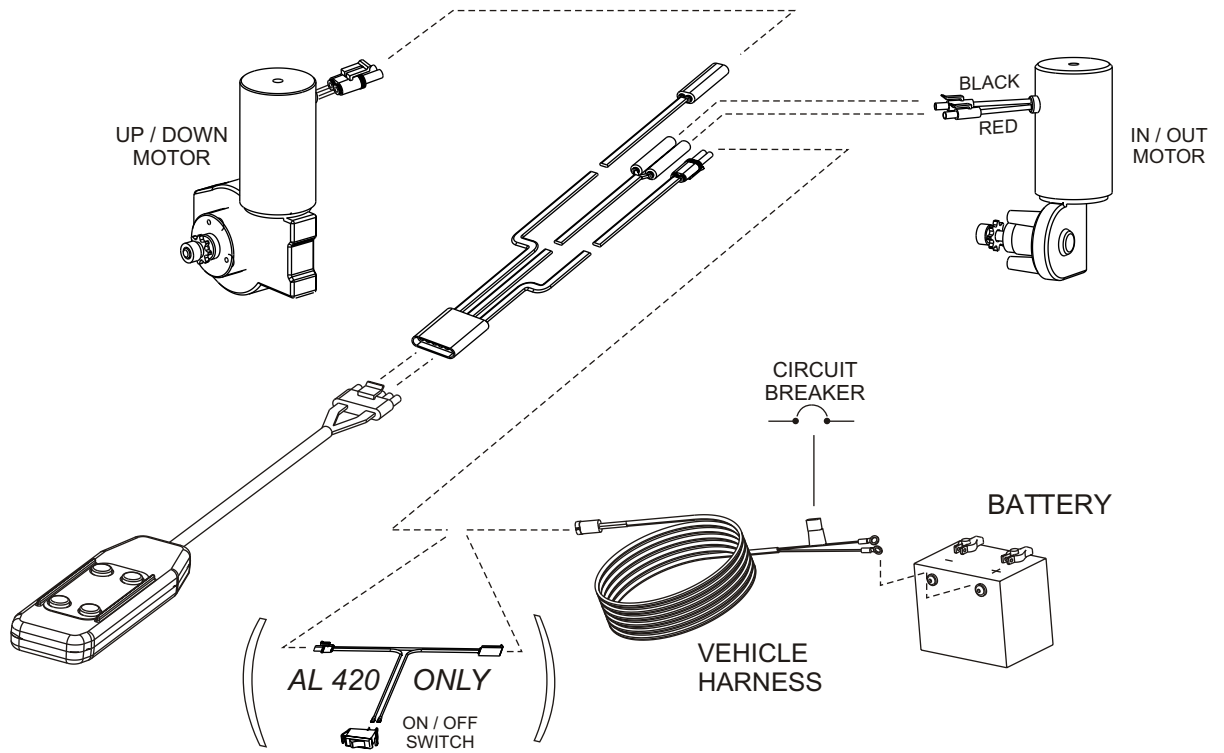


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AL 420 / 220 / 800



AL 055 / 065 / 210

