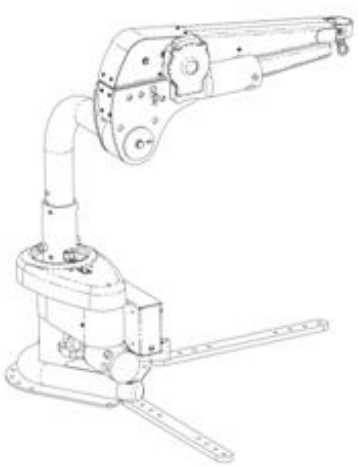
AL435 & AL435T
INSTALLATION & OWNER'S MANUAL



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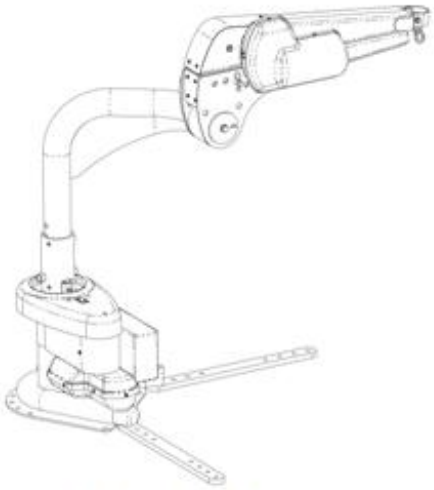


AL435T

These instructions are provided to assist you in the installation of your Harmar lift. If you require further assistance, our trained staff is ready to provide you with quick, efficient service. Call our toll-free number:

866.378.6648
Monday thru Friday, 8:00 AM – 8:00 PM (Except holidays) E.S.T
Before calling please have your serial number available.

FOR YOUR RECORDS

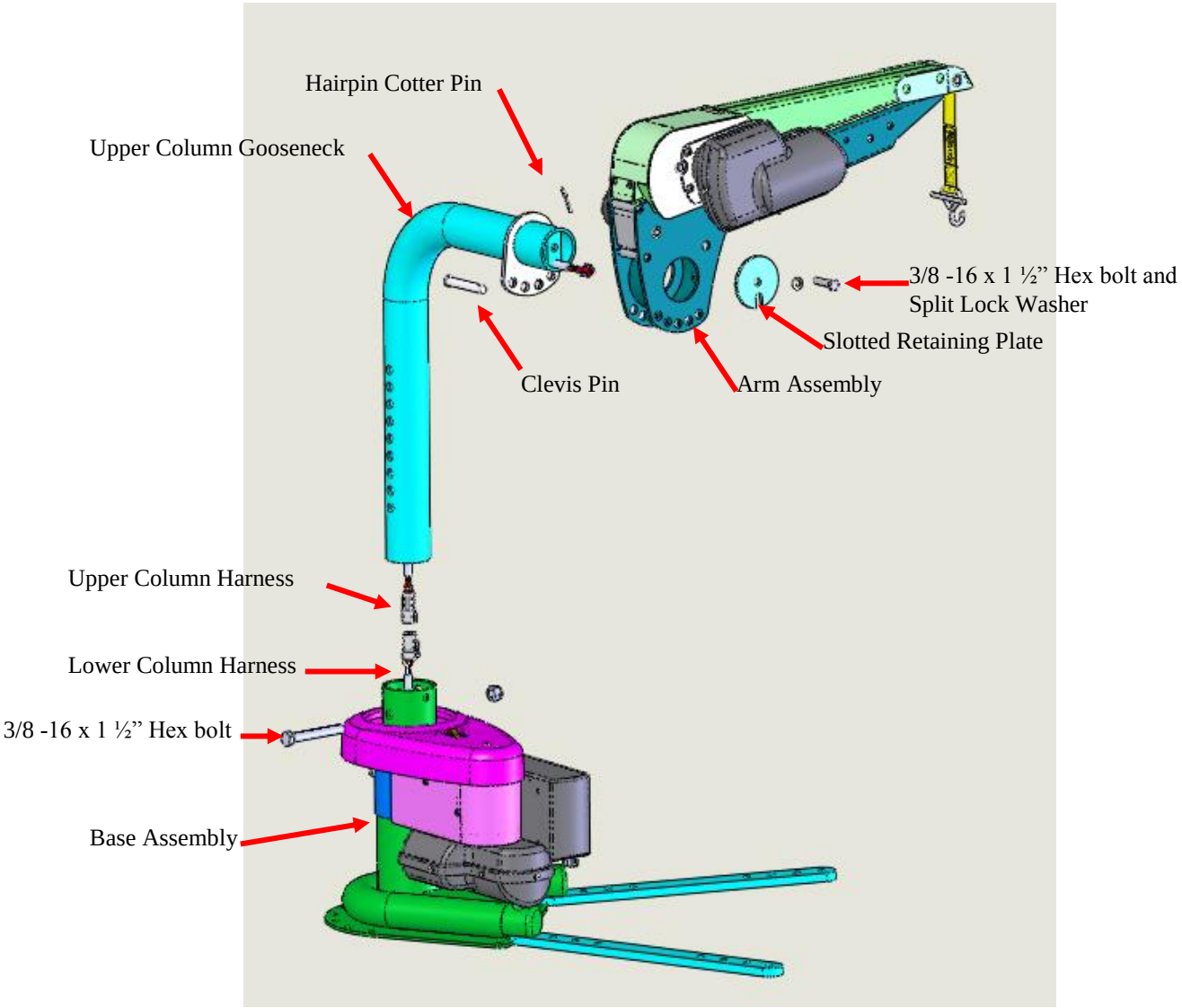
SALESPERSON_____

TELEPHONE_____

PURCHASE DATE_____LIFT SERIAL #_____

CUSTOMER #_____ORDER #_____

SHIPPED EXPLODED VIEW



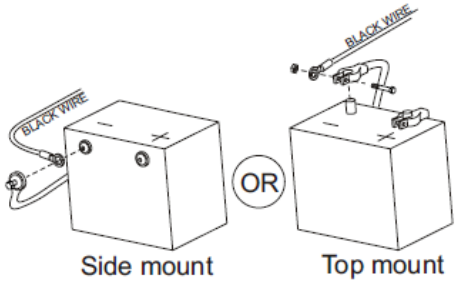
ELECTRICAL WIRING

WARNING:
DO NOT ATTACH THE GROUND WIRE TO THE VEHICLE'S FRAME.

IT IS IMPORTANT THAT THE BLACK GROUND WIRE BE CONNECTED TO THE BATTERY'S NEGATIVE TERMINAL (-) AND NOT TO THE VEHICLE FRAME. FAILURE TO ESTABLISH A PROPER GROUND MAY CAUSE INTERMITTENT AND ERRATIC OPERATION OF YOUR LIFT, MAY CAUSE DAMAGE TO THE LIFT AND/OR VEHICLE ELECTRICAL, AND MAY INVALIDATE THE WARRANTY.

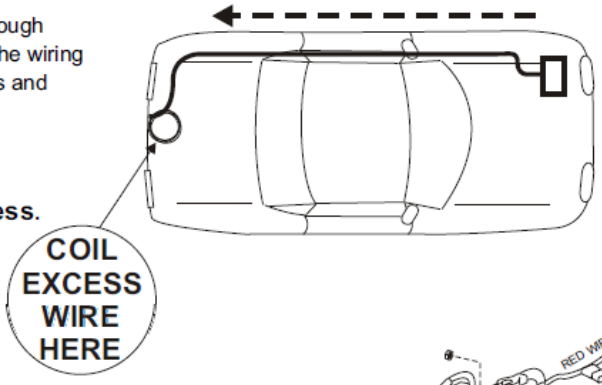
1. Unwind the harness and lay it flat. One end of the harness has a black plug . This end of the harness goes to the back of the vehicle.

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.**

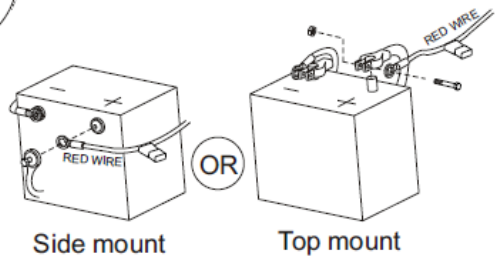


3. Run the wiring harness under, or when possible through the vehicle, back to the trailer hitch. Always locate the wiring harness where it can not be snagged by road debris and away from the vehicle's gas tank.

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 about even with the end of the hitch receiver tube.



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



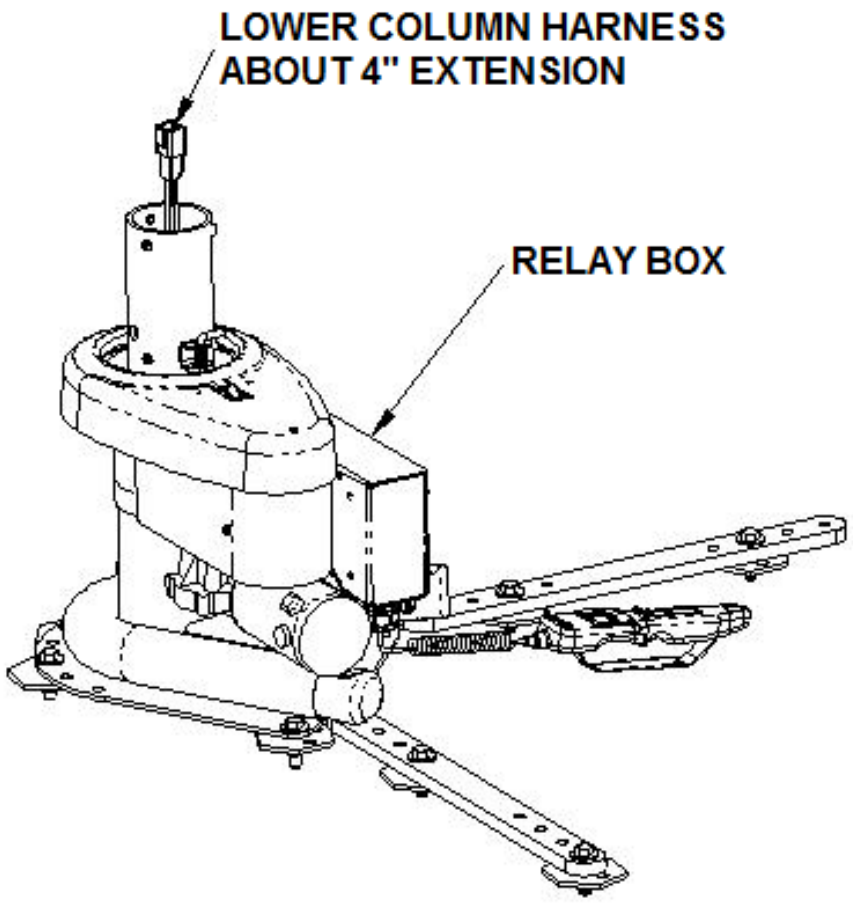
Important Reminder: Never attempt to attach the wire harness to a secondary power source. The harness requires direct connection to the battery.

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.**

INSTALLATION

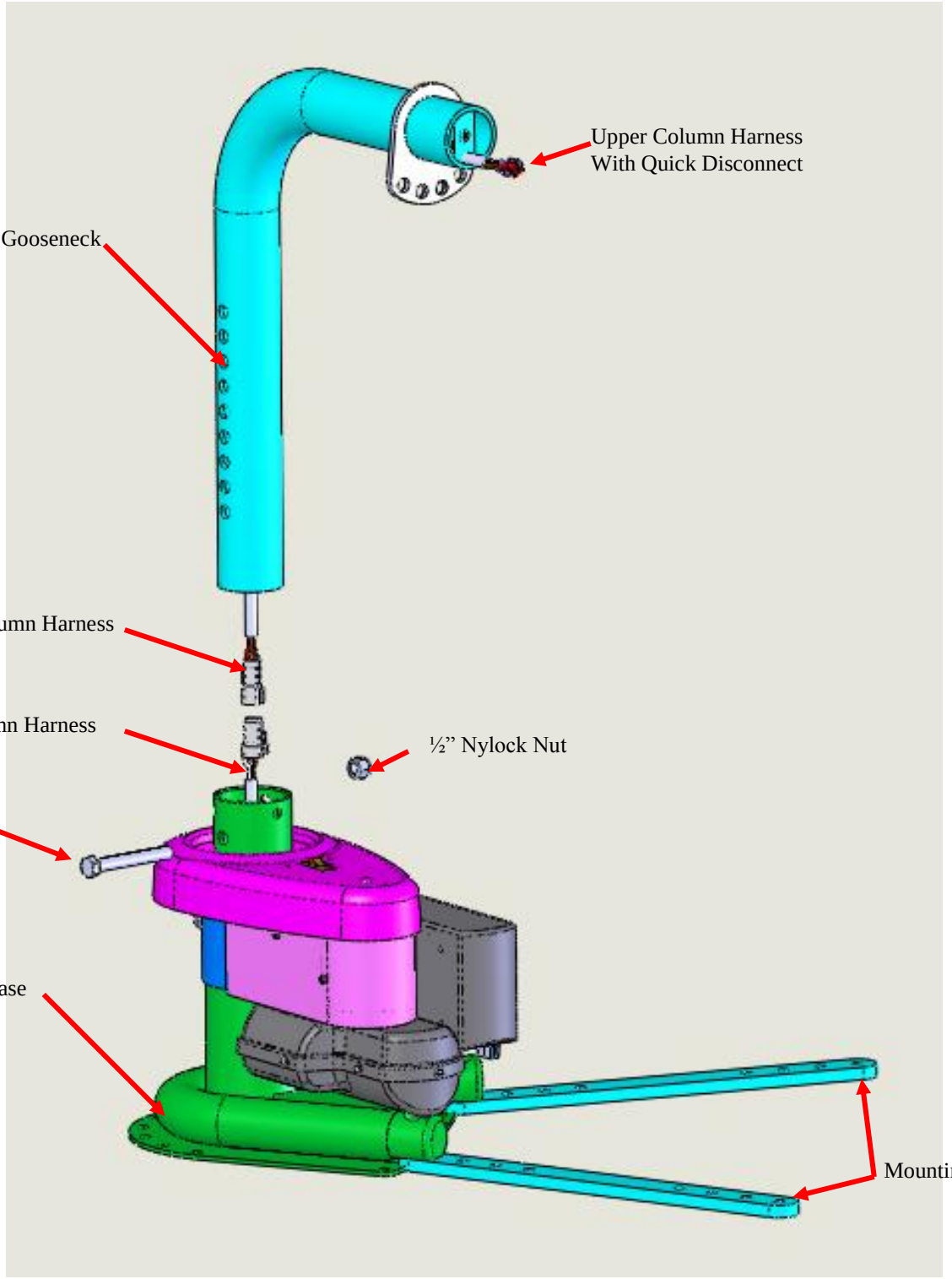
STEP 1
Position the base in the vehicle at the desired location. The relay box should be parallel to the sides of the vehicle. Make sure the Lower Column Harness is extending from the top of the Base column about 4" as shown in Figure 1. **Note: It would help to tape the Lower Harness to the inside tubing wall. Tape it away from the holes for the 1/2x3.75" hex bolt used in the next step.**

FIGURE 1: BASE WIRING



STEP 2

Connect the Lower Column Harness extending from the base to the Upper Column Harness extending from the bottom of the gooseneck column as shown in Figure 2. Insert the gooseneck column into the rotary column being careful not to pinch the wires. Bolt the gooseneck column to the Base at an appropriate height. Use the 1/2x3.75" hex bolt and lock nut as shown. **CAUTION: DO NOT FORCE THE BOLT THROUGH YOU MAY NICK THE INSULATION ON THE HARNESS INSIDE THE TUBE**



AL435

STEP 3

Check for vehicle components under the floorboard before drilling any mounting holes. Determine appropriate base mounting points. Adjust the swivel legs as necessary to obtain the most secure mounting points, avoiding interference with any components underneath the floorboard, i.e. exhaust system, fuel tank and lines, brake lines and electrical wire harness, etc. For stability, it is suggested that at least one hole be drilled and one mounting bolt be installed as shown in Figure 3 before proceeding to step 4. Release the rotational lock and swing the gooseneck column to check the Lift location within the vehicle. Adjust the base location as necessary.

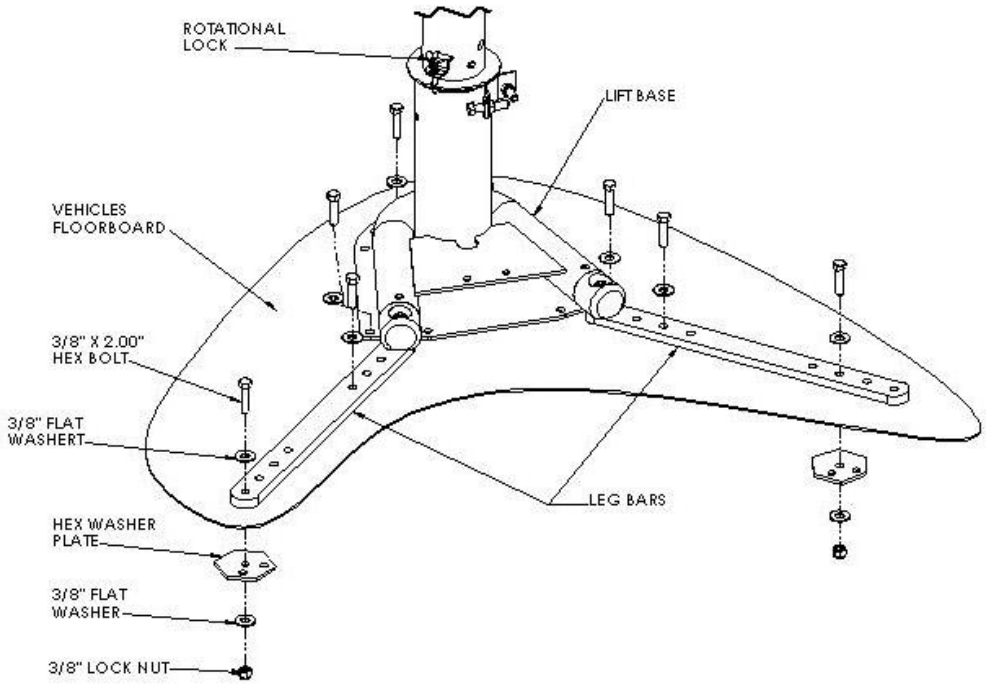


FIGURE 3: BASE MOUNTING

STEP 4
Feed the arm power harness extending from the top end of the gooseneck column through the arm hub. Slide the hub onto the gooseneck column as shown in Figure 4. Insert the ½" arm clevis pin through appropriate angle adjustment holes in the tilt wing and the arm. Secure the clevis pin with the cotter pin.

Attach the arm washer to the end of the gooseneck column as shown using the 5/16x1.50" hex bolt and split lock washer. Take care to feed the arm power harness through the slot in the arm washer. Connect the arm power harness to extend & Lift motor connector.

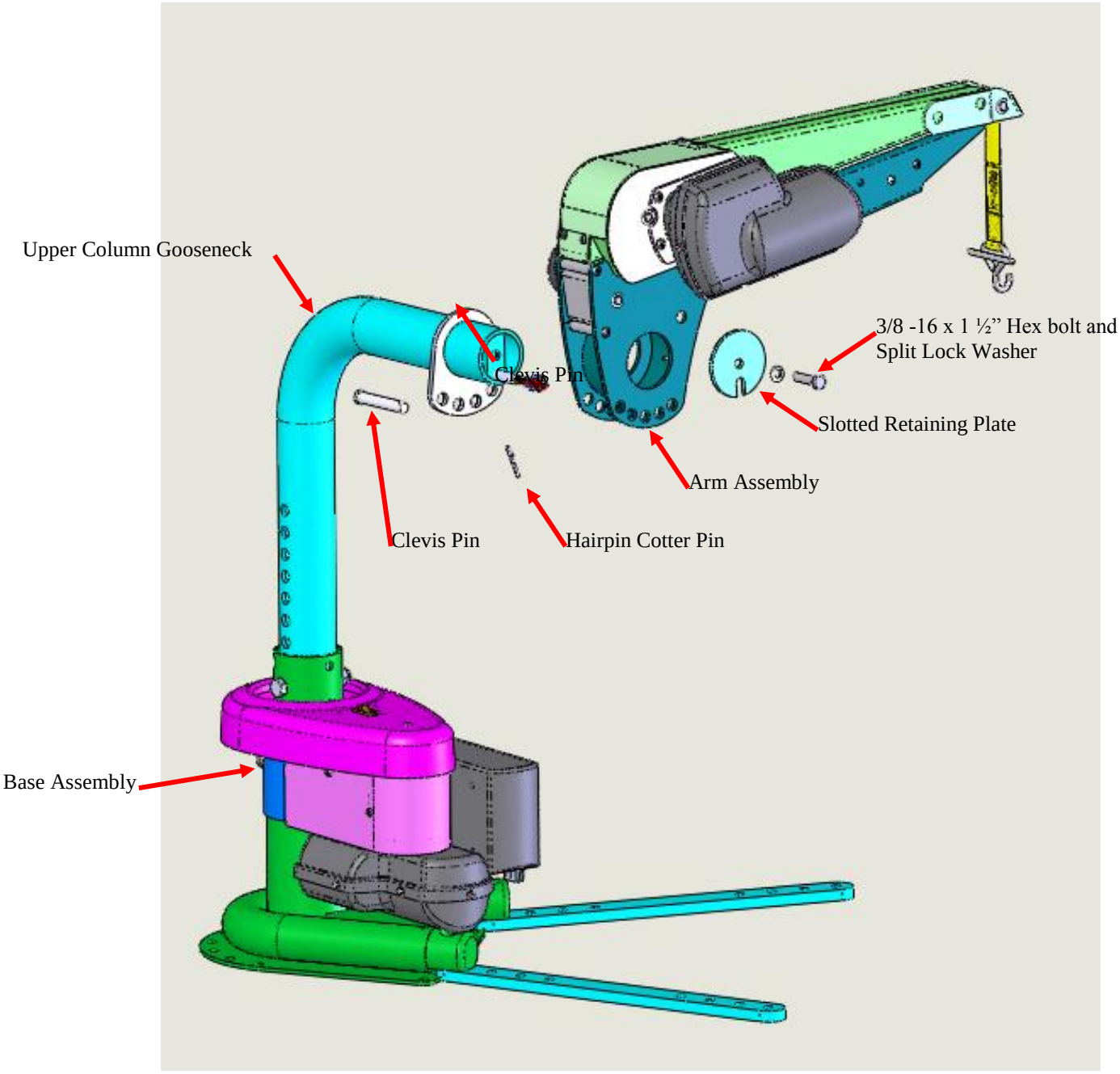


FIGURE 4: ARM ASSEMBLY

STEP 5
Finish securely attaching the base mounting hardware as shown in Figure 3.

STEP 6
Readjust the column height, arm angle as needed to Lift and load the scooter into the vehicle. Set the swing stops by turning the bolts and locking jam nuts under the chain plastic base cover until the micro switch is contacted. Figure 5 shows the stop position with the arm swung into the vehicle. The stops should be adjusted to automatically prevent the Lift from hitting the vehicle.

Note: There is a 10 Amp in-line fuse and a 20 Amp re-settable circuit breaker located underneath the relay box as shown in Figure 6. The purpose of this fuse is to cut off the motor if the operator rotates the Lift into an object or otherwise impedes the rotation of the boom arm. The purpose of this re-settable circuit breaker is to cut off the Lift motor in the event the Lifting operation is impeded in any way. These features are intended to prevent damage to the Lift or scooter/power chair and to avoid dangerous conditions.
If the fuse blows, it must be replaced with a standard automotive/blade fuse of 10 Amp rating. If the re-settable circuit breaker will not re-set, it must be replaced with a 20 Amp, 12VDC ATC Thermal Type II Circuit Breaker. Replacing a blown fuse with one higher than 10 Amp and/or replacing the 20 Amp circuit breaker with one higher than 20 Amp may allow damage to the Lift and scooter, allow dangerous conditions, and void the warranty. Two replacement fuses are supplied with the Lift. Additional replacement fuses can be obtained from any automotive parts store.

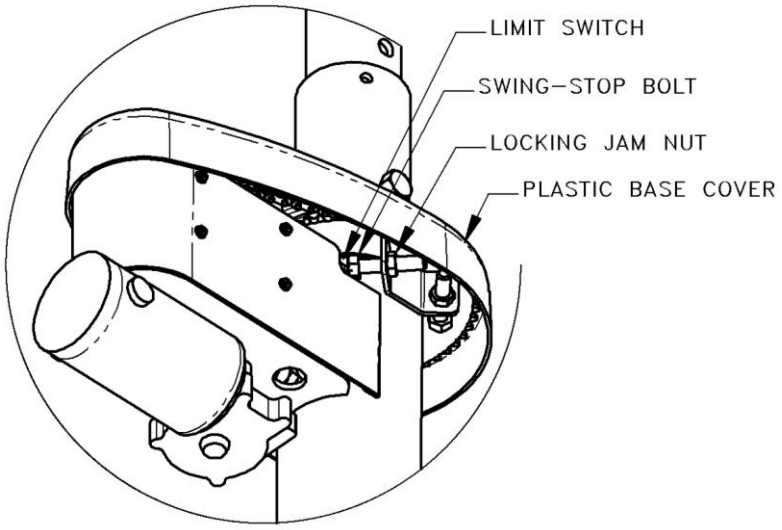


FIGURE 5: SWING STOP ADJUSTMENT

User Precautions

1. The Power Chair must have the brake engaged during transport.

   WARNING: FAILURE TO ENGAGE THE BRAKE DURING TRANSPORT COULD RESULT IN SERIOUS PERSONAL INJURY OR DAMAGE TO THE LIFT, THE POWER CHAIR, AND VEHICLES.

2. After the Power Chair has been lifted into the vehicle, turn the lift control cut-off switch off. This will prevent inadvertent operation of the lift by remote control and/or hand held pendant. The switch is located on top of the base. Remember, for the control cut-off switch – "**RED IS ON**."

   WARNING: ALWAYS PUSH THE POWER CUT-OFF SWITCH TO THE OFF POSITION WHEN NOT OPERATING THE LIFT.

3. The lift is equipped with a 30 AMP self-resetting circuit breaker on the wire harness. The circuit breaker is located in the vehicle near the battery end of the power wire harness. The circuit breaker protects the lift against excessive current draw and is self-resetting. If the circuit breaker continues to trip, have the unit inspected by the installer or by an authorized service center to troubleshoot and correct the problem.

   WARNING: DO NOT ATTEMPT TO BYPASS THE CIRCUIT BREAKER AS THIS MAY CAUSE SERIOUS DAMAGE TO THE LIFT AND/OR CAUSE A FIRE.

4. The lift has a maximum weight lifting limit of 250 or 400 pounds depending on the model. These values apply only if the transporting vehicle and lift are level. Grades more than 5% (4.5 degrees) will reduce the safe lifting capability. If you have any questions on the weight of your scooter or power chair, please contact your lift installer or scooter manufacturer. If you have any questions on weight lifting limits, please contact the installer, authorized service center, or Freedom Lift.

   WARNING: DO NOT EXCEED THE MAXIMUM CAPACITY OF LIFT OR DAMAGE TO THE LIFT AND/OR SERIOUS INJURIES MAY OCCUR.

5. The manual lock lever must be engaged or the arm prevented from rotating during transport.

   WARNING: FAILURE TO ENGAGE THE MANUAL LOCK LEVER OR PREVENTING THE ARM FROM ROTATING DURING TRANSPORT COULD RESULT IN SERIOUS PERSONAL INJURY OR DAMAGE TO THE LIFT, THE POWER CHAIR, AND VEHICLES.

6. The lift has been designed to lift power chairs and scooters. It has not been designed or intended to lift any other object. Lifting people or objects other than power chairs or scooters may be dangerous.

7. Keep the area underneath of the lift clear at all times (i.e. objects, pets, people, etc.).

8. Avoid twisting and abrading the lifting strap. Inspect the strap periodically and replace if the strap shows any signs of wear.

POWERING THE LIFT

There are two methods for powering the lift:

- Using the Battery Pack
- Hard Wiring the lift to the vehicle's battery

Note: The lift may be hard wired to the vehicle's battery, or use a "Mobile Power" battery pack for back-up power.

POWERING WITH THE "MOBILE POWER" BATTERY PACK

Plug the cable from the battery pack into the 12 volt DC connector on the bottom of the lift base. Charge the Battery Pack for 24 hours prior to initial use.

POWERING WITH THE TRANSPORTING VEHICLE'S ELECTRICAL SYSTEM

If your lift has been hard wired directly to the transporting vehicles electrical system, a 30 A self-resetting circuit breaker is located near the transporting vehicle's battery normally located in the engine compartment. The circuit breaker protects the lift against excessive current draw. The circuit breaker is self-resetting. If the circuit breaker continues to trip, have the unit inspected by the installer or by an authorized service center to troubleshoot and correct the problem.

WARNING: DO NOT ATTEMPT TO BYPASS THE CIRCUIT BREAKER AS THIS MAY CAUSE SERIOUS DAMAGE TO THE LIFT AND/OR CAUSE A FIRE.

USING THE LIFT

A lifting bracket for your specific Power Chair must be attached to your Power Chair by the installer. Reference the specific instructions supplied with the lifting brackets for additional information.

LOADING PROCEDURE

1. Make sure that all objects are removed from the landing area inside and outside the transporting vehicle.
2. Switch the cut-off switch located on the top of the base to the "ON" position. If your lift is powered by the "MOBILE POWER" battery pack, move the power switch located on the battery pack to "ON".
3. Position your Power Chair next to the transporting vehicle. The Power Chair can be picked up directly behind or next to your vehicle. See the installer to determine the best lifting location for your situation.
4. Using the hand-held pendant or cordless remote, push and hold the "OUT" button until the lifting strap is directly above the lifting bracket on your Power Chair/Scooter. If you have an Equalizer 3, push the "EXTEND" button to position the lifting strap further out from the transporting vehicle if required.
5. Attached the lifting bar to your Power Chair. See your installer for specific lifting hardware required for your Power Chair.
6. Lower the lifting strap by pushing the "DOWN" button until the lifting strap's hook can be attached to the lifting bar.
7. Push the "UP" button to raise the Power Chair taking care to lift it directly up.

WARNING: IF THE POWER CHAIR IS NOT POSITIONED CORRECTLY, IT COULD SWING AND CAUSE DAMAGE TO YOUR VEHICLE OR PERSONAL INJURY. IF NECESSARY, REPOSITION THE POWER CHAIR BEFORE CONTINUING.

8. Continue lifting the Power Chair until it is high enough to clear the threshold of the transporting vehicle. Let go of the "UP" button to stop lifting.
9. If you have an Equalizer 3, push the "RETRACT" button until arm is sufficiently retracted.
10. Making sure that the path is clear and that the Power Chair will clear the threshold, push the "IN" button to rotate the lift's arm into the transporting vehicle. If the lift encounters sufficient resistance, a fuse, located on the lift base, will blow and stop the rotation. If this occurs, replace the fuse with a new 10 A fuse, eliminate the obstruction and continue the loading procedure.

    WARNING: THE POWER CHAIR COMING IN CONTACT WITH OBSTRUCTIONS AS THE LIFT ROTATES INTO THE TRANSPORTING VEHICLE CAN RESULT IN DANGEROUS CONDITIONS CAUSING DAMAGE TO THE LIFT, DAMAGE TO YOUR VEHICLE OR PERSONAL INJURY. NEVER USE A REPLACEMENT FUSE GREATER THAN 10 A.

11. Your lift should have been installed to automatically stop once fully inside the vehicle. Some care and practice may be required to position the Power Chair at the best position. Often the Power Chair will need to be turned slightly.
12. Once the Power Chair is fully inside the transporting vehicle, push the "Down" button to lower the Power Chair onto the cargo bed. Leave the strap attached to the lifting bar with a little tension during transport.
13. Engage the Power Chair's brakes during transport.

UNLOADING PROCEDURE
To unload the Power Chair from the transporting vehicle, reverse the loading steps.

ARM STORAGE
When the lift is not being used, the arm can be rotated down and out of the way. Remove the clevis and cotter pins holding the arm angle and rotate the arm down. The pins can be replaced into holes provided to keep the arm in the stored position. When returning the arm to the usable position, make sure the arm is at the original angle and the pins fully engaged.

MANUAL ROTATION
The Equalizer 1 does not have the powered rotation feature. For this lift, the manual lock lever must be disengaged and the arm manually rotated into and out of the transporting vehicle. Take care to limit the rotation to avoid hitting windows or walls of the transporting vehicle. Make sure the manual lock lever is fully engaged into the locked position during transport to prevent the arm from rotating.

MAINTAINING THE LIFT

WITH EACH USE:
- Check the lifting strap for twisting or signs of wear.

MONTHLY:
- Check all mounting hardware for tightness and signs of wear.

TWICE A YEAR:
- Have the installer or authorized service center inspect and perform required maintenance.

TROUBLESHOOTING CHART

SYMPTOM	POSSIBLE CAUSE	SOLUTION
Lift does not work	Control cut-off switch is off.	Turn the switch on. (RED IS ON)
	Power cord is unplugged from lift.	Plug the power cord into base.
	Vehicle battery not connected or is dead.	Check the battery connections; charge the battery.
	Mobile Power battery pack is weak or "dead".	Check LED on Mobile Power battery pack; charge if it is red.
	Pendant not plugged in.	Plug pendant in. The receptacle is located in the base.
	RF remote batteries are weak/"dead".	Replace batteries in RF remote Try the hand held pendant
	RF fuse blown	Inspect RF fuse, replace if needed
Lift runs slowly	Weak vehicle battery or Mobile Power battery pack.	Charge Mobile Power battery pack Charge vehicle's battery or run vehicle to charge it.
	Load is too heavy.	Remove any heavy personal items stored on Power Chair/Scooter. See guidelines in the "Safety First"
Lift will move up & down, but will not rotate in & out	Blown 10A fuse.	Check the fuse, located in the lift base. Replace if necessary with the same size fuse. If lift still does not rotate, contact an authorizer service center.
Lift moves up when it should go down. Lift moves down when it should go up.	Strap wound backwards on spool.	With a little tension on the strap, run the strap out until it begins to retract the strap.
Lift does not lift	Circuit breaker is tripped.	Reset by pushing the yellow button on the circuit breaker, under the relay box.

THANK YOU FOR MAKING HARMAR AMERICA'S LEADER IN LIFTS AND RAMPS