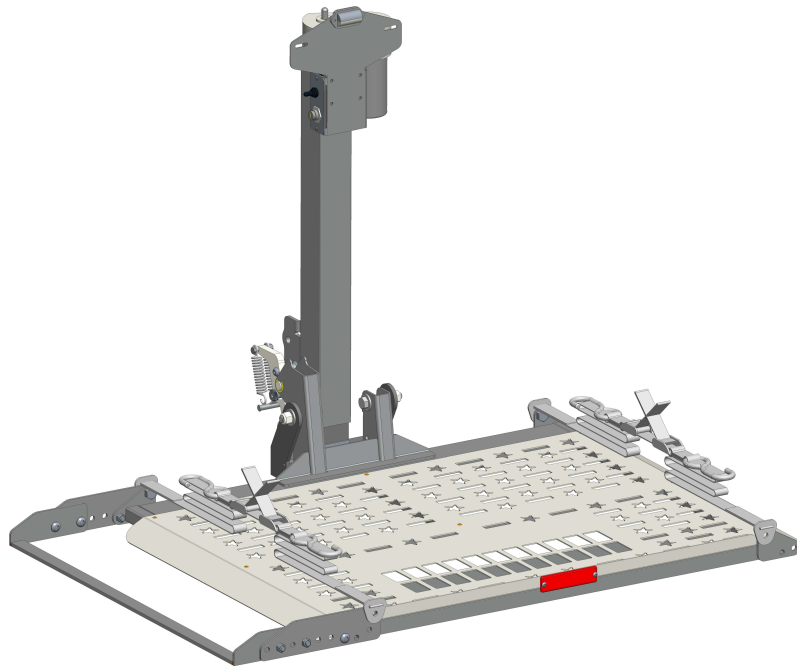


AL350

Installation & Owner's Manual



www.harmar.com | 800-833-0478



AL350 Hitch-Mounted Scooter and Powerchair Lift

Capacity: 350 lbs

Read and understand this manual thoroughly before attempting to install or operate the lift. If you have any questions, please contact your Authorized Harmar Dealer or Harmar's Technical Service Department.

P 800-833-0478 | F 866-234-5680 | TECH@HARMAR.COM

P/N: 610-00065 Rev A

Dealer Name & Contact Information:

Serial # of Your Lift:

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NOTE: The following symbols indicate areas where you should take special care to avoid danger to individuals or property.



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



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

GENERAL OPERATION

1. LOWERING THE LIFT

Insert key and switch to 'ON' position. Press 'DOWN' on toggle switch. The platform will unfold. Continue to lower until platform reaches the ground and becomes level. [Figure 3-1]

DO NOT over-lower to the point where the vehicle begins to rise. This will damage the lift.

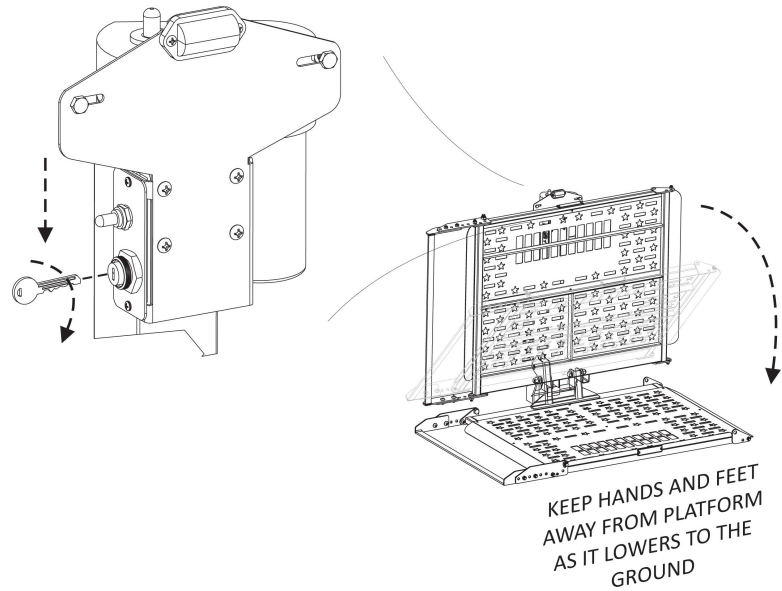


Figure 3-1

2. DRIVE ONTO PLATFORM.

Drive slowly, stopping when the drive wheels fall between the platform bars if applicable. [Figure 3-2]

IMPORTANT
Positioning the chair properly on the platform is critical to ensure it is properly locked onto the lift. Always verify wheels are captured by cradles or bars. Please consult your dealer on the specifics of your application.

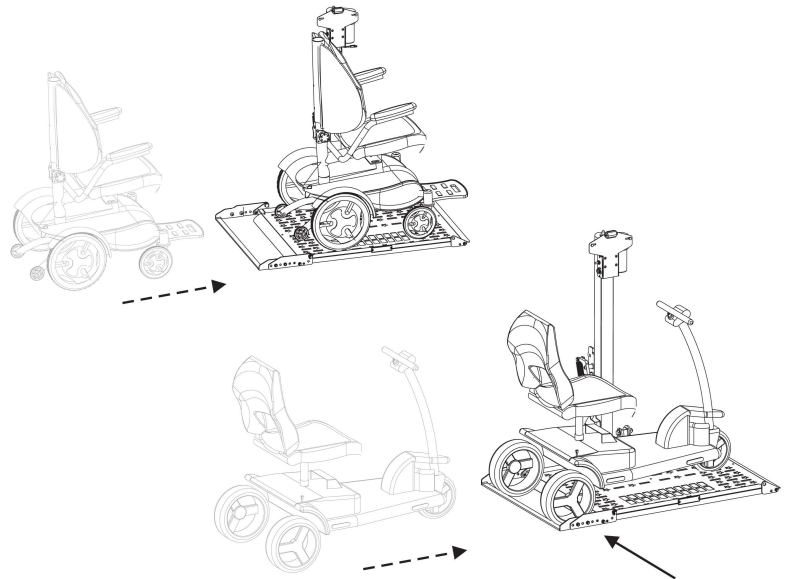


Figure 3-2

3. SECURING THE CHAIR

Ensure Chair or Scooter is Powered Off. You may wish to raise the platform halfway, using the 'UP' toggle switch, in order to avoid having to bend over while you attach straps. [Figure 4-1]

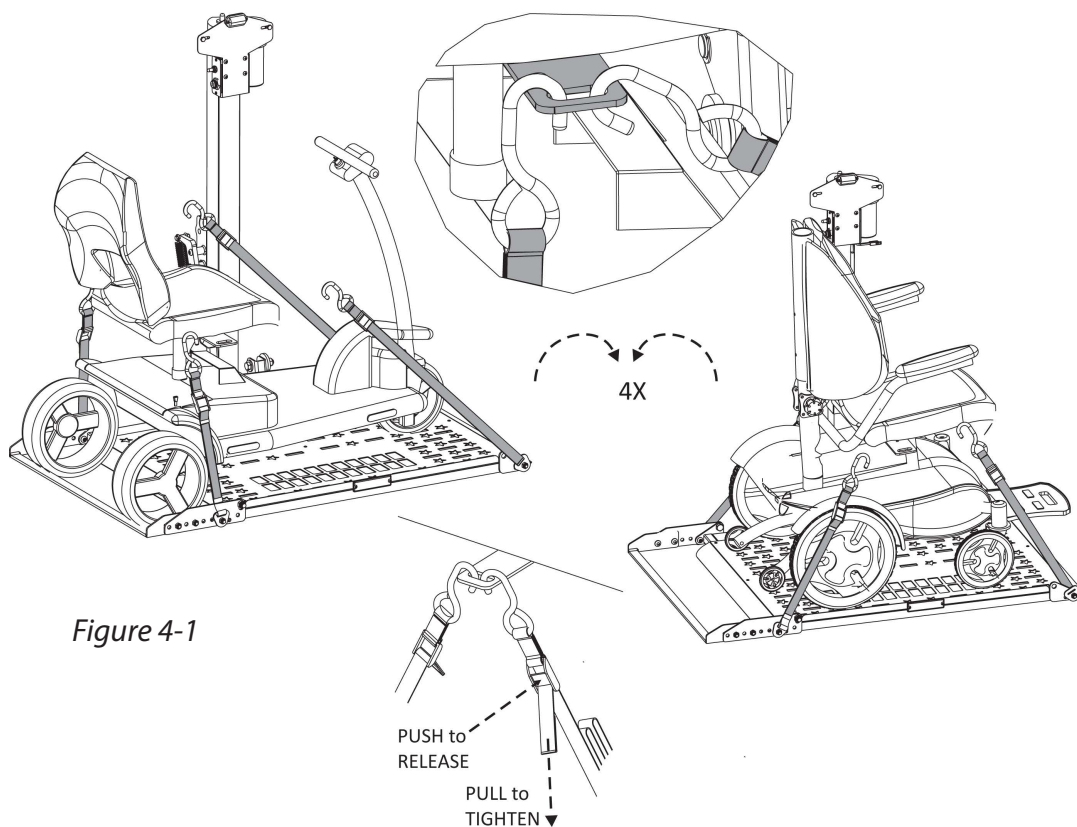


Figure 4-1

4. RAISING THE LIFT

When the chair is secure, use the 'UP' toggle switch to continue raising the lift. Stop when it reaches the top of travel when you hear the clutch sound. Twist the key to remove.

[Figure 4-2]

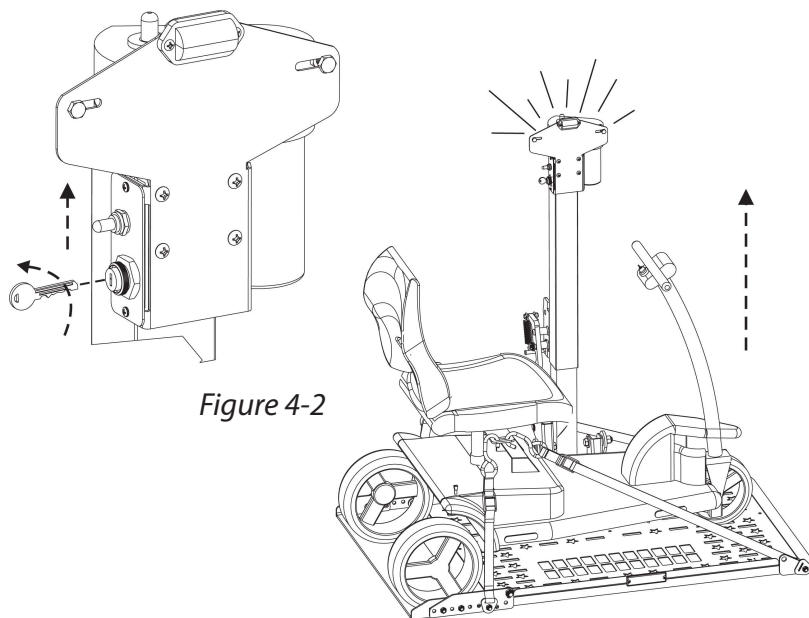


Figure 4-2

5. UNLOADING THE CHAIR

Insert the key and switch to 'ON' position. Press 'DOWN' to lower the lift. Do NOT continue travel to the point where the vehicle rises; that will damage the lift.

[Figure 5-1]

Drive the chair off the platform carefully. When the chair is unloaded, press 'UP' and the platform will automatically fold.

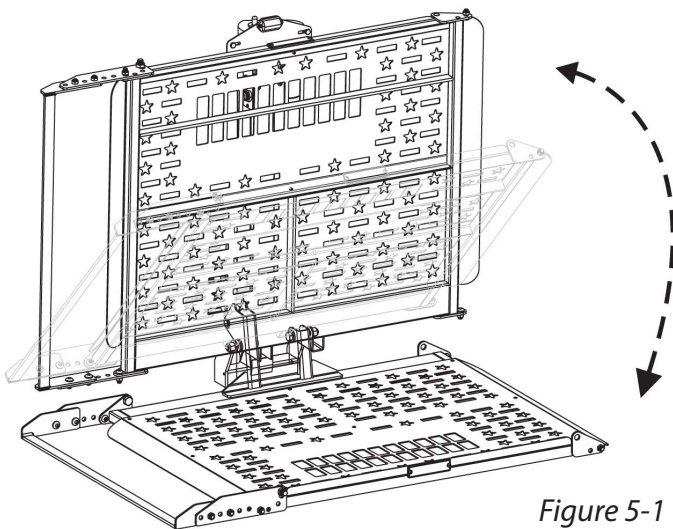


Figure 5-1

**CAUTION**

These are general instructions. Specifics may vary based on your chair model and lift combination. Please follow the specific instruction suggested by your dealer.

**CAUTION**

Always verify the chair or scooter is held firmly in place prior to transport.

- **Always** run the lift fully to the top for transport. The lift will make a ratcheting sound which indicates that all mechanisms are locked and prepared for travel.
- **Never** attempt to move the vehicle without the lift being in the full up or stowed position. This may damage the lift.
- **Drive slowly** over rough terrain such as pot holes, unpaved roads, railroad tracks. Excessive loads from rough driving will damage your lift and is not covered by the warranty.
- **If you notice any damage, stop using the lift immediately.** Do not attempt to transport a chair or scooter with a compromised lift. Damage to your chair, lift, vehicle may occur. Take the lift to your nearest dealer and have it evaluated prior to further use.

SWING-AWAY

The Swing-Away allows you to easily swing the installed auto lift away from the back of the vehicle for convenient access to the trunk or lift gate. The Swing-Away option can be purchased from an authorized dealer and added at any time.



WARNING

NEVER open the Swing-Away with the chair on the lift.

You will damage the Swing-Away and the lift. It will potentially damage the vehicle and the chair. Any of these actions will VOID your warranty.

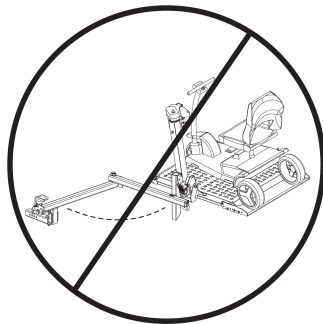


Figure 6-1



WARNING

Open **ONLY** on Level Ground

Failure to open on level ground may result in losing control of the lift, resulting in personal injury or damage to property.

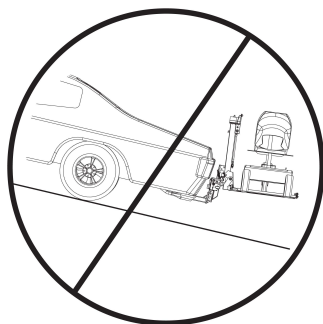


Figure 6-2

OPENING THE SWING-AWAY

1. Remove Safety Pin [Figure 6-3]

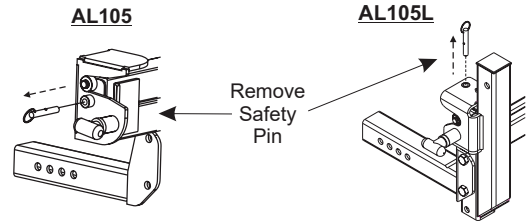


Figure 6-3

2. Pull T-Handle [Figure 6-4]

- Grasp the lift firmly and swing it out, away from the vehicle. The Swing-Away can be opened up to 180 degrees from the closed position to allow full access to the vehicle's cargo area. [Figure 6-5]

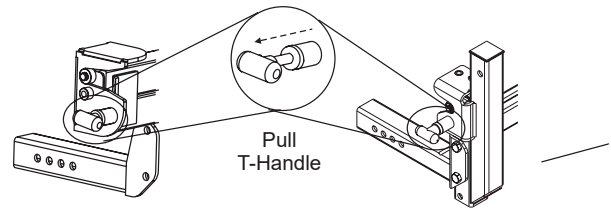


Figure 8-4

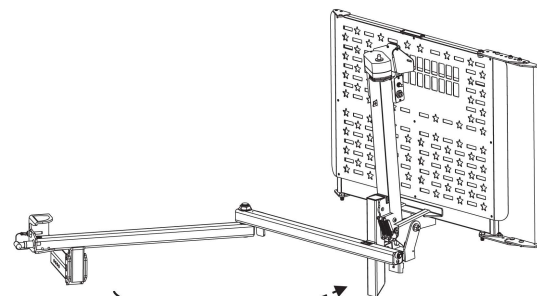


Figure 6-5

NOTE: Two Swing-Away models are available, a standard **AL105** and the lightweight **AL105L**. They work basically the same way but the parts differ slightly as noted in [Figure 6-3].

CLOSING THE SWING AWAY

Close the Swing-Away unit as you would a car door.



WARNING

Stay clear of the latching mechanism

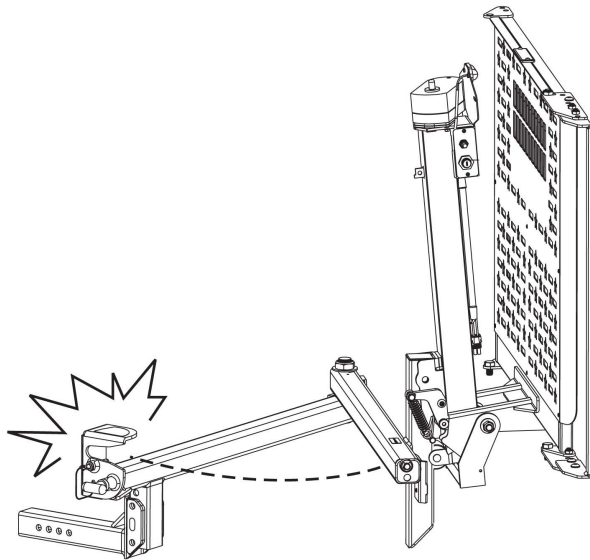


Figure 7-1



CAUTION

Verify that the T handle has fully retracted.

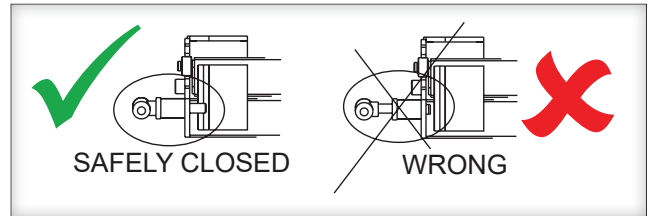


Figure 7-2



WARNING

Always install the safety pin.

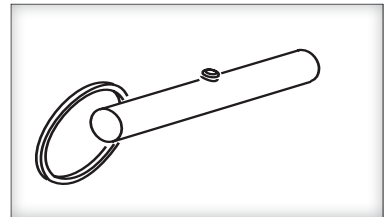
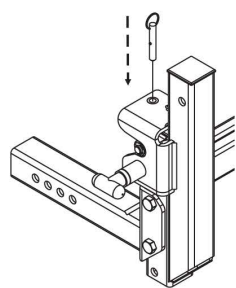


Figure 7-3

AL105L

AL105



Install Safety Pin

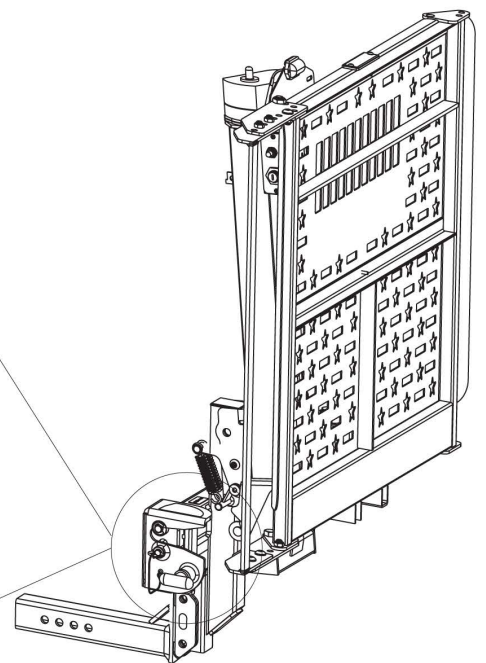
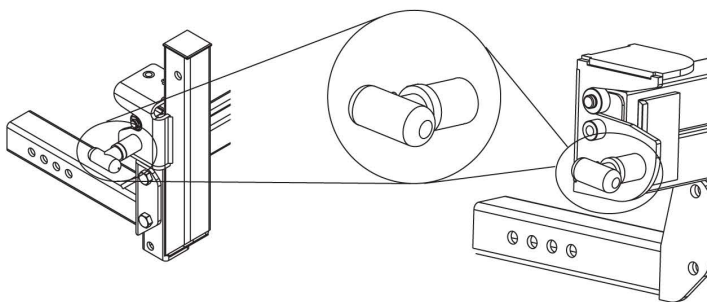
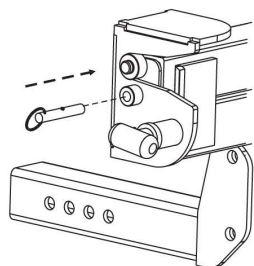



Figure 7-4

MANUAL OVERRIDE

In the event of a power failure, for example if your car battery dies, your lift can still operate using the Manual Override system.

 **WARNING** Disconnect power from lift **BEFORE** attempting manual override.

1. Unplug Power to the Lift. [Figure 8-1]

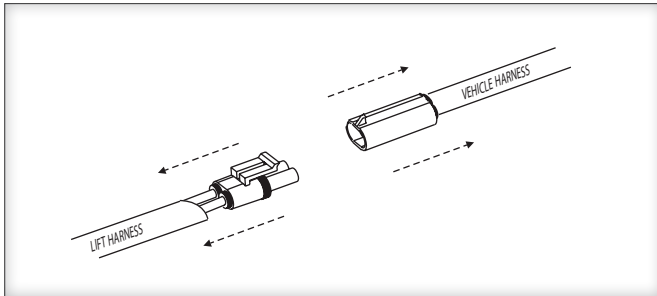


Figure 8-1

2. Remove the cap on top of the motor. [Figure 8-2]

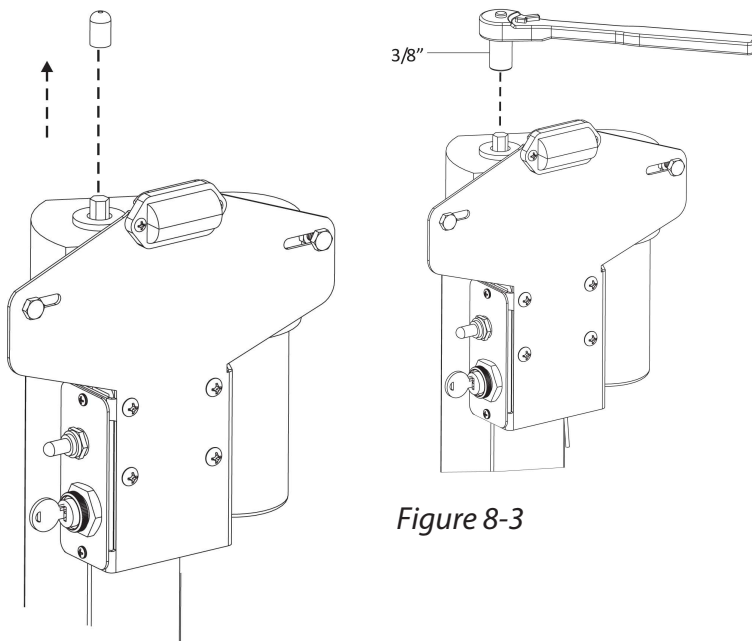


Figure 8-2

3. Insert a 3/8" socket wrench into the actuator and rotate the Hex Shaft. [Figure 8-3]

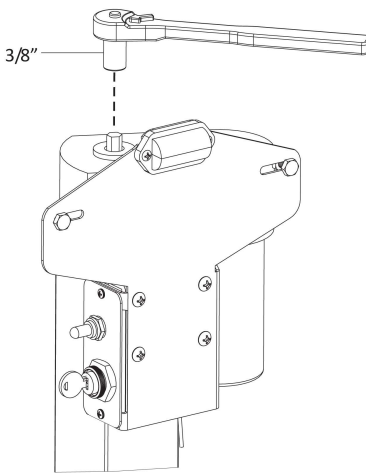


Figure 8-3

IMPORTANT! You **MUST** unplug the two-connector plug **BEFORE** any attempt to use the Manual Override. Failure to do so result in serious injury.

4. Turn **COUNTER-CLOCKWISE** to **LOWER** the platform. [Figure 8-4]

5. Turn **CLOCKWISE** to **RAISE** the platform. [Figure 8-4]

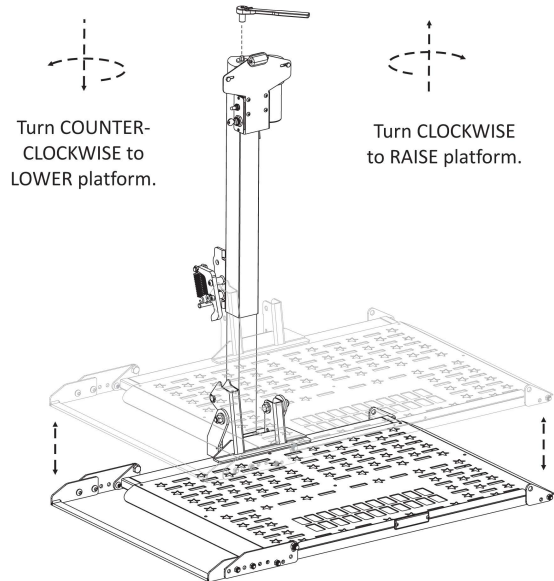
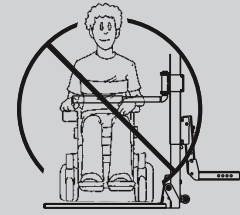


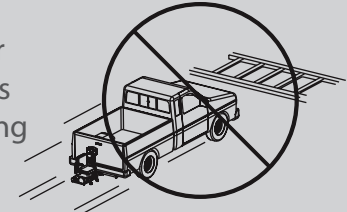
Figure 8-4

SAFETY & MAINTENANCE**WARNING!**

This lift is **NOT** meant for human transport. The chair or scooter **MUST** be unoccupied before operating the lift. Each lift is designed to transport a specific chair only. **DO NOT** attempt to move any mobility devices, objects, people, or materials other than those for which the lift was designed.

**CAUTION!**

Drive with **EXTREME CARE** while transporting your chair or scooter on the lift. **DRIVE SLOWLY** over rough terrain such as pot holes, unpaved roads, railroad tracks. Excessive bumping creates stress on the lift and vehicle and can badly damage your lift, vehicle, and mobility device.

**SPECIAL CAUTIONS**

- **Beware of pinch points.** These are areas of mechanical objects with moving parts than can catch extremities or clothing. Do not place fingers, extremities or allow clothing near such points.
- **Keep hands, feet and objects away** from Platform as it Lowers.
- **Keep chair tires properly inflated.** Improper inflation will change how the chair fits and secures on the platform, and changes the clamping pressure.
- **Secure chair firmly before driving.** Double-check that it is secured properly to the platform before you transport it.
- **Inspect the lift condition often.** If ANY parts are worn or damaged, **DO NOT USE THE LIFT.** Immediately contact the dealer you purchased the lift from for repairs.
- **Do Not Enter Steep Driveways Straight On.** Enter and leave at an angle to the street so that the lift does not drag on the ground.
- **Do Not Move the Vehicle with Platform Down.** If you move with the platform in the down position, you will damage the lift mechanism.
- **Hand Wash or Use Touchless Automatic Car Wash only.** To prevent lift damage do **NOT** use automatic wash systems.

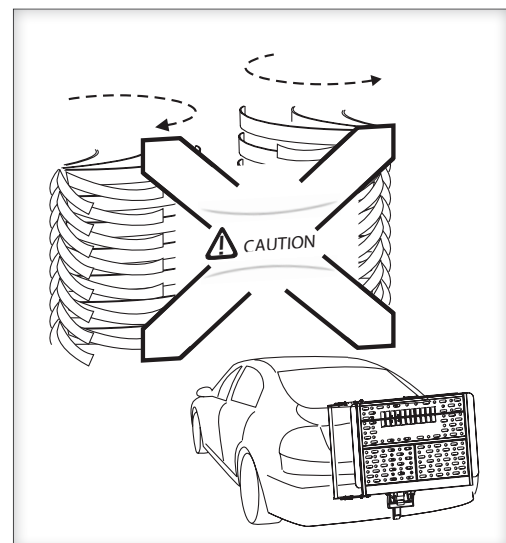


Figure 9-1



CAUTION!

Drive the scooter off in REVERSE. When the scooter is clear of the platform, raise the platform by pushing up on the UP/DOWN switch.

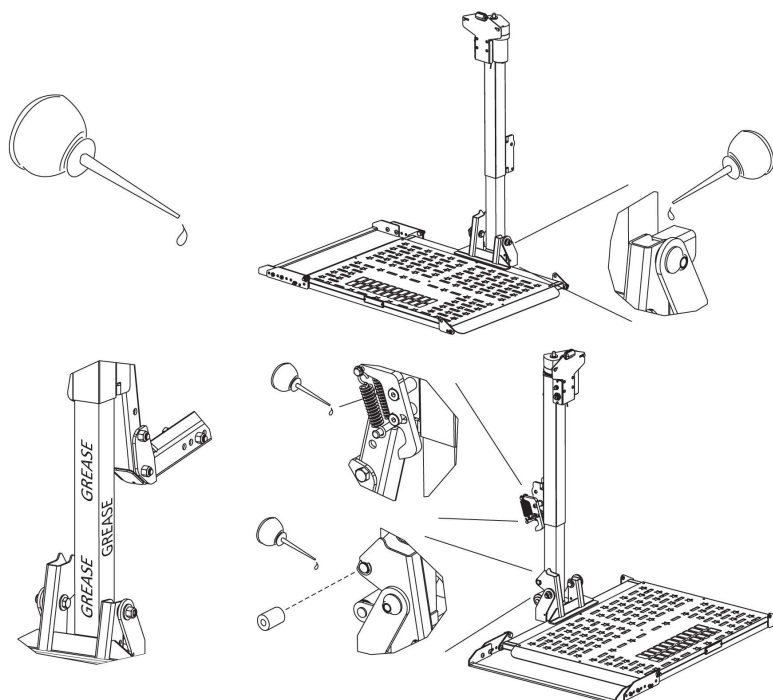


Figure 10-1

MAINTENANCE

This Outside Lift is designed to be as trouble free as possible; however, some basic maintenance will ensure that it continues to offer reliable use for years to come.

Oil pivot points on all moving parts every 30 days.

Re-grease the inside vertical square tube every 30 days in winter or in dirty or dusty conditions. Just lower the platform to the ground and clean the tube with mineral spirits, WD-40, or a good solvent. When clean, grease the square vertical tube shaft with high grade water-resistant grease such as boat trailer wheel bearing grease. [Figure 10-1]

Check for paint chips and touch up bare metal. Use a good gloss black enamel or lacquer to inhibit rust. You may need to do this more frequently if your lift is subject to salt air or road salt in the winter.

PROFESSIONAL INSTALLATION RECOMMENDED

NOTE: The following section is designed for the professional installer. We strongly recommend that a certified dealer install the lift, configure the docking device, and instruct the user on correct operation as well as establish a Safety and Maintenance Schedule.

lift with any hesitation or question. Serious injury or damage can result if proper procedures are not followed.

Read & Understand this Manual Prior to Installation or Operation.










Having an overall understanding of the lift and proper installation techniques will help you save time, energy and avoid possible injury.

If you do not understand any portion of installation or operation, please consult our technical service department or authorized mobility dealer. Do not attempt to install or use this

TOOLS REQUIRED

Installations may vary to some degree, but below are the basic tools to have on hand for an Outside Lift installation.

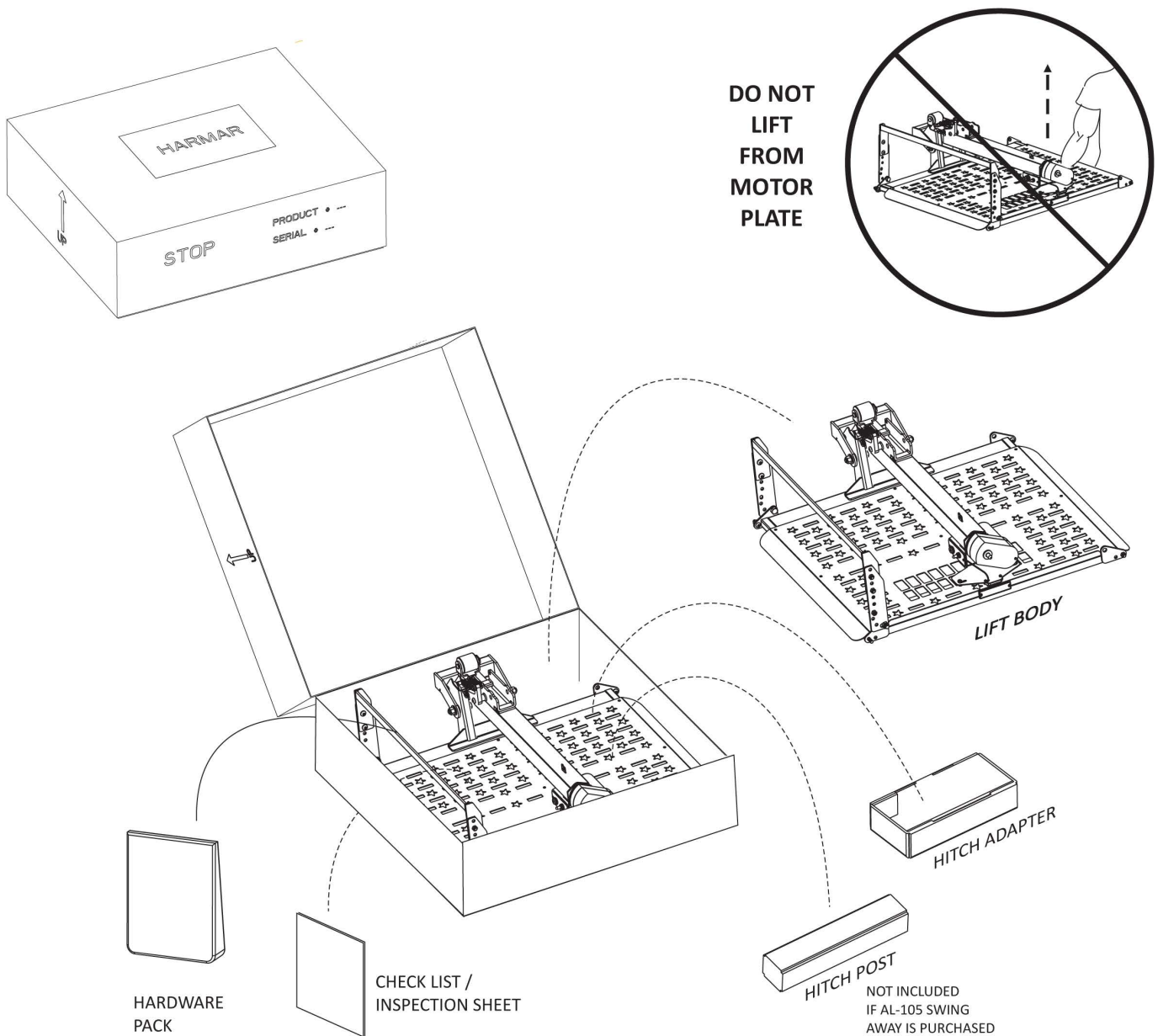
If you have any questions, concerns or comments, please contact our Technical Service Department at 800-378-6648 or tech@harmar.com

				WIRE CUTTERS
SOCKET SET Specifically 3/8" 7/16" 1/2" 9/16" 3/4"	WRENCH SET Specifically 7/16" 1/2" 9/16" 3/4"	ALLEN WRENCH Specifically 1/8" 3/16" 5/16"		NEEDLE NOSE PLIERS
#2 FLAT HEAD SCREWDRIVER	#2 PHILLIPS HEAD SCREWDRIVER	MARKING IMPLEMENT	TAPE MEASURE	
				

UNPACKING THE LIFT

Check the box contents. Review each part against the packaging checklist to ensure that all parts have been included.

If any parts are missing or damaged, immediately contact the dealer who sold the lift. Do not attempt to install or use a lift that has missing or damaged parts.



INSTALLATION OVERVIEW

Never attempt to pick up the lift from the box, ground or on/off a vehicle alone.

If you follow the proper installation procedure, no heavy lifting will be needed, and the lift practically installs itself.

Read & understand this Manual prior to installation or operation.

Knowing the lift's adjustments and the tips on proper installation techniques will save time, energy and avoid possible injury. If you do not understand any portion of installation or operation, please consult our technical service department or authorized mobility dealer.

**Quick Reference – Installation Procedure**

1. Wire the Vehicle. See page 15.

Installing the wiring harness first will ensure you have power to the lift during installation. This allows the motor to do the lifting for you. (If you skip this step, use a shop battery.)

2. Position the open box behind the vehicle. Slice the corner seams. [Figure 13-1]

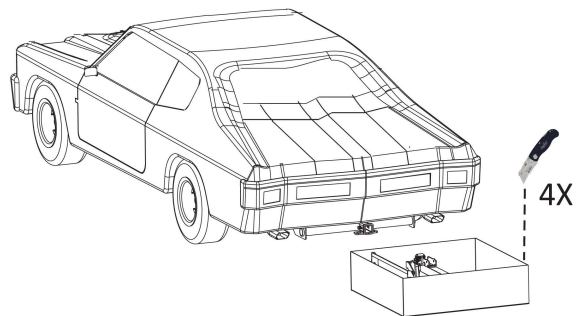


Figure 13-1

3. Determine / Install Hitch Height / Adapter. Measure the hitch to ground distance so you can save time by selecting components that fit between lift and vehicle so as to maintain proper ground clearance. See pages 19-20. Install Hitch Adapter that fits the application. Install Hitch Post (shown) or swing-away. See pages 21-24.

4. Connect power to the lift. [Figure 14-1] Insert and turn key. Press 'DOWN' to extend the lift. [Figure 14-2]

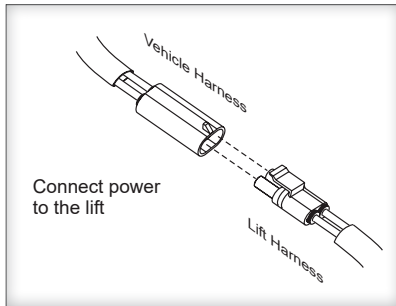


Figure 14-1

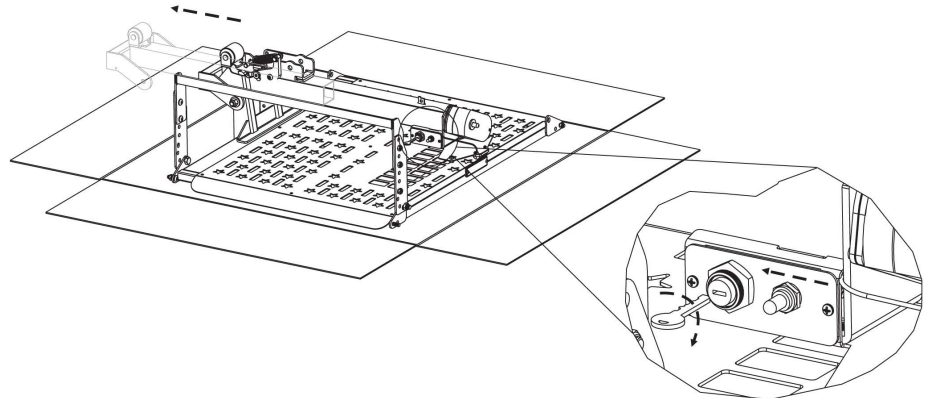


Figure 14-2

5. When extended 3" or more flip up to vertical. [Figure 14-3]

6. Align the outer tube with hitch post or swing-away (as shown) using the power of the lift. The lift will slide on the cardboard box. [Figure 14-4]

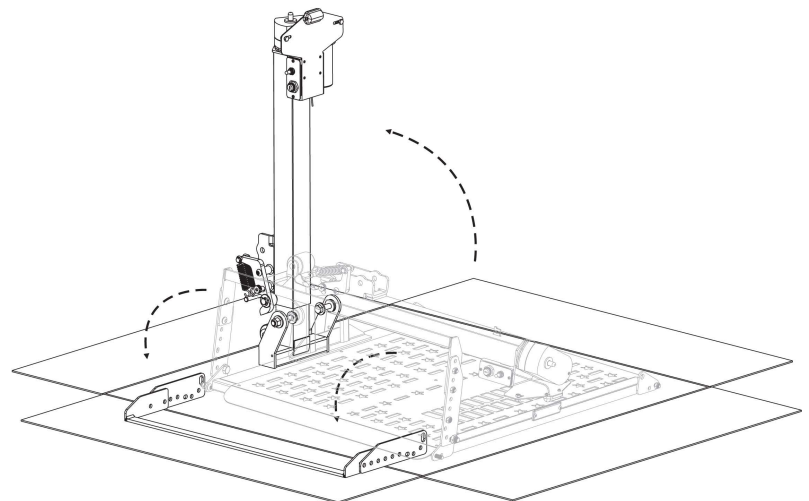


Figure 14-3

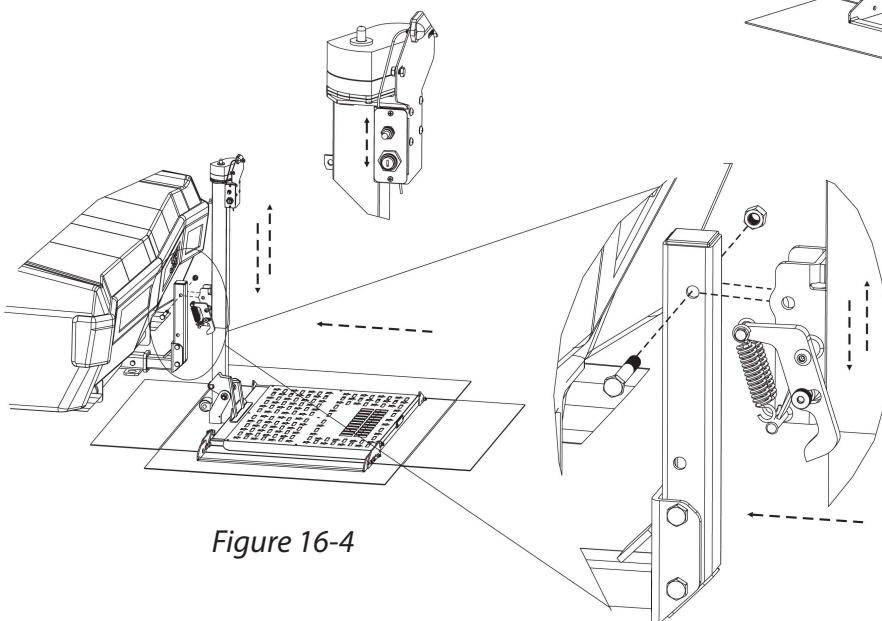



Figure 16-4

WIRING THE VEHICLE

Improper wiring is the #1 cause of problems in the operation of a vehicle lift. Follow the wiring instructions carefully

 **DO NOT** connect the red wire until **LAST**.
WARNING!

The vehicle wiring harness is located in the hardware pack. The harness is manufactured to comply with SAE J1128 requirements. It is approximately 23 feet long and will accommodate most vehicles.

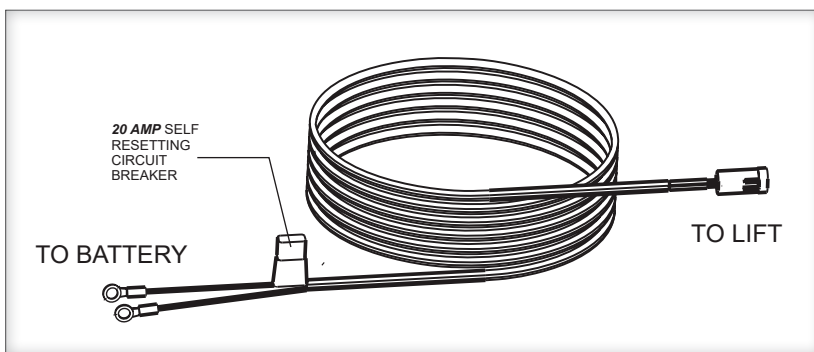


Figure 15-1

1. Unwind the wiring harness and lay it flat.

The harness end with the black connector is the lift end. It goes to the trailer hitch area where the lift will mount. [Figure 15-1]

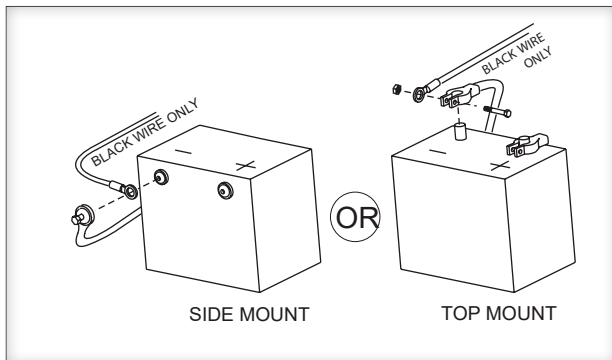


Figure 15-2

2. Begin routing the wiring harness at the vehicle battery. Attach the black wire to the negative terminal on the battery. Do NOT attach the red wire until the very end of installation. [Figure 15-2]



CAUTION!

NEVER attempt to connect the harness to a secondary power source. Always connect both leads directly to the battery.

3. Run the vehicle harness under and, when possible, through the vehicle back to the bumper/trailer hitch area.

- Run the wire under and through the vehicle whenever possible, gaining entry into the vehicle through the firewall
- **DO NOT** run wiring where it can be snagged by road debris.
- **DO NOT** run wiring near the gas tank.
- If you wish to run the harness under the vehicle, use the supplied wire ties to secure the wire against the frame, avoiding moving parts / hot parts such as exhaust.

continued

- If the harness is too long, coil the excess wire and secure it to the vehicle frame/bumper with the supplied wire ties. [Figure 16-1]



DO NOT cut or shorten the harness.

CAUTION!

4. Once harness is run into the vehicle, remove the pin's protective tubing.

5. Inspect the pin's retaining flanges. They may have become deformed while run through the vehicle. These are critical to secure the pins inside the connector. Adjust as needed.

6. Flip open end connector's jinged retainer, insert pins as shown. [Figure 16-2]

Verify the wires can not be pulled out by moderately pulling on the wires.

Be sure rubber seals are inside back of connector and close the hinged retainer.

7. Plug connector into the lift.

8. LAST...attach red wire to the positive terminal on the battery. [Figure 16-3]

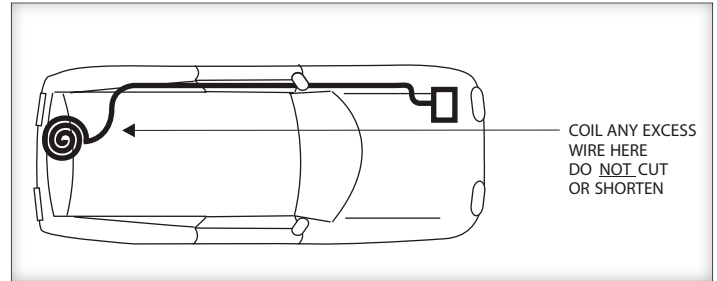


Figure 16-1

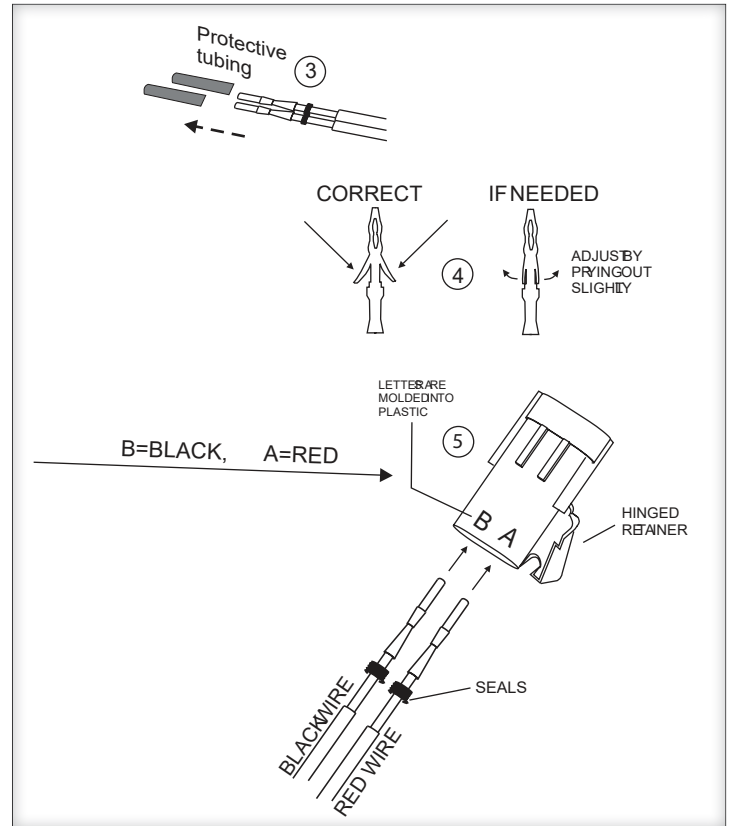


Figure 16-2

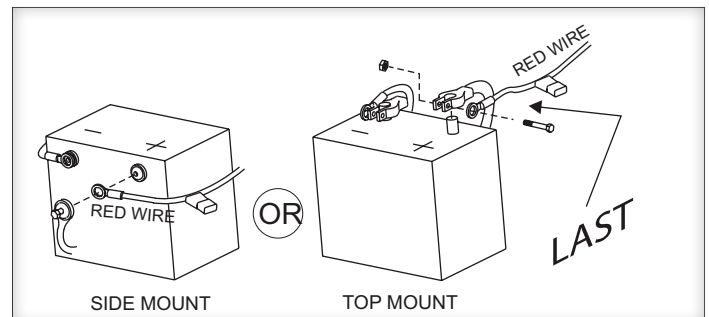


Figure 16-3

IMPORTANT!

If the installation requires the wiring harness to run on the underside of the vehicle, route the harness away from the exhaust system, brake lines, fuel lines and gas tank. Avoid pinch points and sharp edges. Avoid locating the harness where it can be snagged by road debris.

NOTE: A standard two-contact trailer connector is included with the lift. This is for the license plate lamp. If your vehicle is not equipped with the proper connector, you can use the **RED WIRE** to make a wire splice and achieve the same result. [Figure 17-3]

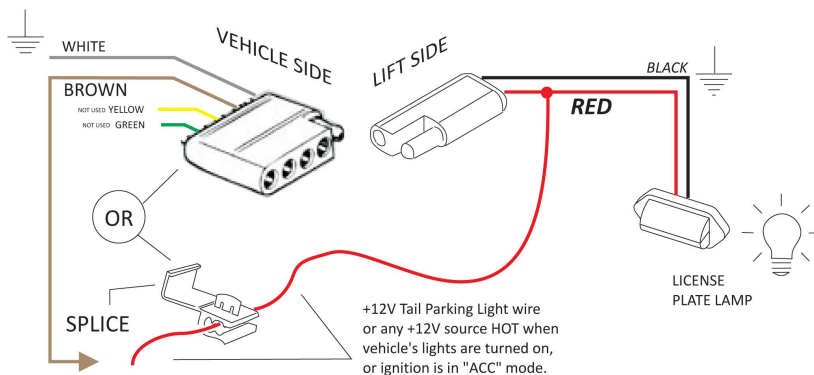


Figure 17-3

TECH NOTE: MOTOR TESTING

Troubleshooting with a test light or voltage meter may give a false indication.

When you probe for 12 volts, the reading may indicate a connection, even if the connection is not necessarily sufficient. The lift's motor can draw up to 20 amps at some points, requiring all of the available wire to flow proper current. Poor connections are the #1 problem associated with a slow, intermittent, warm, poorly performing motor which will also deteriorate prematurely.

If a single strand of a multi-strand wire is making contact, 12V will appear on a meter or test light, but it will not allow the motor to operate. It is always best to test both current and voltage, or run the motor with known good shop battery or power source when troubleshooting.

VEHICLE HITCH

Outside Lifts require a vehicle that can accept a Class 2 or 3 hitch. The vehicle should be wired with a standard 4 connector trailer wiring.

If you are not sure about the vehicle and hitch capability, contact a local hitch installer or you can visit web sites of a hitch company. For example: www.hitch-web.com; www.reeseprod.com; www.draw-tite.com

Be sure to use a hitch installer that is reputable, insured, and capable. Their work reflects directly on the customer's perception of your mobility lift installation.

NOTE: Not every vehicle is capable of having a hitch installed.

1. Calculate the weights of the lift, mobility device, and, where applicable, the Swing-Away option. Be certain that the total weight does not exceed the hitch's recommended tongue weight. A range of hitches are available, capable of bearing different amounts of weight.

The lift manufacturer suggests the installer observe the vehicle's Gross Vehicle Weight Rating restrictions.

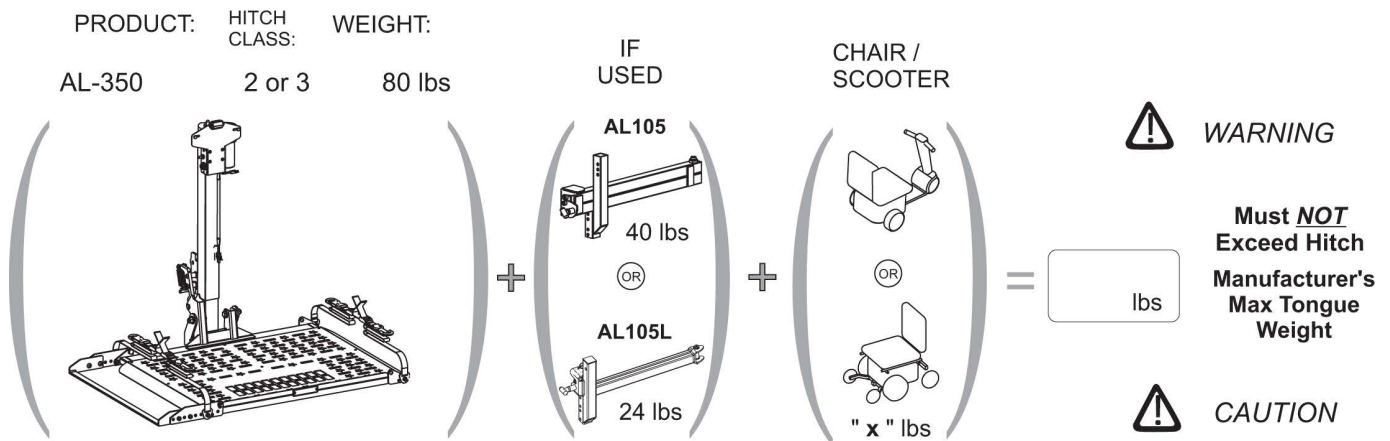
Some states have strict license plate obstruction laws. Familiarize yourself with local and state laws.

2. Ensure the receiver tube of the hitch is installed parallel to the ground. This is a requirement, not merely a recommendation. If the hitch is not installed properly it affects the lift's functionality.

Some vehicles will require that the rear suspension be supplemented. The manufacturer recommends the installer contact a suspension specialist for additional technical support.

A vehicle with a Class 2 hitch requires optional accessories.

A vehicle with a Class 3 hitch and standard 4 connector wiring is ready for installation.



HITCH ADAPTERS

The Hitch Adapter plugs into the vehicle's trailer hitch and serves as the interface between the lift and vehicle. Hitch adapters are designed for the needs of different vehicles. Some are shown in. [Figure 19-1]

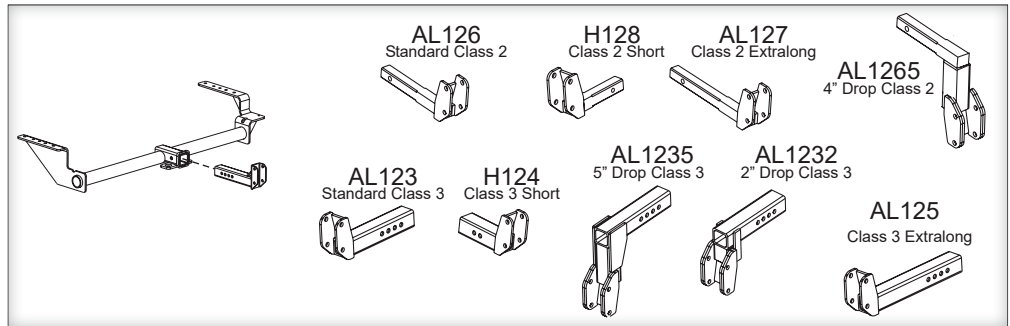


Figure 19-1

Selecting a Hitch Adapter

To determine the Hitch Adapter that will ensure proper lift operation, first determine the Hitch Class. Measure the Bumper Distance and the Hitch Height. [Figure 19-2]

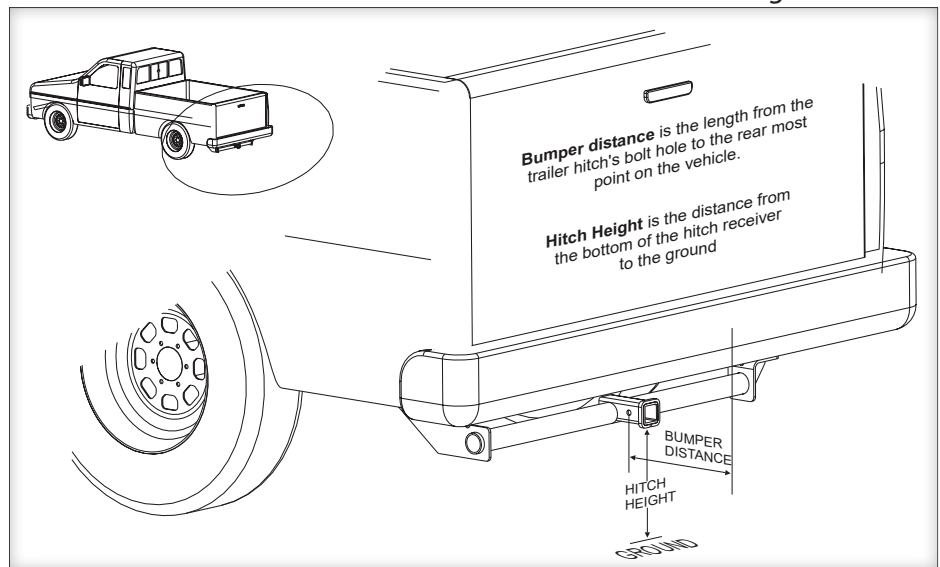


Figure 19-2



WARNING! Harmar lifts require Harmar-approved hitch adapters. Hitch Expanders and Extenders are strictly prohibited – using them or any other aftermarket accessory may result in damage to the vehicle, lift, and/or personal injury to the user.

Hitch Class is usually printed on the trailer hitch. You can also determine it by measuring the inside of the receiver on the trailer hitch as shown. [Figure 19-3]

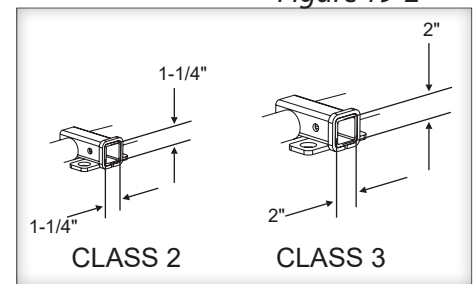


Figure 19-3

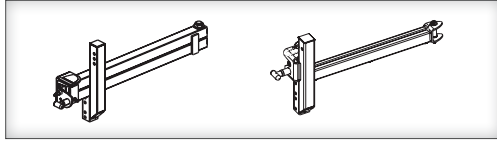
NOTE: Some shallow hitches, ex. Spare tire blocked hitches, may require a short Hitch Adapter. [Figure 19-4]

	IF: X=0-7.5" CLASS 3 AL123 Standard Class 3 	X=7.5"-10" AL125 Class 3 Extra long 	X=10"-13.5" AL125 Class 3 Extra long 	For <u>SOME</u> shallow hitches, ex. Spare Tire blocked hitches, a short Hitch Adapter may be required.
	CLASS 2 AL126 Standard Class 2 	AL127 Class 2 Extra long 	Please contact Harmar's Technical Service Dept. 	

Figure 19-4

Installation SECTION 2 : INSTALLER

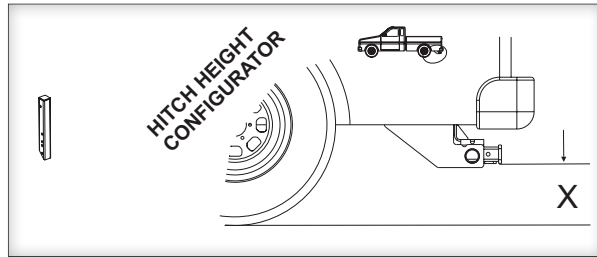
Figure 20-1




HITCH ADAPTERS (Con't)





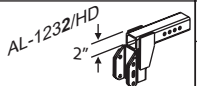
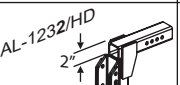
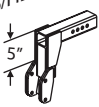

The effective range of the Hitch Adapter changes slightly if the lift is equipped with the standard **AL107** Hitch Post. [Figure 19-1] or if it's equipped with a tail gate/hatch accessibility option, either the **AL105** or **AL105L** Swing-Away. [Figure 20-2]

Figure 20-2



 CLASS 3 HITCH 

 CLASS 2 HITCH 

if X =	STANDARD MOUNT AL107 HITCH POST (NO SWING-AWAY)	SWING-AWAY (OPTIONAL)	if X =	if X =	STANDARD MOUNT AL107 HITCH POST (NO SWING-AWAY)	SWING-AWAY (OPTIONAL)	if X =
6"			6"				6"
7"			7"				7"
8"			8"				8"
9"			9"				9"
10"	AL-123/HD	AL-123/HD	10"		AL-126	AL-126	10"
11"	STANDARD	STANDARD	11"		STANDARD	STANDARD	11"
12"			12"				12"
13"			13"				13"
14"			14"				14"
15"			15"				15"
16"			16"				16"
17"			17"				17"
18"		AL-1232/HD 2"	18"			AL-1265	18"
19"		AL-1235/HD	19"		AL-1265		19"
20"	AL-1232/HD 2"		20"				20"
21"	AL-1235/HD		21"				21"
22"			22"				22"
23"		PLEASE CONTACT TECHNICAL SERVICE DEPARTMENT FOR AVAILABILITY OF LARGER DROP ADAPTERS	23"				23"
24"	PLEASE CONTACT TECHNICAL SERVICE DEPARTMENT FOR AVAILABILITY OF LARGER DROP ADAPTERS		24"				24"
25"			25"				25"
26"			26"				26"

If the measurement falls in between, ex. 18 - 1/2", round up if greater than or equal to 1/2", round down if less than 1/2". Combination Hitch Adapters are available (ex. Short Class 3, 5" Drop or Long Class 2, 2" Drop)

If you have any questions / concerns about selecting the appropriate Hitch Adapter for your application, please contact Harmar's Technical Service Department, and a trained representative will be glad to help.

INSTALLATION WITH HITCH POST

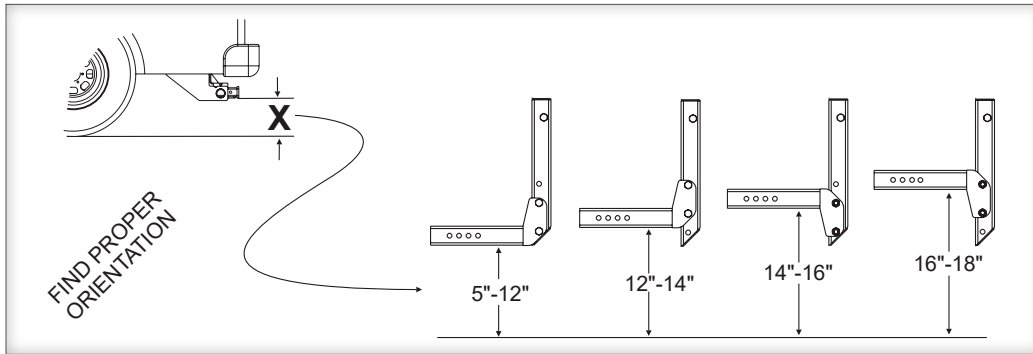


Figure 21-1

OPTIMIZING HITCH HEIGHT

You can vary the lift height by changing the Hitch Adapter's location.

This helps you optimize the vehicle's ground clearance to ensure that the platform lays flat when it reaches the end of its travel.

Consult *Figure 21-1* to select the orientation needed for the vehicle based on the Hitch Height, the vehicle's hitch receiver distance to the ground.

Refer to pages 13 & 14 for an overview of the procedure.

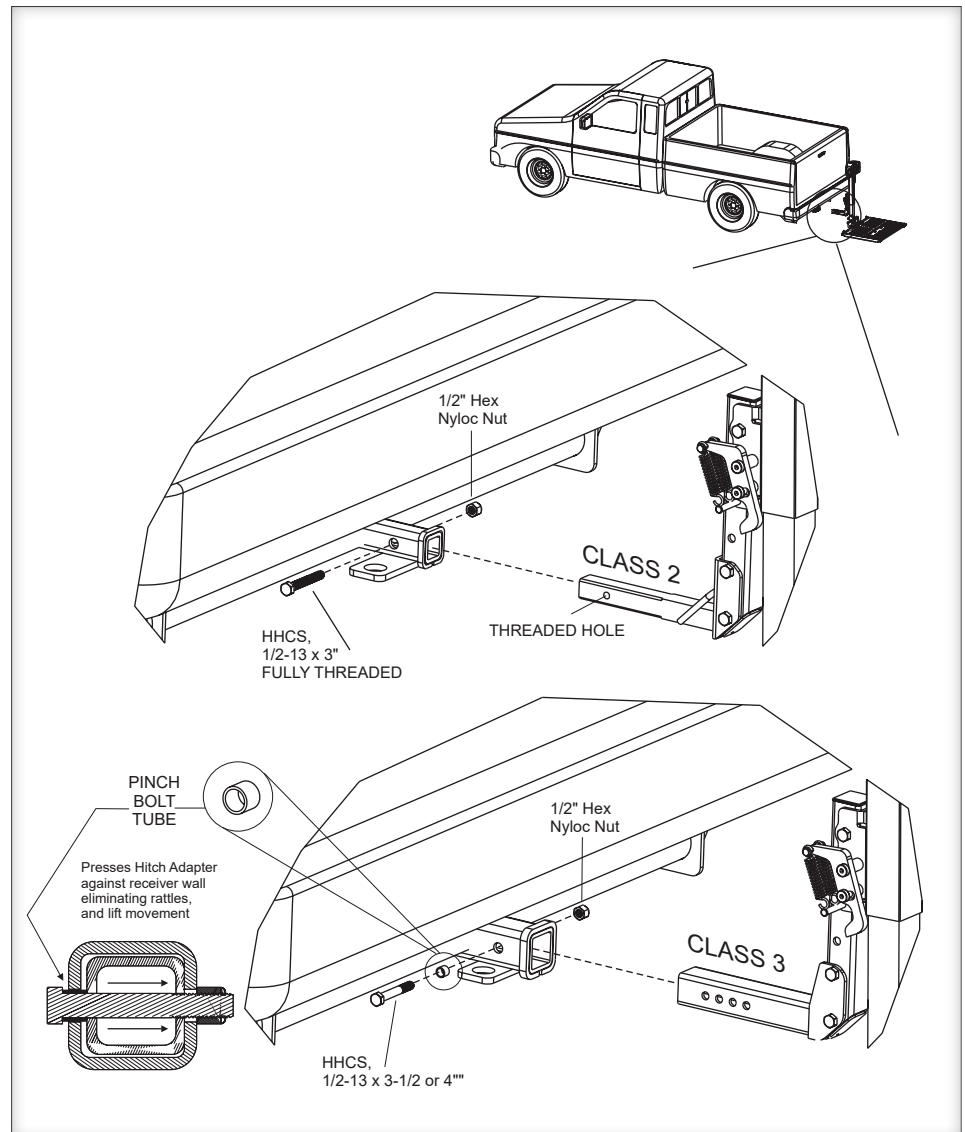


Figure 21-2

INSTALLING THE HITCH ADAPTER

1. Attach hitch adapter to hitch post

orientated properly according to the application's Hitch Height. [Figure 22-1]

2. Attach Hitch Post to lift. Do NOT over tighten.

3. Slide Hitch Adapter into vehicle's hitch receiver. Fasten Adapter according to hitch class. [Figure 22-2]

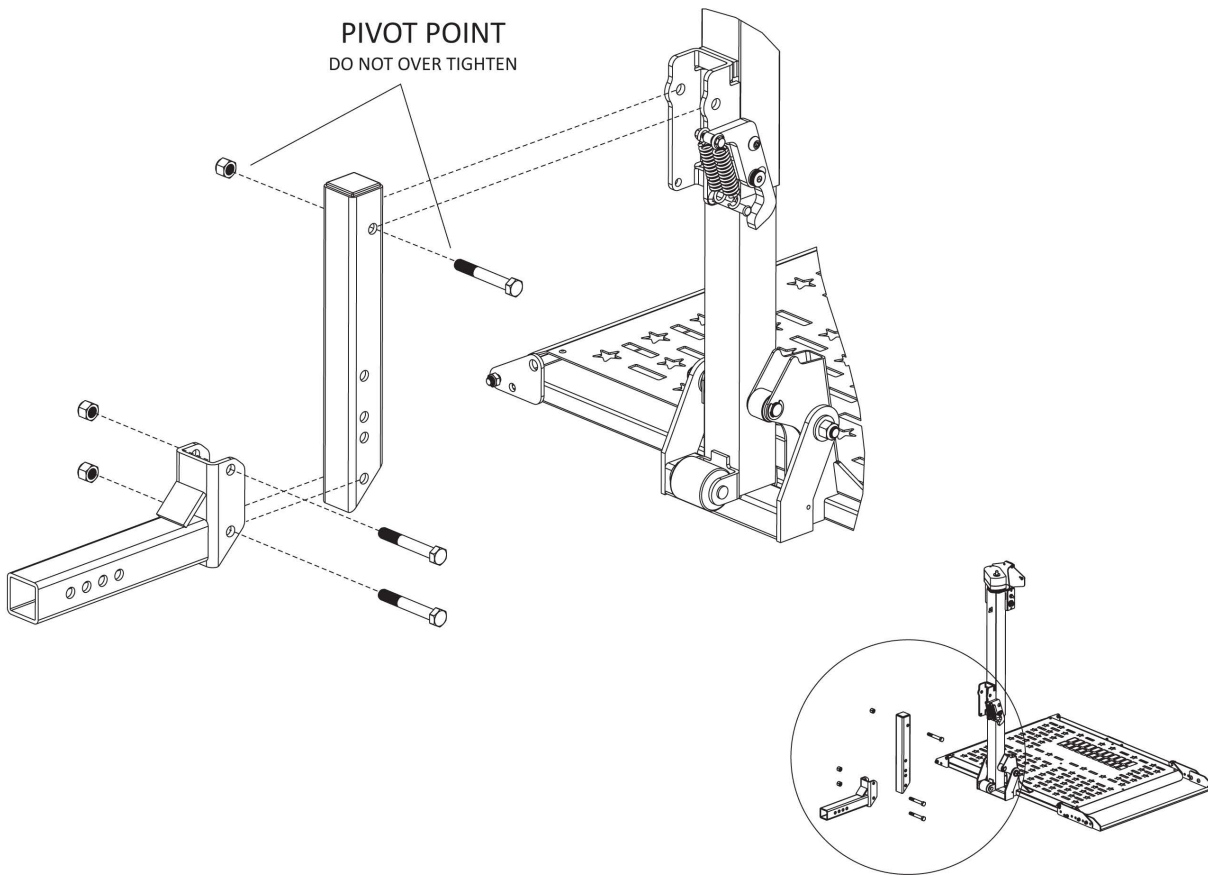
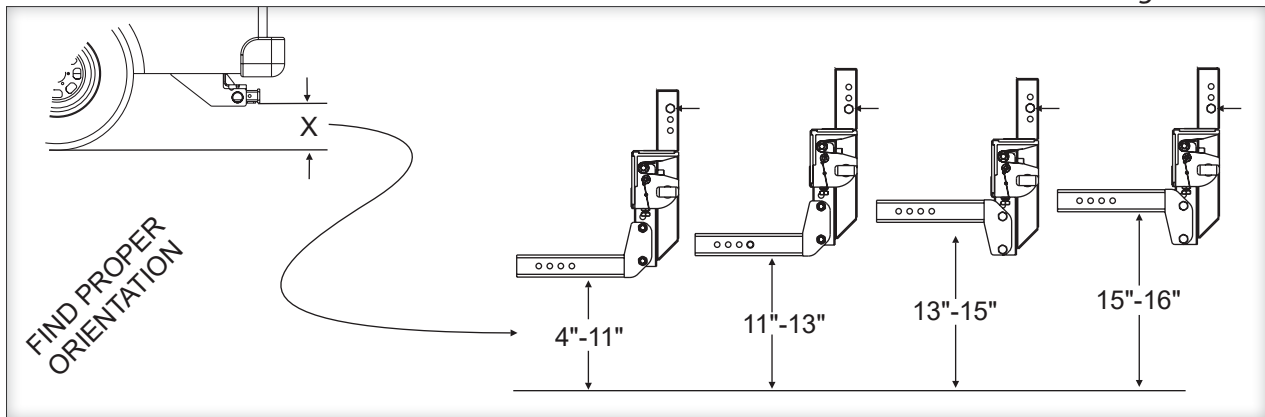
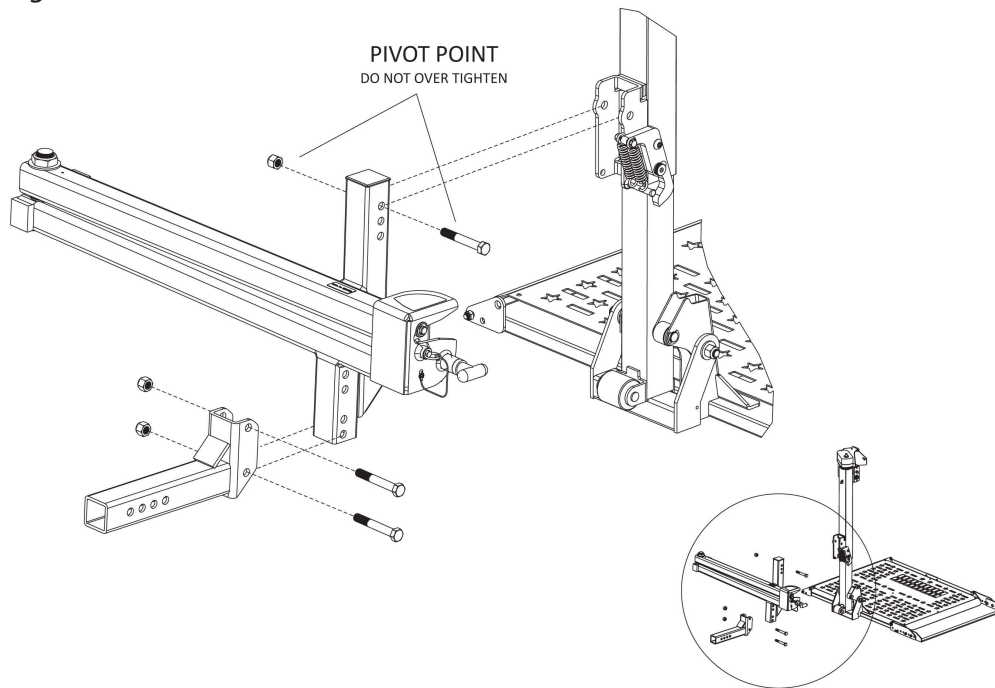


Figure 22-1

INSTALLATION WITH SWING-AWAY**OPTIMIZING HITCH HEIGHT**

You can vary the lift height by changing the Hitch Adapter's orientation and location. This helps you optimize the vehicle's ground clearance to ensure that the platform lays flat on the ground when it reaches the end of its travel.

Consult *Figure 23-1* to select the orientation needed for the vehicle based on the Hitch Height, that is, the vehicle's hitch receiver distance to the ground.

Figure 23-1*Figure 23-2*

NOTE: The Swing-Away replaces the hitch post.

NOTE: ONLY the AL123 or AL126 can be safely inverted.

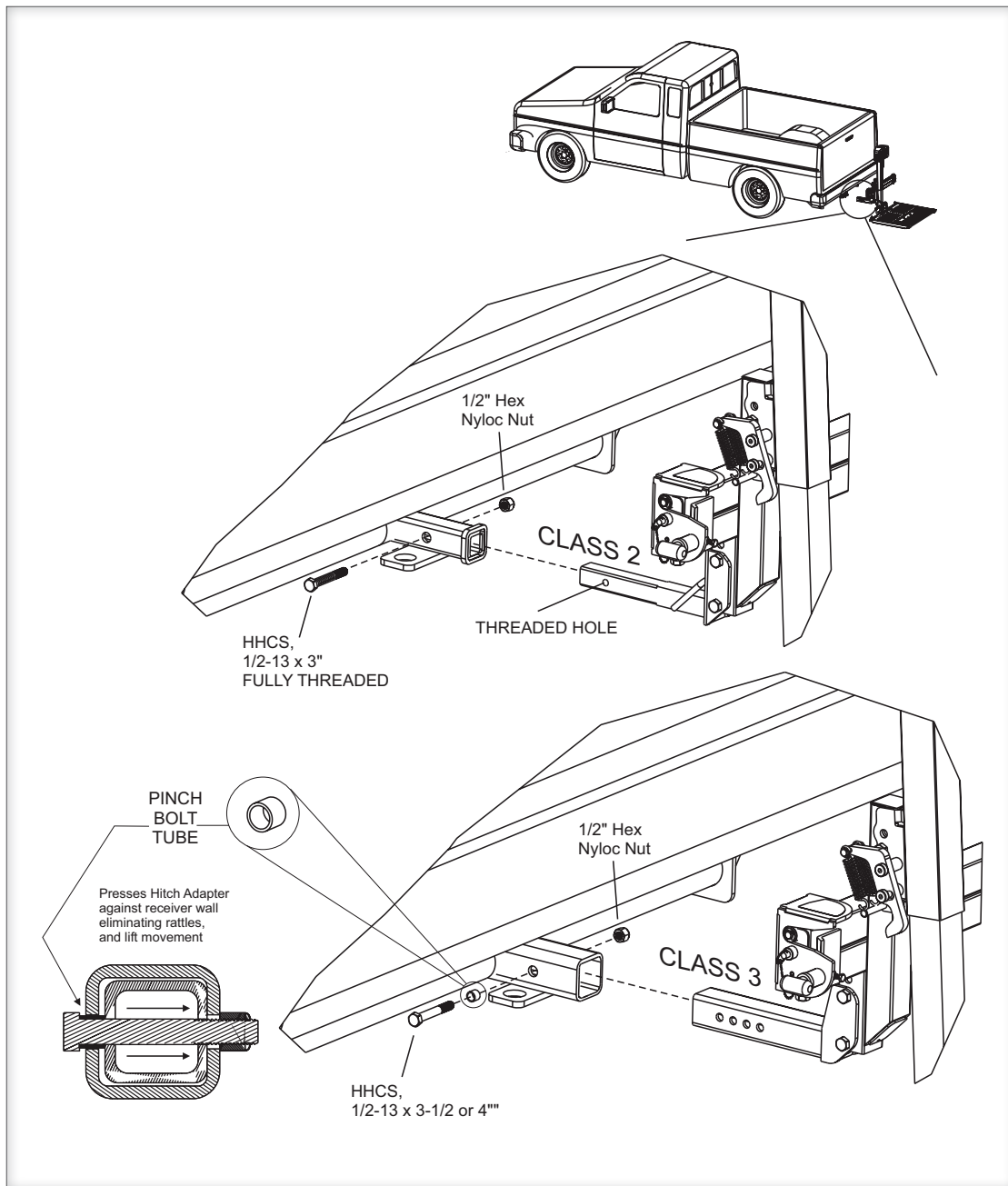
1. Attach Hitch Adapter

to Swing-Away positioned properly according to the application's Hitch Height. [*Figure 23-2*]

Attach Swing-Away to lift. Do NOT over-tighten.

2. Slide Hitch Adapter into vehicle's hitch receiver. [Figure 24-1] Fasten Adapter according to hitch class.

Figure 24-1



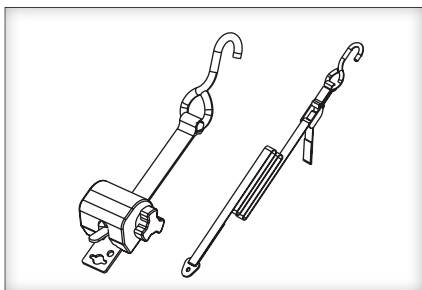


Figure 25-1

CHAIR PREPARATION

A lift with four securement straps offers two options for attaching strap hooks to the chair, Anchor Plate or U-Bolt Kit. The lift includes both sets of options. [Figure 25-1]

ANCHOR PLATE

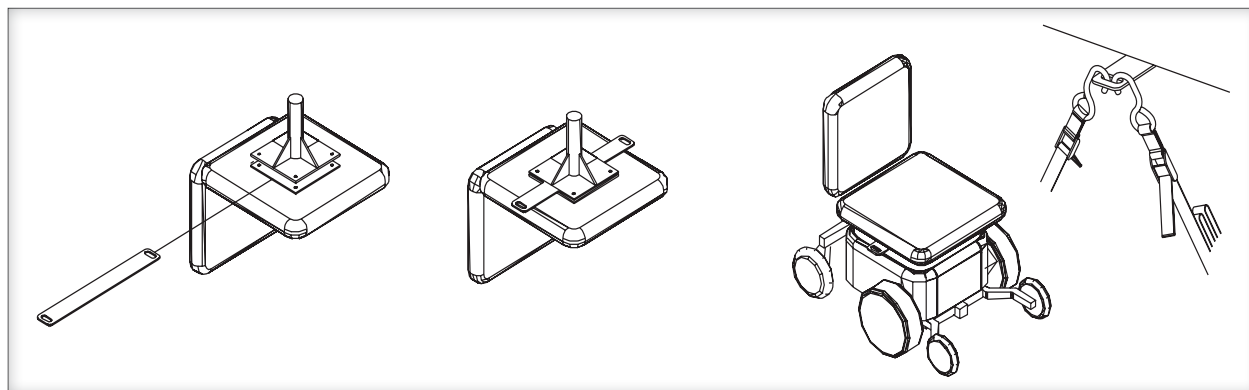
The Anchor Plate is a 20" long flat plate with a slot in each end. It attaches to the bottom of any chair or scooter that has a center seat post. [Figure 25-2]

The Anchor Plate should extend about 1-1/2" out from the side of the cushion. The user can attach the strap hooks to the Anchor Plate in order to secure the chair to the lift.

INSTALLING THE ANCHOR PLATE

1. Remove the seat from the chair.
2. Loosen the screws that attach the plate of the bottom of the seat. Allow enough room to slide the Anchor Plate between the seat and the seat plate.
3. Attach the Anchor Plate in the center of the seat plate with the holes on each end extending evenly on each side of the seat.
4. Re-tighten the screws that hold the seat plate to the bottom of the seat.
5. Replace the seat on the chair. [Figure 25-2]

Figure 25-2



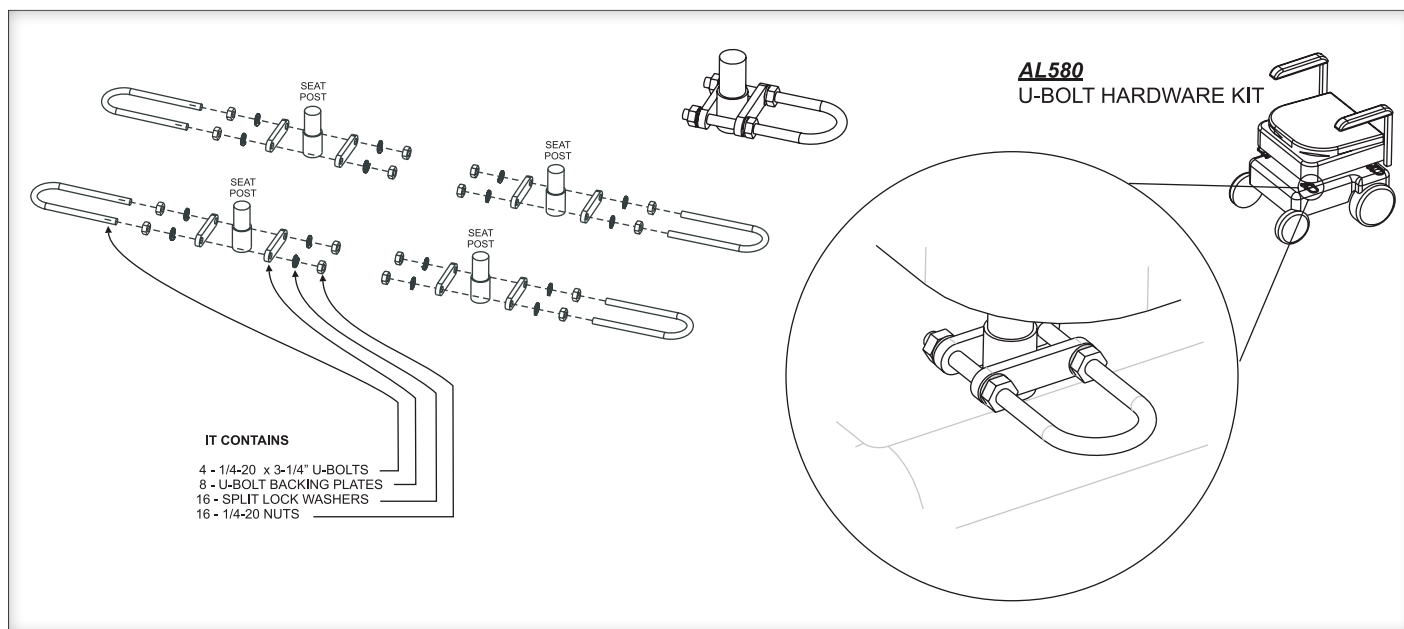
Installing U-Bolt Hardware Kit

The U-bolts are used with power chairs or scooters that do not have a center seat post. On this type chair, the seat is normally attached to a tubular frame. Install the U-bolts, two on each side, to the frame as shown. [Figure 26-1]

Ensure that the loop extends to the outside of the chair so the user can attach the strap hooks.

Each chair is slightly different so the U-bolt placement will differ among models and manufacturers. Place the U-bolts towards the center of the seat if possible. Due to different seat types, you may be forced to install the U-bolts more towards the front or rear of the seat, but we recommend attachment as close as possible to the center of the seat.

Figure 26-1



TROUBLESHOOTING**DEALER ONLY SECTION**

The following procedures are reserved for the approved installer/dealer. They should not be attempted by anyone without proper knowledge of automotive electrical circuitry.

Be careful when troubleshooting with voltage meter. The instruments will detect voltage but may not indicate a tear or poor connection in the wiring.

It may give a false indication since it will only indicate that there is some wire connection –not necessarily enough. [Figure 27-2]

It is strongly recommended that you examine both voltage and current, or isolate sections of the lift wiring using process of elimination with a known good/fully charged 12V automotive battery or known good/fully charged power chair/scooter battery.

PROBLEM

- Lift does not operate.
- Lift operates slowly or intermittently

CAUSE

Bad electrical connection(s) / Circuit breaker

SOLUTION

Check / clean all connections that might be loose or dirty. The lift motor requires quality electrical connections to operate at full capacity; any break in the wiring will slow down the motor and it will deteriorate prematurely.

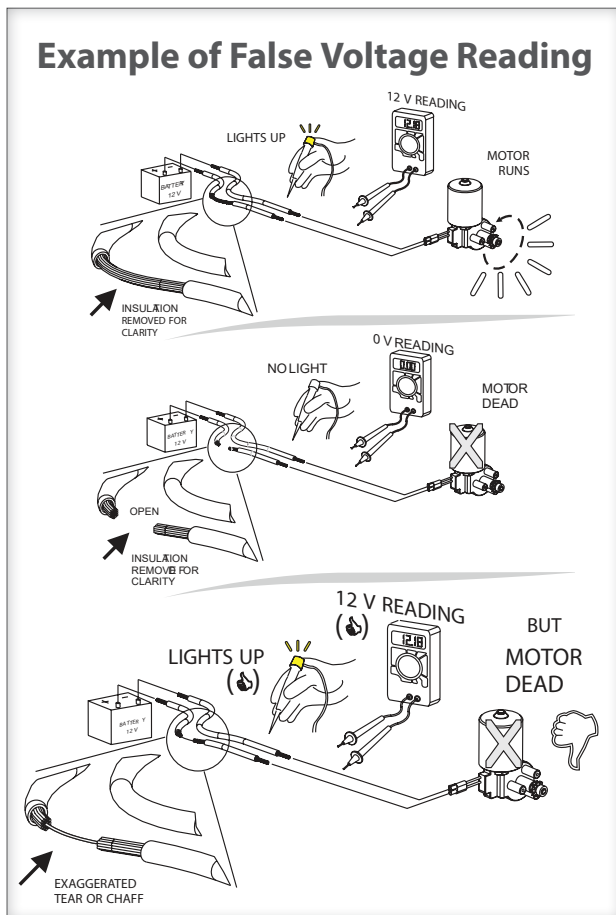
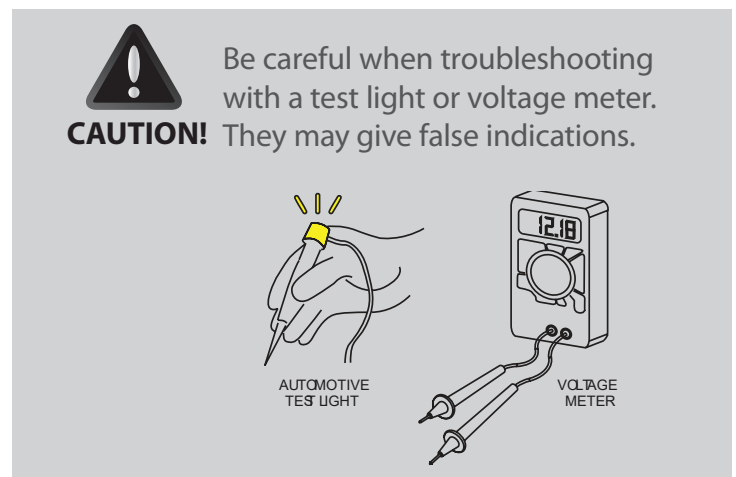


Figure 27-2

Inspect the full length of the wiring harness to ensure the insulation is not torn. The lift's vehicle power harness running through or under the vehicle is subject to road debris and rubbing against the vehicle's frame which can cause a short.

Verify the circuit breaker. The circuit breaker is located about 6" from the connections to the vehicle's battery. The breaker will self-reset if overloaded; however, verify (with Ohm meter or test light) that the breaker is functioning. Or replace it with a new/known-good circuit breaker and perform the following tests.



PROBLEM

License plate light does not work.

CAUSE

Four-prong connector is not wired.

SOLUTION

The license plate light runs from the four-prong trailer plug located on the vehicle harness that powers the lift. Most hitch installers will install this type of wiring when the hitch is installed. If no such plug exists, it may be wired directly to a tail light of license plate light. (Brown wire only (+)).

PROBLEM

A ratcheting sound occurs when the lift is all the way up or down.

CAUSE

Actuator clutch

SOLUTION

In the UP direction, the ratcheting sound indicates normal overload protection and MUST be heard since it indicates platform is all the way up and that the chair/platform is secure.



CAUTION!

Do NOT allow the ratcheting as the lift goes DOWN. Only lower the platform level to the ground level. **Do NOT** begin to raise the car with the lift; it can damage the lift.

PROBLEM

Extra length of wire leads to the lift motor

CAUSE

Wire was provided for optional Swing-Away

SOLUTION

The extra wire is provided in case a Swing-Away option is used with the lift. If a Swing-Away is not installed, coil the extra wire and zip-tie it to the frame, out of the way of any moving parts. We recommend leaving the extra wire in case a Swing-Away is added at a later time.

PROBLEM

Lift does not reach the ground

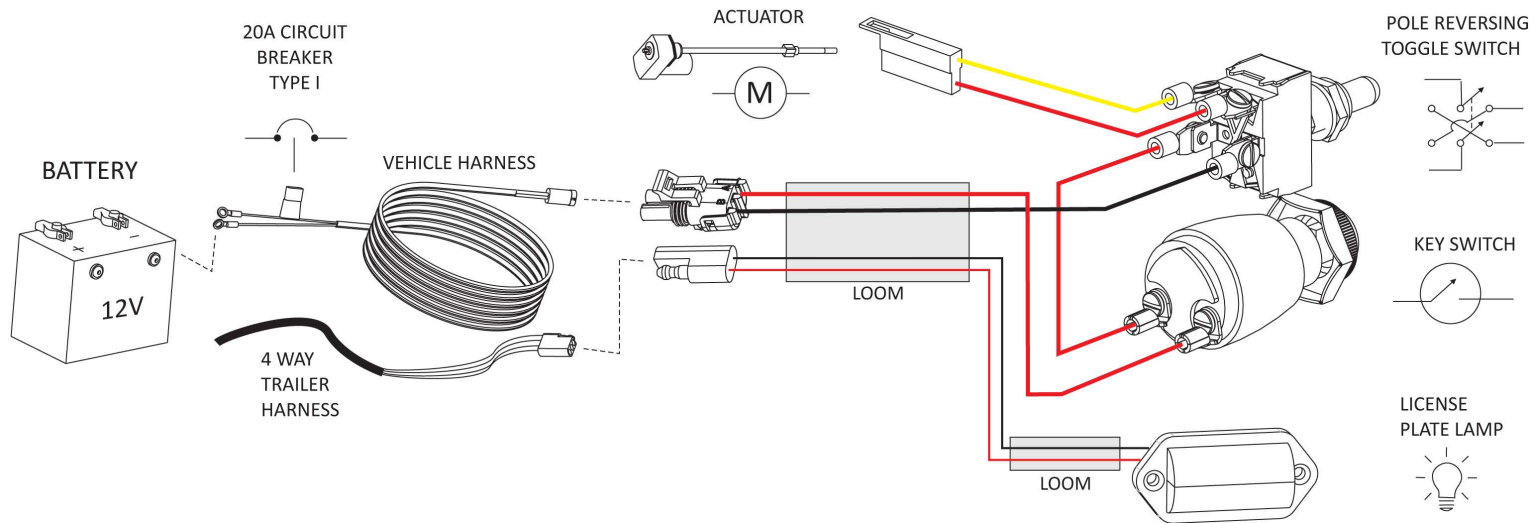
CAUSE

Hitch adapter installation.

SOLUTION

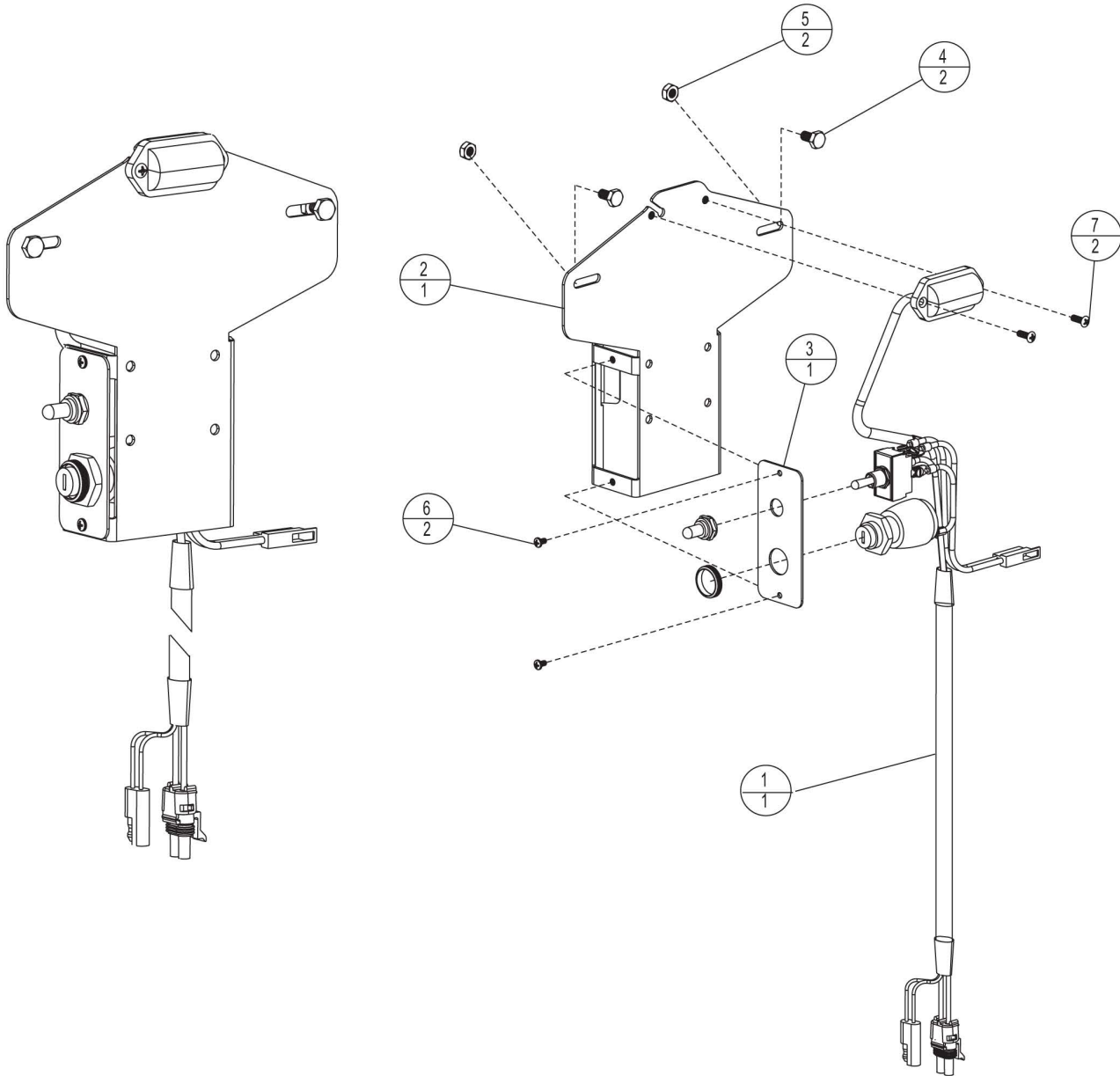
Check the attachment of the hitch adapter to the hitch post on the back of the lift. (See installation page 21 to 25.) The normal range of lift operation is 5" to 16" to the bottom of the hitch receiver of the vehicle. Any higher vehicles will require a different hitch adapter. (See Hitch Adapter section of this manual.)

SECTION 2 : INSTALLER **Wiring Diagram**



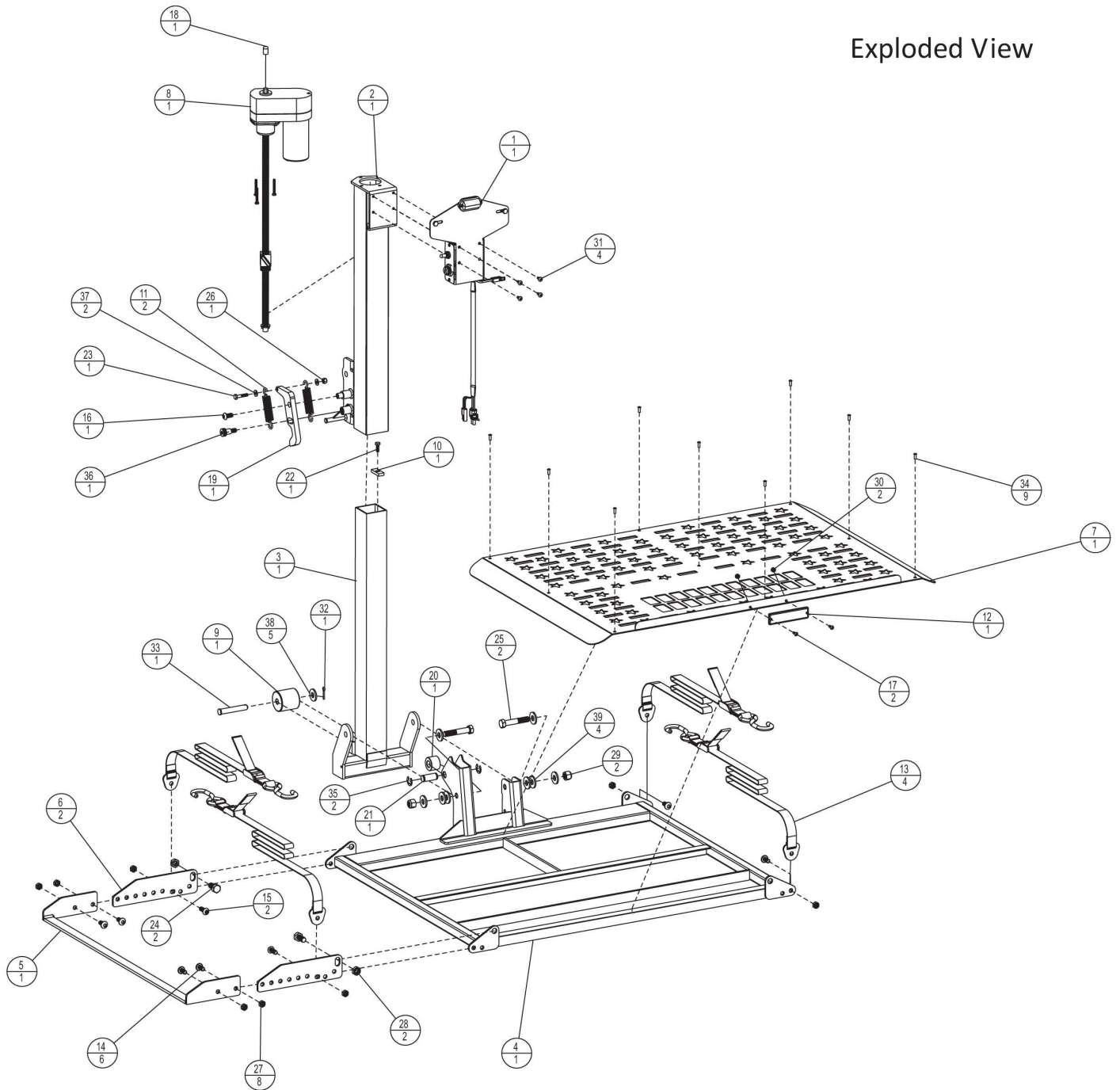
Exploded View

SECTION 2 : INSTALLER



ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	390-00098	AL-350 WIRE HARNESS
2	1	530-00693C	COVER, LICENSE, AL350, POWDER COATED
3	1	530-00694C	PLATE, CONTROL SWITCH, TOGGLE AND TUMBLER, POWDER COATED
4	2	HHCS-0_25-20-0_50_SS	HHCS, 1/4-20 x 1/2 IN LONG, ZINC GRADE 5
5	2	NUT-0_25-20_NYLOCK_NTE_SS	NUT, NYLOCK, 1/4-20, HALF HEIGHT, ZINC
6	2	PHMS-6-32-0_25-SS-BO	PHILLIPS HEAD, 6-32 x 1/4 IN LONG, 18-8 SS, BLACK OXIDE
7	2	PHOV-8-32-0_50-SS	PHILLIPS OVAL HEAD, 8-32 x 1/2" 18-8 SS

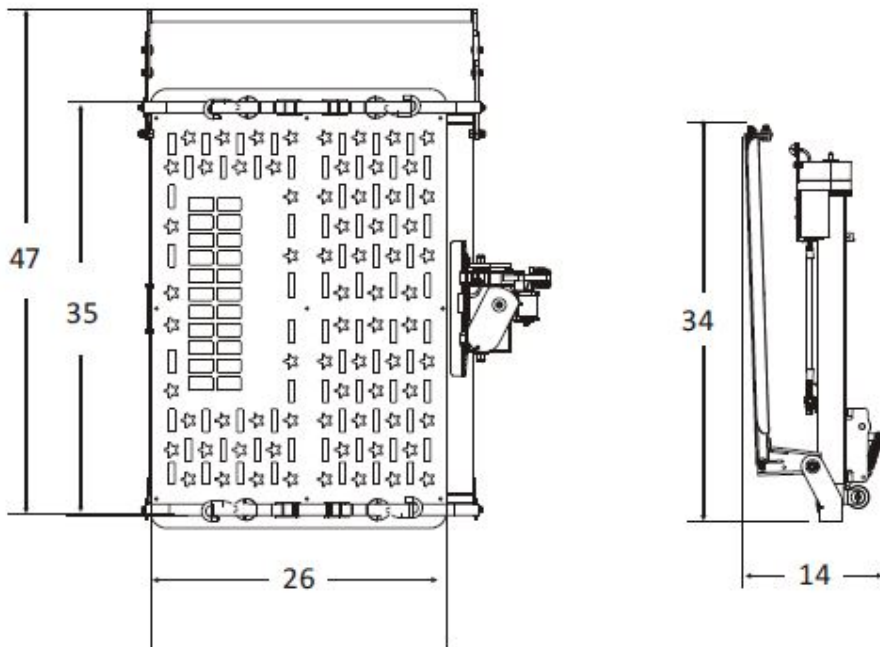
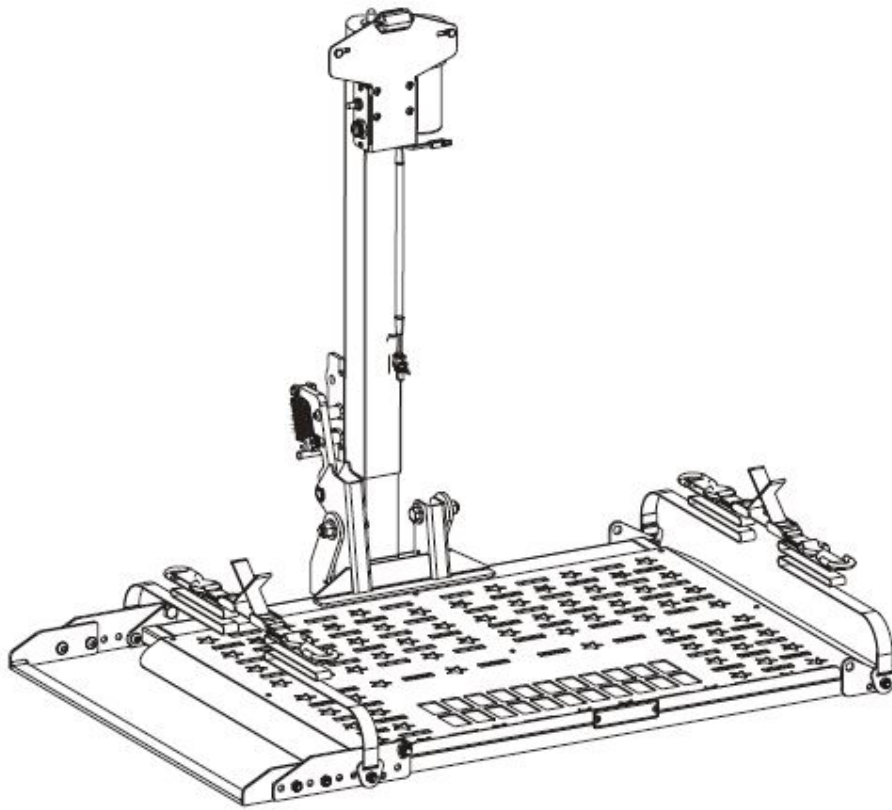
Exploded View



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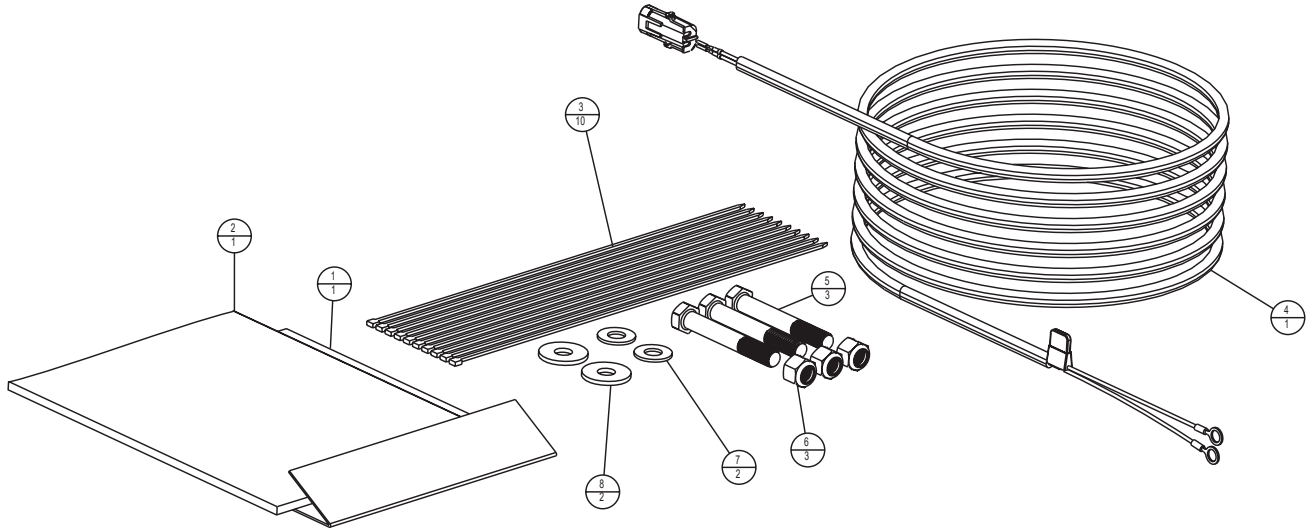
ITEM		ASSEMBLY PARTS	
ITEM	QTY	PART NO.	DESCRIPTION
1	1	116-00033	AL-350 MOTOR PLATE W/ WIRING ASSEMBLY
2	1	120-00194C	OUTER TUBE, XL, POWDER COATED
3	1	201-2408-CA	INNER TUBE
4	1	203-2410-CA	PLATFORM
5	1	204-2408-CA	PC EXTENDED CRADLE BAR
6	2	501-2408-CE	PC SPREADER BAR BRACKET
7	1	510-00017	STARS AND STRIPES ALUMINUM PLATFORM SKIN
8	1	ALA10010	ACTUATOR, OUTSIDE LIFTS
9	1	ALA10032	ROLLER 2" DIA UHMW
10	1	ALA10050	TAB, ACTUATOR
11	2	ALA11025	EXTENSION SPRING
12	1	ALA14096	RED REFLECTOR
13	4	ALA69073	PIONEER STRAP ASSEMBLY
14	6	BHCS-0 37-16-0 75-SS	BUTTON HEAD, 3/8-16 x 0.75, SS
15	2	BHCS-0 37-16-1 00-SS	SHCS, 3/8-16 x 1" L GRADE 5 ZP STEEL
16	1	BHCS-0 37-16-1 00-SS-NP	BUTTON HEAD, 3/8-16 x 1.00, SS
17	2	BHCS-10-24-0 50-SS	BUTTON HEAD, #10-24 X 0.50, SS
18	1	H10150	CAP, VINYL, 5/16-3/8" ID BLACK
19	1	H11010	J-CAM
20	1	H14044	ROLLER

ITEM		ASSEMBLY PARTS	
ITEM	QTY	PART NO.	DESCRIPTION
21	1	H14045	CLEVIS PIN
22	1	HHCS-0 25-20-0 75-NP-Z	HEX HEAD, 1/4-20 x 0.75, ZP
23	1	HHCS-0 25-20-1 25-Z	HEX HEAD, 1/4-20 x 1.25, ZP
24	2	HHCS-0 50-13-1 00-Z	HEX HEAD, HHCS-0, 50-13-1 00-Z
25	2	HHCS-0 50-13-2 75-Z	HEX HEAD, 1/2-13 X 2.75, ZP
26	1	NUT-0 25-20-NYLOCK-Z	NUT, NYLOCK, 1/4-20, ZP
27	8	NUT-0 37-16-NYLOCK-NTE-Z	NYLOCK NUT, THIN, 3/8-16, ZP
28	2	NUT-0 50-13-NYLOCK-NTE-Z	THIN NUT, NYLOCK, 1/2-13, ZP
29	2	NUT-0 50-13-NYLOCK-Z	NUT, NYLOCK, 1/2-13, ZP
30	2	NUT-10-24-NYLOCK-Z	NUT, NYLOCK, #10-24, ZP
31	4	PHNP-12-24 0 50-TS-BZ	PAN HEAD, 12-24 x 0.50, THREAD CUTTING, BLACK ZP
32	1	PIN-0 12-1 50-CO-SS	COTTER PIN
33	1	PIN-0 50-3 00-CL-Z	CLEVIS PIN, 1/2" x 3" L, ZP
34	9	RIV188-SS	RIVET 3/16" POP
35	2	RR-0 62-EC-Z	E-CLIP, 5/8" SHAFT
36	1	SHSB-0 50-0 62-NP-Z	SHOULDER BOLT, 1/2" DIA X 5/8" LONG, 3/8-16 THREADS, ZP
37	2	WASH-0 25-0 62-0 04-RH-SS	WASHER, FLAT, 1/4", SS
38	5	WASH-0 50-1 06-0 08-RH-SS	WASHER, FLAT, 1/2", SS
39	4	WASH-0 50-1 50-0 12-N	WASHER, FLAT, 1/2", NYLON



Exploded View

TYPICAL HARDWARE PACK CONTENTS



ITEM	QTY	PART NO.	ASSEMBLY PARTS	DESCRIPTION
1	1	N/A		WARRANTY FORM
2	1	N/A		OWNER S MANUAL
3	10	CT-14-BLK		CABLE TIE, 14" BLACK
4	1	H28010		12 GAUGE VEHICLE WIRE HARNESS
5	3	HHCS-0 50-13-3 50-Z		HEX HEAD CAP SCREW, 1/2-13 X 3.50"L, ZP NUT,
6	3	NUT-0 50-13-NYLOCK-Z		NYLOCK, 1/2-13, ZP
7	2	WASH-0 50-1 06-0-08-RH-Z		WASHER, FLAT, 1/2" ID X1.06 OD X .0 "TH, ZP
8	2	WASH-0 50-1 37-0 12-RH-Z		WASHER, FLAT, 1/2" ID X1.37" OD X 0.12TH, ZP



VEHICLE LIFT - ONE YEAR TRANSFERABLE WARRANTY

LIMITED WARRANTY CERTIFICATE

PLEASE FILL OUT ALL FIELDS AND RETURN WITHIN TEN (10) DAYS OF PRODUCT INSTALLATION.

Mail to Harmar, 2075 47th Street, Sarasota, FL 34234. Harmar warrants to the owner of the Vehicle Lift manufactured by us to be free from defects in mechanical and electrical components (parts) for a period of one (1) years, provided that the products have been installed, maintained and operated properly by an Authorized Harmar Distributor or Certified Harmar Installer. Product structure is warranted for three (3) years.

This warranty starts on the date of initial product installation (not to exceed 180 days from the date of manufacture), provided the warranty certificate is completely filled out and returned to Harmar within ten (10) days of installation.

Harmar and its dealers shall not be liable for any consequential, special or incidental damages arising out of the purchase or use of the unit or resulting from the breach of this Limited Warranty, or any implied warranty. This warranty is transferable as long as the application is approved by Harmar's Compatibility Calculator.

This warranty does not cover defects in vehicles on which Harmar products are installed or malfunctions in Harmar products caused by defects in any part of the vehicle upon which the product is installed. This warranty does not cover maintenance or adjustments. The limit of liability of Harmar and its dealer hereunder shall be the unit's purchase price. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, or legal remedies, so these above limitations may not apply. All warranty claims must be reported to the dealer from whom the lift was purchased as they have responsibility for handling warranty claims. Applications involving vehicles or mobility devices not approved by Harmar's Compatibility Calculator will void the warranty.

The dealer is to contact the Technical Services Department of Harmar and provide the serial number of the product along with a description and evidence of the defect(s) supporting a warranty claim. Dealers may charge for labor, service, travel, or other associated costs to make repairs, and such charges are not covered by this Limited Warranty. It is permissible to have any repairs or replacement work done as a result of any defects in material and workmanship by someone other than the Dealer under this Limited Warranty. However, the Limited Warranty does not cover any charges or expenses assessed by any such other person or company performing such repairs or replacement work. All parts used to replace defective materials must be genuine Harmar parts to be covered by this Limited Warranty. This Limited Warranty grants specific legal rights, other rights vary from state to state. Harmar will not be charged for labor, consequential damage or repair expenses.

Harmar will not, under any circumstances, be liable for the loss of the use of its products or loss of time. Defective parts must be returned, if requested, prepaid, to Harmar for inspection prior to credit or replacement. At Harmar's discretion, any part found to have been modified, over-stressed, damaged by accident, or misused is not covered by this warranty.

PRODUCT INFORMATION:

Model: _____
Serial Number: _____
Date of Installation: _____

DEALER/INSTALLER INFORMATION

Company Name: _____
Installer Name: _____
Address: _____
Phone: _____ Email: _____

VEHICLE INFORMATION

Make: _____
Model: _____ Year: _____

MOBILITY DEVICE INFORMATION

Scooter Power Chair Wheelchair
Manufacturer: _____
Model: _____ Weight: _____
Serial # _____

PURCHASER INFORMATION:

Name: _____
Mailing Address: _____
Installation Address (if different): _____
Phone: _____ Email: _____

ADDITIONAL INFORMATION:

How did you hear about Harmar?

Dealer Internet Magazine Friend/Family Other

I selected Harmar due to its (select all that apply):

Style Dealer Own Other Harmar Product Ease Use
 Recommendation Price/Value Key Feature

AL350

Installation & Owner's Manual



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