Inside Lifts

Installation & Owner's Manual

Harmar.
America's Lift Leader™

www.harmar.com | 800-833-0478

AL215 Axis I
Single Axis Inside Lift
Capacity: 250 lbs.

AL225 Axis II Lift
2-Axis Inside Lift
Capacity: 250 lbs.

AL425 Axis II
2-Axis Inside Lift
Capacity: 400 lbs.

AL435 Axis III
3-Axis Inside Lift
Capacity: 400 lbs.

AL435T Axis III
Truck Lift
Capacity: 400 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

Dealer Name & Contact Information:

Serial # of Your Lift:

Contents

Section 1 : Owner

Harmar.
America's Lift Leader℠

Section 2: Installer

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

WARNING
Hazardous situation to avoid possible serious injury to installer or user.

CAUTION!
Hazardous situation to avoid serious damage to property.

1. **Park power chair or scooter** ready to be picked-up along the side and parallel to the vehicle. *[Figure 3-1]*

CAUTION! Always make sure the vehicle's parking brake is firmly set.

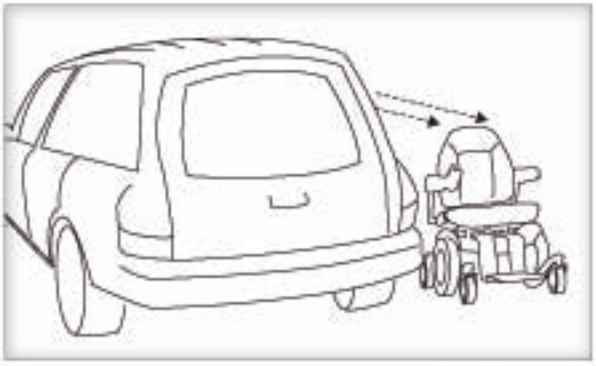


Figure 3-1

2. **Open the vehicle's hatch.** Fold the seat-back of the chair or scooter. *[Figure 3-2]*

CAUTION! Keep hands and feet away from the bottom of the chair or scooter as it is being lifted.

Figure 3-2

3. **Press the 'OUT' button** on the hand controller to rotate the arm outside the vehicle. *[Figure 3-3]*

NOTE: For the **AL215,** manually rotate the lifting arm outside of the vehicle.

Figure 3-3

CAUTION! **DO NOT** expose hand control to rain or snow. If the lift is installed in an open truck bed, keep the control inside the cab when not in use.

Also, place the harness connector within the base cover to protect it from the environment.

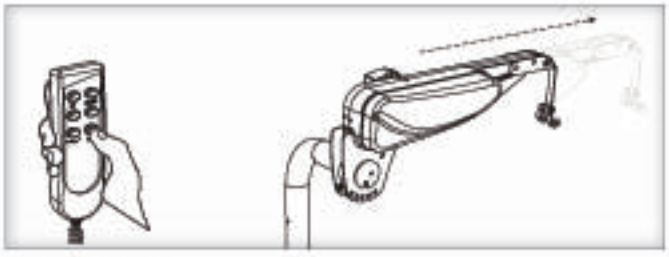


Figure 3-4

AL435 series lifts (AL435 / AL435T) have an "EXTEND" button which can be pressed to extend the arm outside, providing more clearance past the vehicle for wider chairs or scooters. *[Figure 3-4]*

CAUTION! Inspect lifting strap prior to use.

Figure 4-1

Figure 4-2

NOTE: On **AL435** series lifts, you can press the `RETRACT` button to shrink the radius for rotating into the vehicle. This is especially helpful for wider chairs or scooters and for narrower rear vehicle openings. *[Figures 4-3]*

CAUTION! **Ensure the lifting strap is secure and that it points straight down.** Failure to do so could result in the chair or scooter swinging, causing damage to operator, chair or vehicle.

4. **When the lift has cleared the vehicle,** press the "DOWN" button to lower the strap.

Attach the docking device supplied with your lift. Attach the strap hook to the docking device. *[Figure 4-1]*

5. **Press the "UP" button** to begin raising the power chair or scooter. *[Figure 4-2]*

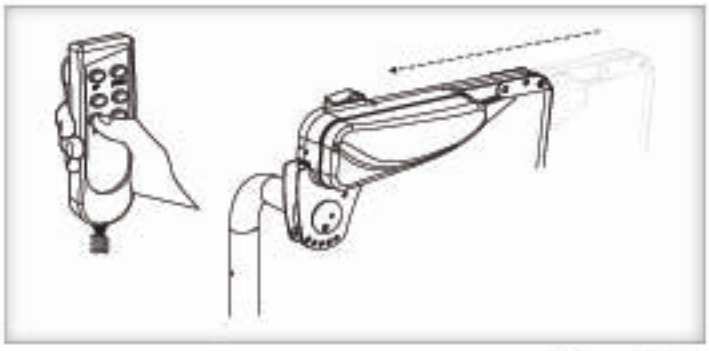


Figure 4-3

6. **When the chair is raised enough to clear the bumper/threshold,** rotate the chair or scooter into the vehicle by pressing the "IN" button. *[Figure 5-1]*

NOTE: For the **AL215** manually rotate the lifting arm inside the vehicle.

7. **When the chair or scooter is fully inside the cargo area,** press "DOWN" until the chair or scooter is placed firmly on the floor.

Leave some tension on the strap during transport to eliminate movement of the chair or docking device.

8. **To unload, reverse the process.**

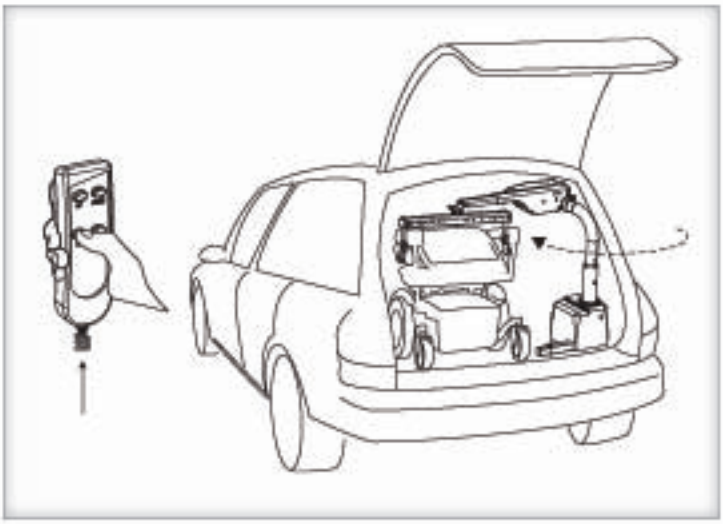


Figure 5-1

CAUTION! **DO NOT** expose hand control to rain or snow. If the lift is installed in an open truck bed, keep the control inside the cab when not in use.

continued

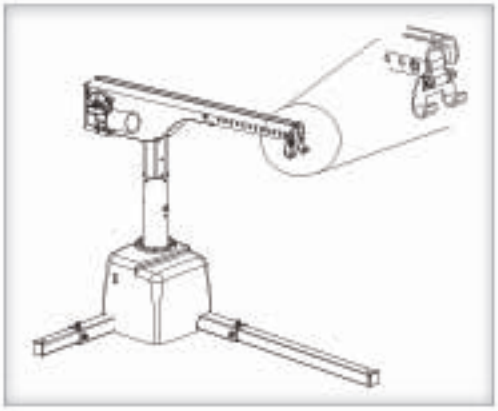


Figure 6-1

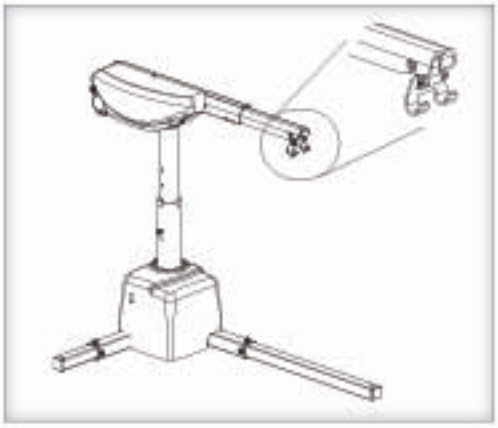


Figure 6-2

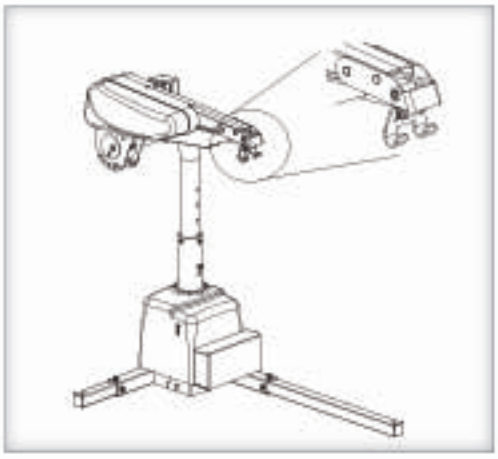


Figure 6-3

When the lift is not being used, press the UP button to run the strap up and keep the hook from swinging. *[Figures 6-1 thru 6-3]*

CAUTION! Tighten the strap only enough to prohibit the lift from rotating. Over-tightening may cause damage to the strap and/or lift.

NOTE: The **AL215** is manually rotated and does not have a lock to keep it from rotating. In order to prevent it from moving when not in use, we recommend that the strap be run down by holding the DOWN button until the hook has reached the gusset nearest the side wall of the vehicle. Latch the hook on the gusset and press the UP button until the strap is taut, as shown for passenger side applications. *[Figure 6-4]*

CAUTION! Always hook the strap to the gusset and run taut when **AL215** is not in use.

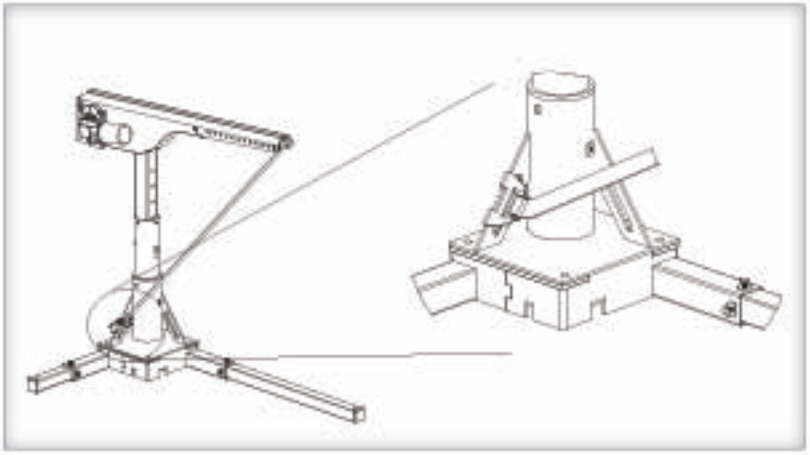


Figure 6-4

CAUTION! **DO NOT** operate this lift until your dealer has satisfactorily instructed you in its proper operation.

WARNING! Check regularly before use for any worn, loose, or damaged parts of the lift. *[Figure 7-1]*

Although your lift is designed and engineered for years of trouble-free use, regular use may result in some parts becoming loose or worn.

- If you notice any problems, **DO NOT USE THE LIFT!** Contact your mobility dealer or installer for repairs or have the strap replaced immediately.
- Use your Inside Lift only for loading and unloading the power chairs and scooters for which it is designed.
- If your particular application (vehicle & chair/scooter) changes, for example, if you buy a new car or change your power chair or scooter, consult your dealer or installer since the original equipment may not configure in the same way.
- **DO NOT** add to or modify any part of the lift system without first consulting the lift manufacturer.
- Any modifications may void warranties as well as compromise the structural integrity of the lift.

WARNING!
ALWAYS CHECK THE LIFTING STRAP BEFORE EACH USE FOR DAMAGE OR WEAR

Figure 7-1

CAUTION! • Ensure the lifting strap is secure and taut when attaching the strap hook to your chair or scooter. Make sure the strap points straight down before lifting. Failure to do so could result in the chair or scooter swinging toward the operator or vehicle, causing damage.

• Avoid having hands and feet under the chair / scooter as it is loaded or unloaded.

• Stop lifting before the strap hook contacts the strap roller or frame. Contact will damage the lift. *[Figure 7-2]* A properly adjusted lift will avoid contact.

Figure 7-2

• Ensure the chair / scooter is firmly sitting on the floor of the vehicle and not suspended by the lift during transportation. If the chair / scooter is not firmly on the floor, it may move during transport causing damage to the lift, vehicle, chair / scooter, or passengers.

Your Inside Lift has been designed and engineered to be as trouble-free as possible. But as with any mechanical device, it requires regular care while owning and using it.

ALWAYS check the lifting strap before use and while using the lift. If any wear or damage is noticed **DO NOT USE THE LIFT!** Contact the dealer or installer for repair. Failure to do so may result in serious injury or damage.

Schedule a preventative maintenance inspection with your dealer at least once a year on motors, lift frame, wiring harnesses, and all moving parts.

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 if the lift is subjected to salt air or road salt.

Store hand control units inside the vehicle whenever possible. If the lift is installed in the back of a pickup truck, unplug the hand control after each use and store it inside the cab. Submerging the hand control in water will cause it to fail.

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

NOTE: The components of this lift are packaged as separate units that should be lifted out and installed individually.

WARNING! DO NOT attempt to pick up the entire lift box from the ground; **DO NOT** try to put the lift on or take off a vehicle alone.

INSTALLATION OVERVIEW

1. Trial Fit for Base Mounting Location

To install the lift, you'll most likely need to drill three holes in the vehicle's floor. Do not drill until you simulate the lift's range of motion inside the vehicle. Also simulate the object to be loaded. Determine an accurate location for the lift while maximizing the remaining cargo area. *[Figure 10-1]*

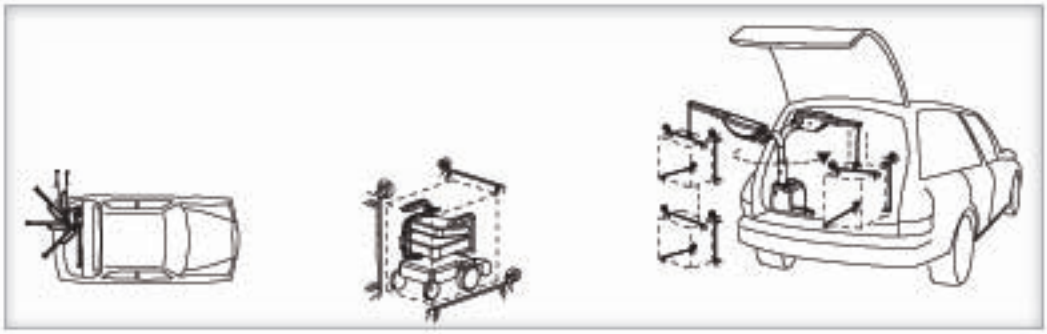


Figure 10-1

2. Vehicle Wiring Harness

Install the vehicle wiring harness first, power will be available to move the lift, making installation easier. *[Figure 10-2]*

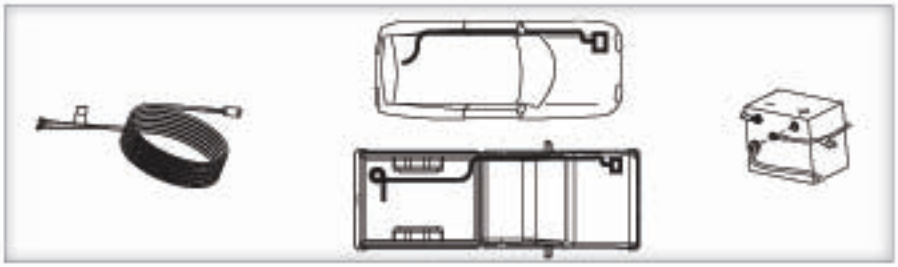


Figure 10-2

3. Installing Lift Components

You'll install the base adapter in the chosen location based on the trial fit procedure. Install base of lift onto the base adapter, then install the lifting arm. *[Figure 10-3]*

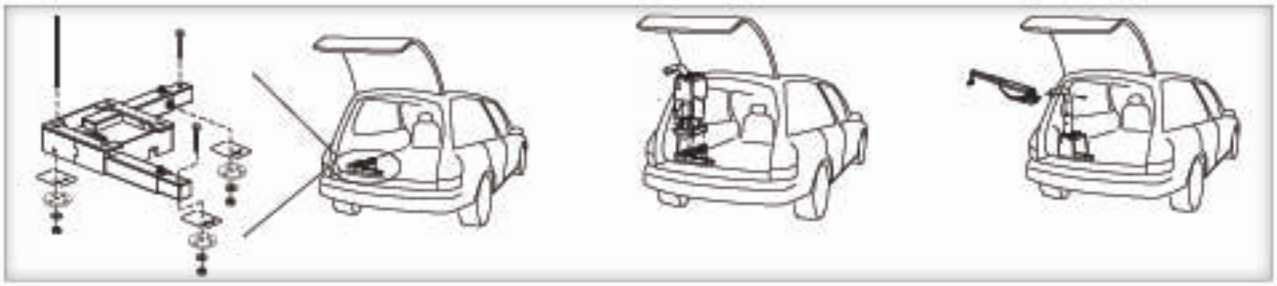


Figure 10-3

TOOLS REQUIRED

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

SAE SOCKETS

7/16"
1/2"
9/16"
3/4"

SAE WRENCHES

7/16"
1/2"
9/16"
3/4"

SAE ALLEN WRENCHES

5/32"
1/8"
3/16"
5/16"
3/8"

WIRE CUTTERS

NEEDLE NOSE PLIERS

#2 FLAT HEAD SCREWDRIVER

#2 PHILLIPS HEAD SCREWDRIVER

SMALL HACKSAW

ELECTRIC DRILL

MARKING IMPLEMENT

TAPE MEASURE

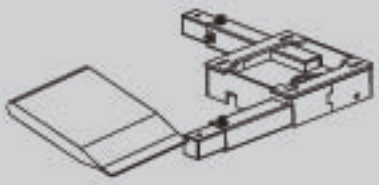
DRILL BITS

PILOT DRILL BIT
3/8" DRILL BIT
9/16" DRILL BIT

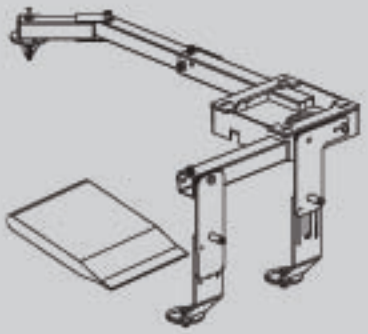
METAL FILE

BASE ADAPTERS & HARDWARE PACK

The base adapter for your specific application is included in the lift package.



BA00 Standard
(Used on any flat surface)



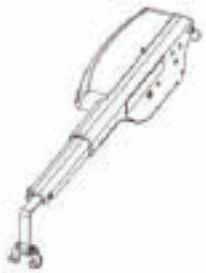
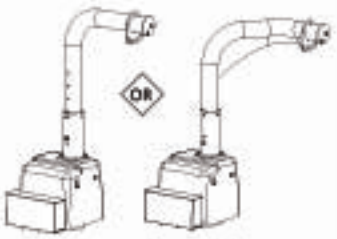
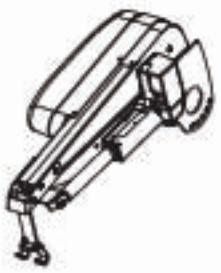
BA01R1 Stow 'n Go (Used with folding seats)

AL207 Leg Extension
(Required for some BA00 applications)

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.

	BASE ASSEMBLY & OFFSET POST	ARM ASSEMBLY
AL425		
AL225		
AL215		
AL435 or AL435T	 *AL435* *AL435T*	

WIRING THE VEHICLE

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

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.

1. Unwind the wiring harness and lay it flat.

One end of the harness has 2 covered pins. This is the lift end and goes to the rear cargo area where the lift mounts. *[Figure 13-1]*

The wiring harness is unassembled for easier installation. The end connector is included separately from the harness to enable the installer to run the wire under and through the vehicle with the smallest clearance possible.

Figure 13-1

DO NOT connect the red wire until the very end.

2. Route the wire harness beginning at the battery.

Attach the black wire to the negative terminal on the battery. *[Figure 13-2]*

continued

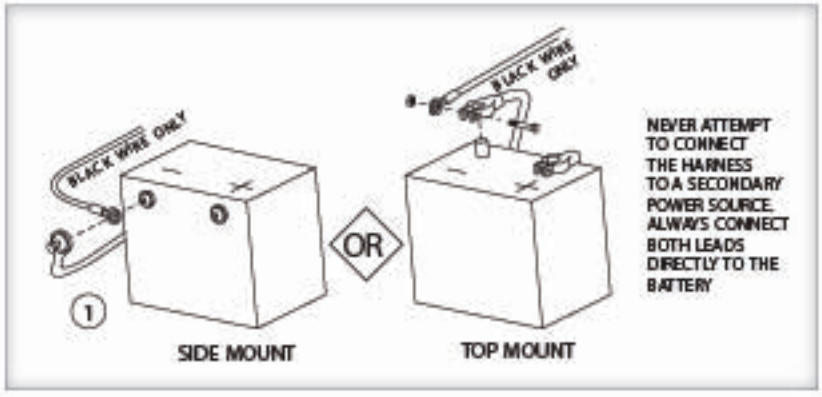


Figure 13-2

DO NOT attach the red wire until the very end of installation.

Wiring the Vehicle (con't)

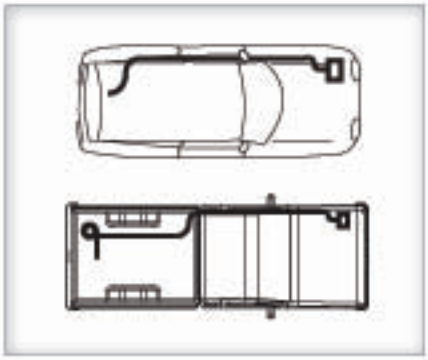


Figure 14-1

3. Run the vehicle harness to the rear cargo area/trunk.

Run the wire under and through the vehicle whenever possible, gaining entry into the vehicle through the firewall. *[Figure 14-1]*

DO NOT run wiring where it can be snagged by road debris.
DO NOT run wiring near the gas tank.

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.

If you want to run the harness under the vehicle, you will most likely need to drill a hole to get the wire into the rear cargo area/trunk. Use the supplied 3/8 grommet in the hole to protect the wire.
If the harness is too long for the vehicle, coil the excess wire and secure it to the vehicle frame with the supplied cable ties.

Do NOT cut or shorten the harness.

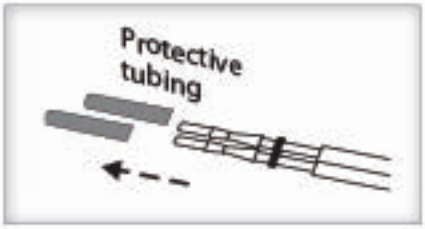


Figure 14-2

4. When the harness is through the vehicle, remove the pin's protective tubing. *[Figure 14-2]*

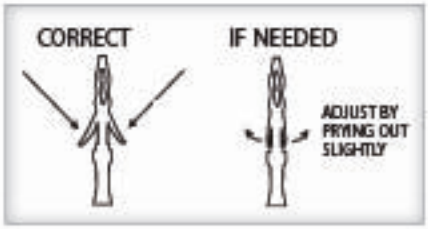


Figure 14-3

5. Inspect the pin's retaining flanges.

The flanges may have been deformed while being run through the vehicle. These are critical to secure the pins inside the connector. Adjust as needed. *[Figure 14-3]*

6. Flip open end connector's hinged retainer.

- Insert pins as shown. *[Figure 15-1]*
- Verify the wires cannot be pulled out by moderately pulling on the wires.
- Be sure rubber seals are inside the back of the connector.
- Close the hinged retainer.
- Plug connector into lift.

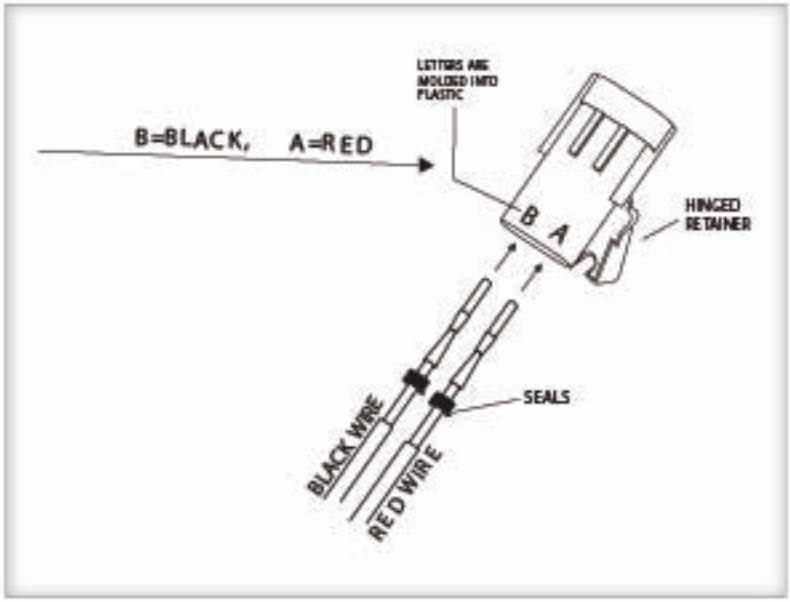


Figure 15-1

7. Attach red wire to the positive terminal on the battery. *[Figure 15-2]*

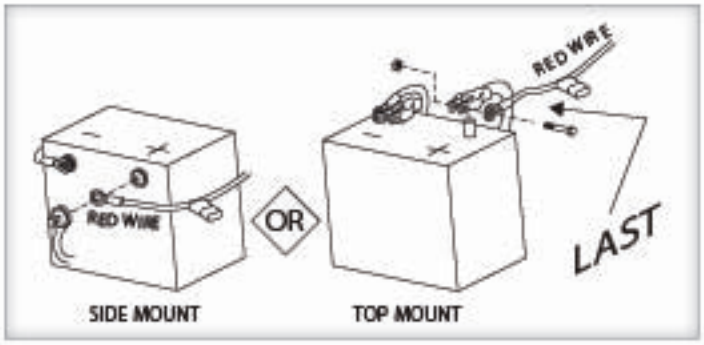


Figure 15-2

AL215

AL225

AL425

AL435

AL435T

TRIAL FIT PROCEDURE

The **AL215, AL225, AL425, AL435 ,AL435T** require a minimum of three holes to be drilled into the vehicle's floor to secure the base. The positioning is vital to the lift's successful installation and operation.

Before drilling any holes, ensure that the lift can be positioned to permit a full range of motion. *[Figure 16-1]*

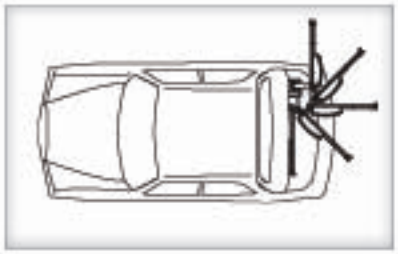


Figure 16-1

Figure 16-2

1. **Place the base in the vehicle's cargo area.** Shown is passenger-side installation. *[Figure 16-2]* Driver's side is identical, but mirrored.

2. **Fold the chair or scooter's seat back** (or remove seat), preferably with the docking device attached, to roughly observe the chair's transportable dimensions. Measure length, width and height. *[Figure 16-3]*

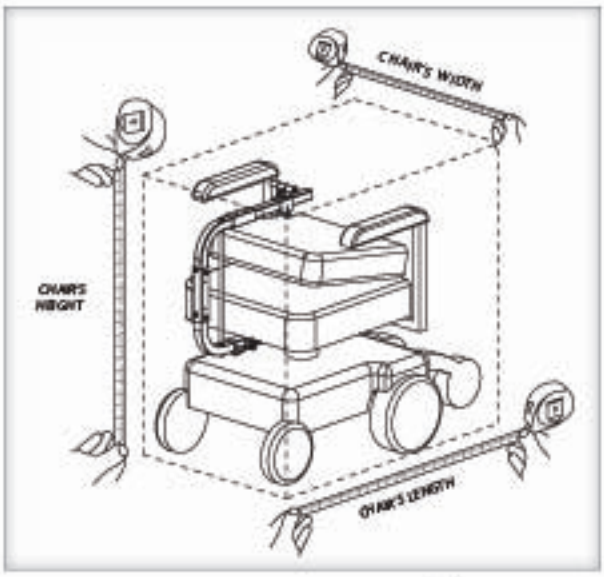


Figure 16-3

3. **With an assistant, place the lift on top of the base** in the extreme back corner of the cargo space. This will yield the greatest available loading area. Slide the arm onto the post. *[Figure 17-1]*

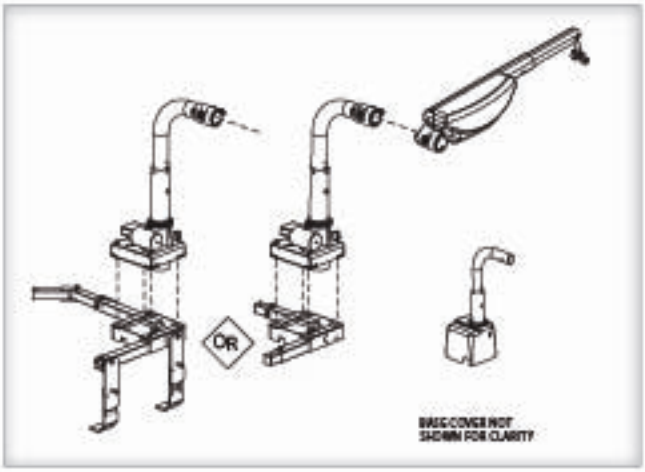


Figure 17-1

4. **Simulate each of the chair's dimensions** (length, width and height) while running the lift through its full range of motion in and out of the cargo area. *[Figure 17-2]*

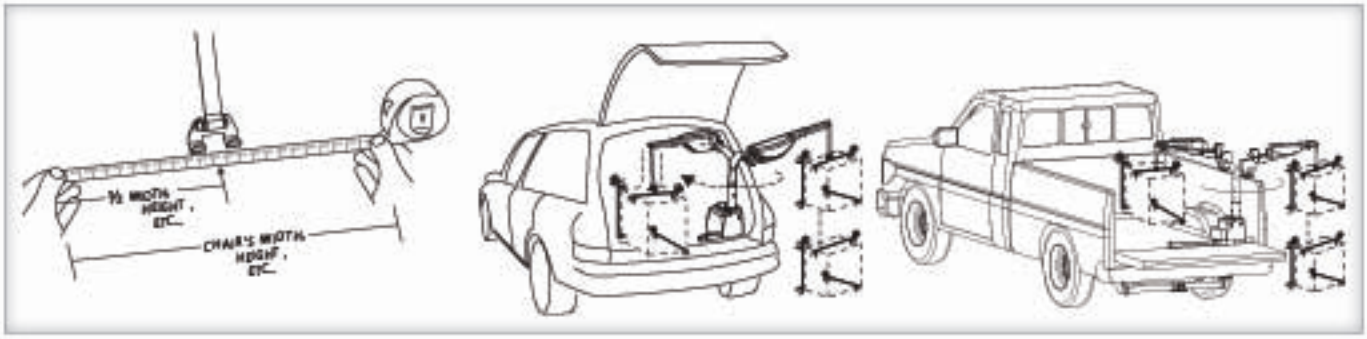


Figure 17-2

5. **Verify that each of the measurements allows full range of motion** within the cargo area and the opening, mark the three locations to drill. *[Figure 17-3]*

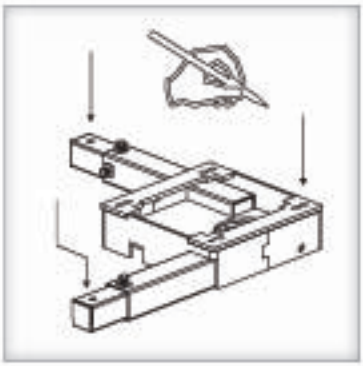


Figure 17-3

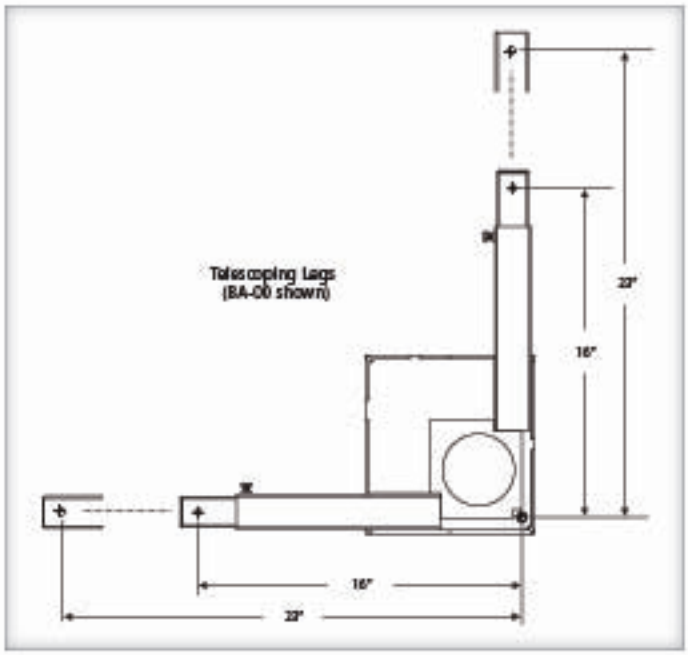


Figure 18-1

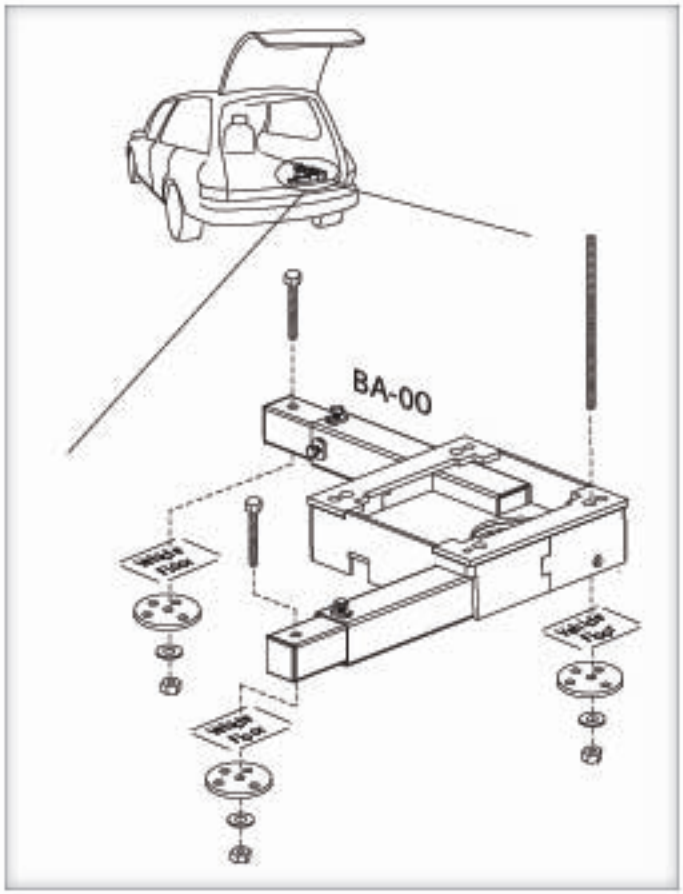


Figure 18-2

BASE INSTALLATION / Flat Floor

After you know the lift position from the trial fit procedure, you are ready to drill three 3/8" holes in the locations you marked.

1. Drill Pilot Holes

- Choose a safe location to drill a single pilot hole from above in one of the three marked locations.
- Look under the vehicle and measure the specified distance from the pilot hole.
- If all is clear in that area continue to drill in remaining locations.
- Inspect all three pilot holes under the vehicle.
- If all clear, drill 3/8" holes in pilot locations. *[Figure 18-1]*

CAUTION!
Avoid vehicle wiring, fuel lines, fuel tanks, spare tires, etc. when drilling.

2. Fasten Base

When holes are drilled, fasten base to vehicle floor using supplied hardware in the hardware pack. Be sure to tighten all fasteners. *[Figure 18-2]*

Special Cases

Storage compartment or well can potentially affect lift placement. Most of these situations can be managed with the help of an All Thread Kit. *[Figure 19-1]*

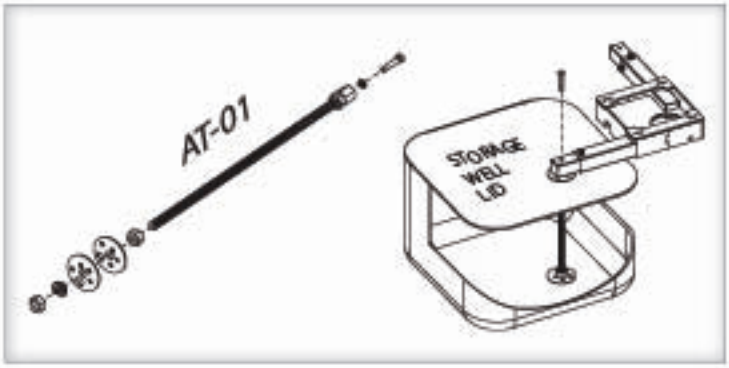


Figure 19-1

Spare Tire Storage

If the spare tire is stored under the floor, be sure that the base can be bolted through a steel floor or frame.

BASE INSTALLATION / 3rd Row Folding Seats

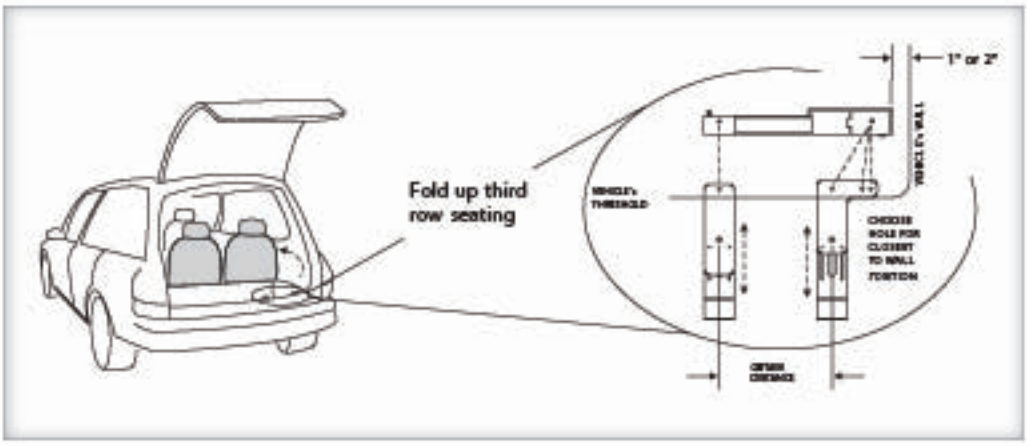


Figure 20-1

1. **Place vertical joiners on back wall** of seating well corner. *[Figure 20-1]*

   Use base as template for position.

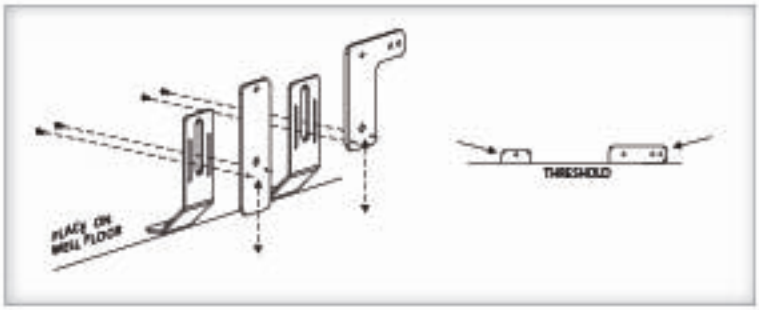


Figure 20-2

2. **Establish height** by having mounting holes show over threshhold. *[Figure 20-2]*

   Attach joiners using small screws provided to lock height.

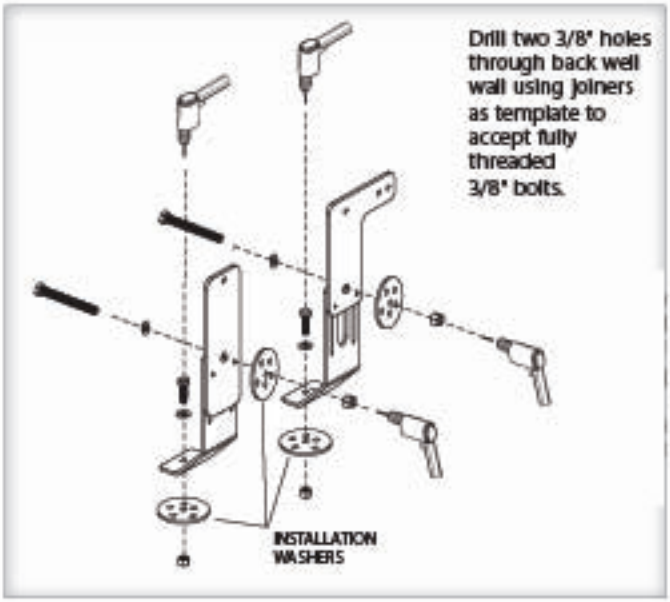


Figure 20-3

3. **Preferred Installation.** Mandatory when lifting heavier payloads.

   - Drill two 3/8" holes in floor of well using joiners as template. Fasten 3/8" hardware (x2). *[Figure 20-3]*

   PLUS

   - Drill two 3/8" holes through back well wall using joiners as template to accept full-threaded 3/8" bolts.

VERIFY THAT ALL MATING SURFACES ARE FLUSH.

4. **Fold third-row seating back into well.** Verify vertical joiner mount holes are above threshold. *[Figure 21-1]*

Figure 21-1

5. **Attach vertical joiners to base** using supplied hardware as indicated. *[Figure 21-2]*

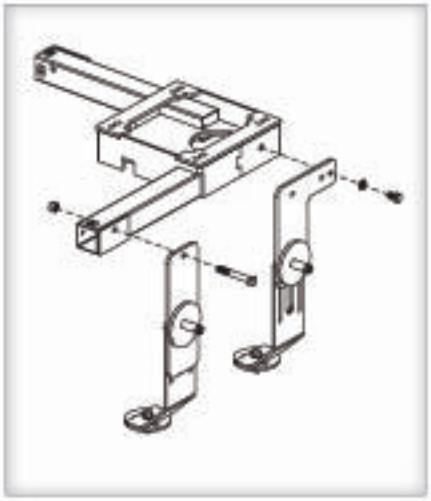


Figure 21-2

6. **Insert telescoping leg.** Attach swivel leg. Drill or, where possible, use J-hook to seat attachment point and secure leg. *[Figure 21-3]*

   Tighten all fasteners.

continued

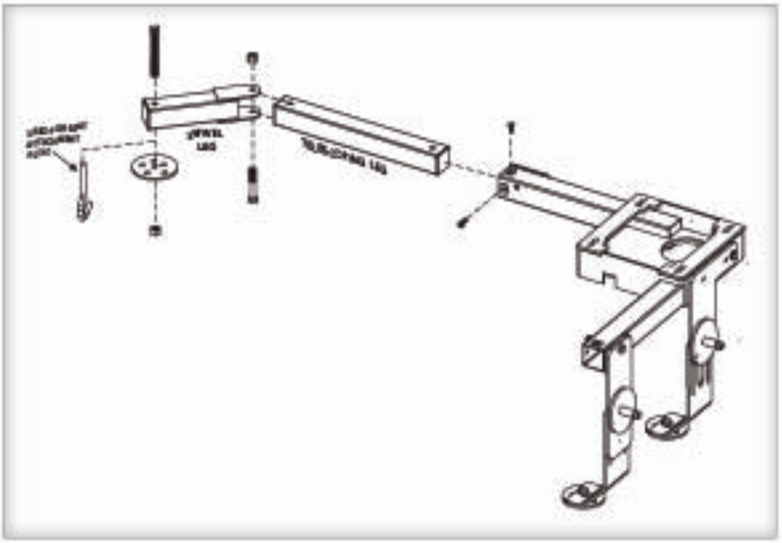
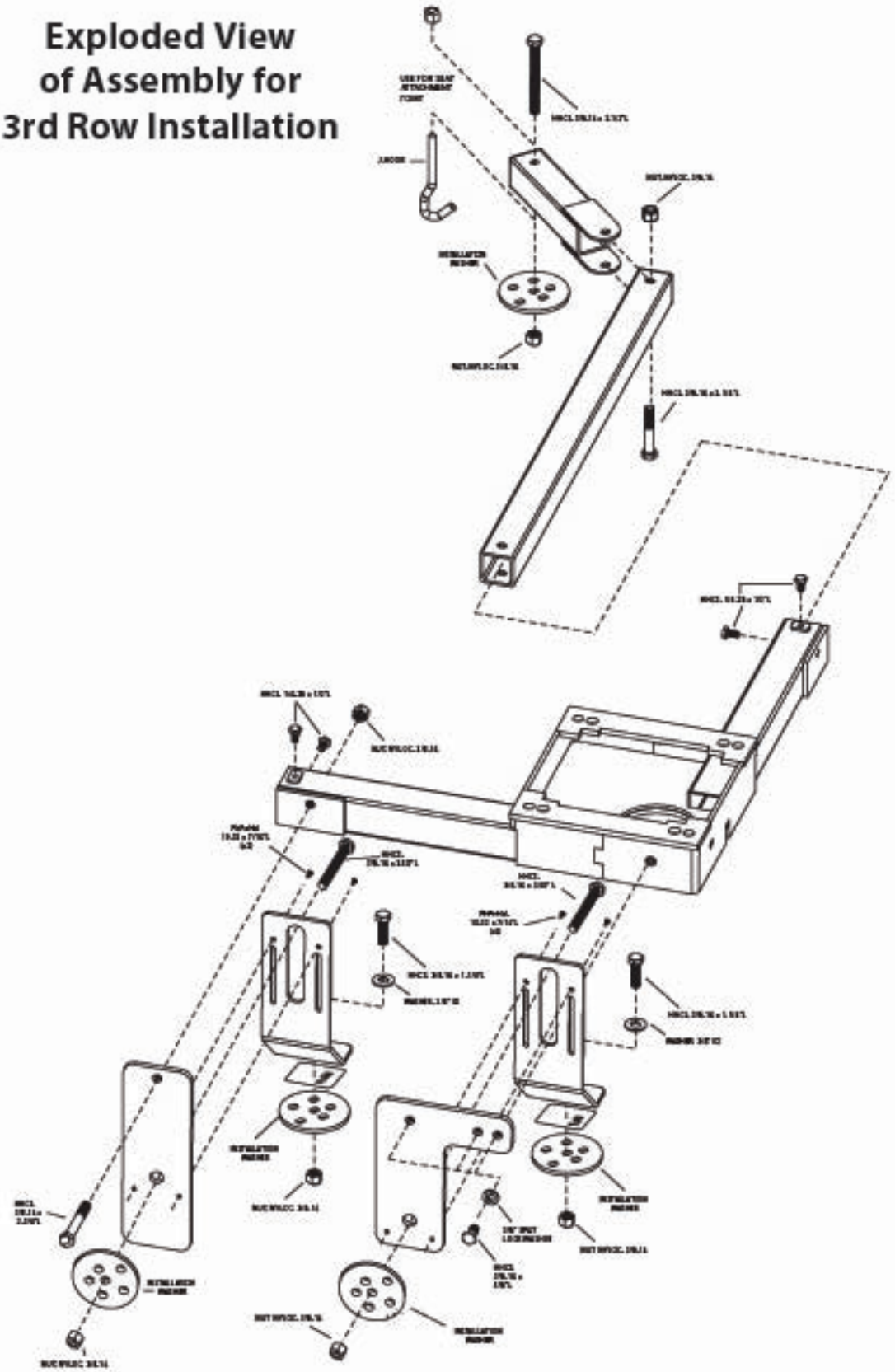


Figure 21-3

Base Installation / 3rd Row Folding Seats (con't)

Exploded View of Assembly for 3rd Row Installation



BASE INSTALLATION / Truck Bed

1. **Place base in corner of truck bed.** Attempt to position as close to the corner as possible while leaving at least 1" clear around the base on all sides. *[Figure 23-1]*

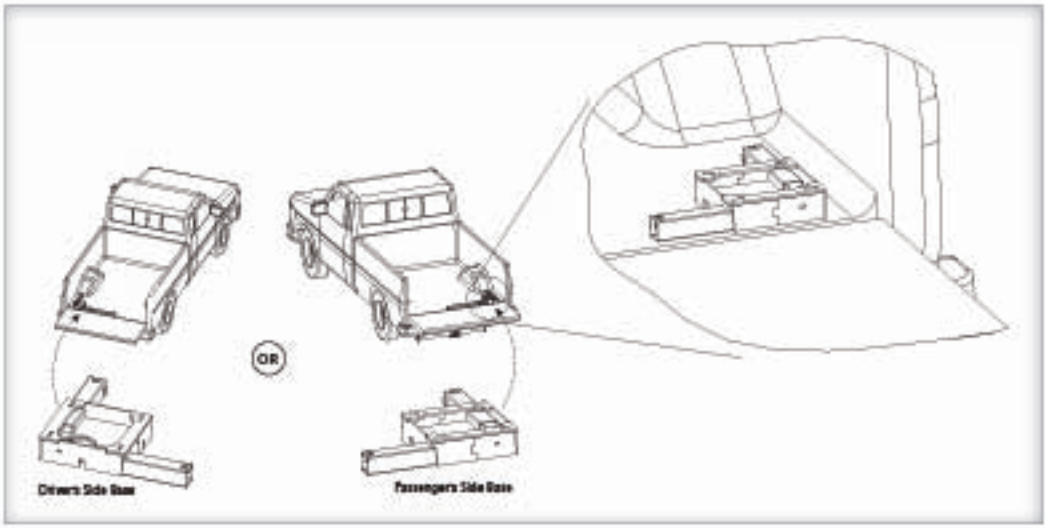


Figure 23-1

2. **Install leg extensions** into base tubes and extend them as far as they will go. The Long Leg Extension should run parallel with the bumper. Set screws can be hand-tightened at this time. *[Figure 23-2]*

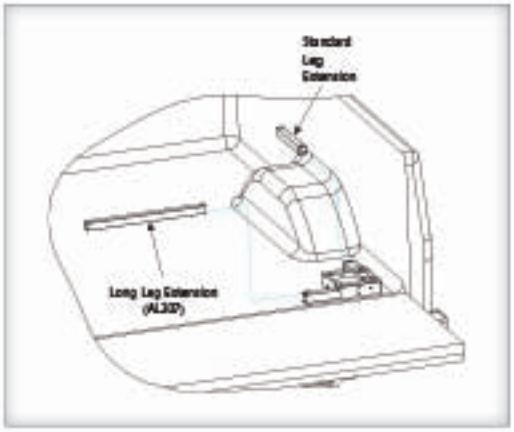


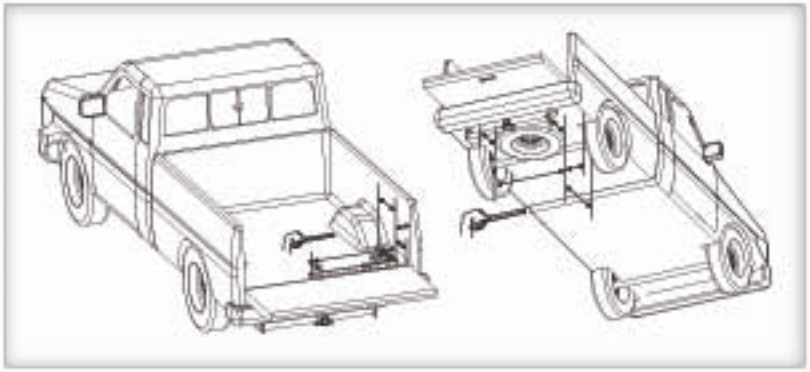
Figure 23-2

USE EXTREME CAUTION! Examine area for obstructions or potential hazards such as gas tank and fuel / brake / electrical lines.

Figure 23-3

3. **Recommended practice before drilling**

With base in position, use a tape measure to estimate the distance in both directions from an exterior reference point (Ex. outside body panel) to all three potential bolt holes. Repeat this underneath the truck bed. *[Figure 23-3]*



Check framing, bracing, or other nearby thickened structure on which to mount the lift. Adjust position of base and leg extensions to capture as much frame as possible while avoiding the vehicle's gas tank, spare tire, suspension components etc.

continued

Base Installation / Base for Truck Bed (con't)

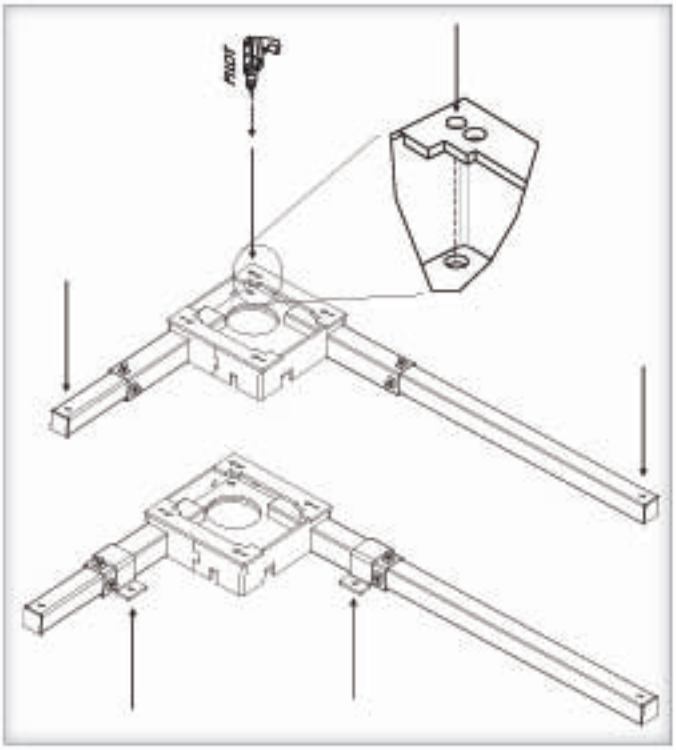


Figure 24-1

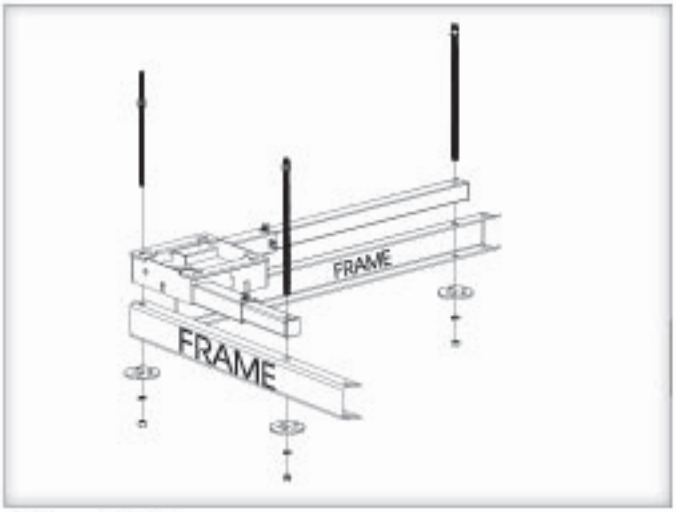


Figure 24-2

4. **Double-check hole positions for pilot holes.** Mark the three hole locations. Use the base as a template, then remove base. Drill pilot holes down through truck bed in the marked locations. *[Figure 24-1]*

5. **Climb under truck and inspect location of pilot holes.** Again, be sure that the larger hole will avoid the vehicle's gas tank, spare tire, suspension components, etc.

Finish drilling by making 3/8" holes through the truck bed and when possible, through the frame of the truck in the locations shown by the arrows. *[Figure 24-1]*

Wherever possible, incorporate the frame rails of the truck. This is a requirement when lifting heavier chairs and scooters. *[Figure 24-2]*

⚠ CAUTION!

If incorporating the frame is impossible, large plates (not supplied) may need to be used to spread the force and keep the truck bed from distorting. Call the technical servce department for further explanation.

⚠ USE EXTREME CAUTION!

Avoid Gas Tank Fuel / Brake / Electrical Lines

6. **Drill two more 3/8" holes** for the base leg anchors through the truck bed; if the frame is not captured, if bed material is too thin, and/or application is very heavy. *[Figure 24-1 and 25-1]*

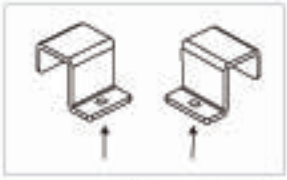


Figure 25-1

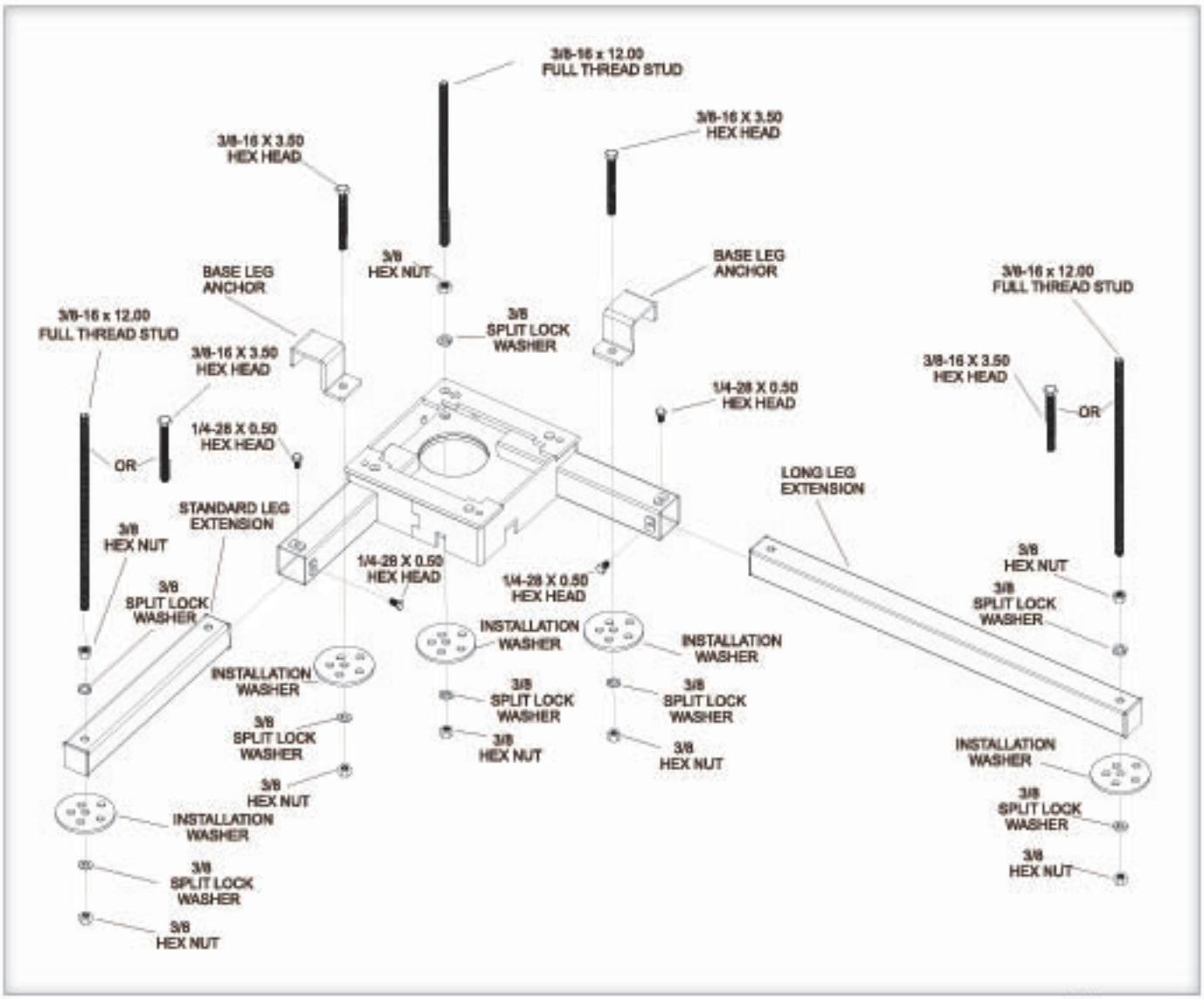


Figure 25-2

LIFT INSTALLATION

1. **Raise the plastic base cover when the base has been fastened to the vehicle floor,** and attach the lift to the base as shown. *[Figure 25-1]*
2. **Be sure to compress all split lock washers** when tightening all fasteners.
3. **Cut off remaining All Thread after it is tightened against the washer.** This allows nut removal to deburr thread as it is removed. *[Figure 25-2]*

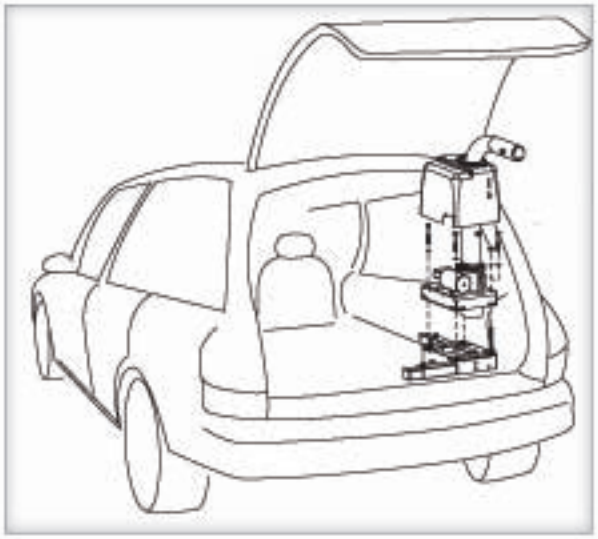


Figure 25-1

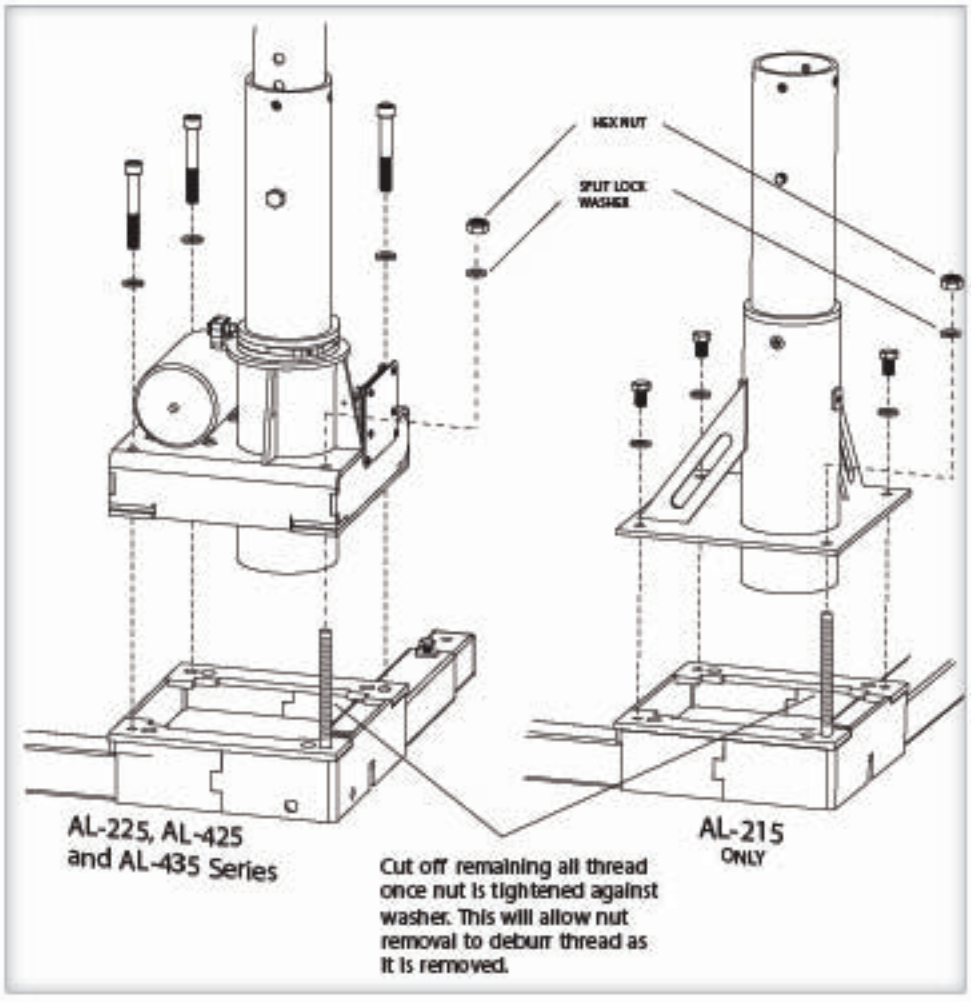


Figure 25-2

continued

Lift Installation (con't)

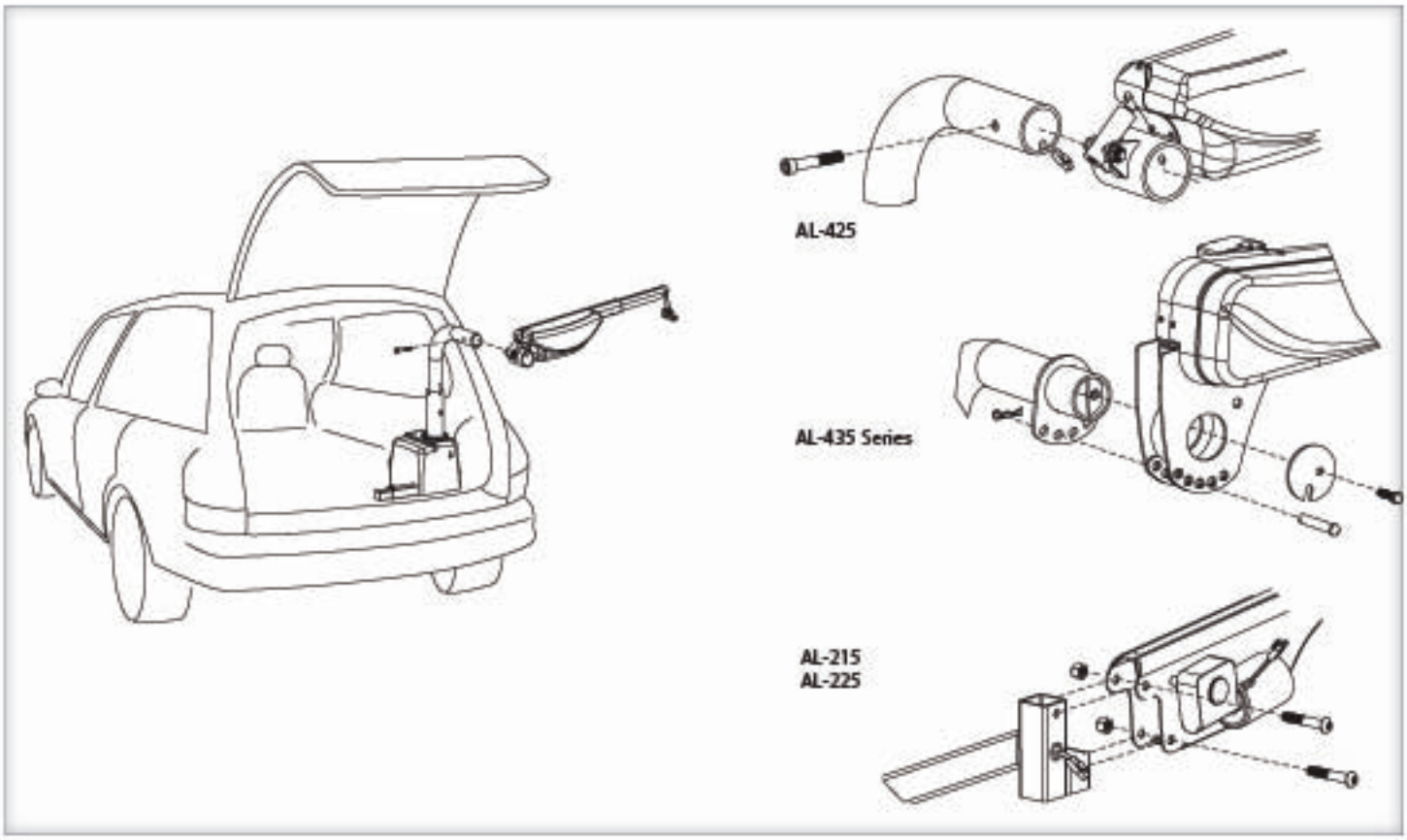


Figure 26-1

4. **Attach lifting arm** as shown according to lift model. *[Figure 26-1]*

5. **Plug in lifting motor.** *[Figure 26-2]*

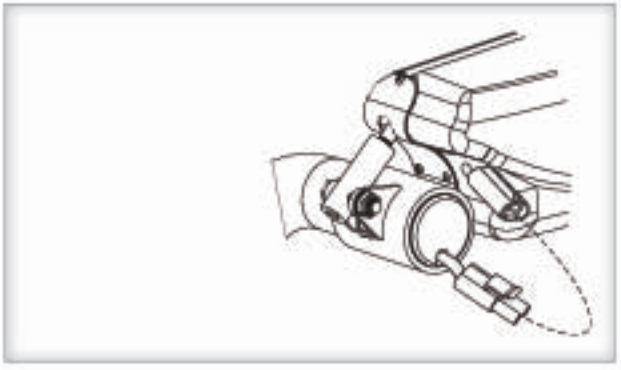


Figure 26-2

ADJUSTMENTS : HEIGHT

AL425 / AL435 / AL435T

- Remove bolt.
- Loosen set screws (x4). *[Figure 27-1]*
- Slide inner vertical post.
- Replace bolt.
- Tighten set screws/ (x4) *[Figure 27-2]*

AL215 / AL225

- Remove bolt.
- Loosen set screws (x4) *[Figure 27-3]*
- Replace bolt.
- Tighten set screws (x4) *[Figure 27-4]*

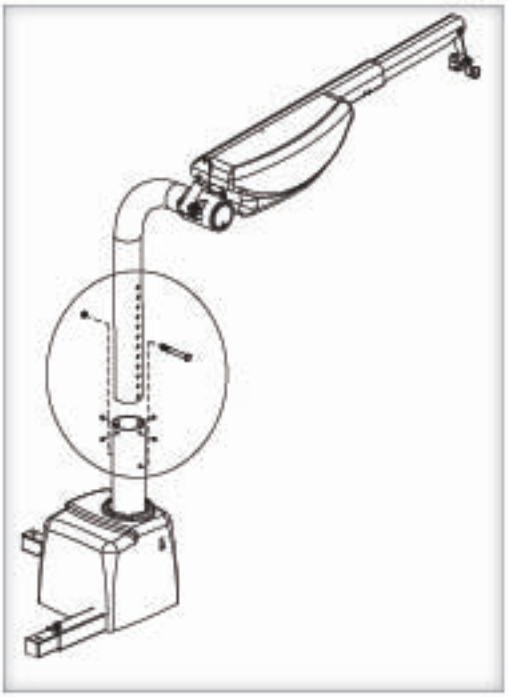


Figure 27-1

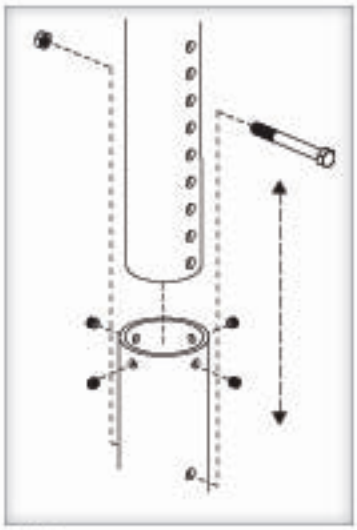


Figure 27-2

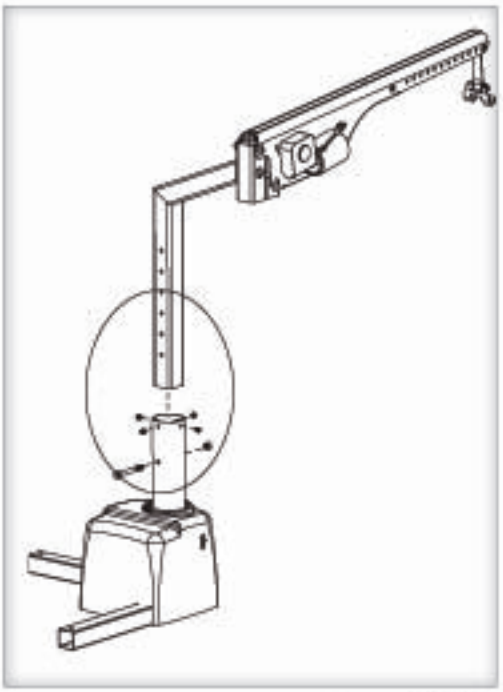


Figure 27-3

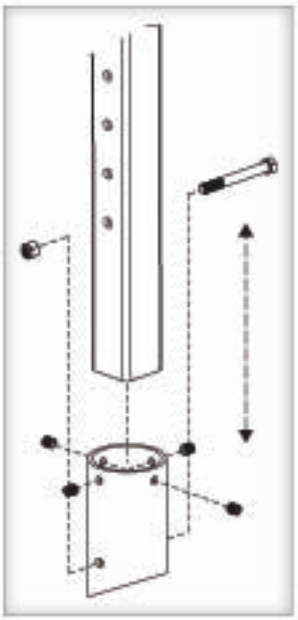


Figure 27-4

continued

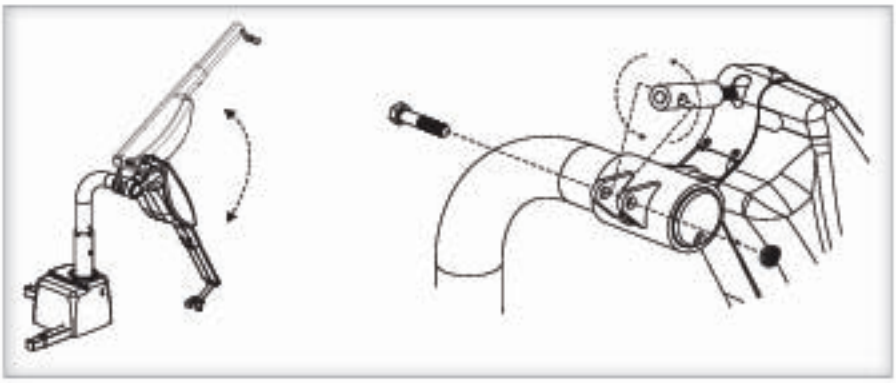


Figure 28-1

Figure 28-2

ADJUSTMENTS : PITCH

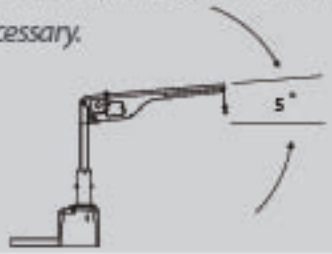
AL425

- Remove bolt.
- Rotate turnbuckle.
- Replace bolt. *[Figure 28-1]*

AL435 / AL435T

- Loosen bolt.
- Remove pin.
- Rotate arm.
- Replace pin.
- Tighten bolt. *[Figure 28-2]*

NOTE: *The* **AL215** *and* **AL225** *are manufactured with a 5 degree pre-load so pitch adjustment is not necessary.*



ADJUSTMENTS : ROTATION

AL225 / AL425 / AL435 / AL 435T The amount of allowable rotation is determined by the cams indicated below. Loosen set screw and rotate as required. *[Figure 28-3]*

If installing the lift on the driver side, or if the post rotates in the wrong direction, simply reverse the wires at the rotational motor. *[Figure 28-4]*

Rotation Limit Switches may also need to be flipped to properly stop the motor. *[Figure 28-5]*

continued

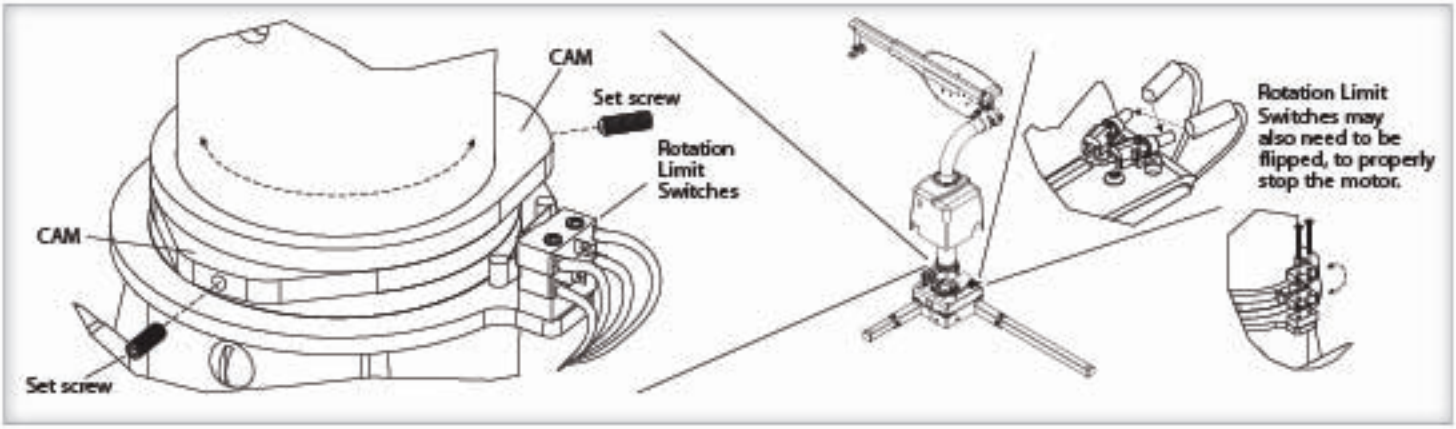


Figure 28-3 *Figure 28-4* *Figure 28-5*

Lift Adjustments : Rotation (con't)

The average installation will require approximately 180 degrees of rotation. *[Figure 29-1]*

Set the rotation so that the arm has enough room to transport the mobility device in and out of the vehicle without any contact with the vehicle.

CAUTION! Do not set the limits to over-rotate the arm. Damage may occur to the vehicle.

Figure 29-1

AL215

The AL215 is manufactured with manual rotation. The base has two set screws which act as mechanical stops to limit the rotation of the arm. *[Figure 29-2]*

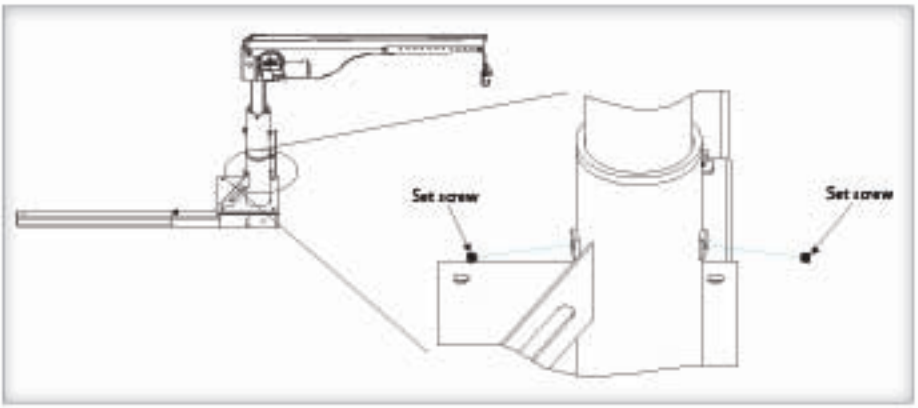


Figure 29-2

When the arm is rotated, it should stop at its full in and out positions. *[Figure 29-3]*

CAUTION! Be sure that set screws are in place, but not so tight as to prohibit the arm from rotating.

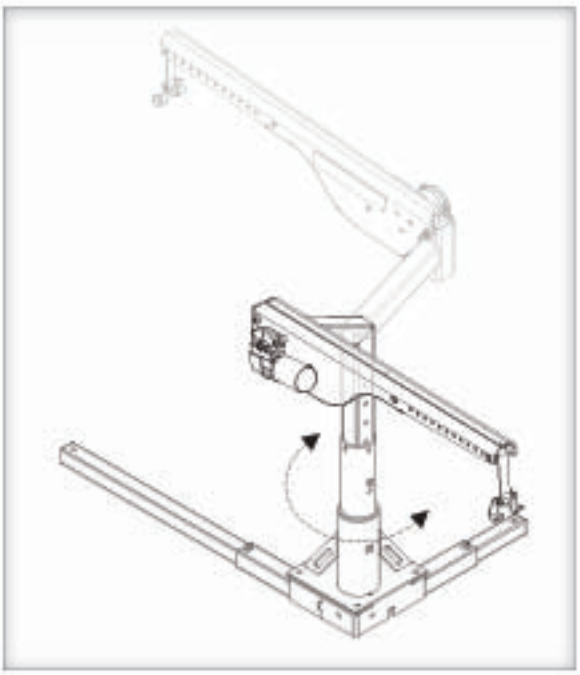


Figure 29-3

Docking Devices

The Docking Device is an interface between the lift and the power chair or scooter.

Most power chairs and scooters can be lifted either by the center seat post or the four-post seat frame.

Figure 30-1

Figure 30-2

Types of Docking Devices

[Figures 30-1 and 30-2]

The Above Docking Devices are two of the most common and can lift most power chairs and scooters. However, many other devices are also available which may be more appropriate to your application.

Please consult the instructions provided with your Docking Device or contact our technical service department to find the specific device that will work best for you.

TROUBLESHOOTING

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

PROBLEM

Lift does not operate or

lift operates slowly or intermittently.

Cause

Bad electrical connection(s) / Circuit breaker

Solutions

- Check / clean all connections that might be loose or dirty. The lift's 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.
- 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 tests shown in Figure 31-2.

PROBLEM

Lifting strap operates in reverse

Cause

Button was held too long and unwound the lifting strap like a yo-yo. The lifting strap wound in reverse.

Solutions

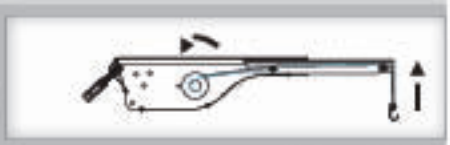
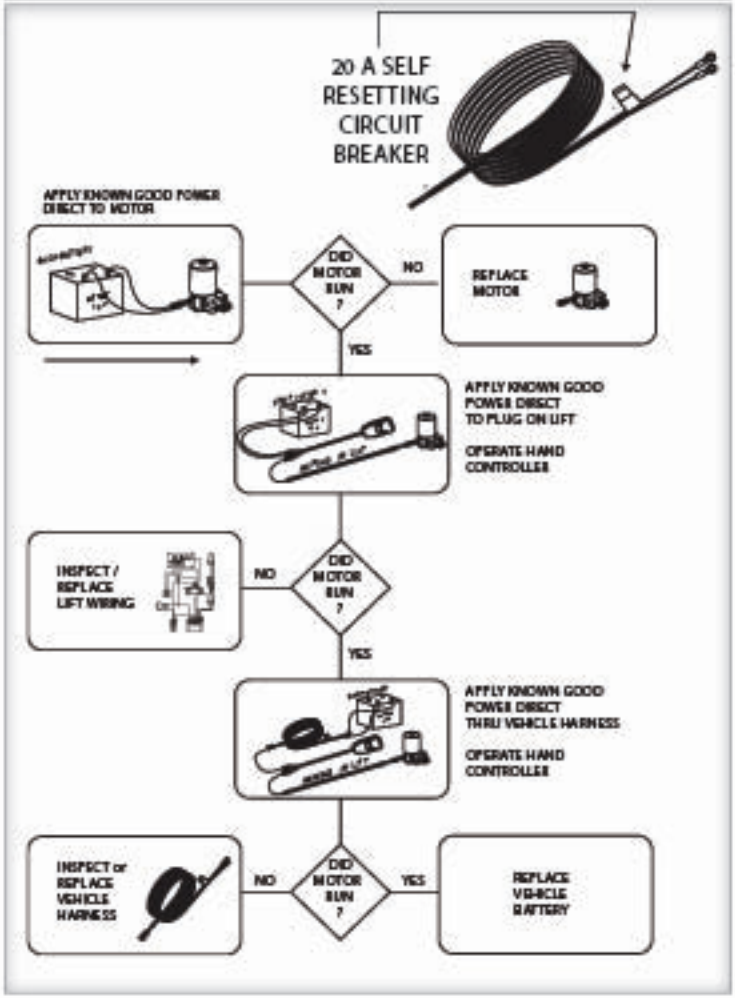


Figure 31-1

Press the button that extends the strap and continue to hold until the strap returns to the proper direction. Strap should always wrap over the top of the spool. *[Figure 31-1]*



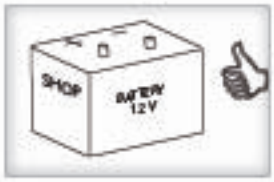
continued

Figure 31-2

Dealer Only: Troubleshooting (con't)

NOTE: Be cautious when troubleshooting with a test light or voltage meter. You may get a false indication as shown below. [Figure 31-2] It will indicate that a wire connection exists – but it may not necessarily enough.

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



These instruments will detect voltage, but may not indicate a tear or poor connection in the wiring.

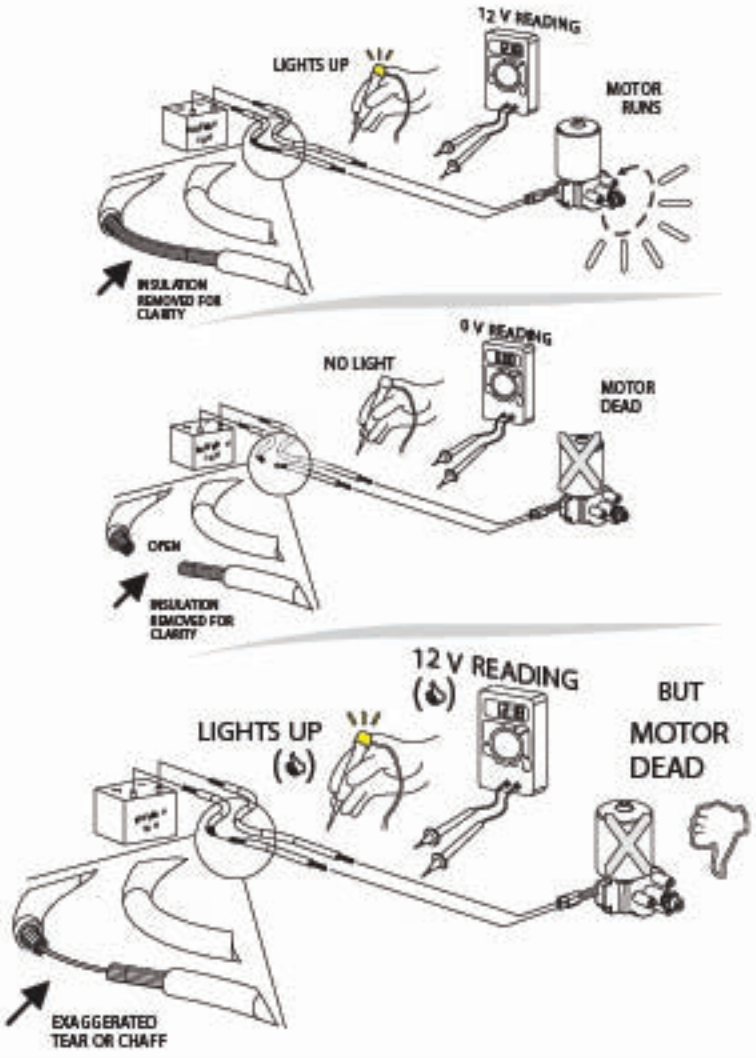


Figure 31-2

PROBLEM

Scooter or chair tips front or back while being lifted.

Cause

Chair or Scooter is being lifted off center.

Solution

Adjust for center of gravity on docking device. Check to see if proper docking device is being used.

PROBLEM

Lifting arm is hard to rotate.

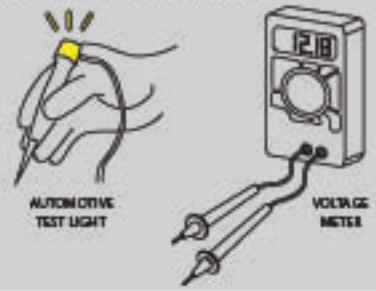
Cause

Dry / dirty bushings.

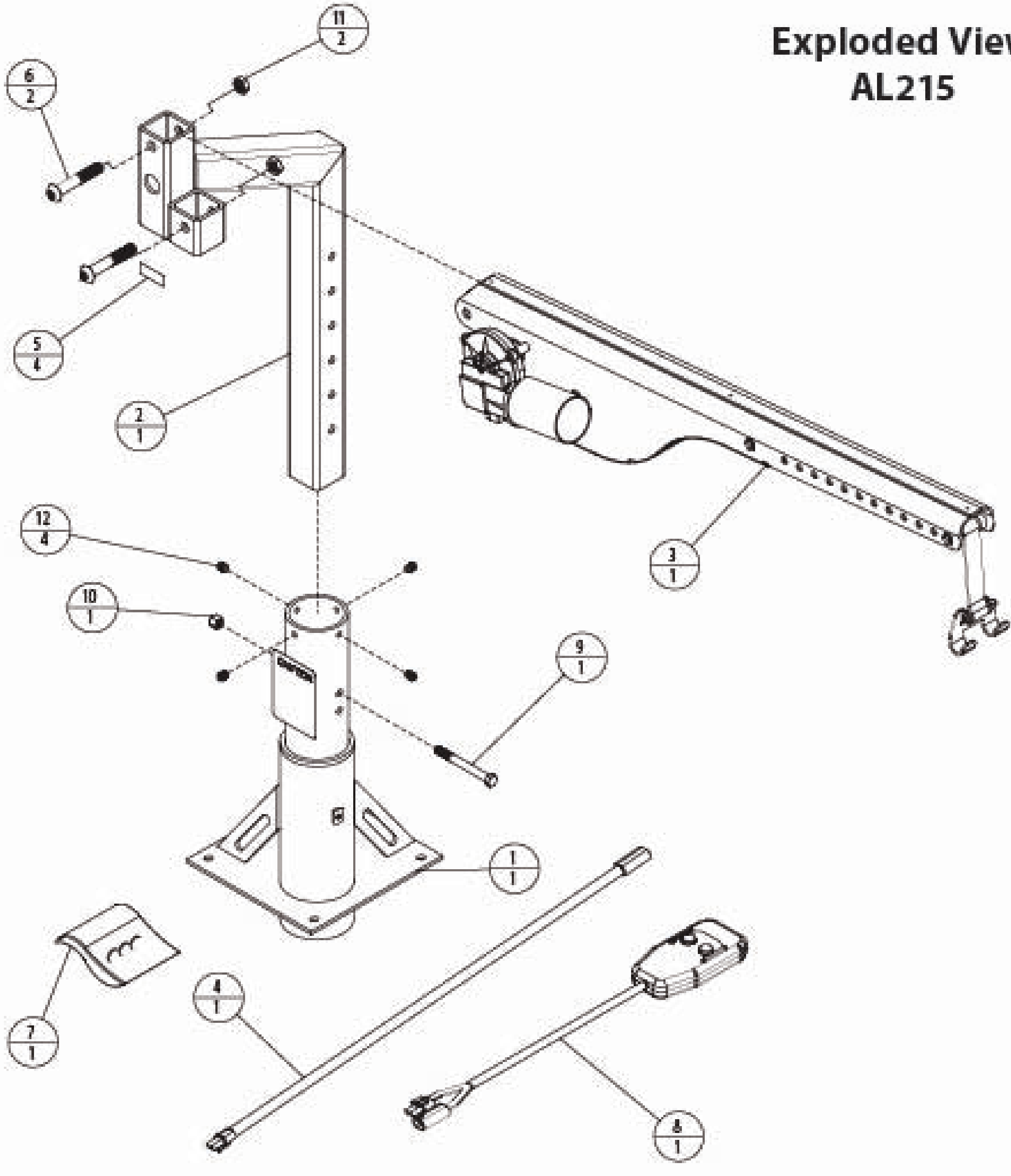
Solution

Clean and lubricate bushings in base with white/lithium grease or equivalent.

CAUTION! Be careful when troubleshooting with a test light or voltage meter. They may give false indications.

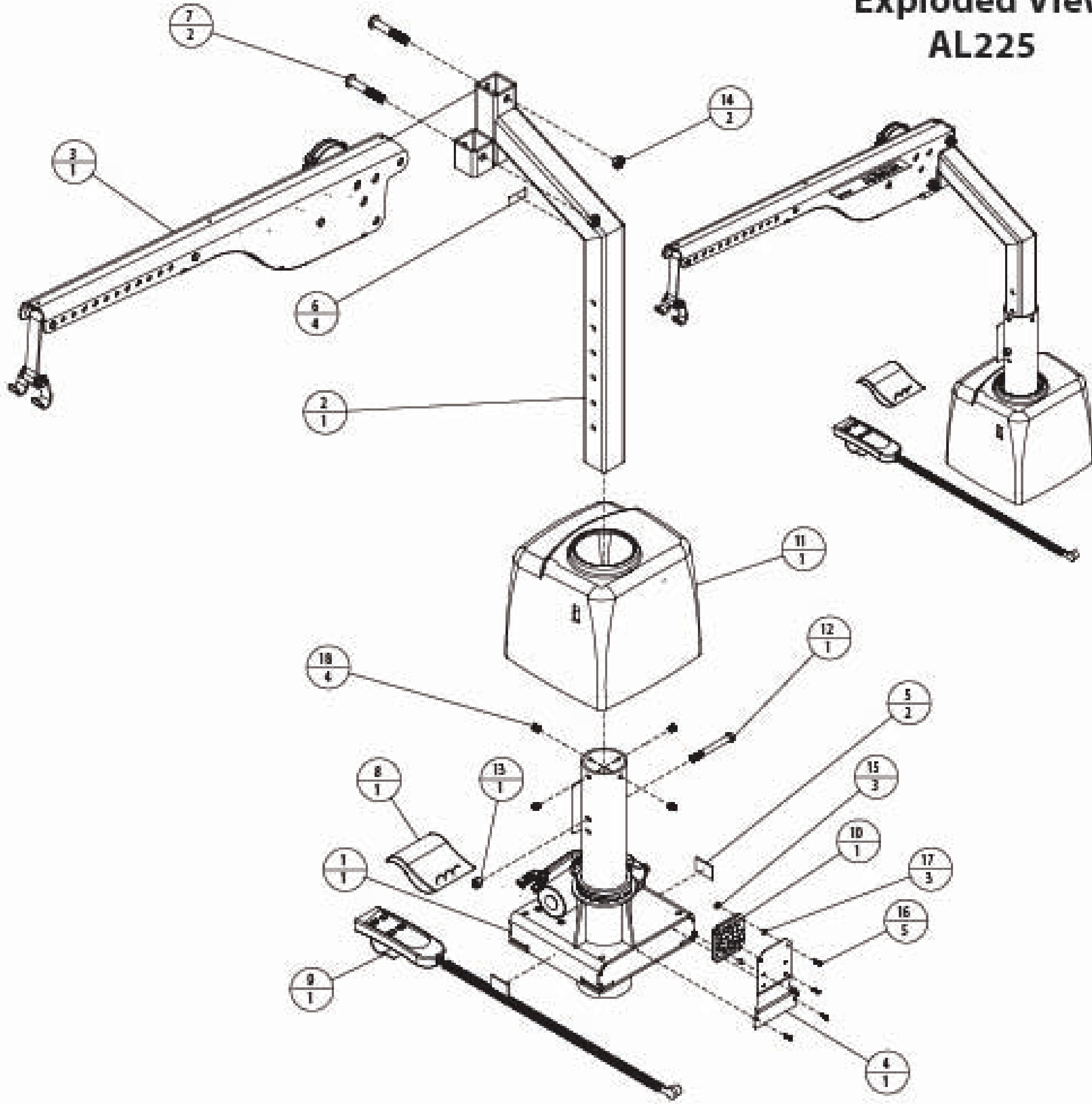


Exploded View AL215



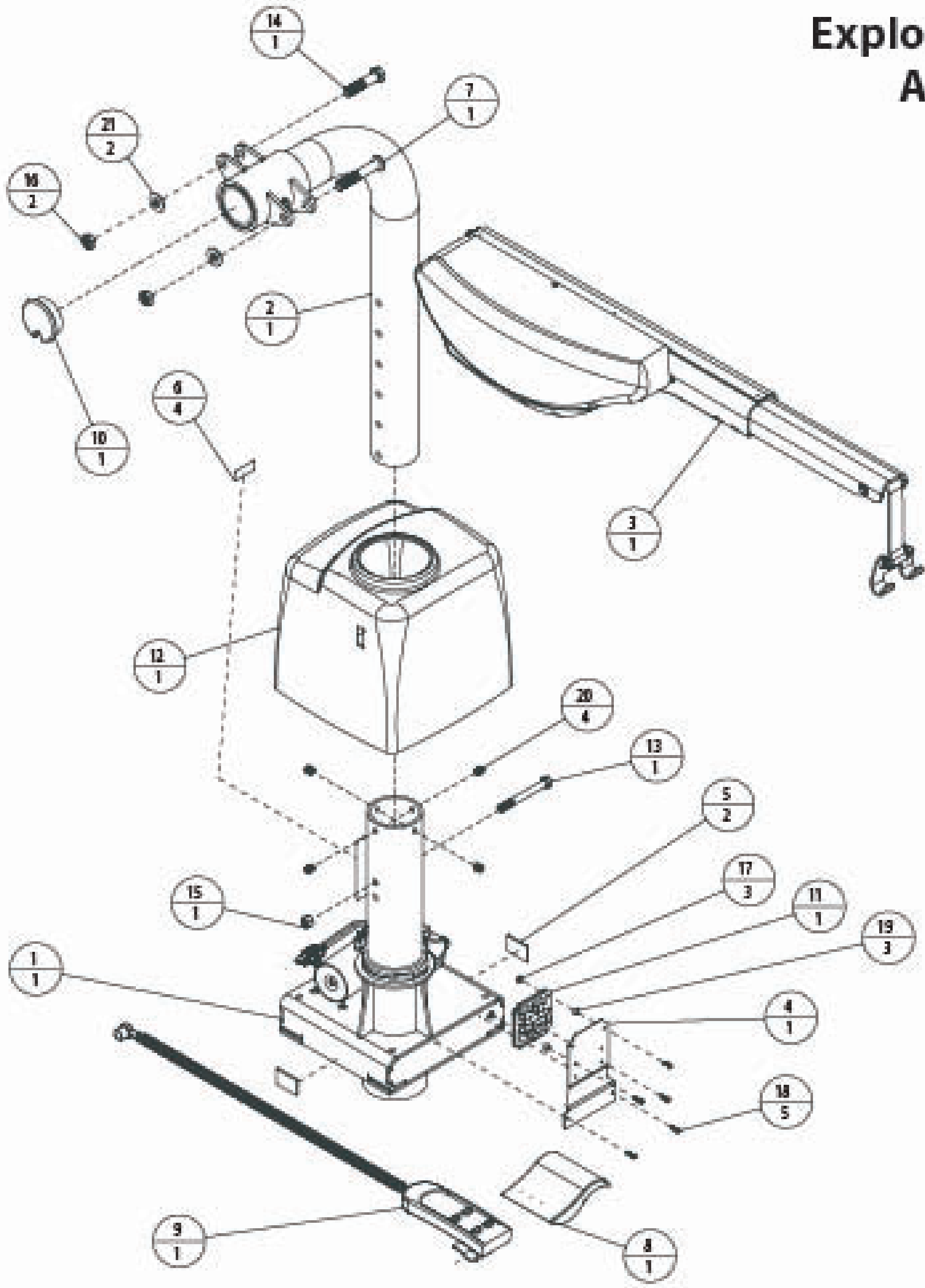
ASSEMBLY PARTS				ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION	ITEM	QTY	PART NO.	DESCRIPTION
1	1	200-2801-A	BASE COVER ASSEMBLY	7	1	HW-2801-A	HARDWARE, KIT, MANUAL BASE MOUNTING
2	1	240-2801-C	SQUARE POST	8	1	HC0008	2 BUTTON HAND CONTROL
3	1	300-2801-A	ARM ASSEMBLY	9	1	HHCS-0_37-16--2_50-Z	HEX HEAD, 3/8-16 X 2.50, ZP
4	1	ALA0050	AL215 HARNESS	10	1	NUT-0_37-16-NYLOCK-Z	NYLOCK NUT, 3/8-16, ZP
5	4	ALA0005	STICKER, SERIAL NUMBER	11	2	NUT-0_50-13-NYLOCK-Z	NYLOCK NUT, 1/2-13, ZP
6	2	BHCS-0_50-13-3_00-SS	BUTTON HEAD, 1/2-13 X 3.00, SS	12	4	SSCP-0_37-16-0_50-Z	SET SCREW 3/8-16 X 0.50, ZP

Exploded View AL225



ASSEMBLY PARTS				ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION	ITEM	QTY	PART NO.	DESCRIPTION
1	1	300-1003-A	MOTOR HOUSING ASSEMBLY	10	1	#425034	HARNESS (WIRES & SWITCHES NOT SHOWN)
2	1	340-2001-C	SQUARE POST	11	1	#425435	BASE COVER
3	1	300-2001-A	ARM ASSEMBLY	12	1	HHCS-0_37-16--3_50-Z	HEX HEAD, 3/8-16 X 3.50, ZP
4	1	377-1000-C	PCB PLATE	13	1	NUT-0_37-16-NYLOCK-Z	NYLOCK NUT, 3/8-16, ZP
5	2	ALA30003	VELCRO, 1" FC from 25 YD ROLL	14	2	NUT-0_50-13-NYLOCK-Z	NYLOCK NUT, 1/2-13, ZP
6	4	ALA00005	STICKER, SERIAL NUMBER	15	3	NUT-6-32-NYLOCK-Z	NYLOCK NUT # 6-32, ZP
7	2	BHCS-0_50-13-0_00-SS	BUTTON HEAD, 1/2-13 X 1.00, SS	16	5	FHMS-6-32--0_50-Z	PAN HEAD, # 6-32 X 0.50, ZP
8	1	H10-2003-AA	HARDWARE, KIT, POWER BASE MOUNTING	17	3	SPCR-0_140-0_313-0_187-NYLON	SPACER ID=.014, OD=.31, L=0.18, N
9	1	H41000	HAND CONTROL- 4 BUTTON	18	4	SSCP-0_37-16--0_50-Z	SET SCREW 3/8-16 X 0.50, ZP

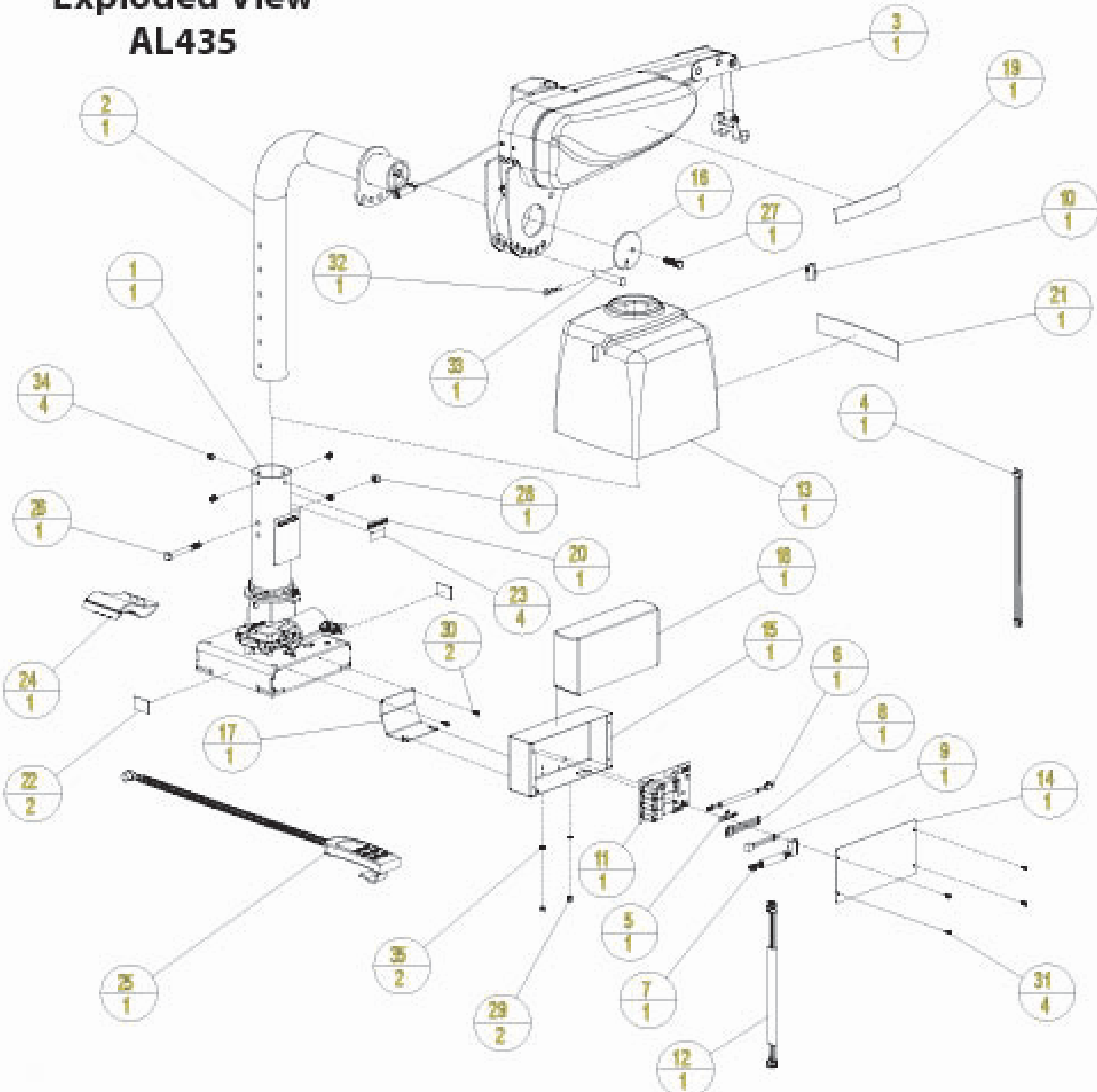
Exploded View AL425



ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	[illegible]	MOTOR HOUSING ASSEMBLY
2	1	[illegible]	COLLAR & POST ASSEMBLY
3	1	[illegible]	HOIST ASSEMBLY
4	1	[illegible]	PCB PLATE
5	2	[illegible]	VELCRO, 1" PC from 25 YD ROLL
6	4	[illegible]	STICKER, SERIAL NUMBER
7	1	BHCS-0_50-13-3_00-SS	BUTTON HEAD, 1/2-13 X 3.00, SS
8	1	[illegible]	HARDWARE, KIT, POWER BASE MOUNTING
9	1	[illegible]	HAND CONTROL- 4 BUTTON
10	1	[illegible]	ROUND TUBE PLUG

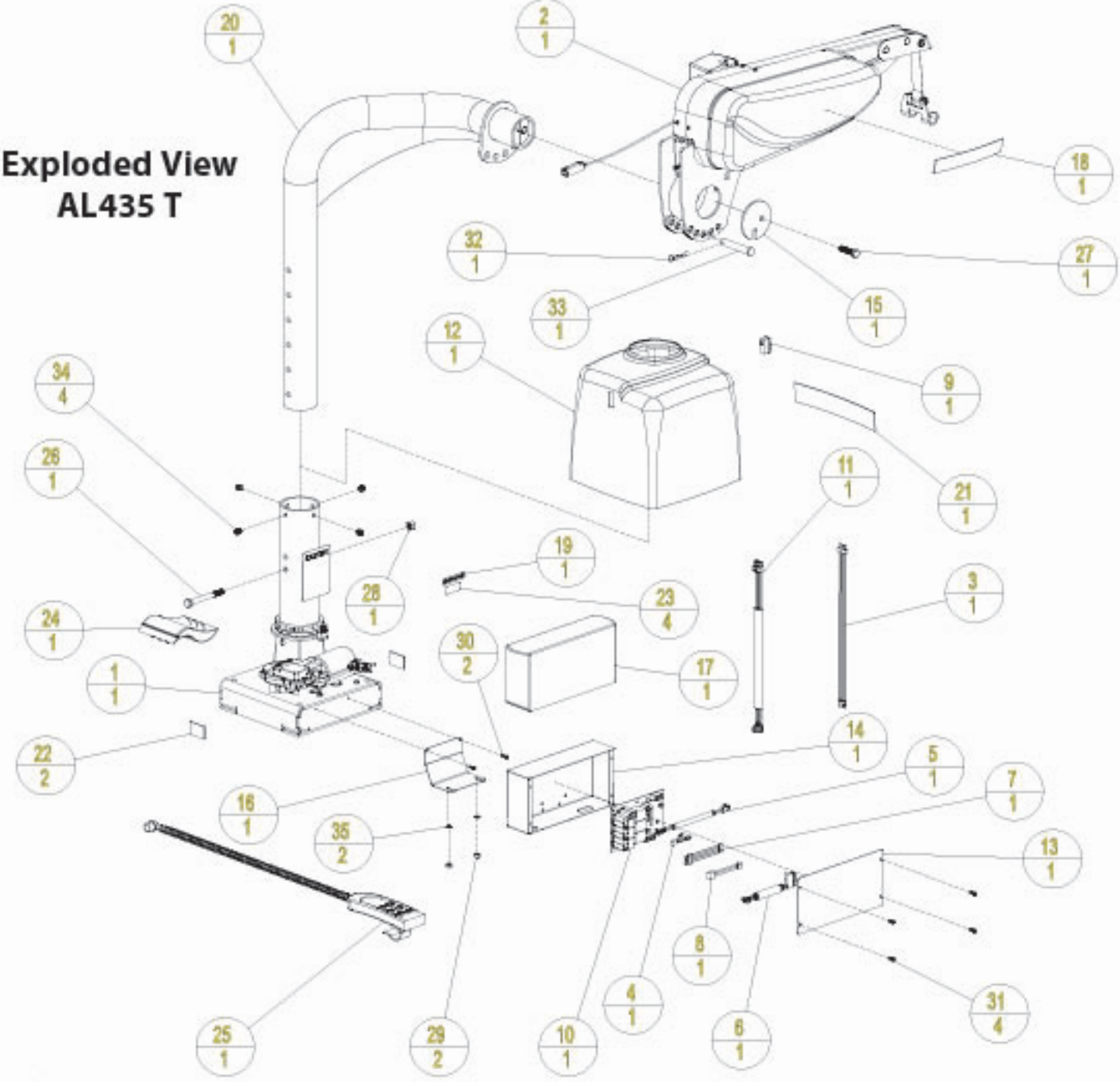
ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
11	1	[illegible]	HARNESS (WIRES & SWITCHES NOT SHOWN)
12	1	[illegible]	BASE COVER
13	1	HHCS-0_37-16-2_50-Z	HEX HEAD, 3/8-16 X 2.50, ZP
14	1	HHCS-0_50-13-3_25-Z	HEX HEAD, 1/2-13 X 3.25, ZP
15	1	NUT-0_37-16-NYLOCK-Z	NYLOCK NUT, 3/8-16, ZP
16	2	NUT-0_50-13-NYLOCK-Z	NYLOCK NUT, 1/2-13, ZP
17	3	NUT-6-32-NYLOCK-Z	NYLOCK NUT #6-32, ZP
18	5	PHMS-6-32-0_50-Z	PAN HEAD, #6-32 X 0.50, ZP
19	3	SPCR-0_140-0_312-0_187-NYLON	SPACER,ID=0.14, OD=.31, L=0.18, N
20	4	SSCP-0_37-16-0_50-Z	SET SCREW 3/8-16 X 0.50, ZP
21	2	[illegible]	ROUND HOLE WASHER 0.50 ID, ZP

Exploded View AL435



ASSEMBLY PARTS				ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION	ITEM	QTY	PART NO.	DESCRIPTION
1	1	250-2003-A	MOTOR HOUSING ASSEMBLY	19	1	[illegible]	STICKER
2	1	255-2009-C	AL435 STANDARD COLUMN ARM WELDMENT	20	1	910-2009-A	[illegible] STICKER
3	1	270-2009-A	[illegible]	21	1	[illegible]	STICKER
4	1	303-2009-A	HARNESS, UPPER COLUMN	22	2	[illegible]	VELCRO, 1" PC from 25 YD ROLL
5	1	304-2009-A	MAIN POWER HARNESS	23	4	[illegible]	STICKER, [illegible]
6	1	305-2004-A	HARNESS, POWER, AL435	24	1	910-2003-A	HARDWARE, KIT, POWER BASE MOUNTING
7	1	306-2004-A	HARNESS, LIMIT SWITCHES, AL435	25	1	[illegible]	HAND CONTROL, 8 BUTTON
8	1	306-2009-A	LOWER COLUMN [illegible] HARNESS	26	1	[illegible]	HEX HEAD, 3/8-16 X 3.00, ZP
9	1	307-2009-A	[illegible] MOTOR HARNESS	27	1	[illegible]	[illegible]
10	1	310-2004-A	SWITCH, ON/OFF RED AND BLACK	28	1	[illegible]	NYLOCK NUT, 3/8-16, ZP
11	1	314-2009-A	PCB, [illegible]	29	2	[illegible]	NYLOCK, 10-32, Z
12	1	353-2004-A	HARNESS, CONTROL, 8 CHANNEL, 7 PIN DIN	30	2	[illegible]	PAN HEAD, #8-32 X 0.50, ZP
13	1	418-1000-A	BASE COVER, AL435	31	4	[illegible]	PAN HEAD, 8-32 X 1/2, Z
14	1	535-2009-C	CONTROL BOX COVER	32	1	[illegible]	MAIN PIN CLIP
15	1	536-2009-C	CONTROL BOX	33	1	[illegible]	CLEVIS PIN, 1/2" x 3.00" ZP
16	1	596-2009-C	LIFT ARM RECEIVER	34	4	[illegible]	SET SCREW 3/8-16 X 0.50, ZP
17	1	671-2009-A	RELAY BOX BRACKET	35	2	[illegible]	WASHER, EXTERNAL TOOTH, #10, Z
18	1	806-2009-A	RELAY BOX COVER				

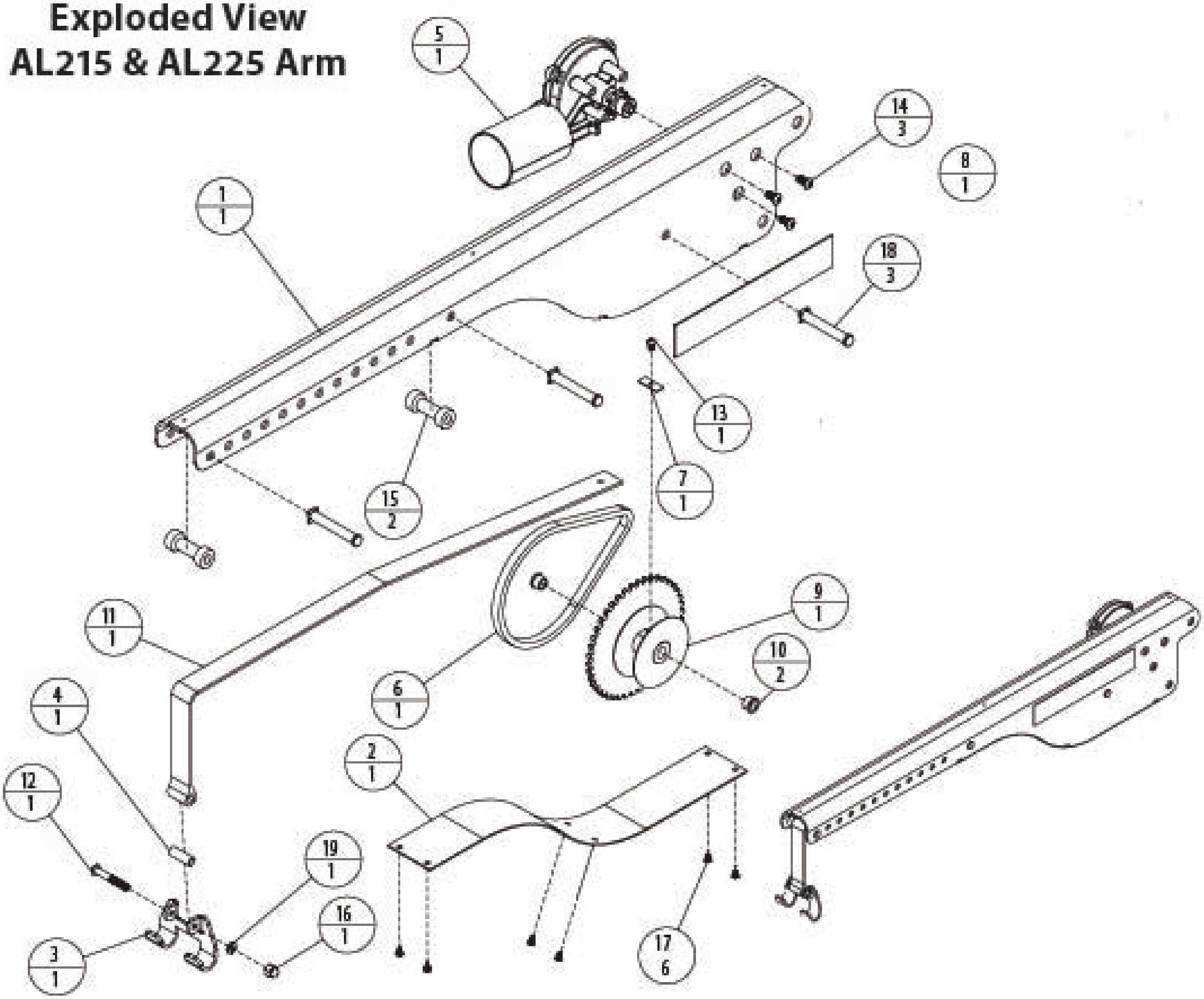
Exploded View AL435 T



ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	205-3005-A	MOTOR HOUSING ASSEMBLY
2	1	275-2509-A	3 AXIS LIFTING ARM
3	1	303-2509-A	HARNESS, UPPER COLUMN
4	1	304-2509-A	MAIN POWER HARNESS
5	1	305-2504-A	HARNESS, POWER, AL435
6	1	306-2504-A	HARNESS, LIMIT SWITCHES, AL435
7	1	309-2509-A	LOWER COLUMN EQ HARNESS
8	1	307-2509-A	EQ ROTATIONAL MOTOR HARNESS
9	1	512-2504-A	SWITCH, ON/OFF RED AND BLACK
10	1	314-2509-A	PCB, CREATIVE WORKS- 5 AXIS
11	1	303-3504-A	HARNESS, CONTROL, 8 CHANNEL, 7 PIN DIN
12	1	410-1005-A	BASE COVER, AL835
13	1	558-2509-C	CONTROL BOX COVER
14	1	559-2509-C	CONTROL BOX
15	1	554-2509-C	LIFT ARM RETAINER
16	1	571-3503-A	RELAY BOX BRACKET
17	1	509-2509-A	RELAY BOX COVER
18	1	818-3L03-A	STICKER

ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
19	1	818-2509-A	PATENT STICKER
20	1	259-2515-C	AL435T POST ASSEMBLY
21	1	AL427099	STICKER
22	3	AL439090	VELCRO, 1" PC tape 25 YD ROLL
23	4	AL439995	STICKER, SERIAL NUMBER
24	1	990-2505-A	HARDWARE, KIT, POWER SHOE MOUNTING
25	1	HW999	HAND CONTROL, 8 BUTTON
26	1	HHCS-0_37-16-0_50-Z	HEX HEAD, 3/8-16 X 0.50, ZP
27	1	HHCS-0_37-16-1_00-Z	HHCS, 3/8-16 x 1-1/2"L, ZINC-SS
28	1	HNYLK-0_37-16-NYLOCK-Z	NYLOCK NUT, 3/8-16, ZP
29	2	NUT-10-32-NYLOCK-Z	NYLOCK, 10-32, Z
30	2	PHMS-8-32-0_50-Z	PAN HEAD, #8-32 X 0.50, ZP
31	4	PHMS-8-32-0_50-Z	PAN HEAD, 8-32 X 1/2, Z
32	1	PHHS_250-0_37-1_50-HP-Z	HAIR PLSH CLIP
33	1	PINS_50-3_00-CP-Z	CLEVIS PIN, 1/2" x 3.00" ZP
34	4	SSCP-0_37-16-0_50-Z	SET SCREW 3/8-16 X 0.50, ZP
35	2	WASH-16-ETLOCK-Z	WASHER, EXTERNAL TOOTH, #16, Z

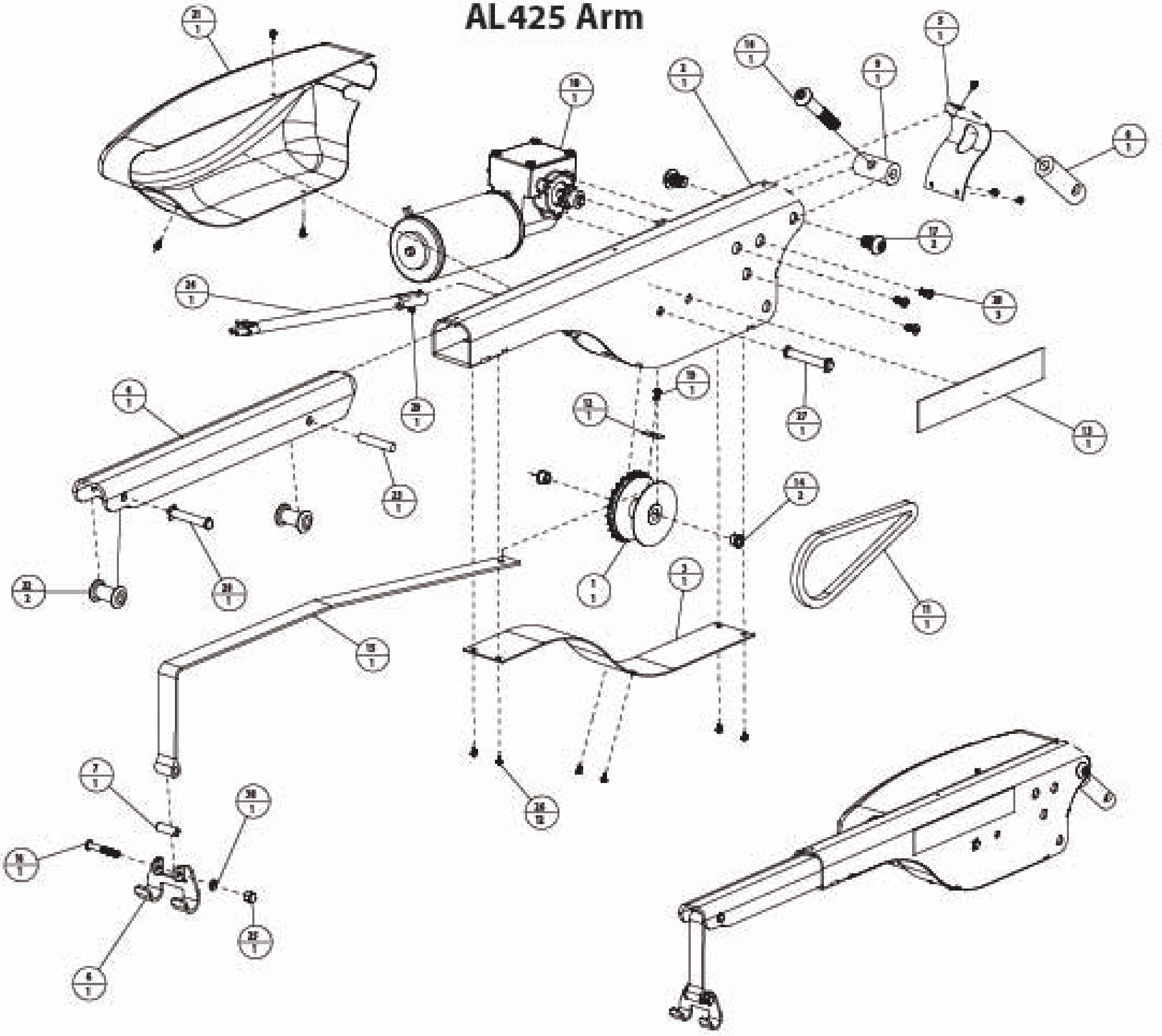
Exploded View AL215 & AL225 Arm



ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	281-2801-C	HOIST HOUSING
2	1	570-2801-C	HOIST HOUSING COVER
3	1	580-2801-C	DETACHABLE HOOK
4	1	581-2801-C	HOOK SLEEVE
5	1	ALA08111	LIFTING MOTOR
6	1	ALA21020	SPOOL CHAIN, 50 LINKS
7	1	ALA21055	STRAP TAB
8	1	ALA21085	STICKER
9	1	ALA214-PLT	SPOOL
10	2	ALA21410	FLANGE BUSHING 002 2/08 1/2020

ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
11	1	ALA07917	LIFTING STRAP
12	1	BHCS-0_25-20-1_75-SS	BUTTON HEAD, 1/4-20 x 1.75, SS
13	1	BHCS-10-32-0_37	BUTTON HEAD, 10-32 x 3/8
14	3	BHCS-M8-1_00-10-SS	BUTTON HEAD, M8-1 X 10MM, SS
15	2	R225400	AL215 & AL225 ROLLER
16	1	NUT-0_25-20-ACORN-N	ACORN NUT, 1/4-20, NI
17	6	PHTS-8-32-0_25-BZ	PAN HEAD - THREAD FORMING, 8-32 X 0.25, BZ
18	3	PIN-0_37-2_50-CL-Z	CLEVIS PIN & CCLIP: 3/8 X 2.50, ZP
19	1	WASH-0_25-0_50-0_06-SL-Z	1/4" SPLIT LOCK WASHER

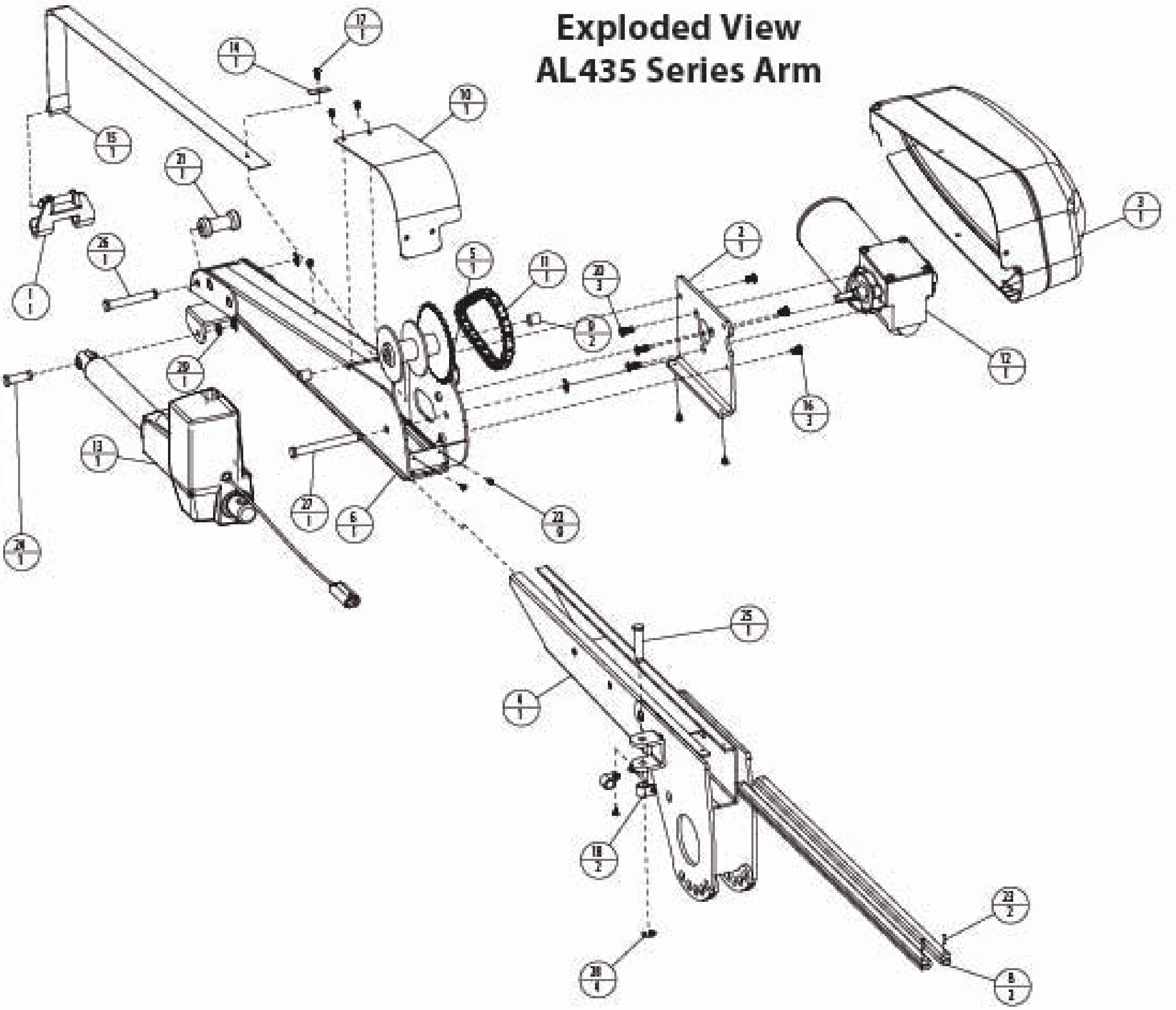
Exploded View AL425 Arm



ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	214-2000-F	26 TOOTH SPOOL
2	1	201-2003-C	HOIST HOUSING
3	1	570-2000-C	HOIST HOUSING COVER
4	1	570-2000-C	HOIST INNER ARM
5	1	573-2000-C	HOIST HOUSING COVER - BACK
6	1	580-2000-C	DETACHABLE HOOK
7	1	581-2000-C	HOOK SLEEVE
8	1	9402431-FLT	TURNBUCKLE NUT
9	1	9402425-FLT	TURNBUCKLE U-CYLINDER
10	1	744-2000-A	MOTOR, LIFTING, ELCIO
11	1	ALK7030	SPOOL CHAIN, 50LINKS
12	1	ALK7033	STRAP TAB
13	1	ALK7005	STICKER
14	3	ALK7470	FLANGE BUSHING [illegible]
15	1	ALK7007	LIFTING STRAP

ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
16	1	BHCS-0_25-20-1_75-SS	BUTTON HEAD, 1/4-20 x 1.75, SS
17	2	BHCS-0_50-13-0_75-Z	BUTTON HEAD, 1/2-13 X 0.75, ZP
18	1	BHCS-0_50-13-1_00-SS	BUTTON HEAD, 1/2-13 X 1.00, SS
19	1	BHCS-10-32-0_37-BO	BUTTON HEAD, 10-32 x 0.37, BO
20	5	BHCSM6-1_00-16-SS	BUTTON HEAD, M6-1 X 16MM, SS
21	1	H625430	HOIST MOTOR COVER
22	2	H625444	STRAP ROLLER
23	1	H625445	PIN, ROLLER, STRAP, AL425
24	1	H48055	SHORT HOIST HARNESS
25	1	HUR-0_25-20-ACORN-NI	ACORN NUT, 1/4-20, NI
26	12	PHTS-8-32-0_25-BZ	PAN HEAD - THREAD FORMING, 8-32 X 0.25, BZ
27	1	PIN-0_37-1_50-CL-Z	CLEVIS PIN W/ E-CLIP: 3/8 X 1.50, ZP
28	1	PIN-0_50-1_25-Z	CLEVIS PIN W/ E-CLIP: 1/2 X 1.25, ZP
29	1	SSCP-0_25-20-0_375	SET SCREW: 1/4-20 X 0.37
30	1	WASH-0_25-0_50-0_06-SL-Z	1/4" SPLIT LOCK WASHER

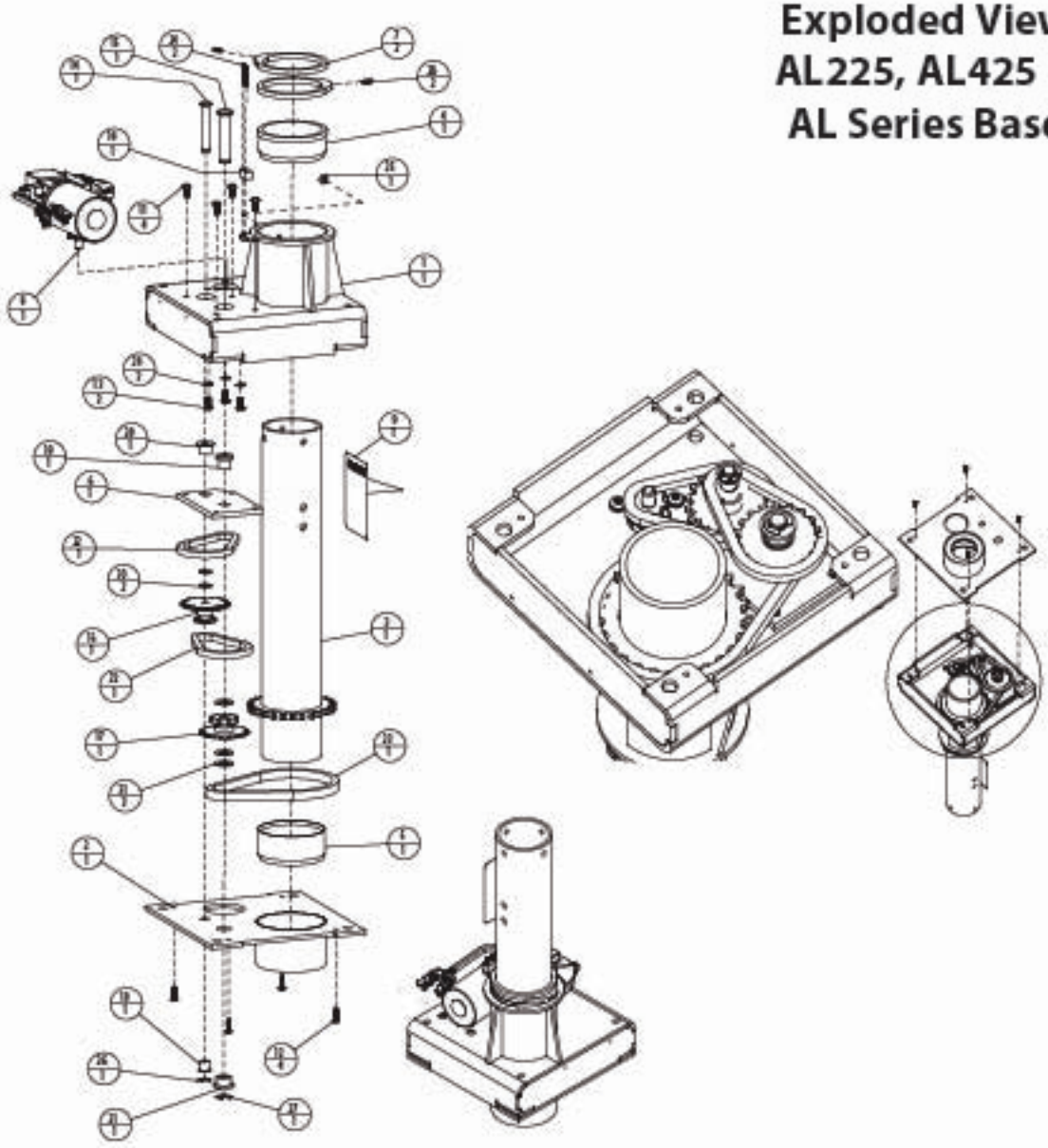
Exploded View AL435 Series Arm



ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	290-2001-A	DETACHABLE HOOK ASSEMBLY
2	1	555-2009-C	MOTOR AND COVER PLATE
3	1	490-2009-A	MOTOR COVER
4	1	275-2009-C	LOWER LIFTING ARM
5	1	270-2001-A	32 TOOTH SPOOL
6	1	280-2009-C	UPPER LIFTING ARM
7	1	310-2009-A	MALE TO FEMALE HARNESS (NOT SHOWN)
8	2	401-2001-A	LIFTING ARM PLASTIC GUIDE
9	2	410-2009-A	LIFTING SPOOL BUSHING
10	1	520-2009-C	LIFTING ARM REAR COVER
11	1	557-2001-A	AL435/435T LIFTING CHAIN
12	1	705-2004-A	435/435T 440lb EUCLID LIFTING MOTOR
13	1	800-2001-A	AL435/435T ACTUATOR W/BRKT. SM
14	1	AL631055	STRAP TAB
15	1	AL667997	LIFTING STRAP

ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
16	5	BHCS-0_25-20-0_37NP-SS	BUTTON HEAD, NYLON PATCH, 1/4-20 X 0.37, SS
17	1	BHCS-10-32-0_37	BUTTON HEAD, 10-32 x 3/8
18	2	C5009105	CLIP, "P" 1/4" (RICHCO INC, 2-4-AMar E3)
19	1	CT-14-BLK	14" BLACK WIRE TIE (NOT SHOWN)
20	5	FHMS-0_25-20X_43-SS	1/4"-20 X 3/8" FLAT HEAD MACHINE SCREW
21	1	K225403	AL235 & AL225 ROLLER
22	8	PHTS-8-32-0_25BZ	PAN HEAD - THREAD FORMING, 8-32 X 0.25, BZ
23	2	PIN-4_094-0_50-RP-Z	0.09 X 0.50" ROLL PIN
24	1	PIN-4_375-1_38-GCL-Z	ACTUATOR FRONT MOUNTING 3/8" GROOVED CLEVIS PIN
25	1	PIN-4_375-1_50-GCL-Z	ACTUATOR REAR MOUNTING 3/8" GROOVED CLEVIS PIN
26	1	PIN-4_375-2_40-GCL-Z	ROLLER MOUNTING 3/8" GROOVED CLEVIS PIN
27	1	PIN-4_375-3_38-GCL-Z	SPOOL MOUNTING 3/8" GROOVED CLEVIS PIN
28	4	RR-0_375EC-Z	E-CLIP 3/8 SHAFT, Z
29	1	WASH-0_375-0_62-0_06-SS	3/8" WASHER .62 OD .06" THICK

Exploded View AL225, AL425 & AL Series Base



ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	xx-0xx-C	[illegible]
2	1	xx-0xx-C	[illegible]
3	1	xx-0xx-C	[illegible]
4	1	xx-xxx-x	[illegible]
5	1	xx-xxx-x	[illegible]
6	1	xx-0xx-C	[illegible]
7	2	xx-0xx-C	[illegible]
8	1	xx-xxx-x	[illegible]
9	1	[illegible]	[illegible]
10	1	[illegible]	[illegible]
11	4	[illegible]	[illegible]
12	4	[illegible]	[illegible]
13	3	[illegible]	[illegible]
14	1	Harmar	[illegible]
15	1	Harmar	[illegible]

ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
16	1	[illegible]	[illegible]
17	1	[illegible]	[illegible]
18	1	[illegible]	[illegible]
19	1	[illegible]	[illegible]
20	1	[illegible]	[illegible]
21	1	[illegible]	[illegible]
22	2	[illegible]	[illegible]
23	1	[illegible]	[illegible]
24	2	[illegible]	[illegible]
25	1	[illegible]	[illegible]
26	1	[illegible]	[illegible]
27	1	[illegible]	[illegible]
28	2	[illegible]	[illegible]
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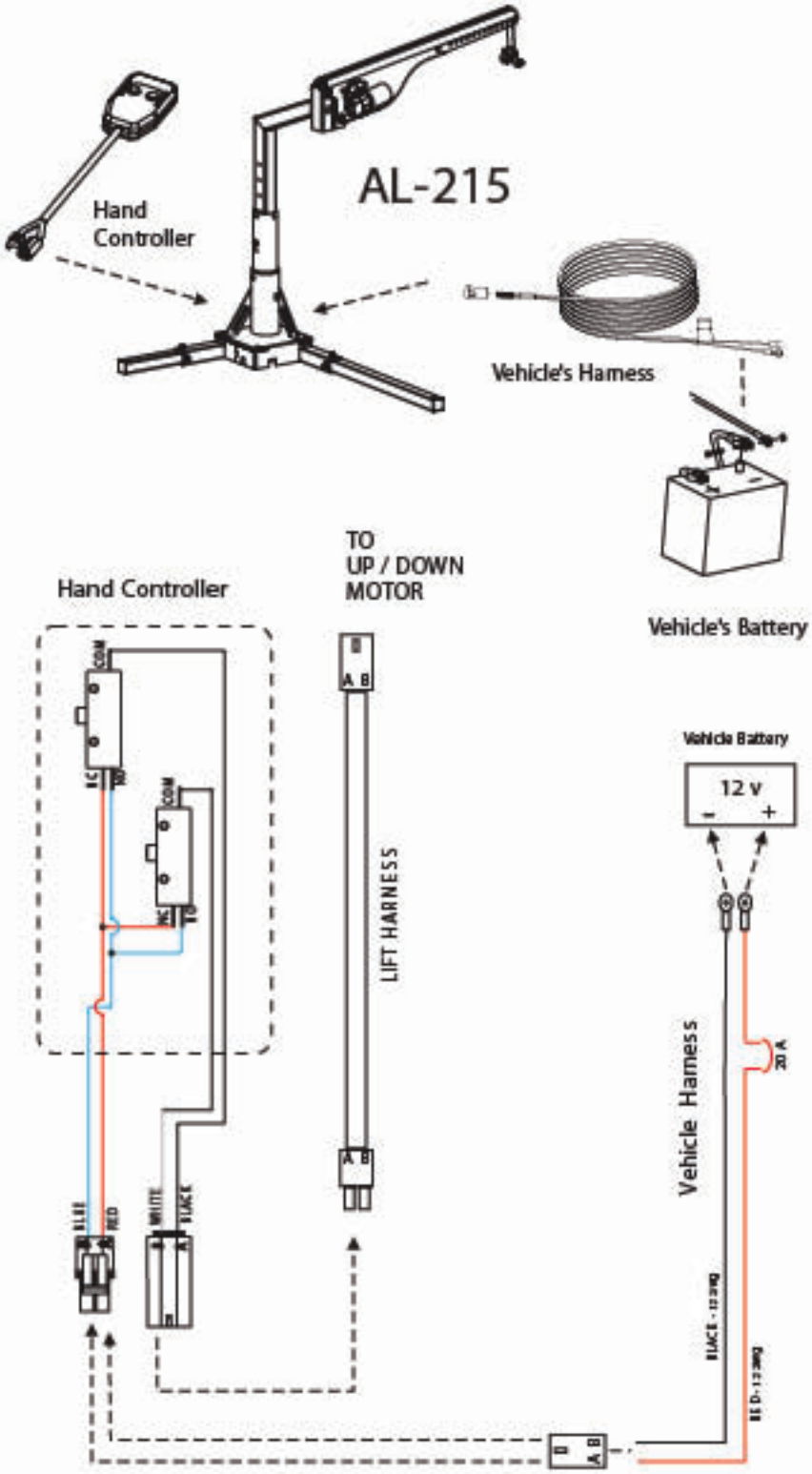
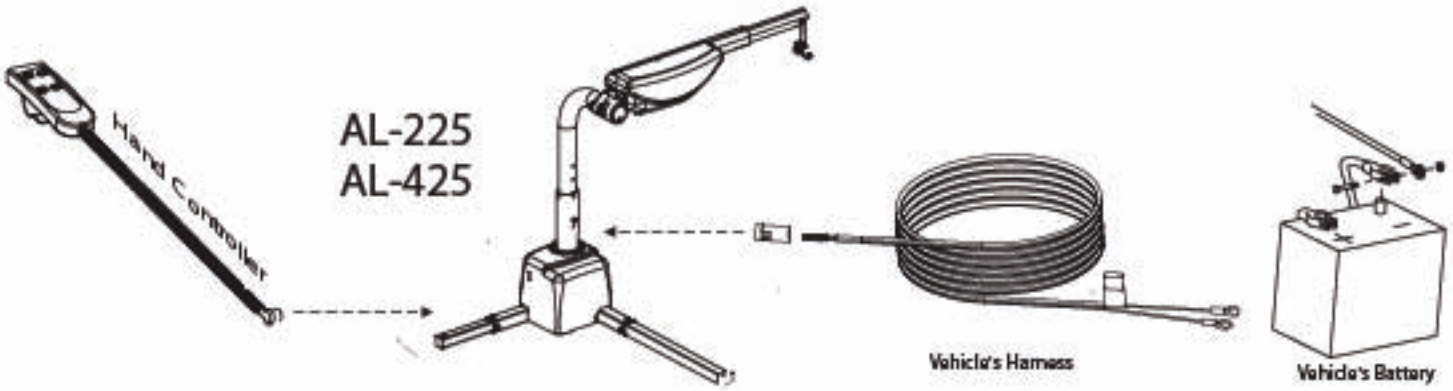
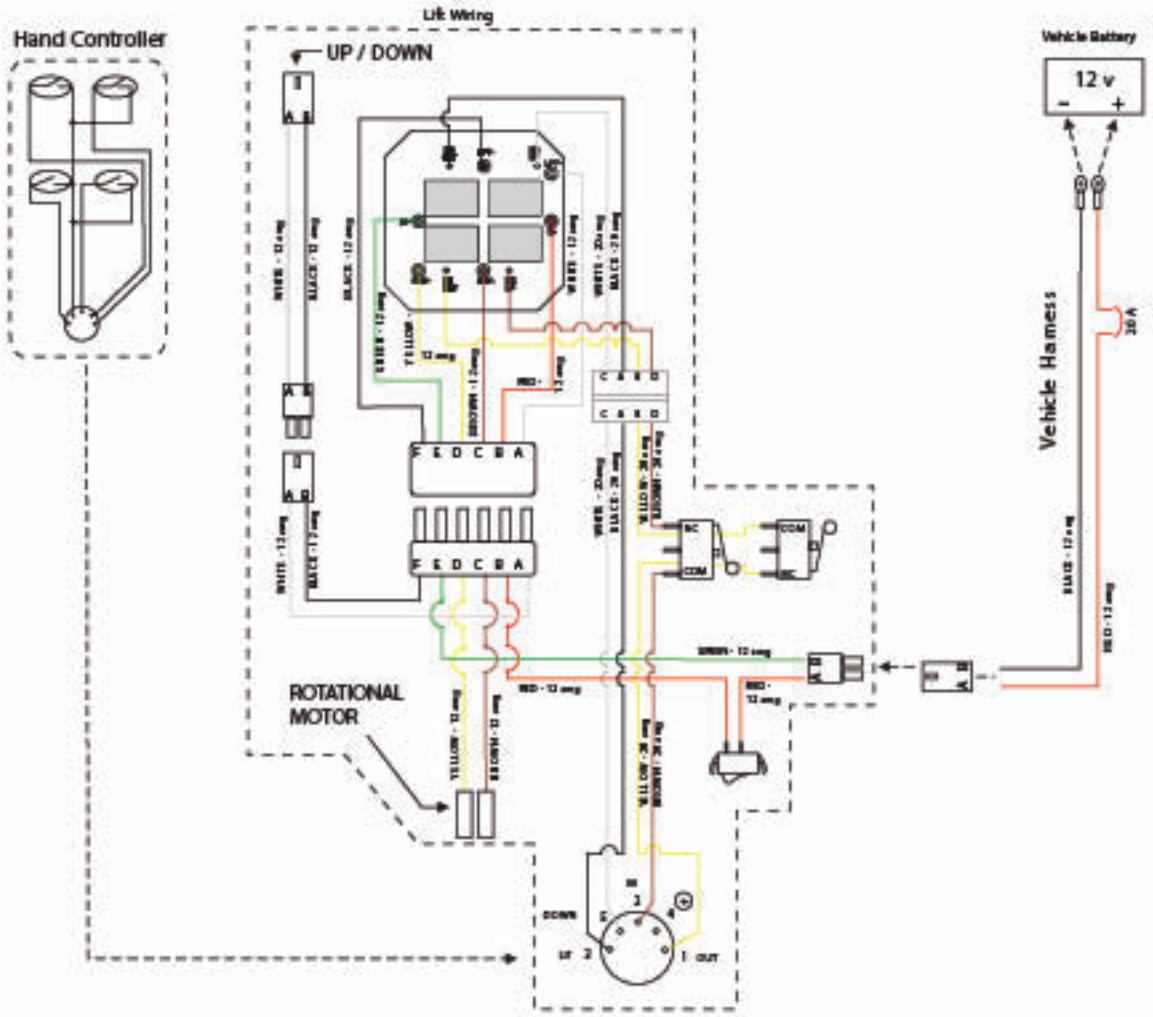
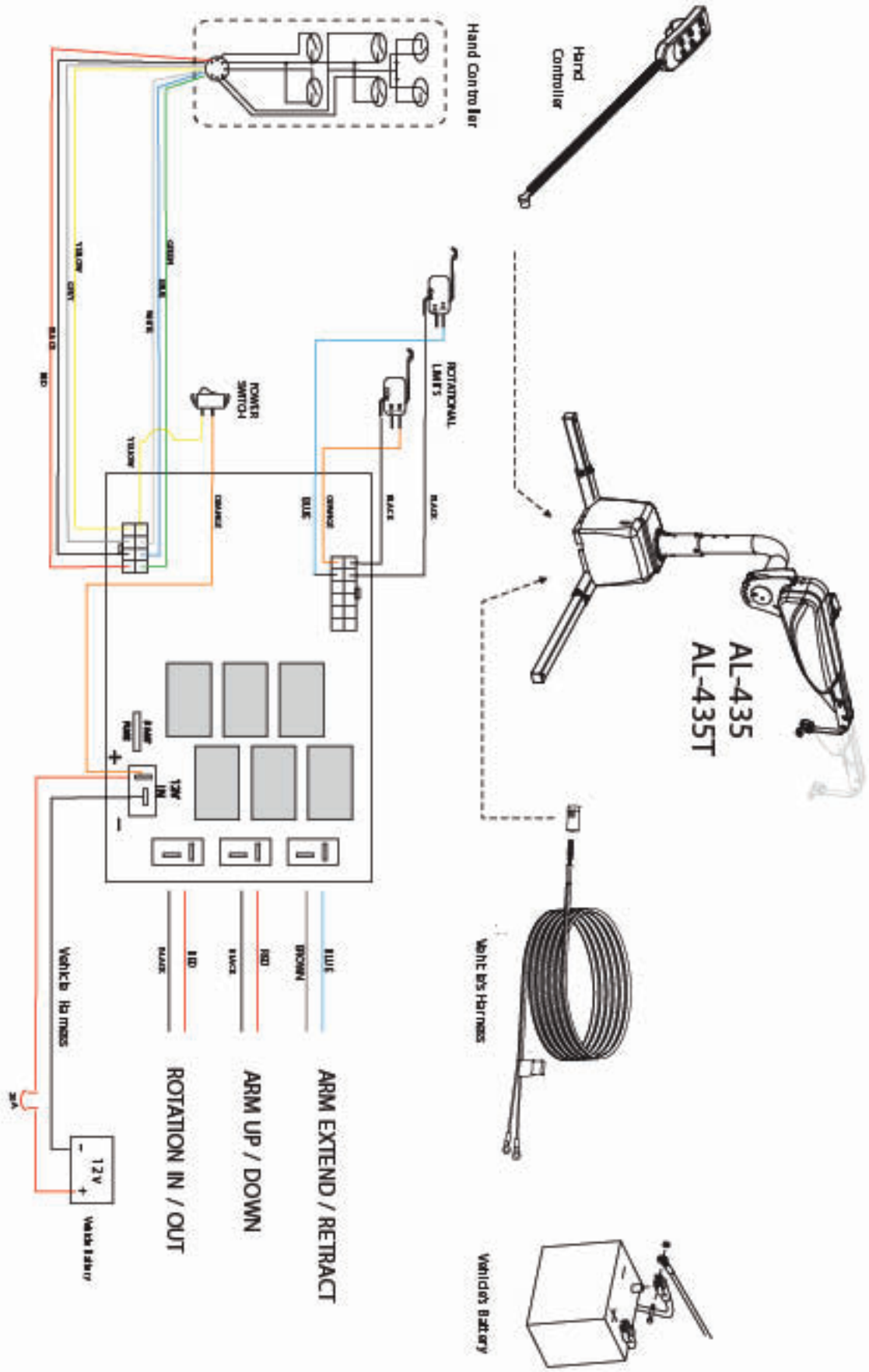
30	2	[illegible]	[illegible]
31	1	[illegible]	[illegible]


AL-215
Hand Controller
Vehicle's Harness
Vehicle's Battery
Hand Controller
TO UP / DOWN MOTOR
LIFT HARNESS
Vehicle Battery
12 V
Vehicle Harness
20 A
COM
NC
NO
BLUE
RED
WHITE
BLACK


Hand Controller
AL-225
AL-425
Vehicle's Harness
Vehicle's Battery


Hand Controller
Lift Wiring
UP / DOWN
Vehicle Battery
12 v
Vehicle Harness
ROTATIONAL MOTOR
DOWN
UP
OUT


Hand Controller
Hand Controller
AL-435
AL-435T
Vehicle Harness
Vehicle Battery
ARM EXTEND / RETRACT
ARM UP / DOWN
ROTATION IN / OUT
Vehicle Harness
Vehicle Battery
ROTATIONAL LIMITS
POWER SWITCH
12V

Notes

Harmar

VEHICLE LIFTS THREE YEAR TRANSFERABLE LIMITED WARRANTY

PLEASE FILL OUT ALL FIELDS AND RETURN A COPY.

Fax completed form to 1-866-234-5680 or mail to Harmar, ATTN: Warranty Department, 2075 47th Street, Sarasota, Florida 34234. You may also register online at www.harmar.com. Keep a copy of this form for your records.

Harmar Mobility warrants its lift products against defects in material, mechanical and electrical components (parts), excluding labor cost, batteries, paint and covers, for a period of three (3) years from date of retail purchase, provided that the products have been installed, maintained and operated properly. This warranty does not cover defects in vehicles on which Harmar products are installed or defects 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. 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. This warranty becomes null and void if the product has been lost, damaged by accident, over-stressed, misused and/or neglected, or if the product has been modified in any way. Defective parts must be returned, prepaid, to Harmar at the address listed above, for inspection prior to credit, repair or replacement, at Harmar's option. Harmar's sole obligation and the exclusive remedy under this warranty is limited to such credit, repair or replacement.

THIS EXPRESS WARRANT Y IS IN LIEU OF ALL OTHER WARRANTIES OR CONDITIONS, INCLUDING ALL IMPLIED WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION OF THE LIMITED WARRANTY DESCRIBED HEREIN. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER LEGAL RIGHTS WHICH VARY FROM STATE TO STATE.

PRODUCT INFORMATION

Model: _____

Serial Number: _____

Purchase Date: _____

INSTALLER INFORMATION

Company Name: _____

Contact Name: _____

Address: _____

_____

Phone: _____

Fax: _____

Email: _____

APPLICATION INFORMATION

☐ Scooter ☐ Power Chair ☐ Wheelchair

Year: _____

Manufacturer: _____

Model: _____

PURCHASER INFORMATION

Name: _____

Address: _____

_____

Phone: _____

Email: _____

ADDITIONAL INFORMATION

How did you hear about Harmar?

☐ Harmar Dealer ☐ Friend or Acquaintance

☐ Internet ☐ Saw Harmar product somewhere

☐ Magazine ☐ Other _____

Which _____

Do you have internet access? ☐ Yes ☐ No

I purchased my Harmar lift because of?

☐ Style/Appearance
☐ Harmar Representative
☐ Previous Experience
☐ Ease of Use
☐ Recommendation
☐ Price/Value

Inside Lifts

Installation & Owner's Manual

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Part # 999-3801-AB Rev. B