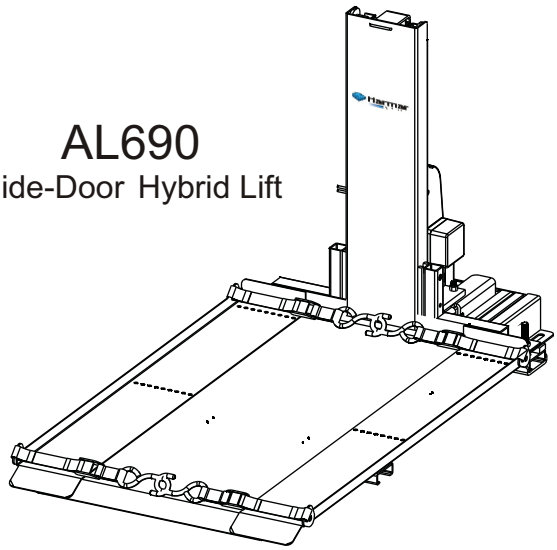
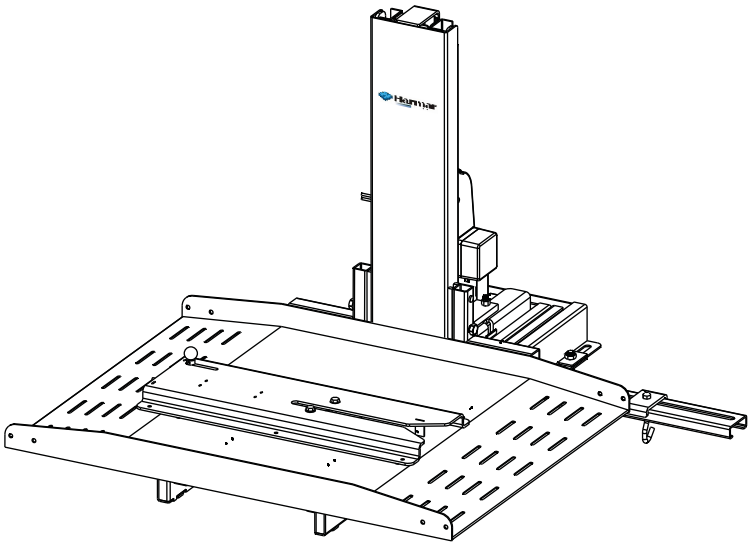
09-16-09

Harmar MOBILITY

Installation and Owner's Manual

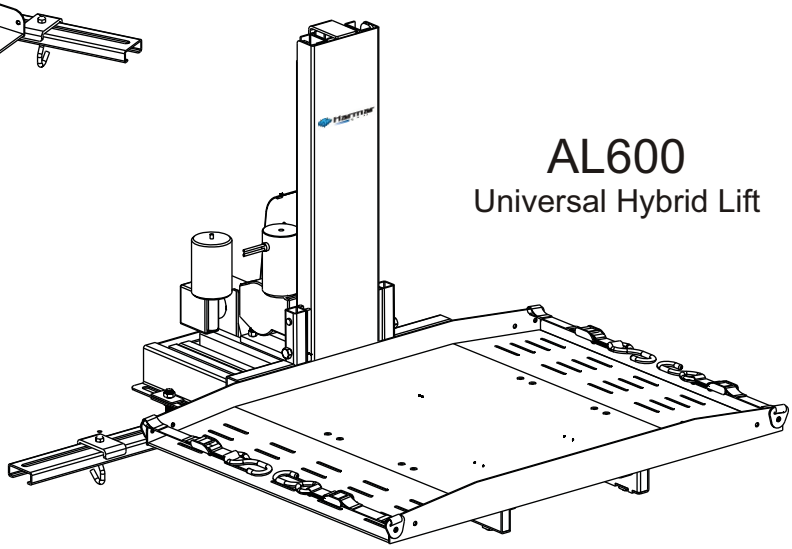
AL690
Side-Door Hybrid Lift





AL650
Hybrid Powerchair Lift
w/ Docking Station

AL600
Universal Hybrid Lift



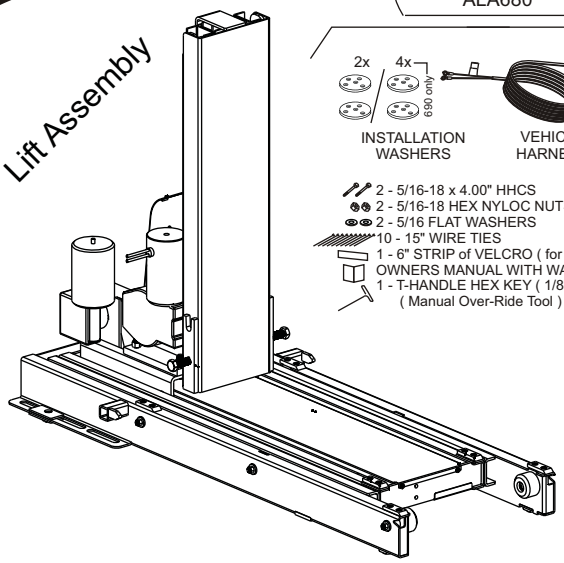
Read manual thoroughly before attempting to install or operate lift.

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

Tel: 800.833.0478
Fax: 866.234.0478
Email: tech@harmar.com

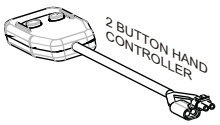
Dealer:

Serial Number:



Hardware Pack
ALA680

- 2 - 5/16-18 x 4.00" HHCS
- 2 - 5/16-18 HEX NYLOC NUTS
- 2 - 5/16 FLAT WASHERS
- 10 - 15" WIRE TIES
- 1 - 6" STRIP of VELCRO (for hand controller)
- OWNERS MANUAL WITH WARRANTY
- 1 - T-HANDLE HEX KEY (1/8" x 6")
  (Manual Over-Ride Tool)

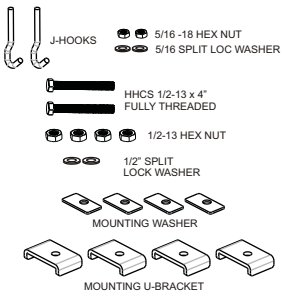


MOUNTING HARDWARE

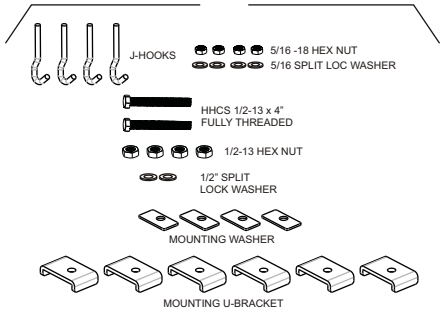
4 - Leveling Pads

OR

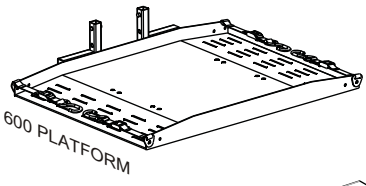
AL600 / AL650

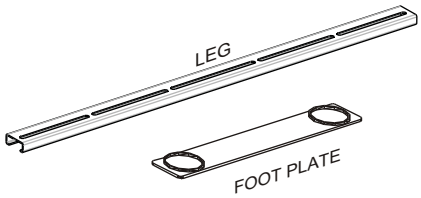


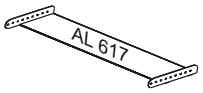
AL690



AL600





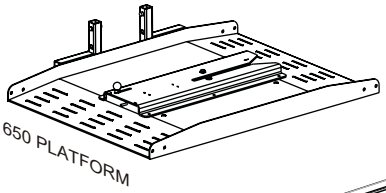


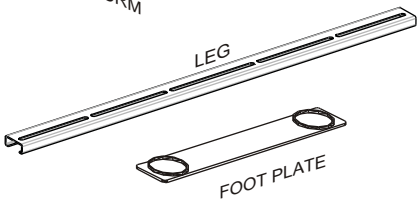
Front Wheel Craddle
(option for scooters)

U-BOLT HARDWARE PACK

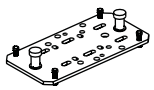
- 4 - U-Bolts 1/4-20 Thread
- 8 - 1/4-20 Nuts
- 8 - 1/4 Split Lock Washers
- 8 - Backing Plates

AL650





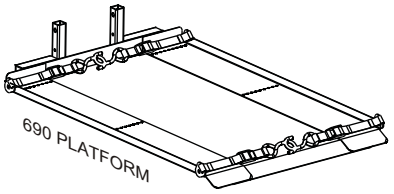
650 Hardware Pack



DOCKING PLATE ASSY

- 4 - 1/4-20 x 2.25" Flat Head Ph
- 4 - 1/4-20 x 3.00" Flat Head Ph
- 8 - 1" Tall Spacer
- 4 - 1/2" Tall Spacer
- 4 - 1/4" Tall Spacer

AL690



U-BOLT HARDWARE PACK

- 4 - U-Bolts 1/4-20 Thread
- 8 - 1/4-20 Nuts
- 8 - 1/4 Split Lock Washers
- 8 - Backing Plates

Be sure to check the contents of the box agaisnt the package checklist assuring that all parts are present. If any parts are missing, or damage is noted, contact your dealer immediately. DO NOT attempt to install or operate a lift with missing or damaged parts.

WIRING THE VEHICLE

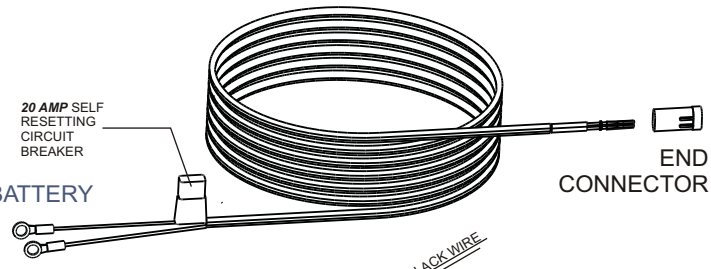
IMPORTANT NOTE:

IMPROPER WIRING IS THE #1 CAUSE OF PROBLEMS IN THE OPERATION OF A VEHICLE LIFT.

FOLLOW THE WIRING INSTRUCTIONS CAREFULLY

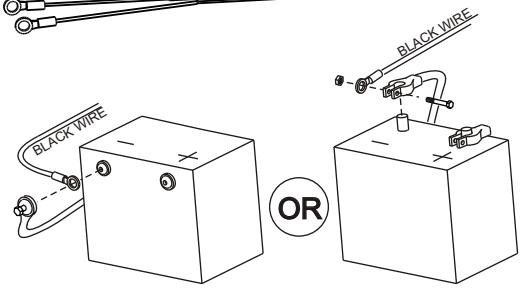
LOCATED IN THE HARDWARE PACK IS THE VEHICLE WIRING HARNESS. THE HARNESS IS MANUFACTURED TO, AND COMPLIES WITH, THE SAE J1128 REQUIREMENTS. THE WIRE HARNESS IS APPROXIMATELY 23 ft LONG AND WILL ACCOMMODATE MOST VEHICLES.

YOUR HEAVY DUTY HARNESS HAS BEEN LEFT UN-ASSEMBLED FOR EASE OF INSTALLATION. THE END CONNECTOR HAS BEEN INCLUDED SEPARATELY FROM THE HARNESS TO ALLOW THE INSTALLER TO THE RUN THE WIRE UNDER AND THROUGH THE VEHICLE WITH THE SMALLEST HOLE POSSIBLE. FOLLOW THESE INSTRUCTIONS TO ASSURE PROPER INSTALLATION.



UNWIND THE HARNESS AND LAY IT FLAT.
ONE END OF THE HARNESS HAS 2 COVERED PINS.
THIS IS THE LIFT END OF THE HARNESS AND GOES TO THE MIDDLE OF THE VEHICLE AND INSIDE TO THE REAR CARGO AREA.

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 END.

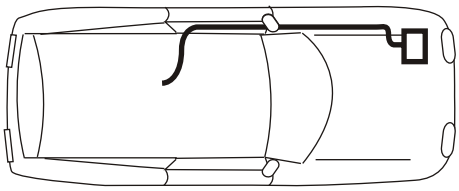


NEVER ATTEMPT TO CONNECT THE HARNESS TO A SECONDARY POWER SOURCE. ALWAYS CONNECT BOTH LEADS DIRECTLY TO THE BATTERY

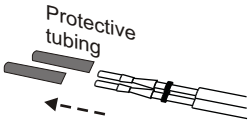
RUN THE WIRING HARNESS UNDER OR WHEN POSSIBLE THROUGH THE VEHICLE, BACK TO THE REAR CARGO AREA. ALWAYS LOCATE THE WIRING WHERE IT CAN NOT BE SNAGGED BY ROAD DEBRIS AND AWAY FROM THE GAS TANK.
THROUGH THE VEHICLE IS BEST FOR THE AL-600 SERIES, GAINING ENTRY INTO THE VEHICLE THROUGH THE FIREWALL. HOWEVER IF YOU WISH TO RUN THE HARNESS UNDER THE VEHICLE, A HOLE WILL MOST LIKELY NEED TO BE DRILLED TO GET THE WIRE INTO THE REAR CARGO AREA.
IF THE HARNESS IS TOO LONG FOR THE VEHICLE, COIL THE EXCESS WIRE AND SECURE IT TO THE VEHICLE FRAME WITH SUPPLIED TIE WRAPS.

DO NOT CUT OR SHORTEN THE HARNESS.

WHEN THE INSTALLATION REQUIRES THE WIRING HARNESS BE RUN ON THE UNDERSIDE OF THE VEHICLE, ROUTE THE HARNESS AWAY FROM THE EXHAUST SYSTEM, BRAKE LINES, FUEL LINES< GAS TANK, PINCH POINTS, AND SHARP EDGES. LOCATE THE WIRING HARNESS WHERE IT CAN NOT BE SNAGGED BY ROAD DEBRIS



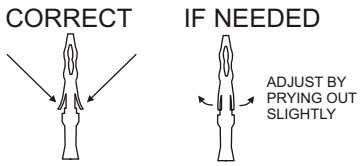
ONCE THE HARNESS IS RUN INTO THE VEHICLE, REMOVE PIN'S PROTECTIVE TUBING.



PROBING FOR 12 VOLTS MAY INDICATE A CONNECTION, BUT NOT NECESSARILY A SUFFICIENT CONNECTION. THE LIFT'S MOTOR CAN DRAW UP TO 30 AMPS AT SOME POINTS, REQUIRING ALL OF THE AVAILABLE WIRE TO FLOW PROPER CURRENT. POOR CONNECTIONS ARE THE #1 PROBLEM ASSOCIATED WITH A SLOW, WARM, POORLY PERFORMING MOTOR. NOT ONLY WILL THE MOTOR PERFORM POORLY, BUT WILL PREMATURELY DETERIORATE.

IF A SINGLE STRAND OF A MULTI-STRAND WIRE IS MAKING CONTACT, 12V WILL APPEAR ON THE METER, OR TEST LIGHT, BUT 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.

INSPECT THE PIN'S RETAINING FLANGES.
THE MAY HAVE BECOME DEFORMED WHILE RUNNING THEM THROUGH THE VEHICLE.
THESE ARE CRITICAL TO SECURE THE PINS INSIDE THE END CONNECTOR. ADJUST AS NEEDED.



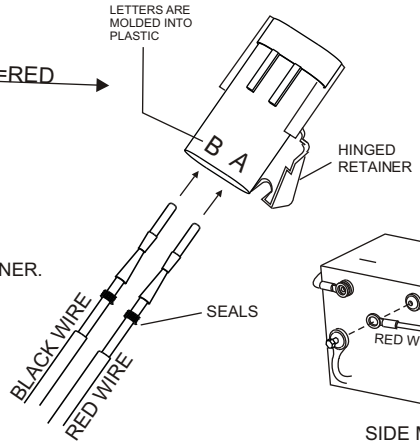
FLIP OPEN END CONNECTOR'S HINGED RETAINER.
INSERT PINS AS SHOWN: B=BLACK, A=RED

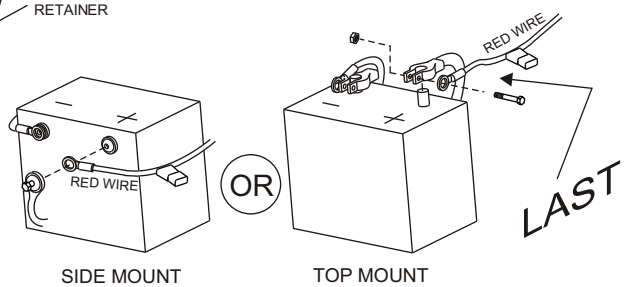
VERIFY THE WIRES CAN NOT BE PULLED OUT BY MODERATELY PULLING ON WIRE.

BE SURE WIRE SEALS ARE INSIDE CONNECTOR, AND CLOSE THE END CONNECTOR'S HINGED RETAINER.

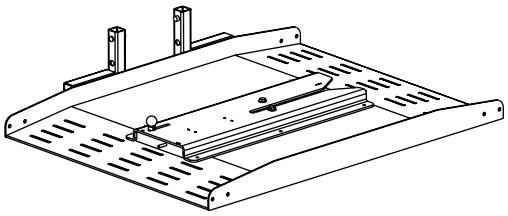
PLUG CONNECTOR INTO LIFT

LAST: ATTACH RED WIRE TO THE POSITIVE TERMINAL ON THE BATTERY



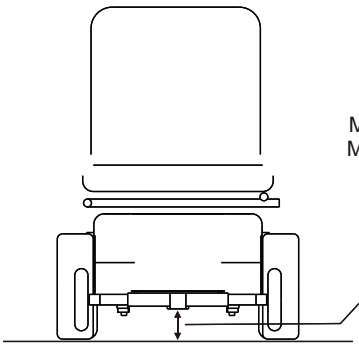


AL 650 - SETTING DOCK STATION HEIGHT *ONLY*

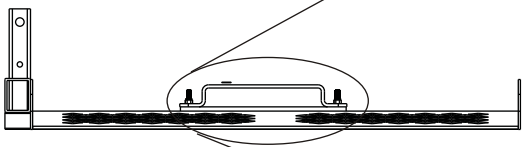


PRIOR TO MOUNTING DOCKING PLATE TO CHAIR

GROUND CLEARANCE MUST BE GREATER THAN OR EQUAL TO 1.75 INCHES



MEASURE DISTANCE OF MOUNTING SURFACE TO GROUND



DETERMINE NUMBER OF SPACERS AND SCREW LENGTH REQUIRED FOR YOUR GROUND CLEARANCE

IF GROUND CLEARANCE =	THEN USE:	HARDWARE USED: (from hardware pack)
1.75" - 2"	No Spacers	MOUNTED ON LIFT FROM FACTORY: 1.25" x4
2.25"	.25" spacers	
2.5"	.5" spacers	
2.75"	.75" spacers	2.25" x4
3"	1" spacers	
3.25"	1" + .25" spacers	
3.5"	1" + .5" spacers	
3.75"	1"+ .5" + .25" spacers	3.00" x4
4"	1"+ 1" spacers	
4.25"	1"+ 1" + .25" spacers	

AL 650 - SETTING DOCK STATION HEIGHT *ONLY*

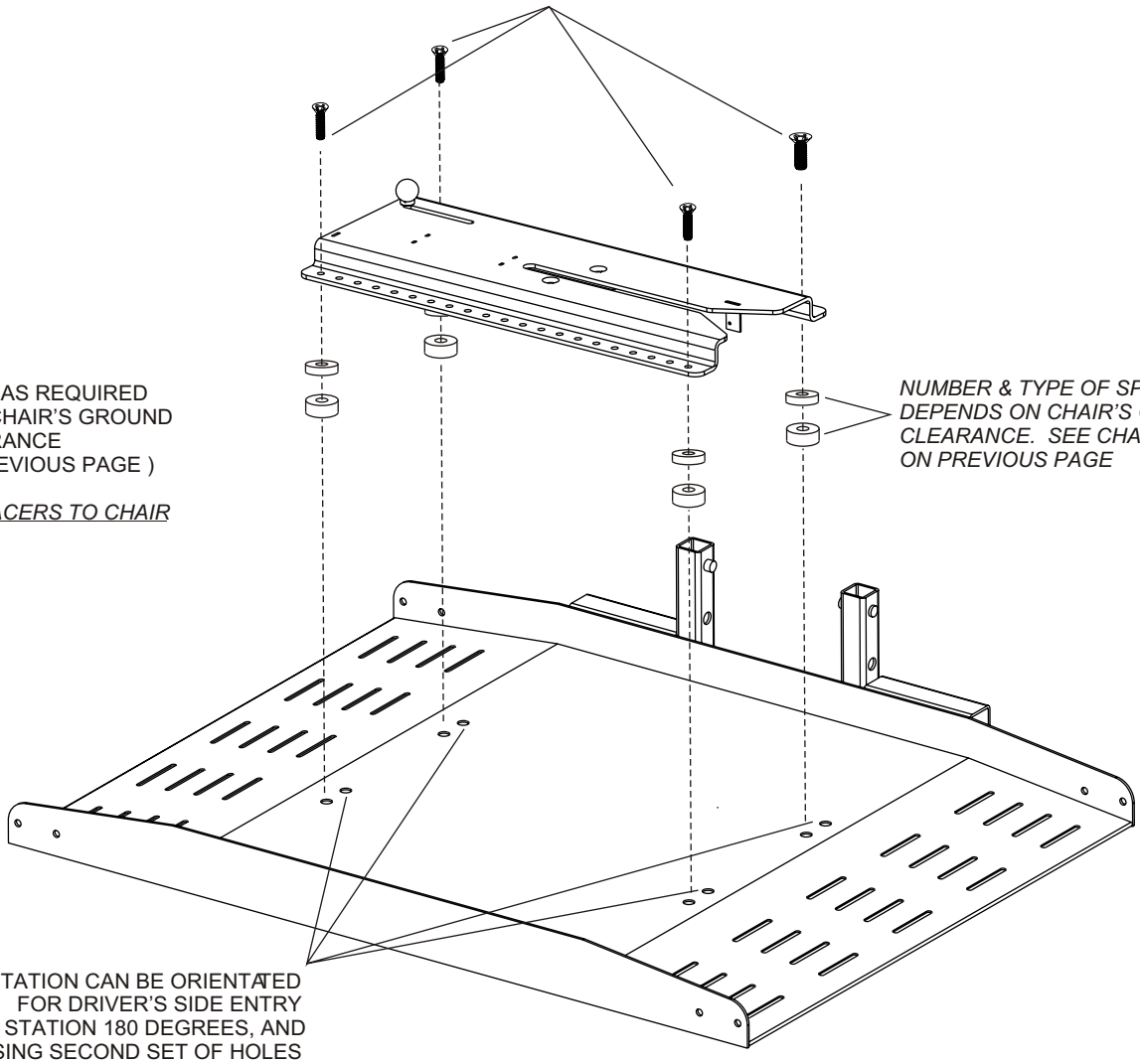
REMOVE LOCKING STATION AND INSERT APPROPRIATE NUMBER OF SPACERS. RE-ATTACH TO PLATFORM. CHANGE TO LONGER SCREWS IF NECESSARY.

CHANGE TO LONGER SCREWS AS REQUIRED (CHART ON PREVIOUS PAGE)

ADD SPACERS AS REQUIRED ACCORDING TO CHAIR'S GROUND CLEARANCE (CHART ON PREVIOUS PAGE)

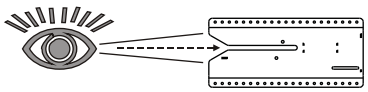
DO NOT ADD SPACERS TO CHAIR

NUMBER & TYPE OF SPACERS DEPENDS ON CHAIR'S GROUND CLEARANCE. SEE CHART ON PREVIOUS PAGE



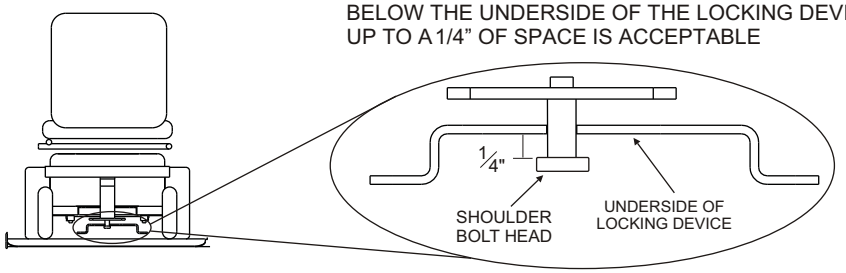
DOCKING STATION CAN BE ORIENTATED FOR DRIVER'S SIDE ENTRY BY ROTATING STATION 180 DEGREES, AND USING SECOND SET OF HOLES

DRIVE CHAIR ONTO PLATFORM



LOOK DOWN ENTRY OF STATION

VERIFY THE HEAD OF THE SHOULDER BOLT IS BELOW THE UNDERSIDE OF THE LOCKING DEVICE UP TO A 1/4" OF SPACE IS ACCEPTABLE

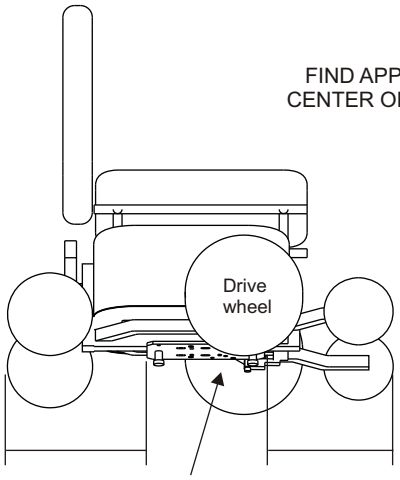


PERFORM LOCKING TEST BY ATTEMPTING TO BACK OFF CHAIR, WHILE IN STATION IS IN LOCKED POSITION

AL 650 - MOUNTING CHAIR PLATE *ONLY*

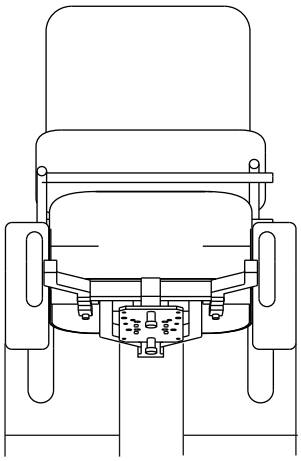
CHOOSING A LOCATION and
MOUNTING THE DOCKING DEVICE PLATE

DO NOT ATTEMPT TO USE THIS AUTOMATIC LOCK DOWN DEVICE ON ANY FOLDING, OR TAKE APART CHAIRS UNLESS RECOMMENDED BY HARMAR.

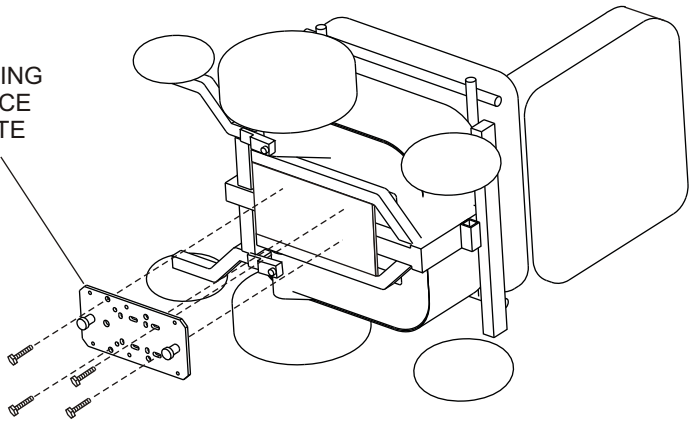


FIND APPROXIMATE
CENTER OF THE CHAIR

THE CLOSER THE PLATE IS POSITIONED TO THE DRIVE WHEELS, THE EASIER THE CHAIR WILL BE TO ENGAGE THE DOCKING STATION



(CENTER)



USE EXISTING HOLES WHEREVER POSSIBLE

IF TOO LITTLE OR NO HOLES EXIST, HOLES WILL NEED TO BE DRILLED. REMOVE BATTERIES, AND USE PLATE AS TEMPLATE. DRILL AS REQUIRED.

ATTACH TO CHAIR USING SUPPLIED HARDWARE:

4 - 1/4-20 x 1.00” HHCS
4 - 1/4-20 NYLOC NUT

(ATTACHED TO PLATE)

CHAIR / SCOOTER PREPARATION

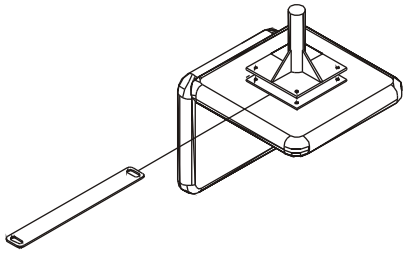
THERE ARE 2 OPTIONS ON HOW TO ATTACH
THE STRAP HOOKS TO THE CHAIR
THAT ARE INCLUDED WITH THE LIFT.

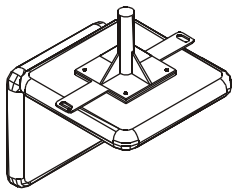
ANCHOR PLATE:

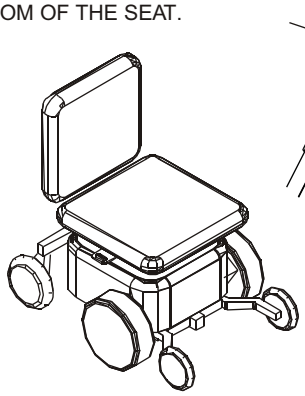
THE ANCHOR PLATE IS A FLAT PLATE THAT IS 20" LONG WITH A SLOT IN EACH END.
THIS PLATE WILL WORK WITH ANY CHAIR OR SCOOTER THAT HAS A CENTER SEAT POST
AND ATTACHES TO THE BOTTOM OF THE SEAT.
ATTACH THE ANCHOR PLATE BY THE FOLLOWING STEPS:

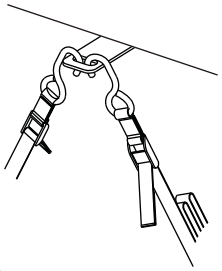
THE ANCHOR PLATE SHOULD EXTEND ABOUT 1-1/2" OUT FROM THE SIDE OF THE CUSHION.
THIS WILL ALLOW THE USER TO ATTACH THE STRAP HOOKS TO THE ANCHOR PLATE TO SECURE
THE CHAIR TO THE LIFT.

1. REMOVE SEAT FROM THE CHAIR.
2. LOOSEN THE SCREWS THAT ATTACH THE PLATE TO THE BOTTOM OF THE SEAT. ALLOW ENOUGH ROOM TO SLIDE THE ANCHOR PLATE BETWEEN THE SEAT AND 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.





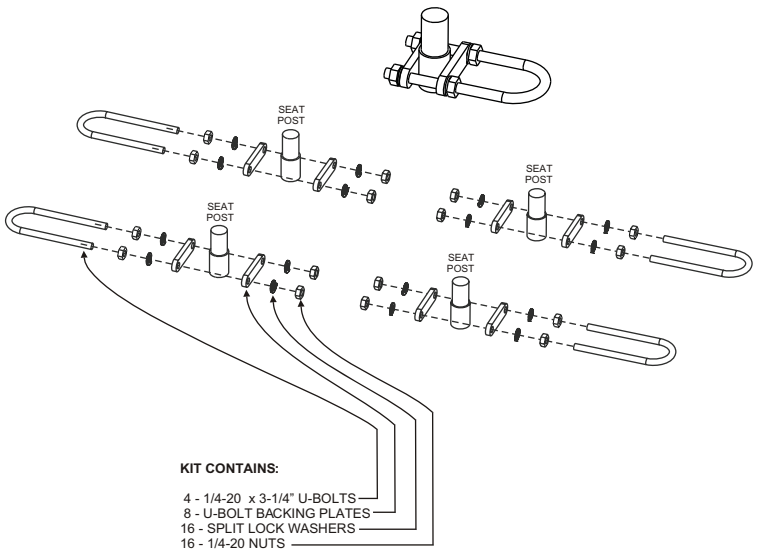




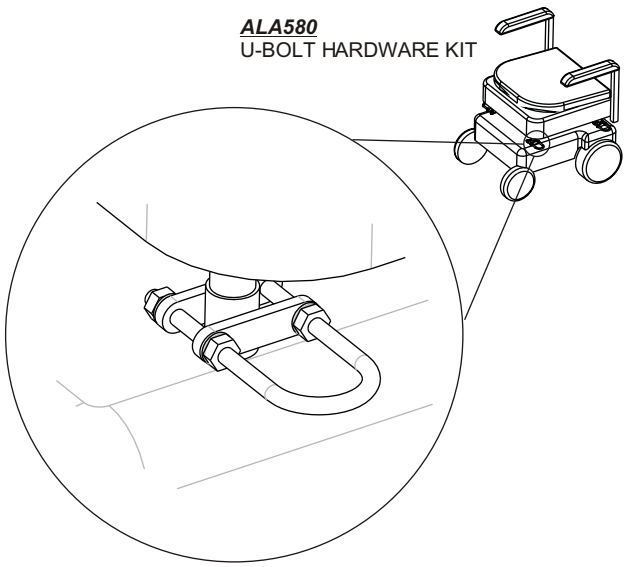
ANCHOR U-BOLTS:

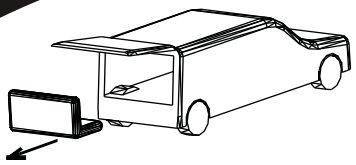
THE U-BOLTS ARE TO BE USED WITH POWER CHAIRS OR SCOOTERS THAT DO NOT HAVE A CENTER SEAT POST.
ON THIS TYPE OF CHAIR, THE SEAT IS NORMALLY ATTACHED TO A TUBULAR FRAME. ATTACH THE U-BOLTS, TWO ON EACH SIDE,
TO THE FRAME AS SHOWN BELOW. MAKE SURE THAT THE LOOP EXTENDS TO THE OUTSIDE OF THE CHAIR TO ALLOW THE STRAP
HOOKS TO BE ATTACHED BY THE END USER.

EACH TYPE OF CHAIR WILL DIFFER SLIGHTLY AND THE PLACEMENT OF THE U-BOLTS WILL DIFFER BETWEEN DIFFERENT MODELS
AND MANUFACTURERS. PLACE THE ANCHOR U-BOLTS TOWARDS THE CENTER OF THE SEAT IF POSSIBLE. BECAUSE OF THE
DIFFERENT TYPES OF SEATS, YOU MAY BE FORCED TO ATTACH THE ANCHOR 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.



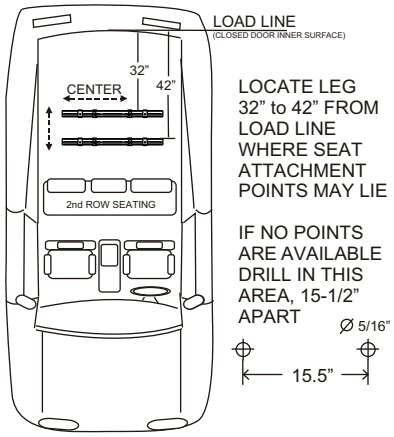
ALA580
U-BOLT HARDWARE KIT





1 REMOVE 3rd ROW SEAT

2 PLACE LEG ASSEMBLY



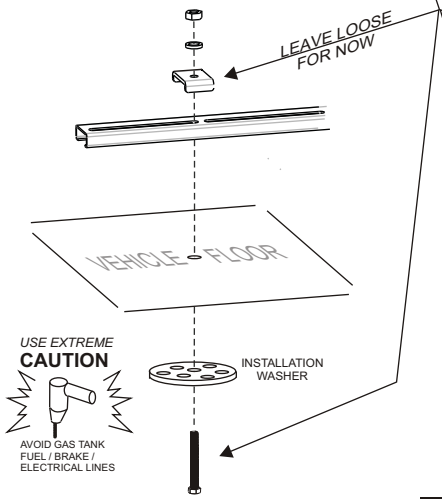
LOCATE LEG 32" to 42" FROM LOAD LINE WHERE SEAT ATTACHMENT POINTS MAY LIE

IF NO POINTS ARE AVAILABLE DRILL IN THIS AREA, 15-1/2" APART

3 ATTACH LEG ASSEMBLY

POSITION BOLTS AND U-BRACKETS FOR STEP 6 BEFORE PROCEEDING

USE J-HOOKS
OR
BOLT THRU FLOOR
IF NO SEAT ATTACHMENT POINTS ARE AVAILABLE



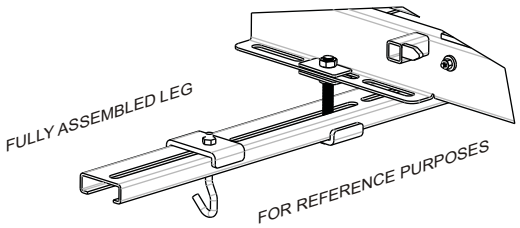
4 INSTALL LEVELING FEET

ADJUST AS NEEDED
TO LEVEL / CLEAR
DOOR THRESHOLD

5 POSITION LIFT

APPLICATION: SCOOTER
OFFSET LIFT'S POSITION
APPLICATION: POWERCHAIR
CENTER LIFT'S POSITION

PLACE LIFT ON TOP OF LEG AND FOOT PLATE

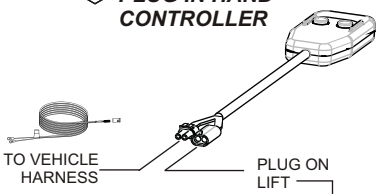


6 ATTACH LIFT

BOLT UP FROM UNDER USING THE SUPPLIED BOLT / NUT / WASHER (2) AND BRACKETS AS INDICATED

LEAVE ALL HARDWARE LOOSE FOR ADJUSTMENT PURPOSES

7 PLUG IN HAND CONTROLLER



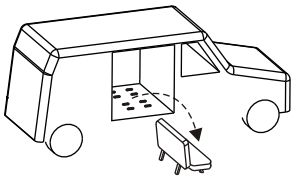
8 INSTALL PLATFORM

RUN LIFT "OUT" (and to the ground)
ATTACH PLATFORM w/ PROVIDED HARDWARE

TEST TRAVEL OF LIFT. TEST CARGO DOOR FOR CLEARANCE, ADJUST AS NEEDED

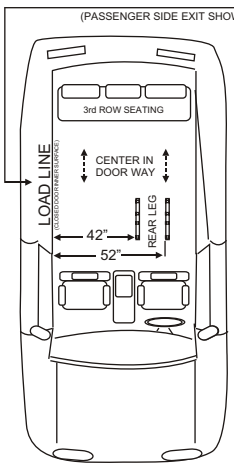
TIGHTEN ALL FASTENERS

AL 690 - INSTALLATION



1 REMOVE 2nd ROW SEAT

2 PLACE LEG ASSEMBLIES



LOCATE REAR LEG 42"to 52" FROM LOAD LINE WHERE SEAT ATTACHMENT POINTS MAY LIE

IF NO POINTS ARE AVAILABLE DRILL IN THIS AREA 15-1/2" APART

15.5"

Ø 5/16"

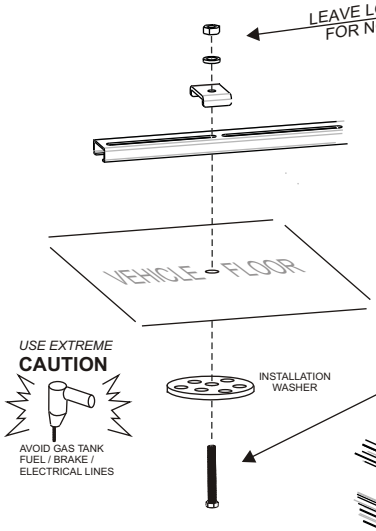
FRONT LEG MAY LIE APPROX 24" FROM REAR LEG

3 ATTACH LEG ASSEMBLIES

POSITION BOLTS AND U-BRACKETS FOR STEP 6 BEFORE PROCEEDING

USE J-HOOKS OR BOLT THRU FLOOR

IF NO SEAT ATTACHMENT POINTS ARE AVAILABLE



4 INSTALL LEVELING FEET

ADJUST AS NEEDED TO LEVEL / CLEAR DOOR THRESHOLD

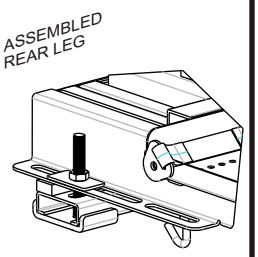
5 POSITION LIFT

PLACE LIFT ON TOP OF LEG ASSEMBLIES ADJUST AS NEEDED

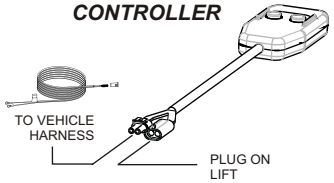
6 ATTACH LIFT

BOLT UP FROM UNDER USING THE SUPPLIED BOLT / NUT / WASHER AND BRACKETS AS INDICATED

LEAVE ALL HARDWARE LOOSE FOR ADJUSTMENT PURPOSES



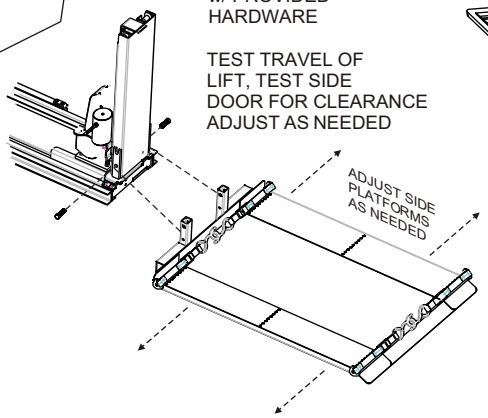
7 PLUG IN HAND CONTROLLER



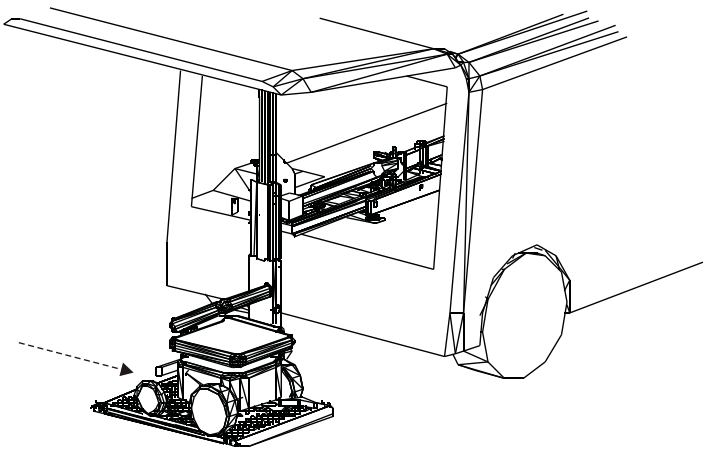
8 INSTALL PLATFORM

RUN LIFT "OUT" (and to the ground) ATTACH PLATFORM w/ PROVIDED HARDWARE

TEST TRAVEL OF LIFT, TEST SIDE DOOR FOR CLEARANCE ADJUST AS NEEDED

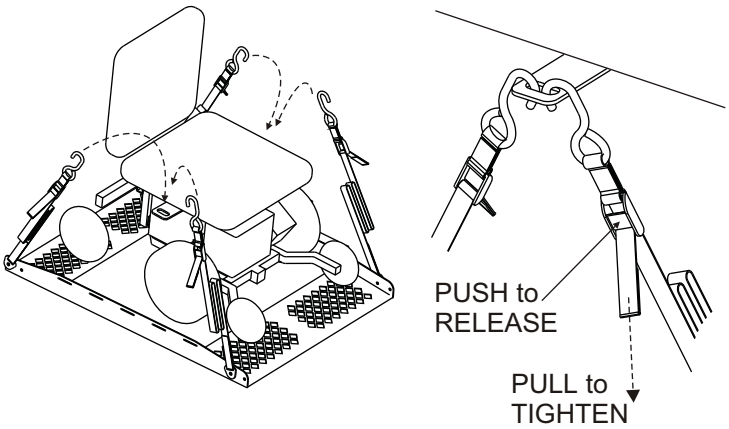


TIGHTEN ALL FASTENERS



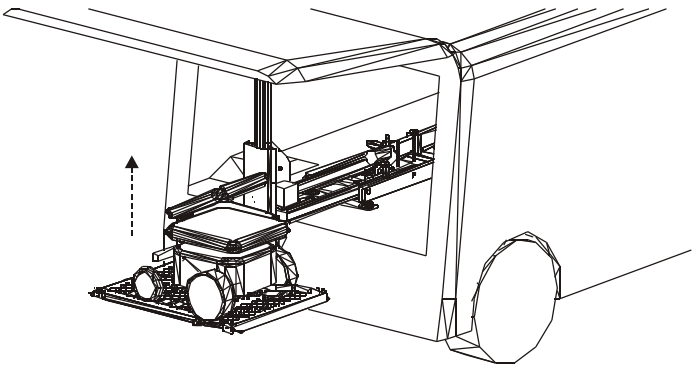
Parking the Chair on the Platform: Before loading the power chair, verify that the platform has been lowered all the way to the ground. Set your chair's speed control at a slow speed so that you may maneuver comfortably onto the platform. You may drive onto the platform from either side. Park the chair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

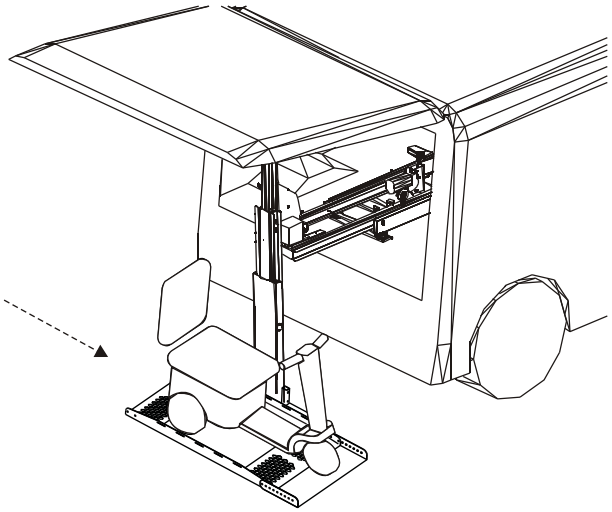
Securing the Chair to the Platform: The Pioneer platform has a restraint attached to each corner of the platform. Each restraint has a hook at the end. Place each hook in either the anchor plate slot, or in each U-bolt. Pull the loose end of each restraint tight. To release, simply press the release tab, and remove the hooks.



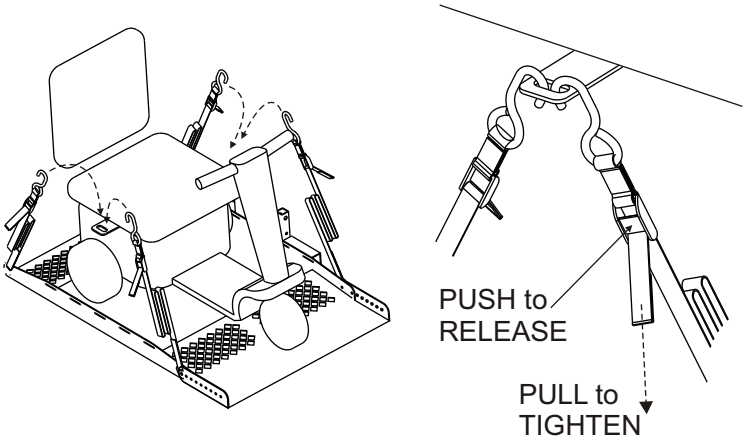
Folding Seat Backs: If your chair has a folding seat back you may wish to fold it to the down position. This will allow you more clearance when loading the chair into the vehicle. Depending on the size of your chair, you may need to remove the head rest to provide for sufficient clearance.

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



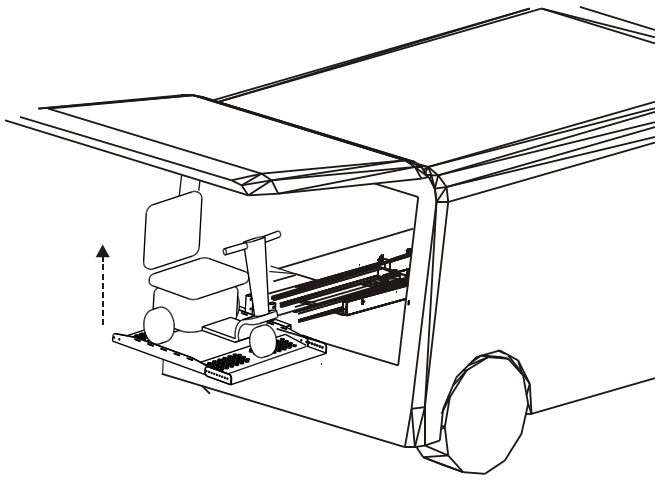


Parking the Scooter on the Platform: Before loading the scooter, verify that the platform has been lowered all the way to the ground. Set your scooter's speed control at a slow speed so that you may maneuver comfortably onto the platform. You must drive onto the platform from the driver's side of the vehicle. Park the scooter such that the front wheel(s) is(are) on top of the front wheel scooter adapter.

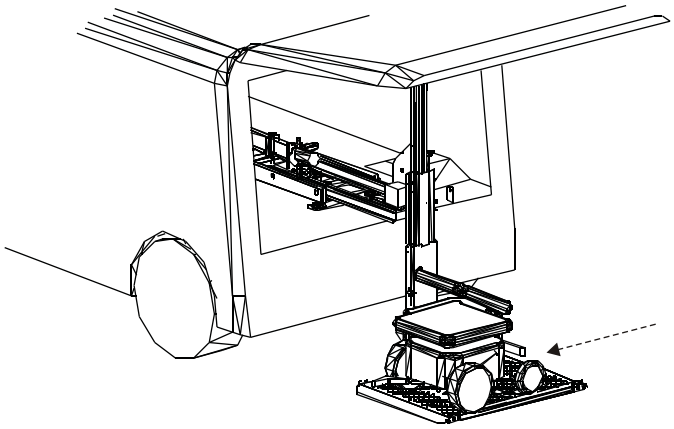


Securing the Scooter to the Platform: The Pioneer platform has a restraint attached to each corner of the platform. Each restraint has a hook at the end. Place each hook in either the anchor plate slot, or in each U-bolt. Pull the loose end of each restraint tight. To release, simply press the release tab, and remove the hooks.

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



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



Parking the Chair on the Platform: Before loading the power chair, verify that the platform has been lowered all the way to the ground. Set your chair's speed control at a slow speed so that you may maneuver comfortably onto the platform. Drive the chair onto the platform into the opening of the docking station.

THREE WAYS TO VERIFY YOUR CHAIR IS SUCCESSFULLY LOCKED DOWN

✓ 1) AUDIBLE "CLICK or POP" SOUND

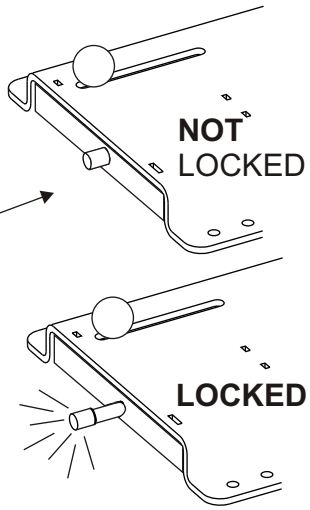
As the chair enters the locking device, it should be driven forward until an audible pop or clicking sound is heard. This sound is the locking device setting itself around the chair's docking device pin.

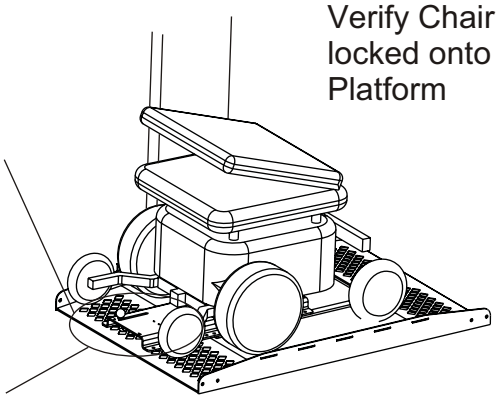
✓ 2) VISUAL INDICATOR

The yellow indicator will extend and stay extended when the chair is successfully locked in place.

✓ 3) REVERSE TEST

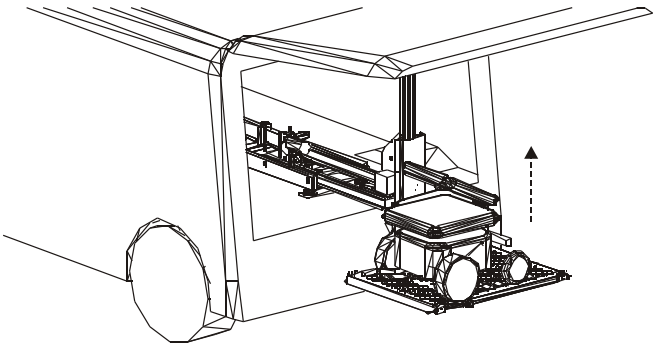
Attempt to back the chair off the platform. The chair will NOT move in any direction when successfully locked.





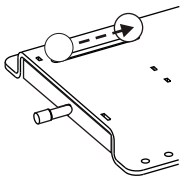
Verify Chair is locked onto Platform

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



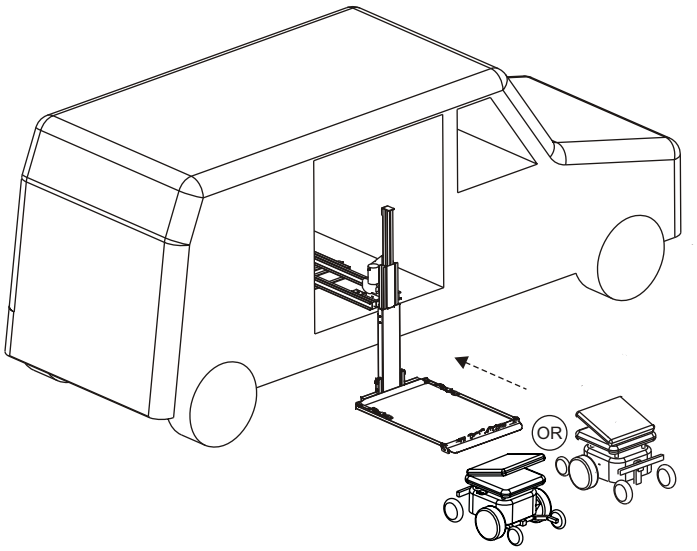
To Unload Chair: Lower Platform to the ground. Push knob as shown to the right. Drive off chair in reverese. The Docking Station will automatically reset itself to accept the next time the chair is loaded.

TO RELEASE CHAIR
Slide knob this direction

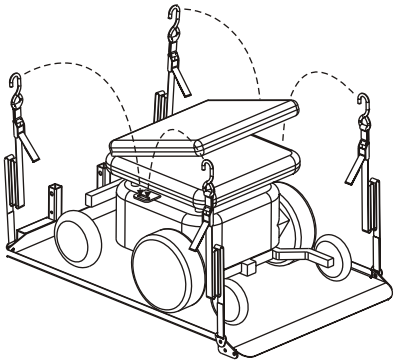


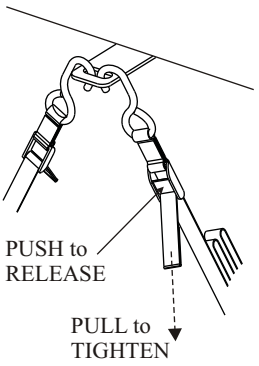
NOTE: During transport, vibration may cause the chair to tighten itself in the locking device, making the release knob difficult to slide. To overcome this, simply drive the chair forward a bit. This will take pressure off the knob, allowing an easier release.

AL 690 - LOADING A POWER CHAIR or MICRO SCOOTER



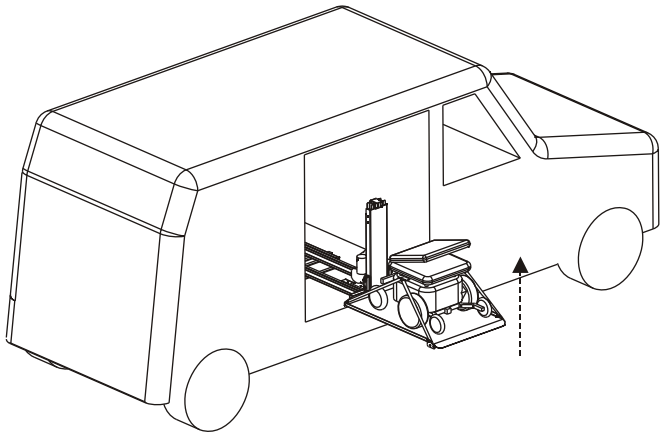
Parking the Chair on the Platform: Before loading the power chair, verify that the platform has been lowered all the way to the ground. Set your chair's speed control at a slow speed so that you may maneuver comfortably onto the platform. Either back the chair onto the platform, or drive forward depending on the chair's weight displacement. The heaviest portion of the chair needs to be closest to the lifting tower.



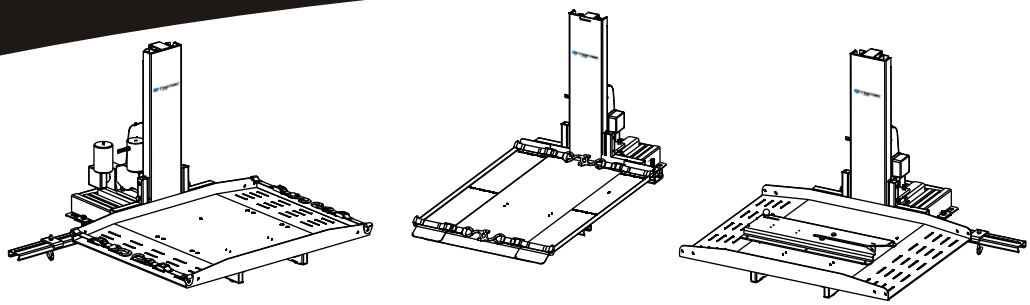


Securing the Chair to the Platform: The Pioneer platform has a restraint attached to each corner of the platform. Each restraint has a hook at the end. Place each hook in either the anchor plate slot, or in each U-bolt. Pull the loose end of each restraint tight. To release, simply press the release tab, and remove the hooks.

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



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



SAFETY:

Caution: Do not operate this lift until your dealer has satisfactorily instructed you in the proper operation of the lift. Your Harmar lift has been engineered and designed for years of trouble free use. Although, with everyday use, some parts may become loose or worn. **IMPORTANT!** Check regularly for any worn, loose or damaged parts of your lift. **If anything is observed, DO NOT USE THE LIFT!** Contact your dealer or installer of the lift for repairs to be **made. Failure to act may cause severe injury!**

Your Harmar lift should only be used for the loading and unloading of scooters and power wheelchairs for which it is designed. DO NOT add to or modify any part of the lift system without first contacting the manufacturer of the lift. Any modifications may void any warranties as well as effect the structural integrity of the lift.

Always make sure the vehicle's parking brake is firmly set before operating the lift.

Caution: When using the lift, keep your hands and feet from under the scooter or power chair as it is being loaded or unloaded.

Warning: This lift is not meant for human transport. The mobility device and platform must be unoccupied before operating the lift.

MAINTENANCE:

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

We recommend that dealers schedule a preventative maintenance inspection at least once a year on motors, lift frame, wiring harness and all moving parts of the lift.

Check for paint chips and touch up any bare metal with a good gloss black enamel or lacquer to inhibit rust. This may be necessary more frequently when subjected to salt air or road salt.

TROUBLESHOOTING:

PROBLEM : The lift will not operate or operates slowly.

Bad Connection **- *THE #1 CAUSE OF PROBLEM LIFTS***

Possible Cause - Verify the vehicle harness is tightly attached to the battery and there is no build-up of corrosion. 12 volts should be present at the end connector, but does not indicate full function.

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

Possible Causes:

Circuit Breaker - Although the breaker resets itself automatically, it may be malfunctioning and need to be replaced.

Bad Connection - Verify the vehicle's wiring harness is tightly attached to the battery and there is no build up on the terminals

Hand Control - Test by bypassing the hand control. Do this for only a second or two. The lift, vehicle, scooter or chair may be damaged if continuos power is supplied to the unit Verify all connectors terminals are well seated, and not retracted back into the body of the connector.

PROBLEM: Platform will not sit level on the ground.

Possible Causes:

Terriain - Verify the vehicle is parked on flat level ground

Orientation of the lift's base - Adjust the four leveling feet until the platform sits on level ground

IMPORTANT NOTE FOR ANYACCESSORY VEHICLE LIFT

PROBING FOR 12 VOLTS MAY INDICATE A CONNECTION, BUT NOT NECESSARILY A SUFFICIENT CONNECTION. THE LIFT'S MOTOR CAN DRAW UP TO 30 AMPS AT SOME POINTS, REQUIRING ALL OF THE WIRE AVAILABLE TO FLOW PROPER CURRENT. POOR CONNECTIONS ARE THE #1 PROBLEM ASSOCIATED WITH A SLOW, WARM, POORLY PERFORMING MOTOR. NOT ONLY WILL THE MOTOR PERFORM POORLY, BUT WILL PREMATURELY DETERIORATE.

IF A SINGLE STRAND OF A MULTI-STRAND WIRE IS MAKING CONTACT. 12V WILL APPEAR ON THE METER, OR TEST LIGHT, BUT WILL NOT ALLOW THE MOTOR TO OPERATE TO ITS FULL POTENTIAL. IT IS ALWAYS BEST TO TEST BOTH CURRENT AND VOLTAGE, OR RUN THE MOTOR WITH KNOWN GOOD SHOP BATTERY OR POWER SOURCE WHEN TROUBLESHOOTING.

NOTES

LIFT MODEL NUMBER: _____

SERIAL NUMBER : _____

SERVICE PERFORMED : _____ DATE: _____

SERVICE PERFORMED : _____ DATE: _____

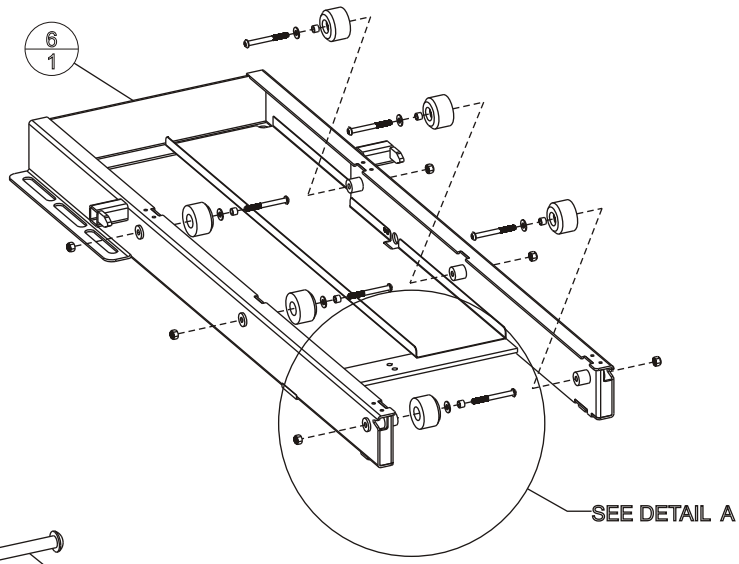
SERVICE PERFORMED : _____ DATE: _____

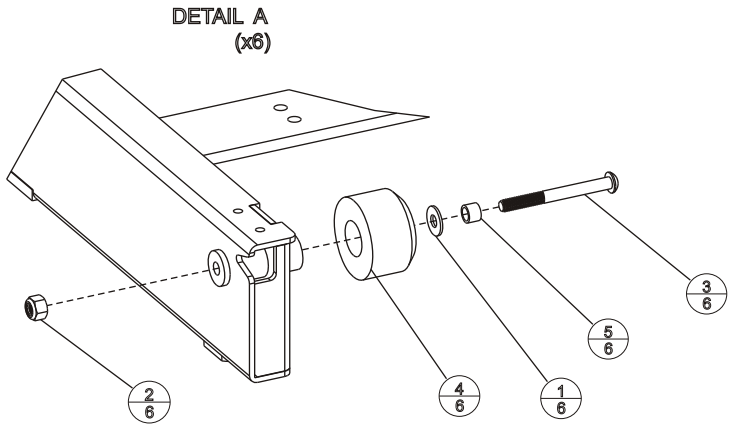
SERVICE PERFORMED : _____ DATE: _____

SERVICE PERFORMED : _____ DATE: _____

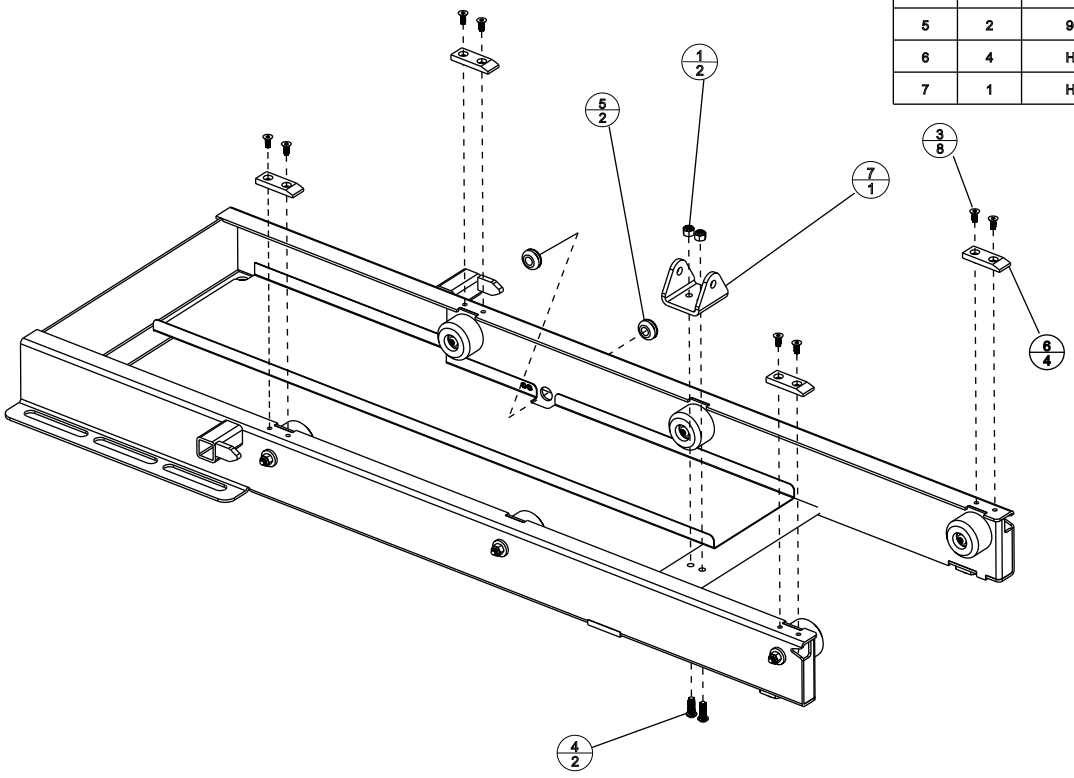
GENERAL NOTES:

ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	6	90126A029	0.25 MW: 0.625 OD
2	6	90640A129	NL: 0.25-20
3	6	92949A552	BSCS: 0.25-20 x 2.50
4	6	H600141	AL600 BASEWHEEL
5	6	H600151	BASE WHEEL SPACER TUBE
6	1	H600803	HPL BASE & LEG

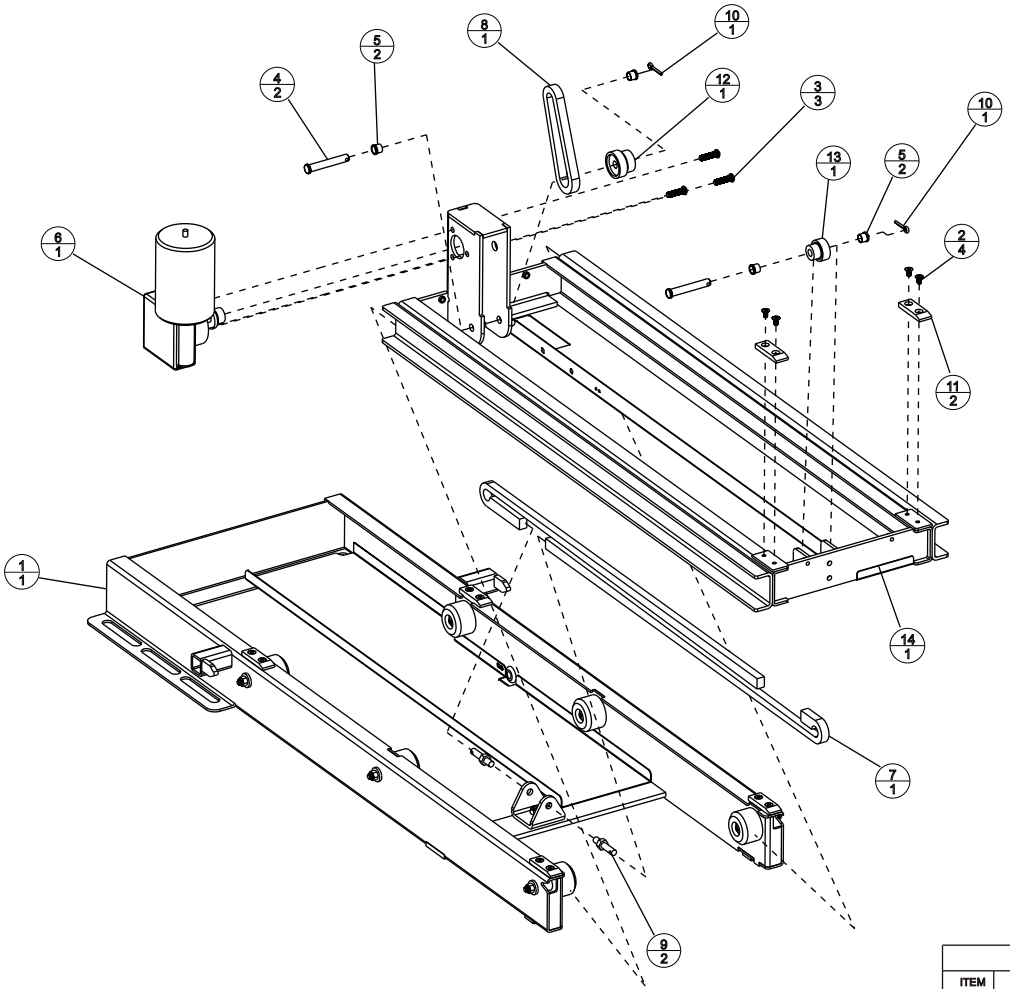




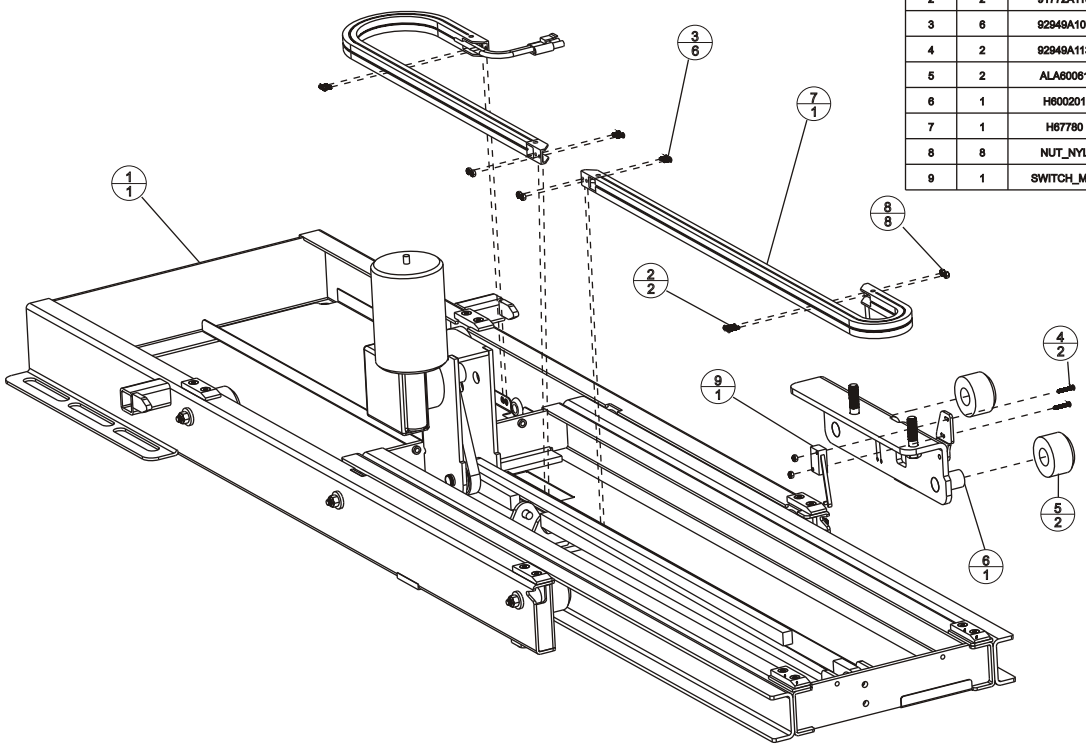
ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	2	0_25-20_LOCK_NUT	90640A129
2	1	1BASE-ASSY	AL600 ASSEMBLY PART 1
3	8	92805A242	SFHSCS: 10-24 x 0.50
4	2	92949A540	BSCS: 0.25-20 x 0.75
5	2	9600K47	RG:0.375 ID,0.875 OD,0.125 TH
6	4	H600132	AL600 PLASTIC SHIM
7	1	H600142	AL600 BASE CHAIN BRACKET



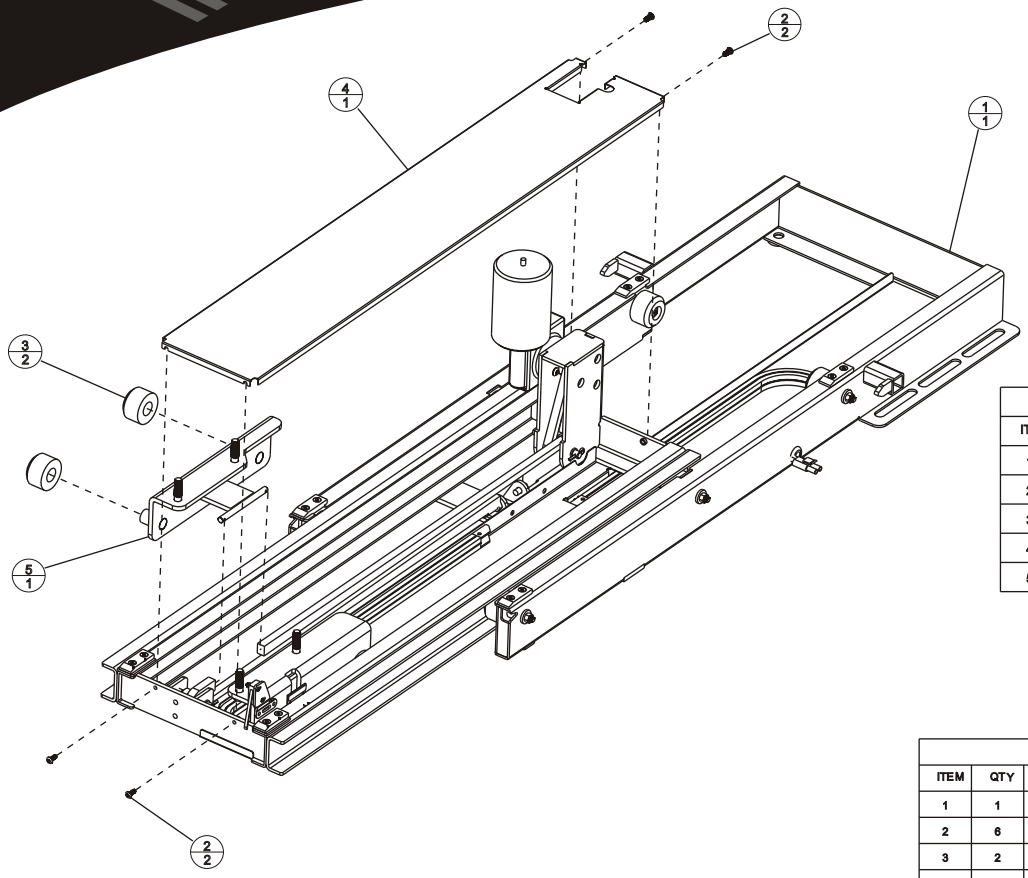
EXPLODED VIEWS



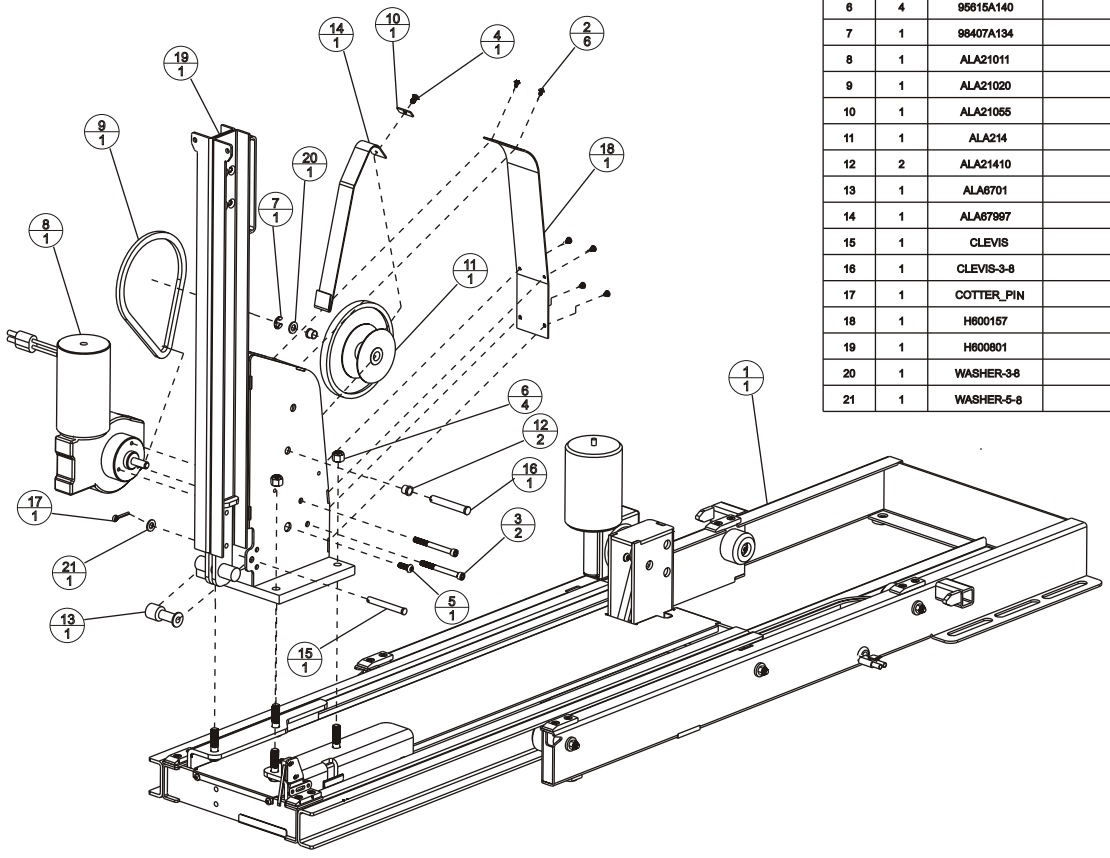
ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	2BASSE-ASSY	AL600 ASSEMBLY PART 2
2	4	91266A250	SHCS: 10-32 X 0.375
3	3	92949A566	BSCS: 0.25-28 x 1.00
4	2	98306A280	CLEVIS PIN, 3/8" x 2-3/8 L
5	4	ALA21410	FLANGE BUSHING BRZ 3/8X1/2X3/8
6	1	ALA41011_CCL	MOTOR: H600802
7	1	ALA60020_QTY_2	H600802 HORIZONTAL CHAIN
8	1	ALA60022	H600802 VERTICAL CHAIN
9	2	ALA62099	CHAIN TENSIONER BOLT 1.75"LG
10	2	COTTER_PIN	COTTER PIN
11	2	H600132	AL600 PLASTIC SHIM
12	1	H600135	AL600 DOUBLE SPROCKET
13	1	H600150	SPROCKET 35B8
14	1	H600802	HPL MIDDLE STAGE



ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	3ASSY	AL600 ASSEMBLY PART 3
2	2	91772A110	SCREW, PhPnHd, 4-40 x 1/2"L, 18-8SS
3	6	92949A107	BSCS: 4-40 x 0.3125
4	2	92949A113	BSCS: 4-40 x 0.75
5	2	ALA60061	ROLLER
6	1	H600201	AL600 PASSENGERSIDE WHEELS
7	1	H67780	HARNESS, AL600 PIONEER WIRING
8	8	NUT_NYLOC	NUT, NYLOC, 4-40, 18-8SS
9	1	SWITCH_MICRO	SWITCH, OMRON - V-15G31-C24-K (part of H67780)

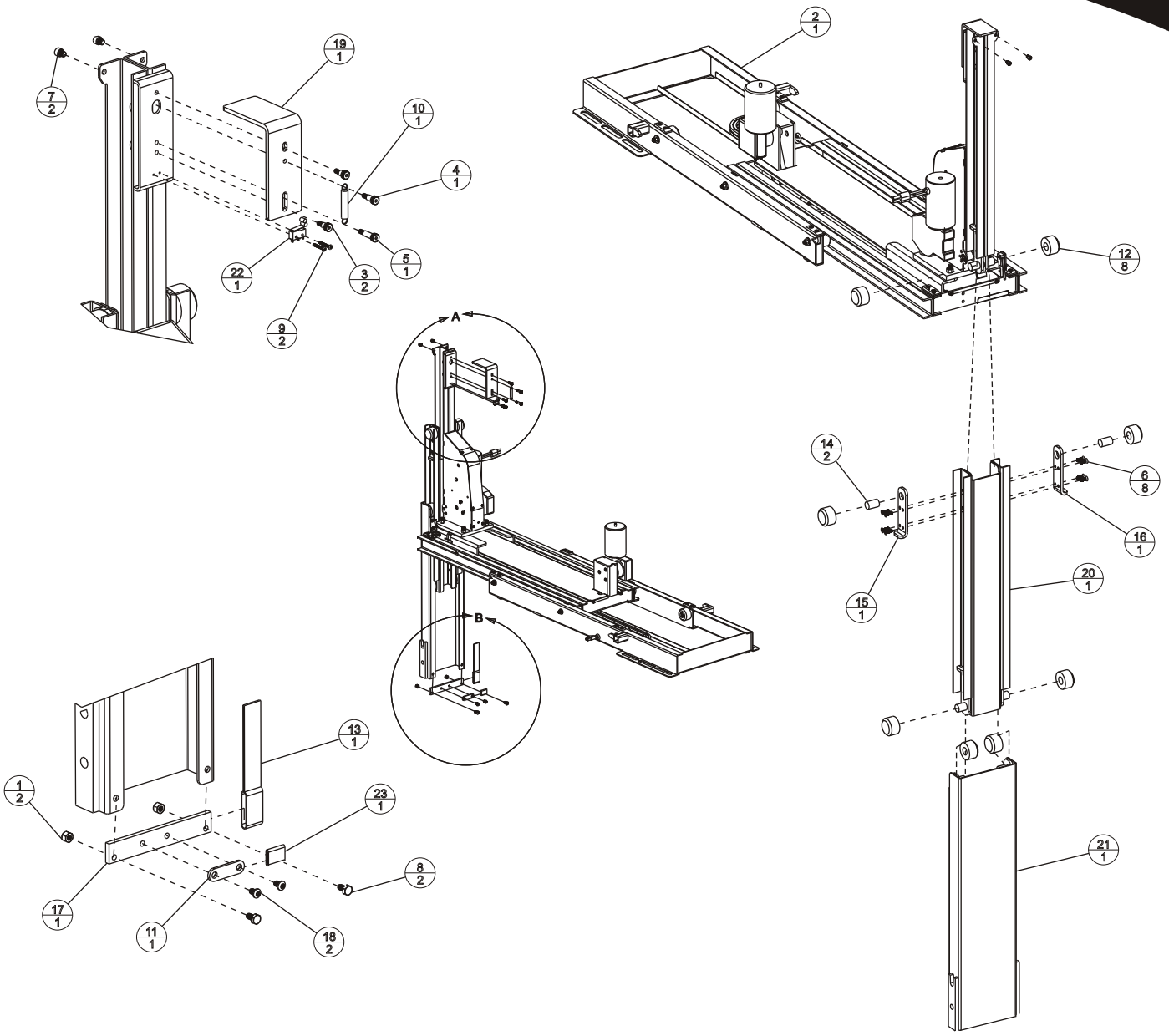


ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	4ASSY	AL600 ASSY (In progress)
2	4	93310A242	BSCS: 10-24 x 0.50
3	2	ALA60061	ROLLER
4	1	H600131	AL600 COVER TOP
5	1	H600200	AL600 DRIVERSIDE WHEELS



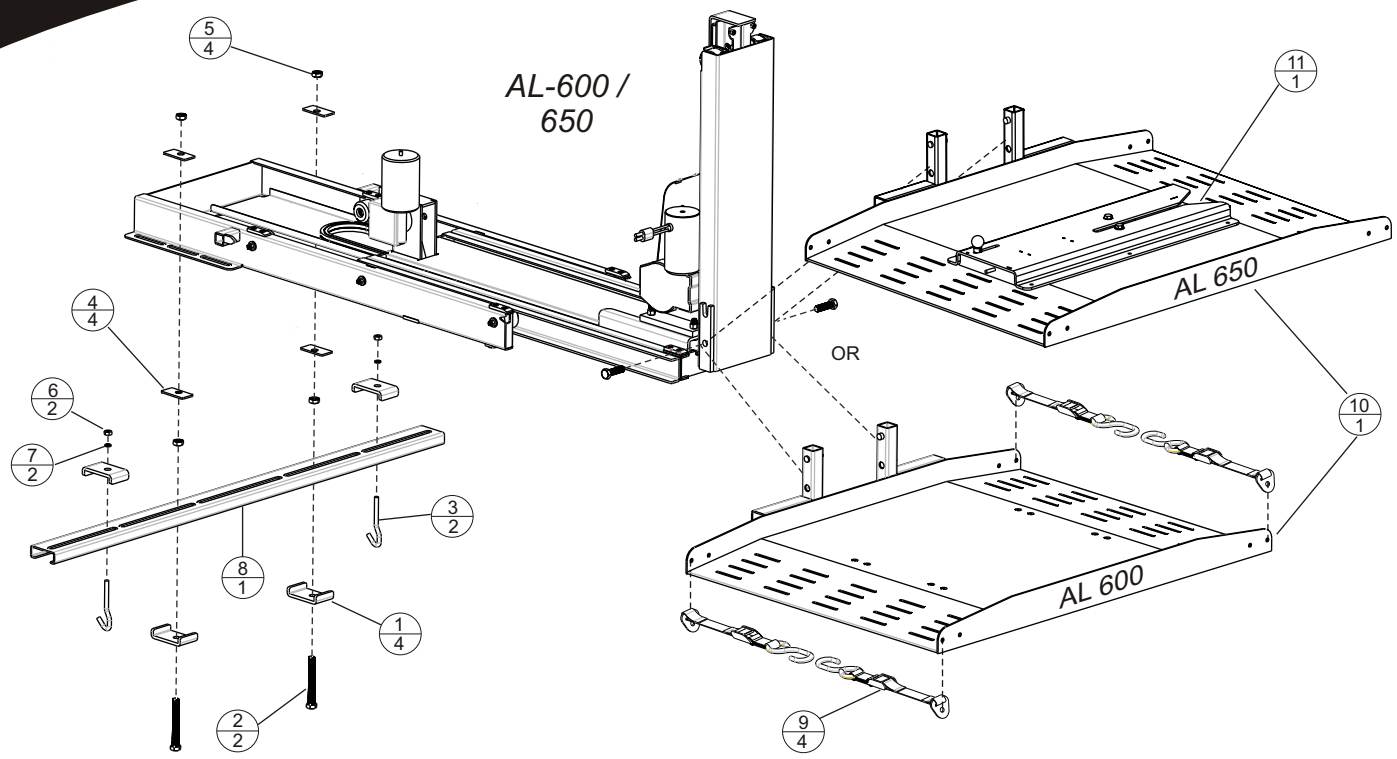
ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	1	5ASSY	AL600 ASSEMBLY PART 5
2	6	90087A190	PnHdHd, 8-32 x 1/4" SELF TAPPING, ZP STEEL
3	2	91251A464	SHCS: 0.25-28 x 2.75
4	1	91255A263	BHCS, 10-32 x 3/8", BLK OX, STEEL
5	1	91306A516	BSCS: 0.25-28 x 0.75
6	4	95615A140	NL: 0.375-16
7	1	98407A134	E-CLIP, for 3/8" SHAFT, ZP STEEL
8	1	ALA21011	MOTOR: H600801
9	1	ALA21020	SPOOL CHAIN
10	1	ALA21055	STRAP TAB, 16 ga
11	1	ALA214	SPOOL
12	2	ALA21410	FLANGE BUSHING BRZ 3/8X1/2X3/8
13	1	ALA6701	STRAP ROLLER
14	1	ALA67997	LIFTING STRAP
15	1	CLEVIS	CLEVIS PIN, 5/16" x 2.5"L ZP STEEL
16	1	CLEVIS-3-8	CLEVIS PIN, 3/8" x 2.5"L, ZP STEEL
17	1	COTTER_PIN	COTTER PIN
18	1	H600157	AL600 - CHAIN COVER
19	1	H600801	HPL UPPER CAR ASSEMBLY
20	1	WASHER-3-8	WASHER, FLAT, 3/8", ZP STEEL
21	1	WASHER-5-8	WASHER, FLAT, 5/8", ZP STEEL

EXPLODED VIEWS



ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	2	0_25-20_LOCK_NUT	90640A129
2	1	6ASSY	AL600 ASSEMBLY PART 6
3	2	90298A534	SS:0.25 DIA,0.25 LG,10-24 TH
4	1	90298A535	SS:0.25 DIA.,0.375 LG,10-24 TH
5	1	90298A539	SS:0.25 DIA.,0.625 LG,10-24 TH
6	8	90471A413	FlPhHd, 100 degree, 1/4-20 x 3/4"L zp STEEL
7	2	92196A313	SHCS, 1/4-28 x 1/4"
8	2	92865A538	HHCS, 1/4-20 x 5/8"L, GRADE ZP STEEL
9	2	92949A113	BSCS: 4-40 x 0.75
10	1	9654K614	ES:1.50 LG,0.3125 OD,0.020 WIRE
11	1	ALA50006	BACKING PLATE

ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
12	8	ALA60061	ROLLER
13	1	ALA67997-STRAP	LIFTING STRAP
14	2	ALM6701	AXLE 0.75DIA x 1.162"LG
15	1	ALM6702	BRACKET LEFT
16	1	ALM6703	BRACKET RIGHT
17	1	ALM67997	STRAP MOUNTING PLATE
18	2	BHSC_1-4_20_3-8	Button Head, 1/4-20 x 3/8"L ZP Steel
19	1	H600126	AL600 TOP LIMIT PLATE
20	1	H600804	HPL MIDDLE CAR ASSEMBLY
21	1	H600805	LOWER CAR ASSEMBLY
22	1	OMRON_SS-5GL2	LIMIT SWITCH
23	1	PAD	FOAM PAD for STRAP



ASSEMBLY PARTS			
ITEM	QTY	PART NO.	DESCRIPTION
1	4/6	H600144	BASE LEG BRACKET
2	2	HHCS	1/2-13 x 4.00"L GRADE 5 ZP STEEL
3	2/4	ALA60133	J-HOOK ZINC PLATED - 3/8" DIA
4	4/2	H600160	BASE WASHER
5	4/2	NUT	HEX JAM NUT, 1/2-13
6	2/4	NUT	NUT, 3/8-16
7	2/4	WASHER	SPLIT LOCK WASHER, 3/8
8	1	H600143	BASE LEG
9	4	ALA69073	STRAP ASSEMBLY
10	1	H600800	PLATFORM WELDMENT AL-600
11	1	ALA550	DOCKING STATION
12	1	H69070	AL-690 REAR LEG
13	1	H69060	AL-690 FRONT LEG
14	1	H69001011	AL-690 PLATFORM - MAIN
15	1	H690015	AL-690 PLATFORM LEFT
16	1	H690016	AL-690 PLATFORM RIGHT