VPLX-DC
VERTICAL PLATFORM LIFT



INSTALLATION & SERVICE MANUAL

HARMAR®
we lift lives

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SECTION 1

SAFETY

SAFETY DEFINITIONS



This safety alert symbol appears with safety statements. It means attention, become alert, your safety and the safety of others are involved! Please read and abide by the message that follows the safety alert symbol.

⚠ WARNING

Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

⚠ CAUTION

Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates a situation which can cause damage to the lift and/or the environment, or cause the lift to operate improperly.

NOTE: Indicates a condition that should be followed in order for the lift to function in the manner intended.

ENVIRONMENTAL CONDITIONS

The technician shall assess the surrounding conditions and verify that the location is acceptable before performing installation and/or servicing tasks. Installation shall not proceed in inclement weather conditions that jeopardize the technician's safety or ability to complete the installation in a safe manner. Tents, canopies or other outdoor provisions that help protect the work area from weather or other safety concerns are recommended when conditions warrant.

Do not attempt to install or use this lift if you have any hesitation or question. Serious injury or damage can result if proper procedures are not followed.

If you do not understand any portion of the installation or operation procedures, please consult Harmar's LiftSquad Support at 800-833-0478.

SECTION 2

INTRODUCTION

DEVICE NAME: HARMAR VPLX-DC

Indications of Use:
The Harmar Highlander VPLX-DC Vertical Platform Lift is to aid in the safe and efficient transfer of individuals with limited mobility or disabilities, along with their mobility devices, between different levels of a residential building.

READ AND UNDERSTAND

This manual provides instructions for the proper installation and service of the Harmar VPLX-DC Vertical Platform Lift which is critical to the lift's safety, performance and durability. Please refer to the Owner's Manual for operating instructions. Any alterations to the equipment without written authorization by the manufacturer is prohibited and will void the warranty.

TECHNICAL SPECIFICATIONS

Visit harmar.com for specifications on the lift model and configuration.

CODE STATEMENT

The Harmar VPLX-DC lift has been designed to meet Safety standard ASME A18.1-2020 "Safety Standard for Platform Lifts and Stairway Chairlifts" under section 5 and has been certified to CSA B44.1/ ASME A17.5-2019 "Elevator and Escalator Electrical Equipment".

Code requirements for Vertical Platform lifts may vary depending on location. It is the installers responsibility to contact their state, city or local code enforcement office and determine all the regulations the lift and installation are subject to. You must do this before installing the Vertical Platform Lift.

APPLICABLE STANDARDS BASED ON INSTALLATION TYPE

Residential installations require compliance to the Safety standard ASME A18.1-2020 safety code and other codes that may be adopted by state, city and local code authority having jurisdiction.

To meet the full intent of Safety standard ASME A18.1-2020 regulation the installer is required to contact their state, city or local code authority having jurisdiction for permits, adopted rules and inspections of the vertical platform lift.

REQUIREMENTS UNDER ASME A18.1

Safety standard ASME A18.1-2020 for Platform Lifts and Stairway Chairlifts under Section 5.

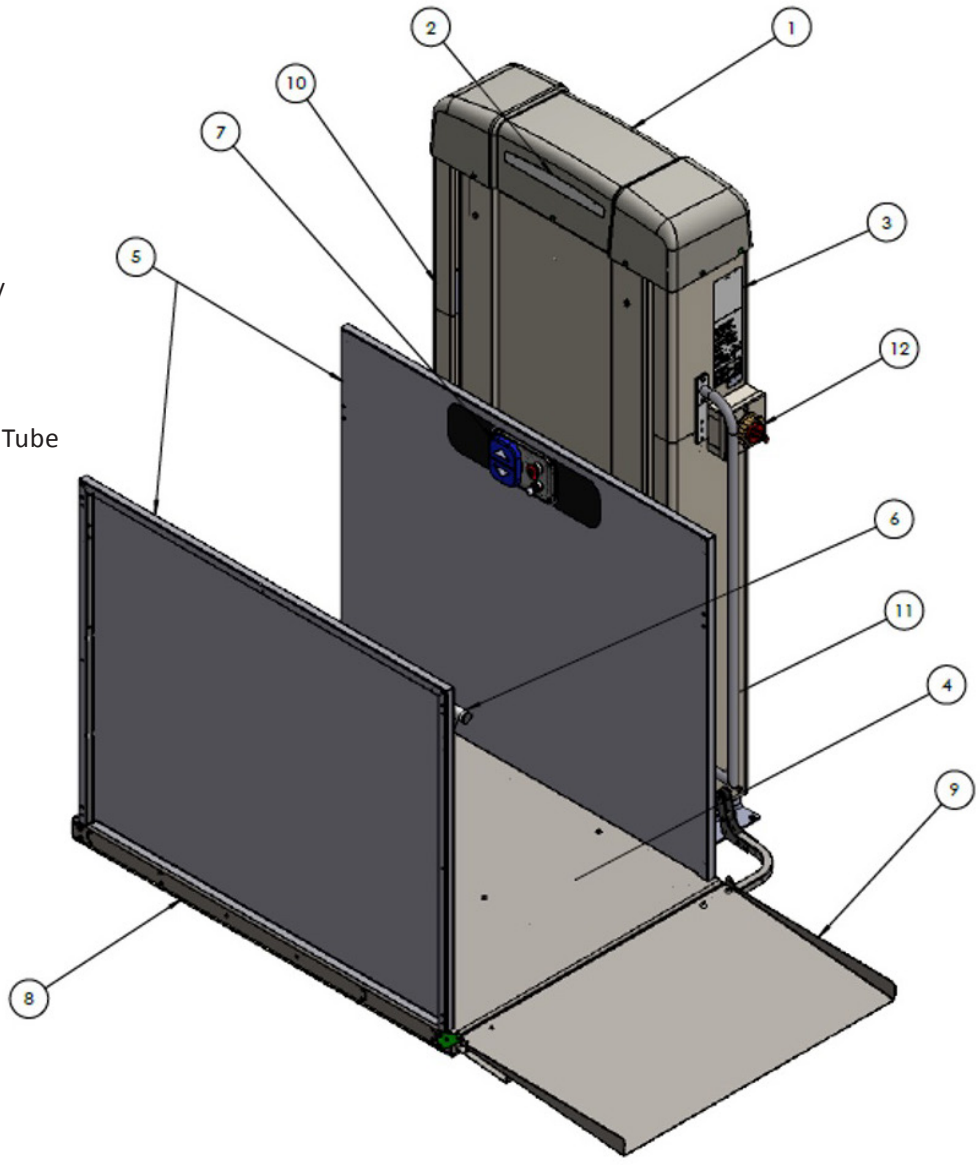
The Harmar VPLX-DC Vertical Platform Lift is to be installed according to all applicable codes in accordance with Safety standard ASME A18.1-2020 - which is the responsibility of the installer - CSA B44.1/ASME A17.5-2019.

STATEMENT OF USE

VPLX-DC units (4') are intended for a maximum operation of 6-cycles per hour.

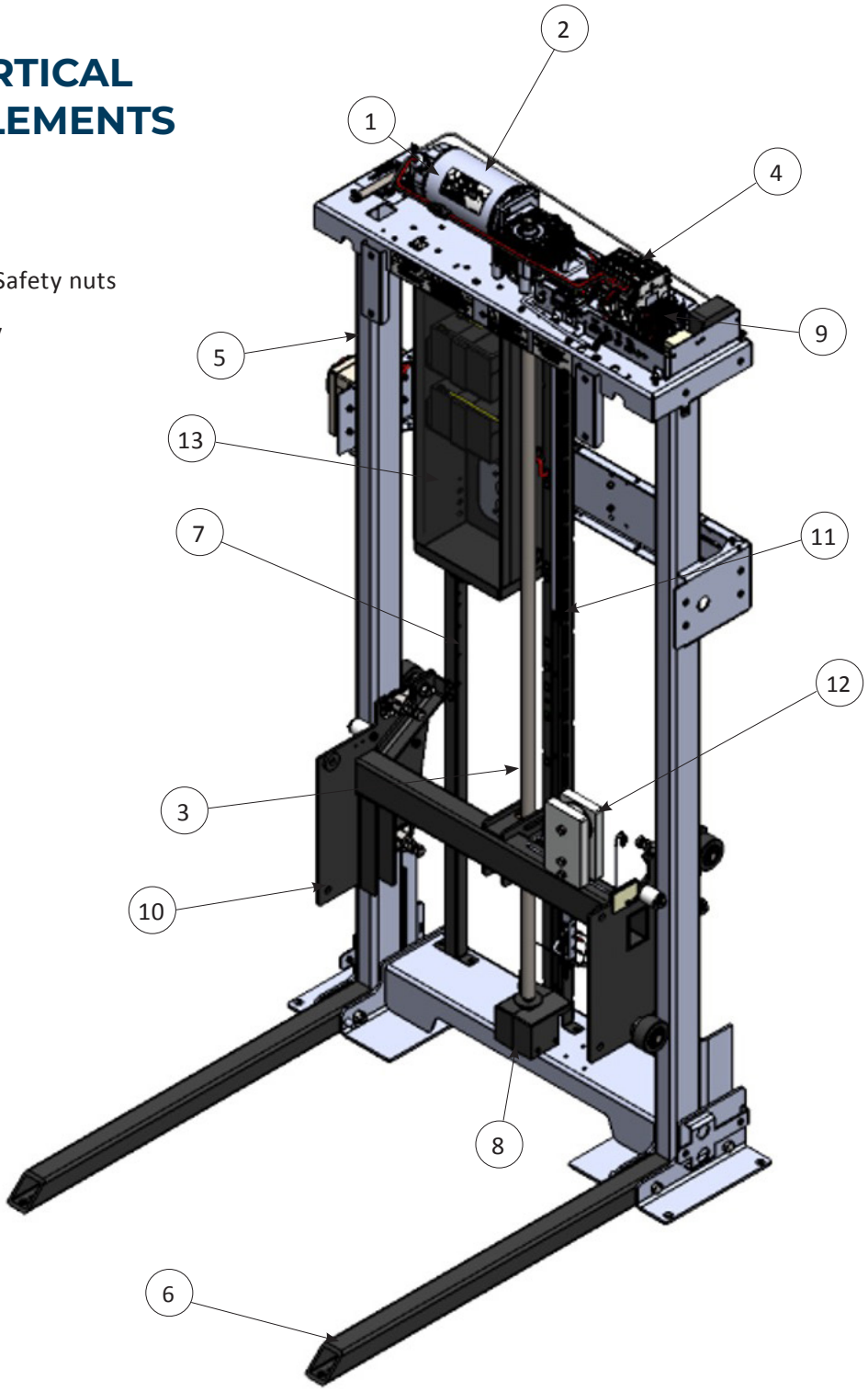
KEY VERTICAL PLATFORM LIFT ELEMENTS

1. Top Cap
2. Decal
3. Data Serial Tag
4. Platform
5. Platform Guard Panel
6. Grab Rail (if supplied)
7. Platform Controls
8. Platform Safety Pan
9. Platform Folding Ramp/ Platform Fixed Ramp
10. Tower
11. Folding Ramp Actuator Tube
12. Power Disconnect



KEY INTERNAL VERTICAL PLATFORM LIFT ELEMENTS

1. Manual Lowering Tool
2. Motor / Gearbox
3. ACME Screw with Drive and Safety nuts
4. Control Electronics Assembly
5. Tower Frame
6. Tower Legs
7. Wire Channel
8. Over-Speed Safety Assembly
9. Motor Contactors
10. Carriage
11. Trailing Cable
12. Cable Tensioning Pulley
13. Junction Box
    (Main Power Supply Hookup)



SECTION 3

PREPARATION

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

If you have any questions, concerns or comments, please contact our LiftSquad Support at 800-833-0478 or techservices@harmar.com.

REQUIRED TOOLS AND HARDWARE

- Tape Measure
- Square
- Level
- Multimeter
- ⅜" Hammer Drill
- Wrench Set:
  - 7⁄16"
  - ½"
  - ⅝"
  - 9⁄16"
  - ¾"
- Allen Wrench:
  - ⅛"
  - 5⁄32"
  - 3⁄16"
  - 7⁄32"
  - 5⁄16"
- Torx Wrench
  - T20
- No. 1 Phillips Head Screwdriver
- No. 2 Flat Head Screwdriver
- No. 2 Phillips Head Screwdriver
- Marking Implement
- ⅜" Nut Driver Bit (with 1.5" min reach) or ⅜" socket, extension and ratchet
- Concrete Drill Bits
- Precision Screwdriver Set
- Anchors for Fixed Ramp *(if specified)*

RECOMMENDED TOOLS

- Fish Tape
- ⅜" Non-Hammer Drill (for emergency lowering)
- Ladder
- Steel Toe Shoes
- Safety Glasses
- First Aid Kit
- Box Cutter
- Hard Hat
- Shop Vacuum
- Shop Towels and General Purpose Cleaner

BOX REQUIRED COMPONENTS NOT SUPPLIED

NOTE: We recommend electrical supply to be installed by an electrician.

- Wire and Conduit
- Fasteners for top gate and call/send boxes.

SITE PREPARATION

- Review and confirm the power requirements for power supply and disconnect per NFPA 70.
- In preparation for receiving the lift for installation a final site inspection must be completed to ensure the mounting surface for the lift complies or exceeds Harmar's recommendation for the concrete slab. The size of the concrete slab must be large enough for the lift and the approach for the mobility device.
- If there was a blueprint created for the project, check that all work matches the blueprint. Running clearance measurements should be double checked for the platform and fascia, guard panels and wall/barrier, and the platform top landing and overhead clearance. Ensure there are no pinch points.
- If doors are supplied by others check that they meet Safety standard ASME A18.1-2020, flush mount doors are required. If other non Harmar supplied equipment (interlocks) are going to be used, check compatibility with Harmar equipment.
- The front tower panel and the top cover must be removed before any power, gate/door, or call send connection can be made.

CONCRETE

- Concrete pad should be no less than 4" thick, 3500 PSI reinforced, and must be level. The size of the concrete pad may vary depending on the size of the VPL footprint. Concrete at the bottom approach to the VPL must be large enough to turn a mobility device around. Pay close attention to the slope of existing concrete where the VPL is going to be installed. Existing concrete on the exterior of a house or building are normally sloped to shed water. The normal slope is about ⅛"-¼" per foot to provide adequate drainage. Steel shims should be used to level the tower when the existing concrete has a normal slope. If the existing concrete has greater slope than ¼" per foot, it should be reworked and leveled before installing the VPL.

⚠ CAUTION

Wood shims should never be used on either inside or outside applications.

NOTE: Do not shim more than ⅞".

- Harmar recommends securing the lift using our Anchor Kit

NOTE: DO NOT install on brick, landscape paver or asphalt surface.

MATERIAL HANDLING

⚠ CAUTION

Do not lift unit from bottom of the platform. This will cause damage to the safety systems.

- It may be necessary to move the VPL around once it's on the job site. Extra material handling equipment such as manual carts, a pallet jack, fork lift, and/or crane may be needed. There may be times when VPL will have to be moved by manpower. All tower panels can be removed to reduce the weight of the tower. Care should be taken not to scratch or damage panels when removing, carrying, and reinstalling them.
- Special care must be taken to protect any landscaping or flooring surfaces that might be damaged by the uses of material handling equipment.

UNLOADING

- The VPL is shipped standing up shrink wrapped to a pallet. The pallet dimensions are 48" x 48" x 83". Units are screwed into the pallet, installers will require a ¾" wrench socket to remove screws. ***See Figure 3-1.***

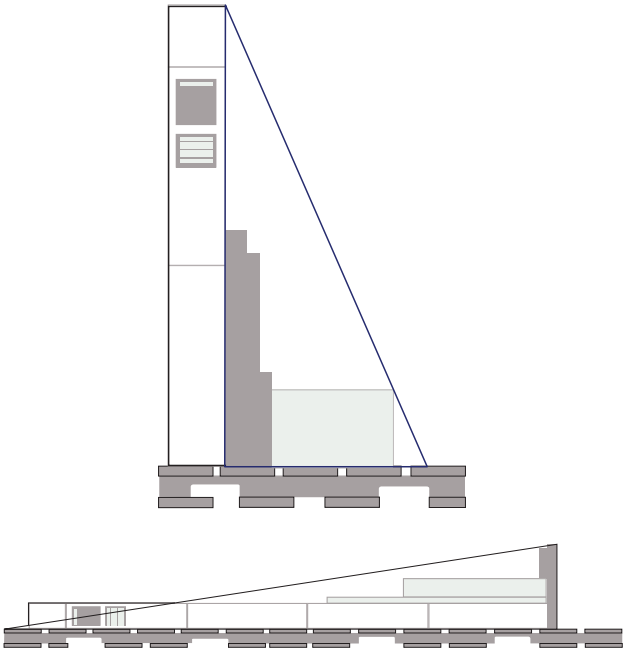


Figure 3-1

- A lift gate is unable to be used when the tower is shipped laying down. A pallet jack or forklift can be used to set into place.

Note: Must have a loading dock, pick up the VPL at the shipping terminal, or ship it directly to the installation site. This information must be documented on the evaluation form.

- VPL's weigh between 800 - 900 lb, depending on the height. The following may be necessary to assist in positioning:
  - Additional Manpower
  - Fork Lift
  - Crane
  - Pallet Jack
  - Lever Bar Dolly

BOX CONTENT

Inspect all boxes for damage or missing parts. If you see any damage, contact the freight carrier to file a damage claim and contact Harmar.

Verify the products match those described on the packing list attached to the exterior packaging. If items are missing or are incorrect, contact Harmar.

UNPACKING

1. Unwrap the VPL and set the following items aside:
   - Small Parts Box
   - Ramp (if provided)
   - Platform Panels
   - Platform
   - Gates
2. Remove the tower from the pallet.
3. Perform pre-delivery inspection

SECTION 4

INSTALLATION

TOWER PREPARATION

1. Remove 5X front screws.
2. Remove the top cap by loosening the four (4) side screws. ***See Figure 4-1.***



Figure 4-1

3. Remove the front panel by leaning the top half out slightly and lifting it out of the lower slots. ***See Figure 4-2.***



Figure 4-2

4. Position the VPL tower close to the upper landing and stand it up using appropriate material handling processes.

NOTE: Tower frame should only be lifted by the rectangular tubes below the top plate.

5. Remove and discard the temporary bolt and nut (5⁄16" hex) that secures the tensioning pulley to the carriage for shipping. This bolt is indicated with a red tag. Suspend the pulley assembly behind the carriage. ***See Figures 4-3 and 4-4.***

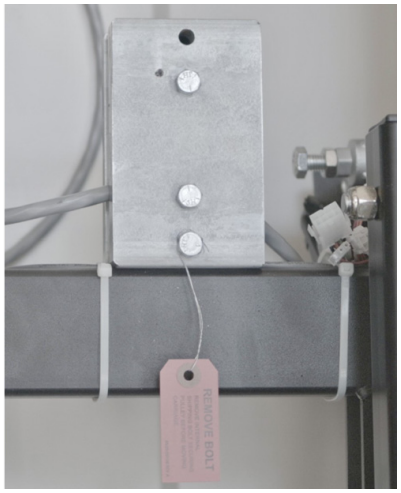


Figure 4-3

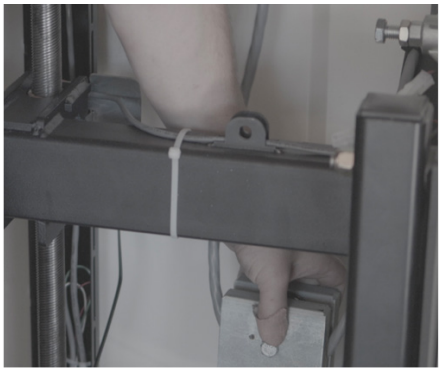


Figure 4-4

NOTE: Be sure that the pulley assembly is suspended with the sheeve at the top and that it is clear to move through the lift range.

6. Route the control box harness, safety pan harness and if equipped gate harness under the carriage flange clip. Plug the 8-pin and 2-pin, connections together. If the VPL is equipped with a platform gate plug the 4-pin connection together. If the VPL doesn't have a platform gate plug in the 4-pin jumper. ***See Figure 4-5.***



Figure 4-5

INSTALLING DISCONNECT

1. Determine the location for the disconnect.
2. Remove the knockouts from the panels on entry side of tower.
3. Install the plastic bushing in the hole and then route the harness through the hole.
4. Loosen the 2 tower panel screws, then hang the box onto the screws and then tighten the screws. ***See Figure 4-6.***



Figure 4-6

5. Route the harness along the frame and secure it with zip ties and then plug the harnesses together. ***See Figure 4-7.***

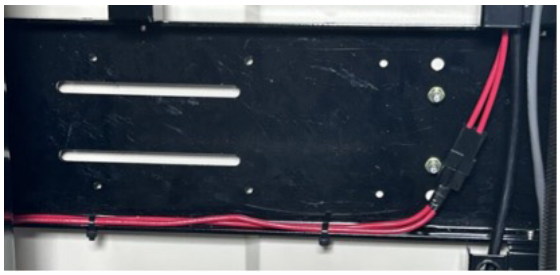


Figure 4-7

6. Secure the cover in place with screws provided. ***See Figure 4-8.***

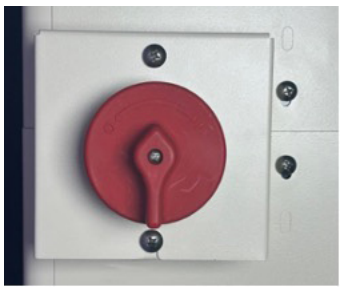


Figure 4-8

BYPASS MODE

To operate the carriage during installation, prior to gate and platform setup, several jumper plugs are required.

1. Plug the 8-pin upper landing cable connector. Route the cable to the 4-pin interlock connection at the gate. ***See Figures 4-9 and 4-9.1***

   Interlock keeper must be inserted in interlock and door closed switch must be actuated.

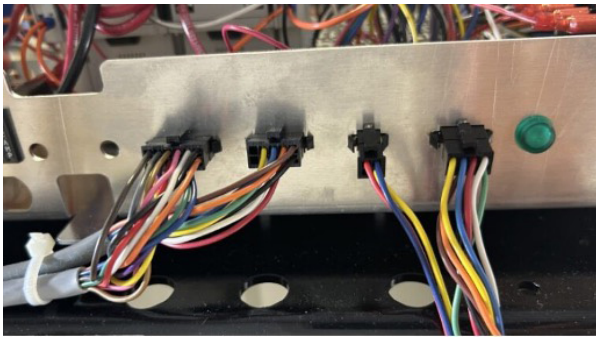


Figure 4-9

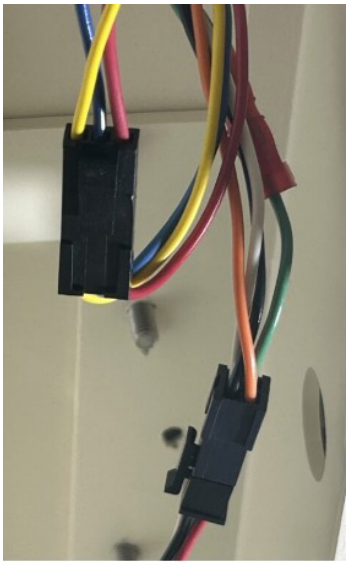


Figure 4-9.1

2. Plug the cab control (8-pin), safety pan jumper (2-pin) and platform gate jumper (4-pin) into the trailing cable connectors at the platform harness. ***See Figure 4-10.***

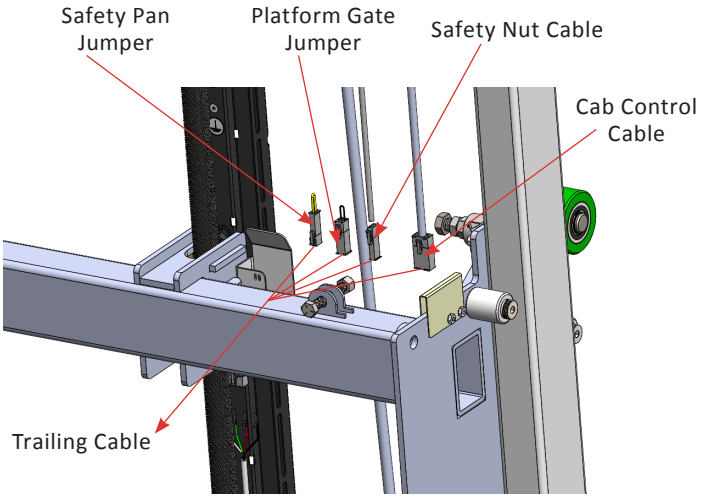


Figure 4-10

3. Move the carriage up or down as needed to finish the installation.
4. These jumpers may need to be removed at the completion of installation. See Installation Tower Check section on ***Page 24.***

PLATFORM CONNECTION

1. Fasten the platform arms to the carriage with the 4 ½"-13 x 3 ¼" bolts using ¾" tools using the low profile nyloc nuts on the lower bolts and a standard nyloc nut on the upper bolts. Make sure they are fastened to the inside of the carriage connection points; otherwise, they will not align with the holes in the platform. ***See Figure 4-11.***



Figure 4-11

2. Slide the platform onto the carriage arms then fasten it in place with 6 ¼"-20 X ⅝" Phillips head bolt using a Phillips screwdriver. ***See Figure 4-12.***



Figure 4-12

ROUTING INTERLOCK & CALL/SEND WIRES INSIDE THE TOWER

Depending on the configuration, call/send and or interlock wires will be wired directly to the control board and coiled up at the top of the tower or will be in the small parts box.

1. Plug the 4-pin and 8-pin connection together and route the cables to the wire channel. ***See Figure 4-13.***

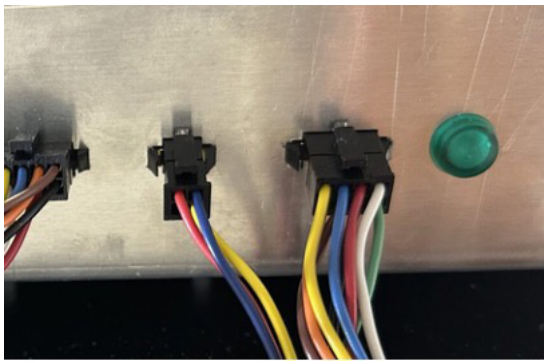


Figure 4-13

2. If the configuration comes with a coil of wire in the small parts box, it must be connected to the AC Controller/Travel Cable and routed to the wire channel. ***See Figure 4-14.***



Figure 4-14

INSTALLING PLATFORM GUARD PANELS STRAIGHT THROUGH CONFIGURATION

1. Remove the four (4) ¼" - 20 x 4" bolts from the small parts bag.
2. Insert the control side guard panel posts into the pockets on the platform with the smooth side facing the inside of the platform and insert the outer panel into the outer pockets. ***See Figure 4-15.***



Figure 4-15

NOTICE

Call/Send and interlock wires can be routed from the top of the tower, into the wire channel, and out one of the provided knockouts at the top or the bottom of the tower side panels.

3. Fasten in place with four (4) ¼"- 20 x 2" hex head bolts. Using a ⅜" socket, torque bolts down sufficiently to hold guard panels rigidly in-place. The platform material in front of the pockets may deform slightly while tightening bolts. ***See Figure 4-16.***



Figure 4-16

4. Grab the top of the panel and push it back and forth to check the rigidity. If the panel is loose, tighten each bolt an ⅛" turn rotating back and forth between the bolts until the panels are not loose. ***See Figure 4-17.***



Figure 4-17

INSTALLING A PLATFORM GATE (IF REQUIRED)

1. Place the gate onto the platform floor and align the gate tabs with the threaded holes on the side panels. ***See Figure 4-18.***



Figure 4-18

NOTICE

A furniture dolly can be used to help position the gate onto the platform.

2. Install four (4) ¼" -20 x ⅝" screws through tabs in gate frame into threaded holes on platform panels. Using a ⅜" open end wrench to tighten the screws. ***See Figure 4-19.***

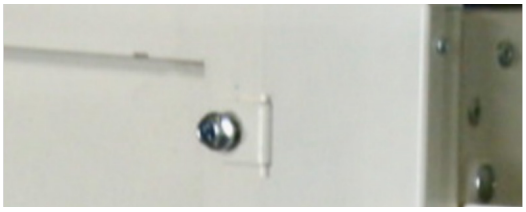


Figure 4-19

3. Using a #1 Phillips screwdriver remove the interlock covers screws. ***See Figure 4-20.***



Figure 4-20

4. Make interlock wire connections. ***See Figure 6-2 on page 30.***

5. If a right-hand platform gate is installed the interlock harness must be routed through the hole. ***See Figure 4-21.***



Figure 4-21

6. Continue routing through the bottom tube and out the other end. Install the rectangular caps into the bottom gate tube. Create a small notch in the rectangular cap to route the harness through after it is installed. ***See Figure 4-22.***



Figure 4-22

7. Secure the platform interlock harness, control box harness, and safety pan harness under the carriage flange clip. ***See Figure 4-23.***

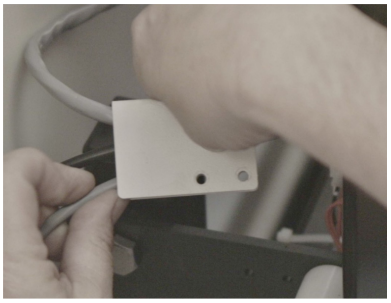


Figure 4-23

8. Remove the platform gate jumper plug from the trailing cable and plug the platform gate interlock cable into the trailing cable.

INSTALLING THE AUTO-FOLDING RAMP

1. If an auto fold ramp option is being installed, the ramp brackets must be installed with the hardware and washers included with the ramp pivot tab brackets. Attach the two ramp pivot tabs to the lower landing sides of the platform using the (4) ¼"-20 x 2" bolts and (4) washers that go between the pivot bracket and platform. ***See Figure 4-24.***



Figure 4-24

2. Attach the ramp to the pivot bracket with the supplied shoulder bolts and nyloc nuts using 5⁄32" hex wrench and 7⁄16" boxed end wrench to tighten the fasteners. ***See Figure 4-25.***



Figure 4-25

3. Remove the three (3) screws holding the tower skins to the tower and install the ramp actuator tube in the orientation shown below using the hardware that was previously removed. ***See Figure 4-26.***



Figure 4-26

NOTICE

The curved corner of the ramp roller guide is oriented up.

4. Adjust actuator ramp arm, so that it is lined up with the actuator tube. Tighten the two Allen bolts from the ramp to the ramp arm. ***See Figure 4-27.***

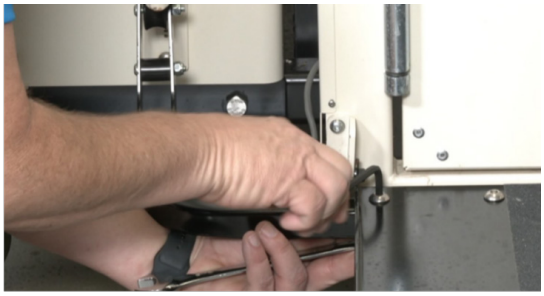


Figure 4-27

NOTICE

If you have a platform gate and auto-folding ramp, the ramp brackets are different. The angle brackets are attached to the gate frame.

FASCIA PANEL INSTALLATION

The fascia panel sections are available in 53" and 24" heights and 43" and 49" widths. Custom fascia panel heights can be special ordered. Fascia panels must provide a smooth surface for the platform edge to run against to prevent any shear or obstruction hazards. They must be fastened beneath the opening and adjacent to each other with no overlapping or gaps between them.

The upper landing of a deck with an opening underneath requires a fascia wall.

NOTE: It may be necessary to stud up the wall to give the fascia panel something to fasten to.

Once the structure is in place, fasten the fascia panel to it.

Use temporary power and the platform control box to run the lift up and down to check for a horizontal gap between the upper landing and the platform. The gap must be no less than ⅜" and no greater than ¾". ***See Figure 4-28.***



Figure 4-28

INSTALLING THE TOP LANDING GATE

NOTE: If the call/send switch is installed in the gate, the wires are routed between the gate and to the top of the tower. If the call send is located outside the gate, the wires are routed from the gate to the call send box and then from the box to the top of the tower.

⚠ WARNING

The top of the gate must be attached to a supporting structure. The gate is not designed to be freestanding. Reference Typical Drawing ENG-000847 Landing Gates.

⚠ WARNING

Disconnect all power before making any electrical connections.

1. Remove small screws and post cover on both sides of the landing gate with a No. 1 Phillips screwdriver.
2. Create the necessary space below the gate sill so the wire can be routed into the gate post through the wire routing slot in the bottom of the gate mounting flange. ***See Figure 4-29.***

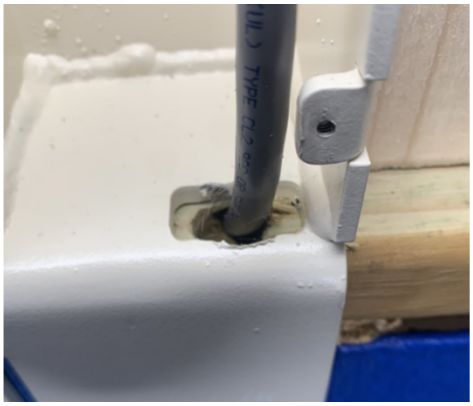


Figure 4-29

3. With the gate in the open position, place it in between the upright structural supports. ***See Figure 4-30.***

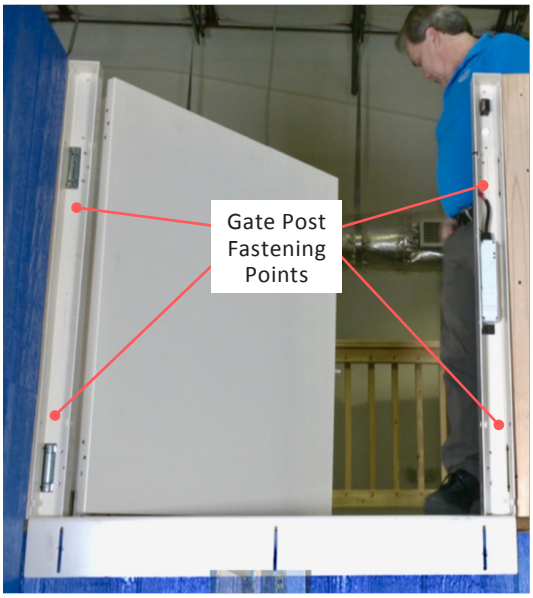


Figure 4-30

4. Use a level to ensure the gate is aligned with the opening. ***See Figure 4-31.***



Figure 4-31

5. Use the two (2) access holes on each side of the gate to fasten it in place. Fasteners are NOT supplied, ¼" x 2" lag bolts are recommended. Fasteners with a low-profiled head are recommend for the horizontal mounting surface of the bottom gate mounting flange. Counter sunk screws should be used on the top of the gate flange. ***See Figures 4-32 through 4-34.***



Figure 4-32



Figure 4-33



Figure 4-34

6. Run the wire through the wire routing slot and to the interlock. ***See Figure 4-29 on page 20.***

7. Plug the 3-pin and 4-pin connections together. ***See Figure 4-35.***

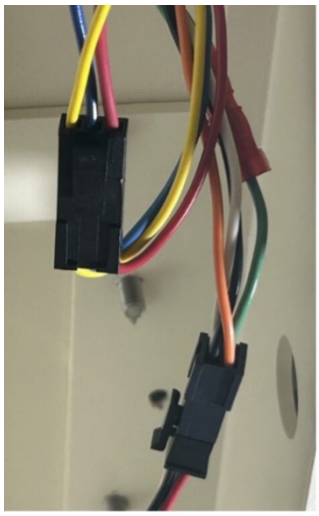


Figure 4-35

8. Landing gate interlock keeper is shipped loose, align keeper to interlock and secure keeper to gate.

NOTE: Gates are field reversible (contact Harmar Technical Service for instructions).

LOWER LANDING CALL STATIONS

Check your state and local codes (ASME A18.1-2020) for mounting height locations for the call stations.

Call stations can be mounted on a surface or flush-mounted on a 2-gang outlet box.

1. Remove four (4) label plate screws and label plate. ***See Figure 4-36.***

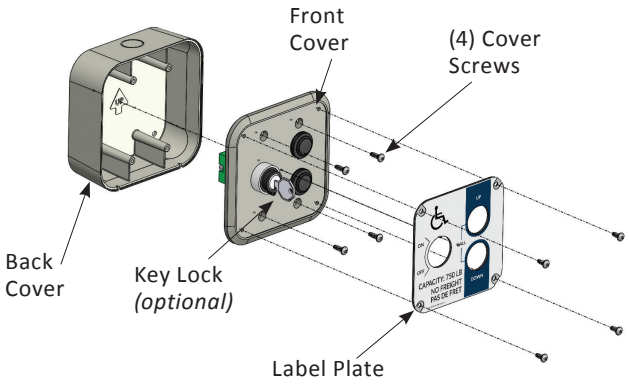


Figure 4-36

2. Remove four (4) cover screws and the front cover from the back cover.
3. Plug the 3-pin connectors together. ***See Figure 4-37.***

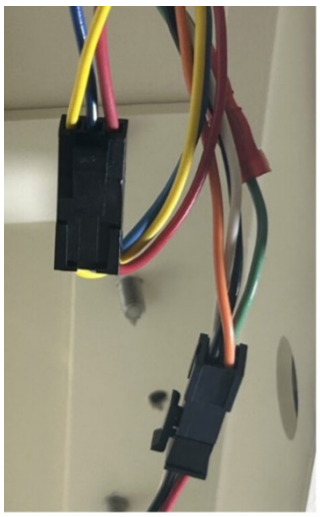


Figure 4-37

4. If using the back cover for a wall mount setup, cut out the desired knock-out for wire routing. There are four (4) knockouts on the back cover. Two (2) on the back surface, one (1) on the top and one (1) on the bottom.
5. If using a flush-mounted setup the back cover can be discarded.
6. Mount back cover to the wall using appropriate fasteners through four (4) holes in the back surface of the back cover.
7. Install the front cover to back cover or in-wall outlet box with four (4) cover screws.
8. Install label plate on the front cover with four (4) label plate screws.
9. If the routing of the wires changes, be sure to zip tie them out of the way of moving parts (ex. Carriage rollers).

INTERLOCKS

The approved interlocks (EMI) are Harmar and Honeywell. ***See wiring sections pages 29-31.***

INSTALLING FIXED RAMPS

1. Position ramp ⅜" to ¾" from the platform opening.
2. Anchor the ramp to the concrete pad. ***See Figure 4-38.***



Figure 4-38

SETTING THE LIMIT SWITCHES

The upper and lower limit switches are set from the factory will need to be adjusted based upon the landing heights at the installation site.

1. Raise the platform so it is level with the upper landing.
2. Loosen the bolts on the upper limit switch assembly. Slide the assembly up or down as needed until the switch makes contact with the carriage and makes a clicking sound. Re-tighten the bolts. ***See Figure 4-39.***

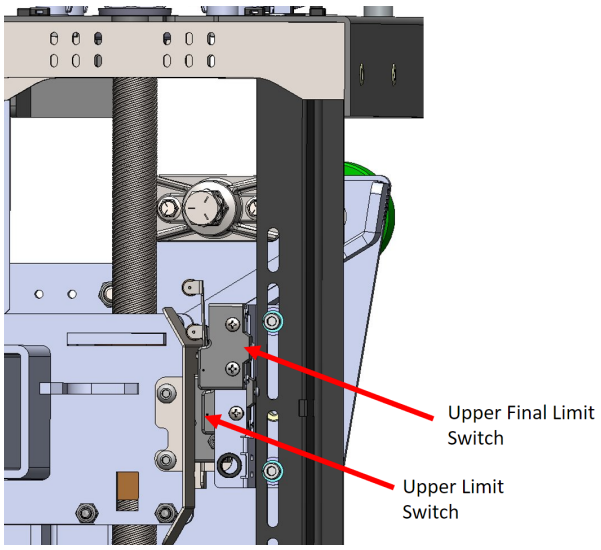


Figure 4-39

3. Repeat for lower limit switch.

FINAL POSITIONING AND ANCHORING

79" of overhead clearance is required above the platform floor when the lift is at the upper landing.

Position the lift in its final location.

Verify that the tower front and sides are plumb and all running clearances are the proper dimensions. Shim if necessary. **Wood shims must never be used.**

Install two (2) anchors at the back of the tower and two (2) anchors into the tower legs. ***See Figure 4-40.***

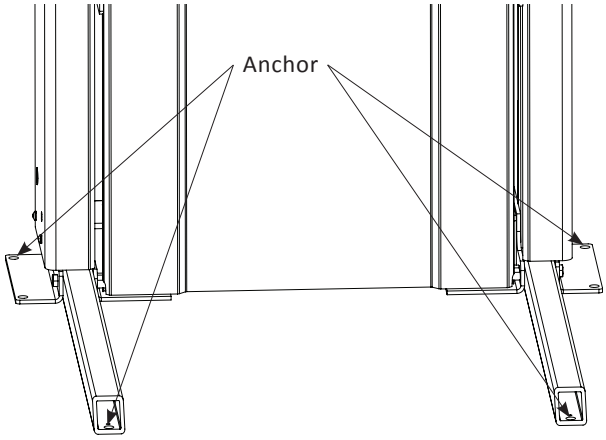


Figure 4-40

INSTALLATION TOWER CHECKS

Before reinstalling the top cap and front panels, an operational check should be completed on the internal tower safety features.

- ☐ Verify that the ACME drive screw is lubricated.
- ☐ Ensure all unnecessary jumpers are removed from the Trailing Cable and AC Controller connectors.
- ☐ Verify that the shipping bolt was removed from the cable tensioning pulley and that the pulley is hanging in the tower without hitting any obstacles during platform travel.
- ☐ Apply temporary power.
- ☐ Verify that the E-Stop is functional with no lift movement.
- ☐ Manually depress the final limit switch (the highest positioned switch) and verify any travel of platform is prevented.
- ☐ Harness should be removed from the trailing cable to simulate safety nut switch activation.
- ☐ Manually depress the safety nut switch (the switch near ACME nut) and verify any travel of platform is prevented.
- ☐ While lowering the platform, lift the Safety Pan under the platform to confirm it stops travel in the Down direction. Travel in the Up direction should not be affected.
- ☐ Manually depress the Over-Speed Governor (OSG) switch (the switch at the bottom of ACME screw) and verify any travel of platform is prevented.
- ☐ If equipped, lift the float of the float switch (the switch at the bottom of the tower) and verify that DOWN travel is prevented.
- ☐ Verify that open gates/door prevent platform travel.
- ☐ Verify that the manual lowering wrench is in place and secured on the top plate with wing nuts.

PERMANENT POWER INSTALLATION

Permanent power can be installed at various points in the overall installation process; however, it must be installed by a qualified electrical contractor in compliance with local codes and regulations. The VPL battery charger must be connected to a properly grounded 120VAC outlet. ***See Figure 4-41 and reference enclosed for wiring details.***

The power can be routed through most convenient knock-out in the tower side panels. Be sure all wiring is routed clear of the moving carriage and roller wheels inside the tower. ***See Figure 4-41.***

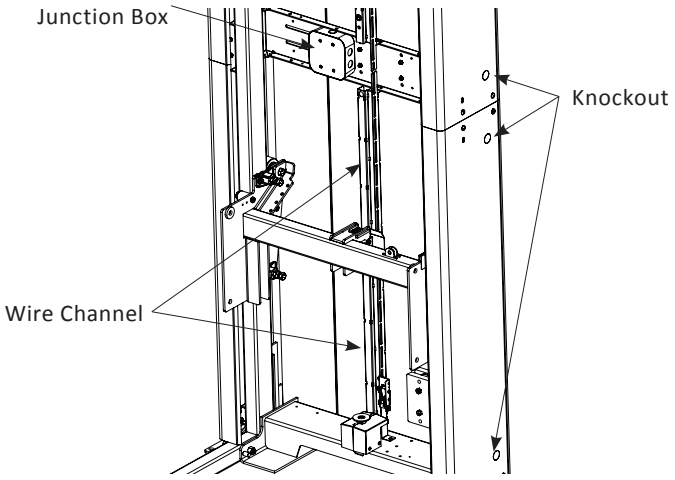


Figure 4-41

FINAL INSTALLATION

⚠ WARNING

Jumpers MUST be removed at completion of installation and confirm safety features are operational.

1. If a platform gate is present, remove the platform gate jumper and plug in the platform gate cable shown. ***See Figure 4-10.***

   If a platform gate is not included, leave the platform gate jumper installed.

2. Remove the safety pan jumper and plug in the platform safety pan harness. ***See Figure 4-10.***

3. Mount the cab control on the platform guard panel.

OPERATIONAL CHECK

Upon installation and at scheduled intervals the operation of the VPL must be verified.

- ☐ Apply power.
- ☐ Paddle/buttons on cab controls control UP and DOWN travel.
- ☐ E-Stop PRESSED IN stops and prevents travel of platform. Button illuminates and alarm sounds (if equipped).
- ☐ Key switch (if equipped) OFF stops and prevents travel.
- ☐ Landing switches stop the platform at each landing within ½", does not coast, and opens the gate locks.
- ☐ Open gates prevent any travel of the platform. If not, check the platform gate cable is plugged into the trailing cable and the Upper landing gate EMI is connected.
- ☐ Call Station buttons control UP and DOWN travel.
- ☐ Key switch (if equipped) OFF on Call Stations stops and prevents travel from Call Station.
- ☐ Safety pan switches depressed prevent DOWN travel and allows UP travel (check several locations).
- ☐ Pit switch (if equipped) prevents UP and DOWN travel.

SECTION 5

INSTALLATION QUICK START

ELECTRIC CONTROL

Upon completion of the installation, it is imperative to review all contents of the Owner's Manual with the customer and provide a thorough demonstration and familiarization of the lift.

In residential applications, this is should be conducted with the end-user and any or all of the following: the homeowner, family members, caregiver, etc. You should not leave until the end-user or primary lift operator has demonstrated they can use the lift properly.

PROVIDE OVERVIEW

- ☐ Review all warnings
- ☐ Describe how the lift works and familiarize with key components
- ☐ Pre-use inspection

REVIEW CARE AND MAINTENANCE

- ☐ Keys
- ☐ Maintenance items
- ☐ Inspection items
- ☐ Rust prevention

DESCRIBE AND DEMONSTRATE PROPER USE AND EACH KEY

- ☐ Call/Send
- ☐ Entrance and positioning
- ☐ Ascend/Descend
- ☐ Emergency lowering



NOTICE

Be sure to leave the user with the Owner's Manual and that your contact information has been written into it as well as on the labels in the cab and on the tower. Have them complete the Warranty Registration while you are there.

QUICK START CHECKLIST

SITE PREP

- ☐ Code Compliance
- ☐ Upper Landing
- ☐ Foundation Level
- ☐ Electrical

Code: ASME 18.1-2020 relative to residential, NAEC and Local Building; NFPA 70 (electrical code).

POSITION LIFT BENEATH LANDING

- ☐ Remove Top Cap
- ☐ Remove Front Panel
- ☐ Verify Overhead Clearance at 79" min

TIP: Use material handling equipment with lifting straps to avoid injury/damage.

ASSEMBLE PLATFORM

- ☐ Attach Platform to Carriage
- ☐ Bolt on Side Walls
- ☐ Attach and Wire Control Panel
- ☐ Auto Ramp*

Tip: Use 2'x4' beneath platform base when connecting to carriage.

INSTALL LANDING GATE*

- ☐ Screw to Landing
- ☐ Pre-run Wiring

INSTALL FASCIA PANEL*

- ☐ Attach to Open Areas Under Gate
- ☐ Ensure Smooth, Flush
- ☐ No Gaps, Protrusions etc.

TIP: Use flat screw heads to avoid protrusions.

FINAL POSITIONING & ANCHORING

- ☐ Level and Perpendicular
- ☐ Anchor Tower Legs
- ☐ Anchor Tower to Structure
- ☐ Fixed Ramp Securement*

VERIFY CLEARANCES:

- ☐ Platform opening to landing: ⅜" - ¾"

WIRING & ELECTRICAL

- ☐ Gates*/Doors/Interlocks
- ☐ Call/Sends*
- ☐ Properly Grounded Outlet

TIP: Use knockouts provided along tower to minimize wire distance.

FINAL

- ☐ Perform Final Function Tests
- ☐ Insert permanent power installation
- ☐ Reattach Top Cap and Front Cover
- ☐ Operator Familiarization
- ☐ Complete Warranty Form
- ☐ Write Date/Info on Lift

** If required/included*

INSTALLATION TOWER CHECKS

Before reinstalling the top cap and front panels, an operational check should be completed on the internal tower safety features.

- ☐ Verify that the ACME drive screw is lubricated.
- ☐ Ensure all unnecessary jumpers are removed from the Trailing Cable and AC Controller connectors.
- ☐ Verify that the shipping bolt was removed from the cable tensioning pulley and that the pulley is hanging in the tower without hitting any obstacles during platform travel.
- ☐ Apply AC power.
- ☐ Verify that the E-Stop is functional with no lift movement.
- ☐ Manually depress the final limit switch (the highest positioned switch) and verify any travel of platform is prevented.
- ☐ Harness should be removed from the trailing cable to simulate safety nut switch activation.
- ☐ Manually depress the safety nut switch (the switch near ACME nut) and verify any travel of platform is prevented.
- ☐ While lowering the platform, lift the Safety Pan under the platform to confirm it stops travel in the Down direction. Travel in the Up direction should not be affected.
- ☐ Manually depress the Over-Speed Governor (OSG) switch (the switch at the bottom of ACME screw) and verify any travel of platform is prevented.
- ☐ If equipped, lift the float of the float switch (the switch at the bottom of the tower) and verify that DOWN travel is prevented.
- ☐ Verify that open gates/door prevent platform travel.
- ☐ Verify that the manual lowering wrench is in place and secured on the top plate with wing nuts.

FINAL INSTALLATION

1. Install the front panel between the platform and tower. Slots in the bottom of the front panel should rest on the pins in the tower. Install five (5) ¼"-20 screws and plastic washers at the top front panel leaving the top three (3) screws loose and ¼" offset from the panel.
2. Disconnect the power to the lift. Slide the top cap over the top of the tower aligning the top cap slots with the four (4) side screws and three (3) front screws. There are tabs in the back of the top cap that drop into slots in the tower top plate. These tabs must drop into the slots for the top cap to sit down on all seven (7) screws. Tighten seven (7) ¼"-20 screws securely against the top cap. Reconnect the power to the lift.

UPPER LANDING WIRE CONNECTIONS

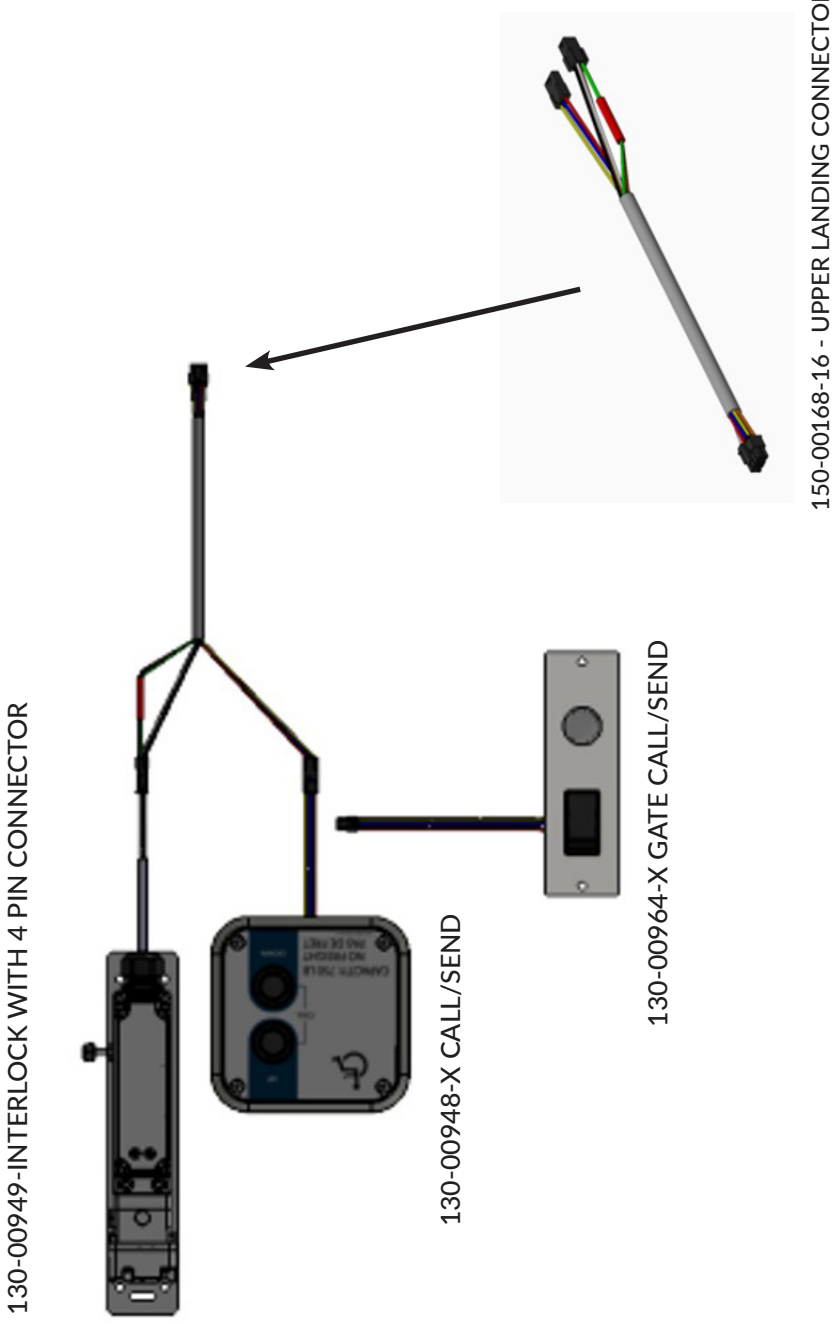


Figure 6-1

PLATFORM GATE WIRE CONNECTIONS

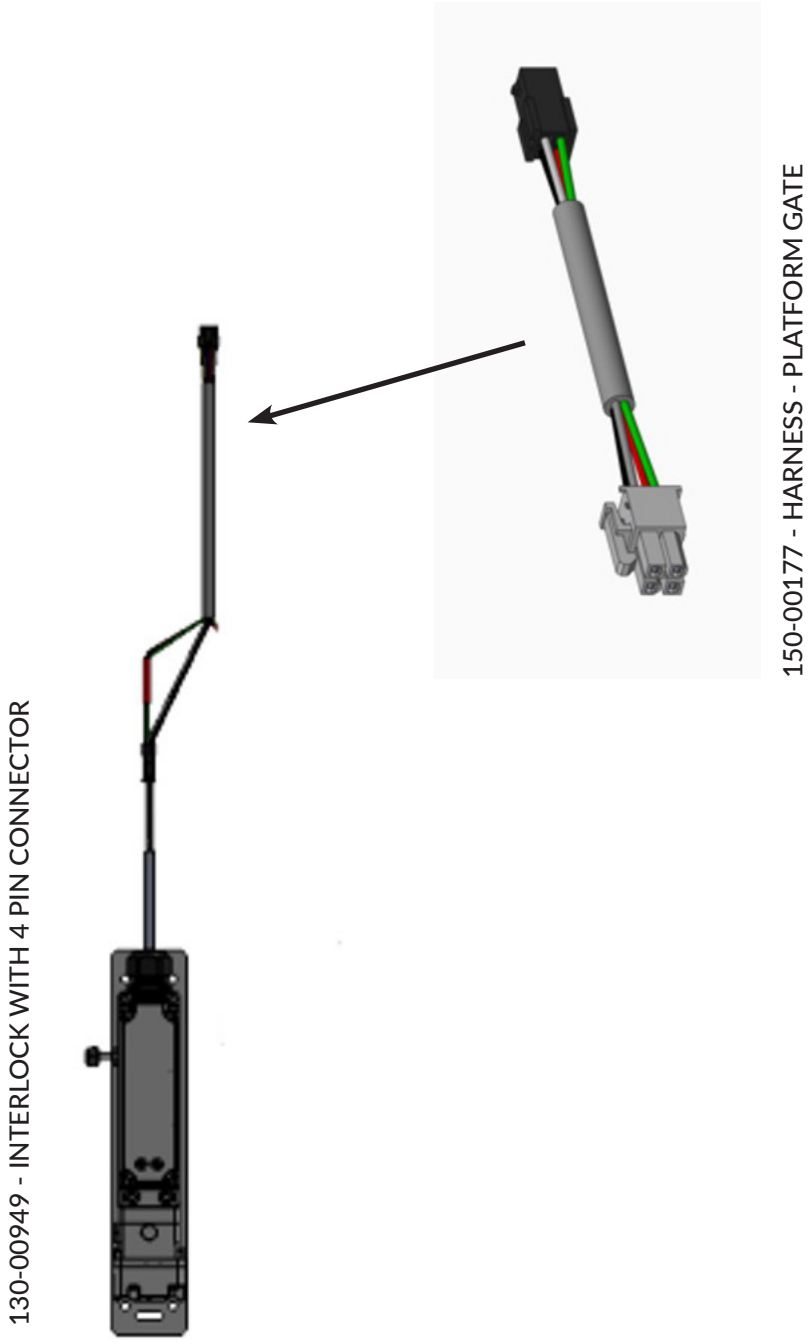


Figure 6-2

LOWER LANDING WIRE CONNECTIONS

150-00205 - LOWER LANDING CONNECTOR



130-00948-X CALL/SEND

Figure 6-3

SECTION 7

TROUBLESHOOTING

A BRAKE RELEASE toggle switch is only used during emergency lowering of the platform or positioning the platform during installation when power is not applied to the unit. ***See Figure 7-1.***

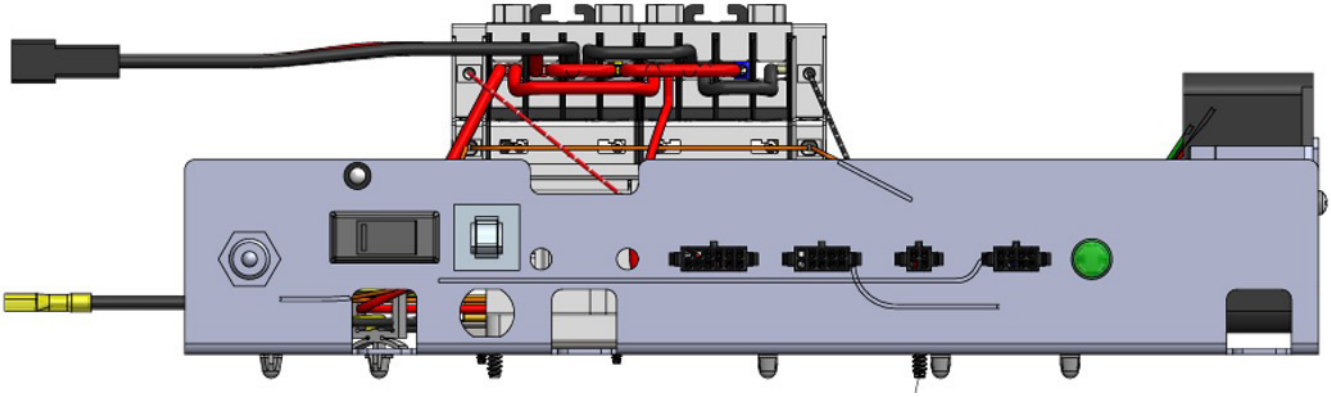


Figure 7-1

⚠ WARNING

If the brake release switch is enabled, the platform may drift. This should only be used in emergency lowering situations or during installation. Toggle switch should be flipped "down" during normal operation.

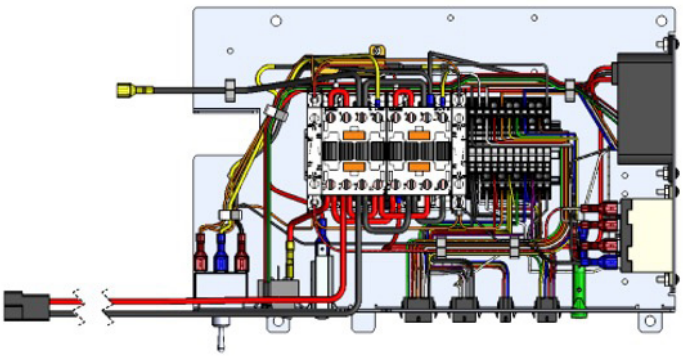


Figure 7-2

15A BREAKER

The unit has a 15A breaker equipped for the motor circuit. If tripped, it can be reset to restore normal function.

2A BREAKER

The unit has a 2A breaker equipped for the interlock circuit. If tripped, it can be reset to restore normal function.

CONTACTOR TRAY

The Contactor Tray contains all electrical wiring for the contacts. ***See Figure 7-3.***

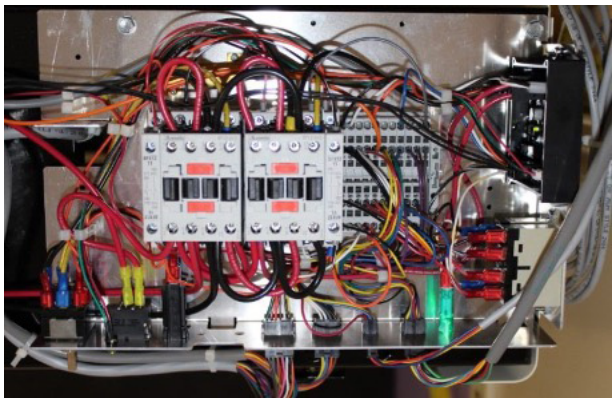


Figure 7-3

UP AND DOWN CONTACTORS

Both contactors have 3-poles with an auxiliary circuit that are switched by 48V DC coils. On top of the contactors is a switch position indicator that can be observed to verify switching is occurring properly. Contactors operate independently and are controlled by the control board.

⚠ WARNING

Do not manually switch the position indicator as all safeties would be bypassed.

BRAKE RESISTOR

The Brake resistor electronically slows the motor quickly via eddy current braking. When both contactors are OFF the resistor essentially shorts the motor leads which resists motor shaft rotation. Braking is proportional to motor speed, so this brake slows the motor very quickly, but does not hold the motor from drifting after it stops.

The electromagnetic holding brake on the motor is engaged after the motor comes to a stop. If the platform is taking too long to come to a stop there could be an issue with this resistor or the wiring on it. Ensure the BRAKE RELEASE toggle switch is in the down position.

GEARMOTOR

The VPL uses a ⅔ Hp gearmotor mounted to the top of the tower frame. The brake on the back of the gear motor is a “fail safe,” electromagnetic holding brake. The Motor Gearbox on the front of the motor is a vented 26:1 worm drive gear reduction with synthetic gear and bearing oil.

EMERGENCY LOWERING PROCEDURE

⚠ WARNING

Never exit an elevated platform unless it is fully parked at a landing. Do not attempt to manually lower the device while in the platform.

In the event that the lift becomes disabled with passengers on the platform that is not at a landing, it may be necessary/desirable to manually lower them prior to a technician arriving.

In that case, a manual lowering mechanism is located beneath the top cap of the lift. A person other than the lift passenger(s) will be required to make their way to the top of the tower to perform this procedure.

1. Use disconnect to remove all power from lift.
2. Loosen seven (7) screws around the perimeter of the top cap with a Phillips head screwdriver.
3. Flip the brake release switch up to make lowering easier.
4. Remove the two wingnuts holding down the manual lowering tool. ***See Figure 7-4.***

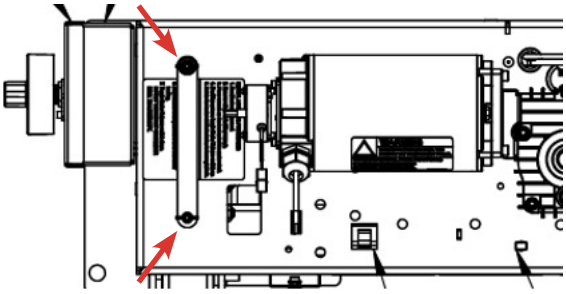


Figure 7-4

5. The wrench fits over the ¼" hex shaft at the end of the drive motor. It is designed to be rotated by hand — clockwise, which will turn the screw and lower the platform. ***See Figure 7-5.***

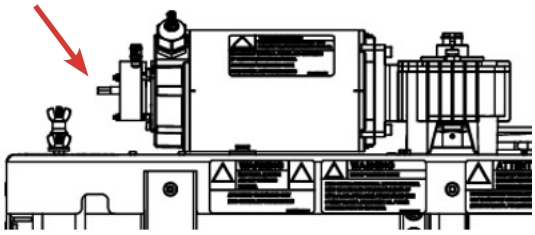


Figure 7-5

6. If you have a ⅜" drive ratchet or a cordless drill with a ⅜" socket adapter bit and a ¼" socket or ¼" hex bit extension *(not included)*, power the drill in the forward direction - rotating clockwise to lower the platform.

⚠ CAUTION

Do not use an impact or hammer drill to run the unit manually. Please us a drill at low speed or socket/ ratchet or manual wrench to avoid damage to the motor.

NOTE: The drive motor is equipped with a low holding force brake to prevent the platform from drifting with heavy loads. Lowering the platform with this brake on will require a bit of strength, typically the equivalent of being able to lift 20 lb with one arm.

7. Rotate the motor shaft clockwise to lower the platform.

NOTE: Do not attempt to raise the platform. The required torque to do so is substantially higher.

8. Stop rotation when the platform is level with the lower landing.
9. Return the Brake Release switch to the down position to re-engage the brake.
10. If the platform gate doesn't open, use the interlock key to open the gate from the outside.

⚠ WARNING

Wait for a Harmar dealer to service and inspect the lift prior to using it again.

SECTION 8

MAINTENANCE & INSPECTION

Annual inspections are required to help prevent unsafe conditions and operation.

RESIDENTIAL APPLICATIONS

OWNER / MAINTENANCE PERSONAL

BEFORE USE

Do not use lift until these conditions are rectified.

- All doors and gates are locked and secure.
- Ensure there is no standing water around the unit.
- Make sure the AC supply, to DC charger, is in good condition and that there are no cracks or gaps in conduit (if used).
- Make sure there are no obstructions intruding in the path of the lift.
  - People, tree branches, loose items, etc.
- Check that there is no loose hardware or emerging cracks/deformations in the platform and tower. Make sure that there are no unusual noise or vibrations that develop.

PERIODICALLY

- Check and ensure that the safety pan under the platform moves freely up and down and is not damaged. This is the built-in safety device designed to detect obstructions under the platform and stop platform downward motion. If for any reason the safety pan does not move as intended, please contact your dealer.
- Check and ensure that all labels are intact and legible. If any safety or warning labels need to be replaced, please contact your dealer.
- Make sure you have a copy of the Owner's Manual. A digital copy of the Owner's Manual is available at harmar.com.
- Check your key locks and emergency stop button for functionality. Ensure user understands overrides and understands how to manually open the gate in the event of an emergency. **EMERGENCY GATE KEY MUST BE LEFT WITH END USER.**
- Check for any rust that may be developing. Rust is expected in outdoor applications (especially in coastal areas), but with proactive maintenance or quick repair, this can be minimized.

IMPORTANT

Understanding State/Local Inspection Requirements and Timing - Always Required.

MAINTENANCE SCHEDULE

RECOMMENDED EVERY 6-MONTHS

NOTICE

We recommend this be performed by a qualified service technician.

- Check for motor gearbox leaks
- Check wear pads for gaps
- Lubricate ACME screw with Nook PAG-1 ACME Screw Grease
- Check all structural connections/hardware
- Inspect the safety brake
- Ensure the electrical disconnect works as intended
- Check all interlocks, and obstruction sensors

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