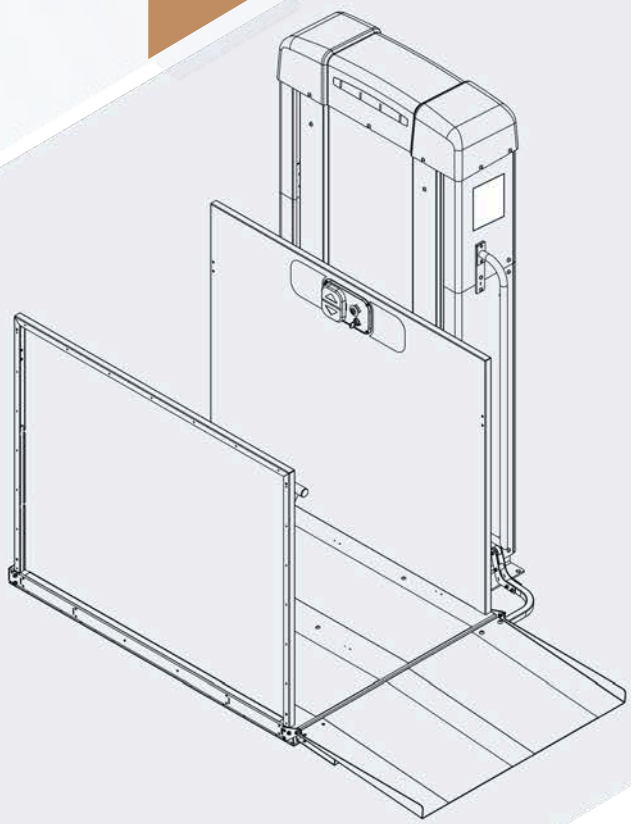
Freedom Easy Ride II
VERTICAL PLATFORM LIFT



INSTALLATION & SERVICE MANUAL

FREEDOM LIFT SYSTEMS

BY ACCESSIBILITY PROFESSIONALS

27SEP24 | 630-00113-01 G

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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 questions. 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 Accessibility Professionals' Customer Care Representatives at 877-947-7769.

SECTION 2

INTRODUCTION

DEVICE NAME: Freedom Easy Ride II - VERTICAL PLATFORM LIFT

Indications of Use: The Accessibility Professionals Freedom Easy Ride II 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 commercial facility or residential building.

READ AND UNDERSTAND

This manual provides instructions for the proper installation and service of the Accessibility Professionals Freedom Easy Ride II 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 www.freedomliftsystems.com for specifications on the lift model and configuration.

CODE STATEMENT

The Accessibility Professionals Freedom Easy Ride II lift has been designed to meet Safety standard ASME A18.1-2020 "Safety Standard for Platform Lifts and Stairway Chairlifts" under section 2 or 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 installer's 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

Commercial and 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 2 or Section 5. The Accessibility Professionals Freedom Easy Ride II 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

ASME A18.1 SECTION 2:
VERTICAL PLATFORM LIFTS

Section 2 applies to vertical platform lifts installed in locations other than in or at a private residence for use by the mobility impaired.

RUNWAYS

Runways shall be installed in accordance with 2.1.1, 2.1.2, or 2.1.3. Runway construction for lifts that penetrate a floor must comply with 2.1.1 and with the building code.

NOTE: There are 3 different sections of rules for a commercial application.

- *2.1.1 Runway Enclosure Provided*
- *2.1.2 Partial Runway Enclosure Provided*
- *2.1.3 Runway Enclosure Not Provided (code has a height restriction under rule 2.7)*

ASME A18.1 SECTION 5:
PRIVATE RESIDENCE VERTICAL PLATFORM LIFTS

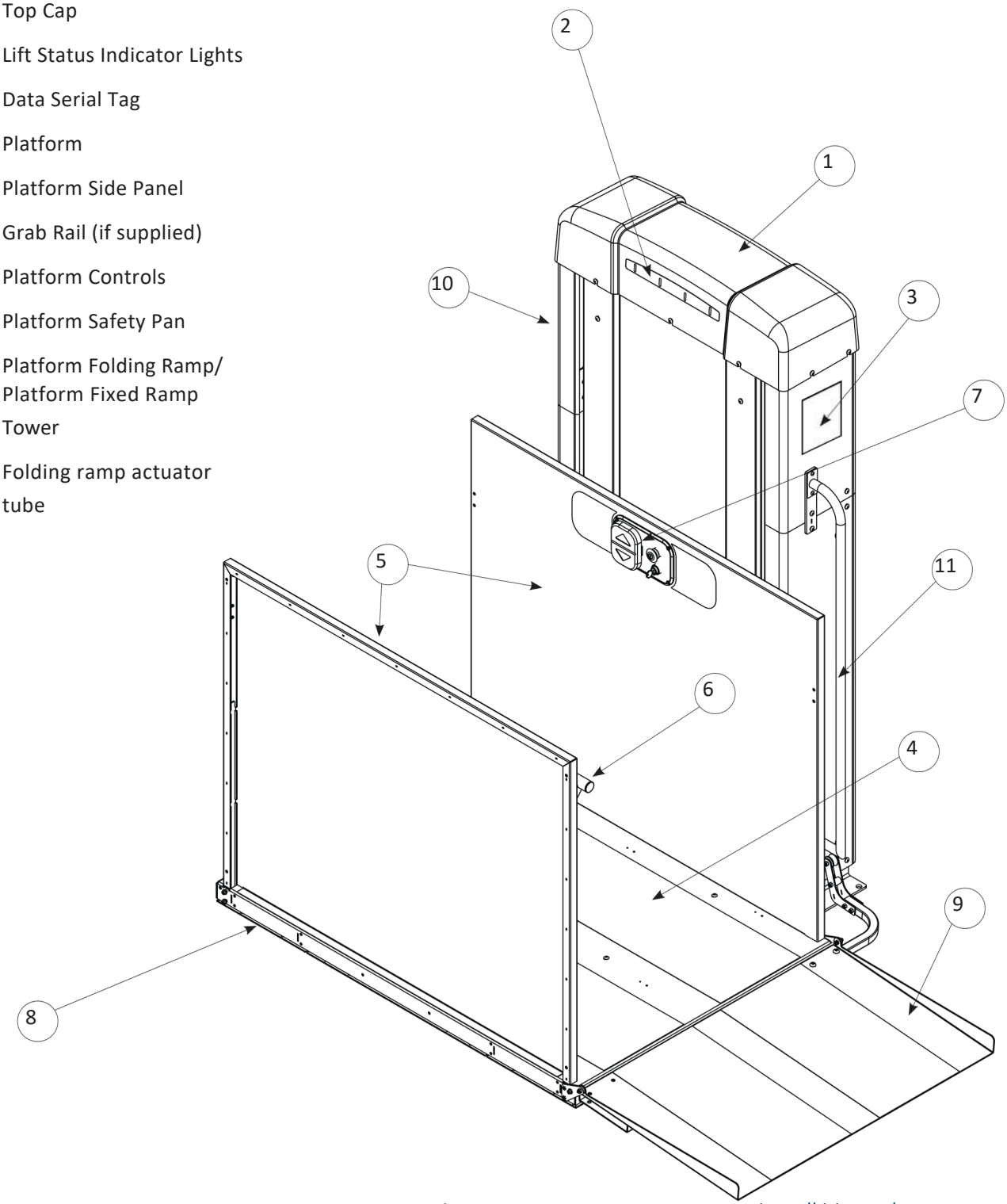
Section 5 applies to vertical platform lifts installed in or at a private residence for use by the mobility impaired.

RUNWAYS

Runways shall be installed in accordance with 2.1.1, 2.1.2, 2.1.3, or 5.1.1. Runway construction for lifts that penetrate a floor must comply with 2.1.1 and with the building code. Only lifts installed in conformance with 2.1.1 shall serve more than two landings.

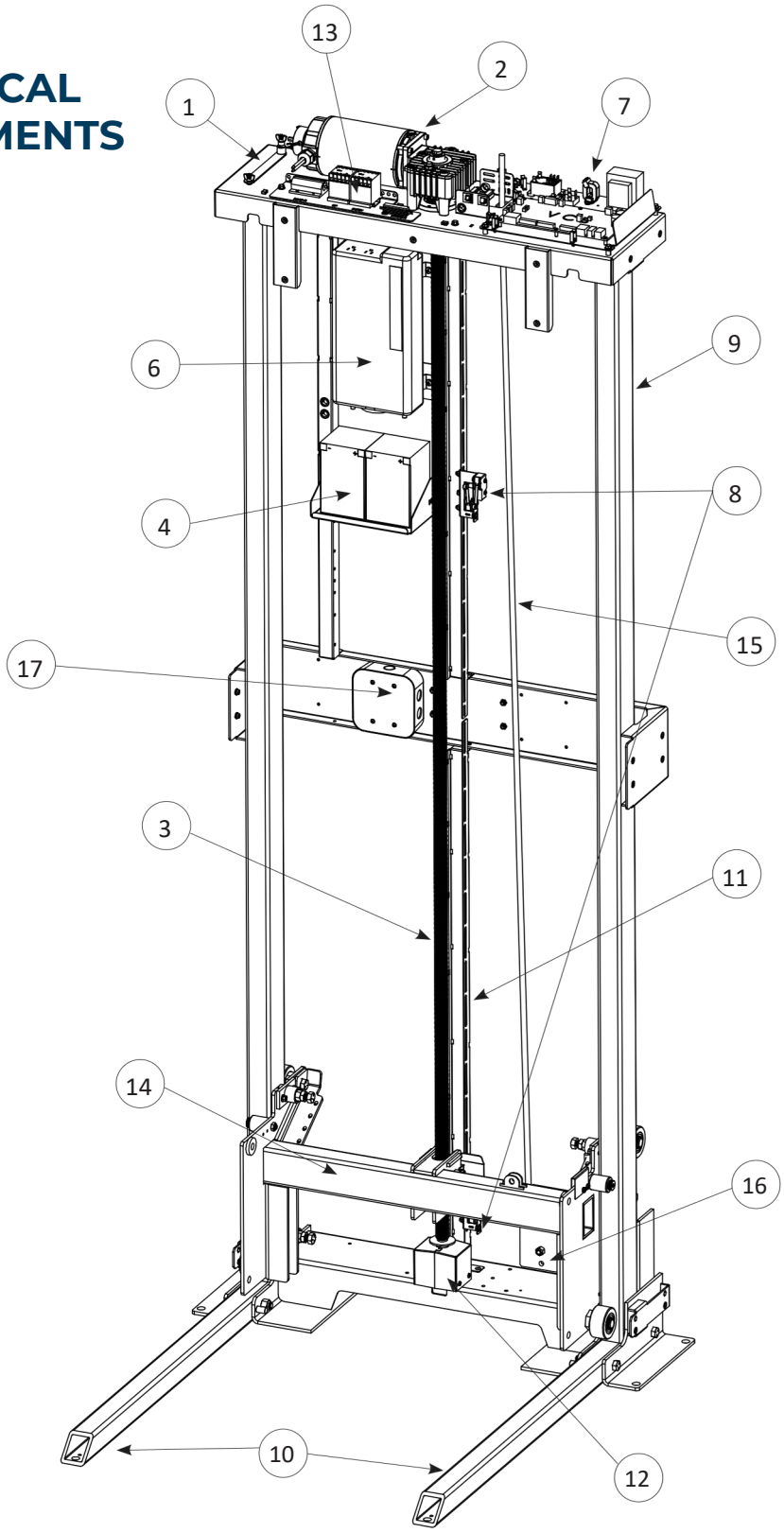
KEY VERTICAL PLATFORM LIFT ELEMENTS

1. Top Cap
2. Lift Status Indicator Lights
3. Data Serial Tag
4. Platform
5. Platform Side 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



KEY INTERNAL VERTICAL PLATFORM LIFT ELEMENTS

1. Manual LoweringTool
2. Motor / Gearbox
3. ACME Screw
4. Batteries *(if supplied)*
5. Battery Charger and assembly (tray) *(if supplied) (not shown)*
6. Inverter (if supplied)
7. Control Electronics Assembly
8. Upper / Lower / Final Limit Switches
9. Tower Frame
10. Tower Legs
11. Wire Channel
12. Over-Speed Safety Assembly
13. Motor Contactors
14. Carriage
15. Trailing Cable
16. Cable Tensioning Pulley
17. 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 Customer Care Team at 877-947-7769 or apsupport@accessibilitypro.com

REQUIRED TOOLS AND HARDWARE

- Tape Measure
- Grounding Strap
- Square
- Level
- Multimeter
- Wire Cutters, Wire Puller
- Stripper, Crimping Tool
- 3/8" Non-Hammer Drill
- Wrench Set:
  - 7/16"
  - 1/2"
  - 5/8"
  - 9/16"
  - 3/4"
- Allen Wrench:
  - 1/8"
  - 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
- 3/8" Nut Driver Bit (with 1.5" min reach) or 3/8" socket, extension and ratchet
- Concrete Drill Bits
- Temporary Power Means
- Precision Screwdriver Set
- Yellow / 74B wire Nut
- Anchors for Fixed Ramp *(if specified)*

RECOMMENDED TOOLS

- Work Lights
- Fish Tape
- 3/8" 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

REQUIRED COMPONENTS NOT SUPPLIED

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

- Indoor applications use 30-AMP 120V 2-pole fusible & lockable disconnect. (NEMA 1) for outdoor applications use 30-AMP 120V 2-pole fusible & lockable disconnect (NEMA 3R).
- Wire, Conduit and Disconnect to meet NFPA 70 code.
- Dedicated Electrical Lead (per local code).
- Fasteners for top gate and call/send boxes.

NOTICE

Battery back-up units require the disconnect to disconnect both AC and DC power to the lift. Requirement per NFPA 70.

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 with or exceeds Accessibility Professionals' 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 Accessibility Professionals supplied equipment (power door openers, interlocks, and/or door strikes) are going to be used, check compatibility with Accessibility Professionals equipment.
- The front tower panel and the top cover must be removed before any power, gate/door, 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 1/8"-1/4" 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 1/4" 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 7/8".

- Accessibility Professionals recommends securing the lift using our Anchor Kit

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

NOTE: Doors and frames are required to be flush to the hoistway interior wall of the hoistway required by ASME A18 .1.

HOIST WAY (SHAFT)

If a shaft is needed and is being built by someone other than the installer, it's important to provide detail drawings and specifications for the shaft way to the builder. The drawings must include any rough in electrical requirements for gate/door, interlock, or call send wiring.
NOTE: Hoistway must comply with the IBC or IRC building codes.

MATERIAL HANDLING

⚠ CAUTION

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

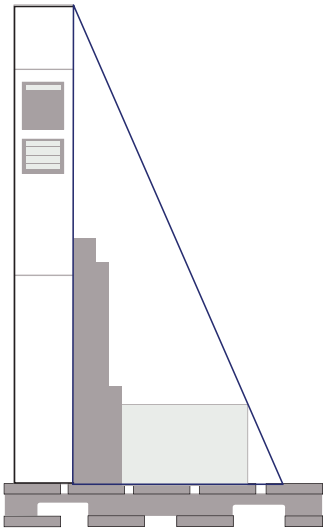
- It may be necessary to move the VPL around once it's on the job site. Extra material handling equipment such as manual carts, a pallet jack, fork lift, and/or crane may be needed. There may be times when VPL will have to be moved

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 4' 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 3/4" wrench socket to remove screws. ***See Figure 3-1.***



- VPL's weigh approximately 800 lbs. The following may be necessary to assist in positioning:
  - Additional Manpower
  - Fork Lift
  - Pallet Jack
  - Lever Bar Dolly

BOX CONTENT

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

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

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 and lifting the top cap partially, then disconnect the cable for status indicator lights from the control board. Then partially lift the cap and unplug the LED status harness from the LED circuit board on the top cap. ***See Figures 4-1 and 4.2.***

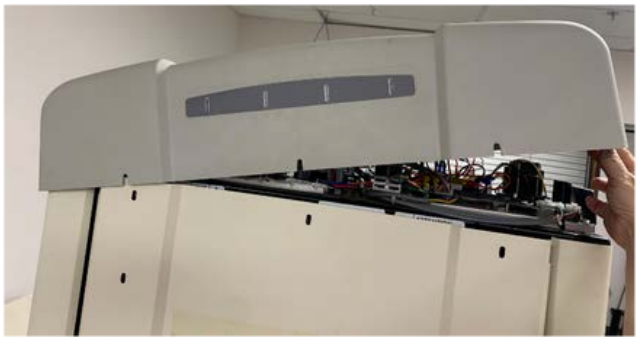


Figure 4-1

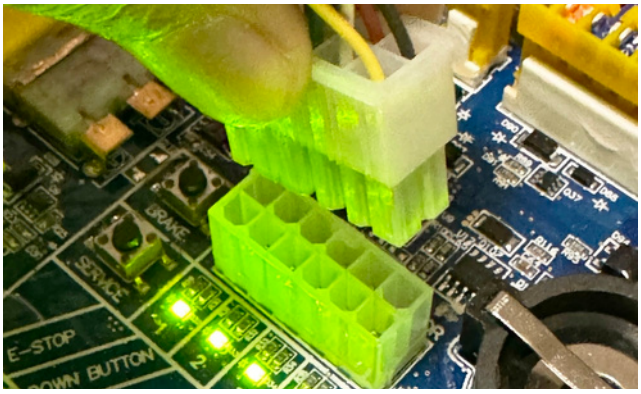


Figure 4-2

⚠ CAUTION

Be careful when removing the top cap as the status indicator cable is clipped to the harness and could result in wires being pulled and damaged.

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

Figure 4-3

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 4-4 and 4-5.***

Figure 4-4

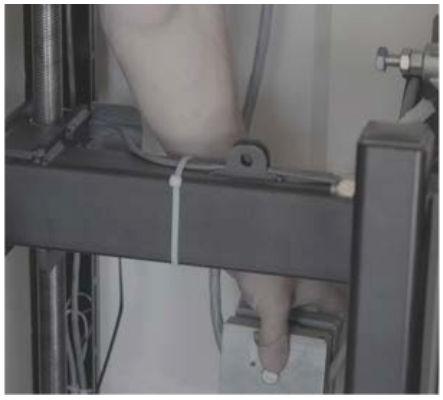


Figure 4-5

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. Connect the 8-pin platform control box, plug to the matching 8-pin plug of the travel near the top of the carriage flange. ***See Figure 4-6.***

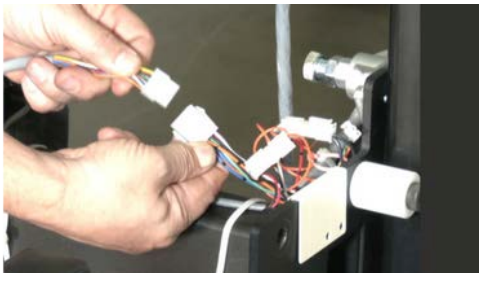


Figure 4-6

TEMPORARY ELECTRICAL CONNECTION

1. Remove the 4X screws on the junction box cover inside the tower. Retrieve the temporary power cord from the parts kit. Route stripped endof the wire into the junction box. ***See Figure 4-7.***

Figure 4-7

2. Connect the black wire to the black wire, white wire to the white wire, and connect the green wire to the green wire. If a battery backup is included, there will also be two (2) brown wires in the junction box. The two (2) brown wires get tied to each other. ***See Figure 4-8.***

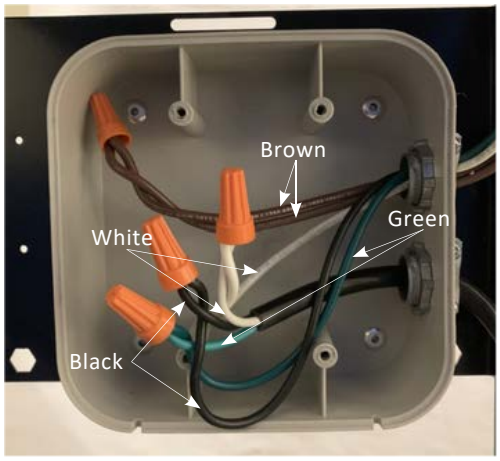


Figure 4-8

⚠WARNING

Verify that hot, neutral and ground conductors where the temporary power cord will connect are correct. Incorrect wiring or lack of ground could cause unit malfunction.

3. Route the temporary cord along the wire channel, run it through one of the knockout holes at the top or bottom of the large side panels and then plug it into 120-volt source outlet. ***See Figure 4-9.***

Figure 4-9

NOTICE

This section is for supplying temporary power to the lift for positioning and installation. If permanent power is being implemented at this stage, please ***refer to page 30*** *for permanent power installation.*

SERVICE MODE

To operate the trolley prior to gate and platform set up, you can put the lift into a temporary "Service Mode" that bypasses the need to wire the safety switches for 30 minutes. *NOTE: The lift will run "UP" in "Service Mode" but not down. This will allow you to move the carriage in the "UP" direction and put the lift carriage legs on.* DO NOT jump the safety pan out.

1. Bridge the connection on the 2-pin safety pan plug located at the upper section of the carriage flange. ***See Figure 4-10.***

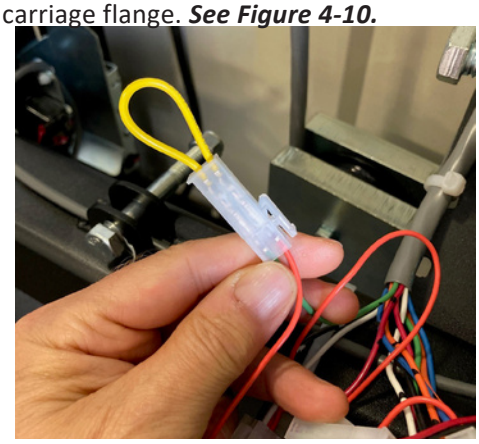


Figure 4-10

2. Swipe a pocket magnet back forth between the blue paddle and the E-stop switch to activate service mode or press and release the service mode button on the PC board. ***See Figures 4-11 and 4-12.***

Figure 4-11

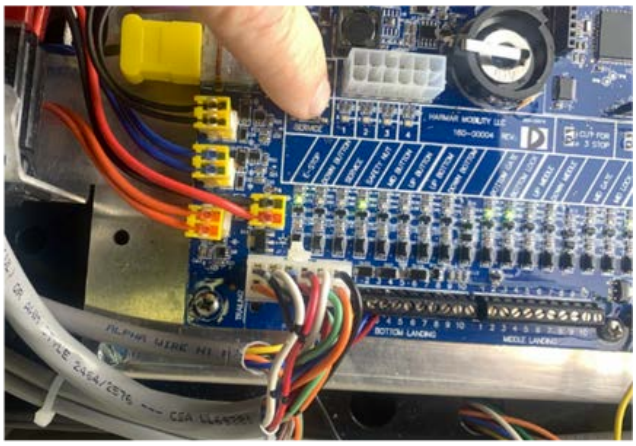


Figure 4-12

4' TOWER APPLICATIONS PLATFORM CONNECTION

1. Fasten the platform arms to the carriagewith the 4 ½"-13 x 3 1/4" bolts using ¾" tools using the low profile nyloc nuts on the lower bolts and a standard nyloc nut on the upper bolts. ***See Figure 4-13.***

Figure 4-13

2. Slide the platform onto the carriage arms then fasten it in place with the 6 ¼"-20 X 5/8" Phillips head screws using a Phillips screwdriver. ***See Figure 4-14.***

Figure 4-14

ROUTING INTERLOCK & CALL/SEND WIRES INSIDE THE TOWER

Depending on the configuration call/send andor

interlock wires will be wired directly to the control board and coiled up at the top of the tower.

1. Uncoil any wires temporarily zip tied to the underside of the tower top plate and route it into the wire channel. ***See Figure 4-17.***

Figure 4-17

2. If the configuration comes with a coil of wire in the small parts box, it must be connected to the PC board and routed to the wire channel. ***See Figure 4-18.***

Figure 4-18

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.

INSTALLING PLATFORM GUARD PANELS STRAIGHT THROUGH CONFIGURATION

1. Remove the four(4)1/4" - 20x4" 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. ***SeeFigure4-19.***

Figure 4-19

3. Fasten in place with four (4) 1/4"- 20 x 2" hex head bolts. Using a 3/8" 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 20.***

Figure 4-20

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 1/8" turn rotating back and forth between the bolts until the panels are not loose. ***See Figure 21.***

Figure 4-21

INSTALLING A PLATFORM GATE (IF REQUIRED)

1. Place the gate onto the platformfloor and align the gate tabs with the threaded holes on the side panels. ***See Figure 4-22.***

Figure 4-22

NOTICE

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

2. Install four (4) 1/4" -20 x 5/8" screws through tabs in gate frame into threaded holes on platform panels. Using a 3/8" open end wrench to tighten the screws. ***See Figure 4-23.***

Figure 4-23

NOTICE

There are 3 more 1/4"-20"5/8" screws that go through the bottom of the platform gate tube and 3 plastic caps to cover the holes.

3. Using a #1 Phillips screwdriver remove the covers screws. ***See Figure 4-24.***

Figure 4-24

4. If a right-hand platform gate is installed the interlock harness must be routed through the hole. ***See Figure 4-25.***

Figure 4-25

5. Continue routing through the bottom tube and out the other end. Install the rectangular caps into the bottom gate tube. Remove the cap and fish the wire through the round hole in the gate frame and go through the bottom frame of the platform gate. ***See Figure 4-26.***

Figure 4-26

6. Secure the platform interlock harness, control box harness, and safety pan harness under the carriage flange clip. ***See Figure 4-27.***

Figure 4-27

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

NOTICE

If the unit has a platform gate, we do not ship a jumper in the travel cable harness.

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) 1/4"-20 x 2" bolts and (4) washers that go between the pivot bracket and platform. ***See Figure 4-28.***

Figure 4-28

2. Attached 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 4-29.***

Figure 4-29

NOTICE

Brackets will differ, if a platform gate and auto folding ramp are installed.

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 4-30.***

Figure 4-30

NOTICE

The curved corner of the ramp roller guide is oriented up. For taller towers, the ramp roller guide has 3 mounting points and it's necessary to remove a knockout in the side panel to mount the tube.

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 4-31.***

Figure 4-31

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 4-33.***

Figure 4-33

3. With the gate in the open position, place it in between the upright structural supports. ***See Figure 4-34.***

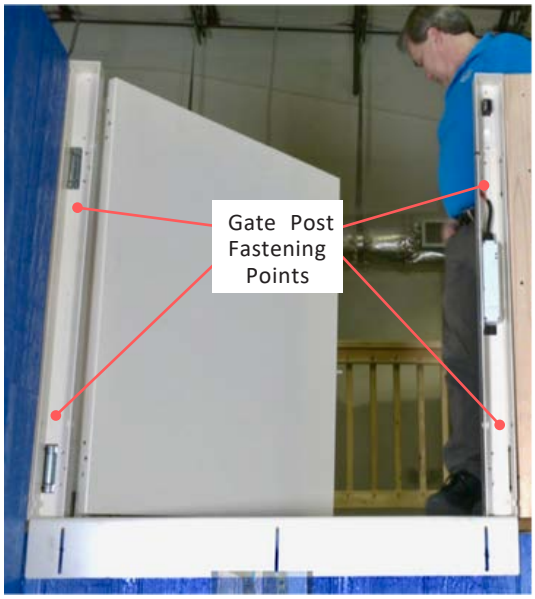


Figure 4-34

4. Use a level to ensure the gate is aligned with the opening. ***See Figure 4-35.***

Figure 4-35

NOTICE

The top landing gate should be centered with the platform center.

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 4-36 through 4-38.***

Figure 4-36

Figure 4-37

Figure 4-38

6. Run the wire through the wire routing slot and to the interlock.
7. Cut the wire to length and strip the wire conductors.
8. Connect the interlock wires and the gate call/ send switch. ***Reference Quick Wiring starting on page 35.***
9. Reinstall interlock, gate post covers, and hole plugs.
10. Lastly, remove the interlock beak from the hardware blister pack and install onto the Keeper panel on the gate so that it can slot into the interlock when the gate is closed.

NOTE: Gates are field reversible (contact Accessibility Professionals 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 4-39.***

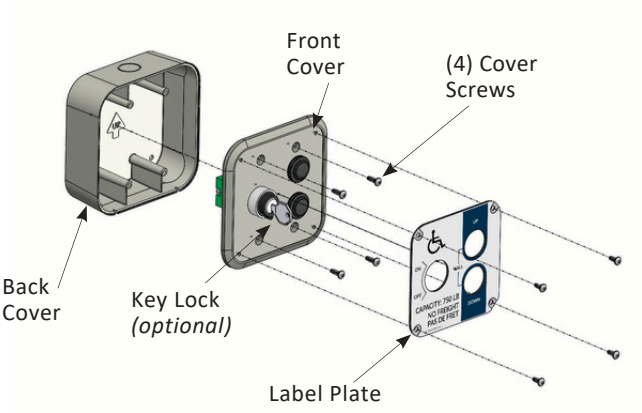


Figure 4-39

2. Remove four (4) cover screws and the front cover from the back cover.
3. 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.
4. If using a flush-mounted setup the back cover can be discarded.
5. Mount back cover to the wall using appropriate fasteners through four (4) holes in the back surface of the back cover.
6. Use crimp to make cable connections in the call station.
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 starting at page 35.

INSTALLING FIXED RAMPS

1. Position ramp 3/8" to 3/4" from the platform opening.
2. Anchor the ramp to the concrete pad.

See figure 4-40.

Figure 4-40

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 4-41.***

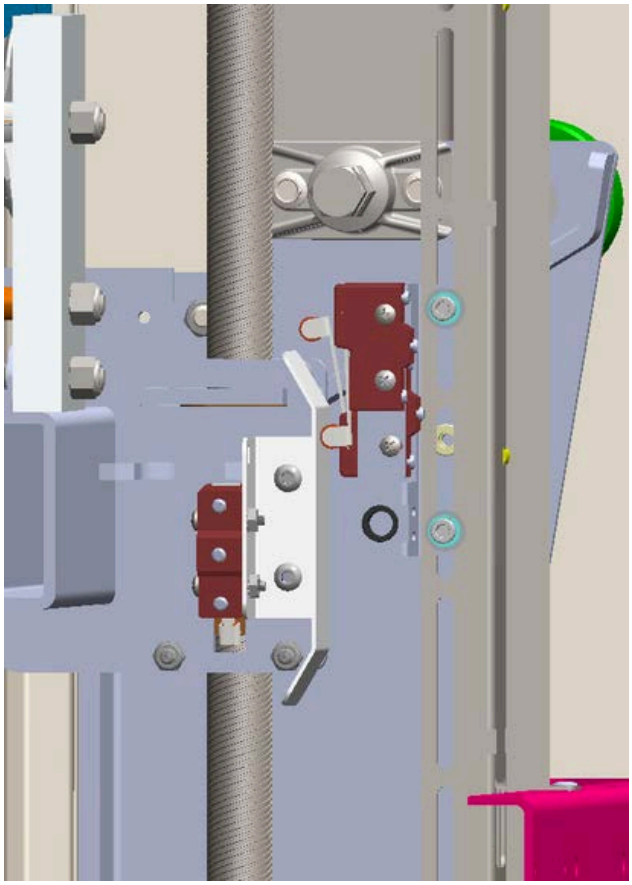


Figure 4-41

3. Repeat for lower limit switch.

INSTALLING PLATFORM GUARD PANELS 90° CONFIGURATION

1. Remove the two(2) 1/4" - 20x2"bolts from each corner of the platform.
2. Insert the control side guard panel posts into the pockets on the platform with the smooth side facing the inside of the platform. Insert the outer panel into the outer pocket. ***See Figure 4-42.***

Figure 4-42

3. Fasten in place with 2 (2) 1/4"- 20 x 2" hex head bolts per post. Using a 3/8" tool 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 4-43.***

Figure 4-43

4. Grab the top of the panel and push it back and forth to check its rigidity. If the panel is wobbly, tighten each bolt by 1/8" of a turn, alternating between the bolts, until the panel is no longer wobbly. ***See Figure 4-44.***

Figure 4-44

5. Place the platform extension bracket onto the platform. Install three (3) 1/4" - 20 x 1" thread forming screws through the bottom tube of the gate frame. Screws are accessed through 7/8" diameter holes in front of the tube. Use a 3/8" nut driver or socket and extension to tighten screws. DO NOT USE AN IMPACT TOOL. ***SeeFigure45.***

Figure 4-45

6. Using a 3/8” open end wrench, install two (2) 1/4" -20 x 5/8" screws through the holes in the platform extension and into platform outer panel. ***See Figure 4-46.***

Figure 4-46

7. Locate 2 panel brackets and two (2) 1/4" -20 x 5/8" screws. Using a 3/8” socket install the upper & lower brackets onto the inner control guard panel. ***See Figure 4-47.***

Figure 4-47

8. Place the back panel onto the platform and using a 3/8" wrench install the two (2) 1/4" -20 x 5/8" screws in the other hole of the bracket. ***SeeFigures4-48and4-49.***

Figure 4-48

Figure 4-49

9. Install the two (2) 1/4" -20 x 5/8" screws through the holes in the platform extension and into platform back panel. Using a 3/8” open end wrench to tighten the screws ***See Figure 4-50.***

Figure 4-50

BATTERY BACKUP

1. If equipped with a battery backup system. Place two (2) or four (4) batteries on the battery tray(s) and secure them in place with zip ties.

2. Remove the battery fuse. Connect the red wires to the positive side of the batteries & the black wires to the negative side of the batteries. Connect the jumper wires between the negative terminal of one battery to the positive terminal of the other battery. ***SeeFigure4-51.***

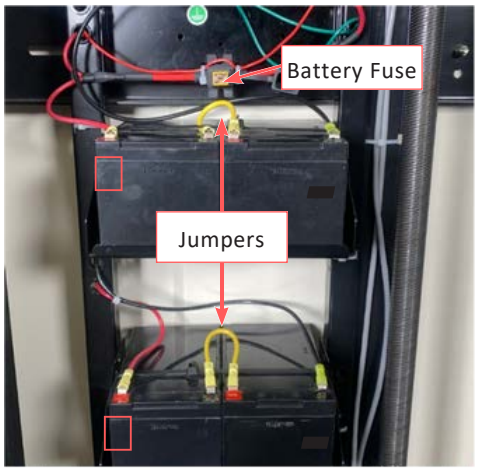


Figure 4-51

NOTE: The primary voltage for the Inverter is 24 VDC. Two (2) 12 VDC batteries are wired in parallel to produce 24VDC.

3. Reinstall the battery fuse & ensure the inverter is switched to the ON position. ***See Figure 4-52.***

Figure 4-52

4. If equipped with a cold-weather package, the junction box will include a duplex outlet.
   - Place batteries on a flat surface. Wrap the battery blanket aroudn the batteries as shown. ***See figure 4-53.***

Figure 4-53

   - Insert the temperature probe and suction cup between the battery and warming blanket by attaching the suction cup to the back of the left battery. ***See figure 4-54.***

Figure 4-54

- Wrap the battery blanket bracket around the batteries and the warming blanket from the front of the batteries. Secure the excess cables and thermostat controller, leaving enough power cable to reach the dual outlet located below the battery tray in the lift tower.
  See figure4-55.

Figure 4-55

- Lift the entire battery, blanket, and bracket assembly, and insert it into the battery tray, ensuring the bracket is positioned inside the sides of the battery tray. Push the batteries and bracket into the tray until the hooks on the bracket clip on to the back of the battery tray flanges. Plug the thermostat controller into the dual outlet located below the battery tray. Secure the cable to the wiring channel with cable ties, ensuring it is clear of the lift carriage. Set the thermostat controller temperature to 70°F by following the instructions included with the controller.
  See figure4-56.

Figure 4-56

- If the lift height is sufficient for the carriage to pass by the batteries and blanket, run the lift up to ensure there is no interference between the installed battery blanket/bracket and the carriage, particularly the gusset on the carriage and the front right corner of the bracket. If needed, push the batteries and bracket further into the battery tray until the bracket hooks securely onto the tray and the interference is eliminated. If the bracket is unable to hook onto the battery tray, you may need to raise the battery blanket on the batteries to be above the rear flange of the battery tray.
  See figure 4-57.

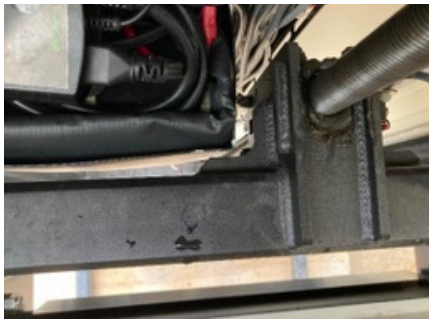


Figure 4-57

- Feed the blanket cord down behind the battery tray and plug into the thermostatic switch.

DOORS / GATES SUPPLIED SEPARATELY

Interlocks and Strikesto be installed into doorsby others are shipped with VPL in the OEM packaging Install devices per instructions in the packaging.

Connect wiring per device instructions ***See details on page 35***.

NOTE: A wiring diagram with part number 640-00025 is placed in a packet with your shipment.

NOTE: Von Duprin strikes are not compatible with lifts containing a Battery backup option.

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 4-58.***

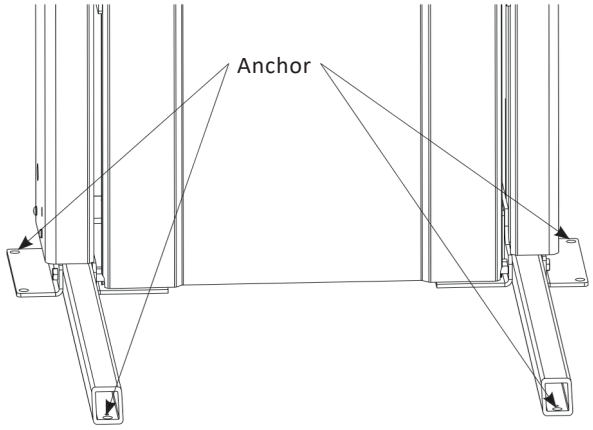


Figure 4-58

INSTALLATION TOWER CHECK

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. *NOTE: No jumpers are to be left on the PCB.*
- ☐ Verify that the shipping bolt was removed from the cable tensioning pulley and that pulley is hanging in the tower without hitting any obstacles during platform travel.
- ☐ Apply temporary power and verify all four (4) LED indicator lights on the control board are solid green. Verify that the E-Stop is functional and
- ☐ All 4-LED lights are solid red with no lift movement.
- ☐ Manually depress the final limit switch (the Highest positioned switch) and verify any travel of platform is prevented and indicator lights 1,2, and 3 are flashing RED
- ☐ Harness should be removed from the trailing cable to simulate safety nut switch activation. Safety Nut Safety Switch: Disconnect the 2 pin Molex this will show the fault. Lights 1, 2, 3, & 4 Flashing Red
- ☐ Manually depress the safety nut switch (the switch near ACME nut) and verify any travel of platform is prevented and indicator lights 1, 2, 3, and 4 are flashing RED.
- ☐ 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. Safety Pan Switches: Press up on safety pan when going in the down direction, safety pan will trigger Lights 1 & 2 Flashing Amber
- ☐ Manually depress the Over-Speed Governor (OSG) switch (the switch at the bottom of ACME screw) and verify any travel of platform is prevented and indicator lights 1, 2, and 3 are solid RED. OSG: Need to remove the cover(s) to access switch, and remove wire from the switch to active the fault. Lights 1, 2, & 3 Solid Red.
- ☐ If equipped, lift the float of the float switch (the switch at the bottom of the tower) and verify that DOWN travel is prevented and indicator light two (2) is flashing AMBER.
- ☐ Verify that the manual lowering wrench and socket are in place and secured on the top plate with wing nuts.

  Verify that open gates/door prevent platform travel.
- ☐ Verify the screws securing the tower skins have a plastic washer and are tight.

Reset the board (IMPORTANT)

- ☐ ❑ Enter service mode by pressing and releasing the service button
- ❑ Press and hold down the service button again for 3-seconds.
- ❑ Press and release the reset button.

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 must be wired to a dedicated circuit, connected through a 2-pole fused and lockable disconnect, providing a 120V AC power supply (15-amp breaker). ***SeeFigure4-60.***

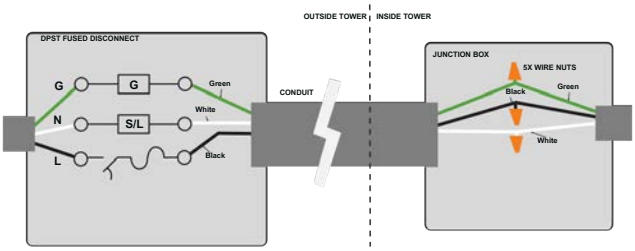


Figure 4-60 (AC Model)

For a DC backup model, the two brown wires need to be connected to the second pole of the disconnect to include the Battery Backup System. ***See Figure 4-61.***

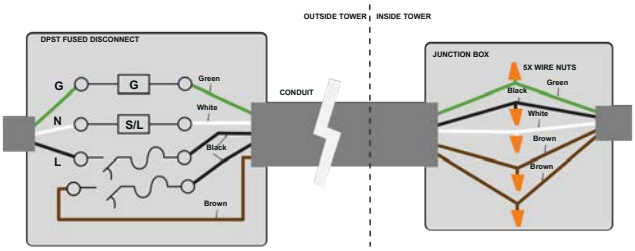


Figure 4-61 (DC Model)

Route wiring from disconnect to tower as directly as possible and enter the tower through most convenient knock-out in the tower side panels. Inside the tower enclosure, route wires from knockout to internal junction box along the back panel of the enclosure. Use the backside of the wire channel if the junction box is at a different level than knockout. Be sure all wiring is routed clear of the moving carriage and roller wheels inside the tower. ***See Figure 4-62.***

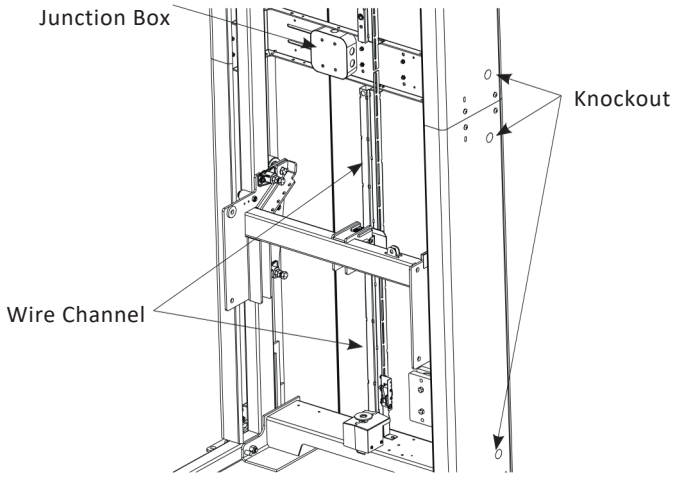


Figure 4-62

FINAL INSTALLATION

Completingthe abovestepswillclearanyerrors from the board.

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. Connect the cable in the top cap for status indicator lights into the control board. 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.

OPERATIONAL CHECK

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

NOTE: Safety standard ASME A18.1-2020 requires that when the lift is installed in commercial applications, operation checks are to be conducted not less than weekly by authorized personnel.

- ☐ Apply power and verify all four (4) LED indicator lights are solid green.
- ☐ 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). Indicator lights 1, 2, 3 and four (4) are solid RED.
- ☐ Key switch (if equipped) OFF stops and prevents travel.
- ☐ Landing switches stop the platform at each landing within 1/2", does not coast, and opens the gate locks.
- ☐ Automatic Door Openers (if equipped) open the doors/gates at landing.
- ☐ Open doors/gates prevent any travel of the platform. Indicator lights three (3) and four (4) are solid RED.
- ☐ 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 allow UP travel (check several locations). Indicator lights one (1) and (2) are flashing AMBER.
- ☐ Pit switch (if equipped) prevents UP and DOWN travel. Indicator lights 1, 2, and 3 are solid RED.

SECTION 5

INSTALLATION QUICK START

CONTROL BOARD

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.

In commercial applications, this would take place with any or all of the following: the property owner, facilities manager, or any personnel who may oversee the unit's use or control its access.

PROVIDE OVERVIEW

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

DESCRIBE AND DEMONSTRATE PROPER USE AND EACH KEY

- ☐ Call/Send
- ☐ Entrance and positioning
- ☐ Door/Gate interlocks and safety pan status lights and color key
- ☐ Ascend/Descend
- ☐ Use of handrail (if equipped)
- ☐ Emergency lowering

REVIEW CARE AND MAINTENANCE

- ☐ Completing the above steps will clear any errors
- ☐ Keys
- ☐ Maintenance items
- ☐ Inspection items
- ☐ Rust prevention

Be sure to leave them 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
- ☐ Hoistway Square
- ☐ Electrical

Code: ASME 18.1 relative to residential or commercial, along with Local Building codes, and NFPA 70 (NAEC 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
- ☐ Platform Gate*
- ☐ 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:Useflat 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: 3/8" - 3/4"
- ☐ Guard panel to hoistway wall: 2" - 3"

WIRING & ELECTRICAL

- ☐ Gates*/Doors/Interlocks/Openers
- ☐ Call/Sends*
- ☐ Install and Connect Battery Backup*
- ☐ Dedicated Line to Primary Power Source

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*

QUICK START WIRING
CALL/SEND & INTERLOCK IN A GATE POST

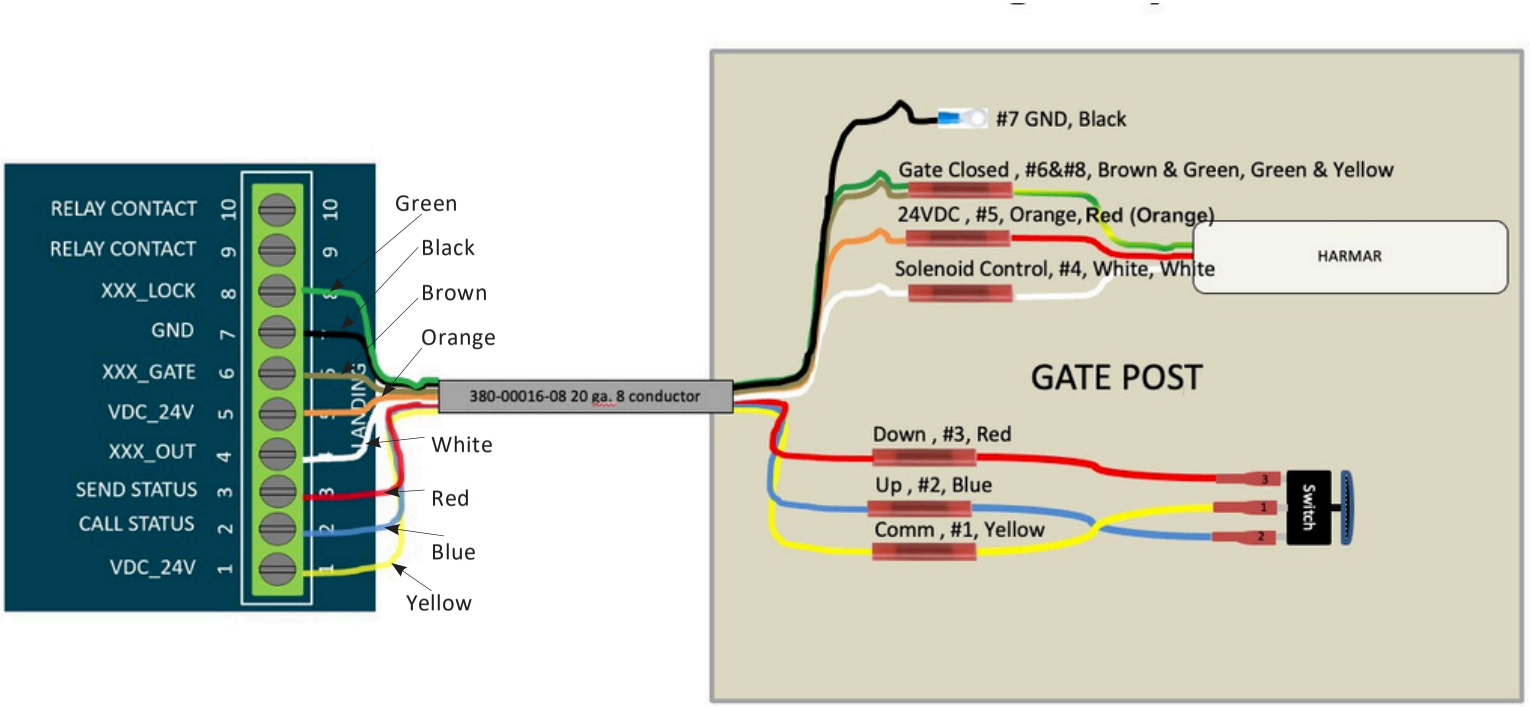


Figure 6-1

CALL/SEND & INTERLOCK IN SAME LOCATION

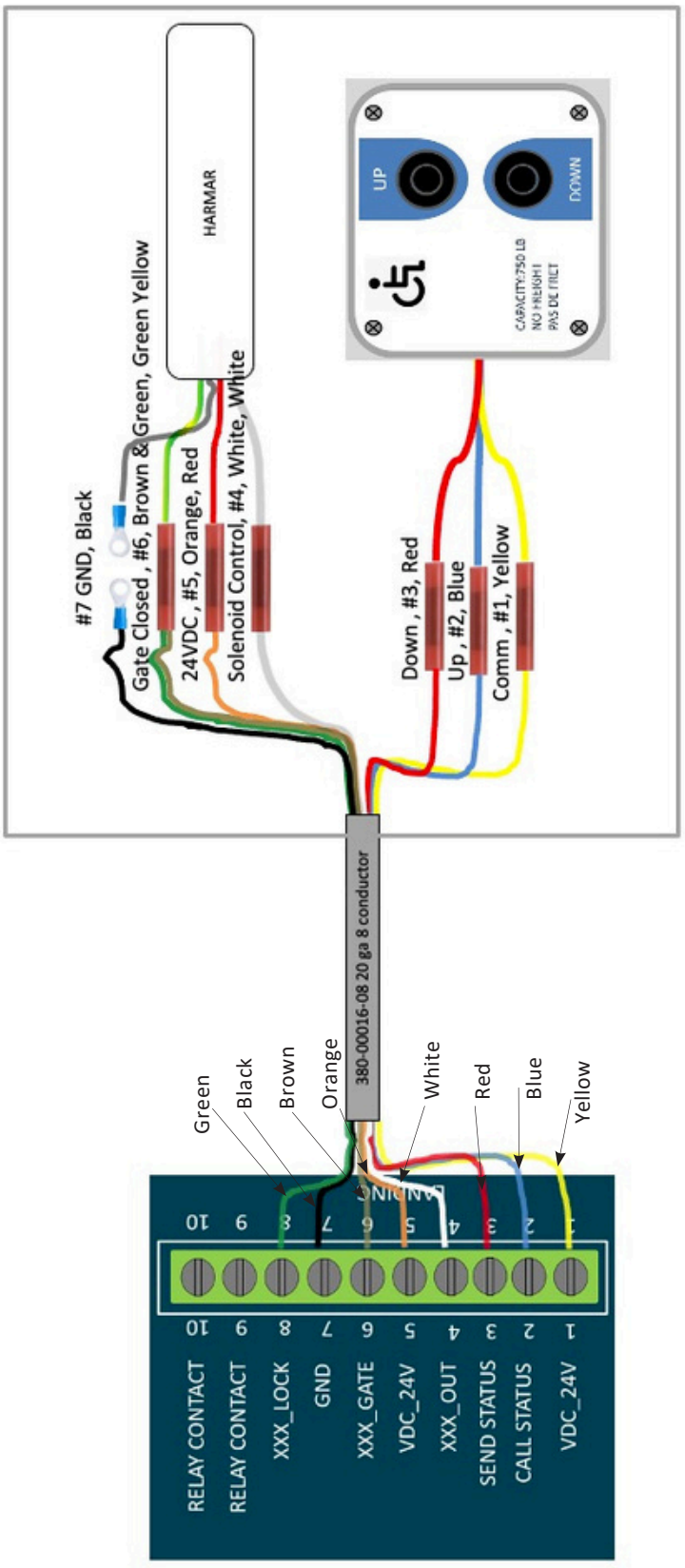


Figure 6-2

CALL/SEND & INTERLOCK IN DIFFERENT LOCATIONS

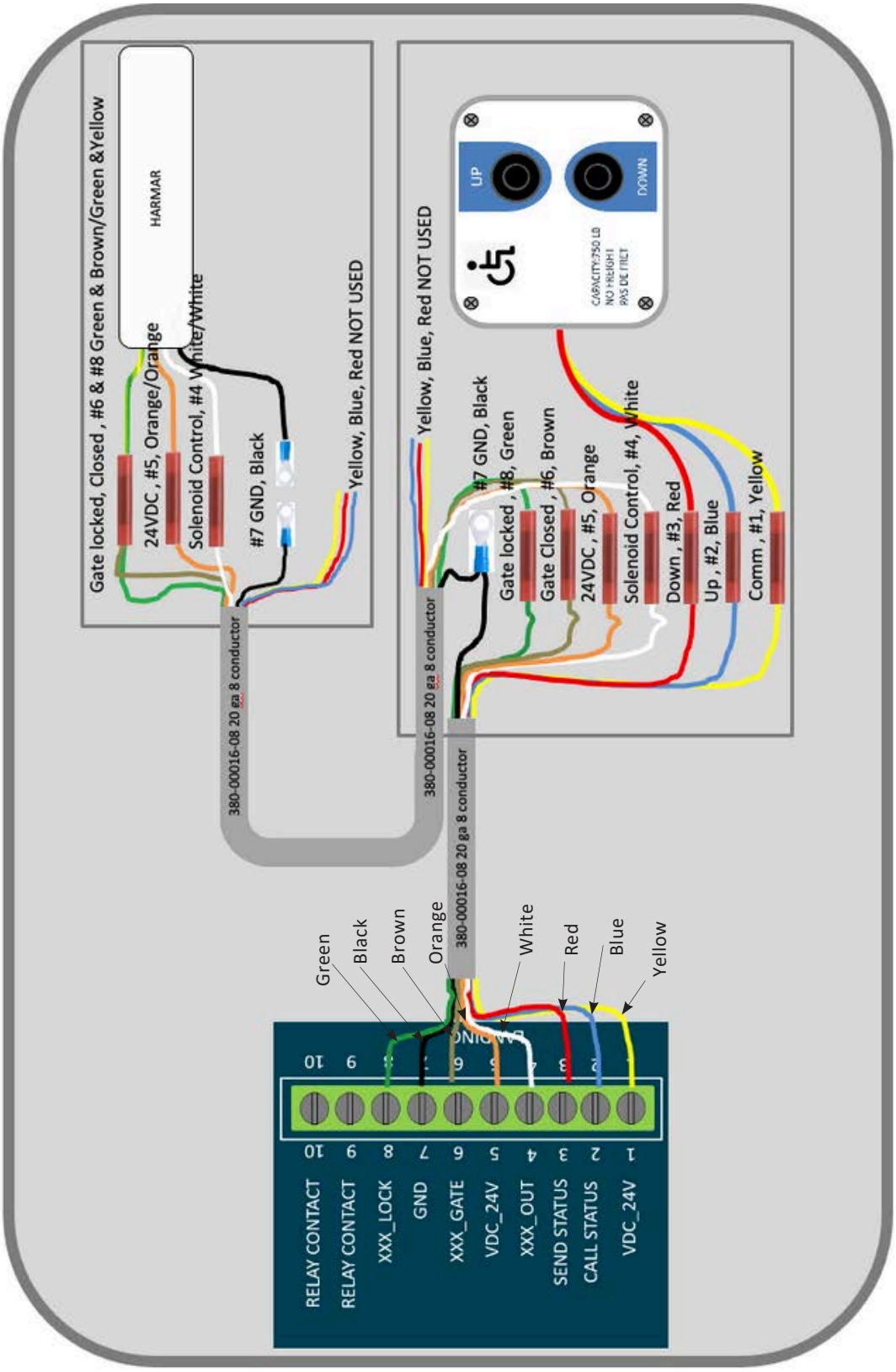


Figure 6-3

SECTION 7

TROUBLESHOOTING

STATUS CODES

This lift has several advanced safety systems that monitor various sensors, switches and the performance of the lift. To indicate the status of the VPL there are 4-LEDs located on the Top Cap of the tower. The table below explains the status indicated by the 4-LEDs. LEDs are numbered from left to right, while facing the tower from the platform side. Color

listed in brackets indicates LED is flashing.

SeeFigure7-1. *NOTE: [COLOR] means flashing light.*

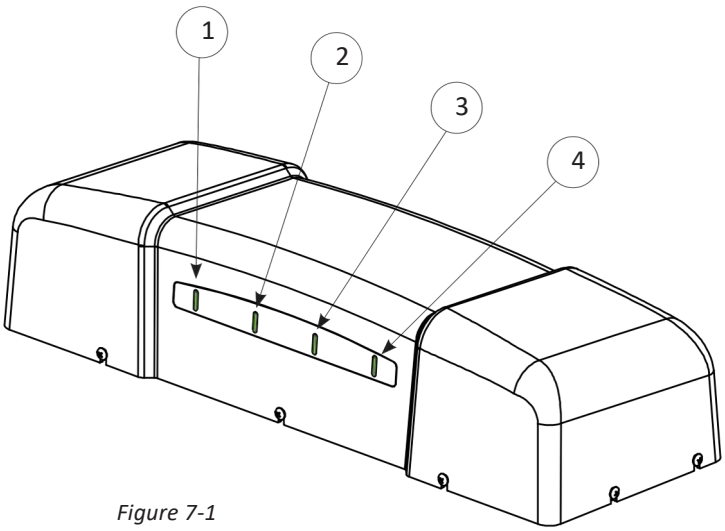


Figure 7-1

STATUS LED				STATUS
#1	#2	#3	#4	
ANY OFF				**Lift will not function.** Major Fault, No Power (and no battery) or Low Power Mode. Service is Required.
All Green				**Lift functional.** No faults
Green	Green	Green	Green	**All systems normal.** Lift is OK to Operate.
Flashing Green	Flashing Green	Flashing Green	Flashing Green	**Lift is in "Service Mode".** Only Authorized Technicians should Operate.
Flashing Green	Flashing Green	Flashing Green		**Lift is running on backup power.** Lift is OK to Operate.
Any Amber				**Lift is OK to Operate.** Service is Required.
Amber	Amber	Amber		**Lift is running on backup power and battery is Low.** Lift is OK to Operate for at least one full lift cycle.
	Amber	Amber	Amber	**Lift is on AC power and battery is Low.** If lift transfers to backup power it will only operate for at least one full lift cycle. Service or replace batteries.

STATUS LED				STATUS
#1	#2	#3	#4	
Amber				**Service is required.** Flood Switch was activated.
	Amber			**Service is required.** Lift travel time exceeded average.
Amber	Amber			**Service is required.** Periodic maintenance limit reached.
		Amber		**Service is required.** Service hour limit reached.
Amber			Amber	Inverter communication failure.
Flashing Amber				**Minor fault. Platform function is reduced.** Service may be Required.
Flashing Amber	Flashing Amber	Flashing Amber		**Lift is running on backup power and battery is very low.** Platform will only go down.
	Flashing Amber	Flashing Amber	Flashing Amber	**Lift is on AC power and battery is very low.** If lift transfers to backup power platform will only go down. Service is Required*.
		Flashing Amber		**Motor temperature is hot.** Platform will only go down.
Flashing Amber	Flashing Amber			**Safety pan has been triggered.** Platform will only go up.
	Flashing Amber			**Float switch has been triggered.** Platform will only go up. Service will be required to ensure safe operation. Alarm will turn into a Major Fault after 25 full cycles or two (2) weeks time after flood event.
	Flashing Amber	Flashing Amber		**Motor temperature monitoring lost.** Service is required.
Any Red				**Safety switch triggered.** Lift will not function.
		Red	Red	**A landing door/gate is open.** Lift will not function until closed.
Red	Red			**A landing door/gate lock has failed.** Lift will not function until lock is enabled. Service may be required.
Red	Red	Red	Red	**E-Stop button is pressed.** Lift will not function until button released.

**If battery is not replaced promptly after this warning, the battery will further degrade to the point that unit will shut off completely when AC power is lost.*

TROUBLESHOOTING

STATUS LED				STATUS
#1	#2	#3	#4	
Red	Red	Red	Red	**E-Stop button is pressed.** Lift will not function until button is released.
Red	Red	Red		**Lift will not function.** Major Fault. Service is required.
Any Flashing Red				**Minor fault. Platform function is reduced.** Service may be required.
	Flashing Red			**Lift out of service.** Service is required after a flood event.
	Flashing Red	Flashing Red	Flashing Red	**Lift is on AC power and battery is very low.** If lift transfers to backup power, platform will only go down. Service is required*.
Flashing Red				**Lift out of service.** Lift travel time exceeded average by 2X. Service is required.
Flashing Red	Flashing Red	Flashing Red	Flashing Red	**Lift out of service.** Safety nut switch is triggered. Service is required.
Flashing Red	Flashing Red	Flashing Red		**Lift out of service.** Final limit switch is triggered. Service is required.
		Flashing Red		**Lift out of service.** Top landing switch did not change state when platform should have moved off landing. Service is required.
	Flashing Red	Flashing Red		**Lift out of service.** Mid landing switch did not change state when platform should have moved off landing. Service is required.
Flashing Red		Flashing Red		**Lift out of service.** Bottom landing switch did not change state when platform should have moved off landing. Service is required.
		Flashing Red	Flashing Red	**Lift out of service.** Motor current is 0 Amps while going up. Service is required.
			Flashing Red	**Lift temporarily out of service.** Motor temperature is Very Hot. Lift will not function until the motor has cooled.

**If battery is not replaced promptly after this warning, the battery will further degrade to the point that unit will shut off completely when AC power is lost.*

CONTROL ELECTRONICS

If the Indicator LEDs do not provide enough information to fully troubleshoot a potential issue it may be necessary to access the control electronics below the top cap of the tower.

Access the control electronics by loosening seven (7) top cap screws, lifting the top cap, and unplugging the indicator board cable from control board. Set top cap assembly aside.

CONTROL ELECTRONICS TRAY

The Control Electronics Tray contains the Control PCBA, power elements and fuses. ***See Figure 7-2.***

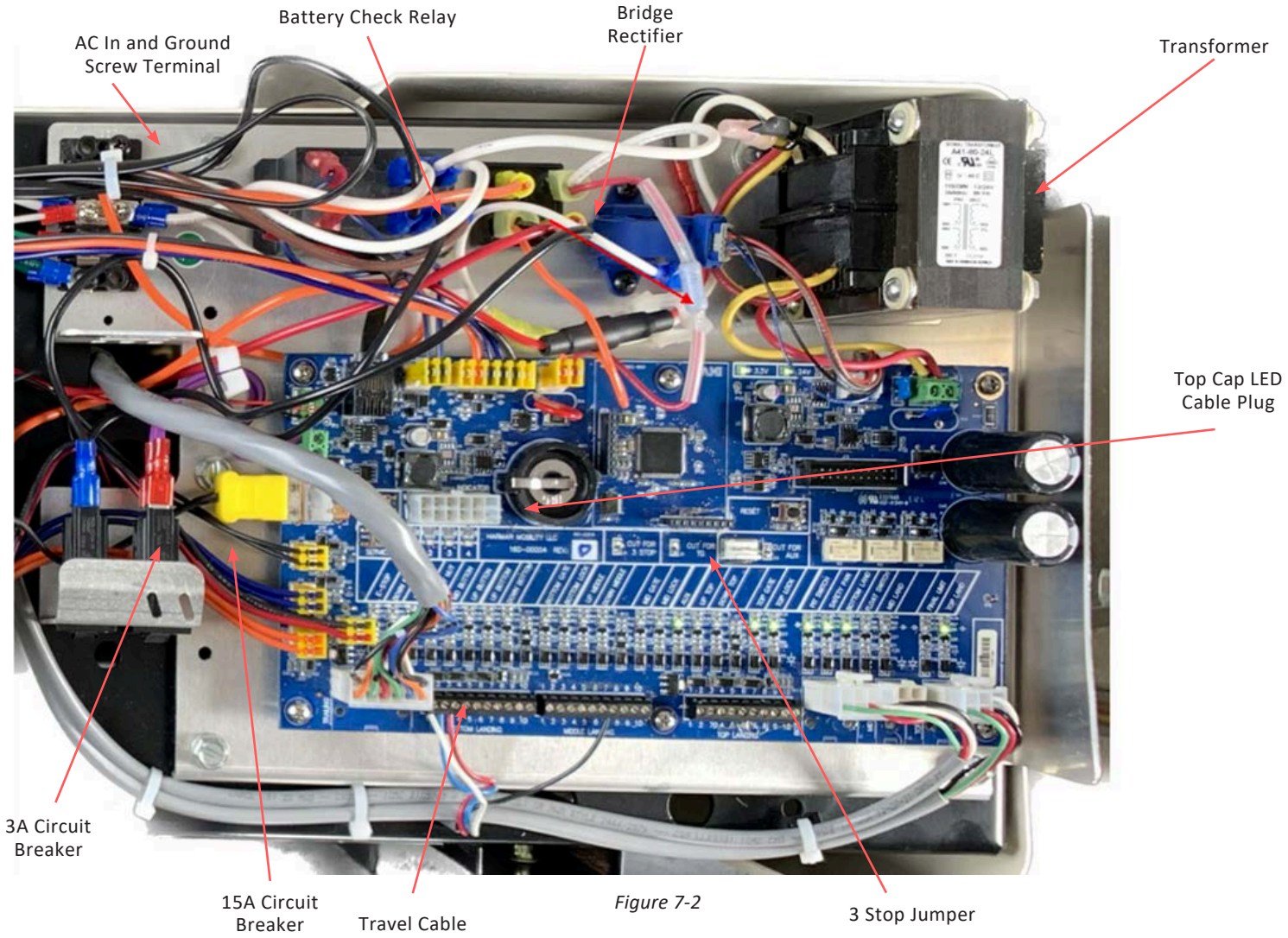


Figure 7-2

CONTROL BOARD

The Control Board contains the processor, receives all of the sensor input, sends out all of the commands and provides important feedback for troubleshooting. It identifies each of the inputs and outputs on the Control Board. ***See Figure 7-3.***

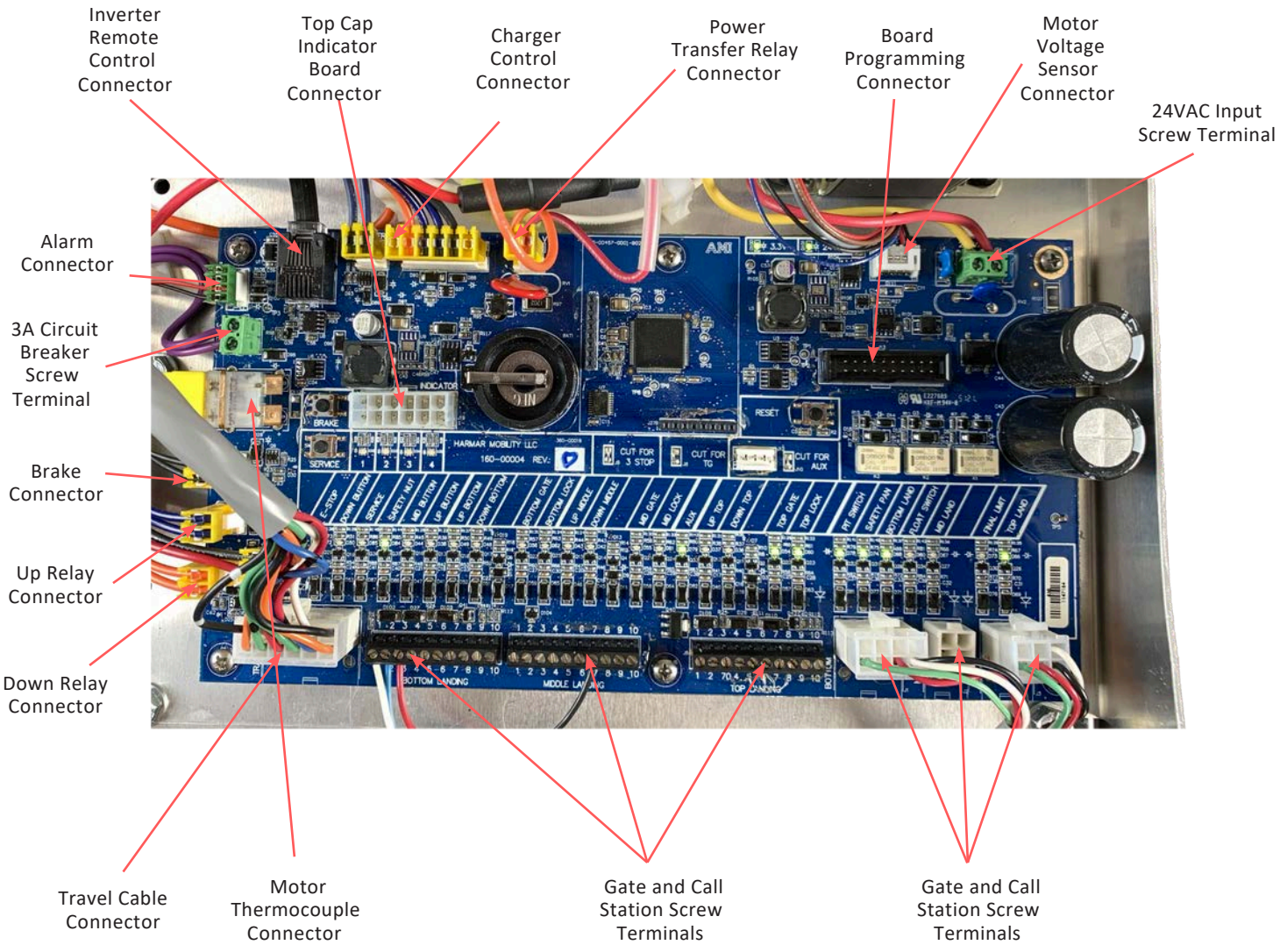


Figure 7-3

FREEDOM LIFT SYSTEMS
BY ACCESSIBILITY PROFESSIONALS

The control board has 32 LEDs to provide the status of power to the board and each circuit that is monitored. It shows the location and description of each LED. ***See Figure 7-4.***

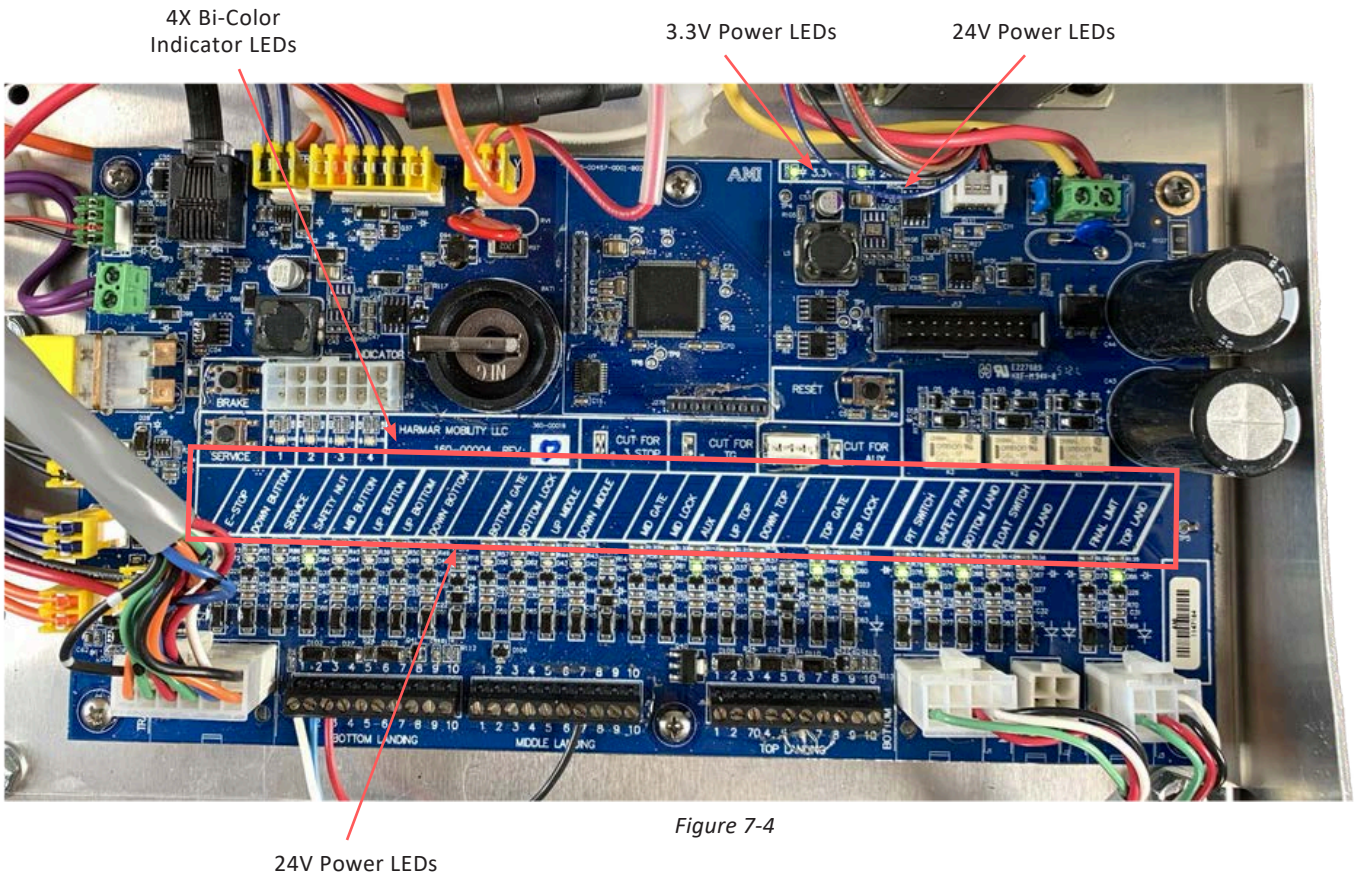


Figure 7-4

DESCRIPTION	COLORS	STATUS, TROUBLESHOOTING
4X Indicators	Green, Amber, Red	These LEDs exactly duplicate the Indicator LEDs on Top Cap. If they do not match there could be an issue with cable or Indicator Board. Refer to Troubleshooting codes above.
3.3V Power	Green	LED ON indicates processor is getting power.
24V Power	Green	LED ON indicates all 24V circuits are getting power.
E-Stop	Green	LED ON indicates the E-stop is not depressed (lift can run)

Down Button	Green	LED ON indicates the Down button in the cab control is being depressed.
Service	Green	LED ON indicates the Service button is being depressed. Service mode is only entered after button is released.
Safety Nut	Green	LED OFF indicates the safety nut switch circuit is open. Major Fault. Possible causes: ACME nut failure, switch failure, connector open or wire break.
Mid Button	Green	If a 3-Stop unit, LED ON indicates the Mid button in the cab control is being depressed. This should never be ON with a 2-stop lift.
Up Button	Green	LED ON indicates the Up button in the cab control is being depressed.
Up Bottom	Green	LED ON indicates the Up button in the Bottom Call Station is being depressed.
Down Bottom	Green	LED ON indicates the Down button in the Bottom Call Station is being depressed.
Bottom Gate	Green	LED ON indicates the Bottom or Platform Gate/Door interlock is closed.
Bottom Lock	Green	LED ON indicates the Bottom or Platform Gate/Door lock is active.
Up Mid	Green	LED ON indicates the Up button in the Mid Call Station is being depressed.
Down Mid	Green	LED ON indicates the Down button in the Mid Call Station is being depressed.
Aux	Green	Aux circuit is unused
Mid Gate	Green	LED ON indicates the Mid Gate/Door interlock is closed.
Mid Lock	Green	LED ON indicates the Mid Gate/Door lock is active.
Up Top	Green	LED ON indicates the Up button in the Top Call Station is being depressed.
Down Top	Green	LED ON indicates the Down button in the Top Call Station is being depressed.
Top Gate	Green	LED ON indicates the Top Gate/Door interlock is closed.

Top Lock	Green	LED ON indicates the Top Gate/Door lock is active.
Pit Switch	Green	LED OFF indicates the Pit Switch (if equipped) or Over Speed Governor circuit is open. Major Fault. Pit switch and OSG share a circuit that normally closed. Possible causes: Failure causing drive screw overspeed, switch failure, connector open or wire break.
Safety Pan	Green	LED OFF indicates the safety pan circuit is open. Minor Fault. Platform is only able to move up. If circuit stays open after obstruction cleared there could be a switch failure, connector open or wire break. There are 11 safety pan switches in platform.
Bottom Land	Green	LED ON indicates the Bottom Landing switch is closed. The switch should be closed only when platform is at that landing.
Float Switch	Green	LED ON indicates the float switch (if equipped) is closed. Minor Fault. The platform is only able to move up. The switch should be closed only when water is present and lifting the float.
Mid Land	Green	If a 3-Stop lift, LED ON indicates the Mid Landing switch is closed. The switch should be closed only when platform is at that landing.
Final Limit	Green	LED ON indicates the Top Final Limit switch is closed. Major Fault. The Top Landing switch did not close when platform was at that landing. Possible causes: Top Landing switch failure, connector open or wire break.
Top Land	Green	LED ON indicates the Top Landing switch is closed. The switch should be closed only when platform is at that landing.

TROUBLESHOOTING

The control board has three (3) momentary switches and three (3) permanent cuttable switches/jumpers. ***See Figure 7-5.***

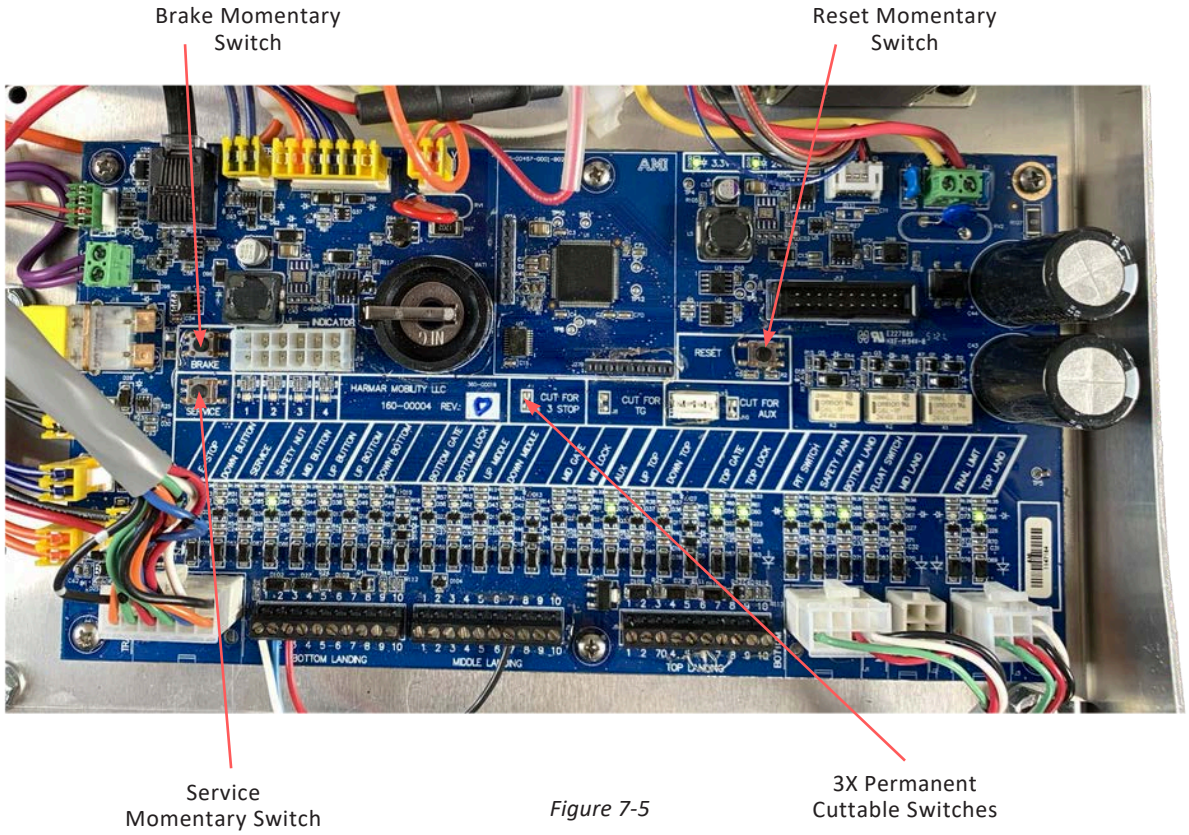


Figure 7-5

BRAKE MOMENTARY SWITCH

The brake on the back of the gear motor is 24V DC "fail safe," electromagnetic holding brake. The brake is released when 24V DC is applied. Pressing the BRAKE momentary switch will apply 24V DC and release the brake with an audible "Click."

⚠WARNING

Pressing and holding this switch could result in the platform slowly drifting down.

This switch can be used to check brake operation and is recommended to be used in the emergency lowering procedure.

RESET MOMENTARY SWITCH

Pressing the RESET momentary switch will reset the processor and exit "Service Mode" if board were in that mode. "Out of Service Mode" flag is not cleared by pressing the RESET switch.

SERVICE MOMENTARY SWITCH

The SERVICE switch should only be used during installation and for service by authorized technicians.

⚠WARNING

Pressing this switch results in the disabling of safety circuits.

TOWER INSTALLATION POST-CHECKS

Pressing the SERVICE switch puts the lift into a "Service Mode" which temporarily ignores most safety circuits and major faults allowing the technician to move the platform and troubleshoot issues more easily. All four (4) Indicator LEDs will flash green when the unit is in "Service Mode" and the lift will automatically go back to normal operation after 30-minutes. You can hit the RESET switch to exit "Service Mode" before 30-minutes. All status LEDs on the control board will work normally in "Service Mode."

Pressing the SERVICE will allow the platform to move if the unit is in "Out of Service Mode", however the lift will return to "Out of Service Mode" when the "Service Mode" expires.

To reset the "Out of Service Mode" flag and clear memory/errors after required service has completed:

1. Enter "Service Mode" by pressing and releasing the SERVICE switch.
2. Press and hold the SERVICE switch for at least 3 seconds then release.
3. Press and release the RESET switch within 30-minutes.

⚠WARNING

Do not reset the "Out of Service Mode" flag until required service has been performed. Unsafe operation could result.

HARD RESET

- Press the service button to go into service mode, then press the reset button. OR press the service button, then the reset button and let go of both at the same time before the starting sequence on the LEDs begins.
- This reset clears service flags such as the float switch cycle count and battery related flags from internal memory.

MEMORY RESET

- Press and hold the service button. While holding, press the reset button momentarily and only release the service button just as the status LEDs all become green.
- This resets all the flags held in memory including service flags, total cycle count, platform location, and the 3-stop flag.
- This does not perform initialization, so a reset and initialization is recommended afterwards.

PERMANENT CUTTABLE JUMPERS

- Three permanent cuttable jumpers are included on the Control Board that allow the software characteristics to change based on configuration. If needed these jumpers are cut in the factory and should never need to change.

3-STOP JUMPER

- This jumper is cut in the factory on 3-stop lifts. The control board will ignore any mid landing circuits when this jumper is intact.

TG JUMPER (UNUSED)

- In the future this jumper will be used on Toe-Guard lifts.

AUX JUMPER (UNUSED)

- This jumper could be used for future expansion/features.

CONTACTOR TRAY

TheContactorTray contains othercontrol electronics wired to motor and control tray. ***See Figure 7-6.***

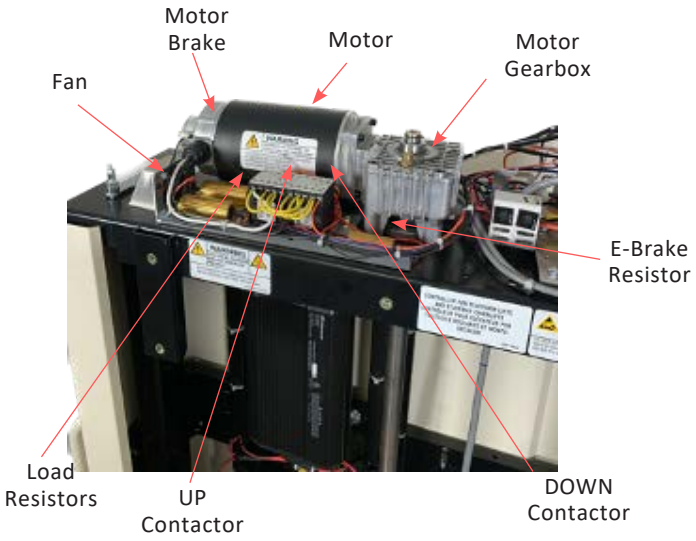


Figure 7-6

UP AND DOWN CONTACTORS

Both contactors have 3-poles with an auxiliary circuit that are switched by 24V AC 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.

E-BRAKE RESISTOR

The E-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.

LOAD RESISTORS

The load resistors function is to slow the platforms speed in the DOWN direction. The resistors are in-circuit only when the DOWN contactor is ON and will generate significant heat as they dissipate some of the downward energy. The fan located next to the load resistors is there to cool the resistors.

⚠WARNING

Load resistors could be very hot. Do not touch.

COOLING FAN

The cooling fan is primarily to cool the load resistors, but also cools the top compartment as it pulls air from the tower below. The fan is controlled by a thermostatic switch located on a load resistor. If the fan is not cutting off when the temperature drops there could be an issue with the switch.

GEARMOTOR

The VPL uses a 2/3Hp gear motor 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. ***See Figure 7-6.***

Motor is designed for a duty cycle of 25% with a maximum continuous operation of 45-minutes. In other words, 45-minutes of continuous operation must be followed by 2-hours and 15-minutes of rest to prevent possible motor damage. Motor temperature is monitored by a thermocouple inside the motor housing. If the motor gets too hot it could restrict travel of platform to DOWN only. If the motor gets so hot that it could cause damage

to the motor it will restrict platform movement entirely. Platform movement will be restored after temperatures fall below hot temperature thresholds. See STATUS CODES section for the codes displayed.

BATTERY BACKUP

If the VPL is equipped with a Battery Backup System, it will be located inside the tower below the top plate. ***See Figure 7-7.***

Figure 7-7

BATTERIES Each battery in a VPL is a 12V Sealed Lead Acid
battery. VPL400 and VPL600 get two (2) batteries wired in series to provide 24V to the Inverter. VPL800 to VPL1400 get four (4) batteries where two (2) pairs of the batteries are wired in series and the pairs are wired together in parallel to get the 24V to the inverter. Properly maintained batteries are sized to be able to provide user with at least 5 round trips at full load while on battery power. In order to preserve battery life during power outages the lift will shut off the inverter and go into a low power standby mode when the lift is not being used. The unit will automatically "wake up" and check the batteries every 8-hours. Hitting any button or activating a gate will "wake-up" the lift after a 5-second delay.

60A FUSE

Between the positive leads of the batteries and the inverter is an 60A fuse. This fuse protects the batteries and is very unlikely to independently blow unless there is a short during install or service.

BATTERY CHARGER

The battery charger is 24V, 2A with 4-stage charge profiles to maximize battery life. After a power outage it may take 12 to 18-hours to return to a full charge.

BATTERY CHECK RELAY

Since we cannot check battery voltage while the battery is charging, we have a Battery Check Relay that switches between charging and voltage monitoring. The battery voltage is monitored continuously any time while on battery power and checked every 4-hours while on AC power. A failed Battery Check Relay would result in a Very Low Battery warning. ***See Figure 7-2.***

INVERTER

The inverter is 1500W and converts the 24V from the batteries into a 120 Volt modified sine wave to power the lift. The inverter is controlled by the control board via the Inverter Remote Control Cable. There are safeties built into the inverter, however the control board monitors the input and output of the inverter and will go into a fault state to prevent the inverter from tripping. A failed inverter will appear to switch over to battery power but not provide power to drive the motor. The periodic operational checks should include a check of the battery backup system. To do this the breaker must be interrupted at the two (2) pole fused disconnect, the tower junction box or the control tray screw terminal.

FLOAT SWITCH

If a float switch is present and the float switch is triggered for more than a minute, you will see a float switch indication (flashing #2 amber).

After 25-trips or 2-weeks in time, the unit will go into "out of service" mode which will not allow it to run (flashing #2 red). This is to protect the safety of the system from being compromised.

Service must be performed in order to restore functionality.

EMERGENCY EVACUATION PROCEDURE

⚠ CAUTION

Platform lifts should not be used for evacuation during emergencies.

Do not use the lift alone if you are not sure that you can maintain pressure on the control buttons for the duration of travel.

If using the lift alone, and you do not have the optional phone equipped in the cab, it is best practice to have a cell phone with you in case of a malfunction that prevents the platform movement.

If the lift malfunctions while occupied:

- Occupant should follow the directions located next to the platform controls and never try to evacuate the lift on their own.
- Contact the closest emergency contact and/or 911
- Push in the Red Emergency Stop button on the cab control. If equipped, an alarm will sound.

Once help arrives, they should follow the Emergency Lowering Procedure to evacuate the occupant.

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. Loosen seven (7) screws around the perimeter of the top cap with a Phillips head screwdriver.
2. Lift the top cap partially and disconnect the cable between the top cap at the control board. Set the top cap aside.
3. Remove the two wingnuts holding down the manual lowering tools (1/4" wrench and 1/4" x 3/8" drive socket). ***See Figure 7-8.***

Figure 7-8

4. The wrench fits over the 1/4" 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 7-9.***

Figure 7-9

5. If you have a 3/8" drive ratchet or a cordless drill with a 3/8" socket adapter bit you can use the 1/4" socket for lowering. Power the drill in the forward direction - rotating clockwise to lower the platform. ***See Figure 7-10.***

Figure 6-10

⚠ CAUTION

Do not use an impact driver to run the unit manually. Please us a drill at low speed or sock/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 the brake engaged will require a bit of strength, typically the equivalent of being able to lift 20 lb with one arm.

6. If the lift has power, press and hold the button on the control board labeled BRAKE. This will release the brake and make lowering the platform a little easier.
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. Release the BRAKE button if pressed.
10. If the lower gate/door does not open, the crescent key can be used to release it.
11. Use disconnect to remove all power from lift.

⚠WARNING

After the emergency lowering procedure is performed. A technician/installer must be contacted to service and inspect the lift prior to using it again.

SECTION 8

MAINTENANCE & INSPECTION

Annual inspections are highly recommended to help prevent unsafe conditions and operation.

RESIDENTIAL APPLICATIONS

OWNER / MAINTENANCEPERSONAL

BEFORE USE

Do not use lift until these conditions are rectified.

- Check the dielectric grease on the board and verify all open connections are greased/ covered.
- All doors and gates are locked and secure.
- Check for standing water around the unit.
- Make sure the AC connections are in good condition and that there are no cracks or gaps in conduit.
- 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 there is an easy-to-remove obstruction, please remove it. 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 FreedomLiftSystems.com
- Check your key locks and emergency stop button for functionality.
- 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.

COMMERCIAL APPLICATIONS

END-USER/MAINTENANCE PERSONAL

IMPORTANT

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

BEFORE USE

Do not use lift until these conditions are rectified.

- Check the dielectric grease on the board and verify all open connections are greased/ covered.
- All doors and gates are locked and secure.
- Check for standing water around the unit.

- Make sure AC connections are in good condition and that there are no cracks or gaps in conduit.
- 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.

OWNER/OWNER'S AGENT

- 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 there is an easy-to-remove obstruction, please remove it. If for any reason the safety pan does not move as intended, please contact a technician.
- 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 FreedomLiftSystems.com
- Check your key locks and emergency stop button for functionality.
- 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.

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
- Check the Battery Backup function (if installed)
- Ensure the Power Cut-Off system works as intended
- Check all interlocks, strikes and obstruction sensors

RECOMMENDED ANNUALLY

- Replace batteries (if equipped)

FREEDOM
LIFT SYSTEMS

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